

Chatterjee International Centre
33A, Chowringhee Road, 11th Floor, Suite # 1, 6 & 11, Kolkata 700 071, India
Phone : 2227-1627, 2226-2312 / 2313 / 3145 Fax : 033 22262314
E-mail : info@kejriwalcastings.com



Kejriwal
CASTINGS LIMITED

TOTAL PIPELINE SOLUTIONS

INTERNATIONAL EDITION **2016**

Ductile Iron

Joints
Pipes
Fittings
Specials
Fittings for Upvc Pipes
Coatings & Linings



Restrained Joint



Tie Rods And Weld Bead Type Restrained Joints for Ductile Iron Pipes and Fittings.

Generally Ductile Iron Pipes are joined with push on type gaskets. Therefore no significant restrained against longitudinal separation of pipes are provided. It is the friction between gasket and the outer diameter of pipe or fittings holds one with the other from separation. Frictional resistance between these two are generally unpredictable and varying on many factors. Thus it is taken in consideration that this push on joints does not provide any longitudinal restrained against any hydrodynamic forces.

During the change of flow of water due to bends, Tees, reducers or other fittings or dead ends, unbalanced thrust occurs and generally concrete thrust blocks are used to resist this thrust.

Tie rod and weld bead type restrained joints are manufactured by Kejriwal Castings Limited as per pressure rating of 10KG/CM², 16KG/CM² and 25KG/CM². These type of restrained joint is easy to lay and fit at the site.

The pipes can be laid above the ground with such type of restrained joints.

Purchaser or consulting engineer should ensure that the proper installation procedures are followed.

Restrained Joint



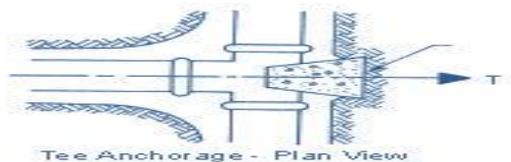
Thrust Blocks

Concrete thrust blocks are commonly used to resist unbalanced thrust forces. A thrust block may be constructed between the fittings and the undisturbed side or bottom of the trench.

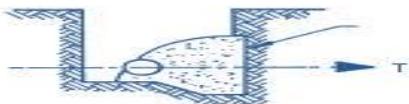
The base of the thrust block is designed to support the anticipated thrust loads by providing a bearing area through which the thrust forces can be transferred to the soil without exceeding the bearing capacity of the soil.



Bend Anchorage - Plan View



Tee Anchorage - Plan View



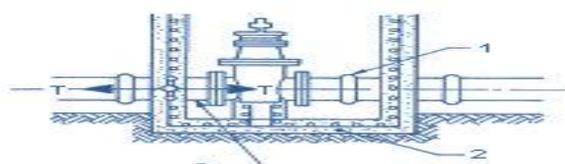
Bend Anchorage - Side View



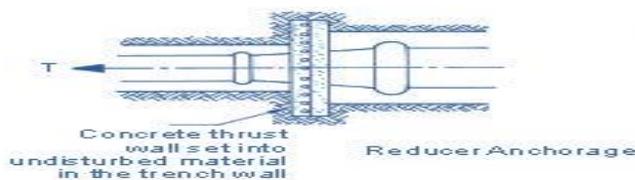
Tee Anchorage - Side View



Bend in Vertical Plane



Valve Anchorage



Reducer Anchorage

- 1 - Mechanical Joint or Dismantling Joint
- 2 - Reinforced concrete valve pit incorporating a thrust wall
- 3 - Valve connector with thrust (puddle) Flange



Restrained Joint



Thrust Block Limitation

Soil Limitation

The effectiveness of a thrust block depends on the type of surrounding soil. The poorer the bearing capacity of the soil the larger the thrust block must be provide an adequate bearing area. Cost considerations may prohibit the use of large thrust blocks. In some cases, such as in swamp lands or marshes, the bearing capacity of the soil may be such that thrust blocks may not be feasible.

Space Limitations

In confined areas, such as excavations under city streets, there may not be adequate space to install a thrust block large enough to resist the anticipated thrust forces.

Future Excavations

The possibility of future excavations can restrict the usefulness of thrust blocks. Excavations that remove the soil support from thrust blocks of an operating pipeline can result in joint separation and line failure.



Restrained Joint

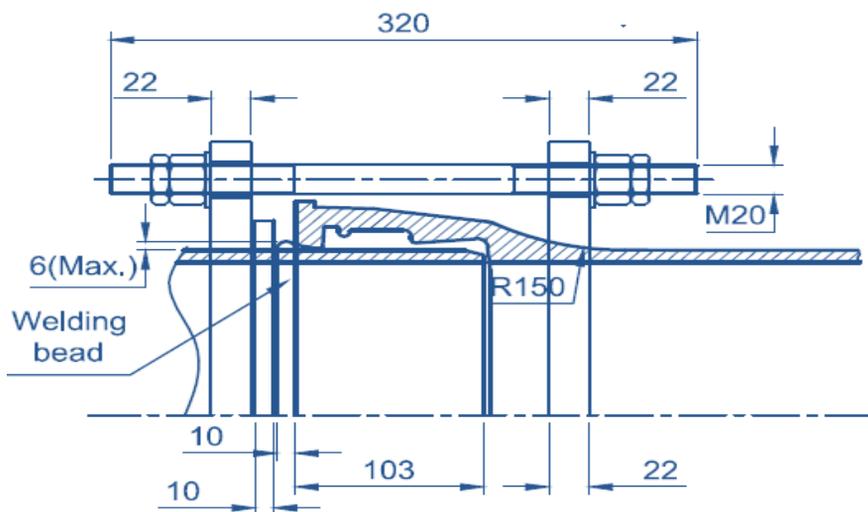


When determining the thrust restraint requirement during a project design phase, consideration should be given to the impact of future growth and/or facility expansion on the area immediately adjacent to the pipeline and potential thrust block locations. Should future utilities be installed within the pipeline right of way, the installation effort may compromise the soil behind the thrust block allowing the thrust block to move and resulting in a pipe joint separation. Such a situation is very common on industrial plant sites and college and business office campuses where facility expansion and upgrades are constantly being implemented. If there is a possibility of pipe having to be supported by a thrust block or soil supporting the pipeline, consideration must be given to use of restrained joints to fulfill the pipeline thrust restrain requirements.

Restrained Joint

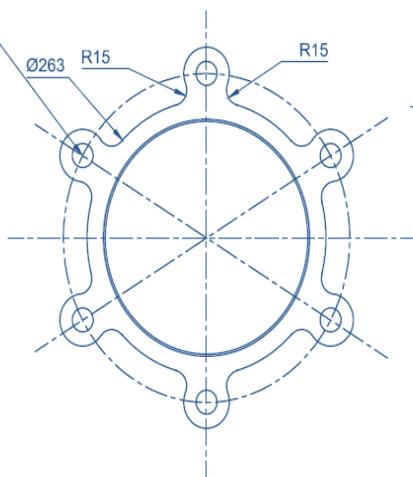


Tie Rods And Weld Bead Type Restrained Joints Ductile Iron Pipes

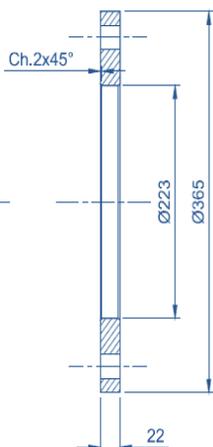


Assembly

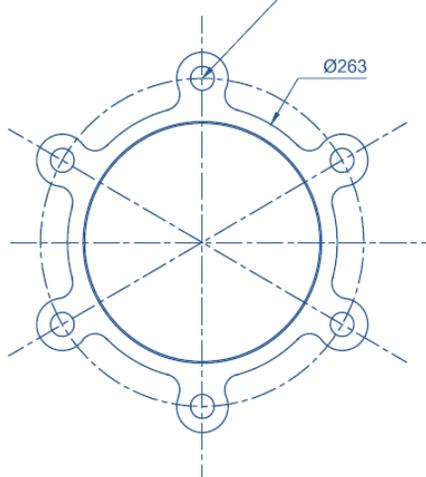
P.C.D 315 x Ø23
x 6 Nos.(Through Hole)



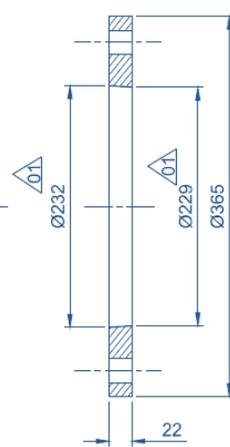
Spigot Ring



P.C.D 315 x Ø23
x 6 Nos.(Through Hole)



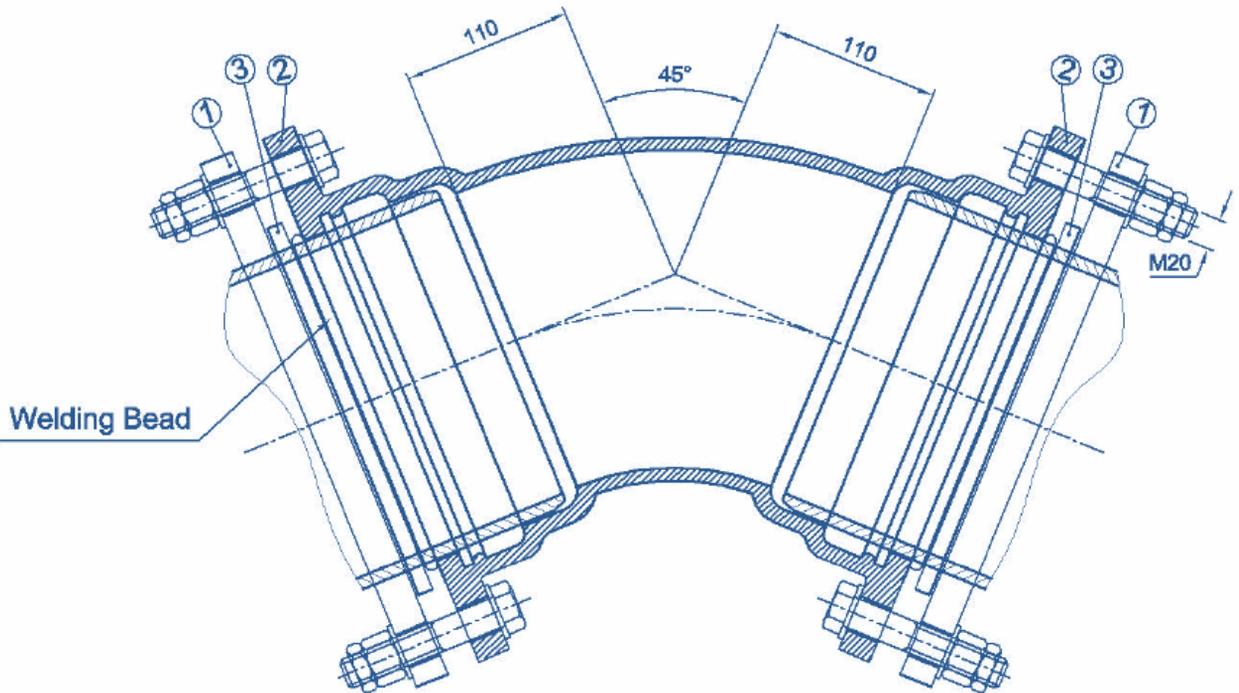
Socket Ring



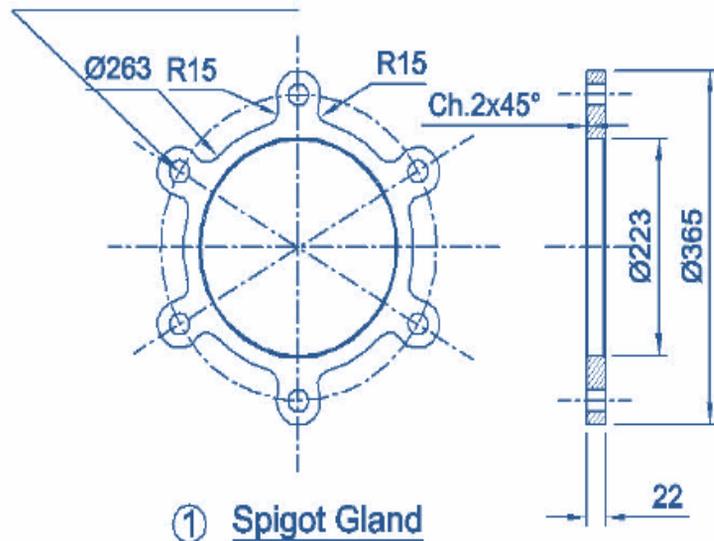


Restrained Joint

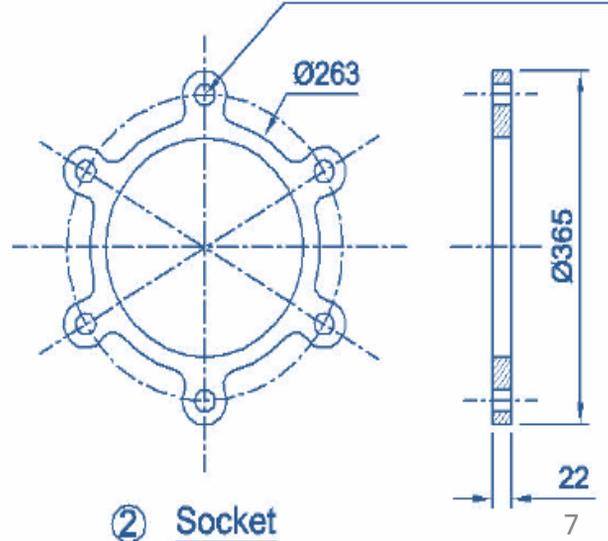
Tie Rods And Weld Bead Type Restrained Joints Ductile Iron Fittings



P.C.D 315 x Ø23
x 6 Nos.(Through Hole)



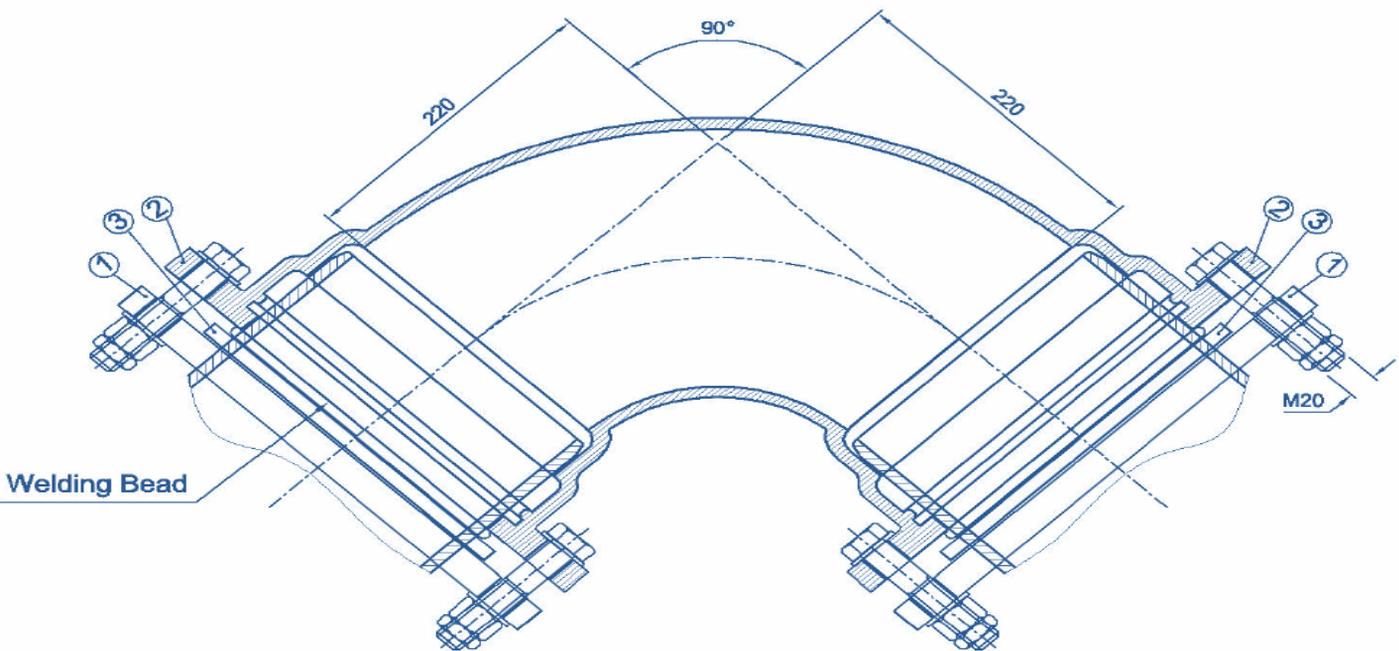
P.C.D 315 x Ø23
x 6 Nos.(Through Hole)



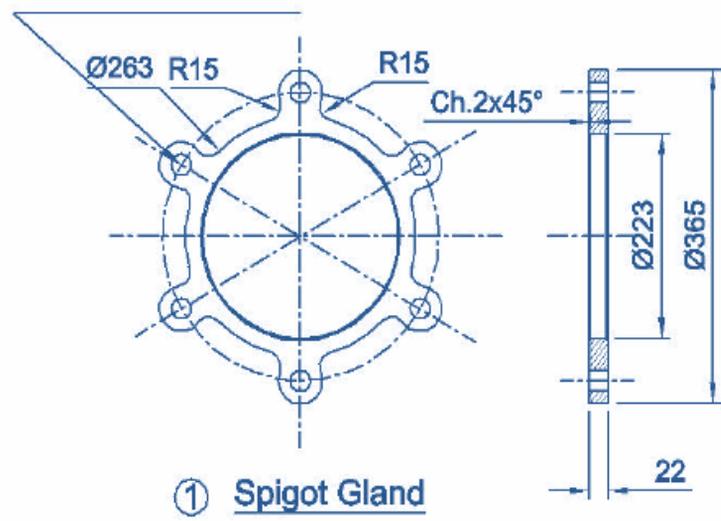


Restrained Joint

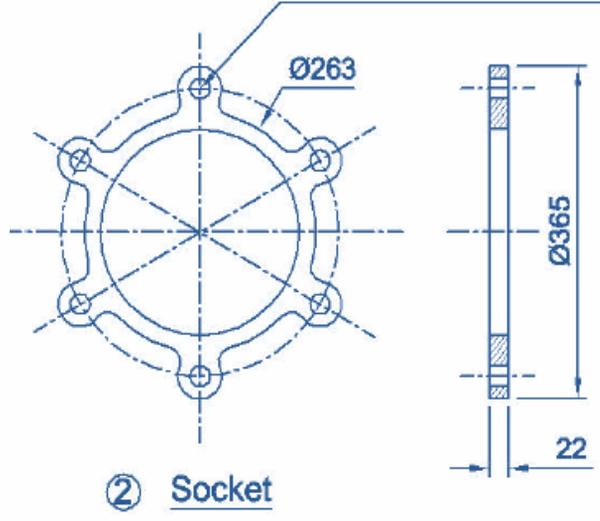
Tie Rods And Weld Bead Type Restrained Joints Ductile Iron Fittings



P.C.D 315 x Ø23
x 6 Nos.(Through Hole)



P.C.D 315 x Ø23
x 6 Nos.(Through Hole)





Restrained Joint



Guidelines to use

This is developed in house by Kejriwal Castings Limited hence installation guidelines to be recommended by us to avoid site issues by users.

We shall remain responsible for our product and our clients.



Restrained Joint

Factory Address

Kejriwal Castings Limited
NH-6, Chamrail, Kona Expressway,
Howrah – West Bengal
India

