



TEMBO GLOBAL INDUSTRIES LIMITED



SEISMIC BRACING, ANTI VIBRATION, PIPE HANGER, FASTENERS & SUPPORT SYSTEMS




Certificate of Compliance

This is to Certify that the Quality Management System of

TEMBO GLOBAL INDUSTRIES LIMITED

PLOT NO. PAP D-146-147, TURBHE MIDC, TTC INDUSTRIAL ESTATE, OPP. BALMER LAWRIE VAN LEEER OO, TURBHE, NAVI MUMBAI-400706, MAHARASHTRA (INDIA)
 APT. HOUSE B-4, BADINATE, GROUND FLOOR, TUNGARSHWAR INDUSTRIAL COMPLEX, SR.NO-1, SURVEY NO-68, NEAR SHIV MANDIR, SATVALI VILLAGE, VASAI (EAST), 401208, MAHARASHTRA (INDIA)
 UNIT NO.1/B BADINATE, GROUND FLOOR, TUNGARSHWAR INDUSTRIAL COMPLEX, SR.NO-1, SURVEY NO-68, NEAR SHIV MANDIR, SATVALI VILLAGE, VASAI (EAST), 401208, MAHARASHTRA (INDIA)

has been assessed and registered by Accredium and found to be in compliance with the requirements applicable as per Quality Management System conforming:

ISO 9001:2015

For the scope of

MANUFACTURING & SUPPLY OF PIPE HANGERS AND SUPPORT SYSTEMS, ANTI VIBRATION PRODUCTS, RUBBER SUPPORT INSERTS, S/S FLOOR DRAINS, THEREDED RODS & SLOTTED CHANNEL.

Certificate No.	GACB5410		
Date of Initial Registration	05 th June 2019	Issue Date	05 th June 2019
1st Surveillance on or before	05 th June 2020	Expiry Date	04 th June 2022
2nd Surveillance on or before	05 th June 2021		

This Certificate is Valid for 3 years & will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Accredium Certifications. The certification details & effectiveness are listed at [www.accredium.com](#). The registration does not assure the quality of products produced by a quality system. This certificate is granted based on the limited sampling audit in per relevant ISO standard & Accredium Certifications is not responsible for client's failure to maintain documented quality system.



Authorized Signatory









Verify this Certificate Status & Details: [http://www.accredium.com/verify/certificate](#)




Certificate of Compliance

This is to Certify that the Environmental Management System of

TEMBO GLOBAL INDUSTRIES LIMITED

PLOT NO. PAP D-146-147, TURBHE MIDC, TTC INDUSTRIAL ESTATE, OPP. BALMER LAWRIE VAN LEEER OO, TURBHE, NAVI MUMBAI-400706, MAHARASHTRA (INDIA)
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has been assessed by ACAS and found to be in compliance with the following Environmental Management Standard:

ISO 14001:2015

For the scope of

MANUFACTURING & SUPPLY OF PIPE HANGERS AND SUPPORT SYSTEMS, ANTI VIBRATION PRODUCTS, RUBBER SUPPORT INSERTS, S/S FLOOR DRAINS, THEREDED RODS & SLOTTED CHANNEL.

Certificate No.	GACB5691		
Date of Initial Registration	01 st Nov. 2019	Issue Date	01 st Nov. 2019
1st Surveillance on or before	01 st Nov. 2020	Expiry Date	31 st Oct. 2022
2nd Surveillance on or before	01 st Nov. 2021		

This Certificate is Valid for 3 years & will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Accredium Certifications. The certification details & effectiveness are listed at [www.accredium.com](#). The registration does not assure the quality of products produced by a quality system. This certificate is granted based on the limited sampling audit in per relevant ISO standard & Accredium Certifications is not responsible for client's failure to maintain documented quality system.



Authorized Signatory









Verify this Certificate Status & Details: [http://www.accredium.com/verify/certificate](#)

CERTIFICATE OF COMPLIANCE

Certificate Number	20170531-EX16250
Report Reference	EX16250-20130628
Issue Date	2017-MAY-31

Issued to: SAKETH EXIM PRIVATE LIMITED
 PLT-PAP-D146/147-M.I.D.C
 TURBHE - INDL AREA
 OPP- BALMER LAWRIE VANNLEER
 NAVI MUMBAI MH 400407 INDIA


This is to certify that representative samples of HANGERS, PIPE
 SCH : Clevis hanger
 SH: Band hanger
 PC-1: Pipe Clamp
 PC-2: Pipe Clamp
 SE-USC: U Strap
 SE-UB Series: U Bolt

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.


Standard(s) for Safety:	UL 203 Pipe Hanger Equipment for Fire Protection Service
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Maheshwari, Director, North American Certification Program
UL LLC



Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/customer-service

Page 1 of 1



Certificate of Compliance

This certificate is issued for the following:

Pipe Hanger Components for Automatic Sprinkler Systems

Product Designation	Hanger Rod Size, in. (mm)	Component Description	For Nominal Pipe Sizes, in.	Remarks
RC	3/8 (10)	Riser Clamp	3/4, 1, 1-1/4, 1-1/2, 2	-
RC	1/2 (12)	Riser Clamp	2-1/2, 3, 4	-
RC	5/8 (16)	Riser Clamp	6	-

Prepared for:
Tembo Global Industries Ltd
Plot No. 146/147 MIDC - Turbhe - TTC, Navi Mumbai, Maharashtra 400703, India

Manufactured by:
Tembo Global Industries Ltd
Unit No. 1/B - Badrinhath, Ground Floor, Tungreshwar Industrial Complex Sattvali Village, Vasai (East), Dist. Thane, Maharashtra 401208, India

FM Approvals Class: 1951, 1952, 1953 Issue Date December 2016
Approval Identification: 3059204 Approval Granted: May 23, 2018
Superseded by: RR223825 Date Approved: June 15, 2020

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, containing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.


 David B. Fuller
 VP, Manager of Fire Protection
 FM Approvals
 1151 Boston-Providence Turnpike
 Norwood, MA 02062 USA



Member of the FM Global Group



Certificate of Compliance

This certificate is issued for the following:

Pipe Hanger Components for Automatic Sprinkler Systems

Product Designation	Hanger Rod Size, in. (mm)	Component Description	For Nominal Pipe Sizes, in.	Remarks
USC	3/8 (10)	U-Strap Hangers	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2	-
USC	1/2 (12)	U-Strap Hangers	3, 3-1/2, 4, 5, 6	-

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Pipe Hanger Components for Automatic Sprinkler Systems

Product Designation	Hanger Rod Size, in. (mm)	Component Description	For Nominal Pipe Sizes, in.	Remarks
SH	3/8 (10)	Loop Hanger	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4	-
SH	1/2 (12)	Loop Hanger	5, 6, 8	-

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Pipe Hanger Components for Automatic Sprinkler Systems

Product Designation	Hanger Rod Size, in. (mm)	Component Description	For Nominal Pipe Sizes, in.	Remarks
CH	3/8 (10)	Clevis Hanger	3/4, 1, 1-1/4, 1-1/2	-
CH	1/2 (12)	Clevis Hanger	2-1/2, 3, 4	-
CH	5/8 (16)	Clevis Hanger	5, 6, 8	-

Prepared for:
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Manufactured by:
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MANUFACTURERS STANDARDIZATION SOCIETY
OF THE
VALVE AND FITTING INDUSTRY, INC.

HEREBY CERTIFIES THAT

TEMBO GLOBAL INDUSTRIES LTD.

IS A MEMBER IN GOOD STANDING FOR THE YEAR 2020


 Frederic J. Washburn
 President


 David Thompson
 Executive Director

TEMBO GLOBAL INDUSTRIES LTD is an Industrial Powerhouse with a dominant presence in Manufacturing and Fabrication of Metal Products used in Pipe Support Systems, HVAC Anti Vibration System and Equipments for Industrial, Commercial, Utility and OEM Installation. It is Young, Agile and responsive company which is constantly expanding its capabilities to fuel its fairy tale journey that seen it grown its standards of research, design, Engineering and Manufacturing that go into each and every product that comprise our Pipe Hangers Products Line. Our customer have access to the most complete Support Systems offered in the Industry, including Pipe Hangers, Rubber Support Inserts, Threaded Rod, Fasteners, Slotted Channels, Angles, Anti Vibration Products and Flexible Connector.

Our products are listed by **UNDERWRITER'S LABORATORY INC. (U.S.A.) AND FM GLOBAL APPROVED (U.S.A.)**. All Tembo products are manufactured to meet or exceed industry standards set for their design and manufacture.

Tembo products are produced in technologically most advanced modern plants. These facilities are located in Commercial Capital of the India i.e. Mumbai.

This catalogue is designed to be helpful to the engineers and contractors in the application and selection of pipe hangers, support and HVAC for construction, maintenance, fire & safety.

If a unique application require a special products not included in this catalogue, Tembo engineer personnel are ready to furnish design consultation and realistic material estimates in addition.

NOTICE

Tembo reserves the right to change the specification, materials and process or the availability of products at any time without prior notice. While every effort had been made to assure the accuracy of information contained in this catalogue at the time of publication, Tembo is not responsible for in accuracies resulting from undetected errors or omissions.

MATERIALS

MILD STEEL

Mild steel is used in the manufacture of Tembo pipe hangers and supports. Excellent strength characteristics and adaptability to cold forming provide a well engineered design. By cold forming the steel, mechanical properties are increased, adding to the structural integrity of the fabricated hanger.

STAINLESS STEEL

AISI Type 304 and Type 316 are non-magnetic members of the austenitic stainless steel group. Several conditions make the use of stainless steel ideal. These include reducing long term maintenance costs, high ambient temperatures, appearance, and stable structural properties such as yield strength, and high creep resistance.

CORROSION

All metal surfaces exposed to the environment are affected by corrosion. Depending on the physical properties of the metal and its proximity to other dissimilar metals, an electrochemical reaction may occur which causes an attack on the metal itself, resulting in corrosion. Chemical corrosion is limited to highly corrosive environments, high temperatures, or a combination of both.

FINISHES

ZINC COATINGS

Protective zinc coatings are available on a number of pipe hangers and accessories in three basic forms:

Electro-galvanized, pre-galvanized, and hot-dip galvanized after fabrication. In all cases, the zinc protects the steel first as a sacrificial anode to repair bare areas on cut edges and gouges. When exposed to air and moisture, zinc forms a tough, adherent protective film consisting of a mixture of zinc oxides, hydroxides, and carbonates. The corrosion resistance of zinc is directly related to its thickness and the environment. For example a 0.2 mil (5 μm) coating will last twice as long as a 0.1 mil (2.5 μm) coating in the same environment.

ELECTRO-GALVANIZED

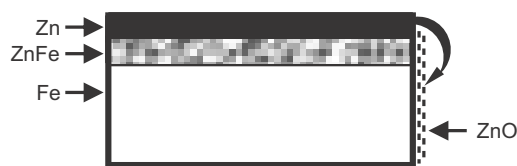
(ASTM B633 SC1 OR Sc3)

An electro-galvanized process deposits a coating of zinc on the steel by electrolysis from a bath of zinc salts. This coating is pure zinc and adheres to the steel with a molecular bond. A maximum of 0.5 mils (12.7 μm) of zinc can be applied by this method. This coating is recommended for in-door use in relatively dry areas.

PRE-GALVANIZED ZINC

(ASTM A653 COATING DESIGNATION G90)

Pre-galvanized zinc is produced by continuously rolling the steel coils or sheets through molten zinc at the steel mills. This is also known as "mill galvanized" or "hot-dipped mill galvanized". Coils are then slit to size for fabrication of pipe hangers. Coating thicknesses of G90, is 0.90 ounces per square foot (0.27 kg/m²) of steel surface.



Protection of cut edges with zinc coatings.

Cut edges and welded areas are not zinc coated; however, zinc near the uncoated metal becomes a sacrificial anode which protects the bar areas after a short period of time. Pre-galvanized steel is not generally recommended for use outdoors in industrial environments, but is suitable for extended exposure in dry or mildly corrosive atmospheres.

HOT-DIP GALVANIZED AFTER FABRICATION (ASTM A123)

After a pipe hanger or fitting has been fabricated, it is completely immersed in a bath of molten zinc. A metallurgical bond is formed, resulting in a zinc coating that completely coats all surfaces, including edges. Zinc coatings of this specification have a minimum thickness of 1.50 ounces per square foot (0.45 kg/m²) on each side or a total of 3.0 ounces per square foot (0.9 kg/m²) of steel.

ZINC FLAKE COATING

Zinc flake coating - Zinc flake coatings are non-electrolytically applied coatings, which provide good protection against corrosion. These coatings consist of a mixture of zinc and aluminium flakes, which are bonded together by an inorganic matrix. Generally, for the Zinc flake coatings, the coating thickness ranges from 5-15 microns. The corrosion resistance can be achieved over 1500 hours by ASTM B117 in Salt Spray test. This layer provides very durable corrosion resistance for normal outdoor applications, and it visually resembles a hot dip galvanized layer in some respects, as both are matte grey. The layer thickness of the zinc flake coatings may be somewhat thicker compared to zinc electroplating (approximately 6 to 12 microns).

Hot dip galvanized after fabrication is recommended for outdoor exposure. For best results, a zinc rich paint (available from B-Line) should be applied to field cuts. The zinc rich paint will provide immediate protection for field cuts and eliminate the short time period for galvanic action to "heal" the damaged coating.

PLASTIC COATING

Some products offered by Tembo are plastic or vinyl coated for prevention of galvanic reaction between materials or for noise reduction. These coated products can also be used where contact between glass pipe and hanger is not desirable. Felt lined hangers may be substituted for same purpose.

RED PRIMER

A corrosion resistant metal primer containing rust inhibitive pigments.

QUALITY ASSURANCE

Tembo's Quality Assurance Program has been developed and implemented for compliance to various industry standards and specifications.

GENERAL

TORQUE

The torque values in this catalog are to be used as a guide only. The relationship between the applied torque or torque wrench reading and the actual tension created in the bolt may be substantially different. Important factors affecting torque-tension relationships include friction under the bolt head or nut, hole tolerances, and torque wrench tolerances. Accuracy of many commercial torque wrenches may vary as much as plus or minus 25%.

CHARTS AND TABLES

Charts and tables in this section are compiled from information published by nationally recognized organizations and are intended for use as a guide only. Tembo recommends that users of this information determine the validity of such information as applied to their own applications.

TEMBO RESERVES THE RIGHT TO MAKE SPECIFICATION CHANGES WITHOUT NOTICE.

SECTION 15140 - PIPE HANGERS AND SUPPORTS

PART I – GENERAL

1.01 SECTION INCLUDES

- A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to completely execute the pipe hanger and supports as described in this specification.

1.02 REFERENCES

- A. ASTM B633 - Specification for Electro deposited Coatings of Zinc on Iron and Steel.
- B. ASTM A123 - Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- D. ASTM A1011 - Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Form ability.
- E. ANSI/MSS SP-58 - Manufacturers Standardization Society: Pipe Hangers and Supports - Materials, Design, and Manufacture.
- F. ANSI/MSS SP-69 - Manufacturers Standardization Society: Pipe Hangers and Supports - Selection and Application.
- G. NFPA 13 - Installation of Sprinkler Systems.

1.03 QUALITY ASSURANCE

- A. Hangers and supports used in fire protection piping systems shall be listed and labeled by Underwriters Laboratories FM APPROVALS.
- B. Steel pipe hangers and supports shall have the manufacturer's BRAND name Tembo Sevenstar / Etalia, and applicable size stamped in the part itself for identification.
- C. Hangers and supports shall be designed and manufactured in conformance with ANSI/MSS SP-58.
- D. Supports for sprinkler piping shall be in conformance with NFPA 13.

1.04 SUBMITTALS

- A. Submit product data on all hanger and support devices, including shields and attachment methods. Product data to include, but not limited to materials, finishes, approvals, load ratings, and dimensional information.

PART II – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Subject to compliance with these specifications, pipe hanger and support systems shall be as manufactured by Tembo Global Industries Ltd.

2.02 PIPE HANGERS AND SUPPORTS

A. HANGERS

1. Uninsulated pipes 2 inches and smaller:
 - a. Sprinkler Hanger.
 - b. Pipe Hanger.
 - c. Clevis Hanger.

B. VERTICAL SUPPORTS

1. Steel Riser Clamp sized to fit outside diameter of pipe.

C. COPPER TUBING SUPPORTS

1. Hangers shall be sized to fit copper tubing outside diameters.
 - a. Sprinkler Hanger.
 - b. Pipe Hanger.
 - c. Clevis Hanger.

D. SUPPLEMENTARY STRUCTURAL SUPPORTS

1. Design and fabricate supports using structural quality steel bolted framing materials as manufactured by Tembo. Channels shall be roll formed, 12 gauge ASTM A1011 SS Grade 33 steel, 15/8" x 15/8" or greater as required by loading conditions. Submit designs for pipe tunnels, pipe galleries, etc., to engineer for approval. Use clamps and fittings designed for use with the strut system.

2.04 UPPER ATTACHMENTS

A. BEAM CLAMPS

1. Beam clamps shall be used where piping is to be suspended from building steel. Clamp type shall be selected on the basis of load to be supported, and load configuration.
2. C-Clamps shall have locknuts and cup point set screws.
3. Center loaded beam clamps shall be used where specified.

B. CONCRETE INSERTS

1. Cast in place spot concrete inserts shall be used where applicable; either steel or malleable iron body. Spot inserts shall allow for lateral adjustment and have means for attachment to forms. Select insert nuts to suit threaded hanger rod sizes.
2. Continuous concrete inserts shall be used where applicable. Channels shall be 12 gauge, ASTM A 1011 SS Grade 33 structural quality carbon steel, complete with Styrofoam inserts and end caps with nail holes for attachment to forms. The continuous concrete insert shall have a load rating of 2,000 lbs/ft. suitable for strut and rod sizes.

2.05 VIBRATION ISOLATION AND SUPPORTS

- A. For refrigeration, air conditioning, hydraulic, pneumatic, and other vibrating system applications, uses a clamp that has a vibration dampening insert and a nylon inserted locknut.
- B. For larger tubing or piping subjected to vibration, use neoprene or spring hangers as required.
- C. For base mounted equipment use vibration pads, molded neoprene mounts, or spring mounts as required.
- D. Vibration isolation products are manufactured by Tembo Global Industries Ltd.

2.06 ACCESSORIES

- A. Hanger rods shall be threaded both ends. Or continuous threaded rods of circular cross section. Use adjusting locknuts at upper attachments and hangers. No wire, chain, or perforated straps are allowed.
- B. Shields shall be 180° galvanized sheet metal, 12 inch minimum length, 18 gauge minimum thickness, designed to match outside diameter of the insulated pipe.
- C. Pipe protection saddles shall be formed from carbon steel, 1/8 inch minimum thickness, sized for insulation thickness. Saddles for pipe sizes greater than 12 inch shall have a center support rib.

2.07 FINISHES

















































INDOOR FINISHES

- A. Hangers and clamps for support of bare copper piping shall be coated with copper colored epoxy paint. Additionally a plastic coating or a felt lining in hanger can be used.
- B. Hangers for other than bare copper pipe shall be zinc plated in accordance with ASTM B633-SC3.
- C. Strut channels shall be Pre-Galvanized in accordance with ASTM A653 G90 or have an electro-deposited Green Epoxy finish.

































OUTDOOR AND CORROSIVE AREA FINISHES

- A. Hangers and strut located outdoors shall be hot dip galvanized after fabrication in accordance with ASTM A123. All hanger hardware shall be hot-dip galvanized or stainless steel. Zinc plated hardware is not acceptable for outdoor or corrosive use.
- B. Hangers and strut located in corrosive areas shall be Type 304 (316) stainless steel with stainless steel hardware.

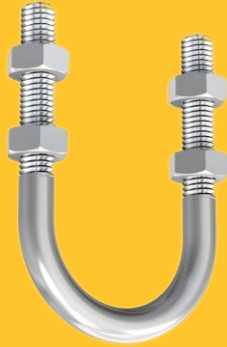
LIST OF CONTENTS

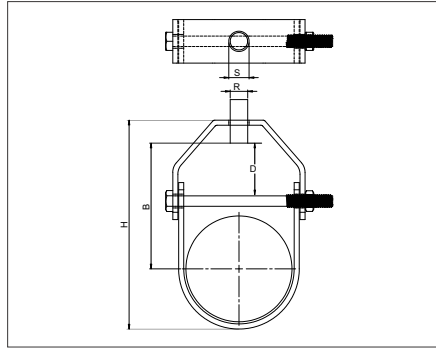
	TGCH0UF000000	CLEVIS HANGER	1		TGHS000000000	HALF SADDLE	27
	TGSHNUF000000	SPRINKLER HANGER WITH NUT	2		TGLS000000000	LIGHT SADDLE	28
	TGSH000000000	SPRINKLER HANGER WITHOUT NUT	3		TGUC000000000	HEAVY SADDLE	29
	TGNCOLUF00000	PIPE HANGER WITH EPDM LINING	4		TGSF000000000	SADDLE FLANGE	30
	TGNC000U00000	PIPE HANGER WITHOUT LINING	5		TGAS000000000	OFFSET HANGER	30
	TGNCOL0000000	PIPE HANGER WITH EPDM LINING	6		TGTPC000000000	STRUT CLAMP-TWO PIECE CHANNELS CLIP	31
	TGNC000000000	PIPE HANGER	7-8		TGPRS000000000	PIPE ROLLER STAND	32
	TGHNCL0000000	PIPE HANGER HEAVY DUTY	9		TGPRC000000000	PIPE ROLLER CHAIR	33
	TGENCL0000000	EASY FIX PIPE HANGER EPDM LINING	10		TGARH000000000	ADJUSTABLE ROLLER HANGER	34
	TGLNCL0000000	PIPE HANGER WITH LINING - STUD	11		TGPR000000000	PIPE ROLLER WITH SOCKET	35
	TGLNC000000000	PIPE HANGER WITHOUT LINING - STUD	12		TGPIS000000000	PIPE INSULATION SADDLE	36
	TGTBC000E0000	TWO BOLT PIPE CLAMPS	13		TGPCS000000000	PIPE COVERING SADDLE	37
	TGTBCL0000000	TWO BOLT PIPE CLAMPS WITH LINING	14		TGSP000000000	SLIDING PIPE SUPPORT	38
	TGDNCL0000000	DOUBLE PIPE HANGER WITH LINING	15		TGPCS000000000	PIPE CLAMP WITH SLEEVE	39
	TGSR000000000	SURGE RESTRAINER	15		TGRSI000000000	RUBBER SUPPORT INSERTS	40-43
	TGUS000000000	U STRAP	16		TGSPH000000000	SPRING HANGER	44
	TGUSOL0000000	U STRAP WITH LINING	18-19		TGCSM000000000	CLOSE SPRING MOUNT	45-46
	TGRC000000000	RISER CLAMPS	20		TGOSM000000000	OPEN SPRING MOUNT	47-48
	TGRCOL0000000	RISER CLAMPS WITH LINING	21		TGIB000000000	INERTIA BASE	49-50
	TGFBC000000000	RISER CLAMPS FOUR BOLTS	22		TGRH000000000	RUBBER HANGER	51
	TGTHC000000000	THREE BOLT PIPE CLAMP	23		TGDM000000000	DUCT MOUNT	52
	TGOPC000000000	OFFSET PIPE CLAMP	24		TGTM000000000	TURRET MOUNT	53
	TGUB00U000000	U BOLT	25		TGAVP000000000	ANTI VIBRATION PADS	54-55
	TGUBOL0000000	U BOLT WITH LINING	26		TGSAF000000000	SINGLE ARC FLOATING FLANGE EXPANSION JOINT	56

LIST OF CONTENTS

	TGDAF00000000	DOUBLE ARC FLOATING FLANGE EXPANSION JOINT	57		TGDWA00000000	DRAW IN ANCHOR	116
	TGREJ00000000	RUBBER EXPANSION JOINTS	58-59		TGWA00000000	WEDGE ANCHOR	117
	TGTFC00000000	FLEXIBLE PIPE CONNECTORS	60-61		TGFB00000000	FOUNDATION BOLT	118
	TGMEB00000000	METALLIC EXPANSION JOINTS	62-63		TGCA00000000	ACCESSORY SERIES	119
	TGFMC00000000	FLEXIBLE METALLIC HOSE CONNECTOR	64-66		TGBC00000000	BEAM CLAMP	120-123
	TGDEUFF000000	DIELECTRIC UNION & FLANGES	67-75		TGCF00000000	CEILING FLANGE	124
	TGSCHO00000000	STRUT CHANNELS	76-78		TGWBA00000000	WELDING BEAM ATTACHMENT	125-126
	TGCW0000000000	CHANNEL WASHER	79		TGSLP00000000	SINGLE LUG PLATE	127
	TGCPN000000000	COUPLING NUT	79		TGCRP00000000	CONCRETE ROD ATTACHMENT PLATE	128-129
	TGRN0000000000	RAIL NUT	80		TGFD0000000000	FLOOR DRAINS	130-134
	TGCA0000000000	CANTILEVER ARMS	81-82		TGTPA000000000	TEST PLUG & AIR VENT	135-136
	TGWBC0000000000	WALL BRACKET FOR CHANNEL	83			INSTALLATION INSTRUCTION TESTING OF PRODUCT	137-140
	TGPC0000000000	PROTECTION CAPS	83				
	TGHCO000000000	HINGE CONNECTOR	84				
	TGDCA0000000000	LIGHT WELDED STEEL BRACKET	86				
	TGDCA0000000000	FLAT PLATE FITTINGS & ANGLE FITTINGS	87-89				
	TGTR0000000000	THREADED ROD	90-91				
	TGSB0000000000	STUD BOLTS	92				
	TGAB0000000000	ANCHOR BOLTS	93-94				
	TGHB0000000000	HEX BOLTS	95-101				
	TGSS0000000000	SOCKET SCREWS	102-104				
	TGF0000000000	NUTS	105-109				
	TGF0000000000	WASHERS	110-115				
	TGDPA0000000000	DROP IN ANCHORS	116				

PIPE HANGERS



**APPLICATION:**

A CLEVIS HANGER provides for sizeable loads to be supported and for an elevation adjustment depending upon the pipe diameter. The lower nut adjusts the piping to the proper elevation and the upper nut, when locked into position, prevents loosening due to vibration.

CONSTRUCTION:

A CLEVIS HANGER consists of a yoke and a support strap made from shaped Mild steel strip and a joining bolt. 15° swing in either direction allows pipe to easily feed through. Pipe will not pinch when installing. Engineered design aligns bolt holes for quicker overhead installation.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 1) 

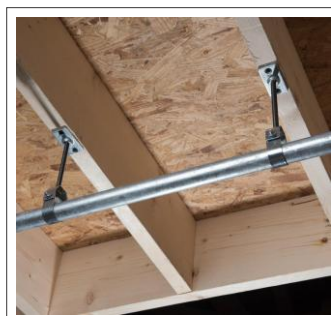
Federal Specification WW-H-171 E & A-A-1192A(Type 1)

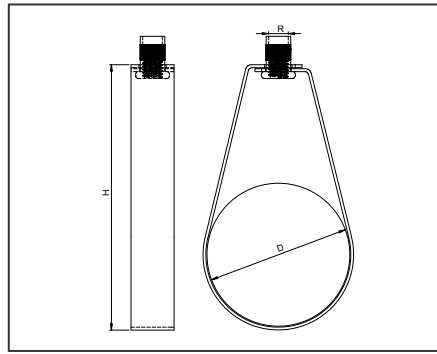
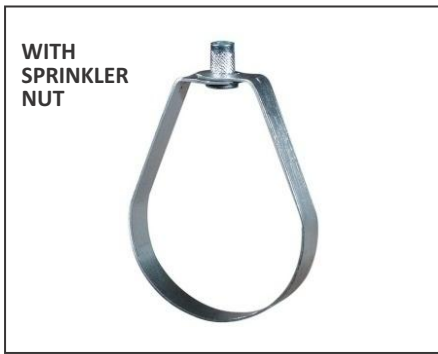
MAXIMUM TEMPERATURE: 343°C(650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake & Epoxy Coated.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD	MATERIAL DIMENSION (MM)		HANGER ROD	CROSS BOLT	MAX LOAD (KG)
	IN.	MM	(MM) D	HEIGHT H	TOP HOLE DIA. S	SIZE (MM) R	DIA. (CRD)	
TGCHOU00E0022	1/2"	DN15	21.3	68	11	M10	M8	350
TGCHOUF0E0027	3/4"	DN20	26.7	72	11	M10	M8	350
TGCHOUF0E0034	1"	DN25	33.4	76	11	M10	M8	350
TGCHOUF0E0042	1 1/4"	DN32	42.1	87	11	M10	M8	350
TGCHOUF0E0048	1 1/2"	DN40	48.2	97	11	M10	M8	350
TGCHOUF0E0060	2"	DN50	60.3	114	11	M10	M8	350
TGCHOUF0E0073	2 1/2"	DN65	73.0	142	13	M12	M10	780
TGCHOUF0E0089	3"	DN80	88.9	165	13	M12	M10	780
TGCHOUF0E0114	4"	DN100	114.3	202	13	M12	M10	780
TGCHOUF0E0141	5"	DN125	141.3	236	13	M12	M12	1250
TGCHOUF0E0168	6"	DN150	168.3	278	13	M12	M12	1250
TGCHOUF0E0219	8"	DN200	219.1	338	13	M12	M12	2100
TGCHOUF0E0273	10"	DN250	273.1	419	17	M16	M16	2100
TGCHOUF0E0323	12"	DN300	323.8	490	21	M20	M20	2100
TGCHOUF0E0356	14"	DN350	355.6	556	21	M20	M20	3800
TGCHOUF0E0406	16"	DN400	406.4	610	25	M24	M20	3800
TGCHOUF0E0457	18"	DN450	457.2	675	25	M24	M24	4000
TGCHOUF0E0508	20"	DN500	508.0	715	32	M30	M24	4000
TGCHOUF0E0610	24"	DN600	609.6	850	32	M30	M24	9400
TGCHOUF0E0762	30"	DN750	762.0	995	32	M30	M24	9400

APPLICATION EXAMPLES:

**APPLICATION:**

A SPRINKLER HANGER recommended to provide vertical support to non insulated piping systems. By adjusting the position of the sprinkler nut on the hanger rod at the top of the hanger, pipe elevation can be altered.

CONSTRUCTION:

A SPRINKLER HANGER consists of a piece of mild steel shaped to support pipe. Gives Double thickness at the support. Most suitable for fire extinguishing pipes installation.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

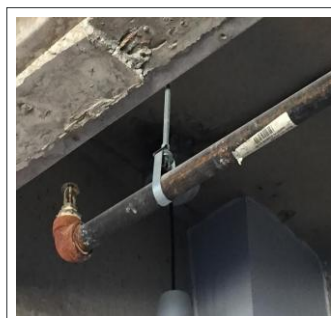
ANSI/MSS SP-58 & SP-69(Type 10) **MSS**
Federal Specification WW-H-171E & A-A-1192A(Type 10)

MAXIMUM TEMPERATURE: 343°C(650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake & Epoxy Coated.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM) D	HEIGHT H	HANGER ROD SIZE (MM) R	MAX LOAD (KG)
	IN.	MM				
TGSNUF0E0027	3/4"	DN20	26.7	61	M10	220
TGSNUF0E0034	1"	DN25	33.4	70	M10	220
TGSNUF0E0042	1 1/4"	DN32	42.1	78	M10	220
TGSNUF0E0048	1 1/2"	DN40	48.2	84	M10	220
TGSNUF0E0060	2"	DN50	60.3	102	M10	220
TGSNUF0E0073	2 1/2"	DN65	73.0	118	M10	300
TGSNUF0E0089	3"	DN80	88.9	144	M10	300
TGSNUF0E0114	4"	DN100	114.3	176	M10	300
TGSNUF0E0168	6"	DN150	168.3	262	M12	550
TGSNUF0E0219	8"	DN200	219.1	305	M12	1300

APPLICATION EXAMPLES:

**APPLICATION:**

A SPRINKLER HANGER recommended to provide vertical support to non insulated piping systems. By adjusting the position of the sprinkler nut on the hanger rod at the top of the hanger, pipe elevation can be altered.


CONSTRUCTION:

A SPRINKLER HANGER consists of a piece of mild steel shaped to support pipe. Gives Double thickness at the support. Most suitable for fire extinguishing pipes installation.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

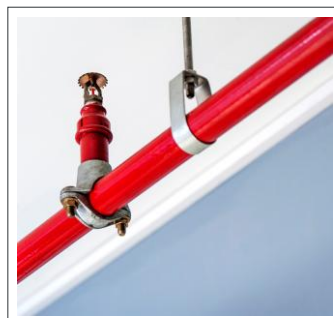
ANSI/MSS SP-58 & SP-69(Type 10) 
Federal Specification WW-H-171E & A-A-1192A(Type 10)

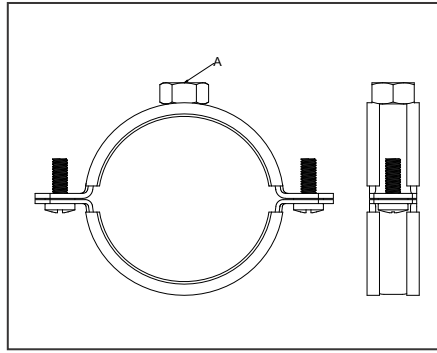
MAXIMUM TEMPERATURE: 343°C(650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake & Epoxy Coated.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM) D	HEIGHT H	HANGER ROD SIZE (MM) R	MAX LOAD (KG)
	IN.	MM				
TGS0000E0027	3/4"	DN20	26.7	61	M10	220
TGS0000E0034	1"	DN25	33.4	70	M10	220
TGS0000E0042	1 1/4"	DN32	42.1	78	M10	220
TGS0000E0048	1 1/2"	DN40	48.2	84	M10	220
TGS0000E0060	2"	DN50	60.3	102	M10	220
TGS0000E0073	2 1/2"	DN65	73.0	118	M10	300
TGS0000E0089	3"	DN80	88.9	144	M10	300
TGS0000E0114	4"	DN100	114.3	176	M10	300
TGS0000E0168	6"	DN150	168.3	262	M12	550
TGS0000E0219	8"	DN200	219.1	305	M12	1300

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE HANGER WITH EPDM LINING is recommended for non-insulated stationary pipelines in a horizontal position. It can be used for supporting pipes along with the roof.

CONSTRUCTION:

PIPE HANGER with EPDM lining consists of piece of mild steel shaped to wrap around the pipe. The selection of the proper PIPE HANGER WITH EPDM LINING depends upon load to be carried. Permits installation before and after pipe is in place. Reduces noise upto 18 dB.

MATERIAL:

Mild Steel. Also other materials can be provided on request

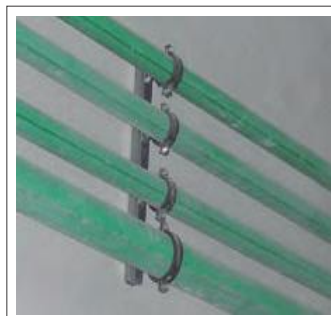
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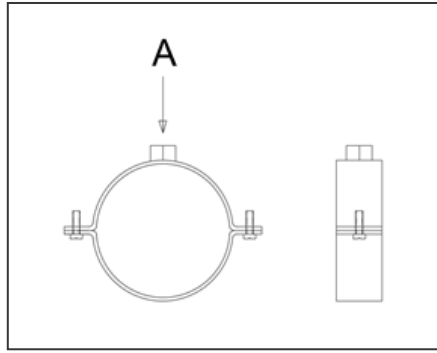
MAXIMUM TEMPERATURE: -20°C 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake & Epoxy Coated.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	RANGE (MM)	HANGER ROD SIZE (MM) (A)	SIDE SCREW SIZE	MAX LOAD (KG)
	IN.	MM					
TGNCOLUOE0022	1/2"	DN15	21.3	20-25	M10	M6	460
TGNCOLUFE0027	3/4"	DN20	26.7	26-30	M10	M6	460
TGNCOLUFE0034	1"	DN25	33.4	32-36	M10	M6	460
TGNCOLUFE0042	1 1/4"	DN32	42.1	38-43	M10	M6	460
TGNCOLUFE0048	1 1/2"	DN40	48.2	47-51	M10	M6	460
TGNCOLUFE0060	2"	DN50	60.3	60-64	M10	M6	460
TGNCOLUFE0073	2 1/2"	DN65	73.0	74-80	M10	M6	570
TGNCOLUFE0089	3"	DN80	88.9	87-92	M10	M6	570

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE HANGER is recommended for non-insulated stationary pipe lines in either a horizontal or vertical position. It can be used for supporting pipes along with the roof as well as wall.

CONSTRUCTION:

PIPE HANGER consists of piece of mild steel shaped to wrap around the pipe, The selection of the PIPE CLAMP depends upon the temperature of piping system and load to be carried. Pipe hanger permits installation before and after pipe is placed.

MATERIAL:

Mild Steel. Also other materials can be provided on request

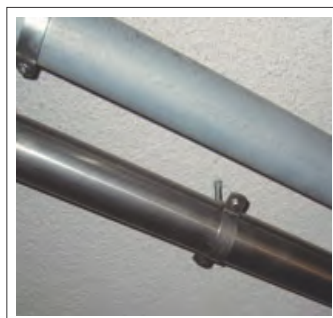
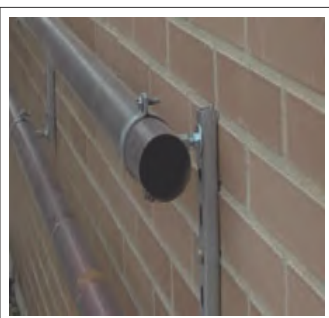
APPROVALS:

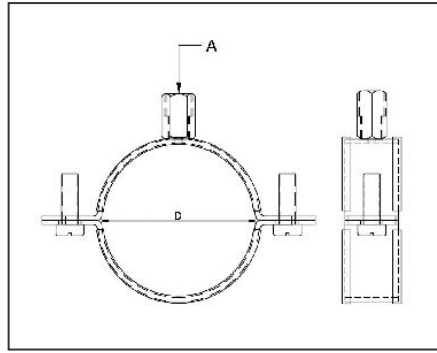
MAXIMUM TEMPERATURE: - 343°C(650°C)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	RANGE (MM)	HANGER ROD SIZE (MM) (A)	SIDE SCREW SIZE	MAX LOAD (KG)
	IN.	MM					
TGNC000UE0022	1/2"	DN15	21.3	20-25	M10	M6	460
TGNC000UE0027	3/4"	DN20	26.7	26-30	M10	M6	460
TGNC000UE0034	1"	DN25	33.4	32-36	M10	M6	460
TGNC000UE0042	1 1/4"	DN32	42.1	38-43	M10	M6	460
TGNC000UE0048	1 1/2"	DN40	48.2	47-51	M10	M6	460
TGNC000UE0060	2"	DN50	60.3	60-64	M10	M6	460
TGNC000UE0073	2 1/2"	DN65	73.0	74-80	M10	M6	570
TGNC000UE0089	3"	DN80	88.9	87-92	M10	M6	570

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE HANGER WITH EPDM LINING is recommended for non-insulated stationary pipelines in a horizontal position. It can be used for supporting pipes along with the roof.

CONSTRUCTION:

PIPE HANGER with EPDM lining consists of piece of mild steel shaped to wrap around the pipe. The selection of the proper PIPE HANGER WITH EPDM LINING depends upon the temperature of the piping system and load to be carried. Permits installation before and after pipe is in place. Reduces noise upto 18 dB.

MATERIAL:

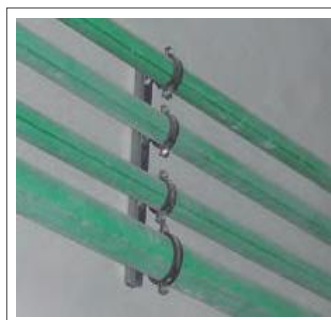
Mild Steel. Also other materials can be provided on request

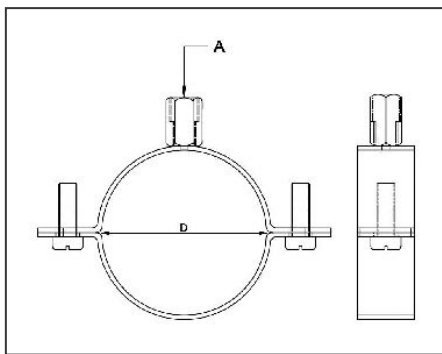
MAXIMUM TEMPERATURE: -20°C - 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	RANGE (MM)	NUT SIZE (A)	SIDE SCREW SIZE	MAX LOAD (KG)
	IN.	MM					
TGNCOL00E0017	3/8"	DN10	17.1	15-19	M8 X M10	M6	450
TGNCOL00E0022	1/2"	DN15	21.3	20-25	M8 X M10	M6	450
TGNCOL00E0027	3/4"	DN20	26.7	26-30	M8 X M10	M6	450
TGNCOL00E0034	1"	DN25	33.4	32-36	M8 X M10	M6	450
TGNCOL00E0042	1 1/4"	DN32	42.1	38-43	M8 X M10	M6	450
TGNCOL00E0048	1 1/2"	DN40	48.2	47-51	M8 X M10	M6	450
TGNCOL00E0054	-	-	54	53-58	M8 X M10	M6	450
TGNCOL00E0060	2"	DN50	60.3	60-64	M8 X M10	M6	450
TGNCOL00E0070	-	-	70	68-72	M8 X M10	M6	450
TGNCOL00E0073	2 1/2"	DN65	73.0	74-80	M8 X M10	M6	600
TGNCOL00E0083	-	-	83	81-86	M8 X M10	M6	600
TGNCOL00E0089	3"	DN80	88.9	87-92	M8 X M10	M6	600
TGNCOL00E0102	3 1/2"	DN90	101.6	99-105	M8 X M10	M6	600
TGNCOL00E0110	-	-	110	107-112	M8 X M10	M6	600
TGNCOL00E0114	4"	DN100	114.3	113-118	M8 X M10	M6	600
TGNCOL00E0125	-	-	125	125-130	M8 X M10	M6	600
TGNCOL00E0141	5"	DN125	141.3	138-142	M8 X M10	M6	600
TGNCOL00E0160	-	-	160	159-166	M8 X M10	M6	600
TGNCOL00E0168	6"	DN150	168.3	168-172	M8 X M10	M8	600
TGNCOL00E0219	8"	DN200	219.1	215-220	M8 X M10	M8	950
TGNCOL00E0273	10"	DN250	273.0	269-274	M8 X M10	M8	950

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE HANGER is recommended for non-insulated stationary pipelines in a horizontal position. It can be used for supporting pipes along with the roof.

CONSTRUCTION:

PIPE HANGER consists of piece of mild steel shaped to wrap around the pipe. The selection of the proper 3 BOLT PIPE CLAMP depends upon the temperature of the piping system and load to be carried. Permits installation before and after pipe is in place.

MATERIAL:

Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: -343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	RANGE (MM)	NUT SIZE (A)	SIDE SCREW SIZE	MAX LOAD (KG)
	IN.	MM					
TGNC0000E0017	3/8"	DN10	17.1	15-19	M8 X M10	M6	450
TGNC0000E0022	1/2"	DN15	21.3	20-25	M8 X M10	M6	450
TGNC0000E0027	3/4"	DN20	26.7	26-30	M8 X M10	M6	450
TGNC0000E0034	1"	DN25	33.4	32-36	M8 X M10	M6	450
TGNC0000E0042	1 1/4"	DN32	42.1	38-43	M8 X M10	M6	450
TGNC0000E0048	1 1/2"	DN40	48.2	47-51	M8 X M10	M6	450
TGNC0000E0054	-	-	54	53-58	M8 X M10	M6	450
TGNC0000E0060	2"	DN50	60.3	60-64	M8 X M10	M6	450
TGNC0000E0070	-	-	70	68-72	M8 X M10	M6	450
TGNC0000E0073	2 1/2"	DN65	73.0	74-80	M8 X M10	M6	600
TGNC0000E0083	-	-	83	81-86	M8 X M10	M6	600
TGNC0000E0089	3"	DN80	88.9	87-92	M8 X M10	M6	600
TGNC0000E0102	3 1/2"	DN90	101.6	99-105	M8 X M10	M6	600
TGNC0000E0110	-	-	110	107-112	M8 X M10	M6	600
TGNC0000E0114	4"	DN100	114.3	113-118	M8 X M10	M6	600
TGNC0000E0125	-	-	125	125-130	M8 X M10	M6	600
TGNC0000E0141	5"	DN125	141.3	138-142	M8 X M10	M6	600
TGNC0000E0160	-	-	160	159-166	M8 X M10	M6	600
TGNC0000E0168	6"	DN150	168.3	168-172	M8 X M10	M8	600
TGNC0000E0219	8"	DN200	219.1	215-220	M8 X M10	M8	950
TGNC0000E0273	10"	DN250	273.0	269-274	M8 X M10	M8	950

NOTE : Pipe Hanger of all Non Standard Sizes to fit upon Rubber Support Insert can be manufactured.

APPLICATION EXAMPLES:

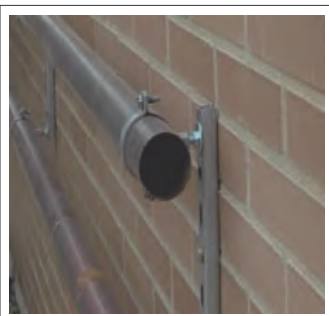


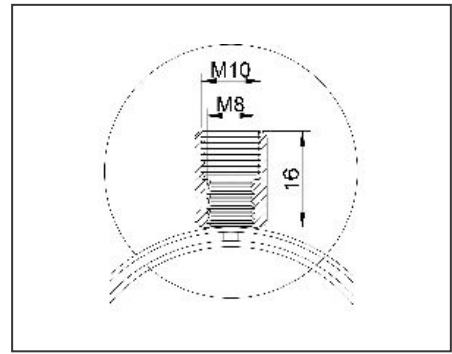
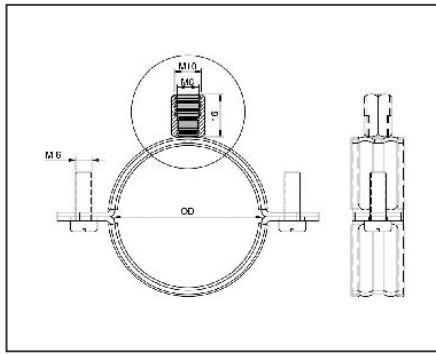
ABS = Acrylonitrile-Butadiene-Styrene
 UPVC = unplasticized polyvinyl chloride
 pe = Polyethylene

SELECTION TABLE FOR DIFFERENT TYPES OF PIPES

NPS (in)	Pipe outside Dia(mm)	uPVC/ PE (mm)	ABS (mm)	Copper (mm)
-	16	-	-	15,18
1/2"	22	20	DN15(21.4)	22
3/4"	28	25	DN20(26.8)	24, 28
1"	35	32, 38	DN25(33.6)	35
1 1/4"	42	40, 43	DN32(42.3)	42
1 1/2"	48	45	DN40(48.3)	-
-	-	54	-	54
2"	60	60	DN50(60.4)	64
-	-	-	-	-
-	-	70	-	67, 70
2 1/2"	75	75	DN65(75.4)	76
-	-	83	-	80
3"	90	90	-	-
-	-	102	DN80(88.9)	102, 105
-	-	110	-	108
4"	115	115	DN100(114.3)	-
-	-	125	-	125
-	-	135	-	-
5"	140	140	DN125(121.4)	-
-	-	152	-	-
-	-	160	-	159
6"	168	-	DN150(168.3)	167
-	-	200	-	206
8"	219	220, 225	DN200(225.0)	-
-	-	250	DN225(250.4)	-
-	-	-	DN300(315.5)	-

APPLICATION EXAMPLES:



**APPLICATION:**

HEAVY DUTY PIPE HANGER WITH LINING is recommended for non-insulated stationary heavy pipe lines in either a horizontal or vertical position. It can be used for supporting pipes along with roof as well as along wall. It is Used where loads to be carried are larger in magnitude.

CONSTRUCTION:

HEAVY DUTY PIPE HANGER WITH LINING consists of piece of mild steel shaped to wrap around the pipe. Quick-Locking permits simple and fast installation. Large opening angles for easy insertion of the pipes. Clamping range without gaps. Reduces noise upto 18 dB.

MATERIAL:

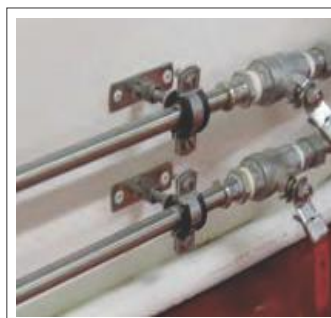
Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: -20°C - 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	RANGE (MM)	NUT SIZE (A)	SIDE SCREW SIZE	MAX LOAD (KG)
	IN.	MM					
TGHNCL00E0022	1/2"	DN15	21.3	20-25	M8 X M10	M6	500
TGHNCL00E0027	3/4"	DN20	26.7	26-30	M8 X M10	M6	500
TGHNCL00E0034	1"	DN25	33.4	32-36	M8 X M10	M6	500
TGHNCL00E0042	1 1/4"	DN32	42.1	38-43	M8 X M10	M6	500
TGHNCL00E0048	1 1/2"	DN40	48.2	47-51	M8 X M10	M6	500
TGHNCL00E0054	-	-	54	53-58	M8 X M10	M6	500
TGHNCL00E0060	2"	DN50	60.3	60-64	M8 X M10	M6	500
TGHNCL00E0070	-	-	70	68-72	M8 X M10	M6	550
TGHNCL00E0073	2 1/2"	DN65	73.0	74-80	M8 X M10	M6	700
TGHNCL00E0083	-	-	83	81-86	M8 X M10	M6	700
TGHNCL00E0089	3"	DN80	88.9	87-92	M8 X M10	M6	700
TGHNCL00E0102	3 1/2"	DN90	101.6	99-105	M8 X M10	M6	700
TGHNCL00E0110	-	-	110	107-112	M8 X M10	M6	700
TGHNCL00E0114	4"	DN100	114.3	113-118	M8 X M10	M6	700
TGHNCL00E0125	-	-	125	125-130	M8 X M10	M6	700
TGHNCL00E0141	5"	DN125	141.3	138-142	M8 X M10	M6	700

APPLICATION EXAMPLES:

**APPLICATION:**

EASY FIX PIPE HANGER WITH EPDM LINING is recommended for non-insulated stationary pipelines in a horizontal position. It can be used for supporting pipes along roof, Where Quick installation is required.

CONSTRUCTION:

EASY FIX PIPE HANGER WITH EPDM LINING consists of piece of carbon steel shaped to wrap around the pipe, made from shaped carbon steel plate. The selection of the proper EASY FIX PIPE HANGER WITH EPDM LINING depends upon the temperature of the piping system & load to be carried. Permits installation before and after pipe is in place. Reduces noise upto 18 dB.

MATERIAL:

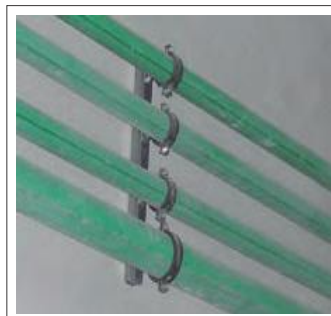
Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: -20°C - 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	RANGE (MM)	NUT SIZE	SIDE SCREW SIZE	MAX LOAD (KG)
	IN.	MM					
TGENCL00E0022	1/2"	DN15	21.3	20-25	M8 X M10	M6	450
TGENCL00E0027	3/4"	DN20	26.7	26-30	M8 X M10	M6	450
TGENCL00E0034	1"	DN25	33.4	32-36	M8 X M10	M6	450
TGENCL00E0042	1 1/4"	DN32	42.1	38-43	M8 X M10	M6	450
TGENCL00E0048	1 1/2"	DN40	48.2	47-51	M8 X M10	M6	450
TGENCL00E0054	-	-	54	53-58	M8 X M10	M6	450
TGENCL00E0060	2"	DN50	60.3	60-64	M8 X M10	M6	450
TGENCL00E0070	-	-	70	68-72	M8 X M10	M6	450
TGENCL00E0073	2 1/2"	DN65	73.0	74-80	M8 X M10	M6	600
TGENCL00E0083	-	-	83	81-86	M8 X M10	M6	600
TGENCL00E0089	3"	DN80	88.9	87-92	M8 X M10	M6	600
TGENCL00E0102	3 1/2"	DN90	101.6	99-105	M8 X M10	M6	600
TGENCL00E0110	-	-	110	107-112	M8 X M10	M6	600
TGENCL00E0114	4"	DN100	114.3	113-118	M8 X M10	M6	600
TGENCL00E0125	-	-	125	125-130	M8 X M10	M6	600
TGENCL00E0141	5"	DN125	141.3	138-142	M8 X M10	M6	600
TGENCL00E0160	-	-	160	159-166	M8 X M10	M6	600
TGENCL00E0168	6"	DN150	168.3	168-172	M8 X M10	M8	600
TGENCL00E0219	8"	DN200	219.1	215-220	M8 X M10	M8	950
TGENCL00E0273	10"	DN250	273.0	269-274	M8 X M10	M8	950

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE HANGER WITH LINING- LIGHT DUTY WITH STUD is recommended for non-insulated stationary pipelines in a horizontal position. It can be used for supporting pipes along with roof.

CONSTRUCTION:

PIPE HANGER WITH LINING- LIGHT DUTY WITH STUD consists of piece of mild steel shaped to wrap around the pipe. The selection of the proper PIPE HANGER WITH LINING- LIGHT DUTY WITH STUD depends upon the temperature of the piping system and load to be carried. Permits installation before and after pipe is in place. Reduces noise upto 18 dB.

MATERIAL:

Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: -20°C - 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

Product Code	Pipe Size	Range	Thickness x Width	Side Screw	Top Nut	Hanger Bolt	Plastic Plug
TGLNCL00E0022	1/2"	20-24	1.0 x 20	M5 x 15	M 8	M8 x 80	S10 x 50
TGLNCL00E0027	3/4"	25-28	1.0 x 20	M5 x 15	M 8	M8 x 80	S10 x 50
TGLNCL00E0034	1"	23-35	1.0 x 20	M5 x 15	M 8	M8 x 80	S10 x 50
TGLNCL00E0042	1 1/4"	39-46	1.2 x 20	M6 x 20	M 8	M8 x 80	S10 x 50
TGLNCL00E0048	1 1/2"	48-53	1.2 x 20	M6 x 20	M 8	M8 x 80	S10 x 50
TGLNCL00E0060	2"	59-66	1.2 x 20	M6 x 20	M 8	M8 x 80	S10 x 50
TGLNCL00E0073	2 1/2"	74-80	1.5 x 20	M6 x 25	M8 x M10	M8 x 80	S10 x 50
TGLNCL00E0089	3"	87-94	1.5 x 20	M6 x 25	M8 x M10	M8 x 80	S10 x 50
TGLNCL00E00114	4"	107-115	1.5 x 20	M6 x 30	M8 x M10	M8 x 100	S10 x 50
TGLNCL00E00141	5"	135-143	2.0 x 25	M6 x 30	M10	M10 x 100	S14 x 75
TGLNCL00E00168	6"	162-170	2.0 x 25	M6 x 30	M10	M10 x 100	S14 x 75
TGLNCL00E00219	8"	207-219	2.0 x 25	M6 x 30	M10	M10 x 100	S14 x 75

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE HANGER WITHOUT LINING - LIGHT DUTY WITH STUD is recommended for non-insulated stationary pipe lines in either a horizontal or vertical position. It can be used for supporting pipes along with roof as well as wall.

CONSTRUCTION:

PIPE HANGER WITHOUT LINING - LIGHT DUTY WITH STUD consists of piece of mild steel shaped to wrap around the pipe. The selection of the proper 3-Bolt PIPE CLAMP depends upon the temperature of the piping system and load to be carried. Permits installation before and after pipe is in place.

MATERIAL:

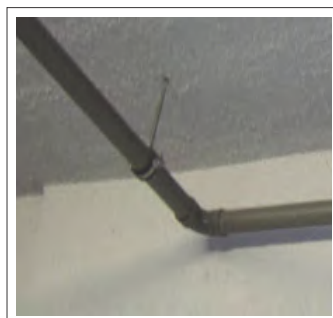
Mild Steel. Also other materials can be provided on request

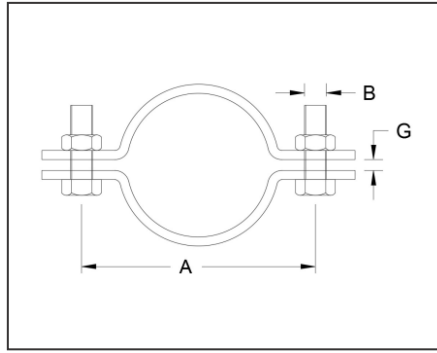
MAXIMUM TEMPERATURE: 343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	PIPE SIZE	RANGE	THICKNESS X WIDTH	SIDE SCREW	TOP NUT	HANGER BOLT	PLASTIC PLUG
TGLNC00E0022	1/2"	20-24	1.0 x 20	M5 x 15	M 8	M8 x 80	S10 x 50
TGLNC00E0027	3/4"	25-28	1.0 x 20	M5 x 15	M 8	M8 x 80	S10 x 50
TGLNC00E0034	1"	23-35	1.0 x 20	M5 x 15	M 8	M8 x 80	S10 x 50
TGLNC00E0042	1 1/4"	39-46	1.2 x 20	M6 x 20	M 8	M8 x 80	S10 x 50
TGLNC00E0048	1 1/2"	48-53	1.2 x 20	M6 x 20	M 8	M8 x 80	S10 x 50
TGLNC00E0060	2"	59-66	1.2 x 20	M6 x 20	M 8	M8 x 80	S10 x 50
TGLNC00E0073	2 1/2"	74-80	1.5 x 20	M6 x 25	M8 x M10	M8 x 80	S10 x 50
TGLNC00E0089	3"	87-94	1.5 x 20	M6 x 25	M8 x M10	M8 x 80	S10 x 50
TGLNC00E00114	4"	107-115	1.5 x 20	M6 x 30	M8 x M10	M8 x 100	S10 x 50
TGLNC00E00141	5"	135-143	2.0 x 25	M6 x 30	M10	M10 x 100	S14 x 75
TGLNC00E00168	6"	162-170	2.0 x 25	M6 x 30	M10	M10 x 100	S14 x 75
TGLNC00E00219	8"	207-219	2.0 x 25	M6 x 30	M10	M10 x 100	S14 x 75

APPLICATION EXAMPLES:

**APPLICATION:**

TWO BOLT PIPE CLAMPS is recommended for suspension of cold pipe lines or hot lines where no insulation is required.

CONSTRUCTION:

TWO BOLT PIPE CLAMPS consists of two mild steel flat bars bent to shape and held together by two bolts.

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

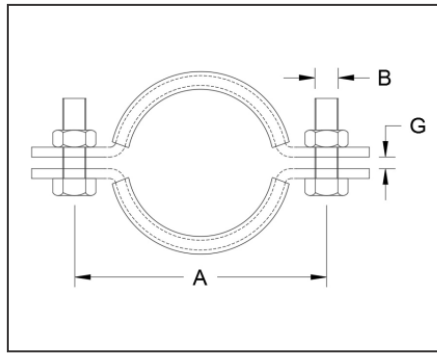
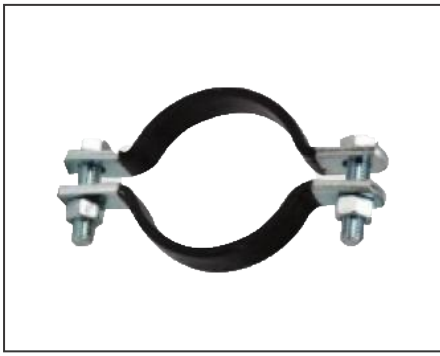
ANSI/MSS SP-58 & SP-69(Type 4) 

Federal Specification WW-H-171E & A-A-1192A (Type 4)

MAXIMUM TEMPERATURE: 343°C (650°F)

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	DIMENSIONS(MM)			MAX LOAD (KG)
	IN.	MM		LENGTH	BOLT SIZE	GAP G	
TGTBC000E0022	1/2"	DN15	21.3	200	M10	12	170
TGTBC000E0027	3/4"	DN20	26.7	210	M10	12	170
TGTBC000E0034	1"	DN25	33.4	230	M10	12	170
TGDBC000E0042	1 1/4"	DN32	42.1	260	M10	12	170
TGDBC000E0048	1 1/2"	DN40	48.2	260	M10	12	170
TGDBC000E0060	2"	DN50	60.3	260	M10	16	170
TGDBC000E0073	2 1/2"	DN65	73.0	290	M12	16	400
TGDBC000E0089	3"	DN80	88.9	290	M12	16	400
TGDBC000E0102	3 1/2"	DN90	101.6	330	M12	16	400
TGDBC000E0114	4"	DN100	114.3	330	M12	19	400
TGDBC000E0141	5"	DN125	141.3	350	M16	19	600
TGDBC000E0168	6"	DN150	168.3	380	M16	22	600
TGDBC000E0219	8"	DN200	219.1	470	M16	25	1100
TGDBC000E0273	10"	Dn250	273.0	520	M16	25	1200
TGDBC000E0323	12"	DN300	323.8	580	M20	25	1500
TGDBC000E0356	14"	DN350	355.6	610	M20	28	1500
TGDBC000E0406	16"	DN400	406.4	660	M20	28	2200
TGDBC000E0457	18"	DN450	457.2	710	M20	32	2200
TGDBC000E0508	20"	DN500	508.0	760	M20	35	2200
TGDBC000E0610	24"	DN600	609.6	880	M20	42	2200

APPLICATION EXAMPLES:

**APPLICATION:**

TWO BOLT PIPE CLAMP WITH LINING is recommended for suspension of cold pipe lines or hot lines where no insulation is required.

CONSTRUCTION:

TWO BOLT PIPE CLAMP WITH LINING consists of two mild steel flat bars bent to shape and held together by two bolts. Reduces noise upto 18 dB.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 4) 

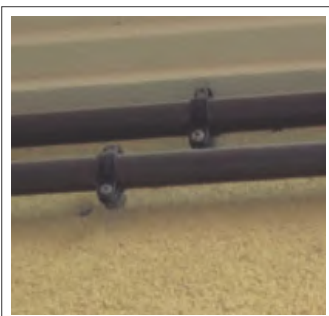
Federal Specification WW-H-171E & A-A-1192A (Type 4)

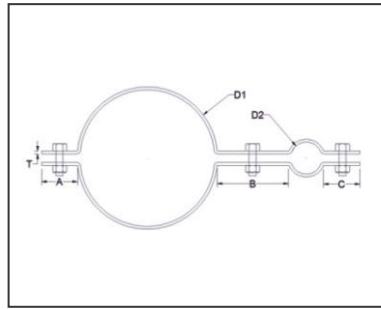
MAXIMUM TEMPERATURE: -20°C to 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	DIMENSIONS(MM)			MAX LOAD (KG)
	IN.	MM		LENGTH	BOLT SIZE	GAP G	
TGTBCL00E0022	1/2"	DN15	21.3	200	M10	12	150
TGTBCL00E0027	3/4"	DN20	26.7	210	M10	12	150
TGTBCL00E0034	1"	DN25	33.4	230	M10	12	150
TGTBCL00E0042	1 1/4"	DN32	42.1	260	M10	12	150
TGTBCL00E0048	1 1/2"	DN40	48.2	260	M10	12	150
TGTBCL00E0060	2"	DN50	60.3	260	M10	16	150
TGTBCL00E0073	2 1/2"	DN65	73.0	290	M12	16	350
TGTBCL00E0089	3"	DN80	88.9	290	M12	16	350
TGTBCL00E0102	3 1/2"	DN90	101.6	330	M12	16	350
TGTBCL00E0114	4"	DN100	114.3	330	M12	19	350
TGTBCL00E0141	5"	DN125	141.3	350	M16	19	500
TGTBCL00E0168	6"	DN150	168.3	380	M16	22	500
TGTBCL00E0219	8"	DN200	219.1	470	M16	25	1000
TGTBCL00E0273	10"	Dn250	273.0	520	M16	25	1000
TGTBCL00E0323	12"	DN300	323.8	580	M20	25	1200
TGTBCL00E0356	14"	DN350	355.6	610	M20	28	1200
TGTBCL00E0406	16"	DN400	406.4	660	M20	28	1800
TGTBCL00E0457	18"	DN450	457.2	710	M20	32	1800
TGTBCL00E0508	20"	DN500	508.0	760	M20	35	1800
TGTBCL00E0610	24"	DN600	609.6	880	M20	42	1800

APPLICATION EXAMPLES:

**APPLICATION:**

DOUBLE PIPE HANGER WITH EPDM LINING is recommended for non-insulated stationary pipelines in a horizontal position. It can be used for supporting pipes along with the roof.

CONSTRUCTION:

DOUBLE PIPE HANGER WITH EPDM LINING consists of piece mild steel shaped to wrap around the pipe. The selection of the proper DOUBLE PIPE HANGER WITH EPDM LINING depends upon the temperature of the piping system and load to be carried. Permits installation before and after pipe is in place. Reduces noise upto 18 dB.

MATERIAL:

Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: -20°C 150°C

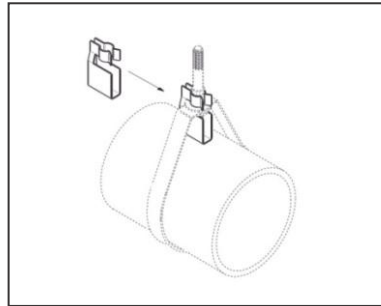
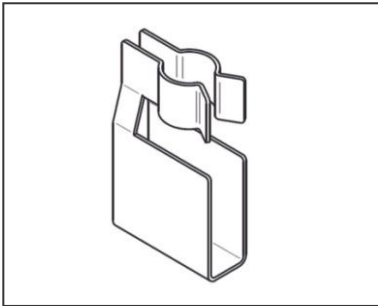
FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	PIPE SIZE		DIMENSIONS					MAX LOAD (KG)
	DN	INCH	D1	D2	A	B	C	
TGDNCL00E0114	DN 100	4"	114	53	50	100	50	400
TGDNCL00E0219	DN 200	8"	219	53	50	100	50	630
TGDNCL00E0323	DN 300	12"	323	53	50	100	50	950

SURGE RESTRAINER

TGSR000000000

**APPLICATION:**

Designed to be used in conjunction with Sprinkler Hanger to restrict the upward movement of piping as it occurs during sprinkler head activation or earthquake type activity. The surge restrainer is easily and efficiently installed by snapping into a locking position on the sprinkler hanger.

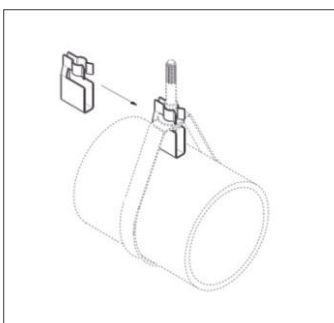
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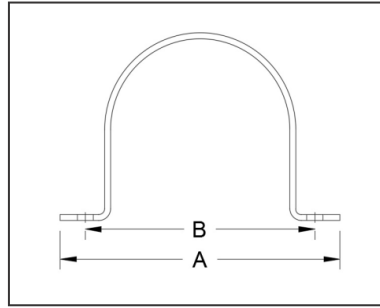
Mild Steel.

SIZE RANGE: 3/4" to 2" .

FINISH AVAILABLE:

Pre-Galvanized, Hot Dip Galvanized, Electro-Galvanized.

APPLICATION EXAMPLES:

**APPLICATION:**

A standard pipe strap is recommended for supporting a piping system with fittings vertically or horizontally to walls or ceilings. It can be used as a restrainer when installed on top of structural wood beams for beam, for limiting pipe movements due to thrust loads during sprinkler system start-up.


CONSTRUCTION:

A standard Pipe Strap consists of a piece of mild steel shaped to hold the pipe down to walls or ceilings.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69 (Type 26) 
Federal Specification WW-H-171E & A-A-1192A (Type 26)

MAXIMUM TEMPERATURE: 343°C (650°F)

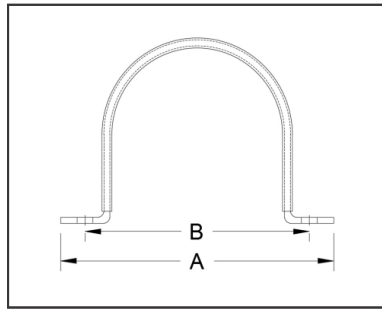
FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, & Epoxy Coated.

APPLICATION EXAMPLES:

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	HANGER DIMENSION (MM)		BOLT SIZE (MM)	MAX LOAD (KG)
				OVERALL DIMENSION A	DISTANCE BETWEEN TWO BOLT B		
TGUS0000E0022	1/2"	DN15	21.3	76	5	M8	500
TGUS0000E0027	3/4"	DN20	26.7	82	57	M8	500
TGUS0000E0034	1"	DN25	33.4	89	64	M8	500
TGUS0000E0042	1 1/4"	DN32	42.1	96	71	M8	500
TGUS0000E0048	1 1/2"	DN40	48.2	102	77	M8	500
TGUS0000E0054	-	-	54	108	83	M8	500
TGUS0000E0060	2"	DN50	60.3	114	89	M8	500
TGUS0000E0067	-	-	67	121	96	M8	500
TGUS0000E0073	2 1/2"	DN65	73.0	145	113	M8	600
TGUS0000E0082	-	-	82	152	120	M8	600
TGUS0000E0089	3"	DN80	88.9	160	128	M8	600
TGUS0000E0102	3 1/2"	DN90	101.6	170	138	M8	600
TGUS0000E0108	-	-	108	178	146	M8	600
TGUS0000E0114	4"	DN100	114.3	185	153	M8	600
TGUS0000E0126	-	-	126	196	16	M8	600
TGUS0000E0141	5"	DN125	141.3	210	178	M10	600
TGUS0000E0148	-	-	148	218	186	M10	600
TGUS0000E0155	-	-	155	225	193	M10	600
TGUS0000E0168	6"	DN150	168.3	237	205	M10	600
TGUS0000E0179	-	-	179	249	217	M10	600
TGUS0000E0190	-	-	190	260	228	M10	800
TGUS0000E0205	-	-	205	275	243	M10	800
TGUS0000E0219	8"	DN200	219.1	289	257	M10	800
TGUS0000E0230	-	-	230	300	268	M10	800
TGUS0000E0241	-	-	241	332	291	M12	1250
TGUS0000E0263	-	-	263	354	313	M12	1250
TGUS0000E0273	10"	DN250	273.0	364	323	M18	1250
TGUS0000E0295	-	-	295	386	345	M18	1250
TGUS0000E0323	12"	DN300	323.8	417	376	M18	1250
TGUS0000E0356	14"	DN350	355.6	447	409	M18	1800
TGUS0000E0374	-	-	374	465	427	M18	1800
TGUS0000E0406	16"	DN400	406.4	497	459	M18	1800
TGUS0000E0432	-	-	432	523	485	M18	1800
TGUS0000E0457	18"	DN450	457.2	547	509	M18	1800
TGUS0000E0482	-	-	482	573	535	M18	1800
TGUS0000E0508	20"	DN500	508.2	599	561	M18	1800
TGUS0000E0533	-	-	533	624	586	M18	1800
TGUS0000E0559	-	-	559	650	612	M18	1800
TGUS0000E0583	-	-	583	674	636	M18	1800
TGUS0000E0610	24"	DN600	609.6	701	663	M18	1800
TGUS0000E0658	-	-	658	766	721	M18	2300
TGUS0000E0690	-	-	690	798	753	M18	2300
TGUS0000E0760	-	-	760	868	823	M18	2300
TGUS0000E0863	-	-	863	971	926	M18	2300
TGUS0000E0918	-	-	918	1026	981	M18	2300

NOTE : U Strap of all Non Standard Sizes to fit upon Rubber Support Insert can be manufactured.

**APPLICATION:**

A Standard PIPE STRAP WITH LINING is recommended for supporting a piping system with fittings vertically or horizontally to walls or ceilings. It can be used as a restrainer when installed on top of structural wood beams for beam, for limiting pipe movements due to thrust loads during sprinkler system start-up.


CONSTRUCTION:

A Standard PIPE STRAP WITH LINING consists of a single piece of mild steel shaped to hold the pipe down to walls or ceilings. Reduces noise upto 18 dB.

MATERIAL:

Mild Steel. Also other materials can be provided on request.

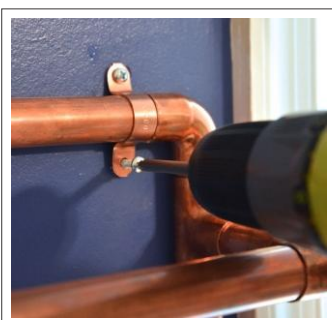
APPROVALS:

ANSI/MSS SP-58 & SP-69 (Type 26) 
Federal Specification WW-H-171E & A-A-1192A (Type 26)

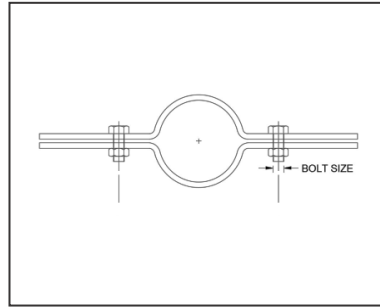
MAXIMUM TEMPERATURE: -20°C to 110°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

APPLICATION EXAMPLES:

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	HANGER DIMENSION (MM)		BOLT SIZE (MM)	MAX LOAD (KG)
				OVERALL DIMENSION A	DISTANCE BETWEEN TWO BOLT B		
				IN.	MM		
TGUSOL00E0022	1/2"	DN15	21.3	76	5	M8	500
TGUSOL00E0027	3/4"	DN20	26.7	82	57	M8	500
TGUSOL00E0034	1"	DN25	33.4	89	64	M8	500
TGUSOL00E0042	1 1/4"	DN32	42.1	96	71	M8	500
TGUSOL00E0048	1 1/2"	DN40	48.2	102	77	M8	500
TGUSOL00E0054	-	-	54	108	83	M8	500
TGUSOL00E0060	2"	DN50	60.3	114	89	M8	500
TGUSOL00E0067	-	-	67	121	96	M8	500
TGUSOL00E0073	2 1/2"	DN65	73.0	145	113	M8	600
TGUSOL00E0082	-	-	82	152	120	M8	600
TGUSOL00E0089	3"	DN80	88.9	160	128	M8	600
TGUSOL00E0102	3 1/2"	DN90	101.6	170	138	M8	600
TGUSOL00E0108	-	-	108	178	146	M8	600
TGUSOL00E0114	4"	DN100	114.3	185	153	M8	600
TGUSOL00E0126	-	-	126	196	165	M8	600
TGUSOL00E0141	5"	DN125	141.3	210	178	M10	600
TGUSOL00E0148	-	-	148	218	186	M10	600
TGUSOL00E0155	-	-	155	225	193	M10	600
TGUSOL00E0168	6"	DN150	168.3	237	205	M10	600
TGUSOL00E0179	-	-	179	249	217	M10	600
TGUSOL00E0190	-	-	190	260	228	M10	800
TGUSOL00E0205	-	-	205	275	243	M10	800
TGUSOL00E0219	8"	DN200	219.1	289	257	M10	800
TGUSOL00E0230	-	-	230	300	268	M10	800
TGUSOL00E0241	-	-	241	332	291	M12	1250
TGUSOL00E0263	-	-	263	354	313	M12	1250
TGUSOL00E0273	10"	DN250	273.0	364	323	M18	1250
TGUSOL00E0295	-	-	295	386	345	M18	1250
TGUSOL00E0323	12"	DN300	323.8	417	376	M18	1250
TGUSOL00E0356	14"	DN350	355.6	447	409	M18	1800
TGUSOL00E0374	-	-	374	465	427	M18	1800
TGUSOL00E0406	16"	DN400	406.4	497	459	M18	1800
TGUSOL00E0432	-	-	432	523	485	M18	1800
TGUSOL00E0457	18"	DN450	457.2	547	509	M18	1800
TGUSOL00E0482	-	-	482	573	535	M18	1800
TGUSOL00E0508	20"	DN500	508.2	599	561	M18	1800
TGUSOL00E0533	-	-	533	624	586	M18	1800
TGUSOL00E0559	-	-	559	650	612	M18	1800
TGUSOL00E0583	-	-	583	674	636	M18	1800
TGUSOL00E0610	24"	DN600	609.6	701	663	M18	1800
TGUSOL00E0658	-	-	658	766	721	M18	2300
TGUSOL00E0690	-	-	690	798	753	M18	2300
TGUSOL00E0760	-	-	760	868	823	M18	2300
TGUSOL00E0863	-	-	863	971	926	M18	2300
TGUSOL00E0918	-	-	918	1026	981	M18	2300

**APPLICATION:**

RISER CLAMPS are recommended for the support and / or restraint of vertical steel pipes. A RISER CLAMP is designed to attach to the pipe and to rest on a structural member or floor; It is not designed to have hanger rods attached to it to support the pipe.

CONSTRUCTION:

RISER CLAMPS consists of two mild steel flat bars bent to shape and held together by two bolts. Designed to act as a rigid support or guide vertical pipes. The clamp should be bolted to the pipe just below support lugs or other attachments that can carry a shear load.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 8) **MSS**

Federal Specification WW-H-171E & A-A-1192A (Type 8)

MAXIMUM TEMPERATURE: 343°C (650°F)

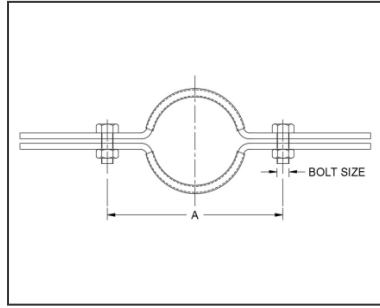
FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	LENGTH BETWEEN HOLE CENTRE (MM)	BOLT SIZE	MAX LOAD (KG)
	IN.	MM				
TGRC0000E0022	1/2"	DN15	21.3	57	M10	1250
TGRC00F0E0027	3/4"	DN20	26.7	68	M10	1250
TGRC00F0E0034	1"	DN25	33.4	76	M10	1250
TGRC00F0E0042	1 1/4"	DN32	42.1	90	M10	1250
TGRC00F0E0048	1 1/2"	DN40	48.2	110	M10	1250
TGRC00F0E0060	2"	DN50	60.3	130	M10	1850
TGRC00F0E0073	2 1/2"	DN65	73.0	142	M12	1850
TGRC00F0E0089	3"	DN80	88.9	161	M12	2250
TGRC00F0E0114	4"	DN100	114.3	190	M12	3600
TGRC00F0E0168	6"	DN150	168.3	258	M16	4500
TGRC0000E0219	8"	DN200	219.1	333	M16	4500
TGRC0000E0273	10"	DN250	273.0	409	M16	5800
TGRC0000E0323	12"	DN300	323.8	467	M20	7300
TGRC0000E0406	16"	DN400	406.4	583	M20	7300
TGRC0000E0508	20"	DN500	508.0	708	M20	13400
TGRC0000E0610	24"	DN600	609.6	833	M20	13400

Note : Riser Clamp of all Non Standard Sizes to fit upon Rubber Support Insert can be manufactured.

APPLICATION EXAMPLES:

**APPLICATION:**

RISER CLAMPS WITH LINING are recommended for the support and/or restraint of vertical steel pipes. A RISER CLAMP with lining is designed to attach to the pipe and to rest on a structural member or floor; It is not designed to have hanger rods attached to it to support the pipe.


CONSTRUCTION:

RISER CLAMPS WITH LINING consists of two mild steel flat bars bent to shape and held together by two bolts. Designed to act as a rigid support or guide for vertical pipes. The clamp should be bolted to the pipe just below support lugs or other attachments that can carry a shear load. Reduces noise upto 18dB.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 8) 
Federal Specification WW-H-171E & A-A-1192A (Type 8)

MAXIMUM TEMPERATURE: -20°C to 110°C

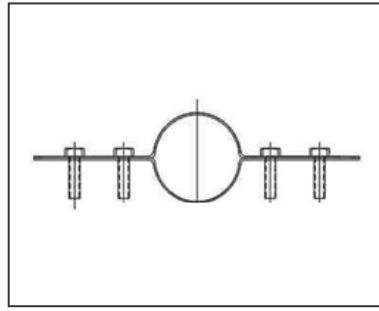
FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	LENGTH BETWEEN HOLE CENTRE (MM)	BOLT SIZE	MAX LOAD (KG)
	IN.	MM				
TGRCOL00E0022	1/2"	DN15	21.3	57	M10	1250
TGRCOL00E0027	3/4"	DN20	26.7	68	M10	1250
TGRCOL00E0034	1"	DN25	33.4	76	M10	1250
TGRCOL00E0042	1 1/4"	DN32	42.1	90	M10	1250
TGRCOL00E0048	1 1/2"	DN40	48.2	110	M10	1250
TGRCOL00E0060	2"	DN50	60.3	130	M10	1850
TGRCOL00E0073	1 1/2"	DN65	73.0	142	M12	1850
TGRCOL00E0089	3"	DN80	88.9	161	M12	2250
TGRCOL00E0114	4"	DN100	114.3	190	M12	3600
TGRCOL00E0168	6"	DN150	168.3	258	M16	4500
TGRCOL00E0219	8"	DN200	219.1	333	M16	4500
TGRCOL00E0273	10"	DN250	273.0	409	M16	5800
TGRCOL00E0323	12"	DN300	323.8	467	M20	7300
TGRCOL00E0406	16"	DN400	406.4	583	M20	7300
TGRCOL00E0508	20"	DN500	508.0	708	M20	13400
TGRCOL00E0610	24"	DN600	609.6	833	M20	13400

Note : Riser Clamp of all Non Standard Sizes to fit upon Rubber Support Insert can be manufactured.

APPLICATION EXAMPLES:

**APPLICATION:**

FOUR BOLT RISER CLAMPS are recommended for the support and/or restraint of more heavy vertical steel pipes. A RISER CLAMP with four bolts is designed to attach to the pipe and to rest on a structural member or floor; It is not designed to have hanger rods attached to it to support the pipe.

CONSTRUCTION:

RISER CLAMPS WITH FOUR BOLTS consists of two mild steel flat bars bent to shape and held together by four bolts.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69 

Federal Specification WW-H-171E & A-A-1192A

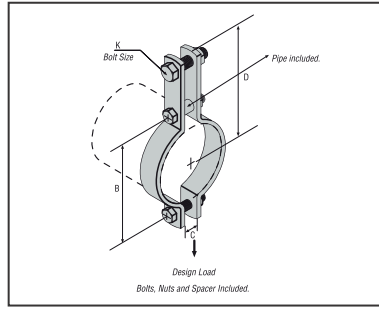
MAXIMUM TEMPERATURE: 343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, & Epoxy Coated.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	DIMENSIONS(MM)		MAX LOAD (KG)
	IN.	MM		LENGTH	BOLT SIZE	
TGFBC000E0022	1/2"	DN15	21.3	57	M10	1250
TGFBC000E0027	3/4"	DN20	26.7	68	M10	1250
TGFBC000E0034	1"	DN25	33.4	76	M10	1250
TGFBC000E0042	1 1/4"	DN32	42.1	90	M10	1250
TGFBC000E0048	1 1/2"	DN40	48.2	110	M10	1250
TGFBC000E0060	2"	DN50	60.3	130	M10	1850
TGFBC000E0073	2 1/2"	DN65	73.0	142	M12	1850
TGFBC000E0089	3"	DN80	88.9	161	M12	2250
TGFBC000E0102	3 1/2"	DN90	101.6	170	M12	2250
TGFBC000E0114	4"	DN100	114.3	190	M12	3600
TGFBC000E0114	5"	DN125	141.3	224	M16	3600
TGFBC000E0168	6"	DN150	168.3	258	M16	4500
TGFBC000E0219	8"	DN200	219.1	333	M16	4500
TGFBC000E0273	10"	DN250	273.0	409	M16	5800
TGFBC000E0323	12"	DN300	323.8	467	M20	7300
TGFBC000E0356	14"	DN350	355.6	519	M20	7300
TGFBC000E0406	16"	DN400	406.4	571	M20	7300
TGFBC000E0457	18"	DN450	457.2	710	M20	11000
TGFBC000E0508	20"	DN500	508.0	760	M20	13400
TGFBC000E0610	24"	DN600	609.6	833	M20	13400

APPLICATION EXAMPLES:


**APPLICATION:**

THREE BOLT PIPE CLAMP is designed for high static loading requirement in plant construction. Pipe clamps manufactured according to DIN 3567

MATERIAL:

Mild Steel. Also other materials can be provided on request

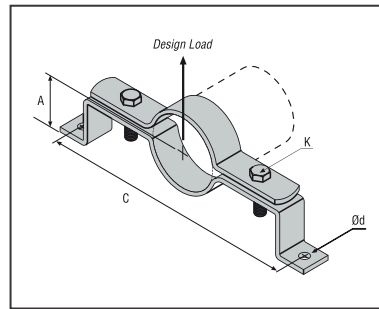
APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 3) 
Federal Specification WW-H-171E & A-A-1192A (Type 3)

FINISH AVAILABLE:

Electro-Galvanized, Hot dip Galvanized & Zinc Flake.

PRODUCT CODE	PIPE SIZE		B MM	C MM	D MM	BOLT SIZE K MM	DESIGN LOAD KN
	INCH	MM					
TGTHC000E0022	1/2"	15	58	7	96	M10	3.29
TGTHC000E0027	3/4"	20	66	7	104	M10	3.29
TGTHC000E0034	1"	25	72	7	110	M10	3.29
TGTHC000E0042	1 1/4"	32	76	7	120	M12	3.29
TGTHC000E0048	1 1/2"	40	88	7	126	M12	5.34
TGTHC000E0060	2"	50	108	9	153	M12	5.34
TGTHC000E0073	2 1/2"	65	122	9	167	M12	5.34
TGTHC000E0089	3"	80	136	9	181	M16	5.34
TGTHC000E0114	4"	100	178	11	237	M16	8.67
TGTHC000E0168	6"	150	222	11	281	M20	9.96
TGTHC000E0219	8"	200	284	11	343	M20	9.96
TGTHC000E0273	10"	250	348	14	421	M20	11.25
TGTHC000E0323	12"	300	392	14	465	M24	11.25
TGTHC000E0356	14"	350	444	14	517	M24	14.94
TGTHC000E0406	16"	400	498	18	586	M24	14.94
TGTHC000E0457	18"	450	580	18	668	M24	14.94
TGTHC000E0508	20"	500	614	18	702	M27	15.65

**APPLICATION:**

OFFSET PIPE CLAMPS is designed for high static loading requirement in plant construction. Pipe clamps manufactured according to DIN 3567.

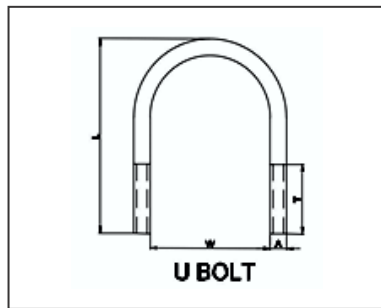
MATERIAL:

Mild Steel.

FINISH AVAILABLE:

Electro-Galvanized, Hot dip Galvanized & Zinc Flake.

PRODUCT CODE	PIPE SIZE		BOLT SIZE		A MM	ØD MM	C MM	DESIGN LOAD KN
	INCH	MM	K MM					
TGOPC000E0022	1/2"	15	M10		63	11	152	0.84
TGOPC000E0027	3/4"	20	M10		63	11	186	0.84
TGOPC000E0034	1"	25	M10		67	11	192	0.84
TGOPC000E0042	1 1/4"	32	M10		71	11	200	0.84
TGOPC000E0048	1 1/2"	40	M10		75	11	209	0.84
TGOPC000E0060	2"	50	M10		81	11	232	1.87
TGOPC000E0073	2 1/2"	65	M10		87	11	267	1.87
TGOPC000E0089	3"	80	M10		95	11	283	1.87
TGOPC000E0114	4"	100	M12		108	14	317	2.71
TGOPC000E0140	5"	125	M12		120	14	349	2.71
TGOPC000E0168	6"	150	M16		135	18	419	3.87
TGOPC000E0219	8"	200	M16		160	18	473	3.87
TGOPC000E0273	10"	250	M16		197	18	584	3.87
TGOPC000E0323	12"	300	M20		222	22	635	3.87



U BOLT

APPLICATION:

U-BOLTS are used to secure piping to structural members. When the piping is below the structural member, the U-Bolt provides vertical support and restricts lateral movement while allowing for axial movement. When the piping system is above the structural member, the U-Bolt restricts lateral movement and upward movement while allowing axial movement of the piping.


CONSTRUCTION:

U-Bolt is provided with four standard hex nuts and has a longer straight threaded length.

MATERIAL:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 24) 
Federal Specification WW-H-171E & A-A-1192A (Type 24)

MAXIMUM TEMPERATURE: 399°C (750°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

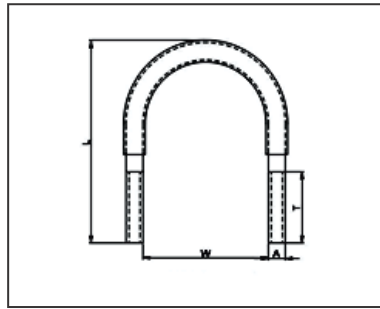
MATERIAL DIMENSION

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	MATERIAL DIMENSION			BOLT SIZE (MM) A	MAX LOAD (KG)
	IN.	MM		ROD DIA. W	HEIGHT L	THREAD LENGTH T		
TGUB0000E0022	1/2"	DN15	21.3	21	65	50	M10	550
TGUB00U0E0027	3/4"	DN20	26.7	27	77	50	M10	550
TGUB00U0E0034	1"	DN25	33.4	34	85	50	M10	550
TGUB00U0E0042	1 1/4"	DN32	42.1	43	93	50	M10	550
TGUB00U0E0048	1 1/2"	DN40	48.2	48	100	50	M10	550
TGUB00U0E0060	2"	DN50	60.3	60	110	50	M10	550
TGUB00U0E0073	2 1/2"	DN65	73.0	76	127	50	M12	900
TGUB00U0E0089	3"	DN80	88.9	89	140	50	M12	900
TGUB00U0E0114	4"	DN100	114.3	115	165	50	M12	900
TGUB00U0E0141	5"	DN125	141.3	140	190	50	M12	900
TGUB00U0E0168	6"	DN150	168.3	168	220	50	M12	900
TGUB0000E0219	8"	DN200	219.1	219	295	75	M16	1900
TGUB0000E0273	10"	DN250	273.0	273	370	100	M20	3200
TGUB0000E0323	12"	DN300	323.8	324	420	100	M20	3200
TGUB0000E0356	14"	DN350	355.6	356	455	100	M20	3200
TGUB0000E0406	16"	DN400	406.4	406	505	100	M20	3200
TGUB0000E0457	18"	DN450	457.2	457	555	100	M24	4400
TGUB0000E0508	20"	DN500	508.0	508	605	100	M24	4400
TGUB0000E0610	24"	DN600	609.6	610	710	100	M24	4400

- Also can manufacture with different Rod size as per requirement.

NOTE : U bolt of all Non Standard Sizes to fit upon Rubber Support Insert can be manufactured.

APPLICATION EXAMPLES:

**APPLICATION:**

U-BOLTS WITH LINING are used to secure piping to structural members. When the piping is below the structural member, U-BOLT WITH LINING provides vertical support and restricts lateral movement while allowing for axial movement. When the piping system is above the structural member, the U-BOLTS WITH LINING restricts lateral movement and upward movement while allowing axial movement of the piping.


CONSTRUCTION:

U-BOLTS WITH LINING is provided with four standard hex nuts and has a longer straight threaded length. Reduces noise upto 18dB.

MATERIALS:

Mild Steel. Also other materials can also be provided on request

APPROVALS:

ANSI/MSS SP-69 & SP-58 (Type 24) 
Federal Specification WW-H-171E & A-A-1192A (Type 24)

MAXIMUM TEMPERATURE: 110°C

MINIMUM TEMPERATURE: -20°C

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

MATERIAL DIMENSION

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	MATERIAL DIMENSION			BOLT SIZE (MM) A	MAX LOAD (KG)
	IN.	MM		ROD DIA. W	(MM) HEIGHT L	THREAD LENGTH T		
TGUBOL00E0022	1/2"	DN15	21.3	21	65	50	M10	550
TGUBOL00E0027	3/4"	DN20	26.7	27	77	50	M10	550
TGUBOL00E0034	1"	DN25	33.4	34	85	50	M10	550
TGUBOL00E0042	1 1/4"	DN32	42.1	43	93	50	M10	550
TGUBOL00E0048	1 1/2"	DN40	48.2	48	100	50	M10	550
TGUBOL00E0060	2"	DN50	60.3	60	110	50	M10	550
TGUBOL00E0073	2 1/2"	DN65	73.0	76	127	50	M12	900
TGUBOL00E0089	3"	DN80	88.9	89	140	50	M12	900
TGUBOL00E00114	4"	DN100	114.3	115	165	50	M12	900
TGUBOL00E00141	5"	DN125	141.3	140	190	50	M12	900
TGUBOL00E00168	6"	DN150	168.3	168	220	50	M12	900
TGUBOL00E00219	8"	DN200	219.1	219	295	75	M16	1900
TGUBOL00E00273	10"	DN250	273.0	273	370	100	M20	3200
TGUBOL00E00323	12"	DN300	323.8	324	420	100	M20	3200
TGUBOL00E00356	14"	DN350	355.6	356	455	100	M20	3200
TGUBOL00E00406	16"	DN400	406.4	406	505	100	M20	3200
TGUBOL00E00457	18"	DN450	457.2	457	555	100	M24	4400
TGUBOL00E00508	20"	DN500	508.0	508	605	100	M24	4400
TGUBOL00E00610	24"	DN600	609.6	610	710	100	M24	4400

- Also can manufacture with different Rod size as per requirement.
- PVC Lining also available.

APPLICATION EXAMPLES:

**APPLICATION:**

HALF SADDLE is recommended for support of standard conduit, cable and steel pipe on walls or sides of beams. Not recommended for use horizontally on ceilings, bottoms of beams and similar installations since the factor of safety is greatly reduced when so used.

CONSTRUCTION:

HALF SADDLE consists of single piece of mild steel shaped to proper configuration as shown in above diagram.

MATERIALS:

Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: 343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL (INCH)	PIPE SIZE (MM)	DIA (MM)	SCREW
TGHS0000E0022	1/2"	DN 15	21.3	M 6
TGHS0000E0027	3/4"	DN 20	26.7	M 6
TGHS0000E0034	1"	DN 25	33.4	M 6
TGHS0000E0042	1 1/4"	DN 32	42.1	M 6
TGHS0000E0048	1 1/2"	DN 40	48.2	M 6
TGHS0000E0060	2"	DN 50	60.3	M 6
TGHS0000E0073	2 1/2"	DN 65	73	M 8
TGHS0000E0089	3"	DN 80	55.9	M 8
TGHS0000E00114	4"	DN 100	114.3	M 8
TGHS0000E00168	6"	DN 150	168.3	M 8

APPLICATION EXAMPLES:

**APPLICATION:**

LIGHT SADDLE is recommended for supporting a piping system with vertically or horizontally to walls or ceilings.

CONSTRUCTION:

LIGHT SADDLE consists of single piece of mild steel shaped to the proper configuration as shown in the diagram.

MATERIALS:

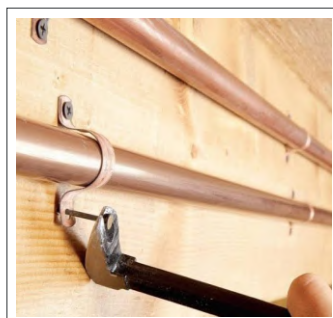
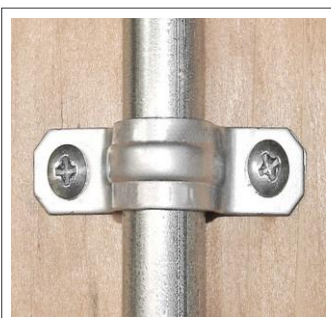
Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: 343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL (INCH)	PIPE SIZE (MM)	DIA (MM)	SCREW
TGLS0000E0022	1/2"	DN 15	21.3	M 6
TGLS0000E0027	3/4"	DN 20	26.7	M 6
TGLS0000E0034	1"	DN 25	33.4	M 6
TGLS0000E0042	1 1/4"	DN 32	42.1	M 6
TGLS0000E0048	1 1/2"	DN 40	48.2	M 6
TGLS0000E0060	2"	DN 50	60.3	M 6
TGLS0000E0073	2 1/2"	DN 65	73	M 6
TGLS0000E0089	3"	DN 80	55.9	M 6
TGLS0000E0114	4"	DN 100	114.3	M 6
TGLS0000E0168	6"	DN 150	168.3	M 6

APPLICATION EXAMPLES:

**APPLICATION:**

HEAVY SADDLE is recommended for supporting a piping system of heavy weight with fittings vertically or horizontally to walls or ceilings. It can be used to mount electrical & insulated pipes, corner locking & better gripping of electrical conduits.

CONSTRUCTION:

A HEAVY SADDLE consists of single piece of mildsteel shaped to the proper configuration as shown in the diagram.

MATERIALS:

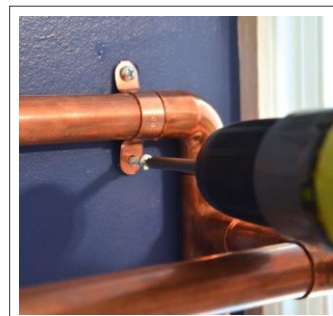
Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: 343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		DIAMETER (MM)	SCREW SIZE
	INCH	MM		
TGUC0000E0022	1/2 "	DN15	21.3	M6
TGUC0000E0027	3/4 "	DN20	26.7	M6
TGUC0000E0034	1 "	DN25	33.4	M6
TGUC0000E0042	1 1/4"	DN32	42.1	M6
TGUC0000E0048	1 1/2 "	DN40	48.2	M6
TGUC0000E0054			54	M6
TGUC0000E0060	2 "	DN50	60.3	M6
TGUC0000E0067			67	M6
TGUC0000E0073	2 1/2 "	DN65	73.0	M6
TGUC0000E0082			82	M6
TGUC0000E0089	3 "	DN80	88.9	M6
TGUC0000E0102	3 1/2"	DN90	101.6	M6
TGUC0000E0108			108	M6
TGUC0000E0114	4 "	DN100	114.3	M6
TGUC0000E0126			126	M6
TGUC0000E0141	5 "	DN125	141.3	M6
TGUC0000E0148			148	M6
TGUC0000E0155			155	M6
TGUC0000E0168	6 "	DN150	168.3	M6
TGUC0000E0179			179	M6
TGUC0000E0190			190	M6
TGUC0000E0205			205	M6
TGUC0000E0219	8 "	DN200	219.1	M8
TGUC0000E0230			230	M8
TGUC0000E0240			241	M8
TGUC0000E0263			263	M8
TGUC0000E0273	10 "	DN250	273.1	M8

APPLICATION EXAMPLES:



SE-SF L41



SE-SF L82



SE-SF L124

MATERIAL:

Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

ITEM**FOR PROFILR FUS**

TGSF0000E0L41

21;41;21D;62

TGSF0000E0L82

41D

TGSF0000EL124

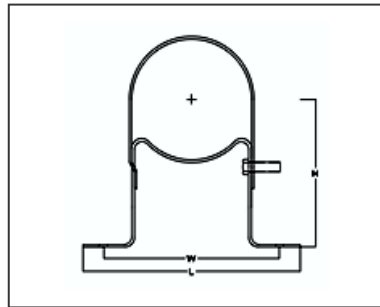
62D

TGSF0000H0L41

21;41;21D;62

TGSF0000S0L41

FUS 21 + FUS 41

**APPLICATION:**

OFFSET HANGER is recommended for support of pipe lines running at a definite distance from the wall or floor of a building or structure. Used where removing and installing of pipe is done periodically.

CONSTRUCTION:

An OFFSET HANGER consists of single piece of mild steel shaped to the proper configuration.

MATERIALS:

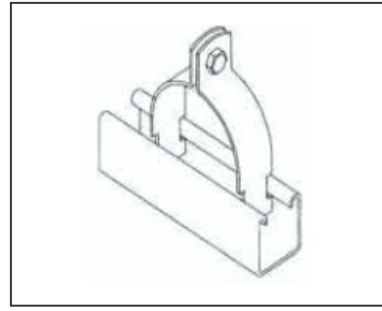
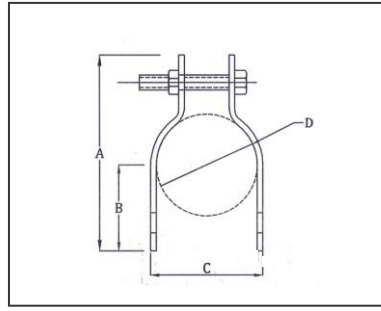
Mild Steel. Also other materials can be provided on request

MAXIMUM TEMPERATURE: 343°C (650°F)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	DIMENSION		
	INCH	MM		L	W	H
TGAS0000E0060	2 "	DN50	60.3	214	186	83
TGAS0000E0073	2 1/2 "	DN65	73	269	231	113
TGAS0000E0089	3 "	DN80	88.9	284	246	113
TGAS0000E0110	-	-	110	298	259	113
TGAS0000E0114	4 "	DN100	114.3	311	271	113
TGAS0000E0141	5 "	DN125	141.3	386	336	138
TGAS0000E0168	6 "	DN150	168.3	411	361	138
TGAS0000E0219	8 "	DN200	219.1	469	419	138

**APPLICATION:**

STRUT CLAMP - TWO PIECE CHANNEL CLIP is designed as a guide to permit longitudinal movement of pipe.

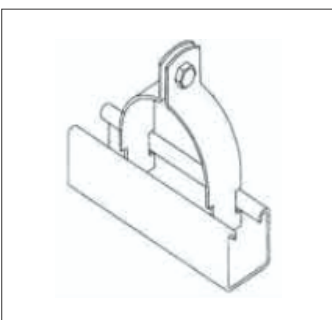
MATERIALS:

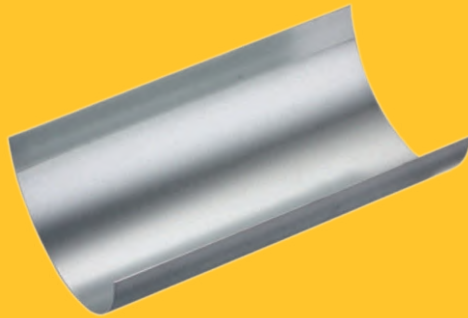
Mild Steel. Also other materials can also be provided on request

FINISH AVAILABLE:

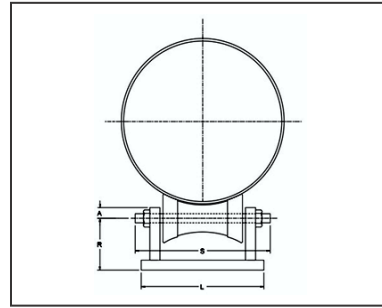
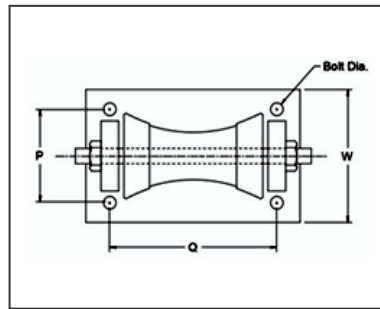
Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake & Epoxy Coated.

PRODUCT CODE	NOMINAL PIPE SIZE		O.D. OF PIPE 'D' MM	A	B	C	FASTENER SIZE
	INCH	MM					
TGTPC000E0022	1/2"	15	22	50.5	14.2	25.00	M 6 x 25
TGTPC000E0027	3/4"	20	27	57.1	17.5	30.00	M 6 x 25
TGTPC000E0034	1"	25	34	63.8	20.6	38.00	M 6 x 25
TGTPC000E0042	1 1/4"	32	42	76.2	25.4	46.00	M 6 x 25
TGTPC000E0048	1 1/2"	40	48	81.5	28.4	52.00	M 6 x 25
TGTPC000E0060	2"	50	60	95.8	34.8	65.00	M 8 x 40
TGTPC000E0073	2 1/2"	65	73	108.7	41.1	78.00	M 8 x 40
TGTPC000E0089	3"	80	89	128.3	50.8	94.00	M 8 x 40
TGTPC000E0114	4"	100	114	153.7	63.5	120.00	M 8 x 40

APPLICATION EXAMPLES:



ROLLER SUPPORTS

**APPLICATION:**

PIPE ROLLER STAND is recommended to support pipes in applications where horizontal movement, due to expansion and contraction will occur.

ROLLER MATERIALS:

Malleable Iron.
Mild Steel.

MATERIALS:

Mild Steel. Also other materials can be provided on request

APPROVALS:

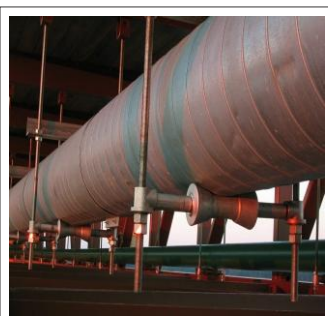
ANSI/MSS SP-58 & SP-69(Type 45) 

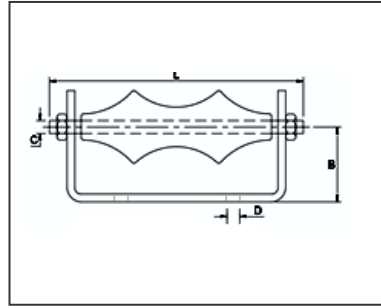
Federal Specification WW-H-171E & A-A-1192A (Type 44)

FINISH AVAILABLE:

Plain, Electro-Galvanized & Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		Pipe OD (MM)	S	BASE PLATE		R	Q	P
	IN.	MM			L	W			
TGPRS000E0060	2"	DN50	59	80	90	145	50	40	100
TGPRS000E0073	2 1/2"	DN65	75	90	100	145	50	48	100
TGPRS000E0089	3"	DN80	89	95	105	145	50	55	100
TGPRS000E0102	3 1/2"	DN90	102	100	110	145	50	61	100
TGPRS000E0114	4"	DN100	115	115	125	155	50	72	115
TGPRS000E0141	5"	DN125	141	130	140	155	55	85	115
TUPRS000E0168	6"	DN150	168	160	170	165	65	100	125
TGPRS000E0219	8"	DN200	219	190	200	170	75	125	130
TGPRS000E0273	10"	DN250	273	225	235	170	90	155	130
TGPRS000E0323	12"	DN300	323	260	270	170	90	180	130
TGPRS000E0356	14"	DN350	356	275	285	170	120	197	130
TGPRS000E0406	16"	DN400	406	300	310	205	120	220	165
TGPRS000E0457	18"	DN450	457	345	355	205	130	250	165
TGPRS000E0508	20"	DN500	508	370	380	205	130	275	165
TGPRS000E0610	24"	DN600	610	480	490	230	160	330	190
TGPRS000E0660	26"	DN650	661	500	510	245	180	355	200
TGPRS000E0711	28"	DN700	712	530	540	245	180	385	200
TGPRS000E0762	30"	DN750	755	550	560	245	200	405	200

APPLICATION EXAMPLES:

**APPLICATION:**


PIPE ROLLER CHAIR is recommended to support pipes where longitudinal movement due to expansion and contraction may occur, but where no vertical adjustment is required.

MAXIMUM TEMPERATURE: 343°C (650°F)

MATERIALS:

Mild Steel. Also other materials can be provided on request

APPROVALS:

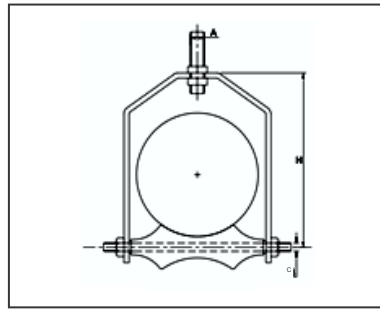
ANSI/MSS SP-58 & SP-69(Type 44) 
Federal Specification WW-H-171E & A-A-1192A (Type 45)

FINISH AVAILABLE:

Plain, Electro-Galvanized & Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NPS (IN)	NPS (MM)	WIDTH	THICKNESS	DIMENSIONS (MM)			
					B	C	D	L
TGPRC000E0060	2"	59	30	6	40	M12	M12	115
TGPRC000E0073	2 ½"	75	30	6	40	M12	M12	125
TGPRC000E0089	3"	89	30	6	45	M12	M12	145
TGPRC000E0102	3 ½"	102	30	6	45	M12	M12	160
TGPRC000E0114	4"	115	40	10	55	M12	M16	175
TGPRC000E0141	5"	141	40	10	55	M12	M16	200
TGPRC000E0168	6"	168	50	10	65	M20	M16	245
TGPRC000E0219	8"	219	50	10	75	M24	M20	305
TGPRC000E0273	10"	273	50	12	90	M24	M20	365
TGPRC000E0323	12"	323	50	12	90	M24	M20	425
TGPRC000E0356	14"	356	50	12	120	M24	M24	460
TGPRC000E0406	16"	406	75	12	120	M24	M24	515
TGPRC000E0457	18"	457	75	12	130	M33	M24	580
TGPRC000E0508	20"	508	75	12	130	M33	M24	630
TGPRC000E0610	24"	610	100	16	160	M50	M24	780
TGPRC000E0660	26"	661	100	16	180	M50	M24	845
TGPRC000E0711	28"	712	100	16	180	M50	M24	895
TGPRC000E0762	30"	755	100	16	200	M50	M24	940

APPLICATION EXAMPLES:

**APPLICATION:**

ADJUSTABLE ROLLER HANGER is recommended for suspended pipes in applications where horizontal movement, due to expansion and contraction, will occur and vertical adjustment is necessary.

FINISH AVAILABLE:

Plain, Electro-Galvanized & Hot Dip Galvanized & Zinc Flake.

MATERIALS:

Mild Steel. Also other materials can be provided on request

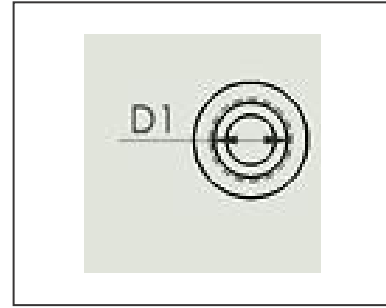
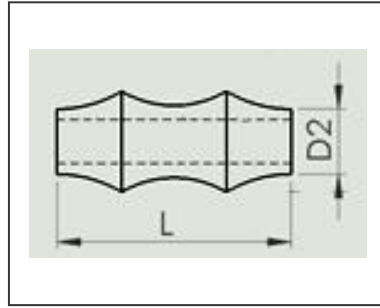
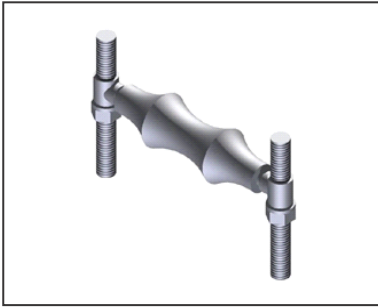
APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 43) 

Federal Specification WW-H-171E & A-A-1192A (Type 44)

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	DIMENSIONS (MM)		
	IN.	MM		A	C	H
TGARH000E0060	2"	DN50	59	M12	M12 x 115	105
TGARH000E0073	2 ½"	DN65	75	M12	M12 x 125	125
TGARH000E0089	3"	DN80	89	M12	M12 x 145	140
TGARH000E0102	3 ½"	DN90	102	M16	M12 x 160	155
TGARH000E0114	4"	DN100	115	M16	M12 x 175	170
TGARH000E0141	5"	DN125	141	M20	M12 x 200	200
TGARH000E0168	6"	DN150	168	M20	M20 x 245	230
TGARH000E0219	8"	DN200	219	M20	M24 x 305	290
TGARH000E0273	10"	DN250	273	M24	M24 X 365	350
TGARH000E0323	12"	DN300	323	M24	M24 x 425	400
TGARH000E0356	14"	DN350	356	M24	M24 x 460	445
TGARH000E0406	16"	DN400	406	M24	M24 x 515	500
TGARH000E0457	18"	DN450	457	M30	M33 x 580	555
TGARH000E0508	20"	DN500	508	M30	M33 x 630	610
TGARH000E0610	24"	DN600	610	M30	M50 x 780	725
TGARH000E0660	26"	DN350	661	M36	M50 x 845	785
TGARH000E0711	28"	DN700	712	M36	M50 x 895	840
TGARH000E0762	30"	DN750	755	M36	M50 x 940	885

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE ROLLER is recommended for supporting pipe in applications where horizontal movement, due to expansion and contraction, will occur.

ROLLER MATERIALS:

Malleable Iron, Mild Steel also available.

MATERIALS:

Mild Steel. Also other materials can be provided on request

APPROVALS:

ANSI/MSS SP-58 & SP-69(Type 41) 

Federal Specification WW-H-171E & A-A-1192A (Type 42)

FINISH AVAILABLE:

Plain, Electro-Galvanized & Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (MM)	DIMENSIONS (MM)			
	IN.	MM		D	L	D1	D2
TGPR0000E0060	2"	DN50	59	27.90	66	20	18
TGPR0000E0073	2 ½"	DN65	75	32.05	79	22	20
TGPR0000E0089	3"	DN80	89	33.92	95	22	20
TGPR0000E0102	3 ½"	DN90	102	35.67	108	22	20
TGPR0000E0114	4"	DN100	115	41.41	121	26	24
TGPR0000E0141	5"	DN125	141	48.89	148	30	28
TGPR0000E0168	6"	DN150	168	58.51	175	36	34
TGPR0000E0219	8"	DN200	219	67.34	227	38	36
TGPR0000E0273	10"	DN250	273	80.58	281	44	42
TGPR0000E0323	12"	DN300	323	93.27	330	50	48
TGPR0000E0356	14"	DN350	356	115.69	362	68	66
TGPR0000E0406	16"	DN400	406	122.39	413	68	66
TGPR0000E0457	18"	DN450	457	131.23	464	70	68
TGPR0000E0508	20"	DN500	508	144.06	514	76	74
TGPR0000E0610	24"	DN600	610	173.72	616	92	90
TGPR0000E0660	26"	DN650	661	188.56	669	100	98
TGPR0000E0711	28"	DN700	712	201.39	722	106	104
TGPR0000E0762	30"	DN750	755	215.15	768	114	112

APPLICATION EXAMPLES:

**APPLICATION:**

PIPE INSULATION SADDLE is designed for use on insulated high temperature systems where heat losses are to be kept to a minimum and to protect insulation against damage.

MATERIALS:

Mild Steel. Also other materials can be provided on request

APPROVALS:

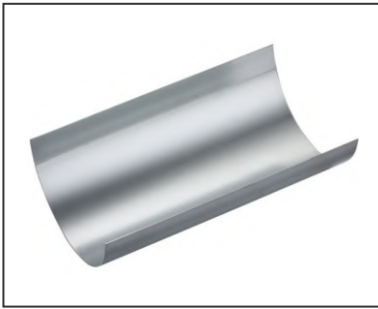
ANSI/MSS SP-58 & SP-69 (Type 39A & 39B) 

Federal Specification WW-H-171E & A-A-1192A (Type 40A & 40B)

FINISH AVAILABLE:

Plain, Electro-Galvanized & Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	NOMINAL PIPE SIZE		PIPE OD (mm)	INSULATION
	(in)	(mm)		
TGPIS00E25034	1"	DN 25	33.4	1"
TGPIS00E50034	1"	DN 25	33.4	2"
TGPIS00E25042	1 1/4"	DN 32	42	1"
TGPIS00E50042	1 1/4"	DN 32	42	2"
TGPIS00E25048	1 1/2"	DN 40	48	1"
TGPIS00E50048	1 1/2"	DN 40	48	2"
TGPIS00E25060	2"	DN 50	60	1"
TGPIS00E50060	2"	DN 50	60	2"
TGPIS00E75060	2"	DN 50	60	3"
TGPIS00E25073	2 1/2"	DN 65	73	1"
TGPIS00E50073	2 1/2"	DN 65	73	2"
TGPIS00E75073	2 1/2"	DN 65	73	3"
TGPIS00E25089	3"	DN 80	90	1"
TGPIS00E50089	3"	DN 80	90	2"
TGPIS00E75089	3"	DN 80	90	3"
TGPIS00E25114	4"	DN 100	115	1"
TGPIS00E50114	4"	DN 100	115	2"
TGPIS00E75114	4"	DN 100	115	3"
TGPIS00E25141	5"	DN 125	140	1"
TGPIS00E50141	5"	DN 125	140	2"
TGPIS00E75141	5"	DN 125	140	3"
TGPIS00E25168	6"	DN 150	168	1"
TGPIS00E50168	6"	DN 150	168	2"
TGPIS00E75168	6"	DN 150	168	3"
TGPIS00E25219	8"	DN 200	219	1"
TGPIS00E50219	8"	DN 200	219	2"
TGPIS00E75219	8"	DN 200	219	3"
TGPIS00E25273	10"	DN 250	273	1"
TGPIS00E50273	10"	DN 250	273	2"
TGPIS00E75273	10"	DN 250	273	3"
TGPIS00E25323	12"	DN 300	323	1"
TGPIS00E50323	12"	DN 300	323	2"
TGPIS00E75323	12"	DN 300	323	3"
TGPIS00E50356	14"	DN 350	356	1"
TGPIS00E75356	14"	DN 350	356	2"

**APPLICATION:**

PIPE COVERING SADDLE is Ideal for protecting pipe insulation

MATERIALS:

Mild Steel. Also other materials can be provided on request

APPROVALS:

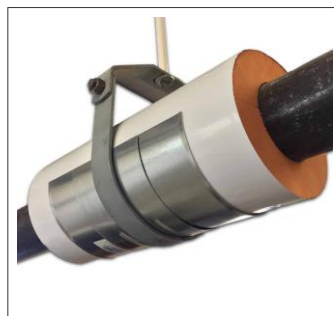
MSS-SP-58 & MSS-SP-69 (Type 40) 

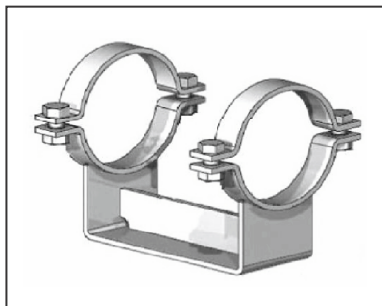
Federal Specification WW-H-171E & A-A-1192A (Type 41)

FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	PIPE SIZE		PIPE OD (mm)	INSULATION	PRODUCT CODE	PIPE SIZE		PIPE OD (mm)	INSULATION
	(in)	(mm)				(in)	(mm)		
TGPCS00E25034	1"	DN 25	33.4	1"	TGPCS00E25323	12"	DN 300	323.6	1"
TGPCS00E32034	1"	DN 25	33.4	1 2/7"	TGPCS00E32323	12"	DN 300	323.6	1 2/7"
TGPCS00E50034	1"	DN 25	33.4	2"	TGPCS00E50323	12"	DN 300	323.6	2"
TGPCS00E25042	1 1/4"	DN 32	42.2	1"	TGPCS00E25356	14"	DN 350	355.6	1"
TGPCS00E32042	1 1/4"	DN 32	42.2	1 2/7"	TGPCS00E32356	14"	DN 350	355.6	1 2/7"
TGPCS00E50042	1 1/4"	DN 32	42.2	2"	TGPCS00E50356	14"	DN 350	355.6	2"
TGPCS00E25048	1 1/2"	DN 40	48.3	1"	TGPCS00E25400	16"	DN 406	406.4	1"
TGPCS00E32048	1 1/2"	DN 40	48.3	1 2/7"	TGPCS00E32400	16"	DN 406	406.4	1 2/7"
TGPCS00E50048	1 1/2"	DN 40	48.3	2"	TGPCS00E50400	16"	DN 406	406.4	2"
TGPCS00E25060	2"	DN 50	60.3	1"	TGPCS00E25457	18"	DN 450	457.2	1"
TGPCS00E32060	2"	DN 50	60.3	1 2/7"	TGPCS00E32457	18"	DN 450	457.2	1 2/7"
TGPCS00E50060	2"	DN 50	60.3	2"	TGPCS00E50457	18"	DN 450	457.2	2"
TGPCS00E25073	2 1/2"	DN 65	73	1"	TGPCS00E25508	20"	DN 500	508	1"
TGPCS00E32073	2 1/2"	DN 65	73	1 2/7"	TGPCS00E32508	20"	DN 500	508	1 2/7"
TGPCS00E50073	2 1/2"	DN 65	73	2"	TGPCS00E50508	20"	DN 500	508	2"
TGPCS00E25089	3"	DN 80	88.9	1"	TGPCS00E25556	22"	DN 550	558.8	1"
TGPCS00E32089	3"	DN 80	88.9	1 2/7"	TGPCS00E32556	22"	DN 550	558.8	1 2/7"
TGPCS00E50089	3"	DN 80	88.9	2"	TGPCS00E50556	22"	DN 550	558.8	2"
TGPCS00E25114	4"	DN 100	114.3	1"	TGPCS00E25610	24"	DN 600	609.6	1"
TGPCS00E32114	4"	DN 100	114.3	1 2/7"	TGPCS00E32610	24"	DN 600	609.6	1 2/7"
TGPCS00E50114	4"	DN 100	114.3	2"	TGPCS00E50610	24"	DN 600	609.6	2"
TGPCS00E25141	5"	DN 125	141.3	1"	TGPCS00E25660	26"	DN 650	660.4	1"
TGPCS00E32141	5"	DN 125	141.3	1 2/7"	TGPCS00E32660	26"	DN 650	660.4	1 2/7"
TGPCS00E50141	5"	DN 125	141.3	2"	TGPCS00E50660	26"	DN 650	660.4	2"
TGPCS00E25168	6"	DN 150	168.3	1"	TGPCS00E25711	28"	DN 700	711.2	1"
TGPCS00E32168	6"	DN 150	168.3	1 2/7"	TGPCS00E32711	28"	DN 700	711.2	1 2/7"
TGPCS00E50168	6"	DN 150	138.3	2"	TGPCS00E50711	28"	DN 700	711.2	2"
TGPCS00E25219	8"	DN 200	219.1	1"	TGPCS00E25812	30"	DN 750	762	1"
TGPCS00E32219	8"	DN 200	219.1	1 2/7"	TGPCS00E32812	30"	DN 750	762	1 2/7"
TGPCS00E50219	8"	DN 200	219.1	2"	TGPCS00E50812	30"	DN 750	762	2"
TGPCS00E25273	10"	DN 250	273.1	1"	TGPCS00E25812	32"	DN 800	812.8	1"
TGPCS00E32273	10"	DN 250	273.1	1 2/7"	TGPCS00E32812	32"	DN 800	812.8	1 2/7"
TGPCS00E50273	10"	DN 250	273.1	2"	TGPCS00E50812	32"	DN 800	812.8	2"

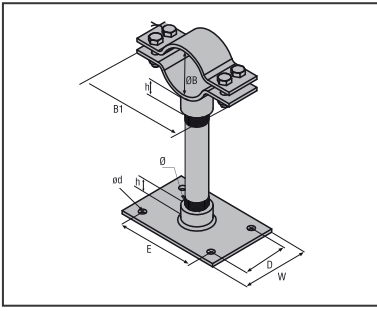
APPLICATION EXAMPLES:

**TECHNICAL DATA :**

Material : Mild Steel
 Finish : Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.
 Temperature : Upto 300 C.

PRODUCT CODE GALVANIZED	NOMINAL SIZE	INSULATION THICKNES	OUTSIDE DIAMETER (MM)	CLAMP		HEIGHT	LENGTH OF GUIDE	CLAMPING FASTENER	SAFE LOAD (KG)
				WIDTH	THICKNESS				
TGSPS000E0219	200	-	219.1	50	8	107	290	M 16	3000
TGSPS000E0283	200	32 MM	283.1	50	8	107	290	M 16	3000
TGSPS000E0319	200	50 MM	319.1	50	8	142	290	M 16	3000
TGSPS000E0273	250	-	273	50	8	107	290	M 16	3000
TGSPS000E0337	250	32 MM	337	50	8	107	290	M 16	3000
TGSPS000E0373	250	50 MM	373	50	8	142	290	M 16	3000
TGSPS000E0324	300	-	323.6	50	8	107	290	M 16	3000
TGSPS000E0388	300	32 MM	387.6	60	8	107	290	M 16	3500
TGSPS000E0424	300	50 MM	423.6	60	8	142	290	M 16	3500
TGSPS000E0356	350	-	355.6	60	8	142	290	M 16	3500
TGSPS000E0420	350	32 MM	419.6	60	8	142	290	M 16	3500
TGSPS000E0456	350	50 MM	455.6	60	8	192	290	M 16	3500
TGSPS000E0406	400	-	406.4	60	8	142	290	M 16	3500
TGSPS000E0470	400	32 MM	470.4	60	8	142	290	M 16	3500
TGSPS000E0506	400	50 MM	506.4	60	8	192	290	M 16	3500
TGSPS000E0457	450	-	457.2	60	8	142	290	M 16	3500
TGSPS000E0521	450	32 MM	521.2	75	10	142	290	M 16	4500
TGSPS000E0557	450	50 MM	557.2	75	10	192	290	M 16	4500
TGSPS000E0508	500	-	508	75	10	142	290	M 16	4500
TGSPS000E0572	500	32 MM	572	75	10	142	290	M 16	4500
TGSPS000E0608	500	50 MM	608	75	10	192	290	M 16	4500
TGSPS000E0610	600	-	609.6	75	10	142	290	M 16	4500
TGSPS000E0674	600	32 MM	673.6	75	10	142	290	M 16	4500
TGSPS000E0710	600	50 MM	709.6	75	10	192	290	M 16	4500

APPLICATION EXAMPLES:

**SERVICE:**

PIPE CLAMP WITH SLEEVE is designed for suspending and fixing of vertical and expanded pipes. For bending - fastening at greater distances from the building structure.

MATERIALS:

Mild Steel.

FINISH AVAILABLE:

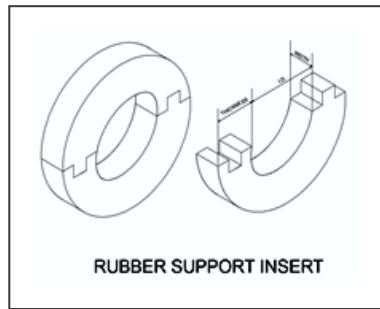
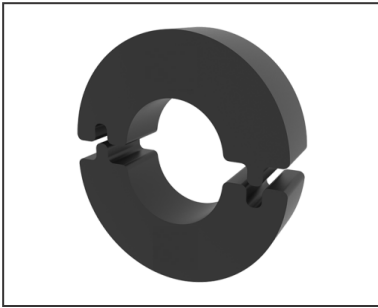
Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	PIPE SIZE		ØB MM	B1 MM	Ø INCH.	L MM	W MM	H MM	D MM	D MM	E MM	DESIGN LOAD KN
	INCH	MM										
TGPCS000E0022	1/2"	15	20-26	82	1/2"	120	75	34	8.50	55	100	4.50
TGPCS000E0027	3/4"	20	26-32	104	1/2"	120	75	34	8.50	55	100	4.50
TGPCS000E0034	1"	25	32-39	99	1/2"	120	75	34	9.00	55	100	4.50
TGPCS000E0042	1 1/4"	32	41-48	115	3/4"	130	85	36	9.00	58	98	6.80
TGPCS000E0048	1 1/2"	40	46-55	135	3/4"	130	85	36	9.00	58	98	6.80
TGPCS000E0060	2"	50	56-66	148	1"	150	100	42	11.00	64	113	6.80
TGPCS000E0073	2 1/2"	65	72-84	155	1"	150	100	42	11.00	64	113	6.80
TGPCS000E0089	3"	80	85-94	185	1"	150	100	42	11.00	64	113	7.40
TGPCS000E0114	4"	100	110-118	214	1 1/4"	175	125	46	11.00	88	138	8.50
TGPCS000E0141	5"	125	137-148	230	1 1/4"	175	125	46	11.00	88	138	9.20
TGPCS000E0168	6"	150	158-172	262	1 1/2"	200	150	47	14.00	110	160	10.40
TGPCS000E0219	8"	200	208-230	335	1 1/2"	200	150	47	14.00	110	160	10.40
TGPCS000E0273	10"	250	265-280	405	1 1/2"	200	150	47	14.00	110	160	16.00

APPLICATION EXAMPLES:



RUBBER SUPPORT INSERTS

**APPLICATION:**

RUBBER SUPPORT INSERTS is recommended to use at the supporting points of insulated pipes to prevent crushing of insulation.

CONSTRUCTION:

Dimensionally accurate as each piece is moulded. It has excellent resistance to deterioration / distortion. Steel reinforcement gives higher strength and load bearing capacity.

DENSITY : 1400kg/m³

THERMAL CONDUCTIVITY : 0.16W/m°C

TEMPERATURE RANGE : -20°C to 110°C

APPLICATION EXAMPLES:

Nominal Pipe Size	Schedule 40 steel pipe	OD (mm)	Product Code for Rubber Support Insert							
			1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Inches	mm		13 mm	19 mm	25 mm	32 mm	38 mm	50 mm	65 mm	75 mm
1/2"	15	21.3	TGRSI00221325	TGRSI00221925	TGRSI00222525	TGRSI00223225	TGRSI00223825	TGRSI00225025	TGRSI00226525	TGRSI00227525
3/4"	20	26.7	TGRSI00271325	TGRSI00271925	TGRSI00272525	TGRSI00273225	TGRSI00273825	TGRSI00275025	TGRSI00276525	TGRSI00277525
1"	25	33.4	TGRSI00341325	TGRSI00341925	TGRSI00342525	TGRSI00343225	TGRSI00343825	TGRSI00345025	TGRSI00346525	TGRSI00347525
1 1/4"	32	42.1	TGRSI00421325	TGRSI00421925	TGRSI00422525	TGRSI00423225	TGRSI00423825	TGRSI00425025	TGRSI00426525	TGRSI00427525
1 1/2"	40	48.2	TGRSI00481325	TGRSI00481925	TGRSI00482525	TGRSI00483225	TGRSI00483825	TGRSI00485025	TGRSI00486525	TGRSI00487525
2"	50	60.3	TGRSI00601325	TGRSI00601925	TGRSI00602525	TGRSI00603225	TGRSI00603825	TGRSI00605025	TGRSI00606525	TGRSI00607525
2 1/2"	65	73.0	TGRSI00731338	TGRSI00731938	TGRSI00732538	TGRSI00733238	TGRSI00733838	TGRSI00735038	TGRSI00736538	TGRSI00737538
3"	80	88.9	TGRSI00891338	TGRSI00891938	TGRSI00892538	TGRSI00893238	TGRSI00893838	TGRSI00895038	TGRSI00896538	TGRSI00897538
3 1/2"	90	101.6	TGRSI01021338	TGRSI01021938	TGRSI01022538	TGRSI01023238	TGRSI01023838	TGRSI01025038	TGRSI01026538	TGRSI01027538
4"	100	114.3	TGRSI01141338	TGRSI01141938	TGRSI01142538	TGRSI01143238	TGRSI01143838	TGRSI01145038	TGRSI01146538	TGRSI01147538
5"	125	141.3	TGRSI01411338	TGRSI01411938	TGRSI01412538	TGRSI01413238	TGRSI01413838	TGRSI01415038	TGRSI01416538	TGRSI01417538
6"	150	168.3	TGRSI01681350	TGRSI01681950	TGRSI01682550	TGRSI01683250	TGRSI01683850	TGRSI01685050	TGRSI01686550	TGRSI01687550
8"	200	219.3	TGRSI02191350	TGRSI02191950	TGRSI02192550	TGRSI02193250	TGRSI02193850	TGRSI02195050	TGRSI02196550	TGRSI02197550
10"	250	273.0	TGRSI02731350	TGRSI02731950	TGRSI02732550	TGRSI02733250	TGRSI02733850	TGRSI02735050	TGRSI02736550	TGRSI02737550
12"	300	323.6	TGRSI03231350	TGRSI03231950	TGRSI03232550	TGRSI03233250	TGRSI03233850	TGRSI03235050	TGRSI03236550	TGRSI03237550
14"	350	355.6	TGRSI03561350	TGRSI03561950	TGRSI03562550	TGRSI03563250	TGRSI03563850	TGRSI03565050	TGRSI03566550	TGRSI03567550
16"	400	406.4	TGRSI04061350	TGRSI04061950	TGRSI04062550	TGRSI04063250	TGRSI04063850	TGRSI04065050	TGRSI04066550	TGRSI04067550
18"	450	457.2	TGRSI04571350	TGRSI04571950	TGRSI04572550	TGRSI04573250	TGRSI04573850	TGRSI04575050	TGRSI04576550	TGRSI04577550
20"	500	508.0	TGRSI05081350	TGRSI05081950	TGRSI05082550	TGRSI05083250	TGRSI05083850	TGRSI05085050	TGRSI05086550	TGRSI05087550
24"	600	609.6	TGRSI06101350	TGRSI06101950	TGRSI06102550	TGRSI06103250	TGRSI06103850	TGRSI06105050	TGRSI06106550	TGRSI06107550

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 13mm X 25mm	47.3
3/4 "	26.7	3/4 " X 13mm X 25mm	52.7
1 "	33.4	1 " X 13mm X 25mm	59.4
1 1/4"	42.1	1 1/4" X 13mm X 25mm	68.1
1 1/2"	48.2	1 1/2" X 13mm X 25mm	74.2
2 "	60.3	2 " X 13mm X 25mm	86.3
2 1/2 "	73	2 1/2 " X 13mm X 38mm	99
3 "	88.9	3 " X 13mm X 38mm	114.9
3 1/2 "	101.6	3 1/2 " X 13mm X 38mm	127.6
4 "	114.3	4 " X 13mm X 38mm	140.3
5 "	141.3	5 " X 13mm X 38mm	167.3
6 "	168.3	6 " X 13mm X 50mm	194.3
8 "	219.1	8 " X 13mm X 50mm	245.1
10 "	273	10 " X 13mm X 50mm	299
12 "	323.8	12 " X 13mm X 50mm	349.8
14 "	355.6	14 " X 13mm X 50mm	381.6
16 "	406.4	16 " X 13mm X 50mm	432.4
18 "	457.2	18 " X 13mm X 50mm	483.2
20 "	508	20 " X 13mm X 50mm	534
24 "	609.6	24 " X 13mm X 50mm	635.6

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 19mm X 25mm	59.3
3/4 "	26.7	3/4 " X 19mm X 25mm	64.7
1 "	33.4	1 " X 19mm X 25mm	71.4
1 1/4"	42.1	1 1/4" X 19mm X 25mm	80.1
1 1/2"	48.2	1 1/2" X 19mm X 25mm	86.2
2 "	60.3	2 " X 19mm X 25mm	98.3
2 1/2 "	73	2 1/2 " X 19mm X 38mm	111
3 "	88.9	3 " X 19mm X 38mm	126.9
3 1/2 "	101.6	3 1/2 " X 19mm X 38mm	139.6
4 "	114.3	4 " X 19mm X 38mm	152.3
5 "	141.3	5 " X 19mm X 38mm	179.3
6 "	168.3	6 " X 19mm X 50mm	206.3
8 "	219.1	8 " X 19mm X 50mm	257.1
10 "	273	10 " X 19mm X 50mm	311
12 "	323.8	12 " X 19mm X 50mm	361.8
14 "	355.6	14 " X 19mm X 50mm	393.6
16 "	406.4	16 " X 19mm X 50mm	444.4
18 "	457.2	18 " X 19mm X 50mm	495.2
20 "	508	20 " X 19mm X 50mm	546
24 "	609.6	24 " X 19mm X 50mm	647.6

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 25mm X 25mm	71.3
3/4 "	26.7	3/4 " X 25mm X 25mm	76.7
1 "	33.4	1 " X 25mm X 25mm	83.4
1 1/4"	42.1	1 1/4" X 25mm X 25mm	92.1
1 1/2"	48.2	1 1/2" X 25mm X 25mm	98.2
2 "	60.3	2 " X 25mm X 25mm	110.3
2 1/2 "	73	2 1/2 " X 25mm X 38mm	123
3 "	88.9	3 " X 25mm X 38mm	138.9
3 1/2 "	101.6	3 1/2 " X 25mm X 38mm	151.6
4 "	114.3	4 " X 25mm X 38mm	164.3
5 "	141.3	5 " X 25mm X 38mm	191.3
6 "	168.3	6 " X 25mm X 50mm	218.3
8 "	219.1	8 " X 25mm X 50mm	269.1
10 "	273	10 " X 25mm X 50mm	323
12 "	323.8	12 " X 25mm X 50mm	373.8
14 "	355.6	14 " X 25mm X 50mm	405.6
16 "	406.4	16 " X 25mm X 50mm	456.4
18 "	457.2	18 " X 25mm X 50mm	507.2
20 "	508	20 " X 25mm X 50mm	558
24 "	609.6	24 " X 25mm X 50mm	659.6

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 32mm X 25mm	85.3
3/4 "	26.7	3/4 " X 32mm X 25mm	90.7
1 "	33.4	1 " X 32mm X 25mm	97.4
1 1/4"	42.1	1 1/4" X 32mm X 25mm	106.1
1 1/2"	48.2	1 1/2" X 32mm X 25mm	112.2
2 "	60.3	2 " X 32mm X 25mm	124.3
2 1/2 "	73	2 1/2 " X 32mm X 38mm	137
3 "	88.9	3 " X 32mm X 38mm	152.9
3 1/2 "	101.6	3 1/2 " X 32mm X 38mm	165.6
4 "	114.3	4 " X 32mm X 38mm	178.3
5 "	141.3	5 " X 32mm X 38mm	205.3
6 "	168.3	6 " X 32mm X 50mm	232.3
8 "	219.1	8 " X 32mm X 50mm	283.1
10 "	273	10 " X 32mm X 50mm	337
12 "	323.8	12 " X 32mm X 50mm	387.8
14 "	355.6	14 " X 32mm X 50mm	419.6
16 "	406.4	16 " X 32mm X 50mm	470.4
18 "	457.2	18 " X 32mm X 50mm	521.2
20 "	508	20 " X 32mm X 50mm	572
24 "	609.6	24 " X 32mm X 50mm	673.6

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 38mm X 25mm	97.3
3/4 "	26.7	3/4 " X 38mm X 25mm	102.7
1 "	33.4	1 " X 38mm X 25mm	109.4
1 1/4"	42.1	1 1/4" X 38mm X 25mm	118.1
1 1/2"	48.2	1 1/2" X 38mm X 25mm	124.2
2 "	60.3	2 " X 38mm X 25mm	136.3
2 1/2 "	73	2 1/2 " X 38mm X 38mm	149
3 "	88.9	3 " X 38mm X 38mm	164.9
3 1/2 "	101.6	3 1/2 " X 38mm X 38mm	177.6
4 "	114.3	4 " X 38mm X 38mm	190.3
5 "	141.3	5 " X 38mm X 38mm	217.3
6 "	168.3	6 " X 38mm X 50mm	244.3
8 "	219.1	8 " X 38mm X 50mm	295.1
10 "	273	10 " X 38mm X 50mm	349
12 "	323.8	12 " X 38mm X 50mm	399.8
14 "	355.6	14 " X 38mm X 50mm	431.6
16 "	406.4	16 " X 38mm X 50mm	482.4
18 "	457.2	18 " X 38mm X 50mm	533.2
20 "	508	20 " X 38mm X 50mm	584
24 "	609.6	24 " X 38mm X 50mm	685.6

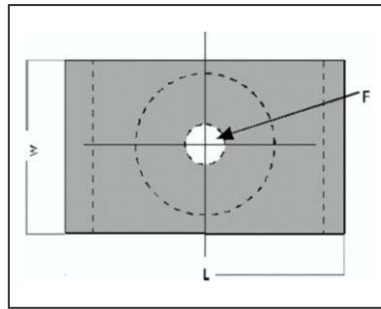
SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 50mm X 25mm	121.3
3/4 "	26.7	3/4 " X 50mm X 25mm	126.7
1 "	33.4	1 " X 50mm X 25mm	133.4
1 1/4"	42.1	1 1/4" X 50mm X 25mm	142.1
1 1/2"	48.2	1 1/2" X 50mm X 25mm	148.2
2 "	60.3	2 " X 50mm X 25mm	160.3
2 1/2 "	73	2 1/2 " X 50mm X 38mm	173
3 "	88.9	3 " X 50mm X 38mm	188.9
3 1/2 "	101.6	3 1/2 " X 50mm X 38mm	201.6
4 "	114.3	4 " X 50mm X 38mm	214.3
5 "	141.3	5 " X 50mm X 38mm	241.3
6 "	168.3	6 " X 50mm X 50mm	268.3
8 "	219.1	8 " X 50mm X 50mm	319.1
10 "	273	10 " X 50mm X 50mm	373
12 "	323.8	12 " X 50mm X 50mm	423.8
14 "	355.6	14 " X 50mm X 50mm	455.6
16 "	406.4	16 " X 50mm X 50mm	506.4
18 "	457.2	18 " X 50mm X 50mm	557.2
20 "	508	20 " X 50mm X 50mm	608
24 "	609.6	24 " X 50mm X 50mm	709.6

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 65mm X 25mm	151.3
3/4 "	26.7	3/4 " X 65mm X 25mm	156.7
1 "	33.4	1 " X 65mm X 25mm	163.4
1 1/4"	42.1	1 1/4" X 65mm X 25mm	172.1
1 1/2"	48.2	1 1/2" X 65mm X 25mm	178.2
2 "	60.3	2 " X 65mm X 25mm	190.3
	73	2 1/2" X 65mm X 38mm	203
3 "	88.9	3 " X 65mm X 38mm	218.9
	101.6	3 1/2" X 65mm X 38mm	231.6
4 "	114.3	4 " X 65mm X 38mm	244.3
5 "	141.3	5 " X 65mm X 38mm	271.3
6 "	168.3	6 " X 65mm X 50mm	298.3
8 "	219.1	8 " X 65mm X 50mm	349.1
10 "	273	10 " X 65mm X 50mm	403
12 "	323.8	12 " X 65mm X 50mm	453.8
14 "	355.6	14 " X 65mm X 50mm	485.6
16 "	406.4	16 " X 65mm X 50mm	536.4
18 "	457.2	18 " X 65mm X 50mm	587.2
20 "	508	20 " X 65mm X 50mm	638
24 "	609.6	24 " X 65mm X 50mm	739.6

SIZE	OD	RSI SIZE	TOTAL OD
1/2 "	21.3	1/2" X 75mm X 25mm	171.3
3/4 "	26.7	3/4 " X 75mm X 25mm	176.7
1 "	33.4	1 " X 75mm X 25mm	183.4
1 1/4"	42.1	1 1/4" X 75mm X 25mm	192.1
1 1/2"	48.2	1 1/2" X 75mm X 25mm	198.2
2 "	60.3	2 " X 75mm X 25mm	210.3
2 1/2 "	73	2 1/2 " X 75mm X 38mm	223
3 "	88.9	3 " X 75mm X 38mm	238.9
3 1/2 "	101.6	3 1/2 " X 75mm X 38mm	251.6
4 "	114.3	4 " X 75mm X 38mm	264.3
5 "	141.3	5 " X 75mm X 38mm	291.3
6 "	168.3	6 " X 75mm X 50mm	318.3
8 "	219.1	8 " X 75mm X 50mm	369.1
10 "	273	10 " X 75mm X 50mm	423
12 "	323.8	12 " X 75mm X 50mm	473.8
14 "	355.6	14 " X 75mm X 50mm	505.6
16 "	406.4	16 " X 75mm X 50mm	556.4
18 "	457.2	18 " X 75mm X 50mm	607.2
20 "	508	20 " X 75mm X 50mm	658
24 "	609.6	24 " X 75mm X 50mm	759.6



FLEXIBLE EXPANSION JOINTS

**APPLICATION:**

SPRING HANGERS are used to isolate suspended sources of both noise and vibration. Suspended mechanical equipment such as air handling units, FCU's cabinet fans, piping and ductwork in close proximity to rotating mechanical equipment are typical applications of model hangers.

FEATURES:

SPRING HANGERS consist of freestanding; laterally stable steel springs in series with a moulded elastomeric element assemble into a stamped and welded hanger bracket. The hanger brackets and the springs are powder coated. Spring Vibration isolation hangers are designed to provide high efficiency isolation from structure-borne vibration and noise. Springs are colour-coded according to load ratings and are designed for 50% overload.

PRODUCT CODE	COLOUR CODE	RATED LOAD (KG)	DEFLECTION (MM)	M (MM)	L (MM)	W (MM)	H (MM)	F (MM)	TOP HOLE (MM)
TGSPH02500015	WHITE	15	20	53	57	38	70	10	12
TGSPH02500030	YELLOW	30	20	53	57	38	70	10	12
TGSPH02500050	PURPLE	50	20	53	57	38	70	10	12
TGSPH02500010	PURPLE	10	25	53	62	52	100	12	13
TGSPH02500015	YELLOW	15	25	53	62	52	100	12	13
TGSPH02500020	GREY	20	25	53	62	52	100	12	13
TGSPH02500040	LIGHT BLUE	40	25	53	62	52	100	12	13
TGSPH02500060	GREEN	60	25	53	62	52	100	12	13
TGSPH02500100	GREEN	100	25	83	90	65	125	14	15
TGSPH02500160	ORANGE	160	25	83	90	65	125	14	15
TGSPH02500200	RED	200	25	83	90	65	125	14	15
TGSPH02500250	PURPLE	250	25	83	90	65	125	14	15
TGSPH02500300	GREY	300	25	102	112	95	165	18	19
TGSPH02500400	ORANGE	400	25	102	112	95	165	18	19
TGSPH02500500	BROWN	500	25	102	112	95	165	18	19
TGSPH02500600	BLACK	600	25	102	112	95	165	18	19
TGSPH02500800	RED	800	25	102	112	95	165	18	19
TGSPH025001050	WHITE	1050	25	102	112	95	165	18	19
TGSPH025001250	GREEN	1250	25	102	112	95	165	18	19

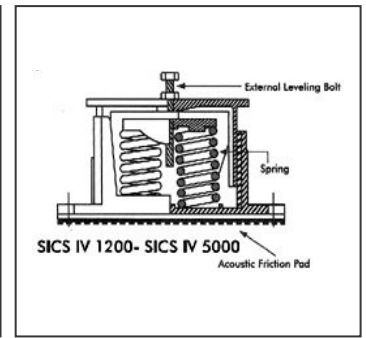
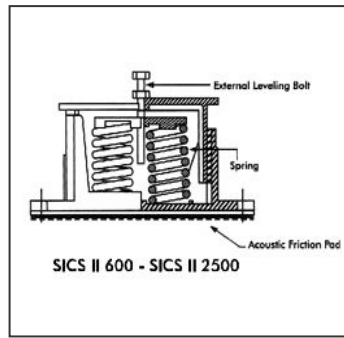
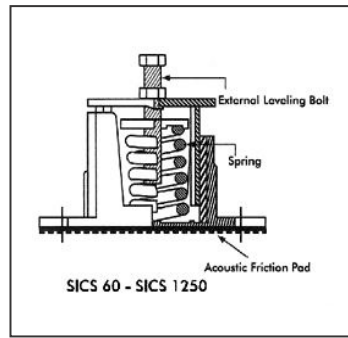
Due to policy of continual improvement, the specifications are subject to change without prior notice.

Measurements are subject to 5% tolerance.

To achieve good sound suppressions do not over load fitting.

Compliance – Springs designed according to BS 1726 (Part 1) : 1987 and recommendations made by SAE (US)

APPLICATION EXAMPLES:



DESIGN FEATURES:-

- Colour coded spring to facilitate identification.
- Powder coated springs.
- Load upto 5000 kgs.
- Deflection upto 25mm.
- 4 Models
- 26 Load Ranges
- Deflection is at rated load with 15% Tolerances
- All mounts have approximately 50% over load capacity.
- Unique mount design provides horizontal stability, high loading capacity and protective spring enclosure.
- All Mounts have external leveling casing arrangement, capable of compensating for full static deflection.
- Inner walls of lower casing have resilient rubber snubbers which
 - Eliminates possibility of binding by providing a smooth guide path for the top casing
 - Limits lateral movement, particularly due to start up, start – up, shut – down and horizontal wind load
- Prevents isolator short – circuiting by avoiding metal to metal contact.
- Neoprene inserts below springs and 6 mm thick ribbed base pad act as noise breaks for high frequencies in the audible range, which can otherwise get transmitted to building structure.
- Mounting must be adjusted so that upper housing clears lower housing by at least 6mm & not more than 12mm

TYPICAL APPLICATION:

Application examples include – Chillers, AHU'S pumps, centrifugal / Axial Fans, Condensing Units, Rooftop Packaged units, Reciprocating compressors , DG sets , Punch presses, Drop Hammers, Floor Pipe supports (Normally at first few pipe supports points leading from isolated equipments.)

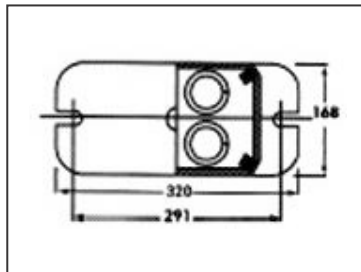
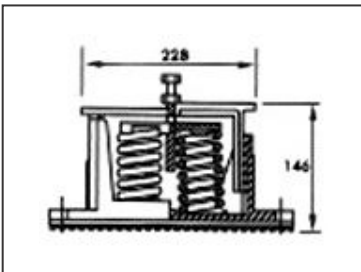
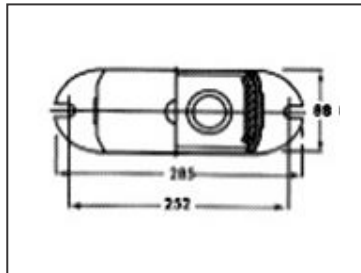
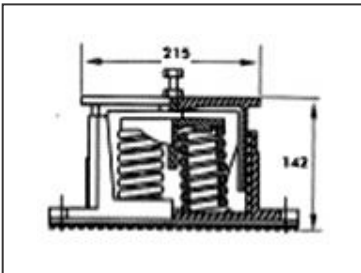
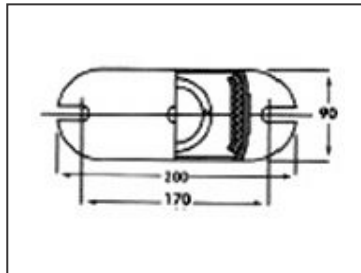
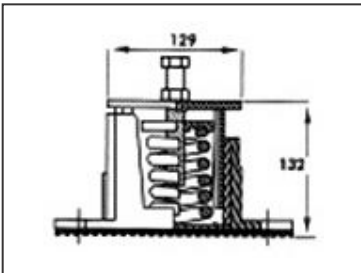
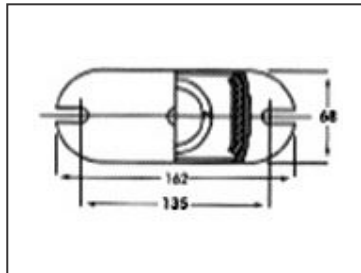
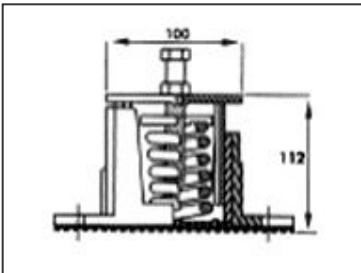
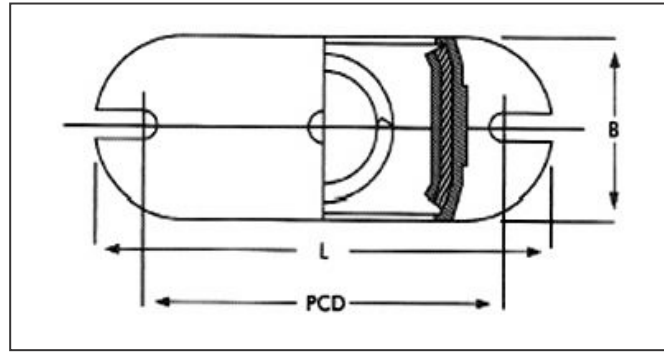
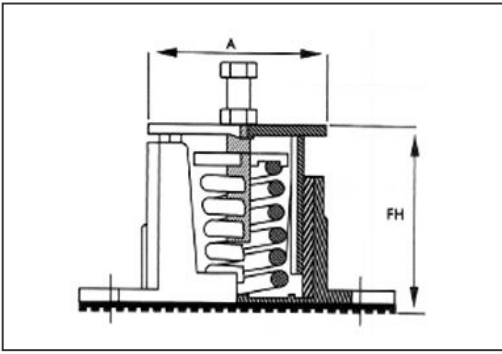
NOTE:

Custom load and deflection are also available.

Compliance – Springs designed according to BS 1726 (Part 1) : 1987 and recommendations made by SAE (US)

APPLICATION EXAMPLES:





PRODUCT CODE	COLOUR CODE	RATED LOAD (KG)	DEFLECTION (MM)
TGCSM00000060	BLUE	60	25
TGCSM00000100	GREEN	100	25
TGCSM00000160	ORANGE	160	25
TGCSM00000200	RED	200	25
TGCSM00000250	PURPLE	250	25
TGCSM00000300	GREY	300	25
TGCSM00000400	ORANGE	400	25
TGCSM00000500	BROWN	500	25
TGCSM00000500	BLACK	600	25
TGCSM00000800	RED	800	25
TGCSM00001050	WHITE	1050	25
TGCSM00001250	GREEN	1250	25
TGCSMII000600	GREY	600	25
TGCSMII000800	ORANGE	800	25
TGCSMII001050	BROWN	1000	25
TGCSMII001250	BLACK	1200	25
TGCSMII001600	RED	1600	25
TGCSMII002100	WHITE	2100	25
TGCSMII002500	GREEN	2500	25
TGCSMIV001200	GREY	1200	25
TGCSMIV001600	ORANGE	1600	25
TGCSMIV002000	BROWN	2000	25
TGCSMIV002400	BLACK	2400	25
TGCSMIV003200	RED	3200	25
TGCSMIV004200	WHITE	4200	25
TGCSMIV005000	GREEN	5000	25

Compliance – spring designed according to BS 1726 (PART 1): 1987 and recommendations made by SAE (US)



This unique range of open spring mounting uses an integral rubber and fixing of the spring which sets them apart from all other designs. Loose spring and plates are now history and high frequency and noise attenuation is provided regardless of whether rubber seating pad is used or not.

Originally designed for use with type IPF inertia pouring frames the mountings are now widely used to isolate vibration from every conceivable type of rotating and reciprocating machine. Some examples being air handing units axial and centrifugal fans, low level pipe work. Ductwork condensing units, pumps generating sets, chillers, etc. where control of transient motion is required, Open spring mountings can be used in conjunction with our viscous dampers type.

DESIGN FEATURES:

Unique expanding rubber and fixing of spring which also provides high frequency attenuation Spring with 50% overload capacity.

Can be bolted to supporting structure or free standing on 6 mm thick rubber pad.

Fully height adjustable

Zinc plated metals

No snubbing gives maximum efficiency.

SIZE	LOAD RANGE (KG)	NOMINAL DEFLECTION (MM)
TGOSM00000025	30-2300	25
TGOSM00000050	510-1300	50

ISOLATION EFFICIENCY AT TYPICAL MACHINE SPEEDS:

M/C SPEED (RPM)	EFFICIENCY %		
	15 MM DEFL	25 MM DEFL	50 MM DEFL
300	DO NOT USE	34.0	75.2
500	68.7	83.3	92.3
150	88.1	93.2	96.7
1000	93.7	96.3	98.2
1200	95.5	97.4	98.7
1500	97.3	98.4	99.2
1750	98.0	99.8	99.4
2000	98.5	99.1	99.5

These above figures are theoretical values only based on the vertical natural frequency of the spring system assuming in infinity stiff structural supports. The effects of high frequency spring coil resonances on low frequency performance are also ignored.

Due to policy of continual improvement, the specifications are subject to change without prior notice.

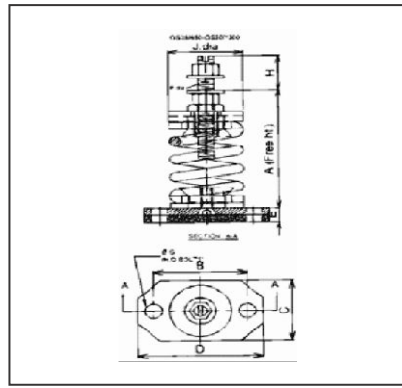
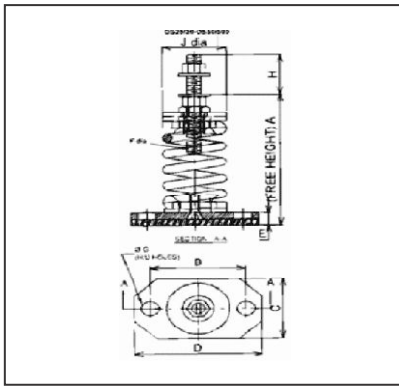
Measurements are subject to 5% tolerance.

To achieve good sound suppressions do not over load fitting.

Compliance – Springs designed according to BS 1726 (Part 1) : 1987 and recommendations made by SAE (US)

APPLICATION EXAMPLES:

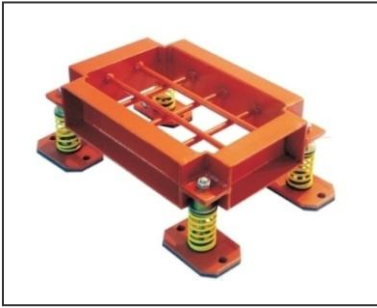




PRODUCT CODE	COLOUR CODE	RATED LOAD (KG)	DEFLECTION AT RATED LOAD	DIMENSIONS (MM)									
				A	B	C	D	E	F	G	H	J	
TGOSM02500030	YELLOW	30	25										
TGOSM02500060	GREEN	60	25										
TGOSM02500100	BLUE	100	25	115	85	70	110	10	M10	10	20	55	
TGOSM02500160	WHITE	160	25										
TGOSM02500250	RED	250	25										
TGOSM02500200	RED	200	25										
TGOSM02500300	PURPLE	300	25										
TGOSM02500400	GREY	400	25										
TGOSM02500500	ORANGE	500	25	160	110	100	140	11	M16	12	27	75	
TGOSM02500600	BROWN	600	25										
TGOSM02500700	ORANGE	700	25										
TGOSM02500800	BLACK	800	25										
TGOSM05000100	YELLOW	100	50										
TGOSM05000200	GREEN	200	50										
TGOSM05000300	BLUE	300	50	188	110	100	140	11	M16	12	27	75	
TGOSM05000400	WHITE	400	50										
TGOSM05000500	BLACK	500	50										
TGOSM02500650	YELLOW	650	26										
TGOSM02500850	GREEN	850	27	182	110	110	140	11	M16	12	27	75	
TGOSM02501050	BLUE	1050	26										
TGOSM02501250	WHITE	1250	26										
TGOSM02501300	RED	1300	27										
TGOSM02501600	PURPLE	1600	25	225	210	150	250	18	M24	16	51	75	
TGOSM02502000	GREY	2000	26										
TGOSM02502300	BROWN	2300	29										
TGOSM05000510	PURPLE	510	51										
TGOSM05000760	GREY	760	51	240	210	150	250	18	M20	16	42	72	
TGOSM05001000	ORANGE	1000	50										
TGOSM05001300	BROWN	1300	53										

*Spring Stiffness is linear over its working range.

- Due to policy of continual improvement, the specifications are subject to change without prior notice.
- Measurements are subject to 5% tolerance.
- To achieve good sound suppressions do not over load fitting.
- Compliance – Springs designed according to BS 1726 (Part 1) : 1987 and recommendations made by SAE (US)



INTRODUCTION:

Inertia Base should be used where the machine to be vibration isolated produces large unbalanced forces which would result in excessive motion if supported directly on spring or rubber based isolators. They should also be used where the machine is subject to external forces or is inherently unstable.

Saketh's Inertia Base come in several standard sizes as listed in our catalogue. However these bases can also be manufactured to any size and specifications, even for heavier and more complex vibration isolation would normally recommend 6 isolators or more for exceptionally large bases.

EXAMPLES OF EQUIPMENT REQUIRING INERTIA BASE ARE AS FOLLOWS:-

- Reciprocating Compressors
- Diesel Generating Sets
- Engine / Dynamometer Test Rigs
- Refrigeration Plants
- Pumps (Particularly Belt Driven Types)

FEATURES:-

- Fully welded steel construction with integral concrete reinforcement fixed at 40 mm above bottom of frame.
- Recessed height reducing corner brackets designed to accept standard Saketh's type SEOS open spring mountings.
- Range of standard size frames available in three thicknesses 150, 200, 300 & 350 mm.
- Frame thicknesses not less than $L/12$ where 'L' is the longest side of the frame.
- Finished with a single coat of red oxide primer on external surface only.

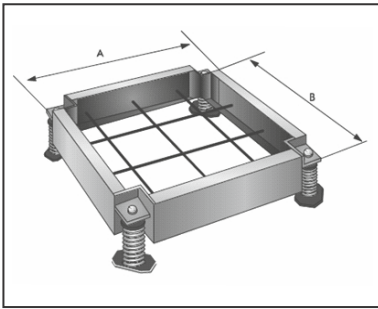
Due to policy of continual improvement, the specifications are subject to change without prior notice.

Measurements are subject to 5% tolerance.

To achieve good sound suppressions do not over load fitting.

APPLICATION EXAMPLES:





ORDERING INFORMATION REQUIRED:-

- Equipment Model / Make
- HP/ RPM Of motor
- Static weight of equipment.
- Operating / Dynamic weight of equipment
- Outside Dimensions L X B X H
- Concrete Plinth Y/N.
- Height / Space constraint if any
- Required Deflection offspring(25 mm /50mm)
- Location- Ground / Roof / Basement.

NOTES:

Frame weights include concrete density at 2400 kg/m³ and mounting selections are base allowing 50% additional weight for the equipment to be supported Nominal 25 mm deflection type (open Spring Isolators) have been listed, however the exact deflection will vary depending on the applied load. When ordering bases should be specified as follows - 150 - 600 X 900 other size .Type and Thickness required and plan dimensions commencing with smallest length. Mounting should also be listed e.g. "25/100 - BULE"

IMPORTANT:

The equipment should be located on the base such that the load is evenly distributed over the 4 mountings. Equipment and ancillary parts should not overhang frame and hold down 100 mm from the outer edge of the bolts must not be at a distance less than base. All the connections to the equipment should incorporate flexible sections and pipe work etc. must independently supported. Concrete plinth if any should be at least 200 mm more than the size of base in all directions. In case of installation of snubbers it should be increased to 300 mm.

AVAILABLE FRAME SIZES:

SR. NO	FRAME SIZE	THICKNESS AVAILABLE		
1	600 x 600	50 MM	100 MM	150 MM
2	600 x 750	50 MM	100 MM	150 MM
3	600 x 900	50 MM	100 MM	150 MM
4	600 x 1200	50 MM	100 MM	150 MM
5	600 x 1500	50 MM	100 MM	150 MM
6	700 x 700	50 MM	100 MM	150 MM
7	700 x 900	50 MM	100 MM	150 MM
8	700 x 1200	50 MM	100 MM	150 MM
9	700 x 1400	50 MM	100 MM	150 MM
10	700 x 1600	50 MM	100 MM	150 MM
11	800 x 800	50 MM	100 MM	150 MM
12	800 x 1000	50 MM	100 MM	150 MM
13	800 x 1200	50 MM	100 MM	150 MM
14	800 x 1600	50 MM	100 MM	150 MM
15	1200 x 1600	50 MM	100 MM	150 MM
16	800 x 1800	50 MM	100 MM	150 MM
17	900 x 1800	50 MM	100 MM	150 MM
18	1000 x 1000	50 MM	100 MM	150 MM
19	1000 x 1200	50 MM	100 MM	150 MM
20	1000 x 1500	50 MM	100 MM	150 MM
21	1000 x 1700	50 MM	100 MM	150 MM
22	1000 x 2000	50 MM	100 MM	150 MM
23	1200 x 2200	50 MM	100 MM	150 MM

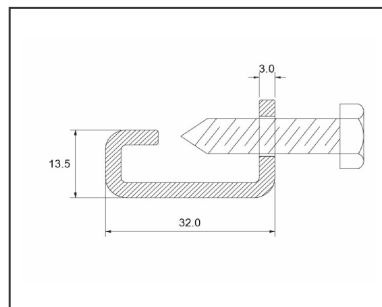
- NOTE :** - Any non standard siz inertai base can be manufacture suitable to pump & motor assembly.
 - Selection of vibration isolators is base on motor & pump weigh.

APPLICATION EXAMPLES:





PRODUCT CODE	POINT LOAD KGS	DEFLECTION MM	ROD SIZE MM
TGRH000000010	10	8	10
TGRH000000020	20	8	10
TGRH000000030	30	8	10
TGRH000000050	50	8	10
TGRH000000070	70	10	10
TGRH000000120	120	10	10



BOLT: M10 X 25 MM

MATERIAL: Mild Steel

THICKNESS: 3.0 MM

FINISH: Electro-Galvanized

DIMENSIONS: Mention in above drawing

APPLICATION EXAMPLES:





TYPICAL APPLICATIONS

- Duct Mount consist of a resilient rubber mount held between two plated steel caps
- For uniform distribution of load.If has an integral extended rubber sleeve which prevents direct metal-to-metal contact,thereby minimising transmission of noise and vibration.

SUSPENSION OF

- Fan Coil Units
- Pipes
- Ducts
- Brackets
- Light Weight Equipment

FLOOR MOUNTING OF

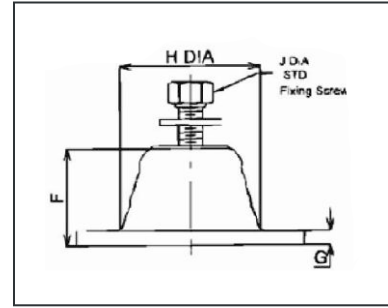
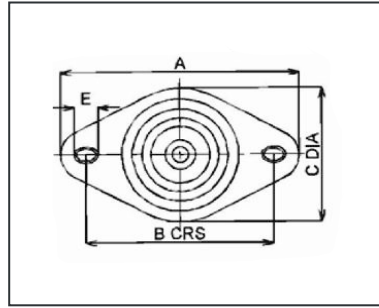
(using rubber element only)

- Refrigerators
- Domestic Appliances
- Industrial Equipments

PRODUCT CODE	POINT LOAD KGS	DEFLECTION MM	ROD SIZE MM
TGDM0S0000050	50	4	10
TGDM0B0000100	100	4	10

APPLICATION EXAMPLES:





TURRET MOUNT rubber mountings are designed to provide superior attenuation of medium to high frequency vibration and noise emanating from wide range of motor driven machines particularly axial and centrifugal fans, high resilience rubber with low dynamic to static stiffness ratio ensures maximum efficiency, good creep performance and long service life.

DESIGN FEATURES:

Moulded in first grade natural rubber with integral steel base and upper fixing boss.

Also available with oil & environment resistant durable neoprene/Nitrile Rubber.

Manufactured in three sizes, each available in three rubber compounds identified by a colour spot.

Static deflections of up to 8mm with loads from 5kg to 400 kg.

TYPICAL APPLICATIONS:

Axial and Centrifugal Fans

Air Handling Units

Air Conditioning equipments

Packaged Air Conditioners

Floating Floors

Generators & Mobile Equipments

Pumps & Refrigeration Plants

Rotary and Multi Cylinder Compressors.

NOTE: Turret mountings should not be used on machines exhibiting high out of balance forces without restraining bolt.

PRODUCT CODE	COLOUR CODE	RATE LOAD (KG)	DEFLECTION AT RATE	NOMINAL DIMENSION (MM)									APPROX WT. (KG)	
				A	B	C	D	E	F	G	H	J		
TGTM0100Y0028	YELLOW	28												
TGTM0100B0050	BLUE	50	6	80	57	45	9	12	32	5	41	M8 X 20	0.11	
TGTM0100R0080	RED	80												
TGTM0101Y0110	YELLOW	110												
TGTM0101B0180	BLUE	180	8	95	71	60	9	14	45	5	56	M10 X 25	0.25	
TGTM0101R0280	RED	280												
TGTM0102Y0150	YELLOW	150												
TGTM0102B0260	BLUE	260	8	150	115	86	11	22	70	6	82	M12 X 30	0.73	
TGTM0102R0400	RED	400												

- Due to policy of continual improvement, the specifications are subject to change without prior notice.
- Measurements are subject to 5% tolerance.
- To achieve good sound suppressions do not over load fitting



RIBBED MOUNTING PAD

Specifications:

- Alternate High/ Low Ribbed Construction.
- Easy to Cut.
- Pads can be cut slightly larger than the size of leg of machines using shear or knife
- Easy Field Installation.
- Multiple layers of Ribbed Mounting Pad can be used to increase deflection.

PRODUCT CODE

SIZE (INCHES)

TGRMP38003003

3/8" x 18" x 18"

TGRMP38004004

3/8" x 12" x 12"

TGRMP38006006

3/8" x 8" x 8"

TGRMP38008008

3/8" x 6" x 6"

TGRMP38012012

3/8" x 4" x 4"

TGRMP38018018

3/8" x 3" x 3"



WAFFLE PADS

Specifications:

- Designed within built suction cups.
- Easy Cut design without tools allows job site flexibility
- No need for bolting.
- Easy field Installation.

PRODUCT CODE

SIZE (INCHES)

TGWP034002002

3/4" x 18" x 18"

TGWP034004004

3/4" x 12" x 12"

TGWP034006006

3/4" x 8" x 8"

TGWP034008008

3/4" x 6" x 6"

TGWP034012012

3/4" x 4" x 4"

TGWP034018018

3/4" x 3" x 3"

- Due to policy of continual improvement, the specifications are subject to change without prior notice.
- Measurements are subject to 5% tolerance.
- To achieve good sound suppressions do not over load fitting.

APPLICATION EXAMPLES:





CORK SANDWICH PADS

Specifications:-

- Cork sandwich Pads are laminated pads having 1/2" thick close grained cork securely bonded between two layers of 1/4" alternate low high ribbed Neoprene rubber pads.
- Offers highest level of sound attenuation and vibration isolation.
- No need for bolting.

PRODUCT CODE

SIZE (INCHES)

TGCSP78003003

7/8" x 18" x 18"

TGCSP78004004

7/8" x 12" x 12"

TGCSP78006006

7/8" x 8" x 8"

TGCSP78008008

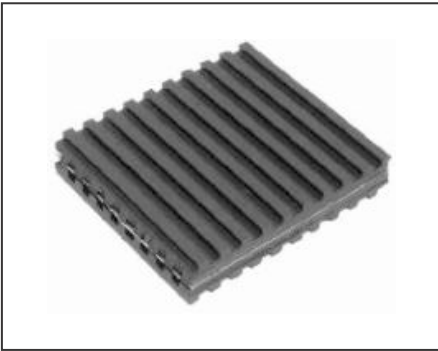
7/8" x 6" x 6"

TGCSP78012012

7/8" x 4" x 4"

TGCSP78018018

7/8" x 3" x 3"



METAL SANDWICH PADS

Specifications:-

- Metal Sandwich Pads are constructed of a steel plate bonded
- Ribbed Anti Vibration Pads.
- Designed for very high load capacity.

PRODUCT CODE

SIZE (INCHES)

TGMSP78018018

7/8" x 18" x 18"

TGMSP78012012

7/8" x 12" x 12"

TGMSP78008008

7/8" x 8" x 8"

TGMSP78006006

7/8" x 6" x 6"

TGMSP78004004

7/8" x 4" x 4"

TGMSP78003003

7/8" x 3" x 3"

- Due to policy of continual improvement, the specifications are subject to change without prior notice.
- Measurements are subject to 5% tolerance.
- To achieve good sound suppressions do not over load fitting.

APPLICATION EXAMPLES:





This Rubber Expansion Joint is a totally effective Tembo's solution for unwanted vibration in heating and air conditioning systems. Available in the common HVAC, plumbing and Fire Fighting pipeline sizes, it is ideal for motion compensation, vibration elimination, and noise control and stress relief.

Manufactured to a fully moulded spherical design the style has a high pressure rating with the added benefit of a non-clogging, long radius Arch. available in Natural rubber and many different polymers like EPDM, Neoprene, and Butyl Having a wide range of flange drilling standards to your building services requirements.

This Floating Flange is designed as per the latest International Standards of FSA & EJMA (USA) are used all over the world. Further, the most beneficial advantage is that if replacement is required it can be replaced without distributing the welded flange due to floating / rotating flange design.

PRODUCT CODE	SIZE I.D (MM)	STANDARD F/F LENGTH (MM)	OPERATING CONDITION				EXPRESSION JOINTS STYLE
			AXIAL COMPOSITION (MM)	ELONGATION (MM)	LATERAL (MM)	ANGULAR DEGREES	
TGSAF00000073	65	150	13	12	13	15"	SI 400
TGSAF00000089	80	150	13	12	13	15"	SI 400
TGSAF00000114	100	150	16	12	16	15"	SI 400
TGSAF00000141	125	150	16	12	16	15"	SI 400
TGSAF00000168	150	150	16	12	16	15"	SI 400
TGSAF00000219	200	150	16	12	16	15"	SI 400
TGSAF00000273	250	200	16	15	16	15"	SI 400
TGSAF00000323	300	200	16	15	16	15"	SI 400
TGSAF00000356	350	200	16	15	16	15"	SI 400

TEMPERATURE / PRESSURE RATINGS :-

Maximum Temperature Maximum Pressure Rating	115° C (Neoprene /EPDM) 16 bar
Working pressure depends on temperature and at higher temperature and at higher temperature , the pressure ratings are reduced slightly	

FLANGE DRILLING TO

BS table D/ E/ F ANSI B16.5 Class 125/ 150 BS 4504 / DIN 2501 or as per customer requirement

ELASTOMERS

Neoprene - Provides excellent resistance to oxidation, ozone and sunlight ageing. Good resistance to oil.

EPDM

Good for hot and cold water service and chemicals.

FLANGES

Expansion joints are furnished with zinc plated steel flanges.They rotate easily on the bellow which allows for simple bolt alignment.

CONTROL UNITS

Tie rods and gusset plates are normally recommended and can be supplied along with the bellows.

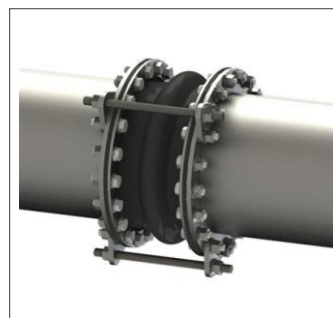
WARNINGS :

Control unit must be used unless piping is properly anchored. When Expansion joints are installed pipelines or equipment carrying fluids and gases at a elevated temperatures and precautions should be taken to ensure proper installation and regular inspection . Care is required to protect personnel in the event of leakage or splash.

NOTE : Maximum pressure rating is based on 40 C operating temperature.

- Due to policy of continual improvement, the specification are subject to change without prior notice.
- Measurements are subject to 5% tolerance.

APPLICATION EXAMPLES:





This Rubber Expansion Joint is a totally effective Tembo's solution for unwanted vibration in heating and air conditioning systems. Available in the common HVAC, Plumbing and Fire Fighting pipeline sizes, it is ideal for motion compensation, vibration elimination, and noise control and stress relief.

Manufactured to a fully moulded spherical design the style has a high pressure rating with the added benefit of a non-clogging, long radius Arch. Available in Natural rubber and many different polymers like EPDM, Neoprene, Nitrile, and Butyl having a wide range of flange drilling standards to your building services requirements.

This Floating Flange is designed as per the latest International Standards of FSA & EJMA (USA) which are used all over the world. Further, the most beneficial advantage is that if replacement is required it can be replaced without distributing the welded flange due to floating/rotating flange design.

SIZE I.D (MM)	STANDARD F/F LENGTH (MM)	OPERATING CONDITION				EXPANSION JOINTS STYLE
		AXIAL COMP ^N (MM)	ELONGATION (MM)	LATERAL (MM)	ANGULAR DEGREES	
25	150	13	12	13	15°	SI 400
32	150	13	12	13	15°	SI 400
40	150	13	12	13	15°	SI 400
50	150	13	12	13	15°	SI 400
65	150	13	12	13	15°	SI 400
80	150	13	12	13	15°	SI 400
100	150	16	12	16	15°	SI 400
125	150	16	12	16	15°	SI 400
150	150	16	12	16	15°	SI 400
200	150	16	12	16	15°	SI 400
250	200	16	15	16	15°	SI 400
300	200	16	15	16	15°	SI 400
350	200	16	15	16	15°	SI 400

TEMPERATURE / PRESSURE RATINGS :-

Maximum Temperature Pressure Vacuum Rating	115°C (Neoprene /EPDM) 16 bar
Working pressure depends on temperature and at higher temperature and at higher temperature , the pressure ratings are reduced slightly	

FLANGE DRILLING TO

BS table D/ E/ F ANSI B16.5 Class 125/ 150 BS 4504 / DIN 2501 or as per customer requirement

ELASTOMERS

Neoprene - Provides excellent resistance to oxidation, ozone and sunlight ageing. Good resistance to oil.

EPDM

Good for hot and cold water service and chemicals.

FLANGES

Expansion joints are furnished with zinc plated steel flanges.They rotate easily on the bellow which allows for simple bolt alignment.

CONTROL UNITS

Tie rods and gusset plates are normally recommended and can be supplied along with the bellows.

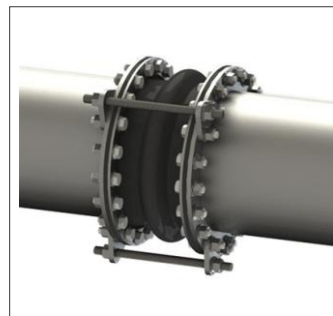
WARNINGS :

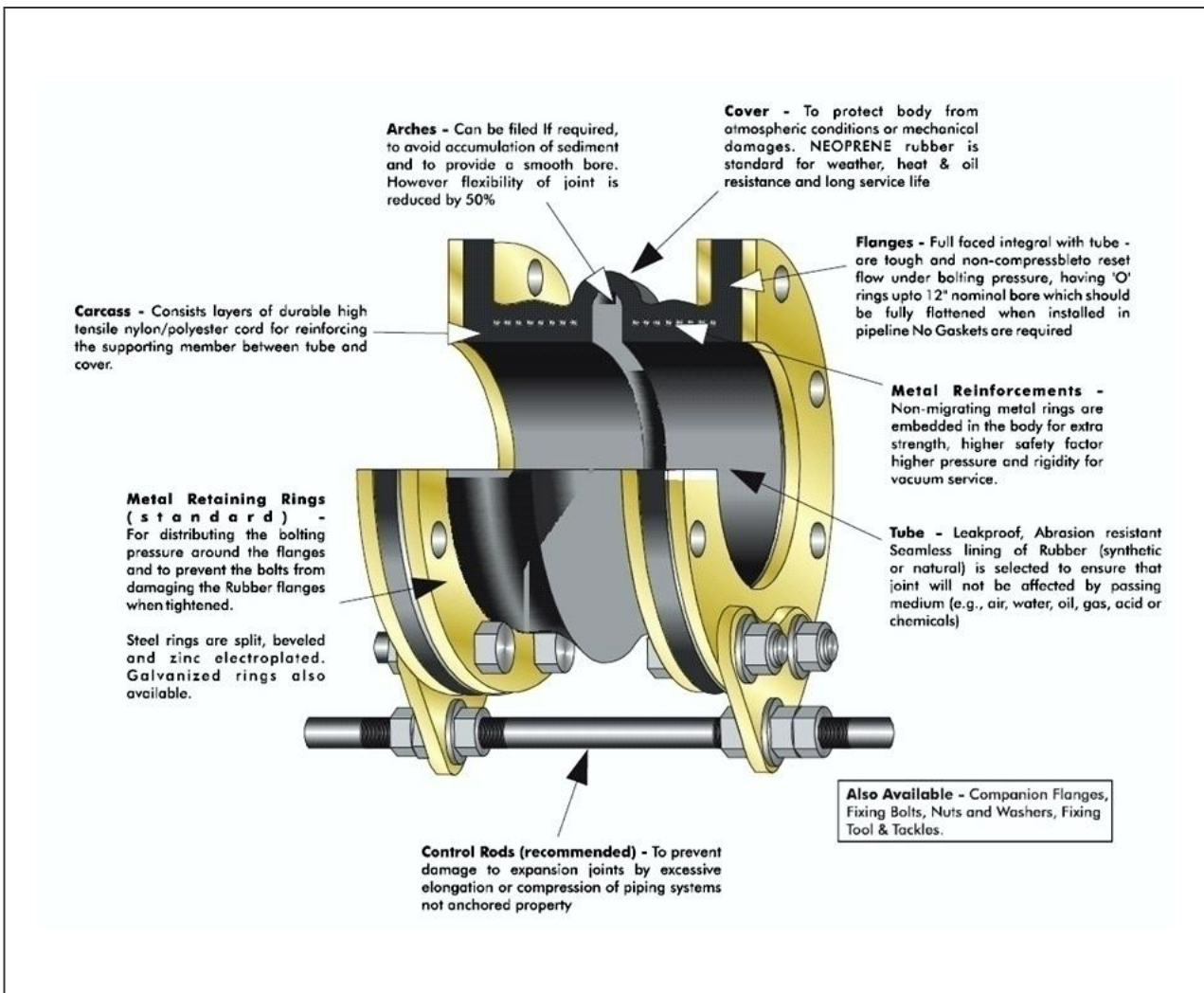
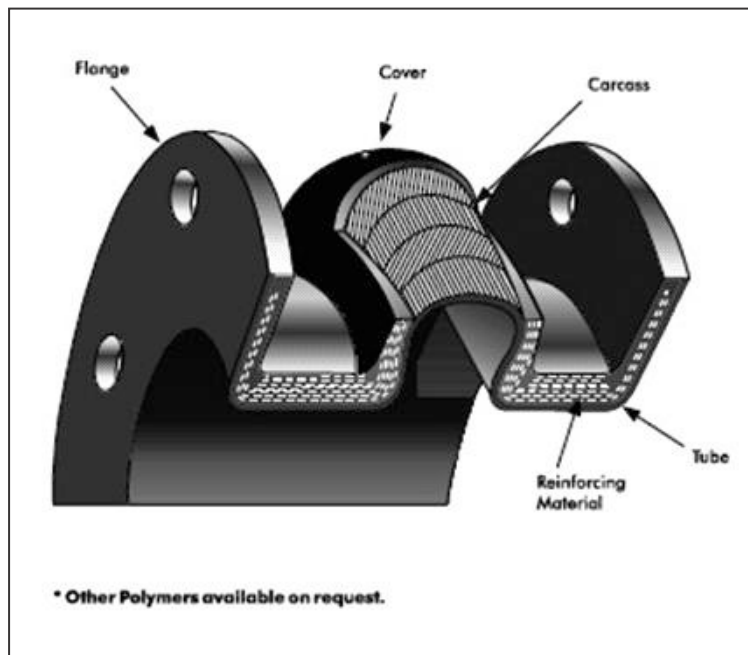
Control unit must be used unless piping is properly anchored. When Expansion joints are installed pipelines or equipment carrying fluids and gases at a elevated temperatures and precautions should be taken to ensure proper installation and regular inspection . Care is required to protect personnel in the event of leakage or splash.

NOTE : Maximum pressure rating is based on 40°C operating temperature.

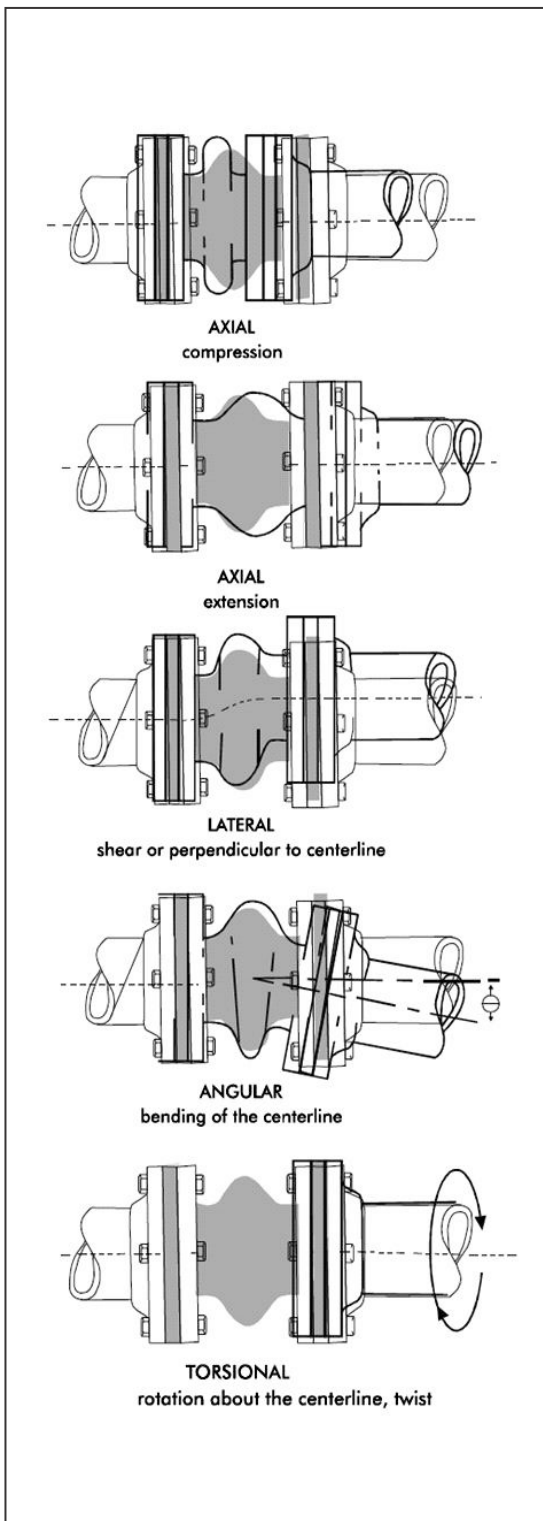
- Due to policy of continual improvement, the specification are subject to change without prior notice.
- Measurements are subject to 5% tolerance.

APPLICATION EXAMPLES:





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- Measurements are subject to 5% tolerance.
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The purpose of an Expansion joints in general, regardless of design or materials of construction, is to provide a point of flexibility in a piping or duct system in order to absorb the growth of the piping due to thermal changes in the media and/or the environment, and to absorb the dynamic movements of machinery, buildings and structures that the piping is attached to or a part of.

The Rubber Expansion joints, because of the non-metallic nature of its construction, offers the piping and ductwork designer advantages within the temperature and pressure ranges of these joints, which cannot be matched by all metal expansion, joints. Consisting of flanged ends and a flexible section, much the same as a flanged metal bellows, the rubber expansion joints can absorb within its free length more movements, particularly lateral, than any other joint of similar overall size and pressure rating.

The flexible section of a Rubber Expansion Joints is most often a single convolution, which, because of the inherent flexibility of the material, can accept large lateral movements with low force, phenomena which requires multiple convolutions in metal bellows. During axial and angular movements, the rubber convolution deflects much the same way that the metal convolution does. The limits of these motions are determined by the geometric shape and size of the convolution and the inherent pressure resisting capacity of the design.

The manner in which the pressure loads are resisted in a Rubber Expansion joints is the major difference between Rubber and Metal Bellows. Circumferential (hoop) loads due to pressure are carried by the convolution itself in metallic bellows. In a Rubber Expansion joint, the convolution is basically incapable of resisting pressure by itself, but is supported by the adjacent rubber tube with its internal fabric and / or fabricmetal reinforcing, or by the attachment flanges themselves.

All Tembo's Units have integrally moulded flanges, sized and drilled to much standard flanges. All Rubber Expansion joints require metallic split retaining rings behind the flanges to back up protect the rubber integral flanges. Control rods must be used to protect expansion joints from excessive movement if piping system is not properly anchored and are normally recommended for most piping installations.

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- Measurements are subject to 5% tolerance.
- To achieve good results do not over load fitting more than designed parameters as per drawing / catalogue

**APPLICATION:**

- Inlet and outlet of fan coil Units, Air Handling Units, Chillers and Condensers.
- Air Suction and discharge of pumps.
- Intervals in Chilled water piping .
- Installation of flexible Pipe Connectors is recommended to allow for axial pipe movement due to thermal expansion or contraction, thereby protecting the building structure from damaging stress. These connectors also help to isolate the low and high frequency vibration transmitted through pipe walls.
- The triangular flange design offer much better reliability, safety and convenience as compared to union type connectors.
- Allows for both Axial and Horizontal movement.
- Unique pressurized steel wire strand for addiitiional safely.

CONSTRUCTION FEATURES:

Bellow	: Neoprene / EPDM
Reinforcement	: Nylon cord fabric
Pressurized Ring	: Steel Wire Strand
Flanges	: Forged Steel, Threaded to BS 21. NPT on request
	: Epoxy powder coated for corrosion resistance
	: Nut and bolts electrogalvanized.
	: Floating triangular thread design

TECHNICAL DATA:

Working Pressure	: 290 psi / 20 Bar
Temperture Range	: -15 deg C to 115 deg C .
Working Media	: Water, Compressed Air, Oil, Weak Acids / Alkalines

PRODUCT CODE	SIZE INCHES	AXIAL DISPLACEMENT		LENGTH MM	DEFLECTION ANGLE
		ELONGATION	COMPRESSION		
TGTFC00000027	3/4"	6	22	160	45
TGTFC00000034	1"	6	22	160	45
TGTFC00000042	1 1/4"	6	22	160	45
TGTFC00000048	1 1/2"	6	22	160	45
TGTFC00000060	2"	6	22	180	45

**APPLICATION:**

- Inlet and outlet of fan coil Units, Air Handling Units , Chillers and Condensers.
- Air Suction and discharge of pumps.
- Intervals in Chilled water piping .
- Installation of flexible Pipe Connectors is recommended to allow for axial pipe movement due to thermal expansion or contraction, thereby protecting the building structure from damaging stress. These connectors also help to isolate the low and high frequency vibration transmitted through pipe walls.
- Allows for both Axial and Horizontal movement.
- Unique pressurized steel wire strand for addiitional safely.

CONSTRUCTION FEATURES:

Bellow	: Neoprene / EPDM
Reinforcement	: Nylon cord fabric
Pressurized Ring	: Steel Wire Strand
Flanges	: Forged Steel, Threaded to BS 21. NPT on request
	: Epoxy powder coated for corrosion resistance
	: Nut and bolts electrogalvanized.
	: Floating triangular thread design

TECHNICAL DATA:

Maximum Pressure	: 250 psi / 17 Bar
Burst pressure	: 650 psi / 45 bar
Temperature Range	: -15 deg C to 115 deg C.
Working Media	: Water Compressed Air, Oil , Weak Acids / Alkaline.
Vacuum	: 700 mm Hg

CONNECTION : FEMALE THREAD BOTH SIDES

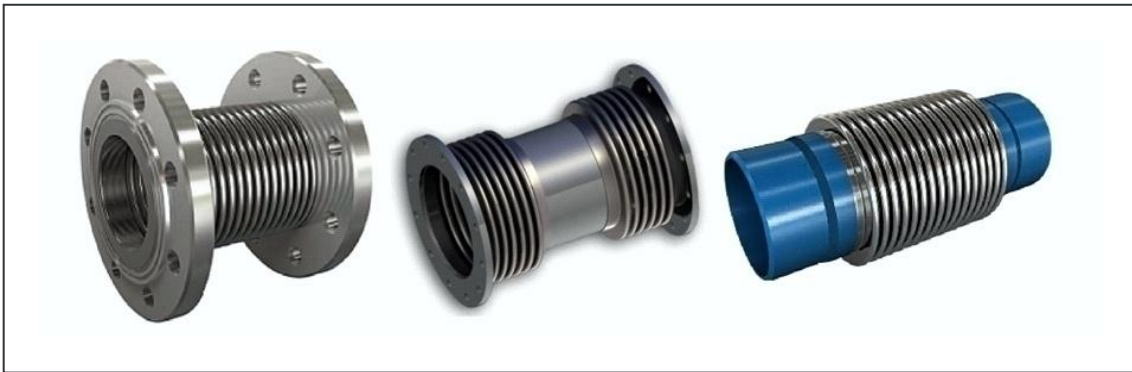
PRODUCT CODE	SIZE INCHES	LENGTH MM	AXIAL DISPLACEMENT		DEFLECTION ANGLE
			ELONGATION (mm)	COMPRESSION (mm)	
TGUFC00000022	1/2"	155	6	22	45
TGUFC00000027	3/4"	155	6	22	45
TGUFC00000034	1"	155	6	22	45
TGUFC00000042	1 1/4"	155	6	22	45
TGUFC00000048	1 1/2"	175	6	22	45
TGUFC00000060	2"	175	6	22	45
TGUFC00000073	2 1/2"	240	10	24	45



Bellows are a flexible piping element. The corrugation of the expansion joint is designed to be flexible in order to absorb pipe expansion and contraction due changes in temperature. The number of corrugation of bellows is decided according to the displacement amount and the expansionary and contracting force that the bellows have to absorb. Bellows have to be strong to the design pressure an operating pressure of piping and pressure and installation and they also have to be flexible to absorb thermal movement. The thrust force of the flow In the piping has to be buttressed by things other than bellow.

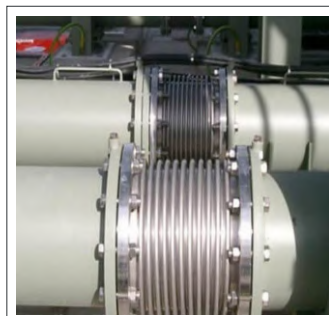
Tembo Industries bellows are fabricated from cylindrical tubes made of high ductility material. The cylindrical body is formed onto parallel corrugation which accommodates all basic movements without encountering wear and tear as associated with conventional mechanical devices. Bellows are designed and manufactures as per the latest additional of EJMA, ASME, GIS, BS, DIN, IS standards under the supervision of highly qualified team of engineers and technocrats.

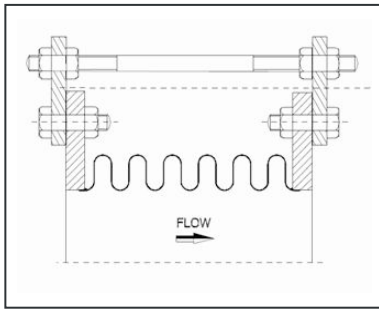
To attain high flexibility and above average life expectancy, our Bellows are made from tested S.S. 316 / 321 / 304 stainless steel material. These bellows retain the flexibility when subject to internal pressure. Tembo's Industries Bellows have been their out standing performance in a wide variety of application



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- Measurements are subject to 5% tolerance.
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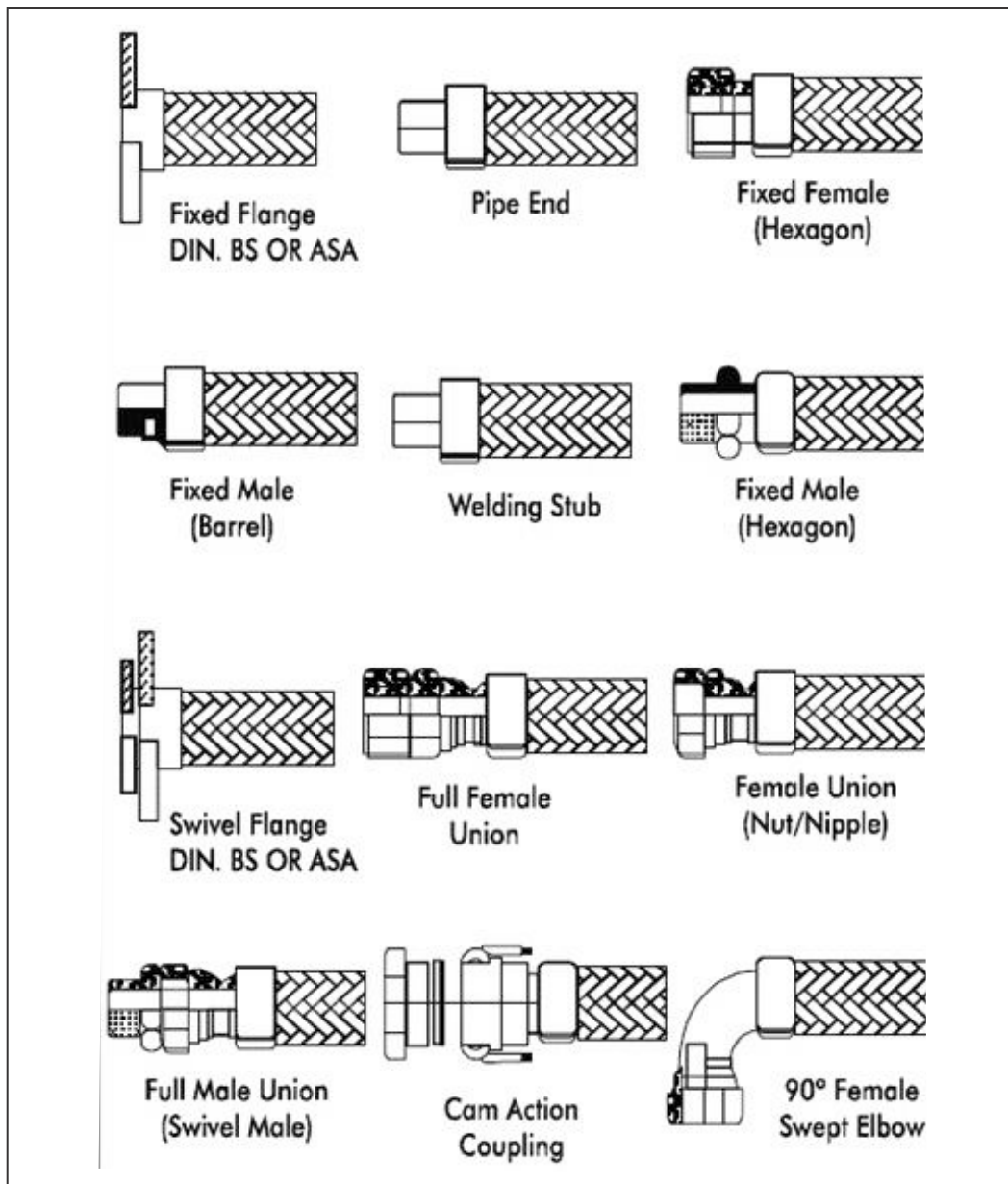
APPLICATION EXAMPLES:





PRODUCT CODE NOMINAL BORE X OVERALL LENGTH	DESIGN TEMPERATURE UPTO	MAXIMUM WORKING PRESSURE (KG/CM ²)	LATERAL MOVEMENT PRESSURE (MM)	AXIAL MOVEMENT PRESSURE (MM)
TGMEB006S0200	600°C	20	20	±10
TGMEB006S0250	600°C	20	40	±15
TGMEB006S0300	600°C	20	60	±20
TGMEB006S0300	600°C	20	20	±10
TGMEB008S0250	600°C	20	40	±15
TGMEB008S0300	600°C	20	60	±20
TGMEB010S0200	600°C	20	20	±10
TGMEB010S0250	600°C	20	40	±15
TGMEB010S0300	600°C	20	60	±20
TGMEB012S0200	600°C	20	20	±10
TGMEB012S0250	600°C	20	40	±15
TGMEB012S0300	600°C	20	60	±20
TGMEB014S0200	600°C	20	20	±10
TGMEB014S0250	600°C	20	40	±15
TGMEB014S0300	600°C	20	60	±20
TGMEB016S0200	600°C	20	20	±10
TGMEB016S0250	600°C	20	40	±15
TGMEB016S0300	600°C	20	60	±20
TGMEB018S0200	600°C	20	20	±10
TGMEB018S0250	600°C	20	40	±15
TGMEB018S0300	600°C	20	60	±20
TGMEB020S0200	600°C	20	20	±10
TGMEB020S0250	600°C	20	40	±15
TGMEB020S0300	600°C	20	60	±20
TGMEB022S0200	600°C	20	20	±10
TGMEB022S0250	600°C	20	40	±15
TGMEB022S0300	600°C	20	60	±20
TGMEB024S0200	600°C	20	20	±10
TGMEB024S0250	600°C	20	40	±15
TGMEB024S0300	600°C	20	60	±20

- Metallic of standard Metallic Bellow SA 240 TP 321, SA 240 TP 304 also available.
- Material of End Flanges IS 2062 Grade 2 (Carbon Steel)
- Custom Made Bellows as per customer specification available for additional movements.
- End flanges as per customer s specification available.
- Accessories like nut bolts / gaskets / tie rods assembly / mating flanges available at extra cost.
- Compliance – Springs designed according to BS 1726 (Part 1) : 1987 and recommendations made by SAE (US)



Tembo manufactures Corrugated Hoses and Hose Assemblies at an ultra-modern facility under the supervision of a qualified team of engineers and technocrats. They are suitable for wide range of chemicals, petroleum products, super heated steam, liquefied gas and cooling lines.

SIZE: 1/4" (6mm) to 12" (300mm)

TEMPERATURE: -2000°C to 7000°C

MATERIAL: Hose S.S. 3016/321/304, Braiding S.S.304. End Connections

MATERIAL OF END CONNECTION: M.S., Carbon Steel, brass, NPTF, METRIC.

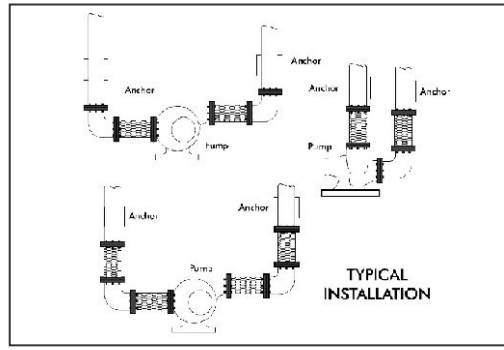
FLANGE: As per BS, ASA, DIN, Slipon, or as per your requirement.

END FITTINGS:

Manufactured from Mild Steel, Stainless Steel or Brass. These are fitted by Argon welding (TIG) or brazing on S.S. Hose depending upon hose type and service conditions to form a complete hose assembly

SIZE		SINGLE BRAID					DOUBLE BRAID		
NOMINAL SIZE	DN	MAX. WORKING PRESSURE (KG/CM ²)	TEST PRESSURE (KG/CM ²)	BURST BEND (KG/CM ²)	STATIC BEND RADIUS (MM)	DYNAMIC BEND RADIUS (MM)	MAX. WORKING PRESSURE (KG/CM ²)	TEST PRESSURE (KG/CM ²)	BURST BEND (KG/CM ²)
INCH	MM								
1/4"	6	100	150	400	25	100	160	240	640
3/8"	10	90	135	360	40	150	144	216	576
1/2"	12	80	120	320	50	200	128	192	512
5/8"	16	70	105	280	50	200	112	168	448
3/4"	20	64	96	256	70	200	102	153	408
1"	25	50	75	200	90	200	80	120	320
1 1/4"	32	40	60	160	110	250	64	96	256
1 1/2"	40	32	48	128	130	250	48	72	192
2"	50	28	42	112	175	350	44	66	176
2 1/2"	65	24	36	96	200	410	42	61	152
3"	80	18	27	72	205	450	28	42	112
4"	100	16	24	64	230	560	26	39	104
5"	125	12	18	48	280	660	20	30	80
6"	150	10	15	40	320	815	16	24	64
8"	200	8	12	32	435	1015	12	18	48

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- Measurements are subject to 5% tolerance.
- To achieve good results do not over load fitting more than designed parameters as per drawing catalogue

**APPLICATION:**

Tembo's stainless steel pump connectors have been optimally designed for use in pipe work systems for pumps or compressors and used to suppress noise, absorb vibration, to correct and accommodate for minor lateral misalignment or thermal movements and to adjust for any building settlement.

CONSTRUCTION:

Manufactured with AISI 32 stainless steel corrugated tubing (to BS 6501pt.1) with AISI 304 stainless steel single over braid & carbon or stainless steel end fittings, TIG welded AISI 304/316 stainless steel Corrugated Hose also available.

END FITTINGS:

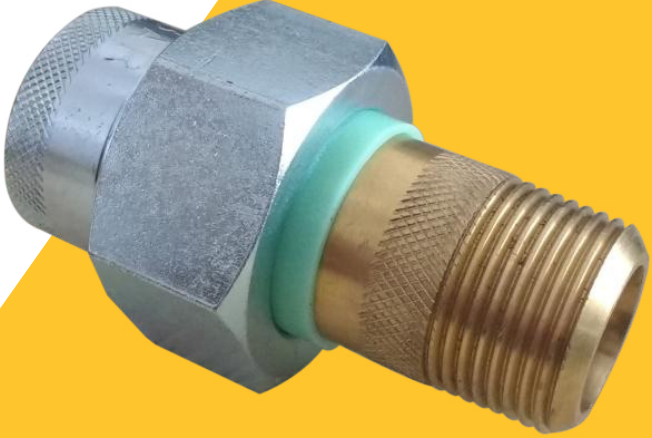
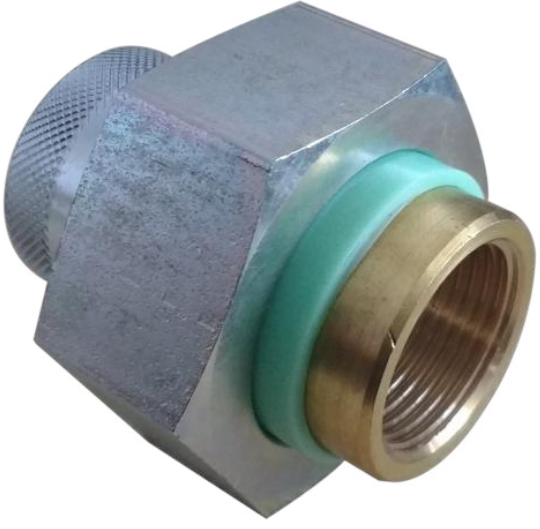
Screwed assemblies-Threaded BSP Taper Male Hexagon or Half Barrel Fittings
Flanged assemblies, to Bs10 table D/BS4504 & ANSI/ ASA standards.

INSTALLATION:

Braided pump connectors are not designed to absorb lateral movements and vibration. For maximum efficiency the connectors should be placed in both the pipe work on the away from the source.

Nominal I.D. of S.S. Braided Bellow	Overall Length Inch/mm	Max. Working Pressure At Room Temp.(BAR)
1/2"	6"/150	16
3/4"	6"/150	16
1"	6"/150	16
1 1/4"	6"/150	16
1 1/2"	6"/150	16
2"	6"/150	16
2 1/2"	6"/150	16
3"	6"/150	16
4"	6"/150	16
5"	6"/150	16
6"	6"/150	16
8"	6"/150	10
10"	12"/300	4.5
12"	12"/300	4.5

- End flanges as per customer specification available
- Due to policy of continual improvement, the specifications are subject to change without prior notice.
- Measurements are subject to 5% tolerance.
- To achieve good results do not over load fitting more than designed parameters as per drawing/ catalogue



DIELECTRIC UNION

TGDEUFF000000

DIELECTRIC UNION - FPT x FPT

**FEATURES:**

- Female NPT iron pipe thread to female brass pipe threaded connections.
- Designed & manufactured to the highest quality standards

MAXIMUM TEMPERATURE: 180°F (82°C)**MAXIMUM PRESSURE:** 25 bar (362 psi)**MATERIAL SPECIFICATIONS :**

No.	Part	Material
1	IPS Connection	Zinc Coat Steel
2	Nut	Zinc Coat Steel
3	Gasket	Nitrile
4	FPT Connection	Brass
5	Insert	Nylon

SIZES AVAILABLE :

Model	Size
TGDEUFF000022	1/2"
TGDEUFF000027	3/4"
TGDEUFF000034	1"
TGDEUFF000042	1-1/4"
TGDEUFF000048	1-1/2"
TGDEUFF000060	2"

TGDEUFM000000

DIELECTRIC UNION - FPT x MPT

**FEATURES:**

- Female NPT iron pipe thread to male brass pipe threaded connections.
- Designed & manufactured to the highest quality standards

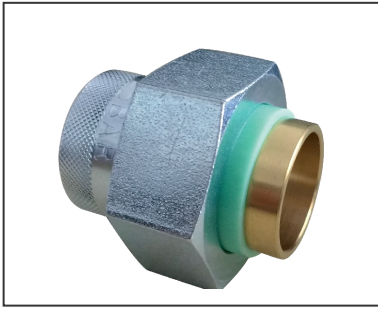
MAXIMUM TEMPERATURE: 180°F (82°C)**MAXIMUM PRESSURE:** 25 bar (362 psi)**MATERIAL SPECIFICATIONS :**

No.	Part	Material
1	IPS Connection	Zinc Coat Steel
2	Nut	Zinc Coat Steel
3	Gasket	Nitrile
4	MPT Connection	Brass
5	Insert	Nylon

SIZES AVAILABLE :

Model	Size
TGDEUFM000022	1/2"
TGDEUFM000027	3/4"
TGDEUFM000034	1"
TGDEUFM000042	1-1/4"
TGDEUFM000048	1-1/2"
TGDEUFM000060	2"

APPLICATION EXAMPLES:

**FEATURES:**

- Female NPT iron pipe thread to Brass tube end connection threaded connections.
- Designed & manufactured to the highest quality standards

MAXIMUM TEMPERATURE: 180°F (82°C)

MAXIMUM PRESSURE: 25 bar (362 psi)

MATERIAL SPECIFICATIONS :

No.	Part	Material
1	IPS Connection	Zinc Coat Steel
2	Nut	Zinc Coat Steel
3	Gasket	Nitrile
4	Solder Connection	Brass
5	Insert	Nylon

SIZES AVAILABLE :

Model	Size
TGDEUFW000022	1/2"
TGDEUFW000027	3/4"
TGDEUFW000034	1"
TGDEUFW000042	1-1/4"
TGDEUFW000048	1-1/2"
TGDEUFW000060	2"

**FEATURES:**

- Male NPT Iron Pipe Thread To Brass Tube End Connection Threaded Connections
- Designed & Manufactured To The Highest Quality Standards

MAXIMUM TEMPERATURE: 180°F (82°C)

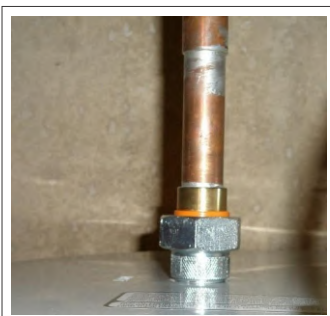
MAXIMUM PRESSURE: 25 bar (362 psi)

MATERIAL SPECIFICATIONS :

No.	Part	Material
1	IPS Connection	Zinc Coat Steel
2	Nut	Zinc Coat Steel
3	Gasket	Nitrile
4	Tube Connection	Brass
5	Insert	Nylon

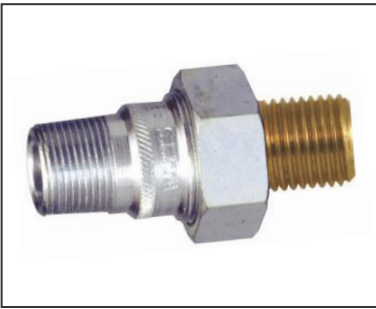
SIZES AVAILABLE :

Model	Size
TGDEUMW000022	1/2"
TGDEUMW000027	3/4"
TGDEUMW000034	1"
TGDEUMW000042	1-1/4"
TGDEUMW000048	1-1/2"
TGDEUMW000060	2"

APPLICATION EXAMPLES:

TGDEUMM000000

DIELECTRIC UNION - STEEL MPT X BRASS MPT

**FEATURES:**

- Male NPT Iron pipe thread to Male Brass pipe threaded connections
- Designed & Manufactured To The Highest Quality Standards

MAXIMUM TEMPERATURE: 180°F (82°C)**MAXIMUM PRESSURE:** 25 bar (362 psi)**MATERIAL SPECIFICATIONS :**

No.	Part	Material
1	IPS Connection	Zinc Coat Steel
2	Nut	Zinc Coat Steel
3	Gasket	Nitrile
4	MPT Connection	Brass
5	Insert	Nylon

SIZES AVAILABLE :

Model	Size
TGDEUMM000022	1/2"
TGDEUMM000027	3/4"
TGDEUMM000034	1"
TGDEUMM000042	1-1/4"
TGDEUMM000048	1-1/2"
TGDEUMM000060	2"

TGDEUMF000000

DIELECTRIC UNION - STEEL MPT X BRASS FPT

**FEATURES:**

- Male NPT Iron pipe thread to Female Brass pipe threaded connections
- Designed & Manufactured To The Highest Quality Standards

MAXIMUM TEMPERATURE: 180°F (82°C)**MAXIMUM PRESSURE:** 25 bar (362 psi)**MATERIAL SPECIFICATIONS :**

No.	Part	Material
1	IPS Connection	Zinc Coat Steel
2	Nut	Zinc Coat Steel
3	Gasket	Nitrile
4	FPT Connection	Brass
5	Insert	Nylon

SIZES AVAILABLE :

Model	Size
TGDEUMF000022	1/2"
TGDEUMF000027	3/4"
TGDEUMF000034	1"
TGDEUMF000042	1-1/4"
TGDEUMF000048	1-1/2"
TGDEUMF000060	2"

APPLICATION EXAMPLES:

**FEATURES:**

- Female iron pipe thread to female brass pipe threaded connections.
- Designed & manufactured to the highest quality standards

MAXIMUM TEMPERATURE: 180°F (82°C)

MAXIMUM PRESSURE: 16 Bar (232.06 psi)

MATERIAL SPECIFICATIONS :

No.	Part	Material
1	Flange	Cast Iron W/Galvanized
2	Gasket	EPDM
3	Flange	Bronze
4	Insulator	Nylon
5	Bolts	Zinc Coated Steel

SIZES AVAILABLE :

Model	Size
TGFF000000073	2-1/2"
TGFF000000089	3"
TGFF000000114	4"

*6" dia and 8" dia sizes are available on request

**FEATURES:**

- Iron Pipe Tube To Brass Pipe Tube
- Designed & manufactured to the highest quality standards

MAXIMUM TEMPERATURE: 180°F (82°C)

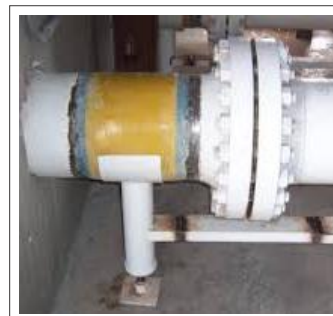
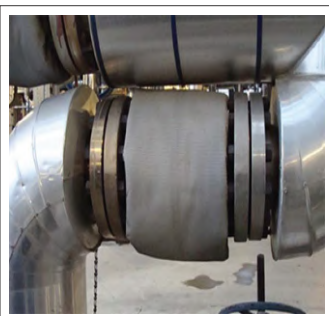
MAXIMUM PRESSURE: 12.1 BAR (175 psi)

MATERIAL SPECIFICATIONS :

No.	Part	Material
1	Flange	Cast Iron W/Galvanized
2	Gasket	EPDM
3	Flange	Bronze
4	Insulator	Nylon
5	Bolts	Zinc Coated Steel

SIZES AVAILABLE :

Model	Size
TGDEFWB000065	2-1/2"
TGDEFWB000080	3"
TGDEFWB000100	4"
TGDEFWB000125	5"
TGDEFWB000150	6"
TGDEFWB000200	8"

APPLICATION EXAMPLES:

TGDEFWF000000

DIELECTRIC FLANGED UNION - WELDED WITH STEEL PIPE X FPT BRASS

**FEATURES:**

- Iorn pipe tube to female brass pipe threaded connections
- Designed & manufactured to the highest quality standards

MAXIMUM TEMPERATURE: 180°F (82°C)**MAXIMUM PRESSURE:** 12.1 BAR (175 psi)**MATERIAL SPECIFICATIONS :**

No.	Part	Material
1	Flange	Cast Iron W/Galvanized
2	Gasket	EPDM
3	Flange	Bronze
4	Insulator	Nylon
5	Bolts	Zinc Coated Steel

SIZES AVAILABLE :

Model	Size
TGDEFWF000065	2-1/2"
TGDEFWF000080	3"
TGDEFWF000100	4"
TGDEFWF000125	5"
TGDEFWF000150	6"
TGDEFWF000200	8"

TGDEFWM000000

DIELECTRIC FLANGED UNION - WELDED WITH STEEL PIPE X MPT BRASS

**FEATURES:**

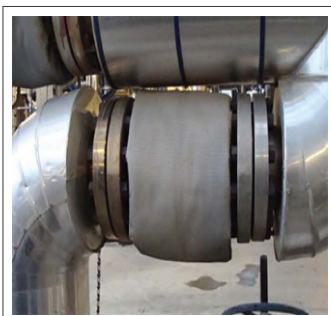
- Male NPT Iorn pipe thread to Male Brass pipe threaded connections
- Designed & manufactured to the highest quality standards

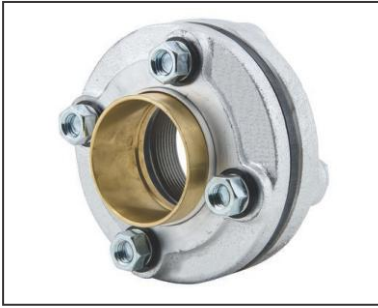
MAXIMUM TEMPERATURE: 180°F (82°C)**MAXIMUM PRESSURE:** 12.1 BAR (175 psi)**MATERIAL SPECIFICATIONS :**

No.	Part	Material
1	Flange	Cast Iron W/Galvanized
2	Gasket	EPDM
3	Flange	Bronze
4	Insulator	Nylon
5	Bolts	Zinc Coated Steel

SIZES AVAILABLE :

Model	Size
TGDEFWM000065	2-1/2"
TGDEFWM000080	3"
TGDEFWM000100	4"
TGDEFWM000125	5"
TGDEFWM000150	6"
TGDEFWM000200	8"

APPLICATION EXAMPLES:

**FEATURES:**

- Female NPT iron pipe thread to male brass pipe threaded connections
- Designed & manufactured to the highest quality standards

MAXIMUM TEMPERATURE: 180°F (82°C)

MAXIMUM PRESSURE: 12.1 BAR (175 psi)

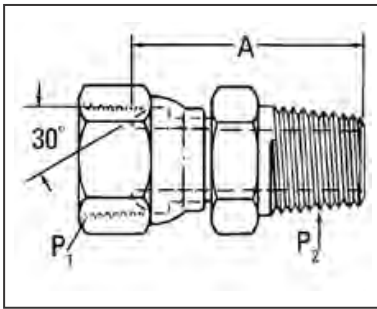
MATERIAL SPECIFICATIONS :

No.	Part	Material
1	Flange	Cast Iron W/Galvanized
2	Gasket	EPDM
3	Flange	Bronze
4	Insulator	Nylon
5	Bolts	Zinc Coated Steel

SIZES AVAILABLE :

Model	Size
TGDEFFM000065	2-1/2"
TGDEFFM000080	3"
TGDEFFM000100	4"
TGDEFFM000125	5"
TGDEFFM000150	6"
TGDEFFM000200	8"

APPLICATION EXAMPLES:

**PRODUCT DESCRIPTION:**

Pipe fittings are components used for connecting, terminating, controlling flow, and changing the direction of piping in many different industries. When purchasing pipe fittings, consider the application, as this will affect material type, shape, size and required durability. Fittings are available threaded or unthreaded, in many shapes, styles, sizes, and schedules (pipe wall thickness).

FEATURES:

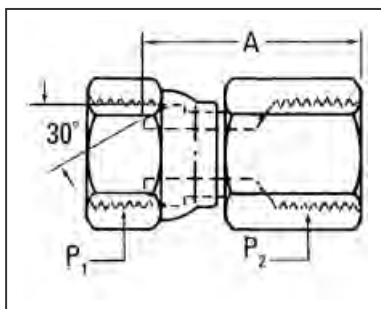
- Pipe swivel adapter for joining pipes in a range of fluid transfer applications
- Zinc-plated steel for strength, durability, and resistance to corrosion
- Meets SAE 140130 specifications

TEMPERATURE RANGE: -42°C To 210°C

WORKING PRESSURE: 320 bar (4641.21psi)

FINISH: Zinc Plated

PRODUCT CODE	DASH SIZE	THREADS P1	THREADS P2	A	
				mm	In
TGUNIFM02S006	2-2S	1/8" - 27	1/8" - 27	24,4	0.96
TGUNIFM04S006	2-4S	1/8" - 27	1/4" - 18	29,0	1.14
TGUNIFM04S008	4-4S	1/4" - 18	1/4" - 18	32,0	1.26
TGUNIFM06S008	4-6S	1/4" - 18	3/8" - 18	32,0	1.26
TGUNIFM08S008	4-8S	1/4" - 18	1/2" - 14	38,4	1.51
TGUNIFM04S010	6-4S	3/8" - 18	1/4" - 18	32,0	1.26
TGUNIFM06S010	6-6S	3/8" - 18	3/8" - 18	33,5	1.32
TGUNIFM08S010	6-8S	3/8" - 18	1/2" - 14	40,1	1.58
TGUNIFM06S015	8-6S	1/2" - 14	3/8" - 18	34,8	1.37
TGUNIFM08S015	8-8S	1/2" - 14	1/2" - 14	41,1	1.62
TGUNIFM12S015	8-12S	1/2" - 14	3/4" - 14	41,1	1.62
TGUNIFM12S020	12-12S	3/4" - 14	3/4" - 14	44,5	1.75
TGUNIFM16S020	12-16S	3/4" - 14	1" - 11 1/2	50,8	2.00
TGUNIFM12S025	16-12S	1" - 11 1/2	3/4" - 14	44,7	1.76
TGUNIFM16S025	16-16S	1" - 11 1/2	1" - 11 1/2	51,3	2.02
TGUNIFM16S032	20-16S	1 1/4" - 11 1/2	1" - 11 1/2	53,3	2.10
TGUNIFM20S032	20-20S	1 1/4" - 11 1/2	1 1/4" - 11 1/2	52,8	2.08
TGUNIFM20S040	24-20S	1 1/2" - 11 1/2	1 1/4" - 11 1/2	55,1	2.17
TGUNIFM24S040	24-24S	1 1/2" - 11 1/2	1 1/2" - 11 1/2	55,9	2.20
TGUNIFM32S050	32-32S	2" - 11 1/2	2" - 11 1/2	60,7	2.39

**PRODUCT DESCRIPTION:**

Pipe fittings are components used for connecting, terminating, controlling flow, and changing the direction of piping in many different industries. When purchasing pipe fittings, consider the application, as this will affect material type, shape, size and required durability. Fittings are available threaded or unthreaded, in many shapes, styles, sizes, and schedules (pipe wall thickness).

FEATURES:

- Pipe swivel adapter for joining pipes in a range of fluid transfer applications
- Zinc-plated steel for strength, durability, and resistance to corrosion
- Meets SAE 140130 specifications

TEMPERATURE RANGE: -42°C To 210°C

WORKING PRESSURE: 320 bar (4641.21 psi)

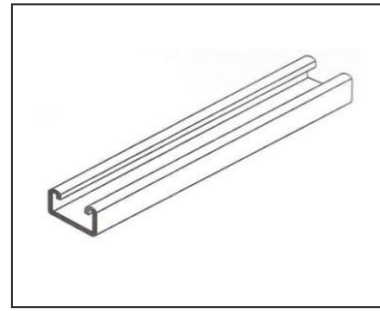
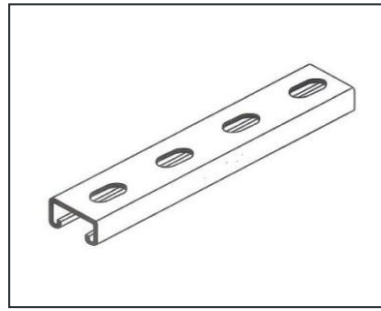
FINISH: Zinc Plated

PRODUCT CODE	DASH SIZE	THREADS P1	THREADS P2	A	
				mm	In
TGUNIMM02S006	2-2S	1/8" - 27	1/8" - 27	23,9	0.94
TGUNIMM04S006	2-4S	1/8" - 27	1/4" - 18	26,9	1.06
TGUNIMM02S008	4-2S	1/4" - 18	1/8" - 27	26,4	1.04
TGUNIMM04S008	4-4S	1/4" - 18	1/4" - 18	33,0	1.30
TGUNIMM06S008	4-6S	1/4" - 18	3/8" - 18	33,3	1.31
TGUNIMM06S010	6-6S	3/8" - 18	3/8" - 18	33,8	1.33
TGUNIMM08S010	6-8S	3/8" - 18	1/2" - 14	36,8	1.45
TGUNIMM08S015	8-8S	1/2" - 14	1/2" - 14	39,6	1.56
TGUNIMM12S020	12-12S	3/4" - 14	3/4" - 14	45,0	1.77
TGUNIMM16S020	12-16S	3/4" - 14	1" - 11 1/2	51,8	2.04
TGUNIMM16S025	16-16S	1" - 11 1/2	1" - 11 1/2	52,3	2.06
TGUNIMM20S032	20-20S	1 1/4" - 11 1/2	1 1/4" - 11 1/2	52,3	2.06
TGUNIMM24S040	24-24S	1 1/2" - 11 1/2	1 1/2" - 11 1/2	55,4	2.18
TGUNIMM32S050	32-32S	2" - 11 1/2	2" - 11 1/2	58,4	2.30



CHANNEL SUPPORT



**APPLICATION:****Mechanical Application**

Piping Racks
Tunnel Pipe Stanchions
Concrete Inserts
Beam Attachments
Pipeline Height Adjustment

Electrical Application

Pipe & Conduit Supports
Raceway Systems
Raceway Systems
Lighting Fixture Supports
Cable Tray Supports
Beam Adjustments

Industrial Application

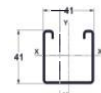
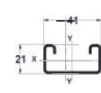
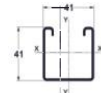
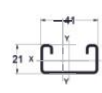
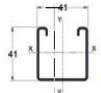
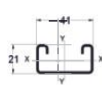
Racks and Shelving
Partitions
Production Line Supports
Trolley Systems
Wall Framing

MATERIAL:

Mild Steel. Also other materials can also be provided on request.

FINISH AVAILABLE:

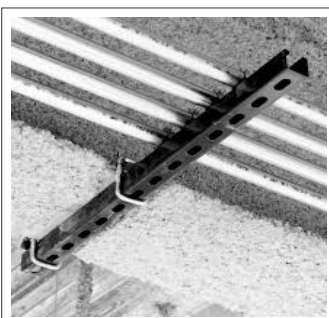
Plain, Electro-Galvanized, Hot dip Galvanized, Pre Galvanized & Zinc Flake.



Product Code		TGSCHOP412115	TGSCHOP414115	TGSCHOP412120	TGSCHOP414120	TGSCHOP412125	TGSCHOP414125
Size	Unit	41 X 21 X 1.5	41 X 41 X 1.5	41 X 21 X 2.0	41 X 41 X 2.0	41 X 21 X 2.5	41 X 41 X 2.5
Area of Shear	cm ²	0.42	1.02	0.55	1.34	0.67	1.67
Moment of Inertia (xx)	cm	0.7	3.87	0.88	4.59	1.03	5.87
Moment of Inertia (yy)	cm	3.34	5.68	4.25	6.99	5.07	8.76
Min.Section Modulus	cm	0.6	1.76	0.75	2.18	0.89	2.72
Wrapping Constant	cm	17.49	114.17	21.34	138.49	24.34	171.52
Torsional Constant	cm	0.01	0.02	0.02	0.03	0.06	0.07
Allowable Bending Stress	kN/cm ²	21.82	21.82	21.82	21.82	21.82	21.82
Allowable Shrear Stress	kN/cm ²	12.6	12.6	12.6	12.6	12.6	12.6

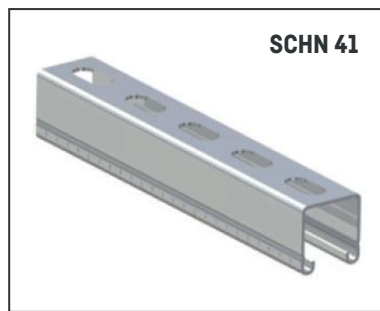
SLOT SIZE :12/30, 14/28.

Requested slot size can be manufactured.

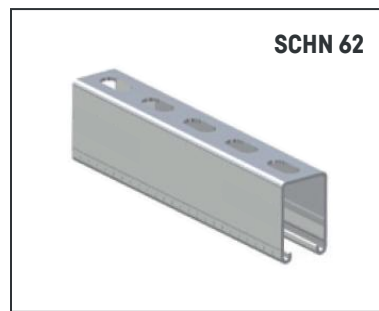
APPLICATION EXAMPLES:



SCHN 21



SCHN 41



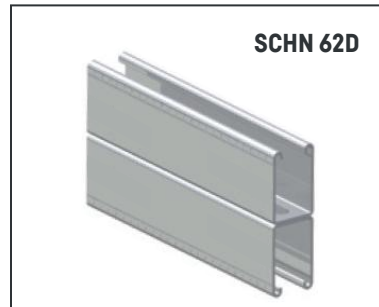
SCHN 62



SCHN 21D



SCHN 41D



SCHN 62D

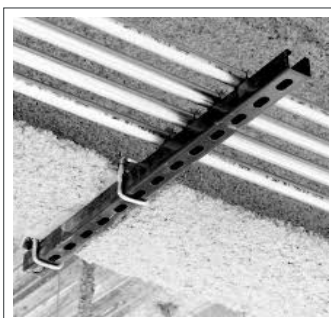
MATERIAL:

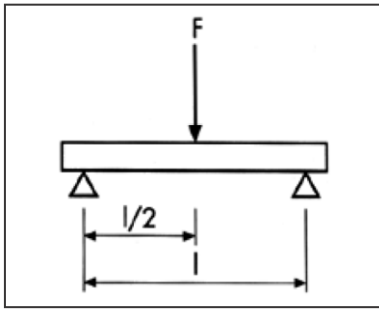
Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	ITEM	LENGTH L (M)	THICKNESS S (M)
TGSCHP2102002	SCHN 21/2.0 - 2M	2	2.0
TGSCHP2102003	SCHN 21/2.0 - 3M	3	2.0
TGSCHP2102503	SCHN 21/2.5 - 3M	3	2.5
TGSCHP2102506	SCHN 21/2.5 - 6M	6	2.5
TGSCHP4102002	SCHN 41/2.0 - 2M	2	2.0
TGSCHP4102003	SCHN 41/2.0 - 3M	3	2.0
TGSCHP4102006	SCHN 41/2.0 - 6M	6	2.0
TGSCHP4102502	SCHN 41/2.5 - 2M	2	2.5
TGSCHP4102503	SCHN 41/2.5 - 3M	3	2.5
TGSCHP4102506	SCHN 41/2.5 - 6M	6	2.5
TGSCHP6202506	SCHN 62/2.5 - 6M	6	2.5
TGSCHP21D2003	SCHN 21D/2.0 - 3M	3	2.0
TGSCHP41D2506	SCHN 41D/2.5 - 6M	6	2.5
TGSCHP62D2506	SCHN 62D/2.5 - 6M	6	2.5

APPLICATION EXAMPLES:



Item	Weight W (kg/m)	Area A (mm ²)	Moment of inertia I _y (mm ⁴)	Moment of inertia I _z (mm ⁴)	Section modulus W _y (mm ³)	Section modulus W _z (mm ³)	Max recommended static load				
							Length =		Length =		
							5 M Frec (KN)	1 M Frec (KN)	1.5 M Frec (KN)	2 M Frec (KN)	3 M Frec (KN)
SCHN 21/2.0	1.44	172	9700	46600	890	2270	1.14	0.49	0.22	0.12	0.05
SCHN 21/2.5	1.67	199	10300	52800	930	2580	1.19	0.52	0.23	0.13	0.06
SCHN 41/2	2.06	252	53300	76900	2580	3750	3.3	1.65	1.10	0.67	0.30
SCHN 41/2.5	2.45	300	60000	89900	285	4380	3.65	1.82	1.22	0.76	0.34
SCHN 62/2.5	3.27	405	177000	129000	5620	6290	7.19	3.60	2.40	1.80	0.99
SCHN 21D/2	2.87	344	54900	93100	2610	4540	3.34	1.67	1.11	0.69	0.31
SCHN 41D/2.5	4.89	600	350100	179000	8760	8780	11.21	5.61	3.74	2.80	1.57
SCHN 62D/2.5	6.55	809	1110000	258000	17900	12580	22.91	11.46	7.64	5.73	3.82

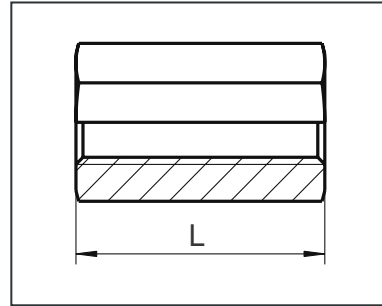
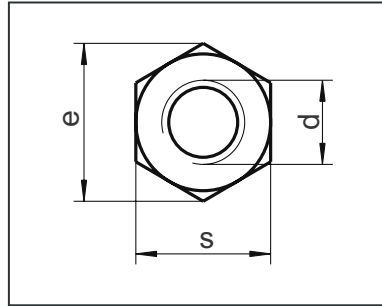
**MATERIAL:**

Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

ITEM	FOR CHANNEL M
TGCW000000008	M8
TGCW000000010	M10
TGCW000000012	M12

**MATERIAL:**

Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

ITEM	LENGTH L (MM)	THREAD D	S	E
TGCPN000000006	18	M6	10	11.1
TGCPN000000008	24	M8	13	15.0
TGCPN000000010	30	M10	17	19.6
TGCPN000000012	36	M12	19	21.9
TGCPN000000016	48	M16	24	27.7

**MATERIAL:**

Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

Item	Thread M	Thickness S (mm)	For Channel
TGRN000028006	M6	4	27/18-28/30
TGRN000028008	M8	5	27/18-28/30
TGRN000028010	M10	5	27/18-28/30
TGRN000041006	M6	-	38/40-40/62
TGRN000041008	M8	-	38/40-40/62
TGRN000041010	M10	-	38/40-40/62

SE-CA 41



SE-CA 62



SE-CA 41D

**MATERIAL:**

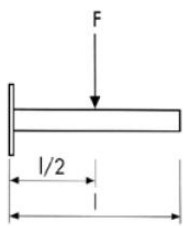
Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

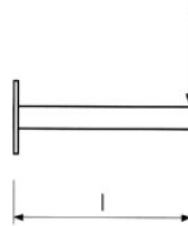
Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	PROFILE	WEIGHT (KG/M)	ITEM	PROFILE	WEIGHT (KG/M)
TGCA0P4100300	41/2.5	300	TGCA0P4100450	41/2.5	450
TGCA0P4100600	41/2.5	600	TGCA0P4100750	41/2.5	750
TGCA0P4101000	62/2.5	1000	TGCA0H41D0750	41D/2.5	750
TGCA0P41D1000	41D/2.5	1000	TGCA0H4100300	41/2.5	300
TGCA0H4100450	41/2.5	450	TGCA0H4100600	41/2.5	600
TGCA0H4100750	41/2.5	750	TGCA0S4100300	-	300
TGCA064100450	-	450	TGCA0S4100600	-	600

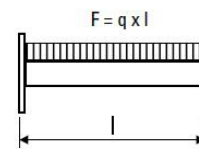
Load case 1



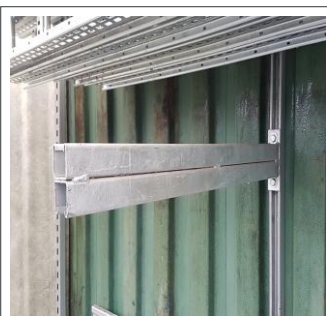
Load case 2

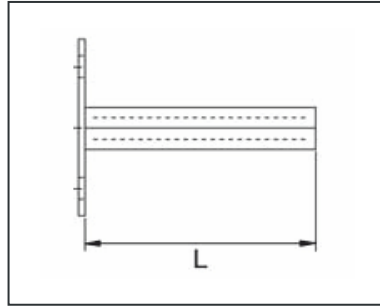


Load case 3

**MAX RECOMMENDED STATIC LOAD**

PRODUCT CODE	MAX RECOMMENDED STATIC LOAD		
	LOAD CASE 1 FREC (kN)	LOAD CASE 2 FREC (kN)	LOAD CASE 3 FREC (kN)
TGCA0P4100300	2.67	1.3	2.67
TGCA0P4100450	1.8	0.9	1.8
TGCA0P4100600	1.33	0.67	1.33
TGCA0P4100750	1.05	0.45	1.05
TGCA0P6201000	1.7	0.74	1.7
TGCA0P41D0750	3.5	1.7	3.5
TGCA0P41D1000	2.6	1.3	2.6

APPLICATION EXAMPLES:

**APPLICATION:**

Provides strength and stability to various support system application.

MATERIAL:

Mild Steel. Also other materials can also be provided on request

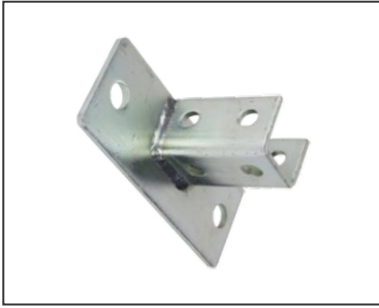
FINISH AVAILABLE:

Plain, Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	PRODUCT DESCRIPTION	LENGTH
TGDCA000E0150	41 X 41	150
TGDCA000E0300	41 X 41	300
TGDCA000E0450	41 X 41	450
TGDCA000E0600	41 X 41	600
TGDCA000E0750	41 X 41	750
TGDCA000E0900	41 X 41	900

NOTE : Any non standard size also can manufacture.

APPLICATION EXAMPLES:

**Saddle Support :** 41/21 , 41/41**FIELD OF APPLICATION :**

- Simple assembly of strong cross-beams using Support channels
- Applicable for cramped installation
- Conditions in shafts and ducts

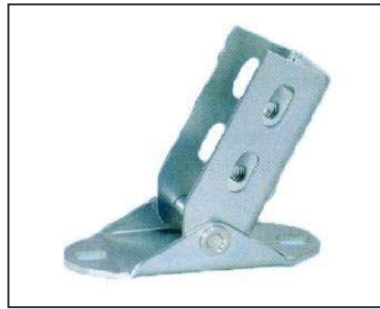
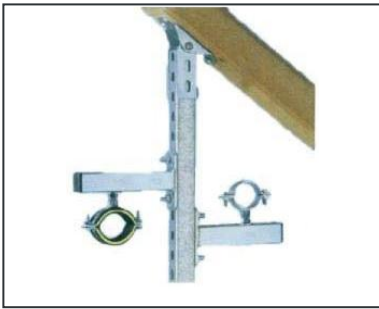
ADVANTAGES:

- The vertical and horizontal holes in the base plate enable simple alignment of the Saddle support
- Good load transfer due to the high bending stiffness of the saddle connection
- Ideal connecting element for channel section structures
- The section 38/80 provides torque-resistant support as channel is encompassed on both sides

**FOR SUPPORT CHANNEL**

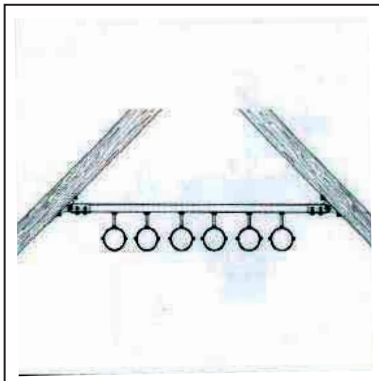
41mm X 41mm

41mm X 21mm

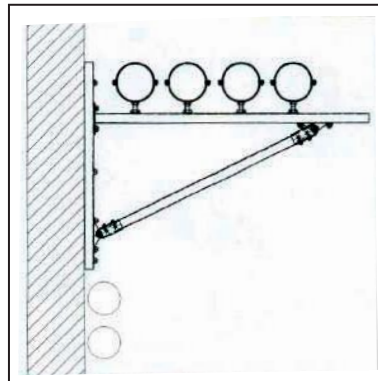


ADVANTAGES:

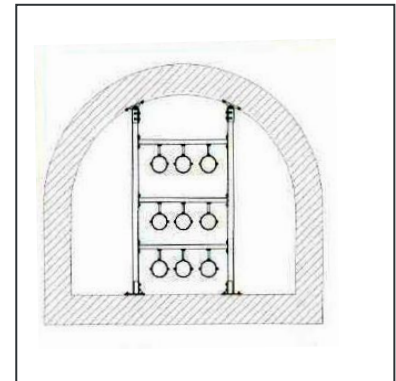
- The specialist product in solving problems when connecting Support Channels to inclined surfaces
- Flexible angle adjustment during installation possible
- Easy and quick fastening owing to pre-mounted Double Rail Nut
- Fixing to the Support Channel in any direction possible when using profile 38/40
- Ideal for installation at slope main truss, vaults and semicircular cable shafts



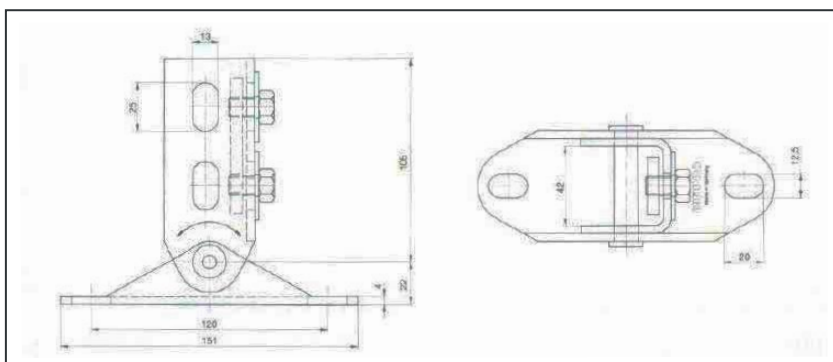
Installation of a pipe bracket
at slope main truss



Pipe installation to Wall
Bracket with diagonal strut



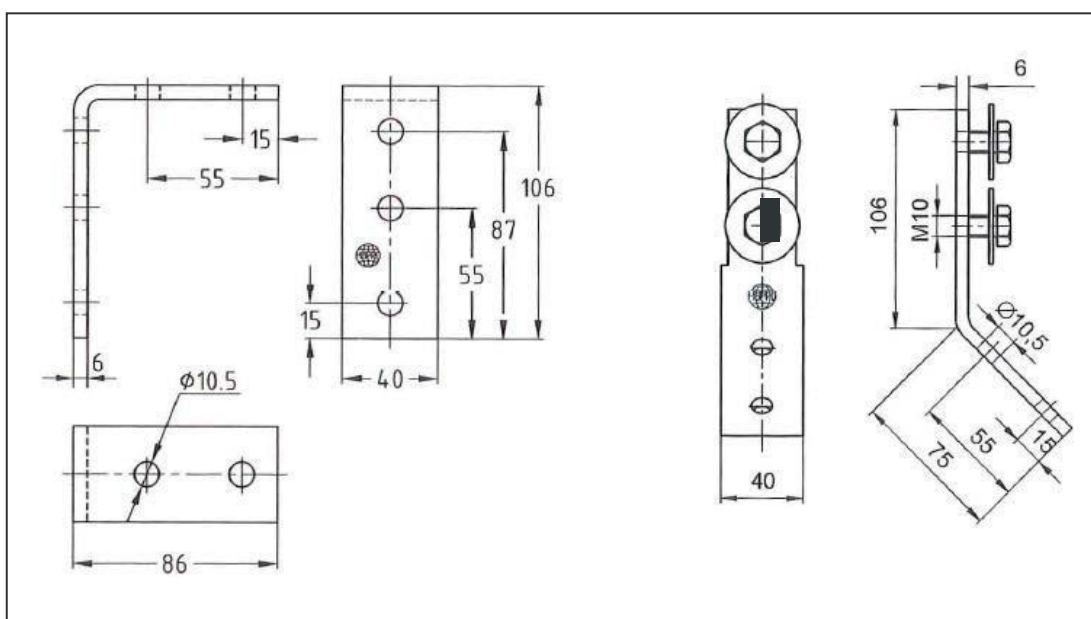
Installation of a support frame in
vaults or semicircular shafts



DATA :

Pre-mounted consists of:

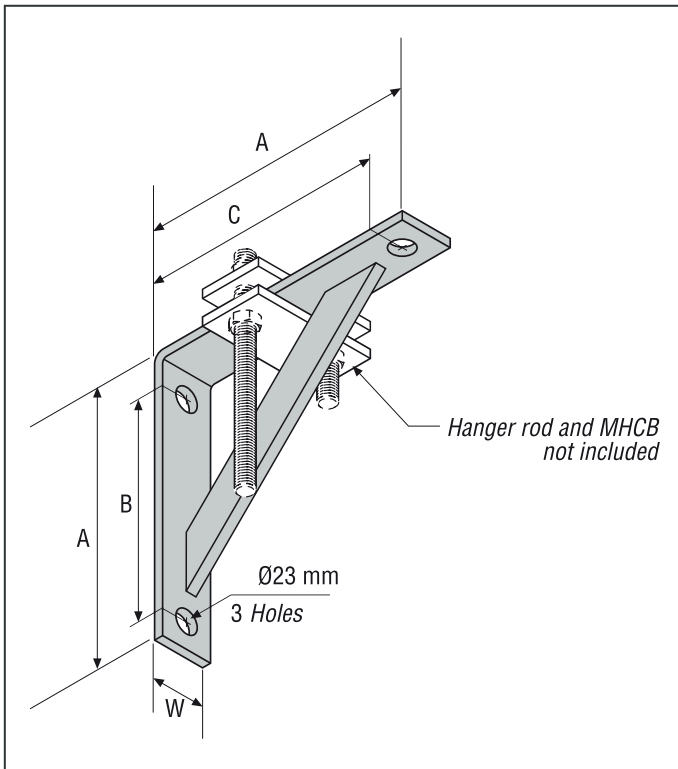
- 1 Saddle Support
- 1 Double Rail Nut
- 2 Hexagon Head bolts M10
- 2 Washers

**APPLICATION:**

- Solid fixing element for construction of pre-wall installations and shelves as well as for channel constructions for attachments of pipelines and air ducts without welding
- Also applicable for direct mounting on walls, ceilings or floors
- Suitable for outdoor use

ADVANTAGES:

- Versatile in use due to oblong holes
e.g. as:
- Angular support bracket Angular load-bearing bracket
- Connection element
- Angular bracket
- Multi-purpose component for professional, practical installation solutions

**MATERIAL :**

Mild Steel.

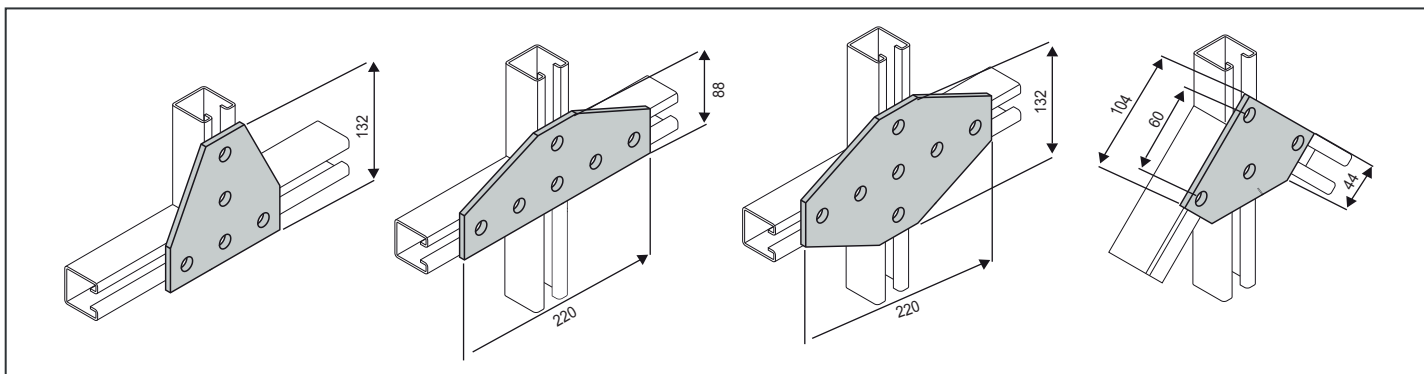
FINISH AVAILABLE :

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

SERVICE :

Designed for suspend hanger rod for support of lights loads under 3.33 kN from a wall or structure.

PRODUCT CODE	A MM	B MM	C MM	W MM	DESIGN LOAD (KN)
TGLWB000E0229	229	155	203	50	3,33
TGLWB000E0330	330	257	305	50	3,33
TGLWB000E0483	483	409	457	50	3,33



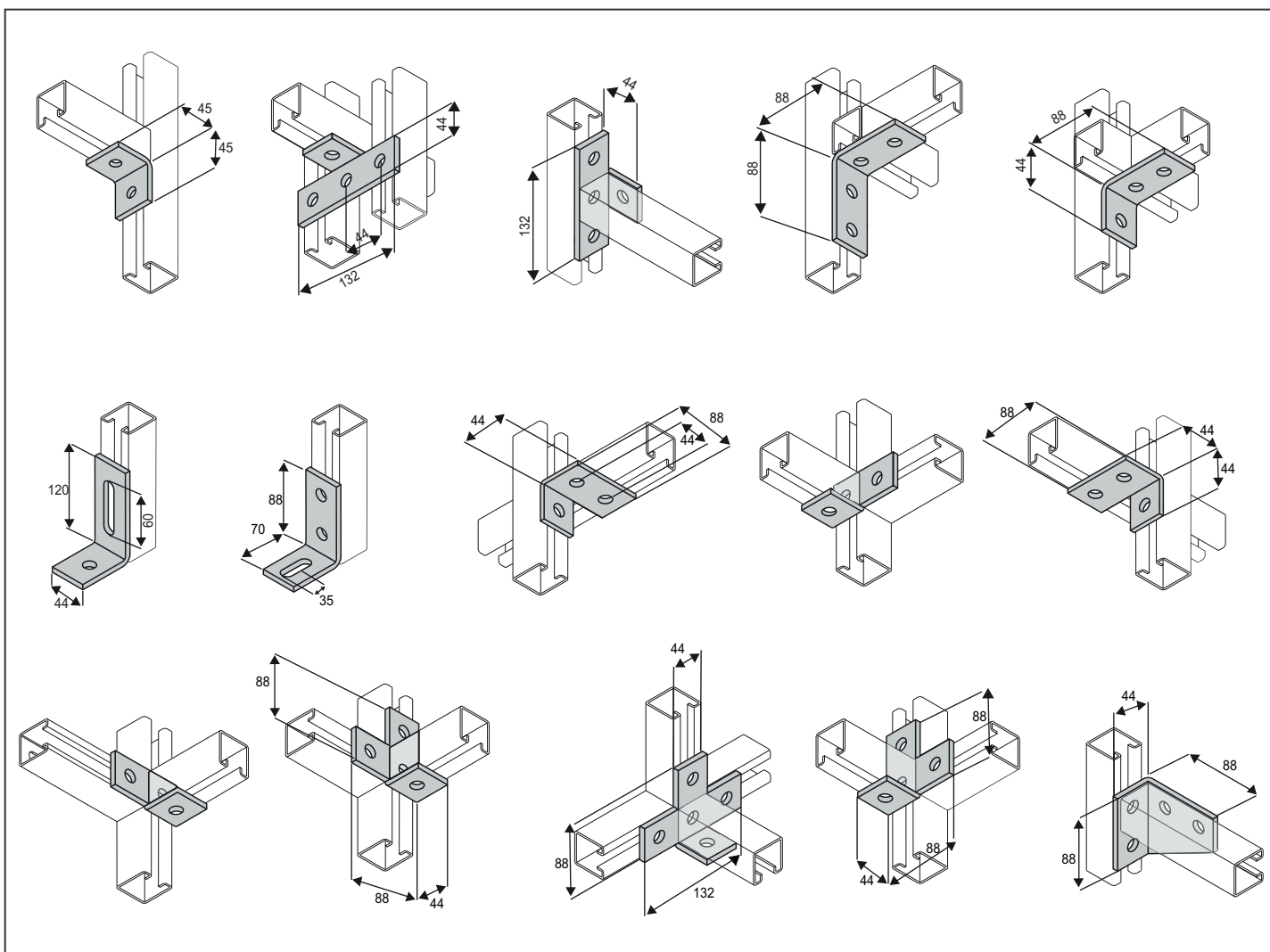
Unless otherwise specified assume that all holes dia 14 mm, thickness 6mm and for 41 - 45 - 60 series.

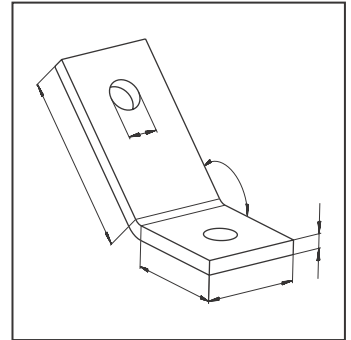
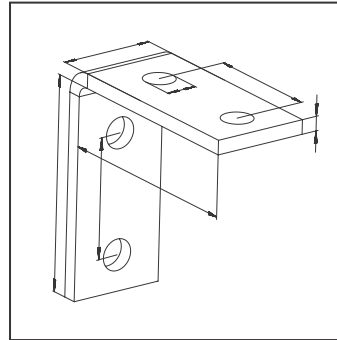
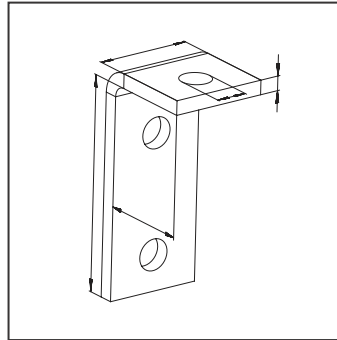
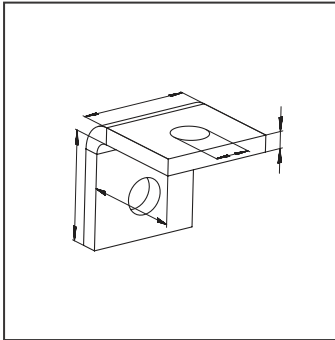
MATERIAL:

Mild Steel.

FINISH AVAILABLE :

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.



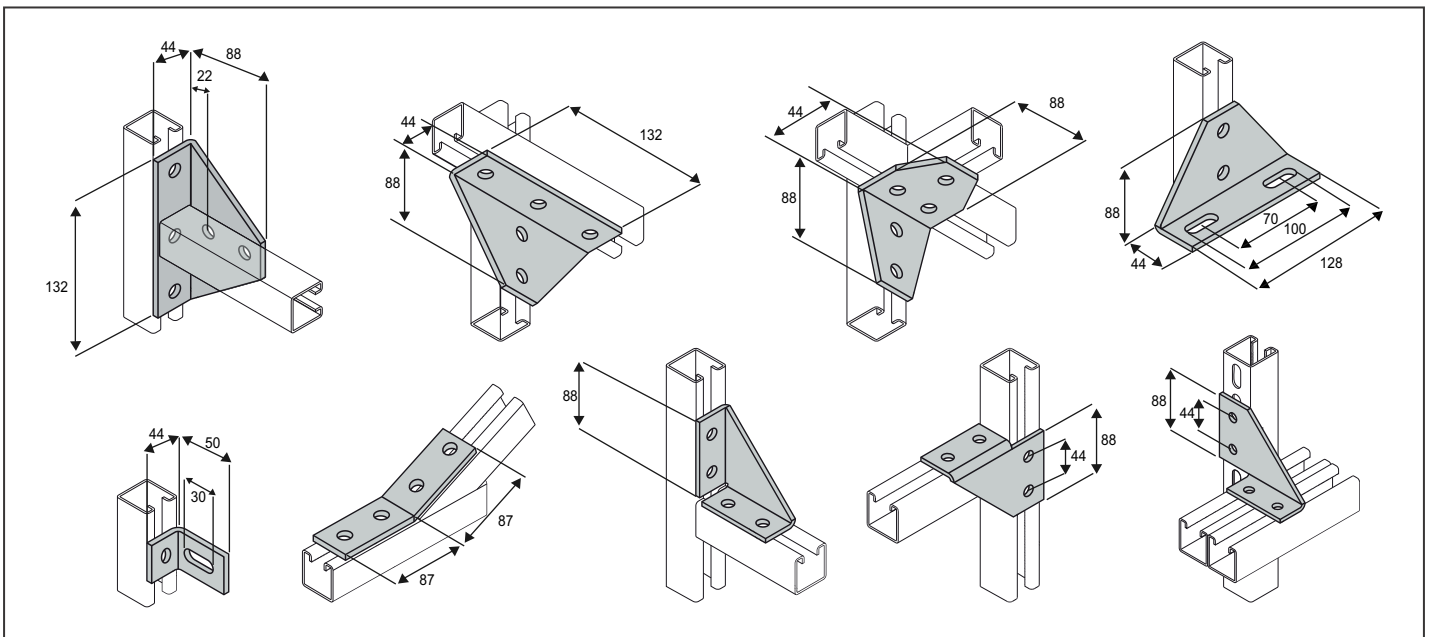


MATERIAL:

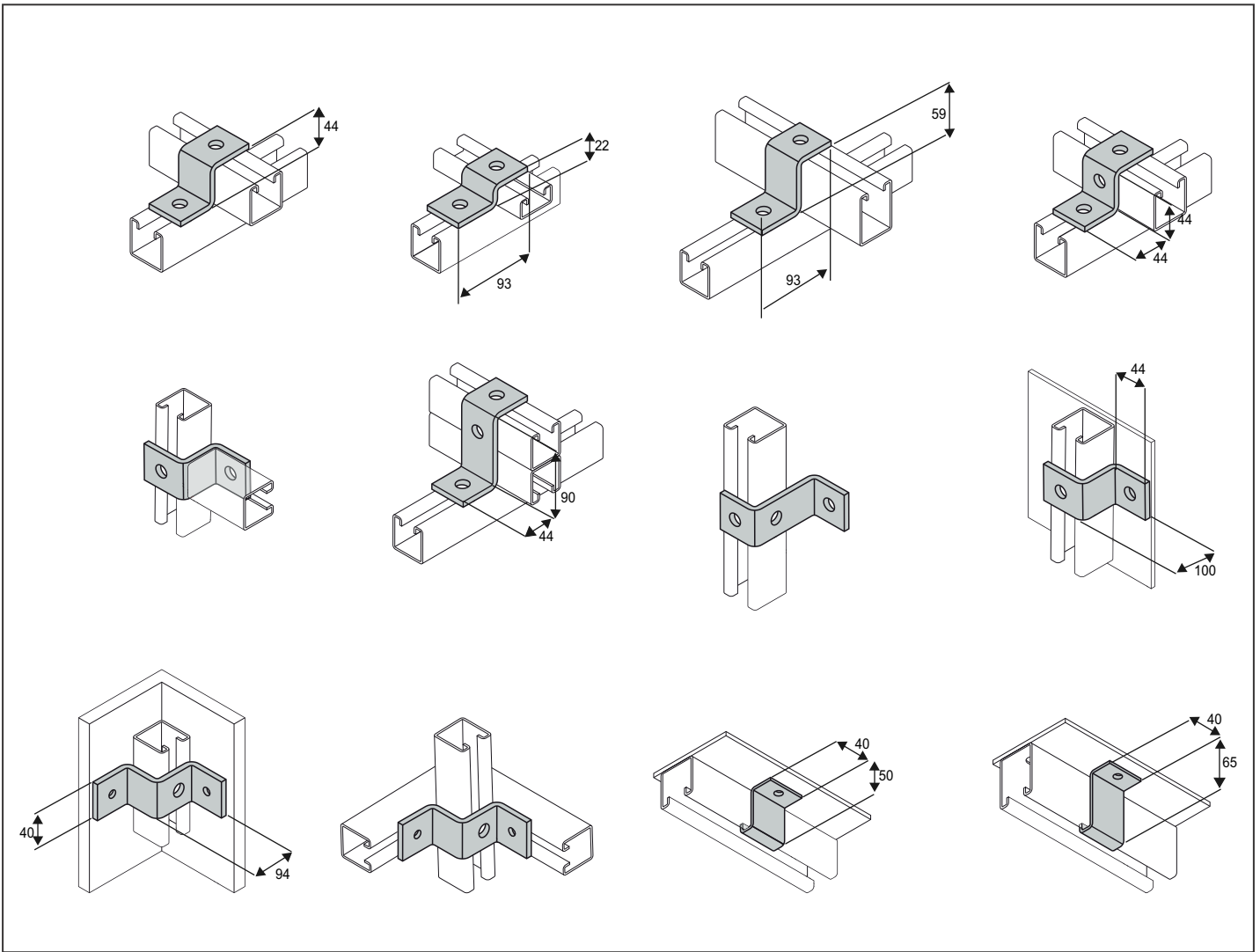
Mild Steel. Also other materials can be provided on request

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.



Unless otherwise specified assume that all holes dia 14 mm, thickness 6mm and for 41 - 45 - 60 series.



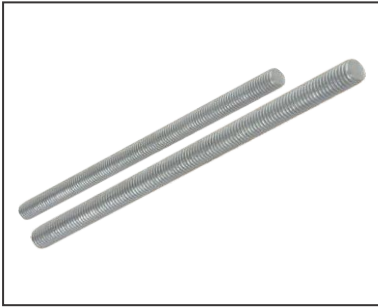
Unless otherwise specified assume that all holes dia 14 mm, thickness 6mm and for 41 series.

MATERIAL:

Mild Steel.

FINISH AVAILABLE :

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.



FULL THREADED BARS

STANDARDS:

ASTM/ASMS/BS/DIN/BS EN ISO/JIS

MATERIAL:

Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel

FINISH AVAILABLE :

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, Yellow, Cadmium & Nickel.

SIZE RANGE:

M6 to M100 in Metric Series

1/4" to 4" in Imperial

THREADS:

UNC, 8UN, UNF, Metric Coarse and Metric Fine

TYPICAL GRADES & STANDARDS:

ASTM A193 Grade B7, B7M, B8, B8M & B16

ASTM A320 Grade L7 & L7M

Stainless Steel 304,304L, 326, 316L, A2-70/80, A4-70/80

BS 3692/BS 4190 Grade 4.6, 4.8, 5.6, 5.8, 8.8

Any other specific grade can be manufactured upon request with short lead times.

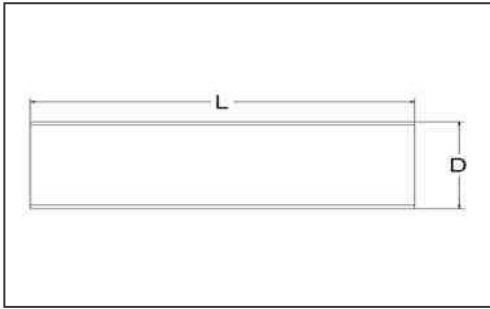
ORDERING INFORMATION:

Dimensions - Dia and Length

Standard and Grade

APPLICATION EXAMPLES:

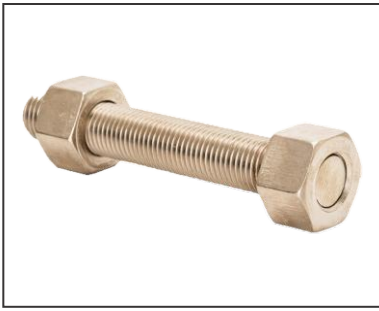




Steel Threaded Rod
ANSI B.1.1/BS4882
Material To ASMT
A193-B7/B7M/B16/B8 & B8M

Steel Threaded Rod to DIN 975
Material To ASMT
A193M-B7/B7M/B16/B8 & B8M

PRODUCT CODE	DIA(D)	THREAD PER INCH	PRODUCT CODE	DIA(D)	THREAD PITCH (mm)
TGTR00UE01400	1/4"UNC	20	TGTR00ME00600	M6	1
TGTR00UE51600	5/16"UNC	18	TGTR00ME00800	M8	1.25
TGTR00UE03800	3/8"UNC	16	TGTR00ME01000	M10	1.5
TGTR00UE71600	7/16"UNC	14	TGTR00ME01200	M12	1.75
TGTR00UE01200	1/2"UNC	13	TGTR00ME01400	M14	2
TGTR00UE91600	9/16"UNC	12	TGTR00ME01600	M16	2
TGTR00UE05800	5/8"UNC	11	TGTR00ME01800	M18	2.5
TGTR00UE03400	3/4"UNC	10	TGTR00ME02000	M20	2.5
TGTR00UE07800	7/8"UNC	9	TGTR00ME02200	M22	2.5
TGTR00UE00100	1"UNC	8	TGTR00ME02400	M24	3
TGTR00UE11800	1.1/8"UNC	7	TGTR00ME02700	M27	3
TGTR00UE11800	1.1/8"UNC	8	TGTR00ME03000	M30	3.5
TGTR00UE11400	1.1/4"UNC	7	TGTR00ME03300	M33	3.5
TGTR00UE11400	1.1/4"UNC	8	TGTR00ME03600	M36	4
TGTR00UE13800	1.3/8"UNC	6	TGTR00ME03900	M39	4
TGTR00UE13800	1.3/8"UNC	8	TGTR00ME04200	M42	4.5
TGTR00UE12200	1.2/2"UNC	6	TGTR00ME04500	M45	4.5
TGTR00UE12200	1.2/2"UNC	8	TGTR00ME04800	M48	5
TGTR00UE15800	1.5/8"UNC	8	TGTR00ME05200	M52	5
TGTR00UE13400	1.3/4"UNC	8	TGTR00ME05600	M56	5.5
TGTR00UE17800	1.7/8"UNC	8	TGTR00ME06400	M64	6
TGTR00UE00200	2"UNC	8	TGTR00ME07200	M72	6
TGTR00UE21400	2.1/4"UNC	8			
TGTR00UE21200	2.1/2"UNC	8			
TGTR00UE23400	2.3/4"UNC	8			
TGTR00UE00300	3"UNC	8			



Full Threaded Studs and Engineering Studs

STANDARDS:-

ASTM/ASME/BS/DIN/BS EN ISO /JIS

MATERIAL:-

Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

FINISH AVAILABLE :

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, Yellow, Cadmium & Nickel.

SIZE RANGE:-

M6 to M100 in metric series

1/4" to 4" in imperial

THREADS:-

UNC, 8UN, UNF, Metric Coarse and Metric Fine

TYPICAL GRADES & STANDARDS:-

ASTM A193 Grade B, B7M, B8, B8M & B16

ASTM A320 Grade L7 & L7M

Any other specific grade can be manufactured upon request with short lead times.

ORDERING INFORMATION:-

Dimensions - Dia and length.

Standard and Grade.

Nut and washer quantity

Anchor bolts, Foundation bolts, holding down Bolts, U Bolts, Sag Rods & Tie Rods can be manufactured as per customer's drawing and as per grade required.

STANDARDS:-

ASTM/ASME/BS/DIN/BS EN ISO /JIS

MATERIAL:-

Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

FINISH AVAILABLE :

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, Yellow, Cadmium & Nickel.

SIZE RANGE:-

M6 to M100 in metric series

¼" to 4" in imperial

THREADS:-

UNC, 8UN, UNF, Metric Coarse and Metric Fine

Typical Grades & Standards:-

BS 3692 / BS 4190 grade 4.6, 4.8, 5.6, 5.8, 8.8, 10.9 and 12.9

ASTM A307, A325, A193, B7 & B16, ASTM A320 L7

Stainless Steel 304, 304L, 316, 316L, A2-70/80, A4-70/80, ASTM A193 Grade B8 & B8M

ASTM A675 Grade 90, ASTM A572 Grade 50 and ASTM F1554 grade 36, 55 and 105

Any other specific grade can be manufactured upon request with short lead times.

ORDERING INFORMATION:-

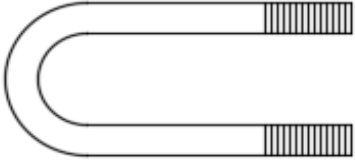
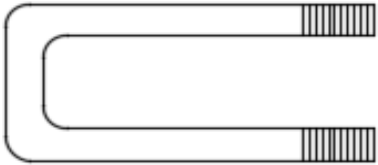




Dimensions.

Standard and Grade.

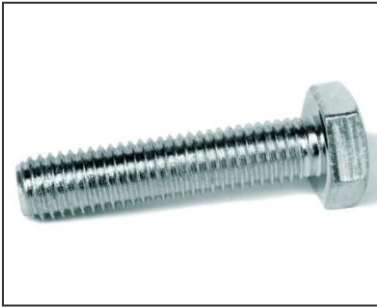
Nut and washer quantity

Plate and sleeve dimensions (if required).

SPECIALLY MANUFACTURED ITEMS:-

	<p>'U' Bolts Grip and Non Grip Type</p>	<p>N.B. (1/2") M15-(24") M600 DIA. Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Square Bend 'U' Bolts</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>'J' Foundation Bolts</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Double Ended Engineer Studs</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Waisted Double Ended Engineer Studs</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Tie Bars & Foundation Bolts</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>

- All products are available with the appropriate grades of nuts and washers
- All forms of plating and coating can be carried out



Hex Head and Heavy Hex Head in Full and Partial Threading

STANDARDS:-

ASTM/ASME/BS/DIN/BS EN ISO /JIS

MATERIAL:-

Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

FINISH AVAILABLE :

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, Yellow, Cadmium & Nickel.

SIZE RANGE:-

M6 to M64 in metric series

¼" to 2½" in imperial

Bigger sizes can be manufactured as per order.

THREADS:-

UNC, 8UN, UNF, Metric Coarse and Metric Fine

TYPICAL GRADES & STANDARDS:-

BS3692 / BS4190 grade 4.6, 4.8, 5.6, 5.8, 8.8, 10.9 and 12.9

ASTM A307 Grade A and B

ASTM A325

ASTM A193 Grade B7, B7M, B8, B8M & B16

ASTM A320 Grade L7 & L7M

Stainless Steel 304, 304L, 316, 316L, A2-70/80, A4-70/80

Any other specific grade can be manufactured upon request with short lead times.

ORDERING INFORMATION:-

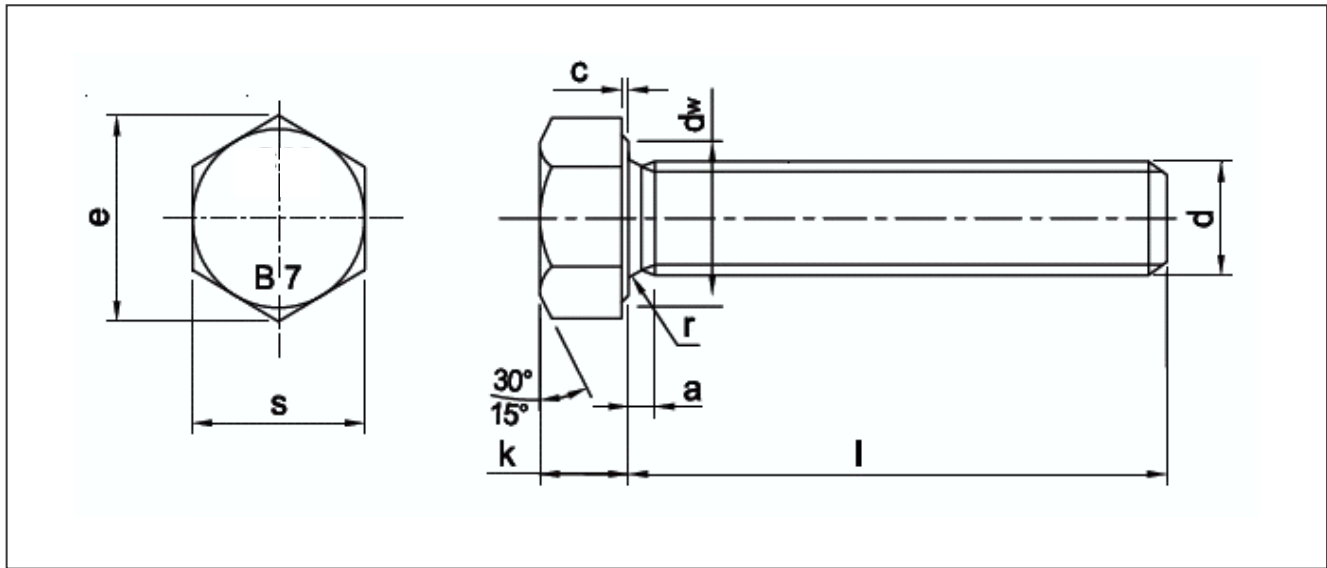
Dimensions – Size Dia and Length.

Standards and Grade

APPLICATION EXAMPLES:

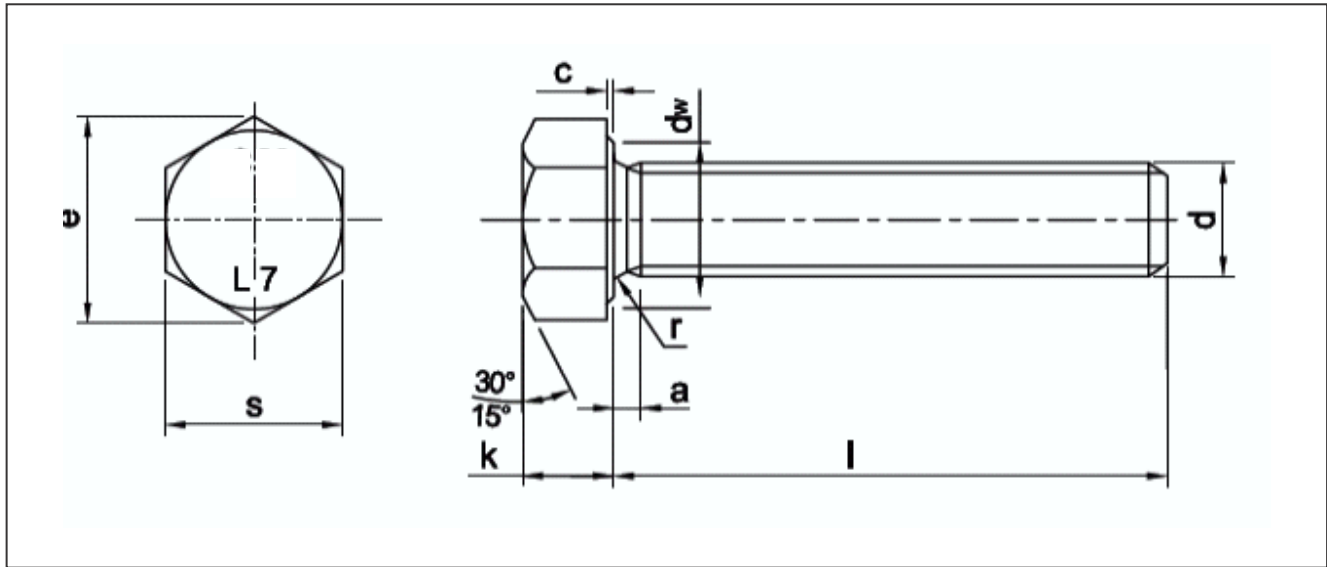


DIN 93 HEXAGON HEAD BOLT
Material ASTM A193 Grade B7



Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.67	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50	3.00	3.00	3.50	3.50	4.00	4.00	4.50	4.50	5.00
	Max	3.00	4.00	4.50	5.30	6.00	7.50	9.00	9.00	10.50	10.50	12.00	12.00	13.50	13.50	5.00
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19	33.61	38.00	42.70	46.50	51.10	55.90	55.90	64.70	74.20
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60

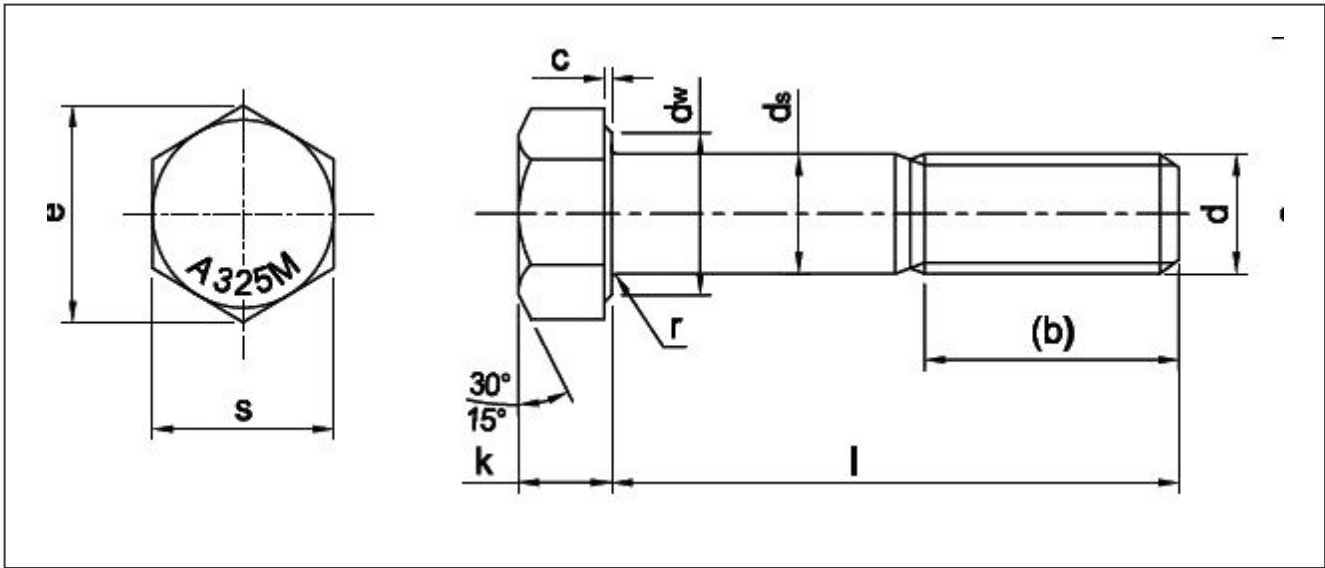
DIN 933 HEXAGON HEAD BOLT
Material ASTM A320 Grade L7



A320 L7 HEX BOLTS

Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.67	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50	3.00	3.00	3.50	3.50	4.00	4.00	4.50	4.50	5.00
	Max	3.00	4.00	4.50	5.30	6.00	7.50	9.00	9.00	10.50	10.50	12.00	12.00	13.50	13.50	5.00
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19	33.61	38.00	42.70	46.50	51.10	55.90	55.90	64.70	74.20
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60

ASTM A325M HEX BOLTS



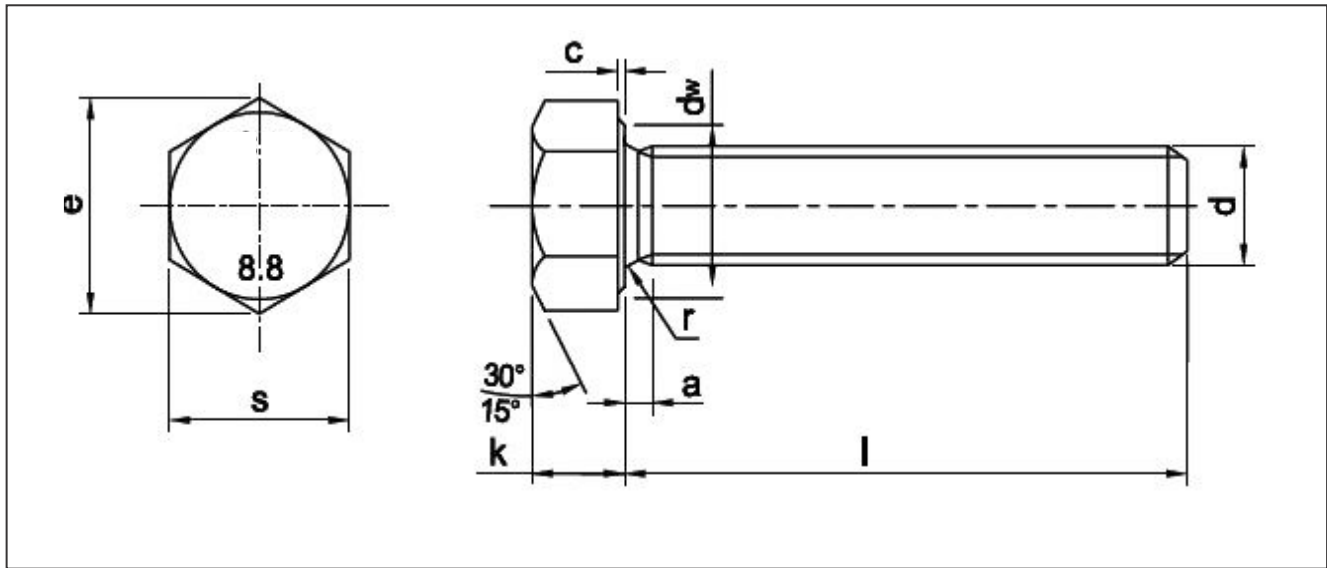
A325M HEX BOLTS

Threads (d)		M16	M20	M24	M27	M30	M33	M36
Across flat (s)	Min	26.16	33.00	35.00	40.00	45.00	49.00	58.80
	Max	27.00	34.00	36.00	41.00	46.00	50.00	60.00
Across corner(e)	Min	29.56	37.29	39.55	45.20	50.85	55.37	66.44
	Max	31.18	39.26	41.57	47.34	53.12	57.74	69.28
Head Thickness(k)	Min	9.25	11.60	13.10	14.10	16.10	17.65	21.45
	Max	10.75	13.40	14.90	15.90	17.90	19.75	23.55
Washer face Depth (c)	Min	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	Max	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Washer face Dia (dw)	Min	24.90	31.40	33.30	38.00	42.80	46.50	55.90
	Max	26.16	33.00	35.00	40.00	45.00	49.00	58.80
Shank Diameter (d s)	Min	15.30	19.16	21.16	23.16	26.16	29.16	35.00
	Max	16.70	20.84	22.84	24.84	27.84	30.84	37.00
Head junction Radius(r)	Min	0.60	0.80	0.80	1.00	1.20	1.20	1.50
	Max	0.80	1.00	1.00	1.20	1.50	1.50	1.80
Thread Length (b)	l<100	31	36	38	41	44	49	56
	l>100	38	43	45	48	51	56	63

l = Overall length of the Bolt

DIN 933 HEX SCREWS (FULL THREAD)

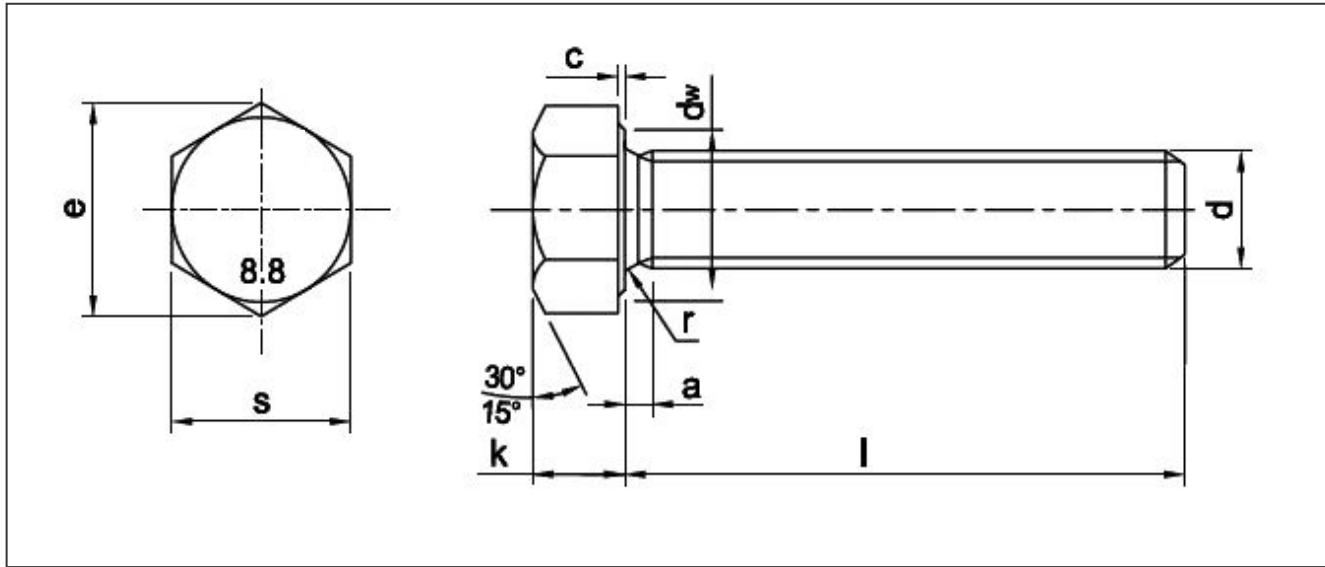
Grades 4.6, 8.8, 10.9, 12.9, A2 70, A2 80, A4 70 and A4 80



Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.67	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50	3.00	3.00	3.50	3.50	4.00	4.00	4.50	4.50	5.00
	Max	3.00	4.00	4.50	5.30	6.00	7.50	9.00	9.00	10.50	10.50	12.00	12.00	13.50	13.50	5.00
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19	33.61	38.00	42.70	46.50	51.10	55.90	55.90	64.70	74.20
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60

DIN 931 HEX BOLTS (HALF THREAD)

Grades - 4.6, 8.8, A2 70, A2 80, A4 70 and A4 80

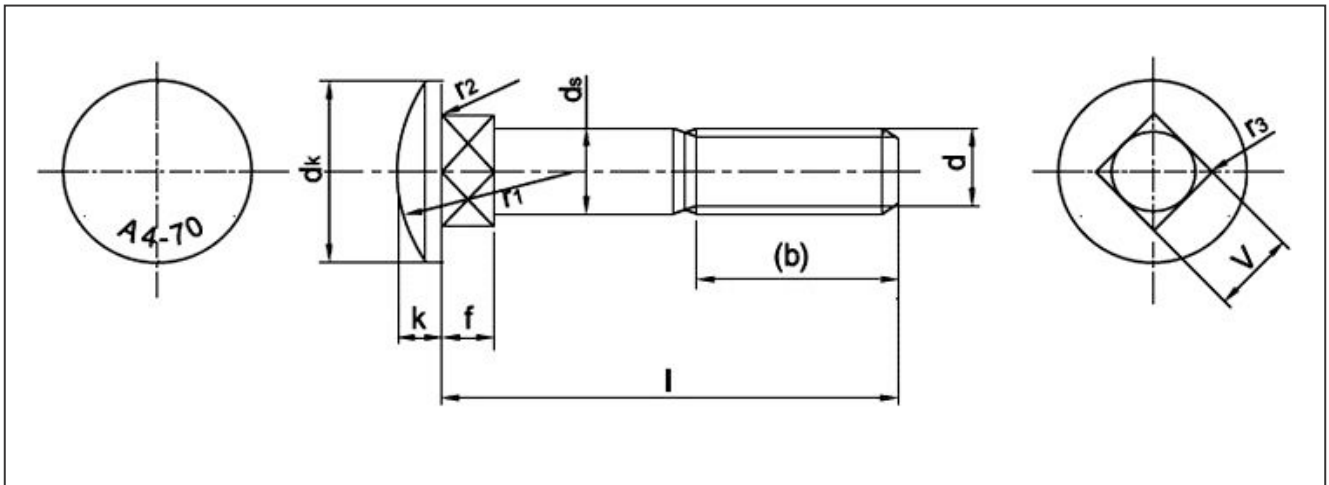


A320 L7 HEX BOLTS

Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.7	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
	Max	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Shank Diameter (ds)	Min	5.82	7.78	9.78	11.73	15.73	19.67	23.67	27.00	30.00	33.00	36.00	39.00	42.00	45.00	52.00
	Max	6.00	8.00	10.00	12.00	16.00	20.00	24.00	26.48	29.48	32.38	35.38	38.38	41.38	44.38	51.26
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60
	1<125*	18	22	26	30	38	46	54	60	66						
Thread Length (b)	125<200	24	28	32	36	44	52	60	66	72	78	84	90	96	102	116
	1>200*	37	41	45	49	57	65	73	79	85	91	97	103	109	115	129

l = Overall length of the Bolt

DIN 603 STAINLESS STEEL CARRIAGE BOLT/MUSHROOM BOLT



Threads (d)		M6	M8	M10	M12
dk	Min	15.45	19.35	23.35	29.35
	Max	16.55	20.65	24.65	30.65
ds	Min	5.52	7.42	9.42	11.30
	Max	6.00	8.00	10.00	12.00
f	Min	3.40	4.40	5.40	7.25
	Max	4.60	5.60	6.60	8.75
k	Min	3.12	4.12	4.62	6.05
	Max	3.88	4.88	5.38	6.95
r1	Approx	12.60	16.00	19.20	24.10
r2	Max	0.50	0.50	0.50	1.00
r3	Max	0.90	1.20	1.50	1.80
v	Min	5.52	7.42	9.42	11.30
	Max	6.48	8.58	10.58	12.70
(b)	1<125*	18	22	26	30
	125<200	24	28	32	36
	1>200*	37	41	45	49

l = Overall length of the Bolt



Socket Screws are also known as Allen Head Bolts and are fastened with a hex Allen wrench. Socket Screws are available in various head styles and materials.

STANDARDS:-

DIN/BS EN ISO

MATERIAL:-

Alloy Steel & Stainless Steel (304, 304L, 316, 316L)

FINISH AVAILABLE :

Plain & Electro-Galvanized.

SIZE RANGE:-

M5 to M24 in metric series

Bigger sizes can be manufactured as per order.

THREADS:-

Metric Coarse and Metric Fine

TYPICAL GRADES & STANDARDS:-

A2-70/80, A4-70/80

DIN 912

DIN 7991

ISO 7380

Any other specific grade can be manufactured upon request with short lead times.

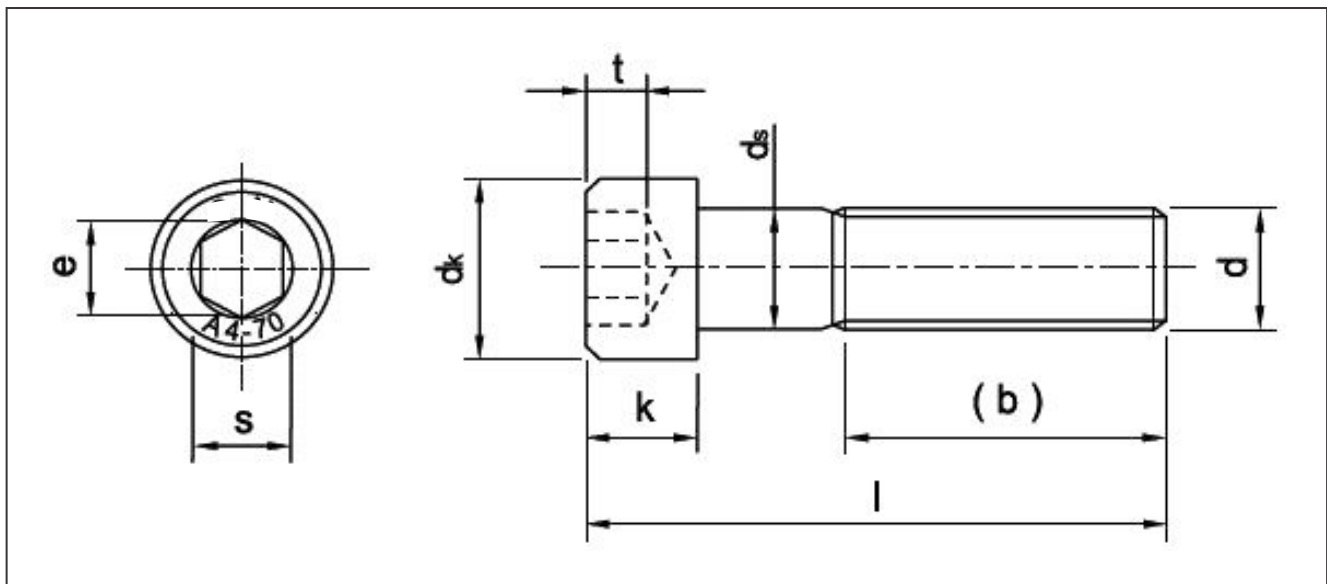
ORDERING INFORMATION:-

Dimensions - Size Dia and Length.

Standard and Material Grade

Nut and Washer quantity

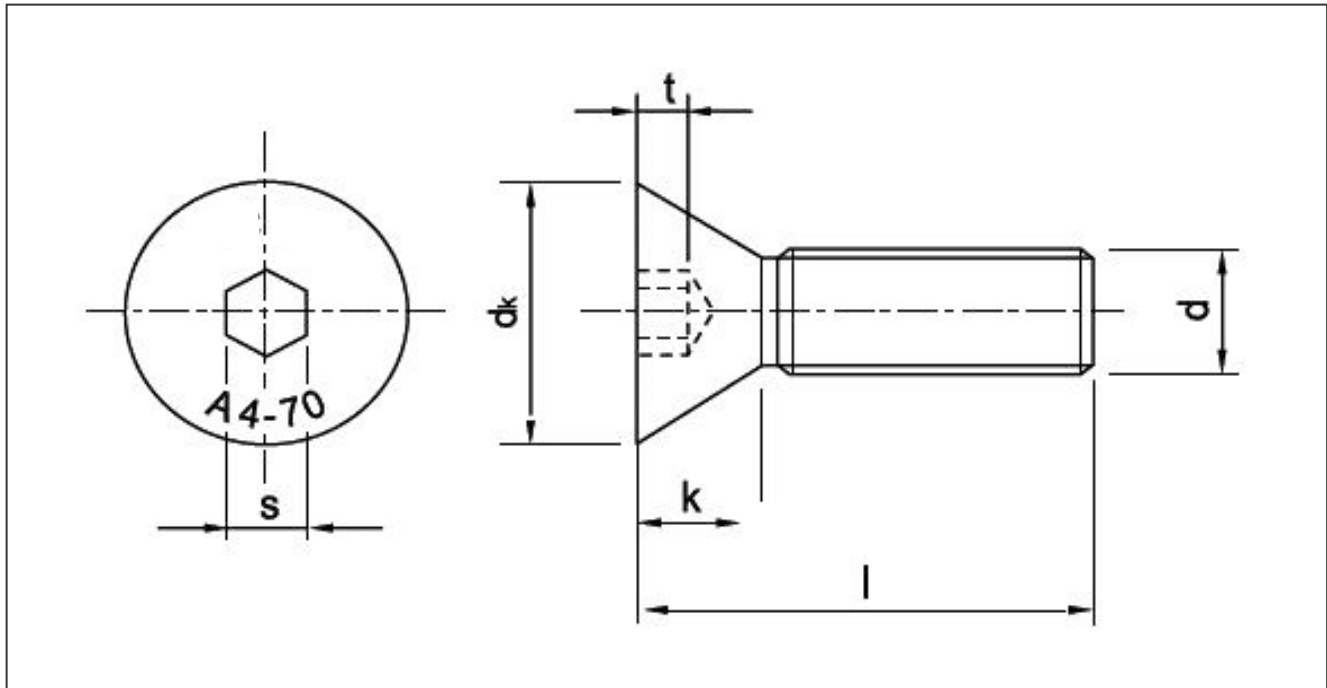
**DIN 912 STAINLESS STEEL HEXAGON
SOCKET HEAD CAPSCREW**



Threads (d)		M6	M8	M10	M12
dk	Min	9.78	12.73	15.73	17.73
	Max For Plain Heads	10.00	13.00	16.00	18.00
	Max For Knurled Heads	10.22	13.27	16.27	18.27
ds	Min	5.82	7.78	9.78	11.73
	Max	6.00	8.00	10.00	12.00
s	Min	5.02	6.02	8.03	10.03
	Max	5.14	6.14	8.175	10.175
e	Min	5.723	6.863	9.149	11.429
	Max	6.00	8.00	10.00	12.00
k	Min	5.70	7.64	9.64	11.57
	Max	6.00	8.00	10.00	12.00
t	Min	3.00	4.00	5.00	6.00
	Max	6.00	8.00	10.00	12.00
(b)	Ref	24	28	32	36

l = Overall length of the Bolt

**DIN 7991 STAINLESS STEEL HEXAGON
SOCKET COUNTERSUNK SCREW**



Threads (d)	M6	M8	M10	M12
dk	12.00	16.00	20.00	24.00
s	4.00	5.00	6.00	8.00
k	3.30	4.40	5.50	6.50
t	2.50	3.50	4.40	4.60

l = Overall length of the Bolt



Standard Hex Nut, Heavy Hex Nut, Hex Coupling Nut, Nylon Lock Nut, Spring Nut, Dome Nut and Wing Nut

STANDARDS:-

ASTM/ASME/BS/DIN/BS EN ISO /JIS

MATERIAL:-

Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

FINISH AVAILABLE :

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, Yellow, Cadmium & Nickel.

SIZE RANGE:-

M6 to M64 in metric series

1/4" to 2-1/2" in imperial

Bigger sizes can be manufactured as per order.

THREADS:-

UNC, 8UN, UNF, Metric Coarse and Metric Fine

TYPICAL GRADES & STANDARDS:-

DIN 934 Class 4, 8, 10, 12, A270, A280, A470 and A480

ASTM A194/A194M Grades 2H, 2HM, 4L, 7L and 7LM

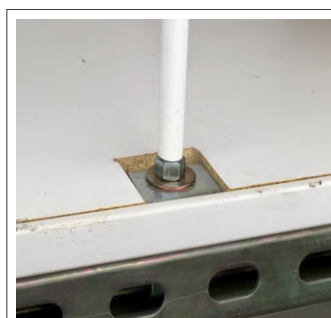
ASTM A563/563M Grades 8, 10S, A, B, C, D, DH, DH3

ORDERING INFORMATION:-

Dimensions - Size.

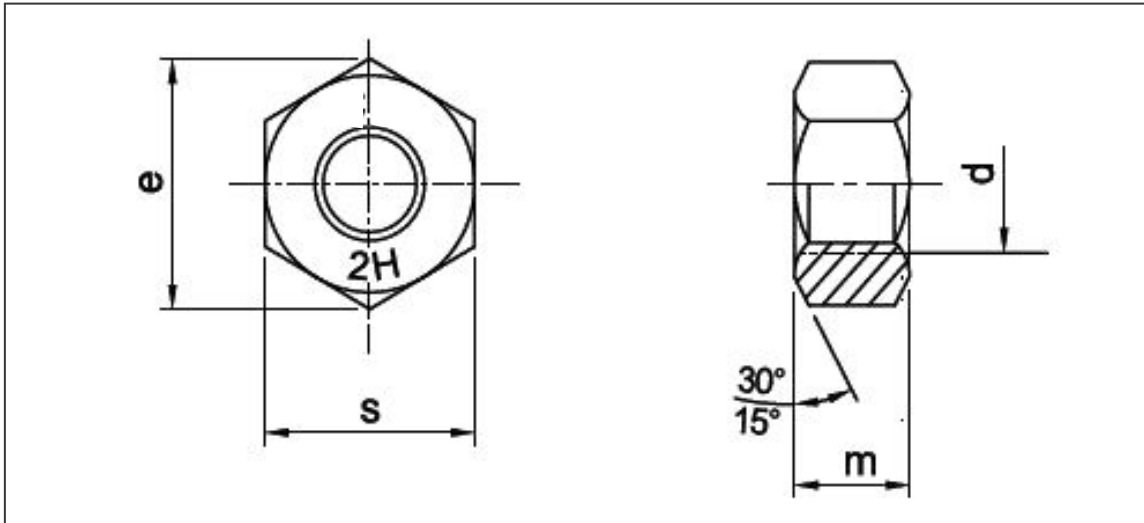
Standard and Grade

APPLICATION EXAMPLES:



HEAVY HEX NUTS TO DIN 934 (H=D)

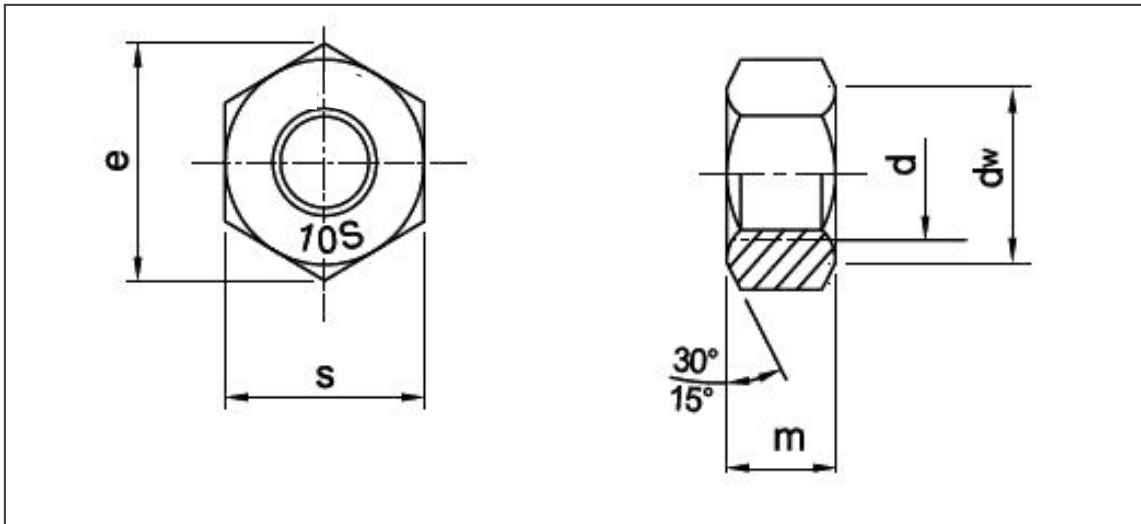
Material ASTM A194 Grade 2H/2HM/4L, 7L, 7LM



A194 HEAVY HEX BOLTS

DIA.(D)	THREAD PITCH	ACROSS FLATS AF	THICKNESS (M)	WEIGHT KG/100
M8	1.25	13	8	0.65
M10	1.5	17	10	1.45
M12	1.75	19	12	2.17
M14	2	22	14	3.13
M16	2	24	16	4.16
M18	2.5	27	18	6.20
M20	2.5	30	20	8.05
M22	2.5	32	22	9.85
M24	3	36	24	13.80
M27	3	41	27	20.65
M30	3.5	46	30	27.90
M33	3.5	50	33	36.00
M36	4.0	55	36	49.15
M39	4.0	60	39	42.75
M42	4.5	65	42	81.50
M45	4.5	70	45	100.00
M48	5.0	75	48	122.00
M52	5.0	80	52	152.50
M56	5.5	85	56	177.50
M64	6.0	95	64	247.50
M72	6.0	105	72	334.50
M76	6.0	110	76	380.00

A563M - 10S HEAVY HEX NUTS

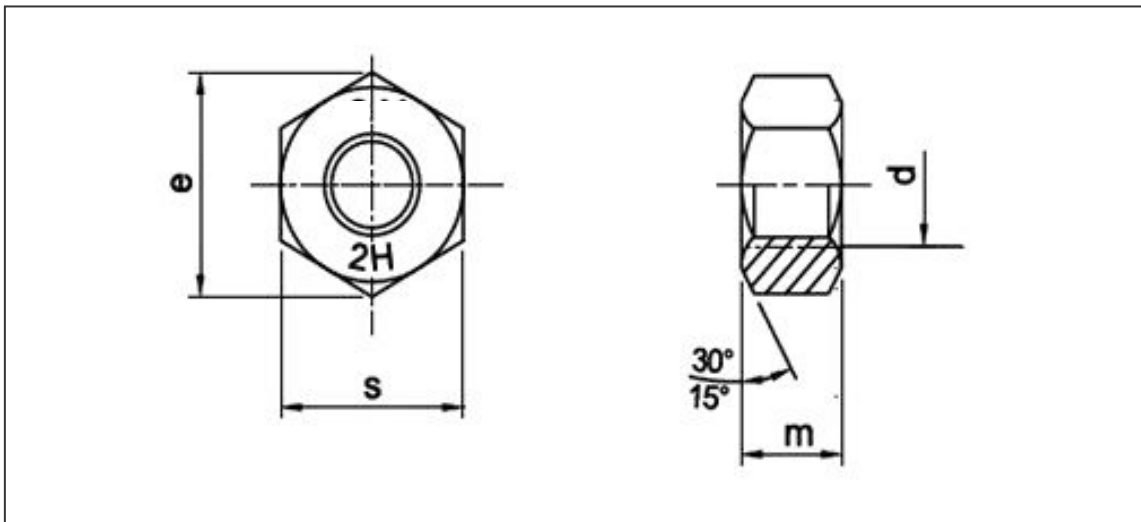


A563-10S HEAVY HEX BOLTS

Threads (d)		M12	M16	M20	M22	M24	M27	M30	M36
Across flat (s)	Min	20.16	26.16	33.00	35.00	40.00	45.00	49.00	58.80
	Max	21.00	27.00	34.00	36.00	41.00	46.00	50.00	60.00
Across corner (e)	Min	22.78	29.56	37.29	39.55	45.20	50.85	55.37	66.44
Nut Thickness (m)	Min	11.90	16.40	19.40	22.30	22.90	26.30	29.10	35.00
	Max	12.30	17.10	20.70	23.60	24.20	27.60	30.70	36.60
Bearing face Dia(dw)	Min	19.20	24.90	31.40	33.30	38.00	42.80	46.60	55.90

HEAVY HEX NUTS TO ANSI B18.2.2

Material ASTM A194 Grade 2H/2HM/4L, 7L, 7LM





A194 HEAVY HEX BOLTS

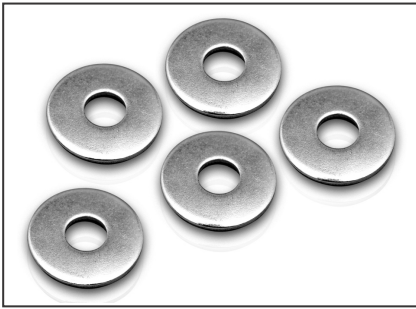
Dia.(D)	Thread Pitch	Across Flats AF	Thickness(m)	Weight KG/100
1/4" UNC	20	7/16"	1/4"	0.3
5/16" UNC	18	1/2"	5/16"	0.4
3/8" UNC	16	11/16"	3/8"	1.4
7/16" UNC	14	3/4"	3/16"	1.9
1/2" UNC	13	7/8"	1/2"	3.0
9/16" UNC	12	15/16"	9/6"	3.7
5/8" UNC	11	1.1/16"	5/8"	5.4
3/4" UNC	10	1.14"	3/4"	8.8
7/8" UNC	9	1.7/16"	7/8"	13.5
1" UNC	8	1.5/8"	1"	19.3
1.1/8" UNC	8	1.13/16"	1.1/8"	26.9
1.1/4" UNC	8	2"	1.1/4"	35.7
1.3/8" UNC	8	2.3/16"	1.3/8"	46.3
1.1/2" UNC	8	2.3/8"	1.1/2"	59.5
1.5/8" UNC	8	2.9/16"	1.5/8"	73.6
1.3/4" UNC	8	2.3/4"	1.3/4"	92.7
1.7/8" UNC	8	2.15/16"	1.7/8"	109.5
2" UNC	8	3.1/8"	2"	135.8
2.1/4" UNC	8	3.1/2"	2.1/4"	190.3
2.1/2" UNC	8	3.7/8"	2.1/4"	256
2.3/4" UNC	8	4.1/4"	2.3/4"	335
3" UNC	8	4.5/8"	3"	432
3.1/4" UNC	8	5"	3.1/4"	543
3.1/2" UNC	8	5.3/8"	3 1/2"	694

DIN 934 HEX NUTS



DIN 934 HEX NUTS

Threads (d)	Across Flat (s)	Across Corner (e)	Nut Thickness (m)
M6	10.00	11.05	6.00
M8	13.00	14.38	6.50
M10	17.00	18.90	8.00
M12	19.00	21.10	10.00
M16	24.00	26.75	13.00
M20	30.00	32.95	16.00
M24	36.00	39.55	19.00
M27	41.00	45.20	22.00
M30	46.00	50.85	24.00
M33	50.00	55.37	26.00
M36	55.00	60.79	29.00
M39	60.00	66.44	31.00
M42	65.00	71.30	34.00
M45	70.00	76.95	36.00
M48	75.00	82.60	38.00
M52	80.00	88.25	42.00
M56	85.00	93.56	45.00
M64	95.00	104.86	51.00
M72	105.00	116.16	58.00



Plain Washers, Spring Lock Washers and Hardened Steel Washers

STANDARDS:-

ASTM/ASME/BS/DIN/BS EN ISO /JIS

MATERIAL:-

Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

FINISH AVAILABLE :

Plain, Electro-Galvanized, Hot Dip Galvanized, Zinc Flake, Yellow, Cadmium & Nickel.

SIZE RANGE:-

M6 to M64 in metric series

1/4" to 2-1/2" in imperial

Bigger sizes can be manufactured as per order.

TYPICAL GRADES & STANDARDS:-

DIN 125/A

DIN 127/B

DIN 9021

ASTM F436 and F436M

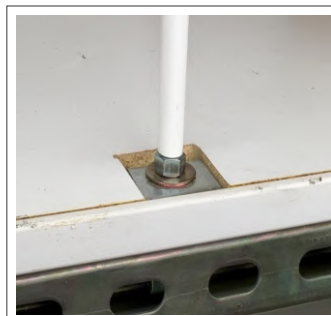
Any other specific grade can be manufactured upon request with short lead times

ORDERING INFORMATION:-

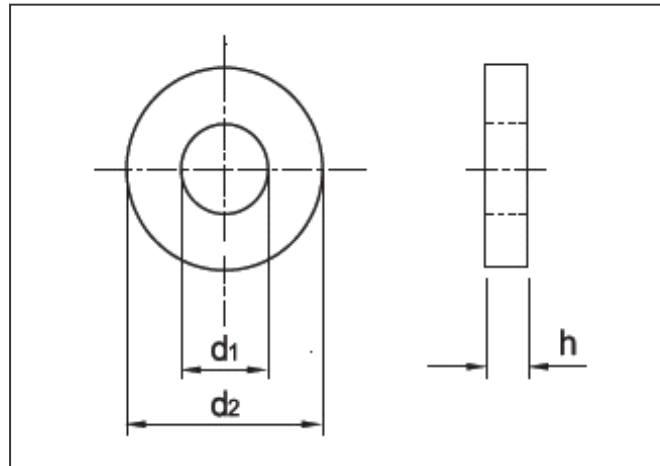
Dimensions – Size.

Standard and Grade

APPLICATION EXAMPLES:



DIN 125 FLAT WASHER



Washer size	Inner Diameter (d1)	Outer Diameter (d2)	Thickness (h)
M6	6.40	12.00	1.60
M8	8.40	16.00	1.60
M10	10.50	20.00	2.00
M12	13.00	24.00	2.50
M16	17.00	30.00	3.00
M20	21.00	37.00	3.00
M24	25.00	44.00	4.00
M27	28.00	50.00	4.00
M30	31.00	56.00	4.00
M33	34.00	60.00	5.00
M36	37.00	66.00	5.00
M39	40.00	72.00	6.00
M42	43.00	78.00	7.00
M45	46.00	85.00	7.00
M48	50.00	92.00	8.00
M52	54.00	98.00	8.00
M56	58.00	105.00	9.00
M64	66.00	115.00	9.00
M72	74.00	125.00	10.00

F436M WASHER



Washer Size	Inner Diameter (d1)		Outer Diameter (d2)		Thickness(h)	
	Max.	Min.	Max.	Min.	Max.	Min.
12	14.40	14.00	27.00	25.70	4.60	3.10
14	16.40	16.00	30.00	28.70	4.60	3.10
16	18.40	18.00	34.00	32.40	4.60	3.10
20	22.50	22.00	42.00	40.40	4.60	3.10
22	24.50	24.00	44.00	42.40	4.60	3.40
24	26.50	26.00	50.00	48.40	4.60	3.40
27	30.50	30.00	56.00	54.10	4.60	3.40
30	33.60	33.00	60.00	58.10	4.60	3.40
36	39.60	39.00	72.00	70.10	4.60	3.40
42	45.60	45.00	84.00	81.10	7.20	4.60
48	52.70	52.00	95.00	92.80	7.20	4.60
56	62.70	62.00	101.00	104.50	8.70	6.10
64	70.70	70.00	187.00	115.80	8.70	6.10
72	78.70	76.00	130.00	127.50	8.70	6.10

Hot Dip Galvanizing:-

STD	COMPONENTS
ASTM A153	Rolled/ Pressed/ steel/ Hardware
ASTM A641	Carbon Steel Wire(Nails/ Straples etc)
ASTM B695	Iron & Steel
ASTM A123	Iron & Steel Anchor Bolts, Fabricated Products
BS EN ISO 461	Heavy Zinc Deposit 388.1 to 76.2 microns

ELECTRO-DEPOSITED Zinc Plating:-

ASTM B633	Iron & Steel Products
BS 3382 PART 2	Bright Finish

ELECTRO-DEPOSITED Cadmium Plating:-

BS 3382 PART 1	Semi- Bright Finish
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ELECTRO-DEPOSITED Nickel Cadmium Plating:-

AMS 2416	Steel
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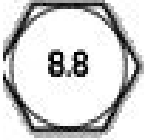


ELECTRO-DEPOSITED Nickel & Nickel Plus Chromium:-

BS 3382 PART 3 & 4	Steel & Copper Alloy
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PTFE (FLUOROPOLYMER Coating):-

XYLAN 1070	Colour- Red, Medium Dark Blue, Green, Orange, Yellow, Black
XYLAN 1052	Blue
XYLAN 1424	Water Base Blue
xylan standard	Aluminium "cermet" Coating
XYLAN Cobalt Blue 1514	Blue

**Mechanical properties per ISO 898-1
(Externally Threaded Fasteners)**

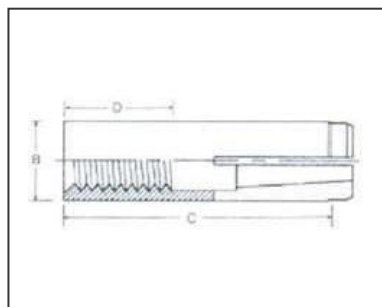
Metric Property Class	Material	Size Range	Min. Proof Strength MPA	Min. Tensile Strength MPA	Core Hardness Rockwell		Min. Yield Strength MPA	Grade Identification Marking'
					Min.	Max.		
4.6	Low or Medium Carbon Steel	M5-M39	225	400 (58,000 PSI)	B67	B99.5	240	
8.8	Medium Carbon Steel: quenched & tempered	M5-M16	580	800 (116,000 PSI)	C22	C32	640	
		M18-M39	600	830(120,000 PSI)	C23	C34	660	
10.9	Alloy Steel quenched & tempered	M5-M39	830	1040 (150,800 PSI)	C32	C39	940	
12.9	Alloy Steel quenched & tempered	M16-M39	970	1220 (177,000 PSI)	C39	C44	1100	

**MECHANICAL PROPERTIES PER DIN 267 PART 4
(INTERNALLY THREADED FASTENERS)**

PROPERTY CLASS	TYPICAL MATERIAL	PROOF STRESS MPA	CORE HARDNESS ROCKWELL (MAX.)	GRADE IDENTIFICATIONS MARKING
Class 8	Low to Medium Carbon Steel	800	C30	
Class 10	Medium Carbon Steel; quenched & tempered	1000	C36	
Class 12	Medium Carbon Steel; quenched & tempered	1200	C36	

DROP IN ANCHOR

TGDPA00000000



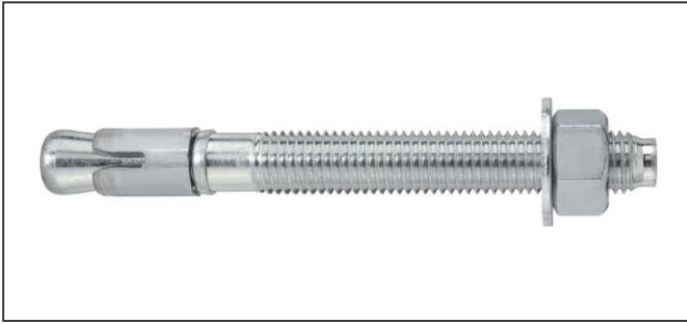
PRODUCT CODE	SIZE	DRILL BIT (B)	ANCHOR LENGTH (C)	THREAD LENGTH (D)
TGDPA000E0830	M8	10	30	13
TGDPA000E1040	M10	12	40	16
TGDPA000E1250	M12	16	50	21
TGDPA000E1665	M16	20	65	30
TGDPA000E2080	M20	25	80	30

DRAW IN ANCHOR

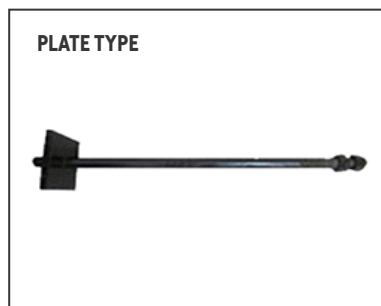
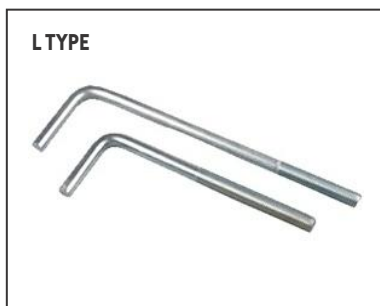
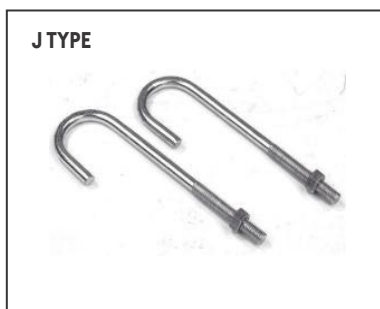
TGDWA00000000



PRODUCT CODE	SIZE	SHIELD LENGTH	HOLE DIAMETER	LENGTH OF ANCHOR
TGDWA000E0645	M6	45	12	45
TGDWA000E0850	M8	50	14	50
TGDWA000E1060	M10	60	16	60
TGDWA000E1265	M12	75	20	65
TGDWA000E1695	M16	115	25	95



	Measure	M6	M8	M10	M12	M16	M20	M24
Thread Diameter	mm	6	8	10	12	16	20	24
Drill Hole Diameter	mm	6	8	10	12	16	20	24
Clearance Hole Diameter	mm	7	9	12	14	18	22	26
Embedment Depth	mm	35	40	50	60	70	100	120
Minimum Structure Thickness	mm	50	60	80	100	110	130	180
Ultimate Tensile Strength	N/mm ²	500	500	500	500	400	400	400
Yield Strength	N/mm ²	400	400	400	400	240	240	240
Recommended Tightening Torque	Nm	6	10	28	34	85	160	300
Characteristic Tensile Load	kN	5.4	8.4	12.9	20.4	24	32.4	57.6
Recommended Tensile Load	kN	1.8	2.8	4.3	6.8	8	10.8	26.2
Characteristic Shear Load	kN	5.8	8	14.5	18	26	35	74
Recommended Shear Load	kN	2.3	3.2	5.8	7.2	10.4	14	49.3
Minimum Centre Spacing	mm	70	80	100	120	140	200	240
Minimum Edge Distance	mm	50	60	80	100	130	160	200

**APPLICATION:**

Cement Plant
 Petrochemical Plant
 Marine Industry
 Construction Industry
 Sugar Plant
 Railway Industries
 Nuclear power Plants ant More

FINISH:

Plain, Electro-Galvanized, Hot Dip Galvanized, Epoxy Coated & Zinc Flake.

MATERIAL OF CONSTRUCTION**BOLT AND NUT STANDARDS****MILD STEEL**

ASTM A 307, Gr. A OR A 36

ASTM A 563

MEDIUM STRENGTH, MILD STEELASTM F 1554 Gr. 55 WITH
SUPPLIMENTRY REQ. S1ASTM A194 Gr. 2H OR A 563 Gr. D
OR BETTER**HIGH STRENGTH STEEL**

ASTM A 325 OR A 321

ASTM A 194 OR A 563, HEAVY HEX

ALLOY STEEL

ASTM A 193 Gr. B7

ASTM A 194 Gr. 2H OR A 563 Gr. DH,
HEAVY HEX**SIZES :****DIAMETER****LENGTH**

12 MM DIA TO 90 MM DIA

UPTO 3 METRES

DUCT CORNER PIECE

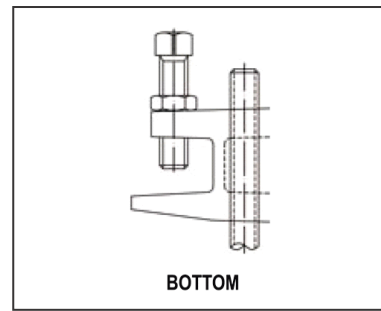
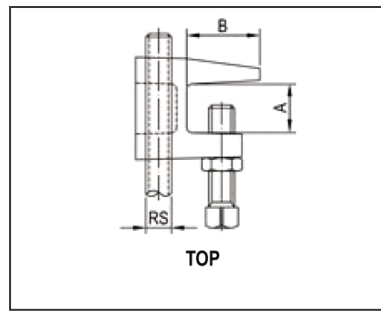
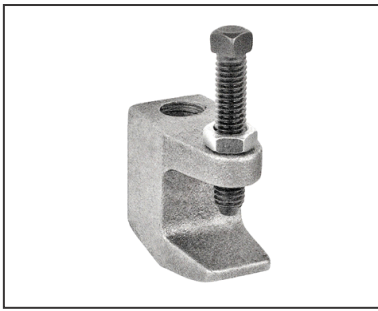


G - CLAMP





HANGING ATTACHMENT

**SIZE RANGE:**

3/8" and 1/2" or M10 and M12

MATERIAL:

Ductile Iron, Hardened Steel cup point set screw and lock nut.


FINISH:

Plain, Electro-Galvanized & Zinc Flake.

SERVICE:

Structural attachment to top or bottom of metal beams, purlins, channels or angel iron

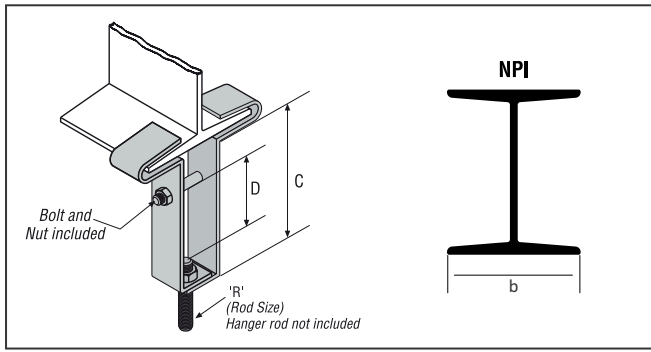
APPROVAL:

Complies with Federal Specification A-A-1192A (Type 19 & 23) WW-H-171-E (Type 23) and MSS-SP-69 (Type 19 & 23). 

PRODUCT CODE	RS (INCH)	A (INCH)	B (INCH)	LOAD (KG)
TGBC0000E0318	3/8	3/4	1 1/8	250
TGBC0000E0112	1/2	3/4	1 1/4	350

PRODUCT CODE	RS (INCH)	A (INCH)	B (INCH)	LOAD (KG)
TGBC0000E0010	M10	19	29	250
TGBC0000E0012	M12	19	31	350

NOTE: Available with threading & without threading

**SERVICE:**

Designed for attaching a hanger rod to be centered under beam flanges vertical adjustment is provided in the clamp. Can be used with swivel unit when connecting to inclined sections.

MATERIAL:

Mild Steel

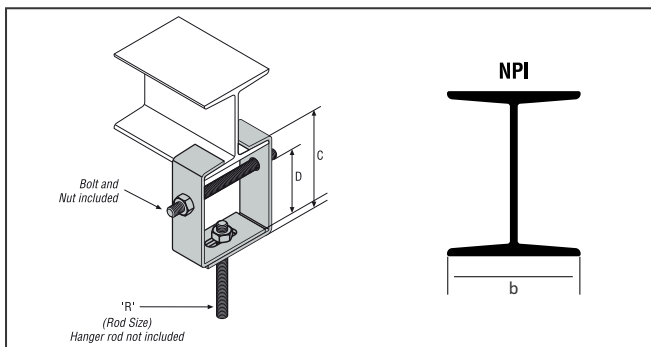
FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	R	NPI MM	b MM	C MM	MAX.VERTICAL ADJ. D MM	BOLT	DESIGN LOAD KN
TGTBC0E080100	M12	80-100	64	84	51	M10	0.85
TGTBC0E120140	M12	120-140	66	80	51	M10	0.85
TGTBC0E160200	M12	160-200	90	100	51	M10	1.35
TGTBC0E000240	M12	240	106	100	51	M10	1.35

BOX STEEL BEAM CLAMP

TGBBC00000000

**SERVICE:**

Designed for attaching a hanger rod to be centered under beam flanges. 51 mm vertical adjustment is provided in the clamp.

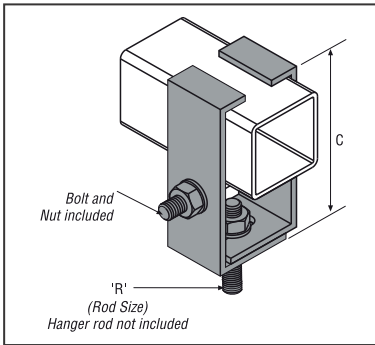
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	R	NPI MM	b MM	C MM	MAX.VERTICAL ADJ. D MM	DESIGN LOAD KN
TGBBC000E0010	M10	80-100	42-50	100	51	2.44
TGBBC000E0012	M12	120-140	58-66	100	51	3.78

**SERVICE:**

Designed for attaching a hanger rod to be centered under beam flanges. 30 mm vertical adjustment is provided in the clamp.

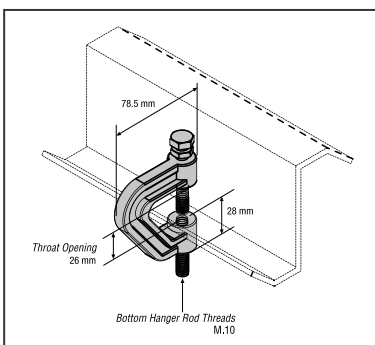
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	R	C MM	DESIGN LOAD KN
TGBBC10E04060	M10	130	1.3/1.7
TGBBC12E04060	M12	130	1.3/1.8
TGBBC10E30100	M10	170	1.6
TGBBC12E60100	M12	170	2.3/1.7
TGBBC12E100120	M12	200	3.2/1.25

**SERVICE:**

Designed for attaching a M.10 hanger rod to the bottom flange of a z-purlin

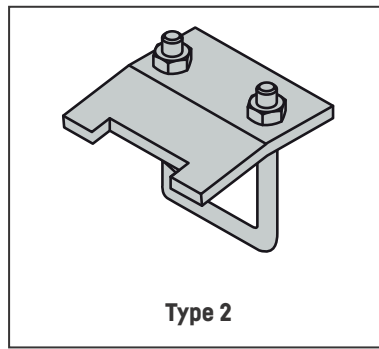
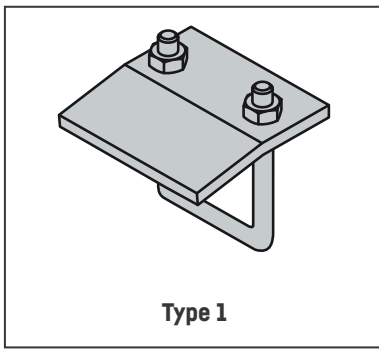
MATERIAL:

Malleable Iron

FINISH AVAILABLE:

Electro-Galvanized

PRODUCT CODE	DESIGN LOAD KN
TGPBC00E00010	1.78

**SERVICE:**

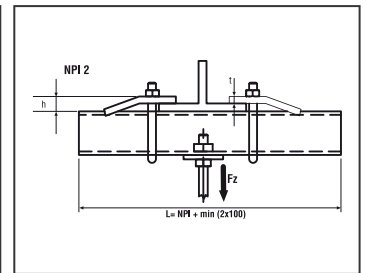
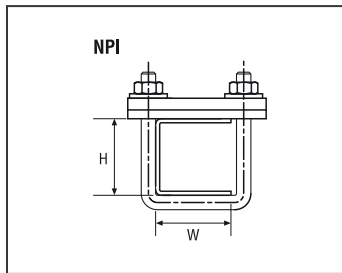
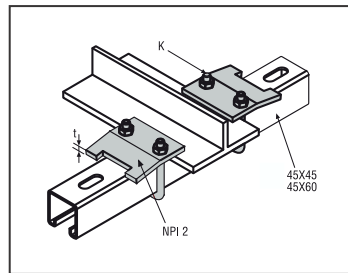
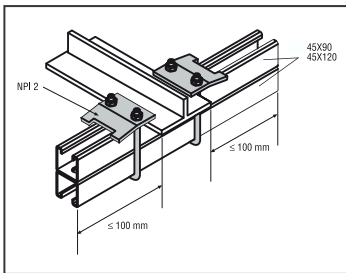
Designed for establishing the suspension systems to the NPI - NPH profiles.

MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

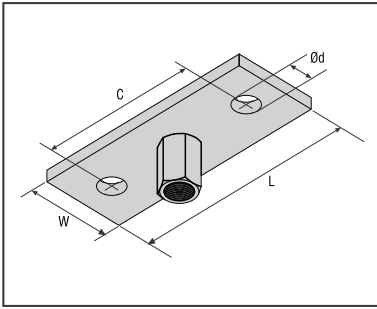


PRODUCT CODE	K MM	t MM	FZ KN	APP.FRAMING CHANNELS	
				W MM	H MM
TGSBC000E1008	M8	6	3.70	max.30	50
TGSBC000E1010	M10	8	4.50	max.40	70
TGSBC000E1012	M12	8	5.60	max.60	110
TGSBC000E1016	M16	10	8.00	max.76	125

Loads per clamp pair.

PRODUCT CODE	K MM	t MM	FZ KN	APP.FRAMING CHANNELS	
				W MM	H MM
TGSBC000E2010	M10	8	4.50		4522
TGSBC000E2012	M12	8	5.60		4545 4560 4590 45120

Loads per clamp pair.

**SERVICE:**

Designed for attaching a hanger rod to beam, ceiling or strut channel.

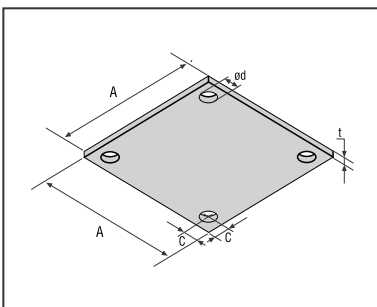
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	R	L MM	W MM	Ød MM	C MM	DESIGN LOAD
TGCF0000E0010	M10	110	50	11	65	3.5
TGCF0000E0012	M12	152	50	13	100	5.2
TGCF0000E0016	M16	152	50	13	100	9.71
TGCF0000E0020	M20	152	50	18	100	14.37
TGCF0000E0022	M22	203	76	18	125	19.93
TGCF0000E0024	M24	203	76	18	125	26.24

**PLATE****SERVICE:**

Designed for attaching unstallation plate.

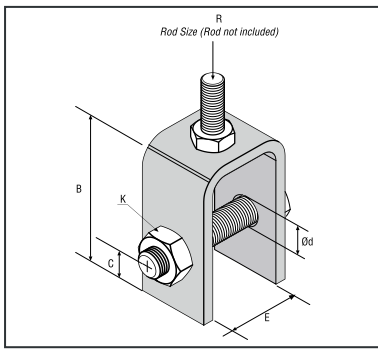
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

Ød MM	A MM	t MM	C MM
11	100	6	25
11	150	8	25
13	200	10	25
23	250	12	35
23	300	15	35

**SERVICE:**

Designed for attaching a hanger rod to bottom of structural steel where heavy load and large hanger rod size are required. can be welded in place in either the upright or inverted position.

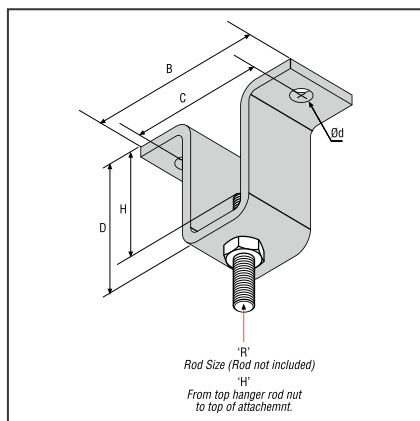
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	R ROD	K MM	B MM	C MM	Ød MM	E MM	DESIGN LOAD KN	
							350°	400°
TGWBA000E0010	M10	M10	72	22	14	32	3.25	2.54
TUWBA000E0012	M12	M12	72	22	18	32	6.00	4.70
TGWBA000E0016	M16	M16	72	22	22	32	9.61	7.52
TGWBA000E0020	M20	M20	78	28	24	38	14.37	11.25
TGWBA000E0022	M22	M22	108	32	30	50	19.93	15.60
TGWBA000E0024	M24	M24	113	38	32	50	26.24	20.55
TGWBA000E0027	M27	M27	113	38	34	70	33.14	25.93
TGWBA000E0030	M30	M30	126	51	38	76	42.25	33.09
TGWBA000E0036	M36	M36	163	63	44	89	61.38	48.07
TGWBA000E0042	M42	M42	195	70	50	95	82.73	64.79
TGWBA000E0048	M48	M48	207	82	60	95	109.42	87.29

**SERVICE:**

Designed for to be used in steel construction structures as a suspension material.

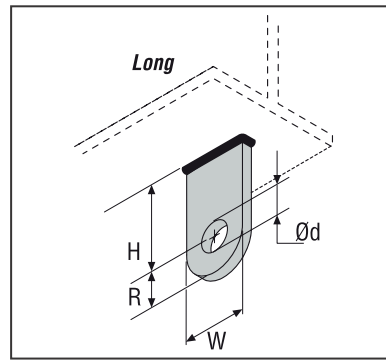
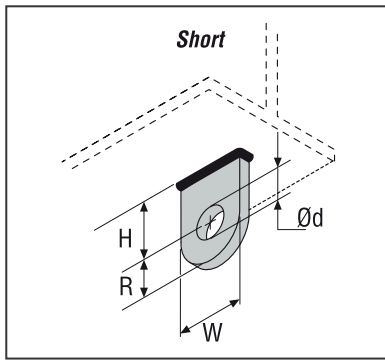
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	R MM	B MM	C MM	D MM	Ød MM	ADJUSMENT H	DESIGN LOAD WITH BOLTS KN
TGUA0000E0010	M10	100	79	86	11	70	3.25
TGUA0000E0012	M12	136	105	92	14	70	6.00
TGUA0000E0016	M16	150	114	94	18	68	9.61
TGUA0000E0020	M20	168	117	121	23	89	14.37
TGUA0000E0022	M22	184	133	125	23	90	19.93

**SERVICE:**

Designed for attachment to structural steel.

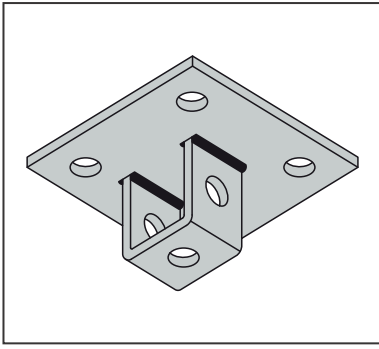
MATERIAL:

Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

PRODUCT CODE	Ød MM	R MM	SHORT H MM	LONG H MM	W MM	DESIGN LOAD kN
TGSLP000ES018	18	32	38	76	63	6.00
TGSLP000ES020	20	32	38	76	63	9.60
TGSLP000ES024	24	32	38	76	63	14.40
TGSLP000ES028	28	32	51	76	63	19.90
TGSLP000ES032	32	38	51	76	76	26.20
TGSLP000ES036	36	38	76	102	76	33.10
TGSLP000ES038	38	51	76	102	102	42.20
TGSLP000ES044	44	64	76	114	127	61.40
TGSLP000ES050	50	64	76	114	127	82.70
TGSLP000ES060	60	76	102	114	152	109.50

**SERVICE:**

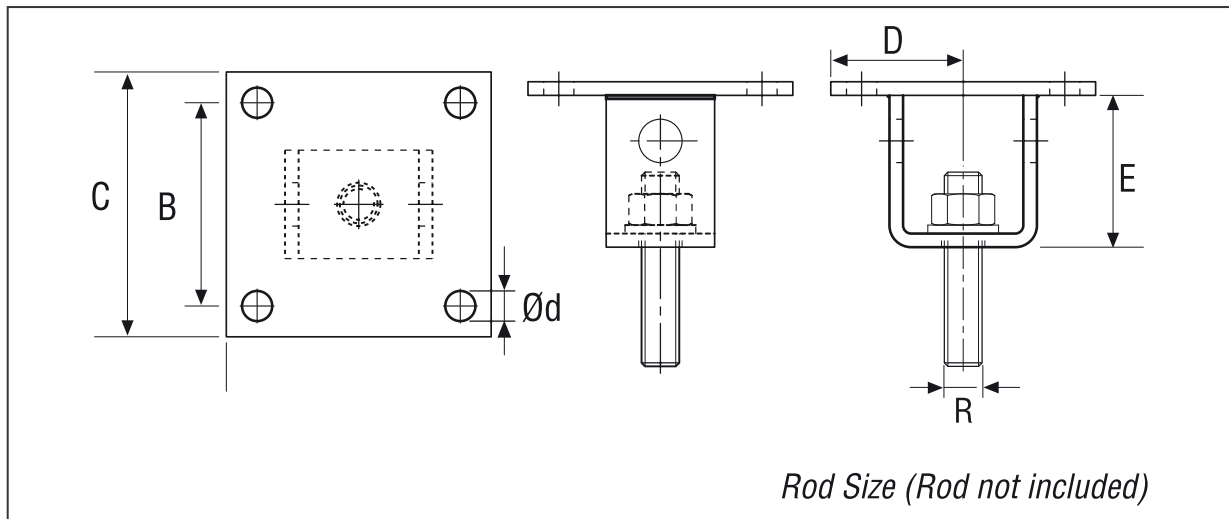
Structural attachment to concrete ceilings where vertical adjustment is desired. Normally used with threaded rod and nut.

MATERIAL:

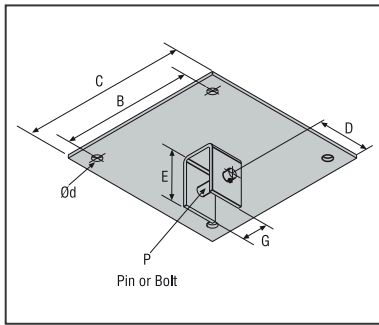
Mild Steel

FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.



PRODUCT CODE	R MM	B MM	C MM	D MM	E MM	Ød MM	DESIGN LOAD
							WITH BOLT kN
TGCRP000E0010	M10	200	250	125	73	14	3.20
TGCRP000E0012	M12	200	250	125	73	14	6.00
TGCRP000E0016	M16	200	250	125	73	14	9.50
TGCRP000E0020	M20	200	250	125	80	18	14.30
TGCRP000E0022	M22	200	250	125	108	18	19.90
TGCRP000E0024	M24	200	300	150	114	20	26.20
TGCRP000E0027	M27	200	300	150	121	24	33.10
TGCRP000E0030	M30	200	300	150	127	24	42.20
TGCRP000E0036	M36	200	300	150	165	28	61.30

**SERVICE:**

Structural attachment to concrete ceilings where vertical adjustment is desired. Normally used with threaded rod and nut.

MATERIAL:

Mild Steel

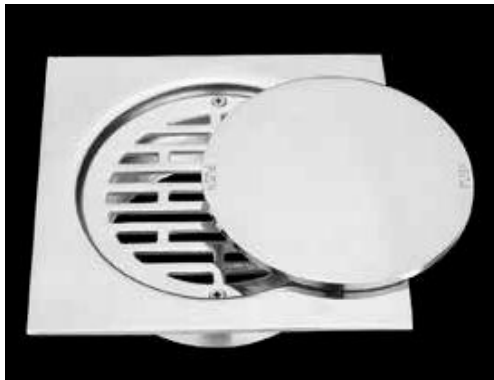
FINISH AVAILABLE:

Electro-Galvanized, Hot Dip Galvanized & Zinc Flake.

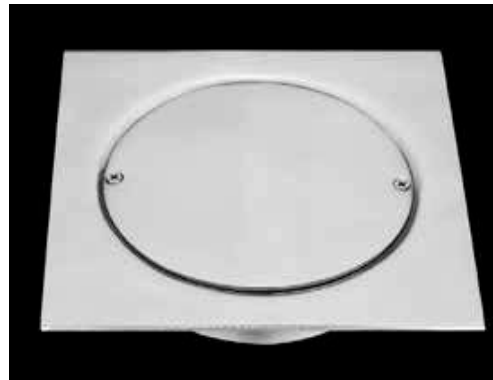
PRODUCT CODE	P	B MM	C MM	D MM	Ød MM	G MM	DESIGN LOAD WITH BOLT KN
TGCAP000E0012	M12	200	250	125	14	32	3.20
TGCAP000E0016	M16	200	250	125	14	32	6.00
TGCAP000E0020	M20	200	250	125	14	32	9.50
TGCAP000E0022	M22	200	250	125	18	38	14.30
TGCAP000E0024	M24	200	250	125	18	50	19.90
TGCAP000E0027	M27	200	300	150	20	50	26.20
TGCAP000E0030	M30	200	300	150	24	70	33.10
TGCAP000E0036	M36	200	300	150	24	75	42.20
TGCAP000E0042	M42	200	300	150	28	90	61.30

FLOOR DRAIN



Stainless Steel Floor Drains – Non Magnetic**SS FLOOR DRAINOUT 3PC GRADE
NON MAGNETIC
(BODY + SCREWED GRATING + LID)****Technical Discription:**

200mm x 200mm x 102mm Fits Inside 4" Pipe
 150mm x 150mm x 102mm Fits Inside 4" Pipe
 109mm x 109mm x 78mm Fits Inside 3" Pipe
 79mm x 79mm x 51mm Fits Inside 2" Pipe

**SS FLOOR CLEANOUT 2PC. - NON
MAGNETIC
(BODY + LID)****Technical Discription:**

150mm x 150mm x 102mm Fits Inside 4" Pipe
 109mm x 109mm x 78mm Fits Inside 3" Pipe
 79mm x 79mm x 51mm Fits Inside 2" Pipe
 63 mm x63 mm x38 mm Fits Inside 1.1/2" Pipe

SS Floor Grating 2pc. - Non Magnetic (Body + Screwed Grating)**Technical Discription:**

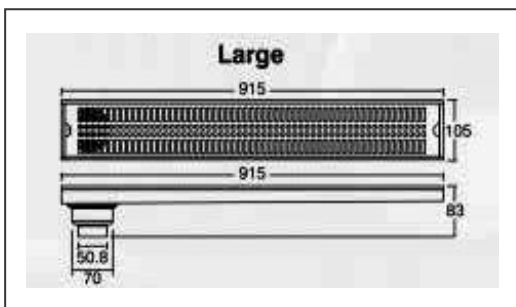
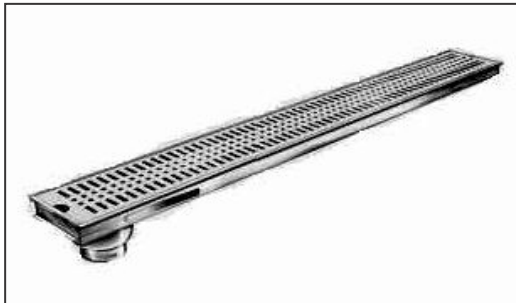
200mm x 200mm x 102mm Fits Inside 4" Pipe
 150mm x 150mm x 102mm Fits Inside 4" Pipe
 109mm x 109mm x 78mm Fits Inside 3" Pipe
 79mm x 79mm x 51mm Fits Inside 2" Pipe
 63 mm x63 mm x38 mm Fits Inside 1.1/2" Pipe

**Thumb Type**

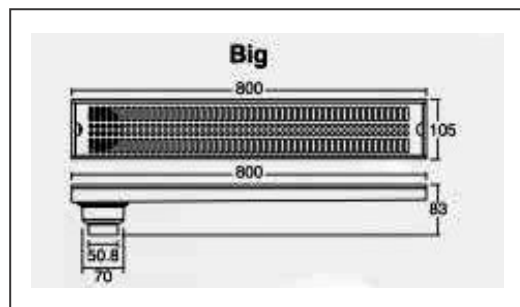
Shower Channel Drains



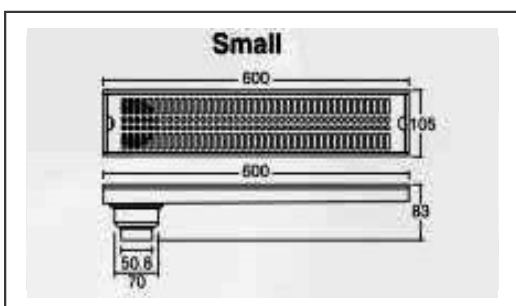
This channel drain is manufactured using the finest quality material in conformity with the international quality standards. The offered channel drain finds immense application in residential and commercial sectors. Available in multiple specifications, this is admired for the features like durable nature, high strength, dimensional accuracy, corrosion resistance, etc.



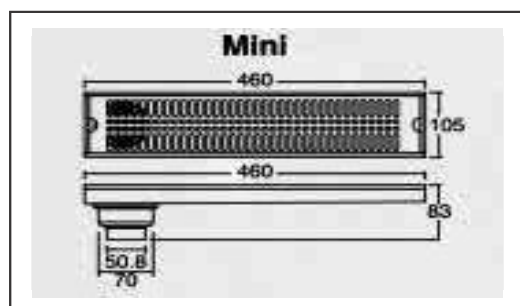
Overall Size:
915 x 105 x 83mm (36 x 4 x 3.1/4 Inch)



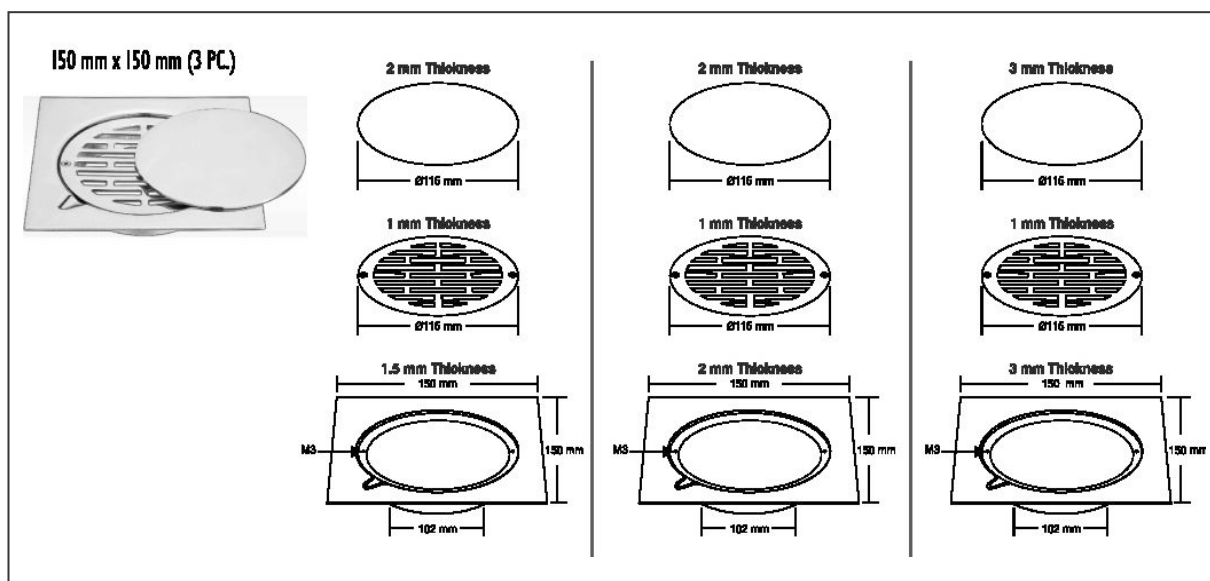
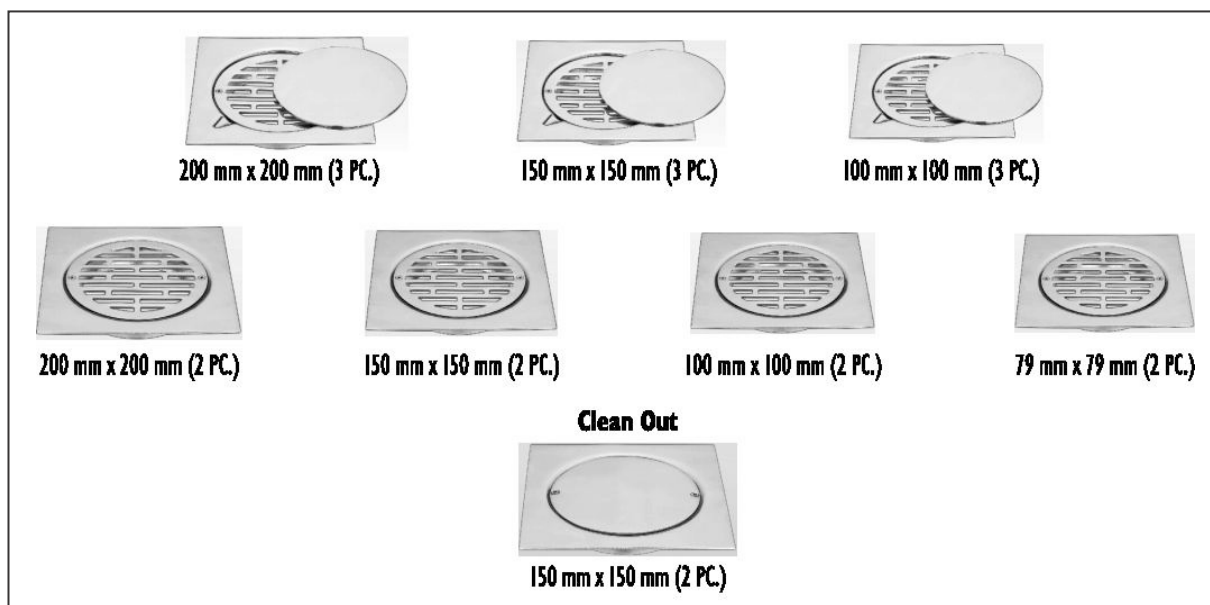
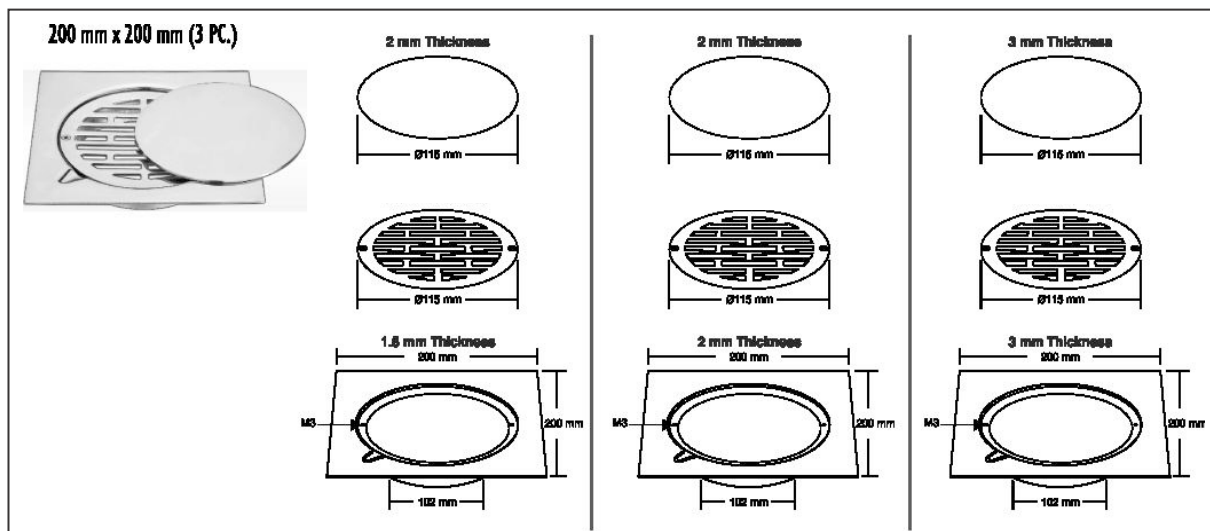
Overall Size:
800 x 105 x 83mm (31.1/2 x 4 x 3.1/4 Inch)

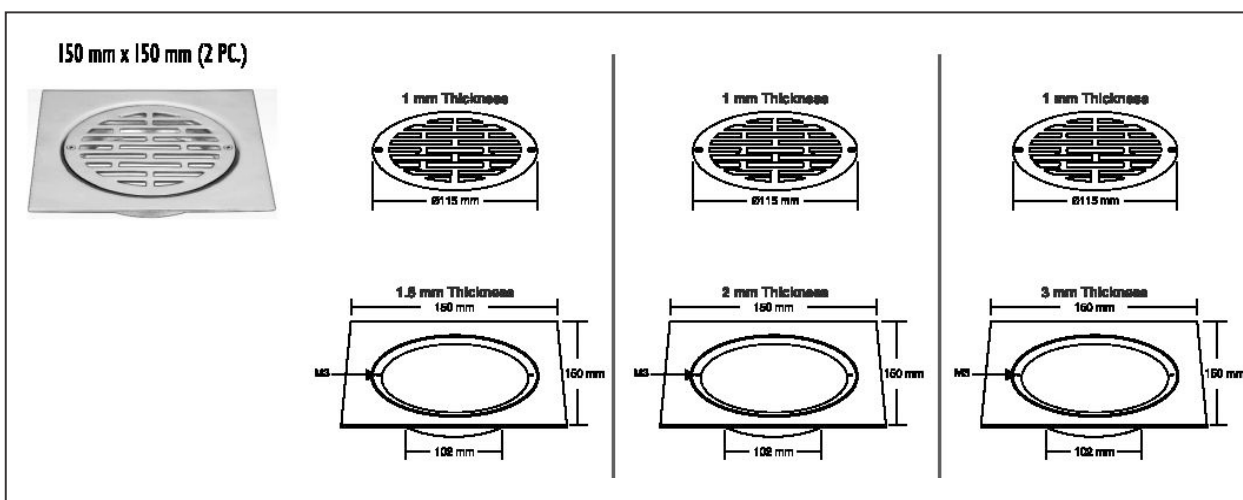
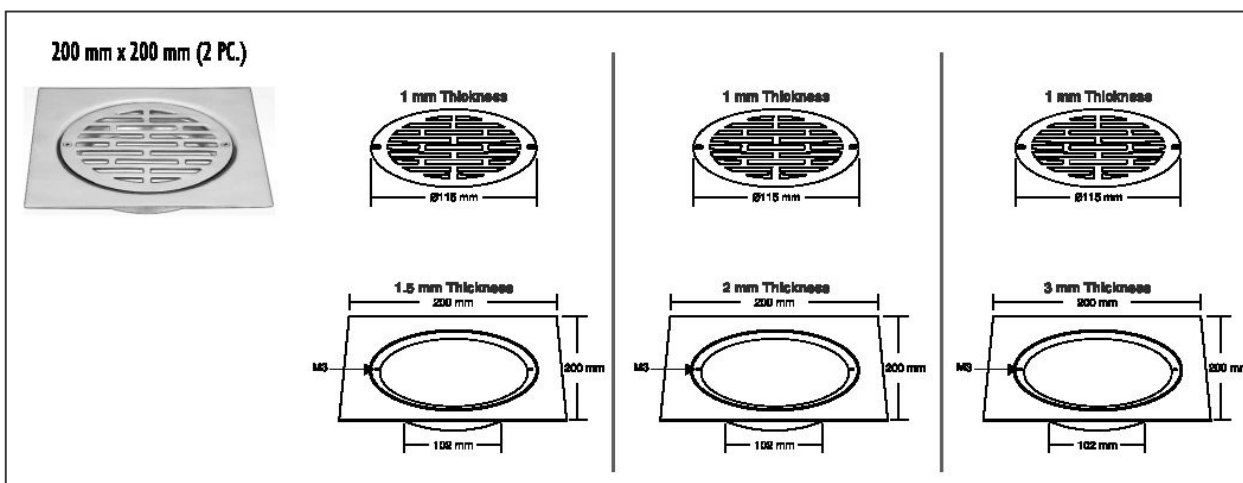
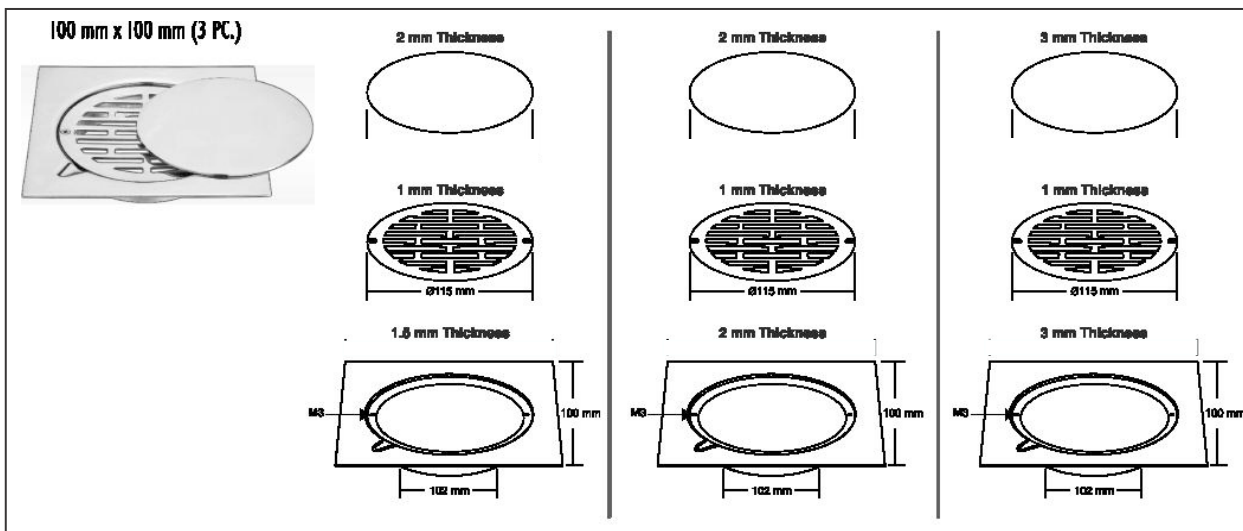


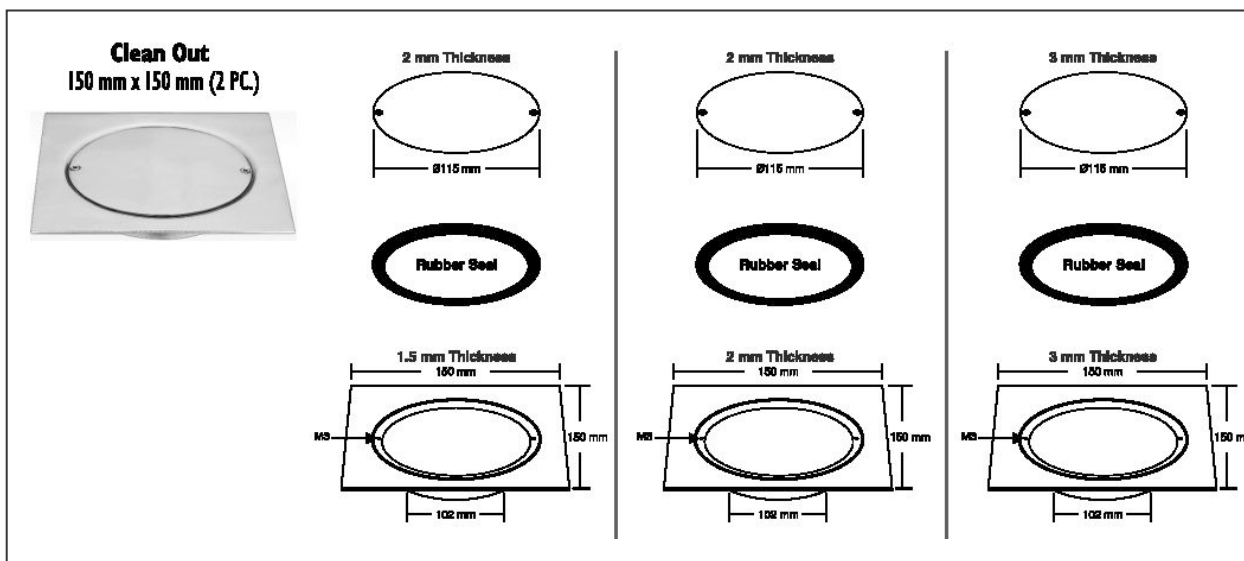
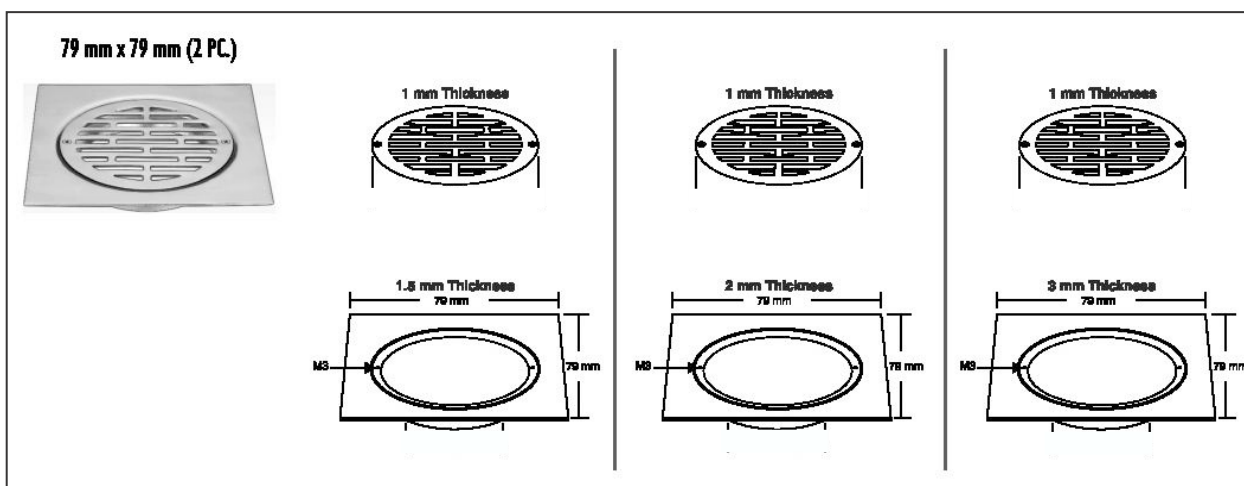
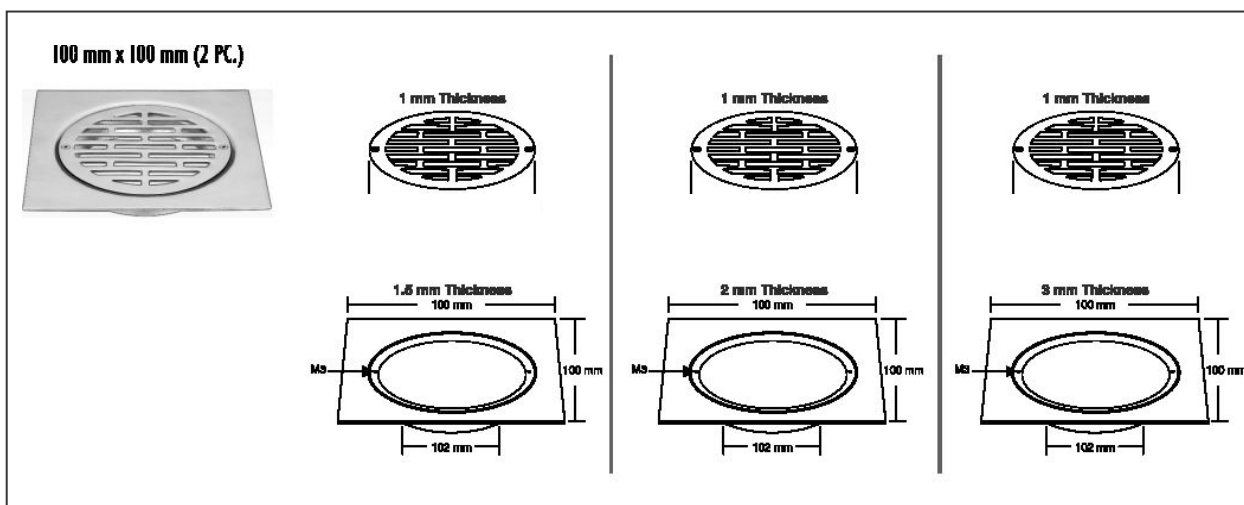
Overall Size:
600 x 105 x 83mm (23.1/2 x 4 x 3.1/4 Inch)



Overall Size:
460 x 105 x 83mm (18 x 4 x 3.1/4 Inch)









Cost effective aids for measuring pressure and temperature in fluid lines.

Used at inlet and outlet of equipment, DRVs and metering stations.

Feature leakproof neoprene twin-core design.

Construction: Full brass body supplied as standard.

SS construction available on application.

Supplied complete with restraining strap for the cap.

Connection Sizes : 1/4" , 1/2" .

Pressure : 35Kg/cm², Temperature : -20°C. to 105°C.

Each unit is individually pressure tested before dispatch.

Extended Test Plugs are suitable for piping with insulation up to 50mm thickness.



APPLICATION :

Air enters all chilled or hot water HVAC systems. This adversely impacts heat transfer and causes corrosion, leading to premature wear of components. Therefore, effective venting of air crucial for ensuring optimal performance of the heat exchanger equipment and protecting against high maintenance costs.

INSTALLATION OF AIR VENTS IS RECOMMENDED AT:

- Top of air bottles, air vessels & air separators.
- All high points of the piping system.
- Top of cooling coils, evaporators, radiators.

FEATURES :

- Flare metal connection at outlet
- Leakproof Float
- Complete with check valve
- High air discharge capacity.

SPECIFICATIONS:

Check Valve : 1/2" MPT
 Connection : 3/8" & 3/4"
 Working Pressure : 15 bar (217 psi)
 Max Temperature : 120°C



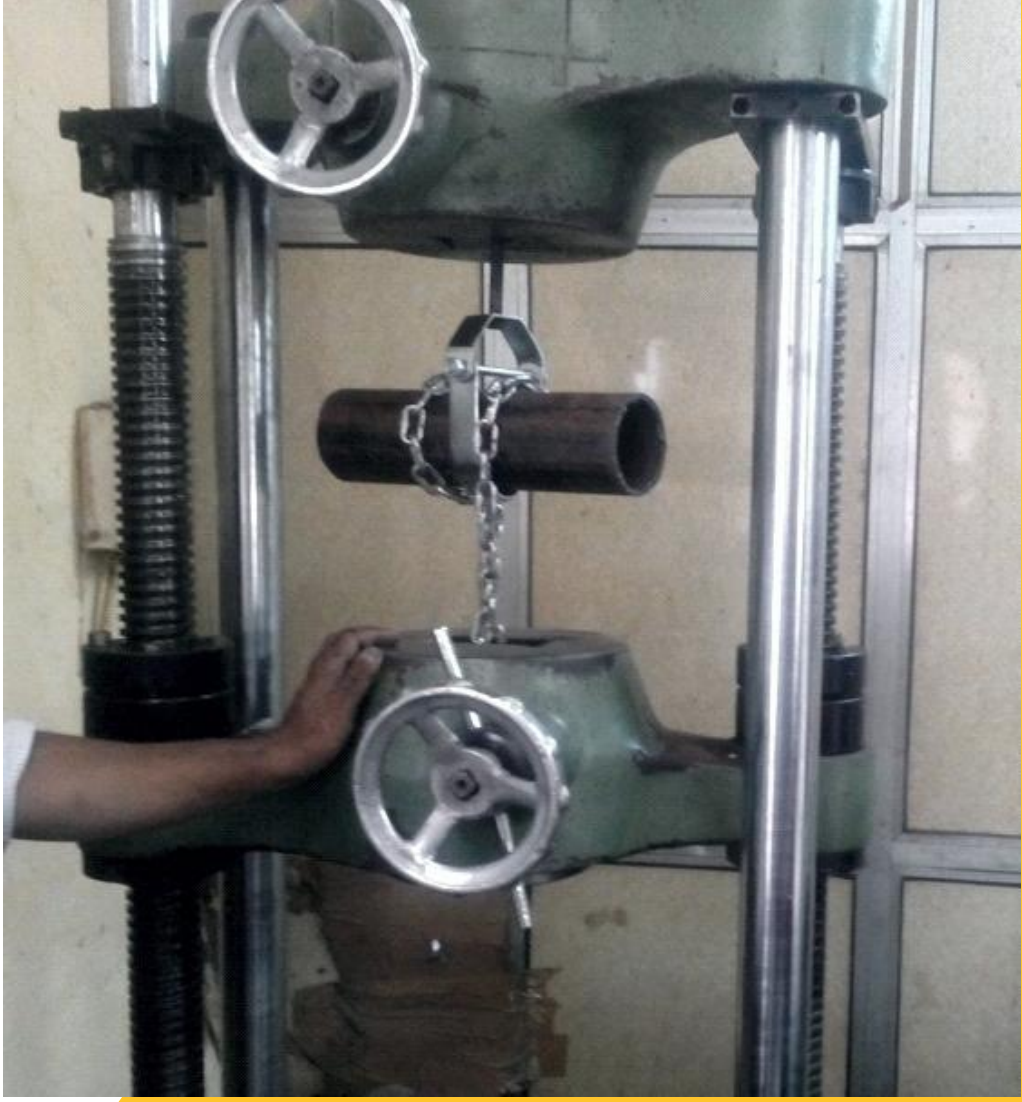
Three-port brass gauge cocks with Teflon seals, air bleed holes and nylon handles. Designed for reliable and efficient operation. Option of forged or machine body available.

PRODUCT FEATURES:

- Rated maximum working pressure : 25 kg/cm²
- Connection sizes -1/2", 3/8" BSPT
- Provide with integral Teflon seating to ensure leakproof and smooth operation.
- Glass-reinforced Nylon handle.
- Air bleed hole provided to purge trapped air which can affect accuracy of gauge.
- Functioning of each unit is individually tested at 150% of rated pressure.

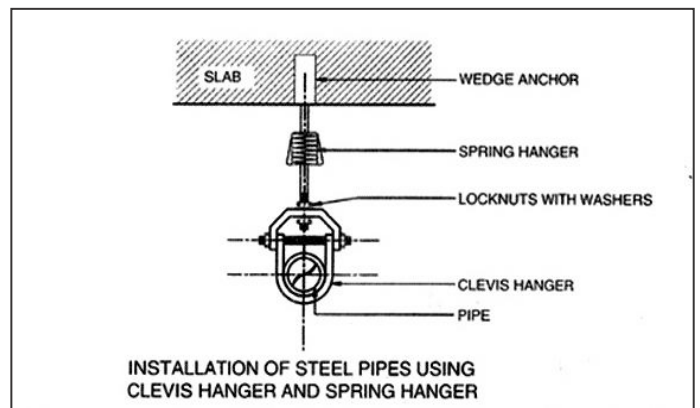
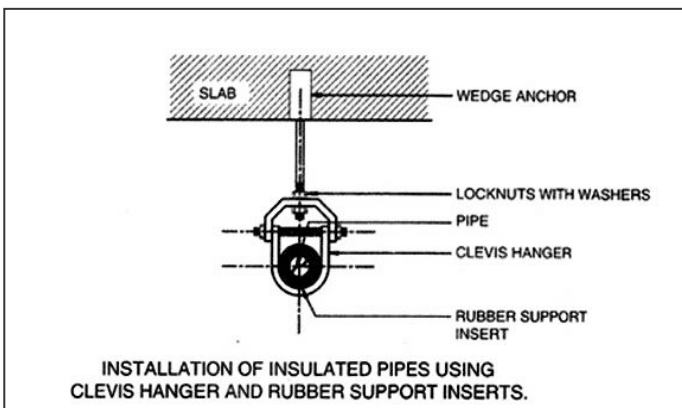
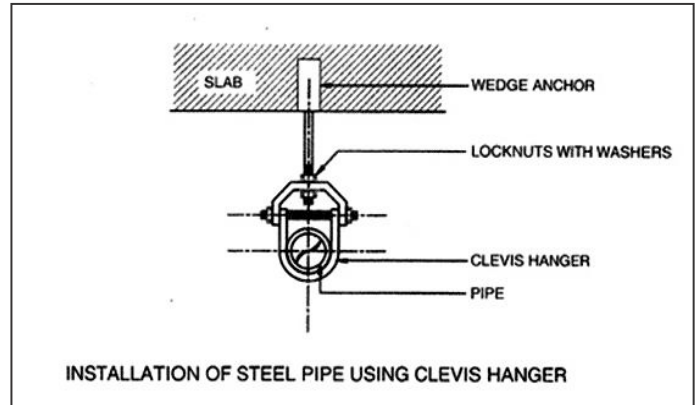
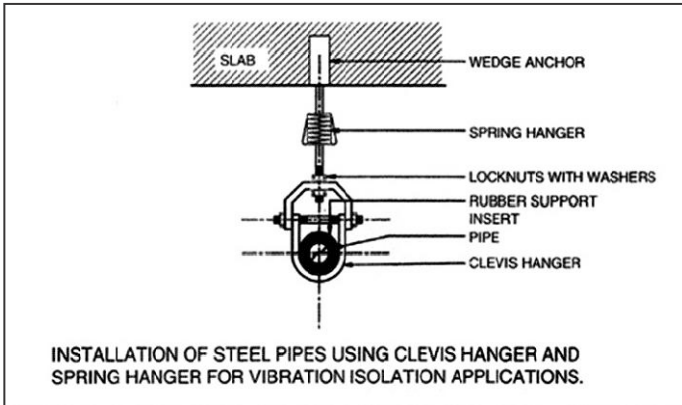
PRODUCT APPLICATION:

Gauge cocks are isolating valves for pressure gauges. The key advantage of their three-port design is the purging of trapped air when the gauge is connected to the fluid system.

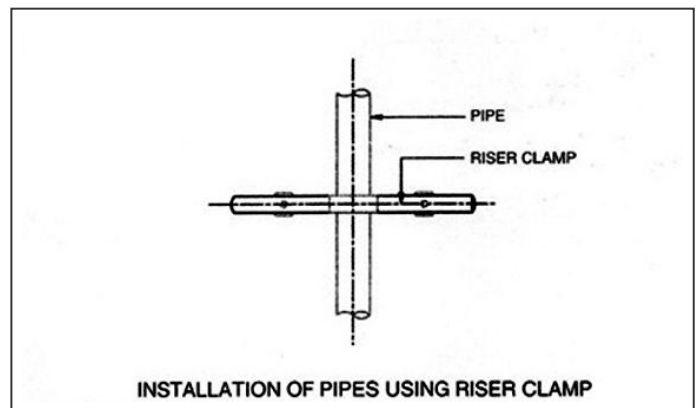
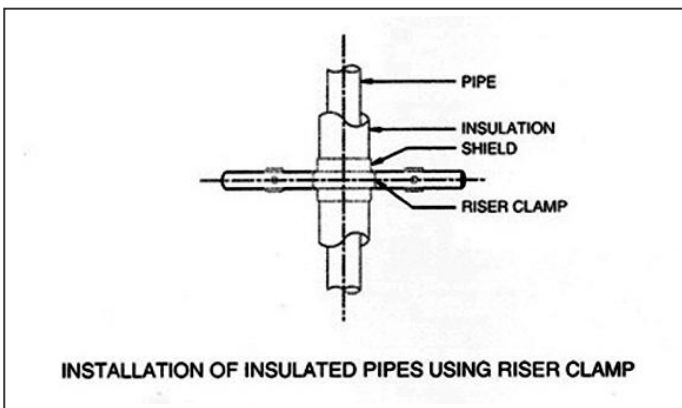


INSTALLATION & TESTING

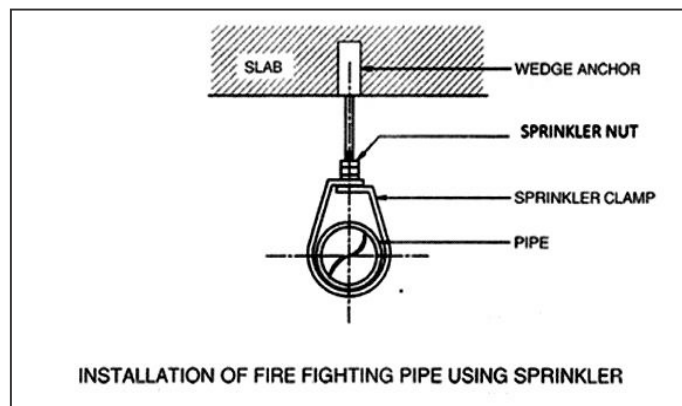
CLEVIS HANGER



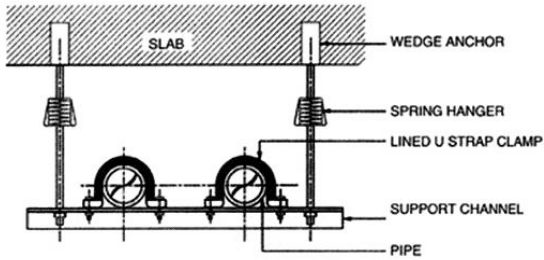
RISER CLAMP



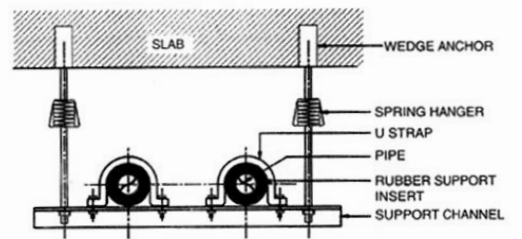
SPRINKLER HANGER



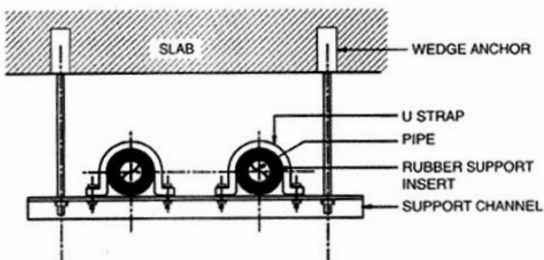
U STRAP



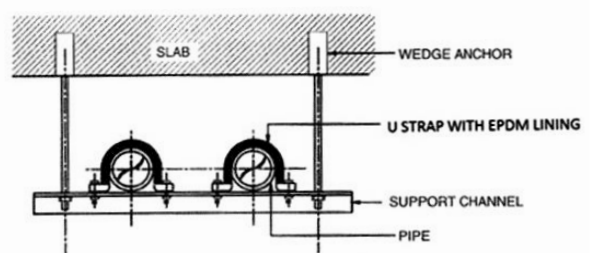
INSTALLATION OF TWO OR MORE PIPES IN PARALLEL USING U STRAP AND SPRING HANGERS FOR VIBRATION & NOISE ISOLATION



INSTALLATION OF TWO OR MORE PIPES IN PARALLEL USING RSI U STRAP AND SPRING HANGERS FOR VIBRATION CONTROL APPLICATION

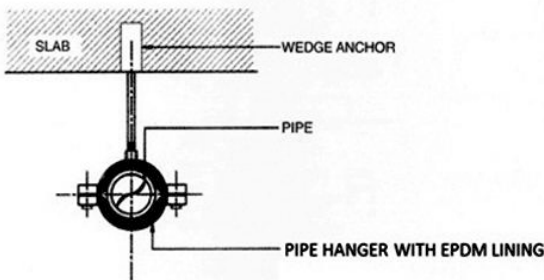


INSTALLATION OF TWO OR MORE PIPES IN PARALLEL USING RUBBER SUPPORT INSERTS AND U STRAP

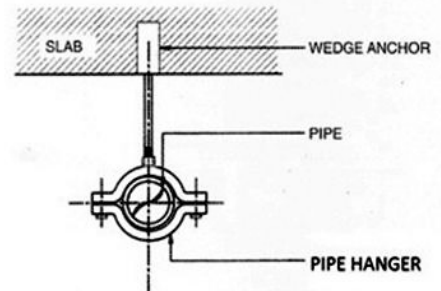


INSTALLATION OF TWO OR MORE PIPES IN PARALLEL USING U STRAP CLAMP FOR NOISE SUPPRESSION

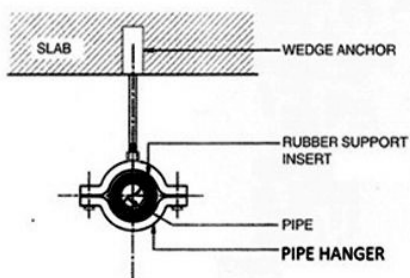
PIPE HANGER WITH EPDM LINING



INSTALLATION OF PIPE USING PIPE HANGER WITH EPDM LINING

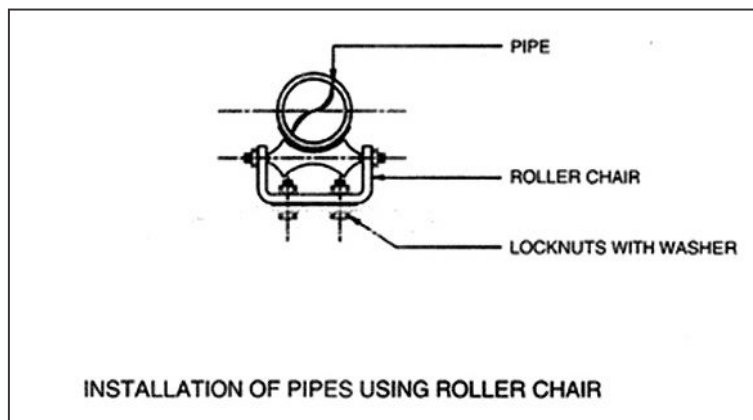
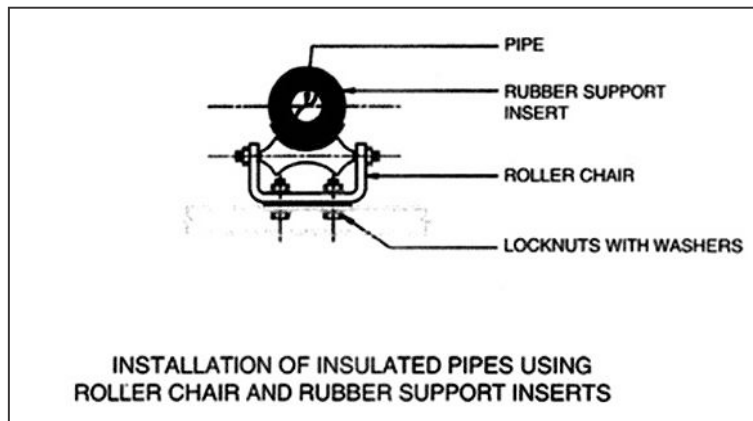


INSTALLATION OF PIPE USING PIPE HANGER

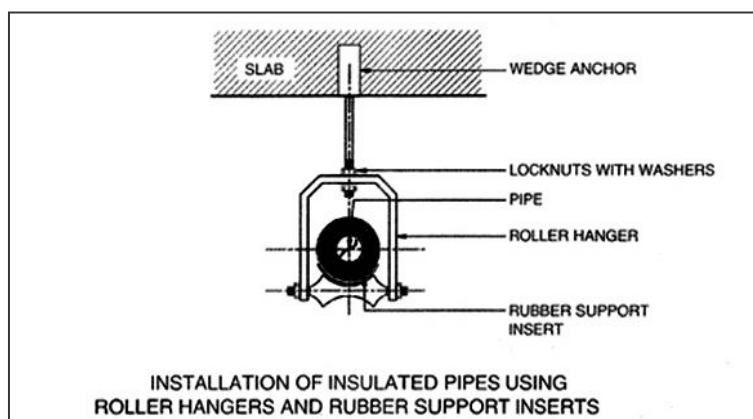
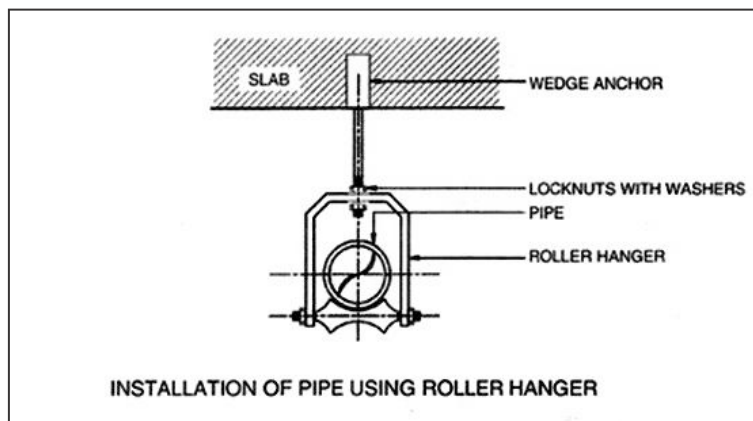


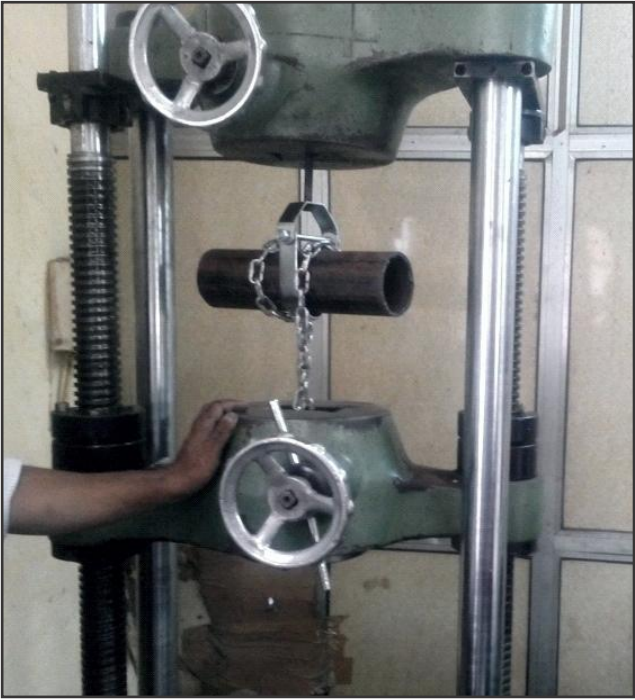
INSTALLATION OF INSULATED PIPES USING RUBBER SUPPORT INSER & PIPE HANGER

PIPE ROLLER CHAIR



ADJUSTABLE ROLLER CHAIR





CLEVIS HANGER



RISER CLAMP



PIPE HANGER WITH EPDM LINING



SPRINKLER HANGER



U STRAP



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