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Kejriwal
CASTINGS LIMITED

TOTAL PIPELINE SOLUTIONS

INTERNATIONAL EDITION **2016**

Ductile Iron **Joints**
Pipes
Fittings
Specials
Fittings for Upvc Pipes
Coatings & Linings



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Quality & Standards

ISO:2531

ISO

ISO : 4633 : Rubber Gasket
ISO : 7005 : Flanged Joints
or
EN : 1092
ISO : 8179 : Metallic Zinc
ISO : 4179 : Cement Mortar Lining
ISO : 16132 : Cement Mortar with Seal Coat
External Coating : Black Bitumen / Fusion Bonded Epoxy (FBE)
PU Coating

BS EN 545

BSI

EN : 681 : Rubber Gasket
EN : 196 : Compressive strength of the Cement Mortar Lining
ISO : 7005 : Flanged Joints
or
EN : 1092
ISO : 8179 : Metallic Zinc
ISO : 4179 : Cement Mortar Lining
ISO : 16132 : Cement Mortar with Seal Coat
External Coating : Black Bitumen / Fusion Bonded Epoxy (FBE)

BS EN 598

BSI

Colour Code
for Sewage : **BROWN / RED / GREY**
Internal Coating : Zinc Coating
High Aluminium Cement (HAC)
External Coating : Zinc Coating
Black Bitumen OR
Red Epoxy OR
Grey Epoxy
Joint System : NBR Rubber Gasket

For details information about standard please, check latest standard



Miscellaneous

Table : i
Approximate Weight of Water Content in
Cast Iron Pipes in Kg/metre.

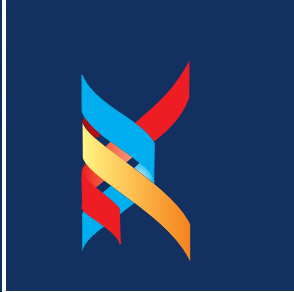
Nominal Bore	Kg./mtr.	Nominal Bore	Kg./mtr.
80	5.0	450	161
100	8.2	500	199
125	12.7	600	285
150	18.2	700	388
200	32.2	750	445
250	50.6	800	505
300	72.7	900	645
350	98.7	1000	790
400	128.1	1200	1140

Table : ii
Conversion Factors

Length	
1 Inch	= 25.400 Millimetres (mm)
1 Foot	= 304.800 Millimetres (mm)
1 Yard	= 914.400 Millimetres (mm)
1 Mile	= 1.609 Kilometres (Km)
Weight	
1 Kilogram	= 2.2046 Pound
1 Pound	= 0.4536 Kilogram
Capacity	
1 Gallon (UK)	= 4.546 litres
1 Litre	= 0.219976 gallon (UK)
1 Gallon (US)	= 3.7853 litres
1 Litre	= 0.26418 gallon (US)
Others	
Pipe OD x π (3.14159)	= Circumference
1 liter	= 1000 cm ² (approx.)

Table : iii
Pressure Conversion Table

Kg/cm ²	lbs/sq.inch	Meter Head	Approx. Feet Head	Kg/cm ²	lbs/sq.inch	Meter Head	Approx. Feet Head	Kg/cm ²	lbs/sq.inch	Meter Head	Approx. Feet Head
1	14.22	10	32.81	13	184.90	130	426.62	25	355.58	250	820.62
2	28.45	20	65.62	14	199.13	140	459.45	26	369.80	260	853.24
3	42.67	30	98.43	15	213.35	150	492.24	27	384.02	270	886.05
4	56.87	40	131.24	16	227.57	160	525.07	28	398.24	280	918.86
5	71.12	50	164.05	17	241.80	170	557.90	29	412.47	290	951.69
6	85.34	60	196.86	18	256.02	180	590.71	30	426.69	300	984.28
7	99.56	70	229.67	19	270.24	190	623.52	31	440.91	310	1017.31
8	113.79	80	262.47	20	284.47	200	656.38	32	455.14	320	1050.15
9	128.01	90	295.38	21	298.69	210	689.17	33	469.36	330	1082.96
10	142.23	100	328.19	22	312.91	220	721.98	34	483.58	340	1115.77
11	156.46	110	361.00	23	327.14	230	754.81	35	497.80	350	1148.33
12	170.68	120	393.81	24	341.36	240	787.62				



INTRODUCTION

Kejriwal Castings Limited, is the manufacturer with the widest range of products in India, and we have an overriding aim: to be your first choice.

Living through our core values of being customer focused, competitive, and innovative through constant development in manufacturing process, services and our people, we aim to achieve it.

From the very beginning, quality has been the bedrock, on which the *Kejriwal* foundation has stood, and British Standards Institution has certified the quality systems in our factory as confirming to ISO-9001 standards for manufacture of Ductile Iron and Grey Iron castings for Industrial, general, municipal and sanitary applications.

At *Kejriwal*, traditional moulding skills with indigenous technology has been combined to enable manufacturing of even non standard items and keeping the costs in check as well.

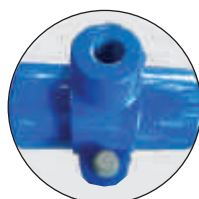
Located at Howrah, a throbbing Industrial Area and twin city of Calcutta, we have easy access to all means of transport, be it rail, road, air or sea. With presence all over India, and in gulf countries, we ensure that we are very near to customer, wherever he may be.



We acknowledge that, it is you, whose support and encouragement has been the single most valuable factor in the success of *Kejriwal* Castings Ltd.

All castings manufactured by *Kejriwal* will comply to the contents of this brochure which itself has been designed to meet the requirements of ISO2531, BS EN 545 & BS EN 598.

The journey towards excellence never ends at *Kejriwal*.





Quality Management System

British Standard Institution (BSI), London



bsi. 

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that: **Kejriwal Castings Limited**
33A, Chowringhee Road
Chatterjee International Centre
11th Floor, Suite No. 11
Kolkata 700 071
West Bengal
India

Holds Certificate No: **FM 81232**
and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

I. Manufacture and supply of cast iron & ductile iron castings (valves, pipes & fittings);
II. Machining and supply of centrifugally cast (spun) cast iron & ductile iron pipes for water, gas & sewage applications.

For and on behalf of BSI: 
Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: 06/01/2004 Effective Date: 06/01/2015
Latest Revision Date: 15/09/2015 Expiry Date: 02/10/2018

Page: 1 of 2

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated [online](#). Printed copies can be validated at www.bsi-global.com/ClientDirectory or telephone +91 11 2692 9000. Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2008 requirements may be obtained by consulting the organization. This certificate is valid only if provided original copies are in complete set.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP, Tel: + 44 845 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

BSI

Certificate No: **FM 81232**

Location	Registered Activities
Kejriwal Castings Limited 33A, Chowringhee Road Chatterjee International Centre 11th Floor, Suite No. 11 Kolkata 700 071 West Bengal India	Top Management, Management System Functions, Marketing, Purchase
Kejriwal Castings Limited NH-6, Chamraail Near Kona Power Sub Station Kona Howrah West Bengal India	Production & QC (Foundry), Sand Plant & Moulding, Production - (Machining & Finishing), QC - (Machining & Finishing), Calibration, Maintenance - Foundry & Finishing, Stores & Stockyard - Foundry & Finishing, Dispatch.

BSI CERTIFICATES

Original Registration Date: 06/01/2004 Effective Date: 06/01/2015
Latest Revision Date: 15/09/2015 Expiry Date: 02/10/2018

Page: 2 of 2

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated [online](#). Printed copies can be validated at www.bsi-global.com/ClientDirectory or telephone +91 11 2692 9000. Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2008 requirements may be obtained by consulting the organization. This certificate is valid only if provided original copies are in complete set.

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DNV





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BUREAU VERITAS

Industry & Facilities Division  Page 3 of 5

Inwork
 Final

INSPECTION REPORT N°
KEJRIWAL/BV KOL/SMC/937/IR/001

BV Job no: IND.K.4.13.0073 R1

Photos:

		
Offered Lot PU Coated Pipes	Offered Lot Brasses Coated	Hydro Test for fittings
		
Metal Thickness Check	DFT for Brasses Part	DFT for PU Coating
		
CHL Thickness Check	Fittings As per marking	BV Stamp

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ANNEXES Yes (Total number of pages: 0) No

Inspected by: **Nasim Ali, Rinja Banerjee** Checked by:

Issued by: **Rinja Banerjee** Name:

Signature:  Signature:

Date of issue: 06.03.2014

Inspection centre: Bureau Veritas India Pvt. Ltd., Kolkata

Address: Poonam Building, Flat no. 3C, 3D, 3rd Floor, 5/2 Russel Street, Kolkata - 700 071, India

Distribution: Kejriwal Castings Ltd. BV Kolkata

BV Job No. IND.K.4.13.0073 R1 Copyright Bureau Veritas 2013

Industry & Facilities Division  Page 4 of 4

Inwork
 Final

INSPECTION REPORT N°
KEJRIWAL/BV KOL/SMC/389/IR/003

BV Job no: IND.K.4.13.0073 R1

Photos:

		
Offered Flange Pipes	Hydro testing	Test pressure 40.53 kgf/cm ²
		
Dimensions Check	Flange Clearance Check	Metal Thickness
		
CVL Check	DFT Check	Marking on pipe with BV Stamp

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Inspected by: **Nasim Ali, Rinja Banerjee** Checked by:

Issued by: **Rinja Banerjee** Name:

Signature:  Signature:

Date of issue: 06.03.2014

Inspection centre: Bureau Veritas India Pvt. Ltd., Kolkata

Address: Poonam Building, Flat no. 3C, 3D, 3rd Floor, 5/2 Russel Street, Kolkata - 700 071, India

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Industry & Facilities Division



Page 4 of 4

Interim

Final

INSPECTION REPORT KEJRIWAL/BV KOL/SMC/937/IR/002

BV Job nr: IND.K.4.13.0073 R1

Photos:		
Offered Lot PU Coated Pipes	Hydro Test @ 25 bars	Hydro Test @ 25 bars
Metal Thickness Check	CML Thickness Check	Dimension Check
DFT for Bitumen Paint	DFT for PU Coating	Marking with BV stamp

Disclaimer: The inspection report is issued on the basis of sample checks and supplier is responsible for the homogeneity. By issuing this Report BVIL does not take responsibility for any statutory requirements for the destination, which shall be the responsibility of M/s Kejriwal Castings Limited.

ANNEXES Yes (Total number of pages: 0) No

<p>Inspected by: Rinjal Banerjee Issued by: Name: Rinjal Banerjee Signature: </p>	<p>Checked by: Name: Signature:</p>
<p>Date of issue: 22.03.2014 Inspection centre : Bureau Veritas India Pvt. Ltd., Kolkata Address: Poonam Building, Flat no. 3C, 3D, 3rd. Floor, 5/2 Russel Street, Kolkata – 700 071, India</p>	
<p>Distribution: <input checked="" type="checkbox"/> Kejriwal Castings Ltd. <input checked="" type="checkbox"/> BV Kolkata <input type="checkbox"/> <input type="checkbox"/></p>	



Tested by Internationally Recognised Third Party SGS

SGS

	ANNEXURE-II (PHOTOS) SGS FILE NO. IN/KOL/IND/201300477 KEJRIWAL CASTINGS LTD, KOLKATA	REPORT NO: KOL/BS/02/2014 DATED: 5 th February 2014	Pg. 1/2
Marking On Materials	Lot of Materials		
Dimension Check (PCD)	Dimension Check (Hole Dia)		
Dimension Check (Flange Thickness)	Semi-Circular Bend after Assembly		
Dimension Check (Height)	Dimension Check (Wall Thickness)		

Bipradip Sarkar			
	ANNEXURE-II (PHOTOS) SGS FILE NO. IN/KOL/IND/201300477	REPORT NO: KOL/BS/02/2014 DATED: 5 th February 2014	Pg. 2/2
Dimension Check (PCD)	Dimension Check (Length of pipe)		
SGS Identification Mark (Double Hard Punch)	SGS Identification Mark (Double Hard Punch)		
Bipradip Sarkar SGS India Pvt. Ltd. Kolkata			

International Consultant Approval



Letter No. SINAW/H-2/044/2012

31 March 2012

Madhusudhan P
Executive Director
SMC-GKC(JV)
P. O. Box 1126
Azaiba PC 130
Muscat

Project : Tender 302/2010 Construction of Water Distribution Network in Sinaw

Re : MAS 09 - Proposed DI Fittings

Ref: SMC Letter # SMC/SINAW/LE/2011-12/43, dated 24 March 2012

Dear Mr. Madhusudhan P,

We refer to the above mentioned letter with which you submitted your proposal for DI Fittings.

Your submitted supplier, Kejriwal Castings Limited, is approved and we attach a copy of MAS No. SMC/302/MAS/09, duly signed by all parties.

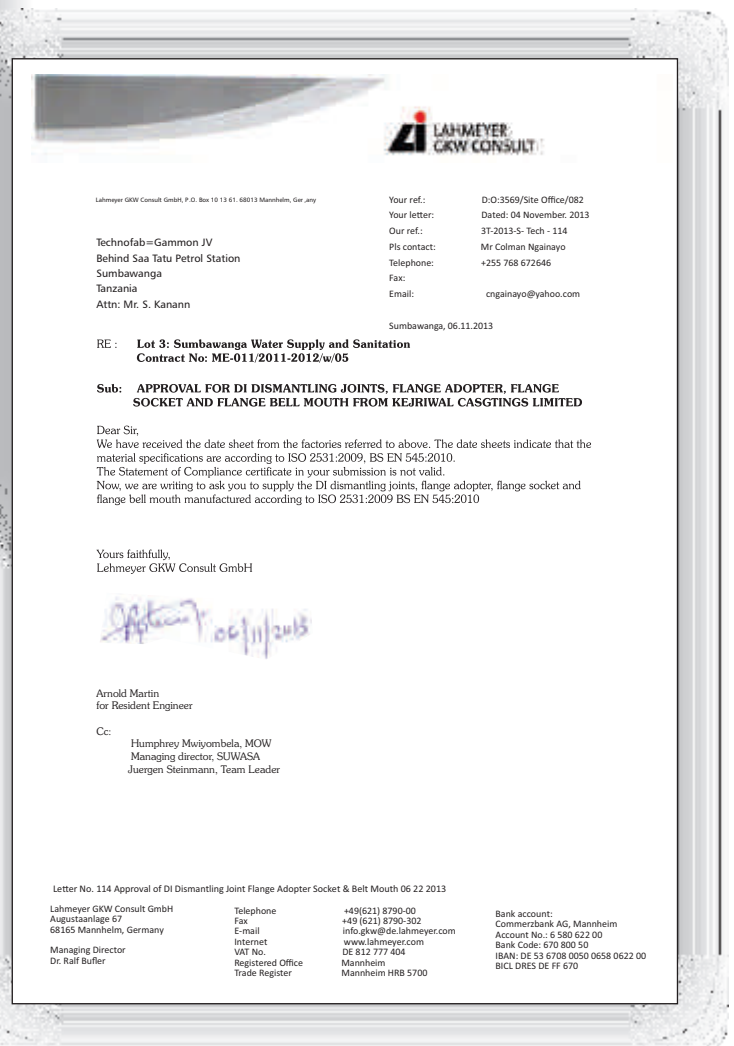
Very Truly Yours

MALCOLM PIRNIE ENGINEERING CONSULTANCY

Acknowledgements:


Richard Griffiths
Resident Engineer

Attachment
MAS No. SMC/302/MAS/09





Quality Assurance



At KCL, QA is a set of activities for ensuring quality in the process by which our products are developed to remain focused on the process used to produce the project which is a proactive quality process.

Our goal remains to improve, develop & test, so that defects do not arise when the product is being developed by establishing good Quality Management System. The assessment of its adequacy and periodic conformance audits of the operations of system, leads to strict quality control.

Our objective is prevention of quality problems through planned and systematic way including documentations. The Senior Management is having direct contact & control with the responsible team members, involved in developing the product for Quality Assurance.

Quality Testing Equipments



MICROSCOPE



for Microstructure

TESTEX PRESS-O-FILM REPLICA TAPE



for surface profiles after Shot-Blasting

UNIVERSAL TESTING MACHINE



for Brinell hardness & elongation

SPECTROMETER



for Chemical Analysis of Materials

PINHOLE DETECTOR



for Pinhole detection



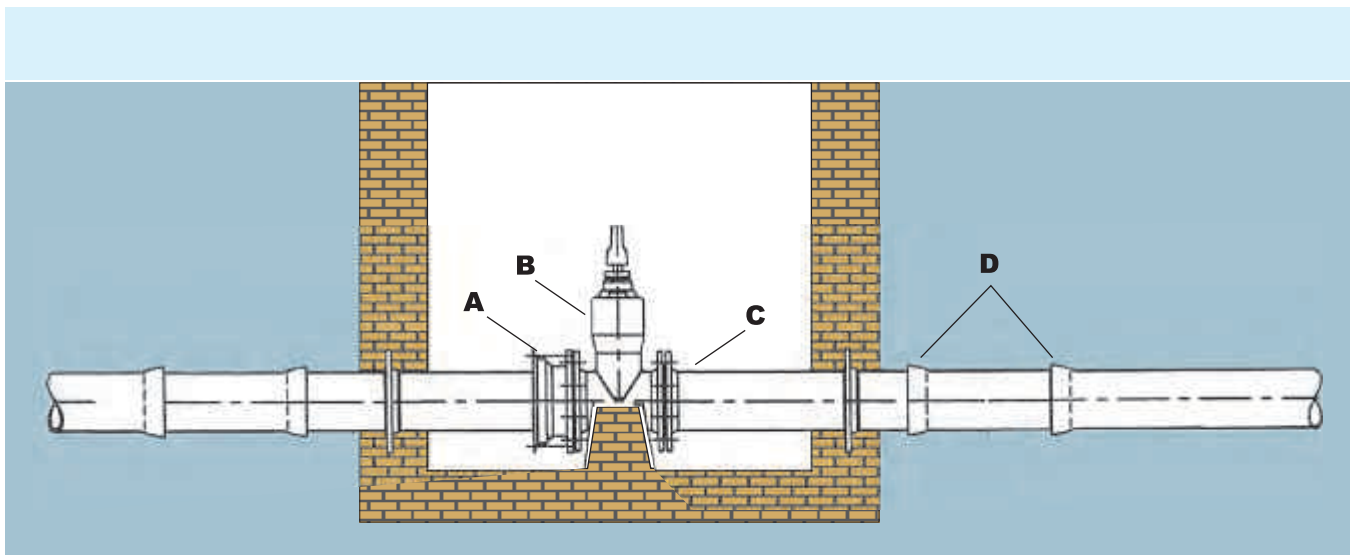
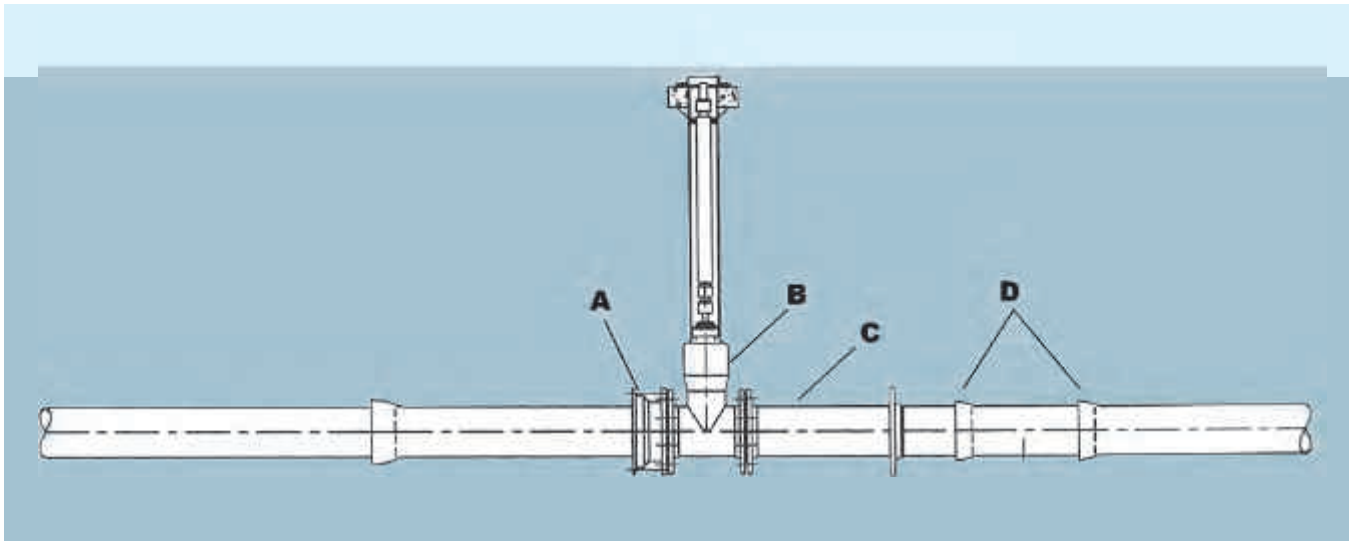
'KEJRIWAL'

A Successful Brand



Project Name	Department	Contracting Co.	Year
Muscat Airport	Ministry of Transportation	Bahwan Engg. Co.	2008
House of Musical Arts - HOMA Waterline Network Project	Royal Court Affairs	Bahwan Engg. Co.	2008
Construction of Sewage System for AR RAHBA	Ministry of Regional Municipality Municipality and Water Resources - MRMEW	Gulf Petroleum Services	2008
Water Supply Extension to Al-Amerat Wilayat	Public Authority of Electricity & Water	Al Habib Contracting	2009
Sewage Treatment Plant of SEEB	Oman Waste Water Company	Gulf Petroleum Services	2009
Diversion of Pipeline at QURUM	Royal Court Affairs / Muscat Municipality	Oman United Engg. Co.	2009/10
Water Supply to Sohar Airport	Ministry of Communication	Al-Ansari	2010/11
Water Supply to Ras Al Hadd	Public Authority of Electricity & Water	National United Engg.	2011
Road Project from Mawaleh to Bait al Barakha	Public Authority of Electricity	Consolidated Contracting Co.	2012
Barka Water Supply - Phase II	Public Authority of Electricity & Water	Galfar Engg. Contracting Co.	2012
Construction of Water Distribution Network (SINWA)	Public Authority of Electricity & Water	SMC Infra LLC	2012
Al Mayan Round About Project at Airport	Ministry of Transportation	Consolidated Contracting Company	2012
Sumbawanga Water Supply & Sanitation	Singida Urban Water and Sanitation Authority (SUWASA)	Technofab & Gammon JV	2013

Design your pipeline with KEJRIWAL

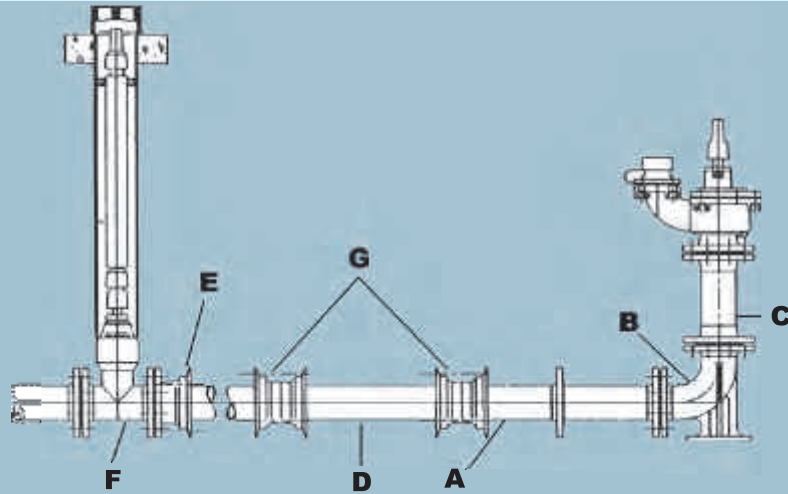


- A** Flange Adaptor
- B** Sluice Gate Valve
- C** Flange Spigot Pipe with Puddle Flange
- D** Socket / Spigot Pipe

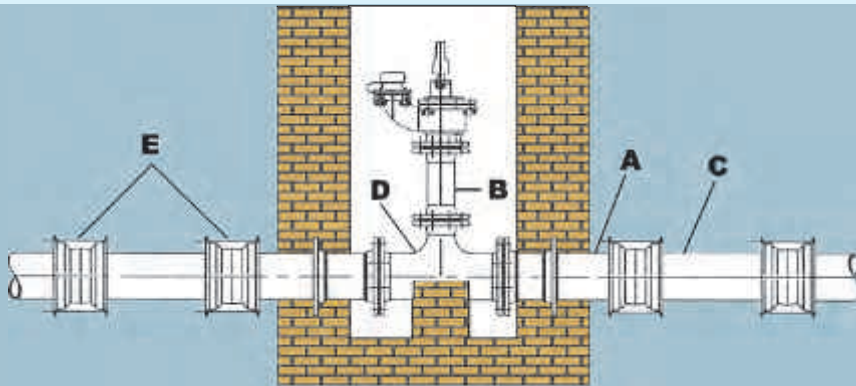


Design your pipeline

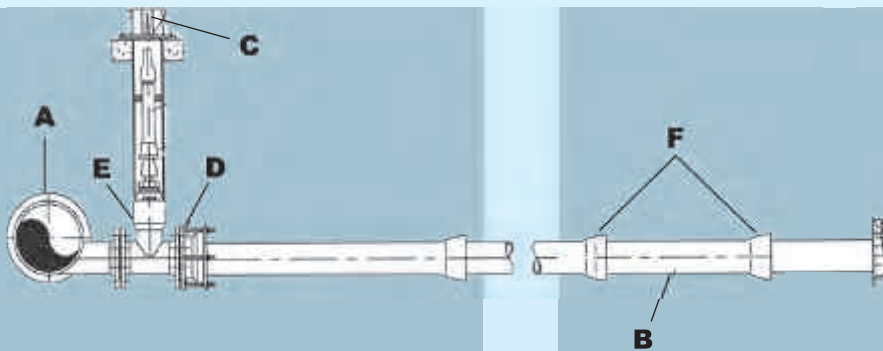
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- A** Flange & Spigot Puddle Flange Pipe
- B** Double Flanged Duckfoot Bend
- C** Double Flanged Rising Piece
- D** Double Spigot Pipe
- E** Flange Adaptor
- F** Gate Valve
- G** Couplings



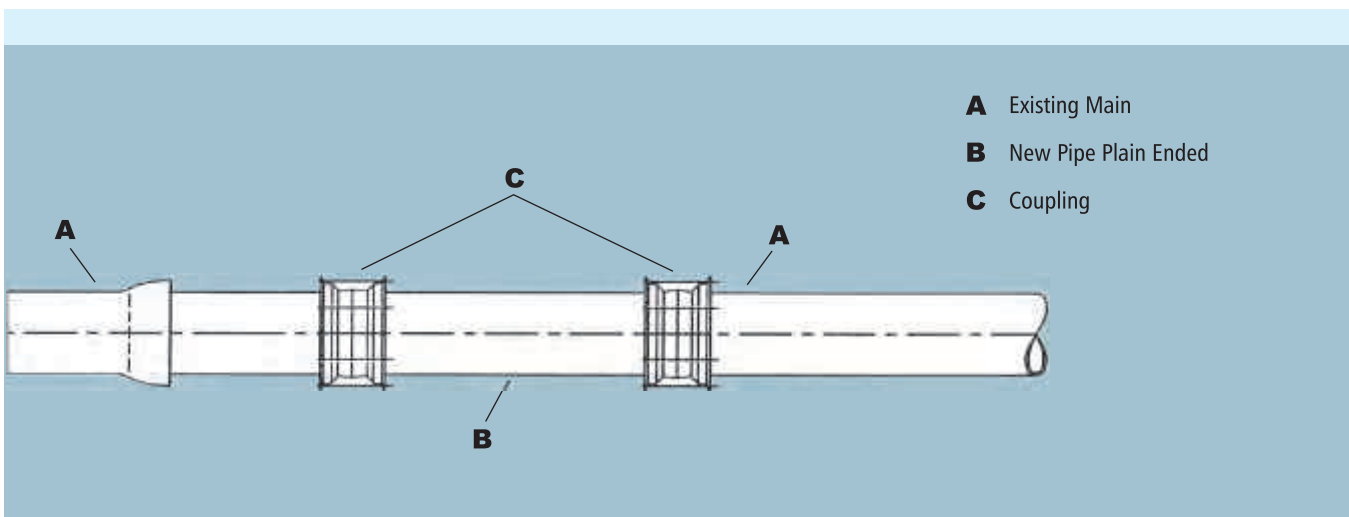
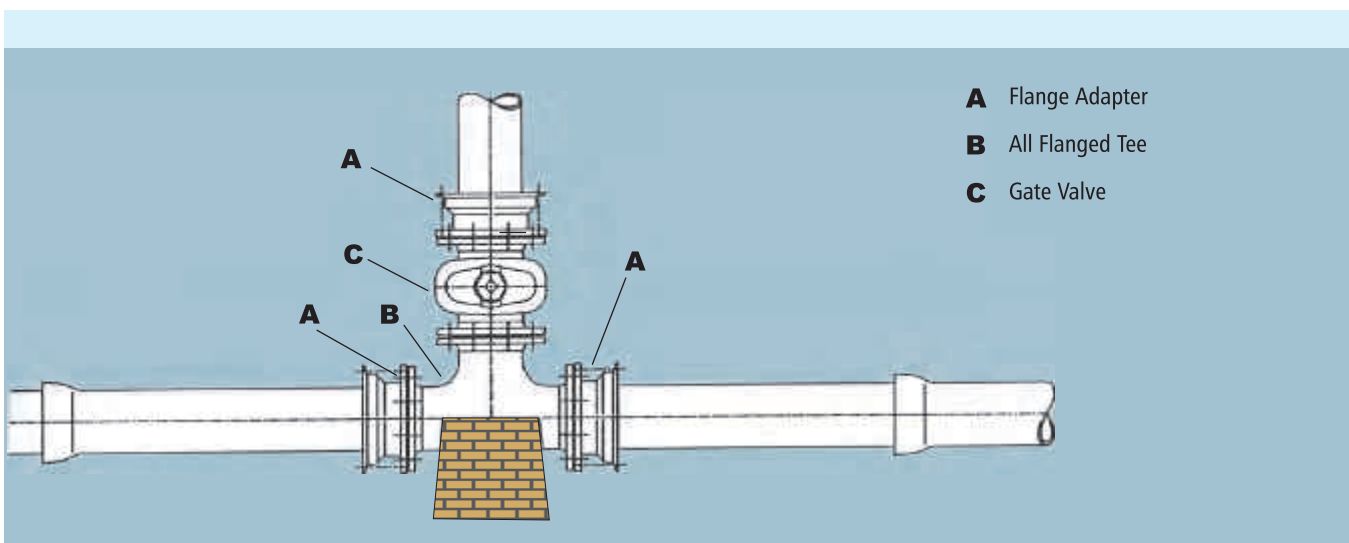
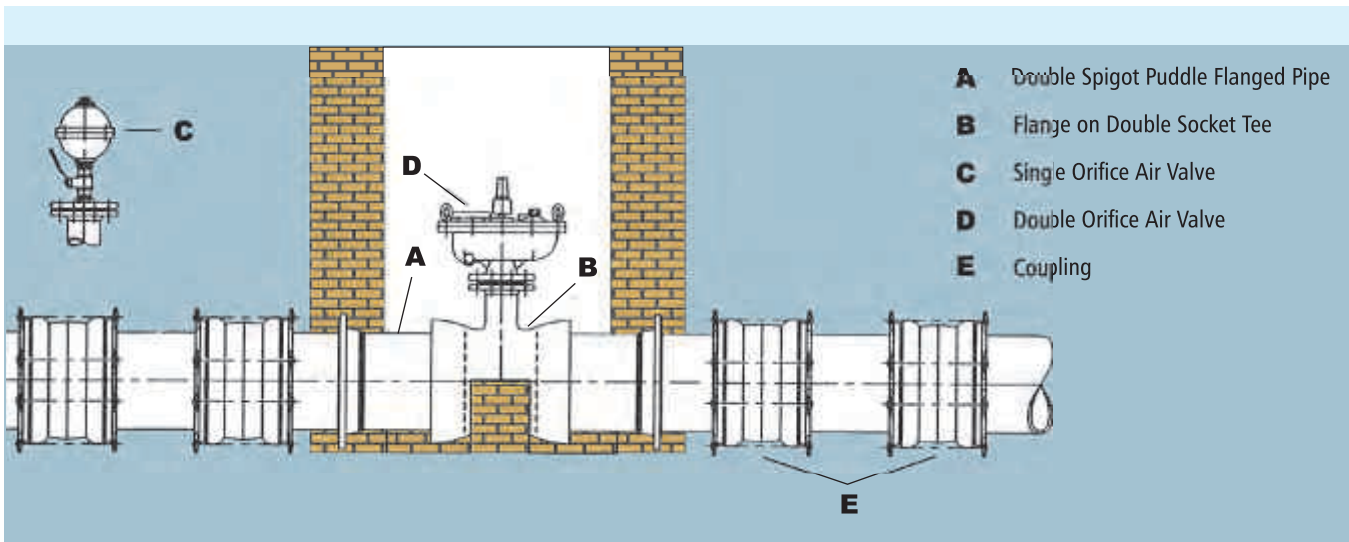
- A** Flange & Spigot Puddle Flange Pipe
- B** Double Flanged Rising Piece
- C** Double Spigot Pipe
- D** All Flanged Tee
- E** Couplings



- A** Flange on Spigot Level Invert Tee
- B** Socket Spigot Pipe
- C** Double Spigot Pipe
- D** Flange Adaptor
- E** Gate Valve

Design your pipeline

with KEJRIWAL

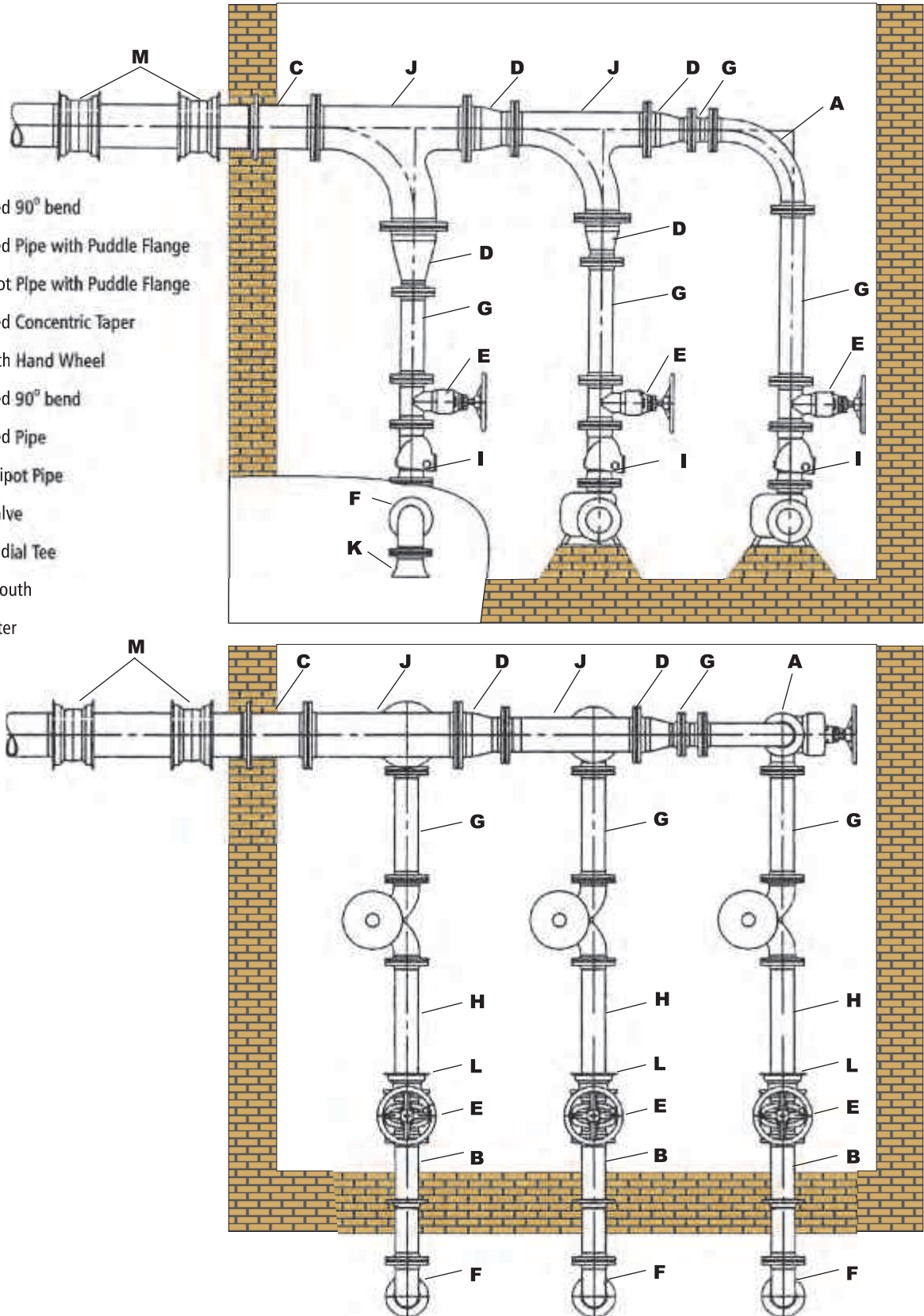




Design your pipeline

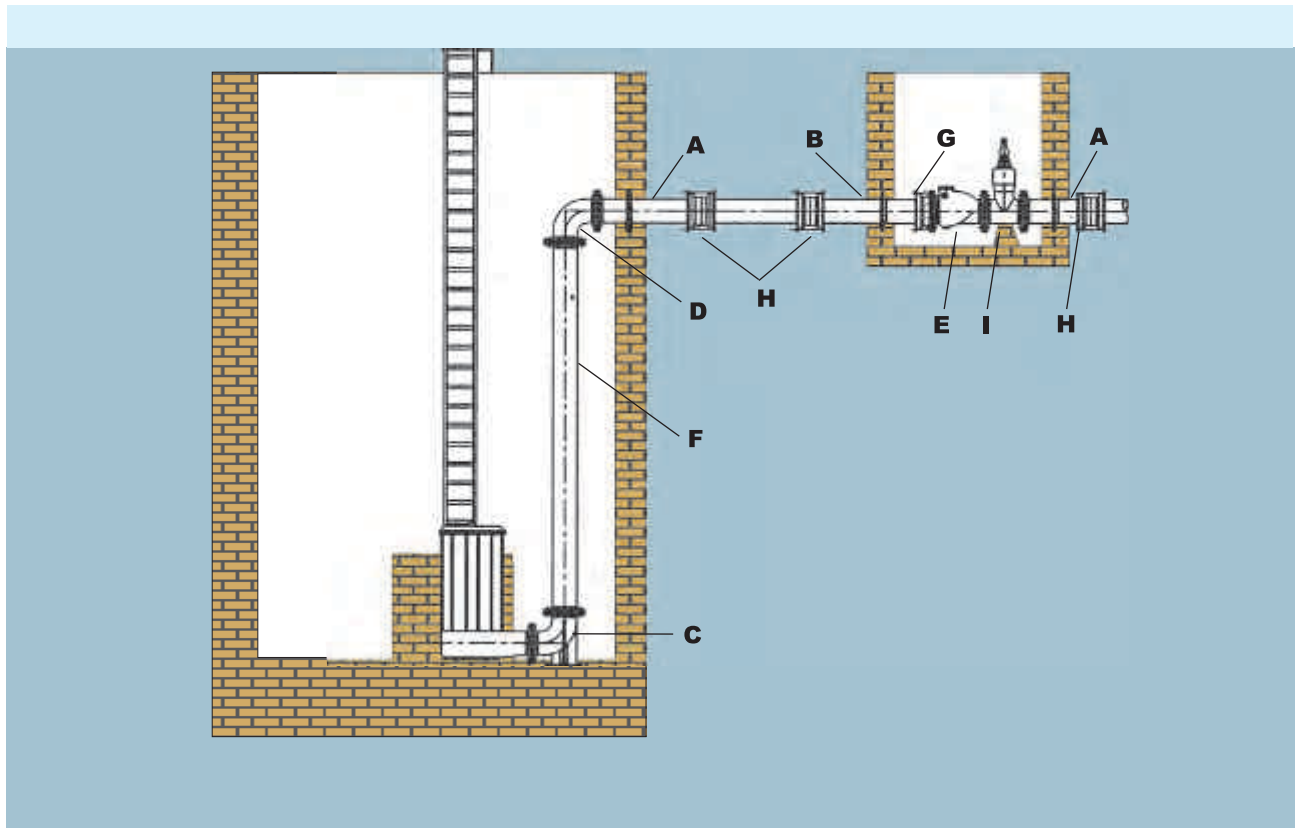
with KEJRIWAL

- A** Double Flanged 90° bend
- B** Double Flanged Pipe with Puddle Flange
- C** Flange & Spigot Pipe with Puddle Flange
- D** Double Flanged Concentric Taper
- E** Gate Valve with Hand Wheel
- F** Double Flanged 90° bend
- G** Double Flanged Pipe
- H** Flanged and Spigot Pipe
- I** Non Return Valve
- J** All Flanged Radial Tee
- K** Flanged Bellmouth
- L** Flanged Adapter
- M** Coupling



Design your pipeline

with KEJRIWAL

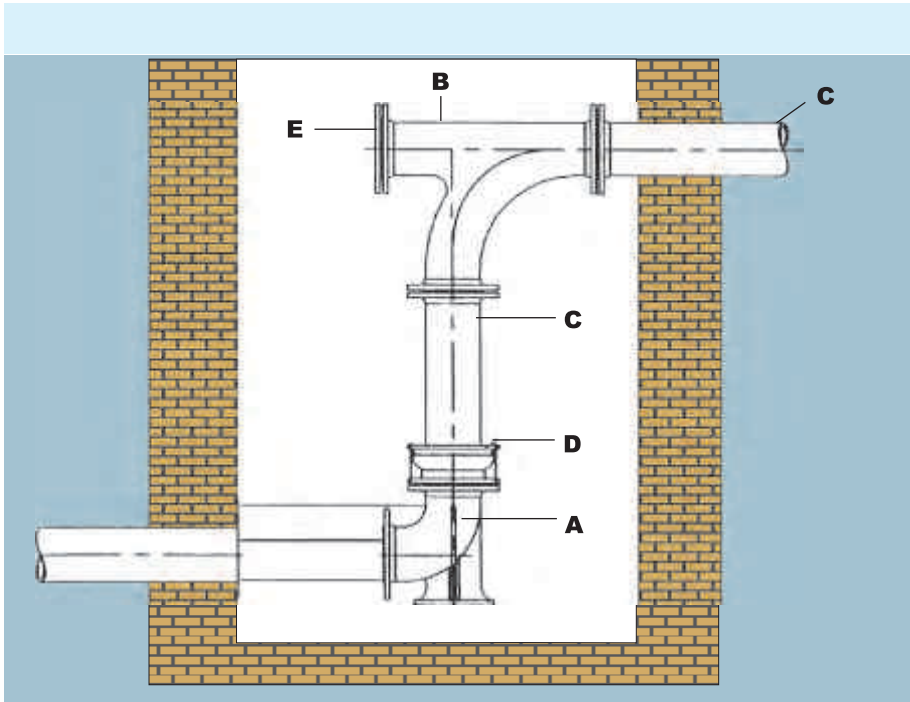


- A** Flange and Spigot Pipe with Puddle Flange
- B** Double Spigot Pipe with Puddle Flange
- C** Double Flanged 90° Duckfoot Bend
- D** Double Flanged 90° Bend
- E** Non-return Valve
- F** Double Flanged Pipe
- G** Flange Adapter
- H** Coupling
- I** Gate Valve

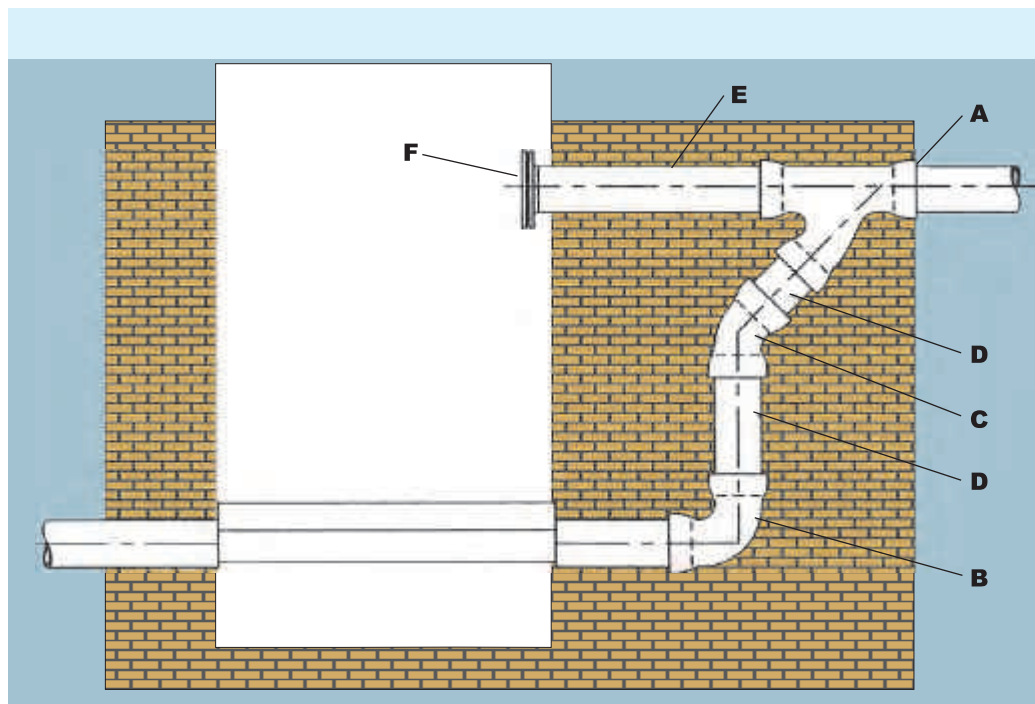


Design your pipeline

with KEJRIWAL



- A** Double Flanged 90° Duckfoot Bend
- B** All Flanged Radial Tee
- C** Flange & Spigot Pipe
- D** Flange Adapter
- E** Blank Flange



- A** All Socket 45° Angle Branch
- B** Double Socket 45° Bend
- C** Double Socket 90° Bend
- D** Double Spigot Pipe
- E** Flange & Spigot Pipe
- F** Blank Flange

www.kejriwalcastings.com



Kejriwal
CASTINGS LIMITED

TOTAL PIPELINE SOLUTIONS

Joints



Joints

Tyton socket & spigot joints



JOINTING PROCEDURE

Joint Preparation

Ensure the spigot is properly chamfered. If it is a cut pipe it is essential to remake the chamfer and ensure that there is a radius to prevent the spigot from displacing the gasket, see Fig. 1 and Table below. Before cutting ensure that the diameter is within tolerance at the cut position.

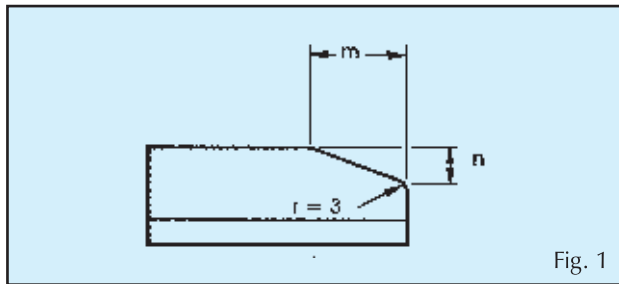


Fig. 1

TABLE - 1

Nominal size	m	n
DN	(mm)	(mm)
80	9 - 12	3 - 4
100	9 - 12	3 - 4
150	9 - 12	3 - 4
200	9 - 12	3 - 4
250	9 - 12	3 - 4
300	9 - 12	3 - 4
350	9 - 12	3 - 4
400	9 - 12	3 - 4
450	9 - 12	3 - 4
500	9 - 12	3 - 4
600	9 - 12	3 - 4
700	15 - 20	5 - 6
800	15 - 20	5 - 6
900	15 - 20	5 - 6
1000	15 - 20	5 - 6
1200	15 - 20	5 - 6
1400	20 - 25	7 - 9
1600	20 - 25	7 - 9
1800	20 - 25	8 - 10

Thoroughly clean the spigot and the interior of the socket.

Clean gasket and insert into socket with the square section gasket heel in the retaining groove and the gasket fish tail towards the back of the socket

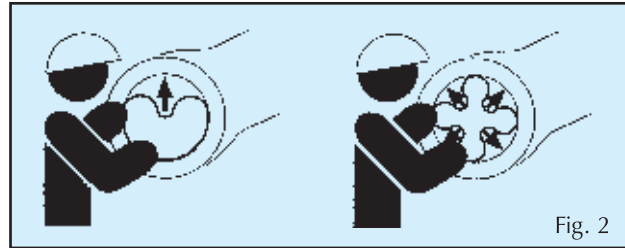


Fig. 2

The insertion of gaskets is facilitated by folding the gasket as shown in Fig. 2 by looping it into a heart shape with the gasket fish tail towards the back of the socket.

For DN 800 - DN 1800 it is preferable to loop the gasket into the shape of a cross for insertion, see Fig. 3.

Apply radial pressure to the gasket at the heart shaped loop (or cross loops) to force it into place.

Check that the gasket is located correctly around its entire circumference with the retaining heel firmly embedded in its seating.

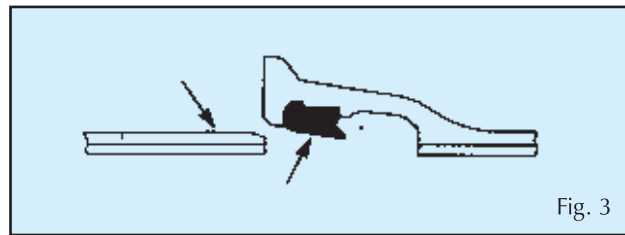


Fig. 3

Where fittings are supplied with pre-fitted gaskets, care should be taken to ensure socket and gasket are clean and free of debris.

Apply a thin film of lubricant to the inside surface of the gasket and to the outside surface of the spigot for a distance of about 50mm for pipe sizes up to and including DN 600 and 120mm for pipe sizes DN 700 and above.

Note : Please follow the Health and Safety guidance specified on the lubricant packaging.

Support the pipe or fitting just clear of the trench bottom and enter spigot into socket until contact is made.

Recommended spigot insertion depths are given in and are also marked on the page.

Complete the joint assembly as described in the following pages for appropriate method being used.



Spigot Insertion Depths

Push-fit joints have the capability of permitting both angular deflection and longitudinal movement within defined limits

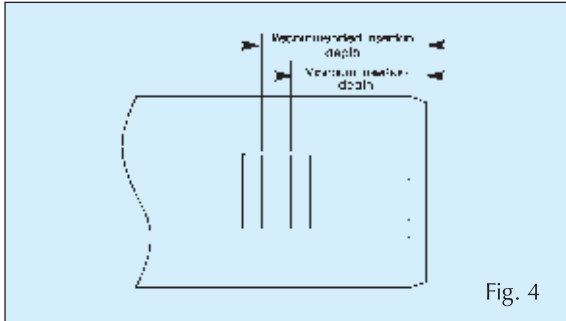


Fig. 4

Two white lines on the spigot indicate the minimum and recommended insertion depths.

On non-standard lengths or where the pipes are cut to length on site, a mark indicating the desired insertion depth should be made on the spigot end prior to jointing and the pipe entered into the socket by this amount. Should any laid pipe or fitting be subsequently disturbed this mark will also indicate if the joint has withdrawn to any serious degree.

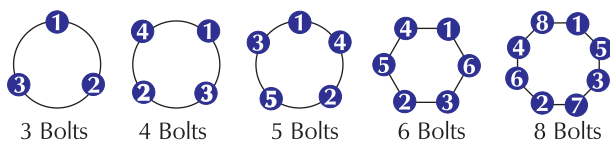
In the event that site requirements necessitate that a joint be deflected after jointing, the minimum insertion depth should also be marked on the spigot end to help ensure that the pipe is not withdrawn beyond its safe limit when this deflection is undertaken.

Note : Insertion of the spigot beyond the maximum recommended insertion depth may result in damage to cement mortar linings. Additionally, the allowable angular deflection will be reduced.

FLANGED JOINTS - Bolt Tightening Sequence

Bolt should be tightened in the correct sequence and a sufficient number of circuits undertaken to ensure that the specified bolt torques are achieved.

Bolt Tightening Sequence 3 to 8 Bolts



It is recommended that sufficient complete tightening circuits are carried out in sequence to ensure all bolts have attended the specified torque.

Joint Assembly

a) Crowbar DN80 and DN100

Push against the end of the pipe socket face with a crowbar or lever to complete the joint Fig. 5.

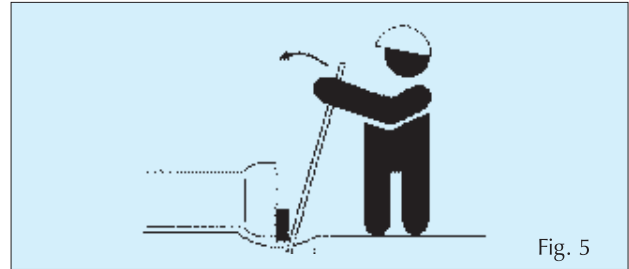


Fig. 5

b) Digger Bucket DN 80 to DN 1800

Where suitable equipment is available on site joints can be made using the trench digger. This method minimizes the time required to make a joint and is widely used.

Place a wooden batten between the pipe and digger bucket.

Push slowly and steadily until the joint is made to the correct insertion depth, Fig. 6.

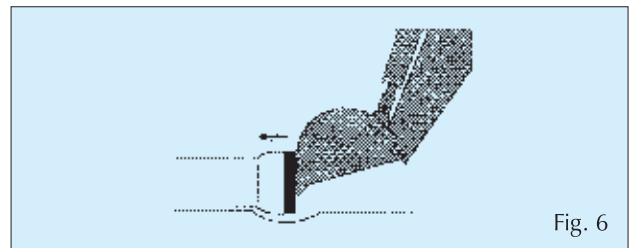
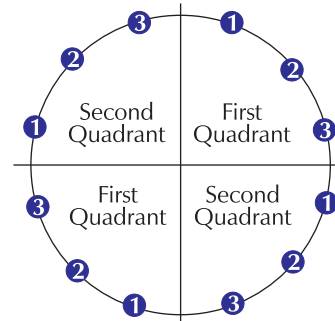


Fig. 6

c) Other methods

Rack and lever, Sidelink tackle, Tifors and Hydraulic tackle can also be used to joint Integral pipes.

For sizes having 12 or more it is recommended that two jointers work simultaneously on diametrically opposite bolts. Each jointer tightens the first nut in the first quadrant, then the first nut in the second quadrant, returns to the second nut in the first quadrant and so on.



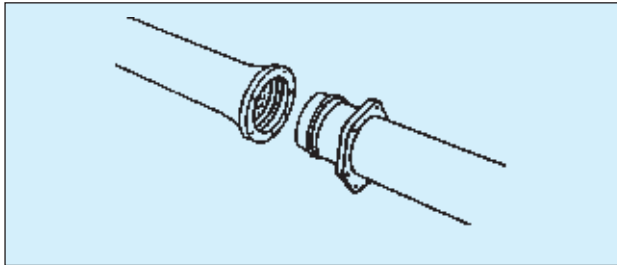


Joints

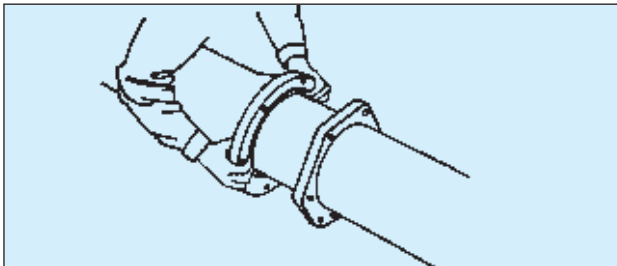
Mechanical Joint Assembly



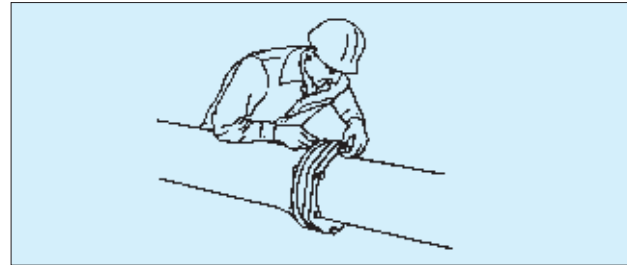
Clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and plain end with soapy water or an approved pipe lubricant, just prior to slipping the gasket on to the plain end for joint assembly. Place the gland on the plain end with the lip extension toward the plain end, followed by the gasket with the narrow edge of the gasket toward the plain end.



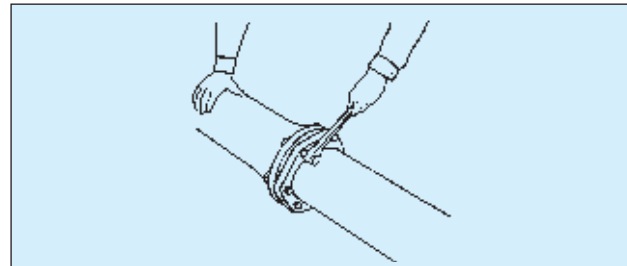
Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during the assembly



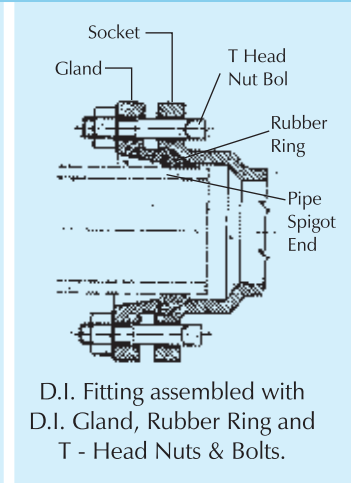
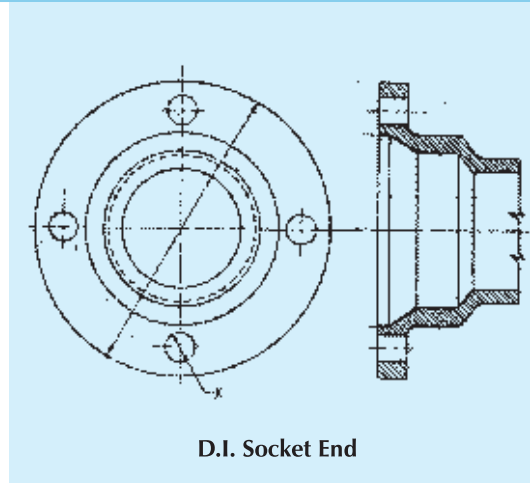
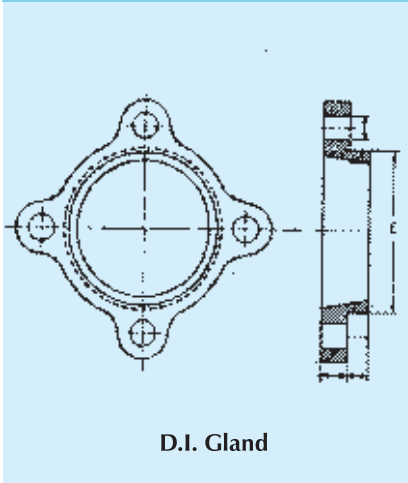
Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand tighten nuts. Make deflection after joint assembly but before tightening bolts.



Tighten the bolts to the normal range of bolt torque as indicated on page 9, while at all times maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This can be accomplished by partially tightening the bottom bolts first, then the top bolt, next the bolts at other side, finally the remaining bolts. The use of a torque - indicating wrench will facilitate this procedure. Repeat the process until all bolts are with in the appropriate range of torque.



Details of Mechanical Joint - Socket Fitment



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TOTAL PIPELINE SOLUTIONS

Pipes



Pipes

Centrifugally Cast Ductile Iron Spun Pressure Pipes

CLASSIFICATION

Pipes have been classified in this standard as K7, K8, K9 and K10 according to their thickness. K7 pipes have minimum wall thickness where K10 has maximum. The Ductile Iron Spun Pipes having screwed on flanges are sealed at the threaded Joints between the pipes and the flange by a suitable sealing compound. The flanges are never removed after screwing on the barrels of the pipes.

TOLERANCE ON LENGTH

- a. Socket & Spigot and Plain end Pipes = ± 100 mm
- b. Flanged Pipes = ± 10 mm

COATINGS

- (1) Pipes are normally externally coated with Black Bituminous paint after zinc primer.
- (2) Suitable cement mortar lining is normally done internally.

S/S Pipes = Socket/Spigot Pipes
 D/F Pipes = Double Flanged Pipes

TABLE - 2 Minimum Class for Ductile Iron Flanged Pipes

Nominal Bore	Screwed on Flange minimum			
	PN-10	PN-16	PN-25	PN-40
80-450	K-9	K-9	K-9	K-9
500-600	K-10	K-10	K-10	K-10
700-1000	K-10	K-10	K-10	x

TABLE - 3 Hydrostatic Works Test Pressures (kgf/cm²)

Nominal Bore	S/S Pipes			D/F Pipes			
				Welded / Screwed Flanged			
	K-7	K-8	K-9, K-10	PN-10	PN-16	PN-25	PN-40
80 - 300	32	40	50	16	25	32	40
350 - 600	25	32	40	16	25	32	40
700 -1000	18	25	32	16	25	32	x

Pipes

Dimensions of
Socket and Spigot Pipes, Classes K7, K8, K9 and K10

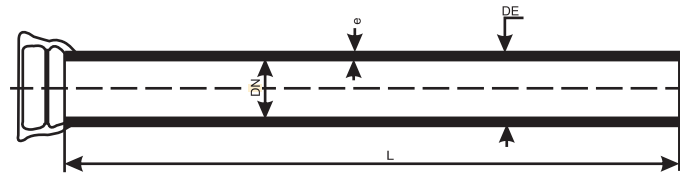


TABLE - 4

Nominal Diameter DN	External Diameter DE	Socket Mass	Barrel Wall Thickness 'e'				Approx Mass Per mtr. including socket				Approx Mass Per Pc. 5.5 mtr. including socket			
			K7	K8	K9	K10	Tar Coated		Cement Lined		Tar Coated		Cement Lined	
80	98	3.4	5	6	6	6	10.91	12.84	12.61	14.54	60	71	69	80
100	118	4.3	5	6	6	6.1	13.29	15.66	15.39	17.76	73	86	85	98
125	144	6.0	5	6	6	6.3	16.43	20.00	20.50	24.27	90	110	113	133
150	170	7.1	5	6	6	6.5	19.55	23.07	22.75	26.27	108	127	125	144
200	222	10.3	5	6	6.3	7	25.89	31.95	30.09	36.15	142	176	165	199
250	274	14.2	5.3	6	6.8	7.5	34.11	42.80	39.31	48.00	188	235	216	264
300	326	18.6	5.6	6.4	7.2	8	43.10	54.19	49.40	60.49	237	298	272	333
350	378	23.8	6	6.8	7.7	8.5	53.72	67.43	66.02	79.73	295	371	363	439
400	429	29.3	6.3	7.2	8.1	9	64.28	80.80	78.28	94.80	354	444	431	521
450	480	36.0	6.6	7.6	8.6	9.5	75.71	95.27	91.41	110.97	416	524	503	610
500	532	42.8	7	8	9	10	89.14	111.98	106.64	129.48	490	616	587	712
600	635	59.3	7.7	8.8	9.9	11	117.71	147.78	138.61	168.63	647	813	762	927
700	738	79.1	8.4	9.6	10.8	12	159.62	188.24	188.92	217.54	878	1035	1039	1196
750	790	90.0	8.7	10	11.3	12.5	184.06	211.30	215.36	242.60	1012	1162	1184	1334
800	842	103	9.1	10.4	11.7	13	210.11	233.70	243.51	267.10	1156	1285	1339	1469
900	945	130	9.8	11.2	12.6	14	255.14	283.69	292.74	321.29	1403	1560	1610	1767
1000	1048	162	10.5	12	13.5	15	304.53	338.49	346.23	380.19	1675	1862	1904	2091
1100	1152	200	11.2	12.8	14.4	16	--	405.00	--	458.0	--	2228	--	2519
1200	1255	238	11.9	13.9	15.3	17	--	460.00	--	520.0	--	2530	--	2860
1400	1462	280	--	--	17.1	--	--	600.00	--	675.0	--	3300	--	3713
1600	1668	380	--	--	18.9	--	--	760.00	--	850.0	--	4180	--	4675
1800	1875	490	--	--	20.7	--	--	930.00	--	1040.0	--	5115	--	5720
2000	2082	626	--	--	22.5	--	--	1120.00	--	1250.0	--	6160	--	6875
2200	2288	784	--	--	24.3	--	--	1350.00	--	1500.0	--	7425	--	8250
2400	2458	966	--	--	26.1	--	--	1610.00	--	1780.0	--	8855	--	9790
2600	2684	1174	--	--	27.9	--	--	1900.00	--	2100.0	--	10450	--	11550

NOTE : No K7 Pipes from 1100 mm Dia onwards is specified.



Pipes

Dimensions of Centrifugally Cast Ductile Iron Pipes with Screwed / Welded Flanges

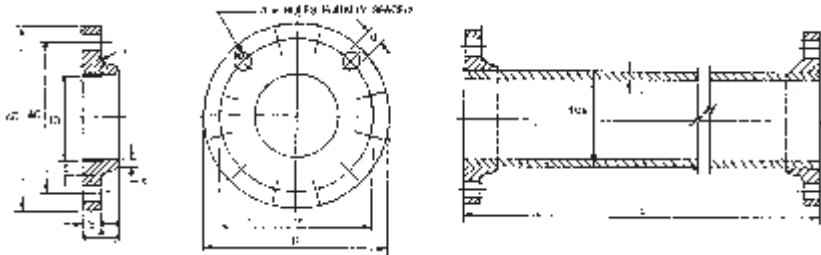


TABLE - 5

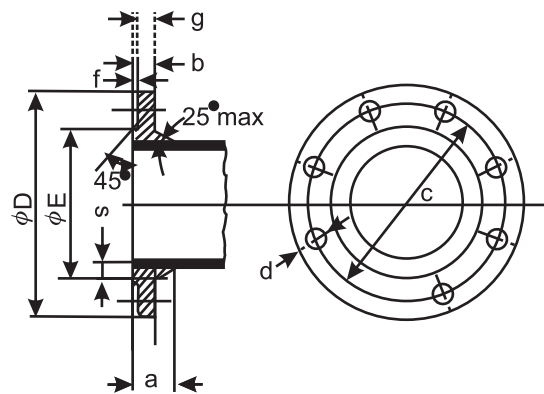
Nominal Diameter	Outside Diameter	Wall Thickness	App. Mass of One Flange		App. Mass of Barrel/mtr.	Approx Mass of One working Length "L" including two flanges					
						PN - 10			PN - 16		
DN	DE	e	PN-10	PN-16	Non-CML	2.75M	5.0M	5.4M	2.75M	5.0M	5.4M
80	98	6.0	3.5	3.5	12.84	42	71	78	42	71	78
100	118	6.0	3.8	3.8	15.66	51	86	94	51	86	94
125	144	6.0	4.7	4.7	20.00	64	109	119	64	109	119
150	170	6.0	5.8	5.8	23.07	75	127	138	75	127	138
200	222	6.3	8.0	8.0	31.95	104	176	191	104	176	191
250	274	6.8	11.0	12.0	42.80	140	236	256	142	238	258
300	326	7.2	15.0	16.0	54.19	179	301	327	181	303	329
350	378	7.7	18.0	23.0	67.43	221	373	406	231	383	416
400	429	8.1	19.0	26.0	80.80	260	442	480	274	456	494
450	480	8.6	22.0	34.0	95.27	306	520	566	330	544	590
500	532	9.0	28.0	46.0	111.98	364	616	670	400	652	706
600	635	9.9	43.0	73.0	147.78	496	829	900	552	885	956
700	738	10.8	62.0	83.0	188.24	642	1065	1155	684	1107	1196
750	790	11.3	74.0	96.0	211.30	729	1205	1306	773	1249	1350
800	842	11.7	82.0	108.0	233.70	807	1333	1445	859	1385	1495
900	945	12.6	92.0	125.0	283.69	964	1602	1740	1030	1668	1805
1000	1048	13.5	126.0	178.0	338.49	1183	1944	2108	1287	2048	2215
1100	1152	14.4	158.0	210.0	367.80	1327	2155	2332	1431	2259	2435
1200	1255	15.3	190.0	270.0	425.80	1551	2509	2715	1711	2669	2875

NOTE :

1. The method of screwing and the exact form of thread are as per our own discretion as the flanges are never removed after screwing on to the barrel of the pipes.
2. If so required the flanges may be spot welded on the back side after screwing.
3. Alternatively the flanges may be completely welded on to the barrel pipes.
4. Pipes = K 9
5. ONLY WELDABLE FLANGES MAY ALSO BE SUPPLIED TO BE WELDED ON TO THE PIPES AS PER SITE REQUIREMENTS
6. PUDDLE flanges (for wall casting) may be welded on pipes as per Customer's requirements.

Pipes

Dimensions of
Standard Flange Drilling for Screwed Flanges and Welded Flange (PN 10)



PN-10

TABLE - 6

Nominal Diameter	Dimensions								Holes		Bolt Size Metric	Bolt length mm
	DN	D	E	C	b	f	g	a	S	Number		
80	200	132	160	19	3	16	32	15	4	19	M16	80
100	220	156	180	19	3	16	32	15	8	19	M16	70
125	250	184	210	19	3	16	32	15	8	19	M16	80
150	285	211	240	19	3	16	32	15	8	23	M20	80
200	340	266	295	20	3	17	34	15	8	23	M20	80
250	395	319	350	22	3	19	48	16	12	23	M20	90
300	445	370	400	24.5	4	20.5	52	17.5	12	23	M20	90
350	505	429	460	24.5	4	20.5	52	19.5	16	23	M20	100
400	565	480	515	24.5	4	20.5	60	19.5	16	28	M24	100
450	615	530	565	25.5	4	21.5	63	20	20	28	M24	100
500	670	582	620	26.5	4	22.5	68	21	20	28	M24	110
600	780	682	725	30	5	25	75	24	20	31	M27	120
700	895	794	840	32.5	5	27.5	82	24	24	31	M27	120
750	960	857	900	34	5	29	87	24	24	31	M27	130
800	1015	901	950	35	5	30	90	24.5	24	34	M30	130
900	1115	1001	1050	37.5	5	32.5	98	26.5	28	34	M30	150
1000	1230	1112	1160	40	5	35	105	28	28	37	M33	150
1100	1340	1231	1270	43	5	38	114	30	32	37	M33	160
1200	1455	1328	1380	45	5	40	120	31.5	32	40	M36	180

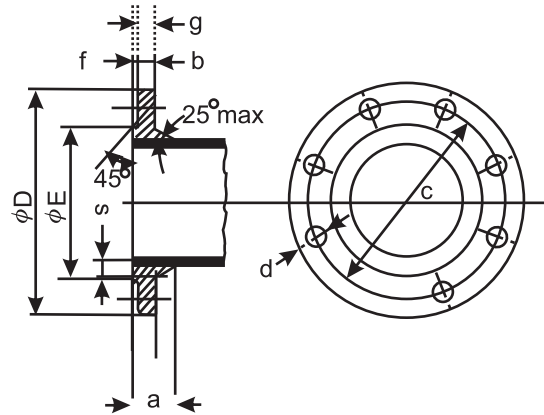
NOTE :

1. The method of screwing and the exact form of thread shall be left to the discretion of the manufacturer as the flanges are never removed after screwing on the barrels of the pipes.
2. If so required the screwed flanges may be spot welded on the back side after screwing.
3. Dimensions 'a' and 'S' are for guidance only.
4. Unless otherwise specified, flanges shall be of ductile iron.



Pipes

Dimensions of
Standard Flange Drilling for Screwed Flanges and Welded Flange (PN 16)



PN-16

TABLE - 7

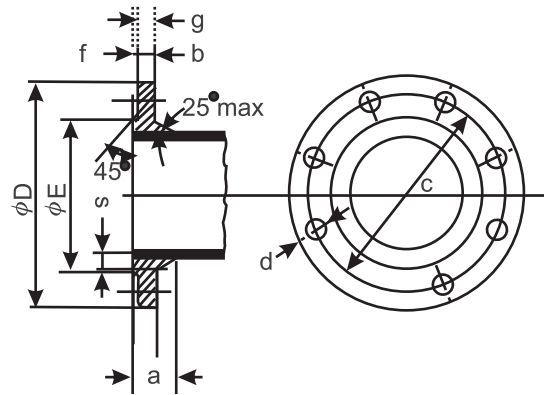
Nominal Diameter	Dimensions								Holes		Bolt Size Metric	Bolt Length mm
	DN	D	E	C	b	f	g	a	S	Number		
80	200	132	160	19	3	16	32	15	8	19	M16	80
100	220	156	180	19	3	16	32	15	8	19	M16	80
125	250	184	210	19	3	16	32	15	8	19	M16	80
150	285	211	240	19	3	16	32	15	8	23	M20	80
200	340	266	295	20	3	17	34	16	12	23	M20	80
250	400	319	355	22	3	19	48	17.5	12	28	M24	90
300	455	370	410	24.5	4	20.5	52	19.5	12	28	M24	100
350	520	429	470	26.5	4	22.5	68	21	16	28	M24	100
400	580	480	525	28	4	24	72	22.5	16	31	M27	110
450	640	548	585	30	4	26	78	24	20	31	M27	110
500	715	609	650	31.5	4	27.5	82	25	20	34	M30	120
600	840	720	770	36	5	31	93	27.5	20	37	M33	130
700	910	794	840	39.5	5	34.5	103	27.5	24	37	M33	140
750	970	857	900	41	5	36	108	28	24	37	M33	140
800	1025	901	950	43	5	38	114	30	24	40	M36	150
900	1125	1001	1050	46	5	41	124	32.5	28	40	M36	160
1000	1255	1112	1170	50	5	45	135	35	28	43	M39	170
1100	1355	1218	1270	53.5	5	48.5	144	37.5	32	43	M39	180
1200	1485	1328	1390	57	5	52	156	40	32	49	M45	200

NOTE :

1. The method of screwing and the exact form of thread shall be left to the discretion of the manufacturer as the flanges are never removed after screwing on the barrels of the pipes.
2. If so required the screwed flanges may be spot welded on the back side after screwing.
3. Dimensions 'a' and 'S' are for guidance only.
4. Unless otherwise specified, flanges shall be of ductile iron.

Pipes

Dimensions of
Standard Flange Drilling for Screwed Flanges and Welded Flanges (PN 25)



PN-25

TABLE - 8

Nominal Diameter	Dimensions								Holes		Bolt Size Metric	Bolt Length mm
	DN	D	E	C	b	f	g	a	S	Number		
80	200	132	160	19	3	16	32	15	8	19	M16	80
100	235	156	190	19	3	16	33	15	8	23	M20	80
125	270	184	220	19	3	16	37	15	8	28	M24	80
150	300	211	250	20	3	17	40	16	8	28	M24	90
200	360	274	310	22	3	19	44	17.5	12	28	M24	90
250	425	330	370	24.5	3	21.5	49	19.5	12	31	M27	100
300	485	389	430	27.5	4	23.5	56	22	16	31	M27	100
350	555	448	490	30	4	26	57	24	16	34	M30	110
400	620	503	550	32	4	28	64	25.5	16	37	M33	120
450	670	548	600	34.5	4	30.5	69	27.5	20	37	M33	130
500	730	609	660	36.5	4	32.5	73	29	20	37	M33	130
600	845	720	770	42	5	37	83	33.5	20	40	M36	150
700	960	820	875	46.5	5	41.5	84	33.5	24	43	M39	150
750	1020	883	940	50	5	45	100	34	24	43	M39	170
800	1085	928	990	51	5	46	102	35.5	24	49	M45	180
900	1185	1028	1090	55.5	5	50.5	112	39	28	49	M45	190
1000	1320	1140	1210	60	5	55	118	42	28	56	M52	210
1100	1420	1240	1310	65.5	5	60.5	120	45	32	56	M52	210
1200	1530	1350	1420	69	5	64	138	48.5	32	56	M52	220

NOTE :

1. The method of screwing and the exact form of thread shall be left to the discretion of the manufacturer as the flanges are never removed after screwing on the barrels of the pipes.
2. If so required the screwed flanges may be spot welded on the back side after screwing.
3. Dimensions 'a' and 'S' are for guidance only.
4. Unless otherwise specified, flanges shall be of ductile iron.

T

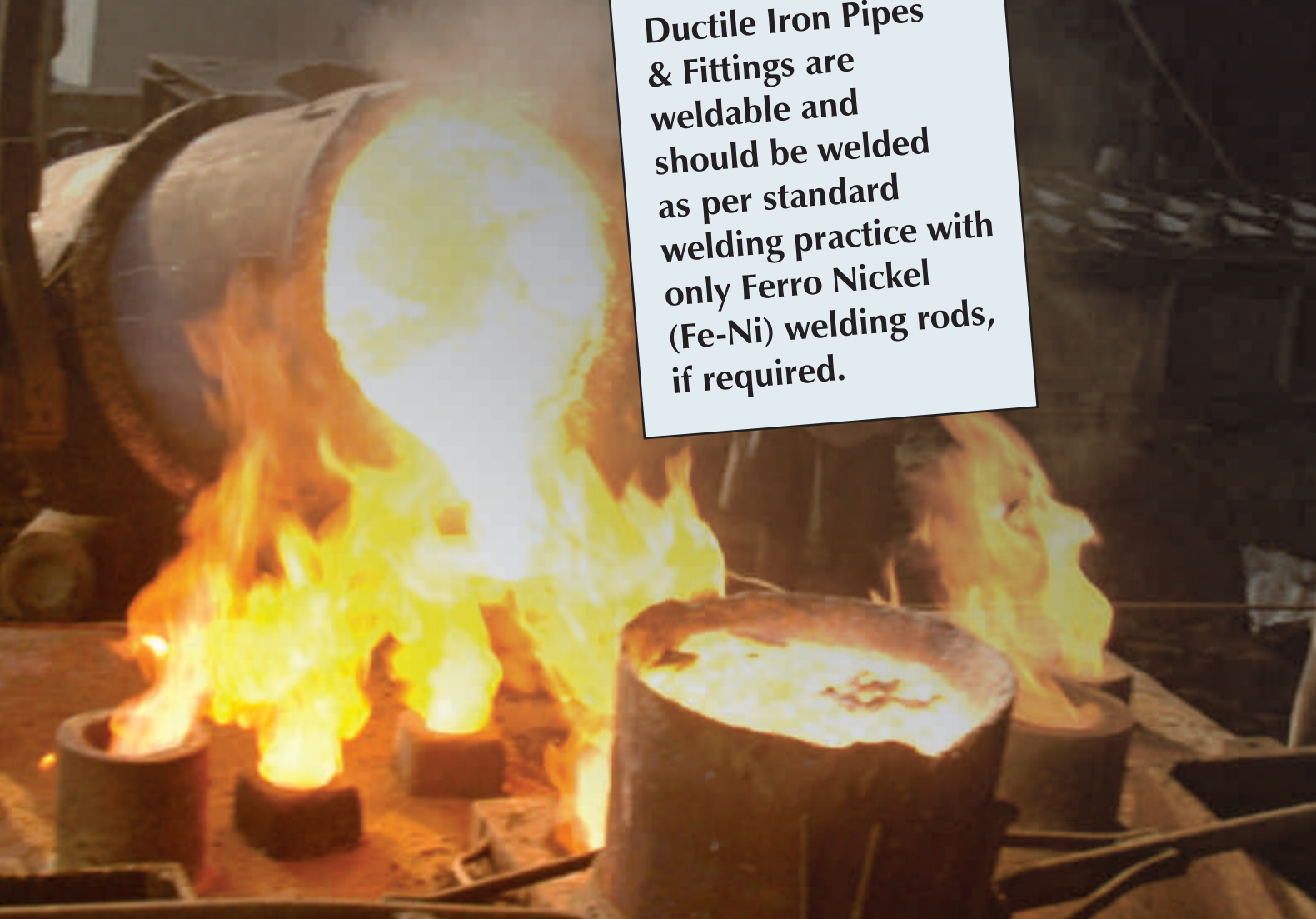
It is recommended that the Tyton Rubber Rings to be used with fittings, of **"T" Type** should be purchased from the manufacturer of fittings for best results.

We supply Tyton Rubber Rings in Natural Rubber (NR), Styrene Butadine Rubber (SBR) and Ethylene Propylene Daimene Modified Rubber (EPDM), sourcing it from our approved vendors under our strict Quality Control Supervision.

However for water works purposes SBR Rubber Rings are highly recommended considering compression, micro bio-degradation, resistance to heat, water and ageing.

K

Fittings of **"K" Type** are suitable for Mechanical Jointing and are supplied as complete set with Nut, Bolts & Rubber Rings. Natural Rubber Rings (NR), are generally supplied. Upon specific requirement SBR & EPDM Rubber Rings may also be supplied.



Ductile Iron Pipes & Fittings are weldable and should be welded as per standard welding practice with only Ferro Nickel (Fe-Ni) welding rods, if required.

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CASTINGS LIMITED

TOTAL PIPELINE SOLUTIONS

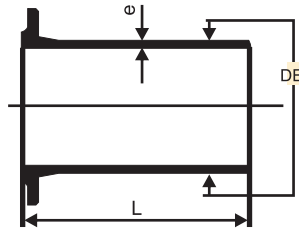
Fittings



Fittings

'KEJRIWAL' Flanged and Socketted Ductile Iron Fittings for Pressure Pipes

Ductile Iron pressure pipe fittings are suitable for use with Ductile Iron pressure pipes having Socket or Flanged ends.



- As per BS-EN-545 / ISO-2531, Tees are K-14 only.
- $e = K(0.5 + 0.001 \text{ DN})$

TABLE - 9

Dimensions of Fittings for Push-on-Joint and Mechanical Joint

Nominal Diameter DN	External Diameter DE		Wall Thickness, e mm		
	Nominal	Tolerance	K12	K14	Tolerance
(1)	(2)	(3)	(4)	(5)	(6)
80	98	+1/-2.7	7.0	8.1	-2.38
100	118	+1/-2.8	7.2	8.4	-2.40
125	144	+1/-2.8	7.5	8.7	-2.42
150	170	+1/-2.9	7.8	9.1	-2.45
200	222	+1/-3.0	8.4	9.5	-2.50
250	274	+1/-3.1	9.0	10.5	-2.55
300	326	+1/-3.3	9.6	11.2	-2.60
350	378	+1/-3.4	10.2	11.9	-2.65
400	429	+1/-3.5	10.8	12.6	-2.70
450	480	+1/-3.6	11.4	13.3	-2.75
500	532	+1/-3.8	12.0	14.0	-2.80
600	635	+1/-4.0	13.2	15.4	-2.90
700	738	+1/-4.3	14.4	16.8	-3.0
750	790	+1/-4.4	15.0	17.5	-3.05
800	842	+1/-4.5	15.6	18.2	-3.10
900	945	+1/-4.8	16.8	19.6	-3.20
1000	1048	+1/-5.0	18.0	21.0	-3.30
1100	1152	+1/-5.4	19.2	21.4	-3.40
1200	1255	+1/-5.8	20.4	23.8	-3.50
1400	1462	+1/-6.6	22.8	26.6	-3.70
1500	1565	+1/-7.0	24.0	28.0	-3.80
1600	1668	+1/-7.4	25.2	29.0	-3.90
1800	1875	+1/-8.2	27.6	32.2	-4.10
2000	2082	+1/-9.0	30.0	35.0	-4.30
2200	2288	+1/-9.3	32.4	37.8	-4.50

All fittings are of **K-12** Class except Tees which are available in both **K-12 & K-14** Class

A. Zinc Coating :

Zinc Rich Paint or metallic zinc wire for metallising / spraying should have at least 99% zinc by mass & min. 85% zinc in dry film.

Zinc metalising = Average min. mass 130 gm/m² (local min. 110 gm/m²)

Zinc Rich Paint = Average min. mass 150 gm/m² (local min. 130 gm/m²)

Conversion

gm / m ²	Microns (Approx.)
110	15.4
130	18.2
150	21.0

B. Bitumin Coating :

Local thickness min. 50 μm & mean thickness 70 μm & to withstand 0°C to 65°C temperature.

C. Cement Mortar Lining (CML) :

Cement to Sand Ratio should be min. **1 : 3.5**

Size	CML Thickness (mm)	Tolerance
80 to 300	4 mm	-1.5
350 to 600	5 mm	-2.0
700 to 1200	6 mm	-2.5
1400 to 2000	9 mm	-3.0

D. Seal Coat :

A seal coat of Bitumen or any other epoxy paint may be given on CML to minimize lime leaching if required specifically.

Fittings

Dimensions, Tolerances and Pressures



TABLE - 10 Mechanical properties of Fittings (IS-1865)

Nominal Diameter (mm)	Type of Castings	Tensile Strength (mm) (Mpa)	Elongation at break (%)	Hardness (HBS) max.
All Size	Fittings	420	5 (min)	250

TABLE - 11 Hydrostatic Test pressure for Fittings

Nominal Diameter DN (mm)	Work Test Pressure Kg/cm ²
80 to 300	25
350 to 600	16
700 to 2200	10

The fittings are kept under pressure for 10 secs which it should withstand without showing any leakage and sweating.

TABLE - 12

Tolerances on the Flange External Diameter D and Raise face E

DN	80	100	125	150	200	250	300	350	400	450	500	600	
Tolerance on D	+ 4.5			+5.5-2.5				+6.5-3.5					
Tolerance on E	± 4.0			± 4.5				± 5.0					
DN	700	750	800	1000	1100	1200	1400	1600	1800	2000			
Tolerance on D	+7.5 - 4				+8.5 - 4		+10 - 5		+12 - 6				
Tolerance on E	+5.5				+ 5.5		+6.0		+ 6.0				

Tolerances on Thickness of Flange

Type of Flange	Tolerance
Integrally Cast flanges	± (3+0.05b)
Welded and screwed on flanged	± (2+0.05b)

The tolerance on the wall thickness of fittings

Type of Casting	Wall Thickness (mm)	Tolerance (mm)
Fittings	ii) upto 7	-2.3
	ii) Greater than 7	-(2.3+0.001 DN)

Deviation on Lengths of Fittings

Type of Fittings	Nominal Diameter DN (mm)	Deviation in L and H (mm)
Flanged sockets	80 to 1200 1400 to 2000	± 25 ± 35
Flanged spigots		
Collars, Tapers		
Tees	80 to 1200 1400 to 2000	+ 50/ - 25 + 75/ - 35
Bends 90° (1/4)	80 to 2000	± (15 + 0.030 DN)
Bends 45° (1/8)	80 to 2000	± (10 + 0.025 DN)
Bends 22°30' and 11°15' (1/16 & 1/32)	80 to 1200 1400 to 2000	± (10 + 0.020 DN) ± (10 + 0.025 DN)

Tolerances on Raised Face Height (f)

Height of Raised	Tolerance
3	+1.5-2.0
4	+2.0-3.0
5	+2.5-4.0

(minimum 1 mm required)

Tolerances on Flange Drilling Dimension Bolt Hole Diameter

	Dia 19 to Dia 28	Dia 31 to Dia 56	Above Dia 62
Bolt hole diameter, d	+2 - 0	+3 - 0	+ 4 - 0
Pitch circle diameter, C			
Centre-to-centre of Adjacent bolt holes	± 2	± 2.8	± 4.8

COATING

Fittings and accessories are normally internally and externally coated. Normally Bituminous paint is applied. However following coating may also be done under agreement.

External Coating

1. Zinc rich paint/Zinc metallisation
2. Bituminous Paint
3. Epoxy Liquid Coating
4. Fusion Bonded Epoxy Powder coating (F.B.E.)
5. Poly Urethane Coating
6. Rilsan Coating

Internal Linings

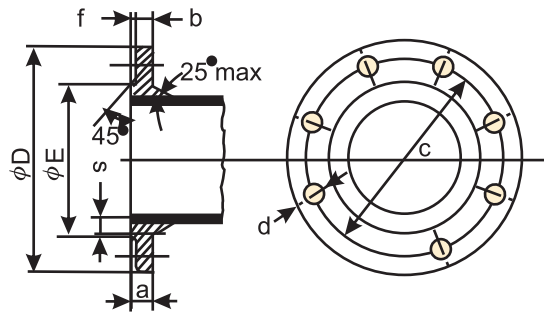
The following lining may be applied depending on the internal conditions of use :

- (1) Portland cement mortar
- (2) Blast furnace slag cement mortar
- (3) High alumina (HAC) cement mortar
- (4) Sulphite Resistant Cement Mortar (SRC)
- (5) Bituminous paint
- (6) Poly Urethane Coating



Fittings

'KEJRIWAL' Standard Flange Drilling for Flange Fittings (PN 10)



PN-10

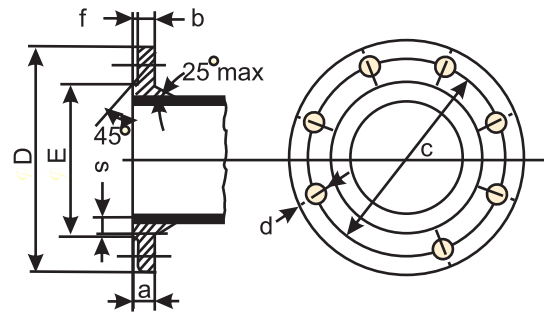
TABLE - 13

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange/ Mass
								Nos.	Dia			
DN	D	E	C	b	f	a	S					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	4	19	M16	80	3
100	220	156	180	16	3	19	15	8	19	M16	80	3.3
125	250	184	210	16	3	19	15	8	19	M16	80	4
150	285	211	240	16	3	19	15	8	23	M20	80	5.1
200	340	266	295	17	3	20	15	8	23	M20	80	7.1
250	395	319	350	19	3	22	16	12	23	M20	90	10
300	445	370	400	20.5	4	24.5	17.5	12	23	M20	90	13
350	505	429	460	20.5	4	24.5	19.5	16	23	M20	90	14.7
400	565	480	515	20.5	4	24.5	19.5	16	28	M24	100	17.7
450	615	530	565	21	4	25.5	20	20	28	M24	100	20.2
500	670	582	620	22.5	4	26.5	21	20	28	M24	100	24.3
600	780	682	725	25	5	30	24	20	31	M27	110	34
700	895	794	840	27.5	5	32.5	24	24	31	M27	120	46
750	960	857	900	29	5	34	24	24	31	M27	120	55
800	1015	901	950	30	5	35	24.5	24	34	M30	130	62
900	1115	1001	1050	32.5	5	37.5	26.5	28	34	M30	130	73
1000	1230	1112	1160	35	5	40	28	28	37	M33	150	93
1100	1340	1231	1270	38	5	43	30	32	37	M33	150	113
1200	1455	1328	1380	40	5	45	31.5	32	40	M36	160	138
1400	1675	1530	1590	41	5	46	32	36	43	M39	180	175
1500	1785	1640	1700	42.5	5	46	32	36	43	M39	180	202
1600	1915	1750	1820	44	5	49	34.5	40	49	M45	190	242
1800	2115	1950	2020	47	5	52	36.5	44	49	M45	200	282
2000	2325	2150	2230	50	5	55	--	48	49	M45	200	337
2200	2550	2370	2440	53	6	59	--	52	56	M52	220	426

NOTE : Dimension 'S' is for guidance only.

Fittings

'KEJRIWAL' Standard Flange Drilling for Flange Fittings (PN 16)



PN-16

TABLE - 14

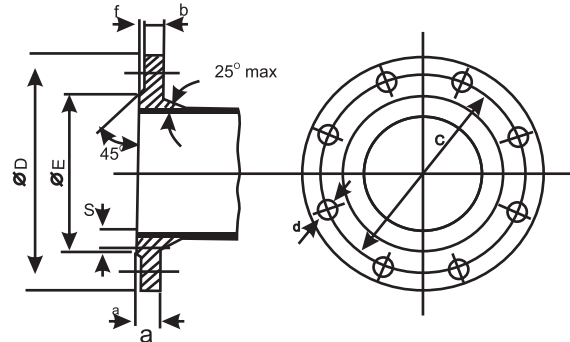
Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange / Mass
								Nos.	Dia			
DN	D	E	C	b	f	a	S					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	8	19	M16	80	3.0
100	220	156	180	16	3	19	15	8	19	M16	80	3.3
125	250	184	210	16	3	19	15	8	19	M16	80	4
150	285	211	240	16	3	19	15	8	23	M20	80	5.1
200	340	266	295	17	3	20	16	12	23	M20	80	7.1
250	400	319	355	19	3	22	17.5	12	28	M24	90	11
300	455	370	410	20.5	4	24.5	19.5	12	28	M24	100	14
350	520	429	470	22.5	4	26.5	21	16	28	M24	100	17.4
400	580	480	525	24	4	28	22.5	16	31	M27	110	22.2
450	640	548	585	26	4	30	24	20	31	M27	110	28
500	715	609	650	27.5	4	31.5	25	20	34	M30	120	38
600	840	720	770	31	5	36	27	20	37	M33	130	60
700	910	794	840	34.5	5	39.5	27.5	24	37	M33	140	62
750	970	857	900	36	5	41	28	24	37	M33	140	70
800	1025	901	950	38	5	43	30	24	40	M36	150	80
900	1125	1001	1050	41	5	46	32.5	28	40	M36	160	92
1000	1255	1112	1170	45	5	50	35	28	43	M39	170	128
1100	1355	1218	1270	48.5	5	53.5	37.5	32	43	M39	180	148
1200	1485	1328	1390	52	5	57	40	32	49	M45	200	193
1400	1685	1530	1590	55	5	60	42	36	49	M45	200	232
1500	1820	1640	1710	57.5	5	62.5	44	36	56	M52	220	290
1600	1930	1750	1820	60	5	65	45.5	40	56	M52	220	331
1800	2130	1950	2020	65	5	70	49	44	56	M52	230	394
2000	2345	2150	2230	70	5	75	--	48	62	M56	250	475
2200	2555	2370	2440	75	6	81	--	52	62	M56	260	600

NOTE : Dimension 'S' is for guidance only.



Fittings

'KEJRIWAL' Standard Flange Drilling for Flange Fittings (PN 25)



PN 25

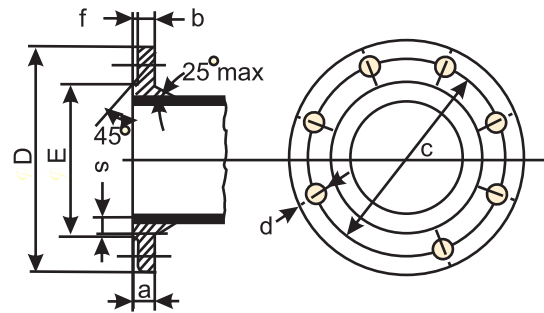
TABLE - 15

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange / Mass
								Nos.	Dia			
DN	D	E	C	b	f	a	S	(9)	(10)	(11)	(12)	(13)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	8	19	M16	80	4
100	235	156	190	16	3	19	15	8	23	M20	80	5
125	270	184	220	16	3	19	15	8	28	M24	80	6
150	300	211	250	17	3	20	16	8	28	M24	90	7
200	360	274	310	19	3	22	17.5	12	28	M24	90	12
250	425	330	370	21.5	3	24.5	19.5	12	31	M27	100	17
300	485	389	430	23.5	4	27.5	22	16	31	M27	100	21
350	555	448	490	26	4	30	24	16	34	M30	110	30
400	620	503	550	28	4	32	25.5	16	37	M33	120	39
450	670	548	600	30.5	4	34.5	27.5	20	37	M33	130	45
500	730	609	660	32.5	4	36.5	29	20	37	M33	130	56
600	845	720	770	37	5	42	33.5	20	40	M36	150	80
700	960	820	875	41.5	5	36.5	33.5	24	43	M39	150	106
750	1020	883	940	45	5	50	34	24	43	M39	170	128
800	1085	928	990	46	5	51	35.5	24	49	M45	180	145
900	1185	1028	1090	50.5	5	55.5	39	28	49	M45	190	171
1000	1320	1140	1210	55	5	60	42	28	56	M52	210	233
1100	1420	1240	1310	60.5	5	65.5	45	32	56	M52	210	272
1200	1530	1350	1420	64	5	69	48.5	32	56	M52	220	322
1400	1755	1560	1640	69	5	74	52	36	62	M56	250	422
1500	1975	1780	1860	76	5	81	56.5	40	62	M56	260	745
1600	2195	1980	2070	83	5	88	61.5	44	70	M64	290	1148
1800	2425	2210	2300	90	5	95	66.5	48	70	M64	300	1452

NOTE : Dimension 'S' is for guidance only.

Fittings

'KEJRIWAL' Standard Flange Drilling for Flange Fittings (PN 40)



PN-40

TABLE - 16

Nominal Diameter	Dimensions							Holes		Bolt Size Metric	Bolt Length mm	App. Flange / Mass
								Nos.	Dia			
DN	D	E	C	b	f	a	S	(9)	(10)	(11)	(12)	(13)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
80	200	132	160	16	3	19	15	8	19	M16	80	4
100	235	166	190	16	3	19	15	8	23	M20	80	5
125	270	184	220	20.5	3	23.5	16.5	8	28	M24	90	8
150	300	211	250	23	3	26	18	8	28	M24	100	10
200	375	284	320	27	3	30	21	12	31	M27	110	18
250	450	345	385	31.5	3	34.5	24	12	34	M30	130	28
300	515	409	450	35.5	4	39.5	27.5	16	34	M30	140	41
350	580	465	510	40	4	44	31	16	37	M33	150	55
400	660	535	585	44	4	48	33.5	16	40	M36	160	80
450	685	560	610	46	4	50	35	20	40	M36	170	85
500	755	615	670	48	4	52	36.5	20	43	M39	180	100
600	890	735	795	53	5	58	40.5	20	49	M45	200	150

NOTE : Dimension 'S' is for guidance only.



Fittings

Dimension & Mass of Follower Glands for Mechanical Joints

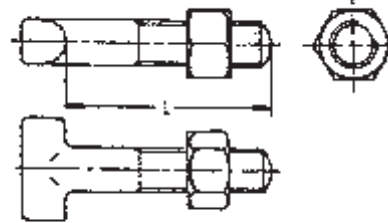


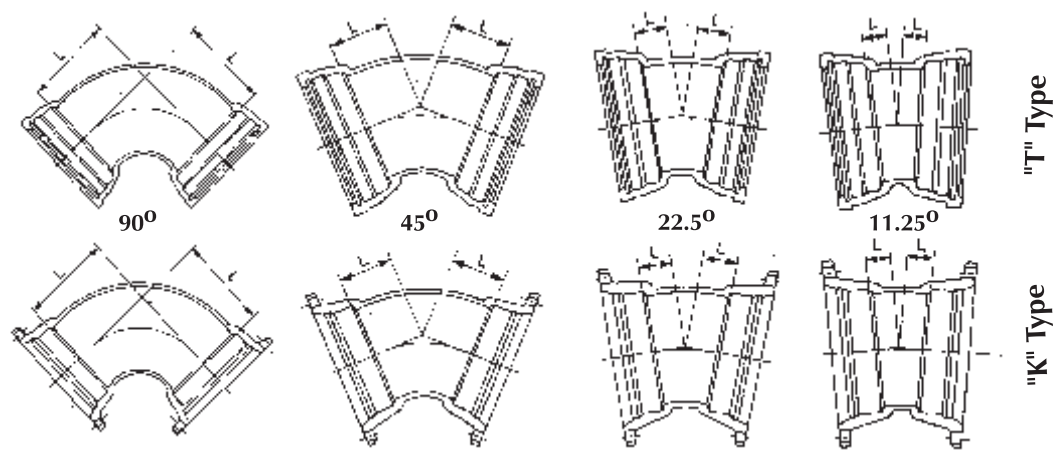
TABLE - 17

Nominal Diameter	Dimensions							Nominal Mass of each per kg.	BOLTS			App. Mass Total Nut Bolt per Flange (Kg)
	DN	D	C	E	F	x	N		M	Size	Length	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	(11)	(12)	(Kg)
80	200	160	125	105	19	13	15	2.0	M16	85	4	0.90
100	220	180	145	125	19	13	15	2.5	M16	85	4	0.90
125	250	210	175	151	19	13	15	3.0	M16	85	4	0.90
150	285	240	197	177	23	13	15	4.0	M20	90	4	1.60
200	340	295	249	230	23	13	15	5.0	M20	90	4	1.60
250	395	350	302	282	23	17	15	6.0	M20	90	6	2.40
300	445	400	354	334	23	17	15	8.0	M20	100	6	2.70
350	505	460	411	386	23	17	20	11.0	M20	100	8	3.60
400	565	515	458	438	28	19	20	13.0	M24	110	8	5.20
450	620	565	513	489	28	19	20	15.0	M24	110	10	6.50
500	670	620	563	541	28	19	20	18.0	M24	110	10	6.50
600	780	725	668	645	31	20	20	20.0	M27	120	10	9.40
700	894	840	781	749	31	20	20	30.0	M27	120	12	11.28
750	944	900	833	800	31	20	20	35.0	M27	120	12	11.28
800	996	950	883	850	34	23	20	45.0	M30	120	12	13.68
900	1118	1050	983	955	34	23	20	55.0	M30	130	14	17.22
1000	1226	1160	1083	1060	37	23	20	70.0	M33	130	14	21.98
1050	1335	1258	1190	1135	37	26	25	80.0	M33	140	14	23.80
1100	1340	1270	1218	1163	37	26	25	100.0	M33	140	16	27.20
1200	1455	1380	1322	1267	40	26	25	130.0	M36	150	16	32.00
1500	1800	1710	1635	1580	43	26	25	170.0	M39	150	18	50.00



Fittings

'KEJRIWAL' Double Socket Bends



K - 12

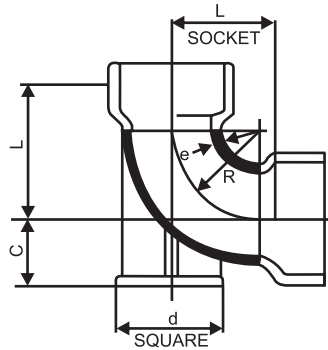
TABLE - 18

Nominal Size	e	90°		45°		22.5°		11.25°	
		L	App Mass	L	App Mass	L	App Mass	L	App Mass
80	7	100	8	55	8	40	7	30	7
100	7.2	120	10	65	9	40	9	30	8
125	7.5	145	15	75	13	50	12	35	11
150	7.8	170	18	85	14	55	13	35	12
200	8.4	220	29	110	24	65	20	40	19
250	9	270	44	130	33	75	28	50	26
300	9.6	320	60	150	47	85	40	55	35
350	10.2	370	85	175	61	95	50	60	40
400	10.8	420	110	195	80	110	62	65	54
450	11.4	470	148	220	104	120	80	70	74
500	12	520	180	240	128	130	102	75	88
600	13.2	620	280	285	198	150	150	85	130
700	14.4	720	405	330	270	175	205	95	170
750	15	770	480	350	330	185	255	100	200
800	15.6	820	550	370	370	195	285	110	234
900	16.8	920	720	415	480	205	350	115	290
1000	18	1020	960	460	640	210	450	120	360
1100	19.2	1130	1350	505	920	220	600	120	530
1200	20.4	1230	1660	550	1120	240	760	130	600
1400	22.8	1430	2430	515	1450	260	1000	130	820
1500	24	1530	3000	540	1750	270	1350	135	1050
1600	25.2	1630	3380	565	1950	280	1600	140	1250
1800	27.6	1830	4400	610	2300	305	1900	155	1390
2000	30.0	--	5500	--	2760	--	2280	--	1600
2200	32.0	--	--	--	--	--	--	--	--



Fittings

'KEJRIWAL' Double Socket Duckfoot 90° Bend



K - 12

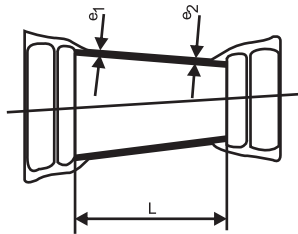
TABLE - 19

Nominal Size	e	L	c	d	App. Mass (kg)
80	7	110	110	180	13
100	7.2	130	125	200	16
125	7.5	155	140	225	22
150	7.8	180	160	250	29
200	8.4	230	190	300	47
250	9	280	225	350	70
300	9.6	325	255	400	100
350	10.2	380	290	450	135
400	10.8	430	320	500	180
450	11.4	480	355	550	230
500	12	530	385	600	290
600	13.2	630	450	700	440
700	14.4	735	515	800	620
750	15	790	545	850	730
800	15.6	830	580	900	840
900	16.8	930	645	1000	1110
1000	18	1035	710	1100	1460
1100	19.2	1130	775	1200	1880
1200	20.4	1230	840	1300	2300
1400	22.8	1430	970	1500	3590
1500	24	1530	1040	1600	4400
1600	25.2	1630	1100	1700	4900
1800	27.6	1830	1230	1900	6800

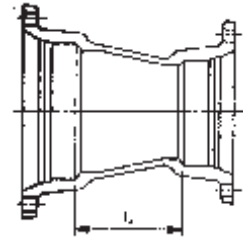


Fittings

'KEJRIWAL' Double Socket Concentric Tapers



"T" TYPE



"K" TYPE

K - 12

TABLE - 20

Nominal Diameter		e ₁	e ₂	L	App. Mass (kg)
Larger End	Smaller End				
100	80	7.2	7.0	90	8
125	80	7.5	7.0	140	11
125	100	7.5	7.2	100	11
150	80	7.8	7.0	190	12
150	100	7.8	7.2	150	13
150	125	7.8	7.5	100	14
200	100	8.4	7.2	250	19
200	125	8.4	7.5	200	21
200	150	8.4	7.8	150	21
250	125	9.0	7.5	300	28
250	150	9.0	7.8	250	27
250	200	9.0	8.4	150	26
300	150	9.6	7.8	350	37
300	200	9.6	8.4	250	36
300	250	9.6	9.0	150	34
350	200	10.2	8.4	360	48
350	250	10.2	9.0	260	47
350	300	10.2	9.6	160	46
400	200	10.8	8.4	360	68
400	250	10.8	9.0	360	60
400	300	10.8	9.6	260	59
400	350	10.8	10.2	160	50
450	250	11.4	9.0	260	72
450	300	11.4	9.6	260	74
450	350	11.4	10.2	260	68
450	400	11.4	10.8	160	62



Fittings

'KEJRIWAL' Double Socket Concentric Tapers



K - 12

TABLE - 20 Contd.

Nominal Diameter		e1	e2	L	App. Mass (kg)
Larger End	Smaller End				
500	300	12.0	9.6	360	94
500	350	12.0	10.2	360	90
500	400	12.0	10.8	260	88
500	450	12.0	11.4	160	85
600	350	13.2	10.2	460	138
600	400	13.2	10.8	460	135
600	450	13.2	11.4	360	136
600	500	13.2	12.0	260	124
700	400	14.4	10.8	480	184
700	450	14.4	11.4	480	188
700	500	14.4	12.0	480	192
700	600	14.4	13.2	280	172
750	450	15.0	11.4	480	210
750	500	15.0	12.0	480	215
750	600	15.0	13.2	280	200
750	700	15.0	14.4	180	185
800	450	15.6	11.4	480	246
800	500	15.6	12.0	480	248
800	600	15.6	13.2	480	245
800	700	15.6	14.4	280	224
900	500	16.8	12.0	480	312
900	600	16.8	13.2	480	315
900	700	16.8	14.4	480	316
900	800	16.8	15.6	280	288
1000	600	18.0	13.2	480	380
1000	700	18.0	14.4	480	385
1000	800	18.0	15.6	480	390
1000	900	18.0	16.8	280	360
1100	700	19.2	14.4	480	560
1100	800	19.2	15.6	480	570
1100	900	19.2	16.8	480	580
1100	1000	19.2	18.0	280	500

Fittings

'KEJRIWAL' Double Socket Concentric Tapers



K - 12

TABLE - 20 Contd.

Nominal Diameter		e1	e2	L	App. Mass (kg)
Larger End	Smaller End				
1200	700	20.4	14.4	480	630
1200	800	20.4	15.6	480	640
1200	900	20.4	16.8	480	650
1200	1000	20.4	18.0	480	660
1200	1100	20.4	19.2	280	610
1400	800	22.8	15.6	360	780
1400	900	22.8	16.8	360	810
1400	1000	22.8	18.0	360	840
1400	1100	22.8	19.2	360	880
1400	1200	22.8	20.4	360	900
1500	900	24.0	16.8	360	990
1500	1000	24.0	18.0	360	1010
1500	1100	24.0	19.2	360	1030
1500	1200	24.0	20.4	260	1010
1500	1400	24.0	22.8	260	1040
1600	1000	25.2	18.0	360	1070
1600	1100	25.2	19.2	360	1100
1600	1200	25.2	20.4	360	1120
1600	1400	25.2	22.8	360	1140
1600	1500	25.2	24.0	260	1110
1800	1100	27.6	19.2	480	1520
1800	1200	27.6	20.4	480	1530
1800	1400	27.6	22.8	360	1440
1800	1500	27.6	24.0	360	1490
1800	1600	27.6	25.2	360	1550

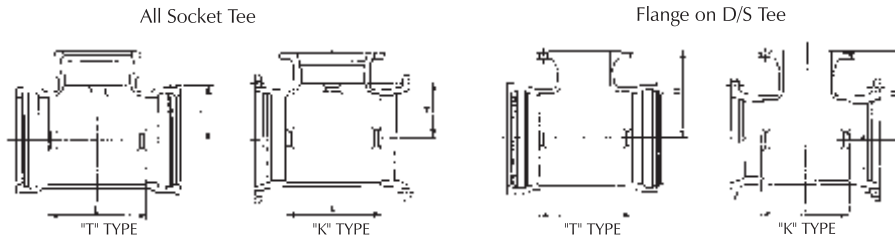
NOTE

1. Size and Dimensions in **RED** are non standard as per IS-9523:2000
2. Tapers in combination of sizes other than above can also be manufactured against specific requirement.



Fittings

'KEJRIWAL' All Socket Tees, Flange on Double Socket Tees



K - 12

TABLE - 21

Nominal Diameter		e	e ₁	L	H		App. Mass (kg)			
DN Body	dn Branch				D/S	B/F	All Socket	D/S B/F		All Socket
								PN 10	PN 16	
80	80	7.0	7.0	170	165	85	13	13	11	
100	80	7.2	7.0	170	175	95	15	15	13	
100	100	7.2	7.2	190	180	95	16	17	14	
125	80	7.5	7.0	170	190	105	18	18	17	
125	100	7.5	7.2	195	195	110	19	20	18	
125	125	7.5	7.5	225	200	110	21	22	20	
150	80	7.8	7.0	170	205	120	21	21	19	
150	100	7.8	7.2	195	210	120	22	23	20	
150	150	7.8	7.8	255	220	125	27	28	23	
200	80	8.4	7.0	175	235	145	28	28	26	
200	100	8.4	7.2	200	240	145	30	31	28	
200	150	8.4	7.8	255	250	150	36	37	32	
200	200	8.4	8.4	315	260	155	42	44	39	
250	80	9.0	7.0	180	265	170	36	36	35	
250	100	9.0	7.2	200	270	170	38	39	37	
250	150	9.0	7.8	260	280	175	44	46	40	
250	200	9.0	8.4	315	290	180	52	54	48	
250	250	9.0	9.0	375	300	190	60	62	54	
300	80	9.6	7.0	180	295	220	48	48	44	
300	100	9.6	7.2	210	300	220	50	51	45	
300	150	9.6	7.8	260	310	220	56	57	54	
300	200	9.6	8.4	325	320	220	63	65	60	
300	250	9.6	9.0	380	330	220	74	76	68	
300	300	9.6	9.6	440	340	220	80	89	74	
350	80	10.2	7.0	185	325	260	58	58	55	
350	100	10.2	7.2	205	330	260	59	60	56	
350	150	10.2	7.8	265	340	265	70	71	64	
350	200	10.2	8.4	325	350	270	75	77	70	
350	250	10.2	9.0	380	360	280	90	92	85	
350	300	10.2	9.6	440	370	285	100	105	95	
350	350	10.2	10.2	495	380	290	110	115	100	
400	80	10.8	7.0	185	355	285	70	70	73	
400	100	10.8	7.2	210	360	285	71	72	72	
400	150	10.8	7.8	270	370	290	80	86	90	
400	200	10.8	8.4	325	380	295	92	94	92	
400	250	10.8	9.0	385	390	305	103	105	100	
400	300	10.8	9.6	440	400	310	114	116	110	
400	400	10.8	10.8	560	420	320	145	150	130	

NOTE : Also available in K-14 as per ISO-2531/BS-EN-545

Fittings

'KEJRIWAL' All Socket Tees, Flange on Double Socket Tees



K - 12

TABLE - 21 Contd.

Nominal Diameter		e	e ₁	L	H		App. Mass (kg)			
DN	dn				D/S	B/F	All Socket	D/S B/F		All Socket
Body	Branch							PN 10	PN 16	
450	80	11.4	7.0	190	385	310	86	86	89	
450	100	11.4	7.2	215	390	310	88	89	90	
450	150	11.4	7.8	270	400	315	95	96	105	
450	200	11.4	8.4	330	410	320	108	110	110	
450	250	11.4	9.0	390	420	330	120	122	112	
450	300	11.4	9.6	445	430	335	134	136	125	
450	400	11.4	10.8	560	450	345	159	164	155	
450	450	11.4	11.4	620	460	350	173	181	160	
500	80	12.0	7.0	195	415	335	102	102	104	
500	100	12.0	7.2	215	420	335	103	104	105	
500	150	12.0	7.8	275	430	340	123	124	127	
500	200	12.0	8.4	330	440	345	126	128	130	
500	250	12.0	9.0	390	450	355	150	152	155	
500	300	12.0	9.6	450	460	360	154	156	160	
500	350	12.0	10.2	505	470	365	172	175	170	
500	400	12.0	10.8	565	480	370	181	186	185	
500	500	12.0	12.0	680	500	380	213	227	205	
600	80	13.2	7.0	200	475	385	151	151	166	
600	100	13.2	7.2	220	480	385	155	156	168	
600	150	13.2	7.8	280	490	390	160	161	170	
600	200	13.2	8.4	340	500	395	171	173	172	
600	300	13.2	9.6	455	520	410	220	222	220	
600	400	13.2	10.8	570	540	420	240	245	240	
600	500	13.2	12.0	685	560	430	290	304	290	
600	600	13.2	13.2	800	580	440	320	335	300	
700	100	14.4	7.2	230	510	435	200	200	205	
700	150	14.4	7.8	285	520	440	210	211	215	
700	200	14.4	8.4	345	525	445	220	226	230	
700	300	14.4	9.6	460	540	460	270	272	270	
700	400	14.4	10.8	575	555	470	300	305	320	
700	500	14.4	12.0	690	570	480	370	384	420	
700	600	14.4	13.2	810	585	490	410	425	470	
700	700	14.4	14.4	925	600	500	440	455	500	
750	100	15.0	7.2	230	540	460	240	240	315	
750	150	15.0	7.8	290	550	465	255	256	330	
750	200	15.0	8.4	345	555	470	270	272	360	
750	300	15.0	9.6	465	570	485	305	307	390	
750	400	15.0	10.8	580	585	495	340	345	430	
750	500	15.0	12.0	695	600	505	382	396	480	
750	600	15.0	13.2	810	615	515	422	437	520	
750	700	15.0	14.4	925	630	525	465	477	570	
750	750	15.0	15.0	985	640	535	490	503	590	
800	100	15.6	7.2	235	570	485	260	265	260	
800	150	15.6	7.8	290	580	490	280	290	280	
800	200	15.6	8.4	350	585	495	300	305	300	
800	300	15.6	9.6	465	600	510	350	355	370	
800	400	15.6	10.8	580	615	520	380	385	420	
800	500	15.6	12.0	700	630	530	500	514	490	
800	600	15.6	13.2	815	645	540	525	560	530	
800	700	15.6	14.4	930	660	550	550	562	550	
800	800	15.6	15.6	1045	675	565	580	595	610	



Fittings

'KEJRIWAL' All Socket Tees, Flange on Double Socket Tees

TABLE - 21 Contd.

Nominal DN Body	Diameter dn Branch	e	e ₁	L	H		App. Mass (kg)			
					D/S	B/F	A/S	D/S B/F		All Socket
								PN 10	PN 16	
900	150	16.8	7.8	300	640	540	330	331	370	
900	200	16.8	8.4	355	645	545	350	352	400	
900	400	16.8	10.8	590	675	570	450	455	500	
900	600	16.8	13.2	1170	705	590	720	746	680	
900	800	16.8	15.6	1170	735	615	750	768	725	
900	900	16.8	16.8	1170	750	625	760	780	750	
1000	150	18.0	7.8	305	700	590	430	430	440	
1000	200	18.0	8.4	360	705	595	450	452	460	
1000	400	18.0	10.8	595	735	620	560	565	550	
1000	600	18.0	13.2	1290	765	640	925	942	900	
1000	800	18.0	15.6	1290	795	665	955	970	940	
1000	1000	18.0	18.0	1290	825	685	985	1020	1000	
1100	200	19.2	8.4	370	765	645	690	692	670	
1100	400	19.2	10.8	600	795	670	785	790	780	
1100	600	19.2	13.2	830	825	690	920	935	910	
1100	800	19.2	15.6	1065	855	715	1100	1115	1190	
1100	1000	19.2	18.0	1295	885	735	1300	1335	1360	
1100	1100	19.2	19.2	1410	900	745	1415	1450	1460	
1200	200	20.4	8.4	375	825	695	720	722	800	
1200	400	20.4	10.8	605	855	720	895	900	930	
1200	600	20.4	13.2	840	885	740	1070	1085	1060	
1200	800	20.4	15.6	1070	915	765	1240	1255	1250	
1200	1000	20.4	18.0	1300	945	785	1440	1475	1490	
1200	1200	20.4	20.4	1535	975	805	1770	1825	1710	
1400	400	22.8	10.8	800	950	820	1400	1405	1380	
1400	600	22.8	13.2	1030	980	840	1565	1580	1550	
1400	800	22.8	15.6	1260	1010	865	1770	1785	1750	
1400	1000	22.8	18.0	1495	1040	885	1985	2020	1960	
1400	1200	22.8	20.4	1725	1070	905	2320	2375	2200	
1400	1400	22.8	22.8	1960	1100	930	2630	2690	2500	
1500	400	24.0	10.8	805	1005	870	1510	1515	1400	
1500	600	24.0	13.2	1035	1035	890	1780	1795	1600	
1500	800	24.0	15.6	1270	1065	915	2070	2085	1850	
1500	1000	24.0	18.0	1500	1095	935	2370	2405	2200	
1500	1200	24.0	20.4	1730	1125	955	2700	2755	2400	
1500	1400	24.0	22.8	1965	1155	980	3040	3100	2700	
1500	1500	24.0	24.0	2080	1170	990	3230	3320	2900	
1600	400	25.2	10.8	810	1060	920	1780	1785	1770	
1600	600	25.2	13.2	1040	1090	940	1980	1995	1980	
1600	800	25.2	15.6	1275	1120	965	2230	2245	2220	
1600	1000	25.2	18.0	1505	1150	985	2480	2520	2460	
1600	1200	25.2	20.4	1740	1180	1005	2790	2850	2800	
1600	1400	25.2	22.8	1970	1210	1030	3250	3310	3000	
1600	1600	25.2	25.2	2200	1240	1050	3800	3900	3400	
1800	600	27.6	13.2	1055	1200	1040	2530	2550	2300	
1800	800	27.6	15.6	1285	1230	1065	2900	2920	2600	
1800	1000	27.6	18.0	1520	1260	1085	3300	3340	3000	
1800	1200	27.6	20.4	1750	1290	1105	3700	3760	3300	
1800	1400	27.6	22.8	1980	1320	1130	4100	4160	3700	
1800	1600	27.6	25.2	2215	1350	1150	4600	4700	4100	
1800	1800	27.6	27.6	2445	1380	1175	5100	5220	4600	

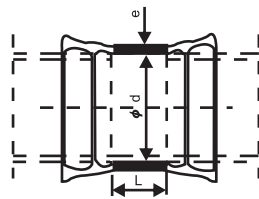
NOTE : 1. Size & Dimensions in **RED** are non standard as per IS-9523:2000.
 2. TEES in combination of sizes other than above can also be manufactured against specific requirements.

Fittings

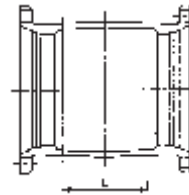
'KEJRIWAL' Collars



"T" TYPE



"K" TYPE



K - 12

TABLE - 22

Nominal Dia (DN)	e	d	SHORT TYTON COLLAR (Non Standard) Mass	STD TYTON COLLAR		M/J COLLAR		
				L	App. Mass (kg)	L	App. Mass (kg)	
							Main Fitting	Complete Set Wt.
80	7	109	6	160	9	160	9	15
100	7.2	130	7	160	11	160	11	18
125	7.5	156	9	165	16	165	16	24
150	7.8	183	11	165	17	165	17	28
200	8.4	235	16	170	22	170	22	36
250	9	288	19	175	29	175	29	47
300	9.6	340	24	180	38	180	38	61
350	10.2	393	32	185	50	185	50	80
400	10.8	445	40	190	66	190	66	105
450	11.4	498	47	195	72	195	72	118
500	12	550	52	200	90	200	90	143
600	13.2	655	80	210	115	210	115	177
700	14.4	760	—	220	172	220	172	262
750	15	810	—	225	180	225	180	281
800	15.6	865	—	230	220	230	220	346
900	16.8	970	—	240	270	240	270	424
1000	18	1075	—	250	325	250	325	520
1100	19.2	1180	—	260	415	260	415	683
1200	20.4	1285	—	270	480	270	480	820
1400	22.8	1477	—	—	—	340	690	1116
1500	24	1580	—	—	—	350	770	1228
1600	25.2	1683	—	—	—	360	920	1430
1800	27.6	1892	—	—	—	380	1170	1770
2000	30.0	2095	—	—	—	400	1460	2120
2200	32.4	2301	—	—	—	420	1800	2570
2400	34.8	2507	—	—	—	440	2150	—
2600	37.2	2713	—	—	—	460	2750	—

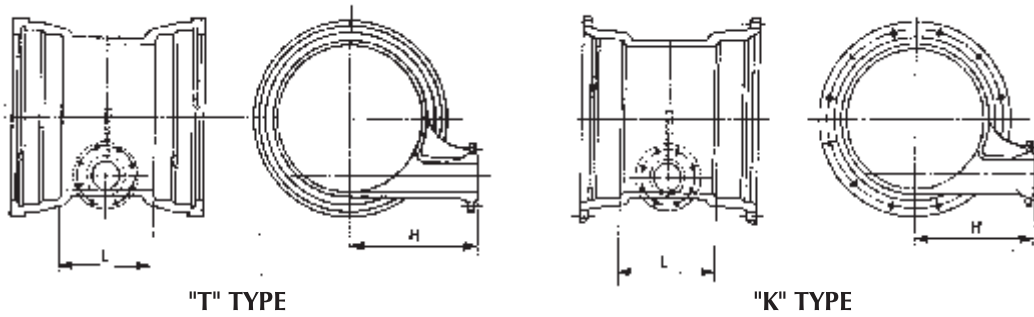
NOTE : Size & Dimensions in RED are non standard as per IS-9523 : 2000.



Fittings



'KEJRIWAL' Double Socket Level Invert Tee with Flanged Branch



K - 12

TABLE - 23

Nominal Diameter		e	L	e1	H	App. Mass (Kg)
DN	dn					
200	80	8.4	245	7	250	40
250	80	9.0	250	7	275	50
300	80	9.6	255	7	300	62
350	100	10.2	280	7.2	325	83
400	100	10.8	280	7.2	350	98
450	100	11.4	285	7.2	375	115
500	100	12.0	290	7.2	400	134
600	100	13.2	295	7.2	450	173
700	150	14.4	360	7.8	500	255
750	150	15.0	360	7.8	500	288
800	150	15.6	365	7.8	550	320
900	150	16.8	370	7.8	600	396
1000	200	18.0	435	8.4	650	514
1100	200	19.2	440	8.4	700	617
1200	200	20.4	445	8.4	750	744
1400	200	22.8	460	8.4	850	950
1500	200	24.0	465	8.4	900	1070
1600	400	25.2	700	10.8	950	1500
1800	400	27.6	715	10.8	1050	1900

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523:2000.

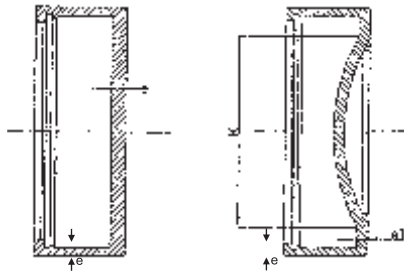
Fittings

'KEJRIWAL' Caps



80 to 300 mm dia

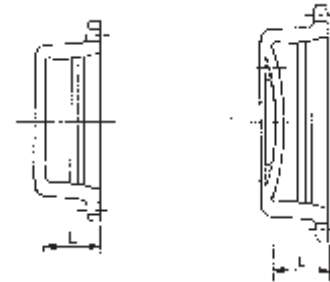
350 to 1200 mm dia



"T" TYPE

80 to 300 mm dia

350 to 1200 mm dia



"K" TYPE

K - 12

TABLE - 24

Nominal Diameter DN	e	e ₁	L	App. Mass (Kg)
80	7	9.5	80	4
100	7.2	10.5	80	5
150	7.8	12.5	90	9
200	8.4	13.5	90	16
250	9	14.5	90	19
300	9.6	15.5	110	30
350	10.2	16.5	110	46
400	10.8	17.5	110	60
450	11.4	19	110	76
500	12	20	110	91
600	13.2	21	110	127
700	14.4	23	120	175
750	15	24	120	202
800	15.6	25	120	227
900	16.8	27	120	295
1000	18	28	130	379
1100	19.2	30	130	466
1200	20.4	32	130	567

NOTE : Size & Dimensions in RED are non standard as per IS-9523 : 2000.



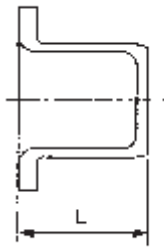
Fittings

'KEJRIWAL' Plugs

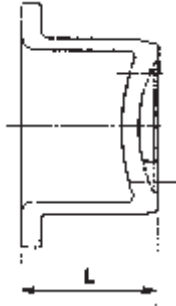


"T" TYPE

80 to 300 mm dia



350 to 1200 mm dia



"K" TYPE

80 to 300 mm dia



350 to 1200 mm dia



K - 12

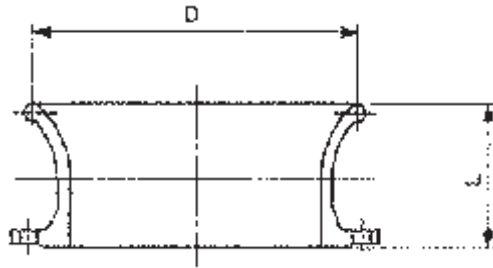
TABLE - 25

Nominal Diameter DN	e	e ₁	"T" TYPE		"K" TYPE	
			L	App. Mass(kg)	L	App. Mass(kg)
80	7	9.5	113	3	92	6
100	7.2	10.5	120	5	93	7
150	7.8	12.5	130	9	104	11
200	8.4	13.5	146	14	105	16
250	9	14.5	152	19	106	28
300	9.6	15.5	159	30	127	31
350	10.2	16.5	176	44	128	41
400	10.8	17.5	178	52	129	53
450	11.4	19	180	66	130	63
500	12	20	187	82	131	76
600	13.2	21	194	120	132	116
700	14.4	23	200	180	143	166
750	15	24	225	220	144	210
800	15.6	25	250	240	144	250
900	16.8	27	300	310	145	333
1000	18	28	325	390	156	434
1100	19.2	30	350	500	158	538
1200	20.4	32	375	620	160	671

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.

Fittings

'KEJRIWAL' Bellmouth



K - 12

TABLE - 26

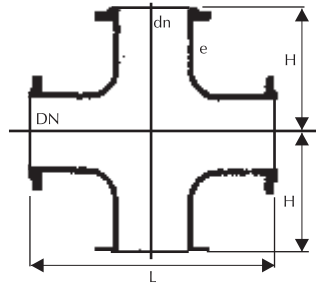
Nominal Diameter DN	D	L	App. Mass (kg)	
			PN 10	PN 16
80	150	130	6	6
100	175	135	7	7
150	230	150	10	11
200	290	170	15	15
250	345	185	22	23
300	405	205	30	31
350	460	220	40	43
400	520	240	52	57
450	575	255	65	75
500	635	275	80	95
600	750	310	110	125
700	865	345	145	160
750	925	360	165	180
800	980	380	190	210
900	1095	415	240	260
1000	1210	450	300	340
1100	1325	485	370	405
1200	1440	520	457	512
1400	1670	590	646	702
1500	1785	625	763	851
1600	1900	660	906	995
1800	2130	730	1185	1297

NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.

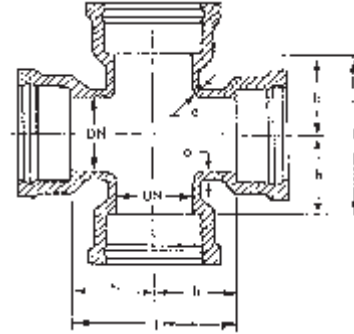


Fittings

'KEJRIWAL' All Flange Cross & All Socket Cross



All Flanged Cross



All Socket Cross

K - 12

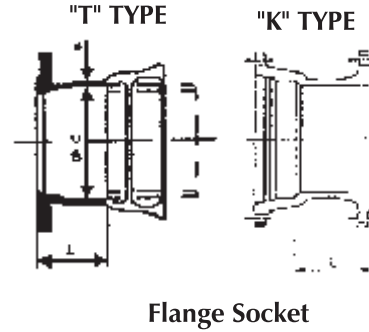
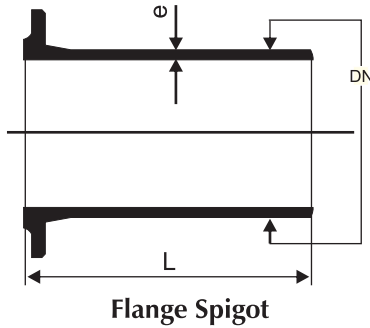
TABLE - 27

Nominal Diameter		e	All Flanged Cross				All Socket Cross		
DN	dn		App. Mass (kg)				L	H	App.Mass (kg)
DN	dn		L	H	PN 10	PN 16	L	H	App.Mass (kg)
80	80	7	330	165	22	22	170	85	16
100	100	7.2	360	180	26	26	190	95	20
150	150	7.8	440	220	42	42	255	125	34
200	200	8.4	520	260	66	66	315	155	52
250	250	9.0	700	350	98	108	375	190	76
300	300	9.6	800	400	143	150	440	220	104
350	350	10.2	850	425	189	200	500	250	136
400	400	10.8	900	450	236	247	560	280	172
450	450	11.4	950	475	286	307	620	310	224
500	500	12.0	1000	500	370	400	680	340	272
600	600	13.2	1100	550	542	585	800	400	400
700	700	14.4	1200	600	730	790	925	460	545
750	750	15.0	1275	640	760	830	985	490	650
800	800	15.6	1350	675	957	1015	1045	520	760
900	900	16.8	1500	750	1220	1305	1170	585	1000
1000	1000	18.0	1650	825	1600	1750	1290	645	1280

NOTE : Size & Dimensions in RED are non standard as per IS-9523 : 2000

Fittings

'KEJRIWAL' Flange Spigot & Flange Socket



K - 12

TABLE - 28

Nominal Dia (DN)	DN	e	Flange Spigot			Flange Socket		
			App. Mass (kg)			App. Mass (kg)		
			L	PN 10	PN 16	L	PN 10	PN 16
80	98	7	350	8	8	130	8	8
100	118	7.2	360	10	10	130	9	9
125	144	7.5	370	13	13	135	12	12
150	170	7.8	380	16	16	135	14	14
200	222	8.4	400	23	23	140	20	20
250	274	9	420	32	33	145	26	27
300	326	9.6	440	41	42	150	34	35
350	378	10.2	460	53	56	155	44	47
400	429	10.8	480	65	71	160	54	60
450	480	11.4	500	80	90	165	60	70
500	532	12	520	96	110	170	72	87
600	635	13.2	560	135	155	180	105	125
700	738	14.4	600	180	200	190	148	168
750	790	15	600	210	230	195	180	200
800	842	15.6	600	228	249	200	200	220
900	945	16.8	600	280	300	210	250	275
1000	1048	18	600	340	375	220	320	360
1100	1152	19.2	600	402	437	230	420	460
1200	1255	20.4	600	470	530	240	464	570
1400	1462	22.8	710	690	750	310	760	770
1500	1565	24.0	745	815	910	320	880	910
1600	1668	25.2	780	955	1045	330	1000	1040
1800	1875	27.6	850	1240	1350	350	1250	1220

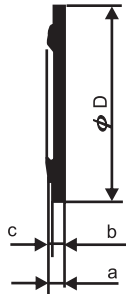


Fittings

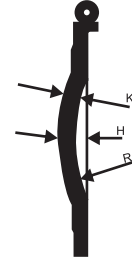
'KEJRIWAL' Blank Flange (PN 10 & PN 16)



80 to 300 mm dia



350 mm and above



K - 12

TABLE - 29

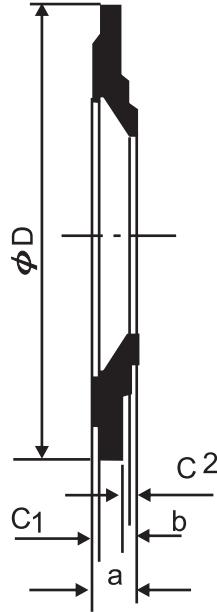
Nominal Dia (DN)	a		b		D		H	App. Mass (kg)	
	PN 10	PN 16	PN 10	PN 16	PN 10	PN 16		PN 10	PN 16
80	19	19	16	16	200	200	–	4	4
100	19	19	16	16	220	220	–	5	5
125	19	19	16	16	250	250	–	6	6
150	19	19	16	16	285	285	–	8	8
200	20	20	17	17	340	340	–	11	11
250	22	22	19	19	400	400	–	17	17
300	24.5	24.5	20.5	20.5	455	455	–	24	24
350	24.5	26.5	20.5	22.5	505	520	71	33	37
400	24.5	28.5	20.5	24	565	580	80	41	49
450	25.5	30	21.5	26	615	640	88	56	64
500	26.5	31.5	22.5	27.5	670	775	97	65	84
600	30	36	25	31	780	840	114	94	130
700	32.5	39.5	27.5	34.5	895	910	131	139	169
750	33	41	28	36	960	970	139	175	205
800	35	43	30	38	1015	1025	148	195	235
900	37.5	46.5	32.5	41.5	1115	1125	165	250	307
1000	40	50	35	45	1230	1255	182	330	415
1100	42.5	53.5	37.5	48.5	1340	1355	199	420	520
1200	45.0	57.0	40	52	1455	1455	216	520	660
1400	46.0	60.0	41	55	1675	1685	244	710	910
1500	47.5	62.0	42.5	57.5	1785	1820	276	830	1100
1600	49.0	65.0	44	60	1915	1930		990	1280
1800	52.0	70.0	47	65	2115	2130		1270	1690

NOTE : 1. PN-16 is the preferred flange in IS Standard.
 2. Dimensions in **RED** are Non-Standard as per IS:9523 : 2000



Fittings

'KEJRIWAL' Reducing Flange (PN 16)



K - 12

TABLE - 30

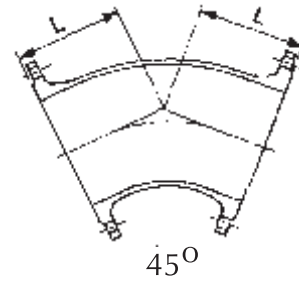
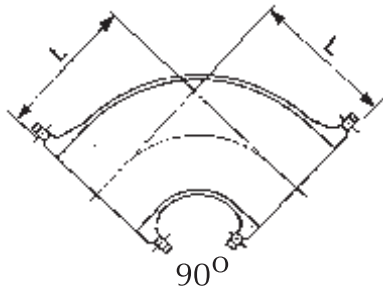
Nominal Dia DN	Larger End			Smaller End			App. Mass (kg) PN 16
	D	b	C1	Nominal Dia dn	C2	a	
200	340	17	3	80	3	40	13
200	340	17	3	100	3	40	13
200	340	17	3	125	3	40	14
350	520	22.5	4	250	3	54	37
400	580	24	4	250	3	54	46
400	580	24	4	300	4	55	44.5
700	910	34.5	5	500	4	67	134
900	1125	41.5	5	700	5	73	200
1000	1255	45	5	700	5	73	285
1000	1255	45	5	800	5	77	260

NOTE : PN 10 drill may be done on request



Fittings

'KEJRIWAL' Double Flanged Bend



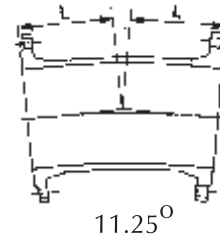
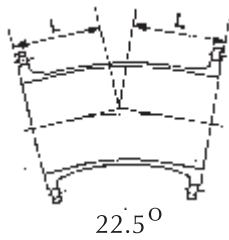
K - 12

TABLE - 31

Nominal Size (DN)	e	90°			45°		
		L	App. Mass (kg)		L	App. Mass (kg)	
			PN 10	PN 16		PN 10	PN 16
80	7	165	10	10	130	10	10
100	7.2	180	12	12	140	12	12
125	7.5	200	16	16	150	15	15
150	7.8	220	22	22	160	19	19
200	8.4	260	32	32	180	28	28
250	9	350	50	52	350	58	60
300	9.6	400	68	70	400	76	78
350	10.2	450	92	98	298	80	86
400	10.8	500	130	140	324	98	108
450	11.4	550	160	175	350	120	140
500	12	600	210	240	375	148	176
600	13.2	700	290	325	426	220	260
700	14.4	800	410	440	478	310	340
750	15	850	490	530	504	360	390
800	15.6	900	590	630	529	415	445
900	16.8	1000	760	810	581	530	580
1000	18	1100	990	1070	632	685	760
1100	19.2	1235	1250	1300	694	860	935
1200	20.4	1340	1480	1600	750	1070	1185
1400	22.8	1550	2150	2280	775	1435	1550
1500	24	1660	2650	2800	810	1680	1860
1600	25.2	1765	3070	3270	845	1970	2150
1800	27.6	1970	4020	4300	910	2540	2770

Fittings

KEJRIWAL' Double Flanged Bend



K - 12

TABLE - 32

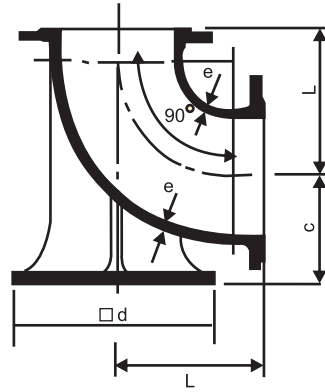
Nominal Size (DN)	e	22.5°			11.25°		
		L	App. Mass (kg)		L	App. Mass (kg)	
			PN 10	PN 16		PN 10	PN 16
80	7	85	9	9	75	8	8
100	7.2	90	10	10	80	10	10
125	7.5	95	13	13	85	12	12
150	7.8	105	18	18	90	17	17
200	8.4	120	25	25	100	23	23
250	9	135	41	43	110	38	40
300	9.6	150	51	53	120	45	47
350	10.2	165	67	73	130	61	67
400	10.8	175	80	90	140	70	80
450	11.4	190	92	107	145	85	100
500	12	205	104	131	155	100	127
600	13.2	235	160	190	175	140	170
700	14.4	265	230	260	195	200	230
750	15	280	280	310	210	250	280
800	15.6	295	289	319	215	260	290
900	16.8	320	363	401	235	307	345
1000	18	350	468	538	255	394	464
1100	19.2	380	583	655	265	481	551
1200	20.4	410	727	837	275	582	692
1400	22.8	465	1012	1126	295	775	889
1500	24	495	1199	1375	330	940	1116
1600	25.2	525	1429	1607	370	1158	1336

NOTE : The above bends are non standard as per IS 9523 : 2000



Fittings

'KEJRIWAL' Double Flanged Duckfoot Bend



K - 12

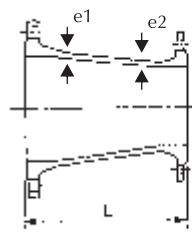
TABLE - 33

Nominal Size (DN)	e	L	c	d	App. Mass (kg)	
					PN 10	PN 16
80	7	155	110	180	16	16
100	7.2	175	125	200	20	20
125	7.5	220	140	225	30	30
150	7.8	230	160	250	38	38
200	8.4	280	190	300	55	55
250	9	335	225	350	80	82
300	9.6	385	255	400	118	120
350	10.2	440	290	450	160	166
400	10.8	495	320	500	210	220
450	11.4	545	355	550	250	265
500	12	600	385	600	300	325
600	13.2	705	450	700	480	532
700	14.4	810	515	800	610	645
750	15	860	550	850	730	760
800	15.6	915	580	900	860	900
900	16.8	1020	645	1000	1110	1150
1000	18	1130	710	1100	1410	1480
1100	19.2	1235	775	1200	1800	1900
1200	20.4	1340	840	1300	2300	2400
1400	22.8	1550	970	1500	3300	3420
1500	24	1660	1035	1600	4100	4240
1600	25.2	1765	1100	1700	4700	4850
1800	27.6	1970	1240	1900	7100	7300

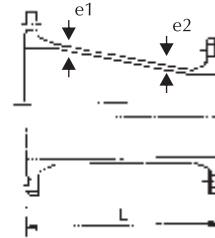
NOTE : Size & Dimensions in **RED** are non standard as per IS-9523 : 2000.

Fittings

'KEJRIWAL' Double Flanged Tapers



Concentric



Eccentric

K - 12

TABLE - 34

Nominal Diameter		e ₁	e ₂	L	App. Mass (kg)			
					Concentric		Eccentric	
DN	dn				PN 10	PN 16	PN 10	PN 16
100	80	7.2	7.0	200	9	9	12	12
125	80	7.5	7.0	200	14	14	17	17
125	100	7.5	7.2	200	15	15	18	18
150	80	7.8	7.0	200	15	15	20	20
150	100	7.8	7.2	200	16	16	19	22
150	125	7.8	7.5	200	17	17	17	23
200	100	8.4	7.2	300	20	20	34	26
200	125	8.4	7.5	300	21	21	32	28
200	150	8.4	7.8	300	22	22	28	28
250	125	9.0	7.5	300	30	31	36	36
250	150	9.0	7.8	300	30	31	36	36
250	200	9.0	8.4	300	31	32	37	37
300	150	9.6	7.8	300	36	38	47	48
300	200	9.6	8.4	300	38	40	48	50
300	250	9.6	9.0	300	40	42	49	52
350	200	10.2	8.4	300	48	51	58	61
350	250	10.2	9.0	300	48	52	59	64
350	300	10.2	9.6	300	50	54	60	64
400	200	10.8	8.4	300	57	65	68	78
400	250	10.8	9.0	300	60	66	70	79
400	300	10.8	9.6	300	62	68	71	80
400	350	10.8	10.2	300	64	72	72	82
450	250	11.4	9.0	300	68	77	82	97
450	300	11.4	9.6	300	70	79	83	98
450	350	11.4	10.2	300	72	83	84	100
450	400	11.4	10.8	300	75	88	85	101



Fittings

'KEJRIWAL' Double Flanged Tapers

TABLE - 34 Contd.

Nominal Diameter		e ₁	e ₂	L	App. Mass (kg)			
					Concentric		Eccentric	
DN	dn				PN 10	PN 16	PN 10	PN 16
500	300	12.0	9.6	600	109	123	132	154
500	350	12.0	10.2	600	110	126	133	156
500	400	12.0	10.8	600	113	131	136	160
500	450	12.0	11.4	600	116	137	140	173
600	350	13.2	10.2	600	145	182	178	218
600	400	13.2	10.8	600	148	185	180	222
600	450	13.2	11.4	600	150	189	182	227
600	500	13.2	12.0	600	154	193	185	232
700	400	14.4	10.8	600	188	226	236	271
700	450	14.4	11.4	600	190	230	238	276
700	500	14.4	12.0	600	194	235	240	282
700	600	14.4	13.2	600	204	241	245	290
750	450	15.0	11.4	600	213	250	256	300
750	500	15.0	12.0	600	215	255	258	306
750	600	15.0	13.2	600	220	260	264	312
750	700	15.0	14.4	600	234	270	281	324
800	450	15.6	11.4	600	254	280	305	336
800	500	15.6	12.0	600	256	284	307	341
800	600	15.6	13.2	600	260	288	312	346
800	700	15.6	14.4	600	263	292	316	350
900	500	16.8	12.0	600	310	345	372	414
900	600	16.8	13.2	600	315	348	378	418
900	700	16.8	14.4	600	320	352	384	422
900	800	16.8	15.6	600	325	360	390	432
1000	600	18.0	13.2	600	380	420	456	504
1000	700	18.0	14.4	600	385	425	462	510
1000	800	18.0	15.6	600	390	435	468	522
1000	900	18.0	16.8	600	393	450	472	540
1100	700	19.2	14.4	600	455	515	546	618
1100	800	19.2	15.6	600	460	525	552	630
1100	900	19.2	16.8	600	465	540	558	648
1100	1000	19.2	18.0	600	474	550	569	660

Fittings

'KEJRIWAL' Double Flanged Tapers



TABLE - 34 Contd.

Nominal Diameter		e ₁	e ₂	L	App. Mass (kg)			
					Concentric		Eccentric	
DN	dn				PN 10	PN 16	PN 10	PN 16
1200	700	20.4	14.4	790	597	685	716	822
1200	800	20.4	15.6	790	600	695	720	834
1200	900	20.4	16.8	790	605	700	726	840
1200	1000	20.4	18.0	790	614	710	737	852
1200	1100	20.4	19.2	790	640	740	768	888
1400	800	22.8	15.6	850	825	930	990	1116
1400	900	22.8	16.8	850	830	935	996	1122
1400	1000	22.8	18.0	850	840	950	1008	1140
1400	1100	22.8	19.2	850	850	960	1020	1152
1400	1200	22.8	20.4	850	859	980	1031	1176
1500	900	24.0	16.8	910	1100	1215	1320	1458
1500	1000	24.0	18.0	910	1110	1230	1332	1476
1500	1100	24.0	19.2	910	1120	1250	1344	1500
1500	1200	24.0	20.4	910	1130	1270	1356	1524
1500	1400	24.0	22.8	910	1145	1290	1374	1548
1600	1000	25.2	18.0	910	1130	1265	1356	1518
1600	1100	25.2	19.2	910	1140	1275	1368	1530
1600	1200	25.2	20.4	910	1150	1295	1380	1554
1600	1400	25.2	22.8	910	1165	1311	1398	1573
1600	1500	25.2	24.0	910	1200	1380	1440	1656
1800	1100	27.6	19.2	970	1475	1690	1770	2028
1800	1200	27.6	20.4	970	1485	1700	1782	2040
1800	1400	27.6	22.8	970	1500	1715	1800	2058
1800	1500	27.6	24.0	970	1510	1730	1812	2076
1800	1600	27.6	25.2	970	1530	1750	1836	2100

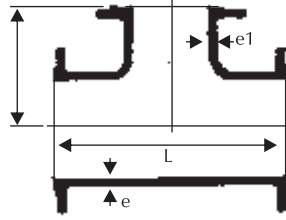
NOTE : 1. Sizes & Dimensions in **RED** are non standard as per IS-9523-2000.

2. Tapers in combination of sizes other than above can also be manufactured against specific requirement.



Fittings

'KEJRIWAL' All Flanged Tee



K - 12

TABLE - 35

Nominal Diameter		e ₁	e ₂	L	H	App. Mass (kg)	
DN	dn					PN 10	PN 16
80	80	7.0	7.0	330	165	16	16
100	80	7.2	7.0	360	175	18	18
100	100	7.2	7.2	360	180	19	19
125	80	7.5	7.0	400	190	23	23
125	100	7.5	7.2	400	195	24	24
125	125	7.5	7.5	400	200	25	25
150	80	7.8	7.0	440	205	28	28
150	100	7.8	7.2	440	210	29	29
150	125	7.8	7.5	440	215	30	30
150	150	7.8	7.8	440	220	32	32
200	80	8.4	7.0	520	235	41	41
200	100	8.4	7.2	520	240	42	42
200	150	8.4	7.8	520	250	45	45
200	200	8.4	8.4	520	260	49	49
250	80	9.0	7.0	700	235	64	67
250	100	9.0	7.2	700	275	65	68
250	150	9.0	7.8	700	325	69	71
250	200	9.0	8.4	700	325	71	75
250	250	9.0	9.0	700	350	77	81
300	80	9.6	7.0	800	265	83	88
300	100	9.6	7.2	800	300	85	90
300	150	9.6	7.8	800	350	90	95
300	200	9.6	8.4	800	350	95	100
300	250	9.6	9.0	800	350	103	108
300	300	9.6	9.6	800	400	110	115
350	80	10.2	7.0	850	295	107	115
350	100	10.2	7.2	850	325	110	118
350	150	10.2	7.8	850	325	113	122
350	200	10.2	8.4	850	325	116	125

NOTE : Also available in K-14 as per ISO-2531/BS-EN-545

Fittings

'KEJRIWAL' All Flanged Tee



TABLE - 35 Contd.

Nominal Diameter		e	e ₁	L	H	App. Mass (kg)	
DN	dn					PN 10	PN 16
350	250	10.2	9.0	850	325	133	138
350	300	10.2	9.6	850	425	137	144
350	350	10.2	10.2	850	425	140	150
400	80	10.8	7.0	900	325	135	145
400	100	10.8	7.2	900	350	140	150
400	150	10.8	7.8	900	350	149	158
400	200	10.8	8.4	900	350	145	155
400	250	10.8	9.0	900	350	152	163
400	300	10.8	9.6	900	450	158	170
400	400	10.8	10.8	900	450	170	185
450	80	11.4	7.0	950	355	160	180
450	100	11.4	7.2	950	375	166	185
450	150	11.4	7.8	950	375	168	188
450	200	11.4	8.4	950	375	170	190
450	250	11.4	9.0	950	375	177	197
450	300	11.4	9.6	950	475	184	204
450	400	11.4	10.8	950	475	196	216
450	450	11.4	11.4	950	475	201	230
500	80	12.0	7.0	1000	385	208	238
500	100	12.0	7.2	1000	400	210	240
500	150	12.0	7.8	1000	400	213	243
500	200	12.0	8.4	1000	400	215	245
500	250	12.0	9.0	1000	400	220	250
500	300	12.0	9.6	1000	500	230	260
500	350	12.0	10.2	1000	500	240	270
500	400	12.0	10.8	1000	500	250	280
500	500	12.0	12.0	1000	500	270	300
600	80	13.2	7.0	1100	445	290	340
600	100	13.2	7.2	1100	450	292	342
600	150	13.2	7.8	1100	450	295	345
600	200	13.2	8.4	1100	450	300	355
600	300	13.2	9.6	1100	550	315	370
600	400	13.2	10.8	1100	550	330	390
600	500	13.2	12.0	1100	550	350	420
600	600	13.2	13.2	1100	550	370	440



Fittings

'KEJRIWAL' All Flanged Tee

TABLE - 35 Contd.

Nominal Diameter		e	e ₁	L	H	App. Mass (kg)	
DN	dn					PN 10	PN 16
700	100	14.4	7.2	540	510	245	270
700	150	14.4	7.8	600	520	265	290
700	200	14.4	8.4	650	525	280	305
700	300	14.4	9.6	760	540	315	340
700	400	14.4	10.8	870	555	350	375
700	500	14.4	12.0	1000	570	405	435
700	600	14.4	13.2	1200	585	475	515
700	700	14.4	14.4	1200	600	505	545
750	100	15.0	7.2	550	540	270	300
750	150	15.0	7.8	610	550	280	310
750	200	15.0	8.4	670	555	287	317
750	300	15.0	9.6	780	570	349	384
750	400	15.0	10.8	890	585	359	394
750	500	15.0	12.0	1020	600	485	530
750	600	15.0	13.2	1130	615	500	545
750	700	15.0	14.4	1250	630	515	560
750	750	15.0	15.0	1275	640	525	570
800	100	15.6	7.2	560	570	350	375
800	150	15.6	7.8	620	580	355	380
800	200	15.6	8.4	690	585	360	385
800	300	15.6	9.6	800	600	413	443
800	400	15.6	10.8	910	615	440	480
800	500	15.6	12.0	1030	630	546	590
800	600	15.6	13.2	1350	645	610	650
800	700	15.6	14.4	1350	660	659	709
800	800	15.6	15.6	1350	675	660	700
900	150	16.8	7.8	650	640	390	430
900	200	16.8	8.4	730	645	400	440
900	400	16.8	10.8	950	675	510	560
900	600	16.8	13.2	1500	705	730	800
900	800	16.8	15.6	1500	735	830	890
900	900	16.8	16.8	1500	750	840	900
1000	150	18.0	7.8	720	700	505	565
1000	200	18.0	8.4	770	705	510	570
1000	400	18.0	10.8	990	735	670	730
1000	600	18.0	13.2	1650	765	970	1050
1000	800	18.0	15.6	1650	795	1050	1130
1000	1000	18.0	18.0	1650	825	1100	1200

Fittings

'KEJRIWAL' All Flanged Tee



TABLE - 35 Contd.

Nominal Diameter		e	e _i	L	H	App. Mass (kg)	
DN	dn					PN 10	PN 16
1100	200	19.2	8.4	760	765	650	720
1100	400	19.2	10.8	980	795	770	860
1100	600	19.2	13.2	1210	825	940	1030
1100	800	19.2	15.6	1470	855	1140	1225
1100	1000	19.2	18.0	1690	885	1345	1450
1100	1100	19.2	19.2	1800	900	1450	1555
1200	200	20.4	8.4	780	825	800	900
1200	400	20.4	10.8	1070	855	990	1110
1200	600	20.4	13.2	1240	885	1100	1220
1200	800	20.4	15.6	1470	915	1300	1420
1200	1000	20.4	18.0	1700	945	1500	1650
1200	1200	20.4	20.4	1950	975	1790	1950
1400	400	22.8	10.8	1050	950	1240	1380
1400	600	22.8	13.2	1550	980	1527	1665
1400	800	22.8	15.6	1760	1010	1755	1884
1400	1000	22.8	18.0	2015	1040	1995	2143
1400	1200	22.8	20.4	2015	1070	2262	2431
1400	1400	22.8	22.8	2200	1100	2545	2715
1500	400	24.0	10.8	1070	1005	1525	1730
1500	600	24.0	13.2	1350	1035	1700	1900
1500	800	24.0	15.6	1570	1065	1900	2100
1500	1000	24.0	18.0	1790	1095	2200	2400
1500	1200	24.0	20.4	2010	1125	2500	2700
1500	1400	24.0	22.8	2230	1155	2750	2980
1500	1500	24.0	24.0	2340	1170	2900	3130
1600	400	25.2	10.8	1100	1060	1700	1900
1600	600	25.2	13.2	1600	1090	2000	2200
1600	800	25.2	15.6	1835	1120	2300	2500
1600	1000	25.2	18.0	2065	1150	2500	2700
1600	1200	25.2	20.4	2300	1180	2800	3000
1600	1400	25.2	22.8	2300	1210	3208	3444
1600	1600	25.2	25.2	2480	1240	3586	3854
1800	600	27.6	13.2	1440	1200	2521	2768
1800	800	27.6	15.6	1660	1230	2848	3087
1800	1000	27.6	18.0	1880	1260	3184	3442
1800	1200	27.6	20.4	2100	1290	3543	3822
1800	1400	27.6	22.8	2320	1320	3910	4190
1800	1600	27.6	25.2	2540	1350	4328	4641
1800	1800	27.6	27.6	2760	1380	4750	5086

NOTE : 1. Sizes & Dimensions in **RED** are non standard as per IS-9523-2000
 2. Tees in combination of sizes other than above can also be manufactured against specific requirement.

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Kejriwal
CASTINGS LIMITED

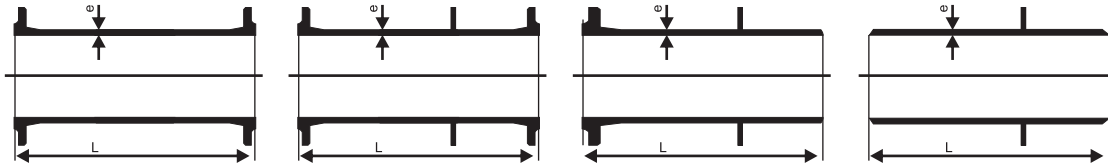
TOTAL PIPELINE SOLUTIONS

Special



Specials

Integrally Casted 'KEJRIWAL' Double Flanged Pipe, Puddle Pipe (K-12)



Double Flanged Pipe

Double Flanged Puddle Pipe

Flanged Spigot Puddle Pipe

Plain End Puddle Pipe

K - 12

TABLE - 36

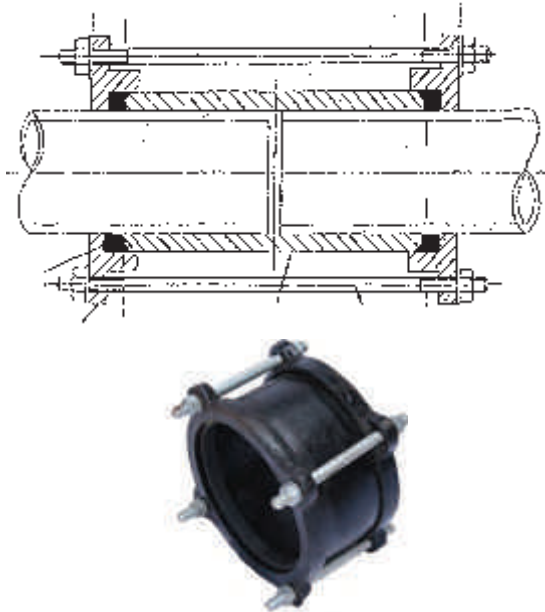
Nominal Size (DN)	Barrel		Integral Flange		App. Mass (kg)			
	e mm	Mass per Meter Kg/m	Unit Mass Per Flg		D/F Pipes PN-10 Flanges		D/F Puddle Pipe PN-10 Flanges	
			PN 10	PN 16	1.0 mtr.	2.0 mtr.	0.5 mtr	1.0 mtr
80	7.0	14.1	3.0	3.0	20	34	16	23
100	7.2	17.7	3.3	3.3	24	42	19	28
125	7.5	22.7	4.0	4.0	31	53	23	35
150	7.8	28.0	5.1	5.1	38	66	29	43
200	8.4	39.7	7.1	7.1	53	93	41	61
250	9.0	52.8	10.0	10.0	72	125	56	83
300	9.6	67.3	13.0	13.0	93	160	73	106
350	10.2	83.1	14.7	17.4	111	194	86	127
400	10.8	100.0	17.7	22.2	133	233	103	153
450	11.4	118.3	20.2	28.0	159	277	120	179
500	12.0	138.2	24.3	38.0	182	320	141	210
600	13.2	181.8	34.0	48.0	243	425	193	284
700	14.4	230.8	46.0	58.0	312	543	253	369
750	15.0	258.0	55.0	68.0	354	612	294	423
800	15.6	285.5	62.0	77.0	395	681	329	472
900	16.8	345.4	73.0	92.0	474	819	392	565
1000	18.0	410.6	93.0	128.0	573	984	484	690
1100	19.2	482.0	113.0	148.0	707	1189	580	821
1200	20.4	558.0	138.0	193.0	800	1357	693	972
1400	22.8	727.0	175.0	232.0	1022	1749	888	1252
1500	24.0	820.0	202.0	290.0	1222	2041	1016	1425
1600	25.2	917.0	242.0	331.0	1330	2247	1184	1643
1800	27.6	1130.0	282.0	394.0	1602	2731	1411	1975
2000	30.4	1880.0	337.0	475.0	2554	4434	1951	2891
2200	32.4	2220.0	426.0	600.0	3072	5292	2388	3498

NOTE :

1. Puddle Flange will be 10mm thick upto 300 mm dia, 15 mm from 350 to 600 mm & 20 mm from 700 to 1800 mm dia, unless otherwise specified
2. Pipes can be supplied with Flanged ends, Plain ends, Flange Spigot ends and with puddles flanges in all combination and in all length with max limit being 2.0 mtrs.



MECHANICAL COUPLING



End Connection

To join two similar plain ends only.

Use

- i) With CI & DI pipes
- ii) can be manufactured specially to suit all other kinds of pipes such as AC, PVC, uPVC, MS, SS etc.

Working

Tightening of bolts draws the two flanges together compressing the sealing ring in the recess between sleeve and flanges on to the pipe thus effecting a leak tight joint.

Size 80mm to 1800mm NB.

Material Used Ductile Iron

Advantages

It can absorb limited expansion, contraction, ground movement and long radius curves.

End Connection

To join one plain end and other flanged end only.

Use

- i) with CI & DI pipes
- ii) can be manufactured specially to suit all other kinds of pipes such as AC, PVC, uPVC, MS, SS etc.

Working

Tightening of bolts draws compression flange towards spigot end of flanged barrel thereby compressing the sealing rubber ring in the recess between compression flange and the spigot end of flange barrel effecting a leak tight joint.

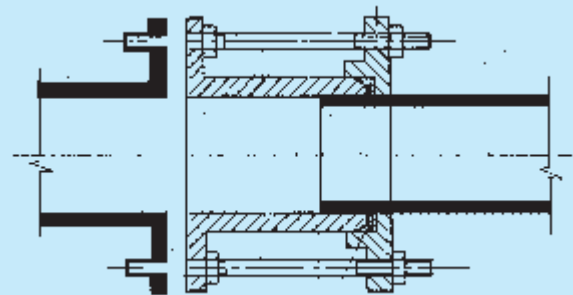
Size 80mm to 1800mm NB.

Material Used Ductile Iron

Advantages

It can absorb limited expansion, contraction, ground movement and long radius curves.

FLANGED MECHANICAL ADAPTERS

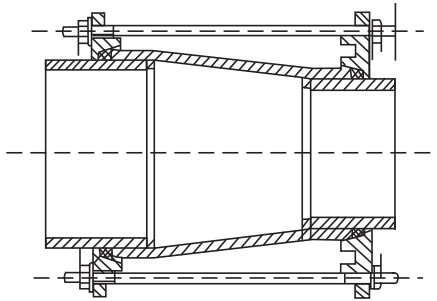




Specials

'KEJRIWAL' Ductile Iron Specialised Mechanical Products

REDUCING MECHANICAL COUPLING



End Connection

To join two dis-similar plain ends having different outside diameters.

Use

with CI, DI, AC, PVC, uPVC, MS, S.S, etc virtually all kinds of rigid pipes.

Working

Tightening of bolts draws the two flanges together compressing the seal ring in the recess between sleeve and flanges on to the pipe thus effecting a leak tight joint.

Size 80mm to 1800mm NB.

Material Used Ductile Iron

Advantages

It can absorb limited expansion, contraction, ground movement and long radius curves.

End Connection

To join two flanged end.

Use

- i) with all kinds of pipes but having flanged ends.
- ii) can be manufactured specially to suit all other kinds of pipes such as AC, PVC, uPVC, MS, SS etc.

Working

A flanged spigot of same nominal bore as that of adjoining pipeline slides inside a flanged spigot barrel of higher diameter to create space in the pipeline upto a maximum of 0 to 100 mm.

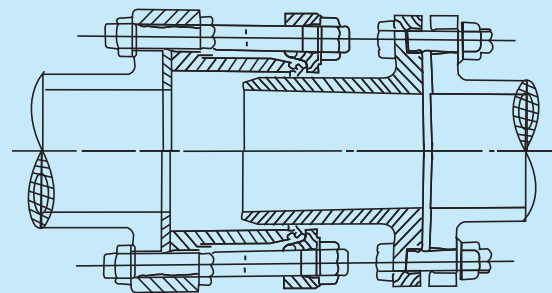
Size 80mm to 1800mm NB.

Material Used Ductile Iron

Advantages

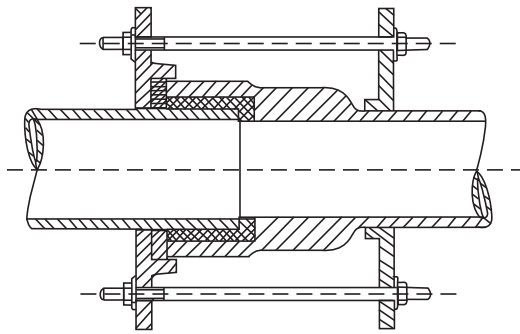
- i) to create gaps/space in flanged pipeline.
- ii) to fill up/adjust gaps/space in flanged pipelines
- iii) can absorb limited vibration/expansion contraction

ADJUSTABLE DISMANTLE JOINTS





SOCKET LEAK REPAIR JOINT CLAMPS



End Connection

To seal the leaking socket joints/ends of pipes having Tyton Rubber Ring Joints or lead caulked Joints.

Use

CI DI socket end pipes (Lead or Tyton Rubber Joints)

Working

Compression Ring, Clamp and Rubber rings are supplied in two parts to be joined with nut bolt and J-hook. The compression Ring is pulled towards socket thereby sealing the gap inbetween the socket and Compression Ring with the help of rubber ring on to the pipe.

Size 80mm to 1800mm

Material Used Ductile Iron

Advantages

Leaking socket ends on Running pipeline can be repaired by digging trenches only near the socket ends.

End Connection

Double flanged end.

Use

To be used as an automatic expansion/contraction absorbing joints between flanged end connections. It can be used on all Rigid pipes like CI, DI, MS, PVC, uPVC, SS but with flanged ends.

Working

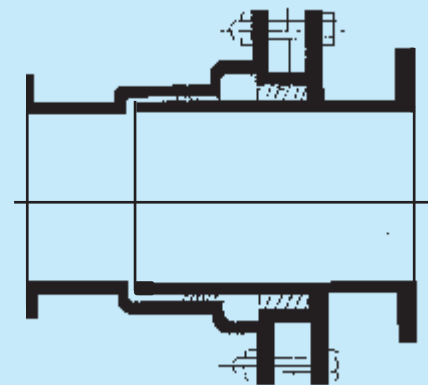
Size 80mm to 1800mm

Material Used Ductile Iron

Advantages

Automatically absorbs expansion/contraction in pipeline thereby prolonging the lifespan of pipeline and reducing chances of bending / zig zag lines.

EXPANSION JOINTS





Specials

'KEJRIWAL' Ductile Iron Specialised Mechanical Products

SADDLE PIECES - SCREWED END

End Connection

For branch connection of screwed end in small dia of 15 to 65 mm.

Use On C.I./D.I./M.S./U.P.V./P.V.C/A.C/S.S Pipe etc.

Working

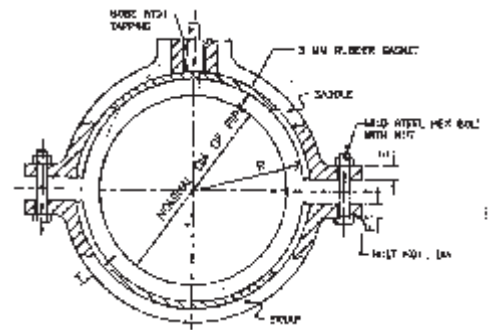
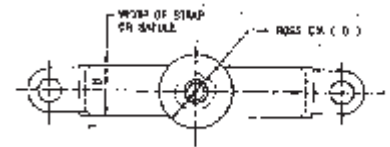
Saddle piece is supplied in two parts bolted together. The bottom half has rubber pad for support only. The top half has screwed outlet at the top. It's base has a round flat rubber gasket pasted with a hole drilled in the centre, to seal the opening. This top half sits on the drilled hole of equal diameter on main pipe. When the end flange nut bolts are tightened the pasted rubber pad tightens towards the main pipes barrel O.D. to seal the opening.

Size Main Pipes : 50 mm to 2000 mm dia
Outlet (Screwed) : 15 mm to 65 mm dia

Material Used Ductile Iron / M.S. Zinc metallised / Stainless Steel

Advantages

A threaded branch connection for fitting an air valve, pressure gauge, meters or branch pipe connection can be taken out from an existing, laid out pipe line without disturbing the main pipe line. A hole of required diameter is drilled by portable drill at site on the pipe & the Saddle piece simply sits on the hole & end nut bolts tightend.



SADDLE PIECES - FLANGED END

End Connection

For branch connection of flanged end in dia of 25 to 200 mm

Use On C.I./D.I./M.S./U.P.V./P.V.C/A.C/S.S Pipe etc.

Working

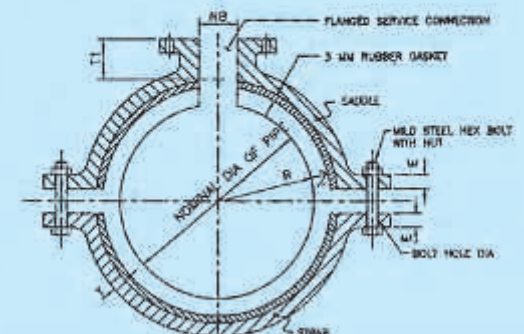
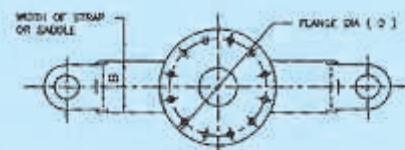
Saddle piece is supplied in two parts bolted together. The bottom half has rubber pad for support only. The top half has flanged outlet at the top. It's base has a round flat rubber gasket pasted with a hole drilled in the centre, to seal the opening. This top half sits on the drilled hole of equal diameter on main pipe. When the end flange nut bolts are tightened the pasted rubber pad tightens towards the main pipe barrel O.D to seal the opening.

Size Main Pipes : 50 mm to 2000 mm dia
Outlet (Flanged) : 25 mm to 200 mm dia

Material Used Ductile Iron/M.S. Zinc metallised/Stainless Steel.

Advantages

A flanged branch connection for fitting an air valve, pressure gauge, meters or branch pipe connection can be taken out from an existing, laid out pipe line without disturbing the main pipe line. A hole of required diameter is drilled by portable drill at site on the pipe & the Saddle piece simply sits on the hole & end nut bolts tightened.





End Connection

To seal small leakages / cracks on pipe body.

Use

CI /DI/MS/AC/PVC/UPVC/SS etc. i.e. Virtually all kinds of Rigid Pipes.

Working

The patch clamp consists of two halves. One half contains three straight patches of rubber for support. The other half contains a rubber pad with a recessed centre to cover the pipe body crack/leak. Tightening the end flange nut bolt tightens the rubber pad on to the crack/leak portion thereby sealing the leak.

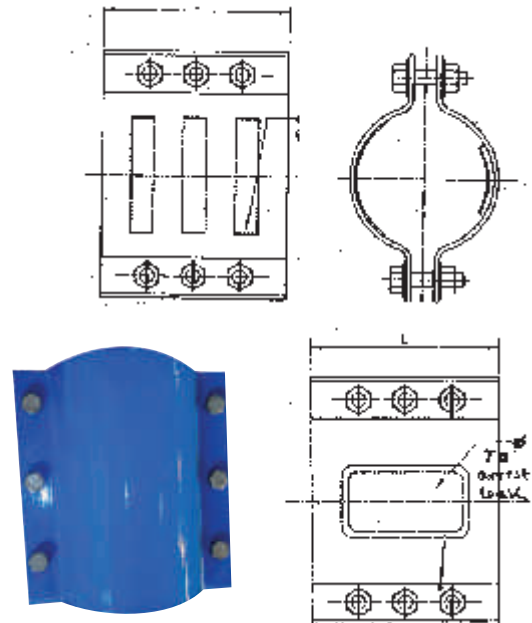
Size 50 mm dia to 2000 mm dia

Material Used Ductile Iron / M.S / S.S

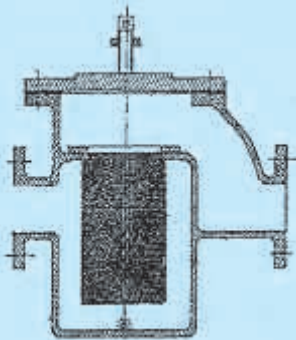
Advantages

Can be used to seal small longitudinal/circumferential cracks/leakages on a running/in use pipeline to arrest leak.

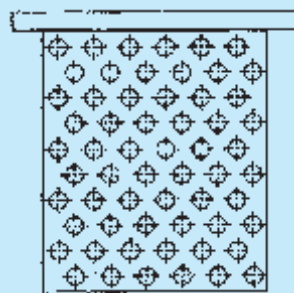
PIPE BODY PATCH CLAMP



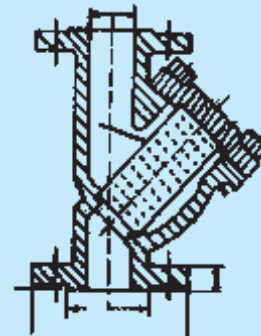
STRAINER



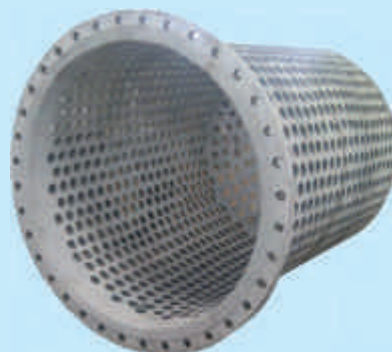
POT STRAINER



BUCKET STRAINER



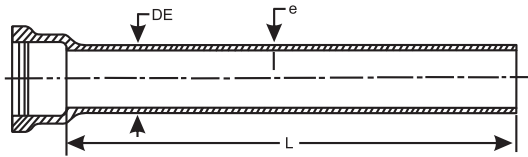
'Y' TYPE STRAINER



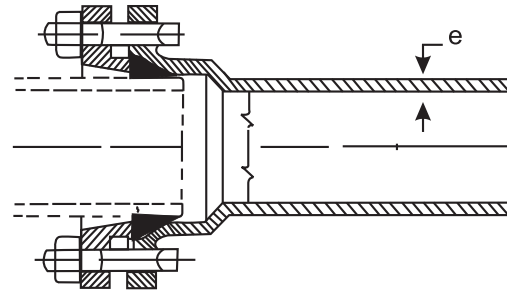


Specials

Vertically Sand Cast 'KEJRIWAL' Ductile Iron Pipes



Socket Spigot Pipe suitable for Lead / Tyton Joint



Socket Spigot Pipe suitable for Mechanical Joint

SOCKET AND SPIGOT PIPES — CLASS K-12 (10 bar pressure)

Nominal Diameter DN	Barrel DE mm	Socket Mass Approx Kg.	B A R R E L		Total Mass Incl. Socket (L)	
			e	Mass / mtr.	2.0 mtr.	2.5 mtr.
			mm	Kg.	Kg.	Kg.
1100	1152	200	19.2	482	1164	1405
1200	1255	238	20.4	558	1354	1633
1400	1462	280	22.8	727	1734	2098
1500	1565	340	24.0	820	1980	2390
1600	1668	380	25.2	917	2214	2672
1800	1875	490	27.6	1130	2750	3315
2000	2082	626	30.0	1370	3366	4051
2200	2288	784	32.4	1620	4024	4834
2400	2458	966	34.8	1900	4766	5716
2600	2684	1174	37.2	2200	5574	6674

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Kejriwal
CASTINGS LIMITED

TOTAL PIPELINE SOLUTIONS

Fittings

suitable for uPVC PIPES

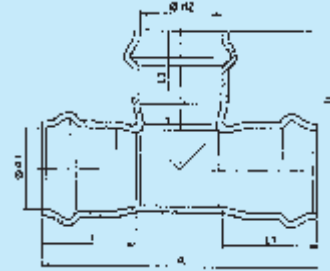


Special Fittings

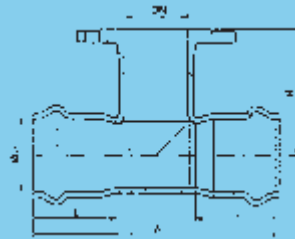
'KEJRIWAL' Special DI Fittings for uPVC Pipes - TEES



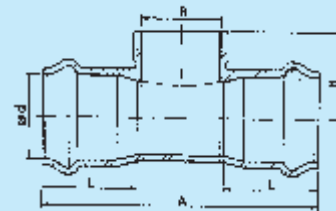
ALL SOCKET TEE



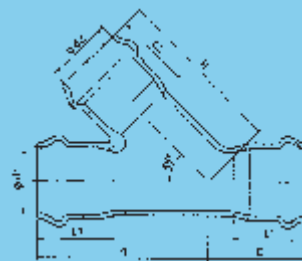
**DOUBLE SOCKET
BRANCH FLANGE
TEE**



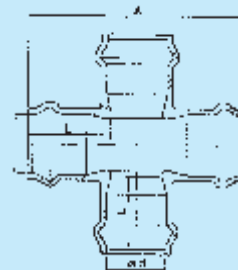
**DOUBLE SOCKET
COLLAR WITH
THREADED BRANCH**



**ALL SOCKET
"Y" TEE**



**ALL SOCKET
CROSS**

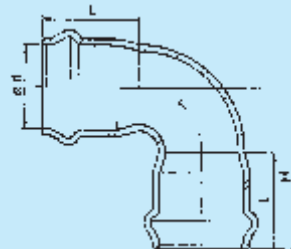


Special Fittings

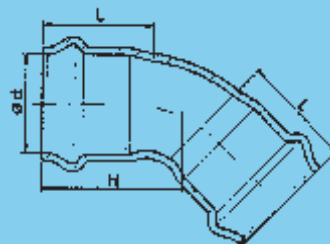
'KEJRIWAL' Special DI Fittings for uPVC Pipes - BENDS



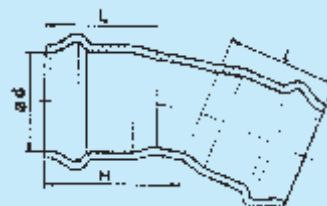
**DOUBLE SOCKET
90 DEG BEND**



**DOUBLE SOCKET
45 DEG BEND**



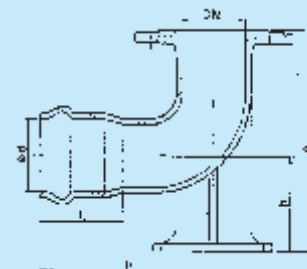
**DOUBLE SOCKET
22.5 DEG BEND**



**DOUBLE SOCKET
11.25 DEG BEND**



**FLANGE SOCKET
DUCKFOOT
BEND**



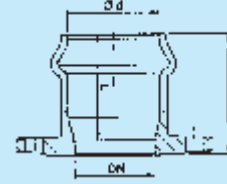


Special Fittings

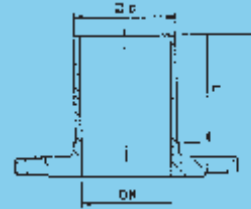
'KEJRIWAL' Special DI Fittings for uPVC Pipes - Tailpieces, Reducers & Adapters



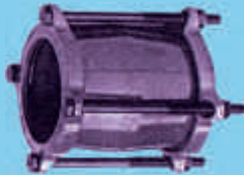
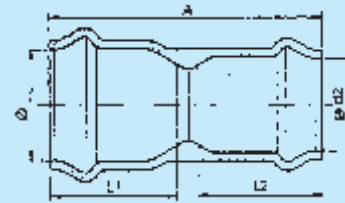
**FLANGED
SOCKET**



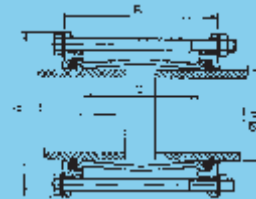
**FLANGED
SPIGOT**



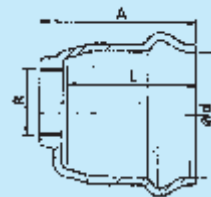
**DOUBLE SOCKET
REDUCER**



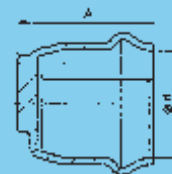
**MECHANICAL
COLLAR JOINT**



END CAPS



**END CAPS
THREADED
BRANCH**



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TOTAL PIPELINE SOLUTIONS

Coatings & Linings



Coatings & Linings

EXTERNAL COATINGS

Kejriwal products are available with multi coating options namely :

- **Bituminous Paint & Zinc Primer/Zinc Metallisation**
- **Epoxy Painting**
- **Fusion Bonded Epoxy Powder Coating**
- **Rilsan Coating**
- **Poly Urethane Coating**

Bituminous Paint & Zinc Primer/Zinc Metallisation

As a normal course, all fittings are spray painted with a coat of zinc rich primer/zinc sprayed/metallised and black bituminous paint.

Epoxy Painting

Epoxy spray painting can be done on all items viz. Pipes, Fittings, Valves for superior finish and excellent corrosion resistance against sea water and others.

Fusion Bonded Epoxy Powder Coating (F.B.E.)

Electrostatic fusion bonded epoxy powder coating can be done on all items viz. Pipes, Fittings, Valves for Ultra Superior finish and excellent corrosion resistance against Sea water and mild acid alkaline solutions.

Rilsan Coating

We have capacity and arrangement for Rilsan coating to be done if required by clients on Pipes, Fittings and Valves.

Poly Urathene Coating (P.U.)

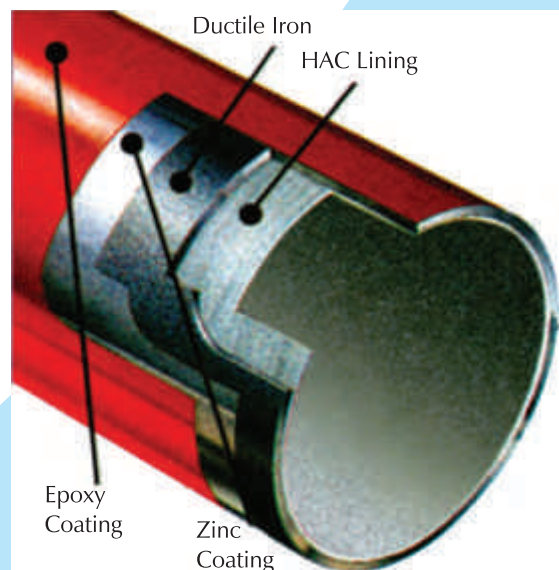
Fittings can be coated with Poly Urathene coating on the outside from 300 to 1000 microns as required.

INTERNAL LININGS

The Ductile Iron products are normally supplied with Cement Mortar lining.

The following linings may be applied depending on the internal conditions of use :

- Portland Cement Mortar
- Blast furnace Slag Cement Mortar
- High Alumina (Calcium Aluminate) Cement Mortar (H.A.C.)
- Sulphite Resistant Cement (SRC) lining
- Bituminous Paint
- Fusion bonded Epoxy Powder Coatings (F.B.E.)
- Poly Urathene Coatings (P.U.).



Easy Technique at Site

PUSH ON JOINT EPDM RUBBER GASKET



- The surface area of the pipe to be changed and free from mud, sand, pebbles & frozen materials.
- Recommended lubricant to be applied in inner surface of Gasket to come into contact with pipe.
- Lubricant to be applied on the outer surface of the plain end of pipe & alignment of pipes into socket enabling contact with gasket
- Fit the gasket when the surface is free from foreign particles and clean
- Use thin coat of lubricant on gasket and plain end of pipe
- Place the plain end pipe above the ground



Easy Techniques at Site

FLANGE JOINT

TOOLS REQUIRED

- Calibrated torque wrench, hydraulic or other tensioner, Wire brush (brass if possible)
- Helmet & Safety Goggles, Lubricant

CLEAN & EXAMINE

- Remove all foreign particulates, materials & debris from the seating surfaces, fasteners (bolts or studs), nuts and washers.
- Examine fasteners (bolt or studs), nuts & washers for defects such as burrs or cracks, if any.
- Examine flange surfaces for warping, radial scores, heavy tool marks, or anything prohibiting proper gasket seating.
- Replace components if found to be defective, if any doubt, seek advice.

ALIGN FLANGES

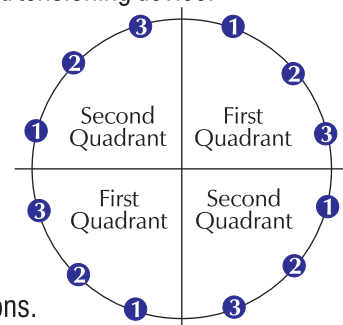
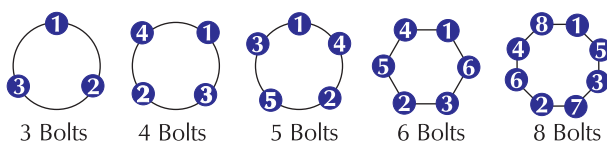
- Align flanges faces and bolt holes without using excessive force. Report any misalignment.

INSTALL GASKET

- Assure gasket is the specified size and material
- Examine the gasket to ensure it is free of defects
- Carefully insert gasket between flanges.
- Make sure the gasket is centered between the flanges.
- Do not use joining compounds or release agents on the gasket for seating surfaces unless specified by the gasket manufacturer.
- Bring flanges together, ensuring the gasket is not pinched or damaged.

INSTALL & TIGHTEN BOLTS

- Always use proper tools – calibrated torque wrench or other controlled tensioning device.



ADHERANCE

- Consult your gasket manufacturer for guidance on torque specifications.
- Always torque nuts in a cross bolt tightening pattern
- Tighten the nuts in multiple steps
- Step 1 – tighten all nuts initially by hand (larger bolts may require a small hand wrench)
- Step 2 – torque each nut to approx 30% of full torque.
- Step 3 – torque the nuts to approx. 60% of full torque.
- Step 4 – torque each nut to full torque, again using the cross bolt tightening pattern.
- Step 5 – apply at-least one final full torque to all nuts in a clock-wise direction until all torque is uniform.

RE-TIGHTENING

- Consult your gasket manufacturer for guidance and recommendations on retightening
- Do not re-torque elastomer-based, asbestos free gaskets after they have been exposed to elevated temperatures.
- Retorque fasteners exposed to aggressive thermal cycling.
- All re-torquing should be performed at ambient temperature and atmospheric pressure.



EQUIPMENT REQUIRED

- Brushes
- Paint brushes
- Trowel
- Palette knife
- Repair product

PROCEDURE

- Position the part so that the area to be repaired points downwards.
- Eliminate any loose parts with the wire brush.
- Clean thoroughly
- Wet the area to be repaired.
- Wet around the area to be repaired a few minutes before making the repair.
- Prepare the mixture as indicated below

PROPORTION BY WEIGHT

- 100 - Cement (suitable for water supply)
- 200 - Fine sand
- 15 - Emulsion (50/50) water/ICOMENT or equivalent
- 20 - Eliminate the damaged parts of the cement by making a clean cut perpendicular to the cast ductile iron
- 20 - Water

Mix the 2 dry components, then the 2 liquid components to obtain a pasty consistency. Add a little water if necessary. Apply the mortar compacting correctly to build up the required thickness and Smooth the surface. Apply an additional protective layer (water & emulsion) to prevent the cement from drying out too quickly. Cover with a damp cloth.



Easy techniques at Site

POLYURETHANE COATING (PU)/FUSION
BONDED EPOXY (FBE)/BITUMEN

EQUIPMENT REQUIRED

- Brush
- Paint brushes
- Spatula
- Gas torch

PROCEDURE

- Eliminate any loose parts with the wire brush
- Clean thoroughly
- Dry the surface to be coated
(in case of low temperature or humidity, it may be necessary to dry with gas torch).
- Apply the PU paint with a paint brush or spatula

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Supply

Several translucent blue water droplets of varying sizes are scattered in the bottom right corner of the page, set against the solid blue background.



Prestigious Supply

Seychelles

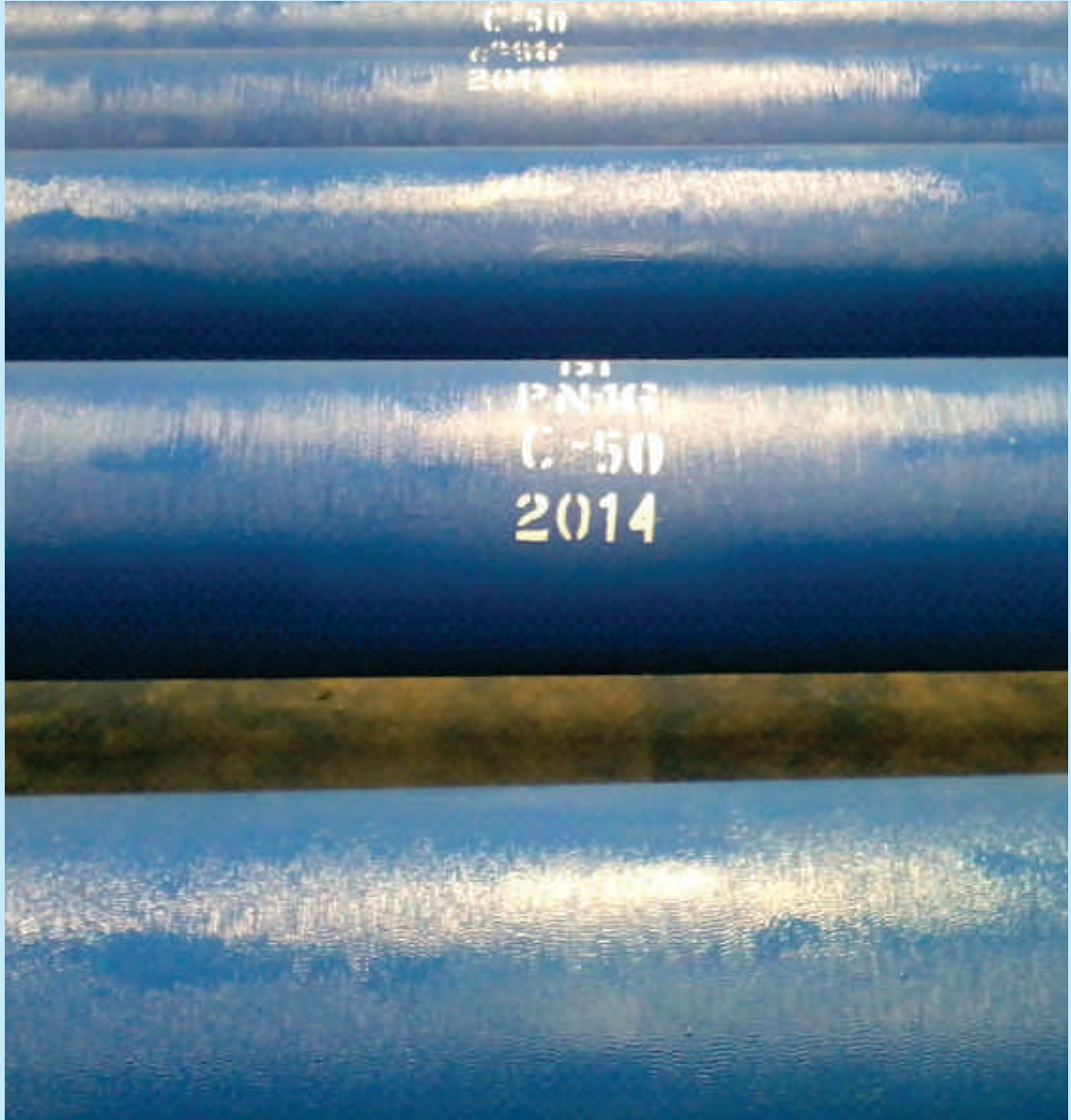


Fusion Bonded Epoxy Coated Dismantling Joints supplied to a Water Project



Prestigious Supply

Taiwan

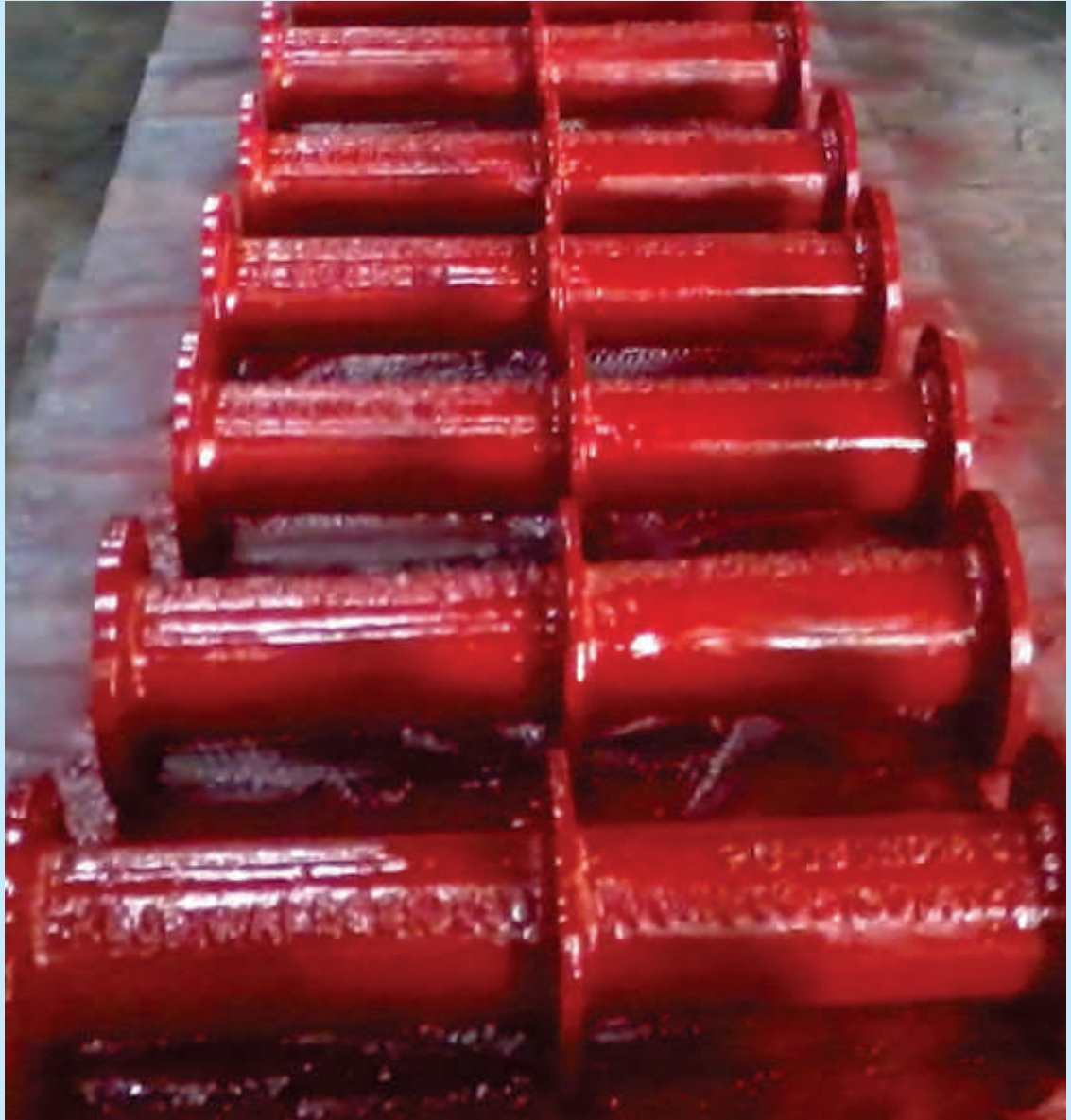


Polyurethane Coated Double Flanged Ductile Iron pipe for a Power Plant Renewal Project



Prestigious Supply

Oman



Red Epoxy Coated Puddle Pipes supplied for a sewage project



Prestigious Supply

Taiwan



Polyurethane Coated Flanged Bends supplied for Taiwan Project



Prestigious Supply

Taiwan



Fusion Bonded Epoxy Tee Flanges with ANSI drilling supplied for Taiwan Project



Prestigious Supply

Sri Lanka



Black Bitumen coated Bend for water project at Sri Lanka



Prestigious Supply

Sri Lanka



Fusion Bonded Epoxy coated Flanged Tee supplied to Sri Lanka



Prestigious Supply

India



Red Epoxy coated Double Socket Bend 45° supplied to Indian project



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