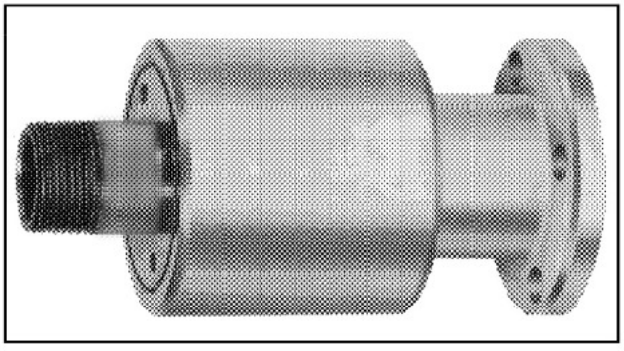
ENGINEERING
TOMORROW

Installation Guide

Airflex by Danfoss RH Rotorseal Assemblies



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Revision history

Table of revisions

Date	Changed	Rev
January 2023	First edition	0101

Contents

AIRFLEX RH Rotorseal Assemblies

Introduction

Operation

Description....6
How it Works....6
Pressure and Speed Limits....6

Installation

Mounting....7
Air Connection....7

Maintenance

Disassembly....8
Cleaning and Inspection....8
Assembly....8

AIRFLEX RH Rotorseal Assemblies

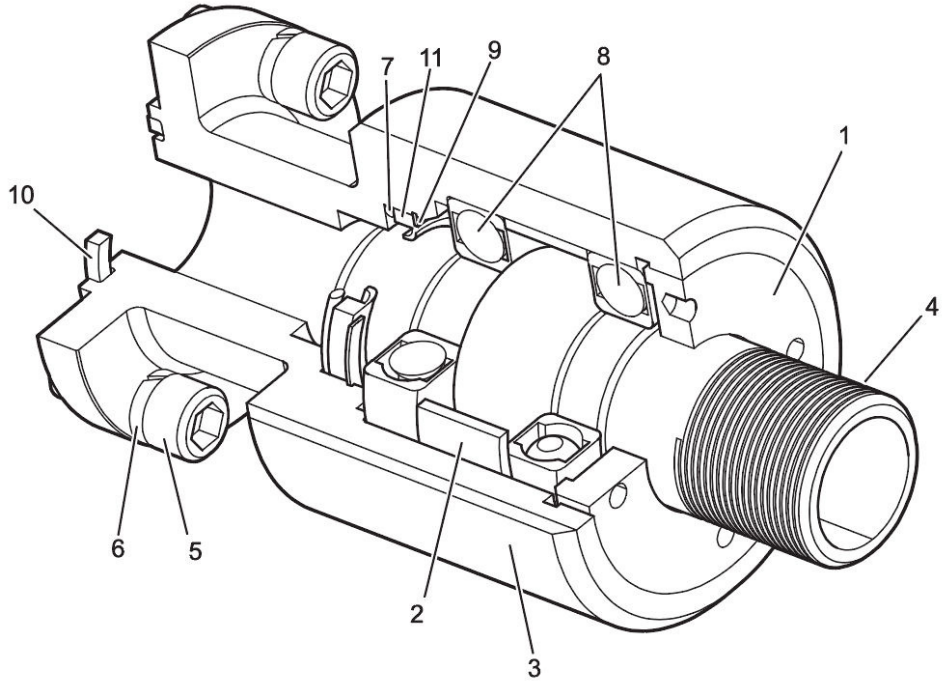


Figure 1

Component Part Number

Item	Qty.	Description	¾" RH	1" RH	1-1/4" RH	1-1/2" RH	2" RH
-	-	Assembly	145487AA	14588AB	145489AA	145461AA	146175AA
1	1	Cover	012068	012045	012055	010939	306912
2	1	Bearing Spacer	308446	308444	308442	308447	306913
3	1	Housing	417030	417020	416960	417033	417036
4	1	Shaft	417031	417021	416961	417034	417037
5	4	Socket Head Screw	30 X 0105	30 X 0207	30 X 0207	30 X 0207	30 X 0208
6	4	Lock Washer	31 X 0001	31 X 0006	31 X 0006	68 X 0008	68 X 0008
7	1	O-Ring	73 X 0426	73 X 0424	73 X 0422	73 X 0425	73 X 0427
8	2	Ball Bearing	159 X 0029	159 X 0082	159 X 0175	159 X 0078	159 X 0186
9	1	Retaining Ring	190 X 0109	190 X 0107	190 X 0106	190 X 0108	190 X 0110
10	1	Square Section Seal	350 X 0003	350 X 0004	350 X 0008	350 X 0009	350 X 0011
11	1	Lip Seal	435 X 0004	435 X 0002	435 X 0001	435 X 0003	435 X 0005
Replacement Kit Includes Items 7, 9, 10, 11)			145487AX	145488AX	145489AX	145461AX	145475AX

Introduction

Throughout this manual there are a number of **HAZARD WARNINGS** that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal words **"DANGER", "WARNING"** and **"CAUTION"** are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.



Denotes the most serious hazard, and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.



Used when serious injury or death MAY result from misuse or failure to follow specific instructions.



Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used to fully understand the:







procedures by which hazards can be avoided.

Operation

Description

The Airflex by Danfoss single passage rotorseal is a positive seal for introducing air under pressure into a rotating shaft. The rotorseal operates continuously or intermittently at high speeds in either direction. The RH rotorseal has been designed for large air volume applications, available in five sizes having inlet ports suitable for ¾, 1, 1-1/4, 1-1/2 and 2 inch pipe.

Consult the Factory when contemplating the use of Airflex by Danfoss rotorseals with mediums other than air.

How it Works

The rotating seal of the Airflex RH rotorseal is established by means of a lip seal (11) that rotates against a polished surface on the stationary shaft (4). Air can pass through the bore of the stationary shaft and that of the rotating housing and then into the machinery shaft or assembly.

Pressure and Speed Limits

Maximum operating pressure allowable in standard RH rotorseals is 150 psig (10,4 bar). Maximum speed limits are shown on Table 1. Operation at maximum pressure combined with maximum speed should be avoided. Consult the factory or your Airflex Distributor for specific application information.

Table 2: Maximum Speeds

Size	Max RPM
3/4	1500
1	1200
1-1/4	1000
1-1/2	800
2	600

Installation

Mounting

The Airflex type RH rotorseal is designed for flange mounting to the machinery shaft or assembly. Refer to Figure 2 and Table 3 for mounting dimensions.

1. Be sure the external rubber seal (12) is properly seated in the rotorseal flange groove before mounting.
2. Mount the rotorseal and torque the mounting screws to the lubed value indicated in Table 2, using an alternating crosswise pattern.

Table 3: Mounting Fastener Torque

Size	Ft.-lb.	Nm
3/4	11	15
1	25	34
1-1/4	25	34
1-1/2	25	34
2	25	34

Air Connection

The rotorseal shaft (4) has a pipe thread for the inlet air connection. The connection to the rotorseal must always be through a flexible hose, and the air supply piping must be self-supporting. Orientation of the hose in a horizontal position may help in reducing bearing loading. A good pipe thread sealant must be used when connecting the flexible hose to the rotorseal.

⚠ Caution

Rigid air connection will preload the rotorseal bearings, resulting in premature failure.

Maintenance

A replacement kit is available to allow the rebuilding of the type RH rotorseal (refer to the table under Figure 1 for part numbers and items included). Airflex rotorseals are manufactured with quality materials to precision tolerances. These instructions should be followed carefully to assure that the rotorseal is repaired properly. Only Airflex by Danfoss parts should be used. The rotorseal must be removed from its mounting, and repairs should only be made in a clean, dust-free environment.

⚠ Caution

When replacing components, use only Genuine Airflex replacement parts. Use of other materials may severely affect performance.

Disassembly

1. The cover (1) is retained in the housing (3) with Loctite #242. It may be necessary to heat the housing slightly to soften the Loctite. Use an adjustable face spanner wrench to remove the cover. (Possible source: McMaster-Carr, part number 564A47).
2. Remove the shaft (4) bearings (8) and bearing spacer (2) from the housing. To assist with the removal of the shaft, assemble a pipe cap onto the end of the shaft and insert a length of round drift or bar stock (approx. ½" D x 12" long) through the center of the housing and against the end cap. Tap the drift to drive the shaft and bearings out of the housing. Rotate the shaft while striking the drift to reduce binding of the bearings in the housing.
3. Remove the internal snap ring (9) from the housing. Using a thing screwdriver or punch, drive the seal out of the housing bore, using care to prevent damage to the bore. Heating the housing slightly will allow for easier seal removal. Do not heat the housing over 150°F (65° C). After the seal has been removed, remove the O-ring (7) from the housing.

Cleaning and Inspection

1. After assemby, clean all parts thoroughly using a grease-cutting solvent.

   ⚠ Caution

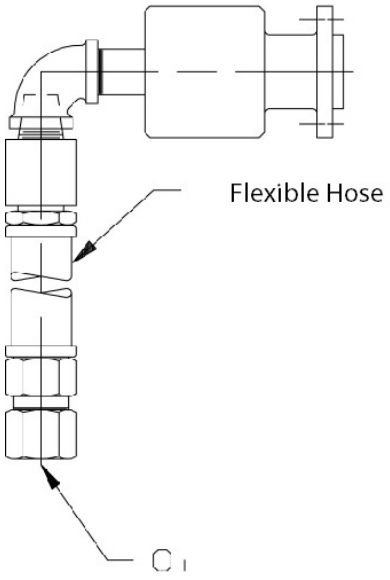
   Follow proper safety precautions when using solvents.
2. Inspect and check the ball bearings (8). The should be free of rust and contamination, revolve smoothly without binding and show no signs of excessive looseness or wear. Bearings with damaged or leaking seals should also be replaced.
3. Inspect the seal contact surface of the shaft (7) for scoring, or pitting. Scoring or pitting will result in leakage or accelerated wear of the seal. If the shaft is to be re-used, remove any burrs or damage from the shaft.
4. If inspection indicates that the shaft or bearings are in poor condition, the shaft (7), bearings (8) and bearing spacer (9) must be replaced.
5. Inspect the housing (3) and cover (1) for damage. Replace if necessary.
6. Clean the threads in the housing (3) with a wire brush, removing any residual Loctite.

Assembly

1. Lubricate the O-ring (7) with O-ring lubricant (Dow 55 or equivalent) and eat it into the counterbore in the housing (3).
2. The seal repair kit includes a special seal and snap ring insertion tool. Noting the orientation of the seal lip (see Figure 1), assemble the seal (11) onto the installation tool and press the seal into the housing bore until it rests evenly against the O-ring. Remove the installation tool.
3. Place the retaining ring (9) into the housing and press it into position using the installation tool. Ensure that the retaining ring is fully engaged in the groove in the housing. Remove the installation tool.

Maintenance

4. If the bearings and shaft are replaced, assemble the bearings and bearing spacer onto the shaft using proper bearing assembly procedures.
5. Make sure that the sealing surface on the shaft is free of contamination. Lubricate the sealing surface on the shaft using a light oil. Slide the shaft and bearing subassemly into the housing.
6. Apply a bead of Loctite 242 (supplied with the repair kit) across the threads of the cover. Assemble cover, tightening to 50 ft.-lb.



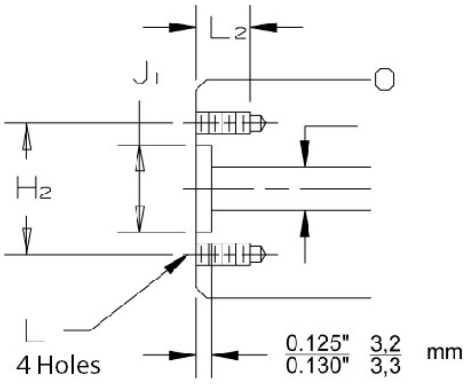


Table 3: Mounting Dimensions, Inches (mm)

Size	H_2	J_1	L(UNC)	L_2	O	O_1(NPT)
3/4	2.375 (60,3)	1.750 (44,5)	5/16-18	0.62 (16)	0.75 (19)	¾ - 14
1	2.625 (66,7)	2.000 (50, 8)	3/8-16	0.75 (19)	1.00 (25)	1 - 11 1/2
1-1/4	3.125 (79,4)	2.500 (63,5)	3/8-16	0.75 (19)	1.25 (32)	1 ¼ - 11 1/2
1-1/2	3.375 (85,7)	2.750 (69,9)	3/8-16	0.75 (19)	1.50 (38)	1 ½ - 11 1/2
2	4.250 (108,0)	3,500 (88,9)	3/8-16	0.75 (19)	2.00 (51)	2 - 11 1/2

For additional information, note the part number and description on the housing and call or write:

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