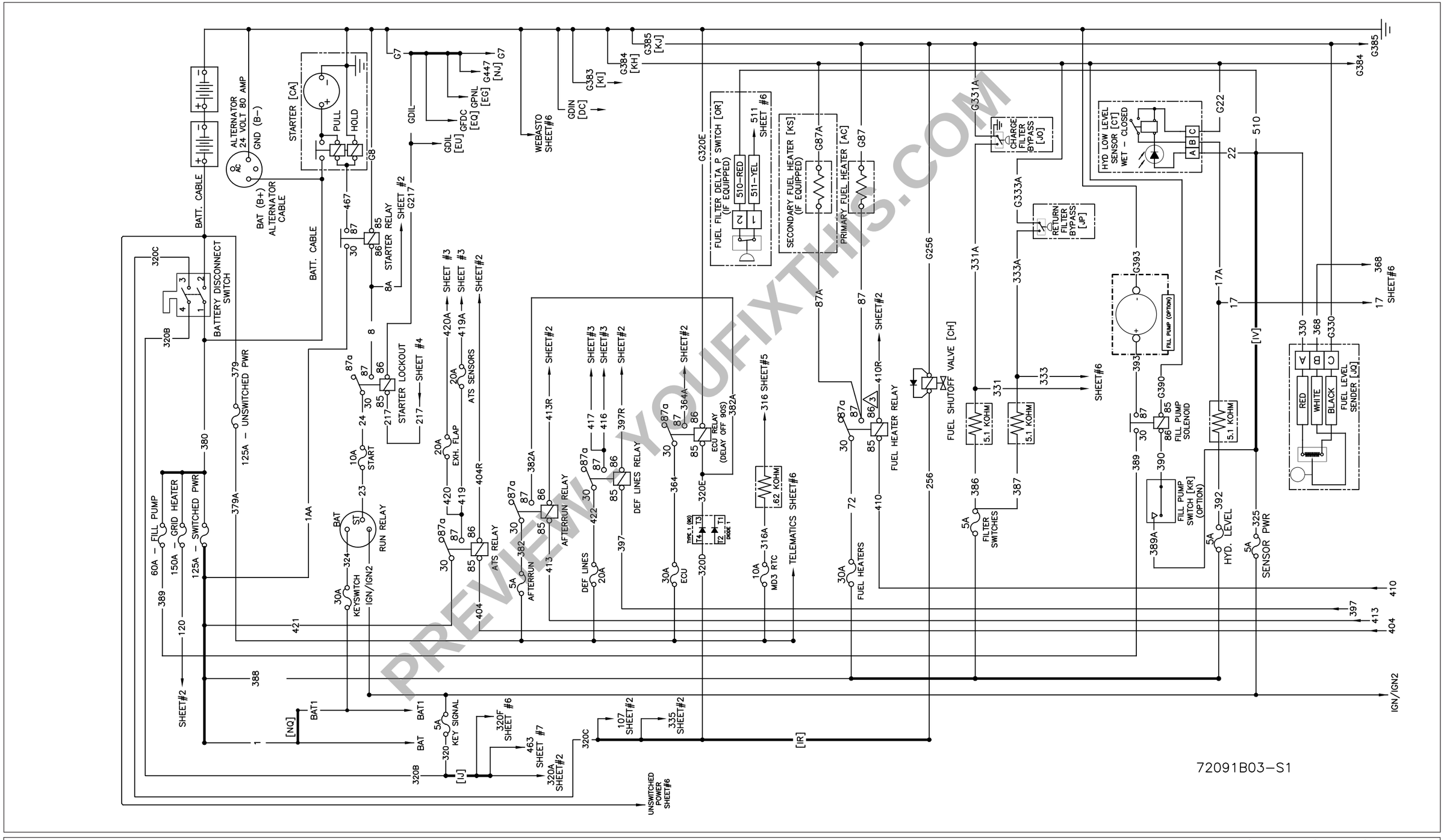
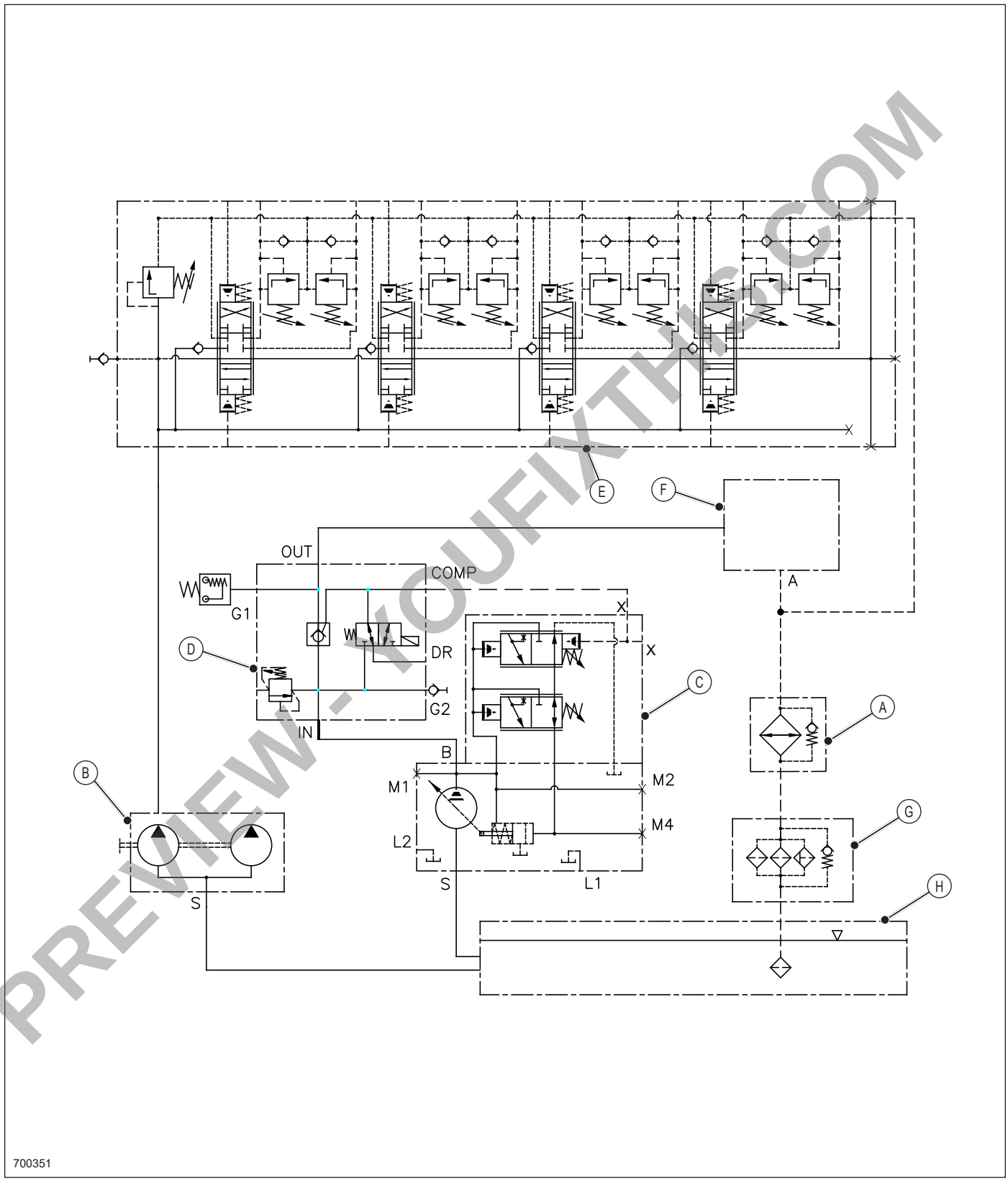


Electrical Schematic–Sheet 1 of 7

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HYDRAULIC OIL COOLER CIRCUIT SCHEMATIC



A Hydraulic Oil Cooler	E Boom Valve
B Boom/Steer Pump–Boom Section	F Attachment
C Attachment Pump	G Hydraulic Oil Return Filters
D Cutter Control Valve	H Hydraulic Oil Tank

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TORQUE CHART

LOCATION	THREAD DIAMETER	TORQUE (LUBRICATED)	
		lbf-ft	Nm
Cylinders			
Piston nut, steer cylinder	1 1/4" UNF	920	1248
Piston nut, lift/tilt cylinder	1 3/4" UNF	1750	2373
Gland, steer cylinder	-	450	610
Gland, lift/tilt cylinder	1/2" UNC	80	109
Keeper plate bolts	3/4" UNC	282-310	382-420
Cab pin keeper plate bolts	M16 x 2	282	382
Center joint bearing			
Bearing retaining bolts	1/2" UNC	80-88	109-119
Pin retaining bolts	3/4" UNC	282-310	382-420
Engine mounting			
Mount to chassis bolts	7/8" UNC	430	583
Mount to engine bolts	M12 x 1.75 (10.9)	75	102
Mount to pump drive bolts	5/8" UNC	159-175	216-237
Pump drive gearbox			
Drive plate to flywheel bolts	M10 x 1.5 (10.9)	37	50
Bell housing to engine bolts	M10 x 1.5 (10.9)	42	57
Drive shafts			
Yoke retaining bolt, park brake	5/8" UNF	180	244
Yoke retaining bolt, 2-Speed transmission	1" UNF	150	204
Yoke retaining bolt, wideRANGE™ transmission	5/8" UNF	180	244
Park brake mounting bolts	5/8" UNC	167	227
Universal joint bolts			
Drive shaft to park brake/transmission bolts	3/8" UNF	37-49	50-66
Drive shaft to axle bolts	M10 x 1.5	37-49	50-66
Axle mounting bolts			
Front axle bolts	7/8" UNC	475	644
Rear axle bolts	3/4" UNC	226	307
Wheel bolts	7/8" UNF	500-550	678-746
Transmission			
Mount to frame bolts	7/8" UNC	364	494
Housing to mount bolts, 2-Speed	3/4" UNC	282-310	382-420
Housing to mount bolts, wideRANGE™	5/8" UNC	159	215

Torque values pertaining to the engine and attachment are provided in the appropriate manuals.

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CRITICAL MESSAGES (RED)

Critical messages advise the operator that a critical machine fault is about to occur or a system fault has occurred.

Critical messages have the highest level of priority and are used to alert operator that immediate action must be taken to prevent damage to machine or to ensure operator safety.

When a critical message is displayed, the master alarm and alarm light will sound and flash continuously. The message remains on the screen until the operator hides it.

The message will give brief details of the fault and advise what action is necessary.

In some instances the machine requires immediate action to correct the problem which requires the operator to STOP machine operation, turn OFF the engine and service the machine to correct the problem.

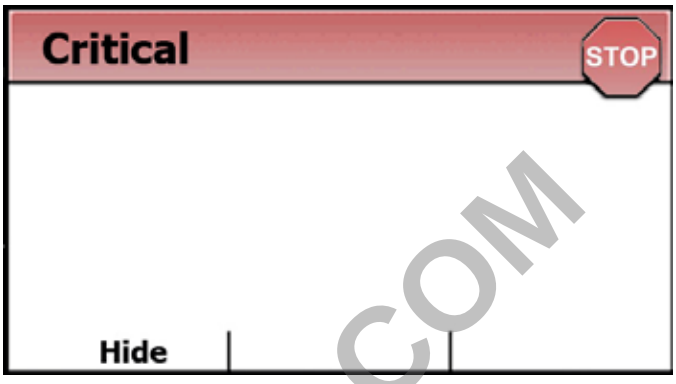
However, if the machine cannot be stopped immediately for safety reasons, the operator can hide the message. In this instance the machine should only be operated long enough to make the machine safe, then STOP machine operation and turn OFF the engine before serious machine damage can occur!

Messages can be hidden by pressing the F2 button (Hide).

Critical messages flash the critical symbol STOP above the F4 button when active messages are hidden. The symbol will continue to flash until the problem is resolved and the fault becomes inactive.

Active messages that have been hidden can be reviewed by pressing the F4 button.





A list of CRITICAL MESSAGES is as follows:

- Hydraulic Oil Level Low
- Hydraulic Oil Temperature High
- Hydraulic Oil Return Filters Bypassed
- Pump Gearbox Temperature High
- Fire Detected
- Engine Fault Code Messages–Critical
- Engine Oil Pressure Low
- Engine Oil Pressure Low–Engine Derate
- Engine Oil Temperature High
- Engine Coolant Level Low
- Engine Coolant Temperature High
- Engine Coolant Temperature High–Engine Derate
- Main Fuel Filter Clogged–Engine Derate
- Fuel Pre-Filter Clogged or Disconnected
- Hardware Fault–MD3 (Computer)
- Hardware Fault–XA2-A0
- Hardware Fault–XA2-A1
- Hardware Fault–Engine
- Aftertreatment System Technical Failure *
- Diesel Exhaust Fluid Quality *
- Engine Restarts Remaining Until Engine Lockout *
- Engine Locked Out *
- Aftertreatment System Engine Idle Too Long *

*** NOTE:** The aftertreatment system and its related components are applicable to Tier 4f machines only.

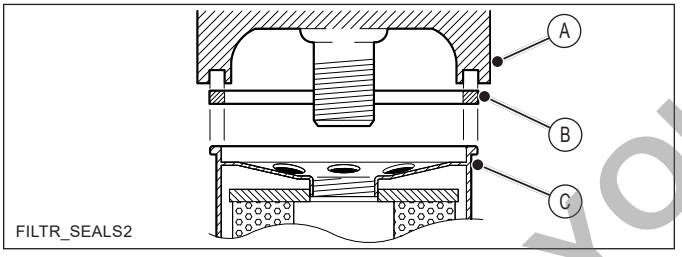
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FILTER CHANGE PROCEDURE–RETURN FILTERS

1. Park the machine on level ground. Refer to PARKING THE MACHINE in SECTION 1.
2. Open the rear door to access the return filters.
3. Wipe clean the area around the filters and filter head.
4. Wearing eye and face protection (in case of an oil spray), unscrew the old filter.
5. Dispose of old filter and any oil properly.
6. Check the seating area for the gasket on the filter head and wipe it clean.
7. The new Tigercat filter is supplied with two gaskets enclosed, examine the filter head closely to determine which gasket should be used and follow the instructions to ensure proper installation.

■ SQUARE SECTION GASKET



A Filter Head
B Gasket
C Filter Element

a. Remove the used gasket and clean the groove in the head.

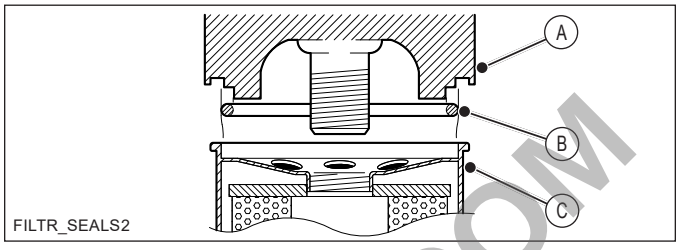
b. Apply clean oil to new gasket surfaces.

c. Install the new gasket into the groove in the filter head.

d. Screw on the new filter until the gasket makes contact.

e. Tighten the filter an additional ¾ turn.

● O-RING GASKET



A Filter Head
B Gasket
C Filter Element

a. Remove the used gasket and clean the gasket seat in the head.

b. Apply clean oil to the new gasket surfaces.

c. Install the new gasket on the inside lip of the filter.

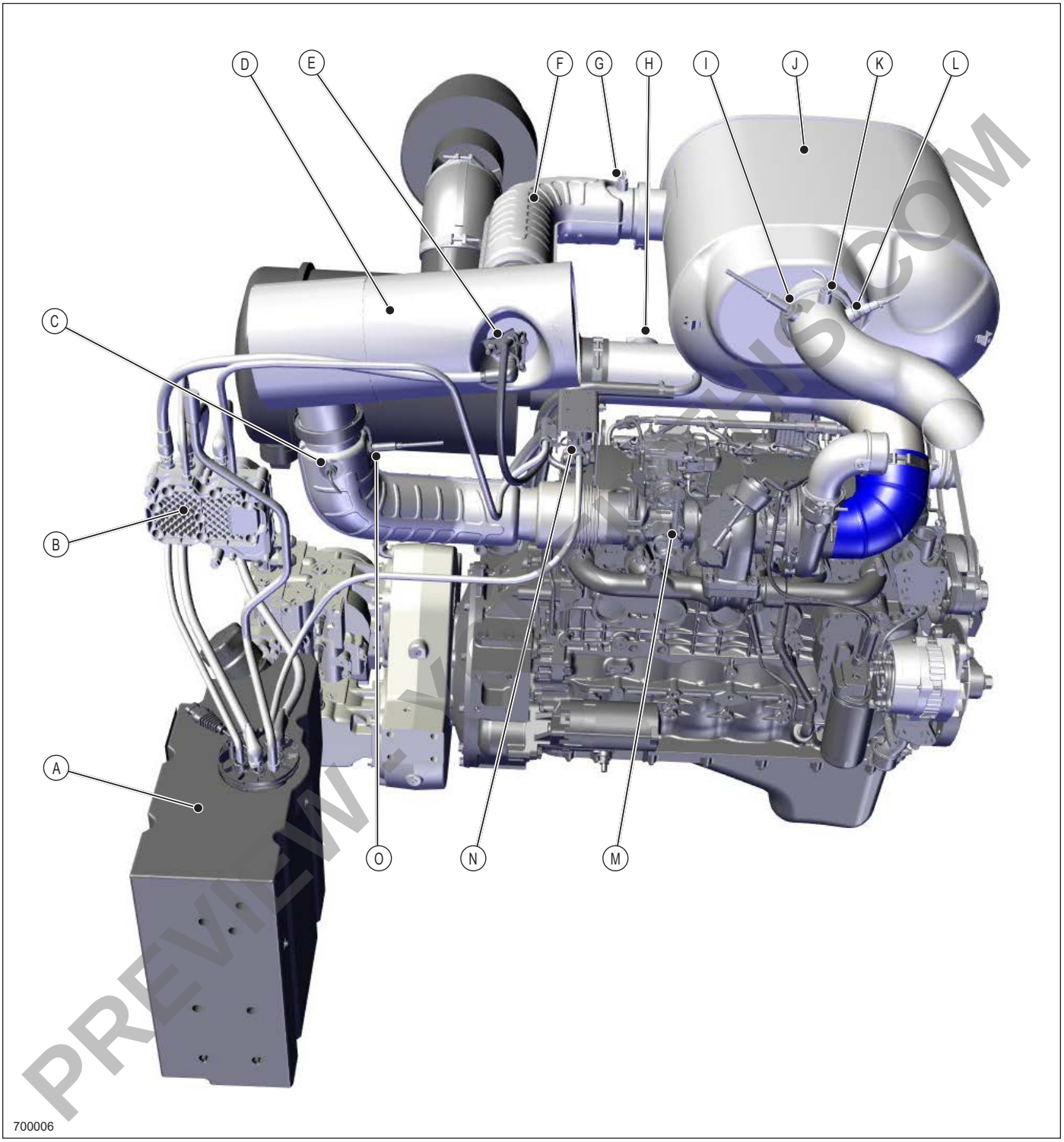
d. Screw on the new filter until the gasket makes contact.

e. Tighten the filter until the top edge makes metal to metal contact with the filter head (Approximately 1½ additional turns after gasket contact.).

8. Use the fill pump to raise the hydraulic oil level up to the FULL line, replacing oil lost during filter change. Refer to HYDRAULIC OIL FILL PUMP in THIS SECTION.
9. Clean up any spilled oil.
10. Start the engine and check for leaks. Refer to STARTING ENGINE in SECTION 2.
11. Run engine at LOW IDLE for at least five minutes to purge any remaining air from the filter system. Then turn OFF the engine for 15 minutes to allow air bubbles in the hydraulic oil tank to rise.
12. Re-check hydraulic oil level and top-up as needed.

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Aftertreatment System Components–720G			
A	DEF Tank	I	Outlet NOx Sensor
B	DEF Supply Module	J	SCR with Clean Up Catalyst (CUC)
C	DOC Inlet Temperature Sensor	K	Catalytic Converter Outlet Temperature Sensor
D	Diesel Oxidation Catalyst (DOC)	L	NH_3 Sensor
E	Dosing Module (DEF Injector)	M	Exhaust Flap
F	Mixer Tube	N	Heater Valve
G	Catalytic Converter Inlet Temperature Sensor	O	Inlet NOx Sensor
H	Humidity and Temperature Sensor		DENOX 2.2 Dosing System (incorporated into the engine ECU)

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EVERY 8 HOURS

PERFORM

- FREQUENTLY maintenance.
- Drain fuel filter/water separator.
- Conduct an overall visual inspection.

CHECK

- Engine coolant level.
- Engine oil level at dipstick.
- Air intake precleaner.
- Air intake filter restriction indicator.
  - Replace primary filter if indicator is in red zone.
  - Replace secondary (safety) filter every third primary filter change to guarantee maximum performance and reliability. Air cleaner unloader valve.
- Air cleaner unloader valve.
- All engine air intake system components (including charge air cooler) rubber elbows, connector hoses, tubes and clamps for damage, hardening, wear, cracks, leaks, loose clamps or loose hanger bracket hardware and repair or replace immediately.
- Hydraulic oil tank level.
- Pump drive gearbox oil level at dipstick.
- Transmission oil level at dipstick.
- Pressurized water system pressure. Pressure gauge in cab reading 4 bar (60 psi).
- If pressurized water system has been operated, refer to PRESSURIZED WATER SYSTEM MAINTENANCE in THIS SECTION for refilling and charging instructions.
- For leakage around hydraulic components and flexible hoses.
- For loose nuts, bolts and fittings.
- Condition and tension of belts.
- Exhaust system for leaks.

CLEAN

- Oil cooler, engine radiator, A/C condenser and charge air cooler.
- Air intake precleaner compartment.
- Remove potentially damaging limbs or sticks and all debris.

LUBRICATE

- Middle driveshaft slip joint: 1 fitting–purge.

  NOTE: Lubricate slip joint with machine articulated.
- Center joint bearings: 2 fittings–purge.
- Steering cylinder ends: 4 fittings–purge.
- Boom cylinder pins (tilt and lift): 8 fittings–purge.
- Boom/link pins (lift and tilt): 10 fittings–purge.
- Quick attach locking pins (if applicable): 2 fittings–purge.

Refer to ENGINE OPERATION AND MAINTENANCE MANUAL and ATTACHMENT MANUFACTURER'S DOCUMENTATION for additional required maintenance at this scheduled time period.

*** Use of filters other than genuine Tigercat replacement filters is not recommended.**

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PICTOGRAM DESCRIPTIONS

Diagrams in pictorial form are used to represent machine function operation. They are a simple universal language of symbols or pictograms that illustrate a function or component without the use of words.

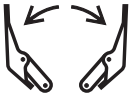
Examples of these pictograms are the turtle and the rabbit that are often used to describe speed such as SLOW = or FAST = .



= 12V, Auxiliary Power Outlet



= 24V, Power Outlet


= Accumulator Arms, OPEN


= Accumulator Arms, CLOSE


= Adjustment Menu


= Air Conditioner ON

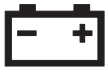

= Air Conditioner OFF


= Air Intake Pressure, BOOST

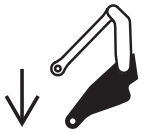

= Air Source, Fresh Air

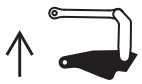

= Air Source, Recirculate


= Alert Message Symbol


= Battery CONNECT


= Battery DISCONNECT


= Boom DOWN


= Boom UP


= Boom Tilt, BACK


= Boom Tilt, FORWARD


= Brake


= Brake Pedal


= Check, Visually


= Control Lever, Multiple Direction


= Control Lever, One Direction


= Control Lever, Two Direction


= Clamp Arms, CLOSE


= Clamp Arms, OPEN

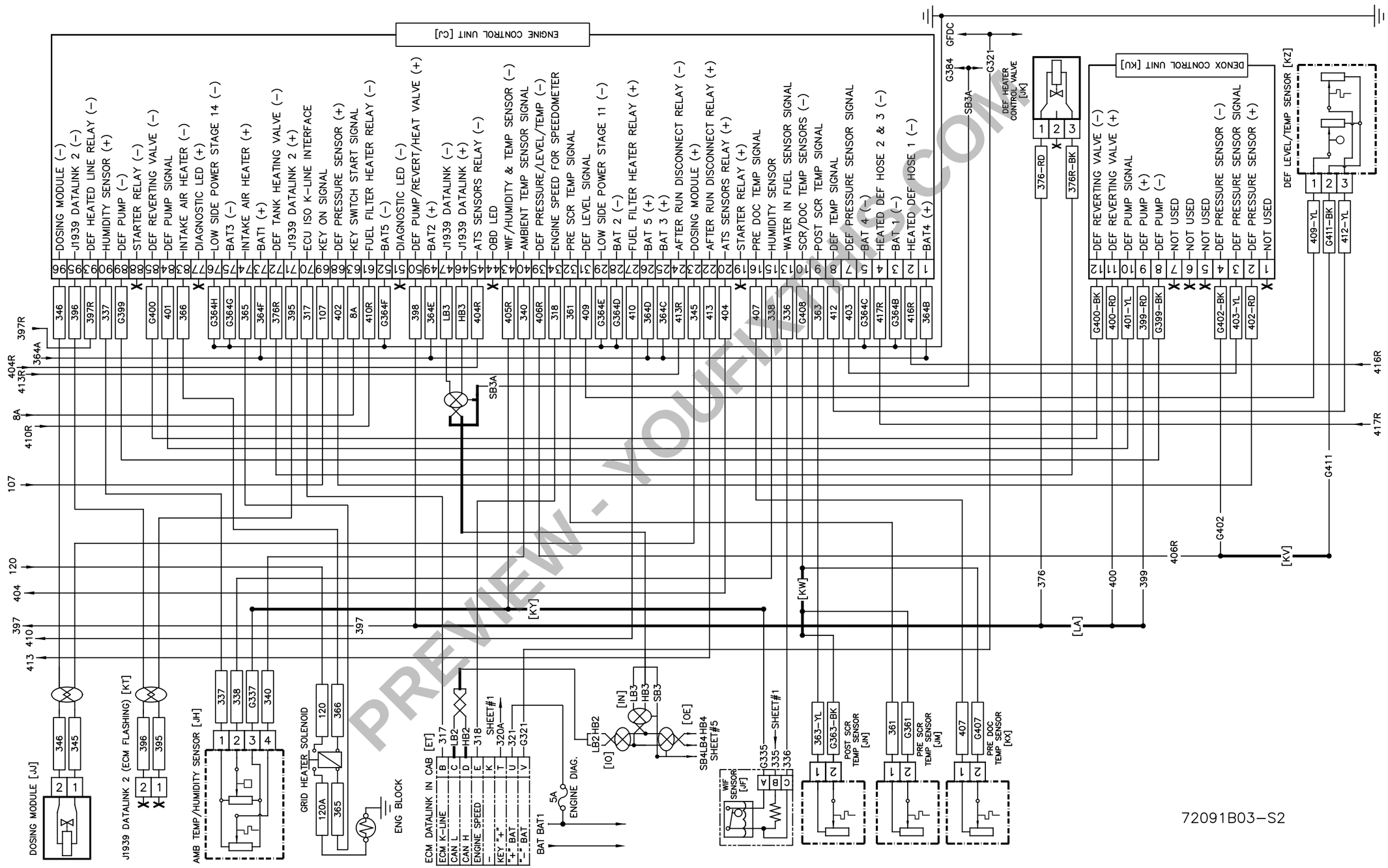


= Critical Message Symbol


= Cruise Control

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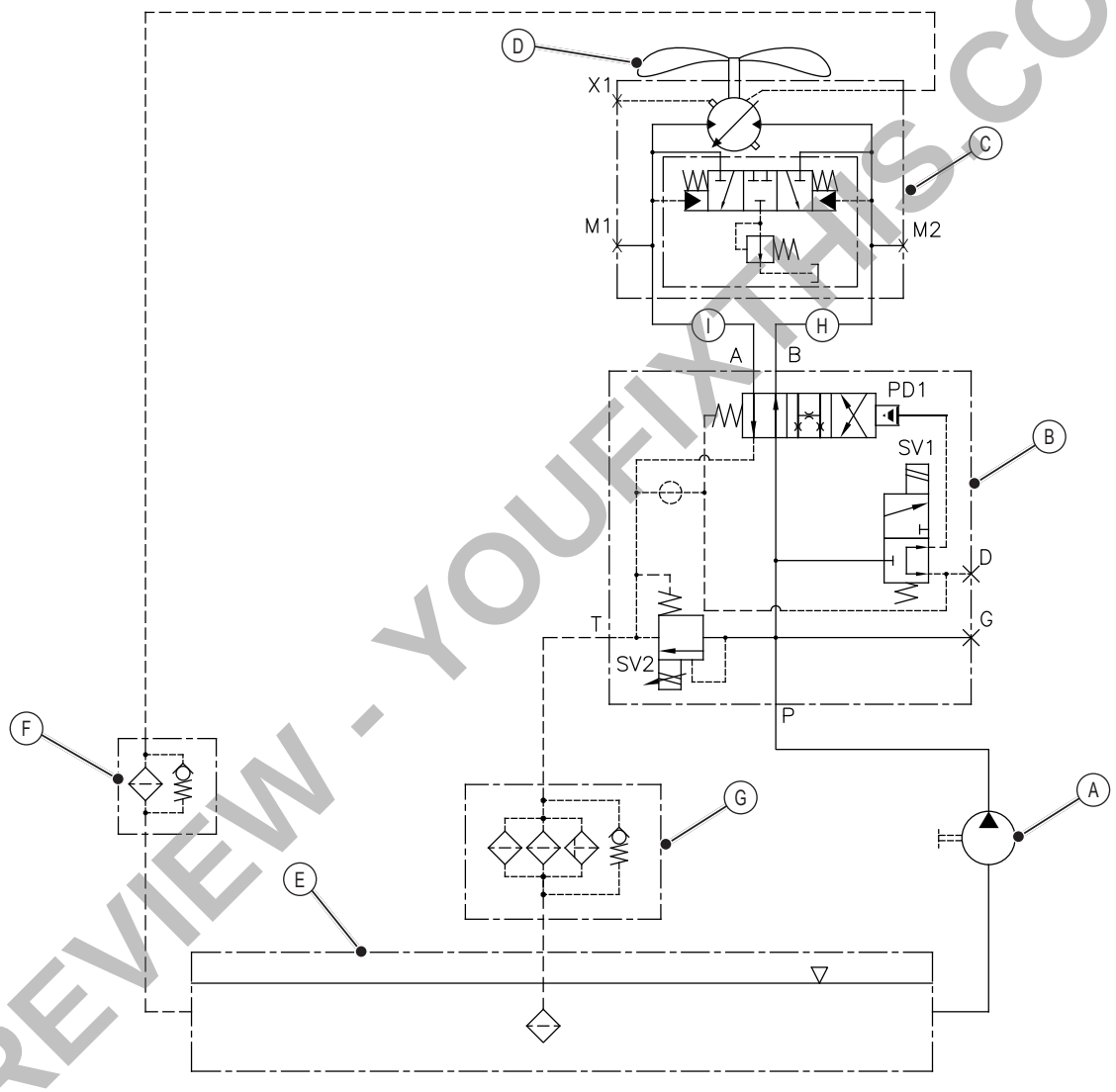


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Electrical Schematic–Sheet 2 of 7

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COOLING FAN CIRCUIT SCHEMATIC



700350

A Fan Pump–40 cc/rev	F Case Drain Strainer
B Fan Control Valve	G Hydraulic Oil Return Filters
C Fan Drive Motor–35 cc/rev	H Forward
D Fan	I Reverse
E Hydraulic Oil Tank	

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GENERAL TORQUE SPECIFICATIONS

The torque values listed below are for general use only. Do not use these values if a different torque value or tightening procedure is shown for a specific application.

IMPERIAL



GRADE 5 BOLTS

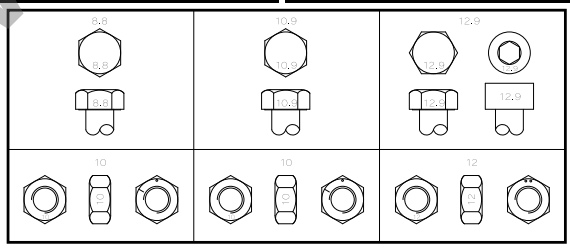


GRADE 8 BOLTS

IMPERIAL BOLT TORQUE SPECIFICATIONS

GRADE 5 BOLTS					GRADE 8 BOLTS				
COARSE THREAD	LUBRICATED		DRY		COARSE THREAD	LUBRICATED		DRY	
	Nm	lbf-ft	Nm	lbf-ft		Nm	lbf-ft	Nm	lbf-ft
1/4" - 20	9 - 9	6 - 7	11 - 13	8 - 9	1/4" - 20	12 - 13	9 - 10	16 - 18	12 - 13
5/16" - 18	18 - 19	13 - 14	24 - 26	17 - 19	5/16" - 18	25 - 27	18 - 20	33 - 37	25 - 27
3/8" - 16	31 - 35	23 - 25	42 - 46	31 - 34	3/8" - 16	44 - 49	33 - 36	59 - 65	44 - 48
7/16" - 14	50 - 55	37 - 41	67 - 74	49 - 54	7/16" - 14	71 - 78	52 - 58	95 - 104	70 - 77
1/2" - 13	77 - 84	57 - 62	102 - 112	75 - 83	1/2" - 13	108 - 119	80 - 88	144 - 159	106 - 117
9/16" - 12	111 - 122	82 - 90	147 - 162	109 - 120	9/16" - 12	156 - 172	115 - 127	208 - 229	154 - 169
5/8" - 11	153 - 168	113 - 124	203 - 224	150 - 165	5/8" - 11	215 - 237	159 - 175	287 - 316	212 - 233
3/4" - 10	271 - 298	200 - 220	361 - 397	267 - 293	3/4" - 10	383 - 421	282 - 310	510 - 561	376 - 414
7/8" - 9	437 - 480	322 - 354	582 - 640	429 - 472	7/8" - 9	616 - 678	455 - 500	822 - 904	606 - 667
1" - 8	654 - 720	483 - 531	873 - 960	644 - 708	1" - 8	924 - 1016	681 - 750	1232 - 1355	909 - 999
1 1/8" - 7	808 - 888	596 - 655	1077 - 1185	794 - 874	1 1/8" - 7	1310 - 1441	966 - 1063	1746 - 1921	1288 - 1417
1 1/4" - 7	1139 - 1253	840 - 924	1519 - 1671	1121 - 1233	1 1/4" - 7	1848 - 2033	1363 - 1499	2464 - 2710	1817 - 1999
FINE THREAD	LUBRICATED		DRY		FINE THREAD	LUBRICATED		DRY	
	Nm	lbf-ft	Nm	lbf-ft		Nm	lbf-ft	Nm	lbf-ft
1/4" - 28	10 - 11	7 - 8	13 - 14	10 - 11	1/4" - 28	14 - 15	10 - 11	18 - 20	14 - 15
5/16" - 24	20 - 22	14 - 16	26 - 29	19 - 21	5/16" - 24	28 - 30	20 - 22	37 - 41	27 - 30
3/8" - 24	36 - 39	26 - 29	47 - 52	35 - 38	3/8" - 24	50 - 55	37 - 41	67 - 74	49 - 54
7/16" - 20	56 - 62	41 - 46	75 - 82	55 - 61	7/16" - 20	79 - 87	58 - 64	106 - 116	78 - 86
1/2" - 20	86 - 95	64 - 70	115 - 127	85 - 93	1/2" - 20	122 - 134	90 - 99	163 - 179	120 - 132
9/16" - 18	123 - 136	91 - 100	164 - 181	121 - 133	9/16" - 18	174 - 192	128 - 141	232 - 255	171 - 188
5/8" - 18	173 - 190	127 - 140	230 - 253	170 - 187	5/8" - 18	244 - 268	180 - 198	325 - 358	240 - 264
3/4" - 16	302 - 332	223 - 245	403 - 443	297 - 327	3/4" - 16	427 - 469	315 - 346	569 - 626	420 - 462
7/8" - 14	482 - 530	355 - 391	642 - 706	474 - 521	7/8" - 14	680 - 748	502 - 552	907 - 997	669 - 736
1" - 14	735 - 808	542 - 596	979 - 1077	722 - 795	1" - 12	1037 - 1141	765 - 841	1383 - 1521	1020 - 1122
1 1/8" - 12	906 - 996	668 - 735	1207 - 1328	890 - 980	1 1/8" - 12	1468 - 1615	1083 - 1191	1958 - 2154	1444 - 1588
1 1/4" - 12	1262 - 1388	930 - 1023	1682 - 1850	1241 - 1365	1 1/4" - 12	2046 - 2250	1509 - 1660	2728 - 3000	2012 - 2213

METRIC



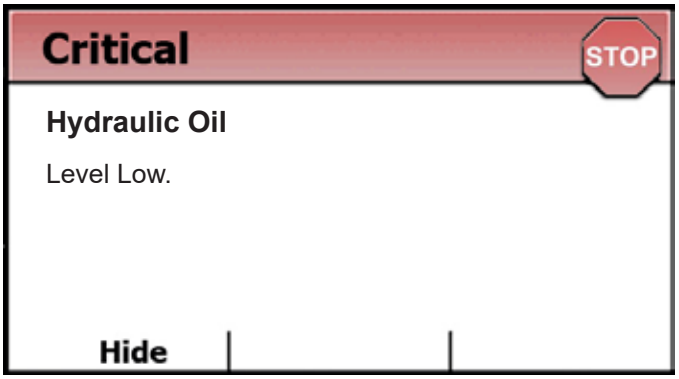
METRIC BOLT TORQUE SPECIFICATIONS

SIZE	PITCH	CLASS 8.8				CLASS 10.9				CLASS 12.9			
		LUBRICATED		DRY		LUBRICATED		DRY		LUBRICATED		DRY	
	mm	Nm	lbf-ft	Nm	lbf-ft	Nm	lbf-ft	Nm	lbf-ft	Nm	lbf-ft	Nm	lbf-ft
M6	1	8 - 9	6 - 7	11 - 12	8 - 9	11 - 12	8 - 9	15 - 17	11 - 12	13 - 14	10 - 11	18 - 19	13 - 14
M8	1.25	20 - 22	15 - 16	26 - 29	19 - 21	27 - 30	20 - 22	36 - 40	27 - 30	32 - 35	24 - 26	43 - 47	31 - 35
M10	1.5	39 - 43	29 - 32	52 - 57	38 - 42	54 - 60	40 - 44	72 - 79	53 - 59	63 - 70	47 - 51	84 - 93	62 - 68
M12	1.75	68 - 75	50 - 55	91 - 100	67 - 74	94 - 104	70 - 77	126 - 138	93 - 102	110 - 121	81 - 90	147 - 162	109 - 119
M14	2	109 - 120	80 - 89	145 - 160	107 - 118	151 - 166	111 - 122	201 - 221	148 - 163	176 - 194	130 - 143	235 - 259	173 - 191
M16	2	169 - 186	125 - 137	226 - 248	166 - 183	234 - 257	173 - 190	312 - 343	230 - 253	274 - 301	202 - 222	365 - 401	269 - 296
M18	2.5	234 - 257	172 - 190	312 - 343	230 - 253	323 - 356	239 - 262	431 - 474	318 - 350	378 - 416	279 - 307	504 - 554	372 - 409
M20	2.5	330 - 364	244 - 268	441 - 485	325 - 357	457 - 503	337 - 371	610 - 670	450 - 495	534 - 588	394 - 433	712 - 784	525 - 578
M22	2.5	451 - 496	332 - 366	601 - 661	443 - 487	623 - 686	460 - 506	831 - 914	613 - 674	728 - 801	537 - 591	971 - 1068	716 - 788
M24	3	571 - 628	421 - 463	761 - 838	562 - 618	790 - 869	583 - 641	1053 - 1159	777 - 855	923 - 1016	681 - 749	1231 - 1354	908 - 999
M27	3	837 - 921	618 - 679	1116 - 1228	823 - 906	1158 - 1274	854 - 940	1544 - 1699	1139 - 1253	1354 - 1489	998 - 1098	1805 - 1985	1331 - 1464
M30	3.5	1135 - 1249	837 - 921	1514 - 1665	1116 - 1228	1570 - 1727	1158 - 1274	2094 - 2303	1544 - 1699	1835 - 2019	1354 - 1489	2447 - 2692	1805 - 1985
M33	3.5	1545 - 1699	1139 - 1253	2060 - 2266	1519 - 1671	2137 - 2351	1576 - 1734	2849 - 3134	2102 - 2312	2498 - 2747	1842 - 2026	3330 - 3663	2456 - 2702
M36	4	1985 - 2183	1464 - 1610	2646 - 2911	1952 - 2147	2745 - 3020	2025 - 2227	3661 - 4027	2700 - 2970	3208 - 3529	2366 - 2603	4278 - 4706	3155 - 3471

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HYDRAULIC OIL LEVEL LOW

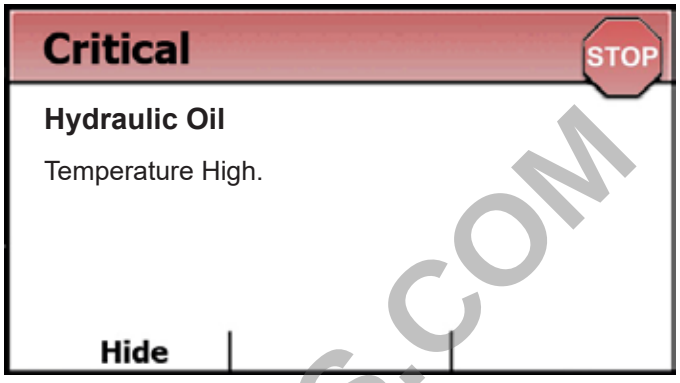


This message will be displayed, alarm light will flash and alarm will sound when the main hydraulic oil tank level is low.

Stop the engine immediately when this alarm is activated. Operating machine with a low hydraulic oil level can cause hydraulic pumps to fail.

When this alarm is activated stop the engine and look for signs of broken hoses or other leaks. Repair leaks and refill the main hydraulic oil tank to FULL mark on the sight gauge. Restart engine and inspect for leaks.

HYDRAULIC OIL TEMPERATURE HIGH



This message will be displayed, alarm light will flash and alarm will sound when the oil temperature exceeds the recommended operating range for the type of hydraulic oil in use.

If the temperature rises above the recommended operating range for the type of hydraulic oil in use check the following:

- Plugged cooler package air intake screens in doors and access panels
- Malfunction in a hydraulic system
- High loads on the hydraulic system
- Malfunction of the cooling fan
- Low hydraulic oil level
- Correct Hydraulic Oil Grade Selection

If hydraulic oil temperature rises above the recommended operating range DO NOT continue to operate the machine.

This alarm must not be used to monitor the hydraulic oil. The operator must use the hydraulic oil temperature gauge on the main screen, together with the HYDRAULIC OIL OPERATING RANGE CHART in SECTION 3 to prevent damage to the hydraulic system.

Hydraulic oil grade information is shown on the main screen below the hydraulic oil temperature gauge.

Operating outside the recommended operating range shortens hydraulic component life.

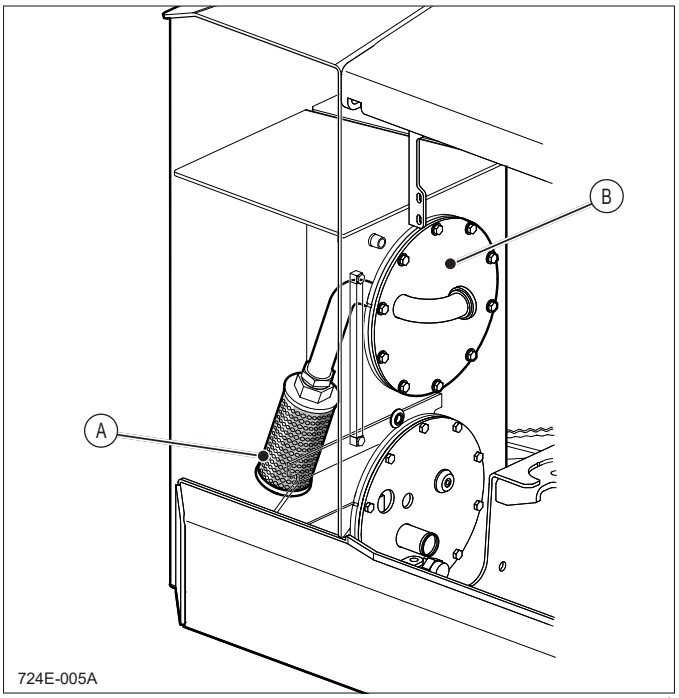
Refer to COMPUTER–ADJUSTMENT MENU–HYDRAULIC OIL GRADE SELECTION in THIS SECTION for hydraulic oil grade selection settings information.

Refer to APPROVED HYDRAULIC OILS in SECTION 3 for hydraulic oil operating range information.

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HYDRAULIC OIL RETURN DIFFUSER/ STRAINER



A Hydraulic Oil Return Diffuser/Strainer
B Access Cover

There is a reusable diffuser/strainer fitted to the return tube inside the hydraulic oil tank. Inspecting, changing or cleaning the diffuser/strainer is only to be performed in the event of a catastrophic pump or motor failure or hydraulic oil contamination.

CHANGING OR CLEANING THE DIFFUSER/ STRAINER

This procedure should only be performed in the event of a pump failure or hydraulic oil contamination.

1. Park the machine on level ground. Refer to PARKING THE MACHINE in SECTION 1.
2. Remove the drain plug in the bottom of the tank and drain the hydraulic oil tank into a suitable container.
3. Disconnect the return hose from the top access cover.
4. Remove the top access cover and O-ring. The diffuser and tube are attached to the cover.
5. Clean any debris from the bottom of the tank and wipe it clean.
6. Remove the hydraulic oil return diffuser/strainer using the hex on the end of diffuser. Carefully clean the diffuser/strainer (it is easily damaged by rough handling).
7. Check for a buildup of foreign materials where the diffuser/strainer screws onto the pipe and on the access cover.
8. Reinstall the diffuser/strainer using the hex on the end.

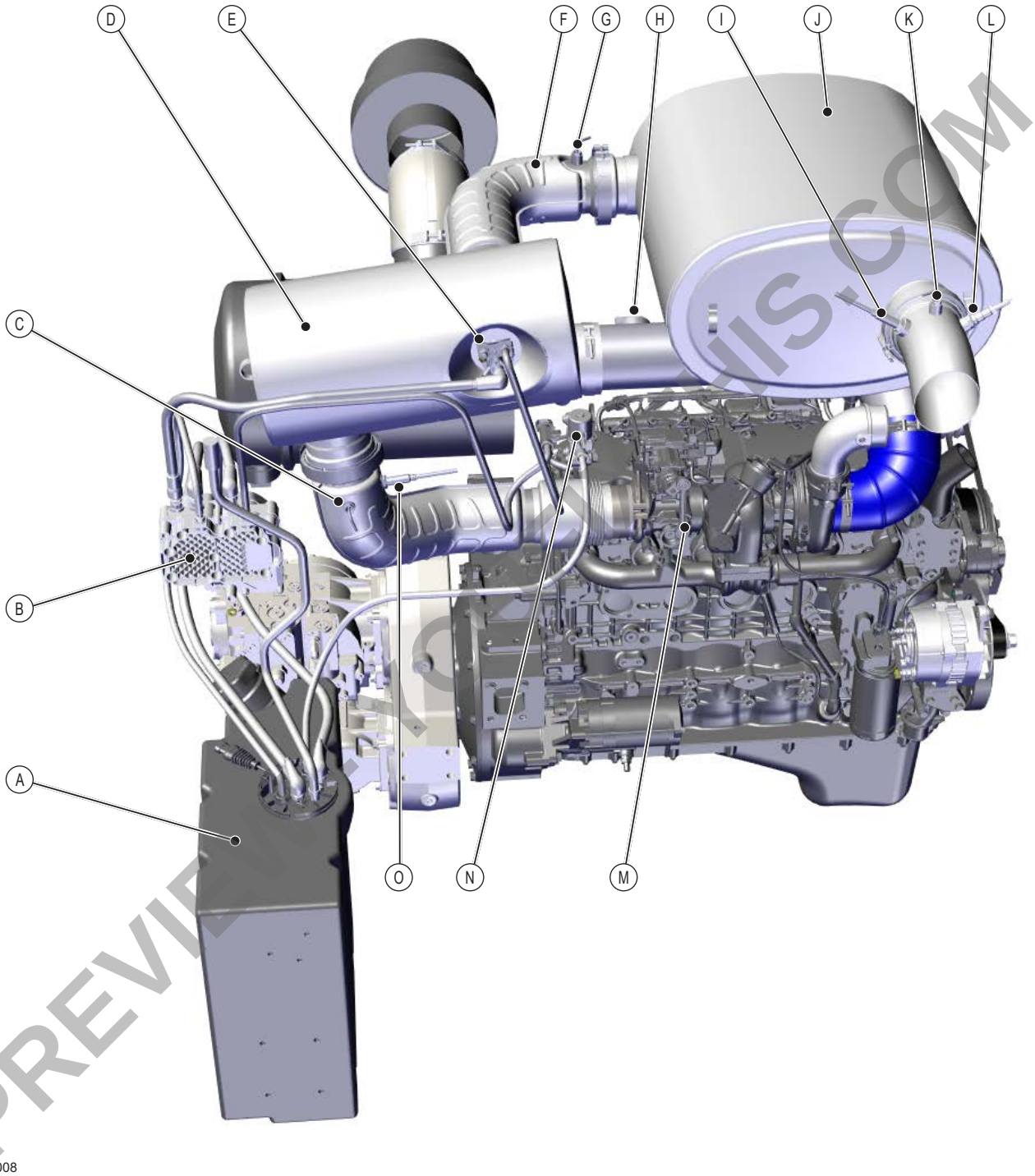
   NOTE: Repair any burrs created when removing the diffuser/strainer before reinstalling.
9. Reinstall the access cover with a new O-ring.
10. Reattach the return hose.
11. Refill the hydraulic tank and check for leaks. Refer to HYDRAULIC OIL HAND FILL PUMP and REFILLING THE HYDRAULIC SYSTEM in THIS SECTION.
12. Bleed air from the main, attachment and fan pumps by loosening the case drain hose fittings at each pump connection.
13. Continue filling hydraulic oil tank using fill pump. Tighten case drain hose fittings to pumps when oil is seen coming from the pump case drain ports. It is important that all air is evacuated from the pumps.
14. Fill hydraulic oil tank up to the FULL mark on the sight gauge using fill pump.

    IMPORTANT!
    ALL CYLINDERS MUST BE FULLY RETRACTED when filling the hydraulic oil tank or overfilling will occur.
15. Recheck hydraulic oil level and add hydraulic oil up to FULL mark using the fill pump.

NOTE: Changing diffuser/strainer and filters and replacing the hydraulic oil tends to aerate the oil. For maximum pump life, the machine should sit for one hour after servicing to allow entrained air to escape from the oil prior to applying working pressures to the pumps.

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Aftertreatment System Components–724G and 726G	
A DEF Tank	I Outlet NOx Sensor
B DEF Supply Module	J SCR with Clean Up Catalyst (CUC)
C DOC Inlet Temperature Sensor	K Catalytic Converter Outlet Temperature Sensor
D Diesel Oxidation Catalyst (DOC)	L NH_3 Sensor
E Dosing Module (DEF Injector)	M Exhaust Flap
F Mixer Tube	N Heater Valve
G Catalytic Converter Inlet Temperature Sensor	O Inlet NOx Sensor
H Humidity and Temperature Sensor	DENOX 2.2 Dosing System (incorporated into the engine ECU)

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EVERY 48 HOURS

PERFORM

- 8 HOURS Maintenance.

CHECK

- Center joint for looseness.

  Refer to CENTER JOINT MAINTENANCE AND INSPECTION in this section for instructions. If a problem is found corrective action should be taken immediately.

  Refer to CENTER JOINT in SECTION 11 of the SERVICE MANUAL for more detailed checking and adjustment procedures.

Refer to ENGINE OPERATION AND MAINTENANCE MANUAL and ATTACHMENT MANUFACTURER'S DOCUMENTATION for additional required maintenance at this scheduled time period.

EVERY 125 HOURS

PERFORM

- FREQUENTLY Maintenance.
- 8 HOURS Maintenance.

CHECK

- Fuel fill strainer (cap screen).
- Fluid level in batteries unless maintenance free.
- Engine speed.
- All hydraulic pressures.
- Hydraulic pumps and motor securing bolts.
- Torque tightening points as per new machine maintenance.
- Test operation of pressurized water system. Refer to PRESSURIZED WATER SYSTEM in SECTION 2 and PRESSURIZED WATER SYSTEM MAINTENANCE in THIS SECTION.

CLEAN/REPLACE

- Recirculating air filter–A/C heater unit. *
- Fresh air filter–cab. *

LUBRICATE

- Front driveshaft slip joint: 1 fitting–purge.
- Rear driveshaft slip joint: 1 fitting–purge.
- Parking brake shaft seals: 2 fittings (later machines).
- Rear axle oscillation pivot: 2 fittings–purge.

VISUALLY INSPECT FOR DAMAGE TO

- Lift boom and tilt linkage.
- Front and rear frame.
- Center joint area.
- Attachment.

Complete repairs immediately.

VISUALLY INSPECT FOR

- Frayed electrical wiring and hydraulic hoses.
- Wear in any other components.

  NOTE: Neglecting the proper maintenance of these items can result in fire.

Refer to ENGINE OPERATION AND MAINTENANCE MANUAL and ATTACHMENT MANUFACTURER'S DOCUMENTATION for additional required maintenance at this scheduled time period.

*** Use of filters other than genuine Tigercat replacement filters is not recommended.**

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= Creep mode or Speed Very Slow


= Defrost, Front Window

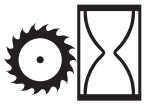

= Diesel Exhaust Fluid (DEF)


= Differential Locks


= Differential Lock ON


= Differential Lock OFF


= Disc Saw


= Disc Saw Hours


= Disc Saw, ON


= Disc Saw Pressure


= Drive Mode


= Drive FORWARD


= Drive REVERSE



= Drive Motor Speed



= Drive Pressure, FORWARD



= Drive Pressure, REVERSE


= Engine Anti Stall


= Engine Anti-stall ON


= Engine Anti-stall OFF


= Engine Boost Pressure


= Engine Air Intake Pressure
(Engine Air Intake Filter Restricted)


= Engine Charge Air Temperature


= Engine Coolant Temperature


= Engine Diagnostics

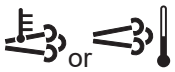


= Engine ECO MODE (If applicable)


= Engine Emission Filter


= Engine Emission Filter OFF


= Engine Emission System FAILURE



= Engine Emission System
Temperature

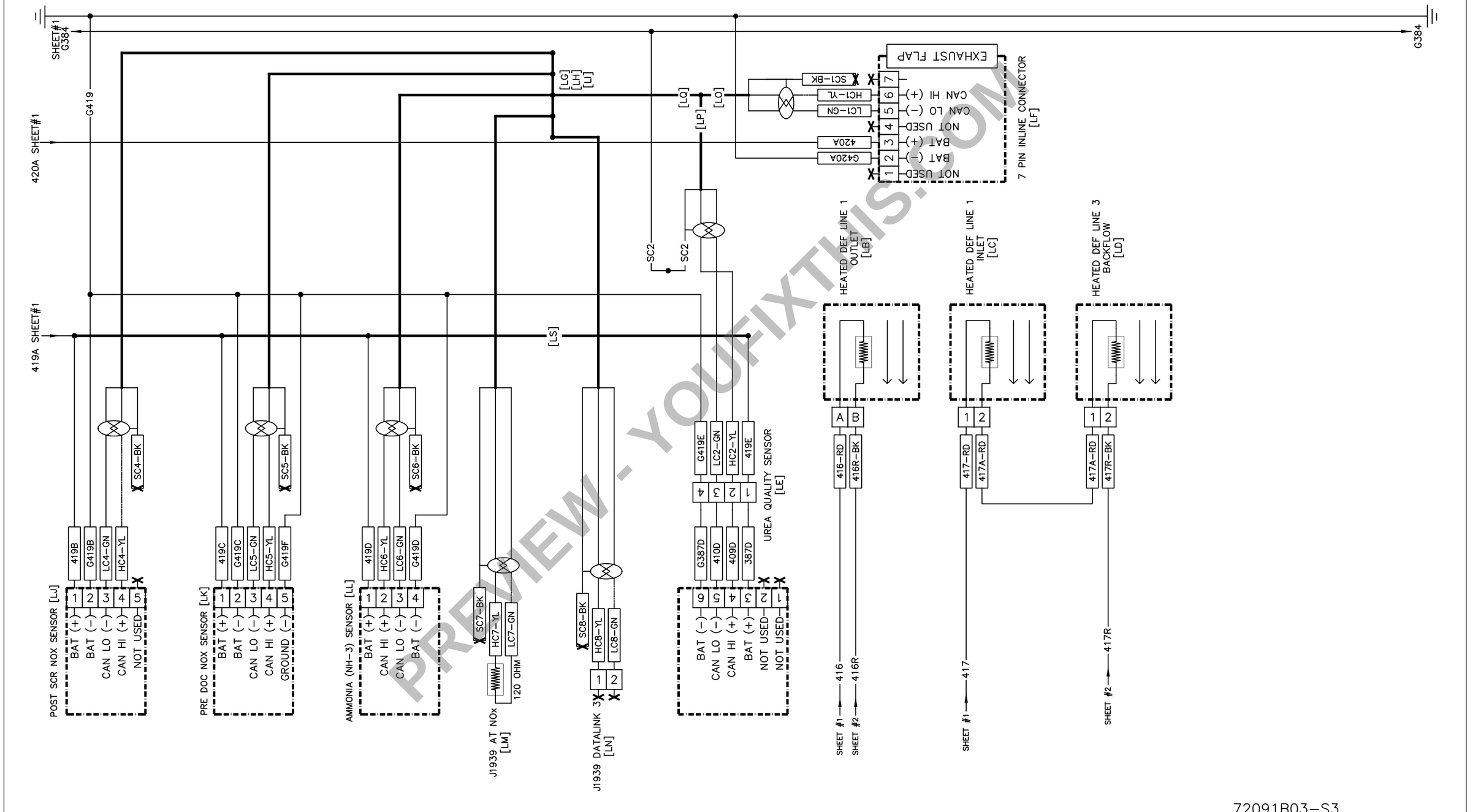

= Engine Menu


= Engine Hours


= Engine Oil Pressure

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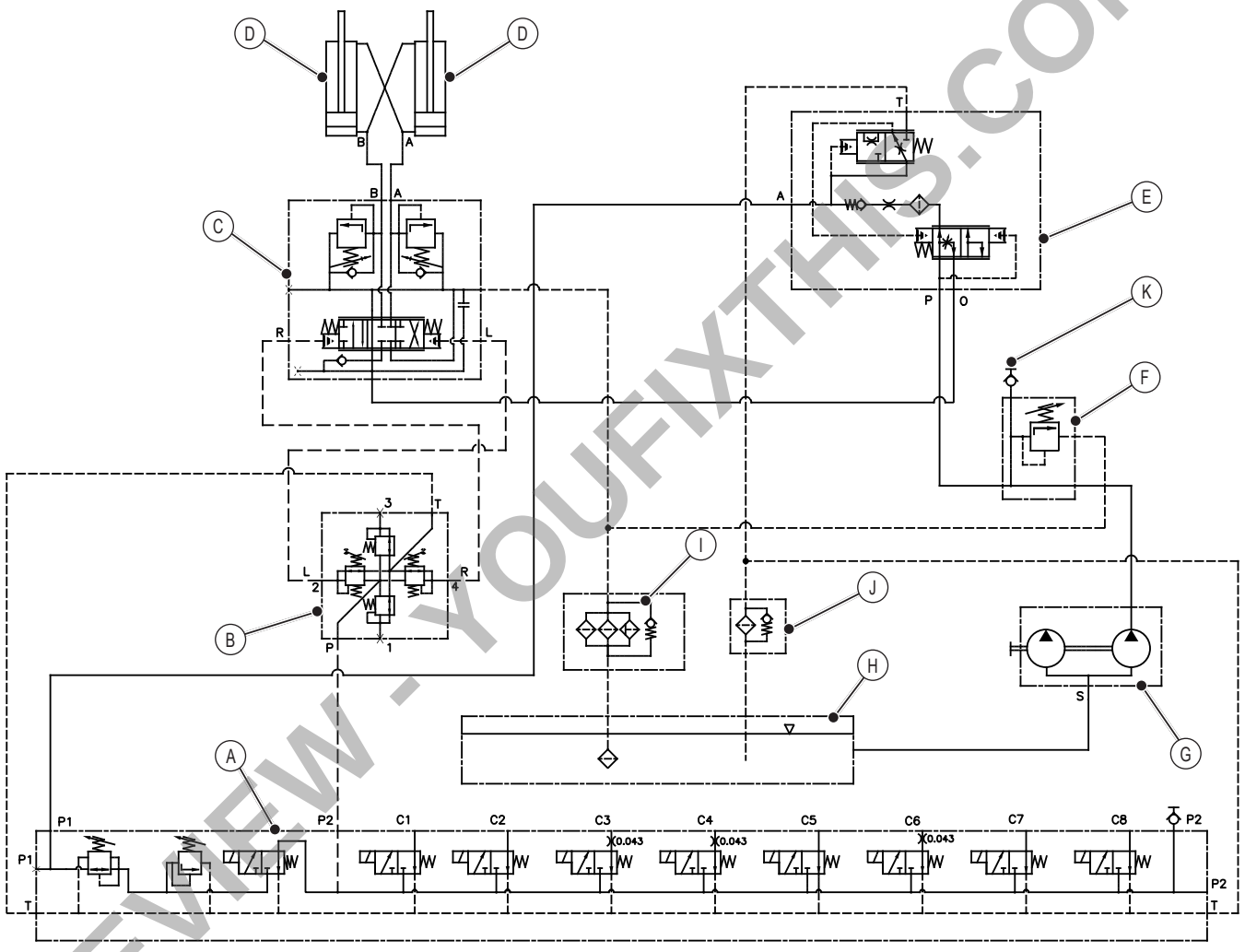


72091B03–S3

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STEER CIRCUIT SCHEMATIC



700345

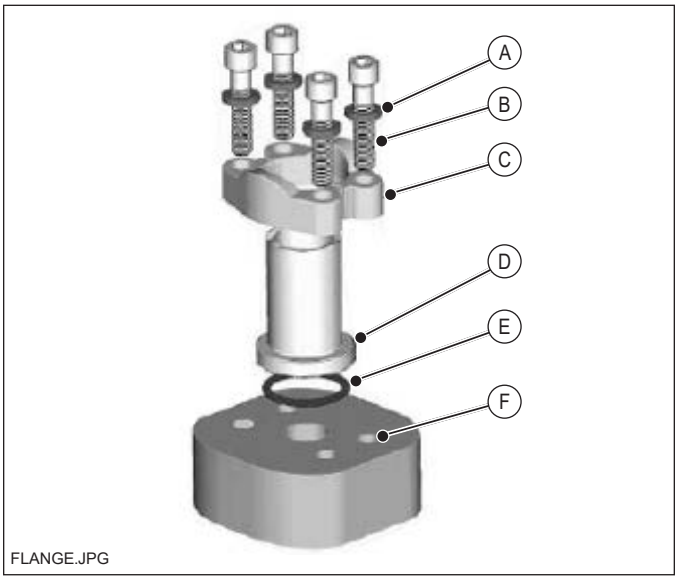
A Pilot Manifold	G Boom/Steer Pump–Steer Section
B Joystick–Left	H Hydraulic Oil Tank
C Steer Valve	I Hydraulic Oil Return Filters
D Steering Cylinder	J Case Drain Strainer
E Accumulator Charge Valve	K Test Port–Steer Relief Valve
F Steer Relief Valve	

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Parker

ASSEMBLY TORQUE



FLANGE.JPG

4-Bolt Split Flange Components	
A	Washers
B	Bolts
C	Flange Clamp
D	Flange Head
E	O-Ring
F	Tapped Holes

- The 4-Bolt Split Flange consists of four main components:
- A body (flange head)
- An O-ring
- One captive or two split flange clamps
- Four bolts and washers

Dash Size	Flange Size	Inch Bolt (J518)	Torque lbf-ft	Metric Bolt (ISO 6162)	Torque Nm
8	1/2	5/16-18	17 +/- 2	M8	25
12	3/4	3/8-16	25 +/- 3.5	M10	49
16	1	3/8-16	31 +/- 4.5	M10	49
20	1-1/4	7/16-14	41 +/- 5	M12	85
24	1-1/2	1/2-13	52 +/- 6	M12	85
32	2	1/2-13	60 +/- 6	M12	135
40	2-1/2	1/2-13	85 +/- 9	M12	95
48	3	5/8-11	144 +/- 15	M16	220
56	3-1/2	5/8-11	125 +/- 8	M16	220
64	4	5/8-11	125 +/- 8	M16	220
80	5	5/8-11	125 +/- 8	M16	220

Table T6 – Code 61 Flange Recommended Bolt Torque

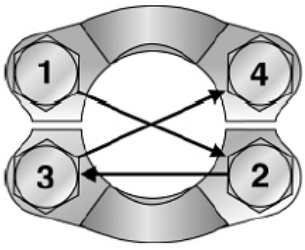
NOTE: Does not meet ISO 6162 specification.

The four-bolt port is simply a circular opening (flow passage) surrounded by four tapped holes in a certain pattern for acceptance of the flange clamping bolts. The flat surface of the port compresses the O-ring contained in the groove in the flange head when the clamp bolts are torqued. In some instances, the groove is in the port and not in the flange head. The bolts, through the clamp halves, clamp down the flange head onto the flat surface of the port compressing and trapping the O-ring in the groove and leaving no gap for it to extrude under pressure. The hydraulic pressure is thus sealed by the compressed O-ring as long as the bolts are tightened enough to maintain solid metal to metal contact between the flange head at the outside diameter of the O-ring and the top of the port.

FLANGE PORT ASSEMBLY

The steps to properly assemble the flange port clamping bolts are:

1. Make sure sealing surfaces are free of burrs, nicks, scratches or any foreign particles.
2. Lubricate the O-ring.
3. Position flange and clamp halves.
4. Place lock washers on bolts and insert through clamp halves.
5. Hand tighten bolts.



FLANGE2.JPG

A	Flange Bolt Tightening Sequence

6. Torque bolts in diagonal sequence in small increments to the appropriate torque level listed in Table T6 or Table T7 on this page.

Dash Size	Flange Size	Inch Bolt (J518)	Torque lbf-ft	Metric Bolt (ISO 6162)	Torque N-m
8	1/2	5/16-18	17 +/- 2	M8	25
12	3/4	3/8-16	30 +/- 4.5	M10	49
16	1	7/16-14	46 +/- 4.5	M12	85
20	1 1/4	1/2-13	69 +/- 6	M14	135
24	1 1/2	5/8-11	125 +/- 8	M16	210
32	2	3/4-10	208 +/- 20	M20	425

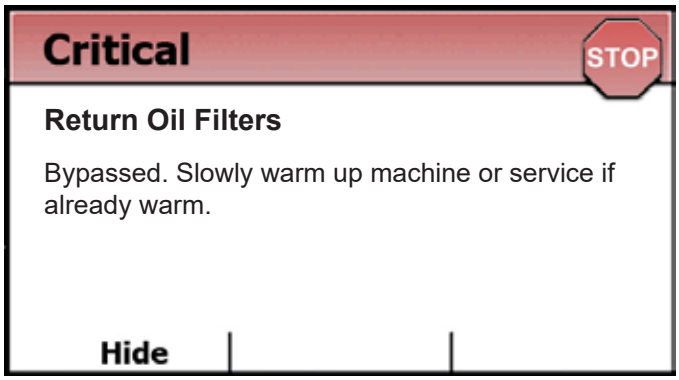
Table T7 – Code 62 Flange Recommended Bolt Torque

NOTE: Does not meet ISO 6162 specification.

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HYDRAULIC OIL RETURN FILTERS BYPASSED



This message will be displayed, alarm light will flash and alarm will sound to inform the operator that the hydraulic oil is bypassing the return filters.

This message may appear if the machine is cold. If the machine has already been warmed up, then the machine should be service immediately.

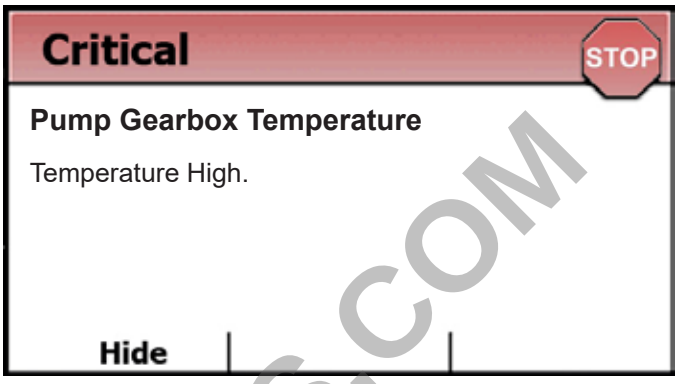
NOTE: When hydraulic oil is at operating temperature, the hydraulic oil filter bypass icon will be illuminated RED. When the hydraulic oil temperature is low the icon will be illuminated YELLOW.

Refer to FILTERS–HYDRAULIC OIL RETURN FILTERS in SECTION 3 for more information.



A Hydraulic Oil Filter Bypass Icon

PUMP DRIVE GEARBOX TEMPERATURE HIGH



This message will be displayed, alarm light will flash and alarm will sound to inform the operator that the pump drive gearbox temperature is high.

Stop the machine immediately when this alarm is activated and check the pump drive gearbox for proper operation.

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1. Park the machine on level ground. Refer to PARKING THE MACHINE in SECTION 1.
2. Wipe clean the area around the filter and head.
3. Place a suitable container under the filter and/or place rags below to catch the spillage of fuel.
4. Loosen the metal vent plug on the filter head.
5. Turn the drain valve open on the separator bowl to allow the fuel to drain completely from the separator bowl into a suitable container.

   NOTE: A drain hose can be attached to the drain valve if required.
6. Close the drain valve.

The fuel filter/water separator is a combination unit, with a replaceable fuel filter and a removable water sediment bowl on the bottom of the unit. The water sediment bowl is only replaced if it becomes damaged or non-functional. For service and replacement intervals, refer to SERVICE AND LUBRICATION POINTS in THIS SECTION.

CHANGING FUEL FILTER/WATER SEPARATOR

Refer to SCHEDULED MAINTENANCE and SERVICE AND LUBRICATION POINTS in THIS SECTION for filter replacement intervals.

1. Park the machine on level ground. Refer to PARKING THE MACHINE in SECTION 1.
2. Drain the fuel from the filter/water separator as described previously in this section.
3. Disconnect the fuel heater and the 'water-in-fuel' sensor from their respective wiring harness.



A Filter Removal Tool

4. Wearing eye and face protection (in case of a fuel spray) use a strap wrench to remove the water separator bowl from the filter head. An optional filter removal tool (Tigercat Part Number: BH859) is available from your dealer.
5. Dispose of any fuel properly .
6. Remove and discard the O-ring from the top of the separator bowl.
7. Clean the separator bowl.
8. Remove the filter cartridge from the filter head (pressure fit) and discard properly.
9. Place the new filter into position on the filter head.
10. Lubricate the O-ring with clean engine oil and install at the top of the separator bowl.
11. Install (screw) separator bowl onto the filter head, hand tighten, then turn an additional ¾ turn only.
12. Reconnect the fuel heater and the 'water-in-fuel' to their respective wiring harness.
13. Turn the ignition key switch to the ON position to energize the fuel supply shut-off solenoid valve.
14. Prime the fuel system using the hand primer until fuel spills out the metal vent plug.
15. Close the vent plug.
16. Start the engine and check for leaks. Refer to STARTING ENGINE in SECTION 2.

⚠ WARNING

To lower the risk of causing accidental fires, DO NOT leave fuel or oil soaked rags laying around.

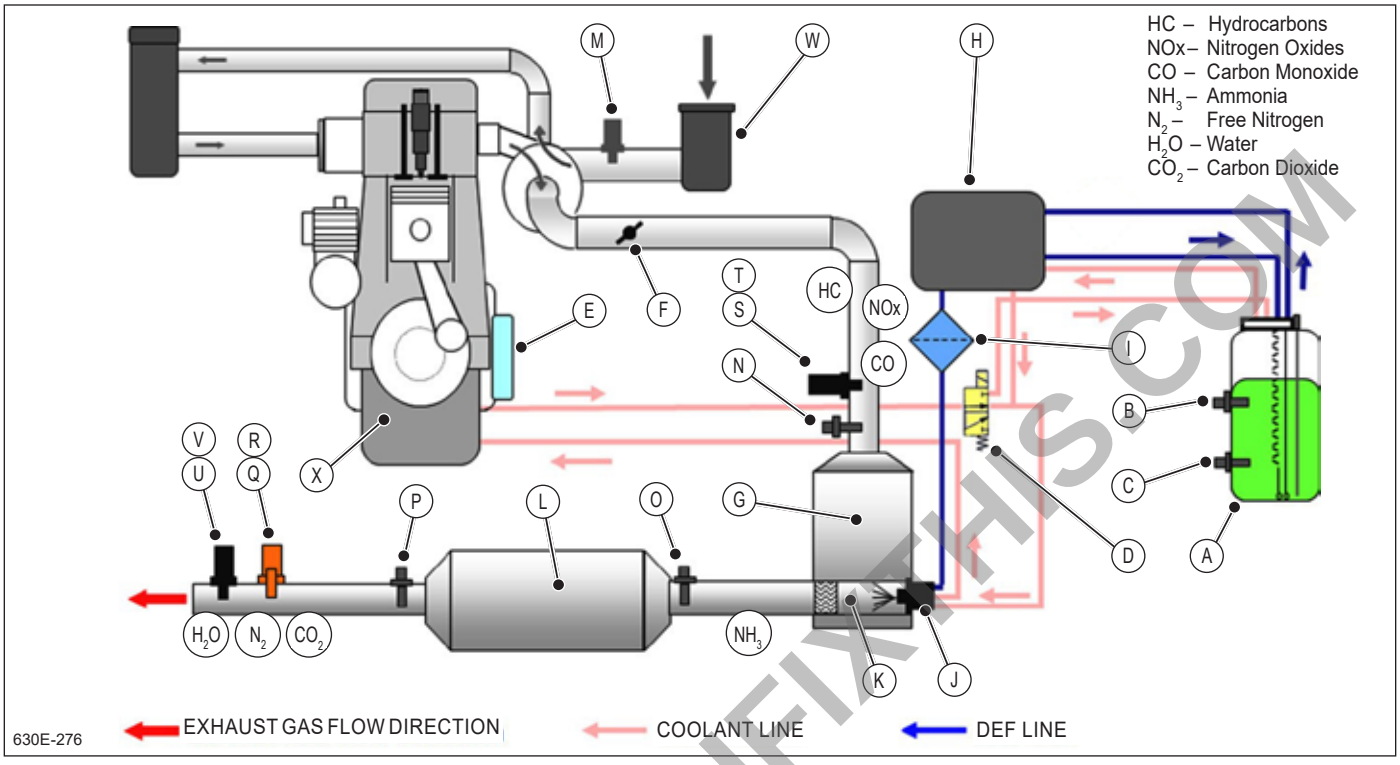
⚠ WARNING

Drain fuel filter into a container and dispose of all fluids properly.



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A DEF Tank	M Humidity and Temperature Sensor
B Sending Unit (includes Level Sensor)	N DOC Inlet Temperature Sensor
C DEF Quality Sensor	O Catalytic Converter Inlet Temperature Sensor
D Heater Valve	P Catalytic Converter Outlet Temperature Sensor
E ECU–Engine (DENOX 2.2 Dosing System)	Q NH_3 Sensor
F Exhaust Flap	R ECU–NH_3 Sensor
G Diesel Oxidation Catalyst (DOC)	S Inlet NOx Sensor
H DEF Supply Module	T ECU–Inlet NOx Sensor
I DEF Dosing Module Filter (in Supply Module)	U Outlet NOx Sensor
J Dosing Module (DEF Injector)	V ECU–Outlet NOx Sensor
K Mixer Tube	W Air Filter
L Catalytic Converter (includes SCR and CUC)	X Engine

The DOC/SCR aftertreatment system is electronically managed by the DENOX 2.2 system incorporated into the engine Electronic Control Unit (ECU). The ECU calculates and adjusts the flow rate of the DEF solution into the system based on current engine speed, torque delivered, exhaust temperature, amount of nitrogen oxides and ammonia present.

The exhaust passes through the DOC which uses oxidation at high temperatures to convert carbon monoxide (CO), hydrocarbons (HC) and the soluble organic fraction (SOF) of diesel particulates into inert compounds, carbon dioxide (CO_2) and water vapour (H_2O). It also converts nitrogen oxide (NO) into nitrogen dioxide (NO_2) which enhances the performance of the SCR catalyst.

The supply module pump picks up the DEF solution from the tank and sends it under pressure to the dosing module (DEF injector) to be injected into the exhaust at the outlet of the DOC and pass through the mixer tube upstream of the catalytic converter.

The first phase of the SCR process takes place in the pipe between the DOC and Catalytic converter. High temperature exhaust gas evaporates the DEF solution instantly and, by hydrolysis, converts it into ammonia ($2NH_3$) and carbon dioxide (CO_2).Evaporation of the solution lowers exhaust gas temperature, bringing it closer to the optimum temperature required by the process.

The exhaust gases and ammonia, at the proper reaction temperature, are introduced into the catalytic converter, where the second phase of the process takes place. The ammonia is converted into free nitrogen (N_2) and water vapour (H_2O) by reacting with the oxygen in the exhaust gases.

Finally the high-efficiency catalytic converter incorporates a clean up catalyst (CUC) which reduces any excess ammonia (NH_3) resulting from the SCR process.

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EVERY 250 HOURS

PERFORM

- FREQUENTLY Maintenance.
- 8 HOURS Maintenance.
- 125 HOURS Maintenance.

CHECK

- Fire extinguisher and turn it to mix contents.
- Parking brake oil level.

DRAIN AND REFILL

- Oil in pump drive gearbox.
- Oil in transmission.

REPLACE

- Engine oil and filter. *
- Engine fuel filter. *
- Fuel filter/water separator filter. *
- DEF dosing module filter (Tier 4f machines only).

Refer to SECTION 8 of the SERVICE MANUAL for various oil change procedures.

Refer to ENGINE OPERATION AND MAINTENANCE MANUAL and ATTACHMENT MANUFACTURER'S DOCUMENTATION for additional required maintenance at this scheduled time period.

EVERY 500 HOURS

PERFORM

- FREQUENTLY Maintenance.
- 8 HOURS Maintenance.
- 125 HOURS Maintenance.
- 250 HOURS Maintenance.

CHECK

- All hydraulic pressures.
- Torque on transmission mounting bolts.

REPLACE

- Hydraulic oil return filters. *
- Hydraulic oil pressure filter, drive charge pressure. *
- Recirculating air filter–A/C heater unit. *
- Fresh air filter–cab. *
- Engine crankcase ventilation filter. * (Tier 4f machines only.)

  Refer to the ENGINE OPERATION AND MAINTENANCE MANUAL for replacement instructions.

LUBRICATE

- Door, door screen and access cover hinges.

Refer to ENGINE OPERATION AND MAINTENANCE MANUAL and ATTACHMENT MANUFACTURER'S DOCUMENTATION for additional required maintenance at this scheduled time period.

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**** Use of filters other than genuine Tigercat replacement filters is not recommended.**

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 = Engine Oil Temperature

 = Engine–Percentage of Load

 = Engine RUN



= Engine Speed–rpm

 = Engine START



= Engine STOP

 = Engine WAIT TO START

 = Engine WARM-UP

 = Engine Warning

 = Exhaust Temperature

AUTO = Fan, Auto Reversing/Cleaning

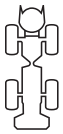
 = Fan, Full ON

 = Fan, Reverse/Clean

 = Fan Speed

 = Fan, Ventilation Blower

 = Flow Adjustment

 = Feller Buncher

 = Fluid Level High

 = Fluid Level Low

 = Foot Pedal Control

 = Fuel Consumption Rate



= Fuel, Diesel

 = Fuel Heater

 = Fuel Information

 = Fuel Reset and Trip Fuel Information

 = Fuel–TEMPERATURE

 = Fuel–WATER IN FUEL

 = Horn

 = Hours ENGINE

 = Hours–MACHINE



= Hydraulic Oil Case Drain

 = Hydraulic Oil Filter Bypass



= Hydraulic Oil Grade

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Tigercat 720G/724G/726G Feller Buncher

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CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

720G/724G/726G Available Literature

Operator's Manual	Part No. 47054AENG
Service Manual (this manual)	Part No. 47055AENG
720G Parts Catalog	Part No. 44529A
724G Parts Catalog	Part No. 43588A
726G Parts Catalog	Part No. 45438A
Vehicle Moving and Transporting Instructions	Part No. 47118AMUL
Engine Operation and Maintenance Manual N67 T2	Part No. 45045AMUL
Engine Operation and Maintenance Manual N67 T4f	Part No. 42939AMUL

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