SCI Fire & Security S.A.S
Diseño, Construcción Y Mantenimiento
En Extinción Y Detección
De Sistemas Contra Incendio
Tel 312 776 9651
Dosquebradas Risaralda
Email:sci.fise@gmail.com
sci.fise@gmail.com

17. Hojas de datos de SCI

Redes de extinción y de alarma y detección, Puertas cortafuego listadas, Bombas contraincendios listadas y nacionales, Equipos de bombeo agua potable, Sellos cortafuegos, IPM (Inspección , prueba y mantenimiento), Prueba de bombas contraincendios con Hose Monster

INGENIERIA DE TANQUES EN FIBRA SAS

COT-OP-181122-1

Bogotá, Noviembre 18 del 2022

Señores

SCI FIRE AND SEGURITY.
REF: Suministro de tanques para almacenamiento agua de potable en Poliéster Reforzado con Fibra de Vidrio (PRFV).

Respetado Señor, cordial saludo:

Atendiendo su amable solicitud, presentamos nuestra mejor propuesta técnico- comercial para fabricación de tanque en **P.R.F.V** según referencia.

Espero que esta oferta cumpla con sus expectativas, quedamos a la espera de su aprobación.

Cordialmente,

Ing. Javier Goenaga
Director de proyectos

Oficina y Planta: Calle 34 Sur No.78L-22 / Calle 107 A sur # 6G este-13
Teléfonos de contactos: 3-944725 /317-8621955 / 313 2544309
E- mail: ingenieriadetanques@gmail.com
gerencia@tanquesenfibradevidrio.com
www.tanquesenfibradevidrio.com

INGENIERIA DE TANQUES EN FIBRA SAS

COT-OP-181122-1

MATERIALES

RESINA LINER: Cristalán 870 de Andercol (isofftálica); RESINA ESTRUCTURAL: Resina Cristalán 805 de Andercol (Ortoftálica); Velo superficie (40g/m2); Matt 700(450g/m2); Wowen Roving (800g/m2); Roving continúo 447B de 2400 tex.
Otros Insumos: MEK; Dimetil-anilina; Octoato de cobalto; Parafina.
Se usará fabricación del cuerpo, el método laminado manual sobre molde según NTC-2888.

MÉTODO DE FABRICACIÓN

DESCRIPCIÓN DEL LAMINADO DEL TANQUE:

Barrera química: Conformada por una capa rica en Cristalán 870 de Andercol (isoftálica); reforzada co de velo de superficie vidrio tipo C, seguido de dos capas de Tela Mat 723B de 450 g/m2, impregnado con la misma resin

Laminado estructural: se aplicarán capas alternadas de tela Matt 700(450g/m2) alternada con; Wowe Roving (800g/m2) impregnadas con Resina Cristalán 805 de Andercol (Ortoftálica

ACABADO DEL TANQUE.

Todos los equipos fabricados en PRFV, tendrán Top- Coat a base de resina poliéster Isoftálica, con estabilizadores de rayos Ultravioleta, ref.: Cristalán 870.

OFERTA ECONÓMICA

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ITF
Tanques y Plantas de Tratamiento

INGENIERIA DE TANQUES EN FIBRA SAS

COT-OP-181122-1

ITEM.	unidad	CANT.	DESCRIPCIÓN	V/UNIT.	VR. TOTAL
1	un	1	CONSTRUCCION DE TANQUE DE 15m3 SEGÚN DESCRIPCION ANTERIOR,	$ 16.200.729	$ 16.200.72
2	UN	1	CONSTRUCCION DE TANQUE DE 30m3 SEGÚN DESCRIPCION ANTERIOR	$ 26.904.986	$ 26.904.98
				SUBTOTAL	$ 43.105.71
				IVA 19%	$ 8.190.08
				TOTAL	$ 51.295.80

FORMA DE PAGO:

50% Como anticipo del Valor Total iva incluido.

50% Contra-entrega con los descuentos de ley si los aplica.

GARANTIA:

Garantía valida por 2 Años por defectos en la fabricación o en los materiales utilizados, y comprobados por nuestro departamento técnico, para que esta aplique la factura deberá estar pagada en su totalidad.

TIEMPO DE ENTREGA:

30 Dias hábiles o antes según producción contados a partir de recibido el anticipo.

PÓLIZAS:

INGENIERIA DE TANQUES EN FIBRA S.A.S suscribirá a favor del cliente y ante una compañía aseguradora con representación nacional las siguientes pólizas:

- Buen manejo y correcta inversión del anticipo por el 100% de su valor.
-Cumplimiento de los términos contratados.
-Estabilidad de obra y correcto funcionamiento del sistema.

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INGENIERIA DE TANQUES EN FIBRA SAS

COT-OP-181122-1

ALCANCE DE LA OFERTA

La presente oferta incluye materia prima, fabricación, mano de obra,
no incluye mano de obra por concepto de obras civiles, accesorios, válvulas, tuberías, bombas,
pruebas de estanqueidad o cualquier otro equipo necesario para una adecuada instalación y
funcionamiento del equipo, que no se haya descrito claramente en la presente oferta.

NO INCLUYE TRANSPORTE PENDIENTE DISPONIBILIDAD A SITIO

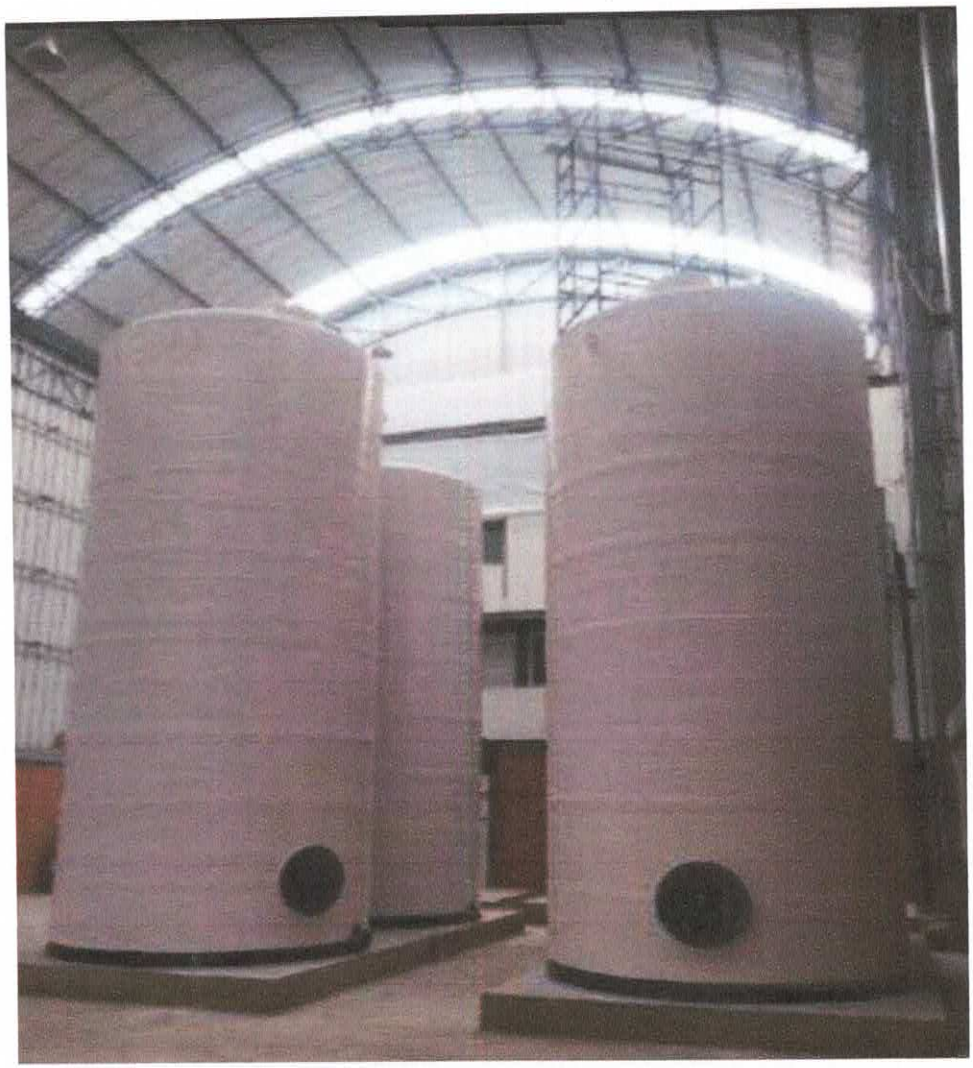
VALIDEZ DE LA OFERTA: 30 DÍAS A PARTIR DE LA FECHA.

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SISTEMA C900 PARA REDES DE AGUA ENTERRADAS CONTRA INCENDIO SEGÚN NFPA 24



CARACTERICAS TECNICAS

- Cumple con AWWA C900 (American Wáter Works Association).
- Aprobado por UL (Underwriters Laboratories)
- Certificado por FM (Factory Mutual)
- ANSI/NSF Estándar 61; fabrica con Resina (materia prima) virgen 12454-B.
- longitud de esta tubería es de 20 pies (6.10) ml.
- su fabricación es de campana RING-TITE tipo RIEBER anillo integrado y espigo.
- se fabrica de color AZUL.
- El sistema funciona con tubería PVC C-900 como con tubería hierro dúctil por norma AWWA.

- Diámetros disponibles: De 4 a 12 pulgadas.
- Tubería en PVC y accesorio en HD.
- Unión de junta mecánica con transiciones para uniones bridadas, ranuradas o soldadas.
- Con restrictores de movimiento tubo- tubo (bell restreiner).
- Con restrictores de movimiento tubo – accesorio (tuf grip)

VENTAJAS

- Nuestro sistema AWWA C900 no requiere atraques ni pollos en concreto.
- Fácil instalación y montaje, solo requiere un par de copas y un rache, lo cual disminuye los costos operativos de montaje.
- El sistema admite cambios en el montaje pues sus accesorios se pueden montar y desmontar con gran facilidad.
- Fácil transición del sistema de junta mecánica a sistema bridado ANSI 16.1.
- Stock permanente en nuestras bodegas para suplir demanda de mercado.
- Diversidad de accesorios para el sistema(codos, tees, reducciones, etc.)
- Asesoramiento personalizado por parte de nuestro departamento de ingeniería para montaje y selección del sistema según necesidad de nuestros clientes.

GSD
Fire Protection & Industrial Solutions

McWANE INTERNATIONAL
A Division of McWane, Inc.

AWWA C-900-07 PIPE

Dimensions and Pressure Classes for Dimension Ratio (DR) PVC 1120 Pipe with Cast-Iron Pipe Equilvalent OD's

Size - Class PSI	DR	Minimum Wall Thickness Inches	Pipe Outside Diameter Inches	Bell Outside Diameter Inches	Outside Diameter Tolerance ±Inches	Approximate Weight/Foot	Product Approval	
							UL	FM
4"-165	25	.192	4.800	6.080	.009	1.851	X	
6"-165	25	.276	6.900	8.435	.011	3.836	X	
8"-165	25	.362	9.050	10.875	.015	6.646	X	
10"-165	25	.444	11.100	13.300	.015	10.046	X	
12"-165	25	.528	13.200	15.775	.015	14.267	X	
4"-235	18	.267	4.800	6.160	.009	2.528	X	X
6"-235	18	.383	6.900	8.600	.011	5.246	X	X
8"-235	18	.503	9.050	11.100	.015	9.062	X	X
10"-235	18	.617	11.100	13.500	.015	13.714	X	X
12"-235	18	.733	13.200	16.010	.015	19.220	X	X
4"-305	14	.343	4.800	6.290	.009	3.271	X	X
6"-305	14	.493	6.900	8.800	.011	6.634	X	X
8"-305	14	.646	9.050	11.395	.015	11.454	X	X
10"-305	14	.793	11.100	13.915	.015	17.380	X	X
12"-305	14	.943	13.200	16.425	.015	24.645	X	X

GSD
Fire Protection & Industrial Solutions

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TUBERIA AWWA
PVC C900 y HIERRO DUCTIL

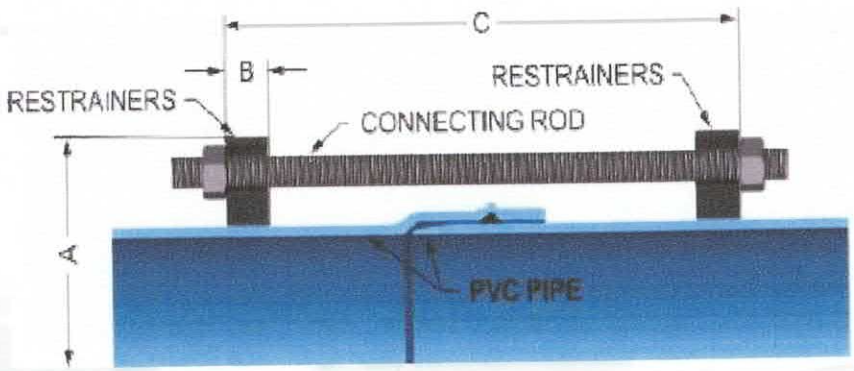




ENSAMBLE TIPICO TUBO – TUBO CON RESTRICTOR BELL RESTREINER

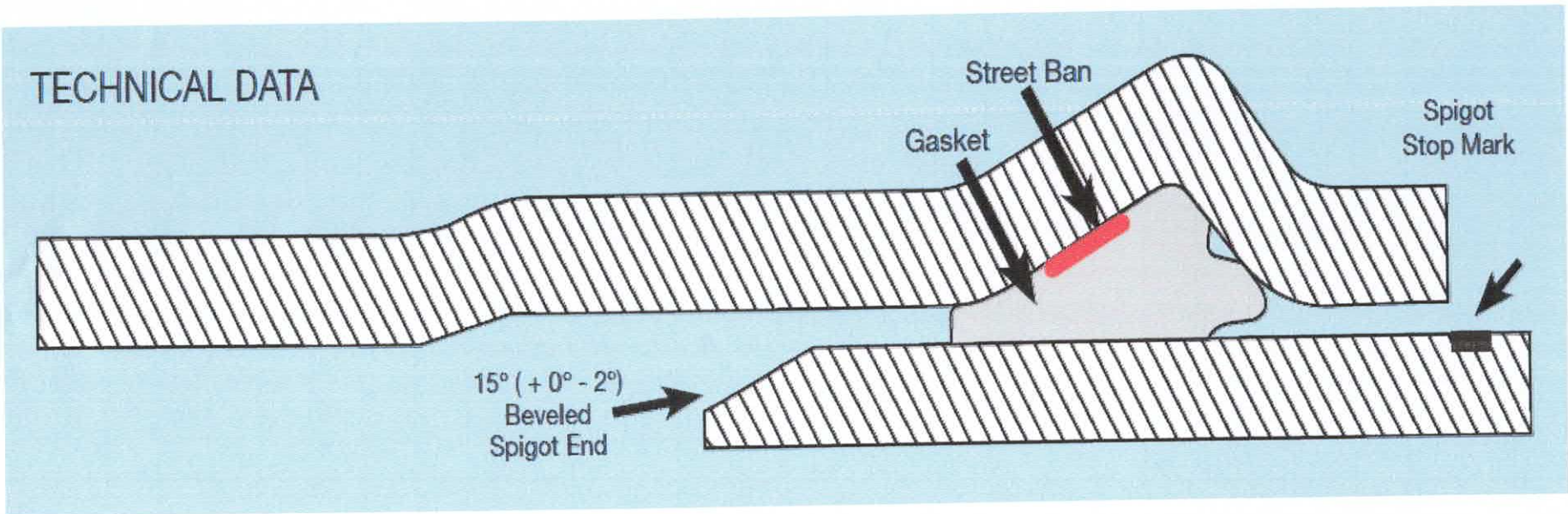


4" to 12" Assembly

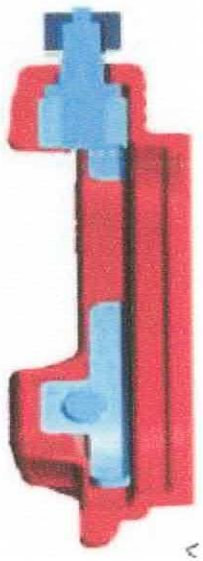


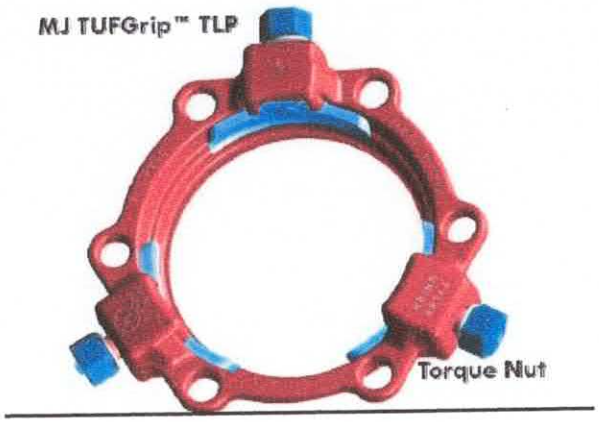
EL BELL RESTREINER ES EL RESTRICTOR TIPO ABRAZADERA TUBO A TUBO. SE HACE LA INSERCION ESPIGO CAMPANA, LA CUAL TIENE YA UN EMPAQUE. LA MORDAZA O RESTRICTOR ABRAZA EL TUBO MEDIANTE UNOS DIENTES PERIMETRALES, UNO EN CADA TUBO, LUEGO MEDIANTE ESPARRAGOS SE HACE LA UNION ENTRE LOS TUBOS.

CORTE INSERTO ESPIGO CAMPANA



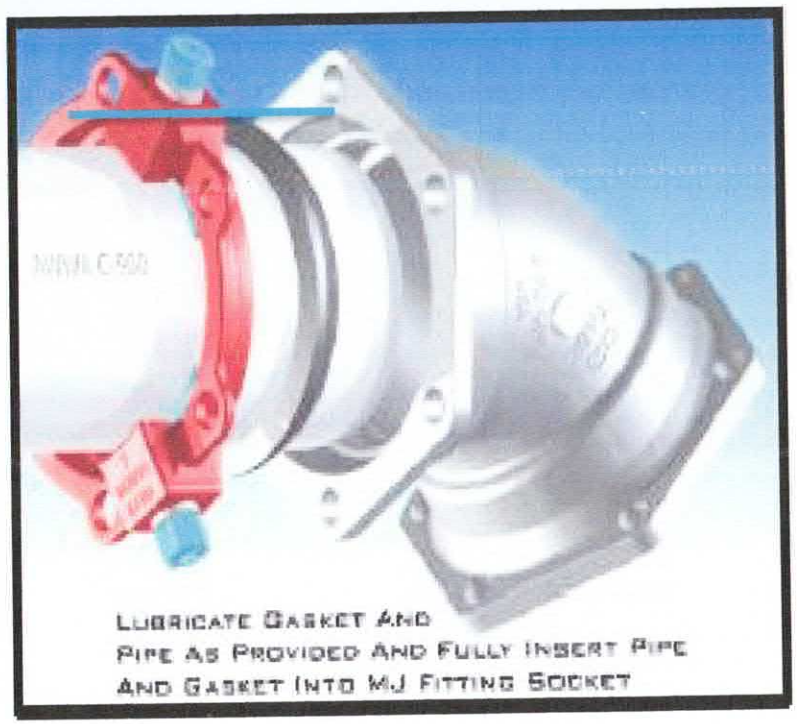
TUF Grip – ACOPLE TUBO - ACCESORIO





EL RESTRICTOR SERIES 2000 ES COMERCIAL DESDE 3 HASTA 36 PULGADAS, DISEÑADO BAJO PARAMETROS AWWA C111, C153, C110. SUS MORDAZAS (COLOR AZUL) RESTRINGEN RADIALMENTE EL MOVIMIENTO Y SUS 6 PERNOS TIPO T LO HACEN DE FORMA AXIAL AL ACOPLARSE AL ACCESORIO EN HIERRO DUCTIL

MONTAJE DE ACCESORIO: PASO 1



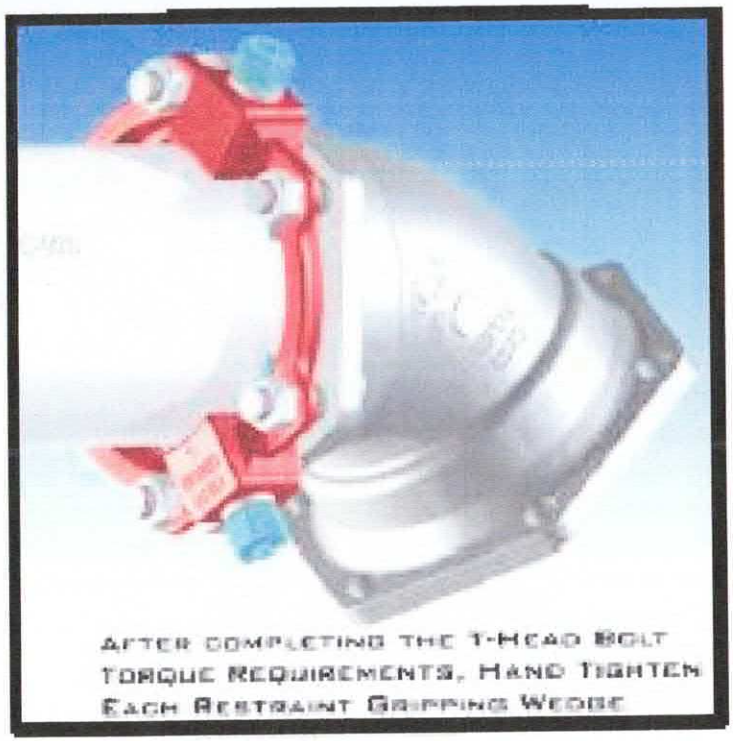
LUBRIQUE EL EMPAQUE Y EL TUBO E INSERTE PRIMERO EN EL ACCESORIO TIPO JUNTA MECANICA Y LUEGO EL EMPAQUE EN EL TUBO HASTA LA MARCA DEL TUBO. IMPORTANTE LUBRICAR CON GRASAS NO AGRESIVAS QUE PUEDAN DETERIORAR EL EMPAQUE CON EL TIEMPO.

MONTAJE DE ACCESORIO: PASO 2



INSERTE EL ACCESORIO EN EL TUBO, ASEGURE QUE EL MOVIEMIENTO SEA AXIAL PARA NO MORDER EL EMPAQUE Y ASI GARANTIZAR EL SELLO ENTRE EL TUBO Y EL ACCESORIO. EL ACCESORIO ESTA DISEÑADO CON UN TOPE O CUELLO PARA LIMITAR LA INSERCION DEL TUBO EN EL MISMO.

MONTAJE DE ACCESORIO: PASO 3



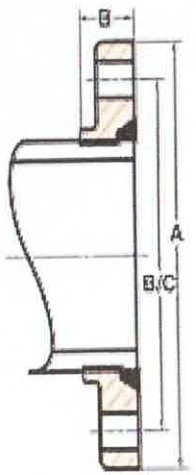
SE INSERTAN LOS PERNOS T DE UNION ENTRE EL ACCESORIO Y EL RESTRICTOR Y SE HACE UN APRIETE INICIAL CON LA MANO HASTA QUE SE TENGA UN APRIETE MEDIANO, SEGUIDAMENTE USAMOS UNA COPA PARA DAR TORQUE EN CRUZ A ESTOS TORNILLOS TIPO T. PARA ESTE PASO LOS TORNILLOS AZULES DEBEN ESTAR SUELTOS AUN.

MONTAJE DE ACCESORIO: PASO 4



USANDO UNA COPA LARGA DE 32 MM Y UN RACHE, DAMOS TORQUE A LOS TORNILLOS AZULES (RADIALES), ESTOS SON FUSIBLES QUE SE DESCABEZAN A 175 PSI, LO CUAL GARANTIZA EL AJUSTE O RESTRICCION SEGÚN NORMA ENTRE EL ACCESORIO Y EL TUBO.

ACCESORIOS HIERRO DUCTIL
TRANSICIONES





ESTE ACCESORIO ES MUY USADO PARA HACER LA TRANSICION A BRIDA TIPO ANSI 125 O 150, ES BIPARTIDO, INCLUYE EL EMPAQUE Y ES LA MEJOR OPCION PARA MONTAJE DE HIDRANTES, VALVULAS BRIDADAS O SIMPLES TRANSICIONES. COMERCIALMENTE DE 4 HASTA 12 PULGADAS.

Certificates













Ductile Iron Grooved Fittings and Couplings

Material: ASTM A536, GRADE 65-45-12, QT450-10
Thread: ASME B1.20.1, ISO 7-1, GB 7306
Size Available: 1"-24"

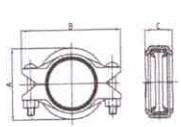
Surface Treatment:
P: Painted E: Electroplated
B: Black S: Epoxy G: Hot-dip Galvanized



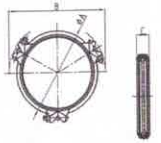
1N

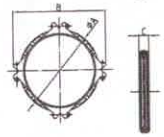
Standard Flexible Coupling









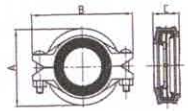


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	B mm/in	C mm/in	Bolt Size No.-Size mm	Certificate
25 1	33.7 1.327	500 3.45	3.0/680	0-1.6 0-0.06	55 2.16	92 3.62	42 1.65	2-3/8X55 2-M10X57	UL FM VdS LPCB
32 1¼	42.4 1.669	300 2.07	2.9/650	0-1.6 0-0.06	65 2.56	104 4.14	44 1.74	2-3/8X55 2-M10X57	UL FM VdS LPCB
40 1½	48.3 1.900	300 2.07	3.8/850	0-3.2 0-0.13	70 2.75	110 4.33	44 1.74	2-3/8X55 2-M10X57	UL FM VdS LPCB
50 2	60.3 2.375	300 2.07	5.9/1330	0-3.2 0-0.13	83 3.27	125 4.92	44 1.74	2-3/8X55 2-M10X57	UL FM VdS LPCB
65 2½	73.0 2.875	300 2.07	8.7/1950	0-3.2 0-0.13	96 3.78	143 5.63	45 1.78	2-3/8X55 2-M10X57	UL FM LPCB
65 2½	76.1 3.000	300 2.07	9.4/2120	0-3.2 0-0.13	100 3.94	145 5.71	45 1.78	2-3/8X55 2-M10X57	UL FM VdS LPCB
80 3	88.9 3.500	300 2.07	12.8/2885	0-3.2 0-0.13	115 4.53	160 6.30	45 1.78	2-1/2X70 2-M12X70	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	31.5/7100	0-3.2 0-0.13	138 5.43	190 7.48	50 1.97	2-1/2X70 2-M12X70	UL FM LPCB
100 4	114.3 4.500	300 2.07	21.2/4770	0-3.2 0-0.13	145 5.71	198 7.80	50 1.97	2-1/2X70 2-M12X70	UL FM VdS LPCB
125 5	133 5.250	300 2.07	28.7/6460	0-3.2 0-0.13	162 6.38	225 8.86	51.0 2.01	2-5/8X80 2-M16X85	UL FM LPCB
125 5	139.7 5.500	450 3.10	47.5/10680	0-3.2 0-0.13	169 6.65	230 9.06	52 2.05	2-5/8X80 2-M16X85	UL FM VdS LPCB
125 5	141.3 5.563	300 2.07	32.4/7290	0-3.2 0-0.13	170 6.69	232 9.13	51 2.01	2-5/8X80 2-M16X65	UL FM LPCB
150 6	159.0 6.250	300 2.07	41.0/9240	0-3.2 0-0.13	190 7.48	256 10.08	52 2.05	2-5/8X85 2-M16X85	UL FM LPCB
150 6	165.1 6.500	300 2.07	44.3/9960	0-3.2 0-0.13	195 7.72	260 10.24	52 2.05	2-5/8X85 2-M16X85	UL FM LPCB
150 6	168.3 6.625	300 2.07	46.0/10340	0-3.2 0-0.13	200 7.87	265 10.43	52 2.05	2-5/8X85 2-M16X85	UL FM VdS LPCB
200 8	219.1 8.625	450 3.10	116.9/26280	0-3.2 0-0.13	258 10.24	350 13.76	60 2.37	2-3/4X115 2-M20X115	UL FM VdS LPCB
250 10	273.0 10.750	300 2.07	121.0/27210	0-3.2 0-0.13	337 13.27	406 16.00	65 2.56	2-7/8X140 2-M22X140	UL FM VdS
300 12	323.9 12.750	300 2.07	170.3/38280	0-3.2 0-0.13	378 14.96	455 18.31	65 2.56	2-7/8X140 2-M22X140	UL FM
350 14	355.6 14.000	300 2.07	205.5/46220	0-3.2 0-0.13	402 15.83	493 19.41	72 2.83	3-7/8X140 3-M22X140	——
400 16	406.4 16.000	300 2.07	268.4/60370	0-3.2 0-0.13	456 18.03	547 21.54	72 2.85	3-7/8X140 3-M22X140	——
450 18	457.2 18.000	300 2.07	262.5/59060	0-3.2 0-0.13	505 19.86	598 23.54	78 3.07	3-7/8X140 3-M22X140	——
500 20	508.0 20.000	300 2.07	324.1/72910	0-3.2 0-0.13	550 21.65	648 25.51	78 3.07	4-7/8X140 4-M22X140	——
600 24	609.6 24.000	300 2.07	466.7/104990	0-3.2 0-0.13	660 25.98	760 29.92	78 3.07	4-1X140	——

1N

Standard Reducing Flexible Coupling



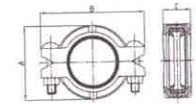


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	B mm/in	C mm/in	Bolt Size No.-Size mm	Certificate
50X40 2X1½	60.3X48.3 2.375X1.900	300 2.07	5.9/1330	0-3.2 0-0.13	86 3.39	125 4.93	44 1.74	2-3/8X55 2-M10X57	UL FM LPCB
65 × 25 2½ × 1	73.0X33.7 2.875 × 1.327	300 2.07	8.7/1950	0-3.2 0-0.13	100 3.94	138 5.44	45 1.78	2-3/8X55 2-M10X57	UL FM
65 × 50 2½ × 2	73.0X60.3 2.875 × 2.375	300 2.07	8.7/1950	0-3.2 0-0.13	100 3.94	138 5.43	45 1.78	2-3/8X55 2-M10X57	UL FM LPCB
65 × 25 2½ × 1	76.1X33.7 3.000 × 1.327	300 2.07	9.4/2120	0-3.2 0-0.13	102 4.02	140 5.51	45 1.78	2-3/8X55 2-M10X57	UL FM
65 × 40 2½ × 1½	76.1X48.3 3.000 × 1.900	300 2.07	9.4/2120	0-3.2 0-0.13	102 4.02	140 5.51	45 1.78	2-3/8X55 2-M10X57	UL FM LPCB
65 × 50 2½ × 2	76.1X60.3 3.000 × 2.375	300 2.07	9.4/2120	0-3.2 0-0.13	102 4.02	144 5.67	45 1.78	2-3/8X55 2-M10X57	UL FM VdS LPCB
80 × 25 3 × 1	88.9X33.7 3.500 × 1.327	300 2.07	12.8/2885	0-3.2 0-0.13	115 4.53	168 6.61	46 1.81	2-1/2X70 2-M12X70	UL FM
80 × 50 3 × 2	88.9X60.3 3.500 × 2.375	300 2.07	12.8/2885	0-3.2 0-0.13	115 4.53	168 6.61	46 1.81	2-1/2X70 2-M12X70	UL FM VdS LPCB
80 × 65 3 × 2½	88.9X73.0 3.500 × 2.875	300 2.07	12.8/2885	0-3.2 0-0.13	115 4.53	168 6.61	46 1.81	2-1/2X70 2-M12X70	UL FM LPCB
80 × 65 3 × 2½	88.9X76.1 3.500 × 3.000	300 2.07	12.8/2885	0-3.2 0-0.13	115 4.53	172 6.77	46 1.81	2-1/2X70 2-M12X70	UL FM VdS LPCB
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.327	300 2.07	21.2/4770	0-3.2 0-0.13	144 5.67	198 7.80	50 1.97	2-1/2X70 2-M12X70	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	21.2/4770	0-3.2 0-0.13	144 5.67	198 7.80	50 1.97	2-1/2X70 2-M12X70	UL FM VdS LPCB
100 × 65 4 × 2½	114.3 × 73.0 4.500 × 2.875	300 2.07	21.2/4770	0-3.2 0-0.13	144 5.67	198 7.80	50 1.97	2-1/2X70 2-M12X70	UL FM LPCB
100 × 65 4 × 2½	114.3 × 76.1 4.500 × 3.000	300 2.07	21.2/4770	0-3.2 0-0.13	144 5.67	202 7.95	50 1.97	2-1/2X70 2-M12X70	UL FM VdS LPCB
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	21.2/4770	0-3.2 0-0.13	148 5.83	198 7.80	50 1.97	2-1/2X70 3-M12X70	UL FM VdS LPCB
150 X 80 6X3	168.1 X 88.9 6.500 × 3.500	300 2.07	44.3/9960	0-3.2 0-0.13	200 7.87	260 10.24	51 2.01	2-3/4X115 2-M20X115	——
150 × 100 6 × 4	165.1 × 114.3 6.500 × 4.500	300 2.07	44.3/9960	0-3.2 0-0.13	197 7.75	260 10.24	51 2.01	2-5/8X85 2-M16X85	UL FM LPCB
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	46.0/10340	0-3.2 0-0.13	200 7.87	258 10.55	51 2.01	2-5/8X85 2-M16X85	UL FM
150 × 100 6 × 4	168.3 × 114.3 6.625 × 4.500	300 2.07	46.0/10340	0-3.2 0-0.13	202.5 7.97	258 10.55	52.5 2.07	2-5/8X85 2-M16X85	UL FM VdS LPCB
200 × 150 8 × 6	219.1 × 165.1 8.625 × 6.500	300 2.07	77.8/17500	0-3.2 0-0.13	257 10.12	335 13.19	60 2.36	2-3/4X115 2-M20X115	UL FM LPCB
200 × 150 8 × 6	219.1 × 168.3 8.625 × 6.625	300 2.07	77.8/17500	0-3.2 0-0.13	260 10.24	338 13.31	60 2.36	2-3/4X115 2-M20X115	UL FM LPCB

1NH

Heavy-duty Flexible Coupling



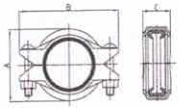


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	B mm/in	C mm/in	Bolt Size No.-Size mm	Certificate
50 2	60.3 2.375	500 3.45	9.8/2210	0-3.2 0-0.13	90 3.54	134 5.28	45 1.77	2-1/2X75 2-M12X76	UL FM
65 2½	73.0 2.875	500 3.45	14.4/3240	0-3.2 0-0.13	100 3.94	150 3.91	45 1.77	2-1/2X75 2-M12X76	UL FM
65 2½	76.1 3.000	500 3.45	15.7/3530	0-3.2 0-0.13	102 4.02	154 6.06	45 1.77	2-1/2X75 2-M12X76	UL FM
80 3	88.9 3.500	500 3.45	21.4/4800	0-3.2 0-0.13	121 4.76	172 6.76	45 1.77	2-1/2X75 2-M12X76	UL FM
100 4	114.3 4.500	500 3.45	35.4/7950	0-3.2 0-0.13	151 5.95	214 8.43	50 1.97	2-5/8X85 2-M16X85	UL FM
125 5	141.3 5.563	500 3.45	54.0/12160	0-3.2 0-0.13	180 7.09	248 9.76	51 2.00	2-3/4X115 2-M20X115	UL FM
150 6	165.1 6.500	500 3.45	73.8/16610	0-3.2 0-0.13	205 8.07	278 10.95	51 2.00	2-3/4X115 2-M20X115	UL FM
150 6	168.3 6.625	500 3.45	76.7/17250	0-3.2 0-0.13	208 8.20	284 11.18	51 2.00	2-3/4X115 2-M20X115	UL FM
200 8	219.1 8.625	500 3.45	130/29240	0-3.2 0-0.13	268 10.56	354 13.94	51 2.40	2-7/8X140 2-M22X140	UL FM

1NS

Light-duty Flexible Coupling



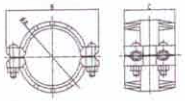


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Bolt Size No.-Size mm	Certificate
100 4	114.3 4.500	300 2.07	21.2/4770	0-3.2 0-0.13	139 5.47	182 7.16	50 1.97	2-3/8X55 2-M10X57	UL FM
125 5	139.7 5.500	450 3.10	47.5/10680	0-3.2 0-0.13	168 6.61	228 8.98	51 2.01	2-5/8X80 2-M16X85	UL FM
165 6	165.1 6.500	300 2.07	44.3/9960	0-3.2 0-0.13	192 7.56	244 9.61	51 2.01	2-1/2X75 2-M12X76	UL FM
165 6	168.3 6.625	300 2.07	46.0/10340	0-3.2 0-0.13	200 7.87	266 10.47	52 2.05	2-5/8X85 2-M16X85	UL FM
250 10	273.0 10.750	300 2.07	121.0/27210	0-3.2 0-0.13	320 12.60	396.0 15.67	64 2.52	2-3/4X120 2-M20X115	UL FM

H305

HDPE Coupling



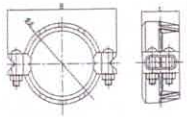


Nominal Size mm/in	Pipe O.D mm/in	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Bolt Size No.-Size mm
50 2	60.3 2.375	86.5 3.406	133 5.24	116 4.567	4-1/2X70
80 3	88.9 3.5	115 4.65	165 6.5	116 4.567	4-1/2X75
100 4	114.3 4.5	148 5.827	202 7.953	146 5.75	4-1/2X75
150 6	168.3 6.625	203 7.99	273 10.75	149 5.87	4-5/8X85
200 8	219.1 8.625	263 10.35	333 13.11	152 5.98	4-5/8X85
250 10	273.0 10.75	321 12.65	399 15.709	165 6.496	4-3/4X120
300 12	323.9 12.75	372 14.656	452 17.795	186 7.28	4-3/4X120

H307

HDPE Transition Coupling



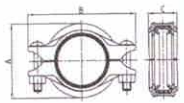


Nominal Size mm/in	Pipe O.D mm/in	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Bolt Size No.-Size mm
50 2	60.3 2.375	86.5 3.406	147 5.787	79 3.11	4-1/2X70
80 3	88.9 3.5	115 4.567	176 6.929	79 3.11	4-1/2X75
100 4	114.3 4.5	148 5.827	209 8.228	95 3.75	4-1/2X75
150 6	168.3 6.625	202 7.95	280 11.02	95 3.74	4-5/8X85
200 8	219.1 8.625	264 10.39	342 13.46	107.5 4.23	4-5/8X85
250 10	273.0 10.75	321 12.65	424 16.693	127 5	4-3/4X120
300 12	323.9 12.75	372 14.656	483 19.016	127 5	4-3/4X120

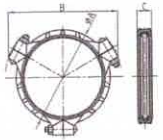
1G

Standard Rigid Coupling

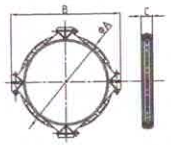










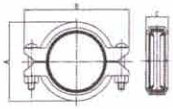


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Bolt Size No.-Size mm	Certificate
25 1	33.7 1.327	500 3.45	3.0/680	0-1.6 0-0.06	59 2.33	100 3.94	44 1.74	2-3/8X55 2-M10X57	UL FM VdS LPCB
32 1¼	42.4 1.669	500 3.45	4.8/1080	0-1.6 0-0.06	66 2.60	109.5 4.31	45 1.78	2-3/8X55 2-M10X57	UL FM VdS LPCB
40 1½	48.3 1.900	500 3.45	6.3/1420	0-3.2 0-0.13	72 2.84	115 4.53	45 1.78	2-3/8X55 2-M10X57	UL FM VdS LPCB
50 2	60.3 2.375	300 2.07	5.9/1330	0-3.2 0-0.13	85 3.35	131 5.16	45 1.78	2-3/8X55 2-M10X57	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	14.4/3240	0-3.2 0-0.13	98 3.86	145 5.71	45 1.78	2-3/8X55 2-M10X57	UL FM LPCB
65 2½	76.1 3.000	300 2.07	9.4/2120	0-3.2 0-0.13	101 3.98	147 5.78	45 1.77	2-3/8X55 2-M10X57	UL FM VdS LPCB
80 3	88.9 3.500	300 2.07	12.8/2885	0-3.2 0-0.13	115.0 4.53	170 6.69	46 1.82	2-1/2X70 2-M12X70	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	31.5/7100	0-3.2 0-0.13	140 5.51	197 7.76	52 2.05	2-1/2X70 2-M12X70	UL FM LPCB
100 4	114.3 4.500	300 2.07	21.2/4770	0-3.2 0-0.13	146 5.75	200 7.88	52 2.05	2-1/2X70 2-M12X70	UL FM VdS LPCB
125 5	133 5.250	300 2.07	28.7/6460	0-3.2 0-0.13	165 6.50	232 9.13	52 2.05	2-5/8X85 2-M16X85	UL FM LPCB
125 5	139.7 5.500	450 3.10	47.5/10680	0-3.2 0-0.13	170 6.69	238 9.37	52 2.05	2-5/8X85 2-M16X85	UL FM VdS LPCB
125 5	141.3 5.563	300 2.07	32.4/7290	0-3.2 0-0.13	172 6.77	236.5 9.31	52 2.05	2-5/8X85 2-M16X85	UL FM LPCB
150 6	159.0 6.250	300 2.07	41.0/9240	0-3.2 0-0.13	190 7.48	258 10.16	52 2.05	2-5/8X85 2-M16X85	UL FM LPCB
150 6	165.1 6.500	300 2.07	44.3/9960	0-3.2 0-0.13	198 7.80	266 10.47	52 2.05	2-5/8X85 2-M16X85	UL FM LPCB
150 6	168.3 6.625	300 2.07	46.0/10340	0-3.2 0-0.13	202.0 7.95	270 10.63	52 2.05	2-5/8X85 2-M16X85	UL FM VdS LPCB
200 8	219.1 8.625	450 3.10	116.9/26280	0-3.2 0-0.13	260.0 10.24	346 13.625	62 2.44	2-3/4X115 2-M20X115	UL FM VdS LPCB
250A 10	267.4 10.528	300 2.07	116/26130	0-3.2 0-0.13	318 12.52	396 15.60	63 2.48	2-3/4X120 2-M20X115	UL FM
250 10	273.0 10.750	300 2.07	121.0/27210	0-3.2 0-0.13	327 12.88	420 16.54	63 2.48	2-7/8X125 2-M22X125	UL FM VdS
300A 12	318.5 12.539	300 2.07	164.8/37080	0-3.2 0-0.13	364 14.33	456 17.95	63 2.48	2-7/8X140 2-M22X140	UL FM
300 12	323.9 12.750	300 2.07	170.3/38280	0-3.2 0-0.13	378 14.88	466 18.35	63 2.48	2-7/8X140 2-M22X140	UL FM
350 14	355.6 14.000	300 2.07	205.5/46220	0-3.2 0-0.13	415 16.34	510 20.08	72 2.84	3-7/8X140 3-M22X140	UL FM
400 16	406.4 16.000	300 2.07	266.4/60370	0-3.2 0-0.13	468 18.43	575 22.64	72 2.84	3-7/8X140 3-M22X140	UL FM
450 18	457.2 18.000	225 1.6	262.5/59060	0-3.2 0-0.13	508 20	608 23.94	78 3.07	3-7/8X140 3-M22X140	——
500 20	508.0 20.0	225 1.6	324.1/72910	0-3.2 0-0.13	583 22.17	660 25.98	78 3.07	4-7/8X140 4-M22X140	——
600 24	609.6 24.000	225 1.6	465.7/104690	0-3.2 0-0.13	688 26.30	772 30.40	78 3.07	4-1X140	——

1GS

Light-duty Rigid Coupling



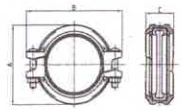


Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Bolt Size No.-Size mm	Certificate
80 3	88.9 3.500	300 2.07	12.8/2885	0-3.2 0-0.13	114 4.50	160 6.30	45 1.78	2-3/8X55 2-M10X57	UL FM VdS LPCB
100 4	108.0 4.250	300 2.07	18.9/4260	0-3.2 0-0.13	135 5.30	185 7.28	50 1.97	2-1/2X70 2-M12X70	UL FM LPCB
100 4	114.3 4.500	300 2.07	21.2/4770	0-3.2 0-0.13	140 5.51	192 7.56	50 1.97	2-1/2X70 2-M12X70	UL FM VdS LPCB
125 5	139.7 5.500	300 2.07	31.7/7130	0-3.2 0-0.13	168 6.62	225 8.86	50 1.97	2-1/2X75 2-M12X76	UL FM LPCB
125 5	141.3 5.563	300 2.07	32.4/7290	0-3.2 0-0.13	170 6.69	226 8.86	50 1.97	2-1/2X75 2-M12X76	UL FM LPCB
150 6	159.0 6.250	300 2.07	41.6/9240	0-3.2 0-0.13	190 7.48	252 9.92	50 1.97	2-5/8X80 2-M16X85	UL FM LPCB
150 6	165.1 6.500	300 2.07	44.3/9960	0-3.2 0-0.13	195 7.68	250 9.84	50 1.97	2-1/2X75 2-M12X76	UL FM LPCB
150 6	168.3 6.625	300 2.07	46.0/10340	0-3.2 0-0.13	200 7.87	255 10.04	50 1.97	2-1/2X75 2-M12X76	UL FM LPCB
200A 8	216.3 8.516	300 2.07	76.0/17100	0-3.2 0-0.13	255 10.04	320 12.60	58 2.28	2-5/8X85 2-M16X85	UL FM
200 8	219.1 8.625	300 2.07	77.8/17500	0-3.2 0-0.13	255 10.05	324 12.76	58 2.28	2-5/8X85 2-M16X85	UL FM LPCB
250 10	273.0 10.750	300 2.07	121.0/27210	0-3.2 0-0.13	318 12.52	410 16.14	63 2.48	2-3/4X120 2-M20X115	UL FM

1GK

Angle Pad Coupling



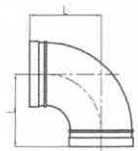


Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Max. End Load kN/Lbs	Pipe End Separation mm/in	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Bolt Size No.-Size mm	Certificate
32 1¼	42.4 1.669	500 3.45	4.8/1080	0-1.6 0-0.06	64 2.52	99 3.90	46.5 1.83	2-M10X55	UL FM
40 1½	48.3 1.900	500 3.45	6.3/1420	0-3.2 0-0.13	70 2.76	105 4.13	46.5 1.83	2-M10X55	UL FM
50 2	60.3 2.375	500 3.45	9.8/2210	0-3.2 0-0.13	85 3.35	121 4.76	46.5 1.83	2-M10X55	UL FM
65 2½	73.0 2.875	300 2.07	8.7/1950	0-3.2 0-0.13	99 3.90	134 5.28	47.5 1.87	2-M10X63	UL FM
65 2½	76.1 3.000	300 2.07	9.4/2120	0-3.2 0-0.13	102 4.02	137 5.39	47.5 1.87	2-M10X63	UL FM
80 3	88.9 3.500	300 2.07	12.8/2885	0-3.2 0-0.13	115 4.53	150 5.91	47.5 1.87	2-M10X80	UL FM
100 4	114.3 4.500	300 2.07	21.2/4770	0-3.2 0-0.13	142 5.59	180 7.09	52 2.05	2-M10X85	UL FM
125 5	139.7 5.500	300 2.07	31.7/7130	0-3.2 0-0.13	171 6.73	214 8.43	52.5 2.07	2-M12X75	UL FM
150 6	165.1 6.500	300 2.07	44.3/9960	0-3.2 0-0.13	196 7.80	242 9.53	52.5 2.07	2-M12X75	UL FM
150 6	168.3 6.625	300 2.07	46.0/10340	0-3.2 0-0.13	201 7.91	245 9.65	52.5 2.07	2-M12X75	UL FM
200 8	219.1 8.625	300 2.07	77.8/17500	0-3.2 0-0.13	256 10.16	331 13.03	63.5 2.50	2-M20X110	UL FM
250 10	273.0 10.750	300 2.07	121.0/27210	0-3.2 0-0.13	321 12.64	406 15.98	64.5 2.54	2-M22X140	——

90

90° Elbow



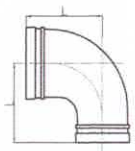


Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
25 1	33.7 1.315	500 3.45	57 2.24	UL FM VdS LPCB
32 1¼	42.4 1.660	500 3.45	70 2.75	UL FM VdS LPCB
40 1½	48.3 1.900	500 3.45	70 2.75	UL FM VdS LPCB
50 2	60.3 2.375	500 3.45	82.5 3.25	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	95 3.74	UL FM
65 2½	76.1 3.000	500 3.45	95 3.74	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	108 4.25	UL FM VdS LPCB
100 4	114.3 4.500	500 3.45	127 5.00	UL FM VdS LPCB
125 5	133.0 5.250	500 3.45	122 4.80	UL FM
125 5	139.7 5.500	500 3.45	140 5.50	UL FM VdS LPCB
125 5	141.3 5.563	500 3.45	140 5.50	UL FM
150 6	165.1 6.500	500 3.45	165 6.50	UL FM LPCB
150 6	168.3 6.625	500 3.45	165 6.50	UL FM VdS LPCB
200 8	219.1 8.625	500 3.45	197 7.75	UL FM VdS LPCB
250 10	267.4 10.526	500 3.45	229 9.00	UL FM
250 10	273.0 10.750	500 3.45	229 9.00	UL FM VdS
300 12	318.5 12.539	500 3.45	254 10.00	UL FM
300 12	323.9 12.750	500 3.45	254 10.00	UL FM VdS
350 14	355.6 14.000	300 2.07	280 11.02	——
400 16	406.4 16.000	300 2.07	305 12.00	——
450 18	457.2 18.000	300 2.07	394 15.50	——
500 20	508.0 20.000	300 2.07	438 17.25	——
600 24	609.6 24.000	300 2.07	508 20.00	——

90R

90° Reducing Elbow



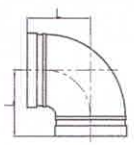


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
80X65 3X2½	88.9X76.1 3.500X3.000	500 3.45	108 4.25	UL FM
100X65 4X2½	114.3X76.1 4.500X3.000	500 3.45	127 5.00	UL FM
100X80 4X3	114.3X88.9 4.500X3.500	500 3.45	127 5.00	UL FM
150X100 6X4	165.1X114.3 6.500X4.500	500 3.45	165 6.50	UL FM
150X100 6X4	168.3X114.3 6.625X4.500	500 3.45	165 6.50	UL FM

90S

Light-duty 90° Elbow



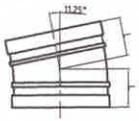


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
50 2	60.3 2.375	300 2.07	70 2.75	UL FM VdS LPCB
65 2½	73.0 2.875	300 2.07	76 3.00	UL FM
65 2½	76.1 3.000	300 2.07	76 3.00	UL FM VdS LPCB
80 3	88.9 3.500	300 2.07	85.5 3.37	UL FM VdS LPCB
100 4	108.0 4.500	300 2.07	101 3.98	UL FM
100 4	114.3 4.500	300 2.07	101 3.98	UL FM VdS LPCB
125 5	139.7 5.500	300 2.07	124 4.88	UL FM VdS LPCB
150 6	159.0 6.500	300 2.07	140 5.50	UL FM
150 6	165.1 6.500	300 2.07	140 5.50	UL FM LPCB
150 6	168.3 6.625	300 2.07	140 5.50	UL FM VdS LPCB
200 8	216.3 8.625	300 2.07	175 6.89	UL FM
200 8	219.1 8.625	300 2.07	165 6.50	UL FM VdS LPCB

105

11.25° Elbow



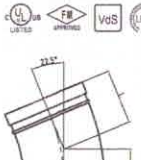


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
32 1¼	42.4 1.660	500 3.45	35 1.38	UL FM
40 1½	48.3 1.900	500 3.45	35 1.38	UL FM
50 2	60.3 2.375	500 3.45	35 1.38	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	38 1.506	UL FM
65 2½	76.1 3.000	500 3.45	38 1.506	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	38 1.50	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	44 1.73	UL FM
100 4	114.3 4.500	500 3.45	44 1.73	UL FM VdS LPCB
125 5	139.7 5.500	500 3.45	51 2.00	UL FM VdS LPCB
150 6	159.0 6.250	500 3.45	51 2.00	UL FM
150 6	165.1 6.500	500 3.45	51 2.00	UL FM LPCB
150 6	168.3 6.625	500 3.45	51 2.00	UL FM VdS
200 8	219.1 8.625	500 3.45	51 2.00	UL FM VdS LPCB

110

22.5° Elbow



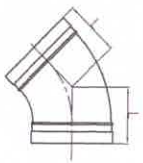


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
32 1¼	42.4 1.660	500 3.45	45 1.77	UL FM
40 1½	48.3 1.900	500 3.45	45 1.77	UL FM
50 2	60.3 2.375	500 3.45	48 1.89	UL FM
65 2½	73.0 2.875	500 3.45	51 2.00	UL FM
65 2½	76.1 3.000	500 3.45	51 2.00	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	57 2.24	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	73 2.87	UL FM
100 4	114.3 4.500	500 3.45	73 2.87	UL FM VdS LPCB
125 5	139.7 5.500	500 3.45	73 2.87	UL FM VdS LPCB
150 6	159.0 6.250	500 3.45	79 3.11	UL FM
150 6	165.1 6.500	500 3.45	79 3.11	UL FM LPCB
150 6	168.3 6.625	500 3.45	79 3.11	UL FM VdS
200 8	219.1 8.625	500 3.45	98 3.86	UL FM VdS LPCB

120

45° Elbow



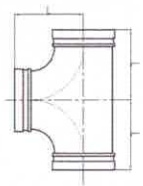


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
25 1	33.7 1.315	500 3.45	44.5 1.75	UL FM VdS LPCB
32 1¼	42.4 1.660	500 3.45	44.5 1.75	UL FM VdS LPCB
40 1½	48.3 1.900	500 3.45	44.5 1.75	UL FM VdS LPCB
50 2	60.3 2.375	500 3.45	51 2.00	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	57 2.24	UL FM
65 2½	76.1 3.000	500 3.45	57 2.24	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	63.5 2.50	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	76 3.00	UL FM
100 4	114.3 4.500	500 3.45	76 3.00	UL FM VdS LPCB
125 5	133.0 5.250	500 3.45	82.5 3.25	——
125 5	139.7 5.500	500 3.45	82.5 3.25	UL FM VdS LPCB
125 5	141.3 5.563	500 3.45	82.5 3.25	UL FM
150 6	159.0 6.250	500 3.45	89 3.50	UL FM
150 6	165.1 6.500	500 3.45	89 3.50	UL FM LPCB
150 6	168.3 6.625	500 3.45	89 3.50	UL FM VdS LPCB
200 8	216.3 8.516	500 3.45	108 4.25	UL FM
200 8	219.1 8.625	500 3.45	108 4.25	UL FM VdS LPCB
250 10	267.4 10.528	300 2.07	120.5 4.75	UL FM
250 10	273.0 10.750	500 3.45	120.5 4.75	UL FM VdS
300 12	318.5 12.750	300 2.07	133 5.25	UL FM
300 12	323.9 12.750	500 3.45	133 5.25	UL FM VdS
300 12	377 12.750	300 2.07	122 4.80	——
350 14	355.6 14.000	300 2.07	152 6.00	——
400 16	406.4 16.000	300 2.07	184 7.25	——
450 18	457.2 18.000	300 2.07	203 8.00	——
500 20	508.0 20.000	300 2.07	229 9.00	——
600 24	609.6 24.000	300 2.07	280 11.00	——

130

Tee



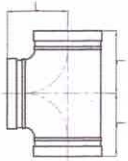


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
25 1	33.7 1.315	500 3.45	57 2.24	UL FM VdS LPCB
32 1¼	42.4 1.660	500 3.45	70 2.75	UL FM VdS LPCB
40 1½	48.3 1.900	500 3.45	70 2.75	UL FM VdS LPCB
50 2	60.3 2.375	500 3.45	82.5 3.25	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	95 3.74	UL FM
65 2½	76.1 3.000	500 3.45	95 3.74	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	108 4.25	UL FM VdS LPCB
100 4	114.3 4.500	500 3.45	127 5.00	UL FM VdS LPCB
125 5	133.0 5.250	500 3.45	122 4.80	UL FM
125 5	139.7 5.500	500 3.45	140 5.50	UL FM VdS LPCB
125 5	141.3 5.563	500 3.45	140 5.50	UL FM
150 6	165.1 6.500	500 3.45	165 6.50	UL FM LPCB
150 6	168.3 6.625	500 3.45	168 6.50	UL FM VdS LPCB
200 8	219.1 8.625	500 3.45	197 7.75	UL FM VdS LPCB
250 10	267.4 10.528	500 3.45	229 9.00	UL FM
250 10	273.0 10.750	500 3.45	229 9.00	UL FM VdS
300 12	318.5 12.539	500 3.45	254 10.00	——
300 12	323.9 12.750	500 3.45	254 10.00	UL FM VdS
350 14	355.6 14.000	300 2.07	280 11.02	——
400 16	406.4 16.000	300 2.07	305 12.00	——
450 18	457.2 18.000	300 2.07	394 15.50	——
500 20	508.0 20.000	300 2.07	438 17.25	——
600 24	609.6 24.000	300 2.07	508 20.00	——

130S

Light-duty Tee



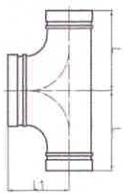


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
50 2	60.3 2.375	300 2.07	70 2.75	UL FM VdS LPCB
65 2½	73.0 2.875	300 2.07	76 3.00	UL FM
65 2½	76.1 3.000	300 2.07	76 3.00	UL FM VdS LPCB
80 3	88.9 3.500	300 2.07	85.5 3.37	UL FM VdS LPCB
100 4	108.0 4.500	300 2.07	101 3.98	UL FM
100 4	114.3 4.500	300 2.07	101 3.98	UL FM VdS LPCB
125 5	139.7 5.500	300 2.07	124 4.88	UL FM VdS LPCB
150 6	159.0 6.500	300 2.07	140 5.50	UL FM
150 6	165.1 6.500	300 2.07	140 5.50	UL FM LPCB
150 6	168.3 6.625	300 2.07	140 5.50	UL FM VdS LPCB
200 8	216.3 8.625	300 2.07	175 6.89	UL FM
200 8	219.1 8.625	300 2.07	175 6.89	UL FM VdS LPCB

130R

Reducing Tee



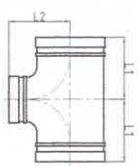


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Dimensions L1 mm/in	Certificate
65 × 65 × 80 2½ × 2½ × 3	76.1 × 76.1 × 88.9 3.000 × 3.000 × 3.500	500 3.45	108 4.25	95 3.74	—
65 × 65 × 100 2½ × 2½ × 4	76.1 × 76.1 × 114.3 3.000 × 3.000 × 4.500	500 3.45	127 5.00	102 4.02	—
80 × 80 × 100 3 × 3 × 4	88.9 × 88.9 × 114 3.500 × 3.500 × 4.500	500 3.45	127 5.00	102 4.02	—

130R

Reducing Tee



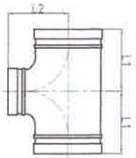


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L1 mm/in	Dimensions L2 mm/in	Certificate
50 × 25 2 × 1	60.3 × 33.7 2.375 × 1.315	500 3.45	70 2.75	70 2.75	UL FM VdS LPCB
50 × 40 2 × 1½	60.3 × 48.3 2.375 × 1.900	500 3.45	70 2.75	70 2.75	UL FM VdS LPCB
65 × 40 2½ × 1½	73.0 × 48.3 2.875 × 1.900	500 3.45	76 3.00	76 3.00	UL FM
65 × 50 2½ × 2	73.0 × 60.3 2.875 × 2.375	500 3.45	69 2.72	69 2.72	UL FM
65 × 32 2½ × 1¼	76.1 × 42.4 3.000 × 1.660	500 3.45	76 3.00	76 3.00	UL FM
65 × 40 2½ × 1½	76.1 × 48.3 3.000 × 1.900	500 3.45	76 3.00	76 3.00	UL FM VdS LPCB
65 × 50 2½ × 2	76.1 × 60.3 3.000 × 2.375	500 3.45	69 2.72	69 2.72	UL FM VdS LPCB
80 × 32 3 × 1	88.9 × 33.7 3.500 × 1.315	500 3.45	108 4.25	108 4.25	UL FM VdS LPCB
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	500 3.45	85.5 3.37	85.5 3.37	UL FM
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	500 3.45	85.5 3.37	85.5 3.37	UL FM VdS LPCB
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	500 3.45	85.5 3.37	85.5 3.37	UL FM VdS LPCB
80 × 65 3 × 2½	88.9 × 73.0 3.500 × 2.875	500 3.45	85.5 3.37	85.5 3.37	UL FM
80 × 65 3 × 2½	88.9 × 76.1 3.500 × 3.000	500 3.45	85.5 3.37	85.5 3.37	UL FM VdS LPCB
100 × 50 4 × 2	108.0 × 60.3 4.250 × 2.375	500 3.45	101 3.98	101 3.98	UL FM
100 × 80 4 × 3	108.0 × 88.9 4.250 × 3.500	500 3.45	101 3.98	101 3.98	UL FM
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	500 3.45	101 3.98	101 3.98	UL FM VdS LPCB
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	500 3.45	101 3.98	101 3.98	UL FM VdS LPCB
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	500 3.45	101 3.98	101 3.98	UL FM VdS LPCB
100 × 65 4 × 2½	114.3 × 73.0 4.500 × 2.875	500 3.45	101 3.98	101 3.98	UL FM
100 × 65 4 × 2½	114.3 × 76.1 4.500 × 3.000	500 3.45	101 3.98	101 3.98	UL FM VdS LPCB
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	500 3.45	101 3.98	101 3.98	UL FM VdS LPCB
125 × 50 5 × 2	133.0 × 60.3 5.250 × 2.375	500 3.45	124 4.88	124 4.88	UL FM
125 × 65 5 × 2½	133.0 × 76.1 5.250 × 3.000	500 3.45	124 4.88	124 4.88	UL FM
125 × 100 5 × 4	133.0 × 108.0 5.250 × 4.250	500 3.45	124 4.88	124 4.88	UL FM
125 × 100 5 × 4	133.0 × 114.3 5.250 × 4.500	500 3.45	124 4.88	124 4.88	UL FM
125 × 40 5 × 1½	139.7 × 48.3 5.500 × 1.900	500 3.45	124 4.88	124 4.88	UL FM
125 × 50 5 × 2	139.7 × 60.3 5.500 × 2.375	500 3.45	124 4.88	124 4.88	UL FM
125 × 65 5 × 2½	139.7 × 76.1 5.500 × 3.000	500 3.45	124 4.88	124 4.88	UL FM
125 × 80 5 × 3	139.7 × 88.9 5.500 × 3.500	500 3.45	124 4.88	124 4.88	UL FM
125 × 100 5 × 4	139.7 × 114.3 5.500 × 4.500	500 3.45	124 4.88	124 4.88	UL FM VdS LPCB
125 × 50 5 × 2	141.3 × 60.3 5.563 × 2.375	500 3.45	124 4.88	124 4.88	UL FM
125 × 80 5 × 3	141.3 × 88.9 5.563 × 3.500	500 3.45	124 4.88	124 4.88	UL FM
125 × 100 5 × 4	141.3 × 114.3 5.563 × 4.500	500 3.45	124 4.88	124 4.88	UL FM
150 × 50 6 × 2	159.0 × 60.3 6.250 × 2.375	500 3.45	140 5.50	140 5.50	UL FM
150 × 65 6X2½	159.0 × 76.1 6.250 × 3.000	500 3.45	140 5.50	140 5.50	UL FM

130R

Reducing Tee



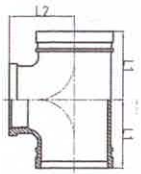


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L 1 mm/in	Dimensions L 2 mm/in	Certificate
150 × 80 6 × 3	159.0 × 88.9 6.250 × 3.500	500 3.45	140 5.50	140 5.50	UL FM
150 × 100 6 × 4	159.0 × 108.0 6.250 × 4.250	500 3.45	140 5.50	140 5.50	UL FM
150 × 100 6 × 4	159.0 × 114.3 6.250 × 4.500	500 3.45	140 5.50	140 5.50	UL FM
150 × 125 6 × 5	159.0 × 133.0 6.250 × 5.250	500 3.45	140 5.50	140 5.50	UL FM
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	140 5.50	140 5.50	UL FM
150 × 65 6 × 2½	165.1 × 76.1 6.500 × 3.000	300 2.07	140 5.50	140 5.50	UL FM
150 × 80 6 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	140 5.50	140 5.50	UL FM LPCB
150 × 100 6 × 4	165.1 × 114.3 6.500 × 4.500	300 2.07	140 5.50	140 5.50	UL FM LPCB
150 × 125 6 × 5	165.1 × 139.7 6.500 × 5.500	300 2.07	140 5.50	140 5.50	UL FM LPCB
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	500 3.45	140 5.50	140 5.50	UL FM VdS LPCB
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	500 3.45	140 5.50	140 5.50	UL FM
150 × 65 6 × 2½	168.3 × 76.1 6.625 × 3.000	500 3.45	140 5.50	140 5.50	UL FM VdS LPCB
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	500 3.45	140 5.50	140 5.50	UL FM VdS LPCB
150 × 100 6 × 4	168.3 × 114.3 6.625 × 4.500	500 3.45	140 5.50	140 5.50	UL FM VdS LPCB
150 × 125 6 × 5	168.3 × 139.7 6.625 × 5.500	300 2.07	140 5.50	140 5.50	UL FM VdS LPCB
150 × 125 6 × 5	168.3 × 141.3 6.625 × 5.563	300 2.07	140 5.50	140 5.50	UL FM
200 × 150 8 × 6	216.3 × 165.1 8.516 × 6.500	300 2.07	175 6.89	175 6.89	UL FM
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	500 3.45	175 6.89	175 6.89	UL FM VdS LPCB
200 × 65 8 × 2½	219.1 × 76.1 8.625 × 3.000	300 2.07	175 6.89	175 6.89	UL FM
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	500 3.45	175 6.89	175 6.89	UL FM VdS LPCB
200 × 100 8 × 4	219.1 × 108.0 8.625 × 4.250	500 3.45	175 6.89	175 6.89	UL FM
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	500 3.45	175 6.89	175 6.89	UL FM VdS LPCB
200 × 125 8 × 5	219.1 × 133.0 8.625 × 5.250	300 2.07	175 6.89	175 6.89	UL FM
200 × 125 8 × 5	219.1 × 139.7 8.625 × 5.500	300 2.07	175 6.89	175 6.89	UL FM
200 × 150 8 × 6	219.1 × 159.0 8.625 × 6.250	300 2.07	175 6.89	175 6.89	UL FM
200 × 150 8 × 6	219.1 × 165.1 8.625 × 6.500	300 2.07	175 6.89	175 6.89	UL FM
200 × 150 8 × 6	219.1 × 168.3 8.625 × 6.625	500 3.45	175 6.89	175 6.89	UL FM VdS LPCB
250 × 150 10 × 6	273.0X159.0 10.750 × 6.250	500 3.45	229 9.00	229 9.00	UL FM
250 × 150 10 × 6	273.0 × 165.1 10.750 × 6.500	300 2.07	229 9.00	229 9.00	UL FM
250 × 150 10 × 6	273.0 × 168.3 10.750 × 6.625	300 2.07	229 9.00	229 9.00	UL FM VdS
250 × 200 10 × 8	273.0 × 219.1 10.750 × 8.625	300 2.07	229 9.00	229 9.00	UL FM VdS
300 × 150 12 × 6	323.9 × 165.1 12.750 × 6.500	300 2.07	254 10	254 10	UL FM
300 × 200 12 × 8	323.9 × 219.1 12.750 × 8.625	300 2.07	254 10	254 10	UL FM VdS
300 × 250 12 × 10	323.9 × 273.0 12.750 × 10.750	300 2.07	254 10	254 10	UL FM VdS
350 × 200 14 × 8	355.6 × 219.1 14.00 × 8.625	300 2.07	280 11.02	280 11.02	——

131R

Reducing Tee with Female Thread



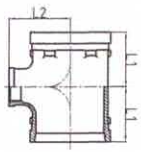


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L 1 mm/in	Dimensions L 2 mm/in	Certificate
50 × 25 2 × 1	60.3 × 33.7 2.375 × 1.315	500 3.45	70 2.75	70 2.75	UL FM
50 × 32 2 × 1¼	60.3 × 42.4 2.375 × 1.660	500 3.45	70 2.75	70 2.75	——
50 × 40 2 × 1½	60.3 × 48.3 2.375 × 1.900	500 3.45	70 2.75	70 2.75	UL FM
65 × 25 2½ × 1	73.0 × 33.7 2.875 × 1.315	500 3.45	76 3.00	76 3.00	UL FM
65 × 32 2½ × 1¼	73.0 × 42.4 2.875 × 1.660	500 3.45	76 3.00	76 3.00	UL FM
65 × 25 2½ × 1	76.1 × 33.7 3.000 × 1.315	500 3.45	76 3.00	76 3.00	UL FM
65 × 32 2½ × 1¼	76.1 × 42.4 3.000 × 1.660	500 3.45	76 3.00	76 3.00	UL FM
65 × 40 2½ × 1½	76.1 × 48.3 3.000 × 1.900	500 3.45	76 3.00	76 3.00	UL FM
65 × 50 2½ × 2	76.1 × 60.3 3.000 × 2.375	500 3.45	76 3.00	76 3.00	UL FM
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	500 3.45	85.5 3.37	85.5 3.37	UL FM
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	500 3.45	85.5 3.37	85.5 3.37	UL FM
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	500 3.45	85.5 3.37	85.5 3.37	UL FM
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	500 3.45	85.5 3.37	85.5 3.37	UL FM
80 × 65 3 × 2½	88.9 × 76.1 3.500 × 3.000	500 3.45	85.5 3.37	85.5 3.37	UL FM
100 × 65 4 × 2½	108.0 × 76.1 4.250 × 3.000	300 2.07	100 3.94	96 3.78	UL FM
100 × 80 4 × 3	108.0 × 88.9 4.250 × 3.500	300 2.07	100 3.94	96 3.78	UL FM
100 × 65 4 × 2½	114.3 × 76.1 4.500 × 3.000	300 2.07	100 3.94	96 3.78	UL FM
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	100 3.94	96 3.78	UL FM
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	175 6.89	175 6.89	FM
200 × 65 8 × 2½	219.1 × 76.1 8.625 × 3.000	300 2.07	175 6.89	175 6.89	FM
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	175 6.89	175 6.89	FM

131R

Reducing Tee with Female Thread



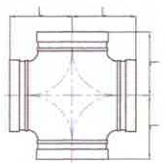


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L1 mm/in	Dimensions L2 mm/in	Certificate
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	76 2.99	88 3.47	UL FM
100 × 32 4 × 1¼	114.3 × 42.4 4.500 × 1.660	300 2.07	76 2.99	88 3.47	UL FM
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	85 3.35	91 3.58	UL FM
100 × 50 4 × 2	168.0 × 60.3 4.250 × 2.375	300 2.07	85 3.35	91 3.58	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	85 3.35	91 3.58	UL FM
125 × 50 5 × 2	133.0 × 60.3 5.250 × 2.375	300 2.07	86 3.39	106 4.17	UL FM
125 × 65 5 × 2½	133.0 × 76.1 5.250 × 3.000	300 2.07	102 4.02	111 4.37	UL FM
125 × 80 5 × 3	133.0 × 88.9 5.250 × 3.500	300 2.07	102 4.02	111 4.37	UL FM
125 × 25 5 × 1	139.7 × 33.7 5.500 × 1.315	300 2.07	78 3.07	103 4.06	UL FM
125 × 32 5 × 1¼	139.7 × 42.4 5.500 × 1.660	300 2.07	78 3.07	103 4.06	UL FM
125 × 40 5 × 1½	139.7 × 48.3 5.500 × 1.900	300 2.07	86 3.39	106 4.17	UL FM
125 × 50 5 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	86 3.39	106 4.17	UL FM
125 × 65 5 × 2½	139.7 × 76.1 5.500 × 3.000	300 2.07	102 4.02	111 4.37	UL FM
125 × 80 5 × 3	139.7 × 88.9 5.500 × 3.500	300 2.07	102 4.02	111 4.37	UL FM
150 × 60 6 × 2	159.0 × 60.3 6.250 × 2.375	300 2.07	92 3.62	124 4.88	UL FM
150 × 65 6 × 2½	159.0 × 76.1 6.250 × 3.000	300 2.07	107 4.21	129 5.08	UL FM
150 × 80 6 × 3	159.0 × 88.9 6.25 × 03.500	300 2.07	107 4.21	129 5.08	UL FM
150 × 25 6 × 1	165.1 × 33.7 6.500 × 1.315	300 2.07	83 3.27	121 4.76	UL FM
150 × 32 6 × 1¼	165.1 × 42.4 6.500 × 1.660	300 2.07	83 3.27	121 4.75	UL FM
150 × 40 6 × 1½	165.1 × 48.3 6.500 × 1.900	300 2.07	92 3.62	124 4.88	UL FM
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	92 3.62	124 4.88	UL FM
150 × 65 6 × 2½	165.1 × 76.1 6.500 × 3.000	300 2.07	107 4.21	129 5.08	UL FM
150 × 80 6 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	107 4.21	129 5.08	UL FM
150 × 100 6 × 4	165.1 × 114.3 6.500 × 4.500	300 2.07	121 4.76	132 5.20	UL FM
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	92 3.62	124 4.88	UL FM
150 × 65 6 × 2½	168.3 × 76.1 6.625 × 3.000	300 2.07	107 4.21	129 5.08	UL FM

180

Cross



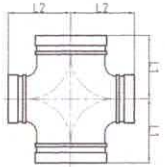


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
32 1¼	42.4 1.660	500 3.45	70 2.75	UL FM VdS LPCB
40 1½	48.3 1.900	500 3.45	70 2.75	UL FM VdS LPCB
50 2	60.3 2.375	500 3.45	70 2.75	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	76 3.00	UL FM
65 2½	76.1 3.000	500 3.45	76 3.00	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	85.5 3.37	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	101 3.98	UL FM
100 4	114.3 4.500	500 3.45	101 3.98	UL FM VdS LPCB
125 5	139.7 5.500	500 3.45	124 4.88	UL FM VdS LPCB
125 5	141.3 5.563	500 3.45	124 4.88	UL FM
150 6	159.0 6.250	500 3.45	140 5.50	UL FM
150 6	165.1 6.500	500 3.45	140 5.50	UL FM LPCB
150 6	168.3 6.625	500 3.45	140 5.50	UL FM VdS LPCB
200 8	219.1 8.625	500 3.45	175 6.89	UL FM VdS LPCB
250 10	273.0 10.750	500 3.45	229 9.00	UL FM VdS
300 12	323.9 12.750	500 3.45	254 10.00	UL FM VdS

180R

Reducing Cross



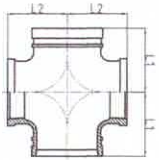


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L1 mm/in	Dimensions L2 mm/in	Certificate
65 × 50 2½ × 2	76.1 × 60.3 3.000 × 2.375	500 3.45	76 3.00	76 3.00	——
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	500 3.45	85.5 3.37	85.5 3.37	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	500 3.45	101 3.98	101 3.98	UL FM
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	500 3.45	101 3.98	101 3.98	UL FM
125 × 100 5 × 4	139.7 × 114.3 5.500 × 4.500	500 3.45	124 4.88	124 4.88	UL FM
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	500 3.45	140 5.50	140 5.50	UL FM
150 × 65 6 × 2½	165.1 × 76.1 6.500 × 3.000	500 3.45	140 5.50	140 5.50	UL FM
150 × 80 6 × 3	165.1 × 88.9 6.500 × 3.500	500 3.45	140 5.50	140 5.50	UL FM
150 × 100 6 × 4	165.1 × 114.3 6.500 × 4.500	500 3.45	140 5.50	140 5.50	UL FM
150 × 50 6 × 2	168X60.3 6.625X2.375	500 3.45	140 5.50	140 5.50	——
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	500 3.45	197 7.75	197 7.75	UL FM
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	500 3.45	175 6.89	175 6.89	UL FM
200 × 125 8 × 5	219.1 × 139.7 8.625 × 5.500	300 2.07	175 6.89	175 6.89	UL FM
200 × 150 8 × 6	219.1 × 159.0 8.625 × 6.250	300 2.07	175 6.89	175 6.89	UL FM
200 × 150 8 × 6	219.1 × 165.1 8.625 × 6.500	300 2.07	175 6.89	175 6.89	UL FM

181

Reducing Cross with Female Thread



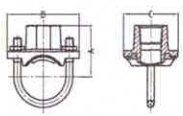


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L1 mm/in	Dimensions L2 mm/in	Certificate
65 × 50 2½ × 2	76.1 × 60.3 3.000 × 2.375	300 2.07	76 3.00	76 3.00	——
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	108 4.25	108 4.25	——
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	86.5 3.37	86.5 3.37	——
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	300 2.07	86.5 3.37	86.5 3.37	——
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	76 2.99	88 3.47	UL FM
100 × 32 4 × 1¼	114.3 × 42.4 4.500 × 1.660	300 2.07	76 2.99	88 3.47	UL FM
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	85 3.35	91 3.58	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	85 3.35	91 3.58	UL FM
100 × 65 4 × 2½	114.3 × 76.1 4.500 × 3.000	300 2.07	101 3.98	96 3.78	——
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	101 3.98	96 3.78	——
150 × 32 6 × 1¼	165.1 × 42.4 6.500 × 1.660	300 2.07	92 3.62	124 4.88	——
150 × 40 6 × 1½	165.1 × 48.3 6.500 × 1.900	300 2.07	92 3.62	124 4.88	——
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	92 3.62	124 4.88	UL FM
150 × 65 6 × 2½	165.1X 76.1 6.500 × 3.000	300 2.07	140 5.50	140 5.50	——
150 × 80 6 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	140 5.50	140 5.50	——
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	175 6.89	175 6.89	——

3L

U-Bolt Mechanical Tee



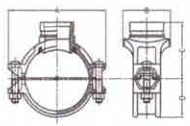


Nominal Size mm/in	Hole Dia mm/in ±1.0/±0.063.0	Working Pressure PSI/MPa	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	U Bolt Size mm/in	Certificate
32X15 1¼X1/2	30 1.18	300 2.07	54.4 2.14	88.9 3.50	57.2 2.25	3/8X73 M10X73	UL FM
32X20 1¼X3/4	30 1.18	300 2.07	54.4 2.14	88.9 3.50	57.2 2.25	3/8X73 M10X73	UL FM
32X25 1¼X1	30 1.18	300 2.07	57.7 2.27	88.9 3.50	57.2 2.25	3/8X73 M10X73	UL FM
40X15 1½X1/2	30 1.18	300 2.07	43 1.69	88.9 3.50	57.2 2.25	3/8X73 M10X73	UL FM
40X20 1½X3/4	30 1.18	300 2.07	51 2.0	88.9 3.50	57.2 2.25	3/8X73 M10X73	UL FM
40X25 1½X1	30 1.18	300 2.07	60.8 2.39	88.9 3.50	57.2 2.25	3/8X73 M10X73	UL FM
50X15 2X1/2	30 1.18	300 2.07	63.3 2.49	95.3 3.75	57.2 2.25	3/8X90 M10X90	UL FM VdS
50X20 2X3/4	30 1.18	300 2.07	63.3 2.49	95.3 3.75	57.2 2.25	3/8X90 M10X90	UL FM VdS
50X25 2X1	30 1.18	300 2.07	66.6 2.62	95.3 3.75	57.2 2.25	3/8X90 M10X90	UL FM VdS
50X32 2X1¼	45 1.75	300 2.07	66.6 2.62	4.72 120	3.00 76	1/2X52	——
65X15 2½X1/2	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8X105 M10X105	UL FM
65X20 2½X3/4	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8X105 M10X105	UL FM
65X25 2½X1	30 1.18	300 2.07	73.2 2.88	108.0 4.25	57.2 2.25	3/8X105 M10X105	UL FM
65X15 76.1X1/2	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8X105 M10X105	UL FM VdS
65X20 76.1X3/4	30 1.18	300 2.07	69.9 2.75	108.0 4.25	57.2 2.250	3/8X105 M10X105	UL FM VdS
65X25 76.1X1	30 1.18	300 2.07	73.2 2.88	108.0 4.25	57.2 2.25	3/8X105 M10X105	UL FM VdS
80X25 88.9X1	38 1.5	300 2.07	79 3.11	145 5.70	73 2.87	1/2X58	UL FM VdS

3G

Mechanical Tee Grooved Outlet



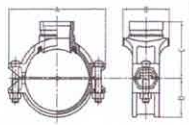


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in ±1.0/±0.063.0	Dimensions A mm/in	Dimensions B mm/in	Dimensions C mm/in	Dimensions D mm/in	Bolt Size mm/in	Certificate
50 × 32 2 × 1¼	60.3 × 42.4 2.375 × 1.660	300 2.07	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	3/8 × 55 M10X57	UL FM VdS
50 × 40 2 × 1½	60.3 × 48.3 2.375 × 1.900	300 2.07	45 1.75	116 4.57	76 2.99	69.5 2.74	39 1.54	3/8 × 55 M10X57	UL FM VdS
65 × 25 2½ × 1	73.0 × 33.7 2.875 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	76 3.07	49 1.93	1/2 × 70 M12X70	——
65 × 32 2½ × 1¼	73.0 × 42.4 2.875 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49 1.93	1/2 × 70 M12X70	UL FM
65 × 40 2½ × 1½	73.0 × 48.3 2.875 × 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49 1.93	1/2 × 70 M12X70	UL FM
65 × 25 76.1 × 1	76.1 × 33.7 3.000 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	78 3.07	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
65 × 32 76.1 × 1¼	76.1 × 42.4 3.000 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
65 × 40 76.1 × 1½	76.1 × 48.3 3.000 × 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	300 2.07	38 1.50	152 5.98	72.5 2.85	84.5 3.33	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	84.5 3.33	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2.00	152 5.98	85.5 3.37	84.5 3.33	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	300 2.07	64 2.50	152 5.98	98 3.86	84.5 3.33	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	38 1.50	188 7.40	78.4 3.09	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 32 4 × 1¼	114.3X42.4 4.500 × 1.660	300 2.07	51 2.00	188 7.40	89 3.50	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2.00	188 7.40	89 3.50	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.5	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 65 4 × 2½	114.3 × 73.0 4.500 × 2.875	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM
100 × 65 4 × 76.1	114.3 × 76.1 4.500 × 3.000	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2 × 75 M12X76	VdS LPCB
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	89 3.50	188 7.40	128 5.03	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS LPCB
125 × 80 133.0 × 3	133.0 × 88.9 5.250 × 3.500	300 2.07	89 3.50	209 8.23	132 5.20	108.5 4.31	77 3.03	5/8 × 85 M16X85	UL FM
125 × 32 139.7 × 1¼	139.7 × 42.4 5.500 × 1.660	300 2.07	51 2.00	221.5 8.72	95 3.74	118 4.65	84 3.31	5/8 × 85 M16X85	UL FM
125 × 40 139.7 × 1½	139.7 × 48.3 5.500 × 1.900	300 2.07	51 2.00	221.5 8.72	95 3.74	118 4.65	84 3.31	5/8 × 85 M16X85	UL FM
125 × 50 139.7 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.5	221.5 8.72	112.5 4.43	118 4.65	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 65 139.7 × 76.1	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	221.5 8.72	112.5 4.43	118 4.65	84 3.31	5/8 × 85 M16X85	UL FM VdS LPCB
125 × 80 139.7 × 3	139.7 × 88.9 5.500 × 3.500	300 2.07	89 3.50	221.5 8.720	132 5.20	118 4.65	84 3.31	5/8 × 85 M16X85	UL FM VdS LPCB
125 × 100 139.7 × 4	139.7 × 114.3 5.500 × 4.500	300 2.07	114 4.50	221.5 8.720	160 6.30	125 4.92	94 3.31	5/8 × 85 M16X85	UL FM VdS LPCB
150 × 50 159.0 × 2	159.1 × 60.3 6.250 × 2.375	300 2.07	64 2.5	244 9.60	112.5 4.43	125 4.92	94 3.70	5/8 × 105 M16X108	——
150 × 100 159.0 × 108.0	159.1 × 108.0 6.250 × 4.250	300 2.07	114 4.50	244 9.60	154 6.06	133 5.24	94 3.70	5/8 × 105 M16X108	UL FM
150 × 100 159.0 × 4	159.1 × 114.3 6.250 × 4.500	300 2.07	114 4.50	244 9.60	158 6.26	125 4.92	94 3.70	5/8 × 105 M16X108	UL FM
150 × 50 165.1 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.5	244 9.60	112.5 4.43	127 5.00	97.5 3.84	5/8 × 105 M16X108	UL FM
150 × 65 165.1 × 76.1	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	130 5.12	97.5 3.84	5/8 × 105 M16X108	UL FM LPCB
150 × 80 6½O.D × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.50	244 9.60	132 5.20	130 5.12	97.5 3.84	5/8 × 105 M16X108	UL FM LPCB
150 × 100 6½O.D × 4	165.1 × 114.3 6.500 × 4.500	300 2.07	114 4.50	244 9.60	154 6.06	135 5.32	97.5 3.84	5/8 × 105 M16X108	UL FM LPCB
150 × 40 6 × 1¾	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2.00	247 9.72	95 3.74	128 5.04	98.5 3.88	5/8 × 105 M16X108	UL FM VdS
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.5	247 9.72	114 4.49	134 5.28	98.5 3.88	5/8 × 105 M16X108	UL FM VdS

3G

Mechanical Tee Grooved Outlet



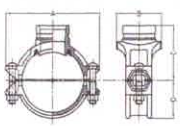


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	247 9.72	112.5 4.43	135 5.32	98.5 3.88	5/8 × 105 M15X108	UL FM
150 × 65 6 × 2½	168.3 × 76.1 6.625 × 3.000	300 2.07	70 2.75	247 9.72	112.5 4.43	135 5.32	98.5 3.88	5/8 × 105 M15X108	VdS LPCB
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.50	247 9.72	132 5.20	141 5.55	98.5 3.88	5/8 × 105 M16X108	UL FM VdS LPCB
150 × 100 6 × 4	168.3 × 114.3 6.625 × 4.500	300 2.07	114 4.50	247 9.72	160 6.30	138 5.43	98.5 3.88	5/8 × 105 M16X108	UL FM VdS LPCB
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.5	320 12.60	118 4.65	158 6.22	125 4.92	3/4 × 115 M20X115	UL FM VdS
200 × 65 8 × 2½	219.1 × 73.0 8.625 × 2.875	300 2.07	70 2.75	320 12.60	118 4.65	158 6.22	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
200 × 65 8 × 76.1	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	320 12.60	118 4.65	158 6.22	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.50	320 12.60	136.5 5.37	161 6.34	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
200 × 100 8 × 4	219.1 × 108.0 8.625 × 4.250	300 2.07	114 4.50	320 12.60	162 6.38	161 6.34	125 4.92	3/4 × 115 M20X115	UL FM
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.50	320 12.60	162 6.38	161 6.34	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
250 × 65 10 × 2½	273.0 × 76.1 10.75 × 3.000	300 2.07	70 2.75	376 14.80	118 4.65	188 7.44	155 6.10	3/4 × 120 M20X115	——
250 × 80 10 × 3	273.0 × 88.9 10.75 × 3.500	300 2.07	89 3.50	376 14.80	136.5 5.37	169 7.44	155 6.10	3/4 × 120 M20X115	——
250 × 100 10 × 4	273.0 × 108 10.75 × 4.250	300 2.07	114 4.50	376 14.80	164 6.46	169 7.44	155 6.10	3/4 × 120 M20X115	UL FM
250 × 100 10 × 4	273.0 × 114.3 10.75 × 4.500	300 2.07	114 4.50	376 14.80	164 6.46	169 7.44	155 6.10	3/4 × 120 M20X115	UL FM VdS

3GS

Light-duty Mechanical Tee Grooved Outlet



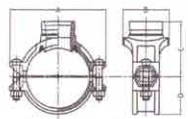


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
65 × 25 76.1 × 1	76.1 × 33.7 3.000 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	78 3.07	49.5 1.95	1/2 × 70 M12X70	UL FM
65 × 32 76.1 × 1¼	76.1 × 42.4 3.000 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2 × 70 M12X70	UL FM
65 × 40 76.1 × 1½	76.1 × 48.3 3.000 × 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	49.5 1.95	1/2 × 70 M12X70	UL FM
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	84 3.31	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	300 2.07	64 2.50	150 5.91	98 3.86	84 3.31	55.5 2.19	1/2 × 75 M12X76	UL FM
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2.00	178 7.01	88 3.46	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.50	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 65 4 × 2½	114.3 × 73.0 4.500 × 2.875	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 65 4 × 76.1	114.3 × 76.1 4.500 × 3.000	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	89 3.50	178 7.01	124 4.88	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM

3GS

Light-duty Mechanical Tee Grooved Outlet



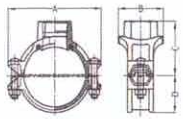


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
125 × 80 133.0 × 3	133.0 × 88.9 5.250 × 3.500	300 2.07	89 3.50	203 7.99	132 5.12	110 4.33	77.5 3.05	5/8 × 85 M16X85	UL FM
125 × 32 139.7 × 11/4	139.7 × 42.4 5.500 × 1.660	300 2.07	51 2.00	210 8.27	91 3.58	113 4.45	82 3.23	5/8 × 85 M16X85	UL FM
125 × 40 139.7 × 11/2	139.7 × 48.3 5.500 × 1.900	300 2.07	51 2.00	210 8.27	91 3.58	113 4.45	82 3.23	5/8 × 85 M16X85	UL FM
125 × 50 139.7 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.50	210 8.27	110 4.33	113 4.45	82 3.23	5/8 × 85 M16X85	UL FM
125 × 65 139.7 × 76.1	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	210 8.27	110 4.33	113 4.45	82 3.23	5/8 × 85 M16X85	UL FM
125 × 80 139.7 × 3	139.7 × 88.9 5.500 × 3.500	300 2.07	89 3.50	210 8.27	130 5.12	113 4.45	82 3.23	5/8 × 85 M16X85	UL FM
125 × 6 139.7 × 4	139.7 × 114.3 5.500 × 4.500	175 1.21	114 4.50	210 8.27	153 6.02	115 4.52	82 3.23	5/8 × 85 M16X85	UL FM
150 × 65 159.0 × 76.1	159.1 × 76.1 6.250 × 3.000	300 2.07	70 2.75	227 8.94	110 4.33	122.5 4.83	91 3.58	5/8 × 105 M16X108	UL FM
150 × 80 159.0 × 88.9	159.1 × 88.9 6.250 × 3.500	300 2.07	89 3.50	227 8.94	130 5.11	122.5 4.83	91 3.58	5/8 × 105 M16X108	UL FM
150 × 100 159.0 × 108.0	159.1 × 108.0 6.250 × 4.250	300 2.07	114 4.50	227 8.94	155 6.10	122.5 4.83	91 3.58	5/8 × 105 M16X108	UL FM
150 × 100 159.0 × 4	159.1 × 114.3 6.250 × 4.500	300 2.07	114 4.50	227 8.94	155 6.10	122.5 4.83	91 3.58	5/8 × 105 M16X108	UL FM
150 × 32 165.1 × 11/4	165.1 × 42.4 6.500 × 1.900	300 2.07	51 2.00	235 9.25	92.5 3.84	124.5 4.90	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 50 165.1 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.50	235 9.25	110 4.33	124.5 4.90	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 65 165.1 × 76.1	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	238 9.25	110 4.33	124.5 4.90	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 80 165.1 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.50	235 9.25	130 5.12	124.5 4.90	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 100 165.1 × 4	165.1 × 108 6.500 × 4.250	300 2.07	114 4.50	235 9.25	155 6.10	126 4.96	94.5 3.72	5/8 × 105 M16X108	——
150 × 100 165.1 × 4	165.1 × 114.3 6.500 × 4.500	300 2.07	114 4.50	235 9.25	155 6.10	126 4.96	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 32 6 × 1¼	168.3 × 42.4 6.500 × 1.660	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 40 6 × 1½	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.50	240 9.45	110 4.33	126 4.96	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	240 9.45	110 4.33	126 4.96	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 65 6 × 76.1	168.3 × 76.1 6.625 × 3	300 2.07	70 2.75	240 9.45	110 4.33	126 4.96	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.50	240 9.45	130 5.12	126 4.96	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 100 6 × 4	168.3 × 114.3 6.625 × 4.500	300 2.07	114 4.50	240 9.45	155 6.10	128 5.04	96.5 3.80	5/8 × 105 M16X108	UL FM
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.50	300 11.81	117 4.60	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 65 8 × 2½	219.1 × 73 8.625 × 2.875	300 2.07	70 2.75	300 11.81	117 4.60	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 65 8 × 76.1	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	300 11.81	117 4.60	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.50	300 11.81	135.5 5.33	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.50	300 11.81	164 6.46	160 6.30	123 4.84	5/8 × 105 M16X108	UL FM

3J

Mechanical Tee Threaded Outlet





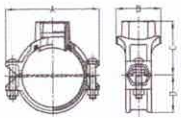
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
25X10 1X3/8	33.7X17.2 1.315X0.677	300 2.07	23.5 0.92	86 3.38	46 1.81	26 1.02	24.5 0.96	M8X30	——
25X15 1X1/2	33.7X21.3 1.315X0.825	300 2.07	23.5 0.92	86 3.38	46 1.81	26 1.02	24.5 0.96	M8X30	——
25X20 1X3/4	33.7X26.9 1.315X1.050	300 2.07	23.5 0.92	86 3.38	52 2.05	41 1.61	24.5 0.96	M8X30	——
25X25 1X1	33.7X33.7 1.315X1.315	300 2.07	23.5 0.92	86 3.38	57 2.24	45 1.77	24.5 0.96	M8X30	——
32X10 1¼X3/8	42.4X17.2 1.660X0.677	300 2.07	30 1.18	95.5 3.76	53 2.09	32 1.26	29 1.14	M10X35	——
32X15 1¼X1/2	42.4X21.3 1.660X0.825	300 2.07	30 1.18	95.5 3.76	57 2.24	32 1.26	29 1.14	M10X35	——
32X20 1¼X3/4	42.4X26.9 1.660X1.050	300 2.07	30 1.18	95.5 3.76	57 2.24	44 1.73	29 1.14	M10X35	——
32X25 1¼X1	42.4X33.7 1.660X1.315	300 2.07	30 1.18	95.5 3.76	57 2.24	53 2.09	29 1.14	M10X35	——
40X10 1½X3/8	48.3X17.2 1.900X0.677	300 2.07	30 1.18	101.5 3.99	52 2.05	34 1.34	32.5 1.28	M10X35	——
40X15 1½X1/2	48.3X21.3 1.900X0.825	300 2.07	30 1.18	101.5 3.99	57 2.24	35.5 1.40	32.5 1.28	M10X35	——
40X20 1½X3/4	48.3X26.9 1.900X1.050	300 2.07	30 1.18	101.5 3.99	57 2.24	47.5 1.87	32.5 1.28	M10X35	——
40X25 1½X1	48.3X33.7 1.900X1.315	300 2.07	30 1.18	101.5 3.99	57 2.24	56 2.20	32.5 1.28	M10X35	——
50 × 10 2 × 3/8	60.3 × 17.2 2.375 × 0.677	300 2.07	38 1.50	116 4.57	68 2.68	44 1.73	39 1.54	3/8 × 55 M10X57	——
50 × 15 2 × ½	60.3 × 21.3 2.375 × 0.825	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8 × 55 M10X57	UL FM VdS
50 × 20 2 × ¾	60.3 × 26.9 2.375 × 1.050	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8 × 55 M10X57	UL FM VdS
50 × 25 2 × 1	60.3 × 33.7 2.375 × 1.315	300 2.07	38 1.50	116 4.57	68 2.68	60 2.36	39 1.54	3/8 × 55 M10X57	UL FM VdS
50 × 32 2 × 1¼	60.3 × 42.4 2.375 × 1.660	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8 × 55 M10X57	UL FM
50 × 40 2 × 1½	60.3 × 48.3 2.375 × 1.900	300 2.07	45 1.75	116 4.57	76 2.99	65 2.56	39 1.54	3/8 × 55 M10X57	UL FM
65 × 20 2½ × ¾	73.0 × 26.9 2.875 × 1.050	300 2.07	38 1.50	137 5.39	71 2.76	68 2.67	49 1.93	1/2 × 70 M12X70	UL FM
65 × 25 2½ × 1	73.0 × 33.7 2.875 × 1.315	300 2.07	38 1.50	137 5.39	71 2.76	70 2.75	49 1.93	1/2 × 70 M12X70	UL FM
65 × 32 2½ × 1¼	73.0 × 42.4 2.875 × 1.660	300 2.07	51 2.00	137 5.397	84.5 3.33	73 2.87	49 1.93	1/2 × 70 M12X70	UL FM
65 × 40 2½ × 1½	73.0 × 48.3 2.875 × 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	73 2.87	49 1.93	1/2 × 70 M12X70	UL FM
65 × 15 76.1 × ½	76.1 × 21.3 3.000 × 0.825	300 2.07	38 1.50	137 5.39	71 2.80	61.5 2.42	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
65 × 20 76.1 × ¾	76.1 × 26.9 3.000 × 1.050	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
65 × 25 76.1 × 1	76.1 × 33.7 3.000 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
65 × 32 76.1 × 1¼	76.1 × 42.4 3.000 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
65 × 40 76.1 × 1½	76.1 × 48.3 3.000 × 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	61.5 2.42	49.5 1.95	1/2 × 70 M12X70	UL FM VdS
80 × 25 3 × 1	88.9 × 21.3 3.500 × 0.825	300 2.07	38 1.50	152 5.98	72.5 2.85	71.5 2.81	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
3 × ¾	88.9 × 26.9 3.500 × 1.050	300 2.07	38 1.50	152 5.98	72.5 2.85	71.5 2.81	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	300 2.07	38 1.50	152 5.98	72.5 2.85	80 3.15	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2.00	152 5.98	85.5 3.37	80 3.15	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	300 2.07	64 2.50	152 5.98	98 3.86	80 3.15	56.5 2.22	1/2 × 75 M12X76	UL FM VdS
100 × 15 108.0 × 1/2	108.1 × 21.3 4.250 × 0.825	300 2.07	38 1.50	172 6.77	78.5 3.09	87 3.43	64.5 2.54	1/2 × 75 M12X76	UL FM

Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
100 × 20 108.0 × 3/4	108.1 × 26.9 4.250 × 1.050	300 2.07	38 1.50	172 6.77	78.5 3.09	87 3.43	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 25 108.0 × 1	108.1 × 33.7 4.250 × 1.315	300 2.07	38 1.50	172 6.77	78.5 3.09	87 3.43	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 32 108.0 × 1¼	108.1 × 42.4 4.250 × 1.660	300 2.07	51 2.00	172 6.77	89 3.50	87 3.43	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 40 108.0 × 1½	108.0 × 48.3 4.250 × 1.900	300 2.07	51 2.00	172 6.77	89 3.50	87 3.43	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 50 108.0 × 2	108.0 × 60.3 4.250 × 2.375	300 2.07	64 2.50	172 6.77	106.5 4.19	92 3.62	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 65 108.0 × 76.1	108.0 × 76.1 4.250 × 3.000	300 2.07	70 2.75	172 6.77	106.5 4.19	100 3.94	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 15 4 × ½	114.3 × 21.3 4.500 × 0.825	300 2.07	38 1.50	188 7.40	78.5 3.09	90 3.54	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 20 4 × ¾	114.3 × 26.9 4.500 × 1.050	300 2.07	38 1.50	188 7.40	78.5 3.09	90 3.54	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	38 1.50	188 7.40	78.5 3.09	93 3.66	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 32 4 × 1¼	114.3 × 42.4 4.500 × 1.660	300 2.07	51 2.00	188 7.40	89 3.50	95 3.74	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2.00	188 7.40	89 3.50	97 3.82	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.50	188 7.40	104.5 4.11	100 3.94	70 2.76	1/2 × 75 M12X76	UL FM VdS
100 × 65 4 × 2½	114.3 × 73.0 4.500 × 2.875	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2 × 7 M12X76S	UL FM
100 × 65 4 × 76.1	114.3 × 76.1 4.500 × 3.000	300 2.07	70 2.75	188 7.40	104.5 4.11	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS LPCB
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	89 3.50	188 7.40	128 5.039	102 4.02	70 2.76	1/2 × 75 M12X76	UL FM VdS LPCB
125 × 25 133.0 × 1	133.0 × 33.7 5.250 × 1.315	300 2.07	38 1.50	209 8.23	78 3.07	105 4.13	77 3.03	5/8 × 85 M16X85	UL FM
125 × 32 133.0 × 1.25	133.0 × 42.4 5.250 × 1.660	300 2.07	51 2.00	209 8.23	93 3.66	109 4.13	77 3.03	5/8 × 85 M16X85	UL FM
125 × 40 133.0 × 1½	133.0 × 48.3 5.250 × 1.900	300 2.07	51 2.00	209 8.23	93 3.66	105 4.13	77 3.03	5/8 × 85 M16X85	UL FM
125 × 50 133.0 × 2	133.0 × 60.3 5.250 × 2.375	300 2.07	64 2.50	209 8.23	112.5 4.43	110 4.33	77 3.03	5/8 × 85 M16X85	UL FM
125 × 65 133.0 × 76.1	133.0 × 76.1 5.250 × 3.000	300 2.07	70 2.75	209 8.23	112.5 4.43	115 4.53	77 3.03	5/8 × 85 M16X85	UL FM
125 × 80 133.0 × 3	133.0 × 88.9 5.250 × 3.500	300 2.07	89 3.50	209 8.23	132 5.20	118 4.65	77 3.03	5/8 × 85 M16X85	UL FM
125 × 15 139.7 × 1/2	139.7 × 21.3 5.500 × 0.825	300 2.07	38 1.50	221.5 8.72	78 3.07	110 4.33	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 20 139.7 × 3/4	139.7 × 26.9 5.500 × 1.050	300 2.07	38 1.50	221.5 8.72	78 3.07	110 4.33	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 25 139.7 × 1	139.7 × 33.7 5.500 × 1.315	300 2.07	38 1.50	221.5 8.72	78 3.07	110 4.33	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 32 139.7 × 1¼	139.7 × 42.4 5.500 × 1.660	300 2.07	51 2.00	221.5 8.72	95 3.74	112 4.41	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 40 139.7 × 1½	139.7 × 48.3 5.500 × 1.900	300 2.07	51 2.00	221.5 8.72	95 3.74	112 4.41	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 50 139.7 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.50	221.5 8.72	112.5 4.43	115 4.53	84 3.31	5/8 × 85 M16X85	UL FM VdS
125 × 65 139.7 × 76.1	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	221.5 8.72	112.5 4.43	115 4.53	84 3.31	5/8 × 85 M16X85	UL FM VdS LPCB
125 × 80 139.7 × 3	139.7 × 88.9 5.500 × 3.500	300 2.07	89 3.50	221.5 8.72	132 5.20	120 4.72	84 3.31	5/8 × 85 M16X85	UL FM VdS LPCB
125 × 100 139.7 × 4	139.7 × 114.3 5.500 × 4.500	300 2.07	114 4.50	221.5 8.72	156 6.38	125 4.92	84 3.31	5/8 × 85 M16X85	UL FM VdS LPCB
150 × 15 159.0 × 1/2	159.0 × 21.3 6.250 × 0.825	300 2.07	38 1.50	244 9.60	78 3.07	116 4.57	94 3.70	5/8 × 105 M16X108	UL FM
150 × 25 159.0 × 1	159.0 × 33.7 6.250 × 1.315	300 2.07	38 1.50	244 9.60	78 3.07	116 4.57	94 3.70	5/8 × 105 M16X108	UL FM
150 × 32 159.0 × 1¼	159.0 × 42.4 6.250 × 1.660	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	94 3.70	5/8 × 105 M16X108	UL FM
150 × 40 159.0 × 1½	159.0 × 48.3 6.250 × 1.900	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	94 3.70	5/8 × 105 M16X108	UL FM

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Mechanical Tee Threaded Outlet



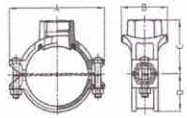


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia tmm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
150 × 50 159.0 × 2	159.0 × 60.3 6.250 × 2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	125 4.92	94 3.70	5/8 × 105 M16X108	UL FM
150 × 65 159.0 × 76.1	159.0 × 76.1 6.250 × 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	125 4.92	94 3.70	5/8 × 105 M16X108	UL FM
150 × 80 159.0 × 3	159.0 × 88.9 6.250 × 3.500	300 2.07	86 3.50	244 9.60	133 5.20	125 4.92	94 3.70	5/8 × 105 M16X108	UL FM
150 × 100 159.0 × 4	159.1 × 114.3 6.258 × 4.500	175 1.20	114 4.50	244 9.60	156.5 6.16	130 5.12	94 3.70	5/8 × 105 M16X108	UL FM
150 × 15 165.1 × ½	165.1 × 21.3 6.500 × 0.825	300 2.07	38 1.50	244 9.60	78 3.07	110 4.33	97.5 3.84	5/8 × 105 M16X108	UL FM
125 × 20 165.1 × ¾	165.1 × 26.9 6.500 × 1.050	300 2.07	38 1.50	244 9.60	78 3.07	110 4.33	97.5 3.84	5/8 × 105 M16X108	UL FM
150 × 25 165.1 × 1	165.1 × 33.7 6.500 × 1.315	300 2.07	38 1.50	244 9.60	78 3.07	118 4.65	97.5 3.84	5/8 × 105 M16X108	UL FM
150 × 32 165.1 × 1¼	165.1 × 42.4 6.500 × 1.660	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	97.5 3.84	5/8 × 105 M16X108	UL FM
150 × 40 165.1 × 1½	165.1 × 48.3 6.500 × 1.900	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	97.5 3.84	5/8 × 105 M16X108	UL FM
150 × 50 165.1 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	128.5 5.43	97.5 3.84	5/8 × 105 M16X108	UL FM
150 × 65 165.1 × 76.1	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	128.5 5.43	97.5 3.84	5/8 × 105 M16X108	UL FM LPCB
150 × 80 166.1 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.50	244 9.60	132 5.20	128.9 5.08	97.5 3.84	5/8 × 105 M16X108	UL FM LPCB
150 × 100 165.1 × 4	165.1 × 114.3 6.500 × 4.500	225 1.6	114 4.50	244 9.60	154 6.16	135 5.32	97.5 3.84	5/8 × 105 M16X108	UL FM LPCB
150 × 32 6 × 1¼	168.3 × 42.4 6.500 × 1.660	300 2.07	51 2.00	247 9.72	95 3.74	122 4.80	98.5 3.88	5/8 × 105 M15X108	UL FM VdS
150 × 40 6 × 1½	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2.00	247 9.72	95 3.74	122 4.80	98.5 3.88	5/8 × 105 M15X108	UL FM VdS
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.50	247 9.72	112.5 4.43	132 5.20	98.5 3.88	5/8 × 105 M15X108	UL FM VdS
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	247 9.72	112.5 4.43	132 5.20	98.5 3.88	5/8 × 105 M15X108	UL FM
150 × 65 6 × 76.1	168.3 × 76.1 6.625 × 3.000	300 2.07	70 2.75	247 9.72	112.5 4.43	132 5.20	98.5 3.88	5/8 × 105 M16X108	UL FM VdS LPCB
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.50	247 9.72	132 5.20	140 5.51	98.5 3.88	5/8 × 105 M16X108	UL FM VdS LPCB
150 × 100 6 × 4	168.3 × 114.3 6.625 × 4.500	300 2.07	114 4.50	247 9.72	160 6.30	140 5.51	98.5 3.88	5/8 × 105 M16X108	UL FM VdS LPCB
200 × 25 8 × 1	219.0 × 33.7 8.625 × 1.315	300 2.07	38 1.50	320 12.60	79.5 3.13	150 5.91	125 4.92	3/4 × 115 M20X115	UL FM VdS
200 × 32 8 × 1¼	219.1 × 42.4 8.625 × 1.660	300 2.07	51 2.00	320 12.60	98.5 3.80	150 5.91	125 4.92	3/4 × 115 M20X115	UL FM VdS
200 × 40 8 × 1½	219.1 × 48.3 8.625 × 1.900	300 2.07	51 2.00	320 12.60	98.5 3.80	159 5.91	125 4.92	3/4 × 115 M20X115	UL FM VdS
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.50	320 12.60	117 4.61	160 6.30	125 4.92	3/4 × 115 M20X115	UL FM VdS
200 × 65 8 × 2½	219.1 × 73.0 8.625 × 2.875	300 2.07	70 2.75	320 12.60	118 4.65	160 6.30	125 4.92	3/4 × 115 M20X115	UL FM
200 × 65 8 × 76.1	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	320 12.60	118 4.65	160 6.30	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.50	320 12.60	136.5 5.37	160 6.30	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.50	320 12.60	164 6.46	160 6.30	125 4.92	3/4 × 115 M20X115	UL FM VdS LPCB
250 × 40 10 × 1½	273.0 × 48.3 10.750 × 1.900	300 2.07	51 2.00	376 14.80	95.5 3.76	180 7.09	155 6.10	3/4 × 120 M20X115	UL FM
250 × 50 10 × 2	273.0 × 60.3 10.750 × 2.375	300 2.07	64 2.50	376 14.80	118 4.65	185 7.28	155 6.10	3/4 × 120 M20X115	UL FM VdS
250 × 65 10 × 76.1	273.0 × 76.1 10.750 × 3.000	300 2.07	70 2.75	376 14.80	118 4.65	190 7.48	155 6.10	3/4 × 120 M20X115	UL FM VdS
250 × 80 10 × 3	273.0 × 88.9 10.750 × 3.500	300 2.07	89 3.50	376 14.80	136.5 5.37	190 7.48	155 6.10	3/4 × 120 M20X115	UL FM VdS
250 × 100 10 × 4	273.0 × 114.3 10.750 × 4.500	300 2.07	114 4.50	376 14.80	164 6.46	190 7.48	155 6.10	3/4 × 120 M20X115	UL FM VdS

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Light-duty Mechanical Tee Threaded Outlet



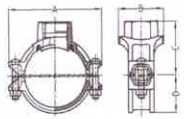


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia tmm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
65 × 15 76.1 × ½	76.1 × 21.3 3.000 × 0.825	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM
65 × 20 76.1 × ¾	76.1 × 26.9 3.000 × 1.050	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM
65 × 25 76.1 × 1	76.1 × 33.7 3.000 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM
65 × 32 76.1 × 1¼	76.1 × 42.4 3.000 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM
65 × 40 76.1 × 1½	76.1 × 48.3 3.000 × 1.900	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	49.5 1.95	1/2 × 70 M12X70	UL FM
80 × 15 3 × ½	88.9 × 21.3 3.500 × 0.825	300 2.07	38 1.50	150 5.91	71.0 2.80	66 2.68	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 20 3 × ¾	88.9 × 26.9 3.500 × 1.050	300 2.07	38 1.50	150 5.91	71.0 2.80	66 2.68	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	71.0 2.80	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	55.5 2.19	1/2 × 75 M12X76	UL FM
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	300 2.07	64 2.50	150 5.91	98 3.86	77 3.03	55.5 2.19	1/2 × 75 M12X76	UL FM
100 × 15 108.0 × ½	108.1 × 21.3 4.250 × 0.825	300 2.07	38 1.50	172 6.77	77.5 3.05	85 3.35	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 25 108.0 × 1	108.1 × 33.7 4.250 × 1.315	300 2.07	38 1.50	172 6.77	77.5 3.05	85 3.35	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 32 108.0 × 1¼	108.1 × 42.4 4.250 × 1.660	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 40 108.0 × 1½	108.0 × 48.3 4.250 × 1.900	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 50 108.0 × 2	108.0 × 60.3 4.250 × 2.375	300 2.07	64 2.50	172 6.77	103.5 4.19	90.5 3.56	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 65 108.0 × 76.1	108.0 × 76.1 4.250 × 3.000	300 2.07	70 2.75	172 6.77	103.5 4.07	97.5 3.84	64.5 2.54	1/2 × 75 M12X76	UL FM
100 × 15 4 × ½	114.3 × 21.3 4.500 × 0.825	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 20 4 × ¾	114.3 × 26.9 4.500 × 1.050	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	89.5 3.52	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 32 4 × 1¼	114.3 × 42.4 4.500 × 1.660	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.50	178 7.01	103.5 4.07	92 3.62	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 65 4 × 2½	114.3 × 73.0 4.500 × 2.875	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 65 4 × 76.1	114.3 × 76.1 4.500 × 3.000	300 2.07	70 2.75	178 7.01	103.5 4.07	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
100 × 80 4 × 3	114.3 × 88.9 4.500 × 3.500	300 2.07	89 3.50	178 7.01	124 4.88	98 3.86	67.5 2.66	1/2 × 75 M12X76	UL FM
125 × 25 133.0 × 1	133.0 × 33.7 5.250 × 1.315	300 2.07	38 1.50	203 7.99	77 3.03	98 3.86	77.5 3.05	5/8 × 85	UL FM
125 × 32 133.0 × 1.25	133.0 × 42.4 5.250 × 1.660	300 2.07	51 2.00	203 7.99	91 3.58	102 4.01	77.5 3.05	5/8 × 85	UL FM
125 × 40 133.0 × 1½	133.0 × 48.3 5.250 × 1.900	300 2.07	51 2.00	203 7.99	91 3.58	102 4.01	77.5 3.05	5/8 × 85	UL FM
125 × 50 133.0 × 2	133.0 × 60.3 5.250 × 2.375	300 2.07	64 2.50	203 7.99	110 4.33	105 4.13	77.5 3.05	5/8 × 85	UL FM
125 × 65 133.0 × 76.1	133.0 × 76.1 5.250 × 3.000	300 2.07	70 2.75	203 7.99	110 4.33	113 4.45	77.5 3.05	5/8 × 85	UL FM
125 × 80 133.0 × 3	133.0 × 88.9 5.250 × 3.500	300 2.07	89 3.50	203 7.99	132 5.12	110 4.33	77.5 3.05	5/8 × 85	UL FM
125 × 25 139.7 × 1	139.7 × 33.7 5.500 × 1.315	300 2.07	38 1.50	210 8.27	77 3.03	100 3.94	82 3.23	5/8 × 85 M16X85	UL FM
125 × 32 139.7 × 1¼	139.7 × 42.4 5.500 × 1.660	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	82 3.23	5/8 × 85 M16X85	UL FM
125 × 40 139.7 × 1½	139.7 × 48.3 5.500 × 1.900	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	82 3.23	5/8 × 85 M16X85	UL FM
125 × 50 139.7 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.50	210 8.27	110 4.33	108 4.25	82 3.23	5/8 × 85 M16X85	UL FM

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Light-duty Mechanical Tee Threaded Outlet



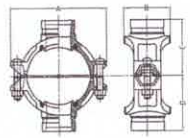


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in	Certificate
125 × 65 139.7 × 76.1	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	210 8.27	110 4.33	115 4.53	82 3.23	5/8 × 85 M16X85	UL FM
125 × 80 139.7 × 3	139.7 × 88.9 5.500 × 3.500	300 2.07	89 3.50	210 8.27	130 5.12	115 4.53	82 3.23	5/8 × 85 M16X85	UL FM
125 × 100 139.7 × 4	139.7 × 114.3 5.500 × 4.500	300 2.07	114 4.50	210 8.27	153 6.02	118 4.65	82 3.23	5/8 × 85 M16X85	UL FM
150 × 25 159.0 × 1	159.0 × 33.7 6.250 × 1.315	300 2.07	38 1.50	227 8.94	77 3.03	110 4.33	91 3.58	5/8 × 85 M16X85	UL FM
150 × 32 159.0 × 1¼	159.0 × 42.4 6.250 × 1.660	300 2.07	51 2.00	227 8.94	92.5 3.64	112 4.41	91 3.58	5/8 × 105 M16X108	UL FM
150 × 40 159.0 × 1½	159.0 × 48.3 6.250 × 1.900	300 2.07	51 2.00	227 8.94	92.5 3.64	112 4.41	91 3.58	5/8 × 105 M16X108	UL FM
150 × 50 159.0 × 2	159.0 × 60.3 6.250 × 2.375	300 2.07	64 2.50	227 8.94	110 4.33	116.5 4.59	91 3.58	5/8 × 105 M16X108	UL FM
150 × 65 159.0 × 76.1	159.0 × 76.1 6.250 × 3.000	300 2.07	70 2.75	227 8.94	110 4.33	121.5 4.78	91 3.58	5/8 × 105 M16X108	UL FM
150 × 80 159.0 × 3	159.0 × 88.9 6.250 × 3.500	300 2.07	89 3.50	227 8.94	130 5.12	123.5 4.86	91 3.58	5/8 × 105 M16X108	UL FM
150 × 100 159.0 × 4	159.1 × 114.3 6.250 × 4.500	300 2.07	114 4.50	227 8.94	155 6.10	127 5.00	91 3.58	5/8 × 105 M16X108	UL FM
150 × 15 165.1 × ⅞	165.1 × 21.3 6.500 × 0.825	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 20 165.1 × 1	165.1 × 26.9 6.500 × 1.050	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 25 165.1 × 1	165.1 × 33.7 6.500 × 1.315	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 32 165.1 × 1¼	165.1 × 42.4 6.500 × 1.660	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 40 165.1 × 1½	165.1 × 48.3 6.500 × 1.900	300 2.07	51 2.00	235 9.25	92.5 3.64	115 4.53	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 50 165.1 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.50	235 9.25	110 4.33	120 4.72	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 65 165.1 × 76.1	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	235 9.25	110 4.33	125 4.92	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 80 165.1 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.50	235 9.25	130 5.12	125 4.92	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 100 165.1 × 4	165.1 × 114.3 6.500 × 4.500	300 2.07	114 4.50	240 9.45	155 6.10	130 5.12	94.5 3.72	5/8 × 105 M16X108	UL FM
150 × 25 6 × 1	168.3 × 33.7 6.500 × 1.315	300 2.07	38 1.50	240 9.45	77 3.03	115 4.53	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 32 6 × 1¼	168.3 × 42.4 6.500 × 1.660	300 2.07	51 2.00	240 9.45	92.5 3.64	115 4.53	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 40 6 × 1½	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2.00	240 9.45	92.5 3.64	115 4.53	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.50	240 9.45	110 4.33	121 4.76	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	240 9.45	110 4.33	127 5.00	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 65 6 × 2½	168.3 × 76.0 6.625 × 3.000	300 2.07	70 2.75	240 9.45	110 4.33	127 5.00	96.5 3.80	5/8 × 105 M16X108	——
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.50	240 9.45	130 5.12	127 5.00	96.5 3.80	5/8 × 105 M16X108	UL FM
150 × 100 6 × 4	168.3 × 114.3 6.625 × 4.500	300 2.07	114 4.50	240 9.45	155 6.10	130 5.12	96.5 3.80	5/8 × 105 M16X108	UL FM
200 × 25 8 × 1	219.0 × 33.7 8.625 × 1.315	300 2.07	38 1.50	300 11.81	78 3.07	140 5.51	123 4.84	5/8 × 105 M16X108	UL FM
200 × 32 8 × 1¼	219.1 × 42.4 8.625 × 1.660	300 2.07	51 2.00	300 11.81	96.5 3.80	140 5.51	123 4.84	5/8 × 105 M16X108	UL FM
200 × 40 8 × 1½	219.1 × 48.3 8.625 × 1.900	300 2.07	51 2.00	300 11.81	96.5 3.80	143 5.63	123 4.84	5/8 × 105 M16X108	UL FM
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.50	300 11.81	117 4.61	149 5.87	123 4.84	5/8 × 105 M16X108	UL FM
200 × 65 8 × 2½	219.1 × 73.0 8.625 × 2.875	300 2.07	70 2.75	300 11.81	117 4.61	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 65 8 × 76.1	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	300 11.81	117 4.61	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	123 4.84	5/8 × 105 M16X108	UL FM
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.50	300 11.81	164 6.45	160 6.30	123 4.84	5/8 × 105 M16X108	UL FM

4G

Mechanical Cross Grooved Outlet



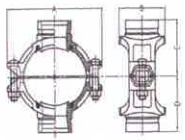


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	Bolt Size mm/in
65 × 32 2½ × 1¼	73.0 × 42.4 2.875 × 1.669	300 2.07	51 2	144 5.67	84.5 3.33	75 2.95	75 2.95	1/2 × 70 M12X70
65 × 25 2½ × 1	76.1 × 33.7 3.000 × 1.327	300 2.07	38 1.5	137 5.39	71 2.8	78 3.07	78 3.07	1/2 × 70 M12X70
65 × 32 2½ × 1¼	76.1 × 42.4 3.000 × 1.669	300 2.07	51 2	137 5.39	84.5 3.33	78 3.07	78 3.07	1/2 × 70 M12X70
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.327	300 2.07	38 1.5	152 5.98	72.5 2.85	84.5 3.33	84.5 3.33	1/2 × 75 M12X76
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.669	300 2.07	51 2	152 5.98	85.5 3.37	84.5 3.33	84.5 3.33	1/2 × 75 M12X76
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2	152 5.98	85.5 3.37	84.5 3.33	84.5 3.33	1/2 × 75 M12X76
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.327	300 2.07	38 1.5	188 7.4	78.4 3.09	102 4.02	102 4.02	1/2 × 75 M12X76
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2	188 7.4	89 3.5	102 4.02	102 4.02	1/2 × 75 M12X76
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.5	188 7.4	104.5 4.11	102 4.02	102 4.02	1/2 × 75 M12X76
125 × 50 5 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.5	221.5 8.72	112.5 4.43	118 4.65	118 4.65	5/8X85 M16X85
125 × 65 5 × 2½	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	221.5 8.72	112.5 4.43	118 4.65	118 4.65	5/8X85 M16X85
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.5	244 9.6	112.5 4.43	127 5	127 5	5/8X105
150 × 65 6 × 2½	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	244 9.6	112.5 4.43	127 5	127 5	5/8X105 M16X108
150 × 80 6 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.5	244 9.6	132 5.2	141 5.55	141 5.55	5/8X105 M16X108
150 × 40 6 × 1½	168.3 × 48.3 6.625 × 1.900	300 2.07	51 2	247 9.72	95 3.74	128 5.04	128 5.04	5/8X105 M16X108
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.5	247 9.72	114 4.49	134 5.28	134 5.28	5/8X105 M16X108
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	247 9.72	115 4.53	134 5.28	134 5.28	5/8X105 M16X108
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.5	247 9.72	132 5.2	141 5.55	141 5.55	5/8X105 M16X108
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.5	320 12.6	118 4.65	158 6.22	158 6.22	3/4X115 M20X115
200 × 65 8 × 2½	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	320 12.6	118 4.65	158 6.22	158 6.22	3/4X115 M20X115
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.5	320 12.6	136.5 5.37	161 6.34	161 6.34	3/4X115 M20X115
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.5	320 12.6	162 6.38	161 6.34	161 6.34	3/4X115 M20X115
250 × 100 10 × 2½	273.0 × 76.1 10.750 × 3.000	300 2.07	70 2.75	376 14.8	118 4.65	189 7.44	189 7.44	3/4X120 M20X115
250 × 100 10 × 3	273.0 × 88.9 10.750 × 3.500	300 2.07	89 3.5	376 14.8	136.5 5.37	189 7.44	189 7.44	3/4X120 M20X115
250 × 100 10 × 4	273.0 × 114.3 10.750 × 4.500	300 2.07	114 4.5	376 14.8	164 6.46	189 7.44	189 7.44	3/4X120 M20X115

4GS

Light-duty Mechanical Cross Grooved Outlet



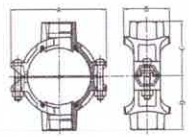


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6.0/+0.063.0	Dimensions				Bolt Size mm/in
				A mm/in	B mm/in	C mm/in	D mm/in	
65 × 25 76.1 × 1	76.1 × 33.7 3.000 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	78 3.07	78 3.07	1/2 × 70 M12X70
65 × 32 76.1 × 1¼	76.1 × 42.4 3.000 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	78 3.07	78 3.07	1/2 × 70 M12X70
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	84 3.31	84 3.31	1/2 × 70 M12X76
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	84 3.31	1/2 × 70 M12X76
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	84 3.31	84 3.31	1/2 × 70 M12X76
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	98 3.86	98 3.86	1/2 × 70 M12X76
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2.00	178 7.01	88 3.46	98 3.86	98 3.86	1/2 × 70 M12X76
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.50	178 7.01	103.5 4.07	98 3.86	98 3.86	1/2 × 70 M12X76
125 × 50 139.7 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.50	210 8.27	110 4.33	113 4.45	113 4.45	5/8 × 85 M16X85
125 × 65 139.7 × 76.1	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	210 8.27	110 4.33	113 4.45	113 4.45	5/8 × 85 M16X85
150 × 50 165.1 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.50	235 9.25	110 4.33	124.5 4.90	124.5 4.90	5/8 × 105 M16X108
150 × 65 165.1 × 76.1	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	235 9.25	110 4.33	124.5 4.90	124.5 4.90	5/8 × 105 M16X108
150 × 80 165.1 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.50	235 9.25	130 5.12	124.5 4.90	124.5 4.90	5/8 × 105 M16X108
150 × 32 6 × 1¼	168.3 × 42.4 6.500 × 1.660	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	126 4.96	5/8 × 105 M16X108
150 × 40 6 × 1½	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2.00	240 9.45	92.5 3.64	126 4.96	126 4.96	5/8 × 105 M16X108
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.50	240 9.45	110 4.33	126 4.96	126 4.96	5/8 × 105 M16X108
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	240 9.45	110 4.33	126 4.96	126 4.96	5/8 × 105 M16X108
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.50	240 9.45	130 5.12	126 4.96	126 4.96	5/8 × 105 M16X108
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.50	300 11.81	115 4.53	155 6.10	155 6.10	5/8 × 105 M16X108
200 × 65 8 × 76.1	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	300 11.81	115 4.53	155 6.10	155 6.10	5/8 × 105 M16X108
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	155 6.10	5/8 × 105 M16X108
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.50	300 11.81	159.5 6.28	160 6.30	160 6.30	5/8 × 105 M16X108

4J

Mechanical Cross Threaded Outlet



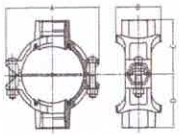


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6.0/+0.063.0	Dimensions				Bolt Size mm/in
				A mm/in	B mm/in	C mm/in	D mm/in	
65 × 20 2½ × ¾	73.0 × 26.9 2.875 × 1.050	300 2.07	38 1.50	137 5.39	71 2.80	68 2.68	68 2.68	1/2 × 70 M12X70
65 × 25 2½ × 1	73.0 × 33.7 2.875 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	70 2.76	70 2.76	1/2 × 70 M12X70
65 × 32 2½ × 1¼	73.0 × 42.4 2.875 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	73 2.87	73 2.87	1/2 × 70 M12X70
65 × 15 2½ × ½	76.1 × 21.3 3.000 × 0.825	300 2.07	38 1.5	137 5.39	71 2.8	61.5 2.42	61.3 2.42	1/2X70 M12X70
65 × 20 2½ × ¾	76.1 × 26.9 3.000 × 1.059	300 2.07	38 1.5	137 5.39	71 2.8	75 3.05	75 3.05	1/2X70 M12X70
65 × 25 2½ × 1	76.1 × 33.7 3.000 × 1.327	300 2.07	38 1.5	137 5.39	71 2.8	75 3.05	75 3.05	1/2X70 M12X70
65 × 32 2½ × 1¼	76.1 × 42.4 3.000 × 1.669	300 2.07	51 2	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2X70 M12X70
80 × 15 3 × ½	88.9 × 21.3 3.500 × 0.825	300 2.07	38 1.5	152 5.98	72.5 2.85	71.5 2.81	71.5 2.81	1/2X75 M12X76
80X20 3 × ¾	88.9 × 26.9 3.500 × 1.059	300 2.07	38 1.5	152 5.98	72.5 2.85	71.5 2.81	71.5 2.81	1/2X75 M12X76
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.327	300 2.07	38 1.5	152 5.98	72.5 2.85	80 3.15	80 3.15	1/2X75 M12X76
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.669	300 2.07	51 2	152 5.98	85.5 3.37	80 3.15	80 3.15	1/2X75 M12X76
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2	152 5.98	85.5 3.37	80 3.15	80 3.15	1/2X75 M12X76
100 × 32 108.0 × 1¼	108.1 × 42.4 4.250 × 1.660	300 2.07	51 2.00	172 6.77	89 3.50	87 3.43	87 3.43	1/2 × 75 M12X76
100 × 40 108.0 × 1½	108.0 × 48.3 4.250 × 1.900	300 2.07	51 2.00	172 6.77	89 3.50	87 3.43	87 3.43	1/2 × 75 M12X76
100 × 50 108.0 × 2	108.0 × 60.3 4.250 × 2.375	300 2.07	64 2.50	172 6.77	106.5 4.19	92 3.62	92 3.62	1/2 × 75 M12X76
100 × 15 4 × ½	114.3 × 21.3 4.500 × 0.825	300 2.07	38 1.5	188 7.4	78.5 3.09	90 3.54	90 3.54	1/2X75 M12X76
100 × 20 4 × ¾	114.3 × 26.9 4.500 × 1.059	300 2.07	38 1.5	188 7.4	78.5 3.09	90 3.54	90 3.54	1/2X75 M12X76
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.327	300 2.07	38 1.5	188 7.4	78.5 3.09	93 3.66	93 3.66	1/2X76 M12X76
100 × 32 4 × 1¼	114.3 × 42.4 4.500 × 1.669	300 2.07	51 2	188 7.4	89 3.5	95 3.74	95 3.74	1/2X75 M12X76
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2	188 7.4	89 3.5	97 3.82	97 3.82	1/2X75 M12X76
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.5	188 7.4	104.5 4.11	100 3.94	100 3.94	1/2X75i M12X76
125 × 50 133.0 × 2	133.0 × 60.3 5.250 × 2.375	300 2.07	64 2.50	209 8.23	112.5 4.43	110 4.33	110 4.33	5/8 × 85 M16X85
125 × 25 5 × 1	139.7 × 33.7 5.500 × 1.327	300 2.07	38 1.5	221.5 8.72	78 3.07	110 4.33	110 4.33	5/8X85 M16X85
125 × 32 5 × 1¼	139.7 × 42.4 5.500 × 1.669	300 2.07	51 2	221.5 8.72	95 3.74	112 4.41	112 4.41	5/8X85 M16X85
125 × 40 5 × 1½	139.7 × 48.3 5.500 × 1.900	300 2.07	51 2	221.5 8.72	95 3.74	112 4.41	112 4.41	5/8X85 M16X85
125 × 50 5 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.5	221.5 8.72	112.5 4.43	115 4.53	115 4.53	5/8X85 M16X85
125 × 65 5 × 2½	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	221.5 8.72	112.5 4.43	115 4.53	115 4.53	5/8X85 M16X85
150 × 32 159.0 × 1¼	159.0 × 42.4 6.250 × 1.660	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	118 4.65	5/8 × 105 M16X105

4J

Mechanical Cross Threaded Outlet



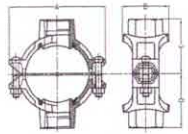


Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6.0/+0.063.0	Dimensions				Bolt Size mm/in
				A mm/in	B mm/in	C mm/in	D mm/in	
150 × 40 159.0 × 1½	159.0 × 48.3 6.250 × 1.900	300 2.07	51 2.00	244 9.60	93 3.66	118 4.65	118 4.65	5/8 × 105 M16X108
150 × 50 159.0 × 2	159.0 × 60.3 6.250 × 2.375	300 2.07	64 2.50	244 9.60	112.5 4.43	125 4.92	125 4.92	5/8 × 105 M16X108
150 × 65 159.0 × 76.1	159.0 × 76.1 6.250 × 3.000	300 2.07	70 2.75	244 9.60	112.5 4.43	125 4.92	125 4.92	5/8 × 105 M16X108
150 × 15 6 × ½	165.1 × 21.3 6.500 × 0.825	300 2.07	38 1.5	244 9.6	78 3.07	110 4.33	110 4.33	5/8X105 M16X108
150 × 20 6 × ¾	165.1 × 26.9 6.500 × 1.059	300 2.07	38 1.5	244 9.6	78 3.07	110 4.33	110 4.33	5/8X105 M16X108
150 × 25 6 × 1	165.1 × 33.7 6.500 × 1.327	300 2.07	38 1.5	244 9.6	78 3.07	118 4.65	118 4.65	5/8X105 M16X108
150 × 32 6 × 1¼	165.1 × 42.4 6.500 × 1.669	300 2.07	51 2	244 9.6	93 3.66	118 4.65	118 4.65	5/8X105 M16X108
150 × 40 6 × 1½	165.1 × 48.3 6.500 × 1.900	300 2.07	51 2	244 9.6	93 3.66	118 4.65	118 4.65	5/8X105 M16X108
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.5	244 9.6	112.5 4.43	128.5 5.43	128.5 5.43	5/8X105 M16X108
150 × 65 6 × 2½	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	244 9.6	112.5 4.43	128.5 5.43	128.5 5.43	5/8X105 M16X108
150 × 80 6 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.5	244 9.6	132 5.2	128.5 5.06	128.5 5.06	5/8X105 M16X108
150 × 32 6 × 1¼	168.3 × 42.4 6.500 × 1.669	300 2.07	51 2	247 9.72	95 3.74	130 5.12	130 5.12	5/8X105 M16X108
150 × 40 6 × 1½	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2	247 9.72	95 3.74	122 4.8	122 4.8	5/8X105 M16X108
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.5	247 9.72	112.5 4.43	132 5.2	132 5.2	5/8X105 M16X108
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	247 9.72	112.5 4.43	132 5.2	132 5.2	5/8X105 M16X108
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.5	247 9.72	132 5.2	140 5.51	140 5.51	5/8X105 M16X108
200 × 25 8 × 1	219.0 × 33.7 8.625 × 1.327	300 2.07	38 1.5	320 12.60	79.5 3.13	150 5.91	150 5.91	3/4X115 M20X115
200 × 32 8 × 1¼	219.1 × 42.4 8.625 × 1.669	300 2.07	51 2	320 12.60	96.5 3.8	150 5.91	150 5.91	3/4X115 M20X115
200 × 40 8 × 1½	219.1 × 48.3 8.625 × 1.900	300 2.07	51 2	320 12.60	96.5 3.8	150 5.91	150 5.91	3/4X115 M20X115
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.5	320 12.60	117 4.61	160 6.3	160 6.3	3/4X115 M20X115
200 × 65 8 × 2½	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	320 12.60	118 4.65	158.5 6.24	158.5 6.24	3/4X115 M20X115
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.5	320 12.60	136.5 5.37	160 6.3	160 6.3	3/4X115 M20X115
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.5	320 12.60	164 6.46	160 6.3	160 6.3	3/4X115 M20X115
250 × 40 10 × 1½	273.0 × 48.3 10.750 × 1.900	300 2.07	51 2	376 14.8	95.5 3.76	180 7.09	180 7.09	3/4X120 M20X115
250 × 50 10 × 2	273.0 × 60.3 10.750 × 2.375	300 2.07	64 2.5	376 14.8	118 4.65	185 7.28	185 7.28	3/4X120 M20X115
250 × 65 10 × 2½	273.0 × 76.1 10.750 × 3.000	300 2.07	70 2.75	376 14.8	118 4.65	190 7.48	190 7.48	3/4X120 M20X115
250 × 80 10 × 3	273.0 × 88.9 10.750 × 3.500	300 2.07	89 3.5	376 14.8	136.5 5.37	190 7.48	190 7.48	3/4X120 M20X115
250 × 100 10 × 4	273.0 × 114.3 10.750 × 4.500	300 2.07	114 4.5	376 14.8	164 6.46	190 7.48	190 7.48	3/4X120 M20X115

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Light-duty Mechanical Cross Threaded Outlet



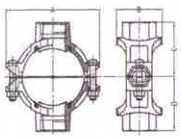


Nominal Size mm/in	Pipe O.D. mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.0.3/+0.043.0	Dimensions mm/in				Bolt Size mm/in
				A mm/in	B mm/in	C mm/in	D mm/in	
65 × 15 76.1 × ½	76.1 × 21.3 3.000 × 0.825	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	75 3.05	1/2 × 70 M12X70
65 × 20 76.1 × ¾	76.1 × 26.9 3.000 × 1.050	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	75 3.05	1/2 × 70 M12X70
65 × 25 76.1 × 1	76.1 × 33.7 3.000 × 1.315	300 2.07	38 1.50	137 5.39	71 2.80	75 3.05	75 3.05	1/2 × 70 M12X70
65 × 32 76.1 × 1¼	76.1 × 42.4 3.000 × 1.660	300 2.07	51 2.00	137 5.39	84.5 3.33	75 3.05	75 3.05	1/2 × 70 M12X70
80 × 15 3 × ½	88.9 × 21.3 3.500 × 0.826	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	68 2.68	1/2 × 75 M12X76
80 × 20 3 × ¾	88.9 × 26.9 3.500 × 1.050	300 2.07	38 1.50	150 5.91	71.0 2.80	68 2.68	68 2.68	1/2 × 75 M12X76
80 × 25 3 × 1	88.9 × 33.7 3.500 × 1.315	300 2.07	38 1.50	150 5.91	71.0 2.80	71.0 2.80	71.0 2.80	1/2 × 75 M12X76
80 × 32 3 × 1¼	88.9 × 42.4 3.500 × 1.660	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	74 2.91	1/2 × 75 M12X76
80 × 40 3 × 1½	88.9 × 48.3 3.500 × 1.900	300 2.07	51 2.00	150 5.91	84.5 3.33	74 2.91	74 2.91	1/2 × 75 M12X76
100 × 25 108.0 × 1	108.1 × 33.7 4.250 × 1.315	300 2.07	38 1.50	172 6.77	77.5 3.05	85 3.35	85 3.35	1/2 × 75 M12X76
100 × 32 108.0 × 1¼	108.1 × 42.4 4.250 × 1.660	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	85 3.35	1/2 × 75 M12X76
100 × 40 108.0 × 1½	108.0 × 48.3 4.250 × 1.900	300 2.07	51 2.00	172 6.77	88 3.46	85 3.35	85 3.35	1/2 × 75 M12X76
100 × 50 108.0 × 2	108.0 × 60.3 4.250 × 2.375	300 2.07	64 2.50	172 6.77	103.5 4.19	89 3.50	89 3.50	1/2 × 75 M12X76
100 × 15 4 × ½	114.3 × 21.3 4.500 × 0.825	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	82 3.23	1/2 × 75 M12X76
100 × 20 4 × ¾	114.3 × 26.9 4.500 × 1.050	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	82 3.23	1/2 × 75 M12X76
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	300 2.07	38 1.50	178 7.01	77.5 3.05	82 3.23	82 3.23	1/2 × 75 M12X76
100 × 32 4 × 1¼	114.3 × 42.4 4.500 × 1.660	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	89.5 3.53	1/2 × 75 M12X76
100 × 40 4 × 1½	114.3 × 48.3 4.500 × 1.900	300 2.07	51 2.00	178 7.01	88 3.46	89.5 3.53	89.5 3.53	1/2 × 75 M12X76
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	300 2.07	64 2.50	178 7.01	103.5 4.07	92 3.62	92 3.62	1/2 × 75 M12X76
125 × 25 133.0 × 1	133.0 × 33.7 5.250 × 1.315	300 2.07	38 1.50	203 7.99	77 3.03	98 3.86	98 3.86	5/8 × 85 M16X85
125 × 32 133.0 × 1.25	133.0 × 42.4 5.250 × 1.660	300 2.07	51 2.00	203 7.99	91 3.58	102 4.01	102 4.01	5/8 × 85 M16X85
125 × 40 133.0 × 1½	133.0 × 48.3 5.250 × 1.900	300 2.07	51 2.00	203 7.99	91 3.58	102 4.01	102 4.01	5/8 × 85 M16X85
125 × 50 133.0 × 2	133.0 × 60.3 5.250 × 2.375	300 2.07	64 2.50	203 7.99	110 4.33	105 4.13	105 4.13	5/8 × 85 M16X85
125 × 65 133.0 × 76.1	133.0 × 76.1 5.250 × 3.000	300 2.07	70 2.75	203 7.99	110 4.33	110 4.33	110 4.33	5/8 × 85 M16X85
125 × 25 139.7 × 1	139.7 × 33.7 5.500 × 1.315	300 2.07	38 1.50	210 8.27	77 3.03	100 3.94	100 3.94	5/8 × 85 M16X85
125 × 32 139.7 × 1¼	139.7 × 42.4 5.500 × 1.660	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	105 4.13	5/8 × 85 M16X85
125 × 40 139.7 × 1½	139.7 × 48.3 5.500 × 1.900	300 2.07	51 2.00	210 8.27	91 3.58	105 4.13	105 4.13	5/8 × 85 M16X85
125 × 50 139.7 × 2	139.7 × 60.3 5.500 × 2.375	300 2.07	64 2.50	210 8.27	110 4.33	108 4.25	108 4.25	5/8 × 85 M16X85

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Light-duty Mechanical Cross Threaded Outlet



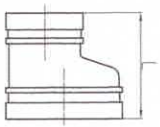


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Hole Dia mm/in +1.6,0/+0.063,0	Dimensions mm/in				Bolt Size mm/in
				A mm/in	B mm/in	C mm/in	D mm/in	
125 × 65 139.7 × 76.1	139.7 × 76.1 5.500 × 3.000	300 2.07	70 2.75	240 9.27	110 4.33	115 4.53	115 4.53	5/8 × 85 M16X85
150 × 25 159.0 × 1	159.0 × 33.7 6.250 × 1.315	300 2.07	38 1.50	227 8.94	77 3.03	110 4.33	110 4.33	5/8 × 85 M16X85
150 × 32 159.0 × 1¼	159.0 × 42.4 6.250 × 1.660	300 2.07	51 2.00	227 8.94	82.5 3.64	112 4.41	112 4.41	5/8 × 85 M16X85
150 × 40 159.0 × 1½	159.0 × 48.3 6.250 × 1.900	300 2.07	51 2.00	227 8.94	82.5 3.64	112 4.41	112 4.41	5/8 × 105 M16X108
150 × 50 159.0 × 2	159.0 × 60.3 6.250 × 2.375	300 2.07	64 2.50	227 8.94	110 4.33	116.5 4.59	116.5 4.59	5/8 × 105 M16X108
150 × 65 159.0 × 76.1	159.0 × 76.1 6.250 × 3.000	300 2.07	70 2.75	227 8.94	110 4.33	121.5 4.78	121.5 4.78	5/8 × 105 M16X108
150 × 80 159.0 × 3	159.0 × 88.9 6.250 × 3.500	300 2.07	89 3.50	227 8.94	130 5.12	123.5 4.86	123.5 4.86	5/8 × 105 M16X108
150 × 15 165.1 × ½	165.1 × 21.3 6.500 × 0.825	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	115 4.53	5/8 × 105 M16X108
125 × 20 165.1 × ¾	165.1 × 26.9 6.500 × 1.050	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 25 165.1 × 1	165.1 × 33.7 6.500 × 1.315	300 2.07	38 1.50	235 9.25	77 3.03	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 32 165.1 × 1¼	165.1 × 42.4 6.500 × 1.660	300 2.07	51 2.00	235 9.25	82.5 3.64	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 40 165.1 × 1½	165.1 × 48.3 6.500 × 1.900	300 2.07	51 2.00	235 9.25	82.5 3.64	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 50 165.1 × 2	165.1 × 60.3 6.500 × 2.375	300 2.07	64 2.50	235 9.25	110 4.33	120 4.72	120 4.72	5/8 × 105 M16X108
150 × 65 165.1 × 76.1	165.1 × 76.1 6.500 × 3.000	300 2.07	70 2.75	235 9.25	110 4.33	125 4.92	125 4.92	5/8 × 105 M16X108
150 × 80 165.1 × 3	165.1 × 88.9 6.500 × 3.500	300 2.07	89 3.50	235 9.25	130 5.12	125 4.92	125 4.92	5/8 × 105 M16X108
150 × 25 6 × 1	168.3 × 33.7 6.500 × 1.315	300 2.07	38 1.50	240 9.45	77 3.03	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 32 6 × 1¼	168.3 × 42.4 6.500 × 1.660	300 2.07	51 2.00	240 9.45	82.5 3.64	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 40 6 × 1½	168.3 × 48.3 6.500 × 1.900	300 2.07	51 2.00	240 9.45	82.5 3.64	115 4.53	115 4.53	5/8 × 105 M16X108
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	300 2.07	64 2.50	240 9.45	110 4.33	121 4.76	121 4.76	5/8 × 105 M16X108
150 × 65 6 × 2½	168.3 × 73.0 6.625 × 2.875	300 2.07	70 2.75	240 9.45	110 4.33	127 5.00	127 5.00	5/8 × 105 M16X108
150 × 80 6 × 3	168.3 × 88.9 6.625 × 3.500	300 2.07	89 3.50	240 9.45	130 5.12	127 5.00	127 5.00	5/8 × 105 M16X108
200 × 25 8 × 1	219.0 × 33.7 8.625 × 1.315	300 2.07	38 1.50	300 11.81	78 3.07	140 5.51	140 5.51	5/8 × 105 M16X108
200 × 32 8 × 1¼	219.1 × 42.4 8.625 × 1.660	300 2.07	51 2.00	300 11.81	93 3.66	140 5.51	140 5.51	5/8 × 105 M16X108
200 × 40 8 × 1½	219.1 × 48.3 8.625 × 1.900	300 2.07	51 2.00	300 11.81	93 3.66	143 5.63	143 5.63	5/8 × 105 M16X108
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	300 2.07	64 2.50	300 11.81	115 4.53	149 5.87	149 5.87	5/8 × 105 M16X108
200 × 65 8 × 76.1	219.1 × 76.1 8.625 × 3.000	300 2.07	70 2.75	300 11.81	115 4.53	155 6.10	155 6.10	5/8 × 105 M16X108
200 × 80 8 × 3	219.1 × 88.9 8.625 × 3.500	300 2.07	89 3.50	300 11.81	133.5 5.25	155 6.10	155 6.10	5/8 × 105 M16X108
200 × 100 8 × 4	219.1 × 114.3 8.625 × 4.500	300 2.07	114 4.50	300 11.81	159.5 6.29	160 6.30	160 6.30	5/8 × 105 M16X108

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Grooved Eccentric Reducer



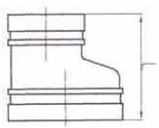


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
89X50 3X2	88.9X60.3 3.500X2.375	500 3.45	89 3.50	UL FM
100X65 4X2 1/2	108.0X76.1 4.250X3.000	500 3.45	102 4.00	UL FM
100X80 4X3	108.0X88.9 4.250X3.500	500 3.45	102 4.00	UL FM
100X65 4X2 1/2	114.3X60.3 4.500X2.000	500 3.45	102 4.00	UL FM
100X65 4X21/2	114.3X76.1 4.500X3.000	300 2.07	102 4.00	UL FM
100X80 4X3	114.3X88.9 4.500X3.500	500 3.45	102 4.00	UL FM
125X100 5X4	139.7X114.3 5.500X4.500	300 2.07	127 5.00	UL FM
150X100 6X4	159.0X108.0 6.250X4.250	300 2.07	140 5.50	UL FM
150X100 6X4	159.0X114.3 6.250X4.500	300 2.07	140 5.50	UL FM
150X80 6X3	165.1X88.9 6.500X3.500	300 2.07	140 5.50	UL FM
150X100 6X4	165.1X114.3 6.500X4.500	300 2.07	140 5.50	UL FM
150X125 6X5	165.1X139.7 6.500X5.500	300 2.07	140 5.50	UL FM
150X80 6X3	168.3X88.9 6.625X3.500	300 2.07	140 5.50	UL FM
150X100 6X4	168.3X114.3 6.625X4.500	300 2.07	140 5.50	UL FM
150X125 6X5	168.3X139.7 6.625X5.500	300 2.07	140 5.50	UL FM
200X100 8X4	219.1X114.3 8.625X4.500	300 2.07	215 8.50	UL FM
200X150 8X6	219.1X165.1 8.625X6.50	300 2.07	215 8.50	——
200X150 8X6	219.1X168.3 8.625X6.625	300 2.07	215 8.50	——
200X100 10X8	273.0X219.1 10.750X8.625	300 2.07	215 8.50	UL FM
350X200 14X8	355.6X219.1 14.000X8.625	300 2.07	318 12.50	——
350X250 14X10	355.6X273.0 14.000X10.750	300 2.07	318 12.50	——
350X300 14X12	355.6X323.9 14.000X12.750	300 2.07	318 12.50	——
400X200 16X8	406.4X219.1 16.000X8.625	300 2.07	318 12.50	——
400X250 16X10	406.4X273.0 16.000X10.750	300 2.07	318 12.50	——
400X300 16X12	406.4X323.9 16.000X12.750	300 2.07	318 12.50	——
400X350 16X14	406.4X355.6 16.000X14.000	300 2.07	318 12.50	——
450X300 18X12	457.2X323.9 18.000X12.750	300 2.07	330 13.00	——
450X350 18X14	457.2X355.6 18.000X14.000	300 2.07	330 13.00	——
450X400 18X16	457.2X406.4 18.000X16.000	300 2.07	330 13.00	——

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Grooved Eccentric Reducer



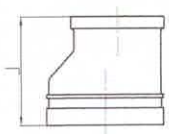


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
500X300 20X12	508.0X323.9 20.000X12.750	300 2.07	356 14.00	
500X350 20X14	508.0X355.6 20.000X14.000	300 2.07	356 14.00	
500X400 20X16	508.0X406.4 20.000X16.000	300 2.07	356 14.00	
500X450 20X18	508.0X457.2 20.000X18.000	300 2.07	356 14.00	
600X200 24X8	609.6X219.1 24.000X8.625	300 2.07	381 15.00	
600X250 24X10	609.6X273.0 24.000X10.750	300 2.07	381 15.00	
600X300 24X12	609.6X323.9 24.000X12.750	300 2.07	381 15.00	
600X350 24X14	609.6X355.6 24.000X14.000	300 2.07	381 15.00	
600X400 24X16	609.6X406.4 24.000X16.000	300 2.07	381 15.00	
600X450 24X18	609.6X457.2 24.000X18.000	300 2.07	381 15.00	
600X500 24X20	609.6X508.0 24.000X20.000	300 2.07	381 15.00	

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Grooved Eccentric Reducer with Female Thread



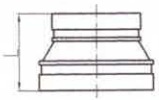


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
100X65 108.0X2½	108.0X76.1 4.250X3.000	500 3.45	102 4.00	UL FM
100X65 4X2½	114.3X76.1 4.500X3.000	500 3.45	102 4.00	UL FM
125X80 5X3	139.7X88.9 5.500X3.500	500 3.45	127 5.00	UL FM
150X80 6X3	165.1X88.9 6.500X3.500	500 3.45	140 5.50	UL FM

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Grooved Concentric Reducer



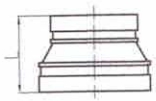


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
32X25 1¼X1	42.4X33.7 1.660X1.315	500 3.45	64 2.50	UL FM VdS LPCB
40X25 1½X1	48.3X33.7 1.900X1.315	500 3.45	64 2.50	UL FM VdS LPCB
40X32 1½X1¼	48.3X42.4 1.900X1.660	500 3.45	64 2.50	UL FM VdS LPCB
50X25 2X1	60.3X33.7 2.375X1.315	500 3.45	64 2.50	UL FM VdS LPCB
50X32 2X1¼	60.3X42.4 2.375X1.660	500 3.45	64 2.50	UL FM VdS LPCB
50X40 2X1½	60.3X48.3 2.375X1.900	500 3.45	64 2.50	UL FM VdS LPCB
65X25 2½X1	73.0X33.7 2.875X1.315	500 3.45	64 2.50	UL FM
65X32 2½X1¼	73.0X42.4 2.875X1.660	500 3.45	64 2.50	UL FM
65X40 2½X1½	73.0X48.3 2.875X1.900	500 3.45	64 2.50	UL FM
65X50 2½X2	73.0X60.3 2.875X2.375	500 3.45	64 2.50	UL FM
65X25 2½X1	76.1 X33.7 3.000X1.315	500 3.45	64 2.50	——
65X32 2½X1¼	76.1X42.4 3.000X1.660	500 3.45	64 2.50	UL FM VdS LPCB
65X40 2½X1½	76.1X48.3 3.000X1.900	500 3.45	64 2.50	UL FM VdS LPCB
65X50 2½X2	76.1X60.3 3.000X2.375	500 3.45	64 2.50	UL FM VdS LPCB
80X25 3X1	88.9X33.7 3.500X1.315	500 3.45	64 2.50	UL FM VdS
80X32 3X1¼	88.9X42.4 3.500X1.660	500 3.45	64 2.50	UL FM
80X40 3X1½	88.9X48.3 3.500X1.900	500 3.45	64 2.50	UL FM VdS
80X50 3X2	88.9X60.3 3.500X2.375	500 3.45	64 2.50	UL FM VdS LPCB
80X65 3X2½	88.9X73.0 3.500X2.875	500 3.45	64 2.50	UL FM
80X65 3X2½	88.9X76.1 3.500X3.000	500 3.45	64 2.50	UL FM VdS LPCB
100X50 4X2	108.0X60.3 4.250X2.375	500 3.45	76 3.00	UL FM
100X65 4X2½	108.0X73.0 4.250X2.875	500 3.45	76 3.00	UL FM
100X65 4X2½	108.0X76.1 4.250X3.000	500 3.45	76 3.00	UL FM
100X80 4X3	108.0X88.9 4.250X3.500	500 3.45	76 3.00	UL FM
100X32 4X1¼	114.3X42.4 4.500X1.660	500 3.45	76 3.00	UL FM VdS
100X40 4X1½	114.3X48.3 4.500X1.900	500 3.45	76 3.00	UL FM VdS LPCB
100X50 4X2	114.3X60.3 4.500X2.375	500 3.45	76 3.00	UL FM VdS LPCB
100X65 4X2½	114.3X73.0 4.500X2.875	500 3.45	76 3.00	UL FM
100X65 4X2½	114.3X76.1 4.500X3.000	500 3.45	76 3.00	UL FM VdS LPCB
100X80 4X3	114.3X88.9 4.500X3.500	500 3.45	76 3.00	UL FM VdS LPCB
125X100 5X4	133.0X108.0 5.250X4.250	500 3.45	89 3.50	UL FM
125X100 15X4	133.0X114.3 5.250X4.500	500 3.45	89 3.50	UL FM
125X50 5X2	139.7X60.3 5.500X2.375	500 3.45	89 3.50	UL FM
125X65 5X2½	139.7X76.1 5.500X3.000	500 3.45	89 3.50	UL FM VdS
125X80 5X3	139.7X88.9 5.500X3.500	500 3.45	89 3.50	UL FM VdS
125X100 5X4	139.7X114.3 5.500X4.500	500 3.45	89 3.50	UL FM VdS LPCB
125X65 5X2½	141.3X73.0 5.563X2.875	500 3.45	89 3.50	UL FM
125X80 5X3	141.3X88.9 5.563X3.500	500 3.45	89 3.50	UL FM

240

Grooved Concentric Reducer



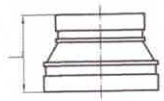


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
125X100 5X4	141.3X114.3 5.563X4.500	500 3.45	89 3.50	UL FM
150X50 6X2	159.0X60.3 6.250X2.375	500 3.45	102 4.00	UL FM
150X65 150.0X2½	159.0X76.1 6.250X3.000	500 3.45	102 4.00	UL FM
150X80 6X3	159.0X88.9 6.250X3.500	500 3.45	102 4.00	UL FM
150X100 6X4	159.0X108 6.250X4.250	500 3.45	102 4.00	UL FM
150X100 6X4	159.0X114.3 6.250X4.500	500 3.45	102 4.00	UL FM
150X125 6X5	159.0X133.0 6.250X5.250	500 3.45	102 4.00	UL FM
150X50 6X2	165.1X60.3 6.500X2.375	500 3.45	102 4.00	UL FM
150X65 6X2½	165.1X76.1 6.500X3.000	500 3.45	102 4.00	UL FM
150X80 6X3	165.1X88.9 6.500X3.500	500 3.45	102 4.00	UL FM LPCB
150X100 6X4	165.1X114.3 6.500X4.500	500 3.45	102 4.00	UL FM LPCB
150X125 6X5	165.1X139.7 6.500X5.500	500 3.45	102 4.00	UL FM LPCB
150X125 6X5	165.1X141.3 6.500X5.563	500 3.45	102 4.00	——
150X50 6X2	168.3X60.3 6.625X2.375	500 3.45	102 4.00	UL FM VdS
150X65 6X2½	168.3X73.0 6.625X2.875	500 3.45	102 4.00	UL FM
150X65 6X2½	168.3X76.1 6.625X3.000	500 3.45	102 4.00	UL FM VdS
150X80 6X3	168.3X88.9 6.625X3.500	500 3.45	102 4.00	UL FM VdS
150X100 6X4	168.3X114.3 6.625X4.500	500 3.45	102 4.00	UL FM VdS LPCB
150X125 6X5	168.3X139.7 6.625X5.500	500 3.45	102 4.00	UL FM VdS LPCB
150X125 6X5	168.3X141.3 6.625X5.563	500 3.45	102 4.00	UL FM
200X100 8X4	216.3X114.3 8.515X4.500	500 3.45	127 5.00	UL FM
200X150 8X6	216.3X165.1 8.515X6.500	500 3.45	127 5.00	UL FM
200X65 8X2½	219.1X73.0 8.625X2.875	500 3.45	127 5.00	UL FM
200X80 8X3	219.1X88.9 8.625X3.500	500 3.45	127 5.00	UL FM VdS LPCB
200X100 8X4	219.1X108.0 8.625X4.250	500 3.45	127 5.00	UL FM
200X100 8X4	219.1X114.3 8.625X4.500	500 3.45	127 5.00	UL FM VdS LPCB
200X125 8X5	219.1X139.7 8.625X5.500	500 3.45	127 5.00	UL FM VdS LPCB
200X125 8X5	219.1X141.3 8.625X5.563	500 3.45	127 5.00	UL FM
200X150 8X6	219.1X159.0 8.625X6.250	300 2.07	127 5.00	UL FM
200X150 8X6	219.1X165.1 8.625X6.500	300 2.07	127 5.00	UL FM
200X150 8X6	219.1X168.3 8.625X6.625	500 3.45	127 5.00	UL FM VdS LPCB
250X150 10X6	273.0X159.0 10.750X6.250	300 2.07	152 6.00	UL FM
250X150 10X6	273.0X165.1 10.750X6.500	300 2.075	152 6.00	UL FM
250X150 10X6	273.0X168.3 10.750X6.625	300 2.07	152 6.00	UL FM VdS
250X200 10X8	273.0X219.1 10.750X8.625	300 2.07	152 6.00	UL FM VdS
300X200 12X8	323.9X219.1 12.750X8.625	300 2.07	178 7.00	UL FM VdS
300X250 12X10	323.9X273.0 12.750X10.750	300 2.07	178 7.00	UL FM VdS

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Grooved Concentric Reducer



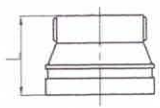


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
350X200 14X8	355.6X219.1 14.000X8.625	300 2.07	203 7.99	——
350X250 14X10	355.6X273.0 14.000X10.750	300 2.07	203 7.99	——
350X300 14X12	355.6X323.9 14.000X12.750	300 2.07	203 7.99	——
400X200 16X8	406.4X219.1 16.000X8.625	300 2.07	229 9.00	——
400X250 16X10	406.4X273.0 16.000X10.750	300 2.07	229 9.00	——
400X300 16X12	406.4X323.9 16.000X12.750	300 2.07	229 9.00	——
400X350 16X14	406.4X355.6 16.000X14.000	300 2.07	229 9.00	——
450X300 18X12	457.2X323.9 18.000X12.750	300 2.07	241 9.50	——
450X350 18X14	457.2X355.6 18.000X14.000	300 2.07	241 9.50	——
450X400 18X16	457.2X406.4 18.000X16.000	300 2.07	241 9.50	——
500X300 20X12	508.0X323.9 20.000X12.750	300 2.07	254 10.00	——
500X350 20X14	508.0X355.6 20.000X14.000	300 2.07	254 10.00	——
500X400 20X16	508.0X406.4 20.000X16.000	300 2.07	254 10.00	——
500X450 20X18	508.0X457.2 20.000X18.000	300 2.07	254 10.00	——
600X200 24X8	609.6X219.1 24.000X8.625	300 2.07	305 12.00	——
600X250 24X10	609.6X273.0 24.000X10.750	300 2.07	305 12.00	——
600X300 24X12	609.6X323.9 24.000X12.750	300 2.07	305 12.00	——
600X350 24X14	609.6X355.6 24.000X14.000	300 2.07	305 12.00	——
600X400 24X16	609.6X406.4 24.000X16.000	300 2.07	305 12.00	——
600X450 24X18	609.6X457.2 24.000X18.000	300 2.07	305 12.00	——
600X500 24X20	609.6X508.0 24.000X20.000	300 2.07	305 12.00	——

240N

Grooved Concentric Reducer with Female Thread



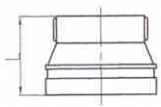


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
50X15 2X1/2	60.3X21.3 2.375X0.826	500 3.45	64 2.50	VdS
50X20 2X3/4	60.3X26.9 2.375X1.05	500 3.45	64 2.50	UL FM VdS LPCB
50X25 2X1	60.3X33.7 2.375X1.315	500 3.45	64 2.50	UL FM VdS LPCB
50X32 2X1¼	60.3X42.4 2.375X1.660	500 3.45	64 2.50	UL FM VdS LPCB
50X40 2X1½	60.3X48.3 2.375X1.900	500 3.45	64 2.50	UL FM VdS LPCB
65X25 2½X1	73.0X33.7 2.875X1.315	500 3.45	64 2.50	UL FM
65X25 2½X1¼	73.0X42.4 2.875X1.660	500 3.45	64 2.50	UL FM
65X40 2½X1½	73.0X48.3 2.875X1.900	500 3.45	64 2.50	UL FM
65X50 2½X2	73.0X60.3 2.875X2.375	500 3.45	64 2.50	UL FM
65X15 2½X1/2	76.1X21.3 3.000X0.825	500 3.45	64 2.50	UL FM VdS
65X20 2½X3/4	76.1X26.9 3.000X1.05	500 3.45	64 2.50	UL FM VdS
65X25 2½X1	76.1X33.7 3.000X1.315	500 3.45	64 2.50	UL FM VdS
65X32 2½X1¼	76.1X42.4 3.000X1.660	500 3.45	64 2.50	UL FM VdS LPCB
65X40 2½X1½	76.1X48.3 3.000X1.900	500 3.45	64 2.50	FM VdS LPCB
65X50 2½X2	76.1X60.3 3.000X2.375	500 3.45	64 2.50	UL FM VdS LPCB
80X15 3X1/2	88.9X21.3 3.500X0.825	500 3.45	64 2.50	VdS
80X20 3X3/4	88.9X26.9 3.500X1.05	500 3.45	64 2.50	UL FM VdS
80X25 3X1	88.9X33.7 3.500X1.315	500 3.45	64 2.50	UL FM VdS
80X32 3X1¼	88.9X42.4 3.500X1.660	500 3.45	64 2.50	VdS
80X40 3X1½	88.9X48.3 3.500X1.900	500 3.45	64 2.50	UL FM VdS
80X50 3X2	88.9X60.3 3.500X2.375	500 3.45	64 2.50	UL FM VdS
80X65 3X2½	88.9X73.0 3.500X2.875	500 3.45	64 2.50	UL FM
80X65 3X2½	88.9X76.1 3.500X3.000	500 3.45	64 2.50	UL FM VdS LPCB
100X25 4X1	108.0X33.7 4.250X1.315	500 3.45	76 3.00	UL FM
100X32 4X1¼	108.0X42.4 4.250X1.660	500 3.45	76 3.00	UL FM
100X40 4X1½	108.0X48.3 4.250X1.900	500 3.45	76 3.00	UL FM
100X50 4X2	108.0X60.3 4.250X2.375	500 3.45	76 3.00	UL FM
100X65 4X2½	108.0X76.1 4.250X3.000	500 3.45	76 3.00	UL FM
100X80 4X3	108.0X88.9 4.250X3.500	500 3.45	76 3.00	UL FM
100X15 4X1/2	114.3X21.3 4.500X0.825	500 3.45	76 3.00	UL FM VdS
100X20 4X3/4	114.3X26.9 4.500X1.05	500 3.45	76 3.00	UL FM VdS
100X25 4X1	114.3X33.7 4.500X1.315	500 3.45	76 3.00	UL FM VdS
100X32 4X1¼	114.3X42.4 4.500X1.660	500 3.45	76 3.00	UL FM VdS
100X40 4X1½	114.3X48.3 4.500X1.900	500 3.45	76 3.00	UL FM VdS LPCB
100X50 4X2	114.3X60.3 4.500X2.375	500 3.45	76 3.00	UL FM VdS LPCB
100X65 4X2½	114.3X73.0 4.500X2.875	500 3.45	76 3.00	UL FM
100X65 4X2½	114.3X76.1 4.500X3.000	500 3.45	76 3.00	UL FM VdS LPCB
100X80 4X3	114.3X88.9 4.500X3.500	500 3.45	76 3.00	UL FM VdS LPCB
125X40 5X1½	133.0X48.3 5.250X1.900	500 3.45	89 3.50	UL FM

240N

Grooved Concentric Reducer with Female Thread



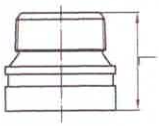


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
125X40 5X2	133.0X60.3 5.250X2.375	500 3.45	89 3.50	——
125X65 5X2½	133.0X76.1 5.250X3.000	500 3.45	89 3.50	UL FM
125X65 5X3	133.0X88.9 5.250X3.500	500 3.45	89 3.50	——
125X25 5X1	139.7X33.7 5.500X1.315	500 3.45	89 3.50	UL FM VdS
125X32 5X1¼	139.7X42.4 5.500X1.660	500 3.45	89 3.50	UL FM VdS
125X40 5X1½	139.7X48.3 5.500X1.900	500 3.45	89 3.50	UL FM VdS
125X50 5X2	139.7X60.3 5.500X2.375	500 3.45	89 3.50	UL FM VdS
125X65 5X2½	139.7X76.1 5.500X3.000	500 3.45	89 3.50	UL FM VdS
125X80 5X3	139.7X88.9 5.500X3.500	500 3.45	89 3.50	UL FM VdS
125X100 5X4	139.7X114.3 5.500X4.500	500 3.45	89 3.50	UL FM VdS LPCB
125X100 5X4	141.3X114.3 5.563X4.500	500 3.45	89 3.50	UL FM
150X20 6X3/4	159.0X26.9 6.250X1.05	500 3.45	102 4.00	UL FM
150X25 6X1	159.0X33.7 6.250X1.315	500 3.45	102 4.00	UL FM
150X32 6X1¼	159.0X42.4 6.250X1.660	500 3.45	102 4.00	UL FM
150X40 6X1½	159.0X48.3 6.250X1.900	500 3.45	102 4.00	UL FM
150X50 6X2	159.0X60.3 6.250X2.375	500 3.45	102 4.00	UL FM
150X65 6X2½	159.0X76.1 6.250X3.000	500 3.45	102 4.00	UL FM
150X80 6X3	159.0X88.9 6.250X3.500	500 3.45	102 4.00	UL FM
150X100 6X4	159.0X114.3 6.250X4.500	500 3.45	102 4.00	UL FM
150X15 6X1/2	165.1X21.3 6.500X0.825	500 3.45	102 4.00	UL FM
150X20 6X3/4	165.1X26.9 6.500X1.05	500 3.45	102 4.00	UL FM
150X25 6X1	165.1X33.7 6.500X1.315	500 3.45	102 4.00	UL FM
150X32 6X1¼	165.1X42.4 6.500X1.660	500 3.45	102 4.00	UL FM
150X40 6X1½	165.1X48.3 6.500X1.900	500 3.45	102 4.00	UL FM
150X50 6X2	165.1X60.3 6.500X2.375	500 3.45	102 4.00	UL FM
150X65 6X2½	165.1X76.1 6.500X3.000	500 3.45	102 4.00	UL FM
150X80 6X3	165.1X88.9 6.500X3.500	500 3.45	102 4.00	UL FM LPCB
150X100 6X4	165.1X114.3 6.500X4.500	500 3.45	102 4.00	UL FM
150X25 6X1	168.3X33.7 6.625X1.315	500 3.45	102 4.00	UL FM
150X50 6X2	168.3X60.3 6.625X2.375	500 3.45	102 4.00	UL FM VdS
150X125 6X5	168.3X141.3 6.625X5.563	500 3.45	102 4.00	UL FM
200X40 8X1¼	219.1X48.3 8.625X1.900	500 3.45	127 5.00	UL FM
200X50 8X2	219.1X60.3 8.625X2.375	500 3.45	127 5.00	UL FM VdS
200X65 8X2½	219.1X73.0 8.625X2.875	500 3.45	127 5.00	UL FM
200X65 8X2½	219.1X76.1 8.625X3.000	500 3.45	127 5.00	UL FM VdS
200X80 8X3	219.1X88.9 8.625X3.500	500 3.45	127 5.00	UL FM VdS LPCB
200X100 8X4	219.1X114.3 8.625X4.500	500 3.45	127 5.00	UL FM
200X100 8X6	219.1X168.3 8.625X6.625	500 3.45	127 5.00	UL FM

240W

Grooved Concentric Reducer with Male Thread





Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
65X50 2"↓X2	73.0X60.3 2.875X2.375	500 3.45	64 2.50	UL FM
65X50 2"↓X2	76.1X60.3 3.000X2.375	500 3.45	64 2.50	UL FM
80X25 3X1	88.9X33.7 3.500X1.315	500 3.45	64 2.50	UL FM
100X50 4X2	114.3X60.3 4.500X2.375	500 3.45	76 3.00	UL FM

300

Cap

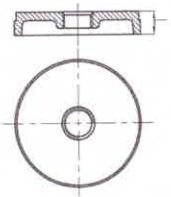


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
25 1	33.7 1.315	500 3.45	22.1 0.87	UL FM VdS LPCB
32 1¼	42.4 1.660	500 3.45	23.5 0.93	UL FM VdS LPCB
40 1½	48.3 1.900	500 3.45	23.5 0.93	UL FM VdS LPCB
50 2	60.3 2.375	500 3.45	23.5 0.93	UL FM VdS LPCB
65 2½	73.0 2.875	500 3.45	23.5 0.93	UL FM
65 2½	76.1 3.000	500 3.45	24.5 0.96	UL FM VdS LPCB
80 3	88.9 3.500	500 3.45	24 0.94	UL FM VdS LPCB
100 4	108.0 4.250	500 3.45	27 1.06	UL FM
100 4	114.3 4.500	500 3.45	27 1.06	UL FM VdS LPCB
125 5	133.0 5.250	500 3.45	25.5 1.00	UL FM
125 5	139.7 5.500	500 3.45	25.5 1.00	UL FM VdS LPCB
125 5	141.3 5.563	500 3.45	25.5 1.00	UL FM
150 6	159.0 6.250	500 3.45	27 1.06	UL FM
150 6	165.1 6.500	500 3.45	27 1.06	UL FM LPCB
150 6	168.3 6.625	500 3.45	24.5 0.97	UL FM VdS LPCB
200 8	216.3 8.516	500 3.45	30 1.18	UL FM
200 8	219.1 8.625	500 3.45	30 1.18	UL FM VdS LPCB
250 10	273.0 10.750	500 3.45	32 1.26	UL FM VdS LPCB
300 12	323.9 12.750	500 3.45	32 1.26	UL FM VdS LPCB
350 14	355.6 14.000	300 2.07	102 4.00	——
400 16	406.4 16.000	300 2.07	102 4.00	——
450 18	457.2 18.000	300 2.07	127 5.00	——
500 20	508.0 20.000	300 2.07	152 6.00	——
600 24	609.6 24.000	300 2.07	152 6.00	——

300

Cap with Concentric Hole



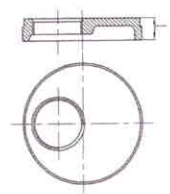


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
50X25 2X1	60.3X33.7 2.375X1.315	500 3.45	23.5 0.93	——
50X40 2X1½	60.3X48.3 2.375X1.900	500 3.45	23.5 0.93	——
65X50 2½X2	73.0X60.3 2.875X2.375	500 3.45	23.5 0.93	——
65X25 2½ × 1	76.1X33.7 3.000X1.315	500 3.45	24.5 0.96	——
65 × 40 2½ × 1½	76.1 × 48.3 3.000 × 1.900	500 3.45	23.5 0.925	UL FM
65X50 2½ × 2	76.1X60.3 3.000X2.375	500 3.45	24 0.94	——
80X15 3X½	88.9X21.3 3.500X0.825	500 3.45	25.4 1.00	UL FM
80X25 3X1	88.9X33.7 3.500X1.315	500 3.45	24 0.94	UL FM
80X40 3X1½	88.9X48.3 3.500X1.900	500 3.45	23.5 0.925	UL FM
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	500 3.45	23.5 0.925	UL FM
100 × 15 4 × 1/2	114.3 × 21.3 4.500 × 0.825	500 3.45	27.0 1.06	UL FM
100 × 25 4 × 1	114.3 × 33.7 4.500 × 1.315	500 3.45	27.0 1.06	UL FM
100X40 4X1½	114.3X48.3 4.500X1.900	500 3.45	25.4 1.00	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	500 3.45	25.4 1.00	——
125 × 50 5 × 2	139.7 × 60.3 5.500 × 2.375	500 3.45	27 1.06	UL FM
150 × 15 6 × 1/2	165.1 × 21.3 6.500 × 0.825	500 3.45	27 1.06	UL FM
150 × 25 6 × 1	165.1 × 33.7 6.500 × 1.315	500 3.45	27 1.06	UL FM
150 × 40 6 × 1½	165.1 × 48.3 6.500 × 1.900	500 3.45	25.4 1.00	——
150 × 50 6 × 2	165.1 × 60.3 6.500 × 2.375	500 3.45	27 1.06	UL FM
150X40 6X1½	168.3x48.3 6.625X1.900	500 3.45	27 1.06	——
150 × 50 6 × 2	168.3 × 60.3 6.625 × 2.375	500 3.45	27 1.06	——
200X25 8X1	219.1X33.7 8.625X1.315	500 3.45	30 1.18	——

300PX

Cap with Eccentric Hole

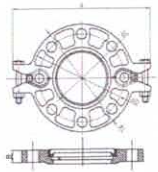




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	Certificate
65X25 2½X1	76.1X33.7 3.000X1.315	500 3.45	23.5 0.925	——
65X40 2½X1½	76.1X48.3 3.000X1.900	500 3.45	23.5 0.925	——
80X25 3X1	88.9X33.7 3.500X1.315	500 3.45	23.5 0.925	——
80X40 3X1½	88.9X48.3 3.500X1.900	500 3.45	23.5 0.925	UL FM
80 × 50 3 × 2	88.9 × 60.3 3.500 × 2.375	500 3.45	23.5 0.925	UL FM
100X25 4X1	114.3X33.7 4.500X1.315	500 3.45	27 1.06	——
100X40 4X1½	114.3X48.3 4.500X1.900	500 3.45	25.4 1.00	UL FM
100 × 50 4 × 2	114.3 × 60.3 4.500 × 2.375	500 3.45	25.4 1.00	UL FM
125 × 40 5 × 1½	139.7 × 48.3 5.500 × 1.900	500 3.45	25.4 1.00	UL FM
125 × 50 5 × 2	139.7 × 60.3 5.500 × 2.375	500 3.45	25.4 1.00	UL FM
150 × 40 6 × 1½	165.1 × 48.3 6.500 × 1.900	500 3.45	25.4 1.00	UL FM
150 × 40 6 × 1½	168.3 × 48.3 6.625 × 1.900	500 3.45	25.4 1.00	UL FM
150 × 50 6 × 2	168.3X60.3 6.625X2.375	500 3.45	25.4 1.00	UL FM
200 × 40 8 × 1½	219.1 × 48.3 8.625 × 1.900	500 3.45	30.2 1.19	UL FM
200 × 50 8 × 2	219.1 × 60.3 8.625 × 2.375	500 3.45	30.2 1.19	UL FM

321
PN16
Grooved Flange

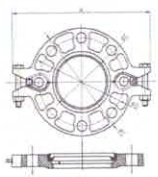




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	Bolt/Nut No.-SIZE mm		Certificate
40 1½	48.3 1.900	225 1.6	195 7.68	18.5 0.73	150 5.90	110 4.33	45.4 1.78	2-M10X50	4-M16	UL FM VdS
50 2	60.3 2.375	225 1.6	220 8.66	18.5 0.73	165 6.50	125 4.92	57.5 2.26	2-M10X50	4-M16	UL FM VdS
65 76.1	76.1 3.000	225 1.6	235 9.25	18.5 0.73	185 7.28	145 5.71	72.7 2.86	2-M10X50	4-M16	UL FM VdS
80 3	88.9 3.500	225 1.6	255 10.04	18.5 0.73	195 7.68	160 6.30	85.5 3.37	2-M10X50	8-M16	UL FM VdS
100 108.0	108.0 4.250	225 1.6	279 10.98	18.5 0.73	220 8.66	180 7.09	104.5 4.11	2-M10X50	8-M16	UL FM
100 4	114.3 4.500	225 1.6	279 10.98	18.5 0.73	224 8.82	180 7.09	110.5 4.35	2-M10X50	8-M16	UL FM VdS
125 5	133.0 5.250	225 1.6	312 12.28	21.5 0.85	250 9.84	210 8.27	129.2 5.08	2-M12X65	8-M16	UL FM
125 5	139.7 5.500	225 1.6	320 12.60	23 0.91	250 9.84	210 8.27	135.5 5.33	2-M12X65	8-M16	UL FM
150 6	159.0 6.25	225 1.6	346 13.62	21.5 0.85	280 11.00	240 9.45	154.8 6.10	2-M12X65	8-M20	UL FM
150 6	165.1 6.500	225 1.6	346 13.62	21.5 0.85	280 11.00	240 9.45	160.8 6.33	2-M12X65	8-M20	UL FM
150 6	168.3 6.625	225 1.8	346 13.62	24 0.94	280 11.00	240 9.45	164.3 6.47	2-M12X65	8-M20	UL FM
200 8	219.1 8.625	225 1.6	414.3 16.31	30 1.18	340 13.39	295 11.61	214.9 8.46	2-3/8X70 2-M10X70	12-M20	UL FM VdS
250 10	273.0 10.750	225 1.6	480 18.90	25.5 1.00	405 15.94	355 13.98	268.9 10.59	2-3/8X70 2-M10X70	12-M24	UL FM VdS
300 12	323.9 12.750	225 1.6	530.5 20.88	25.5 1.00	460 18.11	410 16.14	318.9 12.56	2-3/8X70 2-M10X70	12-M24	UL FM
350 14	355.6 12.750	225 1.6	580 22.83	30 1.18	520 20.47	470 18.50	350.6 13.80	——	16-M24	——
400 16	406.4 16.000	225 1.6	630 24.80	32 1.26	580 22.83	525 20.67	401.5 15.81	——	16-M27	——
450 18	457.2 18.000	225 1.6	693 27.28	36 1.42	640 25.20	585 23.03	452.2 17.80	——	20-M27	——
500 20	508.0 20.000	225 1.6	770 30.31	36 1.42	715 28.15	650 25.59	503 19.80	——	20-M30	——
600 24	609.6 24.000	225 1.6	895 35.24	40 1.57	840 33.07	770 30.31	601.6 23.69	——	20-M33	——

321H
PN25
Grooved Flange

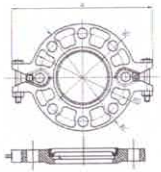




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	Bolt/Nut No.-SIZE mm		Certificate
100 108.0	108.0 4.250	362 2.5	280 11.02	25.5 1.00	220 8.66	180 7.09	104.5 4.11	2-M12X55	8-M16	UL FM
150 165.1	165.1 6.500	362 2.5	346 13.62	25.5 1.00	280 11.00	240 9.45	160.8 6.33	2-M12X65	8-M20	UL FM

321A
ANSI 125/150
Grooved Flange

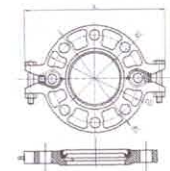




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	Bolt/Nut No.-SIZE mm		Certificate
50 2	60.3 2.375	300 2.07	206 8.11	19 0.75	152 5.98	121 4.76	57.5 2.26	2-M10X50	4-5/8	UL FM
65 2½	73.0 2.875	300 2.07	230 9.05	19 0.75	178 7.00	140 5.51	69.9 2.74	2-M10X50	4-5/8	UL FM
80 3	88.9 3.500	300 2.07	246 9.88	19 0.75	191 7.52	152 5.98	85.5 3.37	2-M10X50	4-5/8	UL FM
100 4	114.3 4.500	300 2.07	280 11.02	19 0.75	229 9.00	181 7.52	110.5 4.35	2-M12X55	8-5/8	UL FM
125 5	141.3 5.563	300 2.07	320 12.60	22 0.87	254 10.00	216 8.50	137.4 5.41	2-M12X65	8-3/4	UL FM
150 6	168.3 6.625	300 2.07	346 13.62	22 0.87	280 11.00	241.3 9.50	164.3 6.47	2-M12X65	8-3/4	UL FM
200 8	219.1 8.625	300 2.07	414.3 16.31	30 1.18	341.4 13.44	298.5 11.75	214.9 8.46	2-3/8X70 2-M10X70	8-3/4	UL FM
250 10	273.0 10.750	300 2.07	481.2 18.94	30.3 1.19	405.6 15.97	361.55 14.25	268.9 10.58	2-3/8X70 2-M10X70	12-7/8	UL FM
300 12	323.9 12.750	300 2.07	553.3 21.78	30.4 1.20	482.6 19.00	431.8 17.00	318.9 12.56	2-3/8X70 2-M10X70	12-7/8	UL FM
350 14	355.6 12.750	300 2.0	590 23.22	37 1.44	535 21.00	476.3 18.75	350.6 13.80	——	12-1	——
400 16	406.4 16.000	300 2.0	650 25.59	37 1.44	595 23.50	539.8 21.25	401.5 15.91	——	16-1	——
450 18	457.2 18.000	300 2.0	690 27.17	40 1.56	635 25.80	577.8 22.75	452.2 17.80	——	16-1⅛	——
500 20	508.0 20.000	300 2.0	765 30.12	43 1.69	700 27.50	635 25.00	503 19.80	——	20-1⅛	——
600 24	609.6 24.000	300 2.0	875 34.45	49 1.94	815 32.00	749.3 29.50	601.6 23.69	——	20-1¼	——

321E
BS.TABLE'E'
Grooved Flange

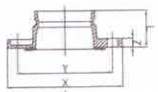


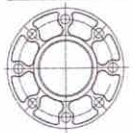


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	Bolt/Nut No.-SIZE mm		Certificate
50 2	60.3 2.375	300 2.07	211 8.31	18.5 0.73	150 5.91	114 4.49	57.5 2.26	2-M10X50	4-M16	——
80 3	88.9 3.500	300 2.07	241 9.49	18.5 0.73	185 7.28	148 5.15	85.5 3.37	2-M10X50	4-M16	——
100 4	114.3 4.500	300 2.07	270 10.63	18.5 0.73	216 8.50	178 7.00	110.5 4.35	2-M10X50	8-M16	——
150 6	165.1 6.500	300 2.07	346 13.62	21.5 0.85	280 11.02	235 9.25	160.6 6.33	2-M12X65	8-M20	——
200 8	219.1 8.625	300 2.07	408 16.06	24 0.94	335 13.19	292 11.50	214.9 8.46	2-3/8X70	12-M20	——
250 10	273.0 14.000	200 1.4	480 18.90	25.5 1.00	406 16.00	356 14.00	268.9 10.59	——	12-3/4	——
300 12	323.9 12.750	200 1.4	530.5 20.88	25.5 1.00	457 18.00	406 16.00	318.9 12.56	——	12-7/8	——
350 14	355.6 12.750	200 1.4	580 22.83	32 1.26	527 20.75	470 18.50	350.6 13.80	——	12-7/8	——
400 16	406.4 16.000	200 1.4	630 24.80	32 1.26	578 22.76	521 20.51	401.5 15.81	——	12-7/8	——
450 18	457.2 18.000	200 1.4	693 27.28	36 1.42	641 25.24	584 23.00	452.2 17.80	——	16-7/8	——
500 20	508.0 20.000	200 1.4	770 30.31	38 1.50	705 27.76	641 25.24	503 19.80	——	16-7/8	——
600 24	609.6 24.000	200 1.4	880 34.65	42 1.65	826 32.52	756 29.76	601.6 23.69	——	16-1⅛	——

321G
PN16
Adaptor Flange



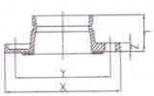




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	X mm/in	Y mm/in	Z mm/in	Bolt/Nut No.-SIZE mm	Certificate
25 1	33.7 1.327	225 1.6	60.5 2.382	115 4.53	85 3.35	16 0.63	4-M12	UL FM VdS LPCB
32 1¼	42.4 1.669	225 1.6	60.5 2.382	140 5.51	100 3.94	16 0.63	4-M16	UL FM VdS LPCB
40 1½	48.3 1.902	225 1.6	60.5 2.382	150 5.91	110 4.33	16 0.63	4-M16	UL FM VdS LPCB
50 2	60.3 2.375	225 1.6	65 2.559	165 6.50	125 4.92	16 0.63	4-M16	UL FM VdS LPCB
65 76.1	76.1 3.000	225 1.6	65 2.559	185 7.28	145 5.70	16 0.63	4-M16	UL FM VdS LPCB
80 3	88.9 3.500	225 1.6	65 2.559	200 7.87	160 6.30	16 0.63	8-M16	UL FM VdS LPCB
100 108.0	108.0 4.250	225 1.6	70 2.756	220 8.66	180 7.09	16 0.63	8-M16	UL FM
100 4	114.3 4.500	225 1.6	70 2.756	220 8.66	180 7.09	16 0.63	8-M16	UL FM VdS LPCB
125 133.0	133 5.250	225 1.6	70 2.756	250 9.84	210 8.27	18 0.71	8-M16	UL FM
125 139.7	139.7 5.500	225 1.6	70 2.756	250 9.84	210 8.27	18 0.71	8-M16	UL FM VdS LPCB
150 159.0	159.0 6.250	225 1.6	70 2.756	285 11.22	240 9.45	18 0.71	8-M20	UL FM
150 165.1	165.1 6.500	225 1.6	70 2.756	285 11.22	240 9.45	18 0.71	8-M20	UL FM LPCB
150 6	168.3 6.625	225 1.6	70 2.756	285 11.22	240 9.45	18 0.71	8-M20	UL FM VdS LPCB
200 8	219.1 8.625	225 1.6	80 3.150	340 13.39	295 11.61	19 0.75	12-M20	UL FM VdS LPCB
250 10	273.0 10.750	225 1.6	85 3.346	405 15.94	355 13.98	21 0.83	12-M24	UL FM VdS
300 12	323.9 12.750	225 1.6	90 3.543	460 18.11	410 16.14	24 0.94	12-M24	UL FM VdS
350 14	377.0 12.843	225 1.6	100 3.937	520 20.47	470 18.50	25 1.00	16-M24	UL FM
400 16	426.0 16.772	225 1.6	110 4.331	580 22.83	525 20.67	27 1.06	16-M27	UL FM
450 18	480 18.897	225 1.6	115 4.528	640 25.196	585 23.03	20 0.787	20-M27	——

321GH
PN25
Adaptor Flange



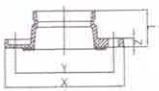


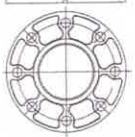


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	X mm/in	Y mm/in	Z mm/in	Bolt/Nut No.-SIZE mm	Certificate
100 108.0	108.0 4.250	362 2.5	70 2.756	230 9.05	190 7.48	18 0.71	8-M20	UL FM
100 4	114.3 4.500	362 2.5	70 2.756	235 9.25	190 7.48	18 0.83	8-M20	UL FM
150 159.0	159.0 6.250	362 2.5	70 2.756	300 11.80	250 9.85	20 0.79	8-M24	UL FM
150 165.1	165.1 6.500	362 2.5	70 2.756	300 11.80	250 9.84	18 0.71	8-M24	UL FM
200 8	219.1 8.625	362 2.5	80 3.150	360 14.17	310 12.20	19 0.75	12-M24	UL FM

321GA
ANSI 125/150
Adaptor Flange
Class 125/150



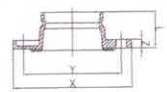


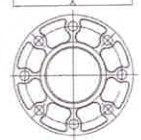


Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	X mm/in	Y mm/in	Z mm/in	Bolt/Nut No.-SIZE mm	Certificate
50 2	60.3 2.375	300 2.07	65 2.559	152 6.0	120.5 4.74	16 0.63	4-5/8	UL FM
65 2½	73.0 2.875	300 2.07	65 2.559	185 7.28	139.7 5.50	16 0.63	4-5/8	UL FM
80 3	88.9 3.500	300 2.07	65 2.559	200 7.87	152.4 6.00	16 0.63	8-5/8	UL FM
100 4	114.3 4.500	300 2.07	70 2.756	229 9.01	190.5 7.50	18 0.63	8-5/8	UL FM
150 6	168.3 6.625	300 2.07	70 2.756	282 11.10	241.3 9.50	18 0.71	8-3/4	UL FM
200 8	219.1 8.625	300 2.07	80 3.150	340 13.39	298.5 11.75	19 0.75	8-3/4	UL FM
250 10	273.0 10.75	300 2.07	85 3.35	406 15.98	362 14.25	21 0.826	12-7/8	UL FM
350 14	355.6 12.750	300 2.0	127 5.00	535 21.00	476.3 18.75	37 1.44	12-1	——
400 16	406.4 16.000	300 2.0	127 5.00	595 23.50	539.8 21.25	37 1.44	16-1	——
450 18	457.2 18.000	300 2.0	140 5.50	635 25.80	577.8 22.75	40 1.56	16-1 1/8	——
500 20	508.0 20.000	300 2.0	152 6.00	700 27.50	635 25.00	43 1.69	20-1 1/8	——
600 24	609.6 24.000	300 2.0	152 6.00	815 32.00	749.3 29.50	49 1.94	20-1 1/4	——

321GL
PN10
Adaptor Flange



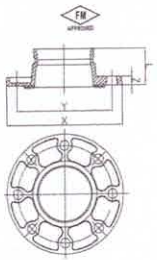




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	X mm/in	Y mm/in	Z mm/in	Bolt/Nut No.-SIZE mm	Certificate
200 8	219.1 8.625	145 1.0	80 3.150	340 13.39	295 11.61	19 0.75	8-M20	UL FM
250 10	273.0 10.750	145 1.0	85 3.346	405 15.94	350 13.78	21 0.83	12-M20	UL FM
300 12	323.9 12.750	145 1.0	90 3.543	460 18.11	400 15.75	24 0.94	12-M20	UL FM

321G
BS.TABLE 'E'
Adaptor Flange

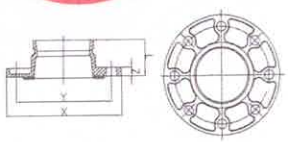




Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	X mm/in	Y mm/in	Z mm/in	Bolt/Nut No.-SIZE mm	Certificate
65 76.1	76.1 3.000	225 1.6	70 2.756	165 6.50	127 5.00	16 0.63	4-M16	—
80 3	88.9 3.500	225 1.6	70 2.756	184 7.24	146 5.75	16 0.63	4-M16	—
100 4	114.3 4.500	225 1.6	70 2.756	216 8.50	178 7.00	16 0.63	8-M16	FM
150 165.1	165.1 6.500	225 1.6	70 2.756	280 11.02	235 9.25	21 0.71	8-M20	FM
200 8	219.1 8.625	225 1.6	102 4.02	337 13.27	292 11.50	19 0.75	12-M20	—
250 10	273.0 10.75	225 1.6	85 3.35	405 15.94	356 14.02	25 0.98	12-M20	—
300 12	323.9 12.750	200 1.4	102 4.02	457 18.00	406 16.00	25.5 1.00	12-7/8	—
350 14	355.6 12.750	200 1.4	127 5.00	527 20.75	470 18.50	32 1.26	12-7/8	—
400 16	406.4 16.000	200 1.4	127 5.00	578 22.76	521 20.51	32 1.26	12-7/8	—
450 18	457.2 18.000	200 1.4	140 5.50	641 25.24	584 23.00	36 1.42	16-7/8	—

321GJ
JIS 10K
Adaptor Flange





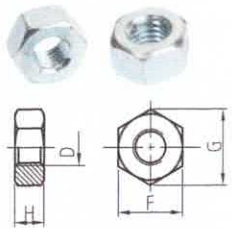
Nominal Size mm/in	Pipe O.D mm/in	Working Pressure PSI/MPa	Dimensions L mm/in	X mm/in	Y mm/in	Z mm/in	Bolt/Nut No.-SIZE mm	Certificate
65 2½	76.3 3.00	145 1.0	65 2.559	175 6.89	140 5.51	18 0.71	4-M16	—
80 3	88.1 3.50	145 1.0	65 2.559	185 7.28	150 5.91	18 0.71	8-M16	—
100 4	114.3 4.50	145 1.0	70 2.756	210 8.27	175 6.89	18 0.71	8-M16	—
125 5	139.8 5.50	145 1.0	70 2.756	250 9.84	210 8.27	20 0.79	8-M20	—
150 6	165.2 6.50	145 1.0	70 2.756	280 11.02	240 9.45	20 0.79	8-M20	—

Gasket Data



Gasket	Name	Temperature Range	General Service Recommendations	Color Mark
E	EPDM	-34~+110℃ (-30~+230° F)	Recommended for hot water service within the specified temperature range plus a variety of dilute acids,oil-free air and many chemical services.UL classified in accordance with ANSI/NSF 61or cold+86° F(+30°)and hot +180° F(+82℃) potable water service.Not recommended for petroleum service.	Black Green Strip
D	NBR	-29~+82℃ (-20~+180° F)	Recommended for petroleum products、air with oil vapors,vegetable and mineral oils within the specified temperature range.Not recommended for hot water services.	Orange Strip
S	Silicone	-40~+177℃ (-40~+350° F)	Recommended for high temperature dry air and some high temperature chemical products.	White

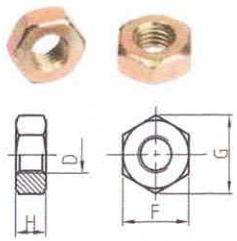
ANSI Heavy Hex Nut



1. Material: SAE J995 2.
2.Thread: ANSI B 1.1-1982, class 2B.
3.Surface Treatment: Zinc electroplated per ASTM B633 CLASS FE/ZN5 TYPE III, thickness ≥5 μ m per class SC1.

d	F		G		H	
	Min	Max	Min	Max	Min	Max
3/8-16UNC	16.99	17.47	19.38	20.17	8.66	9.57
1/2-13UNC	21.59	22.22	24.61	25.65	11.78	12.80
5/8-11UNC	26.19	26.97	29.85	31.16	14.90	16.02
3/4-10UNC	30.78	31.75	35.10	36.65	18.03	19.25
7/8-9UNC	35.41	36.53	40.36	42.16	21.16	22.48

Metric Heavy Hex Nut



1.Material: ISO 898-2:1992 \ GB/T3098.2-2000 Class 8.
2.Thread: ISO 261, tolerance 6h for M10& M12, 7h for M16 and above.
3.Surface Treatment: Zinc Electroplated followed by a yellow chromate dip per ISO 2081 FE/ZN5, ISO4520 CLASS 1A.

d	F		G	H	
	Min	Max	Min	Min	Max
M10	15.73	16.0	17.7	8.0	8.4
M12	21.16	22.0	23.9	9.34	10.0
M16	23.16	24.0	26.17	14.1	15.9
M20	29.16	30.0	32.95	16.9	19.0
M22	33.0	34.0	37.29	18.1	20.2

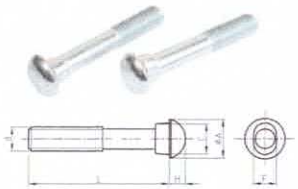
Hexagon Flange Nut



Dimension according to DIN6923.

d	S		D	h	
	Min	Max	Max	Min	Max
M8	12.3	13	17.9	7.6	8
M10	14.73	15.0	21.8	9.64	10
M12	17.73	18.0	26.0	11.57	12.0

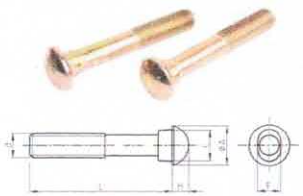
ANSI Oval Neck Track Bolt



1.Material:
2.Thread: UNC thread per ANSI B 1.1 Class 2A.
3.Surface Treatment: Silver chromate electroplated per ASTM B633 CLASS FE/ZN5 TYPE III, thickness ≥5 μ m per class SC1.

d	A	C	F	H	L
3/8-16UNC	19	13.9	9.50	6.0	55/70
1/2-13UNC	22.5	16	12.70	8.0	70/75
5/8-11UNC	27.4	19.8	15.90	10.0	80/85/105
3/4-10UNC	32.5	26.2	19.05	12.0	115/120
7/8-9UNC	37.7	28.8	22.20	14.0	125/140

Metric Oval Neck Track Bolt



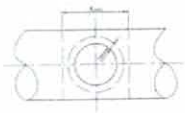
1.Material: ISO 898-1:1992 \ GB/T3098.1-2000 Class 8.8.
2.Thread: ISO metric thread per ISO 261, tolerance 6h.
3.Surface Treatment: Yellow chromate electroplated per ISO 2081 FE/ZN5, ISO4520 CLASS 1A.

d	A	C	F	H	L
M10	18.5	13.5	9.5	5	50/57/63/70/89
M12	23.5	17.5	12.3	8	70/76/82/89/108
M16	29.5	20.5	15.7	10	85/89/95/108
M20	38	27	18.3	12.5	110/115
M22	42.2	31	21.4	14	125/140/150

Hole Diameter of pipe



Hole–cutting Machine



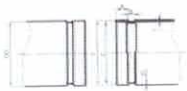
Run Nominal Size mm/in	Outlet Nominal Size mm/in	Hole Dia. +3.2,0+0.13,0 mm/in	Run Nominal Size mm/in	Outlet Nominal Size mm/in	Hole Dia. +3.2,0+0.13,0 mm/in	Run Nominal Size mm/in	Outlet Nominal Size mm/in	Hole Dia. +3.2,0+0.13,0 mm/in
50 2"/60.3	15 1/2	38 1.50 A89	100 108.0 4"/114.3	15 1/2	38 1.50 A89	150 159.0 165.1 6"/168.3	15 1/2	38 1.50 A89
	20 3/4			20 3/4			20 3/4	
	25 1			25 1			25 1	
	32 1¼	45 1.75 A102		32 1¼	51 2.00 A102		32 1¼	51 2.00 A102
	40 1½			40 1½			40 1½	
65 2½" /73.0 76.1	15 1/2	38 1.50 A89		50 2	64 2.50 A114		50 2	64 2.50 A114
	20 3/4			65 2½/76.1	70 2.75 A120		65 2½/76.1	70 2.75 A120
	25 1			80 3	89 3.50 A140		80 3	89 3.50 A140
	32 1¼	51 2.00 A102	125 133.0 139.7 5"/141.3	15 1/2	38 1.50 A89		100 108.0/4	114 4.50 A165
	40 1½			20 3/4		200 8"/219.1 250 10"/273.0	25 1	38 1.50 A89
80 3"/88.9	15 1/2	38 1.50 A89		25 1				
	20 3/4			32 1¼	51 2.00 A102		32 1¼	51 2.00 A102
	25 1			40 1½			40 1½	
	32 1¼	51 2.00 A102		50 2	64 2.50 A114		50 2	64 2.50 A114
	40 1½			65 2½/76.1	70 2.75 A120		65 2½/76.1	70 2.75 A120
	50 2	64 2.50 A114		80 3	89 3.50 A140		80 3	89 3.50 A140
							100 108.0/4	114 4.50 A165

The outside surface of the pie within 16mm from the hole must be clean and smooth.

Roll Groove Dimensions



Roll Grooving Machine



Nominal Size mm/in	Pipe OD			Gasket seat A ±0.76/±0.51 mm/in	Groove Width B ±0.76/±0.03 mm/in	Groove Dia C		Groove Depth D(ref) mm/in	Max.Allow Flare Dia F mm/in	Min.Allow wall thickness T mm/in
	Basic mm/in	Tolerance mm/in				Basic mm/in	Tolerance mm/in			
25 1	33.7 1.327	+0.41 +0.016	-0.68 -0.026	15.88 0.625	7.14 0.281	30.23 1.190	-0.38 -0.015	1.60 0.063	34.5 1.358	1.8 0.071
32 1¼	42.4 1.669	+0.50 +0.020	-0.60 -0.023	15.88 0.625	7.14 0.281	38.99 1.535	-0.38 -0.015	1.60 0.063	43.3 1.706	1.8 0.071
40 1½	48.3 1.900	+0.44 +0.017	-0.52 -0.020	15.88 0.625	7.14 0.281	45.09 1.779	-0.38 -0.015	1.60 0.063	49.4 1.945	1.8 0.071
50 2	60.3 2.375	+0.61 +0.024	-0.61 -0.024	15.88 0.625	8.74 0.344	57.15 2.250	-0.38 -0.015	1.60 0.063	62.2 2.449	1.8 0.071
65 2½	73.0 2.875	+0.74 +0.029	-0.74 -0.029	15.88 0.625	8.74 0.344	69.09 2.720	-0.46 -0.018	1.98 0.078	75.2 2.961	2.3 0.091
65 2½	76.1 3.000	+0.76 +0.030	-0.76 -0.030	15.88 0.625	8.74 0.344	72.25 2.845	-0.46 -0.018	1.95 0.078	77.7 3.059	2.3 0.091
80 3	88.9 3.500	+0.89 +0.035	-0.79 -0.031	15.88 0.625	8.74 0.344	84.94 3.344	-0.46 -0.018	1.98 0.078	90.6 3.567	2.3 0.091
100 4	108.0 4.250	+1.07 +0.042	-0.79 -0.031	15.88 0.625	8.74 0.344	103.73 4.084	-0.51 -0.020	2.11 0.083	109.7 4.319	2.3 0.091
100 4	114.3 4.500	+1.14 +0.045	-0.79 -0.031	15.88 0.625	8.74 0.344	110.08 4.334	-0.51 -0.020	2.11 0.083	116.2 4.575	2.3 0.091
125 5	133.0 5.250	+1.32 +0.052	-0.79 -0.031	15.88 0.625	8.74 0.344	129.13 5.084	-0.51 -0.020	2.11 0.083	134.9 5.311	2.9 0.114
125 5	139.7 5.500	+1.40 +0.055	-0.79 -0.031	15.88 0.625	8.74 0.344	135.48 5.334	-0.51 -0.020	2.11 0.083	141.7 5.579	2.9 0.114
125 5	141.3 5.563	+1.42 +0.056	-0.79 -0.031	15.88 0.625	8.74 0.344	137.03 5.395	-0.56 -0.022	2.13 0.084	143.5 5.650	2.9 0.114
150 6	159.0 6.250	+1.60 +0.063	-0.79 -0.031	15.88 0.625	8.74 0.344	154.50 6.083	-0.56 -0.022	2.16 0.085	161.0 6.339	2.9 0.114
150 6	165.1 6.500	+1.60 +0.063	-0.79 -0.031	15.88 0.625	8.74 0.344	160.8 6.330	-0.56 -0.022	2.16 0.085	167.1 6.579	2.9 0.114
150 6	168.3 6.625	+1.60 +0.063	-0.79 -0.031	15.88 0.625	8.74 0.344	163.98 6.455	-0.56 -0.022	2.16 0.085	170.7 6.720	2.9 0.114
200A 8	216.3 8.516	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	211.60 8.331	-0.64 -0.025	2.35 0.093	219.8 8.653	2.9 0.114
200 8	219.1 8.625	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	214.40 8.441	-0.64 -0.025	2.34 0.092	221.5 8.720	2.9 0.114
250A 10	267.4 10.528	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	262.60 10.339	-0.69 -0.027	2.40 0.095	270.9 10.665	3.6 0.142
250 10	273.0 10.750	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	268.28 10.562	-0.69 -0.027	2.39 0.094	276.4 10.842	3.6 0.142
300A 12	318.5 12.539	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	312.90 12.319	-0.76 -0.030	2.77 0.109	322.0 12.677	4.0 0.158
300 12	323.9 12.750	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	318.29 12.531	-0.76 -0.030	2.77 0.109	326.2 12.842	4.0 0.158
350 14	377.0 14.842	+1.60 +0.063	-0.79 -0.031	23.83 0.938	11.91 0.469	371.44 14.623	-0.76 -0.030	2.77 0.109	379.5 14.941	4.5 0.177
400 16	426.0 16.772	+1.60 +0.063	-0.79 -0.031	23.83 0.938	11.91 0.469	420.46 16.553	-0.76 -0.030	2.77 0.109	428.5 16.870	4.5 0.177
500 20	529.0 20.827	+1.60 +0.063	-0.79 -0.031	25.40 1.000	11.91 0.469	525.46 20.508	-0.76 -0.030	2.77 0.109	533.0 20.984	5.0 0.197

Pressure Ratings and End Loads for Mech Couplings on Steel Pipe



1G Rigid



1GS L/Duty Rigid



1N Reducing

Nom. Size	Pipe O.D	Pipe Sched	Wall Thick	1G		1GS		1NR	
				Roll Grooved		Roll Grooved		Roll Grooved	
				Max.Work Press.	Max.End Load	Max.Work Press.	Max.End Load	Max.Work Press.	End Load
DN/in	mm	(Sch)	mm	Bar/Psi	kN/Lbs	Bar/Psi	kN/Lbs	Bar/Psi	kN/Lbs
25	33.7	40	3.38	35/500	3.0/680	--	--	20/300	1.8/410
		10	2.77	35/500	3.0/680	--	--	20/300	1.8/410
32	42.4	40	3.56	35/500	4.8/1080	--	--	20/300	2.9/650
		10	2.77	35/500	4.8/1080	--	--	20/300	2.9/650
40	48.3	40	3.68	35/500	6.3/1420	--	--	20/300	3.8/850
		10	2.77	35/500	6.3/1420	--	--	20/300	3.8/850
50	60.3	40	3.91	35/500	9.8/2210	--	--	20/300	5.9/1330
		10	2.77	35/500	9.8/2210	--	--	20/300	5.9/1330
65	73	40	5.16	35/500	14.4/3240	--	--	20/300	8.7/1950
		10	3.05	35/500	14.4/3240	--	--	20/300	8.7/1950
65	76.1	--	6.35	--	--	--	--	--	--
		--	5.08	35/500	15.7/3530	20/300	9.4/2120	20/300	9.4/2120
		--	3.81	35/500	15.7/3530	20/300	9.4/2120	20/300	9.4/2120
80	88.9	40	5.49	35/500	21.4/4800	20/300	12.8/2885	20/300	12.8/2885
		10	3.05	35/500	21.4/4800	20/300	12.8/2885	20/300	12.8/2885
100	114.3	40	6.02	35/500	35.4/7950	20/300	21.2/4770	20/300	21.2/4770
		10	3.05	35/500	35.4/7950	20/300	21.2/4770	20/300	21.2/4770
125	141.3	40	6.55	31/450	48.6/10930	20/300	32.4/7290	20/300	32.4/7290
		10	3.4	31/450	48.6/10930	20/300	32.4/7290	20/300	32.4/7290
150	165.1	--	6.35	31/450	66.4/14930	20/300	44.3/9960	20/300	44.3/9960
		--	5.08	31/450	66.4/14930	20/300	44.3/9960	20/300	44.3/9960
150	168.3	40	7.11	31/450	68.9/15500	20/300	46.0/10340	20/300	46.0/10340
		10	3.4	31/450	68.9/15500	20/300	46.0/10340	20/300	46.0/10340
200	219.1	40	8.18	31/450	116.9/26280	20/300	77.8/17500	--	--
		30	7.04	31/450	116.9/26280	20/300	77.8/17500	--	--
		10	4.77	20/300	77.8/17500	20/300	77.8/17500	--	--
250	273	40	9.27	20/300	121.0/27210	--	--	--	--
		30	7.8	20/300	121.0/27210	--	--	--	--
		10	4.77	20/300	121.0/27210	--	--	--	--
300	323.9	40	10.31	20/300	170.3/38280	--	--	--	--
		STD	9.53	20/300	170.3/38280	--	--	--	--
		30	6.35	20/300	170.3/38280	--	--	--	--
		10	4.77	20/300	170.3/38280	--	--	--	--

Pressure Ratings and End Loads for Mech Couplings on Steel Pipe



1N Flexible



1NH Heavy Duty Flexible



321 Flange

Nom. Size	Pipe O.D	Pipe Sched	Wall Thick.	1N		1NH		321	
				Roll Grooved		Roll Grooved		Roll Grooved	
				Max.Work Press.	Max.End Load	Max.Work Press.	Max.End Load	Max.Work Press.	Max.End Load
DN/in	mm	(Sch)	mm	Bar/Psi	kN/Lbs	Bar/Psi	kN/Lbs	Bar/Psi	kN/Lbs
25	33.7	40	3.38	35/500	3.0/680	--	--	--	--
		10	2.77	35/500	3.0/680	--	--	--	--
32	42.4	40	3.56	35/500	4.8/1080	--	--	--	--
		10	2.77	35/500	4.8/1080	--	--	--	--
40	48.3	40	3.56	35/500	6.3/1420	--	--	16/225	3.2/710
		10	2.77	35/500	6.3/1420	--	--	16/225	3.2/710
50	60.3	40	3.91	35/500	9.8/2210	52/750	14.8/3320	16/225	4.4/1000
		10	2.77	35/500	9.8/2210	52/750	14.8/3320	16/225	4.4/1000
65	73	40	5.16	35/500	14.4/3240	52/750	21.7/4870	20/300	5.9/1330
		10	3.05	35/500	14.4/3240	41/600	17.3/3900	20/300	5.9/1330
65	76.1	--	6.35	--	--	--	--	--	--
		--	5.08	35/500	15.7/3530	52/750	23.6/5300	16/225	7.1/1590
		--	3.81	35/500	15.7/3530	41/600	18.9/4240	16/225	7.1/1590
80	88.9	40	5.49	35/500	21.4/4800	52/750	32.1/7210	16/225	9.6/2165
		10	3.05	35/500	21.4/4800	41/600	25.6/5760	16/225	9.6/2165
100	114.3	40	6.02	35/500	35.4/7950	52/750	53.0/11920	16/225	15.9/3580
		10	3.05	35/500	35.4/7950	41/600	42.4/9540	16/225	15.9/3580
125	141.3	40	6.55	31/450	48.6/10930	48/700	75.7/17010	20/300	31.3/7035
		10	3.4	31/450	48.6/10930	31/450	48.6/10930	20/300	31.3/7035
150	165.1	--	6.35	31/450	66.4/14930	48/700	102.7/23090	16/225	33.2/7460
		--	5.08	31/450	66.4/14930	31/450	66.4/14930	16/225	33.2/7460
150	168.3	40	7.11	31/450	68.9/15500	48/700	107.3/24120	16/225	34.5/7750
		10	3.4	31/450	68.9/15500	31/450	68.9/15500	16/225	34.5/7750
200	219.1	40	8.18	31/450	116.9/26280	41/600	155.7/35000	16/225	58.4/13140
		30	7.04	31/450	116.9/26280	41/600	155.7/35000	16/225	58.4/13140
		10	3.76	20/300	77.8/17500	20/300	77.8/17500	16/225	58.4/13140
250	273	40	9.27	20/300	121.0/27210	--	--	16/225	90.8/20410
		30	6.35	20/300	121.0/27210	--	--	16/225	90.8/20410
		10	4.19	20/300	121.0/27210	--	--	16/225	90.8/20410
300	323.9	40	10.31	20/300	170.3/38280	--	--	16/225	127.7/28710
		STD	9.53	20/300	170.3/38280	--	--	16/225	127.7/28710
		20	6.35	20/300	170.3/38280	--	--	16/225	127.7/28710
		10	4.57	20/300	170.3/38280	--	--	16/225	127.7/28710

Installation Instruction For Rigid & Flexible Coupling



1.Pipe preparation

Check pipe end for proper groove dimensions and to assure that pipe end is free of indentations and projections that would prevent proper sealing.



2.Lubricate gasket

Check gasket to be sure it's compatible for the intended service. Apply thin lubricant to the outside and sealing lips of the gasket.



3.Gasket installation

Slip the gasket over one pipe, making sure the gasket lip does not over-hang the pipe end.



4.Alignment

After aligning two pipe ends together, pull the gasket into position, centering between the grooves on each pipe. The gasket should not extend into the groove on either pipe.



5.Housing installation

Remove one bolt&nut and loosen the other nut. Place one housing over the gasket, making sure the housing keys fit into the pipe grooves. Swing the other housing over the gasket and into the grooves on both pipes. Re-insert the bolt and connect two housings.



6.Tighten nuts

Firstly hand tighten nuts and make sure oval neck bolt completely fits into bolt hole. Then securely tighten nuts alternatively and equally to the specified bolt torque by using spanner.



7 a.Assembly completed- Rigid Coupling

For Rigid Coupling, keep the gaps at bolt pads evenly spaced. Gaskets can't be seen visually.



7 b. Assembly completed- Flexible Coupling

For Flexible Coupling, two housings should be iron to iron connected. Gaskets can't be seen visually.

Caution
Proper torquing of bolts is required to obtain specified performance. - Over torquing the bolts may result in damage to the bolt and / or casting which could result in pipe joint separation. - Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque		
ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
Inch	Lbs-Ft.	N.m
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	130-180	175-245
7/8	180-240	245-325

Installation Instruction For Threaded & Grooved Mechanical Tee



1.Pipe preparation

Clean the gasket sealing surface within 16mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket. Don't drill the hole on weld line.



2.Remove burrs

If any burrs or slug exists at the pipe hole, please remove them before assembly, to protect the gasket and avoid leakage.



3.Gasket installation

Insert the gasket into outlet housing making sure the tab in the gasket line up with the tab recesses in the housing. Align outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



4.Alignment

Align the strap around the pipe, inser the bolts and tighten the nuts finger tight.



5.Tighten nuts

Alternatively and evenly tighten the nuts to the specified bolt torque.



6.Assembly completed

There should be even gaps on two sides between upper and lower housings.

Caution
Proper torquing of bolts is required to obtain specified performance. - Over torquing the bolts may result in damage to the bolt and / or casting which could result in pipe joint separation. - Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque		
ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
Inch	Lbs-Ft.	N.m
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	——	——
7/8	——	——

Installation Instruction For U-Bolt Mechanical Tee



1.Pipe preparation

Clean the gasket sealing surface within 16mm of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket. Don't drill the hole on weld line.



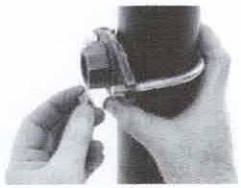
2.Remove burrs

If any burrs or slug exists at the pipe hole, please remove them before assembly, to protect the gasket and avoid leakage.



3.Gasket installation

Insert the gasket into outlet housing properly. Align outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



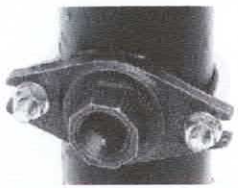
4.Alignment

Attach the U-bolt from the other side and tighten the nuts finger tight.



5.Tighten nuts

Alternatively and evenly tighten the nuts to the specified bolt torque.



6.Assembly completed

Assembly completed.

Caution
Proper torquing of bolts is required to obtain specified performance. - Over torquing the bolts may result in damage to the bolt and / or casting which could result in pipe joint separation. - Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque		
ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
Inch	Lbs-Ft.	N.m
3/8	30-45	40-60
1/2	80-100	110-135
5/8	100-130	135-175
3/4	——	——
7/8	——	——

Installation Instruction For Grooved Flange



1.Pipe preparation

Check pipe end for proper groove dimensions and to assure that pipe end is free of indentations and projections that would prevent proper sealing.



2.Lubricate gasket

Check gasket to be sure it's compatible for the intended service. Apply thin lubricant to the outside and sealing lips of the gasket.



3.Gasket installation

Slip the gasket over pipe end, with the gasket opening side towards "A". Make sure the gasket sealing lip is even with pipe end.



4.Housing installation

Remove bolts and nuts, place two housings over the gasket, making sure the housing keys fit into the pipe grooves. Re-insert the bolts and hand tighten the nuts.



5.Tighten nuts

Securely tighten nuts alternatively and equally to the specified bolt torque by using spanner.



6.Connect mating flange

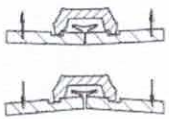
Align flange bolt holes with mating flange (or valve) bolt holes. Insert a standard flange bolt through bolt hole and hand tighten a nut. Insert another bolt opposite the first and hand tighten a nut. Continue this until all bolt holes are fitted. Tighten nuts evenly to specified bolt torque, so flange faces remain parallel. Assembly completed.

Caution
Proper torquing of bolts is required to obtain specified performance. - Over torquing the bolts may result in damage to the bolt and / or casting which could result in pipe joint separation. - Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

Specified Bolt Torque		
ANSI BOLTS		
Bolt Size	Specified Bolt Torque	
Inch	Lbs-Ft.	N.m
M10	30-45	40-60
M12	80-100	110-135
M16	——	——
M20	——	——
M22	——	——
M24	——	——

Flexible Coupling

1.A flexible coupling accommodates pipe deflection and or non-alignment as below: If nominal diameter <DN200, deflection angle is ≥1° ; If nominal diameter ≥DN200, deflection angle is ≥0.5° but <1° .



2.The C-shaped rubber gasket provides excellent self-sealing capabilities in both low and high pressure service as well as under certain vacuum conditions.

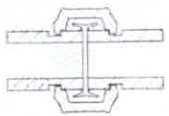
3.The design and construction of the coupling with elastomeric gaskets can provide significant noise and vibration absorption as well as seismic stress.

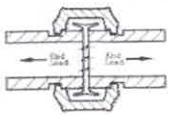
4.With the removal of just a few bolts you can easily access the system for cleaning, maintenance, changes or system expansion.



5.Coupling are non-directive and pipe can be rotated 360° during installation.

6.Coupling keys engage the full circumference of the grooves and provide significant pressure and end load restraint against pipe movement from internal and external forces.

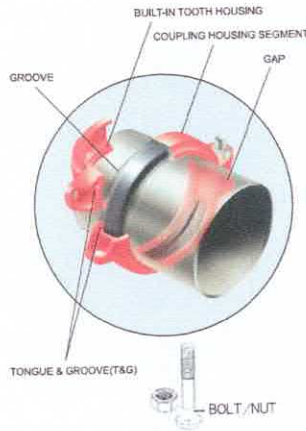




Rigid Coupling

1.The T&G mechanism in combination with a slightly shortened key diameter provides a mechanical and frictional interlock resulting in a rigid joint which reduces undesired angular movement.

2.The built-in teeth on the coupling grip the groove shoulder and serve to reduce linear movement.



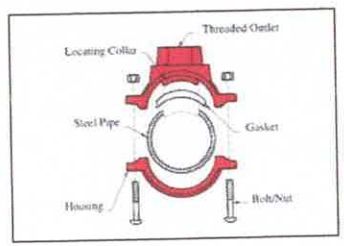
3.The T&G mechanism features a slight offset at the foot of the coupling halves which serve to protect the gasket from exposure.

4.With the T&G style coupling no metal-to-metal contact of the bolt pads is required. You will normally see a 1/16" - 1/8" (1.6mm to 3.2mm) gap between the bold pads when installed.

Mechanical Tee Connection

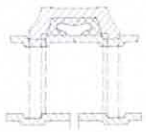
The Mechanical Tee (3J, 3G, 3L) provide for a fast and easy grooved or threaded branch outlet and eliminate the need for welding or the use of a reducing tee and couplings. Simply cut a hole to the specified size at the expected location and fasten the mechanical tee to the pipe with the nuts and bolts provided. As the housing bolts are tightened, the pressure responsive gasket forms a leak-tight seal.





Movement

Each flexible design coupling can provide for pipe system movement up to the design maximum for the specific size and type coupling being utilized. Movement is possible in the coupling due to two factors: (1) designed-in clearance between the key of the coupling and the groove diameter and groove width, and (2) the gap between pipe ends joined by the coupling.



1.Linear Movement

Linear movement is accommodated within the coupling by allowing the pipe ends to move together or apart in response to pressure thrusts and temperature changes. The available linear movement provided by couplings is shown below:

size	1-1¼ (25-32MM)	1½-12 (40-300MM)
movement	0-4.0MM	0-6.4MM



2.Angular Movement

Designed-in clearances allow limited deflection of the pipe joint within the coupling, without introducing eccentric loads into the coupling joint.

The maximum available angular movement of coupling joints is shown in the performance data for each coupling type. The amount of angular flexibility varies for each coupling size and type. For design purposes the published figures should be reduced by the below listed factors to account for pipe, groove and coupling tolerances.

size	1-3(IN)	4-12(IN)
Design factor	Reduce to 50%	Reduce to 75%

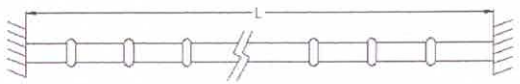
Flexible Couplings: Linear Movement and Angular Movement

Size		Cut			Roll Groove		
		Linear Movement	Angular Movement		Linear Movement	Angular Movement	
Inch	mm	mm	Degree	mm	mm	Degree	mm
1	33.7	2	2°-45'	48	1	1°-22'	24
1 1/4	42.4	2	2°-10'	38	1	1°-05'	19
1 1/2	48.3	3.2	1°-54'	33	1.6	0°-57'	16.5
2	60.3	3.2	1°-31'	26	1.6	0°-45'	13
2 1/2	73	3.2	1°-27'	25	1.6	0°-43'	12.5
2 1/2	76.1	3.2	1°-12'	21	1.6	0°-36'	10.5
3	88.9	3.2	1°-02'	18	1.6	0°-31'	9
4	108	3.2	1°-51'	32	1.6	0°-55'	16
4	114.3	3.2	1°-36'	28	1.6	0°-48'	14
5	133	3.2	1°-41'	30	1.6	0°-50'	15
5	139.7	3.2	1°-19'	23	1.6	0°-37'	11.5
5	141.3	3.2	1°-03'	18	1.6	0°-30'	9
6	159	3.2	1°-18'	23	1.6	0°-39'	11.5
6	165.1	3.2	1°-09'	20	1.6	0°-35'	10
6	168.3	3.2	1°-05'	19	1.6	0°-32'	9.5
8	219.1	3.2	0°-50'	15	1.6	0°-25'	7.5
10	273	3.2	0°-40'	12	1.6	0°-20'	6
12	323.9	3.2	0°-34'	10	1.6	0°-18'	5

Movement -Application

• Thermal stress

Thermal stress is caused by changes in temperature, resulting in either expansion or contraction. When designing a system you must allow for this thermal movement. To determine the appropriate number of flexible couplings to allow for this thermal movement please refer to the following.



Example:

- 4" straight steel pipe, 30m long
- Anchored on both ends
- Minimum temperature (during installation) = 5°C
- Maximum working temperature = 55°C

From the thermal expansion table, we know the overall pipeline length will increase by 18mm (0.71"). You can also use Formula 1 or Table 3 to find the amount of thermal expansion. We want to know the number of couplings that are required to address this thermal movement problem.

The allowed movement of a 4" flexible coupling is :

Movement range x Adjustment = Allowed movement

4.3mm x 75% = 3.2mm

The appropriate number of coupling is:

Thermal expansion / Allowed movement = Number of couplings

18mm / 3.2mm = 5.6

Conclusion:

The appropriate number of coupling is 6.

• Thermal Expansion

Temperature difference (°C)	Pipe length (m)					
	1	5	10	20	30	40
	Thermal Expansion(mm)					
1	0.012	0.06	0.12	0.24	0.36	0.48
5	0.06	0.3	0.6	1.2	1.8	2.4
10	0.12	0.6	1.2	2.4	3.6	4.8
20	0.24	1.2	2.4	4.8	7.2	9.6
30	0.36	1.8	3.6	7.2	11	15
40	0.48	2.4	4.8	9.6	14	20
50	0.6	3	6	12	18	24
60	0.72	3.6	7.2	14	22	29
70	0.84	4.2	8.4	17	25	34
80	0.96	4.8	9.6	19	29	39

Thermal Expansion Formula 1

$\lambda = \alpha \times L \times T$

λ : Thermal Expansion

α : Linear Expansion coefficient for steel

L : Pipe length

T : Temperature difference

Riser Design

Risers assembled with Flexible couplings are generally installed in either of two ways. In the most common method, the pipe ends are butted together within the coupling joint. Note that when installing risers, the gasket is first placed onto the lower pipe and rolled back away from the pipe end prior to positioning the upper pipe. Anchoring of the riser may be done prior to pressur-ization with the pipe ends butted or while pressurized, when, due to pressure thrust, the pipe ends will be fully separated.

An alternative method or riser installation is to place a metal spacer of a predetermined thickness, between the pipe ends when an additional length of pipe is added to the riser stack. The upper pipe length is anchored, the spacer removed and the coupling is then installed. This method creates a predetermined gap at each pipe joint which can be utilized in pipe systems where thermal move-ment is anticipated and in systems with rigid (threaded, welded, flanged) branch connections where shear forces due to pressure thrust could damage the rigid connections.

The following examples illustrate methods of installing commonly encountered riser designs.



Picture 1

• Risers without Branch Connections

Install the riser with the pipe ends butted.

Locate an anchor at the base of the riser (A) to support the total weight of the pipe, couplings and fluid. Provide pipe guides on every other pipe length, as a minimum, to pre-vent possible deflection of the pipe line at the coupling joints as the riser expands due to pressure thrust or thermal growth. Note that no intermediate anchors are required.

When the system is pressurized the pipe stack will "grow" due to pres-sure thrust which causes maximum separation of pipe ends within the couplings. The maximum amount of stack growth can be predeter-mined (see Linear Movement). In this example the pipe length "L" at the top of the riser must be long enough to permit sufficient deflec-tion (see Angular Movement) to accommodate the total movement "M" from both pressure thrust and thermal gradients.



Picture 2

• Risers with Branch Connections

Install the riser with the predetermined gap method. Anchor the pipe at or near the base with a pressure thrust anchor "A" capable of supporting the full pressure thrust, weight of pipe and the fluid column. Anchor at "B" with an anchor capable of withstanding full pressure thrust at the top of the riser plus weight of pipe column. Place intermediate anchors "C" as shown, between anchors "A" and "B". Also place intermediate clamps at every other pipe length as a minimum.

When this system is pressurized, the pipe movement due to pressure thrust will be strained and there will be no shear forces acting at the branch connections.

• Misalignment & Deflections

The angular movement capability of the flexible coupling permits the assembly of pipe joints where the piping is not properly aligned . At least two couplings are required to provide for lateral pipe misalignment . Deflection (longitudinal misalignment) may be accommodated within a single coupling as long as the angle of deflection does not exceed the value shown in the coupling performance data for the particular size and coupling type .

A pipe joint that utilizes the angular deflection capability of the coupling will react to pressure and thermal forces dependent upon the manner in which it is restrained . An unrestrained joint will react to these forces by straightening, thus reducing, if not eliminating, the deflection at the joint . If joint deflection has been designed into the pipe layout and must be maintained, then sufficient anchors must be provided to resist the lateral forces and hold the joint in the deflected condition .



The amount of deflection from pipe run centerline can be calculated utilizing the following equations:

$M=L \sin\theta$

$\theta=\sin^{-1}(G+D)$

$M=(G+D)\times L$

Where:

M = Misalignment (inches)

G = Maximum Allowable Pipe End Movement (Inches) as shown under "Performance Data" (Value to be reduced by Design Factor)

θ = Maximum Deflection (Degrees) from centerline as shown under "Performance Data" (Value to be reduced by Design Factor)

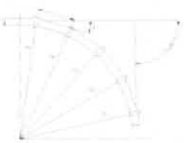
D = Pipe Outside Diameter (Inches)

L = Pipe Length (Inches)

• Curve Layout

Utilizing the angular deflection at each coupling joint curves may be laid out using straight pipe lengths and Couplings.

This example shows how to calculate the curve radius, required pipe lengths, and number of required couplings.



$R = L / (2 \times \sin(\theta/2))$

$L = 2 \times R \times \sin(\theta/2)$

$N = T / \theta$

WHERE:

N = Number of Couplings

R = Radius of Curve (feet)

L = Pipe Length (feet)

θ= Deflection from centerline (Degrees) of each Coupling

(See coupling performance data, value to be reduced by Design Factor)

T = Total Angular Deflection of all Couplings.

Anchoring and Supports

When designing the hangers, supports and anchors for a grooved end pipe system, the piping designer must consider certain unique characteristics of the grooved type coupling in additional to many universal pipe hanger and support design factors. As with any pipe system, the hanger or support system must provide for

1)the weight of the pipe, couplings, fluid and pipe system components;

2)reduce stresses at pipe joints; and

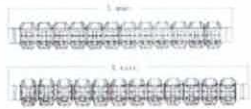
3)permit required pipe system movement to relieve stress.

The following chart shows the maximum span between pipe hangers, supports and anchors.

Max. Span between Supports (steel pipe)

Nominal Size (mm)		15	20	25	32	40	50	70	80	100	125	150	200	250	300
Max. Span Between Supports (mm)	Insulating Pipe	2	2.5	2.5	2.5	3	3	4	4	4.5	6	7	7	8	8.5
	Non-insulating Pipe	2.5	3	3.5	4	4.5	5	6	6	6.5	7	8	9.5	11	12

Movement capability of couplings-expansion and contraction joints



Nominal Size	Pipe O.D. (mm)	Maximum Allowable Movement (mm)	L min. (mm)	L max. (mm)	Number of Couplings	Filled With Water Pressure
1	33.7	45	617	662	10	300
1¼	42.4	45	617	662	10	300
1½	48.3	45	617	662	10	300
2	60.3	45	617	662	10	300
2½	73.0	45	617	662	10	300
76.1	76.1	45	617	662	10	300
3	88.9	45	617	662	10	300
4	114.3	47	503	550	7	300
139.7	139.7	47	503	550	7	300
5	141.3	47	503	550	7	300
165.1	165.1	52	503	550	7	300
6	168.3	52	591	643	7	300
8	219.1	52	591	643	7	300
10	273.0	52	591	643	7	300
12	323.9	52	591	643	7	300

Engineering Test

No.	Item	Standard Requirements
1	Vacuum Test	Grooved couplings, grooved reducing couplings, grooved split flanges, mechanical tees, and plain end couplings shall be able to withstand the effects of vacuum conditions encountered when sprinkler systems are drained. Samples of each nominal size and style of gasketed coupling and fitting shall be subjected to an internal vacuum of 25 inHg (85 kPa) for a duration of 5 minutes. Following the vacuum test, the test assembly shall be pneumatically pressurized from zero to 50 psi (345 kPa) while submerged in a water bath. There shall be no leakage or permanent deformation as a result of this test.
2	Hydrostatic Strength Test	All items shall be able to withstand an internal hydrostatic pressure equal to three-five times the rated working pressure without cracking, rupture, or permanent distortion. . The test shall be conducted for a duration of 1 minute. (Test Size ≤8" , Five time; 8" -10" , 4time; ≥12" , 3times)
3	Air Leakage Test	The coupling assembly shall be pressurised with air to 3 bar +0.5/-0 bar. The assembly shall be immersed in water to establish that there is no visible leakage
4	Moment Test	The moment resistance shall be demonstrated while the test assembly is internally pressurized to the rated working pressure. Then a force was applied to the test assembly. There shall be no leakage, cracking, or fitting or coupling pull-off as a result of this test.
5	Hot Gasket Test	Standard gaskets shall be assembled to short lengths of pipe, and subjected to 275° F (135° C) for a duration of 45 days. After exposure, the test assembly shall be submerged in a water bath and subjected to an air under water leakage test from zero to 50 psi (0 to 345 kPa) in order to evaluate for leakage. After the air under water testing is completed, the test assembly shall be disassembled and the gasket shall not crack when squeezed together from any two diametrically opposite points, or twisted into a figure-eight shape. The gasket shall then be visually inspected for signs of cracking, tearing, or excessive degradation as a result of this test.
6	Cold Gasket Test	The low temperature exposure shall consist of -40 ° F (-40 ° C) air exposure for 4 days. After exposure, the assembly while submerged in -40 ° F (-40 ° C) antifreeze, shall be pneumatically pressurized from 0 to 50 psi (0 - 345 kPa). No leakage shall occur. The assembly shall then be allowed to warm to ambient temperature and then be disassembled. The gasket, after removal from the assembly, shall not crack when squeezed together from any two diametrically opposite points, or twisted into a figure eight shape.
7	Flame test	The test shall be conducted in a room free from air draught.. The test joint is mounted, U-bent on the test apparatus and filled with water. The angle corresponds to the angle documented as a result of the test Subsequently the test joint is drained. The fuel pan is placed centrally below the pipe joint Fuel is filled into the pan and the fuel is ignited.. Burning time 5 min for nominal diameters < DN 100; 8 min for nominal diameters ≥ DN 100 For reducer couplings the dimension of the smaller nominal diameter shall apply for the determination of the burning time. The flame shall be extinguished immediately once the burning time has expired (5 min or 8 min) and the test joint shall be cooled down. For cooling the test joint is immediately sprayed with water until steam formation is no longer visible, but at least for 3 min. The test joint is then filled completely with water and exposed to a test pressure which corresponds to the maximum permissible pressure and is checked visibly for leaks. Water may leak in form of drops, however, not in form of flowing water or a water spray. The test joint is then pressure relieved (force and internal pressure).
8	Cycling Pressure Resistance (Water Hammer Test)	Prior to the cycling, assemblies shall be subjected to a hydrostatic strength test to the rated working pressure, 175 psi (1205 kPa) minimum, for a duration of 5 minutes. Without leakage or cracking. Assemblies shall then be subjected to 20,000 cycles from zero pressure to the rated working pressure, 175 psi (1205 kPa) minimum. After cycling, the test assembly shall be tested Hydrostatic Strength and maintain 5minutes without leakage and cracking.

Engineering Test

No.	Item	Standard Requirements
9	Friction Loss Determination	The construction and installation of the coupling or fitting shall be such that obstruction to the passage of water through the coupling or fitting body is minimal. The loss in pressure through the coupling or fitting shall not exceed 5.0 psi (35 kPa) at a flow producing a velocity of 20 ft/s (6.1 m/s) in Schedule 40 steel pipe of the same nominal diameter as the coupling or fitting.
10	Leakage Test - Assembly without Gasket	Leakage from a gasket-less coupling assembly or fitting shall not exceed that of an operating sprinkler head whose discharge coefficient (K-factor) is 5.3 to 5.8 gal/min(psi)1/2 [76 - 84 L/min/(bar)1/2].This test is for nominal pipe sizes normally associated with over-head piping, less than or equal to 12 in. NPS (300 mm).
11	Torsion test	This test relates to pipe joints ≤ DN 40 only. The test joint is filled with water and exposed once to the maximum permissible pressure and is then pressure relieved again. Subsequently the test joint is fixed on one pipe end and an increasing torque is applied to the other pipe end. At the pressure-less test joint the pipe joint shall be able to transmit a torque of up to 80 Nm from one pipe end to the other pipe end without any torsion of the pipe ends against each other.
12	Flexibility Test for Flexible Fittings	With the assembly pressurized to its rated pressure, a bending moment is to be applied to deflect the joint to the maximum angle specified by the manufacturer, while not less than 1 degree for nominal pipe diameters less than 8 inches (203.2 mm) or 0.5 degrees for 8 inches (203.2 mm) and larger. Observations are to be made for leakage or pipe damage.
13	Seismic Evaluation	In order to evaluate the use of grooved couplings in Earthquake zones 50 through 500 years, test assemblies utilizing flexible couplings and short lengths of steel pipe, in the same nominal size, will be subjected to cyclic testing. The test will deflect the assembly to the manufacturer ° s maximum recommended angle in the forward and reverse direction for a total 15 cycles with the internal pressure equal to the rated working pressure. There shall be no leakage, cracking, or rupture as a result of this test.
14	Lateral Displacement	The coupling shall not leak during any of the tests, within the manufacturer ° s stated limitations for angular deflection or lateral displacement of associated pipework.
15	Hydrostatic fluctuation pressure test	The coupling assembly shall be pressurised with water to a gauge pressure of 10 bar ± 1 bar for 2min, +30s/-0s to establish a datum. The assembly shall then be drained before being subjected to the greatest vacuum attainable to a maximum of 600mm almercury or –0.8bar +0bar/-0.1 bar for 2min +30s/-0s, and allowed to return to atmospheric pressure in not less than 5s. The assembly shall then be pressurised with water to 10 bar ± 1bar for 2 min +30s/-0s. The assembly shall be examined for leakage throughout the test. The relative movement of each pipe shall be recorded at the greatest vacuum and at each pressure. There shall be no leakage.
16	Fire Test	If a gasketed pipe coupling or fitting employs non-ferrous materials for its substantial structural components, or if in the judgment of FM Approvals, the design is otherwise suspect with respect to fire resistance, a fire test shall be conducted. A representative size assembled joint without a gasket shall be exposed to a 1000 ° F (538 ° C) fire environment for 5 minutes. The assembly shall be dry for the duration of this exposure. Immediately after the exposure, a water flow shall be introduced through the joint and sustained until the assembly is cool to the touch. No cracking or distortion of any component of the coupling or fitting shall occur. The coupling or fitting shall then be disassembled and the gasket installed. After reassembly, the joint shall be hydrostatically tested, as described in to the hydrostatic test.

Grooved Butterfly Valve with Tamper Switch (XD381X), UL Listed

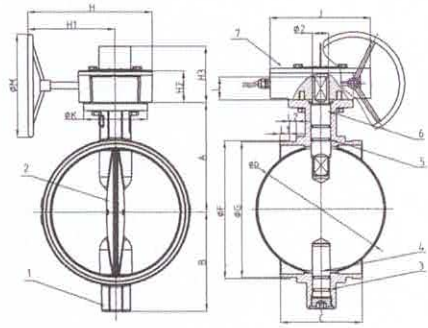


OC2700.7CL

XD381X

NSF/ANSI 61 NSF/ANSI 372

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211
  Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 300PSI
  175PSI, 200PSI and 250PSI available upon request
- Temperature Range: 0℃- 100℃
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

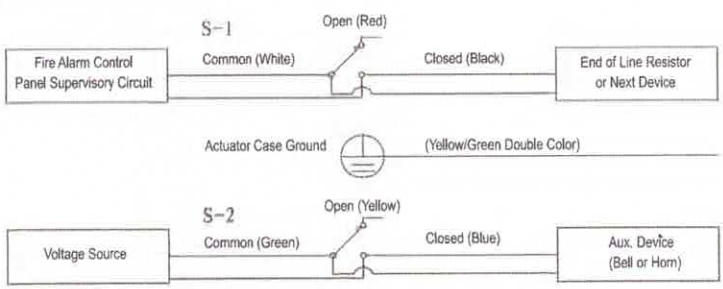


MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	ASTM A536, 65-45-12	
2	Disc	ASTM A536, 65-45-12+EPDM	ASTM A536, 65-45-12+NBR
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
5	O-Ring	NBR	EPDM
6	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
7	Signal Gear Box	ASTM A536, 65-45-12	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

SWITCH WIRING DIAGRAM



DN		Dimensions(mm)																
Inch	mm	A	B	C	ΦD	ΦF	ΦG	L1	L2	L	ΦK	H	H1	H2	H3	J	ΦM	Φ2	ISO 5211
2"	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	208	151	65	108	147	150	14	F07
2.5"	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	208	151	65	108	147	150	14	F07
3"	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	208	151	65	108	147	150	14	F07
4"	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	208	151	65	108	147	150	16	F07
5"	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	208	151	65	108	147	150	16	F07
6"	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	208	151	65	108	147	150	20	F07
8"	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	298	223	77	121	184	200	26	F10
10"	250	216	196	159	252	273.0	268.28	19.05	12.70	45	125	298	223	77	121	184	200	26	F10
12"	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	299	224	77	121	184	250	28	F10

Note: Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.

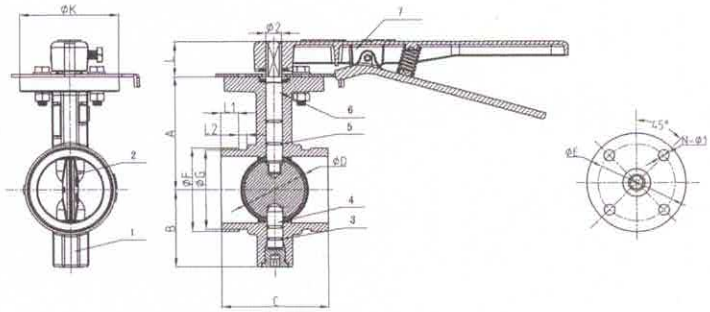
Grooved Butterfly Valve
(D81X4, D381X4)



D81X4

NSF/ANSI 61 NSF/ANSI 372

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211
  Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 300PSI
  175PSI, 200PSI and 250PSI available upon request
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

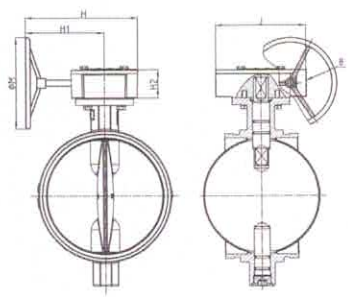


MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	ASTM A536, 65-45-12	
2	Disc	ASTM A536, 65-45-12+EPDM	ASTM A536, 65-45-12+NBR
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
5	O-Ring	NBR	EPDM
6	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
7	Lever	ASTM A536, 65-45-12	Aluminum
8	Gear Box	ASTM A536, 65-45-12	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.





D381X4

DN		Dimensions(mm)																		
Inch	mm	A	B	C	ΦD	ΦF	ΦG	L1	L2	L	ΦK	H	H1	H2	J	ΦM	Φ2	ISO 5211	ΦE	N-Φ1
2"	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
2.5"	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
3"	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
4"	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	206	158	52	114	150	16	F07	70	4-Φ10
5"	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	206	158	52	114	150	16	F07	70	4-Φ10
6"	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	206	158	52	114	150	20	F07	70	4-Φ10
8"	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	310	239	69	167	300	26	F10	102	4-Φ12
10"	250	216	196	159	252	273.0	268.28	19.05	12.70	45	125	310	239	69	167	300	26	F10	102	4-Φ12
12"	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	307	229	73	190	300	28	F10	102	4-Φ12
14"	377	290	241	178	324	377	371.4	23.8	12.7	45	150	307	229	73	190	300	31.7	F12	125	4-Ø14

Note: Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.

Grooved Resilient Swing Check Valve (H84X), UL/FM Approved

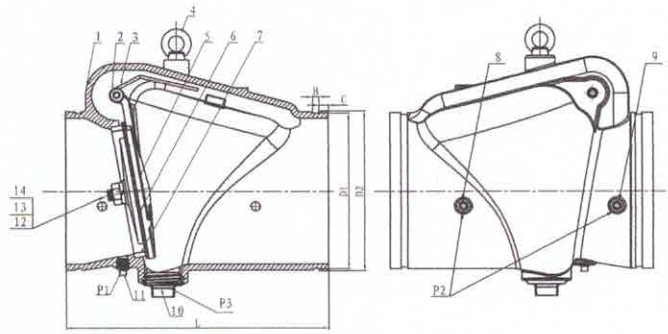


H84X

- Connection Ends: Groove to AWWA C606
- Working Pressure: 300PSI
  200PSI and 250PSI available upon request
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



H84XF4



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	ASTM A536, 65-45-12	
2	Hinge Pin	AISI 420	
3	Spring	AISI 304	AISI 316
4	Eye Bolt	Carbon Steel Zinc Plated	
5	Disc	DN50-100 AISI 304 DN150-300 ASTM A536, 65-45-12	AISI 304
6	Disc Sealing Ring	EPDM	
7	Seat Ring	ASTM B62 C83600 (Pressed Fit)	AISI 304, AISI 316 Pressed Fit or Threaded
8	Plug	Malleable Iron Galvanized	Bronze ASTM B584
9	Plug	Malleable Iron Galvanized	Bronze ASTM B584
10	Plug	Malleable Iron Galvanized	Bronze ASTM B584
11	Plug	Malleable Iron Galvanized	Bronze ASTM B584
12	Bolt	AISI 304	AISI 316
13	Washer	AISI 304	AISI 316
14	Nut	AISI 304	AISI 316

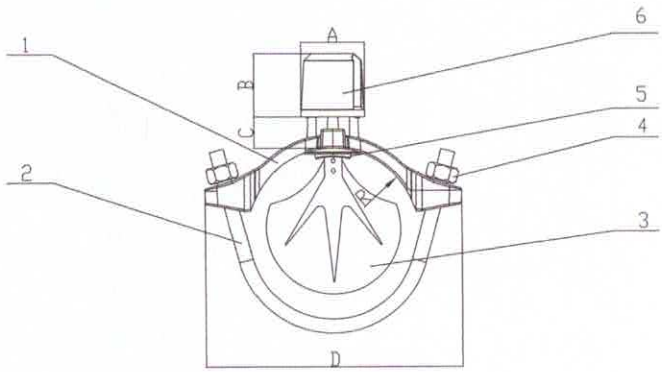
Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)								
Inch	mm	L	D1	D2	B	C	P1	P3		P2
								Standard	Optional	
2"	50	171	57.15	60.3	7.93	15.88	1/2-14NPT	1/2-14NPT	1-11.5NPT	3/8-18NPT
2.5"	65	184	69.09	73	7.93	15.88	1/2-14NPT	1/2-14NPT	1 1/4-11.5NPT	3/8-18NPT
3"	80	197	84.94	88.9	7.93	15.88	1/2-14NPT	1/2-14NPT	1 1/4-11.5NPT	3/8-18NPT
4"	100	210	110.08	114.3	9.53	15.88	1/2-14NPT	1/2-14NPT	2-11.5NPT	1/2-14NPT
5"	125	248	137.03	141.3	9.53	15.88	1/2-14NPT	1/2-14NPT	2-11.5NPT	1/2-14NPT
6"	150	324	163.96	168.3	9.53	15.88	1/2-14NPT	1/2-14NPT	2-11.5NPT	1/2-14NPT
8"	200	371	214.4	219.1	11.13	19.05	1/2-14NPT	1/2-14NPT	2-11.5NPT	1/2-14NPT
10"	250	457	268.28	273	12.7	19.05	1/2-14NPT	1/2-14NPT	2-11.5NPT	1/2-14NPT
12"	300	535	318.29	323.9	12.7	19.05	1/2-14NPT	1/2-14NPT	2-11.5NPT	1/2-14NPT

Water Flow Indicator (ZSJZ)



ZSJZ



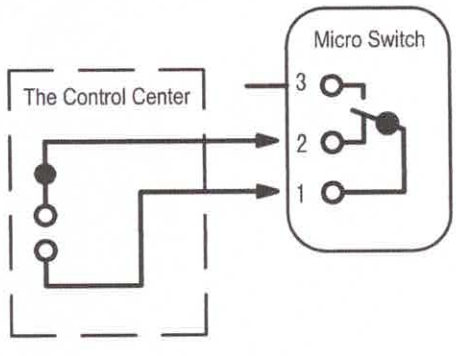
- Connection Ends: AWWA C606
- Working Pressure: 300PSI
  200PSI and 250PSI available upon request
- Temperature Range: 0℃ - 100℃
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Body	ASTM A536, 65-45-12	
2	Bolt	Carbon Steel Zinc Plated	AISI 304, AISI 316
3	Lodicule	Plastic	
4	Nut	Carbon Steel Zinc Plated	AISI 304, AISI 316
5	Gasket	EPDM	NBR

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

SWITCH WIRING DIAGRAM



DN		Dimensions(mm)					
Inch	mm	R	A	B	C	D	Hole Dia.
2"	50	60.3	62	48	36	120	32
2.5"	65	73	62	48	31	130	32
3"	80	88.9	62	48	36.5	145	51
4"	100	114.3	62	48	30.5	185	51
5"	125	141.3	62	48	36.5	221.5	51
6"	150	168.3	62	48	33	254	51
8"	200	219.1	62	48	36.5	300	51

Flanged Resilient OS&Y Gate Valve (XZ41X), UL/FM Approved



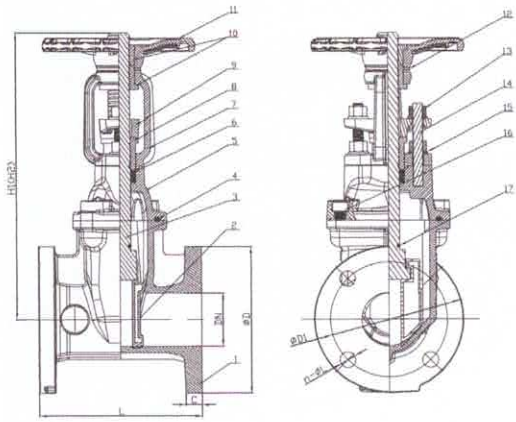
NSF/ANSI 61 NSF/ANSI 372
OC2700.7CL

XZ41X

- Connection Ends: Flange to ASME B16.1 CL 125
- Working Pressure: 300PSI
  200PSI and 250PSI available upon request
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating Complies with ANSI/ AWWA C550



XZ41X-1



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	ASTM A536, 65-45-12	
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM	
3	Stem	Stainless Steel	AISI 304, AISI 316, AISI 420, AISI 431
4	Bonnet Gasket	EPDM	
5	Bonnet	ASTM A536, 65-45-12	
6	Stem Packing	EPDM	
7	Yoke	ASTM A536, 65-45-12	
8	Stem Bushing	Brass Hpb59-1	
9	Gland	ASTM A536, 65-45-12	
10	Stem Nut	Brass Hpb59-1	Bronze ZQSn5-5-5
11	Handwheel	ASTM A536, 65-45-12	Pressed Steel
12	Washer	Brass Hpb59-1	
13	Gland Nut	Carbon Steel Zinc Plated	AISI 304, AISI 316
14	Stud	Carbon Steel Zinc Plated	AISI 304, AISI 316
15	Flat Washer	Carbon Steel Zinc Plated	AISI 304, AISI 316
16	Nut	Carbon Steel Zinc Plated	AISI 304, AISI 316
17	O-Ring	NBR	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.
Size 2"~5" with 1pc of 1/2" bronze NPT tapping plug, size 6"~12 with 1pc of 3/4" bronze NPT tapping plug.

DN		Dimensions(mm)						
Inch	mm	L	H1(Close)	H2(Open)	D	D1	C	n-ΦL
2"	50	178	348	400	152	120.7	16.0	4-Φ19.1
2.5"	65	190	373	440	178	139.7	17.5	4-Φ19.1
3"	80	203	408	490	191	152.4	19.1	4-Φ19.1
4"	100	229	471	573	229	190.5	19.1	8-Φ19.1
5"	125	254	541	665	254	215.9	19.1	8-Φ22.2
6"	150	267	601	755	279	241.3	19.1	8-Φ22.2
8"	200	292	774	975	343	298.5	22.2	8-Φ22.2
10"	250	330	939	1193	406	362.0	23.8	12-Φ25.4
12"	300	356	1065	1370	483	431.8	25.4	12-Φ25.4

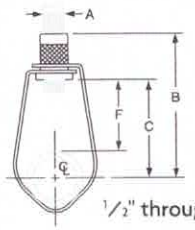
Fig. 69 Adjustable Swivel Ring, Tapped Per NFPA Standards

Size Range: 1/2" through 8"
Material: Carbon steel
Finish: ❑ Galvanized
Service: Recommended for suspension of non-insulated **stationary** pipe line.
Maximum Temperature: 650° F
Approvals: Complies with Federal Specification A-A-1192A (Type 10) *WW-H-171-E (Type 10)*, ANSI/MSS SP-69 and MSS SP-58 (Type 10). UL Listed and FM Approved (Sizes 3/4" - 8").
Features:

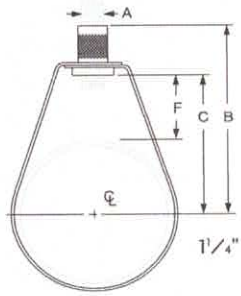
- Threads are countersunk so that they cannot become burred or damaged.
- Knurled swivel nut provides vertical adjustment after piping is in place.
- Captured swivel nut in the 1/2" through 6" sizes. The capture is permanent in the bottom portion of the band, allowing the hanger to be opened during installation if desired, but not allowing the nut to fall completely out.

Ordering: Specify size, figure number and name.
Note: The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.
Metric nut available upon request. Non-captured nut also available upon request.





1/2" through 1" pipe



1 1/4" through 8" pipe

FIG. 69: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)						
Pipe Size	Max Load	Weight	Rod Size A	B	C	F
1/2	300	0.10	3/8	2 7/8	2	1 9/16
3/4		0.10		2 3/4	1 7/8	1 5/16
1		0.10		2 9/16	1 11/16	1
1 1/4		0.10		2 5/8	1 3/4	7/8
1 1/2		0.10		2 3/4	1 7/8	
2		0.11		3 1/4	2 3/8	1 1/8
2 1/2	525	0.20		4	2 3/4	1 5/16
3		0.20		3 13/16	2 15/16	1 3/16
4	650	0.30		4 11/16	3 13/16	1 9/16
5	1,000	0.54	1/2	5 5/16	4 3/8	
6		0.65		6 11/16	5 9/16	2 1/4
8		1.00		8	7	2 11/16

Note: Reflects changes in rod diameter from previously published data per recent revisions in MSS-SP-58 & 69

PROJECT INFORMATION	APPROVAL STAMP
Project:	❑ Approved
Address:	❑ Approved as noted
Contractor:	❑ Not approved
Engineer:	**Remarks:**
Submittal Date:	
Notes 1:	
Notes 2:	

Sway Brace Fittings

FUNCTION: Designed for bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system used in conjunction with a PHD Manufacturing structural attachment fitting, and joined together with a bracing pipe element forms a complete sway brace assembly. Sway brace assemblies are intended to be installed in accordance with NFPA 13 and the manufacturer's installation instructions.

SIZE: Pipe size 2-1/2" thru 8".
Pipe size used for bracing 1" or 1 1/4" Schedule 40 IP.

FINISH: Electro-galvanized

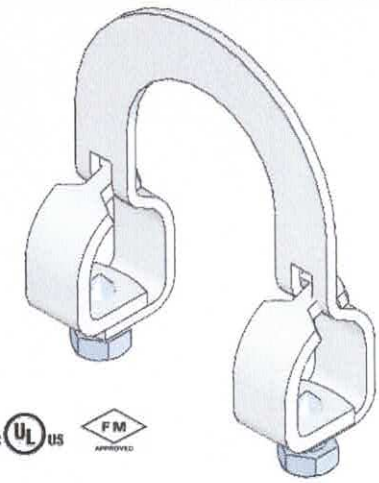
MATERIAL: Low Carbon Steel

INSTALL: Place over the pipe to be braced, adjust brace angle, and insert bracing pipe through opening leaving a minimum of 1" extending from attachment. Brace pipe can be installed on top or bottom of pipe to be braced but must be a minimum of 6" away from a pipe joint. Tighten two hex head cone point set bolts until heads bottom out on attachment, ensuring proper torque has been applied.

APPROVALS: Underwriters Laboratories listed for US and Canada (2 1/2" thru 6" only)
Factory Mutual approved
Listed for use with NFPA and PHD sway brace components only

ORDERING: Specify figure number, brace pipe size, and sprinkler pipe size

Fig. 015
LARGE SWAY BRACE PIPE ATTACHMENT



FM Maximum Design Load Brace: 1" Thru 2" SCH40 Pipe (GB/T3091, EN10255H, or JISG3454)								
Pipe Size SCH 10, 40 & Flow Pipe		Brace Angle From Vertical (Degrees)	lbs.	kN	Weight Ea. 1" (25mm) Brace Pipe		1 1/4" (32mm) Brace Pipe	
					lbs.	kg	lbs.	kg
2 1/2	(65)	30°-44°	1020	(4.53)	1.31	(0.59)	1.49	(0.68)
		45°-59°	1440	(6.40)				
		60°-74°	1770	(7.87)				
		75°-90°	1970	(8.76)				
3	(80)	30°-44°	1080	(4.80)	1.40	(0.64)	1.57	(0.71)
		45°-59°	1530	(6.80)				
		60°-74°	1870	(8.31)				
		75°-90°	2090	(9.29)				
4	(100)	30°-44°	1020	(4.53)	1.53	(0.69)	1.70	(0.77)
		45°-59°	1450	(6.44)				
		60°-74°	1770	(7.87)				
		75°-90°	1980	(8.80)				
6	(150)	30°-44°	640	(2.84)	1.81	(0.82)	1.98	(0.90)
		45°-59°	900	(4.00)				
		60°-74°	1110	(4.93)				
		75°-90°	1240	(5.51)				
8	(200)	30°-44°	570	(2.53)	2.07	(0.94)	2.24	(1.02)
		45°-59°	810	(3.60)				
		60°-74°	990	(4.40)				
		75°-90°	1100	(4.89)				

UL Maximum Design Load			
Pipe Size SCH 10 & 40		lbs.	kN
2 1/2	(65)	1000	(4.45)
3	(80)	1000	(4.45)
4	(100)	1000	(4.45)
6	(150)	1600	(7.12)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

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FIG. 015 LARGE SWAY BRACE PIPE ATTACHMENT

Pipe Braced: 2 1/2", 3", 4", 6", 8"

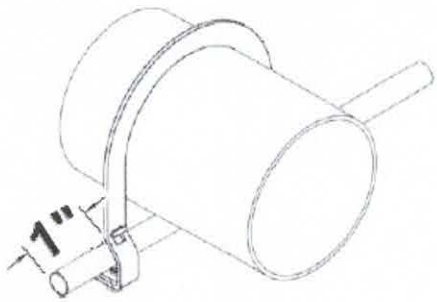
Bracing: 1" Or 1 1/4" SCH40 steel pipe

Function: Designed for bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system used in conjunction with a PHD Manufacturing structural attachment fitting, and joined together with a bracing pipe element forms a complete sway brace assembly. Sway brace assemblies are intended to be installed in accordance with NFPA 13 and the manufacturer's installation instructions.

Approvals: Underwriters Laboratories listed for US and Canada; Sizes 2 1/2" through 6"
Factory Mutual approved; Sizes 2 1/2" through 8"
Listed for use with NFPA and PHD sway brace components only

Material: Low Carbon Steel

Installation: Place over the pipe to be braced, adjust brace angle, and insert bracing pipe through opening leaving a minimum of 1" extending from attachment. Brace pipe can be installed on top or bottom of pipe to be braced but must be a minimum of 6" away from a pipe joint. Tighten two hex head cone point set bolts until heads bottom out on attachment, ensuring proper torque has been applied.



UL Maximum Design Loads				
Pipe Size	Pipe Schedule	Brace Size	Brace Schedule	lbs.
2 1/2	40	1 & 1 1/4	40	1000
3	10 & 40	1 & 1 1/4	40	1000
4	10 & 40	1 & 1 1/4	40	1000
6	10 & 40	1 & 1 1/4	40	1600

FM Approved Loads							
			Allowable Horizontal Capacity Per Installation Angle (lbs.)				
			Brace Angle From Vertical				
Orientation	Pipe Size	Pipe Schedule	30°-44°	45°-59°	60°-74°	75°-90°	Brace Member
Lateral	2 1/2	LW, 10, 40	1020	1440	1770	1970	1" or 1 1/4" Schedule 40 Pipe
Lateral	3	LW, 10, 40	1080	1530	1870	2090	1" or 1 1/4" Schedule 40 Pipe
Lateral	4	LW, 10, 40	1020	1450	1770	1980	1" or 1 1/4" Schedule 40 Pipe
Lateral	6	LW, 10, 40	640	900	1110	1240	1" or 1 1/4" Schedule 40 Pipe
Lateral	8	LW, 10, 40	570	810	990	1100	1" or 1 1/4" Schedule 40 Pipe

NOTE: LW above refers to FM Approved Lightwall pipe, commonly referred to as Schedule 7. These ratings may also be applied to EN10220 and GB/T 8163 pipe. Schedule 10 above may be applied to GB/T 3091, GB/T 3092, EN 10255 M and H, JIS G3452. Schedule 40 above may be applied to GB/T3091, EN10255H or JISG3454 brace pipe.

Sway Brace Fittings

FUNCTION: Designed for bracing pipe against sway and seismic disturbance. Versatile design allows for attachment at any angle and the ability to be used in a lateral or longitudinal bracing configuration. The pipe attachment component of a sway brace system used in conjunction with a PHD Manufacturing structural attachment fitting and joined together with a bracing element form a complete sway brace assembly. Sway brace assemblies are intended to be installed in accordance with NFPA 13 and the manufacturer's installation instructions.

SIZE: Pipe sizes 2" thru 8".
Can use 1" thru 2" SCH 40 pipe, structural steel, and PHD 12 gauge strut channel (1001 & 1201) as sway bracing elements.

FINISH: Electro-galvanized

MATERIAL: Ductile Iron and Low Carbon Steel, Grade 5 clamping bolts

INSTALL: Place attachment around pipe to be braced, positioning brace attachment as needed, then tighten clamping bolts and nuts finger tight. Insert brace component into fitting against back of jaw. Tighten set screw finger tight, adjust brace angle as needed, then tighten set screw until hex head breaks off. Then evenly torque clamping bolts until hex portion of clamping nuts break off.

APPROVALS: Underwriters Laboratories listed for US and Canada
Factory Mutual approved
Listed for use with PHD sway brace components only

ORDERING: Specify figure number and sprinkler pipe size

Fig. 031
CLAMPING
PIPE ATTACHMENT



c UL us FM

UL Maximum Design Loads
All Pipe Sizes, SCH 10 & 40 (3 1/2 SCH 40 only)
Lateral & Longitudinal Assemblies

Brace Member	Member Thickness	Member Length	lbs.	kN
1" Thru 2" Pipe	SCH 40	Refer to NFPA13	2015	(8.96)
Structural Steel	1/4" & 3/8" thick	Refer to NFPA13	2015	(8.96)
1001 Series Strut	12 Ga.	See Chart Below	2015	(8.96)
1201 Series Strut	12 Ga.	See Chart Below	2015	(8.96)

FM Maximum Design Load (All Sizes)
For Bracing SCH 10, 40 & Flow Pipe

Brace Member		Direction	Brace Angle (Degrees)	lbs.	kN
1" Thru 2" SCH 40 Pipe	(GB/T3091, EN10255H, or JISG3454)	Lateral	30°-44°	1270	(5.64)
			45°-59°	1800	(9.07)
			60°-74°	2200	(10.89)
			75°-90°	2460	(12.18)
1/4" Thru 3/8" Thick Structural Steel		Lateral & Longitudinal	30°-44°	900	(4.00)
			45°-59°	1280	(5.69)
			60°-74°	1570	(6.98)
			75°-90°	1750	(7.78)
PHD 12 Gauge Strut Channel 1001 & 1201		Lateral & Longitudinal	30°-44°	1070	(4.75)
			45°-59°	1440	(6.40)
			60°-74°	1740	(7.73)
			75°-90°	1940	(8.62)

FM Maximum Design Load
Brace: 1" Thru 2" SCH40 Pipe
(GB/T3091, EN10255H, or JISG3454)

Pipe Size SCH 10, 40 & Flow Pipe		Brace Angle From Vertical (Degrees)	Longitudinal lbs.	Longitudinal kN	Weight Ea. lbs.	Weight Ea. kg
2	(50)	30°-44°	1370	(6.09)	2.60	(1.18)
		45°-59°	1930	(8.58)		
		60°-74°	2370	(10.54)		
		75°-90°	2810	(12.49)		
2 1/2	(65)	30°-44°	1500	(6.67)	2.77	(1.26)
		45°-59°	2120	(9.43)		
		60°-74°	2600	(11.56)		
		75°-90°	2900	(12.89)		
3	(80)	30°-44°	1370	(6.09)	3.00	(1.36)
		45°-59°	1930	(8.58)		
		60°-74°	2370	(10.54)		
		75°-90°	2810	(12.49)		
3 1/2	(90)	30°-44°	1370	(6.09)	3.13	(1.42)
		45°-59°	1930	(8.58)		
		60°-74°	2370	(10.54)		
		75°-90°	2810	(12.49)		
4	(100)	30°-44°	1370	(6.09)	3.30	(1.50)
		45°-59°	1930	(8.58)		
		60°-74°	2370	(10.54)		
		75°-90°	2810	(12.49)		
5	(125)	30°-44°	1370	(6.09)	4.57	(2.07)
		45°-59°	1930	(8.58)		
		60°-74°	2370	(10.54)		
		75°-90°	2810	(12.49)		
6	(150)	30°-44°	1410	(6.27)	5.42	(2.46)
		45°-59°	2000	(8.89)		
		60°-74°	2450	(10.89)		
		75°-90°	2730	(12.14)		
8	(200)	30°-44°	1320	(5.87)	8.52	(3.86)
		45°-59°	1870	(8.31)		
		60°-74°	2290	(10.18)		
		75°-90°	2550	(11.34)		

PHD Strut Channel Maximum Horizontal Load 90° From Vertical

Strut Fig. #	r		l/r =	100 Max	100 lbs.	100 kN	200 Max	200 lbs.	200 kN	300 Max	300 lbs.	300 kN
1001	0.580	(14.73)		58"	(1473.2)	4670	(20.77)	116"	(2946.4)	1165	(5.18)	174"	(4419.6)	518	(2.30)
1201	0.297	(7.54)		29"	(736.6)	3260	(14.50)	59"	(1498.6)	785	(3.49)	89"	(2260.6)	345	(1.53)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

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FIG. 031 CLAMPING PIPE ATTACHMENT

Pipe Braced: 2", 2 1/2", 3", 3 1/2", 4", 5", 6", 8"

Bracing: 1" thru 2" SCH 40 pipe, structural steel, and PHD 12 gauge strut channel (1001 & 1201)

Function: Designed for bracing pipe against sway and seismic disturbance. Versatile design allows for attachment at any angle and the ability to be used in a lateral or longitudinal bracing configuration. The pipe attachment component of a sway brace system used in conjunction with a PHD Manufacturing structural attachment fitting and joined together with a bracing element forming a complete sway brace assembly. Sway brace assemblies are intended to be installed in accordance with NFPA 13 and the manufacturer's installation instructions.

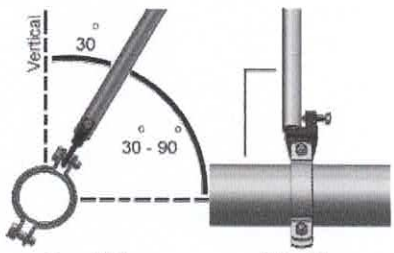
Approvals: Underwriters Laboratories listed for US and Canada
Factory Mutual approved
Listed for use with PHD sway brace components only

Material: Ductile Iron and Low Carbon Steel, Grade 5 clamping bolts

Installation: Place attachment around pipe to be braced, positioning brace attachment as needed, then tighten clamping bolts and nuts finger tight. Insert brace component into fitting against back of jaw. Tighten set screw finger tight, adjust brace angle as needed, then tighten set screw until hex head breaks off. Then evenly torque clamping bolts until hex portion of clamping nuts break off.



Longitudinal



Front View Side View

Lateral

UL Maximum Design Loads			
Pipe Sizes 2" thru 8" SCH 10 & 40 (3 1/2 SCH 40 only) Lateral & Longitudinal Assemblies			
Brace Member	Member Thickness	Member Length	Max. Design Load
1" Thru 2" Pipe	SCH 40	Refer to NFPA13	2015
Structural Steel	1/4" to 3/8" thick	Refer to NFPA13	2015
1001 Series Strut	12 Ga.	See Chart Below	2015
1201 Series Strut	12 Ga.	See Chart Below	2015

FM Maximum Design Loads							
			Allowable Horizontal Capacity Per Installation Angle (lbs.)				
			Brace Angle From Vertical				
Orientation	Pipe Size	Pipe Schedule	30°-44°	45°-59°	60°-74°	75°-90°	Brace Member
Lateral	2, 2 1/2, 3, 3 1/2, 4, 5, 6, 8	LW, 10, 40	1270	1800	2200	2460	1" to 2" Schedule 40 Pipe
Longitudinal	2	LW, 10, 40	1370	1930	2370	2810	1" to 2" Schedule 40 Pipe
Longitudinal	2 1/2	LW, 10, 40	1500	2120	2600	2900	1" to 2" Schedule 40 Pipe
Longitudinal	3, 3 1/2, 4	LW, 10, 40	1370	1930	2370	2810	1" to 2" Schedule 40 Pipe
Longitudinal	5, 6	LW, 10, 40	1410	2000	2450	2730	1" to 2" Schedule 40 Pipe
Longitudinal	8	LW, 10, 40	1320	1870	2290	2550	1" to 2" Schedule 40 Pipe
Lateral or Longitudinal	2, 2 1/2, 3, 3 1/2, 4, 5, 6, 8	LW, 10, 40	900	1280	1570	1750	1/4" to 3/8" Thick Structural Steel
Lateral or Longitudinal	2, 2 1/2, 3, 3 1/2, 4, 5, 6, 8	LW, 10, 40	1070	1440	1740	1940	1001 & 1201 Strut

NOTE: LW above refers to FM Approved Lightwall pipe, commonly referred to as Schedule 7. These ratings may also be applied to EN10220 and GB/T 8163 pipe. Schedule 10 above may be applied to GB/T 3091, GB/T 3092, EN 10255 M and H, JIS G3452. Schedule 40 above may be applied to GB/T3091, EN10255H or JISG3454 brace pipe.

Strut	Max. Horizontal Load (lbs.) 90° From Vertical							
Fig. #	r	l/r =	100		200		300	
1001	0.580		58"	4670	116"	1165	174"	518
1201	0.297		29"	3260	59"	785	89"	345

NOTE: Use NFPA13 table "Allowable Horizontal Load on Brace Assemblies Based on the Weakest Component of the Brace Assembly" reduction factors for maximum loads at varying angles.
Refer to www.phd-mfg.com regarding further strut channel details

Mircom

PANEL DE CONTROL INTELIGENTE DE ALARMA DE INCENDIO FX-400



Descripción

El panel de control de alarma de incendio FX-400 es un panel multizona direccionable inteligente, ideal para instalaciones pequeñas y medianas.

El FX-400 se envía pre montado con tarjeta principal, fuente de alimentación, transformador, pantalla principal, caja posterior negra y gabinete negro con puerta negra o roja.

Compatible con dispositivos MGC (serie MIX-4000), el FX-400 viene con un lazo direccionable (SLC) con un máximo de 240 dispositivos MGC en total.

El FX-400 está equipado con un discador telefónico integrado. El discador proporciona un medio para comunicar el estado del panel a la estación de monitoreo central remota por medio de dos líneas telefónicas dedicadas.

Características

El panel de control de alarma contra incendios direccionable FX-400 de Mircom proporciona lo siguiente:

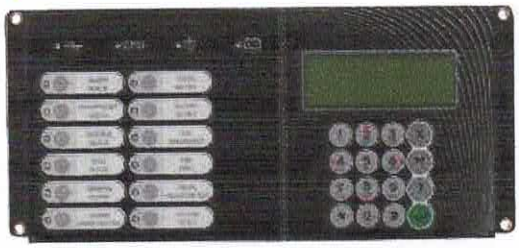
- Tablero Principal, Fuente de Alimentación y Backbox.
- Un lazo direccionable (SLC) con un máximo de 240 dispositivos MGC (serie MIX-4000) en total.
- Panel de control de alarma contra incendios multizona.
- Compatible con dispositivos MGC (MIX-4000).
- Compatible con detectores convencionales que utilizan el módulo de zona convencional MGC MIX-4042, consulte el documento LT-1023 para detectores compatibles.
- Pantalla principal con pantalla LCD de 4 x 20.
- Lazo(s) analógico(s) Clase A, Clase X o Clase B.
- Cuatro circuitos NAC Clase B, Clase A de potencia limitada (máx. 1,5 amperios cada uno - 5,0 amperios en total).
- Los circuitos NAC se pueden configurar como señal silenciable, señal no silenciable, luces estroboscópicas silenciables, luces estroboscópicas no silenciables o salida de alimentación auxiliar. La señal audible puede ser Constante, Código Temporal, Código de California o Hora de Marcha.
- Admite protocolos estroboscópicos de sincronización de los principales fabricantes.
- Configuración del software.
- Inhibición de silencio de señal configurable, silencio de señal automático y prueba de caminata de un solo hombre.
- Operaciones de dos etapas, verificación de alarma y secuencia de alarma positiva.
- Operación subsiguiente de Alarma, Supervisión, Monitoreo y Problema.
- Relés dedicados de alarma común, supervisión, problema y alarma auxiliar.
- Contactos de relé para alarma común, supervisión común y problema común, todos no desconectables y relé de alarma auxiliar (desconectable).
- Las salidas adicionales incluyen conexiones para un indicador de problema remoto RTI, un módulo de polaridad inversa PR-300, un bus RS-485 para la conexión de hasta siete series RAX-LCD-LITE, RAM-3318-LCD, SRM-312 y RA-1000 anunciadores.
- La alimentación auxiliar está disponible en forma de 24 V FWR sin filtrar ni supervisar, 24 V CC filtrada y regulada y fuente de alimentación auxiliar reiniciable.
- Módulo de marcador integrado.

NO DEBE SER UTILIZADO PARA PROPÓSITO DE INSTALACIÓN.
ESTA INFORMACIÓN ES PARA FINES DE MARKETING ÚNICAMENTE Y NO TIENE LA INTENCIÓN DE DESCRIBIR LOS PRODUCTOS TÉCNICAMENTE.

Número de catálogo

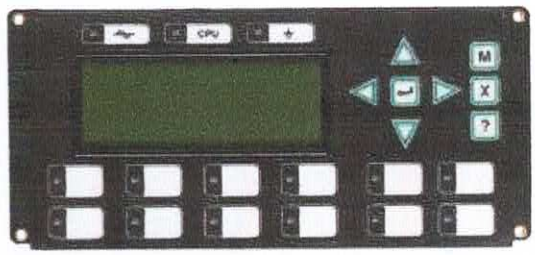
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Componentes del Sistema



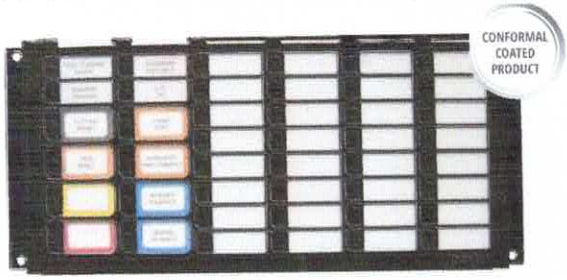
Anunciador Remoto RAM-3318-LCD

El anunciador remoto RAM-3318-LCD se utiliza como componente de un sistema de alarma contra incendios FX-400. Proporciona una imitación exacta de la pantalla FX-400 en una ubicación remota. La pantalla es de cuatro líneas, LCD alfanumérico retroiluminado de 20 caracteres. Muestra información sobre el panel, sus circuitos y dispositivos. Un cursor en pantalla es controlado por los botones de cursor para la selección y el control del menú. el RAM-3318-LCD ocupa una posición de visualización en el gabinete BB-1000.



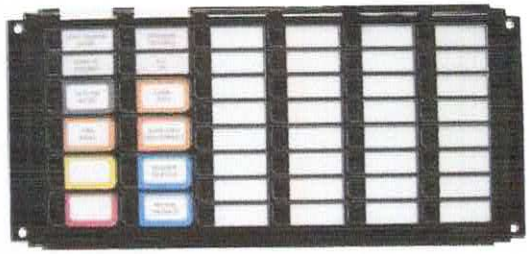
Anunciador Remoto con pantalla LCD, RAX-LCD-LITE

El FX-400 también es compatible con el anunciador LCD remoto RAX-LCD-LITE. Está equipado con una gran pantalla LCD alfanumérica retroiluminada de 4 líneas x 20 caracteres que utiliza un sistema de menú simple completo con un teclado direccional e interruptores para Entrar, Menú, Cancelar e Información. El RAX-LCD-LITE ocupa una posición de visualización en los gabinetes BB-1000.



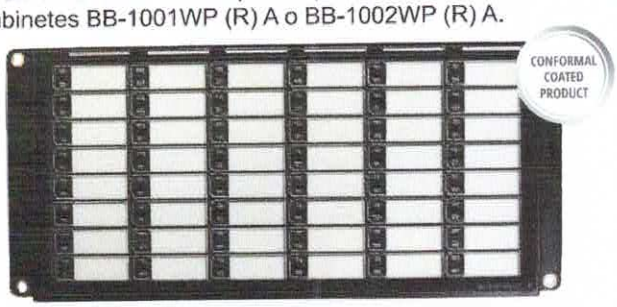
Anunciador LED principal remoto con revestimiento conformado RAM-1032TZDS-CC

El anunciador LED remoto principal con revestimiento de protección conformado RAM-1032TZDS-CC proporciona funciones comunes de anunciador y 32 puntos de anunciación LED. El RAM-1032TZDS-CC incluye indicadores para Testigo de alimentación de C.A., Problema común y Silencio de señales de notificación y botones de control para Reinicio del sistema, Prueba de lámparas, Simulacro de incendio, Silencio de zumbador y Silencio de señales de notificación. El RAM-1032TZDS-CC ocupa una posición de anunciador en los gabinetes BB-1001WP (R) A o BB-1002WP (R) A.



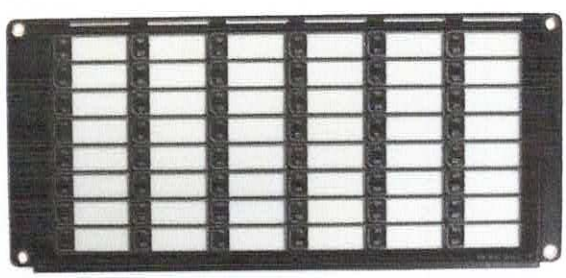
Anunciador LED remoto principal RAM-1032TZDS

El anunciador LED remoto principal RAM-1032TZDS proporciona funciones comunes de anunciador y 32 puntos de anunciación LED. El RAM-1032TZDS tiene indicadores para Testigo de alimentación de C.A., Problema común y Silencio de señales de notificación de alarma y botones de control para Reinicio del sistema, Prueba de lámparas, Simulacro de incendio, Silencio de zumbador y Silencio de señales de notificación de alarma. El RAM-1032TZDS ocupa una posición de anunciador en los gabinetes de la serie BB-1000.



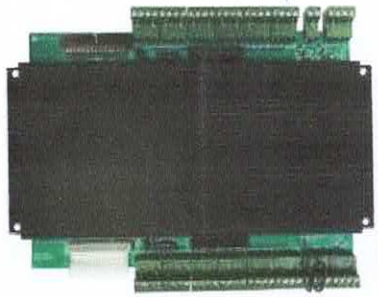
Módulo anunciador LED programable con revestimiento conforme RAX-1048TZDS-CC

El módulo anunciador LED programable con revestimiento conforme RAX-1048TZDS-CC proporciona 48 LED bicolores programables. El RAX-1048TZDS-CC se conecta a la unidad de control principal o al módulo anunciador principal (RAM-1032TZDS) cuando se monta de forma remota. Cada punto de visualización se puede identificar por la etiqueta deslizable que se desliza junto al LED. El RAX-1048TZDS ocupa una posición de visualización en los gabinetes de la serie BB-1001WP(R) A o BB-1002WP(R)A.



Módulo anunciador LED programable RAX-1048TZDS

El módulo anunciador LED programable RAX-1048TZDS proporciona 48 LED bicolores programables. El RAX-1048TZDS se conecta a la unidad de control principal o al módulo anunciador principal (RAM-1032TZDS) cuando se monta de forma remota. Cada punto de visualización se puede identificar por la etiqueta deslizable que se desliza al lado del LED. El RAX-1048TZDS ocupa una posición de visualización en los gabinetes de la serie BB-1000.



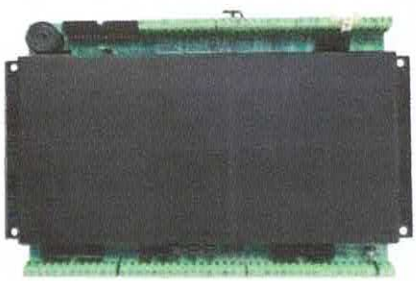
Módulo controlador de LEDs adicional para anunciador gráfico (Mímico) AGD-048

El módulo de controlador de gráficos sumador AGD-048 se puede usar con los módulos de controlador de gráficos maestro MGD-32 o, si se ubica de forma remota, se debe conectar y montar con la pantalla compartida RAX-LCD. El AGD-048 admitirá 48 salidas supervisadas adicionales. Al igual que con los módulos maestros, el AGD-048 admitirá lámparas LED e incandescentes.



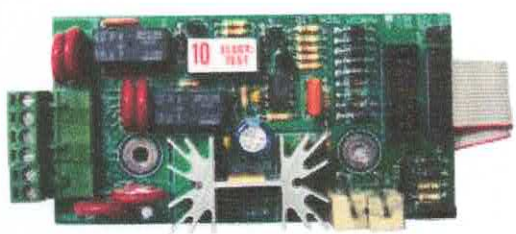
Interfaz para configurar paneles de incendio MGC UIMA4

El UIMA4 es una interfaz para configurar FX-400. El cable plano del UIMA4 se puede desconectar y reemplazar; el número de pieza de reemplazo es RPL-WC-25022 (viene con 3 cables de repuesto). La interfaz UIMA4 tiene 3 conectores: conector serie macho de 9 pines, conector USB B hembra y Conector hembra de 10 pines.



Módulo maestro controlador de LEDs para anunciador gráfico (Mímico) MGD-32

Para uso con paneles de control de alarma contra incendios FX-400. El módulo controlador gráfico maestro MGD-32 proporciona entradas de control comunes para los interruptores, como reinicio del sistema, silencio de señal, desconexión auxiliar, simulacro de incendio, prueba de lámparas y reconocimiento.



Módulo de comunicación a estación municipal PR-300

El PR-300 proporciona salidas para aplicaciones de monitoreo municipales y de inversión de polaridad. Como módulo de conexión de ciudad, el PR300 proporciona una interfaz entre los circuitos indicadores del panel de control y una caja maestra. Proporciona transmisión de señales fuera de las instalaciones para sistemas que deben cumplir con los requisitos de NFPA para sistemas auxiliares de protección. Como módulo de inversión de polaridad, el PR-300 proporciona una interfaz entre el panel de control y un receptor de polaridad inversa.



Indicador remoto de problemas RTI-1

El indicador remoto de problemas de Mircom proporciona un aviso remoto de los problemas de la alarma de incendio. El RTI-1 se monta en una caja eléctrica estándar de un solo grupo. El RTI-1 se puede utilizar con cualquiera de los paneles de control de alarma contra incendios de Mircom.



Placa con resistencia de fin de línea MP-300

El MP-300 de Mircom es una placa de plástico con una resistencia de fin de línea de 3.9K Ohms para usar con paneles convencionales y circuitos de detección de Mircom.

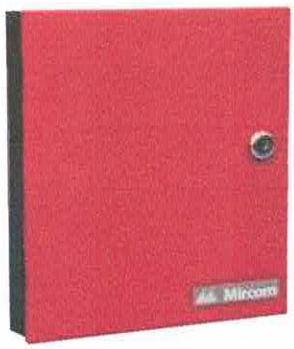


Gabinete para uso en exterior BB-1001WP(R)A

El modelo BB-1001WP(R)A, es un gabinete completo que incluye una puerta ROJA o BLANCA, una caja posterior negra, dos llaves y una cerradura en la parte superior de la puerta. La puerta viene con bisagras en la parte inferior de la caja para mayor protección contra la intemperie. La caja soporta un anunciador principal RAM-1032TZDS-CC que proporciona hasta 32 puntos de visualización. El anunciador RAM-1032TZDS-CC se ordena por separado conforme a los requisitos de instalación UL, ULC.

Nota: no hay necesidad de termostato ni calentador. El anunciador RAM-1032TZDS-CC se debe ordenar por separado para cumplir con los requisitos de instalación de UL y ULC.

Dimensiones	11-5/32" H x 12-15/16" W x 3-1/2" (283mm x 329mm x 89mm)
Clasificado para uso exterior	+50°C a -40°C (-122°F a -40°F)
Tolerancia a la humedad	95% R.H. @60°C



SRM-312R - Módulo de relé inteligente con gabinete rojo

El módulo SRM-312R proporciona doce circuitos de relé configurables, clasificados a 28 VCD, 1 amperio (resistivo). Cada circuito se puede configurar como un contacto normalmente abierto (N.A.) o normalmente cerrado (N.C.). Cada relé está equipado con un LED que se enciende cuando el relé está energizado. Los relés se pueden configurar como relé por zona (1 a 1), común en alarma, común en supervisión o programable para una configuración de zona lógica o adyacente. Una configuración de zona adyacente encenderá una zona adyacente cuando la zona configurada esté activa. Una configuración de encadenamiento permite que se enciendan varios relés. El SRM-312R es configurable por interruptor tipo DIP y se conecta al bus RS-485. El SRM-312R viene completo con un gabinete rojo y una cerradura y llave CAT-30.

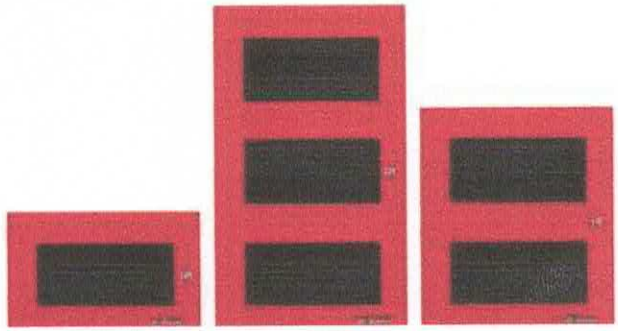


Gabinete para uso en exterior BB-1002WP(R)A

El modelo BB-1002WP(R)A, es un gabinete completo que incluye una puerta ROJA o BLANCA, una caja posterior negra, dos llaves y una cerradura en la parte superior de la puerta. La puerta viene con bisagras en la parte inferior de la caja para mayor protección contra la intemperie. La caja soporta un anunciador principal RAM-1032TZDS-CC que proporciona hasta 32 puntos de visualización y un módulo anunciador adicional RAX1048TZDS-CC que proporciona hasta 48 puntos de visualización adicionales. Los módulos RAM-1032TZDS-CC y RAX1048TZDS-CC se ordenan por separado conforme a los requisitos de instalación U, ULC.

Nota: no hay necesidad de termostato ni calentador. El anunciador RAM-1032TZDS-CC y el módulo anunciador RAX-1048TZDS-CC se deben ordenar por separado para cumplir con los requisitos de instalación de UL y ULC.

Dimensiones	17-15/16" H x 12-15/16" W x 3-1/2" (456mm x 329mm x 89mm)
Clasificado para uso exterior	+50°C a -40°C (-122°F a -40°F)
Tolerancia a la humedad	95% R.H. @60°C



Gabinetes para anunciadores BB-1001 / 2 / 3 / 8 / 12

La serie BB-1000 viene completa con una caja posterior, puerta y bisagra. Las puertas de los gabinetes vienen con ventanas de Lexan, dos llaves y una cerradura. Los gabinetes pueden alojar el chasis del anunciador principal RAM-1032TZDS y módulos adicionales RAX-1048TZDS.

BB-1001D / DR / DS / DB	9" H x 12.75" W x 1.85" D
BB-1002D / DR / DS / DB	18" H x 12.75" W x 1.85" D
BB-1003D / DR / DS / DB	26.4" H x 12.75" W x 1.85" D
BB-1008D / DR / DB	33" x 22.5" W x 1.85" D
BB-1012D / DR / DB	45" H x 22.5" W x 1.85" D

Nota: Dimensiones en pulgadas, H= Alto, W= Ancho, D= Profundidad

Información para ordenar

Modelo	Descripción
Paneles de Control	
FX-400B	Panel de Control de Alarma y Detección de Incendio, Inteligente, con gabinete y puerta color negro
FX-400R	Panel de Control de Alarma y Detección de Incendio, Inteligente, con gabinete negro y puerta color rojo
Pantallas de Visualización	
RAM-3318-LCD	Anunciador Remoto con Pantalla LCD de 4 Líneas.
RAX-LCD-LITE	Anunciador Remoto con Pantalla LCD de 4 Líneas.
RAM-1032TZDS	Anunciador Remoto Principal con 32 LEDs Indicadores de Alarma y Problema.
RAM-1032TZDS-CC	Anunciador Remoto Principal con Recubrimiento Conformado con 32 LEDs de Alarma y Problema.
RAX-1048TZDS	Anunciador Remoto Secundario con 48 LEDs de Alarma y Problema.
RAX-1048TZDS-CC	Anunciador Remoto Secundario con Recubrimiento Conformado con 48 LEDs de Alarma y Problema.
MGD-32	Módulo Principal Controlador de 32 LEDs para anunciador gráfico (Mímico).
AGD-048	Módulo Secundario Controlador de 48 LEDs para anunciador gráfico (Mímico).
SRM-312R	Módulo de Relés Inteligente Con Gabinete Color Rojo. Soporta hasta 12 Relés.
Módulo de Comunicación Adicional	
PR-300	Módulo de Comunicación a Central de Monitoreo Municipal.
Gabinetes	
BB-1001D	Gabinete Color Blanco para Anunciador Remoto con Espacio para Alojar 1 módulo.
BB-1001DR	Gabinete Color Rojo para Anunciador Remoto con Espacio para Alojar 1 módulo.
BB-1001DS	Gabinete de Acero Inoxidable para Anunciador Remoto con Espacio para Alojar 1 módulo.
BB-1001DB	Gabinete Color Negro para Anunciador Remoto con Espacio para Alojar 1 módulo.
BB-1002D	Gabinete Color Blanco para Anunciador Remoto con Espacio para Alojar 2 módulos.
BB-1002DR	Gabinete Color Rojo para Anunciador Remoto con Espacio para Alojar 2 módulos.
BB-1002DS	Gabinete de Acero Inoxidable para Anunciador Remoto con Espacio para Alojar 2 módulos.
BB-1002DB	Gabinete Color Negro para Anunciador Remoto con Espacio para Alojar 2 módulos.
BB-1003D	Gabinete Color Blanco para Anunciador Remoto con Espacio para Alojar 3 módulos.
BB-1003DR	Gabinete Color Rojo para Anunciador Remoto con Espacio para Alojar 3 módulos.
BB-1003DS	Gabinete de Acero Inoxidable para Anunciador Remoto con Espacio para Alojar 3 módulos.
BB-1003DB	Gabinete Color Negro para Anunciador Remoto con Espacio para Alojar 3 módulos.
BB-1008D	Gabinete Color Blanco para Anunciador Remoto con Espacio para Alojar 8 módulos.
BB-1008DR	Gabinete Color Rojo para Anunciador Remoto con Espacio para Alojar 8 módulos.
BB-1008DB	Gabinete Color Negro para Anunciador Remoto con Espacio para Alojar 8 módulos.
BB-1012D	Gabinete Color Blanco para Anunciador Remoto con Espacio para Alojar 12 módulos.
BB-1012DR	Gabinete Color Rojo para Anunciador Remoto con Espacio para Alojar 12 módulos.
BB-10012DB	Gabinete Color Negro para Anunciador Remoto con Espacio para Alojar 12 módulos.
BB-1001WPA	Gabinete para Anunciador Remoto para Uso en Intemperie con Puerta Blanca.
BB-1001WPRA	Gabinete para Anunciador Remoto para Uso en Intemperie con Puerta Roja.
BB-1002WPA	Gabinete para Anunciador Remoto para Uso en Intemperie con dos Puerta Blanca.
BB-1002WPRA	Gabinete para Anunciador Remoto para Uso en Intemperie con dos Puerta Roja.
Accesorios	
RTI-1	Indicador Remoto de Problemas.
MP-300	Placa con resistencia de fin de línea de 3K9 Ohms.
BC-160R	Gabinete externo para alojar baterías, color rojo.
BAT-12V12A	Batería de 12 A.H.
BAT-12V18A	Batería de 18 A. H.
BAT-12V26A	Batería de 26 A. H.
UIMA4	Interfaz para configurar paneles de incendio MGC.
MGC-CONFIG-KIT4	Kit de configuración de centrales de incendios con interfaz UIMA4.
RPL-WC-25022	Cable plano de reemplazo para UIMA4 (Paquete con 3 unidades)

Información para ordenar (continuación)

Modelo	Descripción
Dispositivos MGC Serie MIX-4000	
MIX-4001	Base de montaje para detector de 6 pulgadas de diámetro
MIX-4002	Base de montaje para detector de 4 pulgadas de diámetro.
MIX-4010	Detector de Humo Fotoeléctrico Inteligente (Sin aislador).
MIX-4010-ISO	Detector de Humo Fotoeléctrico Inteligente (Con aislador de corto circuito integrado).
MIX-4020	Detector Fototérmico Inteligente Multicriterio / Multi-Sensor (Sin aislador).
MIX-4020-ISO	Detector Fototérmico Inteligente Multicriterio / Multi-Sensor (Con aislador).
MIX-4030	Detector de Calor Inteligente Tri Modo (Sin aislador).
MIX-4030-ISO	Detector de Calor Inteligente Tri Modo (Con aislador).
MIX-4040	Módulo Monitor de Entrada Dual.
MIX-4041	Mini Módulo Monitor de Entrada Dual.
MIX-4042	Módulo de Zona Convencional.
MIX-4045	Módulo Relé Dual.
MIX-4046	Módulo de Salida Supervisada.
MIX-4050	Módulo de Sincronización.
MIX-4070	Módulo Aislador de Corto Circuito.
MIX-4090	Programador portátil de dispositivos de la Serie MIX-4000.
MS-401MPU	Estación manual de alarma inteligente de tipo simple acción.
MS-407MPU	Estación manual de alarma inteligente de tipo simple acción, con un contacto auxiliar adicional.
MS-710MPU	Estación manual de alarma inteligente de tipo doble acción, con llave de restablecimiento.

Mircom

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CAT. 5981S
Rev. 2

MGC™

DETECTOR DE CALOR TRI-MODO

MIX-4030 / MIX-4030-ISO



MIX-4030 / MIX-4030-ISO

Descripción

El detector de calor MIX-4030/MIX-4030-ISO es un sensor inteligente alámbrico que monitorea continuamente la temperatura del entorno para reportar condiciones de alta temprana causada por una condición de incendio y se comunica con el panel mediante un protocolo totalmente digital.

El sensor informará la existencia de una condición de alarma cuando la temperatura muestreada exceda los 135ºF (57ºC) o 175ºF (79ºC) dependiendo del modo de operación elegido. También se pueden informar aumentos excesivos de temperatura si el detector está configurado para operación de tasa de aumento (Gradiente de temperatura).

El MIX-4030 / MIX-4030-ISO funciona con un panel de control MGC compatible que provee altas tasas de intercambio de información, confiables y seguras, mediante protocolo de comunicación bidireccional.

El detector se direcciona y programa mediante el dispositivo portátil MIX-4090. Las direcciones se pueden seleccionar en un rango de 1-240.

Este detector se envía con una cubierta antipolvo para proteger el dispositivo durante la instalación y antes de la puesta en servicio.

Dos LEDs de tres colores en el dispositivo brindan 360 grados de visibilidad de la condición de operación.

Se puede conectar un indicador LED remoto directamente al sensor.

Características

- Se pueden conectar hasta 240 dispositivos de la serie MIX-4000 en cualquier combinación, en un simple lazo de señalización SLC.
- Diferentes colores de LED para Alarmas y Problemas.
- Tres modos de operación de detección de calor.
- Compatible con la serie completa de módulos de control y módulos de entrada de la Serie MIX-4000.
- El dispositivo puede protegerse mediante un mecanismo exclusivo de protección contra manipulaciones.
- La dirección se programa mediante el dispositivo portátil MIX-4090.
- MODELO OPCIONAL- con aislador de corto circuito incorporado (MIX 4030- ISO).
- Modos de Operación
  - Detección de gradiente de temperatura 15ºF/Minuto 10ºC/Minuto).
  - Detección de temperatura fija (135ºF/57ºC).
  - Detección de temperatura fija (175ºF/79ºC).

Beneficios

- Las bases de montaje de estilo abierto ofrecen un cableado sencillo y bloqueo de baja presión.
- Bases de montaje disponibles en 4 o 6 pulgadas.
- La salida remota puede ser controlada por el panel.
- El modelo MIX-4030-ISO está equipado con un aislador de cortocircuito que protege el lazo contra errores de cableado.
- Bajo consumo de corriente en operación normal.
- La base tiene una lengüeta desmontable que se utiliza para etiquetar la dirección del dispositivo.
- Señal de interrupción de ciclo de barrido que permite comunicar rápidamente las condiciones de alarma a los paneles de control del sistema de detección de incendios.
- Interruptor magnético de prueba integrado que se activa mediante un imán para simular la activación del detector por alarma que facilita la puesta en operación y el mantenimiento.

NO DEBE SER UTILIZADO PARA PROPÓSITO DE INSTALACIÓN.
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Número de catálogo

9503s

Especificaciones Técnicas

Voltaje en Operación Normal	15 a 30 VCD
Corriente Máxima en Alarma	3.2mA (LED encendido)
Corriente en Estado Estable	160µA
Rango de Temperatura	32°F a 100°F (0°C a 37.8°C)
Humedad	10% a 93% Sin condensación
Rango de Calibre de Cable soportado en las terminales	22 a 12 AWG
Diámetro	4.25"
Altura	1.75"

Color de LED en Detector	Descripción
ROJO (Encendido Fijo)	ROJO (Encendido Fijo)
VERDE (Destellando)	VERDE (Destellando)
AMBAR (Encendido Fijo)	AMBAR (Encendido Fijo)

Selección de Modo de Operación Detección de Calor
135°F (57°C)
175°F (79°C)
135°F (57°C) y Taza de incremento 15 °F/Min. (10°C/Min.)

Información para ordenar

Modelo	Descripción
MIX-4010	Detector de Humo Fotoeléctrico Inteligente (Sin aislador)
MIX-4010-ISO	Detector de Humo Fotoeléctrico Inteligente (Con aislador)
MIX-4020	Detector Fototérmico Inteligente Multicriterio / Multi-Sensor (Sin aislador)
MIX-4020-ISO	Detector Fototérmico Inteligente Multicriterio / Multi-Sensor (Con aislador)
MIX-4030	Detector de Calor Inteligente (Sin aislador)
MIX-4030-ISO	Detector de Calor Inteligente (Con aislador)
MIX-4090	Programador portátil de dispositivos de la Serie MIX-4000
MIX-4001	Base de montaje para detector de 6 pulgadas de diámetro
MIX-4002	Base de montaje para detector de 4 pulgadas de diámetro

MGC™

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CAT. 9503S
Rev. 3

Mircom

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Web Page: www.mircom.com

FleXNet

Quotation
DATE:
Invoice To:

CUSTOMER:

Terms: ADVANCE PAY
Ship Via: EXW - Ex-Works
Salesperson: Jose Maria Placeres

SUBJECT:

ATTENTION:

P.O. #
Delivery:

Item	Cantidad	Modelo	Descripcion	Precio Neto	Precios Parciales
	1	FX-400R	Addressable Fire Alarm Control Unit c/w 1 x Addressable Loop **compatible with MGC Devices 4000 Series** only.	5.472.500,00	5.472.500
	1	RAX-LCD-LITE	Remote LCD Annunciator, MIMIC Display c/w Large 4 x 20 Character Back-Lit LCD Display	2.535.000,00	2.535.000
	1	BB-1001DR	Semi-Flush Backbox for Series 1000 Annunciators (Houses 1 Module)	555.000,00	555.000
	2	BAT-12V12A	Sealed Lead Acid Battery, 12 Volt, 12.0 AH	162.500,00	325.000
	27	MIX-4010	4000 Series Photoelectric Detector W/O Isolation	220.000,00	5.940.000
	1	MIX-4030	4000 Series Tri-Mode Heat Detector W/O Isolation	247.500,00	247.500
	28	MIX-4002	4000 Series 4" Detector Base	37.500,00	1.050.000
	5	MIX-4041	4000 Series Mini Dual Input Module	255.000,00	1.275.000
	4	MIX-4070	4000 Series Isolator Module	287.500,00	1.150.000
	6	MPS-810MPU	MP 1 Stage Addressable Double Action Pull Station UL	350.000,00	2.100.000
	8	FS-400C-RR	Red Ceiling Mount Strobe	285.000,00	2.280.000
	6	FHS-400C-RR	Red Ceiling Mount Horn/Strobe	312.500,00	1.875.000
			Mano de obra instalación incluyendo infraestructura		8.000.000
				SUBTOTAL $	$32.805.000,00
				IVA	$ 6.232.950,00
				TOTAL	**$39.037.950,00**

MGC™

DETECTOR DE HUMO FOTOÉLECTRICO

MIX-4010 / MIX-4010-ISO



MIX-4010 / MIX-4010-ISO

Características

- Se pueden conectar hasta 240 dispositivos de la serie MIX-4000 en cualquier combinación, en un simple lazo de señalización SLC.
- Diferentes colores de LED para Alarmas y Problemas.
- Detección de humo mediante avanzados algoritmos de software.
- Protección contra alarmas espurias causadas por presencia de polvo, insectos, pelusas y otras partículas suspendidas.
- Múltiples selecciones de niveles de sensibilidad.
- Compatible con la serie completa de módulos de control y módulos de entrada de la Serie MIX-4000.
- El dispositivo puede protegerse mediante un mecanismo exclusivo de protección contra manipulaciones.
- MODELO OPCIONAL- MIX-4010-ISO con aislador de corto circuito incorporado.)

Descripción

El detector de humo MIX-4010 / MIX-4010-ISO es un sensor inteligente alámbrico que monitorea continuamente el entorno para brindar una advertencia temprana de una condición de incendio y se comunica con el panel mediante un protocolo totalmente digital.

El MIX-4010 / MIX-4010-ISO funciona con un panel de control MGC compatible que provee altas tasas de intercambio de información, confiables y seguras, mediante protocolo de comunicación bidireccional.

El detector se direcciona y programa mediante el dispositivo portátil MIX-4090. Las direcciones se pueden seleccionar en un rango de 1-240.

Este detector se envía con una cubierta antipolvo para proteger el dispositivo durante la instalación y antes de la puesta en servicio.

Dos LEDs de tres colores en el dispositivo brindan 360 grados de visibilidad de la condición de operación.

Se puede conectar un indicador LED remoto directamente al sensor.

Beneficios

- Las bases de montaje de estilo abierto ofrecen un cableado sencillo y bloqueo de baja presión.
- Bases de montaje disponibles en 4 o 6 pulgadas.
- La salida remota puede ser controlada por el panel.
- El modelo MIX-4010-ISO está equipado con un aislador de cortocircuito que protege el lazo contra errores de cableado.
- Bajo consumo de corriente en operación normal.
- La base tiene una lengüeta desmontable que se utiliza para etiquetar la dirección del dispositivo.
- Señal de interrupción de ciclo de barrido que permite comunicar rápidamente las condiciones de alarma a los paneles de control del sistema de detección de incendios.
- Interruptor magnético de prueba integrado que se activa mediante un imán para simular la activación del detector por alarma que facilita la puesta en operación y el mantenimiento.

NO DEBE SER UTILIZADO PARA PROPÓSITO DE INSTALACIÓN.
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Número de catálogo

9501s

Especificaciones Técnicas

Voltaje en Operación Normal	15 a 30 VCD
Corriente Máxima en Alarma	3.2mA (LED on)
Corriente en Estado Estable	160µA
Rango de Temperatura	32°F a 100°F (0°C a 37.8°C)
Humedad	10% a 93% Sin Condensación
Rango de Calibre de Cable soportado en las terminales	22 a 12 AWG
Diámetro	4.25"
Altura	1.75"

Color de LED en Detector	Descripción
ROJO (Encendido Fijo)	Condición de ALARMA
VERDE (Parpadeando)	Condición NORMAL
AMBAR (Encendido Fijo)	Condición de FALLA

Nivel de Sensibilidad	Típica	Nota
LEVEL 1	1.75%/pie	Mayor Nivel Sensibilidad
LEVEL 2	2.25%/pie	Nivel de Sensibilidad
LEVEL 3	2.75%/pie	Nivel de Sensibilidad
LEVEL 4	3.25%/pie	Menor Nivel Sensibilidad

Información para ordenar

Modelo	Descripción
MIX-4010	Detector de Humo Fotoeléctrico Inteligente (Sin aislador)
MIX-4010-ISO	Detector de Humo Fotoeléctrico Inteligente (Con aislador)
MIX-4020	Detector Fototérmico Inteligente Multicriterio / Multi-Sensor (Sin aislador)
MIX-4020-ISO	Detector Fototérmico Inteligente Multicriterio / Multi-Sensor (Con aislador)
MIX-4030	Detector de Calor Inteligente (Sin aislador)
MIX-4030-ISO	Detector de Calor Inteligente (Con aislador)
MIX-4090	Programador portátil de dispositivos de la Serie MIX-4000
MIX-4001	Base de montaje para detector de 6 pulgadas de diámetro
MIX-4002	Base de montaje para detector de 4 pulgadas de diámetro

MGC

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Intertek

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MÓDULO DE MONITOREO DE ENTRADA DUAL

MIX-4040



Características

- Se pueden conectar hasta 240 dispositivos de la serie MIX-4000 en cualquier combinación, en un simple lazo de señalización SLC.
- Se monta en la caja de registro eléctrico estándar de 4 pulgadas o en la caja de registro eléctrico rectangular.
- El LED indicador proporciona el estatus del módulo

Beneficios

- Monitoreo de entradas de contactos rápido y confiable.
- Configuración automática para una sola entrada en Clase A o dos entradas en Clase B, de acuerdo con la información enviada por el panel de control, panel.
- No se requiere de resistencia de fin de línea EOL cuando opera en Clase A.
- Monitorea dos (2) circuitos independientes en Clase B utilizando solo una (1) dirección de módulo.

Descripción

El Módulo de entrada MIX-4040 es un dispositivo direccionable inteligente diseñado para ser utilizado con un panel de control MGC compatible que provee altas tasas de intercambio de información, confiables y seguras, mediante protocolo de comunicación bidireccional.

El módulo se puede utilizar para aplicaciones de alarma supervisión y monitoreo.

El módulo admite una (1) entrada en configuración clase A o dos (2) entradas en configuración clase B Cuando se configura para operación en Clase A, el módulo proporciona una resistencia EOL interna.

Cuando se configura para operación en Clase B, el módulo monitorea dos (2) circuitos de entrada independientes usando solo una (1) dirección de módulo.

La dirección de cada módulo se programa utilizando la herramienta de programación MIX-4090.

El módulo tiene un indicador LED controlado por panel. El LED parpadea durante el funcionamiento normal y permanece encendido de manera constante cuando el dispositivo está en condición de alarma.

Especificaciones Técnicas

Voltaje Operación Normal	15 a 30 VCD
Corriente Máx. en Alarma	3.3mA (LED Encendido)
Resistencia fin línea EOL	22K Ohms
Resistencia Máxima de Cableado	150 Ohms Total
Rango de Temperatura	32°F a 120°F (0°C to 49°C)
Humedad	10% a 93% Sin Condensación
Calibre de cable en Terminales	22 a 12 AWG
Dimensiones	4.625" Alto x 4.25" Ancho x 1.125" Profundidad
Montaje	Se monta en una caja de registro eléctrico cuadrada de 4" o en la caja posterior para montaje superficial BB-400
Corriente en Operación Normal (2 Clase B)	2mA

Información para ordenar

Modelo	Descripción
MIX-4040	Módulo Monitor de Entrada Dual
MIX-4090	Programador portátil de dispositivos de la Serie MIX-4000
MP-302	Resistencia de Fin de Línea EOL montada en tapa de registro
BB-400	Caja posterior para montaje superficial. Color Blanco

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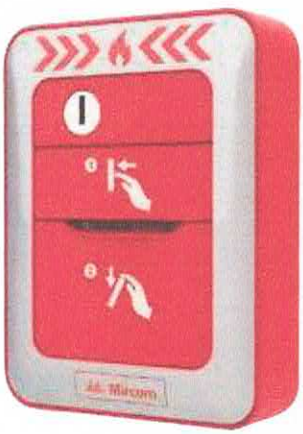
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Número de catálogo 9504s

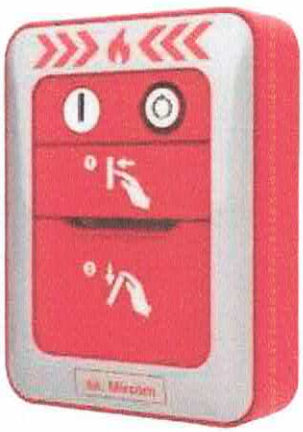
Rev. 2

Mircom

FIRE ALARM ADDRESSABLE MANUAL PULL STATIONS MPS-800MP(U) SERIES



MPS-810MP(U)
1 Stage



MPS-802MP
2 Stage

Features

- Completely made of LEXAN material
- Closed-fist operation (ADA – Americans with Disability Act)
- No printed text on the devices, symbols and icons are used instead
- Symbols are raised to be easily recognized by touch
- Compatible with FX-400 Series and Flex-Net FX-4000 Fire Alarm Panels
- Easy installation
- Accessible from the front for wiring while mounted
- Mounts on a single gang backbox
- Temperature range from 0°C to 49°C / 32°F to 120°F
- Device comes with a reset key
- Indoor use only
- Alarm LED is viewable from the front - Useful for trouble shooting

Description

Mircom's MPS-800MP(U) Series Fire Alarm Manual Pull Stations provide manual fire alarm activation. The new MPS-800 Series uses raised symbols and icons instead of printed text that makes them universally recognized.

These addressable pull stations are available as single or two stage dual action devices. Compatible with FX-400 Series and Flex-Net FX-4000 Fire Alarm Panels.

The MPS-800MP(U) manual stations are constructed of high quality polycarbonate resin thermoplastic "LEXAN" that supports high temperatures without deforming.

The MPS-800MP(U) addressable pull stations are accessible from the front for wiring while mounted making it easy to install. These pull stations can be mounted on a single gang backbox and the mounting holes permit easy alignment to the wall.

The suffix "U" indicates USA version.

All manual fire alarm stations shall be installed as per the specific requirements outlined in the UL/ULC codes, as well as all other applicable national or local codes.

Addressing is done using the MIX-4090 Device Programmer. For setting the address on this device, disconnect it from the loop, or ensure that the loop to which is connected is both disconnected from the panel and shorted across the SCL+ and SLC- inputs at the device. Failing to take either of these steps may change the address programming of previously configured sensors on the loop.

Operation

Activating the Alarm

- Push in the push bar
- Pull down the pull handle

Activating the stage two alarm (MPS-802MP and MPS-822MP)

- Insert the stage two key into the stage two keyhole, and then turn the key.
- The stage two alarm activates immediately.

Resetting the manual station

- Insert the key into the reset keyhole and turn it.
- Pull the cover open. The switch is now reset.
- Close and lock the stations with the reset key.
- Reset the Fire Alarm Control Panel to reset the alarm

Note: Resetting the station does not cancel the alarm at the panel

CATALOG NUMBER

5964

NOT TO BE USED FOR INSTALLATION PURPOSES.
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Specifications

Dimensions Manual Pull Station: 5 ½" H x 4 1/8" W x 1 3/8" D

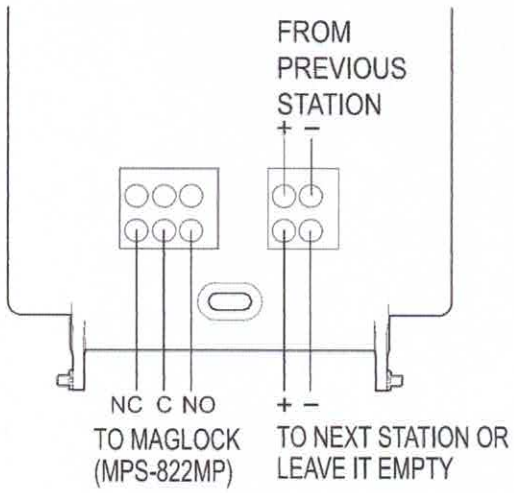
Nominal Operating Voltage: 15-30 VDC

Maximum alarm Current: 3.3 mA

Standby current: 2 mA

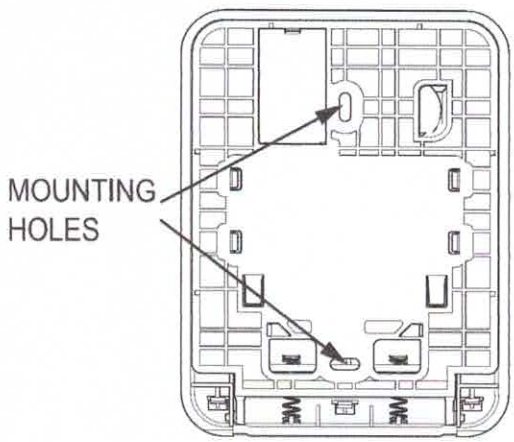
Electrical rating for MPS-802MP Maglok terminal: 1 Amp @ 30 VDC

Wiring Diagram



Mounting Diagram

- Flush mount indoor: Single-gang electrical box
- Surface mount indoor: BB-800 backbox



Ordering Information

Model	Description
MPS-810MP	MP 1 Stage Addressable Double Action Pull Station, **ULC**
MPS-810MPU	MP 1 Stage Addressable Double Action Pull Station, **UL**
MPS-802MP	MP 2 Stage Addressable Pull Station, **ULC**
MPS-822MP	MP Maglock 2 Stage Double Action Pull Station, **ULC**
MIX-4090	4000 Series Address Programmer
BB-800	Surface Backbox for 800 Series Manual Station

Mircom

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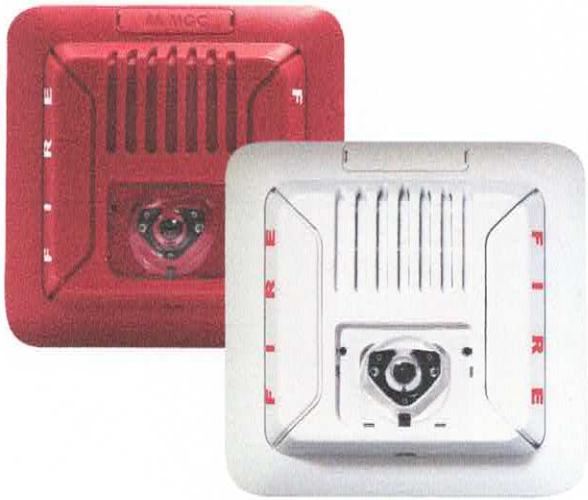
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CAT. 5964
Rev. 1

Mircom™

CEILING MOUNT LED HORN/STROBES FHS-400C SERIES



Description

Mircom's FHS-400C Series ceiling mount horn/strobes offer an audible/visual solution that delivers exceptional energy efficiency in a compact design. Utilizing advanced LED technology, the FHS-400C Series LED horn/strobes provide a lower current draw which allows for more devices on a NAC circuit while reducing the number of external power supplies required.

The FHS-400C Series horn/strobes offer a wide range of audible/visual settings in a single compact device. The audible settings include Temporal, Continuous, March Time and 20 BPM tones that can each be set for Low or High volume settings. The candela settings can be field-configured for 15, 15/75, 30, 75, 110 cd. The candela setting is displayed through the front window for easy identification All device settings are located on the back of the unit to prevent tampering.

The FHS-400C Series horn/strobes can be synchronized using a control panel with the Mircom sync protocol or the SDM-240 synchronization module.

The FHS-400C Series notification appliances utilize a universal mounting plate that allows for mounting to a single gang, double gang, octagon, 4" junction or 4" square electrical box. The back plate allows the installer to mount the plate and connect the wire connections. The device attaches to the mounting plate and is secured by a single mounting screw. In addition, the FHS-400C can mount to the Mircom BB-400 back box for surface mount applications.

Features

- Compact Design
- Advanced LED technology provides superior current draw performance
- Lower power consumption per device allows for more notification appliances per circuit and reduces the need for external power supplies
- Standard and High candela settings in one unit to meet virtually any application
  - 15, 15/75, 30, 75, 110 cd
- Multiple field-selectable audible settings
  - Temporal, Continuous, March Time and 20 BPM audible tones
  - High and Low volume settings
- Red or white finish
- Device settings are located on the back of the unit to prevent tampering
- Includes shorting clip that allows installers to test the wiring before the device is installed
- Supports 12 to 22 AWG
- Mount to Mircom BB-400 surface mount back box, single gang, 4-inch square, double gang, octagon and 4-inch junction boxes
- All units include universal mounting plate
- For indoor applications

Compliance

- UL 1971
- UL 1638
- UL 464
- ULC-S525
- ULC-S526
- NFPA 72 2016 Edition

S5375 S5375 7125-1477:0501

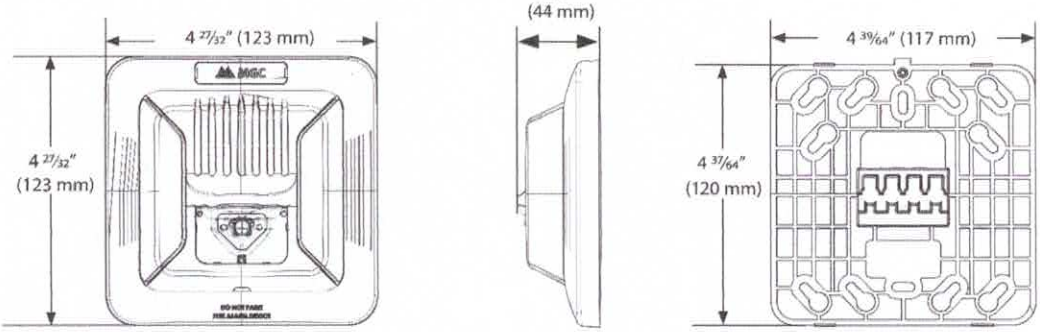
CATALOG NUMBER 5277

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Engineering Specifications

The horn/strobe shall be a Mircom FHS-400C notification appliance for ceiling mount applications. The horn/strobe shall be of a low current draw design and operate at 24 VDC regulated or full wave rectified. The horn/strobe shall have two field selectable volume settings and a choice of four tone settings for temporal, continuous, march time or 20 BPM. The horn/strobe shall incorporate a Light Emitting Diode (LED) as the light source and have five field selectable settings of 15, 15/75, 30, 75, 110 candela. The candela settings shall show the candela selection in a visible location at all times when installed. Both the audible and candela settings shall be tamper resistant. The horn/strobe shall be synchronized using a control panel with the Mircom sync protocol or the SDM-240 sync module. The horn/strobe shall utilize a mounting plate that allows the installer to pre-wire the mounting plate. The mounting plate shall mount on a single gang, double gang, octagon, 4-inch square box or Mircom's BB-400 series back box. The horn/strobe shall be listed to UL standard 464, Audible Signaling Devices for Fire Alarm and Signaling Devices, UL standard 1638, Visible Signaling Devices for Fire Alarm and Signaling Systems and standard 1971, Signaling Devices for the Hearing Impaired. In addition, the horn/strobe shall be listed to ULC-S525, Audible Signal Devices for Fire Alarm Systems and ULC S526, Visible Signal Devices for Fire Alarm Systems.

400 Series Dimensions

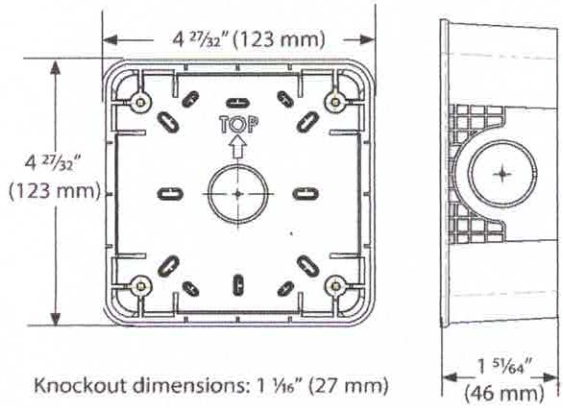


Height and width (all models)

Ceiling Mount Strobes & Horn/Strobes (FS-400C & FHS-400C)

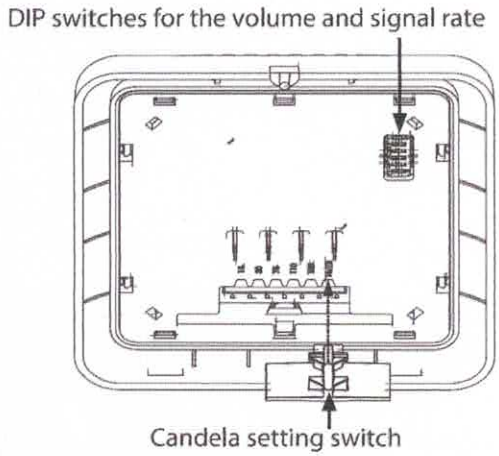
Mounting Plate

BB-400 Dimensions



Knockout dimensions: 1 1/16" (27 mm)

Audible/Visual Settings



Device settings are located on the back of the unit to prevent tampering

Specifications

General Specifications

Operating temperature	0°C to 50°C (32°F to 122°F)
Humidity range	0% to 93%
Strobe flash rate	1 Hz
Nominal Voltage	Regulated 24 VDC / 24 VFWR
Operating Voltage Range (RMS)	16 to 33
Input terminal wire gauge	22 AWG to 12 AWG
Installation environment	For indoor use only

Audible Ratings

dBA Reverberant Ratings per UL464 (dBA@10 ft)

Sound Pattern	Volume	16 VDC	Reg. 24 VDC	33 VDC	16 FWR	Reg. 24 FWR	33 FWR
Temporal	High	82.2	84.9	84.6	76.8	79	80
	Low	75.5	80.5	80.2	71.8	75.1	76.6
Continuous	High	86.4	89.2	88.7	81.5	83.1	84
	Low	79.9	84	84.8	76.2	79.3	81.2
20 BPM	High	79	81.3	81.6	74	75.1	76.1
	Low	72.3	76	76.7	68.9	71.7	73.3
March	High	83.2	86.4	85.7	79.2	80.6	81.4
	Low	76.9	80.9	81.7	73.3	76.2	78

dBA Anechoic Ratings per CAN/ULC-S525 (dBA@3 m)

Sound Pattern	Volume	16 VDC	Reg. 24 VDC	33 VDC	16 FWR	Reg. 24 FWR	33 FWR
Temporal	High	90.2	93.2	93.2	84.4	87.1	88.5
	Low	83.7	87.4	88.3	78	82.2	84.5
Continuous	High	90.2	93.2	93.3	85.1	87.8	89
	Low	83.8	87.6	88.6	78.5	83	85
20 BPM	High	90.3	92.9	92.9	84.4	87.2	88.6
	Low	83.6	87.3	88.3	78	82.2	84.5
March	High	90.2	92.9	92.9	84.4	87.1	88.4
	Low	83.7	87.4	88.3	78	82.2	84.4

ULC Directional Sound Characteristics

Horizontal Axis	
± 45°	-3 dbA
± 61°	-6 dbA
± 90°	-10 dbA
Vertical Axis	
± 49°	-3 dbA
± 61°	-6 dbA
± 90°	-7.7 dbA

FHS-400C Ceiling Horn/Strobe Operating RMS Currents (mA)

Candela	Regulated 24 VDC		Regulated 24 VFWR	
	Temporal Tone, High Volume*	Continuous Tone, High Volume	Temporal Tone, High Volume*	Continuous Tone, High Volume
15	41	52	95	98
30	75	80	160	164
75	155	158	228	232
15/75	156	158	227	233
110	227	231	258	261

*Temporal tone volume is representative of March and 20BPM as well

Light Output Dispersion

Degrees	% of Candela Rating	
	Vertical Dispersion X-Plane	Vertical Dispersion, Y-Plane
±0	150	155
±5	149	153
±10	149	152
±15	145	152
±20	139	146
±25	130	130
±30	121	122
±35	114	115
±40	111	111
±45	110	108
±50	110	108
±55	107	105
±60	100	101
±65	88	89
±70	72	72
±75	59	59
±80	60	61
±85	55	58
±90	42	45
Compound ±45°	79	83

Note: *The values are shown as percentages of the rated light output at any candela setting.*

Ordering Information

Model Number	Description
FHS-400C-RR	Ceiling Mount Horn/Strobe, Red
FHS-400C-WW	Ceiling Mount Horn/Strobe, White
BB-400R	Surface Mount Back Box, Red
BB-400W	Surface Mount Back Box, White
SDM-240	Synchronization Module

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CAT. 5277
Rev. 0

MÓDULO AISLADOR DE CORTO CIRCUITO

MIX-4070



Características

- Se monta en la caja de registro eléctrico estándar de 4 pulgadas o en la caja de registro eléctrico rectangular.
- El LED indicador proporciona el estatus del módulo.
- Acción automática, no se requiere direccionar al dispositivo.

Beneficios

- Aislamiento de corto circuito, que permite que los dispositivos restantes continúen funcionando.
- Facilidad de identificar la sección del lazo de comunicación SLC donde se ha presentado la falla de corto circuito.
- Rearmado automático en cuanto se elimina la falla de corto circuito.

Descripción

El módulo aislador de corto circuito MIX-4070 SLC está diseñado para usarse con un panel de control MGC compatible.

El módulo aislador permite que parte del lazo de comunicación continúe funcionando cuando se produce un corto circuito en él.

El LED indicador parpadea en condiciones normales y se queda iluminado de forma fija durante una condición de corto circuito. Solo los LED de los dispositivos junto al corto circuito se iluminan de forma fija para identificar fácilmente la sección del lazo de comunicación SLC fallada.

El módulo restaura automáticamente todo el lazo de comunicación a la condición normal de operación cuanto el corto circuito se ha eliminado.

Este es un dispositivo solo de hardware y no requiere de una dirección.

No hay límites para la cantidad de dispositivos MX-4070 instalados en el SLC siempre que se respete el límite de corriente total del lazo.

Especificaciones

Voltaje Normal de Operación	15 a 30 VCD
Corriente de Activación	9.6mA
Corriente en Reposo	0.6mA
Corriente en Reposo	32°F a 120°F (0°C a 49°C)
Humedad	10% a 93% Sin condensación
Calibre de cable en Terminales	22 a 12 AWG
Dimensiones	4.625" Alto x 4.25" Ancho x 1.125" Profundidad
Montaje	Se monta en una caja de registro eléctrico cuadrada de 4" o en la caja posterior para montaje superficial BB-400

Información para ordenar

Modelo	Description
MIX-4070	Módulo Aislador de Corto Circuito
BB-400	Caja de registro eléctrico para montaje superficial. Color Blanco

MGC

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Intertek

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Número de catálogo 9507S

Rev. 1

Mircom™

ESTROBO LED PARA MONTAJE EN TECHO FS-400C



Descripción

Los estrobos para montaje en techo FS-400C brindan una solución de notificación visual con excepcional eficiencia energética. Mediante la utilización de avanzada tecnología LED, los estrobos FHS-400C demandan menor consumo de corriente lo que permite conectar mayor cantidad de dispositivos en un circuito de notificación de alarma NAC por lo que la cantidad de fuentes de alimentación externas requeridas se reduce.

Los estrobos FS-400C cuentan con selector que permite elegir en campo la intensidad de destello (Candelas) de entre las opciones siguientes: 15, 15/75, 30, 75, ó 110 cd. La intensidad de destello (Candela) elegida, se visualiza desde el frente de la unidad para una fácil identificación. Todos los ajustes del dispositivo se ubican en la parte posterior de la unidad para evitar manipulaciones.

Los estrobos FS-400C pueden sincronizarse utilizando paneles de control con protocolo Mircom o mediante el módulo de sincronización SDM-240.

Los estrobos FS-400C utilizan un plato de montaje universal que permite instalar la unidad en cajas de conexión rectangular simple o doble, octagonal, cajas de paso de 4 pulgadas o cajas cuadradas de conexión eléctrica de 4 pulgadas. El plato de montaje con terminales, facilita al instalador el terminado y prueba del cableado, así como el montaje del dispositivo. El dispositivo se encastra en el plato de montaje y se asegura con un simple tornillo. Adicionalmente los aparatos FHS-400C se pueden instalar en la caja Mircom BB-400 para aplicaciones que requieren montaje superficial.

En cumplimiento de:

- UL 1971, UL 1638, ULC-S526
- NFPA 72 Edición 2016

S5375 S5375 7125-1477:0501

Características

- Diseño Compacto
- Avanzada tecnología LED que brinda un desempeño superior en cuanto a consumo de corriente
- Menor consumo de corriente por dispositivo que permite conectar una mayor cantidad de dispositivos de notificación por circuito, reduciendo las necesidades de fuentes de alimentación externas
- Ajuste de selección de luminosidad (Candela) estándar y alta en una misma unidad lo que permite cumplir virtualmente con cualquier aplicación
  - 15, 15/75, 30, 75, 110 cd
- Los ajustes del dispositivo se encuentran en la parte posterior de la unidad para evitar manipulaciones
- Incluye clip de continuidad que permite al instalador probar el cableado antes de instalar el dispositivo
- Terminales que soportan cables 12 a 22 AWG
- Montaje en caja para vista aparente Mircom BB-400, cajas de registro para empotrar rectangular estándar, cuadrada de 4 pulgadas, octagonal y cajas de conexiones de 4 pulgadas.
- Todas las unidades incluyen plato montaje universal
- Acabado en color rojo o blanco
- Para aplicaciones en interior

Especificaciones para Ingeniería

Los dispositivos de notificación visual para montaje en techo a utilizar deberán ser lámparas estrobo Mircom FS-400C. Los estrobos deberán de contar con diseño de bajo consumo de corriente y operar a 24 VCD con tensión regulada o de rectificador de onda completa.

Los estrobos deberán de tener incorporado un Diodo Emisor de Luz (LED) como fuente de luminosidad y tendrá un selector que posibilite elegir el nivel de intensidad de destello de 15, 15/75, 30, 75, ó 110 candelas. La intensidad de destello seleccionada (candelas) deberá de poder visualizarse en todo momento, una vez instalado. El selector de ajuste de intensidad de destello deberá de estar alojado en el interior del dispositivo para evitar manipulaciones. Los estrobos deberán poder sincronizarse mediante panel de control que cuente con protocolo de sincronización Mircom o a través del módulo externo de sincronización SDM-240. Los estrobos deberán contar con plato de montaje con terminales de conexión que permitan terminar y probar el cableado antes de instalar el dispositivo. El plato de montaje universal permitirá instalar las unidades en cajas de conexión rectangular simple o doble, octagonal, cajas de paso de 4 pulgadas, cajas cuadradas de conexión eléctrica de 4 pulgadas o caja Mircom BB-400 para aplicaciones que requieren montaje superficial. Los estrobos deberán estar listados por UL estándar 1638, Dispositivos de Notificación Visual para Sistemas de Alarma y Señalización de Incendio y por el estándar UL 1971, Dispositivos de Señalización para Personas con Capacidad Auditiva Disminuida. Adicionalmente los estrobos deberán estar listados en cumplimiento del estándar ULC-S526 Dispositivos de Notificación Visual para Sistemas de Alarma y Señalización de Incendio.

NÚMERO DE CATALOGO 5276

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Especificaciones

Especificaciones Generales

Temperatura de operación	0 °C a 50 °C (32 °F a 122 °F)
Rango de humedad	0 % a 93 %
Frecuencia de destello del estrobo	1 Hz
Voltaje Nominal	Regulada de 24VCD ó 24 VROC
Rango de Voltaje de Operación (RMS)	16 a 33 VCD
Calibre de conductor en terminales de conexión	22 AWG a 12 AWG
Ambiente de instalación	Únicamente para uso en interior

Consumos de Corriente (mA) en Operación RMS de Estrobo para montaje en techo FS-400C

Intensidad de Destello Candela	24 VCD Regulada	24 VROC** Regulada
15	37	93
30	72	152
75	152	217
15/75	153	216
110	226	256

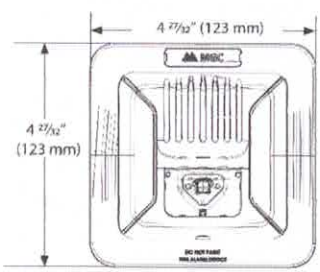
**Nota: El voltaje suministrado por Rectificadores de Onda Completa (VROC) se utiliza en algunas fuentes de alimentación y salidas de alimentación de voltaje de paneles.

Dispersión de Luz de Salida

Grados	% de Rango de Candelas	
	Dispersión Vertical Plano X	Dispersión Vertical Plano Y
±0	150	155
±5	149	153
±10	149	152
±15	145	152
±20	139	146
±25	130	130
±30	121	122
±35	114	115
±40	111	111
±45	110	108
±50	110	108
±55	107	105
±60	100	101
±65	88	89
±70	72	72
±75	59	59
±80	60	61
±85	55	58
±90	42	45
Compuesto ±45°	79	83

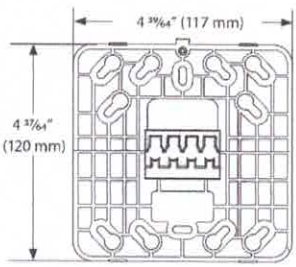
Nota: Los valores se muestran como porcentaje de la salida luminosa nominal de cualquier intensidad de destello (candela)

Dimensiones



Altura y ancho (todos los modelos)

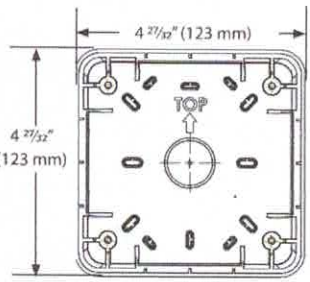


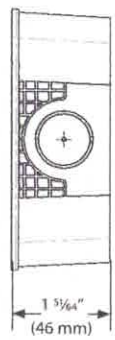


Estrobos y Sirenas con Estrobo para montaje en techo (FS-400C & FHS-400C)

Plato de Montaje

Caja para montaje superficial BB-400



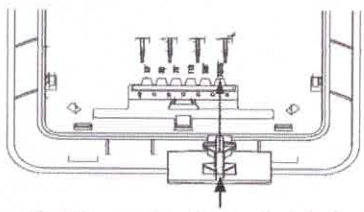


Dimensión de preformado para paso de tubería conduit: 1 1/16" (27 mm)

Información para ordenar

Número de Modelo	Descripción
FS-400C-RR	Estrobo para Montaje en Techo, Rojo
FS-400C-WW	Estrobo para Montaje en Techo, Blanco
BB-400R	Caja posterior para montaje superficial, Roja
BB-400W	Caja posterior para montaje superficial, Blanca
SDM-240	Módulo de Sincronización

Selección de Intensidad de Destello



Switch para elección de nivel de Candelas

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