



Grupo de Incendios

FIRE FIGHTING EQUIPMENTS

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FIRE FIGHTING EQUIPMENTS



Certificate of Compliance	
This certificate is issued for the following:	
Working Check Valves	
Model 1000, Grooved End	
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	
Sizes 150, 175, 200 and 225 mm	
Models 1000 and 1000-01 Flanged End	
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	
Design	Manufacturing
Shanghai Jintan Machinery Co., Ltd.	Shanghai Jintan Machinery Co., Ltd.
No. 1000 Road, Shanghai, China	No. 1000 Road, Shanghai, China
Shanghai City, Shanghai, 201307	Shanghai City, Shanghai, 201307
China	China
FM Approvals Class: 1212, dated June 2004	
Approval Identification: 000007140	Approval Granted: July 9, 2010
To verify the availability of the approved product, please refer to www.fmauthority.com	
Best Approved is subject to satisfactory field performance, continuing Surveillance audits, and strict conformity to the conditions as shown in the Approval Guide, or other resources of FM Approvals	
 David W. Fisher V.P. Manager - Fire Protection FM Approvals 1111 Sunset Boulevard, Torrance Torrance, CA 90501 USA	

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Certificate of Compliance	
This certificate is issued for the following:	
DAKE VALVES - 1000	DAKE VALVES - 1000
Model 1000, Grooved End	Model 1000, Grooved End
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch
Sizes 150, 175, 200 and 225 mm	Sizes 150, 175, 200 and 225 mm
Models 1000 and 1000-01 Flanged End	Models 1000 and 1000-01 Flanged End
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch
DAKE VALVES - 1000	DAKE VALVES - 1000
Model 1000, Grooved End	Model 1000, Grooved End
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch
Sizes 150, 175, 200 and 225 mm	Sizes 150, 175, 200 and 225 mm
Models 1000 and 1000-01 Flanged End	Models 1000 and 1000-01 Flanged End
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch
Prepared for:	
Fire Fighting Equipments Ltd.	
Attn: Mr. YALLAPATI S.R.	
1111 Sunset Boulevard, Torrance	
Torrance, CA 90501 USA	
FM Approvals Class: 1212, dated June 2004	
Approval Identification: 000007140	Approval Granted: November 14, 2010
To verify the availability of the approved product, please refer to www.fmauthority.com	
Best Approved is subject to satisfactory field performance, continuing Surveillance audits, and strict conformity to the conditions as shown in the Approval Guide, or other resources of FM Approvals	
 David W. Fisher V.P. Manager - Fire Protection FM Approvals 1111 Sunset Boulevard, Torrance Torrance, CA 90501 USA	

Certificate of Compliance	
This certificate is issued for the following:	
ALARM CHECK VALVES	
Model 1000, Grooved End	
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	
Sizes 150, 175, 200 and 225 mm	
Models 1000 and 1000-01 Flanged End	
Sizes 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10 and 12 inch	
Prepared for:	
FIRE FIGHTING EQUIPMENTS LTD.	
Attn: Mr. YALLAPATI S.R.	
1111 Sunset Boulevard, Torrance	
Torrance, CA 90501 USA	
FM Approvals Class: 1212, dated June 2004	
Approval Identification: 000007140	Approval Granted: September 14, 2010
To verify the availability of the approved product, please refer to www.fmauthority.com	
Best Approved is subject to satisfactory field performance, continuing Surveillance audits, and strict conformity to the conditions as shown in the Approval Guide, or other resources of FM Approvals	
 David W. Fisher V.P. Manager - Fire Protection FM Approvals 1111 Sunset Boulevard, Torrance Torrance, CA 90501 USA	



GISA GROOVED SYSTEM



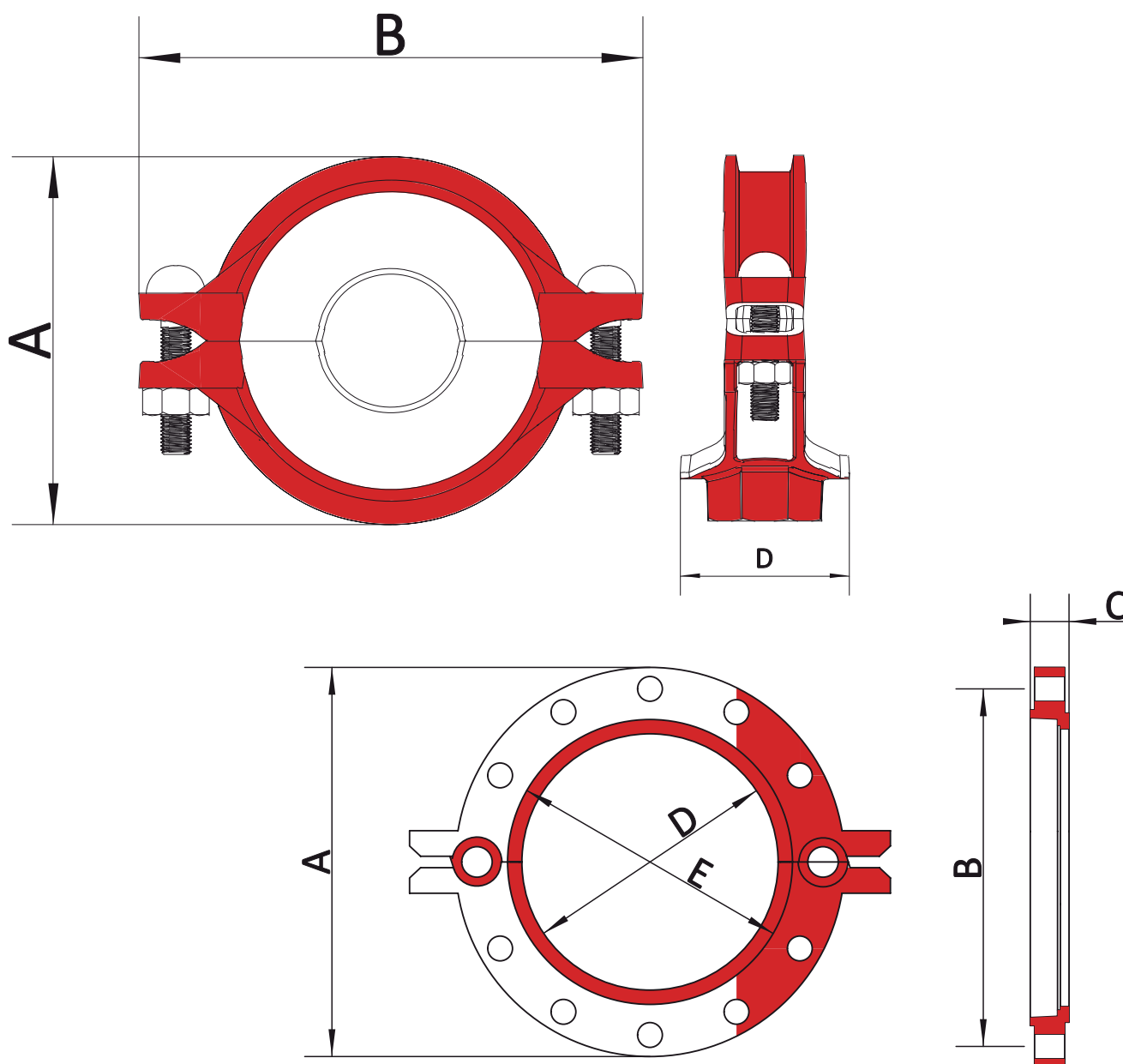
GISA GROOVED PIPING SYSTEM

The GISA grooved piping system is one of the most advanced, versatile, economical and reliable systems available today. After the pipe ends are grooved a gasket is stretched over the pipe ends.

The coupling segments are then placed over the gasket and the bolts and nuts are fastened resulting in a secure and leak free joint.

A coupling can be installed 3-4 times faster than a comparable welded or brazed joint and there is no need for a flame or welding torch on the job site. A coupling can be installed by fastening a pair of bolts and nuts while using only a wrench or spanner, whereas a comparable flanged joint requires the fastening of many bolts and nuts with a pair of wrenches.

The grooved system allows for easy material take-offs and unlike a threaded system, there is no need to allow for added pipe length for thread engagement. With the removal of just a few bolts one can easily access the system for cleaning, maintenance, changes and or system expansion.





PUSH-ON COUPLING

Mod. XGQT4

INNOVATION

The MODEL XGQT4 PUSH-ON Rigid Coupling is a truly rigid Grooved Pipe Coupling that, unlike other Grooved Couplings, does not allow any axial movement, angular movement, or rotational movement under normal service conditions. The push-on coupling allows the pipe to be moved into the couplings directly without losing components. Support and suspension requirements correspond to ANSI B31.1, B31.9 and NFPA 13.

Caution:

The ends of the pipe must be cut square so that the ends of the pipe meet.

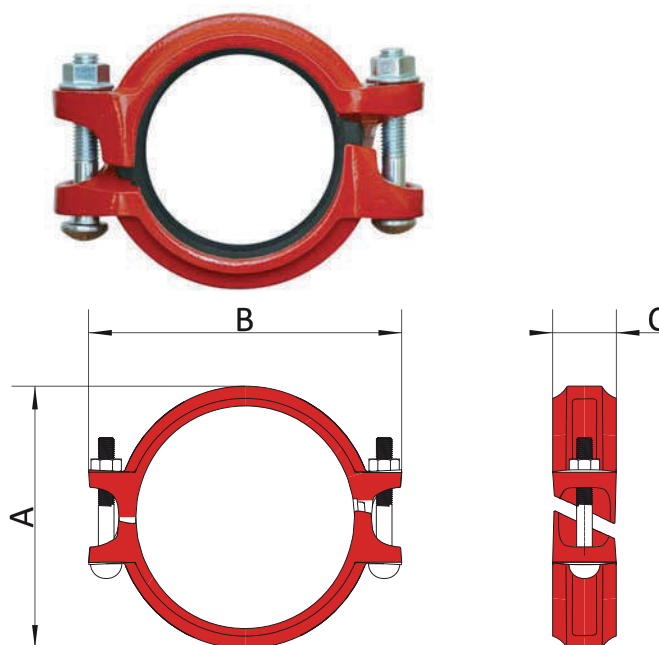
Applications:

All piping, including mechanical rooms where no angular or axial movement is desired.

Protection pipes against dry system.

Stainless Steel pipes for the drinking water and food industries (casings with epoxy coating with NSF61 certified joint and type 316 bolts and silicone BRASS Nuts).

Hot water systems.



Available sizes: 32 mm-200 mm / 1-1 / 4 " ~ 8 "
Work pressure: until 20 bar / 300 psi

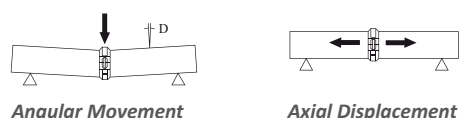


Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Max.End Load KN/Lbs	Axial Displacement	Dimensions			Bolts Size mm/in
					mm/in	mm/in	mm/in	
32	42.4	20	2.92	0-1.6	71.5	112	47	M10×60
11/4	1.669	300	656	0-0.06	2.81	4.41	1.85	3/8×60
40	48.3	20	3.79	0-1.6	78	117	47	M10×60
11/2	1.9	300	852	0-0.06	3.07	4.61	1.85	3/8×60
50	60.3	20	5.91	0-1.6	90	132	48	M10×60
2	2.375	300	1327	0-0.06	3.54	5.20	1.89	3/8×60
65	76.1	20	9.41	0-1.6	106	150	48	M10×70
21/2	3	300	2114	0-0.06	4.17	5.91	1.89	3/8×70
80	88.9	20	12.84	0-1.6	121	164	49	M12×75
3	3.5	300	2885	0-1.7	4.76	6.46	1.93	1/2×75
100	114.3	20	21.22	0-4.1	147	190	52	M12×75
4	4.5	300	4769	0-0.16	5.79	7.48	2.05	1/2×75
125	139.7	20	31.70	0-4.1	174	222	52	M12×80
5	5.5	300	7124	0-0.16	6.85	8.74	2.05	1/2×80
150	165.1	20	44.27	0-4.1	204	263	52	M16×85
6	6.5	300	9950	0-0.16	8.03	10.35	2.05	5/8×3-1/3
150	168.3	20	46.00	0-4.1	206	264	52	M16×85
6	6.625	300	10340	0-0.16	8.11	10.39	2.05	5/8×3-1/3
200	219.1	20	77.97	0-4.1	320	252	65	M16×120
8	8.625	300	17524	0-0.16	12.60	9.92	2.56	5/8×4-3/4

IRIGID OR FLEXIBLE?

GISA grooved couplings are classified into two types, flexible and rigid. What are the differences? When and where should they be used?

The following information is intended for system designers and installers to better understand the nature of the grooved piping systems. This will allow the designer and installer to make better use of the design features and advantages of grooved piping components and systems.



RIGID COUPLINGS

The most popular and most widely used couplings today.

GISA rigid couplings can be used in applications where you require a rigid joint similar to that of a traditional flanged, welded and or threaded connection. You need not worry about the snaking of the pipe on straight runs, as all GISA rigid couplings utilize both a mechanical and frictional interlock design to provide rigidity. Rigid couplings eliminate or reduce undesired angular movement, axial displacement and rotation after installation as is required under normal service conditions. Rigid couplings are some of the most popular and most widely used today.

GISA offers two different types of rigid couplings, the angle-pad design, the T&G (tongue and groove) design.

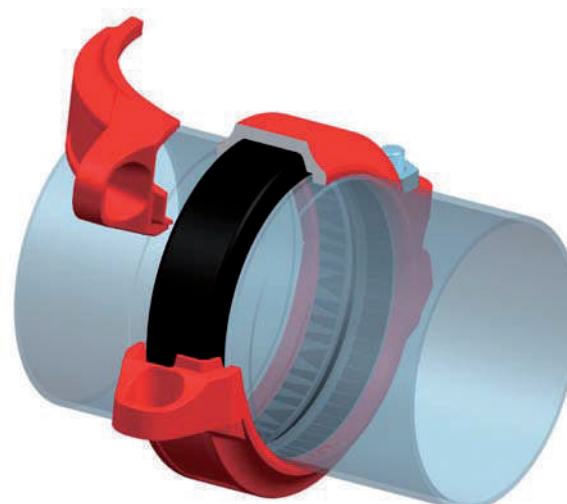


- **Angle-pad design:** As the bolts are tightened, the angled bolt pads slide in opposite directions causing the couplings keys to tightly grip the pipe, while at the same time the pipe grooves are forced outward against the coupling keys.
- **T&G design:** The T&G (tongue & groove) mechanism provides a mechanical and frictional interlock resulting in a rigid joint which reduces undesired angular movement. GISA precision casting techniques allow the coupling segments to meet metal-to-metal when installed on properly grooved pipe.

Type	Angular Movement deg.	Axial Displacement mm	Rotation after installation	Model Nos.
Flexible Coupling	$\geq 1^\circ$	1.6 - 3.2	Yes	XGQT2, XGQT3 1212
Rigid Coupling	Angle-pad design	$< 1^\circ$	No	GKS, 1512, XGQT4
	T&G design	$< 1^\circ$	No	XGQT1, 31HP

Note:

- 1) Angular movement of flexible coupling 8" and larger sizes should be 0.5°.
- 2) Axial displacement data based on roll-grooved pipe.



T&G Design

FLEXIBLE COUPLINGS

For full design features.

GISA flexible couplings allow for full design features in applications such as curved or deflected layouts and or when systems are exposed to outside forces beyond normal static conditions such as seismic events or where vibration and or noise attenuation are a concern. The ability to design in controlled flexibility is an advantageous feature when compared to traditional rigid joining methods such as threading, flanging and welding. When designing with flexible couplings you must allow for proper support to the system so as to eliminate undesired stress.

There are several published standards and codes covering grooved piping component. These codes or standards may vary as to the definition or standard for flexible couplings. System designers should confirm which standard (s) and or code(s) are required for the system being designed and they should select the applicable coupling for the application.



NFPA 13 DEFINES A FLEXIBLE COUPLING AS:

“a listed coupling or fitting that allows axial displacement, rotation, and at least 1 degree of angular movement of the pipe without inducing harm on the pipe. For pipe diameters of 8 in. and larger, the angular movement shall be permitted to be less than 1 degree but not less than 0.5 degrees “. (NFPA 13-2007 3.5.4)

For sprinkler systems, NFPA 13 specifies the use of flexible couplings to protect the system against damage from earthquakes and sets some specific examples of how and where they should be used.

Designers and installers should design their fire protection systems in compliance with this standard. See Typical Applications.



Flexible Coupling

AXIAL DISPLACEMENT & ANGULAR MOVEMENT (MODELS XGQT2 & 1212)

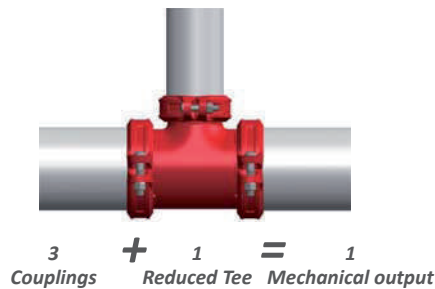
Size		Axial Displacement mm/in	Angular Movement (Deflection)		Size		Axial Displacement mm/in	Angular Movement (Deflection)	
Nom. Size mm/in	Actual OD mm/in		Per coupling degrees	Per pipe mm/m, in/ft	Nom. Size mm/in	Actual OD mm/in		Per coupling degrees	Per pipe mm/m, in/ft
20	26.7	1.6	6°-46'	118	150	159.0	3.2	2°-18'	40
0.75	1.050	0.0625		1.42	6	6.250	0.125		0.48
25	33.4	1.6	5°-30'	96	150	165.1	3.2	2°-14'	39
1	1.315	0.0625		1.16	6	6.500	0.125		0.47
32	42.4	1.6	4°-20'	76	150	168.3	3.2	2°-10'	38
1.25	1.660	0.0625		0.91	6	6.625	0.125		0.45
40	48.3	1.6	3°-48'	66	200 JIS	216.3	3.2	1°-42'	30
1.5	1.900	0.0625		0.80	8	8.516	0.125		0.36
50	60.3	1.6	3°-01'	53	200	219.1	3.2	1°-40'	29
2	2.375	0.0625		0.63	8	8.625	0.125		0.35
65	73	1.6	2°-30'	44	250 JIS	267.4	3.2	1°-22'	24
2.5	2.875	0.0625		0.52	10	10.528	0.125		0.29
65	76.1	1.6	2°-24'	42	250	273.0	3.2	1°-20'	23
2.5	3.000	0.0625		0.50	10	10.750	0.125		0.28
80	88.9	1.6	2°-04'	36	300 JIS	318.5	3.2	1°-10'	20
3	3.500	0.0625		0.43	12	12.539	0.125		0.25
90	101.6	1.6	1°-48'	31	300	323.9	3.2	1°-08'	20
3.5	4.000	0.0625		0.38	12	12.750	0.125		0.24
100	108.0	3.2	3°-24'	59.0	350	355.6	3.2	1°-02'	18
4	4.25	0.125		0.71	14	14.000	0.125		0.22
100	114.3	3.2	3°-12'	55	400	406.4	3.2	0°-54'	16
4	4.500	0.125		0.67	16	16.000	0.125		0.19
125	127.0	3.2	2°-53'	50.0	450	457.0	3.2	0°-48'	14
5	5.000	0.125		0.60	18	18.000	0.125		0.17
125	133	3.2	2°-46'	48	500	508.0	3.2	0°-44'	13
5	5.250	0.125		0.58	20	20.000	0.125		0.15
125	139.7	3.2	2°-37'	46	550	559.0	3.2	0°-38'	11
5	5.500	0.125		0.55	22	22.000	0.125		0.13
125	141.3	3.2	2°-36'	45	600	610.0	3.2	0°-36'	10
5	5.563	0.125		0.54	24	24.000	0.125		0.13

Note: Axial displacement is the maximum value when the system is pressurized to the maximum working pressure. Angular movement is the maximum value that a coupling allows under no internal pressure.

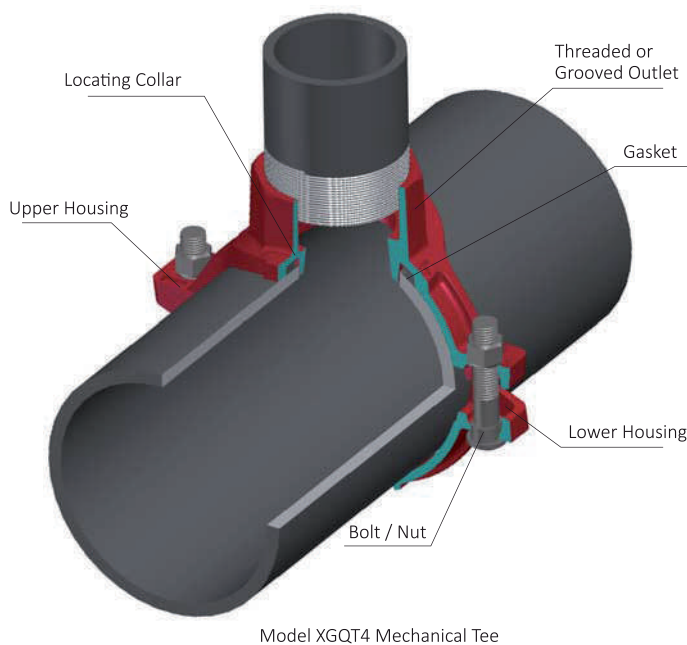
IHOLE-CUT PIPING SYSTEMS GISA

The GISA hole-cut piping systems provide a fast and easy mid-point branch outlet, eliminating the need for multiple fittings and allows for easy expansion of the piping system.

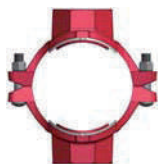
The GISA mechanical tees Models XGQT4G, XGQT4 and L922 provide an easy take-out of a branch outlet without the need for welding. First a hole is cut or drilled at the desired location. The mechanical tee is then positioned so that the built-in locating collar fits within the hole.



As the housing bolts are tightened, the pressure responsive gasket forms a leak-tight seal.

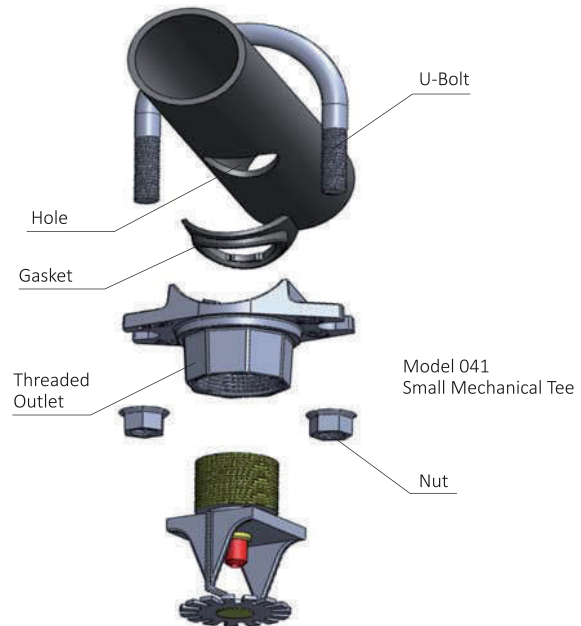


- Grooved-end and threaded outlets are available.
- A mechanical cross connection can be made by combining two upper housing segments.



Model XGQT4C

The Model 041 Saddle-Let mechanical tee is the ideal outlet fitting for direct connection to sprinkler heads, short risers, drops and or gauges.



WELDING OUTLET FITTINGS

The GISA welding outlet fittings provide an easy threaded outlet at any desired location along the header.

The GISA Model J01 universal outlet fitting is designed to fit a range of header sizes which will reduce costs associated with ordering, inventory and installation. The model J01 was designed for the fire protection industry where a high volume of 1/2", 3/4" and 1" sizes are used. These outlets can be welded manually or with automated equipment.

- Meets NFPA 13 requirements, UL listed and FM approved.
- GISA hole template is available for manual hole cutting.
- Reduces welding time and the likelihood of burn through.
- Reduces stock numbers by up to 70% over traditional outlets
- For more sizes and or grooved outlets, please see our Models J01 and J02R outlets.





IMATERIALS

HOUSINGS.

The housing segments not only provide significant strength to the joint but they also compress and protect the gasket from exposure, GISA coupling housings and components are cast in a variety of materials as shown below.



Ductile Iron: Standard coupling housings and fittings are made of ductile iron conforming to ASTM A536 Gr. 65-45-12. The properties of Grade 65-45-12 ductile iron are as follows; 65,000 psi (448 MPa) tensile strength, 45,000 psi (310 MPa) yield strength and 12% elongation. As an option we also offer ductile iron made to ASTM A395 Gr. 60-40-18, for applications where required or where boiler codes may apply.



Stainless Steel: We offer a variety of stainless steel casting materials depending on your intended application. Standard coupling housing and fitting materials include CF8 (304), CF8M (316) or CF3M (316L) per ASTM A743. Optional materials include 2205 Duplex, 2507 Super Duplex and ASTM CK-3MCuN (UNS J93245), equivalent to 254SMO*. (* 254SMO is a registered trademark of Avesta Polarit AQB.).

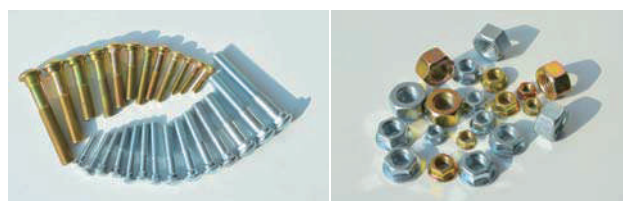
BOLTS AND NUTS.

GISA products utilize oval neck track bolts and heavy duty hex nuts, available either in UNC threaded or ISO metric threaded. The oval neck track bolts mate into the oval holes in the housing segments to allow for easy tightening using only a single wrench/spanner. The UNC bolts and nuts are electro zinc plated in a silver chromate color and ISO bolts and nuts in a gold chromate color. Hot-dip galvanized bolts and nuts are also available upon request. (M10 to M22 only).

Stainless steel track bolts and nuts, type 304 or 316, are supplied with GISA stainless steel couplings. Stainless steel track bolts and nuts are molybdenum disulfide (MoS₂) coated to inhibit galling.

GASKETS.

GISA gaskets are available in a variety of configurations and compounds to meet your specific requirements. These gaskets have excellent self sealing capabilities and are designed to provide a leak tight seal. During assembly the gasket is first stretched over the pipe ends which forms the initial seal.



As the housing segments are installed and secured the pressure responsive gasket is slightly compressed to form a leak-tight joint. The strength of the seal is further enhanced by internal line pressure that creates downward pressure on the lips of the gasket. The gasket also seals well under vacuum conditions up to 10 inHg (254 mmHg) which may occur when a system is drained. Please refer to the GISA Gasket Selection Guide for additional details and gasket materials.



A stainless steel bolt fastened with a silicone bronze nut.

DATA CHART NOTES

Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Max.End Load kN/Lbs	Axial Displacement mm/in	Angular Movement		Dimensions			Bolt Size in	Bolt Torque N-m/Lbs-Ft
					Degree Per Coupling(°)	Pipe mm/m in/ft	A mm/in	B mm/in	C mm/in		
1	2	3	4	5	6		7			8	9

1 **Nominal Size:** GISA couplings and fittings are identified by the nominal IPS pipe size in inches or nominal diameter of pipe (DN) in millimeters.

2 **Pipe OD:** Actual outside diameter of pipe in inches and millimeters.

3 **Maximum Working Pressure:** Maximum working pressures listed are CWP (cold water pressure) or maximum allowed working pressure within the service temperature range of the gasket used in the coupling, based on standard wall or sch. 7/10/40 steel pipe, cut or roll-grooved to ANSI/AWWA C606-04 specifications.

These ratings may occasionally differ from maximum working pressures listed and/or approved by UL, ULC, and/or FM as testing conditions and test pipes differ. For performance data on other pipe schedules contact GISA.

Note: For one time field test only the maximum joint working pressure may be increased 1.5 times the figures shown.

4 **Maximum End Load:** Maximum end loads listed are total of internal and external forces to which the joint can be subjected, based on standard wall or sch. 7/10/40 steel pipe, cut or roll-grooved to ANSI/AWWA C606-04 specifications.

5 **Axial Displacement:** Designed range of the gap between pipe ends based on roll grooved pipe.

6 **Angular Movement (Deflection):** Maximum allowable deflection of pipe from centerline when the joint is used with cut or roll-grooved steel pipe under no internal pressure.

7 **Dimensions:** "A", "B", "C" and so on are external dimensions for reference purpose only in millimeters and inches.

8 **Bolt Size:** UNC bolt size and length in inches and ISO metric bolt size and length in millimeters with numbers of bolts where applicable

9 **Bolt Torque:** Recommended bolt fastening torque in Lbs-Ft and N-m.

GENERAL NOTES

Service Fluid and Temperature: Service fluid and temperature limitations for GISA couplings are primarily governed by the gasket used within the coupling. Always refer to and consult the GISA Gasket Selection Guide.

Working Pressure: GISA grooved couplings are generally engineered for use with standard or sch. 7/10/40 steel pipes (except for some high pressure models) and can be used within the rated working pressures as shown in the GISA literature. A one time only field test at 1.5 times the working pressure is allowed.

As there are limitations in service temperatures, the GISA couplings and fittings do not adopt the ANSI temperature-pressure ratings (Class 150, Class 300, etc.), ISO or JIS methods of pressure ratings (PN10, PN16, JIS 10K or 20K, etc.). All the published working pressures are CWP, non-shock cold water pressures, unless otherwise specified.

Actual allowed working pressures for a specific coupling will vary depending on the coupling size, pipe material, pipe schedule (or thickness) and types of grooves used.

Special attention is required when using thin wall stainless steel pipe such as sch. 5. For further details request the performance data for specific thin wall pipe.

The dimensions, weights, performance data, and other specifications shown in this catalog supersede all previous published data. GISA reserves the right to change product designs and or specifications without notice and without obligation.

Illustrations shown within this catalog are for illustrative purposes. They are not drawn to scale and may have been exaggerated for clarity. Any person who makes use of the information or materials contained herein shall do so at their own risk and shall be liable for any results arising from such use.



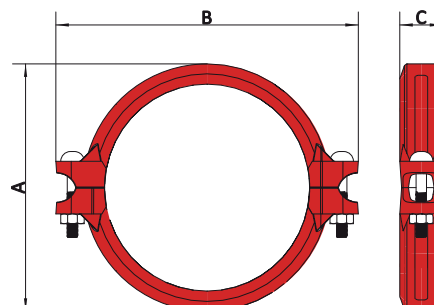
RIGID COUPLING

Mod. XGQT1

T&G DESIGN

The GISA Model XGQT1 is a T&G (tongue & groove) design rigid coupling for moderate pressure applications where rigidity is required including valve connections, mechanical rooms, fire mains and long straight runs. The built-in teeth and T&G mechanism firmly grasp the pipe ends to eliminate undesired. Support and hanging requirements correspond to ANSI B31.1, B31.9 and NFPA 13.

The precision casting allows metal-to-metal contact of bolt pads when properly installed. No torque wrench is required for installation.



Sizes available: 32mm-406mm / 1-1/4"~16"

Working Pressure: Up to 20 bar / 300 psi



Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Max.End Load KN/Lbs	Axial Displacement mm/in	Dimensions			Bolts Size mm/in
					A mm/in	B mm/in	C mm/in	
25	33.7	20	1.80	0-1.6	55	97	45	M10x40
1	1.327	300	405	0-0.06	2.17	3.82	1.77	3/8x1-1/2
32	42.4	20	2.92	0-1.6	63.5	107.5	45	M10x45
11/4	1.669	300	656	0-0.06	2.50	4.23	1.77	3/8x1-3/4
40	48.3	20	3.79	0-1.6	69	114	45	M10x45
11/2	1.9	300	852	0-0.06	2.72	4.49	1.77	3/8x1-3/4
50	60.3	20	5.91	0-1.6	83.6	124	46	M10x55
2	2.375	300	1327	0-0.06	3.29	4.88	1.81	3/8x2-1/8
65	73	20	8.66	0-1.6	98	137	46	M10x55
21/2	2.875	300	1945	0-0.06	3.86	5.39	1.81	3/8x2-1/8
65	76.1	20	9.41	0-1.6	98	139	46	M10x55
21/2	3	300	2114	0-0.06	3.86	5.47	1.81	3/8x2-1/8
80	88.9	20	12.84	0-1.6	114	156	46	M10x55
3	3.5	300	2885	0-0.06	4.49	6.14	1.81	3/8x2-1/8
100	108	20	18.94	0-4.1	138	186	50	M12x65
4	4.25	300	4258	0-0.16	5.43	7.32	1.97	1/2x2-5/8
100	114.3	20	21.22	0-4.1	142	189	50	M12x65
4	4.5	300	4769	0-0.16	5.59	7.44	1.97	1/2x2-5/8
125	133	20	28.73	0-4.1	164	213	50	M12x65
5	5.25	300	6457	0-0.16	6.46	8.39	1.97	1/2x2-5/8
125	139.7	20	31.70	0-4.1	170	222	50	M12x65
5	5.5	300	7124	0-0.16	6.69	8.74	1.97	1/2x2-5/8
125	141.3	20	32.43	0-4.1	170	218	50	M12x65
5	5.563	300	7288	0-0.16	6.69	8.58	1.97	1/2x2-5/8
150	159	20	41.06	0-4.1	192	244	50	M12x65
6	6.25	300	9229	0-0.16	7.56	9.61	1.97	1/2x2-5/8
150	165.1	20	44.27	0-4.1	196	244	50	M12x65
6	6.5	300	9950	0-0.16	7.72	9.61	1.97	1/2x2-5/8
150	168.3	20	46.00	0-4.1	198	251	50	M12x65
6	6.625	300	10340	0-0.16	7.80	9.88	1.97	1/2x2-5/8
200	216.3	20	75.99	0-4.1	254	340	62	M20x90
8	8.515	300	17079	0-0.16	10.00	13.39	2.44	3/4x3-1/2
200	219.1	20	77.97	0-4.1	256	316	60	M16x80
8	8.625	300	17524	0-0.16	10.08	12.44	2.36	5/8x3-1/8
250	267.4	20	116.13	0-4.1	313	400	64	M20x90
10	10.527	300	26101	0-0.16	12.32	15.75	2.52	3/4x3-1/2
250	273	20	121.05	0-4.1	319	393	64	M20x90
10	10.75	300	27206	0-0.16	12.56	15.47	2.52	3/4x3-1/2
300	318.5	20	164.76	0-4.1	368	464	64	M22x110
12	12.539	300	37031	0-0.16	14.49	18.27	2.52	7/8x4-1/3
300	323.9	20	170.39	0-4.1	374	453	65	M20x110
12	12.75	300	38297	0-0.16	14.72	17.83	2.56	3/4x4-1/3



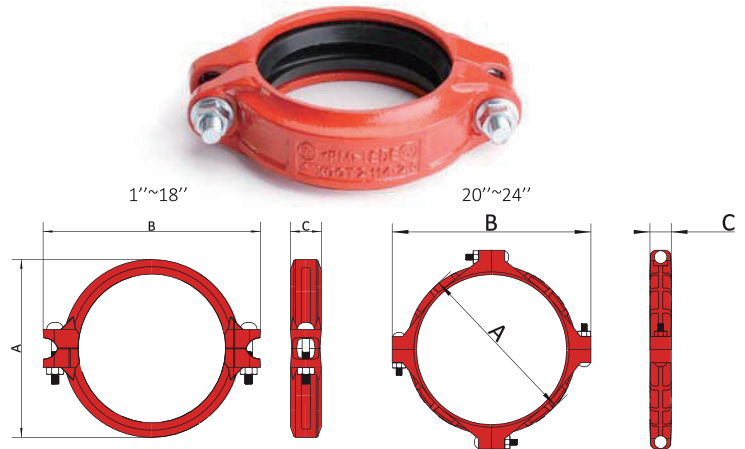
LIGHT FLEXIBLE COUPLING

Mod. XGQT2

The GISA Model XGQT2 is a standard flexible coupling for use in a variety of general piping applications of moderate pressure services. The Model XGQT2 couplings features flexibility that can deal with misalignment, distortion, thermal stress, vibration and noise and also resist seismic tremors. With the use of Model XGQT2 couplings you can even design a curved layout.

Sizes available: 25mm-600mm / 1"~24"

Working Pressure: Up to 20 bar / 300 psi



Nominal Size mm/in	Actual O.D. mm/in	Max. Working Pressure Bar/PSI	Max. End Load KN/Lbs	Axial Displacement mm/in	Angular Movement		Dimensions			Bolt Size mm/in
					Per Coupling Degree (°)	Per Pipe in/ft	A mm/in	B mm/in	C mm/in	
25	33.7	20	1.80	1.6	2°-45'	0.58	55	97	45	M10×40
1	1.327	300	405	0.0625		48	2.17	3.82	1.77	3/8×1-1/2
32	42.4	20	2.92	1.6		0.46	63.5	107.5	45	M10×45
11/4	1.669	300	656	0.0625	2°-10'	38	2.50	4.23	1.77	3/8×1-3/4
40	48.3	20	3.79	1.6		0.4	69	114	45	M10×45
11/2	1.9	300	852	0.0625		33	2.72	4.49	1.77	3/8×1-3/4
50	60.3	20	5.91	1.6	1°-54'	0.32	83.6	124	46	M10×55
2	2.375	300	1327	0.0625		27	3.29	4.88	1.81	3/8×2-1/8
65	73	20	8.66	1.6		0.26	98	137	46	M10×55
21/2	2.875	300	1945	0.0625	1°-15'	22	3.86	5.39	1.81	3/8×2-1/8
65	76.1	20	9.41	1.6		0.25	98	139	46	M10×55
21/2	3	300	2114	0.0625		21	3.86	5.47	1.81	3/8×2-1/8
80	88.9	20	12.84	1.6	1°-12'	0.22	114	156	46	M10×55
3	3.5	300	2885	0.0625		18	4.49	6.14	1.81	3/8×2-1/8
100	108	20	18.94	3.2		0.36	138	186	50	M12×65
4	4.25	300	4258	0.125	1°-02'	30	5.43	7.32	1.97	1/2×2-5/8
100	114.3	20	21.22	3.2		0.34	142	189	50	M12×65
4	4.5	300	4769	0.125		28	5.59	7.44	1.97	1/2×2-5/8
125	133	20	28.73	3.2	1°-36'	0.29	164	213	50	M12×65
5	5.25	300	6457	0.125		24	6.46	8.39	1.97	1/2×2-5/8
125	139.7	20	31.70	3.2		0.27	170	222	50	M12×65
5	5.5	300	7124	0.125	1°-23'	23	6.69	8.74	1.97	1/2×2-5/8
125	141.3	20	32.43	3.2		0.27	170	218	50	M12×65
5	5.563	300	7288	0.125		23	6.69	8.58	1.97	1/2×2-5/8
150	159	20	41.06	3.2	1°-18'	0.24	192	244	50	M12×65
6	6.25	300	9229	0.125		20	7.56	9.61	1.97	1/2×2-5/8
150	165.1	20	44.27	3.2		0.24	196	244	50	M12×65
6	6.5	300	9950	0.125	1°-18'	20	7.72	9.61	1.97	1/2×2-5/8
150	168.3	20	46.00	3.2		0.23	198	251	50	M12×65
6	6.625	300	10340	0.125		19	7.80	9.88	1.97	1/2×2-5/8
200	216.3	20	75.99	3.2	1°-07'	0.18	254	340	62	M20×90
8	8.515	300	17079	0.125		15	10.00	13.39	2.44	3/4×3-1/2
200	219.1	20	77.97	3.2		0.18	256	316	60	M16×80
8	8.625	300	17524	0.125	0°-50'	15	10.08	12.44	2.36	5/8×3-1/8
250	267.4	20	116.13	3.2		0.14	313	400	64	M20×90
10	10.527	300	26101	0.125		12	12.32	15.75	2.52	3/4×3-1/2
250	273.0	20	121.05	3.2	0°-50'	0.14	319	393	64	M20×90
10	10.75	300	27206	0.125		12	12.56	15.47	2.52	3/4×3-1/2
300	318.5	20	164.76	3.2		0.12	368	464	64	M22×110
12	12.539	300	37031	0.125	0°-50'	10	14.49	18.27	2.52	7/8×4-1/3
300	323.9	20	170.39	3.2		0.12	374	453	65	M20×110
12	12.75	300	38297	0.125		10	14.72	17.83	2.56	3/4×4-1/3
350	355.6	20	198.53	3.2	0°-50'	0.06	410	510	75	M22×110
14	14	300	46150	0.125		4.5	16.14	20.08	2.95	7/8×4-1/3
350	377	20	230.84	3.2		0.06	428	520	75	M22×140
14	14.843	300	51883	0.125	0°-31'	4.5	16.85	20.47	2.95	7/8×5-1/2
400	406.4	20	259.30	3.2		0.05	459	555	75	M22×140
16	16	300	60280	0.125	0°-29'	4	18.07	21.85	2.95	7/8×5-1/2
400	426	20	294.74	3.2		0.05	480	572	75	M22×140
16	16.771	300	66246	0.125	0°-27'	4	18.90	22.52	2.95	7/8×5-1/2
450	457.2	20	327.89	3.2		0.04	516	606	78	M22×140
18	18	300	76300	0.125	0°-25'	3.5	20.31	23.86	3.07	7/8×5-1/2
450	480.0	20	374.20	3.2		0.04	540	631	78	M22×160
18	18.9	300	84106	0.125		3	21.26	24.84	3.07	7/8×6-1/3
500	508.0	20	490.60	3.2	0°-24'	0.04	567	674	78	M22×140
20	20	300	113980	0.125		3	22.32	26.54	3.07	7/8×5-1/2
550	558.8	20	584.20	3.2		0.03	622	728	78	M22×140
22	22	300	135640	0.125	0°-22'	2.5	24.49	28.66	3.07	7/8×5-1/2
600	609.6	20	684.72	3.2		0.03	674	778	78	M24×150
24	24	300	159190	0.125		2.5	26.54	30.63	3.07	1×5-9/10

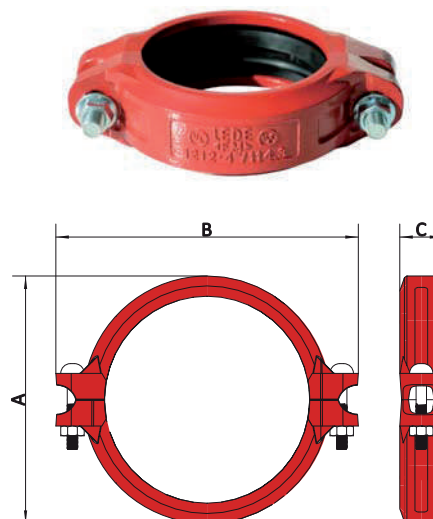
Deflection or angular movement is the maximum value that a coupling allows under no internal pressure. All DIN size 7705 couplings up to DN150 size and the DN200 7705H coupling are VdS approved in addition to cULus and FM approvals.



HEAVY DUTY FLEXIBLE COUPLING

Mod. 1212

The GISA Model 1212 heavy duty flexible coupling is designed for use in a variety of general piping applications of moderate or high pressure services. Working pressure is usually dictated by the wall thickness and rating of the pipe being used. The Model 1212 couplings feature flexibility that can deal with misalignment, distortion, thermal stress, vibration and noise and also resist seismic tremors. With the use of Model 1212 couplings you can even design a curved layout.



Sizes available: 32mm-300mm / 1 1/4"~12"

Working Pressure: Up to 35 bar / 500 psi



Nominal Size mm/in	Actual O.D. mm/in	Max. Working Pressure Bar/PSI	Max.End Load KN/Lbs	Axial Displacement mm/in	Angular Movement		Dimensions			Bolt	
					Per Coupling Degree (°)	Per Pipe in/ft	A mm/in	B mm/in	C mm/in	No.	Size mm/in
32 1 1/4	42.4 1.669	35 500	2.92 656	1.6 0.0625	2°-10'	0.46 38	63.5 2.50	107.5 4.23	45 1.77	2	M10×45 3/8×1-3/4
40 1 1/2	48.3 1.9	35 500	3.79 852	1.6 0.0625	1°-54'	0.4 33	69 2.72	114 4.49	45 1.77	2	M10×45 3/8×1-3/4
50 2	60.3 2.375	35 500	9.84 2212	1.6 0.0625	1°-31'	0.32 27	83 3.27	124 4.88	46 1.81	2	M10×55 3/8×2-1/8
65 2 1/2	73 2.875	35 500	14.64 3240	1.6 0.0625	1°-15'	0.26 22	100 3.94	145 5.71	47 1.85	2	M12×65 1/2×2-5/8
65 2 1/2	76.1 3	35 500	15.68 3523	1.6 0.0625	1°-12'	0.25 21	101.6 4.00	146 5.75	47 1.85	2	M12×65 1/2×2-5/8
80 3	88.9 3.5	35 500	21.39 4808	1.6 0.0625	1°-02'	0.22 18	116 4.57	162 6.38	47 1.85	2	M12×65 1/2×2-5/8
100 4	114.3 4.5	35 500	35.36 7948	3.2 0.125	1°-36'	0.34 28	144 5.67	194 7.64	51 2.01	2	M12×70 1/2×2-3/4
125 5	139.7 5.5	35 500	52.83 11874	3.2 0.125	1°-18'	0.28 23	171 6.73	230 9.06	52 2.05	2	M16×85 5/8×3-1/4
125 5	141.3 5.563	35 500	48.59 10930	3.2 0.125	1°-18'	0.28 23	171 6.73	230 9.06	52 2.05	2	M16×85 5/8×3-1/4
150 6	165.1 6.5	35 500	66.33 14920	3.2 0.125	1°-07'	0.24 20	198 7.80	260 10.24	53 2.09	2	M16×85 5/8×3-1/4
150 6	168.3 6.625	35 500	76.67 17233	3.2 0.125	1°-05'	0.24 20	200 7.87	261 10.28	53 2.09	2	M16×85 5/8×3-1/4
200 8	216.3 8.515	35 500	126.64 28465	3.2 0.125	0°-51'	0.18 15	265 10.43	336 13.23	63 2.48	2	M20×110 3/4×4-1/4
200 8	219.1 8.625	35 500	129.94 29206	3.2 0.125	0°-50'	0.18 15	263 10.35	336 13.23	63 2.48	2	M20×110 3/4×4-1/4
250 10	267.4 10.527	35 500	193.55 43502	3.2 0.125	0°-41'	0.15 12	317 12.48	403 15.87	66 2.60	2	M22×140 7/8×4-1/2
250 10	273 10.75	35 500	201.74 45344	3.2 0.125	0°-40'	0.15 12	326 12.83	410 16.14	66 2.60	2	M22×140 7/8×4-1/2
300 12	318.5 12.539	35 500	274.59 61718	3.2 0.125	0°-35'	0.12 10	375 14.76	463 18.23	66 2.60	2	M22×140 7/8×4-1/2
300 12	323.9 12.75	35 500	283.98 63828	3.2 0.125	0°-34'	0.12 10	381 15.00	469 18.46	66 2.60	2	M22×140 7/8×4-1/2

Deflection or angular movement is the maximum value that a coupling allows under no internal pressure.

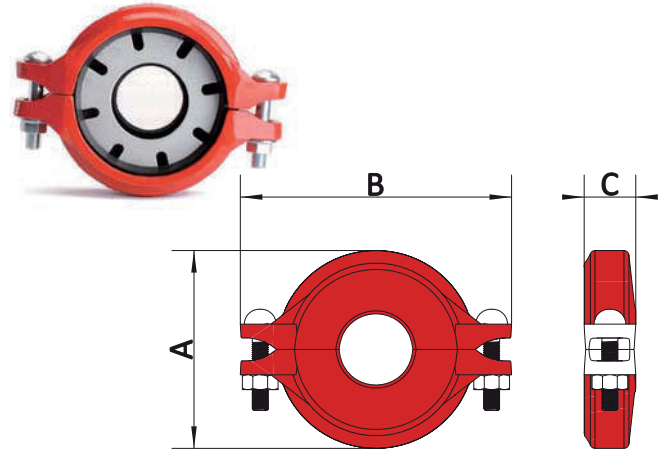


REDUCING COUPLING

Mod. XGQT3

The GISA Model XGQT3 reducing coupling allows for direct reduction on a piping run and eliminates the need for a concentric reducer and couplings. The specially designed rubber gasket helps prevent small pipe from telescoping into larger pipe during vertical assembly.

Caution: The Model XGQT3 couplings should not be used with an end cap, as the end may be sucked into the pipe when draining the system.



Nominal Size mm/in	Actual O.D. mm/in	Max. Working Pressure Bar/PSI	Max. End Load KN/Lbs	Axial Displacement mm/in	Deflection		Dimensions			Bolt Size mm/in
					Degree Per Coupling(°)	Pipe mm/m in/ft	A mm/in	B mm/in	C mm/in	
40x32	48.3x42.4	20	3.79	1.6	1°-54'	0.4	70	113	45	M10x50
11/2x11/4	1.9x1.669	300	852	0.0625	1°-31'	33	2.76	4.45	1.77	3/8x2
50x40	60.3x48.3	20	5.91	1.6	1°-15'	0.32	82	130	46	M10x55
2x11/2	2.375x1.9	300	1327	0.0625	1°-15'	27	3.23	5.12	1.81	3/8x2-1/8
65x25	73x33.7	20	8.66	1.6	1°-15'	0.26	97	151	46	M10x55
21/2x1	2.875x1.327	300	1945	0.0625	1°-15'	22	3.82	5.94	1.81	3/8x2-1/8
65x32	73x42.4	20	8.66	1.6	1°-15'	0.26	97	151	46	M10x55
21/2x11/4	2.875x1.669	300	1945	0.0625	1°-15'	22	3.82	5.94	1.81	3/8x2-1/8
65x40	73x48.3	20	8.66	1.6	1°-15'	0.26	97	151	46	M10x55
21/2x11/2	2.875x1.9	300	1945	0.0625	1°-15'	22	3.82	5.94	1.81	3/8x2-1/8
65x50	73x60.3	20	8.66	1.6	1°-15'	0.26	97	151	46	M10x55
21/2x2	2.875x2.375	300	1945	0.0625	1°-12'	22	3.82	5.94	1.81	3/8x2-1/8
65x50	76.1x60.3	20	9.41	1.6	1°-12'	0.25	97	151	46	M10x55
21/2x2	3x2.375	300	2114	0.0625	1°-12'	21	3.82	5.94	1.81	3/8x2-1/8
65x65	76.1x73	20	9.41	1.6	1°-12'	0.25	97	151	46	M10x55
21/2x21/2	3x2.875	300	2114	0.0625	1°-02'	21	3.82	5.94	1.81	3/8x2-1/8
80x40	88.9x48.3	20	12.84	1.6	1°-02'	0.22	112	166.6	46	M12x65
3x11/2	3.5x1.9	300	2885	0.0625	1°-02'	18	4.41	6.56	1.81	1/2x2-5/8
80x50	88.9x60.3	20	12.84	1.6	1°-02'	0.22	112	166.6	46	M12x65
3x2	3.5x2.375	300	2885	0.0625	1°-02'	18	4.41	6.56	1.81	1/2x2-5/8
80x65	88.9x73.0	20	12.84	1.6	1°-02'	0.22	112	166.6	46	M12x65
3x21/2	3.5x2.875	300	2885	0.0625	1°-02'	18	4.41	6.56	1.81	1/2x2-5/8
80x65	88.9x76.1	20	12.84	1.6	1°-02'	0.22	114	166.6	46	M12x65
3x21/2	3.5x3	300	2885	0.0625	1°-36'	18	4.49	6.56	1.81	1/2x2-5/8
100x50	114.3x60.3	20	21.22	3.2	1°-36'	0.34	141	200	50	M12x65
4x2	4.5x2.375	300	4769	0.125	1°-36'	28	5.55	7.87	1.97	1/2x2-5/8
100x65	114.3x73.0	20	21.22	3.2	1°-36'	0.34	141	200	50	M12x65
4x21/2	4.5x2.875	300	4769	0.125	1°-36'	28	5.55	7.87	1.97	1/2x2-5/8
100x65	114.3x76.1	20	21.22	3.2	1°-36'	0.34	151.2	200	50	M12x65
4x21/2	4.5x3.0	300	4769	0.125	1°-36'	28	5.95	7.87	1.97	1/2x2-5/8
100x80	114.3x88.9	20	21.22	3.2	1°-36'	0.34	141.8	200	50	M12x65
4x3	4.5x3.5	300	4769	0.125	1°-18'	28	5.58	7.87	1.97	1/2x2-5/8
125x100	139.7x114.3	20	31.70	3.2	1°-18'	0.27	169	235	52	M16x80
5x4	5.5x4.5	300	7124	0.125	1°-18'	23	6.65	9.25	2.05	5/8x3-1/8
125x100	141.3x114.3	20	32.43	3.2	1°-07'	0.27	167	230	52	M16x80
5x4	5.563x4.5	300	7288	0.125	1°-07'	23	6.57	9.06	2.05	5/8x3-1/8
150x80	165.1x88.9	20	44.27	3.2	1°-06'	0.24	197	275	52	M16x80
6x3	6.5x3.5	300	9950	0.125	1°-06'	20	7.76	10.83	2.05	5/8x3-1/8
150x100	165.1x114.3	20	44.27	3.2	1°-06'	0.24	197	275	52	M16x80
6x4	6.5x4.5	300	9950	0.125	1°-06'	20	7.76	10.83	2.05	5/8x3-1/8
150x65	168.3x73	20	46.00	3.2	1°-06'	0.23	199.4	275	52	M16x80
6x21/2	6.525x2.875	300	10340	0.125	1°-06'	19	7.85	10.83	2.05	5/8x3-1/8
150x80	168.3x88.9	20	46.00	3.2	1°-06'	0.23	199.4	275	52	M16x80
6x3	6.525x3.5	300	10340	0.125	1°-06'	19	7.85	10.83	2.05	5/8x3-1/8
150x100	168.3x114.3	20	46.00	3.2	1°-06'	0.23	199.4	275	52	M16x80
6x4	6.525x4.5	300	10340	0.125	1°-06'	19	7.85	10.83	2.05	5/8x3-1/8
150x100	168.3x141.3	20	46.00	3.2	1°-06'	0.23	199.4	275	52	M16x80
6x5	6.625x5.563	300	10340	0.125	1°-06'	19	7.85	10.83	2.05	5/8x3-1/8
150x150	168.3x165.1	20	46.00	3.2	0°-50'	0.23	199.4	275	52	M16x80
6x6	6.625x6.5	300	10340	0.125	0°-50'	19	7.85	10.83	2.05	5/8x3-1/8
200x100	219.1x114.3	20	77.97	3.2	0°-50'	0.18	256	336	58	M20x110
8x4	8.625x4.5	300	17524	0.125	0°-50'	15	10.08	13.23	2.28	3/4x4-1/3
200x150	219.1x168.3	20	77.97	3.2	0°-50'	0.18	256	336	58	M20x110
8x6	8.625x6.525	300	17524	0.125		15	10.08	13.23	2.28	3/4x4-1/3

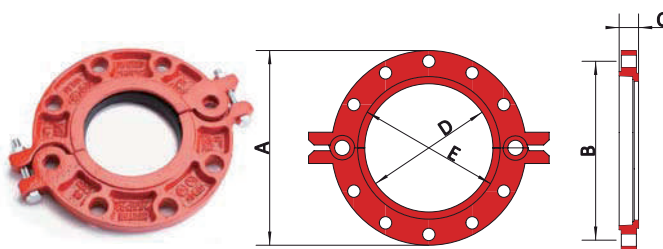
Deflection or angular movement is the maximum value that a coupling allows under no internal pressure.



FLANGE ANSI CLASS 125/150

Mod. L991

The Model L991 Flange allows for direct connection of grooved system to ANSI class 125/150 flanged components.

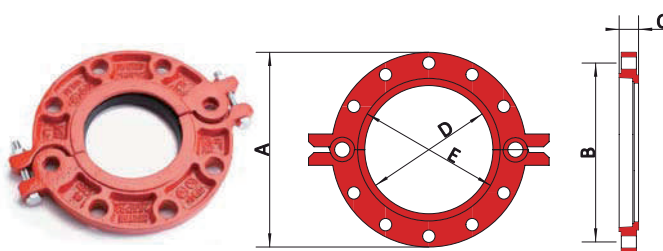


Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Max. End Load KN/Lbs	Dimensions					Bolt	
				A mm/in	B mm/in	C mm/in	D mm/in	E mm/in	No.	Size mm/in
50	60.3	17	5.71	155	120.5	25	60	78	4	M16
2	2.375	250	1330	6.10	4.74	0.98	2.36	3.07		5/8
65	73.0	17	8.37	180	140	25	73	93	4	M16
2.5	2.875	250	1950	7.09	5.51	0.98	2.87	3.66		5/8
80	88.9	17	12.41	190	153	25	89	107	4	M16
3	3.500	250	2880	7.48	6.02	0.98	3.50	4.21		5/8
100	114.3	17	20.51	230	191	25	114	131	8	M16
4	4.500	250	4770	9.06	7.52	0.98	4.49	5.16		5/8
125	141.3	17	31.35	255	216	25	141	157	8	M20
5	5.563	250	7290	10.04	8.50	0.98	5.55	6.18		3/4
150	168.3	17	44.47	280	241	25	168	185	8	M20
6	6.625	250	10340	11.02	9.49	0.98	6.61	7.28		3/4
200	219.1	17	75.37	345	299	27	219	234	8	M20
8	8.625	250	17520	13.58	11.77	1.06	8.62	9.21		3/4
250	273.0	17	164.71	405	362	30	273	294	12	M24
10	10.750	250	27210	15.94	14.25	1.18	10.75	11.57		1
300	323.9	17	164.71	485	432	32	324	341	12	M24
12	12.75	250	38280	19.09	17.01	1.26	12.76	13.43		1

FLANGE – PN10/PN16

Mod. XGQT09

The Model XGQT09 Flange allows for a direct connection with PN10/PN16 flanges. The unique shaped gasket allows for the transition from a flanged system to a grooved system with a single flange.



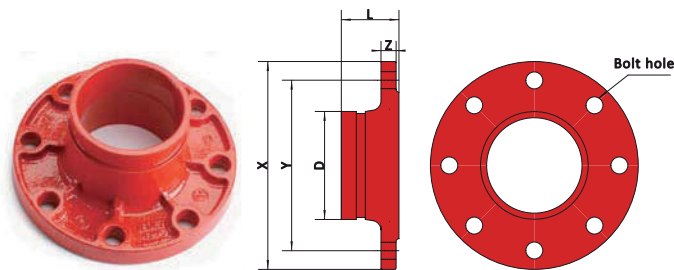
Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Max. End Load KN/Lbs	Dimensions			Sealing Surface		Bolt	
				A mm	B mm	C mm	D mm	E mm	No.	Size mm
50	60.3	16	4.60	164	125	25	60	78	4	M16
2	2.375	225	1000							
65	73	16	6.64	182	145	25	73	93	8	M16
2 1/2	2.875	225	1491							
65	76.1	16	7.30	182	145	25	76	93	8	M16
2 1/2	3	225	1590							
80	88.9	16	9.90	194	160	25	89	107	8	M16
3	3.5	225	2165							
100	108	16	14.52	216	180	25	108	130	8	M16
4	4.25	225	3264							
100	114.3	16	16.40	216	180	25	114	131	8	M16
4	4.5	225	3580							
125	133	16	22.03	247	210	25	133	156	8	M16
5	5.25	225	4951							
125	139.7	16	24.50	247	210	25	140	157	8	M16
5	5.5	225	5340							
125	141.3	16	24.86	247	210	25	141	157	8	M16
5	5.563	225	5588							
150	159	16	31.48	282	240	25	159	184	8	M20
6	6.25	225	7075							
150	165.1	16	34.20	282	240	25	165	185	8	M20
6	6.5	225	7460							
150	168.3	16	35.60	282	240	25	168	185	8	M20
6	6.625	225	7750							
200	219.1	16	60.30	335	295	27	219	234	12	M20
8	8.625	225	13140							

Note: 2" - 6" flange drilling to PN10 / PN16 and 8" and above to PN16.

FLANGE ADAPTER CLASS 125/150

Mod. L981

The Model L981 Universal Flange Adapter provides a rigid transition from a flanged component to a grooved system.

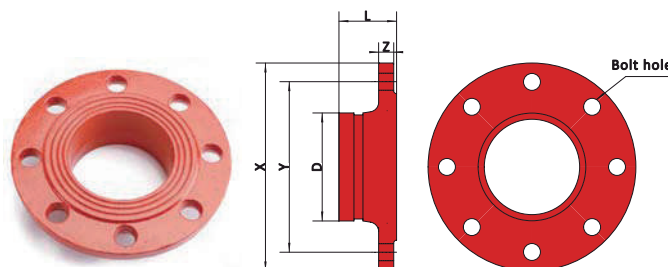


Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	X mm/in	Y mm/in	Z mm/in	L mm/in	Bolts Size mm/in	Bolts No.
50	60.3	20	155	120.5	16	65	M16	4
2	2.375	300	6.10	4.74	0.63	2.56	5/8	4
65	73.00	20	180	140	16	65	M16	4
21/2	2.875	300	7.09	5.51	0.63	2.56	5/8	4
80	88.90	20	190	153	18	65	M16	4
3	3.50	300	7.48	6.02	0.71	2.56	5/8	4
100	114.30	20	230	191	22	70	M16	8
4	4.50	300	9.06	7.52	0.87	2.76	5/8	8
125	141.3	20	255	216	22	70	M20	8
5	5.563	300	10.04	8.50	0.87	2.76	3/4	8
150	168.30	20	280	241	22	70	M20	8
6	6.625	300	11.02	9.49	0.87	2.76	3/4	8
200	219.1	20	345	299	25	80	M20	8
8	8.625	300	13.58	11.77	0.98	3.15	3/4	8
250	273	20	405	362	26	85	M24	12
10	10.75	300	15.94	14.25	1.02	3.35	1	12
300	323.9	20	485	432	28	90	M24	12
12	12.75	300	19.09	17.01	1.10	3.54	1	12

FLANGE ADAPTER PN10/16

Mod. XGQT08

The Model XGQT08 Flange Adapter provides for a rigid transition between a flanged piping system and grooved system.



Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	X mm	Y mm	Z mm	L mm	Bolts Size mm/in	Bolts No.
50	60.30	15	165	125	15	60	M16	4
2	2.38	230						
65	73.00	15	185	145	15	60	M16	4
21/2	2.88	230						
65	76.10	15	185	145	15	60	M16	4
21/2	3.00	230						
80	88.90	15	200	160	16	60	M16	8
3	3.50	230						
100	108.00	15	220	180	16	60	M16	8
4	4.25	230						
100	114.30	15	220	180	16	60	M16	8
4	4.50	230						
125	133.00	15	250	210	18	65	M16	8
5	5.25	230						
125	139.70	15	250	210	18	65	M16	8
5	5.50	230						
125	141.30	15	250	210	18	65	M16	8
5	5.56	230						
150	159.00	15	285	240	18	65	M20	8
6	6.25	230						
150	165.10	15	285	240	18	65	M20	8
6	6.50	230						
150	168.30	15	285	240	18	65	M20	8
6	6.63	230						
200	219.10	15	340	295	19	70	M20	12
8	8.63	230						
250	273.00	15	405	355	25	72	M24	12
10	10.75	230						
300	323.90	15	460	410	27	72	M24	12
12	12.75	230						



Mod. XGQT01L 90° ELBOW
Mod. XGQT011L 45° ELBOW
Mod. XGQT012 22-1/2° ELBOW
Mod. XGQT013 11-1/4° ELBOW

The image displays four red ductile iron elbows in two rows. The top row shows the elbows in perspective: a 90° elbow, a 45° elbow, a 30° elbow, and a 15° elbow. The bottom row shows the same elbows in cross-section, with a vertical dimension line labeled 'C-E' indicating the center-to-end distance for each angle.

NOTES:

[illegible]

Mod. XGQT01 90° ELBOW
Mod. XGQT011 45° ELBOW
Mod. XGQT03 TEE

Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	XGQT01	XGQT011	XGQT03
			SR 90° Elbow	45° Elbow	SR Straight Tee
			C- E (mm/in)	C- E (mm/in)	C- E (mm/in)
50	60.3	20	70	---	70
2	2.375	300	2.76	---	2.76
65	73	20	76	48	76
21/2	2.875	300	2.99	1.89	2.99
65	76.1	20	76	48	76
21/2	3	300	2.99	1.89	2.99
80	88.9	20	85	53	85
3	3.5	300	3.35	2.09	3.35
100	108	20	102	60	102
4	4.25	300	4.02	2.36	4.02
100	114.3	20	102	60	102
4	4.5	300	4.02	2.36	4.02
125	133	20	121	68	121
5	5.25	300	4.76	2.68	4.76
125	139.7	20	121	68	121
5	5.5	300	4.76	2.68	4.76
125	141.3	20	121	68	121
5	5.563	300	4.76	2.68	4.76
150	159	20	130	75.5	130
6	6.25	300	5.12	2.97	5.12
150	165.1	20	130	75.5	130
6	6.5	300	5.12	2.97	5.12
150	168.3	20	140	75.5	140
6	6.625	300	5.51	2.97	5.51
200	219.1	20	175	95	175
8	8.625	300	6.89	3.74	6.89
250	273	20	215	112	215
10	10.75	300	8.46	4.41	8.46
300	323.9	20	220	135	220
12	12.75	300	8.66	5.31	8.66

NOTES:

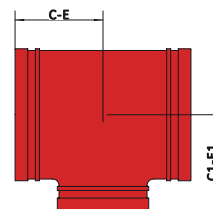
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GROOVED REDUCING TEE

Mod. XGQT03R3

GISA grooved reducing tees are cast of ductile iron.



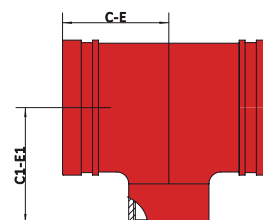
Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Dimensions		Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Dimensions	
			C-E mm/in	C1-E1 mm/in				C-E mm/in	C1-E1 mm/in
50×32	60.3×42.4	20	70	70	150×50	165.1×60.3	20	130	130
2×11/4	2.375×1.669	300	2.76	2.76	6×2	6.5×2.375	300	5.12	5.12
50×40	60.3×48.3	20	70	70	150×65	165.1×76.1	20	130	130
2×11/2	2.375×1.9	300	2.76	2.76	6×2 1/2	6.5×3	300	5.12	5.12
65×32	73×42.4	20	76	76	150×80	165.1×88.9	20	130	130
2 1/2×1 1/4	2.875×1.669	300	2.99	2.99	6×3	6.5×3.5	300	5.12	5.12
65×40	73×48.3	20	76	76	150×100	165.1×114.3	20	130	130
2 1/2×1 1/2	2.875×1.9	300	2.99	2.99	6×4	6.5×4.5	300	5.12	5.12
65×50	73×60.3	20	76	76	150×125	165.1×139.7	20	130	130
2 1/2×2	2.875×2.375	300	2.99	2.99	6×5	6.5×5.5	300	5.12	5.12
65×32	76.1×42.4	20	76	76	150×50	168.3×60.3	20	140	140
2 1/2×1 1/4	3×1.669	300	2.99	2.99	6×2	6.625×2.375	300	5.51	5.51
65×40	76.1×48.3	20	76	76	150×65	168.3×76.1	20	140	140
2 1/2×1 1/2	3×1.9	300	2.99	2.99	6×2 1/2	6.625×3	300	5.51	5.51
65×50	76.1×60.3	20	76	76	150×80	168.3×88.9	20	140	140
2 1/2×2	3×2.375	300	2.99	2.99	6×3	6.625×3.5	300	5.51	5.51
80×32	88.9×42.4	20	86	86	150×100	168.3×114.3	20	140	140
3×1 1/4	3.5×1.669	300	3.39	3.39	6×4	6.625×4.5	300	5.51	5.51
80×40	88.9×48.3	20	86	86	150×125	168.3×139.7	20	140	140
3×1 1/2	3.5×1.9	300	3.39	3.39	6×5	6.625×5.5	300	5.51	5.51
80×50	88.9×60.3	20	86	86	200×65	219.1×76.1	20	174	174
3×2	3.5×2.375	300	3.39	3.39	8×2 1/2	8.625×3	300	6.85	6.85
80×65	88.9×73	20	86	86	200×80	219.1×88.9	20	174	174
3×2 1/2	3.5×2.875	300	3.39	3.39	8×3	8.625×3.5	300	6.85	6.85
80×65	88.9×76.1	20	86	86	200×100	219.1×114.3	20	174	174
3×2 1/2	3.5×3	300	3.39	3.39	8×4	8.625×4.5	300	6.85	6.85
100×32	114.3×42.4	20	90	98*	00×125	219.1×139.7	20	174	174
4×1 1/4	4.5×1.669	300	3.54	3.86	8×5	8.625×5.5	300	6.85	6.85
100×40	114.3×48.3	20	90	98*	200×150	219.1×159	20	174	174
4×1 1/2	4.5×1.9	300	3.54	3.86	8×6	8.625×6.25	300	6.85	6.85
100×50	114.3×60.3	20	102	102	200×150	219.1×165.1	20	174	174
4×2	4.5×2.375	300	4.02	4.02	8×6	8.625×6.5	300	6.85	6.85
100×65	114.3×73	20	102	102	250×80	273×88.9	20	190	190
4×2 1/2	4.5×2.875	300	4.02	4.02	10×3	10.75×3.5	300	7.48	7.48
100×65	114.3×76.1	20	102	102	250×100	273×114.3	20	190	190
4×2 1/2	4.5×3	300	4.02	4.02	10×4	10.75×4.5	300	7.48	7.48
100×80	114.3×88.9	20	102	102	250×125	273×133	20	190	190
4×3	4.5×3.5	300	4.02	4.02	10×5	10.75×5.25	300	7.48	7.48
125×50	139.7×60.3	20	105	105	250×125	273×139.7	20	190	190
5×2	5.5×2.375	300	4.13	4.13	10×5	10.75×5.5	300	7.48	7.48
125×65	139.7×76.1	20	105	105	250×125	273×141.3	20	190	190
5×2 1/2	5.5×3	300	4.13	4.13	10×5	10.75×5.563	300	7.48	7.48
125×80	139.7×88.9	20	105	105	250×150	273×159	20	190	190
5×3	5.5×3.5	300	4.13	4.13	10×6	10.75×6.25	300	7.48	7.48
125×100	139.7×108	20	105	105	250×150	273×165.1	20	190	190
5×4	5.5×4.25	300	4.13	4.13	10×6	10.75×6.5	300	7.48	7.48
125×100	139.7×114.3	20	105	105	250×150	273×168.3	20	190	190
5×4	5.5×4.5	300	4.13	4.13	10×6	10.75×6.625	300	7.48	7.48
125×125	139.7×133	20	105	105	250×200	273×219.1	20	190	190
5×5	5.5×5.25	300	4.13	4.13	10×8	10.75×8.625	300	7.48	7.48
125×50	141.3×60.3	20	105	105	300×150	323.9×159	20	220	220
5×2	5.563×2.375	300	4.13	4.13	12×6	12.75×6.25	300	8.66	8.66
125×65	141.3×73	20	105	105	300×150	323.9×165.1	20	220	220
5×2 1/2	5.563×2.875	300	4.13	4.13	12×6	12.75×6.5	300	8.66	8.66
125×80	141.3×88.9	20	105	105	300×150	323.9×168.3	20	220	220
5×3	5.563×3.5	300	4.13	4.13	12×6	12.75×6.625	300	8.66	8.66
125×100	141.3×114.3	20	105	105	300×200	323.9×219.1	20	220	220
5×4	5.563×4.5	300	4.13	4.13	12×8	12.75×8.625	300	8.66	8.66
150×65	159×76.1	20	110	120*	300×250	323.9×273	20	220	220
6×2 1/2	6.25×3	300	4.33	4.72	12×10	12.75×10.75	300	8.66	8.66
150×80	159×88.9	20	110	120*					
6×3	6.25×3.5	300	4.33	4.72					



THREADED REDUCING TEE

Mod. XGQT03S

GISA threaded reducing tees are cast of ductile iron.



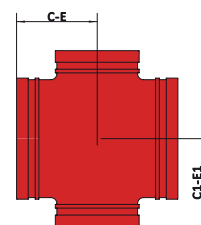
Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Dimensions	
			C-E mm/in	C1-E1 mm/in
50x25	60.3x33.7	20	70	70
2x1	2.375x1.327	300	2.76	2.76
50x32	60.3x42.4	20	70	70
2x1 1/4	2.375x1.669	300	2.76	2.76
50x40	60.3x48.3	20	70	70
2x1 1/2	2.375x1.9	300	2.76	2.76
65x25	73.0x33.7	20	76	76
2 1/2x1	2.875x1.327	300	2.99	2.99
65x32	73.0x42.4	20	76	76
2 1/2x1 1/4	2.875x1.669	300	2.99	2.99
65x40	73.0x48.3	20	76	76
2 1/2x1 1/2	2.875x1.9	300	2.99	2.99
65x50	73.0x60.3	20	76	76
2 1/2x2	2.875x2.375	300	2.99	2.99
65x25	76.1x33.7	20	76	76
2 1/2x1	3x1.327	300	2.99	2.99
65x32	76.1x42.4	20	76	76
2 1/2x1 1/4	3x1.669	300	2.99	2.99
65x40	76.1x48.3	20	76	76
2 1/2x1 1/2	3x1.9	300	2.99	2.99
65x50	76.1x60.3	20	76	76
2 1/2x2	3x2.375	300	2.99	2.99
80x25	88.9x33.7	20	86	86
3x1	3.5x1.327	300	3.39	3.39
80x32	88.9x42.4	20	86	86
3x1 1/4	3.5x1.669	300	3.39	3.39
80x40	88.9x48.3	20	86	86
3x1 1/2	3.5x1.9	300	3.39	3.39
80x50	88.9x60.3	20	86	86
3x2	3.5x2.375	300	3.39	3.39
80x65	88.9x76.1	20	86	86
3x2 1/2	3.5x3	300	3.39	3.39
100x40	108.0x48.3	20	90	98*
4x1 1/2	4.25x1.9	300	3.54	3.86
100x50	108.0x60.3	20	90	98*
4x2	4.25x2.375	300	3.54	3.86
100x65	108.0x76.1	20	90	98*
4x2 1/2	4.25x3	300	3.54	3.86
100x80	108x88.9	20	90	98*
4x3	4.25x3.5	300	3.54	3.86
100x25	114.3x33.7	20	90	98*
4x1	4.5x1.327	300	3.54	3.86
100x32	114.3x42.4	20	90	98*
4x1 1/4	4.5x1.669	300	3.54	3.86
100x40	114.3x48.3	20	90	98*
4x1 1/2	4.5x1.9	300	3.54	3.86
100x50	114.3x60.3	20	90	98*
4x2	4.5x2.375	300	3.54	3.86
100x65	114.3x76.1	20	90	98*
4x2 1/2	4.5x3	300	3.54	3.86
100x80	114.3x88.9	20	90	98*
4x3	4.5x3.5	300	3.54	3.86
125x50	133.0x60.3	20	105	105
5x2	5.25x2.375	300	4.13	4.13
125x65	133.0x76.1	20	105	105
5x2 1/2	5.25x3	300	4.13	4.13
125x80	133.0x88.9	20	105	105
5x3	5.25x3.5	300	4.13	4.13
125x100	133.0x114.3	20	105	105
5x4	5.25x4.5	300	4.13	4.13
125x40	139.7x48.3	20	105	105
5x1 1/2	5.5x1.9	300	4.13	4.13
125x50	139.7x60.3	20	105	105
5x2	5.5x2.375	300	4.13	4.13
125x65	139.7x76.1	20	105	105
5x2 1/2	5.5x3	300	4.13	4.13
125x80	139.7x88.9	20	105	105
5x3	5.5x3.5	300	4.13	4.13
125x100	139.7x114.3	20	105	105
5x4	5.5x4.5	300	4.13	4.13
125x40	141.3x48.3	20	105	105
5x1 1/2	5.563x1.9	300	4.13	4.13
125x50	141.3x60.3	20	105	105
5x2	5.563x2.375	300	4.13	4.13
125x65	141.3x76.1	20	105	105
5x2 1/2	5.563x3	300	4.13	4.13
125x80	141.3x88.9	20	105	105
5x3	5.563x3.5	300	4.13	4.13
125x100	141.3x114.3	20	105	105
5x4	5.563x4.5	300	4.13	4.13
150x40	159.0x48.3	20	110	120*
6x1 1/2	6.25x1.9	300	4.33	4.72
150x50	159.0x60.3	20	110	120*
6x2	6.25x2.375	300	4.33	4.72
150x65	159.0x76.1	20	110	120*
6x2 1/2	6.25x3	300	4.33	4.72
150x80	159.0x88.9	20	110	120*
6x3	6.25x3.5	300	4.33	4.72
150x100	159.0x114.3	20	110	120*
6x4	6.25x4.5	300	4.33	4.72
150x40	165.1x48.3	20	110	120*
6x1 1/2	6.5x1.9	300	4.33	4.72
150x50	165.1x60.3	20	110	120*
6x2	6.5x2.375	300	4.33	4.72
150x65	165.1x76.1	20	110	120*
6x2 1/2	6.5x3	300	4.33	4.72
150x80	165.1x88.9	20	110	120*
6x3	6.5x3.5	300	4.33	4.72
150x100	165.1x114.3	20	110	120*
6x4	6.5x4.5	300	4.33	4.72
150x40	168.3x48.3	20	110	120*
6x1 1/2	6.625x1.9	300	4.33	4.72
150x50	168.3x60.3	20	110	120*
6x2	6.625x2.375	300	4.33	4.72
150x65	168.3x76.1	20	110	120*
6x2 1/2	6.625x3	300	4.33	4.72
150x80	168.3x88.9	20	110	120*
6x3	6.625x3.5	300	4.33	4.72
150x100	168.3x114.3	20	110	120*
6x4	6.625x4.5	300	4.33	4.72
200x50	219.1x60.3	20	146	146
8x2	8.625x2.375	300	5.75	5.75
200x50	219.1x76.1	20	146	146
8x2 1/2	8.625x3	300	5.75	5.75
200x80	219.1x88.9	20	146	146
8x3	8.625x3.5	300	5.75	5.75
200x100	219.1x114.3	20	146	146
8x4	8.625x4.5	300	5.75	5.75



GROOVED REDUCING CROSS

Mod. XGQT05

GISA grooved reducing cross are cast of ductile iron.



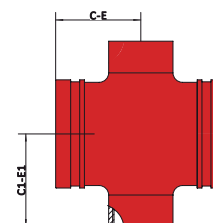
Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Dimensions	
			C-E mm/in	C1-E1 mm/in
65×32	73×42.4	20	76	76
21/2×11/4	2.875×1.669	300	2.99	2.99
65×40	73×48.3	20	76	76
21/2×11/2	2.875×1.9	300	2.99	2.99
65×50	73×60.3	20	76	76
21/2×2	2.875×2.375	300	2.99	2.99
65×32	76.1×42.4	20	76	76
21/2×1/4	3×1.669	300	2.99	2.99
65×40	76.1×48.3	20	76	76
21/2×11/2	3×1.9	300	2.99	2.99
65×50	76.1×60.3	20	76	76
21/2×2	3×2.375	300	2.99	2.99
80×32	88.9×42.4	20	86	86
3×11/4	3.5×1.669	300	3.39	3.39
80×40	88.9×48.3	20	86	86
3×11/2	3.5×1.9	300	3.39	3.39
80×50	88.9×60.3	20	86	86
3×2	3.5×2.375	300	3.39	3.39
80×65	88.9×76.1	20	86	86
3×21/2	3.5×3	300	3.39	3.39
100×50	108×60.3	20	90	98
4×2	4.25×2.375	300	3.54	3.86
100×65	108×76.1	20	90	98
4×21/2	4.25×3	300	3.54	3.86
100×80	108×88.9	20	90	98
4×3	4.25×3.5	300	3.54	3.86
100×32	114.3×42.4	20	90	98
4×11/4	4.5×1.669	300	3.54	3.86
100×40	114.3×48.3	20	90	98
4×11/2	4.5×1.9	300	3.54	3.86
100×50	114.3×60.3	20	90	98
4×2	4.5×2.375	300	3.54	3.86
100×65	114.3×76.1	20	90	98
4×21/2	4.5×3	300	3.54	3.86
100×80	114.3×88.9	20	90	98
4×3	4.5×3.5	300	3.54	3.86
125×65	133×76.1	20	105	105
5×21/2	5.25×3	300	4.13	4.13
125×80	133×88.9	20	105	105
5×3	5.25×3.5	300	4.13	4.13
125×100	133×108	20	105	105
5×4	5.25×4.25	300	4.13	4.13
125×100	133×114.3	20	105	105
5×4	5.25×4.5	300	4.13	4.13
125×50	139.7×60.3	20	105	105
5×2	5.5×2.375	300	4.13	4.13
125×65	139.7×76.1	20	105	105
5×21/2	5.5×3	300	4.13	4.13
125×80	139.7×88.9	20	105	105
5×3	5.5×3.5	300	4.13	4.13
125×100	139.7×108	20	105	105
5×4	5.5×4.25	300	4.13	4.13
125×100	139.7×114.3	20	105	105
5×4	5.5×4.5	300	4.13	4.13
125×50	141.3×60.3	20	105	105
5×2	5.563×2.375	300	4.13	4.13
125×65	141.3×73	20	105	105
5×21/2	5.563×2.875	300	4.13	4.13
125×80	141.3×88.9	20	105	105
5×3	5.563×3.5	300	4.13	4.13
125×100	141.3×108	20	105	105
5×4	5.563×4.25	300	4.13	4.13
125×100	141.3×114.3	20	105	105
5×4	5.563×4.5	300	4.13	4.13
150×65	159×76.1	20	110	120
6×21/2	6.25×3	300	4.33	4.72
150×80	159×88.9	20	110	120
6×3	6.25×3.5	300	4.33	4.72
150×100	159×108	20	110	120
6×4	6.25×4.25	300	4.33	4.72
150×100	159×114.3	20	110	120
6×4	6.25×4.5	300	4.33	4.72
150×125	159×133	20	110	120
6×5	6.25×5.25	300	4.33	4.72
150×50	165.1×60.3	20	110	120
6×2	6.5×2.375	300	4.33	4.72
150×65	165.1×76.1	20	110	120
6×21/2	6.5×3	300	4.33	4.72
150×80	165.1×88.9	20	110	120
6×3	6.5×3.5	300	4.33	4.72
150×100	165.1×108	20	110	120
6×4	6.5×4.25	300	4.33	4.72
150×100	165.1×114.3	20	110	120
6×4	6.5×4.5	300	4.33	4.72
150×125	165.1×133	20	110	120
6×5	6.5×5.25	300	4.33	4.72
150×125	165.1×139.7	20	110	120
6×5	6.5×5.5	300	4.33	4.72
150×50	168.3×60.3	20	110	120
6×2	6.625×2.375	300	4.33	4.72
150×65	168.3×76.1	20	110	120
6×21/2	6.625×3	300	4.33	4.72
150×80	168.3×88.9	20	110	120
6×3	6.625×3.5	300	4.33	4.72
150×100	168.3×108	20	110	120
6×4	6.625×4.25	300	4.33	4.72
150×100	168.3×114.3	20	110	120
6×4	6.625×4.5	300	4.33	4.72
150×125	168.3×133	20	110	120
6×5	6.625×5.25	300	4.33	4.72
150×125	168.3×139.7	20	110	120
6×5	6.625×5.5	300	4.33	4.72
200×65	219.1×76.1	20	146	146
8×21/2	8.625×3	300	5.75	5.75
200×80	219.1×88.9	20	146	146
8×3	8.625×3.5	300	5.75	5.75
200×100	219.1×108	20	146	146
8×4	8.625×4.25	300	5.75	5.75
200×100	219.1×114.3	20	146	146
8×4	8.625×4.5	300	5.75	5.75
200×125	219.1×133	20	146	146
8×5	8.625×5.25	300	5.75	5.75
200×125	219.1×139.7	20	146	146
8×5	8.625×5.5	300	5.75	5.75
200×150	219.1×159	20	146	146
8×6	8.625×6.25	300	5.75	5.75
200×150	219.1×165.1	20	146	146
8×6	8.625×6.5	300	5.75	5.75



THREADED REDUCING CROSS

Mod. XGQT05S

GISA threaded reducing cross are cast of ductile iron.



Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	Dimensions	
			C-E mm/in	C1-E1 mm/in
50x25	60.3x33.7	16	70	70
2x1	2.375x1.327	230	2.76	2.76
50x32	60.3x42.4	16	70	70
2x1 1/4	2.375x1.669	230	2.76	2.76
50x40	60.3x48.3	16	70	70
2x1 1/2	2.375x1.9	230	2.76	2.76
65x25	73.0x33.7	16	76	76
2 1/2x1	2.875x1.327	230	2.99	2.99
65x32	73.0x42.4	16	76	76
2 1/2x1 1/4	2.875x1.669	230	2.99	2.99
65x40	73.0x48.3	16	76	76
2 1/2x1 1/2	2.875x1.9	230	2.99	2.99
65x50	73.0x60.3	16	76	76
2 1/2x2	2.875x2.375	230	2.99	2.99
65x25	76.1x33.7	16	76	76
2 1/2x1	3x1.327	230	2.99	2.99
65x32	76.1x42.4	16	76	76
2 1/2x1 1/4	3x1.669	230	2.99	2.99
65x40	76.1x48.3	16	76	76
2 1/2x1 1/2	3x1.9	230	2.99	2.99
65x50	76.1x60.3	16	76	76
2 1/2x2	3x2.375	230	2.99	2.99
80x25	88.9x33.7	16	86	86
3x1	3.5x1.327	230	3.39	3.39
80x32	88.9x42.4	16	86	86
3x1 1/4	3.5x1.669	230	3.39	3.39
80x40	88.9x48.3	16	86	86
3x1 1/2	3.5x1.9	230	3.39	3.39
80x50	88.9x60.3	16	86	86
3x2	3.5x2.375	230	3.39	3.39
80x65	88.9x76.1	16	86	86
3x2 1/2	3.5x3	230	3.39	3.39
100x50	108.0x60.3	16	90	98
4x2	4.25x2.375	230	3.54	3.86
100x65	108.0x76.1	16	90	98
4x2 1/2	4.25x3	230	3.54	3.86
100x80	108x88.9	16	90	98
4x3	4.25x3.5	230	3.54	3.86
100x25	114.3x33.7	16	90	98
4x1	4.5x1.327	230	3.54	3.86
100x32	114.3x42.4	16	90	98
4x1 1/4	4.5x1.669	230	3.54	3.86
100x40	114.3x48.3	16	90	98
4x1 1/2	4.5x1.9	230	3.54	3.86
100x50	114.3x60.3	16	90	98
4x2	4.5x2.375	230	3.54	3.86
100x65	114.3x76.1	16	90	98
4x2 1/2	4.5x3	230	3.54	3.86
100x80	114.3x88.9	16	90	98
4x3	4.5x3.5	230	3.54	3.86
125x40	139.7x48.3	16	105	105
5x1 1/2	5.5x1.9	230	4.13	4.13
125x50	139.7x60.3	16	105	105
5x2	5.5x2.375	230	4.13	4.13
125x65	139.7x76.1	16	105	105
5x2 1/2	5.5x3	230	4.13	4.13
125x80	139.7x88.9	16	105	105
5x3	5.5x3.5	230	4.13	4.13
125x100	139.7x114.3	16	105	105
5x4	5.5x4.5	230	4.13	4.13
125x40	141.3x48.3	16	105	105
5x1 1/2	5.563x1.9	230	4.13	4.13
125x50	141.3x60.3	16	105	105
5x2	5.563x2.375	230	4.13	4.13
125x65	141.3x76.1	16	105	105
5x2 1/2	5.563x2.875	230	4.13	4.13
125x80	141.3x88.9	16	105	105
5x3	5.563x3.5	230	4.13	4.13
125x100	141.3x114.3	16	105	105
5x4	5.563x4.5	230	4.13	4.13
150x50	159.0x60.3	16	110	120*
6x2	6.250x2.375	230	4.33	4.72
150x65	159.0x76.1	16	110	120*
6x2 1/2	6.25x3	230	4.33	4.72
150x80	159.0x88.9	16	110	120*
6x3	6.25x3.5	230	4.33	4.72
150x100	159x114.3	16	110	120*
6x4	6.25x4.5	230	4.33	4.72
150x40	165.1x48.3	16	110	120*
6x1 1/2	6.5x1.9	230	4.33	4.72
150x50	165.1x60.3	16	110	120*
6x2	6.5x2.375	230	4.33	4.72
150x65	165.1x76.1	16	110	120*
6x2 1/2	6.5x3	230	4.33	4.72
150x80	165.1x88.9	16	110	120*
6x3	6.5x3.5	230	4.33	4.72
150x100	165.1x114.3	16	110	120*
6x4	6.5x4.5	230	4.33	4.72
150x40	168.3x48.3	16	110	120*
6x1 1/2	6.625x1.9	230	4.33	4.72
150x50	168.3x60.3	16	110	120*
6x2	6.625x2.375	230	4.33	4.72
150x65	168.3x76.1	16	110	120*
6x2 1/2	6.625x3	230	4.33	4.72
150x80	168.3x88.9	16	110	120*
6x3	6.625x3.5	230	4.33	4.72
150x100	168.3xRc4	16	110	120*
6x4	6.625x4.5	230	4.33	4.72
200x50	219.1x60.3	16	146	146
8x2	8.625x2.375	230	5.75	5.75
200x50	219.1x76.1	16	146	146
8x2 1/2	8.625x3	230	5.75	5.75
200x80	219.1x88.9	16	146	146
8x3	8.625x3.5	230	5.75	5.75
200x100	219.1x114.3	16	146	146
8x4	8.625x4.5	230	5.75	5.75



GROOVED CONCENTRIC REDUCER

Mod. XGQT07

GISA concentric reducer is cast of ductile iron. The end-to-end dimensions of these reducers are less than that of fabricated reducers.



Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	E - E mm/in
40x32	48.3x42.4	20	64
11/2x11/4	1.9x1.669	300	2.52
50x32	60.3x42.4	20	64
2x11/4	2.375x1.669	300	2.52
50x40	60.3x48.3	20	64
2x11/2	2.375x1.9	300	2.52
65x32	73x42.4	20	64
21/2x11/4	2.875x1.669	300	2.52
65x40	73x48.3	20	64
21/2x11/2	2.875x1.9	300	2.52
65x50	73x60.3	20	64
21/2x2	2.875x2.375	300	2.52
65x40	76.1x48.3	20	64
21/2x11/2	3x1.9	300	2.52
65x50	76.1x60.3	20	64
21/2x2	3x2.375	300	2.52
80x32	88.9x42.4	20	64
3x11/4	3.5x1.669	300	2.52
80x40	88.9x48.3	20	64
3x11/2	3.5x1.9	300	2.52
80x50	88.9x60.3	20	64
3x2	3.5x2.375	300	2.52
80x65	88.9x73	20	64
3x21/2	3.5x2.875	300	2.52
80x65	88.9x76.1	20	64
3x21/2	3.5x3	300	2.52
100x32	114.3x42.4	20	76
4x11/4	4.5x1.669	300	2.99
100x40	114.3x48.3	20	76
4x11/2	4.5x1.9	300	2.99
100x50	114.3x60.3	20	76
4x2	4.5x2.375	300	2.99
100x65	114.3x73	20	76
4x21/2	4.5x2.875	300	2.99
100x65	114.3x76.1	20	76
4x21/2	4.5x3	300	2.99
100x80	114.3x88.9	20	76
4x3	4.5x3.5	300	2.99
125x50	133x60.3	20	85
5x2	5.25x2.375	300	3.35
125x50	139.7x60.3	20	85
5x2	5.5x2.375	300	3.35
125x65	139.7x73	20	85
5x21/2	5.5x2.875	300	3.35
125x65	139.7x76.1	20	85
5x21/2	5.5x3	300	3.35
125x80	139.7x88.9	20	85
5x3	5.5x3.5	300	3.35
125x100	139.7x108	20	85
5x4	5.5x4.25	300	3.35
125x100	139.7x114.3	20	85
5x4	5.5x4.5	300	3.35
125x50	141.3x60.3	20	85
5x2	5.563x2.375	300	3.35
125x65	141.3x73	20	85
5x21/2	5.563x2.875	300	3.35
125x65	141.3x76.1	20	85
5x21/2	5.563x3	300	3.35
125x80	141.3x88.9	20	85
5x3	5.563x3.5	300	3.35
125x100	141.3x114.3	20	85
5x4	5.563x4.5	300	3.35
150x50	159x60.3	20	85
6x2	6.25x2.375	300	3.35
150x100	159x108	20	85
6x4	6.25x4.25	300	3.35

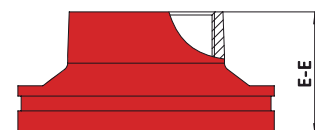
Nominal Size mm/in	Pipe O.D. mm/in	Max.Working Pressure Bar/PSI	E - E mm/in
150x100	159x114.3	20	85
6x4	6.25x4.5	300	3.35
150x125	159x139.7	20	85
6x5	6.25x5.5	300	3.35
150x50	165.1x60.3	20	85
6x2	6.5x2.375	300	3.35
150x65	165.1x73	20	85
6x21/2	6.5x2.875	300	3.35
150x65	165.1x76.1	20	85
6x21/2	6.5x3	300	3.35
150x100	165.1x108	20	85
6x4	6.5x4.25	300	3.35
150x100	165.1x114.3	20	85
6x4	6.5x4.5	300	3.35
150x125	165.1x133	20	85
6x5	6.5x5.25	300	3.35
150x125	165.1x139.7	20	85
6x5	6.5x5.5	300	3.35
150x50	168.3x60.3	20	85
6x2	6.63x2.375	300	3.35
150x65	168.3x73	20	85
6x21/2	6.625x2.875	300	3.35
150x65	168.3x76.1	20	85
6x21/2	6.625x2.375	300	3.35
150x80	168.3x88.9	20	85
6x3	6.625x3.5	300	3.35
150x100	168.3x114.3	20	85
6x4	6.625x4.5	300	3.35
150x125	168.3x139.7	20	85
6x5	6.625x5.5	300	3.35
200x65	219.1x76.1	20	85
8x21/2	8.63x3	300	3.35
200x80	219.1x88.9	20	85
8x3	8.625x3.5	300	3.35
200x100	219.1x114.3	20	85
8x4	8.625x4.5	300	3.35
200x125	219.1x139.7	20	85
8x5	8.625x5.5	300	3.35
200x150	219.1x159	20	85
8x6	8.625x6.25	300	3.35
200x150	219.1x165.1	20	85
8x6	8.63x6.5	300	3.35
200x150	219.1x168.3	20	85
8x6	8.625x6.63	300	3.35
250x100	273x114.3	20	90
10x4	10.75x4.5	300	3.54
250x125	273x139.7	20	90
10x5	10.75x5.5	300	3.54
250x150	273x159	20	90
10x6	10.75x6.25	300	3.54
250x150	273x165.1	20	90
10x6	10.75x6.5	300	3.54
250x200	273x219.1	20	90
10x8	10.75x8.625	300	3.54
300x100	323.9x114.3	20	90
12x4	12.75x4.5	300	3.54
300x125	323.9x139.7	20	90
12x5	12.75x5.5	300	3.54
300x150	323.9x159	20	90
12x6	12.75x6.25	300	3.54
300x150	323.9x165.1	20	90
12x6	12.75x6.625	300	3.54
300x200	323.9x219.1	20	90
12x8	12.75x8.63	300	3.54
300x250	323.9x273	20	90
12x10	12.75x10.75	300	3.54



THREADED CONCENTRIC REDUCER

Mod. XGQT07S

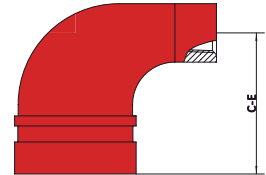
GISA concentric reducer is cast of ductile iron. The end-to-end dimensions of these reducers are less than that of fabricated reducers.



Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure Bar/PSI	E - E mm/in	Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure Bar/PSI	E - E mm/in
50×25	60.3×33.7	16	64	125×65	139.7×76.1	16	85
2×1	2.375×1.327	230	2.52	5×2 1/2	5.5×3	230	3.35
50×32	60.3×42.4	16	64	125×80	139.7×88.9	16	85
2×1 1/4	2.375×1.669	230	2.52	5×3	5.5×3.5	230	3.35
50×40	60.3×48.3	16	64	125×100	139.7×114.3	16	85
2×1 1/2	2.375×1.9	230	2.52	5×4	5.5×4.5	230	3.35
65×25	73×33.7	16	64	125×25	141.3×33.7	16	85
2 1/2×1	2.875×1.327	230	2.52	5×1	5.563×1.327	230	3.35
65×32	73×42.4	16	64	125×32	141.3×42.4	16	85
2 1/2×1 1/4	2.875×1.669	230	2.52	5×1 1/4	5.563×1.669	230	3.35
65×40	73×48.3	16	64	125×40	141.3×48.3	16	85
2 1/2×1 1/2	2.875×1.9	230	2.52	5×1 1/2	5.563×1.9	230	3.35
65×50	73×60.3	16	64	125×50	141.3×60.3	16	85
2 1/2×2	2.875×2.375	230	2.52	5×2	5.563×2.375	230	3.35
65×25	76.1×33.7	16	64	125×65	141.3×73	16	85
2 1/2×1	3×1.327	230	2.52	5×2 1/2	5.563×2.875	230	3.35
65×32	76.1×42.4	16	64	125×80	141.3×88.9	16	85
2 1/2×1 1/4	3×1.669	230	2.52	5×3	5.563×3.5	230	3.35
65×40	76.1×48.3	16	64	125×80	141.3×114.3	16	85
2 1/2×1 1/2	3×1.9	230	2.52	5×3	5.563×4.5	230	3.35
65×50	76.1×60.3	16	64	150×25	165.1×33.7	16	85
2 1/2×2	3×2.375	230	2.52	6×1	6.5×1.327	230	3.35
80×25	88.9×33.7	16	64	150×32	165.1×42.4	16	85
3×1	3.5×1.327	230	2.52	6×1 1/4	6.5×1.669	230	3.35
80×32	88.9×42.4	16	64	150×40	165.1×48.3	16	85
3×1 1/4	3.5×1.669	230	2.52	6×1 1/2	6.5×1.9	230	3.35
80×40	88.9×48.3	16	64	150×50	165.1×60.3	16	85
3×1 1/2	3.5×1.9	230	2.52	6×2	6.5×2.375	230	3.35
80×50	88.9×60.3	16	64	150×65	165.1×76.1	16	85
3×2	3.5×2.375	230	2.52	6×2 1/2	6.5×3	230	3.35
80×65	88.9×76.1	16	64	150×80	165.1×88.9	16	85
3×2 1/2	3.5×3	230	2.52	6×3	6.5×3.5	230	3.35
100×25	108.0×33.7	16	76	150×100	165.1×114.3	16	85
4×1	4.25×1.327	230	2.99	6×4	6.5×4.5	230	3.35
100×32	108.0×42.4	16	76	150×25	168.3×33.7	16	85
4×1 1/4	4.25×1.669	230	2.99	6×1	6.625×1.327	230	3.35
100×40	108.0×48.3	16	76	150×32	168.3×42.4	16	85
4×1 1/2	4.25×1.9	230	2.99	6×1 1/4	6.625×1.669	230	3.35
100×50	108.0×60.3	16	76	150×40	168.3×48.3	16	85
4×2	4.25×2.375	230	2.99	6×1 1/2	6.625×1.9	230	3.35
100×65	108.0×76.1	16	76	150×50	168.3×60.3	16	85
4×2 1/2	4.25×3	230	2.99	6×2	6.625×2.375	230	3.35
100×80	108×88.9	16	76	150×65	168.3×73	16	85
4×3	4.25×3.5	230	2.99	6×2 1/2	6.625×2.875	230	3.35
100×25	114.3×33.7	16	76	150×65	168.3×76.1	16	85
4×1	4.5×1.327	230	2.99	6×2 1/2	6.625×3	230	3.35
100×32	114.3×42.4	16	76	150×80	168.3×88.9	16	85
4×1 1/4	4.5×1.669	230	2.99	6×3	6.625×3.5	230	3.35
100×40	114.3×48.3	16	76	150×100	168.3×114.3	16	85
4×1 1/2	4.5×1.9	230	2.99	6×4	6.625×4.5	230	3.35
100×50	114.3×60.3	16	76	200×25	219.1×33.7	16	85
4×2	4.5×2.375	230	2.99	8×1	8.625×1.327	230	3.35
100×65	114.3×73	16	76	200×32	219.1×42.4	16	85
4×2 1/2	4.5×2.875	230	2.99	8×1 1/4	8.625×1.669	230	3.35
100×65	114.3×76.1	16	76	200×40	219.1×48.3	16	85
4×2 1/2	4.5×3	230	2.99	8×1 1/2	8.625×1.9	230	3.35
100×80	114.3×88.9	16	76	200×50	219.1×60.3	16	85
4×3	4.5×3.5	230	2.99	8×2	8.625×2.375	230	3.35
125×25	139.7×33.7	16	85	200×65	219.1×73	16	85
5×1	5.5×1.327	230	3.35	8×2 1/2	8.625×2.875	230	3.35
125×32	139.7×42.4	16	85	200×65	219.1×76.1	16	85
5×1 1/4	5.5×1.669	230	3.35	8×2 1/2	8.625×3	230	3.35
125×40	139.7×48.3	16	85	200×80	219.1×88.9	16	85
5×1 1/2	5.5×1.9	230	3.35	8×3	8.625×3.5	230	3.35
125×50	139.7×60.3	16	85	200×100	219.1×114.3	16	85
5×2	5.5×2.375	230	3.35	8×4	8.625×4.5	230	3.35

Mod. XGQT014

A red, 90-degree elbow fitting with a threaded end. The fitting is made of a material with a red, possibly painted or coated, surface. It has a standard 90-degree bend. One end is a smooth, flared outlet, and the other end is a threaded inlet. The threads are visible and appear to be standard NPT (National Pipe Thread). There is some faint, illegible text or a logo on the side of the fitting.



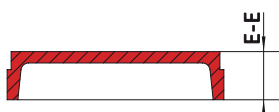
Nominal Size mm/in	NPT/BSP	Max.Working Pressure Bar/PSI	C - E mm/in
32×15	15	20	61
11/4×1/2	1/2	300	2.40
32×20	20	20	61
11/4×3/4	3/4	300	2.40
32×25	25	20	61
11/4×1	1	300	2.40
40×15	15	20	64
11/2×1/2	1/2	300	2.52
40×20	20	20	64
11/2×3/4	3/4	300	2.52
40×25	25	20	64
11/2×1	1	300	2.52
50×15	15	20	70
2×1/2	1/2	300	2.76
50×20	20	20	70
2×3/4	3/4	300	2.76
50×25	25	20	70
2×1	1	300	2.76
65×15	15	20	76
21/2×1/2	1/2	300	2.99
65×20	20	20	76
21/2×3/4	3/4	300	2.99
65×25	25	20	76
21/2×1	1	300	2.99

[illegible]



END CAP

Mod. XGQT06

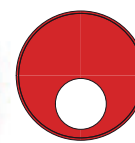


Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure Bar/PSI	E - E mm/in
25	33.7	20	23.8
1	1.327	300	0.94
32	42.4	20	23.8
1 1/4	1.669	300	0.94
40	48.3	20	23.8
1 1/2	1.9	300	0.94
50	60.3	20	23.8
2	2.375	300	0.94
65	76.1	20	23.8
2 1/2	3	300	0.94
80	88.9	20	23.8
3	3.5	300	0.94
100	108	20	25.4
4	4.25	300	1.00
100	114.3	20	25.4
4	4.5	300	1.00
125	133	20	25.4
5	5.25	300	1.00
125	139.7	20	25.4
5	5.5	300	1.00
125	141.3	20	25.4
5	5.563	300	1.00
150	159	20	25.4
5	6.25	300	1.00
150	165.1	20	25.4
6	6.5	300	1.00
150	168.3	20	25.4
6	6.625	300	1.00
200	219.1	20	30.2
8	8.625	300	1.19
250	273	20	32
10	10.75	300	1.26
300	323.9	20	32
12	12.75	300	1.26

TRANSITION CAP (Gr X FT)

Mod. XGQT061

GISA Model XGQT061 is an ideal transition fitting when a large reduction is required such as 6"x1", 4"x1" etc. The XGQT061 can be used as an alternative to expensive swaged nipples.



Nominal Size Grooved X Threaded mm/in	Pipe O.D. mm/in	Max. Working Pressure Bar/PSI	E - E mm/in
50x25	60.3x33.7	20	23.8
2x1	2.375x1.327	300	0.94
50x32	60.3x42.4	20	23.8
2x1 1/4	2.375x1.669	300	0.94
50x40	60.3x48.3	20	23.8
2x1 1/2	2.375x1.9	300	0.94
65x25	73x33.7	20	23.8
2 1/2x1	2.875x1.327	300	0.94
65x32	73x42.4	20	23.8
2 1/2x1 1/4	2.875x1.669	300	0.94
65x40	73x48.3	20	23.8
2 1/2x1 1/2	2.875x1.9	300	0.94
65x50	73.0x60.3	20	23.8
2 1/2x2	2.875x2.375	300	0.94
65x25	76.1x33.7	20	23.8
2 1/2x1	3x1.327	300	0.94
65x32	76.1x42.4	20	23.8
2 1/2x1 1/4	3x1.669	300	0.94
65x40	76.1x48.3	20	23.8
2 1/2x1 1/2	3x1.9	300	0.94
65x50	76.1x60.3	20	23.8
2 1/2x2	3x2.375	300	0.94
80x25	88.9x33.7	20	23.8
3x1	3.5x1.327	300	0.94
80x32	88.9x42.4	20	23.8
3x1 1/4	3.5x1.669	300	0.94
80x40	88.9x48.3	20	23.8
3x1 1/2	3.5x1.9	300	0.94
80x50	88.9x60.3	20	23.8
3x2	3.5x2.375	300	0.94
100x25	114.3x33.7	20	25.4
4x1	4.5x1.327	300	1.00
100x32	114.3x42.4	20	25.4
4x1 1/2	4.5x1.669	300	1.00
100x40	114.3x48.3	20	25.4
4x1 1/2	4.5x1.9	300	1.00
100x50	114.3x60.3	20	25.4
4x2	4.5x2.375	300	1.00
125x50	139.7x60.3	20	25.4
5x2	5.5x2.375	300	1.00
125x50	141.3x60.3	20	25.4
5x2	5.563x2.375	300	1.00
150x25	165.1x33.7	20	25.4
6x1	6.5x1.327	300	1.00
150x50	165.1x60.3	20	25.4
6x2	6.5x2.375	300	1.00
150x32	168.3x42.4	20	25.4
6x1 1/4	6.625x1.669	300	1.00
150x40	168.3x48.3	20	25.4
6x1 1/2	6.63x1.9	300	1.00
150x50	168.3x60.3	20	25.4
6x2	6.63x2.375	300	1.00
200x50	219.1x60.3	20	30.2
8x2	8.625x2.375	300	1.19

MECHANICAL TEE

The GISA hole-cut mechanical tee provides a fast and easy mid-point branch outlet without welding. First a hole is cut or drilled at the desired outlet location. The mechanical tee is then positioned so that the built-in locating collar fits within the hole. As the housing bolts are tightened the pressure moulded gasket forms a leak-tight seal. Use of the GISA mechanical tee can eliminate the need for multiple couplings and fittings.



GISA offers a full range of mechanical tees:

- **Model XGQT04: Threaded outlet, NPT or BSPT (ISO 7-1) pipe threads.**
- **Model XGQT04G: Cut-grooved outlet (machined).**
- **Model L922 and 041: Saddle-Let; Small mechanical tee with threaded outlet, NPT or BSPT (ISO 7-1) pipe threads.**

NOTES:

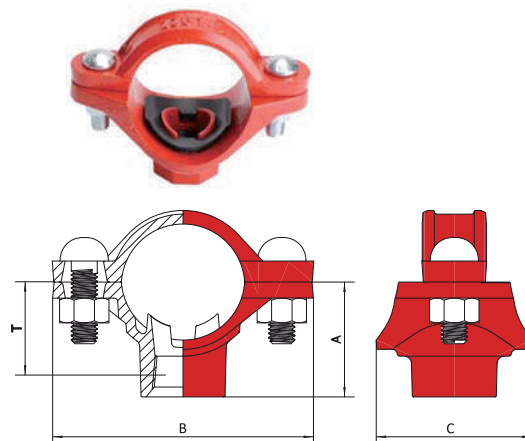
This image shows a full page of blank, lined paper. It features approximately 20 horizontal blue or grey lines spaced evenly apart, typical of notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings present.



SADDLE-LET (Small Mechanical Tee)

Mod. L922

The Model L922 Saddle-Lets is the ideal outlet fitting for direct connections to sprinkler heads, drop nipples and or gauges. No need for welding, just cut or drill a hole at the desired outlet location. Position the Saddle-Let so that the locating collar fits within the hole, then tighten the upper and lower housings with bolts and nuts. The Saddle-Let comes with a standard black finish or as an option can be supplied electro zinc plated or painted orange. The Saddle-Let allows full bore flow and is pressure rates to 300 psi (20 bar).



Nominal Size mm/in	Hole Dia. Φ +1,-0 / +0.04,-0	Dimensions			Take-Out T/D mm/in	Bolt Size in	Bolt Torque N-M/Lb-Ft
		A	B	C			
25x15	24	28	93	48	29	3/8 Φ	30-40
1x1/2	0.95	1.10	3.66	1.89	1.14	U-Bolt	22-29
32x15	30.00	45	98	65	33	3/8 Φ	30-40
11/4x1/2	1.18	1.77	3.86	2.56	1.30	U-Bolt	22-29
32x20	30.00	45	98	65	32.5	3/8 Φ	30-40
11/4x3/4	1.18	1.77	3.86	2.56	1.28	U-Bolt	22-29
32x25	30.00	54	98	65	38.6	3/8 Φ	30-40
11/4x1	1.18	2.13	3.86	2.56	1.52	U-Bolt	22-29
40x15	30.00	48	105.6	65	36.1	3/8 Φ	30-40
11/2x1/2	1.18	1.89	4.16	2.56	1.42	U-Bolt	22-29
40x20	30.00	48	105.6	65	35.6	3/8 Φ	30-40
11/2x3/4	1.18	1.89	4.16	2.56	1.40	U-Bolt	22-29
40x25	30.00	57	105.6	65	41.7	3/8 Φ	30-40
11/2x1	1.18	2.24	4.16	2.56	1.64	U-Bolt	22-29
50x15	30.00	54	125	65	42.2	3/8 Φ	30-40
2x1/2	1.18	2.13	4.92	2.56	1.66	U-Bolt	22-29
50x20	30.00	54	125	65	41.7	3/8 Φ	30-40
2x3/4	1.18	2.13	4.92	2.56	1.64	U-Bolt	22-29
50x25	30.00	62	125	65	47.8	3/8 Φ	30-40
2x1	1.18	2.44	4.92	2.56	1.88	U-Bolt	22-29
65x15	30.00	61	139	65	48.5	3/8 Φ	30-40
21/2x1/2	1.18	2.40	5.47	2.56	1.91	U-Bolt	22-29
65x20	30.00	61	139	65	48	3/8 Φ	30-40
21/2x3/4	1.18	2.40	5.47	2.56	1.89	U-Bolt	22-29
65x25	30.00	71	139	65	54.1	3/8 Φ	30-40
21/2x1	1.18	2.80	5.47	2.56	2.13	U-Bolt	22-29

1. Drill a hole on the pipe according to the hole sizes requirements, ensure all the burrs are removed, and no deep pits or swells are found within 20mm around the hole.



2. Put the gasket into the upper housing, and make sure it is suitable for the intended service.



3. Put the upper parts above the pipe hole, then put the location collar fit into the hole, ensure the gasket to cover the hole evenly.



4. Place the lower housing opposite to the pipe, align the upper housing and lower housing, then insert the bolts.



5. Tighten the nuts evenly until the upper housing touches the pipe well, the torque of the nuts should be in accordance with the requirements of GISA company.



6. After installation, check it carefully to make sure the gap between upper part and lower part is equal and tiny.



When mechanical cross is installed, make sure the deflection of the upper housing and lower housing cannot beyond 1.0mm, and the both location collar are in the center of the hole, when nuts tightened, the torque must be in accordance with the GISA requirements.

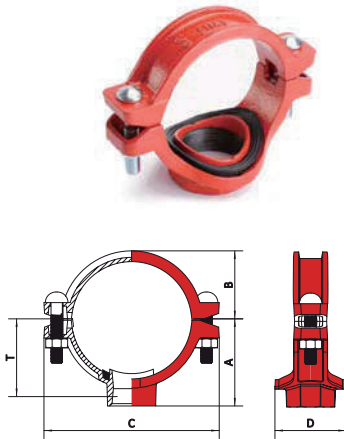


MECHANICAL TEE THREADED OUTLET

Mod. XGQT04

The Model XGQT04 Mechanical Tee provides a fast and easy mid-pipe threaded branch outlet. The XGQT04 eliminates the need for welding or multiple fittings. The mechanical tee utilizes ductile iron housings, a grade E

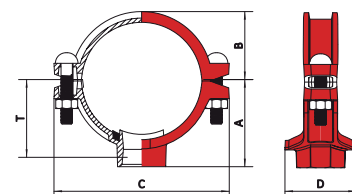
moulded gasket and heat-treated carbon steel track bolts and nuts. Housings are painted orange or red, or as an option can be supplied hot-dipped zinc galvanized or epoxy coated. Pressure rated to 300 psi (20 bar).



Nominal Size mm/in	Pipe O.D.	Hole Dia. \pm +3.2, -0 /+0.13, -0	Dimensions - mm/in					Bolt Size mm/in
			T \pm	A	B	C	D	
50x15	60.3x21.3	38	50	56	42	120	76	M10x60
2x1/2	2.375x0.825	1.50	1.97	2.20	1.65	4.72	2.99	3/8x2-3/8
50x20	60.3x26.7	38	50	56	42	120	76	M10x60
2x3/4	2.375x1.05	1.50	1.97	2.20	1.65	4.72	2.99	3/8x2-3/8
50x25	60.3x33.7	38	47	56	42	120	76	M10x60
2x1	2.375x1.327	1.50	1.85	2.20	1.65	4.72	2.99	3/8x2-3/8
50x32	60.3x42.4	44.5	52	68	42	120	84	M10x60
2x1 1/4	2.375x1.669	1.75	2.05	2.68	1.65	4.72	3.31	3/8x2-3/8
50x40	60.3x48.3	44.5	52	71	42	120	84	M10x60
2x1 1/2	2.375x1.9	1.75	2.05	2.80	1.65	4.72	3.31	3/8x2-3/8
65x15	73x21.3	38	56	61.5	47	143	76	M12x65
2 1/2x1/2	2.375x0.825	1.50	2.20	2.42	1.85	5.63	2.99	1/2x2-5/8
65x20	73x26.7	38	56	61.5	47	143	76	M12x65
2 1/2x3/4	2.875x1.05	1.50	2.20	2.42	1.85	5.63	2.99	1/2x2-5/8
65x25	73x33.7	38	53	61.5	47	143	76	M12x65
2 1/2x1	2.875x1.327	1.50	2.09	2.42	1.85	5.63	2.99	1/2x2-5/8
65x32	73.0x42.4	44.5	58	73.5	47	143	84	M12x65
2 1/2x1 1/4	2.875x1.669	1.75	2.28	2.89	1.85	5.63	3.31	1/2x2-5/8
65x40	73.0x48.3	50.8	58	73.5	47	143	90	M12x65
2 1/2x1 1/2	2.875x1.9	2.00	2.28	2.89	1.85	5.63	3.54	1/2x2-5/8
65x15	76.1x21.3	38	56	61.5	48	143	76	M12x65
2 1/2x1/2	3x0.825	1.50	2.20	2.42	1.89	5.63	2.99	1/2x2-5/8
65x20	76.1x26.7	38	56	61.5	48	143	76	M12x65
2 1/2x3/4	3x1.05	1.50	2.20	2.42	1.89	5.63	2.99	1/2x2-5/8
65x25	76.1x33.7	38	53	61.5	48	143	76	M12x65
2 1/2x1	3x1.327	1.50	2.09	2.42	1.89	5.63	2.99	1/2x2-5/8
65x32	76.1x42.4	44.5	58	73.5	48	143	84	M12x65
2 1/2x1 1/4	3x1.669	1.75	2.28	2.89	1.89	5.63	3.31	1/2x2-5/8
65x40	76.1x48.3	50.8	58	75	48	143	90	M12x65
2 1/2x1 1/2	3x1.9	2.00	2.28	2.95	1.89	5.63	3.54	1/2x2-5/8
80x15	88.9x21.3	38	64	69.5	55	158	76	M12x65
3x1/2	3.5x0.825	1.50	2.52	2.74	2.17	6.22	2.99	1/2x2-5/8
80x20	88.9x26.7	38	63	69.5	55	158	76	M12x65
3x3/4	3.5x1.05	1.50	2.48	2.74	2.17	6.22	2.99	1/2x2-5/8
80x25	88.9x33.7	38	61	69.5	55	158	76	M12x65
3x1	3.5x1.327	1.50	2.40	2.74	2.17	6.22	2.99	1/2x2-5/8
80x32	88.9x42.4	44.5	65	81	55	158	84	M12x65
3x1 1/4	3.5x1.669	1.75	2.56	3.19	2.17	6.22	3.31	1/2x2-5/8
80x40	88.9x48.3	50.8	71	81	55	158	90	M12x65
3x1 1/2	3.5x1.9	2.00	2.80	3.19	2.17	6.22	3.54	1/2x2-5/8
80x50	88.9x60.3	63.5	70	81	55	158	101	M12x65
3x2	3.5x2.375	2.50	2.76	3.19	2.17	6.22	3.98	1/2x2-5/8
100x25	108.1x33.7	38	73	76	62	167	76	M12x65
4x1	4.250x1.327	1.50	2.87	2.99	2.44	6.57	2.99	1/2x2-5/8
100x32	108.0x42.4	46	78	76	62	167	83	M12x65
4x1 1/4	4.25x1.669	1.81	3.07	2.99	2.44	6.57	3.27	1/2x2-5/8
100x40	108.0x48.3	53	83	76	62	167	90	M12x65
4x1 1/2	4.25x1.9	2.09	3.27	2.99	2.44	6.57	3.54	1/2x2-5/8
100x50	108.0x60.3	64	83	78	62	167	100	M12x65
4x2	4.25x2.375	2.52	3.27	3.07	2.44	6.57	3.94	1/2x2-5/8
100x65	108.0x76.1	80	73	105	62	167	117	M12x65
4x2 1/2	4.25x3	3.15	2.87	4.13	2.44	6.57	4.61	1/2x2-5/8
100x15	114.3x21.3	38	77	79	65	181	76	M12x70
4x1/2	4.5x0.825	1.50	3.03	3.11	2.56	7.13	2.99	1/2x2-3/4
100x20	114.3x26.7	38	76	79	65	181	76	M12x70
4x3/4	4.5x1.05	1.50	2.99	3.11	2.56	7.13	2.99	1/2x2-3/4
100x25	114.3x33.7	38	73	82	65	181	76	M12x70
4x1	4.5x1.327	1.50	2.87	3.23	2.56	7.13	2.99	1/2x2-3/4
100x32	114.3x42.4	44.5	78	94	65	181	84	M12x70
4x1 1/4	4.5x1.669	1.75	3.07	3.70	2.56	7.13	3.31	1/2x2-3/4
100x40	114.3x48.3	50.8	83	94	65	181	90	M12x70
4x1 1/2	4.5x1.9	2.00	3.27	3.70	2.56	7.13	3.54	1/2x2-3/4
100x50	114.3x60.3	63.5	83	94	65	181	101	M12x70
4x2	4.5x2.375	2.50	3.27	3.70	2.56	7.13	3.98	1/2x2-3/4
100x65	114.3x76.1	70	73	99	65	181	117	M12x70
4x2 1/2	4.5x3	2.76	2.87	3.90	2.56	7.13	4.61	1/2x2-3/4
100x80	114.3x88.9	89	84	100	65	181	136	M12x70
4x3	4.5x3.5	3.50	3.31	3.94	2.56	7.13	5.35	1/2x2-3/4
125x25	133.0x33.7	38	85	89	74	205	76	M12x75
5x1	5.250x1.327	1.50	3.35	3.50	2.91	8.07	2.99	1/2x3
125x32	133.0x42.4	46	90	89	74	205	83	M12x75
5x1 1/4	5.25x1.669	1.81	3.54	3.50	2.91	8.07	3.27	1/2x3
125x40	133.0x48.3	53	95	89	74	205	90	M12x75
5x1 1/2	5.25x1.9	2.09	3.74	3.50	2.91	8.07	3.54	1/2x3



Nominal Size mm/in	Pipe O.D.	Hole Dia. \pm +3.2,-0 /+0.13,-0	Dimensions - mm/in					Bolt Size mm/in
			T \sharp	A	B	C	D	
125x50	133.0x60.3	64	95	89	74	205	100	M12x75
5x2	5.25x2.375	2.52	3.74	3.50	2.91	8.07	3.94	1/2x3
125x65	133.0x76.1	80	97	92	74	205	117	M12x75
5x2 1/2	5.25x3	3.15	3.82	3.62	2.91	8.07	4.61	1/2x3
125x80	133.0x88.9	92	106	94	74	205	129	M12x75
5x3	5.25x3.5	3.62	4.17	3.70	2.91	8.07	5.08	1/2x3
125x25	139.7x33.7	38	97	96.5	77	219	76	M16x85
5x1	5.5x1.327	1.50	3.82	3.80	3.03	8.62	2.99	5/8x3-1/3
125x32	139.7x42.4	44.5	97	107	77	219	84	M16x85
5x1 1/4	5.5x1.669	1.75	3.82	4.21	3.03	8.62	3.31	5/8x3-1/3
125x40	139.7x48.3	50.8	102	107	77	219	90	M16x85
5x1 1/2	5.5x1.9	2.00	4.02	4.21	3.03	8.62	3.54	5/8x3-1/3
125x50	139.7x60.3	63.5	102	108	77	219	101	M16x85
5x2	5.5x2.375	2.50	4.02	4.25	3.03	8.62	3.98	5/8x3-1/3
125x65	139.7x76.1	70	92	115	77	219	117	M16x85
5x2 1/2	5.5x3	2.76	3.62	4.53	3.03	8.62	4.61	5/8x3-1/3
125x80	139.7x88.9	89	97	118	77	219	136	M16x85
5x3	5.5x3.5	3.50	3.82	4.65	3.03	8.62	5.35	5/8x3-1/3
125x25	141.3x33.7	38	77	96.5	77	219	76	M16x85
5x1	5.563x1.327	1.50	3.03	3.80	3.03	8.62	2.99	5/8x3-1/3
125x32	141.3x42.4	44.5	77	107	77	219	84	M16x85
5x1 1/4	5.563x1.669	1.75	3.03	4.21	3.03	8.62	3.31	5/8x3-1/3
125x40	141.3x48.3	50.8	83	107	77	219	90	M16x85
5x1 1/2	5.563x1.9	2.00	3.27	4.21	3.03	8.62	3.54	5/8x3-1/3
125x50	141.3x60.3	63.5	83	108	77	219	101	M16x85
5x2	5.563x2.375	2.50	3.27	4.25	3.03	8.62	3.98	5/8x3-1/3
125x65	141.3x76.1	70	93	115	77	219	117	M16x85
5x2 1/2	5.563x3	2.76	3.66	4.53	3.03	8.62	4.61	5/8x3-1/3
125x80	141.3x88.9	89	97	118	77	219	136	M16x85
5x3	5.563x3.5	3.50	3.82	4.65	3.03	8.62	5.35	5/8x3-1/3
150x25	159x33.7	38	113	101.5	91	233	76	M14x75
6x1	6.250x1.327	1.50	4.45	4.00	3.58	9.17	2.99	9/16x3
150x32	159.0x42.4	46	113	101.5	91	233	83	M14x75
6x1 1/4	6.250x1.669	1.81	4.45	4.00	3.58	9.17	3.27	9/16x3
150x40	159.0x48.3	53	112	101.5	91	233	90	M14x75
6x1 1/2	6.250x1.9	2.09	4.41	4.00	3.58	9.17	3.54	9/16x3
150x50	159.0x60.3	64	111	101.5	91	233	100	M14x75
6x2	6.250x2.375	2.52	4.37	4.00	3.58	9.17	3.94	9/16x3
150x65	159.0x76.1	80	111	105.5	91	233	117	M16x85
6x2 1/2	6.250x3	3.15	4.37	4.15	3.58	9.17	4.61	5/8x3-1/3
150x80	159.0x88.9	92	110	105.5	91	233	129	M16x85
6x3	6.250x3.5	3.62	4.33	4.15	3.58	9.17	5.08	5/8x3-1/3
150x100	159.0x114.3	118	96.8	110	91	233	157	M16x85
6x4	6.250x4.5	4.65	3.81	4.33	3.58	9.17	6.18	5/8x3-1/3
150x25	165.1x33.7	38	99	108.5	94	248	76	M16x85
6x1	6.5x1.327	1.50	3.90	4.27	3.7	9.76	2.99	5/8x3-1/3
150x32	165.1x42.4	44.5	112	120	94	248	84	M16x85
6x1 1/4	6.5x1.669	1.75	4.41	4.72	3.7	9.76	3.31	5/8x3-1/3
150x40	165.1x48.3	50.8	112	120	94	248	90	M16x85
6x1 1/2	6.5x1.9	2.00	4.41	4.72	3.7	9.76	3.54	5/8x3-1/3
150x50	165.1x60.3	63.5	111	121	94	248	101	M16x85
6x2	6.5x2.375	2.50	4.37	4.76	3.7	9.76	3.98	5/8x3-1/3
150x65	165.1x76.1	70	110	126.5	94	248	117	M16x85
6x2 1/2	6.5x3	2.76	4.33	4.98	3.7	9.76	4.61	5/8x3-1/3
150x80	165.1x88.9	89	110	129.5	94	248	136	M16x85
6x3	6.5x3.5	3.50	4.33	5.10	3.7	9.76	5.35	5/8x3-1/3
150x100	165.1x114.3	114	97	136	94	248	162	M16x85
6x4	6.5x4.5	4.49	3.82	5.35	3.7	9.76	6.38	5/8x3-1/3
150x25	168.3x33.7	38	112	108.5	97	248	76	M16x85
6x1	6.625x1.327	1.50	4.41	4.27	3.82	9.76	2.99	5/8x3-1/3
150x32	168.3x42.4	44.5	112	120	97	248	84	M16x85
6x1 1/4	6.625x1.669	1.75	4.41	4.72	3.82	9.76	3.31	5/8x3-1/3
150x40	168.3x48.3	50.8	112	120	97	248	90	M16x85
6x1 1/2	6.625x1.9	2.00	4.41	4.72	3.82	9.76	3.54	5/8x3-1/3
150x50	168.3x60.3	63.5	111	121	97	248	101	M16x85
6x2	6.625x2.375	2.50	4.37	4.76	3.82	9.76	3.98	5/8x3-1/3
150x65	168.3x76.1	70	110	128	97	248	117	M16x85
6x2 1/2	6.625x3	2.76	4.33	5.04	3.82	9.76	4.61	5/8x3-1/3
150x80	168.3x88.9	89	110	131	97	248	136	M16x85
6x3	6.625x3.5	3.50	4.33	5.16	3.82	9.76	5.35	5/8x3-1/3
150x100	168.3x114.3	114	97	139.5	97	248	162	M16x85
6x4	6.625x4.5	4.49	3.82	5.49	3.82	9.76	6.38	5/8x3-1/3
200x25	219.1x33.7	38	152	136	125	322	76	M20x90
8x1	8.625x1.327	1.50	5.98	5.35	1.92	12.68	2.99	5/8x3-1/2
200x32	219.1x42.4	44.5	152	147	125	322	84	M20x90
8x1 1/4	8.625x1.669	1.75	5.98	5.79	1.92	12.68	3.31	5/8x3-1/2
200x40	219.1x48.3	50.8	152	147	125	322	90	M20x90
8x1 1/2	8.625x1.9	2.00	5.98	5.79	1.92	12.68	3.54	5/8x3-1/2
200x50	219.1x60.3	63.5	138	147	125	322	101	M20x90
8x2	8.625x2.375	2.50	5.43	5.79	1.92	12.68	3.98	5/8x3-1/2
200x65	219.1x76.1	70	129	156	125	322	117	M20x90
8x2 1/2	8.625x3	2.76	5.08	6.14	1.92	12.68	4.61	5/8x3-1/2
200x80	219.1x88.9	89	135	158.5	125	322	136	M20x90
8x3	8.625x3.5	3.50	5.31	6.24	1.92	12.68	5.35	5/8x3-1/2
200x100	219.1x114.3	114	122	167	125	322	162	M20x90
8x4	8.625x4.5	4.49	4.80	6.57	1.92	12.68	6.38	5/8x3-1/2



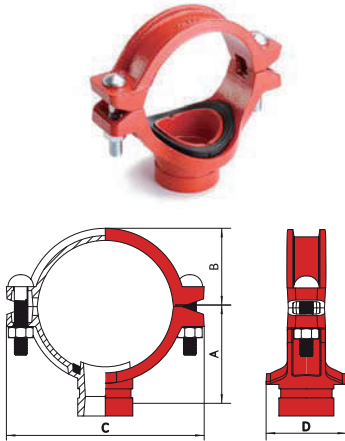


MECHANICAL TEE GROOVED OUTLET

Mod. XGQT04G

The Model XGQT04G Mechanical Tee provides a fast and easy mid-pipe grooved branch outlet. The mechanical tee utilizes ductile iron housings, a grade E gasket and heat-treated carbon steel track bolts and nuts. Housing

are painted orange or red, or as an option can be supplied hot-dipped zinc galvanized or epoxy coated. Maximum working pressure: 300 psi (20 bar). Gaskets are interchangeable between Models 7721 and 7722.



Nominal Size mm/in	Pipe O.D.	Hole Dia. \pm +3.2,-0 /+0.13,-0	Dimensions - mm/in				Bolt Size mm/in
			A	B	C	D	
50x25	60.3x33.7	38	72	42	120	76	M10x60
2x1	2.375x1.327	1.50	2.83	1.65	4.72	2.99	3/8x2-3/8
50x32	60.3x42.4	44.5	72.5	42	120	84	M10x60
2x1 1/4	2.375x1.669	1.75	2.85	1.65	4.72	3.31	3/8x2-3/8
50x40	60.3x48.3	44.5	72.5	42	120	84	M10x60
2x1 1/2	2.375x1.9	1.75	2.85	1.65	4.72	3.31	3/8x2-3/8
65x25	73x33.7	38	78	47	143	76	M12x65
2 1/2x1	2.875x1.327	1.50	3.07	1.85	5.63	2.99	1/2x2-5/8
65x32	73x42.4	44.5	78.5	47	143	84	M12x65
2 1/2x1 1/4	2.875x1.669	1.75	3.09	1.85	5.63	3.31	1/2x2-5/8
65x40	73x48.3	50.8	78.5	47	143	90	M12x65
2 1/2x1 1/2	2.875x1.9	2.00	3.09	1.85	5.63	3.54	1/2x2-5/8
65x25	76.1x33.7	38	79.5	48	143	76	M12x65
2 1/2x1	3x1.327	1.50	3.13	1.89	5.63	2.99	1/2x2-5/8
65x32	76.1x42.4	44.5	80	48	143	84	M12x65
2 1/2x1 1/4	3x1.669	1.75	3.15	1.89	5.63	3.31	1/2x2-5/8
65x40	76.1x48.3	50.8	80	48	143	90	M12x65
2 1/2x1 1/2	3x1.9	2.00	3.15	1.89	5.63	3.54	1/2x2-5/8
80x25	88.9x33.7	38	85.5	55	158	76	M12x65
3x1	3.5x1.327	1.50	3.37	2.17	6.22	2.99	1/2x2-5/8
80x32	88.9x42.4	44.5	86	55	158	84	M12x65
3x1 1/4	3.5x1.669	1.75	3.39	2.17	6.22	3.31	1/2x2-5/8
80x40	88.9x48.3	50.8	86	55	158	90	M12x65
3x1 1/2	3.5x1.9	2.00	3.39	2.17	6.22	3.54	1/2x2-5/8
80x50	88.9x60.3	63.5	87	55	158	101	M12x65
3x2	3.5x2.375	2.50	3.43	2.17	6.22	3.98	1/2x2-5/8
100x50	108x60.3	64	92.5	62	172	90	M12x65
4x2	4.25x2.375	2.52	3.64	2.44	6.77	3.54	1/2x2-5/8
100x65	108x76.1	80	92.5	62	172	107	M12x65
4x2 1/2	4.25x3	3.15	3.64	2.44	6.77	4.21	1/2x2-5/8
100x25	114.3x33.7	38	98	65	181	76	M12x70
4x1	4.5x1.327	1.50	3.86	2.56	7.13	2.99	1/2x2-3/4
100x32	114.3x42.4	44.5	99	65	181	84	M12x70
4x1 1/4	4.5x1.669	1.75	3.90	2.56	7.13	3.31	1/2x2-3/4
100x40	114.3x48.3	50.8	99	65	181	90	M12x70
4x1 1/2	4.5x1.9	2.00	3.90	2.56	7.13	3.54	1/2x2-3/4
100x50	114.3x60.3	63.5	99	65	181	101	M12x70
4x2	4.5x2.375	2.50	3.90	2.56	7.13	3.98	1/2x2-3/4
100x65	114.3x73	70	99	65	181	117	M12x70
4x2 1/2	4.5x2.875	2.76	3.90	2.56	7.13	4.61	1/2x2-3/4
100x65	114.3x76.1	70	99	65	181	117	M12x70
4x2 1/2	4.5x3	2.76	3.90	2.56	7.13	4.61	1/2x2-3/4
100x80	114.3x88.9	89	99	65	181	136	M12x70
4x3	4.5x3.5	3.50	3.90	2.56	7.13	5.35	1/2x2-3/4
125x40	133x48.3	53	105.5	74	205	90	M12x75
5x1 1/2	5.25x1.9	2.09	4.15	2.91	8.07	3.54	1/2x3
125x50	133x60.3	64	105.5	74	205	100	M12x75
5x2	5.25x2.375	2.52	4.15	2.91	8.07	3.94	1/2x3
125x65	133x76.1	80	105.5	74	205	117	M12x75
5x2 1/2	5.25x3	3.15	4.15	2.91	8.07	4.61	1/2x3
125x80	133x88.9	92	105.5	74	205	129	M12x75
5x3	5.25x3.5	3.62	4.15	2.91	8.07	5.08	1/2x3
125x32	139.7x42.4	44.5	112	77	219	84	M16x85
5x1 1/4	5.5x1.669	1.75	4.41	3.03	8.62	3.31	5/8x3-1/3
125x40	139.7x48.3	50.8	112	77	219	90	M16x85
5x1 1/2	5.5x1.9	2.00	4.41	3.03	8.62	3.54	5/8x3-1/3
125x50	139.7x60.3	63.5	113	77	219	101	M16x85
5x2	5.5x2.375	2.50	4.45	3.03	8.62	3.98	5/8x3-1/3
125x65	139.7x73	70	113	77	219	117	M16x85
5x2 1/2	5.5x2.875	2.76	4.45	3.03	8.62	4.61	5/8x3-1/3
125x65	139.7x76.1	70	113	77	219	117	M16x85
5x2 1/2	5.5x3	2.76	4.45	3.03	8.62	4.61	5/8x3-1/3
125x80	139.7x88.9	89	113	77	219	136	M16x85
5x3	5.5x3.5	3.50	4.45	3.03	8.62	5.35	5/8x3-1/3



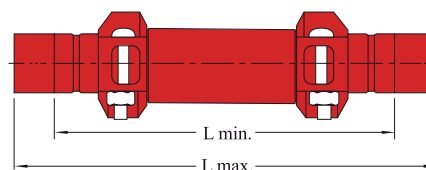
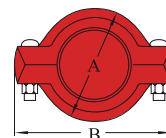
EXPANSION JOINT

Mod. 500

The GISA Model 500 Expansion Joint is a slide-type expansion joint which provides 0 to 3" (0 to 76mm) of axial end movement. The components are supplied epoxy coated (RAL3000 red) for easier use and longer life. An integral safety device prevents excess movement and or the accidental pull-out of the grooved end pieces.



Nominal Size mm/in	Pipe O.D. mm/in	Max. Working Pressure Bar/PSI	Max. Movement mm/in	Dimensions				Weight Kgs/Lbs
				A mm/in	B mm/in	L min. mm/in	L max. mm/in	
50	60.3	25	76	96	144	304	381	7.2
2	2.375	350	3	3.78	5.67	12.00	15.00	15.8
65	73.0	25	76	116	168	304	381	9.6
2.5	2.875	350	3	4.57	6.61	12.00	15.00	21.1
65	76.1	25	76	116	168	304	381	9.6
2.5	3.000	350	3	4.57	6.61	12.00	15.00	21.1
80	88.9	25	76	146	198	304	381	12.5
3	3.500	350	3	5.76	7.80	12.00	15.00	27.5
100	114.3	25	76	160	250	359	435	18.0
4	4.500	350	3	6.30	9.84	14.13	17.13	39.6
150	165.1	25	76	260	334	406	482	34.0
6	6.500	350	3	10.25	13.15	16.00	19.00	74.8
150	168.3	25	76	260	334	406	482	34.0
6	6.625	350	3	10.25	13.15	16.00	19.00	74.8



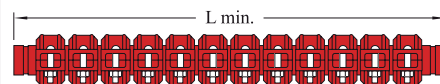
EXPANSION JOINT

Mod. 501

The Model 501 Expansion Joint is a combination of couplings and specially machined pipe nipples that are joined in a series to accommodate the expansion and or contraction of a piping system. Standard units are comprised of either Model XGQT2 or Model 1212 flexible couplings and cut- grooved Sch. 40 pipe nipples. Customized units are available.



Nominal Size mm/in	Pipe O.D. mm/in	Max. Movement mm/in	L min. mm/in	L max. mm/in	Weight Kgs/Lbs
40	48.3	58	718	776	11.0
1.5	1.900	2.25	28.25	30.13	24.2
50	60.3	58	718	776	12.2
2	2.375	2.25	28.25	30.13	27.0
65	73.0	58	718	776	16.3
2.5	2.875	2.25	28.25	30.13	36.0
65	76.1	58	718	776	16.3
2.5	3.000	2.25	28.25	30.13	36.0
80	88.9	58	718	776	20.9
3	3.500	2.25	28.25	30.13	46.0
100	114.3	45	667	712	24.5
4	4.500	1.75	26.25	28.00	54.0
125	133.0	45	667	712	32.7
5	5.250	1.75	26.25	28.00	72.0
150	165.1	45	667	712	32.7
6	6.500	1.75	26.25	28.00	72.0
150	168.3	45	667	712	40.8
6	6.625	1.75	26.25	28.00	90.0
200	219.1	45	724	769	68.0
8	8.625	1.75	28.50	30.25	150.0



SPECIFICATIONS

GISA offers a wide range of grooved-end fittings in size through 24" (600mm). Fittings are available in a number of styles and configurations to support a variety of applications. GISA grooved-end fittings are designed to meet the ASTM F1548-01 and ANSI/AWWA C606-04 requirements. For other pipe size not specified in these standards, refer to applicable groove specifications shown in this catalog. Most fittings are provided in ductile iron conforming to ASTM A536 Gr. 65-45-12. Some styles and size are fabricated of segmentally welded steel. Fittings are painted orange or red, or as an option can be supplied hot-dip galvanized or epoxy coated. Pressure ratings conform to couplings and/or pipe being used.



MODEL MD GROOVE RULE

The GISA grooved diameter rule is a simple and easy to use steel tape rule used for taking circumferential measurements. The Model MD rules are designed to accurately measure the standard groove dimensions of pipe and are available for measuring, sizes 25mm through 1050mm (1"-42"). The double sided direct reading diameter rule features two scales and a quick check reference which indicates the acceptable groove range for all pipe sizes.

MD20: 200cmL x 6mmW -for 25mm-1050mm (1"-42") pipe.



SELF LUBRICANT

All GISA EPDM gaskets are self-lubricant, it allows the gaskets to be installed on the pipe without sparying lubricant. for other gaskets except EPDM, like silicon gasket, lubricant is recommended and to help prevent the gasket from being pinched. The lubricant is applied in a thin coat to the gasket exterior, the gasket lips and/or the housing interiors.

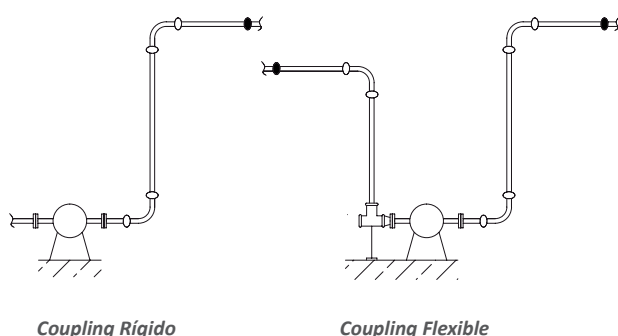




TYPICAL APPLICATIONS - FLEXIBLE COUPLINGS - GENERAL SYSTEMS -

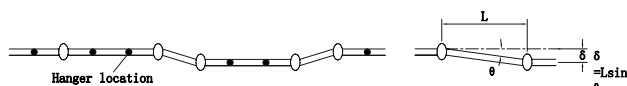
1. ABSORPTION OF VIBRATION AND NOISE

When a pump operates with frequent starts and stops, the piping system is affected by the noise and vibration of the equipment. The entire system may develop a large sway, referred to as sympathetic vibration, as a result of the frequent cycling. GISA flexible couplings will help reduce such vibration and noise. The system should always be properly designed with steel angle sway braces to protect the system from large sways.



2. ADJUSTMENT OF MISALIGNMENT

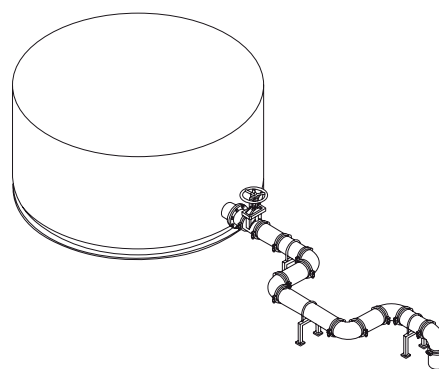
When a straight run has need for a slight adjustment of alignment on the jobsite as shown in the diagram, you can accomplish this with the use of two flexible couplings. The following table shows the deflection value (θ) of the GISA 7705 flexible couplings.



Amount of deflection (δ)						
Nominal Size	Deflection Angle (θ)	Distance between couplings (L) mm				
		600	1200	1500	2000	3000
2"/ 50	3° 02'	32	64	79	106	159
2 1/2"/ 65	2° 30'	26	52	65	87	131
3"/ 80	2° 04'	22	43	54	72	108
4"/ 100	3° 12'	34	67	84	112	168
5"/ 125	2° 36'	27	54	68	91	136
6"/ 150	1° 10'	12	24	31	41	61
8"/ 200	1° 40'	17	35	44	58	87
10"/ 250	1° 20'	14	28	35	47	70
12"/ 300	1° 08'	12	24	30	40	59

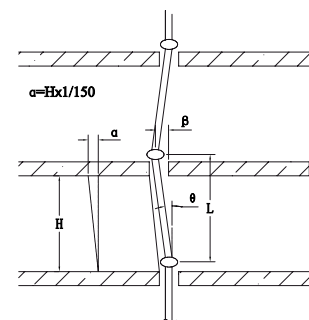
3. ABSORPTION OF DISTORTION

With the use of an assembly as shown below, ground sinking or movement around a tank or reservoir can be effectively absorbed, avoiding damage to the tank, reservoir and or the piping system.



4. ABSORPTION OF INTER-FLOOR DEFLECTION

Risers of high-rise flexible structure buildings are subjected to lateral sways (inter-floor deflection) when an earthquake occurs. If we assume the inter-floor deflection (α) as 1/150 and the floor height (H) as 4 meters, the estimated inter-floor deflection (α) will be.



$$\alpha = H \times 1/150 = 4000 \times 1/150 = 27\text{mm}$$

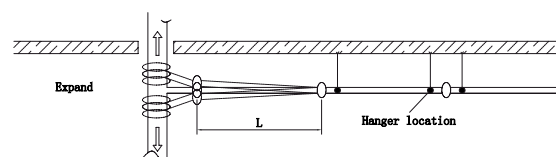
If we use a 200mm (8") 7707 coupling for each floor, the maximum deflection (β) that each coupling can accommodate will be.

$$\beta = L \times \tan \theta = 4000 \times 0.02915 = 4.56'' = 116\text{mm} (\theta = 1.67^\circ)$$

The example shows a flexible coupling would be sufficient enough to absorb this scale of seismic sways.

5. ABSORPTION OF MISALIGNMENT

As shown in the diagram, each branch connection to the free riser will be subjected to serious shearing forces as pressure thermal movement increases. By using two flexible couplings, you can solve this problem.

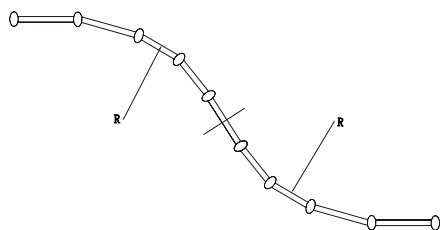


6. CURVED LAYOUT

With GISA flexible couplings you can design a slowly curved layout for a system along a curved tunnel, winding road or curved building.

$$R = \frac{L}{(2 \times \tan \theta/2)}$$

(where: R is radius of curvature, L is pipe length, and θ is max. allowed deflection of a coupling)



Example: When using model 7705 100mm (4") couplings for the layout as shown in the diagram, the max. allowed deflection (θ) of the coupling is 3.4°, and the pipe length (L) is 5.5 meters, the radius of curvature (R) will be 92.7 meters.

7. ABSORPTION OF THERMAL STRESS

Thermal stress is caused by changes in temperature, resulting in either expansion or contraction. With the use of GISA flexible couplings you can design your system to accommodate such movement without the need for costly expansion joints. The thermal expansion or contraction (μ) is determined by the length of pipe (L) and temperature difference (ΔT).

$$\mu = \alpha \times L \times \Delta T$$

Thermal Expansion (Metric)						
Temperature Difference ΔT (°C)	Pipe Length L (meters)					
	1	5.5*	10	20	30	40
	Thermal Expansion (millimeters)					
1	0.012	0.07	0.12	0.24	0.36	0.48
5	0.06	0.33	0.6	1.2	1.8	2.4
10	0.12	0.66	1.2	2.4	3.6	4.8
20	0.24	1.3	2.4	4.8	7.2	9.6
30	0.36	2	3.6	7.2	11	15
40	0.48	2.6	4.8	9.6	14	20
50	0.6	3.3	6	12	18	24
60	0.72	4	7.2	14	22	29
70	0.84	4.6	8.4	17	25	34
80	0.96	5.3	9.6	19	29	39

* 5.5 meters is the standard length of commercial carbon steel pipe.

As the liner expansion coefficient for steel (α) is 1.2×10^{-5} , you can use table above to determine the thermal expansion.

Example:

Pipe size: 100mm (4")

Max. pipe end separation (E): 3.2mm Pipe length (L): 5.5M

Temperature difference (ΔT): 40°C (+5°C to +45°C)

$$\mu = \alpha \times L \times \Delta T = 1.2 \times 10^{-5} \times 5500 \times 40 = 2.64\text{mm}$$

The thermal expansion of a 5.5 meter standard length or pipe (μ) is within the allowance (= max. pipe end separation) of a flexible coupling. In other words, if you use a coupling for each pipe length of 5.5 meters, the coupling will accommodate the thermal expansion or contraction expected to take place for a 40°C temperature change. When you calculate the necessary number of coupling (N) for an anchored system, you should place a clearance of $N \times E \times 1/2$ as a safety factor.

Whether it is thermal expansion, contraction, or a combination thereof, the system requires suitable anchor installations with properly space alignment guides and weight support devices. Where and when larger thermal movement is anticipated, you should use supplementary expansion joint(s).

For installers who use the imperial units of measure, the following table will be more convenient.

Thermal Expansion (Imperial)				
Temp (°F)	Pipe Length L (feet)			
	20	40	60	100
	Thermal Expansion between 70°F and indicated temperature (inch)			
0	-0.10	-0.20	-0.29	-0.49
25	-0.06	-0.13	-0.19	-0.32
50	-0.03	-0.06	-0.08	-0.14
70	0	0	0	0
100	0.05	0.09	0.14	0.23
125	0.08	0.17	0.25	0.42
150	0.12	0.24	0.37	0.61
175	0.16	0.32	0.48	0.80
200	0.20	0.40	0.59	0.99
225	0.24	0.48	0.73	1.21

* Coefficient of thermal expansion of steel pipe = $6.33 \text{ in/in, } ^\circ\text{F} \times 10^{-6}$

NOTES:



2. FLEXIBLE COUPLINGS ON HORIZONTAL PORTION OF TIE-IN



FIGURE A.9.3.2(b) Detail at Short Riser



3. FLEXIBLE COUPLINGS ON MAIN RISER AND BRANCH LINE RISER



4. FLEXIBLE COUPLINGS FOR DROPS

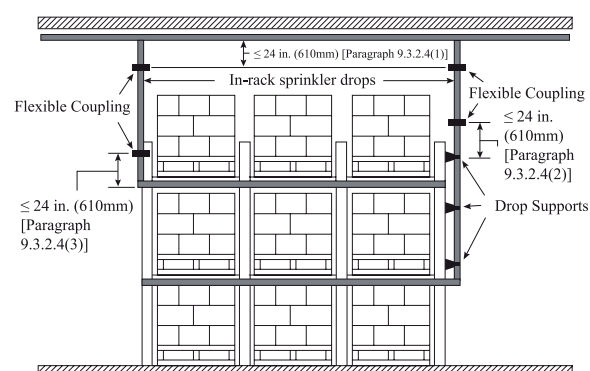


FIGURE A.9.3.2.4 Flexible Coupling for Drops

5. SEISMIC SEPARATION ASSEMBLY

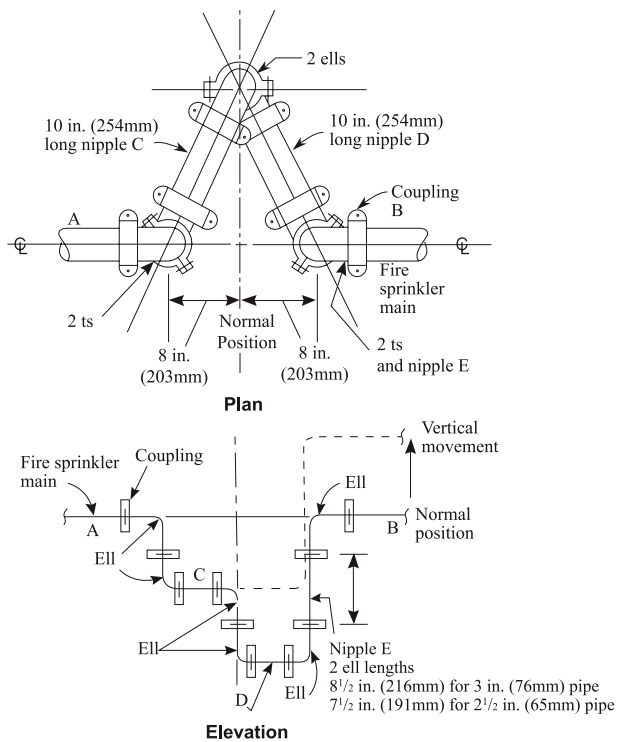


FIGURE A.9.3.3 (a) Seismic Separation Assembly. Shown are an 8 in. (203mm) Separation Crossed by Pipes up to 4 in. (102mm) in Nominal Diameter. For other separation distances and pipe sizes, lengths and distances should be modified proportionally.

6. EARTHQUAKE PROTECTION FOR SPRINKLER PIPING

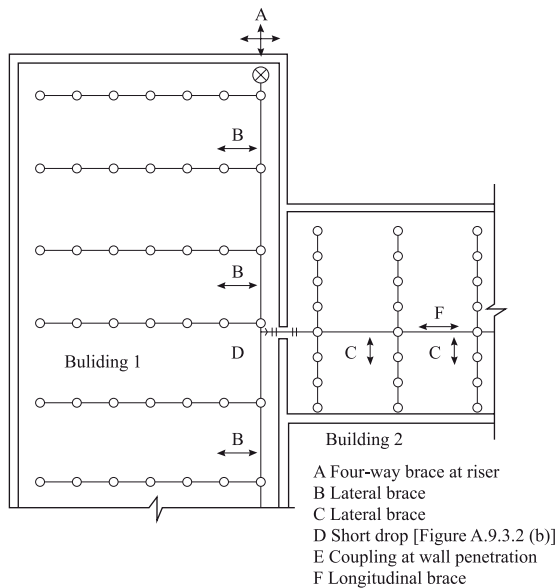
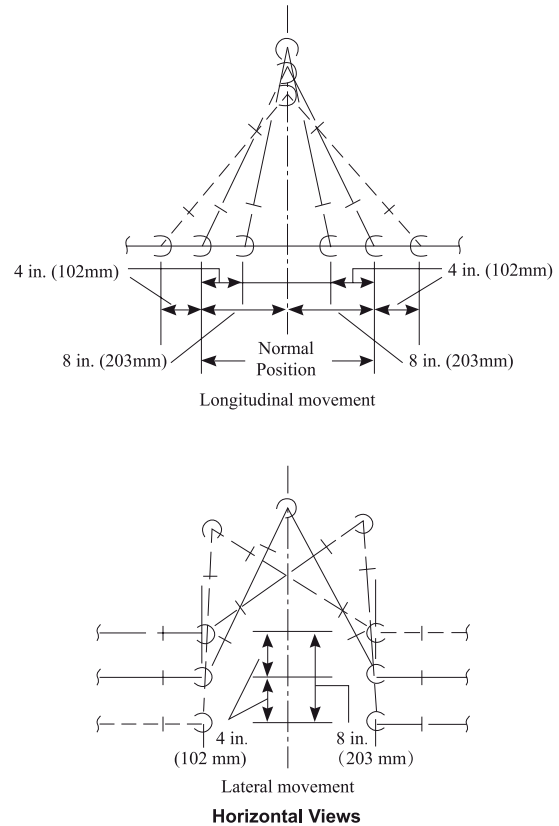


FIGURE A.9.3.5.6 (a)



7. TYPICAL LOCATION OF BRACING ON A LOOPED SYSTEM

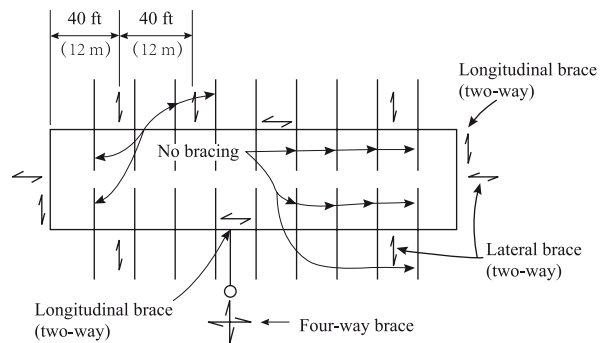


FIGURE A.9.3.5.6 (d) Localización típica de arriostramiento en un sistema en bucle.

Systems having more flexible couplings than required above shall be provided with additional sway bracing. A lateral brace shall be provided within 24" (600mm) of every other coupling unless pipes are supported by rods less than 6" (152mm) long from the veiling or by U-type hooks underside of the structural element. (NFPA 13 - 2007 9.3.2. & 9.3.5.).

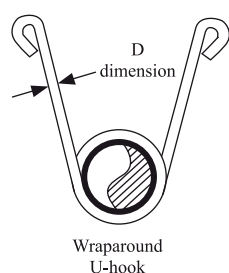


ANCHORING, HANGING AND SUPPORTS

GISA grooved couplings are designed to hold axial thrusts 4-5 times their rated working pressure, though the strength against bending movement is less than that of steel pipe. The joint may be damaged when a bending movement greater than the allowed deflection occurs. System designers should provide anchors (main and intermediate) and pipe guides with proper spacing to protect the system from unexpected large bending movements.

These illustrations are examples only, and are not intended to be used for all installations as conditions and requirements vary from job to job. Reliance on general data or information contained herein shall be at the user's sole risk and without obligation to GISA.

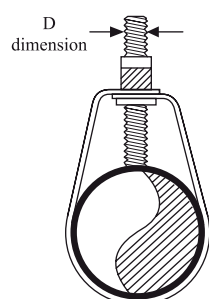
Hangers shall be designed to support five times the weight of water-filled pipe plus 250 lb (115 kgs) at each point of pipe support (NFPA 13 9.1.1.1.). The following illustrations are examples of acceptable hanger types and size per NFPA 13.



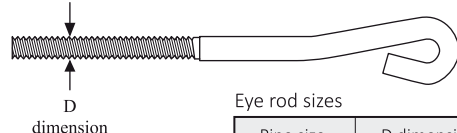
Wraparound U-hook

U-Hook sizes

Pipe size in	D dimension in/mm
~2	5/16 (7.9)
2-1/2 ~ 6	3/8 (9.5)
8	1/2 (12.7)



Adjustable swivel Ring - rod tight to pipe



Eye rod sizes

Pipe size in	D dimension in/mm
~ 4	3/8 (9.5)
5 ~ 6	1/2 (12.7)
10 ~ 12	3/4 (15.1)

HANGERS FOR STRAIGHT RUNS

For straight runs, you can use both flexible and rigid couplings. When rigid couplings are used, the same hanger spacing as other piping methods can be applied. You can refer to the hanger spacing standards of ANSI B31.1 Power Piping Code, B31.9 Building Services Piping Code, NFPA 13.

Sprinkler Systems, or Mechanical Equipment Construction Guide (Japan). See the table below.

Suggested Max. Span between Supports (steel pipe)						
Nominal Pipe Size in/mm	Water Service (meters)				Gas or Air Service (meters)	
	1)	2)	3)	4)	1)	2)
1/25	2.1	2.7	3.7	2.0	2.7	2.7
1.25/32	2.1	3.4	3.7	2.0	2.7	3.4
1.5/40	2.1	3.7	4.6	2.0	2.7	4.0
2/50	3.1	4.0	4.6	2.0	4.0	4.6
3/80	3.7	4.6	4.6	2.0	4.6	5.2
4/100	4.3	5.2	4.6	2.0	5.2	6.4
6/150	5.2	6.1	4.6	3.0	6.4	7.6
8/200	5.8	6.4	4.6	3.0	7.3	8.5
10/250	5.8	6.4		3.0	7.3	9.5
12/300	7.0	6.4		3.0	9.1	10.1
14/350	7.0	6.4			9.1	10.1
16/400	8.2	6.4			10.7	10.1
18/450	8.2	6.4			10.7	10.1
20/500	9.1	6.4			11.9	10.1
24/600	9.8	6.4			12.8	10.1

1) ANSI B31.1 Power Piping Code

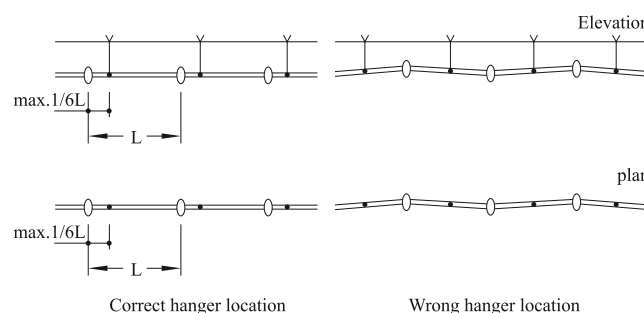
2) ANSI B31.9 Building Services Piping Code

3) NFPA 13 Sprinkler systems

4) Ministry of Land & Transportation of Japan: Mechanical Equipment Construction Guide

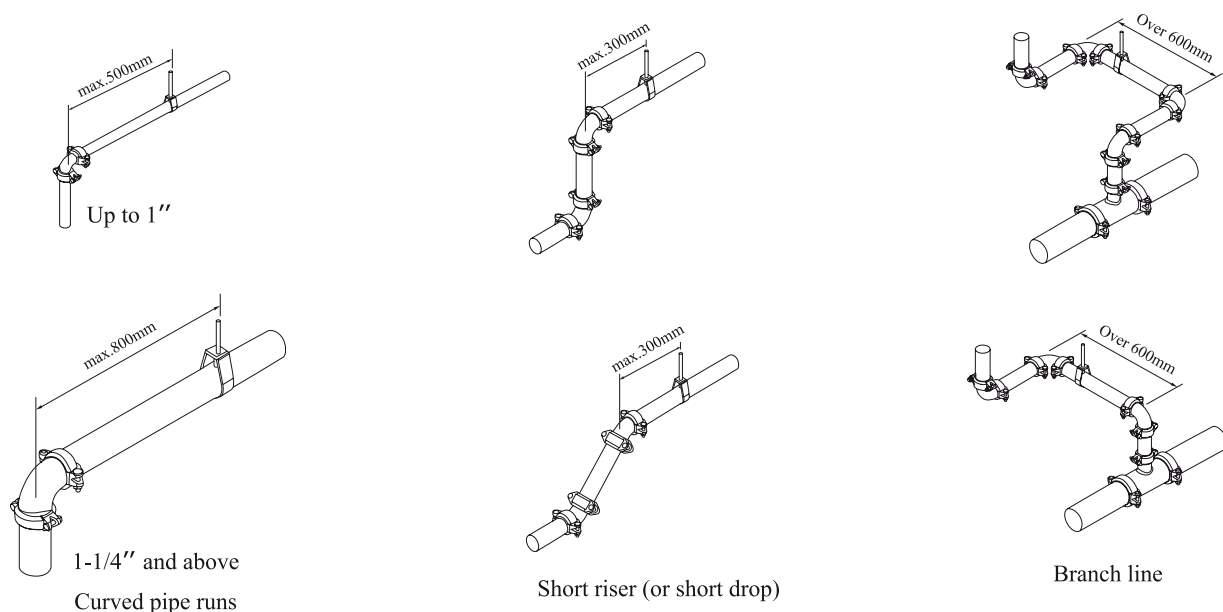
HANGER LOCATIONS ON STRAIGHT RUNS WHERE FLEXIBLE COUPLINGS ARE USED

When flexible couplings are used on straight runs, location of hangers shall be designed as close to each coupling as possible, or within a distance of less than 1/6 the span.



HANGER LOCATIONS ON CURVED PIPE RUNS AND BRANCH LINES

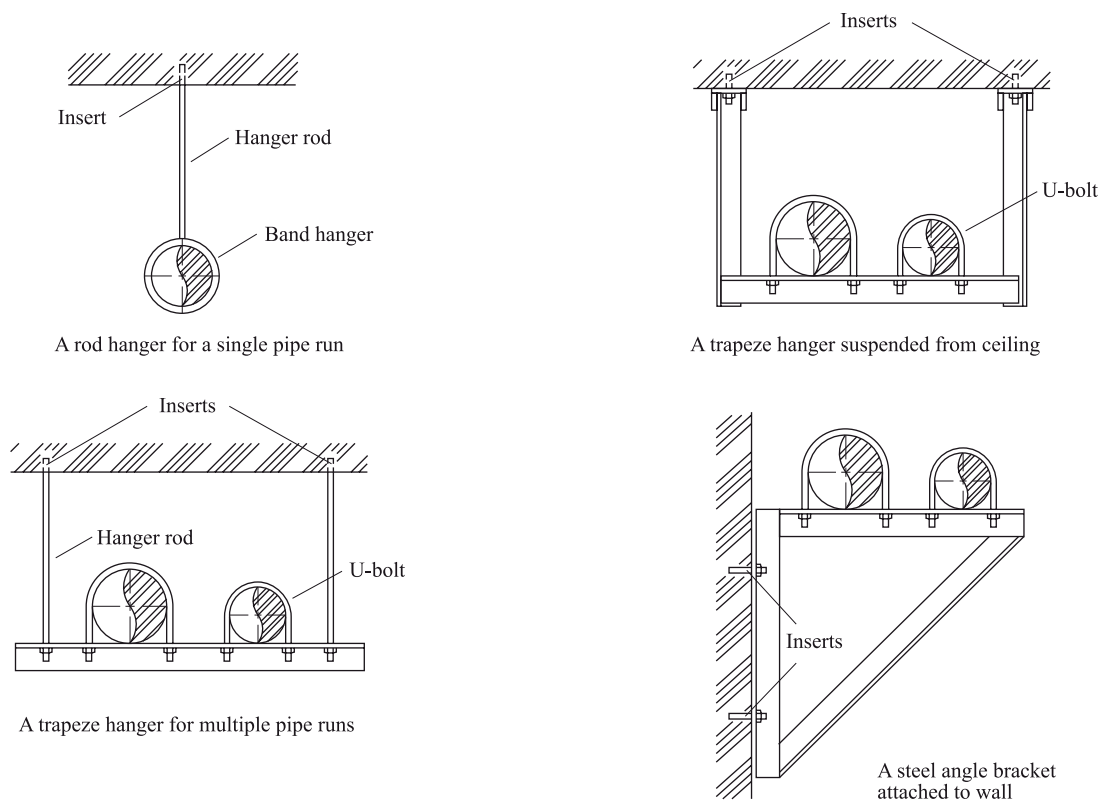
Additional hangers or supports shall be provided where runs are curved, connected to a branch line or on short risers or drops.



TYPICAL DESIGNS OF HANGERS AND SWAY BRACES FOR PIPE RUNS

Pipe runs shall be adequately suspended by rod hangers or steel angles that are directly attached to the building structure to restrict the movement of the piping.

Hangers and their components shall be ferrous. The maximum distance between hangers shall not exceed that specified in the table of previous page





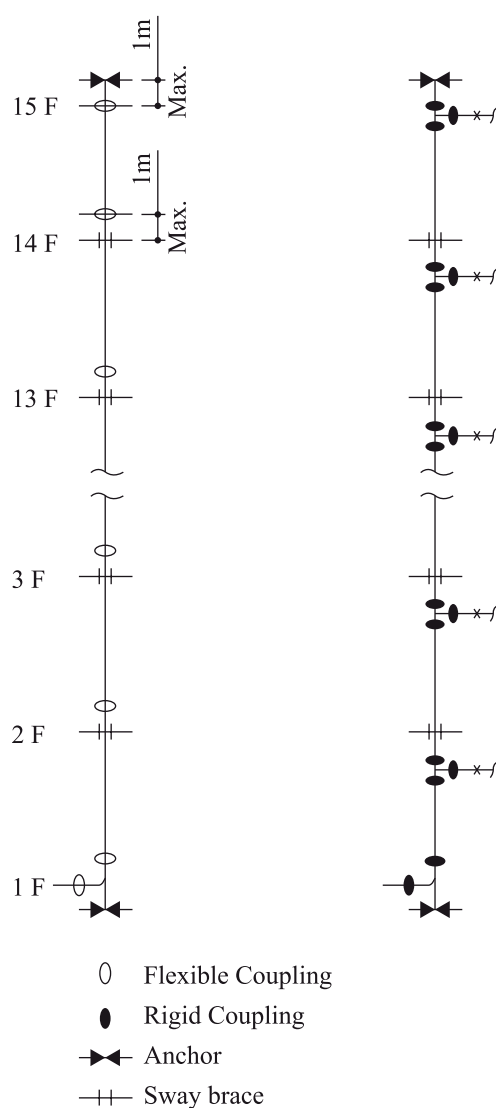
SUPPORTS FOR RISERS

In multi-story buildings, risers shall be fixed (or anchored) at the lowest level and at the top of the riser and shall be supported by riser clamps or U-bolts at each floor level to prevent the risers from swaying.

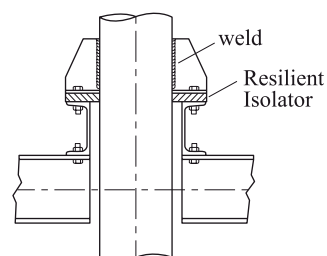
If risers are braced by the penetration floors, the number of riser clamps or U-bolts may be reduced to one at each three stories. For risers, either flexible or rigid couplings can be used as long as proper anchoring and support is provided.

画图

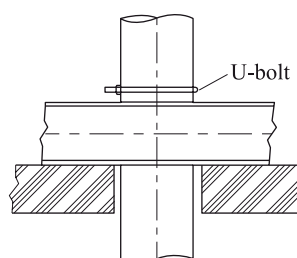
Riser clamp



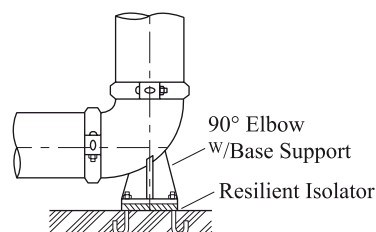
Anchors for risers (↔)



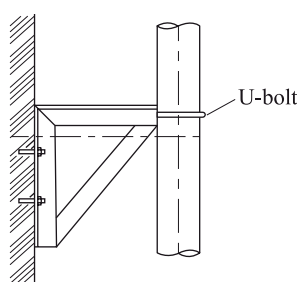
Sway braces for risers (⊕)



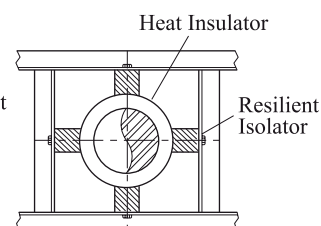
Anchor (↔)



Sway brace (⊕)



Sway brace (⊕)



Anchors should be sufficient to hold the weight of water-filled pipe and pressure thrusts.

Pipe guides (sway braces) should be such as to brace lateral movement of the system.

GASKET SELECTION GUIDE

GISA utilizes the finest gasket materials available in our products. Over the past 50 year great advanced have been made in synthetic elastomer technologies, allowing us to offer a full range of synthetic rubber gasket materials for a wide variety of piping applications. GISA gaskets are engineered and designed to meet and exceed standards such as ASTM D2000, AWWA C606, NSF61 and IAPMO.

Our own stringent internal laboratory testing confirms this. Our continual research, development and testing are designed to advance the elastomer field and to develop new and better solutions for our ever changing industry.

Chemical resistance is primarily determined by the grade and or the compound of the gasket. The color coding identifies the gasket grade and or compound. Always verify that the gasket selected is correct for the intended service.

Service temperature is controlled by factors including the gasket compound, fluid medium (air, water, oils, etc.), and continuity (continuous or intermittent) of service. Under no circumstances should gaskets be exposed to temperatures ablow their individual ratings. For additional information or specific applications contact GISA for recommendations.

STANDARD GASKETS

Compound	Grade	Color Code	Recommended Services	Maximum Temp. Range
EPDM	E	Green Stripe	Good for cold & hot water up to +230°F (+110°C). Also good for services for water with acid, water with chlorine, deionized water, seawater and waste water, dilute acids, oil-free air and many chemicals. Not recommended for petroleum oils, solvents and aromatic hydrocarbons.	-29°F (-34°C) to +230°F (+110°C)
Nitrile	T	Orange Stripe	Good for petroleum oils, mineral oils, vegetable oils, aromatic hydrocarbons, many acids and water ≤ +150°F (+65°C).	-20°F (-29°C) to +180°F (+82°C)
White Nitrile	A	White Gasket	Good for oily and greasy food products and processing, as well as pharmaceutical and cosmetics manufacturing. Compounded from FAD approved ingredients (CFR Title 21 Part 177.2600).	-20°F (-7°C) to +180°F (+82°C)
Silicone	L	Red Stripe	Good for dry, hot air without hydrocarbons and some high temperature chemical services. May also be used for fire protection dry systems.	-29°F (-34°C) to +350°F (+177°C)
Fluoro-elastomer (Viton)	O	Blue Stripe	Good for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons to +300°F (+149°C).	-20°F (-7°C) to +300°F (+149°C)

NOTES:

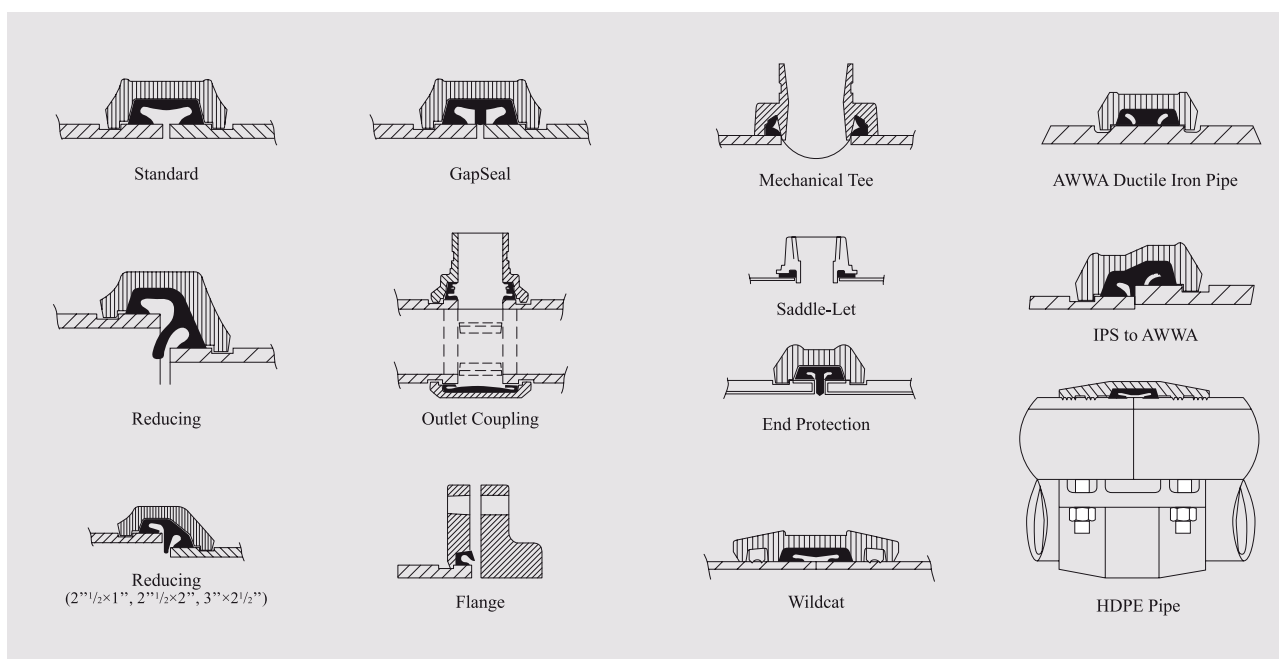
This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



GASKET STYLES

Due to the number of GISA products offered and the variety of service applications, a wide variety of gaskets are available. Even though the products and gaskets may

look different the sealing principles remain the same. The following are some of the most common gasket styles.



VACUUM SERVICE

GISA standard gaskets are designed to seal well under vacuum conditions up to 10 inHg (254 mmHg) which may occur when a system is drained. For continuous services greater than 10 inHg (254 mmHg), the use of GapSeal gaskets or EP (end protection) gaskets in combination with rigid style couplings is recommended. Contact GISA for specific recommendations.

Do not use the normal lubricant for dry pipe and freezer systems. Always use a petroleum free silicone based lubricant.

Rigid couplings are preferred for dry pipe, freezer and vacuum applications. Reducing couplings are not recommended for these applications.

DRY PIPE AND FREEZER SERVICES

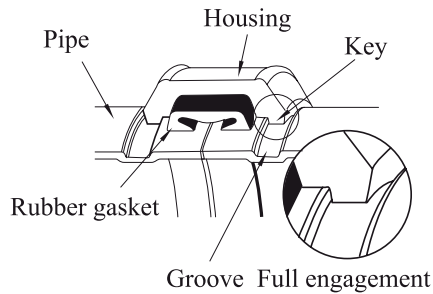
GISA recommends the use of GapSeal Grade E gaskets for dry pipe fire protection systems and freezer applications. The GapSeal gasket close off the gap between the pipes or gasket cavity. This will prevent any remaining liquid from entering the cavities and freezing when the temperature drops.



NOTES:

PIPE END PREPARATION HOW TO PROCESS ROLL-GROOVES

GISA grooved piping systems requires the processing of a roll or cut groove to the pipe ends being connected. The engagement of the housing keys in the grooves is integral in providing a secure and leak-tight joint. It is essential that the grooves are properly processed for optimum joint performance.



NOMINAL PIPE SIZE

GISA couplings and fittings are identified by the nominal IPS pipe size in inches or nominal diameter of pipe (DN) in millimeters. Always check the actual O.D. of the pipe and fittings to be connected, as in some markets it is customary to refer to different O.D. pipes with the same nominal size.

IPS Sizes - Inches		Metric Sizes - millimeters	
Nominal size	Actual size	Nominal size	Actual size
1/2	0.840	15	21.3
3/4	1.050	20	26.7
1	1.315	25	33.4
1-1/4	1.660	32	42.2
1-1/2	1.900	40	48.3
2	2.375	50	60.3
2-1/2	2.875	65	73.0
3 O.D.	3.000	65	76.1
3	3.500	80	88.9
3-1/2	4.000	90	101.6
4-1/4 O.D.	4.250	100	108.0
4	4.500	100	114.3
5	5.563	125	141.3
5-1/4 O.D.	5.250	125	133.0
5-1/2 O.D.	5.500	125	139.7
6-1/4 O.D.	6.250	150	159.0
6-1/2 O.D.	6.500	150	165.1
6	6.625	150	168.3
8 JIS	8.516	200	216.3*
8	8.625	200	219.1
10 JIS	10.528	250	267.4*
10	10.750	250	273.0
12 JIS	12.539	300	318.5*
12	12.750	300	323.9
14	14.000	350	355.6
16	16.000	400	406.4
18	18.000	450	457.2
20	20.000	500	508.0
22	22.000	550	558.8
24	24.000	600	609.6
28	28.000	700	711.2
30	30.000	750	762.0
32	32.000	800	812.8
36	36.000	900	914.4
40	40.000	1000	1016.0
42	42.000	1050	1066.8

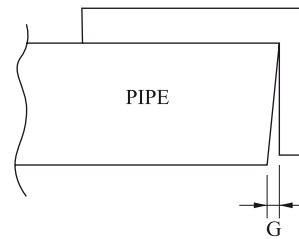
* JIS/KS

ROLL GROOVE STANDARD

Roll grooves must meet the specifications and requirements of ANSI/AWWA C-606-04 Table 5. For other pipe sizes not specified in this standard, refer to the applicable groove specifications shown in this catalog or GISA installation manual.

SQUARE CUT

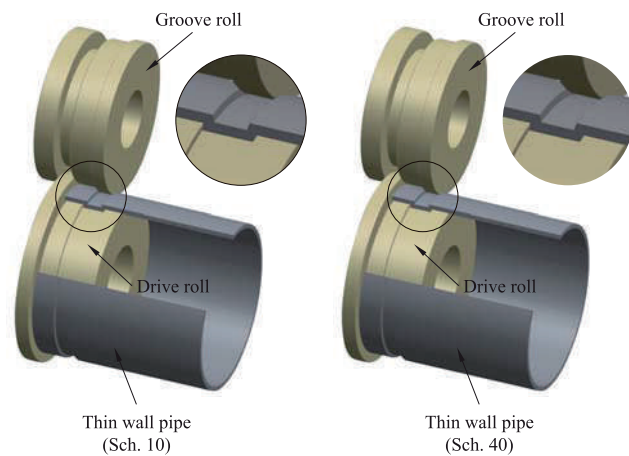
Pipe ends must be square cut. Always use a pipe band-saw or automatic round-saw for cutting pipe. The maximum allowable tolerances from square ends are .03"/0.8mm for sizes up to 3-1/2"/90mm; .045"/1.2mm for 4" thru 6"/100mm thru 150mm and .060"/1.6mm for size 8"/200mm and above.



Pipe Sizes	G (max)
~3 1/2"	0.8 (0.030")
4 ~ 6"	1.2 (0.045")
8" ~	1.6 (0.060")

APPLICABLE PIPE WALL THICKNESS

Roll grooves are generally applicable to .375"/9.5mm thick or thinner wall carbon steel pipe, stainless steel pipe, copper tube, aluminum pipe and PVC pipe depending on the type of roll-grooving machine and roll set being used. Different wall thicknesses and sizes require the use of different roll sets as with Sch. 10 and Sch. 40 pipe as shown.

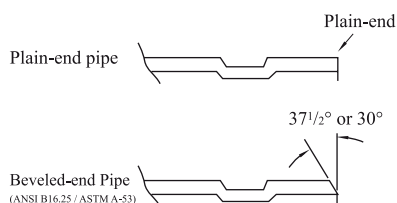


Different roll set (Groove & Drive roll)
W2 should be wider than W1



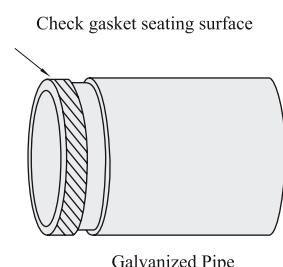
PLAIN END PIPE AND BEVELED END PIPE

While plain-end pipe is preferred, the use of beveled end pipe is acceptable providing that the wall thickness is .375"/9.5mm or thinner and the bevel is $37\frac{1}{2} \pm 2\frac{1}{2}^\circ$ or 30° as specified in ANSI B16.25 and ASTM A-53 respectively.



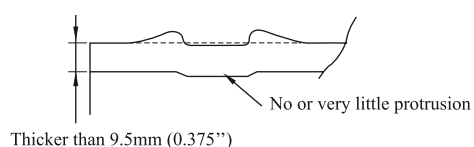
GALVANIZED PIPE

Galvanized pipe is acceptable as long as the gasket seating surface is smooth and free from scale and imperfections that could affect gasket sealing. Whenever you remove welding beads or projections from the sealing surface of galvanized pipe, use caution so as to not over-grind the surface. After grinding, always apply a proper rust-prevention coating to this area.



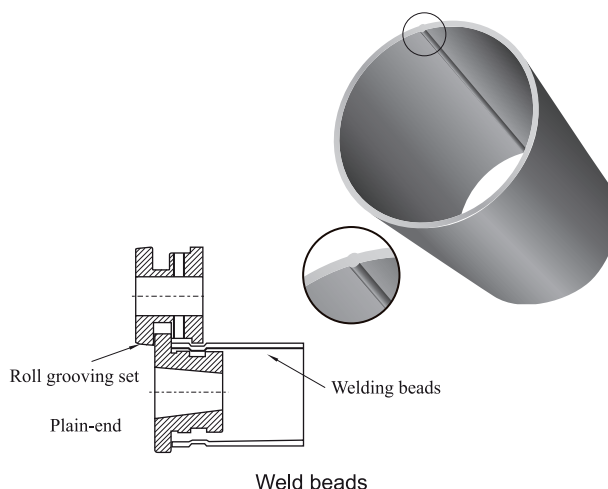
HEAVY WALL PIPE

When you attempt to roll-groove pipe thicker than .375"/9.5mm, the metal may deform and heap up on both sides of the groove rather than radially deforming and protruding on the inside of the pipe. The extra heaped metal on the sealing surface may preclude the coupling housing from making metal-to-metal contact, which could lead to joint failure. In such a case, you should grind off any such extra metal to achieve a flat and smooth sealing surface. A proper rust preventative coating must be applied on the ground surface. GISA strongly recommends the processing of cut-grooves on heavy or thick wall pipe.



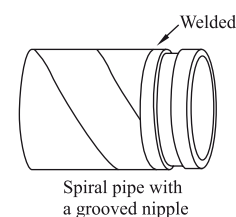
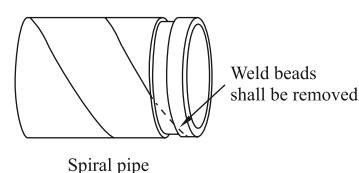
WELD BEADS

ERW pipe is one of the most popular types of pipe used today. Depending on the individual pipe and manufacturer, welding beads may remain on the surface (inside and out) of the pipe. Always remove harmful weld beads near the pipe ends as they can cause rattling of the roll grooving machine resulting in inaccurate grooves.



SPIRAL WELDED PIPE

Spiral welded pipe may be used as long as the weld beads are removed from the gasket seating surface. It is also acceptable and recommended to weld a grooved end nipple to the pipe end as shown below. Whenever you remove weld beads or projections from the gasket seating surface, use caution so as to not over-grind the surface. After grinding, always apply a proper rust-prevention coating to this area.

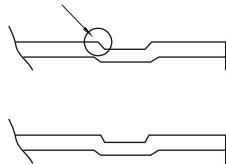


NOTES:

STAINLESS STEEL PIPE

Stainless steel pipe in general is more difficult to groove than carbon steel pipe, as it is more difficult to achieve defined groove corners on stainless pipe. Grooves that are not defined and have too much of a radius could result in joint failure. Care must be taken to process grooves as defined as possible. For this reason, roll-groove machine manufactures offer a variety of roll sets depending on the pipe material and wall thickness being grooved. Always select the correct roll set for the pipe being grooved.

Corners are not sharp enough

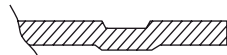


Caution: If the same roll-set that has been used for carbon steel pipe is used on stainless steel pipe, rust or scale may be transferred to the stainless steel pipe during processing of the groove. Thus we recommend the use of a separate roll set specifically for use with stainless steel pipe. Also use caution to keep roll grooved stainless steel pipe dry prior to installation.

PVC PIPE

The same roll set used for carbon steel pipe can be used on applicable PVC pipe. Because PVC is much softer than carbon steel, care must be taken to groove the pipe slowly and with less pressure.

PVC pipe

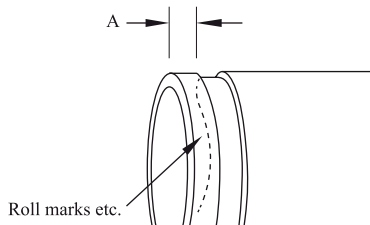


COPPER TUBING

As copper tubing is thinner than carbon steel pipe, always use a roll set specifically designed for use on copper tubing.

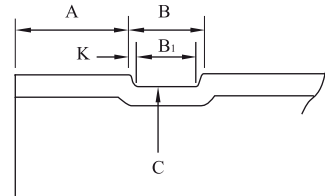
GASKET SEATING SURFACE (A)

The exterior surface of the gasket seating area shall be free from any indentations, projections, roll marks or other harmful defects such as loose paint, scale, dirt, chips, grease and rust.



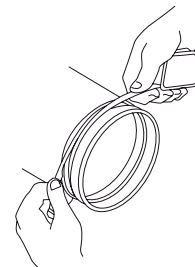
ROLL GROOVE PROFILE

Roll grooves should be as defined as possible. To achieve optimum joint performance the "K" dimension should be as small as possible. When processing a roll groove the machine operator should manage the feed pressure of the upper roll set so as to achieve the best possible groove profile.



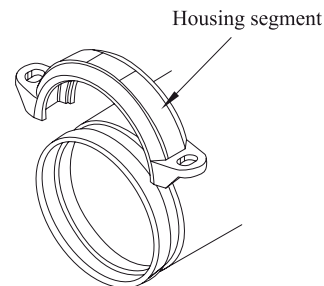
GROOVE DIAMETER (C)

The groove diameters are average values. The groove must be of uniform depth around the entire pipe circumference. Use a GISA groove gage or groove measuring tape to check the groove diameter.



Groove measuring tape

Or you can use a coupling housing for a quick check after verification of the groove dimensions. When using a housing segment as a reference always make up a sample and verify the diameter is within the acceptable range. If the housing fits well you may choose to use this as a reference gauge.

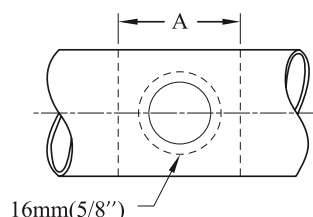


Quick check with a housing segment



HOLE-CUTTING

The hole-cut method of pipe preparation is required when using mechanical tees, mechanical crosses, and saddle-lets.



The method of pipe preparation requires the cutting or drilling of a specified hole size on the centerline of the pipe. Always use the correct hole saw size as shown in this catalog and never use a torch for cutting a hole. After the hole has been cut all rough edges must be removed and the area within 5/8" (16mm) of the hole should be inspected to ensure a clean smooth surface, free of any indentations or projections that could affect proper gasket sealing. The area within the "A" dimension should also be inspected and must be free of dirt, scale or any imperfection that could affect proper seating or assembly of the fitting.



Hole Size: The hole sizes are dictated by the branch size of the mechanical tee.

Table 1 Hole Sizes for Mechanical Tee

Model XGQT04/XGQT04G Mechanical Tee			
Mechanical Tees Branch Size	Hole Dimensions		Surface Preparation "A"
	Hole Saw Size	Max Dia. Allowed	
15, 20, 25 1/2, 3/4, 1	38 1-1/2	41 1-5/8	89 3-1/2
32 1-1/4	45 1-3/4	47 1-7/8	102 4
40 1-1/2	51 2	54 2-1/8	102 4
50 2	64 2-1/2	67 2-5/8	114 4-1/2
65 2-1/2	70 2-3/4	73 2-7/8	121 4-3/4
80 3	89 3-1/2	92 3-5/8	140 5-1/2
100 4	114 4-1/2	118 4-5/8	165 6-1/2

Table 2

Model 041 Saddle-Let			
U Bolt Mechanical Tee Branch Size	Hole Dimensions		Surface Preparation "A"
	Hole Saw Size	Max Dia. Allowed	
15, 20, 25 1/2, 3/4, 1	30 1-3/16	32 1-1/4	89 3-1/2

Table 3

Model L922 Mechanical Tee			
Small Mechanical Tees Branch Size	Hole Dimensions		Surface Preparation "A"
	Hole Saw Size	Max Dia. Allowed	
15, 20, 25 1/2, 3/4, 1	30 1-3/16	32 1-1/4	89 3-1/2

STANDARD ROLL GROOVE FOR ANSI B36.10 AND OTHER IPS PIPE

Pipe OD (Column 2):

Maximum allowable tolerances from square cut ends is 0.03" for size up to 3 1/2"; 0.045" for 4" thru 6"; and 0.060" for size 8" and above.

Gasket Seating Surface (Column 3):

Gasket seating surface (Column 5): The gasket seating surface shall be free from deep scores, marks, or ridges that could prevent a positive seal.

Groove Width (Column 4):

Groove width is to be measured between vertical flanks of the groove side walls.

Groove Diameter (Column 5):

The "C" diameters are average values. The groove must be of uniform depth around the entire pipe circumference.

Minimum Wall Thickness (Column 6):

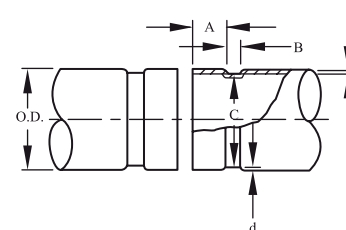
The “t” is the minimum allowable wall thickness that may be roll-grooved.

Groove Depth (Column 7):

The "d" is for reference use only. The groove dimension shall be determined by the groove diameter "C".

Flare Diameter (Column 8):

The pipe end that may flare when the groove is rolled shall be within this limit when measured at the extreme end of the pipe.



1	2			3	4	5	6	7	8
Nominal Size mm/in	Pipe O.D.			A ±0.76 ±0.030	B ±0.76 ±0.030	C +0.00 +0.000	Min. Wall t mm/in	Groove Depth d (ref.) mm/in	Max. Allowed Flare Dia. mm/in
	Basic mm/in	Tolerances							
20	26.7	+0.25	-0.25	15.88	7.14	23.83-0.38	1.65	1.42	29.2
0.75	1.050	+0.010	-0.010	0.625	0.281	0.938-0.015	0.065	0.056	1.15
25	33.4	+0.33	-0.33	15.88	7.14	30.23-0.38	1.65	1.60	36.3
1	1.315	+0.013	-0.013	0.625	0.281	1.190-0.015	0.065	0.063	1.43
32	42.2	+0.41	-0.41	15.88	7.14	38.99-0.38	1.65	1.60	45.0
1.25	1.660	+0.016	-0.016	0.625	0.281	1.535-0.015	0.065	0.063	1.77
40	48.3	+0.48	-0.48	15.88	7.14	45.09-0.38	1.65	1.60	51.1
1.5	1.900	+0.019	-0.019	0.625	0.281	1.775-0.015	0.065	0.063	2.01
50	60.3	+0.61	-0.61	15.88	8.74	57.15-0.38	1.65	1.60	63.0
2	2.375	+0.024	-0.024	0.625	0.344	2.250-0.015	0.065	0.063	2.48
65	73.0	+0.74	-0.74	15.88	8.74	69.09-0.46	2.11	1.98	75.7
2.5	2.875	+0.029	-0.029	0.625	0.344	2.720-0.018	0.083	0.078	2.98
80	88.9	+0.89	-0.79	15.88	8.74	84.94-0.46	2.11	1.98	91.4
3	3.500	+0.035	-0.031	0.625	0.344	3.344-0.018	0.083	0.078	3.60
90	101.6	+1.02	-0.79	15.88	8.74	97.38-0.51	2.11	2.11	104.1
3.5	4.000	+0.040	-0.031	0.625	0.344	38.34-0.020	0.083	0.083	4.10
100	114.3	+1.14	-0.79	15.88	8.74	110.08-0.51	2.11	2.11	116.8
4	4.500	+0.045	-0.031	0.625	0.344	4.334-0.020	0.083	0.083	4.60
125	141.3	+1.42	-0.79	15.88	8.74	137.03-0.56	2.77	2.11	143.8
5	5.563	+0.056	-0.031	0.625	0.344	5.395-0.022	0.109	0.083	5.66
150	168.3	+1.60	-0.79	15.88	8.74	163.96-0.56	2.77	2.16	170.9
6	6.625	+0.063	-0.031	0.625	0.344	6.455-0.022	0.109	0.085	6.73
200	219.1	+1.60	-0.79	19.05	11.91	214.40-0.64	2.77	2.34	223.5
8	8.625	+0.063	-0.031	0.750	0.469	8.441-0.025	0.109	0.092	8.80
250	273.0	+1.60	-0.79	19.05	11.91	268.27-0.69	3.40	2.39	277.4
10	10.750	+0.063	-0.031	0.750	0.469	10.562-0.027	0.134	0.094	10.92
300	323.9	+1.60	-0.79	19.05	11.91	318.29-0.76	3.96	2.77	328.2
12	12.750	+0.063	-0.031	0.750	0.469	12.531-0.030	0.156	0.109	12.92
350	355.6	+1.60	-0.79	23.83	11.91	350.04-0.76	3.96	2.77	358.1
14	14.000	+0.063	-0.031	0.938	0.469	13.781-0.030	0.156	0.109	14.10
400	406.4	+1.60	-0.79	23.83	11.91	400.84-0.76	4.19	2.77	408.9
16	16.000	+0.063	-0.031	0.938	0.469	15.781-0.030	0.165	0.109	16.10
450	457.2	+1.60	-0.79	25.40	11.91	451.64-0.76	4.19	2.77	461.3
18	18.000	+0.063	-0.031	1.000	0.469	17.781-0.030	0.165	0.109	18.16
500	508.0	+1.60	-0.79	25.40	11.91	502.44-0.76	4.78	2.77	512.1
20	20.000	+0.063	-0.031	1.000	0.469	19.781-0.030	0.188	0.109	20.16
550	558.8	+1.60	-0.79	25.40	12.70	550.06-0.76	4.78	4.37	

NOTES:

[illegible]



ISTANDARD ROLL GROOVE FOR LARGE DIAMETER IPS PIPE

Pipe OD (Column 2):

Maximum allowable tolerances from square cut ends is 0.060"

Gasket Seating Surface (Column 3):

The gasket seating surface shall be free from deep scores, marks, or ridges that could prevent a positive seal.

Groove Width (Column 4):

Groove width is to be measured between vertical flanks of the groove side walls.

Groove Diameter (Column 5):

The "C" diameters are average values. The groove must be of uniform depth around the entire pipe circumference.

Minimum Wall Thickness (Column 6):

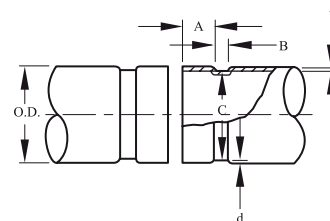
The "t" is the minimum allowable wall thickness that may be roll-grooved.

Groove Depth (Column 7):

The "d" is for reference use only. The groove dimension shall be determined by the groove diameter "C".

Flare Diameter (Column 8):

The pipe end that may flare when the groove is rolled shall be within this limit when measured at the extreme end of the pipe.



1	2			3	4	5	6	7	8
Nom. Size mm/in	Pipe O.D.			A +0.8, -1.6 +0.03, -0.06	B +0.8 +0.03	C +0, -1.6 +0, -0.063	Min. Allow Wall thick t mm/in	Groove Depth d (ref) mm/in	Max. Allowed Flare Dia. mm/in
	Basic mm/in	Tolerances mm/in	Tolerances mm/in						
650	660.4	+2.36	-0.79	44.5	15.9	647.7	6.4	6.4	665.5
26 OD	26.0	+0.093	-0.031	1.75	0.625	25.5	0.25	0.25	26.2
700	711.2	+2.36	-0.79	44.5	15.9	698.5	6.4	6.4	716.3
28 OD	28.0	+0.093	-0.031	1.75	0.625	27.5	0.25	0.25	28.2
750	762.0	+2.36	-0.79	44.5	15.9	749.3	6.4	6.4	767.1
30 OD	30.0	+0.093	-0.031	1.75	0.625	29.5	0.25	0.25	30.2
800	812.8	+2.36	-0.79	44.5	15.9	800.1	6.4	6.4	817.9
32 OD	32.0	+0.093	-0.031	1.75	0.625	31.5	0.25	0.25	32.2
850	863.6	+2.36	-0.79	44.5	15.9	850.9	6.4	6.4	868.7
34 OD	34.0	+0.093	-0.031	1.75	0.625	33.5	0.25	0.25	34.2
900	914.4	+2.36	-0.79	44.5	15.9	901.7	6.4	6.4	919.5
36 OD	36.0	+0.093	-0.031	1.75	0.625	35.5	0.25	0.25	36.2
1000	1016.0	+2.36	-0.79	50.8	15.9	1003.3	6.4	6.4	1026.2
40 OD	40.0	+0.093	-0.031	2.00	0.625	39.5	0.25	0.25	40.4
1050	1066.8	+2.36	-0.79	50.8	15.9	1054.1	6.4	6.4	1071.9
42 OD	42.0	+0.093	-0.031	2.00	0.625	41.5	0.25	0.25	42.2

ISTANDARD ROLL GROOVE FOR BS1387 (ISO 65) CARBON STEEL PIPE

Pipe OD (Column 2):

Maximum allowable tolerances from square cut ends is 0.03" for size up to 3 1/2"; 0.045" for 4" thru 6"; and 0.060" for size 8" and above.

Gasket Seating Surface (Column 3):

The gasket seating surface shall be free from deep scores, marks, or ridges that could prevent a positive seal.

Groove Width (Column 4):

Groove width is to be measured between vertical flanks of the groove side walls.

Groove Diameter (Column 5):

The "C" diameters are average values. The groove must be of uniform depth around the entire pipe circumference.

Minimum Wall Thickness (Column 6):

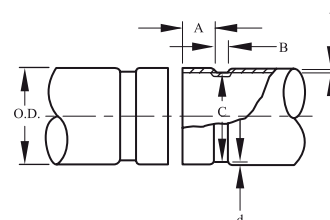
The "t" is the minimum allowable wall thickness that may be roll-grooved.

Groove Depth (Column 7):

The "d" is for reference use only. The groove dimension shall be determined by the groove diameter "C".

Flare Diameter (Column 8):

The pipe end that may flare when the groove is rolled shall be within this limit when measured at the extreme end of the pipe.



1	2			3	4	5	6	7	8
Nominal Size mm	Pipe O.D.			A +0.38, -0.76 mm	B +0.76/-0.38 mm	C +0.00 mm	Min. Wall t mm	Groove Depth d (ref) mm/in	Max. Allowed Flare Dia. mm
	Basic mm	Max mm	Min mm						
20	26.9	27.3	26.5	15.88	7.14	23.83-0.38	1.65	1.42	29.2
25	33.7	34.2	33.3	15.88	7.14	30.23-0.38	1.65	1.60	36.3
32	42.4	42.9	42.0	15.88	7.14	38.99-0.38	1.65	1.60	45.0
40	48.3	48.8	47.9	15.88	7.14	45.09-0.38	1.65	1.60	51.1
50	60.3	60.8	59.7	15.88	8.74	57.15-0.38	1.65	1.60	63.0
65	76.1	76.6	75.3	15.88	8.74	72.26-0.46	2.11	1.98	78.7
80	88.9	89.5	88.0	15.88	8.74	84.94-0.46	2.11	1.98	91.4
100	114.3	115.0	113.1	15.88	8.74	110.08-0.51	2.11	2.11	116.8
125	139.7	140.8	138.5	15.88	8.74	135.48-0.56	2.77	2.16	142.2
150	165.1	166.5	163.9	15.88	8.74	160.78-0.56	2.77	2.16	167.6

ISTANDARD ROLL GROOVE FOR DIN 2440 & DIN 2448 (ISO 4200) CARBON STEEL PIPE

Pipe OD (Column 2):

Maximum allowable tolerances from square cut ends is 0.03" for size up to 3 1/2"; 0.045" for 4" thru 6"; and 0.060" for size 8" and above.

Gasket Seating Surface (Column 3):

The gasket seating surface shall be free from deep scores, marks, or ridges that could prevent a positive seal.

Groove Width (Column 4):

Groove width is to be measured between vertical flanks of the groove side walls.

Groove Diameter (Column 5):

The "C" diameters are average values. The groove must be of uniform depth around the entire pipe circumference.

Minimum Wall Thickness (Column 6):

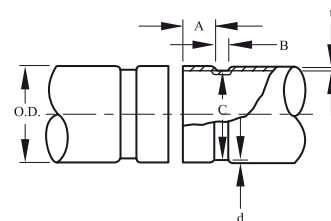
The "t" is the minimum allowable wall thickness that may be roll-grooved.

Groove Depth (Column 7):

The "d" is for reference use only. The groove dimension shall be determined by the groove diameter "C".

Flare Diameter (Column 8):

The pipe end that may flare when the groove is rolled shall be within this limit when measured at the extreme end of the pipe.



1 Pipe or Tube mm	2 Pipe O.D.		3 Gasket Seat A ±0.76 mm	4 Groove Width B ±0.76 mm	5 Groove Diameter		6 Groove Depth d (ref) mm	7 Min. allow. Wall Thickness t mm	8 Max. Flare f mm
	Basic mm	Tolerances			Basic C mm	Tolerance +0.00 mm			
25	33.7	+0.41	-0.68	15.88	7.14	30.23	-0.38	1.70	34.5
32	42.4	+0.50	-0.60	15.88	7.14	38.99	-0.38	1.70	43.3
40	48.3	+0.44	-0.52	15.88	7.14	45.09	-0.38	1.60	49.4
50	60.3	+0.61	-0.61	15.88	8.74	57.15	-0.38	1.60	62.2
65	76.1	+0.76	-0.76	15.88	8.74	72.26	-0.46	1.93	77.7
80	88.9	+0.89	-0.79	15.88	8.74	84.94	-0.46	1.98	90.6
100	108.0	+1.07	-0.79	15.88	8.74	103.73	-0.51	2.11	109.7
100	114.3	+1.14	-0.79	15.88	8.74	110.08	-0.51	2.11	116.2
125	133.0	+1.32	-0.79	15.88	8.74	129.13	-0.51	1.93	134.9
125	139.7	+1.40	-0.79	15.88	8.74	135.48	-0.51	2.11	141.7
150	159.0	+1.60	-0.79	15.88	8.74	154.50	-0.56	2.20	161.0
150	168.3	+1.60	-0.79	15.88	8.74	163.96	-0.56	2.16	170.7
200	219.1	+1.60	-0.79	19.05	11.91	214.40	-0.64	2.34	221.5
250	273.0	+1.60	-0.79	19.05	11.91	268.28	-0.69	2.39	275.4
300	323.9	+1.60	-0.79	19.05	11.91	318.29	-0.76	2.77	326.2

ISTANDARD ROLL GROOVE FOR JIS G3452 CARBON STEEL PIPE

Groove Diameter:

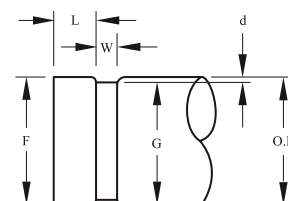
Groove diameters 'G' are only applicable to pipe size 150A or smaller. Grooves for 200A thru 300A are to be determined by the groove circumference.

Groove Depth:

The "d" is for reference use only.

Flare Diameter:

The maximum flare diameters (f) are target values.



$$C = \pi G$$

Nominal Size		Pipe O.D. mm	Gasket Seat L mm		Groove Width W mm		Groove Dia G mm		Groove Circumference C mm		Groove Depth d (ref) mm	Max. Flare f mm
A mm	B mm											
25	1	34.0	16.0	+0.4 -0.9	7.1	±0.8	30.4	0 -1.0	95.5	0 -3.1	1.80	35.5
32	1.25	42.7	16.0	+0.4 -0.9	7.1	±0.8	39.1	0 -1.0	122.8	0 -3.1	1.80	44.2
40	1.5	48.6	16.0	+0.4 -0.9	7.1	±0.8	45.0	0 -1.0	141.4	0 -3.1	1.80	50.1
50	2	60.5	16.0	+0.4 -0.9	8.7	±0.8	56.9	0 -1.0	178.8	0 -3.1	1.80	62.0
65	2.5	76.3	16.0	+0.4 -0.9	8.7	±0.8	72.2	0 -1.0	226.8	0 -3.1	2.05	77.8
80	3	89.1	16.0	+0.4 -0.9	8.7	±0.8	84.9	0 -1.0	266.7	0 -3.1	2.10	90.6
100	4	114.3	16.0	+0.4 -0.9	8.7	±0.8	110.1	0 -1.0	345.9	0 -3.1	2.10	116.8
125	5	139.8	16.0	+0.4 -0.9	8.7	±0.8	135.5	0 -1.0	425.7	0 -3.1	2.15	142.3
150	6	165.2	16.0	+0.4 -0.9	8.7	±0.8	160.8	0 -1.0	505.2	0 -3.1	2.20	167.7
200	8	216.3	19.0	±0.8	11.9	±0.8	(211.6)		664.8	0 -3.1	2.35	219.8
250	10	267.4	19.0	±0.8	11.9	±0.8	(262.6)		825.0	0 -3.1	2.40	270.9
300	12	318.5	19.0	±0.8	11.9	±0.8	(312.9)		983.0	0 -3.1	2.80	322.0



STANDARD CUT GROOVE FOR SPECIFICATIONS FOR IPS / BS / ISO / JIS PIPE

Gasket Seating Surface (Column 3):

The gasket seating surface shall be free from deep scores, marks, or ridges that could prevent a positive seal.

Groove Width (Column 4):

Groove width is to be measured between vertical flanks of the groove side walls.

Groove Diameter (Column 5):

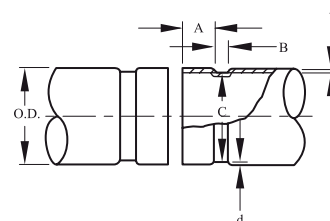
The 'C' diameters are average values. The groove must be of uniform depth around the entire pipe circumference.

Minimum Wall Thickness (Column 6):

The 't' is the minimum allowable wall thickness that may be roll-grooved.

Groove Depth (Column 7):

The 'd' is for reference use only. The groove dimension shall be determined by the groove diameter 'C'.



1 Nominal Size mm/in	2 Pipe O.D.		3 A ±0.79 ±0.031	4 B ±0.79 ±0.031	5 C +0.00 +0.000	6 Min. Wall t mm/in	7 Groove Depth d (ref.) mm/in
	Basic mm/in	Tolerances					
20	26.7	+0.25 -0.25	15.88	7.95	23.83-0.38	2.87	1.42
0.75	1.050	+0.010 -0.010	0.625	0.313	0.938-0.015	0.113	0.056
25	33.4	+0.33 -0.33	15.88	7.95	30.23-0.38	3.38	1.60
1	1.315	+0.013 -0.013	0.625	0.313	1.190-0.15	0.133	0.063
32	42.2	+0.41 -0.41	15.88	7.95	38.99-0.38	3.56	1.60
1.25	1.660	+0.016 -0.016	0.625	0.313	1.535-0.015	0.140	0.063
40	48.3	+0.48 -0.48	15.88	7.95	45.09-0.38	3.68	1.60
1.5	1.900	+0.019 -0.019	0.625	0.313	1.775-0.015	0.145	0.063
50	60.3	+0.61 -0.61	15.88	7.95	57.15-0.38	3.91	1.60
2	2.375	+0.024 -0.024	0.625	0.313	2.250-0.015	0.154	0.063
65	73.0	+0.74 -0.74	15.88	7.95	69.09-0.46	4.78	1.98
2.5	2.875	+0.029 -0.029	0.625	0.313	2.720-0.018	0.188	0.078
65	76.1	+0.76 -0.76	15.88	7.95	72.26-0.46	4.78	1.93
2.5	3.000	+0.030 -0.030	0.625	0.313	2.845-0.018	0.188	0.076
80	88.9	+0.89 -0.79	15.88	7.95	84.94-0.46	4.78	1.98
3	3.500	+0.035 -0.031	0.625	0.313	3.344-0.018	0.188	0.078
90	101.6	+1.02 -0.79	15.88	7.95	97.38-0.51	4.78	1.98
3.5	4.000	+0.040 -0.031	0.625	0.313	3.834-0.020	0.188	0.078
100	108.0	+1.04 -0.79	15.88	9.53	103.73-0.51	5.16	2.11
4	4.250	+0.043 -0.031	0.625	0.375	4.084-0.020	0.203	0.083
100	114.3	+1.14 -0.79	15.88	9.53	110.08-0.51	5.16	2.11
4	4.500	+0.045 -0.031	0.625	0.375	4.334-0.020	0.203	0.083
125	133.0	+1.70 -0.79	15.88	9.53	129.13-0.51	5.16	1.93
5	5.250	+0.053 -0.031	0.625	0.375	5.084-0.020	0.203	0.076
125	139.7	+1.42 -0.79	15.88	9.53	135.48-0.51	5.16	2.11
5	5.500	+0.055 -0.031	0.625	0.375	5.334-0.020	0.203	0.083
125	141.3	+1.42 -0.79	15.88	9.53	137.03-0.56	5.16	2.11
5	5.563	+0.056 -0.031	0.625	0.375	5.395-0.022	0.203	0.083
150	159.0	+1.60 -0.79	15.88	9.53	154.43-0.76	5.56	2.20
6	6.250	+0.063 -0.031	0.625	0.375	6.080-0.030	0.219	0.087
150	165.1	+1.60 -0.79	15.88	9.53	160.80-0.56	5.56	2.16
6	6.500	+0.063 -0.031	0.625	0.375	6.330-0.022	0.219	0.085
150	168.3	+1.60 -0.79	15.88	9.53	163.966-0.56	5.56	2.16
6	6.625	0.063 -0.031	0.625	0.375	6.455-0.022	0.219	0.085
200A	216.3	+1.60 -0.79	19.05	11.13	211.60-0.64	6.05	2.34
8	8.516	+0.063 -0.031	0.750	0.438	8.331-0.025	0.238	0.092
200	219.1	+1.60 -0.79	19.05	11.13	214.40-0.64	6.05	2.34
8	8.625	+0.063 -0.031	0.750	0.438	8.441-0.025	0.238	0.092
250A	267.4	+1.60 -0.79	19.05	12.70	262.60-0.69	6.35	2.39
10	10.528	+0.063 -0.031	0.750	0.500	10.339-0.027	0.250	0.094
250	273.0	+1.60 -0.79	19.05	12.70	268.27-0.69	6.35	2.39
10	10.750	0.063 -0.031	0.750	0.500	10.526-0.027	0.250	0.094
300A	318.5	+1.60 -0.79	19.05	12.70	312.90-0.76	7.09	2.77
12	12.539	+0.063 -0.031	0.750	0.500	12.319-0.030	0.279	0.109
300	323.9	+1.60 -0.79	19.05	12.70	318.29-0.76	7.09	2.77
12	12.750	+0.063 -0.031	0.750	0.500	12.530-0.030	0.279	0.109
350	355.6	+1.60 -0.79	23.83	12.70	350.04-0.76	7.14	2.77
14	14.000	+0.063 -0.031	0.938	0.500	13.781-0.030	0.281	0.109
400	406.4	+1.60 -0.79	23.83	12.70	400.84-0.76	7.92	2.77
16	16.000	0.063 -0.031	0.938	0.500	15.781-0.030	0.312	0.109
450	457.2	+1.60 -0.79	25.40	12.70	451.64-0.76	7.92	2.77
18	18.000	+0.063 -0.031	1.000	0.500	17.781-0.030	0.312	0.109
500	508.0	+1.60 -0.79	25.40	12.70	502.44-0.76	7.92	2.77
20	20.000	+0.063 -0.031	1.000	0.500	19.781-0.030	0.312	0.109
550	558.8	+1.60 -0.79	25.40	14.30	550.06-0.76	9.53	4.37
22	22.000	+0.063 -0.031	1.000	0.563	21.656-0.030	0.375	0.172
600	609.6	+1.60 -0.79	25.40	14.30	600.86-0.76	9.53	4.37
24	24.000	+0.063 -0.031	1.000	0.563	23.656-0.030	0.375	0.172

BOLT TORQUES

GISA couplings and mechanical tees are supplied complete with factory bolts and nuts. The bolt and nut torque is primarily a function of the bolt and nut size. The following table shows guidelines for nut and bolt torque and can be used when setting the torque on power drivers.

Diseño de Torques de Screw:

Bolt Size in	N-m Lbs - ft	Bolt Size in	N-m Lbs - ft
5/16	15 - 20	3/4	1100 - 135
M8	11 - 15	M20	74 - 100
3/8	25 - 30	7/8	170 - 275
M10	18 - 22	M22	125 - 200
1/2	50 - 68	1	275 - 400
M12	37 - 50	M24	200 - 300
5/8	80 - 120		
M16	60 - 90		

Do not exceed the design torque guidelines by more than 25%, as excessive torque could lead to joint failure. Always tighten nuts evenly and equally by alternating sides to prevent the gasket from being pinched and always check to make sure the coupling keys are fully engaged in the grooves.

FLEXIBLE COUPLINGS

The bolt pads on flexible couplings have been designed to meet metal to metal when properly installed. Bolt pad gaps, regardless of their size, are not acceptable on flexible couplings. The listed values in the table 1 are guideline torque values listed by the coupling size.

Table 1
Flexible Coupling Torque Guidelines

Bolt Size in	XGQT2 N-m/Lbs-ft	1212 N-m/Lbs-ft
1	60-70 45-50	---
1-1/4	60-70 45-50	60-70 45-50
1-1/2	60-70 45-50	60-70 45-50
2	60-70 45-50	60-70 45-50
2-1/2	60-70 45-50	90-100 65-75
3	60-70 45-50	90-100 65-75
4	90-100 65-75	90-100 65-75
5	90-100 65-75	200-230 145-170
6	90-100 65-75	200-230 145-170
8	200-230(JIS216 270-300) 145-170(JIS216 200-220)	270-300 200-220
10	270-300 200-220	270-300 200-220
12	270-300 200-220	270-300 200-220
14	270-300 200-220	---
16	270-300 200-220	---
18	270-300 200-220	---
20	270-300 200-220	---
22	270-300 200-220	---
24	320-340 235-250	---

Please note these are only guidelines and that the actual torque value may be less than those listed to achieve a proper assembly. Actual torques for assembly of flexible couplings are normally as little as 15-20 N-m (11-15 Lbs-ft) for the bolt size of M10 (3/8") and 30-40 N-m (22 to 30 Lbs-ft) for the M12 (1/2") bolt size. Do not attempt to add further torque after the bolt pads make metal to metal contact.

If the bolt pads do not make full metal to metal contact, increase the torque to the listed guideline in table 1. Do not exceed the listed torque by more than 25%, as excessive torque could lead to joint failure. If bolt pad gaps still exist after bolts and nuts have been tightened to the guideline torque, then this would indicate a problem in the assembly, pipe and or groove dimensions.

ANGLE-PAD RIGID COUPLINGS

The bolt pads on angle-pad rigid couplings and butt-joint rigid couplings have been designed to meet metal to metal when properly installed. In addition as the bolts are tightened the bolt pads will slide against one another creating a slight off-set. This offset should be equal on each side and is your visual indication that the coupling has been installed properly for a rigid connection. Bolt pad gaps, regardless of their size, are not acceptable on angle-pad coupling. The listed values in the table 2 are guideline torque values listed by the coupling size. Please note these are only guidelines and that the actual torque value may be less than those listed to achieve a proper assembly.

Table 2
Torque Guidelines for Angle-pad Rigid Couplings

Size in	1512 N-m/Lbs-ft	GKS N-m/Lbs-ft	XGQT4 N-m/Lbs-ft
1	---	60-70 45-50	60-70 45-50
1-1/4	60-70 45-50	60-70 45-50	60-70 45-50
1-1/2	60-70 45-50	60-70 45-50	60-70 45-50
2	60-70 45-50	60-70 45-50	60-70 45-50
2-1/2	90-100 65-75	60-70 45-50	60-70 45-50
3	90-100 65-75	60-70 45-50	90-100 65-75
4	90-100 65-75	90-100 65-75	90-100 65-75
5	200-230 145-170	90-100 65-75	90-100 65-75
6	200-230 145-170	90-100 65-75	200-230 145-170
8	270-300 200-220	200-230 145-170	200-230 145-170
10	270-300 200-220	270-300 200-220	---
12	270-300 200-220	270-300 200-220	---



Do not attempt to add further torque after the bolt pads make metal to metal contact.

If the bolt pads do not make full metal to metal contact, increase the torque to the listed guideline in table 2. Do not exceed the listed torque by more than 25%, as excessive torque could lead to joint failure. If bolt pad gaps still exist after bolts and nuts have been tightened to the guideline torque, then this would indicate a problem in the assembly, pipe and or groove dimensions.

T&G (TONGUE & GROOVE) RIGID COUPLINGS

The T&G style rigid coupling features a mechanical interlock mechanism and, while the bolt pads have been designed to meet metal to metal, a slight and equal gap between the bolt pads is acceptable as the T&G mechanism fully protects the gasket. The listed values in the table 3 are guideline torque values listed by the coupling size. Please note these are only guidelines and that the actual torque value may be less than those listed to achieve a proper assembly. Do not attempt to add further torque after the bolt pads make metal to metal contact.

If the bolt pads do not make full metal to metal contact, increase the torque to the listed guideline in table 3. Do not exceed the listed torque by more than 25%, as excessive torque could lead to joint failure. If excessive bolt pad gaps (in excess of 1/8" or 3.2mm) still exist after bolts and nuts have been tightened to the guideline torque, then this would indicate a problem in the assembly, pipe and or groove dimensions.

Table 3
Torque Guidelines for T&G Rigid Couplings

Size in	XGQT1 N-m/Lbs-ft	31HP N-m/Lbs-ft
1	60-70	---
	45-50	---
1-1/4	60-70	---
	45-50	---
1-1/2	60-70	---
	45-50	---
2	60-70	120-130
	45-50	90-95
2-1/2	60-70	120-130
	45-50	90-95
3	60-70	120-130
	45-50	90-95
4	90-100	200-220
	65-75	145-160
5	90-100	---
	65-75	---
6	90-100	---
	65-75	---
8	200-230 (JIS216 270-300)	---
	145-170 (JIS216 200-220)	---
10	270-300	---
	200-220	---
12	270-300	---
	200-220	---

PLAIN-END COUPLINGS

Always tighten the bolts and nuts to the torques listed in the Table 4. Please note that the "Torque Requirements" are actual requirements for proper joint assembly and performance. These requirements values should not be exceeded by more than 25%, as excessive torque could lead joint failure.

Table 4
Torque Requirements for Plain-End Couplings

Size in	HDP N=m/Lbs - ft
2	200
	150
2-1/2	200
	150
3	270
	200
4	270
	200
5	340
	250
6	340
	250
8	275
	200
10	400
	300
12	470
	350
14	470
	350
16	470
	350
18	470
	350
20	470
	350

For items and or sizes not listed, contact GISA or refer to the GISA installation instructions

IMPORTANT CHECK POINTS

Check to make sure the coupling is the correct size for the pipe and or fitting being connected.

Check to make sure the coupling keys are fully engaged in the grooves.

Check to ensure the gasket is not pinched, if so disassemble and reinstall.

Check to ensure the bolts and nuts are fully tightened.

Check to ensure the grooves conform to the applicable specification. If the groove is found to be too shallow or too deep, replace this section of pipe with one that conforms to the applicable groove specification.



GATES
VALVES



GATE VALVE SUITABLE FOR POSITION INDICATOR

Mod. GISA-101-FF

TECHNICAL DETAILS:

Standard design: AWWA C515

Nominal pressure: 300PSI

Standard Flange: DIN PN16

*OTHER STANDARDS ON REQUEST:

ASME / ANSI B16.1 Class 125 o ASME / ANSI

B16.42 Class 150 o BS EN1092-2 PN16 o GB/9113.1

Fusion Bonded Epoxy Coated Interior and Exterior to AWWA C550 Standard.

With steering wheel.

With position indicator.

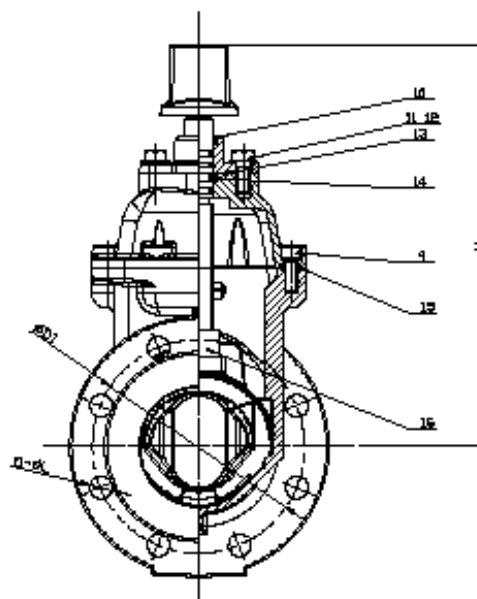
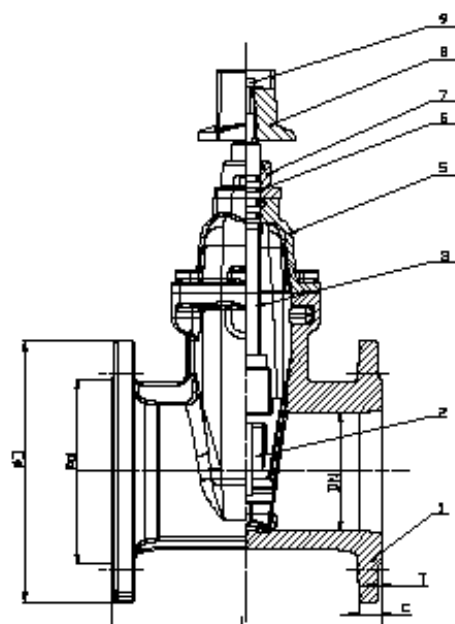
Optional switch.

*POSITION INDICATOR
SOLD SEPARATELY



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
GISA-101-FF-50	NRS Flanged	2"	50	11.11
GISA-101-FF-65	NRS Flanged	2 ½ "	65	12.42
GISA-101-FF-80	NRS Flanged	3"	80	14.1
GISA-101-FF-100	NRS Flanged	4"	100	19.43
GISA-101-FF-125	NRS Flanged	5"	125	29.57
GISA-101-FF-150	NRS Flanged	6"	150	36.05
GISA-101-FF-200	NRS Flanged	8"	200	69.45
GISA-101-FF-250	NRS Flanged	10"	250	120.51
GISA-101-FF-300	NRS Flanged	12"	300	178.82

DIAGRAM FRAME GATE VALVE GISA-101-FF WITHOUT THE HANDWHEEL





MAIN DIMENSIONS

DN		PN	DIMENSIONS								
			L	H		D	D1	d	C	T	n-d
(Inch)	(mm)			TypeA	TypeB						
2"	50	10/16	178	241	279	165	125	99	19	3	4-Ø19
2.5"	65	10/16	190	255	297	185	145	118	19	3	4-Ø19
3"	80	10/16	203	304	323	200	160	132	19	3	8-Ø19
4"	100	10/16	229	337	376	200	180	156	19	3	8-Ø19
5"	125	10/16	254	404	404	250	210	184	19	3	8-Ø19
6"	150	10/16	267	436	457	285	240	211	19	3	8-Ø23
8"	200	10	292	443	557	340	295	266	20	3	8-Ø23
		16									12-Ø23
10"	250	10	330	641	641	405	350	319	22	3	12-Ø23
		16					355				12-Ø28
12"	300	10	356	743	743	460	400	370	24.5	4	12-Ø23
		16					410				12-Ø28

MATERIAL SPECIFICATIONS

PART N°	NAME	STANDARD SPECIFICATION
1	Frame valve	
2	Disk	
3	Stem	SS304, SS316, SS420, SS431
4	Screw	SS304, SS316
5	Cover	
6	Joint	
7	Gland	
8	Coverage Stem	
9	Screw	SS304, SS316
10	Ring wiper	NBR
11	Screw	SS304, SS316
12	Flat washer	SS304, SS316
13	Joint	EPDM
14	Washer (type A) axis guide (typeB)	
15	Cover Joint	NBR
16	Wedge nut	Brass ZQSn5-5-5



OS&Y RESILIENT SEATED GATE VALVE

Mod. GISA-430-FF

TECHNICAL DETAILS:

Standard design: AWWA C515

Nominal pressure: 300PSI

Standard Flange: DIN PN16

*OTHER STANDARDS ON REQUEST:

ASME / ANSI B16.1 Class 125 o ASME / ANSI B16.42

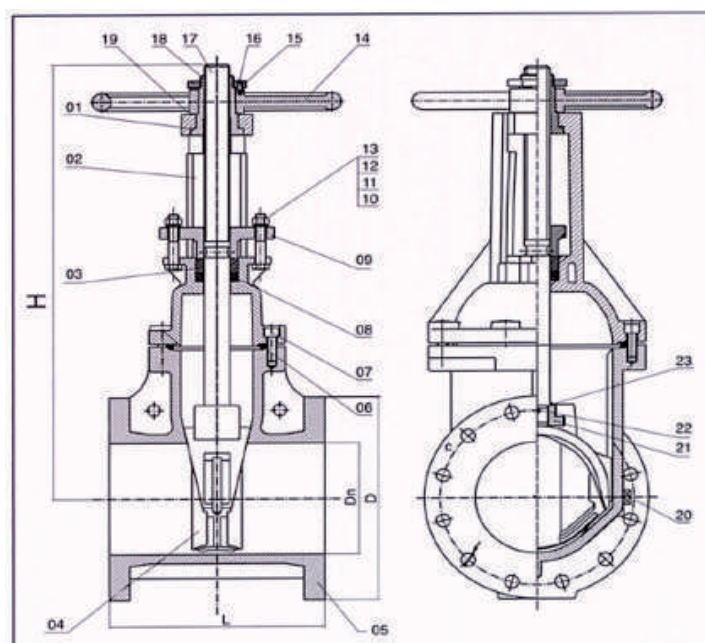
Class 150 o BS EN1092-2 PN16 o GB / T9113.1

Fusion Bonded Epoxy Coated Interior and Exterior to AW
WA C550 Standard.



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
GISA-430-FF	OS&Y Flanged	2"	50	12.20
GISA-430-FF	OS&Y Flanged	2 1/2"	65	12.72
GISA-430-FF	OS&Y Flanged	3"	80	17.68
GISA-430-FF	OS&Y Flanged	4"	100	22.74
GISA-430-FF	OS&Y Flanged	5"	125	35.04
GISA-430-FF	OS&Y Flanged	6"	150	44.06
GISA-430-FF	OS&Y Flanged	8"	200	60.52
GISA-430-FF	OS&Y Flanged	10"	250	118.29
GISA-430-FF	OS&Y Flanged	12"	300	160.89

PARTS DIAGRAM OF THE VALVE





MAIN DIMENSIONS

SIZE ITEM	2-1/2"	3"	4"	5"	6"	8"	10"	12"
Dn	65	80	103	128.5	155	204	255	304
L	190	203	229	254	267	292	330	356
D	178	191	229	254	279	343	406	483
H	370	420	447	547	607	754	890	1031

COMPOSITION GATE VALVE

Nº	NAME	QTY.	MATERIAL
1	GASKET	1	C95400
2	BONNCT	1	DI
3	PACKING	3	GRAPHITEDI
4	DISC	1	DI+EPDM
5	BODY	1	DI
6	SEALING RING	1	EPDM
7	BOLT	m	STEEL
8			
9	GLAND	1	DI
10	NUT	2	STEEL
11	FLAT WASHER	2	STEEL
12	BOLT	2	STEEL
13	SPRING WASHER	2	STEEL
14	HANDWHEEL	1	DI
15	LOCK NUT	1	C95400
16	LOCATING SCREW	1	S.S.304
17	STEM	1	S.S.304
18	STEM NUT	1	S.S.304
19	GASKET	1	C95400
20	PLUG	2	C95400
21	LIFTING NUT	1	CF8M
22	PIN	1	S.S.304
23	SEALING RING	1	EPDM

NOTES:



OS&Y RESILIENT SEATED GATE VALVE FLANGED ENDS

Mod. GISA-400-FF

TECHNICAL DETAILS:

- Adjustable Packing.
- Ductile-Iron Wedge, EPDM Encapsulated.
- Face to Face Dimensions to ANSI / ASME B16.10, EN558, Series 3.
- Flange Drilling to ANSI B16.1, Class 125, ASME B16.42, Class 150.
- Flat Faced Standard, Raised Face Upon Request.
- Grooved Ends to AWWA C606 Standard.
- UL/ ULC Usted / FM Approved @300 psi rating.
- Fusion Bonded Epoxy Coated Interior and Exterior to AWWA C550 Standard.

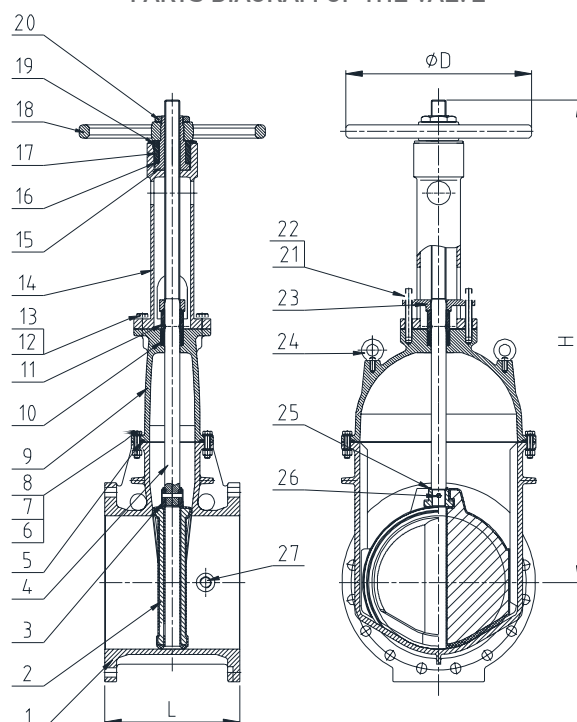
OPTIONS:

- Available with Supervisory Switch.
- ASTM B150 Brass Stem Available.
- ASTM A276 Type 316 Stainless Steel Stem Available.
- Stainless Steel Fasteners, A2-70 or A4-70.
- BUNA-S (SBR) and BUNA-N Wedge Encapsulation Available.



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
GISA-400-FF-350	OS&Y Flanged	14"	350	230
GISA-400-FF-400	OS&Y Flanged	16"	400	570
GISA-400-FF-450	OS&Y Flanged (On request)	18"	450	694
GISA-400-FF-500	OS&Y Flanged (On request)	20"	500	810
GISA-400-FF-600	OS&Y Flanged (On request)	24"	600	953

PARTS DIAGRAM OF THE VALVE





MAIN DIMENSIONS

DIMENSIONS						
Size	350	400	450	500	600	99
L	419	419	476	457	508	118
H(Open)	1646	1846	2020	2276	2600	132
H(Close)	1296	1446	1570	1776	2000	156
D	558	558	610	610	762	184
A	324	343	394	368	419	211

MATERIAL SPECIFICATIONS

PART Nº	NAME	STANDARD SPECIFICATION
1	Frame	Ductil iron A536 65-45-12
2	Wedge	Ductil iron A536 65-45-12 EPDM Encaps.
3	Wedge nut	B148 C95200
4	Stem	Stainless Steel A
5	Joint	EPDM
6-7-8	Screw/Washer/ Nut	Steel to carbon
9	Cover	Ductil iron, A536 65-45-12
10	Bushing	Graphite
11	Bushing assembly	Brass
12-13	Screw/Washer	Steel to carbon
14	Disk support	Ductil iron, A536 65-45-12
15	Stem Nut	Brass
16	Stem of Washer Nut	Brass
17	Key Nut	Steel to carbon
18	Disk	Ductil iron, A536 65-45-12
19	Adjustment Screw	Steel to carbon
20	Disk nut	Ductil iron
21-22	Asparagus and Washer	Steel to carbon
23	Prensaestopa	Ductil iron
24	Adjustment Screw	Steel to carbon
25	Joint	EPDM
26	Pin	Stainless Steel
27	Conexion NPT	Malleable iron

NOTES:



OS&Y RESILIENT SEATED GATE VALVE GROOVED ENDS

Mod. GISA-530-GG

TECHNICAL DETAILS:

- Adjustable Packing.
- Ductile-Iron Wedge, EPDM Encapsulated.
- Face to Face Dimensions to ANSI / ASME B16.10, EN558, Series 3.
- Flange Drilling to ANSI B16.1, Class 125, ASME B16.42, Class 150.
- Flat Faced Standard, Raised Face Upon Request.
- Grooved Ends to AWWA C606 Standard.
- UL/ ULC Usted / FM Approved @300 psi rating.
- Fusion Bonded Epoxy Coated Interior and Exterior to AWWA C550 Standard.

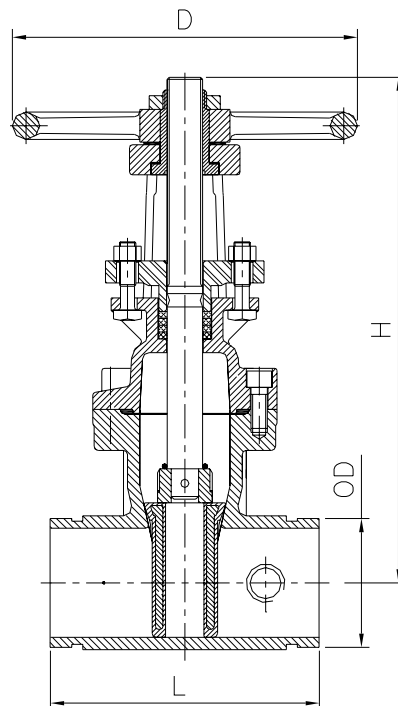
OPTIONS:

- Available with Supervisory Switch.
- ASTM B150 Brass Stem Available.
- ASTM A276 Type 316 Stainless Steel Stem Available.
- Stainless Steel Fasteners, A2-70 or A4-70.
- BUNA-S (SBR) and BUNA-N Wedge Encapsulation Available.



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
GISA-530-GG50	OS&Y Grooved	2"	60	11.50
GISA-530-GG76	OS&Y Grooved	2 1/2"	76	13.30
GISA-530-GG89	OS&Y Grooved	3"	89	17.50
GISA-530-GG114	OS&Y Grooved	4"	114	28
GISA-530-GG139	OS&Y Grooved	5"	139	40.50
GISA-530-GG168	OS&Y Grooved	6"	168	43.50
GISA-530-GG219	OS&Y Grooved	8"	219	68
GISA-530-GG273	OS&Y Grooved	10"	273	113
GISA-530-GG324	OS&Y Grooved	12"	324	153

PARTS DIAGRAM OF THE VALVE





MAIN DIMENSIONS

Size	2"		2.5"		3"		4"		5"		6"		8"		10"		12"	
	mm	inch	mm	Inch	mm	Inc	mm	inc	mm	Inch	mm	inch	mm	inch	mm	inch	mm	inch
OD	60.3	2- 3/8	73.0	2- 7/8	88.9	3- 1/2	114.3	4- 1/2	139.7	5- 1/2	165.1	6- 1/2	219.1	8- 5/8	273.0	10- 3/4	323.9	12- 3/4
			76.1	3					141.3	6- 9/16								
L	178	7	190.5	7- 1/2	203	8	229	9	254	10	267	10- 1/2	292	11- 1/2	330	13	356	14
H (open)	380	15	415	16- 5/8	480	18- 7/8	550	21- 5/8	655	25- 4/5	740	29- 1/8	930	36- 5/8	1130	44- 1/2	1320	52
H (close)	330	13	350	13- 3/4	400	15- 3/4	450	17- 3/4	530	20- 7/8	590	23- 1/4	730	28- 3/4	880	34- 3/4	1020	40- 1/6
D	184	7- 1/4	184	7- 1/4	254	10	254	10	305	12	305	12	356	14	445	17- 1/2	445	17- 1/2
Weight (kg)	11.5		13.3		17.5		28		40.5		43.5		68		113		153	

MATERIAL SPECIFICATIONS

DESCRIPTION	MATERIAL	STANDARD SPECIFICATION
Frame	Ductil iron	A536 65-45-12
Nut	Ductil iron, EPDM encapsulated	
Wedge nut	Stainless Steel	AISI 304
Stem	Stainless Steel	AISI 304
Helmet	Ductil iron	A 536 65-45-12
Joint	Rubber	EPDM
Bushing	Graphite	Commercial
Gland	Ductil iron	A536 65-45-12
Adjustment Nut	Brass	C95200
Disk	Ductil iron	A536 65-45-12
Disk Nut	Ductil iron	A536 65-45-12
Conex. NPT	Fund. malleable	Commercial
Screw of Gland	Stainless Steel	AISI 316
Helmet	Steel to carbon	A307 B



NRS RESILIENT SEATED GATE VALVE FLANGED ENDS & GROOVED ENDS

Mod. GISA-130-FF

TECHNICAL DETAILS:

Standard design: AWWA C515

Nominal pressure: 300PSI

Standard Flange: DIN PN16

- Ductile-Iron Wedge, EPDM Encapsulated.
- Triple O-Ring Stem Seal.
- Face to Face Dimensions to ANSI / ASME B16.1 O, EN558, Series 3.
- Flange Drilling to ANSI B16.1, Class 125, ASME B16.42, Class 150.
- Flat Faced Standard, Raised Face U pon Request.
- Grooved Ends to AWWA C606 Standard.
- UL / ULC Listed / FM Approved @300 psi rating.
- Fusion Bonded Epoxy Coated Interior and Exterior to AWWA C550 Standard.

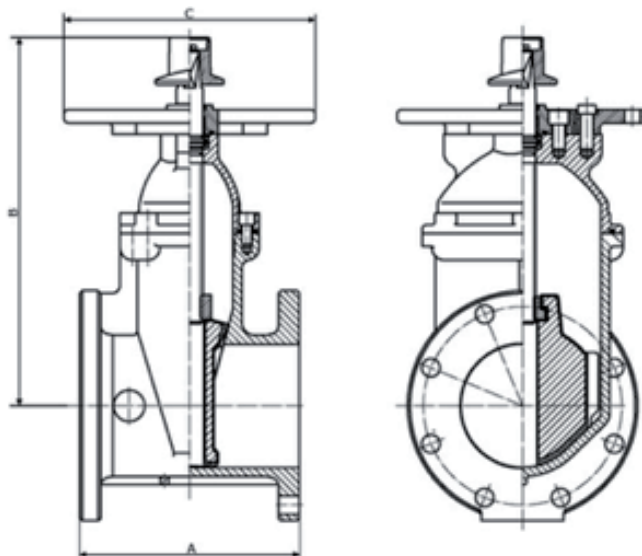
OPTIONS:

- ASTM B150 Brass Stem Available.
- ASTM A276 Type 316 Stainless Steel Stem Available.
- Stainless Steel Fasteners, A2-70 or A4-70.
- BUNA-S (SBR) and BUNA-N Wedge Encapsulation Available.
- Available with Handwheel or Operating Nut (w/o Post Flange).



REFERENCE	DESCRIPTION	Ø NOMINAL	
		(Inch)	(mm)
GISA-130-FF-89	Valve NRS Flanged	3"	89
GISA-130-FF-100	Valve NRS Flanged	4"	100
GISA-130-FF-125	Valve NRS Flanged	5"	125
GISA-130-FF-150	Valve NRS Flanged	6"	150
GISA-130-FF-200	Valve NRS Flanged	8"	200
GISA-130-FF-250	Valve NRS Flanged	10"	250
GISA-130-FF-300	Valve NRS Flanged	12"	300

PARTS DIAGRAM OF THE VALVE



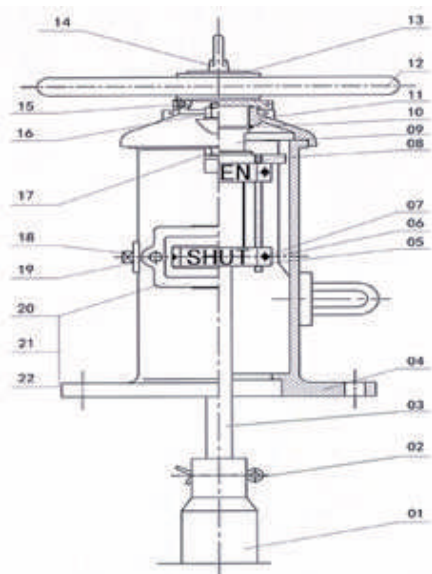


ADJUSTABLE WALL INDICATOR POST

Mod. GISA-720-W

SPECIFICATIONS :

- Meet or Exceed the Requirements of NFPA 24 Standard.
- Indicates the State of the Valve OPEN or SHUT Position.
- Target Nut to allow 13 to 45 Turns.
- Protected Windows.
- Telescoping Operating Rod.
- Easily Adjustable Indicator OPEN and SHUT Targets.
- UL/ULC 789 Listed.
- GOST Certification.
- Spray Painted Interior and Exterior to AWWA C550 Standard.
- Stand Barrel: Black Bitumen Coated.



REFERENCE	DESCRIPTION	Weight UD (KG)
POSTINDH	SIDEWALL Indicator (L=508 mm)	40.80

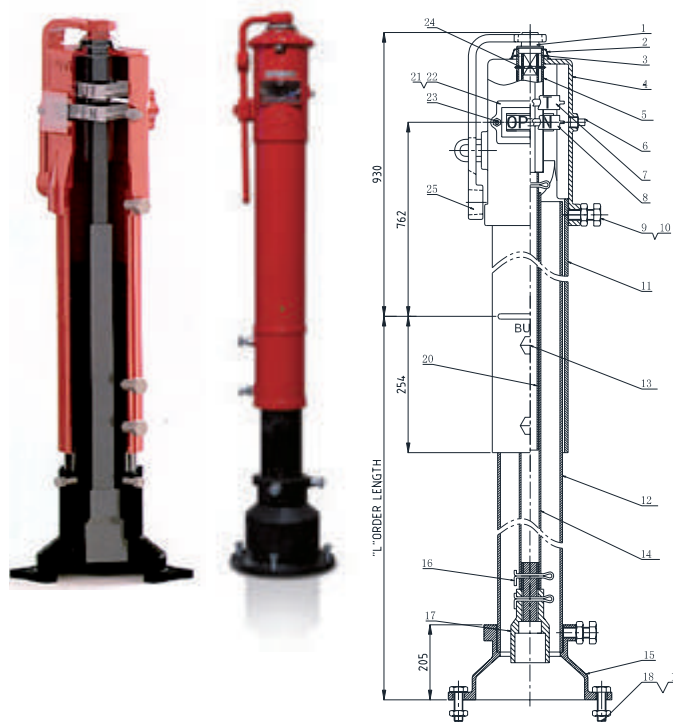


ADJUSTABLE VERTICAL INDICATOR POST

Mod. GISA-730-V

SPECIFICATIONS :

- Meet or Exceed the Requirements of NFPA 24 Standard.
- Indicates the State of the Valve OPEN or SHUT Position.
- Target Nut to allow 13 to 45 Turns.
- "L" Shaped Wrench Handle fitted with a Secure Padlock (provided by user).
- Protected Windows.
- Telescoping Operating Rod.
- Easily Adjustable Indicator OPEN and SHUT Targets.
- UL/ULC 789 Ustet and FM1110 Approved.
- GOST Certification.
- Spray Painted Interior and Exterior to AWWA C550 Standard.
- Stand Barrel: Black Bitumen Coated.





FIELD ADJUSTMENT

LENGTH	MIN	MAX
A	18.00"(459mm)	39.50"(1003mm)
B	36.00"(915mm)	60.50"(1537mm)
C	57.00(1448mm)	81.50"(2070mm)
D	78.00"(1981mm)	102.50"(2604mm)
E	99.00"(2515mm)	123.50"(3137mm)
F	120.00"(3048mm)	144.50"(3670mm)
G	148.50"(3772mm)	168.00"(4267mm)

MATERIAL SPECIFICATIONS

Nº	DEFINITION	MATERIAL	ASTM ESPEC.
1	Nut de functioning	Ductil iron	ASTM A536 65-45-12
2	Cover	Polyethylene	
3	Retaining ring	Stainless Steelidable	ANSI 302
4	Post head	Cast iron	ASTM A126 CLB
5	Thread Shirt	AL	
6	Tube stopper	Steel to carbon	
7	Close target	Cast aluminum	
8	Open target	Cast aluminum	
9	Screw	Steel to carbon / Silver Zinc	ASTM A307B
10	Nut	Steel to carbon / Silver Zinc	ASTM A307B
11	Higher side	Steel to carbon	ASTM A53 Gr.B
12	Lower side	Steel to carbon	ASTM A53 Gr.B
13	Screw	Steel to carbon / Silver Zinc	ASTM A307B
14	Lower Stem	Steel to carbon	ASTM A513
15	Bell	Cast iron	ASTM A126 CLB
16	Barrette	Stainless Steelidable	ANSI 304
17	Coupling	Ductil iron	ASTM A536 65-45-12
18	Screw	Steel to carbon / Silver Zinc	ASTM A307B
19	Nut	Steel to carbon / Silver Zinc	ASTM A307B
20	Higher Stem	Carbon	ASTM A513
21	Window	Methacrylate	
23	Screw	Steel to carbon / Silver Zinc	
24	Spring barrettes	Stainless Steel	ANSI 304
25	Wrench	Stainless Steel	ASTM A536 65-45-12

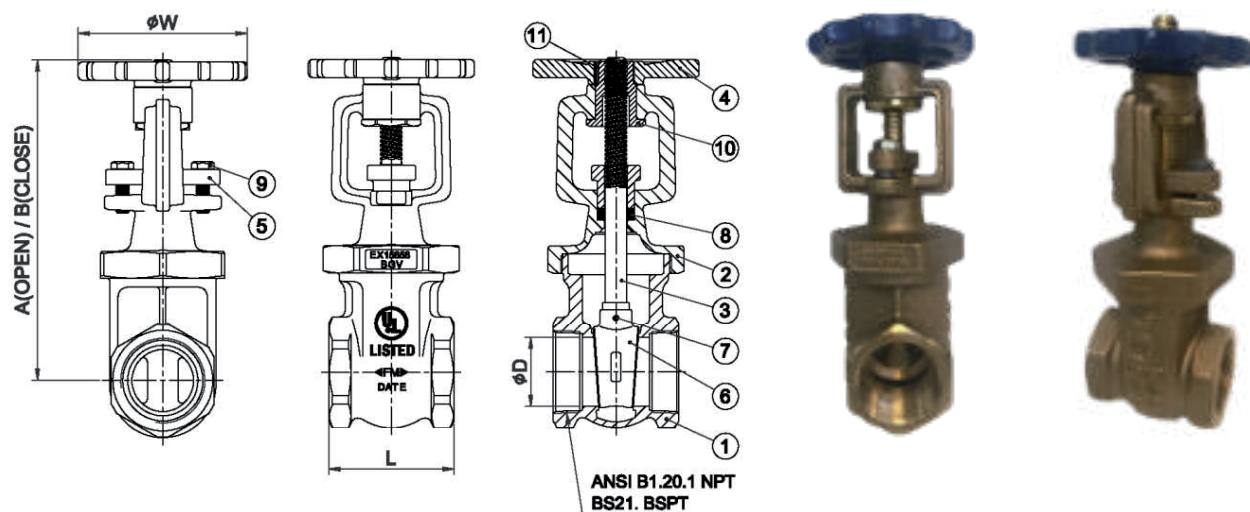


BRASS OS&Y GATE VALVE THREADED ENDS

Mod. ZAYX

TECHNICAL DETAILS:

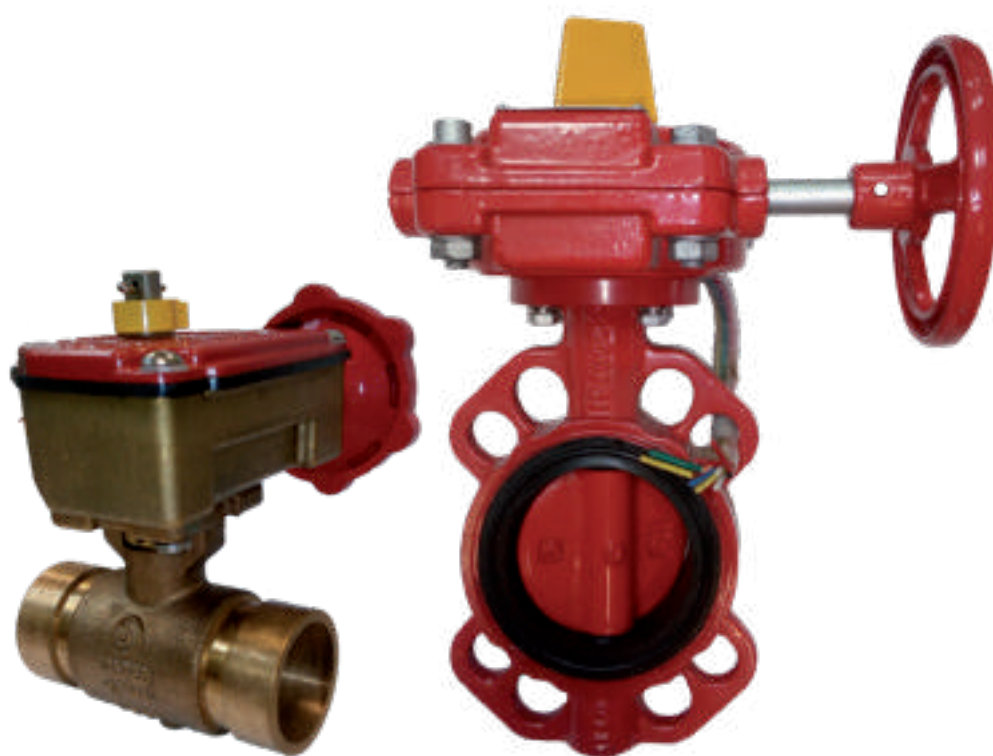
Working pressure: 12 Bar. Certification: UL/FM



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
ZAYX20	OS&Y Thread Brass	¾"	20	1.40
ZAYX25	OS&Y Thread Brass	1"	25	1.80
ZAYX32	OS&Y Thread Brass	1 ¼"	32	2.5
ZAYX40	OS&Y Thread Brass	1 ½"	40	3.24
ZAYX50	OS&Y Thread Brass	2"	50	4.74

MATERIAL SPECIFICATIONS

Nº	NAME	MATERIAL
1	Frame	Brass ASTM C83600
2	Helmet	Brass ASTM C83600
3	Stem	Laton
4	Nut	Cast iron
5	Prensaestopa	Brass ASTM C83600
6	Disk	Brass ASTM C83600
7	Disk Pin	SS304
8	Prensaestopa	Graphite
9	Pin	Steel
10	Assembly Joint	Brass
11	Adjustment Screw	Steel



BUTTERFLY VALVES



GROOVED BUTTERFLY VALVE

Mod. GISA-900-G

Flag type position indicator.
Certification UL/FM

TECHNICAL DETAILS:

- Vulcanized disc design for bubble-tight shutoff at 300 psi.
- Flag type position indicator.
- Low torque operation, high cycle life.
- With built-in supervisory switch.
- Top flange to ISO 5211/1.
- Groove Ends to AWWA C606 Standard or Metric Dimensions.

STANDARD MOUNT

Standard design	API609
Standard grooving	ANSI/AWWA C606
Standard Flange Higher	ISO5211
Standard Test	FM1112/UL1091



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD
		(Inch)	(mm)	(Kg)
GISA-900-G50	Grooved Butterfly	2"	60.3	4,51
GISA-900-G65	Grooved Butterfly	2 1/2"	76	5,49
GISA-900-G80	Grooved Butterfly	3"	89	5,80
GISA-900-G100	Grooved Butterfly	4"	114	6,73
GISA-900-G125	Grooved Butterfly	5"	139	10,15
GISA-900-G150	Grooved Butterfly	6"	168	9,81
GISA-900-G200	Grooved Butterfly	8"	219	15,74
GISA-900-G250	Grooved Butterfly	10"	273	36,43
GISA-900-G300	Grooved Butterfly	12"	323	48,34

Nº	NAME	MATERIAL
1	Upper shaft sealing nut	WCB
2	Cannon seal	EPDM
3	Frame	DI
4	Higher shaft	SS416
5	Disk	DI+EPDM
6	Lower shaft	SS416
7	Lower shaft sealing nut	WCB
8	Shaft bushing	PTFE
9	Signal box	DI

Size	A	B	D	E	C	F	G	H	L	M
2"	77 3.03	99 3.90	90 3.54	84 3.31	120 4.72	170 6.69	65 2.56	155 6.10	150 5.91	200 7.87
2.5"	85 3.45	112 4.41	90 3.54	97 3.82	120 4.72	170 6.69	65 2.56	155 6.10	150 5.91	200 7.87
3"	90 3.54	115 4.53	90 3.54	97 3.82	120 4.72	170 6.69	65 2.56	155 6.10	150 5.91	200 7.87
4"	108 4.25	145 5.71	90 3.54	116 4.57	120 4.72	170 6.69	65 2.56	155 6.10	150 5.91	200 7.87
5"	120 4.72	139 5.47	90 3.54	148 5.83	120 4.72	170 6.69	65 2.56	155 6.10	150 5.91	200 7.87
6"	145 5.71	185 7.28	90 3.54	148 5.83	120 4.72	170 6.69	65 2.56	155 6.10	150 5.91	200 7.87
8"	180 7.09	200 7.87	125 4.92	133 5.24	160 6.30	225 8.86	85 3.35	206 8.11	200 7.87	300 11.81
10"	230 9.06	250 9.84	125 4.92	159 6.26	160 6.30	225 8.86	85 3.35	206 8.11	200 7.87	300 11.81
12"	260 10.23	275 10.83	125 4.92	165 6.50	160 6.30	225 8.86	85 3.35	206 8.11	200 7.87	300 11.81



WAFER BUTTERFLY VALVE GEAR OPERATED

Mod. GISA-800-W

Flag type position indicator.
Certification UL/FM

TECHNICAL DETAILS:

- Single Piece Through Shaft.
- Splined Drive.
- Outdoor and Indoor Rated.
- Vulcanized Seat Design for Bubble-Tight Shutoff.
- Flag Type Position Indicator.
- Supervisory Switch.
- Face to Face Dimension complies with ASME 816.1 O Narrow and EN558 Series 20.
- Connected Flange complies with ASME 816.5 Class 150 and EN1092 PN10/16.



STANDARD MOUNT - API609

Standard side by side	ASME B16.10
Standard Flange	ISO 5211
Standard Test	FM1112/UL1091

REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD
		(Inch)	(mm)	(Kg)
GISA-800-W50	Wafer Butterfly	2"	50	4,66
GISA-800-W65	Wafer Butterfly	2 ½"	65	5,03
GISA-800-W80	Wafer Butterfly	3"	80	5,29
GISA-800-W100	Wafer Butterfly	4"	100	6,55
GISA-800-W125	Wafer Butterfly	5"	125	8,68
GISA-800-W150	Wafer Butterfly	6"	150	9,67
GISA-800-W200	Wafer Butterfly	8"	200	13,25
GISA-800-W250	Wafer Butterfly	10"	250	25,06
GISA-800-W300	Wafer Butterfly	12"	300	32,81

Nº	NAME	MATERIAL
1	UPPER SHAFT SEALING NUT	WCB
2	SHAFT SEAL	EPDM
3	BODY	DI
4	UPPER SHAFT	SS416
5	DISC	DI+EPDM
6	LOWER SHAFT	SS416
7	LOWER SHAFT SEALING NUT	WCB
8	END FACE SEAL	EPDM
9	STEM BUSHING	PTFE
10	SIGNAL GEARBOX	DI



GROOVED BUTTERFLY VALVE WITH LEVER

Mod. D81X

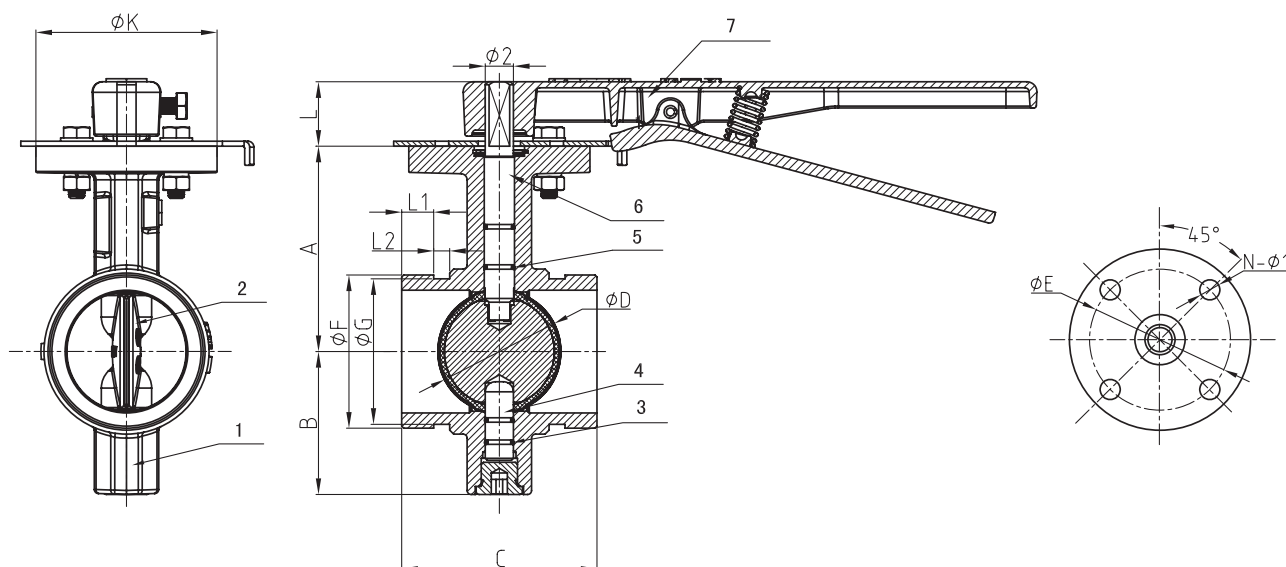
CE NSF/ANSI 61 NS/FANSI 372

TECHNICAL DETAILS:

- Design Standard: BS EN 593
- Connection Ends: Groove to ISO 6182
- Top Flange Standard: ISO 5211. Stem drive by keys, parallel or diagonal square or flat head.
- Working Pressure: PN10/16
- Temperature Range: 0°C- 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request.



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
D81X50	Grooved Butterfly with lever	2"	60.3	4.51
D81X65	Grooved Butterfly with lever	2 ½"	76	5.49
D81X80	Grooved Butterfly with lever	3"	89	5.8
D81X100	Grooved Butterfly with lever	4"	114	6.73
D81X125	Grooved Butterfly with lever	5"	139	10.15
D81X150	Grooved Butterfly with lever	6"	168	9.81
D81X200	Grooved Butterfly with lever	8"	219	15.74
D81X250	Grooved Butterfly with lever	10"	273	36.43
D81X300	Grooved Butterfly with lever	12"	323	48.34

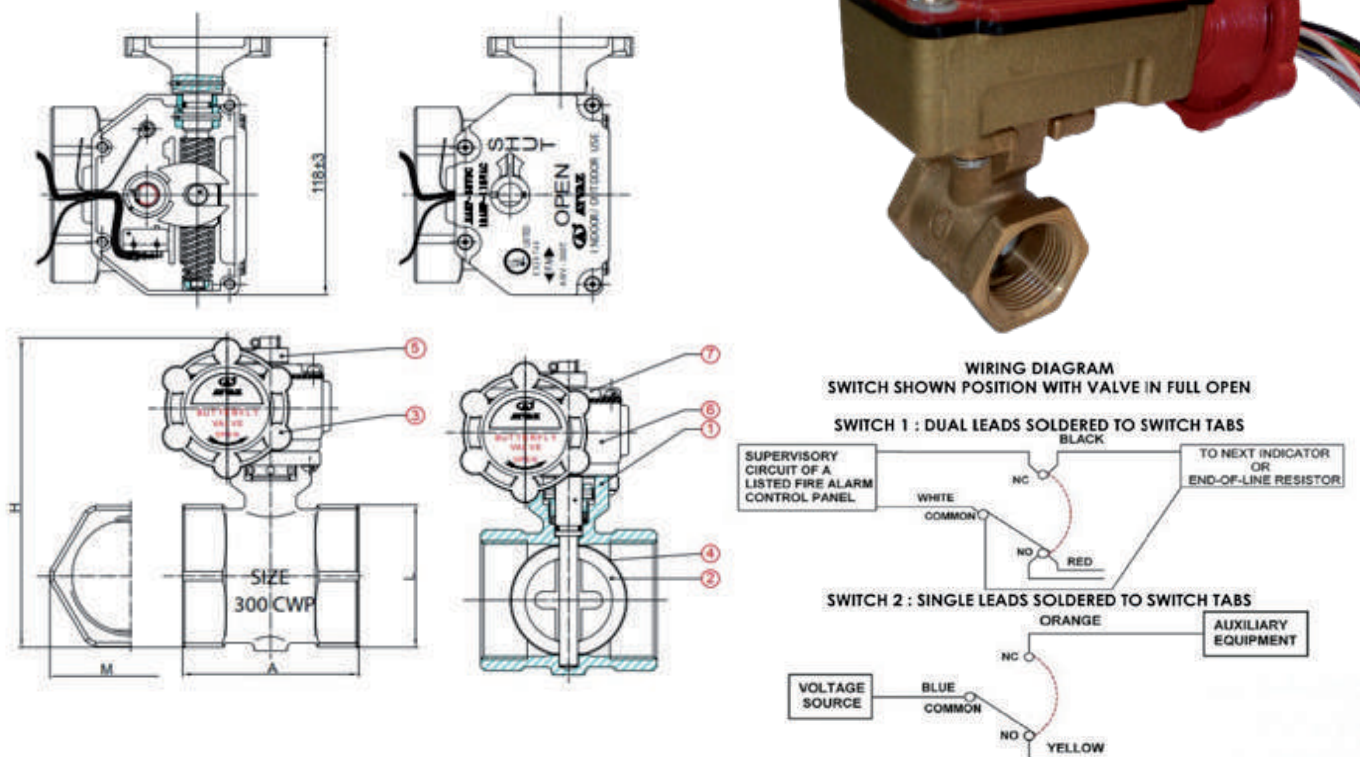




BRASS BUTTERFLY VALVE THREAD

Mod. GISA-900

With gear flywheel and limit switch



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
GISA-90025	Brass Butterfly Thread	1"	25	1,60
GISA-90032	Brass Butterfly Thread	1 ¼"	32	1,70
GISA-90040	Brass Butterfly Thread	1 ½"	40	1,80
GISA-90050	Brass Butterfly Thread	2"	50	2,40
GISA-90065	Brass Butterfly Thread	2 ½"	65	3,40

PART N°	PART	STANDARD SPECIFICATION	OPCIONES
1	Frame valve	EN-GJS-450-10	
2	Disk	EN-GJS-450-10+EPDM	EN-GJS-450-10+NBR
3	Joint	NBR	EPDM
4	Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	Joint	NBR	EPDM
6	Stem	Stainless Steel	SS304, SS316, SS420, SS431
7	Lever	EN-GJS-450-10	Aluminum
8	Gearbox signal	EN-GJS-450-10	

DIMENSIONS (mm)

SIZE	1"	1-1/4"	1-1/2"	2"	2-1/2"
A	54	66.7	73	82.6	114
H	125.4	130.2	142.1	155.6	167.2
L	39.7	49.2	55.6	70	86.5
M	44.5	55	60.3	79	96
Weight (Kg)	1.6	1.7	1.8	2.4	3.4



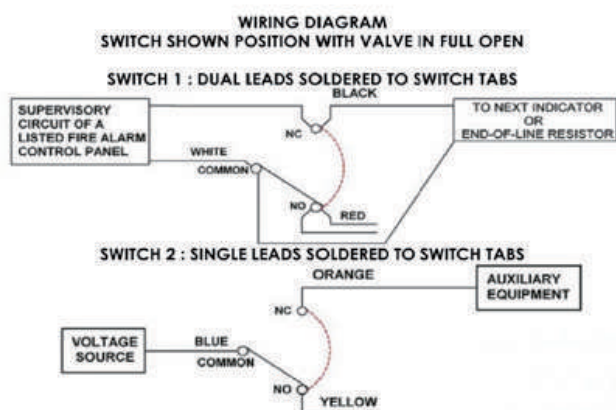
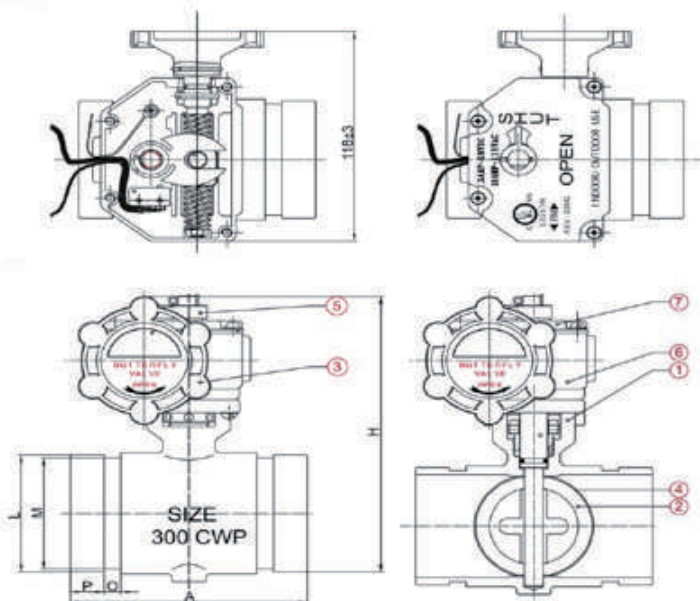
BRASS BUTTERFLY VALVE GROOVED

Mod. GISA-900G

With gear flywheel and limit switch

■ TECHNICAL DETAILS:

- Size: 1 ¼" – 1 ½"
- Working pressure: 20.7 bar (300psi)
- Max test pressure: 41.2 bar (600psi)
- Working temperature: 120°C (250°F)



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD
		(Inch)	(mm)	(Kg)
GISA-900G32	Brass Butterfly Grooved	1 ¼"	32	1.85
GISA-900G40	Brass Butterfly Grooved	1 ½"	40	1.95

Nº	PART	MATERIAL
1	Frame	BRASS ASTM 584 C83600
2	Disk	SS304 SHEET STAMPING
3	Nut	ASTM A216 WCB/FUNDICIÓN ASTM A536
4	BASE	ASTM D2000
5	INDICATOR	METAL FD0205 95HT
6	ACCOMMODATION	Brass C3771
7	Cover	Brass C3771

DIMENSIONS (mm)

SIZE	1-1/4"	1-1/2"	2"	2-1/2"
A	98	102	104	114
H	132.2	138.9	154.2	167.2
P	15.88	15.88	15.88	15.88
O	7.95	7.95	7.95	7.95
M	38.99	45.09	57.15	69.09
L	42.4	48.3	60.3	73
Weight (KG)	1.8	1.9	2.2	2.8



CHECK VALVE AND STRAINER



GROOVED RESILIENT SWING CHECK VALVE

Mod. H84X

Working Pressure: 20Bar. Approved: UL/FM

PRODUCT DESCRIPTION

Grooved check valve that allows water flow in only one direction.

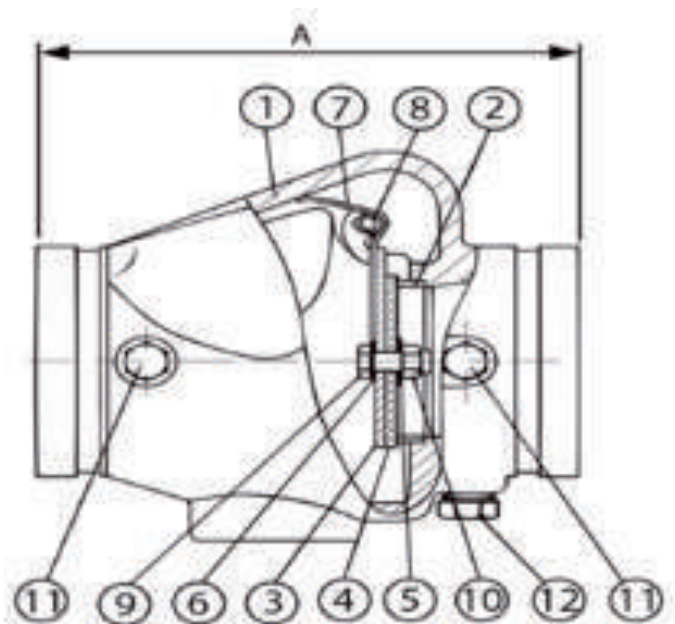
A hinged clapper stays open with water flowing in one direction and closes automatically, with the help of a built-in spring, when the flow stops, preventing back-flow. The clapper seat design allows for leak-free sealing of back pressures in service conditions ranging from 24 bar to as low as 0.35 bar (710 mm height).

- Connection Ends: Groove to ISO 6182
- Working Pressure: PN10/16
- Temperature Range: 0°C- 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
H84X60	Grooved Resilient Swing	2"	60	3,26
H84X76	Grooved Resilient Swing	2 ½"	76	3,55
H84X89	Grooved Resilient Swing	3"	89	4,63
H84X114	Grooved Resilient Swing	4"	114	7,44
H84X141	Grooved Resilient Swing	5"	139	9,99
H84X168	Grooved Resilient Swing	6"	168	16,14
H84X219	Grooved Resilient Swing	8"	219	26,92
H84X273	Grooved Resilient Swing	10"	273	51,90
H84X324	Grooved Resilient Swing	12"	324	75,56

DN	INCH	PSI	OD	L	H
50	2	362	60.3	167	122.5
65	2.5	362	73 76.1	180	136.5
80	3	362	88.9	198	165.5
100	4	362	114.3	229	193.6
125	5	362	139.7 141.3	254	235.5
150	6	362	165.1 168.3	272	252
200	8	362	219.1	330	314.5
250	10	362	273	435	360
300	12	362	323.9	510	424.5



Nº	PART	MATERIAL
1	Frame	Ductil iron ASTM A 395
2	Seat	Brass
3	Clapper	Ductil iron
4	Sealing Coating	EPDM Rubber
5	Attachment with touch clamps	Satinless Steel 304
6	Joint	EPDM Rubber
7	Spring	Stainless Steel 304
8	Hinge bar	Stainless Steel 304
9	Screw	Stainless Steel 304
10	Lock nut	Stainless Steel 304
11	Conexion 1/4" NPT	Carbon Steel
12	Conexion 1/2" NPT	Carbon Steel

NOTES:



DOUBLE DOOR WAFER CHECK VALVE

Mod. H24X

PRODUCT DESCRIPTION

The extremely short face-to-face dimension and compact design of this valve allow for installation and service in confined spaces.

Spring-assisted for better dynamic behavior.

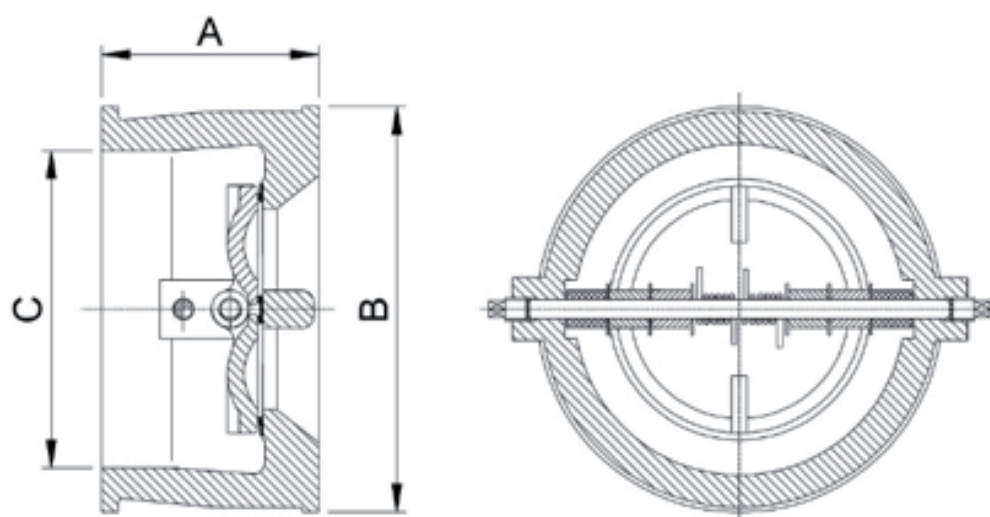
Soft seat for a perfect tightness even at low differential pressure.

- Connection Ends: BS EN 1092 PN10/PN16/PN25, AS 2129 TABLE E, JIS B2212 10K, BS 10 TABLE D/E
- Working Pressure: PN10/16
- Temperature Range: 0°C- 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



REFERENCE	DESCRIPTION	Ø NOMINAL	
		(Inch)	(mm)
H24X50	Double Door Wafer Check Valve 2"	2"	50
H24X65	Double Door Wafer Check Valve 2-1/2"	2.5"	65
H24X80	Double Door Wafer Check Valve 3"	3"	80
H24X100	Double Door Wafer Check Valve 4"	4"	100
H24X150	Double Door Wafer Check Valve 6"	6"	150
H24X200	Double Door Wafer Check Valve 8"	8"	200
H24X250	Double Door Wafer Check Valve 10"	10"	250
H24X300	Double Door Wafer Check Valve 12"	12"	300

Nº	PART	MATERIAL
1	Frame	Cast iron ASTM A126 Class B
2	Stop pin	Stainless Steel AISI 416
3	Barrette	Stainless Steel AISI 416
4	Base	EPDM
5	Retention	Stainless Steel AISI 416
6	Joint	PTFE
7	Washer	PTFE
8	spacer	PTFE
9	Disk	Stainless Steel ASTM CF8
10	Spring	Stainless Steel AISI 304
11	Lifting hook	Steel to carbon



SIZE	100mm/4"		150mm/6"		200mm/8"		250mm/10"		300mm/12"	
	(mm)	(Inch)	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	93	3-11/16	105	4-1/8	121	4-3/4	154	6-1/16	187	7-3/8
B	172	6-3/4	220	8-11/16	280	11	340	13-3/8	410	16-1/8
C	136	5-3/8	178	7	230	9-1/16	285	11-1/4	338	13-5/16
Weight (Kg)	8.4		13.5		23		42		68	

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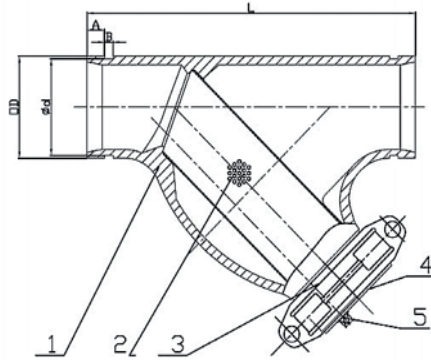
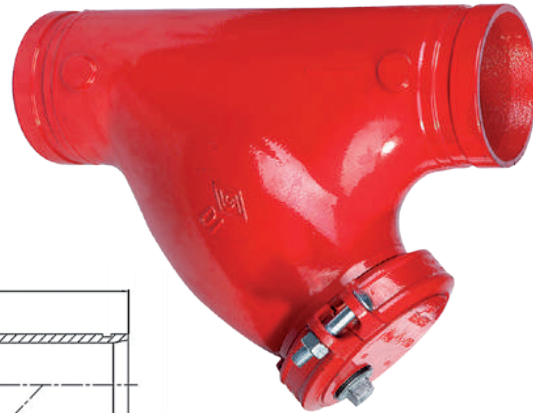
GROOVED Y-TYPE STRAINER

Mod. YGL8

Working Pressure: 20Bar. Approved: UL

TECHNICAL DETAILS

- Connection Ends: Groove to ISO 6182
- Working Pressure: PN10/16
- Temperature Range: 0°C- 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
YGL850	Grooved Y-Type Strainer	2"	50	3.75
YGL865	Grooved Y-Type Strainer	2 ½"	65	6.20
YGL880	Grooved Y-Type Strainer	3"	80	9.18
YGL8100	Grooved Y-Type Strainer	4"	100	15.34
YGL8125	Grooved Y-Type Strainer	5"	125	21.81
YGL8150	Grooved Y-Type Strainer	6"	150	32.73
YGL8200	Grooved Y-Type Strainer	8"	200	70.85
YGL8250	Grooved Y-Type Strainer	10"	250	108.56
YGL8300	Grooved Y-Type Strainer	12"	300	159.45

Nº	PART	STANDARD SPECIFICATION	OPTIONS
1	Frame valve	EN-GJS-450-10	
2	Mesh	SS304	SS316
3	Rigid coupling	EN-GJS-450-10	
4	Cap	EN-GJS-450-10	
5	Conexion	Malleable iron galvanizado	BRASS ASTM B584
6	Accommodation	Brass C3771	
7	Cover	Brass C3771	

DN		DIMENSIONS (MM)				
INCH	MM	L	OD	D	A	B
2"	50	247.5	60.3	57.15	15.88	7.92
2.5"	65	273.0	76.1	72.26	15.88	7.92
3"	80	298.5	88.9	84.94	15.88	7.92
4"	100	362.0	114.3	110.08	15.88	9.52
5"	125	419.0	139.7	135.48	15.88	9.52
6"	150	470.0	168.3	163.96	15.88	9.52
8"	200	609.5	219.1	214.4	19.05	11.13
10"	250	686.0	273.0	268.28	19.05	12.7
12"	300	762.0	323.9	318.29	19.05	12.7

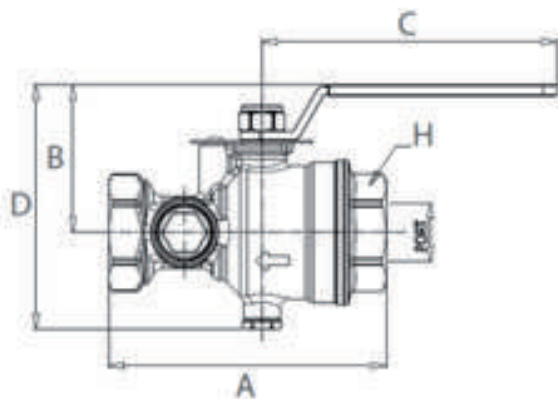


BALL VALVES



TEST AND DRAIN VALVE

Thread. Mod. TDV



REFERENCE	DESCRIPTION	MEASURES	APPROVAL
TDV25A61HH80	VALV. 1"NPT (1/2)GL TEST&DRAIN K80 (5.6)	1" (1/2")	FM/UL
TDV25A61HH115	VALV. 1"NPT (17/32)GL TEST&DRAIN K115 (8.0)	1" (17/32)	FM/UL
TDV32A61HH80	VALV. 1 1/4"NPT (1/2)GL TEST&DRAIN K80 (5.6)	1 1/4 (1/2")	FM/UL
TDV32A61HH200	VALV. 1 1/4"NPT (3/4) TEST&DRAIN K200 (14)	1 1/4	FM/UL
TDV32A61HH160	VALV. 1 1/4"NPT (5/8) TEST&DRAIN K160 (11.0)	1 1/4	FM/UL
TDV32A61HH115	VALV. 1 1/4"NPT (17/32) TEST&DRAIN K115 (8.0)	1 1/4 (17/32)	FM/UL
TDV50A61HH80	VALV. 2"NPT (1/2)GL TEST&DRAIN K80 (5.6)	2" (1/2)	FM/UL
TDV50A61HH200	VALV. 2"NPT (3/4)GL TEST&DRAIN K200 (14)	2" (3/4)	FM/UL
TDV50A61HH160	VALV. 2"NPT (5/8)GL TEST&DRAIN K160 (11.0)	2" (5/8)	FM/UL
TDV50A61HH240	VALV. 2"NPT (15/16)GL TEST&DRAIN K240 (17)	2" (15/16)	FM/UL
TDV50A61HH115	VALV. 2"NPT (17/32)GL TEST&DRAIN K115 (8.0)	2" (17/32)	FM/UL
TDV50A61HH320	VALV. 2"NPT (1-5/64)GL TEST&DRAIN K320 (22)	2" (15/64)	FM/UL
TDV50A61HH360	VALV. 2"NPT (1-9/64)GL TEST&DRAIN K360 (25)	2" (19/64)	FM/UL

SIZE	PLUG	PORT	A mm	B mm	C mm	D mm	H mm
25 (1")	6 (1/4")	27 (1 1/16")	128 (5 1 3/32")	68 (2 43/64")	136 (5 11/32")	112 (4 27/64")	48 (1 57/64")
32 (1 1/4")	6 (1/4")	27 (1 1/16")	(5 1 3/32")	68 (2 43/64")	136 (5 11/32")	112 (4 27/64")	48 (1 57/64")
50 (2")	6 (1/4")	45 (1 12/16")	157 (6 6 3/32")	100 (4")	173 (6 26/32")	161 (6 21/64")	67 (2 40/64")

PRODUCT DESCRIPTION

The Test and Drain valve for sprinkler systems combines the functions of test and drain for wet sprinkler systems.

The valves have forged brass body with chrome plated brass ball valve and PTFE seats. The valves comply with the requirements of NFPA-13, NFPA-13R and NFPA-13D.

The valves are single handle ball valves with three working positions.

They include tamper resistant test orifice and sight glass for the visual control.

TECHNICAL DETAILS

Test and drain valve for sprinkler systems combines the functions of test and drain for wet sprinkler systems. complies with the requirements of NFPA-13, NFPA-13R and NFPA-13D and is FM approved and UL listed.

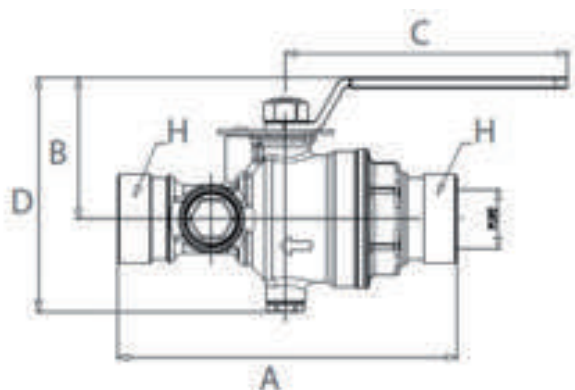
Main feature as following:

- Rp, EN 10226 threads 1" - 1 1/4" - 1 1/2" - 2"
- NPT threads 1" - 1 1/4" - 1 1/2" - 2"
- Groove connections 1 1/4" - 2"
- Forged brass body
- Chrome plated brass ball
- PTFE seats.
- Single handle ball valves with three working positions
- Tamper resistant test orifice and sight glass included



TEST AND DRAIN VALVE

Grooved. Mod. TDV



REFERENCE	DESCRIPTION	APPROVAL
TDV32A61GG80	VALV.1-1/4" (1/2) TEST&DRAIN GROOVE K80 (5.6)	FM/UL
TDV32A61GG200	VALV.1-1/4" (3/4) TEST&DRAIN GROOVE K200 (14)	FM/UL
TDV32A61GG160	VALV.1-1/4" (5/8) TEST&DRAIN GROOVE K160 (11.0)	FM/UL
TDV32A61GG115	VALV.1-1/4" (17/32) TEST&DRAIN GROOVE K115 (8.0)	FM/UL
TDV50A61GG80	VALV. 2" GROOVE (1/2) GL K80 (5.6)	FM/UL
TDV50A61GG200	VALV. 2" GROOVE (3/4) GL K200 (14)	FM/UL
TDV50A61GG160	VALV. 2" GROOVE (5/8) GL K160 (11.0)	FM/UL
TDV50A61GG320	VALV. 2" GROOVE (15/64) GL K320 (22)	FM/UL
TDV50A61GG240	VALV. 2" GROOVE (15/16) GL K240 (17)	FM/UL
TDV50A61GG360	VALV. 2" GROOVE (19/64) GL K360 (25)	FM/UL

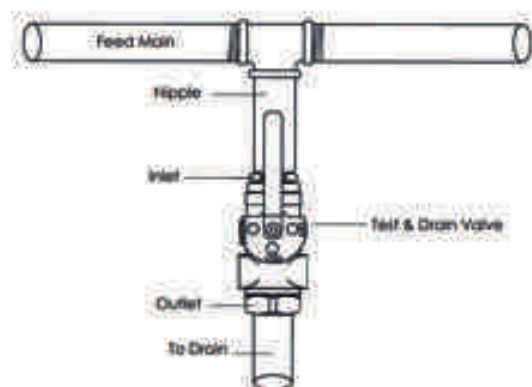
SIZE	PLUG	PORT	A mm	B mm	C mm	D mm	H mm
32 (1 1/4")	6 (1/4")	27 (1 1/16")	163 (6 13/32")	68 (2 43/64")	136 (5 11/32")	112 (4 27/64")	32 GROOVE (1 1/4")
50 (2")	6 (1/4")	45 (1 12/16")	191 (7 17/32")	100 (4")	173 (6 26/32")	161 (6 21/64")	50 GROOVE (2")

NOMINAL PRESSURE: 20 BAR (300 PSI)

MATERIALES:

- Forged brass body
- Chrome plated ball
- Steel handle
- Valve seat in PTFE
- Indication disk in brass
- Sight glasses in polycarbonate

MODEL	SIZE	TYPE
RD61	25mm (1")	NPT Fx F
	32mm (1 1/4")	
	50 (2")	
	32mm (1 1/4") 50mm (2")	Groove x Groove



This valve is a drain and test fitting for use as a special type drain fitting.

For the Fire Protection Service in accordance with the Standard for INSTALLATION of sprinkler systems.

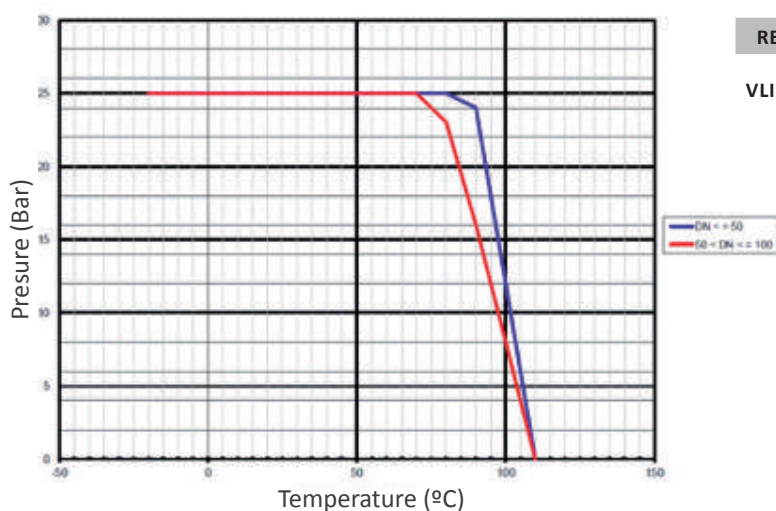


CLEANING AND EMPTYING BALL VALVE

Mod. VLIMP112

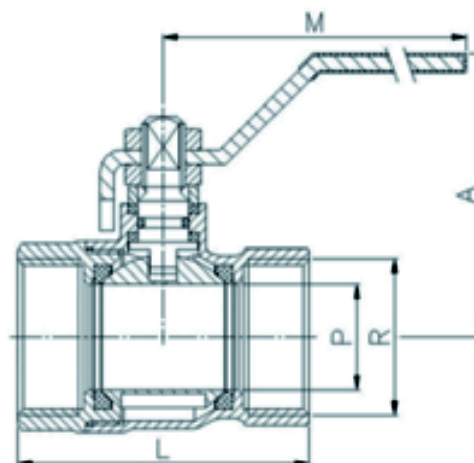
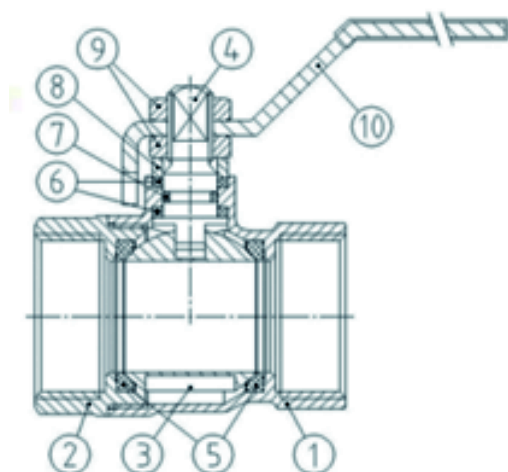
PRODUCT DESCRIPTION

1. Ball valve with standard thread
2. Brass construction s/ UNE-EN 12165 Chrome
3. End Thread (BSP) female gas according to ISO 228/1
4. Steel lever drive
5. Working temperature from -20°C to 110°C
6. Maximum Working Pressure 25 bar (PN 25)
7. PTFE seats



REFERENCE	DESCRIPTION
VLIMP112	CLEANING AND EMPTYING VALVE 2" FOR SPRINKLER NET

Nº	DENOMINATION	MATERIAL	FINISHED
1	Body	Brass (CW617N)	Shot blasting + Chrome
2	Cap	Brass (CW617N)	Shot blasting + Chrome
3	Ball	Brass (CW617N)	Chrome
4	Axis	Brass (CW617N)	Chrome
5	Seats	PTFE (CW617N)	-
6	Press O-ring	PTFE (CW617N)	-
7	Toric	NBR	-
8	Press O-ring	Brass	Chrome
9	Nut	Brass	Chrome
10	Handle	Steel	Dacromet





BALL VALVES UL/FM

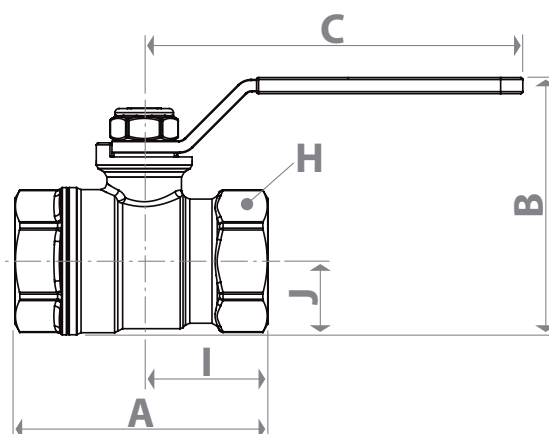
Mod. R850

DESCRIPTION:

Ball valve, with female-female threaded connections.
Full port for 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2".
Standard port for 2-1/2", 3", 4".

TECHNICAL DATA:

- Suitable for water for heating/cooling systems, not dangerous gas and liquid hydrocarbons*
- Valve made of UNI EN 12165 CW617N chrome plated brass
- Stem with double O-Ring
- Nut with anti-corrosion coating, with guarantee seal and hologram
- Steel lever handle with anti-corrosion treatment and red PVC coating
- Min. working temperature: -20 °C with 50 % glycol solutions
- Max. working temperature with dry saturated steam: 185 °C with 1,05 MPa (10,5 bar)
- Max. working pressure at 20 °C with water and not dangerous gas:
3,5 MPa (35 bar) for 1/4", 3/8", 1/2", 3/4"
2,8 MPa (28 bar) for 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4"
- Temperature range with liquid hydrocarbons*: -20÷60 °C
- Max. working pressure at 20 °C with liquid hydrocarbons*: 1,2 MPa (12 bar)



REFERENCE	CONNECTIONS	FINISHING	HANDLE TYPE	HANDLE COLOR
R850X021	G 1/4"F x G 1/4"F	CHROME PLATED BRASS	LEVER	RED
R850X022	G 3/8"F x G 3/8"F	CHROME PLATED BRASS	LEVER	RED
R850X023	G 1/2"F x G 1/2"F	CHROME PLATED BRASS	LEVER	RED
R850X024	G 3/4"F x G 3/4"F	CHROME PLATED BRASS	LEVER	RED
R850X025	G 1"F x G 1"F	CHROME PLATED BRASS	LEVER	RED
R850X026	G 1-1/4"F x G 1-1/4"F	CHROME PLATED BRASS	LEVER	RED
R850X027	G 1-1/2"F x G 1-1/2"F	CHROME PLATED BRASS	LEVER	RED
R850X028	G 2"F x G 2"F	CHROME PLATED BRASS	LEVER	RED
R850X029	G 2-1/2"F x G 2-1/2"F	CHROME PLATED BRASS	LEVER	RED
R850X030	G 3"F x G 3"F	CHROME PLATED BRASS	LEVER	RED
R850X031	G 4"F x G 4"F	CHROME PLATED BRASS	LEVER	RED



PRESSURE

REDUCING AND AIR VALVE



AIR VENT VALVE

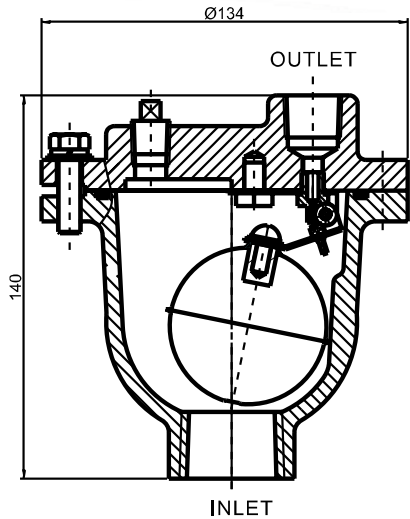
FM APPROVED

PRODUCT DESCRIPTION

- 200PSI Thread
- Working pressure: 200PSI
- Temperature: -10° a 120°C
- Conexions NPT/BSPT

REFERENCE	DESCRIPTION
GISAAIRV1/2"	Automatic Air Vent valve 1/2" BSPT Threaded
GISAAIRV3/4"	Automatic Air Vent 3/4" BSPT Threaded

SIZE	THREAD FEMALE
1/2"	1/2" BSP
3/4"	3/4" BSP



Nº	DENOMINATION	MATERIAL
1	Frame	Cast iron A536 65-45-12
2	Coverage	Cast iron A536 65-45-12
3	Nivel	Stainless Steel AISI 304
4	Ring	Stainless Steel
5	Float	Stainless Steel AISI 304
6	Float arm	Stainless Steel AISI 304
7	Orifice button	Viton

NOTES:



PRESSURE REDUCING VALVE

Mod. VLRDTG

Adjustment range of outlet pressure: 5-11 Bar. Approved: UL
Differential pressure: 0.7 Bar min

SPECIFICATIONS

- Pressure Reducing Valve: Reducing a higher upstream pressure into a lower, constant downstream pressure.
- Operates over a wide flow range.
- Set pressure is adjustable with single screw.
- Can be maintained without removal from the pipe line.
- Flanged to EN1092-2 PN10/PN16, ANSI 816.1 Class125. (Other available on request)
- Grooved ends to AWWA C606 Standard.
- Adjustment range of outlet pressure: 65 to 165 psi.
- FM Approved.
- Working Pressure and Temperature: 300 psi @ 0° C to 87° C.
- Fusion bonded coating interior and exterior meet or exceed all applicable of AWWA C550 standard.



REFERENCE	DESCRIPTION	Ø NOMINAL		Weight UD (Kg)
		(Inch)	(mm)	
VLRDTG2"	Pressure Reducing Valve	2"	50	10.20
VLRDTG3"	Pressure Reducing Valve	3"	80	24.75
VLRDTG4"	Pressure Reducing Valve	4"	100	4.70
VLRDTG6"	Pressure Reducing Valve	6"	150	-
VLRDTG8"	Pressure Reducing Valve	8"	200	-

TYPICAL APPLICATIONS

- Inside the main header (Ref. Figure 1) that supplies wet pipe, dry pipe, deluge, or preaction piping, and/or a standpipe system that supplies hose connections.
- As part of a sectional floor control assembly that supplies sprinkler systems, and/or hose stations.

CHARACTERISTICS

- Can be installed in portrait or landscape orientation
- Eliminates any required bleeding of trapped air from the diaphragm chamber during installation
- Globe or angle pattern
- Precises pressure control
- Rilsan Red internal and external coated
- One piece diaphragm, one moving part
- Online service
- A pilot valve sub-assembly provides any outlet "setting pressure", ie 80 to 225 psi (5.5 to 15.5 bar)

TECHNICAL DETAILS

Approved por UL y C-UL. Approved por FM
UL Listing is based on:

- Installation requirements referenced in the Standard for the Installation of Sprinkler Systems, NFPA 13, or the Standard for the Installation of Standpipe and Hose Valves, NFPA 14, as applicable.
- Inspection, testing, and maintenance requirements referenced in the Standard for Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, NFPA 25.
- Valve configuration to provide the required output pressures and flows for the given application.
- Valve testing after Installation in accordance with NFPA 13 and/or NFPA 14 as applicable.
- Maximum inlet pressure 250 psi (17.2 bar) Factory setting "Adjustment pressure" 125 psi (8.6 bar) "Adjustment pressure" output field Range 80 to 225 psi (5.5 to 15.5 bar) per FM Approval, or 80 to 150 psi (5.5 to 10.3 bar) per UL Listed

PRESSURE LOSS WITH INLET PRESSURE ABOVE "ADJUSTMENT PRESSURE"

The inlet pressure minus the outlet "adjustment pressure" equals the pressure drop. For example, assuming the inlet flow pressure is 225 psi (15.5 bar) and the field outlet "adjustment pressure" is 130 psi (9.0 bar), the pressure loss is 95 psi (6.5 bar). Pressure Loss with Inlet Pressure Below "Set Pressure" See Charts A through E. These charts are a UL requirement and should be used as a reference only



WET ALARM VALVES

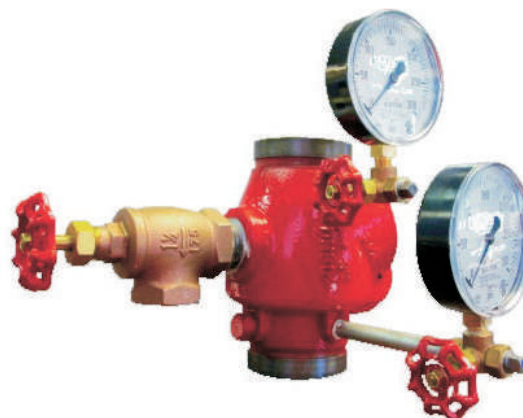


RISER CHECK VALVE

Grooved 350PSI. Mod. RCV

TECHNICAL DETAILS

- Meet or exceed the requirements of UL 312 and FM 121 O Standard.
- Spring Loaded for Fast Closure.
- It is used in wet pipe fire protection systems, as well as the pre-action systems where not need a mechanical alarm.
- Drain plug at the bottom under the inlet end for attaching a drain valve.
- Excellent Flow Characteristics.
- Superior design featuring exceptionally low pressure losses at high flow rates.
- Rubber Disc Facing and Brass Seat Ring.
- Grooved Connections are cut in accordance with AWWA C606 or other standard Groove Specifications for Steel Pipe.
- F3322 with or without Trim.
- Rated Working Pressure
300 psi for valva with Trim
350 psi for valva without Trim



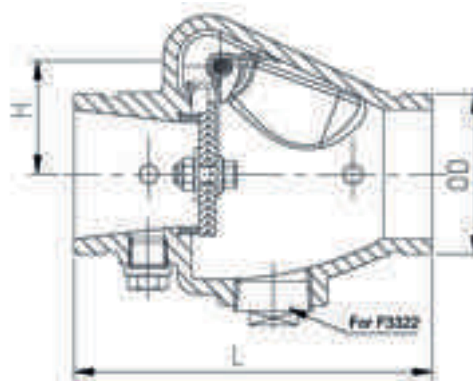
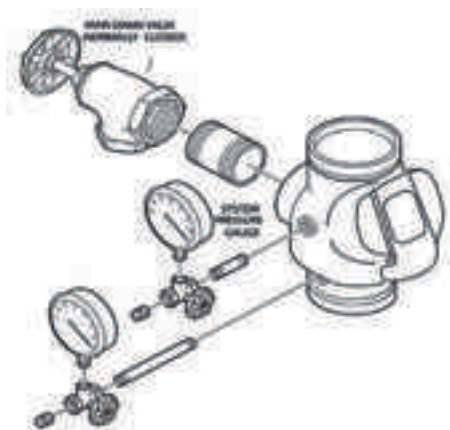
REFERENCE	DIAMETER
RCV060GGFM	2"
RCV076GGFM	2 ½"
RCV089GGFM	3"
RCV114GGFM	4"
RCV139GGFM	5"
RCV168GGFM	6"
RCV219GGFM	8"

SIZE		2"		2.5"		3"		4"		6"		8"	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
OD	ASTM	60.32	2.37	73.0	2.87	88.9	3.5	114.3	4.5	165.1	6.5	219.1	8.63
	BS			76.1	3					168.3	6.63		
L		169	6.65	183	7.2	205	8.07	218	8.58	269	10.6	325	12.8
H		71	2.8	79	3.11	89	3.50	102	4	128	5.04	159	6.26

Nº	DEFINITION	MATERIAL	ASTM ESPEC.
1	Frame	Malleable iron	A536 65-45-12
2	Foundation ring	Brass	B62 C83600
3	Disk	Stainless Steel	AISI 304
4	Joint	Rubber	EPDM
5	Axis	Stainless Steel	AISI 304
6	Spring	Stainless Steel	AISI 304
7	Lock nut	Stainless Steel	AISI 304
8	Conexion	Stainless Steel	AISI 304

■ INSTALLATION

1. The arrow on the frame of the check valve must point in the direction of flow.
2. Valves are usually installed vertically and the arrow should point in the upward direction.
3. If the valves are installed horizontally, the check valve hinge should be in the upward direction.
4. Grooved Couplings must be used when installing the valve and must be installed in accordance with the manufacturer's instructions.
5. In accordance with good piping practice, the valve should be installed a minimum of 5 pipe diameters downstream of pumps, elbows, reducers, or other similar items.



DISASSEMBLY AND INSPECTION

- 1.Shut off main water supply and drain system.
- 2.Remove the two Slotted Couplings that hold the riser latch in place and remove the valve.
- 3.Inspect the Grooved Coupling Joints for tears and/or abrasions and replace if necessary.
- 4.Inspect the seat for cuts, dents or other damage and replace the entire valve if any damage is found.

NOTES:

[illegible]

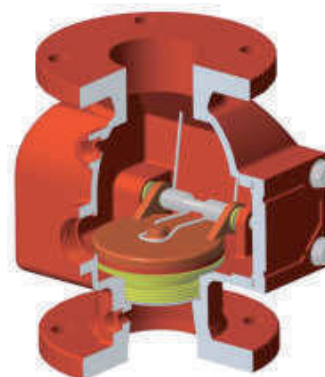
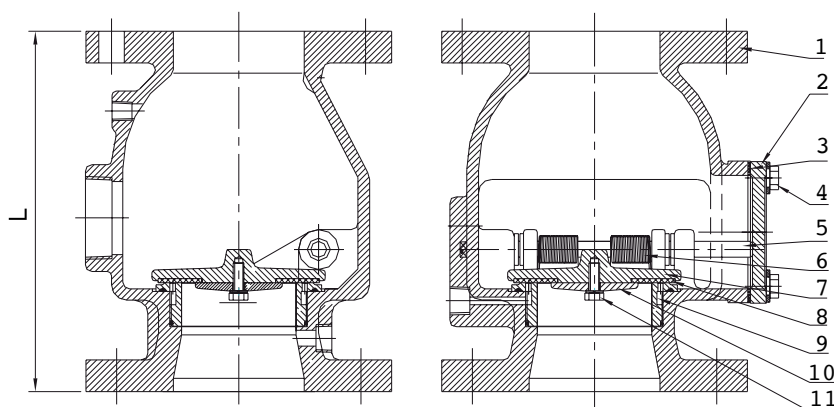


ALARM CHECK VALVE, VERTICAL TRIM FLANGED ENDS

Mod. GISA-ACV-FF

PRODUCT DESCRIPTION

- Valve must be installed in vertical position with the trim as shown. Any deviation may affect the proper operation of the valve.
- Flange designed to EN1092- 2 PN10/ 16, ANSI B16. 1 Class 125 or BS10 Table D/ E (Other types available on request).
- UL/ULC listed and GOST Certified.
- FM Approved (sizes through 6" / 150mm)
- Working Pressure: 4 C - 70 C.
- Working temperature:
Cold water, 300PSI,
200PSI or 250PSI available on request.



REFERENCE	DIAMETER
GISA-ACV-FF-80	3"
GISA-ACV-FF-100	4"
GISA-ACV-FF-150	6"
GISA-ACV-FF-200	8"

CHARACTERISTICS

When a significant flow of water occurs, such as from an open sprinkler, the alarm valve clapper lifts and allows water to enter the system. Simultaneously, the water enters an intermediate chamber, allowing the water to trigger an alarm through a water motor alarm or water pressure alarm. These alarms continue to sound until the flow of water stops.

The GISA-ACV-FF control station, made of Ductile iron, very resistant and low in weight, offers easy access to all internal parts. All of them are replaceable without having to remove the valve from the installed position. The rubber clapper seal is easily replaced without removing the clapper from the valve. It is painted inside and out to increase resistance to corrosion. The UL approved version can be installed in a vertical orientation, and can be used in constant and variable pressure systems when the optional retard chamber is included in the adjustment piping.

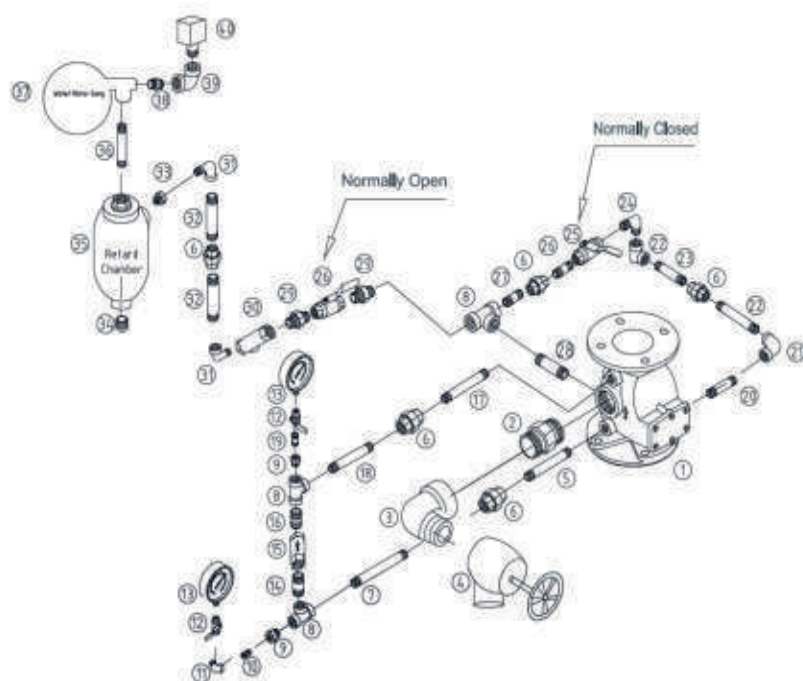
OPERATION

The construction of the GISA-ACV-FF alarm post includes a clapper, which has a replaceable rubber face. Clapper closure is spring assisted, which ensures proper contact of the clapper to the brass seat ring.

When installed, the alarm check valve traps pressure above the clapper and prevents reverse flow of water. Minor pressure surges pass through the bypass circuit without lifting the clapper off its seat. The swing check valve in the bypass line traps pressure on the clapper. This can be seen on the pressure gauges.

The system side water pressure will always be equal to or greater than the supply side water pressure in the absence of an open sprinkler.

When a sustained flow of water occurs, such as a sprinkler activated or an open inspector's test connection, the clapper lifts from its closed position. This allows water to enter the intermediate chamber to the alarm line and trigger system alarms. These alarms continue to sound until the water flows.



OPERATION WITH A DELAY CHAMBER INSTALLED

When the GISA-ACV-VF alarm station is installed with the optional delay chamber, a surge of water, greater than the bypass line can handle, will lift the clapper. When it is raised, water will enter the intermediate chamber through the holes in the seat ring and fill the chamber. The water then drains into the retard chamber through a restricted orifice.

A sustained flow of water, such as from an open sprinkler head, will raise the clapper. The water will flow into the intermediate chamber and fill the retard chamber completely. These events activate the water motor alarm and/or the pressure switch for the electrical alarm.

Nº	SPECIFICATION	MATERIAL
1	Valve	See Above
2	2" NPT Pipe Fitting	Malleable iron
3	2" NPT Street Elbows	Malleable iron
4	2" Angle Valve	Brass
5	½" NPT Screwed Pipe	Steel carbon
6	½" Cone Union	Malleable iron
7	½" NPT Screwed Pipe	Steel carbon
8	½" Straight Tees	Malleable iron
9	½" x ¼" Reducers	Malleable iron
10	¼" NPT Screwed Pipe	Steel carbon
11	¼" 90° Elow	Malleable iron
12	¼" Ball Valve	Brass
13	Pressure Gage	-
14	½" NPT Screwed Pipe	Steel carbon
15	½" Check Valve	Brass
16	½" tubo	Steel carbon
17	½" NPT Screwed Pipe	Steel carbon
18	½" NPT Screwed Pipe	Steel carbon
19	½" NPT Screwed Pipe	Steel carbon
20	½" NPT Screwed Pipe	Steel carbon
21	¼" 90° Elow	Malleable iron
22	½" NPT Screwed Pipe	Steel carbon
23	½" NPT Screwed Pipe	Steel carbon
24	½" 90° Elow	Malleable iron
25	½" Ball Valve	Brass
26	½" NPT Screwed Pipe	Steel carbon
27	½" NPT Screwed Pipe	Steel carbon
28	½" NPT Screwed Pipe	Steel carbon
29	½" NPT Screwed Pipe	Malleable iron
30	½" Y-Strainer	Brass
31	½" 90° Elow	Malleable iron
32	½" NPT Screwed Pipe	Steel carbon
33	Pipe Fitting	AISI 304
34	Plug 1	Brass
35	Plug 2	Brass
36	¾" NPT Screwed Pipe	Steel carbon
37	Water Motor Gong	-
38	¾" NPT Screwed Pipe	Steel carbon
39	¾" x ½" 90 Reducing Elbow	Malleable iron
40	Switch	-

ALARM CHECK VALVE – VERTICAL TRIM

Size	Check Valve Weight (Kg)	Assembly Weight (Kg)	Dimensions (cm)				
			L1	L2	L3	L4	Height
DN80	18.2	36	30	26	25	60	85
DN100	27.1	45.9	30	26	25	60	85
DN150	49.9	69.1	30	26	25	60	85
DN200	80	99.8	35	26	25	60	85



ALARM CHECK VALVE, VERTICAL TRIM GROOVED ENDS

Mod. GISA-ACV-GG

PRODUCT DESCRIPTION

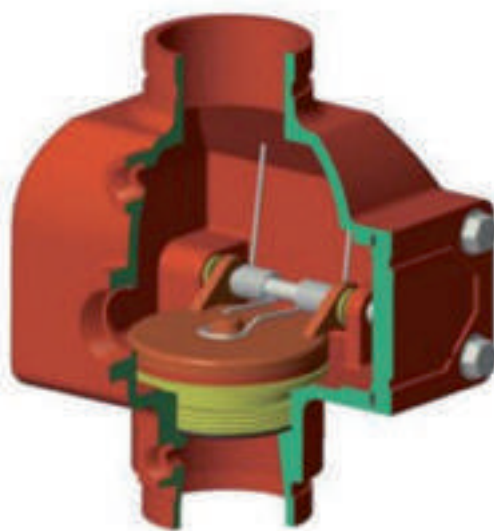
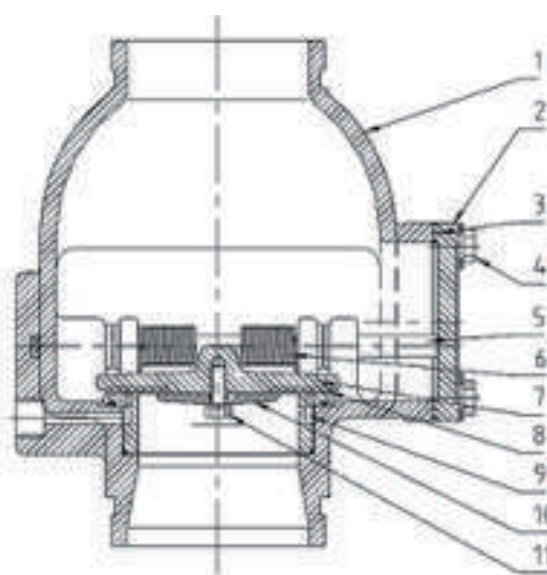
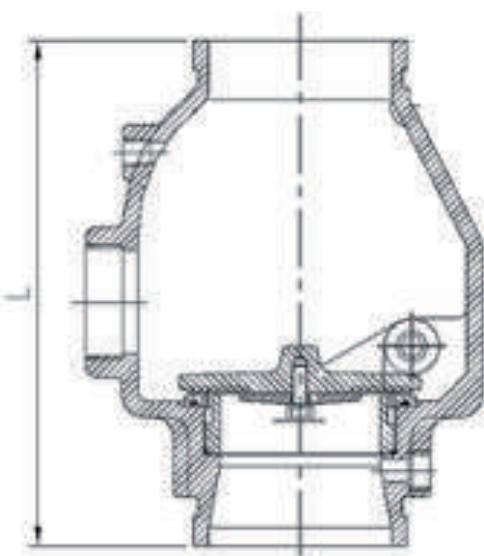
- Valve must be installed in vertical position with the trim as shown. Any deviation may affect the proper operation of the valve.
- Flange designed to EN1092-2 PN10/16, ANSI B16.1 Class 125 or BS10 Table D/E (Other types available on request).
- UL/ULC listed and GOST Certified.
- FM Approved (sizes through 6" / 150mm)

Working pressure: -20,68Bar (300PSI)

Working temperature: -0°C a 68°C

Anti-corrosion protection: ReCover interior and exterior with molten epoxy according to AWWA C550 standard.

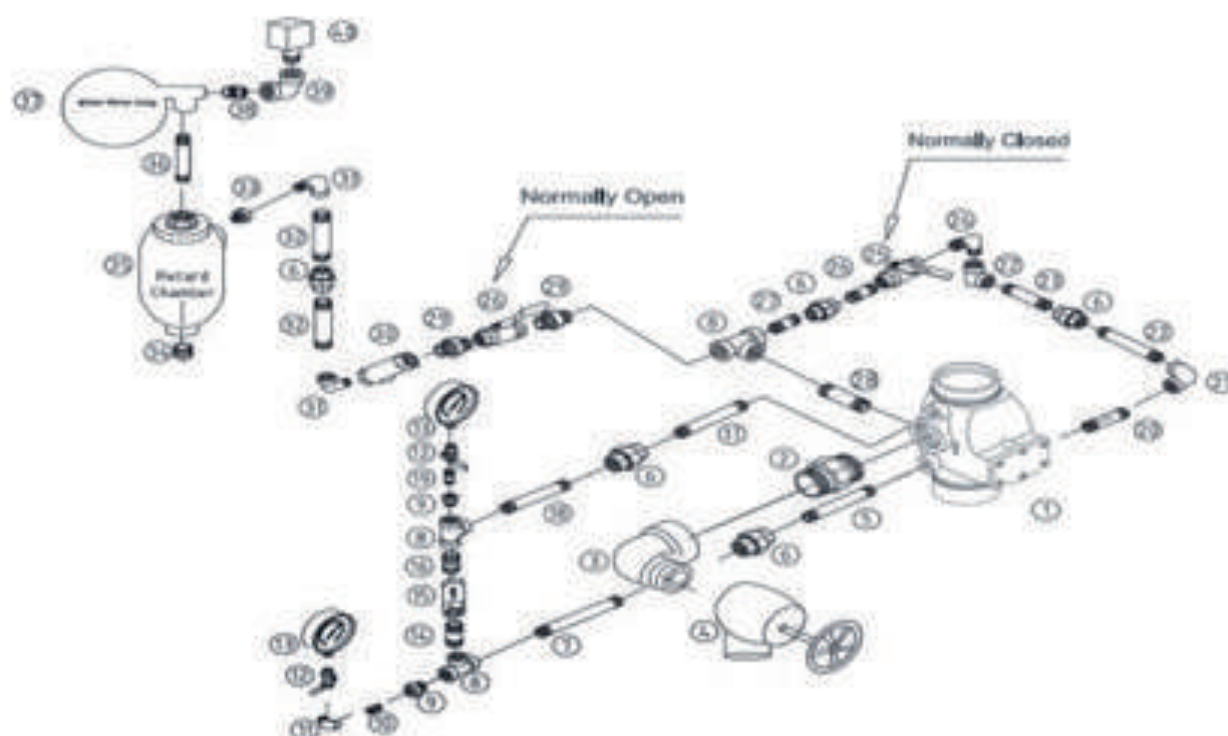
REFERENCE	DESCRIPTION	SIZE
GISA-ACV-GG-80	checkpoint slot/slot	3"
GISA-ACV-GG-100	checkpoint slot/slot	4"
GISA-ACV-GG-150	checkpoint slot/slot	6"
GISA-ACV-GG-200	checkpoint slot/slot	8"



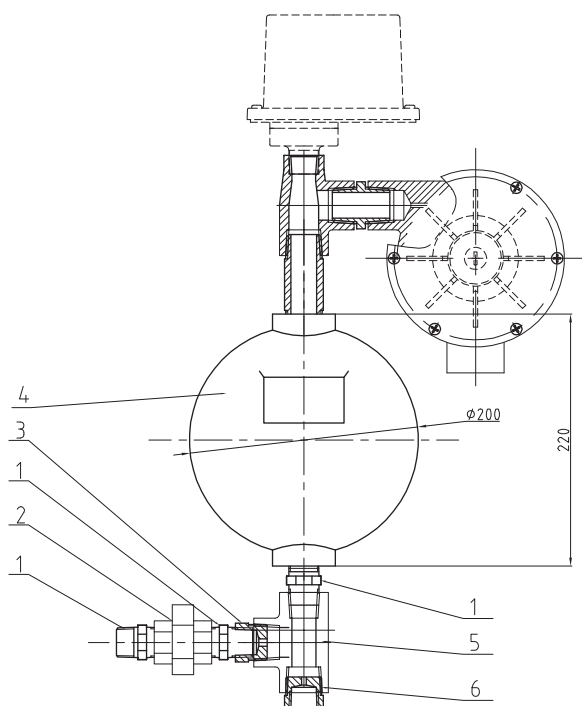


DIMENSIONS (mm)					
Size		DN80(3"	DN100(4"	DN150(6"	DN200(8"
L	(mm)	257	270	340	432
	(Inch)	10.12	10.63	13.39	17.01

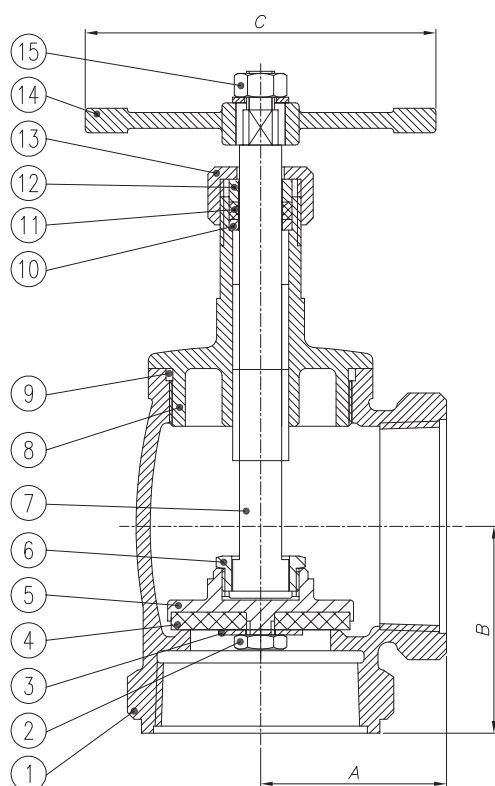
Nº	DEFINITION	MATERIAL	ASTM
1	Frame	Ductil iron	A536 65-45-12
2	Cover	Ductil iron	A536 65-45-12
3	Joint	Rubber	EPDM
4	Screw	Steel carbon	A307B
5	Axis	Stainless Steel	AISI 304
6	Dock	Stainless Steel	AISI 304
7	Disk	Ductil iron	A536 65-45-12
8	Disk ring	Goma	EPDM
9	Seat	Brass	B62 C83600
10	Retainer	Brass	B16 C36000
11	Screw	Stainless Steel	A2-70



Nº	SPECIFICATION	MATERIAL
1	Valve	See Above
2	2" NPT Pipe Fitting	Malleable iron
3	2" NPT Street Elbows	Malleable iron
4	½" Angle Valve	Brass
5	½" NPT Screwed Pipe	Steel carbon
6	½" Cone Union	Malleable iron
7	½" NPT Screwed Pipe	Steel carbon
8	½" Straight Tees	Malleable iron
9	½" x ¼" Reducers	Malleable iron
10	¼" NPT Screwed Pipe	Steel carbon
11	¼" 90° Elow	Malleable iron
12	¼" Ball Valve	Brass
13	Pressure Gage	-
14	½" NPT Screwed Pipe	Steel carbon
15	½" Check Valve	Brass
16	½" NPT Screwed Pipe	Steel carbon
17	½" NPT Screwed Pipe	Steel carbon
18	½" NPT Screwed Pipe	Steel carbon
19	½" NPT Screwed Pipe	Steel carbon
20	½" NPT Screwed Pipe	Steel carbon
21	½" 90° Elow	Malleable iron
22	½" NPT Screwed Pipe	Steel carbon
23	½" NPT Screwed Pipe	Steel malleable
24	½" 90° Elow	Malleable iron
25	½" Ball Valve	Brass
26	½" NPT Screwed Pipe	Steel carbon
27	½" NPT Screwed Pipe	Steel carbon
28	½" NPT Screwed Pipe	Steel carbon
29	1-2" NPT Pipe Fitting	Malleable iron
30	1-2" Y-Strainer	Brass
31	1-2" 90° Elow	Malleable iron
32	½" NPT Screwed Pipe	Steel carbon
33	Pipe Fitting	AISI 304
34	Plug 1	Brass
35	Plug 2	Brass
36	¾" NPT Screwed Pipe	Steel carbon
37	Water Motor Gong	-
38	¾" NPT Screwed Pipe	Steel carbon
39	¾" x ½" 90° Reducing Elbow	Malleable iron
40	Pressure Switch	-



6	Plug 2	1	Brass	
5	1/2" Straight tees	1	Malleable iron	
4	Retard Chamber body	1	CI, ASTM A126 Class B	
3	Plug 1	1	Brass	
2	1/2" NPT Pipe fitting	1	Malleable iron	
1	1/2" Nipple	3	Brass	
No.	Part Name	QTY.	Material	



Size	1 1/4"	2"
Inlet/Outlet	1 1/4"-NPT	2"-NPT
A	45	53
B	44	59
C	77	97

Notes:
1. Working Pressure: 300 psi.

Item	Part Name	Material	ASTM Specification
1	Body	Brass	B124 C37700
2	Nut	Brass	B124 C37700
3	Washer	Brass	B124 C37700
4	Gasket	Rubber EPDM	D2000
5	Disc	Brass	B124 C37700
6	Disc Nut	Brass	B124 C37700
7	Stem	Brass	B124 C37700
8	Bonnet	Brass	B124 C37700
9	O-Ring	Rubber EPDM	D2000
10	Washer	Brass	B124 C37700
11	O-Ring	Rubber EPDM	D2000
12	Bushing	Brass	B124 C37700
13	Stem Nut	Brass	B124 C37700
14	Handwheel	Ductile Iron	A536 Grade 65-45-12
15	Nut	Stainless Steel	SS304

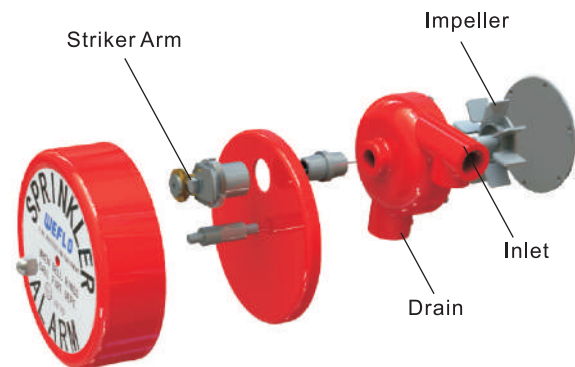


WATER MOTOR AND GONG

Water Motor Alarm

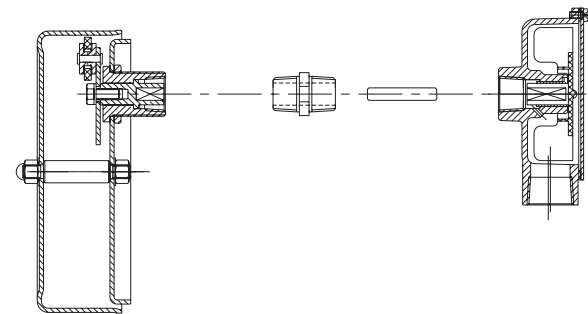
PRODUCT DESCRIPTION

- The Water Motor Alarm is a hydromechanical automatic sound warning device actuated by water flow. It sounds a continuous alarm while a deluge or Water Control Valve operates.
- Should be used indoors.
- UL listed.



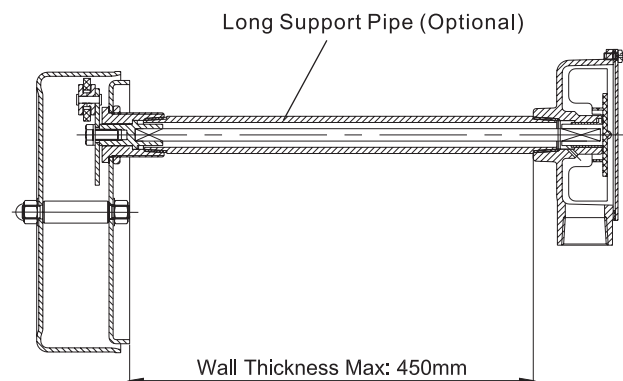
SPECIFICATIONS

- End Connections
- Inlet: 3/4" NPT
- Outlet Drain: 1" NPT
- Gong Specifications
- Outlet sound: 90 dB
- Working Pressure: 7 to 300 psi (0.5 to 20.7 bar).



OPERATION

When a Deluge Valve is activated, water flows through the valve's trim, discharges to a strainer and into the water motor inlet. From the inlet, the water flows through a nozzle which directs the stream to the impeller. The stream turns the impeller and drive shaft, causing the striker arm to rotate, thus producing a continuous alarm. The water is discharged through a 1" (25mm) drain outlet at the bottom of the impeller housing.



NOTES:



DELUGE FIRE PROTECTION SYSTEMS

Automatic Water Control Valve

TECHNICAL DETAILS

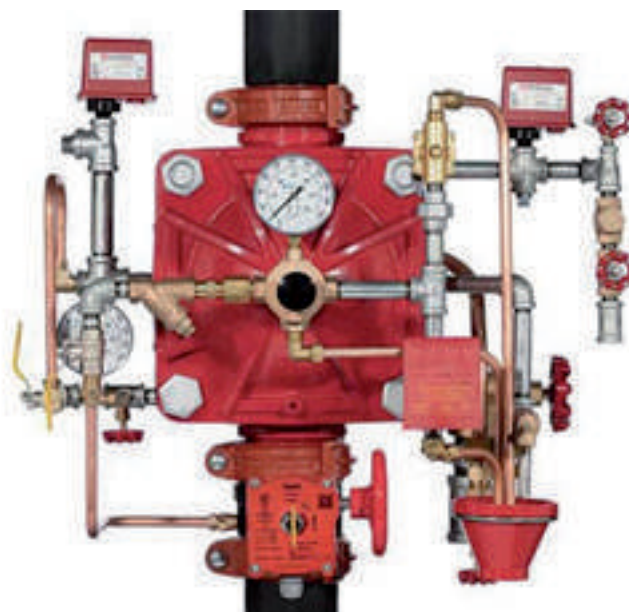
The TYCO DV-5a Automatic Water Control Valves are diaphragm type valves that can be used in deluge fire protection systems. When properly trimmed, the double seat design of the DV-5a Valve also provides actuation of fire alarms upon system operation.

The diaphragm style design of the DV-5a Valve allows external resetting, providing for easy resetting of a deluge system without having to open a valve handhole cover to manually reposition a clapper and/or latch mechanism.

Simply re-pressurizing the diaphragm chamber resets the valve.

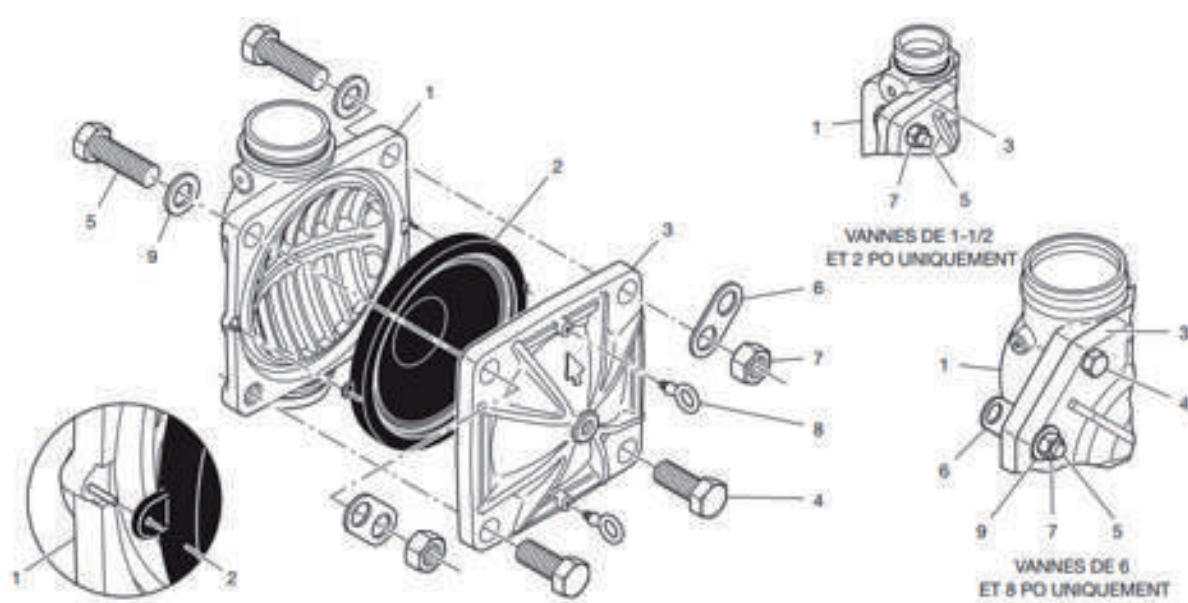
The DV-5a features internal and external coating of the valve to provide corrosion resistance. The external corrosion resistance of the epoxy coating permits the use of the DV-5a in corrosive atmospheres associated with many types of industrial processing plants and outdoor installations.

The DV-5a Valves are offered with the DV-5a Valve and separately ordered semi-assembled trim shown in Figures 7, 8, and 9, or, for ease of installation, with the DV-5a Valve completely trimmed with or without a System Main Control Valve.

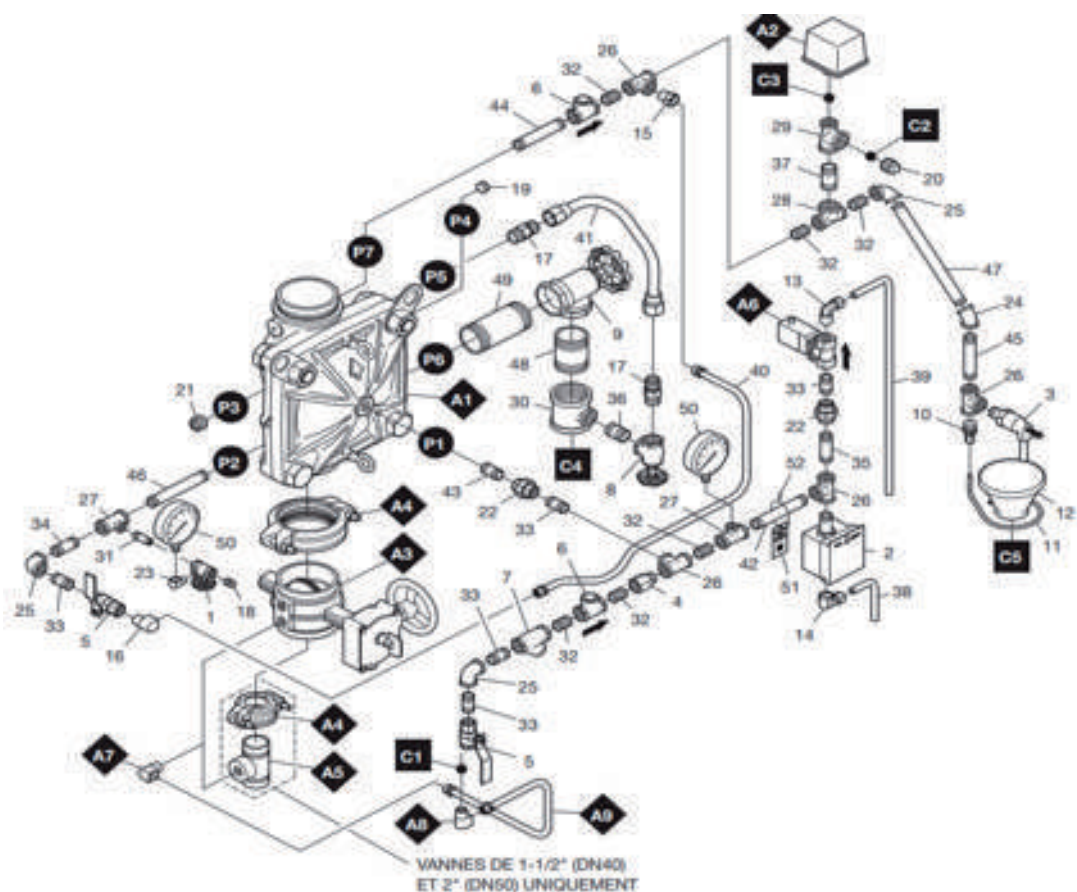


REFERENCE	DESCRIPTION
DV089GGEFM	3"-ELECTRICAL PILOT LINE – INCLUDES SOLENOID VALVE
DV114GGEFM	4"-ELECTRICAL PILOT LINE – INCLUDES SOLENOID VALVE
DV168GGEFM	6"-ELECTRICAL PILOT LINE – INCLUDES SOLENOID VALVE
DV219GGEFM	8"-ELECTRICAL PILOT LINE – INCLUDES SOLENOID VALVE

Nominal Valve Size ANSI Inches (DN)	Flange Drilling Specification											
	Nominal Dimensions in Inches and (mm)											
	ANSI B16.1 ^a (Class 125)			ISO 7005-2 (PN16)			JIS B 2211 (10K)			AS 2129		
	A	B	N	A	B	N	A	B	N	A	B	N
3 (80)	6.00 (152.4)	0.75 (19.0)	4	6.3 (160.0)	0.75 (19.0)	8	5.90 (150.0)	0.59 (146.0)	8	5.75 (146.0)	0.71 (18.0)	4
4 (100)	7.50 (190.5)	0.75 (19.0)	8	7.09 (180.0)	0.75 (19.0)	8	6.89 (240.0)	0.60 (15.0)	8	7.00 (178.0)	0.71 (18.0)	8
6 (150)	9.50 (241.3)	0.88 (22.2)	8	9.45 (240.0)	0.91 (23.0)	8	9.45 (240.0)	0.75 (19.0)	8	9.25 (235)	0.87 (22.0)	8
8 (200)	11.75 (298.5)	0.88 (22.2)	8	11.61 (295.0)	0.91 (23.0)	12	11.42 (290.0)	0.75 (19.0)	12	11.50 (292.0)	11.50 (292.0)	8

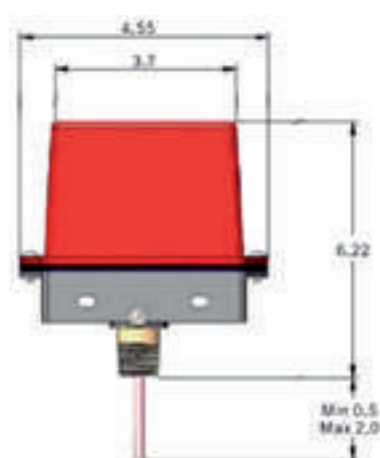


Nº	DESCRIPTION	Qty.	Nominal Valve Size ANSI Inch (DN)			
			3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)
1	Valve Body	1	N/R	N/R	N/R	N/R
2	Diaphragm	1	5450000030	5450000040	5450000060	5450000080
3	Diaphragm Cover	2	N/R	N/R	N/R	N/R
4	Hex Bolt, Short	2	545100002	545100003	545100004	545100003
5	Hex Bolt, Long	2	545100012	545100013	545100014	545100015
6	Lift Washer	2	545100021	545100022	545100023	545100022
7	Hex Nut	2	545100032	545100033	545100034	545100033
8	Hoist Ring	2	545100041	545100041	545100041	545100041
9	Flat Washer	2	545000024	545100025	545100026	545100025



Nº	CANT.	DESCRIPTION
1	1	¼" GAUGE TEST VALVE
2	1	MRA-1 MANUAL RESET ACTUATOR
3	1	MC-2 MANUAL CONTROL STATION
4	1	AD-3 AUTOMATIC DRAIN VALVE
5	2	½" BALL VALVE
6	2	½" SPRING LOADED CHECK VALVE
7	1	½" Y-STRAINER
8	1	¾" ANGLE VALVE
9	1	ANGLE VALVE
10	1	DRIP FUNNEL BRACKET CONNECTOR
11	1	DRIP FUNNEL BRACKET
12	1	DRIP FUNNEL
13	1	COMP. FITTING 90º
14	1	FITTING 90º
15	1	FLARE FITTING 90º
16	1	FLARE FITTING
17	2	MALE/MALE CONICAL FITTING
18	1	PIPE PLUG
19	1	PIPE PLUG, SOCKET HEAD
20	1	PIPE PLUG

Nº	CANT.	DESCRIPTION
21	1	PIPE PLUG, SOCKET HEAD
22	2	COUPLING
23	1	STREET ELBOW
24	1	ELBOW
25	3	ELBOW
26	4	TEE
27	2	REDUCING TEE
28	1	REDUCING TEE
29	1	REDUCING TEE
30	1	REDUCING TEE
31	1	PIPE NIPPLE
32	6	PIPE NIPPLE
33	5	PIPE NIPPLE
34	1	PIPE NIPPLE
35	1	PIPE NIPPLE
36	1	PIPE NIPPLE
37	1	PIPE NIPPLE
38	1	TUBING, MRA-1 DRAIN
39	1	TUBING, MC-2 DRAIN
40	1	TUBING ASSY, ALARM TEST INTERCONNECT
41	1	TUBING ASSY, SYSTEM DRAIN
42	1	PIPE NIPPLE
43	1	PIPE NIPPLE
44	1	PIPE NIPPLE
45	1	PIPE NIPPLE
46	1	PIPE NIPPLE
47	1	PIPE NIPPLE
48	1	PIPE NIPPLE
49	1	PIPE NIPPLE
50	2	WATER PRESSURE GAUGE, 300 PSI / 2000 kPa (AMER/APAC)
	2	WATER PRESSURE GAUGE, 20 bar / 2000 kPa (EMEA)
51	1	LABEL
52	1	LABEL WIRE
A1	1	DV-5A Valve
A2		
	1	WATERFLOW PRESSURE ALARM SWITCH, PS10-2 (AMER/APAC)
	1	WATERFLOW PRESSURE ALARM SWITCH, PS10-1 (EMEA)
A3	1	BUTTERFLY VALVE, 1-½" G x G
	1	BFV-300 BUTTERFLY VALVE, G x G
A4	2	FIGURE 577 RIGID GROOVED COUPLING
	1	FIGURE 577 RIGID GROOVED COUPLING
A5	1	GROOVE x THREADED OUTLET WELDED TEE
A6	1	INVERTED FLARE SHUT-OFF VALVE
A7	1	FLARE FITTING 90°
A8	1	FLARE FITTING 90° ½" NPT x ½" TUBE
A9	1	TUBING ASSY, DIAPHRAGM CHAMBER SUPPLY



SWITCH



SWITCH FOR OS&Y VALVES

Switch for OS&Y Gate Valves

FEATURES

- Weight: 0.6 kg.
- Enclosure:
Caver: Die cast, Aluminum Al lay, ASTM B85A04130. Finish: Red powder coat.
Base: Die cast, Aluminum Alloy, ASTM B85 A04130. All parts have corrosion resistant finishes.
- CaverTamper:
Tamper resistant screws.
Caver tamper switch available.
3 AMPS / 5 AMPS at 125/250 VAC.
- Contact Ratings:
WOSY-1: one set of SPDT.
WOSY-2: two sets of SPDT.
WOSY-3: two sets of SPDT and caver tamper switch.
10AMPS at 125/250 VAC.
2.5 AMPS at 30 VDC resistive.
- Conduit Entrances:
One knockouts and one half 1/2" conduit provided.
- Service Use: NFPA 13, 13D, 13R, 72.
- IP67.
- UL/ULC Listed
- FM Approved

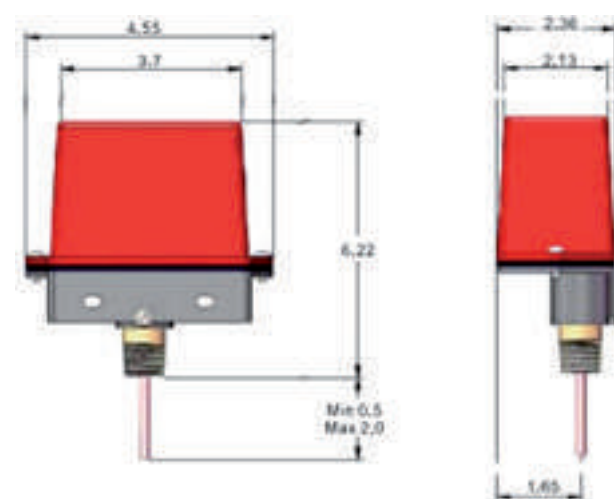
REFERENCE	DIAMETER
SWITCHOSY	Switch 1 for OS&Y valve
SWITCHOSY2	Switch 2 for OS&Y valve



Switch for Indicator Post and Stop Valves

FEATURES

- Weight: 0.45 kg.
- Enclosure:
Caver: Die cast, Aluminum Alloy, ASTM B85A04130. Finish: Red powder coat.
Base: Die cast, Aluminum Alloy, ASTM B85 A04130. All parts have corrosion resistant finishes.
- Caver tamper:
Tamper resistant screws.
Caver tamper switch available.
3AMPS / 5AMPS at 125/250 VAC.
- Contact Ratings:
WIP-1: one set of SPDT.
WIP-2: two sets of SPDT.
WIP-3: two sets of SPDT and caver tamper switch. 10 AMPS at 125/250 VAC.
2.5 AMPS at 30 VDC resistive.
- Conduit Entrances:
One knockouts and one half 1/2" conduit provided.
- IP 67. -UL/ULC Listed
- FM Approved





WATERFLOW DETECTOR

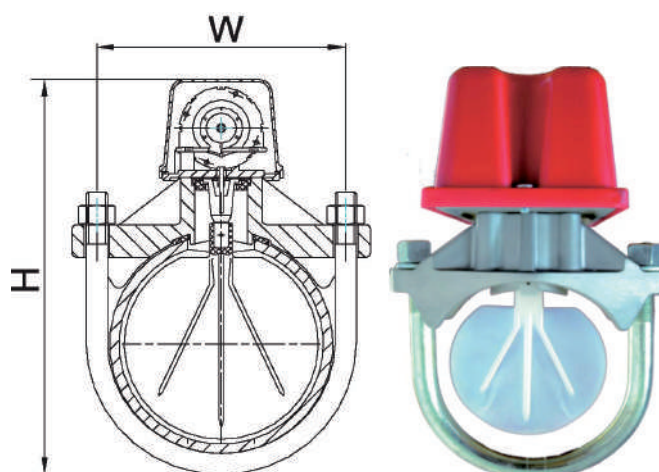
Mod. WFD

TECHNICAL DETAILS

- Equipped with tamper resistant screws to prevent unauthorized entry.
- Two synchronized switches are enclosed in a durable terminal block. Terminals are easy to read and wire.
- Built-In mechanical time delay feature; minimizing the risk of false alarms due to pressure surges or air trapped in the system.
- Offers excellent performance during riser vibrations caused by large in-rushes of water.
- Flow sensitivity range: UL/FM: 4- 10 GPM (15-38 LPM)
CE: 30-5 7L/min

WORKING PRESSURE: 450 PSI

WORKING TEMPERATURE: -0-68°C



REFERENCE	DESCRIPTION
WFD20	Waterflow Detector 2"
WFD25	Waterflow Detector 2 1/2"
WFD30	Waterflow Detector 3"
WFD40	Waterflow Detector 4"
WFD50	Waterflow Detector 5"
WFD60	Waterflow Detector 6"
WFD80	Waterflow Detector 8"

Size	DN 65		DN 80		DN 100	
	mm	inch	mm	inch	mm	inch
L	92	3.62	104	4.09	133	5.24
H	200	7.87	220	8.66	245	9.65
Nominal Pipe Size OD.	73	2.87	88.9	3.5	114.3	4.50
Pipe Wall Thickness	3.05-5.16	0.12-0.20	3.05-5.49	0.12-0.22	3.05-6.02	0.12-0.24

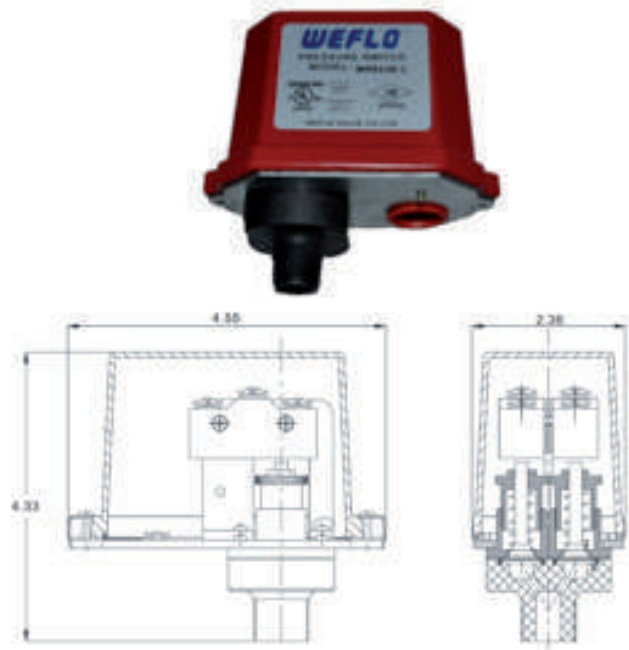
Size	DN 125		DN 150		DN 200	
	mm	inch	mm	inch	mm	inch
L	160	6.3	187	7.36	239	9.41
H	270	10.63	300	11.8	350	13.78
Nominal Pipe Size OD.	141.3	5.56	168.3	6.63	219.1	8.63
Pipe Wall Thickness	3.40-6.55	0.13-0.26	3.40-7.11	0.13-0.28	3.76-8.18	0.15-0.32

Size	1"		1 1/2"	
	mm	inch	mm	inch
L	93.2	3.67	93.2	3.67
H	110	4.33	110	4.33
D (Depth)	53.8	2.12	62.5	2.46

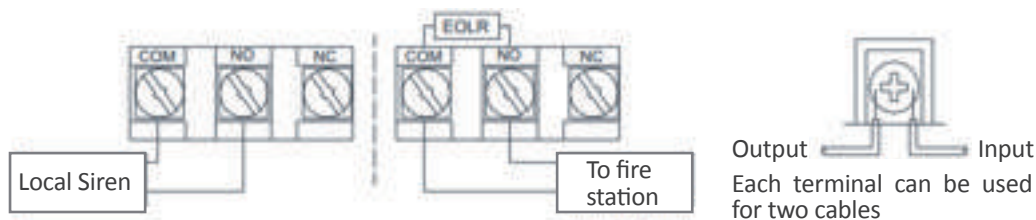
Size	1 1/2"		2"	
	mm	inch	mm	inch
L	93.2	3.67	93.2	3.67
H	110	4.33	110	4.33
D (Depth)	68.8	2.71	81.8	3.22

UL/FM

- Maximum Adjustment Pressure Range:
WPS10-1 / WPS10-2: 4-20 psi.
WPS40-1 / WPS40-2: 10-100 psi.
WPS120-1 / WPS120-2: 10-200 psi.
- Factory Setting:
WPS10-1, WPS10-2: 4-8 psi.
WPS40-1: operates at decreasing pressure at 30 psi.
WPS40-2: operates at increasing pressure at 50 psi and decreasing pressure 30 psi. WPS120-1: operates at decreasing pressure at 11 O psi.
WPS120-2: operates at increasing pressure at 130 psi and decreasing pressure 11 O psi.
- Approximate Differential:
WPS10-1 / WPS10-2: 3 psi throughout range.
WPS40-1 / WPS40-2: 3 psi@ 1 O psi & 6psi@ 100 psi.
WPS120-1 / WPS120-2: 3 psi@ 1 O psi & 9 psi @200 psi.
- Contact Rating: 1 OA@ 125/250VAC, 2.5A@ 30VDC.
- IP 66.
- Listed UL/ULC
- Approved FM



RANGE OF 0.7 TO 4.1 BAR – THREAD ½" NPT	
REFERENCE	DESCRIPTION
EPS40-1	Pressure EPS40 - 1 contact
EPS40-2	Pressure EPS40 - 2 contacts

[illegible]



PRESSURE GAUGES

Mod. 111.10SP 411

TECHNICAL DETAILS

- EN 837-1 & ASME B40.100.
- Accuracy class.
- $\pm 3/2/3\%$ of span (ASME B40.100 Grade B).

WORKING PRESSURE

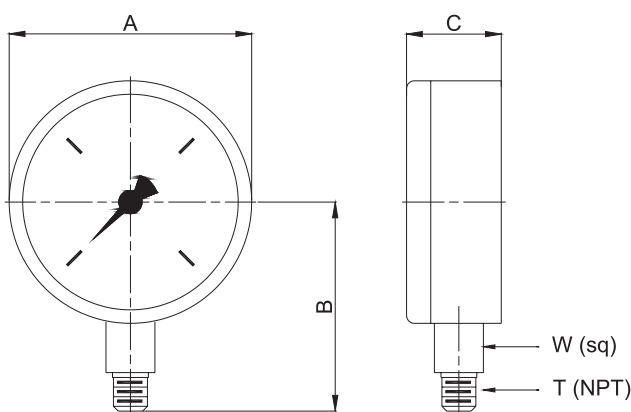
- 0/80 psi, retard to 250 psi (air).
- 0/300 psi (water).

WORKING TEMPERATURE

- Ambient: -40°F to 140°F (-40°C to 60°C).
- Media: 140°F (+60°C) maximum.

MATERIAL SPECIFICATIONS

- Bourdon Tube
- Material: Copper Alloy
- C-type
- Pressure Connection
- Material: Copper Alloy
- 1/4"NPT Lower Mount (LM)
- Movement
- Copper Alloy
- Dial
- White Aluminum with Stop Pin; Black and Red Lettering.
- Pointer
- Black Aluminum
- Case
- Black Polycarbonate
- Window
- Snap-in Clear Polycarbonate
- Approvals
- UL Usted (UL-393)
- FM Approved
- Temperature Error
- Additional error when temperature changes from reference temperature of 68°F (20°C) +0.4% for every 18°F (1°C) rising or falling. Percentage of Span.



- Fire Sprinkles Systems
- Suitable for all media that will not obstruct the pressure system or attack copper alloy parts
- UL Usted (UL-393), United States and Canada
- Factory Mutual (FM) Approved
- Reliable and Economical

SIZE	A	B	C	T	W
4	100/4.0	71/2.79	30/1.18	1/4"	14/0.55

NOTES:



RUBBER EXPANSION JOINT



SINGLE SPHERE RUBBER EXPANSION JOINT

Mod. GISAANTB

SPECIFICATIONS

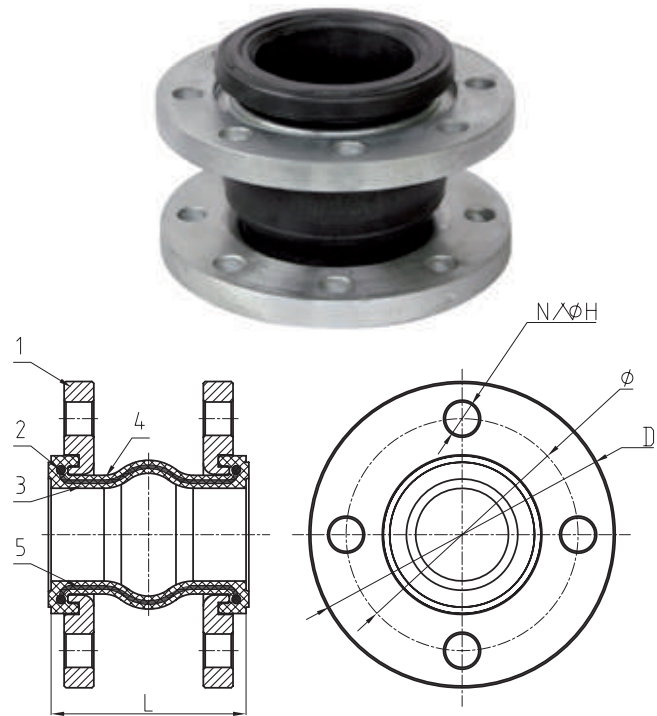
- With single structure so that the vibration absorption is better and noise reduction efficiency is significant.
- High working pressure, anti-burst and good elasticity.
- To avoid damage caused by stretching, compressing, deflecting or displacing of pipes.
- Carbon steel flanges, Zinc plated to B84504 PN 16 (Other flanges available).
- EPDM rubber suitable for hot water, steam, oxidant, animal and vegetable oils. Good for high and low temperature applications.
- NBR is suitable for most hydrocarbons, good for high and hydraulic fluids. No! good for sunlight ageing, ozone and flame.
- Neoprene suitable for water, sewage, oxidant and non-aromatic hydrocarbons. Good for oil resistance and weathering.

WORKING PRESSURE

- Size DN32 to DN300:
- Working pressure 16 bar.
- Bursting pressure 48bar.
- Vacuum rating 750mmHg.

WORKING PRESSURE

- Size DN32 to DN600:
- Working pressure 10 bar.
- Bursting pressure 30 bar.
- Vacuum rating 500mmHg.

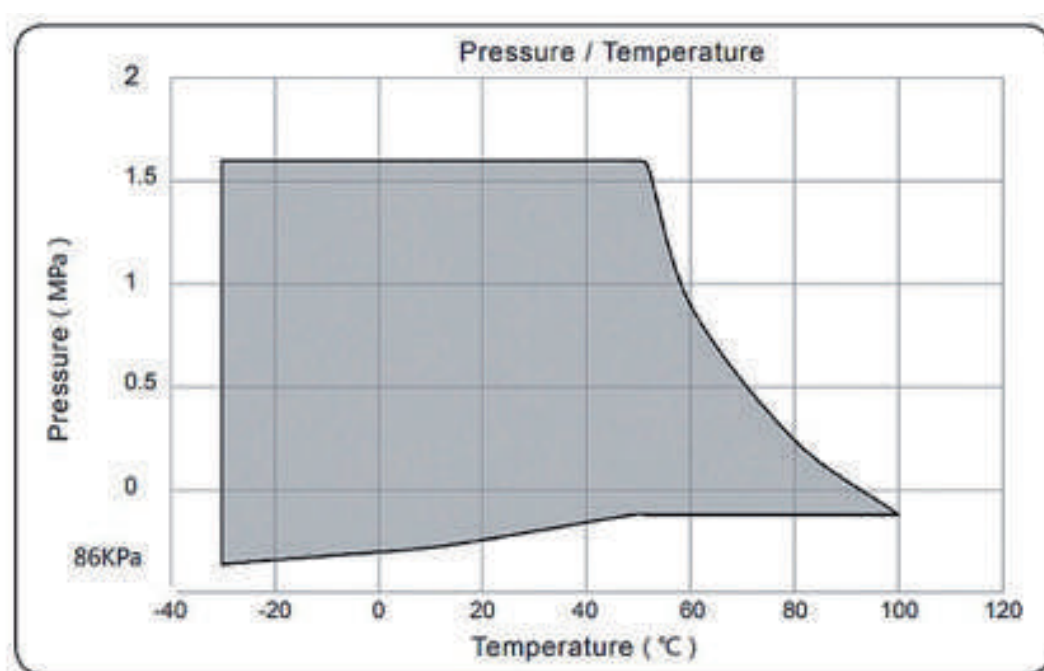


REFERENCE	DESCRIPTION	Ø NOMINAL	
		(Inch)	(mm)
GISAANTB11/4"	Single Sphere Rubber Expansion joint	1 ¼"	32
GISAANTB11/2"	Single Sphere Rubber Expansion joint	1 ½"	40
GISAANTB2"	Single Sphere Rubber Expansion joint	2"	50
GISAANTB21/2"	Single Sphere Rubber Expansion joint	2 ½"	65
GISAANTB3"	Single Sphere Rubber Expansion joint	3"	80
GISAANTB4"	Single Sphere Rubber Expansion joint	4"	100
GISAANTB5"	Single Sphere Rubber Expansion joint	5"	125
GISAANTB6"	Single Sphere Rubber Expansion joint	6"	150
GISAANTB8"	Single Sphere Rubber Expansion joint	8"	200
GISAANTB10"	Single Sphere Rubber Expansion joint	10"	250

Nº	PART	STANDARD SPECIFICATION
1	Flange	Carbon Steel
2	Reinforcing wire	Spring Steel Wire
3	Interior Rubber	EPDM
4	Exterior Rubber	EPDM
5	Carcass	Nylon Cord Fabric



DN		Dimensions				Axial (mm)		Lateral Movement (mm)	Angular Movement
Inch	mm	L	D	Ø	N-ØH	Elongation	Compression		
1 ¼"	32	95	140	100	4X18	6	10	10	25
1 ½"	40	95	150	110	4X18	6	10	10	25
2"	50	105	165	125	4X18	6	10	10	25
2 ½"	65	115	185	145	8X18	8	15	12	25
3"	80	135	200	160	8X18	8	15	12	25
4"	100	150	220	180	8X18	12	20	16	15
5"	125	165	250	210	8X18	12	20	16	15
6"	150	180	285	240	8X22	12	20	16	15
8"	200	210	340	295	12X22	12	20	16	15
10"	250	230	405	355	12X26	14	30	25	8



NOTES:



DOUBLE SPHERE UNION TYPE RUBBER EXPANSION JOINT

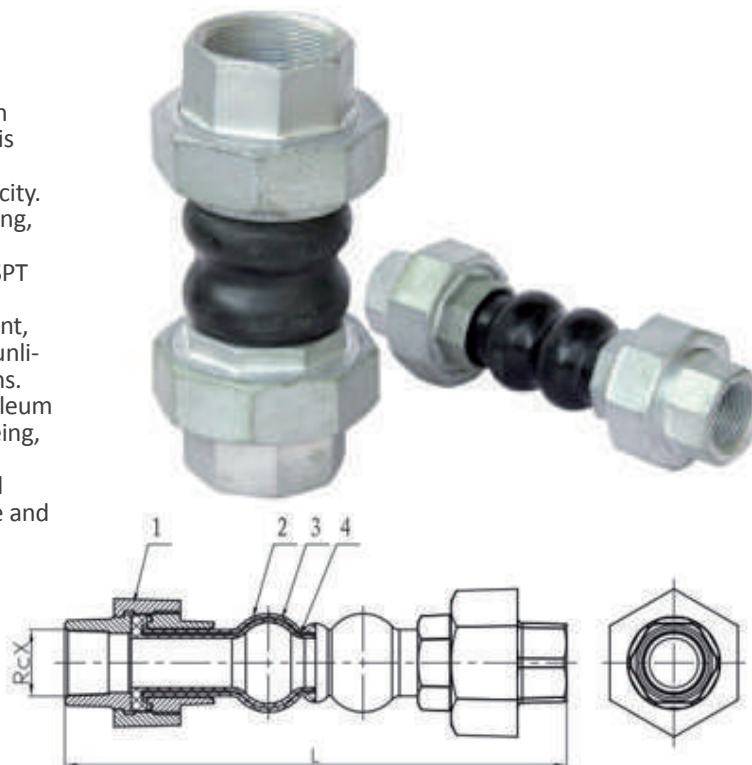
Mod. GISAANTR

SPECIFICATIONS

- With multi - sphere structure so that the vibration absorption is better and noise reduction efficiency is significant.
- High working pressure, anti-burst and good elasticity.
- To avoid damage caused by stretching, compressing, deflecting or displacing of pipes.
- Malleable iron fittings with Zinc plated, NPT or BSPT thread.
- EPDM rubber suitable far hot water, steam, oxidant, animal and vegetable oils. Excellent resistance to sunlight. Good far high and low temperature applications.
- NBR is suitable far most hydrocarbons, oils, petroleum fuels and hydraulic fluids. Not good far sunlight ageing, ozone and flame.
- Neoprene suitable far water, sewage, oxidant and non-aromatic hydrocarbons. Good far oil resistance and weathering.

WORKING PRESSURE

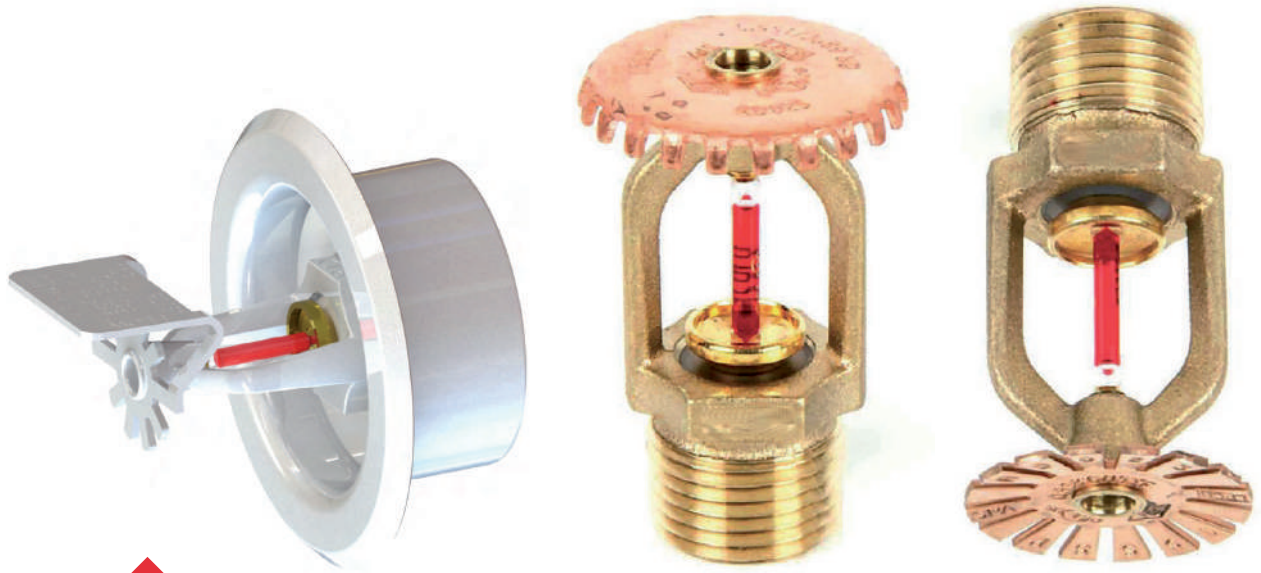
- Working pressure 10 bar.
- Bursting pressure 30 bar.
- Vacuum rating 400mmHg.



REFERENCE	DESCRIPTION	INCH
GISAANTR1"	Double Sphere Union Type Rubber Expansion Joint	1"
GISAANTR1 1/4"	Double Sphere Union Type Rubber Expansion Joint	1 1/4"
GISAANTR1 1/2"	Double Sphere Union Type Rubber Expansion Joint	1 1/2"
GISAANTR 2	Double Sphere Union Type Rubber Expansion Joint	2"
GISAANTR2 1/2"	Double Sphere Union Type Rubber Expansion Joint	2 1/2"

PART Nº	PART	STANDARD SPECIFICATION
1	Flange	Malleable iron
2	Interior Rubber	EPDM
3	Carcass	Nylon Cord Fabric
4	Exterior Rubber	EPDM

DN		Long. L	Thread Rc X	Axial (mm)		Lateral Movement (mm)	Angular Movement
Inch	mm			Elongation	Compression		
1"	25	200	Rc 1	6	22	22	40
1 1/4"	32	200	Rc 1 1/4	6	22	22	40
1 1/2"	40	200	Rc 1 1/2	6	22	22	40
2"	50	200	Rc 2	6	22	22	40
2 1/2"	65	240	Rc 2 1/2	6	22	22	40



SPRINKLERS



CONVENTIONAL, PENDENT AND UPRIGHT SPRINKLERS ½" K80

STANDARD RESPONSE

Thread NPT - Approval FM/UL/LPCB/VdS/CE

REFERENCE	MODEL	FINISHED	TEMPERATURE
SSC080CPS1	PENDENT	BRASS	57°C
SSC080CPS2	PENDENT	BRASS	68°C
SSC080CPS3	PENDENT	BRASS	79°C
SSC080CPS4	PENDENT	BRASS	93°C
SSC080CPS5	PENDENT	BRASS	141°C
SSC080CCS1	PENDENT	CHROME	57°C
SSC080CCS2	PENDENT	CHROME	68°C
SSC080CCS3	PENDENT	CHROME	79°C
SSC080CCS4	PENDENT	CHROME	93°C
SSC080CCS5	PENDENT	CHROME	141°C
SSC080CWS1	PENDENT	WHITE	57°C
SSC080CWS2	PENDENT	WHITE	68°C
SSC080CWS3	PENDENT	WHITE	79°C
SSC080CWS4	PENDENT	WHITE	93°C
SSC080CWS5	PENDENT	WHITE	141°C
SSC080MPS1	UPRIGHT	BRASS	57°C
SSC080MPS2	UPRIGHT	BRASS	68°C
SSC080MPS3	UPRIGHT	BRASS	79°C
SSC080MPS4	UPRIGHT	BRASS	93°C
SSC080MPS5	UPRIGHT	BRASS	141°C
SSC080MCS1	UPRIGHT	CHROME	57°C
SSC080MCS2	UPRIGHT	CHROME	68°C
SSC080MCS3	UPRIGHT	CHROME	79°C
SSC080MCS4	UPRIGHT	CHROME	93°C
SSC080MCS5	UPRIGHT	CHROME	141°C
SSC080MWS1	UPRIGHT	WHITE	57°C
SSC080MWS2	UPRIGHT	WHITE	68°C
SSC080MWS3	UPRIGHT	WHITE	79°C
SSC080MWS4	UPRIGHT	WHITE	93°C
SSC080MWS5	UPRIGHT	WHITE	141°C



PENDENT K80 BRASS



UPRIGHT K80 BRASS

PRODUCT DESCRIPTION

Mark CE, Approval LPCB, FM y VdS, Listed UL.

They are upright and pendent sprinklers, they are standard response or rapid with frangible glass bulb for automatic sprinklers.

Upright sprinklers produces a hemispherical water distribution pattern below the deflector. In the event of a fire, the heat causes the fluid in the glass bulb to expand, which breaks the glass. Water flows from the orifice into the sprinkler deflector which spreads the water in an even spray pattern that extinguishes or controls the fire.

OPERATING TEMPERATURES	
Nominal Operating Temperature	Bulb Colour
57°C (135°F)	Orange
68°C (155°F)	Red
79°C (175°F)	Yellow
93°C (200°F)	Green
141°C (286°F)	Blue



CONVENTIONAL, PENDENT AND UPRIGHT SPRINKLERS ½" K80

QUICK RESPONSE

Thread NPT - Approval FM/UL/LPCB/VdS/CE

REFERENCE	MODEL	FINISHED	TEMPERATURE
SSC080CPQ1	PENDENT	BRASS	57°C
SSC080CPQ2	PENDENT	BRASS	68°C
SSC080CPQ3	PENDENT	BRASS	79°C
SSC080CPQ4	PENDENT	BRASS	93°C
SSC080CPQ5	PENDENT	BRASS	141°C
SSC080CCQ1	PENDENT	CHROME	57°C
SSC080CCQ2	PENDENT	CHROME	68°C
SSC080CCQ3	PENDENT	CHROME	79°C
SSC080CCQ4	PENDENT	CHROME	93°C
SSC080CCQ5	PENDENT	CHROME	141°C
SSC080CWQ1	PENDENT	WHITE	57°C
SSC080CWQ2	PENDENT	WHITE	68°C
SSC080CWQ3	PENDENT	WHITE	79°C
SSC080CWQ4	PENDENT	WHITE	93°C
SSC080CWQ5	PENDENT	WHITE	141°C
SSC080MPQ1	UPRIGHT	BRASS	57°C
SSC080MPQ2	UPRIGHT	BRASS	68°C
SSC080MPQ3	UPRIGHT	BRASS	79°C
SSC080MPQ4	UPRIGHT	BRASS	93°C
SSC080MPQ5	UPRIGHT	BRASS	141°C
SSC080MCQ1	UPRIGHT	CHROME	57°C
SSC080MCQ2	UPRIGHT	CHROME	68°C
SSC080MCQ3	UPRIGHT	CHROME	79°C
SSC080MCQ4	UPRIGHT	CHROME	93°C
SSC080MCQ5	UPRIGHT	CHROME	141°C
SSC080MWQ1	UPRIGHT	WHITE	57°C
SSC080MWQ2	UPRIGHT	WHITE	68°C
SSC080MWQ3	UPRIGHT	WHITE	79°C
SSC080MWQ4	UPRIGHT	WHITE	93°C
SSC080MWQ5	UPRIGHT	WHITE	141°C



PENDENT K80 BRASS



UPRIGHT K80 BRASS

TECHNICAL DETAILS

K factor	K80 (K5.6)
Standard Orifice Size	15mm (1/2")
Thread size	½" NPT (R1/2" – ½" BSP T available on special order)
Max. Working Pressure	12 bar (175psi)
Min. Operating Pressure	0.5 bar (7psi)
Factory Pressure Test	100% at 34 bar (500psi)
Weight	57gr (2oz)
Fitted with Bulb Protector	Remove after installing sprinkler

PENDENT SPRINKLER

Spray Pendent for installing only in pendent position giving hemispherical discharge below the deflector with little or no water being discharged upwards.

UPRIGHT SPRINKLER

Spray Upright for installing only in upright position giving hemispherical discharge below the deflector with little or no water being discharged upwards.

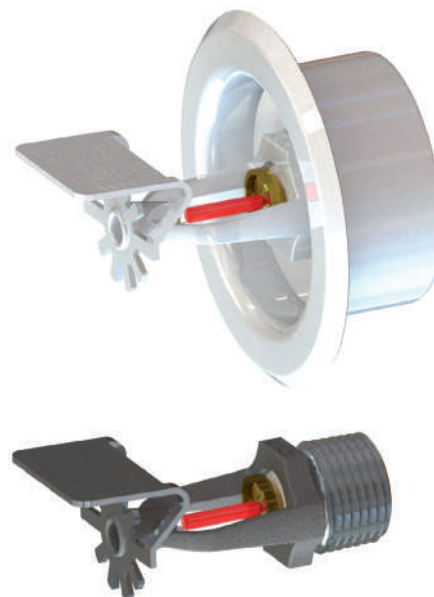


HORIZONTAL SIDEWALL SPRINKLERS ½" K80

STANDARD RESPONSE

Approval FM/UL

REFERENCE	MODEL	FINISHED	TEMPERATURE
SSC080PPS1	SIDEWALL	BRASS	57°C
SSC080PPS2	SIDEWALL	BRASS	68°C
SSC080PPS3	SIDEWALL	BRASS	79°C
SSC080PPS4	SIDEWALL	BRASS	93°C
SSC080PPS5	SIDEWALL	BRASS	141°C
SSC080PCS1	SIDEWALL	CHROME	57°C
SSC080PCS2	SIDEWALL	CHROME	68°C
SSC080PCS3	SIDEWALL	CHROME	79°C
SSC080PCS4	SIDEWALL	CHROME	93°C
SSC080PCS5	SIDEWALL	CHROME	141°C
SSC080PWS1	SIDEWALL	WHITE	57°C
SSC080PWS2	SIDEWALL	WHITE	68°C
SSC080PWS3	SIDEWALL	WHITE	79°C
SSC080PWS4	SIDEWALL	WHITE	93°C
SSC080PWS5	SIDEWALL	WHITE	141°C



PRODUCT DESCRIPTION

Standard/Quick Response frangible glass bulb automatic sprinklers. They are CE Marked, LPCB, VdS, FM approved, UL listed, standard orifice fire sprinklers for installation in fire sprinkler systems. In a fire condition the heat causes the fluid in the glass bulb to expand which shatters the glass and releases the spring seal assembly. Water flows from the orifice onto the sprinkler deflector which diffuses the water into a uniform spray pattern in order to control the fire.

Sidewall Sprinklers are designed for installation along a wall or side of a beam beneath a smooth ceiling. Available in Standard Response and Quick Response.

TECHNICAL DETAILS

K factor	K80 (K5.6)
Standard Orifice Size	½" NPT
Max. Working Pressure	12 bar (175 psi)
Min. Operating Pressure	0.5 bar (7 psi)
Factory Pressure Test	34 bar (500 psi)
Weight	60.6gr
Fitted with Bulb Protector	Remove after installing sprinkler
Baffle Distance - Ceiling (UL)	4" a 12" – 100mm a 300mm

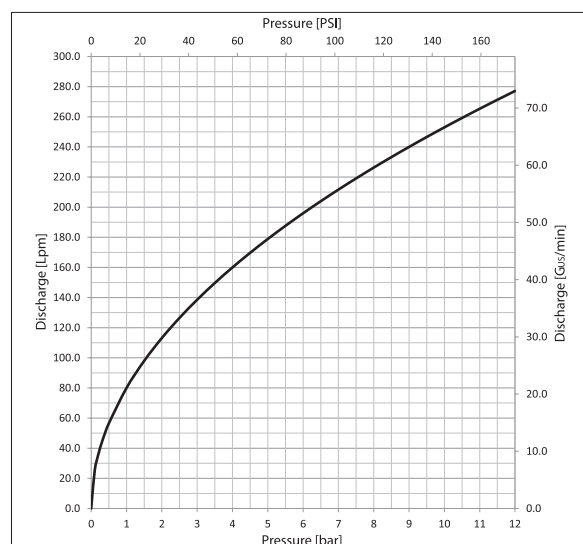
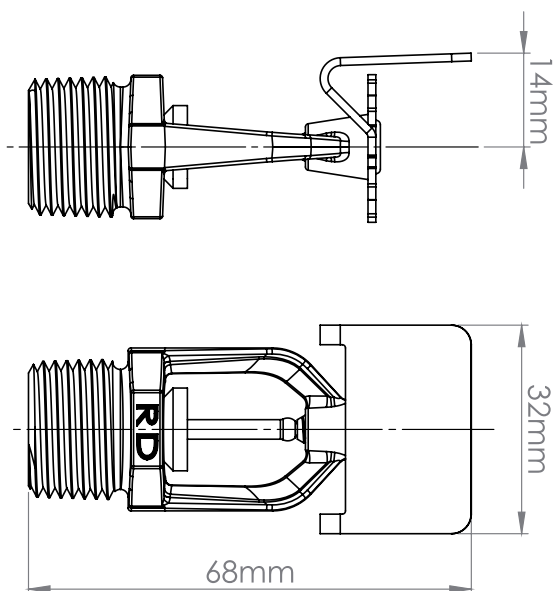
OPERATING TEMPERATURES

Nominal Operating Temperature	Bulb Colour
57°C (135°F)	Orange
68°C (155°F)	Red
79°C (175°F)	Yellow
93°C (200°F)	Green
141°C (286°F)	Blue



DESIGN COVERAGE

For sprinkler coverage area and placement refer to NFPA 13, EN12845 or CEA4001 standards or other Installation rules for automatic sprinkler systems as required by the authority having jurisdiction.



INSTALLATION

Sprinklers are designed to be installed only in the horizontal position with the deflector parallel to the ceiling. The engraved word TOP on the deflector must be facing towards the ceiling.

1. All Rapidrop sprinklers must be installed and maintained in compliance with this document and according to the installation standards, or local rules and requirements which are specified by the authority having jurisdiction. It is the installer's responsibility to conform to such standards and requirements, deviations from the requirements will void any warranty.
2. To ensure that the minimum flow requirement is met, the system piping must be correctly sized.
3. To avoid mechanical damage the sprinklers must be installed after the piping is in place. Any damaged sprinklers must be replaced. If there is a leak from the sprinkler thread, remove the sprinkler, apply new pipe joint compound or tape and re-install.
4. Always check that the sprinklers are the correct model, style, orifice size, temperature and sensitivity ratings prior to commencing installation.
5. Use only non-hardening pipe joint compound or PTFE tape. Apply to external threads only.
6. Hand tighten the sprinkler into the fitting, then use the correct sprinkler wrench to tighten the sprinkler into the fitting. Ensure that the sprinkler wrench stays on the wrench flats while tightening the sprinkler.
7. Remove sprinkler bulb protector after the sprinkler is installed and before the system is put into service.

CARE AND MAINTENANCE

Sprinklers must be carefully handled and stored where temperatures will not exceed 100 F/38 C and they must never be painted, plated, coated or otherwise modified after leaving the factory. Do not install sprinklers which have been dropped or damaged in any way. The installation rules required by the authority having jurisdiction contain guidelines on minimum inspection and maintenance requirements to assist owners fulfilling their responsibility to ensure sprinklers and sprinkler systems are maintained in proper operating condition.



UPRIGHT AND PENDENT SPRINKLERS 3/4" K115

STANDARD RESPONSE

Thread NPT - Approval FM/UL/LPCB/VdS/CE

REFERENCE	MODEL	FINISHED	TEMPERATURE
SSC115CPS1	PENDENT	BRASS	57°C
SSC115CPS2	PENDENT	BRASS	68°C
SSC115CPS3	PENDENT	BRASS	79°C
SSC115CPS4	PENDENT	BRASS	93°C
SSC115CPS5	PENDENT	BRASS	141°C
SSC115CCS1	PENDENT	CHROME	57°C
SSC115CCS2	PENDENT	CHROME	68°C
SSC115CCS3	PENDENT	CHROME	79°C
SSC115CCS4	PENDENT	CHROME	93°C
SSC115CCS5	PENDENT	CHROME	141°C
SSC115CWS1	PENDENT	WHITE	57°C
SSC115CWS2	PENDENT	WHITE	68°C
SSC115CWS3	PENDENT	WHITE	79°C
SSC115CWS4	PENDENT	WHITE	93°C
SSC115CWS5	PENDENT	WHITE	141°C
SSC115MPS1	UPRIGHT	BRASS	57°C
SSC115MPS2	UPRIGHT	BRASS	68°C
SSC115MPS3	UPRIGHT	BRASS	79°C
SSC115MPS4	UPRIGHT	BRASS	93°C
SSC115MPS5	UPRIGHT	BRASS	141°C
SSC115MCS1	UPRIGHT	CHROME	57°C
SSC115MCS2	UPRIGHT	CHROME	68°C
SSC115MCS3	UPRIGHT	CHROME	79°C
SSC115MCS4	UPRIGHT	CHROME	93°C
SSC115MCS5	UPRIGHT	CHROME	141°C
SSC115MWS1	UPRIGHT	WHITE	57°C
SSC115MWS2	UPRIGHT	WHITE	68°C
SSC115MWS3	UPRIGHT	WHITE	79°C
SSC115MWS4	UPRIGHT	WHITE	93°C
SSC115MWS5	UPRIGHT	WHITE	141°C



Standard Pendent K115



Standard Upright K115

NOTES:



UPRIGHT AND PENDENT SPRINKLERS ¾" K115

QUICK RESPONSE

Thread NPT - Approval FM/UL/LPCB/VdS/CE

REFERENCE	MODEL	FINISHED	TEMPERATURE
SSC115CPQ1	PENDENT	BRASS	57°C
SSC115CPQ2	PENDENT	BRASS	68°C
SSC115CPQ3	PENDENT	BRASS	79°C
SSC115CPQ4	PENDENT	BRASS	93°C
SSC115CPQ5	PENDENT	BRASS	141°C
SSC115CCQ1	PENDENT	CHROME	57°C
SSC115CCQ2	PENDENT	CHROME	68°C
SSC115CCQ3	PENDENT	CHROME	79°C
SSC115CCQ4	PENDENT	CHROME	93°C
SSC115CCQ5	PENDENT	CHROME	141°C
SSC115CWQ1	PENDENT	WHITE	57°C
SSC115CWQ2	PENDENT	WHITE	68°C
SSC115CWQ3	PENDENT	WHITE	79°C
SSC115CWQ4	PENDENT	WHITE	93°C
SSC115CWQ5	PENDENT	WHITE	141°C
SSC115MPQ1	UPRIGHT	BRASS	57°C
SSC115MPQ2	UPRIGHT	BRASS	68°C
SSC115MPQ3	UPRIGHT	BRASS	79°C
SSC115MPQ4	UPRIGHT	BRASS	93°C
SSC115MPQ5	UPRIGHT	BRASS	141°C
SSC115MCQ1	UPRIGHT	CHROME	57°C
SSC115MCQ2	UPRIGHT	CHROME	68°C
SSC115MCQ3	UPRIGHT	CHROME	79°C
SSC115MCQ4	UPRIGHT	CHROME	93°C
SSC115MCQ5	UPRIGHT	CHROME	141°C
SSC115MWQ1	UPRIGHT	WHITE	57°C
SSC115MWQ2	UPRIGHT	WHITE	68°C
SSC115MWQ3	UPRIGHT	WHITE	79°C
SSC115MWQ4	UPRIGHT	WHITE	93°C
SSC115MWQ5	UPRIGHT	WHITE	141°C



Standard Pendent K115



Standard Upright K115

NOTES:

PRODUCT DESCRIPTION

Are Standard/Quick Response frangible glass bulb automatic sprinklers. They are CE Marked, LPCB, VdS, FM approved, UL listed, standard orifice fire sprinklers for installation in fire sprinkler systems.

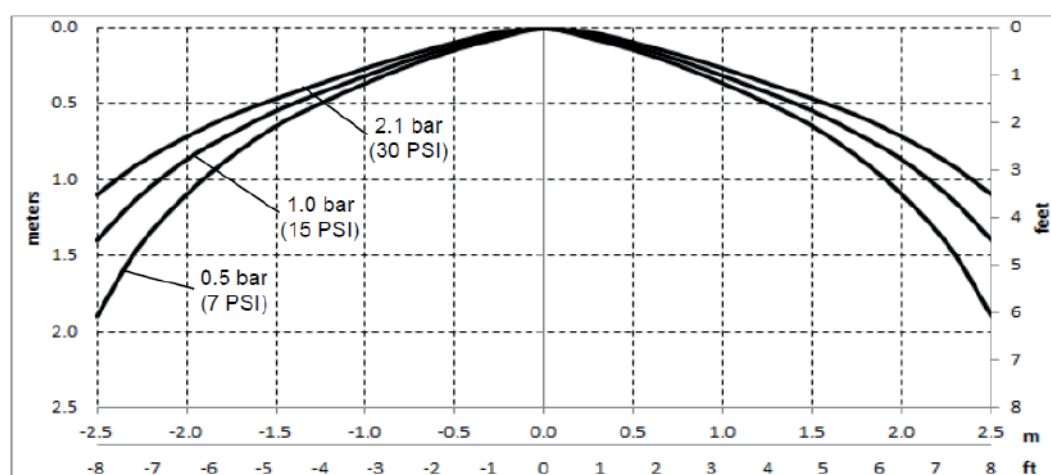
Sprinklers produce an hemispherical water distribution pattern below the deflector. In a fire condition the heat causes the fluid in the glass bulb to expand which shatters the glass and releases the spring seal assembly. Water flows from the orifice onto the sprinkler deflector which diffuses the water into a uniform spray pattern which extinguishes or controls the fire.

TECHNICAL DETAILS	
K factor	K115 (K8.0)
Standard Orifice Size	3/4" NPT, R3/4 (3/4" BSPT) available on special order
Max. Working Pressure	12 bar (175 psi)
Min. Operating Pressure	0.5 bar (7 psi)
Factory Pressure Test	34 bar (500 psi)
Weight	79gr
Fitted with Bulb Protector	Remove after installing sprinkler

OPERATING TEMPERATURES	
Nominal Operating Temperature	Bulb Colour
57°C (135°F)	Orange
68°C (155°F)	Red
79°C (175°F)	Yellow
93°C (200°F)	Green
141°C (286°F)	Blue

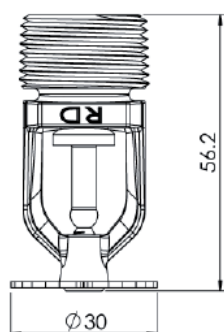
DESIGN COVERAGE

For sprinkler coverage area and placement refer to NFPA 13 or EN 12845 standards or other Installation rules for automatic sprinkler systems as required by the authority having jurisdiction. The following details are provided for information only.

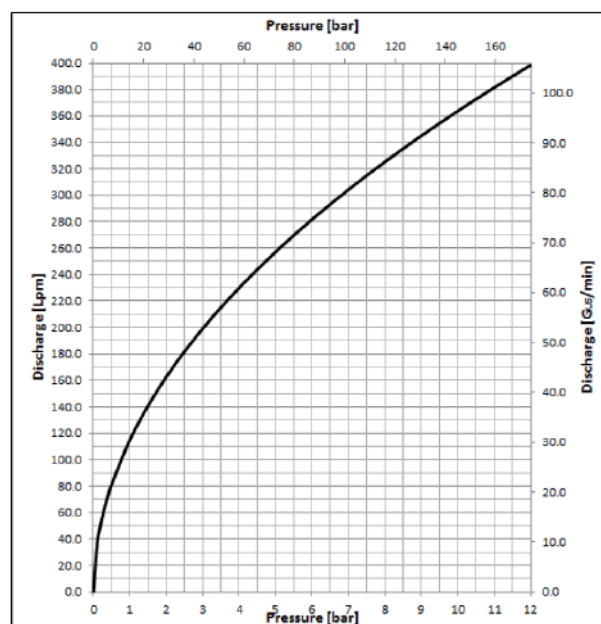
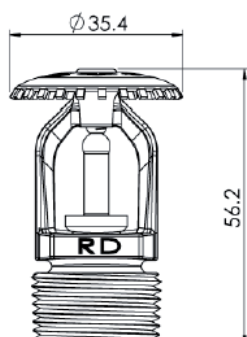




■ **Spray Pendent Sprinkler.** For installing only in pendent position giving hemispherical discharge below the deflector with little or no water being discharged upwards.



■ **Spray Upright Sprinkler.** For installing only in upright position giving hemispherical discharge below the deflector with little or no water being discharged upwards.



■ INSTALLATION

1. All Rapiddrop sprinklers must be installed and maintained in compliance with this document and according to the installation standards, or local rules and requirements which are specified by the authority having jurisdiction. It is the installer's responsibility to conform to such standards and requirements, deviations from the requirements will void any warranty.
2. To ensure that the minimum flow requirement is met, the system piping must be correctly sized.
3. To avoid mechanical damage the sprinklers must be installed after the piping is in place. Any damaged sprinklers must be replaced. If there is a leak from the sprinkler thread, remove the sprinkler, apply new pipe joint compound or tape and re-install.
4. Always check that the sprinklers are the correct model, style, orifice size, temperature and sensitivity ratings prior to commencing installation.
5. Upright sprinklers must be mounted in upright position and Pendent sprinklers must be mounted in pendent position.
6. Use only non-hardening pipe joint compound or PTFE tape. Apply to external threads only.
7. Hand tighten the sprinkler into the fitting, then use the correct sprinkler wrench to tighten the sprinkler into the fitting. Ensure that the sprinkler wrench stays on the wrench flats while tightening the sprinkler. A leak tight joint requires only 10 to 19 Nm (7 to 14 ft.lbs.) torque. i.e. a tangential force of 6.35 to 12.7kgs. (14 to 28 lbs.) delivered through a 150mm (6") handle will deliver adequate torque. Torque levels over 29 Nm (21 ft.lbs.) may distort the orifice seal and result in a leakage.
8. Remove sprinkler bulb protector after the sprinkler is installed and before the system is put into service.

■ CARE AND MAINTENANCE

Sprinklers must be carefully handled and stored where temperatures will not exceed 100 F/38 C and they must never be painted, plated, coated or otherwise modified after leaving the factory. Do not install sprinklers which have been dropped or damaged in any way. The installation rules required by the authority having jurisdiction contain guidelines on minimum inspection and maintenance requirements to assist owners fulfilling their responsibility to ensure sprinklers and sprinkler systems are maintained in proper operating condition.



COMMERCIAL FLAT CONCEALED SPRINKLER ½" K80

QUICK & STANDARD RESPONSE, STANDARD COVERAGE

Approval FM/UL

PRODUCT DESCRIPTION

Commercial Flat Concealed Sprinklers are automatic sprinklers of the compressed fusible solder type. These are decorative and quick/standard response. The frame of the sprinkler hides the deflector, gasket, etc., which is in turn concealed above the ceiling by the cover plate assembly. The cover plate has a flat profile, and its diameter is extremely small. The push-on/thread-on, thread-off design of the concealed cover plate assembly allows easy installation of the cover plate. Therefore, the Model RD105 should be your first choice when aesthetics is the major consideration for ultimate appeal and unbeatable performance is desired.

They are to be used in wet pipe sprinkler systems per NFPA 13 or as required by the authority having jurisdiction.

Has a 5.6 (80) K-factor. For extended installation flexibility, the Model RD105 provides 9.5mm (3/8 inch) vertical adjustment. This adjustment in installation decreases the need for precise cutting of the pipe that drops to the sprinkler and allows for a perfect fit with a range of pipe lengths. The heat sensitivity and water distribution design of Model RD105 allows for an increased chance of occupants' escape or evacuation in case of fire. However, fire sprinkler systems are not a substitute for fire safety awareness or fire safety construction required by building codes.



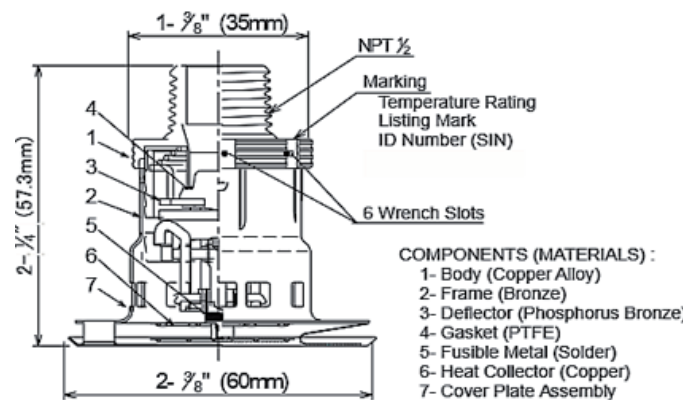
TECHNICAL DETAILS

Approvals	UL - QUICK RESPONSE FM – STANDARD RESPONSE
Maximum Working Pressure	12.1 bar (175 psi)
Minimum Operating Pressure	0.5bar (7psi) Requirement of cULus Listing, FM Approval and NFPA 13 standards
Discharge Coefficient	K80 (K5.6)
Temperature Rating	Sprinkler: 72°C / 162°F / Cover Plate: 60°C / 140°F (FM, UL) Sprinkler: 96°C / 205°F / Cover Plate: 72°C / 162°F (UL)
Vertical Adjustment	9.5 mm (3/8 pulg.)
Finishes	WHITE or CHROME

WARNINGS

The Model RD105 must be installed and maintained in accordance with the rules stated herein as well as in compliance with the applicable standards of the National Fire Protection Association regulations and the standards of any other authorities having jurisdiction. In the event of this condition, consult the Authorities Having Jurisdiction for guidance and approval. Failure to do so may impair the integrity of these devices.

It is the responsibility of the installing contractor to provide a copy of this document to the owner or his representative, and in turn, it is the obligation of the owner to provide a copy of this document to a succeeding owner. The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any related questions.





COMMERCIAL FLAT CONCEALED SPRINKLER ½" K80

STANDARD RESPONSE, STANDARD COVERAGE

Approval LPCB / CE

PRODUCT DESCRIPTION

The Model RD107 Commercial Flat Concealed Sprinklers are automatic sprinklers of the compressed fusible solder type. These are decorative and standard response. The frame of the sprinkler hides the deflector, gasket, etc., which is in turn concealed above the ceiling by the cover plate assembly. The cover plate has a flat profile, and its diameter is extremely small. The push-on/thread-on, thread-off design of the concealed cover plate assembly allows easy installation of the cover plate. Therefore, the Model RD107 should be your first choice when aesthetics is the major consideration for ultimate appeal and unbeatable performance is desired. They are to be used in wet pipe sprinkler systems per EN12845 or as required by the Authority having jurisdiction. The Model RD107 has a 80(5.6) K-factor. For extended installation flexibility, the Model RD107 provides 9.5mm (3/8 inch) vertical adjustment.



This adjustment in installation decreases the need for precise cutting of the pipe that drops to the sprinkler and allows for a perfect fit with a range of pipe lengths. The heat sensitivity and water distribution design of Model RD107 allows for an increased chance of occupants' escape or evacuation in case of fire. However, fire sprinkler systems are not a substitute for fire safety awareness or fire safety construction required by building codes.

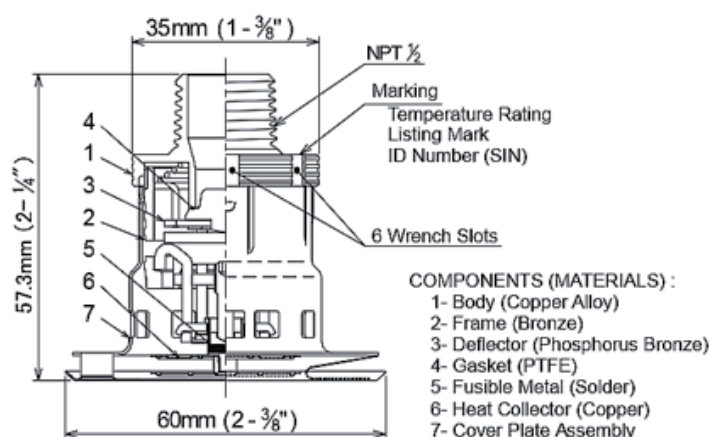
TECHNICAL DETAILS

Approvals	LPCB
E.C. Certificate of Conformity	0832-CPD-2067
Maximum Working Pressure	12.1 bar (175 psi)
Minimum Operating Pressure	0,35 bar (5 psi) EN12259-1 (Ref. Functional Test)
Discharge Coefficient	K = 80 (5.6)
Temperature Rating	Sprinkler: 72°C / 162°F Cover Plate: 60°C / 140°F
Vertical Adjustment	9.5 mm (3/8 inch)
Finishes	WHITE or CHROME

WARNINGS

The Model RD105 must be installed and maintained in accordance with the rules stated herein as well as in compliance with the applicable standards of the National Fire Protection Association regulations and the standards of any other authorities having jurisdiction. In the event of this condition, consult the Authorities Having Jurisdiction for guidance and approval. Failure to do so may impair the integrity of these devices.

It is the responsibility of the installing contractor to provide a copy of this document to the owner or his representative, and in turn, it is the obligation of the owner to provide a copy of this document to a succeeding owner. The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any related questions.





CONCEALED STANDARD SPRAY SIDEWALL SPRINKLER

QUICK RESPONSE

Approval UL

PRODUCT DESCRIPTION

The Reliable Model G6-56 is a concealed quick response standard spray sidewall sprinkler that utilizes a push-on/pull-off flat cover plate assembly. The sprinkler can be used in any occupancy where sidewall sprinklers are permitted, and is especially well-suited for use in dormitories, hotels, health care facilities, and offices where aesthetically pleasing sidewall sprinkler protection is needed.

The flat cover plate is attached to the skirt using 135°F (57°C) ordinary temperature classification solder. When the temperature rises, the solder holding the cover plate melts, allowing the release of the plate and exposing the concealed fire sprinkler to the rising temperature.

The Model G5-56 utilizes a quick response solder link that enables the sprinkler to activate five to six times quicker than a standard response sprinkler of the same temperature rating. The sprinkler is listed for a maximum service pressure of 175 psi (12.0 bar), and is shipped with a factory installed protective cap.



MODEL G6-56 CONCEALED QUICK RESPONSE SIDEWALL STANDARD SPRAY SPRINKLER

Technical Specifications

Style: Concealed Horizontal Sidewall
Threads: 1/2" NPT (R1/2)
Nominal K-Factor: 5.6 (80)
Max. Working Pressure: 175 psi (12 bar)

Material Specifications

Operating Element: Nickel Alloy
Frame Arms: Brass
Sprinkler Body: Brass
Cap: Brass
Sealing Washer: Nickel Alloy
Load Screw: Stainless Steel
Push Spring: Stainless Steel
Deflector: Brass
Yoke: Brass
Lever Arms: Brass

Sprinkler Finishes

Brass (only)

Sensitivity

Quick Response

Cover Plate

Standard Finishes:

White Paint
 Chrome

Special Application Finishes:

Off-White Paint
 Black Paint
 Custom Color Paint – Specify(2)
 Raw Brass (Lacquered)
 Bright Brass
 Finished Brass
 Black Plated
 Satin Chrome

Features

- Convenient push-on/pull-off flat cover plate with 1/4" (6 mm) adjustment
- Cover plate is available in a wide variety of colors and finishes
- Shipped complete with factory installed protective cap

Temperature Ratings

165°F (74°C) (Sprinkler)
 135°F (57°C) (Cover Plate)

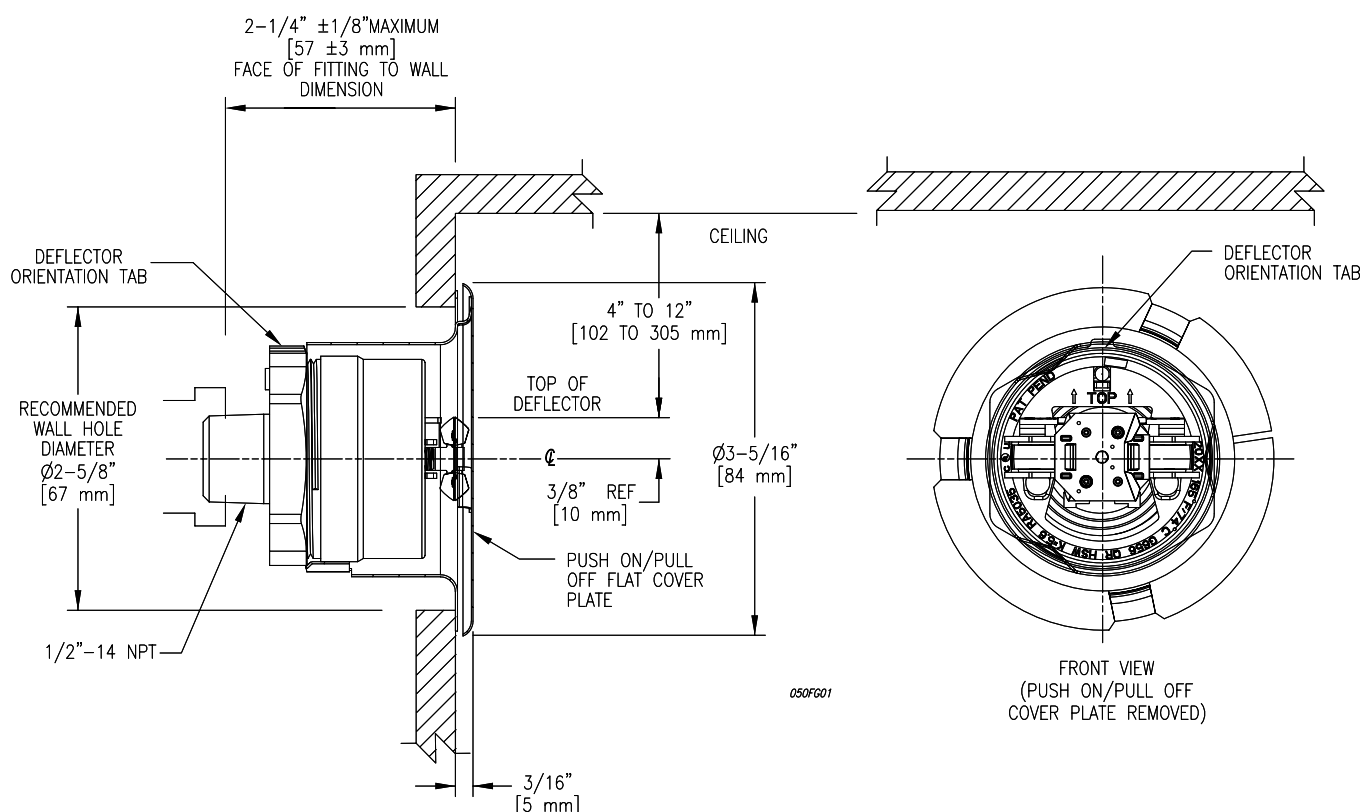
Sprinkler Wrench

G6 Wrench

Listings and Approvals

cULus Listed

NOTES:



INSTALLATION

Care must be exercised that orifice size, temperature rating, and sprinkler spacing are in accordance with this bulletin and the latest published standards of the National Fire Protection Association, and approved by the Authority Having Jurisdiction.

Apply a PTFE-based thread sealant or thread sealant tape to the sprinkler threads. Using the Model G6 Wrench (see figure 2), install the sprinkler into the fitting and verify the sprinkler is properly oriented.

It is not necessary to remove the factory installed plastic protective cap since it is sized to fit inside the Model G6 wrench. The G6 wrench must be properly orientated on the sprinkler using the key way in the wrench for proper fit. The G6 wrench is provided with a flat surface for use with a bubble level and TOP marking to allow proper orientation of the horizontal sidewall deflector. Final leveling can be performed after a leak proof joint is obtained with a torque between 8 and 18 ft-lbs (11 to 24 N.m). Leave the protective cap in place to protect the sprinkler while the wall is finished.

The protective cap must be removed and the Model G6 listed cover plate installed prior to the sprinkler system being placed in service. Concealed cover plate/cup assemblies are listed only for use with specific sprinklers. The use of any other cover plate with the Model G6-56 Concealed Horizontal Sidewall Sprinkler, the use of the G6 cover plate assembly on any sprinkler with which is it not specifically listed, or alteration of the sprinkler or cover plate will void all guarantees, warranties, listings, and approvals.

CARE AND MAINTENANCE

Model G6-56 Concealed Sprinklers should be inspected and maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids.

Remove dust by using a soft brush or gentle vacuuming. Replace any sprinkler or cover plate assembly, which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in their original cartons and packaging until used to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.



SPRINKLER FOR STORAGE APPLICATIONS ELO 3/4" K160

STANDARD RESPONSE – PENDENT & UPRIGHT

Listed UL / C-UL Approved FM

PRODUCT DESCRIPTION

Reliable Model GXLO (extra-large orifice) upright and pendent sprinklers are standard coverage standard-response sprinklers that utilize a robust center strut, solder in compression thermal element. These sprinklers are intended for use in hydraulically calculated control mode density area (CMDA) storage and nonstorage occupancies in accordance with the area/density curves of NFPA 13 or other applicable standards.

The Model GXLO sprinkler is FM Approved as a standard-response storage and non-storage sprinkler when used in accordance with FM Global Property Loss Prevention Data Sheets.



For new installations, the sprinkler is provided with either 3/4-inch NPT or ISO 7-R3/4 threads. The upright version is also available with 1/2-inch NPT or ISO 7-R1/2 threads for retrofit installations only. Sprinklers without guards are installed using the Model H wrench.

For use as an intermediate level sprinkler, the Model GXLO upright sprinkler is available with a factory installed water shield. Various other water shields, guards, or guard/shield options are also available for both upright and pendent models (please refer to Technical Specifications on following pages). Sprinkler guards or guard/shields may be installed in the field or factory installed. Use of the Model JV sprinkler wrench is required for installation where a guard is added to the sprinkler prior to threading the assembly into a fitting.

MODEL GXLO UPRIGHT SPRINKLER

Technical Specifications

Style: Upright, Intermediate Upright

Threads: 3/4" NPT or ISO 7-1R3/4*

Nominal K-Factor: 11.2 (160 metric)

Max. Working Pressure: 175 psi (12 bar)

Material Specifications

Thermal Sensor: Solder Capsule

Sprinkler Frame: Brass Alloy

Button/Cup: Brass Alloy

Sealing Assembly: Brass with PTFE

Load Screw: Brass

Deflector: Brass Alloy

Levers: Brass Alloy

Ejection Spring: Stainless Steel

Sensitivity

Standard Response

Temperature Ratings

Sprinkler rating: 74°-141°

Max. Ambient Temperature: 38°-107°

Guards & Shields

D-6 Guard & Water Shield (cULus)

D-7 Guard & Water Shield (FM)

D-8 Guard (FM)

Water Shield (factory installed; FM)

Sprinkler Wrench

Model H

Model JV (with guard installed)

Listings and Approvals

cULus Listed

FM Approved



MODEL GXLO PENDENT SPRINKLER

Technical Specifications

Style: Pendent

Threads: 3/4" NPT or ISO 7-1R3/4

Nominal K-Factor: 11.2 (160 metric)

Max. Working Pressure: 175 psi (12 bar)

Material Specifications

Thermal Sensor: Beryllium Nickel Solder Link

Sprinkler Frame: Brass Alloy

Button/Cup: Brass Alloy

Sealing Assembly: Brass Alloy with PTFE

Load Screw: Brass

Deflector: Brass Alloy

Levers: Brass Alloy

Sensitivity

Standard Response

Temperature Ratings

Sprinkler rating: 74°-141°

Max. Ambient Temperature: 38°-107°

Guards & Shields

D-8 Guard

D-9 Guard & Water Shield

S-2 Water Shield

Sprinkler Wrench

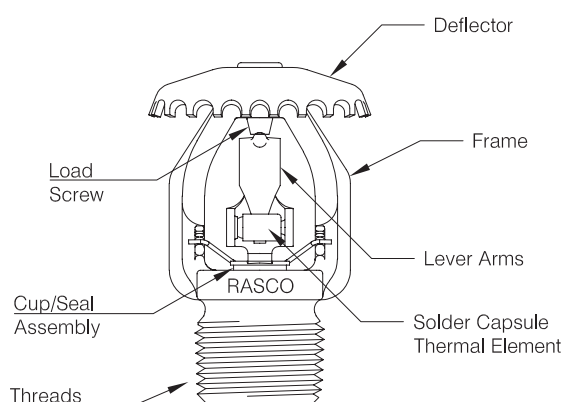
Model H

Model JV (with guard installed)

Listings and Approvals

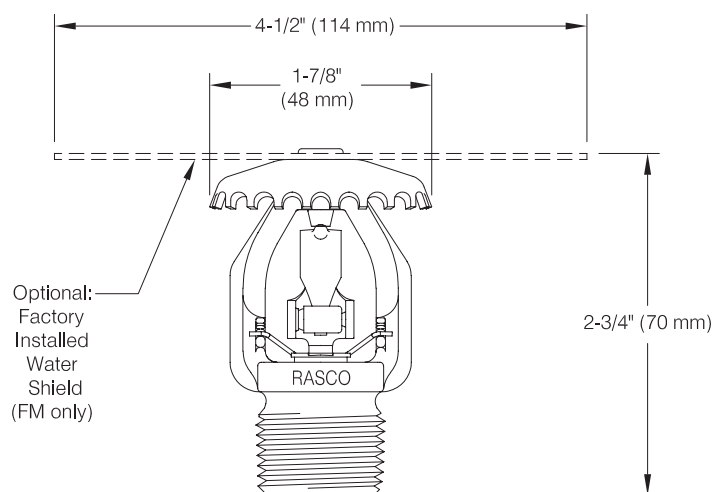
FM Approved



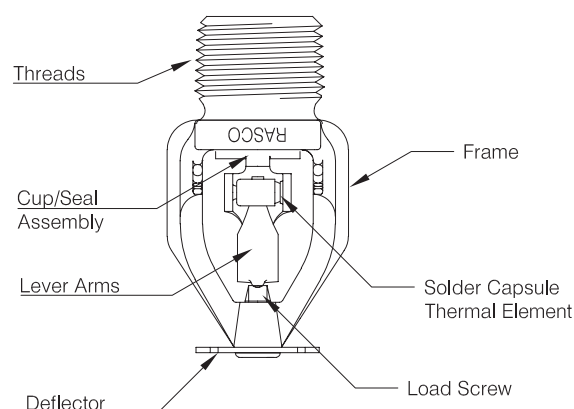


129FG01

COMPONENTS

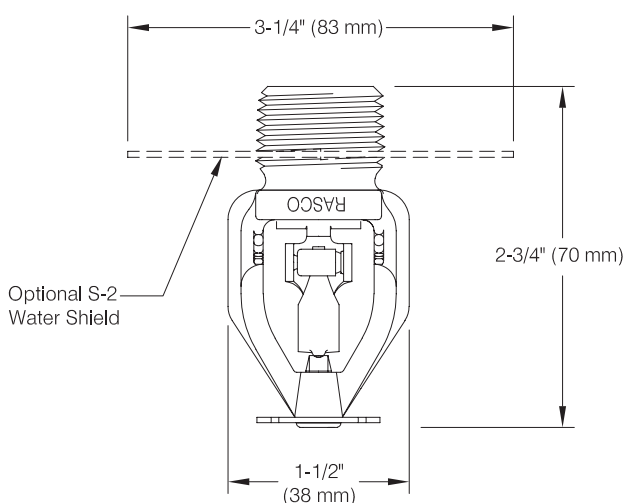


DIMENSIONS



129FG02

COMPONENTS



DIMENSIONS

INSTALLATION

Model GXLO sprinklers must be installed according to appropriate NFPA Standards, FM Global Loss Prevention Data Sheets, and/or the requirements of the authority having jurisdiction.

Use only the Model H sprinkler wrench for sprinkler installation or use the Model JV wrench to install the sprinkler/guard assembly (Figure 3). Any other type of wrench may damage the sprinkler. Damaged sprinklers must be replaced immediately.

A leak tight joint should be obtained with a torque of 14 to 20 lb-ft (19 to 27 N.m) for 3/4 inch NPT and ISO 7-R3/4 thread sprinklers. For 1/2 inch NPT and ISO 7-R1/2 thread sprinklers the recommended installation torque is 8 to 18 lb-ft (11 to 24 N.m). Exceeding the maximum recommended torque may cause leakage or impairment of the sprinklers.

CARE AND MAINTENANCE

Reliable Model GXLO sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Prior to installation, sprinklers should remain in the original cartons and packaging until used. This will minimize the potential for damage to sprinklers that could cause improper operation or non-operation.

Do not clean sprinklers with soap and water, ammonia liquid or any other cleaning fluids. Remove dust by gentle vacuuming without touching the sprinkler.

Replace any sprinkler which has been painted (other than factory applied). A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Failure to properly maintain sprinklers may result in inadvertent operation or non-operation during a fire event.



SPRINKLER FOR STORAGE APPLICATIONS ELO ¾" K160

QUICK RESPONSE – PENDENT & UPRIGHT

Listed UL / C-UL Approved FM

PRODUCT DESCRIPTION

Reliable Model GL112 upright and pendent sprinklers are standard coverage, quick response sprinklers utilizing a levered fusible allow solder link thermal element in 165°F (74°C) or 212°F (100°C) temperature rating. These sprinklers are intended for use in hydraulically calculated control mode density area (CMDA) storage and non-storage occupancies in accordance with the area/density curves of NFPA 13 or other applicable standards.

The Model GL112 sprinkler is FM Approved as a quick response storage and non-storage sprinkler when used in accordance with FM Global Property Loss Prevention Data Sheets.



The Model GL112 is provided with ¾-inch NPT or ISO 7-R3/4 threads. Sprinklers without guards are installed using the Model H wrench.

For use as an intermediate level sprinkler, the Model GL112 upright sprinkler is available with a factory installed water shield. Various other water shields, guards, or guard/shield options are also available for both upright and pendent models (please refer to Technical Specifications on following pages). Sprinkler guards or guard/shields may be installed in the field or factory installed. Use of the Model JV sprinkler wrench is required for installation where a guard is added to the sprinkler prior to threading the assembly into a fitting.

MODEL GL112 UPRIGHT SPRINKLER

Technical Specifications

Style: Upright

Threads: ¾" NPT or ISO 7-1R3/4

Nominal K-Factor: 11.2 (160 metric)

Max. Working Pressure: 175 psi (12 bar)

Material Specifications

Thermal Sensor: Nickel Alloy Solder Link

Sprinkler Frame: Brass Alloy

Button/Cup: Brass Alloy

Sealing Assembly: Brass with PTFE

Load Screw: Brass

Deflector: Brass Alloy

Levers: Brass Alloy

Ejection Spring: Stainless Steel

Sprinkler Finishes

Standard (Brass) Only

Sensitivity

Quick Response

Temperature Ratings

165° F (74° C)

212° F (100° C)

Guards & Shields

D-7 Guard

Water Shield (factory installed)

Sprinkler Wrench

Model H

Model JV (when guard is installed prior to make-in)

Listings and Approvals

FM Approved



MODEL GL112 PENDENT SPRINKLER

Technical Specifications

Style: Pendent

Threads: ¾" NPT or ISO 7-1R3/4

Nominal K-Factor: 11.2 (160 metric)

Max. Working Pressure: 175 psi (12 bar)

Material Specifications

Thermal Sensor: Nickel Alloy Solder Link

Sprinkler Frame: Brass Alloy

Button/Cup: Brass Alloy

Sealing Assembly: Brass Alloy with PTFE

Load Screw: Brass

Deflector: Brass Alloy

Levers: Brass Alloy

Ejection Spring: Stainless Steel

Sprinkler Finishes

Standard (Brass) Only

Sensitivity

Quick Response

Temperature Ratings

165° F (74° C)

212° F (100° C)

Guards & Shields

D-8 Guard

D-9 Guard & Water Shield

S-2 Water Shield

Sprinkler Wrench

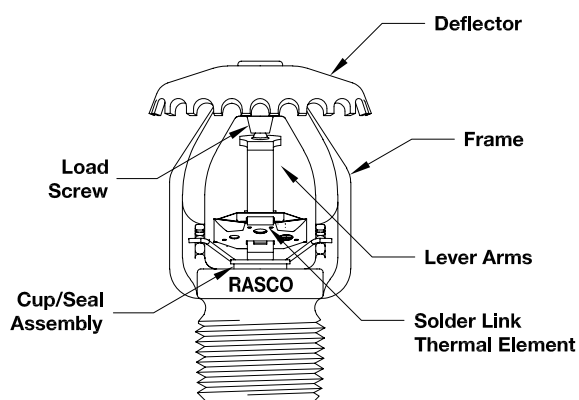
Model H

Model JV (when guard is installed prior to make-in)

Listings and Approvals

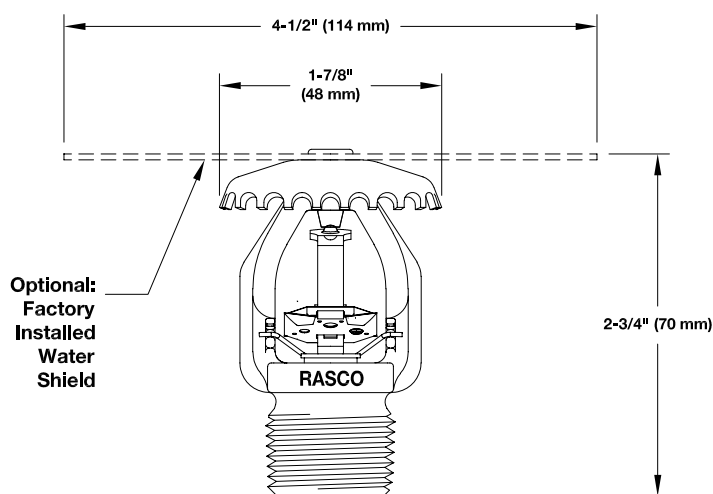
FM Approved



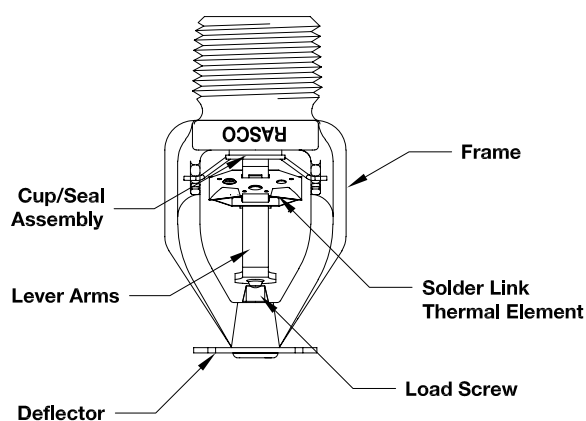


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COMPONENTS

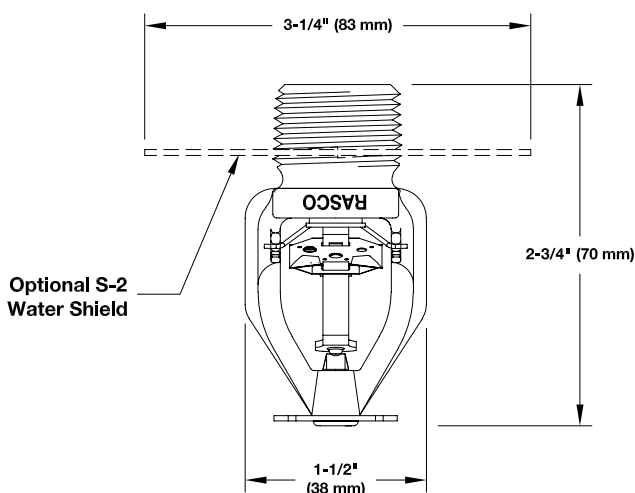


DIMENSIONS



32FG02

COMPONENTS



DIMENSIONS

INSTALLATION

The Reliable Model GL112 QR sprinkler must be installed according to NFPA Standards or the appropriate FM Global Data Sheets for all area/density methods of design as well as the Authority Having Jurisdiction.

Use only the Model H sprinkler wrench for sprinkler installation or use the Model JV wrench to install the sprinkler/guard assembly (Figure 3). Any other type of wrench may damage the sprinkler. Damaged sprinklers must be replaced immediately.

Note: Sprinklers should be tightened between 14-20 lb-ft (19-27,1 N.m) torque. Exceeding the maximum recommended torque may cause leakage or impairment of the sprinklers.

CARE AND MAINTENANCE

Reliable Model GL112 sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Prior to installation, sprinklers should remain in the original cartons and packaging until used. This will minimize the potential for damage to sprinklers that could cause improper operation or non-operation.

Do not clean sprinklers with soap and water, ammonia liquid or any other cleaning fluids. Remove dust by gentle vacuuming without touching the sprinkler.

Replace any sprinkler which has been painted (other than factory applied). A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Failure to properly maintain sprinklers may result in inadvertent operation or non-operation during a fire event.



SPRINKLER FOR STORAGE APPLICATIONS ESRF 1" K25

QUICK RESPONSE

Listed UL – C-UL Approved FM

PRODUCT DESCRIPTION

Model ESRF-25 Pendent Sprinklers are Early Suppression, Fast Response (ESFR) sprinklers having a nominal K-factor of 25.2 (Ref. Figure 1). They are suppression-mode sprinklers that are especially advantageous as a means of eliminating the use of in-rack sprinklers when protecting high-piled storage.

The Model ESRF-25 Sprinklers are listed by Underwriters Laboratories (UL) for specific applications with a maximum storage height of 43 ft (13,1 m) with a maximum ceiling height of 48 ft (14,6 m) without the requirement for in-rack sprinklers.



TECHNICAL DETAILS

Frame	Brass
Finish	Brass
Deflector	Copper
Compression Screw	Stainless Steel
Button	Brass
Link Assembly	Solder, Nickel
Sealing Assembly	Nickel w/TEFLON
Deflector Nut	Brass
Maximum Working Pressure	175 psi (12,1 bar)
Thread Size	1 Inch NPT or ISO 7-R 1
Discharge Coefficient	K=25.2 gpm/psi ^{1/2} (362,9 lpm/bar ^{1/2})
Temperature Rating	165°F (74°C) and 212°F (100°C)

Sprinkler Position: Pendent, frame arms aligned with pipe, deflectors parallel with ceiling or roof.

Maximum Coverage Area: 100 ft² (9,3 m²)

Maximum Spacing: 10 ft (3,1 m) for building heights greater than 30 ft (9,1 m). In some cases, installation standards permit a greater spacing.

Minimum Spacing: 8 ft (2,4 m)

Deflector Distance from Walls: Minimum of 4 in. (100 mm) from walls but no more than 1/2 the allowable distance permitted between sprinklers.

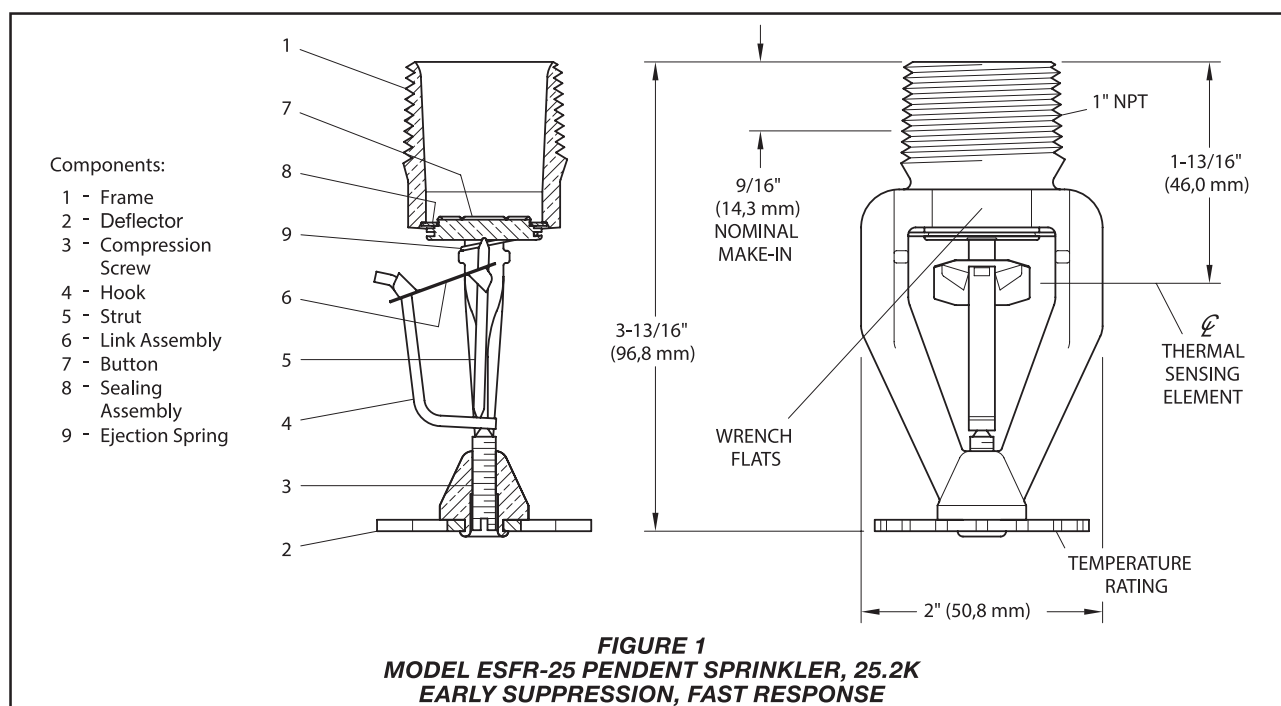
Deflector to Ceiling Distance: 6 in. to 14 in. (152 mm to 356 mm)

Maximum Ceiling Height: 48 ft (14,6 m)

Maximum Storage Height: 43 ft (13,1 m)

Storage Type	NFPA	FM Global
Sprinkler Type	ESFR	Storage
Response Type	QR	QR
System Type	Wet	Wet
Temperature Rating °F (°C)	165°F (74°C) 212°F (100°C)	165°F (74°C) 212°F (100°C)
Open Frame (i.e., no solid shelves); Single, Double, Multiple-Row, or Portable Rack Storage of Class I-HV and Group A or B Plastics	Refer to NFPA 13	Refer to FM Global 2-0 and 8-9
Solid Pile or Palletized Storage of Class I-HV and Group A or B Plastics	Refer to NFPA 13	Refer to FM Global 2-0 and 8-9
Idle Pallet Storage	Refer to NFPA 13	Refer to FM Global 2-0, 8-9, and 8-24
Rubber Tire Storage	Refer to NFPA 13	Refer to FM Global 2-0 and 8-3
Roll Paper Storage (Refer to the Standard)	Refer to NFPA 13	Refer to FM Global 8-21
Flammable/Ignitable Liquid Storage (Refer to the Standard)	Refer to NFPA 30	Refer to FM Global 7-29
Aerosol Storage (Refer to the Standard)	Refer to NFPA 30B	Refer to FM Global 7-31
Automotive Components in Portable Racks (Control mode only; refer to the Standard)	Refer to NFPA 13	N/A
N/A – Not Applicable		

TABLE B
MODEL ESRF-25 PENDENT SPRINKLER
COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW



INSTALLATION

Damage to the fusible Link Assembly during installation can be avoided by handling the sprinkler using only the frame arms and the appropriate sprinkler wrench. Do not grip or apply any force to the fusible Link Assembly. Damaged sprinklers must be replaced immediately.

A leak-tight 1 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 20 to 30 lb-ft (26,8 to 40,2 N·m). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Step 1. With pipe thread sealant applied, hand-tighten the sprinkler into the sprinkler fitting. Do not apply any force to the Link Assembly, and handle the Model ESFR-25 Upright Sprinkler only by the Frame arms.

Step 2. Wrench-tighten the Model ESFR-25 Upright Sprinkler using only the W-Type 1 Sprinkler Wrench (Ref. Figure 2) and by fully engaging (seating) the wrench on the sprinkler wrench flats.

Step 3. After installation, inspect the Link Assembly of each Model ESFR-25 Upright Sprinkler for damage. In particular, verify that the Link Assembly and Hook are positioned as illustrated in Figure 1, and that the Link Assembly has not been bent, creased, or forced out of its normal position in any way. Damaged sprinklers must be replaced immediately.

CARE AND MAINTENANCE

The Model ESFR-25 Pendant Sprinklers must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities and notify all personnel who may be affected by this decision.

Inspection, testing, and maintenance must be performed as indicated below and in accordance with the local requirements and/or national codes. Any impairment must be immediately corrected.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

Automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes



SPRINKLER FOR STORAGE APPLICATIONS ESFR 1" K22

QUICK RESPONSE

Listed UL – C-UL Approved FM

PRODUCT DESCRIPTION

Model ESFR-22 Pendent Sprinklers are Early Suppression, Fast Response Sprinklers having a nominal K-factor of 22.4 (Ref. to Figure 1). They are suppression-mode sprinklers that are especially advantageous as a means of eliminating the use of in-rack sprinklers when protecting high-piled storage.

The Model ESFR-22 can protect a storage arrangement of 40 ft (12,2 m) with a ceiling height of 45 ft (13,7 m) without requiring in-rack sprinklers. In addition, it can be installed with a maximum deflector-to-ceiling distance of 18 in. (460 mm).



TECHNICAL DETAILS

Frame	Brass
Finish	Brass
Deflector	Copper
Compression Screw	Stainless Steel
Button	Brass
Link Assembly	Solder, Nickel
Sealing Assembly	Nickel w/TEFLON
Deflector Nut	Brass
K factor, gpm / psi½ (lpm / bar½)	22.4 gpm/psi½ (320 lpm/bar½)
Thread Size	1" NPT or ISO 7-R
Maximum Working Pressure	175 psi (12,1 bar)

Maximum Coverage Area: 100 ft² (9,3 m²)
In some cases, the installation standards permit a greater coverage area.

Minimum Coverage Area: 64 ft² (5, 8 m²)
per NFPA 13 / FM Global 2-0

Maximum Spacing:

*12 ft (3,7 m) for building heights up to 30 ft. (9,1 m).

*10 ft (3,1 m) for building heights greater than 30 ft (9,1 m); in some cases, installation standards permit a greater spacing.

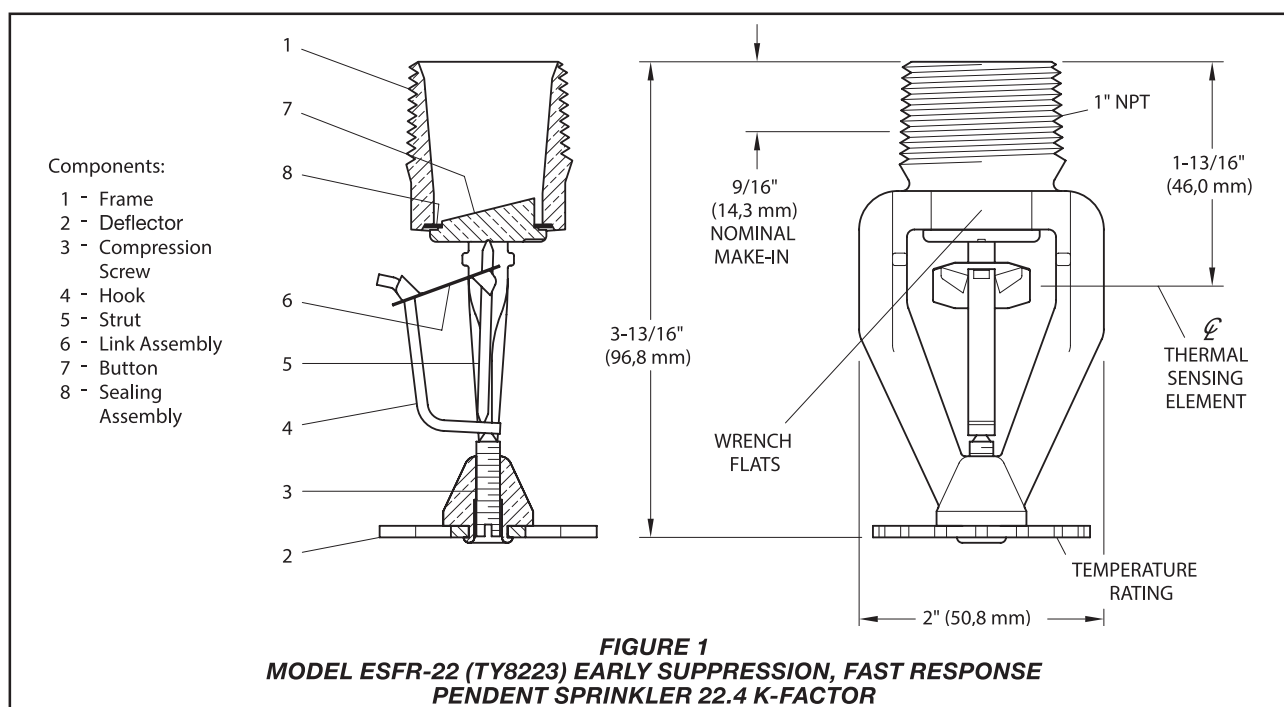
Minimum Spacing: 8 ft (2,4 m)

Minimum Clearance to Commodity: 36 in (914 mm)

Deflector-to-Ceiling Distance: NFPA - 6 to 18" (152 to 457 mm)

Storage Type	NFPA	FM Global
Sprinkler Type	ESFR	Storage
Response Type	QR	QR
System Type	Wet	Wet
Temperature Rating °F (°C) 1	165°F (74°C) 212°F (100°C)	165°F (74°C) 212°F (100°C)
Open Frame (i.e., no solid shelves) Single, Double, Multiple-Row, or Portable Rack Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13	Refer to FM 2-0 and 8-9
Solid Pile or Palletized Storage of Class HV and Group A or B Plastics	Refer to NFPA 13	Refer to FM 2-0 and 8-9
Idle Pallet Storage	Refer to NFPA 13	Refer to FM 2-0, 8-9, and 8-24
Rubber Tire Storage	Refer to NFPA 13	Refer to FM 2-0 and 8-3
Roll Paper Storage (Refer to the Standard)	Refer to NFPA 13	Refer to FM 8-21
Flammable/Ignitable Liquid Storage (Refer to the Standard)	Refer to NFPA 30	Refer to FM 7-29
Aerosol Storage (Refer to the Standard)	Refer to NFPA 30B	Refer to FM 7-31
Automotive Components in Portable Racks (Control mode only; refer to the Standard)	N/A	N/A
N/A – Not Applicable		

TABLE B
MODEL ESFR-22 PENDENT SPRINKLERS
COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW



INSTALLATION

Damage to the fusible Link Assembly during installation can be avoided by handling the sprinkler using only the frame arms and the appropriate sprinkler wrench. Do not grip or apply any force to the fusible Link Assembly. Damaged sprinklers must be replaced immediately.

A leak-tight 1 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 20 to 30 lb-ft (26,8 to 40,2 N-m). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Step 1. With pipe thread sealant applied, hand-tighten the sprinkler into the sprinkler fitting. Do not apply any force to the Link Assembly, and handle the Model ESFR-22 Upright Sprinkler only by the Frame arms.

Step 2. Wrench-tighten the Model ESFR-22 Upright Sprinkler using only the W-Type 1 Sprinkler Wrench (Ref. Figure 2) and by fully engaging (seating) the wrench on the sprinkler wrench flats.

Step 3. After installation, inspect the Link Assembly of each Model ESFR-22 Upright Sprinkler for damage. In particular, verify that the Link Assembly and Hook are positioned as illustrated in Figure 1, and that the Link Assembly has not been bent, creased, or forced out of its normal position in any way. Damaged sprinklers must be replaced immediately.

CARE AND MAINTENANCE

The Model ESFR-22 Pendant Sprinklers must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities and notify all personnel who may be affected by this decision.

Inspection, testing, and maintenance must be performed as indicated below and in accordance with the local requirements and/or national codes. Any impairment must be immediately corrected.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

Automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes



SPRINKLER FOR STORAGE APPLICATIONS ESFR 3/4" K14

QUICK RESPONSE

Listed UL / C-UL Approved FM

PRODUCT DESCRIPTION

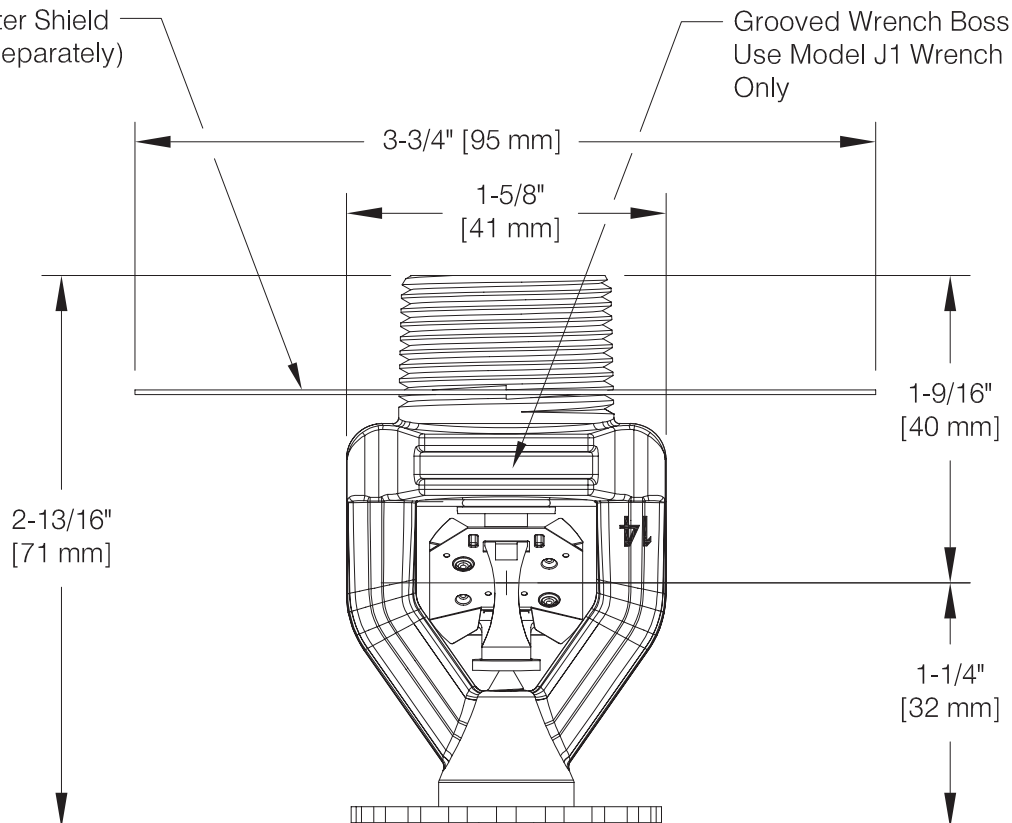
The Reliable Models K14 are Early Suppression Fast Response (ESFR) Sprinklers with nominal K-factors of 14.0 (200 metric) and 16.8 (240 metric), respectively. The sprinklers use a levered fusible alloy solder link in either a 165 F (74 C) or a 212 F (100 C) temperature rating. These sprinklers are designed to respond quickly to growing fires and will deliver a heavy water discharge to "suppress" rather than "control" fires.

FM Approvals classifies the Model K14 as quick-response sprinklers, storage and non-storage, when used in accordance with FM Global Property Loss Prevention Data Sheets.

The K14 sprinklers are available with 3/4" NPT or ISO7-1R3/4 (BSPT) threads. Model K14 ESFR sprinklers are designed to be shorter and more compact than other ESFR sprinklers, allowing greater flexibility with regard to distance from ceilings and obstructions. The K14 ESFR sprinklers are also less susceptible to damage due to smaller deflector and frame design. The lighter K14 ESFR sprinklers passed rough use and abuse listing tests without plastic protectors.



Optional:
S-3 Water Shield
(order separately)





TECHNICAL DETAILS	
Style	Pendent
Connection	3/4" NPT or ISO7-1R3/4 (BSPT) threads
Nominal K-Factor	14.0 (200 metric)
Max. Working Pressure	175 psi (12 bar)
Thermal Sensor	Beryllium Nickel Solder Link
Sprinkler Frame	Brass Alloy
Cap	Brass Alloy
Sealing Assembly	Nickel Alloy with PTFE
Load Screw	Brass Alloy
Deflector	Brass Alloy
Kick Spring	Stainless Steel Alloy
Sprinkler Finishes	Brass
Sensitivity	Fast-Response Quick-Response (FM)
Temperature Ratings	Ordinary: 165 F (74 C) Intermediate: 212 F (100 C)
Sprinkler Wrench	Model J1
Guards & Shields	Model S-3 Water Shield (FM)*
Listings and Approvals	cULus FM Approved VdS LPCB CNBOP-PIB

INSTALLATION

Model JL14 and JL17 sprinklers are intended for installation in accordance with NFPA 13 and FM Loss Prevention Data Sheets 2-0 and 8-9, as well as the requirements of any Authorities Having Jurisdiction. See Table B for information on NFPA and FM Global design criteria for the Model JL14 and JL17 sprinklers.

For threaded sprinklers only, use the Model J1 sprinkler wrench for removal and installation. Any other type of wrench may damage the sprinkler. A grooved wrench boss is provided on the sprinkler to limit the potential for the wrench to slip during installation.

When handling sprinklers, hold sprinklers only on frame arms and do not apply any force on the link assembly. Model JL14 and JL17 sprinklers should be tightened between 14 - 40 ft-lbs (19 - 54 N-m) torque. Sprinklers not tightened to recommended torque may cause leakage or impairment of the sprinkler. Damaged sprinklers must be replaced immediately.

For grooved sprinklers, push the IGS™ Style V9 Sprinkler Coupling onto the grooved outlet until contact with the center leg of the gasket occurs. Align the sprinkler frame arms and the pads of the coupling with the sprinkler piping and tighten the coupling until the pads of the coupling meet. For additional information, please reference Victaulic technical bulletin I-V9. Caution: When handling sprinklers, hold sprinklers only by the frame arms and do not apply any force on the link assembly.

CARE AND MAINTENANCE

Model JL14 and JL17 ESFR Sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinkler with soap and water, ammonia or any other cleaning fluid. Replace any sprinkler that has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging until used, to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Once operated, automatic sprinklers cannot be reassembled and reused. New sprinklers of the same size, type and temperature rating must be installed. A cabinet of replacement sprinklers should be provided for this purpose.



SPRINKLER FOR STORAGE APPLICATIONS ESFR ¾" K17

PENDENT - UPRIGHT

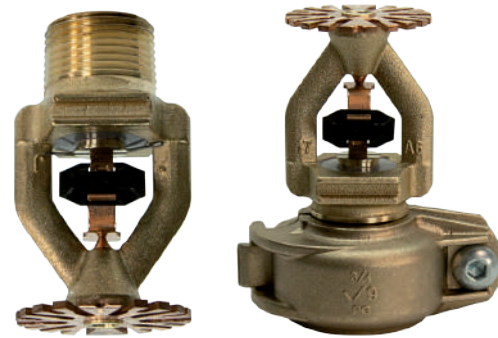
Approved FM

PRODUCT DESCRIPTION

Model ESFR-17, 16.8 K-factor, Pendent Sprinklers are Early Suppression, Fast Response (ESFR) sprinklers having a nominal K-factor of 16.8.

These sprinklers are designed to respond quickly to growing fires and will deliver a heavy water discharge to "suppress" rather than "control" fires.

The sprinklers use a levered fusible alloy solder link in either a 165 °F (74 °C) or a 212 °F (100 °C) temperature rating.



TECHNICAL DETAILS

Frame	Brass
Finished	Brass
Deflector	Copper
Compression Screw	Stainless Steel
Button	Brass
Assembly	Soldadura, níquel
Sealing Assembly	Nickel w/ Teflon
Deflector Nut	Brass
Maximum Working Pressure	175 psi (12,1 bar)
Thread Size	¾" NPT ISO 7-R 3/4
Discharge Coefficient	K=16.8 gpm/psi ^{1/2} (241,9 lpm/bar ^{1/2})
Temperature Rating	165°F (74°C) 214°F (101°C)
Minimum Spacing	8 feet (2,4 m)
Deflector-to-Ceiling Distance	NFPA – 6 to 14 inches (152 to 356 mm)
Maximum Coverage Area	100 ft ² (9,3 m ²)
Minimum Coverage Area	64 ft ² (5,8 m ²) per NFPA 13/FM 2-0
Maximum Spacing	12 ft (3,7 m) for building heights greater than 30 ft (9,1 m)
Minimum Spacing	8 pies (2,4 m)

INSTALLATION

Damage to the fusible Link Assembly during installation can be avoided by handling the sprinkler using only the frame arms and the appropriate sprinkler wrench. Do not grip or apply any force to the fusible Link Assembly. Damaged sprinklers must be replaced immediately. A leak-tight 1 in. NPT sprinkler joint should be obtained by applying a minimum-to-maximum torque of 20 to 30 lb-ft (26,8 to 40,2 N·m). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Step 1. With pipe thread sealant applied, hand-tighten the sprinkler into the sprinkler fitting. Do not apply any force to the Link Assembly, and handle the Model ESFR-17 Pendent- Upright Sprinkler only by the Frame arms.

Step 2. Wrench-tighten the Model ESFR-17 Pendent-Upright Sprinkler using only the W-Type 1 Sprinkler Wrench (Ref. Figure 2) and by fully engaging (seating) the wrench on the sprinkler wrench flats.

Step 3. After installation, inspect the Link Assembly of each Model ESFR-17 Pendent-Upright Sprinkler for damage. In particular, verify that the Link Assembly and Hook are positioned as illustrated in Figure 1, and that the Link Assembly has not been bent, creased, or forced out of its normal position in any way. Damaged sprinklers must be replaced immediately.

CARE AND MAINTENANCE

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities and notify all personnel who may be affected by this decision. Inspection, testing, and maintenance must be performed as indicated below and in accordance with the local requirements and/or national codes. Any impairment must be immediately corrected.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.



MEDIUM VELOCITY WATER SPRAY NOZZLE

Lista UL Approved FM

PRODUCT DESCRIPTION

Medium Velocity Water Spray Nozzles are open type (nonautomatic) nozzles, designed for directional spray application in fixed fire protection system.

Medium velocity water spray nozzle has an external deflector, which discharges water in a directional cone shaped pattern of small droplet size. The water is uniformly distributed over the surface to be protected.



TECHNICAL DETAILS

Maximum Working Pressure	12 bar (175 psi)	
End Connection	½" BSPT (½" NPT optional)	
Included Water Spray Angle For Each K-Factor	140°, 120°, 110°, 100°, 90°, 80° & 65°	
K factor	MV-A/MV-B & MV-E	MV-AS/MV-BS
	Metric(US)	Metric(US)
	K-18 (1.26)	K-18 (1.26)
	K-22 (1.54)	K-22 (1.54)
	K-30 (2.10)	K-30 (2.10)
	K-35 (2.45)	K-35 (2.45)
	K-41 (2.87)	K-41 (2.87)
	K-51 (3.57)	
	K-64 (4.48)	
	K-79 (5.53)	
	K-91 (6.37)	
	K-102 (7.14)	
Weight	110 g. Aprox.	
Finish	Nickel, Chrome or Epoxy powder coated	

INSTALLATION Y MANTENIMIENTO

The spray nozzle must be handled with due care. For best results, the storage as well as any further shipment be made in original packing only.

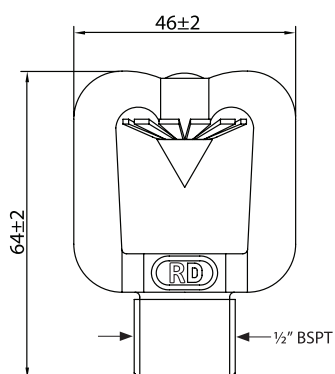
Nozzle which is visibly damaged should not be installed. Use Teflon tape or soft thread sealant on male thread of the nozzle. The nozzles must be hand tightened into the fitting. After hand tightening use Nozzle Wrench- NW-M for wrench tightening in to nozzle fittings. Excessive tightening torque may result into serious damage to nozzle arms and the deflector, which may affect spray pattern of the nozzle and its performance.

It is recommended that water spray system be inspected regularly by authorised technical personnel.

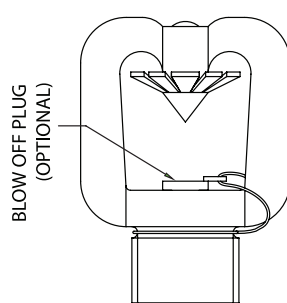
The nozzle must be checked for atmospheric effects, external and internal obstruction, blockage if any. The system must be operated with optimum water flow at least twice in a year or as per the provisions of NFPA /TAC or local authority having jurisdiction.

The owner is solely responsible for maintaining the water spray system and the components there in so that it performs properly when required.

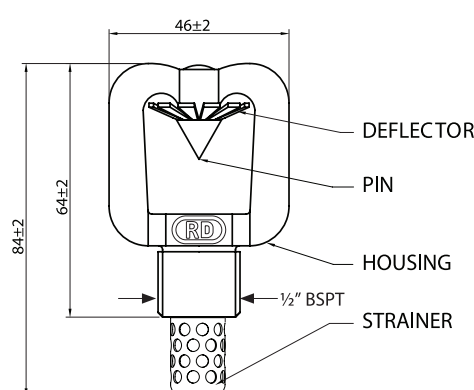
Model MV-A, MV-B & MV-E



Nozzle with Blow-off Plug

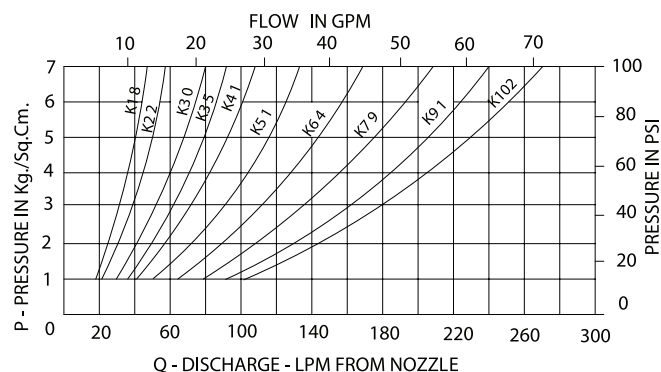


Model MV-AS & MV-BS

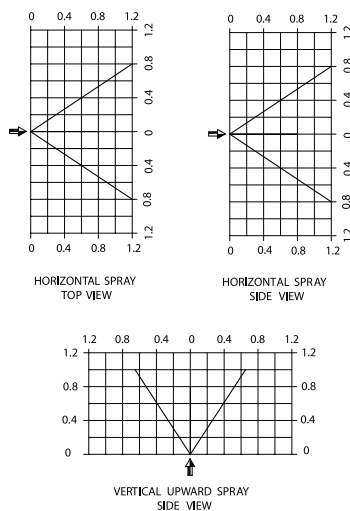


MATERIAL OF CONSTRUCTION			
Component	MODEL MV-A & MV-AS	MODEL MV-B & MV-BS	Model MV-E
Housing	Brass, IS:291 GR.-1 (Equivalent to ASTM B21)	A351-CF8M	Aluminium Brass IS:305-AB1 (Equivalent to ASTM B148)
Pin	Brass IS:291. GR. -1 (Equivalent to ASTM B21)	ASTM-A479 GR 31803	Ph.Brass IS:7811 (Equivalent to ASTM B139)
Strainer	Copper (For MV-AS)	Stainless Steel 316 (For MV-BS)	-
Blow-off Cap	Elastomer	Elastomer	Elastomer

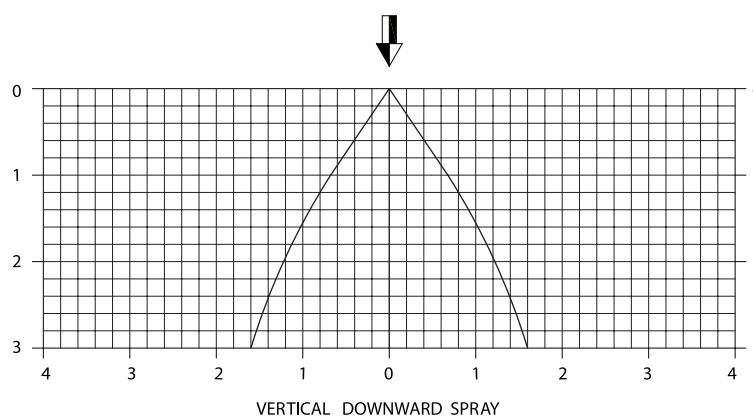
Discharge Characteristics



$Q = K \sqrt{P}$ where P is supply pressure in Kg/sq.cm., K= nozzle constant (K-factor) in metric
US K factor = Metric K factor $MK \div 14.7245$

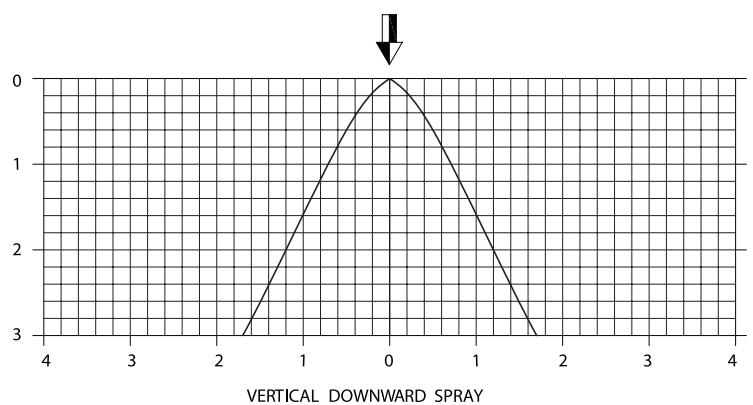
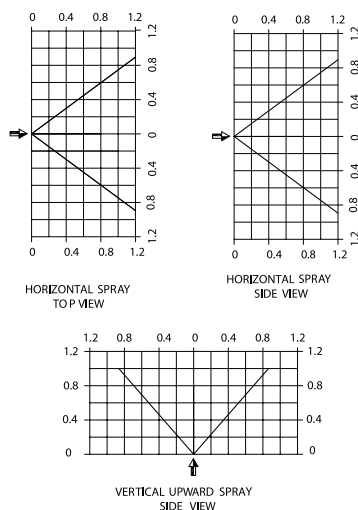


SPRAY ANGLE 65 °



VERTICAL DOWNWARD SPRAY

SPRAY ANGLE 80 °

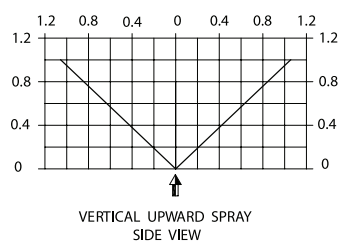
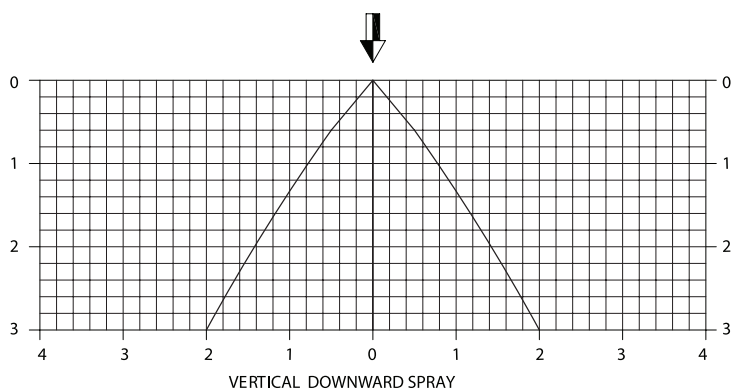
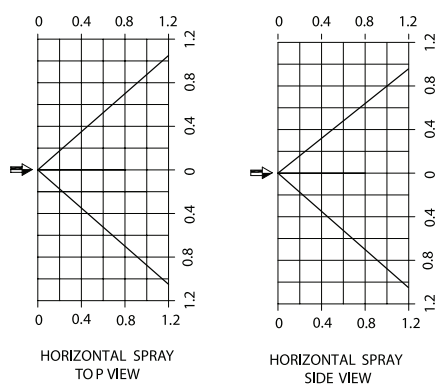


VERTICAL DOWNWARD SPRAY

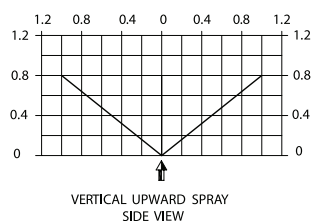
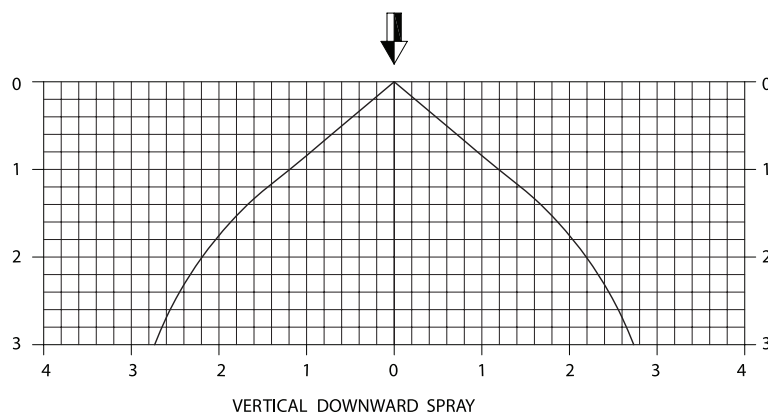
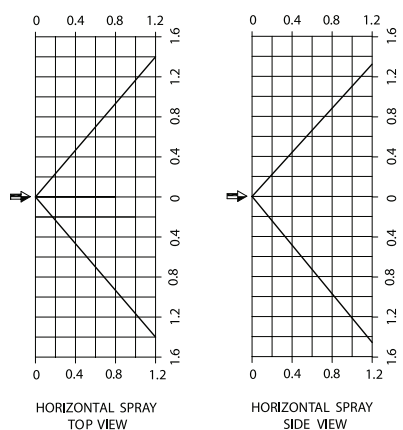
All Dimensions Are In Meters



SPRAY ANGLE 90°

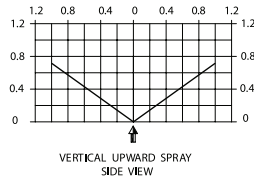
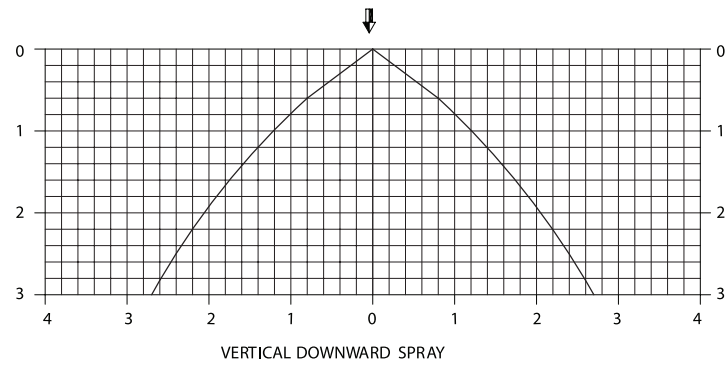
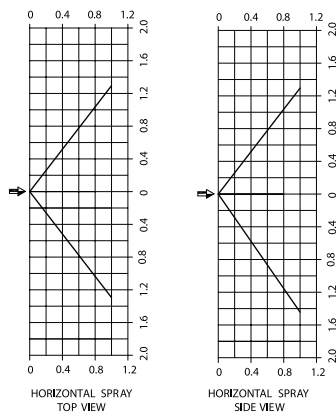


SPRAY ANGLE 100°

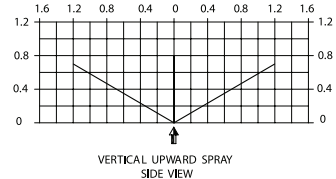
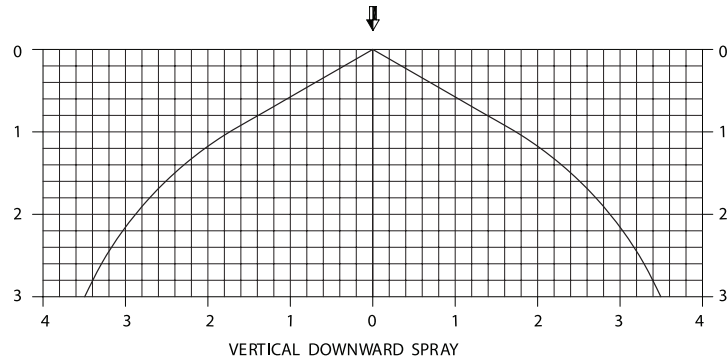
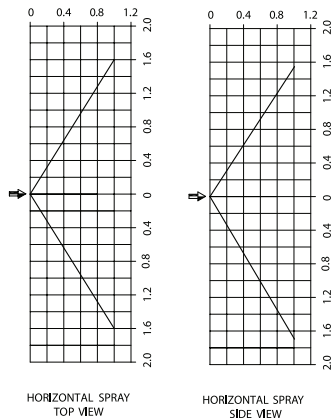


All Dimensions Are In Meters

SPRAY ANGLE 110°

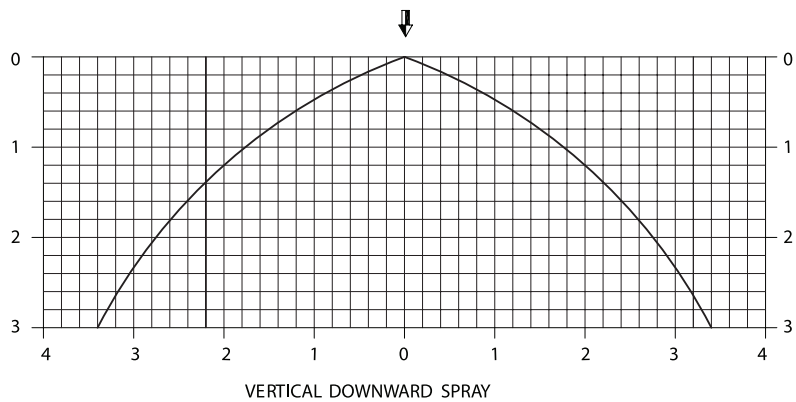
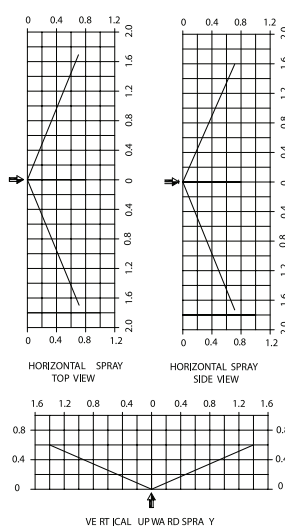


SPRAY ANGLE 120°



All Dimensions Are In Meters

SPRAY ANGLE 140°



All Dimensions Are In Meters



HIGH VELOCITY WATER SPRAY NOZZLE

List UL

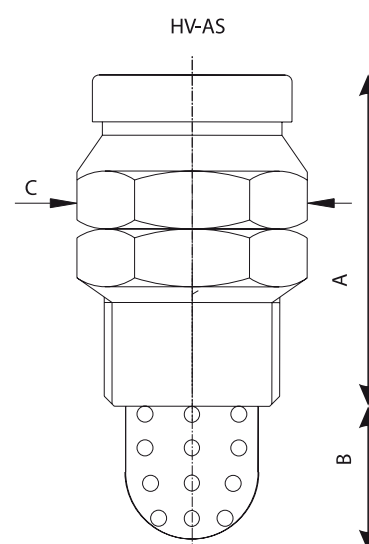
PRODUCT DESCRIPTION

High Velocity Water Spray Nozzles are internal swirl plate type open nozzles designed for use in fixed water spray or deluge system for the fire protection application.

These nozzles produce solid uniform and dense core of high velocity water spray to effect fire control. Nozzles are normally used to cool the surface as well as for extinguishment. Nozzles are typically used for Deluge protection of special hazards such as oil filled transformers, switch-gear, chemical process equipments, conveyor system and flammable liquid storage areas.

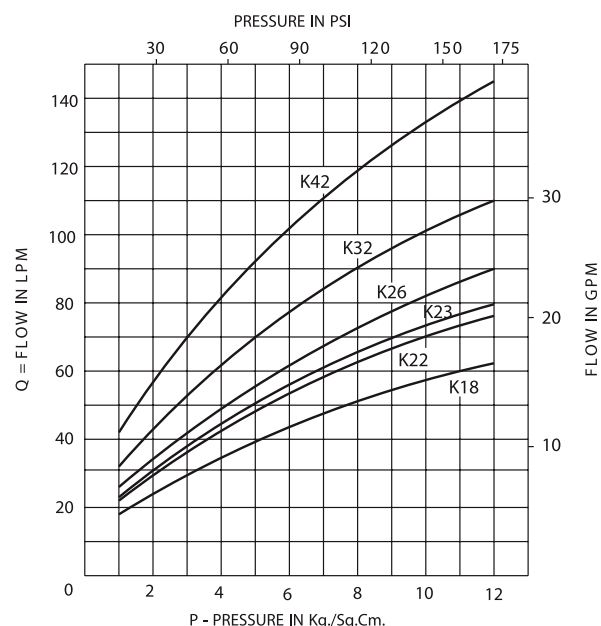


TECHNICAL DETAILS	
Maximum Working Pressure	12 Bar (175 PSI)
Effective Working Pressure	3.5 Bar to 10.5 Bar (50 - 150 PSI)
End Connections	¾" BSPT (¾" NPT Optional)
Material	HV-AS
	Housing & Scroll - Brass IS : 291 (Equivalent to ASTM B21)
	Strainer - Copper
	HV-BS
	Stainless Steel CF8M (SS316)
Weight aprox.	200gr.



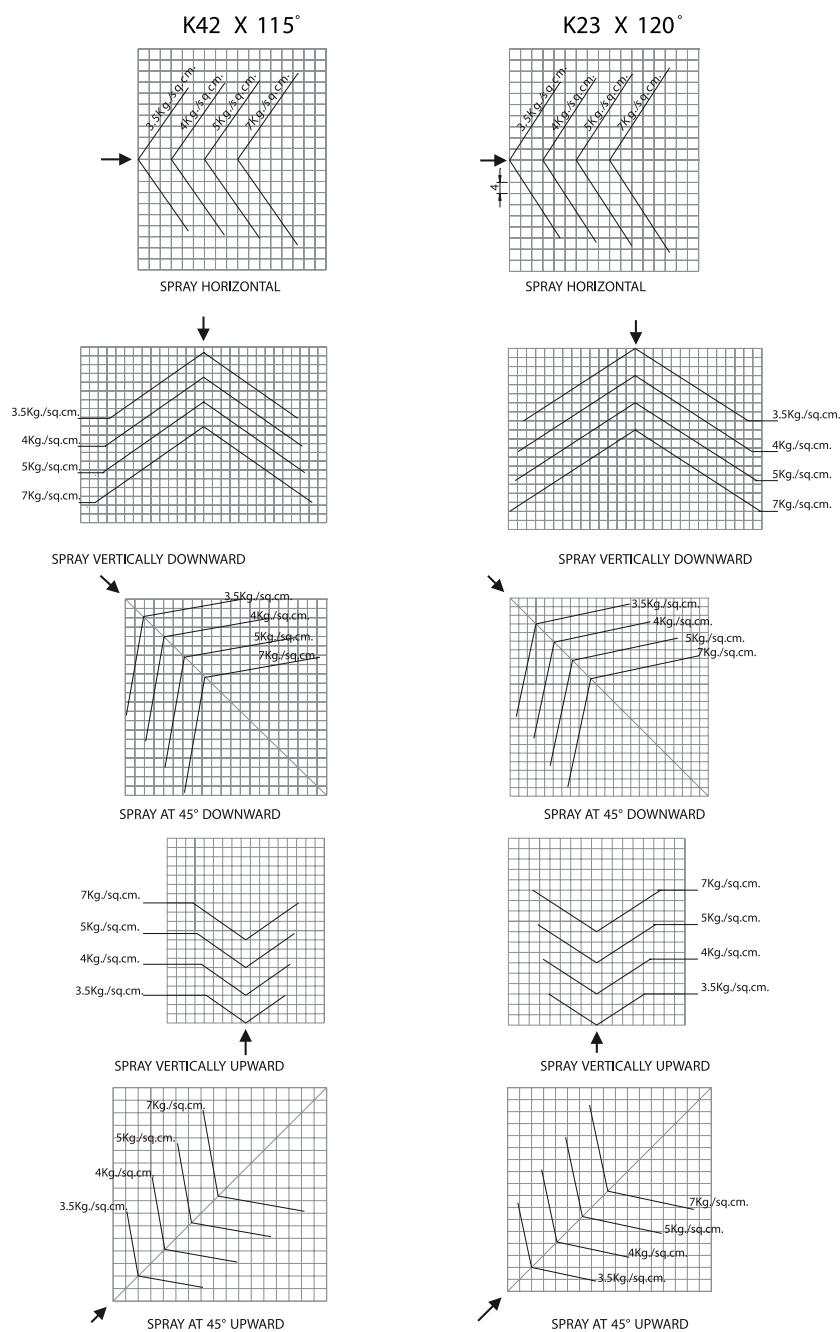
DIMENSION IN MILLIMETRES			
Nozzle Factor & Spray Angle	A	B	C A/F
K 22 x 75°	49	21	30
K 18 x 80°	44	21	30
K 32 x 90°	49	21	30
K 26 x 100°	55	21	30
K 23 x 120°	49	21	30
K 42 x 115°	49	21	30

DISCHARGE CHARACTERISTICS



$Q = K \sqrt{P}$ where P is supply pressure in Kg/sq.cm., K = nozzle constant (K-f actor) in metric
US K factor = Metric K factor \div 14.745

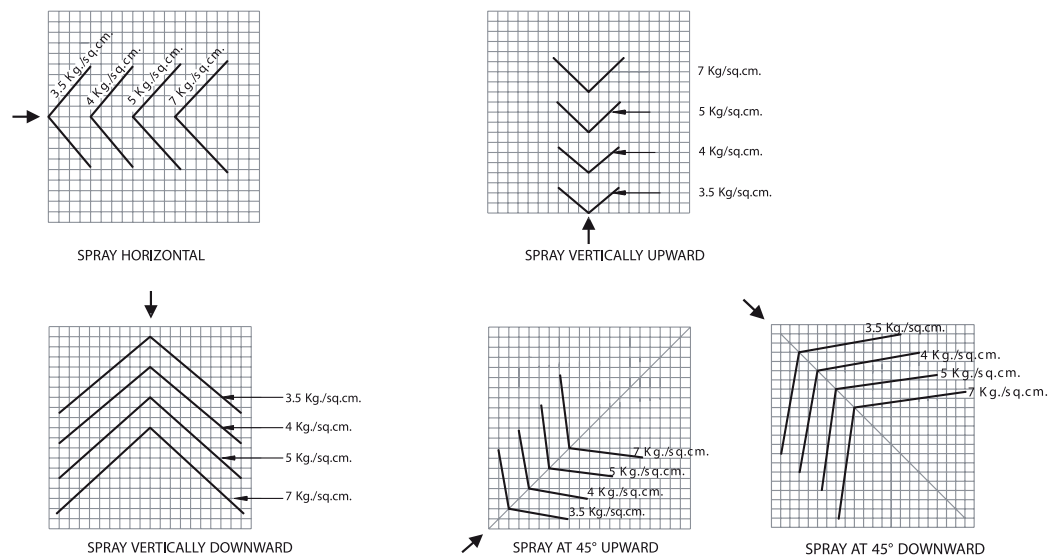
Spray Pattern



Note : One square is 200 X 200 mm.

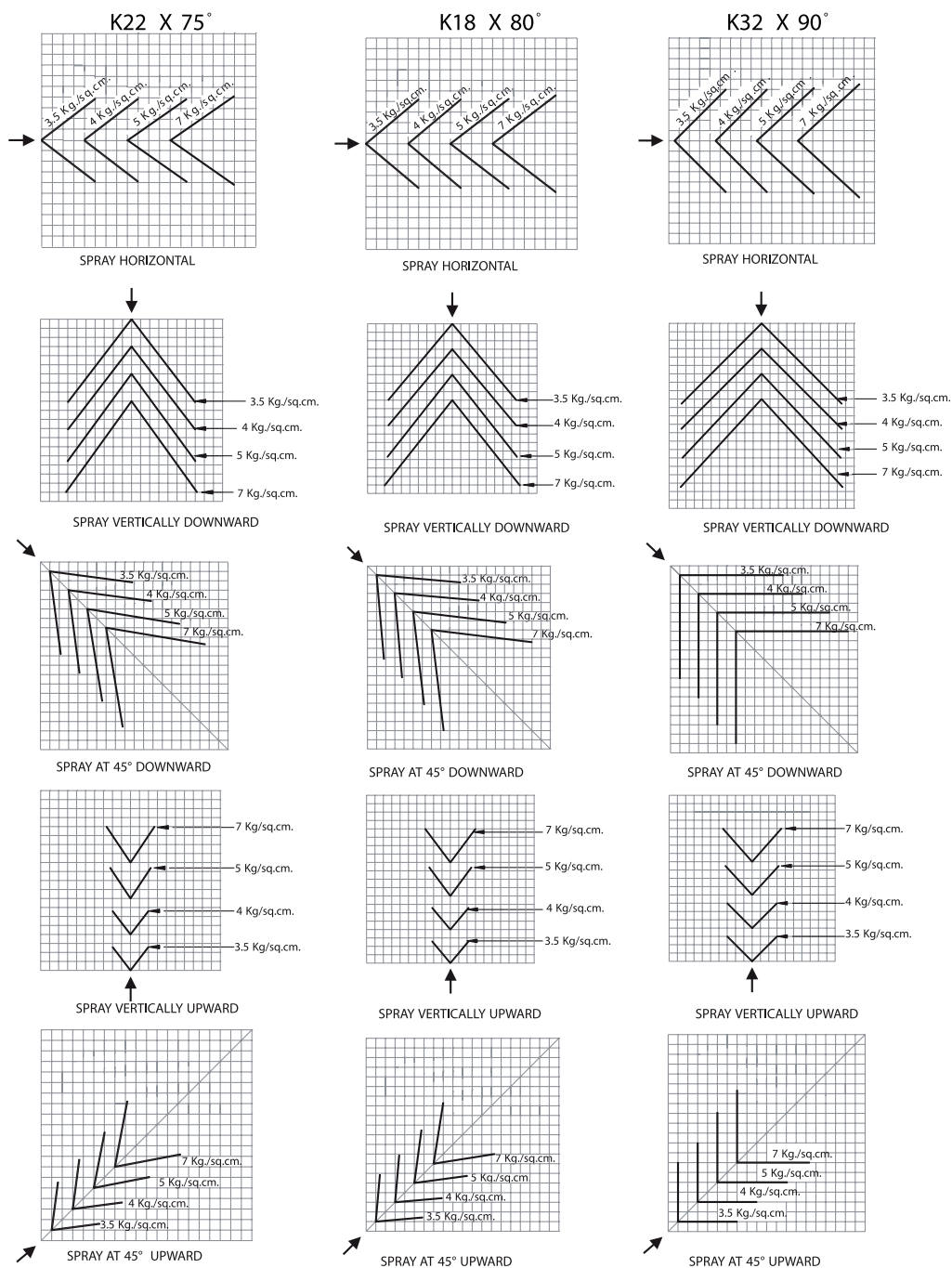
Spray Pattern

K26 x 100





Spray Pattern



Note : One square is 200 X 200 mm.

MAINTENANCE

The spray nozzle must be handled with due care. For best results, the storage as well as any further shipment be made in original packing only. Nozzle which is visibly damaged should not be installed. Use Teflon tape or soft thread sealant on the male thread of the nozzle.

It is recommended that the water spray system be inspected by an authorised technical personnel. The nozzle must be checked for corrosion, external and internal obstruction, blockage if any.

The nozzle should be cleaned or replaced if required. The system must be operated with optimum water flow at least three times in a year or as per the provision of NFPA/TAC or local authority having jurisdiction. The owner is solely responsible for maintaining the water spray system and components therein, so that it performs properly when required.



ACCESSORIES - SPRINKLER SPARES CABINETS

PRODUCT DESCRIPTION

Rapidrop sprinkler cabinets are designed to store spare sprinklers and a sprinkler wrench. Appropriate authorities having jurisdiction specify minimum number of emergency sprinklers that need to be kept on site. This allows for an immediate replacement of damaged sprinkler or sprinkler that have operated.

Sprinklers kept in the cabinet should be identical (type, orifice, temperature rating) as sprinklers installed in the sprinkler system.

Table below specifies recommended number of spare sprinklers for each sprinkler type installed in the system.

- Maximum sprinkler height 90mm
- Thread diameter max. 22mm (3/4")
- The cabinets are pre-drilled for wall mounting.
- Available in three sizes.
- Steel 20 SWG
- Colour RAL 3002



DIMENSIONS			
Type	Wide mm	Height mm	Depth mm
12 Head Sprinkler Cabinet	362	134	101
24 Head Sprinkler Cabinet	362	215	101
36 Head Sprinkler Cabinet	362	298	101



RDCAB12
12 sprinkler head cabinet



RDCAB24
24 sprinkler head cabinet



RDCAB36
36 sprinkler head cabinet



ACCESSORIES – TWO PIECE ROSETTE

PRODUCT DESCRIPTION

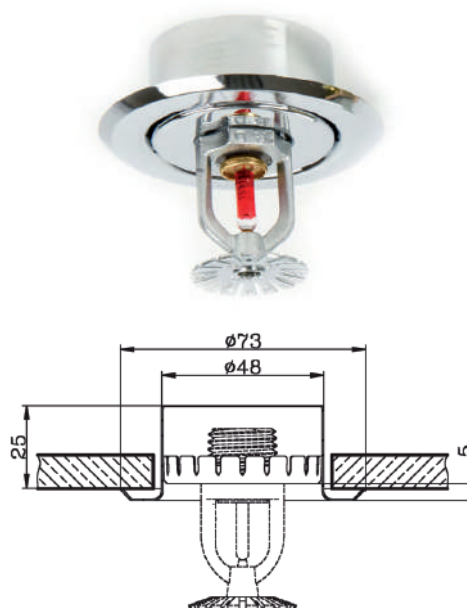
Recessed two pieces push fit rosette suitable for most 15mm pendent sprinkler heads. Two pieces rosettes must be installed in accordance with the relevant guidelines issued by the authority having jurisdiction. Maximum adjustment depth - 20mm.

FINISHES

Chrome
White (RAL9010)
Gloss White

MATERIAL SPECIFICATION

Inner	Pressed Spring Steel
Outer	Pressed Steel
Weight	35gr.



ACCESSORIES – MINIATURE SPRINKLER GUARD

PRODUCT DESCRIPTION

Rapidrop Sprinkler Guard encases the sprinkler to protect it from physical damage. Guards are recommended for sprinklers installed in areas exposed to high level of mechanical activities, e.g warehouse racks.

Wire clip type guard suitable for use with most 15mm sprinkler heads in either the upright or pendent position

FINISHED

Chrome

MATERIAL SPECIFICATION

Zinc Plated 13 s.w.g. Steel Wire
Weight 13g



INSTALLATION

- Install the sprinkler, refers to appropriate installation instructions.
- Remove the Locking Ring from the Guard.
- Spread 2 halves of the guard apart and carefully slide the guard onto the sprinkler. Make sure the base plate of the guard slots into the groove below (pendant) or above (upright) sprinkler thread.
- Slide the Locking Ring onto the guard until it locks in position.



ACCESSORIES – SPRINKLER SPANNER

PRODUCT DESCRIPTION

Always use Rapidrop sprinkler spanner for installing the sprinklers.





ACCESSORIES – SPRINKLER GUARD WITH SHIELD

PRODUCT DESCRIPTION

Sprinkler Guard encases the sprinkler to protect it from physical damage. Guards are recommended for sprinklers installed in areas exposed to high level of mechanical activities, e.g warehouse racks.

FINISHED

White or Chrome.

INSTALLATION

A. Pendent Sprinkler & Shield

- Thread the shield on to the sprinkler. Install the assembly.

B. Pendent Sprinkler & Guard.

- Install the sprinkler, refer to appropriate installation instructions.
- Remove the Locking Ring from the Guard.
- Spread 2 halves of the guard apart and carefully slide the guard onto the sprinkler. Make sure the base plate of the guard slots into the groove below sprinkler thread.
- Slide the Locking Ring onto the guard until it locks in position.

C. Pendent Sprinkler & Guard & Shield

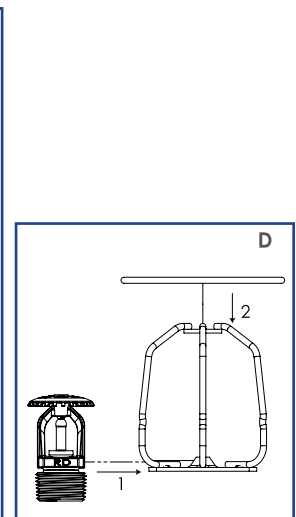
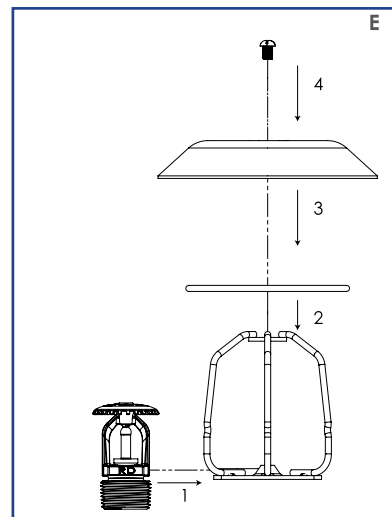
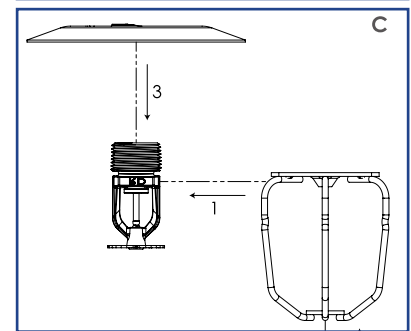
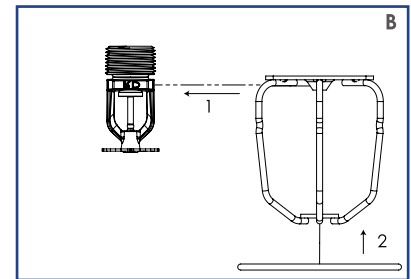
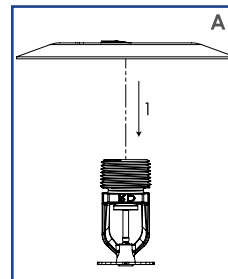
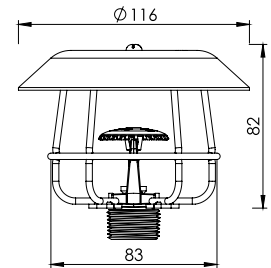
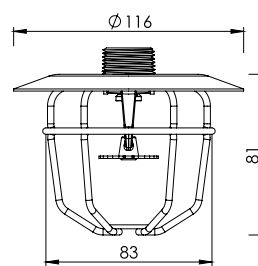
- Thread the shield on to the sprinkler frame
- Install the sprinkler, refer to appropriate installation instructions.
- Remove the Locking Ring from the Guard.
- Spread 2 halves of the guard apart and carefully slide the guard onto the sprinkler. Make sure the base plate of the guard slots into the groove below sprinkler thread.
- Slide the Locking Ring onto the guard until it locks in position.
- Install the sprinkler, refer to appropriate installation instructions.

D. Upright Sprinkler & Guard.

- Install the sprinkler, refer to appropriate installation instructions.
- Remove the Locking Ring from the Guard.
- Spread 2 halves of the guard apart and carefully slide the guard onto the sprinkler. Make sure the base plate of the guard slots into the groove above sprinkler thread.
- Slide the Locking Ring onto the guard until it locks in position.

E. Upright Sprinkler & Guard & Shield

- Install the sprinkler, refer to appropriate installation instructions.
- Remove the Locking Ring from the Guard.
- Spread 2 halves of the guard apart and carefully slide the guard onto the sprinkler. Make sure the base plate of the guard slots into the groove above sprinkler thread.
- Slide the Locking Ring onto the guard until it locks in position.
- Align the shield with the guard and connect them using supplied M5 screw.



NOTES:

[illegible]



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