



155™ CARTRIDGE SINGLE SEAL

SEAL INSTALLATION

Preparation

Determine if the pump is in good condition.

A. Check the shaft or sleeve.

1. Remove all burrs and sharp corners, especially in areas where the O-ring has to slide. Cover threads and keyway slots with a thin tape to prevent cutting the O-ring. The distance from the face of the stuffing box to the center of the O-ring groove is .47" (12 mm). For shaft sizes larger than 2.5" (60 mm), this distance is .68" (17 mm).
2. The shaft finish should be no rougher than 32 microinches (0,8 microns) AA. It should feel smooth if you run your fingernail along the shaft in the axial direction.
3. **Make sure the shaft or sleeve diameter is within tolerance (no more than +/- .002" [0,05 mm] from nominal).**

Example: 1.750" (50 mm) shaft should not be larger than 1.752" (50,05 mm) or smaller than 1.748" (49,95 mm).
4. 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.**
5. Place the dial indicator on the end of the shaft and alternately push and pull the shaft in the axial direction to measure end play. If the bearings are in a good condition, end play should not exceed .005" (0,13 mm) TIR.

6. Protect the sleeve O-ring by lubricating the shaft with a clean silicone based lubricant. A sufficient quantity is provided with the seal.

B. Check the stuffing box face.

1. The stuffing box face must be smooth enough for a gasket to seal; maximum 125 microinches (3,2 microns) AA.
2. Split case pumps will sometimes cause a step (misalignment) to occur on the stuffing box face. This step must be machined flat.
3. Make sure the stuffing box is clean and clear along its entire length.
4. If possible, attach the base of a dial indicator to shaft and rotate shaft and indicator slowly while reading the runout of the stuffing box face. Misalignment of the stuffing box relative to the shaft should not exceed .005" TIR per inch (0,005 mm TIR per millimeter) of shaft diameter.

Installation

1. Check the chemical listing to determine if the FKM O-rings installed in this seal are compatible with the fluid being sealed. If it is necessary to change the O-ring material, disassemble the seal as shown in the instructions and replace it with suitable O-rings. A spare set of Ethylene Propylene O-rings is supplied with the seal.

2. **For 155 Small Seal (1" to 2.5" [25 mm to 60 mm] shaft/sleeve):** The flat head socket screws (covered with yellow dots) hold the lock ring in place. These socket screws go through the smaller holes on the sleeve. **Do not loosen the flat head socket screws when positioning the seal.** The three cup point screws next to the flat head socket screws press on the sleeve. Their loading configuration assists in centering the sleeve on the shaft. The three cup point screws further away from the flat head socket screws go through the larger holes on the sleeve. Make sure these are engaged through the sleeve but do not protrude into the sleeve I.D. bore.

For 155 Large Seal (larger than 2.5" [60 mm] shaft/sleeve): The flat head socket screws (covered with yellow dots) hold the lock ring in place. These socket screws go through the smaller holes on the sleeve. **Do not loosen the flat head socket screws when positioning the seal.** The three hybrid dog/cup point screws press on the sleeve. Their loading configuration assists in centering the sleeve on the shaft. The six cup point screws go through the larger holes on the sleeve. Make sure these are engaged through the sleeve but do not protrude into the sleeve I.D. bore.

3. **CAUTION: If the 155 seal is operating at a stuffing box pressure of over 300 psig (20 Bar) or if the shaft is case hardened, replace the three 316 stainless steel set screws that go through the larger holes on the sleeve with the hardened steel set screws supplied with the seal.**

SEAL INSTALLATION

4. **For 155 Small Seal (1" to 2.5" [25 mm to 60 mm] shaft/sleeve):** Attaching the 478 or any other gland or re-attaching the tabs.
 - A. When using the 478 or any other gland instead of the tabs, remove the tabs by removing the tab retaining snap ring and pressing the tabs towards the center of the hub gland and then sliding them out. Slide the 478 or other gland over the hub gland until it bottoms out.
 - B. If the tabs need to be re-attached:
 - Place the seal, lock ring side up, on a flat surface.
 - When installing a tab spring in a tab, apply a small amount of silicone grease to the bottom of the spring. This will help the spring stay in the hole. To install a tab, compress the tab spring by pressing the tab against the hub gland surface and slide the tab till it bottoms out on the hub gland. Place the desired number of tabs, in pairs, at the required orientation. As a minimum two pairs of tabs must be used. When the 155 seal is operating at a stuffing box pressure of over 300 psig (20 Bar), four pairs of tabs must be used.
 - Insert the snap ring in the hub gland groove. The snap ring will prevent the tabs from falling off, but can be removed at any time without affecting the performance of the seal. Make sure that the gap between the ends of the snap ring is aligned with the slot in the hub gland for the centering strap.
5. Slide the seal onto the shaft, by pushing on the lock ring.

6. Reassemble the pump and make necessary shaft alignments and impeller adjustments.
7. Orientate the flush connection to the location required. The port is plugged prior to shipping. Removal of the plug will require 25 lbs.-ft. (33,9 Nm) of torque.
8. Piping connections should not be made prior to tightening the gland bolts.
9. Tighten the gland nuts evenly.
IMPORTANT: The gland nuts must be tightened before tightening set screws onto the shaft.
10. The seal has been designed to promote self-centering of the sleeve on the shaft. Following the set screw tightening procedure outlined below will lead to the maximum self-centering possible.

For 155 Small Seal (1" to 2.5" [25 mm to 60 mm] shaft/sleeve):

Tighten the three cup point set screws, that are closer to the flat head screws, evenly. If necessary, tighten the three flat head socket screws with the hex keys provided. Then tighten the three cup point set screws, that are further away from the flat head screws, evenly. **After these three cup point screws have been tightened with the hex key, tighten them again with a torque wrench to 50-60 lbs.-in. (5,7-6,8 Nm).** Pull out the centering strap, and save the strap. If the strap is lost after seal installation, a standard wire wrap, .054" thick by .187" wide (1,37 mm thick by 4,75 mm) can be used.

For 155 Large Seal (larger than 2.5" [60 mm] shaft/sleeve): Tighten the three hybrid dog/cup point set screws evenly. If necessary, tighten the three flat head socket screws with the hex keys provided. Then tighten the six cup point set screws evenly. **After these three cup point screws have been tightened with the hex key, tighten them again with a torque wrench to 50-60 lbs.-in. (5,7-6,8 Nm).** Pull out the centering strap, and save the strap. If the strap is lost after seal installation, a standard wire wrap, .068" thick by .300" wide (1,73 mm thick by 7,62 mm) can be used.

11. **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.

For 155 Seal:

- Start the centering strap through the slot in the hub gland.
- Loosen the gland bolts.
- Loosen the set screws.
(Do not loosen the flat head socket screws as this will allow the lock ring to come off).
- Push the strap in until it completely surrounds the seal sleeve. It will pilot between the hub gland, seal sleeve and lock ring.
- Re-tighten the gland bolts.
- Re-tighten the set screws.
- Remove the centering strap.

If metal to metal contact still exists check the centering of the stuffing box.

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

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 for successful operation (heating, cooling, flushing) as well as safety devices must be employed. These decisions are to be made by the user. The chemical listing is intended as a general reference for this seal only. The decision to use this seal or any other Chesterton seal in a particular service is the customer's responsibility.

DISASSEMBLY (1-6) – SMALL (1" to 2.5" [25 mm to 60 mm] shaft/sleeve)

For 155 seal, remove the tabs or the 478 or other gland before disassembling the seal. Remove the tabs by removing the tab retaining snap ring and pressing the tabs towards the center of the hub gland and then sliding them out. To remove the 478 or other gland just pull the gland away from the hub gland.



You will need the hex keys provided with the seal, and an O-ring extractor or paper clip to disassemble the seal.



Place the seal, lock ring side up, on a flat surface. Back out all the screws from the sleeve. Remove the lock ring. Remove the centering strap.



While holding the sleeve and gland together, turn the seal assembly over and lift out the rotary and the sleeve, separating the stationary face from the rotary face with your fingers. Turn the faces in opposite directions if it becomes difficult to separate them.



Place the rotary and the sleeve next to the gland assembly.



Lift out the stationary and remove the dynamic O-ring.



Remove the back-up washer and stationary drive with the springs. Remove the springs from the stationary drive. Remove the rotary, rotary O-ring and shaft O-ring from the sleeve.

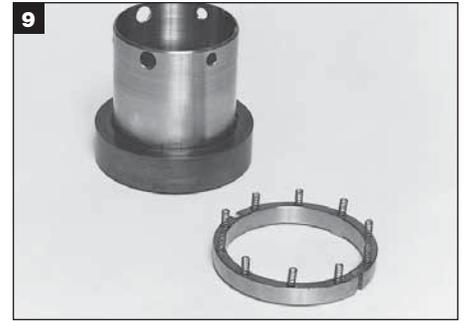
ASSEMBLY (7-14) – SMALL (1" to 2.5" [25 mm to 60 mm] shaft/sleeve)



Lubricate the sleeve I.D. O-ring with the silicone grease provided and install it in the sleeve I.D. groove. Lubricate the rotary O-ring and install it in the sleeve O.D. groove.



Slide the rotary onto the sleeve, aligning the drive tabs with the rotary slots. Slide the rotary over the O-ring until the rotary bottoms out. Check to make sure the drive tabs are properly engaged.



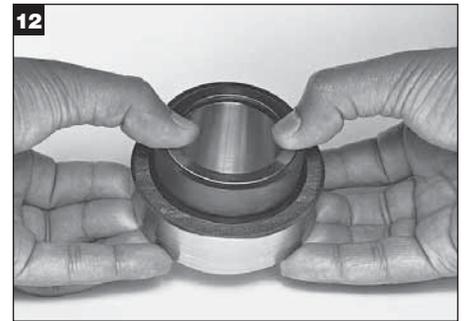
Place a spring in each hole in the stationary drive. A small amount of silicone grease can be applied to the bottom of each spring. This will help the springs stay in the holes.



Place the hub gland assembly with the gasket side up, on a flat surface. Align the slots in the stationary drive with the tabs in the hub gland. Slide the stationary drive in until the springs touch the hub gland. Place the back-up washer in the hub gland. It will rest on the stationary drive until the seal is compressed.



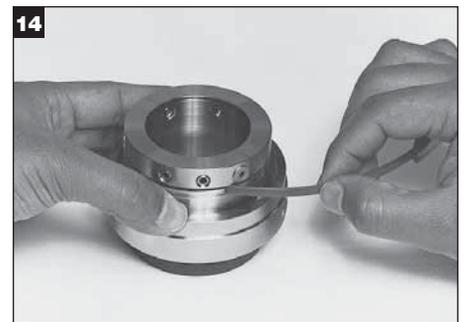
Lubricate the dynamic O-ring for the stationary. Slide the O-ring onto the stationary. Slide the stationary into the hub gland until it engages the stationary drive. Be sure to line-up the drive tabs with the stationary slots.



Wipe the stationary and rotary faces clean with a lint free cloth. Place the hub gland, with the stationary installed, stationary side up on a flat surface. Place the stuffing box face gasket in the hub gland. Slide the sleeve, with the rotary installed, downwards into the hub gland. Pick up the hub gland and sleeve and continue to push them together until the faces contact each other.



Turn the assembly over and place with the lock ring side of the sleeve up, on a flat surface. Place the lock ring over the sleeve, lining up the flat head socket screws with the smaller holes and the cup point set screws with the larger holes. Press down on the lock ring and tighten the flat head socket screws and the cup point set screws. Check to ensure that the sleeve is not deformed while tightening the set screws. Make sure the screws do not protrude into the sleeve I.D. bore.

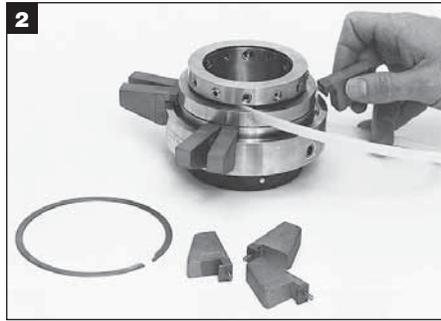


Press down on the hub gland and push the centering strap through the slot in the hub gland. Push the strap in until it completely surrounds the seal sleeve. It will pilot between the hub gland, seal sleeve and lock ring.

DISASSEMBLY (1-8) – LARGE (larger than 2.5" [60 mm] shaft/sleeve)



You will need the hex keys provided with the seal, and an O-ring extractor or paper clip to disassemble the seal.



For 155 large seal, remove the tabs or the 478 or other gland before disassembling the seal. Remove the tabs by removing the tab retaining snap ring and pressing the tabs towards the center of the hub gland and then sliding them out. To remove the 478 or other gland just pull the gland away from the hub gland.



Place the seal, lock ring side up, on a flat surface. Back out all the screws from the sleeve. Remove the lock ring. Remove the centering strap.



While holding the sleeve and gland together, turn the seal assembly over and lift out the rotary and the sleeve, separating the stationary face from the rotary face with your fingers.



Place the rotary and the sleeve next to the gland assembly.



Remove the rotary, rotary O-ring and shaft O-ring from the sleeve.



Remove the stationary and the adapter together. Separate them and remove the dynamic O-ring.



Remove the stationary drive with the springs. Remove the static O-ring from inside the hub gland. Remove the springs from the stationary drive.

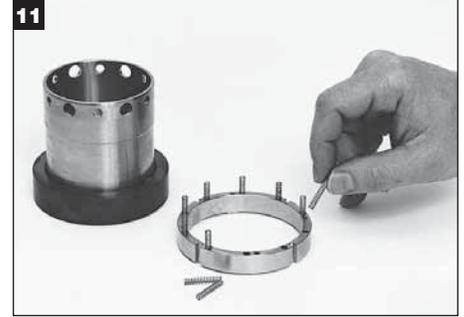
ASSEMBLY (9-19) – LARGE (larger than 2.5" [60 mm] shaft/sleeve)



Lubricate the sleeve I.D. O-ring with the silicone grease provided and install it in the sleeve I.D. groove. Lubricate the rotary O-ring and install it in the sleeve O.D. groove.



Slide the rotary onto the sleeve, aligning the drive tabs with the rotary slots. Slide the rotary over the O-ring until the rotary bottoms out. Check to make sure the drive tabs are properly engaged.



Place a spring in each hole in the stationary drive. A small amount of silicone grease can be applied to the bottom of each spring. This will help the springs stay in the holes.



Place the hub gland assembly with the gasket side up, on a flat surface. Lubricate the static O-ring and install it in the hub gland. Align the slots in the stationary drive with the tabs in the hub gland. Slide the stationary drive in until the springs touch the hub gland. Place the back-up washer in the hub gland.



Lubricate the dynamic O-ring for the stationary and slide it in the adapter I.D. groove. Place the stationary face down on a flat surface and press the adapter onto the stationary.



Slide the stationary and adapter assembly into the hub gland until it engages the stationary drive. Be sure to line-up the drive tabs with the stationary slots.

ASSEMBLY (9-19) – LARGE (larger than 2.5" [60 mm] shaft/sleeve)



Wipe the stationary and rotary faces clean with a lint free cloth. Place the hub gland, with the stationary installed, stationary side up on a flat surface. Place the stuffing box face gasket in the hub gland.



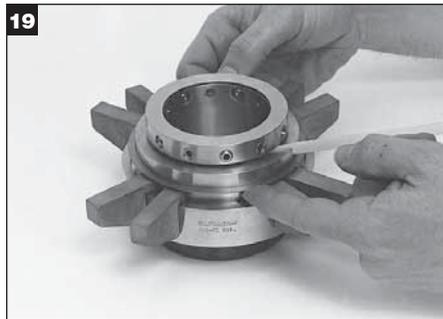
Slide the sleeve, with the rotary installed, downwards into the hub gland. Pick up the hub gland and sleeve and continue to push them together until the faces contact each other.



Press down on the hub gland and push the centering strap through the slot in the hub gland. Push the strap in until it completely surrounds the seal sleeve. It will pilot between the hub gland, seal sleeve and lock ring.

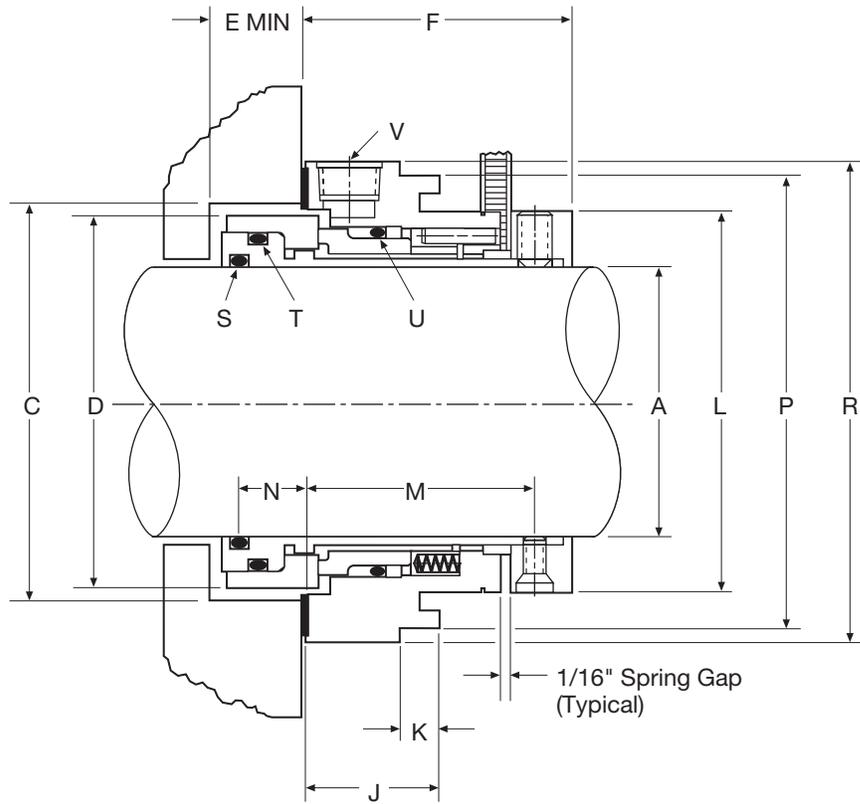


Turn the assembly over and place with the lock ring side of the sleeve up, on a flat surface. Place the lock ring over the sleeve, lining up the flat head socket screws and hybrid dog/cup point set screws with the smaller holes. Also, line up the cup point set screws with the larger holes. Press down on the lock ring and tighten the flat head socket screws, hybrid dog/cup point set screws and the cup point set screws. Check to ensure that the sleeve is not deformed while tightening the set screws. Make sure the screws do not protrude into the sleeve I.D. bore.

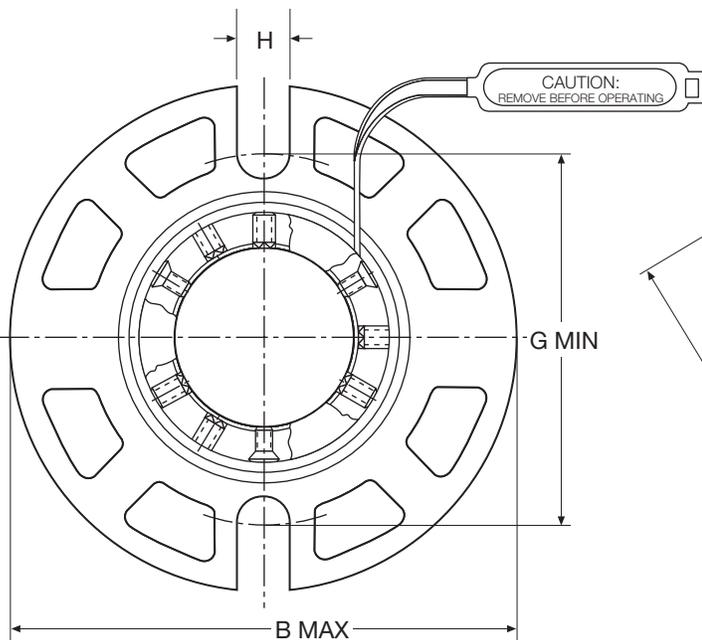


Replace the tabs by pressing the tabs toward the center of the hub gland and then sliding them in. Reinstall the tab retaining snap ring. The assembly is now complete.

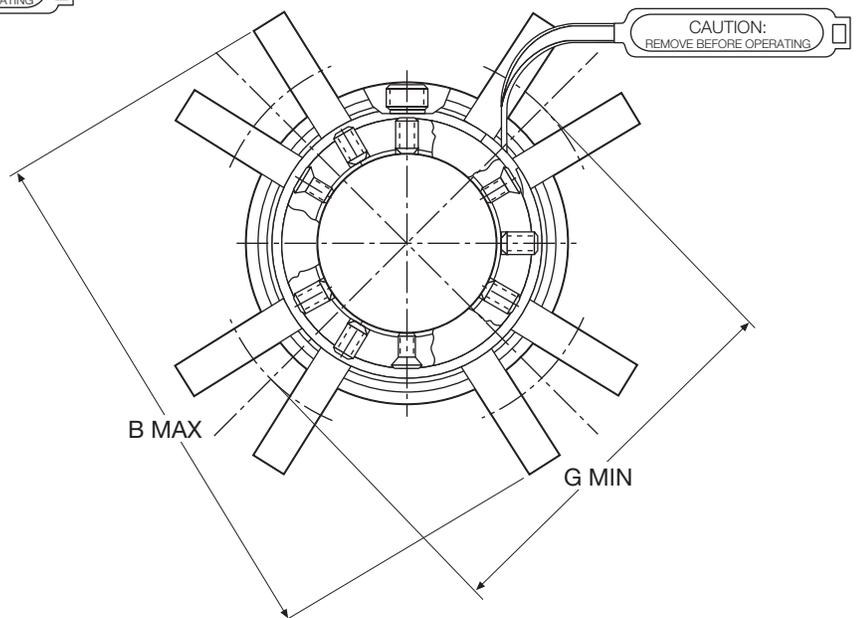
DIMENSIONAL DATA (DRAWINGS) – SMALL



478 GLAND



TABS



DIMENSIONAL DATA (INCH) – SMALL

SHAFT SIZE A	DASH SIZE	B MAX TABS	B MAX 478	STUFFING BOX BORE		D	E MIN	F	G MIN TABS			G MIN 478			H	J	K	L	M	N	P	R	S	T	U	478 GLAND	NPT SIZE V
				C MIN	C MAX				3/8" BOLTS	1/2" BOLTS	5/8" BOLTS	3/8" BOLTS	1/2" BOLTS	5/8" BOLTS													
1.000	8	4.65	4.24	1.75	2.00	1.69	0.63	1.89	2.88	3.01	3.13	2.90	-	-	0.44	0.93	0.37	1.76	1.58	0.47	2.25	2.45	120	124	126	9	1/8"
1.125	9	4.69	4.24	1.88	2.03	1.82	0.63	1.89	2.92	3.05	3.17	2.90	-	-	0.44	0.93	0.37	1.89	1.58	0.47	2.25	2.48	122	126	128	9	1/8"
1.250	10	4.90	4.49	2.00	2.26	1.94	0.63	1.89	3.13	3.26	3.38	3.21	-	-	0.44	0.93	0.37	2.01	1.58	0.47	2.43	2.70	124	128	130	11	1/8"
1.375	11	5.04	4.99	2.13	2.42	2.07	0.63	1.89	3.27	3.40	3.52	3.52	-	-	0.44	0.93	0.37	2.14	1.58	0.47	2.75	2.84	126	130	132	12	1/8"
1.500	12	5.23	4.99	2.25	2.62	2.19	0.63	1.89	3.46	3.59	3.71	3.52	-	-	0.44	0.93	0.37	2.26	1.58	0.47	2.75	3.03	128	132	134	12	1/8"
1.625	13	5.29	4.99	2.38	2.68	2.32	0.63	1.89	3.52	3.65	3.77	3.51	3.63	-	0.58	0.93	0.37	2.39	1.58	0.47	2.87	3.08	130	134	136	13	1/8"
1.750	14	5.41	5.49	2.50	2.80	2.44	0.63	1.89	3.64	3.77	3.89	3.74	3.86	-	0.58	0.93	0.37	2.51	1.58	0.47	3.12	3.21	132	136	138	14	1/8"
1.875	15	5.53	5.49	2.63	2.93	2.57	0.63	1.89	3.76	3.89	4.01	3.90	4.02	-	0.58	0.93	0.37	2.64	1.58	0.47	3.25	3.33	134	138	140	15	1/8"
2.000	16	5.74	5.99	2.75	3.18	2.69	0.63	1.89	3.97	4.10	4.22	4.15	4.27	-	0.58	0.93	0.37	2.76	1.58	0.47	3.50	3.54	136	140	142	16	1/8"
2.125	17	6.04	5.99	2.88	3.43	2.82	0.63	1.89	4.27	4.40	4.52	4.53	4.66	4.78	0.69	0.93	0.37	2.89	1.58	0.47	3.75	3.84	138	142	144	18	1/8"
2.250	18	6.14	6.24	3.00	3.55	2.94	0.63	1.89	4.38	4.51	4.63	4.56	4.69	4.81	0.69	0.93	0.37	3.01	1.58	0.47	3.87	3.94	140	144	146	19	1/8"
2.375	19	6.29	6.24	3.13	3.59	3.07	0.63	1.89	4.52	4.65	4.77	4.56	4.69	4.81	0.69	0.93	0.37	3.14	1.58	0.47	3.90	4.08	142	146	148	19	1/8"
2.500	20	6.41	6.49	3.25	3.80	3.19	0.63	1.89	4.65	4.78	4.90	4.79	4.92	5.04	0.69	0.93	0.37	3.26	1.58	0.47	4.12	4.21	144	148	150	20	1/8"

DIMENSIONAL DATA (METRIC) – SMALL

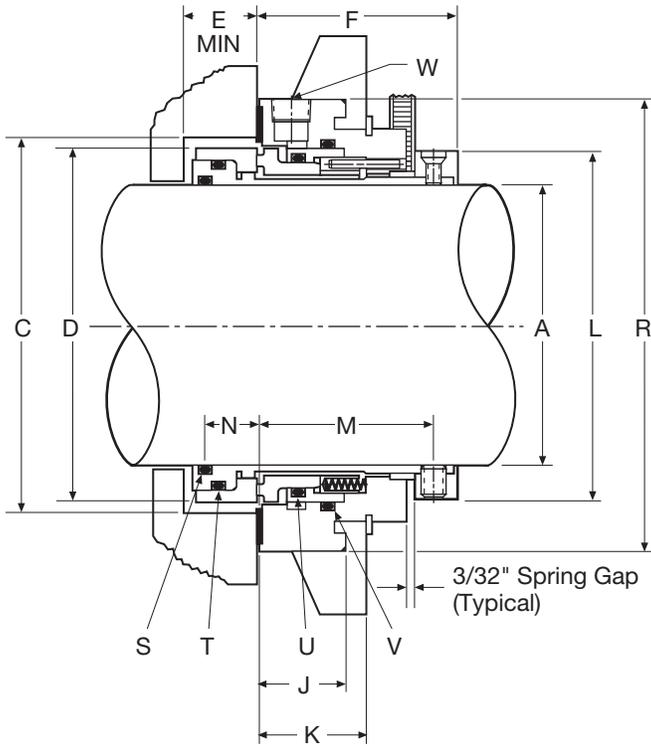
SHAFT SIZE A	B MAX TABS	B MAX 478	STUFFING BOX BORE		D	E MIN	F	G MIN TABS			G MIN 478			H	J	K	L	M	N	P	R	S	T	U	478 GLAND	NPT SIZE V
			C MIN	C MAX				8 mm BOLTS	10 mm BOLTS	12 mm BOLTS	8 mm BOLTS	10 mm BOLTS	12 mm BOLTS													
25	118	108	44	51	43	16	48	70	72	74	71	73	-	11	24	9	44	40	12	57	62	120	124	126	9	1/8"
28	118	108	47	52	46	16	48	70	72	74	71	73	-	11	24	9	47	40	12	57	62	121	126	128	9	1/8"
30	124	111	49	57	48	16	48	76	78	80	77	79	-	11	24	9	49	40	12	60	68	123	127	129	10	1/8"
32	124	114	51	58	50	16	48	77	79	81	78	80	-	11	24	9	51	40	12	62	69	124	128	130	11	1/8"
33	124	114	52	59	51	16	48	76	78	80	78	80	-	11	24	9	52	40	12	62	69	125	129	131	11	1/8"
35	128	127	54	62	52	16	48	80	82	84	86	88	-	11	24	9	54	40	12	70	72	126	130	132	12	1/8"
38	133	127	57	67	56	16	48	85	87	89	86	88	-	11	24	9	57	40	12	70	77	128	132	134	12	1/8"
40	134	127	59	68	58	16	48	86	88	90	86	88	90	15	24	9	59	40	12	73	78	129	134	135	13	1/8"
43	134	127	62	69	61	16	48	86	88	90	86	88	90	15	24	9	62	40	12	73	78	131	135	137	13	1/8"
45	140	139	64	73	63	16	48	92	94	96	92	94	96	15	24	9	64	40	12	79	84	132	136	138	14	1/8"
48	139	139	67	74	66	16	48	91	93	95	92	94	96	15	24	9	67	40	12	79	84	134	139	140	14	1/8"
50	145	139	69	78	68	16	48	97	99	101	96	98	100	15	24	9	69	40	12	82	89	136	140	142	15	1/8"
55	150	158	74	83	73	16	48	102	104	106	112	114	116	17	24	9	74	40	12	94	94	139	143	145	18	1/8"
60	160	158	79	91	78	16	48	112	114	116	113	115	117	17	24	9	80	40	12	99	104	142	146	148	19	1/8"

KEY (drawings & charts)

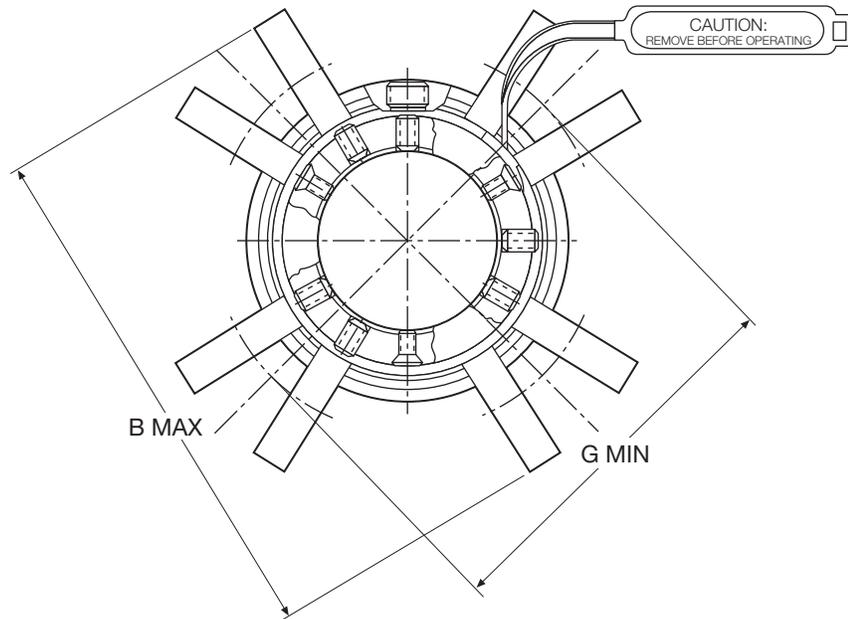
- A – Shaft Size
- B – Maximum Gland Tab Diameter
- C – Stuffing Box Inside Diameter
- D – Seal Diameter in Stuffing Box
- E – Minimum Stuffing Box Depth
- F – Outboard Seal Length
- G – Minimum Bolt Circle by Bolt Size
- H – Slot Width
- J – Hub Gland Flange Width
- K – Hub Gland Slot Width
- L – Lock Ring Diameter
- M – Distance from Stuffing Box Face to Set Screws
- N – Distance from Stuffing Box Face to Shaft O-Ring
- P – Hub Gland Slot Diameter
- R – Hub Gland Diameter
- S – Shaft O-Ring
- T – Rotary O-Ring
- U – Stationary O-Ring
- V – NPT Size

DIMENSIONAL DATA (DRAWINGS) – LARGE & OVERSIZE

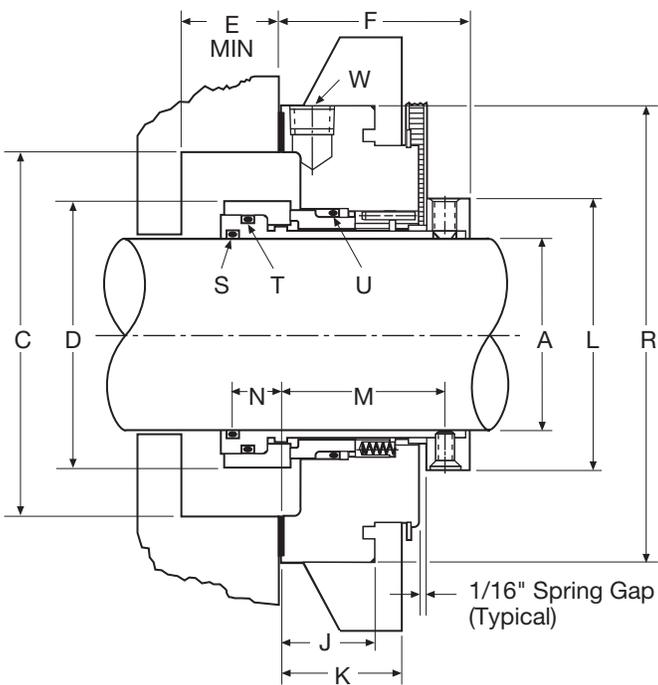
LARGE



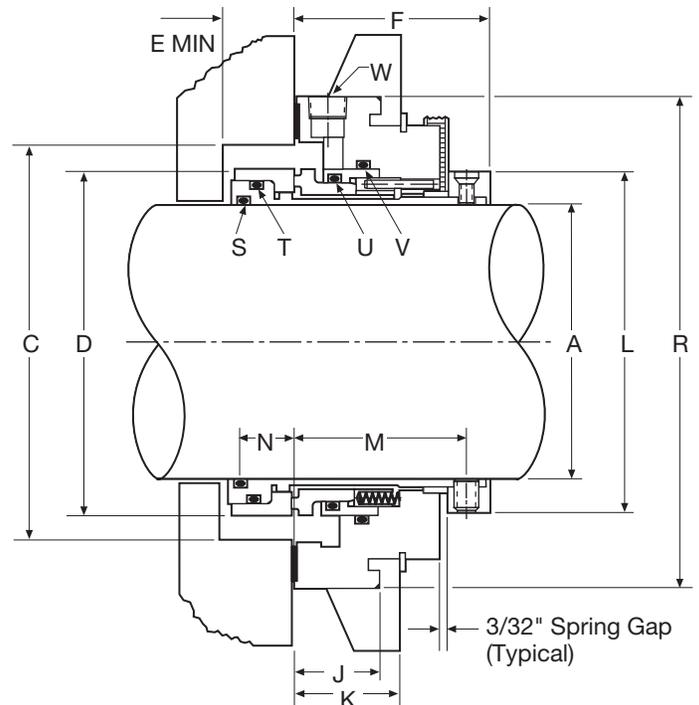
TABS



OVERSIZE – SMALL
(1.13" to 2.50" shaft/sleeve)



OVERSIZE – LARGE
(2.63" to 4.75" shaft/sleeve)



DIMENSIONAL DATA (INCH) – LARGE

SHAFT SIZE A	DASH SIZE	B MAX	STUFFING BOX BORE		D	E MIN	F	G MIN			J	K	L	M	N	R	O-RINGS				NPT SIZE W
			C MIN	C MAX				1/2" BOLTS	5/8" BOLTS	3/4" BOLTS							S	T	U	V	
2.625	21	7.63	3.63	4.00	3.54	0.88	2.50	5.35	5.48	5.60	1.08	1.33	3.49	2.22	0.68	4.79	231	234	236	239	1/4"
2.750	22	7.76	3.75	4.13	3.67	0.88	2.50	5.48	5.60	5.73	1.08	1.33	3.61	2.22	0.68	4.92	232	235	237	240	1/4"
2.875	23	7.88	3.88	4.25	3.79	0.88	2.50	5.60	5.73	5.85	1.08	1.33	3.74	2.22	0.68	5.04	233	236	238	241	1/4"
3.000	24	8.01	4.00	4.44	3.92	0.88	2.50	5.73	5.85	5.98	1.08	1.33	3.86	2.22	0.68	5.17	234	237	239	242	1/4"
3.125	25	8.13	4.13	4.55	4.04	0.88	2.50	5.85	5.98	6.10	1.08	1.33	3.99	2.22	0.68	5.29	235	238	240	243	1/4"
3.250	26	8.26	4.25	4.69	4.17	0.88	2.50	5.98	6.10	6.23	1.08	1.33	4.11	2.22	0.68	5.42	236	239	241	244	1/4"
3.375	27	8.38	4.38	4.80	4.29	0.88	2.50	6.10	6.23	6.35	1.08	1.33	4.24	2.22	0.68	5.54	237	240	242	245	1/4"
3.500	28	8.51	4.50	4.94	4.42	0.88	2.50	6.23	6.35	6.48	1.08	1.33	4.36	2.22	0.68	5.67	238	241	243	246	1/4"
3.625	29	8.63	4.63	5.05	4.54	0.88	2.50	6.35	6.48	6.60	1.08	1.33	4.49	2.22	0.68	5.79	239	242	244	247	1/4"
3.750	30	8.76	4.75	5.14	4.67	0.88	2.50	6.48	6.60	6.73	1.08	1.33	4.61	2.22	0.68	5.92	240	243	245	248	1/4"
3.875	31	8.88	4.88	5.26	4.79	0.88	2.50	6.60	6.73	6.85	1.08	1.33	4.74	2.22	0.68	6.04	241	244	246	249	1/4"
4.000	32	9.01	5.00	5.44	4.92	0.88	2.50	6.73	6.85	6.98	1.08	1.33	4.86	2.22	0.68	6.17	242	245	247	250	1/4"
4.125	33	9.13	5.13	5.55	5.04	0.88	2.50	6.85	6.98	7.10	1.08	1.33	4.99	2.22	0.68	6.29	243	246	248	251	1/4"
4.250	34	9.18	5.25	5.69	5.17	0.88	2.50	6.89	7.02	7.14	1.08	1.33	5.11	2.22	0.68	6.33	244	247	249	252	1/4"
4.375	35	9.30	5.38	5.81	5.29	0.88	2.50	7.02	7.14	7.27	1.08	1.33	5.24	2.22	0.68	6.46	245	248	250	253	1/4"
4.500	36	9.43	5.50	5.94	5.42	0.88	2.50	7.14	7.27	7.39	1.08	1.33	5.36	2.22	0.68	6.58	246	249	251	254	1/4"
4.625	37	9.56	5.63	6.06	5.54	0.88	2.50	7.27	7.39	7.52	1.08	1.33	5.49	2.22	0.68	6.71	247	250	252	255	1/4"
4.750	38	9.76	5.75	6.22	5.67	0.88	2.50	7.47	7.60	7.72	1.08	1.33	5.61	2.22	0.68	6.91	248	251	253	256	1/4"

DIMENSIONAL DATA (METRIC) – LARGE

SHAFT SIZE A	B MAX	STUFFING BOX BORE		D	E MIN	F	G MIN			J	K	L	M	N	R	O-RINGS				NPT SIZE W
		C MIN	C MAX				10 mm BOLTS	12 mm BOLTS	16 mm BOLTS							S	T	U	V	
65	194	92	102	90	22	64	132	134	138	27	34	89	56	17	122	231	234	236	239	1/4"
70	197	95	105	93	22	64	135	137	141	27	34	92	56	17	125	232	235	237	240	1/4"
75	203	100	113	99	22	64	141	143	147	27	34	98	56	17	131	234	237	239	242	1/4"
80	207	105	116	103	22	64	144	146	150	27	34	102	56	17	134	236	238	240	243	1/4"
85	213	110	122	109	22	64	151	153	157	27	34	108	56	17	141	237	240	242	245	1/4"
90	216	115	125	113	22	64	154	156	160	27	34	112	56	17	144	239	241	243	246	1/4"
95	222	120	131	118	22	64	160	162	166	27	34	117	56	17	150	240	243	245	248	1/4"
100	229	127	138	125	22	64	167	169	173	27	34	123	56	17	157	242	245	247	250	1/4"
110	236	136	148	134	22	64	174	176	180	27	34	133	56	17	164	245	248	250	253	1/4"
120	248	145	158	144	22	64	186	188	192	27	34	142	56	17	176	248	251	253	256	1/4"

DIMENSIONAL DATA (INCH) – OVERSIZE

SHAFT SIZE A	DASH SIZE	B MAX	STUFFING BOX BORE		D	E MIN	F	G MIN					J	K	L	M	N	R	O-RINGS				NPT SIZE W
			C MIN	C MAX				3/8" BOLTS	1/2" BOLTS	5/8" BOLTS	3/4" BOLTS	7/8" BOLTS							S	T	U	V	
1.125	9	5.29	2.50	2.75	1.82	0.63	1.89	3.59	3.72	3.84	–	–	0.93	1.18	1.89	1.58	0.47	3.15	122	126	128	–	1/4"
1.375	11	5.57	2.68	3.00	2.07	0.63	1.89	3.86	3.99	4.11	–	–	0.93	1.18	2.14	1.58	0.47	3.43	126	130	132	–	1/4"
1.750	14	6.64	3.37	3.75	2.44	0.63	1.89	4.93	5.06	5.18	–	–	0.93	1.18	2.51	1.58	0.47	4.49	132	136	138	–	1/4"
1.875	15	6.58	3.42	3.81	2.57	0.63	1.89	4.88	5.01	5.13	–	–	0.93	1.18	2.64	1.58	0.47	4.44	134	138	140	–	1/4"
2.125	17	7.31	3.75	4.25	2.82	0.63	1.89	5.60	5.73	5.85	–	–	0.93	1.18	2.89	1.58	0.47	5.17	138	142	144	–	1/4"
2.500	20	8.14	4.37	4.75	3.19	0.63	1.89	6.43	6.56	6.68	–	–	0.93	1.18	3.26	1.58	0.47	6.00	144	148	150	–	1/4"
2.625	21	8.04	4.38	4.78	3.54	0.88	2.50	–	5.83	5.96	6.08	6.21	1.08	1.33	3.49	2.22	0.68	5.27	231	234	236	239	1/4"
2.750	22	8.04	4.28	4.78	3.67	0.88	2.50	–	5.83	5.96	6.08	6.21	1.08	1.33	3.61	2.22	0.68	5.27	232	235	237	240	1/4"
3.000	24	8.65	4.75	5.39	3.92	0.88	2.50	–	6.44	6.57	6.69	6.82	1.08	1.33	3.86	2.22	0.68	5.88	234	237	239	242	1/4"
3.375	27	8.54	4.78	5.27	4.29	0.88	2.50	–	6.33	6.46	6.58	6.71	1.08	1.33	4.24	2.22	0.68	5.77	237	240	242	245	1/4"
3.750	30	9.63	5.78	6.40	4.67	0.88	2.50	–	7.41	7.54	7.66	7.79	1.08	1.33	4.61	2.22	0.68	6.86	240	243	245	248	1/4"
4.125	33	9.54	5.78	6.27	5.04	0.88	2.50	–	7.33	7.46	7.58	7.71	1.08	1.33	4.99	2.22	0.68	6.77	243	246	248	251	1/4"
4.750	38	11.25	7.03	7.65	5.67	0.88	2.50	–	9.04	9.17	9.29	9.42	1.08	1.33	5.61	2.22	0.68	8.48	248	251	253	256	1/4"

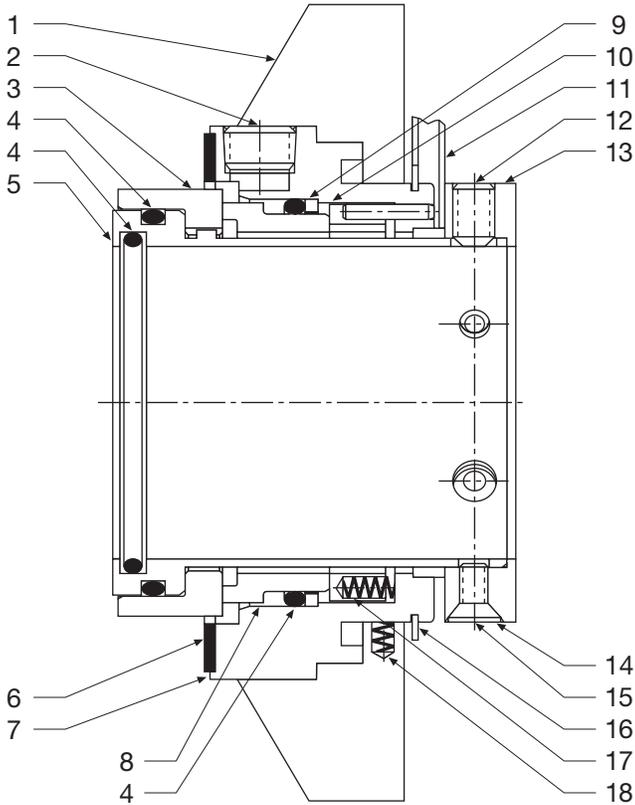
KEY (drawings & charts)

- A – Shaft Size
- B – Maximum Gland Tab Diameter
- C – Stuffing Box Inside Diameter
- D – Seal Diameter in Stuffing Box
- E – Minimum Stuffing Box Depth
- F – Outboard Seal Length
- G – Minimum Bolt Circle by Bolt Size
- J – Hub Gland Flange Width
- K – Distance from Stuffing Box Face to Back of Tab
- L – Lock Ring Diameter
- M – Distance from Stuffing Box Face to Set Screws
- N – Distance from Stuffing Box Face to Shaft O-Ring
- R – Hub Gland Diameter
- S – Shaft O-Ring
- T – Rotary O-Ring
- U – Stationary O-Ring
- V – Gland O-Ring (applies only to large size and large oversize seal)
- W – NPT Size

PARTS IDENTIFICATION

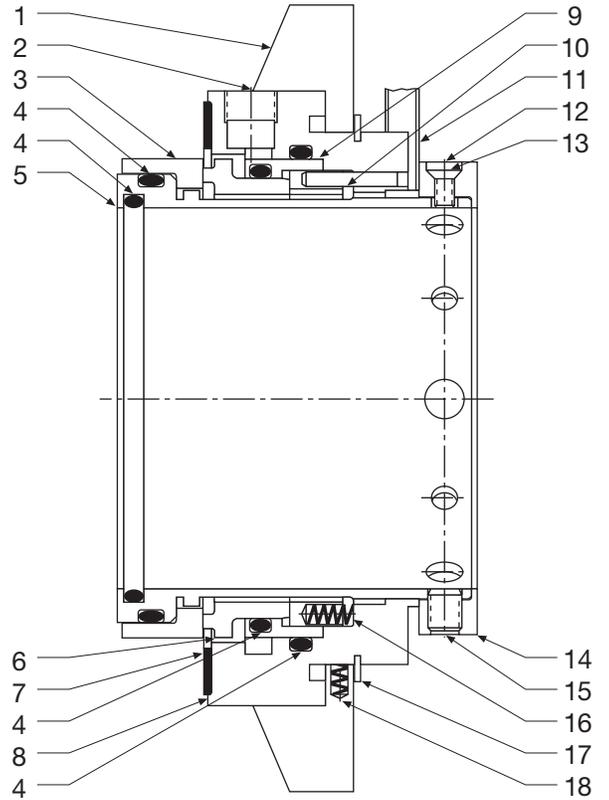
SMALL

(1" to 2.5" [25 mm to 60 mm] shaft/sleeve)



LARGE

(larger than 2.5" [60 mm] shaft/sleeve)



KEY

- | | |
|--------------------------|---------------------------|
| 1 - Bolt Tab | 10 - Stationary Drive |
| 2 - Pipe Plug | 11 - Centering Strap |
| 3 - Rotary Seal Ring | 12 - Cup Point Set Screw |
| 4 - O-Ring | 13 - Lock Ring |
| 5 - Sleeve | 14 - Dot |
| 6 - Gasket | 15 - Flat HD Socket Screw |
| 7 - Hub Gland Assembly | 16 - Snap Ring |
| 8 - Stationary Seal Ring | 17 - Spring |
| 9 - Back-up Washer | 18 - Bolt Tab Spring |

KEY

- | | |
|--------------------------|---------------------------|
| 1 - Bolt Tab | 10 - Stationary Drive |
| 2 - Pipe Plug | 11 - Centering Strap |
| 3 - Rotary Seal Ring | 12 - Flat HD Socket Screw |
| 4 - O-Ring | 13 - Dot |
| 5 - Sleeve | 14 - Lock Ring |
| 6 - Stationary Seal Ring | 15 - Cup Point Set Screw |
| 7 - Gasket | 16 - Spring |
| 8 - Hub Gland Assembly | 17 - Snap Ring |
| 9 - Adapter | 18 - Bolt Tab Spring |

155 is a trademark of A.W. Chesterton Company.



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