

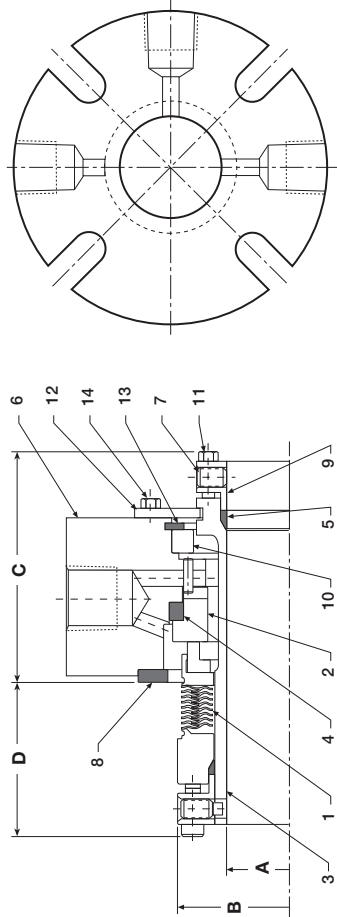
(INCH)

SHAFT DIA.	ROTARY OD		OB LENGTH	IB DEPTH
	A	B		
1.125	1.94	1.94	1.924	1.640
1.250	2.17	1.94	1.924	1.679
1.375	2.30	1.986	1.979	1.679
1.500	2.42	1.986	1.979	1.679
1.625	2.55	1.986	1.979	1.679
1.750	2.67	1.986	1.979	1.679
1.875	2.80	2.048	1.804	1.804
2.000	2.92	2.048	1.804	1.804
2.125	3.05	2.048	1.804	1.804
2.250	3.19	2.048	1.804	1.804
2.375	3.31	2.111	1.804	1.804
2.500	3.44	2.111	1.804	1.804
2.625	3.63	2.111	1.830	1.830

(METRIC)

SHAFT DIA.	ROTARY OD		OB LENGTH	IB DEPTH
	A	B		
25 mm	1.81	1.924	1.640	1.640
30 mm	1.94	1.924	1.640	1.640
32 mm	2.17	1.924	1.679	1.679
35 mm	2.30	1.986	1.679	1.679
36 mm	2.42	1.986	1.679	1.679
40 mm	2.55	1.986	1.679	1.679
42 mm	2.55	1.986	1.679	1.679
45 mm	2.67	1.986	1.679	1.679
50 mm	2.92	2.048	1.804	1.804
55 mm	3.05	2.048	1.804	1.804
60 mm	3.31	2.111	1.804	1.804
65 mm	3.44	2.111	1.804	1.804

186HT PARTS IDENTIFICATION



KEY (186HT)

- 1 – Rotary Head Assembly
- 2 – Mating Ring
- 3 – Sleeve
- 4 – Mating Ring Pkg
- 5 – Sleeve Pkg
- 6 – Gland
- 7 – Cup Point Set Screw
- 8 – Gland Gasket
- 9 – Lock Collar
- 10 – Throttle Bushing
- 11 – Hex Head Cap Screw
- 12 – Setting Washer
- 13 – Retaining Ring
- 14 – Hex Head Cap Screw



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MECHANICAL SEAL
 INSTALLATION INSTRUCTIONS

186HT Cartridge Seal / 886HT Component Seal

High Temperature Single Bellows Seals SEAL INSTALLATION

Preparation

Determine if the pump is in good condition.

- A. Check the shaft or sleeve.
- Remove all burrs and sharp corners, especially in areas where the sleeve packing has to slide. Cover threads and keyway slots with a thin tape to prevent cutting the packing.
 - The shaft finish should be 32 microinches RA (0.8 microns) maximum. It should feel smooth if you run your fingernail along the shaft in the axial direction.
 - Make sure the shaft or pump sleeve diameter is within tolerance (no more than +/- .002" (0.05 mm) from nominal). Example: 1.750" (50mm) shaft should not be larger than 1.752" (50.05mm) or smaller than 1.748" (49.95mm).

- Use a dial indicator to measure the shaft runout in the area where the seal is to be installed. Readings should not exceed .001" TIR per inch (0.001 mm TIR per millimeter) of shaft diameter.

- Place the dial indicator on the shaft and alternately push and pull the shaft axially to measure end play. End play should not exceed .005 inch (0.13 mm) TIR.
- Protect the graphite sleeve gasket by lubricating the shaft with a clean silicone based lubricant.

B. Check the stuffing box.

- The stuffing box face must be a maximum of 125 microinches RA (3.2 microns) for a gasket to seal.
- Split case pumps will sometimes cause a step (misalignment) to occur on the stuffing box face. This step must be machined flat within 0.001 inch (0.025 mm).
- Make sure the stuffing box bore is clean and clear along its entire length.
- If possible, attach the base of a dial indicator to the shaft and rotate shaft and indicator slowly while reading the runout of the stuffing box face. Misalignment of the stuffing box face relative to the shaft should not exceed .002" TIR per inch (0.002 mm TIR per millimeter) of shaft diameter.

Installation of Complete Seals (186HT)

- Check the chemical listing to determine if the graphite packings installed in this seal are compatible with the fluid being sealed.
- Make sure all cup point set screws are engaged in the lock collar but do not protrude into the inside diameter. The cup point screws go through the lock collar to lock onto the shaft.
- Do not tighten the hex head cap screws on the lock collar / compression ring at this time.
- To install, reposition or remove the seal, make sure that all the setting clips and hex head cap screws are engaged.
- Setting clips have been preset at the factory. If for any reason you loosen or remove the 5/16" hex head cap screw, retighten the cap screw (approximate 30 inch-pounds of torque).
- Slide the completely assembled seal onto the shaft by pushing on the gland.
- On some pumps, the 186HT is supplied to fit directly on the pump shaft and pump sleeve removal will be necessary. For these pumps, an impeller spacer is available to fill the gap left by the removal of the hook type sleeves. If required, the impeller spacer should be installed now, before the impeller is installed.
- Reassemble the pump and make necessary shaft alignments and impeller adjustments. These adjustments must be made before the seal is affixed to the pump backcover.
- Orient the flush connection to the location required. The 1/2" NPT ports are plugged prior to shipping. CAUTION: Shipping plugs limit the dirt and contamination, which could enter the seal and cause seal malfunction. When plugs are removed ensure that dirt, liquid, and contamination do not enter the seal ports.
- Piping connections should not be made prior to tightening the gland bolts.
- Tighten the gland bolts evenly. IMPORTANT: The gland bolts must be tightened before tightening any of the screws on the lock collar.
- After tightening gland bolts, tighten the hex head shaft packing compression screws on the lock collar alternately until there is an approximate 0.050" (1.27mm) gap between the sleeve and the lock collar.

SEAL INSTALLATION

13. After compression of the sleeve packing evenly tighten the cup point set screws on the lock collar to the shaft with the hex key provided. If rotation of the shaft is required for tightening set screws, loosen or remove one setting clip. After all set screws have been tightened by hand, retighten the set screws with a torque wrench to 50-60 in-lb.

14. Remove hex head cap screws and the setting clips. Retain for later use.

15. **IMPORTANT: It is important to make sure that the gland is properly centered over the sleeve.** To do this, turn the shaft by hand to make sure the seal turns freely. If you hear metal to metal contact within the seal, it was improperly centered. Re-install the setting clips finger tight. Loosen the gland bolts. Loosen the compression ring hex head screws. Fully tighten clips. Loosen the set screws. Re-tighten the gland bolts. Re-tighten the compression ring hex head screws. Re-tighten the set screws. Remove the clips. If metal to metal contact still exists check the centering of the stuffing box.

16. Determine if flush / re-circulation or quench and drain piping is required. The flush connection is the 1/2" NPT port on the outer diameter of the gland marked "F". Plug the flush port if no connection is used. The quench and drain connections are the 1/2" NPT ports marked "Q/D".

17. Take all necessary precautions and follow normal safety procedures before starting the equipment.

STANDARD MATERIALS

- Bellows:**
- AMI350
- Rotary Face:**
- Tungsten Carbide, Antimony Carbon

Stationary Face:

- Sintered Silicon Carbide

Gaskets & Secondary Seals:

- Graphite

CAUTIONS

These instructions are general in nature. It is assumed that the installer is familiar with seals and certainly with the requirements of their plant for the successful use of mechanical seals. If in doubt, get assistance from someone in the plant who is familiar with seals or delay the installation until a seal representative is available. All necessary auxiliary arrangements

Installation of Component Seals (886HT)

Determine if the pump is in good condition (see section on "Preparation").

1. Determine the seal installation length using the 886HT rotary unit operating length. Refer to dimension "C" on the Rotary Head Assembly table on page 3.
2. Use the Rotary Unit Installed Length dimension to scribe a line on the shaft as measured from the face of the stationary face.
3. Cover threads and keyway slots with a thin tape to prevent cutting the shaft seal. Lubricate the shaft with a clean, silicone-based grease.
4. Slide the rotary onto the shaft and bring the back of the rotary unit compression ring to the scribe mark. Set screw the seal to the shaft. Evenly tighten the cup point set screws. After all set screws have been tightened by hand, retighten the set screws with a torque wrench to 50-60 in-lb.

5. **After tightening rotary to the shaft, tighten the hex head shaft packing compression screws alternately until there is an approximate 0.050" (1.27mm) gap between the sleeve collar and the rotary.**

6. Reassemble the equipment (with the stationary and gland as required for the particular equipment). Proper installation of the rotary and stationary units per steps 2 - 4 will set the 886HT at its correct operating length without over- or under-compressing the seal.

7. Rotate the shaft by hand. The seal should turn freely without binding or using excessive force.

8. You are now ready to start the equipment. **Follow all normal safety procedures when starting the equipment.**

OPERATING LIMITS

- Pressure:**
- 200 Psig (14 Bar g)
- Temperature:**
- 800°F (426°C)

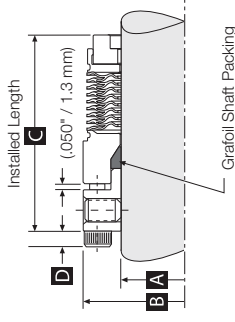
886HT DIMENSIONAL DATA

ROTARY UNIT (INCH)

SHAFT DIA.	ROTARY HEAD OD	INSTALLED LENGTH	SCREW HEAD LENGTH
A	B	C	D
1.000	1.562	1.687	.125
1.125	1.687	1.562	.125
1.250	1.812	1.562	.125
1.375	1.937	1.750	.125
1.500	2.170	1.750	.164
1.625	2.295	1.750	.164
1.750	2.420	1.750	.164
1.875	2.545	1.750	.164
2.000	2.670	1.750	.164
2.250	2.920	1.875	.164
2.500	3.187	1.875	.164
2.625	3.312	1.875	.164

ROTARY UNIT (METRIC)

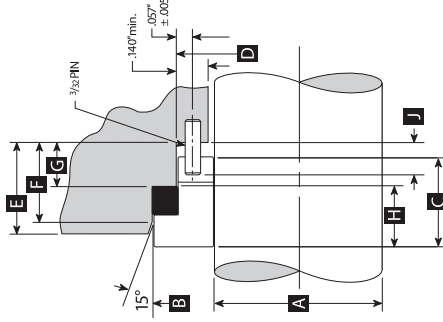
SHAFT DIA.	ROTARY HEAD OD	INSTALLED LENGTH	SCREW HEAD LENGTH
A	B	C	D
25 mm	39.7	42.8	3.2
28 mm	42.8	39.7	3.2
30 mm	46.0	42.8	3.2
32 mm	49.2	44.5	3.2
35 mm	49.2	44.5	3.2
38 mm	55.1	44.5	4.2
40 mm	58.3	44.5	4.2
43 mm	61.5	44.5	4.2
46 mm	62.3	44.5	4.2
48 mm	64.6	44.5	4.2
50 mm	67.8	44.5	4.2
53 mm	71.1	44.5	4.2
55 mm	74.2	47.6	4.2
60 mm	77.3	47.6	4.2
63 mm	80.9	47.6	4.2
65 mm	84.1	47.6	4.2



ROTARY HEAD ASSEMBLY

STATIONARY (INCH)

SHAFT DIA.	GLAND BORE DIA.	SEAT LENGTH	CAVITY STEP DIA.	CAVITY DEPTH	BORE DEPTH	CAVITY DEPTH	NOSE LENGTH	PIN EXTRUSION
A	B	C	D	E	F	G	H	J
1.000	1.625	.437	1.384	.551	.390	.240	.261	.125
1.125	1.750	.437	1.509	.551	.390	.240	.261	.125
1.250	1.875	.437	1.634	.551	.390	.240	.261	.125
1.375	2.000	.437	1.759	.551	.390	.240	.261	.125
1.500	2.125	.437	1.884	.551	.390	.240	.261	.125
1.625	2.275	.500	2.134	.592	.431	.251	.314	.125
1.750	2.500	.500	2.259	.592	.431	.251	.314	.125
1.875	2.625	.500	2.384	.592	.431	.251	.314	.125
2.000	2.750	.500	2.509	.592	.431	.251	.314	.125
2.125	3.000	.562	2.759	.641	.480	.300	.346	.156
2.250	3.125	.562	2.884	.641	.480	.300	.346	.156
2.375	3.250	.562	3.009	.641	.480	.300	.346	.156
2.500	3.375	.562	3.134	.641	.480	.300	.346	.156
2.625	3.375	.625	3.134	.682	.521	.341	.379	.170



STATIONARY (METRIC)

SHAFT DIA.	GLAND BORE DIA.	SEAT LENGTH	CAVITY STEP DIA.	CAVITY DEPTH	BORE DEPTH	CAVITY DEPTH	NOSE LENGTH	PIN EXTRUSION
A	B	C	D	E	F	G	H	J
25 mm	1.625	.437	1.384	.551	.390	.240	.261	.125
28 mm	1.750	.437	1.509	.551	.390	.240	.261	.125
30-32 mm	1.875	.437	1.634	.551	.390	.240	.261	.125
35 mm	2.000	.437	1.759	.551	.390	.240	.261	.125
38 mm	2.125	.437	1.884	.551	.390	.240	.261	.125
40 mm	2.275	.500	2.134	.592	.431	.251	.314	.125
42 mm	2.500	.500	2.259	.592	.431	.251	.314	.125
45 mm	2.625	.500	2.384	.592	.431	.251	.314	.125
48 mm	2.750	.500	2.509	.592	.431	.251	.314	.125
50 mm	3.000	.562	2.759	.641	.480	.300	.346	.156
55 mm	3.125	.562	2.884	.641	.480	.300	.346	.156
60 mm	3.250	.562	3.009	.641	.480	.300	.346	.156
65 mm	3.375	.625	3.134	.682	.521	.341	.379	.170