NEW

FM APPROVED

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Grooved Couplings and Fittings



Company Profile

"GREEN MANUFACTURING CO. LIMITED"is a leading unit in organized sector engaged in manufacturing of Ductile Iron Pipe Fittings, Malleable Iron Pipe Fittings and Groove Fittings. Our products have been widely accepted in the market due to superior quality and accuracy. Due to our commitment towards quality consciousness, development systems and implementation methods, our company has been awarded ISO 9001-2008 certification from "UL MANAGEMENT SYSTEMS SOLUTIONS". The latest plant and machinery installed by the company is managed by a competent team of professionals in engineering and technology.

"Customer Loyalty is Priceless"

Customer satisfaction has always been the company's top priority, and we constantly stick to the principal to provide customer with a value added solution rather than simply delivering products.

Quality is never an accident ; it is always the result of high intention, sincere effort, intelligent direction and skillful execution ; it represents the wise choice of many alternatives. We insist on the management philosophy, 'to operate with integrity, first-rate service, harmony, environment friendly, serving the community'; inherit management principle, 'people-oriented management-innovation, continuous improvement', and pursue enterprise spirit, 'Innovation, sincerity and high efficiency'. Depending on good business reputation, reliable product quality and attentive services, we win the believing, supporting and favorable report from a wide range of customers.

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Certificate of Compliance

This certificate is issued for the following:

Pipe Couplings and Fittings for Aboveground Fire Protection Systems

Model NEW 1GS Rigid Coupling	**Model NEW 1GH** Rigid Bevel Coupling	**Model NEW 1X** Angle Pad Rigid Coupling
Model NEW 1N Flexible Coupling	**Model NEW 1NH** Flexible Coupling	**Model NEW 1NR** Reducer Coupling
Model NEW 3G Grooved Mechanical Tee	**Model NEW 321** Grooved Split Flange	**Model NEW 321G** Flange Adapter

Prepared for:

Green Manufacturing Co Ltd.
C 20 Canal Rd Near Canara Bank
Industrial Area
Jalandhar, Punjab 144004
India

FM Approvals Class: 1920 – "Pipe Couplings and Fittings for Aboveground Fire Protection Systems" (November 2007)

Approval Identification: PR466899
Revision Request: RR239113

Approval Granted: 24 August 2023
Date Authorized: 2 January 2024

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

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

FM Approvals
Member of the FM Global Group

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

FM Approvals

Certificate of Compliance

This certificate is issued for the following:

Pipe Couplings and Fittings for Aboveground Fire Protection Systems

Model NEW 1F Quick Coupling	**Model NEW 105** 11.25° Elbow

Prepared for:

Green Manufacturing Co., Ltd.
C-20 Canal Road, Industrial Area
Jalandhar City - 144004, Punjab
India

Approval Standard: FM 1920 (November 2007)

Approval Identification: PR466899
Revision Request: RR250719

Approval Granted: 24 August 2023
Date Authorized: 16 April 2026

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

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David B. Fuller
VP, Manager – Fire Protection
FM Approvals
One Technology Way
Norwood, MA 02062

FM APPROVED

Certificate of Compliance

This certificate is issued for the following:

Pipe Couplings and Fittings for Aboveground Fire Protection Systems

Model NEW 90 90d Elbow	**Model NEW 90DE** 90d Drain Elbow	**Model NEW 90RT** 90d Reducing Elbow	**Model NEW 90S** 90d Short Radius Elbow
Model NEW 130 Equal Tee	**Model NEW 110** 22.5d Elbow	**Model NEW 130S** Short Radius Equal Tee	**Model NEW 120** 45d Elbow
Model NEW 131 Grooved Reducing Tee	**Model NEW 131N** Threaded Reducing Tee	**Model NEW 180** Equal Cross	**Model NEW 180S** Short Radius Equal Cross

Prepared for:

Green Manufacturing Co Ltd.
C 20 Canal Rd Near Canara Bank
Industrial Area
Jalandhar, Punjab 144004
India

FM Approvals Class: 1920 – "Pipe Couplings and Fittings for Aboveground Fire Protection Systems" (November 2007)

Approval Identification: PR466899
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Norwood, MA 02062

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Certificate of Compliance

This certificate is issued for the following:

Pipe Couplings and Fittings for Aboveground Fire Protection Systems

Model NEW 230 Eccentric Reducer	**Model NEW 240** Concentric Reducer	**Model NEW 240N** Threaded Concentric Reducer
Model NEW 300 End Cap	**Model NEW 300H1** Concentric Drain End Cap	**Model NEW 300H2** Eccentric Drain End Cap
Model NEW 3L U-Bolt Mechanical Tee	**Model NEW 3J** Threaded Mechanical Tee	**Model NEW 3JS** Threaded Mechanical Tee

Prepared for:

Green Manufacturing Co Ltd.
C 20 Canal Rd Near Canara Bank
Industrial Area
Jalandhar, Punjab 144004
India

FM Approvals Class: 1920 – "Pipe Couplings and Fittings for Aboveground Fire Protection Systems" (November 2007)

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Norwood, MA 02062

NEW PIPE FITTINGS

FM APPROVED

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CERTIFICATE OF COMPLIANCE

Certificate Number EX27288
Report Reference EX27288-20230919
Issue Date 2023-SEPTEMBER-19

Issued to: GREEN MANUFACTURING CO LIMITED
C-20 Canal Road, Industrial Area Jalandhar Punjab 144004 IN

This certificate confirms that representative samples of FITTINGS, GROOVED AND PLAIN END
See addendum page for models

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

Standard(s) for Safety: UL 213C - Standard for Grooved and Plain End Fittings
ULC/ORD 213 - Rubber Gasketed Fittings for Fire-Protection Service

Additional Information: See UL Product iQ® at https://iq.ulprospector.com for additional information.

Deborah Jennings-Sims
Deborah Jennings-Sims, VP Regulatory Services
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number EX27288
Report Reference EX27288-20230919
Issue Date 2023-SEPTEMBER-19

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

Deborah Jennings-Sims
Deborah Jennings-Sims, VP Regulatory Services
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number EX27288
Report Reference EX27288-20230919
Issue Date 2023-SEPTEMBER-19

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Grooved End :
90S- 90° Short Radius Elbow
120- 45° Elbow
130S- Short Radius Equal Tee
240- Concentric Reducer (Grooved Outlet)
240N- Concentric Reducer (Threaded Outlet)
300- End Cap
300H1- Concentric Drain End Cap
300H2- Eccentric Drain End Cap
90- 90° Elbow
90DE- 90°Drain Elbow
90RT- 90° Reducing Elbow Grv / Thrd
130- Equal Tee
180- Equal Cross
180S- Short Radius Equal Cross
131- Reducing Tee (Grooved Outlet)
131N- Reducing Tee (Threaded Outlet)
321G- Flange Adaptor
110- 22.5° Elbow
105- 11.25° Elbow
230- Eccentric Reducer

Deborah Jennings-Sims
Deborah Jennings-Sims, VP Regulatory Services
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number EX29142
Report Reference EX29142-20230919
Issue Date 2023-SEPTEMBER-19

Issued to: GREEN MANUFACTURING CO LIMITED
C-20 Canal Road, Industrial Area
Jalandhar, Punjab 144004 India

This certificate confirms that representative samples of FITTINGS, RUBBER GASKETED
See Addendumn page for Models/Product

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

Standard(s) for Safety: ANSI/CAN/UL 213 Rubber Gasketed Fittings for Fire Protection Service

Additional Information: See UL Product iQ® at https://iq.ulprospector.com for additional information.



CERTIFICATE OF COMPLIANCE

Certificate Number EX29142
Report Reference EX29142-20230919
Issue Date 2023-SEPTEMBER-19

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

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Look for the UL Certification Mark on the product.



CERTIFICATE OF COMPLIANCE

Certificate Number EX29142
Report Reference EX29142-20230919
Issue Date 2023-SEPTEMBER-19

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Coupling –
1GS- Rigid Coupling
1NH- Heavy Duty Flexible Coupling
1X- Angle Pad Rigid Coupling
1GH- Rgid Bevel Coupling
1F- Quick Coupling

Reducing coupling –
1NR- Reducer Coupling

Flexible coupling -
1N- Flexible Coupling
1NH- Heavy Duty Flexible Coupling

Grooved Split Flange - 321

Side outlet -
3G- Mechanical Tee Grooved Outlet
3J- Mechanical Tee Threaded Outlet
3JS- Mechanical Tee Threaded Outlet
3L- U-Bolt Mechanical Tee Threaded Outlet

NEW PIPE FITTINGS

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APPLICATION FIELDS

















Products Presentation

Three traditional methods to connect steel pipes, namely welding, flange connection and screw connection.

NEW grooved piping system use the grooved couplings & branch outlet fittings as the key, supplemented by a variety of non-gasket pipefittings. This is a pipe connection revolution. At present, NEW manufactures all kinds of grooved branch outlet fittings and non-gasket fittings. In order to meet the needs of customers, NEW also developed extended products such as grooved end valves, filters, etc. NEW will continue to improve and optimize so that the company's product line can fulfill demands in civil construction, municipal and industrial fields..

NEW groove piping system is an universal, economic, safe and practical piping system components, the installation process will not bring any pollution to the pipeline. It is an environmentally friendly green product.

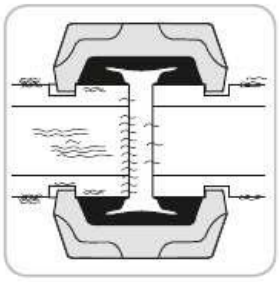
NEW groove piping system builds pipe connection on the external surface of steel pipes. The inner diameter & interior surface of the pipe has no matter of the connection, which makes the range of application of this product much more extended.

Products Strong Point

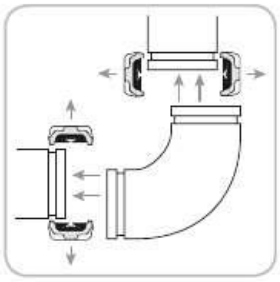
Compared with the traditional piping methods such as welded, flanges or threaded connection, the grooved and mechanical outlet fittings has very significant advantages, mainly in the following aspects:



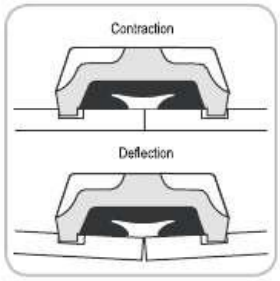
◆ Rigid
Rigid coupling provides enough rigidity to resist tube twisting and bending moment.



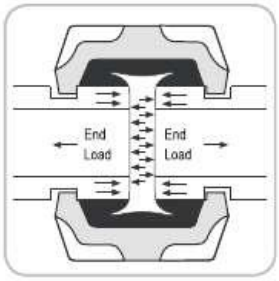
◆ Noise and vibration
The separation between pipe ends reduces the transmission of noise and vibration, provides the entire system a significant dampening effect



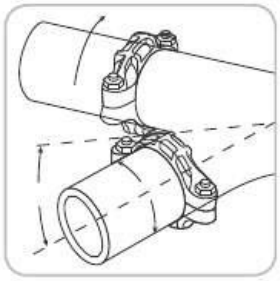
◆ system maintenance
System unit can be disassembled without moving the pipeline, thus facilitating system maintenance and modification.



◆ Flexibility
Flexible coupling provides radial and axial deflection. It absorbs expansion, contraction, deflection and vibration.



◆ Earthquake stress
The full circumferential engage between couplings keys and pipe grooves provides sufficient internal pressure and pipe end load capacity to withstand pipe movement.



◆ Easy alignment
Groove system allows free rotation of pipe and system components prior final fixing.

⚠ Warning

Before attempting to install, disassemble, and adjust any CNG product, please depressurize and drain the plumbing system. Failure to do this may result in personal injury, property damage, leaks, and / or other potential function failureßá

Products Type

NEW grooved piping system covers following categories:

- **Grooved Couplings**

Grooved couplings are designed as a ring self-centering connector, the inner key area of the housing engages in the pipe grooves to provide a pipe connection. When the flexible coupling is assembled in the pipeline, a gap is formed between the pipe ends to allow axial displacement and lateral deflection. Rigid coupling locks the pipes directly without deflection.

- **Mechanical Outlets**

The housing of branch outlet fittings has two different parts, respectively, the outlet housing and the cover. The mechanical outlets can be composed of two outlet housing (said the mechanical cross), or one outlet housing plus one cover(said as mechanical tee). The outlet housing is designed as a self-positioning structure, to builds a branch outlet on the main pipe run.

- **Grooved Non-Gasket Fittings**

Grooved fittings have a variety of styles, to provide flow direction turning, diameter reducing, branching and other functions.

Products Component

- **Housing**

Material: Ductile cast iron conforming to ASTM A-536, Grade 65-45-12.
Surface Finish: Standard: Epoxy powder coating
Optional: Galvanized (Zinc Plated, HDG), Dip painted
Surface Color: Variable colors for choice

- **Rubber Gasket**

Standard: EPDM.
Optional: Nitrile, Silicone, Fluoroelastomer, Neoprene
The sealing mechanism of grooved couplings and mechanical outlets is basically the same, the main structure of the gasket has "C" shape, forming a triple seal function. The first seal is formed by the elasticity of the gasket during the static state. After the coupling is installed, the gasket is confined by the housing of groove coupling or the mechanical outlet, the second seal is formed. Medium inside the pipe system press the "C" cavity after pressurizing, it increases the adhesion between gasket lip and steel pipe surface, so as to achieve the third reactive seal. The greater the pressure of the fluid within the pipe, The better the sealing of the coupling.



The material of the gasket must be chosen to follow the characteristics of the fluid medium below. The commonly used gasket are shown in the following table:

Grade	Temperature Range	Rubber Compound	Color Code	General Service Recommendations
E	-30°F to +230°F -34°C to +110°C	EPDM	Green Stripe	Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. **NOT RECOMMENDED FOR PETROLEUM SERVICES.**
T	-20°F to +180°F -29°C to +82°C	Nitrile	Orange Stripe	Recommended for petroleum products, hydrocarbons, air with oil vapors, vegetable and mineral oils within the specified temperature range; except hot dry air over +140°F/+60°C and water over +150°F/+66°C. **NOT RECOMMENDED FOR HOT WATER SERVICES.**
O	-20°F to +300°F -29°C to +149°C	Fluoroelastomer	Blue Stripe	Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons to +300°F/+149°C.
L	-30°F to +350°F -34°C to +177°C	Silicone	Body white	Recommended for dry heat, air without hydrocarbons to +350°F/+177°C and certain chemical services.
V	-30°F to +180°F -34°C to +82°C	Neoprene	Yellow Stripe	Recommended for hot lubricating oils and certain chemicals. Good oxidation resistance. Will not support combustion.

For specific compound and temperature compatibility, see this book Chemical Application Table

- **Bolt/Nut**

Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts.
Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.



As the manufacturer and innovator of grooved coupling technology, NEW offers a variety of coupling sizes and styles for almost any piping application.
All grooved couplings are made up of four parts, namely housing, gasket, bolt and nut. Housing is made of ductile iron, surface finish is orange, but also for a variety of fluid piping system to provide matching color scheme; standard gasket material is EPDM, also prepared for a variety of pipeline media rubber material. The bolt's tensile rating is class 8.8 and the nut's rating 8.0.
NEW couplings provide pipe system with versatility not found in other pipe connection methods. NEW rigid and flexible couplings can be combined to allow for thermal growth within the system. Additionally, the use of three consecutive flexible couplings reduces noise and vibration and eliminates costly noise dampeners.



Style 1GS Rigid Coupling
DN25~DN300 1"~24"
33.7mm~609.6mm



Style 1X Angle-pad Rigid Coupling
DN25~DN300 1"~12"
33.7mm~323.9mm



Style 1N Flexible Coupling
DN25~DN600 1"~24"
33.7mm~609.6mm



Style 1 F Quick Coupling
DN25~DN200 1"~8"
33.7mm~219.1mm

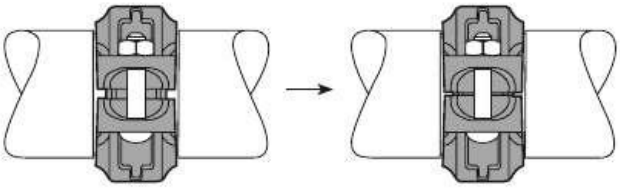


Style 1NR Reducing Flexible Coupling
DN32~DN200 1 1/4"~8"
42.4mm~219.1mm



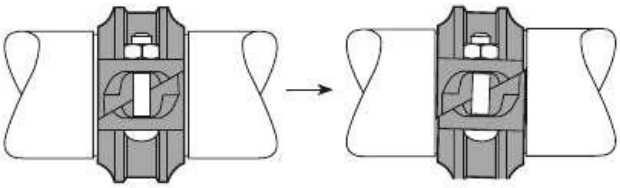
Style 321 Split Flange Adaptor
DN50~DN200 2"~8"
60.3mm~219.1mm

Rigid coupling connection & performance



The structure of the socket type rigid coupling is compact, with the inner and outer female and male teeth, socket type, meshing design, the use of the gap between the female and male port socket combination of pipe and joint meshing to achieve the rigid requirements.

Due to the improved interface structure, it is not easy to make the gasket to produce transverse and oblique twists and turns, the positioning of the gasket is more accurate, the abnormal pressing and destructive pressure loss of the gaskets are avoided, the sealing property is increased, and the overall joint is increased service life.



The Angle-pad rigid coupling is designed to sliding rather than vertical moving when tightening the housing. So the pipe tightly stuck to form a rigid connection. This 60°diagonal sliding also forces the coupling housing keys to make double sided contact on the inside and outside edges of the groove so that axial and radial movement of the tube cannot occur and the effect of rigid connecting pipe is truly achieved. No deflection after installation.
This rigid coupling allows for more accurate positioning of the tube end forming a fixed tube end separation that should be considered in the design and installation (see the following list of parameters).

Allow. Pipe End Sep.

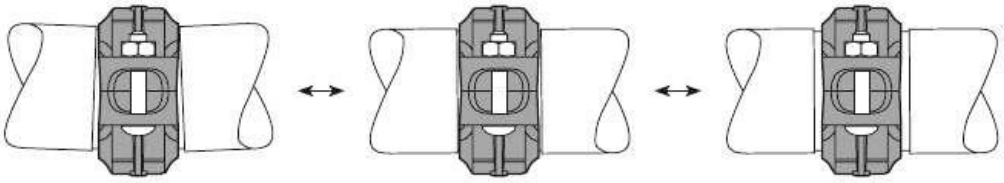
Size		Allow. Pipe End Sep.	
Nominal Dia.	Actual O.D.	Style 1GS	Style 1X
DN Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	2.3 0.091	2.2 0.087
32 $1^1/_4$	42.4 1.660	2.3 0.091	2.2 0.087
40 $1^1/_2$	48.3 1.900	2.3 0.091	2.2 0.087
50 2	60.3 2.375	2.3 0.091	2.2 0.087
65 $2^1/_2$	73.0 2.875	2.3 0.091	2.7 0.106
65 $2^1/_2$	76.1 3.000	2.3 0.091	2.7 0.106
80 3	88.9 3.500	2.7 0.106	2.7 0.106
100 4	108.0 4.250	2.7 0.106	3.3 0.130
100 4	114.3 4.500	2.7 0.106	3.3 0.130

Size		Allow. Pipe End Sep.	
Nominal Dia.	Actual O.D.	Style 1GS	Style 1X
DN Inches	mm Inches	mm Inches	mm Inches
125 5	133.0 5.250	2.7 0.106	3.3 0.130
125 5	139.7 5.500	2.7 0.106	3.3 0.130
125 5	141.3 5.563	2.7 0.106	3.3 0.130
150 6	159.0 6.250	2.7 0.106	3.3 0.130
150 6	165.1 6.500	2.7 0.106	3.3 0.130
150 6	168.3 6.625	2.7 0.106	3.3 0.130
200 8	219.1 8.625	4.9 0.193	4.9 0.193
250 10	273.0 10.750	4.9 0.193	4.9 0.193
300 12	323.9 12.750	4.9 0.193	4.9 0.193

- Rigid couplings cannot be used to absorb any piping system movement.
- For the absorption of pipe system movement, please use flexible couplings.

Flexible Coupling Systems & Performance

Using of flat joint design, flexible coupling keeps a separation between pipe ends to achieve flexibility of pipeline. This structure ensures the strength without fully holding the pipes, allows axial and radial displacement, suitable for deflection requirements of the pipeline. The flexible coupling is designed to absorb the deviation of the pipe outer diameter without affecting the joint performance



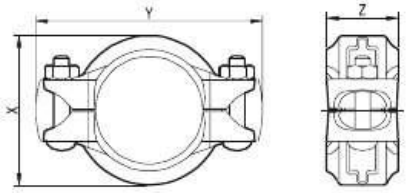
Allow. Pipe End Sep. & Flexibility

Size		Allow. Pipe End Sep.	Flexibility	
Nominal Dia.	Actual O.D.		Max. Degrees	Misalignment
DN Inches	mm Inches	mm Inches	(°)	mm/m In./Ft.
25 1	33.7 1.327	2.2 0.087	2.7	47 0.57
32 1 1/4	42.4 1.660	2.2 0.087	2.2	38 0.46
40 1 1/2	48.3 1.900	2.2 0.087	2.0	34 0.42
50 2	57.0 2.250	2.2 0.087	1.9	33 0.40
50 2	60.3 2.375	2.2 0.087	1.9	33 0.40
65 2 1/2	73.0 2.875	2.4 0.094	1.8	31 0.38
65 2 1/2	76.1 3.000	2.4 0.094	1.8	31 0.38
80 3	88.9 3.500	2.8 0.110	1.7	29 0.36
100 4	108.0 4.250	3.3 0.130	1.6	27 0.34
100 4	114.3 4.500	3.3 0.130	1.6	27 0.34

Size		Allow. Pipe End Sep.	Flexibility	
Nominal Dia.	Actual O.D.		Max. Degrees	Misalignment
DN Inches	mm Inches	mm Inches	(°)	mm/m In./Ft.
125 5	133.0 5.250	3.6 0.142	1.3	22 0.27
125 5	139.7 5.500	3.6 0.142	1.3	22 0.27
125 5	141.3 5.563	3.6 0.142	1.3	22 0.27
150 6	159.0 6.250	3.9 0.154	1.1	19 0.23
150 6	165.1 6.500	3.9 0.154	1.1	19 0.23
150 6	168.3 6.625	3.9 0.154	1.1	19 0.23
200A 8	216.3 8.516	4.9 0.193	0.85	14 0.18
200 8	219.1 8.625	4.9 0.193	0.85	14 0.18
250A 10	267.4 10.528	4.9 0.193	0.67	11 0.14
250 10	273.0 10.750	4.9 0.193	0.67	11 0.14
300A 12	318.5 12.539	4.9 0.193	0.58	10 0.12
300 12	323.9 12.750	4.9 0.193	0.58	10 0.12

- All the parameters in the above table are the maximum tolerance of each flexible couplingßá
- These values are based on standard roll grooved pipe. Figures for standard cut grooved pipe may increase.
- All the parameters in the above table are the maximum performance parameters. When designing and installing, the corresponding safety factor should be considered. It is suggested that the pipe diameter of DN25 ~ DN80 should be reduced to 50% and the pipe diameter of DN100 ~ DN300 should be reduced to 75%ßá

Style 1GS Rigid Coupling





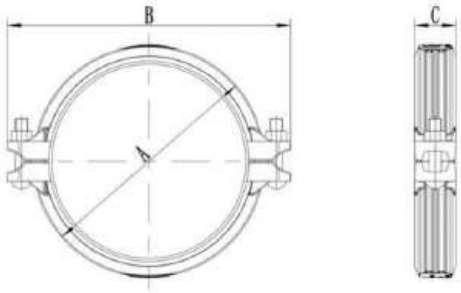
FM APPROVED UL LISTED

- Model 1GS rigid coupling, socketed & meshing design
- Female and male port socket design is not easy to make the horizontal and horizontal seal twists and turns, the gasket is not exposed, increasing the sealing and improve the overall service life of the joint
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	5170 750	4530 1020	2.3 0.091	54 2.126	98 3.858	44 1.732	M10X55 $^{3}/_{8}$X2¼
32 1¼	42.4 1.660	5170 750	7300 1620	2.3 0.091	63 2.480	103 4.055	44 1.732	M10X55 $^{3}/_{8}$X2¼
40 1½	48.3 1.900	5170 750	9470 2130	2.3 0.091	69 2.717	109 4.291	44 1.732	M10X55 $^{3}/_{8}$X2¼
50 2	60.3 2.375	4140 600	11820 2660	2.3 0.091	82 3.268	123 4.843	45 1.772	M10X55 $^{3}/_{8}$X2¼
65 2½	73.0 2.875	3780 550	15820 3570	2.3 0.091	96 3.780	142 5.591	46 1.811	M10X60 $^{3}/_{8}$X2⅜
65 2½	76.1 3.000	3780 550	17190 3890	2.3 0.091	100 3.937	145 5.709	46 1.811	M10X60 $^{3}/_{8}$X2⅜
80 3	88.9 3.500	3780 550	23460 5290	2.7 0.106	113 4.449	159 6.260	47 1.850	M10X60 $^{3}/_{8}$X2⅜
100 4	108.0 4.250	3450 500	31610 7090	2.7 0.106	136 5.354	186 7.323	49 1.929	M12X70 $^{1}/_{2}$X2$^{3}/_{4}$
100 4	114.3 4.5	3450 500	3540 7950	2.7 0.106	140 5.512	189 7.441	47 1.850	M12X70 $^{1}/_{2}$X2$^{3}/_{4}$
125 5	133.0 5.250	3450 500	47930 10820	2.7 0.106	163 6.417	216 8.504	50 1.969	M12X75 $^{1}/_{2}$X3
125 5	139.7 5.500	3450 500	52880 11880	2.7 0.106	169 6.654	222 8.740	50 1.969	M12X75 $^{1}/_{2}$X3
125 5	141.3 5.563	3450 500	54100 12150	2.7 0.106	171 6.732	224 8.819	50 1.969	M12X75 $^{1}/_{2}$X3
150 6	159.0 6.250	3450 500	68500 15340	2.7 0.106	190 7.480	237 9.33	51 2.008	M12X75 $^{1}/_{2}$X3
150 6	165.1 6.500	3450 500	73860 16590	2.7 0.106	196 7.717	248 9.764	51 2.008	M12X75 $^{1}/_{2}$X3
150 6	168.3 6.625	3450 500	76750 17240	2.7 0.106	198 7.835	251 9.882	51 2.008	M12X75 $^{1}/_{2}$X3
200 8	216.3 8.516	2750 400	101050 22780	4.9 0.193	252 9.921	319 12.560	58 2.283	M16X90 $^{5}/_{8}$X3$^{3}/_{4}$
200 8	219.1 8.625	2750 400	103680 23370	4.9 0.193	255 10.039	322 12.677	58 2.283	M16X90 $^{5}/_{8}$X3$^{3}/_{4}$
250A 10	267.4 10.528	2500 350	140400 30470	4.9 0.193	307 12.087	386 15.197	62 2.441	M20X100 $^{3}/_{4}$X4
250 10	273.0 10.750	2500 350	146340 31770	4.9 0.193	313 12.323	391 15.394	62 2.441	M20X100 $^{3}/_{4}$X4
300A 12	318.5 12.539	2500 350	199182 43220	4.9 0.193	360 14.173	440 17.468	63 2.480	M20X110 $^{3}/_{4}$X4$^{3}/_{4}$
300 12	323.9 12.750	2500 350	205990 44690	4.9 0.193	366 14.409	445 17.520	63 2.480	M20X110 $^{3}/$ X4$^{3}/$

- **Housing material**: Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**: R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish**: Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material**: EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts**: Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range**: DN25 through DN300 (1" through 12")
- **Tolerance** : + /- 7%

Style 1GS Rigid Coupling



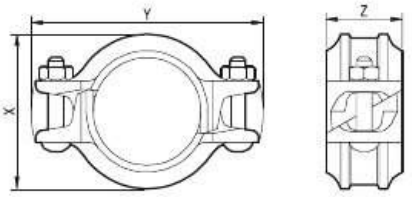


- Model 1GS rigid coupling, socketed & meshing design
- Female and male port socket design is not easy to make the horizontal and horizontal seal twists and turns, the gasket is not exposed, increasing the sealing and improve the overall service life of the joint
- Enhanced body resists 4 times working pressure.

Nominal Size	Pipe O.D.	Max. Working Pressure (CWP)	Dimensions			Bolt	
			A	B	C		Size
in mm	mm	PSI Bar	in mm	in mm	in mm	No.	in mm
14 DN350	355.6	300 21	15.9 405	19.6 498	2.87 73	2	7/8×4.72 M22×120
16 DN400	406.4	300 21	18.0 457	21.8 553	2.87 73	2	7/8×4.72 M22×120
18 DN450	457.2	300 21	20.2 512.6	24 610	2.93 74.5	2	1×5.12 M24×130
20 DN500	508.0	300 21	22.3 566	26.5 674	2.99 76	2	1×5.12 M24×130
22 DN550	558.8	300 21	24.5 621	28.7 730	2.99 76	2	1×5.12 M24×130
24 DN600	609.6	300 21	26.5 672	30.9 784	2.99 76	2	1×5.12 M24×130

- **Housing material**: Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **Pressure Rating**: R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish**: Electrophoretic Orange Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material**: EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts**: Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range**: DN350 through DN 600 (14" through 24")
- **Tolerance**: + /- 7%

Style 1X Angle Pad Rigid Coupling





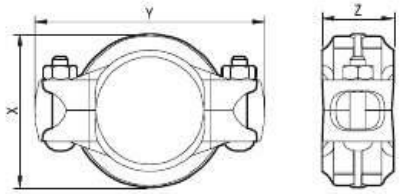
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- Model 1X Angle pad rigid coupling
- This rigid coupling allows for more accurate positioning of the tube end, forming a fixed tube end separation, which should be considered in the design and installation.
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	5170 750	4530 1020	2.2 0.086	54 2.126	90 3.543	45 1.772	M10X55 3/8X2¼
32 1¼	42.4 1.660	5170 750	7300 1620	2.2 0.086	63 2.480	102 4.016	45 1.772	M10X55 3/8X2¼
40 1½	48.3 1.900	5170 750	9470 2130	2.2 0.086	69 2.717	108 4.252	45 1.772	M10X55 3/8X2¼
50 2	60.3 2.375	4140 600	11820 2660	2.2 0.086	82 3.228	124 4.882	47 1.850	M10X55 3/8X2¼
65 2½	73.0 2.875	3780 550	15820 3570	2.7 0.106	96 3.780	140 5.512	48 1.900	M10X60 3/8X2 3/8
65 2½	76.1 3.000	3780 550	17190 3890	2.7 0.106	99 3.900	143 5.630	48 1.900	M10X60 3/8X2 3/8
80 3	88.9 3.500	3780 550	23460 5290	2.7 0.106	113 4.567	158 6.220	48 1.900	M10X60 3/8X2 3/8
100 4	108.0 4.250	3450 500	31610 7090	3.3 0.130	138 5.433	188 7.402	51 2.008	M12X70 1/2X2 3/4
100 4	114.3 4.500	3450 500	35400 7950	3.3 0.130	141 5.551	194 7.638	50 1.970	M12X70 1/2X2 3/4
125 5	133.0 5.250	3450 500	47930 10820	3.3 0.130	165 6.496	226 8.898	51 2.008	M12X75 1/2X3
125 5	139.7 5.500	3450 500	52880 11880	3.3 0.130	168 6.614	224 8.819	51 2.008	M12X75 1/2X3
125 5	141.3 5.563	3450 500	54100 12150	3.3 0.130	169 6.654	226 8.898	51 2.008	M12X75 1/2X3
150 6	159.0 6.250	3450 500	68500 15340	3.3 0.130	192 7.559	252 9.921	52 2.047	M12X75 1/2X3
150 6	165.1 6.500	3450 500	73860 16590	3.3 0.130	195 7.677	253 9.961	52 2.047	M12X75 1/2X3
150 6	168.3 6.625	3450 500	76750 17240	3.3 0.130	198 7.795	256 10.079	52 2.047	M12X75 1/2X3
200A 8	216.3 8.516	2750 400	101050 22780	4.9 0.193	252 9.921	319 12.560	60 2.362	M16X100 5/8X4 3/8
200 8	219.1 8.625	2750 400	103680 23370	4.9 0.193	255 10.039	322 12.677	60 2.362	M16X90 5/8X3 1/2
250A 10	267.4 10.528	2500 350	140400 30470	4.9 0.193	307 12.087	386 15.197	62 2.441	M20X115 3/4X4 1/2
250 10	273.0 10.750	2500 350	146340 31770	4.9 0.193	313 12.323	397 15.630	62 2.441	M20X115 3/4X4 1/2
300A 12	318.5 12.539	2500 350	199180 43220	4.9 0.193	361 14.213	440 17.323	63 2.480	M20X115 3/4X4 1/2
300 12	323.9 12.750	2500 350	205990 44690	4.9 0.193	366 14.409	445 17.520	63 2.480	M20X115 3/4X4 1/2

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Orange Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN25 through DN300 (1" through 12")
- **Tolerance :** + /- 7%

Style 1N Flexible Coupling





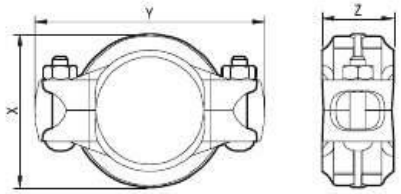
FM APPROVED UL LISTED

- Style 1N standard flexible coupling provides flexible connection by the gap between pipe groove and coupling key.
- Unique design allows both axial and radial movement, suitable for pipeline with flexibility under intermediate pressure.
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25	33.7	5170	4530	2.2	56	91	45	M10X55
1	1.327	750	1020	0.087	2.205	3.583	1.772	$^{3}/_{8}$X2$^{1}/_{8}$
32	42.4	5170	7300	2.2	68	103	45	M10X55
1$^{1}/_{4}$	1.660	750	1620	0.087	2.677	4.055	1.772	$^{3}/_{8}$X2$^{1}/_{8}$
40	48.3	5170	9470	2.2	73	109	45	M10X55
1$^{1}/_{2}$	1.900	750	2130	0.087	2.874	4.291	1.772	$^{3}/_{8}$X2$^{1}/_{8}$
50	57.0	4140	10560	2.2	82	123	45	M10X55
2	2.250	600	2390	0.087	3.228	4.843	1.772	$^{3}/_{8}$X2$^{1}/_{8}$
50	60.3	4140	11820	2.2	87	125	45	M10X55
2	2.375	600	2660	0.087	3.425	4.921	1.772	$^{3}/_{8}$X2$^{1}/_{8}$
65	73.0	3780	15820	2.4	100	138	46	M10X60
2$^{1}/_{2}$	2.875	550	3570	0.094	3.937	5.433	1.811	$^{3}/_{8}$X2$^{3}/_{4}$
65	76.1	3780	17190	2.4	103	141	46	M10X60
2$^{1}/_{2}$	3.000	550	3890	0.094	4.055	5.551	1.811	$^{3}/_{8}$X2$^{3}/_{4}$
80	88.9	3780	23460	2.8	118	165	46	M12X70
3	3.500	550	5290	0.110	4.646	6.496	1.811	$^{1}/_{2}$X2$^{3}/_{4}$
100	108.0	3450	31610	3.3	136	183	50	M12X70
4	4.250	500	7090	0.130	5.354	7.205	1.969	$^{1}/_{2}$X2$^{3}/_{4}$
100	114.3	3450	3540	3.3	140	194	50	M12X70
4	4.500	500	7950	0.130	5.512	7.634	1.969	$^{1}/_{2}$X2$^{3}/_{4}$
125	133.0	3450	47930	3.6	160	209	51	M12X70
5	5.250	500	10820	0.142	6.300	8.228	2.008	$^{1}/_{2}$X2$^{3}/_{4}$
125	139.7	3450	52880	3.6	172	220	51	M12X85
5	5.500	500	11880	0.142	6.772	8.661	2.008	$^{1}/_{2}$X2$^{3}/_{8}$
125	141.3	3450	54100	3.6	173	221	51	M12X75
5	5.563	500	12150	0.142	6.811	8.701	2.008	$^{1}/_{2}$X3
150	159.0	3450	68500	3.9	190	238	52	M12X75
6	6.250	500	15340	0.154	7.480	9.370	2.047	$^{1}/_{2}$X3

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN25 through DN300 (1" through 12")
- **Tolerance :** + / - 7%

Style 1N Flexible Coupling





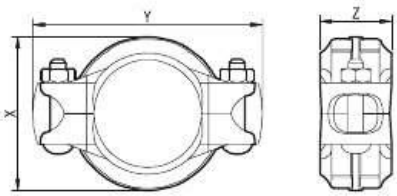
FM APPROVED UL LISTED

- Style 1N standard flexible coupling provides flexible connection by the gap between pipe groove and coupling key.
- Unique design allows both axial and radial movement, suitable for pipeline with flexibility under intermediate pressure.
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
150	165.1	3450	73860	3.9	197	250	51	M12X75
6	6.500	500	16590	0.154	7.756	9.843	2.008	$^{1}/_{2}$X3
150	168.3	3450	76750	3.9	202	251	52	M12X75
6	6.625	500	17240	0.154	7.835	9.882	2.047	$^{1}/_{2}$X3
200A	216.3	2750	101050	4.9	257	332	61	M20X115
8	8.516	400	22780	0.193	10.118	13.071	2.402	$^{3}/_{4}$X4$^{1}/_{2}$
200	219.1	2750	103680	4.9	260	335	61	M16X90
8	8.625	400	23370	0.193	10.236	13.189	2.402	$^{5}/_{8}$X3$^{1}/_{2}$
200	219.1	2750	103680	4.9	257	325	59	M20X115
8	8.625	400	23370	0.193	10.118	12.795	2.323	$^{3}/_{4}$X4$^{1}/_{2}$
250A	267.4	2500	140400	4.9	309	395	62	M20X100
10	10.528	3500	30470	0.193	12.165	15.551	2.441	$^{3}/_{4}$X4
250	273.0	2500	146340	4.9	315	400	62	M20X100
10	10.750	350	31770	0.193	12.401	15.748	2.441	$^{3}/_{4}$X4
300A	318.5	2500	199180	4.9	363	451	63	M20X100
12	12.539	350	43220	0.193	14.911	17.756	2.480	$^{3}/_{4}$X4
300	323.9	2500	205990	4.9	368	448	63	M20X100
12	12.750	350	44690	0.193	14.488	17.638	2.480	$^{3}/_{4}$X4

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN25 through DN300 (1" through 12")
- **Tolerance :** + /- 7%

Style 1N Flexible Coupling



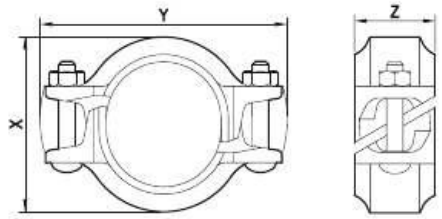


- Style 1N standard flexible coupling provides flexible connection by the gap between pipe groove and coupling key.
- Unique design allows both axial and radial movement, suitable for pipeline with flexibility under intermediate pressure.
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
350A	355.6	2500	248290	4.9	403	502	73	M22X120
14	14.000	350	53880	0.193	15.866	19.764	2.874	$^{7}/_{8}$X4$^{3}/_{4}$
350	377.0	2500	279070	4.9	425	515	73	M22X120
14	14.842	350	60560	0.193	16.732	20.276	2.874	$^{7}/_{8}$X4$^{3}/_{4}$
400A	406.4	2500	324300	4.9	459	560	73	M22X120
16	16.000	350	70380	0.193	18.071	22.047	2.874	$^{7}/_{8}$X4$^{3}/_{4}$
400	426.0	2500	36330	4.9	473	573	73	M22X120
16	16.772	350	77330	0.193	18.622	22.559	2.874	$^{7}/_{8}$X4$^{3}/_{4}$
500	508.0	2100	425640	4.9	576	681	76	M24X150
20	20.000	300	94250	0.193	22.677	26.811	2.992	1X5$^{7}/_{8}$
600	610.0	2100	612920	4.9	666	769	78	M24X150
24	24.016	300	135720	0.193	26.220	30.276	3.071	1X5$^{7}/_{8}$

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **Pressure Rating :** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Orange Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN350 through DN 600 (14" through 24")
- **Tolerance :** + /- 7%

Style 1F Quick Coupling





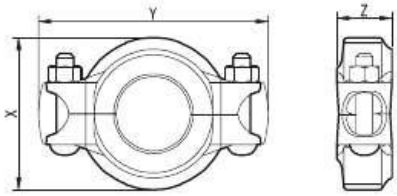
FM APPROVED UL LISTED

- Model 1F Quick Coupling rigid coupling
- This rigid coupling allows for more accurate positioning of the tube end, forming a fixed tube end separation, which should be considered in the design and installation.
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Pre-assembly dimension			Post-assembly dimension			Bolt/Nut Size
Nominal Dia.	Actual O.D.		X	Y	Z	X	Y	Z	
DN Inches	mm Inches	KPa PSI	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25	33.7	5170	65	100	50	56	100	50	M10X55
1	1.327	750	2.556	3.937	1.969	2.205	3.937	1.969	$^{3}/_{8}$X2$^{3}/_{8}$
32	42.4	5170	73	109	50	65	109	50	M10X55
1$^{1}/_{4}$	1.660	750	2.874	4.291	1.969	2.556	4.291	1.969	$^{3}/_{8}$X2$^{3}/_{8}$
40	48.3	5170	78	115	50	70	115	50	M10X55
1$^{1}/_{2}$	1.900	750	3.071	4.528	1.969	2.756	4.528	1.969	$^{3}/_{8}$X2$^{3}/_{8}$
50	60.3	4140	89	127	50	83	127	50	M10X60
2	2.375	600	3.504	5.000	1.969	3.268	5.000	1.969	$^{3}/_{8}$X2$^{3}/_{8}$
65	73.0	3780	103	140	50	96	140	50	M10X60
2$^{1}/_{2}$	2.875	550	4.055	5.512	1.969	3.780	5.512	1.969	$^{3}/_{8}$X2$^{3}/_{8}$
65	76.1	3780	106	142	50	99	142	50	M10X60
2$^{1}/_{2}$	3.000	550	4.173	5.591	1.969	3.898	5.591	1.969	$^{3}/_{8}$X2$^{3}/_{8}$
80	88.9	3780	118	159	50	112	159	50	M12X65
3	3.500	550	4.646	6.260	1.969	4.409	6.260	1.969	$^{1}/_{2}$X2$^{1}/_{2}$
100	114.3	3450	142	189	53	138	189	53	M12X70
4	4.500	500	5.591	7.441	2.087	5.433	7.441	2.087	$^{1}/_{2}$X2$^{3}/_{4}$
125	139.7	3450	175	218	53	168	218	53	M12X75
5	5.500	500	6.891	8.583	2.087	6.614	8.583	2.087	$^{1}/_{2}$X3
125	141.3	3450	175	220	53	169	220	53	M12X75
5	5.563	500	6.891	8.661	2.087	6.654	8.661	2.087	$^{1}/_{2}$X3
150	165.1	3450	198	255	53	190	255	53	M16X90
6	6.500	500	7.795	10.039	2.087	7.480	10.039	2.087	$^{5}/_{8}$X3$^{1}/_{2}$
150	168.3	3450	198	257	53	193	257	53	M16X90
6	6.625	500	7.795	10.118	2.087	7.598	10.118	2.087	$^{5}/_{8}$X3$^{1}/_{2}$
200	216.3	2750	251	312	60	244	312	60	M16X90
8	8.516	400	9.882	12.283	2.362	9.606	12.283	2.362	$^{5}/_{8}$X3$^{1}/_{2}$
200	219.1	2750	251	315	60	246	315	60	M16X90
8	8.625	400	9.882	12.402	2.362	9.685	12.402	2.362	$^{5}/_{8}$X3$^{1}/_{2}$

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Orange Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN25 through DN300 (1" through 12")
- **Tolerance :** + /- 7%

Style 1NR Reducing Flexible Coupling





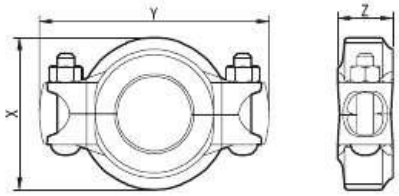
FM APPROVED UL LISTED

- Model 1NR is a reducing flexible coupling. Two ends can connect to different diameter of steel pipe. The middle of the coupling with a steel plate to avoid telescope by vertical installation.
- The structure ensures lower cost and faster installation under the premise of ensuring the strength.
- Enhanced body resists 4 times working pressure.

Size			Max. WorkPressure	Max. EndLoad	Allow. PipeEnd Sep.	Dimensions			Bolt/NutSize
Run Pipe	X	Branch Pipe				X	Y	Z	
mm Inches	X X	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
42.4	X	33.7	3800	3330	2.4	63	103	45	M10X55
$1^1/_4$	X	1	550	730	0.094	2.480	4.055	1.772	$^3/_8$X$2^1/_8$
48.3	X	42.4	3800	5365	2.4	72	109	45	M10X55
$1^1/_2$		$1^1/_4$	550	1190	0.094	2.835	4.291	1.772	$^3/_8$X$2^1/_8$
60.3	X	42.4	3800	5365	2.6	84	125	46	M10X55
2		$1^1/_4$	550	1190	0.102	3.307	4.921	1.811	$^3/_8$X$2^1/_8$
		48.3	3800	6963	2.6	82	125	46	M10X55
		$1^1/_2$	550	1559	0.102	3.228	4.921	1.811	$^3/_8$X$2^1/_8$
73.0	X	42.4	3800	5365	2.6	100	145	46	M12X75
$2^1/_2$		$1^1/_4$	550	1190	0.102	3.937	5.709	1.811	$^1/_2$X3
		48.3	3800	6963	2.6	100	145	46	M12X75
		$1^1/_2$	550	1559	0.102	3.937	5.709	1.811	$^1/_2$X3
		60.3	3800	10852	2.9	100	145	46	M12X75
		2	550	2437	0.114	3.937	5.709	1.811	$^1/_2$X3
76.1	X	42.4	3800	5365	2.6	103	148	46	M12X75
$2^1/_2$		$1^1/_4$	550	1190	0.102	4.055	5.827	1.811	$^1/_2$X3
		48.3	3800	6963	2.6	103	148	46	M12X75
		$1^1/_2$	550	1559	0.102	4.055	5.827	1.811	$^1/_2$X3
		60.3	3800	10852	2.9	103	148	46	M12X75
		2	550	2437	0.114	4.055	5.827	1.811	$^1/_2$X3
		73.0	3800	15905	3.1	103	148	46	M12X75
		$2^1/_2$	550	3571	0.122	4.055	5.827	1.811	$^1/_2$X3
88.9	X	42.4	3800	5365	3.1	114	160	49	M12X75
3		$1^1/_4$	550	1190	0.122	4.488	6.299	1.929	$^1/_2$X3
		48.3	3800	6963	3.1	114	160	49	M12X75
		$1^1/_2$	550	1559	0.122	4.488	6.299	1.929	$^1/_2$X3
		60.3	3450	9852	3.1	114	160	49	M12X75
		2	500	2215	0.122	4.488	6.299	1.929	$^1/_2$X3
		73.0	3800	15905	3.1	114	160	49	M12X75
		$2^1/_2$	550	3571	0.122	4.488	6.299	1.929	$^1/_2$X3
		76.1	3800	17284	3.1	114	160	49	M12X75
		$2^1/_2$	550	3888	0.122	4.488	6.299	1.929	$^1/_2$X3

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN40 X DN32 through DN200 X DN150 ($1^1/_2$" X $1^1/_4$" through 8"X6")
- **Tolerance :** + / - 7%

Style 1NR Reducing Flexible Coupling





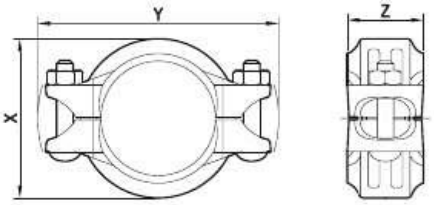
FM APPROVED UL LISTED

- Model 1NR is a reducing flexible coupling. Two ends can connect to different diameter of steel pipe. The middle of the coupling with a steel plate to avoid telescope by vertical installation.
- The structure ensures lower cost and faster installation under the premise of ensuring the strength.
- Enhanced body resists 4 times working pressure.

Size			Max. WorkPressure	Max. EndLoad	Allow. PipeEnd Sep.	Dimensions			Bolt/NutSize
Run Pipe	X	Branch Pipe				X	Y	Z	
mm	X	mm	KPa	N	mm	mm	mm	mm	mm
Inches	X	Inches	PSI	Lbs.	Inches	Inches	Inches	Inches	Inches
114.3	X	48.3	3450	6321	3.5	142	200	51	M16X90
4		$1^{1}/_{2}$	500	1421	0.138	5.591	7.874	2.008	$^{5}/_{8}$X$3^{1}/_{2}$
		60.3	3450	9852	3.5	142	200	51	M16X90
		2	500	2215	0.138	5.591	7.874	2.008	$^{5}/_{8}$X$3^{1}/_{2}$
		73.0	3450	14440	3.5	142	200	51	M16X90
		$2^{1}/_{2}$	500	3246	0.138	5.591	7.874	2.008	$^{5}/_{8}$X$3^{1}/_{2}$
		76.1	3450	15692	3.5	142	200	51	M16X90
		$2^{1}/_{2}$	500	3534	0.138	5.591	7.874	2.008	$^{5}/_{8}$X$3^{1}/_{2}$
		88.9	3800	23587	3.5	142	200	51	M16X90
		3	550	5292	0.138	5.591	7.874	2.008	$^{5}/_{8}$X$3^{1}/_{2}$
165.1	X	76.1	2750	12508	4.0	197	269	51	M20X115
6		$2^{1}/_{2}$	400	2812	0.157	7.756	10.591	2.008	$^{3}/_{4}$X$4^{1}/_{2}$
		88.9	2750	17070	4.0	197	269	51	M20X115
		3	400	3848	0.157	7.756	10.591	2.008	$^{3}/_{4}$X$4^{1}/_{2}$
		114.3	3100	31809	4.0	197	269	51	M20X115
		4	450	7157	0.157	7.756	10.591	2.008	$^{3}/_{4}$X$4^{1}/_{2}$
168.3	X	76.1	2750	12508	4.0	200	272	51	M20X115
6		$2^{1}/_{2}$	400	2812	0.157	7.874	10.709	2.008	$^{3}/_{4}$X$4^{1}/_{2}$
		88.9	2750	17070	4.0	200	272	51	M20X115
		3	400	3848	0.157	7.874	10.709	2.008	$^{3}/_{4}$X$4^{1}/_{2}$
		114.3	3100	31809	4.0	200	272	51	M20X115
		4	450	7157	0.157	7.874	10.709	2.008	$^{3}/_{4}$X$4^{1}/_{2}$
216.3	X	165.1	2750	58873	4.7	258	342	61	M22X135
8		6	350	13273	0.185	10.157	13.465	2.402	$^{7}/_{8}$X$5^{1}/_{8}$
219.1	X	88.9	2070	12849	4.9	261	345	61	M22X135
8		3	300	2886	0.193	10.276	13.583	2.402	$^{7}/_{8}$X$5^{1}/_{8}$
		114.3	2070	21240	4.9	261	345	61	M22X135
		4	300	7157	0.193	10.276	13.583	2.402	$^{7}/_{8}$X$5^{1}/_{8}$
		165.1	2750	58873	4.9	261	345	61	M22X135
		6	350	11674	0.193	10.276	13.583	2.402	$^{7}/_{8}$X$5^{1}/_{8}$
		168.3	2750	61178	4.9	261	345	61	M22X135
		6	350	12058	0.193	10.276	13.583	2.402	$^{7}/_{8}$X$5^{1}/_{8}$

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN40 X DN32 through DN200 X DN150 ($1^{1}/_{2}$" X $1^{1}/_{4}$" through 8"X6")
- **Tolerance :** + / - 7%

Style 1GH Heavy Duty Coupling





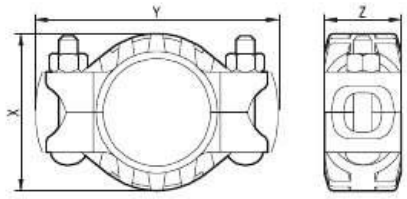
FM APPROVED UL LISTED

- Model 1GH rigid coupling, socketed & meshing design
- Female and male port socket design is not easy to make the horizontal and horizontal seal twists and turns, the gasket is not exposed, increasing the sealing and improve the overall service life of the joint
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	10350 1500	9068 2037	2.2 0.086	56 2.205	97 3.820	45 1.772	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
32 $1^{1}/_{4}$	42.4 1.660	860 1250	1214 2705	2.2 0.086	66 2.520	112 4.409	45 1.772	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
40 $1^{1}/_{2}$	48.3 1.900	860 1250	1576 3544	2.2 0.086	70 2.760	125 4.921	45 1.772	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
50 2	60.3 2.375	860 1250	2195 4970	2.2 0.086	84 3.308	134 5.276	46 1.811	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
65 $2^{1}/_{2}$	73.0 2.875	860 1250	2456 5538	2.7 0.106	98 3.858	153 6.074	48 1.900	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
65 $2^{1}/_{2}$	76.1 3.000	6900 1000	28879 6492	2.7 0.106	101 3.976	156 6.142	48 1.900	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
80 3	88.9 3.500	6900 1000	31384 7069	2.7 0.106	115 4.528	164 6.457	48 1.900	M12X60 $^{1}/_{2}$X2$^{3}/_{4}$
100 4	108.0 4.250	6900 1000	42830 9621	3.3 0.130	138 5.433	188 7.402	49 1.929	M12X75 $^{1}/_{2}$X3
100 4	114.3 4.500	6900 1000	63210 14186	3.3 0.130	144 5.669	203 7.992	49 1.929	M12X75 $^{1}/_{2}$X3
125 5	133.0 5.250	6900 1000	70800 15904	3.3 0.130	165 6.496	226 8.898	51 2.008	M16X90 $^{5}/_{8}$X3$^{1}/_{2}$
125 5	139.7 5.500	6900 1000	95861 21648	3.3 0.130	171 6.732	233 9.173	51 2.008	M16X90 $^{5}/_{8}$X3$^{1}/_{2}$
125 5	141.3 5.563	6900 1000	105763 23758	3.3 0.130	173 6.811	235 9.252	51 2.008	M16X90 $^{5}/_{8}$X3$^{1}/_{2}$
150 6	159.0 6.250	6900 1000	108199 24306	3.3 0.130	192 7.559	252 9.921	52 2.047	M16X100 $^{3}/_{4}$X4
150 6	165.1 6.500	6900 1000	137004 30680	3.3 0.130	198 7.795	266 10.472	52 2.047	M16X100 $^{3}/_{4}$X4
150 6	168.3 6.625	6900 1000	147718 33183	3.3 0.130	201 7.913	269 10.591	52 2.047	M16X100 $^{3}/_{4}$X4
200A 8	216.3 8.516	6900 1000	153500 34472	4.9 0.193	250 9.843	334 13.150	61 2.402	M20X100 $^{3}/_{4}$X4
200 8	219.1 8.625	5500 800	207366 46741	4.9 0.193	258 10.157	337 13.268	60 2.362	M20X100 $^{3}/_{4}$X4
250A 10	267.4 10.528	5500 800	308870 69642	4.9 0.193	314 12.362	396 15.591	64 2.520	M20X100 $^{3}/_{4}$X4
250 10	273.0 10.750	5500 800	321943 72610	4.9 0.193	319 12.560	401 15.787	64 2.520	M20X100 $^{3}/_{4}$X4
300A 12	318.5 12.539	5500 800	438200 98789	4.9 0.193	364 14.331	448 17.638	65 2.560	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
300 12	323.9 12.750	5500 800	453185 102141	4.9 0.193	369 14.528	453 17.835	65 2.560	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN25 through DN300 (1" through 12")
- **Tolerance :** + /- 7%

Style 1NH Heavy Duty Flexible Coupling





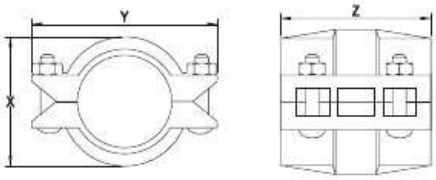
FM APPROVED UL LISTED

- Style 1NH heavy duty flexible coupling provides flexible connection by the gap between pipe groove and coupling key.
- Unique design allows both axial and radial movement, suitable for pipeline with flexibility under intermediate pressure.
- Enhanced body resists 4 times working pressure.

Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	10350 1500	9068 2037	2.2 0.087	57 2.244	91 3.583	45 1.772	M10X55 $^{3}/_{8}$X2$^{1}/_{8}$
32 1$^{1}/_{4}$	42.4 1.660	860 1250	1214 2705	2.2 0.087	66 2.598	109 4.291	45 1.772	M12X60 $^{1}/_{2}$X2$^{3}/_{8}$
40 1$^{1}/_{2}$	48.3 1.900	860 1250	1576 3544	2.2 0.087	72 2.835	115 4.528	45 1.772	M12X60 $^{1}/_{2}$X2$^{3}/_{8}$
50 2	60.3 2.375	860 1250	2456 5538	2.2 0.087	87 3.425	131 5.787	49 1.929	M12X60 $^{1}/_{2}$X2$^{3}/_{8}$
65 2$^{1}/_{2}$	73.0 2.875	6900 1000	28879 6492	2.4 0.094	101 3.976	147 5.984	49 1.929	M12X70 $^{1}/_{2}$X2$^{5}/_{8}$
65 2$^{1}/_{2}$	76.1 3.000	6900 1000	31384 7069	2.4 0.094	104 4.094	150 5.906	49 1.929	M12X70 $^{1}/_{2}$X2$^{5}/_{8}$
80 3	88.9 3.500	6900 1000	42830 9621	2.8 0.110	118 4.646	166 6.53	49 1.929	M12X70 $^{1}/_{2}$X2$^{3}/_{4}$
100 4	108.0 4.250	6900 1000	63210 14186	3.3 0.130	142 5.591	206 8.110	51 2.008	M16X90 $^{5}/_{8}$X3$^{1}/_{2}$
100 4	114.3 4.500	6900 1000	70800 15904	3.3 0.130	148 5.827	204 8.031	51 2.008	M16X90 $^{5}/_{8}$X3$^{1}/_{2}$
125 5	133.0 5.250	6900 1000	95861 21648	3.6 0.142	169 6.654	235 9.324	51 2.008	M20X110 $^{3}/_{4}$X4$^{3}/_{8}$
125 5	139.7 5.500	6900 1000	105763 23758	3.6 0.142	176 6.929	241 9.488	51 2.008	M20X110 $^{3}/_{4}$X4$^{3}/_{8}$
125 5	141.3 5.563	6900 1000	108199 24306	3.6 0.142	177 6.969	243 9.567	51 2.008	M20X110 $^{3}/_{4}$X4$^{3}/_{8}$
150 6	159.0 6.250	6900 1000	137004 30680	3.9 0.154	197 7.756	263 10.354	52 2.047	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
150 6	165.1 6.500	6900 1000	147718 33183	3.9 0.154	203 7.992	269 10.591	52 2.047	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
150 6	168.3 6.625	6900 1000	153500 34472	3.9 0.154	206 8.110	272 10.709	52 2.047	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
200A 8	216.3 8.516	5500 800	202100 45567	4.9 0.193	264 10.394	342 13.465	61 2.402	M22X135 $^{7}/_{8}$X5$^{3}/_{8}$
200 8	219.1 8.625	5500 800	207366 46741	4.9 0.193	267 10.512	345 13.583	61 2.402	M22X135 $^{7}/_{8}$X5$^{3}/_{8}$
250A 10	267.4 10.528	5500 800	308870 69642	4.9 0.193	317 12.480	419 16.496	65 2.559	M24X150 1X5$^{7}/_{8}$
250 10	273.0 10.750	5500 800	321943 72610	4.9 0.193	322 12.677	424 16.693	65 2.559	M24X150 1X5$^{7}/_{8}$
300A 12	318.5 12.539	5500 800	438200 98789	4.9 0.193	371 14.606	473 18.622	65 2.559	M24X150 1X5$^{7}/_{8}$
300 12	323.9 12.750	5500 800	453185 102141	4.9 0.193	376 14.803	478 18.819	65 2.559	M24X150 1X5$^{7}/_{8}$

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN25 through DN300 (1" through 12")
- **Tolerance :** + /- 7%

HDPE Coupling

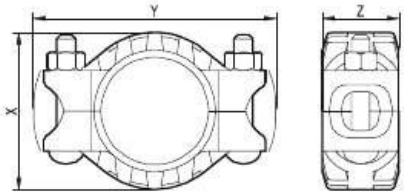




PIPE O.D.		Dimensions			Bolt/Nut Size
Min	Max	A	B	C	
mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
50 1.969	50.5 1.988	71 2.795	111 4.370	105 4.134	M10X50 $^{3}/_{8}$X2
63 2.480	63.6 2.504	86.7 3.413	128 5.039	105 4.134	M10X50 $^{3}/_{8}$X2
75 2.953	75.7 2.980	97.5 3.839	140 5.512	105 4.134	M10X50 $^{3}/_{8}$X2
90 3.543	90.9 3.579	113 4.449	156 6.142	105 4.134	M12X75 $^{1}/_{2}$X3
110 4.331	111 4.370	136 5.354	180 7.087	112 4.409	M12X75 $^{1}/_{2}$X3
140 5.512	141.3 5.563	168 6.614	210 8.268	118 4.646	M12X75 $^{1}/_{2}$X3
160 6.299	161.5 6.358	187 7.362	230 9.055	118 4.646	M12X80 $^{3}/_{8}$X3$^{1}/_{8}$
180 7.087	181.7 7.154	211 8.307	253 9.961	118 4.646	M12X70 $^{3}/_{8}$X2$^{1}/_{4}$
200 7.874	201.8 7.945	228.4 8.992	290 11.417	127 5.000	M16X100 $^{5}/_{8}$X4
225 8.858	226.4 8.913	261 10.276	330 12.992	127 5.000	M16X100 $^{5}/_{8}$X4
250 9.843	252.3 9.933	279 10.984	345.5 13.602	134 5.276	M16X100 $^{5}/_{8}$X4
280 11.024	281.7 11.091	311 12.244	393 15.472	134 5.276	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
315 12.402	317.9 12.516	347 13.661	429 16.890	134 5.276	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$

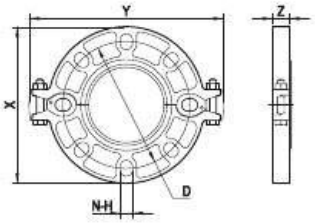
Style 777Z Flexible Coupling





Size		Max. Work Pressure	Max. End Load	Allow. Pipe End Sep.	Dimensions			Bolt/Nut Size
Nominal Dia.	Actual O.D.				X	Y	Z	
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	10350 1500	9068 2037	2.2 0.087	57 2.244	101 3.976	44 1.732	M10X50 $^{3}/_{8}$X2$^{3}/_{4}$
32 1$^{1}/_{4}$	42.4 1.660	860 1250	1214 2705	2.2 0.087	66 2.598	113 4.449	45 1.772	M12X60 $^{1}/_{2}$X3$^{3}/_{8}$
40 1$^{1}/_{2}$	48.3 1.900	860 1250	1576 3544	2.2 0.087	72 2.835	121 4.764	45 1.772	M12X60 $^{1}/_{2}$X3$^{3}/_{8}$
50 2	57.0 2.250	860 1250	2195 4970	2.2 0.087	84 3.307	135 5.315	47 1.850	M12X60 $^{1}/_{2}$X3$^{3}/_{8}$
50 2	60.3 2.375	860 1250	2456 5538	2.2 0.087	87 3.425	138 5.433	47 1.850	M12X60 $^{1}/_{2}$X3$^{3}/_{8}$
65 2$^{1}/_{2}$	73.0 2.875	6900 1000	28879 6492	2.4 0.094	101 3.976	152 5.984	49 1.929	M12X75 $^{1}/_{2}$X3
65 2$^{1}/_{2}$	76.1 3.000	6900 1000	31384 7069	2.4 0.094	104 4.094	155 6.102	49 1.929	M12X75 $^{1}/_{2}$X3
80 3	88.9 3.500	6900 1000	42830 9621	2.8 0.110	118 4.646	170 6.693	49 1.929	M12X75 $^{1}/_{2}$X3
100 4	108.0 4.250	6900 1000	63210 14186	3.3 0.130	142 5.591	206 8.110	51 2.008	M16X90 $^{5}/_{8}$X3$^{3}/_{8}$
100 4	114.3 4.500	6900 1000	70800 15904	3.3 0.130	148 5.827	212 8.346	51 2.008	M16X90 $^{5}/_{8}$X3$^{3}/_{8}$
125 5	133.0 5.250	6900 1000	95861 21648	3.6 0.142	169 6.654	243 9.567	51 2.008	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
125 5	139.7 5.500	6900 1000	105763 23758	3.6 0.142	176 6.929	249 9.803	51 2.008	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
125 5	141.3 5.563	6900 1000	108199 24306	3.6 0.142	177 6.969	251 9.882	51 2.008	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
150 6	159.0 6.250	6900 1000	137004 30680	3.9 0.154	197 7.756	271 10.669	51 2.008	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
150 6	165.1 6.500	6900 1000	147718 33183	3.9 0.154	203 7.992	277 10.906	51 2.008	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
150 6	168.3 6.625	6900 1000	153500 34472	3.9 0.154	206 8.110	279 10.984	51 2.008	M20X115 $^{3}/_{4}$X4$^{1}/_{2}$
200 8	219.1 8.625	5500 800	207366 46741	4.9 0.193	267 10.512	357 14.055	63 2.480	M22X135 $^{7}/_{8}$X5$^{1}/_{2}$
250 10	273.0 10.750	5500 800	321943 72610	4.9 0.193	320 12.598	410 16.142	65 2.559	M24X150 1X5$^{1}/_{2}$
300 12	323.9 12.750	5500 800	453185 102141	4.9 0.193	370 14.567	460 18.110	65 2.559	M24X150 1X5$^{1}/_{2}$

Style 321 Split Flange





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- Style 321 split flange mainly use for the flange connection with the valve, equipment or pipe conversion connection to solve the groove connection and flange connection conversion, installation is simple and fast.
- Model 321 split flange's bolt holes designed into oval hole. ANSI Class 125 & 150 and PN16 grade flanges are universally available, with DN50 to DN200 (2" to 8") for both PN10 and PN25 nominal flanges; DN100 to DN150 (4" to 6") for both flanges PN10 nominal grade flange.
- In addition to the standard flanges described above, it is also available to provide flanges under other standards such as JIS 10K and ANSI Class 300.

Size		Max. Work Pressure	Max. End Load	Dimensions			Diameter	No. & Hole	Bolt/Nut Size
Nominal Dia.	Actual O.D.			X	Y	Z	D	N—H	mm
DN Inches	mm Inches	KPa PSI	N Lbs.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
50	60.3	3450	9852	165	207	22	125	4-M18	M10X70
2	2.375	500	2215	6.496	8.145	0.866	4.921	4-0.709	$^{3}/_{8}$X2$^{3}/_{4}$
65	73.0	3450	14440	178	223	22	140	4-M18	M10X70
2$^{1}/_{2}$	2.875	500	3246	7.008	8.780	0.866	5.512	4-0.709	$^{3}/_{8}$X2$^{3}/_{4}$
65	76.1	3450	15692	185	230	22	145	4-M18	M10X70
2$^{1}/_{2}$	3.000	500	3534	7.283	9.055	0.866	5.709	4-0.709	$^{3}/_{8}$X2$^{3}/_{4}$
80	88.9	3450	21415	200	246	22	160	8-M18	M10X70
3	3.500	500	4811	7.874	9.685	0.866	6.299	0.709	$^{3}/_{8}$X2$^{3}/_{4}$
100	108.0	3450	31610	220	267	24	180	8-M18	M10X70
4	4.252	500	7090	8.661	10.512	0.945	7.087	0.709	$^{3}/_{8}$X2$^{3}/_{4}$
100	114.3	3450	35400	229	276	24	191	8-M18	M10X70
4	4.500	500	7952	9.016	10.866	0.945	7.520	0.709	$^{3}/_{8}$X2$^{3}/_{4}$
125	133.0	3450	47930	250	298	24	210	8-M18	M10X70
5	5.236	500	10820	9.843	11.732	0.945	8.268	0.709	$^{3}/_{8}$X2$^{3}/_{4}$
125	139.7	3450	52881	254	300	24	210	8-M18	M10X70
5	5.500	500	11879	10.000	11.811	0.945	8.268	0.709	$^{3}/_{8}$X2$^{3}/_{4}$
125	141.3	3450	54100	255	304	24	216	8-M22	M10X70
5	5.563	500	12153	10.039	11.968	0.945	8.504	0.866	$^{3}/_{8}$X2$^{3}/_{4}$
150	159.0	3450	68500	285	341	25	240	8-M22	M12X75
6	6.260	500	15340	11.220	13.425	0.984	9.449	0.866	$^{1}/_{2}$X3
150	165.1	3450	73859	285	341	25	240	8-M22	M12X75
6	6.500	500	16592	11.220	13.425	0.984	9.449	0.866	$^{1}/_{2}$X3
150	168.3	3450	76750	285	341	26	240	8-M22	M12X75
6	6.625	500	17236	11.220	13.425	1.024	9.449	0.866	$^{1}/_{2}$X3
200A	216.3	2750	101050	330	391	28	290	12-M22	M12X75
8	8.516	400	22780	12.992	15.394	1.102	11.417	12-0.866	$^{1}/_{2}$X3
200	219.1	2750	103683	343	400	28	298	12-M22	M12X75
8	8.625	400	23371	13.50	15.748	1.102	11.732	12-0.866	$^{1}/_{2}$X3

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- **Bolts and Nuts:** Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range:** DN50 through DN200 (2" through 8")
- **Tolerance :** + /- 7%

General





Grooved pipe fittings mainly include groove elbows, tee, cross, head, end cap and flange adaptor, etc., is an indispensable accessory in the grooved piping system, widely used in the whole system. Due to the grooved pipe fittings, making the site on-site installation and piping becomes quick and easy, is a very ideal way of piping.

The commonly used grooved fittings are made by the casting process. Most of the groove parts are made by casting. The advanced equipment and exquisite casting technology ensure the dimension accuracy of the groove. Machined grooves used, high precision machining, to ensure the reliability of the pipe system connection

The material of the grooved pipe fitting is ductile iron, which has the same performance as the connector shell. It has very high strength and toughness, and is a high-quality and long-life product.

The power of the pipeline system is provided by the pump. After passing through the entire piping system, it is ensured that sufficient pressure will be obtained on reaching the water equipment or appliances, and the pressure loss of the piping system will be minimized and the energy saving effect of the system will also be achieved.

The pressure loss of the pipe system is mainly caused by the pressure loss of pipes, pipe fittings, valves and some other fittings or accessories. The most serious pressure loss is the fittings of the pipe fittings. Therefore, it is very necessary to effectively control and improve the pressure loss of pipe fittings.

NEW groove fittings have carried out the calculation of the flow coefficient, to ensure product safety and life expectancy, but also to ensure adequate flow path diameter, turning radius and the smoothness of the inner surface, so as to ensure The pressure loss of the entire pipeline system is reduced, and the energy saving effect is achieved.

The pressure loss of NEW grooved pipe fittings can be estimated by referring to the flow coefficient table on the next page..

NEW groove fittings in addition to the standard ductile iron parts, there are other types of pipe fittings

- lined plastic grooved pipe fittings
- The lining plastic is lined with a layer of PTFE material on the inner surface of the pipe fitting, which is tasteless and non-toxic, and is an environmentally friendly food-grade material. Plastic pipe fittings are mainly used in domestic water piping systems or food-grade requirements of the pipeline system, such as pharmaceutical, food and other industries process pipeline.
- hot galvanized groove pipe fittings
- Steel grooved pipe fittings

Flow Data

The chart expresses the frictional resistance of various NEW fittings as equivalent feet of straight pipe. Fittings not listed can be estimated from the data given, for example, a 22.5° elbow is approximately one-half the resistance of a 45° elbow. Values of mid-sizes can be interpolated.

Size		90° Elbow		45° Elbow		Tee	
Nominal Dia.	Actual O.D.	Style 90	Style 9015D	Style 120	Style 9015D	Branch	RUN
DN	mm	m	m	m	m	m	m
Inches	Inches	Feet	Feet	Feet	Feet	Feet	Feet
25	33.7	0.5	—	0.2	—	1.3	0.5
1	1.327	1.6	—	0.7	—	4.3	1.6
32	424.	0.8	—	0.4	—	1.8	0.8
$1^1/_4$	1.660	2.6	—	1.3	—	5.9	2.6
40	48.3	0.9	—	0.4	—	2.0	0.9
$1^1/_2$	1.900	3.0	—	1.3	—	6.6	3.0
50	60.3	1.1	0.8	0.5	0.3	2.6	1.1
2	2.375	3.6	2.6	1.6	1.0	8.5	3.6
65	73.0	1.2	0.9	0.6	0.4	3.2	1.2
$2^1/_2$	2.875	3.9	3.0	2.0	1.3	10.5	3.9
65	76.1	1.3	1.0	0.7	0.4	3.3	1.3
$2^1/_2$	3.000	4.3	3.3	2.3	1.3	10.8	4.3
80	88.9	1.5	1.2	0.8	0.5	4.0	1.5
3	3.500	4.9	3.9	2.6	1.6	13.1	4.9
100	108.0	2.0	1.4	0.9	0.6	4.7	2.0
4	4.250	6.6	4.6	3.0	2.0	15.4	6.6
100	114.3	2.1	1.5	1.0	0.6	4.9	2.1
4	4.500	6.9	4.9	3.3	2.0	16.1	6.9
125	133.0	2.5	1.9	1.2	0.8	6.2	2.5
5	5.250	8.2	6.2	3.9	2.6	20.3	8.2
125	139.7	2.6	2.0	1.3	0.8	6.4	2.6
5	5.500	8.5	6.6	4.3	2.6	21.0	8.5

Size		90° Elbow		45° Elbow		Tee	
Nominal Dia.	Actual O.D.	Style 90	Style 9015D	Style 120	Style 9015D	Branch	RUN
DN	mm	m	m	m	m	m	m
Inches	Inches	Feet	Feet	Feet	Feet	Feet	Feet
125	141.3	2.6	2.0	1.3	0.8	6.4	2.6
5	5.563	8.5	6.6	4.3	2.6	21.0	8.5
150	159.0	2.9	2.2	1.5	0.9	7.6	2.9
6	6.250	9.5	7.2	4.9	3.0	24.9	9.5
150	165.1	2.9	2.3	1.5	0.9	7.6	3.0
6	6.500	9.5	7.2	4.9	3.0	24.9	9.5
150	168.3	3.0	2.3	1.5	0.9	7.6	3.0
6	6.625	9.8	7.5	4.9	3.0	24.9	9.8
200A	216.3	3.9	2.9	1.9	1.1	10.0	3.9
8	8.516	13.0	9.6	6.5	3.8	33.0	13.0
200	219.1	4.0	3.0	2.0	1.2	10.1	4.0
8	8.625	13.1	9.8	6.6	3.9	33.1	13.1
250A	267.4	4.9	3.4	2.4	1.4	12.3	4.9
10	10.528	16.0	11.1	8.1	4.8	40.3	16.0
250	273.0	5.2	3.7	2.5	1.5	12.5	5.2
10	10.750	17.1	12.1	8.2	4.9	41.0	17.1
300A	318.5	5.8	4.1	2.9	1.7	15.0	5.8
12	12.539	19.1	13.4	9.7	5.8	49.2	19.1
300	323.9	6.1	4.4	3.0	1.8	15.2	6.1
12	12.750	20.0	14.4	9.8	5.9	49.9	20.0

Note: The flow data listed is based upon the pressure drop of Schedule 40 pipe.

Material Specifications

Housing:

A: Ductile cast iron, QT450-12.conforming to ASTM A—536, Grade 65—45—12.
Ductile cast iron material is not easy to rust, high strength & toughness, good extensibility, but also has strong shock absorption properties.

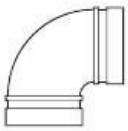
B: Steel, steel groove pipe fittings made of high-quality cold-rolled steel pipe, the groove is made of rolled (also according to customer requirements for cutting groove

Housing color:

Standard color: Electrophorentic Red Paint/ Fusion Bonded Epoxy Coated
Electrostatic powder epoxy resin powder, salt spray time more than 600 hours, superior corrosion resistance.

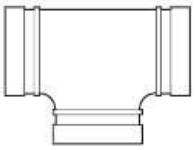
Other Optional: blue paint, gray paint, galvanized, etc. (order must be specified)

- The rated pressure of all standard pipe fittings is equal to the rated pressure of the coupling is used
- All pipe fittings are cut groove ends, as well as thread, flange and other conversion ends.
- Housing Finish: Fusion Bonded Epoxy Coated(Optional:Hot Deep Galvanized and Others)



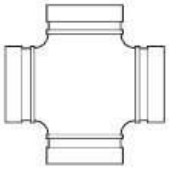
Style 90S 90° Short Elbow
DN50~DN200 2"~8"
60.3mm~219.1mm

FM APPROVED UL LISTED



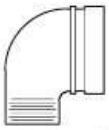
Style 130S Short Equal Tee
DN50~DN200 2"~8"
60.3mm~219.1mm

FM APPROVED UL LISTED



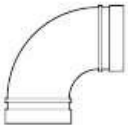
Style 180S Short Equal Cross
DN50~DN200 2"~8"
60.3mm~219.1mm

FM APPROVED UL LISTED



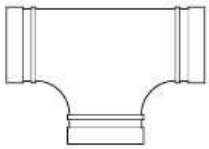
Style 90RT 90°Reducing Elbow GxT
DN25~DN65 $1^{1}/_{4}$"~$2^{1}/_{2}$"
42.4mm~76.1mm

FM UL



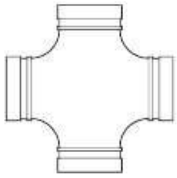
Style 90 90° Std. Elbow
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED



Style 130 Std. Equal Tee
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED



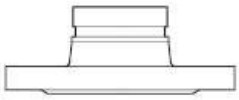
Style 180 Std. Equal Cross
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED



Style 90DE 90° Drain Elbow
DN50~DN200 2"~8" 60.3mm~219.1mm

FM UL



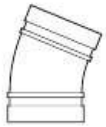
Style 321G Flange Adaptor Nipple
DN50~DN300 2"~12"
60.3mm~323.9mm

FM UL



Style 120 45°Elbow
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED



Style 110 22.5°Elbow
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED

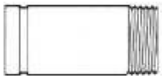


Style 105 11.25° Elbow
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED



Style 018GG Grooved X Grooved Nipple
DN25~DN300 1"~12"
33.4mm~323.9mm



Style 018GT Grooved X Threaded Nipple
DN25~DN300 1"~12"
33.4mm~323.9mm



Style 300 End Cap
DN25~DN300 1"~12"
33.4mm~323.9mm

FM APPROVED UL LISTED



Style 300CH End Cap
With Center Hole
DN50~DN300 2"~12"
60.3mm~323.9mm

FM APPROVED UL LISTED

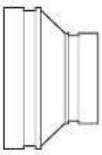


Style 300EH End Cap
With Eccentric Hole
DN50~DN300 2"~12"
60.3mm~323.9mm

FM APPROVED UL LISTED

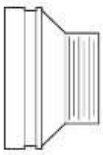


Style 018GB Grooved X Bevel Nipple
DN25~DN300 1"~12"
33.4mm~323.9mm



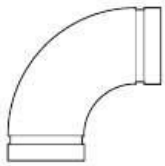
Style 240 Grooved Concentric Reducer
DN32X25~DN300X250
1¼X1"~12X10"
42.4X33.4mm~323.9X273.0mm

FM APPROVED UL LISTED

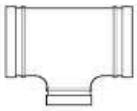


Style 240N Threaded Concentric Reducer
DN32X15~DN300X80
1¼X½"~12X3"
42.4X21.3mm~323.9X88.9mm

FM APPROVED UL LISTED

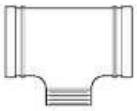


Style 9015D Long Radius 90°Elbows 1.5 D
DN50~DN300 2"~12"
60.3mm~323.9mm



Style 131 Grooved Reducing Tee
DN32X25~DN300X250
1¼X1"~12X10"
42.4X33.4mm~323.9X273.0mm

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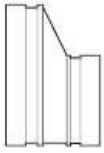


Style 131N Threaded Reducing Tee
DN32X15~DN300X80
1¼X½"~12X3"
42.4X21.3mm~323.9X88.9mm

FM APPROVED UL LISTED

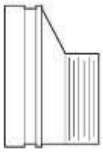


Style 4515D Long Radius 45°Elbows 1.5 D
DN50~DN300 2"~12"
60.3mm~323.9mm



Style 230 Grooved Eccentric Reducer
DN32X25~DN300X250
1¼X1"~12X10"
42.4X33.4mm~323.9X273.0mm

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Style 230N Threaded Eccentric Reducer
DN32X15~DN300X80
1¼X1/2"~12X3"
42.4X21.3mm~323.9X88.9mm

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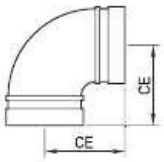


Style 9030DLong Radius 90°Elbows 3D
DN50~DN300 2"~12"
60.3mm~323.9mm

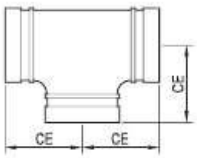


Style 4530DLong Radius 45°Elbows 3D
DN50~DN300 2"~12" 60.3mm~323.9mm

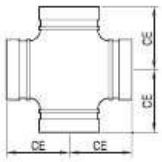
90° Short Elbow, Short Equal Tee & Short Equal Cross



Style 90S



Style 130S



Style 180S

Style 90S 90° Short Elbow



Style 130S Short Equal Tee



Style 180S Short Equal Cross



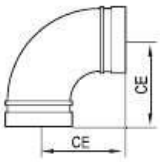
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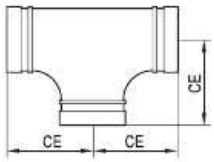
Size		Style 90S 90°Short Elbow	Style 130S Short Equal Tee	Style 180S Short Equal Cross
Nominal Dia.	Actual O.D.	CE	CE	CE
DN Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	– –	– –	– –
32 1 1/4	424. 1.660	– –	– –	– –
40 1 1/2	48.3 1.900	– –	– –	– –
50 2	60.3 2.375	70 2.75	70 2.75	70 2.75
65 2 1/2	73.0 2.875	76 3.00	76 3.00	76 3.00
65 2 1/2	76.1 3.000	76 3.00	76 3.00	76 3.00
80 3	88.9 3.500	86 3.40	86 3.40	86 3.40
100 4	108.0 4.250	102 4.00	102 4.00	102 4.00
100 4	114.3 4.500	102 4.00	102 4.00	102 4.00
125 5	133.0 5.250	124 4.88	124 4.88	124 4.88
125 5	139.7 5.500	124 4.88	124 4.88	124 4.88
125 5	141.3 5.563	124 4.88	124 4.88	124 4.88
150 6	159.0 6.250	140 5.50	140 5.50	140 5.50
150 6	165.1 6.500	140 5.50	140 5.50	140 5.50
150 6	168.3 6.625	140 5.50	140 5.50	140 5.50
200 8	216.3 8.516	173 6.80	173 6.80	173 6.80
200 8	219.1 8.625	173 6.80	173 6.80	173 6.80
250A 10	267.4 10.528	204 8.03	204 8.03	– –
250 10	273.0 10.750	185 7.28	185 7.28	– –
300A 12	318.5 12.539	220 8.66	220 8.66	– –
300 12	323.9 12.750	215 8.46	215 8.46	– –

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range**:DN50 through DN200 (2" through 8")
- **Tolerance** : + /- 7%

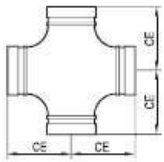
90° Standard Elbow, Standard Equal Tee & Standard Equal Cross



Style 90



Style 130



Style 180

Style 90 90°Standard Elbow



Style 130 Standard Equal Tee



Style 180 Standard Equal Cross



FM APPROVED UL LISTED

Size		Style 90 90° Std. Elbow	Style 130 Std. Equal Tee	Style 180 Std. Equal Cross
Nominal Dia.	Actual O.D.	CE	CE	CE
DN Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	57 2.25	57 2.25	57 2.25
32 $1^1/_4$	42.4 1.660	70 2.75	70 2.75	70 2.75
40 $1^1/_2$	48.3 1.900	70 2.75	70 2.75	70 2.75
50 2	60.3 2.375	83 3.25	83 3.25	83 3.25
65 $2^1/_2$	73.0 2.875	95 3.75	95 3.75	95 3.75
65 $2^1/_2$	76.1 3.000	95 3.75	95 3.75	95 3.75
80 3	88.9 3.500	108 4.25	108 4.25	108 4.25
100 4	108.0 4.250	127 5.00	127 5.00	127 5.00
100 4	114.3 4.500	127 5.00	127 5.00	127 5.00
125 5	133.0 5.250	140 5.50	140 5.50	140 5.50
125 5	139.7 5.500	140 5.50	140 5.50	140 5.50
125 5	141.3 5.563	140 5.50	140 5.50	140 5.50
150 6	159.0 6.250	165 6.50	165 6.50	165 6.50
150 6	165.1 6.500	165 6.50	165 6.50	165 6.50
150 6	168.3 6.625	165 6.50	165 6.50	165 6.50
200A 8	216.3 8.516	197 7.75	197 7.75	197 7.75
200 8	219.1 8.625	197 7.75	197 7.75	197 7.75
250A 10	267.4 10.528	229 9.00	229 9.00	229 9.00
250 10	273.0 10.750	229 9.00	229 9.00	229 9.00
300A 12	318.5 12.539	254 10.00	254 10.00	254 10.00
300 12	323.9 12.750	254 10.00	254 10.00	254 10.00

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range**:DN25 through DN300 (1" through 12")
- **Tolerance** : + /- 7%

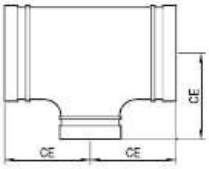
Reducing Tee



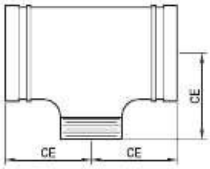
Style 131 Grooved Reducing Tee



Style 131N Threaded Reducing Tee



Style 131



Style 131N

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Size			Style 131 Reducing Tee	Style 131N Reducing Tee
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
42.4 1 1/4	X	33.7 1	57 2.25	57 2.25
48.3 1 1/2	X	33.4 1	70 2.75	70 2.75
		42.4 1 1/4	70 2.75	70 2.75
60.3 2	X	33.7 1	70 2.75	70 2.75
		42.4 1 1/4	70 2.75	70 2.75
		48.3 1 1/2	70 2.75	70 2.75
73.0 2 1/2	X	33.7 1	76 3.00	76 3.00
		42.4 1 1/4	76 3.00	76 3.00
		48.3 1 1/2	76 3.00	76 3.00
		60.3 2	76 3.00	76 3.00
76.1 2 1/2	X	33.7 1	76 3.00	76 3.00
		42.4 1 1/4	76 3.00	76 3.00
		48.3 1 1/2	76 3.00	76 3.00
		60.3 2	76 3.00	76 3.00
88.9 3	X	33.7 1	86 3.40	86 3.40
		42.4 1 1/4	86 3.40	86 3.40
		48.3 1 1/2	86 3.40	86 3.40
		60.3 2	86 3.40	86 3.40
		73.0 2 1/2	86 3.40	86 3.40
		76.1 2 1/2	86 3.40	86 3.40

Size			Style 131 Reducing Tee	Style 131N Reducing Tee
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
114.3 4	X	33.7 1	102 4.00	102 4.00
		42.4 1 1/4	102 4.00	102 4.00
		48.3 1 1/2	102 4.00	102 4.00
		60.3 2	102 4.00	102 4.00
		73.0 2 1/2	102 4.00	102 4.00
		76.1 2 1/2	102 4.00	102 4.00
		88.9 3	102 4.00	102 4.00
139.7 5	X	33.7 1	124 4.88	124 4.88
		42.4 1 1/4	124 4.88	124 4.88
		48.3 1 1/2	124 4.88	124 4.88
		60.3 2	124 4.88	124 4.88
		76.1 2 1/2	124 4.88	124 4.88
		88.9 3	124 4.88	124 4.88
		114.3 4	124 4.88	-- --
141.3 5	X	33.7 1	124 4.88	124 4.88
		42.4 1 1/4	124 4.88	124 4.88
		48.3 1 1/2	124 4.88	124 4.88
		60.3 2	124 4.88	124 4.88
		73.0 2 1/2	124 4.88	124 4.88
		88.9 3	124 4.88	124 4.88
		114.3 4	124 4.88	-- --

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65kgf/cm^2)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range**:DN32 X DN25 through DN300 X DN250 (1 1/4" X 1" through 12" X 10")
- **Tolerance** : + /- 7%

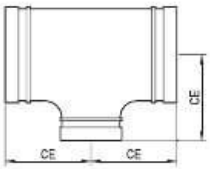
Reducing Tee



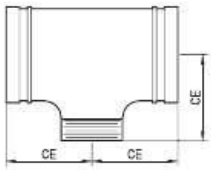
Style 131 Grooved Reducing Tee



Style 131N Threaded Reducing Tee



Style 131



Style 131N

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Size			Style 131 Reducing Tee	Style 131N Reducing Tee
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X X	mm Inches	mm Inches	mm Inches
165.1 6	X	33.7 1	140 5.50	140 5.50
		42.4 $1^1/_4$	140 5.50	140 5.50
		48.3 $1^1/_2$	140 5.50	140 5.50
		60.3 2	140 5.50	140 5.50
		76.1 $2^1/_2$	140 5.50	140 5.50
		88.9 3	140 5.50	140 5.50
		114.3 4	140 5.50	-- --
		139.7 5	140 5.50	-- --
168.3 6	X	33.7 1	140 5.50	140 5.50
		42.4 $1^1/_4$	140 5.50	140 5.50
		48.3 $1^1/_2$	140 5.50	140 5.50
		60.3 2	140 5.50	140 5.50
		73.0 $2^1/_2$	140 5.50	140 5.50
		88.9 3	140 5.50	140 5.50
		114.3 4	140 5.50	-- --
		114.3 5	140 5.50	-- --
216.3 8	X	33.7 1	173 6.80	173 6.80
		42.4 $1^1/_4$	173 6.80	173 6.80
		48.3 $1^1/_2$	173 6.80	173 6.80
		60.3 2	173 6.80	173 6.80
		73.0 $2^1/_2$	173 6.80	173 6.80
		76.1 $2^1/_2$	173 6.80	173 6.80
		88.9 3	173 6.80	173 6.80
		114.3 4	173 6.80	-- --
		139.7 5	173 6.80	-- --
		141.3 5	173 6.80	-- --

Size			Style 131 Reducing Tee	Style 131N Reducing Tee
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X X	mm Inches	mm Inches	mm Inches
216.3 8	X	165.1 6	173 6.80	-- --
		168.3 6	173 6.80	-- --
219.1 8	X	33.7 1	173 6.80	173 6.80
		42.4 $1^1/_4$	173 6.80	173 6.80
		48.3 $1^1/_2$	173 6.80	173 6.80
		60.3 2	173 6.80	173 6.80
		73.0 $2^1/_2$	173 6.80	173 6.80
		76.1 $2^1/_2$	173 6.80	173 6.80
		88.9 3	173 6.80	173 6.80
		114.3 4	173 6.80	-- --
		139.7 5	173 6.80	-- --
		141.3 5	173 6.80	-- --
		165.1 6	173 6.80	-- --
		168.3 6	173 6.80	-- --
273.0 10	X	114.3 4	229 9.00	-- --
		139.7 5	229 9.00	-- --
		141.3 5	229 9.00	-- --
		165.1 6	229 9.00	-- --
		168.3 6	229 9.00	-- --
		219.1 8	229 9.00	-- --
323.9 12	X	114.3 4	254 10.00	-- --
		139.7 5	254 10.00	-- --
		141.3 5	254 10.00	-- --
		165.1 6	254 10.00	-- --
		168.3 6	254 10.00	-- --
		219.1 8	254 10.00	-- --
		273.0 10	254 10.00	-- --

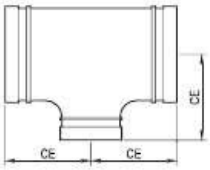
Reducing Tee



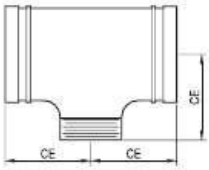
Style 131 Grooved Reducing Tee



Style 131N Threaded Reducing Tee



Style 131



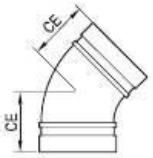
Style 131N

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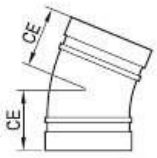
FM APPROVED UL LISTED

Size			Style 131 Reducing Tee	Style 131N Reducing Tee
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X X	mm Inches	mm Inches	mm Inches
267.4 10	X	114.3 4	204 8.03	-- --
		139.7 5	204 8.03	-- --
		165.1 6	204 8.03	-- --
		216.3 8	204 8.03	-- --
273.0 10	X	114.3 4	190 7.48	-- --
		139.7 5	190 7.48	-- --
		141.3 5	190 7.48	-- --
		165.1 6	190 7.48	-- --
		168.3 6	190 7.48	-- --
		219.1 8	190 7.48	-- --
318.5 12	X	139.7 5	220 8.66	-- --
		165.1 6	220 8.66	-- --
		216.3 8	220 8.66	-- --
		267.4 10	220 8.66	-- --
323.9 12	X	114.3 4	220 8.66	-- --
		139.7 5	220 8.66	-- --
		141.3 5	220 8.66	-- --
		165.1 6	220 8.66	-- --
		168.3 6	220 8.66	-- --
		219.1 8	220 8.66	-- --
		273.0 10	220 8.66	-- --

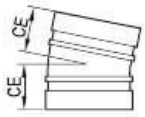
45° Elbow, 22.5° Elbow & 11.25° Elbow



Style 120



Style 110



Style 105

Style 120 45° Elbow



Style 110 22.5° Elbow



Style 105 11.25° Elbow



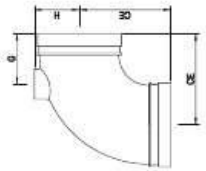
FM APPROVED UL LISTED

Size		Style 120 45° Elbow	Style 110 22.5° Elbow	Style 105 11.25° Elbow
Nominal Dia.	Actual O.D.	CE	CE	CE
DN Inches	mm Inches	mm Inches	mm Inches	mm Inches
25 1	33.7 1.327	44 1.75	44 1.75	35 1.38
32 $1^1/_4$	424. 1.660	44 1.75	44 1.75	35 1.38
40 $1^1/_2$	48.3 1.900	44 1.75	44 1.75	35 1.38
50 2	60.3 2.375	51 2.00	48 1.89	35 1.38
65 $2^1/_2$	73.0 2.875	57 2.25	51 2.00	38 1.50
65 $2^1/_2$	76.1 3.000	57 2.25	51 2.00	38 1.50
80 3	88.9 3.500	64 2.50	57 2.25	38 1.50
100 4	108.0 4.250	76 3.00	73 2.87	44 1.75
100 4	114.3 4.500	76 3.00	73 2.87	44 1.75
125 5	133.0 5.250	83 3.25	73 2.87	51 2.00
125 5	139.7 5.500	83 3.25	73 2.87	51 2.00
125 5	141.3 5.563	83 3.25	73 2.87	51 2.00
150 6	159.0 6.250	89 3.50	79 3.11	51 2.00
150 6	165.1 6.500	89 3.50	79 3.11	51 2.00
150 6	168.3 6.625	89 3.50	79 3.11	51 2.00
200A 8	216.3 8.516	108 4.25	83 3.25	51 2.00
200 8	219.1 8.625	108 4.25	83 3.25	51 2.00
250A 10	267.4 10.528	121 4.75	89 3.50	54 2.15
250 10	273.0 10.750	121 4.75	89 3.50	54 2.15
300A 12	318.5 12.539	133 5.25	102 4.00	57 2.25
300 12	323.9 12.750	133 5.25	102 4.00	57 2.25

- **Housing material:** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish:** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:** EPDM (Optional: Nitrile NBR, Silicone and Others)
- In addition to the points listed in this table, but also according to customer requirements to provide a variety of special point of the elbow
- **Size Range:** DN25 through DN300 (1"through 12")
- **Tolerance :** + / - 7%

Style 90DE 90° Drain Elbow with 1″ Threaded





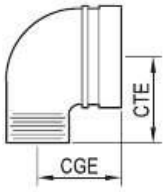
FM APPROVED UL LISTED

Size			Style 90RT 90° Drain Elbow		
Run Pipe	X	Branch Pipe	C to CE	C to G	C to H
mm Inches	X X	mm Inches	mm Inches	mm Inches	mm Inches
60.3	X	33.7	83	57	40
2	X	1	3.27	2.24	1.57
73.0	X	33.7	95	70	40
$2^1/_2$	X	1	3.74	2.76	1.57
76.1	X	33.7	95	70	40
$2^1/_2$	X	1	3.74	2.76	1.57
88.9	X	33.7	108	70	49
3	X	1	4.25	2.76	1.93
114.3	X	33.7	127	70	63
4	X	1	5.00	2.76	2.48
139.7	X	33.7	140	70	76
5	X	1	5.51	2.76	2.99
141.3	X	33.7	140	70	76
5	X	1	5.51	2.76	2.99
165.1	X	33.7	165	70	90
6	X	1	6.50	2.76	3.54
168.3	X	33.7	165	70	90
6	X	1	6.50	2.76	3.54
216.3	X	33.7	197	84	114
8	X	1	7.76	3.31	4.49
219.1	X	33.7	197	84	114
8	X	1	7.76	3.31	4.49

- **Housing material :** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed:** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish :** Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- Hydrophobic port thread standard size is 1", for other specifications, please indicate on the order.
- **Size Range :** DN50 through DN200 (2"through 8")
- **Tolerance :** + /- 7%

Style 90RT 90° Reducing Elbow with Threaded Small End (Add-a-cap)





Style 90RT

FM APPROVED UL LISTED

Size			Style 90RT 90° Reducing Elbow	
Run Pipe	X	Branch Pipe	C to GE	C to GE
mm Inches	X X	mm Inches	mm Inches	mm Inches
42.4	X	21.3	48	32
$1^1/_4$		$^1/_2$	1.90	1.26
		26.9	51	34
		$^3/_4$	2.00	1.34
		33.7	55	37
		1	2.17	1.46
48.3	X	21.3	48	35
$1^1/_2$		$^1/_2$	1.90	1.38
		26.9	51	37
		$^3/_4$	2.00	1.46
		33.7	55	40
		1	2.17	1.57
60.3	X	21.3	48	41
2		$^1/_2$	1.90	1.60
		26.9	51	43
		$^3/_4$	2.00	1.70
		33.7	55	46
		1	2.17	1.80
73.0	X	21.3	48	48
$2^1/_2$		$^1/_2$	1.90	1.90
		26.9	51	50
		$^3/_4$	2.00	1.97
		33.7	55	53
		1	2.17	2.10
76.1	X	21.3	48	51
$2^1/_2$		$^1/_2$	1.90	2.00
		26.9	51	53
		$^3/_4$	2.00	2.10
		33.7	55	56
		1	2.17	2.20

- **Housing material :** Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed :** R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range :** DN32 X DN15 through DN65 X DN25 ($1^1/_4$" X $^1/_2$" through $2^1/_2$" X 1")
- **Tolerance :** + /- 7%

End Cap & End Cap with Hole



Style 300

Style 300 End Cap

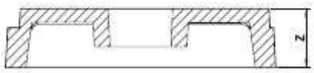


FM APPROVED UL LISTED

Size		Style 300 End Cap
Nominal Dia.	Actual O.D.	CE
DN Inches	mm Inches	mm Inches
25 1	33.7 1.327	27 1.06
32 $1^1/_4$	424. 1.660	27 1.06
40 $1^1/_2$	48.3 1.900	27 1.06
50 2	60.3 2.375	29 1.142
65 $2^1/_2$	73.0 2.875	29 1.142
65 $2^1/_2$	76.1 3.000	29 1.142
80 3	88.9 3.500	31 1.221
100 4	108.0 4.250	33 1.299
100 4	114.3 4.500	33 1.299
125 5	133.0 5.250	35 1.378
125 5	139.7 5.500	35 1.378
125 5	141.3 5.563	35 1.378
150 6	159.0 6.250	35 1.378
150 6	165.1 6.500	35 1.378
150 6	168.3 6.625	35 1.378
200 8	216.3 8.516	43 1.693
200 8	219.1 8.625	43 1.693
250A 10	267.4 10.528	50 1.969
250 10	273.0 10.750	50 1.969
300A 12	318.5 12.539	50 1.969
300 12	323.9 12.750	50 1.969

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- End cap standard thread is 1", for other specifications, please indicate on the order
- **Size Range**:DN25 through DN300 (1" through 12")
- **Tolerance** : + /- 7%

Style 300H1 End Cap With Center Hole



Style 300H1



FM APPROVED UL LISTED

Size			Max. Work Pressure	Dimensions
Run Pipe	X	Branch Pipe		Z
mm	X	mm	KPa	mm
Inches	X	Inches	PSI	Inches
60.3	X	33.7	2500	25
2		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
73.0	X	33.7	2500	25
$2^1/_2$		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
76.1	X	33.7	2500	25
$2^1/_2$		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
88.9	X	33.7	2500	25
3		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
108.0	X	33.7	2500	25
4		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
114.3	X	33.7	2500	25
4		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
133.0	X	33.7	2500	25
4		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984

Size			Max. Work Pressure	Dimensions
Run Pipe	X	Branch Pipe		Z
mm	X	mm	KPa	mm
Inches	X	Inches	PSI	Inches
139.7	X	33.7	2500	25
5		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
141.3	X	33.7	2500	25
5		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
159.0	X	33.7	2500	25
6		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
165.1	X	33.7	2500	25
6		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
168.3	X	33.7	2500	25
6		1	350	0.984
		42.4	2500	25
		$1^1/_4$	350	0.984
		48.3	2500	25
		$1^1/_2$	350	0.984
216.3	X	33.7	2500	30
8		1	350	1.181
		42.4	2500	30
		$1^1/_4$	350	1.181
		48.3	2500	30
		$1^1/_2$	350	1.181
219.1	X	33.7	2500	30
8		1	350	1.181
		42.4	2500	30
		$1^1/_4$	350	1.181
		48.3	2500	30
		$1^1/_2$	350	1.181

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- End cap standard thread is 1", for other specifications, please indicate on the order
- **Size Range**:DN25 through DN200 (1" through 8")
- **Tolerance** : + /- 7%

Style 300H2 End Cap With Eccentric Hole



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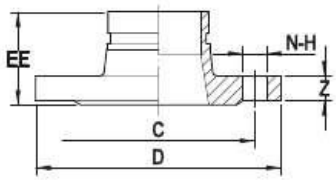
Style 300H2

Size			Max. Work Pressure	Dimensions
Run Pipe	X X	Branch Pipe		Z
mm Inches	X X	mm Inches	KPa PSI	mm Inches
60.3 2	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
73.0 2 1/2	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
76.1 2 1/2	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
88.9 3	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
108.0 4	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
114.3 4	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
133.0 4	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984

Size			Max. Work Pressure	Dimensions
Run Pipe	X	Branch Pipe		Z
mm Inches	X X	mm Inches	KPa PSI	mm Inches
139.7 5	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
141.3 5	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
159.0 6	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
165.1 6	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
168.3 6	X	33.7 1	2500 350	25 0.984
		42.4 1 1/4	2500 350	25 0.984
		48.3 1 1/2	2500 350	25 0.984
		60.3 2	2500 350	25 0.984
216.3 8	X	33.7 1	2500 350	30 1.181
		42.4 1 1/4	2500 350	30 1.181
		48.3 1 1/2	2500 350	30 1.181
		60.3 2	2500 350	30 1.181
219.1 8	X	33.7 1	2500 350	30 1.181
		42.4 1 1/4	2500 350	30 1.181
		48.3 1 1/2	2500 350	30 1.181
		60.3 2	2500 350	30 1.181

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- End cap standard thread is 1", for other specifications, please indicate on the order
- **Size Range** : DN25 through DN200 (1" through 8")
- **Tolerance** : + /- 7%

Style 321G Flange Adaptor Nipple



Style 321G

Style 321G Flange Adaptor Nipple



FM APPROVED UL LISTED

- Model 321G flanged adaptor is mainly used for the conversion connection of valves, equipment or pipes which interface with some flanges, which solves the conversion of the grooved connection and the flanged connection, and the installation is quick and easy.
- Model 321G flanged adaptor has bolt hole designed into an oval shape. ANSI Class 125 & 150 and PN16 grade flanges are universally available, with DN50 to DN80(2"to 3") for both PN10 and PN25 nominal flanges; DN100 to DN150 (4"to 6") for both flanges PN10 nominal grade flange.
- In addition to the above standard flanged short pipe products, other flange standards such as JIS 10K and ANSI Class 300 can also be supplied.

Size		Dimensions				
Nominal Dia.	Actual O.D.	EE	D	C	Z	No. & Hole
DN Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
32 1 1/4	42.4 1.660	60 2.36	134 5.28	100 3.94	14 0.55	4-M18 4-0.71
40 1 1/2	48.3 1.900	60 2.36	150 5.91	110 4.33	14 0.55	4-M18 4-0.71
50 2	60.3 2.375	60 2.36	165 6.50	121 4.76	15 0.59	4-M18 4-0.71
65 2 1/2	73.0 2.875	60 2.36	182 7.17	140 5.51	15 0.59	4-M18 4-0.71
65 2 1/2	76.1 3.000	60 2.36	182 7.17	140 5.51	15 0.59	4-M18 4-0.71
80 3	88.9 3.500	60 2.36	199 7.83	153 6.02	15 0.59	8-M18 8-0.71
100 4	108.0 4.250	70 2.76	227 8.94	180 7.09	18 0.71	8-M18 8-0.71
100 4	114.3 4.500	70 2.76	227 8.94	191 7.52	18 0.71	8-M18 8-0.71
125 5	133.0 5.250	70 2.76	250 9.84	210 8.27	19 0.75	8-M18 8-0.71
125 5	139.7 5.500	70 2.76	250 9.84	210 8.27	19 0.75	8-M23 8-0.91
125 5	139.7 5.500	80 3.15	253 9.96	210 8.27	19 0.75	8-M18 8-0.71
125 5	141.3 5.563	70 2.76	254 10.00	216 8.50	19 0.75	8-M22 8-0.87
150 6	159.0 6.250	70 2.76	285 11.22	240 9.45	19 0.75	8-M22 8-0.87
150 6	165.1 6.500	70 2.76	285 11.22	240 9.45	19 0.75	8-M22 8-0.87
150 6	168.3 6.625	70 2.76	285 11.22	240 9.45	19 0.75	8-M22 8-0.87
200 8	216.3 8.516	75 2.95	330 11.29	290 11.42	19 0.75	12-M22 12-0.87
200 8	219.1 8.625	75 2.95	345 13.58	295 11.61	19 0.75	12-M22 12-0.87
250A 10	267.4 10.528	90 3.54	400 15.748	355 13.98	24 0.945	12-M25 12-0.98
250 10	273.0 10.750	90 3.54	405 15.94	362 14.25	22 0.87	12-M25 12-0.98
300A 12	318.5 12.539	95 3.74	445 17.520	400 15.75	24 0.945	16-M26 16-1.02
300 12	323.9 12.750	95 3.74	485 19.09	432 17.01	30 1.18	12-M26 12-1.02

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range**:DN50 through DN300 (2"through 12")
- **Tolerance** : + / - 7%

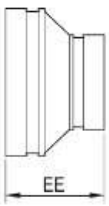
Concentric Reducer



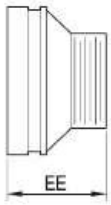
Style 240 Grooved Concentric Reducer



Style 240N Threaded Concentric Reducer



Style 240



Style 240N

FM APPROVED UL LISTED

FM APPROVED UL LISTED

Size			Style 240 Concentric Reducer	Style 240N Concentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
42.4 $1^{1}/_{4}$	X	33.7 1	64 2.50	64 2.50
48.3 $1^{1}/_{2}$	X	33.7 1	64 2.50	64 2.50
		42.4 $1^{1}/_{4}$	64 2.50	64 2.50
60.3 2	X	33.7 1	64 2.50	64 2.50
		42.4 $1^{1}/_{4}$	64 2.50	64 2.50
		48.3 $1^{1}/_{2}$	64 2.50	64 2.50
73.0 $2^{1}/_{2}$	X	33.7 1	64 2.50	64 2.50
		42.4 $1^{1}/_{4}$	64 2.50	64 2.50
		48.3 $1^{1}/_{2}$	64 2.50	64 2.50
		60.3 2	64 2.50	64 2.50
76.1 $2^{1}/_{2}$	X	33.7 $^{1}/_{2}$	64 2.50	64 2.50
		42.4 $1^{1}/_{4}$	64 2.50	64 2.50
		48.3 $1^{1}/_{2}$	64 2.50	64 2.50
		60.3 2	64 2.50	64 2.50
88.9 3	X	33.7 1	64 2.50	64 2.50
		42.4 $1^{1}/_{4}$	64 2.50	64 2.50
		48.3 $1^{1}/_{2}$	64 2.50	64 2.50

Size			Style 240 Concentric Reducer	Style 240N Concentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
88.9 3	X	60.3 2	64 2.50	64 2.50
		73.0 $2^{1}/_{2}$	64 2.50	64 2.50
		76.1 $2^{1}/_{2}$	64 2.50	64 2.50
114.3 4	X	33.7 1	76 3.00	76 3.00
		42.4 $1^{1}/_{4}$	76 3.00	76 3.00
		48.3 $1^{1}/_{2}$	76 3.00	76 3.00
		60.3 2	76 3.00	76 3.00
		73.0 $2^{1}/_{2}$	76 3.00	76 3.00
		76.1 $2^{1}/_{2}$	76 3.00	76 3.00
		88.9 3	76 3.00	76 3.00
139.7 5	X	33.7 1	89 3.50	89 3.50
		42.4 $1^{1}/_{4}$	89 3.50	89 3.50
		48.3 $1^{1}/_{2}$	89 3.50	89 3.50
		60.3 2	89 3.50	89 3.50
		76.1 $2^{1}/_{2}$	89 3.50	89 3.50
		88.9 3	89 3.50	89 3.50
		114.3 4	89 3.50	-- --
141.3 5	X	33.7 1	89 3.50	89 3.50
		42.4 $1^{1}/_{4}$	89 3.50	89 3.50
		48.3 $1^{1}/_{2}$	89 3.50	89 3.50
		60.3 2	89 3.50	89 3.50
		73.0 $2^{1}/_{2}$	89 3.50	89 3.50
		88.9 3	89 3.50	89 3.50
		114.3 4	89 3.50	-- --

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa/ 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range**:DN32 X DN25 through DN300 X DN250 ($1^{1}/_{4}$" X 1" through 12" X 10")
- **Tolerance** : + /- 7%

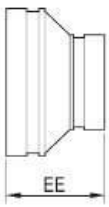
Concentric Reducer



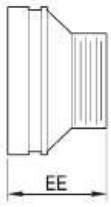
Style 240 Grooved Concentric Reducer



Style 240N Threaded Concentric Reducer



Style 240



Style 240N

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Size			Style 240 Concentric Reducer	Style 240N Concentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
165.1 6	X	33.7 1	102 4.00	102 4.00
		42.4 1 1/4	102 4.00	102 4.00
		48.3 1 1/2	102 4.00	102 4.00
		60.3 2	102 4.00	102 4.00
		76.1 2 1/2	102 4.00	102 4.00
		88.9 3	102 4.00	102 4.00
		114.3 4	102 4.00	-- --
		139.7 5	102 4.00	-- --
168.3 6	X	33.7 1	102 4.00	102 4.00
		42.4 1 1/4	102 4.00	102 4.00
		48.3 1 1/2	102 4.00	102 4.00
		60.3 2	102 4.00	102 4.00
		73.0 2 1/2	102 4.00	102 4.00
		88.9 3	102 4.00	102 4.00
		114.3 4	102 4.00	-- --
		141.3 5	102 4.00	-- --
216.3 8	X	33.7 1	127 5.00	127 5.00
		141.3 1 1/4	127 5.00	127 5.00
		48.3 1 1/2	127 5.00	127 5.00
		60.3 2	127 5.00	127 5.00
		73.0 2 1/2	127 5.00	127 5.00
		76.1 2 1/2	127 5.00	127 5.00
		88.9 3	127 5.00	127 5.00
		114.3 4	127 5.00	-- --
		139.7 5	127 5.00	-- --
		141.3 5	127 5.00	-- --

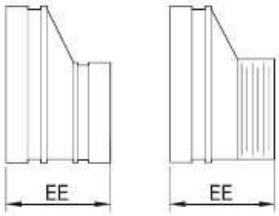
Size			Style 240 Concentric Reducer	Style 240N Concentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
216.3 8	X	165.1 6	127 5.00	-- --
		168.3 6	127 5.00	-- --
219.1 8	X	33.7 1	127 5.00	127 5.00
		141.3 1 1/4	127 5.00	127 5.00
		48.3 1 1/2	127 5.00	127 5.00
		60.3 2	127 5.00	127 5.00
		73.0 2 1/2	127 5.00	127 5.00
		76.1 2 1/2	127 5.00	127 5.00
		88.9 3	127 5.00	127 5.00
		114.3 4	127 5.00	-- --
		139.7 5	127 5.00	-- --
		141.3 5	127 5.00	-- --
		165.1 6	127 5.00	-- --
		168.3 6	127 5.00	-- --
273.0 10	X	114.3 4	152 6.00	-- --
		139.7 5	152 6.00	-- --
		141.3 5	152 6.00	-- --
		165.1 6	152 6.00	-- --
		168.3 6	152 6.00	-- --
		219.1 8	152 6.00	-- --
323.9 12	X	114.3 4	178 7.00	-- --
		139.7 5	178 7.00	-- --
		141.3 5	178 7.00	-- --
		165.1 6	178 7.00	-- --
		168.3 6	178 7.00	-- --
		219.1 8	178 7.00	-- --
		273.0 10	178 7.00	-- --

Eccentric Reducer



Style 230 Grooved Eccentric Reducer

Style 230N Threaded Eccentric Reducer



Style 230 Style 230N

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Size			Style 230 Eccentric Reducer	Style 230N Eccentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
42.4 1 1/4	X	33.7 1	64 2.50	64 2.50
48.3 1 1/2	X	33.4 1	64 2.50	64 2.50
		42.4 1 1/4	64 2.50	64 2.50
60.3 2	X	33.7 1	64 2.50	64 2.50
		42.4 1 1/4	64 2.50	64 2.50
		48.3 1 1/2	64 2.50	64 2.50
73.0 2 1/2	X	33.7 1	64 2.50	64 2.50
		42.4 1 1/4	64 2.50	64 2.50
		48.3 1 1/2	64 2.50	64 2.50
		60.3 2	64 2.50	64 2.50
76.1 2 1/2	X	33.7 1/2	64 2.50	64 2.50
		42.4 1 1/4	64 2.50	64 2.50
		48.3 1 1/2	64 2.50	64 2.50
		60.3 2	64 2.50	64 2.50
88.9 3	X	33.7 1	64 2.50	64 2.50
		42.4 1 1/4	64 2.50	64 2.50
		48.3 1 1/2	64 2.50	64 2.50
		60.3 2	64 2.50	64 2.50
		73.0 2 1/2	64 2.50	64 2.50
		76.1 2 1/2	64 2.50	64 2.50
108.0 4	X	33.7 1	76 3.00	76 3.00
		42.4 1 1/4	76 3.00	76 3.00
		48.3 1 1/2	76 3.00	76 3.00

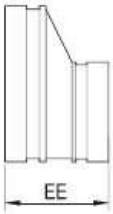
Size			Style 230 Eccentric Reducer	Style 230N Eccentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
108.0 4	X	60.3 2	76 3.00	76 3.00
		76.1 2 1/2	76 3.00	76 3.00
		88.9 3	76 3.00	76 3.00
114.3 4	X	33.7 1	76 3.00	76 3.00
		42.4 1 1/4	76 3.00	76 3.00
		48.3 1 1/2	76 3.00	76 3.00
		60.3 2	76 3.00	76 3.00
		73.0 2 1/2	76 3.00	76 3.00
		76.1 2 1/2	76 3.00	76 3.00
		88.9 3	76 3.00	76 3.00
133.0 5	X	60.3 2	89 3.50	89 3.50
		76.1 2 1/2	89 3.50	89 3.50
		88.9 3	89 3.50	89 3.50
		108.0 4	89 3.50	-- --
		114.3 4	89 3.50	-- --
139.7 5	X	60.3 2	89 3.50	89 3.50
		76.1 2 1/2	89 3.50	89 3.50
		88.9 3	89 3.50	89 3.50
		108.0 4	89 3.50	-- --
		114.3 4	89 3.50	-- --
141.3 5	X	60.3 2	89 3.50	89 3.50
		73.0 2 1/2	89 3.50	89 3.50
		88.9 3	89 3.50	89 3.50
		114.3 4	89 3.50	-- --

Eccentric Reducer

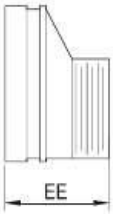


Style 230 Grooved Eccentric Reducer

Style 230N Threaded Eccentric Reducer



Style 230



Style 230N

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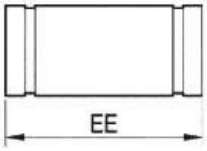
Size			Style 230 Eccentric Reducer	Style 230N Eccentric Reducer
Run Pipe	X	Branch Pipe	EE	EE
mm Inches	X	mm Inches	mm Inches	mm Inches
159.0 6	X	60.3 2	102 4.00	102 4.00
		76.1 $2^1/_2$	102 4.00	102 4.00
		88.9 3	102 4.00	102 4.00
		108.0 4	102 4.00	-- --
		114.3 4	102 4.00	-- --
		133.0 5	102 4.00	-- --
		139.7 5	102 4.00	-- --
165.1 6	X	60.3 2	102 4.00	102 4.00
		76.1 $2^1/_2$	102 4.00	102 4.00
		88.9 3	102 4.00	102 4.00
		108.0 4	102 4.00	-- --
		114.3 4	102 4.00	-- --
		133.0 5	102 4.00	-- --
		139.7 5	102 4.00	-- --
168.3 6	X	60.3 2	102 4.00	102 4.00
		73.0 $2^1/_2$	102 4.00	102 4.00
		88.9 3	102 4.00	102 4.00
		114.3 4	102 4.00	-- --
		141.3 5	102 4.00	-- --

Size			Style 230 Eccentric Reducer	Style 230N Eccentric Reducer
Run Pipe	X X	Branch Pipe	EE	EE
mm Inches	X X	mm Inches	mm Inches	mm Inches
216.3 8	X	60.3 2	127 5.00	127 5.00
		73.0 $2^1/_2$	127 5.00	127 5.00
		76.1 $2^1/_2$	127 5.00	127 5.00
		88.9 3	127 5.00	127 5.00
		108.0 4	127 5.00	-- --
		114.3 4	127 5.00	-- --
		133.0 5	127 5.00	-- --
		139.7 5	127 5.00	-- --
		141.3 5	127 5.00	-- --
		159.0 6	127 5.00	-- --
		165.1 6	127 5.00	-- --
		168.3 6	127 5.00	-- --
219.1 8	X	60.3 2	127 5.00	127 5.00
		73.0 $2^1/_2$	127 5.00	127 5.00
		76.1 $2^1/_2$	127 5.00	127 5.00
		88.9 3	127 5.00	127 5.00
		108.0 4	127 5.00	-- --

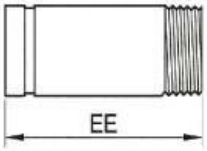
Size			Style 230 Eccentric Reducer	Style 230N Eccentric Reducer
Run Pipe	X X	Branch Pipe	EE	EE
mm Inches	X X	mm Inches	mm Inches	mm Inches
219.1 8	X	114.3 4	127 5.00	-- --
		133.0 5	127 5.00	-- --
		139.7 5	127 5.00	-- --
		141.3 5	127 5.00	-- --
		159.0 6	127 5.00	-- --
		165.1 6	127 5.00	-- --
		168.3 6	127 5.00	-- --
273.0 10	X	108.0 4	152 6.00	-- --
		114.3 4	152 6.00	-- --
		133.0 5	152 6.00	-- --
		139.7 5	152 6.00	-- --
		141.3 5	152 6.00	-- --
		159.0 6	152 6.00	-- --
		165.1 6	152 6.00	-- --
		168.3 6	152 6.00	-- --
		219.1 8	152 6.00	-- --
323.9 12	X	108.0 4	178 7.00	-- --
		114.3 4	178 7.00	-- --
		133.0 5	178 7.00	-- --
		139.7 5	178 7.00	-- --
		141.3 5	178 7.00	-- --
		159.0 6	178 7.00	-- --
		165.1 6	178 7.00	-- --
		168.3 6	178 7.00	-- --
		219.1 8	178 7.00	-- --
		273.0 10	178 7.00	-- --

- **Housing material**:Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**:R.W.P. rated working pressure 300PSI(2.065MPa / 20.65kgf/cm^2)
- **Housing Finish**: Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range**:DN32 X DN25 through DN300 X DN250 ($1^1/_4$" X 1" through 12" X 10")
- **Tolerance** : + /- 7%

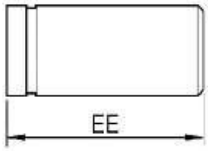
Grooved Nipple



Style 018GG



Style 018GT



Style 018GB

- The table EE value is the standard value, but can also be customized according to user requirements length
- Nipple's wall thickness is the standard US' SCH40 thickness, weight is based on the wall thickness, but also according to user requirements choose a different wall thickness
- Standard cutting groove, but also can do the rolling groove

Size		Style 018GG Grooved X Grooved Nipple	Style 018GT Grooved X Threaded Nipple	Style 018GB Grooved X Bevel Nipple
Nominal Dia.	Actual O.D.	EE	EE	EE
DN	mm	mm	mm	mm
Inches	Inches	Inches	Inches	Inches
25	33.7	76	76	76
1	1.327	3.00	3.00	3.00
32	42.4	102	102	102
$1^1/_4$	1.660	4.00	4.00	4.00
40	48.3	102	102	102
$1^1/_2$	1.900	4.00	4.00	4.00
50	60.3	102	102	102
2	2.375	4.00	4.00	4.00
65	73.0	102	102	102
$2^1/_2$	2.875	4.00	4.00	4.00
65	76.1	102	102	102
$2^1/_2$	3.000	4.00	4.00	4.00
80	88.9	102	102	102
3	3.500	4.00	4.00	4.00
100	108.0	152	---	152
4	4.250	6.00	---	6.00
100	114.3	152	---	152
4	4.500	6.00	---	6.00
125	133.0	152	---	152
5	5.250	6.00	---	6.00
125	139.7	152	---	152
5	5.500	6.00	---	6.00
125	141.3	152	---	152
5	5.563	6.00	---	6.00
150	159.0	152	---	152
6	6.250	6.00	---	6.00
150	165.1	152	---	152
6	6.500	6.00	---	6.00
150	168.3	152	---	152
6	6.625	6.00	---	6.00
200A	216.3	152	---	152
8	8.516	6.00	---	6.00
200	219.1	152	---	152
8	8.625	6.00	---	6.00
250A	267.4	203	---	203
10	10.528	8.00	---	8.00
250	273.0	203	---	203
10	10.750	8.00	---	8.00
300A	318.5	203	---	203
12	12.539	8.00	---	8.00
300	323.9	203	---	203
12	12.750	8.00	---	8.00

- **Housing material** : Steel
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Size Range** : DN25 through DN300 (1" through 12")
- **Tolerance** : + /- 7%



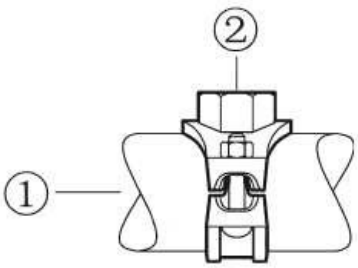
- Branch outlet fitting is a supplement to the grooved piping system. It is a very important piping unit in the mechanical piping system. The appearance of the branch outlet fitting makes the installation of the piping system more convenient and quick. Branch outlet fittings replaced welding and reducing Tee, to solve the problem of the connection branch.
- Branch outlet fitting is another way of piping innovation, is the use of bolted connections branch pipe fittings. No need to weld directly from the supervisor on the branch pipe. The method used is in the need to take over the main branch pipe processing a round hole, fitted with branch outlet housing. The opening must be secured on the centerline of the pipe and be mechanically perforated by a dedicated opening.
- NEW branch outlet fitting, including mechanical tee, mechanical cross, U-bolt.

Flow Date

The flow coefficient and flow resistance of the product at 16°C (60 F) are shown in the table on the right.

Since the pressure of the medium varies across the manifolds, the connection of the product functions best when the medium flows between ① and ②. As shown below.

The physical relationship between the various parameters under different pressures can be calculated from the formula on the right and from the data on the right.



Formulas for CV Values:

$$\Delta P = Q^2 / C_V{}^2$$

$$Q = C_V \times \sqrt{\Delta P}$$

注:

ΔP : Pressure Drop, MPa

Q : Flow, L/min

C_V : Flow Coefficient

Size		C_v Values	Equiv. of Pipe		Size		CV Values	Equiv. of Pipe	
Nominal Dia.	Actual O.D.		Grooved	Threaded	Nominal Dia.	Actual O.D.		Grooved	Threaded
DN Inches	mm Inches		m Feet	m Feet	DN Inches	mm Inches		m Feet	m Feet
15 1/2	21.3 0.840	775	---	0.6 2.0	65 2 1/2	73.0 2.875	6154	3.4 11.0	3.8 12.5
20 3/4	26.9 1.050	957	---	1.2 4.0	65 2 1/2	76.1 3.000	6154	3.4 11.0	3.8 12.5
25 1	33.7 1.327	1140	---	1.5 5.0	80 3	88.9 3.500	9117	4.1 13.5	4.7 15.5
32 1 1/4	42.4 1.660	2051	1.7 5.5	1.8 6.0	100 4	108.0 4.250	18234	6.1 20.0	6.7 22.0
40 1 1/2	48.3 1.900	2735	2.1 7.0	2.4 8.0	100 4	114.3 4.500	18234	6.1 20.0	6.7 22.0
50 2	60.3 2.375	4558	2.7 9.0	3.2 10.5					

Mechanical Cross



Mechanical cross description:

- Model 4G grooved mechanical cross is built by 2 pieces of model 3G's outlet housing.
- Model 4J threaded mechanical cross is built by 2 pieces of model 3J's outlet housing

All sizes of 3G / 3J mechanical tee can be combined into a mechanical cross, but must be combined according to certain principles, otherwise it will affect the strength of the pipeline, see the table on the right.

In the sprinkler system, the use of mechanical cross should be in accordance with the following principles, otherwise it will affect the strength of the pipeline:

Run Pipe Size		Max. Branch Pipe Size			
Nominal Dia.	Actual O.D.	Mechanical Tee		Mechanical Cross	
		Nominal Dia.	Actual O.D.	Nominal Dia.	Actual O.D.
DN Inches	mm Inches	DN Inches	mm Inches	DN Inches	mm Inches
50 2	60.3 2.375	25 1	33.7 1.327	25 1	33.7 1.327
65 $2^1/_2$	73.0 2.875	40 $1^1/_2$	48.3 1.900	32 $1^1/_4$	42.4 1.660
65 $2^1/_2$	76.1 3.000	40 $1^1/_2$	48.3 1.900	32 $1^1/_4$	42.4 1.660
80 3	88.9 3.500	50 2	60.3 2.375	40 $1^1/_2$	48.3 1.900
100 4	108.0 4.250	65 $2^1/_2$	76.1 3.000	50 2	60.3 2.375
100 4	114.3 4.500	80 3	88.9 3.500	50 2	60.3 2.375
125 5	133.0 5.250	80 3	88.9 3.500	76.1 3.000	40 $1^1/_2$
125 5	139.7 5.500	80 3	88.9 3.500	76.1 3.000	40 $1^1/_2$
125 5	141.3 5.563	80 3	88.9 3.500	73.0 2.875	40 $1^1/_2$
150 6	159.0 6.250	100 4	114.3 4.500	88.9 3.500	50 2
150 6	165.1 6.500	100 4	114.3 4.500	88.9 3.500	50 2
150 6	168.3 6.625	100 4	114.3 4.500	88.9 3.500	50 2
200 8	219.1 8.625	100 4	114.3 4.500	100 4	114.3 4.500

- With mechanical outlet fittings, the branch pipe can be built directly from the main pipe without welding.
- Gasket designed with the pipe arc to pipe surface, so as to achieve a more ideal sealing effect.
- Hole cut must be ensured on the center line of the pipe and be perforated by hole saw.



Style 3G Grooved Outlet Mechanical Tee
DN65X25~DN200X100
2X1"~8X4"
60.3X33.7mm~219.1X114.3mm

FM APPROVED UL LISTED



Style 3J Threaded Outlet Mechanical Tee
DN65X15~DN200X80
$2^{1}/_{2}$X$^{1}/_{2}$"~8X3"
60.3X21.3mm~219.1X88.9mm

FM APPROVED UL LISTED



Style 3L U-bolt Mechanical Tee
DN32X15~DN65X25
$1^{1}/_{4}$X$^{1}/_{2}$"~$2^{1}/_{2}$"X1"
42.4X21.3mm~76.1X33.7mm

FM APPROVED UL LISTED



Style 4G Grooved Mechanical Cross

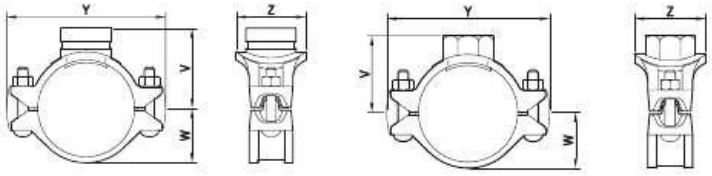


Style 4J Threaded Mechanical Cross



Style 4GJ Grooved/Threaded Mechanical Cross

Mechanical Tee



Style 3G Style 3J

Style 3G Grooved Outlet Mechanical Tee



Style 3J Threaded Outle Mechanical Tee



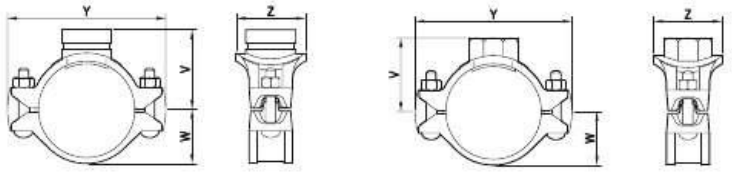
FM APPROVED UL LISTED

- By using the bolting method, the branch pipe is directly connected with the main pipe without welding
- All products have 21.3mm (1/2") outlets and 26.9mm (3/4") outlets are the same as 33.4mm (1") outlets.
- Enhanced body resists 4 times working pressure.

Size			Max. Work Pressure	Hole Size	Dimensions					Bolt/Nut Size
Run Pipe	X	Branch Pipe			W	Y	Z	3G V	3J V	
mm Inches	X	mm Inches	KPa PSI	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
60.3 2	X	33.7 1	3450 500	38 1.50	35 1.38	128 5.04	70 2.76	63 2.48	62 2.44	M12X60 1/2X2 3/4
		42.4 1 1/4	3450 500	44.5 1.75	35 1.38	128 5.04	77 3.03	63 2.48	60 2.36	M12X60 1/2X2 3/4
		48.3 1 1/2	3450 500	44.5 1.75	35 1.38	128 5.04	77 3.03	63 2.48	60 2.36	M12X60 1/2X2 3/4
73.0 2 1/2	X	33.7 1	3450 500	38 1.50	42 1.65	139 5.47	69 2.72	70 2.76	69 2.72	M12X75 1/2X3
		42.4 1 1/4	3450 500	44.5 1.75	42 1.65	139 5.47	77 3.03	70 2.76	71 2.80	M12X75 1/2X3
		48.3 1 1/2	3450 500	51 2.00	42 1.65	139 5.47	83 3.27	70 2.76	71 280	M12X75 1/2X3
76.1 2 1/2	X	33.7 1	3450 500	38 1.50	43 1.69	142 5.59	69 2.72	72 2.83	68 2.68	M12X75 1/2X3
		42.4 1 1/4	3450 500	44.5 1.75	43 1.69	142 5.59	77 3.03	72 2.83	69 2.72	M12X75 1/2X3
		48.3 1 1/2	3450 500	51 2.00	43 1.69	142 5.59	83 3.27	72 2.83	69 2.72	M12X75 1/2X3
		60.3 2	3450 500	51 2.50	43 1.69	142 5.59	95 3.74	72 2.83	74 2.91	M12X75 1/2X3
88.9 3	X	33.7 1	3450 500	38 1.50	50 1.97	152 5.98	69 2.72	77 3.03	76 2.99	M12X75 1/2X3
		42.4 1 1/4	3450 500	44.5 1.75	50 1.97	152 5.98	75 2.95	78 3.07	79 3.11	M12X75 1/2X3
		48.3 1 1/2	3450 500	51 2.00	50 1.97	152 5.98	83 3.27	78 3.07	79 3.11	M12X75 1/2X3
		60.3 2	3450 500	64 2.50	50 1.97	152 5.98	95 3.74	79 3.11	79 3.11	M12X75 1/2X3
108.0 4	X	33.7 1	3450 500	38 1.50	60 2.36	173 6.81	69 2.72	-- --	84 3.31	M12X75 1/2X3
		42.4 1 1/4	3450 500	44.5 1.75	60 2.36	173 6.81	75 2.95	-- --	85 3.35	M12X75 1/2X3
		48.3 1 1/2	3450 500	51 2.00	60 2.36	173 6.81	83 3.27	-- --	85 3.35	M12X75 1/2X3
		60.3 2	3450 500	64 2.50	60 2.36	173 6.81	95 3.74	89 3.50	89 3.50	M12X75 1/2X3
		76.1 2 1/2	3450 500	70 2.75	60 2.36	173 6.81	103 4.06	95 3.74	95 3.74	M12X75 1/2X3
114.3 4	X	33.7 1	3450 500	38 1.50	63 2.48	179 7.05	69 2.72	91 3.58	87 3.42	M12X75 1/2X3
		42.4 1 1/4	3450 500	44.5 1.75	63 2.48	179 7.05	75 2.95	91 3.58	88 3.46	M12X75 1/2X3
		48.3 1 1/2	3450 500	51 2.00	63 2.48	179 7.05	83 3.27	91 3.58	88 3.46	M12X75 1/2X3
		60.3 2	3450 500	64 2.50	63 2.48	179 7.05	95 3.74	92 3.62	92 3.62	M12X75 1/2X3
		73.0 2 1/2	3450 500	70 2.75	63 2.48	179 7.05	105 4.13	93 3.66	98 3.86	M12X75 1/2X3
		76.1 2 1/2	3450 500	70 2.75	63 2.48	179 7.05	105 4.13	93 3.66	98 3.86	M12X75 1/2X3
		88.9 3	3450 500	89 3.50	63 2.48	179 7.05	126 4.96	93 3.66	100 3.94	M12X75 1/2X3

- **Housing material**: Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**: R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material**:EPDM(Optional:Nitrile NBR,Silicone and Others)
- **Bolts and Nuts**:Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range**:DN50 X DN25 through DN200 X DN100 (2" X 1" through 8" X 4")
- **Tolerance** : + /- 7%

Mechanical Tee



Style 3G

Style 3J

Style 3G Grooved Outlet Mechanical Tee



Style 3J Threaded Outle Mechanical Tee



FM APPROVED

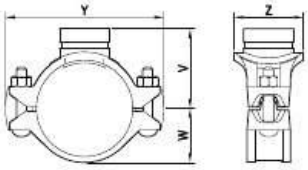
UL LISTED

- By using the bolting method, the branch pipe is directly connected with the main pipe without welding
- All products have 21.3mm (1/2") outlets and 26.9mm (3/4") outlets are the same as 33.4mm (1") outlets.
- Enhanced body resists 4 times working pressure.

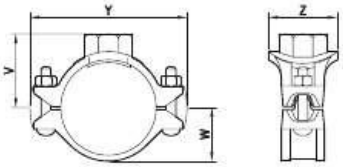
Size			Max. Work Pressure	Hole Size	Dimensions					Bolt/Nut Size
Run Pipe	X	Branch Pipe			W	Y	Z	3G V	3J V	
mm Inches	X X	mm Inches	KPa PSI	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
133.0 5	X	33.7 1	3450 500	38 1.50	73 2.87	216 8.50	69 2.72	-- --	97 3.82	M16X90 5/8X3 3/8
		42.4 1 1/4	3450 500	44.5 1.75	73 2.87	216 8.50	75 2.95	-- --	97 3.82	M16X90 5/8X3 3/8
		48.3 1 1/2	3450 500	51 2.00	73 2.87	216 8.50	83 3.27	-- --	97 3.82	M16X90 5/8X3 3/8
		60.3 2	3450 500	64 2.50	73 2.87	216 8.50	95 3.74	104 4.09	102 4.02	M16X90 5/8X3 3/8
		76.1 2 1/2	3450 500	70 2.75	73 2.87	216 8.50	106 4.17	104 4.09	109 4.29	M16X90 5/8X3 3/8
		88.9 3	3450 500	89 3.50	73 2.87	216 8.50	126 4.96	104 4.09	111 4.37	M16X90 5/8X3 3/8
139.7 5	X	33.7 1	3450 500	38 1.50	76 2.99	222 8.74	69 2.72	105 4.13	99 3.90	M16X90 5/8X3 3/8
		42.4 1 1/4	3450 500	44.5 1.75	76 2.99	222 8.74	75 2.95	105 4.13	101 3.98	M16X90 5/8X3 3/8
		48.3 1 1/2	3450 500	51 2.00	76 2.99	222 8.74	83 3.27	107 4.21	101 3.98	M16X90 5/8X3 3/8
		60.3 2	3450 500	64 2.50	76 2.99	222 8.74	95 3.74	107 4.21	105 4.13	M16X90 5/8X3 3/8
		76.1 2 1/2	3450 500	70 2.75	76 2.99	222 8.74	106 4.17	108 4.25	112 4.41	M16X90 5/8X3 3/8
		88.9 3	3450 500	89 3.50	76 2.99	222 8.74	126 4.96	108 4.25	112 4.41	M16X90 5/8X3 3/8
141.3 5	X	33.7 1	3450 500	38 1.50	77 3.03	224 8.97	69 2.72	106 4.17	100 3.94	M16X90 5/8X3 3/8
		42.4 1 1/4	3450 500	44.5 1.75	77 3.03	224 8.97	75 2.95	106 4.17	102 4.02	M16X90 5/8X3 3/8
		48.3 1 1/2	3450 500	51 2.00	77 3.03	224 8.97	83 3.27	106 4.17	102 4.02	M16X90 5/8X3 3/8
		60.3 2	3450 500	64 2.50	77 3.03	224 8.97	95 3.74	108 4.25	106 4.17	M16X90 5/8X3 3/8
		73.0 2 1/2	3450 500	70 2.75	77 3.03	224 8.97	106 4.17	108 4.25	112 4.41	M16X90 5/8X3 3/8
		88.9 3	3450 500	89 3.50	77 3.03	224 8.97	126 4.96	108 4.25	112 4.41	M16X90 5/8X3 3/8
159.0 5	X	33.7 1	3450 500	38 1.50	86 3.76	244 9.61	69 2.72	-- --	110 4.33	M16X90 5/8X3 3/8
		42.4 1 1/4	3450 500	44.5 1.75	86 3.76	244 9.61	75 2.95	-- --	111 437	M16X90 5/8X3 3/8
		48.3 1 1/2	3450 500	51 2.00	86 3.76	244 9.61	83 3.27	-- --	111 437	M16X90 5/8X3 3/8
		60.3 2	3450 500	64 2.50	86 3.76	244 9.61	95 3.74	118 4.65	115 4.53	M16X90 5/8X3 3/8
		76.1 2 1/2	3450 500	70 2.75	86 3.76	244 9.61	106 4.17	118 4.65	121 4.76	M16X90 5/8X3 3/8
		88.9 3	3450 500	89 3.50	86 3.76	244 9.61	126 4.96	118 4.65	123 4.84	M16X90 5/8X3 3/8
		108.0 4	3450 500	114 4.50	86 3.76	244 9.61	-- --	-- --	-- --	-- --
		114.3 4	3450 500	114 4.50	86 3.76	244 9.61	-- --	-- --	-- --	-- --

- **Housing material**: Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**: R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material:**EPDM(Optional:Nitrile NBR,Silicone and Others)
- **Bolts and Nuts**:Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range**:DN50 X DN25 through DN200 X DN100 (2" X 1" through 8" X 4")
- **Tolerance** : + /- 7%

Mechanical Tee



Style 3G



Style 3J

Style 3G Grooved Outlet Mechanical Tee



Style 3J Threaded Outle Mechanical Tee



FM APPROVED UL LISTED

- By using the bolting method, the branch pipe is directly connected with the main pipe without welding
- All products have 21.3mm (1/2") outlets and 26.9mm (3/4") outlets are the same as 33.4mm (1") outlets.
- Enhanced body resists 4 times working pressure.

Size			Max. Work Pressure	Hole Size	Dimensions					Bolt/Nut Size
Run Pipe	X	Branch Pipe			W	Y	Z	3G V	3J V	
mm Inches	X	mm Inches	KPa PSI	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
165.1 6	X	33.7 1	3450 500	38 1.50	89 3.50	250 9.84	69 2.72	118 4.65	103 4.06	M16X90 5/8X3 1/4
		42.4 1 1/4	3450 500	44.5 1.75	89 3.50	250 9.84	75 2.95	119 4.69	115 4.53	M16X90 5/8X3 1/4
		48.3 1 1/2	3450 500	51 2.00	89 3.50	250 9.84	83 3.27	121 4.76	115 4.53	M16X90 5/8X3 1/4
		60.3 2	3450 500	64 2.50	89 3.50	250 9.84	95 3.74	121 4.76	119 4.69	M16X90 5/8X3 1/4
		76.1 2 1/2	3450 500	70 2.75	89 3.50	250 9.84	106 4.17	121 4.76	124 4.88	M16X90 5/8X3 1/4
		88.9 3	3450 500	89 3.50	89 3.50	250 9.84	126 4.96	121 4.76	126 4.96	M16X90 5/8X3 1/4
		108.0 4	3450 500	114 4.50	89 3.50	250 9.84	154 6.06	124 4.88	126 4.96	M16X90 5/8X3 1/4
		114.3 4	3450 500	114 4.50	89 3.50	250 9.84	154 6.06	124 4.88	126 4.96	M16X90 5/8X3 1/4
168.3 6	X	33.7 1	3450 500	38 1.50	91 3.58	253 9.96	69 2.72	120 4.72	115 4.53	M16X90 5/8X3 1/4
		42.4 1 1/4	3450 500	44.5 1.75	91 3.58	253 9.96	75 2.95	120 4.72	116 4.57	M16X90 5/8X3 1/4
		48.3 1 1/2	3450 500	51 2.00	91 3.58	253 9.96	83 3.27	123 4.84	116 4.57	M16X90 5/8X3 1/4
		60.3 2	3450 500	64 2.50	91 3.58	253 9.96	95 3.74	123 4.84	120 4.72	M16X90 5/8X3 1/4
		73.0 2 1/2	3450 500	70 2.75	91 3.58	253 9.96	106 4.17	123 4.84	125 4.92	M16X90 5/8X3 1/4
		76.1 2 1/2	3450 500	70 2.75	91 3.58	253 9.96	106 4.17	123 4.84	125 4.92	M16X90 5/8X3 1/4
		88.9 3	3450 500	89 3.50	91 3.58	253 9.96	126 4.96	123 4.84	125 4.92	M16X90 5/8X3 1/4
		114.3 4	3450 500	114 4.50	91 3.58	253 9.96	154 6.06	125 4.92	126 4.96	M16X90 5/8X3 1/4
216.3 8	X	33.7 1	3450 500	38 1.50	118 4.65	317 12.48	69 2.72	145 5.71	138 5.43	M20X115 3/4X4 1/2
		42.4 1 1/4	3450 500	44.5 1.75	118 4.65	317 12.48	75 2.95	145 5.71	140 5.51	M20X115 3/4X4 1/2
		48.3 1 1/2	3450 500	51 2.00	118 4.65	317 12.48	83 3.27	147 5.79	140 5.51	M20X115 3/4X4 1/2
		60.3 2	3450 500	64 2.50	118 4.65	317 12.48	95 3.74	147 5.79	144 5.67	M20X115 3/4X4 1/2
		73.0 21/2	3450 500	70 2.75	118 4.65	317 12.48	106 4.17	147 5.79	149 5.87	M20X115 3/4X4 1/2
		76.1 2 1/2	3450 500	70 2.75	118 4.65	317 12.48	106 4.17	147 5.79	151 5.94	M20X115 3/4X4 1/2
		88.9 3	3450 500	89 3.50	118 4.65	317 12.48	126 4.96	147 5.79	-- --	M20X115 3/4X4 1/2
		108.0 4	3450 500	114 4.50	118 4.65	317 12.48	154 6.06	147 5.79	-- --	M20X115 3/4X4 1/2
		114.3 4	3450 500	114 4.50	118 4.65	317 12.48	154 6.06	147 5.79	-- --	M20X115 3/4X4 1/2
219.1 8	X	33.7 1	3450 500	38 1.50	118 4.65	320 12.6	69 2.72	145 5.71	138 5.43	M20X115 3/4X4 1/2
		42.4 1 1/4	3450 500	44.5 1.75	118 4.65	320 12.6	75 2.95	145 5.71	140 5.51	M20X115 3/4X4 1/2
		48.3 1 1/2	3450 500	51 2.00	118 4.65	320 12.6	83 3.27	147 5.79	140 5.51	M20X115 3/4X4 1/2
		60.3 2	3450 500	64 2.50	118 4.65	320 12.6	95 3.74	147 5.79	144 5.67	M20X115 3/4X4 1/2
		73.0 21/2	3450 500	70 2.75	118 4.65	320 12.6	106 4.17	147 5.79	149 5.87	M20X115 3/4X4 1/2
		76.1 2 1/2	3450 500	70 2.75	118 4.65	320 12.6	106 4.17	147 5.79	151 5.94	M20X115 3/4X4 1/2
		88.9 3	3450 500	89 3.50	118 4.65	320 12.6	126 4.96	147 5.79	151 5.94	M20X115 3/4X4 1/2
		108.0 4	3450 500	114 4.50	118 4.65	320 12.6	154 6.06	147 5.79	151 5.94	M20X115 3/4X4 1/2
		114.3 4	3450 500	114 4.50	118 4.65	320 12.6	154 6.06	147 5.79	151 5.94	M20X115 3/4X4 1/2

- **Housing material**: Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**: R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish** : Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material**:EPDM(Optional:Nitrile NBR,Silicone and Others)
- **Bolts and Nuts**:Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range**:DN50 X DN25 through DN200 X DN100 (2" X 1" through 8" X 4")
- **Tolerance** : + /- 7%

Mechanical Cross

Mechanical Tee, all the sizes can be combined into a mechanical cross. But it should be in accordance with certain principles of combination, otherwise it will affect pipe strength.
This table shows the principle of combination.

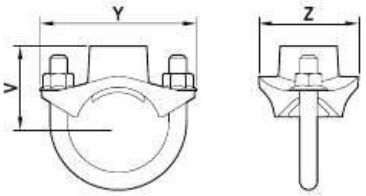


◆ Can be combined into mechanical cross.
◆ Not recommended to assemble a mechanical cross.

Size			Branch Pipe						
Run Pipe	X	Branch Pipe	33.7 1	42.4 1¼	48.3 1½	60.3 2	73.0 2½	76.1 2½	88.9 3
73.0 2½	X	33.4 1	★	★	★				
		42.4 1¼	★	★	★				
		48.3 1½	★	★	※				
76.1 2½	X	33.7 1	★	★	★				
		42.4 1¼	★	★	★				
		48.3 1½	★	★	※				
88.9 3	X	33.7 1	★	★	★	★			
		42.4 1¼	★	★	★	★			
		48.3 1½	★	★	★	★			
		60.3 2	★	★	★	※			
108.0 4	X	33.7 1	★	★	★	★		★	
		42.4 1¼	★	★	★	★		★	
		48.3 1½	★	★	★	★		★	
		60.3 2	★	★	★	★		※	
		76.1 2½	★	★	★	※		※	
114.3 4	X	33.7 1	★	★	★	★	★	★	★
		42.4 1¼	★	★	★	★	★	★	★
		48.3 1½	★	★	★	★	★	★	★
		60.3 2	★	★	★	★	※	※	※
		73.0 2½	★	★	★	※	※	※	※
		76.1 2½	★	★	★	※	※	※	※
		88.9 3	★	★	★	※	※	※	※
133.0 5	X	33.7 1	★	★	★	★		★	★
		42.4 1¼	★	★	★	★		★	★
		48.3 1½	★	★	★	★		★	★
		60.3 2	★	★	★	★		★	★
		76.1 2½	★	★	★	★		★	※
		88.9 3	★	★	★	★		※	※
139.7 5	X	33.7 1	★	★	★	★		★	★
		42.4 1¼	★	★	★	★		★	★
		48.3 1½	★	★	★	★		★	★
		60.3 2	★	★	★	★		★	★
		76.1 2½	★	★	★	★		★	※
		88.9 3	★	★	★	★		※	※

Size			Branch Pipe								
Run Pipe	X	Branch Pipe	33.7 1	42.4 1¼	48.3 1½	60.3 2	73.0 2½	76.1 2½	88.9 3	108.0 4	114.3 4
141.3 5	X	33.7 1	★	★	★	★	★		★		
		42.4 1¼	★	★	★	★	★		★		
		48.3 1½	★	★	★	★	★		★		
		60.3 2	★	★	★	★	★		★		
		73.0 2½	★	★	★	★	★		※		
		88.9 3	★	★	★	★	※		※		
159.0 6	X	33.7 1	★	★	★	★		★	★	★	★
		42.4 1¼	★	★	★	★		★	★	★	★
		48.3 1½	★	★	★	★		★	★	★	★
		60.3 2	★	★	★	★		★	★	★	★
		76.1 2½	★	★	★	★		★	★	★	★
		88.9 3	★	★	★	★		★	★	※	※
		108.0 4	★	★	★	★		★	※	※	※
		114.3 4	★	★	★	★		★	※	※	※
165.1 6	X	33.7 1	★	★	★	★		★	★	★	★
		42.4 1¼	★	★	★	★		★	★	★	★
		48.3 1½	★	★	★	★		★	★	★	★
		60.3 2	★	★	★	★		★	★	★	★
		76.1 2½	★	★	★	★		★	★	★	★
		88.9 3	★	★	★	★		★	★	※	※
		108.0 4	★	★	★	★		★	※	※	※
		114.3 4	★	★	★	★		★	※	※	※
168.3 6	X	33.7 1	★	★	★	★	★		★		★
		42.4 1¼	★	★	★	★	★		★		★
		48.3 1½	★	★	★	★	★		★		★
		60.3 2	★	★	★	★	★		★		★
		76.1 2½	★	★	★	★	★		★		★
		88.9 3	★	★	★	★	★		★		★
		108.0 4	★	★	★	★	★		★		※
		114.3 4	★	★	★	★	★		※		※
219.1 8	X	33.7 1	★	★	★	★	★	★	★	★	★
		42.4 1¼	★	★	★	★	★	★	★	★	★
		48.3 1½	★	★	★	★	★	★	★	★	★
		60.3 2	★	★	★	★	★	★	★	★	★
		73.0 2½	★	★	★	★	★	★	★	★	★
		76.1 2½	★	★	★	★	★	★	★	★	★
		88.9 3	★	★	★	★	★	★	★	★	★
		108.0 4	★	★	★	★	★	★	★	★	★
		114.3 4	★	★	★	★	★	★	★	★	★

U-bolt Mechanical Tee



Style 3L U-bolt Mechanical Tee



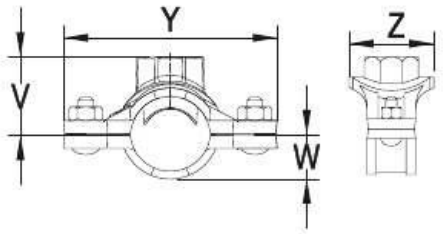
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- U-bolt replaces cover part, without welding ,directly from the main pipe branch
- Enhanced body resists 4 times working pressure.

Size			Max. Work Pressure	Hole Size	Dimensions			Bolt/Nut Size
Run Pipe	X	Branch Pipe			Y	Z	V	
mm Inches	X X	mm Inches	KPa PSI	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
33.7	X	21.3	2500	25	78	45	37	M10 X 60 X 28
1		1/2	350	0.98	3.07	1.77	1.46	3/8 X 2 3/8 X 1 1/4
		26.9	2500	25	78	45	37	M10 X 60 X 28
		3/4	350	0.98	3.07	1.77	1.46	3/8 X 2 3/8 X 1 1/4
42.4	X	21.3	2500	30.5	87	57	42	M10 X 68 X 38
1 1/4		1/2	350	1.20	3.43	2.25	1.65	3/8 X 2 15/16 X 1 1/2
		26.9	2500	30.5	87	57	45	M10 X 68 X 38
		3/4	350	1.20	3.43	2.25	1.77	3/8 X 2 15/16 X 1 1/2
		33.7	2500	30.5	87	57	52	M10 X 68 X 38
		1	350	1.20	3.43	2.25	2.05	3/8 X 2 15/16 X 1 1/2
48.3	X	21.3	2500	30.5	87	57	45	M10 X 68 X 38
1 1/2		1/2	350	1.20	3.43	2.25	1.77	3/8 X 2 15/16 X 1 1/2
		26.9	2500	30.5	87	57	48	M10 X 68 X 38
		3/4	350	1.20	3.43	2.25	1.89	3/8 X 2 15/16 X 1 1/2
		33.7	2500	30.5	87	57	55	M10 X 68 X 38
		1	350	1.20	3.43	2.25	2.17	3/8 X 2 15/16 X 1 1/2
60.3	X	21.3	2500	30.5	93	57	51	M10 X 74 X 47
2		1/2	350	1.20	3.66	2.25	2.00	3/8 X 2 15/16 X 1 7/8
		26.9	2500	30.5	93	57	54	M10 X 74 X 47
		3/4	350	1.20	3.66	2.25	2.13	3/8 X 2 15/16 X 1 7/8
		33.7	2500	30.5	93	57	61	M10 X 74 X 47
		1	350	1.20	3.66	2.25	2.40	3/8 X 2 15/16 X 1 7/8
73.0	X	21.3	2500	30.5	108	57	58	M10 X 89 X 57
2 1/2		1/2	350	1.20	4.25	2.25	2.28	3/8 X 3 1/2 X 2 1/4
		26.9	2500	30.5	108	57	62	M10 X 89 X 57
		3/4	350	1.20	4.25	2.25	2.44	3/8 X 3 1/2 X 2 1/4
		33.7	2500	30.5	108	57	68	M10 X 89 X 57
		1	350	1.20	4.25	2.25	2.68	3/8 X 3 1/2 X 2 1/4
76.1	X	21.3	2500	30.5	108	57	58	M10 X 89 X 57
2 1/2		1/2	350	1.20	4.25	2.25	2.28	3/8 X 3 1/2 X 2 1/4
		26.9	2500	30.5	108	57	62	M10 X 89 X 57
		3/4	350	1.20	4.25	2.25	2.44	3/8 X 3 1/2 X 2 1/4
		33.7	2500	30.5	108	57	68	M10 X 89 X 57
		1	350	1.20	4.25	2.25	2.68	3/8 X 3 1/2 X 2 1/4

- **Housing material**: Ductile iron conforming to ASTM A-536, grade 65-45-12.
- **FM Approved & UL Listed**: R.W.P. rated working pressure 300PSI(2.065MPa / 20.65bars)
- **Housing Finish**: Electrophoretic Red Paint/ Fusion Bonded Epoxy Coated (Optional : Hot Dip Galvanized and Others)
- **Coupling gasket material**:EPDM(Optional:Nitrile NBR,Silicone and Others)
- **Bolts and Nuts**:Heat treated and electro galvanized bolts with oval neck, and heavy duty hexagon nuts. Track head meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.
- **Size Range**:DN32 X DN15 through DN65 X DN25 (1 1/4" X 3/4" through 2 1/2" X 1")
- **Tolerance** : + / - 7%

Small Mechanical Tee



Style 3JS Small Mechanical Tee



FM APPROVED UL LISTED

- By using the bolting method, the branch pipe is directly connected with the main pipe without welding
- All products have 21.3mm (1/2") outlets and 26.9mm (3/4") outlets are the same as 33.4mm (1") outlets.
- Enhanced body resists 4 times working pressure.

Size			Max. Work Pressure	Hole Size	Dimensions				Bolt/Nut Size
Run Pipe	X	Branch Pipe			Y	V	W	Z	
mm	X	mm	KPa	mm	mm	mm	mm	mm	mm
Inches	X	Inches	PSI	Inches	Inches	Inches	Inches	Inches	Inches
33.7	X	21.3	2500	25	93	34	27	48	M10 X 40
1		1/2	350	0.98	3.661	1.339	1.063	1.890	3/8 X 1 5/8
42.4	X	21.3	2500	30.5	98	45	28	66	M10 X 40
1 1/4		1/2	350	1.20	3.858	1.772	1.102	2.598	3/8 X 1 5/8
		26.9	2500	30.5	98	45	28	66	M10 X 40
		3/4	350	1.20	3.858	1.772	1.102	2.598	3/8 X 1 5/8
		33.7	2500	30.5	98	54	28	66	M10 X 40
		1	350	1.20	3.858	2.126	1.102	2.598	3/8 X 1 5/8
48.3	X	21.3	2500	30.5	104	48	31	66	M10 X 40
1 1/2		1/2	350	1.20	4.094	1.890	1.220	2.598	3/8 X 1 5/8
		26.9	2500	30.5	104	48	31	66	M10 X 40
		3/4	350	1.20	4.094	1.890	1.220	2.598	3/8 X 1 5/8
		33.7	2500	30.5	104	57	31	66	M10 X 40
		1	350	1.20	4.094	2.244	1.220	2.598	3/8 X 1 5/8
60.3	X	21.3	2500	30.5	125	54	38	66	M10 X 40
2		1/2	350	1.20	4.921	2.126	1.496	2.598	3/8 X 1 5/8
		26.9	2500	30.5	125	54	38	66	M10 X 40
		3/4	350	1.20	4.921	2.126	1.496	2.598	3/8 X 1 5/8
		33.7	2500	30.5	125	62	38	66	M10 X 40
		1	350	1.20	4.921	2441	1.496	2.598	3/8 X 1 5/8
73.0	X	21.3	2500	30.5	136	61	45	66	M10 X 40
2 1/2		1/2	350	1.20	5.354	2.402	1.772	2.598	3/8 X 1 5/8
		26.9	2500	30.5	136	61	45	66	M10 X 40
		3/4	350	1.20	5.354	2.402	1.772	2.598	3/8 X 1 5/8
		33.7	2500	30.5	136	71	45	66	M10 X 40
		1	350	1.20	5.354	2.795	1.772	2.598	3/8 X 1 5/8
76.1	X	21.3	2500	30.5	136	61	47	66	M10 X 40
2 1/2		1/2	350	1.20	5.354	2.402	1.850	2.598	3/8 X 1 5/8
		26.9	2500	30.5	136	61	47	66	M10 X 40
		3/4	350	1.20	5.354	2.402	1.850	2.598	3/8 X 1 5/8
		33.7	2500	30.5	136	71	47	66	M10 X 40
		1	350	1.20	5.354	2.795	1.850	2.598	3/8 X 1 5/8
88.9	X	33.7	2500	30.5	158	75	54	66	M10 X 40
3		1	350	1.20	6.220	2.953	2.126	2.598	3/8 X 1 5/8
		42.4	2500	44.5	158	79	54	66	M10 X 40
		1 1/4	350	1.75	6.220	3.110	2.126	2.598	3/8 X 1 5/8

Rubber Gasket



NEW gaskets are designed to provide life-of-the-system service in a wide variety of applications.
Gasket materials are available to meet most piping applications. For a list of service recommendations by gasket type see pg 45-47

Rubber Gasket Styles



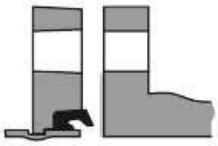
Standard C type:
Usually with grooved fittings. 1GS, 1X, 1N, 1NH, such as no special requirements are supporting this type of rubber seals



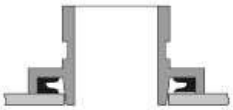
E type:áø
Special Rubber Ring for 1F, 2F Quick Coupling Series.



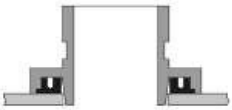
Reducing typeáø
Usually with grooved reducing fitting. 1NR supporting this type of rubber ring.



Flange type:
321-type slip flange are matched with this type of rubber ring



Opening reaction type:
3G, 3J are optional matching this type of rubber ring



Hole labyrinth type:
3G, 3J are optional matching this type of rubber ring

Rubber Gasket Materials

As elastomer technology advanced, superior gasket materials became available and were added to the NEW line. This allows NEW to presently offer a variety of synthetic rubber gaskets to provide the option of selecting NEW products for the widest variety of applications.
For most water system piping applications, NEW grade EPDM rubber is recommended. NEW E-grade rubber gasket material with excellent performance in anti-aging and heat resistance, the material at 125 °C (257°F) temperature, the material for hot air aging test, the physical properties of the basic unchanged. When the rubber in a non-air environment, such as water piping system, its anti-aging properties will be further strengthened.
Since water has no deteriorating effect on the elastomer, temperature is the only limiting factor to be considered in determining the life expectancy of the elastomer in water service. The superior performance of the Grade "E" elastomer permits its use for hot water service up to +230°F/+110°C. The Grade "E" gasket is superior to previous gasket materials by all performance barometers, including high and low temperature limits, tensile strength, chemical resistance and shelf life.

Rubber Gasket Data

To assure the maximum life for the service intended, proper gasket selection and specification in ordering is essential. Many factors must be considered in determining the optimum gasket for a specific service. The foremost consideration is temperature along with concentration of product, duration of service and continuity of service. Temperatures beyond the recommended limits have a degrading effect on the polymer. Therefore, there is a direct relationship between temperature, continuity of service and gasket life.
Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. For a list of application-specific and non-recommended application recommendations, reference should be made to the latest selection guide for seals.
The use of gasket only for the selection of rubber materials in the product, does not involve the selection of metal shell, fittings and bolts and nuts. For the housing, accessories and bolts and nuts selection, should be selected according to the actual application environment.

Rubber Gasket Lubricant

When installing the product, the outer surface of the gasket should be lubricated, this will help prevent the gasket from being crushed during installation. It is recommended to lubricate the outer surface of the gasketl, including the lip and / or tube end, and the housing cavity, and the lubricated aprons surface will help to properly install the product.
Under normal circumstances recommended the use of special lubricants, if necessary, consult the relevant CNG institutions. Also available household human body can be directly exposed to the washing products, add water after modulation, such as detergents, soap, detergent, etc., avoid using mechanical lubricants, such as butter and so on.

⚠ Warning

To ensure that the rubber seal in the application of the longest life expectancy, the correct choice when ordering rubber seal material and specifications are the most basic requirements.
Failure to select the right rubber seal material can result in personal injury or property damage, joint leakage, or connection failure.

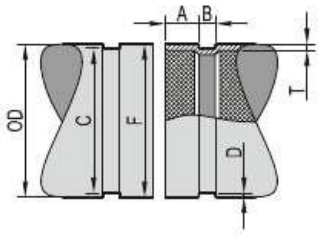
Rubber Gasket Materials

The material of the gasket must be determined according to the characteristics of the fluid medium. The commonly used sealing rings are shown in the following table:

Grade	Temperature Range	Rubber Compound	Color Code	General Service Recommendations
E	-30°F to +230°F -34°C to +110°C	EPDM	Green Stripe	Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.
T	-20°F to +180°F -29°C to +82°C	Nitrile	Orange Stripe	Recommended for petroleum products, hydrocarbons, air with oil vapors, vegetable and mineral oils within the specified temperature range; except hot dry air over +140°F/+60°C and water over +150°F/+66°C. NOT RECOMMENDED FOR HOT WATER SERVICES.
O	-20°F to +300°F -29°C to +149°C	Fluoroelastomer	Blue Stripe	Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons to +300°F/+149°C.
L	-30°F to +350°F -34°C to +177°C	Silicone	White	Recommended for dry heat, air without hydrocarbons to +350°F/+177°C and certain chemical services.
V	-30°F to +180°F -34°C to +82°C	Neoprene	Yellow Stripe	Recommended for hot lubricating oils and certain chemicals. Good oxidation resistance. Will not support combustion.

For specific compound and temperature compatibility, see this book Chemical Application Table

Roll Groove Parameters



Standard Roll Groove Specifications-Steel and Other IPS Pipe

Size				Gasket Seat	Grv. Width	Grv. Diameter C		Grv. Depth	Min. Wall	Max. Flare
Nominal Dia.	Actual O.D.	Tolerance		A	B	Std.	Tolerance	D(Ref.)	T	F
DN Inches	mm Inches	mm Inches	mm Inches	±0.76mm ±0.03In.	±0.76mm ±0.03In.	mm Inches	mm Inches	mm Inches	mm Inches	mm Inches
20 3/4	26.9 1.050	0.25 0.01	0.25 0.01	15.88 0.625	7.14 0.281	23.83 0.938	-0.38 -0.015	1.42 0.056	1.65 0.065	29.2 1.15
25 1	33.7 1.327	0.33 0.013	0.33 0.013	15.88 0.625	7.14 0.281	30.23 1.19	-0.38 -0.015	1.6 0.063	1.65 0.065	36.3 1.43
32 1 1/4	42.4 1.660	0.041 0.016	0.041 0.016	15.88 0.625	7.14 0.281	38.99 1.535	-0.38 -0.015	1.6 0.063	1.65 0.065	45 1.77
40 1 1/2	48.3 1.900	0.048 0.019	0.048 0.019	15.88 0.625	7.14 0.281	45.09 1.775	-0.38 -0.015	1.6 0.063	1.65 0.065	51.1 2.01
50 2	57.0 2.250	0.57 0.022	0.57 0.022	15.88 0.625	8.74 0.344	53.85 2.12	-0.38 -0.015	1.6 0.063	1.65 0.065	59.7 2.35
50 2	60.3 2.375	0.61 0.024	0.61 0.024	15.88 0.625	8.74 0.344	57.15 2.25	-0.38 -0.015	1.6 0.063	1.65 0.065	63 2.48
65 2 1/2	73.0 2.875	0.74 0.029	0.74 0.029	15.88 0.625	8.74 0.344	69.09 2.72	-0.46 -0.018	1.98 0.078	2.11 0.083	75.7 2.98
65 2 1/2	76.1 3.000	0.76 0.03	0.76 0.03	15.88 0.625	8.74 0.344	72.26 2.845	-0.46 -0.018	1.98 0.078	2.11 0.083	78.7 3.1
80 3	88.9 3.500	0.89 0.089	0.79 0.031	15.88 0.625	8.74 0.344	84.94 3.344	-0.46 -0.018	1.98 0.078	2.11 0.083	91.4 3.6
90 3 1/2	101.6 4.000	1.02 0.04	0.79 0.031	15.88 0.625	8.74 0.344	97.38 3.834	-0.51 -0.02	2.11 0.083	2.11 0.083	104.1 4.1
100 4	108.0 4.250	1.07 0.042	0.79 0.031	15.88 0.625	8.74 0.344	103.73 4.084	-0.51 -0.02	2.11 0.083	2.11 0.083	110.5 4.35
100 4	114.3 4.500	1.14 0.045	0.79 0.031	15.88 0.625	8.74 0.344	110.08 4.334	-0.51 -0.02	2.11 0.083	2.11 0.083	116.8 4.6
120 4 1/2	127 5.000	1.27 0.05	0.79 0.031	15.88 0.625	8.74 0.344	122.78 4.834	-0.51 -0.02	2.11 0.083	2.41 0.095	129.5 5.098
125 5	133.0 5.250	1.32 0.052	0.79 0.031	15.88 0.625	8.74 0.344	129.13 5.084	-0.51 -0.02	2.11 0.083	2.77 0.109	135.9 5.35
125 5	139.7 5.500	1.42 0.056	0.79 0.031	15.88 0.625	8.74 0.344	135.48 5.334	-0.51 -0.02	2.11 0.083	2.77 0.109	142.2 5.6
125 5	141.3 5.563	1.42 0.056	0.79 0.031	15.88 0.625	8.74 0.344	137.03 5.395	-0.56 -0.022	2.13 0.084	2.77 0.109	143.8 5.66
6 6OD	152.4 6.000	1.42 0.056	0.79 0.031	15.88 0.625	8.74 0.344	148.08 5.83	-0.56 -0.022	2.16 0.085	2.77 0.109	154.9 6.1
150 6	159.0 6.250	1.6 0.063	0.79 0.031	15.88 0.625	8.74 0.344	154.5 6.082	-0.56 -0.022	2.16 0.085	2.77 0.109	161.3 6.35
150 6	165.1 6.500	1.6 0.063	0.79 0.031	15.88 0.625	8.74 0.344	160.9 6.334	-0.56 -0.022	2.16 0.085	2.77 0.109	167.6 6.6
150 6	168.3 6.625	1.6 0.063	0.79 0.031	15.88 0.625	8.74 0.344	163.96 6.455	-0.56 -0.022	2.16 0.085	2.77 0.109	170.9 6.73
200 8	216.3 8.500	1.6 0.063	0.79 0.031	19.05 0.75	11.91 0.469	211.61 8.331	-0.64 -0.025	2.34 0.092	2.77 0.109	220.7 8.69
200 8	219.1 8.625	1.6 0.063	0.79 0.031	19.05 0.75	11.91 0.469	214.4 8.441	-0.64 -0.025	2.34 0.092	2.77 0.109	223.5 8.8
250 10	267.4 10.500	1.6 0.063	0.79 0.031	19.05 0.75	11.91 0.469	262.6 10.339	-0.69 -0.027	2.39 0.094	3.4 0.134	271.8 10.7
250 10	273.0 10.750	1.6 0.063	0.79 0.031	19.05 0.75	11.91 0.469	268.28 10.562	-0.69 -0.027	2.39 0.094	3.4 0.134	277.4 10.92
300 12	318.4 12.500	1.6 0.063	0.79 0.031	19.05 0.75	11.91 0.469	312.9 12.319	-0.76 -0.03	2.77 0.109	3.96 0.156	322.8 12.71
300 12	323.9 12.750	1.6 0.063	0.79 0.031	19.05 0.75	11.91 0.469	318.29 12.531	-0.76 -0.03	2.77 0.109	3.96 0.156	328.2 12.92

• Pipe standard OD and tolerance OD: Confirmed before rolling the groove pipe áëïf not, then the pipe is not suitable for rolling grooveáù

• Sealing surface A: confirm the sealing surface size in line with the requirements of the above table, if it is too large, it will affect the joint installation, too small will affect the joint sealing performance;

• Groove width B: Confirm that the width of the groove conforms to the above requirements, if it exceeds the requirement, it will affect the flexibility of the flexible coupling;

• Groove bottom diameter C: The standard value is its maximum, which has only negative tolerances. It affect the pressure bearing capacity and the various indicators of sex, if C is too large will appear the possibility of joint tripping;

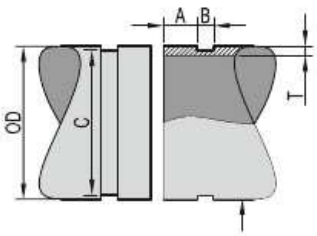
• Groove depth D: for reference only. When the pipe outer diameter is the standard outer diameter, it is the minimum depth of the groove.

• Minimum wall thickness T: control the quality of the pipeline after rolling groove, if it is too small, there will be pipeline cracking or lowering pipe pressure capacity;

• Max.flare F: After the pipe grooved, the pipe-end flare will generally occur. If it is oversized or over-pressed, it may exceed the requirements in the following table, which will lead to the installation quality of the joint and the seal exposed Sealing performance.

NEW PIPE FITTINGS FM APPROVED UL LISTED

Cut Groove Parameters



Standard Roll Groove Specifications-Steel and Other IPS Pipe

Size				Gasket Seat	Grv. Width	Grv. Diameter C		Grv. Depth	Min. Wall
Nominal Dia.	Actual O.D.	Tolerance		A	B	Std.	Tolerance	D(Ref.)	T
DN Inches	mm Inches	mm Inches	mm Inches	±0.76mm ±0.03in.	±0.76mm ±0.03in.	mm Inches	mm Inches	mm Inches	mm Inches
20 3/4	26.9 1.050	0.25 0.01	0.25 0.01	15.88 0.625	7.95 0.313	23.83 0.938	-0.38 -0.015	1.42 0.056	2.87 0.113
25 1	33.7 1.327	0.33 0.013	0.33 0.013	15.88 0.625	7.95 0.313	30.23 1.19	-0.38 -0.015	1.6 0.063	3.38 0.133
32 1 1/4	42.4 1.660	0.041 0.016	0.041 0.016	15.88 0.625	7.95 0.313	38.99 1.535	-0.38 -0.015	1.6 0.063	3.56 0.140
40 1 1/2	48.3 1.900	0.048 0.019	0.048 0.019	15.88 0.625	7.95 0.313	45.09 1.775	-0.38 -0.015	1.6 0.063	3.68 0.145
50 2	57.0 2.250	0.57 0.022	0.57 0.022	15.88 0.625	7.95 0.313	53.85 2.12	-0.38 -0.015	1.6 0.063	3.91 0.154
50 2	60.3 2.375	0.61 0.024	0.61 0.024	15.88 0.625	7.95 0.313	57.15 2.25	-0.38 -0.015	1.6 0.063	3.91 0.154
65 2 1/2	73.0 2.875	0.74 0.029	0.74 0.029	15.88 0.625	7.95 0.313	69.09 2.72	-0.46 -0.018	1.98 0.078	4.78 0.188
65 2 1/2	76.1 3.000	0.76 0.03	0.76 0.03	15.88 0.625	7.95 0.313	72.26 2.845	-0.46 -0.018	1.98 0.078	4.78 0.188
80 3	88.9 3.500	0.89 0.089	0.79 0.031	15.88 0.625	7.95 0.313	84.94 3.344	-0.46 -0.018	1.98 0.078	4.78 0.188
90 3 1/2	101.6 4.000	1.02 0.04	0.79 0.031	15.88 0.625	7.95 0.313	97.38 3.834	-0.51 -0.02	2.11 0.083	4.78 0.188
100 4	108.0 4.250	1.07 0.042	0.79 0.031	15.88 0.625	9.53 0.375	103.73 4.084	-0.51 -0.02	2.11 0.083	5.17 0.203
100 4	114.3 4.500	1.14 0.045	0.79 0.031	15.88 0.625	9.53 0.375	110.08 4.334	-0.51 -0.02	2.11 0.083	5.17 0.203
120 4 1/2	127 5.000	1.27 0.05	0.79 0.031	15.88 0.625	9.53 0.375	122.78 4.834	-0.51 -0.02	2.11 0.083	5.17 0.203
125 5	133.0 5.250	1.32 0.052	0.79 0.031	15.88 0.625	9.53 0.375	129.13 5.084	-0.51 -0.02	2.11 0.083	5.17 0.203
125 5	139.7 5.500	1.42 0.056	0.79 0.031	15.88 0.625	9.53 0.375	135.48 5.334	-0.51 -0.02	2.11 0.083	5.17 0.203
125 5	141.3 5.563	1.42 0.056	0.79 0.031	15.88 0.625	9.53 0.375	137.03 5.395	-0.56 -0.022	2.13 0.084	5.17 0.203
6 6OD	152.4 6.000	1.42 0.056	0.79 0.031	15.88 0.625	9.53 0.375	148.08 5.83	-0.56 -0.022	2.16 0.085	5.56 0.219
150 6	159.0 6.250	1.6 0.063	0.79 0.031	15.88 0.625	9.53 0.375	154.5 6.082	-0.56 -0.022	2.16 0.085	5.56 0.219
150 6	165.1 6.500	1.6 0.063	0.79 0.031	15.88 0.625	9.53 0.375	160.9 6.334	-0.56 -0.022	2.16 0.085	5.56 0.219
150 6	168.3 6.625	1.6 0.063	0.79 0.031	15.88 0.625	9.53 0.375	163.96 6.455	-0.56 -0.022	2.16 0.085	5.56 0.219
200 8	216.3 8.500	1.6 0.063	0.79 0.031	19.05 0.75	11.13 0.438	211.61 8.331	-0.64 -0.025	2.34 0.092	6.05 0.238
200 8	219.1 8.625	1.6 0.063	0.79 0.031	19.05 0.75	11.13 0.438	214.4 8.441	-0.64 -0.025	2.34 0.092	6.05 0.238
250 10	267.4 10.500	1.6 0.063	0.79 0.031	19.05 0.75	12.7 0.500	262.6 10.339	-0.69 -0.027	2.39 0.094	6.35 0.250
250 10	273.0 10.750	1.6 0.063	0.79 0.031	19.05 0.75	12.7 0.500	268.28 10.562	-0.69 -0.027	2.39 0.094	6.35 0.250
300 12	318.4 12.500	1.6 0.063	0.79 0.031	19.05 0.75	12.7 0.500	312.9 12.319	-0.76 -0.03	2.77 0.109	7.09 0.279
300 12	323.9 12.750	1.6 0.063	0.79 0.031	19.05 0.75	12.7 0.500	318.29 12.531	-0.76 -0.03	2.77 0.109	7.09 0.279

- Pipe standard OD and tolerance OD: Confirmed before rolling the groove pipe, if not, then the pipe is not suitable for rolling groove;
- Sealing surface A: confirm the sealing surface size in line with the requirements of the above table, if it is too large, it will affect the joint installation, too small will affect the joint sealing performance;
- Groove width B: Confirm that the width of the groove conforms to the above requirements, if it exceeds the requirement, it will affect the flexibility of the flexible coupling;
- Groove bottom diameter C: The standard value is its maximum, which has only negative tolerances. It affect the pressure bearing capacity and the various indicators of sex, if C is too large will appear the possibility of joint tripping;
- Groove depth D: for reference only. When the pipe outer diameter is the standard outer diameter, it is the minimum depth of the groove.
- Minimum wall thickness T: control the quality of the pipeline after rolling groove, if it is too small, there will be pipeline cracking or lowering pipe pressure capacity;

Introduction

This NEW General Catalog has been written for the piping system installer, designer, specification writer and owner as a basic reference guide for data about NEW mechanical piping methods. This catalog is organized to provide information in the context and form most readily usable. For easy identification of major sections of interest, see the condensed table of contents, for a fully detailed index. For more detailed information, consult Design Data.

Important Information

After more than a decade of experience in grooved-connected pipelines, NEW has developed multi-gauge and multi-pressure ratings of grooved products for use with different pipe materials.

NEW standard grooved piping system products are designed for use only with pipes and fittings that conform to the global groove standard as AWWA C606. Piping must be prepared in accordance with the groove specifications published by NEW and the performance data listed in this catalog is based on the correct preparation of the piping. In particular, installer must choose the right rubber seal material to suit applications. It should be noted that some special applications are not recommended to use the standard sealing material. Please refer to the "Rubber Gasket" section of this catalog for a list of applications where rubber sealant materials are recommended, as well as applications not recommended for use. NEW rubber gasket must be lubricated to facilitate proper installation and use. The seal lubricant must comply with NEW regulations or approval. Fully lubricate the outer surface of the gasket, including the lips and tube ends, and the housing cavity for lubrication, which will help prevent the rubber gasket from crinkling during installation.

Notice

The technical and performance data, weights, dimensions and specifications published in this catalog supersede all previously published data.

Green Mfg. Co. Ltd. maintains a policy of continual product improvement and, therefore, reserves the right to change product specifications, designs, and standard equipment without notice and without incurring obligation.

For the most up-to-date NEW product information, please visit **www.newpipefittings.in**

All data & information presented in this catalog is intended for piping design reference in utilization of NEW products for their intended application. It is not intended as a substitute for competent, professional assistance which is an obvious requisite to any specific application.

Design

Reference should always be made to design information available at no charge on request from NEW Good piping practices should always prevail. Specific pressures, temperatures, external or internal loads, performance standards and tolerances must never be exceeded. Many applications require recognition of special conditions, code requirements and use of safety factors. Qualified engineers must make these decisions.

While every effort has been made to ensure its accuracy, Green Mfg. Co. Ltd. its subsidiaries and affiliated companies, make no express or implied warranty of any kind respecting the information contained in this catalog or the material referred to herein.

Anyone making use of the information or material contained herein does so at their own risk and assumes any and all liability resulting from such use.

NEW PIPE FITTINGS FM APPROVED UL LISTED

Designations of global pipe sizes

NEW product data is utilized worldwide and all technical data is shown in both imperial (U.S.) and metric terms. The following chart shows a comparison between typical metric and IPS pipe sizes.

Size		Design Date	ISO	ANSI	BS	DIN	JIS	GB
Nominal Dia.		Actual O.D.	Actual O.D.	Actual O.D.	Actual O.D.	Actual O.D.	Actual O.D.	Actual O.D.
Metric	Inches	Metric mm	Metric mm	Metric mm	Metric mm	Metric mm	Metric mm	Metric mm
15	1/2	21.3	21.3	21.3	21.3	21.3	21.7	21.3
20	3/4	26.9	26.9	26.7	26.9	26.9	27.2	26.9
25	1	33.4	33.7	33.4	33.7	33.7	34.0	33.7
32	1 1/4	42.4	42.4	42.2	42.4	42.4	42.7	42.4
40	1 1/2	48.3	48.3	48.3	48.3	48.3	48.3	48.3
50	2	54.0	-	-	-	-	-	54.0
		57.0	-	-	-	-	-	57.0
		60.3	60.3	60.3	60.3	60.3	60.5	60.3
65	2 1/2	73.0	-	73.0				73.0
		76.1	76.1	-	76.1	76.1	76.3	76.1
80	3	88.9	88.9	88.9	88.9	88.9	89.1	88.9
90	3 1/2	101.6	-	101.6	101.6	101.6	101.5	102.0
100	4	108.0	-	-	-	-	-	108.0
		114.3	114.3	114.3	114.3	114.3	114.3	114.3
120	4 1/2	127.0	-	127.0	-	-	-	127.0
125	5	133.0	-	-	-	-	-	133.0
		139.7	139.7	-	139.7	139.7	139.8	139.7
		141.3	-	141.3	-	-	-	141.3
150	6	152.4	-	152.4(6OD)	-	-	-	152.0
		159.0	-	-	-	-	-	159.0
		165.1	-	-	165.1	-	165.2	165.1
		168.3	168.3	168.3	-	168.3	-	168.3
175	7	194.0	-	193.7	193.7	193.7	-	194.0
200	8	203.2	-	203.2(8OD)	-	-	-	203.0
		216.3	-	-	-	-	216.3	-
		219.1	219.1	219.1	219.1	219.1	-	219.1
225	9	241.8	-	-	-	-	241.8	-
		245.0	-	245.0	-	-	-	245.0
250	10	254.0	-	254.0(10OD)	-	-	-	-
		267.4	-	-	-	-	267.4	267.0
		273.0	273.0	273.0	273.0	273.0	-	273.0
275	11	299.1	-	299.1	-	-	-	299.0
300	12	304.8	-	304.8(12OD)	-	-	-	-
		318.5	-	-	-	-	318.5	318.5
		323.9	323.9	323.9	323.9	323.9	-	325.0
350	14	355.6	355.6	355.6	355.6	355.6	355.6	356.0
		377.0	-	-	-	-	-	377.0
400	16	406.4	406.4	406.4	406.4	406.4	406.4	406.0
		426.0	-	-	-	-	-	426.0
450	18	457.2	457.2	457.2	457.2	457.2	457.2	457.0
		480.0	-	-	-	-	-	480.0
500	20	508.0	508.0	508.0	508.0	508.0	508.0	508.0
		530.0	-	-	-	-	-	530.0
550	22	558.8	-	558.8	559.0	558.8	558.8	560.0
600	24	609.6	610.0	609.6	610.0	609.6	609.6	610.0
		630.0	-	-	-	-	-	630.0
700	28	711.2	711.0	711.2	711.0	711.2	711.2	711.0
		720.0	-	-	-	-	-	720.0
800	32	812.8	813.0	812.8	813.0	812.8	812.8	813.0
900	36	914.4	914.0	914.4	914.0	914.4	914.4	914.0
1000	40	1016.0	1016.0	1016.0	1016.0	1016.0	1016.0	1016.0
1050	42	1066.8	1067.0	1066.8	-	1066.8	-	1067.0
1100	44	1117.6	1118.0	1117.6	-	1117.6	1117.6	1118.0
1200	48	1219.2	-	1219.2	-	1219.2	1219.2	1219.0

























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