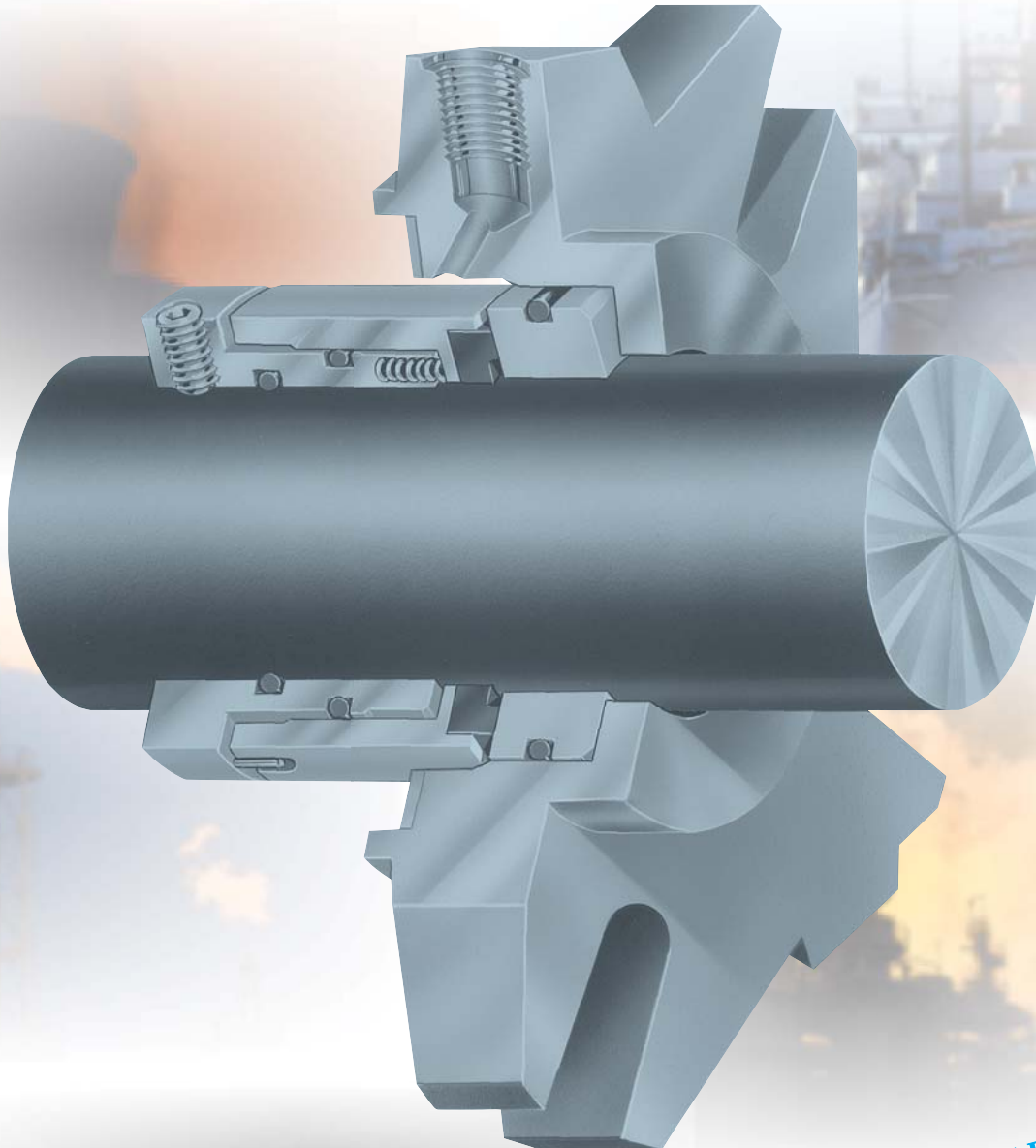


# Model SD-3

Single Inside Mechanical Seal

**Versatile, Rugged and Reliable**



[www.advancedsealing.com](http://www.advancedsealing.com)



# ASI Model SD-3

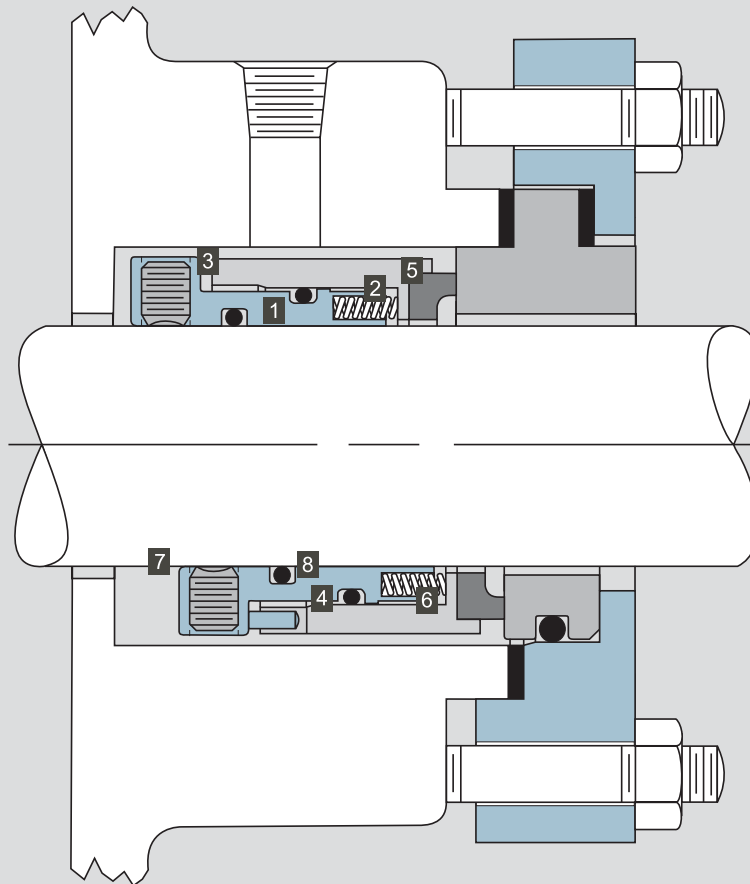
The operating range for the **ASI Model SD-3** seal is perhaps the widest in the industry for any single mechanical seal. Its rugged, balanced, anti-clogging design is particularly well suited for the more hostile sealing applications where unique conditions such as high pressure, low viscosity or the presence of abrasives make other designs “short-timers.” No wonder this seal has delivered decades of dependable, trouble-free performance.

[1]  
**Heavy Duty Lock Collar**  
Rugged locking collar resists distortion that can cause the flexing mechanism to seize.

[2]  
**Isolated Springs**  
Springs are removed from the fluid and cannot clog from sedimentation in the pumpage.

[3]  
**Unitized Rotary**  
No loose parts to fall off or jam during seal installation.

[4]  
**Hydraulic Balance**  
Balanced without the use of stepped shaft or sleeve. Seals can operate at higher pressures without overheating for better seal performance.



[5]  
**Optional Face Material**  
Standard carbon face can be replaced with tungsten carbide for extreme abrasive service.

[6]  
**Multiple Springs**  
Multiple springs prevent uneven face wear. Heavy gauge Hastelloy® springs deliver uniform mechanical face load.

[7]  
**No Shaft Modification**  
Seal will install over straight or stepped shaft or packing sleeve.

[8]  
**Non-Fretting**  
Shaft o-ring is static and cannot damage equipment.

## MATERIALS OF CONSTRUCTION

### **METAL PARTS**

Standard Metal Parts- 316ss  
Standard Springs- Hastelloy® C  
Standard Set Screws- 316ss  
(Other Materials May Be Specified)

### **FACE MATERIALS**

Rotary Face- High Quality Carbon Graphite  
(Other Materials May Be Specified)

### **SECONDARY SEALS**

Standard O-ring Materials- Fluorocarbon, EPDM or Aflas®  
(Other Materials May Be Specified)

## ADDITIONAL FEATURES:

### **REPAIR KITS-**

Seal repair kits allow the ease of “in-field” part replacement without special equipment or tools.

### **COMPACT DESIGN-**

Permits use in smaller ANSI pumps without equipment modification, including those with 5/16” cross section stuffing boxes.

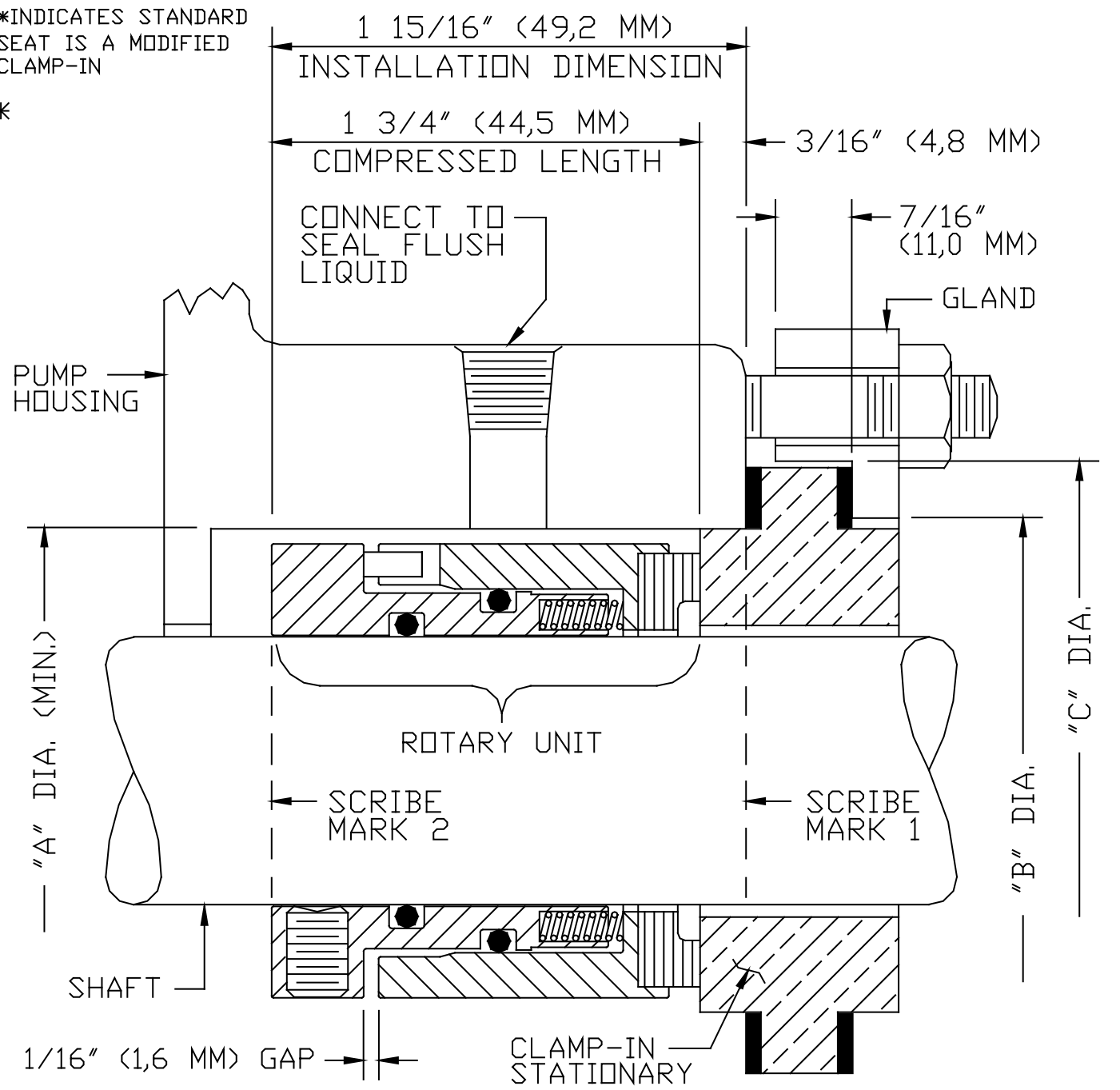
### **INTERCHANGEABLE-**

Seal will interchange with many other designs and can, in most instances, be used with existing stationaries and gland follower flanges.

SIZE	"A"	"B"	"C"
15/16" 24 MM	1.562 39,7	1.59 40,4	1.99 50,5
1" 25 MM	1.625 41,3	1.66 42,2	2.15 54,6
1 1/8" 28 MM	1.750 44,5	1.78 45,2	2.28 57,9
1 1/4" 32 MM	1.875 47,6	1.91 48,5	2.40 61,0
1 3/8" 35 MM	2.000 50,8	2.03 51,6	2.41 61,2
1 1/2" 38 MM	2.250 57,2	2.28 57,9	2.78 70,6
1 5/8" 40 MM	2.375 60,3	2.41 61,2	2.90 73,7
1 3/4" 45 MM	2.498 63,4	2.53 64,3	3.15 80,0
1 7/8" 48 MM	2.623 66,6	2.65 67,3	3.28 83,3
2" 50 MM	2.748 69,8	2.78 70,6	3.47 88,1
2 1/8" 55 MM	2.873 73,0	2.90 73,7	3.78 96,0
2 1/4" 55 MM	2.998 76,1	3.03 77,0	3.90 99,1
2 3/8" 60 MM	3.125 79,4	3.09 78,5	3.94 100,1
2 1/2" 63 MM	3.248 82,5	3.28 83,3	4.15 105,4
2 5/8" 65 MM	3.373 85,7	3.40 86,4	4.28 108,7

\*INDICATES STANDARD SEAT IS A MODIFIED CLAMP-IN

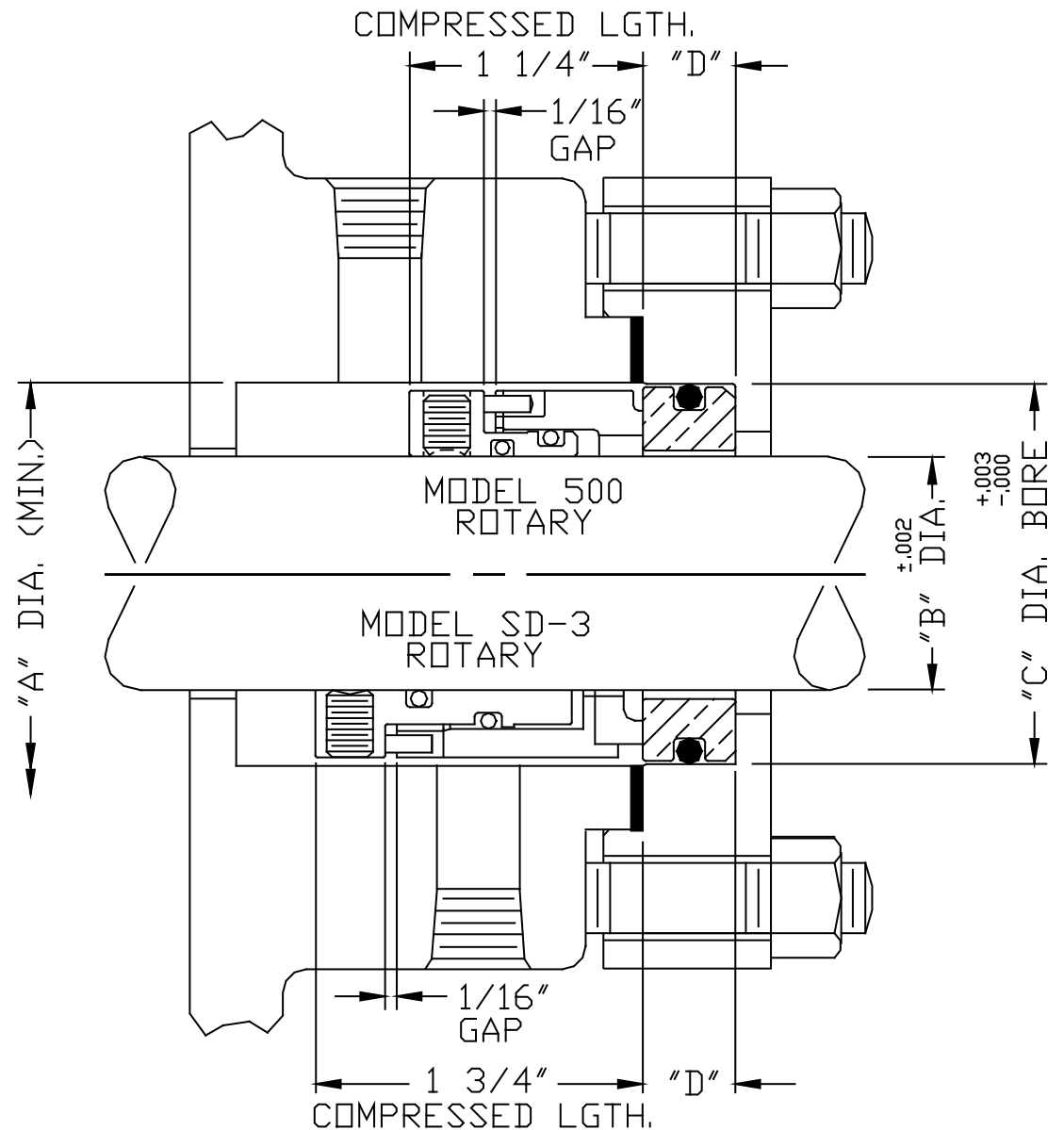
\*



ADVANCED SEALING

INSTALLATION, MODEL SD3  
WITH CLAMP-IN STATIONARY

SIZE	"A"	"B"	"C"	"D"
15/16	1.562	.937	1.562	.375
1	1.625	1.000	1.625	.437
1 1/16	1.750	1.063	1.750	.437
1 1/8	1.750	1.125	1.750	.437
1 1/4	1.875	1.250	1.875	.437
1 3/8	2.000	1.375	2.000	.437
1 1/2	2.250	1.500	2.125	.437
1 5/8	2.375	1.625	2.375	.500
1 3/4	2.500	1.750	2.500	.500
1 7/8	2.625	1.875	2.625	.500
2	2.750	2.000	2.750	.500
2 1/8	2.875	2.125	2.875	.562
2 1/4	3.000	2.250	3.125	.562
2 3/8	3.125	2.375	3.250	.562
2 1/2	3.375	2.500	3.375	.562
2 5/8	3.500	2.625	3.500	.625



UNLESS OTHERWISE SPECIFIED  
 REMOVE ALL BURRS, .01/.02 BREAK ALL EDGES  
 TOLERANCES : FRACT. ± .020, .XX DEC. ± .010  
 .XXX DEC. ± .005, ANGLES ± 1/2°  
 SURFACE FINISH ( RMS ), 63√ ALL OVER

TITLE  
 INSTALLATION,  
 MODEL 500/SD-3,  
 .937" - 2.625" DIA.

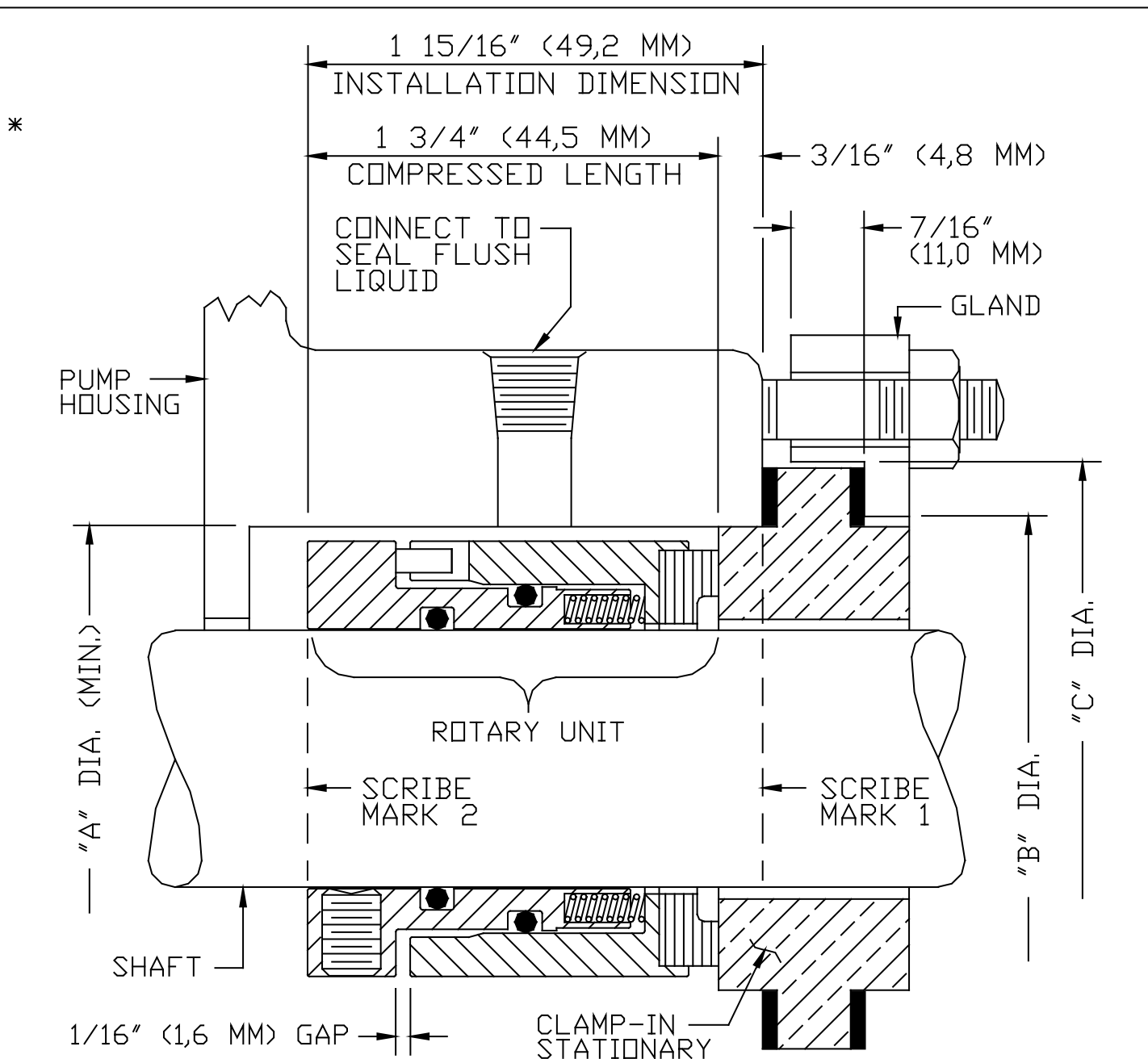
DATE 8-11-86 SCALE NONE  
 DR BY T.G. APPR D.L.H.  
 SHEET 1 TOTAL 1

ADVANCED SEALING  
 INTERNATIONAL

SD3500

REV. DESCRIPTION DATE

SIZE	"A"	"B"	"C"
24 MM .945"	39,7 1.562	40,4 1.59	50,5 1.99
25 MM .984"	41,3 1.625	42,2 1.66	54,6 2.15
28 MM 1.102"	44,5 1.750	45,2 1.78	57,9 2.28
30 MM 1.181"	46,0 1.812	46,7 1.84	63,5 2.50
32 MM 1.260"	47,6 1.875	48,5 1.91	61,0 2.40
35 MM 1.378"	50,8 2.000	51,6 2.03	61,2 2.41
38 MM 1.496"	57,2 2.250	57,9 2.28	70,6 2.78
40 MM 1.575"	60,3 2.375	61,2 2.41	73,7 2.90
42 MM 1.654"	62,6 2.466	63,5 2.50	78,5 3.09
43 MM 1.693"	62,6 2.466	63,5 2.50	78,5 3.09
45 MM 1.771"	63,4 2.498	64,3 2.53	80,0 3.15
48 MM 1.890"	66,6 2.623	67,3 2.65	83,3 3.28
50 MM 1.969"	69,8 2.748	70,6 2.78	88,1 3.47
55 MM 2.165"	76,1 2.998	77,0 3.03	99,1 100.1
58 MM 2.283"	79,4 3.125	78,5 3.09	100,1 3.94
60 MM 2.362"	79,4 3.125	78,5 3.09	100,1 3.94
65 MM 2.559	85,7 3.373	86,4 3.40	108,7 4.28

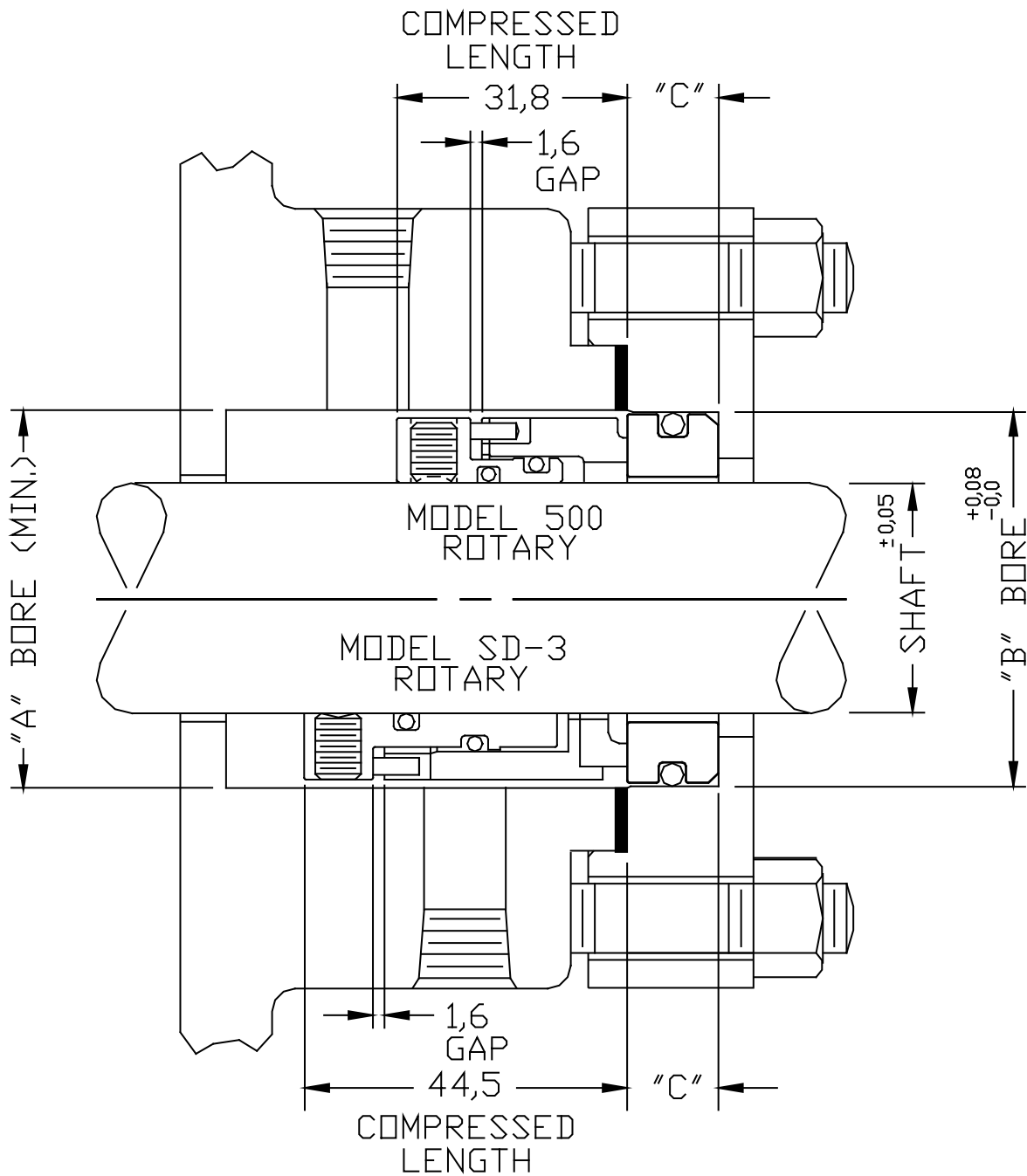


\*INDICATES STANDARD SEAT IS A MODIFIED CLAMP-IN



ADVANCED SEALING, INC.

INSTALLATION, MOD. SD-3  
WITH CLAMP-IN STATIONARY



SHAFT SIZE	"A" DIA.	"B" DIA.	"C" DIM.
24mm	39,67	39,67	9,53
25mm	41,28	41,28	11,10
28mm	44,45	44,45	11,10
30mm	47,63	47,63	11,10
32mm	47,63	47,63	11,10
35mm	50,80	50,80	11,10
38mm	57,20	53,97	11,10
40mm	60,33	60,33	12,70
42mm	63,50	63,50	12,70
43mm	63,50	63,50	12,70
45mm	63,50	63,50	12,70
48mm	66,68	66,68	12,70
50mm	69,85	69,85	12,70
55mm	76,20	79,38	14,27
60mm	79,38	82,55	14,27
65mm	88,90	88,90	15,88

UNLESS OTHERWISE SPECIFIED  
 REMOVE ALL BURRS, .01/.02 BREAK ALL EDGES  
 TOLERANCES : FRACT. ± .020, .XX DEC. ± .010  
 .XXX DEC. ± .005, ANGLES ± 1/2°  
 SURFACE FINISH ( RMS ), 63√ ALL OVER

TITLE  
 INSTALLATION,  
 MODEL SD-3/500,  
 MM SIZES, W/O-RING MT

DATE 6-26-90 SCALE NONE  
 DR BY J.H. APPR D.L.H.  
 SHEET 1 TOTAL 1

ADVANCED SEALING INTERNATIONAL  
 SD3500M

1	OLD DWG #AY1996A/A1996R1	3-00
REV.	DESCRIPTION	DATE

## INSTALLATION INSTRUCTIONS FOR MODEL SD-3

### EQUIPMENT PREPARATION:

- A. Do not remove seal parts from protective packaging until equipment has been inspected and repaired.
- B. Disassemble and clean equipment. Radius end of shaft or sleeve to help start seal shaft o-ring. Remove any burrs or marks which may cut o-rings. If sleeve shows signs of wear, check to determine if points of wear are located in an area where either the shaft o-ring or the set screws are mounted on the sleeve. If these two areas are free from wear, the old sleeve may be used.
- C. If the impeller is adjustable, check and set before installation of seal.
- D. Dial indicate shaft or sleeve. Maximum allowable runout is .003" (0,08 mm) T.I.R. Allowable end play is .010" (0,25 mm). If excessive movement is observed, check for bent shaft or bad bearings and correct.
- E. Chemical compatibility between the materials of construction of the mechanical seal and the product must be established. If materials of construction are not compatible, do not attempt to install seal. If compatibility cannot be established, consult factory for assistance.

### INSTALLATION FOR SINGLE-ENDED PUMPS: (USING CLAMP-IN SEAT)

1. Reinstall pump stuffing box.
2. Apply bluing to shaft or sleeve at a point directly under the stuffing box.
3. Scribe sleeve or shaft to show location of stuffing box.
4. Remove stuffing box.
5. Scribe a second mark 1 15/16" (49,2 mm) back from first scribe mark.
6. Carefully remove seal from package
7. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft toward bearing housing.
8. Lubricate seal shaft o-ring with silicone grease provided. DO NOT USE PETROLEUM BASED LUBRICANTS.
9. Install seal rotary unit onto shaft. A slight twisting action will help compress the o-ring over the end of the shaft.
10. Slide seal rotary unit over the shaft, locating the rear of the seal over the scribe mark (see note #5) which should be located 1 15/16" (49,2 mm) back from stuffing box face.
11. Tighten set screws. Screws should be set evenly and not overtightened.
12. Reinstall stuffing box and impeller.
13. Place gland and stationary seat assembly over gland studs. Slide stationary seat up to a point where it is in contact with the rotary seal face. At this point, when seal faces are just touching, there should be 5/32" (4,0 mm) between the face of the stuffing box and the gasket on the gland.
14. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
15. Reinstall and open flush connections.

### INSTALLATION FOR DOUBLE-ENDED PUMPS: (USING CLAMP-IN SEAT)

1. Carefully remove seal from package.
2. Lubricate seal shaft o-ring with silicone grease provided. DO NOT USE PETROLEUM BASED LUBRICANTS.
3. Install seal rotary unit onto shaft. A slight twisting motion will help compress the o-ring over the end of the shaft.
4. Insert stationary clamp-in seat into seal gland and slide gland, seat and gaskets onto shaft towards stuffing box.
5. After all seal parts have been assembled loosely on rotary element, install pump bearings making any final impeller and/or bearing adjustments.
6. Set rear of rotary unit at the installation mark, 1 15/16" (49,2 mm) from the stuffing box face. Tighten set screws. At this point, when seal faces are just touching, there should be 5/32" (4,0 mm) between the face of the stuffing box and the gasket on the gland.
7. Care should be taken to make a new head gasket for the pump. The gasket should protrude over the edge of the stuffing box face by a minimum of 1/16" (1,6 mm) and should not touch rotary element.
8. Carefully reassemble pump casing, taking care not to hit the seal.
9. Cut gasket protrusions flush with stuffing box with a razor or sharp knife.
10. Pull up seal gland on studs. Finger tighten gland nuts evenly. Then, in an opposing sequence, tighten gland nuts two to three flats (just enough to compress gasket).
11. Reinstall and open all flush connections.