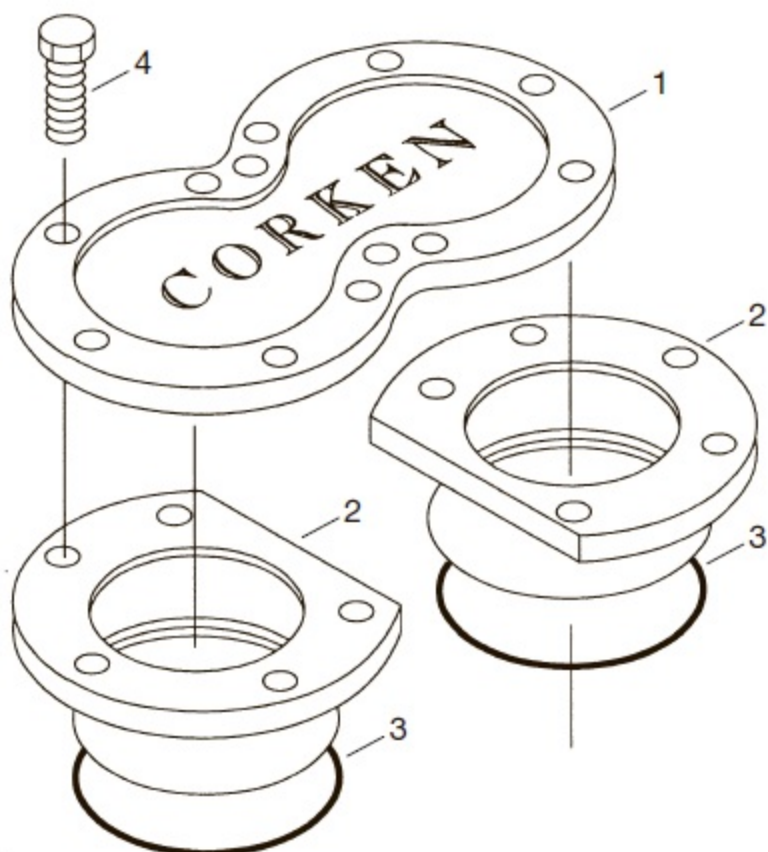


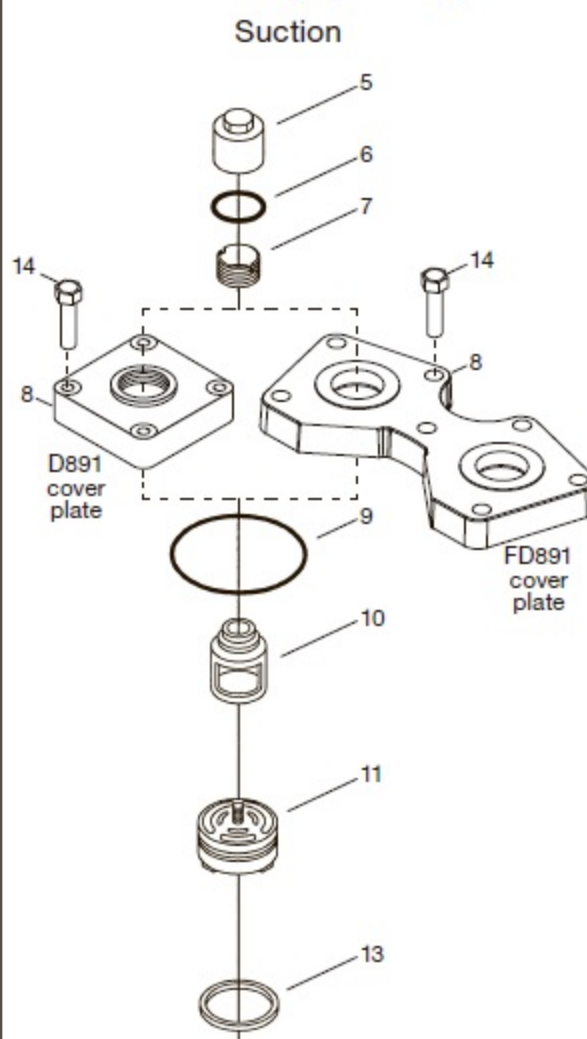
Appendix E—Parts Details for D891 and FD891 Head and Valve Assembly

891 Head

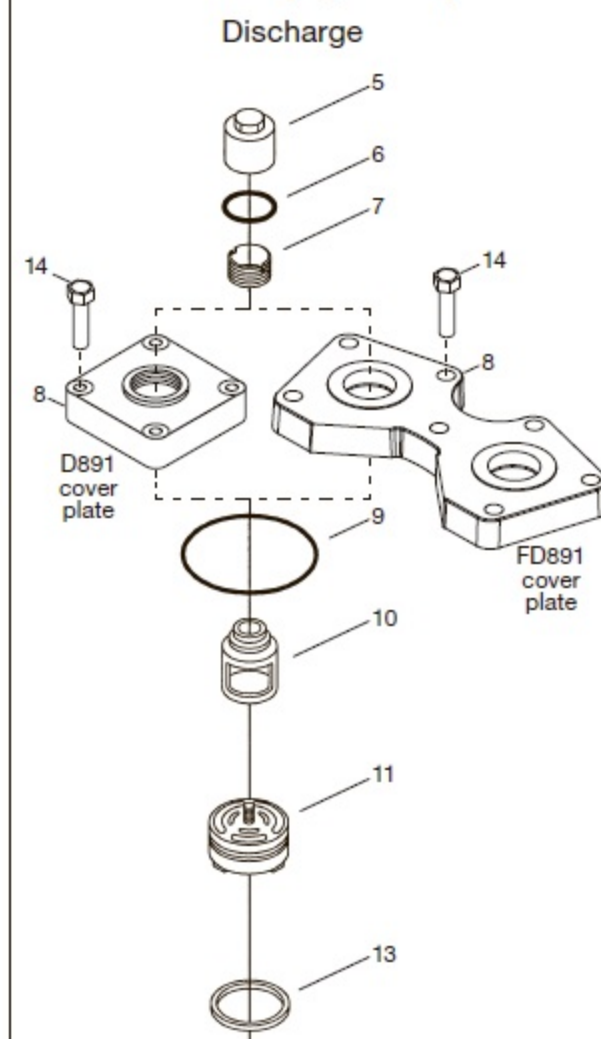


CAUTION: Always relieve pressure in the unit before attempting any repairs.

Valve Holddown Assembly (4-1/2")



Valve Holddown Assembly (4-1/2")

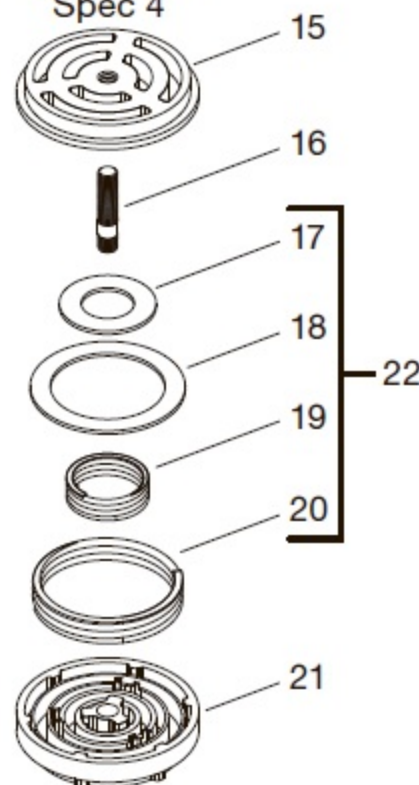


Head and Valve Bill of Materials

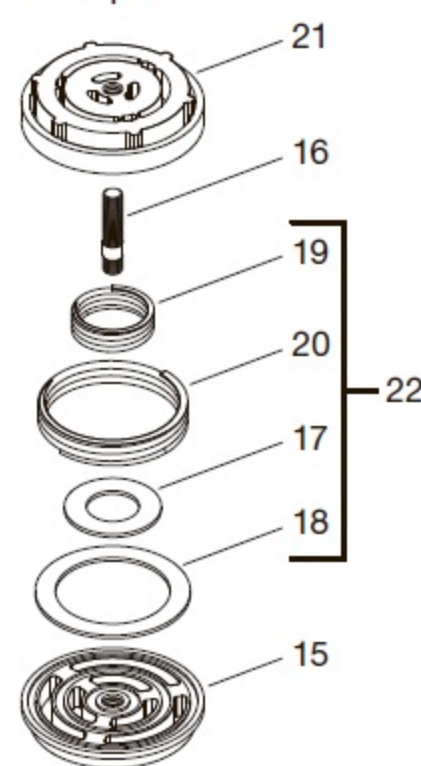
Ref No.	Part No.	Description	Qty.
1.	3923	Cylinder cap	1
2.	3924	Cylinder head (4-1/2")	2
3.	2-246__ ^a	O-ring	2
4.	7001-050 NC175A	Bolt (hex head, 1/2"-13 x 1-3/4", grade 5, torque to 65 ft•lbs)	12
5.	2714-1	Valve cap	8
6.	2-031__ ^a	O-ring	8
7.	2715	Hold-down screw	8
8.	1764	Valve cover plate (model D891)	8
	4854	Valve cover plate (model FD891)	4
9.	2-235__ ^a	O-ring	8
10.	3570-1	Valve cage	8
11.	3856-2X	Valve assembly (4-1/2", suction)	4
12.	3857-2X	Valve assembly (4-1/2", discharge)	4
13.	2114 ^b	Valve gasket	8
14.	7001-043 NC150A	Bolt (hex head, 7/16"-14 x 1-1/2", torque to 37 ft•lbs)—model FD891	28
		Bolt (hex head, 7/16"-14 x 1-1/2", torque to 37 ft•lbs)—model D891	32
15.	3856	Valve seat (4-1/2")	8
16.	3920	Stud	8
17.	4230 ^c	Valve plate (inner)	8
18.	4229 ^c	Valve plate (outer)	8
19.	3929 ^c	Inner spring	2
20.	3928 ^c	Outer spring	2
21.	3857-1	Valve bumper (4-1/2")	8
22.	3146-X2	Valve repair kit	1

Valve Assemblies (4-1/2")

Suction Valve Spec 4



Discharge Valve All Specs



^a __ denotes material code. See material code chart for details.

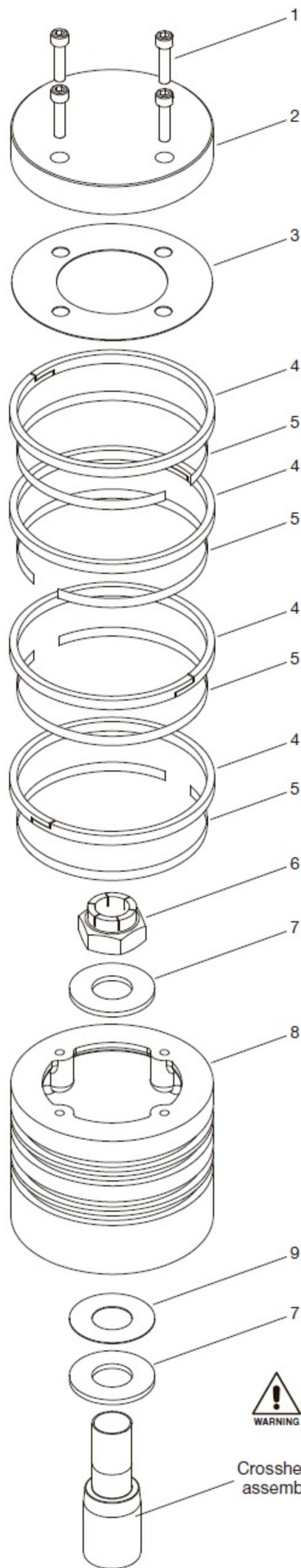
^b Included with valve assembly.

^c Included with valve repair kit.

^d Registered trademark of the DuPont company.

Material Code	
A	Buna-N
B	Neoprene ^d

Appendix E—Parts Details for D891 and FD891 Piston



Piston—Bill of Materials Piston Diameter 4.5" (11.43 cm)

Ref No.	Part No.	Description	Qty.
1.	7002-025TP100A	Screw (orlo, gr. 8, torque to 8 ft•lbs)	4
2.	3927	Piston cap	1
3.	2902	Shim washer (thick)	As req.
	2902-1	Shim washer (thin)	
4.	1739	Piston rings	4
5.	1740	Expander ring	4
6.	3604	Lock nut (torque to 150 ft•lbs)	1
7.	3730	Thrust washer	2
8.	3925	Piston (4-1/2" diameter)	1
9.	3603	Shim washer (thick)	As req.
	3603-1	Shim washer (thin)	
10.	3812	Loctite tube (620, not shown)	1

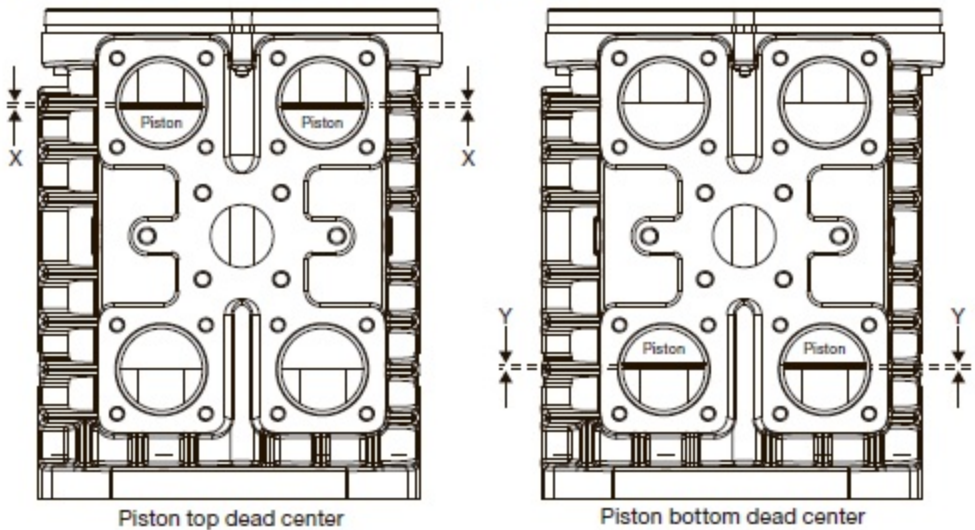
Ref No.	Assembly Number	Assembly Name
11.	3925-X1	Piston assembly

Piston Clearance (Cold)^a

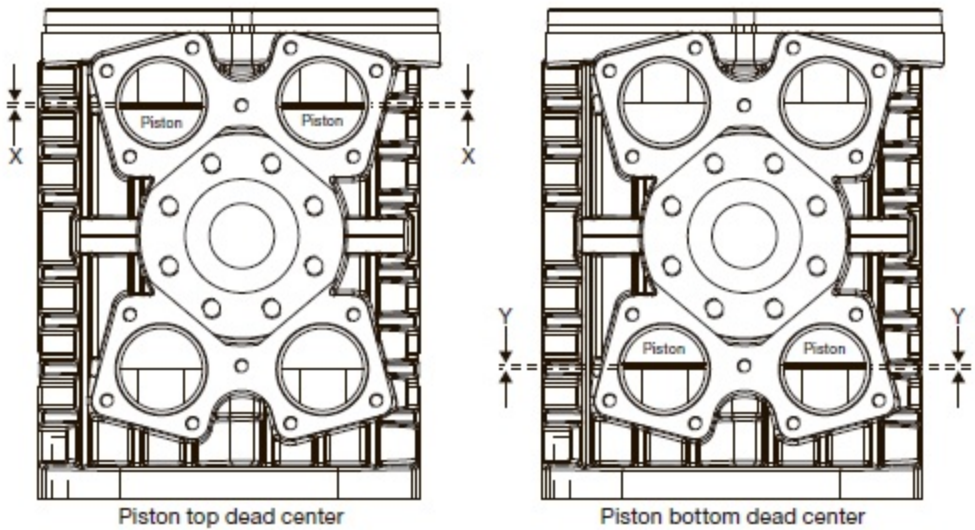
Model	Top (X) Minimum ^a	Top (X) Maximum ^a	Bottom (Y) Minimum ^b	Bottom (Y) Maximum ^b
D891	0.084" (2.13 mm)	0.104" (2.64 mm)	0.010" (0.25 mm)	0.020" (0.51 mm)

^a The distance from the bottom of the head to the top of the piston.
^b The distance from the bottom of the piston to the top of the packing barrel.

Model D891 Piston Clearance



Model FD891 Piston Clearance

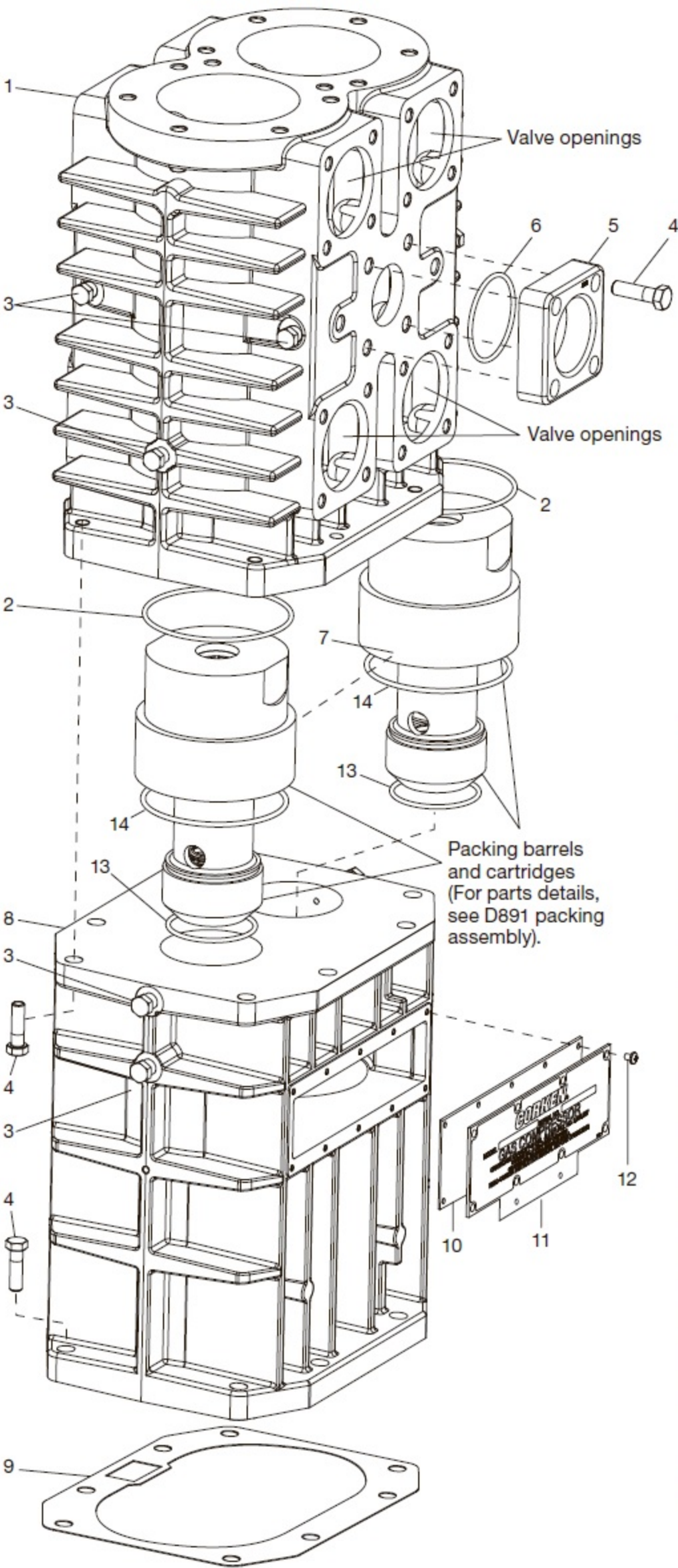


CAUTION: Always relieve pressure in the unit before attempting any repairs.

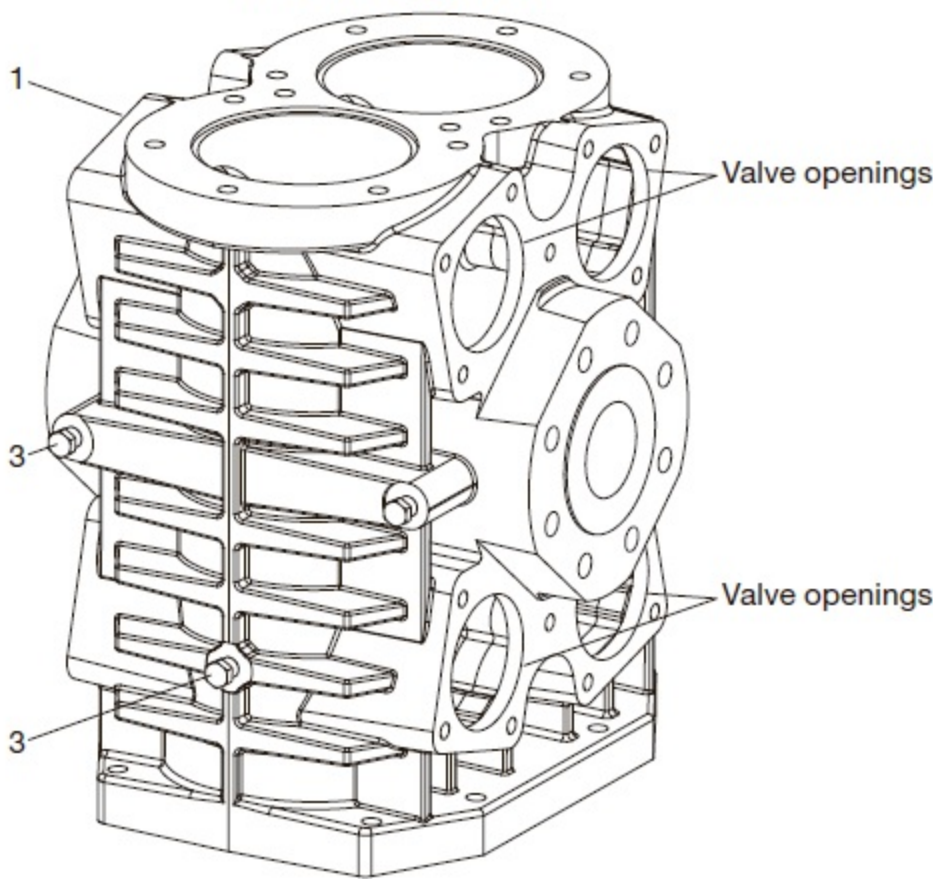
Crosshead assembly

Appendix E—Parts Details for D891 and FD891 Crosshead Guide

D891 Cylinder



FD891 Cylinder



Crosshead Guide—Bill of Materials

Ref No.	Part No.	Description	Qty.
1.	3922	Cylinder (model D891)	1
	4851	Cylinder (model FD891, Class 300 RF flange)	1
2.	2-246_ ^a	O-ring for cylinder	2
3.	3442	Pipe plug (1/4" NPT)	3
4.	7001-050NC175A	Bolt (hex head, 1/2"—13 x 1-3/4", grade 5, model D891)	18
		Bolt (hex head, 1/2"—13 x 1-3/4", grade 5, model FD891)	14
5.	3793-2S	Flange (inlet / outlet, model D891 only)	2
6.	2-231_ ^a	O-ring (flange, model D891 only)	2
7.	3253	Roll pin	1
8.	2405-1	Crosshead guide	1
9.	1761	Gasket (crankcase)	1
10.	1760	Gasket (inspection cover)	1
11.	1721	Inspection cover	1
12.	7012-010NC025B	Bolt (phillip head, 10"—24 x 1/4")	10
13.	2-231_ ^a	O-ring	2
14.	2-238_ ^a	O-ring	2

^a _ denotes material code. See material code chart for details.

^b Registered trademark of the DuPont company.

Material Code

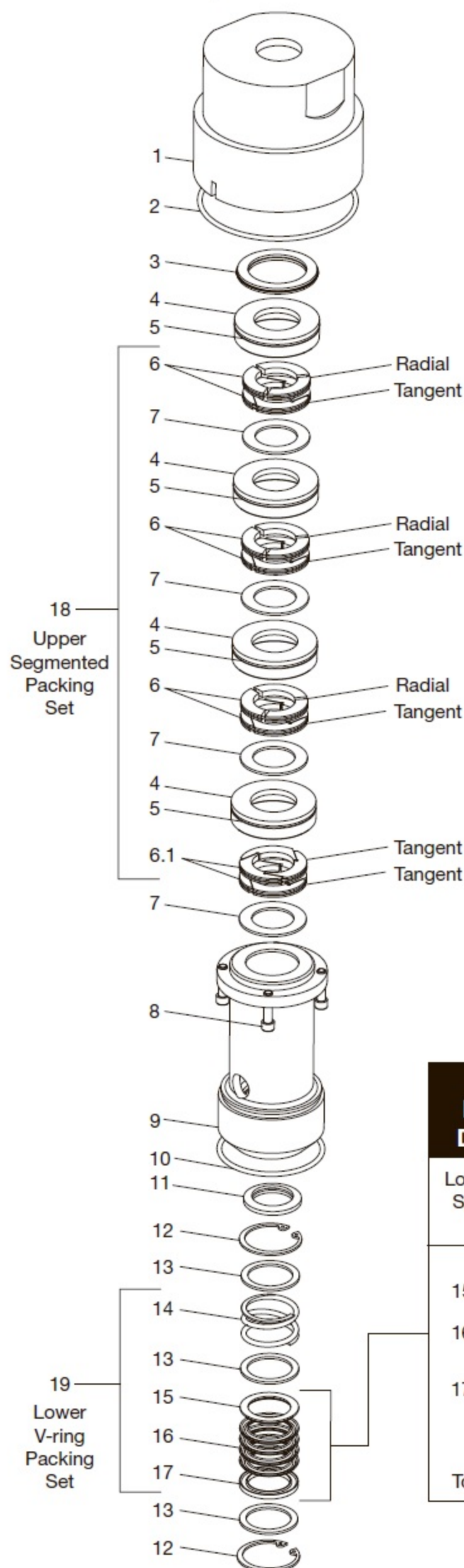
A	Buna-N
B	Neoprene ^{®b}



CAUTION: Always relieve pressure in the unit before attempting any repairs.

Appendix E—Parts Details for D891 and FD891 Packing

Specification "J"



Packing—Bill of Materials

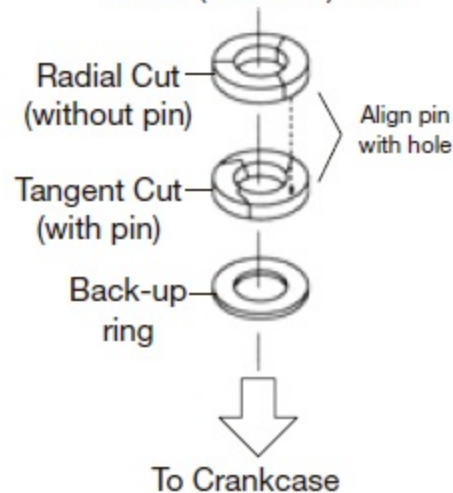
Ref No.	Part No.	Description	Qty.
1.	3926	Packing barrel (4-1/2")	2
2.	2-238_ ^{a, c}	O-ring	2
3.	3906	Crush gasket	2
4.	3817	Packing cup (Not included in 3810-X1 packing set)	8
5.	2-036_ ^{a, d}	O-ring (cup)	8
6.	3810	Segmented packing (radial—tangent) pair	6
6.1.	3814	Segmented packing (tangent—tangent) pair	2
7.	3811	Back-up ring	8
8.	7002-025TP100A	Screw (socket head, 1/4"-20 x 1")	8
9.	3885	Cartridge	2
10.	2-231_ ^a	O-ring	4
11.	1732 ^b	Oil deflector ring	2
12.	5000-175	Retainer ring	4
13.	1728	Washer	6
14.	1731	Spring	2
15.	1724	Packing ring (male)	2
16.	1725-2	V-ring packing	8
17.	1723	Packing ring (female)	2
18.	3810-X1 ^e	Packing set (segmented)	2
19.	1725-2X	Packing set (V-ring)	2

Identification of Packing Specification

Example: Model Number FD891 **J** M4PFBANSNN
Packing Spec _____

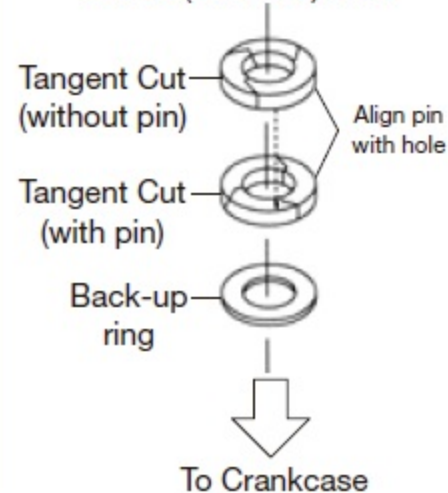
Segmented Packing for Specification "J"

Piston (Pressure) Side



Segmented packing for Specification "J"

Piston (Pressure) Side



IMPORTANT: Identify and line up the rings before installing. Be sure they face the way shown here and that the pin and hole are aligned when assembled.

^a _ denotes material code. See material code chart for details.

^b Deflector ring is loose within the packing cartridge until fitted on the piston rod. Must be put in from the bottom of the cartridge.

^c Insert O-ring into the groove in the bottom of the barrel.

^d Starting with S.N. NN51397.

^e Packing cup O-ring not included in packing set.

^f Registered trademark of the DuPont company.

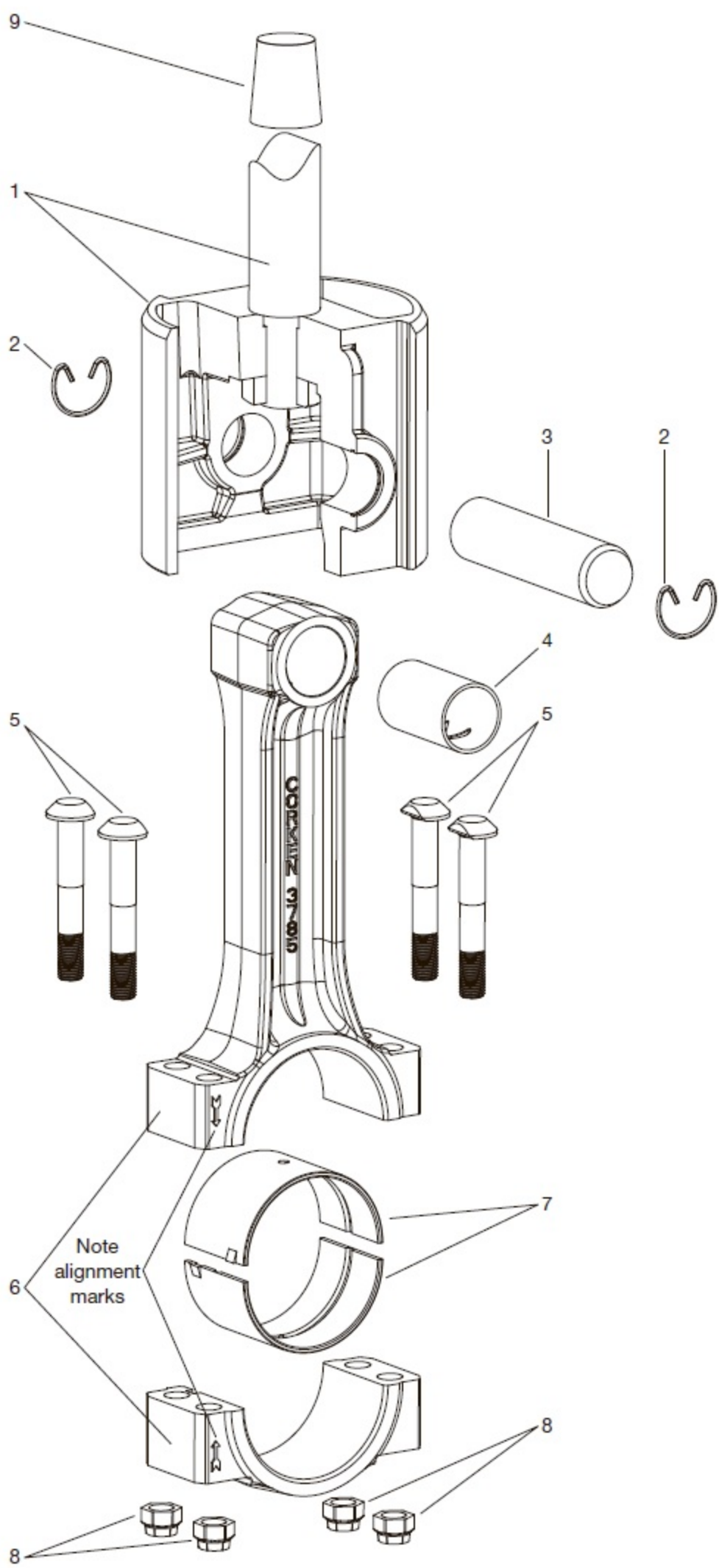
Material Code

A	Buna-N
B	Neoprene ^f



CAUTION: Always relieve pressure in the unit before attempting any repairs.

Appendix E—Parts Details for D891 and FD891 Connecting Rod Assembly




Connecting Rod—Bill of Materials

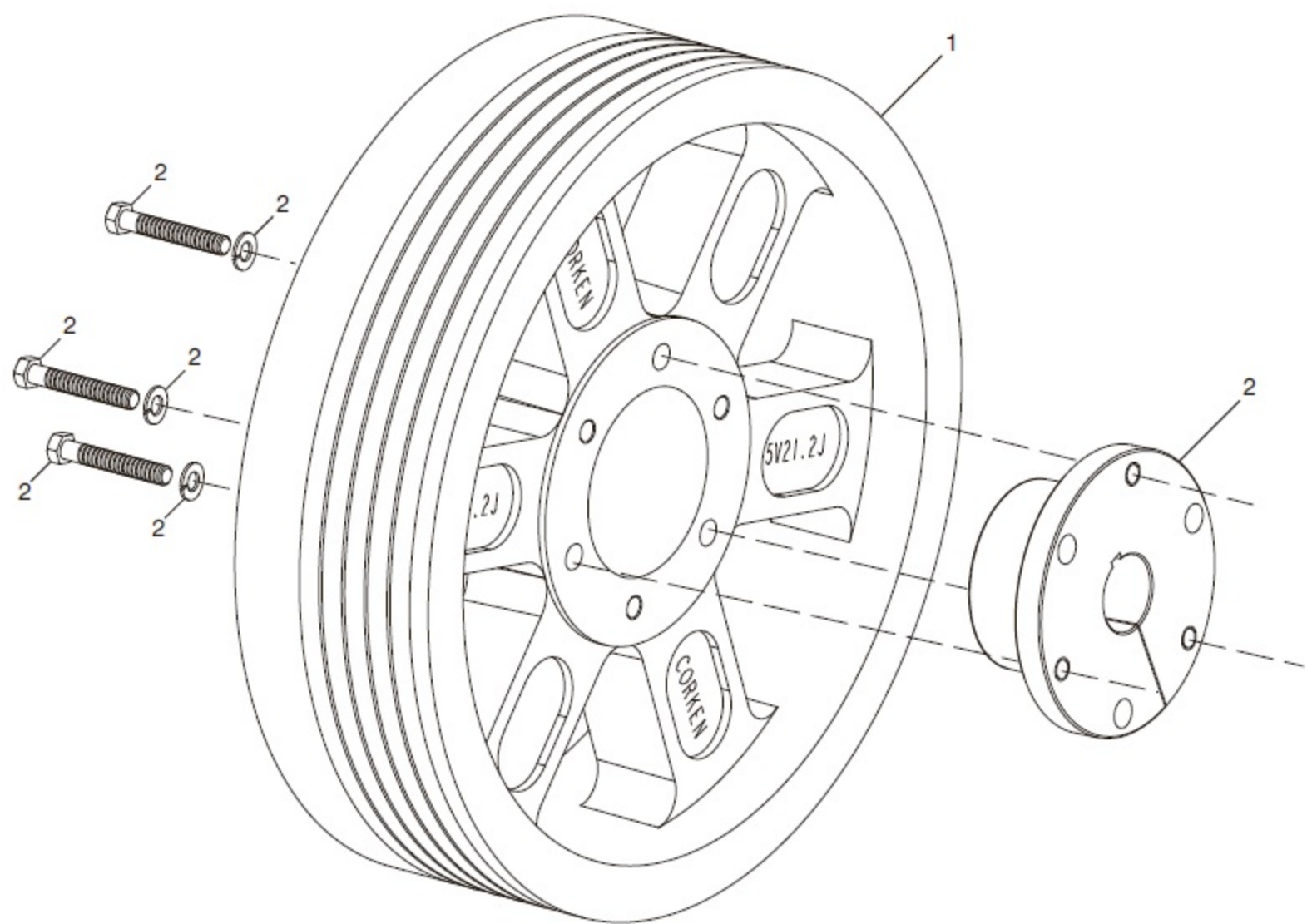
Ref No.	Part No.	Description	Qty. per Compressor
1.	3544-X3	Crosshead assembly	2
2.	3590	Retainer ring	4
3.	3540	Wrist pin	2
4.	3541-X ^{a, c}	Wrist pin bushing	2
5.	1726 ^a	Bolt	8
6.	3785-X1 ^a	Connecting rod assembly	2
7.	3542 ^a	Connecting rod bearing (pair)	2
8.	1727 ^{a, b}	Nut	8
9.	3905	Packing installation cone	1

^a Included with connecting rod assembly
^b Torque connecting rod nut to 40 ft. lbs.
^c After the wrist pin bushing has been pressed into the connecting rod, it must be honed to 1.1263/1.1259. A hydraulic press and honing machine are recommended for this step.

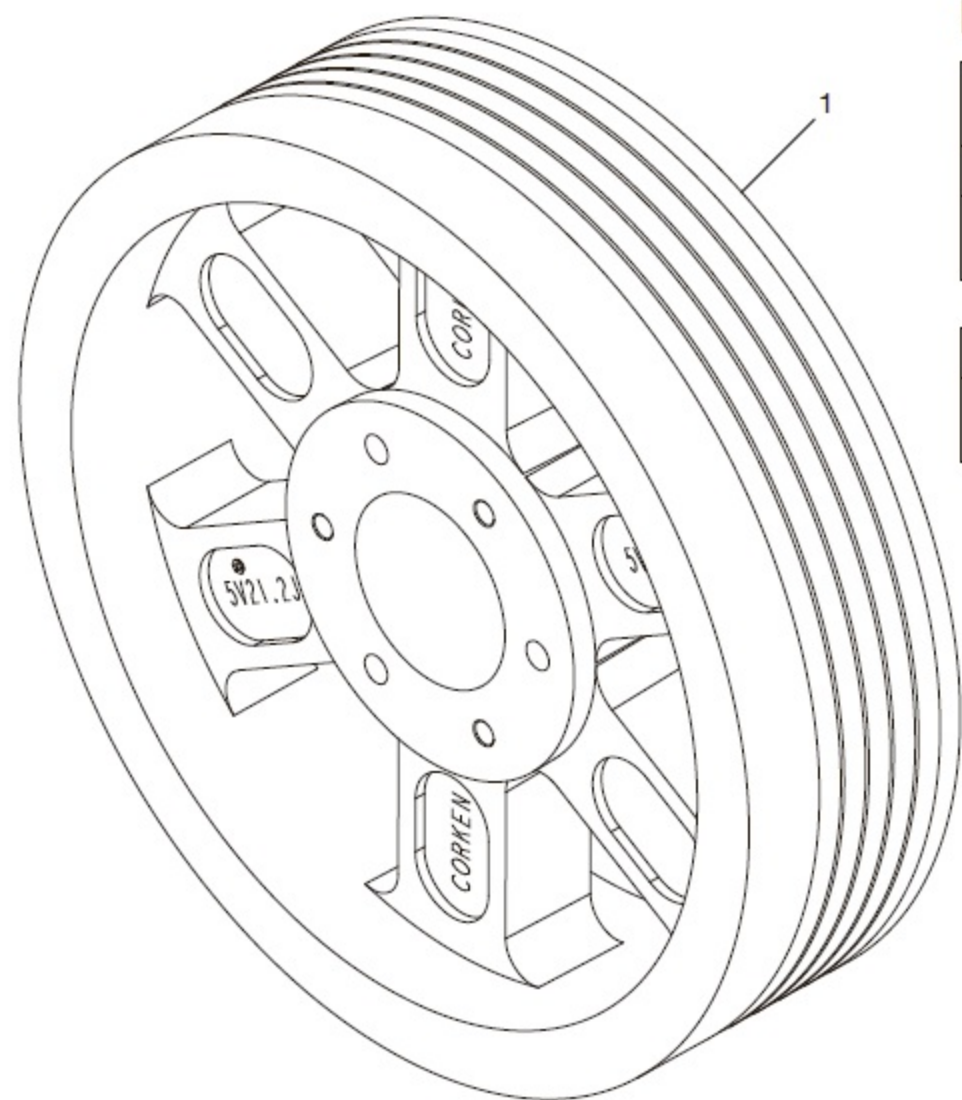
Never attempt to separate the piston rod and crosshead. When repair becomes necessary, the entire crosshead assembly must be replaced.

 **CAUTION:** Always relieve pressure in the unit before attempting any repairs.

Appendix E—Parts Details for D891 and FD891 Flywheel Assembly



Back Side



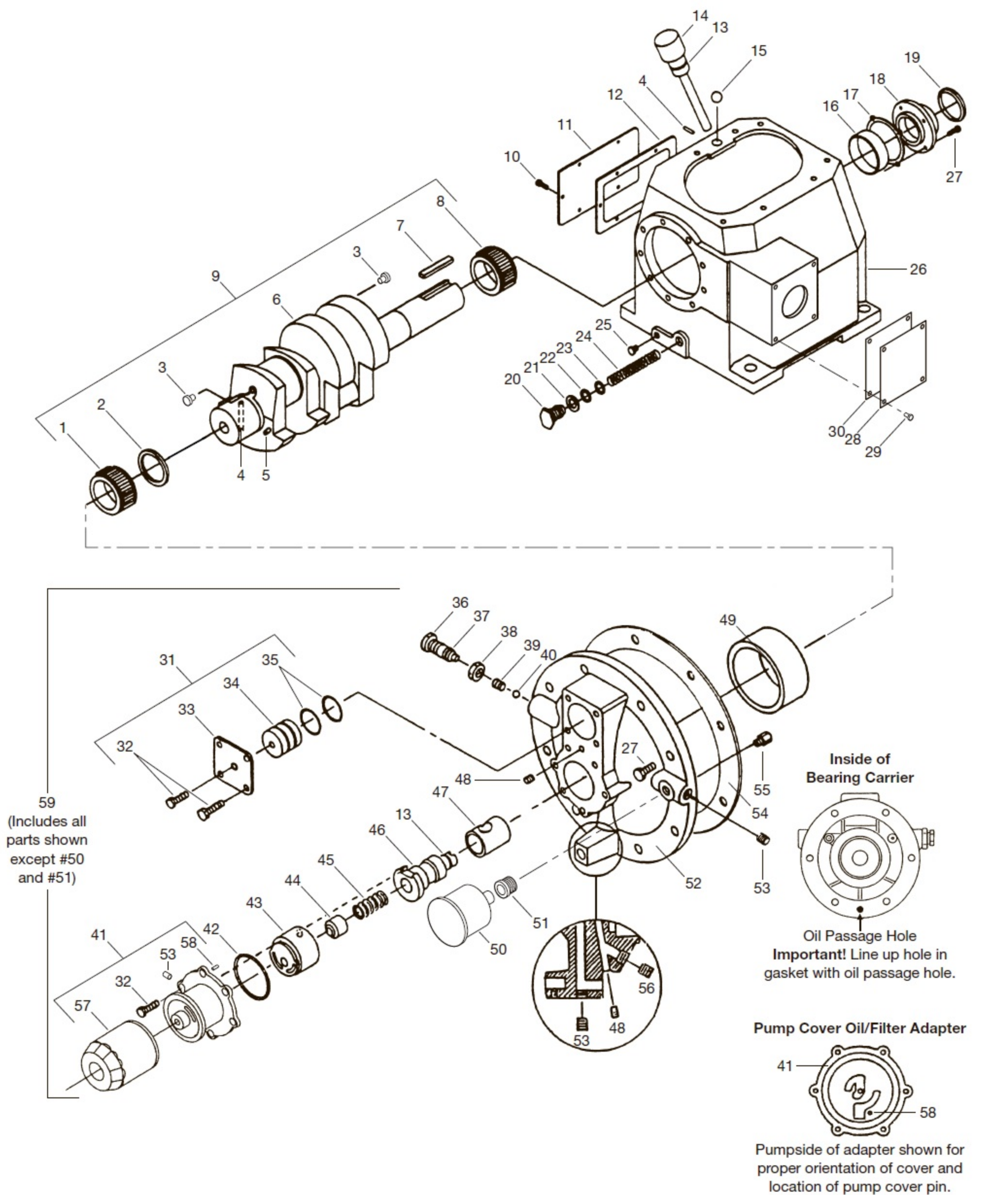
Front Side

Flywheel—Bill of Materials

Ref No.	Part No.	Description	Qty.
1.	3852	Flywheel (21.2" O.D., 5 groove)	1
2.	H J-2.125	Hub with three bolts and lockwashers	1

Assembly Number	Assembly Name
3852-X	Flywheel assembly (flywheel, hub, and three bolts)

Appendix E—Parts Details for D891 and FD891 Crankcase Assembly



Appendix E—Parts Details for D891 and FD891 Crankcase Assembly

Packing Assembly Bill of Materials

Ref No.	Part No.	Description	Qty.
1.	1737	Bearing cone	1
2.	3638-1	Spacer	1
3.	1284	Crankshaft orifice	2
4.	2197	Drive pin	1
5.	2933	Link pin	1
6.	3786	Crankshaft	1
7.	3503	Flywheel key	1
8.	3580	Bearing cone	1
9.	3786-X1	Crankshaft assembly	1
10.	7001-031NC075A	Bolt (hex head, 5/16"–18 x 3/4")	6
11.	2122	Inspection cover	1
12.	2123	Gasket (inspection cover)	1
13.	2-112A	O-ring (Buna-N)	2
14.	3225-X1	Oil bayonet assembly (with O-ring)	1
15.	2126	Breather ball	1
16.	3579	Bearing cup	1
17.	3589	Bearing adjustment shim (.005")	As needed
	3589-1	Bearing adjustment shim (.007")	As needed
	3589-2	Bearing adjustment shim (.020")	As needed
18.	3539	Bearing cover	1
19.	3526	Oil seal	1
20.	1280	Filter screw	1
21.	1281	Gasket (filter)	1
22.	2-116A	O-ring (Buna-N)	1
23.	1276	Washer	1
24.	1275	Oil filter screen	1
25.	3443	Pipe plug (1/2" NPT, steel)	1
26.	3221	Crankcase	1
27.	7001-037NC100A	Bolt (hex head, 3/8"–16 x 1", grade 5)	12
28.	3875	Access cover	1
29.	7003-025NC037E	Screw (1/4"–20 x 3/8")	4
30.	3874	Gasket (access cover)	1
31.	1515-X	Closure cap assembly	1
32.	7001-025NC050A	Bolt (hex head, 1/4"–20 x 1/2")	11
33.	1515	Closure cap	1
34.	1516	Closure body	1
35.	2-218A	O-ring (Buna-N)	2
36.	1290	Relief valve adjusting screw	1
37.	2-011A	O-ring (Buna-N)	1
38.	1291	Adjusting screw locknut	1
39.	1292	Relief valve spring	1
40.	1293	Relief valve ball	1
41.	4222-X ^a	Oil filter adapter assembly (with pin)	1
42.	2-228A	O-ring (Buna-N)	1
43.	2849-1X ^a	Oil pump assembly	1

Ref No.	Part No.	Description	Qty.
44.	2851	Spring guide	1
45.	2852	Oil pump spring	1
46.	3219	Pump shaft adapter	1
47.	2805 ^b	Pump shaft bushing	1
48.	1629	Pipe plug (1/16" NPT, flush seal)	1
49.	1736	Bearing cup	1
50.	1302	Oil pressure gauge	1
51.	1044	Bushing (1/8" x 1/4" NPT)	1
52.	3220-2	Bearing carrier	1
53.	3289	Pipe plug (1/4" NPT, flush seal)	4
54.	2131	Bearing carrier gasket	1
55.	2961-X	Air release valve assembly	1
56.	2590	Pipe plug (1/8" NPT, flush seal)	1
57.	4225	Filter	1
58.	2798	Pump cover pin (included with 4222-X)	1
59.	3220-2X	Bearing carrier assembly M3 style	1

Assembly Number	Assembly Name
3221-X1	Crankcase assembly (M3, 4, 8, 9) without lubrication (not shown)

^a Caution: To avoid damage during assembly, refer to installation Instruction Manual IE400.

^b Must be rebores and honed after replacing (0.876"/0.875" diameter).



CAUTION: Always relieve pressure in the unit before attempting any repairs.