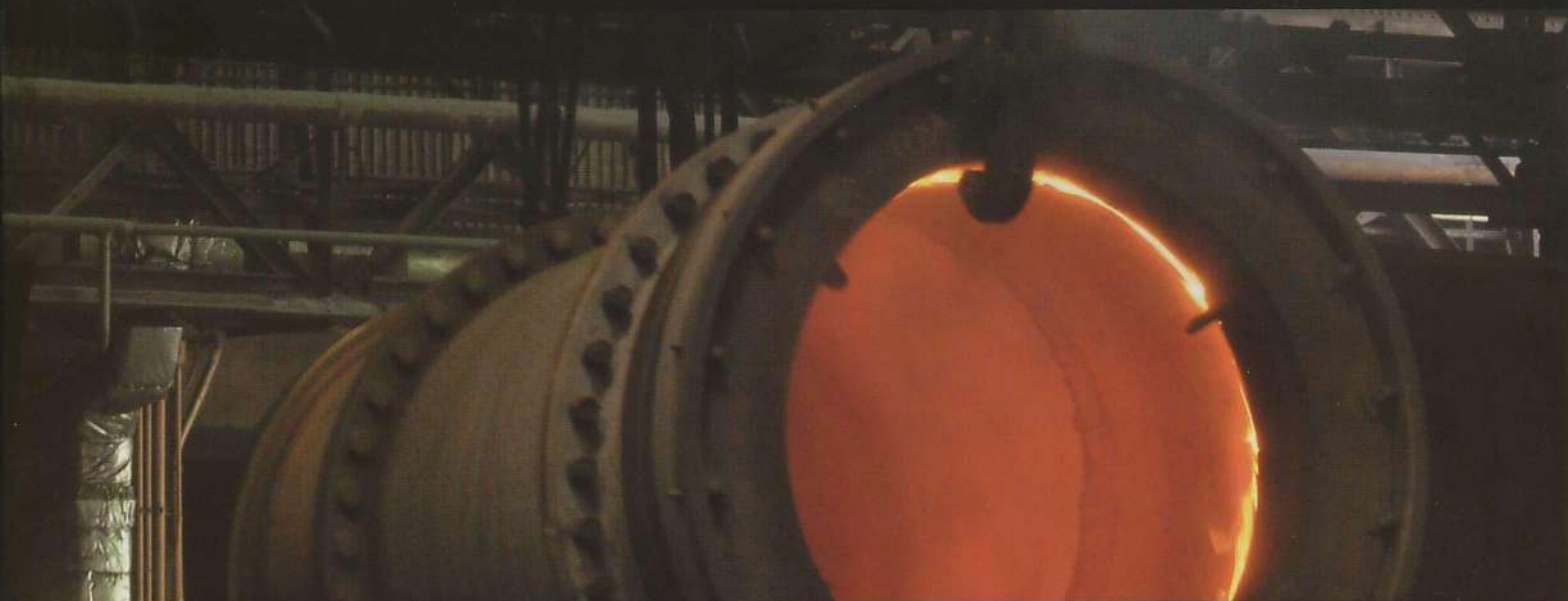
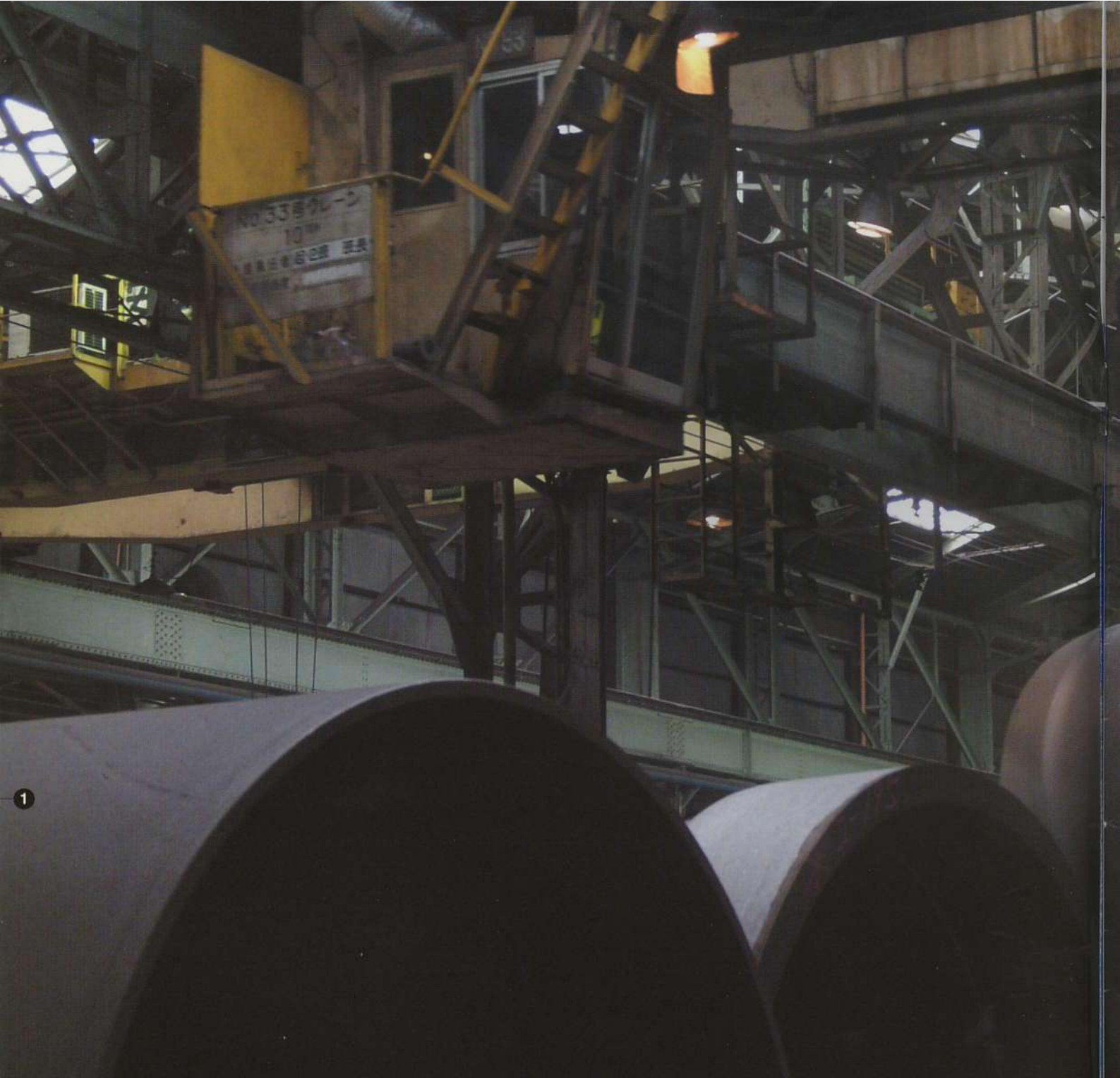




DUCTILE IRON PIPES



KURIMOTO



Lots of pipes run deep underground and crawl across the surface of the land.

Pipes carry critical drinking water, beneficial irrigation water, and gas that serves as an energy source, supporting our everyday lives.

And it is not only water and gas that they carry.

There are pipes to keep rivers from overflowing their banks, and pipes to provide water after earthquakes or other disasters occur.

Pipes support our society simply and in a wide variety of fields. It is safe to say that pipes can truly serve as lifelines.

A network of pipes continues to grow, from the private realm of your homes to industries that contribute to the economy.

Kurimoto Ductile Iron Pipes are part of that expansion. The active inclusion of new technologies at Kurimoto allow us to manufacture and provide ductile Iron pipes, and with leading-edge technologies we aim to offer the best pipe networks for each and every field, realizing the optimal environment for both homes and business in the process

Pipe supports our Lives and

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①	Strength
②	Water-tightness
③	Corrosion Resistance
6	Standard
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41	Ductile Iron Pipe Production System

our Society

The Strength of Kurimoto Ductile Iron Pipe

① Strength

The most important element of a pipe is its strength, regardless of its use.
How does the strength of Ductile Iron Pipe compare to pipes made from other materials?
Therein lies the key in pipe selection.

● Strength of Ductile Iron Pipe.

Ductile Iron Pipe far outshines other pipe materials in terms of strength; this owes to the spherical shape of the graphite in its composition. The spherical shape minimizes the surface area, maintaining the connectivity of the iron base, which yields our superior strength ratings.

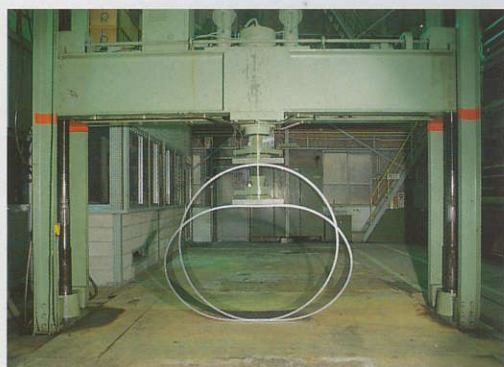
Spherical graphite crystals are made by adding small amounts of magnesium and cerium during the casting process. The resulting stress on the graphite is low, even when focused, yielding remarkable improvements in mechanical properties. The chart below compares Ductile Iron Pipe to pipe made from other materials.

Physical and Mechanical Properties

Physical and Mechanical Properties of Different Types of Pipe

Mechanical Properties	Material	Ductile Iron Pipe	Steel pipe	FPRM pipe	PVC pipe
Tensile strength (kgf/mm ²)		min.42.8	min.40.8	————	min.5.0(15°C)
Bending strength(kgf/mm ²)		min61.2	min40.8	17-32(*1) 2-6(*2)	8-10
Elongation (%)		min.10	min.18	————	50-150
Elastic modulus(kgf/mm ²)		1.6×10 ⁴	2.1×10 ⁴	1.5×2.25×10 ³	2.7×3×10 ²
Hardness		max.230 HB	max.140 HB	Barcol 50-60	Rockwell 115
Poisson's ratio		0.28 - 0.29	0.3	0.3	0.37
Impact value(kgf·m/cm ²)		IZOD min.6	Charpy 15	————	Charpy 0.07~0.1
Specific gravity		7.15	7.85	2.0	1.43
Thermal expansion coefficient		1.0×10 ⁻⁵	1.1×10 ⁻⁵	1.1×10 ⁻⁵	6~8×10 ⁻⁵

(*1) circum (*2) axis

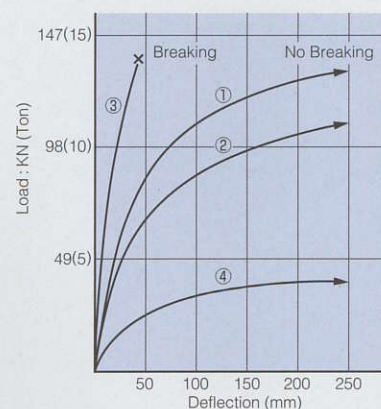


Ring Test

Ductile Iron Pipe will not break even if it is flexed as shown in the picture.

Ring Test of DN 1500 (test width 1000mm)

No.	Kind of pipe	Wall thickness
①	Ductile Iron Pipe	15.0mm
②	Ductile Iron Pipe	13.5mm
③	Gray cast iron pipe	22.0mm
④	steel pipe	9.0mm

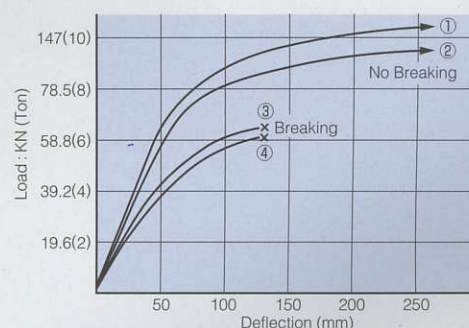


Bending Test

Ductile Iron Pipe will not break even if it is bent as shown in the picture.

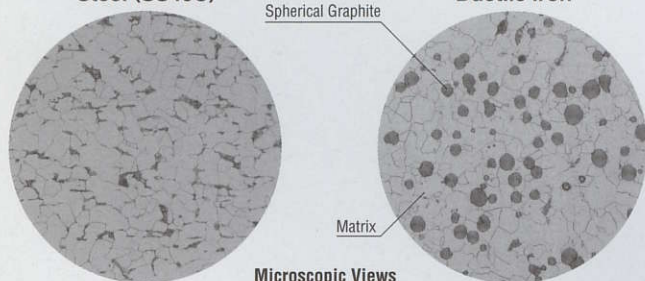
DN 150×5m Bending Test

No.	Kind of pipe	Wall thickness
①	Ductile Iron Pipe	7.9mm
②	Ductile Iron Pipe	7.5mm
③	Gray cast Iron Pipe	8.5mm
④	steel pipe	8.2mm



Steel (SS40C)

Ductile Iron



Microscopic Views

The difference between ductile iron and steel.

Both are made primarily from iron, but ductile iron is made from austenite (a combination of gamma iron and carbon) with 2.0% carbon or higher, and steel is made from austenite with less carbon. The higher amount of carbon in ductile iron separates out as graphite. Ductile iron features spherical graphite, however. Cast iron is superior in many regards, but it is particularly vulnerable to impacts, but spherical graphite gives our Ductile Iron Pipe the strength of steel while remaining cast iron. Ductile iron, to be precise.

② Water-tightness

Critical features for pipe includes the ability to prevent the leaking of precious drinking water and the penetration of foreign matter internally. Not only do pipes need to be strong, as the network of pipes grows, they need to be water-tight and air-tight as well.

● Can you completely prevent leaks and penetration of foreign matter?

No matter how they are used, all pipe networks comprise pipes and the joints between them. As a result, to prevent the leaking of internal liquids, including water, and to prevent the penetration of external foreign matter, both pipes and joints must be extremely water-tight.

The joints used to connect Ductile Iron Pipes are constructed to withstand high levels of hydraulic stresses, and do not leak or in other ways fail.

Some Hydraulic Test Results

pipe diameter (mm)	pipe type	pipe thickness (mm)	joint type	hydraulic load (MPa)	joint status
250	type 1	7.5	type K	4.9	no leaking or other faults
600	type 3	9.0	type K	7.4	no leaking or other faults
800	type 3	11.0	type K	4.9	no leaking or other faults
1200	type 2	17.0	type K	3.9	no leaking or other faults

The Rubber Ring of the Joint lasts as Long as the Pipe Itself

The rubber ring used in Ductile Iron Pipes directly contributes to the water-tightness of the joint. Rubber rings used in buried pipe will suffer little deterioration as a result of ultraviolet radiation or heat and can last as long as the pipe itself (although it may be necessary to change the ring material based on the content carried by the pipe).

Stress Impacts Shape in Only Minor Ways

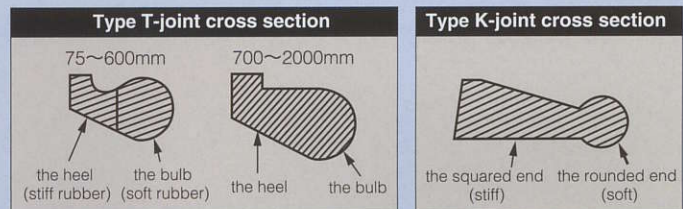
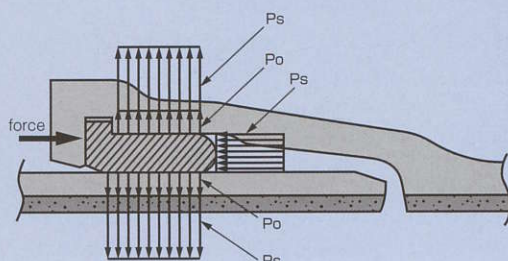
There are cases where water-tightness is compromised when rubber loses some of its flexibility after being continually compressed for a long period of time.

In tests examining the change in rubber rings after periods of stress (permanent compression distortion), even after dozens of years, the permanent compression distortion was around thirty percent (estimated value), as indicated in the graph. As a result, we can see that the rubber ring maintains sufficient water-tightness.

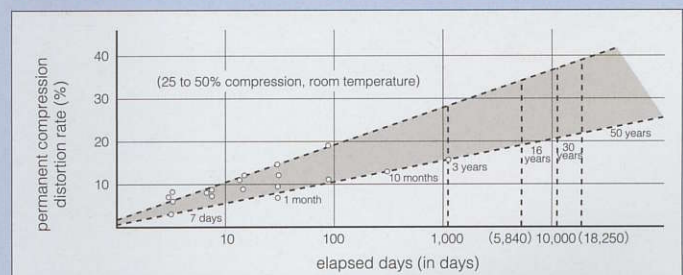
Self-sealing Action

Among the joints used in Ductile Iron Pipe, the T-joint features a rubber ring that is self-sealing when pressed up against another surface, which allows it to maintain higher levels of water-tightness.

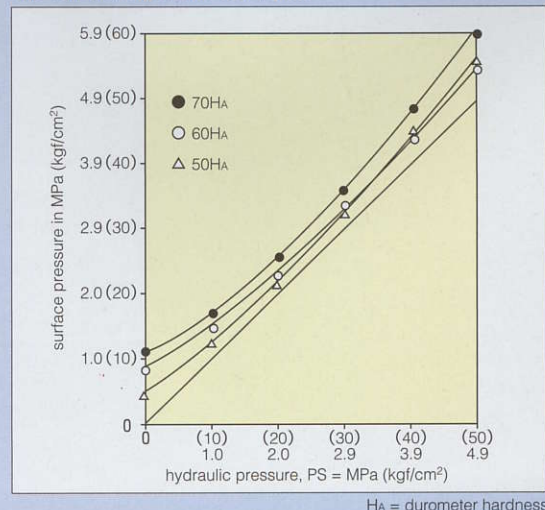
$P =$ surface pressure in MPa (kgf/cm^2) = $P_o + P_s$
 $P_o =$ surface pressure at connection in MPa (kgf/cm^2)
 $P_s =$ hydraulic pressure in MPa (kgf/cm^2)



Permanent Compression Distortion and the Number of Elapsed Days in relation to the Rounded Rubber Rings used in Joints (K-joints)



The Self-sealing Action of a T-joint



③ Corrosion Resistance

Pipes not only need to be strong and water-tight, they need to resist corrosion. Given that much pipe is laid underground, it is critical to prevent the onset and spread of corrosion. This leads to a longer lifecycle for pipe

● Is it possible to prevent the onset and spread of corrosion?

The electrical resistance of Ductile Iron Pipe is very high; this is one factor helping to prevent corrosion. In addition, the carbon and silicon molecules within the pipe structure form a protective layer, which serves to markedly prevent the spread of corrosion. What's more, the rubber in the joints acts as an insulator, minimizing the impact of electrical currents. When all of these elements work together, they not only prevent the onset and spread of corrosion, they allow for Ductile Iron Pipe to be used for longer periods of time. When laying pipe in corrosive soils (acidic soils), a polyethylene sleeve will further work to prevent corrosion (see the table below).

Electrical Resistance in Ductile Cast Iron and Steel

Material	Electric Resistance ($\mu\Omega\cdot\text{cm}$)
Ductile Iron Pipe	50~70
Steel pipe	10~20



Polyethylene sleeves being used to protect Ductile Iron Pipe.



What types of soils engender corrosion?

In addition to corrosion caused by electrical currents, it can arise from the soil in which pipe is laid. Ductile Iron Pipe is sufficiently corrosion resistant in ordinary soils, but in highly acidic soils or areas with high concentrations of salts, areas with large amounts of underground waste or soils with high levels of clay, corrosion can be a significant issue, and a polyethylene sleeve is required as a further defense. In addition to preventing contact between the pipe and the soil, the polyethylene sleeve will prevent corrosion from acids dissolved in any water that might penetrate the sleeve, and will last for a long time within the earth.

Pipes and Fittings

SPECIFICATION

BS EN 545 / 598:2002

ISO 2531:1998

● Tensile strength and elongation of pipes and fittings

Pipes

Tensile strength N/mm ²	Elongation %	
420(minimum)	DN80 to DN1000	DN1100 to DN2000
	10(minimum)	7(minimum)

Remarks: In the case of doubt, the hardness shall be measured.
In this case, the hardness shall not exceed 230 HB.

Fittings

Tensile strength N/mm ²	Elongation %
420(minimum)	DN80 to DN2000
	5(minimum)

Remarks: In the case of doubt, the hardness shall be measured.
In this case, the hardness shall not exceed 250 HB.

● Specified hydrostatic pressure and holding time

Pipes

DN mm	Hydrostatic pressure bar	Holding time s
80 to 300	50	15(minimum)
350 to 600	40	
700 to 1000	32	
1100 to 2000	25	

Fittings

DN mm	Hydrostatic pressure bar	Holding time s
80 to 300	25	15(minimum)
350 to 600	16	
700 to 1000	10	

● Standard coating and lining

Application area	Pipes and fittings
External	Zinc with synthetic resin paint or bituminous paint
Internal	Cement mortar lining or epoxy powder coating

JOINT STRUCTURE

TYPE T PUSH ON JOINT

rubber ring

mortar lining

Simply by inserting the outlet pipe into an inlet pipe with a rubber ring attachment, the connection is made easily, quickly and completely.

With just a rubber ring to connect the pipes, our process is much more economical. By inserting the outlet pipe, the valve of the rubber ring is contracted, maintaining a water-tight seal. The heel portion of the ring adheres to the convex portion of the inlet pipe, which prevents the ring from coming loose. The outlet has a gradient, which makes it easy to lay pipe. If the internal pressure increases, the rubber ring becomes even stronger, blocking the water surface; it has a self-sealing functionality that allows it to respond to changes in hydraulic pressure, and aiding in its tight connection to the inlet pipe.



TYPE K MECHANICAL JOINT

T head bolt and nut

pressure ring

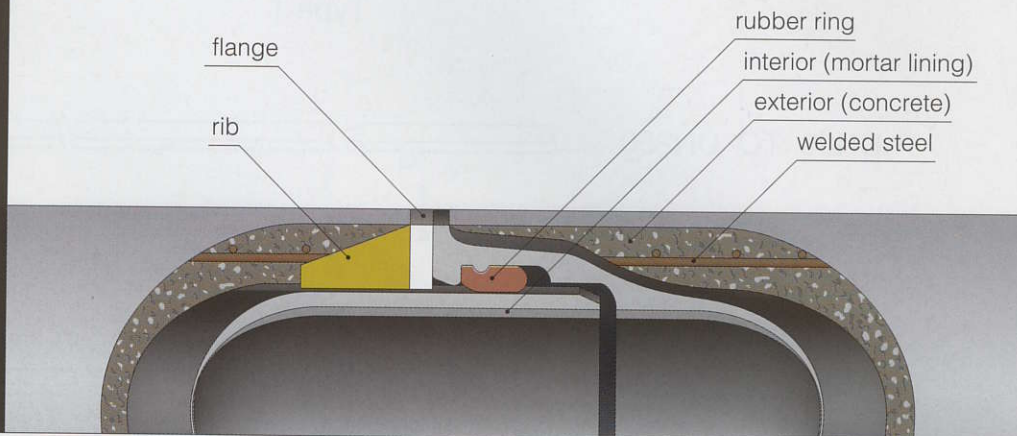
rubber ring

mortar lining

Our standard mechanical joint is extremely water-tight, making it perfect for larger diameter pipes, high-pressure pipes or situations involving high external pressure. The rubber ring, which combines square and rounded rubber components, is bolted through the insert ring, squeezing the rounded portion, and, as in the T-joint, increasing the level of water-tightness. It also provides a degree of give as well.

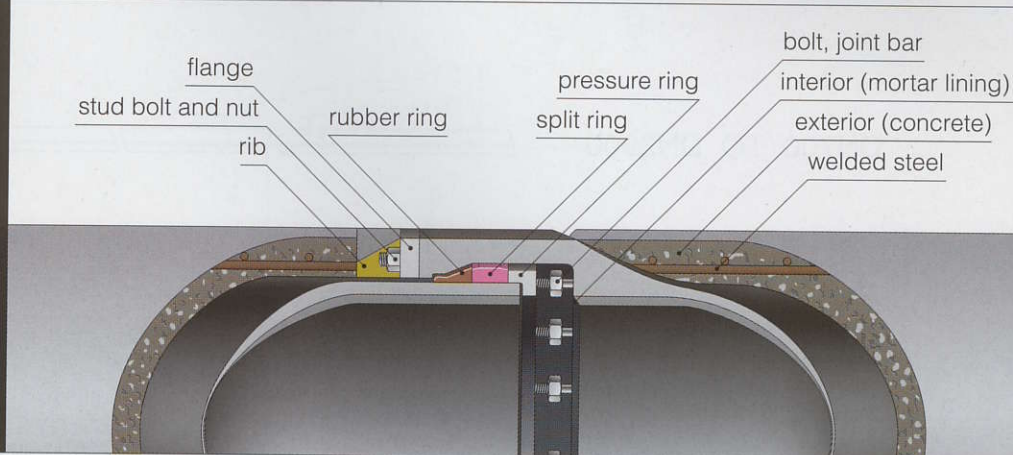
TYPE T

JACKING PIPE (WITHOUT EXCAVATION)



TYPE U

JACKING PIPE (WITHOUT EXCAVATION)



The exterior of T and U type joint pipes (JIS) is wrapped in reinforced concrete, with the exterior diameter of the pipe and joint made to match, smoothed, and the flange and rib welded on the circumference of the spigot have contact with the end surface of the faucet; thus transferring force.

In addition, the use of an intermediate sleeve allows us to lay long-distances of pipe without excavation.



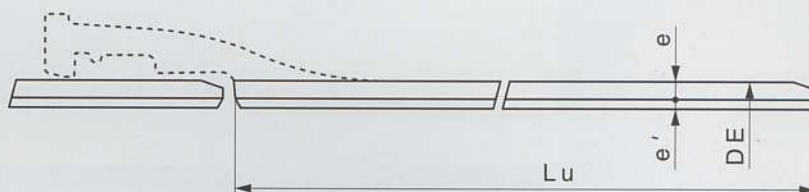
DUCTILE IRON PIPES

BS EN 545 / 598
ISO 2531

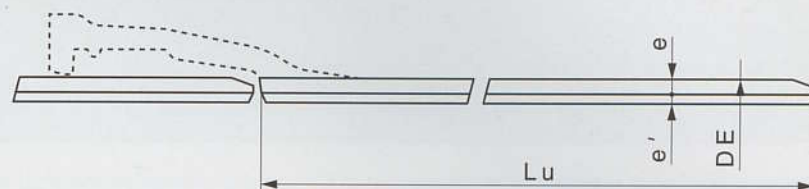
SOCKET AND SPIGOT PIPES (PUSH ON JOINT)

Type T

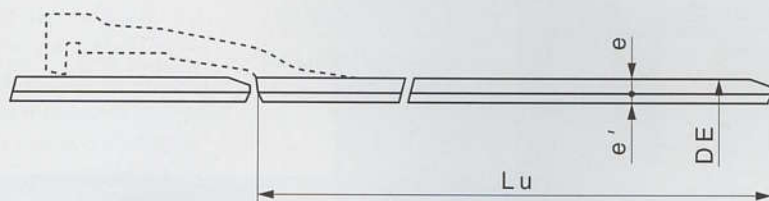
DN80 TO DN250



DN300 TO DN600



DN700 TO DN2000

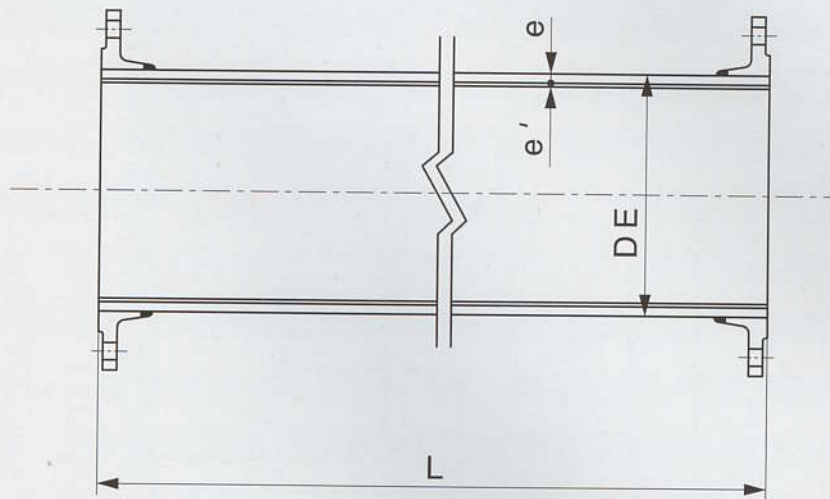


● K9,K12

Unit : mm

Nominal diameter	Thickness		External diameter	Effective length	Mass(kg)			
DN	e		e'	DE	Lu	Pipe		Cement mortar lining
	K9	K12				K9	K12	
80	6.0	7.0	3.5	98	4000	52.6	60.1	8.0
100	6.0	7.2	3.5	118	4000 6000	64.4 94.2	75.6 111	9.9 14.9
150	6.0	7.8	3.5	170	5000 6000	117 139	148 176	18.7 22.4
200	6.3	8.4	3.5	222	5000 6000	163 193	211 251	24.9 29.9
250	6.8	9.0	3.5	274	5000 6000	217 257	280 333	31.1 37.3
300	7.2	9.6	3.5	326	6000	322	421	44.7
350	7.7	10.2	5	378	6000	403	523	74.1
400	8.1	10.8	5	429	6000	480	628	84.6
450	8.6	11.4	5	480	6000	571	742	94.9
500	9.0	12.0	5	532	6000	663	867	106
600	9.9	13.2	5	635	6000	871	1139	127
700	10.8	14.4	6	738	6000	1113	1454	177
800	11.7	15.6	6	842	6000	1376	1798	202
900	12.6	16.8	6	945	6000	1665	2176	227
1000	13.5	18.0	6	1048	6000	1988	2596	253
1100	14.4	19.2	6	1152	6000	2340	3053	278
1200	15.3	20.4	6	1255	6000	2715	3542	303
1400	17.1	22.8	9	1462	6000	3569	4646	530
1500	18.0	24.0	9	1565	6000	4025	5239	567
1600	18.9	25.2	9	1668	5000	3841	4974	504
1800	20.7	27.6	9	1875	5000	4764	6160	567
2000	22.5	30.0	9	2082	5000	5791	7476	631

DOUBLE FLANGED PIPES (WELDED ON FLANGES)



● K9,K12

Unit : mm

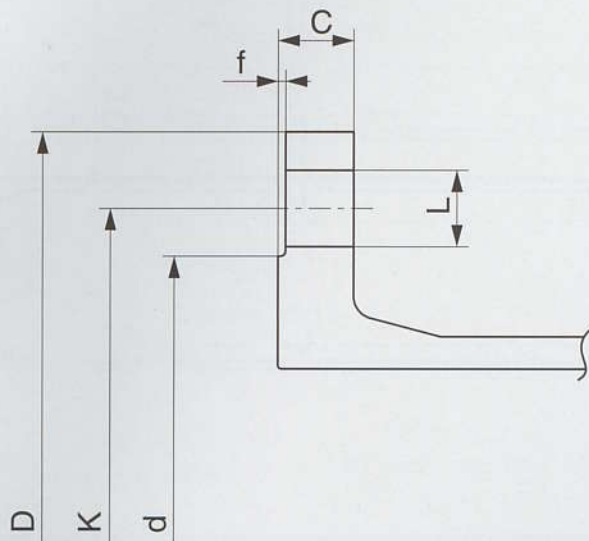
Nominal diameter	Thickness		External diameter	Length	Mass(kg)			
DN	e		e'	DE	L	Pipe		Cement mortar lining
	K9	K12				PN16		
						K9	K12	
80	6.0	7.0	3.5	98	4000	55.7	63.2	8.0
100	6.0	7.2	3.5	118	4000	67.5	78.7	9.9
					6000	97.3	114	14.9
150	6.0	7.8	3.5	170	5000	121	152	18.7
					6000	143	180	22.4
200	6.3	8.4	3.5	222	5000	167	215	24.9
					6000	197	255	29.9
250	6.8	9.0	3.5	274	5000	225	288	31.1
					6000	265	341	37.3
300	7.2	9.6	3.5	326	6000	337	436	44.7
350	7.7	10.2	5	378	6000	423	542	74.1
400	8.1	10.8	5	429	6000	509	656	84.6
500	9.0	12.0	5	532	6000	721	925	106
600	9.9	13.2	5	635	6000	967	1235	127
700	10.8	14.4	6	738	6000	1198	1539	177
800	11.7	15.6	6	842	6000	1499	1922	202
900	12.6	16.8	6	945	6000	1816	2327	227
1000	13.5	18.0	6	1048	6000	2208	2816	253
1200	15.3	20.4	6	1255	6000	3057	3884	303

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

DIMENSIONS OF FLANGES

DN80 TO DN2000



● PN10

Unit : mm

Nominal diameter	Dimension of each portion					Hole of bolts	
DN	D	K	d	C	f	L	Number
80	200	160	132	19	3	19	8
100	220	180	156	19	3	19	8
150	285	240	211	19	3	23	8
200	340	295	266	20	3	23	8
250	400	350	319	22	3	23	12
300	455	400	370	24.5	4	23	12
350	505	460	429	24.5	4	23	16
400	565	515	480	24.5	4	28	16
450	615	565	530	25.5	4	28	20
500	670	620	582	26.5	4	28	20
600	780	725	682	30	5	31	20
700	895	840	794	32.5	5	31	24
800	1015	950	901	35	5	34	24
900	1115	1050	1001	37.5	5	34	28
1000	1230	1160	1112	40	5	37	28
1100	1340	1270	1218	42.5	5	37	32
1200	1455	1380	1328	45	5	41	32
1400	1675	1590	1530	46	5	44	36
1500	1785	1700	1640	47.5	5	44	36
1600	1915	1820	1750	49	5	50	40
1800	2115	2020	1950	52	5	50	44
2000	2325	2230	2150	55	5	50	48

● PN16

Unit : mm

Nominal diameter	Dimension of each portion					Hole of bolts	
DN	D	K	d	C	f	L	Number
80	200	160	132	19	3	19	8
100	220	180	156	19	3	19	8
150	285	240	211	19	3	23	8
200	340	295	266	20	3	23	12
250	400	355	319	22	3	28	12
300	455	410	370	24.5	4	28	12
350	520	470	429	26.5	4	28	16
400	580	525	480	28	4	31	16
450	640	585	548	30	4	31	20
500	715	650	609	31.5	4	34	20
600	840	770	720	36	5	37	20
700	910	840	794	39.5	5	37	24
800	1025	950	901	43	5	41	24
900	1125	1050	1001	46.5	5	41	28
1000	1255	1170	1112	50	5	44	28
1100	1355	1270	1218	53.5	5	44	32
1200	1485	1390	1328	57	5	50	32
1400	1685	1590	1530	60	5	50	36
1500	1820	1710	1640	62.5	5	57	36
1600	1930	1820	1750	65	5	57	40
1800	2130	2020	1950	70	5	57	44
2000	2345	2230	2150	75	5	62	48

12

● PN25

Unit : mm

Nominal diameter	Dimension of each portion					Hole of bolts	
DN	D	K	d	C	f	L	Number
80	200	160	132	19	3	19	8
100	235	190	156	19	3	23	8
150	300	250	211	20	3	28	8
200	360	310	274	22	3	28	12
250	425	370	330	24.5	3	31	12
300	485	430	389	27.5	4	31	16
350	555	490	448	30	4	34	16
400	620	550	503	32	4	37	16
450	670	600	548	34.5	4	37	20
500	730	660	609	36.5	4	37	20
600	845	770	720	42	5	41	20
700	960	875	820	46.5	5	44	24
800	1085	990	928	51	5	50	24
900	1185	1090	1028	55.5	5	50	28
1000	1320	1210	1140	60	5	57	28
1100	1420	1310	1240	64.5	5	57	32
1200	1530	1420	1350	69	5	57	32
1400	1755	1640	1560	74	5	62	36
1500	1865	1750	1678	77.5	5	62	36
1600	1975	1860	1780	81	5	62	40

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

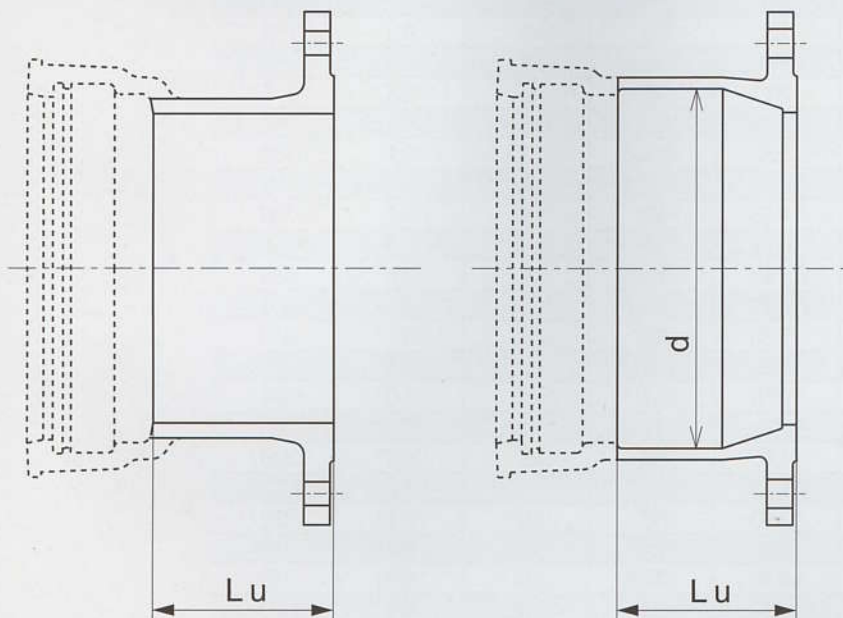
WALL THICKNESS OF FITTINGS

Unit : mm

Nominal diameter	Wall thickness	
	K12	K14
DN		
80	7.0	8.1
100	7.2	8.4
150	7.8	9.1
200	8.4	9.8
250	9.0	10.5
300	9.6	11.2
350	10.2	11.9
400	10.8	12.6
450	11.4	13.3
500	12.0	14.0
600	13.2	15.4
700	14.4	16.8
800	15.6	18.2
900	16.8	19.6
1000	18.0	21.0
1100	19.2	22.4
1200	20.4	23.8
1400	22.8	26.6
1500	24.0	28.0
1600	25.2	29.4
1800	27.6	32.2
2000	30.0	35.0

FLANGED SOCKETS

Type T



● K12

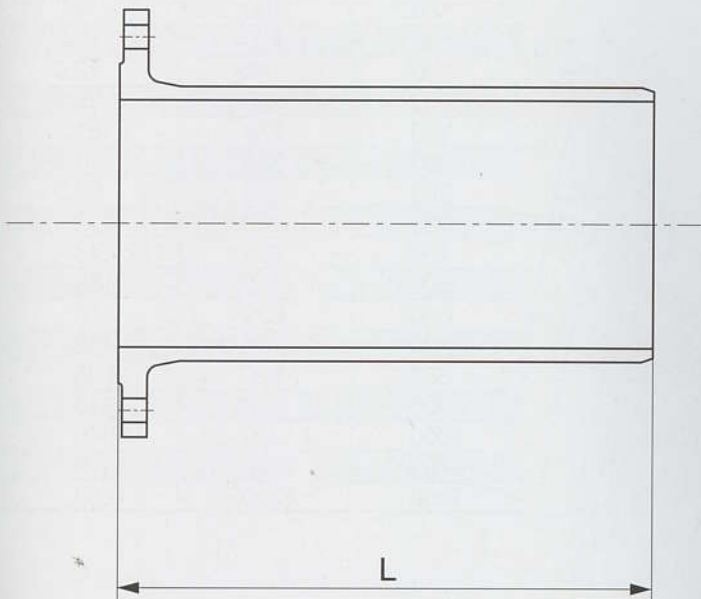
Unit : mm

Nominal diameter	Effective Length		Mass (kg)
	Lu	d	
DN			PN16
80	130	109	8.0
100	130	130	9.9
150	135	183	16.0
200	140	235	23.7
250	145	288	31.4
300	150	340	40.5
350	155	393	54.4
400	160	445	66.6
450	165	498	81.1
500	170	550	100
600	180	655	140
700	190	760	173
800	200	865	224
900	210	970	278
1000	220	1075	357
1100	230	1180	429
1200	240	1285	537
1400	310	1477	766
1500	330	1580	929
1600	330	1683	1063
1800	350	1889	1363
2000	370	2095	1728

FLANGED SPIGOTS

● K12

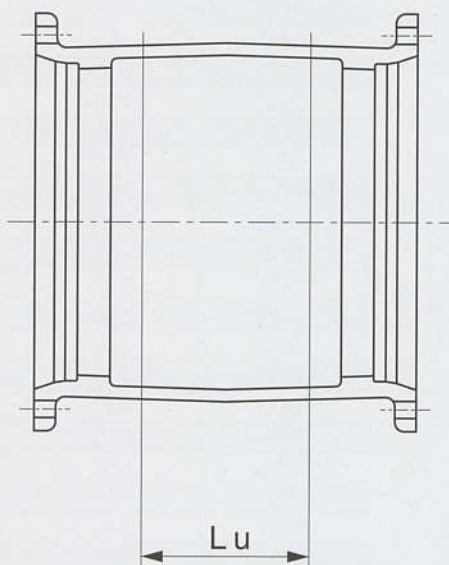
Unit : mm



Nominal diameter	Length	Mass (kg)
DN	L	PN16
80	350	7.8
100	360	9.7
150	380	15.7
200	400	22.8
250	420	31.8
300	440	42.2
350	460	55.6
400	480	70.2
450	500	87.3
500	520	110
600	560	159
700	600	196
800	600	248
900	600	299
1000	600	374
1100	600	437
1200	600	528
1400	710	748
1500	750	904
1600	780	1046
1800	850	1354
2000	920	1729

COLLARS

Type K



● K12

Unit : mm

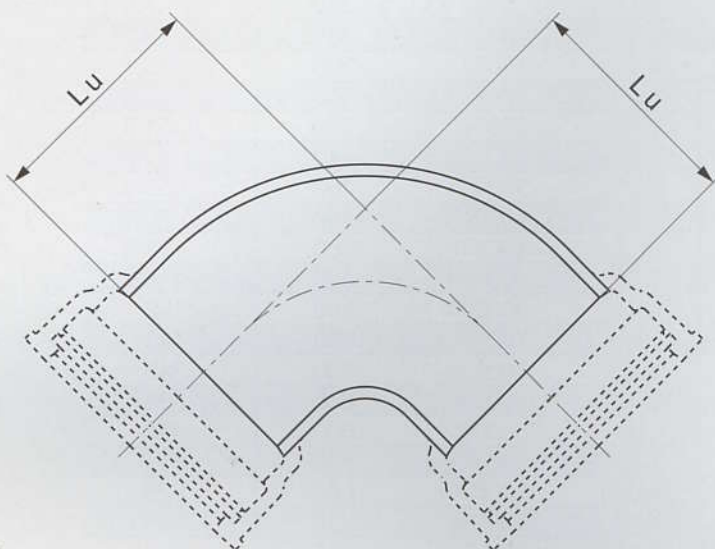
Nominal diameter	Effective Length	Mass (kg)
DN	Lu	
80	160	12.9
100	160	15.8
150	165	23.5
200	170	30.0
250	175	38.5
300	180	54.0
350	185	67.5
400	190	81.0
450	195	96.0
500	200	109
600	210	140
700	220	185
800	230	225
900	240	278
1000	250	348
1100	260	407
1200	270	472
1400	340	701
1500	350	783
1600	360	920
1800	380	1172
2000	400	1461

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

DOUBLE SOCKET 90° BENDS

Type T



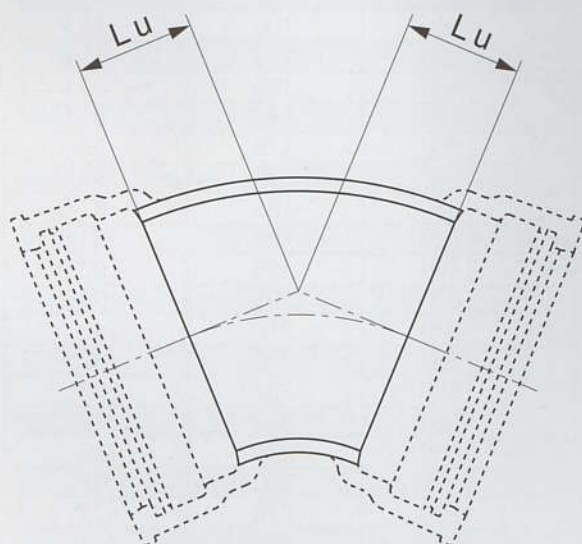
● K12

Unit : mm

Nominal diameter	Effective Length	Mass (kg)
DN	Lu	
80	100	9.0
100	120	12.1
150	170	22.0
200	220	36.6
250	270	51.3
300	320	70.3
350	370	83.0
400	420	113
450	470	143
500	520	183
600	620	273
700	720	455
800	820	605
900	920	813
1000	1020	1045
1100	1120	1358
1200	1220	1663

DOUBLE SOCKET 45° BENDS

Type T



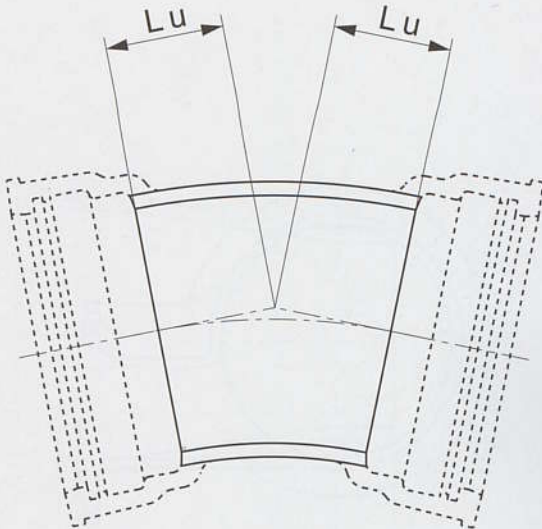
● K12

Unit : mm

Nominal diameter	Effective Length	Mass (kg)
DN	Lu	
80	55	8.1
100	65	10.8
150	85	18.8
200	110	30.8
250	130	41.4
300	155	54.9
350	175	76.1
400	200	94.1
450	220	117
500	240	141
600	285	199
700	330	288
800	370	382
900	415	501
1000	460	640
1100	510	805
1200	550	1007
1400	515	1333
1500	540	1583
1600	565	1848
1800	610	2464
2000	660	3216

DOUBLE SOCKET 22° 30' BENDS

Type T



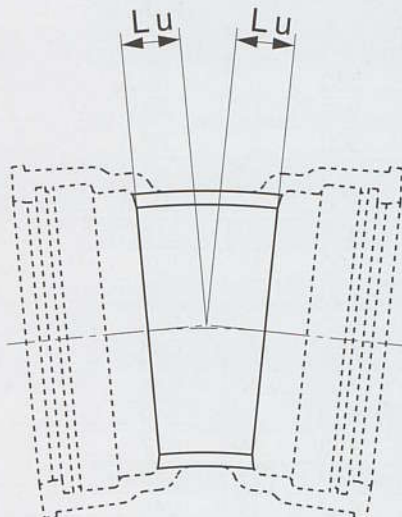
● K12

Unit : mm

Nominal diameter	Effective Length	Mass (kg)
DN	Lu	
80	40	7.7
100	45	10.0
150	55	17.3
200	65	27.5
250	75	36.1
300	90	46.9
350	100	63.8
400	110	78.6
450	120	95.1
500	135	113
600	155	154
700	175	223
800	195	291
900	220	377
1000	240	474
1100	270	588
1200	285	736
1400	260	992
1500	270	1177
1600	280	1367
1800	305	1831
2000	330	2390

DOUBLE SOCKET 11° 15' BENDS

Type T



● K12

Unit : mm

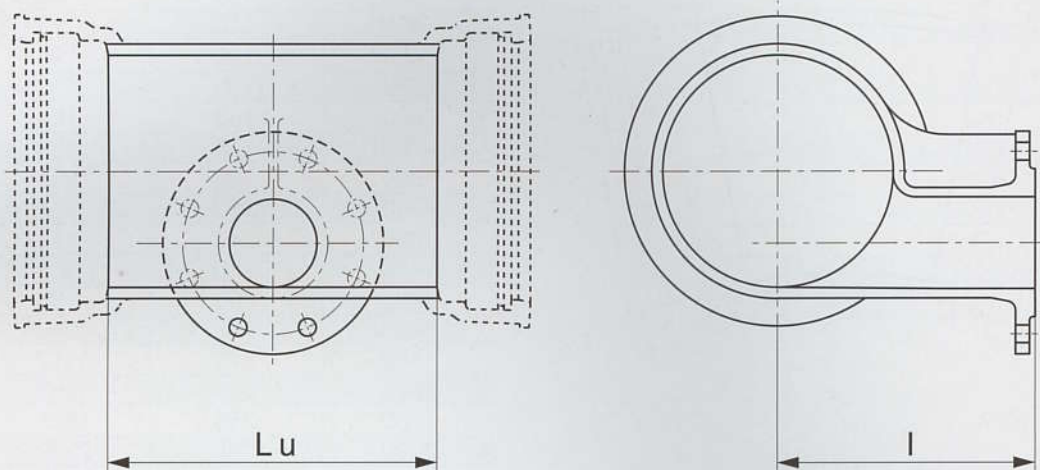
Nominal diameter	Effective Length	Mass (kg)
DN	Lu	
80	30	7.4
100	35	9.7
150	40	16.2
200	45	25.6
250	50	33.5
300	60	43.0
350	65	58.2
400	70	69.8
450	75	83.5
500	85	98.5
600	95	131
700	95	186
800	110	243
900	120	309
1000	130	386
1100	140	475
1200	150	588
1400	130	806
1500	140	968
1600	140	1115
1800	155	1498
2000	165	1948

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

DOUBLE SOCKET LEVEL INVERT TEES WITH FLANGED BRANCH

Type T



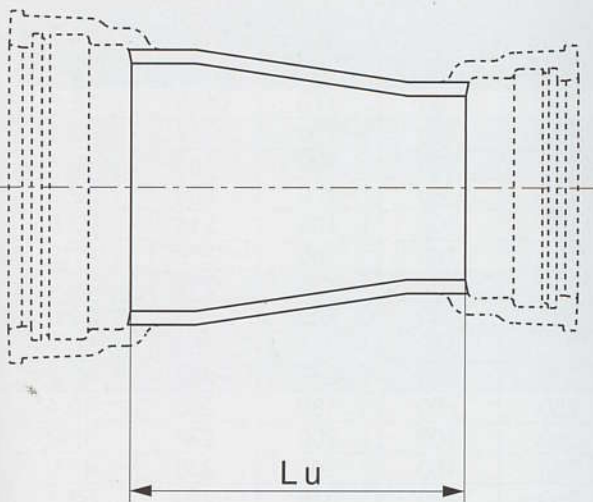
● K14

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	l	PN16
200	80	245	250	39.5
250	80	250	275	49.5
300	80	255	300	62.0
350	100	280	325	83.0
400	100	280	350	97.5
450	100	285	375	115
500	100	290	400	134
600	100	295	450	173
700	150	360	500	255
800	150	365	550	320
900	150	370	600	396
1000	200	435	650	514
1100	200	440	700	617
1200	200	445	750	744
1400	200	460	850	1048
1500	200	465	900	1228
1600	400	700	950	1677
1800	400	715	1050	2174
2000	400	725	1150	2750

DOUBLE SOCKET TAPERS

Type T



● K12

Unit : mm

Nominal diameter		Effective Length	Mass (kg)
DN	dn	Lu	
100	80	90	6.6
150	80	190	10.9
150	100	150	10.8
200	100	250	17.0
200	150	150	16.4
250	150	250	24.5
250	200	150	23.5
300	150	350	35.5
300	200	250	34.5
300	250	150	33.0
350	200	360	45.5
350	250	260	44.0
350	300	160	43.0
400	200	460	61.5
400	250	360	59.5
400	300	260	58.0
400	350	160	53.0
450	250	460	76.0
450	300	360	75.0
450	350	260	69.5
450	400	160	66.0

● K12

Unit : mm

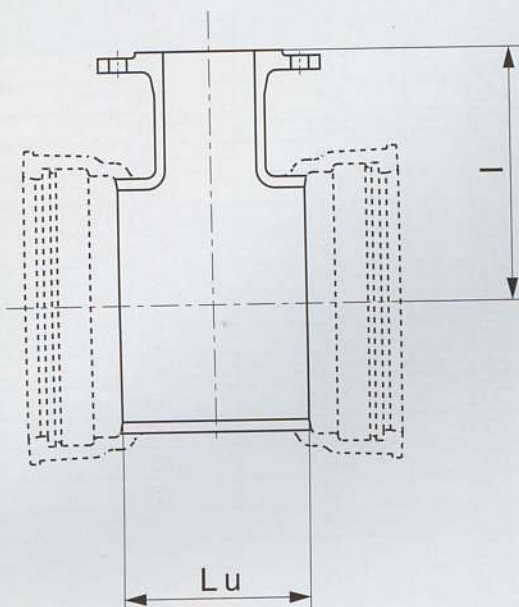
Nominal diameter		Effective Length	Mass (kg)
DN	dn	Lu	
500	250	560	96.5
500	300	460	95.5
500	350	360	90.5
500	400	260	86.5
500	450	160	80.5
600	300	660	144
600	350	560	138
600	400	460	133
600	450	360	127
600	500	260	121
700	350	800	235
700	400	700	231
700	450	600	224
700	500	480	215
700	600	280	196
800	400	870	303
800	450	770	295
800	500	670	288
800	600	480	270
800	700	280	280
900	450	940	396
900	500	840	388
900	600	640	365
900	700	480	384
900	800	280	355
1000	500	1040	504
1000	600	840	480
1000	700	680	498
1000	800	480	468
1000	900	280	446
1100	600	1020	631
1100	700	870	651
1100	800	670	619
1100	900	480	599
1100	1000	300	570
1200	600	1220	784
1200	700	1020	783
1200	800	870	768
1200	900	670	743
1200	1000	480	708
1200	1100	300	694
1400	1000	560	910
1400	1100	460	942
1400	1200	360	938
1600	1000	760	1228
1600	1100	660	1255
1600	1200	560	1252
1600	1400	360	1272

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

DOUBLE SOCKET TEES WITH FLANGED BRANCH

Type T



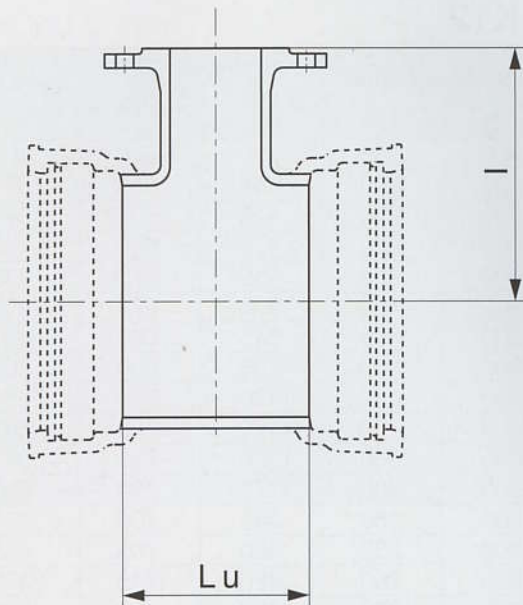
● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	I	PN16
80	80	170	165	12.8
100	80	170	175	15.1
100	100	190	180	16.1
150	80	170	205	22.2
150	100	195	210	23.5
150	150	255	220	27.2
200	80	175	235	30.4
200	100	200	240	32.0
200	150	255	250	36.2
200	200	315	260	40.8
250	80	180	265	40.4
250	100	200	270	42.0
250	150	260	280	47.0
250	200	315	290	52.1
250	250	375	300	58.3
300	80	180	295	51.4
300	100	205	300	53.5
300	150	260	310	59.0
300	200	320	320	65.0
300	250	380	330	72.0
300	300	435	340	79.4
350	80	185	325	64.3
350	100	205	330	66.4
350	150	265	340	73.0
350	200	325	350	79.9
350	250	380	360	87.3
350	300	440	370	95.8
350	350	495	380	106
400	80	185	355	78.1
400	100	210	360	80.9
400	150	270	370	88.5
400	200	325	380	95.7
400	250	385	390	104
400	300	440	400	113
400	350	500	410	124
400	400	560	420	135
450	80	190	385	93.3
450	100	215	390	96.5
450	150	270	400	104
450	200	330	410	113
450	250	385	420	122
450	300	445	430	133
450	350	505	440	145
450	400	560	450	156
450	450	620	460	168

DOUBLE SOCKET TEES WITH FLANGED BRANCH

Type T



● K12

Unit : mm

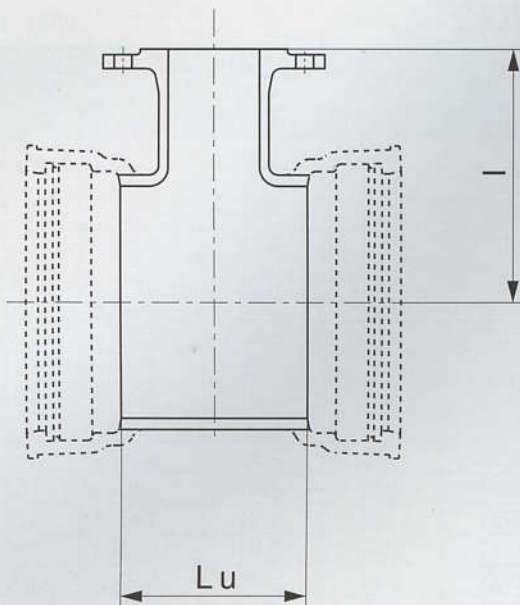
Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	I	PN16
500	80	195	415	112
500	100	215	420	115
500	150	275	430	125
500	200	330	440	134
500	250	390	450	145
500	300	450	460	156
500	350	505	470	168
500	400	565	480	181
500	450	620	490	194
500	500	680	500	212
600	80	200	475	153
600	100	220	480	157
600	150	280	490	169
600	200	340	500	180
600	250	395	510	193
600	300	455	520	206
600	350	510	530	221
600	400	570	540	236
600	450	630	550	251
600	500	685	560	272
600	600	800	580	313
700	150	285	520	220
700	200	345	525	234
700	250	400	535	248
700	300	460	540	263
700	350	520	550	281
700	400	575	555	296
700	450	635	565	314
700	500	690	570	335
700	600	810	585	379
700	700	925	600	400
800	150	290	580	281
800	200	350	585	298
800	250	410	595	316
800	300	465	600	333
800	350	525	610	353
800	400	580	615	371
800	450	640	625	391
800	500	700	630	416
800	600	1045	645	519
800	700	1045	660	519
800	800	1045	675	538

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

DOUBLE SOCKET TEES WITH FLANGED BRANCH

Type T



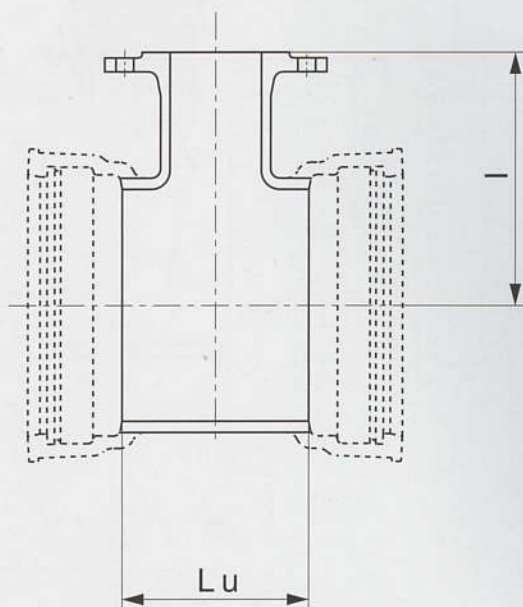
● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	l	PN16
900	150	300	640	353
900	200	355	645	371
900	250	415	655	392
900	300	470	660	412
900	350	530	670	435
900	400	590	675	458
900	450	645	685	480
900	500	705	690	508
900	600	1170	705	662
900	700	1170	720	662
900	800	1170	735	681
900	900	1170	750	696
1000	150	305	700	434
1000	200	360	705	455
1000	250	420	715	479
1000	300	480	720	504
1000	350	535	730	529
1000	400	595	735	555
1000	450	650	745	580
1000	500	710	750	611
1000	600	1290	765	830
1000	700	1290	780	830
1000	800	1290	795	849
1000	900	1290	810	864
1000	1000	1290	725	899
1100	150	310	760	522
1100	200	370	765	549
1100	250	425	770	574
1100	300	485	780	603
1100	350	540	790	631
1100	400	600	795	660
1100	450	660	805	691
1100	500	715	810	724
1100	600	830	825	792
1100	700	950	840	840
1100	800	1065	855	906
1100	900	1180	870	967
1100	1000	1295	885	1047
1100	1100	1410	900	1111

DOUBLE SOCKET TEES WITH FLANGED BRANCH

Type T



● K12

Unit : mm

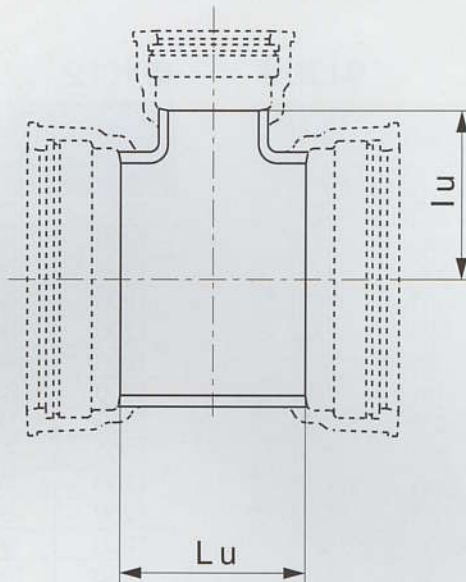
Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	I	PN16
1200	150	315	820	628
1200	200	375	825	659
1200	250	430	835	688
1200	300	490	840	720
1200	350	550	850	754
1200	400	605	855	786
1200	450	665	865	820
1200	500	720	870	856
1200	600	840	885	934
1200	700	955	900	988
1200	800	1070	915	1061
1200	900	1185	930	1130
1200	1000	1300	945	1218
1200	1100	1420	960	1291
1200	1200	1535	975	1388

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

ALL SOCKET TEES

Type T



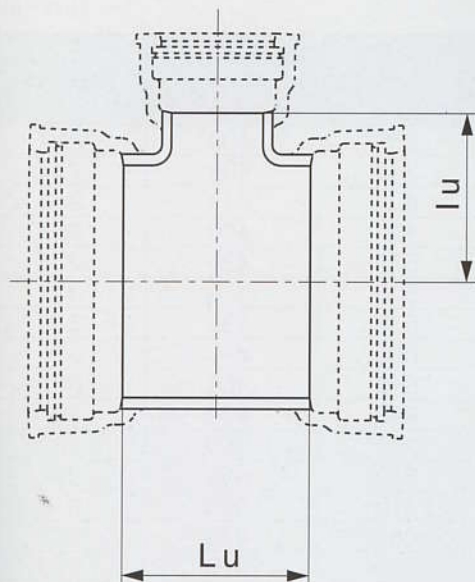
● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	lu	
80	80	170	85	12.4
100	80	170	95	14.7
100	100	190	95	15.8
150	80	170	120	21.7
150	100	195	120	23.2
150	150	255	125	27.3
200	80	175	145	29.9
200	100	200	145	31.6
200	150	255	150	36.1
200	200	315	155	41.0
250	80	180	170	39.8
250	100	200	170	41.5
250	150	260	175	46.8
250	200	315	180	52.2
250	250	375	190	58.5
300	80	180	195	50.7
300	100	205	195	53.0
300	150	260	200	58.7
300	200	320	205	65.0
300	250	375	210	71.5
300	300	435	220	78.9

ALL SOCKET TEES

Type T



● K12

Unit : mm

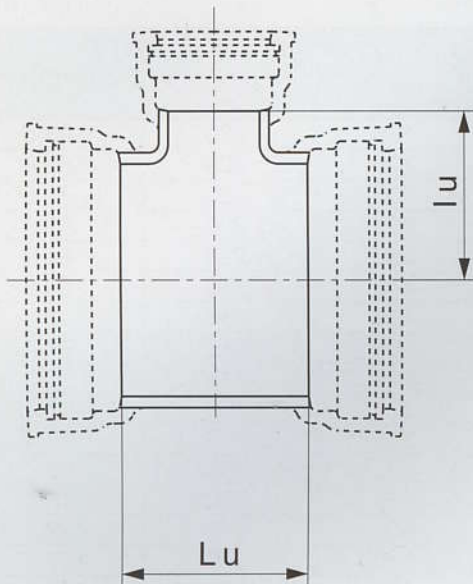
Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	lu	
350	80	185	220	63.6
350	100	205	220	65.8
350	150	265	225	72.6
350	200	325	230	79.6
350	250	380	235	86.9
350	300	440	240	94.8
350	350	495	250	103
400	80	185	245	77.4
400	100	210	245	80.3
400	150	270	250	87.9
400	200	325	255	95.4
400	250	385	365	108
400	300	440	270	112
400	350	500	275	122
400	400	560	280	177
450	80	190	270	92.4
450	100	215	270	95.7
450	150	270	275	104
450	200	330	280	113
450	250	385	290	122
450	300	445	295	131
450	350	505	300	141
450	400	560	305	198
450	450	620	310	162
500	80	195	295	111
500	100	215	295	114
500	150	275	300	124
500	200	330	305	133
500	250	390	315	144
500	300	450	320	154
500	350	505	325	165
500	400	565	330	222
500	450	620	335	187
500	500	680	340	200
600	80	200	345	152
600	100	220	345	156
600	150	280	350	168
600	200	340	355	179
600	250	395	365	191
600	300	455	370	204
600	350	510	375	217
600	400	570	380	276
600	450	630	385	244
600	500	685	390	258
600	600	800	400	288

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

ALL SOCKET TEES

Type T



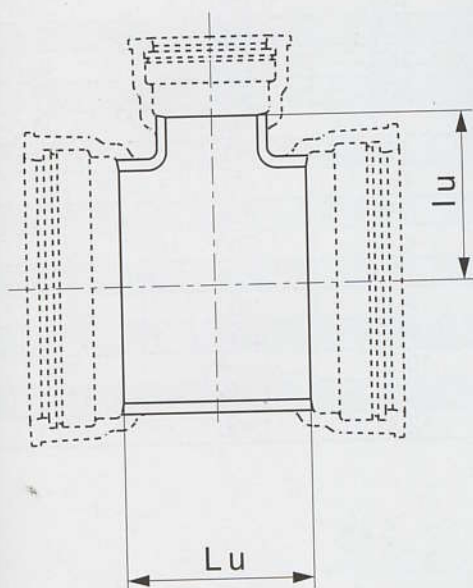
● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	lu	
700	150	285	400	219
700	200	345	405	234
700	250	400	415	248
700	300	460	420	263
700	350	520	425	279
700	400	575	430	340
700	450	635	435	310
700	500	690	440	326
700	600	810	450	361
700	700	925	460	397
800	150	290	450	280
800	200	350	455	297
800	250	410	465	315
800	300	465	470	332
800	350	525	475	350
800	400	580	480	414
800	450	640	485	386
800	500	700	490	406
800	600	815	500	446
800	700	930	510	487
800	800	1045	525	531
900	150	300	500	352
900	200	355	505	370
900	250	415	515	391
900	300	470	520	411
900	350	530	525	432
900	400	590	530	500
900	450	645	535	474
900	500	705	540	497
900	600	820	550	541
900	700	935	560	588
900	800	1050	575	638
900	900	1170	585	691
1000	150	305	550	433
1000	200	360	555	454
1000	250	420	565	478
1000	300	480	570	502
1000	350	535	575	525
1000	400	595	580	596
1000	450	650	585	573
1000	500	710	590	599
1000	600	825	600	650
1000	700	940	610	703
1000	800	1060	625	760
1000	900	1175	635	817
1000	1000	1290	645	877

ALL SOCKET TEES

Type T



● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	Lu	lu	
1100	150	310	600	521
1100	200	370	605	547
1100	250	425	615	572
1100	300	485	620	600
1100	350	540	625	626
1100	400	600	630	700
1100	450	660	635	683
1100	500	715	640	710
1100	600	830	650	768
1100	700	950	660	829
1100	800	1065	675	892
1100	900	1180	685	956
1100	1000	1295	695	1022
1100	1100	1410	705	1088
1200	150	315	650	627
1200	200	375	655	657
1200	250	430	665	686
1200	300	490	670	717
1200	350	550	675	749
1200	400	605	680	825
1200	450	665	685	811
1200	500	720	690	842
1200	600	840	700	909
1200	700	955	710	975
1200	800	1070	725	1045
1200	900	1185	735	1161
1200	1000	1300	745	1189
1200	1100	1420	750	1263
1200	1200	1535	765	1344

DUCTILE IRON FITTINGS

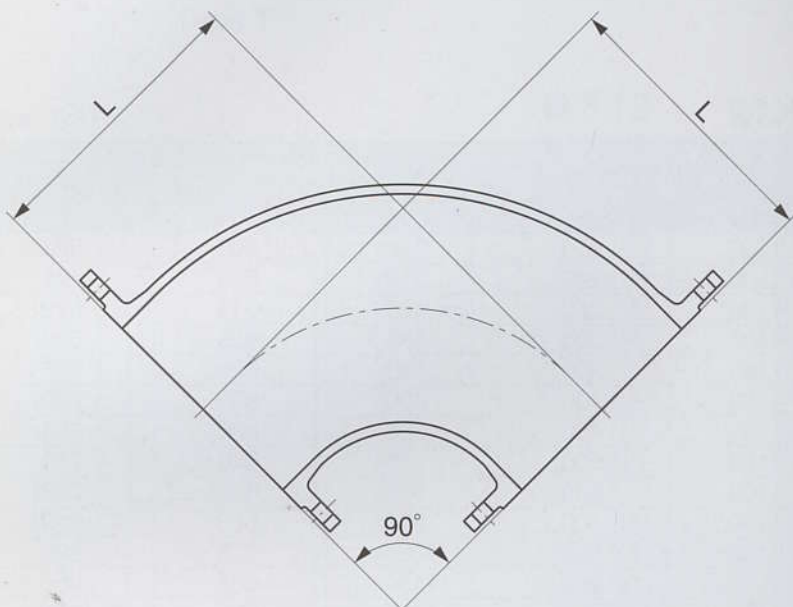
BS EN 545 / 598
ISO 2531

DOUBLE FLANGED 90° BENDS

● K12

Unit : mm

Nominal diameter	Length	Mass (kg)
DN	L	PN16
80	165	9.7
100	180	11.9
150	220	20.0
200	260	30.5
250	350	49.0
300	400	69.0
350	450	96.0
400	500	126
450	550	162
500	600	210
600	700	324
700	800	423
800	900	571
900	1000	750
1000	1100	990
1100	1200	1233
1200	1300	1573

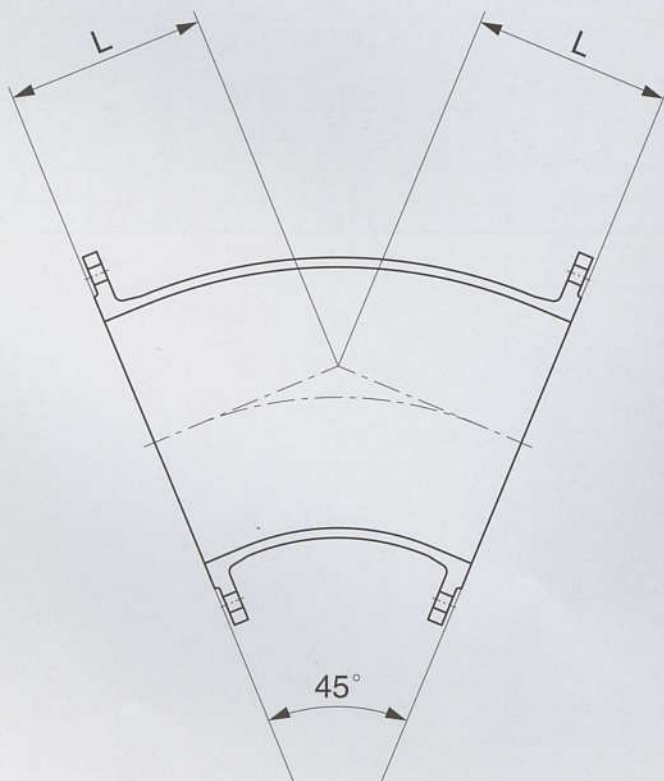


DOUBLE FLANGED 45° BENDS

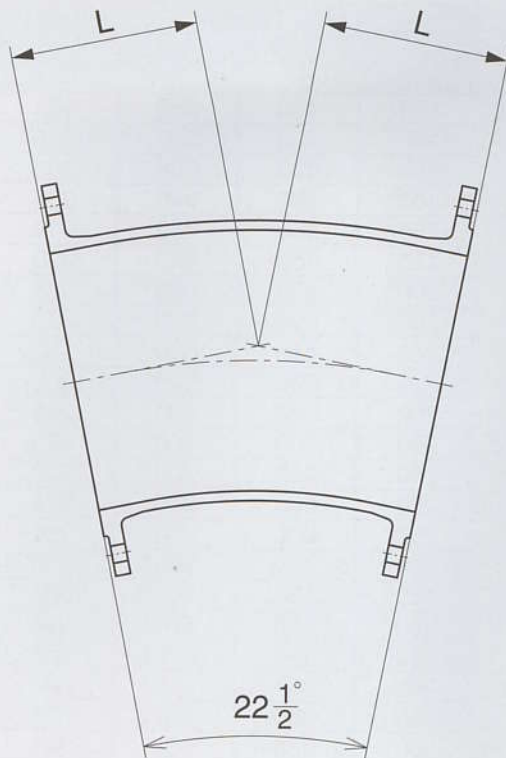
● K12

Unit : mm

Nominal diameter	Length	Mass (kg)
DN	L	PN16
80	130	9.3
100	140	11.3
150	160	18.5
200	180	27.0
250	350	54.0
300	400	76.0
350	298	82.0
400	324	106
450	349	132
500	375	174
600	426	264
700	478	335
800	529	444
900	581	576
1000	632	757
1100	683	931
1200	735	1187
1400	835	1599
1500	940	2273
1600	845	2151
1800	910	2763
2000	980	3519



DOUBLE FLANGED 22 1/2° BENDS

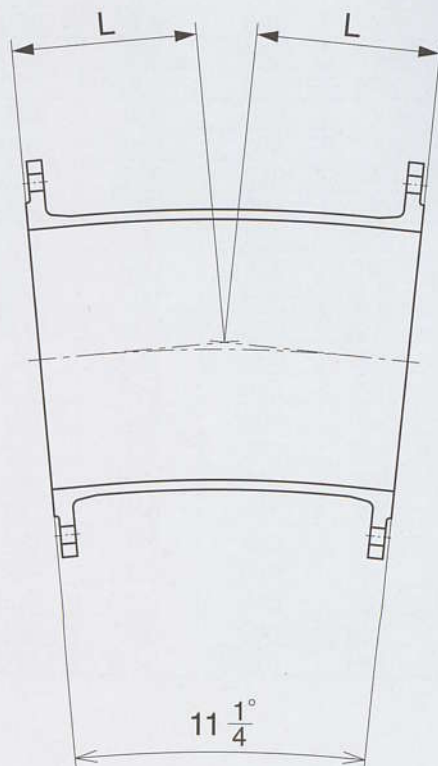


● K12

Unit : mm

Nominal diameter	Length	Mass (kg)
DN	L	PN16
80	130	9.2
100	140	11.5
150	160	18.6
200	180	27.5
250	350	55.0
300	400	78.0
350	298	83.5
400	324	108
450	349	135
500	375	177
600	426	268
700	478	343
800	529	451
900	581	592
1000	632	778
1100	683	957
1200	735	1220
1400	835	1643
1600	940	2338

DOUBLE FLANGED 11 1/2° BENDS



● K12

Unit : mm

Nominal diameter	Length	Mass (kg)
DN	L	PN16
80	130	9.2
100	140	11.5
150	160	18.6
200	180	27.0
250	350	54.5
300	400	77.5
350	298	83.0
400	324	107
450	349	135
500	375	176
600	426	267
700	478	342
800	529	448
900	581	588
1000	632	773
1100	683	952
1200	735	1213
1400	835	1635
1600	940	2325

DUCTILE IRON FITTINGS

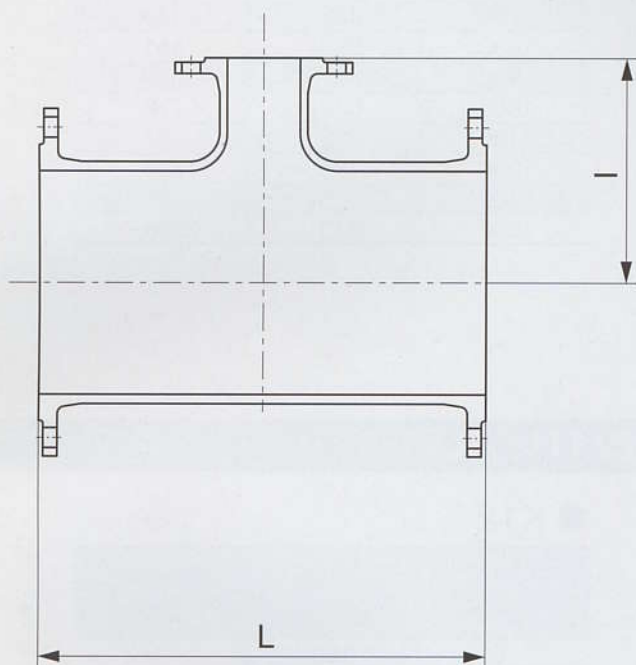
BS EN 545 / 598
ISO 2531

ALL FLANGED TEES

● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	L	I	PN16
80	80	330	165	13.7
100	80	360	175	15.9
100	100	360	180	16.5
150	80	440	205	24.0
150	100	440	210	24.7
150	150	440	220	27.1
200	80	520	235	34.3
200	100	520	240	35.0
200	150	520	250	37.5
200	200	520	260	40.1
250	80	700	265	53.0
250	100	700	275	53.8
250	150	700	300	56.6
250	200	700	325	60.0
250	250	700	350	64.6
300	80	800	290	73.2
300	100	800	300	74.0
300	150	800	325	76.9
300	200	800	350	80.2
300	250	800	375	84.8
300	300	800	400	90.5
350	80	850	325	96.8
350	100	850	325	97.4
350	150	850	325	99.7
350	200	850	325	102.0
350	250	850	325	105.0
350	300	850	425	114.0
350	350	850	425	120.0
400	80	900	350	122.0
400	100	900	350	123.0
400	150	900	350	125.0
400	200	900	350	127.0
400	250	900	350	130.0
400	300	900	450	139.0
400	350	900	450	145.0
400	400	900	450	151.0



● K12

Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	L	I	PN16
450	80	950	375	150.0
450	100	950	375	151.0
450	150	950	375	153.0
450	200	950	375	155.0
450	250	950	375	158.0
450	300	950	475	167.0
450	350	950	475	173
450	400	950	475	179
450	450	950	475	185
500	80	1000	400	192
500	100	1000	400	193
500	150	1000	400	195
500	200	1000	400	197
500	250	1000	400	200
500	300	1000	500	209
500	350	1000	500	215
500	400	1000	500	221
500	450	1000	500	226
500	500	1000	500	237
600	80	1100	450	283
600	100	1100	450	284
600	150	1100	450	286
600	200	1100	450	288
600	250	1100	450	291
600	300	1100	550	300
600	350	1100	550	306
600	400	1100	550	312
600	450	1100	550	318
600	500	1100	550	328
600	600	1100	550	349
700	150	595	520	232
700	200	650	525	245
700	250	705	535	259
700	300	760	540	273
700	350	815	550	290
700	400	870	555	305
700	450	925	565	322
700	500	980	570	343
700	600	1200	585	406
700	700	1200	600	406
800	150	635	580	305
800	200	690	585	320
800	250	745	595	337
800	300	800	600	354
800	350	855	610	373
800	400	910	615	392
800	450	965	625	410
800	500	1020	630	434
800	600	1350	645	534
800	700	1350	660	533
800	800	1350	675	552

● K12

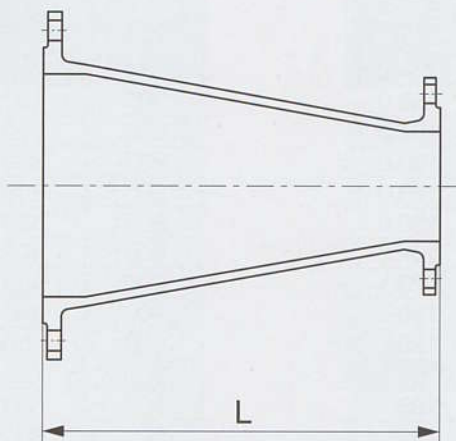
Unit : mm

Nominal diameter		Dimension of each portion		Mass (kg)
DN	dn	L	I	PN16
900	150	675	640	376
900	200	730	645	394
900	250	785	655	414
900	300	840	660	434
900	350	895	670	456
900	400	950	675	477
900	450	1005	685	499
900	500	1060	690	525
900	600	1500	705	672
900	700	1500	720	672
900	800	1500	735	692
900	900	1500	750	706
1000	150	715	700	496
1000	200	770	705	517
1000	250	825	715	539
1000	300	880	720	562
1000	350	935	730	587
1000	400	990	735	611
1000	450	1045	745	636
1000	500	1100	750	666
1000	600	1650	765	874
1000	700	1650	780	874
1000	800	1650	795	894
1000	900	1650	810	909
1000	1000	1650	825	944
1100	150	690	760	564
1100	200	750	765	590
1100	250	805	775	616
1100	300	865	780	644
1100	350	920	790	673
1100	400	980	795	702
1100	450	1040	805	732
1100	500	1095	810	766
1100	600	1210	825	834
1100	700	1330	840	882
1100	800	1445	855	948
1100	900	1560	870	1008
1100	1000	1675	885	1089
1100	1100	1790	900	1152
1200	150	715	820	707
1200	200	775	825	738
1200	250	830	835	767
1200	300	890	840	799
1200	350	950	850	833
1200	400	1005	855	864
1200	450	1065	865	898
1200	500	1120	870	935
1200	600	1240	885	1013
1200	700	1355	900	1067
1200	800	1470	915	1140
1200	900	1585	930	1208
1200	1000	1700	945	1297
1200	1100	1820	960	1370
1200	1200	1935	975	1466

DUCTILE IRON FITTINGS

BS EN 545 / 598
ISO 2531

DOUBLE FLANGED TAPERS



● K12

Unit : mm

Nominal diameter		Length	Mass (kg)
DN	dn	L	PN16
100	80	200	9.3
150	80	400	16.1
150	100	300	15.0
200	100	600	27.0
200	150	300	21.5
250	150	600	38.0
250	200	300	29.5
300	150	600	46.0
300	200	600	51.0
300	250	300	39.5
350	200	600	60.5
350	250	600	67.0
350	300	300	52.0
400	200	600	71.0
400	250	600	77.0
400	300	600	84.0
400	350	300	67.0
450	250	600	87.5
450	300	600	95.0
450	350	600	104
450	400	300	81.0
500	250	700	114
500	300	600	111
500	350	600	121
500	400	600	130
500	450	300	102
600	300	800	171
600	350	700	167
600	400	600	164
600	450	600	175
600	500	600	190
700	350	900	225
700	400	800	220
700	450	700	213
700	500	600	208
700	600	600	243

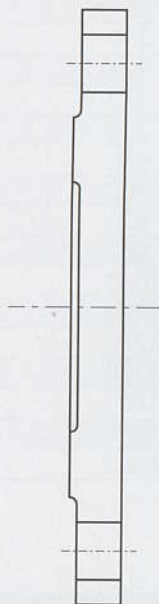
● K12

Unit : mm

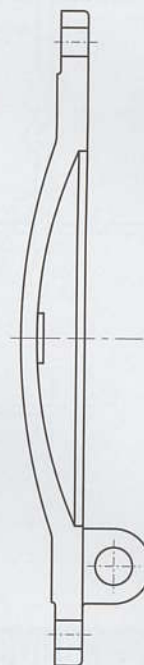
Nominal diameter		Length	Mass (kg)
DN	dn	L	PN16
800	400	1000	293
800	450	900	287
800	500	800	285
800	600	600	275
800	700	600	295
900	450	1100	380
900	500	1000	377
900	600	800	366
900	700	600	333
900	800	600	364
1000	500	1200	501
1000	600	1000	487
1000	700	800	452
1000	800	600	418
1000	900	600	454
1100	600	1230	617
1100	700	1050	592
1100	800	860	561
1100	900	800	579
1100	1000	600	550
1200	600	1450	801
1200	700	1260	768
1200	800	1070	765
1200	900	880	708
1200	1000	800	720
1200	1100	600	666
1400	1000	1500	1177
1400	1100	1250	1102
1400	1200	1000	1070
1600	1000	2000	1718
1600	1100	1750	1646
1600	1200	1500	1615
1600	1400	1000	1338

BLANK FLANGES

DN80 TO DN300



DN350 TO DN2000



Unit : mm

Nominal diameter	Mass (kg)
DN	PN16
80	3.5
100	4.3
150	7.2
200	10.8
250	16.6
300	23.5
350	34.5
400	46.0
450	60.0
500	79.5
600	125
700	163
800	228
900	299
1000	405
1100	509
1200	635
1400	993
1600	1462

DUCTILE IRON FITTINGS

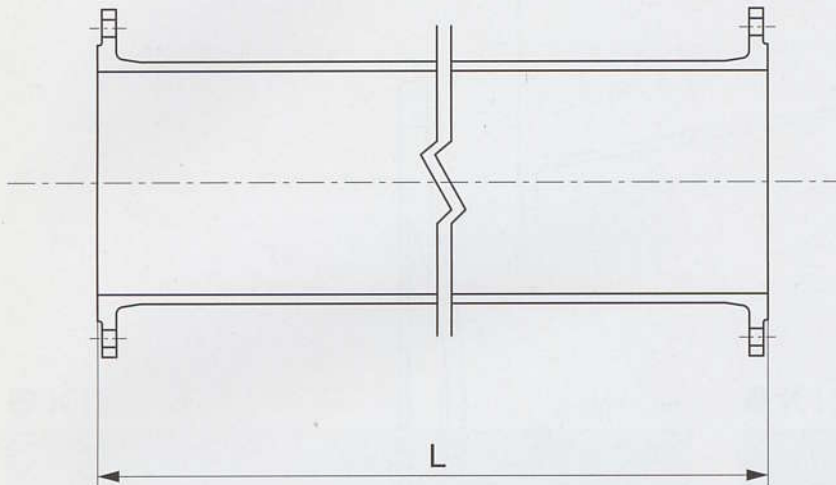
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ISO 2531

DOUBLE FLANGED STRAIGHT PIPES

● K12

Unit : mm

Nominal diameter	Length	Mass (kg)
DN	L	PN16
80	2000	34.0
100	2000	41.9
150	2000	66.2
200	2000	93.3
250	2000	125
300	2000	160
350	2000	201
400	2000	244
450	2000	293
500	2000	352
600	2000	478
700	2000	578
800	2000	725
900	2000	875
1000	2000	1076
1100	2000	1259
1200	2000	1501
1400	2000	1917
1600	2000	2496
1800	2000	3046
2000	2000	3676

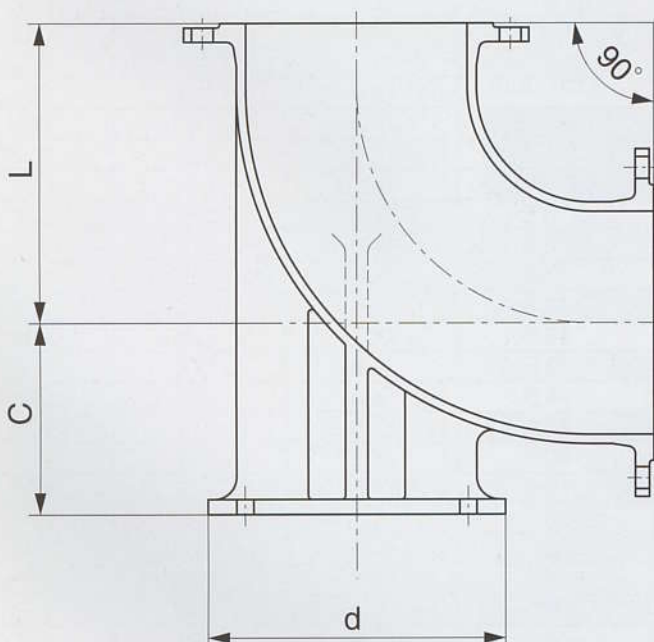


DOUBLE FLANGED DUCKFOOT 90° BENDS

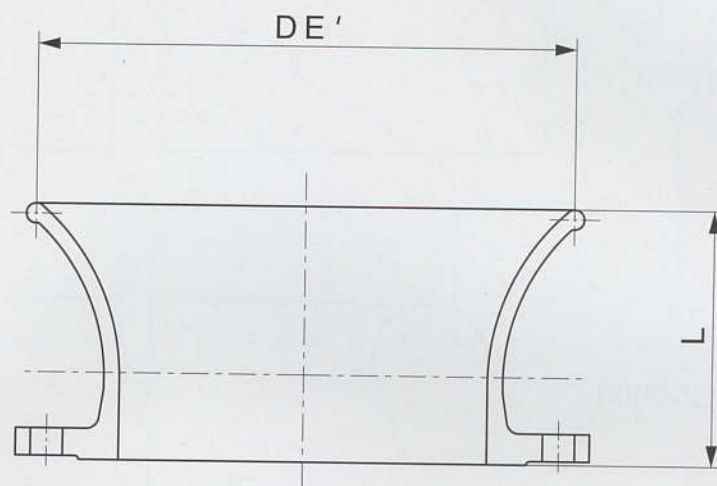
● K12

Unit : mm

Nominal diameter	Dimension of each portion			Mass (kg)
DN	L	C	d	PN16
80	165	110	180	14.0
100	180	125	200	17.7
150	220	160	250	30.5
200	260	190	300	47.0
250	350	225	350	76.0
300	400	255	400	108
350	450	290	450	147
400	500	320	500	196
450	550	355	550	246
500	600	385	600	322
600	700	450	700	493
700	800	515	800	586
800	900	580	900	798
900	1000	645	1000	1050
1000	1100	710	1100	1380
1100	1200	775	1200	1656
1200	1300	840	1300	2063



FLANGED BELL MOUTHS



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● K12

Unit : mm

Nominal diameter	Dimension of each portion		Mass (kg)
DN	DE'	L	PN16
80	160	135	5.2
100	185	140	6.3
150	245	155	10.1
200	310	170	14.7
250	370	190	21.0
300	435	210	29.0
350	495	225	39.0
400	560	245	51.0
450	620	260	63.0
500	685	280	82.5
600	810	300	122
700	945	340	154
800	1055	380	203
900	1165	420	263
1000	1290	440	339
1100	1400	465	409
1200	1515	490	515
1400	1725	515	609
1600	1945	540	826

ACCESSORIES

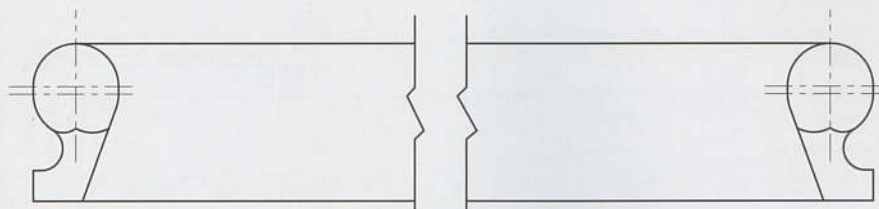
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PUSH ON JOINT ACCESSORIES

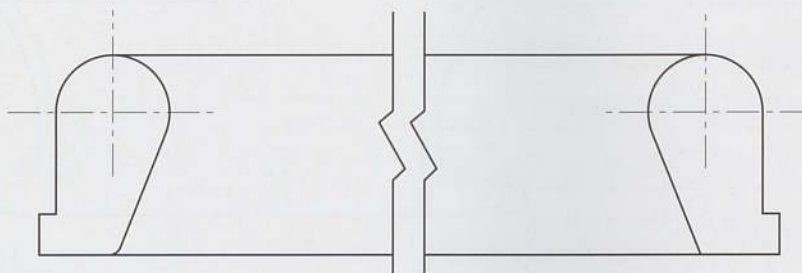
Type T

Rubber gasket

DN80 TO DN600

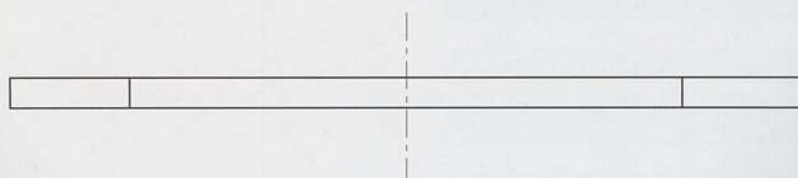


DN700 TO DN2000

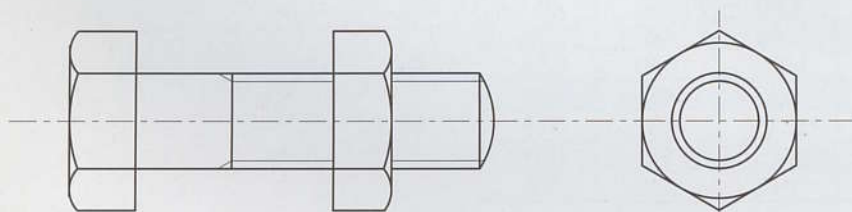


FLANGE JOINT ACCESSORIES

Rubber sheet packings



Steel bolts and nuts



● PN16

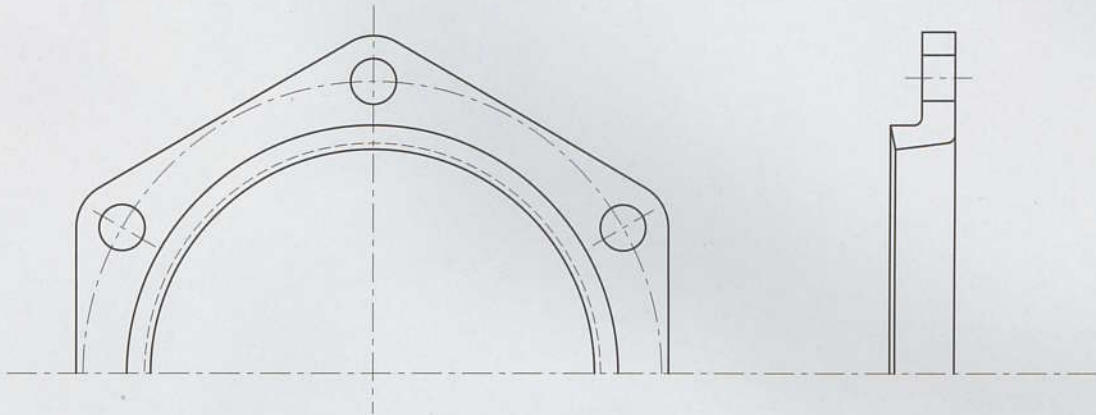
Unit : mm

Nominal diameter	Size and Length	Number of bolts
80	M16 X 65	8
100	M16 X 65	8
150	M20 X 70	8
200	M20 X 70	12
250	M24 X 85	12
300	M24 X 85	12
350	M24 X 85	16
400	M27 X 100	16
450	M27 X 100	20
500	M30 X 110	20
600	M33 X 120	20
700	M33 X 120	24
800	M36 X 140	24
900	M36 X 140	28
1000	M39 X 150	28
1100	M39 X 160	32
1200	M45 X 170	32
1400	M45 X 180	36
1500	M52 X 190	36
1600	M52 X 190	40
1800	M52 X 200	44
2000	M56 X 230	48

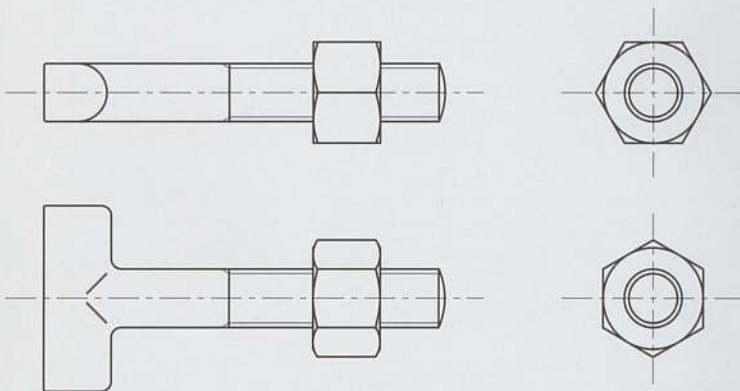
MECHANICAL JOINT ACCESSORIES

Type K

Ductile iron gland



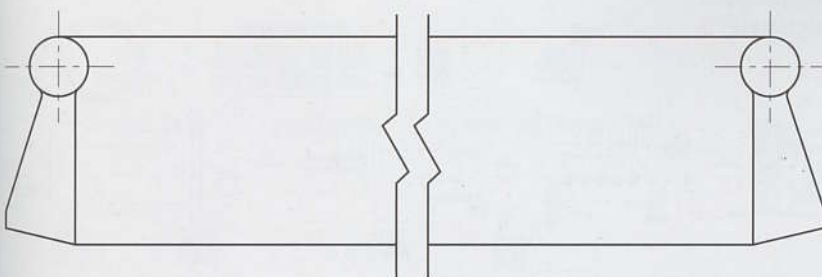
Ductile iron bolts and nuts



Unit : mm

Nominal diameter	Size and Length	Number of bolts
80	M16 X 85	4
100	M20 X 90	4
150	M20 X 90	6
200	M20 X 90	6
250	M20 X 90	8
300	M20 X 100	8
350	M20 X 100	10
400	M20 X 110	12
450	M20 X 110	12
500	M20 X 110	14
600	M20 X 120	14
700	M24 X 120	16
800	M24 X 120	20
900	M30 X 130	20
1000	M30 X 130	20
1100	M30 X 140	24
1200	M30 X 140	28
1400	M30 X 150	28
1500	M30 X 150	28
1600	M30 X 150	30
1800	M30 X 150	34
2000	M30 X 160	36

Rubber gasket



MANUFACTURING LINE

Ductile Iron Pipe for a variety of customer needs are made in a manufacturing venue that incorporates the latest in casting technology.



Casting

Molds are placed at the top of the caster, and the molten metal is carefully poured into the molds as they are revolved. Once the molten metal has been poured in, the revolution speed increases and continues until the product hardens.



Melting

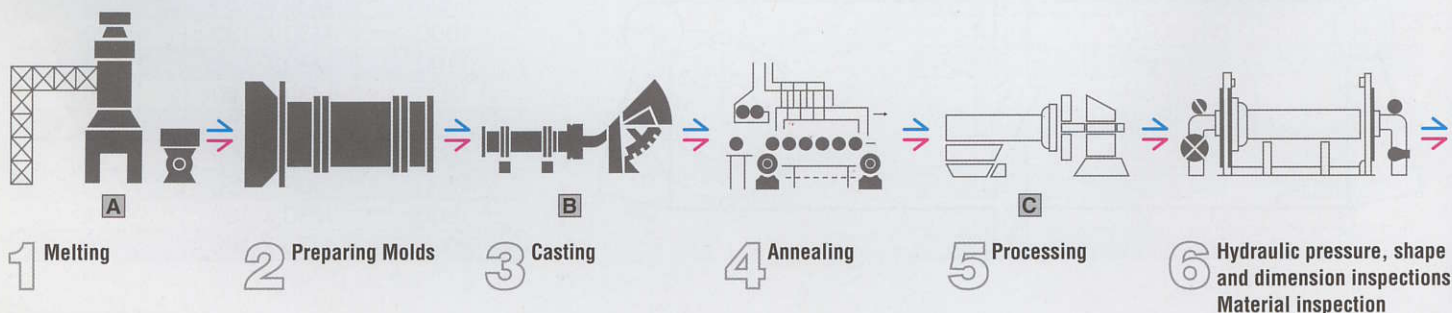
With a maximum capacity of 40 tons per hour, melting created in the cupolas have their temperatures and compositions adjusted in channel-type low-frequency furnaces. Management of the entire process, including the weighing of raw materials, addition of materials to the cupolas and the pouring of the molten metal is controlled by computers. Although cast iron is ordinarily resistant to corrosion, we add magnesium as part of the ductile process as a means to improve product strength.

Kurimoto's primary products are straight and bent Ductile Iron Pipe, providing completed products for a variety of fields.

Straight Ductile Iron Pipe Manufacturing Process

➤ mortar lining pipes
➤ powder coating pipes

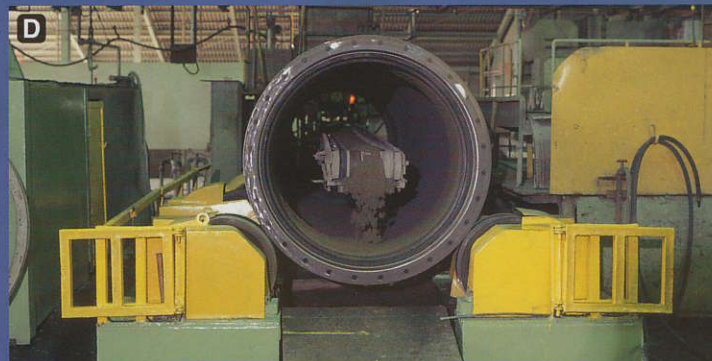
* The order may change based on plant and product.





Finishing

Finishing is implemented, including the treatment of the inlet and the opening of any flange holes.



Mortar Lining

The interior surface is lined with mortar to improve corrosion-resistance and to maintain smooth flow rates. Once the pipes are cured with steam, a seal coating is applied. A secondary paint layer is applied externally before the final inspection, from which pipes move on to shipping.

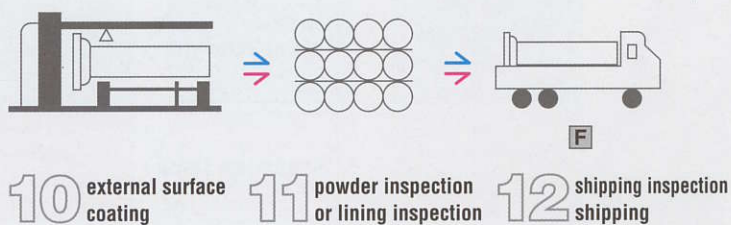
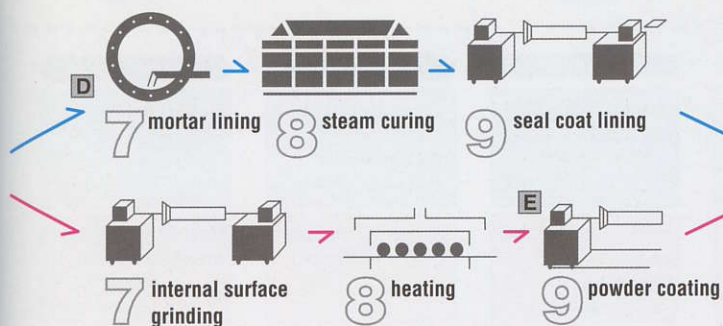


Powder Coating

After polishing the inner surface, heating it and baking on an epoxy powder coating, a pinhole inspection takes place, after which pipes are released to shipping.



Shipping



QUALITY CONTROL

Thorough inspections and a comprehensive quality control system were implemented to realize higher levels of quality.



Spectrometric Analysis

The spectrometric analysis room performs compositional analysis on the liquid metals.



Microscope Inspection

Portable microscopes are used to determine the degree of graphite spherization and to inspect the composition of the base material.

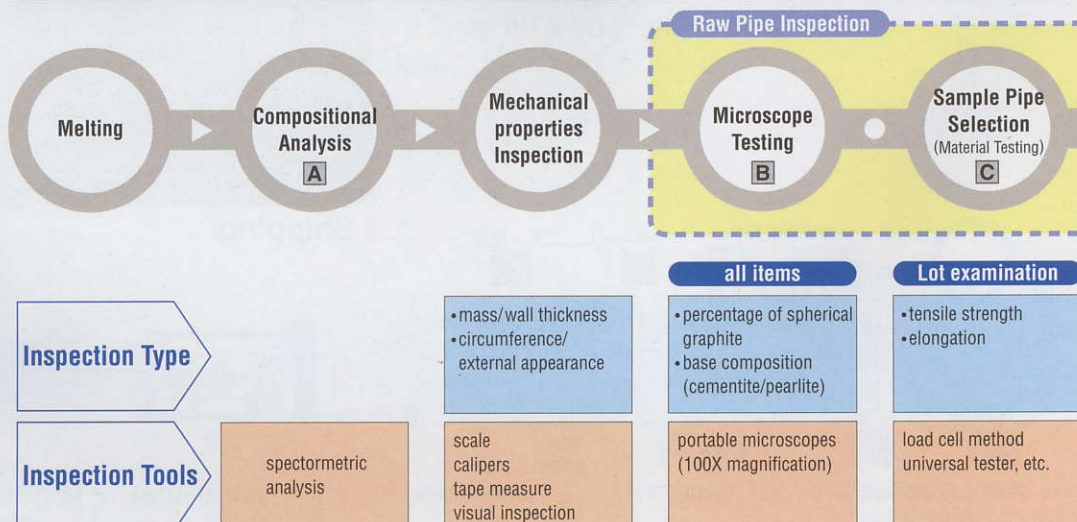


Materials Testing

The tensile strength tester that inspects the tensile strength of sample pipes.

Quality Assurance Straight Pipe Inspection Flowchart

*The order and content of inspections may change by plant and/or product.





Mass, Shape, Measurement Inspections

Precise quality inspections use form measuring equipment, scales, etc.

During the production phase, an emission spectrum analysis device (the cantback) allows for a thorough review of the dissolved content within the Ductile Iron Pipe products. In addition, completed ductile iron pipe products pass through a comprehensive quality control system, including computerized management processes, to assure that our product reliability is the best it can be for the various fields in which it is used. A complete round of detailed checks is performed. The iron undergoes microscopic inspection, hydraulic testing, and external appearance, shape and measurement inspections for all products during quality inspections, with tensile strength and elongation and hardness testing performed on each lot. Once the pipes pass inspection, they undergo mortar lining, seal coating or powder painting processes, from which they move on to a final inspection, which they must pass before shipping.



Hydraulic Test (Ductile Iron Fittings)

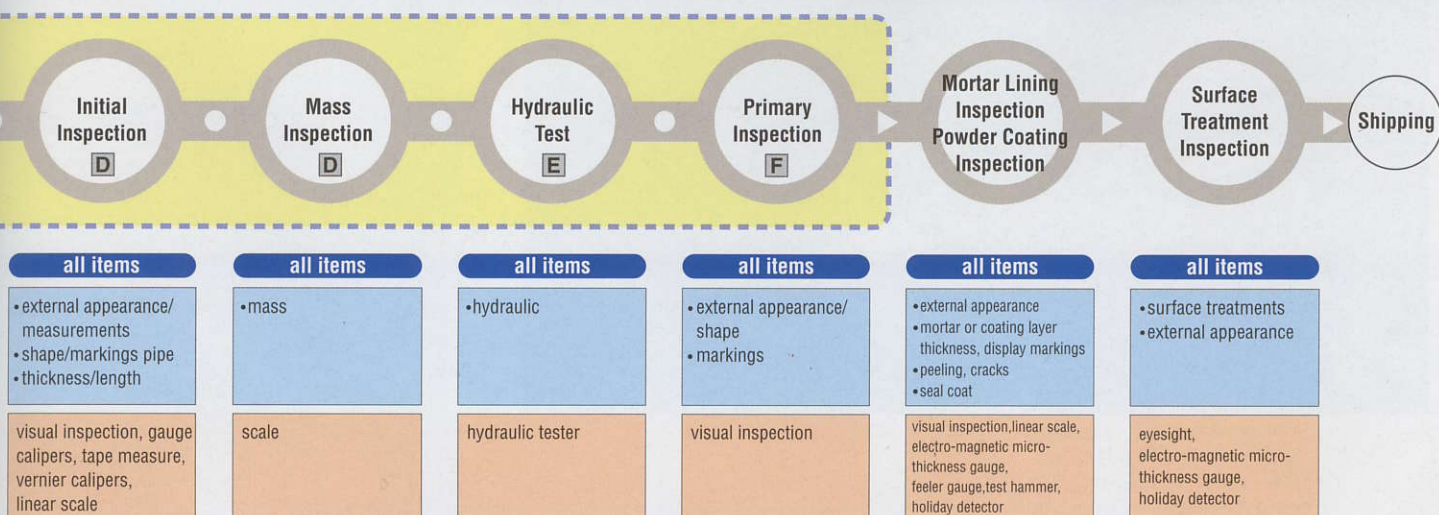
Each pipe passes through the hydraulic tester, confirming its level of water-tightness.



Inlet Measurement Inspection

All pipes are visually inspected using gauges.

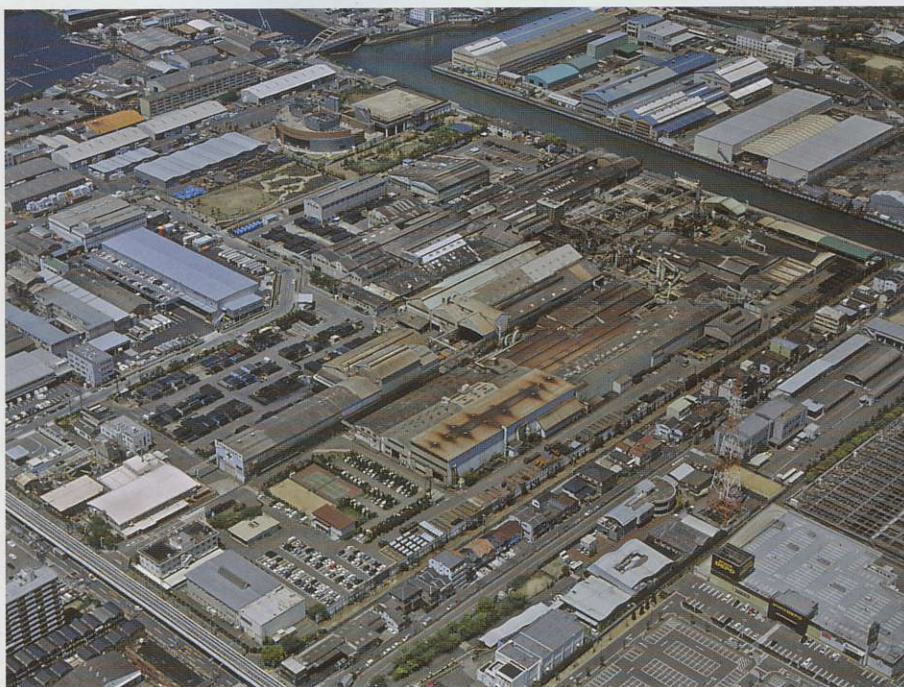
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PRODUCTION SYSTEM

Centered on our production facilities in Kagaya and Sakai, we manufacture Ductile Iron Pipes for a variety of applications.

KAGAYA PLANT



As one of the main plants manufacturing medium- and large-diameter Ductile Iron Pipes, its involvement in research and development into the latest iron casting technologies makes it central to our production work.

Producing Ductile Iron Pipe in diameters ranging from 300 to 2,600 millimeters, this plant can respond to any of our customers' needs.

Founded	November 1940
Products	Ductile Iron Pipes, Ductile Iron Fittings
Output Capacity	7,000 tons (monthly)
ISO Certification	Iron Pipe Division ISO9001 (international standard for quality assurance) certified in January of 1995 ISO14001 certified in February of 2000
Address	1-64 Izumi 2-chome, Suminoe-ku, Osaka 559-0023, Japan

SAKAI PLANT



Located in a corner of the Sakai Seaside Industrial District, the Sakai Plant has been promoting a full automated production line and quality control system in advance of other plants. This plant specializes in the production of narrow gauge Ductile Iron Pipes using a centrifugal mold casting method, producing straight Ductile Iron Pipes in diameters of 75 to 250 millimeters.

Founded	August 1963
Products	Ductile Iron Pipes
Output Capacity	10,000 tons (monthly)
ISO Certification	ISO9001 (international standard for quality assurance) certified in October of 1995 ISO14001 certified in December of 1999
Address	14-1 Ishizunishi-machi, Sakai, Osaka 592-8332, Japan

BACKGROUND

Feb.1909: The late Mr.Yunosuke Kurimoto, the founder, established KURIMOTO Tekkosho (KURIMOTO Ltd.), a limited partnership, at the site of the present Chishima Factory, and started the manufacture of cast iron pipes for water and gas supply

June.1951: The Kagaya Factory was completed with a cast iron pipe manufacturing shop employing the centrifugal casting method.

Oct.1958: Ductile Iron Pipe manufacturing equipment was completed at the Kagaya Factory.

Dec.1972: The Sakai Factory was constructed at Ohamanishi-machi, Sakai City, for the manufacture of steel frame products.

Mar.1974: Superlarge-diameter Ductile Iron Pipe casting equipment was completed at the Kagaya Factory.

Apr.1975: Acquired the entire stock of Shin-Nippon Pipe Co.,Ltd.

Apr.1987: Absorbed Shin-Nippon Pipe Co.,Ltd. and renamed as the Sakai Factory.

Jan.1995: Ductile Iron Pipe Div. of Kagaya Factory won an ISO 9002 certification.

Oct.1995: Sakai Factory won an ISO 9002 certification.

Dec.1999: Sakai Factory won an ISO 14001 certification.

Feb.2000: Kagaya Factory won an ISO 14001 certification.



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