

RING  BRAND with **JFE** mark

PIPE FITTINGS

**Malleable Pipe Fitting
Steel Pipe Nipples**



JFE Pipe Fitting Mfg. Co., Ltd.

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Regarding Ring brand with JFE mark;

To make clear the high quality products
which are produced under our quality control system,
Ring brand with JFE mark is indicated on our products.

Ring brand with JFE mark is the symbol mark
which is indicated on the pipe fittings supplied by JFE Pipe Fitting Mfg. Co.,Ltd.

Pipe fittings with this mark are high quality products
which are produced by Japanese high quality control technologies.

In 1997, we were certified according to ISO 9001 the first in the industry. This certification covers the overall range of quality system for “ the design, development, production and related services for (a) cast iron fittings and parts, (b) steel, stainless steel, copper alloy and resin fittings and parts, and (c) prefabricated piping” and signifies the favorable evaluation of our products.

In process of manufacture, we use the equipments reflecting new technologies with our own development.

In the strict inspection process, we use our original equipments.

The products manufactured under the high reliabilities of this system are being well received in the market of the world.

Corporate Profile

Establishment	: April 27, 1935
Capital	: 958.95 million yen
Business	: Production of fittings for piping for gas, city water, and other purposes, and of parts for architectural and industrial machines
Main Customers	: JFE Corp., Osaka Gas Co., Ltd., Tokyo Gas Co., Ltd., and other leading gas companies in Japan, NTT, and waterworks bureaus in main cities of Japan
Business locations	
Main office and factory	: 153-1 Tajime-cho, Kishiwada City, Osaka Prefecture Japan 596-8585 TEL: +81-72-445-8181
Kawasaki Factory	: 1-1 Watarida-cho, Kawasaki-ku, Kawasaki City, Kanagawa Prefecture Japan 210-0855 TEL: +81-44-322-2157
Tokyo Branch Office	: JFE Kuramae Building 6th floor, 2-17-4 Kuramae, Taito-ku, Tokyo Japan 111-0051 TEL: +81-3-5823-1651
Sales offices	: Tohoku, Chubu, and Kyushu

History

- 1935 Established as Toyo Tekkan Pipe Fitting Mfg. Co., Ltd.
- 1944 Renamed as Nippon Kokan Pipe Fitting Mfg. Co., Ltd. Joined the Nippon Kokan Group.
- 1951 Permitted to use the JIS B 2301 conformity marking for threaded malleable cast iron pipe fittings.
- 1955 Received a prize from the director of the Osaka Regional Bureau of International Trade and Industry.
- 1959 Received a prize from the director of the Agency of Industrial Science and Technology.
- 1960 Installed the first automatic nipple machine in Japan to start the production of steel pipe fittings.
- 1964 Completed an automatic continuous molding system using the ASM method.
- 1965 Permitted to use the JIS B 2302 conformity marking for threaded steel pipe fittings (pipe nipples).
- 1968 Completed an automatic continuous molding system using the ASS method.
- 1969 Opened the Kawasaki Factory to start the production of oil-well pipe fittings.
- 1971 Completed an automatic continuous molding system using the ATH method.
- 1973 Accredited by the API (American Petroleum Institute).
Completed an automatic continuous molding system using the DISA method.
- 1976 Permitted to use the JIS marking for resin-coated fittings.
- 1981 Completed the factory line dedicated to the production of small-diameter couplings for oil-well pipes at the Kawasaki Factory.
- 1982 Installed a crucible low-frequency induction furnace (3 tons, 800 kW).
Started the production of anticorrosive pipe fittings (mechanical, threaded).
- 1985 Completed the Technology Center.
- 1986 Designated as a factory (for gray iron and ductile iron products) accredited by Lloyd's Registry of Shipping.
- 1988 Received a prize as an excellent industry-standardized factory, again from the director of the Osaka Regional Bureau of International Trade and Industry.
- 1989 Completed the ATH77 high-pressure automatic continuous molding system.
- 1990 Added the JIS B 2302 long nipples and resin-coated pipe fittings.
- 1991 Installed a crucible low-frequency induction furnace (3 ton, 800 kW).
Permitted to use the JIS B 5502 marking for spherical graphite cast iron products (permission No.591018).
- 1994 Merged Sakai Imono Kogyo Co., Ltd.
- 1995 Completed the Kansai Piping Production Center (Prefabricated Piping Production Factory) in the premises of the factory adjacent to the main office.
- 1997 Obtained the accreditation of ISO9001 (for design, development, production, and related services).
- 1998 Opened a factory for the production of polybutene pipes.
- 2000 Received a prize of the chairman for the clean Japan Center, regarding discharge regulation of scrapped materials in our casting factory.
Received a prize of the technology for the Japan gas association, regarding a PE-GM II joining material that had been developed with 3 companies.
- 2001 Completed the fitting-product delivery center in our factory of head office.
- 2003 Our trade name was changed to the JFE Pipe Fitting Mfg along with the establishment of the JFE-group.
An annealing furnace (a continued high-performance furnace) was completed.
- 2004 Received a prize the technology of the Japanese gas association, regarding developing fittings that transfer from steel pipes to polyethylene pipes and keep gas alive.
- 2006 Acquired the certification of ISO 14001 (environmental preservation).
- 2010 Received a prize of the technology for the Japan gas association, regarding a Neo Joint.
- 2011 Received the grand prize of the technology for the Japan gas association, regarding a Neo Joint.

Inspection and Quality Control for RING BRAND with JFE mark Products

In order to ensure the reliable quality for our customers, the RING  BRAND with JFE mark products are subject to the following strict inspection and thorough quality control:

Inspection for RING BRAND with JFE mark products

1. Receiving inspection

All of the raw materials, sub-materials, machines, and tools required for the production of pipe fittings are strictly inspected when they are received. This inspection is intended to improve the quality of products with meticulous care.

2. Component testing and temperature control

The component control, which determines the quality of products, is performed in the following processes: The metal molten in the cupola is continuously received by the channel type low-frequency furnace. After the molten metal is mixed thoroughly and its temperature is controlled, various elements including carbon (C), silicon (Si), manganese (Mn), sulfur (S), phosphate (P), and chromium (Cr) are rapidly analyzed at certain intervals with a vacuum emission spectroscopic analyzer. Through these control, the stability of the molten metal is always maintained. The temperature of the molten metal delivered from the low-frequency furnace is measured continuously. In addition, an immersed type high-temperature thermometer is used to measure the temperature more accurately at certain intervals. This minimizes the variations in the temperature of the molten metal and provides the constantly stable control of the molten metal.

3. Inspection for the start

Whenever any model (metal matrix or core box) used for casting and core making is newly created or modified, and whenever the main casting work is changed, trial casting is performed. After the experimentally cast iron has passed our strict dimensional inspection, internal breakdown inspection, and x-ray inspection, the product starts being manufactured. Therefore, the dimensions do not deviate from the allowable difference in the standard, and no harmful defect occurs inside.

4. Inspection for white pig iron

The inner and outer surfaces of materials of white pig iron are thoroughly cleaned with the automatic continuous shot blast machine. All of the treated coarse materials are inspected for casting surfaces, sand inclusions, slug inclusions, flaws, and any other defects, so that the best quality can be maintained.

5. Inspections for annealing and materials

The materials, which have been graphitized in the tunnel type annealing furnace, are sampled at certain intervals to ascertain the graphitization state at the breaking test. In addition, No.4 test pieces, which have been cast from the same lot of molten metal and thermally treated under the same conditions, are tested concerning tensile strength, yield strength, and elongation. These inspections are intended to control the constantly stable quality of materials. For more thorough control of materials, some samples are also obtained from the test pieces, as necessary, to evaluate the microscopic structure.

6. Inspection for materials

The materials of white pig iron, which have been thermally treated in the annealing furnace, are subjected to grinding and rectifying the ingates and other machining. Subsequently, the finishes and shapes of the ingates and mating surfaces are inspected visually.

7. Inspection for galvanizing

The galvanized materials are sampled for each inspection lot. The copper sulfate test is then conducted by the molten zinc plating test method, and the plated surfaces and adhesion state are inspected.

8. Inspection for threads

The pipe fittings which have been threaded with the automatic threading machine are sampled for each inspection lot. A thread gauge is then used to check whether or not the basic diameter of each thread is located within the tolerance. A misalignment checker for thread axial lines is also used to strictly check each angle between thread axial lines.

In addition, a visual inspection is made to check for any wear, chip, flaw, or black surface, and check the finished surface, so that the threading process is controlled thoroughly.

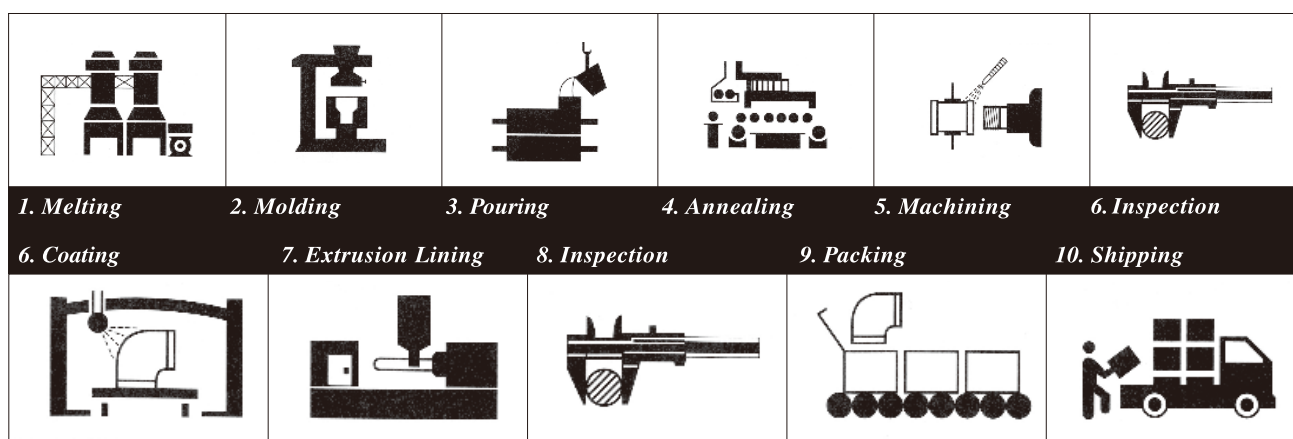
9. Shipping inspection

The products which have passed the process inspections are packed in carton boxes in accordance with their types and sizes to the packing standard. The packed products are then inspected for their state. This shipping inspection ensures that the products are handled easily when unpacked by the user.

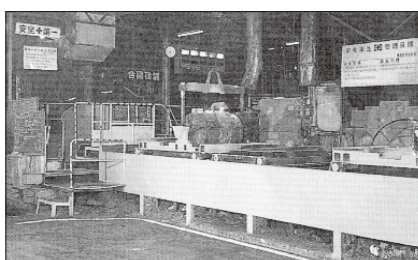
Quality Control for RING○BRAND with JFE mark Products

The RING○BRAND with JFE mark pipe fittings of malleable cast iron are manufactured using the statistic quality control method in each production process, so that high quality can be maintained in the entire production flow from the receipt of raw materials, sub-materials, etc. to the shipment of products. One of the policies of our company, “cooperative and joint efforts” is observed for this purpose. In addition, the quality control activities throughout the company and design of experiments are used to proceed with our tests, studies, etc. These efforts are focused on further improvement of quality.

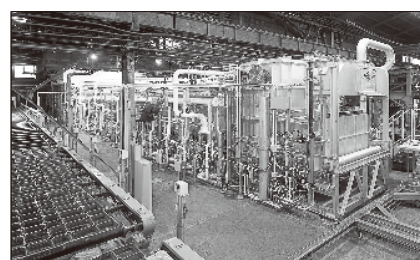
Production Process for RING○BRAND with JFE mark Pipe Fittings



Melting factory (low-frequency furnace)



Foundry



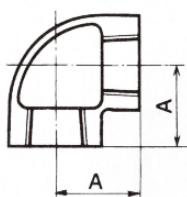
Annealing factory

Types and Sizes of RING O BRAND with JFE mark Pipe Fittings

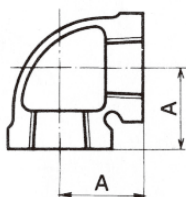
For using this list of different types and sizes of RING O BRAND with JFE mark pipe fittings, see the following notes:	
1	The types shown in parentheses in the list of different types and sizes of RING O BRAND with JFE mark pipe fittings are available at request, and take longer time for manufacture. Contact us for information on delivery time.
2	For some of the types and sizes included in the list of different types and sizes of RING O BRAND with JFE mark pipe fittings, PL pipe fittings (epoxy resin-coated) may not be available. Contact us for further information.

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

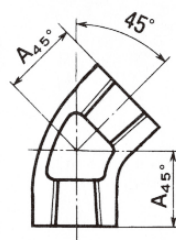
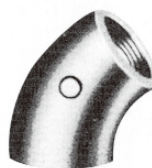
Elbows, plain, equal



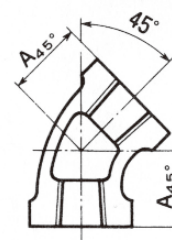
Elbows, banded equal



Elbows, plain, 45°

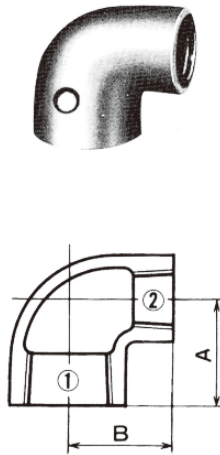


Elbows, banded, 45°

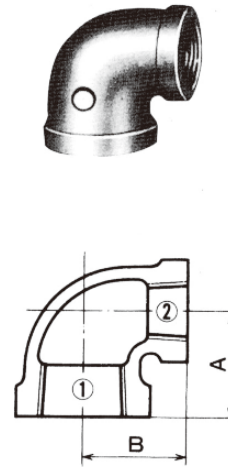


Nominal size	Distance between center and ends	
	A	A45°
1/8	17	(16)
1/4	19	17
3/8	23	19
1/2	27	21
3/4	32	25
1	38	29
1 1/4	46	34
1 1/2	48	37
2	57	42
2 1/2	69	49
3	78	54
4	97	65
5	113	74
6	132	82

Elbows, plain, reducing



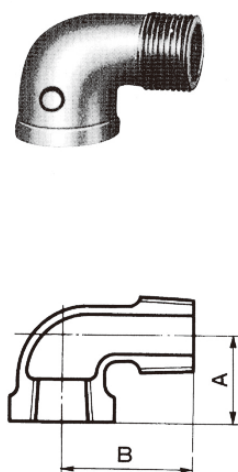
Elbows, banded reducing



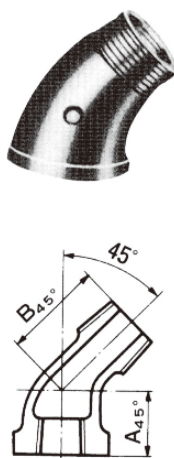
Nominal size ①×②	Distance between center and ends		Nominal size ①×②	Distance between center and ends		Nominal size ①×②	Distance between center and ends	
	A	B		A	B		A	B
$\frac{1}{4} \times \frac{1}{8}$	18	18	$1\frac{1}{2} \times \frac{3}{4}$	38	43	$3 \times 1\frac{1}{4}$	55	70
$\frac{3}{8} \times \frac{1}{8}$	19	21	$1\frac{1}{2} \times 1$	41	45	$3 \times 1\frac{1}{2}$	58	72
$\frac{3}{8} \times \frac{1}{4}$	20	22	$1\frac{1}{2} \times 1\frac{1}{4}$	45	48	3×2	62	72
$\frac{1}{2} \times \frac{1}{4}$	24	24				$3 \times 2\frac{1}{2}$	72	75
$\frac{1}{2} \times \frac{3}{8}$	26	25	$2 \times \frac{1}{2}$	38	48			
$\frac{3}{4} \times \frac{1}{4}$	25	27	$2 \times \frac{3}{4}$	41	49	$4 \times 1\frac{1}{4}$	61	86
$\frac{3}{4} \times \frac{3}{8}$	28	28	2×1	44	51	$4 \times 1\frac{1}{2}$	62	87
$\frac{3}{4} \times \frac{1}{2}$	29	30	$2 \times 1\frac{1}{4}$	48	54	4×2	69	87
			$2 \times 1\frac{1}{2}$	52	55	$4 \times 2\frac{1}{2}$	78	90
$1 \times \frac{3}{8}$	30	31	$2\frac{1}{2} \times \frac{1}{2}$	41	57	4×3	83	91
$1 \times \frac{1}{2}$	32	33	$2\frac{1}{2} \times \frac{3}{4}$	44	58			
$1 \times \frac{3}{4}$	34	35	$2\frac{1}{2} \times 1$	48	60	5×3	87	107
$1\frac{1}{4} \times \frac{1}{2}$	34	38	$2\frac{1}{2} \times 1\frac{1}{4}$	52	62	5×4	100	111
$1\frac{1}{4} \times \frac{3}{4}$	38	40	$2\frac{1}{2} \times 1\frac{1}{2}$	55	62			
$1\frac{1}{4} \times 1$	40	42	$2\frac{1}{2} \times 2$	60	65	6×3	92	120
$1\frac{1}{2} \times \frac{3}{8}$	34	39				6×4	102	125
$1\frac{1}{2} \times \frac{1}{2}$	35	42	3×1	50	68	6×5	116	128

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

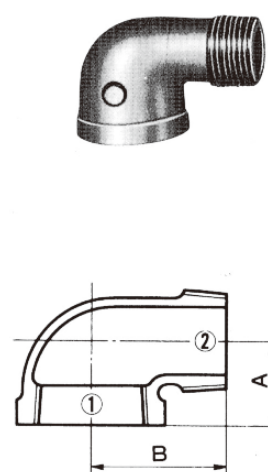
Street Elbows, banded, equal



Street Elbows, banded, equal, 45°

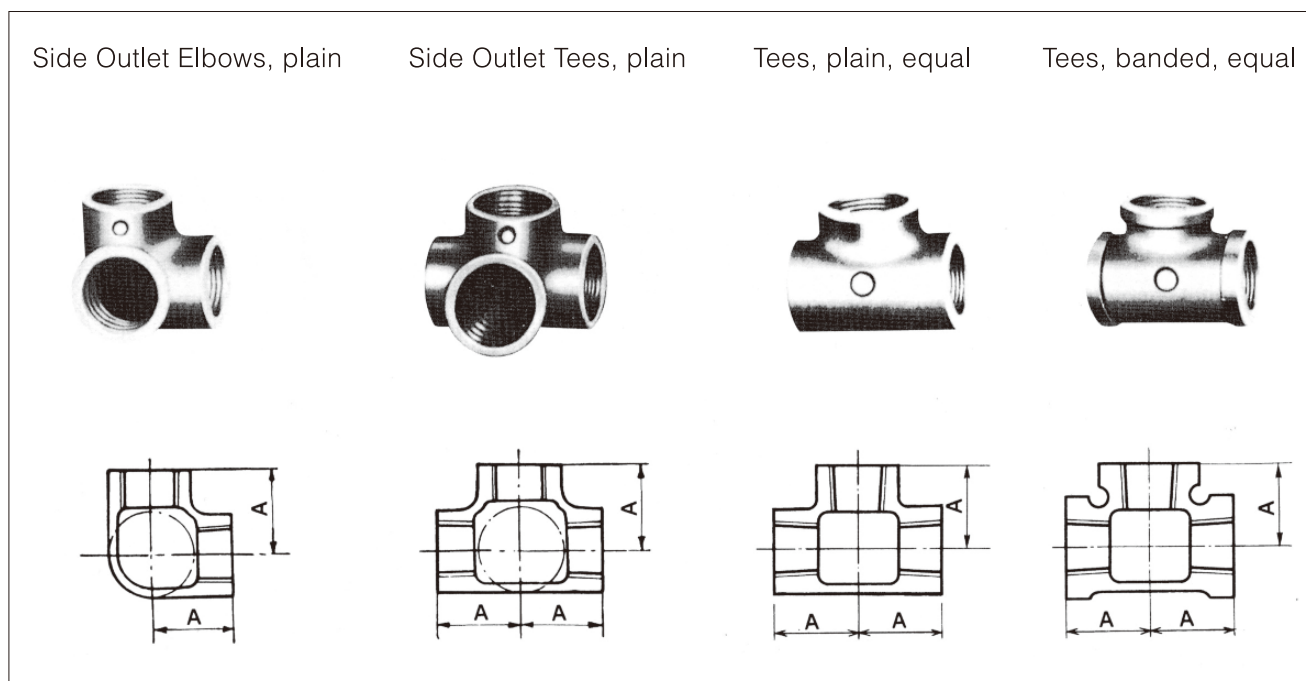


Street Elbows, banded, reducing



Nominal size	Distance between center and ends			
	A	B	A45°	B45°
1/8	17	26	(16)	(21)
1/4	19	30	(17)	(23)
3/8	23	35	19	27
1/2	27	40	21	31
3/4	32	47	25	36
1	38	54	29	42
1 1/4	46	62	34	49
1 1/2	48	68	37	51
2	57	79	42	59
2 1/2	69	92	(49)	(71)
3	78	104	(54)	(79)
4	97	126	(65)	(96)
5	(113)	(148)	(74)	(110)
6	(132)	(170)	(82)	(127)

Nominal size ①×②	Distance between center and ends	
	A	B
3/4 × 1/2	(29)	(44)
1 × 1/2	(32)	(47)
1 × 3/4	34	51
1 1/4 × 1	40	61
1 1/2 × 1	(41)	(65)
1 1/2 × 1 1/4	45	68
2 × 3/4	(41)	(65)
2 × 1 1/4	(48)	(75)
2 × 1 1/2	(52)	(75)
2 1/2 × 1	(48)	(79)
2 1/2 × 2	(60)	(88)
3 × 2	(62)	(98)

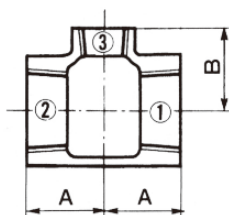
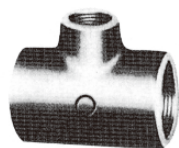


Nominal size	Distance between center and ends A
1/4	(19)
3/8	23
1/2	27
3/4	32
1	38
1 1/4	46
1 1/2	48
2	57
2 1/2	(69)
3	(78)

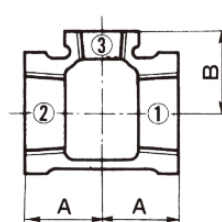
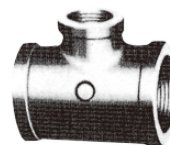
Nominal size	Distance between center and ends A
1/8	17
1/4	19
3/8	23
1/2	27
3/4	32
1	38
1 1/4	46
1 1/2	48
2	57
2 1/2	69
3	78
4	97
5	113
6	132

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Tees, plain, reducing

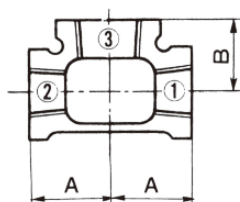
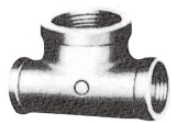


Tees, banded, reducing

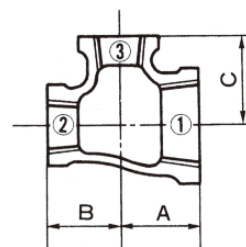


Nominal size ①×②×③	Distance between center and ends		Nominal size ①×②×③	Distance between center and ends		Nominal size ①×②×③	Distance between center and ends	
	A	B		A	B		A	B
$\frac{3}{8} \times \frac{3}{8} \times \frac{1}{8}$	(19)	(21)	$2 \times 2 \times 1$	44	51	$4 \times 4 \times 2$	69	87
$\frac{3}{8} \times \frac{3}{8} \times \frac{1}{4}$	20	22	$2 \times 2 \times 1\frac{1}{4}$	48	54	$4 \times 4 \times 2\frac{1}{2}$	78	90
$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{4}$	24	24	$2 \times 2 \times 1\frac{1}{2}$	52	55	$4 \times 4 \times 3$	83	91
$\frac{1}{2} \times \frac{1}{2} \times \frac{3}{8}$	26	25	$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{2}$	41	57			
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{4}$	25	27	$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$	44	58	$5 \times 5 \times \frac{3}{4}$	(55)	(96)
$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{8}$	28	28	$2\frac{1}{2} \times 2\frac{1}{2} \times 1$	48	60	$5 \times 5 \times 1$	60	97
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$	29	30	$2\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{4}$	52	62	$5 \times 5 \times 1\frac{1}{4}$	62	100
			$2\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$	55	62	$5 \times 5 \times 1\frac{1}{2}$	66	100
$1 \times 1 \times \frac{3}{8}$	30	31	$2\frac{1}{2} \times 2\frac{1}{2} \times 2$	60	65	$5 \times 5 \times 2$	72	103
$1 \times 1 \times \frac{1}{2}$	32	33				$5 \times 5 \times 2\frac{1}{2}$	81	105
$1 \times 1 \times \frac{3}{4}$	34	35	$3 \times 3 \times \frac{1}{2}$	44	64	$5 \times 5 \times 3$	87	107
$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{8}$	(33)	(36)	$3 \times 3 \times \frac{3}{4}$	46	66	$5 \times 5 \times 4$	100	111
$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{1}{2}$	34	38	$3 \times 3 \times 1$	50	68			
$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{4}$	38	40	$3 \times 3 \times 1\frac{1}{4}$	55	70	$6 \times 6 \times \frac{3}{4}$	(60)	(108)
$1\frac{1}{4} \times 1\frac{1}{4} \times 1$	40	42	$3 \times 3 \times 1\frac{1}{2}$	58	72	$6 \times 6 \times 1$	64	110
$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{8}$	(34)	(40)	$3 \times 3 \times 2$	62	72	$6 \times 6 \times 1\frac{1}{4}$	67	113
$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{2}$	35	42	$3 \times 3 \times 2\frac{1}{2}$	72	75	$6 \times 6 \times 1\frac{1}{2}$	70	115
$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{4}$	38	43				$6 \times 6 \times 2$	75	116
$1\frac{1}{2} \times 1\frac{1}{2} \times 1$	41	45	$4 \times 4 \times \frac{1}{2}$	50	79	$6 \times 6 \times 2\frac{1}{2}$	85	118
$1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{4}$	45	48	$4 \times 4 \times \frac{3}{4}$	54	80	$6 \times 6 \times 3$	92	120
			$4 \times 4 \times 1$	57	83	$6 \times 6 \times 4$	102	125
$2 \times 2 \times \frac{1}{2}$	38	48	$4 \times 4 \times 1\frac{1}{4}$	61	86	$6 \times 6 \times 5$	116	128
$2 \times 2 \times \frac{3}{4}$	41	49	$4 \times 4 \times 1\frac{1}{2}$	63	86			

Tees, banded, reducing



Tees, banded, reducing

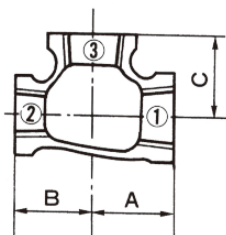
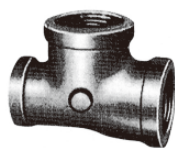


Nominal size ①×②×③	Distance between center and ends	
	A	B
$\frac{1}{2} \times \frac{1}{2} \times \frac{3}{4}$	30	30
$\frac{3}{4} \times \frac{3}{4} \times 1$	35	34
$\frac{3}{4} \times \frac{3}{4} \times 1\frac{1}{4}$	40	38
$1 \times 1 \times 1\frac{1}{4}$	42	40
$1 \times 1 \times 1\frac{1}{2}$	45	42
$1 \times 1 \times 2$	51	44
$1\frac{1}{4} \times 1\frac{1}{4} \times 1\frac{1}{2}$	48	45
$1\frac{1}{4} \times 1\frac{1}{4} \times 2$	52	48
$1\frac{1}{2} \times 1\frac{1}{2} \times 2$	54	52
$1\frac{1}{2} \times 1\frac{1}{2} \times 2\frac{1}{2}$	62	55
$2 \times 2 \times 2\frac{1}{2}$	65	60
$2 \times 2 \times 3$	72	62
$2\frac{1}{2} \times 2\frac{1}{2} \times 3$	75	70

Nominal size ①×②×③	Distance between center and ends		
	A	B	C
$\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$	30	27	30
$1 \times \frac{1}{2} \times \frac{1}{2}$	32	24	33
$1 \times \frac{3}{4} \times \frac{3}{4}$	34	32	35
$1\frac{1}{4} \times \frac{3}{4} \times \frac{3}{4}$	37	32	40
$1\frac{1}{4} \times 1 \times 1$	40	38	42
$1\frac{1}{2} \times 1 \times 1$	41	37	45
$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{4}$	45	44	48
$2 \times 1 \times 1$	44	38	51
$2 \times 1\frac{1}{4} \times 1\frac{1}{4}$	48	46	54
$2 \times 1\frac{1}{2} \times 1\frac{1}{2}$	52	48	55
$2\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$	55	48	62
$2\frac{1}{2} \times 2 \times 2$	60	57	65

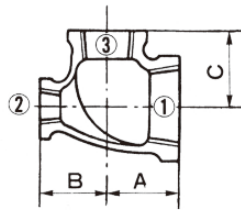
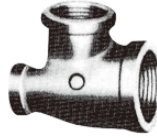
Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Tees, banded, reducing



Nominal size ①×②×③	Distance between center and ends		
	A	B	C
$\frac{3}{4} \times \frac{1}{2} \times \frac{3}{4}$	32	30	32
1 × $\frac{1}{2}$ × 1	38	34	38
1 × $\frac{3}{4}$ × 1	38	35	38
$1\frac{1}{4} \times \frac{3}{4} \times 1\frac{1}{4}$	46	40	46
$1\frac{1}{4} \times 1 \times 1\frac{1}{4}$	46	42	46
$1\frac{1}{2} \times 1 \times 1\frac{1}{2}$	48	45	48
$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{2}$	48	48	48
2 × 1 × 2	57	52	57
2 × $1\frac{1}{4}$ × 2	57	54	57
2 × $1\frac{1}{2}$ × 2	57	55	57
$2\frac{1}{2} \times 1\frac{1}{2} \times 2\frac{1}{2}$	69	62	69
$2\frac{1}{2} \times 2 \times 2\frac{1}{2}$	69	65	69

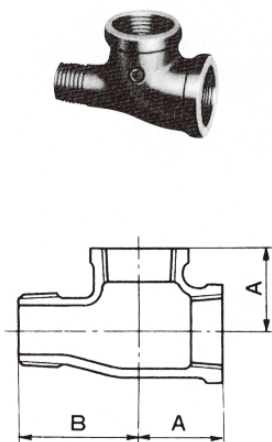
Tees, banded, reducing



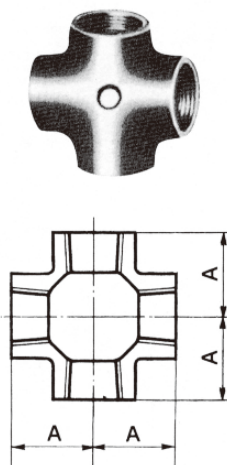
Nominal size ①×②×③	Distance between center and ends			Nominal size ①×②×③	Distance between center and ends		
	A	B	C		A	B	C
1 × 1/2 × 3/4	34	30	35	2 × 1 × 1 1/4	48	42	54
1 × 3/4 × 1/2	32	29	33	2 × 1 × 1 1/2	52	45	55
1 1/4 × 3/4 × 1	40	35	42	2 × 1 1/4 × 1	44	40	51
1 1/4 × 1 × 1/2	34	32	38	2 × 1 1/4 × 1 1/2	52	48	55
1 1/4 × 1 × 3/4	37	34	40	2 × 1 1/2 × 1/2	38	35	48
1 1/4 × 1 × 1 1/2	48	45	45	2 × 1 1/2 × 3/4	41	38	50
1 1/4 × 1 × 2	54	51	48	2 × 1 1/2 × 1	45	42	52
1 1/2 × 1 × 3/4	38	34	43	2 × 1 1/2 × 1 1/4	49	46	54
1 1/2 × 1 × 1 1/4	45	42	48	2 1/2 × 1 1/2 × 2	60	55	65
1 1/2 × 1 × 2	55	51	52	2 1/2 × 2 × 1	48	44	60
1 1/2 × 1 1/4 × 1/2	35	34	42	2 1/2 × 2 × 1 1/4	52	48	62
1 1/2 × 1 1/4 × 3/4	38	38	43	2 1/2 × 2 × 1 1/2	55	52	62
1 1/2 × 1 1/4 1	41	40	45	3 × 2 1/2 × 2	62	60	72
1 1/2 × 1 1/4 2	55	54	52				

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

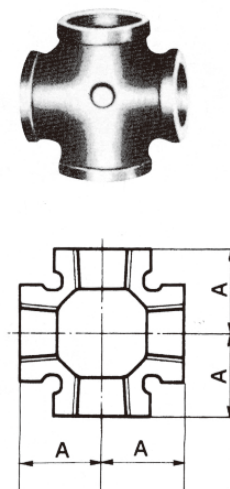
Service Tees, banded



Crosses, plain, equal



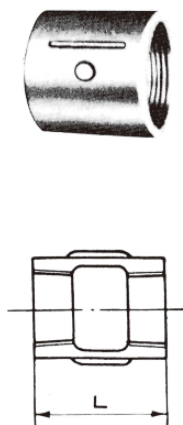
Crosses, banded, equal



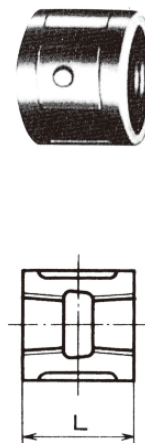
Nominal size	Distance between center and ends	
	A	B
1/8	(17)	(26)
1/4	(19)	(30)
3/8	(23)	(35)
1/2	27	40
3/4	32	47
1	38	54
1 1/4	46	62
1 1/2	48	68
2	57	79
2 1/2	(69)	(92)
3	78	104
4	(97)	(126)
5	(113)	(148)
6	(132)	(170)

Nominal size	Distance between center and ends
	A
1/8	(17)
1/4	19
3/8	23
1/2	27
3/4	32
1	38
1 1/4	46
1 1/2	48
2	57
2 1/2	69
3	78
4	97
5	113
6	132

Sockets, plain, with ribs



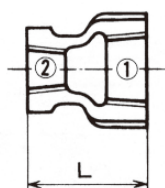
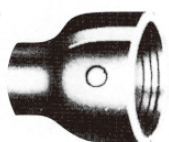
Sockets, banded, with ribs



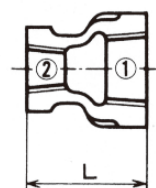
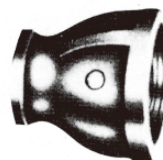
Nominal size	L	Nominal size	L
$\frac{1}{8}$	22	3	75
$\frac{1}{4}$	25		
$\frac{3}{8}$	30	4	85
$\frac{1}{2}$	35		
$\frac{3}{4}$	40	5	95
1	45	6	105
$1\frac{1}{4}$	50		
$1\frac{1}{2}$	55		
2	60		
$2\frac{1}{2}$	70		

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Reducing Sockets, plain, with ribs

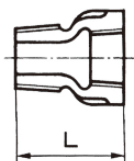
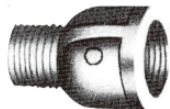


Reducing Socket, banded, with ribs

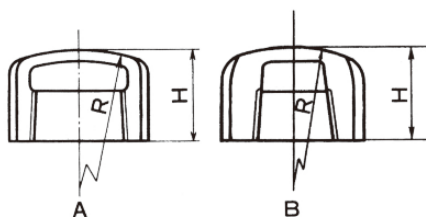


Nominal size ①×②	L	Nominal size ①×②	L	Nominal size ①×②	L
1/4 × 1/8	25	2 × 1/4	58	4 × 3/4	85
3/8 × 1/8	(28)	2 × 3/8	58	4 × 1	85
3/8 × 1/4	28	2 × 1/2	58	4 × 1 1/4	85
1/2 × 1/8	(34)	2 × 3/4	58	4 × 1 1/2	85
1/2 × 1/4	34	2 × 1	58	4 × 2	85
1/2 × 3/8	34	2 × 1 1/4	58	4 × 2 1/2	85
3/4 × 1/4	38	2 × 1 1/2	58	4 × 3	85
3/4 × 3/8	38	2 1/2 × 1/2	65		
3/4 × 1/2	38	2 1/2 × 3/4	65	5 × 1 1/2	95
		2 1/2 × 1	65	5 × 2	95
1 × 1/4	42	2 1/2 × 1 1/4	65	5 × 2 1/2	95
1 × 3/8	42	2 1/2 × 1 1/2	65	5 × 3	95
1 × 1/2	42	2 1/2 × 2	65	5 × 4	95
1 × 3/4	42				
1 1/4 × 1/2	48	3 × 1/2	72	6 × 2	105
1 1/4 × 3/4	48	3 × 3/4	72	6 × 2 1/2	105
1 1/4 × 1	48	3 × 1	72	6 × 3	105
1 1/2 × 1/2	52	3 × 1 1/4	72	6 × 4	105
1 1/2 × 3/4	52	3 × 1 1/2	72	6 × 5	105
1 1/2 × 1	52	3 × 2	72		
1 1/2 × 1 1/4	52	3 × 2 1/2	72		

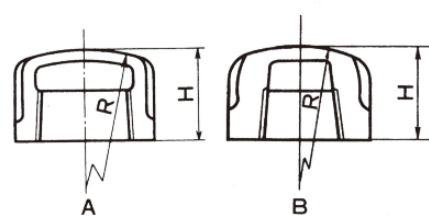
Extension pieces



Caps, plain



Caps, banded

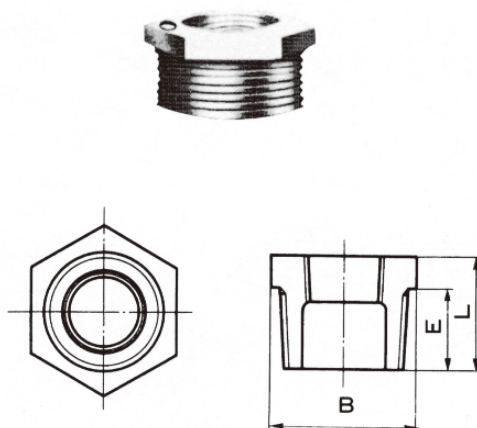


Nominal size	L	Nominal size	Height H	Outer radius of top R	Type
$\frac{1}{8}$	(25)	* $\frac{1}{8}$	(14)	(40)	B
$\frac{1}{4}$	(28)	* $\frac{1}{4}$	15	50	B
$\frac{3}{8}$	(32)	$\frac{3}{8}$	17	62	A
$\frac{1}{2}$	40	* $\frac{1}{2}$	20	78	B
$\frac{3}{4}$	48	* $\frac{3}{4}$	24	95	B
1	55	* 1	28	125	B
$1\frac{1}{4}$	60	* $1\frac{1}{4}$	30	150	B
$1\frac{1}{2}$	(65)	* $1\frac{1}{2}$	32	170	B
2	(70)	* 2	36	215	B
$2\frac{1}{2}$	(80)	* $2\frac{1}{2}$	42	270	B
3	(90)	3	45	310	A
4	(100)	* 4	55	405	B
5	(110)	5	58	495	A
6	(125)	6	65	580	A

Remarks: 1.The products marked with an asterisk (*) have no cap at the end of the threaded part.

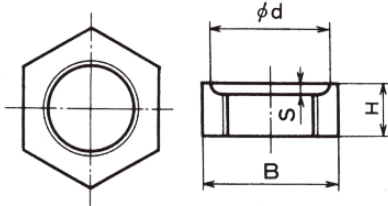
Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Bushings

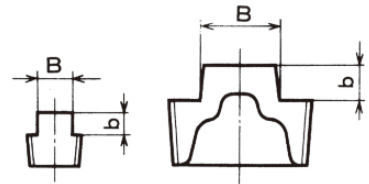
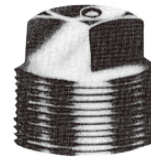


Nominal size	Width across flat B		L	E	Nominal size	Width across flat B		L	E	Nominal size	Width across flat B		L	E
	Hexagon	Octagon				Hexagon	Octagon				Hexagon	Octagon		
$\frac{1}{4} \times \frac{1}{8}$	17		17	12	$1\frac{1}{2} \times 1$	54		32	23	$4 \times \frac{1}{2}$		120	51	37
$\frac{3}{8} \times \frac{1}{8}$	21		18	13	$1\frac{1}{2} \times 1\frac{1}{4}$	54		32	23	$4 \times \frac{3}{4}$		120	51	37
$\frac{3}{8} \times \frac{1}{4}$	21		18	13						4×1		120	51	27
$\frac{1}{2} \times \frac{1}{8}$	26		21	16	$2 \times \frac{3}{8}$		63	36	25	$4 \times 1\frac{1}{4}$		120	51	37
$\frac{1}{2} \times \frac{1}{4}$	26		21	16	$2 \times \frac{1}{2}$		63	36	25	$4 \times 1\frac{1}{2}$		120	51	37
$\frac{1}{2} \times \frac{3}{8}$	26		21	16	$2 \times \frac{3}{4}$		63	36	25	4×2		120	51	37
$\frac{3}{4} \times \frac{1}{8}$	32		24	18	2×1		63	36	25	$4 \times 2\frac{1}{2}$		120	51	37
$\frac{3}{4} \times \frac{1}{4}$	32		24	18	$2 \times 1\frac{1}{4}$		63	36	25	4×3		120	51	37
$\frac{3}{4} \times \frac{3}{8}$	32		24	18	$2 \times 1\frac{1}{2}$		63	36	25					
$\frac{3}{4} \times \frac{1}{2}$	32		24	18	$2\frac{1}{2} \times \frac{1}{2}$		80	39	28	$5 \times 1\frac{1}{2}$		145	57	42
					$2\frac{1}{2} \times \frac{3}{4}$		80	39	28	5×2		145	57	42
$1 \times \frac{1}{4}$	38		27	20	$2\frac{1}{2} \times 1$		80	39	28	$5 \times 2\frac{1}{2}$		145	57	42
$1 \times \frac{3}{8}$	38		27	20	$2\frac{1}{2} \times 1\frac{1}{4}$		80	39	28	5×3		145	57	42
$1 \times \frac{1}{2}$	38		27	20	$2\frac{1}{2} \times 1\frac{1}{2}$		80	39	28	5×4		145	57	42
$1 \times \frac{3}{4}$	38		27	20	$2\frac{1}{2} \times 2$		80	39	28					
$1\frac{1}{4} \times \frac{1}{4}$	46		30	22						6×2		170	64	46
$1\frac{1}{4} \times \frac{3}{8}$	46		30	22	$3 \times \frac{1}{2}$		95	44	32	$6 \times 2\frac{1}{2}$		170	64	46
$1\frac{1}{4} \times \frac{1}{2}$	46		30	22	$3 \times \frac{3}{4}$		95	44	32	6×3		170	64	46
$1\frac{1}{4} \times \frac{3}{4}$	46		30	22	3×1		95	44	32	6×4		170	64	46
$1\frac{1}{4} \times 1$	46		30	22	$3 \times 1\frac{1}{4}$		95	44	32	6×5		170	64	46
$1\frac{1}{2} \times \frac{1}{4}$	54		32	23	$3 \times 1\frac{1}{2}$		95	44	32					
$1\frac{1}{2} \times \frac{3}{8}$	54		32	23	3×2		95	44	32					
$1\frac{1}{2} \times \frac{1}{2}$	54		32	23	$3 \times 2\frac{1}{2}$		95	44	32					
$1\frac{1}{2} \times \frac{3}{4}$	54		32	23										

Lock-nuts



Plugs



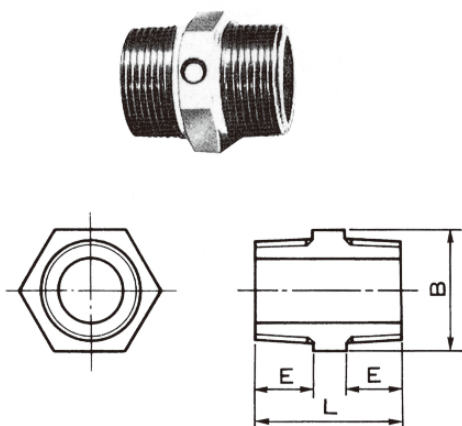
Nominal size	Width across flat		Height H	Diameter d	Depth S
	B				
	Hexagon	Octagon			
1/8	(17)		(7)		
1/4	21		8	18	1.2
3/8	26		9	22	1.2
1/2	32		9	28	1.2
3/4	38		10	34	1.5
1	46		11	40	1.5
1 1/4	54		12	50	1.5
1 1/2		63	13	55	2.5
2		77	15	68	2.5
2 1/2		100	17	88	2.5
3		115	18	100	2.5
4		145	22	125	2.5
5		165	25	150	2.5
6		200	30	180	2.5

Nominal size	Head (square)	
	Width across flat B	Height d
1/8	7	7
1/4	9	8
3/8	12	9
1/2	14	10
3/4	17	11
1	19	12
1 1/4	23	13
1 1/2	26	14
2	32	15
2 1/2	41	18
3	46	19
4	58	22
5	67	25
6	77	28

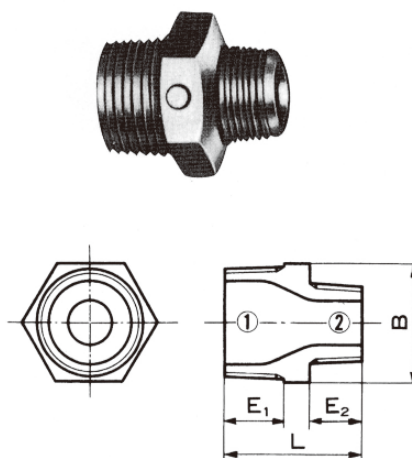
Remarks: 1. The 1/8, 1/4, and 3/8 plugs are made of steel.

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Nipples, equal



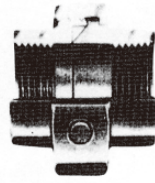
Nipples, reducing



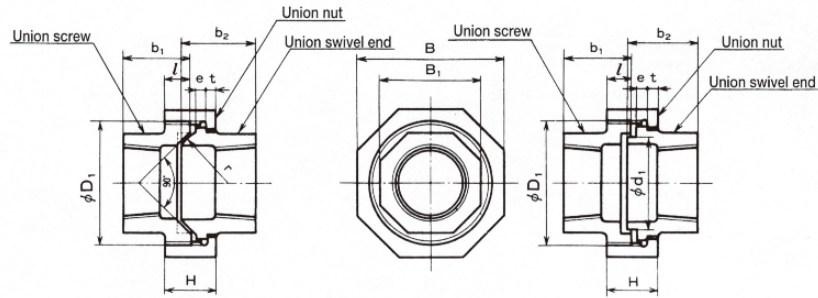
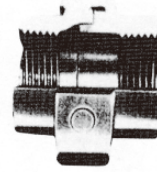
Nominal size	Width across flat		L	E
	B			
	Hexagon	Octagon		
1⁄8	14		32	11
1⁄4	17		34	12
3⁄8	21		36	13
1⁄2	26		42	16
3⁄4	32		47	18
1	38		52	20
1 1⁄4	46		56	22
1 1⁄2	54		60	23
2		63	66	25
2 1⁄2		80	73	28
3		95	81	32
4		120	92	37
5		145	104	42
6		170	116	46

Nominal size ①×②	Distance between opposite sides, B		L	E ₁	E ₂
	Hexagon	Octagon			
$\frac{3}{8} \times \frac{1}{4}$	(21)		(35)	(13)	(12)
$\frac{1}{2} \times \frac{1}{4}$	(26)		(38)	(16)	(12)
$\frac{1}{2} \times \frac{3}{8}$	(26)		(39)	(16)	(13)
$\frac{3}{4} \times \frac{1}{4}$	(32)		(41)	(18)	(12)
$\frac{3}{4} \times \frac{3}{8}$	(32)		(42)	(18)	(13)
$\frac{3}{4} \times \frac{1}{2}$	32		45	18	16
$1 \times \frac{3}{8}$	(38)		(45)	(20)	(13)
$1 \times \frac{1}{2}$	(38)		(48)	(20)	(16)
$1 \times \frac{3}{4}$	(38)		(50)	(20)	(18)
$1\frac{1}{4} \times \frac{1}{2}$	(46)		(50)	(22)	(16)
$1\frac{1}{4} \times \frac{3}{4}$	(46)		(52)	(22)	(18)
$1\frac{1}{4} \times 1$	(46)		(54)	(22)	(20)
$1\frac{1}{2} \times \frac{3}{4}$	(54)		(55)	(23)	(18)
$1\frac{1}{2} \times 1$	(54)		(57)	(23)	(20)
$1\frac{1}{2} \times 1\frac{1}{4}$	(54)		(59)	(23)	(22)
$2 \times \frac{3}{4}$		(63)	(59)	(25)	(18)
2×1		(63)	(61)	(25)	(20)
$2 \times 1\frac{1}{4}$		(63)	(63)	(25)	(22)
$2 \times 1\frac{1}{2}$		(63)	(64)	(25)	(23)
$2\frac{1}{2} \times 1\frac{1}{2}$		(80)	(68)	(28)	(23)
$2\frac{1}{2} \times 2$		(80)	(70)	(28)	(25)
3×2		(95)	(74)	(32)	(25)
$3 \times 2\frac{1}{2}$		(95)	(77)	(32)	(28)
4×2		(120)	(80)	(37)	(25)
4×3		(120)	(87)	(37)	(32)

Unions Conical Joint, Female'



Unions Standard, flat seat



Nominal size	Threaded part D1 (for reference only)	Union screw and union swivel end							Union nut			
	D1	Length of screw <i>l</i>	<i>b</i> ₁	Thickness of swivel end <i>e</i>	<i>b</i> ₂	<i>d</i> ₁	Width across flat <i>B</i> ₁		Height <i>H</i>	Thickness of hole <i>t</i>	Width across flat <i>B</i>	
							Octagon	Decagon			Octagon	Decagon
1/8	(M21×1.5)	(6.5)	(15)	(2.5)	(16.5)	(12.5)	(15)	—	(13)	(2.5)	(25)	—
1/4	M26×1.5	7	17	2.5	18	16.5	19	—	13.5	2.5	31	—
3/8	M31×2	8	19	3	20.5	20	23	—	16	3	37	—
1/2	M35×2	9	21	3	21.5	24	27	—	17	3	42	—
3/4	M42×2	9.5	24.5	3.5	26	30	33	—	18.5	3.5	49	—
1	M51×2	10	27	4	29	38	41	—	20	4	59	—
1 1/4	M60×2	11	30	4.5	32	46	—	50	22	4.5	—	69
1 1/2	M68×2	12	33	5	35.5	53	—	56	24.5	5	—	78
2	M82×2	13.5	37	5.5	39.5	65	—	69	27	5.5	—	93
2 1/2	M100×2	15	42	6	45.5	81	—	86	29.5	6	—	112
3	M115×2	17	47	6.5	50	95	—	99	32.5	6.5	—	127
4	M145×2	21	58	7.5	60.5	121	—	127	39	7.5	—	158
5	M175×3	24	66	8	66.5	150	—	154	43	8	—	188
6	M205×3	28	73	9	73	177	—	182	49	9	—	219

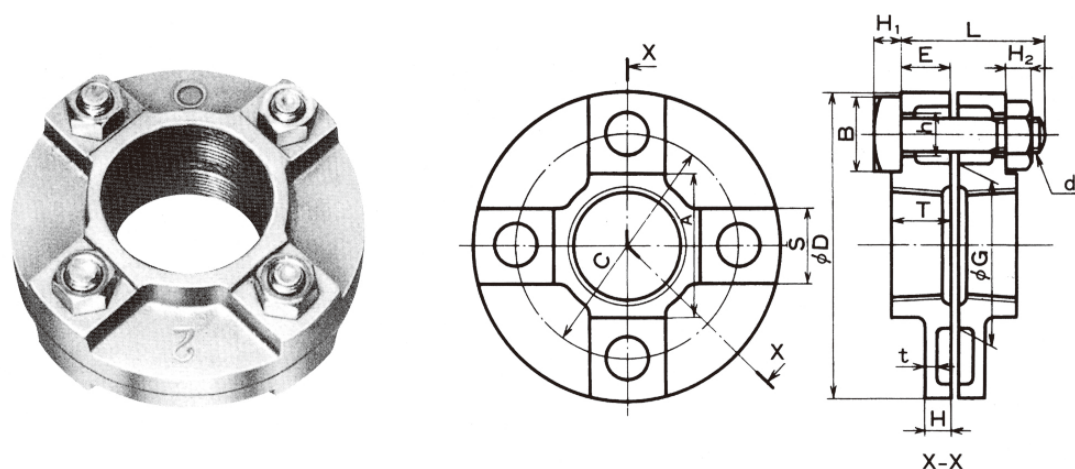
Remarks: 1. The available conical unions include brass unions, which has a brass sheet embedded in the part indicated with dotted lines.

2. The standard unions should be used with a proper gasket.

Note: A proper gasket for your standard union should be purchased in accordance with your application.

Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Flange Unions, round, with bolts

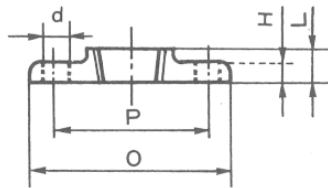
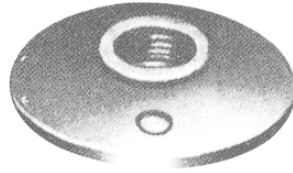


Nominal size	Flange											Bolt and nut				
	D	A	G	S	E	H	T	t	C	h	Number of bolt holes	Nominal size d	Our actual size			
													L	B	H ₁	H ₂
1/2	73	27	34	23	10	6	13	3	48	12	3	M10	40	19	7	8
3/4	79	33	40	23	12	6	15	3.5	54	12	3	M10	40	19	7	8
1	87	41	48	23	14	8	17	3.5	62	12	4	M10	40	19	7	8
1 1/4	107	50	59	28	16	9	19	4	76	15	4	M12	55	21	8	10
1 1/2	112	56	65	28	17	10	20	4	82	15	4	M12	55	21	8	10
2	126	69	78	28	21	11	24	5	95	15	4	M12	60	21	8	10
2 1/2	155	86	96	35	23	12	27	5.5	118	19	4	M16	70	27	10	13
3	168	99	109	35	26	13	30	6	131	19	4	M16	70	27	10	13
4	196	127	136	35	32	16	36	7	159	19	4	M16	85	27	10	13
5	223	154	163	35	36	19	40	8	186	19	6	M16	90	27	10	13
6	265	182	194	41	36	21	40	9	220	24	6	M20	95	35	13	16

Remarks: 1. The set flanges should be used with a proper gasket.

Note: A proper gasket should be purchased for your application.

Round Flanges, light pattern, without bolt hole

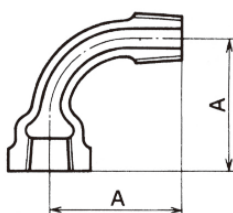


Nominal size	Round Flange					
	P	O	L	H	Bolt hole	
					d	Number of holes
1/4	44	64	9	5	7	3
3/8	54	75	10	5	11	3
1/2	63	95	12	5	11	3
4/3	75	102	14	5	11	3
1	83	114	16	5	14.5	3
1 1/4	94	120	18	6.5	14.5	3
1 1/2	107	133	19	6.5	14.5	4
2	122	152	21	8	14.5	4
2 1/2	135	165	24	8	18	5
3	145	184	26	9.5	18	5
4	178	216	30	9.5	20.5	5
5	210	254	32	13	20.5	5
6	238	280	35	13	20.5	6

Remarks: Remarks: Bolt holes are only made at your request.

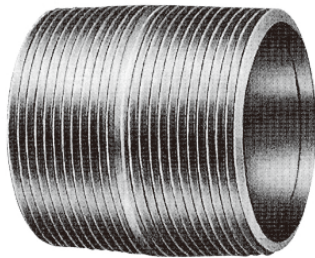
Malleable pipe fitting Epoxy resin coated Malleable pipe fitting

Malleble Bends,
M&F, plain, or Banded

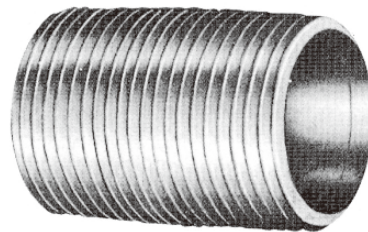


Nominal size	Distance between center and ends	
	A	
$\frac{1}{8}$	(32)	
$\frac{1}{4}$	38	
$\frac{3}{8}$	44	
$\frac{1}{2}$	52	
$\frac{3}{4}$	65	
1	82	
$1\frac{1}{4}$	100	
$1\frac{1}{2}$	115	
2	140	
$2\frac{1}{2}$	175	
3	205	
4	260	
5	318	
6	375	

Barrel Nipples



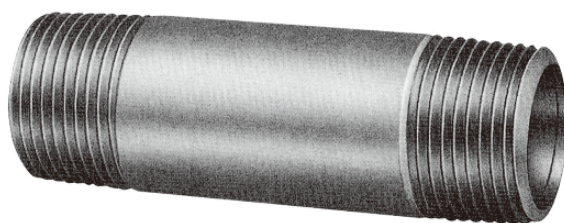
Close Nipples



Nominal size	Length of close nipple (min.)	Length of barrel nipple (min.)
$\frac{1}{8}$	22	24
$\frac{1}{4}$	24	26
$\frac{3}{8}$	26	28
$\frac{1}{2}$	29	34
$\frac{3}{4}$	35	38
1	38	42
$1\frac{1}{4}$	41	50
$1\frac{1}{2}$	44	50
2	51	58
$2\frac{1}{2}$	64	70
3	67	78
4	73	90
5	76	103
6	79	103

Remarks: 1. The ends of each threaded part are chamfered.

Long Nipples



															Unit:mm
Length Nominal size	50	65	75	90	100	115	125	140	150	175	200	225	250	275	300
1/8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1/4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3/8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1/2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3/4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1 1/4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
1 1/2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
2		●	●	●	●	●	●	●	●	●	●	●	●	●	●
2 1/2			●		●		●		●		●		●		●
3					●		●		●		●		●		●
4					●		●		●		●		●		●
5							●		●		●		●		●
6							●		●		●		●		●

Unit:mm													
Length Nominal size	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	2000
1/8	●	●	●	●	●	●	●	●	●	●	●	●	●
1/4	●	●	●	●	●	●	●	●	●	●	●	●	●
3/8	●	●	●	●	●	●	●	●	●	●	●	●	●
1/2	●	●	●	●	●	●	●	●	●	●	●	●	●
3/4	●	●	●	●	●	●	●	●	●	●	●	●	●
1	●	●	●	●	●	●	●	●	●	●	●	●	●
1 1/4	●	●	●	●	●	●	●	●	●	●	●	●	●
1 1/2	●	●	●	●	●	●	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●	●	●	●	●	●	●
2 1/2													
3													
4													

Remarks: 1. The ends of each threaded part are chamfered.

2. Long nipples of dimensions other than the above ones are available at your request.

■ Pipe Fittings for Water Supply

Core Fittings

Features of Core Fittings

1.Excellent corrosion resistance

Excellent corrosion resistance for both uPVC lined steel pipes and PE powder lined steel pipes is achieved by the double seal construction of the core consisting of lips and O-ring. Variances in the inside diameter of the pipes are accommodated by the specially designed lips and O-ring on the core which from tight sealing to suppress water movement and prevent corrosion.

2.Easy jointing

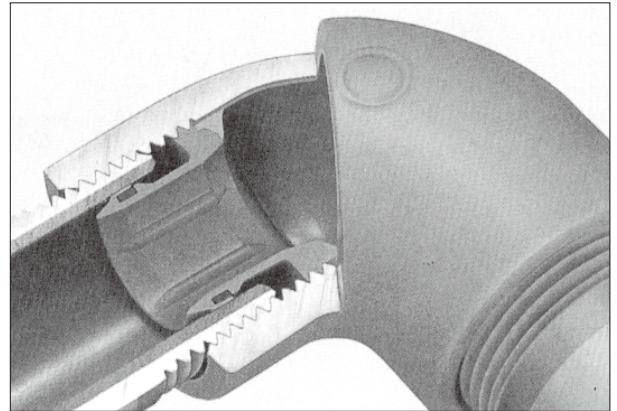
As dimensions of the core are strictly designed for both uPVC lined steel pipes and PE powder lined steel pipes,the pipes are easily and smoothly joined to the fittings.

3.Secure installation

The shape of top end of the core is carefully designed to prevent damaging by pipe end at the jointing. Also the thread length of the fittings is long enough to avoid the pipe end hitting the core end.

4.Enough items

In addition to malleable cast iron core fittings, bronze core fittings and insulation core fittings are also available to cope with the various applications.

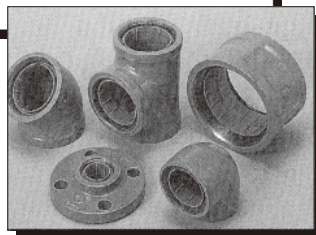
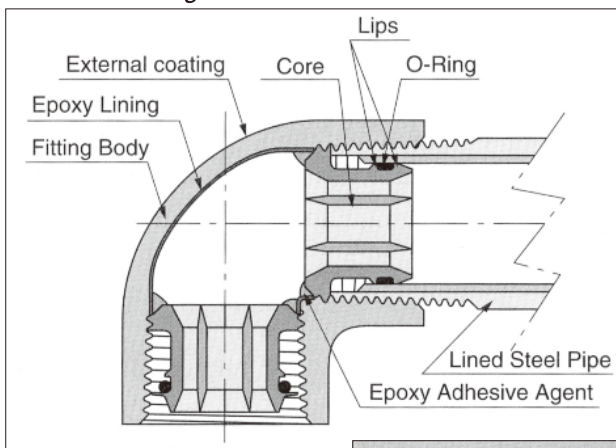


Applicability

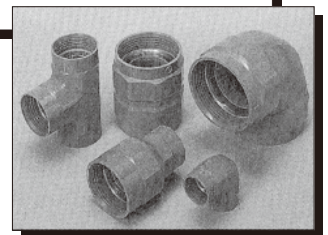
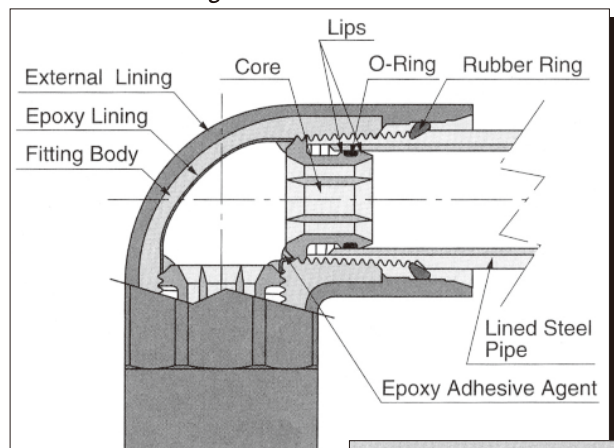
- Fluid:Fresh water
- Temperature:40℃ and lower
- Pressure:1.0MPa and lower
- Type of pipe:Unplasticized PVC lined steel pipes and PE powder lined steel pipes for water works

■ Connection Sectional View

●C Core Fittings



●CD Core Fittings



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