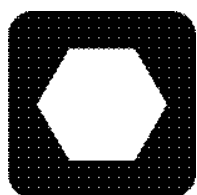


JT520

Parts Manual



Ditch Witch[®]

JT520

ISSUE NO. 14PL-10/11

For Replacement Copy Order **P/N 053-062**

This product is covered by one or more of the following patents:

US B1 4,858,704; 4,953,638; 5,148,880; 5,242,026; 5,341,887; 5,490,569; 5,684,466; 5,713,423, 5,794,719; 5,880,680; 5,941,322; 6,085,852; 6,109,371; 6,179,065; 6,216,803; 6,250,403; 6,250,404; 6,290,606; 6,311,790; 6,411,094; 6,543,551; 6,550,547; 6,672,409; 6,739,413; 6,776,246; 6,808,210; 6,827,158; RE37,450; RE37,923; RE37,975; RE38,418

AU 689,533; 706,544; 718,034, 755,862

CA 2,156,398

FR 674,093

DE 694 17 019; 695 29 634; 297 01 406

EP 0683845; 0674093; 0817901; 0846841


GB 2,209,239; 2,312,006; EP674,093; EP846,841

JP 3,458,247

Other U.S. and foreign patents pending

This manual contains information concerning the following models:
JT520 Directional Drilling System

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 **Ditch Witch**, Ditch Witch, CMW, AutoCrowd, Jet Trac, Roto Witch, Subsite, Fluid Miser, Power Pipe, Super Witch, Pierce Arrow, Zahn, The Underground, and The Underground Authority Worldwide are registered trademarks of The Charles Machine Works, Inc.

ID0134928

FOREWORD

This manual contains illustrated parts lists to help you select quality ProTech[®] Replacement parts for your Ditch Witch[®] equipment. Using other replacement parts will lessen the productivity of your equipment.

- ◆ Part numbers enclosed in a box are no longer available from The Charles Machine Works, Inc. Your local Ditch Witch dealer may be able to locate the part for you.
- ◆ Footnotes provide more information to help you identify parts shown in the manual.
- ◆ Assembly instructions and Tech Bits articles referenced in footnotes are available through your local Ditch Witch dealer.
- ◆ Description and specifications in this book were current at publication. However, The Charles Machine Works, Inc. reserves the right to improve equipment, so this manual might not reflect the most current improvements.
- ◆ Instructions on recommended equipment use and maintenance are in the Operator's Manual that was shipped with your equipment.

Keep the following in mind when ordering ProTech replacement parts:

- ◆ Specify parts you need by part number and description, not by illustration reference numbers.
- ◆ Have equipment model and serial number on hand to help ensure you get the right parts for your machine whether it's old or new.

Thank you for buying and using Ditch Witch equipment and ProTech replacement parts.

WARRANTY

DW WARRANTY Policy
July, 2005

POLICY 1: DITCH WITCH® EQUIPMENT AND REPLACEMENT PARTS LIMITED WARRANTY POLICY

Subject to the limitation and exclusions herein, free replacement parts will be provided at any authorized Ditch Witch dealership for any Ditch Witch equipment or parts manufactured by The Charles Machine Works, Inc. (CMW) that fail due to a defect in material or workmanship within one (1) year of first commercial use (Exception: 2 years for all SK500 Attachments). Free labor will be provided at any authorized Ditch Witch dealership for installation of parts under this warranty during the first year following "initial commercial" use of the serial numbered Ditch Witch equipment on which it is installed. The customer is responsible for transporting their equipment to an authorized Ditch Witch dealership for all warranty work.

EXCLUSIONS FROM PRODUCT WARRANTY

- All incidental or consequential damages.
- All defects, damages, or injuries caused by misuse, abuse, improper installation, alteration, neglect, or uses other than those for which products were intended.
- All defects, damages, or injuries caused by improper training, operation, or servicing of products in a manner inconsistent with manufacturer's recommendations.
- All engines and engine accessories (these are covered by original manufacturer's warranty).
- Tires, belts, and other parts which are subject to another manufacturer's warranty. (Such warranty will be available to purchaser.)
- ALL IMPLIED WARRANTIES NOT EXPRESSLY STATED HEREIN, INCLUDING ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY.

IF THE PRODUCTS ARE PURCHASED FOR COMMERCIAL PURPOSES, AS DEFINED BY THE UNIFORM COMMERCIAL CODE, THEN THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE HEREOF AND THERE ARE NO IMPLIED WARRANTIES OF ANY KIND WHICH EXTEND TO A COMMERCIAL BUYER. ALL OTHER PROVISIONS OF THIS LIMITED WARRANTY APPLY INCLUDING THE DUTIES IMPOSED.

Ditch Witch products have been tested to deliver acceptable performance in most conditions. This does not imply they will deliver acceptable performance in all conditions. Therefore, to assure suitability, products should be operated under anticipated working conditions prior to purchase.

Defects will be determined by an inspection within thirty (30) days of the date of failure of the product or part by CMW or its authorized dealer. CMW will provide the location of its inspection facilities or it's nearest authorized dealer upon inquiry. CMW reserves the right to supply remanufactured replacement parts under this warranty as it deems appropriate.

Extended warranties are available upon request from your local Ditch Witch dealer or CMW.

Some states do not allow exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. Further, some states do not allow exclusion of or limitation of how long an implied warranty lasts, so the above limitation may not apply. This limited warranty gives product owner specific legal rights and the product owner may also have other rights which vary from state to state.

For information regarding this limited warranty, contact CMW's Product Support Department, P.O. Box 66, Perry, OK 73077-0066, or contact your local Ditch Witch dealer.

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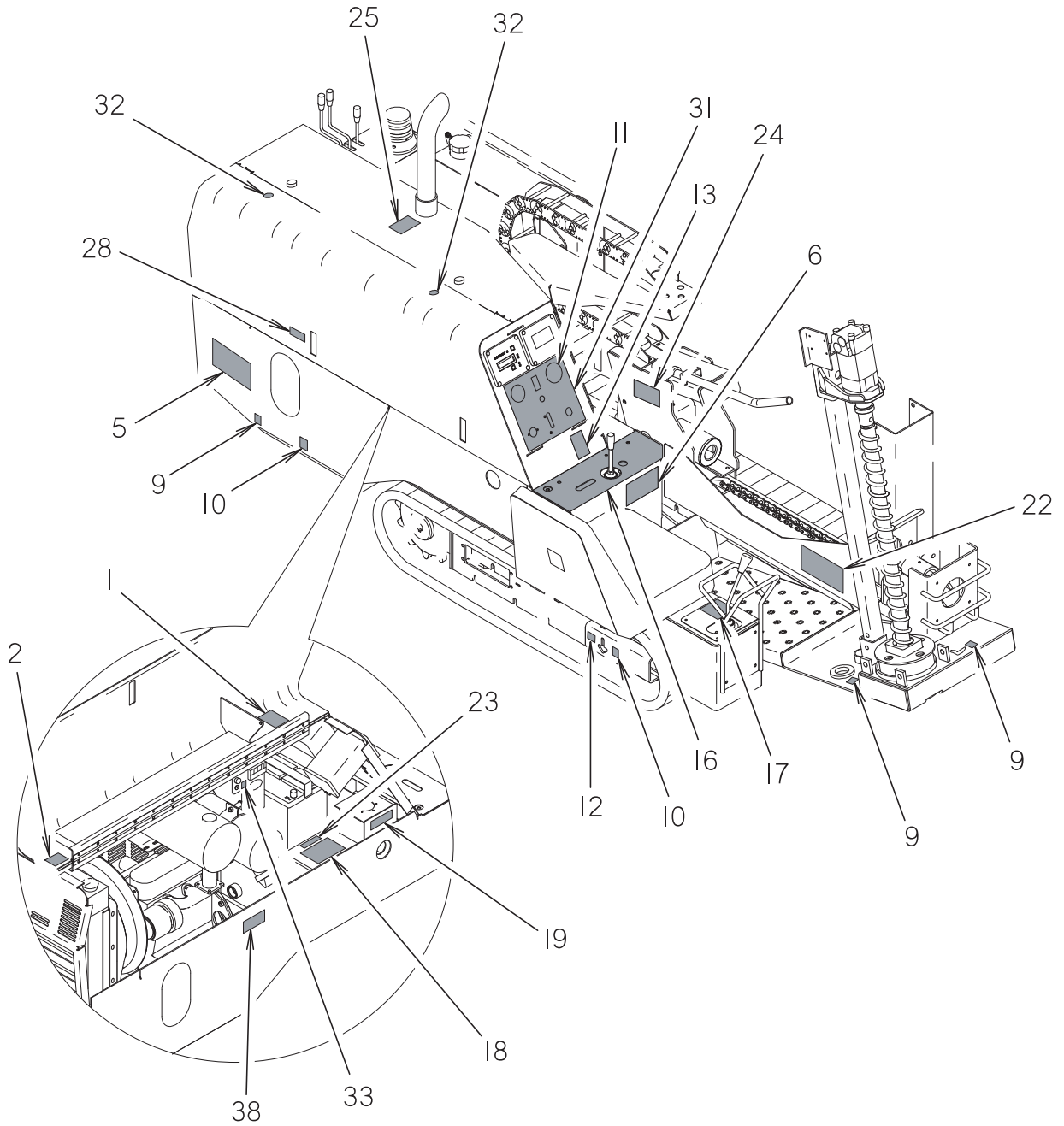
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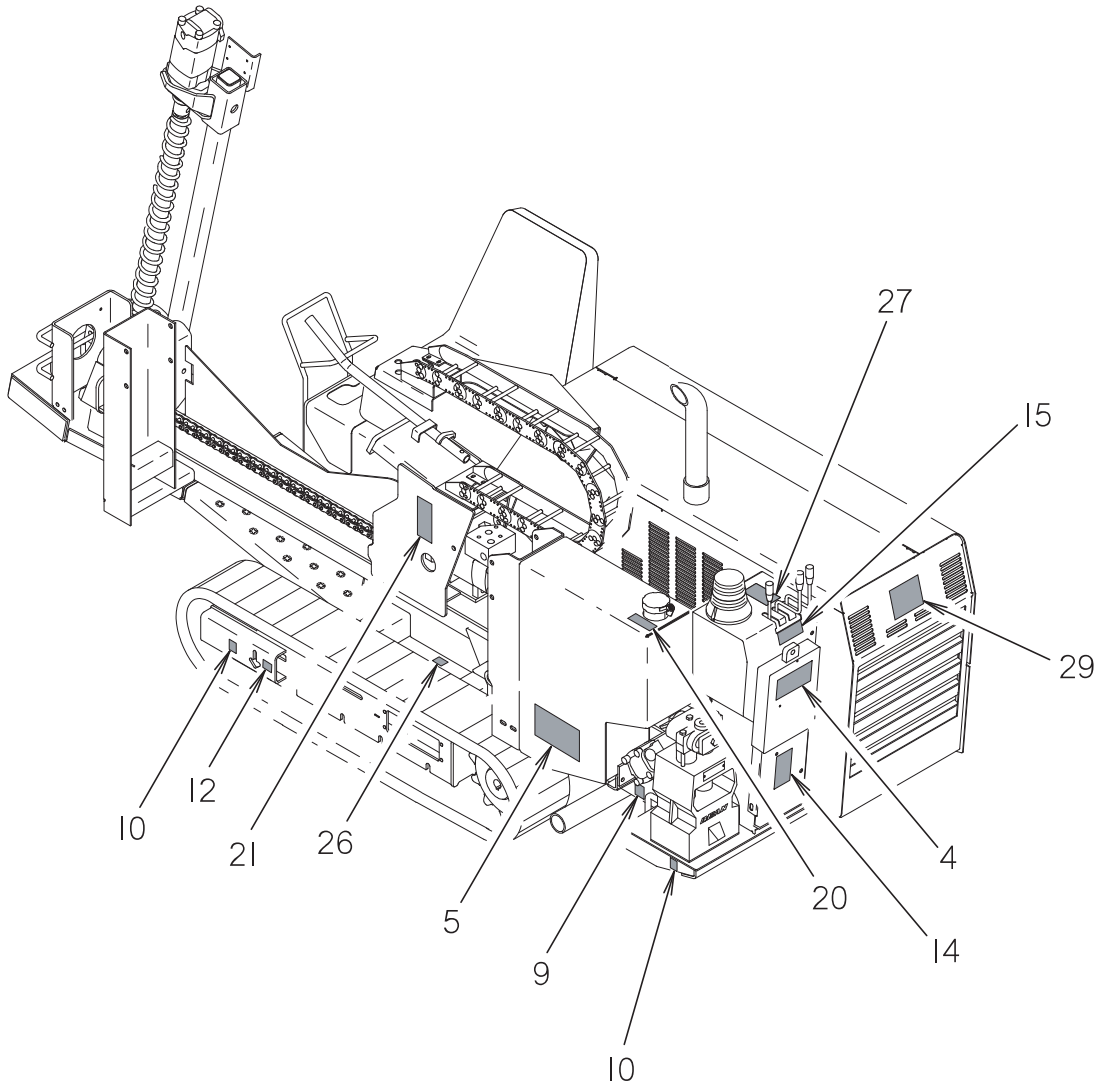
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DECALS

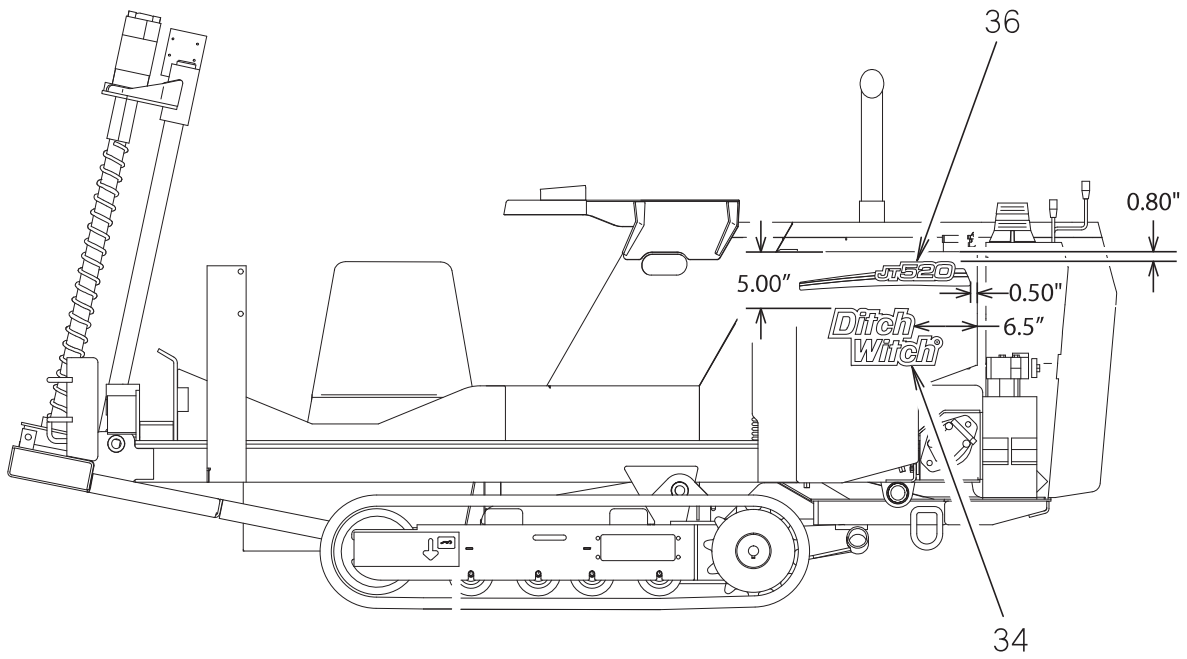
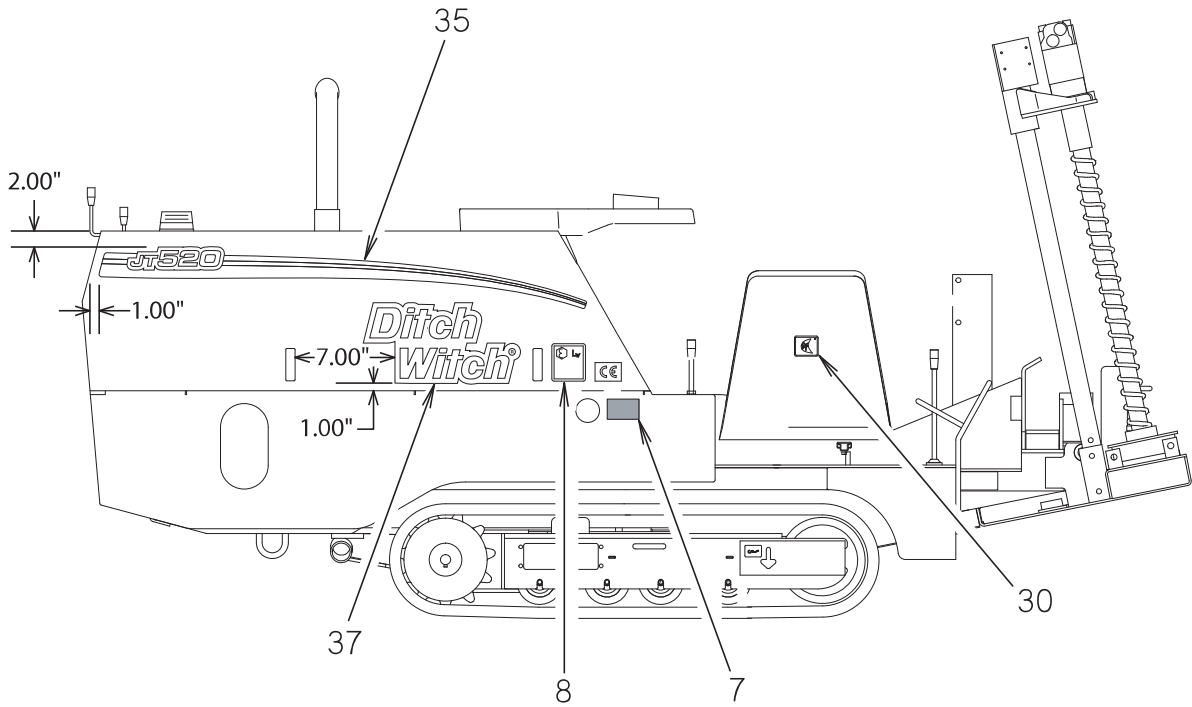
DECAL LOCATION JT520 T2 (BEGINS WITH SERIAL NO. 2Y1471)



DECAL LOCATION JT520 T2 (BEGINS WITH SERIAL NO. 2Y1471)



DECAL LOCATION JT520 T2 (BEGINS WITH SERIAL NO. 2Y1471)



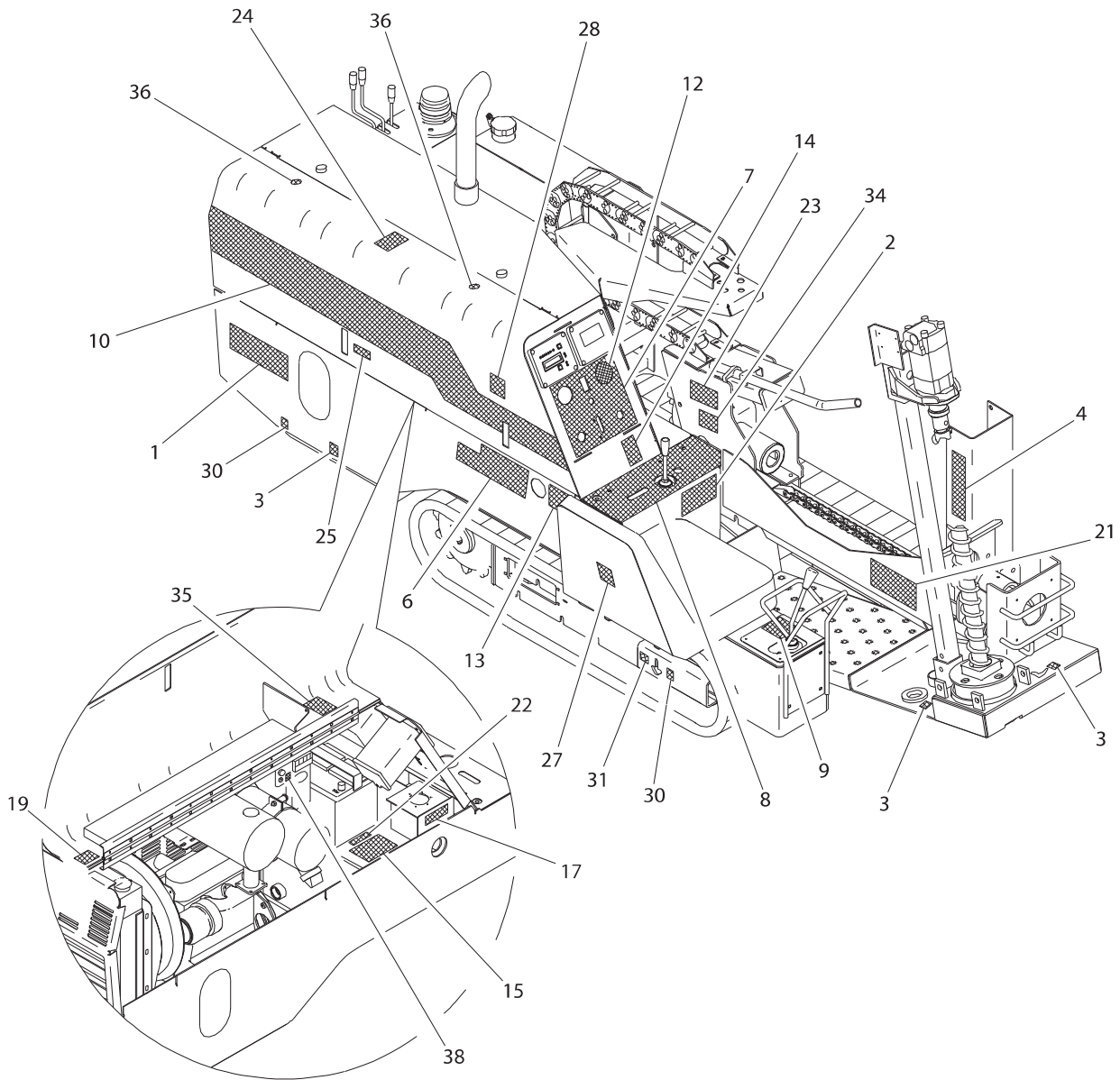
DECAL LOCATION JT520 T2 (BEGINS WITH SERIAL NO. 2Y1471)

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|-----------------|
| | 275-928 | | DECAL KIT - JT520 T2 | |
| 1 | 273-044 | 1 | JT520 ELECTRICAL DIAGNOSTIC | |
| 2 | 273-138 | 1 | NOTICE COOLANT | |
| 3 | 273-267 | 1 | DITCH WITCH BATTERY | SEE FOOTNOTE 3 |
| 4 | 273-562 | 1 | NOTICE READ MANUAL | |
| 5 | 274-049 | 2 | DANGER ELECTROCUTION | |
| 6 | 274-050 | 1 | WARNING JOBSITE HAZARD | |
| 7 | 274-198 | 1 | NOTICE OIL LEVEL | |
| 8 | 274-291 | 1 | SOUND POWER 10 | SEE FOOT NOTE 1 |
| 9 | 274-318 | 4 | TIE DOWN LOCATION | |
| 10 | 274-442 | 4 | LIFT LOCATION | |
| 11 | 274-592 | 1 | FLUID PRESSURE DIAL (485 PSI) | |
| 12 | 274-602 | 2 | TOW POINT | |
| 13 | 274-724 | 1 | ONE CALL NOTIFICATION | |
| 14 | 274-780 | 1 | JET TRAC PATENT(S) | |
| 15 | 274-970 | 1 | SETUP CONTROL PANEL | |
| 16 | 274-973 | 1 | LEFT CONTROL PANEL | |
| 17 | 274-974 | 1 | RIGHT CONTROL PANEL | |
| 18 | 275-033 | 1 | NOTICE ELECTRICAL SYSTEM | |
| 19 | 275-120 | 1 | RESERVOIR (THF) | |
| | 274-672 | 1 | ENVIRO HYDRAULIC RESERVOIR | SEE FOOTNOTE 2 |
| 20 | 275-148 | 1 | FUEL TANK (DIESEL) | |
| 21 | 275-184 | 1 | WARNING MOVING PARTS | |
| 22 | 275-197 | 1 | DANGER ROTATING SHAFT | |
| 23 | 275-203 | 1 | BATTERY | |
| 24 | 275-341 | 1 | WARNING SLIDING PARTS | |
| 25 | 275-355 | 1 | CAUTION HOT PARTS | |
| 26 | 275-372 | 1 | IMPORTANT CYLINDER LOCK | |
| 27 | 275-383 | 1 | NOTICE SLOPE PARKING | |
| 28 | 275-400 | 1 | NOTICE OIL LEVEL | |
| 29 | 275-449 | 1 | DITCH WITCH LOGO PLACARD | |
| 30 | 275-450 | 1 | LOGO PLACARD | |
| 31 | 700-004 | 1 | INSTRUMENT PANEL | |
| 32 | 700-018 | 2 | PAINT GUARD | |
| 33 | 700-116 | 1 | TRACKER CONTROL | |
| 34 | 700-196 | 1 | STACKED DITCH WITCH LOGOTYPE | |
| 35 | 700-233 | 1 | LARGE JT520 T2 STRIPE | |
| 36 | 700-234 | 1 | SMALL JT520 T2 STRIPE | |
| 37 | 700-235 | 1 | 8.50" STACKED DITCH WITCH | |
| 38 | 273-459 | 1 | NOTICE EXPLOSION POSSIBLE | |

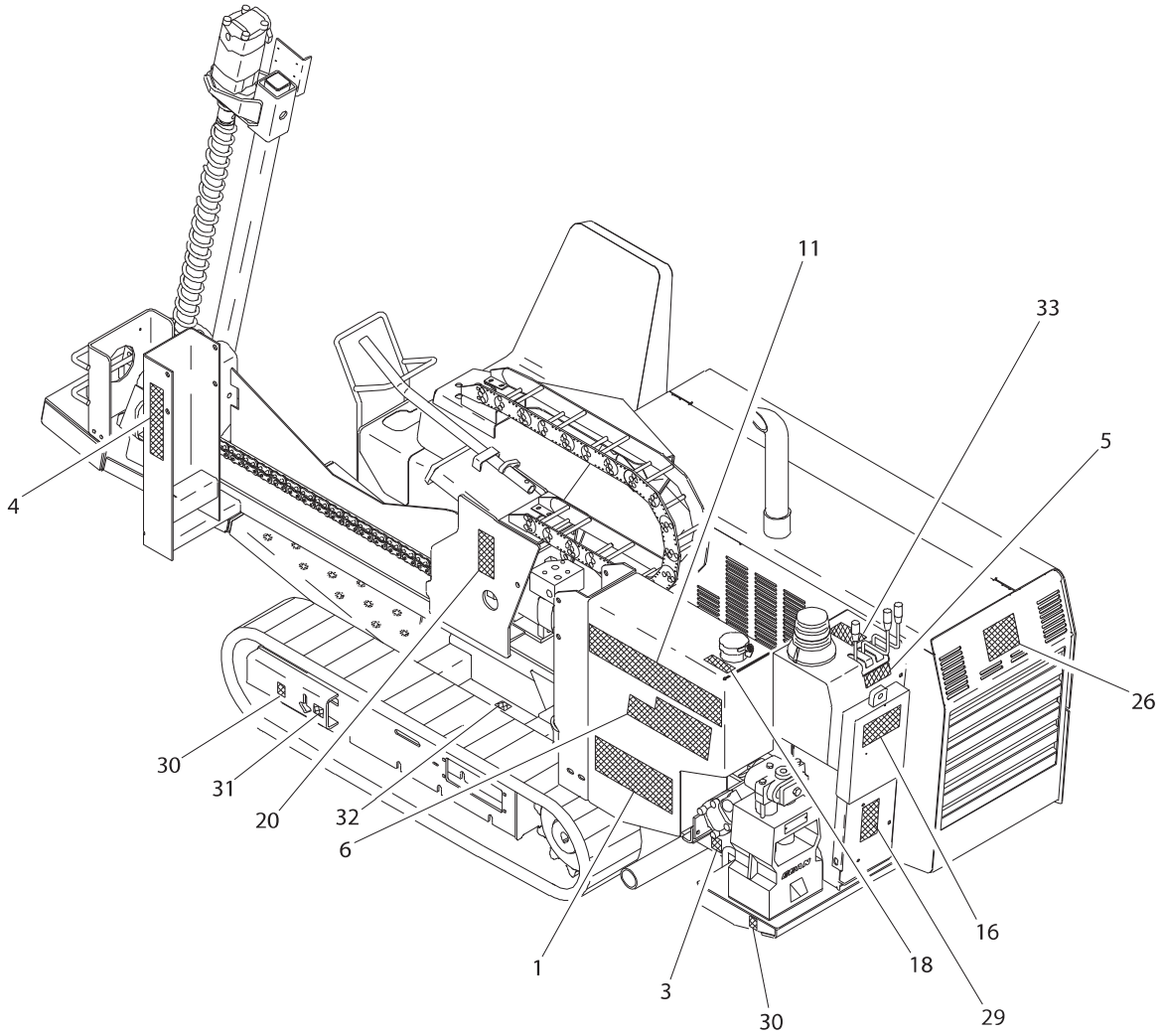
FOOTNOTES

1. NOT PART OF KIT.
2. NOT PART OF KIT. USE WITH 256-030 ENVIRONMENTAL HYD OIL (MOBILE).
3. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

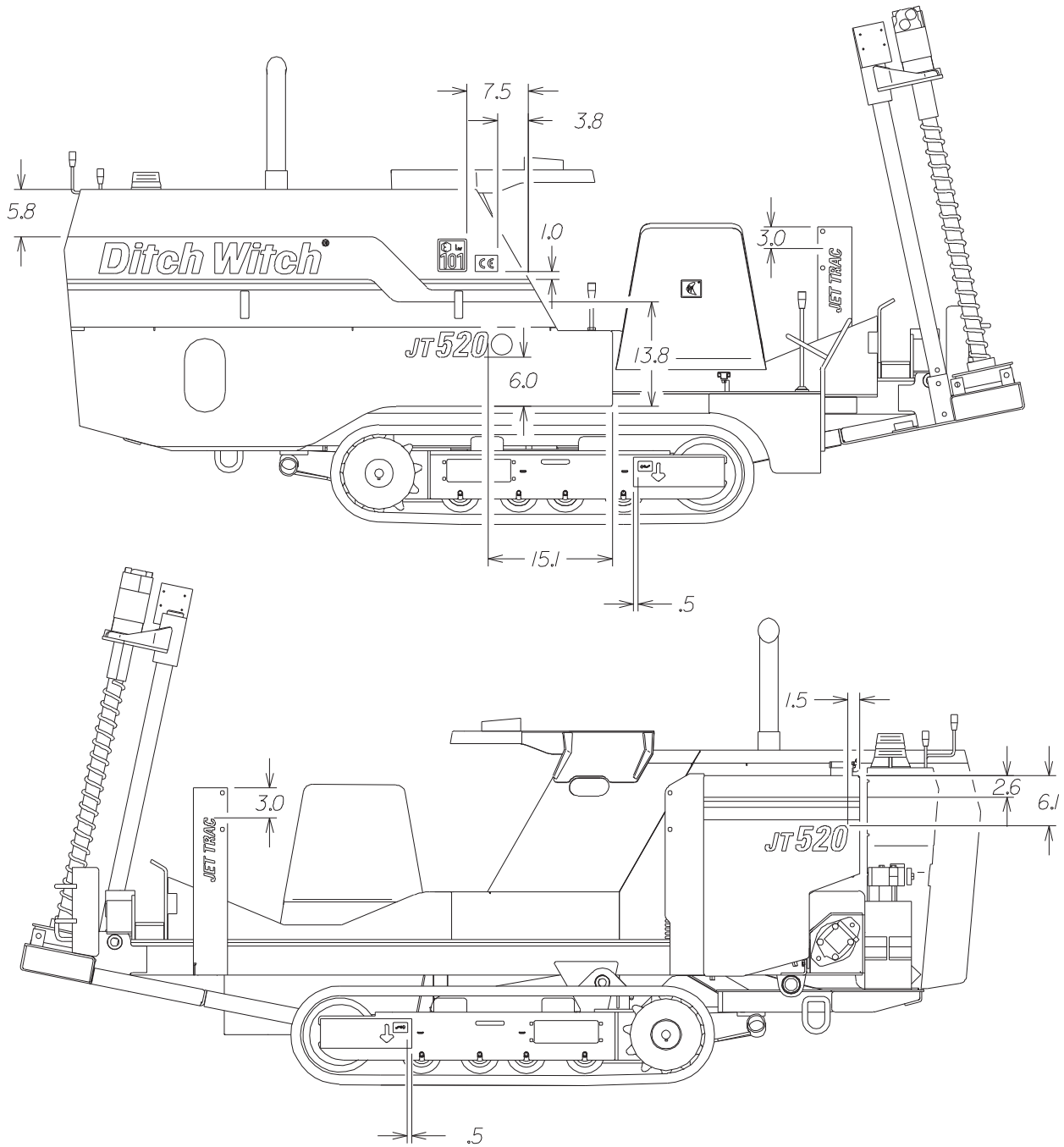
DECAL LOCATION JT520



DECAL LOCATION JT520



DECAL LOCATION JT520



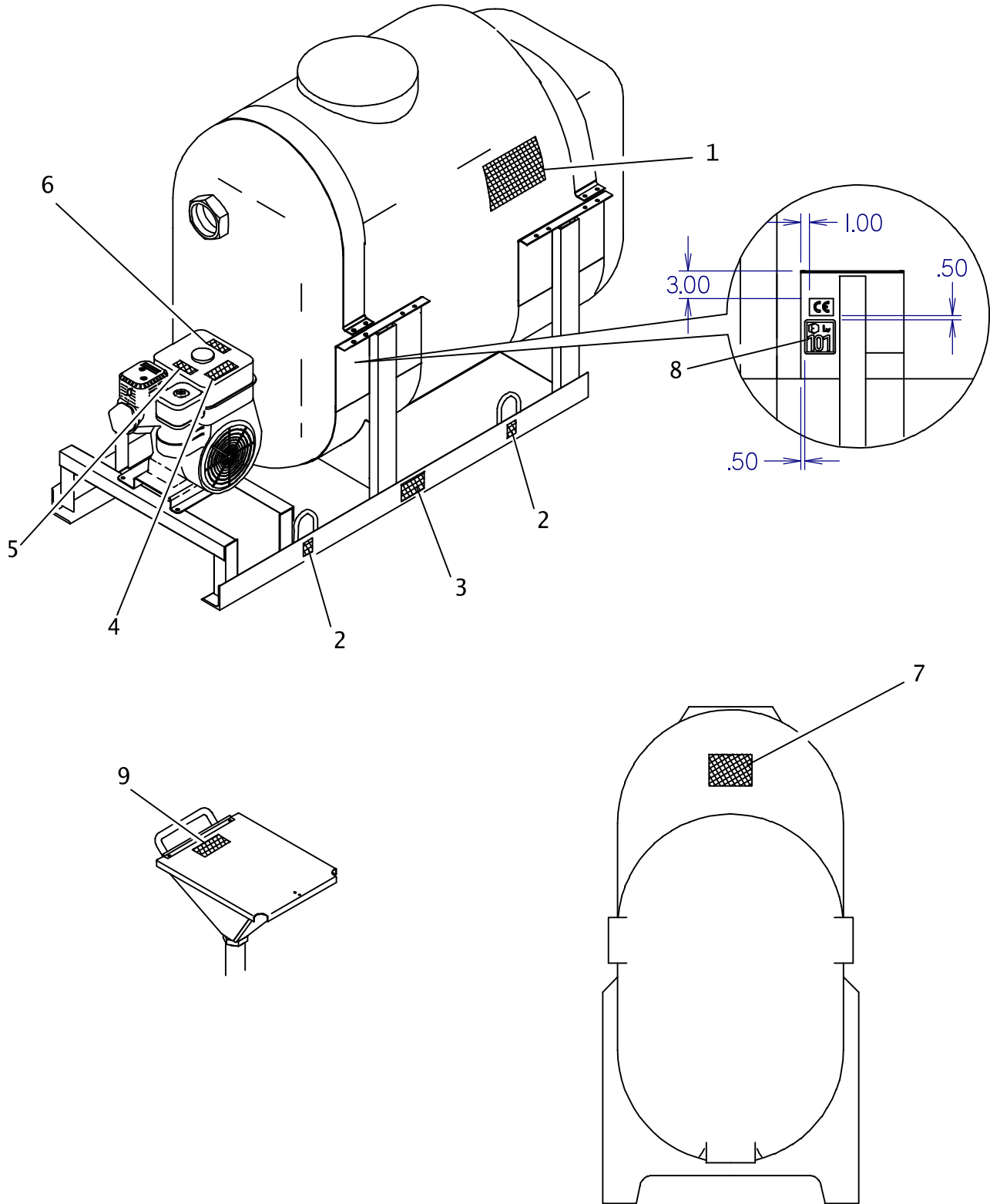
DECAL LOCATION JT520

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|------------------------------|
| | 275-877 | | DECAL KIT - JT520 | |
| 1 | 274-049 | 2 | DANGER ELECTROCUTION | |
| 2 | 274-050 | 1 | WARNING JOBSITE HAZARD | |
| 3 | 274-318 | 4 | TIE DOWN LOCATION | |
| 4 | 274-885 | 2 | JET TRAC LOGO TYPE | |
| 5 | 274-970 | 1 | SETUP CONTROL PANEL | |
| 6 | 274-971 | 2 | JT520 MODEL IDENTIFIER | |
| 7 | 700-004 | 1 | INSTRUMENT PANEL | |
| 8 | 274-973 | 1 | LEFT CONTROL PANEL | |
| 9 | 274-974 | 1 | RIGHT CONTROL PANEL | |
| 10 | 274-996 | 1 | DITCH WITCH STRIPE | |
| 11 | 274-554 | 1 | GRAPHIC STRIPE | |
| 12 | 274-592 | 1 | FLUID PRESSURE DIAL (485 PSI) | |
| 13 | 274-198 | 1 | NOTICE OIL LEVEL | |
| 14 | 274-724 | 1 | ONE CALL NOTIFICATION | |
| 15 | 275-033 | 1 | NOTICE ELECTRICAL SYSTEM | |
| 16 | 275-048 | 1 | IMPORTANT SAFETY RULES | |
| 17 | 275-120 | 1 | RESERVOIR (THF) | |
| | 274-672 | 1 | ENVIRO HYDRAULIC RESERVOIR | SEE FOOTNOTE 2 |
| 18 | 275-148 | 1 | FUEL TANK (DIESEL) | |
| 19 | 273-138 | 1 | NOTICE COOLANT | |
| 20 | 275-184 | 1 | WARNING MOVING PARTS | |
| 21 | 275-197 | 1 | DANGER ROTATING SHAFT | |
| 22 | 275-203 | 1 | BATTERY | |
| 23 | 275-341 | 1 | WARNING SLIDING PARTS | |
| 24 | 275-355 | 1 | CAUTION HOT PARTS | |
| 25 | 275-400 | 1 | NOTICE OIL LEVEL | |
| 26 | 275-449 | 1 | DITCH WITCH LOGO PLACARD | |
| 27 | 275-450 | 1 | LOGO PLACARD | |
| 28 | 274-291 | 1 | SOUND POWER RATING | SEE FOOTNOTE 1 |
| 29 | 274-780 | 1 | JET TRAC PATENT (S) | |
| 30 | 274-442 | 4 | LIFT LOCATION | |
| 31 | 274-602 | 2 | TOW POINT | |
| 32 | 275-372 | 1 | IMPORTANT CYLINDER LOCK | |
| 33 | 275-383 | 1 | NOTICE SLOPE PARKING | |
| 34 | 273-083 | 1 | NOTICE LUBE | SEE FOOTNOTE 4 |
| 35 | 273-044 | 1 | JT520 ELECTRICAL DIAGNOSTIC | |
| 36 | 700-018 | 2 | PAINT GUARD | |
| 37 | 273-267 | 1 | DITCH WITCH BATTERY | SEE FOOTNOTE 3 |
| 38 | 700-116 | 1 | TRACKER CONTROL | BEGIN WITH SERIAL NO. 2X0275 |

FOOTNOTES

1. NOT PART OF KIT.
2. NOT PART OF KIT. SEE 256-030 ENVIRONMENTAL HYD OIL (MOBILE)
3. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.
4. NOT PART OF KIT. ENDS WITH SERIAL NO. 2V2660. US ONLY ON SERIAL NO. 2V2594 AND BELOW.

DECAL LOCATION FT5



DECAL LOCATION

FT5

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------|----------------|
| | 275-813 | | FT5 DECAL KIT | |
| 1. | 273-037 | 2 | FT5 MODEL IDENTIFIER | |
| 2. | 274-442 | 4 | LIFT LOCATION | |
| 3. | 274-817 | 2 | NOTICE, DO NOT LIFT | |
| 4. | 275-173 | 1 | FUEL TANK (GASOLINE) | |
| 5. | 275-355 | 1 | CAUTION HOT PARTS DECAL | |
| 6. | 275-419 | 1 | WARNING, NO FLAME | |
| 7. | 275-449 | 1 | DITCH WITCH LOGO PLACARD | |
| 8. | 274-291 | 1 | SOUND POWER RATING DECAL | SEE FOOTNOTE 1 |
| 9. | 275-184 | 1 | WARNING MOVING PARTS | |

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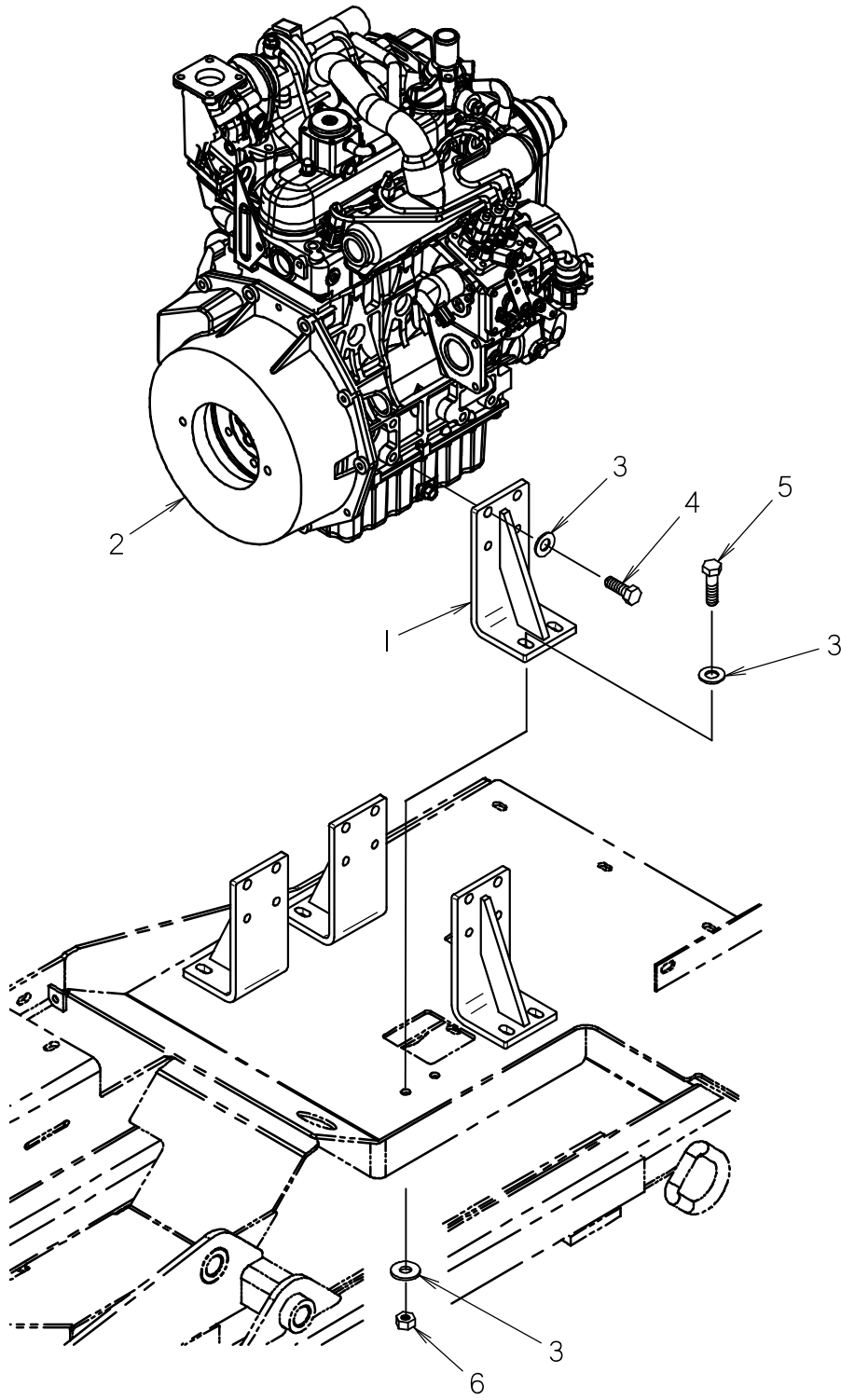
FOOTNOTES:

1. NOT PART OF KIT. FOR EUROPEAN UNITS ONLY.

NOTE:

ENGINE COMPONENTS

ENGINE MOUNT



ENGINE MOUNT

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|-------------------------------|
| 1. | 302-702 | 4 | ENGINE MOUNT | |
| 2. | 194-034 | 1 | ENGINE, KUBOTA, 25 HP | SEE FOOTNOTE 1 |
| | 194-541 | 1 | ENGINE - KUBOTA D1105 DIESEL T2 | SEE FOOTNOTE 2 & 5 |
| | 195-1169 | 1 | ENGINE, KUBOTA D1105-T TIER 3 | SEE FOOTNOTE 6 |
| | 171-017 | 1 | FAN BELT | |
| | 194-041 | 1 | ENGINE OIL FILTER | SEE FOOTNOTE 3 & 4 |
| | 194-881 | 1 | OIL FILTER | SEE FOOTNOTE 7 |
| | 194-378 | 1 | FLYWHEEL AND RING GEAR | |
| | 194-379 | 1 | FUEL PUMP, MECHANICAL | |
| | 213-338 | 1 | TEMPERATURE SENSOR | SEE FOOTNOTE 3 & 4 |
| | 194-380 | 1 | FAN PULLEY | |
| | 194-381 | 1 | INJECTION PUMP | SEE FOOTNOTE 3 & 4 |
| | 194-382 | 1 | STARTER | SEE FOOTNOTE 3 & 4 |
| | 194-873 | 1 | STARTER, 1.4 KW | SEE FOOTNOTE 7 |
| | 194-383 | 3 | GLOW PLUG | |
| | 217-453 | 1 | ALTERNATOR | SEE FOOTNOTE 3 & 4 |
| | 213-365 | 1 | ALTERNATOR | SEE FOOTNOTE 7 |
| | 217-856 | 1 | LAMPTIMER 12V | |
| | 217-952 | 1 | OIL PRESSURE SWITCH | |
| | 217-953 | 1 | STOP SOLENOID | SEE FOOTNOTE 3 |
| | 213-306 | 1 | STOP SOLENOID | SEE FOOTNOTE 4 & 7 |
| | 194-386 | 1 | FUEL FILTER ELEMENT | |
| | 194-210 | 1 | THERMOSTAT | |
| | 153-352 | 1 | THERMOSTAT GASKET | |
| | 194-218 | 1 | WATER PUMP | |
| | 153-353 | 1 | WATER PUMP GASKET | |
| 3. | 106-396 | 32 | WASHER (M10, HARDENED) | |
| 4. | 111-054 | 16 | SCREW (M10-1.25 X 25MM) | USE LOCTITE 242 OR EQUIVALENT |
| 5. | 105-876 | 8 | SCREW (M10-1.50 X 35MM) | |
| 6. | 105-894 | 8 | LOCKNUT (M10-1.5, PRV TRQ, 10.9) | |

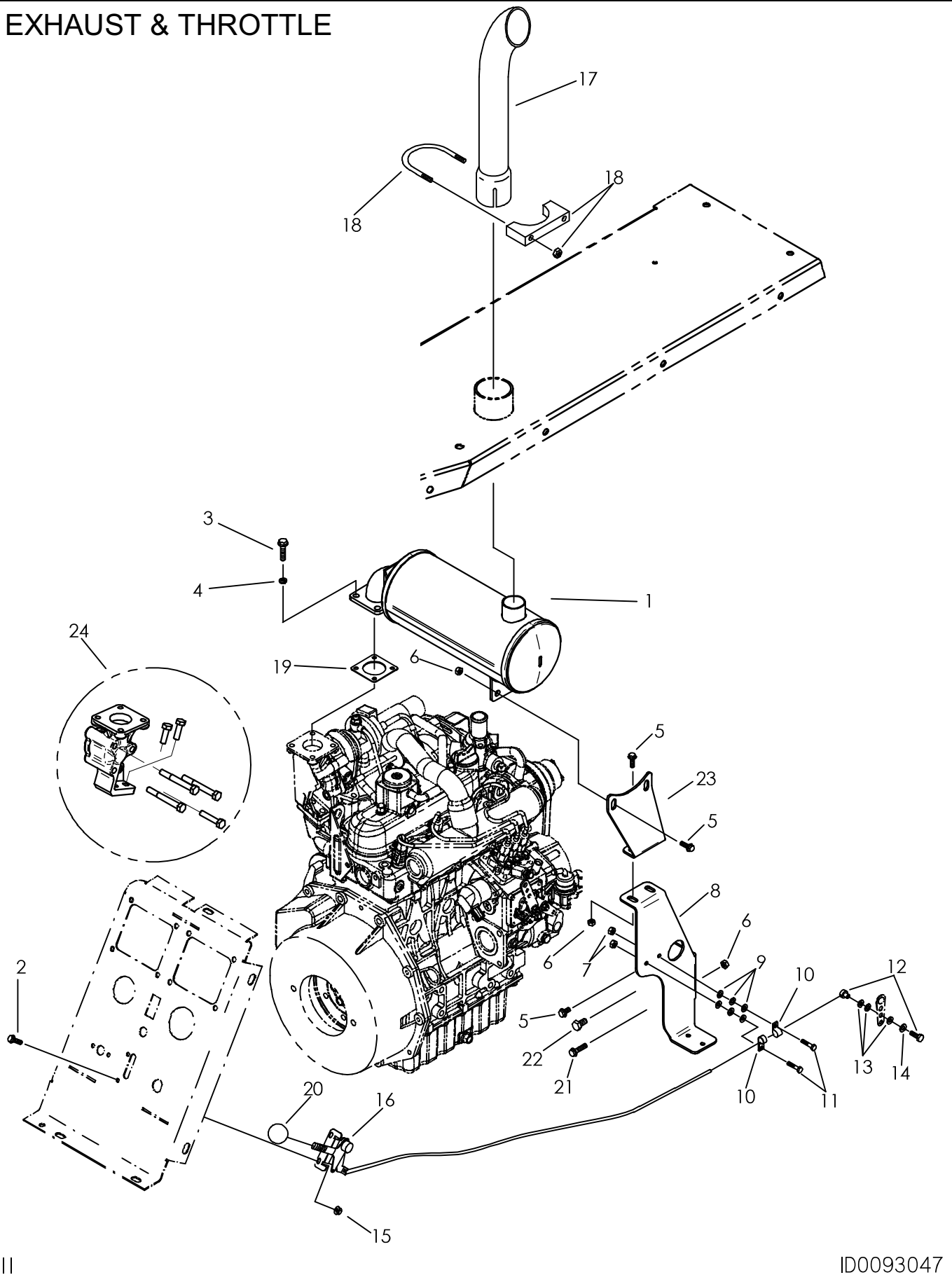
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FOOTNOTES:

1. EPA TIER 1 ENGINE ENDS WITH S/N 2Y1290.
2. EPA TIER 2 ENGINE BEGINS WITH S/N 2Y1471.
3. USED WITH ENGINE 194-034. TEIR 1 SOLENOID WITH 3 WIRE CONNECTOR.
4. USED WITH ENGINE 194-541. TEIR 2 SOLENOID WITH 2 WIRE CONNECTOR.
5. EPA TIER 2 ENGINE ENDS WITH S/N CMWJT520L80000181
6. EPA TIER 4 ENGINE BEGINS WITH S/N CMWJT520C80000182
7. USED WITH ENGINE 195-1169

NOTE:

EXHAUST & THROTTLE



EXHAUST & THROTTLE

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------------|----------------|
| 1. | 195-1120 | 1 | MUFFLER | |
| 2. | 106-103 | 2 | BOLT (1/4-NC X 1/2", BUT SOC) | |
| 3. | 105-806 | 4 | SCREW (M8-1.25 X 25MM) | |
| 4. | 105-091 | 4 | LOCK WASHER (5/16") | |
| 5. | 106-380 | 4 | FLG LK SCREW (M8-1.25 X 16MM) | |
| 6. | 106-386 | - | FLG LOCKNUT (M8-1.25, PRV TRQ,10.9) | SEE FOOTNOTE 1 |
| 7. | 106-048 | - | LOCKNUT (#10-24) | |
| 8. | 300-5133 | 1 | BRACKET | |
| 9. | 106-205 | 6 | WASHER (.191") | |
| 10. | 149-556 | 2 | CABLE CLAMP (.250") | |
| 11. | 106-049 | 2 | BOLT (#10-24 X 3/4 ", PLPS) | |
| 12. | 196-058 | 1 | CABLE SWIVEL (.081") | |
| 13. | 106-076 | 3 | WASHER (1/4") | |
| 14. | 106-013 | 1 | WASHER (3/16") | |
| 15. | 105-085 | 2 | LOCKNUT (1/4-NC) | |
| 16. | 196-123 | 1 | THROTTLE CABLE (40") | |
| 17. | 196-076 | 1 | EXHAUST STACK (2.50" X 16.25") | |
| 18. | 196-009 | 1 | U-BOLT CLAMP (2-1/2") | |
| 19. | 149-326 | 1 | GASKET, MUFFLER | |
| 20. | 111-064 | 1 | KNOB (1/4-NC, ORANGE) | |
| 21. | 106-163 | 1 | FLG SCREW (M8-1.25 X 30MM) | |
| 22. | 106-958 | - | SCREW (M10-1.25 X 20MM) | |
| 23. | 300-3590 | 1 | BRACKET | |
| 24. | 190-1262 | 1 | VERTICAL EXHAUST KIT | SEE FOOTNOTE 2 |

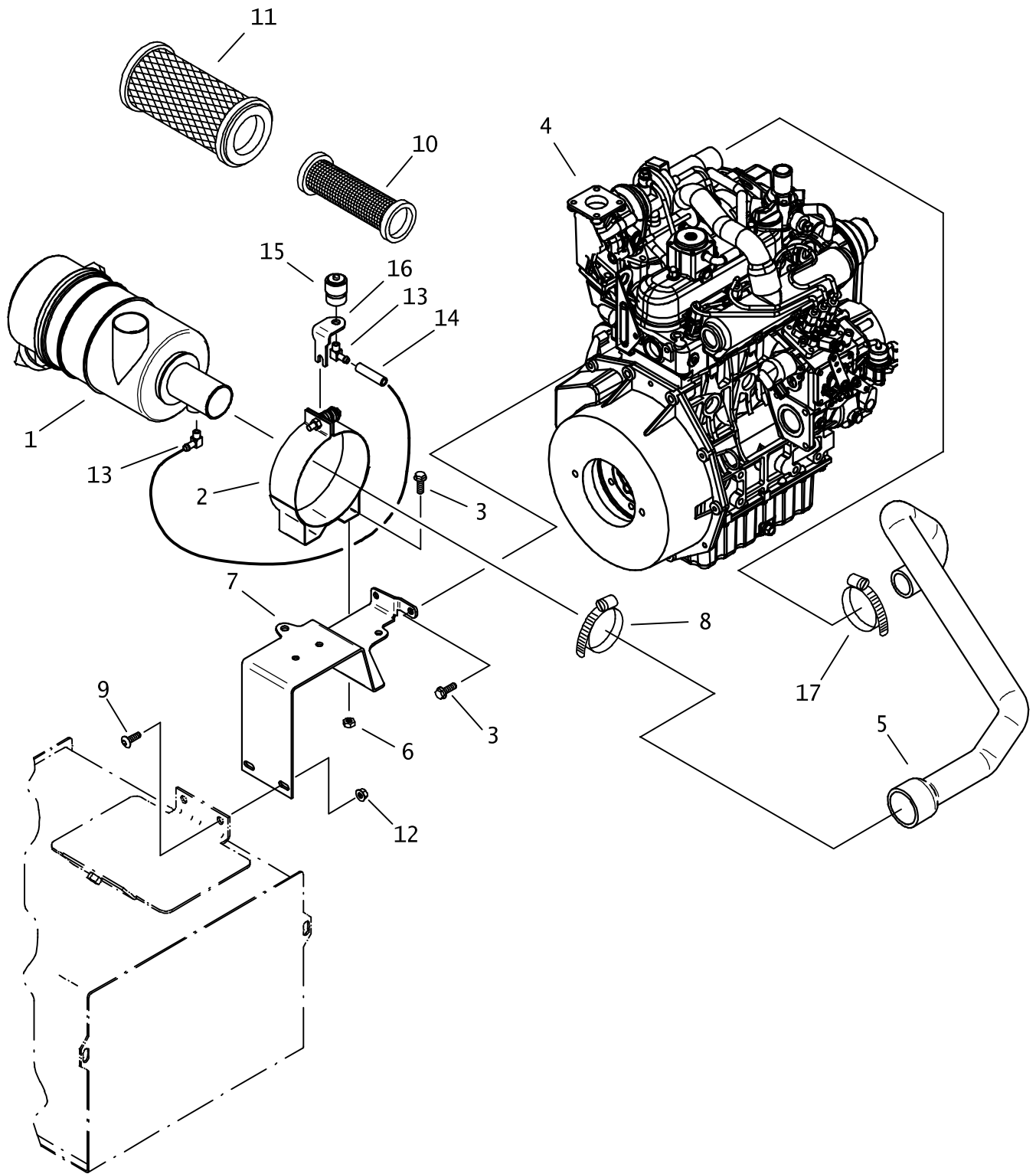
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FOOTNOTES:

1. USE (3) WITH ENGINES I94-034 AND I94-541; USE (5) WITH ENGINE I95-1169
2. REMOVE HORIZONTAL EXHAUST FLANGE AND REPLACE WITH VERTICAL EXHAUST FLANGE, INCLUDING HARDWARE, FOUND IN KIT #I90-1262.

NOTE:

AIR FILTER SYSTEM



AIR FILTER SYSTEM

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|--|
| 1. | 194-035 | 1 | AIR FILTER ASSY | INCL REF NO.'S 10 AND 11, SEE FOOTNOTE 4 |
| | 194-093 | 1 | AIR FILTER ASSY | INCL REF NO.'S 10 AND 11, SEE FOOTNOTE 5 |
| 2. | 194-036 | 1 | MOUNTING CLAMP (5.750") | |
| 3. | 106-380 | 4 | FLG LK SCREW (M8-1.25 X 16MM) | |
| 4. | 194-034 | - | ENGINE, KUBOTA, 25 HP | SEE FOOTNOTE 1 AND 2 |
| | 194-541 | - | ENGINE - KUBOTA D1105 DIESEL T2 | SEE FOOTNOTE 1 AND 3 |
| | 195-1169 | - | ENGINE - KUBOTA D1105-T T3 | SEE FOOTNOTE 1 AND 5 |
| 5. | 120-556 | 1 | AIR INTAKE HOSE | SEE FOOTNOTE 4 |
| | 195-1119 | 1 | AIR INTAKE HOSE | SEE FOOTNOTE 5 |
| 6. | 106-561 | 2 | LOCKNUT (M8-1.25, PRV TRQ, 10.9) | |
| 7. | 302-711 | 1 | FILTER MOUNT | |
| 8. | 110-134 | 1 | WORM CLAMP (2.062" TO 2.750") | |
| 9. | 107-032 | 2 | SCREW (M8-1.25 X 20MM, BUT SOC) | |
| 10. | 194-039 | 1 | FILTER ELEMENT, SECONDARY | |
| 11. | 194-038 | 1 | FILTER ELEMENT, PRIMARY | |
| 12. | 106-386 | 2 | FLG LOCKNUT (M8-1.25) | |
| 13. | 155-241 | 2 | S/O COUPLER (02N-05H90) | SEE FOOTNOTE 5 |
| 14. | 116-108 AR | | BULK HOSE (5/16", SOLD PER 1") | USE 1 @ 18" SEE FOOTNOTE 5 |
| 15. | 195-633 | 1 | RESTRICTION INDICATOR (20" H2O) | SEE FOOTNOTE 5 |
| 16. | 300-5036 | 1 | MOUNT BRACKET | SEE FOOTNOTE 5 |
| 17. | 110-133 | 1 | WORM CLAMP (1 1/16" TO 1 15/16") | |

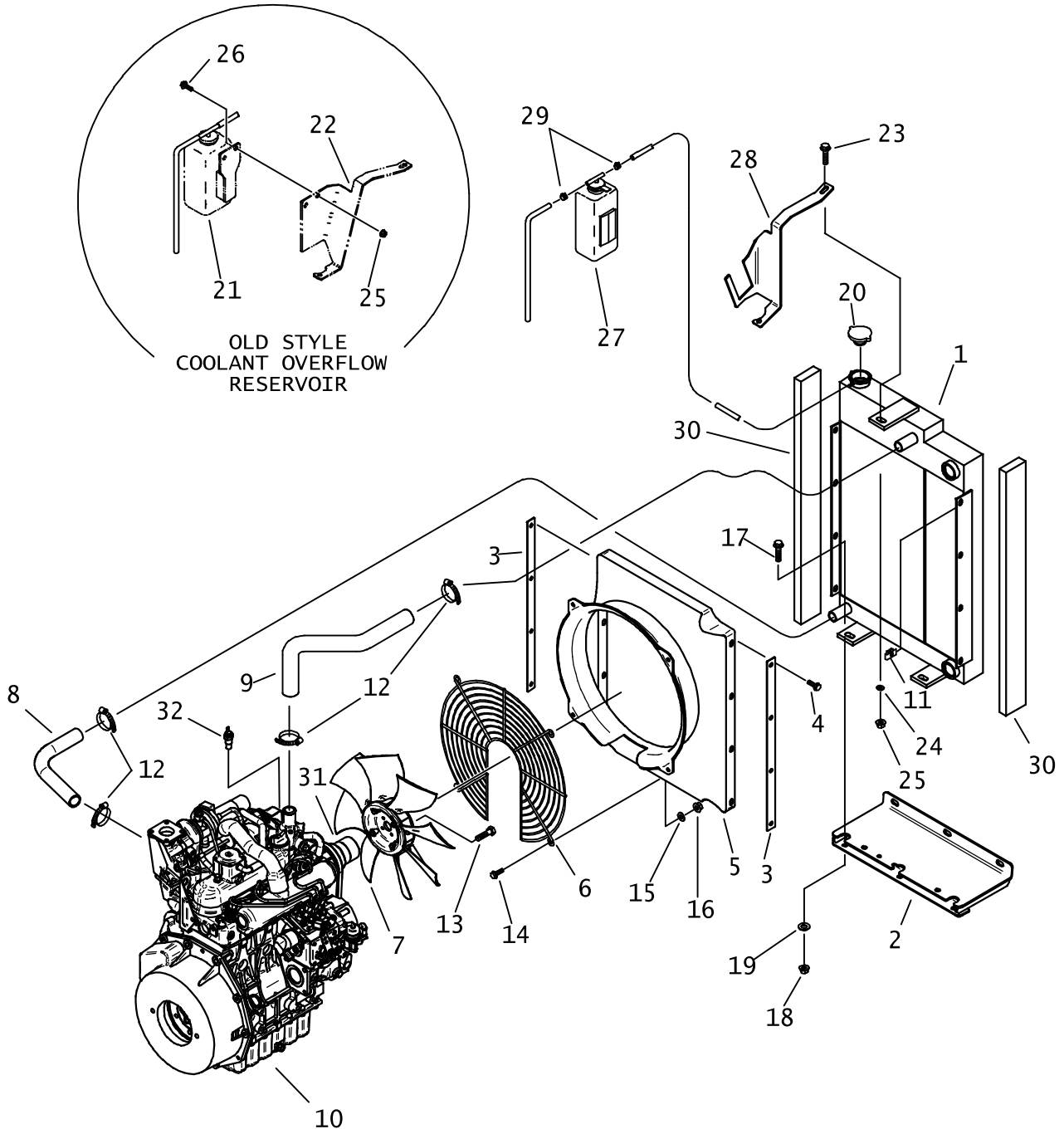
NOT SHOWN:

FOOTNOTES:

1. REFER TO ENGINE MOUNT PAGE FOR SERVICE PARTS.
2. EPA TIER 1 ENGINE ENDS WITH S/N 2Y1290.
3. EPA TIER 2 ENGINE BEGINS WITH S/N 2Y1471.
4. EPA TIER 2 ENGINE ENDS WITH S/N _____.
5. EPA TIER 3 ENGINE BEGINS WITH S/N _____.

NOTE:

RADIATOR



RADIATOR

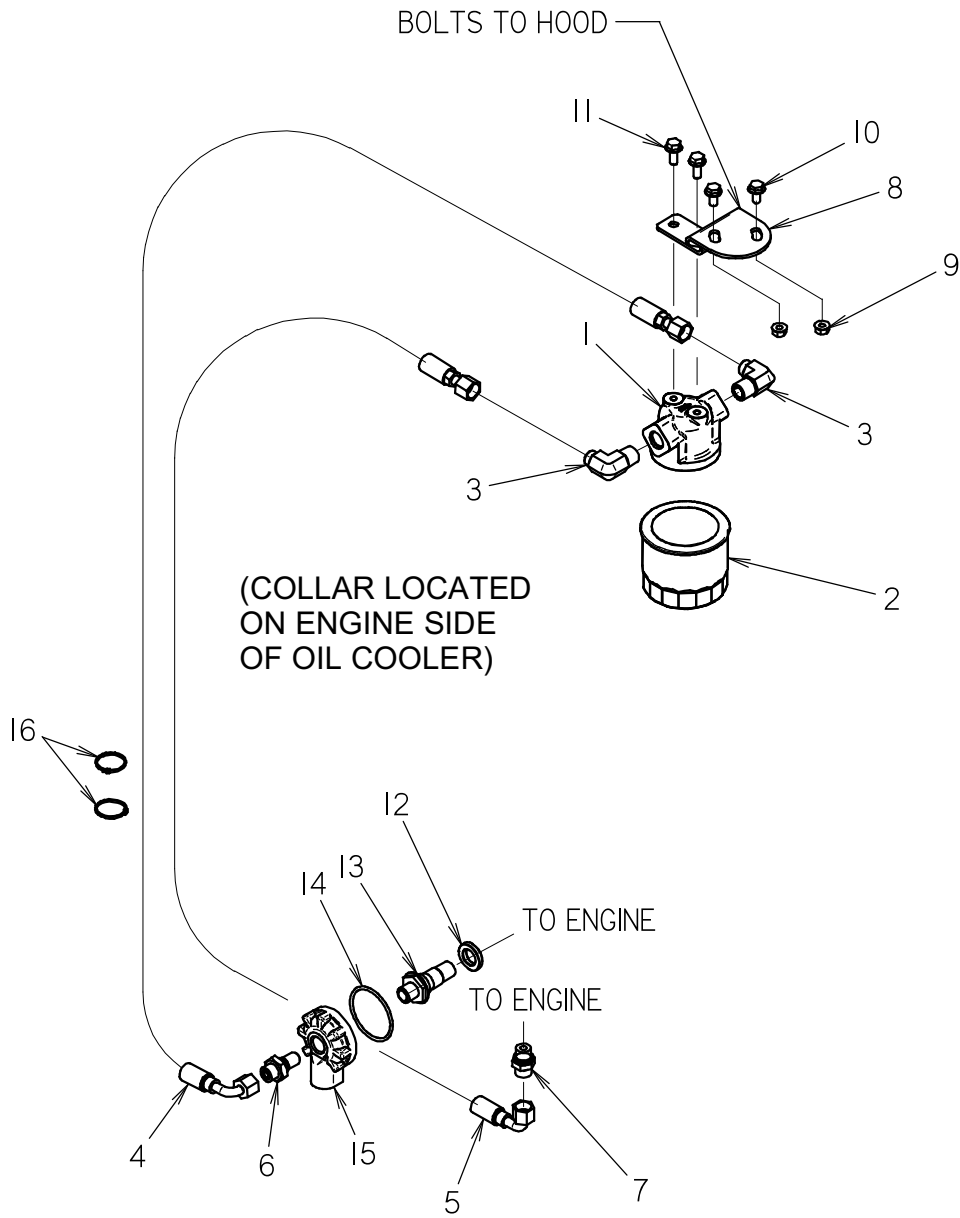
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|---|
| 1. | 302-697 | 1 | RADIATOR/OIL COOLER | SEE FOOTNOTE 3, 4, & 5 |
| | 195-1163 | 1 | RADIATOR/OIL COOLER | SEE FOOTNOTE 6 |
| 2. | 302-758 | 1 | RADIATOR/OIL COOLER MOUNT | SEE FOOTNOTE 3, 4, & 5 |
| | 300-3752 | 1 | RADIATOR/OIL COOLER MOUNT | SEE FOOTNOTE 6 |
| 3. | 302-769 | 2 | SHROUD MOUNT BAR | SEE FOOTNOTE 3, 4, & 5 |
| | 300-3801 | 2 | SHROUD MOUNT BAR | SEE FOOTNOTE 6 |
| 4. | 107-334 | 8 | SCREW (M8-1.25 X 25MM,BUT SOC) | |
| 5. | 196-367 | 1 | FAN SHROUD | SEE FOOTNOTE 3, 4, & 5 |
| | 362-1117 | 1 | FAN SHROUD | SEE FOOTNOTE 6 |
| 6. | 196-369 | 1 | FAN GUARD | |
| 7. | 195-1165 | 1 | FAN | SEE FOOTNOTE 6 |
| 8. | 116-857 | 1 | OUTLET HOSE | SEE FOOTNOTE 3, 4, & 5 |
| | 195-1144 | 1 | OUTLET HOSE | SEE FOOTNOTE 6 |
| 9. | 116-858 | 1 | INLET HOSE | |
| 10. | 194-034 | - | ENGINE, KUBOTA, 25 HP | SEE FOOTNOTES 1 AND 3. |
| | 194-541 | - | ENGINE - KUBOTA D1105 DIESEL T2 | SEE FOOTNOTES 1, 4 AND 5. |
| | 195-1169 | - | ENGINE, KUBOTA, 25 HP | SEE FOOTNOTES 1 AND 6 |
| 11. | 106-551 | 8 | CLIP NUT (M8-1.25) | |
| 12. | 110-353 | 4 | WORM CLAMP (3/4" TO 1-1/2") | |
| 13. | 106-972 | 4 | SCREW (M6-1.00 X 65MM) | TORQUE TO 84 IN-LBS., USE LOCTITE 242 OR EQUIVALENT |
| 14. | 106-162 | 4 | FLG SCREW (M8-1.25 X 20MM, GD8) | |
| 15. | 106-389 | 4 | WASHER (M8) | |
| 16. | 107-096 | 4 | LOCKNUT (M8-1.25, NLK) | |
| 17. | 106-383 | 2 | FLG LK SCREW (M10-1.50 X 30MM) | |
| 18. | 105-894 | 2 | LOCKNUT (M10-1.50,PRV TRQ,10.9) | |
| 19. | 106-396 | 2 | WASHER (M10, HARDENED) | |
| 20. | 110-898 | 1 | RADIATOR CAP (14 PSI) | |
| 21. | 149-369 | - | COOLANT OVERFLOW RESERVOIR | OBSOLETE. SEE FOOTNOTE 2. |
| 22. | 305-535 | - | RADIATOR BRACKET | OBSOLETE. SEE FOOTNOTE 2. |
| 23. | 106-992 | 1 | FLG LK SCREW (M8-1.25 X 25MM) | |
| 24. | 105-117 | 1 | WASHER (5/16") | |
| 25. | 106-386 | 1 | FLG LOCKNUT (M8-1.25) | |
| 26. | 106-916 | 2 | SCREW (M8-1.25 X 25MM, SOC) | |
| 27. | 364-529 | 1 | COOLANT OVERFLOW RESERVOIR | |
| | 364-520 | 1 | RESERVOIR BOTTLE | |
| | 364-521 | 1 | RESERVOIR CAP | |
| 28. | 306-393 | 1 | RADIATOR BRACKET | SEE FOOTNOTE 3, 4, & 5 |
| | 300-4487 | 1 | RADIATOR BRACKET | SEE FOOTNOTE 6 |
| 29. | 310-343 | 2 | SPRING CLAMP | |
| 30. | 116-883 | 2 | SOUND INSULATION | SEE FOOTNOTE 3, 4, & 5 |
| | 118-166 | 2 | SOUND INSULATION | SEE FOOTNOTE 6 |
| 31. | 194-100 | 1 | FAN SPACER | SEE FOOTNOTE 7 |
| 32. | 213-338 | 1 | TEMP SWITCH | |

FOOTNOTES:

- REFER TO ENGINE MOUNT PAGE FOR SERVICE PARTS.
- REPLACEMENT PARTS FOR REF. 21 & 22 TO INCLUDE REF. 27 & 28
- EPA TIER 1 ENGINE ENDS WITH S/N 2Y1290.
- EPA TIER 2 ENGINE BEGINS WITH S/N 2Y1471.
- EPA TIER 2 ENGINE ENDS WITH S/N CMWJT520L80000181
- EPA TIER 3 ENGINE BEGINS WITH S/N CMWJT520L80000182
- REMOVE 21 MM FAN SPACER (194-561) AND REPLACE IT WITH 50 MM FAN SPACER (194-100) FOUND IN 190-1262 KIT

NOTE:

REMOTE OIL FILTER



REMOTE OIL FILTER

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|----------------|
| 1 | 502-161 | 1 | REMOTE HEAD | |
| 2 | 194-881 | 1 | OIL FILTER | |
| 3 | 154-420 | 2 | CONNECTOR (08N-06090) | |
| 4 | 153-315 | 1 | HOSE (060FX90S-36"-3000) | |
| 5 | 153-315 | 1 | HOSE (060FX90S-36"-3000) | |
| 6 | 195-1153 | 1 | CONNECTOR, REMOTE OIL FILTER | SEE FOOTNOTE 1 |
| 7 | 150-1936 | 1 | CONNECTOR (M16-1.50-060) | |
| 8 | 300-4842 | 1 | REMOTE FILTER MOUNT | |
| 9 | 106-386 | 2 | FLG LOCKNUT (M8-1.25) | |
| 10 | 106-380 | 2 | FLG LK SCREW (M8-1.25 X 16MM) | |
| 11 | 106-162 | 2 | FLG SCREW (M8-1.25 X 20MM, GD8) | |
| 12 | 502-165 | 1 | COLLAR | |
| 13 | 500-1254 | 1 | CONNECTOR I | |
| 14 | 502-166 | 1 | O-RING | |
| 15 | 502-162 | 1 | BASE (OIL FILTER) | |
| 16 | 110-248 | 2 | CABLE TIE (1/16" TO 1/4") | |

NOT SHOWN:

FOOTNOTES:

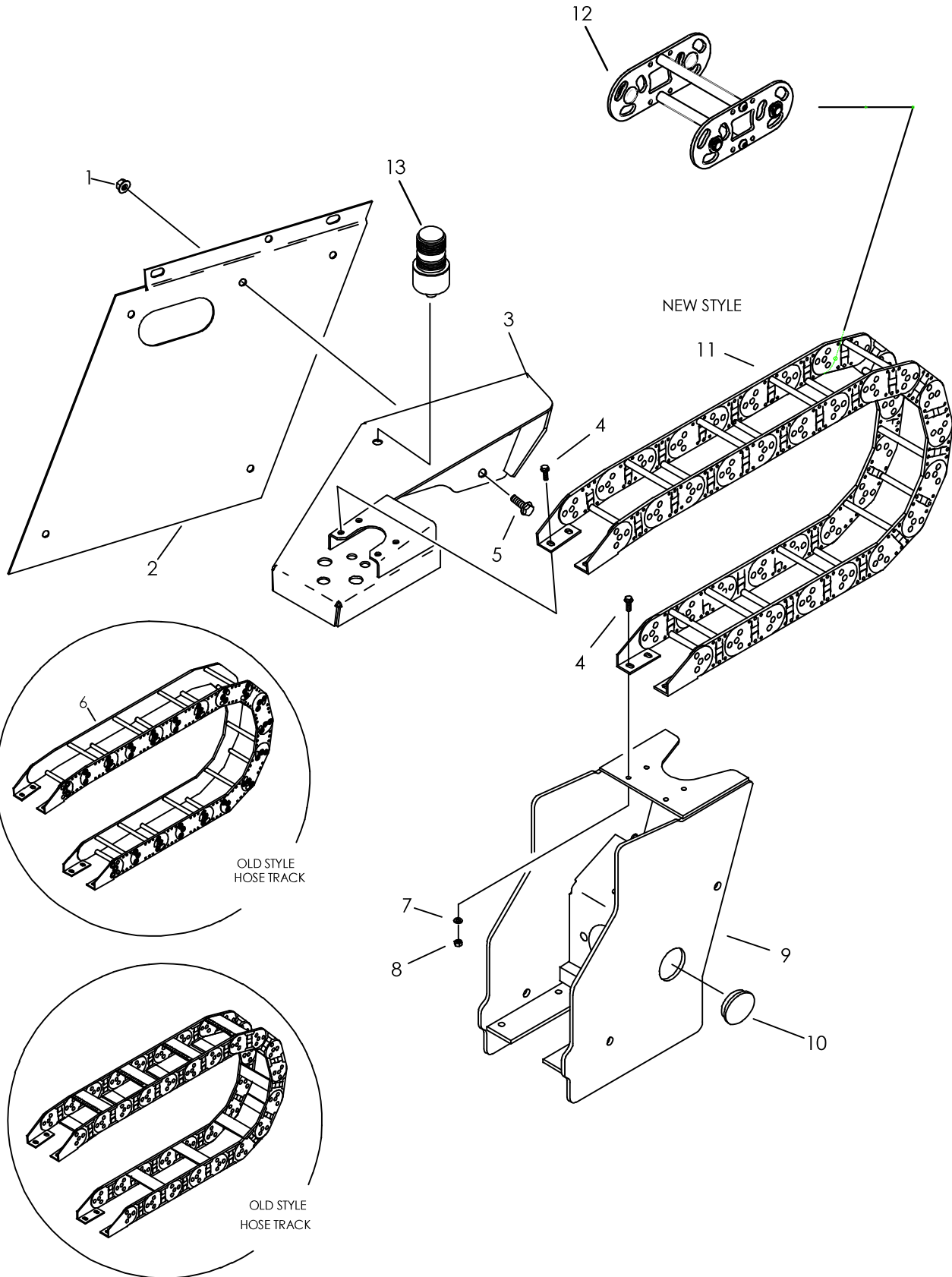
- I. REMOVE STANDARD KUBOTA FITTING AND REPLACE WITH REF #6, 195-1153.

NOTE:

FRAME COMPONENTS

HOSE TRACK

END WITH S/N: 2V2594



HOSE TRACK

END WITH S/N: 2V2594

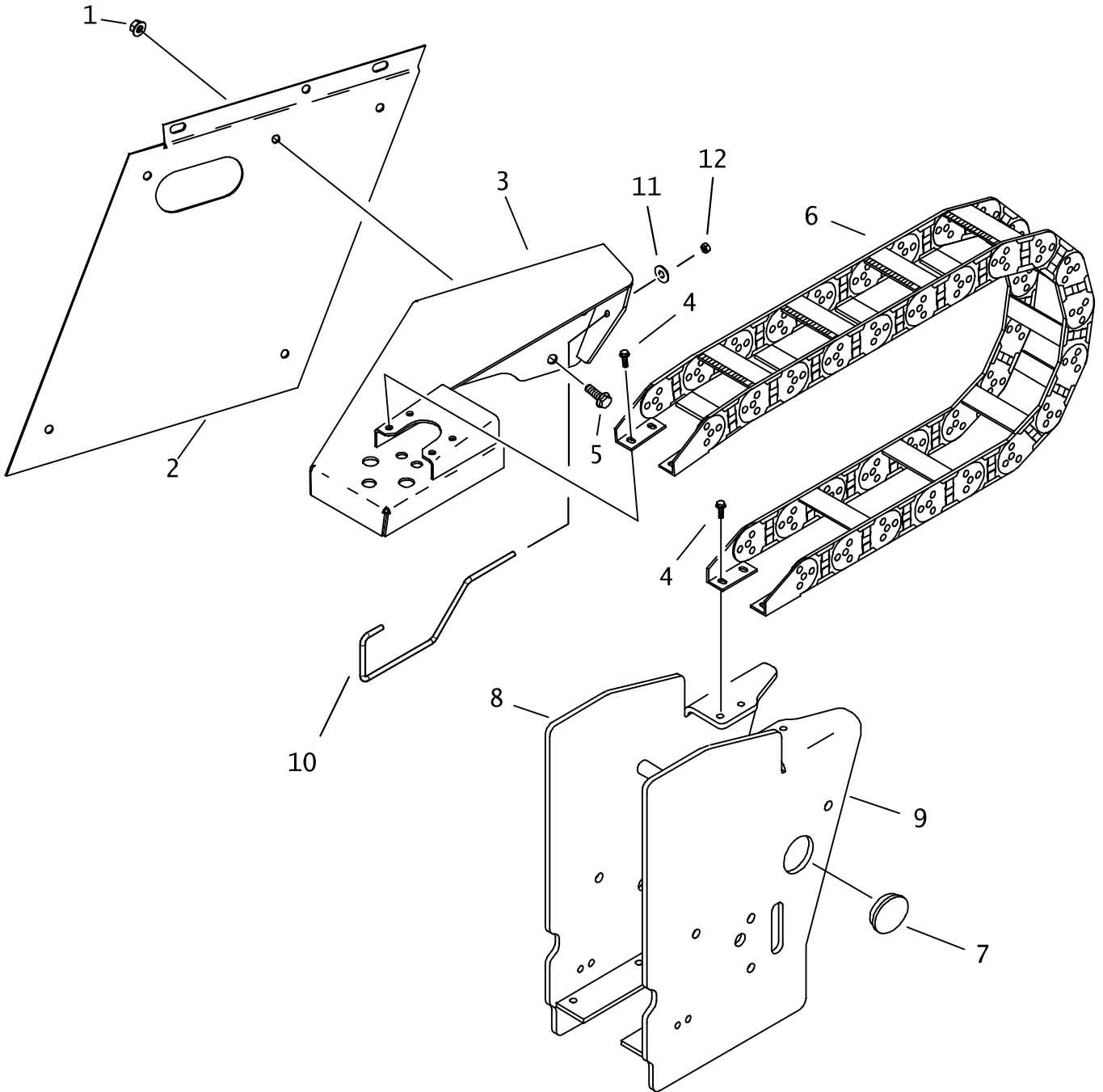
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|--|
| 1. | 106-387 | 4 | FLG LOCKNUT (M10-1.50) | |
| 2. | 302-773 | - | UPPER LEFT COVER | |
| 3. | 303-289 | 1 | BULKHEAD BRACKET | |
| 4. | 106-712 | 8 | FLG SCREW (M6-1.00 X 16MM) | |
| 5. | 107-001 | 4 | FLG LK SCREW (M10-1.50 X 25MM) | |
| 6. | 149-198 | - | HOSE TRACK (4" X 54") | SUPERSEDED BY REF. # 11 |
| | 303-973 | - | REPAIR SECTION (4" X 12") | |
| | 303-974 | - | ALUMINUM RND BAR (3/8" X 4") | |
| | 303-975 | - | ALUMINUM RND BAR (3/8" X 4.156") | |
| | 303-976 | - | MOUNT BRACKET (LH) | |
| | 303-977 | - | MOUNT BRACKET (RH) | |
| 7. | 105-284 | 4 | WASHER (3/16") | |
| 8. | 106-538 | 4 | LOCKNUT (M6-1.00,PRV TRQ.10.9) | |
| 9. | 302-665 | - | CARRIAGE | |
| 10. | 111-067 | 2 | EXPANSION PLUG (2.125") | |
| 11. | 149-573 | 1 | HOSE CARRIER | |
| | 308-918 | - | REPAIR SECTION (4" X 15") | INCLUDES 15" HOSE CARRIER SECTION AND HARDWARE |
| | 178-519 | - | MOLDED BAR | SUPERSEDED BY REF. # 12 |
| 12. | 500-1100 | 1 | INNER LINK KIT | BEGINS WITH S/N: 2V2659 |
| 13. | 217-297 | 1 | STROBE LIGHT-GREEN MEDIUM PROFILE | BEGINS WITH S/N: 2V2659 |

NOT SHOWN:

FOOTNOTES:

NOTE:

HOSE TRACK



HOSE TRACK

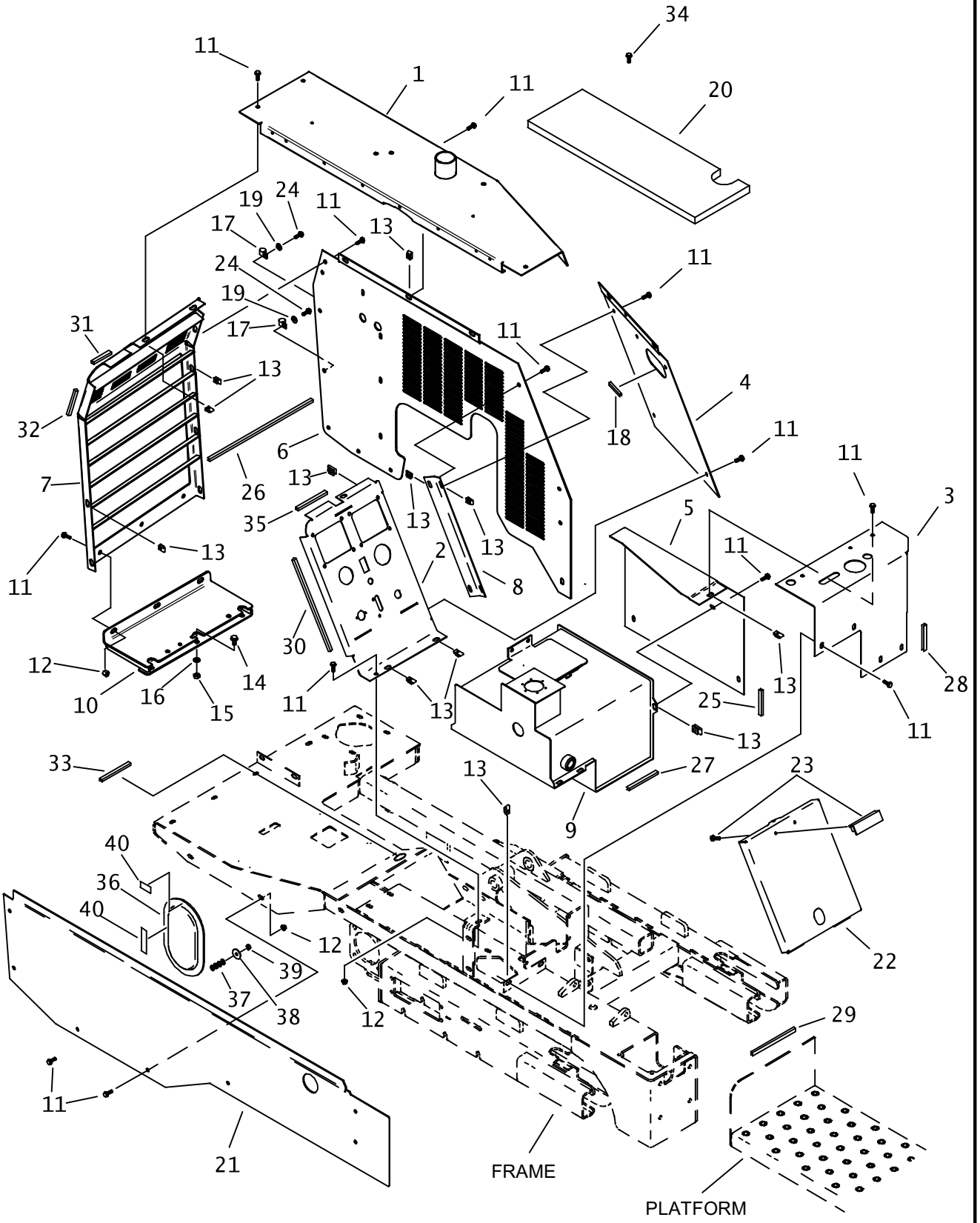
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|--|
| 1. | 106-387 | 4 | FLG LOCKNUT (M10-1.50) | |
| 2. | 302-773 | - | UPPER LEFT COVER | |
| 3. | 303-289 | 1 | BULKHEAD BRACKET | |
| 4. | 106-161 | 8 | FLG SCREW (M6-1.00 X 20MM) | |
| 5. | 107-001 | 4 | FLG LK SCREW (M10-1.50 X 25MM) | |
| 6. | 118-253 | 1 | HOSE CARRIER | INCLUDES 15" HOSE CARRIER SECTION AND HARDWARE |
| | 308-918 | - | REPAIR SECTION (4" X 15") | |
| | 178-519 | - | MOLDED BAR | |
| 7. | 111-067 | 2 | EXPANSION PLUG (2.125") | |
| 8. | 314-425 | - | CARRIAGE | |
| 9. | 313-997 | - | CARRIAGE | |
| 10. | 118-409 | 1 | RETAINER ROD | |
| 11. | 105-095 | 1 | FLAT WASHER | |
| 12. | 107-770 | 1 | NYLOK NUT | |

NOT SHOWN:

FOOTNOTES:

NOTE:

COVERS



COVERS

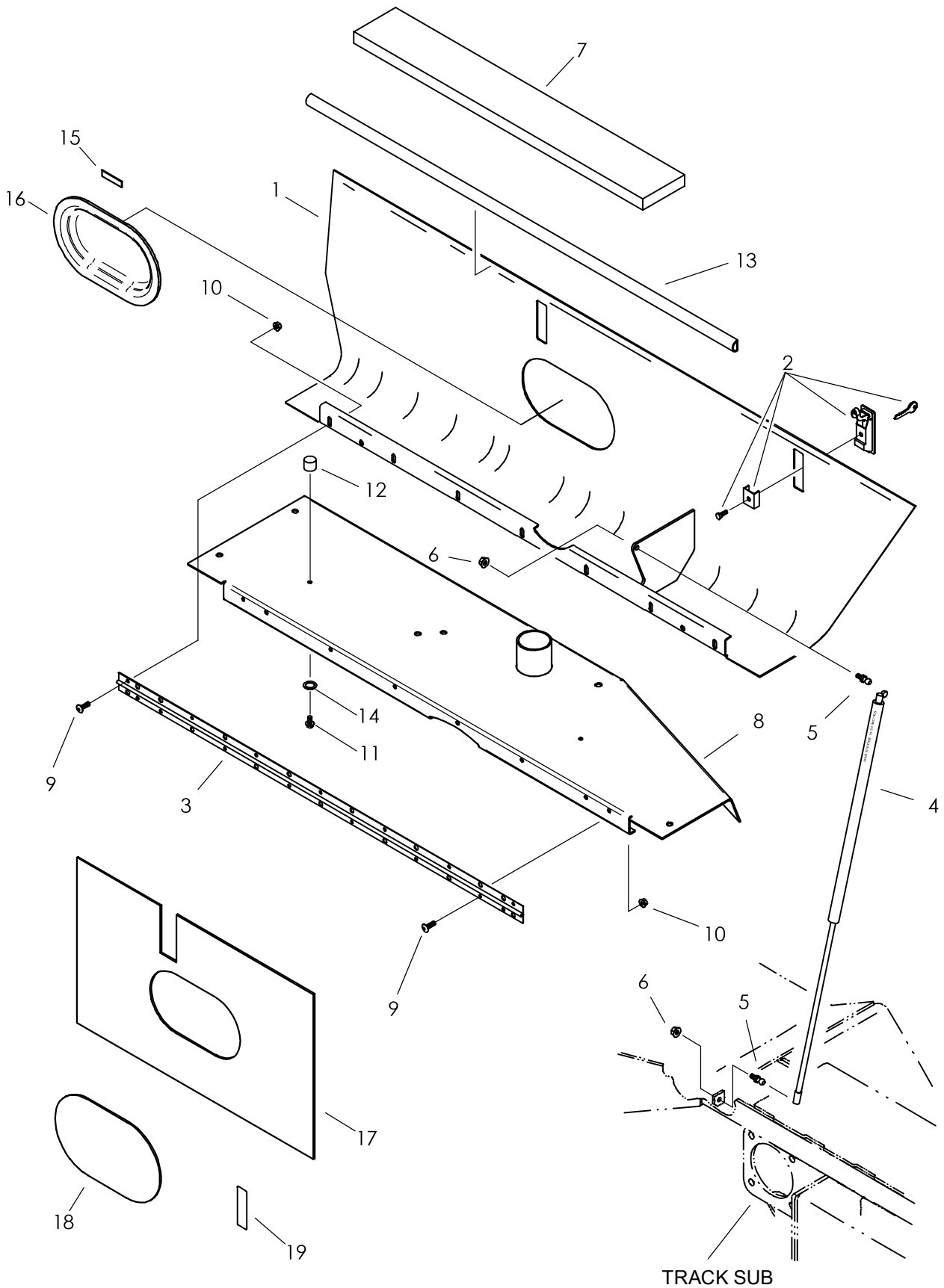
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|---------------------|
| 1. | 303-275 | 1 | TOP COVER | SEE FOOTNOTE 1 |
| | 300-4041 | 1 | TOP COVER | SEE FOOTNOTE 2 |
| 2. | 302-771 | 1 | UPPER FRONT COVER | |
| 3. | 302-772 | 1 | LOWER FRONT COVER | |
| 4. | 302-773 | 1 | UPPER LEFT COVER | |
| 5. | 302-774 | 1 | LOWER LEFT COVER | |
| 6. | 302-775 | 1 | LEFT COVER FRAME | SEE FOOTNOTE 1 |
| | 300-4146 | 1 | LEFT COVER FRAME | SEE FOOTNOTE 2 |
| 7. | 302-887 | 1 | GRILLE | SEE FOOTNOTE 1 |
| | 300-3792 | 1 | GRILLE | SEE FOOTNOTE 2 |
| 8. | 302-787 | 1 | PLATE | |
| 9. | 302-831 | - | HYDRAULIC RESERVOIR | |
| 10. | 302-758 | - | RADIATOR/OIL COOLER MOUNT | SEE FOOTNOTE 1 |
| | 300-3752 | - | RADIATOR/OIL COOLER MOUNT | SEE FOOTNOTE 2 |
| 11. | 106-991 | 38 | FLG LK SCREW (M8-1.25 X 20mm) | |
| 12. | 106-386 | 7 | FLG LOCKNUT (M8-1.25) | |
| 13. | 106-551 | 34 | CLIP NUT (M8-1.25) | |
| 14. | 106-724 | 3 | FLG SCREW (M10-1.50 X 25mm) | |
| 15. | 105-894 | 3 | LOCKNUT (M10-1.5, PRV TRQ, 10.9) | |
| 16. | 106-396 | 3 | WASHER (M10, HARDENED) | |
| 17. | 110-259 | 2 | BOLT-ON CLAMP (.625") | |
| 18. | 115-686 | AR | BULK EDGE (5/32", SOLD PER 1") | USE 1 @ 13" |
| 19. | 105-117 | 2 | WASHER (5/16") | |
| 20. | 117-239 | 1 | TOP COVER INSULATION | SEE FOOTNOTE 1 |
| | 362-1144 | 1 | SOUND INSULATION | SEE FOOTNOTE 2 |
| 21. | 302-885 | 1 | LOWER COVER | SEE FOOTNOTE 1 |
| | 300-4996 | 1 | LOWER COVER | SEE FOOTNOTE 2 |
| 22. | 302-930 | 1 | CONSOLE COVER | |
| 23. | 110-503 | 1 | PULL HANDLE | |
| 24. | 106-992 | 2 | FLG LK SCREW (M8-1.25 X 25mm) | |
| 25. | 116-259 | AR | BULK EDGE (1/2", SOLD PER 1') | USE 1 @ 2.5" |
| 26. | 116-421 | AR | BULK EDGE (1/8", SOLD PER 1') | USE 1 @ 17" |
| 27. | 115-686 | AR | BULK EDGE (5/32", SOLD PER 1") | USE 1 @ 4" |
| 28. | 115-686 | AR | BULK EDGE (5/32", SOLD PER 1") | USE 1 @ 2.5" |
| 29. | 115-686 | AR | BULK EDGE (5/32", SOLD PER 1") | USE 1 @ 6" |
| 30. | 116-724 | AR | BULK SEAL (3/32", SOLD PER 1') | USE 1 @ 15.75" |
| 31. | 116-724 | AR | BULK SEAL (3/32", SOLD PER 1') | USE 1 @ 3" |
| 32. | 116-724 | AR | BULK SEAL (3/32", SOLD PER 1') | USE 1 @ 5.5" |
| 33. | 115-663 | AR | GROMMET EDGE (1/4" X 12.7") | USE 1 @ .500 |
| 34. | 107-950 | 6 | INSULATION STUD | |
| 35. | 116-724 | AR | BULK SEAL (3/32", SOLD PER 1') | USE 1 @ 4" |
| 36. | 111-066 | 1 | SLOT PLUG (2.438" X 4.000") | |
| 37. | 105-881 | AR | WASHER (5/16") | |
| 38. | 105-117 | 2 | WASHER (5/16") | |
| 39. | 106-078 | 2 | NUT (M8-1.25) | |
| 40. | 111-075 | AR | MAGNET (SOLD PER 1') | USE 2 @ 5" & 1 @ 2" |

FOOTNOTES:

1. ENDS WITH S/N _____
2. BEGINS WITH S/N _____

NOTE:

DOOR



TRACK SUB

DOOR

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|--------------------------------|-----------------------------------|
| 1. | 302-777 | 1 | DOOR | SEE FOOTNOTE 1 |
| | 300-4044 | 1 | DOOR | SEE FOOTNOTE 2 |
| 2. | 117-558 | 2 | ADJUST LEVER LATCH (LOCKING) | |
| | 214-961 | | KEY, PAIR (BASE CODE) | |
| | 217-309 | | LOCK PLUG 4/LATCH (BASE CODE) | |
| | <u>110-757</u> | 2 | LEVER LATCH | ADJUSTABLE LOCKING; INCLUDES KEYS |
| | 110-596 | | KEYS (PAIR) | |
| 3. | 303-350 | 1 | HINGE | |
| 4. | 111-057 | 1 | STRUT (40 LB) | |
| 5. | 110-727 | 2 | BALL SCREW (5/16-NC X 1/2") | |
| 6. | 105-003 | 2 | FLG LOCKNUT (5/16-NC) | |
| 7. | 117-240 | 1 | DOOR INSULATION | |
| 8. | 303-275 | - | TOP COVER | SEE FOOTNOTE 1 |
| | 300-4041 | - | TOP COVER | SEE FOOTNOTE 2 |
| 9. | 106-103 | 15 | BOLT (1/4-NC X 1/2", BUT SOC) | |
| 10. | 105-085 | 15 | LOCKNUT (1/4-NC) | |
| 11. | 106-224 | 2 | FLG SCREW (M6-1.00 X 10mm) | |
| 12. | 116-853 | 2 | BUFFER (M6-1.00) | |
| 13. | 116-724 | AR | BULK SEAL (3/32", SOLD PER 1') | USE I @ 59" |
| 14. | 105-284 | 2 | WASHER (3/16") | |
| 15. | 118-184 | AR | VHB TAPE (.50") | USE I @ 25" |
| 16. | 362-1229 | 1 | FILLER PLUG | |
| 17. | 362-1245 | 1 | HEAT INSULATION | SEE FOOTNOTE 2 |
| 18. | 362-1246 | 1 | HEAT INSULATION | SEE FOOTNOTE 2 |
| 19. | 118-187 | AR | FOIL TAPE (HI TEMP ALUM) 2" WD | USE I10", SEE FOOTNOTE 2 |

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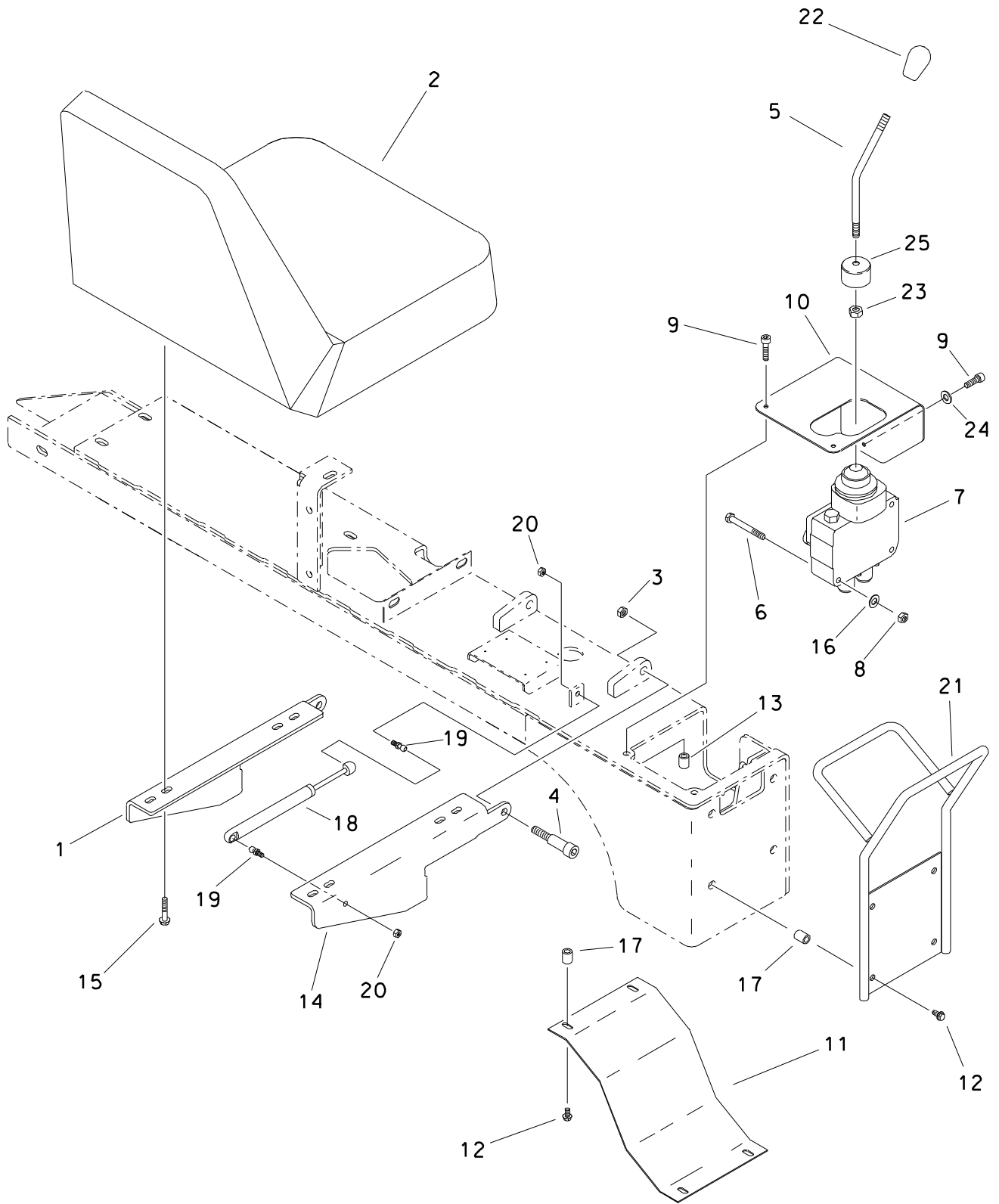
FOOTNOTES:

1. ENDS WITH S/N _____
2. BEGINS WITH S/N _____

NOTE:

OPERATOR'S STATION

SEAT MOUNT



SEAT MOUNT

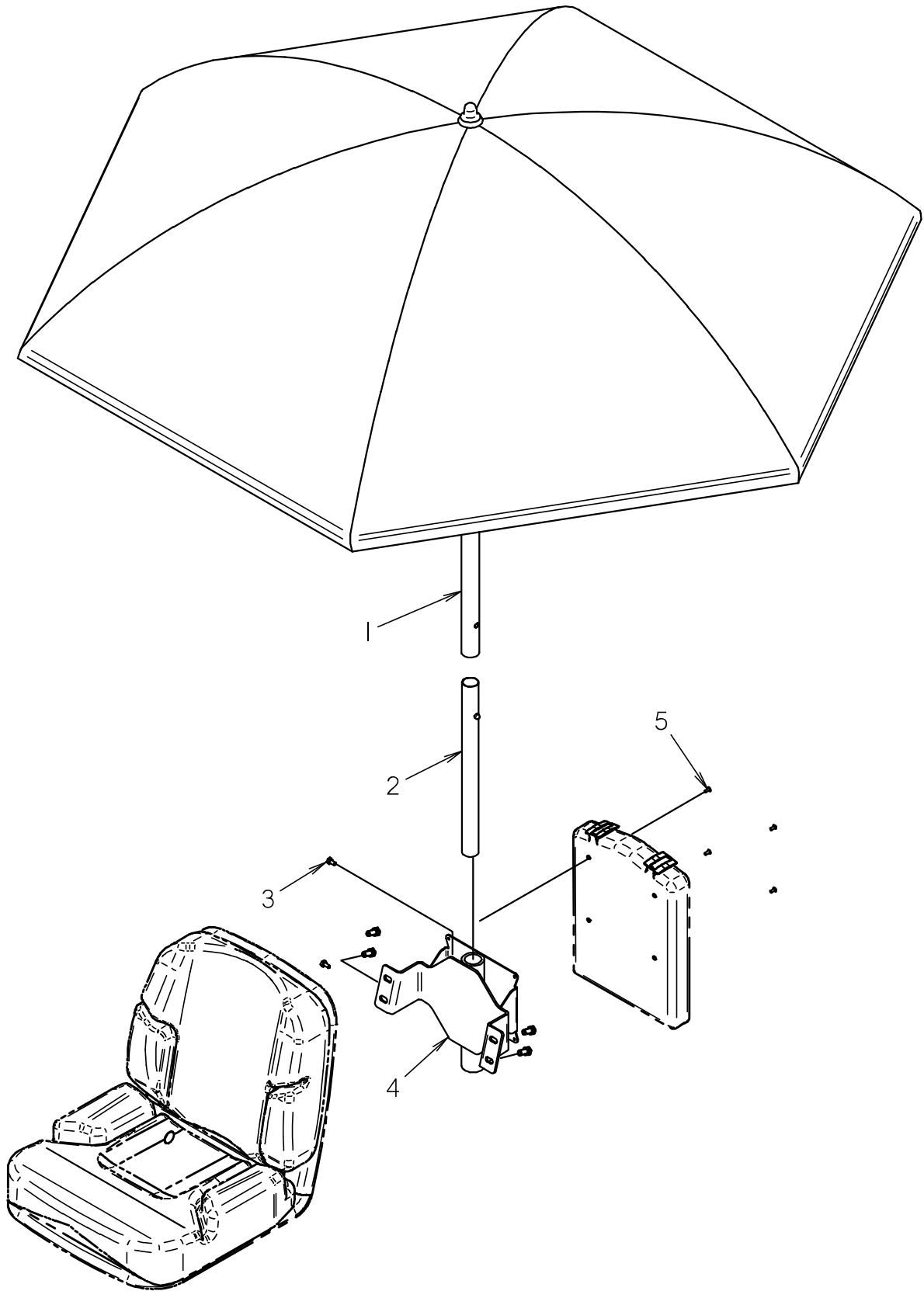
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|---------|
| 1. | 302-760 | 1 | LEFT SEAT MOUNT | |
| 2. | 117-230 | 1 | SEAT | |
| 3. | 105-894 | 2 | LOCKNUT(M10-1.50,PRV TRQ,10.9) | |
| 4. | 106-739 | 2 | SHLD BLT (M12 X 20MM, M10-1.50) | |
| 5. | 303-386 | 1 | HANDLE | |
| 6. | 106-330 | 3 | SCREW(M8-1.25 X 70MM) | |
| 7. | 516-107 | 1 | HYD CONTRDL VALVE | |
| | 190-736 | - | SEAL REPAIR KIT | |
| 8. | 106-561 | 3 | LOCKNUT (M8-1.25, PRV TRQ, 10.9) | |
| 9. | 106-640 | 3 | BOLT (M6-1.00 X 20MM, BUT SOC) | |
| 10. | 302-762 | 1 | VALVE COVER | |
| 11. | 302-761 | 1 | ACCESS COVER | |
| 12. | 106-381 | 8 | FLG LK SCREW (M8-1.25 X 25MM) | |
| 13. | 105-631 | 3 | NUTSERT(M6X1.0) 4.20-6.60THK | |
| 14. | 302-759 | 1 | RIGHT SEAT MOUNT | |
| 15. | 501-325 | 4 | FLG LOCK BOLT (5/16-NC X 5/8") | |
| 16. | 105-117 | 3 | WASHER (5/16") | |
| 17. | 105-633 | 8 | NUTSERT(M8X1.25) 3.80-7.90THK | |
| 18. | 105-694 | 1 | STRUT | |
| 19. | 110-655 | 2 | BALL SCREW (5/16-NC X 1/2") | |
| 20. | 105-089 | 2 | LOCKNUT (5/16-NC) | |
| 21. | 302-901 | 1 | JOYSTICK GUARD | |
| 22. | 110-022 | 1 | KNOB (1/2-NC, BLACK) | |
| 23. | 106-089 | 1 | NUT (M12-1.75, 10.9) | |
| 24. | 105-284 | 1 | WASHER (3/16") | |
| 25. | 111-077 | 1 | VINYL CAP (1.625") | |

NOT SHOWN:

190-884 - ARMREST KIT

FOOTNOTES

UMBRELLA KIT



UMBRELLA KIT

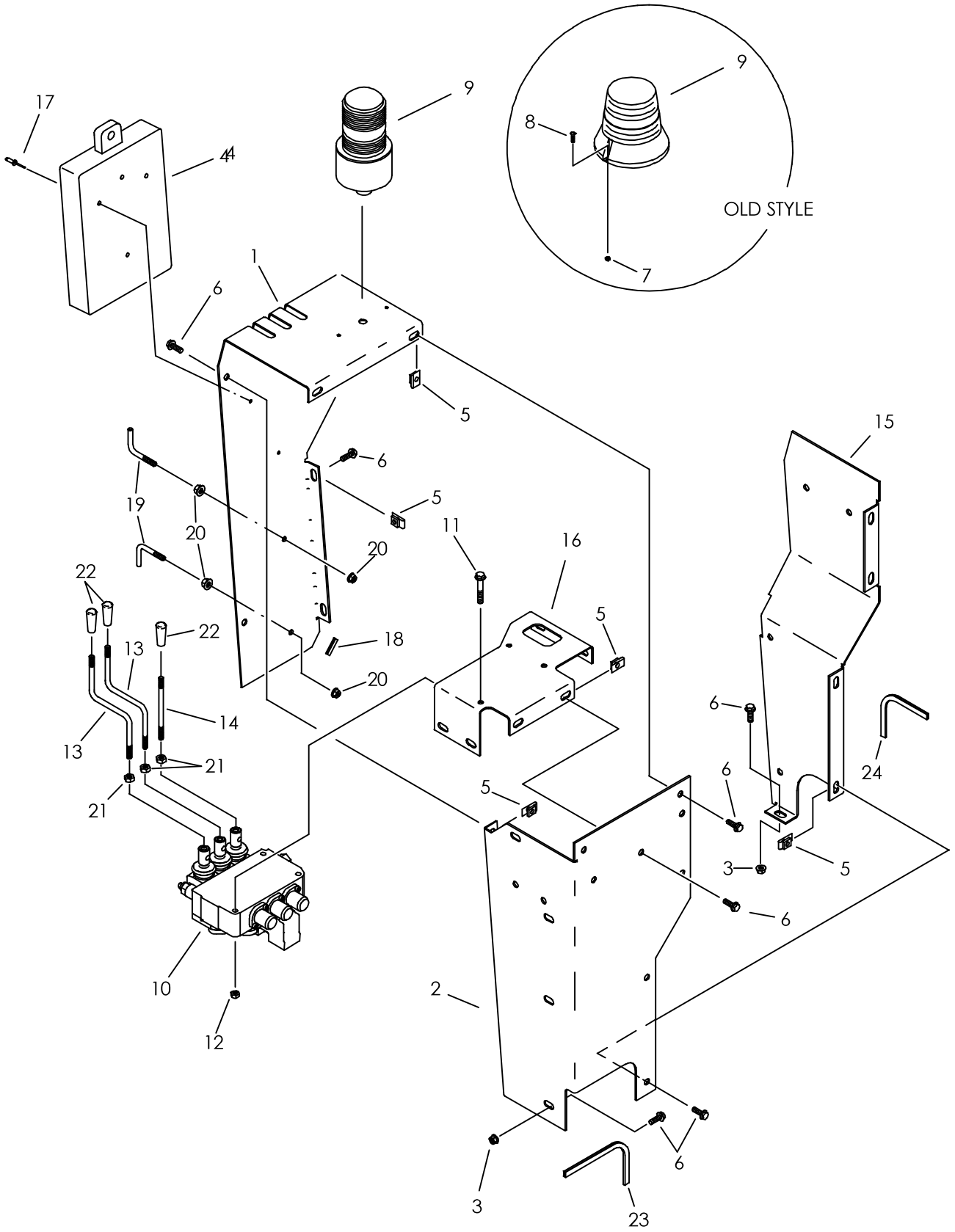
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|--------------------------------|
| | 190-1731 | | UMBRELLA KIT | INCLUDES REFERENCE NUMBERS 1-5 |
| 1 | 344-0001 | 1 | UMBRELLA | INCLUDES REFERENCE NUMBER 2 |
| 2 | 500-1962 | 1 | UMBRELLA POLE (16") | |
| 3 | 105-174 | 2 | BOLT (1/4-NC X 1/2") | |
| 4 | 301-2607 | 1 | UMBRELLA MOUNT | |
| 5 | 110-560 | 4 | POP RIVET (3/16" X 1/2", ALUM) | |

NOT SHOWN:

FOOTNOTES:

NOTE:

TOWER



TOWER

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|-------------------------|
| 1. | 302-838 | 1 | SET-UP CONSOLE COVER | |
| 2. | 302-843 | 1 | CONSOLE FRONT | |
| 3. | 106-386 | 5 | FLG LOCKNUT (M8-1.25) | |
| 4. | 250-622 | 1 | MANUAL COMPARTMENT | |
| 5. | 106-551 | 15 | CLIP NUT (M8-1.25) | |
| 6. | 106-991 | 19 | FLG LK SCREW (M8-1.25 X 20MM) | |
| 7. | 106-048 | - | LOCKNUT (#10-24) | ENDS WITH S/N: 2W0902 |
| 8. | 105-185 | - | BOLT (#10-24 X 1/2", RD SLT) | ENDS WITH S/N: 2W0902 |
| 9. | 217-108 | - | STROBE LIGHT W/AMBER LENS | ENDS WITH S/N: 2W0902 |
| | 214-576 | - | LINEAR FLASHTUBE | ENDS WITH S/N: 2W0902 |
| | 214-633 | - | AMBER DOME LENS | ENDS WITH S/N: 2W0902 |
| | 217-296 | 1 | STROBE LIGHT AMBER MED PROFILE | BEGINS WITH S/N: 2W0967 |
| | 214-991 | 1 | REPLACEMENT FLASH BULB | BEGINS WITH S/N: 2W0967 |
| | 217-302 | 1 | REPLACEMENT LENS (AMBER) | BEGINS WITH S/N: 2W0967 |
| | 217-301 | 1 | BRUSH GUARD | BEGINS WITH S/N: 2W0967 |
| 10. | 516-108 | - | HYD CONTROL VALVE | |
| | 190-734 | - | SEAL REPAIR KIT | |
| 11. | 106-570 | 3 | SCREW (M8-1.25 X 60MM) | |
| 12. | 106-386 | 3 | FLG LOCKNUT (M8-1.25) | |
| 13. | 303-619 | 2 | LEVER ROD | |
| 14. | 303-667 | 1 | ROD | |
| 15. | 302-844 | 1 | CONSOLE SIDE | |
| 16. | 302-845 | 1 | VALVE MOUNT | |
| 17. | 110-560 | 3 | POP RIVET (3/16" X 1/2", ALUM) | |
| 18. | 115-686 | AR | BULK EDGE (5/32",SOLD PER 1") | USE 1 @ 1.5" |
| 19. | 343-086 | 2 | CABLE SUPPORT | |
| 20. | 105-003 | 4 | FLG LOCKNUT (5/16-NC) | |
| 21. | 106-078 | 3 | NUT (M8-1.25) | |
| 22. | 116-906 | 3 | KNOB (5/16-NC, BLACK) | |
| 23. | 115-686 | AR | BULK EDGE (5/32",SOLD PER 1") | USE 1 @ 9" |
| 24. | 115-686 | AR | BULK EDGE (5/32",SOLD PER 1") | USE 1 @ 7.5" |

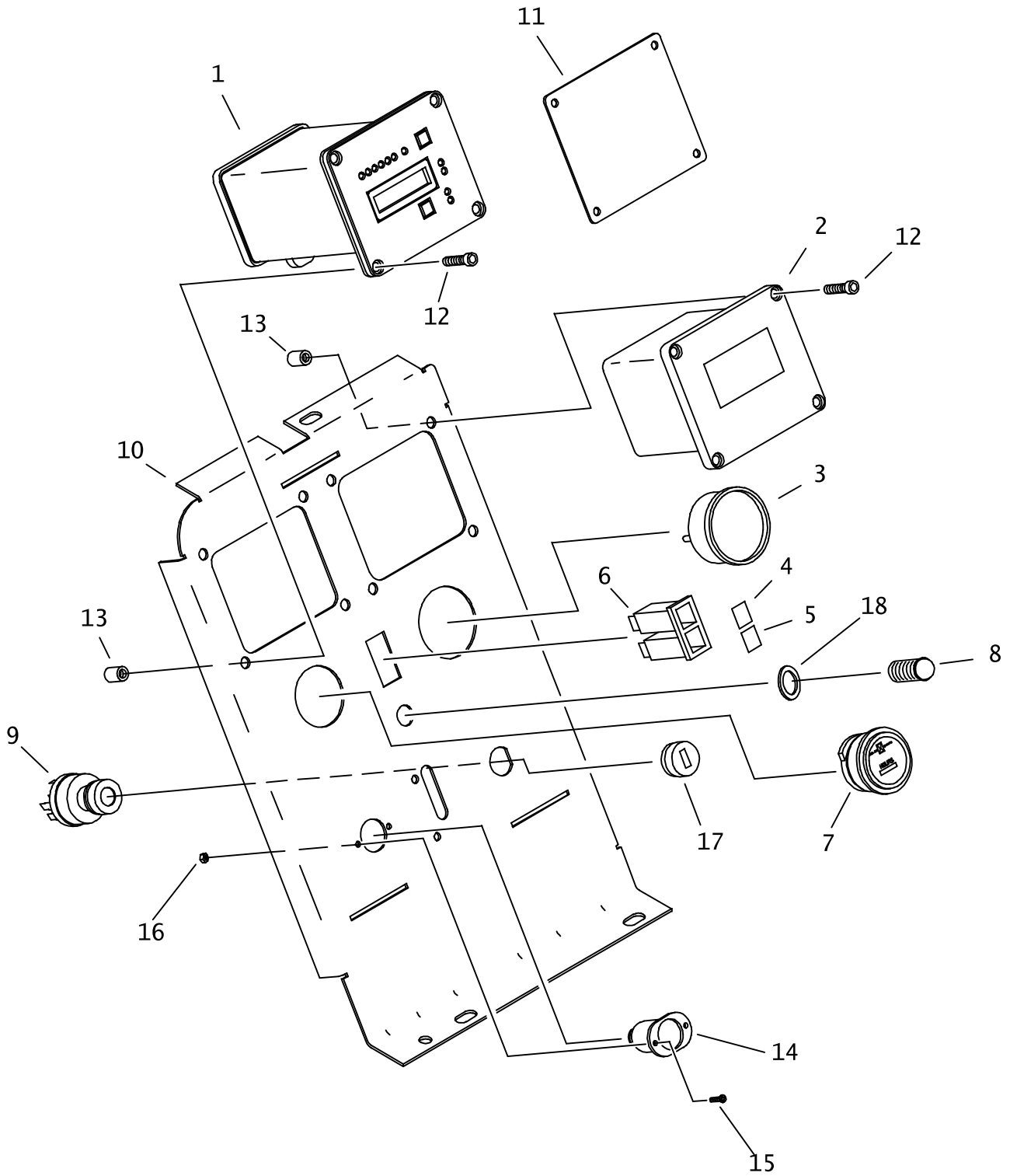
NOT SHOWN:

FOOTNOTES:

NOTE:

CONSOLE

JT520_FT5



CONSOLE

JT520_FT5

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|---|
| 1. | 220-027 | 1 | ESID MODULE | |
| 2. | N/A | 1 | SUBSITE 90D/ANTENNA | FOR REPLACEMENT CONTACT SUBSITE ELECTRONICS |
| 3. | 191-047 | 1 | GAUGE KIT | |
| 4. | 217-034 | 1 | INSERT (RED) ENG OIL TEMP | |
| 5. | 217-021 | 1 | INSERT (RED) ENG OIL PSI | |
| 6. | 217-020 | 1 | PILOT LIGHT | |
| | 217-046 | 2 | BULB (12V, DC) | |
| 7. | 215-128 | 1 | HOUR METER | |
| 8. | 217-071 | 1 | RED PILOT LIGHT | |
| | 214-563 | 1 | RED LED 12V | |
| 9. | 214-852 | 1 | IGNITION SWITCH | |
| | 214-961 | | KEY, PAIR (BASE CODE) | |
| | 214-962 | | SWITCH MOUNTING NUT | |
| 10. | 302-771 | - | UPPER FRONT COVER | |
| 11. | 348-896 | 1 | COVER PLATE | FOR UNITS WITHOUT REMOTE DISPLAY |
| 12. | 106-640 | 8 | BOLT (M6-1.00 X 20MM, BUT SOC) | |
| 13. | 105-630 | 8 | NUTSERT (M6X1.0).70-4.20THK | |
| 14. | 214-301 | 1 | ACCESSORY SOCKET | |
| 15. | 106-273 | 2 | SCREW (#6-32 X 5/8", FLT, BRASS) | |
| 16. | 105-215 | 2 | NUT (#6-32) | |
| 17. | 216-009 | 1 | COVER (13/16", NYLON) | |
| 18. | 107-767 | 1 | WASHER | |

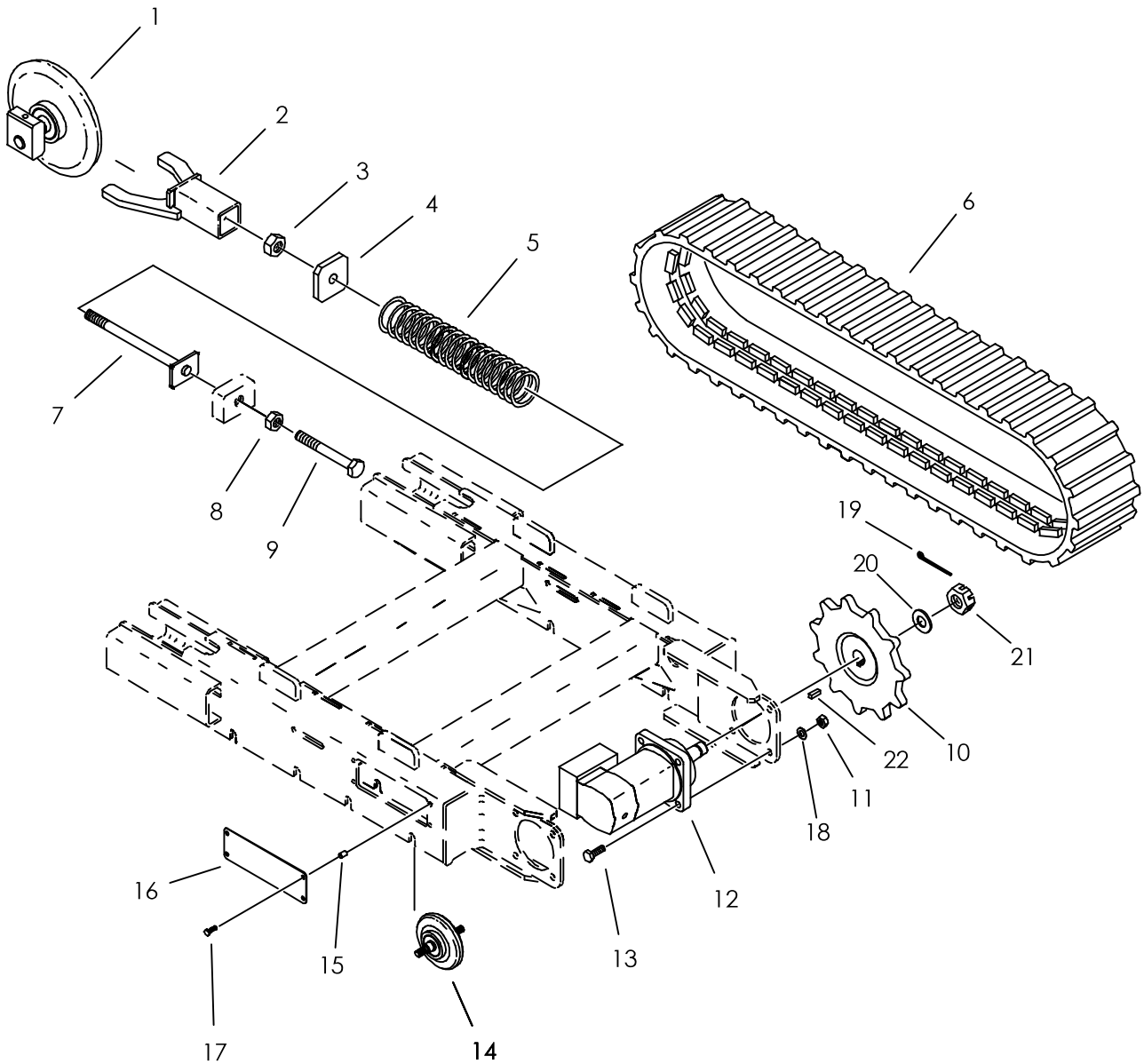
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FOOTNOTES:

NOTE:

TRACK FRAME

TRACK GROUP



TRACK GROUP

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|-------------------------------|
| 1. | 347-019 | 2 | IDLER | |
| 2. | 355-930 | 2 | YOKE | |
| 3. | 106-851 | 2 | LOCKNUT (M18-2.50) | |
| 4. | 355-926 | 2 | END PLATE | |
| 5. | 117-047 | 2 | COMPRESSION SPRING | |
| 6. | 302-644 | 2 | RUBBER TRACK (180MM, 39P, 72MM) | |
| 7. | 355-924 | 2 | SHAFT | |
| 8. | 106-374 | 2 | NUT (M20-2.50, 10.9) | |
| 9. | 106-672 | 2 | BOLT (M20-2.50 X 160MM) | USE LOCTITE 767 OR EQUIVALENT |
| 10. | 174-009 | 2 | SPROCKET (180B11) | |
| 11. | 106-685 | 8 | LOCKNUT (M12-1.75,PRV TRQ,10.9) | |
| 12. | 158-965 | 2 | HYD MOTOR W/ COUNTER BALANCE | INCLUDES REF NO.'S 21 & 22 |
| | 500-658 | AR | SEAL REPAIR KIT | |
| | 155-776 | 2 | O-RING (117-D70) | BETWEEN BLOCK AND MOTOR |
| | 500-2063 | - | COUTERBALANCE MANIFOLD | |
| 13. | 106-334 | 8 | SCREW (M12-1.75 X 50MM) | |
| 14. | 355-972 | 8 | ROLLER | |
| 15. | 105-631 | 8 | NUTSERT(M6X1.0) 4.20-6.60THK | |
| 16. | 302-707 | 2 | ADJUSTMENT COVER | |
| 17. | 106-712 | 8 | FLG SCREW (M6-1.00 X 16MM) | |
| 18. | 106-397 | 8 | WASHER (M12, HARDENED) | |
| 19. | 105-511 | 2 | COTTER PIN (1/8" X 1-1/4") | |
| 20. | 110-112 | 2 | MACHINERY BUSHING (1") | |
| 21. | 107-034 | 1 | CASTLE NUT (1-20 NEF) | |
| 22. | 165-915 | 1 | KEY (5/16" X 1") | |

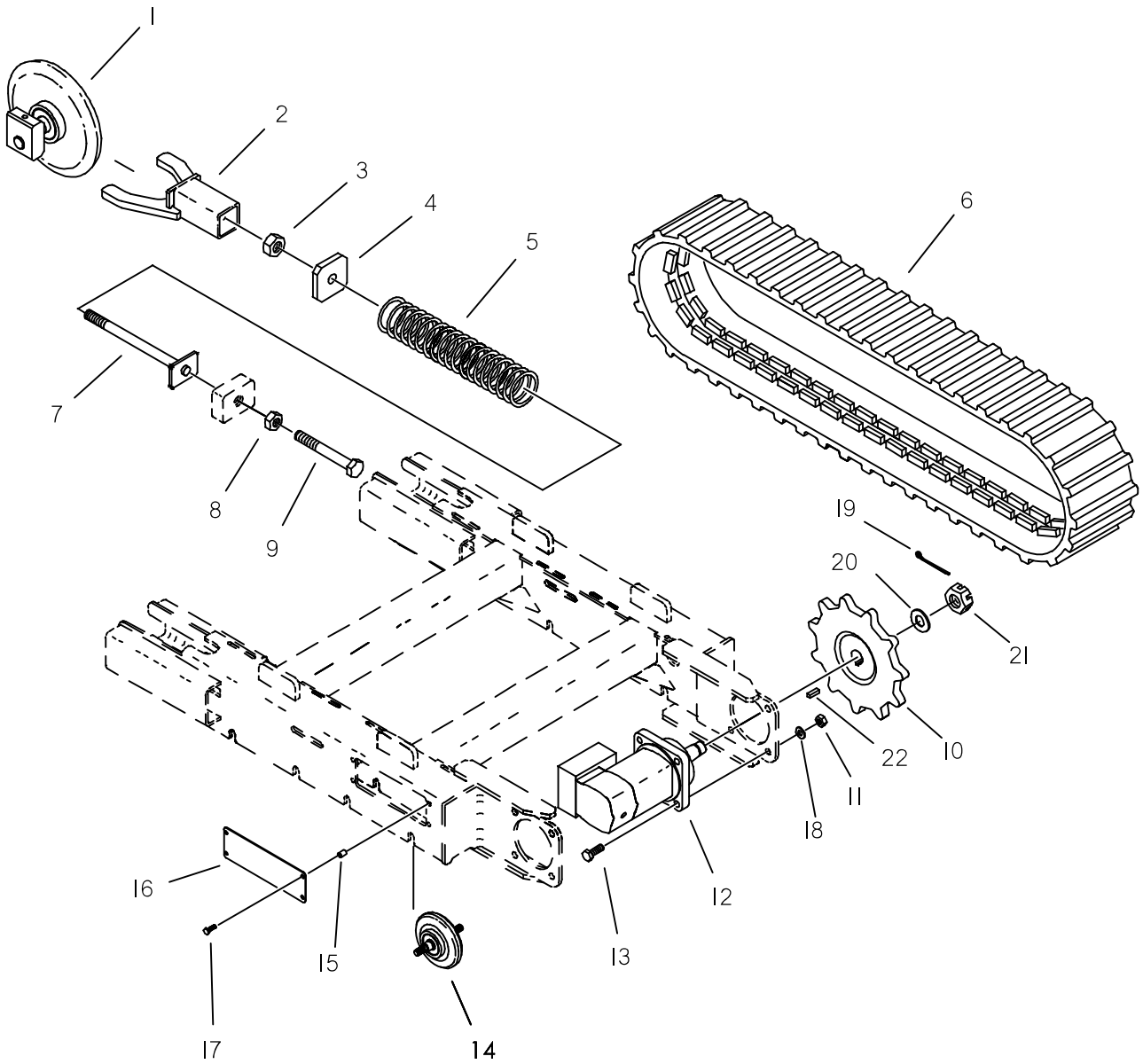
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FOOTNOTES:

NOTE:

TRACK GROUP

ENDS WITH S/N
BEGINS WITH S/N



TRACK GROUP
ENDS WITH S/N
BEGINS WITH S/N

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|-------------------------------|
| 1. | 347-019 | 2 | IDLER | |
| 2. | 355-930 | 2 | YOKE | |
| 3. | 106-851 | 2 | LOCKNUT (M18-2.50) | |
| 4. | 355-926 | 2 | END PLATE | |
| 5. | 117-047 | 2 | COMPRESSION SPRING | |
| 6. | 302-644 | 2 | RUBBER TRACK (180MM, 39P, 72MM) | |
| 7. | 355-924 | 2 | SHAFT | |
| 8. | 106-374 | 2 | NUT (M20-2.50, 10.9) | |
| 9. | 106-672 | 2 | BOLT (M20-2.50 X 160MM) | USE LOCTITE 767 OR EQUIVALENT |
| 10. | 140-1085 | 2 | SPROCKET (180B11) | SUPERCEDES 174-009 |
| 11. | 106-685 | 8 | LOCKNUT (M12-1.75, PRV TRQ, 10.9) | |
| 12. | 158-965 | 2 | HYD MOTOR W/ COUNTER BALANCE | INCLUDES REF NO.'S 21 & 22 |
| | 500-658 | AR | SEAL REPAIR KIT | |
| | 155-776 | 2 | O-RING (117-D70) | BETWEEN BLOCK AND MOTOR |
| | 500-2063 | - | COUTERBALANCE MANIFOLD | |
| 13. | 106-334 | 8 | SCREW (M12-1.75 X 50MM) | |
| 14. | 355-972 | 8 | ROLLER | |
| 15. | 105-631 | 8 | NUTSERT(M6X1.0) 4.20-6.60THK | |
| 16. | 302-707 | 2 | ADJUSTMENT COVER | |
| 17. | 106-712 | 8 | FLG SCREW (M6-1.00 X 16MM) | |
| 18. | 106-397 | 8 | WASHER (M12, HARDENED) | |
| 19. | 105-511 | 2 | COTTER PIN (1/8" X 1-1/4") | |
| 20. | 110-112 | 2 | MACHINERY BUSHING (1") | |
| 21. | 107-034 | 1 | CASTLE NUT (1-20 NEF) | |
| 22. | 165-915 | 1 | KEY (5/16" X 1") | |

NOT SHOWN:

FOOTNOTES:

NOTE:

IDLER

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|---------------------|
| 1. | 347-019 | 1 | IDLER | SEE FOOTNOTES 1 & 3 |
| 2. | 167-340 | 1 | IDLER SHAFT | |
| 3. | 125-550 | 2 | BALL BEARING (1.378") GREASABLE | |
| 4. | 115-465 | 2 | EXTERNAL SNAP RING (1.375") | |
| 5. | 105-561 | 2 | ROLL PIN (3/8" X 2-3/4") | |
| 6. | 347-023 | 2 | PUSH BLOCK | |
| 7. | 118-021 | 2 | EXTERNAL SNAP RING (1.500") | |
| 8. | 110-478 | 2 | MACHINERY BUSHING (1.585") | |
| 9. | 157-650 | 2 | INTERNAL SEAL (1.574") | |
| 10. | 115-464 | 2 | INT SNAP RING (3.149") | |
| 11. | 125-107 | 1 | BALL BEARING (1.574") | |
| 12. | 347-024 | 1 | IDLER SHAFT | |
| 13. | 375-277 | 1 | IDLER | SEE FOOTNOTE 2 |
| 14. | 115-001 | 1 | ZERK (02N) | |

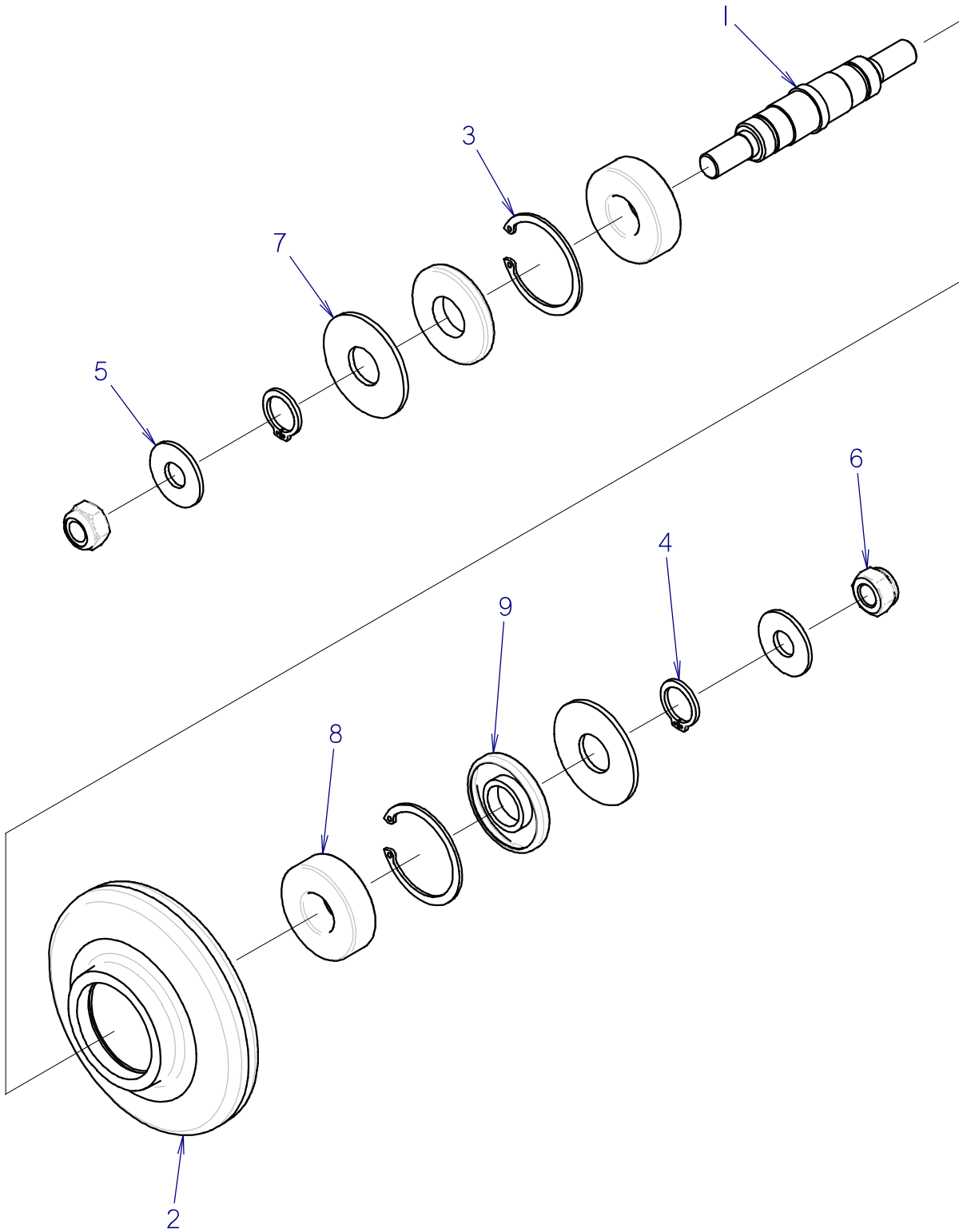
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FOOTNOTES:

NOTE:

1. REF NO'S 1 - 6 & 14, NEW STYLE (DOUBLE BEARING)
2. REF NO'S 5 - 13 OLD STYLE (SINGLE BEARING)
3. AFTER ASSEMBLY, ADD GREASE TO IDLER.

INNER ROLLER



INNER ROLLER

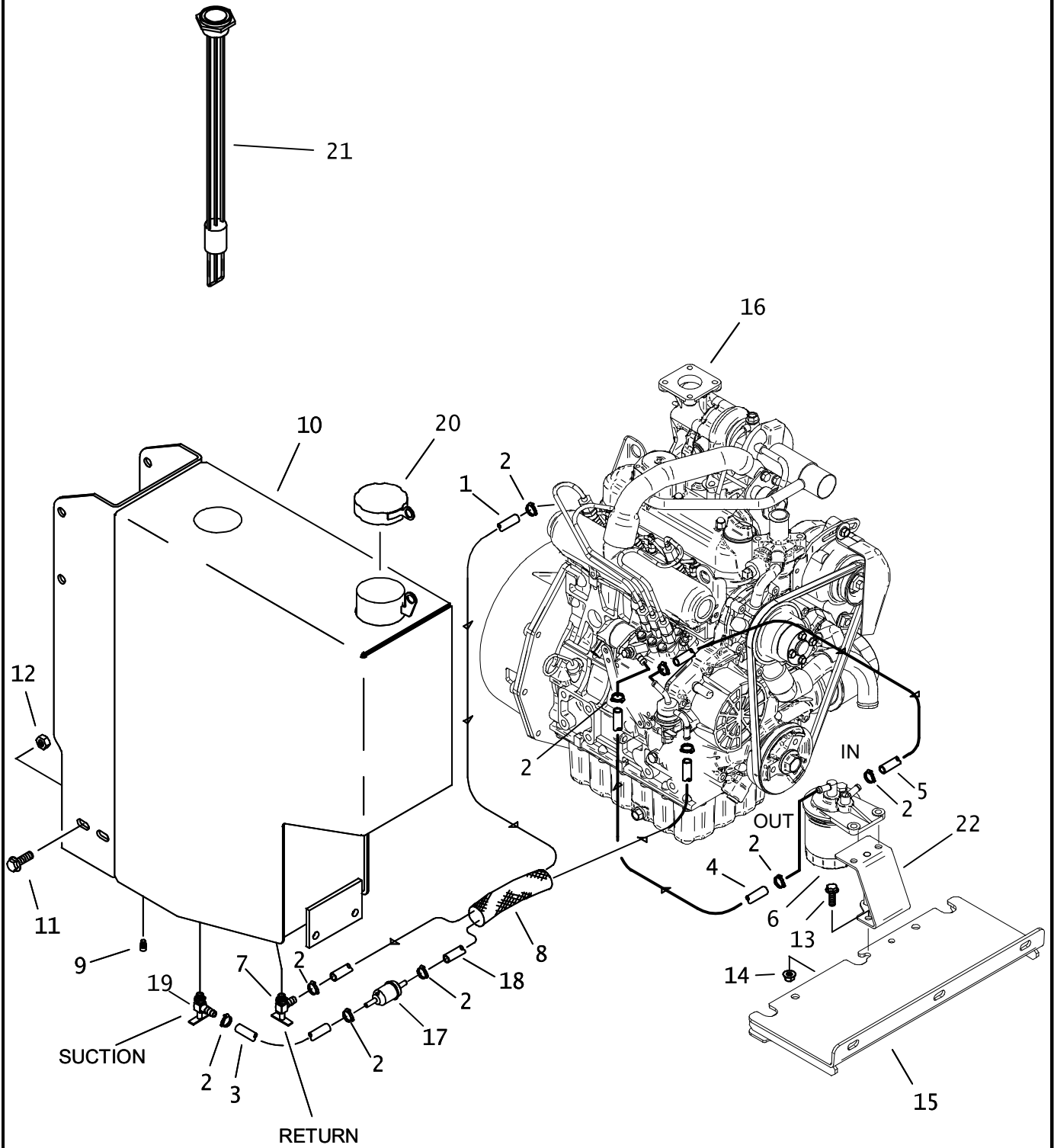
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|-------------------------|
| | 355-972 | | ROLLER | INCLUDES REF No's 1 - 9 |
| 1 | 355-942 | 1 | ROLLER SHAFT | |
| 2 | 356-265 | 1 | ROLLER | |
| 3 | 118-018 | 2 | INTERNAL SNAP RING (1.875) | |
| 4 | 115-545 | 2 | EXTERNAL SNAP RING (.750) | |
| 5 | 105-059 | 2 | WASHER (.716") | |
| 6 | 106-031 | 2 | LOCKNUT (M12-1.75, NLK) | |
| 7 | 110-773 | 2 | MACHINERY BUSHING (3/4"X18 GA) | |
| 8 | 125-094 | 2 | BALL BEARING (.787") | |
| 9 | 157-500 | 2 | INTERNAL SEAL | |

NOT SHOWN:

FOOTNOTES:

NOTE:

FUEL TANK



FUEL TANK

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|----------------------------------|
| 1. | 116-866 AR | | BULK HOSE (3/16", SOLD PER 1") | USE 1 @ 43" |
| 2. | 110-249 | 10 | WORM CLAMP (1/4" TO 5/8") | |
| 3. | 116-108 AR | | BULK HOSE (5/16", SOLD PER 1") | USE 1 @ 6" |
| 4. | 116-108 AR | | BULK HOSE (5/16", SOLD PER 1") | USE 1 @ 36" |
| 5. | 116-108 AR | | BULK HOSE (5/16", SOLD PER 1") | USE 1 @ 45" |
| 6. | 159-510 | 1 | FUEL FILTER | |
| | 194-386 | 1 | FUEL FILTER ELEMENT | |
| 7. | 156-064 | 1 | SHUT-OFF (02N-03H90) | |
| 8. | 117-672 | 1 | ABRASION SLEEVE (1.00" X 20") | |
| 9. | 115-157 | 2 | PLUG (02N, SOC) | |
| 10. | 302-799 | 1 | FUEL TANK | INCLUDE REF. 20 |
| 11. | 106-724 | 6 | FLG SCREW (M10-1.50 X 25MM) | |
| 12. | 105-894 | 4 | LOCKNUT (M10-1.50, PRV TRQ, 10.9) | |
| 13. | 106-162 | 4 | FLG SCREW (M8-1.25 X 20MM) | LOCKTITE 242 |
| 14. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | |
| 15. | 302-758 | - | RADIATOR/OIL COOLER MOUNT | SEE FOOTNOTE 2, 3, & 4 |
| | 300-3752 | - | RADIATOR/OIL COOLER MOUNT | SEE FOOTNOTE 5 |
| 16. | 194-034 | - | ENGINE, KUBOTA, 25 HP | SEE FOOTNOTE 1 AND 2 |
| | 194-541 | - | ENGINE - KUBOTA D1105 DIESEL T2 | SEE FOOTNOTE 1,3 AND 4 |
| | 195-1169 | - | ENGINE - KUBOTA D1105-T T3 | SEE FOOTNOTE 1 AND 5 |
| 17. | 194-095 | 1 | FUEL FILTER (05H-05H, IN-LINE) | SEE FOOTNOTE 2, 3, & 4 |
| | 155-941 | 1 | FUEL FILTER (05H-05H, IN-LINE) | SEE FOOTNOTE 5 |
| 18. | 116-108 AR | | BULK HOSE (5/16", SOLD PER 1") | USE 1 @ 35" |
| 19. | 156-239 | 1 | S/O SHUT-OFF (02N-05H90) | |
| 20. | 111-065 | 1 | FUEL CAP | USE BEFORE SN: CMWJT520P60000072 |
| 21. | 364-730 | 1 | FUEL GUAGE | USE 567 LOCKTITE |
| 22. | 300-3947 | 1 | FUEL FILTER MOUNT | |

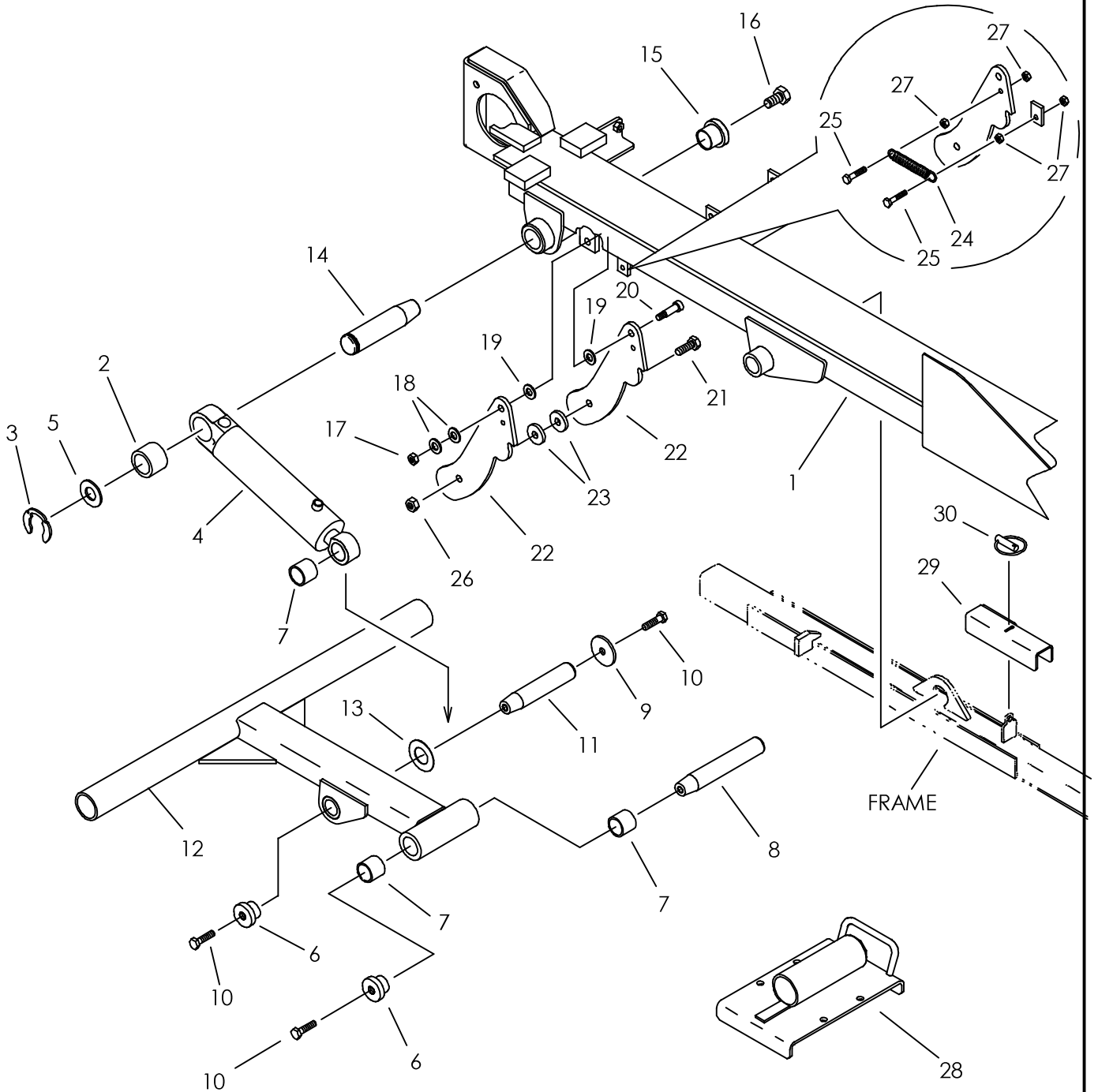
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FOOTNOTES:

1. REFER TO ENGINE MOUNT PAGE FOR SERVICE PARTS.
2. EPA TIER 1 ENGINE ENDS WITH S/N 2Y1290.
3. EPA TIER 2 ENGINE BEGINS WITH S/N 2Y1471.
4. EPA TIER 2 ENGINE ENDS WITH S/N CMWJT520L8000181.
5. EPA TIER 4 ENGINE BEGINS WITH S/N CMWJT520L8000182.

NOTE:

STABILIZER



STABILIZER

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|-------------|
| 1. | 302-710 | - | DRILL FRAME | |
| 2. | 125-772 | 1 | COMPOSITION BUSHING (1.5") | |
| 3. | 115-511 | 1 | KLIP RING (1-1/2") | |
| 4. | 151-045 | 1 | CYL (2.5" X 1.25" X 8.0") | |
| | 190-166 | - | SEAL REPAIR KIT (2.5" X 1.25") | |
| 5. | 110-220 | 1 | MACH BUSHING (1-1/2", 14GA) | |
| 6. | 181-982 | 2 | TAPERED INSERT (1.25") | |
| 7. | 125-771 | 3 | COMPOSITION BUSHING (1.25") | |
| 8. | 303-278 | 1 | TAPERED PIN (1.25" X 8.70") | |
| 9. | 105-475 | 1 | WASHER (1/2") | |
| 10. | 106-559 | 3 | SCREW (M12-1.75 X 25MM) | LOCTITE 242 |
| 11. | 302-731 | 1 | PIN | |
| 12. | 302-689 | 1 | STABILIZER | |
| 13. | 180-118 | 1 | BRASS BUSHING (1.25") | |
| 14. | 179-277 | 1 | TAPERED PIN | |
| 15. | 181-974 | 1 | TAPERED INSERT (1.5") | |
| 16. | 106-338 | 1 | SCREW (M16-2.00 X 30MM) | |
| 17. | 105-047 | 1 | LOCKNUT (3/8-NC) | |
| 18. | 105-058 | 2 | BELLEVILLE WASHER (1/2") | |
| 19. | 110-096 | 2 | MACHINERY BUSHING (1/2") | |
| 20. | 107-361 | 1 | SHLD BOLT (1/2" X 1-1/4", 3/8-NC) | |
| 21. | 106-333 | 1 | SCREW (M12-1.75 X 40MM) | |
| 22. | 303-255 | 2 | LATCH | |
| 23. | 105-398 | 2 | WASHER (1/2") | |
| 24. | 115-568 | 1 | EXTENSION SPRING | |
| 25. | 106-328 | 2 | BOLT (M8-1.25 X 40MM) | |
| 26. | 106-685 | 1 | LOCKNUT(M12-1.75, PRV TRQ, 10.9) | |
| 27. | 106-078 | 4 | NUT (M8-1.25) | |
| 28. | 305-533 | 2 | STABILIZER PAD | ACCESSORY |
| 29. | 303-381 | 1 | CYLINDER LOCK | |
| 30. | 110-228 | 1 | LYNCH PIN (7/16" X 2") | |

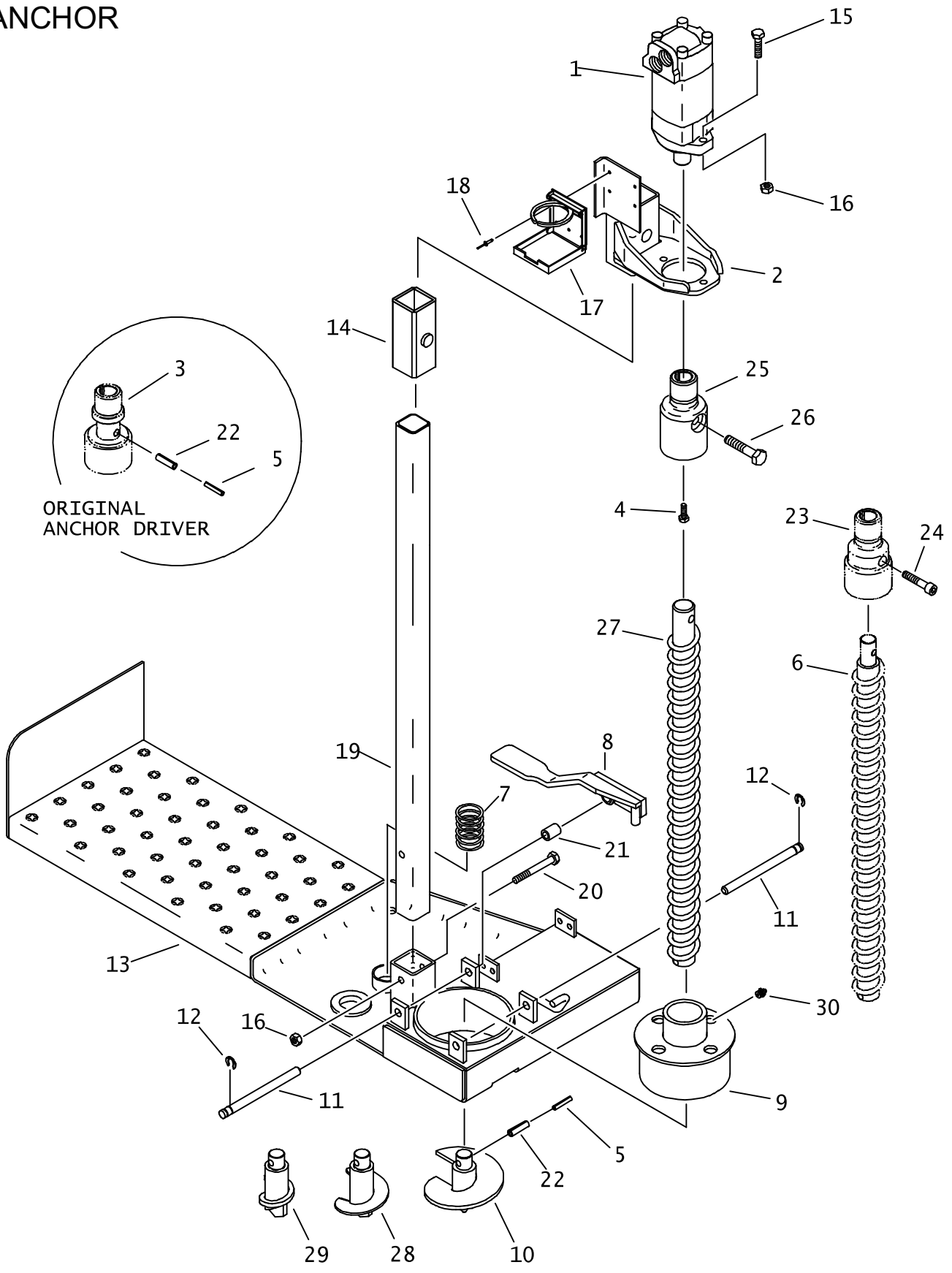
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FOOTNOTES:

NOTE:

ANCHOR SYSTEMS

ANCHOR



ANCHOR

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|---------------------|
| 1. | 158-700 | 1 | HYD MOTOR | |
| | 500-568 | - | SEAL REPAIR KIT | |
| 2. | 302-713 | 1 | MOTOR TROLLEY | |
| 3. | 302-802 | - | ANCHOR DRIVER | SEE FOOTNOTE 1 & 3 |
| 4. | 105-052 | 1 | BOLT (3/8-NC X 1-1/4") | |
| 5. | 105-670 | 1 | ROLL PIN (5/16" X 1-3/4") | |
| 6. | 305-731 | 1 | ANCHOR SHAFT | SEE FOOTNOTE 2 |
| 7. | 115-057 | 1 | SPRING | |
| 8. | 302-715 | 1 | LATCH | |
| 9. | 111-099 | 1 | CENTER CAP | |
| 10. | 302-695 | AR | AUGER (6") | |
| 11. | 302-727 | 2 | PIN | |
| 12. | 115-780 | 4 | KLIP RING (.625") | |
| 13. | 302-710 | - | DRILL FRAME | |
| 14. | 140-013 | 1 | BOOM SLEEVE | |
| 15. | 106-477 | 2 | SCREW (M12-1.75 X 45MM, 10.9) | |
| 16. | 106-685 | 4 | LOCKNUT (M12-1.75, PRV TRQ, 10.9) | |
| 17. | 354-905 | 1 | CUP HOLDER | |
| 18. | 110-560 | 4 | POP RIVET (3/16" X 1/2 ", ALUM) | |
| 19. | 302-846 | 1 | TROLLEY RAIL TUBE | |
| 20. | 106-578 | 2 | SCREW (M12-1.75 X 80MM) | |
| 21. | 125-403 | 1 | BRONZE BUSHING (.625") | |
| 22. | 105-671 | 1 | ROLL PIN (1/2" X 1-3/4") | |
| 23. | 305-920 | 1 | ANCHOR DRIVER | SEE FOOTNOTES 1 & 3 |
| 24. | 105-938 | 1 | BOLT (1/2-NC X 2-1/4", SOC) | |
| 25. | 307-750 | 1 | ANCHOR DRIVER | SEE FOOTNOTE 1 |
| 26. | 107-457 | 1 | SCREW (M16-2.00 X 75MM, 10.9) | |
| 27. | 307-751 | 1 | ANCHOR SHAFT | |
| 28. | 141-433 | AR | AUGER (4") | |
| 29. | 101-049 | AR | ANCHOR BIT | |
| 30. | 115-001 | 1 | ZERK (O2N) | |

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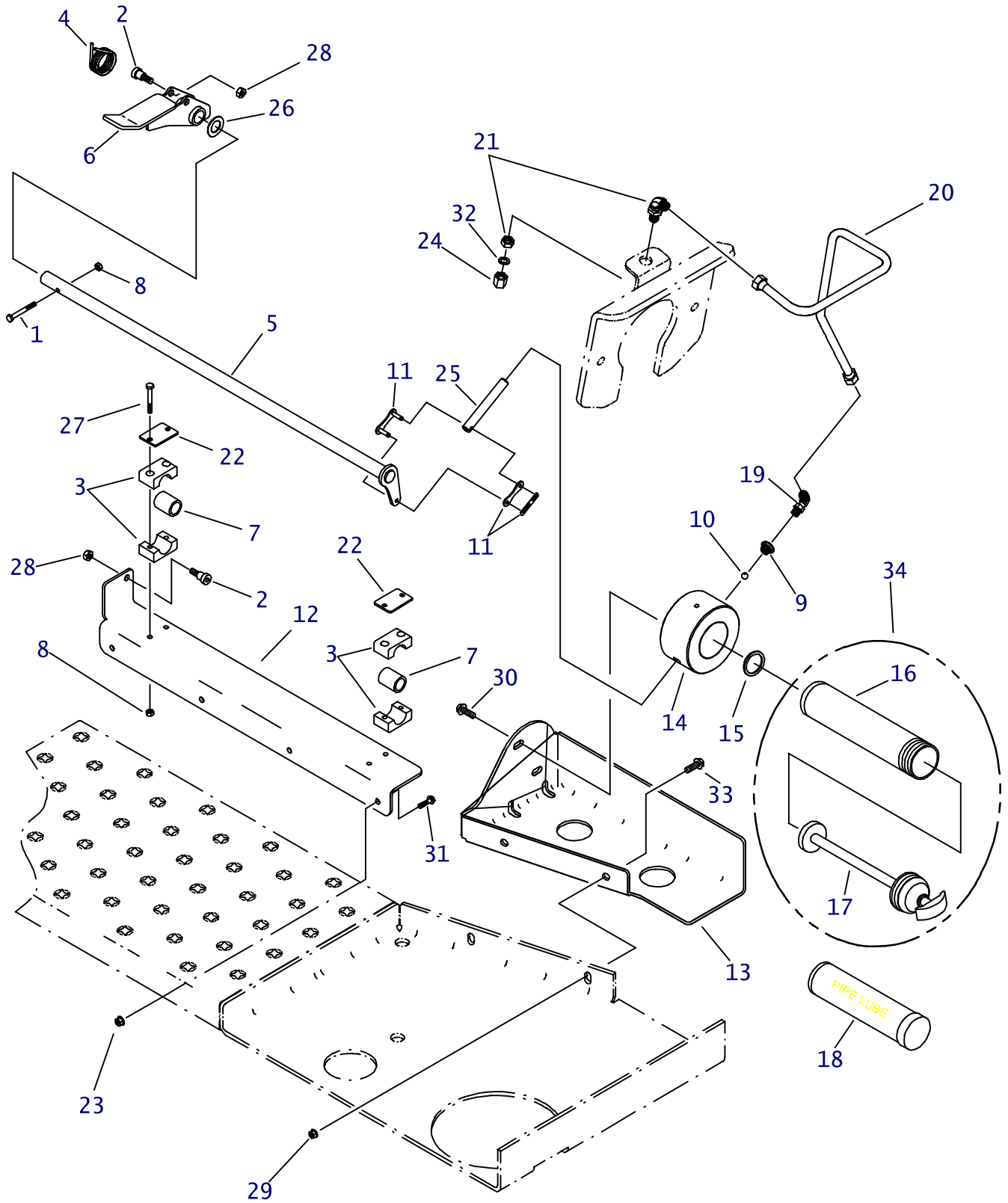
FOOTNOTES:

1. USE LOCKTITE 767 ANTI-SEIZE COMPOUND (OR EQUIVALENT) ON MOTOR AND ANCHOR SHAFTS.
2. NO LONGER AVAILABLE. REPLACEMENT SHAFT (REF 27) REQUIRES DRIVER (REF 25) AND M16 SCREW (REF 26).
3. NO LONGER AVAILABLE. REPLACEMENT DRIVER (REF 25) REQUIRES SHAFT (REF 27) AND M16 SCREW (REF 26).

NOTE:

LUBRICATOR SYSTEMS

THREAD LUBRICATOR



THREAD LUBRICATOR

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|------------------------------|
| 1. | 105-818 | 1 | BOLT (1/4-NC X 1-1/2") | |
| 2. | 106-070 | 2 | SHLD BLT (1/2" X 3/8", 3/8-NC) | |
| 3. | 110-573 | 2 | BOLT-ON CLAMP (1", SOLD PER SET) | |
| 4. | 117-257 | 1 | TORSION SPRING | |
| 5. | 303-375 | 1 | SHAFT | |
| 6. | 303-371 | 1 | PEDAL | |
| 7. | 125-301 | 2 | COMPOSITION BUSHING (.750") | |
| 8. | 105-085 | 5 | LOCKNUT (1/4-NC) | |
| 9. | 117-162 | 1 | COMPRESSION SPRING (.438") | |
| 10. | 125-136 | 1 | DETENT BALL (.187", CHROME) | |
| 11. | 130-331 | 1 | CONNECTOR LINK (1-1/4") | |
| 12. | 303-374 | 1 | FORMED MOUNT | |
| 13. | 303-379 | 1 | PUMP MOUNT | |
| 14. | 359-925 | 1 | LUBER BASE | |
| 15. | 157-716 | 1 | GREASE SEAL | |
| 16. | 359-869 | 1 | GREASE BARREL | SEE FOOTNOTE 2 |
| 17. | 359-871 | 1 | PLUNGER | SEE FOOTNOTE 2 |
| 18. | 256-663 | 1 | GREASE (14 OZ CARTRIDGE) | SUMMER GRADE, SEE FOOTNOTE 1 |
| 19. | 154-342 | 1 | CONNECTOR (06S-06090) | |
| 20. | 156-991 | 1 | GREASE LINE (060FX-060FX) | |
| 21. | 154-229 | 1 | BK CONNECTOR (060-06090BK) | |
| 22. | 322-289 | 2 | BACKUP (BOLT-ON) | |
| 23. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | |
| 24. | 149-221 | 1 | NOZZLE | |
| 25. | 359-924 | 1 | PLUNGER | |
| 26. | 110-095 | 1 | MACHINERY BUSHING (3/4", 18GA) | |
| 27. | 105-106 | 4 | BOLT (1/4-NC X 2") | |
| 28. | 105-047 | 2 | LOCKNUT (3/8-NC) | |
| 29. | 105-894 | 2 | LOCKNUT (M10-1.50, PRV TRQ, 10.9) | |
| 30. | 106-382 | 2 | FLG LK SCREW (M10-1.5 X 20MM) | |
| 31. | 106-991 | 4 | FLG SCREW (M8-1.25 X 20MM) | |
| 32. | 105-890 | 1 | SEAL WASHER (7/16") | |
| 33. | 106-724 | 2 | FLG LK SCREW (M10-1.50 X 25MM) | |
| 34. | 300-4655 | 1 | GREASE BARREL/PLUNGER ASSEMBLY | |

NOT SHOWN:

FOOTNOTES:

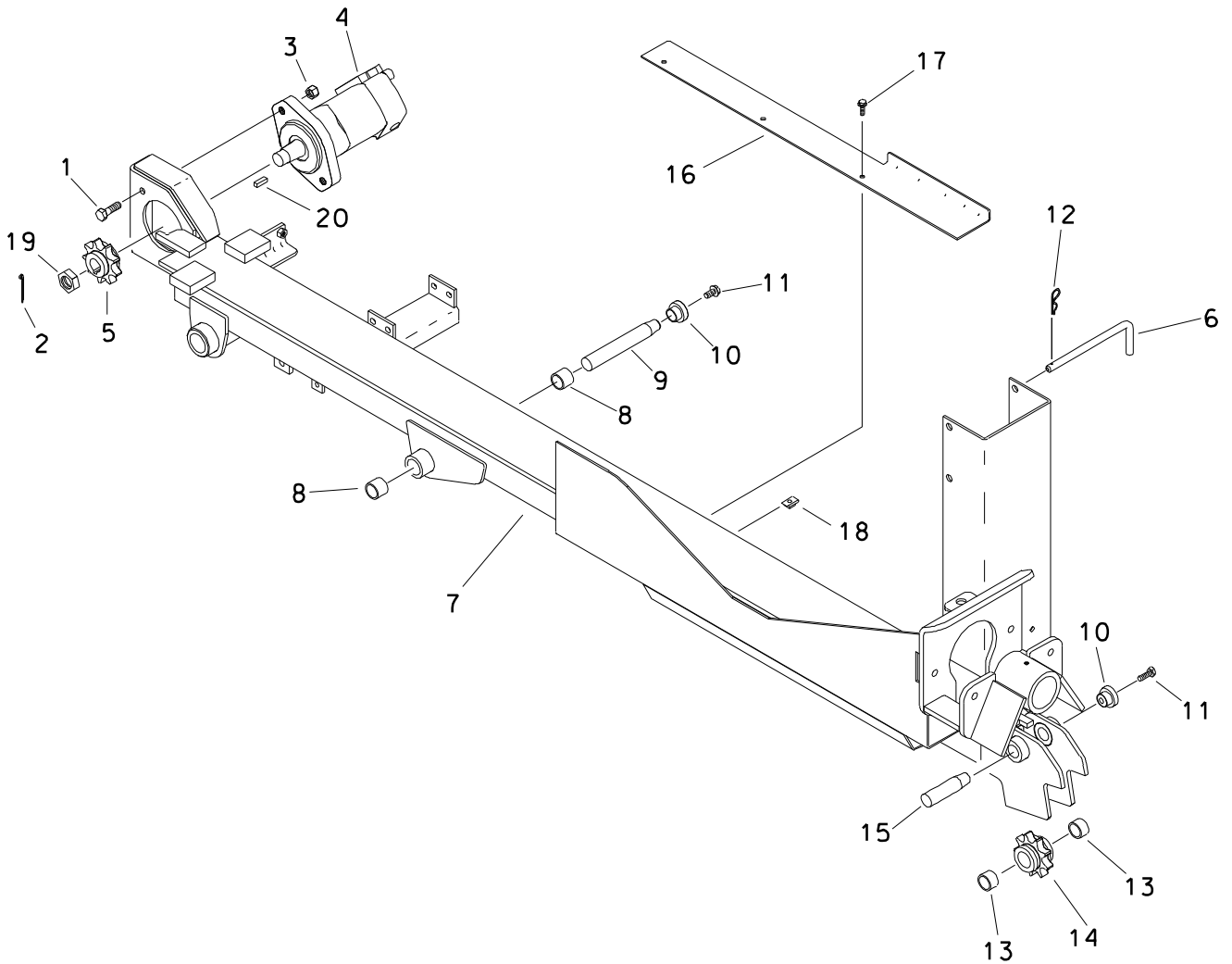
1. USE 256-026 GREASE (14OZ CART, ARCTIC GD) AS STANDARD GREASE.
2. OBSOLETE, SUPERCEED WITH 300-4655

NOTE:

REFER TO O-RING CHAR (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

DRILL FRAME

DRILL FRAME

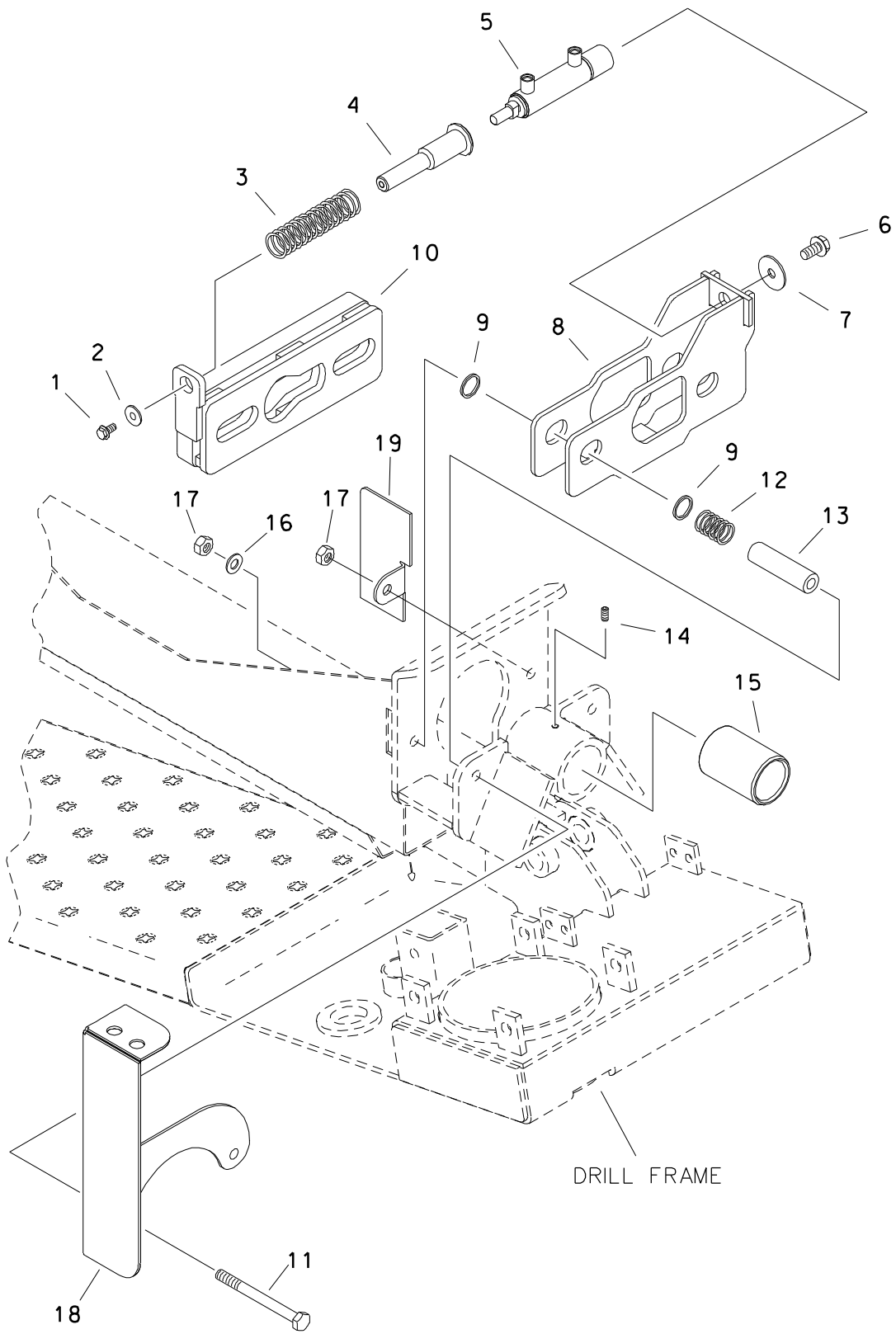


DRILL FRAME

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|--------------------------------|
| 1. | 106-547 | 2 | SCREW (M12-1.75 X 40MM,10.9) | |
| 2. | 105-511 | 1 | COTTER PIN (.125" X 1.250") | |
| 3. | 106-685 | 2 | LOCKNUT (M12-1.75,PRV TRQ,10.9) | TORQUE TO 90 FT-LBS (122 N.M) |
| 4. | 158-971 | 1 | HYDRAULIC MOTOR | INCLUDES REF NO.'S 19 & 20 |
| | 500-658 | - | SEAL REPAIR KIT | |
| 5. | 175-547 | 1 | SPROCKET (80C9) | |
| 6. | 302-757 | 2 | PIN | |
| 7. | 302-710 | 1 | DRILL FRAME | |
| 8. | 125-770 | 2 | COMPOSITION BUSHING (1") | |
| 9. | 302-735 | 1 | TAPERED PIN (1" X 7.20") | |
| 10. | 181-981 | 2 | TAPERED INSERT (1") | |
| 11. | 106-079 | 2 | SCREW (M10-1.50 X 30MM) | USE LOCKTITE 242 OR EQUIVALENT |
| 12. | 110-033 | 2 | HAIR CLIP PIN (1/8" X 1/2") | |
| 13. | 125-813 | 2 | COMPOSITION BUSHING (1") | |
| 14. | 175-548 | 1 | SPROCKET (80C9) | |
| 15. | 302-686 | 1 | TAPERED PIN (1" X 4.02") | |
| 16. | 305-493 | 1 | GUARD | |
| 17. | 106-991 | 3 | FLG LK SCREW (M8-1.25 X 20MM) | |
| 18. | 106-551 | 3 | CLIP NUT (M8-1.25) | |
| 19. | 107-034 | 1 | CASTLE NUT (1-20 NEF) | |
| 20. | 165-915 | 1 | KEY (5/16" X 1") | |

FOOTNOTES

FRONT WRENCH



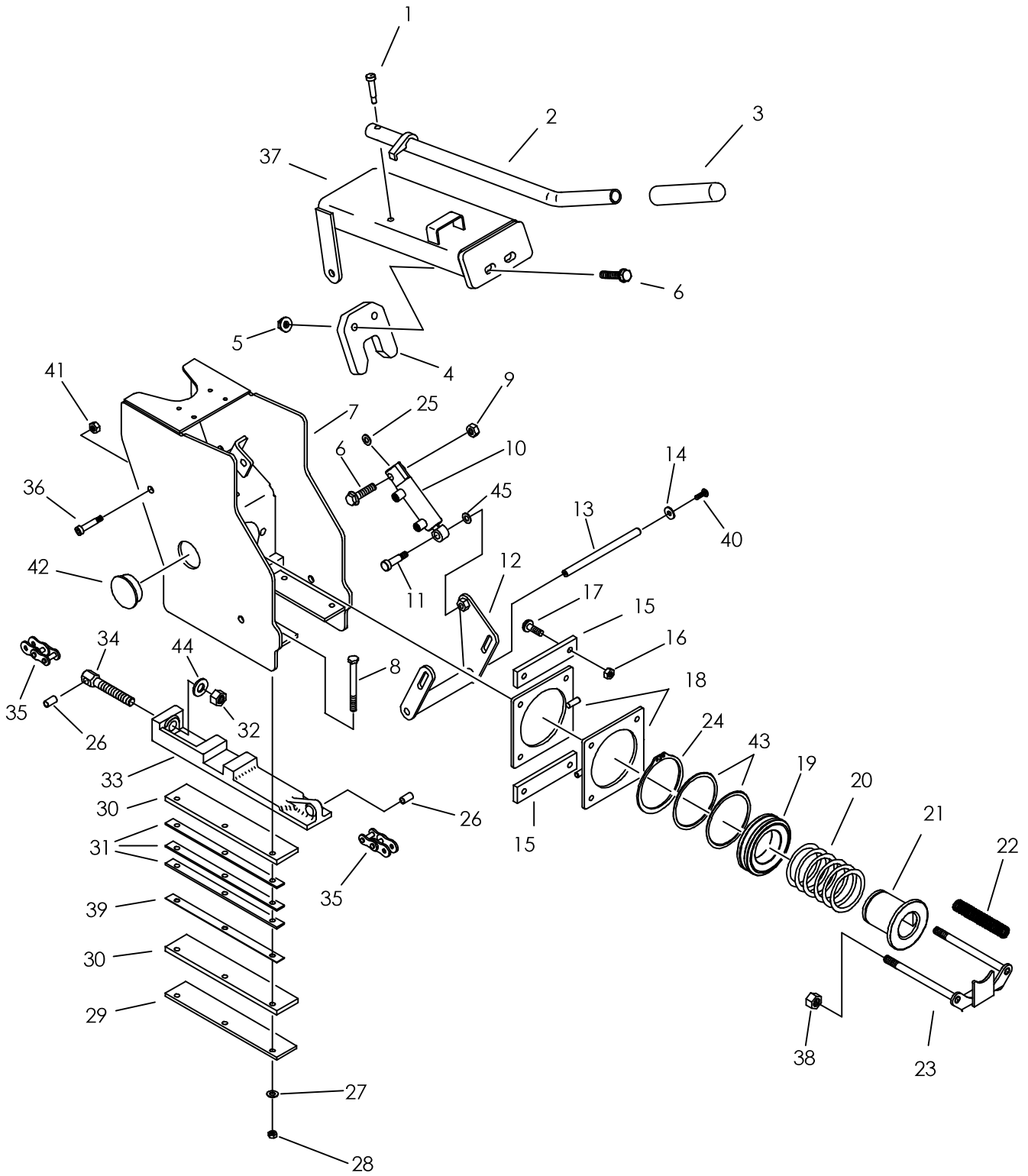
FRONT WRENCH

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|-------------------|
| 1. | 106-380 | 1 | FLG LK SCREW (M8-1.25 X 16MM) | |
| 2. | 106-260 | 1 | WASHER (3/8") | |
| 3. | 117-052 | 1 | COMPRESSION SPRING | |
| 4. | 184-945 | 1 | SPRING GUIDE | |
| 5. | 151-153 | 1 | HYD CYL (1" X 2.5") | LOCKTITE WITH 242 |
| | 150-725 | 1 | CYL (1" X 2.5") | |
| 6. | 106-806 | 1 | FLG LK SCREW (M12-1.75 X 25MM) | LOCKTITE WITH 242 |
| 7. | 106-397 | 1 | WASHER (M12, HARDENED) | |
| 8. | 348-314 | 1 | SLIDE PLATE | |
| 9. | 110-078 | 4 | MACH BSHG (1.000", 14 GA) | |
| 10. | 302-638 | 1 | WRENCH PLATE | |
| 11. | 106-618 | 2 | SCREW (M12-1.75 X 130MM) | |
| 12. | 117-017 | 2 | COMPRESSION SPRING | |
| 13. | 183-966 | 2 | BUSHING (.53" X 1" X 3.6") | |
| 14. | 107-353 | 1 | SET SCREW (M8-1.25 X 10MM) | LOCKTITE WITH 242 |
| 15. | 185-167 | 1 | ROD GUIDE BUSHING | |
| 16. | 106-391 | 1 | WASHER (M12) | |
| 17. | 106-685 | 2 | LOCKNUT (M12-1.75, PRV TRQ, 10.9) | |
| 18. | 302-897 | 1 | BULKHEAD BRACKET | |
| 19. | 305-806 | 1 | GUARD | |

FOOTNOTES

CARRIAGE

ENDS WITH S/N: 2V2594



CARRIAGE

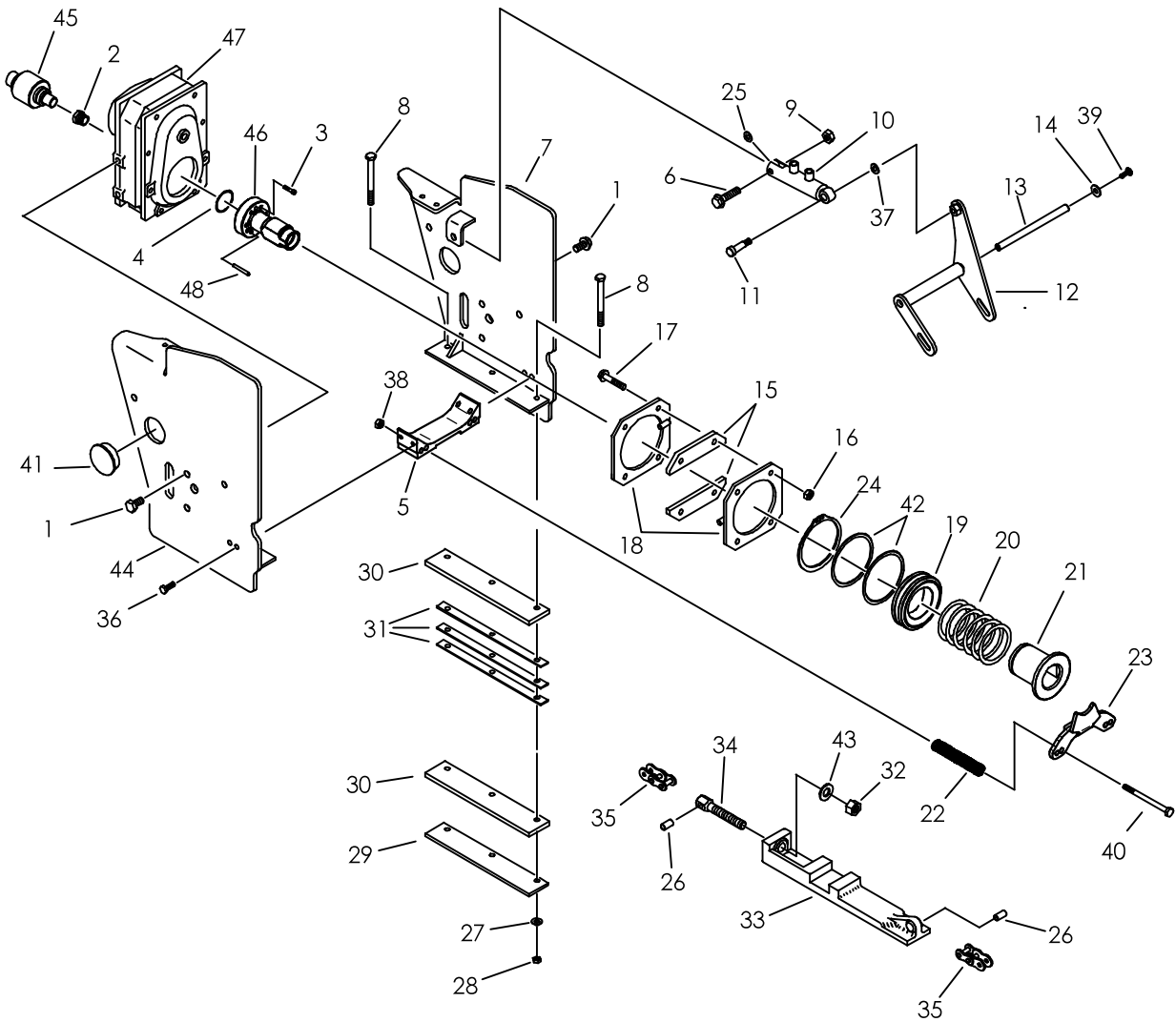
ENDS WITH S/N: 2V2594

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|-------------------------------|
| 1. | 107-223 | 1 | SHLD BOLT (M10 X 35MM, M8-1.25) | USE 242 LOCTITE OR EQUIVALENT |
| 2. | 302-729 | 1 | HANDLE | |
| 3. | 110-013 | 1 | HAND GRIP (1", BLACK) | |
| 4. | 302-663 | 1 | BACKUP WRENCH | |
| 5. | 106-354 | 2 | FLG LOCKNUT (M12-1.75) | |
| 6. | 107-004 | 3 | FLG LK SCREW (M12-1.75 X 45MM) | |
| 7. | 302-665 | 1 | CARRIAGE | |
| 8. | 107-763 | 6 | SCREW (M8-1.25 X 55MM) | |
| 9. | 106-685 | 1 | LOCKNUT (M12-1.75, PRV TRQ, 10.9) | |
| 10. | 159-464 | 1 | HYD CYL (1") | OBSOLETE |
| | 150-723 | 1 | CYL (1" X 2") W/EYE | |
| 11. | 107-422 | 1 | SHLD BLT (M12 X 25MM, M10-1.50) | USE 242 LOCTITE OR EQUIVALENT |
| 12. | 302-647 | 1 | SHIFT LEVER | |
| 13. | 302-646 | 1 | SHIFT LEVER PIN | |
| 14. | 106-076 | 2 | WASHER (1/4") | |
| 15. | 302-655 | 2 | PLATE | |
| 16. | 105-894 | 4 | LOCKNUT (M10-1.5, PRV TRQ, 10.9) | |
| 17. | 107-421 | 4 | SCREW (M10-1.5X35MM, BUT SOC) | |
| 18. | 302-656 | 2 | SLIDE PLATE | |
| 19. | 302-652 | 1 | SHIFT RING | |
| 20. | 117-219 | 1 | COMPRESSION SPRING | |
| 21. | 302-659 | 1 | WRENCH COLLAR | |
| 22. | 117-232 | 2 | SPRING | |
| 23. | 302-848 | 1 | CRADLE | |
| 24. | 115-457 | 1 | EXTERNAL SNAP RING (2.5") | |
| 25. | 106-397 | 1 | WASHER (M12, HARDENED) | |
| 26. | 130-300 | 2 | ROLLER BUSHING (#80) | |
| 27. | 106-390 | 6 | WASHER (M10) | |
| 28. | 106-561 | 6 | LOCKNUT (M8-1.25, PRV TRQ, 10.9) | |
| 29. | 302-685 | 2 | PLATE | |
| 30. | 302-683 | 4 | SLIDE | |
| 31. | 302-684 | 6 | SPACER | |
| 32. | 105-357 | 1 | LOCKNUT (5/8-NC) | |
| 33. | 375-355 | 1 | FLOAT CASTING (MACHINED) | |
| 34. | 302-873 | 1 | CHAIN ADJUSTER | |
| 35. | 130-333 | 1 | ROLLER CHAIN (#80, 166P) | |
| | 130-304 | 2 | CONNECTOR LINK (#80) | |
| 36. | 106-070 | 2 | SHLD BOLT (1/2" X 3/8 ", 3/8-NC) | |
| 37. | 302-786 | 1 | WRENCH MOUNT | |
| 38. | 105-065 | 2 | LOCKNUT (1/2-NC) | |
| 39. | 302-939 | AR | SPACER | |
| 40. | 106-103 | 2 | BOLT (1/4-NC X 1/2 ", BUT SOC) | USE 242 LOCTITE OR EQUIVALENT |
| 41. | 105-047 | 2 | LOCKNUT (3/8-NC) | |
| 42. | 111-067 | 2 | EXPANSION PLUG (2.125") | |
| 43. | 107-386 | 2 | SHIM | |
| 44. | 106-398 | 1 | WASHER (M16, HARDENED) | |
| 45. | 106-396 | 1 | WASHER (M10, HARDENED) | |

FOOTNOTES:

CARRIAGE

BEGINS WITH S/N: 2V2595



CARRIAGE

BEGINS WITH S/N: 2V2595

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|---|
| 1. | 106-559 | 4 | SCREW (M12-1.75 X 25MM) | USE 277 LOCTITE OR EQUIVALENT, TORQUE TO 86 FT-LBS |
| 2. | 115-126 | 1 | REDUCER (12N-08F) | |
| 3. | 107-322 | 6 | SCREW (M6-1.00X25MM,SOC,12.9) | USE 242 LOCTITE OR EQUIVALENT, TORQUE TO 15 FT LBS |
| 4. | 155-792 | 1 | O-RING (212 D70) | |
| 5. | 318-518 | 1 | MOUNT BLOCK | |
| 6. | 107-004 | 2 | FLG LK SCREW (M12-1.75 X 45MM) | |
| 7. | 313-997 | 1 | CARRIAGE | |
| 8. | 107-763 | 6 | SCREW (M8-1.25 X 55MM) | |
| 9. | 106-685 | 1 | LOCKNUT (M12-1.75,PRV TRQ,10.9) | |
| 10. | 151-218 | 1 | CYLINDER | |
| 11. | 107-422 | 1 | SHLD BLT (M12 X 25MM,M10-1.50) | USE 242 LOCTITE OR EQUIVALENT |
| 12. | 313-998 | 1 | SHIFT LEVER | |
| 13. | 179-402 | 1 | PIN | |
| 14. | 106-076 | 2 | WASHER (1/4") | |
| 15. | 315-715 | 2 | PLATE | |
| 16. | 105-894 | 4 | LOCKNUT (M10-1.5,PRV TRQ,10.9) | |
| 17. | 107-421 | 4 | SCREW (M10-1.5X35MM, BUT SOC) | |
| 18. | 315-717 | 2 | SLIDE PLATE | |
| 19. | 302-652 | 1 | SHIFT RING | |
| 20. | 117-219 | 1 | COMPRESSION SPRING | |
| 21. | 302-659 | 1 | WRENCH COLLAR | |
| 22. | 115-604 | 2 | COMPRESSION SPRING | |
| 23. | 315-594 | 1 | CRADLE | |
| 24. | 115-457 | 1 | EXTERNAL SNAP RING (2.5") | |
| 25. | 106-391 | 1 | WASHER (M12) | |
| 26. | 130-300 | 2 | ROLLER BUSHING (#80) | |
| 27. | 106-390 | 4 | WASHER (M10) | |
| 28. | 106-561 | 4 | LOCKNUT (M8-1.25, PRV TRQ, 10.9) | |
| 29. | 302-685 | 2 | PLATE | |
| 30. | 302-683 | 4 | SLIDE | |
| 31. | 302-684 | 6 | SPACER | |
| 32. | 105-357 | 1 | LOCKNUT (5/8-NC) | |
| 33. | 375-355 | 1 | FLOAT CASTING (MACHINED) | |
| 34. | 302-873 | 1 | CHAIN ADJUSTER | |
| 35. | 130-333 | 1 | ROLLER CHAIN (#80, 166P) | |
| | 130-304 | 2 | CONNECTOR LINK (#80) | |
| 36. | 106-083 | 4 | SCREW (M8-1.25 X 20MM) | USE 242 LOCTITE OR EQUIVALENT |
| 37. | 106-396 | 1 | WASHER (M10, HARDENED) | |
| 38. | 105-047 | 2 | LOCKNUT (3/8-NC) | |
| 39. | 106-103 | 2 | BOLT (1/4-NC X 1/2 ", BUT SOC) | USE 242 LOCTITE OR EQUIVALENT |
| 40. | 500-301 | 2 | BOLT (3/8-NC X 8") | |
| 41. | 111-067 | 2 | EXPANSION PLUG (2.125") | |
| 42. | 107-386 | 2 | SHIM | |
| 43. | 106-398 | 1 | WASHER (M16, HARDENED) | |
| 44. | 314-425 | 1 | CARRIAGE | |
| 45. | 153-765 | 1 | FLUID SWIVEL (8N-8NF) | ENDS WITH S/N: |
| | 150-1462 | 1 | FLUID SWIVEL (-08) | SEE FOOTNOTE 1, USE SEAL KIT 500-2127, BEGINS WITH S/N: |
| 46. | 400-828 | 1 | SAVER SUB | |
| 47. | 166-411 | 1 | GEARBOX | |
| 48. | 107-796 | 3 | DOWEL PIN (8MM X 30MM) | USE LOCTITE 680 |

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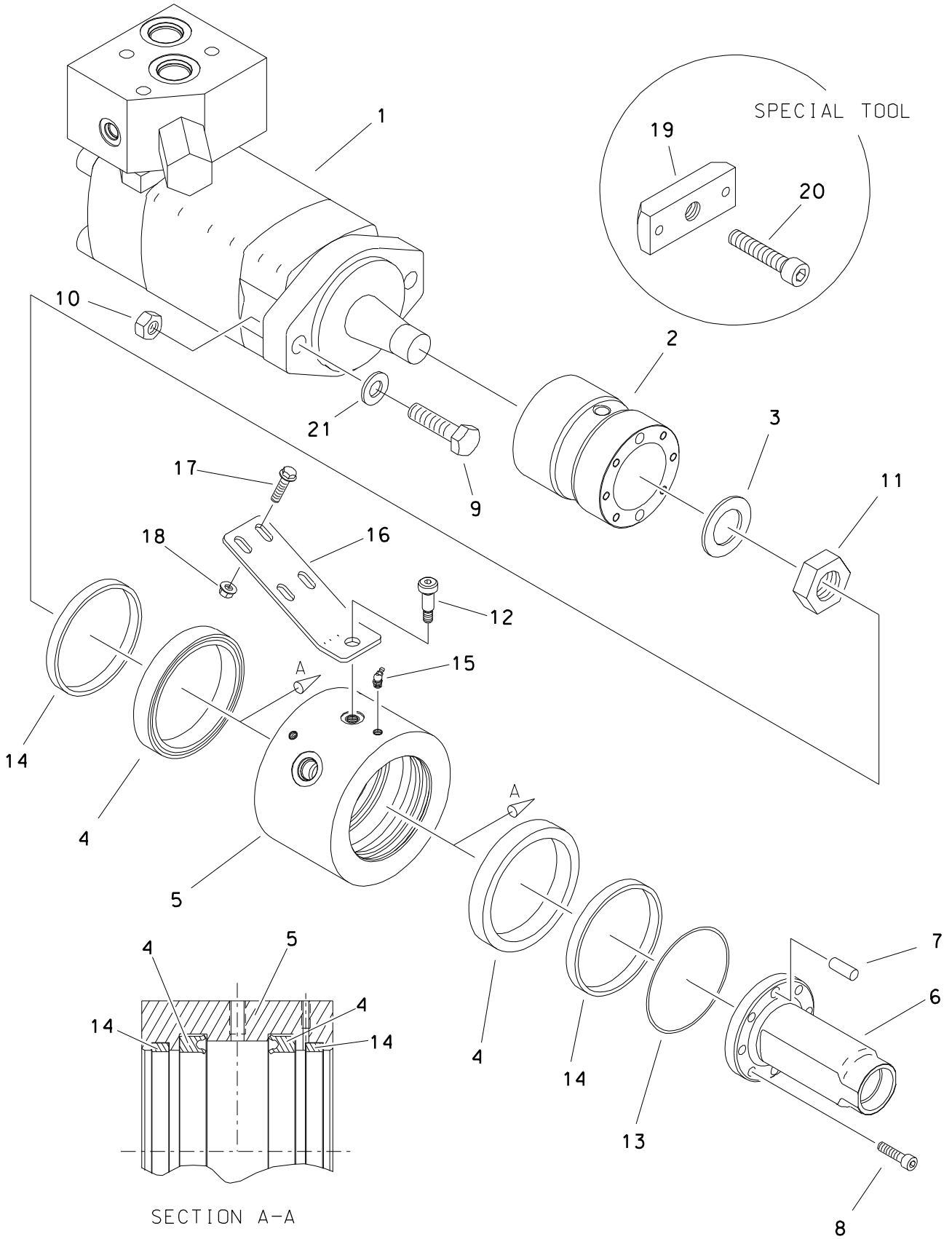
FOOTNOTES:

I. INSTALL USING NICKLE THREAD SEALING TAPE (I17-555) ON MALE THREADS.

NOTE:

WATER SWIVEL

ENDS WITH S/N: 2V2594



WATER SWIVEL

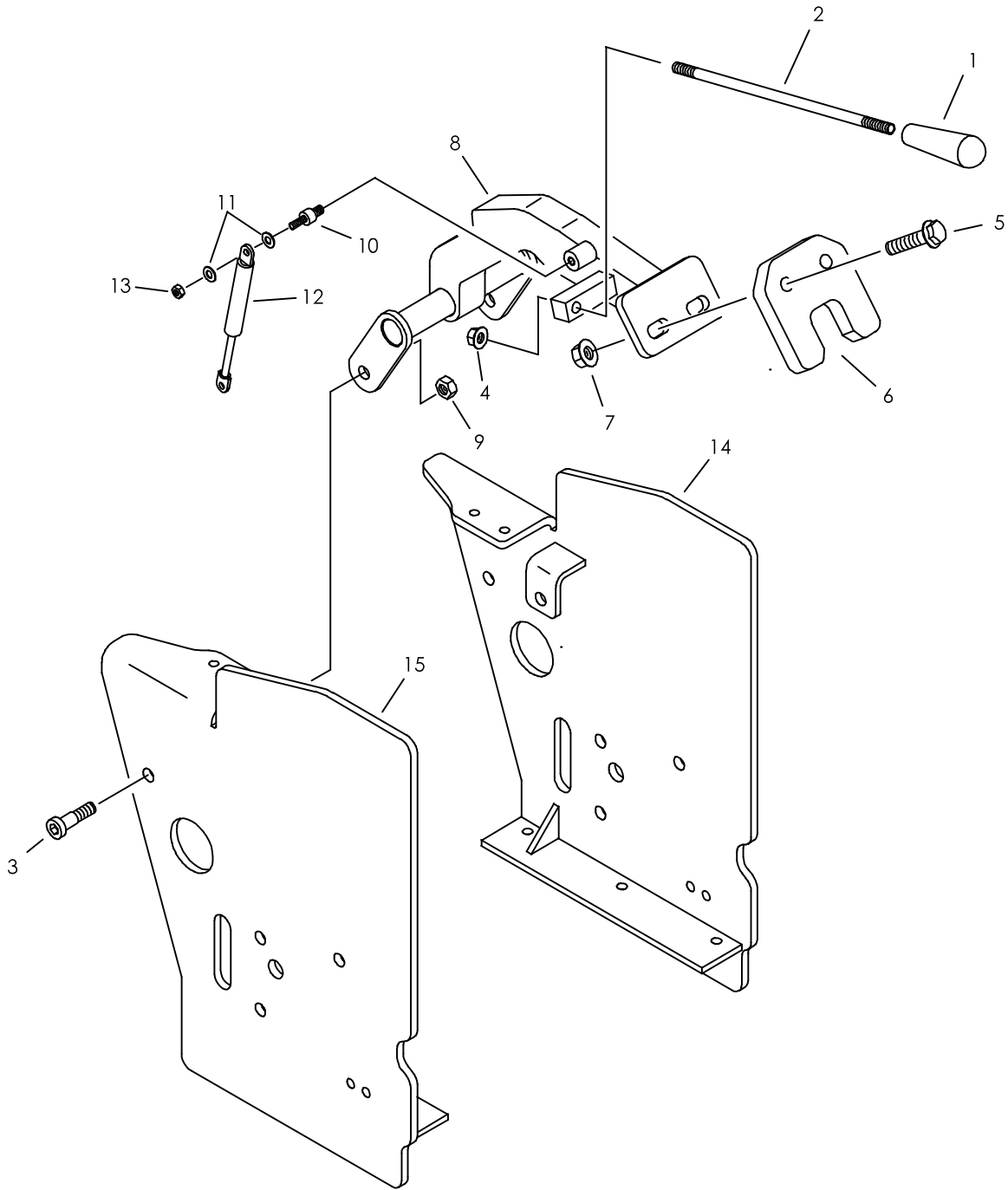
ENDS WITH S/N: 2V2594

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|--------------------|-----|-----------------------------------|--|
| | 302-878 | - | WATER SWIVEL ASSEMBLY | INCLUDES REF NO.'S 2, 4, 5, 7, 14 & 15 |
| 1. | 158-054 | - | HYDRAULIC MOTOR W/ RELIEF | |
| | 156-980 | - | RELIEF VALVE | |
| | 156-985 | - | HYDRAULIC MOTOR | |
| | 155-580 | - | HYDRAULIC MOTOR | |
| | 500-752 | - | SEAL REPAIR KIT | |
| 2. | 302-641 | 1 | SHAFT | USE RED RTV SILICONE; SEE FOOTNOTE 1 |
| 3. | 178-134 | 1 | BRASS BUSHING (1-3/4") | SEE ILLUSTRATION FOR ORIENTATION |
| 4. | 157-227 | 2 | EXTERNAL SEAL (3") | |
| 5. | 303-158 | 1 | SWIVEL HOUSING | |
| 6. | 302-643 | 1 | SAVER SUB | USE LOCTITE 680 OR EQUIVALENT |
| 7. | 105-618 | 2 | DOWEL PIN (8MM X 20MM) | USE LOCTITE 242, TORQUE TO 15 FT-LBS |
| 8. | 107-322 | 6 | SCREW (M6-1.00 X 25MM, SOC, 12.9) | TORQUE TO 110 FT-LBS |
| 9. | 105-871 | 2 | BOLT (1/2-NC X 2", GD 8) | |
| 10. | 105-065 | 2 | LOCKNUT (1/2-NC) | SEE FOOTNOTE 3 |
| 11. | 105-418 | 1 | LOCKNUT (1-20 NEF) | USE LOCTITE 242 OR EQUIVALENT |
| 12. | 105-748 | 1 | SHLD BOLT (1/2" X 1/2", 3/8-NC) | |
| 13. | 157-159 | 1 | O-RING (Q33 D90) | SEE FOOTNOTE 2 |
| 14. | 125-166 | 2 | WEAR RING | SEE FOOTNOTE 2 |
| 15. | 115-006 | 2 | ZERK (1/4-NF, 45) | |
| 16. | 302-893 | 1 | TORQUE BRACKET | |
| 17. | 106-991 | 4 | FLG LK SCREW (M8-1.25 X 20MM) | |
| 18. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | ACCESSORY, SEE FOOTNOTE 4 |
| 19. | 303-463 | 1 | PULLER BAR | ACCESSORY USED WITH REF. 19 |
| 20. | 106-244 | 1 | SCREW (M16-2.00 X 60MM, SOC) | |
| 21. | 107-605 | 2 | WASHER (1/2", HARDENED) | |

FOOTNOTES

1. SILICONE BRASS BUSHING, REF NO 3, BOTH SIDES INTO SHAFT, REF NO 2.
2. APPLY GENERAL PURPOSE GREASE ON INSIDE DIAMETER OF WEAR RINGS BEFORE ASSEMBLY AND APPLY GREASE THROUGH ZERKS AFTER COMPLETE ASSEMBLY.
3. REQUIRES A THIN WALL 1-7/16" SOCKET 1.93" O.D. MAX (REF: PROTO 7446).
4. AFTER REMOVING LOCKNUT (REF. 11) USE WITH TWO M6 SCREWS (REF. 8) & M16 SCREW (REF. 20) TO REMOVE SHAFT (REF. 2) FROM MOTOR.

BACKUP WRENCH
BEGINS WITH S/N: CMWJT520T60000037



BACKUP WRENCH

BEGINS WITH S/N: CMWJT520T60000037

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|-------------------------------|
| 1. | 110-439 | 1 | HANDLE (3/8-NC, BLACK) | |
| 2. | 318-662 | 1 | LEVER | SEE F/N |
| 3. | 107-802 | 2 | SHLD BLT (M12 X 16MM,M10-1.50) | |
| 4. | 105-834 | 1 | FLG LOCKNUT (3/8-NC) | |
| 5. | 107-004 | 2 | FLG LK SCREW (M12-1.75 X 45MM) | |
| 6. | 302-663 | 1 | BACKUP WRENCH | |
| 7. | 106-354 | 2 | FLANGE NUT (M12-1.75) | |
| 8. | 318-596 | 1 | WRENCH MOUNT | |
| 9. | 105-894 | 2 | LOCKNUT(M10-1.50,PRV TRQ,10.9) | |
| 10. | 179-463 | 2 | STRUT PIN | |
| 11. | 105-095 | 4 | WASHER (1/4") | USE 242 LOCTITE OR EQUIVALENT |
| 12. | 151-217 | 1 | STRUT | |
| 13. | 106-237 | 2 | LOCKNUT (M6-1.00,PRV TRQ,NLK) | |
| 14. | 313-997 | - | CARRIAGE | |
| 15. | 314-425 | - | CARRIAGE | |

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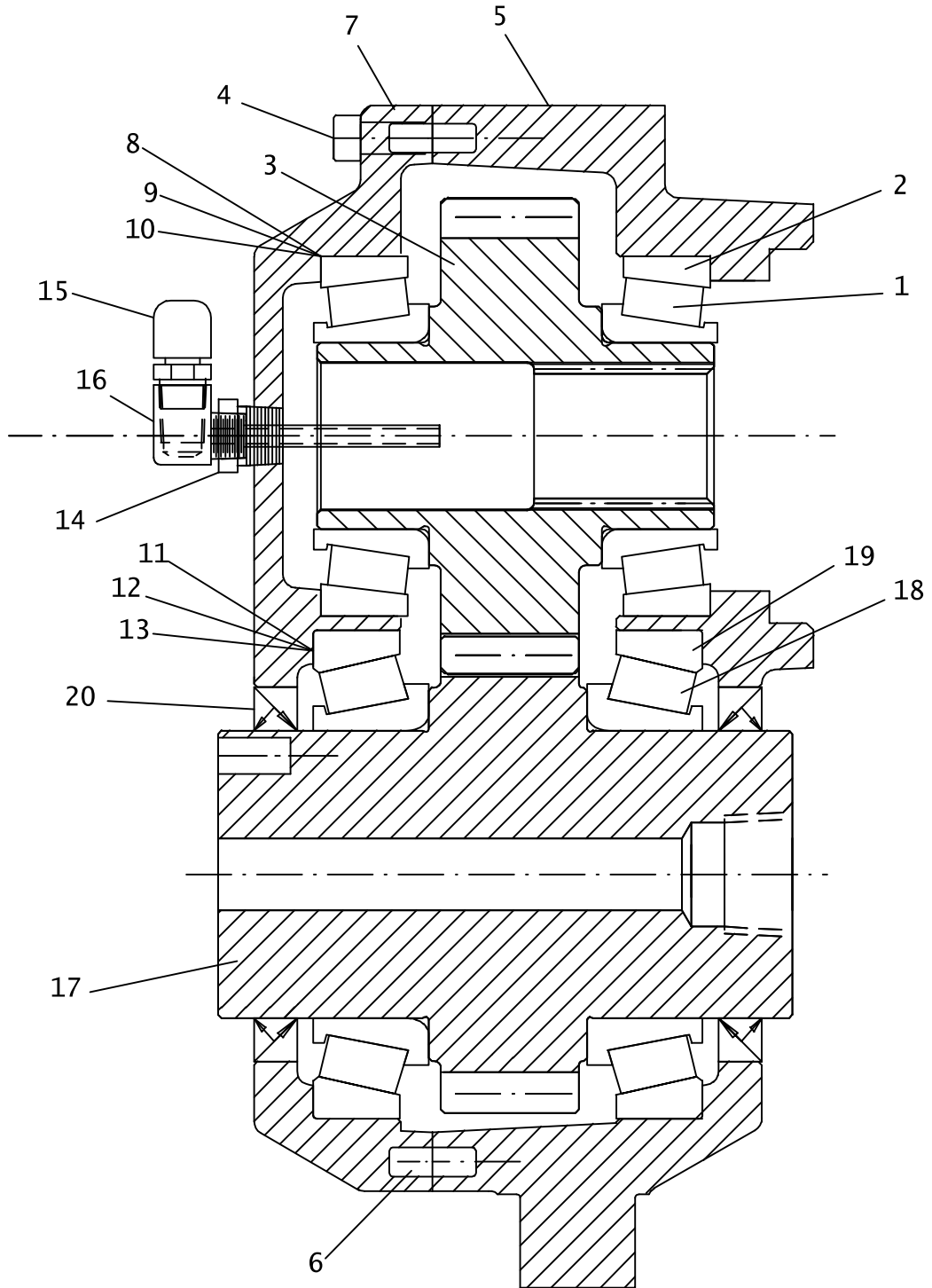
FOOTNOTES:

USE LOCTITE 680 OR EQUIVALENT ON SHAFT MATING SURFACE WITH 3/8" HOLE IN WELDMENT.
 USE LOCTITE 242 OR EQUIVALENT ON THREADS OF LEVER.
 TORQUE 3/8" FLANGE NUT ON LEVER TO 70-75 FT/LBS.

NOTE:

ROTATION GEARBOX

BEGINS WITH S/N: 2Z4659



ROTATION GEARBOX

BEGINS WITH S/N: 2Z4659

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|------------------------------|-----------------------|
| | 166-411 | | GEARBOX | INCL REF NO.'S 1 - 21 |
| 1. | 125-331 | 2 | TAPERED BEARING (1.625") | |
| 2. | 125-332 | 2 | TAPERED RACE (3.125") | |
| 3. | 166-407 | 1 | PINION | |
| 4. | 106-063 | 8 | SCREW (M8-1.25 X 40MM, 10.9) | |
| 5. | 166-418 | 1 | GEARBOX HOUSING | |
| 6. | 106-906 | 2 | DOWEL PIN (.250 X .750) | |
| 7. | 166-419 | 1 | GEARBOX COVER | |
| 8. | 178-930 | 2 | SHIM | |
| 9. | 178-927 | 2 | SHIM | |
| 10. | 178-928 | 2 | SHIM | |
| 11. | 178-931 | 2 | SHIM | |
| 12. | 178-932 | 2 | SHIM | |
| 13. | 178-933 | 2 | SHIM | |
| 14. | 115-181 | 1 | REDUCER (04N-02NF) | |
| 15. | 159-003 | 1 | AIR VENT (02N) | |
| 16. | 514-123 | 1 | PICKUP TUBE (02N-02NF90-2") | |
| 17. | 166-408 | 1 | OUTPUT SHAFT | |
| 18. | 125-529 | 2 | BEARING CONE | |
| 19. | 125-528 | 2 | BEARING CUP | |
| 20. | 153-638 | 2 | INTERNAL SEAL | |

NOT SHOWN:

115-444 2 PLUG (04N, SOC, SS)

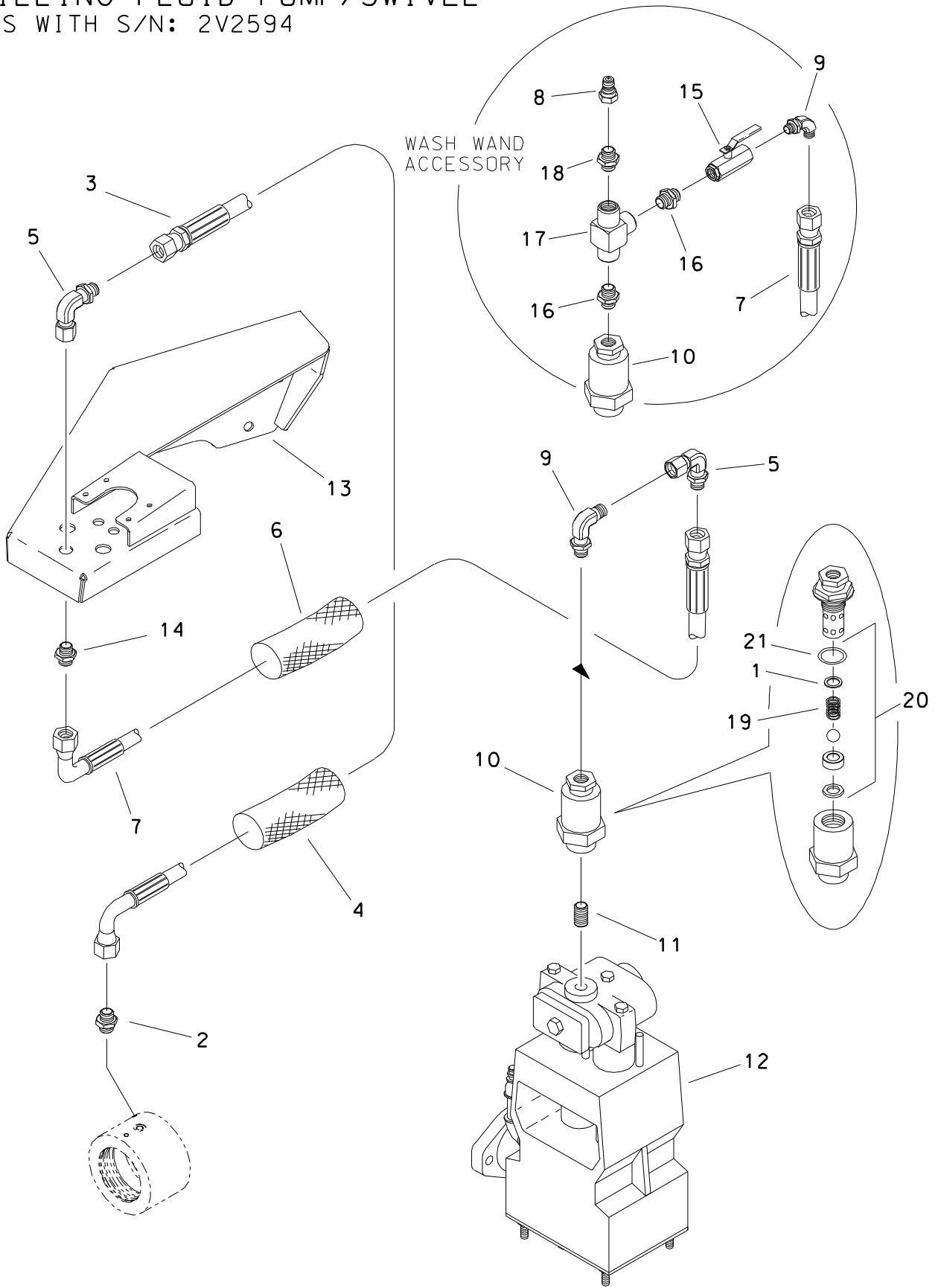
FOOTNOTES:

NOTE:

FLUID SYSTEMS

DRILLING FLUID PUMP/SWIVEL

ENDS WITH S/N: 2V2594



**DRILLING FLUID PUMP/SWIVEL
ENDS WITH S/N: 2V2594**

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---|
| 1. | 110-096 | - | MACHINERY BUSHING (1/2") | SEE FOOTNOTE 2 |
| 2. | 154-221 | 1 | CONNECTOR (06S-060) | |
| 3. | 154-954 | 1 | HOSE (060FX90S-70"-3000) | |
| 4. | 117-702 | 1 | ABRASION SLEEVE (1.0" X 68") | |
| 5. | 154-228 | 2 | UNION (060-060FX90) | |
| 6. | 117-213 | 1 | ABRASION SLEEVE (1.00" X 96") | |
| 7. | 515-151 | 1 | HOSE (060FX90-96"-3000) | |
| 8. | 159-089 | 1 | QDC ADAPTER (08-08SF) | INCLUDED WITH WASH WAND KIT |
| 9. | 154-420 | 1 | CONNECTOR (08N-06090) | |
| 10. | 149-324 | 1 | FLOW CHECK (08NF-08NF, 64PSI) | |
| 11. | 115-148 | 1 | ALL THREAD (08N) | |
| 12. | 158-057 | - | DRILLING FLUID PUMP | SEE FOOTNOTE 1 |
| 13. | 303-289 | - | BULKHEAD BRACKET | |
| 14. | 514-163 | 1 | BK CONNECTOR (060-060BK) | |
| 15. | 158-579 | 1 | SHUT-OFF (08NF-08NF) | INCLUDED WITH WASH WAND KIT |
| 16. | 155-210 | 2 | CONNECTOR (08N-08N) | INCLUDED WITH WASH WAND KIT |
| 17. | 514-241 | 1 | TEE (08N-08N-08N) | INCLUDED WITH WASH WAND KIT |
| 18. | 514-240 | 1 | CONNECTOR (08N-08S) | INCLUDED WITH WASH WAND KIT |
| 19. | 159-326 | - | COMPRESSION SPRING | |
| 20. | 190-963 | - | REPAIR KIT (CHECK VALVE) | INCLUDES REF 1,19, 21, & 052-097 INSTRUCTIONS |
| 21. | 155-748 | - | O-RING (916 D90) | |

FOOTNOTES

1. REFER TO DRILLING FLUID PUMP PAGE FOR SERVICE PARTS. IF REPLACING REFER TO FOOTNOTE ON DRILLING FLUID PUMP INLET PAGE.
2. NOT REQUIRED WITH INITIAL KIT INSTALLATION. REFER TO 052-097 INSTRUCTIONS.

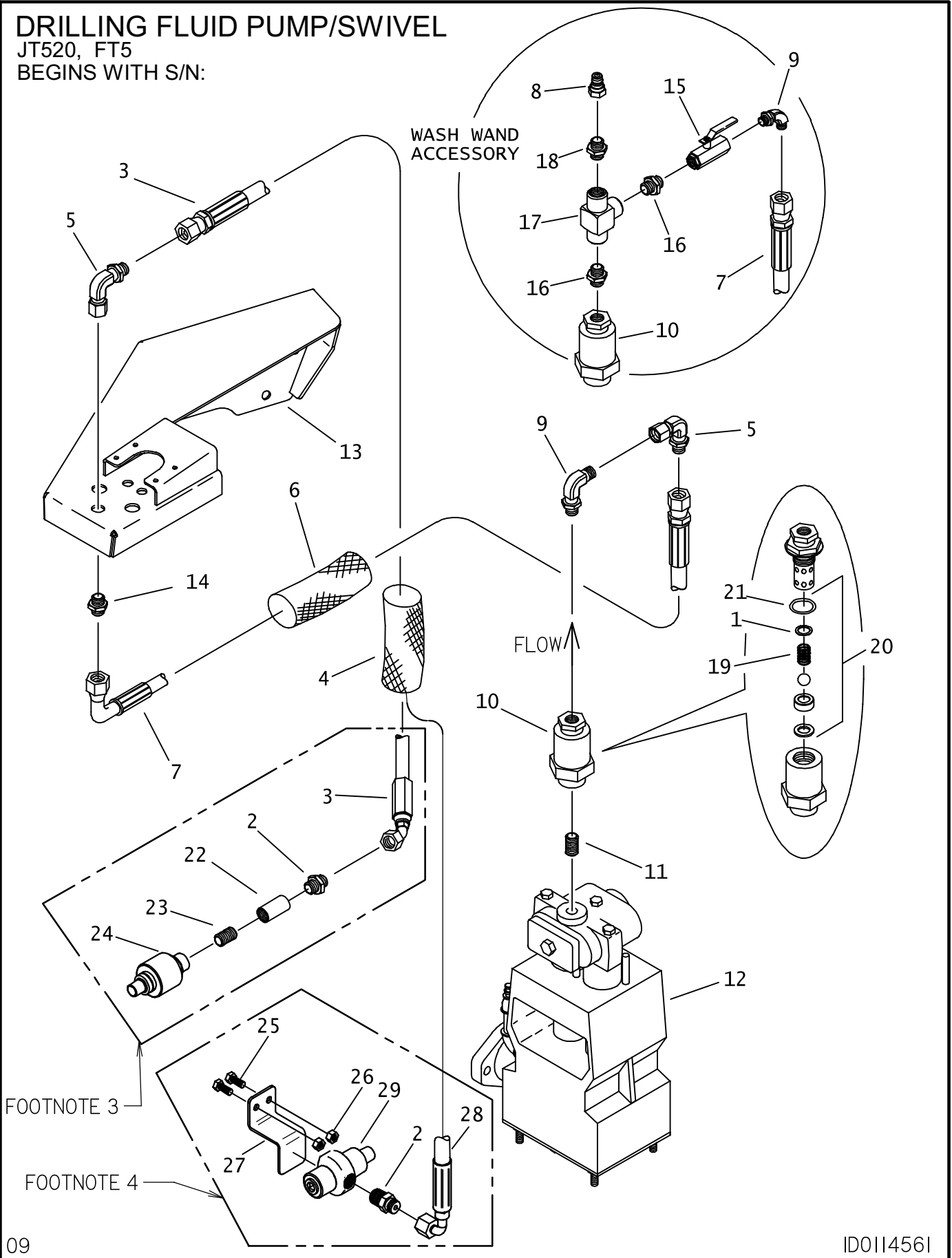
NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

DRILLING FLUID PUMP/SWIVEL

JT520, FT5
BEGINS WITH S/N:

WASH WAND
ACCESSORY



DRILLING FLUID PUMP/SWIVEL

JT520, FT5

BEGINS WITH S/N:

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---|
| 1. | 110-096 | - | MACHINERY BUSHING (1/2") | SEE FOOTNOTE 2 |
| 2. | 153-858 | 1 | FITTING (060-08N) | |
| 3. | 157-344 | 1 | HOSE (060FX45S-65"-3000) | SEE FOOTNOTE 3 |
| 4. | 117-613 | 1 | ABRASION SLEEVE (1.00" X 64") | |
| 5. | 154-228 | 2 | UNION (060-060FX90) | |
| 6. | 117-213 | 1 | ABRASION SLEEVE (1.00" X 96") | |
| 7. | 515-151 | 1 | HOSE (060FX90-96"-3000) | |
| 8. | 159-089 | 1 | QDC ADAPTER (08-08SF) | INCLUDED WITH WASH WAND KIT |
| 9. | 154-420 | 1 | CONNECTOR (08N-06090) | |
| 10. | 149-324 | 1 | FLOW CHECK (08NF-08NF/64PSI) | |
| 11. | 115-148 | 1 | ALL THREAD (08N) | |
| 12. | 158-057 | - | DRILLING FLUID PUMP | SEE FOOTNOTE 1 |
| 13. | 303-289 | - | BULKHEAD BRACKET | |
| 14. | 514-163 | 1 | BK CONNECTOR (060-060BK) | |
| 15. | 158-579 | 1 | SHUT-OFF (08NF-08NF) | INCLUDED WITH WASH WAND KIT |
| 16. | 155-210 | 2 | CONNECTOR (08N-08N) | INCLUDED WITH WASH WAND KIT |
| 17. | 514-241 | 1 | TEE (08N-08N-08N) | INCLUDED WITH WASH WAND KIT |
| 18. | 514-240 | 1 | CONNECTOR (08N-08S) | INCLUDED WITH WASH WAND KIT |
| 19. | 159-326 | - | COMPRESSION SPRING | |
| 20. | 190-963 | - | REPAIR KIT (CHECK VALVE) | INCLUDES REF 1,19, 21, & 052-097 INSTRUCTIONS |
| 21. | 155-748 | - | O-RING (916 D90) | |
| 22. | 115-155 | 1 | COLLAR (08NF) | SEE FOOTNOTE 3 |
| 23. | 115-118 | 1 | NIPPLE (08N-2") | SEE FOOTNOTE 3 |
| 24. | 153-765 | 1 | WATER SWIVEL | SEE FOOTNOTE 3 |
| 25. | 106-083 | 2 | SCREW (M8-1.25 X 20MM) | SEE FOOTNOTE 4 |
| 26. | 106-078 | 2 | NUT (M8-1.25) | SEE FOOTNOTE 4 |
| 27. | 300-6671 | 1 | SWIVEL SUPPORT | SEE FOOTNOTE 4 |
| 28. | 154-954 | 1 | (060FX90S-70"-3000) | SEE FOOTNOTE 4 |
| 29. | 150-1462 | 1 | WATER SWIVEL | SEE FOOTNOTES 4 & 5, USE SEAL KIT 500-2127 |

NOT SHOWN:

FOOTNOTES:

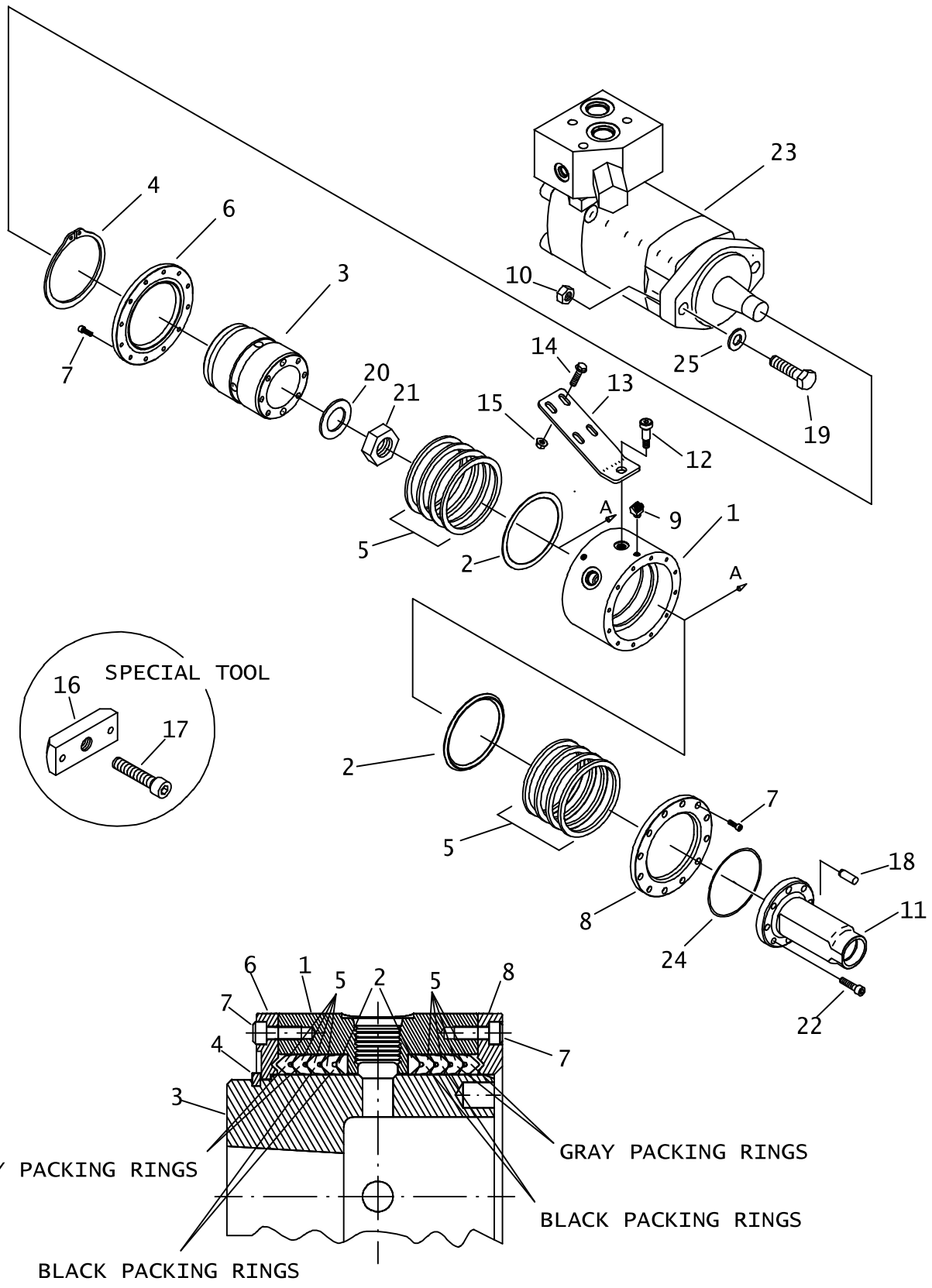
- REFER TO DRILLING FLUID PUMP PAGE FOR SERVICE PARTS. IF REPLACING REFER TO FOOTNOTE ON DRILLING FLUID PUMP INLET PAGE.
- NOT REQUIRED WITH INITIAL KIT INSTALLATION. REFER TO 052-097 INSTRUCTIONS.
- BEGINS WITH S/N: 2V2659, ENDS WITH S/N:
- BEGINS WITH S/N:
- INSTALL USING NICKLE THREAD SEALING TAPE (117-555) ON MALE THREADS.

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

DRILLING FLUID SWIVEL

ENDS WITH S/N: 2V2595



GRAY PACKING RINGS

GRAY PACKING RINGS

BLACK PACKING RINGS

BLACK PACKING RINGS

SECTION A-A

DRILLING FLUID SWIVEL ENDS WITH S/N: 2V2595

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---|
| | 153-246 | | SWIVEL | INCLUDES REF NO.'S 1-9 |
| | 303-281 | | SWIVEL | SEE FOOTNOTE 6 |
| | 150-1654 | | SWIVEL ASSEMBLY | SEE FOOTNOTE 8 |
| 1. | 499-290 | 1 | SWIVEL BARREL | |
| | 369-791 | | SWIVEL BARREL | SEE FOOTNOTE 6 |
| | 500-1334 | 1 | SWIVEL BARREL | SEE FOOTNOTE 8 |
| 2. | 369-792 | 2 | MALE PACKING ADAPTER | |
| 3. | 369-789 | 1 | SWIVEL SHAFT | |
| 4. | 107-370 | 1 | EXTERNAL SNAP RING (2.875") | |
| 5. | 369-790 | 1 | PACKING SET | SEE FOOTNOTES 2 & 5 |
| 6. | 400-310 | 1 | BOTTOM CAP | |
| | 369-788 | | BOTTOM CAP | SEE FOOTNOTE 6 |
| | 500-1333 | | BOTTOM CAP | SEE FOOTNOTE 8 |
| 7. | 106-715 | 24 | SCREW (M4-0.7 X 12MM, SOC) | USE LOCKTITE 242 OR EQUIVALENT |
| | 106-591 | 24 | SCREW (M6-1.00 X 16MM, SOC) | USE LOCKTITE 242 OR EQUIVALENT.SEE FOOTNOTE 8 |
| 8. | 400-311 | 1 | TOP CAP | |
| | 369-787 | | TOP CAP | SEE FOOTNOTE 6 |
| | 500-1332 | | TOP CAP | SEE FOOTNOTE 8 |
| 9. | 115-006 | 2 | ZERK (1/4-NF,45) | SEE FOOTNOTE 2 |
| 10. | 105-065 | 2 | LOCKNUT (1/2-NC) | |
| 11. | 302-643 | 1 | SAVER SUB | |
| 12. | 105-748 | 1 | SHLD BLT (1/2" X ", 3/8-NC) | USE LOCKTITE 242 OR EQUIVALENT |
| 13. | 302-893 | 1 | TORQUE BRACKET | |
| 14. | 106-991 | 4 | FLG LK SCREW (M8-1.25 X 20MM) | |
| 15. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | |
| 16. | 303-463 | 1 | PULLER BAR | ACCESSORY SEE FOOTNOTE 4 |
| 17. | 106-244 | 1 | SCREW (M16-2.00 X 60MM, SOC) | ACCESSORY WITH REF. 16 |
| 18. | 105-618 | 2 | DOWEL PIN (8MM X 20MM) | SEE FOOTNOTE 7 |
| 19. | 105-871 | 2 | BOLT (1/2-NC X 2",GD 8) | TORQUE TO 110 FT-LBS |
| 20. | 178-134 | 1 | BRASS BUSHING (1-3/4") | USE RED RTV SILICONE: SEE FOOTNOTE 1 |
| 21. | 105-418 | 1 | LOCKNUT (1-20 NEF) | SEE FOOTNOTE 3 |
| 22. | 107-322 | 6 | SCREW (M6-1X25MM, SOC, 12.9) | USE LOCTITE 242, TORQUE TO 15 FT-LBS |
| 23. | 158-054 | - | HYDRAULIC MOTOR W/RELIEF | |
| | 156-980 | - | RELIEF VALVE | |
| | 156-985 | - | HYDRAULIC MOTOR | |
| | 155-580 | - | HYDRAULIC MOTOR | |
| 24. | 157-159 | 1 | O-RING (O33 D90) | |
| 25. | 107-605 | 2 | WASHER (1/2", HARDENED) | |

NOT SHOWN:

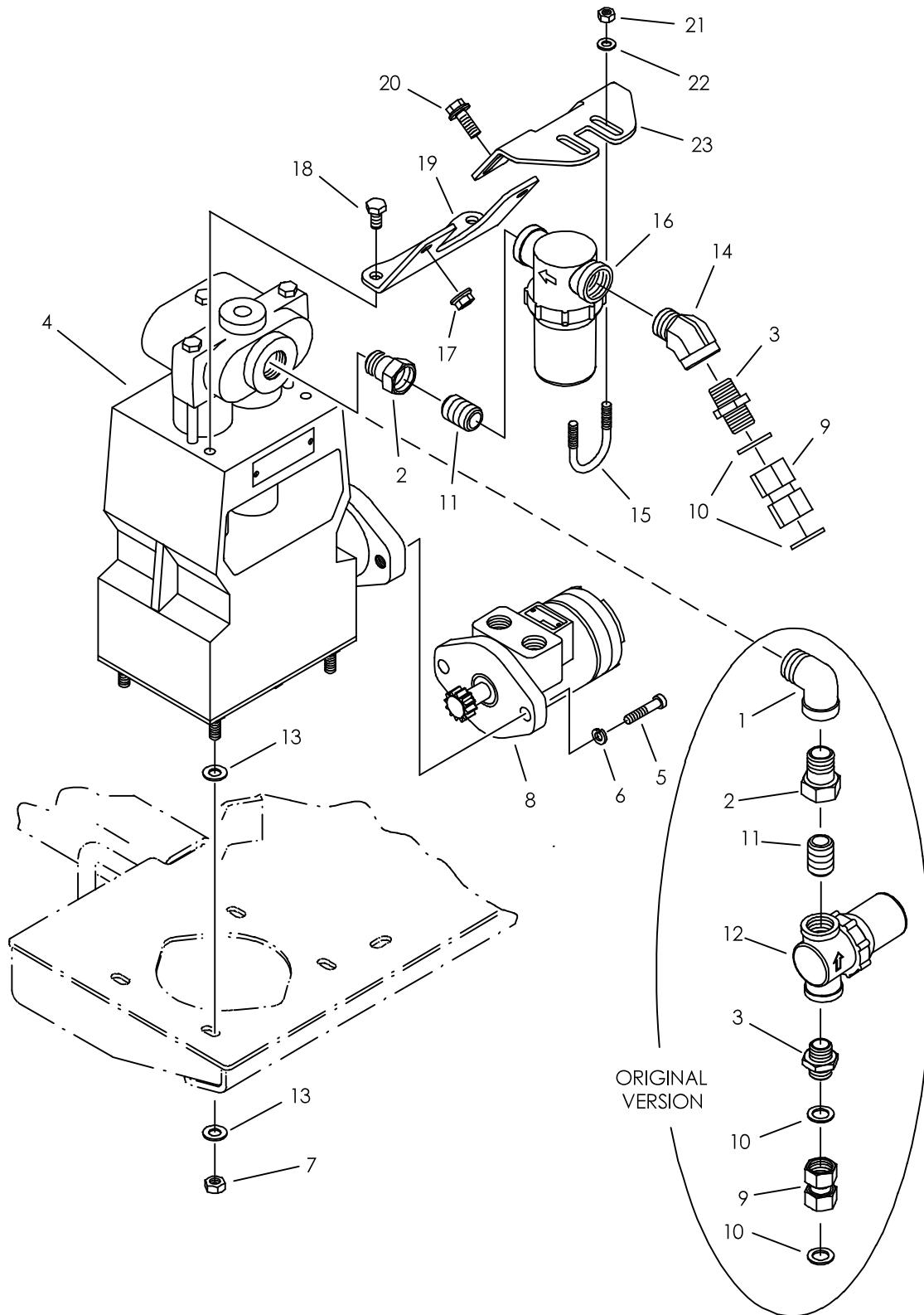
FOOTNOTES:

1. SILICONE BRASS BUSHING, (REF NO. 20) BOTH SIDES INTO SHAFT, REF NO 3.
2. APPLY HIGH TEMPERATURE GREASE ON PACKING RINGS BEFORE ASSEMBLY AND THROUGH ZERKS AFTER COMPLETE ASSEMBLY.
3. REQUIRES A THIN WALL 1-7/16" SOCKET 1.93" O.D. MAX. (REF:PROTO 7446).
4. AFTER REMOVING LOCKNUT (REF. 21) USE WITH TWO M6 SCREWS (REF. 22) & M16 SCREW (REF. 17) TO REMOVE SHAFT (REF. 3) FROM MOTOR.
5. INCLUDES 8 PACKING RINGS. REFER TO 051-212 INSTRUCTIONS.
6. ORIGINAL VERSION (NOT SHOWN). USED SIX MOUNTING SCREWS (REF 7) EACH END CAP.
7. USE LOCTITE 680 OR EQUIVALENT. INSERT TAPERED END OF PIN FIRST.
8. BOLT PATTERN THAT HOLDS TOP AND BOTTOM CAP CHANGED FROM 4MM SCREWS TO 6MM SCREWS. CHANGE MADE DECEMBER 2006.

NOTE:

DRILLING FLUID PUMP INLET

ENDS WITH SERIAL # 2T4484



DRILLING FLUID PUMP INLET ENDS WITH SERIAL # 2T4484

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------|-----------------------------|
| 1. | 115-440 | - | STREET ELBOW (16N-16NF90) | |
| 2. | 115-151 | 1 | REDUCER (16N-12NF) | |
| 3. | 115-449 | 1 | REDUCER (12N-12GM) | |
| 4. | 158-057 | - | DRILLING FLUID PUMP | SEE FOOTNOTE 1 |
| 5. | 106-204 | 2 | BOLT (1/2-NC X 1-1/2", ALN) | |
| 6. | 105-070 | 2 | LOCK WASHER (.500") | |
| 7. | 105-047 | 4 | LOCKNUT (3/8-NC) | |
| 8. | 158-1008 | - | HYDRAULIC MOTOR | |
| 9. | 156-968 | 1 | CONNECTOR(-12GF12GF) | |
| 10. | 116-896 | 2 | WASHER (1.100", RUBBER) | |
| 11. | 115-163 | 1 | ALL THREAD (12N) | |
| 12. | 149-381 | - | STRAINER (12NF) | BLACK |
| | 149-478 | | SCREEN (20-MESH) | 1.0" DIA X 2.65" LG |
| 13. | 107-368 | 8 | WASHER (3/8", HARDENED) | |
| 14. | 149-513 | 1 | STREET ELBOW (12N-12NF45) | |
| 15. | 107-563 | 1 | U-BOLT (5/16-NC X 1-3/8") | |
| 16. | 153-133 | 1 | STRAINER (12NF) | WHITE WITH TRANSPARENT BOWL |
| | 153-198 | | SCREEN (20-MESH) | 1.5" DIA X 3.7" LG |
| 17. | 106-387 | 2 | FLG LOCKNUT (M10-1.50) | |
| 18. | 105-032 | 2 | BOLT (3/8-NC Xf") | |
| 19. | 309-302 | 1 | LOWER BRACKET | |
| 20. | 106-724 | 2 | FLG SCREW (M10-1.50 X 25MM) | |
| 21. | 105-089 | 2 | LOCKNUT (5/16-NC) | DO NOT OVER TIGHTEN |
| 22. | 105-226 | 2 | WASHER (5/16") | |
| 23. | 309-301 | 1 | UPPER BRACKET | |

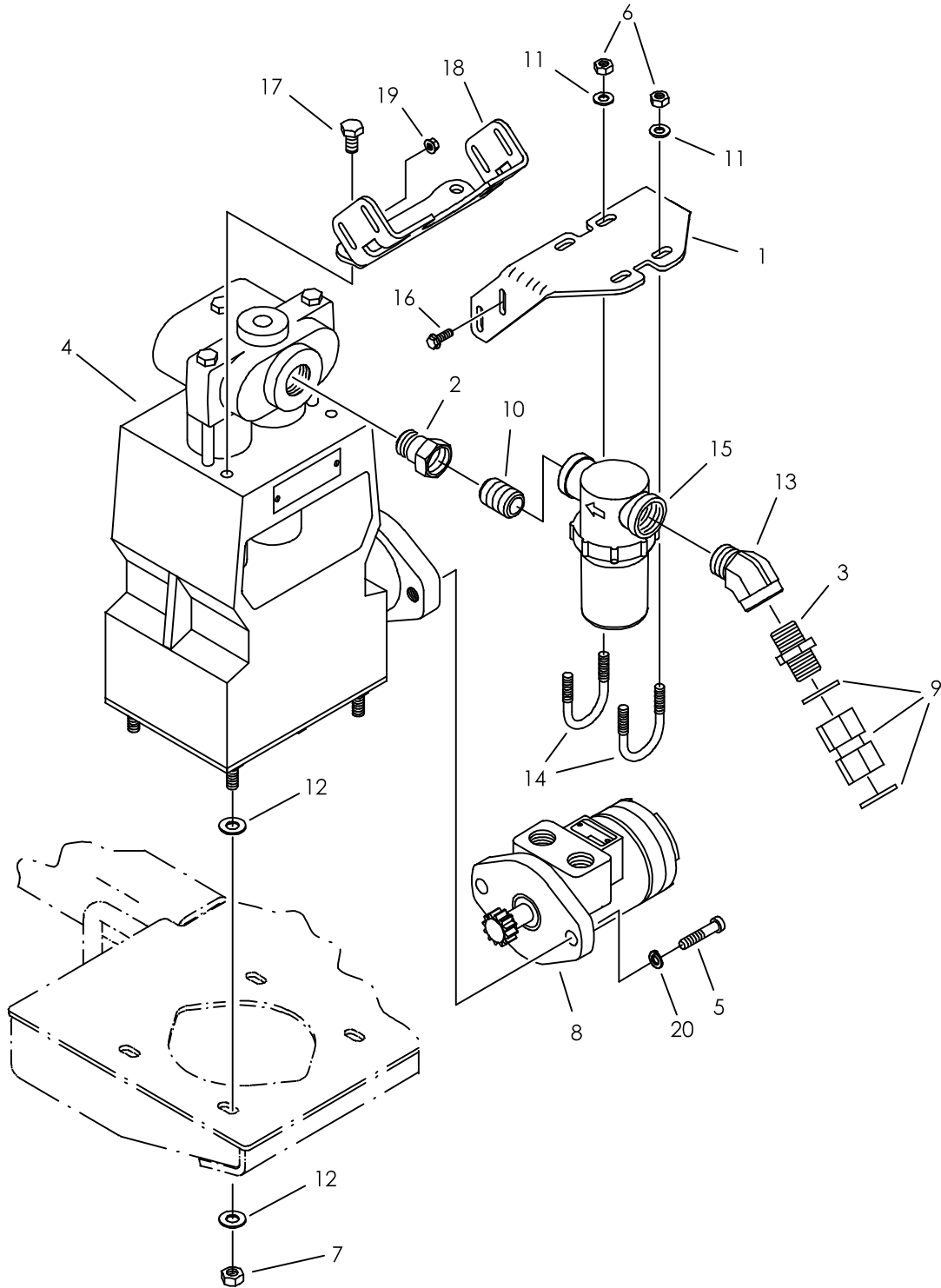
NOT SHOWN:

FOOTNOTES:

1. REFER TO DRILLING FLUID PUMP PAGE FOR SERVICE PARTS.
PUMPS ON EARLY MACHINES USED (4) 105-826 FLG LOCK BOLTS FOR MOUNTING. IF REPLACING EARLY MACHINE PUMP WITH CURRENT PUMP (MOUNTED WITH STUDS) SHEET METAL MODIFICATION IS REQUIRED. REFER TO 052-215 SERVICE BULLETIN.

NOTE:

DRILLING FLUID PUMP INLET
 BEGINS WITH SERIAL # 2T4485



DRILLING FLUID PUMP INLET BEGINS WITH SERIAL # 2T4485

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------|--------------------------------------|
| 1. | 310-509 | 1 | UPPER BRACKET | |
| 2. | 115-151 | 1 | REDUCER (16N-12NF) | |
| 3. | 115-449 | 1 | REDUCER (12N-12G, BRASS) | |
| 4. | 158-057 | - | DRILLING FLUID PUMP | SEE FOOTNOTE 1 |
| 5. | 106-204 | 2 | BOLT (1/2-NC X 1-1/2", SOC) | USE 242 LOCTITE, TORQUE TO 100 FT-LB |
| 6. | 105-089 | 4 | LOCKNUT (5/16-NC) | DO NOT OVER TIGHTEN |
| 7. | 105-047 | 4 | LOCKNUT (3/8-NC) | |
| 8. | 158-1008 | - | HYDRAULIC MOTOR | SEE FOOTNOTE 2 |
| 9. | 156-968 | 1 | CONNECTOR(12GF-12GF) | |
| 10. | 115-163 | 1 | ALL THREAD (12N) SCH 80 | |
| 11. | 105-226 | 4 | WASHER (5/16") | |
| 12. | 107-368 | 8 | WASHER (3/8", HARDENED) | |
| 13. | 149-513 | 1 | STREET ELBOW (12N-12NF45) | |
| 14. | 107-563 | 2 | U-BOLT (5/16-NC X 1-3/8") | |
| 15. | 153-133 | 1 | STRAINER (12NF) | WHITE WITH TRANSPARENT BOWL |
| | 153-198 | | SCREEN (20-MESH) | 1.5" DIA X 3.7" LG |
| 16. | 106-161 | 4 | FLG SCREW (M6-1.00 X 20MM) | |
| 17. | 105-032 | 2 | BOLT (3/8-NC X 3/4") | |
| 18. | 310-510 | 1 | LOWER BRACKET | |
| 19. | 106-385 | 4 | FLG LOCKNUT (M6-1.00) | |
| 20. | 105-070 | 2 | LOCK WASHER (1/2") | |

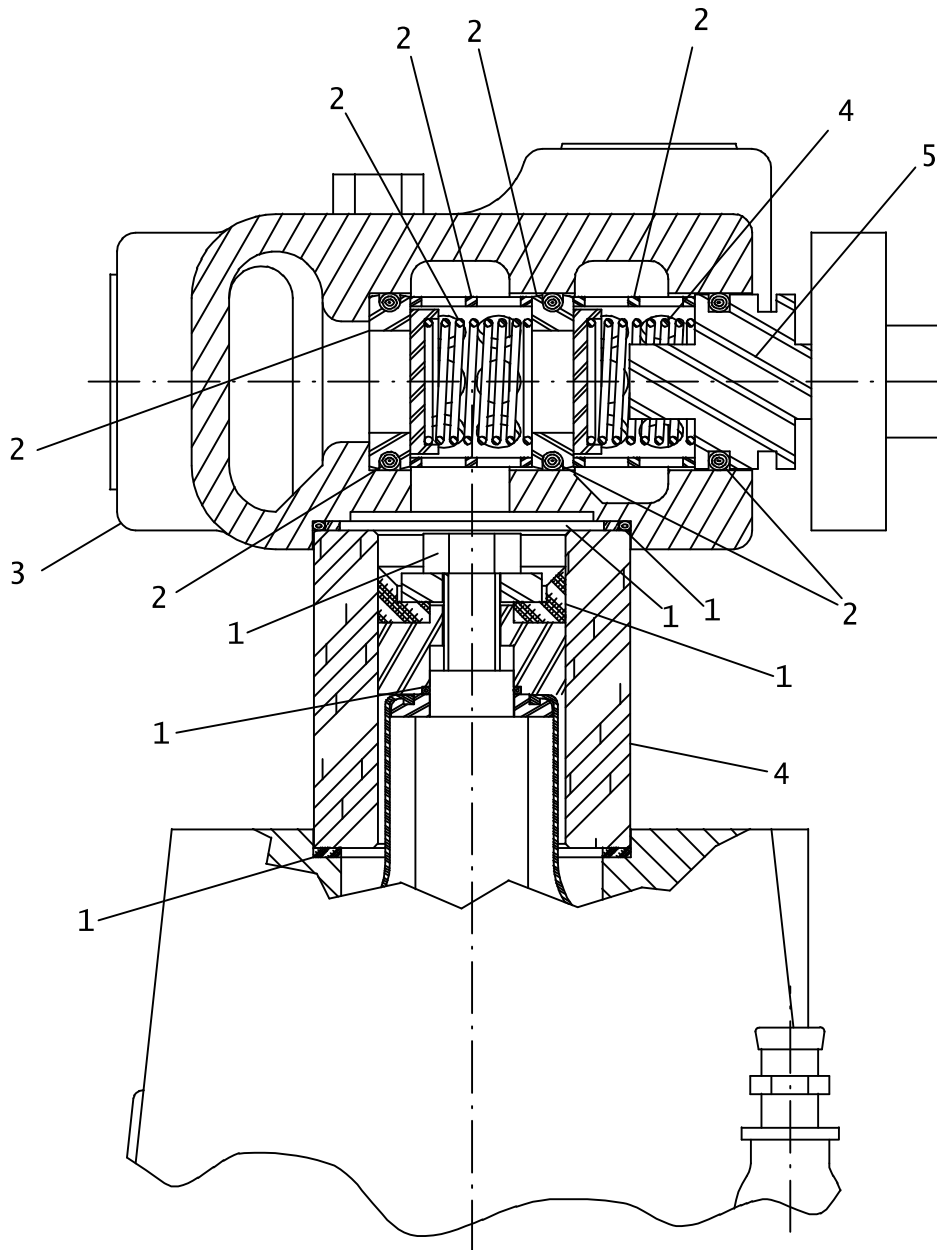
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FOOTNOTES:

1. REFER TO DRILLING FLUID PUMP PAGE FOR SERVICE PARTS.
2. USE COUPLING GREASE.

NOTE:

DRILLING FLUID PUMP



DRILLING FLUID PUMP

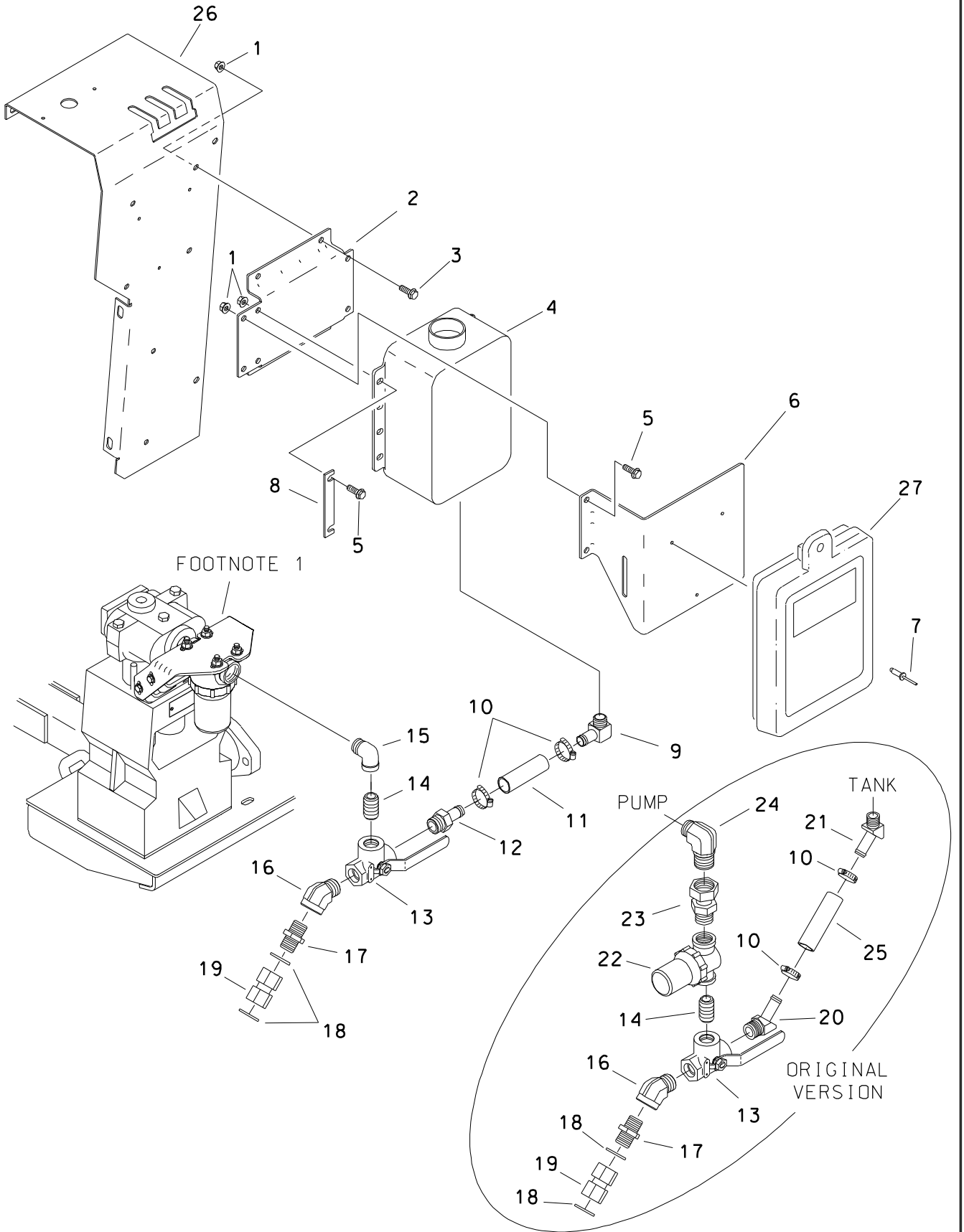
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|------------------------------|---------|
| | 158-057 | 1 | DRILLING FLUID PUMP | |
| | 197-087 | - | REBUILT 158-057 FLUID PUMP | |
| 1. | 190-933 | - | PACKING REPAIR KIT | |
| 2. | 190-815 | - | VALVE REPAIR KIT | |
| 3. | 499-015 | 1 | VALVE CHAMBER/FLUID CYLINDER | |
| 4. | 500-903 | 2 | CLINDER, CERAMIC | |
| 5. | 499-086 | 2 | VALVE COVER | |

NOT SHOWN:

FOOTNOTES:

NOTE:

ANTIFREEZE KIT



FOOTNOTE 1

PUMP

TANK

ORIGINAL VERSION

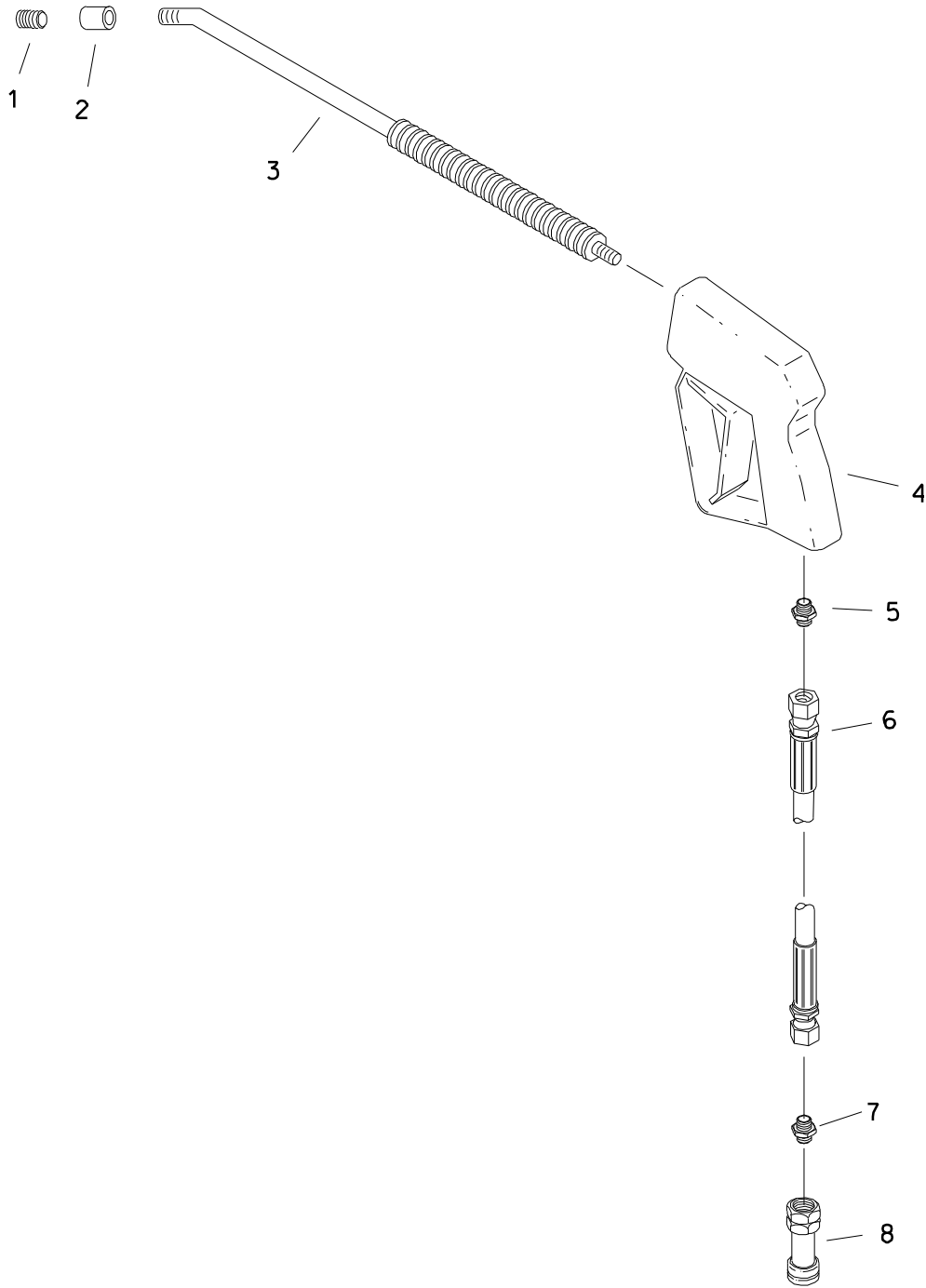
ANTIFREEZE KIT

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|-------------------------|
| | 101-031 | - | ANTIFREEZE KIT | INCLUDES REF NO.'S 1-15 |
| 1. | 106-386 | 10 | FLG LOCKNUT (M8-1.25) | |
| 2. | 305-576 | 1 | FORMED MOUNT | |
| 3. | 106-380 | 4 | FLG LK SCREW (M8-1.25 X 16MM) | |
| 4. | 149-382 | 1 | ANTIFREEZE TANK (1 GAL) | |
| 5. | 106-162 | 6 | FLG SCREW (M8-1.25 X 20MM) | |
| 6. | 305-577 | 1 | COMPARTMENT MOUNT | |
| 7. | 110-560 | 3 | POP RIVET (3/16" X 1/2", ALUM) | |
| 8. | 305-579 | 2 | MOUNT BAR | |
| 9. | 514-285 | 1 | S/O COUPLER (08N-10H90) | |
| 10. | 110-217 | 2 | WORM CLAMP (7/16" TO 1") | |
| 11. | 116-855 | AR | BULK TUBE (.625", SOLD PER 1") | USE 1 @ 4" |
| 12. | 153-196 | 1 | S/O COUPLER (12N-10H) | |
| 13. | 149-431 | 1 | SHUT-OFF (12NF, 3-WAY) | |
| 14. | 115-163 | 1 | ALL THREAD (12N) SCH 80 | |
| 15. | 153-197 | 1 | STREET ELBOW (12N-12NF90) | |
| 16. | 149-513 | - | STREET ELBOW (12N-12NF45) | SEE FOOTNOTE 2 |
| 17. | 115-449 | - | REDUCER (12N-12G, BRASS) | SEE FOOTNOTE 2 |
| 18. | 116-896 | - | WASHER (1.100", RUBBER) | SEE FOOTNOTE 2 |
| 19. | 156-968 | - | CONNECTOR (12GF-12GF) | SEE FOOTNOTE 2 |
| 20. | 149-488 | - | S/O COUPLER (12N-10H45) | |
| 21. | 149-487 | - | S/O COUPLER (08N-10H45) | |
| 22. | 149-381 | - | STRAINER (12NF) | |
| | 153-133 | - | STRAINER (12NF) | |
| 23. | 149-489 | - | UNION (12N-12JFX) | |
| 24. | 149-490 | - | CONNECTOR (16N-12J90) | USE 1 @ 7.5" |
| 25. | 116-855 | - | BULK TUBE (.625", SOLD PER 1") | SEE FOOTNOTE 2 |
| 26. | 302-838 | - | SETUP CONSOLE COVER | SEE FOOTNOTE 2 |
| 27. | 250-622 | - | MANUAL COMPARTMENT | |

FOOTNOTES

1. SEE PAGES ENTITLED "DRILLING FLUID PUMP INLET" FOR PART NUMBERS.
2. INCLUDED WITH BASIC MACHINE.

WASH WAND



WASH WAND

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------|----------------|
| | 101-024 | - | WASH WAND ACCESSORY KIT | SEE FOOTNOTE 1 |
| 1. | 155-242 | 1 | NOZZLE (04N, ORF .047", TC) | |
| 2. | 115-170 | 1 | COLLAR (04NF) | |
| 3. | 259-353 | 1 | WASH WAND (04N-36") | |
| 4. | 259-197 | 1 | SPRAY GUN | |
| | 190-938 | - | REPAIR KIT, SPRAY GUN | |
| 5. | 514-141 | 1 | CONNECTOR (06N-080) | |
| 6. | 154-804 | 1 | HOSE (080FX-290"-3000) | |
| 7. | 154-233 | 1 | CONNECTOR (08S-080) | |
| 8. | 159-088 | 1 | QDC BODY (08-08SF) | |
| | 190-186 | - | SEAL REPAIR KIT | |

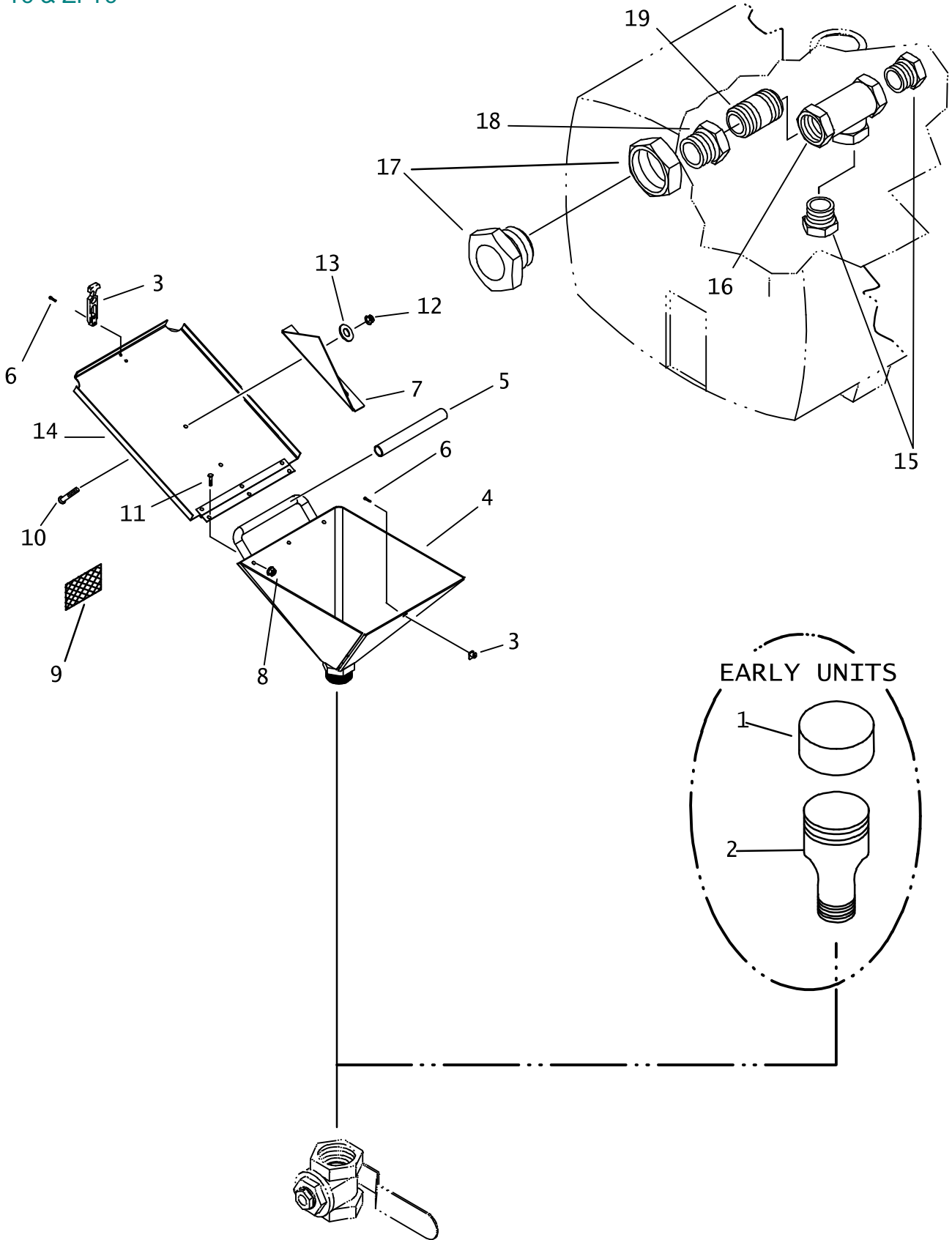
FOOTNOTES

1. INCL REF NO.'S 1 THRU 8 & PARTS NOTED ON "DRILLING FLUID PUMP/SWIVEL" PAGE.

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

FLUID TRANSFER HOPPER FT5 & ZFT5



FLUID TRANSFER HOPPER FT5 & ZFT5

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|--------------------------------|---------------------|
| 1. | 105-768 | 1 | PLASTIC CAP (64N) | USED ON EARLY UNITS |
| 2. | 149-379 | 1 | SWAGE NIPPLE (34N X 64N) | USED ON EARLY UNITS |
| 3. | 110-638 | 1 | FLEX DRAW LATCH | |
| 4. | 308-478 | 1 | HOPPER | |
| 5. | 116-389 | AR | BULK TUBING (3/4" SOLD PER 1') | USE 1 @ 6" |
| 6. | 106-428 | 3 | SCREW (M5-0.80 X 14mm, SOC) | |
| 7. | 346-521 | 1 | BAG OPENER | |
| 8. | 105-085 | 3 | LOCK NUT (1/4-NC) | |
| 9. | 275-184 | 1 | WARNING MOVING PARTS DECAL | |
| 10. | 105-835 | 2 | CARRIAGE BOLT (3/8-NC Xf") | |
| 11. | 105-174 | 3 | BOLT (1/4-NC X ") | |
| 12. | 105-047 | 2 | LOCKNUT (3/8-NC) | |
| 13. | 105-118 | 2 | WASHER (3/8) | |
| 14. | 308-476 | 1 | LID | |
| 15. | 115-271 | 2 | REDUCER (24N-12NF) | SEE FOOTNOTE 1 |
| 16. | 115-269 | 1 | TEE (24NF) | SEE FOOTNOTE 1 |
| 17. | <u>514-269</u> | - | BK CONN. (48N-32NFBK, NYL) | |
| | 157-492 | - | BK CONNECTOR (32NF, POLY) | SEE FOOTNOTE 2 |
| 18. | 115-087 | 1 | REDUCER (32N-24NF) | SEE FOOTNOTE 1 |
| 19. | 115-263 | 1 | ALL THREAD (24N) | SEE FOOTNOTE 1 |

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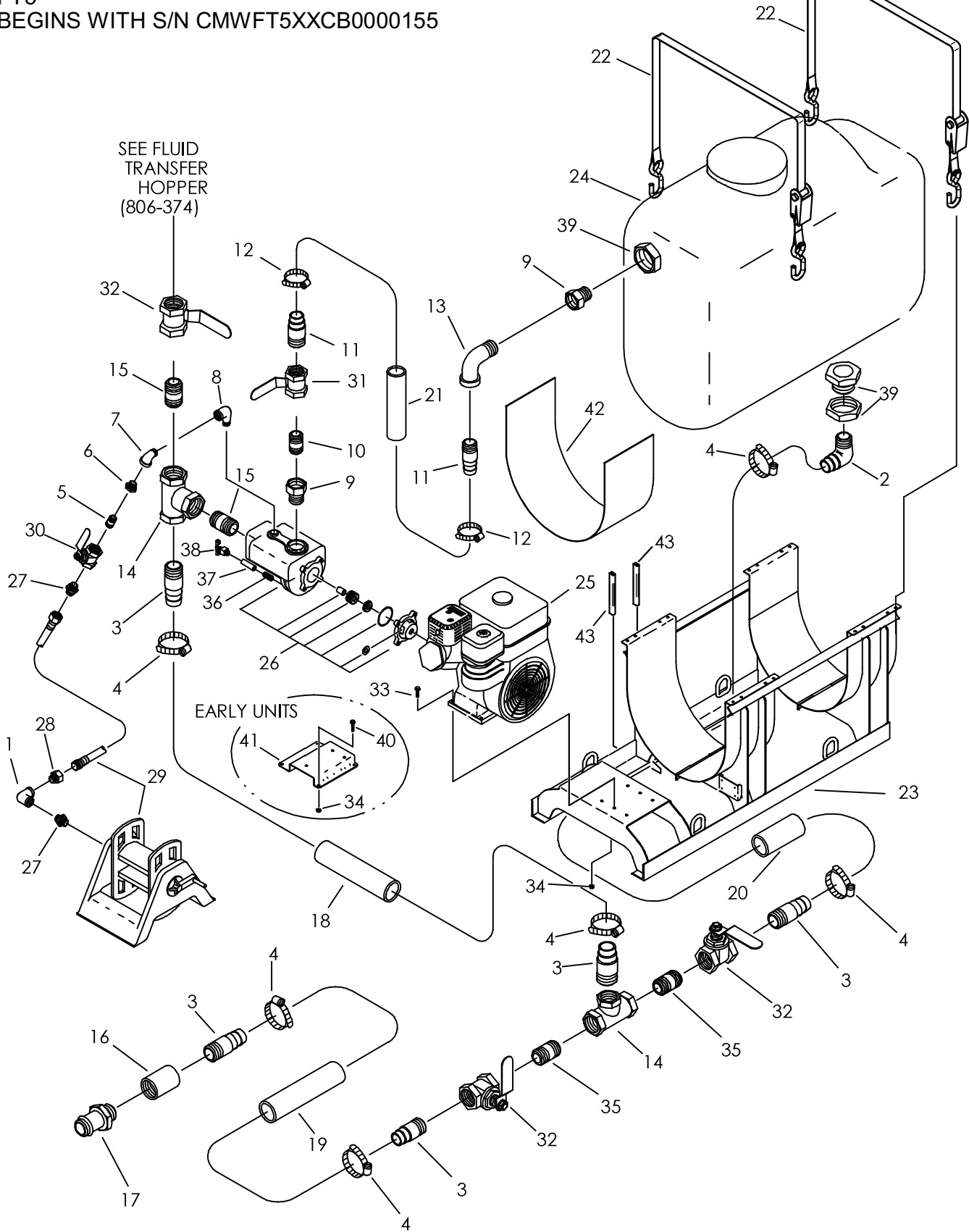
FOOTNOTES:

1. USE ONLY ON UNITS WITH HOPPER
2. HOLES MAY REQUIRE MODIFICATION FOR NEW FITTINGS.

NOTE:

FLUID TRANSFER SYSTEM

FT5
BEGINS WITH S/N CMWFT5XXCB0000155



FLUID TRANSFER SYSTEM

FT5

BEGINS WITH S/N CMWFT5XXCB0000155

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|---------------------------------|----------------------------------|
| 1. | 115-108 | 1 | ELBOW (12NF-12NF90) | NOT INCLUDED WITH SYSTEM |
| 2. | 514-320 | 1 | S/O COUPLER (32N-32H90) | |
| 3. | 514-089 | 5 | S/O COUPLER (32N-32H) | |
| 4. | 110-134 | 6 | WORM CLAMP (2.062" TO 2.750") | |
| 5. | 115-104 | 1 | NIPPLE (12N X 1-1/2") | |
| 6. | 115-151 | 1 | REDUCER (16N-12NF) | |
| 7. | 114-007 | 1 | STREET ELBOW (16N-16NF45) | |
| 8. | 115-440 | 1 | STREET ELBOW (16N-16NF90) | |
| 9. | 115-087 | 2 | REDUCER (32N-24NF) | |
| 10. | 115-040 | 1 | NIPPLE (24N-3") | |
| 11. | 155-188 | 2 | S/O COUPLER (24N-24H) | |
| 12. | 110-250 | 2 | WORM CLAMP (1-1/4" TO 2-1/8") | |
| 13. | 115-044 | 1 | STREET ELBOW (24N-24NF90) | |
| 14. | 154-484 | 2 | TEE (32NF-32NF-32NF) | |
| 15. | 115-295 | 2 | ALL THREAD (32N-2") | |
| 16. | 115-186 | 1 | COLLAR (32NF) | |
| 17. | 159-181 | 1 | FHC ADAPTER (40-32N) | |
| 18. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | SEE FOOTNOTE 1 |
| 19. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 23" |
| 20. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 27" |
| 21. | 116-047 | AR | BULK HOSE (1-1/2", SOLD PER 1") | USE 1 @ 21" |
| 22. | 118-181 | 2 | RATCHET STRAP (1" X 6') | |
| 23. | 319-176 | 1 | SADDLE PUMP SKID | |
| | 303-209 | 1 | SADDLE PUMP SKID | OBSOLETE SEE FOOTNOTE 2 |
| 24. | 364-591 | 1 | WATER TANK (200 GAL) | |
| | 153-718 | 1 | TANK LID | |
| | 190-053 | | POLY-PATCH TANK REPAIR KIT | |
| | <u>364-519</u> | 1 | WATER TANK (200 GAL) | OBSOLETE INCL FILLWELL AND COVER |
| | 303-982 | 1 | FILLWELL (10"), WATER TANK | SERVICE PART FOR 364-519 |
| | 303-983 | 1 | COVER (10") | SERVICE PART FOR 364-519 |
| 25. | 195-028 | 1 | ENGINE - HONDA | |
| | 194-009 | - | FUEL TANK CAP | |
| 26. | 158-398 | - | WATER PUMP | OBSOLETE |
| | 149-929 | 1 | CENTRIFUGAL PUMP | |
| | 165-834 | 1 | SHIM (.015", IMPELLER) | |
| | 157-668 | - | EXTERNAL SHAFT SEAL (3/4") | OBSOLETE |
| | 191-017 | 1 | PUMP SEAL KIT | |
| | 180-817 | 1 | SLEEVE | |
| | 500-248 | 1 | O-RING (246 D70) | |
| | 194-044 | 1 | ENGINE ADAPTER (HONDA 5.5 HP) | |
| | 500-860 | 1 | SLINGER | |
| 27. | 114-038 | 2 | NIPPLE (12N-12NH) | ONE INCLUDED WITH SYSTEM |
| 28. | 114-037 | 1 | CONNECTOR (12N-12NH) | NOT INCLUDED WITH SYSTEM |
| 29. | NA | 1 | WATER HOSE & HOSE REEL | NOT INCLUDED WITH SYSTEM |

NOT SHOWN:

FOOTNOTES:

- USE 1 @ 8". EARLY UNITS WITH ORIGINAL SKID USE 1 @ 10"
- ORIGINAL SKID USED ENGINE MOUNT PLATE (REF. 46).

NOTE:

FLUID TRANSFER SYSTEM

FT5

BEGINS WITH S/N CMWFT5XXCB0000155

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|--|
| 30. | 120-018 | 1 | SHUT-OFF (12NF) | |
| 31. | 120-023 | 1 | SHUT-OFF (24NF-24NF) | |
| 32. | 120-059 | 3 | SHUT-OFF (32NF-32NF) | |
| 33. | 106-989 | 4 | FLG LK SCREW (M8-1.25 X 35mm) | |
| 34. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | 8 USED ON EARLY UNITS |
| 35. | 115-296 | 2 | NIPPLE (32N-4") | |
| 36. | 115-166 | 1 | NIPPLE (04N-1.5") | |
| 37. | 115-170 | 1 | COLLAR (04NF) | |
| 38. | 110-141 | 1 | DRAIN VALVE (04N) | |
| 39. | 155-261 | 2 | BK CONNECTOR (32NF-32NF, NYL) | OBSOLETE |
| | 157-492 | 2 | BK CONNECTOR (32NF, POLY) | SEE FOOTNOTE 4 |
| 40. | 106-991 | 4 | FLG LK SCREW (M8-1.25 X 20mm) | USED ON EARLY UNITS WITH ORIGINAL SKID |
| 41. | 346-350 | 1 | ENGINE MOUNT PLATE | USED ON EARLY UNITS WITH ORIGINAL SKID |
| 42. | 305-597 | 2 | TANK PAD (13") | USED ON EARLY UNITS WITH ORIGINAL SKID. SEE FOOTNOTE 3 |
| | 305-572 | 2 | TANK PAD (15") | BEGINS WITH S/N 2S0739. SEE FOOTNOTE 3 |
| | 256-665 | AR | ADHESIVE | ENDS WITH S/N 2S0738. SEE FOOTNOTE 3 |
| 43. | 115-704 | AR | BULK EDGE (1/4", SOLD PER 1") | USE 2 @ 6" |

NOT SHOWN:

FOOTNOTES:

3. NOT REQUIRED PARTS.
4. HOLES MAY REQUIRE MODIFICATION FOR NEW FITTINGS.

NOTE:

REFER TO O-RING CHART (800-301) IN THE BACK OF THE BOOK FOR REPLACEMENT O-RINGS.

FLUID TRANSFER SYSTEM

FT5

ENDS WITH S/N CMWFT5XXVB0000150

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|----------------------------------|
| 1. | 115-108 | 1 | ELBOW (12NF-12NF90) | NOT INCLUDED WITH SYSTEM |
| 2. | 514-320 | 1 | S/O COUPLER (32N-32H90) | |
| 3. | 514-089 | 5 | S/O COUPLER (32N-32H) | |
| 4. | 110-134 | 6 | WORM CLAMP (2.062" TO 2.750") | |
| 5. | 115-104 | 1 | NIPPLE (12N X 1-1/2") | |
| 6. | 115-151 | 1 | REDUCER (16N-12NF) | |
| 7. | 114-007 | 1 | STREET ELBOW (16N-16NF45) | |
| 8. | 115-440 | 1 | STREET ELBOW (16N-16NF90) | |
| 9. | 115-087 | 2 | REDUCER (32N-24NF) | |
| 10. | 115-040 | 1 | NIPPLE (24N-3") | |
| 11. | 155-188 | 2 | S/O COUPLER (24N-24H) | |
| 12. | 110-250 | 2 | WORM CLAMP (1-1/4" TO 2-1/8") | |
| 13. | 115-044 | 1 | STREET ELBOW (24N-24NF90) | |
| 14. | 154-484 | 2 | TEE (32NF-32NF-32NF) | |
| 15. | 115-295 | 2 | ALL THREAD (32N-2") | |
| 16. | 115-186 | 1 | COLLAR (32NF) | |
| 17. | 159-181 | 1 | FHC ADAPTER (40-32N) | |
| 18. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | SEE FOOTNOTE 1 |
| 19. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 23" |
| 20. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 27" |
| 21. | 116-047 | AR | BULK HOSE (1-1/2", SOLD PER 1") | USE 1 @ 21" |
| 22. | 316-596 | 1 | STRAP | |
| 23. | 316-595 | 1 | STRAP | |
| 24. | 319-176 | 1 | SADDLE PUMP SKID | |
| | 303-209 | 1 | SADDLE PUMP SKID | OBSOLETE SEE FOOTNOTE 2 |
| 25. | 364-591 | 1 | WATER TANK (200 GAL) | |
| | 153-718 | 1 | TANK LID | |
| | 190-053 | | POLY-PATCH TANK REPAIR KIT | |
| | 364-519 | 1 | WATER TANK (200 GAL) | OBSOLETE INCL FILLWELL AND COVER |
| | 303-982 | 1 | FILLWELL (10"), WATER TANK | SERVICE PART FOR 364-519 |
| | 303-983 | 1 | COVER (10") | SERVICE PART FOR 364-519 |
| 26. | 195-028 | 1 | ENGINE - HONDA | |
| | 194-009 | - | FUEL TANK CAP | |
| 27. | 158-398 | - | WATER PUMP | OBSOLETE |
| | 149-929 | 1 | CENTRIFUGAL PUMP | |
| | 165-834 | 1 | SHIM (.015", IMPELLER) | |
| | 157-668 | - | EXTERNAL SHAFT SEAL (3/4") | OBSOLETE |
| | 191-017 | 1 | PUMP SEAL KIT | |
| | 180-817 | 1 | SLEEVE | |
| | 500-248 | 1 | O-RING (246 D70) | |
| | 194-044 | 1 | ENGINE ADAPTER (HONDA 5.5 HP) | |
| | 500-860 | 1 | SLINGER | |
| 28. | 114-038 | 2 | NIPPLE (12N-12NH) | ONE INCLUDED WITH SYSTEM |
| 29. | 114-037 | 1 | CONNECTOR (12N-12NH) | NOT INCLUDED WITH SYSTEM |
| 30. | NA | 1 | WATER HOSE & HOSE REEL | NOT INCLUDED WITH SYSTEM |

NOT SHOWN:

FOOTNOTES:

- USE 1 @ 8". EARLY UNITS WITH ORIGINAL SKID USE 1 @ 10"
- ORIGINAL SKID USED ENGINE MOUNT PLATE (REF. 46).

NOTE:

**FLUID TRANSFER SYSTEM
FT5
ENDS WITH S/N CMWFT5XXVB0000150**

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|--|
| 31. | 120-018 | 1 | SHUT-OFF (12NF) | |
| 32. | 120-023 | 1 | SHUT-OFF (24NF-24NF) | |
| 33. | 120-059 | 3 | SHUT-OFF (32NF-32NF) | |
| 34. | 106-989 | 4 | FLG LK SCREW (M8-1.25 X 35mm) | |
| 35. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | 8 USED ON EARLY UNITS |
| 36. | 106-175 | 8 | LOCKNUT (M10-1.50) | |
| 37. | 105-118 | 4 | WASHER (3/8") | |
| 38. | 115-296 | 2 | NIPPLE (32N-4") | |
| 39. | 115-166 | 1 | NIPPLE (04N-1.5") | |
| 40. | 115-170 | 1 | COLLAR (04NF) | |
| 41. | 110-141 | 1 | DRAIN VALVE (04N) | |
| 42. | 155-261 | 2 | BK CONNECTOR (32NF-32NF, NYL) | OBSOLETE |
| | 157-492 | 2 | BK CONNECTOR (32NF, POLY) | SEE FOOTNOTE 4 |
| 43. | 106-991 | 4 | FLG LK SCREW (M8-1.25 X 20mm) | USED ON EARLY UNITS WITH ORIGINAL SKID |
| 44. | 346-350 | 1 | ENGINE MOUNT PLATE | USED ON EARLY UNITS WITH ORIGINAL SKID |
| 45. | 305-597 | 2 | TANK PAD (13") | USED ON EARLY UNITS WITH ORIGINAL SKID. SEE FOOTNOTE 3 |
| | 305-572 | 2 | TANK PAD (15") | BEGINS WITH S/N 2S0739. SEE FOOTNOTE 3 |
| | 256-665 | AR | ADHESIVE | ENDS WITH S/N 2S0738. SEE FOOTNOTE 3 |
| 46. | 115-704 | AR | BULK EDGE (1/4", SOLD PER 1") | USE 2 @ 6" |

NOT SHOWN:

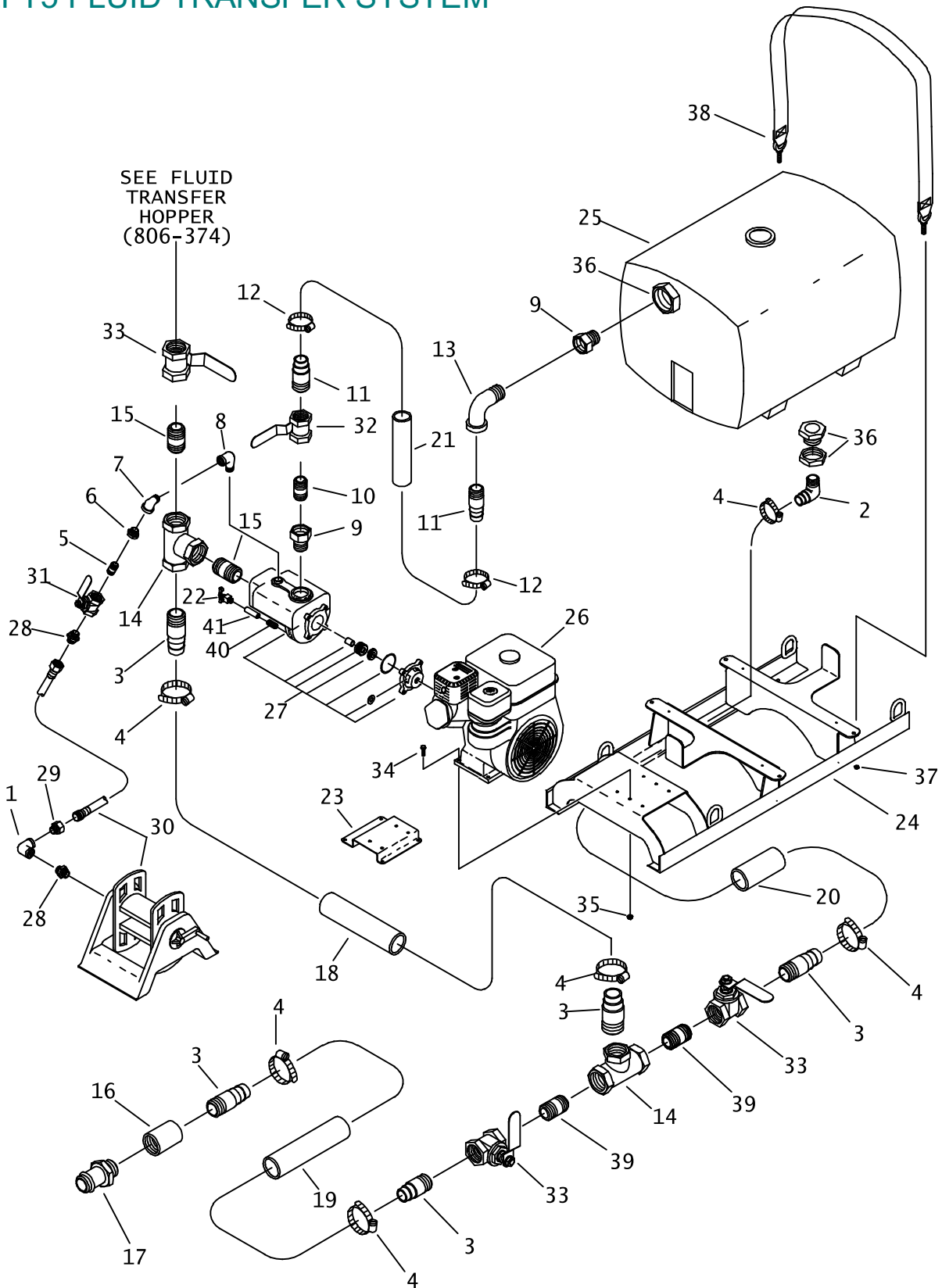
FOOTNOTES:

- 3. NOT REQUIRED PARTS.
- 4. HOLES MAY REQUIRE MODIFICATION FOR NEW FITTINGS.

NOTE:

REFER TO O-RING CHART (800-301) IN THE BACK OF THE BOOK FOR REPLACEMENT O-RINGS.

ZFT5 FLUID TRANSFER SYSTEM



ZFT5 FLUID TRANSFER SYSTEM

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|--------------------------------|--------------------------|
| 1. | 115-108 | 1 | ELBOW (12NF-12NF90) | NOT INCLUDED WITH SYSTEM |
| 2. | 514-320 | 1 | S/O COUPLER (32N-32H90) | |
| 3. | 514-089 | 5 | S/O COUPLER (32N-32H) | |
| 4. | 110-134 | 6 | WORM CLAMP (2.062" TO 2.750") | |
| 5. | 115-104 | 1 | NIPPLE (12N X 1-1/2") | |
| 6. | 115-151 | 1 | REDUCER (16N-12NF) | |
| 7. | 114-007 | 1 | STREET ELBOW (16N-16NF45) | |
| 8. | 115-440 | 1 | STREET ELBOW (16N-16NF90) | |
| 9. | 115-087 | 2 | REDUCER (32N-24NF) | |
| 10. | 115-040 | 1 | NIPPLE (24N-3") | |
| 11. | 155-188 | 2 | S/O COUPLER (24N-24H) | |
| 12. | 110-250 | 2 | WORM CLAMP (1-1/4" TO 2-1/8") | |
| 13. | 115-044 | 1 | STREET ELBOW (24N-24NF90) | |
| 14. | 154-484 | 2 | TEE (32NF-32NF-32NF) | |
| 15. | 115-295 | 2 | ALL THREAD (32N-2") | |
| 16. | 115-186 | 1 | COLLAR (32NF) | |
| 17. | 159-181 | 1 | FHC ADAPTER (40-32N) | |
| 18. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 8" |
| 19. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 23" |
| 20. | 116-505 | AR | BULK HOSE (2", SOLD PER 1') | USE 1 @ 18" |
| 21. | 116-047 | AR | BULK HOSE (1-1/2",SOLD PER 1') | USE 1 @ 25" |
| 22. | 110-141 | 1 | DRAIN VALVE (04N) | |
| 23. | 346-350 | 1 | ENGINE MOUNT PLATE | USED ON EARLY UNITS |
| 24. | 305-795 | 1 | ZFT5 SKID | |
| 25. | 149-432 | 1 | WATER TANK (100 GAL) | INCL COVER |
| | 305-799 | 1 | COVER (5") | |
| 26. | 195-028 | 1 | ENGINE - HONDA | |
| | 194-009 | - | FUEL TANK CAP | |
| 27. | <u>158-398</u> | 1 | WATER PUMP | |
| | 149-929 | 1 | CENTRIFUGAL PUMP | |
| | 165-834 | 1 | SHIM (.015",IMPELLER) | |
| | <u>157-668</u> | 1 | EXTERNAL SHAFT SEAL (3/4") | |
| | 191-017 | 1 | PUMP SEAL KIT | |
| | 180-817 | 1 | SLEEVE | |
| | 500-248 | 1 | O-RING (246 D70) | |
| | 194-044 | 1 | ENGINE ADAPTER (HONDA 5.5 HP) | |
| | 500-860 | 1 | SLINGER | |
| 28. | 114-038 | 2 | NIPPLE (12N-12NH) | ONE INCLUDED WITH SYSTEM |
| 29. | 114-037 | 1 | CONNECTOR (12N-12NHF) | NOT INCLUDED WITH SYSTEM |
| 30. | NA | 1 | WATER HOSE & HOSE REEL | NOT INCLUDED WITH SYSTEM |
| 31. | 120-018 | 1 | SHUT-OFF (12NF) | |
| 32. | 120-023 | 1 | SHUT-OFF (24NF-24NF) | |

FOOTNOTES:

NOTE:

ZFT5 FLUID TRANSFER SYSTEM

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|----------------|
| 33. | 120-059 | 3 | SHUT-OFF (32NF-32NF) | |
| 34. | 106-989 | 4 | FLG LK SCREW (M8-1.25 X 35MM) | |
| 35. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | |
| 36. | 155-261 | 2 | BK CONNECTOR (32NF-32NF, NYL) | |
| | 157-492 | 2 | BK CONNECTOR (32NF, POLY) | SEE FOOTNOTE 1 |
| 37. | 105-814 | 4 | FLG LOCKNUT (3/8-NC) | |
| 38. | 105-779 | 2 | STRAP | |
| 39. | 115-296 | 2 | NIPPLE (32N-4") | |
| 40. | 115-166 | 1 | NIPPLE (04N-1.5") | |
| 41. | 115-170 | 1 | COLLAR (04NF) | |

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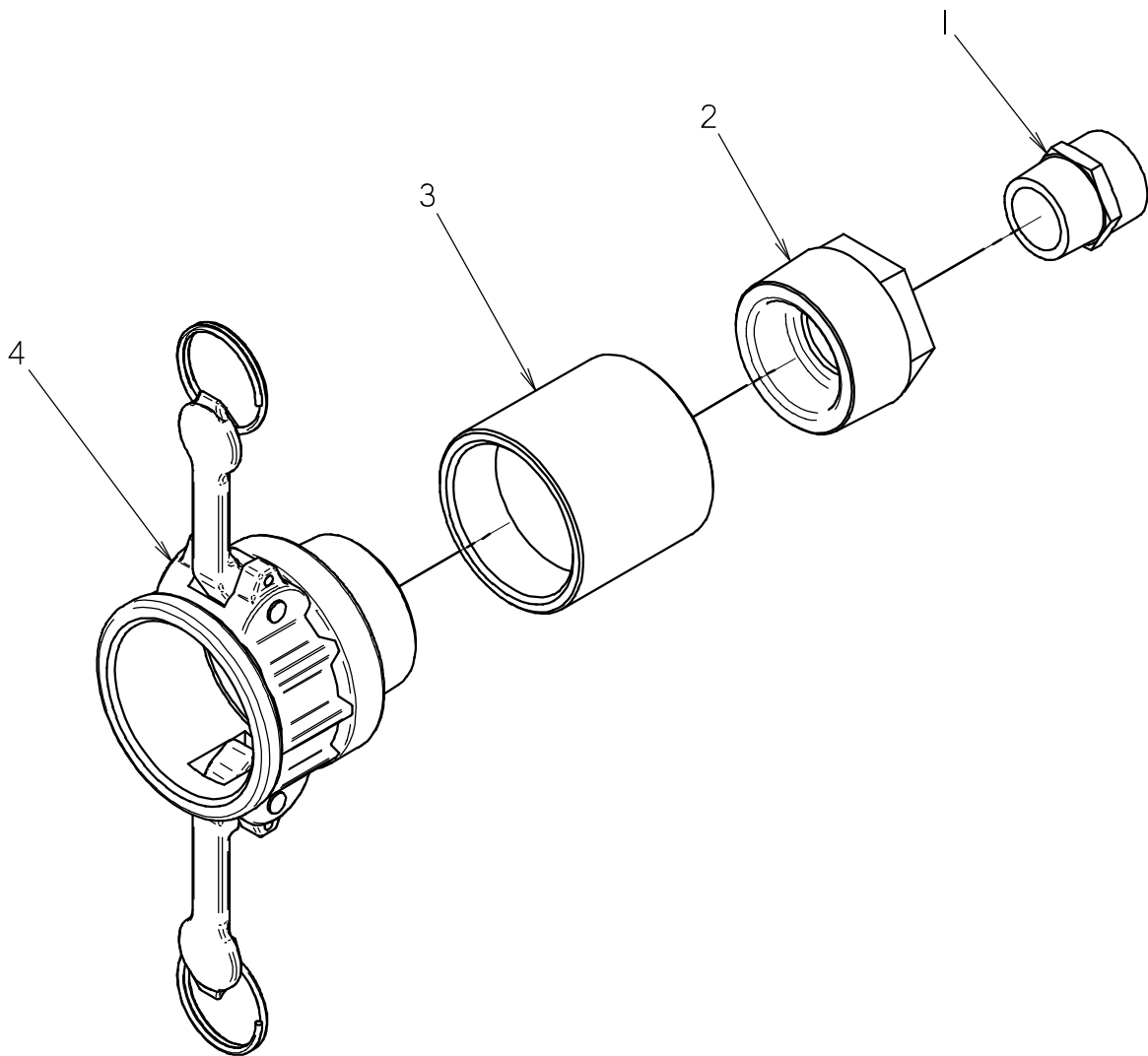
FOOTNOTES:

1. HOLES MAY REQUIRE MODIFICATION FOR NEW FITTINGS.

NOTE:

REFER TO O-RING CHART (800-301) IN THE BACK OF THE BOOK FRO REPLACEMENT O-RINGS

GARDEN HOSE ADAPTER



GARDEN HOSE ADAPTER

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------|----------------------|
| | 159-891 | | GARDEN HOSE ADAPTER | INCL. REF No's 1 - 4 |
| 1 | 114-038 | 1 | NIPPLE (12N-12NH) | |
| 2 | 115-271 | 1 | REDUCER (24N-12NF) | |
| 3 | 115-134 | 1 | COLLAR (24NF) | |
| 4 | 159-500 | 1 | FHC BODY (24-24N) | |

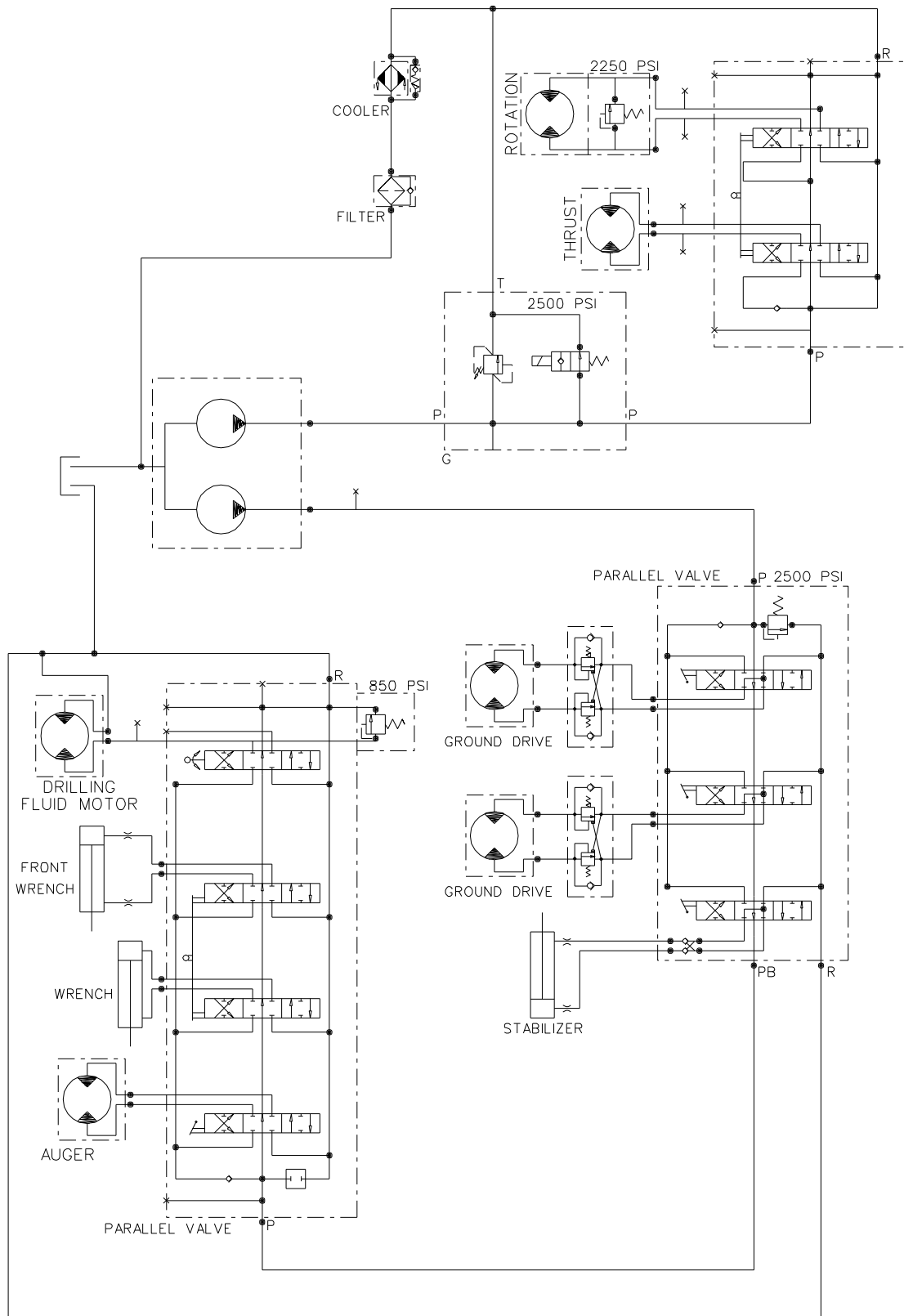
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FOOTNOTES:

NOTE:

HYDRAULICS

HYDRAULIC SCHEMATIC

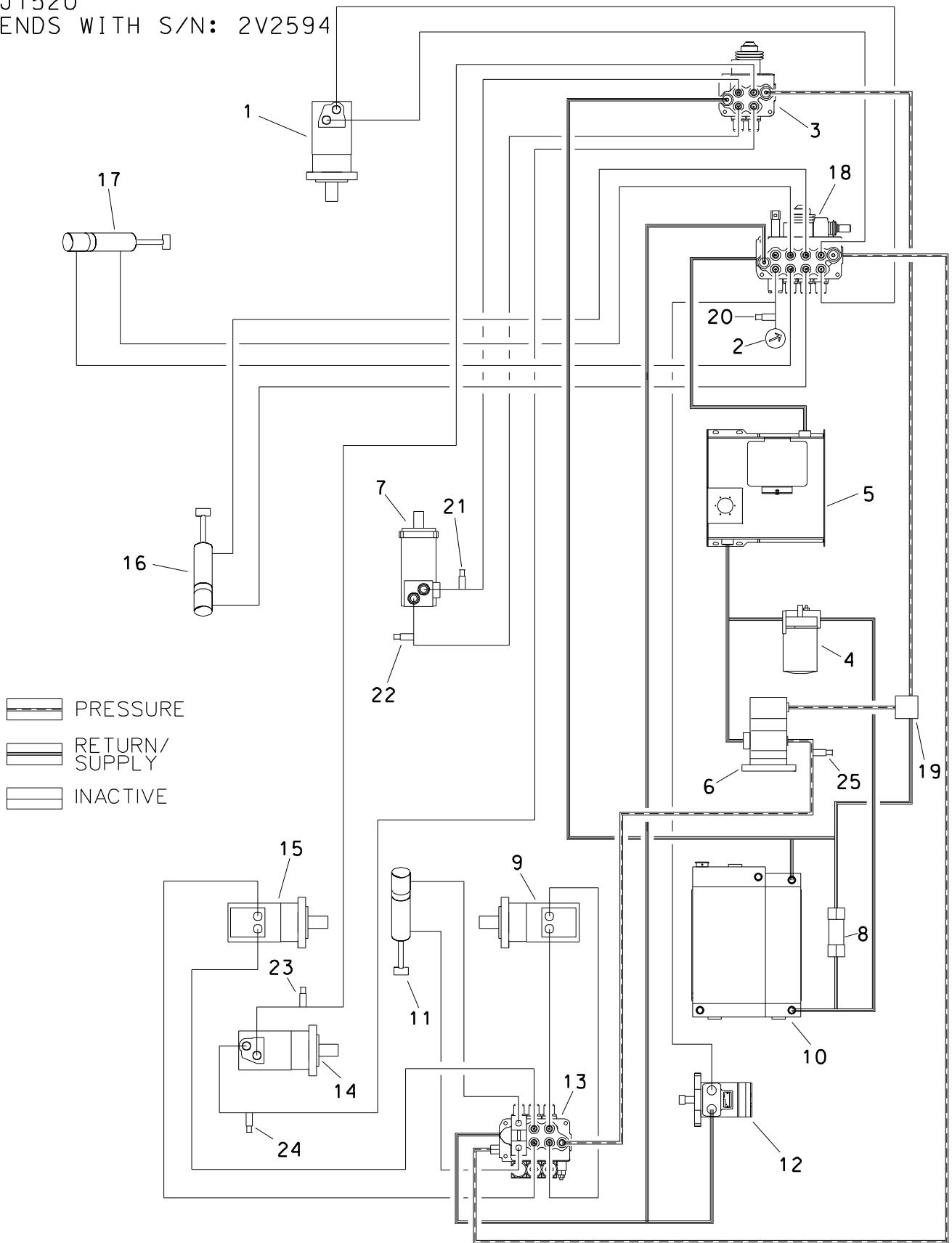


HYDRAULIC SCHEMATIC

SPECIFICATIONS

| ENGINE | | PUMP | | | MOTOR | |
|--------------------|------|--------------------------|-----|---------------|----------------|----------------|
| MFG (NO LOAD) | RPM | TYPE | GPM | DISPLACEMENT | TYPE | DISPLACEMENT |
| KUBOTA D1105B-1 | 3200 | THRUST/ROT. AUXILIARY | 15 | 1.2 CU IN/REV | ROTATION | 18.7 CU IN/REV |
| | | | 10 | .84 CU IN/REV | THRUST | 18.7 CU IN/REV |
| | | | | | GROUND DRIVE | 24 CU IN/REV |
| | | | | | DRILLING FLUID | 5.9 CU IN/REV |
| | | | | | ANCHOR | 24 CU IN/REV |

HYDRAULIC DIAGRAM
 JT520
 ENDS WITH S/N: 2V2594



HYDRAULIC DIAGRAM

JT520

ENDS WITH S/N: 2V2594

REF

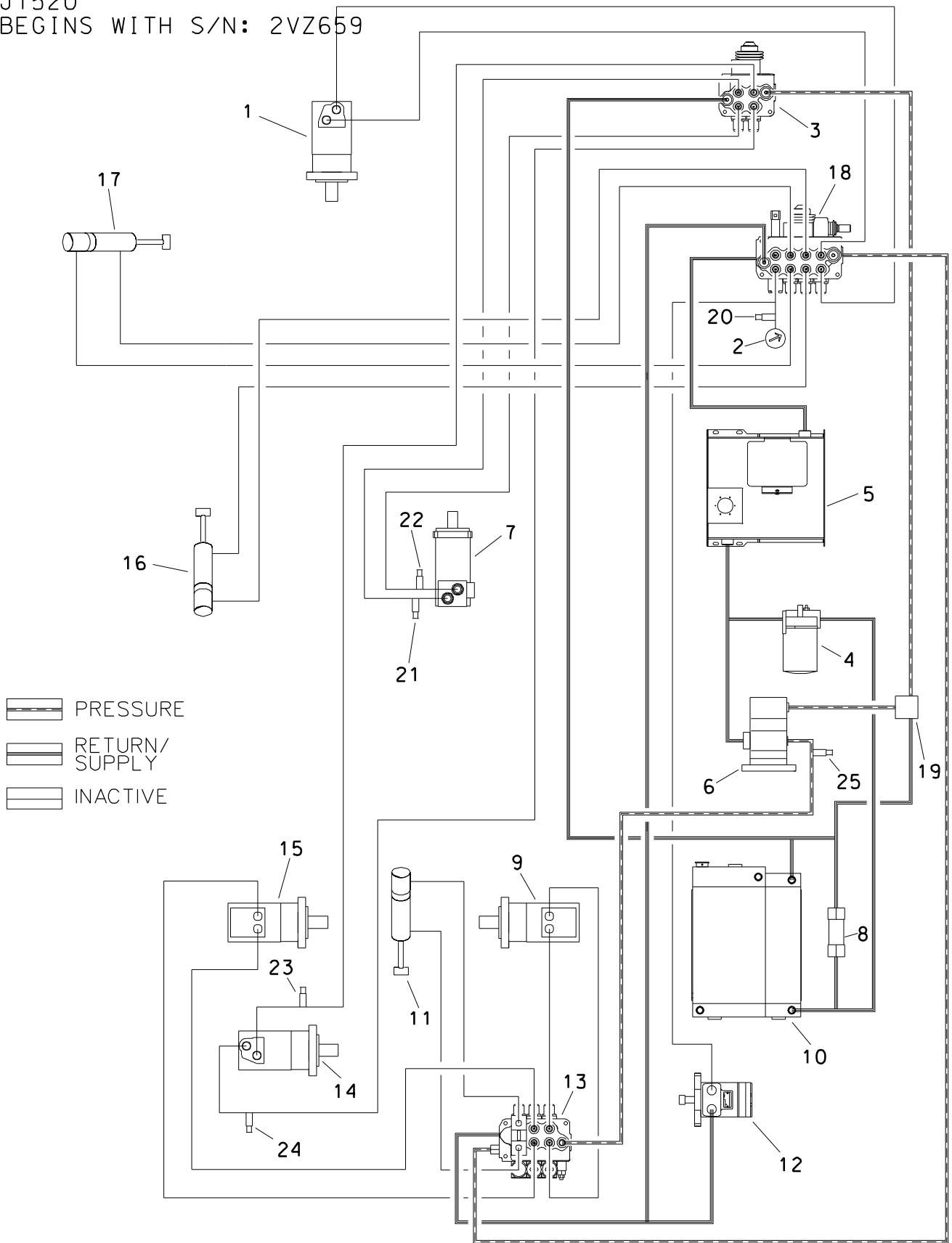
| NO. | DESCRIPTION | REMARKS |
|-----|-----------------------------|---------|
| 1. | ANCHOR MOTOR | |
| 2. | MUD GAUGE | |
| 3. | ROTATION/THRUST VALVE | |
| 4. | HYD FILTER | |
| 5. | HYD TANK | |
| 6. | THRUST/AUX PUMP | |
| 7. | ROTATION MOTOR | |
| 8. | COOLER BYPASS VALVE | |
| 9. | RIGHT GROUND DRIVE MOTOR | |
| 10. | RDIATOR/OIL COOLER | |
| 11. | STABILIZER CYLINDER | |
| 12. | MUD PUMP MOTOR | |
| 13. | MOBILE/SETUP VALVE | |
| 14. | THRUST MOTOR | |
| 15. | LEFT GROUND DRIVE MOTOR | |
| 16. | REAR WRENCH CYLINDER | |
| 17. | FRONT WRENCH CYLINDER | |
| 18. | WRENCH VALVE | |
| 19. | RELIEF VALVE | |
| 20. | DRILLING FLUID TESTPORT | |
| 21. | FORWARD ROTATION TESTPORT | |
| 22. | REVERSE ROTATION TESTPORT | |
| 23. | PULLBACK TESTPORT | |
| 24. | THRUST TESTPORT | |
| 25. | AUXILIARY PRESSURE TESTPORT | |

FOOTNOTES

HYDRAULIC DIAGRAM

JT520

BEGINS WITH S/N: 2VZ659



HYDRAULIC DIAGRAM

JT520

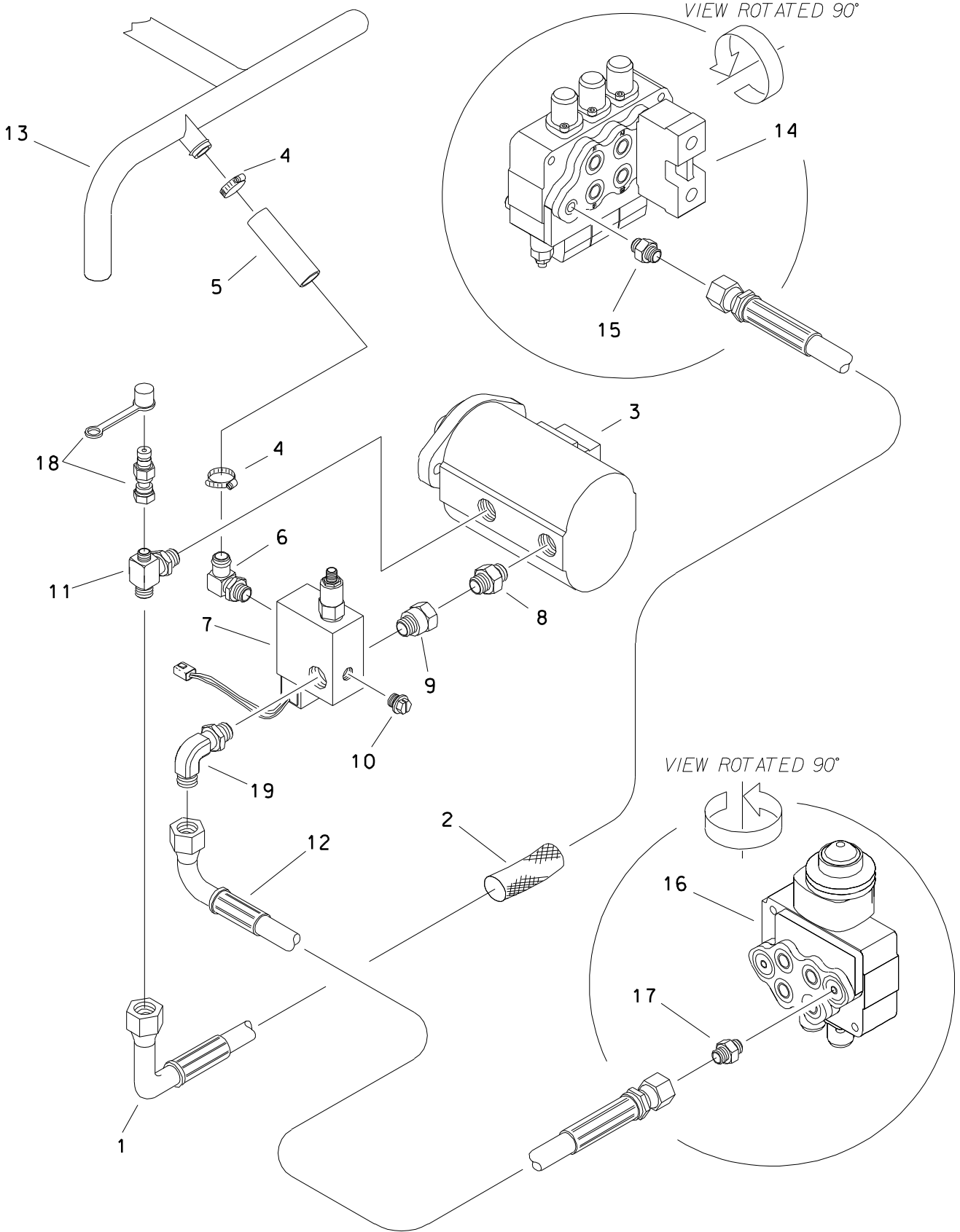
BEGINS WITH S/N: 2VZ659

REF

| NO. | DESCRIPTION | REMARKS |
|-----|-----------------------------|---------|
| 1. | ANCHOR MOTOR | |
| 2. | MUD GAUGE | |
| 3. | ROTATION/THRUST VALVE | |
| 4. | HYD FILTER | |
| 5. | HYD TANK | |
| 6. | THRUST/AUX PUMP | |
| 7. | ROTATION MOTOR | |
| 8. | COOLER BYPASS VALVE | |
| 9. | RIGHT GROUND DRIVE MOTOR | |
| 10. | RADIATOR/OIL COOLER | |
| 11. | STABILIZER CYLINDER | |
| 12. | MUD PUMP MOTOR | |
| 13. | MOBILE/SETUP VALVE | |
| 14. | THRUST MOTOR | |
| 15. | LEFT GROUND DRIVE MOTOR | |
| 16. | REAR WRENCH CYLINDER | |
| 17. | FRONT WRENCH CYLINDER | |
| 18. | WRENCH VALVE | |
| 19. | RELIEF VALVE | |
| 20. | DRILLING FLUID TESTPORT | |
| 21. | FORWARD ROTATION TESTPORT | |
| 22. | REVERSE ROTATION TESTPORT | |
| 23. | PULLBACK TESTPORT | |
| 24. | THRUST TESTPORT | |
| 25. | AUXILIARY PRESSURE TESTPORT | |

FOOTNOTES

TANDEM HYDRAULIC PUMP (PRESSURE)



TANDEM HYDRAULIC PUMP (PRESSURE)

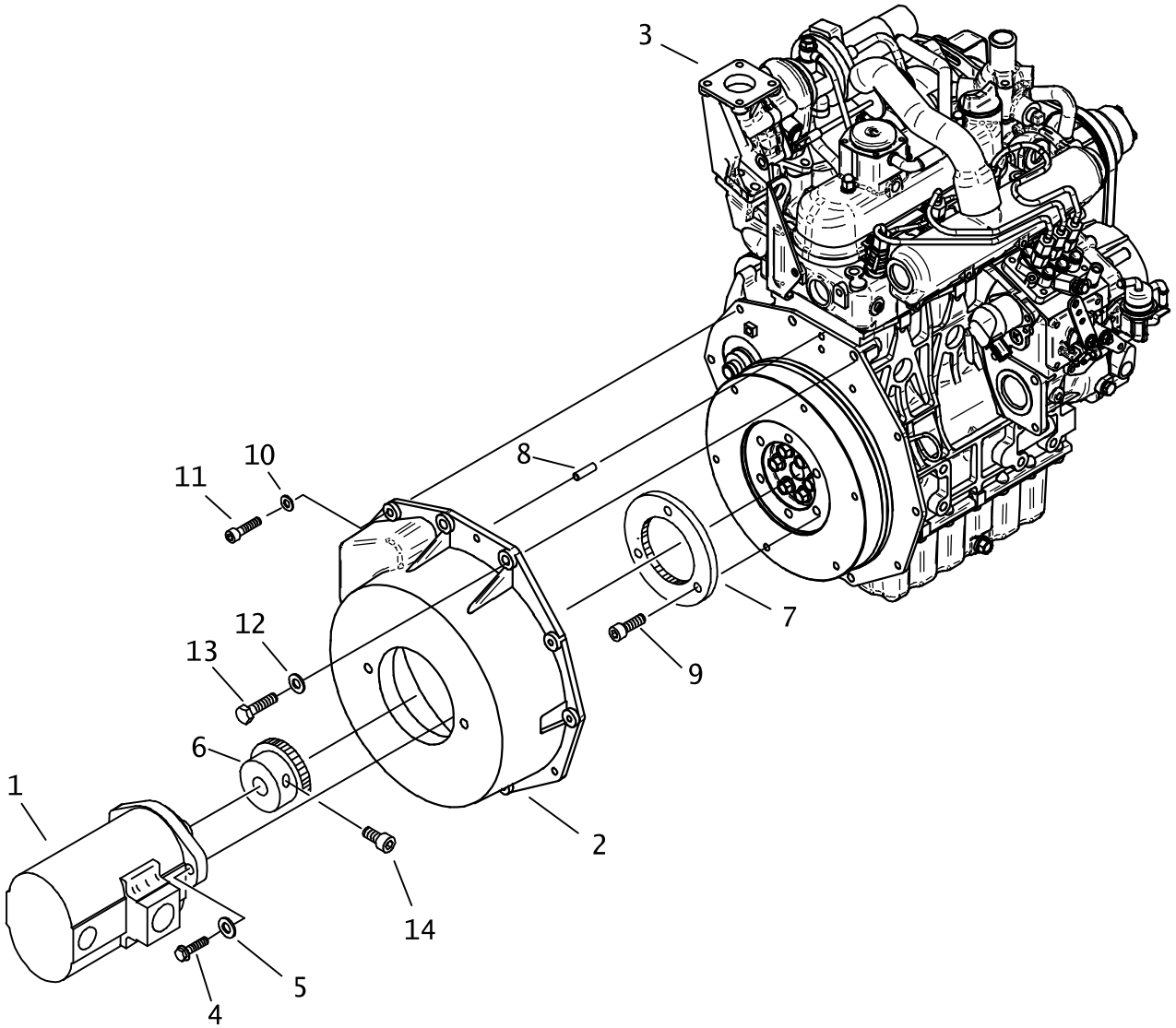
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|----------------------|
| 1. | 515-742 | 1 | HOSE (080FX90L-48"-3000) | |
| 2. | 117-214 | 1 | ABRASION SLEEVE (1.25" X 40") | |
| 3. | 158-491 | - | HYDRAULIC PUMP | |
| | 500-967 | - | SEAL REPAIR KIT | |
| 4. | 110-026 | 2 | WORM CLAMP (1/2" TO 1-1/4") | |
| 5. | 116-636 | AR | BULK HOSE (3/4", SOLD PER 1') | USE 1 @ 7" |
| 6. | 154-362 | 1 | S/O COUPLER (10S-12H90) | |
| 7. | 156-986 | 1 | RELIEF VALVE | |
| 8. | 154-179 | 1 | CONNECTOR (10J-10S) | |
| 9. | 154-216 | 1 | UNION (10S-10JFX) | |
| 10. | 155-125 | 1 | PLUG (04S) | |
| 11. | 156-973 | 1 | BRANCH TEE (080-040-10S) | |
| 12. | 515-743 | 1 | HOSE (100FX90M-47"-3000) | |
| 13. | 149-145 | - | HYD LINE (10H-16H-16H) | |
| 14. | 516-108 | - | HYD CONTROL VALVE | |
| | 190-734 | - | SEAL REPAIR KIT | |
| 15. | 154-233 | 1 | CONNECTOR (08S-080) | |
| 16. | 516-107 | - | HYD CONTROL VALVE | |
| | 190-736 | - | SEAL REPAIR KIT | |
| 17. | 154-391 | 1 | CONNECTOR (08S-100) | |
| 18. | 159-156 | 1 | ODC ADAPTER (02-040F) | 159-146 TEST ADAPTER |
| | 159-148 | | DUST CAP (1/8") | |
| 19. | 154-298 | 1 | CONNECTOR (10S-10090) | |

FOOTNOTES

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS.

PUMP MOUNTING



PUMP MOUNTING

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|---|
| 1. | 158-491 | 1 | HYDRAULIC PUMP | |
| | 500-967 | - | SEAL REPAIR KIT | |
| 2. | 194-376 | 1 | PUMP MOUNT | SEE FOOTNOTE 1 |
| 3. | 194-034 | - | ENGINE, KUBOTA, 25 HP | SEE FOOTNOTE 3. SERVICE PARTS ON ENGINE MOUNT PAGE. |
| | 194-541 | - | ENGINE - KUBOTA D1105 DIESEL T2 | SEE FTNOTE 4 & 5. SERVICE PARTS ON ENGINE MOUNT PAGE. |
| | 195-1169 | - | ENGINE - KUBOTA D1105-T T3 | SEE FOOTNOTE 6. SERVICE PARTS ON ENGINE MOUNT PAGE. |
| 4. | 105-052 | 2 | BOLT (3/8-NC X 1-1/4") | TORQUE TO 25 FT-LBS (34 N.M.) SEE FOOTNOTE 2 |
| 5. | 105-072 | 2 | LOCK WASHER (3/8") | |
| 6. | 194-388 | 1 | HUB (PUMP MOUNT) | REFER TO 052-245 INSTRUCTIONS FOR POSTION ON SHAFT |
| 7. | 194-387 | 1 | PUMP MOUNT FLANGE (135MM) | |
| 8. | N/A | 1 | ROLL PIN (M8 X 12MM) | |
| 9. | 107-925 | 3 | SCREW (M10-1.25 X 30MM,SOC) | TORQUE TO 52 FT-LBS (70 N.M).APPLY GREASE TO CENTER SEE FOOTNOTE 2 |
| 10. | 106-389 | 8 | WASHER (M8) | |
| 11. | 105-892 | 8 | SCREW (M8-1.25 X 30MM, SOC) | TORQUE TO 18 FT-LBS (24 N.M) SEE FOOTNOTE 2 |
| 12. | 106-390 | 2 | WASHER (M10) | |
| 13. | 107-357 | 2 | SCREW (M10-1.25 X 35MM, 8.8) | TORQUE TO 36 FT-LBS (49 N.M) SEE FOOTNOTE 2 |
| 14. | 106-305 | 1 | BOLT (7/16-NCX1-1/4",SOC, GD8) | TORQUE TO 72 FT-LBS (98 N.M) SEE FOOTNOTE 2 |

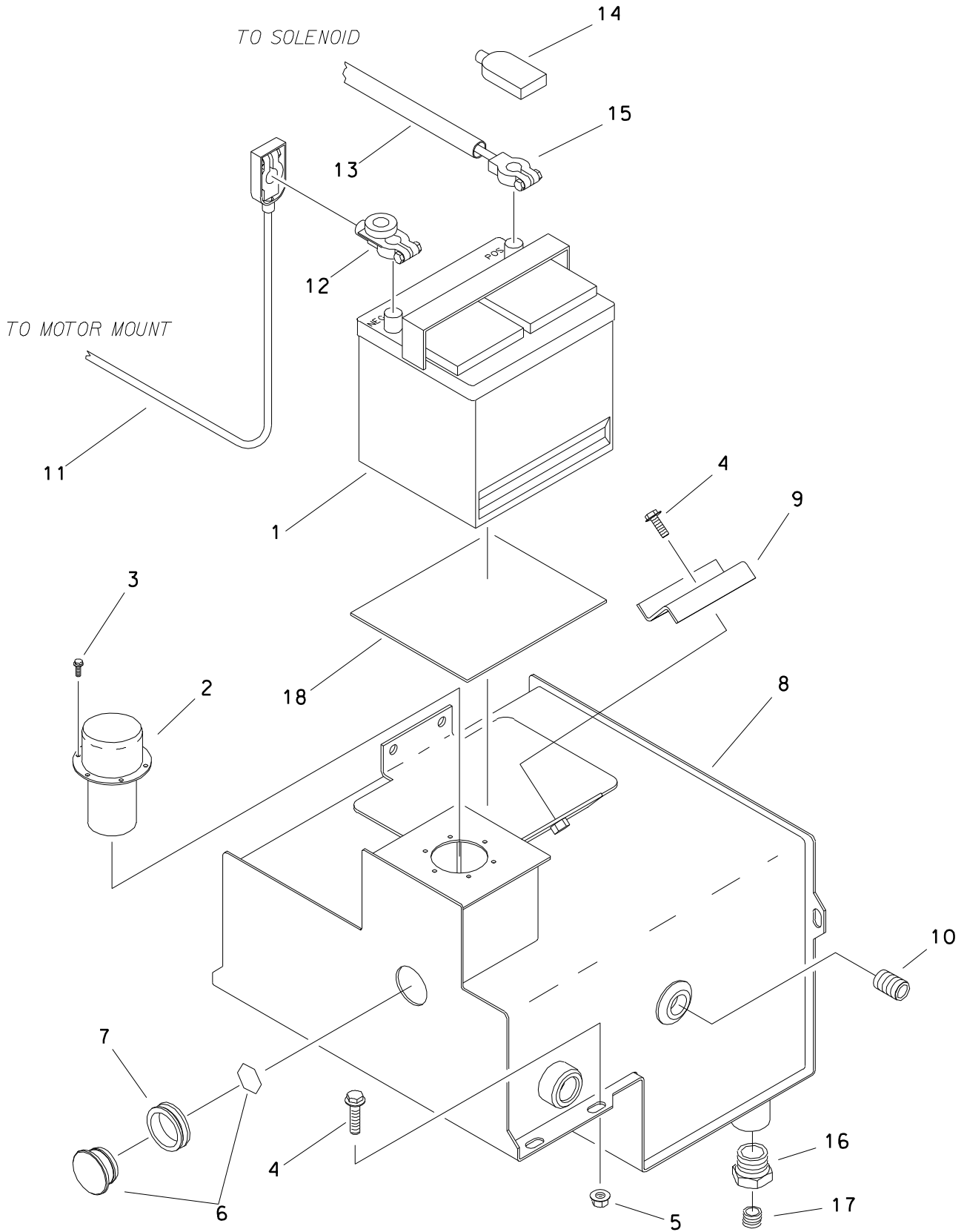
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FOOTNOTES:

1. INCLUDES REF NUMBERS 6-14. SEE 052-245 MOUNTING INSTRUCTIONS
2. USE 242 LOCTITE OR EQUIVALENT.
3. EPA TIER 1 ENGINE ENDS WITH S/N 2Y1290.
4. EPA TIER 2 ENGINE BEGINS WITH S/N 2Y1471.
5. EPA TIER 2 ENGINE ENDS WITH S/N CMWJT520L80000181.
6. EPA TIER 3 ENGINE BEGINS WITH S/N CMWJT520C80000183.

NOTE:

HYDRAULIC RESERVOIR/BATTERY



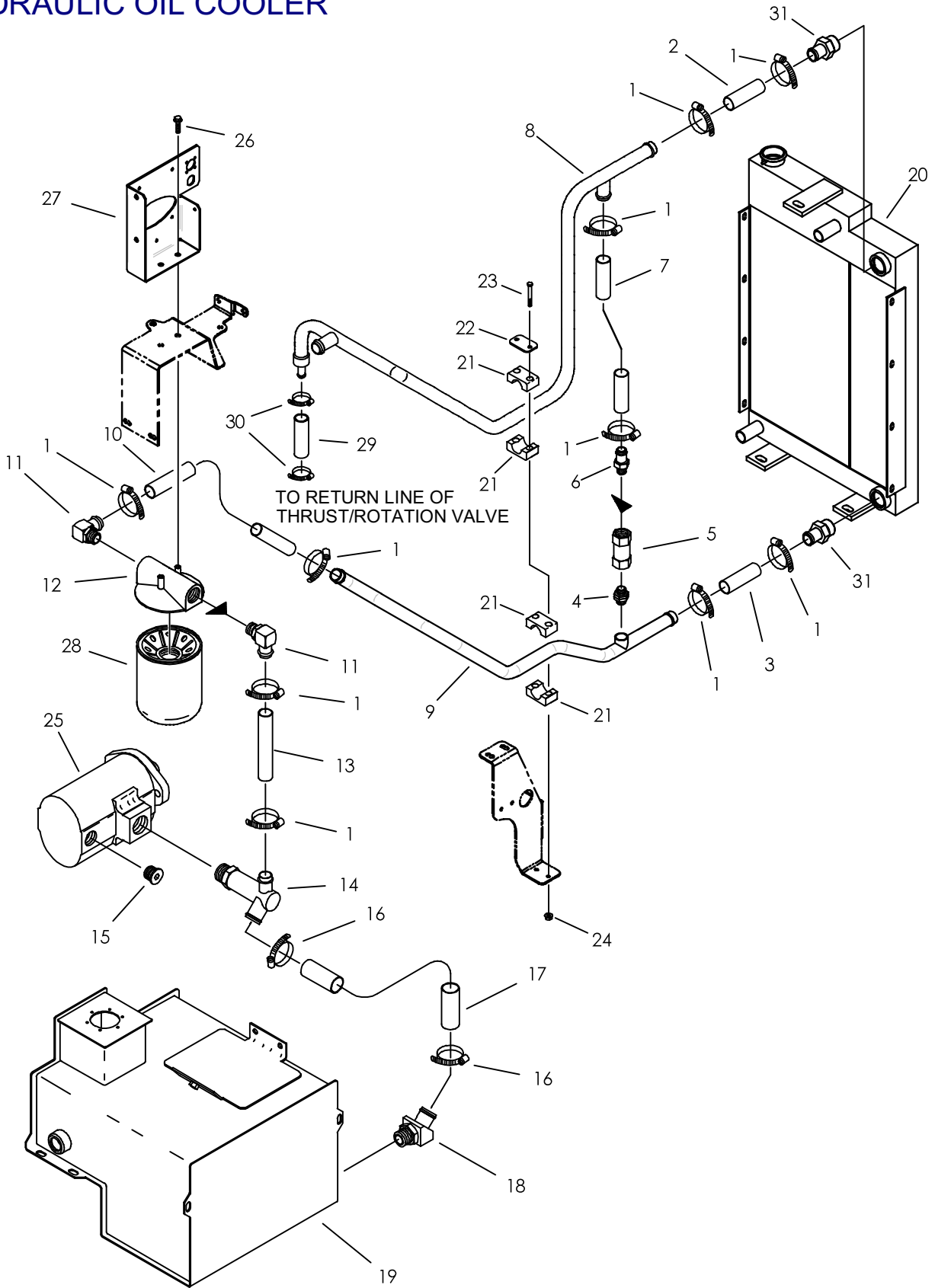
HYDRAULIC RESERVOIR/BATTERY

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|--------------------------------|
| 1. | 215-258 | 1 | BATTERY | |
| 2. | 110-008 | 1 | FILLER BREATHER (2-1/8") | |
| 3. | 105-214 | 6 | FLG SCREW (#10-24 X .5") | |
| 4. | 106-382 | 5 | FLG LK SCREW (M10-1.5 X 20MM) | |
| 5. | 105-894 | 4 | LOCKNUT (M10-1.50, PRV TRQ,10.9) | |
| 6. | 116-218 | 1 | SIGHT GLASS (2") | INCL REFLECTOR; SEE FOOTNOTE 1 |
| | 360-849 | | REFLECTOR | |
| 7. | 115-320 | 1 | GROMMET (1-1/2") | |
| 8. | 302-831 | 1 | HYDRAULIC RESERVOIR | |
| 9. | 302-859 | 1 | BATTERY RETAINER | |
| 10. | 115-152 | 1 | PLUG (12N, SQ FM) | |
| 11. | 215-351 | 1 | BAT CABLE (1 GA X 40", BLK) | |
| | 116-208 | 1 | TERMINAL COVER (BLACK) | |
| 12. | 217-833 | 1 | BATTERY DISCONNECT SWITCH | |
| 13. | 116-389 | 1 | BULK TUBING (3/4",SOLD PER 1') | |
| 14. | 116-193 | 1 | TERMINAL COVER (RED) | |
| 15. | 215-310 | 1 | BAT CABLE (1 GA X 50", RED) | |
| 16. | 115-235 | 1 | PIPE BUSHING (1NPT TP 3/8 NPT) | |
| 17. | 115-178 | 1 | PLUG (06N, SQ FM) | |
| 18. | 116-995 | 1 | BATTERY PAD | |

FOOTNOTES

1. REFER TO SPECIAL TOOL DIAGRAM 052-524.

HYDRAULIC OIL COOLER



HYDRAULIC OIL COOLER

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|--------------------------------|
| 1. | 110-353 | 10 | WORM CLAMP (3/4" TO 1-1/2") | |
| 2. | 116-460 | AR | BULK HOSE (1", SOLD PER 1') | USE 1 @ 4.00" |
| 3. | 116-460 | 1 | BULK HOSE (1", SOLD PER 1') | USE 1 @ 4.00" |
| 4. | 155-152 | 1 | CONNECTOR (12S-12S) | |
| 5. | 158-576 | 1 | CHECK VALVE (12SF-12SF) | |
| 6. | 155-161 | 1 | S/O COUPLER (12S-16H) | |
| 7. | 116-460 | AR | BULK HOSE (1", SOLD PER 1') | USE 1 @ 12.25", SEE FOOTNOTE 1 |
| | 116-460 | AR | BULK HOSE (1", SOLD PER 1') | USE 1 @ 15.88", SEE FOOTNOTE 2 |
| 8. | 149-145 | 1 | HYD LINE (10H-16H-16H) | |
| 9. | 149-144 | 1 | HYD LINE (12S-16H-16H) | SEE FOOTNOTE 1 |
| | 150-1591 | 1 | HYD LINE (12S-16H-16H) | SEE FOOTNOTE 2 |
| 10. | 116-460 | AR | BULK HOSE (1", SOLD PER 1') | USE 1 @ 4.50" |
| 11. | 154-188 | 2 | S/O COUPLER (16S-16H90) | |
| 12. | 155-999 | 1 | FILTER HEAD (16SF-16SF) | |
| 13. | 116-460 | AR | BULK HOSE (1", SOLD PER 1') | USE 1 @ 10.50" |
| 14. | 156-958 | 1 | S/O BRANCH TEE (20S-20H-16H) | |
| 15. | 155-184 | 1 | PLUG (16S) | |
| 16. | 110-133 | 2 | WORM CLAMP (1-1/16" TO 1-15/16") | |
| 17. | 116-587 | AR | BULK HOSE (1-1/4", SOLD PER 1') | USE 1 @ 5.00" |
| 18. | 115-281 | 1 | S/O COUPLER (16S-20H45) | |
| 19. | 302-831 | - | HYDRAULIC RESERVOIR | |
| 20. | 302-697 | - | RADIATOR/OIL COOLER | SEE FOOTNOTE 1 |
| | 195-1163 | - | RADIATOR/OIL COOLER | SEE FOOTNOTE 2 |
| | 110-898 | - | RADIATOR CAP (14PSI) | |
| 21. | 110-573 | 2 | BOLT-ON CLAMP(1", SOLD PER SET) | |
| 22. | 322-289 | 1 | BACKUP (BOLT-ON) | |
| 23. | 107-151 | 2 | SCREW (M6-1.00 X 85MM) | |
| 24. | 106-538 | 2 | LOCKNUT (M6-1.00, PRV TRQ, 10.9) | |
| 25. | 158-491 | - | HYDRAULIC PUMP | |
| | 500-967 | - | SEAL REPAIR KIT | |
| 26. | 105-823 | 2 | FLG LK BOLT (5/16-NC X 3/4") | |
| 27. | 302-876 | - | RELAY PANEL | |
| 28. | 155-954 | 1 | FILTER ELEMENT (1-1/2-UNF) | |
| 29. | 116-044 | AR | BULK HOSE (5/8", SOLD PER 1') | USE 1 @ 4.50" |
| 30. | 110-026 | 2 | WORM CLAMP (1/2" TO 1-1/4") | |
| 31. | 514-088 | 2 | S/O COUPLER (16S-16H) | SEE FOOTNOTE 2 |

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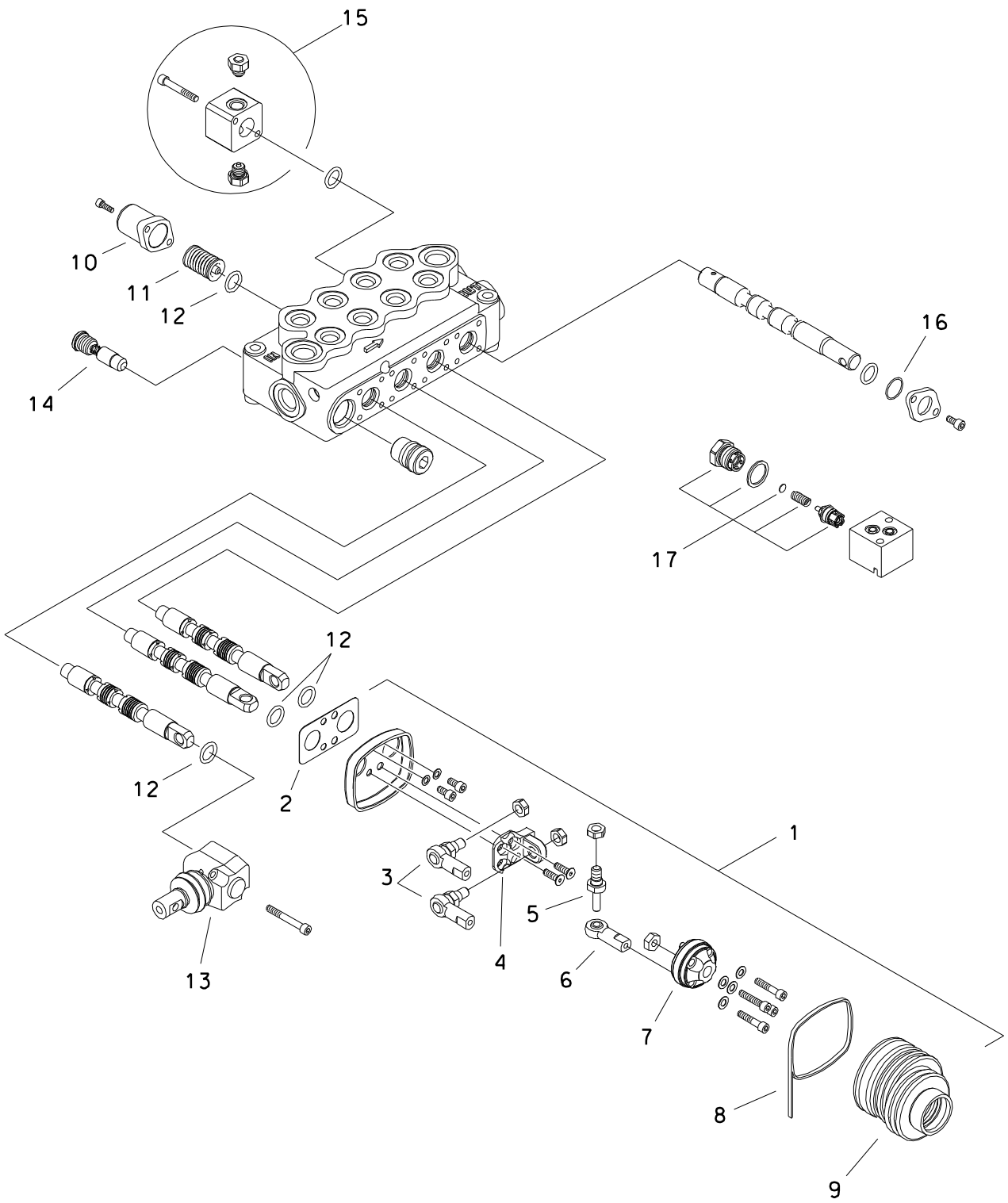
FOOTNOTES:

1. ENDS WITH S/N _____
2. BEGINS WITH S/N _____

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

AUXILIARY VALVE

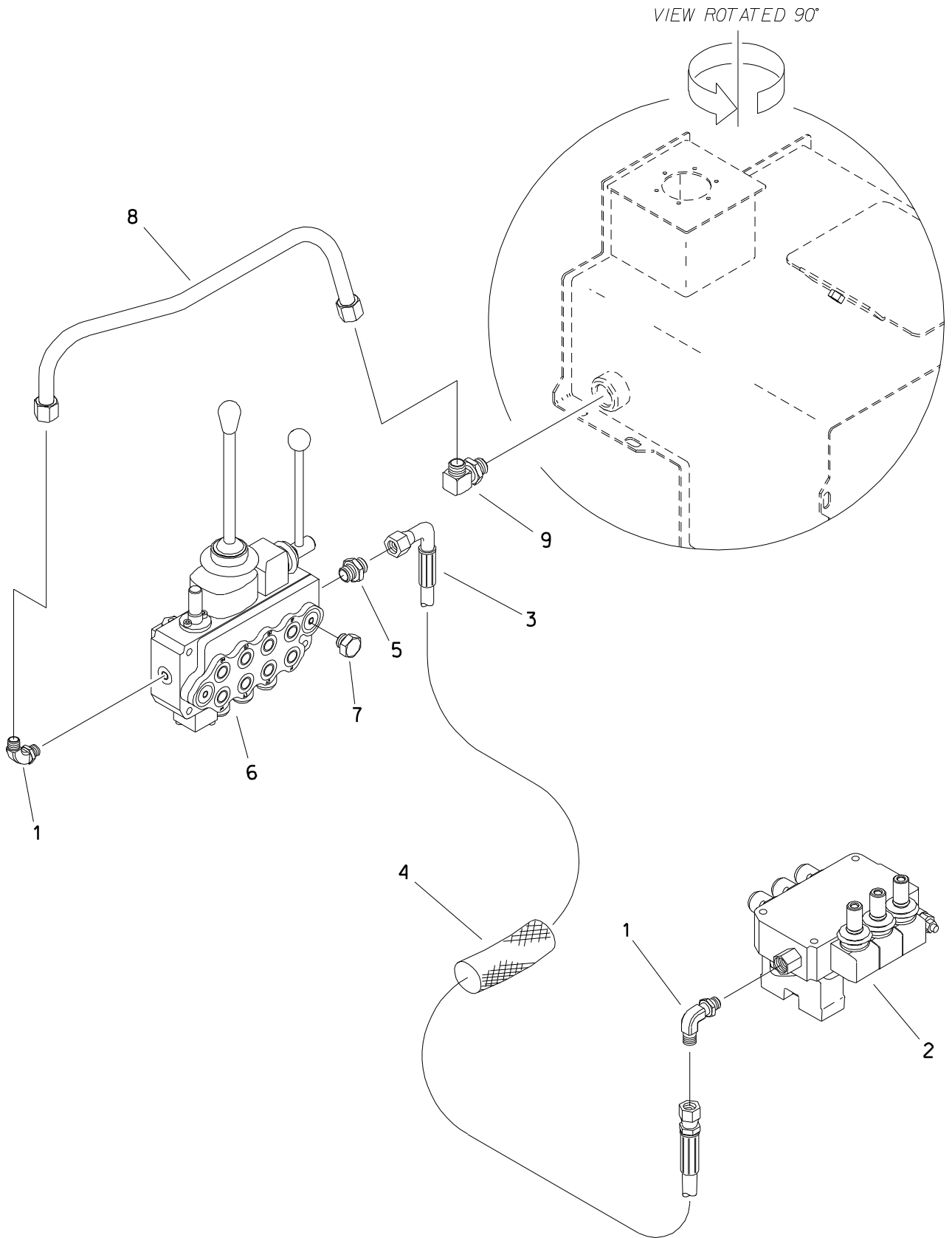


AUXILIARY VALVE

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------|---------|
| | 516-109 | - | HYD CONTROL VALVE | |
| 1. | 499-006 | - | JOYSTICK LEVER | |
| 2. | 157-744 | 1 | SEAL, JOYSTICK | |
| 3. | 499-139 | 2 | ARTICULATED JOINT | |
| 4. | 499-166 | 1 | FULCRUM (JOYSTICK) | |
| 5. | 499-133 | 1 | ROD END PIN | |
| 6. | 499-138 | 1 | ROD END | |
| 7. | 499-134 | 1 | ARTICULATION HOLDER | |
| 8. | 499-137 | 1 | BELLOW CLAMP | |
| 9. | 499-135 | 1 | RUBBER BELLOW | |
| 10. | 500-731 | 3 | SPOOL BONNET | |
| 11. | 499-142 | 3 | SPOOL CONTROL KIT | |
| 12. | 157-218 | 6 | O-RING (D70) | |
| 13. | 499-143 | 1 | VALVE LEVER | |
| 14. | 149-664 | 1 | CHECK VALVE | |
| 15. | 499-459 | 1 | DETENT KIT | |
| 16. | 153-067 | 1 | 15.80X1.78 70 SEAL RING | |
| 17. | 499-460 | 1 | RELIEF VALVE | |

FOOTNOTES

SET-UP/AUXILIARY VALVE



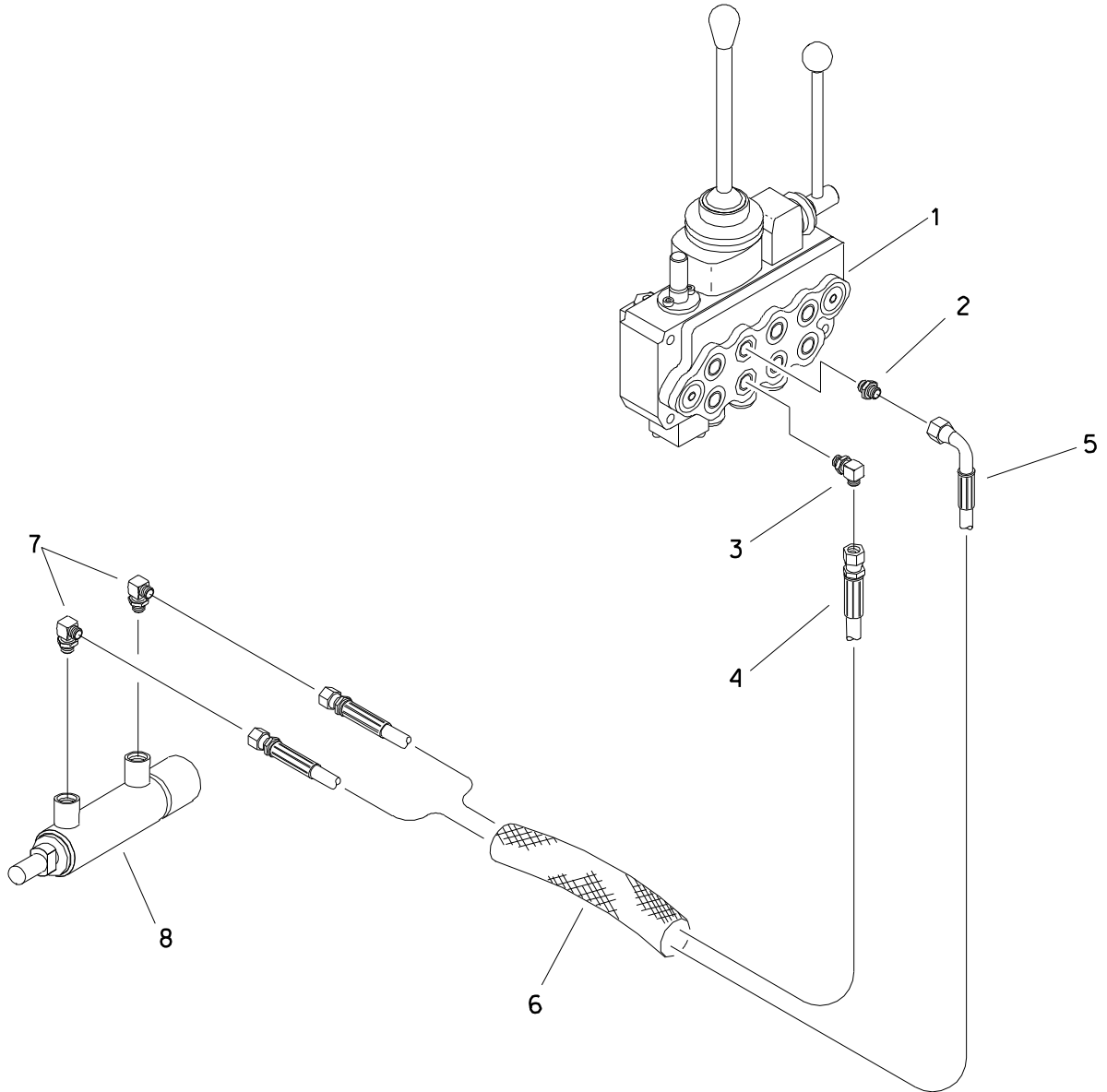
SET-UP/AUXILIARY VALVE

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 154-235 | 1 | CONNECTOR (08S-08090) | |
| 2. | 516-108 | - | HYD CONTROL VALVE | |
| 3. | 515-745 | 1 | HOSE (080FX90M-94"-3000) | |
| 4. | 117-211 | 1 | ABRASION SLEEVE (1.25" X 90") | |
| 5. | 154-233 | 1 | CONNECTOR (08S-080) | |
| 6. | 516-109 | - | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 7. | 155-074 | 1 | PLUG (08S, SOC, FM) | |
| 8. | 149-151 | 1 | HYDRAULIC LINE | |
| 9. | 154-236 | 1 | CONNECTOR (080-12S90) | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

FRONT WRENCH HYDRAULICS



FRONT WRENCH HYDRAULICS

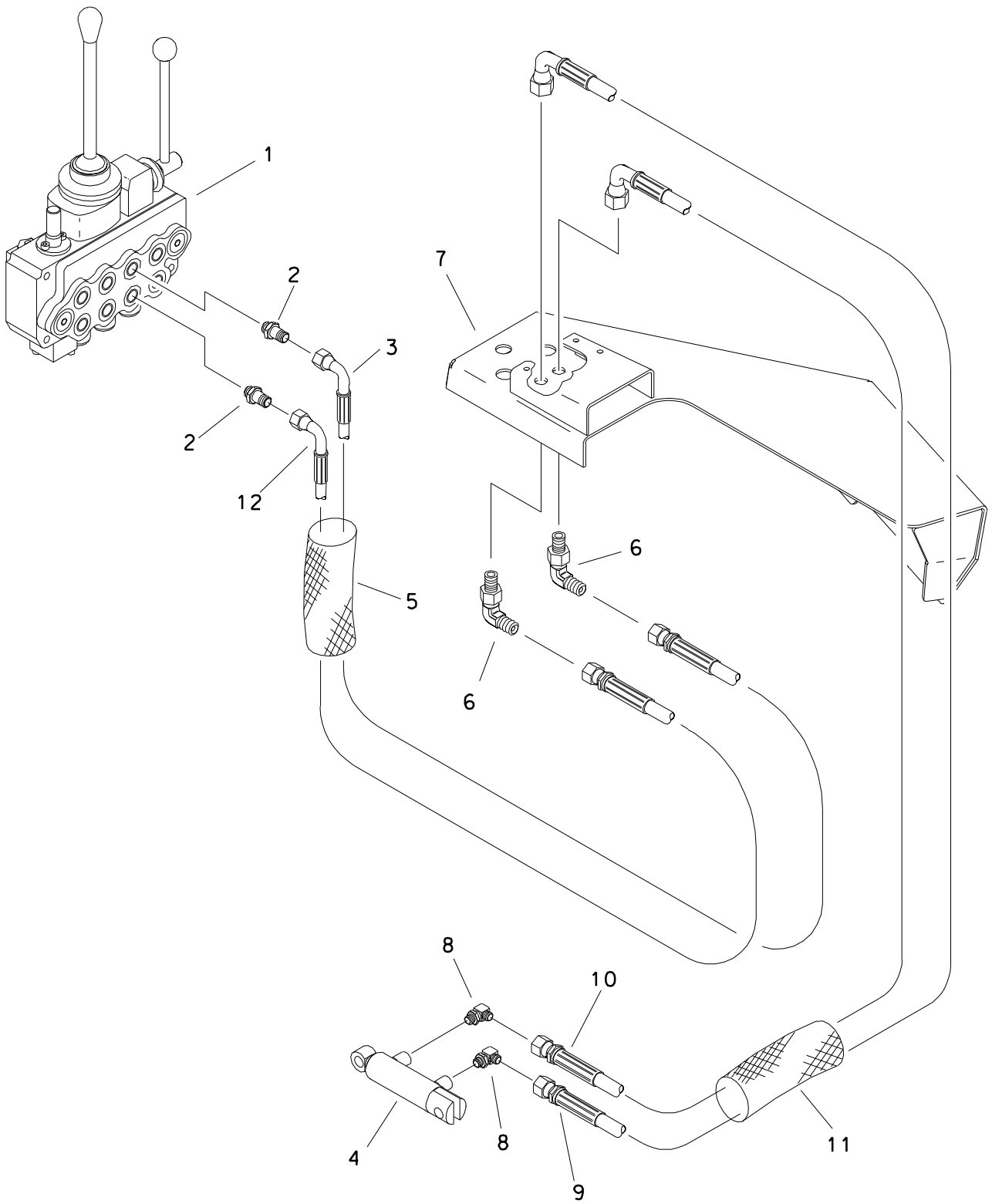
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 516-109 | - | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 2. | 154-220 | 1 | CONNECTOR (040-06S) | |
| 3. | 154-226 | 1 | CONNECTOR (040-06S90) | |
| 4. | 515-533 | 1 | HOSE (040FX-68"-3000) | |
| 5. | 515-712 | 1 | HOSE (040FX90L-68"-3000) | |
| 6. | 117-603 | 1 | ABRASION SLEEVE (1.59" X 62") | |
| 7. | 156-967 | 2 | CONNECTOR (04S-04090, ORF) | |
| 8. | 151-153 | - | CYL (1" X 2.5") | |
| | 150-725 | 1 | CYL (1" X 2.5") | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

REAR WRENCH HYDRAULICS

ENDS WITH S/N: 2V2594



REAR WRENCH HYDRAULICS
 ENDS WITH S/N: 2V2594

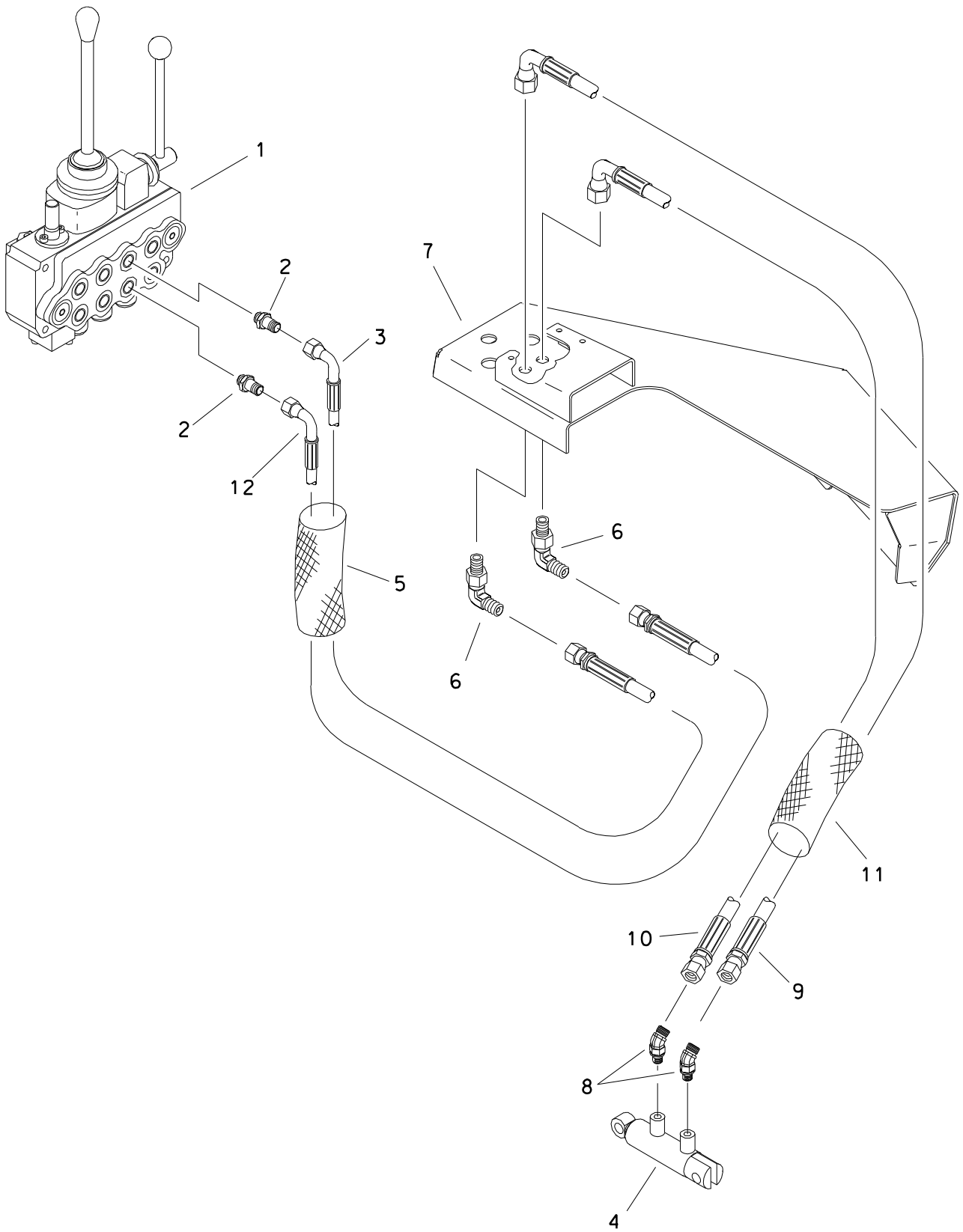
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 516-109 | - | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 2. | 154-220 | 2 | CONNECTOR (040-06S) | |
| 3. | 515-012 | 1 | HOSE (040FX90-42"-3000) | |
| 4. | 159-464 | - | CYL (1") | |
| | 150-723 | - | CYL (1" X 2") W/EYE | |
| 5. | 115-737 | 1 | ABRASION SLEEVE (1.59" X 40") | |
| 6. | 154-355 | 2 | BK CONNECTOR (040-04090BK) | |
| 7. | 303-289 | - | BULKHEAD BRACKET | |
| 8. | 154-252 | 2 | CONNECTOR (04S-04090) | |
| 9. | 154-900 | 1 | HOSE (040FX90S-62"-3000) | |
| 10. | 154-840 | 1 | HOSE (040FX90S-66"-3000) | |
| 11. | 117-603 | 1 | ABRASION SLEEVE (1.59" X 62") | |
| 12. | 515-753 | 1 | HOSE (040FX90L-44"-3000) | |

FOOTNOTES

NOTE:
 REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

REAR WRENCH HYDRAULICS

BEGINS WITH S/N: 2V2659



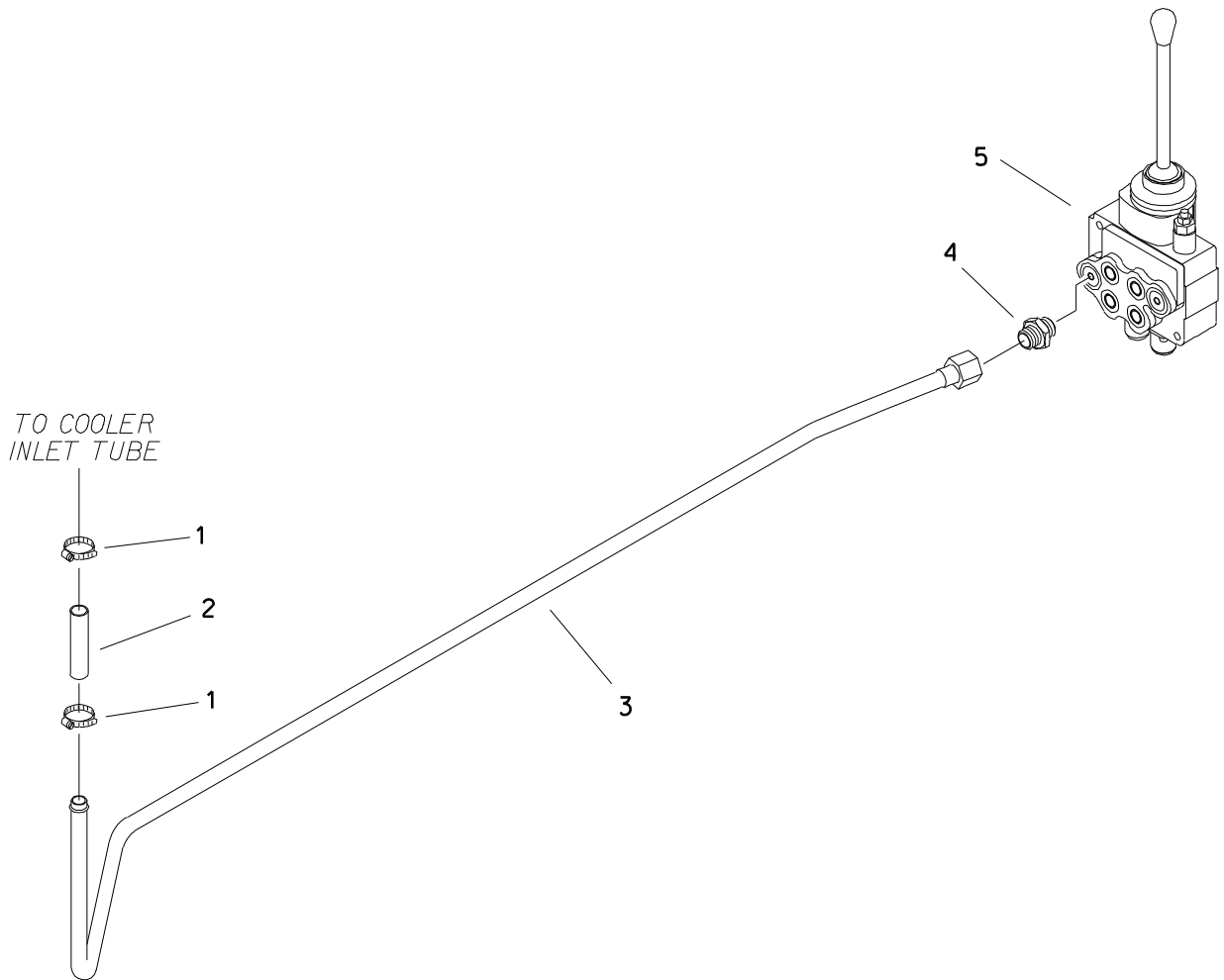
REAR WRENCH HYDRAULICS BEGINS WITH S/N: 2V2659

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 516-109 | - | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 2. | 154-220 | 2 | CONNECTOR (040-06S) | |
| 3. | 515-012 | 1 | HOSE (040FX90-42"-3000) | |
| 4. | 151-218 | 1 | HYDRAULIC CYLINDER | |
| 5. | 115-737 | 1 | ABRASION SLEEVE (1.59" X 40") | |
| 6. | 154-355 | 2 | BK CONNECTOR (040-04090BK) | |
| 7. | 303-289 | - | BULKHEAD BRACKET | |
| 8. | 154-263 | 2 | CONNECTOR (04S-04045) | |
| 9. | 154-900 | 1 | HOSE (040FX90S-62"-3000) | |
| 10. | 154-840 | 1 | HOSE (040FX90S-66"-3000) | |
| 11. | 117-603 | 1 | ABRASION SLEEVE (1.59" X 62") | |
| 12. | 515-753 | 1 | HOSE (040FX90L-44"-3000) | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

ROTATION/THRUST VALVE RETURN HYDRAULICS



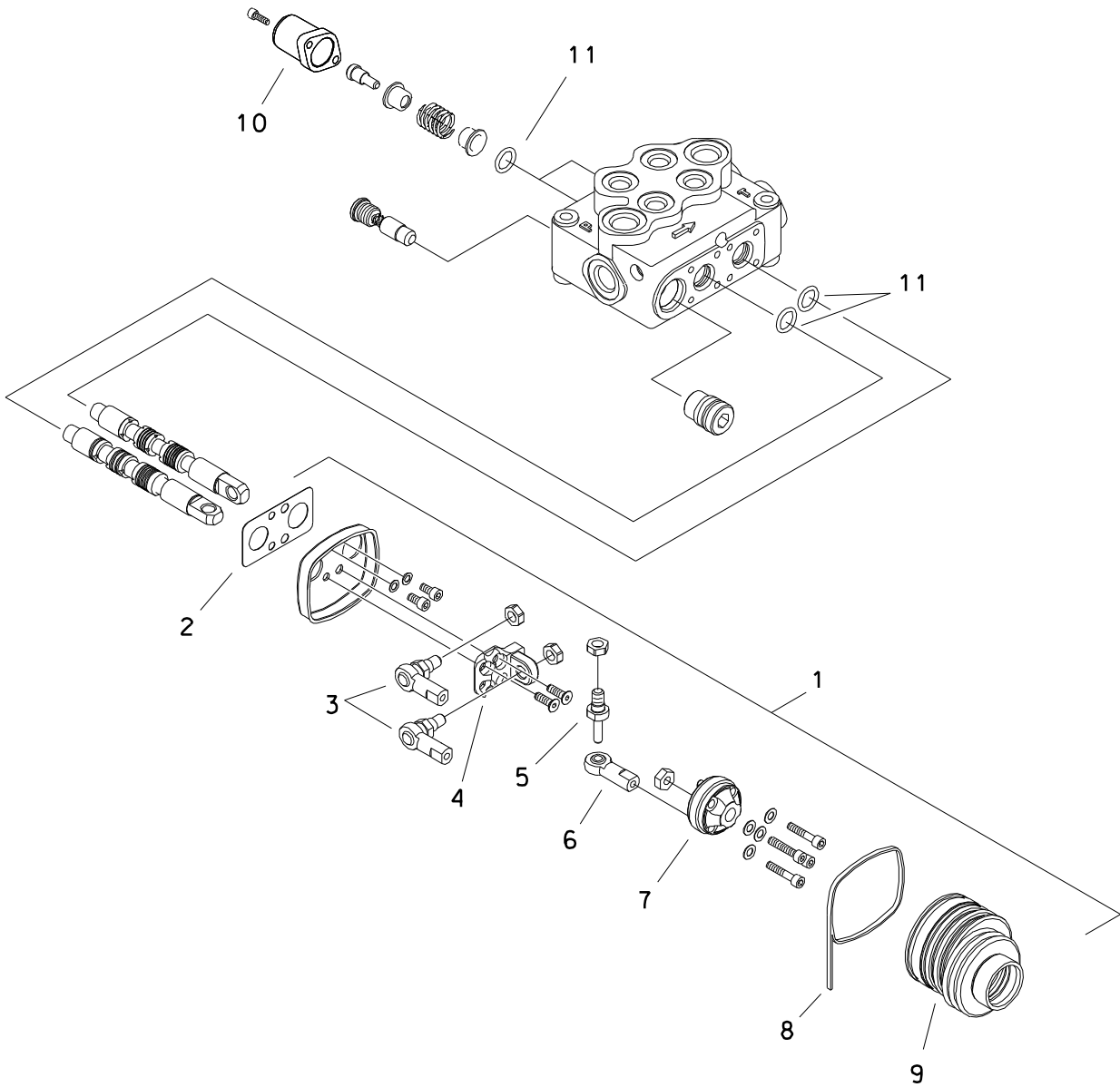
ROTATION/THRUST VALVE RETURN HYDRAULICS

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|--------------|
| 1. | 110-026 | - | WORM CLAMP (1/2" TO 1-1/4") | |
| 2. | 116-044 | - | BULK HOSE (5/8", SOLD PER 1") | USE 1 @ 4.5" |
| 3. | 149-148 | 1 | HYDRAULIC LINE | |
| 4. | 154-391 | 1 | CONNECTOR (08S-100) | |
| 5. | 516-107 | - | HYD CONTROL VALVE | |
| | 190-736 | - | SEAL REPAIR KIT | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

THRUST/ROTATION VALVE

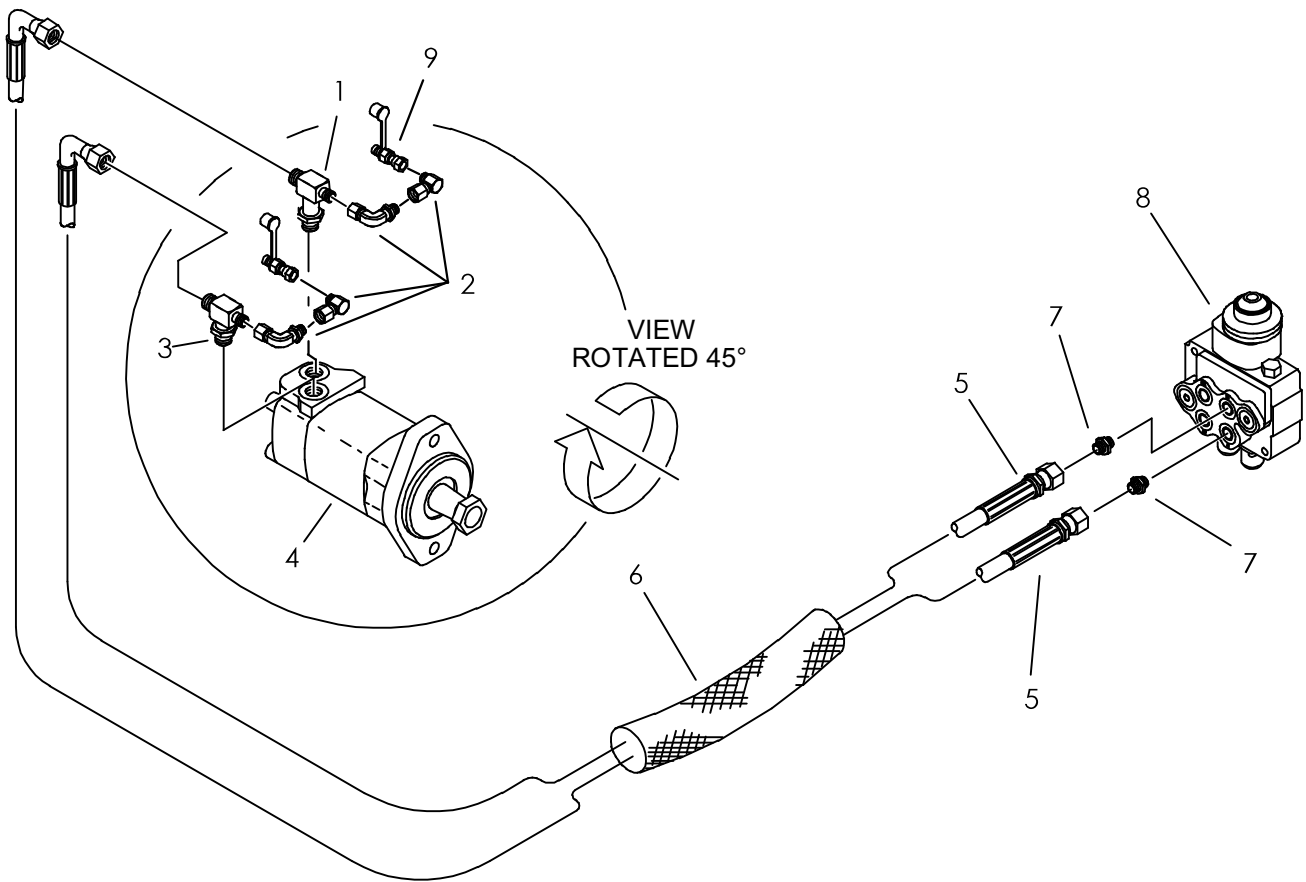


THRUST/ROTATION VALVE

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------|---------|
| | 516-107 | - | HYD CONTROL VALVE | |
| 1. | 499-006 | - | JOYSTICK LEVER | |
| 2. | 157-744 | 1 | SEAL, JOYSTICK | |
| 3. | 499-139 | 2 | ARTICULATED JOINT | |
| 4. | 499-166 | 1 | FULCRUM (JOYSTICK) | |
| 5. | 499-133 | 1 | ROD END PIN | |
| 6. | 499-138 | 1 | ROD END | |
| 7. | 499-134 | 1 | ARTICULATION HOLDER | |
| 8. | 499-137 | 1 | BELLOW CLAMP | |
| 9. | 499-135 | 1 | RUBBER BELLOW | |
| 10. | 500-731 | 2 | SPOOL BONNET | |
| 11. | 157-218 | 4 | O-RING (D70) | |

FOOTNOTES

THRUST MOTOR HYDRAULICS



THRUST MOTOR HYDRAULICS

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 156-975 | 1 | BRANCH TEE (080-040-10S) | |
| 2. | 154-255 | 4 | UNION (040-040FX90) | |
| 3. | 156-973 | 1 | BRANCH TEE (080-040-10S) | |
| 4. | 158-971 | - | HYDRAULIC MOTOR | |
| | 500-658 | - | SEAL REPAIR KIT | |
| 5. | 515-741 | 2 | HOSE (080FX90S-112"-3000) | |
| 6. | 117-687 | 1 | ABRASION SLEEVE (1.75" X 83") | |
| 7. | 154-246 | 2 | CONNECTOR (06S-080) | |
| 8. | 516-107 | - | HYD CONTROL VALVE | |
| | 190-736 | - | SEAL REPAIR KIT | |
| 9. | 159-156 | 2 | QDC ADAPTER (02-040F) | |

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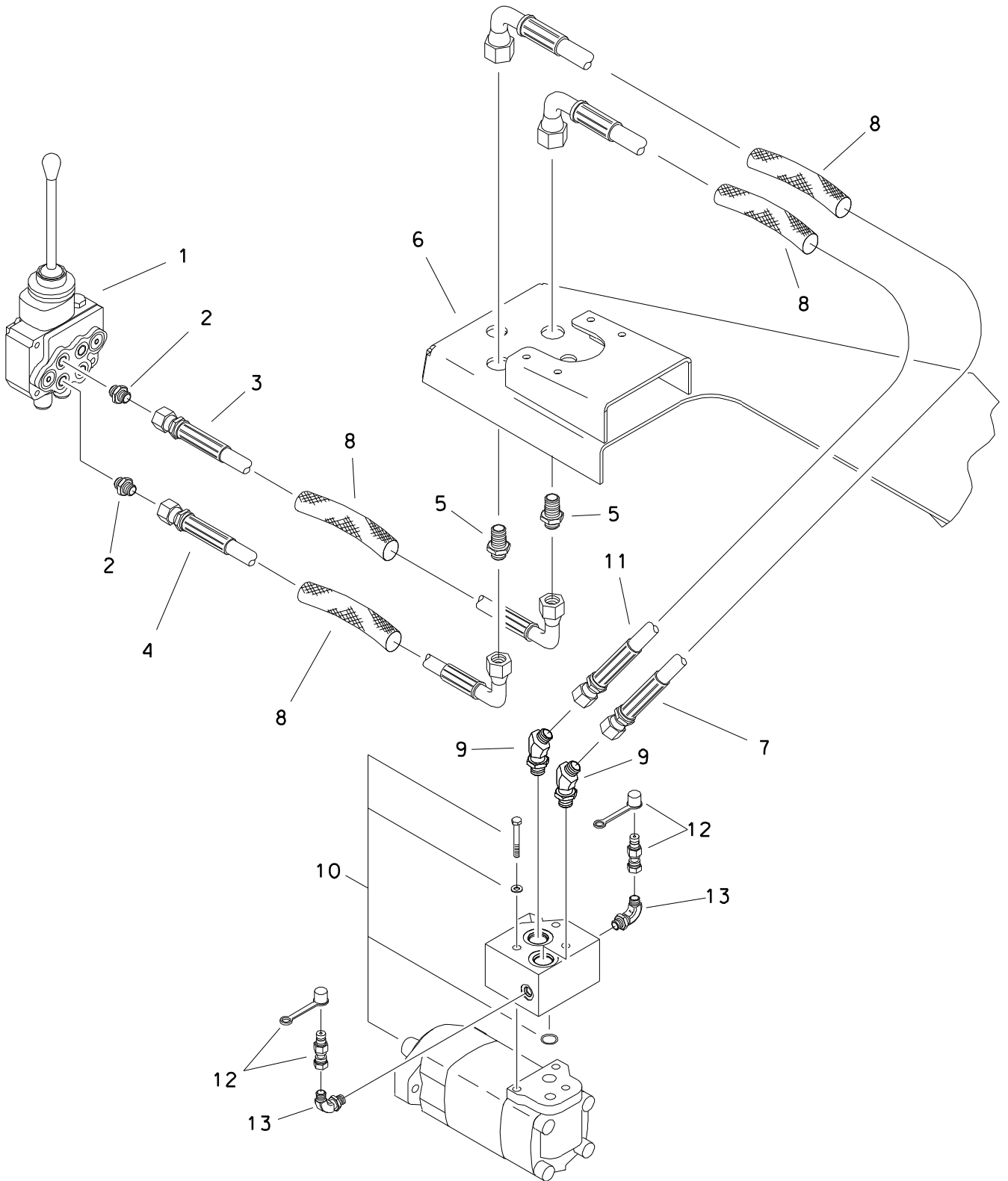
FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

ROTATION MOTOR HYDRAULICS

ENDS WITH S/N: 2V2594



ROTATION MOTOR HYDRAULICS

ENDS WITH S/N: 2V2594

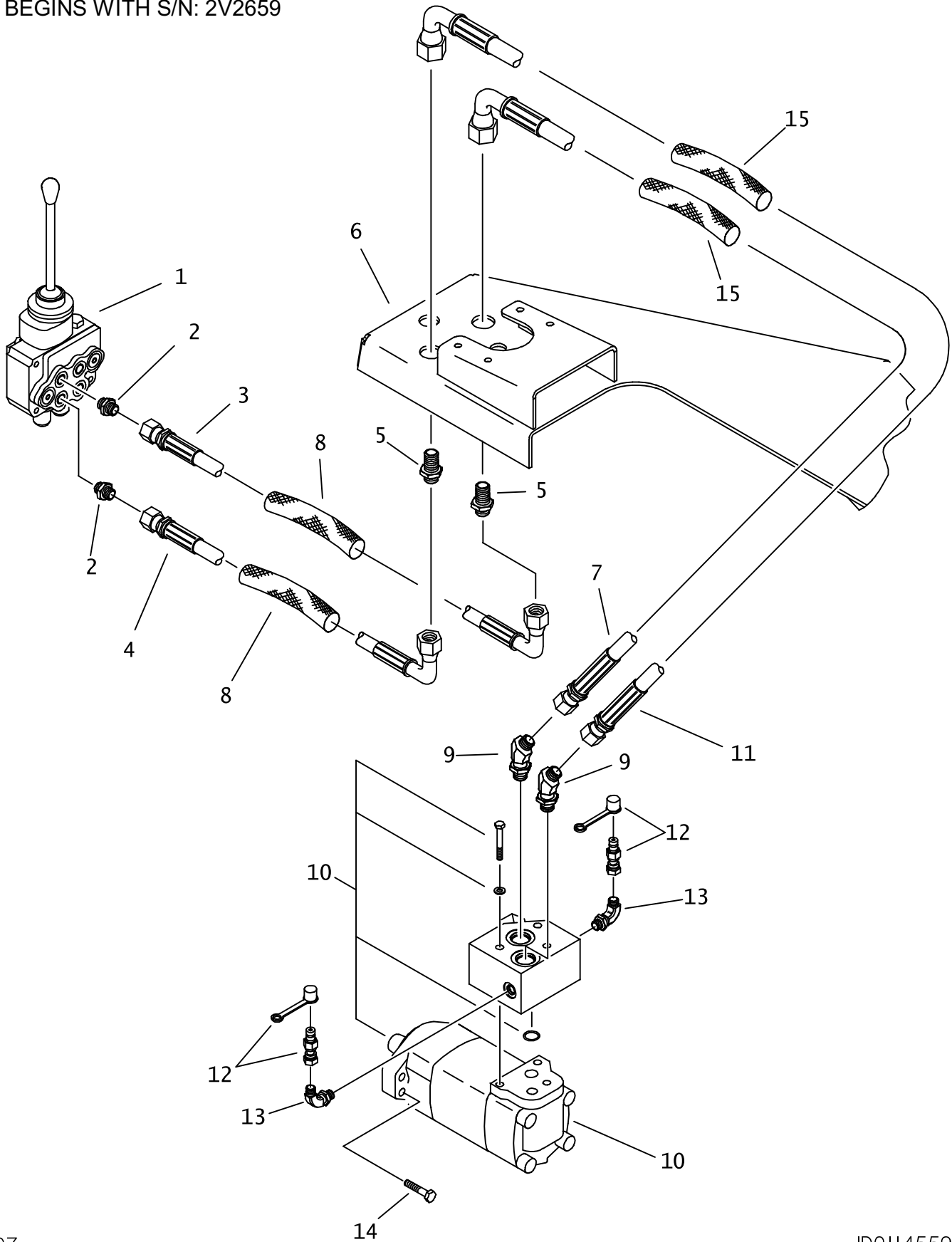
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|---|-----|-------------------------------|---------------------|
| 1. | 516-107 | - | HYD CONTROL VALVE | |
| | 190-736 | - | SEAL REPAIR KIT | |
| 2. | 154-246 | 2 | CONNECTOR (06S-080) | |
| 3. | 515-264 | - | HOSE (080FX90S-70"-3000) | |
| 4. | 515-452 | 1 | HOSE (080FX90-72"-3000) | |
| 5. | 154-390 | 2 | BK CONNECTOR (080) | |
| 6. | 303-289 | - | BULKHEAD BRACKET | |
| 7. | 515-140 | 1 | HOSE (080FX90-56"-3000) | |
| 8. | 117-690 | 4 | ABRASION SLEEVE (1.25" X 58") | |
| 9. | 154-264 | 2 | CONNECTOR (080-10S45) | |
| 10. | 158-054 | 1 | HYDRAULIC MOTOR W/RELIEF | |
| | 156-985 | 1 | HYDRAULIC MOTOR | |
| | 155-580 | 1 | HYDRAULIC MOTOR | |
| | 156-980 | 1 | RELIEF VALVE | |
| | 105-055 | 3 | BOLT (3/8-NC X 3") | TORQUE TO 30 FT-LBS |
| | 106-396 | 3 | WASHER (M10, HARDENED) | |
| | 155-776 | 2 | O-RING (117 D70) | |
| 11. | 515-303 | 1 | HOSE (080FX90-58"-3000) | |
| 12. | 159-156 | 2 | QDC ADAPTER (02-040F) | |
| | 159-148 | | DUST CAP (1/8") | |
| 13. | 154-252 | 2 | CONNECTOR (04S-04090) | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

ROTATION HYDRAULICS

BEGINS WITH S/N: 2V2659



ROTATION HYDRAULICS

BEGINS WITH S/N: 2V2659

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---|
| 1. | 516-107 | - | HYD CONTROL VALVE | |
| | 190-736 | - | SEAL REPAIR KIT | |
| 2. | 154-246 | 2 | CONNECTOR (06S-080) | |
| 3. | 515-264 | - | HOSE (080FX90S-70"-3000) | |
| 4. | 515-452 | 1 | HOSE (080FX90-72"-3000) | |
| 5. | 154-390 | 2 | BK CONNECTOR (080) | |
| 6. | 303-289 | - | BULKHEAD BRACKET | |
| 7. | 515-191 | 1 | HOSE (080FX90S-54"-3000) | |
| 8. | 117-690 | 2 | ABRASION SLEEVE (1.25" X 58") | |
| 9. | 154-264 | 2 | CONNECTOR (080-10S45) | |
| 10. | 153-714 | 1 | HYDRAULIC MOTOR W/RELIEF | SEE FOOTNOTE #1 |
| | 500-1469 | - | SHAFT AND BEARING KIT | |
| | 156-980 | - | RELIEF VALVE | |
| | 105-055 | 3 | BOLT (3/8-NC X 3") | TORQUE TO 30 FT-LBS |
| | 106-396 | 3 | WASHER (M10, HARDENED) | |
| | 155-776 | 2 | O-RING (117 D70) | |
| 11. | 157-324 | 1 | HOSE (080FX90S-53"-3000) | |
| 12. | 159-156 | 2 | QDC ADAPTER (02-040F) | |
| | 159-148 | | DUST CAP (1/8") | |
| 13. | 154-252 | 2 | CONNECTOR (04S-04090) | |
| 14. | 106-204 | 4 | BOLT (1/2-NC X 1-1/2, SOC) | TORQUE TO 100 FT-LBS; USE 271 LOCTITE OR EQUIVALENT |
| 15. | 117-395 | 2 | ABRASION SLEEVE (1.25" X 50") | |

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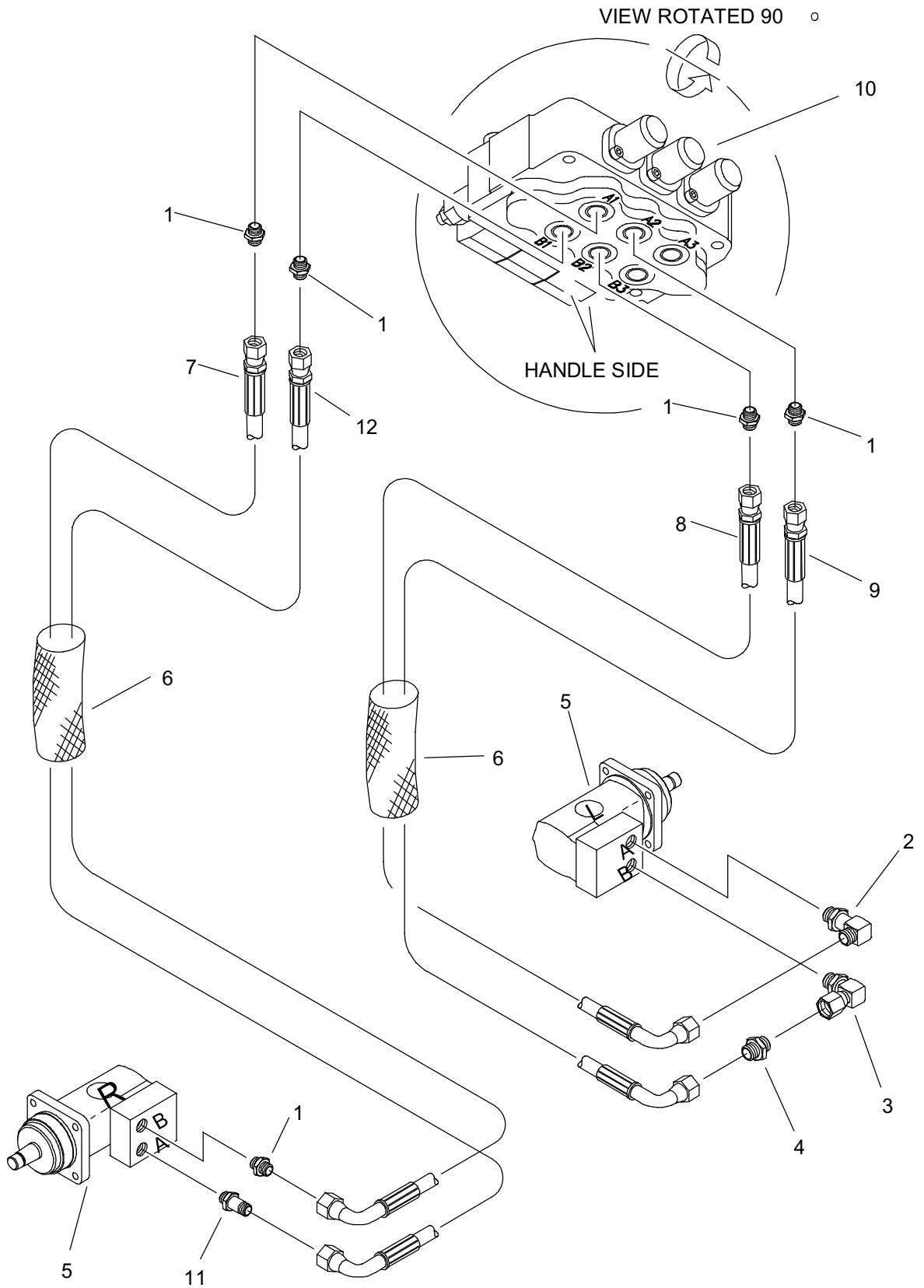
FOOTNOTES:

1. USE LOCTITE 518 OR EQUIVALENT ON MOTOR FACE

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

GROUND DRIVE/VALVE HYDRAULICS



GROUND DRIVE/VALVE HYDRAULICS

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|-------------------------|
| 1. | 154-221 | 5 | CONNECTOR (06S-060) | |
| 2. | 154-342 | 1 | CONNECTOR (06S-06090) | |
| 3. | 154-343 | 1 | CONNECTOR (06S-060FX90) | |
| 4. | 154-413 | 1 | CONNECTOR (060-060) | |
| 5. | 158-965 | - | HYD MOTOR W/ COUNTER BALANCE | |
| | 500-658 | - | SEAL REPAIR KIT | |
| | 155-776 | 2 | O-RING (117 D70) | BETWEEN BLOCK AND MOTOR |
| | 500-2063 | - | COUNTERBALANCE MANIFOLD | |
| 6. | 115-903 | 2 | ABRASION SLEEVE (1.59" X 50") | |
| 7. | 515-746 | 1 | HOSE(060FX90S-58"-3000) | |
| 8. | 515-747 | 1 | HOSE(060FX90M-50"-3000) | |
| 9. | 515-748 | 1 | HOSE(060FX90L-50"-3000) | |
| 10. | 516-108 | - | HYD CONTROL VALVE | |
| | 190-734 | - | SEAL REPAIR KIT | |
| 11. | 156-174 | 1 | CONNECTOR (06S-060) | |
| 12. | 150-1338 | 1 | HOSE(060FX90S-56"-3000) | |

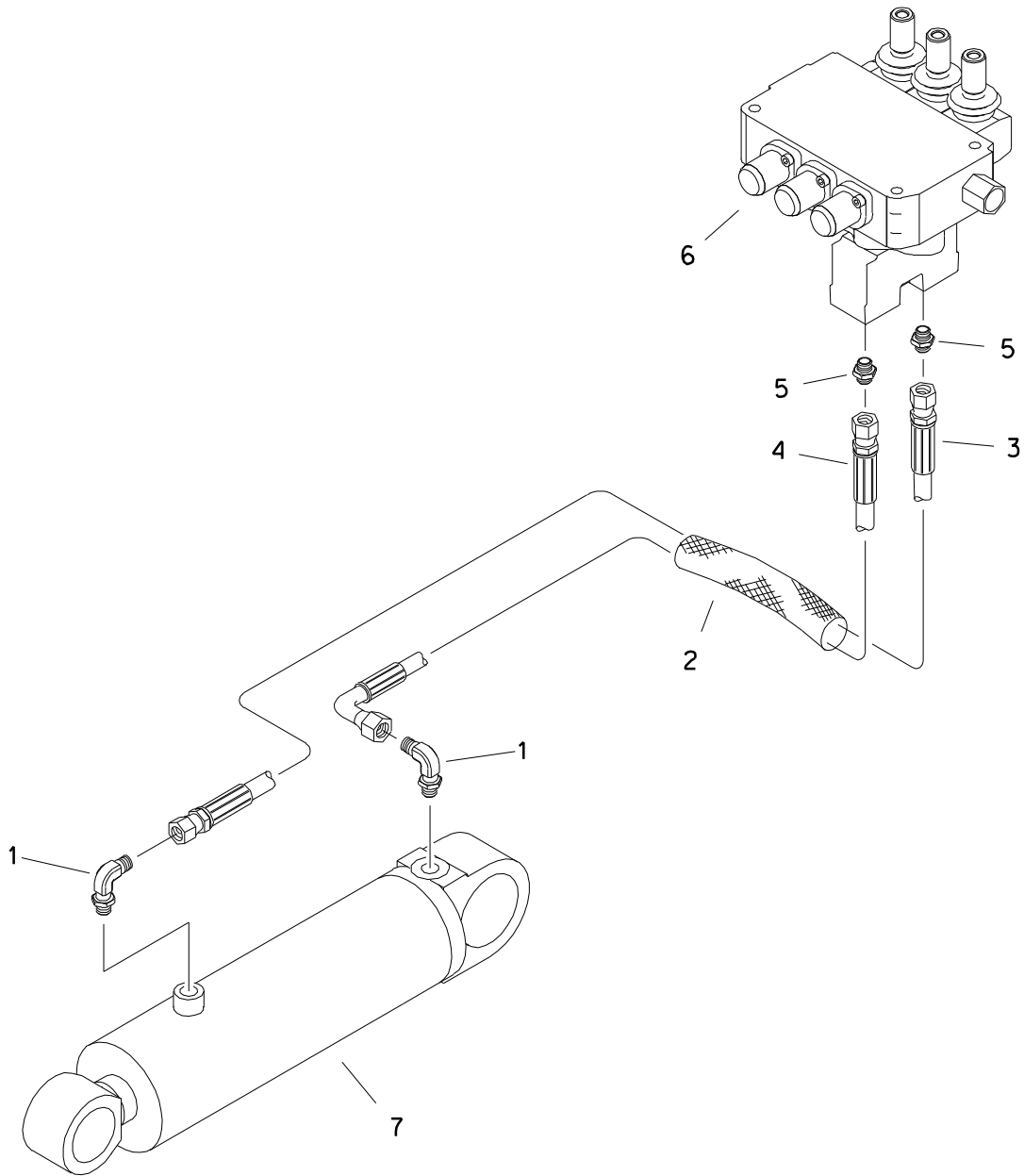
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FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

STABILIZER HYDRAULICS



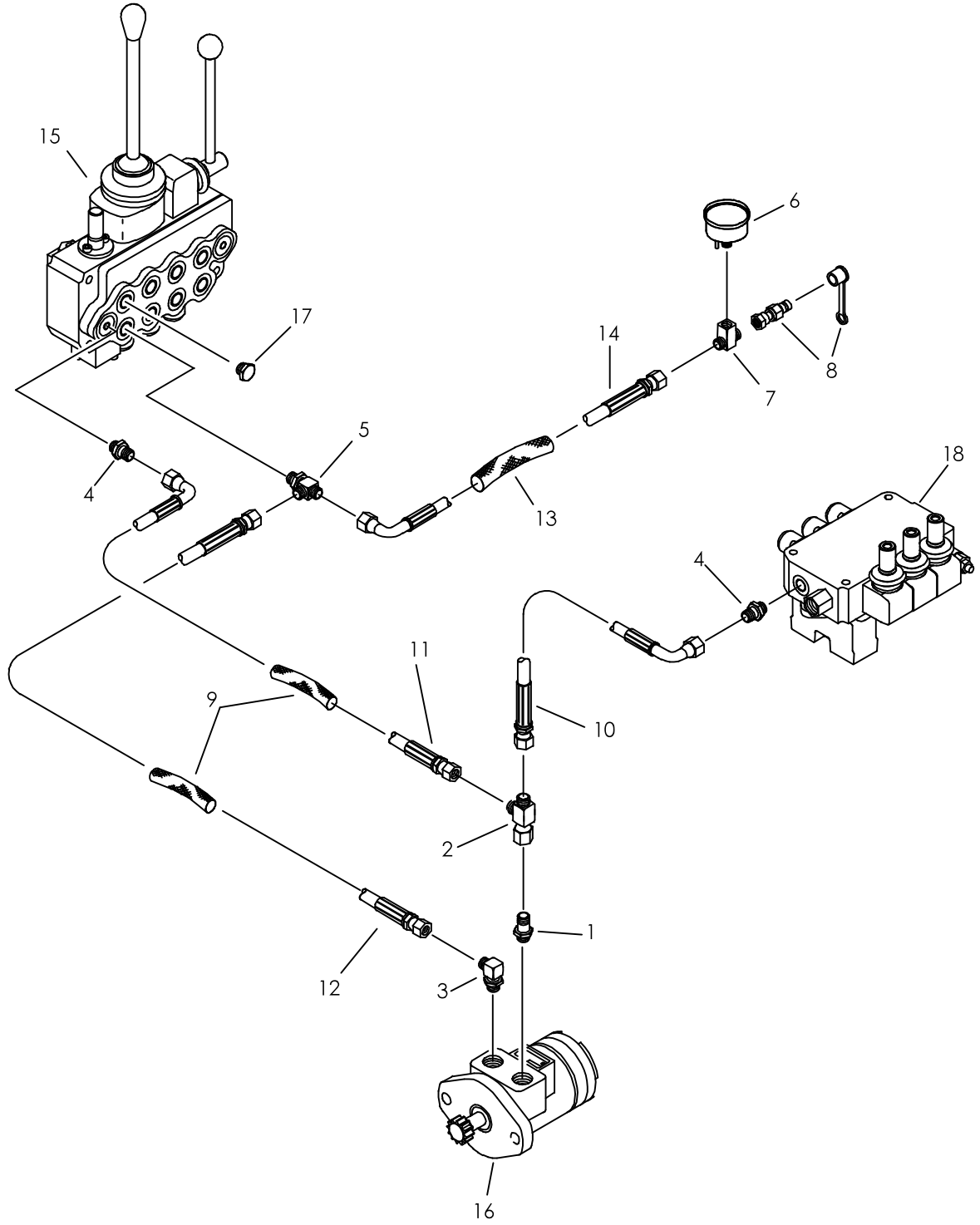
STABILIZER HYDRAULICS

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|---------|
| 1. | 154-226 | 2 | CONNECTOR (040-06S90) | |
| 2. | 115-811 | 1 | ABRASION SLEEVE (1.59" X 20") | |
| 3. | 154-695 | 1 | HOSE (040FX-38"-3000) | |
| 4. | 515-744 | 1 | HOSE (040FX90S-28"-3000) | |
| 5. | 154-385 | 2 | CONNECTOR (040-06S, ORF) | |
| 6. | 516-108 | - | HYD CONTROL VALVE | |
| | 190-734 | - | SEAL REPAIR KIT | |
| 7. | 151-045 | - | CYL (2.5" X 1.25" X 8.0") | |
| | 190-166 | - | SEAL REPAIR KIT (2.5" X 1.25") | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

DRILLING FLUID MOTOR HYDRAULICS



DRILLING FLUID MOTOR HYDRAULICS

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 154-279 | 1 | CONNECTOR (080-10S) | |
| 2. | 154-266 | 1 | UN RUN TEE (080FX-080-080) | |
| 3. | 154-322 | 1 | CONNECTOR (080-10S90) | |
| 4. | 154-233 | 2 | CONNECTOR (08S-080) | |
| 5. | 156-962 | 1 | TEE (040-06S-080) | |
| 6. | 191-047 | 1 | GAUGE KIT | |
| 7. | 156-974 | 1 | BRANCH TEE (040-040-04NF) | |
| 8. | 159-156 | 1 | QDC ADAPTER (02-040F) | |
| | 159-148 | 1 | DUST CAP (1/8") | |
| 9. | 117-690 | 2 | ABRASION SLEEVE (1.25" X 58") | |
| 10. | 154-749 | 1 | HOSE (080FX90S-18"-3000) | |
| 11. | 154-884 | 1 | HOSE (080FX90-60"-3000) | |
| 12. | 154-853 | 1 | HOSE (080FX-58"-3000) | |
| 13. | 117-194 | 1 | ABRASION SLEEVE (1.00" X 16") | |
| 14. | 154-715 | 1 | HOSE (040FX90-18"-3000) | |
| 15. | 516-109 | - | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 16. | 158-1008 | - | HYDRAULIC MOTOR | |
| | 500-506 | - | SEAL REPLACEMENT KIT | |
| 17. | 154-384 | 1 | PLUG (06S) | |
| 18. | 516-108 | - | HYD CONTROL VALVE | |
| | 190-734 | - | SEAL REPAIR KIT | |

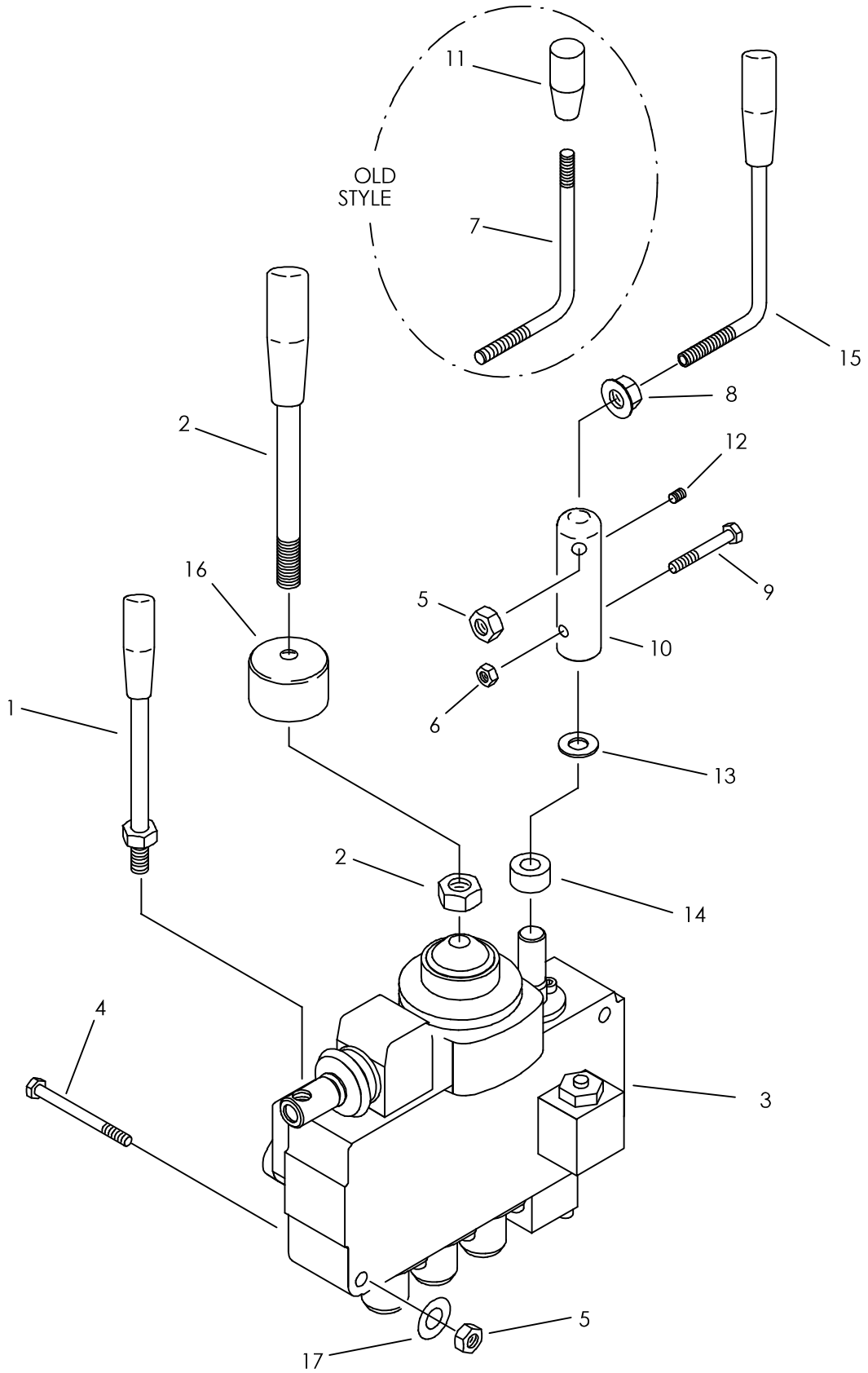
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FOOTNOTES:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

NOTE:

WRENCH VALVE



WRENCH VALVE

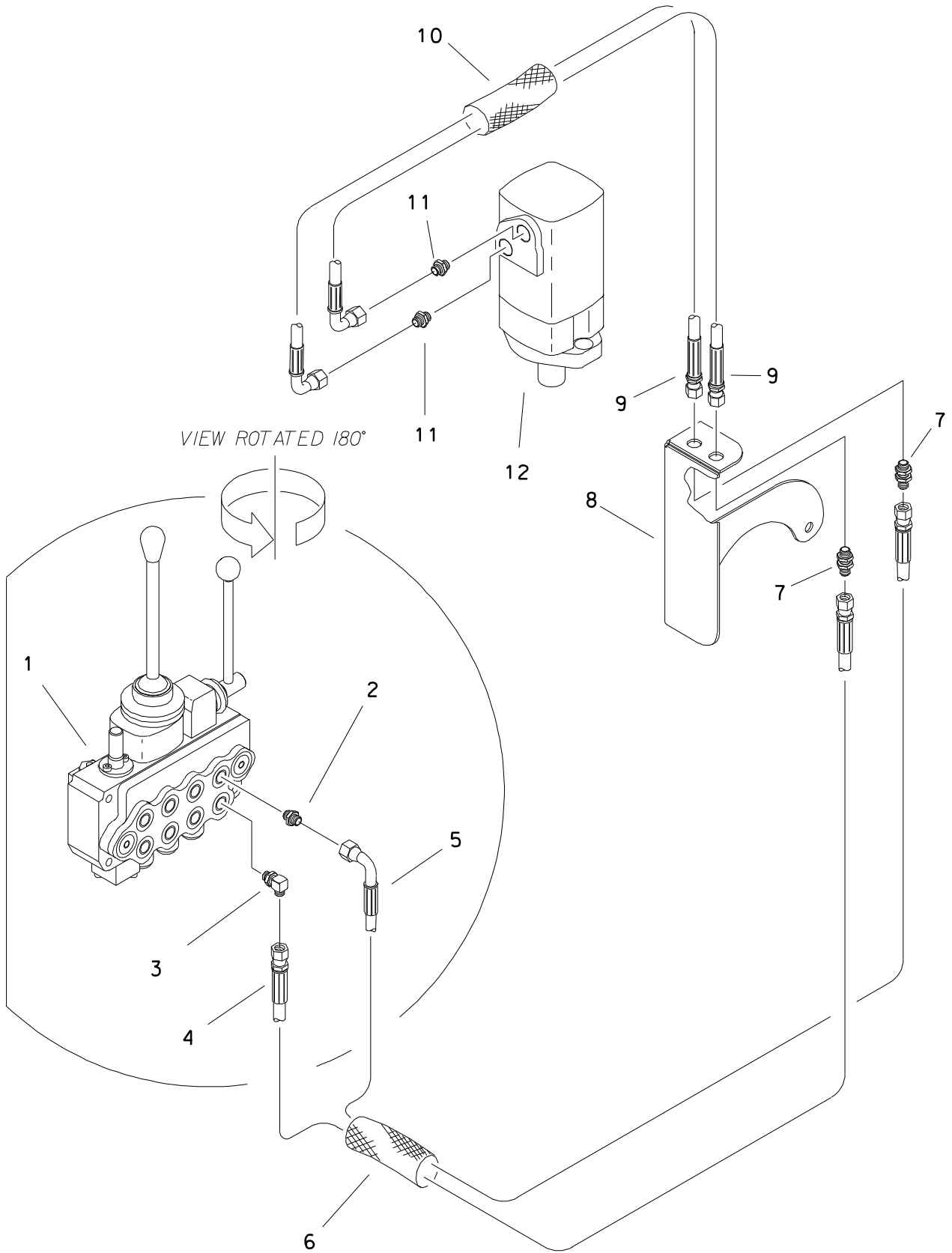
| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|-------------------------|
| 1. | 500-908 | 1 | LEVER (M8-1.25, BLACK) | |
| 2. | 149-163 | 1 | LEVER (M12-1.75, BLACK) | |
| 3. | 516-109 | 1 | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 4. | 106-330 | 3 | SCREW (M8-1.25 X 70MM) | |
| 5. | 106-561 | 4 | LOCKNUT (M8-1.25, PRV TRQ, 10.9) | |
| 6. | 105-085 | 1 | LOCKNUT (1/4-NC) | |
| 7. | 303-951 | 1 | LEVER ROD | SUPERSEDED WITH REF. 15 |
| 8. | 106-386 | 1 | FLG LOCKNUT (M8-1.25) | |
| 9. | 105-856 | 1 | BOLT (1/4-NC X 1-1/4") | |
| 10. | 302-767 | 1 | TUBE | |
| 11. | 116-906 | 1 | KNOB (5/16-NC, BLACK) | |
| 12. | 105-712 | 1 | SET SCREW (1/4-NC X 1/4", CUP) | |
| 13. | 110-085 | AR | SPRING WASHER (9/16") | |
| 14. | 178-266 | 1 | SPACER | |
| 15. | 149-127 | 1 | LEVER (M8-1.25, BLACK) | |
| 16. | 111-077 | 1 | VINYL CAP (1.625") | |
| 17. | 105-117 | 3 | WASHER (5/16") | |

NOT SHOWN:

FOOTNOTES:

NOTE:

ANCHOR MOTOR HYDRAULICS



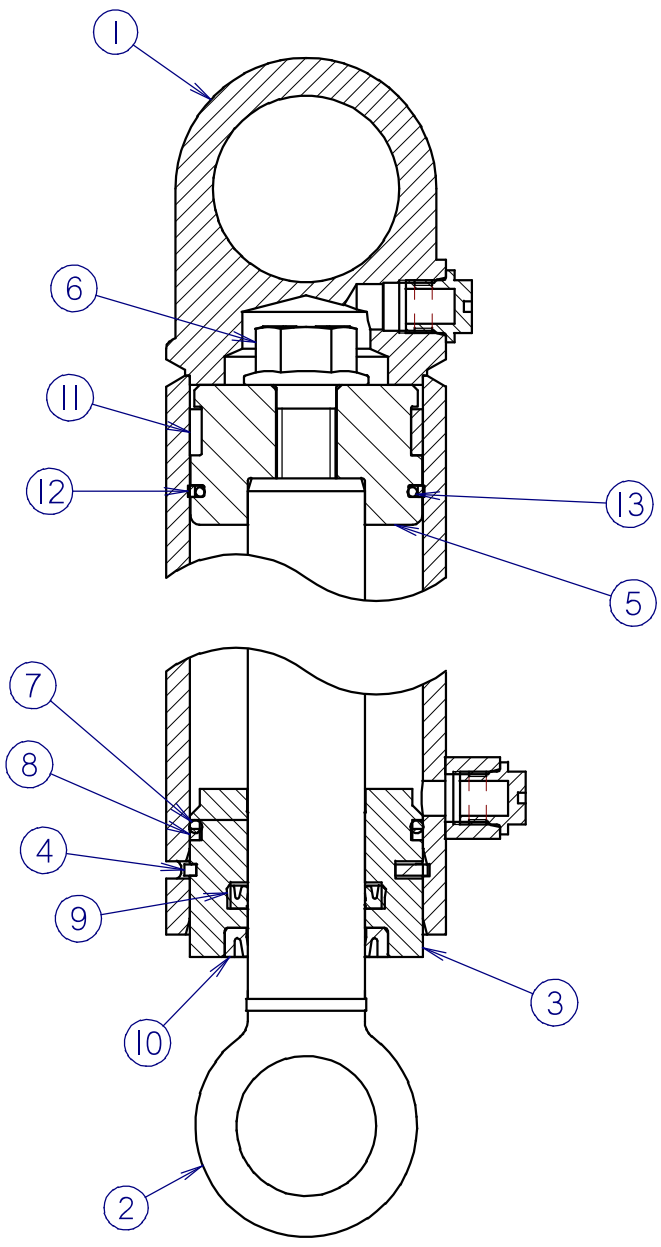
ANCHOR MOTOR HYDRAULICS

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-------------------------------|---------|
| 1. | 516-109 | - | HYD CONTROL VALVE | |
| | 190-641 | - | SEAL REPAIR KIT | |
| 2. | 154-221 | 1 | CONNECTOR (06S-060) | |
| 3. | 154-342 | 1 | CONNECTOR (06S-06090) | |
| 4. | 515-739 | 1 | HOSE (06QFX-72"-3000) | |
| 5. | 515-740 | 1 | HOSE (06QFX90M-72"-3000) | |
| 6. | 115-935 | 1 | ABRASION SLEEVE (1.75" X 70") | |
| 7. | 514-163 | 2 | BK CONNECTOR (060-060BK) | |
| 8. | 302-897 | - | BULKHEAD BRACKET | |
| 9. | 515-015 | 2 | HOSE (06QFX90M-44"-3000) | |
| 10. | 117-686 | 1 | ABRASION SLEEVE (1.75" X 43") | |
| 11. | 154-369 | 2 | CONNECTOR (060-10S) | |
| 12. | 158-700 | - | HYDRAULIC MOTOR | |
| | 166-278 | 1 | SHAFT ASSEMBLY | |
| | 500-658 | - | SEAL REPAIR KIT | |

FOOTNOTES

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

HYDRAULIC CYLINDERS (2.5" X 1.25")



HYDRAULIC CYLINDERS (2.5" X 1.25")

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|--------------------------------|---------------------|
| | 151-101 | - | CYL (2.5 X 1.25 X 2.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 152-034 | 1 | CYLINDER BARREL (2.5 X 2.0) | |
| 2 | 153-012 | 1 | CYLINDER ROD (1.25 X 2.0) | |
| | 151-084 | - | CYL (2.5 X 1.25 X 2.5) | SEE FOOTNOTES 1 & 2 |
| 1 | 152-022 | 1 | CYLINDER BARREL (2.5 X 2.5) | |
| 2 | 153-005 | 1 | CYLINDER ROD (1.25 X 2.5) | |
| | 151-055 | - | CYL (2.5 X 1.25 X 3.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 152-005 | 1 | CYLINDER BARREL (2.5 X 3.0) | |
| 2 | 150-435 | 1 | CYLINDER ROD (1.25 X 3.0) | |
| | 151-028 | - | CYL (2.5 X 1.25 X 4.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 150-283 | 1 | CYLINDER BARREL (2.5 X 4.0) | |
| 2 | 150-415 | 1 | CYLINDER ROD (1.25 X 4.0) | |
| | 149-797 | - | CYL (2.5 X 1.25 X 5.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 149-810 | 1 | CYLINDER BARREL (2.5 X 5.0) | |
| 2 | 150-423 | 1 | CYLINDER ROD (1.25 X 5.0) | |
| | 151-061 | - | CYL (2.5 X 1.25 X 6.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 152-010 | 1 | CYLINDER BARREL (2.5 X 6.0) | |
| 2 | 150-438 | 1 | CYLINDER ROD (1.25 X 6.0) | |
| | 151-045 | - | CYL (2.5 X 1.25 X 8.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 150-295 | 1 | CYLINDER BARREL (2.5 X 8.0) | |
| 2 | 150-427 | 1 | CYLINDER ROD (1.25 X 8.0) | |
| | 149-675 | - | CYL (2.5 X 1.25 X 10.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 150-692 | 1 | CYLINDER BARREL (2.5 X 10.0) | |
| 2 | 149-730 | 1 | CYLINDER ROD (1.25 X 10.0) | |
| | 151-180 | - | CYL (2.5 X 1.25 X 12.0) | SEE FOOTNOTES 1 & 2 |
| 1 | 152-015 | 1 | CYLINDER BARREL (2.5 X 12.0) | |
| 2 | 150-418 | 1 | CYLINDER ROD (1.25 X 12.0) | |
| 3 | 150-773 | 1 | CYLINDER HEAD (2.5 X 1.25) | |
| 4 | 150-779 | 1 | LOCK RING (2.5) | |
| 5 | 150-776 | 1 | CYLINDER PISTON (2.5 X 1.25) | |
| 6 | 106-097 | 1 | FLG BOLT (5/8-NC X 1-3/4",GD8) | SEE FOOTNOTE 3 |
| 7 | 500-031 | 1 | O-RING (228 D90) | |
| 8 | 157-021 | 1 | BACKUP RING (228 D90) | |
| 9 | 157-541 | 1 | U-SEAL (1.250") | |
| 10 | 157-538 | 1 | WIPER SEAL (1.250") | |
| 11 | 125-775 | 1 | WEAR RING | |
| 12 | 157-535 | 1 | BACKUP RING (139 D90) | |
| 13 | 157-019 | 1 | O-RING (139 D90) | |

NOT SHOWN:

| | |
|---------|--------------------------------|
| 259-100 | U-SEAL INSTALLER (1" - 1.499") |
| 259-236 | WIPER INSTALLER (1.25") |
| 259-242 | PISTON SEAL INSTALLER (2.5") |
| 259-243 | PISTON INSTALLER (2.5") |
| 259-188 | CYL HEAD SPANNER - TWO PIN |

FOOTNOTES:

- REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF #3 THRU #13 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
- SEAL REPAIR KIT P/N: 190-166
- APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 180-200 FT-LBS

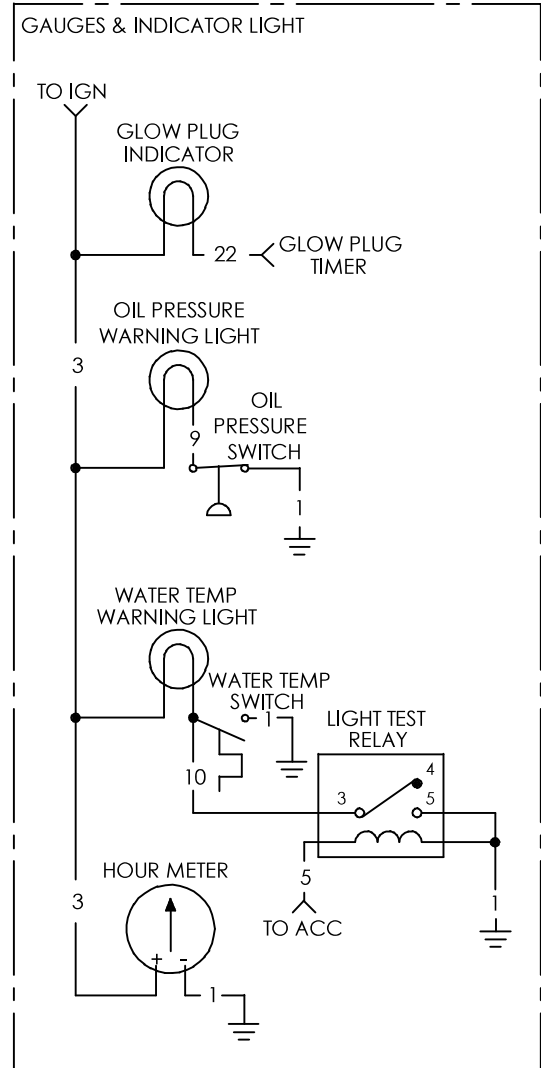
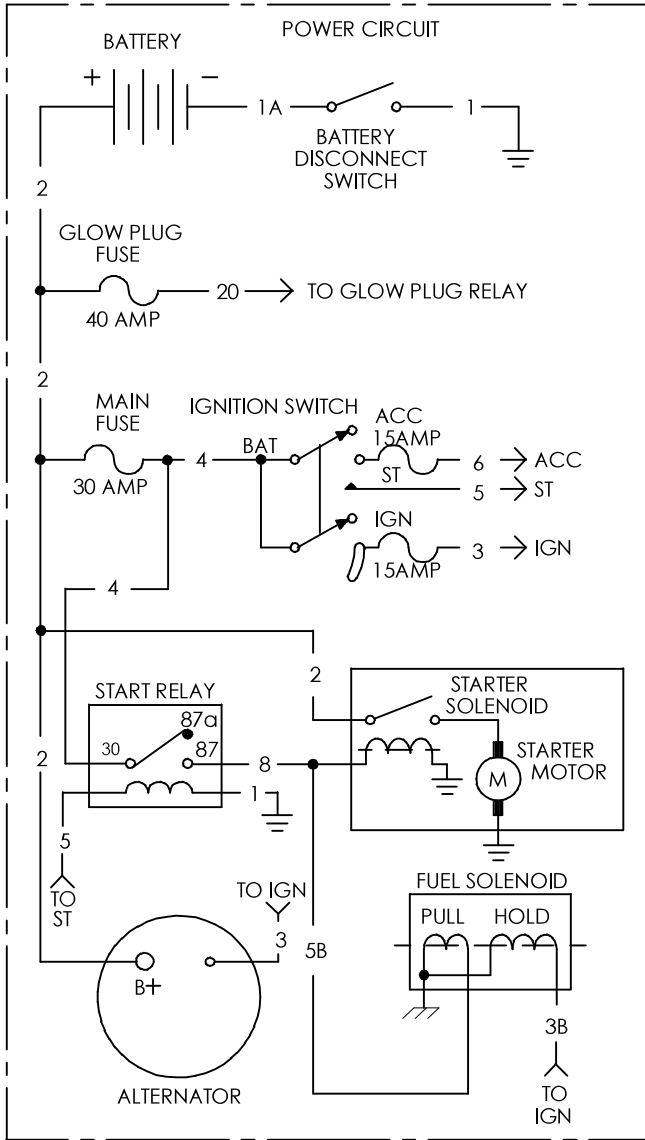
NOTE:

ELECTRICAL

ELECTRICAL SCHEMATIC

JT520

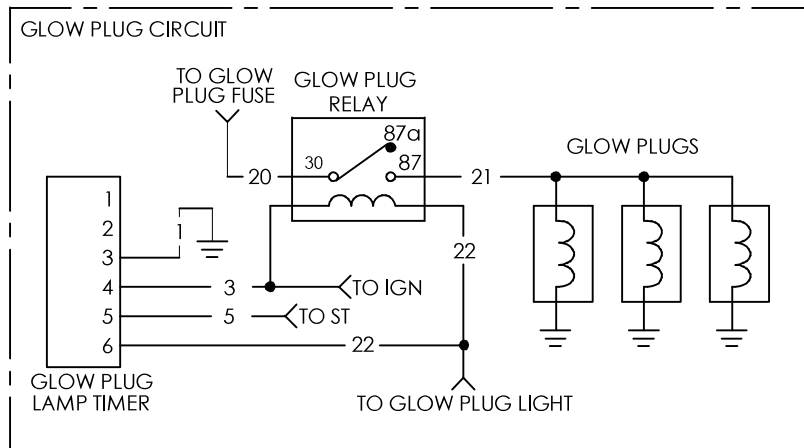
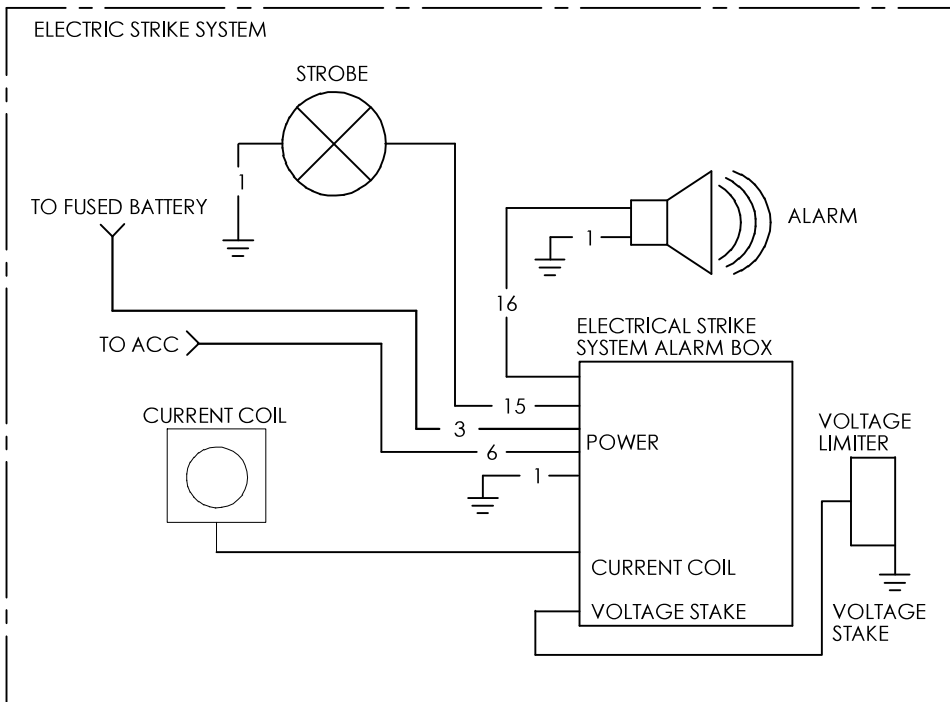
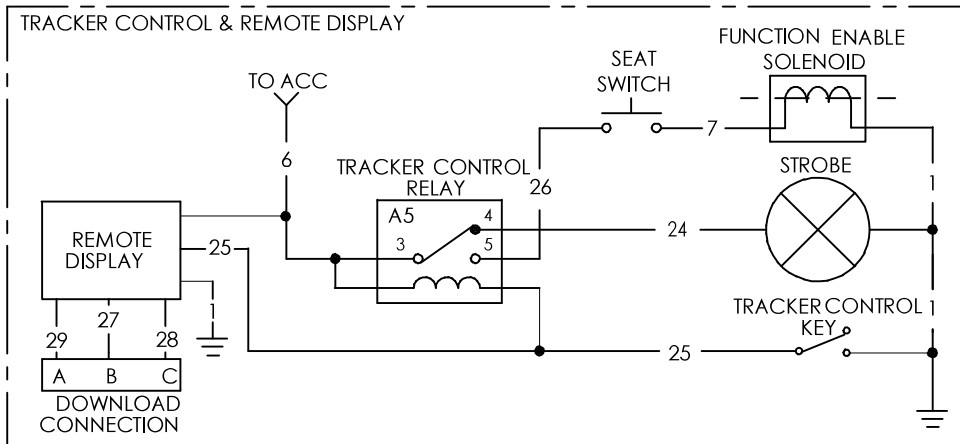
BEGINS WITH S/N 2Z0888



ELECTRICAL SCHEMATIC

JT520

BEGINS WITH S/N 2Z0888



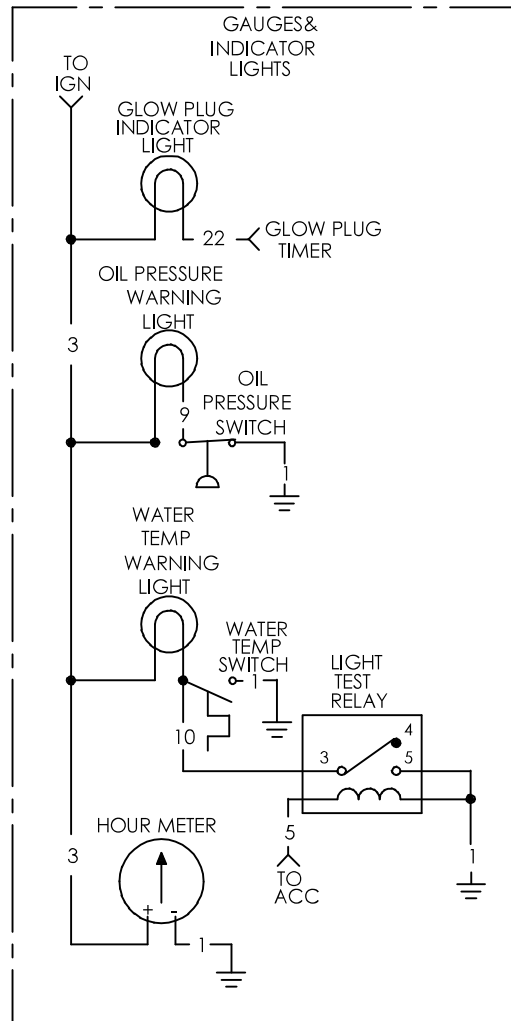
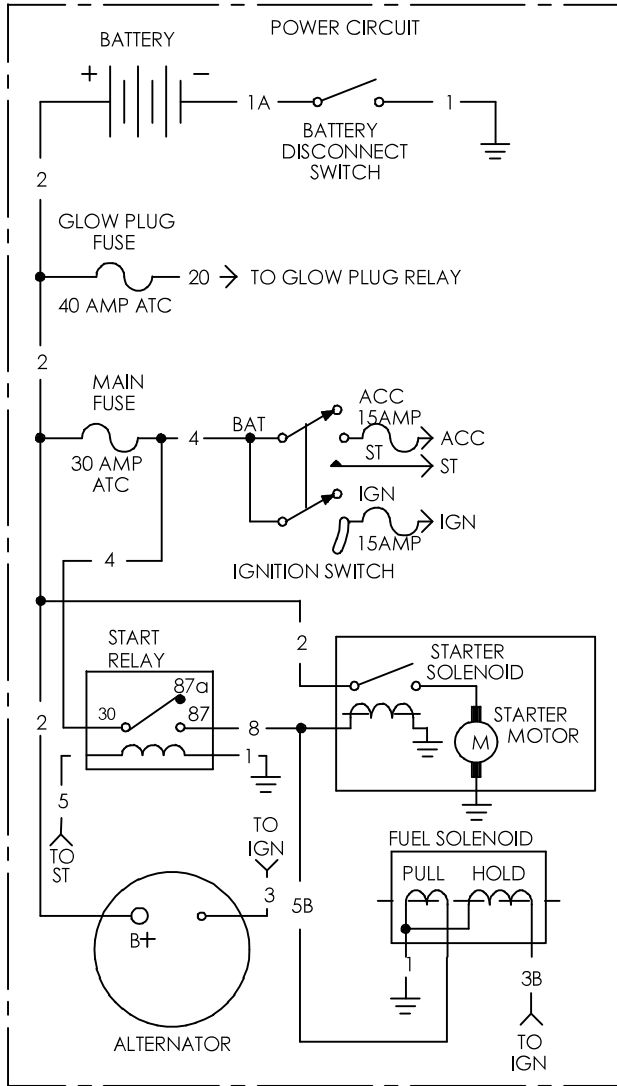
ELECTRICAL SCHEMATIC
JT520
BEGINS WITH S/N 2Z0888

| CKT NO. | WIRE COLOR | FUNCTION | REMARKS |
|---------|------------|--|---------|
| 1. | BLK | SYSTEM GROUND | |
| 1A. | BLK | BATTERY GROUND TO BATTERY DISCONNECT SWITCH | |
| 2. | RED | BATTERY POSITIVE CIRCUIT | |
| 3. | ORG | IGNITION CIRCUIT | |
| 3B. | RED | IGNITION CIRCUIT TO HOLD CIRCUIT OF FUEL SOLENOID | |
| 4. | RED | FUSED BATTERY CIRCUIT | |
| 4A. | RED/BLU | SHUTDOWN RELAY TO DELAY TIMER | |
| 5. | WHT | IGNITION SWITCH TO START RELAY AND GLOW PLUG TIMER | |
| 5B. | WHT | STARTER SOLENOID TO PULL CIRCUIT OF FUEL SOLENOID | |
| 6. | ORG/BLU | ACCESSORY CIRCUIT | |
| 7. | GRA | SEAT SWITCH TO FUNCTION ENABLE SOLENOID | |
| 8. | WHT/BLK | START RELAY TO STARTER SOLENOID | |
| 9. | WHT/BLU | OIL PRESSURE SWITCH TO OIL PRESSURE WARNING LIGHT | |
| 10. | WHT/GRN | WATER TEMP GAUGE TO SENDER | |
| 11. | | NOT USED | |
| 12. | | NOT USED | |
| 13. | | NOT USED | |
| 14. | | NOT USED | |
| 15. | WHT/PUR | E.S.I.D. TO STROBE | |
| 16. | BRN | ELECTRIC STRIKE TO ALARM | |
| 17. | | NOT USED | |
| 18. | | NOT USED | |
| 19. | | NOT USED | |
| 20. | BLU | GLOW PLUG FUSE TO GLOW PLUG RELAY | |
| 21. | GRN | GLOW PLUG RELAY TO GLOW PLUGS | |
| 22. | BLK/YEL | GLOW PLUG RELAY & INDICATOR LIGHT TO TIMER | |
| 23. | | NOT USED | |
| 24. | GRA/PUR | TRACKER CONTROL RELAY TO STROBE LIGHT | |
| 25. | TAN/RED | TRACKER CONTROL RELAY TO REMOTE DISPLAY & TRACKER CONTROL SWITCH | |
| 26. | TAN/PUR | TRACKER CONTROL RELAY TO SEAT SWITCH | |
| 27. | WHT | REMOTE DISPLAY TO DOWNLOAD CONNECTION "B" | |
| 28. | YEL | REMOTE DISPLAY TO DOWNLOAD CONNECTION "C" | |
| 29. | BLK | REMOTE DISPLAY TO DOWNLOAD CONNECTION "A" | |

FOOTNOTES

ELECTRICAL SCHEMATIC

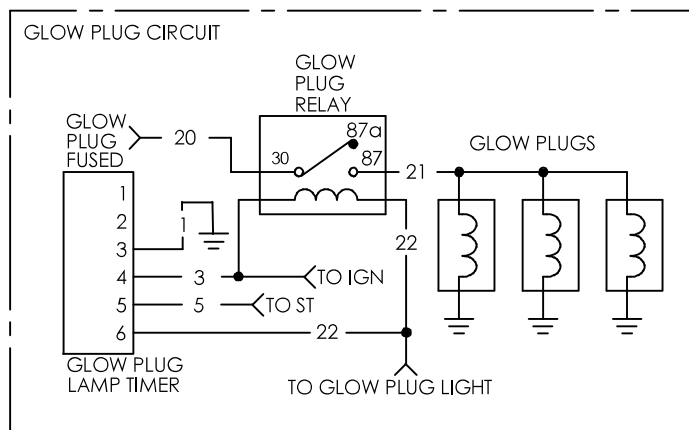
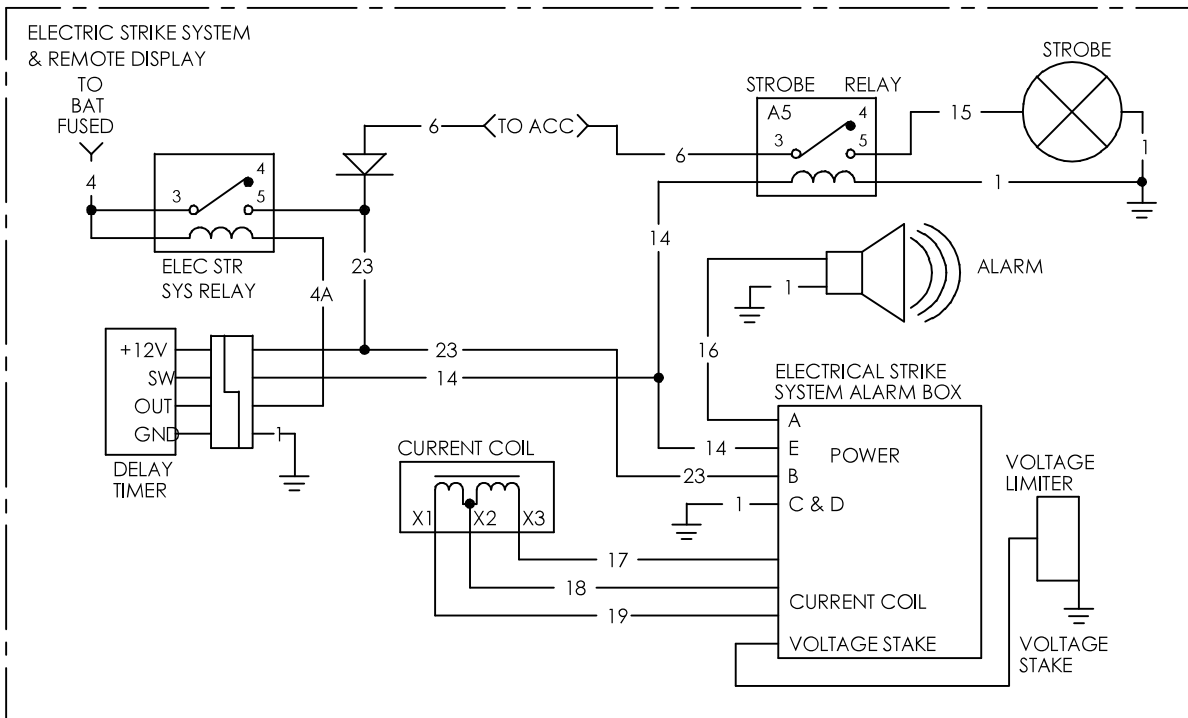
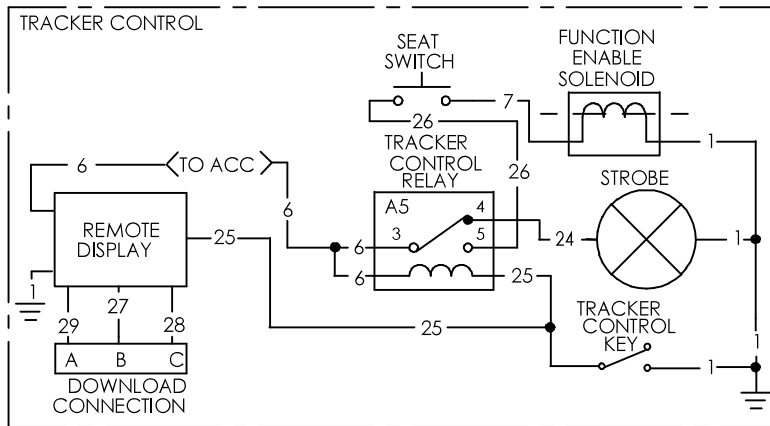
JT520 T2/T4i
ENDS WITH S/N 2Z0887



ELECTRICAL SCHEMATIC

JT520 T2/T4i

ENDS WITH S/N 2Z0887



ELECTRICAL SCHEMATIC

JT520 T2/T4i

ENDS WITH S/N 2Z0887

| CKT NO. | WIRE COLOR | FUNCTION | REMARKS |
|---------|------------|--|---------|
| 1. | BLK | SYSTEM GROUND | |
| 1A. | BLK | BATTERY GROUND TO BATTERY DISCONNECT SWITCH | |
| 2. | RED | BATTERY POSITIVE CIRCUIT | |
| 3. | ORG | IGNITION CIRCUIT | |
| 3B. | RED | IGNITION CIRCUIT TO HOLD CIRCUIT OF FUEL SOLENOID | |
| 4. | RED | FUSED BATTERY CIRCUIT | |
| 4A. | RED/BLU | SHUTDOWN RELAY TO DELAY TIMER | |
| 5. | WHT | IGNITION SWITCH TO START RELAY AND GLOW PLUG TIMER | |
| 5B. | WHT | STARTER SOLENOID TO PULL CIRCUIT OF FUEL SOLENOID | |
| 6. | ORG/BLU | ACCESSORY CIRCUIT | |
| 7. | GRA | SEAT SWITCH TO FUNCTION ENABLE SOLENOID | |
| 8. | WHT/BLK | START RELAY TO STARTER SOLENOID | |
| 9. | WHT/BLU | OIL PRESSURE SWITCH TO OIL PRESSURE WARNING LIGHT | |
| 10. | WHT/ GRN | WATER TEMP GAUGE TO SENDER | |
| 11. | BLU | REGULATOR/RECTIFIER TO STATOR ALTERNATOR | |
| 12. | BLU | REGULATOR/RECTIFIER TO STATOR ALTERNATOR | |
| 13. | GRN | REGULATOR/RECTIFIER TO RESISTOR | |
| 14. | WHT/YEL | ELECTRIC STRIKE TO STROBE RELAY | |
| 15. | WHT/PUR | STROBE RELAY TO STROBE | |
| 16. | BRN | ELECTRIC STRIKE TO ALARM | |
| 17. | RED | ELECTRIC STRIKE TO CURRENT COIL X3 | |
| 18. | BLK | ELECTRIC STRIKE TO CURRENT COIL X2 | |
| 19. | WHT | ELECTRIC STRIKE TO CURRENT COIL X1 | |
| 20. | BLU | GLOW PLUG FUSE TO GLOW PLUG RELAY | |
| 21. | GRN | GLOW PLUG RELAY TO GLOW PLUGS | |
| 22. | BLK/YEL | GLOW PLUG RELAY & INDICATOR LIGHT TO TIMER | |
| 23. | ORG/RED | DIODE CATHODE TO DELAY TIMER & ELEC STR SYSTEM | |
| 24. | GRA/PUR | TRACKER CTRL RELAY TO STROBE LIGHT | |
| 25. | TAN/RED | TRACKER CTRL RELAY TO REMOTE DISPLAY & TRACKER CTRL SWITCH | |
| 26. | TAN/PUR | TRACKER CTRL RELAY TO SEAT SWITCH | |
| 27. | WHT | REMOTE DISPLAY TO DOWNLOAD CONNECTION "B" | |
| 28. | YEL | REMOTE DISPLAY TO DOWNLOAD CONNECTION "C" | |
| 29. | BLK | REMOTE DISPLAY TO DOWNLOAD CONNECTION "A" | |

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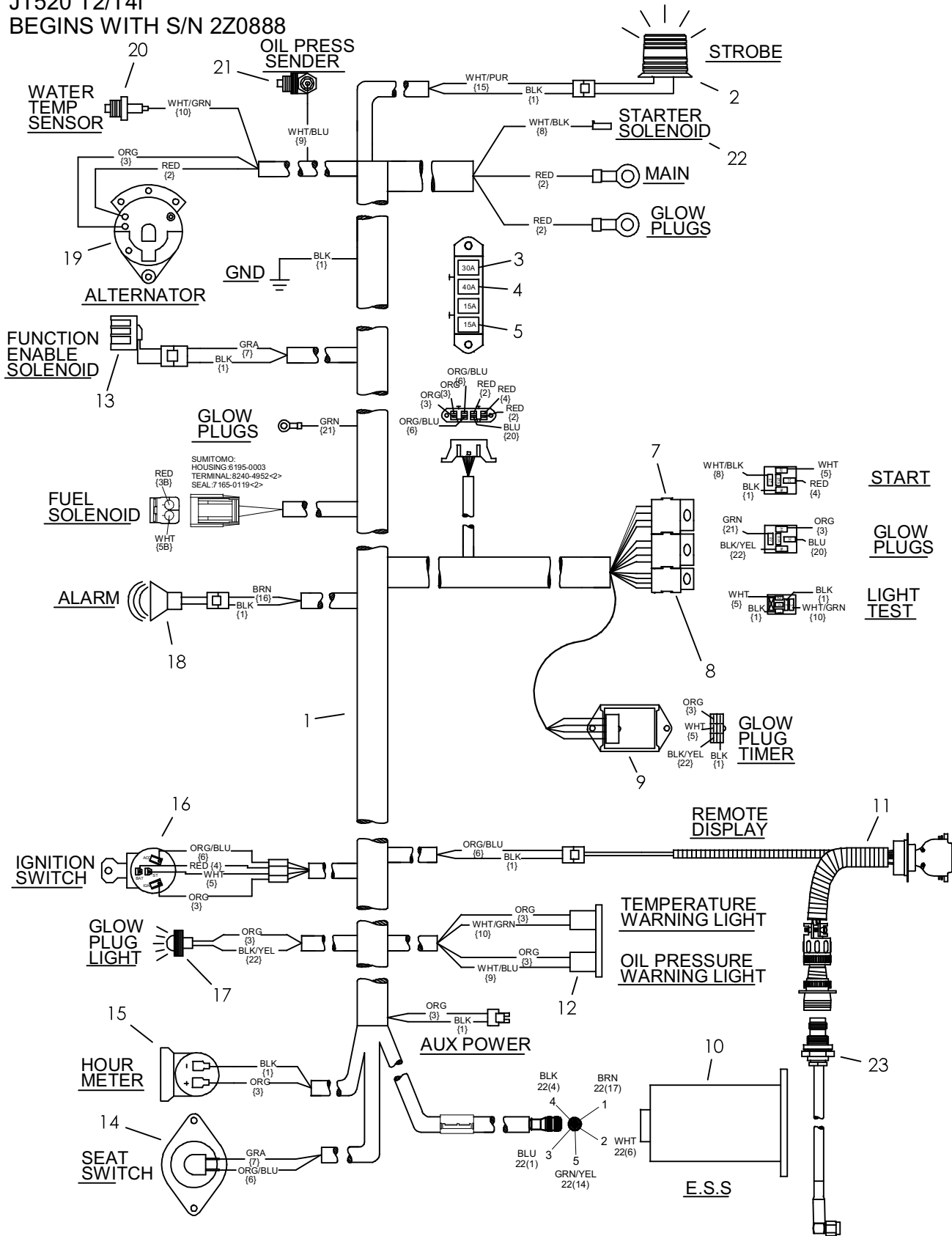
FOOTNOTES:

NOTE:

ELECTRICAL DIAGRAM

JT520 T2/T4i

BEGINS WITH S/N 2Z0888



ELECTRICAL DIAGRAM

JT520 T2/T4i

BEGINS WITH S/N 2Z0888

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|--------------------------|-------------------------|
| 1. | 214-494 | 1 | ENGINE/FRAME HARNESS | SEE FOOTNOTE 1 |
| 2. | 217-296 | 1 | STROBE LIGHT (AMBER) | |
| | 214-991 | 1 | FLASH BULB | |
| | 217-302 | 1 | LENS (AMBER) | |
| 3. | 217-813 | 1 | FUSE (ATC, 30 AMP) | |
| 4. | N/A | 1 | FUSE (40 AMP) | |
| 5. | 217-811 | 2 | FUSE (ATC, 15 AMP) | |
| 6. | 214-502 | 1 | DELAY TIMER | |
| 7. | 217-826 | 1 | MINI RELAY (SPDT) | |
| 8. | 217-710 | 2 | MICRO RELAY (SPDT) | |
| 9. | 217-856 | 1 | LAMPTIMER 12V | BEGINS WITH S/N: 2T3168 |
| 10. | 217-241 | 1 | ESID MODULE | ENDS WITH S/N: 2T3165 |
| | 217-232 | 1 | CONTROL MODULE | |
| 11. | 214-415 | 1 | 90D MODULE TO RIG CABLE | |
| 12. | 217-020 | 1 | PILOT LIGHT | |
| 13. | 158-569 | 1 | SOLENOID DIVERSION VALVE | |
| 14. | 217-750 | 1 | SEAT SWITCH | |
| 15. | 215-128 | 1 | HOUR METER | |
| 16. | 214-852 | 1 | IGNITION SWITCH | |
| | 214-961 | | KEY, PAIR (BASE CODE) | |
| | 214-962 | | SWITCH MOUNTING NUT | |
| 17. | 214-563 | 1 | RED LED 12V | |
| 18. | 306-602 | 1 | BACKUP ALARM | |
| 19. | 217-453 | 1 | ALTERNATOR | |
| 20. | 213-338 | 1 | TEMPERTURE SWITCH | BEGINS WITH S/N: _____ |
| | <u>215-242</u> | - | TEMPERTURE SWITCH | ENDS WITH S/N" _____ |
| 21. | 217-952 | 1 | OIL PRESSURE SWITCH | |
| 22. | 194-382 | 1 | STARTER | |
| 23. | 214-412 | 1 | RIG RF CABLE | |

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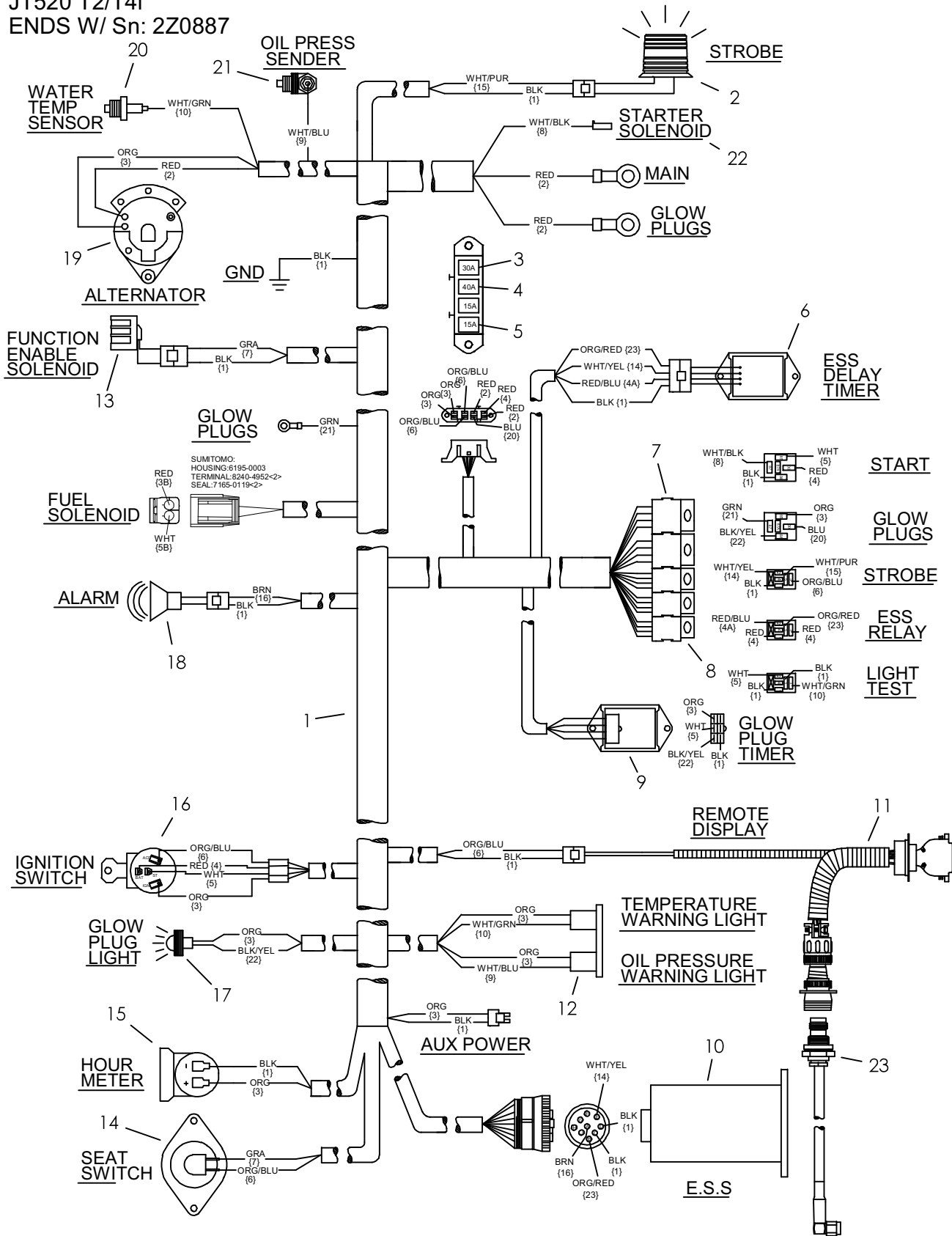
FOOTNOTES:

1. 214-494 V01 REV. H, BEGINS WITH S/N 2Z08888 & 214-494 V09 REV. G, ENDS WITH S/N 2Z0887.

NOTE:

ELECTRICAL DIAGRAM

JT520 T2/T4i
ENDS W/ Sn: 2Z0887



ELECTRICAL DIAGRAM

JT520 T2/T4i

ENDS W/ Sn: 2Z0887

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|--------------------------|-----------------------------|
| 1. | 214-494 | 1 | ENGINE/FRAME HARNESS | SEE FOOTNOTE #1 |
| 2. | 217-296 | 1 | STROBE LIGHT (AMBER) | |
| | 214-991 | 1 | FLASH BULB | |
| | 217-302 | 1 | LENS (AMBER) | |
| 3. | 217-813 | 1 | FUSE (ATC, 30 AMP) | |
| 4. | N/A | 1 | FUSE (40 AMP) | |
| 5. | 217-811 | 2 | FUSE (ATC, 15 AMP) | |
| 6. | 214-502 | 1 | DELAY TIMER | |
| 7. | 217-826 | 2 | MINI RELAY (SPDT) | |
| 8. | 217-710 | 3 | MICRO RELAY (SPDT) | |
| 9. | 217-856 | 1 | LAMPTIMER 12V | |
| 10. | 217-241 | 1 | ESID MODULE | BEGINS WITH SERIAL # 2T3168 |
| | 217-232 | 1 | CONTROL MODULE | ENDS WITH SERIAL # 2T3165 |
| 11. | 214-415 | 1 | 90D MODULE TO RIG CABLE | |
| 12. | 217-020 | 1 | PILOT LIGHT | |
| 13. | 158-569 | 1 | SOLENOID DIVERSION VALVE | |
| 14. | 217-750 | 1 | SEAT SWITCH | |
| 15. | 215-128 | 1 | HOUR METER | |
| 16. | 214-852 | 1 | IGNITION SWITCH | |
| | 214-961 | | KEY, PAIR (BASE CODE) | |
| | 214-962 | | SWITCH MOUNTING NUT | |
| 17. | 214-563 | 1 | RED LED 12V | |
| 18. | 306-602 | 1 | BACKUP ALARM | |
| 19. | 217-453 | 1 | ALTERNATOR | |
| 20. | 213-338 | 1 | TEMPERTURE SWITCH | BEGINS WITH S/N:2Y1471 |
| | <u>215-242</u> | - | TEMPERTURE SWITCH | ENDS WITH S/N:2Y1290 |
| 21. | 217-952 | 1 | OIL PRESSURE SWITCH | |
| 22. | 194-382 | 1 | STARTER | |
| 23. | 214-412 | 1 | RIG RF CABLE | |

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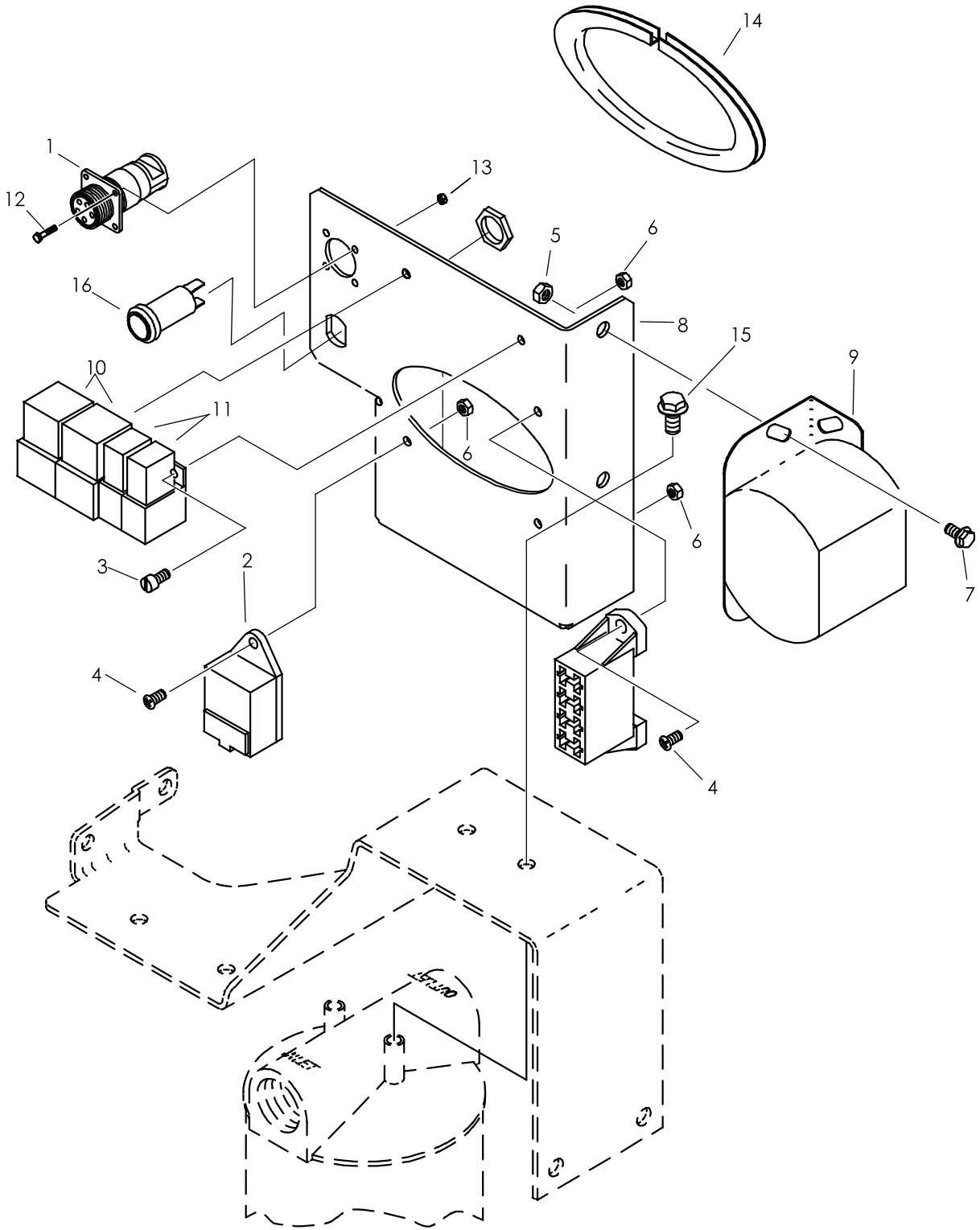
FOOTNOTES:

1. 214-494 V01 Rev.H, BEGINS WITH S/N 2Z0888 & 214-494 V09 REV.G, ENDS WITH S/N 2Z0887.

NOTE:

RELAY PANEL

JT520 T2/T4i



RELAY PANEL

JT520 T2/T4i

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|----------------------------------|------------------------|
| 1. | 214-415 | 1 | 90D MODULE TO RIG CABLE | |
| 2. | 217-856 | 1 | LAMPTIMER 12 V | |
| 3. | 105-185 | 2 | BOLT (#10-24 X 1/2", RD SLT) | |
| 4. | 106-049 | 3 | BOLT (#10-24 X 3/4", PLPS) | |
| 5. | 106-561 | 2 | LOCKNUT (M8-1.25, PRV TRQ, 10.9) | |
| 6. | 106-048 | 7 | LOCKNUT (#10-24) | |
| 7. | 106-380 | 2 | FLG LK SCREW (M8-1.25 X 16MM) | |
| 8. | 302-876 | 1 | RELAY PANEL | |
| 9. | 306-602 | 1 | BACKUP ALARM | |
| 10. | 217-826 | 2 | MINI RELAY (SPDT) | |
| 11. | 217-710 | 2 | MICRO RELAY (SPDT) | |
| 12. | 107-269 | 4 | SCREW (#4-40 X 3/4", PAN) | |
| 13. | 106-277 | 4 | NUT (#4-40, BRASS) | |
| 14. | 115-686 | AR | BULK EDGE (5/32, SOLD PER 1") | USE 1 @ 12" |
| 15. | 105-823 | - | FLG LK BOLT (5/16-NC X 3/4") | |
| 16. | 214-908 | 1 | ON-OFF KEY SWITCH | BEGINS WITH S/N:2V2659 |

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FOOTNOTES:

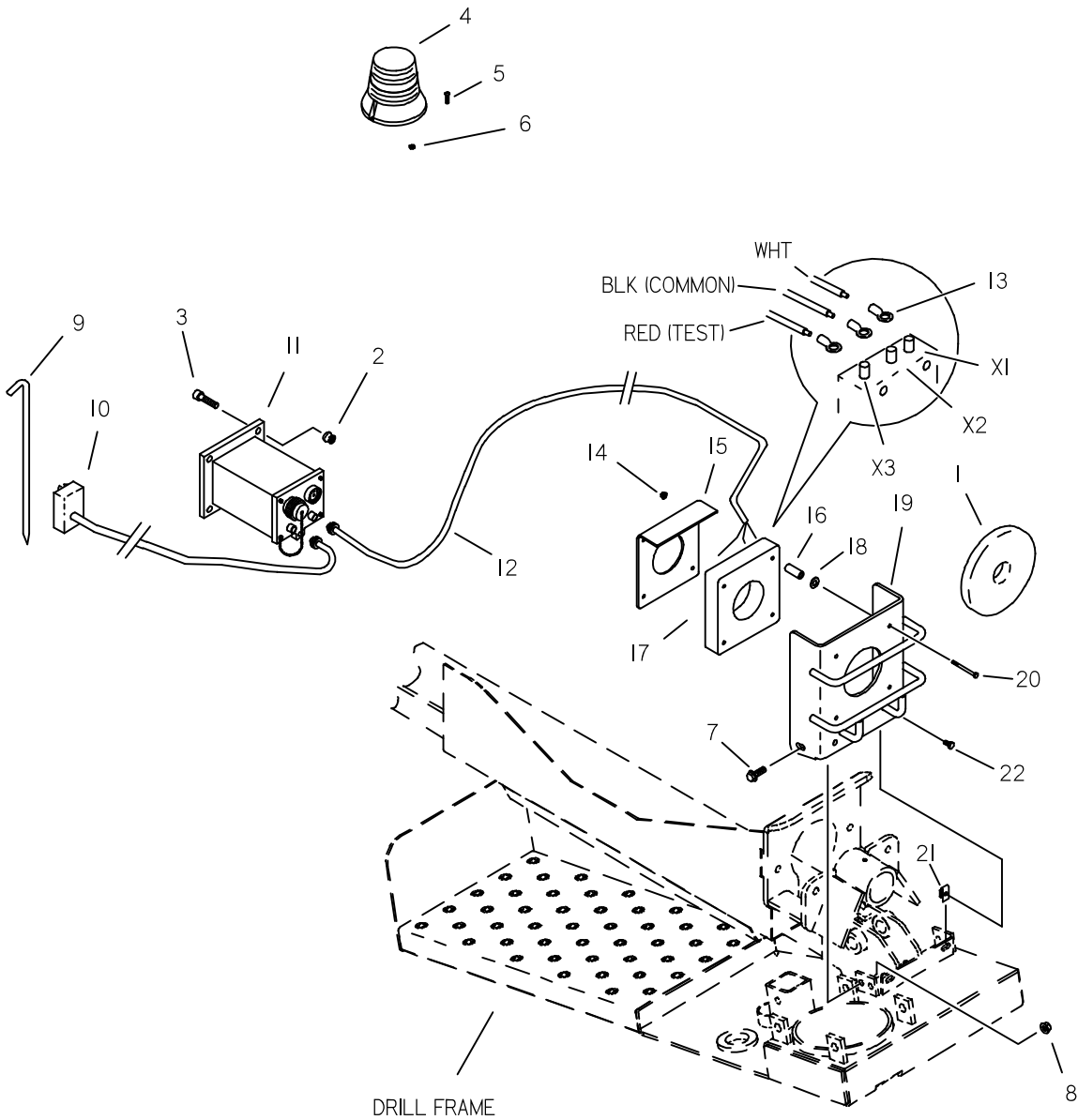
NOTE:

ORIENTATE FUSE BLOCK WITH 15 AMP FUSE ON TOP.

ELECTRICAL STRIKE SYSTEM

JT520 T2/T4i

ENDS WITH SERIAL #2T3165



ELECTRICAL STRIKE SYSTEM**JT520 T2/T4i****ENDS WITH SERIAL #2T3165**

| REF PART NO. NUMBER | QTY | DESCRIPTION | REMARKS |
|------------------------|-----|--|----------------|
| 1. | | 116-515 - ROD WIPER (1.0") | |
| 2. | | 105-631 - NUTSERT (M6X1.014.20-6.60THK) | |
| 3. | | 106-640 - SCREW (M6-1.00 X 20MM, BUT SOCI) | |
| 4. | | 217-108 - STROBE LIGHT W/ AMBER LENS | |
| | | 214-576 - LINEAR FLASHTUBE | |
| | | 214-633 - AMBER DOME LENS | |
| 5. | | 105-185 - SCREW (M10-24 X 1/2", RD SLT) | |
| 6. | | 106-048 - LOCKNUT (M10-24) | |
| 7. | 2 | 106-724 - FLG SCREW (M10-1.50 X 25MM) | |
| 8. | 2 | 105-894 - LOCKNUT (M10-1.50,PRV TRQ,10.9) | |
| 9. | | 215-799 - VOLTAGE STAKE | |
| 10. | 1 | 216-032 - VOLT LIMITER (EL STR SYST) | |
| 11. | | 217-232 - CONTROL MODULE | |
| 12. | 1 | 214-173 - EL STR SYSTM CABLE (3.7M) | SEE FOOTNOTE I |
| 13. | | 215-476 - RING TERMINAL (#10) | |
| 14. | 4 | 106-538 - LOCKNUT (M6-1.00,PRV TRQ,10.9) | |
| 15. | 1 | 362-623 - COIL COVER (BACK) | SEE FOOTNOTE I |
| 16. | 4 | 116-376 - SPACER | |
| 17. | 1 | 216-023 CURRENT TRANSFORMER | SEE FOOTNOTE I |
| 18. | 4 | 116-283 - WASHER (531", RUBBER) | |
| 19. | 1 | 359-952 - COIL COVER | |
| 20. | 4 | 105-843 - SCREW (M6-1.00 X 80MM) | |
| 21. | 2 | 106-558 - CLIP NUT (M10-1.50) | |
| 22. | 2 | 106-079 - SCREW (M10-1.50 X 30MM) | |

NOT SHOWN:

FOOTNOTES:

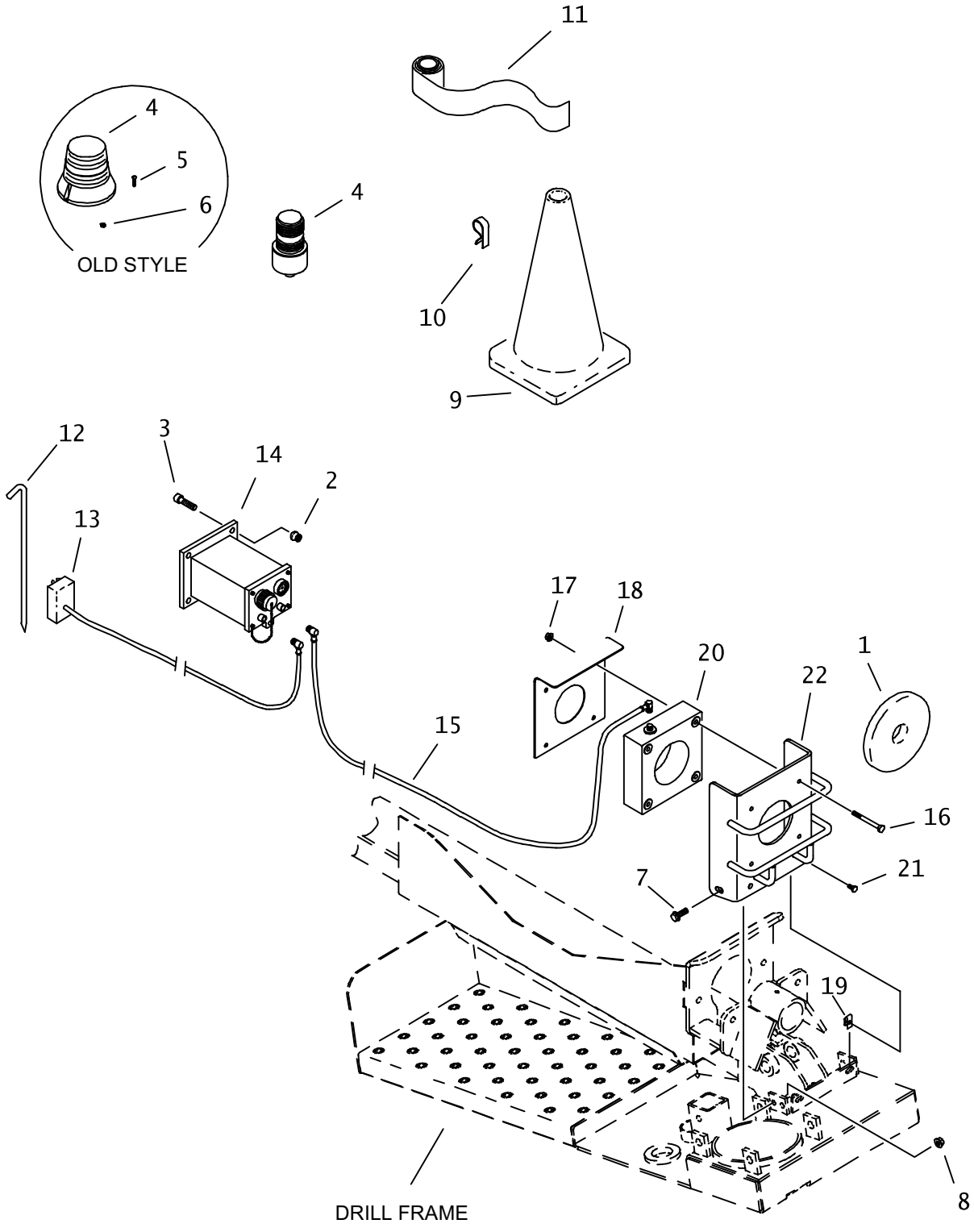
I. REF 20 OBSOLETE, 216-023 REPLACE W/214-554, 309-758 & 211-083. REFERENCE PAGE 807-434.

NOTE:

ELECTRICAL STRIKE SYSTEM

JT520 T2/T4i

BEGINS WITH SERIAL # 2T3168



ELECTRICAL STRIKE SYSTEM

JT520 T2/T4i

BEGINS WITH SERIAL # 2T3168

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|----------------|-----|-----------------------------------|-------------------------|
| 1. | 116-515 | - | ROD WIPER (1.0") | |
| 2. | 105-630 | - | NUTSERT(M6X1.0).70-4.20THK | |
| 3. | 106-640 | - | SCREW (M6-1.00 X 20MM, BUT SOC) | |
| 4. | 217-108 | - | STROBE LIGHT W/ AMBER LENS | ENDS WITH S/N: 2w0902 |
| | 214-576 | - | LINEAR FLASHTUBE | ENDS WITH S/N: 2w0902 |
| | 214-633 | - | AMBER DOME LENS | ENDS WITH S/N: 2w0902 |
| | 217-296 | 1 | STROBE LIGHT (AMBER) | BEGINS WITH S/N: 2w0967 |
| | 214-991 | 1 | FLASH BULB | BEGINS WITH S/N: 2w0967 |
| | 217-302 | 1 | LENS (AMBER) | BEGINS WITH S/N: 2w0967 |
| | 217-301 | 1 | BRUSH GUARD | BEGINS WITH S/N: 2w0967 |
| 5. | 105-185 | - | BOLT (#10-24 X 1/2", RD SLT) | ENDS WITH S/N: 2w0902 |
| 6. | 106-048 | - | LOCKNUT (#10-24) | ENDS WITH S/N: 2w0902 |
| 7. | 106-724 | 2 | FLG SCREW (M10-1.50 X 25MM) | |
| 8. | 105-894 | 2 | LOCKNUT (M10-1.50, PRV TRQ, 10.9) | |
| 9. | <u>259-210</u> | - | TRAFFIC CONE - ORANGE | |
| 10. | <u>259-234</u> | - | CONE CLIP | |
| 11. | <u>260-223</u> | - | BARRIER TAPE (3" X 1000') | |
| 12. | 215-799 | - | VOLTAGE STAKE | |
| 13. | 211-042 | 1 | VOLTAGE LIMITER CABLE | |
| 14. | 220-1024 | - | ESID MODULE NEW (T) | |
| 15. | 214-554 | 1 | CURRENT COIL CABLE | |
| 16. | 106-602 | 4 | SCREW (M8-1.25 X 80MM) | |
| 17. | 106-386 | 4 | FLG LOCKNUT (M8-1.25) | |
| 18. | 309-758 | 1 | COVER | |
| 19. | 106-558 | 2 | CLIP NUT (M10-1.50) | |
| 20. | <u>216-064</u> | 1 | CURRENT TRANSFORMER | |
| | 211-083 | 1 | CURRENT TRANSFORMER | |
| 21. | 106-079 | 2 | SCREW (M10-1.50 X 30MM) | |
| 22. | 359-952 | 1 | COIL COVER | |

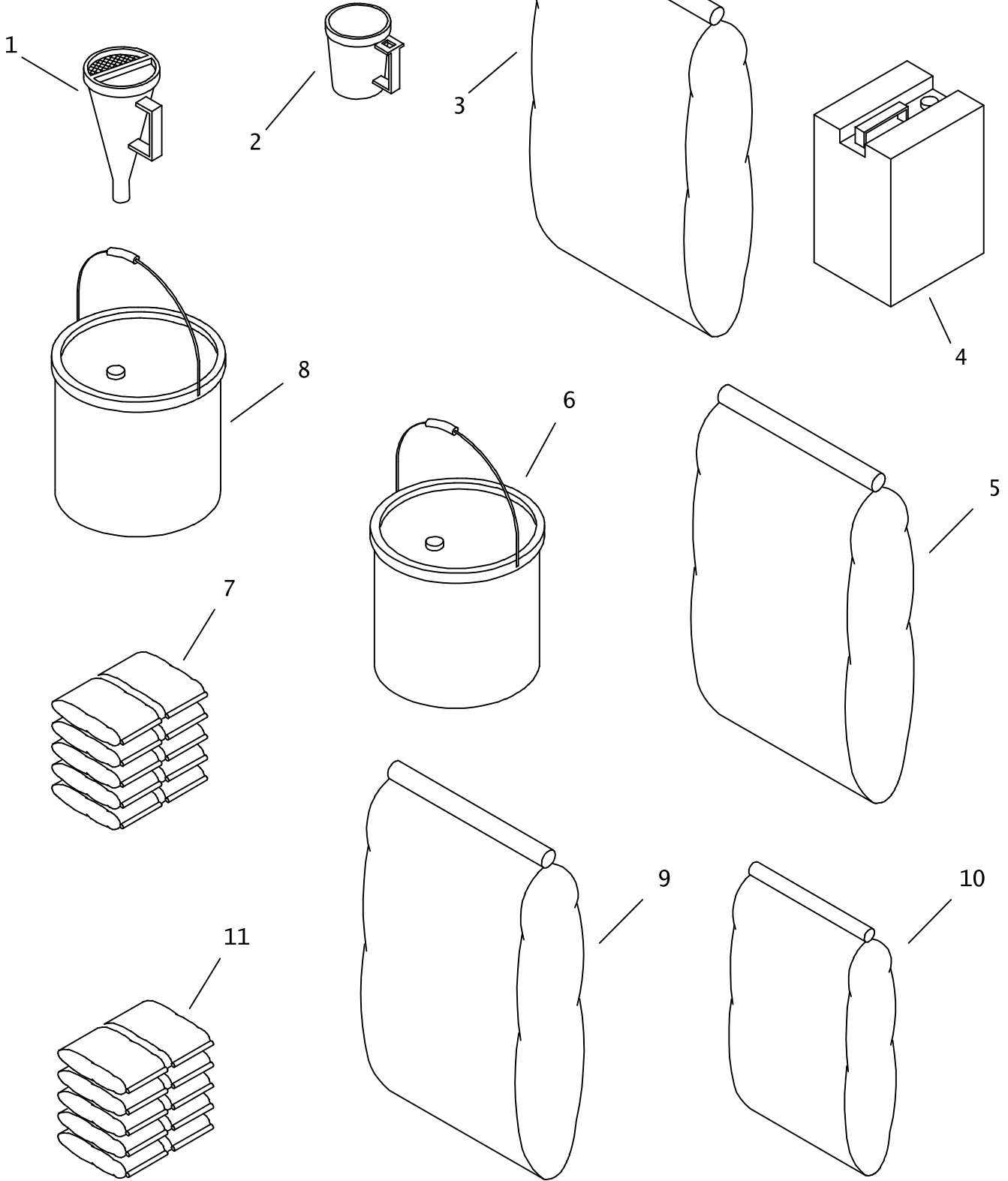
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FOOTNOTES:

NOTE:

ACCESSORIES

FLUID MIXING ACCESSORIES



FLUID MIXING ACCESSORIES

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|-----------------------------------|---------|
| 1. | 259-195 | 1 | VISCOSITY FUNNEL | |
| 2. | 259-196 | 1 | VISCOSITY CUP | |
| 3. | 259-804 | AR | BENTONITE, QUIK-GEL (50 LB) | |
| 4. | 259-805 | AR | LIQUID POLYMER, EZ-MUD (5 GAL) | |
| 5. | 259-807 | AR | BENTONITE, BORE-GEL (50 LB) | |
| 6. | 259-808 | AR | VISCOSIFIER, LIQUI-TROL (5 GAL) | |
| 7. | 259-809 | AR | POWDER POLYMER, QUIK-TROL (20 LB) | |
| 8. | 259-810 | AR | WET AGENT, CON-DET (5 GAL) | |
| 9. | 259-821 | AR | 'PAC-R' FILTRATION CONTROL | |
| 10. | 259-822 | AR | 'BARAZAN D+' VISCOSIFIER | |
| 11. | 259-832 | AR | 'NO SAG' (20# BOX/10-2#BAGS) | |

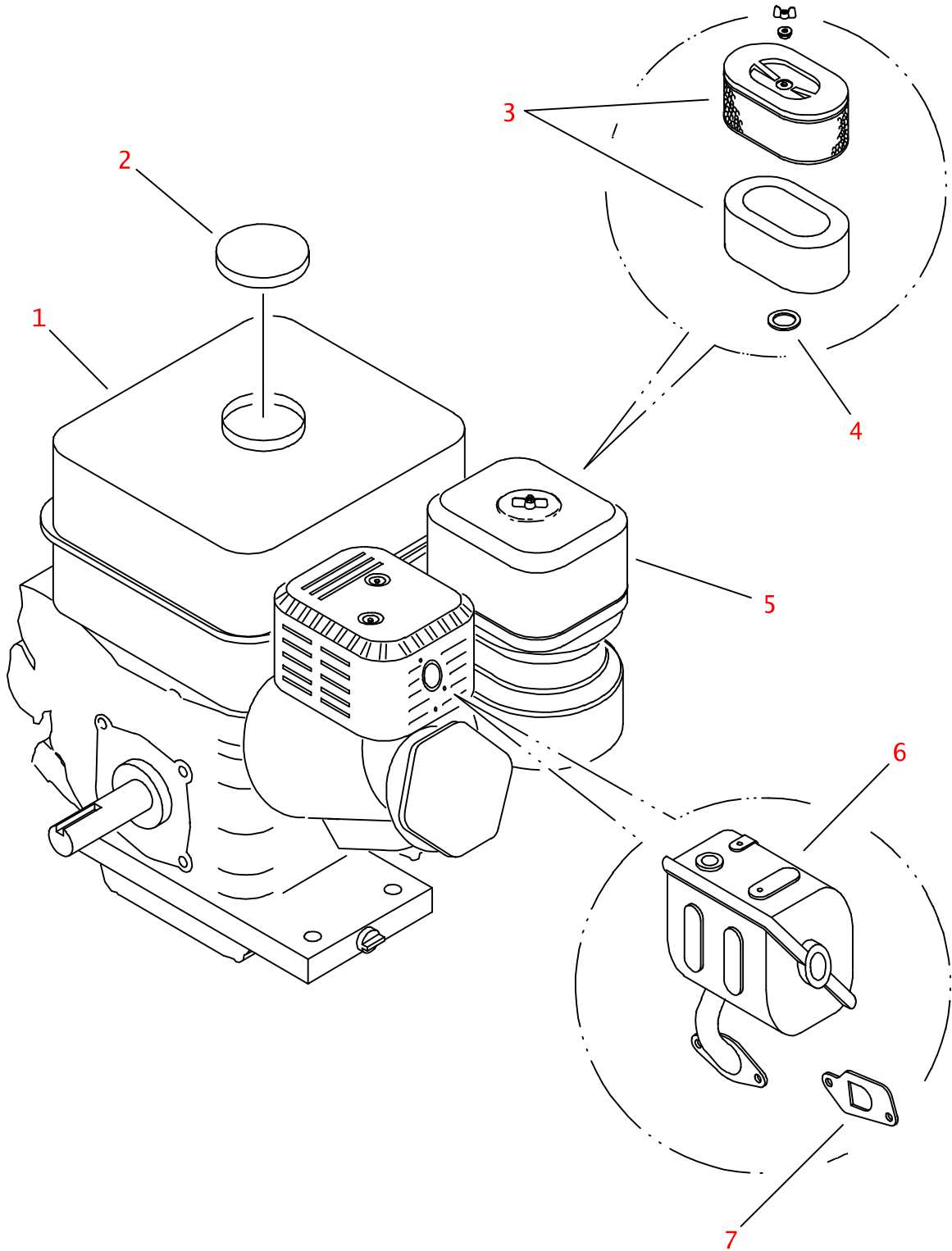
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| | | |
|---------|---|-------------------------|
| 191-158 | 1 | DRILLING FLUID TEST KIT |
| 259-487 | 1 | SHEAROMETER |

FOOTNOTES:

NOTE:

ENGINE - HONDA



ENGINE - HONDA

| REF NO. | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|---------|-------------|-----|---------------------------------|------------|
| | 194-598 | 1 | ENGINE - HONDA (GX160K1QX) | GASOLINE |
| | 195-028 | 1 | ENGINE - HONDA (GX160K1TX) | GASOLINE |
| 1. | 194-010 | 1 | FUEL TANK | |
| 2. | 194-009 | 1 | CAP | FUEL TANK |
| 3. | 194-001 | 1 | ELEMENT SET (PRIMARY/SECONDARY) | AIR FILTER |
| 4. | 194-007 | 1 | GASKET | AIR FILTER |
| 5. | 194-003 | 1 | COVER | AIR FILTER |
| 6. | 194-004 | 1 | MUFFLER | |
| 7. | 194-005 | 1 | GASKET | MUFFLER |

NOT SHOWN:

| | | |
|---------|---|--------------------------------|
| 194-011 | 1 | OIL LEVEL SWITCH |
| 194-002 | 1 | FUEL FILTER (04H-04H, IN-LINE) |
| 194-006 | 1 | RECOIL STARTER |
| 194-008 | 1 | CARBURETOR |

FOOTNOTES:

NOTE:

MISCELLANEOUS

SAE Bolt and Nut Torque Value Chart

Grade 5: UNC or UNF Thread

| Size | Hex nut, or bolt tapped into hex nut, or d&t hole | | Hex top deformed locknut | | Flange nut, locknut, or bolt tapped into flange nut or d&t* hole | |
|-------|---|------|--------------------------|------|--|------|
| | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m |
| 1/4 | 12 | 16 | 8 | 11 | 20 | 27 |
| 5/16 | 25 | 34 | 15 | 20 | 45 | 60 |
| 3/8 | 40 | 54 | 25 | 34 | 75 | 100 |
| 7/16 | 65 | 90 | 40 | 55 | 125 | 170 |
| 1/2 | 100 | 135 | 60 | 80 | 190 | 260 |
| 9/16 | 150 | 200 | 90 | 125 | 270 | 370 |
| 5/8 | 200 | 270 | 120 | 165 | 370 | 500 |
| 3/4 | 350 | 475 | 210 | 285 | 650 | 880 |
| 7/8 | 560 | 760 | 340 | 460 | 1250 | 1425 |
| 1 | 840 | 1140 | 500 | 680 | 1580 | 2145 |
| 1-1/8 | 1030 | 1400 | 320 | 840 | 1950 | 3645 |
| 1-1/4 | 1460 | 1980 | 880 | 1195 | 2760 | 3475 |

Grade 8: UNC or UNF Thread

| Size | Hex nut, or bolt tapped into hex nut, or d&t hole | | Hex top deformed locknut | | Flange nut, locknut, or bolt tapped into flange nut or d&t* hole | |
|-------|---|------|--------------------------|------|--|------|
| | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m |
| 1/4 | 14 | 19 | 10 | 14 | 24 | 33 |
| 5/16 | 30 | 40 | 18 | 25 | 50 | 70 |
| 3/8 | 55 | 73 | 35 | 50 | 90 | 125 |
| 7/16 | 85 | 115 | 50 | 70 | 140 | 190 |
| 1/2 | 130 | 175 | 80 | 110 | 220 | 300 |
| 9/16 | 190 | 260 | 110 | 150 | 310 | 420 |
| 5/8 | 260 | 355 | 160 | 245 | 430 | 585 |
| 3/4 | 450 | 610 | 270 | 365 | 750 | 1015 |
| 7/8 | 730 | 990 | 440 | 600 | 1210 | 1640 |
| 1 | 1090 | 1480 | 650 | 880 | 1320 | 2465 |
| 1-1/8 | 1550 | 2100 | 930 | 1260 | 2580 | 3500 |
| 1-1/4 | 2180 | 2955 | 1310 | 1780 | 3640 | 4935 |

*drilled and tapped

Metric Bolt and Cap Screw Torque Values

| Size | Class 4.8 | | | | Class 8.8 and 9.8 | | | | Class 10.9 | | | | Class 12.9 | | | |
|------|------------|-------|------|-------|-------------------|-------|------|-------|------------|-------|------|-------|------------|-------|------|-------|
| | Lubricated | | Dry | | Lubricated | | Dry | | Lubricated | | Dry | | Lubricated | | Dry | |
| | N•m | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m | ft•lb | N•m | ft•lb |
| M6 | 4.8 | 3.5 | 6 | 4.5 | 9 | 6.5 | 11 | 8.5 | 13 | 9.5 | 17 | 12 | 15 | 11.5 | 19 | 14.5 |
| M8 | 12 | 8.5 | 15 | 11 | 22 | 16 | 28 | 20 | 32 | 24 | 40 | 30 | 37 | 28 | 47 | 35 |
| M10 | 23 | 17 | 29 | 21 | 43 | 32 | 55 | 40 | 63 | 47 | 80 | 60 | 75 | 55 | 95 | 70 |
| | | | | | | | | | | | | | | | | |
| M12 | 40 | 29 | 50 | 37 | 75 | 55 | 95 | 70 | 110 | 80 | 140 | 105 | 130 | 95 | 165 | 120 |
| M14 | 63 | 47 | 80 | 60 | 120 | 88 | 150 | 110 | 175 | 130 | 225 | 165 | 205 | 150 | 260 | 190 |
| M16 | 100 | 73 | 125 | 92 | 190 | 140 | 240 | 175 | 275 | 200 | 350 | 225 | 320 | 240 | 400 | 300 |
| | | | | | | | | | | | | | | | | |
| M18 | 135 | 100 | 175 | 125 | 260 | 195 | 330 | 250 | 375 | 275 | 475 | 350 | 440 | 325 | 560 | 410 |
| M20 | 190 | 140 | 240 | 180 | 375 | 275 | 475 | 350 | 530 | 400 | 675 | 500 | 625 | 460 | 800 | 580 |
| M22 | 260 | 190 | 330 | 250 | 510 | 375 | 650 | 475 | 725 | 540 | 925 | 675 | 850 | 625 | 1075 | 800 |
| | | | | | | | | | | | | | | | | |
| M24 | 330 | 250 | 425 | 310 | 650 | 475 | 825 | 600 | 925 | 675 | 1150 | 850 | 1075 | 800 | 1350 | 1000 |
| M27 | 490 | 360 | 625 | 450 | 950 | 700 | 1200 | 875 | 1350 | 1000 | 1700 | 1250 | 1600 | 1150 | 2000 | 1500 |
| M30 | 675 | 490 | 850 | 625 | 1600 | 950 | 1650 | 1200 | 1850 | 1350 | 2300 | 1700 | 2150 | 1600 | 2700 | 2000 |
| | | | | | | | | | | | | | | | | |
| M33 | 900 | 675 | 1150 | 850 | 1750 | 1300 | 2200 | 1650 | 2500 | 1850 | 3150 | 2350 | 2900 | 2150 | 3700 | 2750 |
| M36 | 1150 | 850 | 1450 | 1075 | 2250 | 1650 | 2850 | 2100 | 3200 | 2350 | 4050 | 3000 | 3750 | 2750 | 4750 | 3500 |

Do not use these values if a different torque value or tightening procedure is given for specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class fasteners.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to strength of original.

Make sure fastener threads are clean and that the threads are properly started. This will prevent them from cross threading or galling when tightened.

Tighten plastic insert or crimped type steel locknuts to approximately 50% of dry torque indicated on chart. Apply torque to the nut - not the bolt head. Tighten toothed or serrated type locknuts to full torque value.

LUBRICATED means coated with lubricant. DRY means plain or zinc plated without any type of lubricant.

Hydraulic Cylinder Bolt Torque Chart

| Bolt Size (inch) | Bolt Part No. | Cylinder Repair Kit Part No. | Torque (ft•lb) | Torque (N•m) |
|------------------|---------------|------------------------------|----------------|--------------|
| 1/2 | 106-096 | 190-165 | 90-100 | 120-135 |
| 5/8 | 106-097 | 190-166 & 190-169 | 180-200 | 245-270 |
| 3/4 | 106-098 | 190-167 & 190-170 | 290-325 | 395-440 |
| 7/8 | 106-122 | 190-172 & 190-174 | 410-640 | 550-625 |
| 1 | 106-145 | 190-175 & 190-189 | 630-700 | 855-950 |
| 1-1/8 | 106-146 | 190-177 | 770-850 | 1045-1170 |

As a general rule:

- 1/2-inch bolts are used in cylinders with 1-inch rods
- 5/8-inch bolts are used in cylinders with 1 1/4-inch rods
- 3/4-inch bolts are used in cylinders with 1 1/2-inch rods
- 7/8-inch bolts are used in cylinders with 1 3/4-inch rods
- 1-inch bolts are used in cylinders with 2-inch rods (one with 1 3/4-inch)
- 1-1/8-inch bolts are used in cylinders with 2-1/4-inch rods

IMPORTANT: Do not reuse cylinder piston bolts when rebuilding a hydraulic cylinder. Each cylinder repair kit contains a new bolt. Use it. Lubricate lightly and torque to value shown on chart.

SAE & ORS Hydraulic Fitting Replacement O-Ring Chart

| Fraction Size | Dash Size | SAE (Port Seal O-Ring) | | ORS (Face Seal O-Ring) | |
|---------------|-----------|------------------------|------------|------------------------|------------|
| | | Thread Size | O-Ring P/N | Thread Size | O-Ring P/N |
| 1/16 | 1 | NA | NA | NA | NA |
| 1/8 | 2 | 5/16 - 24 | NA | NA | NA |
| 3/16 | 3 | 3/8 - 24 | NA | NA | NA |
| 1/4 | 4 | 7/16 - 20 | 155-760 | 9/16 - 18 | 157-037 |
| 5/16 | 5 | 1/2 - 20 | NA | NA | NA |
| 3/8 | 6 | 9/16 - 18 | 155-705 | 11/16 - 16 | 157-038 |
| 1/2 | 8 | 3/4 - 16 | 155-706 | 13/16 - 16 | 157-039 |
| 5/8 | 10 | 7/8 - 14 | 155-707 | 1 - 14 | 157-040 |
| 3/4 | 12 | 1-1/16 - 12 | 155-709 | 1-3/16 - 12 | 157-017 |
| 7/8 | 14 | 1-3/16 - 12 | 155-747 | NA | NA |
| 1 | 16 | 1-5/16 - 12 | 155-748 | 1-7/16 - 12 | 155-714 |
| 1-1/4 | 20 | 1-5/8 - 12 | 155-702 | 1-11/16 - 12 | NA |
| 1-1/2 | 24 | 1-7/8 - 12 | 157-001 | 2 - 12 | NA |
| 2 | 32 | 2-1/2 - 12 | NA | NA | NA |
| 2-1/2 | 40 | 3 - 12 | NA | NA | NA |
| 3 | 48 | 3-1/2 - 12 | NA | NA | NA |

Thread size indicates the diameter of the threaded area in fractions of an inch and number of threads per inch.

NA = not a current CMW part numbered o-ring, or dash size does not occur in current CMW applications

SAE = straight thread fitting that seals by sandwiching a hard o-ring between a shoulder on the male part and an angular surface at the mouth of the female port.

ORS = o-ring face seal; a type of fitting that seals by compressing a hard, captive o-ring between two flat parallel faces, one grooved for the o-ring and the other plain to act as the sealing surface

JT520

Related Publications

| Component | Ass'y | P/N |
|--|--|----------------------|
| Model: | | |
| JT520 - FT5 | Parts Manual | 053-062 |
| JT520 | Operators Manual | 054-053 |
| FT5 | Operators Manual | 054-058 |
| JT520 - FT5 | Repair Guide (Service Manual) | 055-053 |
| JT520 - FT5 | Supplementary Maint Guide - Trenchless | 055-485 |
| JT520 - FT5 | Special Tools Guide | 052-901 |
| Engine: | | |
| Kubota 25 | Parts Manual - D1105B-1 | 194-034/194-54 |
| Kubota 31.5 hp | Parts Manual - D1105-T-E3B | 195-1169..... |
| Kubota | Operators Manual - D1105B-1/D1105-T-E3B | 053-1339 |
| Kubota | Service (Shop) Manual - D1105B-1/D1105-T-E3B | 054-051/053-1337 |
| Kubota | | 055-051 |
| WATER TRANSFER SYSTEM OPTION: FT5 | | |
| Honda 5.5hp | Parts Manual - GX160K1TX | 195-028 |
| Honda 5.5hp | Operators Manual - GX160K1TX | 053-042 |
| Honda 5.5hp | Service (Shop) Manual - GX160K1TX | N/A |
| Honda 5.5hp | | N/A |

Filters

| | | |
|---|--|-----------------|
| Engine: | | |
| Air Filter Parts Ass'y (D1105B-1)/(D1105-T-E3B) | | 194-035/194-093 |
| Element (primary, paper) | | 194-038 |
| Element (secondary, foam) | | 194-039 |
| Oil Filter Element (spin-on) - Kubota (D1105B-1)/(D1105-T-E3B)..... | | 194-041/194-881 |
| Fuel Filter (04H-04H)/(05H-05H, in-line) – Kohler & Kubota/Kubota | | 195-256/155-941 |
| Fuel Filter Element (spin-on) - Kubota (D1105B-1)/(D1105-T-E3B) | | 194-386 |
| WATER TRANSFER SYSTEM OPTION: FT5 | | |
| Air Filter Parts Ass'y - Honda 5.5hp (GX160K1TX) | | N/A |
| Element Set (primary, paper) - Honda (GX160K1TX) | | 194-001 |
| (secondary, foam) - Honda (GX160K1TX) | | 194-001 |
| Fuel Filter (04H-04H, in-line) - Honda 5.5hp (GX160K1TX) | | 194-002 |
| Hydraulic: | | |
| Oil Filter Element (1-1/2-UNF, spin-on) | | 155-954 |

Optional Kits

| | |
|---|---------|
| O-ring Repair Kit - FLG, ORS & SAE (15 different O-rings) | 190-051 |
| O-ring Repair Kit - Field Service (46 different O-rings) | 190-052 |



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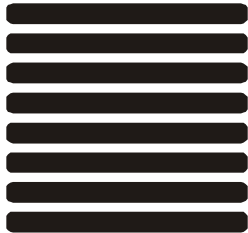
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