

ELECTRO LOCK



Introduction

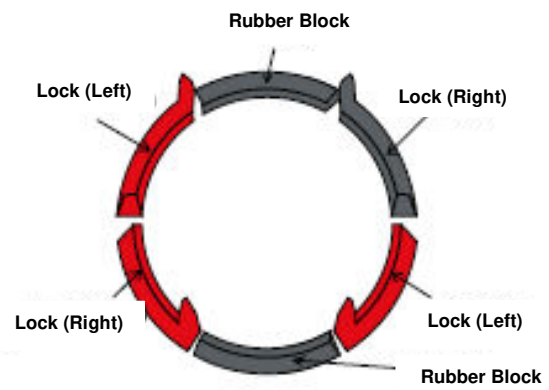
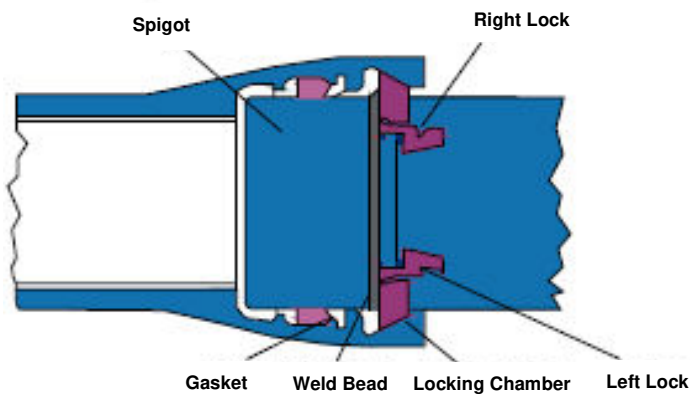
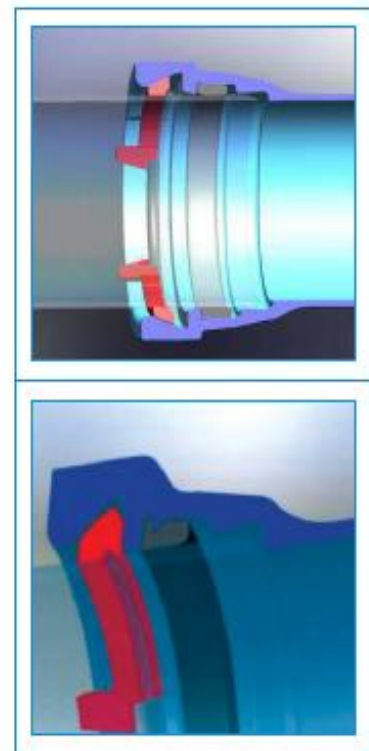
In the majority of pipelines, the design and layout will often create unbalanced forces when pressurised; it is these forces of hydrostatic or hydrodynamic origins that are often called 'thrust' and if left unrestrained, may lead to joint separation.

The Electrolock system offers a high pressure yet completely robust restrained solution, and combined with an ease of installation, this results in overall construction cost savings per joint made.

The Electrolock self-restrained joint employs a double chamber socket; one chamber utilising a standard push fit gasket for the sealing mechanism, and the other chamber providing for the anchorage mechanism that involve a series of specially designed locking segments.

Basic Features

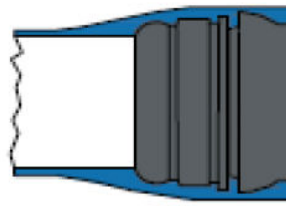
- Can withstand high pressures.
- Double Chamber – one for sealing the other for restraining axial movement.
- Standard push fit gasket for sealing mechanism.
- Weld bead and locking segments for restraint mechanism.
- After assembly, the locking segments are inserted in the restraining chamber. Under pressure the weld bead on the spigot engages the locking segments in the socket preventing joint separation.
- Easy to assemble and disassemble.
- Completely negates the need for expensive concrete thrust blocks and expansive excavations.



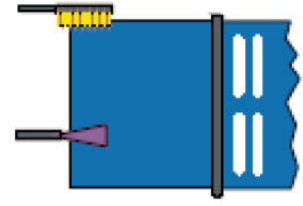
STEP 1: Cleaning

Clean all the parts shown in the diagrams.

Ensure the spigot end is clean to facilitate correct jointing.



SOCKET CLEANING



CLEANING SPIGOT END



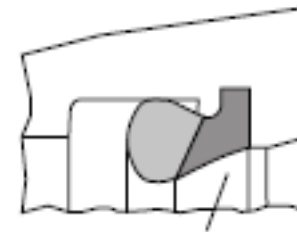
STEP 2: Insert Gasket

Install the gasket in the sealing chamber exactly the same way as a normal push fit joint.

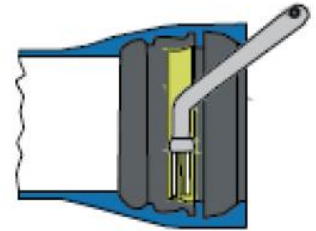
STEP 3: Gasket Insertion

Ensure correct position of the gasket in the sealing chamber.

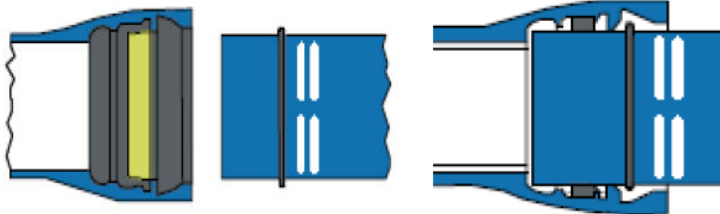
Lubricate the installed gasket and spigot end of pipe to be inserted.



CORRECT POSITION OF GASKET



LUBRICATE



STEP 4: Assemble Joint

- Align the pipe correctly to the receiving socket.
- Push the spigot pipe by suitable means until it stops.

Do not deflect during assembly.

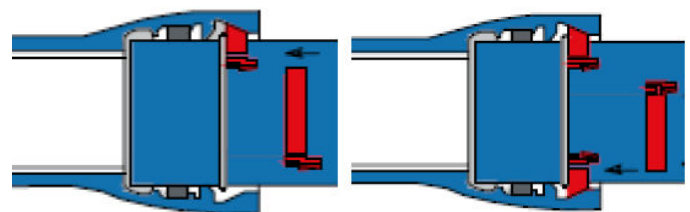
Do not remove the lifting mechanism before the complete connection has been made.

STEP 5a: Install Locking Segments (DN 80 to DN 500)

Insert the locking bars and the rubber retainers.

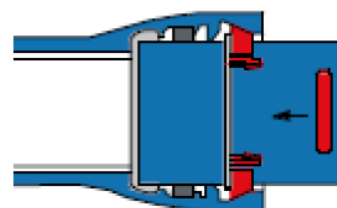
Carefully insert the locks as detailed in the diagrams

Close the gap between the locks with the provided rubber retainer.

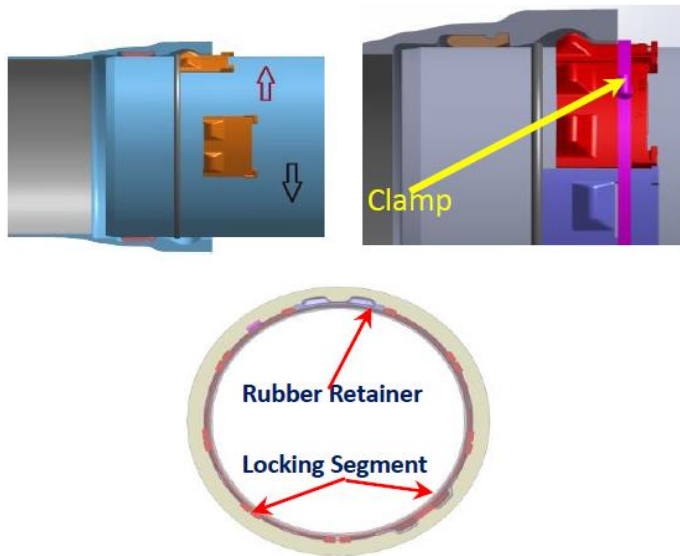


LOCK RIGHT

LOCK LEFT



RUBBER RETAINER



STEP 5b: Install Locking Segments (DN 600 to DN 1000)

Insert the locking plates and the rubber retainer.

Carefully insert the locking plates as detailed in the diagrams

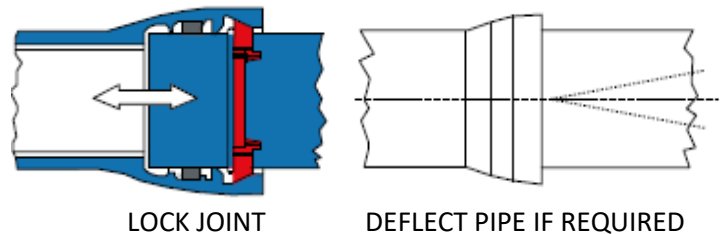
Close the gap between the locking clamps with the provided rubber retainer.

Before deflection, clamp the locking plates with the clamp provided.

STEP 6: Lock the Joint

Withdraw the pipe until the weld bead engages the locking mechanism; the assembly is now locked.

Angular deflection: deflect the pipe if required after the joint has been locked



DN	No. of locking segments	No. of rubber retainers	Maximum Angular Deflection	Pressure		
				PFA (bar)	PMA (bar)	PEA (bar)
80	2 (1R+1L)	1	5°	64	76.8	81.8
100	4 (2R+2L)	2	5°	64	76.8	81.8
150	4 (2R+2L)	2	5°	55	66	71
200	4 (2R+2L)	2	4°	44	52.8	57.8
250	4 (2R+2L)	2	4°	39	46.8	51.8
300	4 (2R+2L)	2	4°	37	44.4	49.4
350	4 (2R+2L)	2	3°	32	38.4	42.5
400	4 (2R+2L)	2	3°	30	36	41
450	8 (4R+4L)	4	3°	30	36	41
500	8 (4R+4L)	4	3°	30	36	41
600	8	1 + clamp	3°	30	36	41
700	9	1 + clamp	3°	30	36	41
800	10	1 + clamp	3°	25	30	35
900	11	1 + clamp	3°	25	30	35
1000	12	1 + clamp	3°	25	30	35

PFA = maximum hydrostatic pressure that a component is capable of withstanding continually in service.

PMA = maximum pressure occurring from time to time, including surge, that a component is capable of withstanding continually in service.

PEA = maximum hydrostatic pressure that a newly installed component is capable of withstanding for a relatively short duration, in order to ensure the integrity and tightness of the pipeline.

For further details, contact the team via email: sales@electrosteel.co.uk or telephone: +44 (0) 1246 264222 (option 1)

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