

FULL LOAD RPM: 2600 MAXIMUM

ENGINE: 4045T&D
APPLICATION: 300 SERIES

CUSTOMER PART #: RE-518166
CUSTOMER'S NAME: JOHN DEERE

MODEL NO.: DE2435-5805
SUPERSEDES:
EDITION NO.: OBS
DATED: 1/16/2006

NOTE: ALL SPEEDS ARE IN ENGINE RPM UNLESS OTHERWISE NOTED.
ALL DEGREES ARE IN PUMP DEGREES UNLESS OTHERWISE NOTED.

TEST STAND ISO 4008:

- CALIBRATION HIGH PRESSURE LINES: SAE J1418 / ISO 4093; .063" (1.60mm) I.D. x 25" (635mm) LONG, P/N 70050
- CALIBRATING INJECTORS: STANADYNE P/N 36951 (LOW DEAD VOLUME) 0.5mm ORIFICE PLATE, 3625 PSI (250 BAR) OPENING PRESSURE.
- CALIBRATION FLUID: SAE J967 / ISO 4113
 - INLET TEMPERATURE: 110°- 115°F (43.3°- 46.6°C)
 - RETURN TEMPERATURE: 115°- 156°F (46.6°- 68.6°C)
 - SUPPLY PRESSURE: 5 PSI +/- 1.0 PSI (34 +/- 6 kPa) AT PUMP INLET.

PUMP INSTALLATION: IT-117

ROTATION – CW*
NAME PLATE: LEFT SIDE**
#1 CYL. – 5 O'CLOCK POSITION**

*VIEWED FROM DRIVE END
**VIEWED FROM CONTROL SOLENOID END

PUMP OPERATING SPEED...HALF...ENGINE SPEED

PUMP CALIBRATION CHECKS: AS RECEIVED FOR SERVICE

NOTE: USE DE ELECTRONIC CONTROL PACKAGE (P/N 36269).
REFERENCE 99820 DE PUMP MANUAL FOR TEST BENCH SET-UP INSTRUCTIONS

SOLENOID VOLTAGE: 17 VDC

- 000 RPM:** MANUALLY ROTATE SHAFT TO INSTALL TIMING PIN (P/N 36275). ALIGN TIMING WHEEL WITH INDICATOR AND TIGHTEN TIMING WHEEL IN PLACE.
- 000 RPM:** REMOVE TIMING PIN, INSTALL HOUSING PRESSURE TAP (P/N 36464) AND CONNECT TO HOUSING PRESSURE GAUGE
- 150 RPM:** TEST PACKAGE PERFORMING SELF-DIAGNOSTICS.
- 1400 RPM: (LOSSOP: 9.0°, SPW: 9.71°)** WAIT FOR PUMP TO STABILIZE FOR 60 SEC.
- 2500 RPM: (LOSSOP: 9.0°, SPW: 9.87°)**
 - STABILIZE INLET FUEL TEMPERATURE AT 43.3°-46.6° C. RETURN FUEL IS BEING MONITORED FOR RATE OF CHANGE LESS THAN 5° C/MIN. RETURN TEMPERATURE 68.6° C MAXIMUM.
 - CHECK TRANSFER PUMP PRESSURE FOR 130 PSI MINIMUM.
 - CHECK RETURN OIL FOR 400-1100 CC/MIN.
- 1500 RPM: (LOSSOP: 10.0°, SPW: 9.71°)**
 - CHECK CYL-CYL VARIATION FOR A MAXIMUM OF 10.0 mm³/STROKE.
 - (LOSSOP: 0°, SPW: 0°)** CHECK SHUT-OFF FUEL DELIVERY FOR 4.0 mm³/STROKE MAXIMUM.
- 150 RPM: (LOSSOP: 8.0°, SPW: 18.00°)** CHECK FUEL DELIVERY FOR 100 mm³/STROKE MINIMUM.
- 3000 RPM: (LOSSOP: 9.0°, SPW: 9.00°)** STABILIZE RETURN TEMPERATURE 46.6° C MINIMUM.

9. CHECK POINTS:

NOTE: a. CLOSURE TIME AT ALL SPEEDS/LOADS: 1.1-2.1 ms.
b. CLOSURE TIME DELTA MUST BE BETWEEN 2.0 AND 150.0 MICRO SECONDS.

2500 RPM	LOSSOP	SPW	FUEL DEL. (mm ³)
a.	11.74°	9.87°	92.9 ± 7.2
b.	11.74°	6.82°	65.6 ± 6.0
1400 RPM			
c.	16.1°	9.71°	101.7 ± 7.6
d.	16.6°	7.80°	81.1 ± 6.7
800 RPM			
e.	10.6°	8.60°	91.0 ± 8.5
f.	14.1°	5.70°	43.6 ± 8.8

NOTE: POPPET VALVE STROKE SETTING:

- FOR NEW H&R/POPPET VALVE : .0066" +/- .0002"
 - FOR ORIGINAL H&R/POPPET VALVE: .0070" +/- .0002"
- 000 RPM:** MANUALLY ROTATE SHAFT TO INSTALL TIMING PIN (P/N 36275). ALIGN TIMING WHEEL WITH INDICATOR AND TIGHTEN TIMING WHEEL IN PLACE.
 - 000 RPM:** REMOVE TIMING PIN, INSTALL HOUSING PRESSURE TAP (P/N 36464) AND CONNECT TO HOUSING PRESSURE GAUGE.
 - 150 RPM:** TEST PACKAGE PERFORMING SELF-DIAGNOSTICS.
 - 1000 RPM: (LOSSOP: 8.0°, SPW: 7.00°)**
 - SET TPP FOR 85 PSI MINIMUM. ADJUST IF NECESSARY.
 - CHECK RETURN FUEL FOR 400-1000 CC/MIN RETURN.
 - 150 RPM: (LOSSOP: 9.0°, SPW: 9.71°)** WAIT FOR PUMP TO STABILIZE FOR 60 SEC.
 - 2500 RPM: (LOSSOP: 9.0°, SPW: 9.87°)**
 - SET TRANSFER PUMP PRESSURE TO 150 - 155 PSI.
 - CHECK HOUSING PRESSURE 2-10 PSI.
 - CHECK CLOSURE TIME 1.1-2.1 ms.
 - CHECK RETURN FUEL FOR 500-900 CC/MIN. ADJUST IF NECESSARY.

NOTE: IF ADJUSTMENT WAS NECESSARY RETURN TO 6a.

- STABILIZE INLET FUEL TEMPERATURE AT 43.3°- 46.6° C. MONITOR RETURN FUEL RATE OF CHANGE TO BE LESS THAN 5° C/MIN. RETURN TEMPERATURE 68.6° C MAXIMUM.
- 1500 RPM: (LOSSOP: 10.0°, SPW: 9.71°)**
 - CHECK FUEL DELIVERY FOR 90-110 mm³/STROKE.
 - CHECK CYL-CYL VARIATION FOR A MAXIMUM OF 10.0 mm³/STROKE.
 - (LOSSOP: 0°, SPW: 0°)** CHECK SHUT-OFF FUEL DELIVERY FOR 4.0 mm³/STROKE MAXIMUM.
 - 150 RPM: (LOSSOP: 8.0°, SPW: 18.00°)**
 - CHECK TRANSFER PUMP PRESSURE FOR 16 PSI MINIMUM.
 - CHECK HOUSING PRESSURE FOR 2.0-10.0 PSI.
 - CHECK FUEL DELIVERY FOR 100.0 mm³/STROKE MINIMUM.
 - 1500 RPM: (LOSSOP: 10.0°, SPW: 9.71°)** CHECK TRANSFER PUMP PRESSURE FOR 100 PSI MINIMUM.
 - 3000 RPM: (LOSSOP: 9.0°, SPW: 9.00°)**
 - RUN PUMP LONG ENOUGH TO STABILIZE RETURN TEMPERATURE 46.6° C MINIMUM.
 - CHECK RETURN FLOW 400 - 1000 CC/MIN.
 - CHECK HOUSING PRESSURE FOR 2.0 - 10.0 PSI.
 - IF ADJUSTMENT IS NECESSARY RETURN TO STEP 6a.

11. CHECK POINTS:

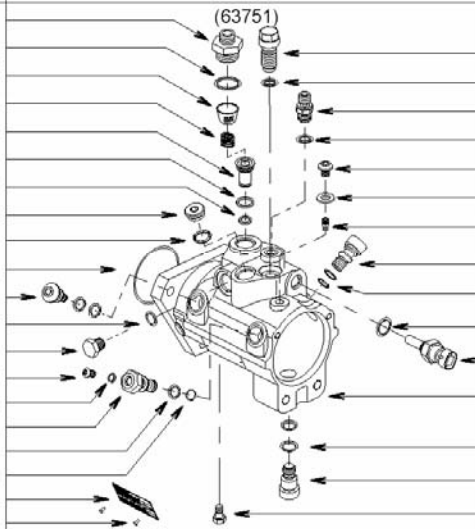
NOTE: a. CLOSURE TIME AT ALL SPEEDS/LOADS: 1.1-2.1 ms.
b. CLOSURE TIME DELTA MUST BE BETWEEN 2.0 AND 150.0 MICRO SECONDS.

2500 RPM	LOSSOP	SPW	FUEL DEL. (mm ³)	TPP (psi)
a.	11.74°	9.87°	92.9 ± 7.2	152.5 ± 5.0 *
b.	11.74°	6.82°	65.6 ± 6.0	
1400 RPM				
c.	16.1°	9.71°	101.7 ± 7.6	
d.	16.6°	7.80°	81.1 ± 6.7	
800 RPM				
e.	10.6°	8.60°	91.0 ± 8.5	
f.	14.1°	5.70°	43.6 ± 8.8	

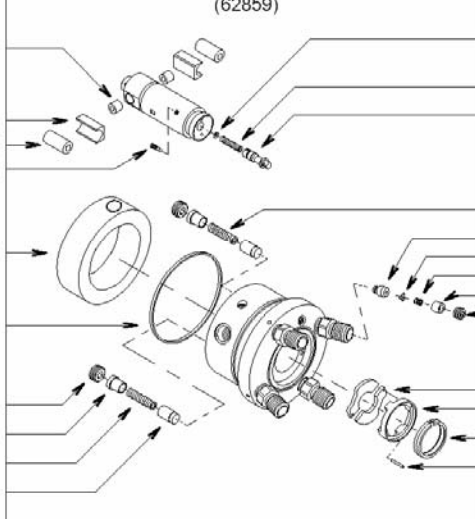
*(1051.5 ± 34.5 kPa)

12. SPECIAL NOTE:

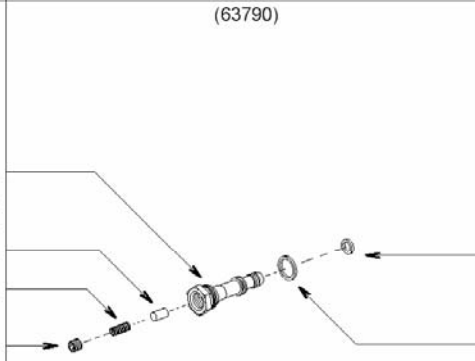
- TORQUE ALL FASTENERS PER 70338.

Description	QTY	P/N	HOUSING GROUP	P/N	QTY	Description
CONNECTOR, INLET	1	35141		36744	1	SCREW, CAM PIN
SEAL, O-RING	1	27609		29525	1	SEAL, O-RING
FILTER, INLET	1	35226		35140	1	RGLTR ASSY, HSG PRESS
SPRING, TP INSERT RET	1	30488		27607	1	SEAL, O-RING
INSERT, TRANSFER PUMP	1	30978		22601	1	SCREW, BUTTON HD CAP
SEAL, O-RING	1	27610		27606	1	WASHER, SEALING
SEAL, O-RING	1	27602		21660	1	SCREW ASSY, VENT OR 21661-21665
PLUG, HEX SOCKET	1	35932		35127	1	SCREW, HEAD LOCKING
SEAL, O-RING	1	27610		29525	4	SEAL, O-RING
SEAL, RECT SECTION	1	26470		31239	1	SEAL, O-RING
SCREW, TP PORTING	1	31265		35142	1	SENSOR, TEMPERATURE
SEAL, O-RING	1	27607		37270	1	HOUSING ASSY, PUMP
PLUG, TP REGULATOR	1	35130		29525	2	SEAL, O-RING
SCREW, TP PRESS TAP	1	30770		35129	1	SCREW, HEAD LOCATING
SEAL, O-RING	1	17438		11331	1	SCREW, HEX HEAD
SCREW, HEAD LOCKING	1	35455				
SEAL, O-RING	1	27610				
SEAL, O-RING	1	29525				
PLATE, NAME	1	10394				
SCREW, RIVET	2	24419				

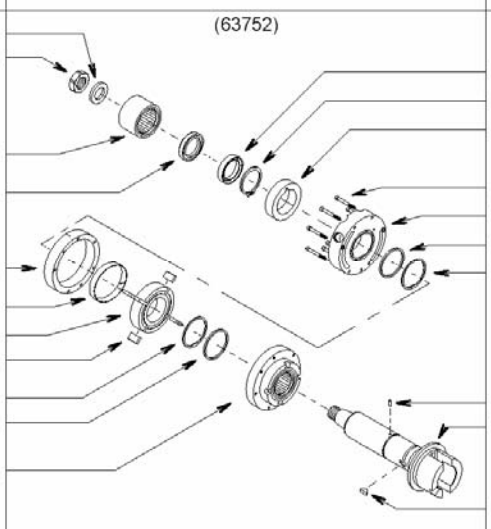
Note:

Description	QTY	P/N	HEAD & ROTOR GROUP	P/N	QTY	Description
			(62859)	35637	1	HEAD & ROTOR ASSY
PLUNGER, ROTOR USE 35188-35191 (STD) OR 35192-35196 (O/S) AS IND. ON ROTOR S.B.60R	2	35187		29653	2	SHIM, POPPET VALVE OR 29654-29661 AS REQ'D
SHOE, CAM ROLLER	2	35135		35501	1	SPRING, POPPET VALVE
ROLLER, CAM	2	26072		35502	1	VALVE, POPPET OR 35503-35509 AS REQ'D
PIN, VALVE HOLDING	1	30874		30790	1	SPRING, SPILL ACC
CAM RING	1	35410		35137	4	SEAT, SNUBBER
SEAL, O-RING	1	27245		35468	4	PLATE, SNUBBER
SCREW, SOCKET	2	31248		23055	4	SPRING, SNUBBER PLATE
STOP, ACC PISTON	2	30115		37781	4	RING, SNUBBER RETAINER
SPRING, CHARGE ACC	1	30791		22860	4	SCREW, SNUBBER
PISTON, ACCUMULATOR	2	30494		29341	2	RETAINER, ROTOR
				29905	1	RETAINER, ADJ SPACER
				29917	1	SPACER, ADJUSTABLE
				29919	2	PIN, LOCATING

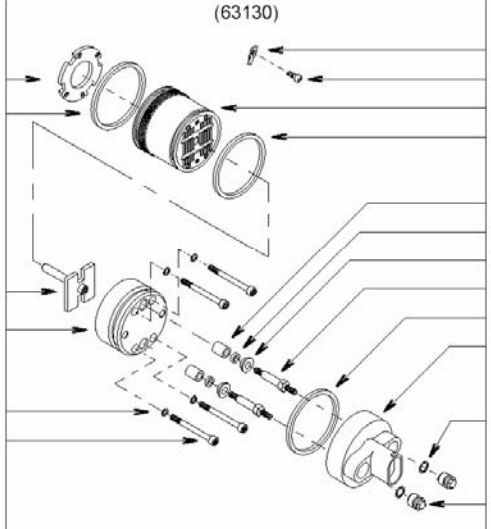
Note:

Description	QTY	P/N	TRANSFER PUMP PRESS. REG.	P/N	QTY	Description
			(63790)			
REGULATOR ASSY, TP	1	30495				
BUSHING, PISTON STOP	1	37365				
SCREEN, TP REGULATOR	1	32228				
PISTON, REGULATING	1	11508		27602	1	SEAL, O-RING
SPRING, REGULATING	1	30669				
PLUG ASSY, END PL ADJ	1	15228		30274	1	SEAL, O-RING

Note:

Description	QTY	P/N	DRIVE SHAFT - TRANSFER PUMP	P/N	QTY	Description
(63752)						
WASHER, PLAIN	1	19839		30804	1	SEAL, TEFLON LIP
NUT, HEX	1	35240		30241	1	RING, RETAINING
BEARING, NEEDLE	1	26359		33855	1	WASHER, OUTER THRUST
SEAL, DRIVE SHAFT	1	36534		30087	7	SCREW, SKT HEAD TORX
LINER, TRANSFER PUMP	1	31620		35126	1	PLATE, TP CW
SPRING, BAND	1	33853		29555	1	SEAL, O-RING
RETAINER, TP BLADE	1	31013		29554	1	RING, TP SEALING
BLADE, TRANSFER PUMP	4	29856				
OR 29857 (O/S)						
RING, TP SEALING	1	29554		30088	1	ROLL PIN
SEAL, O-RING	1	29555		35167	1	DRIVESHAFT
RTNR ASSY, INNER BRG	1	35233		31672	1	KEY, WOODRUFF

Note:

Description	QTY	P/N	FUEL CONTROL	P/N	QTY	Description
(63130)						
RETAINER, ARM COVER	1	35143		30413	1	PLATE, SOLENOID LOCK
SEAL, O-RING	1	29526		30389	1	SCREW, SKT HEAD TORX
ARMATURE ASSEMBLY	1	35133		36393	1	SOLENOID ASSEMBLY
COVER, ARMATURE PLATE	1	35830		29526	1	SEAL, O-RING
WASHER, SEALING	4	29529		30876	2	BUSHING, INNER
SCREW, SKT HEAD TORX	4	30090		31332	2	SEAL, O-RING
				29562	2	BUSHING, OUTER INSUL
				37591	2	STUD, TERMINAL
				35165	1	SEAL, O-RING
				35543	1	CONNECTOR ASSY, SOL
				27602	2	SEAL, O-RING
				37592	2	CAP, SOLENOID TERM

Note:

FOR SERVICE USE ONLY

APPLICABLE SERVICE ASSEMBLIES

Assembly	Description
36476	GASKET KIT
36491	HEAD AND ROTOR KIT

FOR ENGINEERING USE ONLY

DATE	ECN NO	EDITION
12/06/2001	24946	1
01/07/2002	24946	2
04/01/2002	27722	3
09/10/2002	27700	4
10/14/2002	27943	5
10/17/2002	24946	6
02/26/2003	28074	7
09/10/2003	27943	8
09/14/2004	28910	9
12/01/2004	232-M	10
02/02/2005	29151	11
04/15/2005	29291	12
06/22/2005	29368	13
09/23/2005	29619	14
01/16/2006	29824	OBS