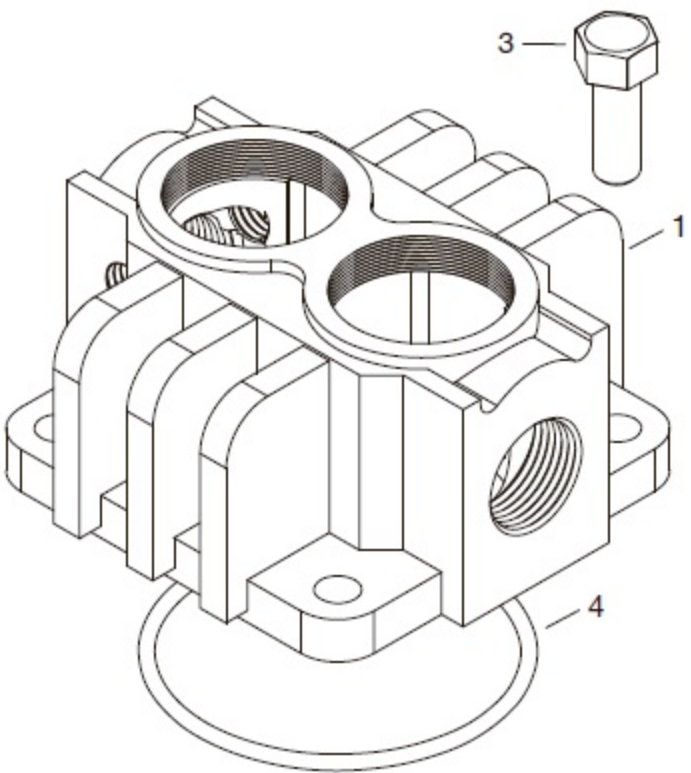
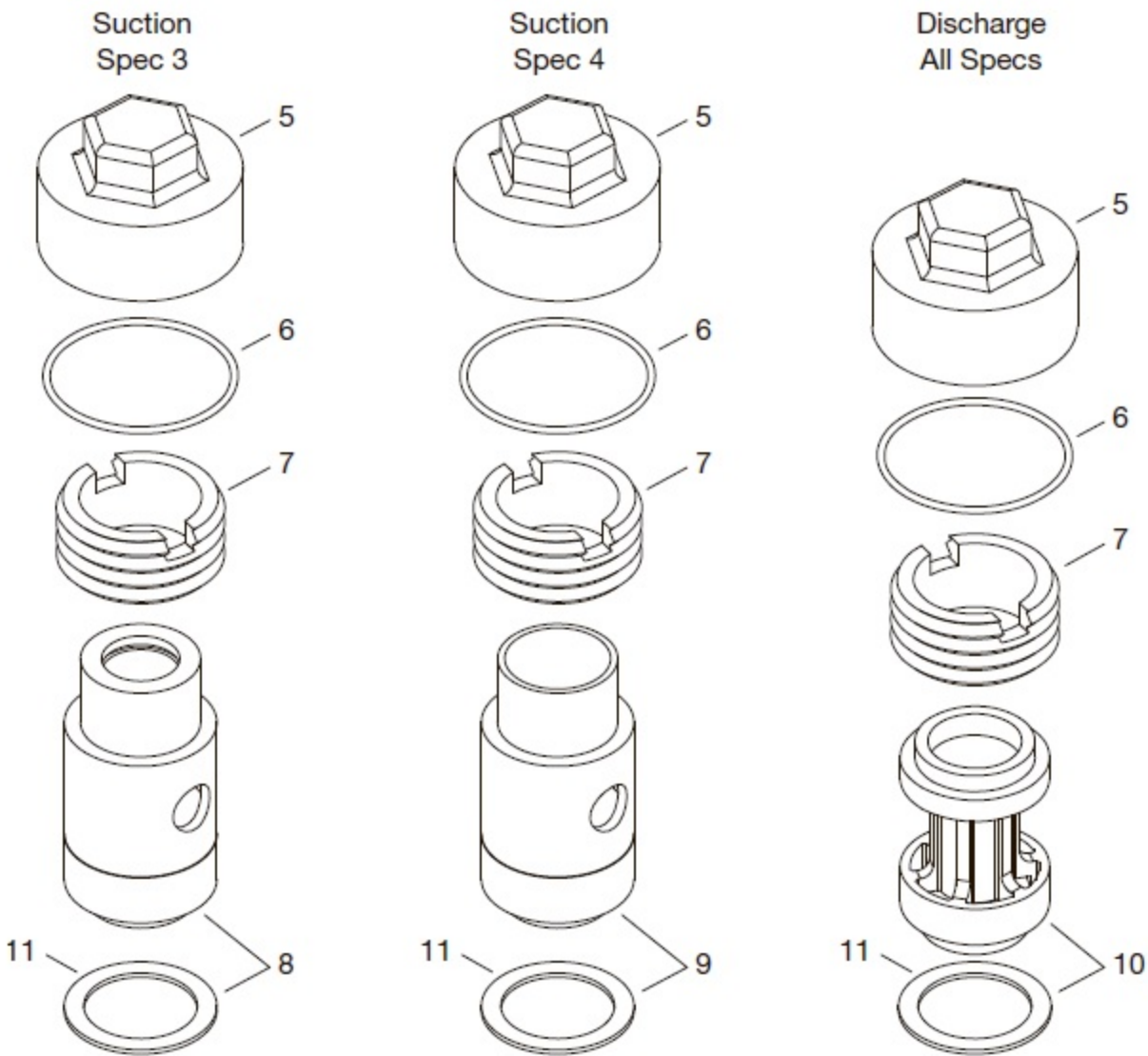


Appendix E—Parts Details for 91 and F91 Head and Valve Assembly

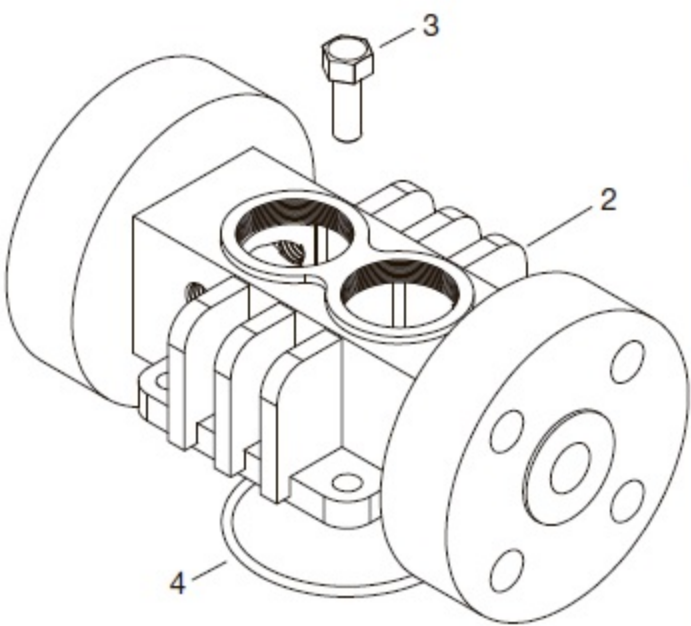
91 Head Assembly



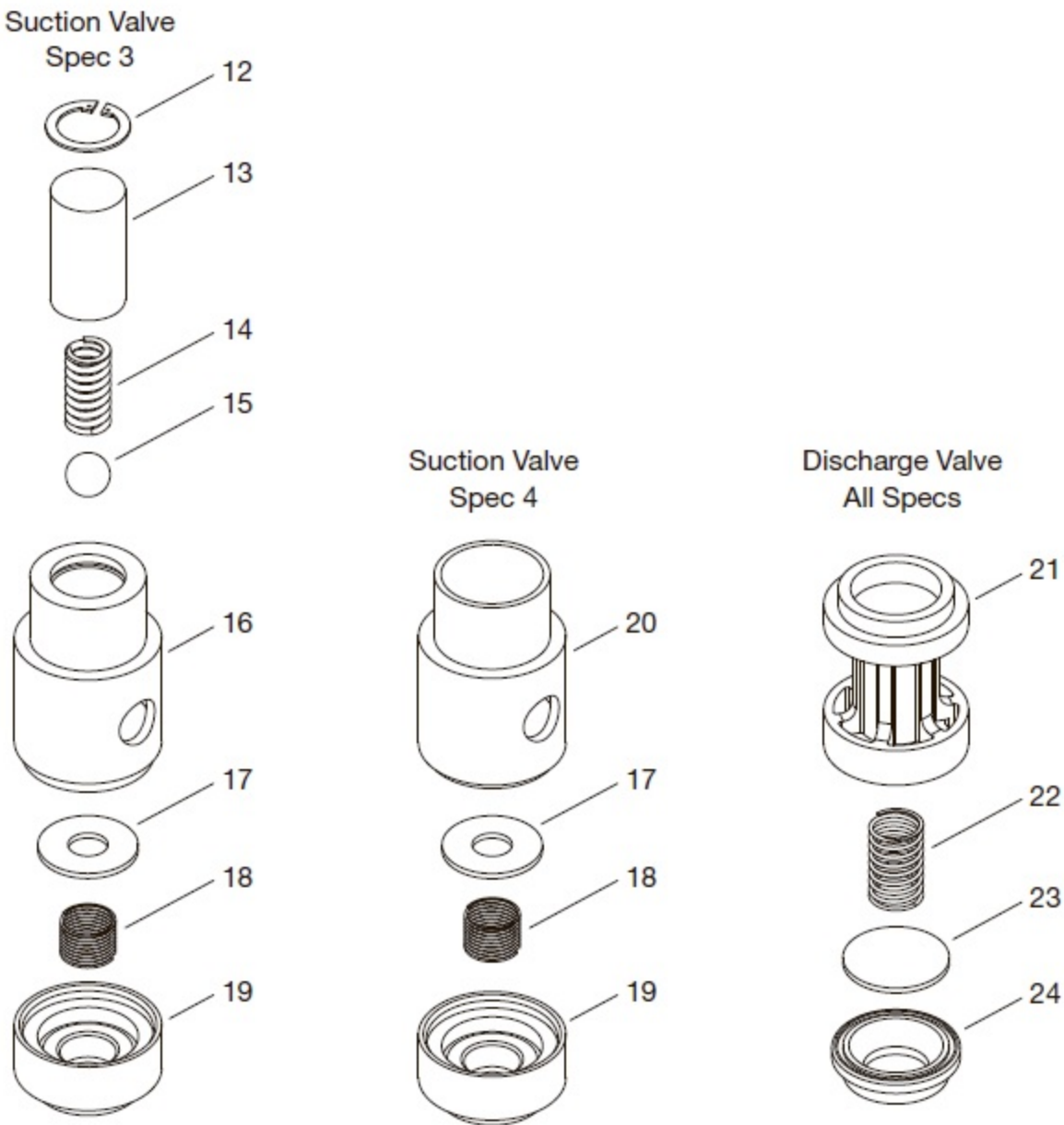
Valve Holddown Assemblies



F91 Head Assembly



Valve Assemblies



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

WARNING

Appendix E—Parts Details for 91 and F91 Head and Valve Assembly

Head and Valve Bill of Materials

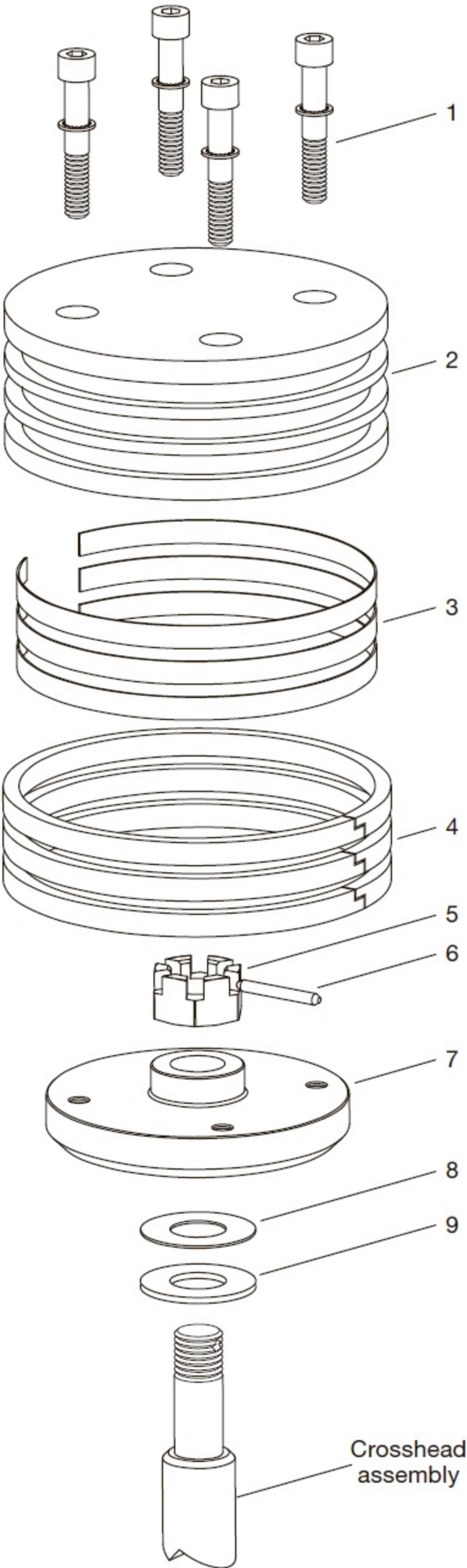
| Ref No. | Part No. | Description | Qty. |
|---------|---------------------|--|------|
| 1. | 2374 | Head (model 91) | 1 |
| | 2374-X | Head assembly (model 91, spec 3) | 1 |
| | 2374-X1 | Head assembly (model 91, spec 4) | 1 |
| 2. | 4302 | Head (model F91, Class 300 RF flange) | 1 |
| 3. | 7001-037NC100A | Bolt (hex head 3/8"-16 x 1-1/4") | 4 |
| 4. | 2-235_ ^a | O-ring | 1 |
| 5. | 2714-1 | Valve cap | 2 |
| 6. | 2-031_ ^a | O-ring | 2 |
| 7. | 2715 | Holddown screw | 2 |
| 8. | 3483-1X | Suction valve assembly (aluminum, spec 3) | 1 |
| 9. | 3483-X | Suction valve assembly (aluminum, spec 4) | 1 |
| 10. | 3485-X | Discharge valve assembly (aluminum, all specs) | 1 |
| 11. | 2717 | Valve gasket (aluminum) | 2 |
| 12. | 5000-77 | Retainer ring (spec 3) | 1 |
| 13. | 3977 | Suction valve relief housing (spec 3) | 1 |
| 14. | 1411 | Spring (spec 3) | 1 |
| 15. | 1410 | Ball (spec 3) | 1 |
| 16. | 3483-1 | Suction valve seat (spec 3) | 1 |
| 17. | 3972 | Suction valve plate | 1 |
| 18. | 4009 | Suction spring | 1 |
| 19. | 3484 | Suction valve bumper | 1 |
| 20. | 3483 | Suction valve seat (spec 4) | 1 |
| 21. | 3486 | Discharge valve bumper | 1 |
| 22. | 4008 | Discharge spring | 1 |
| 23. | 3973 | Discharge valve plate | 1 |
| 24. | 3485 | Discharge valve seat | 1 |

^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} |

Appendix E—Parts Details for 91 and F91 Head and Valve Assembly




Piston—Bill of Materials
Piston Diameter 3" (7.62 cm)

| Ref No. | Part No. | Description | Qty. |
|---------|----------------|---------------------|---------|
| 1. | 7002-010TP100A | Screw (socket head) | 4 |
| | 7207-010A | Lock washer | 4 |
| 2. | 1983 | Head (iron) | 1 |
| 3. | 1775 | Ring expander | 3 |
| 4. | 1772 | Piston ring | 3 |
| 5. | 1482 | Locknut | 1 |
| 6. | 1483 | Lock pin | 1 |
| 7. | 1984 | Piston platform | 1 |
| 8. | 1528 | Shim washer (thick) | As Req. |
| | 1528-1 | Shim washer (thin) | As Req. |
| 9. | 1527 | Thrust washer | 1 |

Piston Clearance (Cold)^a

| Model | Minimum (x) | Maximum (x) |
|-------|------------------|------------------|
| 91 | 0.020" (0.51 mm) | 0.044" (1.12 mm) |

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

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

Appendix E—Parts Details for 91 and F91 Packing Assembly

Packing—Bill of Materials

| Ref No. | Part No. | Description | Qty. |
|---------|---------------------|----------------------------------|------|
| 1. | 2242 | Cylinder | 1 |
| 2. | 2-235_ ^a | O-ring for cylinder | 1 |
| 3. | 5000-137 | Retainer ring | 1 |
| 4. | 1012 | Washer | 1 |
| 5. | 1628 | Packing spring | 1 |
| 6. | 1714 | Packing box washer | 1 |
| 7. | 1453-1 | Male packing ring | 1 |
| 8. | 1454 ^b | Packing ring | 8 |
| 9. | 1452-1 | Female packing ring | 1 |
| 10. | 2240 | Crosshead guide | 1 |
| 11. | 1387-X | Adjusting screw assembly | 1 |
| 12. | 2526 | Crankcase gasket | 1 |
| 13. | 1452-1X1 | Packing set | 1 |
| 14. | 7001-037NC100A | Bolt (hex head 3/8"-16 x 1") | 4 |
| 15. | 7001-037NC125A | Bolt (hex head 3/8"-16 x 1-1/4") | 4 |
| 16. | 7206-037A | Lock washer (3/8") | 4 |
| 17. | 2243 | Inspection plate | 1 |
| 18. | 2244 | Inspection plate gasket | 1 |
| 19. | 7012-010NC025B | Screw (Pan HD phillip) | 6 |
| 20. | 1192 | Lock device (not shown) | 1 |

| Assembly Number | Assembly Name |
|-----------------|-------------------------------|
| 1132-X2 | Crosshead—piston rod assembly |

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

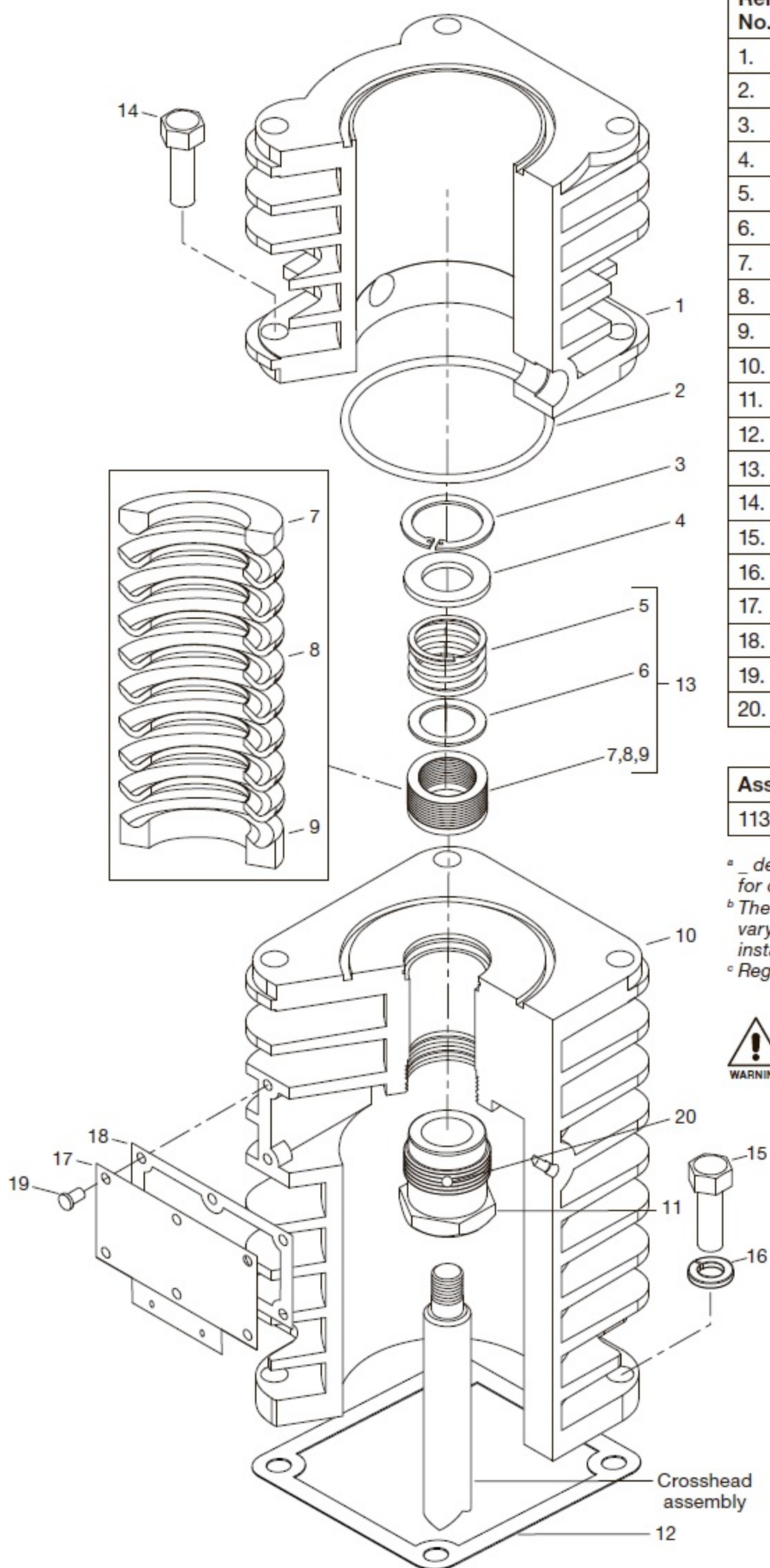
^b The quantity of 1454 packing rings required will vary due to tolerances. Use cone 4005 for installation of packing.

^c Registered trademark of the DuPont company.

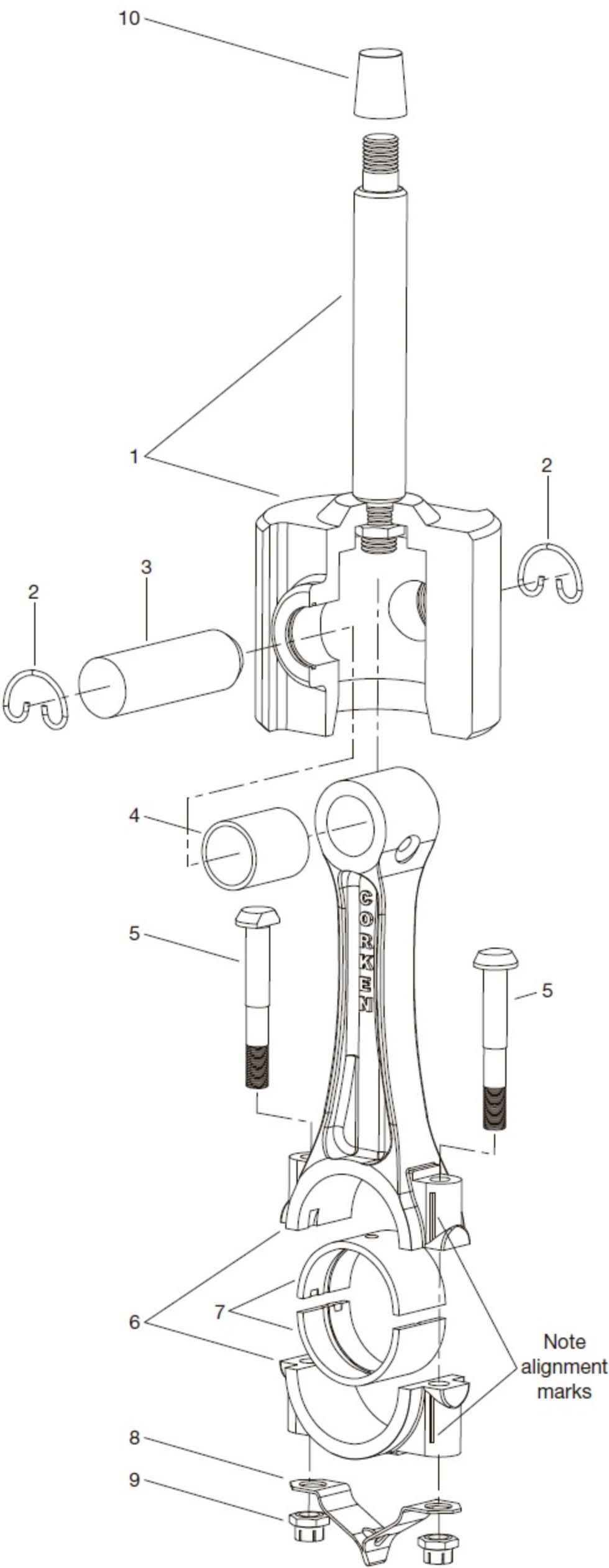
| Material Code | |
|---------------|------------------------|
| A | Buna-N |
| B | Neoprene ^{®c} |



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



Appendix E—Parts Details for 91 and F91 Connecting Rod Assembly



Connecting Rod—Bill of Materials

| Ref No. | Part No. | Description | Qty. per Compressor |
|---------|------------------------|-------------------------------|---------------------|
| 1. | 1132-X2 | Crosshead assembly | 1 |
| 2. | 1498 | Retainer ring | 2 |
| 3. | 2505 | Wrist pin | 1 |
| 4. | 1846-X ^{a, b} | Wrist pin bushing | 1 |
| 5. | 1599 ^b | Bolt | 2 |
| 6. | 1889-1X | Connecting rod assembly | 1 |
| 7. | 1367 ^b | Connecting rod bearing (pair) | 1 |
| 8. | 2011 ^b | Dipper | 1 |
| 9. | 1600 ^{b, c} | Nut | 2 |
| 10. | 4005 | Packing installation cone | 1 |

^a After the wrist pin bushing has been pressed into the connecting rod, it must be honed to .8759/.8756. A hydraulic press and honing machine are recommended for this step.

^b Included with connecting rod assembly, not sold separately.

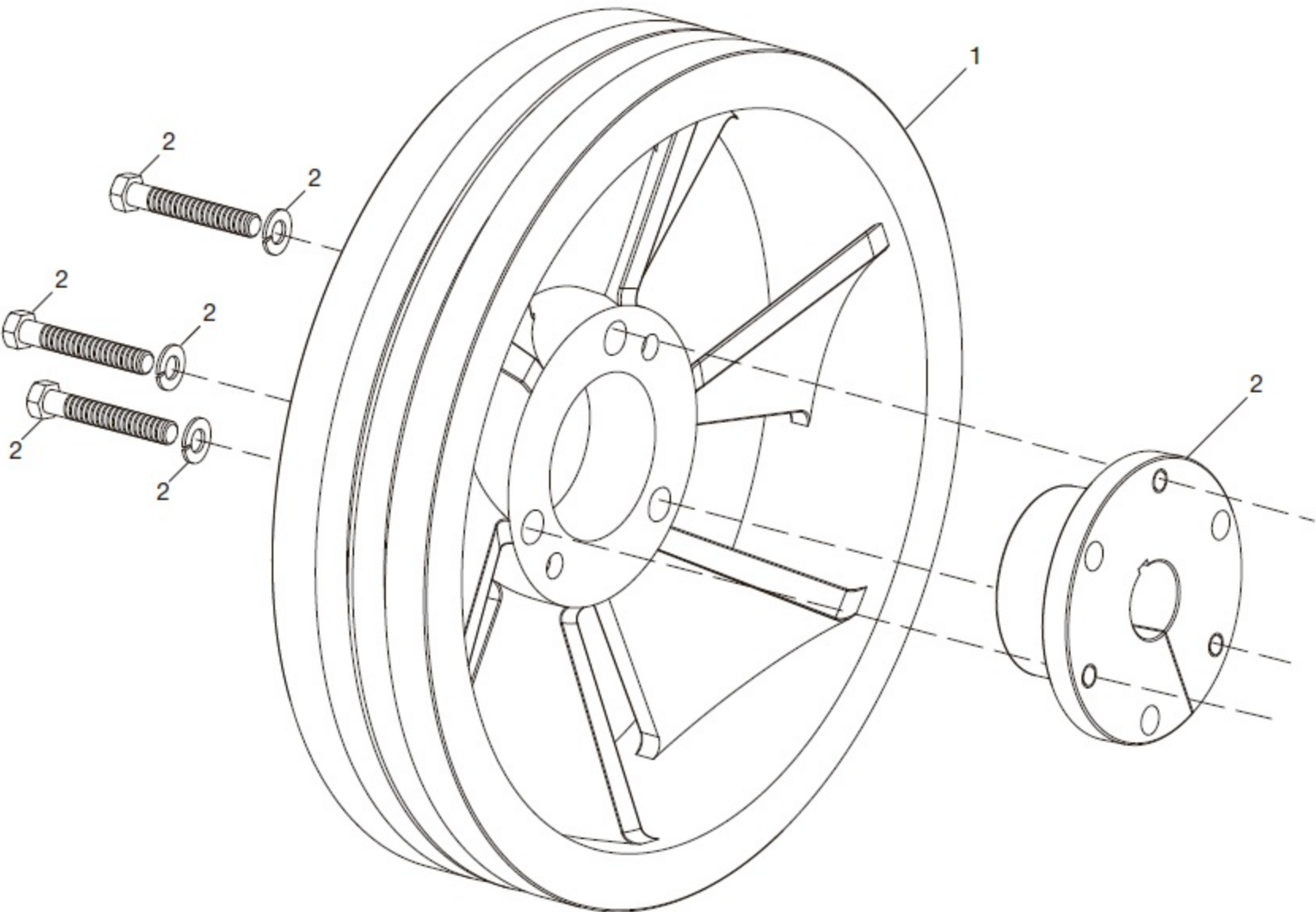
^c Torque connecting rod nut to 28 ft. lbs.

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

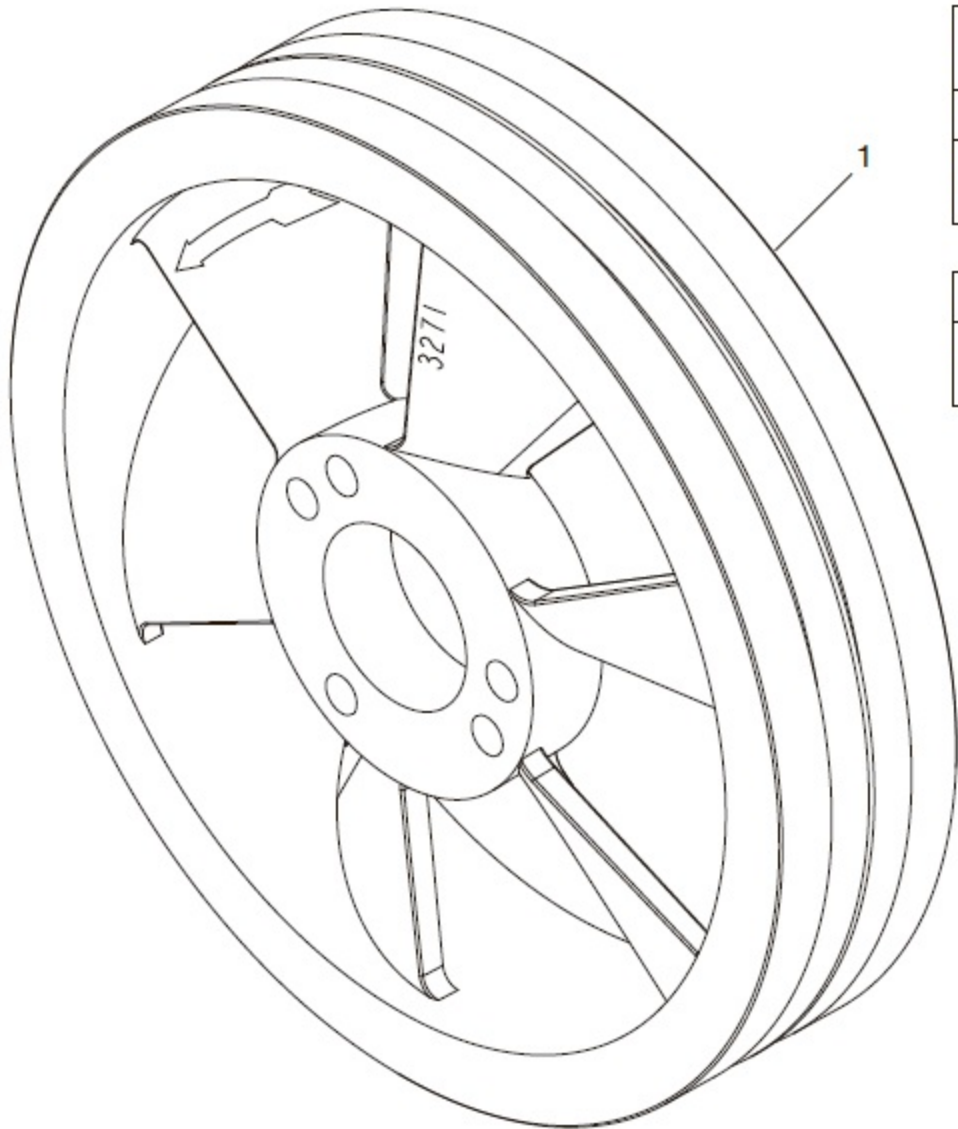


CAUTION: Always relieve pressure in the unit before attempting any repairs.

Appendix E—Parts Details for 91 and F91 Flywheel Assembly



Back Side



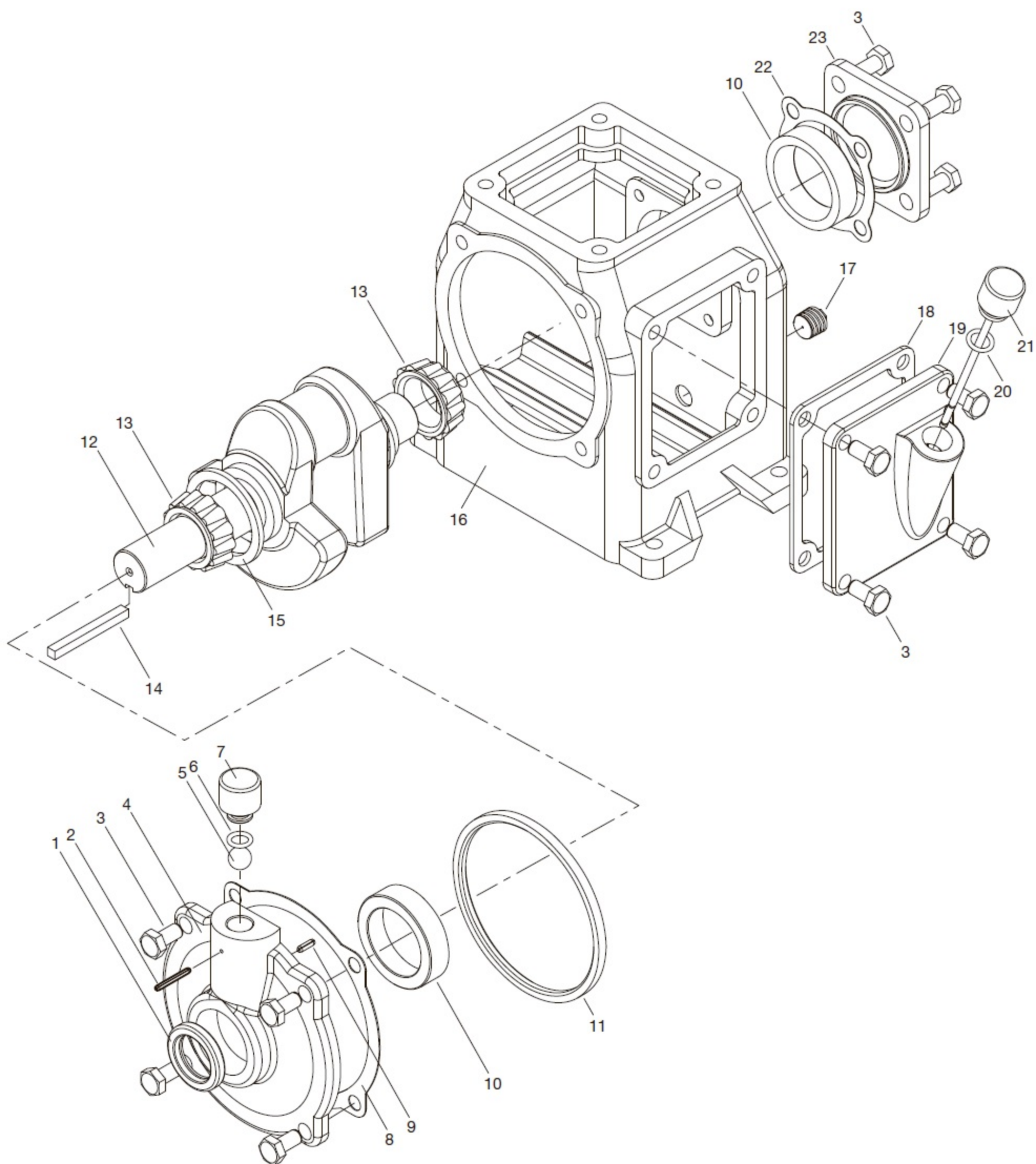
Front Side

Flywheel—Bill of Materials

| Ref No. | Part No. | Description | Qty. |
|---------|------------|--------------------------------------|------|
| 1. | 3271 | Flywheel (14" O.D., 2 groove) | 1 |
| 2. | H SF-1.125 | Hub with three bolts and lockwashers | 1 |

| Assembly Number | Assembly Name |
|-----------------|---|
| 3271-X2 | Flywheel assembly (flywheel, hub, and three bolts) standard |

Appendix E—Parts Details for 91 and F91 Crankcase Assembly



Appendix E—Parts Details for 91 and F91 Crankcase Assembly

Packing—Bill of Materials

| Ref No. | Part No. | Description | Qty. |
|---------|----------------|---|-----------|
| 1. | 3259 | Oil seal | 1 |
| 2. | 1450 | Groove pin (1/8" x 1") | 1 |
| 3. | 7001-037NC075A | Hex head (3/8"—16 x 3/4", grade 5) | 12 |
| 4. | 3260 | Bearing carrier | 1 |
| 5. | 2796 | Breather ball | 1 |
| 6. | 2-111A | O-ring (Buna-N) | 1 |
| 7. | 1279-X | Breather cap | 1 |
| 8. | 2725 | Bearing carrier gasket | 1 |
| 9. | 1807 | Roll pin (1/8" x 5/8") | 1 |
| 10. | 2718 | Bearing cup | 2 |
| 11. | 2723 | Oil circulating ring | 1 |
| 12. | 2476 | Crankshaft | 1 |
| 13. | 2719 | Bearing cone | 2 |
| 14. | 2289 | Flywheel key | 1 |
| 15. | 2290 | Oil ring retainer washer | 1 |
| 16. | 2554 | Crankcase (capacity: 0.9 quarts, 0.8 liters) | 1 |
| 17. | 1661 | Pipe plug (3/8" NPT square or hex head) | 1 |
| 18. | 2729 | Inspection plate gasket | 1 |
| 19. | 2728 | Crankcase inspection plate | 1 |
| 20. | 2-112A | O-ring (Buna-N) | 1 |
| 21. | 1368-X1 | Oil bayonet assembly (with O-ring) | 1 |
| 22. | 2721 | Bearing adjustment shim (0.005) | As needed |
| | 2721-1 | Bearing adjustment shim (0.007) | As needed |
| | 2721-2 | Bearing adjustment shim (0.020) | As needed |
| 23. | 2720 | Bearing cap | 1 |

| Assembly Number | Assembly Name |
|----------------------|---|
| 2476-X | Crankshaft assembly with 2476, 2290 and 2719 |
| 2476-SX ^a | Extended crankshaft assembly with 2719 (2) and 2290 |
| 3260-X | Bearing carrier assembly with 3260, 2718, 3259, 1279-X, 2-111A, 1450, 2796 and 1807 |
| 3271-X2 ^a | Flywheel assembly 14" - 2 groove with H SF-1.125 and 3271 |

^a Optional equipment.



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