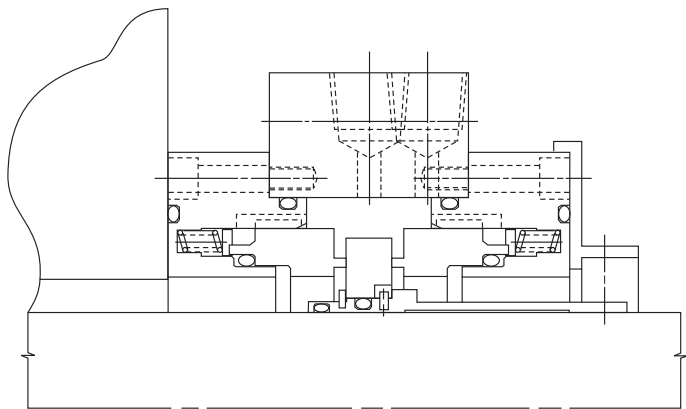


Foreword

These instructions are provided to familiarize the user with the seal and its designated use. The instructions must be read and applied whenever work is done on the seal, and must be kept available for future reference.



ATTENTION

These instructions are for the installation and operation of a seal as used in rotating equipment and will help to avoid danger and increase reliability. The information required may change with other types of equipment or installation arrangements. These instructions must be read in conjunction with the instruction manuals for both the pump and any ancillary equipment.

If the seal is to be used for an application other than that originally intended or outside the recommended performance limits, John Crane must be contacted before its installation and use.

Any warranty may be affected by improper handling, installation or use of this seal. Contact John Crane for information as to exclusive product warranty and limitations of liability.

If questions or problems arise, contact your local John Crane representative or the original equipment manufacturer, as appropriate.

ATTENTION

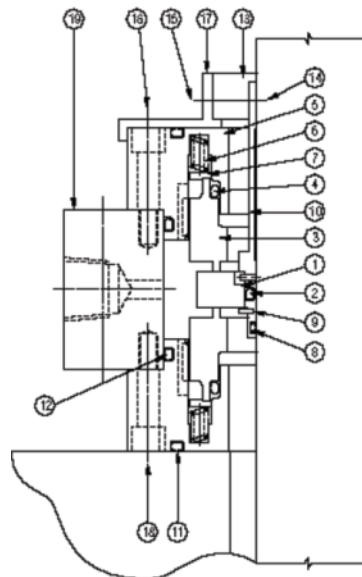
John Crane mechanical seals are precision products and must be handled appropriately. Take particular care to avoid damage to lapped sealing faces and to flexible sealing rings. Do not excessively compress the seal before or during installation.

General Instructions

1. Be sure to read all instructions carefully before installing seal.
2. The John Crane Type 7700 Seal is a precision product and is shipped as a completely assembled package seal for ease of installation.

Part Name

1 Mating Ring	9 Snap Ring	17 Spacer
2 O-ring	10 Sleeve	18 Cap Screw
3 Primary Ring	11 O-ring	19 Gland Plate
4 O-ring	12 O-ring	
5 Retainer	13 Collar	
6 Spring	14 Set Screw	
7 Disc	15 Cap Screw	
8 O-ring	16 Cap Screw	



Before Starting the Equipment

1. Check mixer at coupling for proper alignment of the driver or motor. Recheck that all gland bolts and set screws are securely fastened.
2. Complete assembly of the mixer. If possible, turn shaft by hand to ensure free rotation.
3. Check to make certain that the circulation lines are open and free of any obstruction which might interfere with circulation.
4. Refer to seal installation drawing or equipment manufacturer's instructions for proper piping connections.
5. Pressurize 15 psi to 20 psi greater than vessel pressure.
6. Contact John Crane engineering if seal is to be run in liquid.
7. Ensure before start-up that all personnel and assembly equipment have been removed to a safe distance so there is no contact with rotating parts on the seal, coupling, or motor.
8. Pressurize 15 psi to 20 psi greater than vessel pressure.

ATTENTION

Dry running — often indicated by a squealing noise from the seal area — will cause overheating and scoring or other damage to the sealing surfaces, resulting in excessive leakage or a much shortened seal life.



Before startup, ensure that all personnel and assembly equipment have been moved to a safe distance so there is no contact with rotating parts on the pump, seal, coupling, or motor.

WARNING:

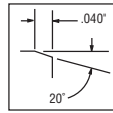
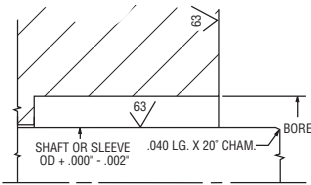
Seal installation should be handled only by qualified personnel. If questions arise, contact the local John Crane representative. Improper use and/or installation of this product could result in injury to the person and/or harmful emissions to the environment, and may affect any warranty on the product. Please contact John Crane for information as to exclusive product warranty and limitations of liability.

CARTRIDGE SEAL

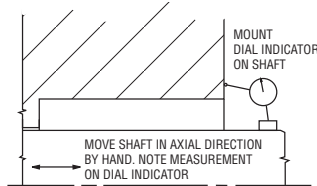
Installation, Operation & Maintenance Instructions

Preparing the Equipment

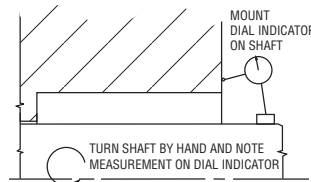
1. Check seal chamber dimensions and finishes.



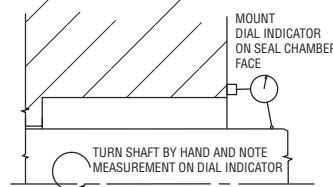
2. Measure axial end play (0.030" TIR max)



3. Determine squareness of seal chamber face to shaft (0.020" TIR max).

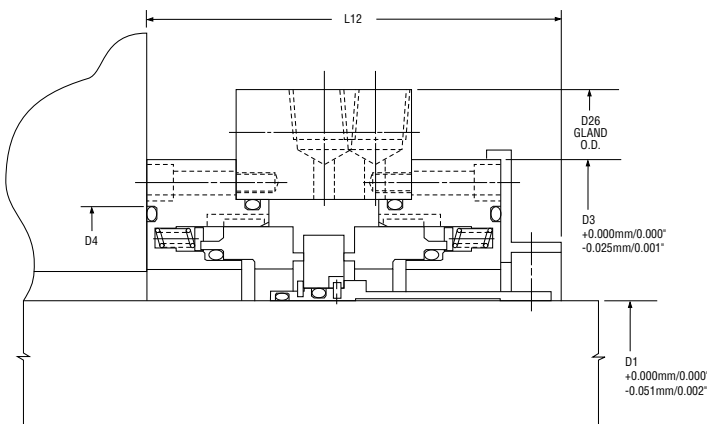


4. Measure shaft runout (0.180" TIR max)



NOTE: If measured dimensions exceed those values given, consult equipment manual.

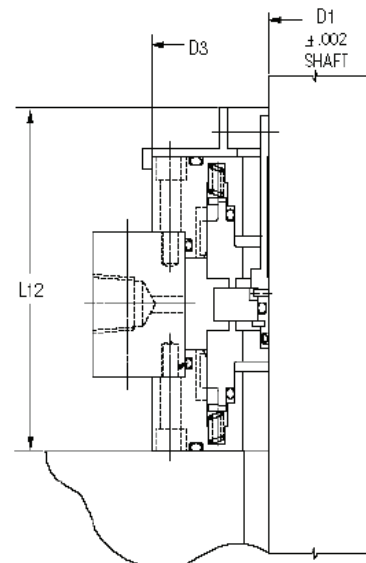
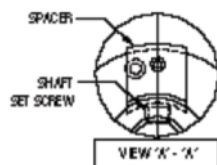
Typical Type 7700 Installation Dimensions



Seal Size	D1	D3	L12
750	.750	4.281	4.656
1000	1.000	4.531	4.656
1250	1.250	4.781	4.656
1500	1.500	5.031	4.656
1750	1.750	5.281	4.906
2000	2.000	5.531	4.906
2250	2.250	5.781	4.906
2500	2.500	6.031	4.906
2750	2.750	6.281	5.156
3000	3.000	6.531	5.156
3250	3.250	6.781	5.156
3500	3.500	7.031	5.156
3750	3.750	7.281	5.406
4000	4.000	7.531	5.406
4250	4.250	-	-
4500	4.500	-	-
4750	4.750	-	-
5000	5.000	-	-
6500	6.500	-	-
8000	8.000	-	-

Installing Typical Type 7700

1. Lubricate the sleeve O-ring thoroughly with John Crane silicone O-ring grease (Part #D-0001-637) and slide complete assembly on the shaft.
2. Bolt the gland plate to the face of the seal housing box or the face of the stuffing box. Tighten bolts finger tight.
3. If the stuffing box is to be removed, bolt gland plate to adapter plate. Or, if the seal is to be mounted directly to the stuffing box, tighten the bolts alternately until secure. Do not over-torque bolts.
4. Remove spacers and save by reinstalling them on the retainer with the 1/4-20 screws used for shipping the seal.



CARTRIDGE SEAL

Installation, Operation & Maintenance Instructions

Ordering Information

1. Cartridge seal size = solid shaft or sleeve outside diameter (OD).
2. Select (7700) arrangement.
3. Determine whether standard or enlarged seal chamber configuration is required.
4. Choose seal drawing number from chart below.
5. For other material combinations or size considerations, consult your local John Crane representative.

Materials of Construction — Standard

Primary Ring	Carbon
Mating Ring	Tungsten Carbide
Hardware/Spring	316 Stainless Steel
Secondary Seal	Fluoroelastomer

Operating Limits

Pressure:	Full vacuum to 300 psig (21 bar g)
Temperature:	Up to 300°F/150°C
Speed:	Up to 300 rpm

Type 7700 Drawing Numbers

Seal Size (Inches)	Type 7700 Drawing Numbers	Type 7700 UBM Numbers
1.000	H-SP-14172	M33000
1.250	H-SP-14173	M33001
1.500	H-SP-14174	M33002
1.750	H-SP-14175	M33003
2.000	H-SP-14176	M33004
2.250	H-SP-14177	M33005
2.500	H-SP-14178	M33006
2.750	H-SP-14179	M33007
3.000	H-SP-14180	M33008
3.250	H-SP-14181	M33009
3.500	H-SP-14182	M33010
3.750	H-SP-14183	M33011
4.000	H-SP-14184	M33012

CARTRIDGE SEAL

Installation, Operation & Maintenance Instructions



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 Tel: 1-847-967-2400
 Fax: 1-847-967-3915

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 Fax: 44-1753-224224

Latin America
 Brazil
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 Fax: 55-11-3371-2599

Middle East & Africa
 United Arab Emirates
 Tel: 971-481-27800
 Fax: 971-488-62830

Asia Pacific
 Singapore
 Tel: 65-6518-1800
 Fax: 65-6518-1803

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated. ISO 9001 and ISO14001 Certified, details available on request.