

2011 EDITION

30"–64"

HP LOK[®]

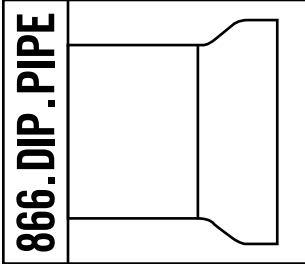
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WATER & WASTEWATER

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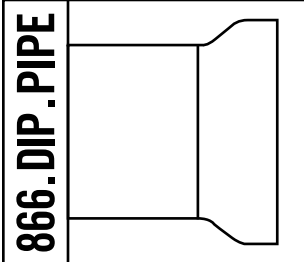
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ANSI/AWWA C200

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HP LOK Restrained Joint Pipe and Fittings 30"–64"

HP LOK Restrained Joint Pipe and Fittings provide flexible push-on joints for 30"–64" pipe sizes. The HP LOK Restrained Joint has a working pressure equivalent to the working pressure rating of the parent pipe with a maximum working pressure rating of 350 psi.

30"–36" HP LOK spigot ends are compatible with 30"–36" TR FLEX® Pipe and Fittings. The rating will be 250 psi when used with TR FLEX Fittings.

42"–64" HP LOK Pipe is not compatible with 42"–64" TR FLEX Pipe and Fittings.

Pipe for wastewater service may be furnished in accordance with **ASTM 746 Standard Specification for Ductile Iron Gravity Sewer Pipe**. For certain wastewater applications, a ceramic quartz filled, amine cured, novalac epoxy lining is available — see *PROTECTO 401™ Ceramic Epoxy Lined Pipe and Fittings brochure*.

HP LOK Pipe and Fittings utilize the TYTON® Gasket.

An HP LOK Ring that is factory installed in the bell provides a positive axial lock between the bell interior surface and a retainer weldment on the spigot end of the pipe.

**For higher pressure ratings, consult your U.S. Pipe Sales Representative.*

For a suggested design procedure for the restraint of thrust forces in pressurized, buried Ductile Iron piping systems, the design engineer should refer to the current DIPRA publication "Thrust Restraint Design for Ductile Iron Pipe" or the U.S. Pipe brochure "The Use And Application of Restrained Joints for Ductile Iron Pipelines."

ANSI/AWWA Standards

ANSI/AWWA C151/A21.51 "Ductile-Iron Pipe, Centrifugally Cast, for Water."

Asphaltic outside coating and inside lining are in accordance with ANSI/AWWA C151/A21.51.

ANSI/AWWA C153/A21.53 "Ductile-Iron Compact Fittings For Water Service" or ANSI/AWWA C110/A21.10 "Ductile-Iron and Gray-Iron Fittings, For Water."

HP LOK® Fittings conform to applicable requirements of ANSI/AWWA C153/A21.53 or ANSI/AWWA C110/A21.10.

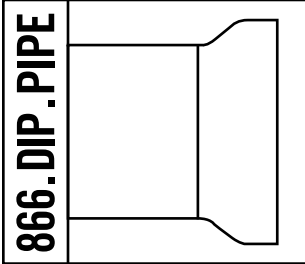
ANSI/AWWA C104/A21.4 "Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water."

Cement lining, in accordance with ANSI/AWWA C104/A21.4, or special linings and/or coatings can be furnished for specific conditions.

ASTM-A716-08 "Standard Specification for for Ductile Culvert Pipe."

ASTM A536 "Standard Specification for Ductile Iron Castings."

NOTE: *If specifiers or users believe that corrosive soils will be encountered where our products are to be installed, please refer to ANSI/AWWA C105/A21.5 "Polyethylene Encasement for Ductile Iron Pipe Systems" for proper external protection procedures. TYTON®, HP LOK® and TYTON JOINT® are Registered Trademarks of U.S. Pipe and Foundry Co., LLC.*



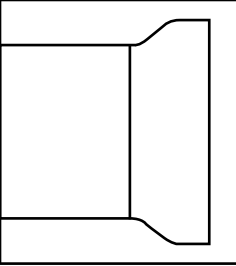
HP LOK ® RESTRAINED JOINT		
 <small>Approved for</small>	2011 EDITION	P 4

Suggested Specifications for HP LOK Restrained Push-On Joint Pipe and Fittings

30" –64" restrained joints shall be HP LOK Pipe and Fittings or pre-approved equal. Restrained push-on joints for pipe and fittings shall be designed for a water working pressure of 350 in accordance with ANSI/AWWA C111/A21.51 Rubber-Gasket Joints for Ductile Iron Pipe and Fittings.

Restrained joint pipe shall be Ductile Iron manufactured in accordance with the requirements of **ANSI/AWWA C151/A21.51**. Push-on joints for such pipe shall be in accordance with **ANSI/AWWA C111/A21.11 "Rubber-Gasket Joints for Ductile-Iron Pipe and Fittings."** Pipe thickness shall be designed in accordance with **ANSI/AWWA C150/A21.50 "Thickness Design of Ductile-Iron Pressure Pipe,"** and shall be based on laying conditions and internal pressures as stated in the project plans and specifications. Fittings shall be manufactured of Ductile Iron per grade 70-50-05 as specified in AWWA C153 and C110.

NOTE: Cement mortar lining and seal coating for pipe and fittings, where applicable, shall be in accordance with **ANSI/AWWA C104/A21.4**. Asphaltic outside coating shall be in accordance with **ANSI/AWWA C151/A21.51** for pipe and **ANSI/AWWA C110/A21.10** or **ANSI/AWWA C153/A21.53** for fittings.



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Instructions for Assembling HP LOK Pipe and Fittings 30"–64"

1. The gasket seat must be clean and free of debris or any foreign matter.*
2. Install the gasket in the bell. Do not lubricate gasket prior to installing bell.*
3. Lubricate the gasket and spigot end of the mating pipe with TYTON JOINT® Lubricant.*
4. The spigot end of the mating pipe may now be inserted into the bell. The installer must make sure that the spigot end is fully homed in the bell and not deflected. The HP LOK® Ring can be slid back and forth when the spigot end is inserted correctly and not deflected.
5. The jack bolt should now be removed and discarded.
6. The clamp bolt can now be snugged down so that the HP LOK Ring contacts the pipe surface. Use only enough bolt torque to make sure the HP LOK Ring is in contact with the mating spigot end and to prevent the HP LOK Ring from spreading.
7. Inspect the full circumference of the HP LOK Ring to make sure it is in contact with the spigot end of the pipe and not resting on the weld bead. If the HP LOK Ring is sitting on the weld bead, the spigot end is not fully homed in the bell or the joint is excessively deflected for installation.
8. When it is certain that the HP LOK Ring is fully contacting the spigot end, extend the joint (remove slack in the joint) by pulling on the assembled pipe joints. Do not use excessive force. The spigot end should slide easily under the HP LOK Ring.
9. Tighten the clamp bolt to approximately 10 to 20 ft-lb of torque. Do not over tighten.
10. Deflect the joint as desired, not to exceed 1/2 degree.
11. The joint is now completely assembled.

Components required for each joint:

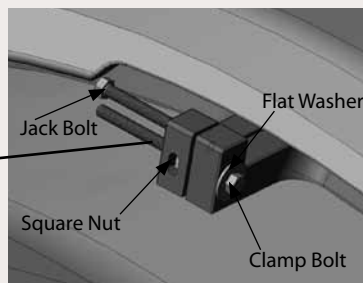
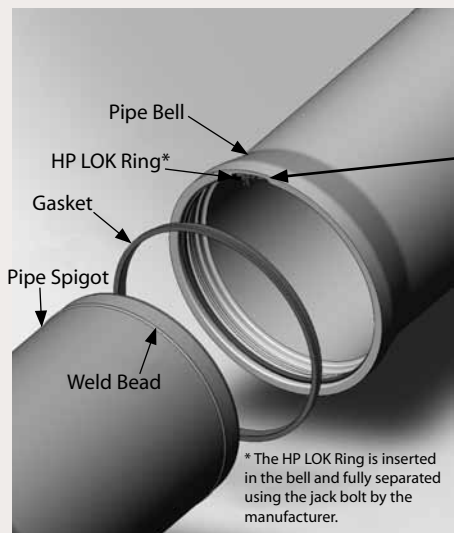
1 HP LOK® Ring (factory installed)

1 TYTON® Gasket

TYTON JOINT® Lubricant

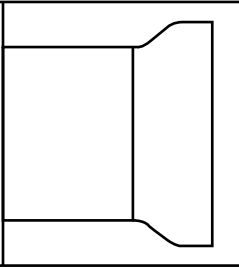
1 jack bolt (factory installed)

1 clamp bolt (factory installed)



NOTE: HP LOK Ring shown in full closed position.

* Refer to page 6.



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TYTON[®] Gasket Installation Instructions

Clean the gasket and the bell. Loop the gasket as shown in the illustrations. Place the gasket into the mating gasket seating area of the bell with the rounded bulb end of the gasket entering first. Seat the gasket heel firmly in the retainer seat of the bell.

It will be necessary to form equally spaced loops in the gasket for proper insertion. It is recommended to use two or three loops for 30" and 36" gaskets and four to six loops in 42"-64" gaskets.

Make sure the gasket is uniformly seated around the inside of the socket.

In colder weather, the gaskets should be kept at temperatures above 40°F to ensure the resiliency of the gasket during installation. In such conditions, the gaskets should be stored in a heated area or heated in drums of water prior to installation. If water is used, the gaskets should be dried before installation in the bell.

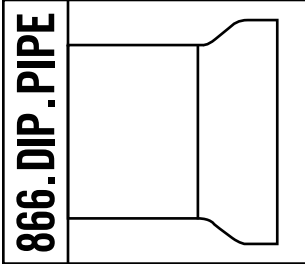
Lubrication

After the gasket has been installed into the bell, a thin film of TYTON JOINT[®] Lubricant should be applied to the inside surface of the gasket which will come in contact with the beveled end of the pipe. In warm, dry weather conditions, the lubricant can dry out, especially when applied to warm or hot pipe, it will be necessary to add a small amount of water to hydrate the lubricant. Only TYTON JOINT Lubricant should be used.

CAUTION: *The use of spray-on lubricant is not recommended. Experience has determined that spray-on lubricant may not have sufficient lubricity to allow joint assembly without gasket displacement.*

Clean the spigot end of the pipe back to the assembly stripes. Apply TYTON JOINT Lubricant to the cleaned spigot end. Do not allow the lubricated surface to touch the ground or trench sides prior to installation.





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Pipeline Expansion

HP LOK® Pipe and Fittings Socket Pull Out

(Linear Expansion Within The Assembled Socket)

In HP LOK Pipe and Fitting sockets, there is a small amount of slack or pullout available at each joint. This pullout, or expansion capability, is the result of clearance inside the socket required for joint assembly. The expansion can be minimized by extending the joint after assembly and prior to setting the joint deflection.

The expansion of the joint in both pipe and fitting sockets must be considered, especially in the following cases:

- When HP LOK Pipe are used above ground (bridge crossings, on piers, etc.),
- When HP LOK Pipe are used in poor soil conditions (swamps, marshes, etc.),
- When long lengths of HP LOK Pipe are required for restraint due to high operating pressures and/or unfavorable soil parameters,
- Where HP LOK Pipe are used inside casing pipe.
- Where HP LOK Pipe and Fittings are in vertical applications. If HP LOK joints are used in vertical installations, provisions must be made to keep the joint extended. Failure to keep vertical joints extended can result in movement of pipeline components.

When HP LOK Pipe are used inside a casing pipe, it is recommended that the assembled pipe be pulled through the casing.

Please note that if the joint is not extended during assembly, the expansion per joint during line pressurization will increase the length of a 1000 foot long installation up to 3 feet, depending upon the pipe size. (Refer to Table 1 for the Pullout at each joint.)

Minimum Laying Lengths For HP LOK Pipe

The following drawings and Table 1 define the minimum lengths for HP LOK Pipe when furnished in either Plain End x Plain End, or Bell x Plain End. The minimum laying lengths are determined on the basis of the socket depth and the minimum space required in front of the pipe bell face to clear the HP LOK® Ring and provide access to the jack and clamp bolts. These minimum laying lengths must be considered when ordering factory cut lengths or field cutting HP LOK Pipe.

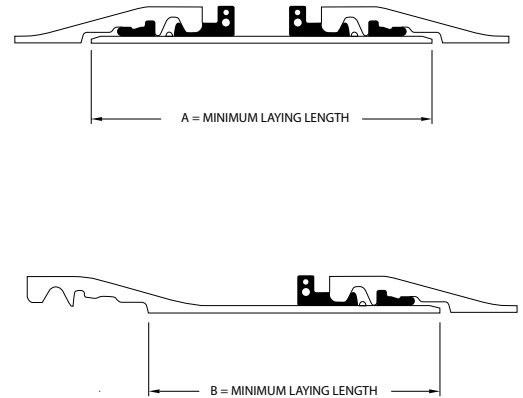
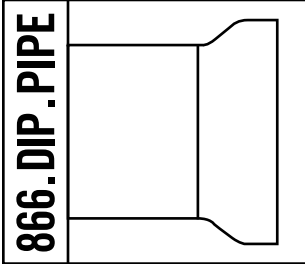


Table 1. Minimum Laying Lengths & Average Pullout For Each HP LOK Pipe or Fittings Socket

SIZE Inches	DIMENSIONS Inches		PULLOUT Feet
	A	B	
30	24.00	18.00	.05
36	24.00	18.00	.04
42	27.00	20.00	.04
48	29.00	23.00	.05
54	29.00	23.00	.05
60	29.00	23.00	.05
64	29.00	23.00	.05



HP LOK Field Cut Pipe Instructions

Making a Field Cut

Before making the field cut, measure the pipe diameter or circumference at the location to be cut. The diameter or circumference should fall within the range shown below in **Table 2**. If the measurement is not within the prescribed range, another pipe should be selected and checked before cutting.

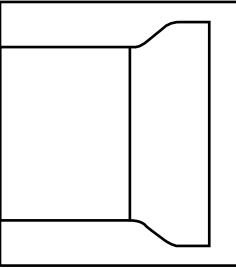
The pipe must be cut as square as is practical. A field cut end that is not square may leak, especially if the joint is fully deflected. Measure from the factory manufactured spigot end to the desired cut location. Mark the measured distance around the circumference of the pipe at sufficient intervals to determine a square cut-line (a line perpendicular to the axis of the pipe). Scribe the square cut-line around the outside surface of the pipe.

Cut the pipe. (Abrasive saws are commonly used.) Bevel the field cut end (a disk grinder can be used). Refer to a shop manufactured bevel as a guide for proper shape. Additional grinding may be required to further bevel the pipe if difficulty in assembly of the joint is encountered.

When Ductile Iron pipe 14" and larger is to be cut in the field, the material should be ordered as "GAUGED PIPE." A *Gauged Pipe* is a pipe whose barrel outside diameter is within the spigot diameter dimensional specifications as determined by diameter tape measurements over the pipe's length to within approximately two feet of the bell chime. Pipe that is "gauged" is specially marked to avoid confusion. **ANSI/AWWA C151/A21.51** Standard for Ductile Iron pipe requires factory gauging of the spigot end. Accordingly, pipe selected for field cutting should also be field gauged in the location of the cut and verified to be within the tolerances shown below in the table. In the field a mechanical joint gland can be used as a gauging device.

Table 2.

NOM. PIPE SIZE Inches	CIRCUMFERENCE		DIAMETER	
	MAXIMUM Inches	MINIMUM Inches	MAXIMUM Inches	MINIMUM Inches
30	100-25/32	100-11/32	32.08	31.94
36	120-9/16	120-1/8	38.38	38.24
42	140-1/16	139-5/8	44.58	44.44
48	159-27/32	159-13/32	50.88	50.74
54	180-31/32	180-1/2	57.60	57.46
60	193-11/16	193-1/4	61.65	61.51
64	206-7/16	206	65.71	65.57



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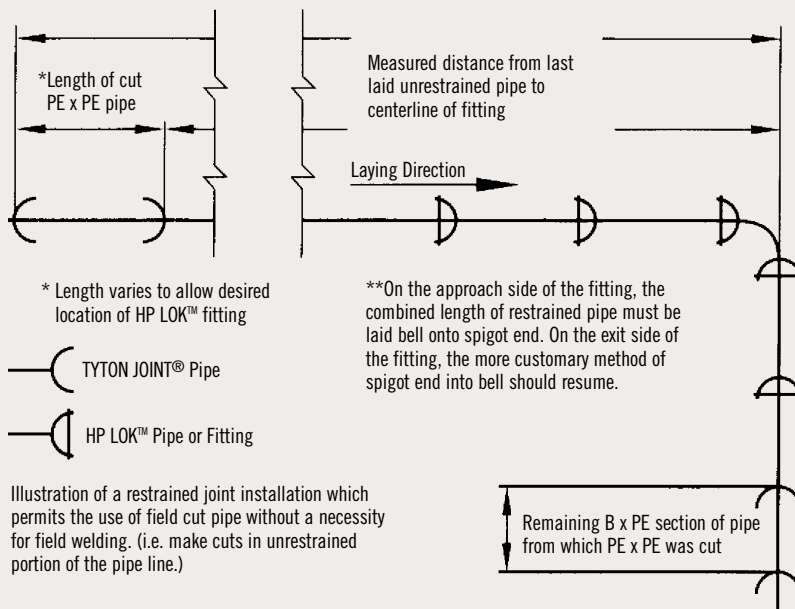
HP LOK Field Cut Pipe Instructions (cont.)

Unrestrained Field Cut Pipe Installation Method

The following schematic illustrates the use of a field cut pipe in the unrestrained portions of the line, to eliminate the requirement for a field weldment.

Thrust Restraint Design For Ductile Iron Pipe

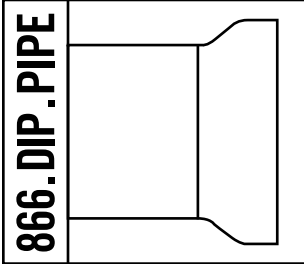
Published by the Ductile Iron Pipe Research Association (DIPRA).



Pipe installations may require field cutting, particularly where fittings are used. By planning ahead, many field cuts can be made in the portion of the line involving standard TYTON JOINT[®] Pipe thus eliminating the need to weld HP LOK[®] Pipe.

30-36" TR FLEX[®] fittings can be used with 30-36" HP LOK[®] Pipe however, the pressure rating is reduced to 250 psi with the use of PC 350, 30-36" HP LOK[®] Pipe. TR FLEX GRIPPER[®] Rings can only be used in TR FLEX[®] Fittings. If a pressure class pipe lower than PC350 is used with TR FLEX[®] Fittings, contact a U.S. Pipe Sales Representative for a Working Pressure rating. Refer to the TR FLEX GRIPPER[®] Ring brochure for use and application notes.

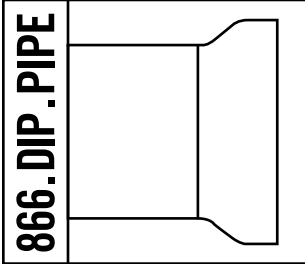
In the event field cuts are required in the restrained section of the line, please refer to the HP LOK[®] Field Weld brochure where the procedure describes how to weld a round steel bar to the plain end of field cut HP LOK[®] Pipe. The procedure has been qualified in conformance with the American National Standards Institute/American Society Standard ANSI/AWS D11.2-89, Section 8.



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Notes Regarding the Use of Restrained Joint Pipe

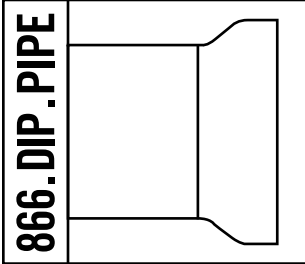
1. Large unbalanced thrust forces can be produced at dead ends, bends, tees or size changes of high pressure and/or large diameter piping systems.
2. Concrete thrust blocks or restrained joint pipe and fittings can normally be used to resist the unbalanced thrust forces.
3. In underground piping systems, an unbalanced thrust force can normally be resisted by providing a designed length of restraint at a change in direction or diameter where thrust forces are anticipated. Restrained joint pipe normally must transfer the thrust forces to the soil surrounding the pipeline.
4. The ***Thrust Restraint Design For Ductile Iron Pipe*** published by the Ductile Iron Pipe Research Association (DIPRA) is one method used to calculate the required length of restraint at a change in direction. This publication is available through your U.S. Pipe Sales Representative.
5. Most restrained joints allow for joint take-up after installation. The amount of take-up or slack can vary considerably with the type of joint and installation conditions. Thrust forces produced by internal pressures can result in removal of this joint take-up thereby increasing the length of the restrained section of the line. In any situation or configuration where increases in the line segment length could be detrimental to the pipeline or surrounding structures, the restrained joints should be fully extended during installation.
6. An increase in line segment length can also result in additional joint deflection. If an increase in length or other line movement are anticipated, the deflection of the restrained joints should be limited to only a portion of the joint design deflection during the installation of the pipe.
7. In fully extended, totally restrained piping systems, the thrust forces are carried by the piping system, and the resistance to the thrust is not dependent upon the surrounding soil. In situations where there is insufficient space to provide the designed restrained length, or where there are poor soil conditions, the entire section of line should be restrained or other external means of restraint provided.
8. If restrained joint pipe is used in a casing and is subjected to thrust, the joints should be fully extended to take up the joint slack prior to making end connections. The length of restraint in the casing should not be considered as part of the designed length of restraint required to provide the soil resistance to the thrust forces.



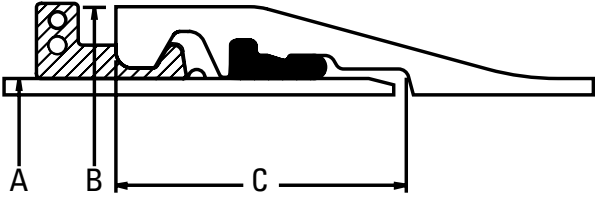
HP LOK ® RESTRAINED JOINT		
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Notes Regarding the Use of Restrained Joint Pipe (cont.)

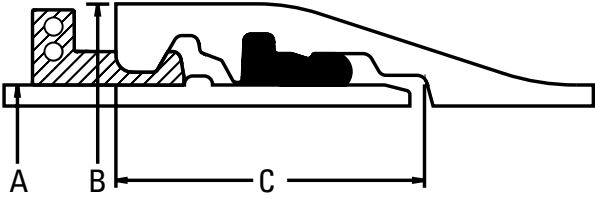
9. Above ground lines subject to thrust forces should be fully restrained and extended to remove any slack from the joint. The joint can be extended by pulling out on the pipe after the restrained joint assembly is made. The thrust forces can cause an unexpected increase in length of an above ground line if the slack is not first removed from the joint. When restrained joint pipe are used for bridge crossings or other above ground installations, each length of pipe must be supported in a manner to restrict both vertical and horizontal movement.
10. It is the responsibility of the Purchaser or Consulting Engineer to ensure that proper trench preparation, compaction and pipe installation procedures are followed and that adequate restrained lengths or thrust block designs are provided to resist the unbalanced thrust loads generated by the installed piping systems.
11. In general, restrained joints are more electrically conductive than conventional push-on joints used for Ductile Iron pipe. This increased conductivity can make a restrained section of the line more susceptible to stray current corrosion caused by direct currents from sources such as electrical transit systems or cathodically protected steel structures (steel pipe, underground storage tanks, etc.). If exposure to stray current is anticipated, contact your U.S. Pipe Sales Representative for the recommended method of protection.
12. If HP LOK joints are used in vertical installations, provisions must be made to keep the joint extended. Failure to keep vertical joints extended can result in movement of pipeline components.



HP LOK Restrained Joint Pipe and Fittings Basic Dimensions



30" - 36" HP LOK Assembly Cross Section

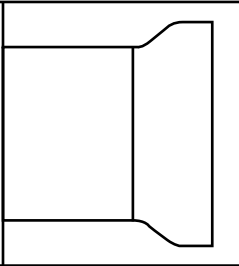


42" - 64" HP LOK Assembly Cross Section

SIZE	WORKING PRESSURE*	A	B PIPE	B FITTINGS	C PIPE	C FITTINGS	PULLOUT
Inches	psi	Inches	Inches	Inches	Inches	Inches	Feet
30	350	32.00	36.38	37.83	8.70	8.70	.05
36	350	38.30	42.68	44.73	8.70	8.70	.04
42	350	44.50	49.36	50.54	9.25	9.24	.04
48	350	50.80	56.25	58.05	10.06	9.91	.05
54	350	57.56	63.39	65.39	10.06	9.91	.05
60	350	61.61	67.95	69.65	10.06	9.91	.05
64	350	65.67	71.70	73.90	10.06	9.91	.05

Actual B and C Dimensions may be up to 0.50" greater than dimensions shown in this table.
The maximum deflection for HP LOK joints is 0.5 degree.

*The HP LOK Restrained Joint has a working pressure equivalent to the working pressure rating of the parent pipe with a maximum working pressure rating of 350 psi. For higher pressure ratings, contact your U.S. Pipe Sales Representative.



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Pressure Class – Thickness, Dimensions and Weight

SIZE Inches	PRESSURE CLASS psi	THICKNESS Inches	OUTSIDE DIAMETER* Inches	18-FOOT LAYING LENGTH		20-FOOT LAYING LENGTH	
				WEIGHT PER LENGTH† Pounds	AVG. WEIGHT PER FOOT†† Pounds	WEIGHT PER LENGTH† Pounds	AVG. WEIGHT PER FOOT†† Pounds
30	150	0.34	32.00	2160	120.0	—	—
30	200	0.38	32.00	2375	131.9	—	—
30	250	0.42	32.00	2590	143.9	—	—
30	300	0.45	32.00	2755	155.1	—	—
30	350	0.49	32.00	2970	165.0	—	—
36	150	0.38	38.30	2935	163.1	—	—
36	200	0.42	38.30	3195	177.5	—	—
36	250	0.47	38.30	3520	195.6	—	—
36	300	0.51	38.30	3780	210.0	—	—
36	350	0.56	38.30	4100	227.8	—	—
42	150	0.41	44.50	3635	201.9	—	—
42	200	0.47	44.50	4090	227.2	—	—
42	250	0.52	44.50	4465	248.1	—	—
42	300	0.57	44.50	4840	268.9	—	—
42	350	0.63	44.50	5290	293.9	—	—
48	150	0.46	50.80	—	—	4915	245.8
48	200	0.52	50.80	—	—	5490	274.5
48	250	0.58	50.80	—	—	6060	303.0
48	300	0.64	50.80	—	—	6635	331.8
48	350	0.70	50.80	—	—	7205	360.3
54	150	0.51	57.56	—	—	6380	319.0
54	200	0.58	57.56	—	—	7140	357.0
54	250	0.65	57.56	—	—	7900	395.0
54	300	0.72	57.56	—	—	8655	432.8
54	350	0.79	57.56	—	—	9410	470.5

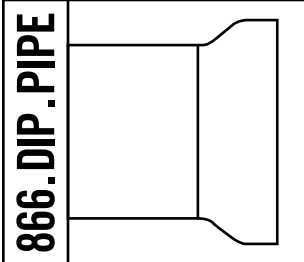
NOTE: Thicknesses and dimensions of 30" through 64" Ductile Iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

*Tolerance of O.D. of spigot end: 30-48 in., +0.08 in., -0.06 in.; 54-64 in., +0.04 in., -0.10 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

†† Including bell; average weight, per foot, based on calculated weight of pipe before rounding.

Table continued on next page.



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Pressure Class – Thicknesses, Dimensions and Weight (cont.)

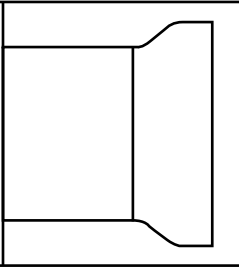
SIZE Inches	PRESSURE CLASS psi	THICKNESS Inches	OUTSIDE DIAMETER* Inches	18-FOOT LAYING LENGTH		20-FOOT LAYING LENGTH	
				WEIGHT PER LENGTH† Pounds	AVG. WEIGHT PER FOOT†† Pounds	WEIGHT PER LENGTH† Pounds	AVG. WEIGHT PER FOOT†† Pounds
60	150	0.54	61.61	—	—	7235	361.8
60	200	0.61	61.61	—	—	8050	402.5
60	250	0.68	61.61	—	—	8860	443.0
60	300	0.76	61.61	—	—	9785	489.3
60	350	0.83	61.61	—	—	10,595	529.8
64	150	0.56	65.67	—	—	8045	402.3
64	200	0.64	65.67	—	—	9035	451.8
64	250	0.72	65.67	—	—	10,025	501.3
64	300	0.80	65.67	—	—	11,010	550.5
64	350	0.87	65.67	—	—	11,870	593.5

NOTE: Thicknesses and dimensions of 30" through 64" Ductile Iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

*Tolerance of O.D. of spigot end: 30-48 in., +0.08 in., -0.06 in.; 54-64 in., +0.04 in., -0.10 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

†† Including bell; average weight, per foot, based on calculated weight of pipe before rounding.



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Thickness Class - Thicknesses, Dimensions and Weight

Size Inches	Thickness Class	Thickness Inches	Outside Diameter* Inches	18-Foot Laying Length		20-Foot Laying Length	
				Avg. Weight Length† Pounds	Weight Per Foot†† Pounds	Avg. Weight Length† Pounds	Weight Per Foot†† Pounds
30	50	0.39	32	2466	137	—	—
30	51	0.43	32	2682	149	—	—
30	52	0.47	32	2897	161	—	—
30	53	0.51	32	3112	173	—	—
30	54	0.55	32	3326	185	—	—
30	55	0.59	32	3540	197	—	—
30	56	0.63	32	3753	209	—	—
36	50	0.43	38.3	3331	185	—	—
36	51	0.48	38.3	3654	203	—	—
36	52	0.53	38.3	3977	221	—	—
36	53	0.58	38.3	4299	239	—	—
36	54	0.63	38.3	4620	257	—	—
36	55	0.68	38.3	4940	274	—	—
36	56	0.73	38.3	5259	292	—	—
42	50	0.47	44.5	4113	229	—	—
42	51	0.53	44.5	4565	254	—	—
42	52	0.59	44.5	5015	279	—	—
42	53	0.65	44.5	5464	304	—	—
42	54	0.71	44.5	5912	328	—	—
42	55	0.77	44.5	6359	353	—	—
42	56	0.83	44.5	6804	378	—	—

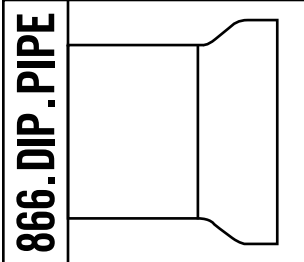
NOTE: Thicknesses and dimensions of 30" through 64" Ductile Iron Pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

60" and 64" classified as pressure class only.

*Tolerance of O.D. of spigot end: 30" - 48", +0.08", -0.06 in., 54"-64", +0.04, -0.10".

†Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

††Including bell; average weight, per foot, based on calculated weight of pipe before rounding.



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Thickness Class - Thicknesses, Dimensions and Weight (cont.)

Size Inches	Thickness Class	Thickness Inches	Outside Diameter*	18-Foot Laying Length		20-Foot Laying Length	
				Avg. Weight Length Pounds	Weight Per Foot† Pounds	Avg. Weight Length Pounds	Weight Per Foot† Pounds
48	50	0.51	50.8	—	—	5703	285
48	51	0.58	50.8	—	—	6372	319
48	52	0.65	50.8	—	—	7039	352
48	53	0.72	50.8	—	—	7705	385
48	54	0.79	50.8	—	—	8368	418
48	55	0.86	50.8	—	—	9029	451
48	56	0.93	50.8	—	—	9689	484
54	50	0.57	57.56	—	—	7275	364
54	51	0.65	57.56	—	—	8141	407
54	52	0.73	57.56	—	—	9005	450
54	53	0.81	57.56	—	—	9867	493
54	54	0.89	57.56	—	—	10726	536
54	55	0.97	57.56	—	—	11583	579
54	56	1.05	57.56	—	—	12437	622

NOTE: Thicknesses and dimensions of 30" through 64" Ductile Iron Pipe conform to ANSI/AWWA C151/A21.51.

Weights may vary from the standard because of differences in bell weights.

60" and 64" classified as pressure class only.

*Tolerance of O.D. of spigot end: 30" - 48", +0.08", -0.06 in., 54"-64", +0.04, -0.10".

†Including bell; average weight, per foot, based on calculated weight of pipe before rounding.