Installation, Operation, & Maintenance Instructions
IOM J500.11
2020.12

Weld Pad Gages

Series W20, W300L, and RW400

JERGUSON®
A PRODUCT OF CLARK-RELIANCE

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1. Introduction

Clark-Reliance is a global leader in the level indication and control, sight-flow indication, and filtration and separation industries. Clark-Reliance is dedicated to offering the largest and broadest range of instrumentation products and being the single-source for every type of level measurement and control to meet the varying demands of the process industry.

Jerguson® Gage and Valve, a leading supplier of level gaging products, offers the world's largest selection of liquid level glass gages, magnetic level gages, liquid level switches, and level transmitters. Since 1905, Jerguson gages and valves have been installed in a wide variety of liquid level applications, from basic chemical storage tanks to the most advanced nuclear aircraft carriers. With complete product offerings in both traditional glass gages and magnetic gages, Jerguson is able to satisfy customers' diverse needs.

2. Warranty

Clark-Reliance warranties its manufactured goods as being free from defects in material and workmanship for one (1) year from the date of shipment. If any of the goods are found by the seller to be defective, such goods will be replaced or repaired at the seller's cost. Refer to Clark-Reliance's Terms & Conditions for full warranty details.

3. About This Manual

This manual is designed to aid and guide in the installation, operation, and maintenance of the Jerguson W20, W300L, and RW400 family of weld pads. Authorized personnel must read and understand all instructions before attempting to install, operate, or maintain this equipment. Only persons certified to perform work described herein should attempt any actions suggested. Safety precautions and company safety standards should be adhered to at all times when performing the activities described in this manual.

4. Inspection and Delivery

Upon receiving weld pad gages, check all components carefully for damage incurred during shipping. Sign for the shipment noting "damaged" and immediately notify the shipping firm of any such damage and request damage inspection. Confirm that the product model number, and pressure / temperature ratings (on nameplate) meet application specifications. Also confirm that the material of construction is compatible with both the process fluid and surrounding atmosphere.

CAUTION: *Jerguson weld pad gages are not to be used for gaging lethal substances as defined by ASME Section VIII*

5. Product Description

Jerguson weld pads are an economical means for level indication. The pad of the gage is welded directly to the outer shell, becoming integral with the wall of vessel. The pad can come machined with either a vision slot (standard with transparent glass) or 2-Hole design (standard with reflex glass) (Figure 1). As an option, the pad can also be machined with a radius to conform to the vessel outer diameter. Weld pads are generally used for non-critical applications because the process must be shut down for gage maintenance or replacement.

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6. Specification

How to Specify Jerguson Weld Pad Gages

1 – 7 – RW20 – T – 2H – I – 3.312R – FS

Number of Sections
1 through 4

Glass Size (Gage Series)
1 through 9 (Series W20, W400) or
15, 18, 20 (Series W300L)

Glass Type & Gage Series

Code	Description
RW20	Reflex Series 20 Weld Pad
TW20	Transparent Series 20 Weld Pad
RW400	Reflex Series 400 Weld Pad
RW300L	Reflex Series 300L Weld Pad
TW300L	Transparent Series 300L Weld Pad

Material Code

Code	Description
A	Carbon Steel
T	316SS (wetted components) / Carbon Steel (non-wetted)
SP/T	All 316SS (both wetted and non-wetted components)
Other	Specify / Contact Factory

Pad Style

Code	Description
2H	2-Hole (Std. w/ Reflex Glass)
SL	Vision Slot Thru Pad (Std. w/ Transparent Glass)

Other Options

Code	Description
ISO	Isolable - Series W20 & Series W300L only
__SP	Steel Spacers for Welding (Specify # of Spacers)
FS	Ft/In Scale
MS	M/mm Scale

Chamber Radius

Code	Description
NR	No Radius = Flat Back
3.312R	Radius for 6" NPS (6.625" OD = 3.312"R)
4.312R	Radius for 8" NPS (8.625" OD = 4.312"R)
____ R	Other Radius (___ = Pad Radius, not NPS or Pipe OD)

Seal/Cushion Gasket

Code	Description
I	IFG5500 Seal & Cushion
GG	Grafoil Seal, Grafoil Cushion
T	GORE GR Seal (ePTFE), IFG5500 Cushion
Other	Contact Factory

Example Model: 1-7-RW20-T-2H-I-3.312R-FS

Code	Description
1	1 Section
7	Size 7 Glass
RW20	Reflex Series 20 Weld Pad
T	316SS (wetted components) / Carbon Steel (non-wetted)
2H	2-Hole Pad Style
I	IFG5500 Seal & Cushion Gasket
3.312R	Radius for 6" NPS Pipe
FS	Foot/In Scale

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7. Welding Instructions

Weld pad gages are shipped loosely assembled (bolting finger tight) and should first be entirely dismantled. Place the pad in the desired location on the vessel so that it can be used as a template for drilling holes or to cut the vision slot.

For 2-Hole style pads, drill a hole at the top and bottom of the visible slot. For Series W20, and Series RW400 gages, the hole diameter should be 5/8" [15mm] to match the pad. For Series W300L, the hole diameter should be 9/16" [14mm].

For vision slot style pads, the slot should be cut through the wall of the tank. If internal welding is to be performed, the width and length of the slot can be increased by chalking a second cutout line 1/4" [6mm] outside the scribed line. This will provide a suitable shelf on which to lay the bead as shown in Figure 2.

To avoid buckling, the pad should be tack welded at intervals, both internally and externally, in accordance with recognized welding procedures before placing the continuous welds.

As an added precaution against distortion, the weld pad gage can be assembled without gaskets, using a steel spacer instead of the glass inserts. This spacer can be cut from bar stock 1" x 1/2" [25mm x 12mm] for the Series W300L gages and 1-1/4" x 3/4" [31mm x 19mm] for the Series W20 and RW400 gages. Its length will be determined by the length of the gasket recess. This procedure will increase the rigidity of the pad and minimize the possibility of distorting the glass seating surface during welding. These spacers are also available for purchase (see spare parts section).

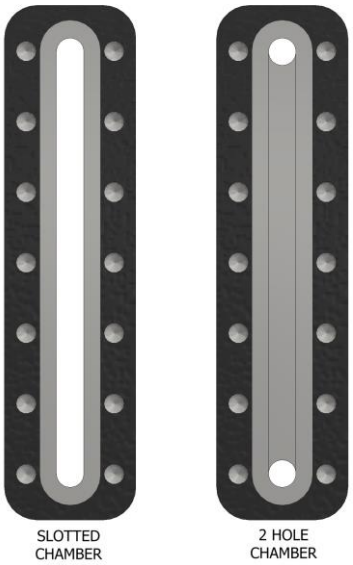

FIGURE 1

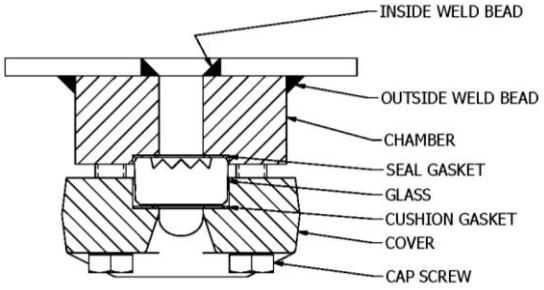

FIGURE 2

CAUTION: ***Pressure Loads:*** *Where it is necessary to slot the tank because of the nature of the liquid, or there is need to observe the color or interface of the liquid, the following facts must be considered: Standard weld pad gages will withstand loadings due to the pressure within the gage itself, but they are not designed to replace the tank strength lost when the tank wall is cut. The gage manufacturer has no control over the loading which the pressure vessel will impose on the pad. It is therefore impossible to rate weld pad gages. The tank fabricator must provide suitable tank wall reinforcement to prevent the pad from being distorted during weld or while under operating conditions. The user is responsible for performing pressure vessel calculations to determine if acceptable for ASME Sec. VIII.*

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8. Assembly Instructions

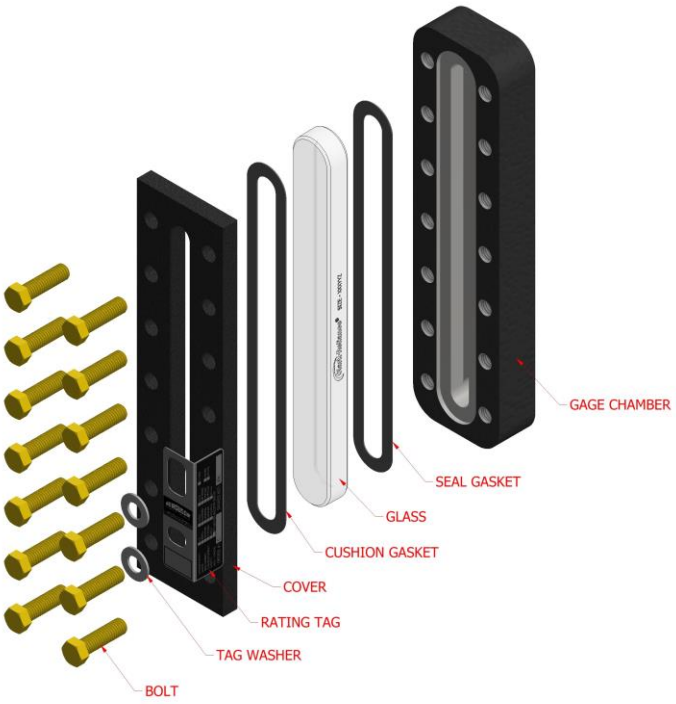

FIGURE 3

Assemble the weld pad as shown in the exploded view of Figure 3. The glass and gaskets should be centrally located within the recessed seat of the pad to avoid glass-to-metal contact. Take note of the seal and cushion gasket material to confirm the correct material is used for each respective gasket in configurations where the materials differ. Tighten the bolts finger-tight working from the middle set and alternating outward (see Figure 4 below). Next, tighten with a torque wrench in the same sequence in 5 ft.-lb (6.7 N-m) increments until final torque value of 15 ft-lbs (20.3 N-m) is achieved.

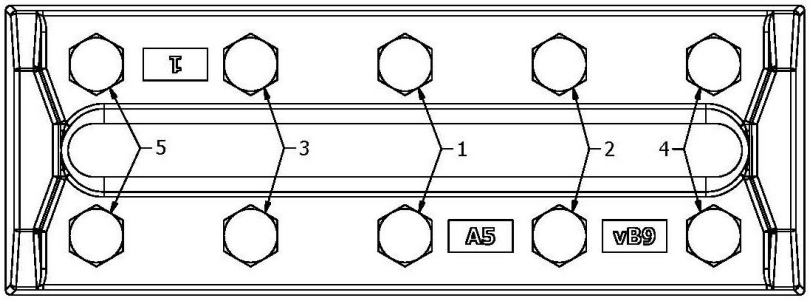

FIGURE 4

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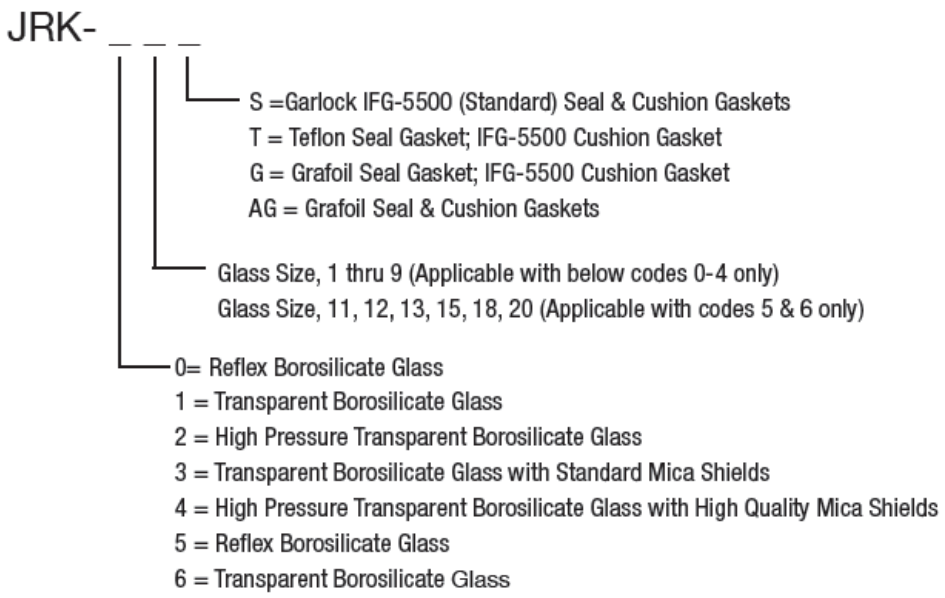
7. Spare Parts

Part#	Material	Description
V16756-X	Tempered Borosilicate	Transparent Glass W20 and RW400
V16757-X	Tempered Borosilicate	Reflex Glass W20 and RW400
L1412-X	Tempered Borosilicate	Transparent Glass W300L
L1413-X	Tempered Borosilicate	Reflex Glass W300L
V18980-X	Inorganic Fiber with Nitrile Binder	Garlock IFG 5500 W20 and RW400
V19469-X	Inorganic Fiber with Nitrile Binder	Garlock IFG 5500 W300L
V13143-X	SS Reinforced Graphite	Grafoil W20 and RW400
V14574-X	SS Reinforced Graphite	Grafoil W300L
V20610-X	ePTFE	Gore GR for W20 and RW400
V22747-X	ePTFE	Gore GR for W300L
P4527-B71	Carbon Steel	W20 and W300L Bolts (A193 B7)
P4527-B8M	316SS	W20 and W300L Bolts (A193 B8M)
X172479	Carbon Steel	RW400 Bolt (Grade 8 / B18.2.1)
X172603	316SS	RW400 Bolt (Grade 8 / B18.2.1)
V2M-X-A5	Carbon Steel	W20 Gage Covers
V438-X-TL2	316SS	W20 Gage Covers
V19607-X-A5	Carbon Steel	W300L Gage Covers
V19607-X-TL2	316SS	W300L Gage Covers
V22505-X-A11	Carbon Steel	RW400 Gage Covers
V22505-X-TL10	316SS	RW400 Gage Covers
P2442-X-A6	Carbon Steel	W20 and RW400 Steel Spacer for Welding
P2540-X-A6	Carbon Steel	W300L Steel Spacer for Welding

Glass & Gaskets can also be purchased as spare part “kits” following the below part# scheme:



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