

FULL LOAD RPM: 1760-2600
 GOV. REGULATION: 3-5 %
 ENGINE: 4045D
 APPLICATION: O.E.M. 66 kW FIRE PUMP

CUSTOMER PART #: RE-509529
 CUSTOMER'S NAME:
 JOHN DEERE DUBUQUE/SARAN

MODEL NO.: DB2435-5804
 SUPERSEDES:
 EDITION NO.: 1
 DATED: 08-01-01

NOTE: THIS SPECIFICATION DEVELOPED WITH ISO LONG INLET STUD.
 ALL SPEEDS ARE IN ENGINE RPM UNLESS OTHERWISE NOTED.
 USE LATEST REVISION FOR ALL REFERENCED DOCUMENTS.

TEST STAND: ISO 4008:

1. CALIBRATING HIGH PRESSURE PIPES...SAE J1418/ISO 4093:
 .063" (1.6mm) ID X 25" (635 mm) LONG.
2. CALIBRATING INJECTORS.....SAE J968/ISO 7440:
 0.5 mm ORIFICE PLATE NOP: 3000 PSI (207 BAR)
3. CALIBRATION FLUID: SAE J967/ISO 4113 (REF. S.B. 201)
 a. TEMPERATURE **110°-115°F** (43°-46°C) AT INLET.
 b. SUPPLY PRESSURE (S.B. 334): 5.0 ± 0.5 PSI
 (34 ± 3 kPa) AT PUMP INLET.
4. CAM MOVEMENT READ-OUT DEVICE: #23745.

PUMP INSTALLATION: IT-082

ROTATION-C.*	LEVER ANGLES (REF.)
NAME PLATE-L-SIDE**	THOT MIN.(∠B) NA
#1 CYL.-5-O'CLOCK**	THOT MAX.(∠C) NA
THROTTLE-L-SIDE**	S.O. (∠ E) N/A
TIMING MARK N/A	S.O. (∠ F) N/A
E.S.O. (24V E.T.S.O)	

* VIEWED FROM DRIVE END ** VIEWED FROM TRANSFER PUMP END

PUMP OPERATING SPEED...HALF...ENGINE SPEED
 AIR TIME TO HOUSING FLANGE (S.B. 177)(SEE SPECIAL NOTES)

PUMP CALIBRATION CHECKS: AS RECEIVED FOR SERVICE
 (REF. SL-222)

1. **1000 RPM (WOT):** OPERATE PUMP FOR 10 MINUTES TO BRING TO OPERATING TEMPERATURE AND CLEAR AIR FROM SYSTEM.
2. TURN SPEED DROOP TO MINIMUM DROOP POSITION (CCW DIRECTION) AND SET 8 TURNS (CW).
3. **2800 RPM (WOT):** RESET HIGH IDLE SCREW IF NECESSARY TO OBTAIN 10-12 mm³/STROKE.
4. **CHECK POINTS:** (SEQUENCE MUST BE FOLLOWED AS LISTED)

RPM	THROTTLE POSITION	mm ³ /STROKE	ADVANCE
a. 150	WOT	25 MIN.	---
b. 400	WOT *	4 MAX.	---
c. 1400	L.I. **	13-15	---
d. 1500	WOT	---	0°-0.3°
e. 1700	WOT	---	0°-2.0°
f. 2600	WOT	58-62	2.0°-4.0°
g. 2600	WOT *	4 MAX.	---
h. 1500	ADJ.	23-27	3.0°-5.0°
i. 2600	ADJ.	44.5-50.5	4.0° MAX.
j. 2800	WOT	10-12	8.0°-9.0°
k. 2850	WOT	5 MAX.	---

* E.S.O. DE-ENERGIZED
 ** RESET USING LOW IDLE SCREW, IF NECESSARY

PUMP SETTINGS: FOLLOWING PUMP SERVICE

1. ROLLER-TO-ROLLER DIMENSION: **1.9540" ± .0015"**
 (49.63 mm ± 0.04 mm)
 MAXIMUM ECCENTRICITY: **.004"** (0.10 mm) T.I.R.
2. GOVERNOR LINKAGE GAP: **.125" TO .165"** (3.2-4.2 mm)
 (USE KIT #23093 S.B. 95)
3. **0 RPM (WOT):**
 a. SPEED DROOP SETTING: ASSEMBLE SPEED DROOP PER S.B. 97R. ENSURE CONTROL SPRING IS INSTALLED WITH 5 ± ½ TURNS ON CONTROL ROD SPRING GUIDE.
 b. TURN SPEED DROOP ADJUSTING CAP IN 8 TURNS CLOCKWISE FROM MINIMUM DROOP POSITION.
 c. BACK OUT HIGH IDLE SCREW.
4. **1000 RPM (WOT):** OPERATE PUMP FOR 10 MINUTES TO BRING TO OPERATING TEMPERATURE AND CLEAR AIR FROM SYSTEM.
5. **300 RPM (WOT):** WITH SUPPLY PUMP ON, UNSCREW ADVANCE CAP 4 TURNS TO ALLOW FUEL TO BLEED FOR 30 SECONDS. RETORQUE CAP TO **455-505** IN./LBS.
6. **400 RPM (WOT):**
 a. CHECK SHUT-OFF: **4** mm³/STROKE MAX.
 b. CHECK FOR MINIMUM TRANSFER PUMP LIFT OF 18" HG. (60 kPa).
7. **2600 RPM (WOT):**
 a. SET TRANSFER PUMP PRESSURE FOR **89-91** PSI, (614-628 kPa)(SUPPLY SET PER TEST STAND NOTE 3B)
 b. ADJUST RETURN OIL TO **400-700** CC/MIN. RECHECK TRANSFER PUMP PRESURE.
 c. CHECK HOUSING PRESSURE FOR **8.5-13.5** PSI, (59-93 kPa)
8. **1700 RPM (WOT):** SET ADVANCE TRIMMER PLUG FOR **1.0°**.
9. **300 RPM (WOT):** WITH SUPPLY PUMP ON, UNSCREW ADVANCE CAP 4 TURNS TO ALLOW FUEL TO BLEED FOR 30 SECONDS. RETORQUE CAP TO **455-505** IN./LBS.
10. **2600 RPM (WOT):** SET ROLLER-TO-ROLLER FUEL DELIVERY **59.5-60.5** mm³/STROKE.
11. **2800 RPM (WOT):** SET HIGH IDLE SCREW **10-12** mm³/STROKE
12. **1400 RPM (L.I.):** SET LOW IDLE SCREW **13-15** mm³/STROKE
13. **1500 RPM (ADJ. 25 mm³/STROKE):** SET LIGHT LOAD ADVANCE ADJUSTING SCREW FOR **4.0°**.
14. **300 RPM (WOT):** WITH SUPPLY PUMP ON, UNSCREW ADVANCE CAP 4 TURNS TO ALLOW FUEL TO BLEED FOR 30 SECONDS. RETORQUE CAP TO **455-505** IN./LBS.
15. **CHECK POINTS:**

RPM	THROTTLE POSITION	mm ³ /STROKE	ADVANCE	T.P. PRESSURE
a. 150	WOT	27 MIN.	---	10 MIN. **
b. 400	WOT *	4 MAX.	---	---
c. 1400	L.I.	13-15	---	---
d. 1500	WOT	---	0°-0.3°	---
e. 1700	WOT	---	0.5°-1.5°	---
f. 2600	WOT	59.5-60.5	2.5°-3.5°	89-91 ***
g. 2600	WOT *	4 MAX.	---	---
h. 1500	ADJ.	24.5-25.5	3.5°-4.5°	---
i. 2600	ADJ.	44.5-50.5	4.0° MAX.	---
j. 2800	WOT	10-12	8.0°-9.0°	---
k. 2850	WOT	5 MAX.	---	---

* E.S.O. DE-ENERGIZED ** (69 kPa) *** (614-628 kPa)

16. SPECIAL NOTES:

- a. TORQUE ALL FASTENERS PER S.B. 106.
- b. ASSEMBLE THROTTLE LEVER SPACER AND ARM IN B4-L POSITION PER S.B. 164.
- c. SEAL FASTENER PER S.B. 134R.
- d. ASSEMBLE DRIVE COMPONENTS PER S.B. 438.
- e. ADJUST SPEED DROOP PER S.B. 97R (WITH 8 TURNS ON DROOP)
- f. **FOR SERVICE ONLY:**AIR TIME PUMP USING HARTRIDGE BASIC AIR TIMING TOOL 7244-27 WITH INSERT 7244-30 AND PILOT RING 7244-26E. CONNECT AIR SUPPLY WITH **60-100** PSI (4.1-6.9 BAR) TO #1 CYLINDER OUTLET. SET TOOL TO **196°** AND INSTALL TO DRIVE SHAFT. SLOWLY ROTATE TOOL CLOCKWISE UNTIL ROLLERS STRIKE CAM RING AND TOOL STOPS. SCRIBE LINE ON HOUSING FLANGE. REPEAT PROCEDURE TO ENSURE ACCURACY. IF INTERFERENCE BETWEEN STRAIGHT EDGE AND HOUSING FLANGE OCCURS, PLACE WASHER (i.e. 13521) BETWEEN STRAIGHT EDGE AND TOOL.

DESCRIPTION	QTY	P/N	HOUSING & DRIVE GROUP (62754)	P/N	QTY	DESCRIPTION
NUT, HEX	1	26346		21660	1	SCREW ASSY-VENT OR 21661-21665
WASHER, DRIVE SHAFT	1	32787		22601	1	SCREW, BUTTON HD CAP
KEY, WOODRUFF	1	30387		27606	1	WASHER, SEALING
SHAFT, DRIVE	1	32901		23107	1	COVER, TIMING WINDOW
SEAL, DRIVE SHAFT BLK	2	10453		21194	2	SCREW, HEX WASH HD M
SEAL, O-RING	1	23367		27603	1	GASKET, TIMING COVER
SCREW, HEAD LOCKING	2	11331		12259	1	SCREW, PAN HEAD
HOUSING ASSY, PUMP	1	34605		10464	1	WASHER, SEALING
SLEEVE, THROTTLE STOP	1	24364		26180	1	BEARING, THRUST
SCREW, NAME PLATE	2	24419		21521	1	WASHER, THRUST
NAME PLATE	1	10394		21522	1	WASHER, DR SH SPRING
SEAL, O-RING	1	17438		10443	1	RING, RETAINING
SEAL, O-RING	1	32884				
SCREW, LLA ORIFICE	1	33985				

NOTES:

DESCRIPTION	QTY	P/N	HEAD & ROTOR GROUP (61812)	P/N	QTY	DESCRIPTION
ROLLER, CAM	2	11141		34323	1	H&R ASSY, HYD 4 CYL
SHOE, CAM ROLLER -10	2	24569		11086	2	PLUNGER, BASIC USE 11087-11090 (STD) OR 11097-11100 (O/S) AS IND. ON ROTOR SB 60R
CAM RING	1	32164		11438	1	SCREW, SOCKET SET
SEAL, O-RING	1	27245		12216	1	SCREW, HEAD PLUG
SPRING, LEAF	1	11196		20727	4	CONNECTOR, FUEL LINE
SCREW, LEAF SPRING	1	11175		29710	1	SCREW, TX DR SOC HD
FILTER, HD LOC SCREW	1	24565		29384	1	PLATE-LOCK
				27601	1	SEAL, O-RING
				13837	1	SCREW, DEL VALV
				16440	1	STOP, DELIVERY VALVE
				16441	1	SPRING, DLVY VALVE
				13821	1	VALVE, DELIVERY 15MM OR 13822 (O/S) AS REQ'D REF. S.B. 143B

NOTES:

DESCRIPTION	QTY	P/N	TRANSFER PUMP GROUP (62126)	P/N	QTY	DESCRIPTION
SEAL, TRANSFER PUMP	1	27608		32859	1	RETAINER, ROTOR
RETAINER, ROTOR	1	19870		21232	1	LINER, TRANS. PUMP
SPRING, T.P. BLADE	2	15699		20511	4	BLADE, TRANS PUMP OR 20512 REF. S.B. 304
ROLL PIN	1	19837		19906	1	RING, LINER LOCATING
SEAL, REG. SLEEVE	1	19844		33040	1	REG ASSY, PORTING
PISTON, REGULATING	1	31240		23915	1	SPRING, REGULATING
PLUG, END PLATE ADJ	1	32642		32636	1	CAP, T.P. END
FILTER, INLET	1	28986				

NOTES:

DESCRIPTION	QTY	P/N	GOVERNOR GROUP	P/N	QTY	DESCRIPTION
SPRING, SPEED DROOP GREEN	1	13563		20240	1	ROD ASSY-CONTROL
ARM ASSY, GOVERNOR	1	29060		13554	1	PIN, CONTROL SPRING
SHAFT, GOV ARM	1	12214		27606	1	WASHER, SEALING
SEAL, O-RING	2	31332		12966	1	SEAL, O-RING
NUT, PIVOT SHAFT RET.	2	12288		20243	1	CAP ASSY, ADJUSTING
SPRING, DAMPER	1	20475		20355	1	CAP, DROOP CONT. LOCK
PISTON ASSY, DAMPER	1	16572		27599	1	GUIDE, CONTROL ROD
SLEEVE, GOV. THRUST	1	21312		16568	1	BARREL ASSY, DAMPER
WEIGHT, GOVERNOR	6	11643		21895	1	ARM ASSY-MET.VALVE
WASHER, THRUST	1	23272		11563	1	VALVE, METERING * SEE NOTE
RING, RETAINING	1	12285		26427	1	SHIM, MET.VALVE SPRG
				20359	1	SPRING, MTR VALVE
				29111	1	RETAINER ASSY, GOV WT

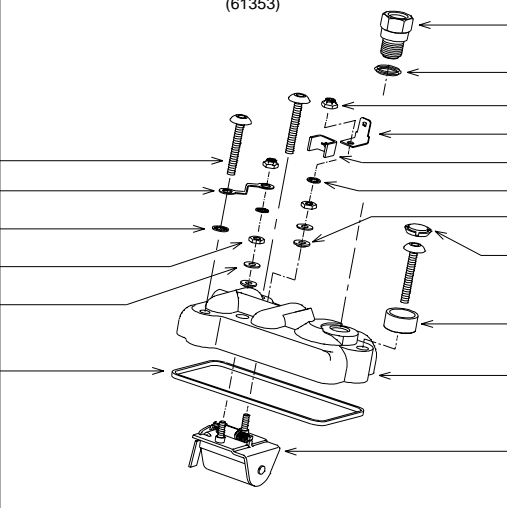
NOTES: * O.S. METERING VALVE AND ARM ASSEMBLY 22249 REFERENCE S.B. 336

DESCRIPTION	QTY	P/N	LINKAGE GROUP	P/N	QTY	DESCRIPTION
SEAL, O-RING	2	17438		16279	1	SHAFT, SHUT-OFF
WASHER, SPACER	2	14408		12253	1	CLIP, SHAFT RETAINER
SHAFT ASSY, THROTTLE	1	12015		12221	1	LEVER, THROTTLE FORK
SCREW, LEVER ADJUST	1	12972		15306	1	SPACER, GOV SPRING
NUT, HEX	1	12174		12169	1	SCREW, LEVER ADJUST
SPACER, THR.LEVER ADJ	1	16135		12174	1	NUT, HEX
SCREW, SOCKET CAP	1	12051		18021	1	HOOK ASSY, GOV.LINK.
ARM, ADJUSTING SPACER	1	16136		12360	1	SCREW, HEX HEAD MACH.
LEVER ASSY, THROTTLE	1	16392		12362	1	LOCKWASHER, SHAKEPROOF
SPRING, THROT. LEVER	1	13003		18020	1	HOOK, GOV LINK
SCREW, SOCKET HD CAP	1	15668		12358	1	LINK ASSY, ADJUSTING
RETAINER, TH.LEV.SPRG	1	13010		11919	1	SPRING, GOVERNOR LINK

NOTES: THROTTLE LEVER BUSHING OUT

DESCRIPTION	QTY	P/N	AUTOMATIC ADVANCE GROUP	P/N	QTY	DESCRIPTION
SEAL, O RING	1	32948		34633	1	SEAL, RECT SECTION
PLUG ASSY, ADVANCE	1	34639		22649	1	PLUG, SERVO ADV. END
PISTON, LLA	1	34241		32533	1	SEAL, O-RING
PLUG, SPEED ADV. ADJ	1	34245		19834	1	SCREW, REED VALVE
SPRING, LLA	1	34285		21146	1	VALVE, REED
SEAL,O-RING	1	33613		27602	2	SEAL, O-RING
SCREW, SPRING ADJ	1	33614		22238	1	SCREW, HEAD LOCATING 0.02
SEAL, O RING	1	32948				
CAP, LIGHT LOAD ADV	1	35109				
PISTON, ADVANCE	1	33399				
SEAT, SPRING	1	23197				
SPRING, LLA INNER	1	33167				
VALVE, SERVO ADV	1	32818				
PIN, CAM ADVANCE	1	21147				
SEAL, O-RING	1	27610				
PLUG, ADV. SCREW HOLE	1	23056				

NOTES:

DESCRIPTION	QTY	P/N	COVER GROUP	P/N	QTY	DESCRIPTION
			(61353)			
						
				22109	1	REG ASSY, HSG PRESS
				27607	1	SEAL, O-RING
				14760	2	NUT, LOCK
				22985	1	TERMINAL, BLADE
SCREW, BUTTON HD CAP	3	22351		21618	1	INSULATOR, TERMINAL
STRAP, TERM GROUNDING	1	20951		12049	2	LOCK WASHER, TOOTH
LOCK WASHER, TOOTH	1	18493		12500	2	WASHER, TERM INSUL
NUT, HEX	2	12519		30789	1	CAP, COVER SCREW
WASHER, PLAIN	2	18501		30788	1	CUP, COVER SCREW
SEAL, RECT SECTION	1	27244		21898	1	COVER, GOV CONTROL
				26922	1	SOLENOID, 12V ETSO 2-23190 TUBE, INSULATE

NOTES:

FOR SERVICE USE ONLY
APPLICABLE SERVICE ASSEMBLIES

THROTTLE SHAFT BUSHING REPLACEMENT	17776
GASKET KIT	24373
ESO MOUNTING AND GROUNDING KIT	26431
PILOT TUBE REPLACEMENT (REF SB 171C)	32980

FOR ENGINEERING USE ONLY
DATE CHANGE NO. EDITION

08/01/2001	27377	1
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