Jacking Kit - Field Rounding – Procedure

No ductile-iron pipe is a perfect circle - especially after cutting. It is a cast product, not machined, and no matter whom the manufacturer is, slight ovality is a reliable given. That is an often unspoken reality of large diameter ductile (flexible) iron pipe. This is most notable in diameters of 16 inches and above. Internal stresses in the metal wall can be released when cutting the pipe, causing the pipe to "spring" out-of-round, when previously it may have gauged as permissible. This is not in any way an indication of "bad" pipe, just one that has been annealed (heat-treated).

A pipe can be deemed "out-of-round" when ovality is found to exceed AWWA standardized tolerances where, in simple terms, there would be unforgiving metal-to-metal conflict between the spigot and bell during assembly. This kit takes "out-of-round" out of your construction vocabulary.

More important than shape, in terms of fitness for duty, is the size of the pipe. The purpose of this jacking kit is to allow you to easily change the shape of the pipe – from the outside – in plain sight - during joint assembly.



The size of the pipe – the diameter if it were a perfect circle – cannot be changed with this kit. It will not shrink or grow the pipe. That is why the first and most important aspect of cutting a ductile-iron pipe is to confirm its size prior to cutting.

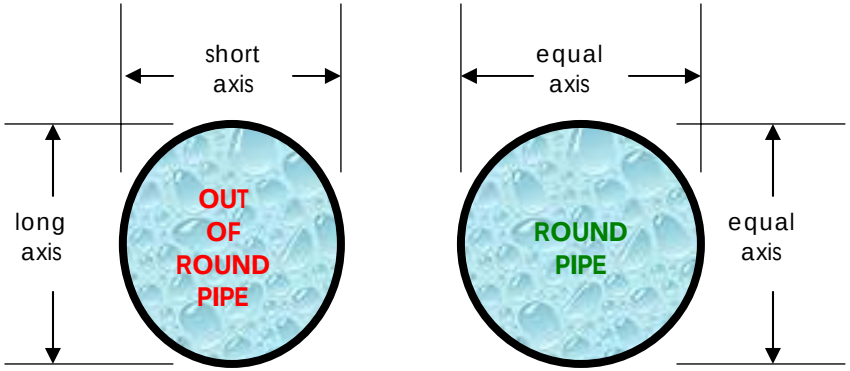
The following table lists the size and ovality range for AWWA -conforming ductile-iron pipe:

Spoken Diameter	Nominal Outside Diameter	Minimum Outside Diameter	Maximum Outside Diameter	Maximum Diameter Closest 16th
6	6.90	6.84	6.96	6 15/16
8	9.05	8.99	9.11	9 1/8
10	11.10	11.04	11.16	11 1/4
12	13.20	13.14	13.26	13 1/4
14	15.30	15.22	15.35	15 5/16
16	17.40	17.32	17.45	17 7/16
18	19.50	19.42	19.55	19 9/16
20	21.60	21.52	21.65	21 10/16
24	25.80	25.72	25.85	25 13/16
30	32.00	31.94	32.08	32 1/16
36	38.30	38.24	38.38	38 3/8

All dimensions shown are *inches*

These dimensions are provided as reference to written AWWA standards (C150 / 151 / 600). An adapted measuring tape is provided for use in determining if the pipe of concern is of appropriate size. The measuring tape contains marked ranges for each diameter wherein the zero point must fall (when wrapped around a pipe) to ensure productivity from jacking. If the zero line does not fall within the colored range on the tape for that diameter, DO NOT CUT THE PIPE AT THAT LOCATION.





Once cut, any pipe has the potential to look as shown upper left. The idea is to correct it as shown upper right. The external jacking kit is intended and designed for this purpose. *HINT : A mechanical joint gland typically serves as a wonderful field ring to gauge roundness during jacking.*

Step by Step jacking Instructions :

1. **Measure pipe**
   Only cut pipe that measures within specification. The jacking kit can only adjust the shape of the barrel – NOT THE SIZE.



2. **Cut pipe**
   Use carbide abrasive or diamond tipped blade to cut the pipe at the location confirmed with OD tape.

3. **Bevel spigot** (if to be used within a push-joint)
   Carefully use the cutting saw or a rotary grinder to place angled relief to the spigot end.

4. **Place long axis vertical**
   The purpose of this kit is to concurrently transform both the long axis and short axis (of the egg) into axis of equal measure.

5. **Set jack on pipe / wrap chain**
   The chain should be initially wrapped and hooked so as to stay put (tensioned) as placed. This makes each stroke of the jack more effective.









6. **Round pipe**
   In the simplest of terms, this kit is used to turn the egg back into a circle. Each pipe addressed will require different amounts of jacking based upon size, wall thickness, and degree of original ovality.



7. **Assemble joint**
   The jacking is best done from a position where the operator is riding the pipe like a jockey, from behind the jack, and carefully watching its progress into the receiving opening.



8. **Remove jack**
   Release the tension on the chain by turning the jack valve in the direction indicated on the jack body.



IMPORTANT NOTE : Clow Water Systems Company / McWane Inc. shall not be liable for injuries or damage caused through improper use or application of this equipment.