TUF-LOK®

Ring Grip Pipe Coupling
Series 688, 689 & 698

Installation & Operations Guide

Thank you for purchasing the Tuf-Lok Ring Grip Pipe Coupling. This manual contains information that will allow you to get the best results from your equipment while operating it safely. Please read it carefully before installing and operating this equipment. It is critical that the people operating and maintaining this equipment have a copy of this manual. All information in this publication is based on the latest product information. Tuf-Lok International reserves the right to make changes at any time without notice and without incurring any obligation.

Safety

Your safety and the safety of others are very important. We have provided important safety messages in this manual and safety labels on the equipment. Please read these messages carefully.

A safety message alerts you to the potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol and one of three words, DANGER, WARNING, or CAUTION.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

These signal words mean:

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Each message typically identifies the type of the hazard, the consequence of not avoiding the hazard, and how to avoid the hazard.

Damage Prevention Messages

NOTICE indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

Symbol	Typical Warning/Meaning
	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Mandatory Action to Avoid a Hazard
	Pressurized Source, or Contents Under Pressure

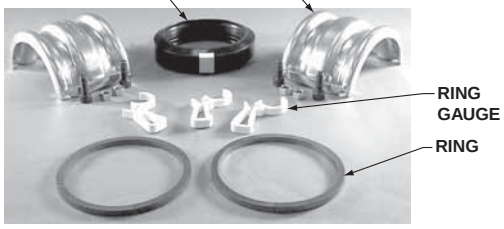
NOTICE

OPERATING CONDITIONS

The Tuf-Lok pipe coupling has been designed to provide dependable service, even under severe use. However, the Tuf-Lok pipe coupling is intended for specific operating conditions only, with respect to air pressure and temperature. Maintenance of such products is controlled exclusively by the user. Tuf-lok disclaims all responsibility for damage or injury resulting from the use of the Tuf-Lok pipe coupling. Therefore, the user assumes all responsibility for any and all claims arising directly or indirectly from the product and/or its use.

Operation Principles

The Tuf-Lok ring grip pipe coupling provides a versatile, economical and reliable method for connecting pipe together. The Tuf-Lok ring grip pipe coupling eliminates any pipe grooving, threading or flanging. Pipe end preparation is simple and easy, either in the shop or on the job site. In addition to speed and ease of assembly, the Tuf-Lok ring grip pipe coupling offers specific mechanical benefits to the designer, installer and user.



Installation

⚠ WARNING

Provide proper supports for the pipe during installation. The Tuf-lok pipe coupling is not intended to support the weight of the pipe.

1. Cut both pipe ends square and deburr all edges (see Fig. 1). Burrs and jagged edges can cut the rubber gasket.
2. Be sure the outside surface of the pipe is dry and free of dirt or grease.

   NOTE: If the coupling rings and pipe are to be painted prior to coupling assembly, a “cleaner-phosphate bath”, such as a Fremont #426 product, is recommended for best paint adhesion.
3. Slide the ring over the end of the pipe and position using the nylon ring gauges provided. This will insure the correct position prior to welding (see Fig. 2 and 3).

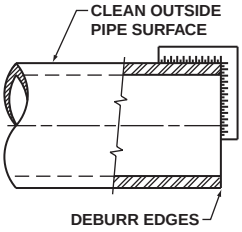


Fig. 1

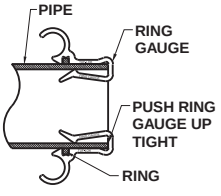
Fig. 2

Fig. 3

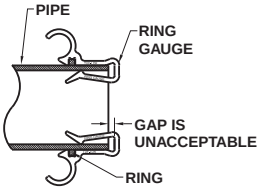
NOTICE

Make sure the ring gauges are properly installed to locate the rings (see Fig. 4 thru Fig. 6).

4. Make sure the nylon ring gauge is pushed up tightly to maintain a distance of 0.771” (20 mm) for the Series 689 couplings, 1.943” (49 mm) for the Series 688 couplings and 3.136” (80 mm) for the Series 698 couplings (see Fig. 4 thru 6).



Correct
Fig. 4



Incorrect
Fig. 5

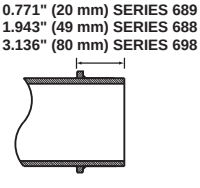


Fig. 6

Installation

5. Tack weld the ring in four places starting with point 1 and proceeding counterclockwise to point 4 (see Fig. 7).

NOTICE

Failure to tack weld rings properly may cause warping and improper location of ring.

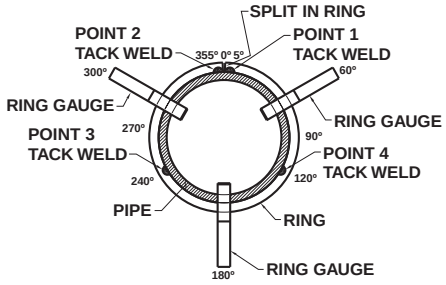


Fig. 7

6. Remove the nylon ring gauges and continuously weld the ring on the pipe end side only with a 1/4" (6.4mm) fillet weld for Series 688 and 698 couplings, and 1/8" (3.2mm) for Series 689 couplings (see Fig. 8). Repeat steps 2 through 6 for the mating pipe end.

NOTICE

Allow the welded ring and pipe to cool below 150° F (65° C) before continuing with the assembly of the coupling.

7. Using a soap solution of liquid detergent and water, approximately 4 oz. (118ml) of detergent to 32 oz. (946ml) of water, lubricate the rubber gasket for ease of installation (see Fig. 9).

8. Gently slide the gasket past the end of the pipe (see Fig. 10).

Fig. 8

Fig. 9

Fig. 10

9. Butt the mating pipe end to the pipe with the gasket in place.

10. Slide the gasket over the joint until it is centered (see Fig. 11).

11. Use the metal cover as an alignment guide to position the gasket (see Fig. 12).

12. Position the metal covers over the welded rings and gasket with the gasket inserts positioned between the coupling cover halves (see Fig. 13).

⚠ WARNING

Gasket inserts on Series 688 and 698 couplings must be positioned between the cover halves to prevent joint pressure failure and/or damage to equipment or possible injury to plant personnel (see Fig. 13).

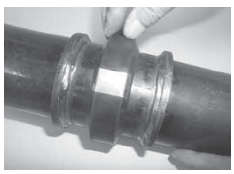


Fig. 11

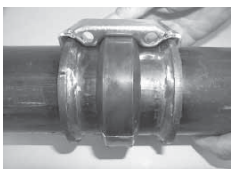


Fig. 12

Fig. 13

13. Install bolts, lock washers and nuts; partially tighten the coupling bolts to ensure proper seating of the gasket (see Fig. 14). Then, evenly tighten all the coupling bolts to the following torque values: 12 ft. lbs. for Series 689 couplings; 44 ft. lbs for Series 688 couplings; and 212 ft. lbs. for Series 698 couplings.

NOTICE

Do not over tighten bolts. Over tightening would exceed recommended limits and damage the coupling.

14. After the coupling is fully assembled and tightened, make sure the metal insert on the gasket (Series 688 and 698 couplings only) is showing to protect against gasket failure (see Fig. 15).

15. For optimum alignment, the cover must be touching the pipe perimeter at points 1 through 6 (see Fig. 16).

Fig. 14

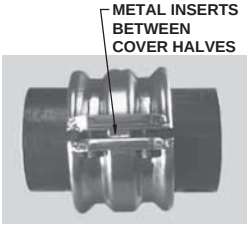


Fig. 15

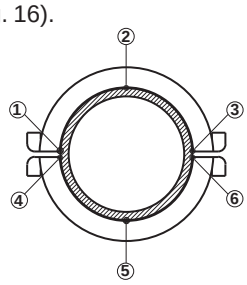


Fig. 16

16. Before disassembling the coupling, completely depressurize the piping system.

⚠ WARNING

To prevent damage to equipment and/or possible injury to plant personnel, make sure any residual pressure within the pipe is completely relieved before disassembling the coupling.

Dimensions & Specifications

Series Number	Nominal Pipe Size		Pipe Outside Diameter		Maximum Working Pressure		Maximum End Load*	
	in.	mm	in.	mm	psig	barg	lbs.	N
689	1.0	25	1.315	33	150	10.34	2,950	13,122
689	1.5	40	1.900	48	150	10.34	3,900	17,348
688	2.0	50	2.375	60	150	10.34	4,600	20,461
688	3.0	80	3.500	89	150	10.34	6,300	28,024
688	4.0	100	4.500	114	150	10.34	7,600	33,806
688	5.0	125	5.563	141	150	10.34	9,000	40,034
688	6.0	150	6.625	168	150	10.34	10,100	44,927
688	8.0	200	8.625	219	130	8.96	12,400	55,158
698	8.0	200	8.625	219	150	10.34	18,000	80,067
698	10.0	250	10.750	273	150	10.34	22,100	98,306

** Working pressure and end load are total, including equivalent loads based on coupling being properly assembled.*

Customer Assistance

Should any questions arise with regard to installation and/or operation that are not covered in this manual, please call the Tuf-Lok customer service department for further recommendations.

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