NORTH AMERICAN PRODUCT TECHNICAL GUIDE

Volume 3:

Modular Support Systems Technical Guide, Edition 1



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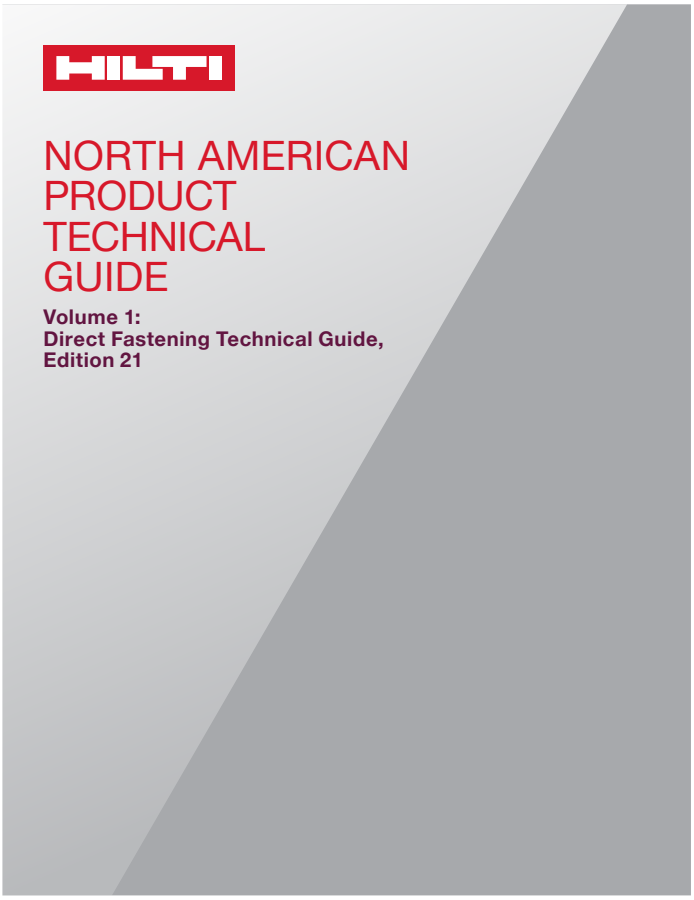
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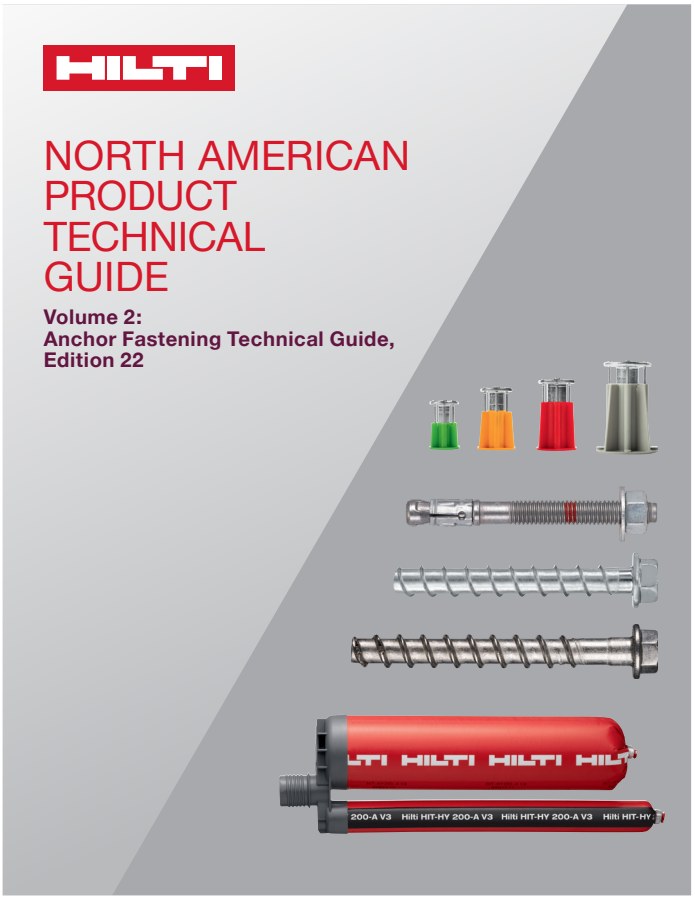


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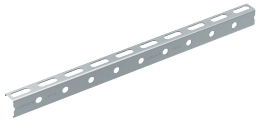
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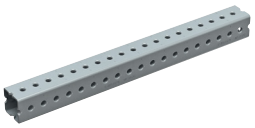
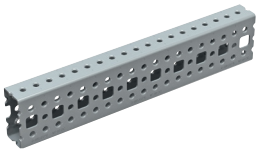
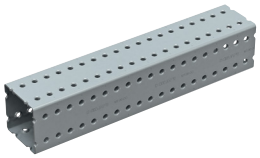
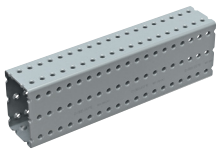
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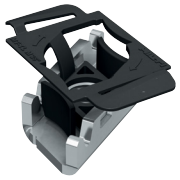
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● 2268513 (3M) ● 2268514 (6M) ● 2268515 (3M) ● 2268516 (6M)	● 2268364 (3M) ● 2268365 (6M)	● 2268366 (3M) ● 2268367 (6M)	● 2268368 (3M) ● 2268369 (6M)	● 2268490 (3M) ● 2268491 (6M)

Installation System Material Finish:

● Pre-Galvanized (PG) ● Zinc Magnesium (ZM)

MODULAR SUPPORT SELECTION GUIDE

MT CONNECTION MECHANISM

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● 2272084	● 2272080 (M10) ● 2273636 (3/8") ● 2273638 (1/2") ● 2272082 (M10) ● 2273637 (3/8") ● 2273639 (1/2")	● 2273254 ● 2282190 ● 2273256 ● 2282191	● 2332797 ● 2332788

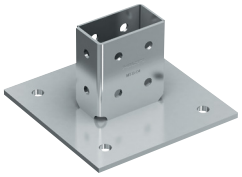
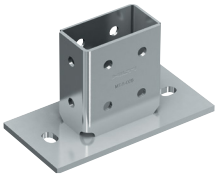
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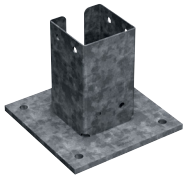
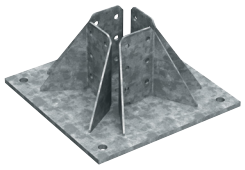
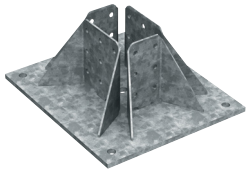
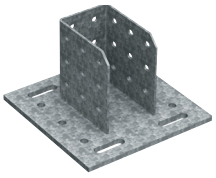
Installation System Material Finish:

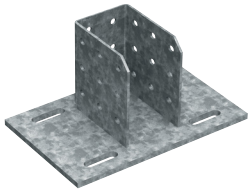
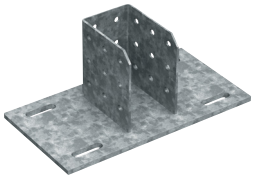
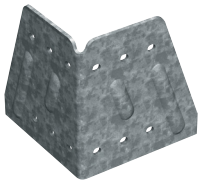
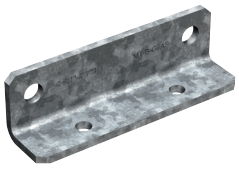
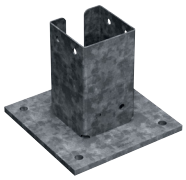
● Electro-Galvanized (EG) ● Hot Dipped Galvanized (HDG)

MODULAR SUPPORT SELECTION GUIDE

MT BASE CONNECTOR

MT-B-L (pg 54)	**MT-B-T** (pg 55)	**MT-B-O2** (pg 56)	**MT-B-O4** (pg 57)	**MT-B-O2B** (pg 58)
				
● 2272086 ● 2272088	● 2272090 ● 2272092	● 2272094 ● 2272096	● 2272098 ● 2272099	● 2282212 ● 2282213

MT-B-GS T (pg 59)	**MT-B-GS O4U** (pg 60)	**MT-B-GL O4** (pg 61)	**MT-B-GXL O4** (pg 62)	**MT-B-GXL S1** (pg 63)
				
● 2272100	● 2272101	● 2272103	● 2272104	● 2272106

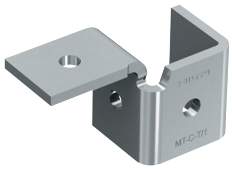
MT-B-GXL S2 (pg 64)	**MT-B-GXL S3** (pg 65)	**MT-B-G WS** (pg 66)	**MT-B-G AS** (pg 67)	**MT-B-GL O4C** (pg 68)
				
● 2272107	● 2272108	● 2272109	● 2332781	● 2343282

Installation System Material Finish:

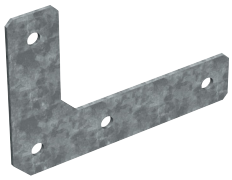
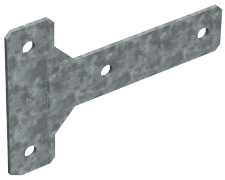
● Electro-Galvanized (EG) ● Hot Dipped Galvanized (HDG)

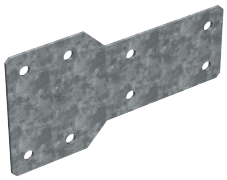
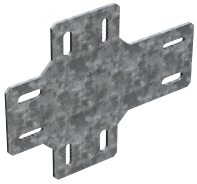
MODULAR SUPPORT SELECTION GUIDE

MT SYSTEM CONNECTORS

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● 2272054 ● 2272055	● 2272056 ● 2272057	● 2272058 ● 2272059	● 2272060 ● 2272061	● 2272064

MT-C-GL (pg 83)	**MT-C-GS A** (pg 85)	**MT-C-GL A** (pg 86)	**MT-C-GSP L** (pg 87)	**MT-C-GSP T** (pg 88)
				
● 2272066	● 2272068	● 2272069	● 2272073	● 2272074

MT-C-GLP T (pg 89)	**MT-C-GLP X A** (pg 90)	**MT-C-GLP T A** (pg 91)	**MT-C-GSP T A** (pg 92)	**MT-C-GSP L A** (pg 93)
				
● 2272075	● 2332783	● 2332784	● 2332785	● 2332786

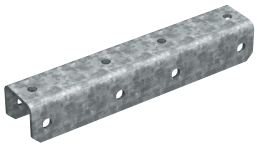
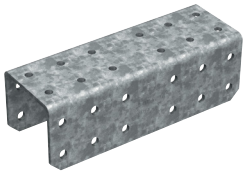
MT-C-LDP L1 (pg 94)	**MT-C-T 3D/2/HL** (pg 95)
	
● 2320180	● 2320181

Installation System Material Finish:

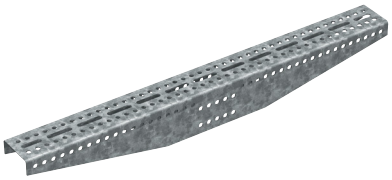
● Electro-Galvanized (EG) ● Hot Dipped Galvanized (HDG)

MODULAR SUPPORT SELECTION GUIDE

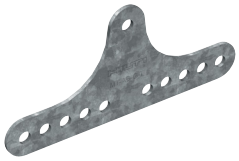
MT SPLICE CONNECTORS

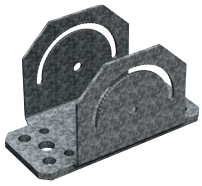
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● 2272062 ● 2272063	● 2322415 ● 2322416	● 2272078	● 2272076

MT T-BEAM CONNECTORS

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● 2272070

MT ANGLE BRACES AND FITTINGS

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● 2346395 ● 2346396	● 2272113 ● 2272114	● 2272115 ● 2273585	● 2272116	● 2332787

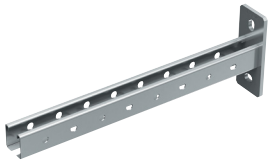
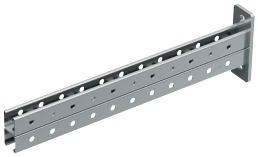
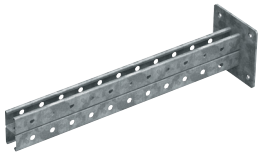
MT-B-GL AB (pg 106)

● 2353811

Installation System Material Finish:

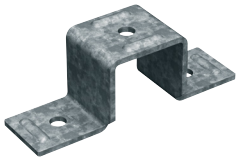
● Electro-Galvanized (EG) ● Hot Dipped Galvanized (HDG)

MODULAR SUPPORT SELECTION GUIDE

MT BRACKETS

MT-BR-30 (pg 107)	MT-BR-40 (pg 107)	MT-BR-40D (pg 107)	MT-BR-40 O4 (pg 107)	MT-BR-40D O4 (pg 107)
				
● 2271288 (300 mm) ● 2271289 (300 mm) ● 2271440 (450 mm) ● 2271441 (450 mm)	● 2271442 (300 mm) ● 2271443 (300 mm) ● 2271444 (450 mm) ● 2271445 (450 mm) ● 2271451 (600 mm) ● 2271452 (600 mm) ● 2271446 (1000 mm) ● 2271447 (1000 mm)	● 2271448 (600 mm) ● 2271449 (600 mm) ● 2271450 (1000 mm) ● 2271453 (1000 mm)	● 2271455 (600 mm) ● 2271456 (1000 mm)	● 2271459 (600 mm) ● 2271461 (1000 mm) ● 2271287 (1500 mm)

MT CLAMPS AND CHANNEL TIES

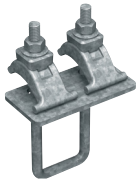
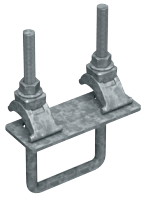
MT-CC-30 (pg 111)	MT-CC-40/50 (pg 112)	MT-CC-40D (pg 113)	MT-CC-70 (pg 114)	MT-CT-H2 (pg 115)
				
● 2322427	● 2322429 ● 2322391	● 2322398 ● 2322399	● 2322404	● 2322405 ● 2322409

MT-CT-H5 (pg 116)	MT-CT-T (pg 117)	MT-CT-H4 (pg 118)
		
● 2322406 ● 2322410	● 2322407 ● 2322411	● 2322408 ● 2322412

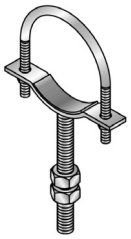
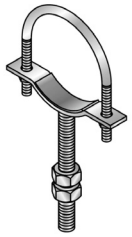
Installation System Material Finish:	
● Electro-Galvanized (EG)	● Hot Dipped Galvanized (HDG)

MODULAR SUPPORT SELECTION GUIDE

MT BEAM CLAMPS

MT-BC-GS T (pg 119)	**MT-BC-GXL T** (pg 120)	**MQT-21-41** (pg 121)	**MQT-41-82** (pg 122)	**MQT-U** (pg 123)
				
● 2273587	● 2273589	● 369675 ● 304190	● 369676 ● 304191	● 2301108

MT THREADED ROD CONNECTORS AND PIPE SADDLES

MT-CTR-GS (pg 124)	**MT-CTR-GL** (pg 125)	**MT-C-PS** (pg 126)	**MI-PSCU** (pg 127)	**MI-PSU** (pg 127)
				
● 2332791 (1/2") ● 2332792 (5/8")	● 2332794 (1/2") ● 2332795 (5/8")	● 2343196 (5/8") ● 2343197 (7/8") ● 2343198 (1 1/4")	● 2199851 (2") ● 2199852 (2-1/2") ● 2199853 (3") ● 2199854 (3-1/2") ● 2199855 (4") ● 2199856 (5") ● 2199857 (6") ● 2199858 (8") ● 2199859 (10") ● 2199860 (12")	● 2199861 (2") ● 2199862 (2-1/2") ● 2199863 (3") ● 2199864 (3-1/2") ● 2199865 (4") ● 2199866 (5") ● 2199867 (6") ● 2199868 (8") ● 2199869 (10") ● 2199870 (12")

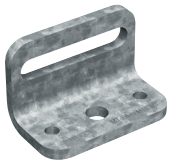
Installation System Material Finish:

● Electro-Galvanized (EG) ● Hot Dipped Galvanized (HDG)

MODULAR SUPPORT SELECTION GUIDE

MT MEDIA INTERFACE

MT-FA-G (pg 129)



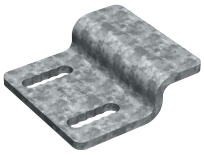
- 2273681 (3/8")
- 2273682 (1/2")
- 2273683 (5/8")
- 2273684 (7/8")
- 2273685 (1")

MT-FPS-GS (pg 131)



- 2273702

MT-FPS-GL (pg 132)



- 2273701

MT-SP (pg 133)



- 2368807

MP-UB (pg 134)



- 2288426 (1-1/2")
- 2288427 (2")
- 2288428 (2-1/2")
- 2288429 (3")
- 2288430 (3-1/2")
- 2288431 (4")
- 2288432 (5")
- 2288433 (6")
- 2288434 (8")
- 2288435 (10")
- 2288436 (12")
- 2288437 (14")
- 2288438 (16")
- 2288439 (18")
- 2288311 (20")
- 2288313 (24")

MP-US (pg 136)



- 2288314 (3/8")
- 2288315 (1/2")
- 2288316 (3/4")
- 2288317 (1")
- 2288318 (1-1/4")
- 2288319 (1-1/2")
- 2288370 (2")
- 2288371 (2-1/2")
- 2288372 (3")
- 2288373 (3-1/2")
- 2288374 (4")
- 2288950 (5")
- 2288376 (6")
- 2288377 (8")
- 2288378 (10")
- 2288379 (12")

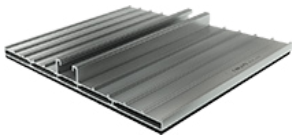
MT LOAD DISTRIBUTION PLATES

MT-B-LDP S (pg 138)



- 2320182

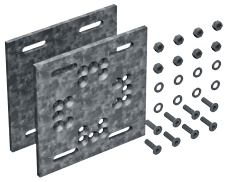
MT-B-LDP ME (pg 139)



- 2328319

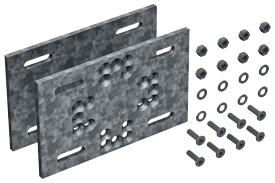
MT MODULAR PLATES

MT-P-G S1 (pg 140)



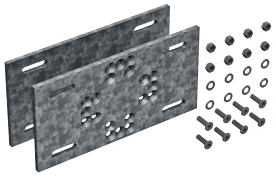
- 2343199
- 2345353

MT-P-G S2 (pg 141)



- 2343280
- 2345354

MT-P-G S3 (pg 142)



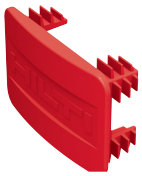
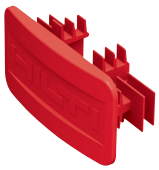
- 2343281
- 2345355

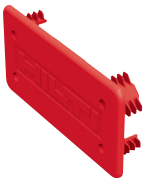
Installation System Material Finish:

- Uncoated
- Hot Dipped Galvanized (HDG)

MODULAR SUPPORT SELECTION GUIDE

MT ACCESSORIES AND END CAPS

MT-EC-20 (pg 143)	**MT-EC-30** (pg 143)	**MT-EC-40/50** (pg 143)	**MT-EC-60** (pg 143)	**MT-EC-70** (pg 144)
				
● 2282197	● 2273642	● 2273643	● 2273644	● 2273697

MT-EC-80 (pg 144)	**MT-EC-90** (pg 144)	**MT-EC-100** (pg 144)
		
● 2273698	● 2273699	● 2273700

Installation System Material Finish:
● Uncoated

1.0 INTRODUCTION

1.1 PUBLISHED LOAD VALUES

Technical data herein is current as of the date of publication. Load values are based on testing, finite element analysis, and analytical calculations. Information on how technical data is evaluated for the purposes of this Technical Guide is provided in Section 2.2. When using the published load values in this Technical Guide, the specific application must always be checked for feasibility by the Design Professional.

Requests for additional information on Hilti Modular Support Systems beyond the scope of this Technical Guide may be submitted to Hilti Technical Services.

For information regarding updates and changes, please contact Hilti, Inc. (US) Technical Support at **1-877-749-6337** or Hilti (Canada) Corporation at **1-800-363-4458**.

1.2 APPROVALS/LISTINGS

Many Hilti Modular Support System products have listings or approvals such as International Code Council Evaluation Services Reports (ICC-ES ESR's). Listings and approvals are provided by independent third parties who evaluate products based on model building codes or various jurisdictional requirements. Product listings and approvals indicate that a product has been tested and evaluated based on a specific acceptance or test criteria.

Not all technical data contained in this document is based on a published approval or listing. Hilti may publish additional data beyond that contained in a report, e.g. for applications outside the scope of an available test criteria.

Approvals and listings have been indicated in the Modular Support Systems Technical Guide for reference. Acceptance of the product listings or approvals is subject to the Authority Having Jurisdiction over the project.

It is important for the Design professional to determine if the application or conditions expected for the project are included in the scope of the approval or listing.

1.3 INSTRUCTIONS FOR USE (IFU)

Tabulated technical data for all profiles and connectors in this Technical Guide is based on following the Instructions For Use (IFU), packaged with each product, for special installation parameters and additional hardware required.

1.4 UNITS

Technical data is provided in both Imperial and Metric units. Metric values provided herein use the International System of units (SI) in observance of the Metric Conversion Act of 1975 as amended by the Omnibus Trade and Competitiveness Act of 1988. MT connector dimensions are provided in both SI units and Imperial units.

1.5 OUR PURPOSE

We make construction better!

Customer Promise

We strive to be your best partner for productivity, safety, and sustainability.

Productivity

In how our customers perform their work and run their business.

Safety

For our customers and for the end user of the building.

Sustainability

At Hilti and for our customers.

1.6 OUR QUALITY SYSTEM

Hilti is one of a select group of North American companies to receive the ISO 9001 and ISO 14001 Certifications. This recognition of our commitment to quality assures our customers that Hilti has the systems and procedures in place to maintain our position as the world market leader and to continually evaluate and improve our performance.

For Technical Support, contact:

Hilti, Inc. (US)
1-877-749-6337

Hilti (Canada) Corporation
1-800-363-4458

2.0 MODULAR SUPPORT TECHNOLOGY

2.1 BENEFITS AND APPLICATIONS OF MT

One Integrated System

Hilti's MT system is your solution to nearly all of your modular support structures, covering applications ranging from cable trays, piping supports, overhead grids, and multi-trade racks.

The MT portfolio allows components to be bolted together quickly and efficiently to provide support for your applications. Because welding is not required, installation work can be done in flame and gas sensitive areas. Whether your application needs are simple or complex, the MT system has you covered.

The Hilti MT Support System helps reduce planning and installation time. Because each piece is lightweight and generally reconfigurable, there is no need for heavy equipment. As such, the system helps reduce waste, adding to the overall system efficiency and savings to your bottom line.

The MT portfolio is designed to be complementary to the full range of MT open (angles and channels) and closed (girders) profiles.

Flexible

- Easier to install, reconfigure, and extend.
- More efficient design to satisfy "as built" tolerances.
- One integrated portfolio to cover light-duty to heavy-duty support configurations.

Efficient

- Faster and more consistent installation with the SIW-AT module.
- Faster and easier on-site installation requires no specialized labor.
- No welding means less downtime and hot work permit for constructing supports.

Economical

- All parts are re-adjustable in the field.
- One MT connector can have multiple applications, saving component and installation cost.
- Up to 50% lighter than equivalent welded systems, less special lifting equipment required.
- No welding with a Hilti Modular System means avoiding potentially high welding costs.

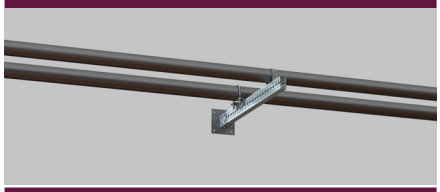
Safe

- Connection mechanism with reinforced dome holes on MT girders.
- Cutting-edge corrosion resistance with the use of Zinc Magnesium Coating.

Cable Tray



Piping



Mechanical



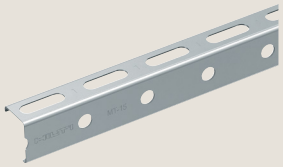
Multi-Trade Supports



2.0 MODULAR SUPPORT TECHNOLOGY

2.1 BENEFITS AND APPLICATIONS OF MT (CONTINUED)

Angle Profiles



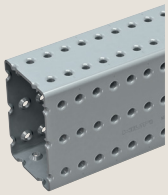
MT angles (MT-10 and MT-15) are ultra-light profiles that are used primarily for light-duty trapeze applications. In such applications, MT angles are installed in a horizontal orientation and supported vertically by threaded rods with nuts. Note: MT connectors are not intended for use with angle profiles.

Open Channel Profiles



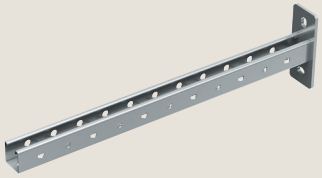
Open channels (MT-20, MT-30, MT-50, and MT-60) may be used for a wide range of light-duty to medium-duty applications. Channels can be used as beams or columns. While these members can resist bending, shear, and compression, they are not recommended for use with torsional loading. MT open channels have full 2D and 3D connectivity capabilities with MT connectors.

Closed Girder Profiles



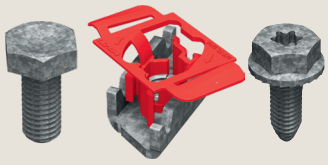
Closed MT profiles (MT-70, MT-80, MT-90, and MT-100), or “girders”, are used for heavy-duty applications. The closed shape of these profiles results in a greater cross-sectional area compared to similarly sized channels and, accordingly, yields significantly higher capacities in bending, shear, compression, and torsion. Reinforced holes along each girder face provide greater contact area for thread forming with the MT Thread Forming Bolt (MT-TFB) connection mechanism.

Brackets



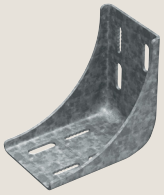
MT brackets of various sizes and lengths act as cantilevered beams. With 2-hole and 4-hole base plate options, MT brackets can anchor to concrete, attach to MT channels and girders, or directly fasten to steel.

Connection Mechanisms



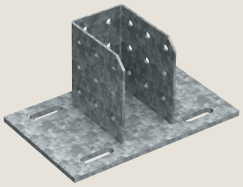
The twist-lock mechanism (MT-TL with MT-TLB) may be installed anywhere along the open face of MT channels. Once installed, a high shear capacity is then made possible by the innovative twist-lock (MT-TL) and its “On-The-Spot” serration. Hilti MT-TFB Thread Forming Bolts securely connect to closed profiles (girders) without the need for nuts or additional washers, as the washer is integrated within the head of the MT-TFB. During installation, a robust thread is formed within the reinforced girder hole, minimizing the risk of thread stripping.

Base/Girder Connectors



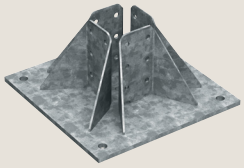
Many of the connectors in the MT portfolio may be used as either base connectors or as system connectors (to MT channels or girders via MT-TFB). Using bolt holes in the MT channels and girders that interlock with the clouded and slotted holes in the connectors, MT systems are adjustable up to 1" on the first installation, and can be fine adjusted by 3/16".

Steel Connectors



Connections to steel are made using robust beam clamps and innovative direct fastening technology (X-BT/S-BT/F-BT). The base plates are designed to cover a large range of standard steel profiles with flange widths up to 12". Girder clamping accommodates steel profiles with flange widths greater than 12".

Concrete Connectors



MT connector base plates can be anchored to concrete using a variety of Hilti anchors. Choose from mechanical and chemical anchors according to loading and base material conditions.

Channel Connectors



MT channel connectors, when used in combination with the twist-lock mechanism, act as system connectors between channel profiles. Many of these connectors can be installed in a variety of configurations.

2.0 MODULAR SUPPORT TECHNOLOGY

2.2 EVALUATIONS OF TECHNICAL DATA

All technical data provided in this Technical Guide is based on analytical calculations, finite element analysis, or testing by Hilti or by contracted testing laboratories using testing procedures and construction materials representative of current practice in North America. Published loads are provided for independent loading directions. The design professional shall consider appropriate interaction equations when loading is applied in multiple directions.

Analytical Calculations

Analytical calculations based on the provisions of AISI S100-16 (for USA) and CSA S136-16 (for Canada) are permitted for determining the load capacities of cold-formed steel members.

Finite Element Analysis

In accordance with AISI S100-16/CSA S136-16, rational engineering analysis based on appropriate theory and engineering judgment is permitted as an alternative to testing and analytical methods for obtaining design load data. Accordingly, finite element analyses were performed to derive the technical data for several connector components contained herein.

Testing

In accordance with AISI S100-16/CSA S136-16 Chapter K, data based solely on tests represents the average results of at least three identical specimens, provided that no individual test result deviates from the average value of all tests by more than 15 percent. Once an average value of all acceptable tests made is determined, a nominal strength, R_n, for the series of tests is obtained. The coefficient of variation, V_p, of the test results is then determined by statistical analysis.

Data based on rational engineering analysis with confirmatory tests is based on a minimum of three tests. A correlation coefficient, C_c, based on the tested strength, R_t, is compared to the nominal strength, R_n, predicted from rational engineering analysis models. The correlation between C_c and R_t, must be greater than or equal to 0.80.

For allowable strength design (ASD), the allowable strength value, R_a, is then computed as follows:

$$R_a = \frac{R_n}{\Omega}$$

The safety factor, Ω, is derived from the following equation:

$$\Omega = \frac{1.6}{\phi}$$

Where the resistance factor, Φ:

$$\phi = C_\phi (M_m F_m P_m) e^{-\beta_o \sqrt{V_M^2 + V_F^2 + C_P V_P^2 + V_Q^2}}$$

And:

- C_Φ = Calibration coefficient
- M_m = Mean value of material factor
- F_m = Mean value of fabrication factor
- P_m = Mean value of professional factor
- e = Natural logarithmic base
- β_o = Target reliability index
- V_M = Coefficient of variation of material factor
- V_F = Coefficient of variation of fabrication factor
- C_P = Correction factor
- V_P = Coefficient of variation of test results
- V_Q = Coefficient of variation of load effect

The correlation coefficient, C_c:

$$C_c = \frac{n \Sigma R_{t,i} R_{n,i} - (\Sigma R_t i)(\Sigma R_{n,i})}{\sqrt{n(\Sigma R_{t,i}^2) - (\Sigma R_{t,i})^2}\ \sqrt{n(\Sigma R_{n,i}^2) - (\Sigma R_{n,i})^2}}$$

Where:

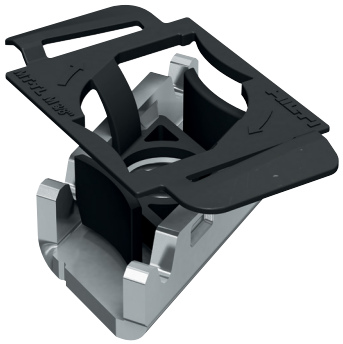
- n = Number of tests
- $R_{t,i}$ = Tested strength (resistance) of test *i*
- $R_{n,i}$ = Calculated nominal strength (resistance) of test *i* per rational engineering analysis model

2.0 MODULAR SUPPORT TECHNOLOGY

2.3 INFORMATION ON ADJUSTABILITY OF MT COMPONENTS

The MT System, as with all Hilti modular installation systems, is designed for a single permanent installation. A single permanent installation is achieved with the following: the assembly process is complete, the system is subjected to the final in-use conditions, and the expected design loads are applied to the structure. It may remain in this use for as long as the expected lifespan, with due adherence to project-specific inspection and maintenance requirements. It is not designed to be completely disassembled and then rebuilt or re-purposed, as the use conditions of the original structure may have changed over time (e.g. applied loads, impact, corrosion attack, product modifications etc.). Any reuse of the MT System beyond a single permanent installation is at the risk of the customer.

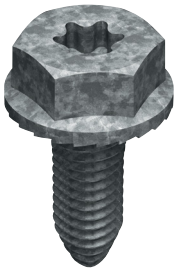
Twist-Lock (MT-TL) Connection Mechanism



The Twist-Lock interface is designed for a single permanent installation. However, during assembly, the Twist-Lock may be repositioned as necessary until final installation is completed. Final installation is achieved when the Twist-Lock installation torque in the Instructions For Use (IFU) is reached.

Repositioning the Twist-Lock can occur at any point along the MT channel length. Once the installation torque as defined in the IFU has been applied to the Twist-Lock, its location can no longer be adjusted. A new Twist-Lock must be utilized for final installation in a new location.

Thread Forming Bolt (MT-TFB) Connection Mechanism



The MT-TFB forms a thread into the reinforced hole of the MT girder during assembly. After assembly, the MT-TFB may be subsequently removed to enable positional adjustments of connectors. Once this thread has been formed, so long as the thread remains intact (e.g. it is not cross threaded), the threaded hole can be used up to four additional times (five in total). A torque-controlled wrench is recommended when reusing a reinforced MT girder hole. Reuse of the MT-TFB is possible but should be limited to five re-uses. Any reuse beyond this limit could lead to degradation of the tip of the bolt, thereby negatively impacting its performance.

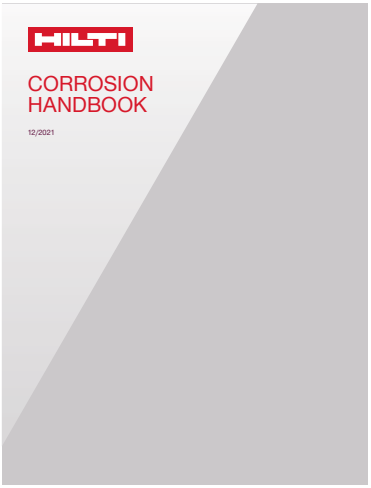
If a customer is uncertain how many times a reinforced hole in an MT girder has been used, then a fresh hole should be used for installation. Likewise, a new MT-TFB should be used if it is unknown the number of times it has been used previously.

The upper limit of five uses for a single MT-TFB for MT girder connections may be extended if the Hilti Adaptive Torque Module (SI-AT-A22, in combination with the Hilti impact wrench SIW 6AT-A22) is used with the correct MT-TFB parameter set (found via the QR code on the box of the MT-TFB's). An important feature of the Adaptive Torque Module is that it will indicate if the connection mechanism has been correctly set. If it determines the connection mechanism has been correctly set, a green light will illuminate, indicating the correct amount of pre-tensioning has been achieved. If a red light illuminates, then the connection mechanism is not sufficient and should not be used. Refer to the product documentation for the Adaptive Torque Module for additional guidance.

2.0 MODULAR SUPPORT TECHNOLOGY

2.4 CORROSION

The following is an overview of typical finishes used on Hilti MT products. For more detailed information from Hilti on material finishes and corrosion protection, please consult the Hilti Corrosion Handbook which can be found under the Documents section for MT portfolio items on Hilti Online.



Electro-Galvanized (EG)

Electro-Galvanized, or zinc plated, bonds a minimum 0.5 mil zinc coating to carbon steel through an electrolysis process. Most Hilti MT connectors and miscellaneous hardware are available with an electro-galvanized finish. This coating is in accordance with DIN EN ISO 2081.

Pre-Galvanized (PG)

Pre-Galvanized parts are manufactured by passing sheet steel through a molten zinc bath. Afterwards, the sheets are cold-formed into applicable shaped profiles and slots are punched, hence the name “pre-galvanized". PG refers to pre-galvanized parts with punches slots and PGS refers to solid strut. Surfaces of the punched and cut portions are partially protected by the adjacent zinc plating which acts as a sacrificial anode impeding corrosion of the raw edges. However, if corrosion remains a concern additional protection may be required. PG conforms to ISO EN 10346 galvanizing, with a Z275 thickness (0.787 mils thick or 0.77 ounces zinc per square foot of steel).

Outdoor Coating (OC)

The Hilti MT OC System for outdoor applications has been developed with various corrosion protection technologies and consists of two finishes: Hot-Dipped Galvanized (HDG) and Zinc Magnesium (ZM). The Hilti OC is intended primarily for use in environments considered Outdoor with low pollution. For more corrosive environments, additional protection may be required. The proper amount of corrosion protection for a given application should always be assessed by the Design professional to ensure products meet the project requirements.

Hot Dipped Galvanized (HDG)

Component parts such as base plates and system connectors have zinc coatings applied by the hot-dipped galvanizing (HDG) process in accordance with the ASTM A153M Standard. On hot dipped galvanized parts, the zinc coating process occurs after cold forming and punching. The parts are pretreated, pickled, and then dipped into tanks of molten zinc. HDG provides increased corrosion resistance compared to PG and EG finishes. HDG conforms to ASTM A153/A153M galvanizing as stated on the product sheet for beams, connectors, bases, splices, and fasteners. Suitability of a HDG finish for a product must be assessed for each project.

Zinc Magnesium (ZM)

MT profiles such as strut, channels, and girders are coated with zinc-aluminum-magnesium alloy (ZM) by a continuous hot-dip galvanizing process during the steel coil phase in accordance with the EN 10346 Standard. On Zinc Magnesium parts, the process involves sheet metal coils that are drawn continuously through a bath of molten zinc after the surface has been cleaned and it is subjected to a special annealing process. In addition to zinc, the molten bath contains Magnesium (Mg) and Aluminum (Al). The Aluminum reacts with the steel surface to create a layer with a thickness of 0.984 mils per side (1.02 ounces per square foot), which inhibits the formation of ZnFe phases. Hilti’s OC ZM processing conforms to the EN 10346 Galvanizing Standard.

3.0 MODULAR SUPPORT SYSTEM

3.1 MT PROFILES

Approvals / Listings

ICC-ES (International Code Council)	ESR-5019 for Cold-Formed Steel per AISI S100-16/ICC-ES AC46 ELC-5019 for Cold-Formed Steel per CSA S136-16
ETA (European Technical Assessment)	ETA-21/0414 for HILTI Installation Channels of MT System ETA-21/1017 for HILTI Channel Connectors of MT System ETA-21/1045 for HILTI Base Connectors of MT System ETA-21/1046 for HILTI Angle Connectors of MT System ETA-22/0194 for HILTI Saddle Nuts of MT System ETA-22/0195 for HILTI Cantilevers of MT System
COLA (City of Los Angeles)	2023 LABC Supplement (within ESR-5019)
California Building Code	2022 California Building Code (CBC) Supplement (within ESR-5019)

Table 1 - MT Profile Material Specifications, Corrosion Protection, and Ordering Information

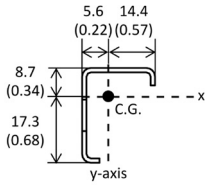
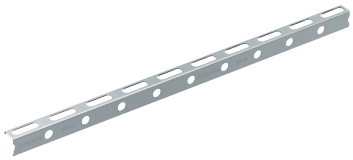
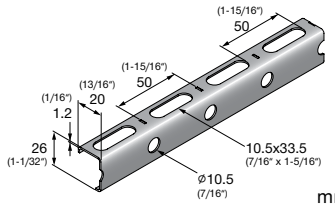
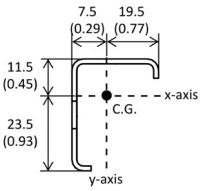
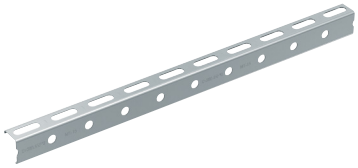
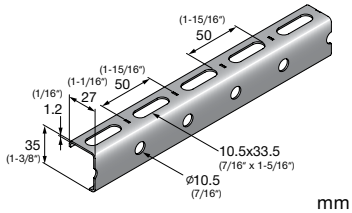
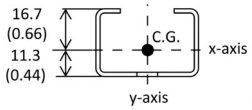
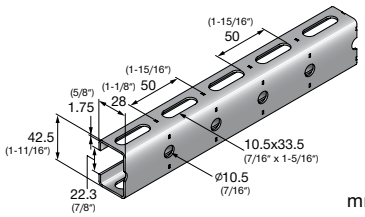
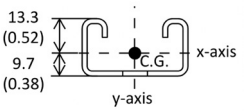
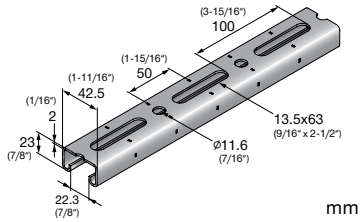
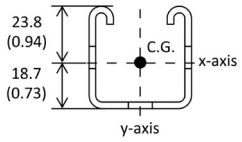
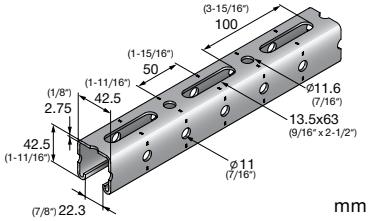
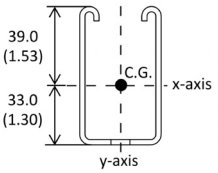
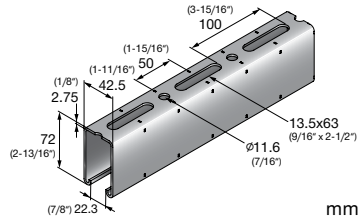
Description	Material Specifications [1,2]	Type of Coating	Finish	Length ft (m)	Item No.
MT-10	EN 10346 S280GD	Indoor	Pre-Galvanized	6'-6 3/4" (2)	2268492
MT-15	EN 10346 S280GD	Indoor	Pre-Galvanized	6'-6 3/4" (2)	2268493
MT-15 OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	6'-6 3/4" (2)	2268494
MT-20	EN 10346 S280GD	Indoor	Pre-Galvanized	6'-6 3/4" (2)	2268495
MT-20 OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	6'-6 3/4" (2)	2268496
MT-30 S	EN 10346 S280GD	Indoor	Pre-Galvanized	9'-10" (3)	2268497
MT-30	EN 10346 S280GD	Indoor	Pre-Galvanized	19'-8 1/4" (6)	2268498
MT-30 S OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268499
MT-30 OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268500
MT-50 S	EN 10346 S280GD	Indoor	Pre-Galvanized	9'-10" (3)	2268509
MT-50	EN 10346 S280GD	Indoor	Pre-Galvanized	19'-8 1/4" (6)	2268510
MT-50 S OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268511
MT-50 OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268512
MT-60 S	EN 10346 S280GD	Indoor	Pre-Galvanized	9'-10" (3)	2268513
MT-60	EN 10346 S280GD	Indoor	Pre-Galvanized	19'-8 1/4" (6)	2268514
MT-60 S OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268515
MT-60 OC	EN 10346 S280GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268516
MT-70 S OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268364
MT-70 OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268365
MT-80 S OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268366
MT-80 OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268367
MT-90 S OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268368
MT-90 OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268369
MT-100 S OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	9'-10" (3)	2268490
MT-100 OC	EN 10346 S350GD	Outdoor	Zinc Magnesium	19'-8 1/4" (6)	2268491

1. Mechanical properties of EN 10346 Grade S280 GD meet or exceed the mechanical properties of ASTM A653/A1046 SS Grade 37.
2. Mechanical properties of EN 10346 Grade S350 GD meet or exceed the mechanical properties of ASTM A653/A1046 SS Grade 50 Cl4.

3.0 MODULAR SUPPORT SYSTEM

3.1 MT PROFILES

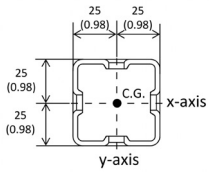
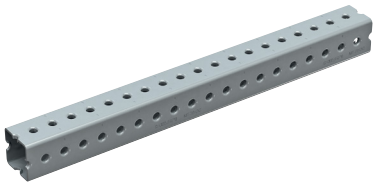
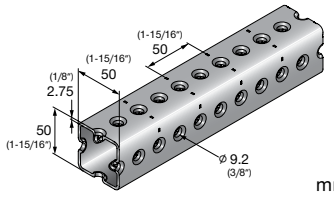
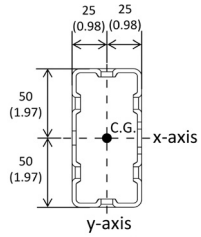
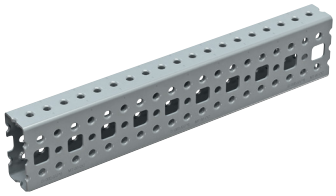
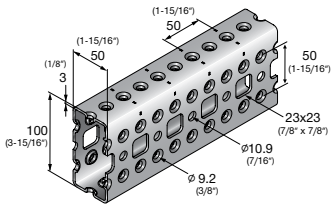
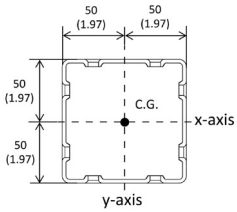
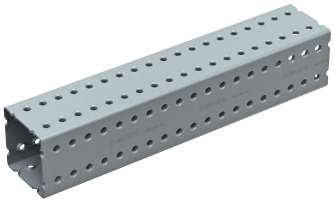
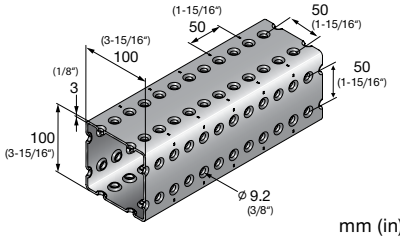
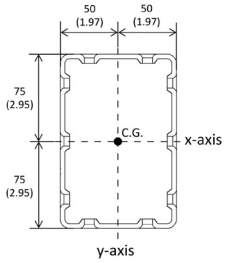
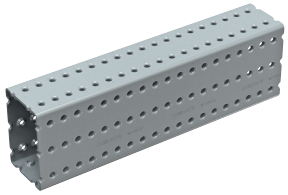
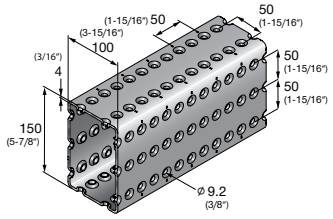
Table 2 - MT Angle and Channel Profile Dimensions

MT-10  mm (in)		 mm (in)
MT-15, MT-15 OC  mm (in)		 mm (in)
MT-20, MT-20 OC  mm (in)		 mm (in)
MT-30 S, MT-30, MT-30 S OC, MT-30 OC  mm (in)		 mm (in)
MT-50 S, MT-50, MT-50 S OC, MT-50 OC  mm (in)		 mm (in)
MT-60 S, MT-60, MT-60 S OC, MT-60 OC  mm (in)		 mm (in)

3.0 MODULAR SUPPORT SYSTEM

3.1 MT PROFILES

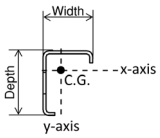
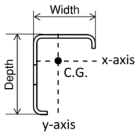
Table 3 - MT Girder Profile Dimensions

MT-70 S OC, MT-70 OC  mm (in)		 mm (in)
MT-80 S OC, MT-80 OC  mm (in)		 mm (in)
MT-90 S OC, MT-90 OC  mm (in)		 mm (in)
MT-100 S OC, MT-100 OC  mm (in)		 mm (in)

3.0 MODULAR SUPPORT SYSTEM

3.1.1 CROSS-SECTION PROPERTIES OF MT PROFILES

Table 4 - Cross-Section Properties of MT Angle Profiles [1,3]

Description	Symbol	Units	MT-10	MT-15 MT-15 OC
Profile of cross-section	-	-		
Design thickness	t	in (mm)	0.047 (1.2)	0.059 (1.5)
Width	-	in (mm)	0.79 (20)	1.06 (27)
Depth	-	in (mm)	1.02 (26)	1.38 (35)
Weight	w	lbs/ft (kg/m)	0.314 (0.47)	0.527 (0.78)
Minimum specified yield strength	F_y	ksi (MPa)	40.6 (280)	40.6 (280)
Modulus of elasticity	E	ksi (MPa)	29,500 (203,400)	29,500 (203,400)
Gross Section Properties [2]				
Gross cross-sectional area	A_g	in^2 (mm^2)	0.092 (59.62)	0.155 (99.90)
Moment of inertia of the gross section about x-axis	I_x	in^4 (mm^4)	0.0114 (4,765)	0.0347 (14,440)
Moment of inertia of the gross section about y-axis	I_y	in^4 (mm^4)	0.0063 (2,630)	0.0192 (8,013)
Gross section-modulus about x-axis	S_x	in^3 (mm^3)	0.0168 (275.1)	0.0376 (615.7)
Gross section-modulus about y-axis	S_y	in^3 (mm^3)	0.0112 (183)	0.0251 (410.5)
Radius of gyration of the gross section about x-axis	r_x	in (mm)	0.352 (8.94)	0.473 (12.0)
Radius of gyration of the gross section about y-axis	r_y	in (mm)	0.261 (6.64)	0.353 (8.96)
Net Section Properties				
Net cross-sectional area	A_n	in^2 (mm^2)	0.053 (34.42)	0.106 (68.40)
Net section-modulus about x-axis	S_x	in^3 (mm^3)	0.0135 (221.1)	0.0323 (528.8)
Net section-modulus about y-axis	S_y	in^3 (mm^3)	0.0084 (138.2)	0.0207 (339.9)
Radius of gyration of the gross section about x-axis	r_x	in (mm)	0.398 (10.12)	0.517 (13.14)
Radius of gyration of the gross section about y-axis	r_y	in (mm)	0.296 (7.53)	0.386 (9.81)

1. Tabulated values are in accordance with AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Tabulated gross properties are based on the full unreduced cross section of the profiles, away from the punched holes and slots.
3. C.G. is center of gravity of the profile cross-section.

Trapeze Load Tables for MT Angle Profiles

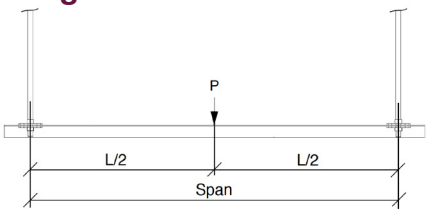


Table 5 - Allowable Beam Loads[1,2,4,5]

Span in (cm)	Max Factored Concentrated Load P, lbs (N)			
	MT-10		MT-15	
	Braced	Unbraced	Braced	Unbraced
24 (61.0)	39 (170)	39 (170)	139 (615)	130 (575)
48 (121.9)	19 (80)	18 (80)	69 (305)	69 (305)
72 (182.9)	12 (50)	9 (40)	45 (200)	45 (200)

Table 6 - Maximum Factored Beam Loads[1,3,5]

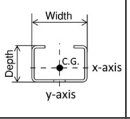
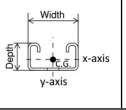
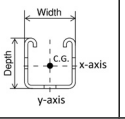
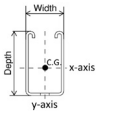
Span in (cm)	Max Factored Concentrated Load P, lbs (N)			
	MT-10		MT-15	
	Braced	Unbraced	Braced	Unbraced
24 (61.0)	58 (255)	58 (255)	208 (925)	195 (865)
48 (121.9)	28 (120)	27 (120)	103 (455)	103 (455)
72 (182.9)	18 (80)	13 (55)	67 (295)	67 (295)

1. Loads are based on AISI S100-16 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety Factor for flexure is 2.0.
3. Resistance Factor for flexure is 0.75.
4. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
5. Profile weight is accounted for in the tabulated load values.

3.0 MODULAR SUPPORT SYSTEM

3.1.1 CROSS-SECTION PROPERTIES OF MT PROFILES

Table 7 - Cross-Section Properties of MT Channel Profiles [1,3,4,5]

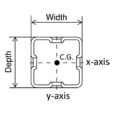
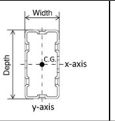
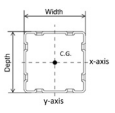
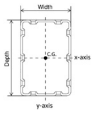
Description	Symbol	Units	MT-20 MT-20 OC	MT-30 S MT-30 MT-30 S OC MT-30 OC	MT-50 S MT-50 MT-50 S OC MT-50 OC	MT-60 S MT-60 MT-60 S OC MT-60 OC
Profile of cross-section	-	-				
Design thickness	t	in (mm)	0.069 (1.75)	0.079 (2)	0.108 (2.75)	0.108 (2.75)
Width	-	in (mm)	1.10 (28)	1.67 (42.5)	1.67 (42.5)	1.67 (42.5)
Depth	-	in (mm)	1.67 (42.5)	0.91 (23)	1.67 (42.5)	2.83 (72)
Weight	w	lbs/ft (kg/m)	0.84 (1.25)	1.1 (1.64)	1.97 (2.93)	2.83 (4.21)
Minimum specified yield strength	F_y	ksi (MPa)	40.6 (280)	40.6 (280)	40.6 (280)	40.6 (280)
Modulus of elasticity	E	ksi (MPa)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)
Gross Section Properties [2]						
Gross cross-sectional area	A_g	in^2 (mm^2)	0.291 (187.59)	0.322 (207.95)	0.583 (376.02)	0.834 (538.27)
Moment of inertia of the gross section about x-axis	I_x	in^4 (mm^4)	0.0489 (20,349)	0.0351 (14,621)	0.2033 (84,619)	0.7904 (329,006)
Moment of inertia of the gross section about y-axis	I_y	in^4 (mm^4)	0.1272 (52,943)	0.1274 (53,018)	0.2611 (108,670)	0.4153 (172,864)
Gross section-modulus about x-axis	S_x	in^3 (mm^3)	0.0742 (1,216)	0.067 (1,098)	0.2165 (3,548)	0.5146 (8,432)
Gross section-modulus about y-axis	S_y	in^3 (mm^3)	0.152 (2,491)	0.1523 (2,495)	0.3121 (5,114)	0.4964 (8,135)
Radius of gyration of the gross section about x-axis	r_x	in (mm)	0.41 (10.42)	0.33 (8.39)	0.591 (15)	0.973 (24.72)
Radius of gyration of the gross section about y-axis	r_y	in (mm)	0.661 (16.8)	0.629 (15.97)	0.669 (17)	0.706 (17.92)
Effective Section Properties						
Effective moment of inertia about x-axis	$I_{x\text{-}eff}$	in^4 (mm^4)	0.0443 (18,439)	0.0327 (13,594)	0.2005 (83,452)	0.7802 (324,725)
Effective moment of inertia about y-axis	$I_{y\text{-}eff}$	in^4 (mm^4)	0.0901 (37,509)	0.1264 (52,608)	0.2611 (108,664)	0.4153 (172,858)
Effective section modulus about x-axis at stress = F_y	$S_{x\text{-}eff}$	in^3 (mm^3)	0.0673 (1,102)	0.0623 (1,021)	0.2135 (3,499)	0.5079 (8,323)
Effective section modulus about y-axis at stress = F_y	$S_{y\text{-}eff}$	in^3 (mm^3)	0.1077 (1,765)	0.1511 (2,476)	0.3121 (5,114)	0.4964 (8,135)
Allowable bending moment based on local buckling about x-axis (Ω_b = 1.67)	$M_{a\text{-}x}$	k-in (kN m)	1.845 (0.208)	1.92 (0.216)	6.8 (0.768)	15.53 (1.755)
Allowable bending moment based on local buckling about y-axis (Ω_b = 1.67)	$M_{a\text{-}y}$	k-in (kN m)	2.88 (0.325)	4.21 (0.476)	8.46 (0.956)	12.8 (1.446)
Allowable bending moment for distortional buckling about x-axis based on Kϕ= 0 (Ω_b = 1.67)	$M_{ad\text{-}x}$	k-in (kN m)	1.685 (0.19)	1.77 (0.199)	6.03 (0.682)	12.41 (1.402)
Allowable bending moment for distortional buckling about y-axis based on Kϕ= 0 (Ω_b = 1.67)	$M_{ad\text{-}y}$	k-in (kN m)	2.501 (0.283)	3.79 (0.428)	8.46 (0.956)	11.88 (1.342)
Allowable shear about x-axis (Ω_v = 1.6)	$V_{a\text{-}x}$	lbs (N)	1,466 (6,516)	1,629 (7,240)	2,103 (9,348)	2,103 (9,348)
Allowable shear about y-axis (Ω_v = 1.6)	$V_{a\text{-}y}$	lbs (N)	1,735 (7,712)	1,416 (6,295)	4,205 (18,691)	8,036 (35,720)
Torsional Section Properties [2]						
St. Venant Torsional Constant	J	in^4 (mm^4)	0.0005 (191.50)	0.0007 (277.26)	0.0023 (947.89)	0.0033 (1,356.90)
Torsional Warping Constant	C_w	in^6 (mm^6)	0.0368 (9,881,442)	0.0323 (8,685,395)	0.1593 (42,771,610)	0.5991 (160,884,400)
Distance from the centroid to the shear center along the principal x-axis	X_0	in (mm)	0	0	0	0
Distance from the centroid to the shear center along the principal y-axis	Y_0	in (mm)	0.988 (25.1)	0.868 (22.05)	1.579 (40.11)	2.740 (69.59)
Distance from shear center to centroid to mid-plane of web	m	in (mm)	0.60 (15.1)	0.45 (11.4)	0.90 (22.9)	1.50 (38.0)
Net polar radius of gyration about the shear center	r_0	in (mm)	1.258 (31.95)	1.122 (28.49)	1.814 (46.07)	2.992 (76.00)
Coefficient for determining critical elastic lateral-torsional buckling stress	β	-	0.4	0.4	0.2	0.2

1. Tabulated values are in accordance with ICC-ES ESR-5019 and AISI-S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Tabulated gross properties, including torsional properties, are based on the full unreduced cross section of the profiles, away from the punched holes and slots.
3. For deflection calculations, use the effective moment of inertia.
4. Allowable moment is the lesser of M_a and M_{ad}.
5. C.G. is the center of gravity of the profile cross-section.

3.0 MODULAR SUPPORT SYSTEM

3.1.1 CROSS-SECTION PROPERTIES OF MT PROFILES

Table 8 - Cross-Section Properties of MT Girder Profiles [1,3,4,5]

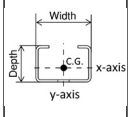
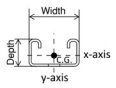
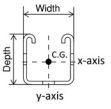
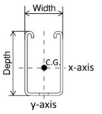
Description	Symbol	Units	MT-70 S OC MT-70 OC	MT-80 S OC MT-80 OC	MT-90 S OC MT-90 OC	MT-100 S OC MT-100 OC
Profile of cross-section	-	-				
Design thickness	t	in (mm)	0.108 (2.75)	0.118 (3)	0.118 (3)	0.157 (4)
Width	-	in (mm)	1.97 (50)	1.97 (50)	3.94 (100)	3.94 (100)
Depth	-	in (mm)	1.97 (50)	3.94 (100)	3.94 (100)	5.91 (150)
Weight	w	lbs/ft (kg/m)	2.63 (3.914)	4.43 (6.593)	6.01 (8.944)	10.0 (14.882)
Minimum specified yield strength	F_y	ksi (MPa)	50.75 (350)	50.75 (350)	50.75 (350)	50.75 (350)
Modulus of elasticity	E	ksi (MPa)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)
Gross Section Properties [2]						
Gross cross-sectional area	A_g	in^2 (mm^2)	0.775 (500.28)	1.303 (840.82)	1.768 (1140.80)	2.937 (1894.80)
Moment of inertia of the gross section about x-axis	I_x	in^4 (mm^4)	0.4382 (182,390)	2.5576 (1,064,540)	4.2536 (1,770,469)	14.2854 (5,946,036)
Moment of inertia of the gross section about y-axis	I_y	in^4 (mm^4)	0.4382 (182,390)	0.8663 (360,568)	4.2536 (1,770,469)	7.654 (3,185,651)
Gross section-modulus about x-axis	S_x	in^3 (mm^3)	0.4452 (7,296)	1.2993 (21,291)	2.1608 (35,409)	4.838 (79,280)
Gross section-modulus about y-axis	S_y	in^3 (mm^3)	0.4452 (7,296)	0.8801 (14,423)	2.1608 (35,409)	3.888 (63,713)
Radius of gyration of the gross section about x-axis	r_x	in (mm)	0.752 (19.09)	1.401 (35.58)	1.551 (39.39)	2.205 (56.02)
Radius of gyration of the gross section about y-axis	r_y	in (mm)	0.752 (19.09)	0.815 (20.71)	1.551 (39.39)	1.614 (41)
Effective Section Properties						
Effective moment of inertia about x-axis	$I_{x\text{-}eff}$	in^4 (mm^4)	0.4382 (182,390)	2.3832 (991,957)	3.8584 (1,605,985)	12.0259 (5,005,546)
Effective moment of inertia about y-axis	$I_{y\text{-}eff}$	in^4 (mm^4)	0.4382 (182,390)	0.6451 (268,521)	3.8584 (1,605,985)	6.4751 (2,695,127)
Effective section modulus about x-axis at stress = F_y	$S_{x\text{-}eff}$	in^3 (mm^3)	0.4452 (7,296)	1.2107 (19,839)	1.9601 (32,120)	4.0728 (66,741)
Effective section modulus about y-axis at stress = F_y	$S_{y\text{-}eff}$	in^3 (mm^3)	0.4452 (7,296)	0.6555 (10,741)	1.9601 (32,120)	3.2894 (53,903)
Allowable bending moment based on local buckling about x-axis (Ω_b = 1.67)	$M_{a\text{-}x}$	k-in (kN m)	15.137 (1.710)	41.759 (4.718)	61.75 (6.977)	134.73 (15.222)
Allowable bending moment based on local buckling about y-axis (Ω_b = 1.67)	$M_{a\text{-}y}$	k-in (kN m)	15.137 (1.710)	21.008 (2.374)	61.75 (6.977)	101.91 (11.514)
Allowable bending moment for distortional buckling about x-axis based on Kϕ= 0 (Ω_b = 1.67)	$M_{ad\text{-}x}$	k-in (kN m)	N.A.	N.A.	N.A.	N.A.
Allowable bending moment for distortional buckling about y-axis based on Kϕ= 0 (Ω_b = 1.67)	$M_{ad\text{-}y}$	k-in (kN m)	N.A.	N.A.	N.A.	N.A.
Allowable shear about x-axis (Ω_v = 1.6)	$V_{a\text{-}x}$	lbs (N)	6,329 (28,132)	6,727 (29,902)	15,579 (69,249)	19,828 (88,135)
Allowable shear about y-axis (Ω_v = 1.6)	$V_{a\text{-}y}$	lbs (N)	6,329 (28,132)	12,723 (56,554)	15,579 (69,249)	31,631 (140,600)
Torsional Section Properties [2]						
St. Venant Torsional Constant	J	in^4 (mm^4)	0.7146 (297,456)	2.1217 (883,107)	6.6870 (2,783,333)	15.8713 (6,606,148)
Torsional Warping Constant	C_w	in^6 (mm^6)	0.00015 (39,434)	0.1693 (45,468,000)	0.0023 (610,560)	1.2794 (343,560,000)
Distance from the centroid to the shear center along the principal x-axis	X_0	in (mm)	0	0	0	0
Distance from the centroid to the shear center along the principal y-axis	Y_0	in (mm)	0	0	0	0
Net polar radius of gyration about the shear center	r_0	in (mm)	1.063 (27.00)	1.621 (41.17)	2.193 (55.71)	2.733 (69.42)
Coefficient for determining critical elastic lateral-torsional buckling stress	β	-	1	1	1	1

1. Tabulated values are in accordance with ICC-ES ESR-5019 and AISI-S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Tabulated gross properties, including torsional properties, are based on the full unreduced cross section of the profiles, away from the punched holes and slots.
3. For deflection calculations, use the effective moment of inertia.
4. Allowable moment is the lesser of M_a and M_{ad}.
5. C.G. is the center of gravity of the profile cross-section.

3.0 MODULAR SUPPORT SYSTEM

3.1.1 CROSS-SECTION PROPERTIES OF MT PROFILES

Table 9 - Cross-Section Properties of MT Channel Profiles [1,3,4,5]

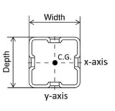
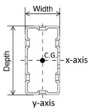
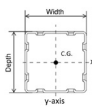
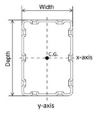
Description	Symbol	Units	MT-20 MT-20 OC	MT-30 S MT-30 MT-30 S OC MT-30 OC	MT-50 S MT-50 MT-50 S OC MT-50 OC	MT-60 S MT-60 MT-60 S OC MT-60 OC
Profile of cross-section	-	-				
Design thickness	t	in (mm)	0.069 (1.75)	0.079 (2)	0.108 (2.75)	0.108 (2.75)
Width	-	in (mm)	1.10 (28)	1.67 (42.5)	1.67 (42.5)	1.67 (42.5)
Depth	-	in (mm)	1.67 (42.5)	0.91 (23)	1.67 (42.5)	2.83 (72)
Weight	w	lbs/ft (kg/m)	0.84 (1.25)	1.1 (1.64)	1.97 (2.93)	2.83 (4.21)
Minimum specified yield strength	F_y	ksi (MPa)	40.6 (280)	40.6 (280)	40.6 (280)	40.6 (280)
Modulus of elasticity	E	ksi (MPa)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)
Gross Section Properties [2]						
Gross cross-sectional area	A_g	in^2 (mm^2)	0.291 (187.59)	0.322 (207.95)	0.583 (376.02)	0.834 (538.27)
Moment of inertia of the gross section about x-axis	I_x	in^4 (mm^4)	0.0489 (20,349)	0.0351 (14,621)	0.2033 (84,619)	0.7904 (329,006)
Moment of inertia of the gross section about y-axis	I_y	in^4 (mm^4)	0.1272 (52,943)	0.1274 (53,018)	0.2611 (108,670)	0.4153 (172,864)
Gross section-modulus about x-axis	S_x	in^3 (mm^3)	0.0742 (1,216)	0.067 (1,098)	0.2165 (3,548)	0.5146 (8,432)
Gross section-modulus about y-axis	S_y	in^3 (mm^3)	0.152 (2,491)	0.1523 (2,495)	0.3121 (5,114)	0.4964 (8,135)
Radius of gyration of the gross section about x-axis	r_x	in (mm)	0.41 (10.42)	0.33 (8.39)	0.591 (15)	0.973 (24.72)
Radius of gyration of the gross section about y-axis	r_y	in (mm)	0.661 (16.8)	0.629 (15.97)	0.669 (17)	0.706 (17.92)
Effective Section Properties						
Effective moment of inertia about x-axis	$I_{x\text{-}eff}$	in^4 (mm^4)	0.0443 (18,439)	0.0327 (13,594)	0.2005 (83,452)	0.7802 (324,725)
Effective moment of inertia about y-axis	$I_{y\text{-}eff}$	in^4 (mm^4)	0.0901 (37,509)	0.1264 (52,608)	0.2611 (108,664)	0.4153 (172,858)
Effective section modulus about x-axis at stress = F_y	$S_{x\text{-}eff}$	in^3 (mm^3)	0.0673 (1,102)	0.0623 (1,021)	0.2135 (3,499)	0.5079 (8,323)
Effective section modulus about y-axis at stress = F_y	$S_{y\text{-}eff}$	in^3 (mm^3)	0.1077 (1765)	0.1511 (2476)	0.3121 (5114)	0.4964 (8135)
Factored bending moment resistance based on local buckling about x-axis (ϕ_b = 0.9)	$\phi_b M_{nl}$	k-in (kN m)	2.77 (0.313)	2.88 (0.325)	10.22 (1.15)	23.34 (2.64)
Factored bending moment resistance based on local buckling about y-axis (ϕ_b = 0.9)	$\phi_b M_{nl}$	k-in (kN m)	4.33 (0.489)	6.33 (0.716)	12.71 (1.436)	19.24 (2.173)
Factored bending moment resistance for distortional buckling about x-axis based on Kφ= 0 (ϕ_b = 0.9)	$\phi_b M_{nd}$	k-in (kN m)	2.53 (0.286)	2.66 (0.300)	9.06 (1.024)	18.65 (2.107)
Factored bending moment resistance for distortional buckling about y-axis based on Kφ= 0 (ϕ_b = 0.9)	$\phi_b M_{nd}$	k-in (kN m)	3.76 (0.425)	5.70 (0.644)	12.71 (1.436)	17.86 (2.017)
Factored shear resistance about x-axis (ϕ_v = 0.8)	$\phi_v V_n$	lbs (N)	1,877 (8,350)	2,085 (9,274)	2,691 (11,972)	2,692 (11,975)
Factored shear resistance about y-axis (ϕ_v = 0.8)	$\phi_v V_n$	lbs (N)	2,220 (9,871)	1,813 (8,064)	5,383 (23,944)	10,286 (45,756)
Torsional Section Properties [2]						
St. Venant Torsional Constant	J	in^4 (mm^4)	0.0005 (191.50)	0.0007 (277.26)	0.0023 (947.89)	0.0033 (1,356.90)
Torsional Warping Constant	C_w	in^6 (mm^6)	0.0368 (9,881,442)	0.0323 (8,685,395)	0.1593 (42,771,610)	0.5991 (160,884,400)
Distance from the centroid to the shear center along the principal x-axis	X_0	in (mm)	0	0	0	0
Distance from the centroid to the shear center along the principal y-axis	Y_0	in (mm)	0.988 (25.1)	0.868 (22.05)	1.579 (40.11)	2.740 (69.59)
Distance from shear center to centroid to mid-plane of web	m	in (mm)	0.60 (15.1)	0.45 (11.4)	0.90 (22.9)	1.50 (38.0)
Net polar radius of gyration about the shear center	r_0	in (mm)	1.258 (31.95)	1.122 (28.49)	1.814 (46.07)	2.992 (76.00)
Coefficient for determining critical elastic lateral-torsional buckling stress	β	-	0.4	0.4	0.2	0.2

1. Tabulated values are in accordance with ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Tabulated gross properties, including torsional properties, are based on the full unreduced cross section of the profiles, away from the punched holes and slots.
3. For deflection calculations, use the effective moment of inertia.
4. Design moment capacity is taken as the lesser of $\Phi_b M_{nl}$ and $\Phi_b M_{nd}$.
5. C.G. is the center of gravity of the profile cross-section.

3.0 MODULAR SUPPORT SYSTEM

3.1.1 CROSS-SECTION PROPERTIES OF MT PROFILES

Table 10 - Cross-Section Properties of MT Girder Profiles [1,3,4]

Description	Symbol	Units	MT-70 S OC MT-70 OC	MT-80 S OC MT-80 OC	MT-90 S OC MT-90 OC	MT-100 S OC MT-100 OC
Profile of cross-section	-	-				
Design thickness	t	in (mm)	0.108 (2.75)	0.118 (3)	0.118 (3)	0.157 (4)
Width	-	in (mm)	1.97 (50)	1.97 (50)	3.94 (100)	3.94 (100)
Depth	-	in (mm)	1.97 (50)	3.94 (100)	3.94 (100)	5.91 (150)
Weight	w	lbs/ft (kg/m)	2.64 (3.914)	4.43 (6.593)	6.01 (8.944)	9.99 (14.882)
Minimum specified yield strength	F_y	ksi (MPa)	50.75 (350)	50.75 (350)	50.75 (350)	50.75 (350)
Modulus of elasticity	E	ksi (MPa)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)	29,500 (203,400)
Gross Section Properties [2]						
Gross cross-sectional area	A_g	in^2 (mm^2)	0.775 (500.28)	1.303 (840.82)	1.768 (1140.80)	2.937 (1894.80)
Moment of inertia of the gross section about x-axis	I_x	in^4 (mm^4)	0.4382 (182,390)	2.5576 (1,064,540)	4.2536 (1,770,469)	14.2854 (5,946,036)
Moment of inertia of the gross section about y-axis	I_y	in^4 (mm^4)	0.4382 (182,390)	0.8663 (360,568)	4.2536 (1,770,469)	7.654 (3,185,651)
Gross section-modulus about x-axis	S_x	in^3 (mm^3)	0.4452 (7,296)	1.2993 (21,291)	2.1608 (35,409)	4.838 (79,280)
Gross section-modulus about y-axis	S_y	in^3 (mm^3)	0.4452 (7,296)	0.8801 (14,423)	2.1608 (35,409)	3.888 (63,713)
Radius of gyration of the gross section about x-axis	r_x	in (mm)	0.752 (19.09)	1.401 (35.58)	1.551 (39.39)	2.206 (56.02)
Radius of gyration of the gross section about y-axis	r_y	in (mm)	0.752 (19.09)	0.815 (20.71)	1.551 (39.39)	1.614 (41)
Effective Section Properties						
Effective moment of inertia about x-axis	$I_{x\text{-}eff}$	in^4 (mm^4)	0.4382 (182,390)	2.3832 (991,957)	3.8584 (1,605,985)	12.0259 (5,005,546)
Effective moment of inertia about y-axis	$I_{y\text{-}eff}$	in^4 (mm^4)	0.4382 (182,390)	0.6451 (268,521)	3.8584 (1,605,985)	6.4751 (2,695,127)
Effective section modulus about x-axis at stress = F_y	$S_{x\text{-}eff}$	in^3 (mm^3)	0.4452 (7,296)	1.2107 (19,839)	1.9601 (32,120)	4.0728 (66,741)
Effective section modulus about y-axis at stress = F_y	$S_{y\text{-}eff}$	in^3 (mm^3)	0.4452 (7,296)	0.6554 (10,741)	1.9601 (32,120)	3.2893 (53,903)
Factored bending moment resistance based on local buckling about x-axis (ϕ_b = 0.9)	$\phi_b M_{nl}$	k-in (kN m)	22.75 (2.571)	62.76 (7.091)	92.81 (10.49)	216.03 (22.88)
Factored bending moment resistance based on local buckling about y-axis (ϕ_b = 0.9)	$\phi_b M_{nl}$	k-in (kN m)	22.75 (2.571)	31.58 (3.567)	92.81 (10.49)	153.16 (17.30)
Factored bending moment resistance for distortional buckling about x-axis based on Kφ= 0 (ϕ_b = 0.9)	$\phi_b M_{nd}$	k-in (kN m)	N.A.	N.A.	N.A.	N.A.
Factored bending moment resistance for distortional buckling about y-axis based on Kφ= 0 (ϕ_b = 0.9)	$\phi_b M_{nd}$	k-in (kN m)	N.A.	N.A.	N.A.	N.A.
Factored shear resistance about x-axis (ϕ_v = 0.8)	$\phi_v V_n$	lbs (N)	8,101 (36,036)	8,611 (38,304)	19,941 (88,704)	25,380 (112,896)
Factored shear resistance about y-axis (ϕ_v = 0.8)	$\phi_v V_n$	lbs (N)	8,101 (36,036)	16,285 (72,439)	19,941 (88,704)	40,488 (180,096)
Torsional Section Properties [2]						
St. Venant Torsional Constant	J	in^4 (mm^4)	0.7146 (297,456)	2.1217 (883,107)	6.6870 (2,783,333)	15.8713 (6,606,148)
Torsional Warping Constant	C_w	in^6 (mm^6)	0.00015 (39,434)	0.1693 (45,468,000)	0.0023 (610,560)	1.2794 (343,560,000)
Distance from the centroid to the shear center along the principal x-axis	X_0	in (mm)	0	0	0	0
Distance from the centroid to the shear center along the principal y-axis	Y_0	in (mm)	0	0	0	0
Net polar radius of gyration about the shear center	r_0	in (mm)	1.063 (27.00)	1.621 (41.17)	2.193 (55.71)	2.733 (69.42)
Coefficient for determining critical elastic lateral-torsional buckling stress	β	-	1	1	1	1

1. Tabulated values are in accordance with ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Tabulated gross properties, including torsional properties, are based on the full unreduced cross section of the profiles, away from the punched holes and slots.
3. For deflection calculations, use the effective moment of inertia.
4. C.G. is the center of gravity of the profile cross-section.

3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES

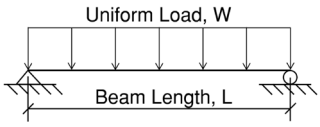
Beam Design Fundamentals

Hilti modular support system profiles may be used in a wide variety of beam applications. Beams are structural elements that resist applied loads perpendicular to their length.

Beams must be designed for shear, flexure (bending), torsion, and deflection. In some cases, beams may be subjected to an axial load that acts concurrently with the applied perpendicular loads, and the member must be accordingly designed for the combined effects of bending and compression. Examples of typical load, shear, and moment diagrams for beams are shown on page 31. Per AISI S100-16/CSA S136-16, cold-formed steel beams, which typically consist of highly customized profiles with very slender elements, must be designed for the effects of local buckling, distortional buckling, and for yielding and global buckling. Additionally, local buckling interacting with yielding and global buckling must be checked. The load values given in the beam tables in this technical guide represent the controlling load capacities for beams that are sufficiently laterally braced with due consideration of these limit states. A fully braced beam is restrained against twisting about the beam's longitudinal axis as well as lateral movement perpendicular to the beam's longitudinal axis. For unbraced conditions, reductions must be applied to the allowable loads per page 49.

Beam Loading

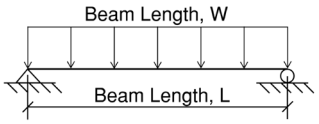
Beam load tables in this technical guide are based on a "uniformly loaded" condition unless noted otherwise. Uniform loads are distributed evenly along the length of the member.



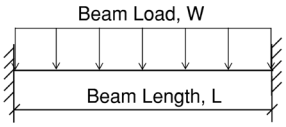
See page 32 for modification factors to be applied to allowable load values for non-uniform loading conditions.

Support Conditions

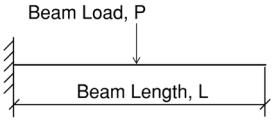
A "simply-supported" beam is a single-span beam, supported at its ends, whose supports restrain translation (lateral movement) in the 3 orthogonal directions as well as twisting about the beam's longitudinal axis, but do not restrain bending moments.



A "fixed-end" beam is a single-span beam, supported at its ends, whose supports restrain translation and rotation (bending and twisting moments) in the 3 orthogonal directions. Several Hilti MT connectors allow for moment resistance which can be used to simulate a "fixed-end" beam.



A "cantilevered" beam is a single-span beam, supported at only end and free to translate and rotate at its other (unsupported) end. The supported end of a "cantilevered" beam is considered a "fixed-end". MT brackets are examples of "cantilevered" beams.



Note that beam load tables in this technical guide are based on a "simply-supported" beam span condition unless noted otherwise. See page 32 for modification factors to be applied to allowable load values for non-simply-supported span conditions.

Deflection

Beam designs can often be governed by deflection limits (serviceability). Beam deflections are computed based on the magnitude and type of applied loading, the member's length, L, elastic modulus, E, moment of inertia about the axis under consideration, I, and support conditions.

Allowable loads corresponding to deflection limits in this technical guide are based on "simply-supported" and "uniformly loaded" conditions. See page 32 for modification factors to be applied to allowable load values for other conditions.

3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES

Column Design Fundamentals

Columns are structural elements that resist applied loads primarily in axial compression along their length.

A column's capacity is based on its unbraced length (noted as "height" in load tables), support conditions, cross-sectional properties, material properties, and load location (i.e. whether applied at the column's center of gravity or at the face of the profile).

Column Unbraced Length

The unbraced length of a column represents the distance between braced locations. Braced locations along a column are restrained against lateral movement (perpendicular to the length of the column). The larger the unbraced height of a column, its ability to resist applied loads is decreased. The tendency for a column to buckle about an axis under consideration is highly dependent on its slenderness ratio, KL/r, where K is the effective length factor (explained to the right), L is the unbraced length of the column, and r is the radius of gyration for the cross section. The AISI S100-16/ CSA S136-16 Specification recommends that such ratios not exceed 200 for compression members. Buckling must be considered in both principal directions for a column, with the smaller buckling load controlling the design. Remember that for members that are not doubly symmetric (e.g channels), the radius of gyration will be different for each principal direction.

Column Loading - Concentric

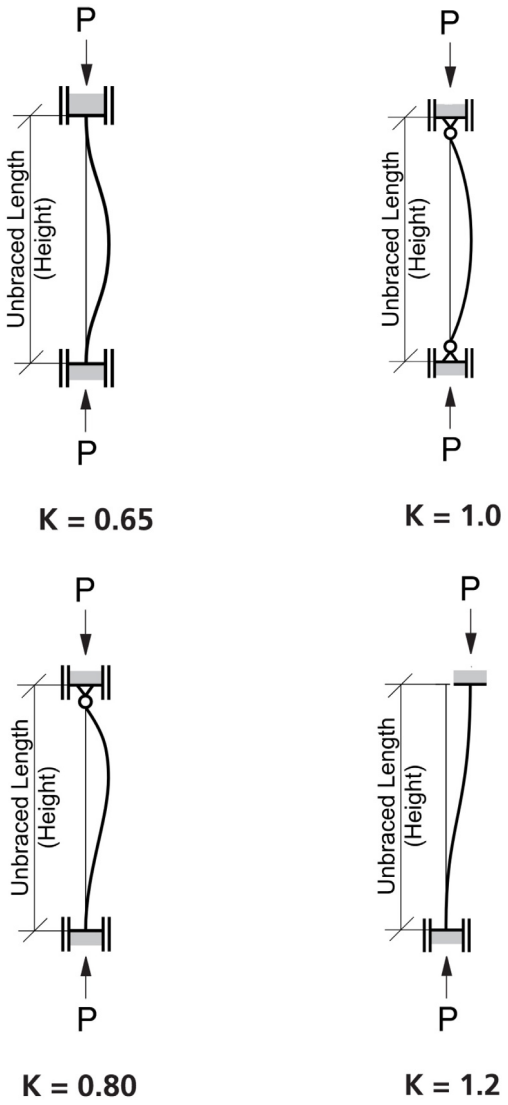
A load applied at the center of gravity, C.G., of a column cross section is considered concentric. Such a load does not induce a bending moment in the column at the point of load application.

Column Loading - Eccentric

A load applied away from the center of gravity, C.G., of a column cross section is considered eccentric (e.g. a load at the slotted face of an MT channel). Such a load induces a bending moment in the column at the point of load application and, consequently, results in a lower allowable column load compared to a concentrically loaded condition. Columns with higher slenderness ratios are particularly sensitive to eccentrically applied axial loads.

Column Support Conditions

A column's allowable load capacity depends considerably on its support (end) conditions. Variations in support conditions for a column are addressed via an Effective Length Factor, K, which modifies a non-pinned-end column's unbraced height to represent that of an equivalent pinned-end column. Accordingly, the K value for a pinned-end column is 1.0. See the figure below for applicable K values to be used for certain column support conditions.

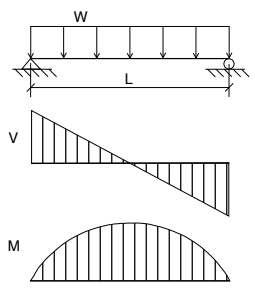


3.0 MODULAR SUPPORT SYSTEM

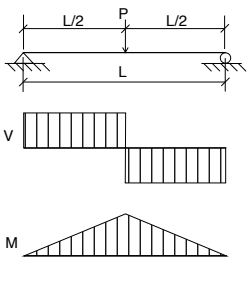
3.1.2 MT BEAM AND COLUMN LOAD TABLES

Table 11 - Beam Load, Shear, and Moment Diagrams

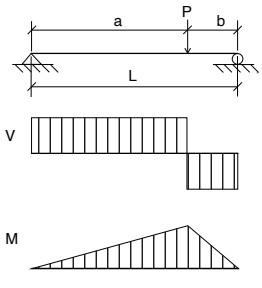
Simply-Supported Beams



$R_L = \frac{WL}{2}$
$R_R = \frac{WL}{2}$
$V_{max} = \frac{WL}{2}$
$M_{max} = \frac{WL^2}{8}$
$\Delta_{max} = \frac{5WL^4}{384EI}$

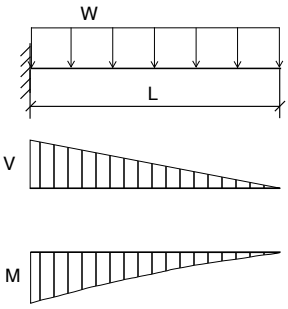


$R_L = \frac{P}{2}$
$R_R = \frac{P}{2}$
$V_{max} = \frac{P}{2}$
$M_{max} = \frac{PL}{4}$
$\Delta_{max} = \frac{PL^3}{48EI}$

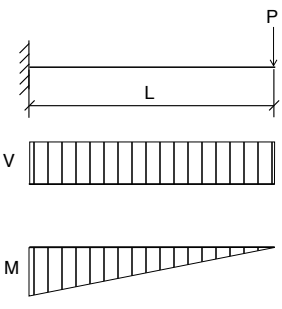


$R_L = \frac{WL}{2}$
$R_R = \frac{WL}{2}$
$V_{max} = \frac{WL}{2}$
$M_{max} = \frac{WL^2}{8}$
$\Delta_{max} = \frac{Pab(a+2b)\sqrt{3a(a+2b)}}{27EIL}$

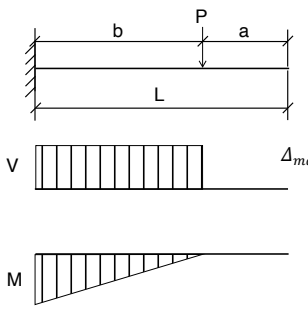
Cantilever Beams



$R_L = WL$
$V_{max} = WL$
$M_{max} = \frac{WL^2}{2}$
$\Delta_{max} = \frac{WL^4}{8EI}$

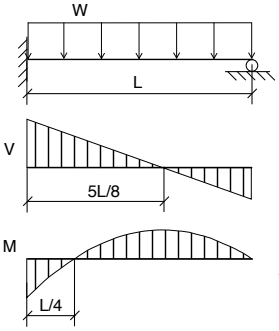


$R_L = P$
$V_{max} = P$
$M_{max} = PL$
$\Delta_{max} = \frac{PL^3}{3EI}$

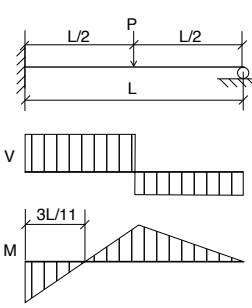


$R_L = P$
$V_{max} = P$
$M_{max} = Pb$
$\Delta_{max} = \frac{Pb^2}{6EI}(3L - b)$

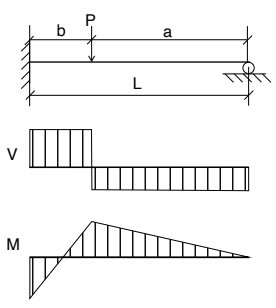
Beams Fixed at One End and Supported at the Other



$R_L = \frac{5WL}{8}$
$R_R = \frac{3WL}{8}$
$V_{max} = \frac{5WL}{8}$
$M_{max} = \frac{WL^2}{8}$
$\Delta_{max} = \frac{WL^4}{184EI}$

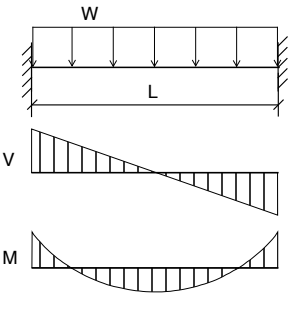


$R_L = \frac{11P}{16}$
$R_R = \frac{5P}{16}$
$V_{max} = \frac{11P}{16}$
$M_{max} = \frac{3PL}{16}$
$\Delta_{max} = 0.00932\frac{PL^3}{EI}$

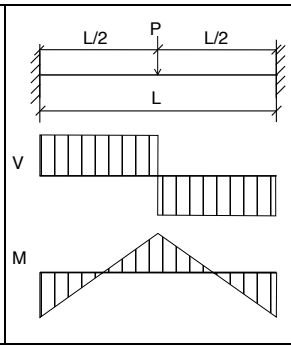


$R_L = \frac{Pa}{2L^3}(3l^2 - a^2)$
$R_R = \frac{Pb^2}{2L^3}(a + 2l)$
$M_L = \frac{Pab}{2L^2}(a + L)$
$\Delta_{max} = \frac{Pb^2}{6EI}(3L - b)$

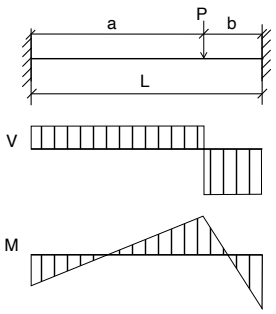
Beams Fixed at Both Ends



$R_L = \frac{WL}{2}$
$R_R = \frac{WL}{2}$
$V_{max} = \frac{5WL}{8}$
$M_{max} = \frac{WL^2}{12}$
$\Delta_{max} = \frac{WL^4}{384EI}$



$R_L = \frac{P}{2}$
$R_R = \frac{P}{2}$
$V_{max} = \frac{P}{2}$
$M_{max} = \frac{PL}{8}$
$\Delta_{max} = \frac{PL^3}{192EI}$



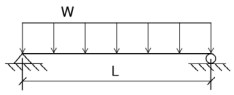
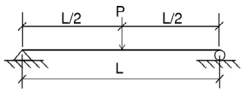
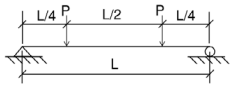
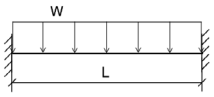
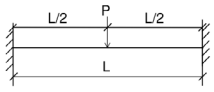
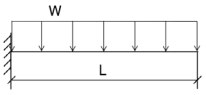
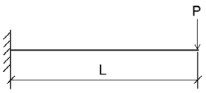
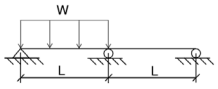
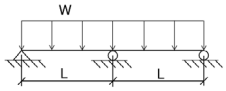
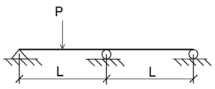
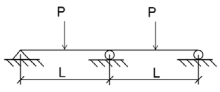
$R_L = \frac{Pb^3}{L^3}(3a + b)$
$R_R = \frac{Pa^3}{L^3}(a + 3b)$
$M_{at\ P} = \frac{2Pa^2b^2}{L^3}$
$M_{max} = \frac{Pa^2b}{L^2}$
$\Delta_{max} = \frac{2Pa^3b^2}{3EI(3a+b)^2}$

W: *Uniformly Distributed Load*
L: *Beam Span Length*
R_L: *Reaction at Left End*
R_R: *Reaction at Right End*
V: *Shear*
V_{max}: *Maximum Shear*
M: *Moment*
M_{max}: *Maximum Moment*
P: *Concentrated (Point) Load*
E: *Modulus of Elasticity*
I: *Moment of Inertia*
Δ_{max}: *Maximum Deflection of Beam*

3.0 MODULAR SUPPORT SYSTEM

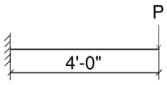
3.1.2 MT BEAM AND COLUMN LOAD TABLES

Table 12 - Load and Deflection Factors for Beams

Span and Loading Condition		Load Factor	Deflection Factor
Simple Beam - Uniform Load		1.00	1.00
Simple Beam - Concentrated Load at Mid-span		0.50	0.80
Simple Beam - Two Equal Concentrated Loads at 1/4 Points		1.00	1.10
Beam Fixed at Both Ends - Uniform Load		1.50	0.30
Beam Fixed at Both Ends - Concentrated Load at Mid-span		1.00	0.40
Cantilever Beam - Uniform Load		0.25	2.40
Cantilever Beam - Concentrated Load at End		0.12	3.20
Continuous Beam - Two Equal Spans, Uniform Load on One Span		1.3	0.92
Continuous Beam - Two Equal Spans, Uniform Load on Both Spans		1.00	0.42
Continuous Beam - Two Equal Spans, Concentrated Load at Center of One Span		0.62	0.71
Continuous Beam - Two Equal Spans, Concentrated Load at Center of Both Spans		0.67	0.48

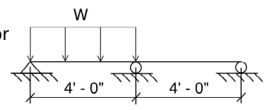
The allowable beam load tables in this technical guide are for single-span supported beams with uniform loading. Common arrangements of other load and support conditions are shown in the above table. Loads and deflections for these conditions can be determined by multiplying the load value from the tables by the given load and deflection factors. Additional reduction factors for unbraced beam lengths may apply per the tables on page 49.

EXAMPLE 1)
Determine the maximum allowable load and deflection for an MT-50 fully braced cantilever beam with a concentrated load at the unsupported end.



SOLUTION:
1. Allowable load and deflection for an MT-50 with a 48" span from Table 19 on Page 35 is 1,000 lbs and 0.24".
2. Multiply by factors from above table:
   Load = (1,000 lbs -1.97 x 4) x 0.12 = 119 lbs
   Deflection = 0.24" x 3.20 = 0.77"

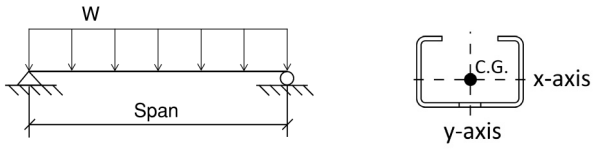
EXAMPLE 2)
Determine the maximum allowable load and deflection for a two-span MT-70 fully braced continuous beam that is uniformly loaded on one span.



SOLUTION:
1. Allowable load and deflection for an MT-70 with a 48" span from Table 25 on Page 37 is 2,520 lbs and 0.28".
2. Multiply by factors from above table:
   Load = (2,520 lbs -2.64 x 4) x 1.3 = 3,260 lbs
   Deflection = 0.28" x 0.92 = 0.26"

3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



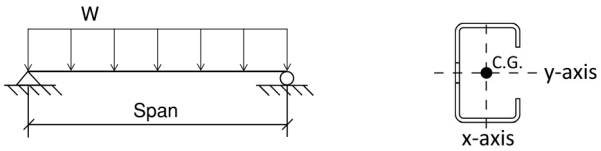


Table 13 - MT-20 Allowable Beam Loads: X-axis Bending[1,2,3,4,5,6]

Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
12 (30.5)	1,115 (4,955)	0.02 (0.05)	1,115 (4,955)	1,115 (4,955)	1,115 (4,955)
24 (61.0)	555 (2,465)	0.08 (0.20)	555 (2,465)	555 (2,465)	480 (2,135)
36 (91.4)	370 (1,645)	0.17 (0.44)	370 (1,645)	320 (1,420)	215 (955)
48 (121.9)	275 (1,220)	0.31 (0.78)	240 (1,065)	180 (800)	120 (530)
60 (152.4)	220 (975)	0.48 (1.22)	150 (665)	115 (510)	75 (330)
72 (182.9)	185 (820)	0.69 (1.76)	105 (465)	80 (355)	50 (220)

Table 14 - MT-20 Allowable Beam Loads: Y-axis Bending[1,2,3,4,5,6]

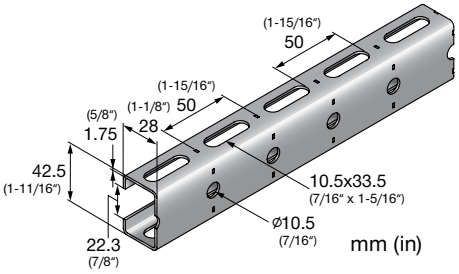
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
12 (30.5)	1,665 (7,405)	0.01 (0.04)	1,665 (7,405)	1,665 (7,405)	1,665 (7,405)
24 (61.0)	830 (3,690)	0.06 (0.14)	830 (3,690)	830 (3,690)	830 (3,690)
36 (91.4)	555 (2,465)	0.13 (0.32)	555 (2,465)	555 (2,465)	435 (1,930)
48 (121.9)	415 (1,850)	0.23 (0.57)	415 (1,850)	365 (1,620)	245 (1,085)
60 (152.4)	330 (1,465)	0.35 (0.90)	315 (1,400)	235 (1,045)	155 (685)
72 (182.9)	275 (1,220)	0.51 (1.29)	215 (955)	160 (710)	105 (465)

Table 15 - MT-20 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
12 (30.5)	1,750 (7,780)	4,370 (19,435)	4,370 (19,435)	4,370 (19,435)	4,370 (19,435)
24 (61.0)	1,700 (7,560)	4,370 (19,435)	4,370 (19,435)	4,290 (19,080)	3,710 (16,500)
36 (91.4)	1,550 (6,890)	4,370 (19,435)	3,710 (16,500)	2,960 (13,165)	2,360 (10,495)
48 (121.9)	1,350 (6,005)	3445 (15,320)	2,745 (12,210)	2,060 (9,160)	1655 (7,360)
60 (152.4)	1,105 (4,915)	2,695 (11,985)	2,060 (9,160)	1,580 (7,025)	1,250 (5,560)
72 (182.9)	900 (4,000)	2,130 (9,470)	1,655 (7,360)	1,250 (5,560)	**

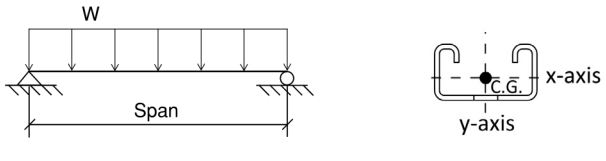
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 0.84 lbs/ft (12.26 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at channel face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



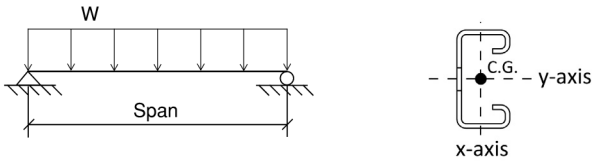


Table 16 - MT-30 Allowable Beam Loads: X-axis Bending[1,2,3,4,5,6]

Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	585 (2,602)	0.11 (0.28)	585 (2,602)	535 (2,375)	355 (1,575)
36 (91.4)	390 (1,735)	0.25 (0.63)	315 (1,400)	235 (1,045)	155 (685)
48 (121.9)	290 (1,290)	0.44 (1.12)	175 (775)	130 (575)	85 (375)
60 (152.4)	235 (1,045)	0.69 (1.74)	110 (485)	85 (375)	55 (240)
72 (182.9)	195 (867)	0.99 (2.51)	75 (330)	55 (240)	35 (155)
84 (213.4)	165 (734)	1.35 (3.42)	55 (240)	40 (175)	-
96 (243.8)	145 (645)	1.76 (4.46)	40 (175)	30 (130)	-
108 (274.3)	130 (578)	2.22 (5.65)	35 (155)	-	-
120 (304.8)	115 (512)	2.75 (6.97)	-	-	-
144 (365.8)	95 (423)	3.95 (10.04)	-	-	-
168 (426.7)	80 (356)	5.38 (13.67)	-	-	-
192 (487.7)	70 (311)	7.03 (17.85)	-	-	-
216 (548.6)	65 (289)	8.89 (22.59)	-	-	-
240 (609.6)	55 (245)	10.98 (27.89)	-	-	-

Table 17 - MT-30 Allowable Beam Loads: Y-axis Bending[1,2,3,4,5,6]

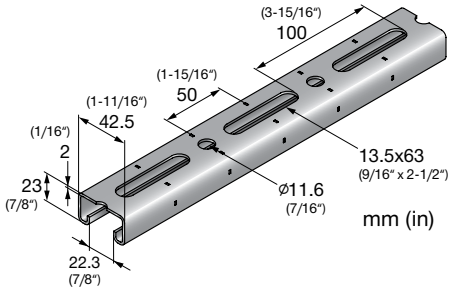
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	1,260 (5,605)	0.06 (0.15)	1,260 (5,605)	1,260 (5,605)	1,260 (5,605)
36 (91.4)	840 (3,736)	0.14 (0.35)	840 (3,736)	840 (3,736)	610 (2,710)
48 (121.9)	630 (2,802)	0.24 (0.62)	630 (2,802)	515 (2,290)	345 (1,530)
60 (152.4)	505 (2,246)	0.38 (0.97)	440 (1,955)	330 (1,465)	220 (975)
72 (182.9)	420 (1,868)	0.55 (1.39)	305 (1,355)	230 (1,020)	150 (665)
84 (213.4)	360 (1,601)	0.75 (1.90)	225 (1,000)	165 (730)	110 (485)
96 (243.8)	315 (1,401)	0.98 (2.48)	170 (755)	125 (555)	85 (375)
108 (274.3)	280 (1,245)	1.24 (3.14)	135 (600)	100 (440)	65 (285)
120 (304.8)	250 (1,112)	1.52 (3.87)	110 (485)	80 (355)	55 (240)
144 (365.8)	210 (934)	2.20 (5.58)	75 (330)	55 (240)	35 (155)
168 (426.7)	180 (801)	2.99 (7.59)	55 (240)	40 (175)	-
192 (487.7)	155 (689)	3.90 (9.91)	40 (175)	30 (130)	-
216 (548.6)	140 (623)	4.94 (12.55)	30 (130)	-	-
240 (609.6)	125 (556)	6.10 (15.49)	-	-	-

Table 18 - MT-30 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	2,280 (10,140)	6,045 (26,885)	5,600 (24,910)	5,020 (22,330)	4,485 (19,950)
36 (91.4)	1,860 (8,270)	5,090 (22,640)	4,485 (19,950)	3,415 (15,190)	2,455 (10,920)
48 (121.9)	1,385 (6,160)	4,120 (18,325)	3,080 (13,700)	1,985 (8,825)	1,380 (6,135)
60 (152.4)	1,055 (4,690)	2,995 (13,320)	1,985 (8,825)	1,270 (5,645)	**
72 (182.9)	820 (3,645)	2,090 (9,295)	1,380 (6,135)	**	**
84 (213.4)	**	1,535 (6,825)	**	**	**
96 (243.8)	**	1,175 (5,225)	**	**	**
108 (274.3)	**	**	**	**	**
120 (304.8)	**	**	**	**	**
144 (365.8)	**	**	**	**	**

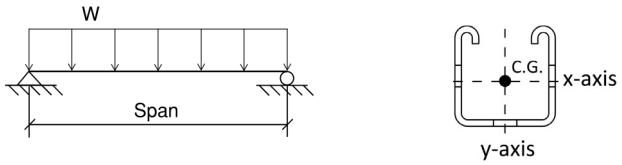
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 1.1 lbs/ft (16.09 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at channel face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



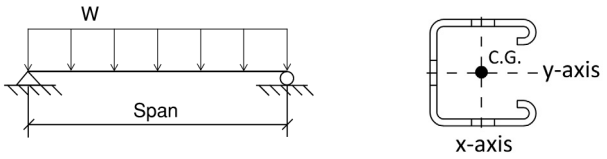


Table 19 - MT-50 Allowable Beam Loads: X-axis Bending[1,2,3,4,5,6]

Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	2,005 (8,915)	0.06 (0.16)	2,005 (8,915)	2,005 (8,915)	2,005 (8,915)
36 (91.4)	1,335 (5,935)	0.14 (0.35)	1,335 (5,935)	1,335 (5,935)	970 (4,310)
48 (121.9)	1,000 (4,445)	0.24 (0.62)	1,000 (4,445)	820 (3,645)	545 (2,420)
60 (152.4)	800 (3,555)	0.38 (0.97)	700 (3,110)	525 (2,335)	350 (1,555)
72 (182.9)	665 (2,955)	0.55 (1.40)	485 (2,155)	365 (1,620)	240 (1,065)
84 (213.4)	570 (2,535)	0.75 (1.90)	355 (1,575)	265 (1,175)	175 (775)
96 (243.8)	500 (2,220)	0.98 (2.49)	270 (1,200)	205 (910)	135 (600)
108 (274.3)	445 (1,975)	1.24 (3.15)	215 (955)	160 (710)	105 (465)
120 (304.8)	400 (1,775)	1.53 (3.88)	175 (775)	130 (575)	85 (375)
144 (365.8)	330 (1,465)	2.20 (5.59)	120 (530)	90 (400)	60 (265)
168 (426.7)	285 (1,265)	3.00 (7.61)	85 (375)	65 (285)	40 (175)
192 (487.7)	250 (1,110)	3.91 (9.94)	65 (285)	50 (220)	30 (130)
216 (548.6)	220 (975)	4.95 (12.58)	50 (220)	40 (175)	-
240 (609.6)	200 (885)	6.12 (15.53)	40 (175)	30 (130)	-

Table 20 - MT-50 Allowable Beam Loads: Y-axis Bending[1,2,3,4,5,6]

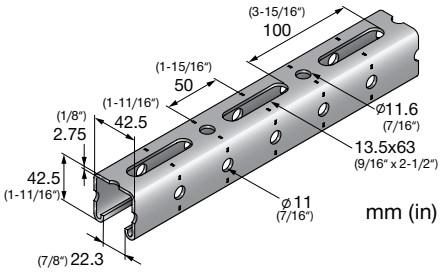
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	2,840 (12,630)	0.07 (0.17)	2,840 (12,630)	2,840 (12,630)	2,840 (12,630)
36 (91.4)	1,895 (8,425)	0.15 (0.38)	1,895 (8,425)	1,895 (8,425)	1,265 (5,625)
48 (121.9)	1,420 (6,315)	0.26 (0.67)	1,420 (6,315)	1,065 (4,735)	710 (3,155)
60 (152.4)	1,135 (5,045)	0.41 (1.04)	910 (4,045)	680 (3,020)	455 (2,020)
72 (182.9)	945 (4,200)	0.59 (1.50)	630 (2,800)	475 (2,110)	315 (1,400)
84 (213.4)	810 (3,600)	0.81 (2.05)	465 (2,065)	345 (1,530)	230 (1,020)
96 (243.8)	710 (3,155)	1.05 (2.66)	355 (1,575)	265 (1,175)	175 (775)
108 (274.3)	630 (2,800)	1.33 (3.38)	280 (1,245)	210 (930)	140 (620)
120 (304.8)	565 (2,510)	1.64 (4.16)	225 (1,000)	170 (755)	110 (485)
144 (365.8)	470 (2,090)	2.35 (5.96)	155 (685)	115 (510)	75 (330)
168 (426.7)	405 (1,800)	3.21 (8.14)	115 (510)	85 (375)	55 (240)
192 (487.7)	355 (1,575)	4.19 (10.64)	85 (375)	65 (285)	40 (175)
216 (548.6)	315 (1,400)	5.28 (13.41)	70 (310)	50 (220)	35 (155)
240 (609.6)	280 (1,245)	6.54 (16.62)	55 (240)	40 (175)	-

Table 21 - MT-50 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	4,400 (19,570)	11,010 (48,970)	10,180 (45,280)	8,720 (38,785)	7,600 (33,805)
36 (91.4)	3,360 (14,945)	8,865 (39,430)	7,600 (33,805)	6,160 (27,400)	4,995 (22,215)
48 (121.9)	2,870 (12,765)	7,090 (31,535)	5,745 (25,555)	4,380 (19,480)	3,530 (15,700)
60 (152.4)	2,380 (10,585)	5,645 (25,110)	4,380 (19,480)	3,365 (14,965)	2,740 (12,185)
72 (182.9)	2,020 (8,985)	4,515 (20,080)	3,530 (15,700)	2,740 (12,185)	2,225 (9,895)
84 (213.4)	1,750 (7,780)	3,755 (16,700)	2,960 (13,165)	2,300 (10,230)	1,850 (8,225)
96 (243.8)	1,545 (6,870)	3,220 (14,320)	2,545 (11,320)	1,960 (8,715)	1,560 (6,935)
108 (274.3)	1,370 (6,090)	2,820 (12,540)	2,225 (9,895)	1,695 (7,535)	**
120 (304.8)	1,230 (5,470)	2,500 (11,120)	1,960 (8,715)	**	**
144 (365.8)	1,000 (4,445)	2,025 (9,005)	1,560 (6,935)	**	**

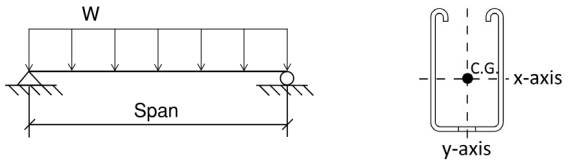
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 1.97 lbs/ft (28.74 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at channel face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



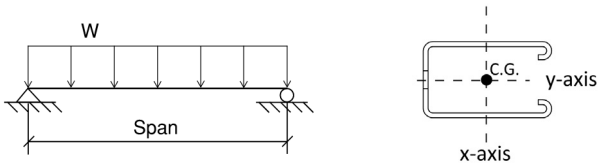


Table 22 - MT-60 Allowable Beam Loads: X-axis Bending[1,2,3,4,5,6]

Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	4,135 (18,390)	0.03 (0.08)	4,135 (18,390)	4,135 (18,390)	4,135 (18,390)
36 (91.4)	2,755 (12,250)	0.07 (0.18)	2,755 (12,250)	2,755 (12,250)	2,755 (12,250)
48 (121.9)	2,065 (9,185)	0.13 (0.33)	2,065 (9,185)	2,065 (9,185)	2,065 (9,185)
60 (152.4)	1,650 (7,335)	0.20 (0.51)	1,650 (7,335)	1,650 (7,335)	1,360 (6,045)
72 (182.9)	1,375 (6,115)	0.29 (0.74)	1,375 (6,115)	1,375 (6,115)	945 (4,200)
84 (213.4)	1,180 (5,245)	0.40 (1.01)	1,180 (5,245)	1,040 (4,625)	695 (3,090)
96 (243.8)	1,030 (4,580)	0.52 (1.31)	1,030 (4,580)	795 (3,535)	530 (2,355)
108 (274.3)	915 (4,070)	0.65 (1.66)	840 (3,735)	630 (2,800)	420 (1,865)
120 (304.8)	825 (3,665)	0.81 (2.05)	680 (3,020)	510 (2,265)	340 (1,510)
144 (365.8)	685 (3,045)	1.16 (2.96)	470 (2,090)	355 (1,575)	235 (1,045)
168 (426.7)	590 (2,620)	1.58 (4.02)	345 (1,530)	260 (1,155)	170 (755)
192 (487.7)	515 (2,290)	2.07 (5.26)	265 (1,175)	195 (865)	130 (575)
216 (548.6)	455 (2,020)	2.62 (6.65)	210 (930)	155 (685)	105 (465)
240 (609.6)	410 (1,820)	3.23 (8.21)	170 (755)	125 (555)	85 (375)

Table 23 - MT-60 Allowable Beam Loads: Y-axis Bending[1,2,3,4,5,6]

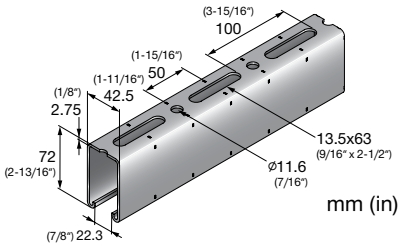
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	3,960 (17,610)	0.06 (0.15)	3,960 (17,610)	3,960 (17,610)	3,960 (17,610)
36 (91.4)	2,640 (11,740)	0.13 (0.33)	2,640 (11,740)	2,640 (11,740)	2,015 (8,960)
48 (121.9)	1,980 (8,805)	0.23 (0.59)	1,980 (8,805)	1,700 (7,560)	1,130 (5,025)
60 (152.4)	1,580 (7,025)	0.36 (0.92)	1,450 (6,445)	1,085 (4,825)	725 (3,220)
72 (182.9)	1,320 (5,870)	0.52 (1.33)	1,005 (4,470)	755 (3,355)	500 (2,220)
84 (213.4)	1,130 (5,025)	0.71 (1.81)	740 (3,290)	555 (2,465)	370 (1,645)
96 (243.8)	990 (4,400)	0.93 (2.36)	565 (2,510)	425 (1,890)	280 (1,245)
108 (274.3)	880 (3,910)	1.18 (2.99)	445 (1,975)	335 (1,490)	220 (975)
120 (304.8)	790 (3,510)	1.45 (3.69)	360 (1,600)	270 (1,200)	180 (800)
144 (365.8)	660 (2,935)	2.09 (5.32)	250 (1,110)	185 (820)	125 (555)
168 (426.7)	565 (2,510)	2.85 (7.24)	185 (820)	135 (600)	90 (400)
192 (487.7)	495 (2,200)	3.72 (9.46)	140 (620)	105 (465)	70 (310)
216 (548.6)	440 (1,955)	4.71 (11.97)	110 (485)	80 (355)	55 (240)
240 (609.6)	395 (1,755)	5.82 (14.78)	90 (400)	65 (285)	45 (200)

Table 24 - MT-60 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	5,340 (23,750)	15,420 (68,590)	14,005 (62,295)	12,045 (53,575)	10,145 (45,125)
36 (91.4)	4,630 (20,595)	12,290 (54,665)	10,145 (45,125)	7,630 (33,935)	5,725 (25,465)
48 (121.9)	3,690 (16,410)	9,255 (41,165)	6,890 (30,645)	4,885 (21,725)	3,780 (16,810)
60 (152.4)	2,865 (12,740)	6,720 (29,890)	4,885 (21,725)	3,580 (15,920)	2,845 (12,655)
72 (182.9)	2,325 (10,340)	5,070 (22,550)	3,780 (16,810)	2,845 (12,655)	2,305 (10,250)
84 (213.4)	1,940 (8,625)	4,065 (18,080)	3,095 (13,765)	2,375 (10,560)	1,945 (8,650)
96 (243.8)	1,660 (7,380)	3,400 (15,120)	2,635 (11,720)	2,050 (9,115)	1,690 (7,515)
108 (274.3)	1,460 (6,490)	2,935 (13,055)	2,305 (10,250)	1,810 (8,050)	1,490 (6,625)
120 (304.8)	1,310 (5,825)	2,590 (11,520)	2,050 (9,115)	1,615 (7,180)	**
144 (365.8)	1,090 (4,845)	2,110 (9,385)	1,690 (7,515)	**	**

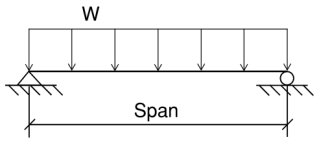
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 2.83 lbs/ft (41.30 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at channel face assumes K value of 0.8.



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3.1.2 MT BEAM AND COLUMN LOAD TABLES



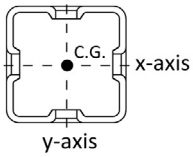


Table 25 - MT-70 Allowable Beam Loads: X-axis and Y-axis Bending[1,2,3,4,5,6]

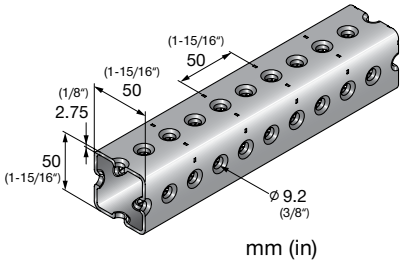
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	5,045 (22,440)	0.07 (0.18)	5,045 (22,440)	5,045 (22,440)	4,785 (21,280)
36 (91.4)	3,360 (14,945)	0.16 (0.40)	3,360 (14,945)	3,190 (14,185)	2,125 (9,450)
48 (121.9)	2,520 (11,205)	0.28 (0.71)	2,390 (10,630)	1,795 (7,980)	1,195 (5,315)
60 (152.4)	2,015 (8,960)	0.44 (1.11)	1,530 (6,805)	1,145 (5,090)	765 (3,400)
72 (182.9)	1,680 (7,470)	0.63 (1.60)	1,060 (4,715)	795 (3,535)	530 (2,355)
84 (213.4)	1,440 (6,405)	0.86 (2.18)	780 (3,465)	585 (2,600)	390 (1,730)
96 (243.8)	1,260 (5,600)	1.12 (2.85)	595 (2,645)	445 (1,975)	295 (1,310)
108 (274.3)	1,120 (4,980)	1.42 (3.61)	470 (2,090)	350 (1,555)	235 (1,045)
120 (304.8)	1,005 (4,470)	1.75 (4.44)	380 (1,690)	285 (1,265)	190 (845)
144 (365.8)	840 (3,735)	2.53 (6.42)	265 (1,175)	195 (865)	130 (575)
168 (426.7)	720 (3,200)	3.44 (8.73)	195 (865)	140 (620)	95 (420)
192 (487.7)	630 (2,800)	4.49 (11.41)	145 (640)	110 (485)	70 (310)
216 (548.6)	560 (2,490)	5.68 (14.44)	115 (510)	85 (375)	55 (240)
240 (609.6)	500 (2,220)	6.96 (17.68)	95 (420)	70 (310)	45 (200)

Table 26 - MT-70 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	8,550 (38,030)	21,190 (94,255)	20,850 (92,745)	20,300 (90,295)	19,645 (87,385)
36 (91.4)	8,150 (36,250)	20,375 (90,630)	19,645 (87,385)	18,495 (82,265)	16,835 (74,885)
48 (121.9)	7,570 (33,670)	19,285 (85,780)	18,075 (80,400)	15,830 (70,415)	13,735 (61,095)
60 (152.4)	6,240 (27,755)	17,965 (79,910)	15,830 (70,415)	13,200 (58,715)	10,575 (47,035)
72 (182.9)	5,630 (25,040)	16,085 (71,545)	13,735 (61,095)	10,575 (47,035)	7,670 (34,115)
84 (213.4)	5,020 (22,325)	14,400 (64,050)	11,610 (51,640)	8,115 (36,095)	5,635 (25,065)
96 (243.8)	4,430 (19,705)	12,670 (56,355)	9,565 (42,545)	6,215 (27,645)	4,315 (19,190)
108 (274.3)	3,860 (17,170)	10,960 (48,750)	7,670 (34,115)	4,910 (21,840)	3,410 (15,165)
120 (304.8)	3,375 (15,010)	9,320 (41,455)	6,215 (27,645)	3,975 (17,680)	2,760 (12,275)
144 (365.8)	2,630 (11,695)	6,535 (29,065)	4,315 (19,190)	2,760 (12,275)	**

Notes:

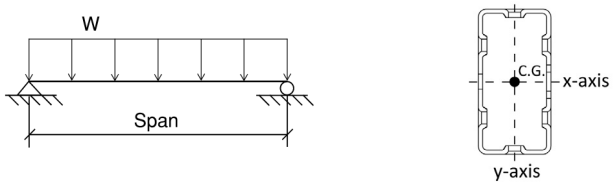
1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 2.63 lbs/ft (38.39 N/m) must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at girder face assumes K value of 0.8.



mm (in)

3.0 MODULAR SUPPORT SYSTEM

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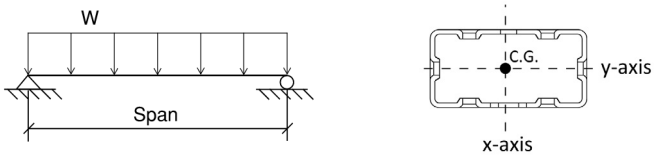


Table 27 - MT-80 Allowable Beam Loads: X-axis Bending[1,2,3,4,5,6]

Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	13,920 (61,915)	0.04 (0.09)	13,920 (61,915)	13,920 (61,915)	13,920 (61,915)
36 (91.4)	9,280 (41,275)	0.08 (0.20)	9,280 (41,275)	9,280 (41,275)	9,280 (41,275)
48 (121.9)	6,960 (30,955)	0.14 (0.36)	6,960 (30,955)	6,960 (30,955)	6,505 (28,935)
60 (152.4)	5,565 (24,750)	0.22 (0.57)	5,565 (24,750)	5,565 (24,750)	4,165 (18,525)
72 (182.9)	4,640 (20,635)	0.32 (0.81)	4,640 (20,635)	4,335 (19,280)	2,890 (12,855)
84 (213.4)	3,975 (17,680)	0.44 (1.11)	3,975 (17,680)	3,185 (14,165)	2,125 (9,450)
96 (243.8)	3,480 (15,475)	0.57 (1.45)	3,250 (14,455)	2,440 (10,850)	1,625 (7,225)
108 (274.3)	3,095 (13,765)	0.72 (1.83)	2,570 (11,430)	1,925 (8,560)	1,285 (5,715)
120 (304.8)	2,780 (12,365)	0.89 (2.26)	2,080 (9,250)	1,560 (6,935)	1,040 (4,625)
144 (365.8)	2,320 (10,315)	1.28 (3.26)	1,445 (6,425)	1,080 (4,800)	720 (3,200)
168 (426.7)	1,985 (8,825)	1.74 (4.43)	1,060 (4,715)	795 (3,535)	530 (2,355)
192 (487.7)	1,740 (7,735)	2.28 (5.79)	810 (3,600)	610 (2,710)	405 (1,800)
216 (548.6)	1,545 (6,870)	2.88 (7.32)	640 (2,845)	480 (2,135)	320 (1,420)
240 (609.6)	1,390 (6,180)	3.56 (9.04)	520 (2,310)	390 (1,730)	260 (1,155)

Table 28 - MT-80 Allowable Beam Loads: Y-axis Bending[1,2,3,4,5,6]

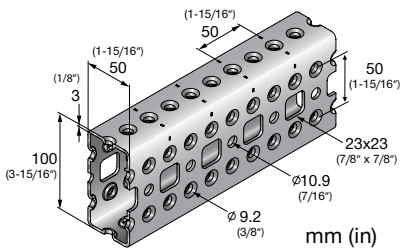
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	7,000 (31,135)	0.02 (0.05)	7,000 (31,135)	7,000 (31,135)	7,000 (31,135)
36 (91.4)	4,665 (20,750)	0.04 (0.10)	4,665 (20,750)	4,665 (20,750)	3,130 (13,920)
48 (121.9)	3,500 (15,565)	0.07 (0.18)	3,500 (15,565)	2,640 (11,740)	1,760 (7,825)
60 (152.4)	2,800 (12,450)	0.11 (0.28)	2,255 (10,030)	1,690 (7,515)	1,125 (5,000)
72 (182.9)	2,330 (10,360)	0.16 (0.41)	1,565 (6,960)	1,170 (5,200)	780 (3,465)
84 (213.4)	2,000 (8,895)	0.22 (0.56)	1,150 (5,115)	860 (3,825)	575 (2,555)
96 (243.8)	1,750 (7,780)	0.29 (0.73)	880 (3,910)	660 (2,935)	440 (1,955)
108 (274.3)	1,555 (6,915)	0.36 (0.92)	695 (3,090)	520 (2,310)	345 (1,530)
120 (304.8)	1,400 (6,225)	0.45 (1.14)	560 (2,490)	420 (1,865)	280 (1,245)
144 (365.8)	1,165 (5,180)	0.64 (1.64)	390 (1,730)	290 (1,285)	195 (865)
168 (426.7)	1,000 (4,445)	0.88 (2.23)	285 (1,265)	215 (955)	140 (620)
192 (487.7)	875 (3,890)	1.15 (2.91)	220 (975)	165 (730)	110 (485)
216 (548.6)	775 (3,445)	1.45 (3.67)	170 (755)	130 (575)	-
240 (609.6)	700 (3,110)	1.79 (4.55)	140 (620)	-	-

Table 29 - MT-80 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	11,820 (52,575)	29,775 (132,445)	29,775 (132,445)	29,775 (132,445)	29,775 (132,445)
36 (91.4)	11,540 (51,330)	29,775 (132,445)	29,775 (132,445)	29,775 (132,445)	29,200 (129,885)
48 (121.9)	11,160 (49,640)	29,775 (132,445)	29,775 (132,445)	27,665 (123,055)	23,755 (105,665)
60 (152.4)	10,430 (46,390)	29,775 (132,445)	27,665 (123,055)	22,890 (101,815)	18,585 (82,665)
72 (182.9)	8,590 (38,210)	28,060 (124,815)	23,755 (105,665)	18,585 (82,665)	13,740 (61,115)
84 (213.4)	7,770 (34,560)	24,830 (110,445)	20,295 (90,275)	14,530 (64,630)	10,095 (44,900)
96 (243.8)	6,960 (30,955)	22,025 (97,970)	16,920 (75,260)	11,130 (49,505)	7,730 (34,380)
108 (274.3)	6,160 (27,400)	19,220 (85,490)	13,740 (61,115)	8,795 (39,120)	6,105 (27,155)
120 (304.8)	5,440 (24,195)	16,510 (73,435)	11,130 (49,505)	7,120 (31,670)	4,945 (21,995)
144 (365.8)	4,300 (19,125)	11,710 (52,085)	7,730 (34,380)	4,945 (21,995)	**

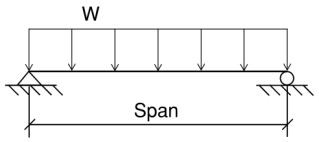
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 4.43 lbs/ft (64.67 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at girder face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



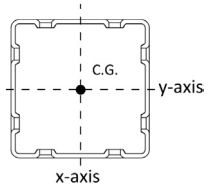


Table 30 - MT-90 Allowable Beam Loads: X-axis and Y-axis Bending[1,2,3,4,5,6]

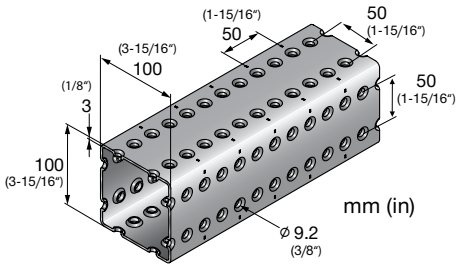
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	20,580 (91,540)	0.03 (0.08)	20,580 (91,540)	20,580 (91,540)	20,580 (91,540)
36 (91.4)	13,720 (61,025)	0.07 (0.19)	13,720 (61,025)	13,720 (61,025)	13,720 (61,025)
48 (121.9)	10,290 (45,770)	0.13 (0.33)	10,290 (45,770)	10,290 (45,770)	10,290 (45,770)
60 (152.4)	8,230 (36,605)	0.20 (0.52)	8,230 (36,605)	8,230 (36,605)	6,745 (30,000)
72 (182.9)	6,860 (30,510)	0.29 (0.74)	6,860 (30,510)	6,860 (30,510)	4,680 (20,815)
84 (213.4)	5,880 (26,155)	0.40 (1.01)	5,880 (26,155)	5,160 (22,950)	3,440 (15,300)
96 (243.8)	5,145 (22,885)	0.52 (1.32)	5,145 (22,885)	3,950 (17,570)	2,630 (11,695)
108 (274.3)	4,570 (20,325)	0.66 (1.67)	4,160 (18,500)	3,120 (13,875)	2,080 (9,250)
120 (304.8)	4,115 (18,300)	0.81 (2.07)	3,370 (14,990)	2,525 (11,230)	1,685 (7,495)
144 (365.8)	3,430 (15,255)	1.17 (2.98)	2,340 (10,405)	1,755 (7,805)	1,170 (5,200)
168 (426.7)	2,940 (13,075)	1.59 (4.05)	1,720 (7,650)	1,290 (5,735)	860 (3,825)
192 (487.7)	2,570 (11,430)	2.08 (5.29)	1,315 (5,845)	985 (4,380)	655 (2,910)
216 (548.6)	2,285 (10,160)	2.63 (6.69)	1,040 (4,625)	780 (3,465)	520 (2,310)
240 (609.6)	2,055 (9,140)	3.25 (8.25)	840 (3,735)	630 (2,800)	420 (1,865)

Table 31 - MT-90 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	18,000 (80,065)	45,040 (200,345)	45,040 (200,345)	45,040 (200,345)	45,040 (200,345)
36 (91.4)	17,860 (79,440)	45,040 (200,345)	45,040 (200,345)	45,040 (200,345)	45,040 (200,345)
48 (121.9)	17,680 (78,640)	45,040 (200,345)	45,040 (200,345)	45,040 (200,345)	44,870 (199,590)
60 (152.4)	17,470 (77,710)	45,040 (200,345)	45,040 (200,345)	44,470 (197,810)	42,285 (188,090)
72 (182.9)	17,210 (76,550)	45,040 (200,345)	44,870 (199,590)	42,285 (188,090)	38,845 (172,790)
84 (213.4)	16,680 (74,195)	45,040 (200,345)	43,195 (192,135)	39,380 (175,170)	35,495 (157,885)
96 (243.8)	16,100 (71,615)	44,050 (195,940)	41,335 (183,865)	36,635 (162,955)	31,990 (142,295)
108 (274.3)	14,440 (64,230)	42,630 (189,625)	38,845 (172,790)	33,755 (150,145)	28,430 (126,460)
120 (304.8)	13,830 (61,515)	41,090 (182,775)	36,635 (162,955)	30,805 (137,025)	24,920 (110,845)
144 (365.8)	12,560 (55,865)	37,200 (165,470)	31,990 (142,295)	24,920 (110,845)	18,325 (81,510)
168 (426.7)	11,280 (50,175)	33,465 (148,855)	27,250 (121,210)	19,385 (86,225)	13,465 (59,895)
192 (487.7)	10,020 (44,570)	29,615 (131,730)	22,650 (100,750)	14,845 (66,030)	10,305 (45,835)
216 (548.6)	8,800 (39,140)	25,790 (114,715)	18,325 (81,510)	11,725 (52,155)	8,145 (36,230)
240 (609.6)	7,730 (34,380)	22,095 (98,280)	14,845 (66,030)	9,500 (42,255)	6,595 (29,335)

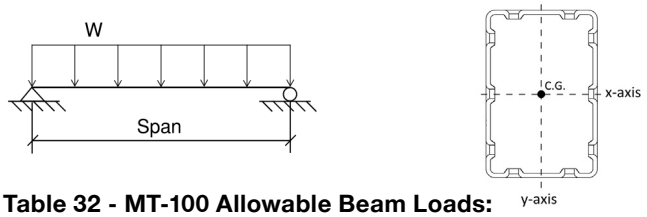
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 6.01 lbs/ft (87.74 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at girder face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



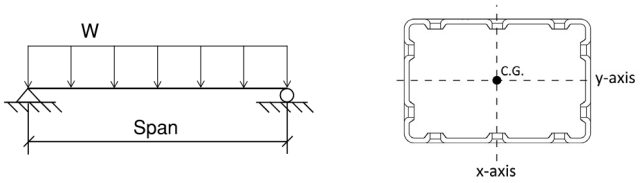


Table 32 - MT-100 Allowable Beam Loads: X-axis Bending[1,2,3,4,5,6]

Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	44,910 (199,765)	0.02 (0.06)	44,910 (199,765)	44,910 (199,765)	44,910 (199,765)
36 (91.4)	29,940 (133,175)	0.05 (0.13)	29,940 (133,175)	29,940 (133,175)	29,940 (133,175)
48 (121.9)	22,455 (99,880)	0.09 (0.23)	22,455 (99,880)	22,455 (99,880)	22,455 (99,880)
60 (152.4)	17,960 (79,885)	0.14 (0.36)	17,960 (79,885)	17,960 (79,885)	17,960 (79,885)
72 (182.9)	14,970 (66,585)	0.21 (0.52)	14,970 (66,585)	14,970 (66,585)	14,595 (64,920)
84 (213.4)	12,830 (57,070)	0.28 (0.71)	12,830 (57,070)	12,830 (57,070)	10,725 (47,705)
96 (243.8)	11,225 (49,930)	0.36 (0.93)	11,225 (49,930)	11,225 (49,930)	8,210 (36,515)
108 (274.3)	9,980 (44,390)	0.46 (1.17)	9,980 (44,390)	9,730 (43,280)	6,485 (28,845)
120 (304.8)	8,980 (39,940)	0.57 (1.45)	8,980 (39,940)	7,880 (35,050)	5,255 (23,375)
144 (365.8)	7,485 (33,290)	0.82 (2.08)	7,295 (32,445)	5,470 (24,330)	3,645 (16,210)
168 (426.7)	6,415 (28,535)	1.12 (2.84)	5,360 (23,840)	4,020 (17,880)	2,680 (11,920)
192 (487.7)	5,610 (24,950)	1.46 (3.70)	4,105 (18,255)	3,075 (13,675)	2,050 (9,115)
216 (548.6)	4,990 (22,195)	1.85 (4.69)	3,240 (14,410)	2,430 (10,805)	1,620 (7,205)
240 (609.6)	4,490 (19,970)	2.28 (5.79)	2,625 (11,675)	1,970 (8,760)	1,310 (5,825)

Table 33 - MT-100 Allowable Beam Loads: Y-axis Bending[1,2,3,4,5,6]

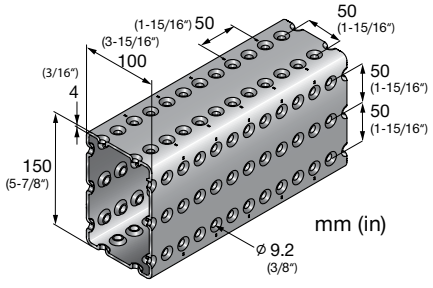
Span in (cm)	Max Allowable Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	33,970 (151,105)	0.03 (0.08)	33,970 (151,105)	33,970 (151,105)	33,970 (151,105)
36 (91.4)	22,645 (100,725)	0.07 (0.18)	22,645 (100,725)	22,645 (100,725)	22,645 (100,725)
48 (121.9)	16,985 (75,550)	0.13 (0.33)	16,985 (75,550)	16,985 (75,550)	16,985 (75,550)
60 (152.4)	13,585 (60,425)	0.20 (0.51)	13,585 (60,425)	13,585 (60,425)	11,315 (50,330)
72 (182.9)	11,320 (50,350)	0.29 (0.73)	11,320 (50,350)	11,320 (50,350)	7,860 (34,960)
84 (213.4)	9,705 (43,165)	0.39 (1.00)	9,705 (43,165)	8,660 (38,520)	5,775 (25,685)
96 (243.8)	8,490 (37,765)	0.51 (1.30)	8,490 (37,765)	6,630 (29,490)	4,420 (19,660)
108 (274.3)	7,545 (33,560)	0.65 (1.65)	6,985 (31,070)	5,240 (23,305)	3,490 (15,520)
120 (304.8)	6,790 (30,200)	0.80 (2.03)	5,655 (25,150)	4,240 (18,860)	2,825 (12,565)
144 (365.8)	5,660 (25,175)	1.15 (2.93)	3,930 (17,480)	2,945 (13,095)	1,965 (8,740)
168 (426.7)	4,850 (21,570)	1.57 (3.98)	2,885 (12,830)	2,165 (9,630)	1,440 (6,405)
192 (487.7)	4,245 (18,880)	2.05 (5.20)	2,210 (9,830)	1,655 (7,360)	1,105 (4,915)
216 (548.6)	3,770 (16,765)	2.59 (6.58)	1,745 (7,760)	1,310 (5,825)	870 (3,865)
240 (609.6)	3,395 (15,100)	3.20 (8.13)	1,410 (6,270)	1,060 (4,715)	705 (3,135)

Table 34 - MT-100 Allowable Column Loads[1,2,6,7,8,9]

Unbraced Height in (cm)	Max Allowable Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	25,820 (114,850)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)
36 (91.4)	25,740 (114,495)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)
48 (121.9)	25,670 (114,185)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)
60 (152.4)	25,490 (113,380)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)
72 (182.9)	25,320 (112,625)	67,280 (299,270)	67,280 (299,270)	67,280 (299,270)	65,740 (292,420)
84 (213.4)	25,150 (111,870)	67,280 (299,270)	67,280 (299,270)	66,580 (296,160)	60,480 (269,025)
96 (243.8)	24,900 (110,760)	67,280 (299,270)	67,280 (299,270)	62,275 (277,010)	54,930 (244,335)
108 (274.3)	24,300 (108,090)	67,280 (299,270)	65,740 (292,420)	57,730 (256,790)	49,250 (219,070)
120 (304.8)	23,560 (104,795)	67,280 (299,270)	62,275 (277,010)	53,045 (235,950)	43,600 (193,940)
144 (365.8)	21,950 (97,635)	63,155 (280,925)	54,390 (241,935)	43,600 (193,940)	32,875 (146,230)
168 (426.7)	20,200 (89,850)	57,265 (254,725)	47,360 (210,665)	34,580 (153,815)	24,170 (107,510)
192 (487.7)	18,350 (81,620)	51,150 (227,525)	39,910 (177,525)	26,650 (118,540)	18,505 (82,310)
216 (548.6)	16,460 (73,215)	45,000 (200,165)	32,875 (146,230)	21,055 (93,655)	14,620 (65,030)
240 (609.6)	14,580 (64,850)	39,000 (173,475)	26,650 (118,540)	17,055 (75,860)	11,845 (52,685)

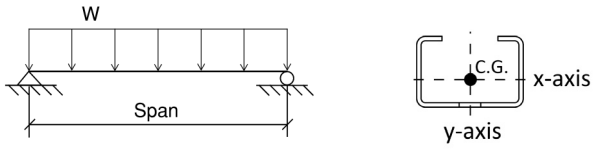
Notes:

1. Loads are based on ICC-ES ESR-5019 and AISI S100-16, the North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Safety factors for flexure and compression are 1.67 and 1.80, respectively.
3. Allowable beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 10.0 lbs/ft (145.99 N/m), must be deducted from allowable beam load values.
6. Multiply tabulated load values by 1.5 to obtain Load and Resistance Factor Design (LRFD) values.
7. C.G. is the 'Center of Gravity' of the cross section.
8. ** indicates KL/r for compression exceeds 200.
9. Maximum allowable load at girder face assumes K value of 0.8.



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3.1.2 MT BEAM AND COLUMN LOAD TABLES



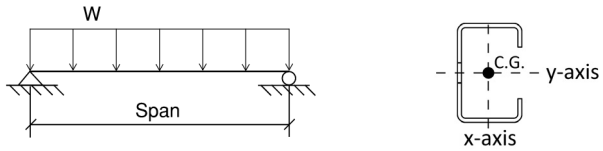


Table 35 - MT-20 Maximum Factored Beam Loads: X-axis Bending[1,2,3,4,5]

Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
12 (30.5)	1,680 (7,470)	0.03 (0.07)	1,680 (7,470)	1,680 (7,470)	1,680 (7,470)
24 (61.0)	840 (3,735)	0.12 (0.29)	840 (3,735)	725 (3,220)	480 (2,135)
36 (91.4)	560 (2,490)	0.26 (0.66)	430 (1,910)	320 (1,420)	215 (955)
48 (121.9)	420 (1,865)	0.46 (1.18)	240 (1,065)	180 (800)	120 (530)
60 (152.4)	335 (1,490)	0.72 (1.84)	150 (665)	115 (510)	75 (330)
72 (182.9)	280 (1,245)	1.04 (2.65)	105 (465)	80 (355)	50 (220)

Table 36 - MT-20 Maximum Factored Beam Loads: Y-axis Bending[1,2,3,4,5]

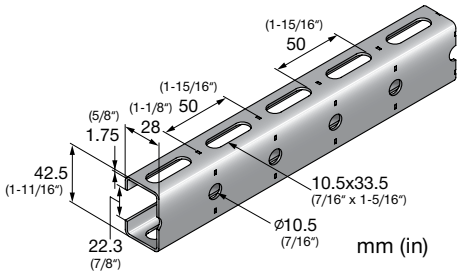
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
12 (30.5)	2,500 (11,120)	0.02 (0.05)	2,500 (11,120)	2,500 (11,120)	2,500 (11,120)
24 (61.0)	1,250 (5,560)	0.08 (0.22)	1,250 (5,560)	1,250 (5,560)	980 (4,355)
36 (91.4)	830 (3,690)	0.19 (0.48)	830 (3,690)	655 (2,910)	435 (1,930)
48 (121.9)	625 (2,780)	0.34 (0.86)	490 (2,175)	365 (1,620)	245 (1,085)
60 (152.4)	500 (2,220)	0.53 (1.35)	315 (1,400)	235 (1,045)	155 (685)
72 (182.9)	415 (1,845)	0.76 (1.94)	215 (955)	160 (710)	105 (465)

Table 37 - MT-20 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
12 (30.5)	2,520 (11,200)	6,290 (27,985)	6,290 (27,985)	6,290 (27,985)	6,290 (27,985)
24 (61.0)	2,790 (12,420)	6,290 (27,985)	6,290 (27,985)	6,175 (27,475)	5,340 (23,760)
36 (91.4)	2,410 (10,725)	6,290 (27,985)	5,340 (23,760)	4,260 (18,955)	3,395 (15,110)
48 (121.9)	1,985 (8,830)	4,960 (22,060)	3,950 (17,580)	2,965 (13,190)	2,380 (10,595)
60 (152.4)	1,590 (7,075)	3,880 (17,255)	2,965 (13,190)	2,275 (10,115)	1,800 (8,005)
72 (182.9)	1,295 (5,760)	3,065 (13,635)	2,380 (10,595)	1,800 (8,005)	**

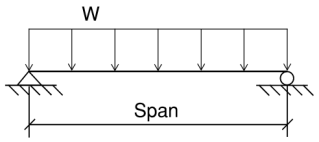
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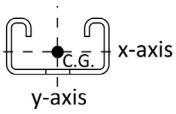
1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 0.84 lbs/ft (12.26 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at channel face assumes K value of 0.8.

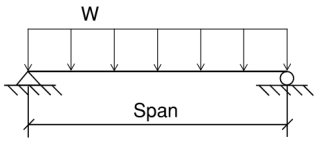


3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES







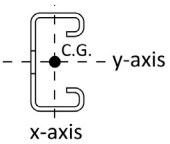


Table 38 - MT-30 Maximum Factored Beam Loads: X-axis Bending[1,2,3,4,5]

Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	880 (3,910)	0.17 (0.42)	710 (3,155)	535 (2,375)	355 (1,575)
36 (91.4)	585 (2,600)	0.37 (0.94)	315 (1,400)	235 (1,045)	155 (685)
48 (121.9)	440 (1,955)	0.66 (1.68)	175 (775)	130 (575)	85 (375)
60 (152.4)	350 (1,555)	1.03 (2.62)	110 (485)	85 (375)	55 (240)
72 (182.9)	290 (1,285)	1.49 (3.77)	75 (330)	55 (240)	35 (155)
84 (213.4)	250 (1,110)	2.02 (5.13)	55 (240)	40 (175)	-
96 (243.8)	220 (975)	2.64 (6.71)	40 (175)	30 (130)	-
108 (274.3)	195 (865)	3.34 (8.49)	35 (155)	-	-
120 (304.8)	175 (775)	4.13 (10.48)	-	-	-
144 (365.8)	145 (640)	5.94 (15.09)	-	-	-
168 (426.7)	125 (555)	8.09 (20.54)	-	-	-
192 (487.7)	110 (485)	10.56 (26.83)	-	-	-
216 (548.6)	95 (420)	13.37 (33.95)	-	-	-
240 (609.6)	85 (375)	16.50 (41.92)	-	-	-

Table 39 - MT-30 Maximum Factored Beam Loads: Y-axis Bending[1,2,3,4,5]

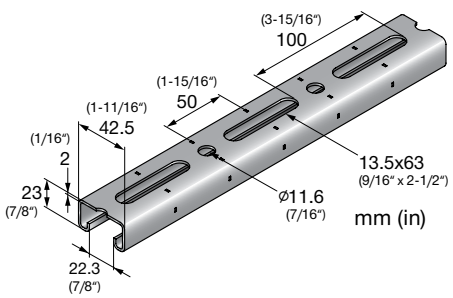
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	1,895 (8,425)	0.09 (0.23)	1,895 (8,425)	1,895 (8,425)	1,380 (6,135)
36 (91.4)	1,265 (5,625)	0.21 (0.52)	1,225 (5,445)	920 (4,090)	610 (2,710)
48 (121.9)	945 (4,200)	0.37 (0.93)	690 (3,065)	515 (2,290)	345 (1,530)
60 (152.4)	755 (3,355)	0.57 (1.46)	440 (1,955)	330 (1,465)	220 (975)
72 (182.9)	630 (2,800)	0.83 (2.10)	305 (1,355)	230 (1,020)	150 (665)
84 (213.4)	540 (2,400)	1.12 (2.85)	225 (1,000)	165 (730)	110 (485)
96 (243.8)	470 (2,090)	1.47 (3.73)	170 (755)	125 (555)	85 (375)
108 (274.3)	420 (1,865)	1.86 (4.72)	135 (600)	100 (440)	65 (285)
120 (304.8)	375 (1,665)	2.29 (5.82)	110 (485)	80 (355)	55 (240)
144 (365.8)	315 (1,400)	3.30 (8.38)	75 (330)	55 (240)	35 (155)
168 (426.7)	270 (1,200)	4.49 (11.41)	55 (240)	40 (175)	-
192 (487.7)	235 (1,045)	5.87 (14.90)	40 (175)	30 (130)	-
216 (548.6)	210 (930)	7.43 (18.86)	30 (130)	-	-
240 (609.6)	185 (820)	9.17 (23.28)	-	-	-

Table 40 - MT-30 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	3,280 (14,600)	8,700 (38,710)	8,060 (35,870)	7,225 (32,155)	6,455 (28,725)
36 (91.4)	2,675 (11,905)	7,325 (32,600)	6,455 (28,725)	4,915 (21,870)	3,535 (15,720)
48 (121.9)	1,990 (8,870)	5,930 (26,385)	4,435 (19,725)	2,855 (12,705)	1,985 (8,830)
60 (152.4)	1,515 (6,750)	4,310 (19,180)	2,855 (12,705)	1,825 (8,125)	**
72 (182.9)	1,180 (5,245)	3,005 (13,380)	1,985 (8,830)	**	**
84 (213.4)	**	2,210 (9,825)	**	**	**
96 (243.8)	**	1,690 (7,520)	**	**	**
108 (274.3)	**	**	**	**	**
120 (304.8)	**	**	**	**	**
144 (365.8)	**	**	**	**	**

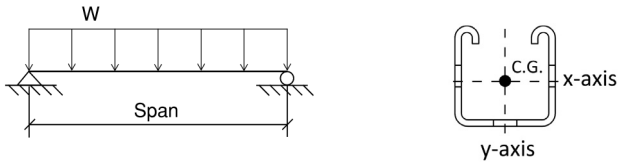
Notes:

1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 1.1 lbs/ft (16.09 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at channel face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



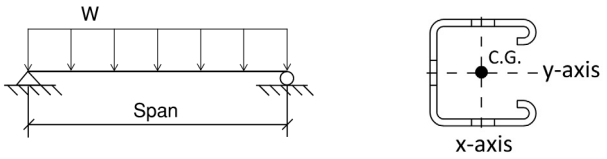


Table 41 - MT-50 Maximum Factored Beam Loads: X-axis Bending[1,2,3,4,5]

Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	3,020 (13,430)	0.09 (0.23)	3,020 (13,430)	3,020 (13,430)	2,190 (9,740)
36 (91.4)	2,010 (8,940)	0.21 (0.53)	1,945 (8,650)	1,460 (6,490)	970 (4,310)
48 (121.9)	1,510 (6,715)	0.37 (0.93)	1,095 (4,870)	820 (3,645)	545 (2,420)
60 (152.4)	1,205 (5,360)	0.57 (1.46)	700 (3,110)	525 (2,335)	350 (1,555)
72 (182.9)	1,005 (4,470)	0.83 (2.10)	485 (2,155)	365 (1,620)	240 (1,065)
84 (213.4)	860 (3,825)	1.13 (2.86)	355 (1,575)	265 (1,175)	175 (775)
96 (243.8)	755 (3,355)	1.47 (3.74)	270 (1,200)	205 (910)	135 (600)
108 (274.3)	670 (2,980)	1.86 (4.73)	215 (955)	160 (710)	105 (465)
120 (304.8)	600 (2,665)	2.30 (5.84)	175 (775)	130 (575)	85 (375)
144 (365.8)	500 (2,220)	3.31 (8.40)	120 (530)	90 (400)	60 (265)
168 (426.7)	430 (1,910)	4.50 (11.44)	85 (375)	65 (285)	40 (175)
192 (487.7)	375 (1,665)	5.88 (14.94)	65 (285)	50 (220)	30 (130)
216 (548.6)	335 (1,490)	7.45 (18.91)	50 (220)	40 (175)	-
240 (609.6)	300 (1,330)	9.19 (23.35)	40 (175)	30 (130)	-

Table 42 - MT-50 Maximum Factored Beam Loads: Y-axis Bending[1,2,3,4,5]

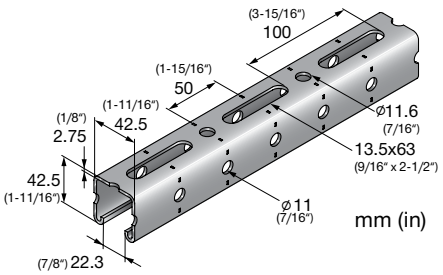
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	4,270 (18,990)	0.10 (0.25)	4,270 (18,990)	4,270 (18,990)	2,850 (12,675)
36 (91.4)	2,845 (12,655)	0.22 (0.57)	2,535 (11,275)	1,900 (8,450)	1,265 (5,625)
48 (121.9)	2,135 (9,495)	0.40 (1.01)	1,425 (6,335)	1,065 (4,735)	710 (3,155)
60 (152.4)	1,705 (7,580)	0.62 (1.58)	910 (4,045)	680 (3,020)	455 (2,020)
72 (182.9)	1,420 (6,315)	0.90 (2.28)	630 (2,800)	475 (2,110)	315 (1,400)
84 (213.4)	1,220 (5,425)	1.22 (3.10)	465 (2,065)	345 (1,530)	230 (1,020)
96 (243.8)	1,065 (4,735)	1.59 (4.05)	355 (1,575)	265 (1,175)	175 (775)
108 (274.3)	945 (4,200)	2.01 (5.11)	280 (1,245)	210 (930)	140 (620)
120 (304.8)	850 (3,780)	2.48 (6.31)	225 (1,000)	170 (755)	110 (485)
144 (365.8)	710 (3,155)	3.58 (9.10)	155 (685)	115 (510)	75 (330)
168 (426.7)	610 (2,710)	4.89 (12.42)	115 (510)	85 (375)	55 (240)
192 (487.7)	530 (2,355)	6.34 (16.11)	85 (375)	65 (285)	40 (175)
216 (548.6)	470 (2,090)	8.01 (20.34)	70 (310)	50 (220)	35 (155)
240 (609.6)	425 (1,890)	9.93 (25.23)	55 (240)	40 (175)	-

Table 43 - MT-50 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	6,335 (28,185)	15,850 (70,520)	14,655 (65,205)	12,555 (55,855)	10,940 (48,680)
36 (91.4)	4,835 (21,525)	12,765 (56,780)	10,940 (48,680)	8,870 (39,460)	7,190 (31,990)
48 (121.9)	4,130 (18,385)	10,205 (45,415)	8,270 (36,800)	6,305 (28,055)	5,080 (22,610)
60 (152.4)	3,425 (15,245)	8,125 (36,160)	6,305 (28,055)	4,845 (21,550)	3,945 (17,550)
72 (182.9)	2,905 (12,940)	6,500 (28,920)	5,080 (22,610)	3,945 (17,550)	3,200 (14,250)
84 (213.4)	2,520 (11,205)	5,405 (24,050)	4,260 (18,960)	3,310 (14,735)	2,660 (11,845)
96 (243.8)	2,220 (9,895)	4,635 (20,625)	3,660 (16,305)	2,820 (12,550)	2,245 (9,990)
108 (274.3)	1,970 (8,770)	4,060 (18,060)	3,200 (14,250)	2,440 (10,855)	**
120 (304.8)	1,770 (7,880)	3,600 (16,015)	2,820 (12,550)	**	**
144 (365.8)	1,440 (6,405)	2,915 (12,970)	2,245 (9,990)	**	**

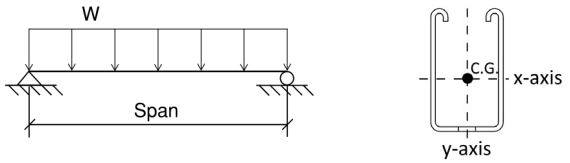
Notes:

1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 1.97 lbs/ft (28.74 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at channel face assumes K value of 0.8.



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3.1.2 MT BEAM AND COLUMN LOAD TABLES



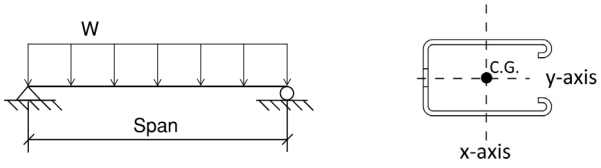


Table 44 - MT-60 Maximum Factored Beam Loads: X-axis Bending[1,2,3,4,5]

Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	6,215 (27,645)	0.05 (0.12)	6,215 (27,645)	6,215 (27,645)	6,215 (27,645)
36 (91.4)	4,140 (18,415)	0.11 (0.28)	4,140 (18,415)	4,140 (18,415)	3,785 (16,835)
48 (121.9)	3,105 (13,810)	0.19 (0.49)	3,105 (13,810)	3,105 (13,810)	2,130 (9,470)
60 (152.4)	2,485 (11,050)	0.30 (0.77)	2,485 (11,050)	2,045 (9,095)	1,360 (6,045)
72 (182.9)	2,070 (9,205)	0.44 (1.11)	1,890 (8,405)	1,420 (6,315)	945 (4,200)
84 (213.4)	1,775 (7,895)	0.60 (1.51)	1,390 (6,180)	1,040 (4,625)	695 (3,090)
96 (243.8)	1,550 (6,890)	0.78 (1.98)	1,065 (4,735)	795 (3,535)	530 (2,355)
108 (274.3)	1,380 (6,135)	0.98 (2.50)	840 (3,735)	630 (2,800)	420 (1,865)
120 (304.8)	1,240 (5,515)	1.22 (3.09)	680 (3,020)	510 (2,265)	340 (1,510)
144 (365.8)	1,035 (4,600)	1.75 (4.44)	470 (2,090)	355 (1,575)	235 (1,045)
168 (426.7)	885 (3,935)	2.38 (6.05)	345 (1,530)	260 (1,155)	170 (755)
192 (487.7)	775 (3,445)	3.11 (7.90)	265 (1,175)	195 (865)	130 (575)
216 (548.6)	690 (3,065)	3.94 (10.00)	210 (930)	155 (685)	105 (465)
240 (609.6)	620 (2,755)	4.86 (12.35)	170 (755)	125 (555)	85 (375)

Table 45 - MT-60 Maximum Factored Beam Loads: Y-axis Bending[1,2,3,4,5]

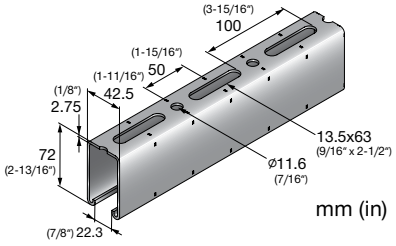
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	5,950 (26,465)	0.09 (0.22)	5,950 (26,465)	5,950 (26,465)	4,535 (20,170)
36 (91.4)	3,965 (17,635)	0.20 (0.50)	3,965 (17,635)	3,025 (13,455)	2,015 (8,960)
48 (121.9)	2,975 (13,230)	0.35 (0.89)	2,265 (10,075)	1,700 (7,560)	1,130 (5,025)
60 (152.4)	2,380 (10,585)	0.55 (1.39)	1,450 (6,445)	1,085 (4,825)	725 (3,220)
72 (182.9)	1,980 (8,805)	0.79 (2.00)	1,005 (4,470)	755 (3,355)	500 (2,220)
84 (213.4)	1,700 (7,560)	1.07 (2.72)	740 (3,290)	555 (2,465)	370 (1,645)
96 (243.8)	1,485 (6,605)	1.40 (3.55)	565 (2,510)	425 (1,890)	280 (1,245)
108 (274.3)	1,320 (5,870)	1.77 (4.50)	445 (1,975)	335 (1,490)	220 (975)
120 (304.8)	1,190 (5,290)	2.19 (5.55)	360 (1,600)	270 (1,200)	180 (800)
144 (365.8)	990 (4,400)	3.15 (8.00)	250 (1,110)	185 (820)	125 (555)
168 (426.7)	850 (3,780)	4.29 (10.88)	185 (820)	135 (600)	90 (400)
192 (487.7)	740 (3,290)	5.60 (14.22)	140 (620)	105 (465)	70 (310)
216 (548.6)	660 (2,935)	7.08 (17.99)	110 (485)	80 (355)	55 (240)
240 (609.6)	595 (2,645)	8.75 (22.21)	90 (400)	65 (285)	45 (200)

Table 46 - MT-60 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Channel Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	7,685 (34,200)	22,200 (98,770)	20,165 (89,705)	17,340 (77,150)	14,605 (64,980)
36 (91.4)	6,665 (29,660)	17,695 (78,720)	14,605 (64,980)	10,985 (48,870)	8,240 (36,670)
48 (121.9)	5,310 (23,635)	13,325 (59,280)	9,920 (44,130)	7,030 (31,285)	5,440 (24,210)
60 (152.4)	4,125 (18,350)	9,675 (43,045)	7,030 (31,285)	5,155 (22,925)	4,095 (18,225)
72 (182.9)	3,345 (14,890)	7,300 (32,475)	5,440 (24,210)	4,095 (18,225)	3,315 (14,760)
84 (213.4)	2,790 (12,420)	5,850 (26,040)	4,455 (19,825)	3,420 (15,210)	2,800 (12,460)
96 (243.8)	2,390 (10,630)	4,895 (21,775)	3,790 (16,880)	2,950 (13,130)	2,430 (10,825)
108 (274.3)	2,100 (9,350)	4,225 (18,800)	3,315 (14,760)	2,605 (11,595)	2,145 (9,540)
120 (304.8)	1,885 (8,390)	3,725 (16,590)	2,950 (13,130)	2,325 (10,340)	**
144 (365.8)	1,565 (6,980)	3,035 (13,515)	2,430 (10,825)	**	**

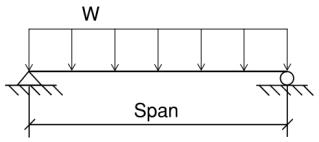
Notes:

1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 2.83 lbs/ft (41.30 N/m) must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at channel face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



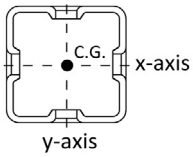


Table 47 - MT-70 Maximum Factored Beam Loads: X-axis and Y-axis Bending[1,2,3,4,5]

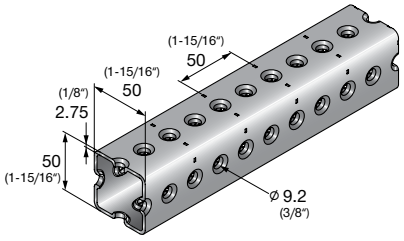
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	7,585 (33,735)	0.11 (0.27)	7,585 (33,735)	7,180 (31,935)	4,785 (21,280)
36 (91.4)	5,055 (22,485)	0.24 (0.60)	4,255 (18,925)	3,190 (14,185)	2,125 (9,450)
48 (121.9)	3,790 (16,855)	0.42 (1.07)	2,390 (10,630)	1,795 (7,980)	1,195 (5,315)
60 (152.4)	3,035 (13,500)	0.66 (1.68)	1,530 (6,805)	1,145 (5,090)	765 (3,400)
72 (182.9)	2,525 (11,230)	0.95 (2.41)	1,060 (4,715)	795 (3,535)	530 (2,355)
84 (213.4)	2,165 (9,630)	1.29 (3.28)	780 (3,465)	585 (2,600)	390 (1,730)
96 (243.8)	1,895 (8,425)	1.69 (4.29)	595 (2,645)	445 (1,975)	295 (1,310)
108 (274.3)	1,685 (7,495)	2.14 (5.43)	470 (2,090)	350 (1,555)	235 (1,045)
120 (304.8)	1,515 (6,735)	2.64 (6.70)	380 (1,690)	285 (1,265)	190 (845)
144 (365.8)	1,260 (5,600)	3.79 (9.63)	265 (1,175)	195 (865)	130 (575)
168 (426.7)	1,080 (4,800)	5.16 (13.10)	195 (865)	145 (640)	95 (420)
192 (487.7)	945 (4,200)	6.74 (17.11)	145 (640)	110 (485)	70 (310)
216 (548.6)	840 (3,735)	8.53 (21.66)	115 (510)	85 (375)	55 (240)
240 (609.6)	755 (3,355)	10.51 (26.70)	95 (420)	70 (310)	45 (200)

Table 48 - MT-70 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	12,310 (54,765)	30,510 (135,730)	30,020 (133,555)	29,230 (130,025)	28,285 (125,835)
36 (91.4)	11,735 (52,200)	29,340 (130,510)	28,285 (125,835)	26,630 (118,465)	24,240 (107,835)
48 (121.9)	10,900 (48,485)	27,770 (123,525)	26,025 (115,780)	22,795 (101,400)	19,775 (87,980)
60 (152.4)	8,985 (39,970)	25,865 (115,075)	22,795 (101,400)	19,005 (84,550)	15,225 (67,735)
72 (182.9)	8,105 (36,060)	23,160 (103,025)	19,775 (87,980)	15,225 (67,735)	11,040 (49,130)
84 (213.4)	7,225 (32,150)	20,735 (92,235)	16,715 (74,365)	11,685 (51,980)	8,110 (36,095)
96 (243.8)	6,375 (28,380)	18,240 (81,155)	13,770 (61,265)	8,945 (39,810)	6,210 (27,635)
108 (274.3)	5,555 (24,725)	15,780 (70,200)	11,040 (49,130)	7,070 (31.450)	4.910 (21.840)
120 (304.8)	4,860 (21,615)	13,420 (59,700)	8,945 (39,810)	5.720 (25.460)	3.970 (17.680)
144 (365.8)	3,785 (16,845)	9,410 (41,855)	6,210 (27,635)	3.970 (17.680)	**

Notes:

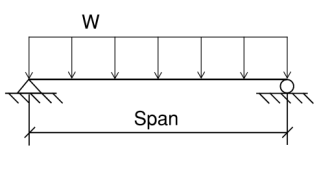
1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 2.63 lbs/ft (38.39 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at girder face assumes K value of 0.8.

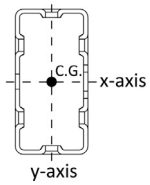


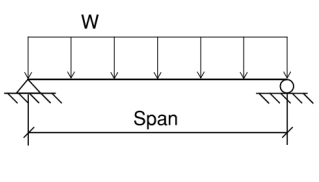
mm (in)

3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES







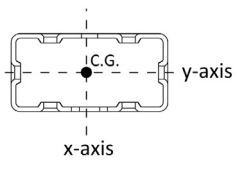


Table 49 - MT-80 Maximum Factored Beam Loads: X-axis Bending[1,2,3,4,5]

Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	20,935 (93,120)	0.05 (0.14)	20,935 (93,120)	20,935 (93,120)	20,935 (93,120)
36 (91.4)	13,955 (62,070)	0.12 (0.31)	13,955 (62,070)	13,955 (62,070)	11,570 (51,465)
48 (121.9)	10,465 (46,550)	0.21 (0.54)	10,465 (46,550)	9,760 (43,410)	6,505 (28,935)
60 (152.4)	8,370 (37,230)	0.33 (0.85)	8,330 (37,050)	6,245 (27,775)	4,165 (18,525)
72 (182.9)	6,975 (31,025)	0.48 (1.22)	5,785 (25,730)	4,335 (19,280)	2,890 (12,855)
84 (213.4)	5,980 (26,600)	0.66 (1.67)	4,250 (18,900)	3,185 (14,165)	2,125 (9,450)
96 (243.8)	5,230 (23,260)	0.86 (2.18)	3,250 (14,455)	2,440 (10,850)	1,625 (7,225)
108 (274.3)	4,650 (20,680)	1.08 (2.76)	2,570 (11,430)	1,925 (8,560)	1,285 (5,715)
120 (304.8)	4,185 (18,615)	1.34 (3.40)	2,080 (9,250)	1,560 (6,935)	1,040 (4,625)
144 (365.8)	3,485 (15,500)	1.93 (4.90)	1,445 (6,425)	1,080 (4,800)	720 (3,200)
168 (426.7)	2,990 (13,300)	2.63 (6.67)	1,060 (4,715)	795 (3,535)	530 (2,355)
192 (487.7)	2,615 (11,630)	3.43 (8.71)	810 (3,600)	610 (2,710)	405 (1,800)
216 (548.6)	2,325 (10,340)	4.34 (11.02)	640 (2,845)	480 (2,135)	320 (1,420)
240 (609.6)	2,090 (9,295)	5.35 (13.59)	520 (2,310)	390 (1,730)	260 (1,155)

Table 50 - MT-80 Maximum Factored Beam Loads: Y-axis Bending[1,2,3,4,5]

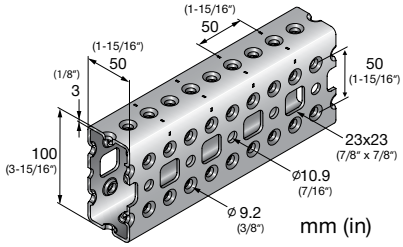
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	10,535 (46,860)	0.03 (0.07)	10,535 (46,860)	10,535 (46,860)	7,045 (31,335)
36 (91.4)	7,025 (31,245)	0.06 (0.15)	6,265 (27,865)	4,695 (20,880)	3,130 (13,920)
48 (121.9)	5,265 (23,415)	0.11 (0.27)	3,520 (15,655)	2,640 (11,740)	1,760 (7,825)
60 (152.4)	4,215 (18,745)	0.17 (0.43)	2,255 (10,030)	1,690 (7,515)	1,125 (5,000)
72 (182.9)	3,510 (15,610)	0.24 (0.62)	1,565 (6,960)	1,170 (5,200)	780 (3,465)
84 (213.4)	3,010 (13,385)	0.33 (0.84)	1,150 (5,115)	860 (3,825)	575 (2,555)
96 (243.8)	2,630 (11,695)	0.43 (1.09)	880 (3,910)	660 (2,935)	440 (1,955)
108 (274.3)	2,340 (10,405)	0.55 (1.39)	695 (3,090)	520 (2,310)	345 (1,530)
120 (304.8)	2,105 (9,360)	0.67 (1.71)	560 (2,490)	420 (1,865)	280 (1,245)
144 (365.8)	1,755 (7,805)	0.97 (2.47)	390 (1,730)	290 (1,285)	195 (865)
168 (426.7)	1,505 (6,690)	1.32 (3.36)	285 (1,265)	215 (955)	140 (620)
192 (487.7)	1,315 (5,845)	1.72 (4.38)	220 (975)	165 (730)	110 (485)
216 (548.6)	1,170 (5,200)	2.18 (5.55)	170 (755)	130 (575)	85 (375)
240 (609.6)	1,050 (4,670)	2.69 (6.83)	140 (620)	105 (465)	70 (310)

Table 51 - MT-80 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	17,020 (75,710)	42,875 (190,725)	42,875 (190,725)	42,875 (190,725)	42,875 (190,725)
36 (91.4)	16,615 (73,920)	42,875 (190,725)	42,875 (190,725)	42,875 (190,725)	42,045 (187,035)
48 (121.9)	16,070 (71,485)	42,875 (190,725)	42,875 (190,725)	39,835 (177,200)	34,205 (152,160)
60 (152.4)	15,015 (66,805)	42,875 (190,725)	39,835 (177,200)	32,960 (146,615)	26,760 (119,040)
72 (182.9)	12,365 (55,025)	40,405 (179,735)	34,205 (152,160)	26,760 (119,040)	19,785 (88,010)
84 (213.4)	11,185 (49,770)	35,755 (159,045)	29,220 (130,000)	20,920 (93,070)	14,535 (64,660)
96 (243.8)	10,020 (44,580)	31,715 (141,080)	24,360 (108,375)	16,025 (71,290)	11,130 (49,510)
108 (274.3)	8,870 (39,460)	27,675 (123,110)	19,785 (88,010)	12,660 (56,335)	8,790 (39,105)
120 (304.8)	7,830 (34,845)	23,770 (105,750)	16,025 (71,290)	10,250 (45,605)	7,120 (31,675)
144 (365.8)	6,190 (27,540)	16,860 (75,005)	11,130 (49,510)	7,120 (31,675)	**

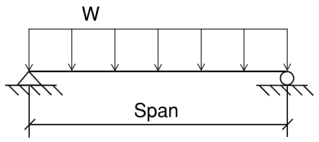
Notes:

1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 4.43 lbs/ft (64.67 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at girder face assumes K value of 0.8.



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3.1.2 MT BEAM AND COLUMN LOAD TABLES



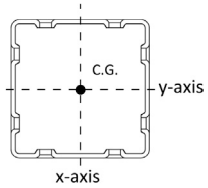


Table 52 - MT-90 Maximum Factored Beam Loads: X-axis and Y-axis Bending[1,2,3,4,5]

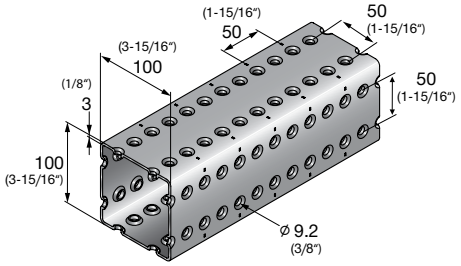
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	30,935 (137,605)	0.05 (0.12)	30,935 (137,605)	30,935 (137,605)	30,935 (137,605)
36 (91.4)	20,620 (91,720)	0.11 (0.28)	20,620 (91,720)	20,620 (91,720)	18,735 (83,335)
48 (121.9)	15,465 (68,790)	0.20 (0.50)	15,465 (68,790)	15,465 (68,790)	10,535 (46,860)
60 (152.4)	12,370 (55,020)	0.31 (0.78)	12,370 (55,020)	10,115 (44,990)	6,745 (30,000)
72 (182.9)	10,310 (45,860)	0.44 (1.12)	9,365 (41,655)	7,025 (31,245)	4,680 (20,815)
84 (213.4)	8,835 (39,295)	0.60 (1.52)	6,880 (30,600)	5,160 (22,950)	3,440 (15,300)
96 (243.8)	7,730 (34,380)	0.78 (1.99)	5,265 (23,415)	3,950 (17,570)	2,630 (11,695)
108 (274.3)	6,870 (30,555)	0.99 (2.51)	4,160 (18,500)	3,120 (13,875)	2,080 (9,250)
120 (304.8)	6,185 (27,510)	1.22 (3.11)	3,370 (14,990)	2,525 (11,230)	1,685 (7,495)
144 (365.8)	5,155 (22,930)	1.76 (4.47)	2,340 (10,405)	1,755 (7,805)	1,170 (5,200)
168 (426.7)	4,415 (19,635)	2.39 (6.08)	1,720 (7,650)	1,290 (5,735)	860 (3,825)
192 (487.7)	3,865 (17,190)	3.13 (7.95)	1,315 (5,845)	985 (4,380)	655 (2,910)
216 (548.6)	3,435 (15,275)	3.96 (10.06)	1,040 (4,625)	780 (3,465)	520 (2,310)
240 (609.6)	3,090 (13,740)	4.89 (12.41)	840 (3,735)	630 (2,800)	420 (1,865)

Table 53 - MT-90 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	25,920 (115,295)	64,855 (288,500)	64,855 (288,500)	64,855 (288,500)	64,855 (288,500)
36 (91.4)	25,715 (114,395)	64,855 (288,500)	64,855 (288,500)	64,855 (288,500)	64,855 (288,500)
48 (121.9)	25,455 (113,245)	64,855 (288,500)	64,855 (288,500)	64,855 (288,500)	64,610 (287,410)
60 (152.4)	25,155 (111,905)	64,855 (288,500)	64,855 (288,500)	64,035 (284,850)	60,890 (270,850)
72 (182.9)	24,780 (110,235)	64,855 (288,500)	64,610 (287,410)	60,890 (270,850)	55,935 (248,820)
84 (213.4)	24,015 (106,845)	64,855 (288,500)	62,200 (276,675)	56,705 (252,245)	51,110 (227,355)
96 (243.8)	23,180 (103,130)	63,430 (282,155)	59,520 (264,770)	52,750 (234,660)	46,065 (204,905)
108 (274.3)	20,790 (92,495)	61,385 (273,060)	55,935 (248,820)	48,605 (216,210)	40,935 (182,105)
120 (304.8)	19,915 (88,585)	59,165 (263,200)	52,750 (234,660)	44,355 (197,320)	35,880 (159,620)
144 (365.8)	18,085 (80,450)	53,565 (238,280)	46,065 (204,905)	35,880 (159,620)	26,385 (117,375)
168 (426.7)	16,240 (72,255)	48,185 (214,355)	39,240 (174,545)	27,910 (124,165)	19,385 (86,250)
192 (487.7)	14,425 (64,185)	42,645 (189,695)	32,615 (145,080)	21,375 (95,085)	14,835 (66,005)
216 (548.6)	12,670 (56,365)	37,135 (165,190)	26,385 (117,375)	16,880 (75,105)	11,725 (52,175)
240 (609.6)	11,130 (49,510)	31,815 (141,525)	21,375 (95,085)	13,680 (60,850)	9,495 (42,245)

Notes:

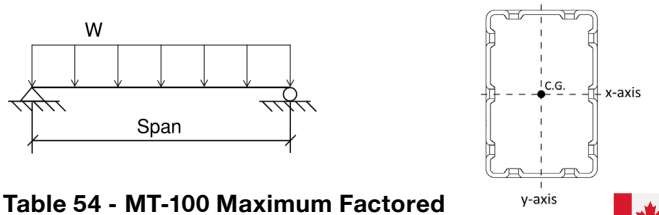
1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 6.01 lbs/ft (87.74 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at girder face assumes K value of 0.8.



mm (in)

3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES



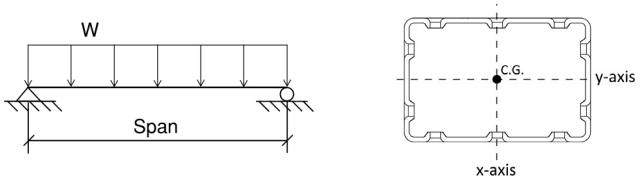


Table 54 - MT-100 Maximum Factored Beam Loads: X-axis Bending[1,2,3,4,5]

Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	67,500 (300,250)	0.03 (0.09)	67,500 (300,250)	67,500 (300,250)	67,500 (300,250)
36 (91.4)	45,000 (200,165)	0.08 (0.20)	45,000 (200,165)	45,000 (200,165)	45,000 (200,165)
48 (121.9)	33,750 (150,125)	0.14 (0.35)	33,750 (150,125)	33,750 (150,125)	32,845 (146,100)
60 (152.4)	27,000 (120,100)	0.21 (0.54)	27,000 (120,100)	27,000 (120,100)	21,020 (93,500)
72 (182.9)	22,500 (100,080)	0.31 (0.78)	22,500 (100,080)	21,895 (97,390)	14,595 (64,920)
84 (213.4)	19,285 (85,780)	0.42 (1.07)	19,285 (85,780)	16,085 (71,545)	10,725 (47,705)
96 (243.8)	16,875 (75,060)	0.55 (1.39)	16,420 (73,035)	12,315 (54,775)	8,210 (36,515)
108 (274.3)	15,000 (66,720)	0.69 (1.76)	12,975 (57,715)	9,730 (43,280)	6,485 (28,845)
120 (304.8)	13,500 (60,050)	0.86 (2.17)	10,510 (46,750)	7,880 (35,050)	5,255 (23,375)
144 (365.8)	11,250 (50,040)	1.23 (3.13)	7,295 (32,445)	5,470 (24,330)	3,645 (16,210)
168 (426.7)	9,640 (42,880)	1.68 (4.26)	5,360 (23,840)	4,020 (17,880)	2,680 (11,920)
192 (487.7)	8,435 (37,520)	2.19 (5.57)	4,105 (18,255)	3,075 (13,675)	2,050 (9,115)
216 (548.6)	7,500 (33,360)	2.77 (7.05)	3,240 (14,410)	2,430 (10,805)	1,620 (7,205)
240 (609.6)	6,750 (30,025)	3.42 (8.70)	2,625 (11,675)	1,970 (8,760)	1,310 (5,825)

Table 55 - MT-100 Maximum Factored Beam Loads: Y-axis Bending[1,2,3,4,5]

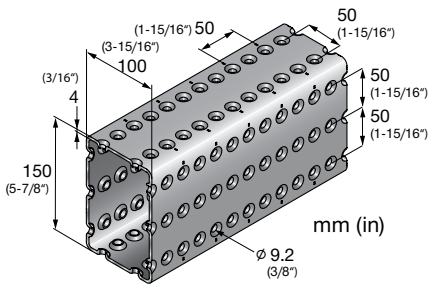
Span in (cm)	Max Factored Uniform Load lbs (N)	Defl. At Max Uniform Load in (cm)	Uniform Loading at Deflection		
			Span/180 lbs (N)	Span/240 lbs (N)	Span/360 lbs (N)
24 (61.0)	51,055 (227,100)	0.05 (0.12)	51,055 (227,100)	51,055 (227,100)	51,055 (227,100)
36 (91.4)	34,035 (151,390)	0.11 (0.27)	34,035 (151,390)	34,035 (151,390)	31,440 (139,850)
48 (121.9)	25,525 (113,540)	0.19 (0.49)	25,525 (113,540)	25,525 (113,540)	17,685 (78,665)
60 (152.4)	20,420 (90,830)	0.30 (0.76)	20,420 (90,830)	16,975 (75,505)	11,315 (50,330)
72 (182.9)	17,015 (75,685)	0.43 (1.10)	15,720 (69,925)	11,790 (52,440)	7,860 (34,960)
84 (213.4)	14,585 (64,875)	0.59 (1.50)	11,550 (51,375)	8,660 (38,520)	5,775 (25,685)
96 (243.8)	12,760 (56,755)	0.77 (1.95)	8,840 (39,320)	6,630 (29,490)	4,420 (19,660)
108 (274.3)	11,345 (50,460)	0.97 (2.47)	6,985 (31,070)	5,240 (23,305)	3,490 (15,520)
120 (304.8)	10,210 (45,415)	1.20 (3.05)	5,655 (25,150)	4,240 (18,860)	2,825 (12,565)
144 (365.8)	8,505 (37,830)	1.73 (4.40)	3,930 (17,480)	2,945 (13,095)	1,965 (8,740)
168 (426.7)	7,290 (32,425)	2.36 (5.98)	2,885 (12,830)	2,165 (9,630)	1,440 (6,405)
192 (487.7)	6,380 (28,375)	3.08 (7.82)	2,210 (9,830)	1,655 (7,360)	1,105 (4,915)
216 (548.6)	5,670 (25,220)	3.90 (9.89)	1,745 (7,760)	1,310 (5,825)	870 (3,865)
240 (609.6)	5,105 (22,705)	4.81 (12.22)	1,410 (6,270)	1,060 (4,715)	705 (3,135)

Table 56 - MT-100 Maximum Factored Column Loads[1,2,6,7,8]

Unbraced Height in (cm)	Max Factored Load at Girder Face lbs (N)	Maximum Column Load Applied at C.G.			
		K = 0.65 lbs (N)	K = 0.80 lbs (N)	K = 1.0 lbs (N)	K = 1.2 lbs (N)
24 (61.0)	37,180 (165,385)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)
36 (91.4)	37,065 (164,875)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)
48 (121.9)	36,960 (164,430)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)
60 (152.4)	36,705 (163,270)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)
72 (182.9)	36,460 (162,180)	96,880 (430,950)	96,880 (430,950)	96,880 (430,950)	94,665 (421,085)
84 (213.4)	36,215 (161,095)	96,880 (430,950)	96,880 (430,950)	95,875 (426,475)	87,090 (387,400)
96 (243.8)	35,855 (159,495)	96,880 (430,950)	96,880 (430,950)	89,675 (398,895)	79,095 (351,845)
108 (274.3)	34,990 (155,650)	96,880 (430,950)	94,665 (421,085)	83,130 (369,780)	70,920 (315,465)
120 (304.8)	33,925 (150,905)	96,880 (430,950)	89,675 (398,895)	76,380 (339,770)	62,780 (279,275)
144 (365.8)	31,605 (140,595)	90,940 (404,535)	78,320 (348,390)	62,780 (279,275)	47,340 (210,575)
168 (426.7)	29,085 (129,385)	82,460 (366,805)	68,195 (303,360)	49,795 (221,495)	34,800 (154,815)
192 (487.7)	26,420 (117,535)	73,655 (327,640)	57,470 (255,640)	38,375 (170,700)	26,645 (118,530)
216 (548.6)	23,700 (105,430)	64,800 (288,240)	47,340 (210,575)	30,315 (134,865)	21,050 (93,645)
240 (609.6)	20,995 (93,385)	56,160 (249,805)	38,375 (170,700)	24,555 (109,240)	17,055 (75,870)

Notes:

1. Loads are based on ICC-ES ELC-5019 and CSA S136-16, the North American Specification for the Design of Cold-Formed Steel Structural Members (using the Appendix B provisions applicable to Canada), CSA Group.
2. Resistance factors for flexure and compression are 0.90 and 0.80, respectively.
3. Maximum factored beam loads in table are given in total uniform load (W * Span) and based on a uniformly loaded condition with simply supported ends. For other loading and support conditions, see page 32 for applicable load and deflection modification factors.
4. Beams spans in table are assumed to be sufficiently laterally braced. Unbraced spans may reduce beam load carrying capacity. See page 49 for reduction factors for unbraced conditions.
5. Profile weight, 10.0 lbs/ft (145.99 N/m), must be deducted from maximum factored beam load values.
6. C.G. is the 'Center of Gravity' of the cross section.
7. ** indicates KL/r for compression exceeds 200.
8. Maximum factored load at girder face assumes K value of 0.8.



3.0 MODULAR SUPPORT SYSTEM

3.1.2 MT BEAM AND COLUMN LOAD TABLES

Table 57 - MT Beam Load Reduction Factors for Laterally Unbraced Channels[1,2,3,4]

Span in (cm)	MT-20		MT-30		MT-50		MT-60	
	x-axis	y-axis	x-axis	y-axis	x-axis	y-axis	x-axis	y-axis
12 (30.5)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
24 (51.0)	1.00	1.00	1.00	1.00	0.93	1.00	0.91	1.00
36 (91.4)	0.98	1.00	0.86	0.90	0.79	0.95	0.89	1.00
48 (121.9)	0.90	1.00	0.86	0.81	0.75	0.90	0.76	1.00
60 (152.4)	0.83	1.00	0.83	0.71	0.70	0.69	0.64	1.00
72 (182.9)	0.77	0.95	0.81	0.62	0.66	0.69	0.54	1.00
84 (213.3)	-	-	0.78	0.53	0.63	0.69	0.46	0.99
96 (243.8)	-	-	0.76	0.45	0.59	0.69	0.41	0.97
108 (274.3)	-	-	0.74	0.40	0.57	0.69	0.37	0.94
120 (304.8)	-	-	0.72	0.35	0.54	0.67	0.35	0.92
144 (365.8)	-	-	0.69	0.29	0.49	0.60	0.31	0.86
168 (426.7)	-	-	0.65	0.25	0.44	0.53	0.28	0.79
192 (487.7)	-	-	0.61	0.22	0.41	0.46	0.26	0.73
216 (548.6)	-	-	0.58	0.19	0.38	0.41	0.24	0.68
240 (609.6)	-	-	0.54	0.17	0.35	0.36	0.23	0.62

1. Linear interpolation is not permitted.
2. Reduction factors in table are based on loading through the shear center of the cross section. The impact of torsion is not accounted for in these values.
3. Reduction factors are to be applied to the tabulated beam load values for fully braced spans. Additional modification factors based on loading and support conditions may apply per Table 12 on page 32.
4. Tabulated values conservatively assume a value for the lateral torsional-buckling modification factor, C_b, of 1.0.

Table 58 - MT Beam Load Reduction Factors for Laterally Unbraced Girders[1,2]

Span in (cm)	MT-70	MT-80	MT-90	MT-100
	x- and y-axis	x- and y-axis	x- and y-axis	x- and y-axis
24 (51.0)	1.00	1.00	1.00	1.00
36 (91.4)	1.00	1.00	1.00	1.00
48 (121.9)	1.00	1.00	1.00	1.00
60 (152.4)	1.00	1.00	1.00	1.00
72 (182.9)	1.00	1.00	1.00	1.00
84 (213.3)	1.00	1.00	1.00	1.00
96 (243.8)	1.00	1.00	1.00	1.00
108 (274.3)	1.00	1.00	1.00	1.00
120 (304.8)	1.00	1.00	1.00	1.00
144 (365.8)	1.00	1.00	1.00	1.00
168 (426.7)	1.00	1.00	1.00	1.00
192 (487.7)	1.00	1.00	1.00	1.00
216 (548.6)	1.00	1.00	1.00	1.00
240 (609.6)	1.00	1.00	1.00	1.00

1. No reductions to the published allowable MT beam load capacities herein are required for unbraced girder spans up to 240 inches.
2. Additional modification factors based on loading and support conditions may apply per Table 12 on page 32.

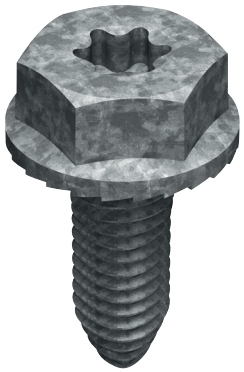
3.0 MODULAR SUPPORT SYSTEM

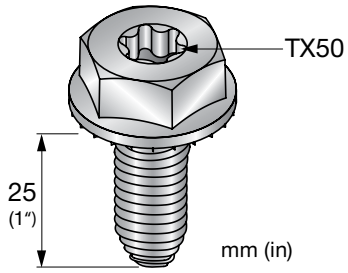
3.2.1 MT CONNECTION MECHANISMS

MT-TFB OC

Description

Thread forming bolt for MT-70, MT-80, MT-90, and MT-100 connection. Thread forming bolt is fastened using the TX-50 or an 11/16" diameter socket.





Approvals / Listings

City of Los Angeles	City of Los Angeles 2020 LABC LARR 26181
European Technical Assessment	ETA-21/1017

Material Specifications

F_y, ksi (MPa)	F_u, ksi (MPa)
136.34 (940)	150.84 (1,040)

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-TFB OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-TFB OC	0.07 (0.03)	250	2272084

Figure 1 - MT Connection

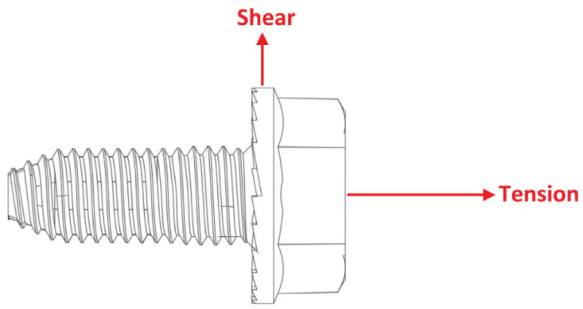


Table 59 - Allowable Strength Design (ASD) Load Data[1,2,3]

Tension lb (kN)	Shear lb (kN)
1,650 (7.33)	2,550 (11.33)

1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance factor Design (LRFD) values.
3. See Figure 1.

Table 60 - Limit State Design (LSD) Load Data[1,2]

Tension lb (kN)	Shear lb (kN)
2,140 (9.53)	3,310 (14.73)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. See Figure 1.

3.0 MODULAR SUPPORT SYSTEM

3.2.1 MT CONNECTION MECHANISMS

MT-TL M10 + MT TLB

Description

Twist lock and bolt for channel connection system.

Approvals / Listings

City of Los Angeles	City of Los Angeles 2020 LABC LARR 26181
European Technical Assessment	ETA-21/1017

Material Specifications

F_y, ksi (MPa)	F_u, ksi (MPa)
92.82 (640)	116.03 (800)

Corrosion Protection

Electro-Galvanized (EG)

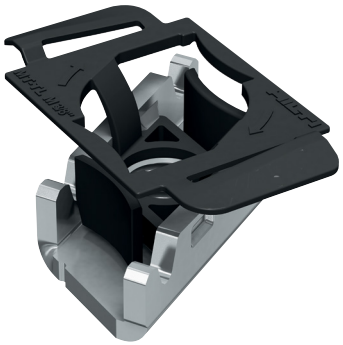
MT-TL M10
MT-TLB
MT-TLB 30

Hot-Dipped Galvanized (HDG)

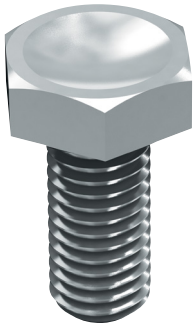
MT-TL M10 OC
MT-TLB OC
MT-TLB 30 OC

Ordering Information

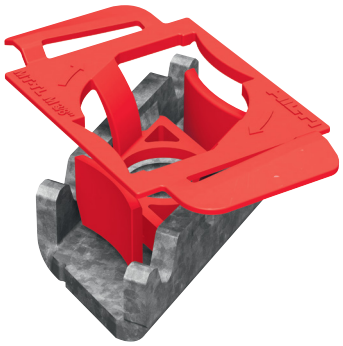
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-TL M10	0.07 (0.03)	50	2272080
MT-TL M10 OC	0.07 (0.03)	50	2272082
MT-TLB	0.06 (0.03)	200	2273254
MT-TLB 30	0.06 (0.03)	200	2282190
MT-TLB OC	0.06 (0.03)	200	2273256
MT-TLB 30 OC	0.06 (0.03)	200	2282191



MT-TL M10



MT-TLB / MT-TLB 30



MT-TL M10 OC



MT-TLB OC / MT-TLB 30 OC

Figure 2 - MT-TL with MT-TLB Connection

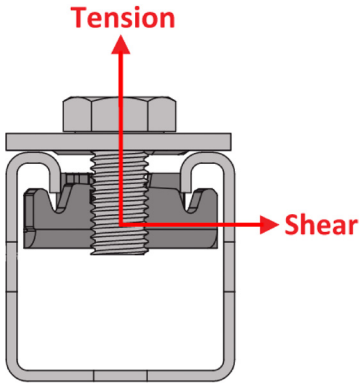


Table 61 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

Description	Tension lb (kN)	Shear lb (kN)
MT-TL M10 OC	1,125 (5.00)	1,010 (4.50)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values in table are for MT-TL M10 with MT-TLB.
4. See Figure 2.

Table 62 - Limit State Design (LSD) Load Data[1,2,3]

Description	Tension lb (kN)	Shear lb (kN)
MT-TL M10 OC	1,570 (6.96)	1,410 (6.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.5.
2. Tabulated values in table are for MT-TL M10 with MT-TLB.
3. See Figure 2.

3.0 MODULAR SUPPORT SYSTEM

3.2.1 MT CONNECTION MECHANISMS

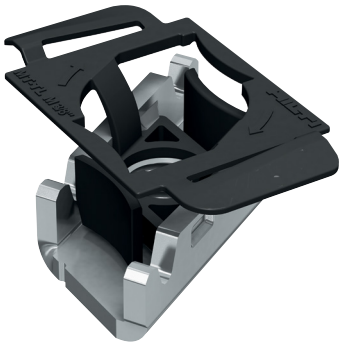
MT-TL 3/8" AND 1/2"

Description

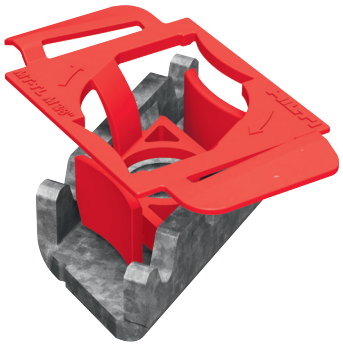
Twist lock – for threaded rod to channel connection. MT-TL 3/8 and MT-TL 1/2 are valid for media fixation only and are not compatible with MT connectors.

Approvals / Listings

City of Los Angeles	City of Los Angeles 2020 LABC LARR 26181
European Technical Assessment	ETA-21/1017



MT-TL 3/8
MT-TL 1/2



MT-TL 3/8 OC
MT-TL 1/2 OC

Corrosion Protection

Electro-Galvanized (EG)

MT-TL 3/8
MT-TL 1/2

Hot-Dipped Galvanized (HDG)

MT-TL 3/8 OC
MT-TL 1/2 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-TL 3/8	0.07 (0.03)	50	2273636
MT-TL 3/8 OC	0.07 (0.03)	50	2273637
MT-TL 1/2	0.07 (0.03)	30	2273638
MT-TL 1/2 OC	0.07 (0.03)	30	2273639

Figure 3 - MT-TL with Threaded Rod Connection

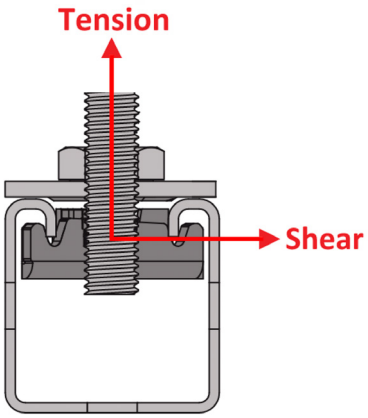


Table 63 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

Description	Tension lb (kN)	Shear lb (kN)
MT-TL 3/8 OC	1,125 (5.00)	1,010 (4.50)
MT-TL 1/2 OC	1,125 (5.00)	1,010 (4.50)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Loads are for twist-lock mechanism only. Design professional is responsible for checking threaded rod strength.
4 See Figure 3.

Table 64 - Limit State Design (LSD) Load Data[1,2,3]

Description	Tension lb (kN)	Shear lb (kN)
MT-TL 3/8 OC	1,570 (6.96)	1,410 (6.26)
MT-TL 1/2 OC	1,570 (6.96)	1,410 (6.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. Loads are for twist-lock mechanism only. Design professional is responsible for checking threaded rod strength.
3. See Figure 3.

3.0 MODULAR SUPPORT SYSTEM

3.2.1 MT CONNECTION MECHANISMS

MT-CTAB

Description

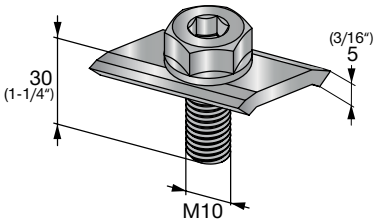
Screw for channel connections. MT-CTAB screw is fastened using the TX-50 or an 11/16" (17 mm) diameter socket.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
EN-10025-2	S235 JR	34.08 (235)	53.66 (370)

1. Mechanical properties of EN-10025-2 Grade S235 JR meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.





mm (in)

Corrosion Protection

Electro-Galvanized (EG)

MT-CTAB

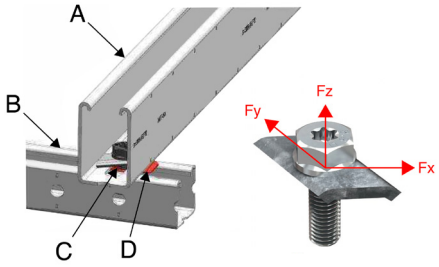
Hot-Dipped Galvanized (HDG)

MT-CTAB OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CTAB	0.11 (0.05)	100	2332797
MT-CTAB OC	0.11 (0.05)	100	2332788

Figure 4 - MT Channel Connection



A. MT-30/50/60
B. MT-40D
C. MT-CTAB
D. MT-TL

Table 65 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
415 (1.86)	505 (2.26)	1,405 (6.25)

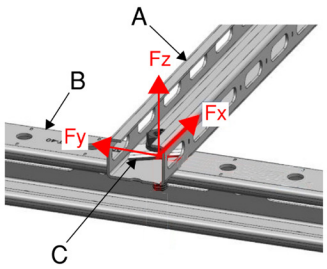
1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 4.

Table 66 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
525 (2.35)	810 (3.61)	1,850 (8.23)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. See Figure 4.

Figure 5 - MT Channel Connection



A. MT-30/50/60
B. MT-50/60
C. MT-CTAB

Table 67 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
505 (2.26)	505 (2.26)	1,405 (6.25)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 5.

Table 68 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
810 (3.61)	810 (3.61)	1,850 (8.23)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. See Figure 5.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-L

Description

1-hole base plate for channel-to-concrete or channel-to-steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-B-L

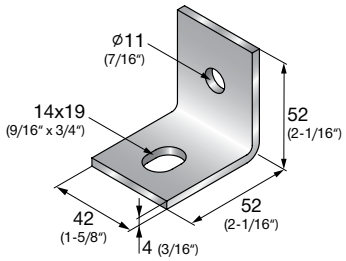
Hot-Dipped Galvanized (HDG)

MT-B-L OC

Ordering Information

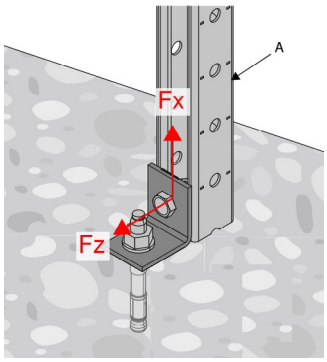
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-L	0.27 (0.12)	20	2272086
MT-B-L OC	0.27 (0.12)	20	2272088





mm (in)

Figure 6 - MT Channel Anchoring to Concrete



A. MT-30/50/60/40D

Table 69 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_z lb (kN)
975 (4.35)	975 (4.35)

1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance factor Design (LRFD) values.
3. See Figure 6.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 70 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_z lb (kN)
1,290 (5.74)	1,290 (5.74)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. See Figure 6.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-T

Description

2-hole 'T' base plate for channel-to-concrete or channel-to-steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-B-T

Hot-Dipped Galvanized (HDG)

MT-B-T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-T	1.25 (0.57)	20	2272090
MT-B-T OC	1.25 (0.57)	20	2272092



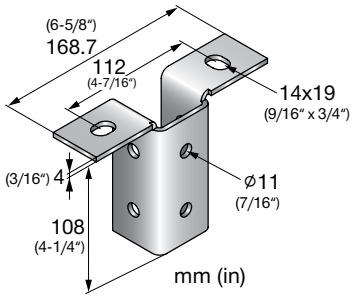
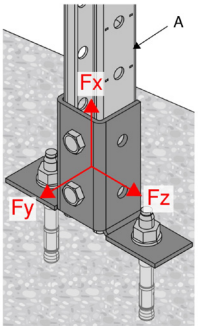


Figure 7 - MT Concentric Channel Connection



A. MT-30/50/60/40D

Table 71 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,400 (6.24)	725 (3.23)	225 (1.01)

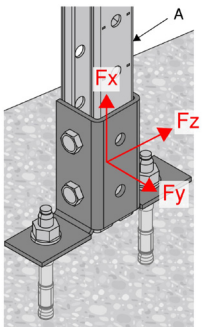
1. Minimum safety factor, Ω, for tabulated values is 3.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 7.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 72 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,890 (8.42)	1,005 (4.49)	310 (1.40)

1. Maximum resistance factor, Φ, for tabulated values is 0.45.
2. See Figure 7.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Figure 8 - MT Eccentric Channel Connection



A. MT-50

Table 73 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,450 (6.46)	225 (1.01)	725 (3.23)

1. Minimum safety factor, Ω, for tabulated values is 3.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 8.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 74 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,960 (8.72)	310 (1.40)	1,005 (4.49)

1. Maximum resistance factor, Φ, for tabulated values is 0.45.
2. See Figure 8.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-O2

Description

2-hole base plate for channel-to-concrete or channel-to-steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

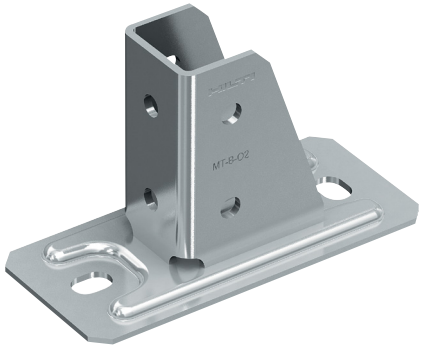
MT-B-O2

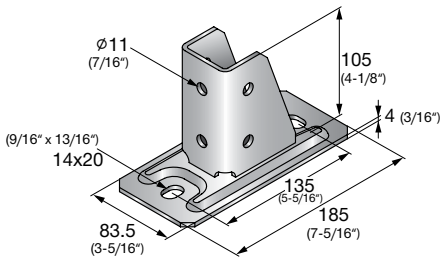
Hot-Dipped Galvanized (HDG)

MT-B-O2 OC

Ordering Information

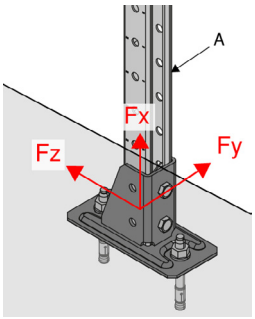
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-O2	2.27 (1.03)	12	2272094
MT-B-O2 OC	2.27 (1.03)	12	2272096





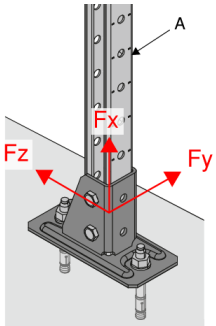
mm (in)

Figure 9 - MT Concentric Channel Connection



A. MT-30/50/60/40D

Figure 10 - MT Eccentric Channel Connection



A. MT-50

Table 75 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
2,105 (9.38)	350 (1.56)	980 (4.36)	720 (0.98)

1. Minimum safety factor, Ω, for tabulated values is 2.35.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 9.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 76 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
2,775 (12.35)	490 (2.18)	1,250 (5.57)	925 (1.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. See Figure 9.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 77 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
2,105 (9.38)	350 (1.56)	240 (1.08)	255 (0.35)

1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 10.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 78 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
2,660 (11.85)	490 (2.18)	310 (1.40)	335 (0.46)

1. Maximum resistance factor, Φ, for tabulated values is 0.5.
2. See Figure 10.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-O4

Description

4-hole base plate for back-to-back channel attachment to concrete or steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

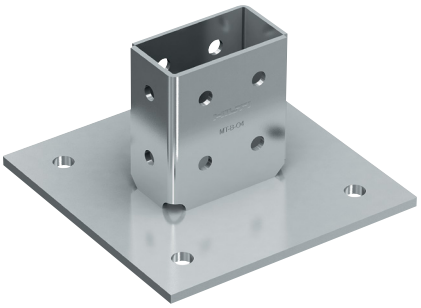
MT-B-O4

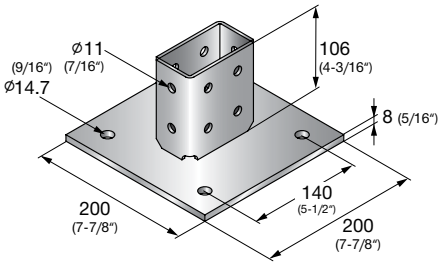
Hot-Dipped Galvanized (HDG)

MT-B-O4 OC

Ordering Information

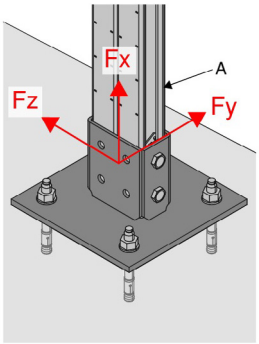
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-O4	7.28 (3.3)	4	2272098
MT-B-O4 OC	7.28 (3.3)	4	2272099





mm (in)

Figure 11 - MT Channel Anchoring to Concrete



A. MT-40D

Table 79 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
3,030 (13.50)	700 (3.12)	3,590 (15.98)	3,485 (4.73)	1,860 (2.53)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 11.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 80 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
4,095 (18.23)	945 (4.21)	4,665 (20.77)	5,015 (6.80)	2,645 (3.59)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. See Figure 11.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-O2B

Description

2-hole base plate for back-to-back channel-to-concrete or channel-to-steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

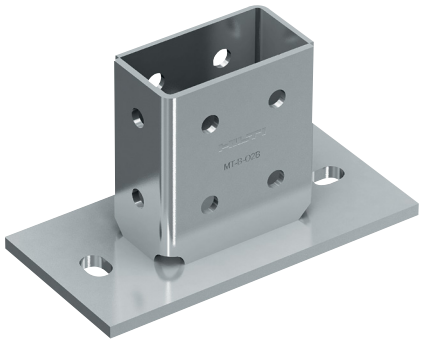
MT-B-O2B

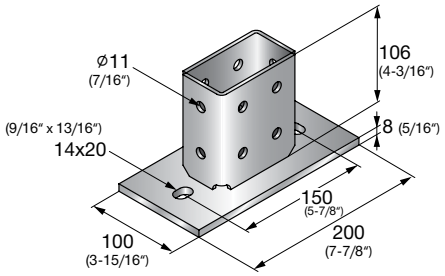
Hot-Dipped Galvanized (HDG)

MT-B-O2B OC

Ordering Information

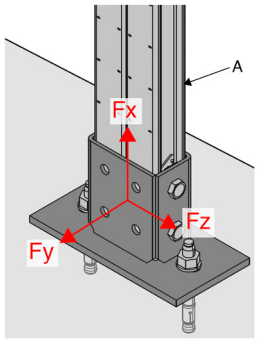
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-O2B	4.54 (2.06)	6	2282212
MT-B-O2B OC	4.54 (2.06)	6	2282213





mm (in)

Figure 12 - MT Channel Anchoring to Concrete



A. MT-40D

Table 81 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
3,030 (13.50)	700 (3.12)	3,590 (15.98)	600 (0.82)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 12.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 82 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
4,095 (18.23)	945 (4.21)	4,665 (20.77)	815 (1.11)

1. Maximum resistance factor, Φ, for tabulated values is 0.65.
2. See Figure 12.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM
3.2.2 MT BASE CONNECTORS
MT-B-GS T OC

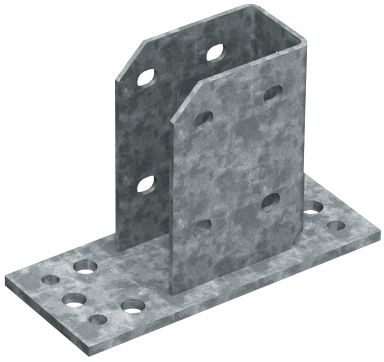
Description

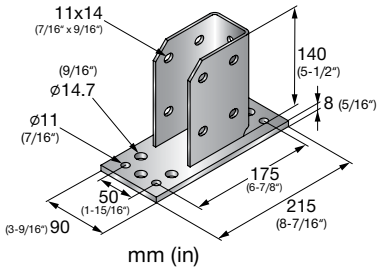
Base connector for anchoring MT-70 and MT-80 girder structures to concrete and steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.





Corrosion Protection

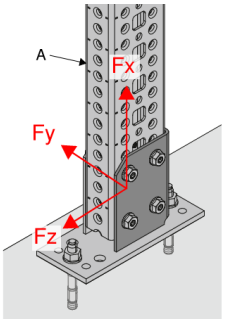
Hot-Dipped Galvanized (HDG)

MT-B-GS T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GS T OC	4.78 (2.17)	2	2272100

Figure 13 - MT Girder Anchoring to Concrete



A. MT-70/80

Table 83 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
4,950 (22.03)	2,695 (12.00)	3,615 (16.1)	815 (1.11)

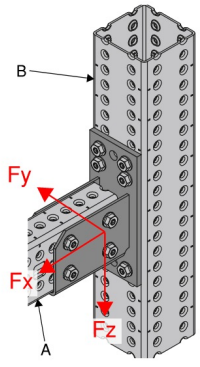
1. Minimum safety factor, Ω for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Load values are for base connector only. The design professional is responsible for checking concrete and fastener strength.
4. See Figure 13.

Table 84 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
7,025 (31.27)	3,525 (15.70)	5,125 (22.80)	1,230 (1.67)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. Load values are for base connector only. The design professional is responsible for checking concrete and fastener strength.
3. See Figure 13.

Figure 14 - MT Girder-to-Girder Connection



A. MT-70/80
B. MT-90/100

Table 85 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
4,235 (18.84)	1,870 (8.32)	3,120 (13.89)	800 (1.09)

1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 14.

Table 86 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
6,010 (26.74)	2,810 (12.51)	4,360 (19.40)	1,205 (1.64)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. See Figure 14.

3.0 MODULAR SUPPORT SYSTEM
3.2.2 MT BASE CONNECTORS
MT-B-GS O4U OC

Description

4-hole base plate for MT-70 and MT-80 girder to concrete.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

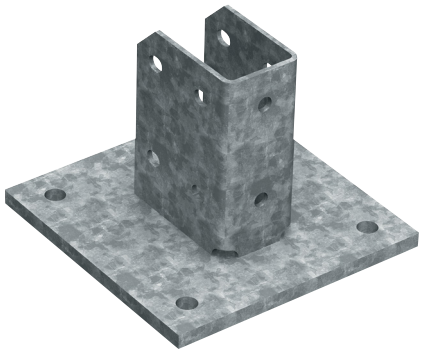
Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-B-GS O4U OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GS O4U OC	10.36 (4.7)	4	2272101



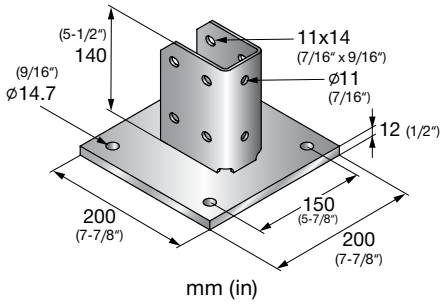
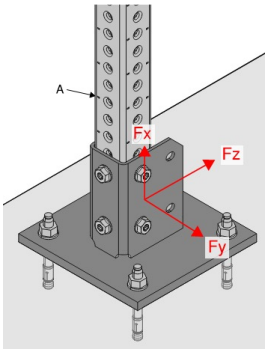


Figure 15 - MT Girder Anchoring to Concrete



A. MT-70/80

Table 87 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
12,115 (53.89)	2,610 (11.62)	3,005 (13.38)	1,010 (1.37)	830 (1.13)

1. Minimum safety factor, Ω, for tabulated values is 2.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 15.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 88 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
15,750 (70.06)	3,395 (15.11)	3,910 (17.40)	1,435 (1.95)	1,080 (1.47)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. See Figure 15.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

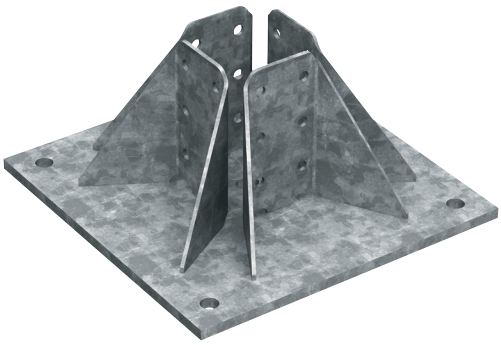
3.0 MODULAR SUPPORT SYSTEM

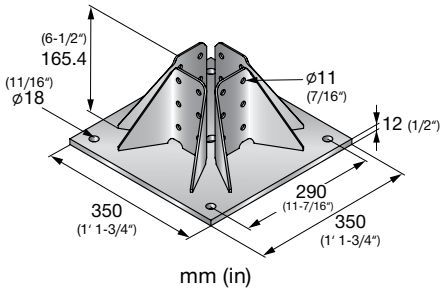
3.2.2 MT BASE CONNECTORS

MT-B-GL O4 OC

Description

4-hole base plate for MT-90 girder-to-concrete.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

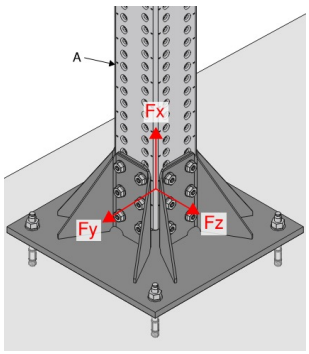
Hot-Dipped Galvanized (HDG)

MT-B-GL O4 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GL O4 OC	30.86 (14)	1	2272103

Figure 16 - MT Girder Anchoring to Concrete



A. MT-90

Table 89 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
27,175 (120.9)	12,265 (54.56)	12,265 (54.56)	5,560 (7.54)	5,560 (7.54)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 16.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 90 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
38,505 (171.3)	17,375 (77.29)	17,375 (77.29)	7,845 (10.64)	7,845 (10.64)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. See Figure 16.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-GXL O4 OC

Description

4-hole base plate for MT-100 girder structures to concrete.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

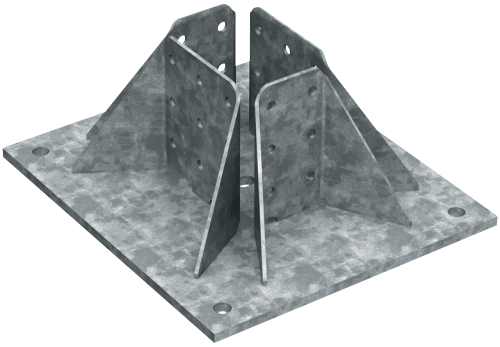
Corrosion Protection

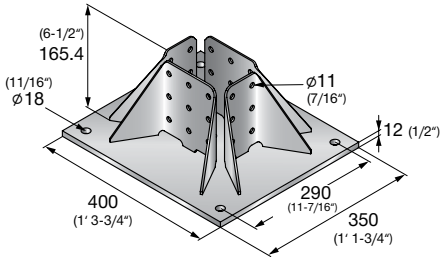
Hot-Dipped Galvanized (HDG)

MT-B-GXL O4 OC

Ordering Information

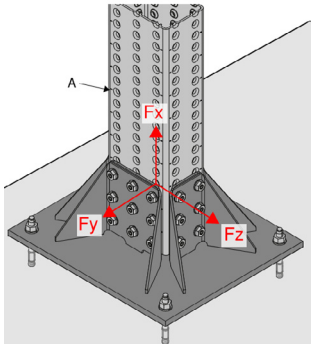
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GXL O4 OC	30.86 (14)	1	2272104





mm (in)

Figure 17 - MT Girder Anchoring to Concrete



A. MT-100

Table 91 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
32,340 (143.9)	19,470 (86.63)	20,750 (92.32)	13,050 (17.70)	8,640 (11.72)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 17.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 92 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
45,860 (204.0)	27,580 (122.7)	29,380 (130.7)	16,980 (23.02)	11,240 (15.24)

1. Maximum resistance factor, Φ, for tabulated values is 0.70.
2. See Figure 17.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-GXL S1 OC

Description

Base plate for fixation of MT-90 and MT-100 girder structures to 3.1"-6.9" steel flange widths (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

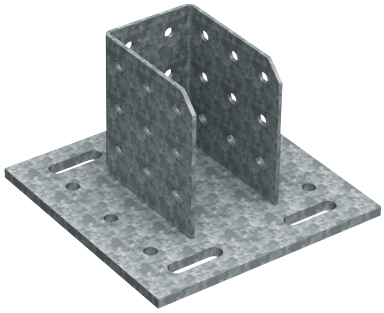
Corrosion Protection

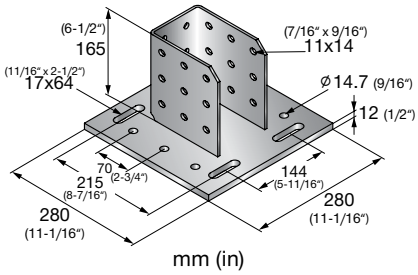
Hot-Dipped Galvanized (HDG)

MT-B-GXL S1 OC

Ordering Information

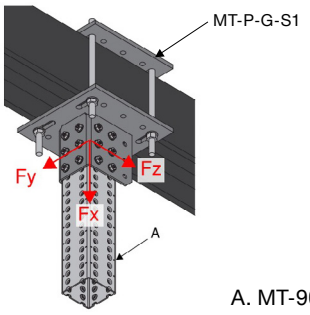
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GXL S1 OC	20.72 (9.4)	2	2272106





mm (in)

Figure 18 - MT Girder Sandwiched to Steel



A. MT-90/100

Table 93 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_x lb (kN)	F_y[5] lb (kN)	F_z[5] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
16,790 (74.7)	3,345 (14.9)	3,345 (14.9)	4,835 (6.56)	2,445 (3.32)

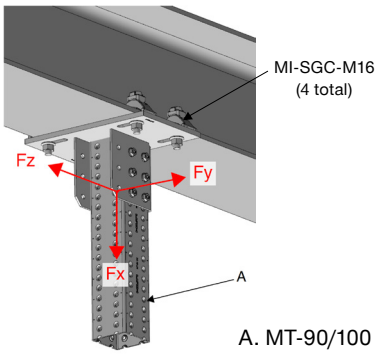
1. Minimum safety factor, Ω, for tabulated values is 2.1.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values require that minimum grade 8.8 threaded rods must be used.
4. Tabulated values are for assembly shown in Figure 18. Design Professional is responsible for checking strength of supporting steel member.
5. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Table 94 - Limit State Design (LSD) Load Data[1,2,3,4]

F_x lb (kN)	F_y[4] lb (kN)	F_z[4] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
25,170 (112.0)	5,035 (22.4)	5,035 (22.4)	6,290 (8.53)	3,670 (4.98)

1. Maximum resistance factor, Φ, for tabulated values is 0.7.
2. Tabulated values require that minimum grade 8.8 threaded rods must be used.
3. Tabulated values are for assembly shown in Figure 18. Design Professional is responsible for checking strength of supporting steel member.
4. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Figure 19 - MT Girder Clamped to Steel



A. MT-90/100

Table 95 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y[4] lb (kN)	F_z[4] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
14,380 (64.0)	1,545 (6.88)	1,545 (6.88)	4,835 (6.56)	2,100 (2.85)

1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are for assembly shown in Figure 19. Design Professional is responsible for checking strength of supporting steel member.
4. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Table 96 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y[3] lb (kN)	F_z[3] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
21,580 (96.0)	2,315 (10.3)	2,315 (10.3)	6,290 (8.53)	3,145 (4.27)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. Tabulated values are for assembly shown in Figure 19. Design Professional is responsible for checking strength of supporting steel member.
3. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-GXL S2 OC

Description

Base plate for fixation of MT-90 and MT-100 girder structures to 5.9"-9.7" steel flange widths.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-B-GXL S2 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GXL S2 OC	20.72 (9.4)	2	2272107

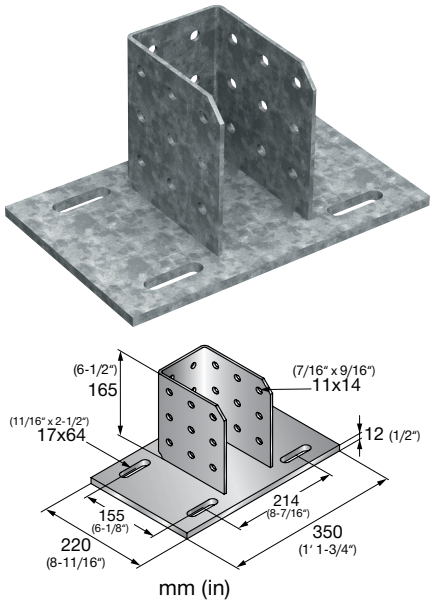
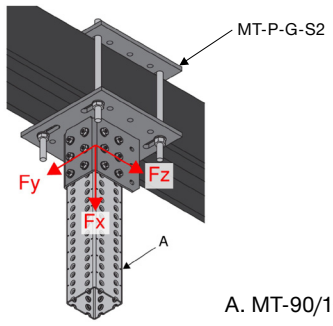


Figure 20 - MT Girder Sandwiched to Steel



A. MT-90/100

Table 97 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_x lb (kN)	F_y[5] lb (kN)	F_z[5] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
13,880 (61.75)	3,345 (14.9)	3,345 (14.9)	4,270 (5.79)	4,985 (6.76)

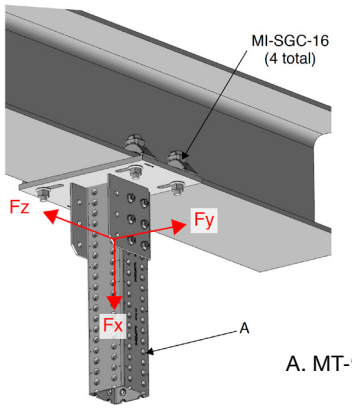
1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values require that minimum grade 8.8 threaded rods must be used.
4. Tabulated values are for assembly shown in Figure 20. Design Professional is responsible for checking strength of supporting steel member.
5. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Table 98 - Limit State Design (LSD) Load Data[1,2,3,4]

F_x lb (kN)	F_y[4] lb (kN)	F_z[4] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
20,810 (92.58)	5,035 (22.4)	5,035 (22.4)	6,290 (8.53)	7,470 (10.14)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. Tabulated values require that minimum grade 8.8 threaded rods must be used.
3. Tabulated values are for assembly shown in Figure 20. Design Professional is responsible for checking strength of supporting steel member.
4. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Figure 21 - MT Girder Clamped to Steel



A. MT-90/100

Table 99 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y[4] lb (kN)	F_z[4] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
13,880 (61.75)	1,545 (6.88)	1,545 (6.88)	3,655 (4.96)	4,270 (5.79)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are for assembly shown in Figure 21. Design Professional is responsible for checking strength of supporting steel member.
4. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Table 100 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y[3] lb (kN)	F_z[3] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
20,810 (92.58)	2,315 (10.3)	2,315 (10.3)	5,485 (7.44)	6,405 (8.69)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. Tabulated values are for assembly shown in Figure 21. Design Professional is responsible for checking strength of supporting steel member.
3. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-GXL S3 OC

Description

Base plate for fixation of MT-90 and MT-100 girder structures to 9.1"-12.8" steel flange widths.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

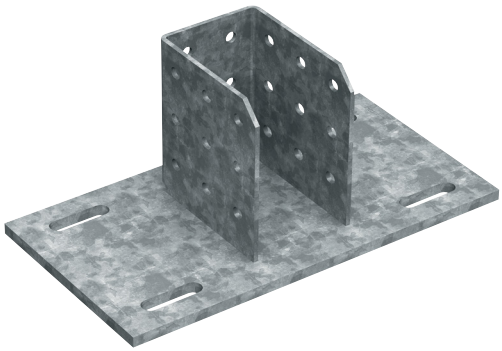
Corrosion Protection

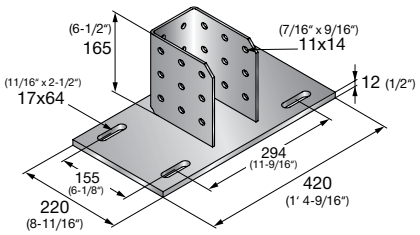
Hot-Dipped Galvanized (HDG)

MT-B-GXL S3 OC

Ordering Information

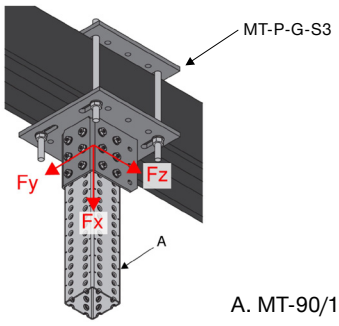
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GXL S3 OC	23.81 (10.8)	2	2272108





mm (in)

Figure 22 - MT Girder Sandwiched to Steel



A. MT-90/100

Table 101 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_x lb (kN)	F_y[5] lb (kN)	F_z[5] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
8,440 (37.54)	3,345 (14.9)	3,345 (14.9)	3,700 (5.02)	4,450 (6.04)

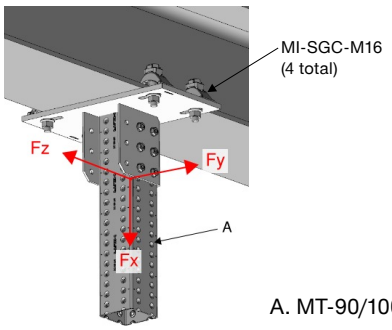
1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values require that minimum grade 8.8 threaded rods must be used.
4. Tabulated values are for assembly shown in Figure 22. Design Professional is responsible for checking strength of supporting steel member.
5. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Table 102 - Limit State Design (LSD) Load Data[1,2,3,4]

F_x lb (kN)	F_y[4] lb (kN)	F_z[4] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
12,650 (56.28)	5,035 (22.4)	5,035 (22.4)	5,240 (7.11)	6,310 (8.56)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. Tabulated values require that minimum grade 8.8 threaded rods must be used.
3. Tabulated values are for assembly shown in Figure 22. Design Professional is responsible for checking strength of supporting steel member.
4. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

Figure 23 - MT Girder Clamped to Steel



A. MT-90/100

Table 103 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y[4] lb (kN)	F_z[4] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
8,440 (37.54)	1,545 (6.88)	1,545 (6.88)	3,655 (4.96)	4,450 (6.04)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are for assembly shown in Figure 23. Design Professional is responsible for checking strength of supporting steel member.
4. Tabulated values are based on friction that is provided mechanically and not due to gravity loads..

Table 104 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y[3] lb (kN)	F_z[3] lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
12,650 (56.28)	2,315 (10.3)	2,315 (10.3)	5,240 (7.11)	6,310 (8.56)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. Tabulated values are for assembly shown in Figure 23. Design Professional is responsible for checking strength of supporting steel member.
3. Tabulated values are based on friction that is provided mechanically and not due to gravity loads.

3.0 MODULAR SUPPORT SYSTEM

3.2.2 MT BASE CONNECTORS

MT-B-G WS NC

Description

Weldable starter bracket for all MT girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Zinc (Ethyl) Silicate Primer

MT-B-G WS NC[1] (Weldable Primer)

1. "NC" indicates "non-coated".

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-G WS NC	9.58 (4.34)	4	2272109

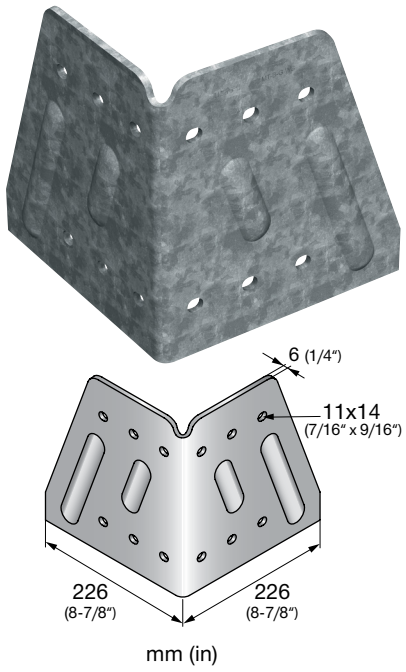
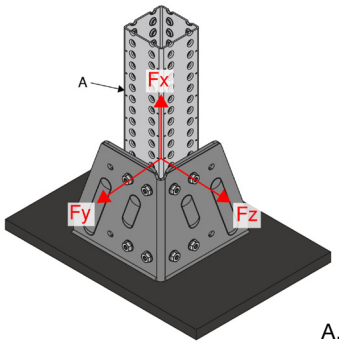


Figure 24 - MT Girder Connection



A. MT-70/80/90/100

Table 105 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
10,030 (44.62)	2,620 (11.67)	2,830 (12.61)	1,090 (1.48)	1,090 (1.48)

1. Minimum safety factor, Ω, for tabulated values is 2.1.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Welds to be checked by the design professional.
4. See Figure 24.

Table 106 - Limit State Design (LSD) Load Data[1,2,3]

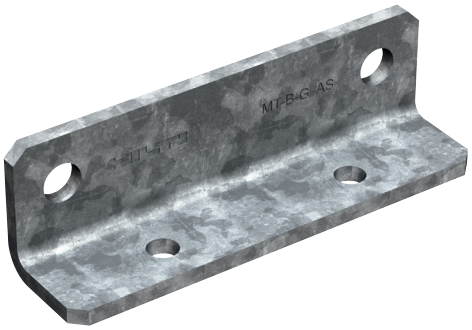
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
12,880 (57.31)	3,940 (17.53)	4,260 (18.96)	1,635 (2.22)	1,635 (2.22)

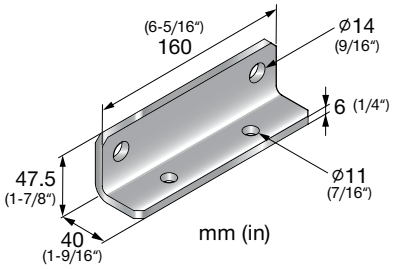
1. Maximum resistance factor, Φ, for tabulated values is 0.70.
2. Welds to be checked by the design professional.
3. See Figure 24.

3.0 MODULAR SUPPORT SYSTEM
3.2.2 MT BASE CONNECTORS
MT-B-G AS OC

Description

Base connector for MT-70 and MT-80 girder-to-concrete or girder-to-steel (X-BT/S-BT/F-BT compatible).





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

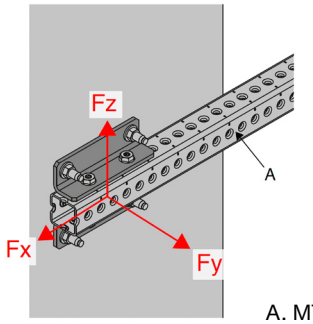
Hot-Dipped Galvanized (HDG)

MT-B-G AS OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-G AS OC	1.24 (0.56)	10	2332781

Figure 25 - MT Girder Anchoring to Concrete



A. MT-70/80 (long side)

Table 107 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
9,660 (42.99)	1,570 (7.00)	5,360 (23.86)	1,665 (2.26)

1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 25.
4. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

Table 108 - Limit State Design (LSD) Load Data[1,2,3]

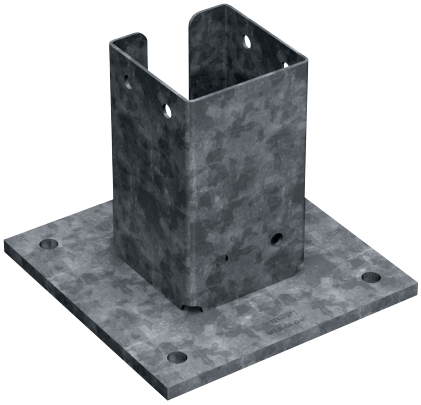
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)
13,240 (58.90)	2,360 (10.52)	8,045 (35.80)	2,505 (3.40)

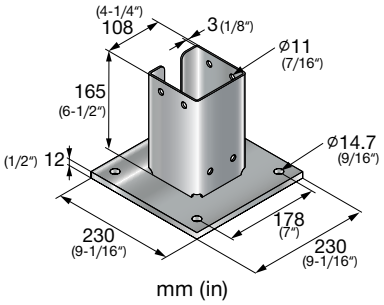
1. Maximum resistance factor, Φ, for tabulated values is 0.65.
2. See Figure 25.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.

3.0 MODULAR SUPPORT SYSTEM
3.2.2 MT BASE CONNECTORS
MT-B-GL O4C OC

Description

4-hole productivity base plate for MT-90 for girder-to-concrete.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

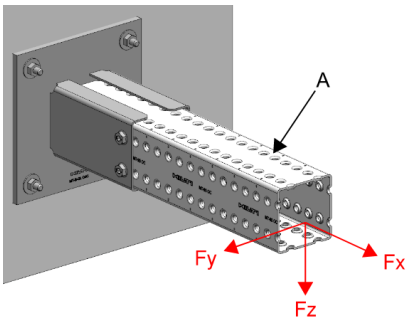
Hot-Dipped Galvanized (HDG)

MT-B-GL O4C OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GL O4C OC	15.05 (6.83)	2	2343282

Figure 26 - MT-90 Anchoring to Concrete



A. MT-90

Table 109 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
9,835 (43.76)	2,250 (10.01)	3,255 (14.50)	2,300 (3.12)	1,125 (1.53)

1. Minimum safety factor, Ω, for tabulated values is 2.75.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Load values are for base connector only. The design professional is responsible for checking concrete and fastener strength.
4. See Figure 26.

Table 110 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y lb ft (kN m)	M_z lb ft (kN m)
13,965 (62.12)	3,380 (15.04)	4,560 (20.30)	2,905 (3.94)	3,190 (4.33)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. Load values are for base connector only. The design professional is responsible for checking concrete and fastener strength.
3. See Figure 26.

3.0 MODULAR SUPPORT SYSTEM

3.2.3 MT SYSTEM CONNECTORS

MT-C-L1

Description

2-hole angle connector for channel.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-L1

Hot-Dipped Galvanized (HDG)

MT-C-L1 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-L1	0.44 (0.20)	20	2271514
MT-C-L1 OC	0.44 (0.20)	20	2271516

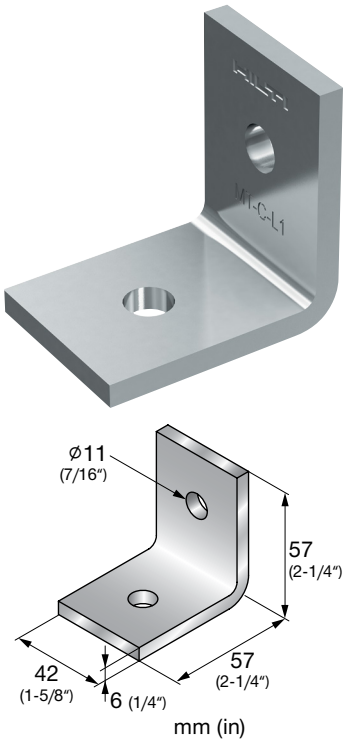
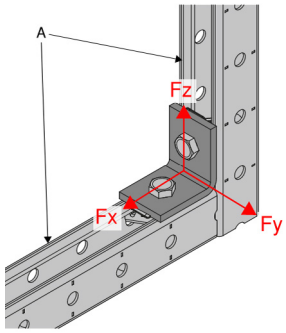


Figure 27 - MT Channel Connection



A. MT-30/50/60/40D

Table 111 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_z lb (kN)
1,005 (4.48)	1,005 (4.48)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 27.

Table 112 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_z lb (kN)
1,295 (5.78)	1,295 (5.78)

1. Maximum resistance factor, Φ, for tabulated values is 0.5.
2. See Figure 27.

3.0 MODULAR SUPPORT SYSTEM

3.2.3 MT SYSTEM CONNECTORS

MT-C-L2

Description

3-hole angle connector for channel-to-channel or channel-to-girder.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-L2

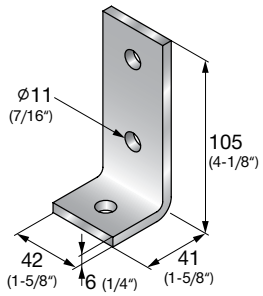
Hot-Dipped Galvanized (HDG)

MT-C-L2 OC

Ordering Information

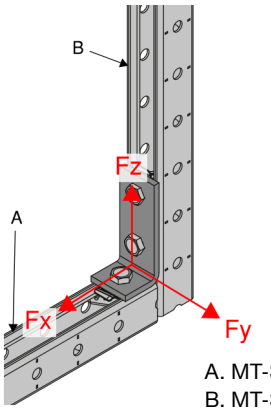
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-L2	0.57 (0.26)	20	2271518
MT-C-L2 OC	0.57 (0.26)	20	2271519





mm (in)

Figure 28 - MT Channel Connection



A. MT-30/50/60/40D
B. MT-30/50/60/40D/70/80/90/100

Table 113 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
490 (2.18)	350 (1.56)	1,120 (5.00)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 28.

Table 114 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
735 (3.29)	490 (2.18)	1,370 (6.10)

1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. See Figure 28.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-T/1

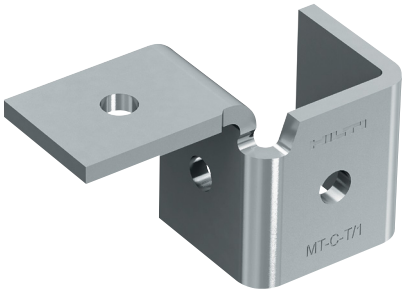
Description

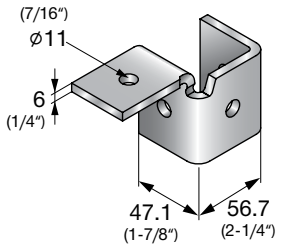
Wing fitting for assembling channel structures.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.





mm (in)

Corrosion Protection

Pre-Galvanized (PG)

MT-C-T/1

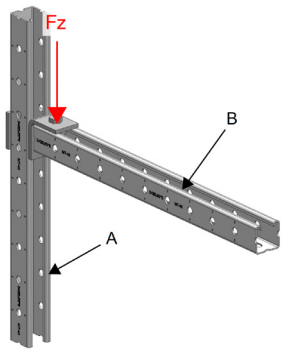
Hot-Dipped Galvanized (HDG)

MT-C-T/1 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-T/1	0.97 (0.44)	20	2272040
MT-C-T/1 OC	0.97 (0.44)	20	2272042

Figure 29 - MT Channel Connection



A. MT-50
B. MT-30/50/60/40D

Table 115 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_z lb (kN)
580 (2.60)

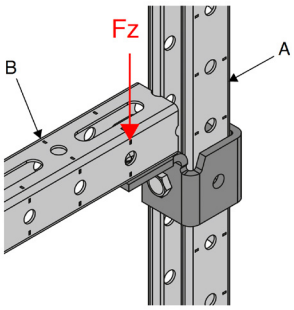
1. Safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 29.

Table 116 - Limit State Design (LSD) Load Data[1,2]

F_z lb (kN)
825 (3.68)

1. Resistance factor, Φ, for tabulated values is 0.65.
2. See Figure 29.

Figure 30 - MT Channel Connection



A. MT-50
B. MT-30/50/60/40D

Table 117 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_z lb (kN)
640 (2.86)

1. Safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 30.

Table 118 - Limit State Design (LSD) Load Data[1,2]

F_z lb (kN)
910 (4.05)

1. Resistance factor, Φ, for tabulated values is 0.65.
2. See Figure 30.

3.0 MODULAR SUPPORT SYSTEM

3.2.3 MT SYSTEM CONNECTORS

MT-C-LL1

Description

Wing fitting for assembling channel structures.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-LL1

Hot-Dipped Galvanized (HDG)

MT-C-LL1 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-LL1	1.75 (0.79)	10	2272047
MT-C-LL1 OC	1.75 (0.79)	10	2272049

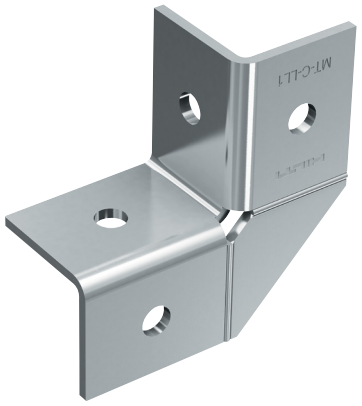
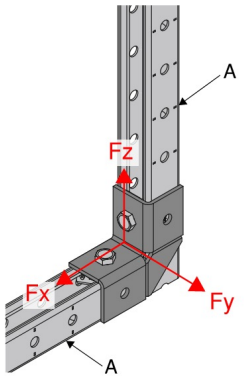


Figure 31 - MT Channel Connection



A. MT-30/50/60

Table 119 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,130 (5.04)	170 (0.77)	1,130 (5.04)

1. Minimum safety factor, Ω, for tabulated values is 2.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 31.

Table 120 - Limit State Design (LSD) Load Data[1,2]

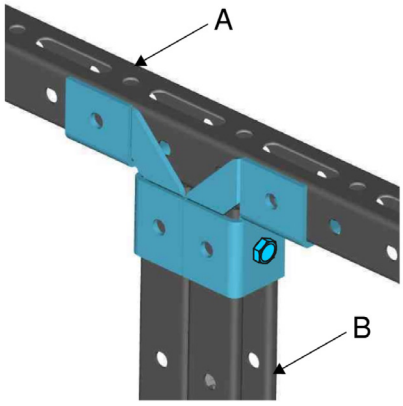
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,450 (6.45)	210 (0.95)	1,450 (6.45)

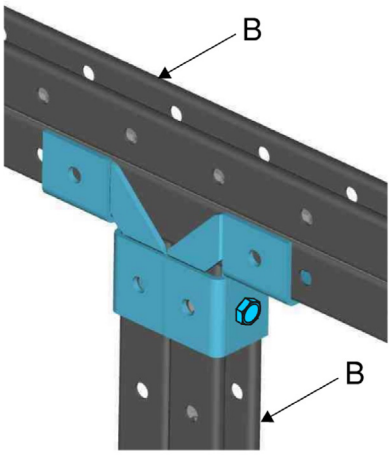
1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. See Figure 31.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS

Additional Variants

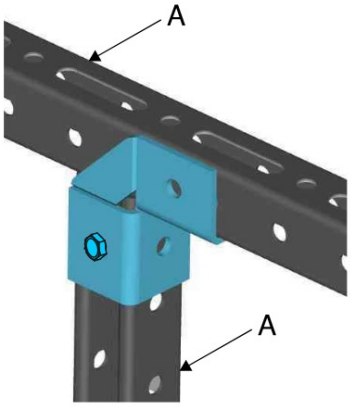
Dual Connectors on Double Channel

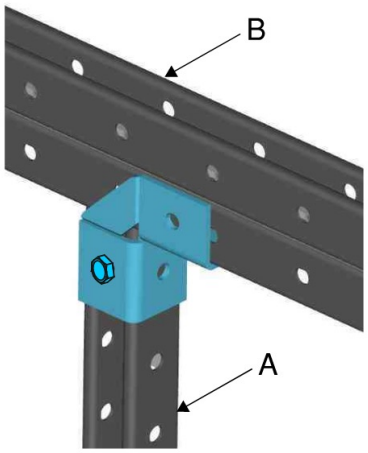


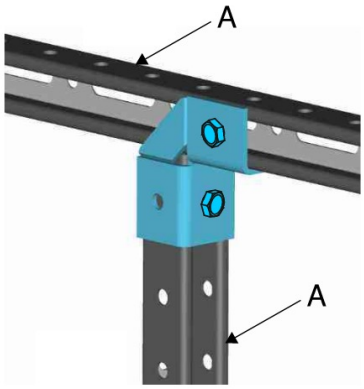


A. MT-30/50/60
B. MT-40D

Single Channel Eccentric

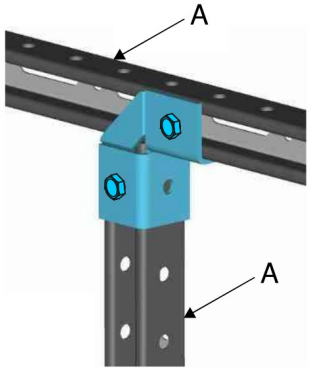






A. MT-30/50/60
B. MT-40D

Both Channels Eccentric



A. MT-30/50/60

*Technical data for additional variants shown are available upon request.

3.0 MODULAR SUPPORT SYSTEM

3.2.3 MT SYSTEM CONNECTORS

MT-C-LL2

Description

8-hole angle connector for channels.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-LL2

Hot-Dipped Galvanized (HDG)

MT-C-LL2 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-LL2	1.30 (0.59)	10	2272051
MT-C-LL2 OC	1.30 (0.59)	10	2272053

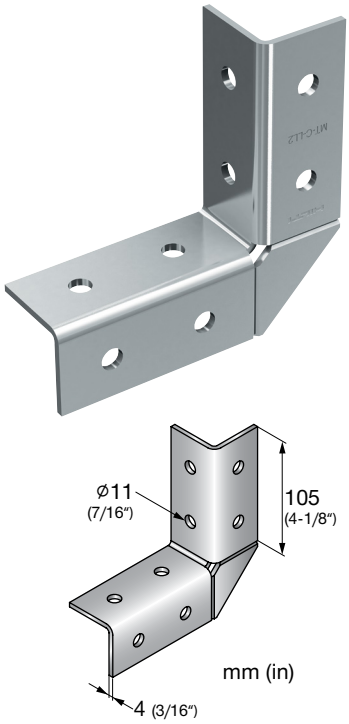
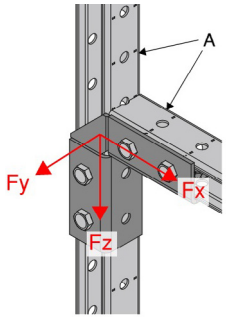


Figure 32 - MT Channel Connection



A. MT-30/50/60/40D

Table 121 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,070 (4.78)	530 (2.36)	1,070 (4.78)

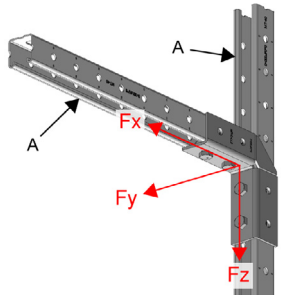
1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 32.

Table 122 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,380 (6.15)	645 (2.88)	1,380 (6.15)

1. Maximum resistance factor, Φ, for tabulated values is 0.5.
2. See Figure 32.

Figure 33 - MT Channel Connection



A. MT-30/50/60/40D

Table 123 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,025 (4.56)	170 (0.77)	1,025 (4.56)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 33.

Table 124 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,320 (5.88)	210 (0.95)	1,320 (5.88)

1. Maximum resistance factor, Φ, for tabulated values is 0.5.
2. See Figure 33.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-T/2

Description

T-connector for channels.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-T/2

Hot-Dipped Galvanized (HDG)

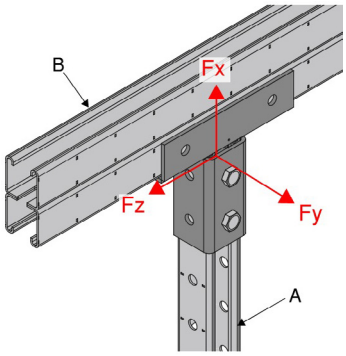
MT-C-T/2 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-T/2	1.74 (0.79)	15	2272054
MT-C-T/2 OC	1.74 (0.79)	15	2272055



Figure 34 - MT Channel Connection



A. MT-30/50/60
B. MT-40D

Table 125 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,100 (9.36)	725 (3.23)	225 (1.01)

1. Minimum safety factor, Ω, for tabulated values is 2.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 34.

Table 126 - Limit State Design (LSD) Load Data[1,2]

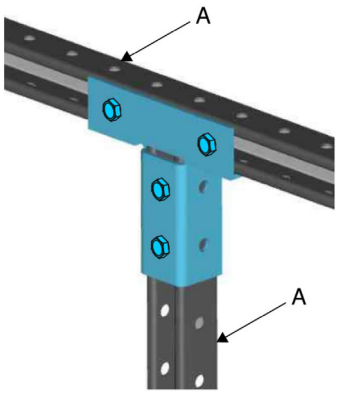
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,735 (12.17)	1,005 (4.49)	310 (1.40)

1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. See Figure 34.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS

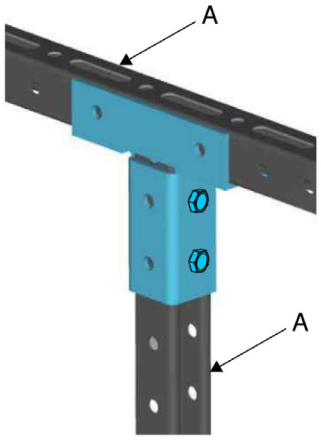
Additional Variants

Supported Channel Rotated



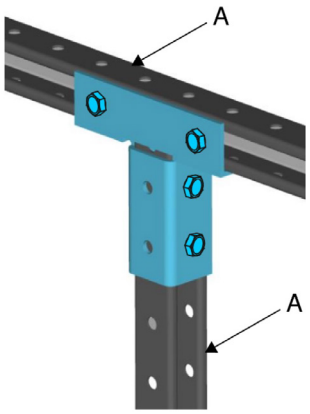
A. MT-30/50/60

Supporting Channel Rotated



A. MT-30/50/60

Supported and Supporting Channels Rotated



A. MT-30/50/60

*Technical data for additional variants shown are available upon request.

3.0 MODULAR SUPPORT SYSTEM

3.2.3 MT SYSTEM CONNECTORS

MT-C-T A

Description

Angle bracket for channel-to-channel or channel-to-girder connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-T A

Hot-Dipped Galvanized (HDG)

MT-C-T A OC

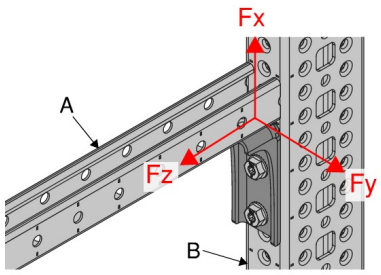
Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-T A	0.71 (0.32)	20	2272056
MT-C-T A OC	0.71 (0.32)	20	2272057



mm (in)

Figure 35 - MT Channel-to-Girder Connection



A. MT-30/50/60
B. MT-70/80/90/100

Table 127 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,400 (6.23)	415 (1.86)	240 (1.08)

1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 35.

Table 128 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,880 (8.38)	560 (2.51)	385 (1.73)

1. Maximum resistance factor, Φ, for tabulated values is 0.6.
2. See Figure 35.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-T 3D/2

Description

Two-sided 3D connector for channel.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Electro-Galvanized (EG)

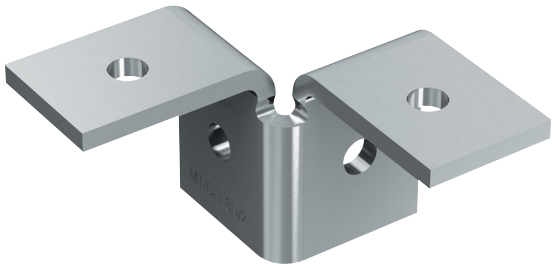
MT-C-T 3D/2

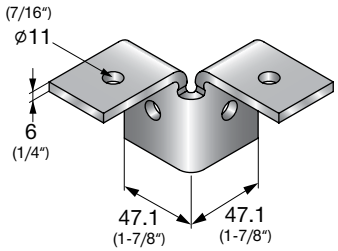
Hot-Dipped Galvanized (HDG)

MT-C-T 3D/2 OC

Ordering Information

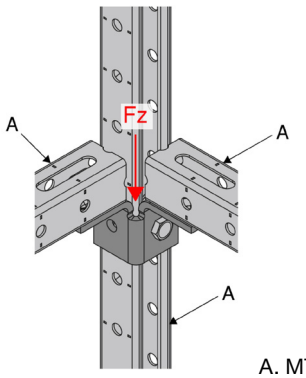
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-T 3D/2	0.92 (0.42)	10	2272058
MT-C-T 3D/2 OC	0.92 (0.42)	10	2272059





mm (in)

Figure 36 - MT Channel Connection



A. MT-30/50/60/40D

Table 129 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_z lb (kN)
1,010 (4.50)

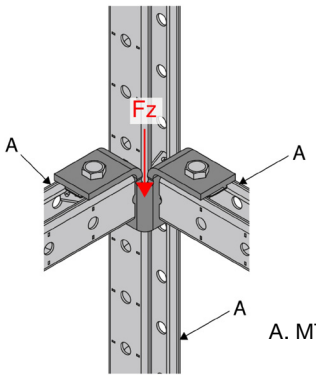
1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 36.
4. Tabulated values represent the maximum total allowable load of the connector. The applied load on a single horizontal leg cannot exceed 875 lbs (3.91 kN).

Table 130 - Limit State Design (LSD) Load Data[1,2,3]

F_z lb (kN)
1,405 (6.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. See Figure 36.
3. Tabulated values represent the maximum total factored load of the connector. The applied load on a single horizontal leg cannot exceed 1,245 lbs (5.54 kN).

Figure 37 - MT Channel Connection



A. MT-30/50/60/40D

Table 131 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_z lb (kN)
1,010 (4.50)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 37.
4. Tabulated values represent the maximum total allowable load of the connector. The applied load on a single horizontal leg cannot exceed 570 lbs (2.54 kN).

Table 132 - Limit State Design (LSD) Load Data[1,2,3]

F_z lb (kN)
1,405 (6.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. See Figure 37.
3. Tabulated values represent the maximum total factored load of the connector. The applied load on a single horizontal leg cannot exceed 805 lbs (3.60 kN).

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-T 3D/3

Description

Three sided 3D connector for T-shape channel connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Electro-Galvanized (EG)

MT-C-T 3D/3

Hot-Dipped Galvanized (HDG)

MT-C-T 3D/3 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-T 3D/3	1.39 (0.63)	10	2272060
MT-C-T 3D/3 OC	1.39 (0.63)	10	2272061

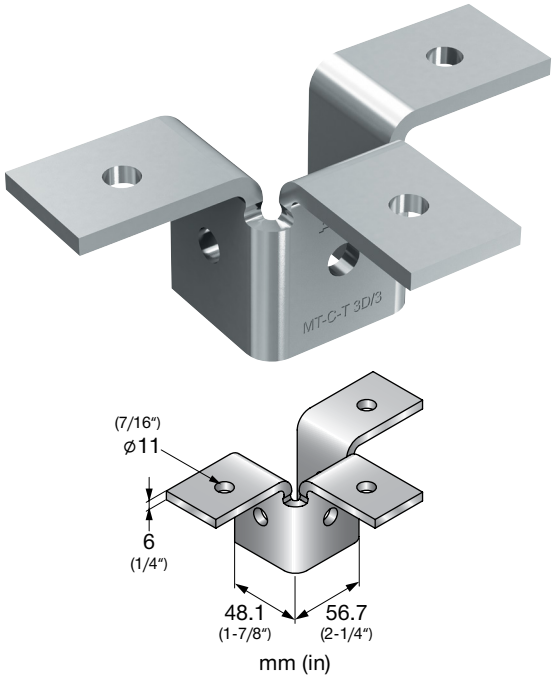
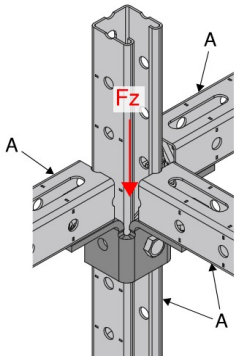


Figure 38 - MT Channel Connection



A. MT-30/50/60/40D

Table 133 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_z lb (kN)
1,010 (4.50)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 38.
4. Tabulated values represent the maximum total allowable load of the connector. The applied load on a single horizontal leg cannot exceed 845 lbs (3.77 kN).

Table 134 - Limit State Design (LSD) Load Data[1,2,3]

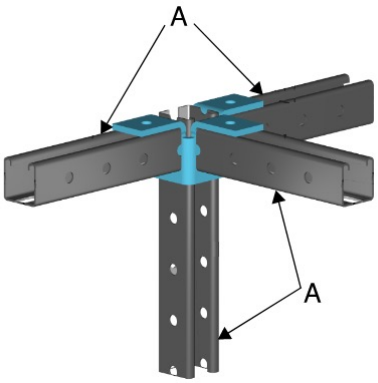
F_z lb (kN)
1,405 (6.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.55.
2. See Figure 38.
3. Tabulated values represent the maximum total factored load of the connector. The applied load on a single horizontal leg cannot exceed 1,200 lbs (5.34 kN).

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS

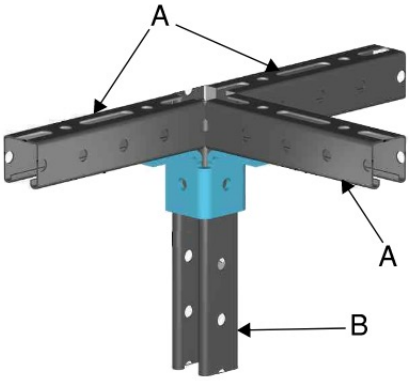
Additional Variants

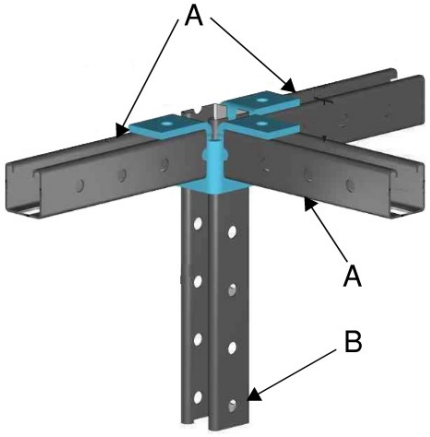
Supported Channels Rotated



A. MT-30/50/60/40D

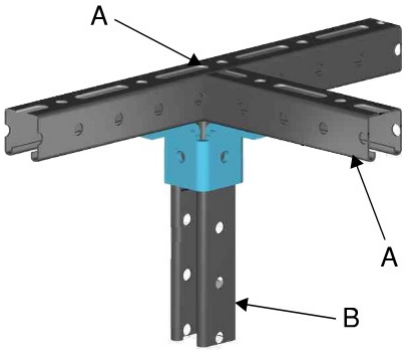
Supporting Channel Rotated





A. MT-30/50/60/40D
B. MT-50

Supported and Supporting Channels Rotated



A. MT-30/50/60/40D
B. MT-50

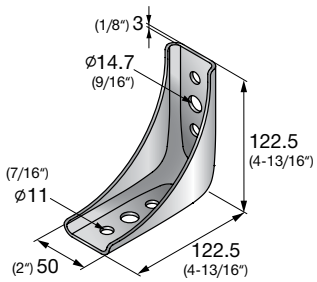
*Technical data for additional variants shown are available upon request.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GS OC

Description

Angle connector for girder and channel connections. Use as base for attachment to concrete or steel (X-BT/S-BT/F-BT compatible).





mm (in)

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

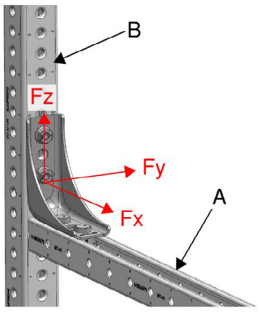
Hot-Dipped Galvanized (HDG)

MT-C-GS OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GS OC	0.88 (0.40)	10	2272064

Figure 39 - MT Channel Connection to Girder



A. MT-30/50/60/40D
B. MT-70/80/90/100

Table 135 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,230 (5.50)	310 (1.37)	950 (4.21)

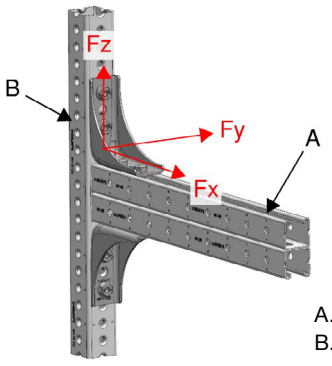
1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 39.

Table 136 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,860 (8.27)	465 (2.07)	1,230 (5.47)

1. Maximum resistance factor, Φ, for tabulated values is 0.70.
2. See Figure 39.

Figure 40 - MT Double Angle Connection



A. MT-40D
B. MT-70/80/90/100

Table 137 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
1,970 (8.78)	250 (1.13)	2,130 (9.49)	715 (0.97)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 40.

Table 138 - Limit State Design (LSD) Load Data[1,2]

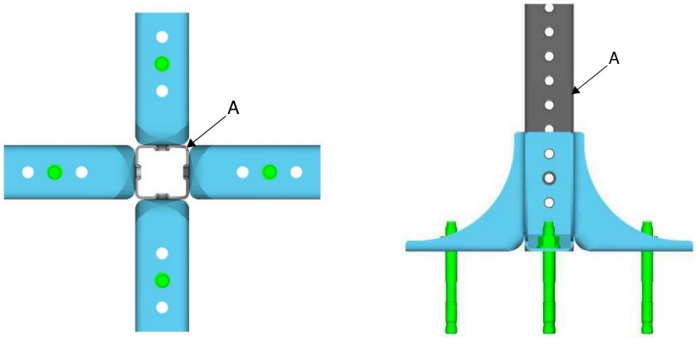
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
2,785 (12.39)	380 (1.70)	3,205 (14.27)	925 (1.26)

1. Maximum resistance factor, Φ, for tabulated values is 0.70.
2. See Figure 40.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS

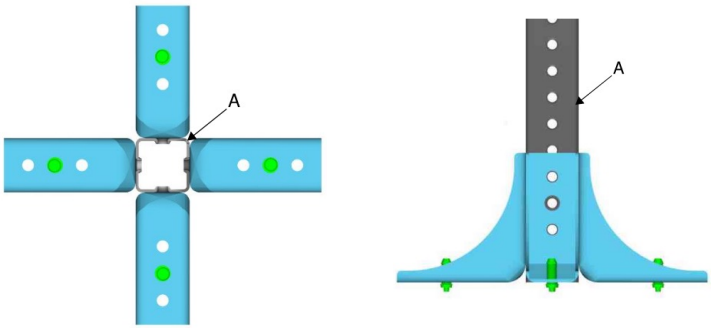
Additional Variants

Anchorage to Concrete



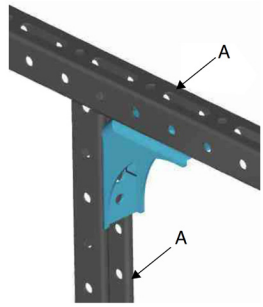
A. MT-70

Direct Fasten to Steel



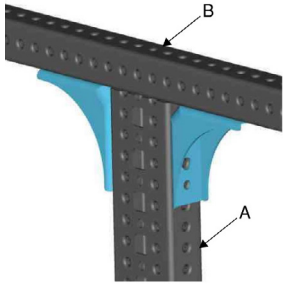
A. MT-70

Single Angle Connection to MT Channel



A. MT-30/50/60/40D

Double Angle Connection to MT Girder



A. MT-80
B. MT-70/80

*Technical data for additional variants shown are available upon request.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GL OC

Description

Angle connector for MT-80 (long side), MT-90, and MT-100 girders. Use as base for attachment to concrete or steel (X-BT/S-BT/F-BT compatible).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-C-GL OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GL OC	2.64 (1.2)	10	2272066

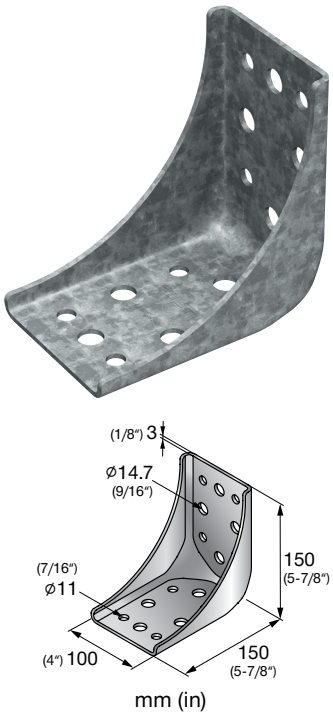
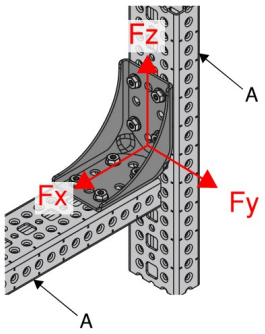


Figure 41 - MT Single Angle Connection



A. MT-80 (long side)/90/100

Table 139 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
3,070 (13.65)	2,610 (11.6)	3,240 (14.45)

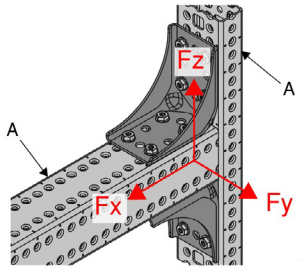
1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 41.

Table 140 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
4,910 (21.83)	3,680 (16.38)	4,610 (20.52)

1. Maximum resistance factor, Φ, for tabulated values is 0.65.
2. See Figure 41.

Figure 42 - MT Double Angle Connection



A. MT-80 (long side)/90/100

Table 141 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
7,340 (32.65)	5,230 (23.27)	5,620 (25.00)	1,320 (1.79)	875 (1.19)

1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 42.

Table 142 - Limit State Design (LSD) Load Data[1,2]

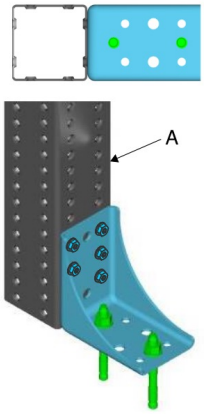
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
10,690 (47.58)	7,360 (32.76)	7,975 (35.49)	1,870 (2.54)	1,140 (1.55)

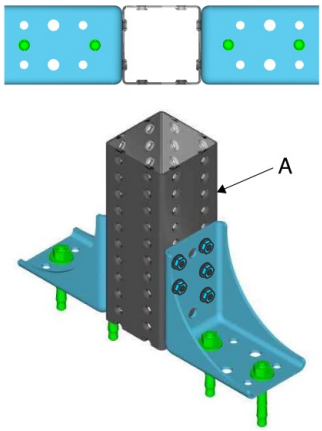
1. Maximum resistance factor, Φ, for tabulated values is 0.65.
2. See Figure 42.

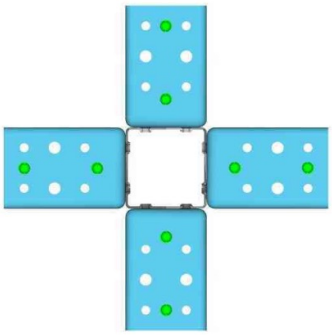
3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS

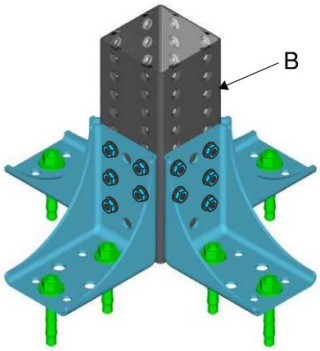
Additional Variants

Base Connector



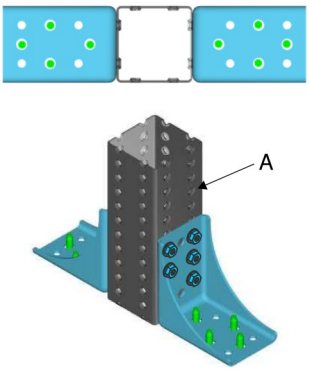


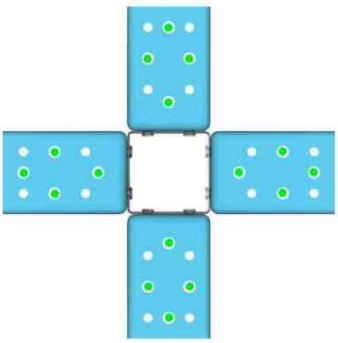


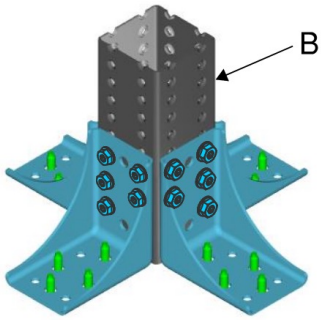


A. MT-80 long side/90/100
B. MT-90/100

Direct Fasten to Steel







A. MT-80 long side/90/100
B. MT-90/100

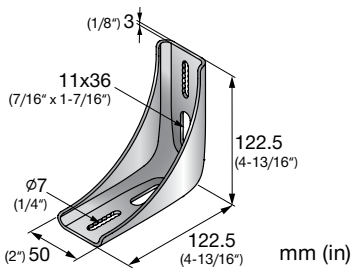
*Technical data for additional variants shown are available upon request.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GS A OC

Description

Adjustable angle bracket for girder-to-girder connections.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

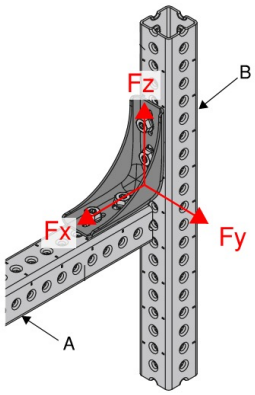
Hot-Dipped Galvanized (HDG)

MT-C-GS A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GS A OC	0.86 (0.39)	10	2272068

Figure 43 - MT Single Angle Connection



A. MT-70/80 (short side)
B. MT-70/80/90/100

Table 143 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
990 (4.42)	535 (2.40)	2,070 (9.23)

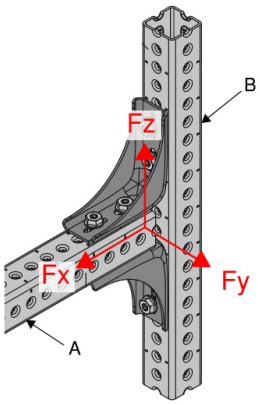
1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 43.

Table 144 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,445 (6.44)	810 (3.61)	2,675 (11.91)

1. Maximum resistance factor, Φ, for tabulated values is 0.7.
2. See Figure 43.

Figure 44 - MT Double Angle Connection



A. MT-70/80 (short side)
B. MT-70/80/90/100

Table 145 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
3,295 (14.66)	1,585 (7.07)	5,965 (26.54)	1,045 (1.42)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 44.

Table 146 - Limit State Design (LSD) Load Data[1,2]

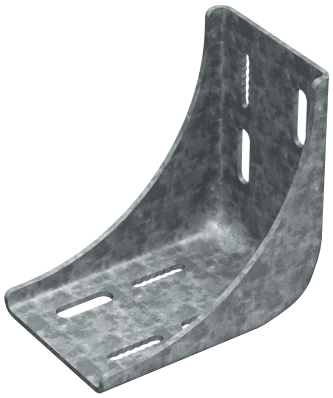
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
4,280 (19.06)	2,385 (10.63)	8,685 (38.65)	1,525 (2.07)

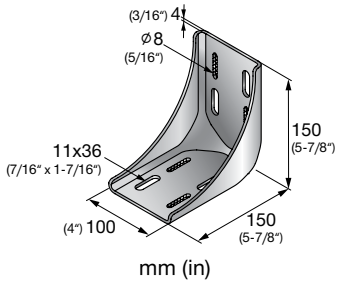
1. Maximum resistance factor, Φ, for tabulated values is 0.75.
2. See Figure 44.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GL A OC

Description

Adjustable connector for MT-80 (long side), MT-90, and MT-100 girders.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

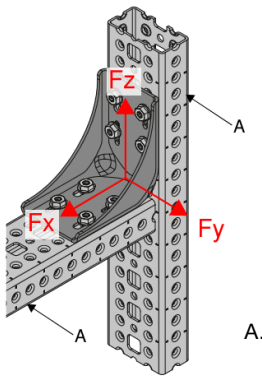
Hot-Dipped Galvanized (HDG)

MT-C-GL A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GL A OC	2.53 (1.15)	10	2272069

Figure 45 - MT Single Angle Connection



A. MT-80 (long side)/90/100 (short side)

Table 147 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,995 (13.33)	2,620 (11.66)	3,000 (13.36)

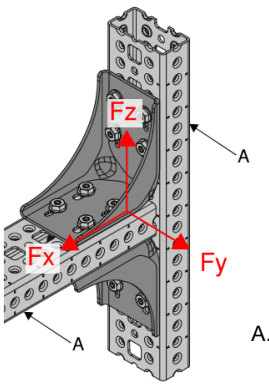
1. Minimum safety factor, Ω, for tabulated values is 2.1.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 45.

Table 148 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
4,495 (20.00)	3,935 (17.52)	4,510 (20.08)

1. Maximum resistance factor, Φ, for tabulated values is 0.7.
2. See Figure 45.

Figure 46 - MT Double Angle Connection



A. MT-80 (long side)/90/100 (short side)

Table 149 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
6,560 (29.20)	5,275 (23.47)	5,615 (24.99)	1,320 (1.79)

1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 46.

Table 150 - Limit State Design (LSD) Load Data[1,2]

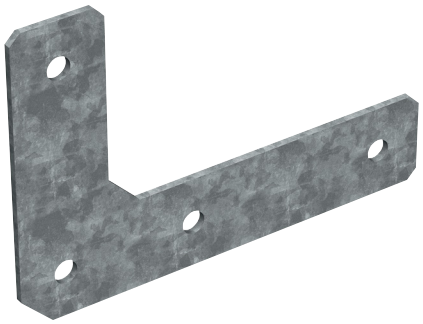
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
8,530 (37.96)	7,635 (33.97)	7,970 (35.47)	1,870 (2.54)

1. Maximum resistance factor, ϕ, for tabulated values is 0.65.
2. See Figure 46.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GSP L OC

Description

Gusset plate for L-shaped connections with MT-70 and MT-80 girders.



Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-C-GSP L OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GSP L OC	0.93 (0.42)	10	2272073

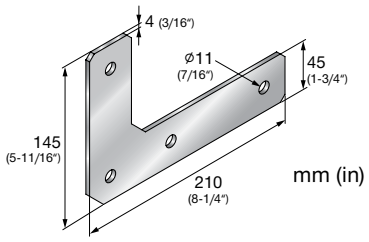
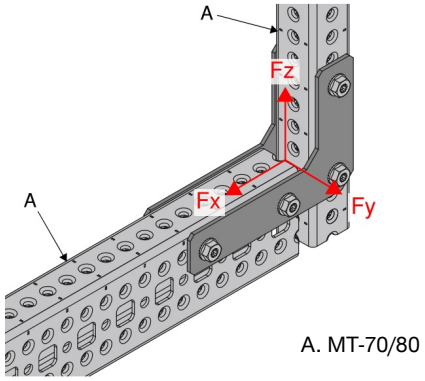


Figure 47 - MT Girder Connection



A. MT-70/80

Table 151 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN cm)	M_z ft lb (kN m)
3,035 (13.52)	785 (3.50)	2,415 (10.76)	560 (0.76)	300 (0.41)

1. Minimum safety factor, Ω, for tabulated values is 2.1.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on brackets being installed in pairs.
4. See Figure 47.

Table 152 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN cm)	M_z ft lb (kN m)
4,310 (19.19)	1,180 (5.25)	3,435 (15.28)	815 (1.11)	455 (0.62)

1. Maximum resistance factor, ϕ, for tabulated values is 0.7.
2. Tabulated values are based on brackets being installed in pairs.
3. See Figure 47.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GSP T OC

Description

Gusset plate for T-shaped connections with MT-70 and MT-80 girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

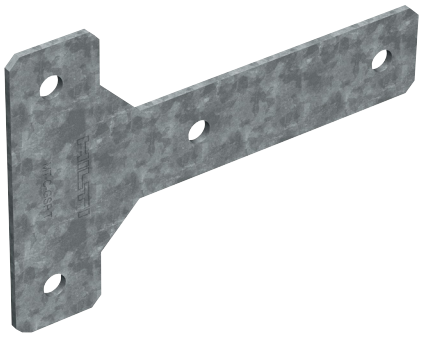
Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-C-GSP T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GSP T OC	0.95 (0.43)	10	2272074



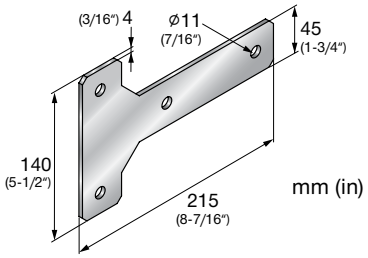
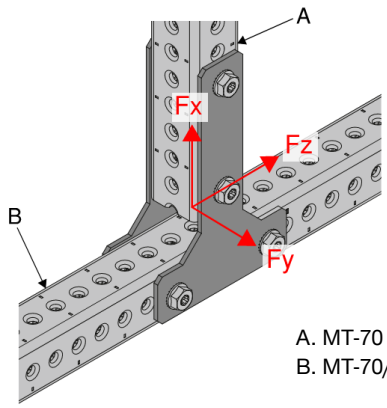


Figure 48 - MT Girder Connection



A. MT-70
B. MT-70/80 (long side)

Table 153 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
10,250 (45.60)	1,300 (5.80)	1,575 (7.01)	600 (0.82)	280 (0.38)

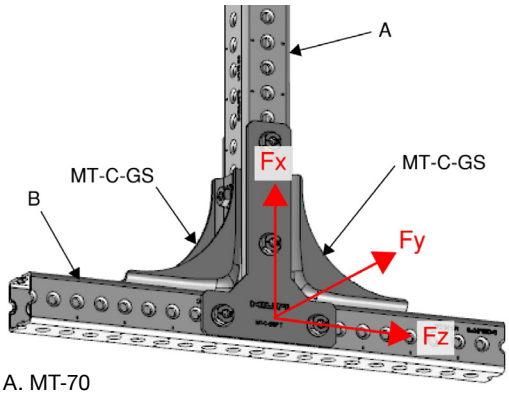
1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 48.

Table 154 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
13,375 (59.50)	1,955 (8.71)	2,365 (10.54)	855 (1.16)	420 (0.57)

1. Maximum resistance factor, ϕ, for tabulated values is 0.65.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 48.

Figure 49 - MT Girder Connection



A. MT-70
B. MT-70/80 (long side)

Table 155 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
9,440 (42.00)	1,660 (7.39)	3,170 (14.11)	905 (1.23)	530 (0.72)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 49.

Table 156 - Limit State Design (LSD) Load Data[1,2,3]

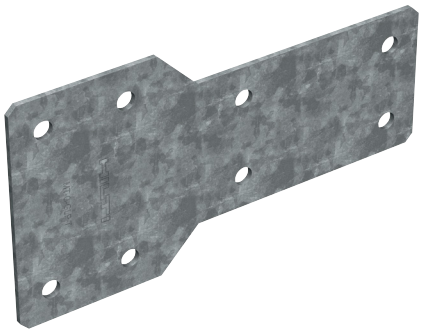
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
13,400 (59.62)	2,495 (11.10)	4,415 (19.64)	1,280 (1.74)	800 (1.09)

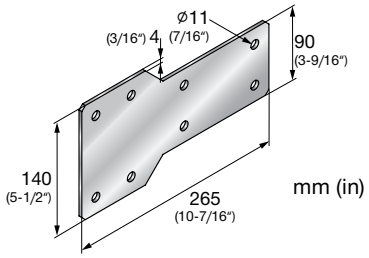
1. Maximum resistance factor, ϕ, for tabulated values is 0.7.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 49.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GLP T OC

Description

Gusset plate for T-shaped connections with MT-80, MT-90 or MT-100 girders.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

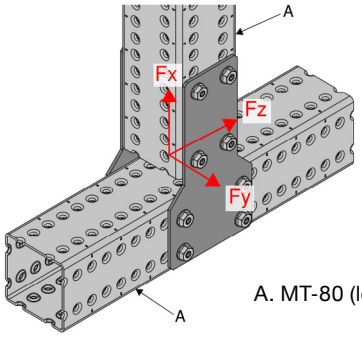
Hot-Dipped Galvanized (HDG)

MT-C-GLP T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GLP T OC	4.03 (1.83)	8	2272075

Figure 50 - MT Girder Connection



A. MT-80 (long side)/90/100 (long side)

Table 157 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
19,240 (85.60)	1,870 (8.33)	5,545 (24.68)	2,385 (3.24)	795 (1.08)

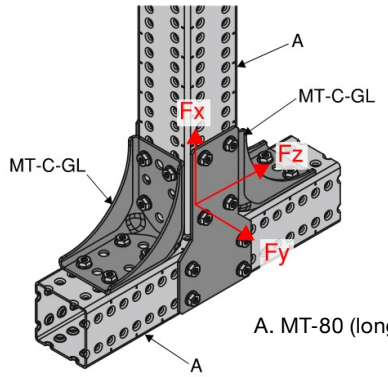
1. Minimum safety factor, Ω, for tabulated values is 2.05.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 50.

Table 158 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
26,480 (117.80)	2,810 (12.52)	7,325 (32.60)	3,385 (4.59)	1,200 (1.63)

1. Maximum resistance factor, ϕ, for tabulated values is 0.7.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 50.

Figure 51 - MT Girder Connection



A. MT-80 (long side)/90/100 (long side)

Table 159 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
15,560 (69.22)	4,045 (18.01)	9,450 (42.04)	2,830 (3.84)	2,245 (3.05)

1. Minimum safety factor, Ω, for tabulated values is 2.05.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 51.

Table 160 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
23,385 (104.04)	6,085 (27.07)	14,010 (62.34)	4,015 (5.45)	2,920 (3.96)

1. Maximum resistance factor, ϕ, for tabulated values is 0.7.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 51.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GLP X A OC

Description

Adjustable connector plate for cantilever with MT-80 (long side) or MT-90 girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

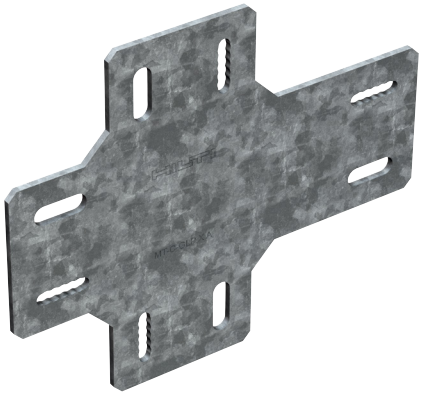
Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-C-GLP X A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GLP X A OC	2.25 (1.02)	10	2332783



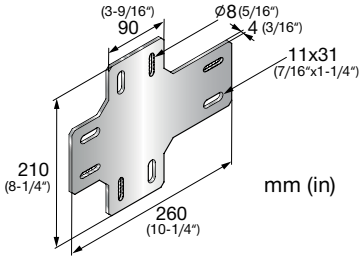
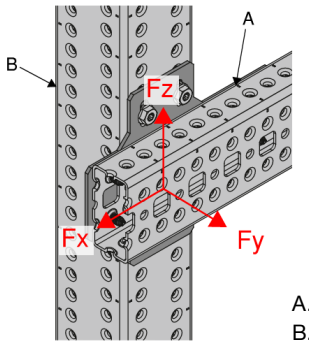


Figure 52 - MT Girder Connection



A. MT-80 (long side)/90
B. MT-80 (long side)/90/100

Table 161 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
1,030 (4.59)	970 (4.32)	1,255 (5.60)	1,450 (1.97)

1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 52.

Table 162 - Limit State Design (LSD) Load Data[1,2]

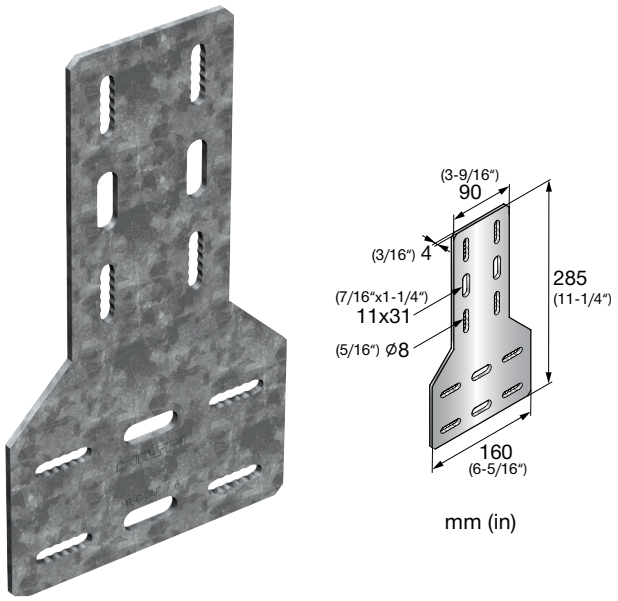
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
1,460 (6.50)	1,375 (6.12)	1,780 (7.93)	1,885 (2.56)

1. Maximum resistance factor, ϕ, for tabulated values is 0.65.
2. See Figure 52.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GLP T A OC

Description

Adjustable gusset plate for T-shaped connections with MT-80, MT-90, or MT-100 girders.



Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

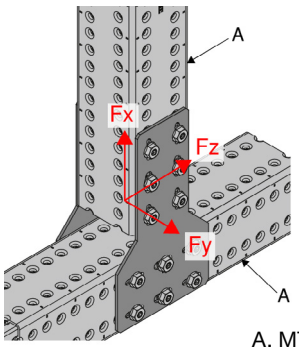
Hot-Dipped Galvanized (HDG)

MT-C-GLP T A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GLP T A OC	2.14 (0.97)	8	2332784

Figure 53 - MT Girder Connection



A. MT-80 (long side)/90/100 (long side)

Table 163 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
14,685 (65.33)	960 (4.28)	5,485 (24.42)	1,865 (2.53)	1,320 (1.79)

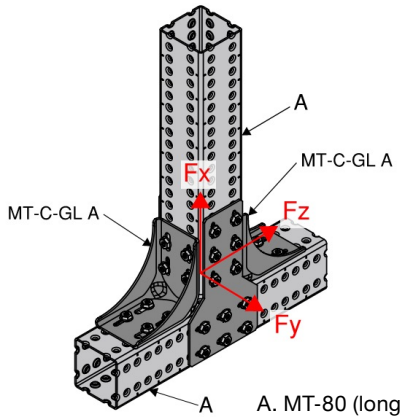
1. Minimum safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 53.

Table 164 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
22,070 (98.19)	1,445 (6.43)	7,245 (32.24)	2,800 (3.80)	1,865 (2.53)

1. Maximum resistance factor, ϕ, for tabulated values is 0.7.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 53.

Figure 54 - MT Girder Connection



A. MT-80 (long side)/90/100 (long side)

Table 165 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
16,820 (74.83)	3,390 (15.10)	7,625 (33.92)	2,950 (4.00)	2,565 (3.48)

1. Minimum safety factor, Ω, for tabulated values is 2.4.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 54.

Table 166 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
23,870 (106.22)	4,815 (21.43)	9,910 (44.10)	4,180 (5.67)	3,580 (4.86)

1. Maximum resistance factor, ϕ, for tabulated values is 0.6.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 54.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-GSP T A OC

Description

Adjustable gusset plate for T-shaped connections with MT-70 and MT-80 girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-C-GSP T A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GSP T A OC	1.04 (0.47)	10	2332785

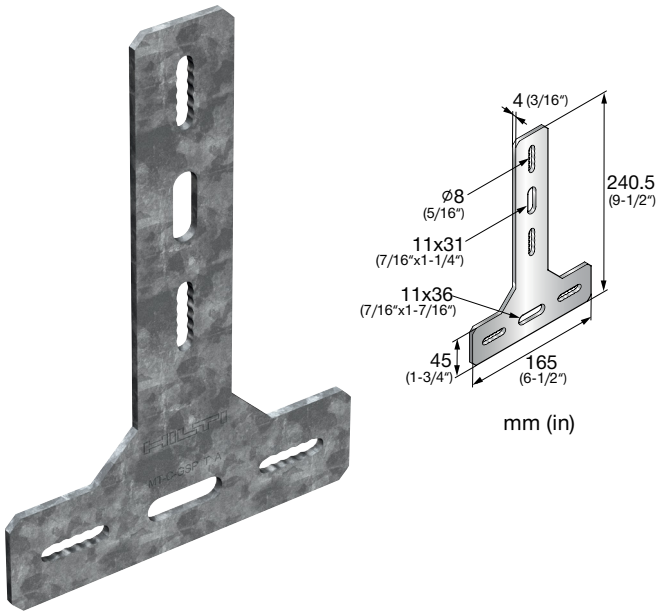
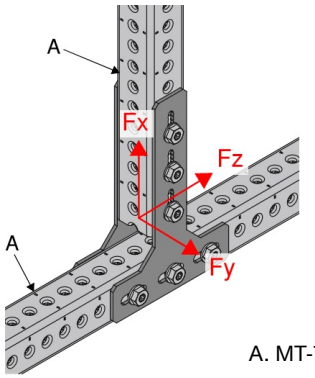


Figure 55 - MT Girder Connection



A. MT-70/80 (long side)

Table 167 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
7,420 (33.02)	455 (2.04)	3,725 (16.59)	505 (0.69)	485 (0.66)

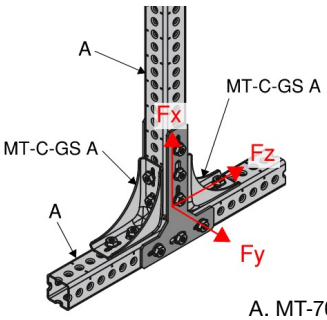
1. Minimum safety factor, Ω, for tabulated values is 2.25.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 55.

Table 168 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
10,535 (46.87)	690 (3.07)	5,290 (23.55)	720 (0.98)	690 (0.94)

1. Maximum resistance factor, ϕ, for tabulated values is 0.65.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 55.

Figure 56 - MT Girder Connection



A. MT-70/80 (long side)

Table 169 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
7,495 (33.34)	1,250 (5.57)	4,605 (20.49)	940 (1.28)	715 (0.97)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 56.

Table 170 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
9,740 (43.34)	1,885 (8.39)	6,535 (29.08)	1,320 (1.79)	1,010 (1.37)

1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 56.

3.0 MODULAR SUPPORT SYSTEM

3.2.3 MT SYSTEM CONNECTORS

MT-C-GSP L A OC

Description

Adjustable gusset plate for L-shaped connections with MT-70 and MT-80 girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-C-GSP L A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-GSP L A OC	1.02 (0.46)	10	2332786

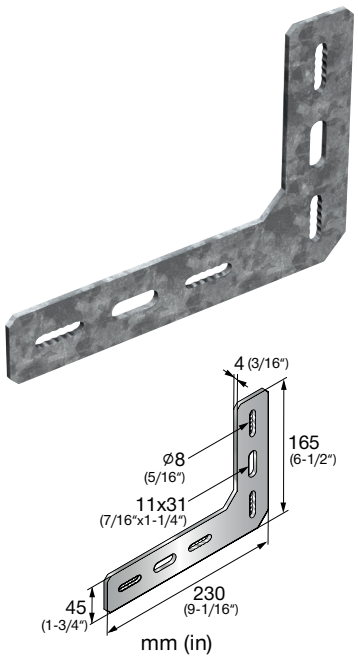
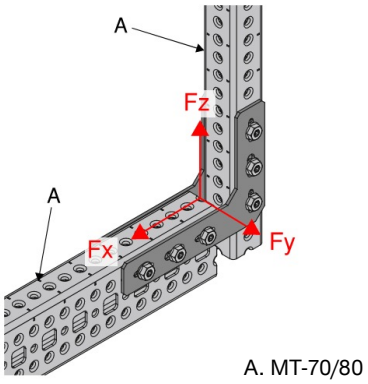


Figure 57 - MT Girder Connection



A. MT-70/80

Table 171 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
4,460 (19.84)	575 (2.57)	3,115 (13.86)	360 (0.49)	360 (0.49)

1. Minimum safety factor, Ω, for tabulated values is 2.25.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 57.

Table 172 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)	M_z ft lb (kN m)
6,405 (28.50)	865 (3.86)	4,290 (19.10)	505 (0.69)	545 (0.74)

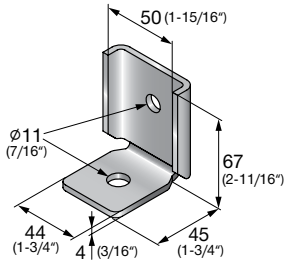
1. Maximum resistance factor, ϕ, for tabulated values is 0.7.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 57.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-LDP L1 OC

Description

Angle connector for channel-to-LDP (Load Distribution Plate) or MT-70-to-LDP connections.





mm (in)

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

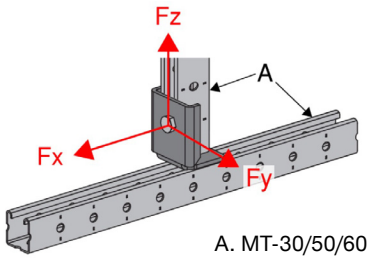
Hot-Dipped Galvanized (HDG)

MT-C-LDP L1 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-LDP L1 OC	0.45 (0.21)	8	2320180

Figure 58 - MT Channel Connection



A. MT-30/50/60

Table 173 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
685 (3.06)	380 (1.71)	450 (2.02)

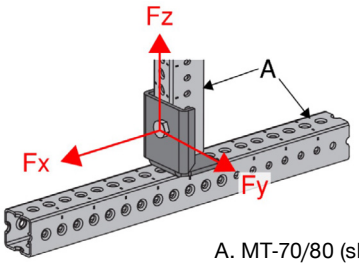
1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 58.

Table 174 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
990 (4.41)	575 (2.56)	650 (2.91)

1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. See Figure 58.

Figure 59 - MT Girder Connection



A. MT-70/80 (short side)

Table 175 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
705 (3.15)	605 (2.70)	1,645 (7.33)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 59.

Table 176 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,080 (4.82)	855 (3.82)	2,100 (9.35)

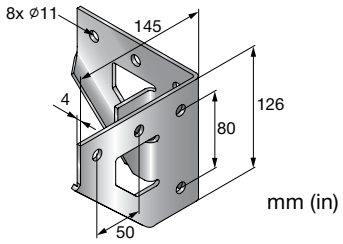
1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. See Figure 59.

3.0 MODULAR SUPPORT SYSTEM
3.2.3 MT SYSTEM CONNECTORS
MT-C-T 3D/2/HL OC

Description

3D connector for channel-to-channel connections on rooftop applications.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
EN 10025-2	S235 JR	34.08 (235)	53.66 (370)

1. Mechanical properties of EN 10025-2 Grade S235 JR meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

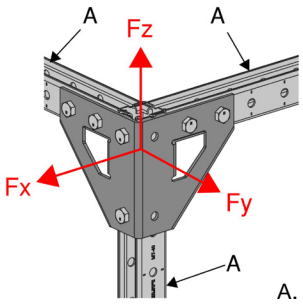
Hot-Dipped Galvanized (HDG)

MT-C-T 3D/2/HL OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-T 3D/2/HL OC	0.45 (0.21)	8	2320181

Figure 60 - MT Channel Connection



A. MT-50

Table 177 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_x ft lb (kN m)	M_y ft lb (kN m)
965 (4.31)	965 (4.31)	1,315 (5.87)	60 (0.084)	115 (0.156)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 60.

Table 178 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_x ft lb (kN m)	M_y ft lb (kN m)
1,455 (6.48)	1,375 (6.12)	1,985 (8.83)	90 (0.126)	180 (0.250)

1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. See Figure 60.

3.0 MODULAR SUPPORT SYSTEM

3.2.4 MT SPLICE CONNECTORS

MT-ES-40

Description

Extension splice for channel.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.



Corrosion Protection

Electro-Galvanized (EG)

MT-ES-40

Hot-Dipped Galvanized (HDG)

MT-ES-40 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-ES-40	1.79 (0.81)	12	2272062
MT-ES-40 OC	1.79 (0.81)	12	2272063

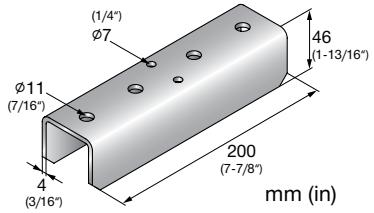
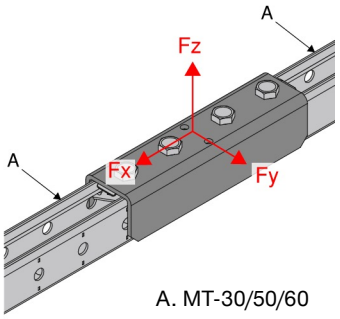


Figure 61 - Channel Splice Connection



A. MT-30/50/60

Table 179 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,105 (9.38)	130 (0.58)	1,210 (5.40)

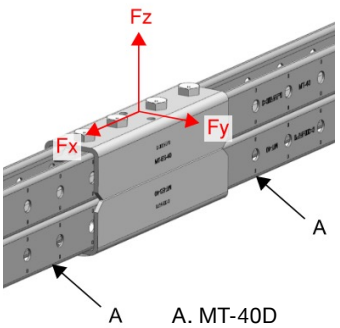
1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 61.

Table 180 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,930 (13.05)	180 (0.81)	1,685 (7.50)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 61.

Figure 62 - Channel Splice Connection



A. MT-40D

Table 181 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
4,215 (18.76)	260 (1.16)	2,425 (10.80)	475 (0.65)

1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 62.

Table 182 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
5,865 (26.10)	360 (1.62)	3,370 (15.00)	665 (0.906)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 62.

3.0 MODULAR SUPPORT SYSTEM

3.2.4 MT SPLICE CONNECTORS

MT-ES-60

Description

Extension splice for channel.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-ES-60

Hot-Dipped Galvanized (HDG)

MT-ES-60 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-ES-60	5.45 (2.47)	8	2332415
MT-ES-60 OC	5.45 (2.47)	8	2332416



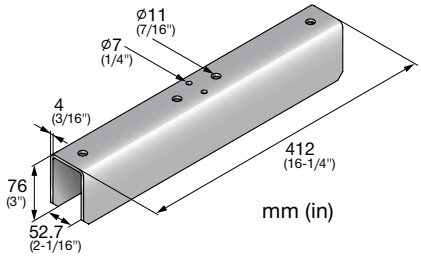
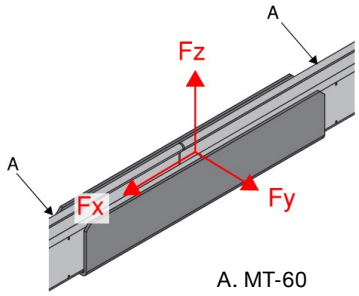


Figure 63 - Splice Extension for MT Channel



A. MT-60

*Splice connector is attached to MT Channels using 4 x MT-CTAB screws.

Table 183 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,320 (10.33)	200 (0.90)	1,655 (7.37)

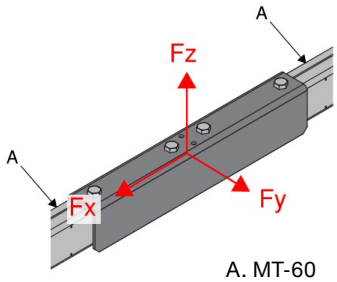
1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 63.

Table 184 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
3,230 (14.37)	265 (1.19)	2,300 (10.24)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 63.

Figure 64 - Splice Extension for MT Channel



A. MT-60

Table 185 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
835 (3.72)	80 (0.37)	1,320 (5.88)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 64.

Table 186 - Limit State Design (LSD) Load Data[1,2]

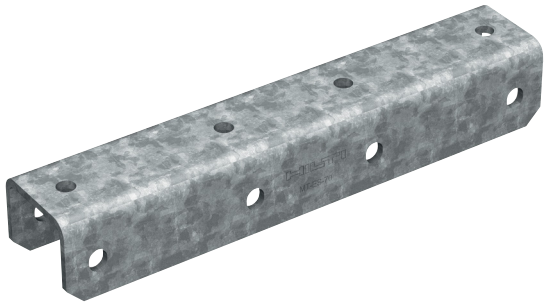
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,055 (4.70)	95 (0.44)	1,705 (7.59)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. See Figure 64.

3.0 MODULAR SUPPORT SYSTEM
3.2.4 MT SPLICE CONNECTORS
MT-ES-70 OC

Description

Splice connector for coupling MT-70 or MT-80 girders end-to-end.



Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-ES-70 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-ES-70 OC	4.03 (1.83)	4	2272078

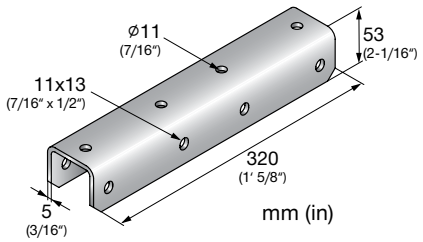
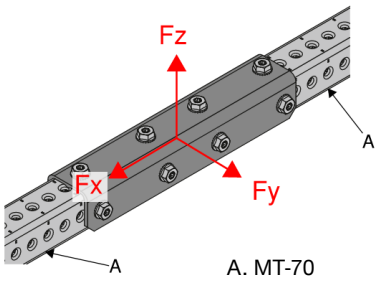


Figure 65 - MT Splice Connection



A. MT-70

Table 187 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
10,180 (45.30)	1,100 (4.90)	1,795 (8.00)

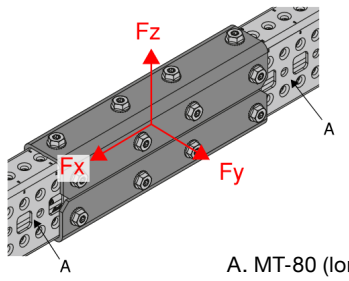
1. Minimum safety factor, Ω, for tabulated values is 2.05.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 65.

Table 188 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
13,240 (58.90)	1,435 (6.40)	2,335 (10.40)

1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. See Figure 65.

Figure 66 - MT Splice Connection



A. MT-80 (long side)

Table 189 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
20,360 (90.60)	2,200 (9.80)	3,595 (16.00)	3,340 (4.53)

1. Minimum safety factor, Ω, for tabulated values is 2.3.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 66.

Table 190 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
26,480 (117.80)	2,875 (12.80)	4,675 (20.80)	4,340 (5.89)

1. Maximum resistance factor, ϕ, for tabulated values is 0.6.
2. See Figure 66.

3.0 MODULAR SUPPORT SYSTEM
3.2.4 MT SPLICE CONNECTORS
MT-ES-90 OC

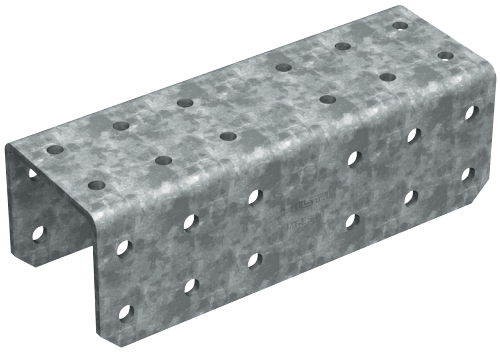
Description

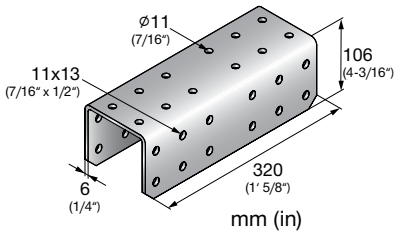
Splice connector for coupling MT-90 or MT-100 girders end-to-end.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.





Corrosion Protection

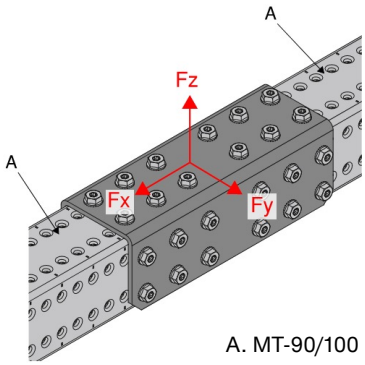
Hot-Dipped Galvanized (HDG)

MT-ES-90 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-ES-90 OC	1.79 (0.81)	12	2272076

Figure 67 - MT Splice Connection



A. MT-90/100 (short side)

Table 191 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
35,960 (160.0)	2,605 (11.60)	3,595 (16.00)	3,200 (4.34)

1. Minimum safety factor, Ω, for tabulated values is 2.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 67.

Table 192 - Limit State Design (LSD) Load Data[1,2]

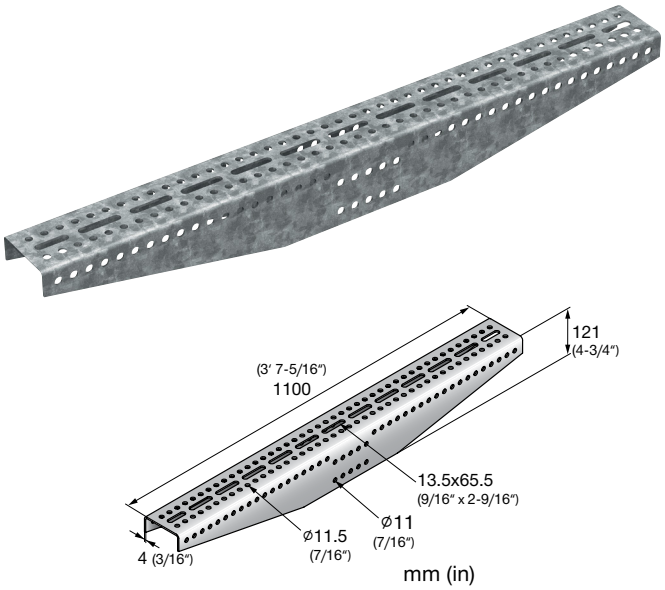
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
46,760 (208.0)	3,390 (15.10)	4,675 (20.80)	3,340 (4.53)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 67.

3.0 MODULAR SUPPORT SYSTEM
3.2.5 MT BEAM CONNECTORS
MT-U-GL1 OC

Description

T-Post beam connector (horizontal) for MT-90 and MT-100.



Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

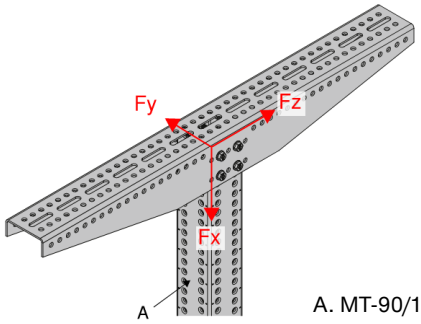
Hot-Dipped Galvanized (HDG)

MT-U-GL1 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-U-GL1 OC	19.48 (8.84)	2	2272070

Figure 68 - T-Beam to MT Connection



A. MT-90/100 (short side)

Table 193 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
14,545 (64.70)	1,545 (6.88)	4,690 (20.88)	1,940 (2.63)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 68.
4. Loading in the negative x-direction is not recommended for this connector.

Table 194 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)	M_y ft lb (kN m)
18,905 (84.10)	2,255 (10.04)	7,040 (31.32)	2,895 (3.93)

1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. See Figure 68.
3. Loading in the negative x-direction is not recommended for this connector.

3.0 MODULAR SUPPORT SYSTEM

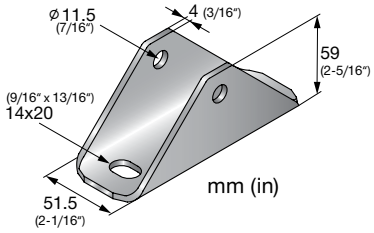
3.2.6 MT ANGLE BRACES AND FITTINGS

MT-AB-A

Description

Adjustable brace for anchoring bracing of MT-50 channel.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-AB-A

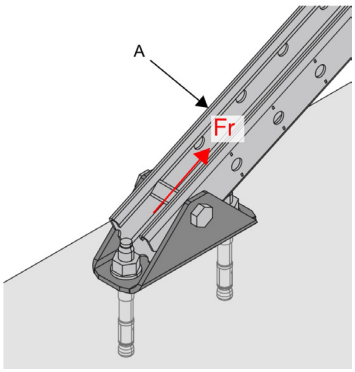
Hot-Dipped Galvanized (HDG)

MT-AB-A OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-AB-A	0.97 (0.44)	12	2346395
MT-AB-A OC	0.97 (0.44)	12	2346396

Figure 69 - MT Channel Base Anchorage



A. MT-50

Table 195 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_r lb (kN)
2,060 (9.17)

1. Safety factor, Ω, for tabulated values is 3.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Load values are for base connector only. The design professional is responsible for checking base and anchor strength.
4. See Figure 69.

Table 196 - Limit State Design (LSD) Load Data[1,2,3]

F_r lb (kN)
2,610 (11.61)

1. Resistance factor, ϕ, for tabulated values is 0.4.
2. Load values are for base connector only. The design professional is responsible for checking base and anchor strength.
3. See Figure 69.

3.0 MODULAR SUPPORT SYSTEM

3.2.6 MT ANGLE BRACES AND FITTINGS

MT-AB-L 45

Description

45-degree angle brace for MT-50 channel to concrete and channel-to-channel connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-AB-L 45

Hot-Dipped Galvanized (HDG)

MT-AB-L 45 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-AB-L 45	1.06 (0.48)	10	2272113
MT-AB-L 45 OC	1.06 (0.48)	10	2272114



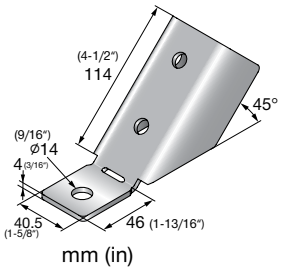
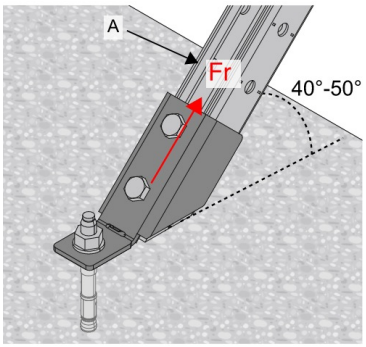


Figure 70 - MT Channel Anchorage to Base



A. MT-50

Table 197 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_r lb (kN)
975 (4.34)

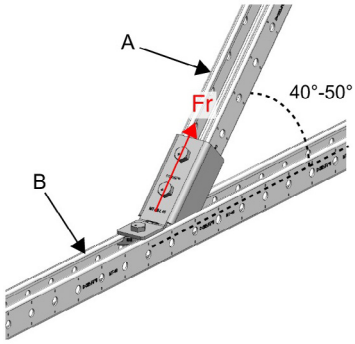
1. Safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Load values are for base connector only. The design professional is responsible for checking concrete and fastener strength.
4. See Figure 70.

Table 198 - Limit State Design (LSD) Load Data[1,2,3]

F_r lb (kN)
1,230 (5.48)

1. Resistance factor, ϕ, for tabulated values is 0.55.
2. Load values are for base connector only. The design professional is responsible for checking concrete and fastener strength.
3. See Figure 70.

Figure 71 - MT Channel-to-Channel Connection



A. MT-50

Table 199 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_r lb (kN)
975 (4.34)

1. Safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 71.

Table 200 - Limit State Design (LSD) Load Data[1,2]

F_r lb (kN)
1,230 (5.48)

1. Resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 71.

3.0 MODULAR SUPPORT SYSTEM
3.2.6 MT ANGLE BRACES AND FITTINGS
MT-AB-LL2 45

Description

45-degree angle bracket for bracing channel connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-AB-LL2 45

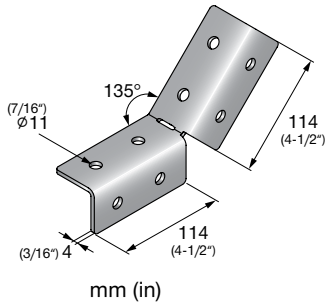
Hot-Dipped Galvanized (HDG)

MT-AB-LL2 45 OC

Ordering Information

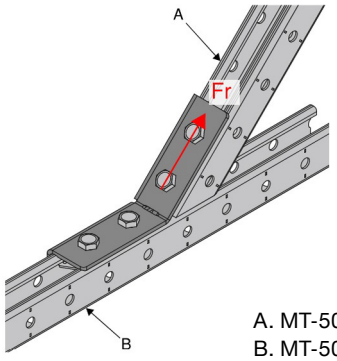
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-AB-LL2 45	1.32 (0.60)	10	2272115
MT-AB-LL2 45 OC	1.32 (0.60)	10	2273585





mm (in)

Figure 72 - MT Channel-to-Channel Connection



A. MT-50
B. MT-50/60/40D

Table 201 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_r lb (kN)
1,300 (5.79)

1. Safety factor, Ω, for tabulated values is 3.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 72.

Table 202 - Limit State Design (LSD) Load Data[1,2]

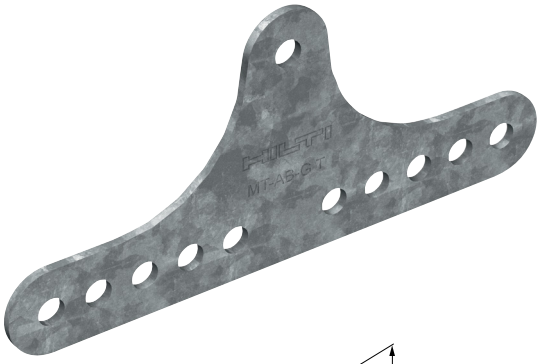
F_r lb (kN)
1,640 (7.33)

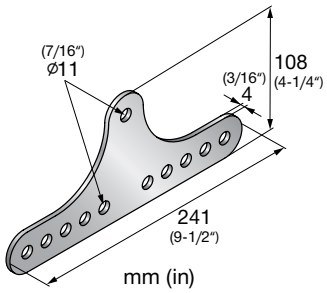
1. Resistance factor, ϕ, for tabulated values is 0.45.
2. See Figure 72.

3.0 MODULAR SUPPORT SYSTEM
3.2.6 MT ANGLE BRACES AND FITTINGS
MT-AB-G T OC

Description

Angle brace connector for MT girders.





Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

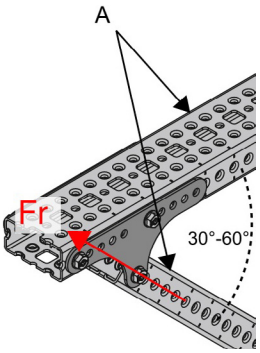
Hot-Dipped Galvanized (HDG)

MT-AB-G T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-AB-G T OC	0.77 (0.35)	4	2272116

Figure 73 - MT Girder Connection



A. MT-70/80/90/100

Table 203 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_r lb (kN)
4,740 (21.10)

1. Safety factor, Ω, for tabulated values is 2.35.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 73.

Table 204 - Limit State Design (LSD) Load Data[1,2,3]

F_r lb (kN)
6,315 (28.10)

1. Resistance factor, ϕ, for tabulated values is 0.6.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 73.

3.0 MODULAR SUPPORT SYSTEM
3.2.6 MT ANGLE BRACES AND FITTINGS
MT-B-GS AB OC

Description

Angle brace base connector for MT-70 girder to MT, concrete, or steel (X-BT/S-BT/F-BT).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

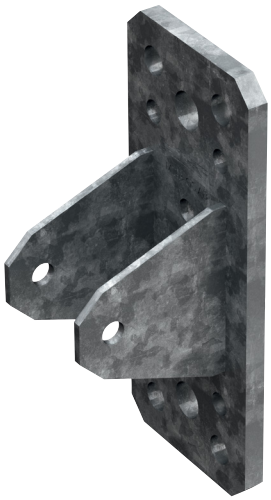
Corrosion Protection

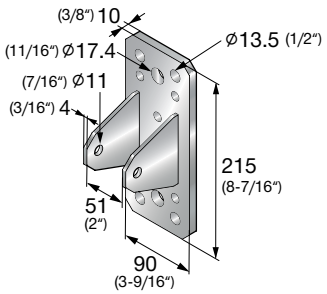
Hot-Dipped Galvanized (HDG)

MT-B-GS AB OC

Ordering Information

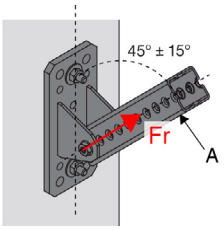
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GS AB OC	3.62 (1.64)	8	2332787





mm (in)

Figure 74 - MT Girder-to-Concrete



A. MT-70

Table 205 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_r lb (kN)
3,795 (16.90)

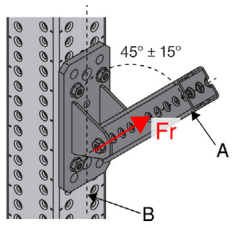
1. Safety factor, Ω, for tabulated values is 3.4.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.
4. See Figure 74.

Table 206 - Limit State Design (LSD) Load Data[1,2,3]

F_r lb (kN)
5,280 (23.50)

1. Resistance factor, ϕ, for tabulated values is 0.4.
2. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.
3. See Figure 74.

Figure 75 - MT Girder-to-Girder



A. MT-70
B. MT-80 (long side)/MT-90/MT-100

Table 207 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_r lb (kN)
2,940 (13.10)

1. Safety factor, Ω, for tabulated values is 2.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 75.

Table 208 - Limit State Design (LSD) Load Data[1,2]

F_r lb (kN)
4,180 (18.60)

1. Resistance factor, ϕ, for tabulated values is 0.6.
2. See Figure 75.

3.0 MODULAR SUPPORT SYSTEM

3.2.6 MT ANGLE BRACES AND FITTINGS

MT-B-GL AB OC

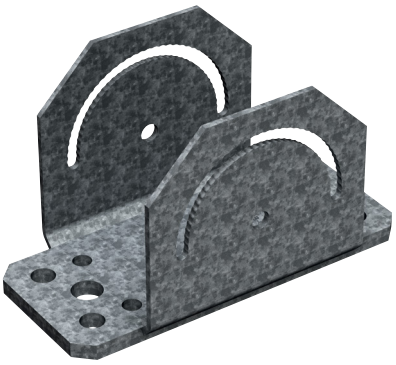
Description

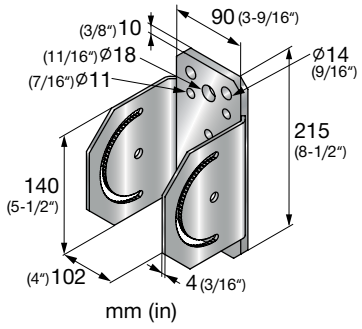
Adjustable angle brace base for MT-90 or MT-100 girder to MT, concrete, or steel (X-BT/S-BT/F-BT).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.





Corrosion Protection

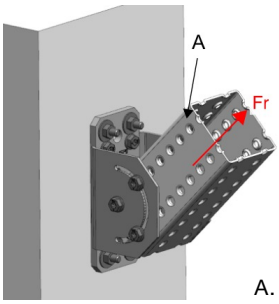
Hot-Dipped Galvanized (HDG)

MT-B-GL AB OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-GL AB OC	5.20 (2.36)	6	2353811

Figure 76 - MT Girder-to-Concrete



A. MT-90/100 (long side)

Table 209 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_r lb (kN)
5,035 (22.40)

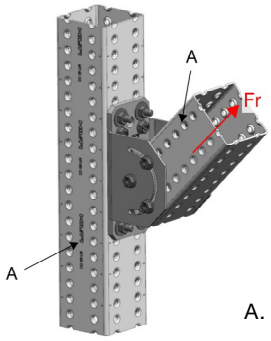
1. Safety factor, Ω, for tabulated values is 2.5.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.
4. See Figure 76.

Table 210 - Limit State Design (LSD) Load Data[1,2,3]

F_r lb (kN)
7,125 (31.70)

1. Resistance factor, ϕ, for tabulated values is 0.6.
2. Load values are for base connector only. Design professional is responsible for checking concrete and fastener strength.
3. See Figure 76.

Figure 77 - MT Girder-to-Girder



A. MT-90/100 (long side)

Table 211 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_r lb (kN)
3,145 (14.00)

1. Safety factor, Ω, for tabulated values is 2.2.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 77.

Table 212 - Limit State Design (LSD) Load Data[1,2]

F_r lb (kN)
4,450 (19.80)

1. Resistance factor, ϕ, for tabulated values is 0.65.
2. See Figure 77.

3.0 MODULAR SUPPORT SYSTEM

3.2 MT COMPONENTS

3.2.7 MT BRACKETS

Table 213 - Material Specifications and Ordering Information

Description	Material Specifications[1,2]	F_y ksi (MPa)	F_u ksi (MPa)	Type of Coating	Finish	Quantity Piece(s)	Item No.
MT-BR-30 300	EN-10025-2 S235 JR	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	12	2271288
MT-BR-30 300 OC	EN-10025-2 S235 JR	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	12	2271289
MT-BR-30 450	EN-10025-2 S235 JR	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	16	2271440
MT-BR-30 450 OC	EN-10025-2 S235 JR	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	16	2271441
MT-BR-40 300	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	10	2271442
MT-BR-40 300 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	10	2271443
MT-BR-40 450	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	10	2271444
MT-BR-40 450 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	10	2271445
MT-BR-40 600	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	10	2271451
MT-BR-40 600 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	10	2271452
MT-BR-40 1000	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	10	2271446
MT-BR-40 1000 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	10	2271447
MT-BR-40 O4 600 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	4	2271455
MT-BR-40 O4 1000 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	4	2271456
MT-BR-40D 600	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	6	2271448
MT-BR-40D 600 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	6	2271449
MT-BR-40D 1000	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Indoor	Electro-Galvanized	6	2271450
MT-BR-40D 1000 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	6	2271453
MT-BR-40D O4 600 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	4	2271459
MT-BR-40D O4 1000 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	4	2271461
MT-BR-40D O4 1500 OC	GB/T 700 Q235 B	34.08 (235)	53.66 (370)	Outdoor	Hot Dipped Galvanized	2	2271287

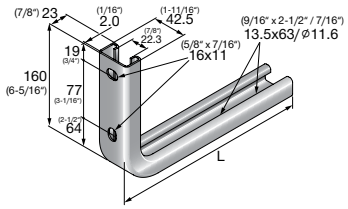
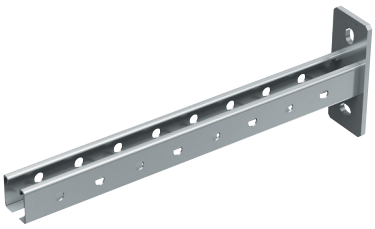
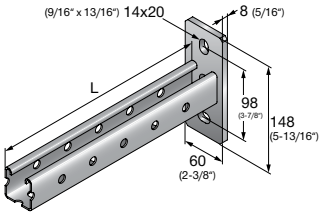
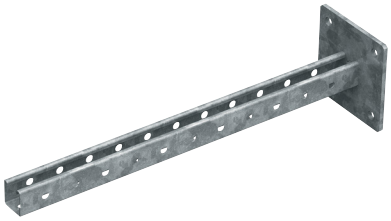
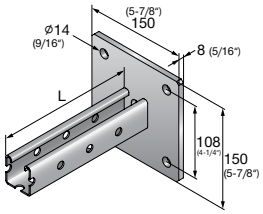
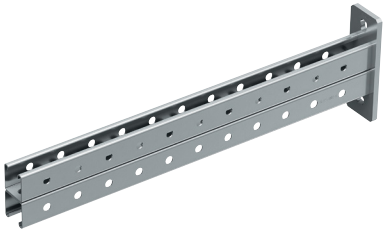
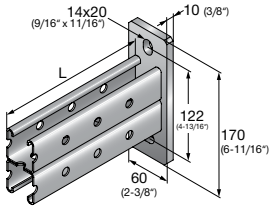
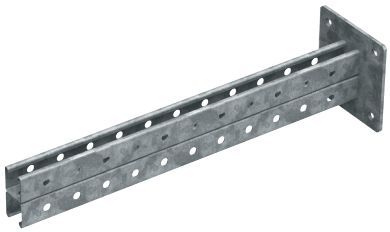
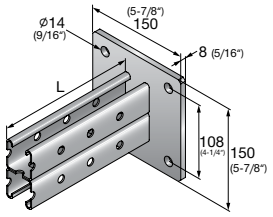
1. Mechanical properties of EN-10025-2 Grade S235 JR meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.
2. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

3.0 MODULAR SUPPORT SYSTEM

3.2 MT COMPONENTS

3.2.7 MT BRACKETS

Table 214 - MT Bracket Dimensions

MT-BR-30 300, MT-BR-30 300 OC **MT-BR-30 450, MT-BR-30 450 OC** **Bent bracket – 13/16" (14 gauge) equivalent channel**		 mm (in)
MT-BR-40 300, MT-BR-40 300 OC **MT-BR-40 450, MT-BR-40 450 OC** **MT-BR-40 600, MT-BR-40 600 OC** **MT-BR-40 1000, MT-BR-40 1000 OC** **Cantilever arm with 1-5/8" (14 gauge) equivalent channel**		 mm (in)
MT-BR-40 O4 600 OC **MT-BR-40 O4 1000 OC** **4-hole channel bracket – 1-5/8" (14 gauge) equivalent channel**		 mm (in)
MT-BR-40D 600, MT-BR-40D 600 OC **MT-BR-40D 1000, MT-BR-40D 1000 OC** **2-hole channel bracket – back-to-back 1-5/8" (14 gauge) equivalent channel**		 mm (in)
MT-BR-40D O4 600 OC **MT-BR-40D O4 1000 OC** **MT-BR-40D OC 1500 OC** **4-hole channel bracket – back-to-back 1-5/8" (14 gauge) equivalent channel**		 mm (in)

*See Instructions For Use (IFU), packaged with the product, for special Installation parameters and additional hardware required.

3.0 MODULAR SUPPORT SYSTEM
3.2 MT COMPONENTS
3.2.7 MT BRACKETS

Figure 78 - MT-BR-30



Figure 79 - MT-BR-40

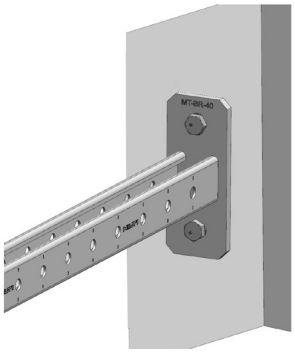


Figure 80 - MT-BR-40D



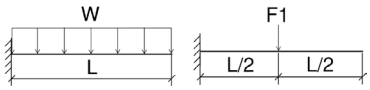


Table 215 - Allowable Strength Design (ASD) Load Data[1,5,6,7]

Bracket	Weight lbs (kg)	L in (mm)	W lb/in (N/cm)	F1 lb (kN)
MT-BR-30 300 (OC)[2]	1.43 (0.65)	11-13/16 (300)	18.62 (33.03)	220 (1.00)
MT-BR-30 450 (OC)[2]	1.93 (0.88)	17-11/16 (450)	8.20 (14.68)	145 (0.66)
MT-BR-40 300 (OC)[2]	2.49 (1.13)	11-13/16 (300)	66.04 (116.36)	780 (3.49)
MT-BR-40 450 (OC)[2]	3.15 (1.43)	17-11/16 (450)	29.35 (51.71)	520 (2.33)
MT-BR-40 600 (OC)[2]	3.84 (1.74)	23-5/8 (600)	16.51 (29.09)	390 (1.75)
MT-BR-40 1000 (OC)[2]	5.64 (2.56)	39-3/8 (1000)	5.97 (10.47)	235 (1.05)
MT-BR-40 O4 600 OC	5.69 (2.58)	23-5/8 (600)	18.20 (32.16)	430 (1.93)
MT-BR-40 O4 1000 OC	7.50 (3.40)	39-3/8 (1000)	6.60 (11.58)	260 (1.16)
MT-BR-40D 600 (OC)[3,4]	3.84 (1.74)	23-5/8 (600)	50.17 (88.12)	1,185 (5.29)
MT-BR-40D 1000 (OC)[3,4]	5.64 (2.56)	39-3/8 (1000)	18.03 (31.72)	710 (3.17)
MT-BR-40D O4 600 OC	8.40 (3.81)	23-5/8 (600)	50.17 (88.12)	1,185 (5.29)
MT-BR-40D O4 1000 OC	12.02 (5.45)	39-3/8 (1000)	18.03 (31.72)	710 (3.17)
MT-BR-40D O4 1500 OC	16.49 (7.48)	59-1/16 (1500)	8.04 (14.10)	475 (2.11)

1. Minimum safety factor, Ω, for tabulated values is 2.5.
2. No reductions to tabulated loads need to be applied for bracket attachment to channel.
3. For bracket attachment to 14 gauge vertical channel, multiply tabulated load values by 0.61.
4. For bracket attachment to 12 gauge (e.g. MT-50) vertical channel, multiply tabulated load values by 0.66.
5. The loads apply only when channel profile opening is facing upward or downward.
6. The bracket's self-weight has been accounted for in the table load values.
7. Load values are for bracket only. Design professional is responsible for checking base material and fastener strength.

3.0 MODULAR SUPPORT SYSTEM
3.2 MT COMPONENTS
3.2.7 MT BRACKETS

Figure 81 - MT-BR-30



Figure 82 - MT-BR-40

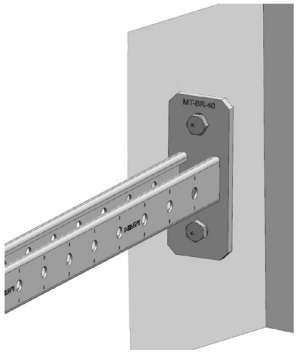


Figure 83 - MT-BR-40D



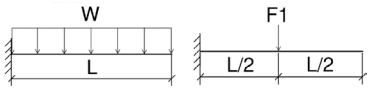


Table 216 - Limit State Design (LSD) Load Data[1,5,6,7]

Bracket	Weight lbs (kg)	L in (mm)	W lb/in (N/cm)	F1 lb (kN)
MT-BR-30 300 (OC)[2]	1.43 (0.65)	11-13/16 (300)	30.46 (53.86)	360 (1.62)
MT-BR-30 450 (OC)[2]	1.93 (0.88)	17-11/16 (450)	13.67 (23.94)	240 (1.08)
MT-BR-40 300 (OC)[2]	2.49 (1.13)	11-13/16 (300)	99.86 (174.89)	1,180 (5.25)
MT-BR-40 450 (OC)[2]	3.15 (1.43)	17-11/16 (450)	44.31 (77.73)	785 (3.50)
MT-BR-40 600 (OC)[2]	3.84 (1.74)	23-5/8 (600)	24.97 (43.72)	590 (2.62)
MT-BR-40 1000 (OC)[2]	5.64 (2.56)	39-3/8 (1000)	8.89 (15.74)	350 (1.57)
MT-BR-40 O4 600 OC	5.69 (2.58)	23-5/8 (600)	27.52 (48.34)	650 (2.90)
MT-BR-40 O4 1000 OC	7.50 (3.40)	39-3/8 (1000)	9.91 (17.40)	390 (1.74)
MT-BR-40D 600 (OC)[3,4]	3.84 (1.74)	23-5/8 (600)	75.57 (132.45)	1,785 (7.95)
MT-BR-40D 1000 (OC)[3,4]	5.64 (2.56)	39-3/8 (1000)	27.18 (47.68)	1,070 (4.77)
MT-BR-40D O4 600 OC	8.40 (3.81)	23-5/8 (600)	75.57 (132.45)	1,785 (7.95)
MT-BR-40D O4 1000 OC	12.02 (5.45)	39-3/8 (1000)	27.18 (47.68)	1,070 (4.77)
MT-BR-40D O4 1500 OC	16.49 (7.48)	59-1/16 (1500)	12.10 (21.19)	715 (3.18)

1. Maximum resistance factor, Ω, for tabulated values is 0.65.
2. No reductions to tabulated loads need to be applied for bracket attachment to channel.
3. For bracket attachment to 14 gauge vertical channel, multiply tabulated load values by 0.52.
4. For bracket attachment to 12 gauge (e.g. MT-50) vertical channel, multiply tabulated load values by 0.57.
5. The loads apply only when channel profile opening is facing upward or downward.
6. The bracket's self-weight has been accounted for in the table load values.
7. Load values are for bracket only. Design professional is responsible for checking base material and fastener strength.

3.0 MODULAR SUPPORT SYSTEM
3.2.8 MT CLAMPS AND CHANNEL TIES
MT-CC-30

Description

Clamp for channel-to-channel or channel-to-girder connections.



Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

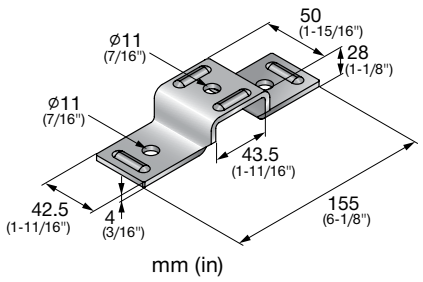
Corrosion Protection

Electro-Galvanized (EG)

MT-CC-30

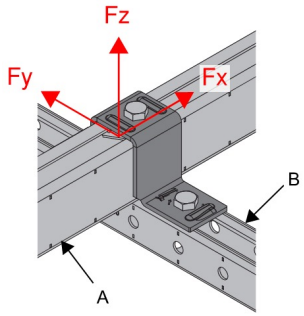
Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CC-30	0.60 (0.27)	10	2322427



mm (in)

Figure 84 - Channel-to-Channel Connection



A. MT-30
B. MT-30/50/60

Table 217 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	1,685 (7.50)	1,120 (5.00)

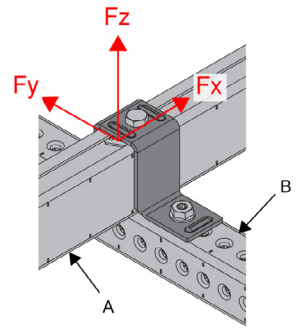
1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 84.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 218 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,345 (10.44)	1,560 (6.96)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 84.
3. Loading in the negative Z-direction is not recommended for this connector.

Figure 85 - Channel-to-Girder Connection



A. MT-30
B. MT-70/80/90/100

Table 219 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	2,035 (9.06)	1,645 (7.33)

1. Minimum safety factor, Ω, for tabulated values is 2.35.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 85.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 220 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,645 (11.78)	2,140 (9.53)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 85.
3. Loading in the negative Z-direction is not recommended for this connector.

3.0 MODULAR SUPPORT SYSTEM

3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CC-40/50

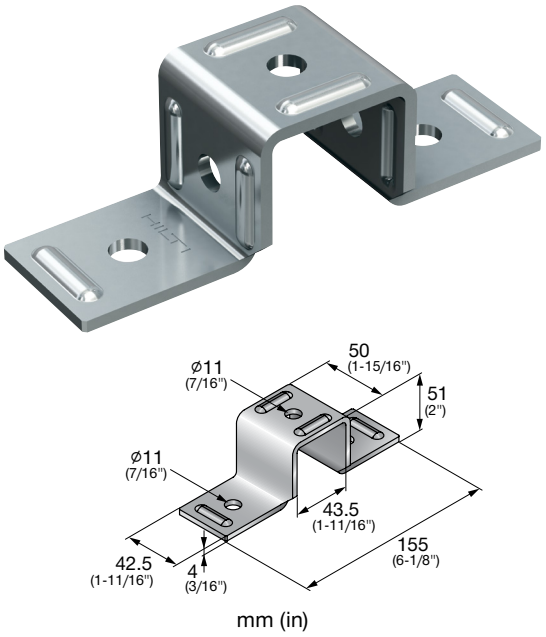
Description

Clamp for channel-to-channel or channel-to-girder connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.



mm (in)

Corrosion Protection

Electro-Galvanized (EG)

MT-CC-40/50

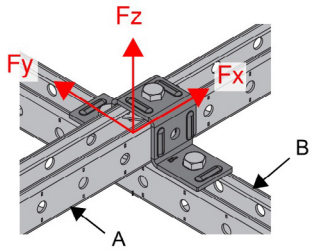
Hot-Dipped Galvanized (HDG)

MT-CC-40/50 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CC-40/50	0.70 (0.32)	20	2322429
MT-CC-40/50 OC	0.70 (0.32)	20	2322391

Figure 86 - Channel-to-Channel Connection



A. MT-50
B. MT-30/50/60/40D

Table 221 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	1,685 (7.50)	1,120 (5.00)

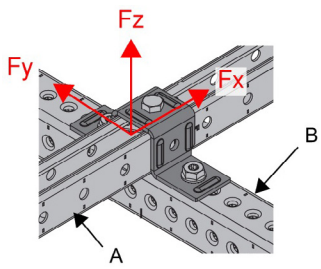
1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 86.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 222 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,345 (10.44)	1,560 (6.96)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 86.
3. Loading in the negative Z-direction is not recommended for this connector.

Figure 87 - Channel-to-Girder Connection



A. MT-50
B. MT-70/80/90/100

Table 223 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	2,035 (9.06)	1,645 (7.33)

1. Minimum safety factor, Ω, for tabulated values is 2.35.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 87.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 224 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,645 (11.78)	2,140 (9.53)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 87.
3. Loading in the negative Z-direction is not recommended for this connector.

3.0 MODULAR SUPPORT SYSTEM

3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CC-40D

Description

Clamp for channel-to-channel or channel-to-girder connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-CC-40D

Hot-Dipped Galvanized (HDG)

MT-CC-40D OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CC-40D	1.02 (0.47)	10	2322398
MT-CC-40D OC	1.02 (0.47)	10	2322399

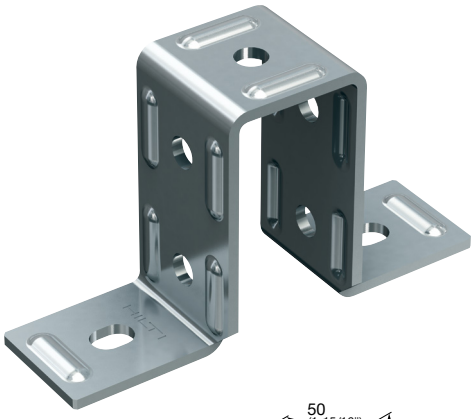
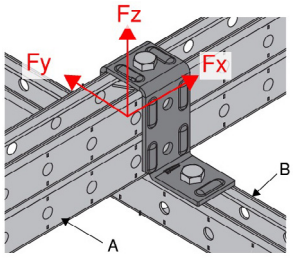


Figure 88 - Channel-to-Channel Connection



A. MT-40D
B. MT-30/50/60/40D

Table 225 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	1,685 (7.50)	1,120 (5.00)

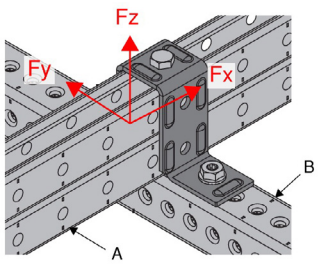
1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 88.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 226 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,345 (10.44)	1,560 (6.96)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 88.
3. Loading in the negative Z-direction is not recommended for this connector.

Figure 89 - Channel-to-Girder Connection



A. MT-40D
B. MT-70/80/90/100

Table 227 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	2,035 (9.06)	1,645 (7.33)

1. Minimum safety factor, Ω, for tabulated values is 2.35.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 89.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 228 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,645 (11.78)	2,140 (9.53)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 89.
3. Loading in the negative Z-direction is not recommended for this connector.

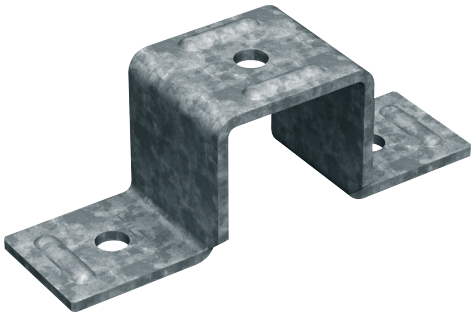
3.0 MODULAR SUPPORT SYSTEM

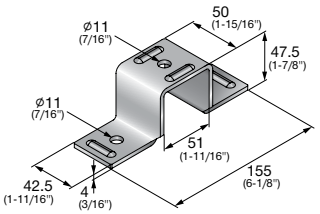
3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CC-70 OC

Description

Clamp for girder-to-channel or girder-to-girder connections.





mm (in)

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

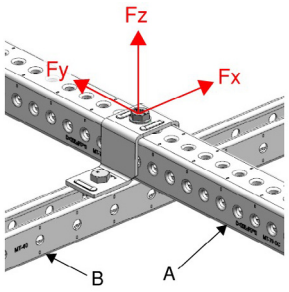
Hot-Dipped Galvanized (HDG)

MT-CC-70 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CC-70 OC	0.79 (0.36)	16	2322404

Figure 90 - Girder-to-Channel Connection



A. MT-70
B. MT-30/50/60/40D

Table 229 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
700 (3.12)	2,105 (9.38)	1,120 (5.00)

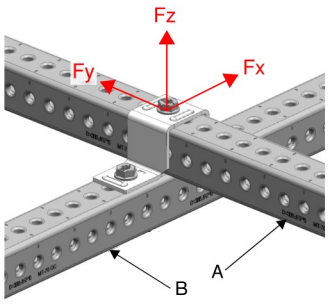
1. Minimum safety factor, Ω, for tabulated values is 2.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 90.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 230 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
975 (4.35)	2,930 (13.05)	1,560 (6.96)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 90.
3. Loading in the negative Z-direction is not recommended for this connector.

Figure 91 - Girder-to-Girder Connection



A. MT-70
B. MT-70/80/90/100

Table 231 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,545 (11.33)	2,035 (9.06)	2,055 (9.16)

1. Minimum safety factor, Ω, for tabulated values is 2.35.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 915.
4. Loading in the negative Z-direction is not recommended for this connector.

Table 232 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
3,310 (14.73)	2,645 (11.78)	2,675 (11.91)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. See Figure 91.
3. Loading in the negative Z-direction is not recommended for this connector.

3.0 MODULAR SUPPORT SYSTEM

3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CT-H2

Description

Flat plate for channel-to-channel (same size) connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-CT-H2

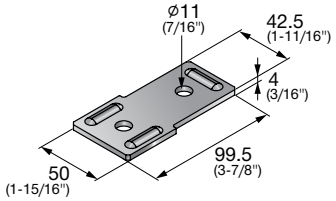
Hot-Dipped Galvanized (HDG)

MT-CT-H2 OC

Ordering Information

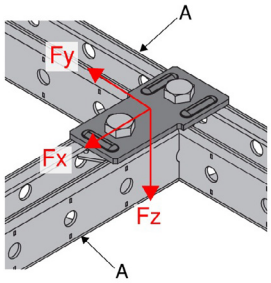
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CT-H2	0.31 (0.14)	15	2322405
MT-CT-H2 OC	0.31 (0.14)	15	2322409





mm (in)

Figure 92 - Single Plate Connection



A. MT-30/50/60/40D

Table 233 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
350 (1.56)	350 (1.56)	495 (2.22)

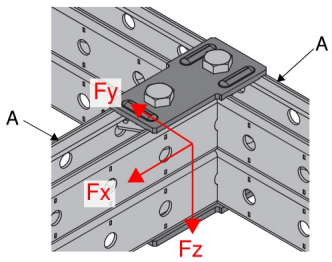
1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 92.

Table 234 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
490 (2.18)	490 (2.18)	640 (2.86)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. See Figure 92.

Figure 93 - Double Plate Connection



A. MT-40D

Table 235 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
700 (3.12)	700 (3.12)	1,615 (7.19)

1. Minimum safety factor, Ω, for tabulated values is 3.50.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 93.

Table 236 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
975 (4.35)	975 (4.35)	2,100 (9.35)

1. Maximum resistance factor, ϕ, for tabulated values is 0.4.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 93.

3.0 MODULAR SUPPORT SYSTEM

3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CT-H5

Description

Flat plate for channel-to-channel (same size) connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-CT-H5

Hot-Dipped Galvanized (HDG)

MT-CT-H5 OC

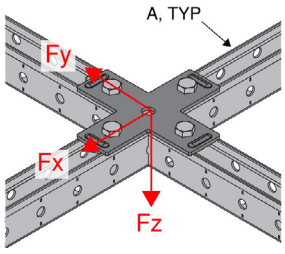
Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CT-H5	0.76 (0.34)	8	2322406
MT-CT-H5 OC	0.76 (0.34)	8	2322410



mm (in)

Figure 94 - Single Plate Connection



A. MT-30/50/60/40D

Table 237- Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
550 (2.46)	505 (2.25)	495 (2.22)

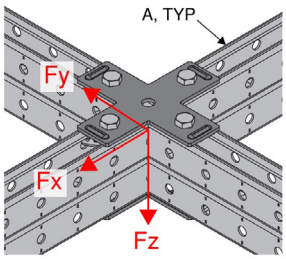
1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 94.

Table 238- Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
715 (3.19)	645 (2.88)	640 (2.86)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. See Figure 94.

Figure 95 - Double Plate Connection



A. MT-40D

Table 239 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,340 (5.98)	1,010 (4.50)	1,615 (7.19)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 95.

Table 240 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,745 (7.77)	1,290 (5.75)	2,100 (9.35)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 95.

3.0 MODULAR SUPPORT SYSTEM

3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CT-T

Description

Flat plate for channel-to-channel connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

MT-CT-T

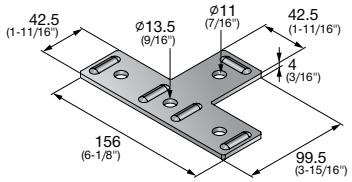
Hot-Dipped Galvanized (HDG)

MT-CT-T OC

Ordering Information

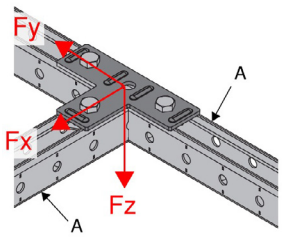
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CT-T	0.59 (0.27)	12	2322407
MT-CT-T OC	0.59 (0.27)	12	2322411





mm (in)

Figure 96 - Single Plate Connection



A. MT-30/50/60/40D

Table 241 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
505 (2.25)	990 (4.42)	495 (2.22)

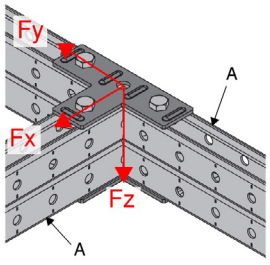
1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 96.

Table 242 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
700 (3.13)	1,290 (5.75)	640 (2.86)

1. Maximum resistance factor, ϕ, for tabulated values is 0.50.
2. See Figure 96.

Figure 97 - Double Plate Connection



A. MT-40D

Table 243 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,010 (4.50)	1,845 (8.22)	1,615 (7.19)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 97.

Table 244 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,405 (6.26)	2,400 (10.69)	2,100 (9.35)

1. Maximum resistance factor, ϕ, for tabulated values is 0.55.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 97.

3.0 MODULAR SUPPORT SYSTEM

3.2.8 MT CLAMPS AND CHANNEL TIES

MT-CT-H4

Description

Flat plate for channel-to-channel (same size) connections.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

Corrosion Protection

Electro-Galvanized (EG)

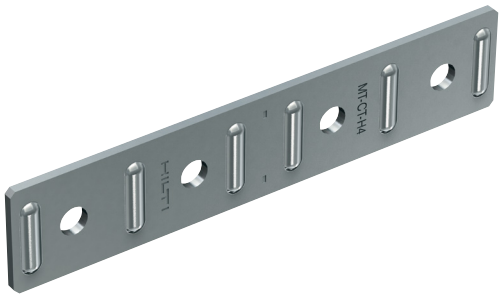
MT-CT-H4

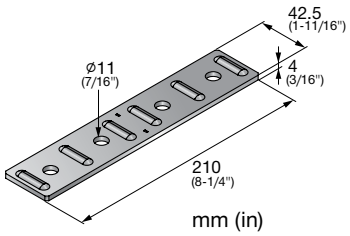
Hot-Dipped Galvanized (HDG)

MT-CT-H4 OC

Ordering Information

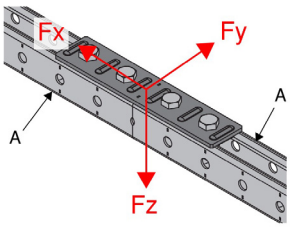
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CT-H4	0.58 (0.26)	15	2322408
MT-CT-H4 OC	0.58 (0.26)	15	2322412





mm (in)

Figure 98 - Single Plate Connection



A. MT-30/50/60/40D

Table 245 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,215 (5.41)	350 (1.56)	495 (2.22)

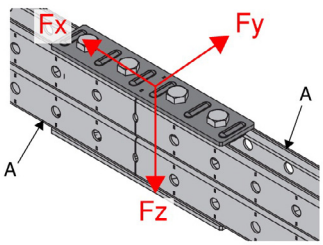
1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 98.

Table 246 - Limit State Design (LSD) Load Data[1,2]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
1,580 (7.03)	490 (2.18)	640 (2.86)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. See Figure 98.

Figure 99 - Double Plate to Connection



A. MT-40D

Table 247 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
2,305 (10.27)	700 (3.12)	1,615 (7.19)

1. Minimum safety factor, Ω, for tabulated values is 3.50.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on plates being installed in pairs.
4. See Figure 99.

Table 248 - Limit State Design (LSD) Load Data[1,2,3]

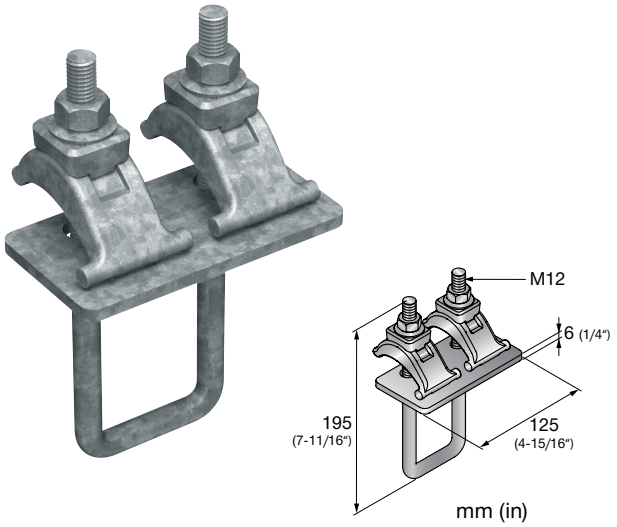
F_x lb (kN)	F_y lb (kN)	F_z lb (kN)
3,000 (13.35)	975 (4.35)	2,100 (9.35)

1. Maximum resistance factor, ϕ, for tabulated values is 0.4.
2. Tabulated values are based on plates being installed in pairs.
3. See Figure 99.

3.0 MODULAR SUPPORT SYSTEM
3.2.9 MT BEAM CLAMPS
MT-BC-GS T OC

Description

Girder beam clamp – MT-70 and MT-80.



Corrosion Protection

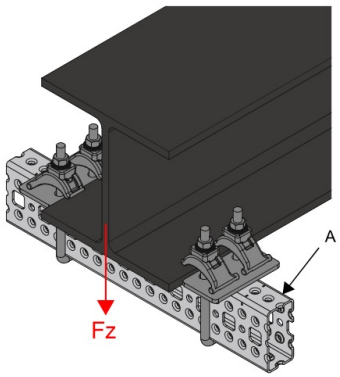
Hot-Dipped Galvanized (HDG)

MT-BC-GS T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-BC-GS T OC	2.81 (1.28)	12	2273587

Figure 100 - MT Girder-to-Steel



A. MT-70/80

Table 249 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_z lb (kN)
3,035 (13.52)

1. Safety factor, Ω, for tabulated values is 2.0.
2. Tabulated values represent the total allowable load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 1,515 lbs (6.76 kN).
3. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
4. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
5. See Figure 100.

Table 250 - Limit State Design (LSD) Load Data[1,2,3,4]

F_z lb (kN)
4,555 (20.28)

1. Resistance factor, ϕ, for tabulated values is 0.75.
2. Tabulated values represent the total factored design load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 2,275 lbs (10.14 kN).
3. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
4. See Figure 100.

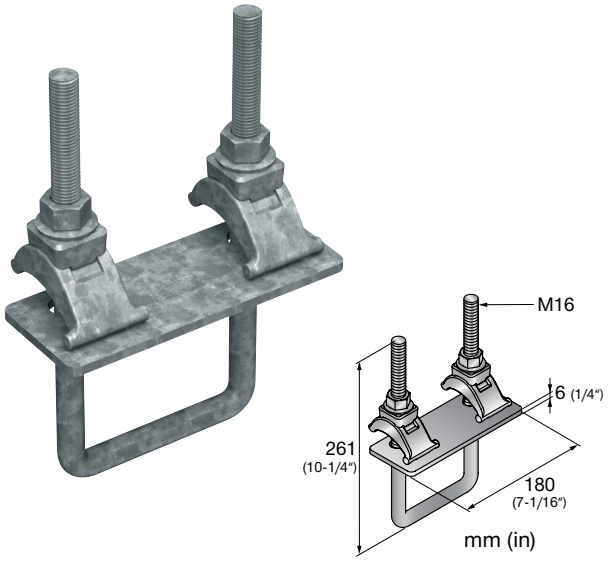
3.0 MODULAR SUPPORT SYSTEM

3.2.9 MT BEAM CLAMPS

MT-BC-GXL T OC

Description

Girder beam clamp – MT-90 and MT-100.



Corrosion Protection

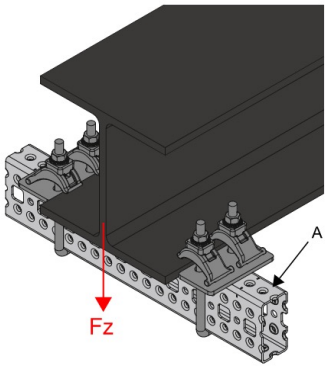
Hot-Dipped Galvanized (HDG)

MT-BC-GXL T OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-BC-GXL T OC	4.67 (2.12)	10	2273589

Figure 101 - MT Girder-to-Steel



A. MT-90/100

Table 251 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_z lb (kN)
6,500 (28.92)

1. Safety factor, Ω, for tabulated values is 2.0.
2. Tabulated values represent the total allowable load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 3,250 lbs (14.46 kN).
3. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
4. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
5. See Figure 101.

Table 252 - Limit State Design (LSD) Load Data[1,2,3,4]

F_z lb (kN)
9,745 (43.37)

1. Resistance factor, ϕ, for tabulated values is 0.75.
2. Tabulated values represent the total factored design load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 4,870 lbs (21.68 kN).
3. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
4. See Figure 101.

3.0 MODULAR SUPPORT SYSTEM

3.2.9 MT BEAM CLAMPS

MQT-21-41

Description

Beam clamp for connecting channels directly to steel beams.



Corrosion Protection

Electro-Galvanized (EG)

MQT-21-41

Hot-Dipped Galvanized (HDG)

MQT-21-41-F

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MQT-21-41	0.83 (0.38)	10	369675
MQT-21-41-F	0.79 (0.36)	10	304190

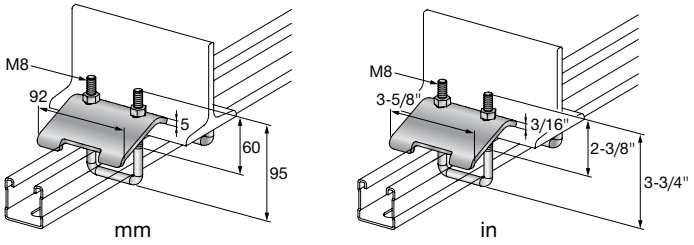
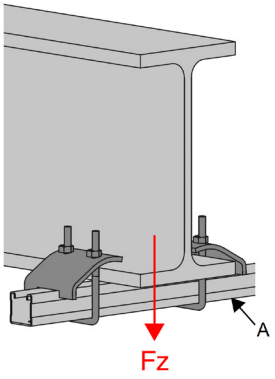


Figure 102 - MT Channel-to-Steel



A. MT-30/50

Table 253 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_z lb (kN)
1,350 (6.01)

1. Safety factor, Ω, for tabulated values is 3.0.
2. Tabulated values represent the total allowable load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 675 lbs (3.0 kN).
3. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
4. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
5. See Figure 102.

Table 254 - Limit State Design (LSD) Load Data[1,2,3,4]

F_z lb (kN)
1,820 (8.11)

1. Resistance factor, ϕ, for tabulated values is 0.45.
2. Tabulated values represent the total factored design load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 910 lbs (4.05 kN).
3. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
4. See Figure 102.

3.0 MODULAR SUPPORT SYSTEM

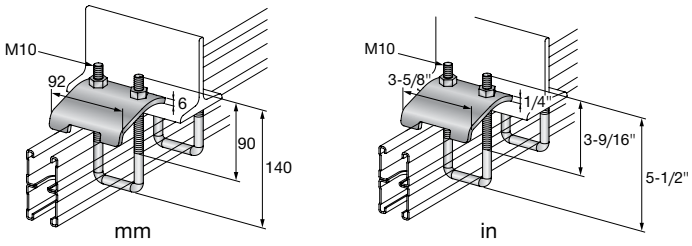
3.2.9 MT BEAM CLAMPS

MQT-41-82

Description

Beam clamp for connecting channels directly to steel beams.





Corrosion Protection

Electro-Galvanized (EG)

MQT-41-82

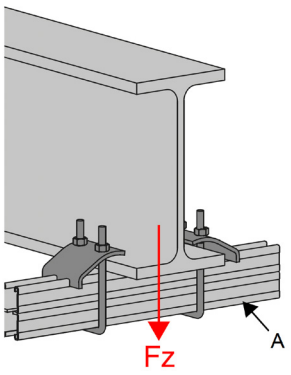
Hot-Dipped Galvanized (HDG)

MQT-41-82-F

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MQT-41-82	1.30 (0.59)	10	369676
MQT-41-82-F	1.33 (0.60)	10	304191

Figure 103 - MT Channel-to-Steel



A. MT-40D

Table 255 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_z lb (kN)
1,800 (8.01)

1. Safety factor, Ω, for tabulated values is 3.0.
2. Tabulated values represent the total allowable load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 900 lbs (4.0 kN).
3. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
4. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
5. See Figure 103.

Table 256 - Limit State Design (LSD) Load Data[1,2,3,4]

F_z lb (kN)
2,430 (10.81)

1. Resistance factor, ϕ, for tabulated values is 0.45.
2. Tabulated values represent the total factored design load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 1,215 lbs (5.4 kN).
3. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
4. See Figure 103.

3.0 MODULAR SUPPORT SYSTEM

3.2.9 MT BEAM CLAMPS

MQT-U

Description

Channel beam clamp.



Corrosion Protection

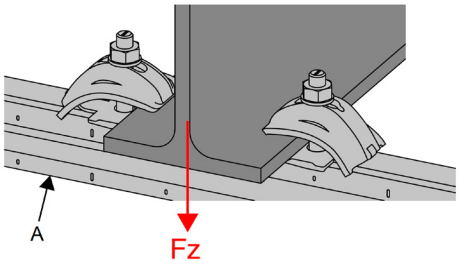
Electro-Galvanized (EG)

MQT-U

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MQT-U	0.42 (0.19)	10	2301108

Figure 104 - MT Channel-to-Steel



A. MT-20/30/50/60/40D

Table 257 - Allowable Strength Design (ASD) Load Data[1,2,3,4,5]

F_z lb (kN)
950 (4.23)

1. Safety factor, Ω, for tabulated values is 4.0.
2. Tabulated values represent the total allowable load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 475 lbs (2.11 kN).
3. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
4. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
5. See Figure 104.

Table 258 - Limit State Design (LSD) Load Data[1,2,3,4]

F_z lb (kN)
1,280 (5.71)

1. Resistance factor, ϕ, for tabulated values is 0.35.
2. Tabulated values represent the total factored design load on a pair of beam clamps. The load resisted by a single beam clamp must not exceed 640 lbs (2.85 kN).
3. The design professional must account for moment decoupling when the applied loads do not occur between the pair of beam clamps.
4. See Figure 104.

3.0 MODULAR SUPPORT SYSTEM

3.2.10 MT THREADED ROD CONNECTORS AND PIPE SADDLES

MT-CTR-GS OC

Description

Threaded rod hanging connector for MT-70 and MT-80 (short side) girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-CTR-GS 1/2 OC
MT-CTR-GS 5/8 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CTR-GS 1/2 OC	1.02 (0.46)	16	2332791
MT-CTR-GS 5/8 OC	1.11 (0.50)	16	2332792

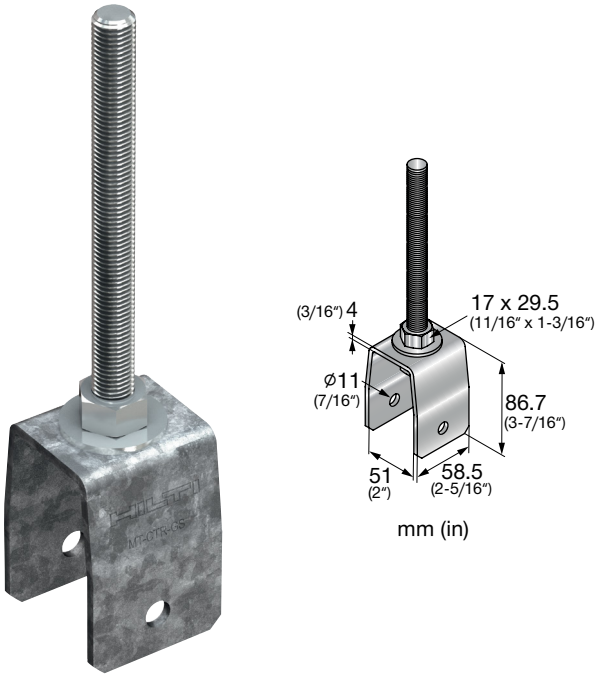
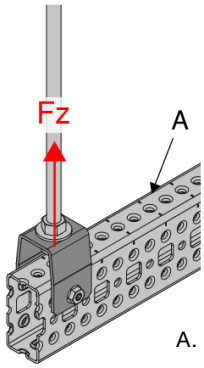


Figure 105 - MT Channel-to-Channel Connection



A. MT-70/80 (short side)

Table 259 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_z lb (kN)
2,470 (11.00)

1. Minimum safety factor, Ω, for tabulated values is 3.6.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 105.

Table 260 - Limit State Design (LSD) Load Data[1,2]

F_z lb (kN)
3,955 (17.60)

1. Maximum resistance factor, ϕ, for tabulated values is 0.45.
2. See Figure 105.

3.0 MODULAR SUPPORT SYSTEM

3.2.10 MT THREADED ROD CONNECTORS AND PIPE SADDLES

MT-CTR-GL OC

Description

Threaded rod hanging connector for MT-90 or MT-100 (short side) girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-CTR-GL 1/2 OC
MT-CTR-GL 5/8 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-CTR-GL 1/2 OC	1.11 (0.50)	16	2332794
MT-CTR-GL 5/8 OC	1.19 (0.54)	16	2332795

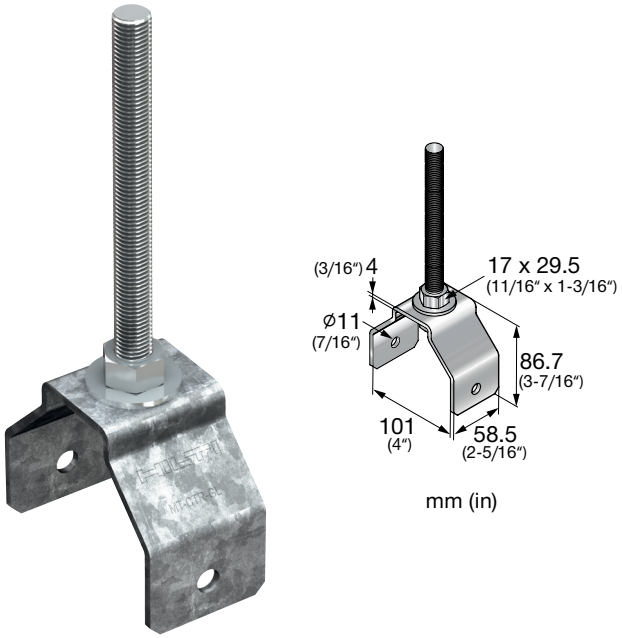
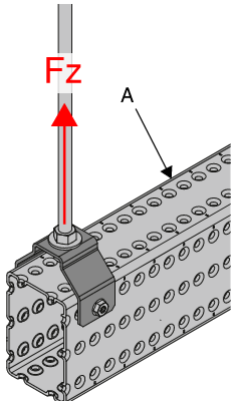


Figure 106 - MT Channel-to-Channel Connection



A. MT-90/100 (short side)

Table 261 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_z lb (kN)
3,215 (14.32)

1. Minimum safety factor, Ω, for tabulated values is 2.65.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 106.

Table 262 - Limit State Design (LSD) Load Data[1,2]

F_z lb (kN)
4,150 (18.48)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. See Figure 106.

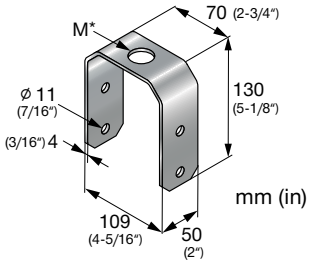
3.0 MODULAR SUPPORT SYSTEM

3.2.10 MT THREADED ROD CONNECTORS AND PIPE SADDLES MT-C-PS

Description

Connector for pipe saddle attachment for pipe stanchion applications on MT-80 (long side), MT-90, or MT-100 (short side).





*Hole size, M, varies based on rod diameter of 5/8", 7/8", or 1-1/4".

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 50.

Corrosion Protection

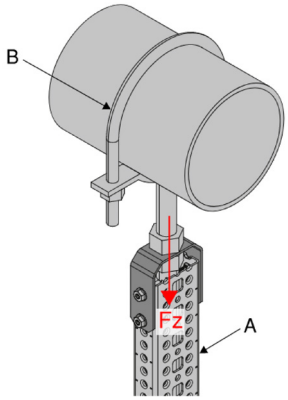
Hot-Dipped Galvanized (HDG)

MT-C-PS 5/8 OC
MT-C-PS 7/8 OC
MT-C-PS 1-1/4 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-C-PS 5/8 OC	1.20 (0.54)	10	2343196
MT-C-PS 7/8 OC	1.18 (0.54)	10	2343197
MT-C-PS 1-1/4 OC	1.16 (0.53)	10	2343198

Figure 107 - Connection to MT Girder



A. MT-80 (long side), MT-90, MT-100 (short side)
B. B. MI-PSCU / MI-PSU Pipe Saddle

Table 263 - Allowable Strength Design (ASD) Load Data[1,2,3]

F_z lb (kN)
1,175 (5.24)

1. Minimum safety factor, Ω, for tabulated values is 2.7.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 107.

Table 264 - Limit State Design (LSD) Load Data[1,2]

F_z lb (kN)
1,525 (6.80)

1. Maximum resistance factor, ϕ, for tabulated values is 0.5.
2. See Figure 107.

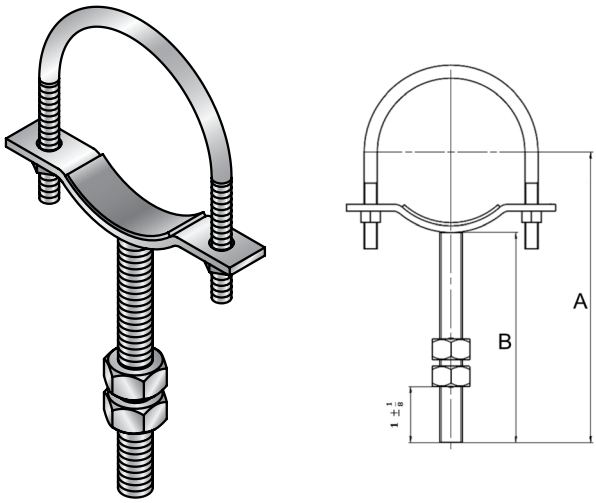
3.0 MODULAR SUPPORT SYSTEM

3.2.10 MT THREADED ROD CONNECTORS AND PIPE SADDLES

MI-PSCU / MI-PSU

Description

Hot-dipped galvanized saddle with U-bolt for pipe support.



Material Specifications

Standard and Grade
ASTM A36 (U-bolt) ASTM A307 Grade A (threaded rod) ASTM D2000-BC-608 (Rubber)

Ordering Information

Description	Weight Per Piece lbs (kg)	Item No.	Pipe Size NPS (in)	Threaded Rod Diameter (in)	Dimension “A” (in)	Dimension “B” (in)
Pipe saddle with coated U-Bolt, 2"	0.5 (0.23)	2199851	2	5/8	9.50	8
Pipe saddle with coated U-Bolt, 2-1/2"	1.1 (0.50)	2199852	2.5	5/8	9.75	8
Pipe saddle with coated U-Bolt, 3"	1.7 (0.77)	2199853	3	5/8	10.06	8
Pipe saddle with coated U-Bolt, 3-1/2"	2.2 (1.0)	2199854	3.5	5/8	10.31	8
Pipe saddle with coated U-Bolt, 4"	2.8 (1.27)	2199855	4	7/8	10.56	8
Pipe saddle with coated U-Bolt, 5"	4.0 (1.81)	2199856	5	7/8	11.06	8
Pipe saddle with coated U-Bolt, 6"	5.1 (2.31)	2199857	6	1	11.75	8
Pipe saddle with coated U-Bolt, 8"	7.4 (3.36)	2199858	8	1	12.75	8
Pipe saddle with coated U-Bolt, 10"	9.7 (4.40)	2199859	10	1-1/4	13.94	8
Pipe saddle with coated U-Bolt, 12"	12 (5.44)	2199860	12	1-1/4	14.94	8
Pipe saddle with uncoated U-Bolt, 2"	0.5 (0.23)	2199861	2	5/8	9.50	8
Pipe saddle with uncoated U-Bolt, 2-1/2"	1.1 (0.50)	2199862	2.5	5/8	9.75	8
Pipe saddle with uncoated U-Bolt, 3"	1.7 (0.77)	2199863	3	5/8	10.06	8
Pipe saddle with uncoated U-Bolt, 3-1/2"	2.2 (1.0)	2199864	3.5	5/8	10.31	8
Pipe saddle with uncoated U-Bolt, 4"	2.8 (1.27)	2199865	4	7/8	10.56	8
Pipe saddle with uncoated U-Bolt, 5"	4.0 (1.81)	2199866	5	7/8	11.06	8
Pipe saddle with uncoated U-Bolt, 6"	5.1 (2.31)	2199867	6	1	11.75	8
Pipe saddle with uncoated U-Bolt, 8"	7.4 (3.36)	2199868	8	1	12.75	8
Pipe saddle with uncoated U-Bolt, 10"	9.7 (4.40)	2199869	10	1-1/4	13.94	8
Pipe saddle with uncoated U-Bolt, 12"	12 (5.44)	2199870	12	1-1/4	14.94	8

3.0 MODULAR SUPPORT SYSTEM

3.2.10 MT THREADED ROD CONNECTORS AND PIPE SADDLES

MI-PSCU

Figure 108 - Pipe Saddle



Table 265 - Allowable Strength Design (ASD) Load Data[1,2,3]

Description	F_z (lb)
Pipe saddle with coated U-Bolt, 2"	4,326
Pipe saddle with coated U-Bolt, 2-1/2"	4,326
Pipe saddle with coated U-Bolt, 3"	4,326
Pipe saddle with coated U-Bolt, 3-1/2"	4,326
Pipe saddle with coated U-Bolt, 4"	8,843
Pipe saddle with coated U-Bolt, 5"	8,843
Pipe saddle with coated U-Bolt, 6"	11,599
Pipe saddle with coated U-Bolt, 8"	11,599
Pipe saddle with coated U-Bolt, 10"	18,547
Pipe saddle with coated U-Bolt, 12"	18,547

1. Minimum safety factor, Ω, for tabulated values is 3.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 108.

MI-PSU

Figure 109 - Pipe Saddle



Table 266 - Allowable Strength Design (ASD) Load Data[1,2,3]

Description	F_z (lb)
Pipe saddle with uncoated U-Bolt, 2"	4,326
Pipe saddle with uncoated U-Bolt, 2-1/2"	4,326
Pipe saddle with uncoated U-Bolt, 3"	4,326
Pipe saddle with uncoated U-Bolt, 3-1/2"	4,326
Pipe saddle with uncoated U-Bolt, 4"	8,843
Pipe saddle with uncoated U-Bolt, 5"	8,843
Pipe saddle with uncoated U-Bolt, 6"	11,599
Pipe saddle with uncoated U-Bolt, 8"	11,599
Pipe saddle with uncoated U-Bolt, 10"	18,547
Pipe saddle with uncoated U-Bolt, 12"	18,547

1. Minimum safety factor, Ω, for tabulated values is 3.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. See Figure 109.

3.0 MODULAR SUPPORT SYSTEM

3.2.11 MT MEDIA FIXATION

MT-FA-G M10-3/8" / M12-1/2" / M16-5/8" / M22-7/8" / M24-1"

Description

MT-FA-G M10-3/8": U-bolt connector – MT-70/80/90/100 – 3/8" threads
MT-FA-G M12-1/2": U-Bolt connector – MT-70/90/90/100 – 1/2" threads
MT-FA-G M16-5/8": U-Bolt connector – MT-70/80/90/100 – 5/8" threads
MT-FA-G M22-7/8": U-Bolt connector – MT-70/80/90/100 – 7/8" threads
MT-FA-G M24-1": U-Bolt connector – MT-70/80/90/100 – 1" threads

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

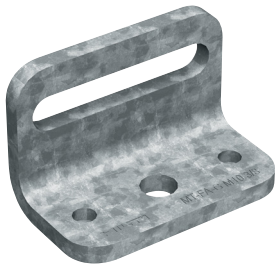
Corrosion Protection

Outdoor Coating (HDG)

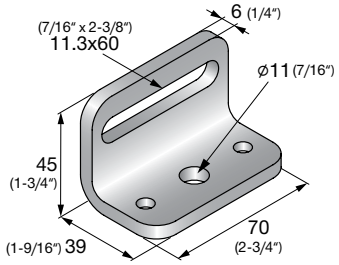
MT-FA-G M10-3/8 OC
MT-FA-G M12-1/2 OC
MT-FA-G M16-5/8 OC
MT-FA-G M22-7/8 OC
MT-FA-G M24-1 OC

Ordering Information

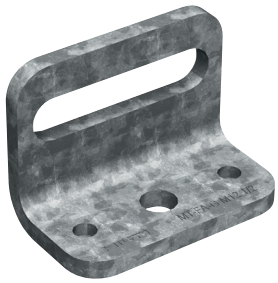
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-FA-G M10-3/8 OC	0.46 (0.21)	10	2273681
MT-FA-G M12-1/2 OC	0.48 (0.22)	10	2273682
MT-FA-G M16-5/8 OC	0.54 (0.24)	10	2273683
MT-FA-G M22-7/8 OC	0.63 (0.29)	10	2273684
MT-FA-G M24-1 OC	0.71 (0.32)	10	2273685



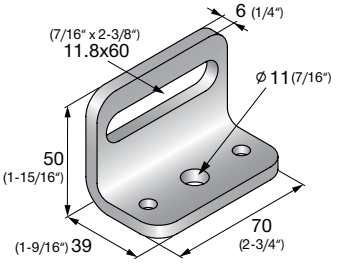
MT-FA-G 3/8 OC



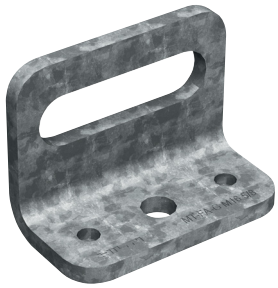
mm (in)



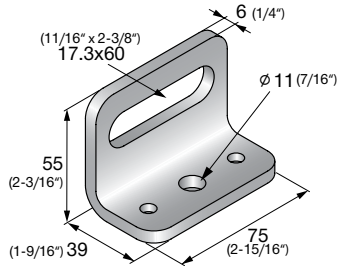
MT-FA-G 1/2 OC



mm (in)



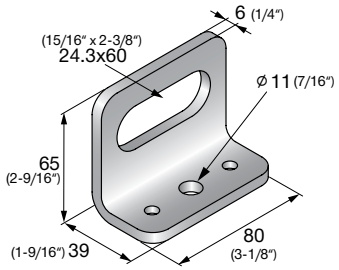
MT-FA-G 5/8 OC



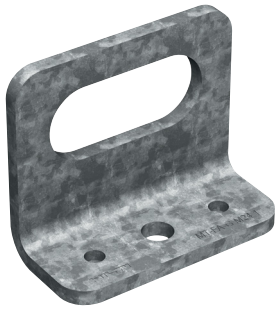
mm (in)



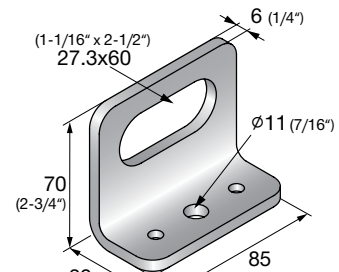
MT-FA-G 7/8 OC



mm (in)



MT-FA-G 1 OC



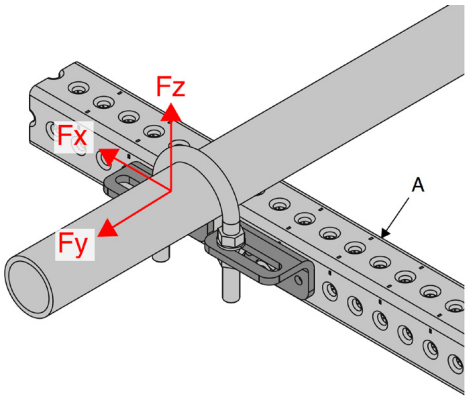
mm (in)

3.0 MODULAR SUPPORT SYSTEM

3.2.11 MT MEDIA FIXATION

MT-FA-G M10-3/8" / M12-1/2" / M16-5/8" / M22-7/8" / M24-1"

Figure 110 - MT Girder Connection



A. MT-70/80/90/100

Table 267 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_z lb (kN)
485 (2.17)	680 (3.03)

1. Minimum safety factor, Ω, for tabulated values is 2.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are for a single connector. Connectors are to be used in pairs.
4. See Figure 110.

Table 268 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_z lb (kN)
730 (3.26)	1,010 (4.50)

1. Maximum resistance factor, ϕ, for tabulated values is 0.75.
2. Tabulated values are for a single connector. Connectors are to be used in pairs.
3. See Figure 110.

3.0 MODULAR SUPPORT SYSTEM
3.2.11 MT MEDIA FIXATION
MT-FPS-GS OC

Description

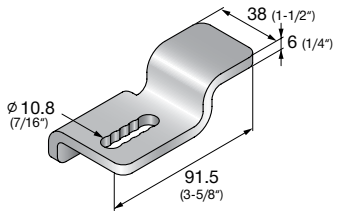
Adjustable guiding bracket for fastening sliding pipe shoes to MT-70 and MT-80 (short side) girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.





mm (in)

Corrosion Protection

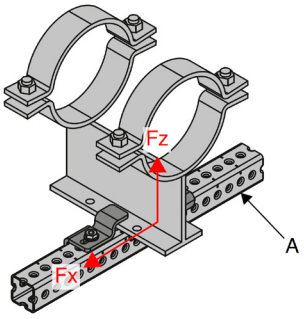
Hot-Dipped Galvanized (HDG)

MT-FPS-GS OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-FPS-GS OC	0.49 (0.22)	12	2273702

Figure 111 - MT Girder Connection



A. MT-70/80

Table 269 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_z lb (kN)
400 (1.78)	530 (2.37)

1. Minimum safety factor, Ω, for tabulated values is 2.7.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on brackets being installed in pairs.
4. See Figure 111.

Table 270 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_z lb (kN)
600 (2.67)	795 (3.55)

1. Maximum resistance factor,Φ, for tabulated values is 0.55.
2. Tabulated values are based on brackets being installed in pairs.
3. See Figure 111.

3.0 MODULAR SUPPORT SYSTEM
3.2.11 MT MEDIA FIXATION
MT-FPS-GL OC

Description

Adjustable guiding bracket for fastening sliding pipe shoes to MT-90 and MT-100 girders.

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 700	Q235 B	34.08 (235)	53.66 (370)

1. Mechanical properties of GB/T 700 Grade Q235 B meet or exceed the mechanical properties of ASTM A1011 SS Grade 33.

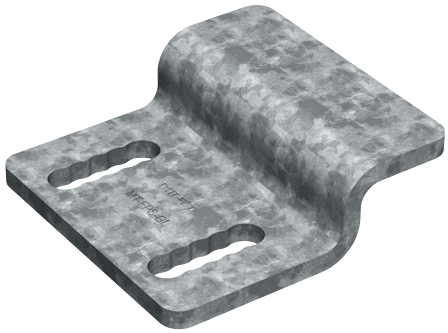
Corrosion Protection

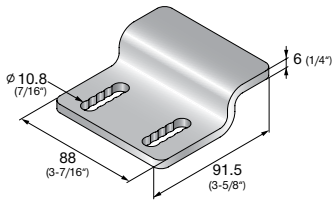
Hot-Dipped Galvanized (HDG)

MT-FPS-GL OC

Ordering Information

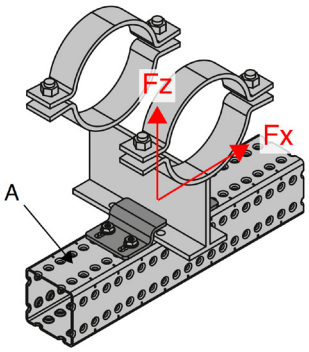
Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-FPS-GL OC	0.87 (0.40)	10	2273701





mm (in)

Figure 112 - MT Girder Connection



A. MT-80 (long side)/90/100

Table 271 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

F_x lb (kN)	F_z lb (kN)
705 (3.14)	530 (2.36)

1. Minimum safety factor, Ω, for tabulated values is 3.0.
2. Multiply tabulated values by 1.5 to obtain minimum Load and Resistance Factor Design (LRFD) values.
3. Tabulated values are based on brackets being installed in pairs.
4. See Figure 112.

Table 272 - Limit State Design (LSD) Load Data[1,2,3]

F_x lb (kN)	F_z lb (kN)
1,045 (4.67)	790 (3.52)

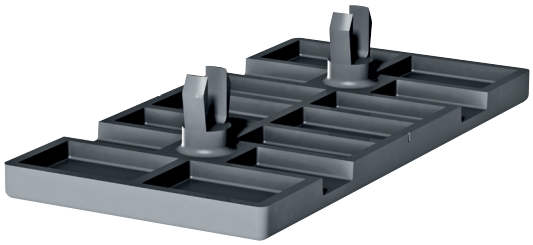
1. Maximum resistance factor,Φ, for tabulated values is 0.5.
2. Tabulated values are based on brackets being installed in pairs.
3. See Figure 112.

3.0 MODULAR SUPPORT SYSTEM
3.2.11 MT MEDIA FIXATION
MT-SP OC

Description

Universal low-friction slider plate with improved temperature and UV-resistance for use between pipes and MT girders or MT-U-GL1. Suitable for indoor or outdoor use with service temperatures ranging from -40° F (-40° C) to 302° F (150° C).



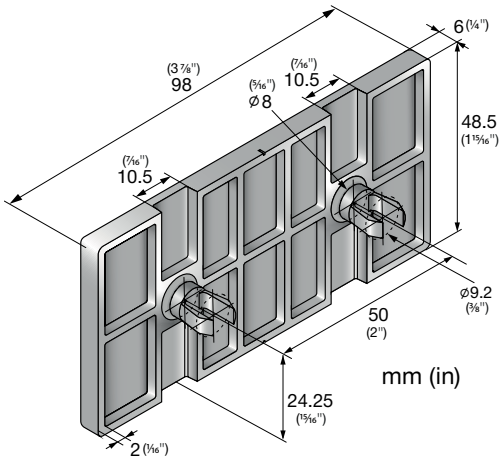


Material Specifications

Material
PA66-GF30 UV-stabilized

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-SP OC	0.04 (0.02)	10	2368807



*Technical load data for MT-SP is available upon request.

3.0 MODULAR SUPPORT SYSTEM

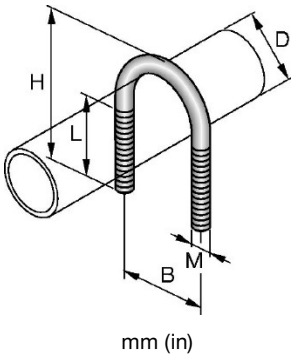
3.2.11 MT MEDIA FIXATION

MP-UB OC

Description

U-bolt for attaching pipes to connectors or directly onto MT members.





mm (in)

Corrosion Protection

Hot-Dipped Galvanized (HDG)

U-Bolt MP-UB 1-1/2" to 24" OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.	U-Bolt Thread "M" Before Coating (in)	Pipe Diameter "D" (in)	Dimension "H" (in)	Dimension "B"[1] (in)	Thread Length "L" (in)
U-Bolt MP-UB 1-1/2" OC	0.33 (0.15)	20	2288426	3/8	1-1/2	4.35	2.85	2.9
U-Bolt MP-UB 2" OC	0.37 (0.17)	20	2288427	3/8	2	4.85	3.4	3
U-Bolt MP-UB 2-1/2" OC	0.77 (0.35)	10	2288428	1/2	2-1/2	5.55	4	3.25
U-Bolt MP-UB 3" OC	0.86 (0.39)	10	2288429	1/2	3	6.1	4.25	3.6
U-Bolt MP-UB 3-1/2" OC	0.93 (0.42)	10	2288430	1/2	3-1/2	6.6	4.75	3.6
U-Bolt MP-UB 4" OC	1.00 (0.46)	10	2288431	1/2	4	7	5.25	3.6
U-Bolt MP-UB 5" OC	1.15 (0.52)	10	2288432	1/2	5	8.2	6.25	3.7
U-Bolt MP-UB 6" OC	1.32 (0.60)	2	2288433	1/2	6	9.25	7.25	3.7
U-Bolt MP-UB 8" OC	1.60 (0.73)	2	2288434	1/2	8	11.25	9.25	3.7
U-Bolt MP-UB 10" OC	1.98 (0.90)	2	2288435	1/2	10	14	11.5	4.38
U-Bolt MP-UB 12" OC	2.27 (1.03)	2	2288436	1/2	12	16	13.5	4.38
U-Bolt MP-UB 14" OC	7.65 (3.47)	2	2288437	7/8	14	17.25	15.13	4.38
U-Bolt MP-UB 16" OC	8.53 (3.87)	2	2288438	7/8	16	19.25	17.13	4.38
U-Bolt MP-UB 18" OC	12.54 (5.69)	2	2288439	1	18	21.69	19.25	4.81
U-Bolt MP-UB 20" OC	13.69 (6.21)	2	2288311	1	20	23.68	21.25	4.81
U-Bolt MP-UB 24" OC	15.98 (7.25)	2	2288313	1	24	27.68	25.25	4.81

1. Dimension "B" is measured from center line to center line of the U-bolt.

3.0 MODULAR SUPPORT SYSTEM
3.2.11 MT MEDIA FIXATION
MP-UB OC

Figure 113 - Attachment to MT Profile



*For attachment to MT girder, install a pair of MT-FA-G connectors with MT-TFB.

Load Condition

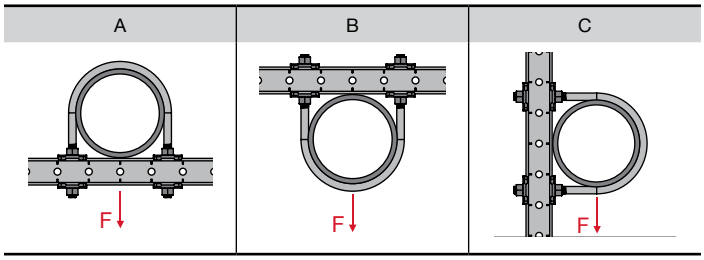


Table 273 - Allowable Strength Design (ASD) Load Data[1,2,3,4]

Static Loads (non-sprinkler loads)	Load Condition A Max Allowable Load (lb)	Load Condition B Max Allowable Load @ 650˚ F (lb)	Load Condition B Max Allowable Load @ 750˚ F (lb)	Load Condition C Max Allowable Load (lb)
MP-UB 1-1/2"-2" OC 3/8"	See load resistance of sub-structure	1,460	1,144	365
MP-UB 2-1/2"-12" OC 1/2"		2,700	2,114	675
MP-UB 14"-16" OC 7/8"		8,960	7,016	2,000
MP-UB 18"-24" OC 1"		11,800	9,239	N.A.

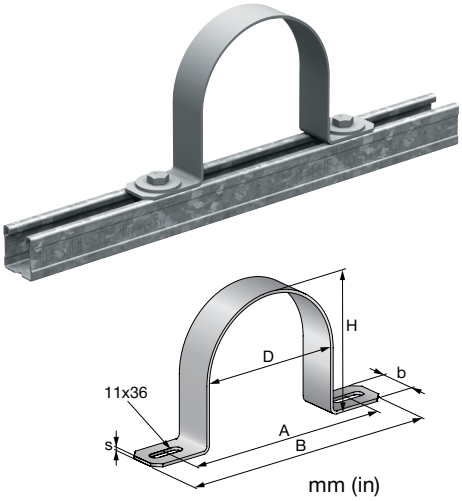
1. Minimum safety factor, Ω, for tabulated values is 3.50.
2. Load data is based on MSS-SP 58 methodologies.
3. See Figure 113.
4. Load data is for U-bolt only. Design professional is responsible for checking MT profile and connector strength.

Sprinkler Approved	FM APPROVED	c UL us LISTED
Load Condition A	MP-UB 1-1/2"-12" OC	MP-UB 1-1/2"-12" OC
Load Condition B		
Load Condition C	MP-UB 1-1/2"-5" OC	

3.0 MODULAR SUPPORT SYSTEM
3.2.11 MT MEDIA FIXATION
MP-US OC

Description

Pipe strap designed for use with MT channels, girders, bracket arms, and the MT-U-GL 1 connector.



Material Specifications

Standard	Grade
EN 10346:2016	DX51D-ZM300

Corrosion Protection

Hot-Dipped Galvanized (HDG)

Pipe Strap MP-US 3/8" to 12" OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.	Diameter "D" (in)	Height "H" (in)	Width "B" (in)	Distance Btwn Holes "A" (in)	Cross-Section Width "b" (in)	Cross-Section Thickness "s" (in)
Pipe Strap MP-US 18 3/8" OC	0.157 (0.071)	40	2288314	0.8	0.6	5.06	3.17	1.17	0.1
Pipe Strap MP-US 22 1/2" OC	0.170 (0.077)	40	2288315	0.9	0.8	5.22	3.33	1.17	0.1
Pipe Strap MP-US 28 3/4" OC	0.187 (0.085)	40	2288316	1.2	1	5.44	3.56	1.17	0.1
Pipe Strap MP-US 34 1" OC	0.212 (0.096)	20	2288317	1.4	1.3	5.71	3.82	1.17	0.1
Pipe Strap MP-US 43 1-1/4" OC	0.240 (0.109)	20	2288318	1.8	1.6	6.06	4.17	1.17	0.1
Pipe Strap MP-US 49 1-1/2" OC	0.258 (0.117)	20	2288319	2	1.8	6.3	4.41	1.17	0.1
Pipe Strap MP-US 61 2" OC	0.298 (0.135)	20	2288370	2.5	2.3	6.78	4.89	1.17	0.1
Pipe Strap MP-US 77 2-1/2" OC	0.353 (0.160)	10	2288371	3.1	2.9	7.4	5.51	1.17	0.1
Pipe Strap MP-US 90 3" OC	0.395 (0.179)	10	2288372	3.6	3.4	7.9	6.01	1.17	0.1
Pipe Strap MP-US 102 3-1/2" OC	0.741 (0.336)	10	2288373	4.1	3.9	9.07	6.91	1.56	0.12
Pipe Strap MP-US 115 4" OC	0.809 (0.367)	10	2288374	4.6	4.4	9.6	7.44	1.56	0.12
Pipe Strap MP-US 139 5" OC	0.948 (0.430)	10	2288950	5.6	5.4	10.61	8.44	1.56	0.12
Pipe Strap MP-US 169 6" OC	1.118 (0.507)	2	2288376	6.8	6.5	12.12	9.96	1.56	0.12
Pipe Strap MP-US 275 10" OC	1.411 (0.640)	2	2288377	8.8	8.5	14.55	12.38	1.56	0.12
Pipe Strap MP-US 221 8" OC	2.178 (0.988)	2	2288378	10.9	10.6	17.46	14.94	1.95	0.12
Pipe Strap MP-US 326 12" OC	2.511 (1.139)	2	2288379	12.9	12.6	19.46	16.94	1.95	0.12

3.0 MODULAR SUPPORT SYSTEM
3.2.11 MT MEDIA FIXATION
MP-US OC

Figure 114 - Attachment to MT Profile



*Use MT-TFB for attachment to MT girder.

Load Condition

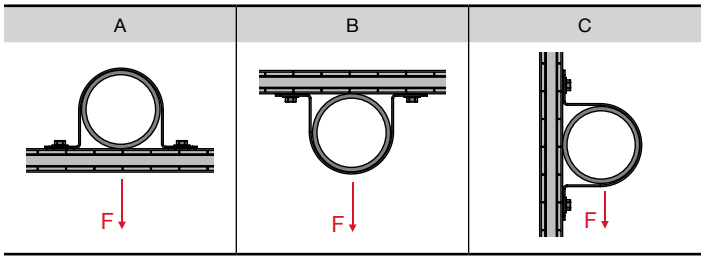


Table 274 - Allowable Strength Design (ASD) Load Data[1,2]

Static Loads (non-sprinkler loads)	Load Condition A Max Allowable Load (lb)	Load Condition B Max Allowable Load (lb)	Load Condition C Max Allowable Load (lb)
MP-US 18-90 OC"	See load resistance of sub-structure	300	75
MP-US 102-222 OC		800	240
MP-US 275 OC			
MP-US 326 OC			

1. Minimum safety factor, Ω, for tabulated values is 3.50.
2. See Figure 114.

Sprinkler Approved	VdS	FM APPROVED	cULus LISTED
Load Condition A	MP-US 18 – 326 OC	MP-US 28-61 OC	MP-US 22 – 326 OC
Load Condition B			
Load Condition C		No	

3.0 MODULAR SUPPORT SYSTEM

3.2.12 MT LOAD DISTRIBUTION PLATES

MT-B-LDP S

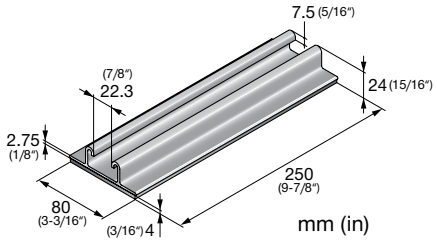
Description

Small load distribution plate for rooftop supports.



Material Specifications

Standard	Grade	F_y, ksi (MPa)	F_u, ksi (MPa)
HN 650	AlMgSi	23.21 (160)	31.18 (215)



Corrosion Protection

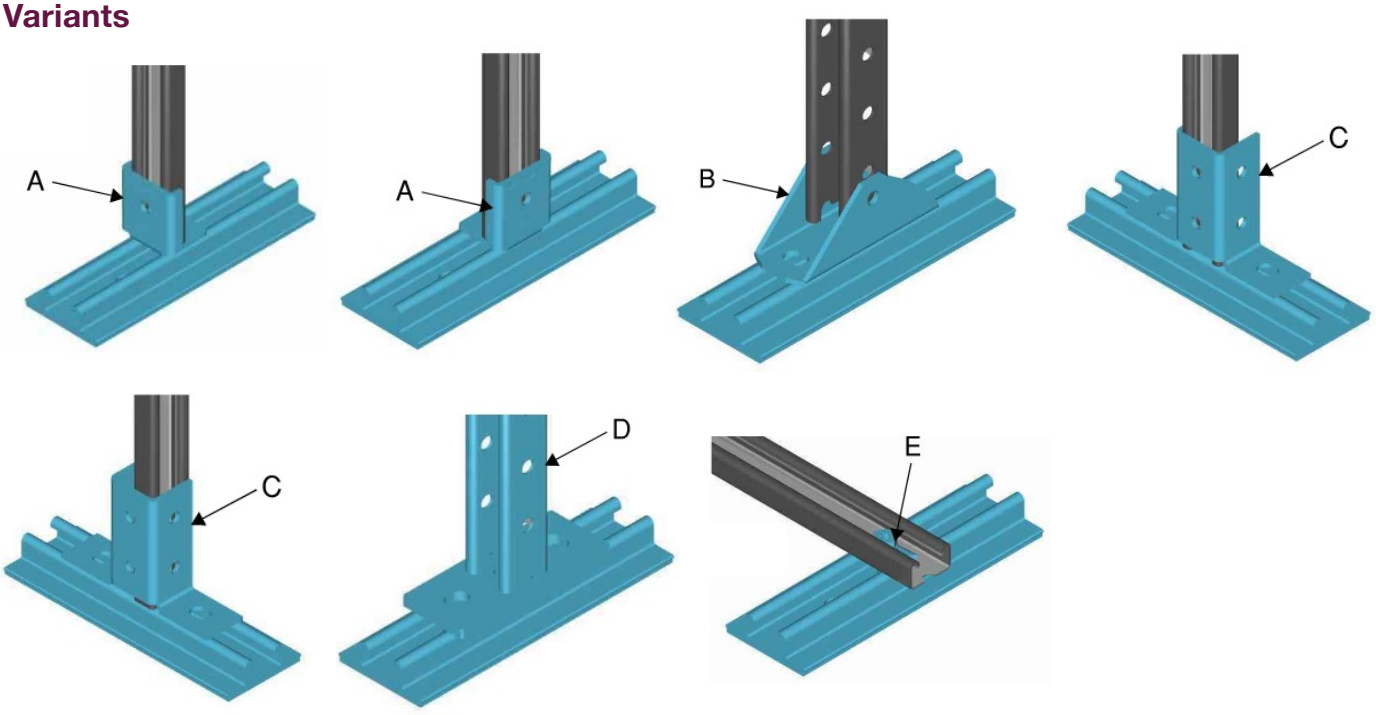
Aluminum / EPDM Rubber

MT-B-LDP S

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-LDP S	1.46 (0.66)	2	2320182

Variants



A. MT-C-LDP L1 OC
B. MT-AB-A OC
C. MT-B-T OC
D. MT-BR-300/450/600/1000 OC
E. MT-CTAB OC

*Technical data for variants shown are available upon request.

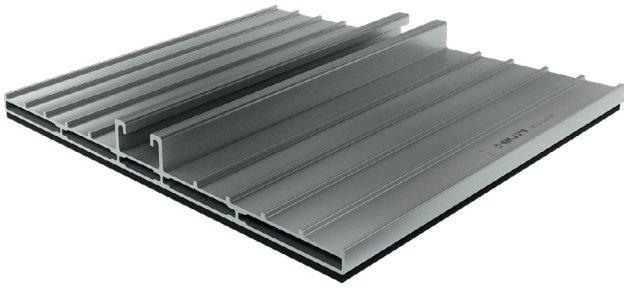
3.0 MODULAR SUPPORT SYSTEM

3.2.12 MT LOAD DISTRIBUTION PLATES

MT-B-LDP ME

Description

Medium load distribution plate for rooftop supports.



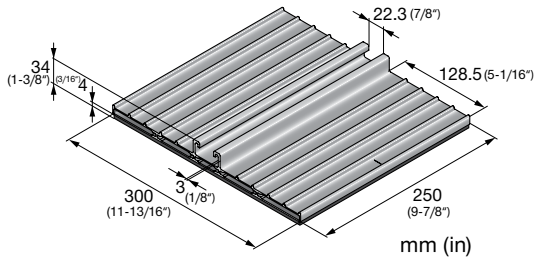
Material Specifications

Standard	Grade	F_y, ksi (MPa)	F_u, ksi (MPa)
HN 650	AlMgSi	23.21 (160)	31.18 (215)

Corrosion Protection

Aluminum / EPDM Rubber

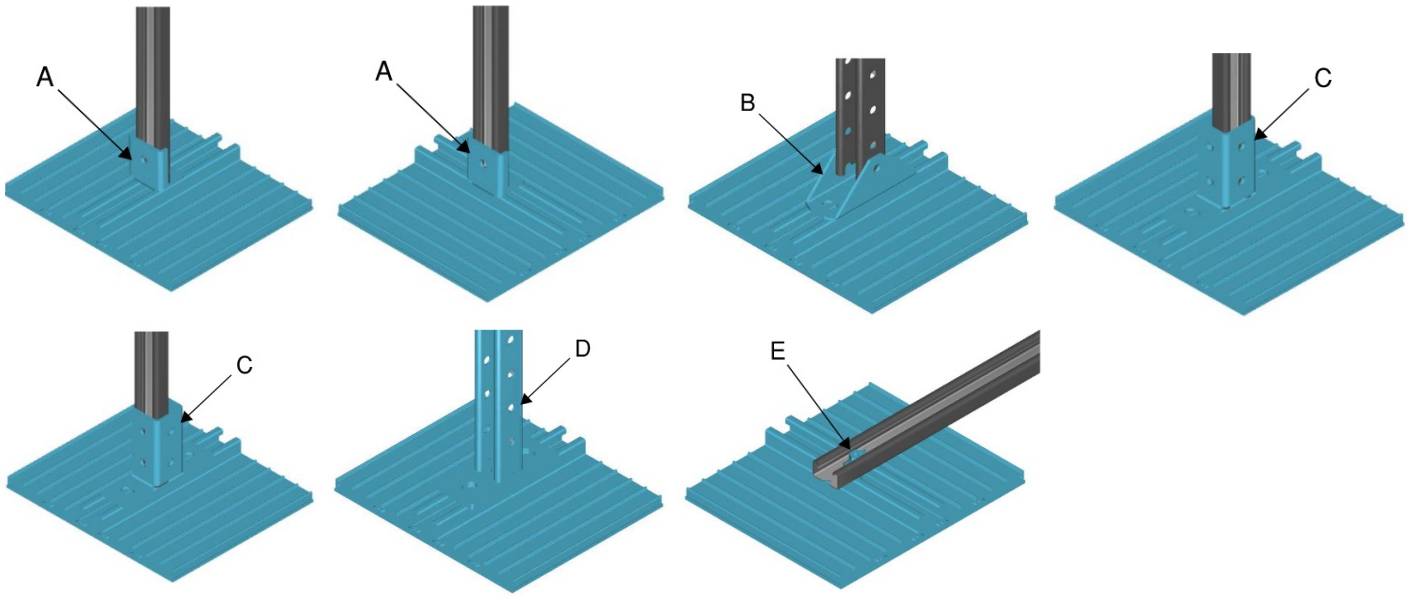
MT-B-LDP ME



Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-B-LDP ME	2.59 (1.17)	4	2328319

Variants



A. MT-C-LDP L1 OC
B. MT-AB-A OC
C. MT-B-T OC
D. MT-BR-300/450/600/1000 OC
E. MT-CTAB OC

*Technical data for variants shown are available upon request.

3.0 MODULAR SUPPORT SYSTEM

3.2.13 MT MODULAR PLATES

MT-P-G S1 OC / MT-P-GM S1 OC

Description

MT-P-G S1 OC: Modular plate with backing plate and hardware for sandwiched condition using MT-B-GS AB OC or MT-B-GS T OC (3.1" to 6.9" flange widths).

MT-P-GM S1 OC: Modular plate with hardware for clamped condition using MT-B-GS AB OC or MT-B-GS T OC (3.1" to 6.9" flange widths).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM 1011 SS Grade 50.

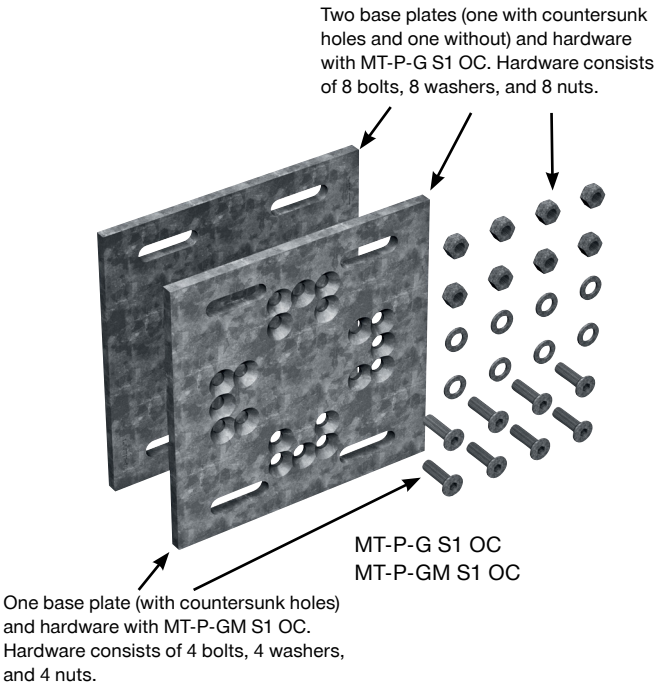
Corrosion Protection

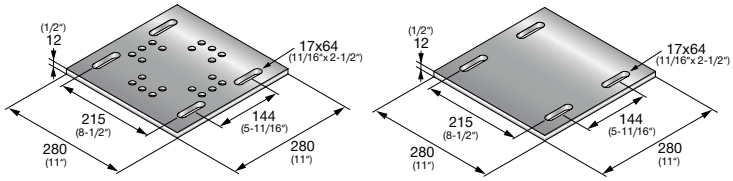
Hot-Dipped Galvanized (HDG)

MT-P-G S1 OC
MT-P-GM S1 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-P-G S1 OC	14.44 (6.55)	2	2343199
MT-P-GM S1 OC	7.43 (3.37)	2	2345353





3.0 MODULAR SUPPORT SYSTEM
3.2.13 MT MODULAR PLATES
MT-P-G S2 OC / MT-P-GM S2 OC

Description

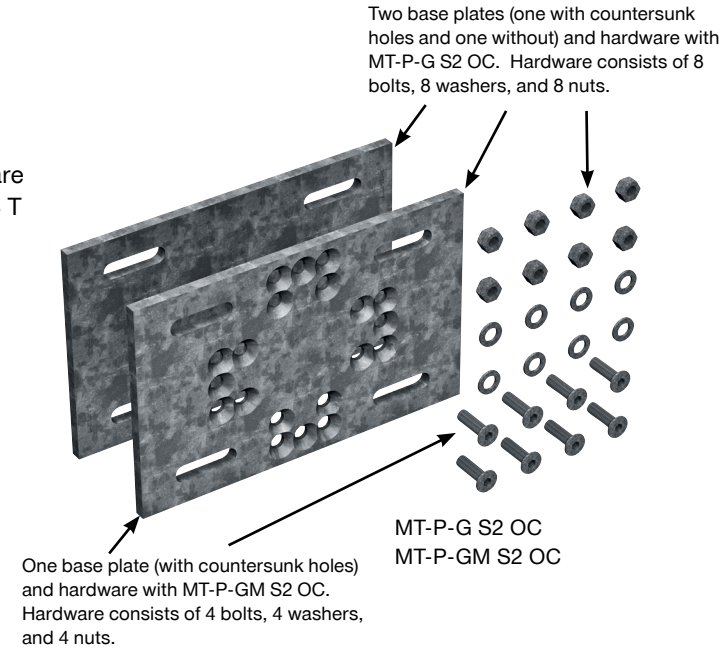
MT-P-G S2 OC: Modular plate with backing plate and hardware for sandwiched condition using MT-B-GS AB OC or MT-B-GS T OC (5.9" to 9.7" flange widths).

MT-P-GM S2 OC (SET): Modular plate with hardware for clamped condition using MT-B-GS AB OC or MT-B-GS T OC (5.9" to 9.7" flange widths).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM 1011 SS Grade 50.



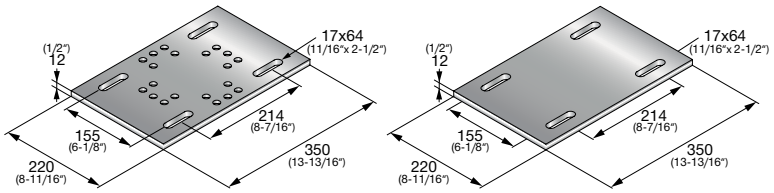
Corrosion Protection

Hot-Dipped Galvanized (HDG)

MT-P-G S2 OC
MT-P-GM S2 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-P-G S2 OC	14.22 (6.45)	2	2343280
MT-P-GM S2 OC	7.28 (3.30)	2	2345354



mm (in)

3.0 MODULAR SUPPORT SYSTEM

3.2.13 MT MODULAR PLATES

MT-P-G S3 OC / MT-P-GM S3 OC

Description

MT-P-G S3 OC: Modular plate with backing plate and hardware for sandwiched condition using MT-B-GS AB OC or MT-B-GS T OC (9.1" to 12.8" flange widths).

MT-P-GM S3 OC (SET): Modular plate with hardware for clamped condition using MT-B-GS AB OC or MT-B-GS T OC (9.1" to 12.8" flange widths).

Material Specifications

Standard[1]	Grade[1]	F_y, ksi (MPa)	F_u, ksi (MPa)
GB/T 1591	Q355 B	51.49 (355)	68.17 (470)

1. Mechanical properties of GB/T 1591 Grade Q355 B meet or exceed the mechanical properties of ASTM 1011 SS Grade 50.

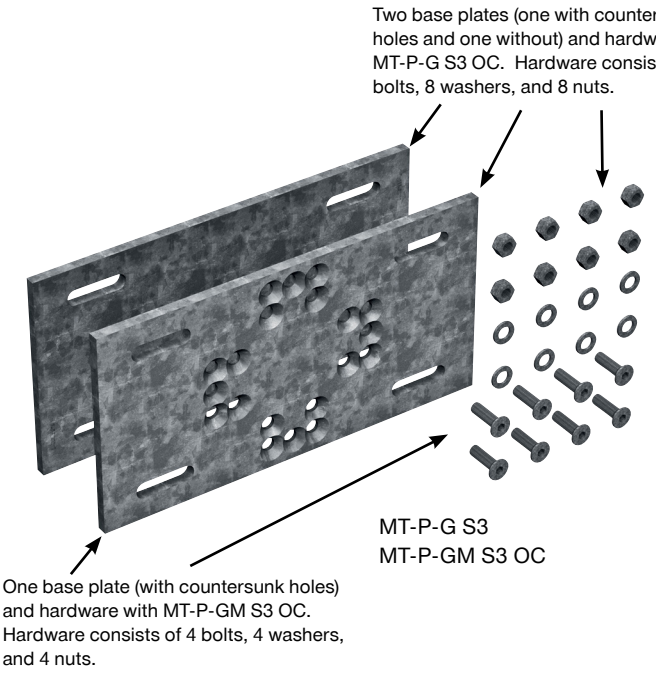
Corrosion Protection

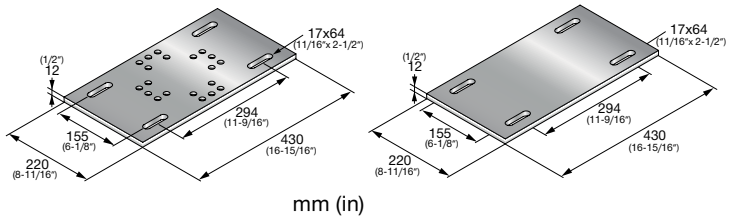
Hot-Dipped Galvanized (HDG)

MT-P-G S3 OC
MT-P-GM S3 OC

Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-P-G S3 OC	17.86 (8.10)	2	2343281
MT-P-GM S3 OC	9.11 (4.13)	2	2345355





3.0 MODULAR SUPPORT SYSTEM

3.2.14 MT ACCESSORIES AND END CAPS

MT-EC-20/30/40/50/60

Description

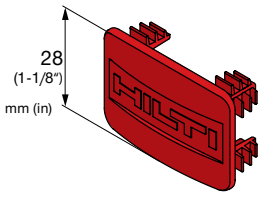
MT-EC-20: Plastic end cap – MT-20
MT-EC-30: Plastic end cap – MT-30
MT-EC-40/50: Plastic end cap – MT-40/50
MT-EC-60: Plastic end cap – MT-60

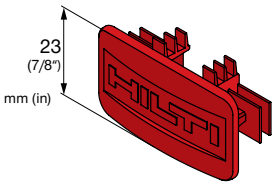
Material Specifications

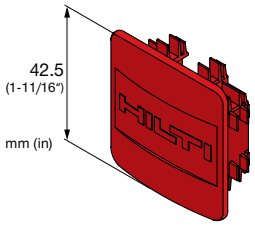
Material
PPB-MO2

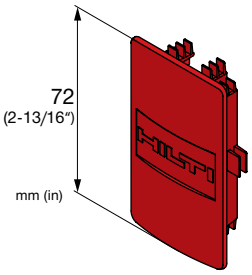
Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-EC-20	0.01 (0.01)	50	2282197
MT-EC-30	0.01 (0.01)	50	2273642
MT-EC-40/50	0.01 (0.01)	50	2273643
MT-EC-60	0.02 (0.01)	50	2273644

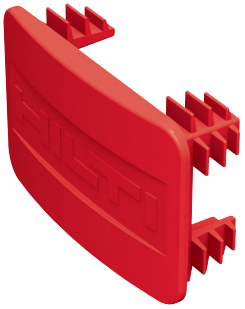




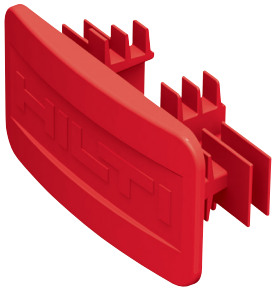




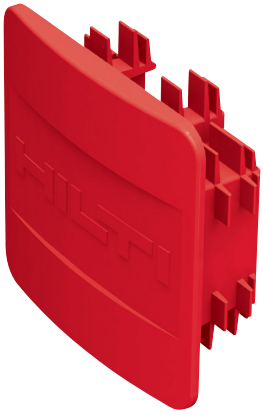
MT-EC-20



MT-EC-30



MT-EC-40/50



MT-EC-60



3.0 MODULAR SUPPORT SYSTEM

3.2.14 MT ACCESSORIES AND END CAPS

MT-EC-70/80/90/100

Description

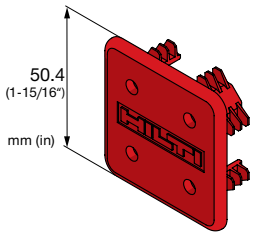
MT-EC-70: Plastic end cap – MT-70
MT-EC-80: Plastic end cap – MT-80
MT-EC-90: Plastic end cap – MT-90
MT-EC-100: Plastic end cap – MT-100

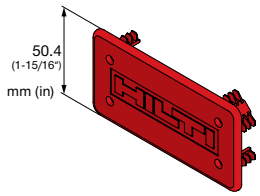
Material Specifications

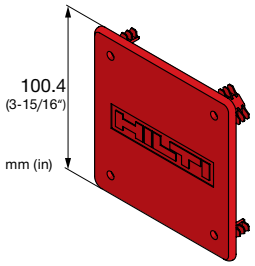
Material
PPB-MO2

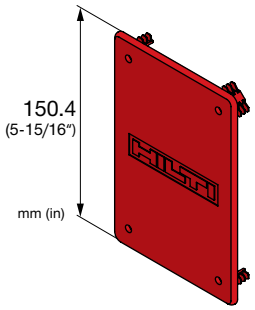
Ordering Information

Description	Weight Per Piece lbs (kg)	Quantity Piece(s)	Item No.
MT-EC-70	0.02 (0.01)	50	2273697
MT-EC-80	0.03 (0.02)	25	2273698
MT-EC-90	0.08 (0.03)	25	2273699
MT-EC-100	0.10 (0.05)	25	2273700

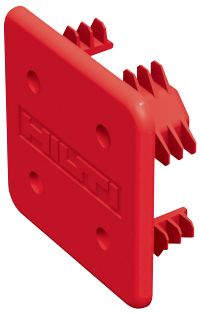




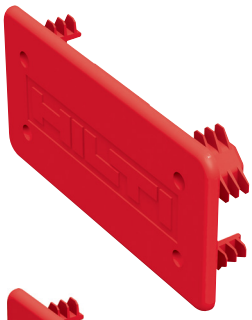




MT-EC-70



MT-EC-80



MT-EC-90



MT-EC-100

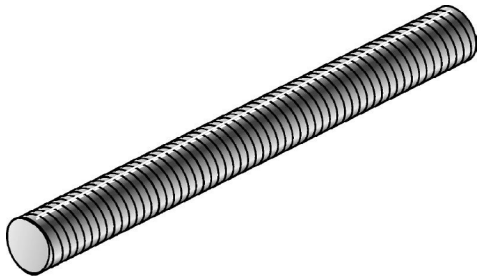


4.0 ADDITIONAL HARDWARE

THREADED ROD

Material Specifications

Material	F_y, ksi (MPa)	F_u, ksi (MPa)
Carbon steel per AISI 1008 or ASTM A36	36 (248.2)	48 (330.9)



Corrosion Protection

Plain: Un-coated
Zinc: Galvanized to ASTM F1941-Fe/Zn 5A local layer min. 5 ym

Table 275 - Technical Data and Ordering Information

Description	Quantity Pack	Weight (ft/lb)	Weight Per Package (lbs)	Diameter (in)	Item No.	MSS-SP-58[1] Allowable Tensile Load at 650° F (lbs)	AISC[2] Allowable Tensile Load (lbs)
1/4" x 6' Threaded rod (Zinc)	50	0.12	35.7	1/4	257963	300	780
1/4" x 10' Threaded rod (Zinc)	50	0.12	59.5	1/4	309386	300	780
1/4" x 10' Threaded rod (Plain)	50	0.12	59.5	1/4	309391	300	780
3/8" x 6' Threaded rod (Zinc)	25	0.3	42.6	3/8	257964	730	1,750
3/8" x 6' Threaded rod (Plain)	25	0.3	42.6	3/8	257969	730	1,750
3/8" x 10' Threaded rod (Zinc)	25	0.3	71.3	3/8	309387	730	1,750
3/8" x 10' Threaded rod (Plain)	25	0.3	71.3	3/8	309392	730	1,750
1/2" x 6' Threaded rod (Zinc)	12	0.5	38.8	1/2	257965	1350	3,110
1/2" x 10' Threaded rod (Zinc)	12	0.5	61.4	1/2	309388	1350	3,110
1/2" x 10' Threaded rod (Plain)	12	0.5	61.4	1/2	309393	1350	3,110
5/8" x 6' Threaded rod (Zinc)	8	0.84	40.0	5/8	257966	2160	4,860
5/8" x 10'Threaded rod (Zinc)	8	0.84	66.5	5/8	309389	2160	4,860
5/8" x 10' Threaded rod (Plain)	8	0.84	66.5	5/8	309394	2160	4,860
3/4" x 6' Threaded rod (Zinc)	5	1.2	36.2	3/4	257967	3230	6,700
3/4" x 10' Threaded rod (Zinc)	5	1.2	60	3/4	309390	3230	6,700

1. Per MSS-SP-58-2002, the ultimate tensile loads are based on a tensile stress of 50,000 psi multiplied by the threaded rod root area based on coarse thread UNC.
2. AISC Allowable Tensile load = 0.33 x F_u x A_{nom}
   AISC Allowable Shear load = 0.17 x F_u x A_{nom}

4.0 ADDITIONAL HARDWARE

HEX NUTS

Material Specifications

Material	Dimensions	Finish	Thread
ASTM A563 Grade A; Stainless Steel SS316	ASME/ANSI B18.2.2 – 1986	ASTM B 633-98, SC 1 Type I	Class 2A fit; Class 2B thread; ASME B1.1

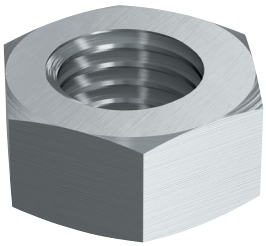


Table 276 - Ordering Information

Description	Weight Per Package (lbs)	Quantity Pack	Item No.
Hex nut-heavy 1/4"	1/2	200	411751
Hex nut-heavy 3/8"	11/16	100	411752
Hex nut-standard 3/8" (SS316)	9/16	100	411775
Hex nut-heavy 1/2"	7/8	100	411753
Hex nut-standard 1/2" (SS316)	3/4	100	411776
Hex nut-5/8"	15/16	50	411754
Hex nut-standard 5/8" (SS316)	15/16	50	411777
Hex nut-3/4"	1-1/8	25	411755
Hex nut-standard 3/4"	1-1/8	25	411778

1. Per MSS-SP-58-2002, the ultimate tensile loads are based on a tensile stress of 50,000 psi multiplied by the threaded rod root area based on coarse thread UNC.
2. AISC Allowable Tensile load = 0.33 x F_u x A_{nom}
   AISC Allowable Shear load = 0.17 x F_u x A_{nom}

WASHERS

Material Specifications

Material	Dimensions	Finish	Thread
ASTM A563 Grade A; Stainless Steel 316	ASME/ANSI B18.2.2 – 1986	ASTM B 633-98, SC 1 Type I	Class 2A fit; Class 2B thread; ASME B1.1

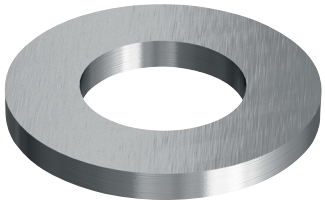


Table 277 - Ordering Information

Description	Inside Diameter (in)	Outside Diameter (in)	Quantity Pack	Item No.
Washer 1/4"	0.312	0.734	200	411756
Washer 1/4" (SS316)	0.281	0.625	200	411779
Washer 3/8"	0.438	1.000	200	411757
Washer 3/8" (SS316)	0.406	0.813	200	411780
Washer 1/2"	0.562	1.375	100	411758
Washer 1/2" (HDG)	0.512	0.945	100	304771
Washer 1/2" (SS316)	0.531	1.250	100	411781
Washer 5/8"	0.656	1.312	100	411759
Washer 5/8" (SS316)	0.656	1.312	100	411782
Washer 3/4"	0.812	1.469	50	411760
Washer 3/4" (SS316)	0.812	1.500	50	411783
Fender washer 1/4"	0.281	1.250	100	411761
Fender washer 1/4" (SS316)	0.281	1.250	100	411784
Fender washer 3/8"	0.406	1.500	100	411762
Fender washer 3/8" (SS316)	0.406	1.500	100	411785
Fender washer 1/2"	0.531	2.000	100	411763
Fender washer 1/2" (SS316)	0.531	2.000	100	411787

4.0 ADDITIONAL HARDWARE

ROD COUPLERS



Material Specifications

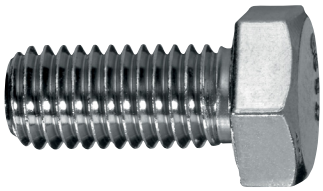
Material	Finish	Thread
ASTM A563 Grade A; Carbon Steel	Zinc electroplated to ASTM B 633-98, SC 1, Type I	Class 2A fit; Class 2B thread

Table 278 - Technical Data and Ordering Information

Description	Length (in)	Width Across Flats (in)	Quantity Pack	Item No.	MSS-SP-58[1] Allowable Tensile Load at 650° F (lbs)	AISC[2] Allowable Tensile Load (lbs)
1/4" Rod Coupler	7/8	3/8	100	411746	300	780
3/8" Rod Coupler	1-1/8	1/2	50	411747	730	1,750
1/2" Rod Coupler	1-1/4	5/8	50	411748	1,350	3,110
5/8" Rod Coupler	2-1/8	13/16	50	411749	2,160	4,860
3/4" Rod Coupler	2-1/4	1	25	411750	3,230	6,700

1. Per MSS-SP-58-2002, the ultimate tensile loads are based on a tensile stress of 50,000 psi multiplied by the threaded rod root area based on coarse thread UNC.
2. AISC Allowable Tensile load = 0.33 x F_u x A_{nom}
   AISC Allowable Shear load = 0.17 x F_u x A_{nom}

HEX BOLTS



Material Specifications

Material	Dimensions	Finish	Thread
ASTM A307; Stainless Steel 316	ASME/ANSI B18.2.1 – 1981	Zinc electroplated to ASTM B 633-98, SC 1, Type I	Class 2A fit; Class 2B thread; ASME B1.1

Table 279 - Ordering Information

Description	Quantity Pack	Item No.
Hex head bolt 3/8" x 1-1/4"	100	411764
Hex head bolt 3/8" x 1-1/4" (SS316)	50	411788
Hex head bolt 3/8" x 1-1/2"	100	411765
Hex head bolt 3/8" x 1-1/2" (SS316)	50	411789
Hex head bolt 1/2" x 1"	50	411766
Hex head bolt 1/2" x 1" (SS316)	50	411790
Hex head bolt 1/2" x 1-1/4"	50	411767
Hex head bolt 1/2" x 1-1/4" (SS316)	50	411791
Hex head bolt 1/2" x 1-1/2"	50	411768
Hex head bolt 1/2" x 1-1/2" (SS316)	50	411792

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

GAUGE WALL THICKNESS

The following tables are for information only.

For uncoated steel reference ASTM A568/A568M, for mill galvanized steel reference ASTM A924/A924M.

Uncoated Steel		
Standard Gauge Number	Equivalent Thickness (in)	Equivalent Thickness (mm)
20	0.0359	0.912
19	0.0418	1.062
18	0.0478	1.214
17	0.0538	1.367
16	0.0598	1.519
15	0.0673	1.709
14	0.0747	1.897
13	0.0897	2.278
12	0.1046	2.657
11	0.1196	3.038
10	0.1345	3.416

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

STANDARD STEEL PIPE INFORMATION

Based on ASME B36.10M-2018 information.
Specific gravity (SG) of 1.0 for contents (water has a density, ρ_w, 62.4 lbs/ft^3).
Insulation thickness (t_{ins}) (ρ_{ins}) 9.0 lbs/ft^3 [foamglass].
Ice thickness (t_{ice}) 1 inch with a density (r_{ice}) 56 lbs/ft^3.
Density of steel, ρ_s, is 490 lbs/ft^3.
Support spacing is based on MSS SP-58.

Standard Steel (STD) Pipe information								
Nominal Pipe Size (in)	Schedule Number (SCH)	Pipe Outer Diameter, D_o in (mm)	Wall Thickness, t_w in (mm)	Pipe Weight Only plf (kg/m)	Pipe+ Contents Weight Only plf (kg/m)	Pipe+ Contents+ Ice Weight Only[1] plf (kg/m)	Pipe+ Insulation Weight Only plf (kg/m)	Maximum Support Spacing ft (m)
3/8	40	0.675 (17.1)	0.091 (2.31)	0.57 (0.85)	0.65 (0.97)	2.7 (4.02)	1.62 (2.41)	7 (2.1)
1/2	40	0.84 (21.3)	0.109 (2.77)	0.85 (1.26)	0.98 (1.46)	3.23 (4.81)	1.97 (2.93)	7 (2.1)
3/4	40	1.05 (26.7)	0.113 (2.87)	1.13 (1.68)	1.36 (2.02)	3.87 (5.76)	2.33 (3.47)	7 (2.1)
1	40	1.315 (33.4)	0.133 (3.38)	1.68 (2.50)	2.05 (3.05)	4.88 (7.26)	2.98 (4.43)	7 (2.1)
1-1/4	40	1.66 (42.2)	0.14 (3.56)	2.27 (3.38)	2.92 (4.35)	6.17 (9.18)	3.71 (5.52)	7 (2.1)
1-1/2	40	1.9 (48.3)	0.145 (3.68)	2.72 (4.05)	3.6 (5.36)	7.15 (10.64)	4.25 (6.32)	8 (2.4)
2	40	2.375 (60.3)	0.154 (3.91)	3.65 (5.43)	5.11 (7.60)	9.24 (13.75)	5.38 (8.01)	10 (3.0)
2-1/2	40	2.875 (73.0)	0.203 (5.16)	5.79 (8.62)	7.87 (11.71)	12.61 (18.77)	7.71 (11.47)	11 (3.3)
3	40	3.5 (88.9)	0.216 (5.49)	7.58 (11.28)	10.78 (16.04)	16.28 (24.23)	9.74 (14.49)	12 (3.6)
3-1/2	40	4 (101.6)	0.226 (5.74)	9.11 (13.56)	13.4 (19.94)	19.51 (29.03)	11.48 (17.08)	13 (3.9)
4	40	4.5 (114.3)	0.237 (6.02)	10.79 (16.06)	16.32 (24.29)	23.04 (34.29)	13.35 (19.87)	14 (4.2)
5	40	5.563 (141.3)	0.258 (6.55)	14.62 (21.76)	23.27 (34.63)	31.29 (46.56)	17.57 (26.15)	116 (35.3)
6	40	6.625 (168.3)	0.28 (7.11)	18.99 (28.26)	31.52 (46.91)	40.83 (60.76)	22.39 (33.32)	17 (5.1)
8	40	8.625 (219.1)	0.322 (8.18)	28.58 (42.53)	50.28 (74.82)	62.04 (92.33)	32.77 (48.77)	19 (5.7)
10	40	10.75 (273.1)	0.365 (9.27)	40.48 (60.24)	74.67 (111.12)	89.03 (132.49)	45.51 (67.73)	22 (6.7)
12	STD	12.75 (323.9)	0.375 (9.53)	49.63 (73.86)	98.61 (146.75)	115.41 (171.75)	55.39 (82.43)	23 (7.0)
14	30	14 (355.6)	0.375 (9.53)	54.62 (81.28)	114.35 (170.17)	132.68 (197.45)	60.88 (90.60)	25 (7.6)
16	30	16 (406.4)	0.375 (9.53)	62.64 (93.22)	141.75 (210.95)	162.52 (241.86)	69.67 (103.68)	27 (8.2)
18	STD	18 (457.2)	0.375 (9.53)	70.65 (105.14)	171.87 (255.77)	195.09 (290.33)	78.45 (116.75)	28 (8.5)
20	20	20 (508.0)	0.375 (9.53)	86.69 (129.01)	204.72 (304.66)	230.37 (342.83)	87.24 (129.83)	30 (9.1)
24	20	24 (609.6)	0.375 (9.53)	94.71 (140.94)	278.57 (414.56)	309.12 (460.02)	104.81 (155.97)	32 (9.7)

1. Assumes no insulation

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

STANDARD PVC PIPE INFORMATION

Based on ASME B36.10M-2018 information.
Specific gravity (SG) of 1.0 for contents (water has a density, ρ_w, 62.4 lbs/ft^3).
Temperature of pipe contents is less than 100° F.
Density of PVC, ρ_{pvc}, is 86.15 lbs/ft^3.
Support spacing is based on MSS SP-58.

Standard PVC Piping							
Nominal Pipe Size (in)	Pipe Outer Diameter, D_o in (mm)	Pipe Inner Diameter, D_i in (mm)	Wall Thickness, t_w in (mm)	Pipe Weight Only plf (kg/m)	Pipe+ Contents Weight Only plf (kg/m)	Pipe+ Contents+ Ice Weight Only[1] plf (kg/m)	Pipe+ Insulation Weight Only plf (kg/m)
1/8	0.405 (10.3)	0.269 (6.8)	0.068 (1.73)	0.043 (0.064)	0.025 (0.037)	0.068 (0.101)	3 (4.46)
1/4	0.54 (13.7)	0.364 (9.2)	0.088 (2.24)	0.075 (0.112)	0.045 (0.067)	0.12 (0.179)	3.5 (5.21)
3/8	0.675 (17.1)	0.493 (12.5)	0.091 (2.31)	0.1 (0.149)	0.083 (0.124)	0.183 (0.272)	3.5 (5.21)
1/2	0.84 (21.3)	0.622 (15.8)	0.109 (2.77)	0.15 (0.223)	0.132 (0.196)	0.281 (0.418)	4 (5.95)
3/4	1.05 (26.7)	0.824 (20.9)	0.113 (2.87)	0.199 (0.296)	0.231 (0.344)	0.43 (0.640)	4 (5.95)
1	1.315 (33.4)	1.049 (26.6)	0.133 (3.38)	0.295 (0.439)	0.375 (0.558)	0.67 (0.997)	4.5 (6.70)
1-1/4	1.66 (42.2)	1.38 (35.1)	0.14 (3.56)	0.4 (0.595)	0.648 (0.964)	1.048 (1.560)	5 (7.44)
1-1/2	1.9 (48.3)	1.61 (40.9)	0.145 (3.68)	0.478 (0.711)	0.882 (1.313)	1.36 (2.024)	5 (7.44)
2	2.375 (60.3)	2.067 (52.5)	0.154 (3.91)	0.643 (0.957)	1.454 (2.164)	2.097 (3.121)	5 (7.44)
2-1/2	2.875 (73.0)	2.469 (62.7)	0.203 (5.16)	1.019 (1.516)	2.075 (3.088)	3.094 (4.604)	6 (8.93)
3	3.5 (88.9)	3.068 (77.9)	0.216 (5.49)	1.333 (1.984)	3.203 (4.767)	4.537 (6.752)	6 (8.93)
3-1/2	4 (101.6)	3.548 (90.1)	0.226 (5.74)	1.603 (2.386)	4.284 (6.375)	5.887 (8.761)	6 (8.93)
4	4.5 (114.3)	4.026 (102.3)	0.237 (6.02)	1.899 (2.826)	5.516 (8.209)	7.415 (11.035)	6.5 (9.67)
5	5.563 (141.3)	5.047 (128.2)	0.258 (6.55)	2.572 (3.828)	8.669 (12.901)	11.242 (16.730)	7 (10.42)
6	6.625 (168.3)	6.065 (154.1)	0.28 (7.11)	3.339 (4.969)	12.519 (18.630)	15.858 (23.599)	7.5 (11.16)
8	8.625 (219.1)	7.981 (202.7)	0.322 (8.18)	5.025 (7.478)	21.678 (32.260)	26.703 (39.738)	8 (11.91)
10	10.75 (273.1)	10.02 (254.5)	0.365 (9.27)	7.124 (10.602)	34.17 (50.851)	41.294 (61.452)	8.5 (12.65)
12	12.75 (323.9)	11.938 (303.2)	0.406 (10.31)	9.419 (14.017)	48.504 (72.182)	57.923 (86.199)	9.5 (14.14)

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

STANDARD DUCTILE IRON CLASS 53 PIPE INFORMATION

Based on AWWA C108-70, Table 8.2.
Specific gravity (SG) of 1.0 for contents (water has a density, ρ_w, 62.4 lbs/ft^3).
Add flange weight for flanged cast iron pipe.
Pipe weights vary by class.
Density of ductile iron, ρ_D, is 455.72 lbs/ft^3.

Ductile Iron Class 53 Piping						
Nominal Pipe Size (in)	Pipe Outer Diameter, D_o in (mm)	Pipe Inner Diameter, D_i in (mm)	Wall Thickness, t_w in (mm)	Pipe Weight Only plf (kg/m)	Contents Weight Only plf (kg/m)	Pipe+ Contents Weight Only plf (kg/m)
3	3.96 (100.6)	3.34 (84.8)	0.31 (7.9)	11.25 (16.74)	3.8 (5.66)	15.05 (22.40)
4	4.8 (121.9)	4.16 (105.7)	0.32 (8.1)	14.25 (21.21)	5.89 (8.77)	20.14 (29.97)
6	6.9 (175.3)	6.22 (158.0)	0.34 (8.6)	22.18 (33.01)	13.17 (19.60)	35.34 (52.59)
8	9.05 (229.9)	8.33 (211.6)	0.36 (9.1)	31.1 (46.28)	23.62 (35.15)	54.72 (81.43)
10	11.1 (281.9)	10.34 (262.6)	0.38 (9.7)	40.5 (60.27)	36.39 (54.15)	76.89 (114.42)
12	13.2 (335.3)	12.4 (315.0)	0.4 (10.2)	50.9 (75.75)	52.33 (77.88)	103.23 (153.62)
14	15.3 (388.6)	14.46 (367.3)	0.42 (10.7)	62.14 (92.47)	71.16 (105.90)	133.3 (198.37)
16	17.4 (442.0)	16.54 (420.1)	0.43 (10.9)	72.55 (107.97)	93.11 (138.56)	165.66 (246.53)
18	19.5 (495.3)	18.62 (472.9)	0.44 (11.2)	83.38 (124.08)	118 (175.60)	201.38 (299.69)
20	21.6 (548.6)	20.7 (525.8)	0.45 (11.4)	94.63 (140.82)	145.83 (217.02)	240.46 (357.84)
24	25.8 (655.3)	24.86 (631.4)	0.47 (11.9)	118.36 (176.14)	210.34 (313.02)	328.7 (489.16)
30	32 (812.8)	30.98 (786.9)	0.51 (13.0)	159.67 (237.62)	326.64 (486.09)	486.32 (723.72)
36	38.3 (972.8)	37.14 (943.4)	0.58 (14.7)	217.51 (323.69)	469.46 (698.63)	686.97 (1,022.32)
42	44.5 (1,130)	43.2 (1,097)	0.65 (16.5)	283.38 (421.72)	635.15 (945.21)	918.53 (1,366.92)
48	50.8 (1,290)	49.36 (1,254)	0.72 (18.3)	358.49 (533.49)	829.21 (1,234.00)	1187.7 (1,767.49)
54	57.1 (1,450)	55.48 (1,409)	0.81 (20.6)	453.32 (674.61)	1047.57 (1,558.96)	1500.89 (2,233.57)

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

TYPE M COPPER TUBING

Dimensions taken from ASTM B88-83.
Specific gravity (SG) of 1.0 for contents (water has a density, ρ_w, 62.4 lbs/ft^3).
Density of copper, ρ_c, is 559.35 lbs/ft^3.
Support spacing is based on MSS SP-58.

Type M Copper Tubing							
Nominal Pipe Size (in)	Pipe Outer Diameter, D_o in (mm)	Pipe Inner Diameter, D_i in (mm)	Wall Thickness, t_w in (mm)	Tube Weight Only plf (kg/m)	Contents Weight Only plf (kg/m)	Tube+ Contents Weight Only plf (kg/m)	Maximum Support Spacing ft (m)
1/4	0.375 (9.53)	0.325 (8.26)	0.025 (0.64)	0.107 (0.159)	0.036 (0.054)	0.143 (0.213)	5 (1.52)
3/8	0.5 (12.70)	0.45 (11.43)	0.025 (0.64)	0.145 (0.216)	0.069 (0.103)	0.214 (0.318)	5 (1.52)
1/2	0.625 (15.88)	0.569 (14.45)	0.028 (0.71)	0.204 (0.304)	0.11 (0.164)	0.314 (0.467)	5 (1.52)
5/8	0.75 (19.05)	0.69 (17.53)	0.03 (0.76)	0.264 (0.393)	0.162 (0.241)	0.426 (0.634)	5 (1.52)
3/4	0.875 (22.23)	0.811 (20.60)	0.032 (0.81)	0.329 (0.490)	0.224 (0.333)	0.553 (0.823)	5 (1.52)
1	1.125 (28.58)	1.055 (26.80)	0.035 (0.89)	0.466 (0.693)	0.379 (0.564)	0.844 (1.256)	6 (1.83)
1-1/4	1.375 (34.93)	1.291 (32.79)	0.042 (1.07)	0.683 (1.016)	0.567 (0.844)	1.25 (1.860)	7 (2.13)
1-1/2	1.625 (41.28)	1.527 (38.79)	0.049 (1.24)	0.942 (1.402)	0.794 (1.182)	1.736 (2.583)	8 (2.44)
2	2.125 (53.98)	2.009 (51.03)	0.058 (1.47)	1.463 (2.177)	1.374 (2.045)	2.837 (4.222)	8 (2.44)
2-1/2	2.625 (66.68)	2.495 (63.37)	0.065 (1.65)	2.031 (3.022)	2.119 (3.153)	4.149 (6.174)	9 (2.74)
3	3.125 (79.38)	2.981 (75.72)	0.072 (1.83)	2.682 (3.991)	3.024 (4.500)	5.707 (8.493)	10 (3.05)
3-1/2	3.625 (92.08)	3.459 (87.86)	0.083 (2.11)	3.588 (5.340)	4.072 (6.060)	7.66 (11.399)	11 (3.35)
4	4.125 (104.78)	3.935 (99.95)	0.095 (2.41)	4.672 (6.953)	5.27 (7.843)	9.942 (14.795)	12 (3.66)
5	5.125 (130.18)	4.907 (124.64)	0.109 (2.77)	6.672 (9.929)	8.195 (12.196)	14.867 (22.125)	13 (3.96)
6	6.125 (155.58)	5.881 (149.38)	0.122 (3.10)	8.937 (13.300)	11.771 (17.517)	20.708 (30.817)	14 (4.27)
8	8.125 (206.38)	7.785 (197.74)	0.17 (4.32)	16.503 (24.559)	20.627 (30.696)	37.13 (55.256)	16 (4.88)

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

TYPE L / ACR COPPER TUBING

Dimensions taken from ASTM B88-83.
Specific gravity (SG) of 1.0 for contents (water has a density, ρ_w, 62.4 lbs/ft^3).
Density of copper, ρ_c, is 559.35 lbs/ft^3.
Support spacing is based on MSS SP-58.

Type L / ACR Copper Tubing							
Nominal Pipe Size (in)	Pipe Outer Diameter, D_o in (mm)	Pipe Inner Diameter, D_i in (mm)	Wall Thickness, t_w in (mm)	Tube Weight Only plf (kg/m)	Contents Weight Only plf (kg/m)	Tube+ Contents Weight Only plf (kg/m)	Maximum Support Spacing ft (m)
1/4	0.375 (9.53)	0.315 (8.00)	0.03 (0.76)	0.126 (0.188)	0.034 (0.051)	0.16 (0.238)	5 (1.52)
3/8	0.5 (12.70)	0.43 (10.92)	0.035 (0.89)	0.199 (0.296)	0.063 (0.094)	0.262 (0.390)	5 (1.52)
1/2	0.625 (15.88)	0.545 (13.84)	0.04 (1.02)	0.286 (0.426)	0.101 (0.150)	0.387 (0.576)	5 (1.52)
5/8	0.75 (19.05)	0.666 (16.92)	0.042 (1.07)	0.363 (0.540)	0.151 (0.225)	0.514 (0.765)	5 (1.52)
3/4	0.875 (22.23)	0.785 (19.94)	0.045 (1.14)	0.456 (0.679)	0.21 (0.313)	0.666 (0.991)	5 (1.52)
1	1.125 (28.58)	1.025 (26.04)	0.05 (1.27)	0.656 (0.976)	0.358 (0.533)	1.013 (1.508)	6 (1.83)
1-1/4	1.375 (34.93)	1.265 (32.13)	0.055 (1.40)	0.886 (1.319)	0.545 (0.811)	1.431 (2.130)	7 (2.13)
1-1/2	1.625 (41.28)	1.505 (38.23)	0.06 (1.52)	1.146 (1.705)	0.771 (1.147)	1.917 (2.853)	8 (2.44)
2	2.125 (53.98)	1.985 (50.42)	0.07 (1.78)	1.755 (2.612)	1.34 (1.994)	3.096 (4.607)	8 (2.44)
2-1/2	2.625 (66.68)	2.465 (62.61)	0.08 (2.03)	2.485 (3.698)	2.068 (3.078)	4.553 (6.776)	9 (2.74)
3	3.125 (79.38)	2.945 (74.80)	0.09 (2.29)	3.333 (4.960)	2.952 (4.393)	6.285 (9.353)	10 (3.05)
3-1/2	3.625 (92.08)	3.425 (87.00)	0.1 (2.54)	4.302 (6.402)	3.992 (5.941)	8.294 (12.343)	11 (3.35)
4	4.125 (104.78)	3.905 (99.19)	0.11 (2.79)	5.39 (8.021)	5.19 (7.724)	10.579 (15.743)	12 (3.66)
5	5.125 (130.18)	4.875 (123.83)	0.125 (3.18)	7.627 (11.350)	8.088 (12.036)	15.715 (23.386)	13 (3.96)
6	6.125 (155.58)	5.845 (148.46)	0.14 (3.56)	10.225 (15.216)	11.627 (17.303)	21.582 (32.118)	14 (4.27)
8	8.125 (206.38)	7.725 (196.22)	0.2 (5.08)	19.342 (28.784)	20.31 (30.225)	39.652 (59.009)	16 (4.88)

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

TYPE K COPPER TUBING

Dimensions taken from ASTM B88-83.
Specific gravity (SG) of 1.0 for contents (water has a density, ρ_w, 62.4 lbs/ft^3).
Density of copper, ρ_c, is 559.35 lbs/ft^3.
Support spacing is based on MSS SP-58.

Type K Copper Tubing							
Nominal Pipe Size (in)	Pipe Outer Diameter, D_o in (mm)	Pipe Inner Diameter, D_i in (mm)	Wall Thickness, t_w in (mm)	Tube Weight Only plf (kg/m)	Contents Weight Only plf (kg/m)	Tube+ Contents Weight Only plf (kg/m)	Maximum Support Spacing ft (m)
1/4	0.375 (9.53)	0.305 (7.75)	0.035 (0.89)	0.145 (0.216)	0.032 (0.048)	0.177 (0.263)	5 (1.52)
3/8	0.5 (12.70)	0.402 (10.21)	0.049 (1.24)	0.27 (0.402)	0.055 (0.082)	0.325 (0.484)	5 (1.52)
1/2	0.625 (15.88)	0.527 (13.39)	0.049 (1.24)	0.344 (0.512)	0.095 (0.141)	0.439 (0.653)	5 (1.52)
5/8	0.75 (19.05)	0.652 (16.56)	0.049 (1.24)	0.419 (0.624)	0.145 (0.216)	0.564 (0.839)	5 (1.52)
3/4	0.875 (22.23)	0.745 (18.92)	0.065 (1.65)	0.642 (0.955)	0.189 (0.281)	0.831 (1.237)	5 (1.52)
1	1.125 (28.58)	0.995 (25.27)	0.065 (1.65)	0.841 (1.252)	0.337 (0.502)	1.178 (1.753)	6 (1.83)
1-1/4	1.375 (34.93)	1.245 (31.62)	0.065 (1.65)	1.039 (1.546)	0.528 (0.786)	1.567 (2.332)	7 (2.13)
1-1/2	1.625 (41.28)	1.481 (37.62)	0.072 (1.83)	1.365 (2.031)	0.746 (1.110)	2.111 (3.142)	8 (2.44)
2	2.125 (53.98)	1.959 (49.76)	0.083 (2.11)	2.068 (3.078)	1.306 (1.944)	3.374 (5.021)	8 (2.44)
2-1/2	2.625 (66.68)	2.435 (61.85)	0.095 (2.41)	2.933 (4.365)	2.018 (3.003)	4.951 (7.368)	9 (2.74)
3	3.125 (79.38)	2.907 (73.84)	0.109 (2.77)	4.012 (5.971)	2.876 (4.280)	6.888 (10.250)	10 (3.05)
3-1/2	3.625 (92.08)	3.385 (85.98)	0.12 (3.05)	5.133 (7.639)	3.9 (5.804)	9.032 (13.441)	11 (3.35)
4	4.125 (104.78)	3.857 (97.97)	0.134 (3.40)	6.526 (9.712)	5.063 (7.535)	11.589 (17.246)	12 (3.66)
5	5.125 (130.18)	4.805 (122.05)	0.16 (4.06)	9.694 (14.426)	7.858 (11.694)	17.552 (26.120)	13 (3.96)
6	6.125 (155.58)	5.741 (145.82)	0.192 (4.88)	13.901 (20.687)	11.217 (16.693)	25.118 (37.380)	14 (4.27)
8	8.125 (206.38)	7.583 (192.61)	0.271 (6.88)	25.974 (38.654)	19.57 (29.123)	45.544 (67.777)	16 (4.88)

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

GALVANIZED RIGID STEEL CONDUIT

The following tables are for information only.
As per UL Standard Safety 6 manufactured to ANSI C80.1

For Galvanized Rigid Conduit (GRC) Trade Tolerances are for outer diameter:
-/+0.015 inches for 1/2" to 1-1/2"
-/+ 1% for 2" to 6"

Conduit weight is an approximation.

Galvanized Rigid Conduit (GRC)				
Trade Size (in)	Avg Outer Diameter in (mm)	Avg Inner Diameter in (mm)	Avg Wall Thickness t_w in (mm)	Approximate Weight lb/100 ft (kg/m)
1/2	0.84 (21.3)	0.632 (16.05)	0.104 (2.64)	82 (1.22)
3/4	1.05 (26.7)	0.836 (21.23)	0.107 (2.72)	109 (1.62)
1	1.315 (33.4)	1.063 (27.00)	0.126 (3.20)	161 (2.40)
1-1/4	1.66 (42.2)	1.394 (35.41)	0.133 (3.38)	218 (3.24)
1-1/2	1.99 (50.5)	1.624 (41.25)	0.138 (3.51)	263 (3.91)
2	2.375 (60.3)	2.083 (52.91)	0.146 (3.71)	350 (5.21)
2-1/2	2.875 (73.0)	2.489 (63.22)	0.193 (4.90)	559 (8.32)
3	3.5 (88.9)	3.09 (78.49)	0.205 (5.21)	727 (10.82)
3-1/2	4 (101.6)	3.57 (90.68)	0.215 (5.46)	880 (13.10)
4	4.5 (114.3)	4.05 (102.87)	0.225 (5.72)	1030 (15.33)
5	5.563 (141.3)	5.073 (128.85)	0.245 (6.22)	1520 (22.62)
6	6.625 (168.3)	6.093 (154.76)	0.266 (6.76)	1785 (26.56)

Rigid and Intermediate Metal Conduit shall be supported at least every 10 feet (3.05 m) and within 3 feet (914 mm) of each outlet box, junction box, cabinet, or fitting, except for straight runs of conduit connected with couplings which may be supported in accordance with NEC Article 345 and 346, provided such supports prevent transmission of stresses to termination where conduit is deflected between supports.

INTERMEDIATE METAL CONDUIT

The following tables are for information only.
As per UL Standard Safety 6 manufactured to ANSI C80.1
For Intermediate Metal Conduit (IMC) Trade Tolerances are for outer diameter:
-/+0.005 inches for 1/2" to 1"
-/+0.0075 inches for 1-1/4" to 2"
-/+0.10 inches for 2" to 4"

For Intermediate Metal Conduit (IMC) Trade Tolerances for wall thickness:
-/+0.15 inches for 1/2" to 2"
-/+0.20 inches for 2-1/2" to 4"

Conduit weight is an approximation.

Intermediate Metal Conduit (IMC)				
Trade Size (in)	Avg Outer Diameter in (mm)	Avg Inner Diameter in (mm)	Avg Wall Thickness t_w in (mm)	Approximate Weight lb/100 ft (kg/m)
1/2	0.815 (20.70)	0.675 (17.15)	0.07 (1.8)	62 (0.92)
3/4	1.029 (26.14)	0.879 (22.33)	0.075 (1.9)	84 (1.25)
1	1.29 (32.77)	1.12 (28.45)	0.085 (2.2)	119 (1.77)
1-1/4	1.638 (41.61)	1.468 (37.29)	0.085 (2.2)	158 (2.35)
1-1/2	1.883 (47.83)	1.703 (43.26)	0.09 (2.3)	194 (2.89)
2	2.36 (59.94)	2.17 (55.12)	0.095 (2.4)	256 (3.81)
2-1/2	2.857 (72.57)	2.597 (65.96)	0.14 (3.6)	441 (6.56)
3	3.476 (88.29)	3.216 (81.69)	0.14 (3.6)	543 (8.08)
3-1/2	3.971 (100.86)	3.711 (94.26)	0.14 (3.6)	629 (9.36)
4	4.466 (113.44)	4.206 (106.83)	0.14 (3.6)	700 (10.42)

Rigid and Intermediate Metal Conduit shall be supported at least every 10 feet (3.05 m) and within 3 feet (914 mm) of each outlet box, junction box, cabinet, or fitting, except for straight runs of conduit connected with couplings which may be supported in accordance with NEC Article 345 and 346, provided such supports prevent transmission of stresses to termination where conduit is deflected between supports.

5.0 REFERENCE

5.1 GENERAL INFORMATION FOR LOAD TABLES

ELECTRICAL METALLIC TUBING (EMT) METAL THINWALL CONDUIT

The following tables are for information only.
As per UL Standard Safety 6 manufactured to ANSI C80.1

Conduit weight is an approximation.

Galvanized Rigid Conduit (GRC)				
Trade Size (in)	Avg Outer Diameter in (mm)	Avg Inner Diameter in (mm)	Avg Wall Thickness t_w in (mm)	Approximate Weight lb/100 ft (kg/m)
3/8	0.577 (14.66)	0.493 (12.52)	0.042 (1.07)	36.6 (0.54)
1/2	0.706 (17.93)	0.622 (15.80)	0.042 (1.07)	50.6 (0.75)
3/4	0.922 (23.42)	0.824 (20.93)	0.049 (1.24)	84.3 (1.25)
1	1.163 (29.54)	1.049 (26.64)	0.057 (1.45)	130.3 (1.94)
1-1/4	1.51 (38.35)	1.38 (35.05)	0.065 (1.65)	212.3 (3.16)
1-1/2	1.74 (44.20)	1.61 (40.89)	0.065 (1.65)	269.8 (4.02)
2	2.197 (55.80)	2.067 (52.50)	0.065 (1.65)	401.8 (5.98)
2-1/2	2.875 (73.03)	2.731 (69.37)	0.072 (1.83)	579 (8.62)
3	3.5 (88.90)	3.356 (85.24)	0.072 (1.83)	826.3 (12.30)
3-1/2	4 (101.60)	3.834 (97.38)	0.083 (2.11)	1098 (16.34)
4	4.5 (114.30)	4.334 (110.08)	0.083 (2.11)	1364 (20.30)

Rigid and Intermediate Metal Conduit shall be supported at least every 10 feet (3.05 m) and within 3 feet (914 mm) of each outlet box, junction box, cabinet, or fitting, except for straight runs of conduit connected with couplings which may be supported in accordance with NEC Article 345 and 346, provided such supports prevent transmission of stresses to termination where conduit is deflected between supports.

5.0 REFERENCE

5.2 TERMS AND CONDITIONS OF SALE

Terms and Conditions of Sale (U.S.)

All sales are subject to Hilti's Terms and Conditions of Sale.

The U.S. Terms and Conditions are here: https://www.hilti.com/content/hilti/W1/US/en/company/legal-and-footer-information/terms-conditions/terms-and-conditions-of-sales.html

Terms and Conditions of Sale (Canada)

All sales are subject to Hilti's Terms and Conditions of Sale.

English: https://www.hilti.ca/content/hilti/W1/CA/en/company/legal-and-footer-information/terms-conditions/terms-and-conditions-of-sales.html

French: https://www.hilti.ca/content/hilti/W1/CA/fr/entreprise/information-legale/conditions-generales-ventes/terms-and-conditions-of-sales.html

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Customer Service: 1-800-363-4458
Fax: 1-800-363-4459

www.hilti.ca

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Certified Quality and Environmental Systems
SQS
ISO 9001 / ISO 14001
Reg. No. 12455-02
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