

# IRONTITE® DUCTILE IRON PIPE

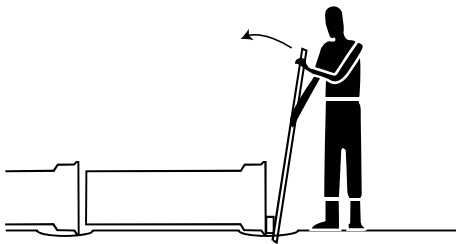
## JOINTING

Jointing procedures will vary according to the type of joint being used. Basic conditions which should be ensured for all types of joint are:

- Cleanliness of all parts
- Correct location of components
- Centralization of spigot within socket
- Strict compliance with jointing instructions

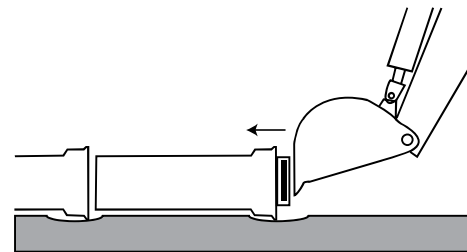
## JOINTING METHODS

- Centre the spigot in the socket and keep it in this position
- Push the spigot into the socket, checking alignment and level
- Deflect, if required, within the permissible limits
- Push in the spigot until the mark is in line with the socket face. Do not go beyond this position
- The assembly of DI push-on joint pipes and connections is easily performed using some standard equipment such as crowbars, TIRFOR type winches or the bucket of a mechanical excavator



### CROWBAR METHOD(FOR DN80 TO 150)

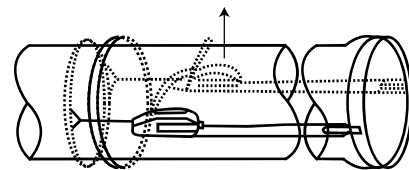
The crowbar levers against the ground. The pipe socket face must be protected with a piece of hard wood. The jointing done by the leverage of the crowbar.



### EXCAVATOR BUCKET (FOR ALL DIAMETER)

The hydraulic force of the arm of a mechanical excavator can be effectively used to assemble pipes and straight fittings. However the following precautions are to be taken:

- Between the socket and excavator bucket, place a wooden batten as a cushion
- Exert a slow and steady force observing the rules for joint assembly



### TIRFOR TYPE MECHANICAL WINCHES OR CHAIN PULLEY

- DN150 to 300: TIRFOR type winch, capacity 1.6 Ton, steel cable and rubber protected hooks
- DN350 to 600: TIRFOR type winch, capacity 3.5 Ton, steel cable and rubber protected hooks
- DN700 to DN1200: Two TIRFOR type winches, capacity 3.5 Ton, placed diametrically opposite. Two steel cables and two rubber protected hooks

**#Any of the above method as found suitable may be used.**

*The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.*

# IRONTITE<sup>®</sup> DUCTILE IRON PIPE

## JOINTING

### END PREPARATION FOR JOINTING

Where Push-on joints are to be used, the cut ends should be chamfered by filing or grinding similar to the original spigot ends.

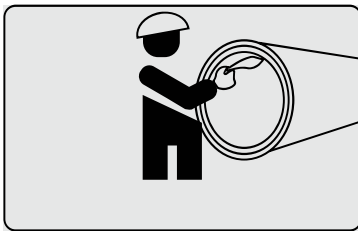
For sizes up to and including DN300 and for larger sizes where the pipes are to be checked and ascertained as being suitable for cutting, the diameter will be within the ovality tolerances guidance should be sought as to re-rounding.

### LUBRICATION

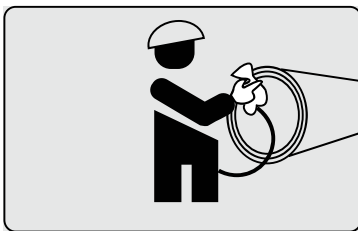
A layer of lubrication is to be applied on the exposed surface of the gasket, and the spigot end. The lubricating paste to be brush applied. No petroleum base lubricant should be used.

### JOINTING OF PUSH-ON JOINT

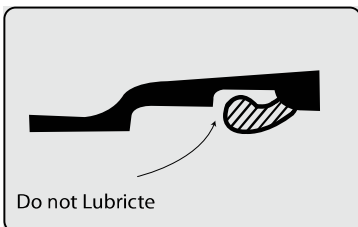
#### A) PROCEDURE FOR INSERTION OF RUBBER GASKET FOR PUSH-ON JOINT



Clean the inside of socket groove where gasket heel is to be inserted using a wire brush and a rag.



Clean gasket and insert to socket with the square section gasket heel in the retaining groove.



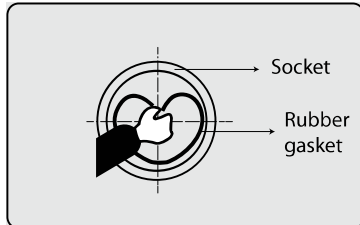
Coat with lubrication paste on the spigot end of the pipe and the exposed surface of the gasket.

*The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.*

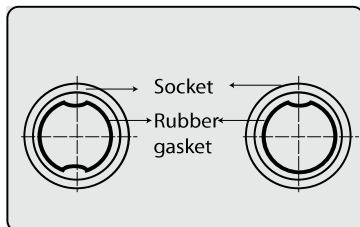


# IRONTITE® DUCTILE IRON PIPE

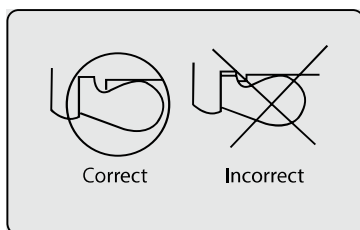
## JOINTING



The insertion of DN80 and DN150 gaskets may be facilitated by turning the gasket inside out, gripping one end with retaining heel uppermost and folding the free end down.

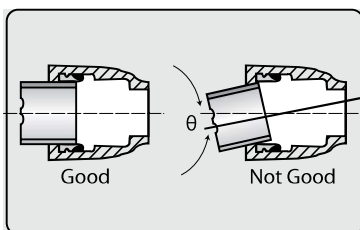


The insertion of DN200 and larger gaskets is facilitated by folding the gasket as shown by looping it into a heart shape with the gasket bulb towards the back of the socket. For DN800 - DN1600 it is preferable to loop the gasket into shape of a cross for insertion.



After insertion of the gasket confirm that the Heel position is properly seated in socket groove.

### B) INSERTION DEPTH OF SOCKET



The insertion depth of the spigot by two at the outside of spigot end gently as shown in figure.

*The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.*



# IRONTITE<sup>®</sup> DUCTILE IRON PIPE

## JOINTING

TABLE 1.1 INSERTION DEPTH FOR SOCKETED JOINTS

DN	INSERTION DEPTH FOR TJ PIPE		INSERTION DEPTH FOR AJ PIPE	
	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
80	65	73	72	80
100	68	76	74	82
125	70	78	77	85
150	74	82	80	88
200	80	88	86	94
250	85	93	86	94
300	90	98	87	95
350	90	98	90	98
400	90	103	92	100
450	93	108	88	103
500	93	108	90	105
600	93	108	95	110
700	123	138	120	135
750	123	138	-	-
800	133	148	120	135
900	148	163	120	135
1000	158	173	135	150
1100	178	188	-	-
1200	193	203	-	-
1400	213	238	-	-
1500	218	243	-	-
1600	233	258	-	-
1800	255	285	-	-
2000	285	315	-	-

The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.



# IRONTITE® DUCTILE IRON PIPE

## JOINTING

### B) JOINT CORRECTION

- Ensure that gasket is located correctly around its whole circumference with its groove on the retaining bead in the socket and retaining heel firmly bedded in its seat. At time of insertion of the spigot end check alignment of the pipes and fittings.
- Ensure that the gasket is correctly in position by inserting the end of a metal ruler (130mm to 200mm length) through the annular spigot and socket gap until it touches the gasket. The ruler must penetrate to the same depth around the whole circumference. If a difference is found, the gasket may have been displaced and the joining should be dismantled and attempted again.

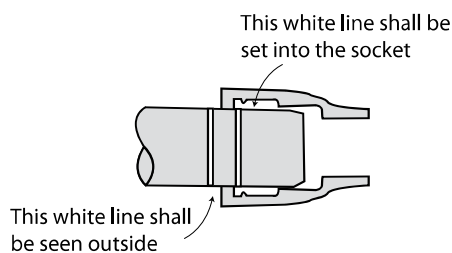


Fig. 1.1: Figures showing push-on jointing procedures for DI pipes

### C) JOINT DISMANTLING

- Socketed joints can usually be separated by using lifting equipment appropriated to the size of the pipe. Secure a webbing sling, of suitable size and strength around the pipe near the end farthest from the joining to be dismantled. This is then attached to the lifting equipment and the pipe is raised and lowered within the specified deflection limitations, whilst at the same time exerting slight pulling force so that the spigot is "walked" out of the socket.

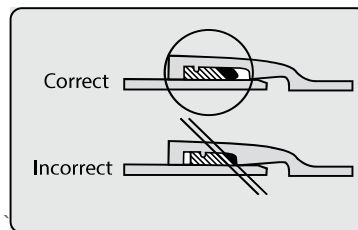


Fig. 1.2: Correct position of Rubber Gasket in push-on joint

The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.

# IRONTITE<sup>®</sup> DUCTILE IRON PIPE

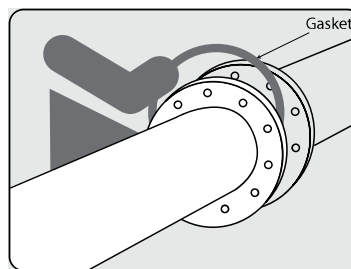
## JOINTING

TABLE 1.2 DEPTH OF INSERTION OF SOCKET (P)

DN (mm)	P (mm)	DN (mm)	P (mm)
80	87	750	145
100	87	800	155
150	87	900	170
200	95	1000	180
250	100	1100	190
300	105	1200	205
350	105	1400	255
400	110	1500	260
450	120	1600	275
500	120	1800	305
600	120	2000	335
700	140	2200	365

### PROCEDURE FOR JOINTING OF FLANGED FITTINGS

Flanged joints are both rigid and self anchoring, and are primarily used in above ground installations. To ensure a proper jointing, it is imperative to align the faces of the flanged ends in a straight line.



### MANUAL BOLT TIGHTENING PROCEDURE

- Ensure that the flanges are parallel and axially aligned.
- Lubricate the nut and bolt threads and the contact face of the nut on the flange.
- Locate the gasket and lightly nip the bolts.
- Tighten evenly to approximately one third of the final torque following the sequence shown in Bolt Tightening Sequence below.
- Repeat the tightening sequence in at least three more steps to the full torque. If required by the procedure, use a torque wrench.

The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.

