B55W-1

Shop Manual

023-00067E

Serial Number 1001 and Up

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This documentation may include attachments and optional equipment that is not available in your machine's package. Please call your distributor for additional items that you may require.

Illustrations used throughout this manual are used only as a representation of the actual piece of equipment, and may vary from the actual item.

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WHEEL EXCAVATOR SAFETY

⚠ CAUTION!

Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

Always use tools and equipment that is in good working order.

Use lifting and hoisting equipment capable of safely handling load.

Remember, that ultimately safety is your own personal responsibility.

MODEL	SERIAL NUMBER RANGE
B55W-1	1001 and Up

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GENERAL SPECIFICATIONS

			B55W-1			
Weight			5,550 kg			
Bucket Capacity (PCSA/CECE)			0.174 m^3/ 0.15 m^3			
Bucket width			700 mm			
Engine	Manufacturer and Model No.		YANMAR 4TNV94L			
	Displacement		3,054 cc			
	Rated output		54.9 ps @ 2,400 rpm			
	Torque		19.3 kg•m @ 1,600 rpm			
Working range	Maximum digging depth		3,405 mm			
	Maximum digging height		5,715 mm			
	Maximum dump height		4,303 mm			
	Maximum digging radius		6,010 mm			
	Minimum turning radius		5,000 mm			
	Boom swing angle		80° (left), 50° (right)			
Performance	Travel speed		25 km/h (20 km/h)			
	Swing speed		9.1 rpm			
	Gradeability		30°			
	Tractive effort		2,800 kg			
Main data	Overall length		5,406 mm			
	Overall width		1,920 mm			
	Overall height		3,795 mm			
	Blade	Width x Height (option)	1,920 x 412 mm			
		Lowest road clearance	280 mm			
Hydraulic pressure	Pump type		Variable piston pump + gear pump			
	Main pressure; kg/cm^2 (psi)		P1	P2	P3	P3
			230	230	210	100
	Delivery; liter/min (gpm)		60	60	38.9	21.4
	Hydraulic oil capacity		72 liters			
Others	Engine oil capacity		Minimum 5.7 liters Maximum 9.2 liters			
	Fuel tank capacity		120 liters			
	Coolant capacity		11.5 liters			

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TORQUE VALUES FOR STANDARD METRIC FASTENERS

NOTE: *The units for the torque values are kg•m (ft lb).*

Dia. x Pitch (mm)	Grade										
	3.6 (4A)	4.6 (4D)	4.8 (4S)	5.6 (5D)	5.8 (5S)	6.6 (6D)	6.8 (6S)	6.9 (6G)	8.8 (8G)	10.9 (10K)	12.9 (12K)
M5 x Std.	0.15 (1.08)	0.16 (1.15)	0.25 (1.80)	0.22 (1.59)	0.31 (2.24)	0.28 (2.02)	0.43 (3.11)	0.48 (3.47)	0.50 (3.61)	0.75 (5.42)	0.90 (6.50)
M6 x Std.	0.28 (2.02)	0.30 (2.16)	0.45 (3.25)	0.40 (2.89)	0.55 (3.97)	0.47 (3.39)	0.77 (5.56)	0.85 (6.14)	0.90 (6.50)	1.25 (9.04)	1.50 (10.84)
M7 x Std.	0.43 (3.11)	0.46 (3.32)	0.70 (5.06)	0.63 (4.55)	0.83 (6.00)	0.78 (5.64)	1.20 (8.67)	1.30 (9.40)	1.40 (10.12)	1.95 (14.10)	2.35 (16.99)
M8 x Std.	0.70 (5.06)	0.75 (5.42)	1.10 (7.95)	1.00 (7.23)	1.40 (10.12)	1.25 (9.04)	1.90 (13.74)	2.10 (15.18)	2.20 (15.91)	3.10 (22.42)	3.80 (27.48)
M8 x 1	0.73 (5.28)	0.80 (5.78)	1.20 (8.67)	1.00 (7.23)	1.50 (10.84)	1.35 (9.76)	2.10 (15.18)	2.30 (16.63)	2.40 (17.35)	3.35 (24.23)	4.10 (29.65)
M10 x Std.	1.35 (9.76)	1.40 (10.12)	2.20 (15.91)	1.90 (13.74)	2.70 (19.52)	2.35 (19.99)	3.70 (26.76)	4.20 (30.37)	4.40 (31.18)	6.20 (44.84)	7.20 (52.07)
M10 x 1	1.50 (10.84)	1.60 (11.57)	2.50 (18.08)	2.10 (15.18)	3.10 (22.42)	2.80 (20.25)	4.30 (31.10)	4.90 (35.44)	5.00 (36.16)	7.00 (50.63)	8.40 (60.75)
M12 x Std.	2.40 (17.35)	2.50 (18.08)	3.70 (26.76)	3.30 (23.86)	4.70 (33.99)	4.20 (30.37)	6.30 (45.56)	7.20 (52.07)	7.50 (54.24)	10.50 (75.94)	12.50 (90.41)
M12 x 1.5	2.55 (18.44)	2.70 (19.52)	4.00 (28.93)	3.50 (25.31)	5.00 (36.16)	4.50 (32.54)	6.80 (49.18)	7.70 (55.69)	8.00 (57.86)	11.20 (81.00)	13.40 (96.92)
M14 x Std.	3.70 (26.76)	3.90 (28.20)	6.00 (13.23)	5.20 (37.61)	7.50 (54.24)	7.00 (50.63)	10.00 (72.33)	11.50 (83.17)	12.00 (86.79)	17.00 (122.96)	20.00 (144.66)
M14 x 1.5	4.10 (29.65)	4.30 (31.10)	6.60 (47.73)	5.70 (41.22)	8.30 (60.03)	7.50 (54.24)	11.10 (80.28)	12.50 (90.41)	13.00 (94.02)	18.50 (11.26)	22.00 (158.12)
M16 x Std.	5.60 (40.50)	6.00 (43.39)	9.00 (65.09)	8.00 (57.86)	11.50 (83.17)	10.50 (75.94)	15.50 (112.11)	17.90 (129.47)	18.50 (133.81)	26.00 (188.05)	31.00 (224.22)
M16 x 1.5	6.20 (44.84)	6.50 (47.01)	9.70 (70.16)	8.60 (62.20)	12.50 (90.41)	11.30 (81.73)	17.00 (122.96)	19.50 (141.04)	20.00 (144.66)	28.00 (202.52)	35.50 (256.77)
M18 x Std.	7.80 (56.41)	8.30 (60.03)	12.50 (90.41)	11.00 (79.56)	16.00 (115.72)	14.50 (104.87)	21.00 (151.89)	27.50 (198.90)	28.50 (206.14)	41.00 (296.55)	43.00 (311.01)
M18 x 1.5	9.10 (65.82)	9.50 (68.71)	14.40 (104.15)	12.50 (90.41)	18.50 (133.81)	16.70 (120.79)	24.50 (177.20)	27.50 (198.90)	28.50 (206.14)	41.00 (296.55)	49.00 (354.41)
M20 x Std.	11.50 (83.17)	12.00 (86.79)	18.00 (130.19)	16.00 (115.72)	22.00 (159.12)	19.00 (137.42)	31.50 (227.83)	35.00 (253.15)	36.00 (260.38)	51.00 (368.88)	60.00 (433.98)
M20 x 1.5	12.80 (92.58)	13.50 (97.64)	20.50 (148.27)	18.00 (130.19)	25.00 (180.82)	22.50 (162.74)	35.00 (253.15)	39.50 (285.70)	41.00 (296.55)	58.00 (419.51)	68.00 (491.84)
M22 x Std.	15.50 (112.11)	16.00 (115.72)	24.50 (177.20)	21.00 (151.89)	30.00 (216.99)	26.00 (188.05)	42.00 (303.78)	46.00 (332.71)	49.00 (354.41)	67.00 (484.61)	75.00 (542.47)
M22 x 1.5	17.00 (122.96)	18.50 (133.81)	28.00 (202.52)	24.00 (173.59)	34.00 (245.92)	29.00 (209.75)	47.00 (339.95)	52.00 (44.76)	56.00 (405.04)	75.00 (542.47)	85.00 (614.80)
M24 x Std.	20.50 (148.27)	21.50 (155.50)	33.00 (238.68)	27.00 (195.29)	40.00 (289.32)	34.00 (245.92)	55.00 (397.81)	58.00 (419.51)	63.00 (455.67)	82.00 (593.10)	92.00 (655.43)
M24 x 1.5	23.00 (166.35)	35.00 (253.15)	37.00 (267.62)	31.00 (224.22)	45.00 (325.48)	38.00 (202.52)	61.00 (441.21)	67.00 (484.61)	74.00 (535.24)	93.00 (672.66)	103.00 (744.99)

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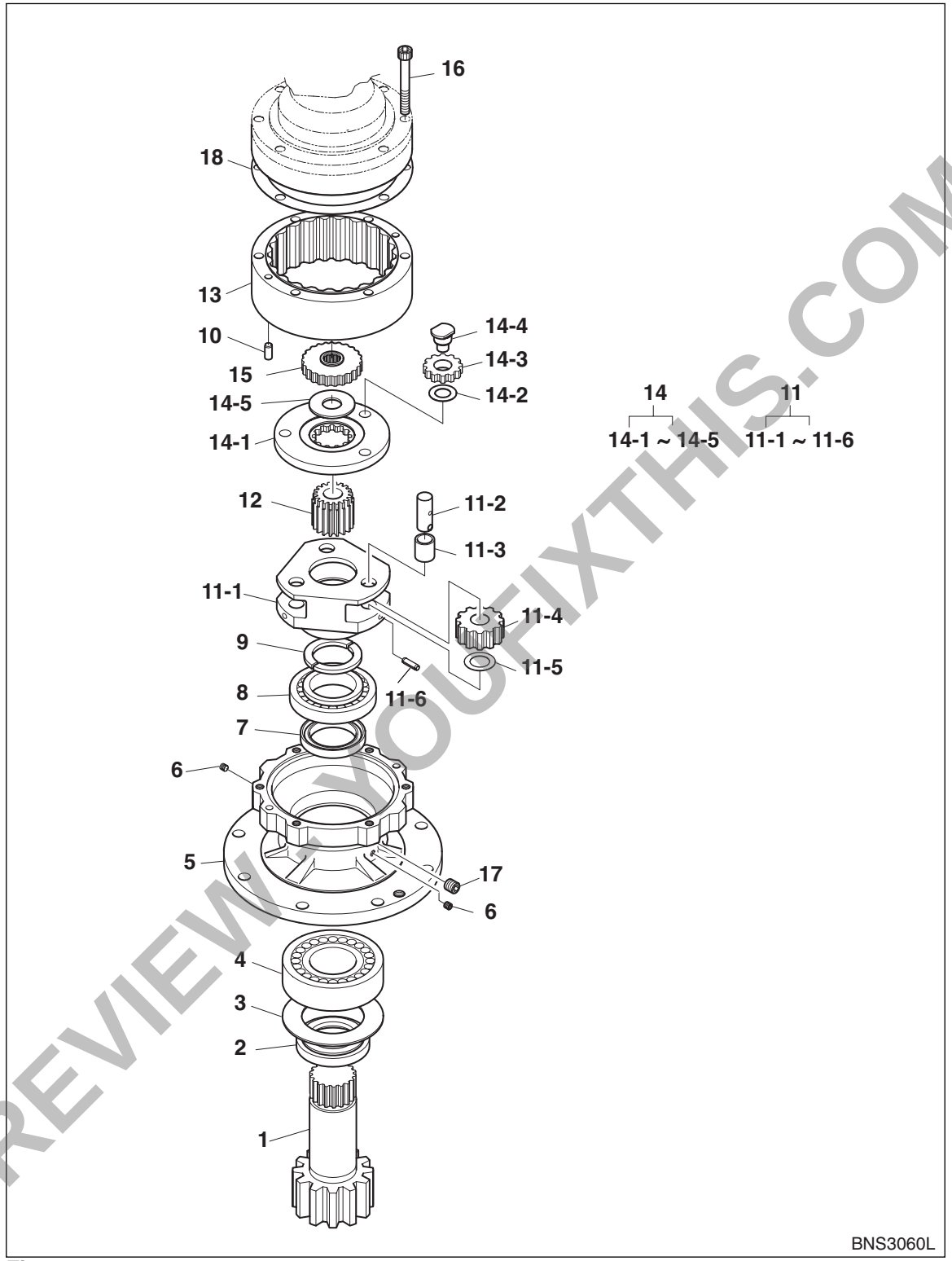


Figure 1

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Symptoms	Possible Causes	Remedies
1. No rotation and –□		
a. Pressure at swing motor inlet increases	Swing brake not releasing	Check brake engagement and disengagement, check release pressure
	Internal damage to gearbox drive train	Replace broken gears, drive train assemblies
	Overload	Reduce load weight
b. Pressure at swing motor inlet shows no increase, **and** the swing motor is making irregular noises	Swing motor drive shaft damage	Replace swing motor
	Internal damage to gearbox drive train	Repair/replace broken or faulty assemblies
c. Pressure at swing motor inlet shows no increase, but **without** irregular noises from the swing motor	Hydraulic pump or valve broken	Troubleshoot hydraulic system
2. Oil leakage		
a. From drive shaft	Oil seal damaged	Replace oil seal
b. From bolted connections or other assembled surfaces	Assembly compound (joint sealer) old and not sealing, bolt not tight or flange warped	Disassemble and check mating surfaces. Reapply Loctite, torque bolts to specifications
3. Excess heat		
Gearbox casing becomes excessively hot, with or without irregular noise(s) during operation	Low oil level	Replace oil, refill to specified level
	Bearings or gear worn but not completely inoperative	Repair or replace gearbox

HAOE960L

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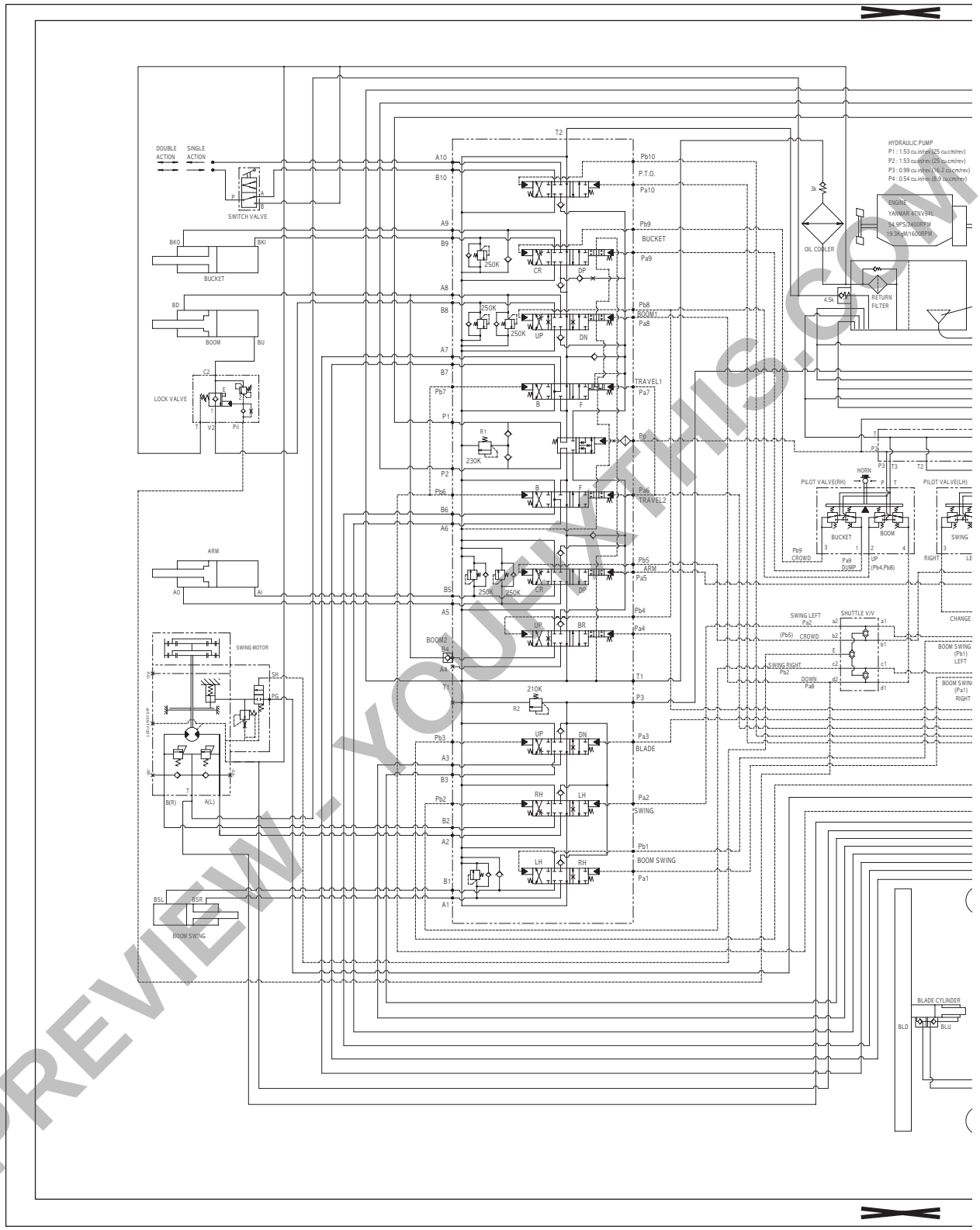


Figure 2

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AIR-CONDITIONING SYSTEM CIRCUIT DIAGRAM

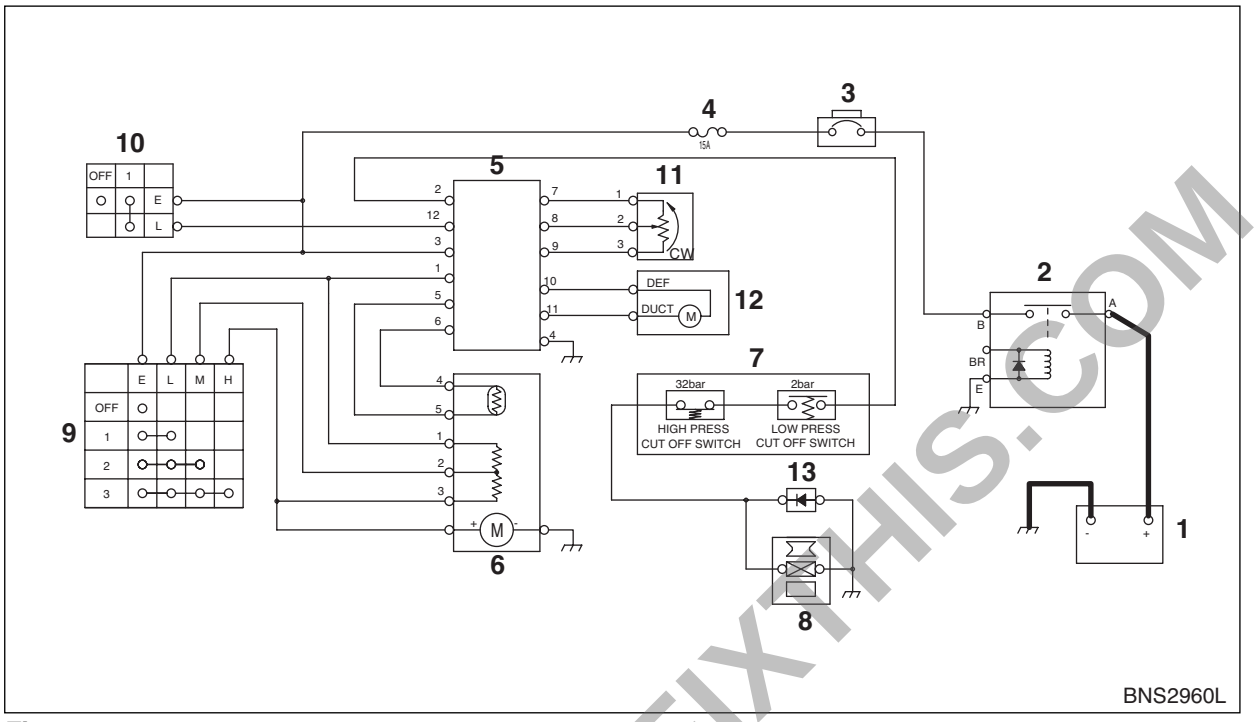


Figure 2

Reference Number	Description
1	Battery
2	Battery Relay
3	Circuit Breaker
4	Fuse
5	A/C Controller
6	A/C Unit
7	Receiver Dryer (Low/high) Pressure Cutoff Switch

Reference Number	Description
8	Compressor
9	A/C Blower Switch
10	Foot/Def. Select Switch
11	Temp. Control Dial
12	Foor/Def. Actuator
13	Diode

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DISASSEMBLY

⚠ CAUTION!

1. **Place the disassembled parts in a safe location so they do not get damaged.**
2. **Prior to reassembly, inspect each part for any damages.**
3. **Clean and dry each part before reassembly.**
4. **Clean all surface of sealing compound.**
5. **Torque all bolts according to specifications.**

1. Remove swing motor assembly from the equipment and drain gear oil from housing by opening drain plug.

⚠ CAUTION!

Please take out gear oil with clean container and check for wearing out part.

2. Remove mounting bolts (19) and separate motor from reduction gear.
3. Remove No. 1 sun gear (7)
4. Remove No. 1 carrier assembly with No. 1 planetary gear (6).
5. Disassembling No. 1 carrier assembly.
   A. Remove stopper ring (24) and separate thrust washers on the upper part.

⚠ CAUTION!

Mark on each planetary gear and pin so that they can be replaced to their proper location during reassembly.

   B. Remove planetary gear (6).
   C. Remove thrust washers from lower section of planetary gear (6).

      If the No. 1 pin (11) is not defective, do not remove it from the No. 1 carrier (9). If it must be replaced, tap on the inner side of the pin to remove.

6. Remove No. 2 sun gear (5).
7. Remove No. 2 carrier assembly.
8. Disassembling No. 2 carrier assemble.

If there are no visible defects after inspection, do not disassemble the No. 2 carrier assembly.

   A. Place a dowel at the opposite end of No. 2 pin (10) and tap it with a hammer to cut off the spring pin (27) and remove No. 2 pin (10).
   B. Remove No. 2 planetary gear (4) and thrust washer (12).

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MAINTENANCE INTERVALS

Operation	Frequency	Lubricants
• Check levels:	Monthly	• **SAE85W90 API GL3**
• Oil change:	Every 1000 hours *	

* Initially after 100 working hours

CONVERSION TABLES

1 Atm ≅ 1 bar ≅ 10^5 P_A ≅ 14.4 Psi
Pa

	N	daN	kN	kg	lbs
1N	1	0.1	0.001	0.102	0.225
1daN	10	1	0.01	1.02	2.25
1kN	1000	100	1	102	225
1kg	9.81	0.981	0.00981	1	2.205

	Nm	daNm	kNm	kgm	lb-in
1Nm	1	0.1	0.001	0.102	8.854
1daNm	10	1	0.01	1.02	88.54
1kNm	1000	100	1	102	8854
1kgm	9.81	0.981	0.00981	1	86.8
1lb-in	0.1129	0.01129	0.0001129	0.01152	1

TIGHTENING TORQUES

	Type of Bolt		
Size of bolt	**8G/8.8 Nm**	**10k/10.9 Nm**	**12k/10.9 Nm**
M4	2.9	4.1	
M6	10.0	14.0	
M8	25.0	35.0	
M10	49.0	69.0	
M10x1.25	52.0	73.0	88.0
M12	86.0	120.0	
M14	135.0	190.0	
M14x1.5	150.0	210.0	250.0
M16	210.0	295.0	
M18x1.5	325.0	460.0	550.0
A22	550		

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FUEL TRANSFER PUMP

⚠ CAUTION!

Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

Always use tools and equipment that is in good working order.

Use lifting and hoisting equipment capable of safely handling load.

Remember, that ultimately safety is your own personal responsibility.

MODEL	SERIAL NUMBER RANGE
Mega 130	0001 and Up
Mega 160	0001 and Up
Mega 200-III	1001 and Up
Mega 200-V (Tier I & II)	1001 and Up
Mega 250-III	1001 and Up
Mega 250-V (Tier I)	1001 thru 2000
Mega 250-V (Tier II)	2001 and Up
Mega 300-V (Tier I)	1001 thru 2000
Mega 300-V (Tier II)	2001 and Up
Mega 400-III PLUS	1001 and Up
Mega 400-V	1001 and Up
Mega 500-V	1001 thru 2000
Mega 500-V (Tier II)	2001 and Up
Solar 75-V	1001 and Up
Solar 130LC-V	0001 and Up
B55W-1	1001 and Up
Solar 130W-V	0001 and Up
Solar 140W-V	1001 and Up
Solar 160W-V	1001 and Up

Models continued on back of cover.

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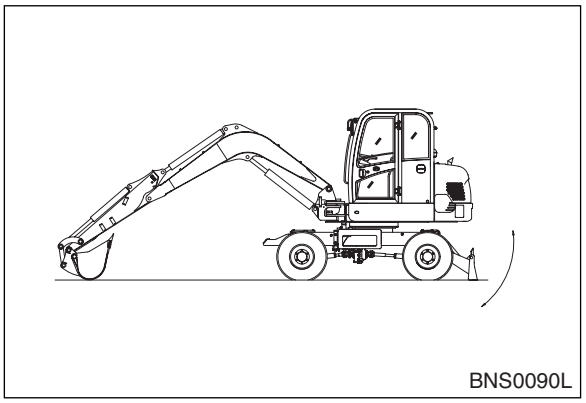
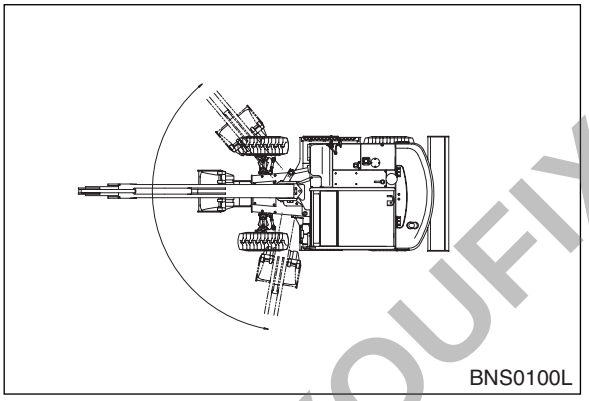
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Cylinder	Measuring Conditions		Unit	Reference Value
				Based On New Machine
Dozer	 BNS0090L	UP	SEC	3.1±0.3
		DOWN	SEC	2.8±0.3
Boom swing	 BNS0100L	LEFT	SEC	9.1±0.5
		RIGHT	SEC	7.1±0.5

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12. Tighten screws using a torque wrench setting of 25-26 Nm.

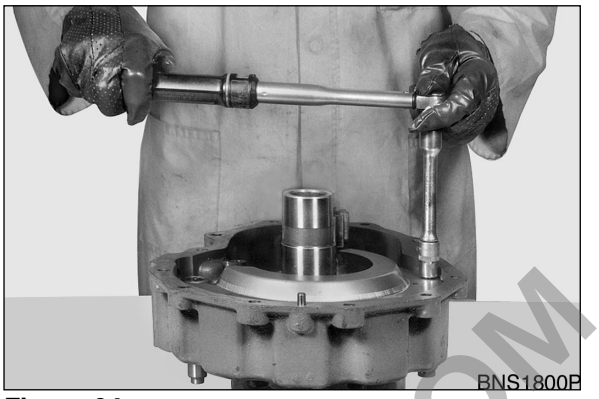


Figure 64

13. Re-assemble needle bearings, gear and distance piece.

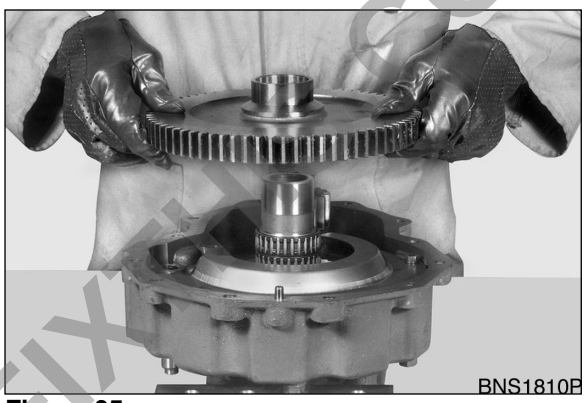


Figure 65

14. Check the insertion of pins.

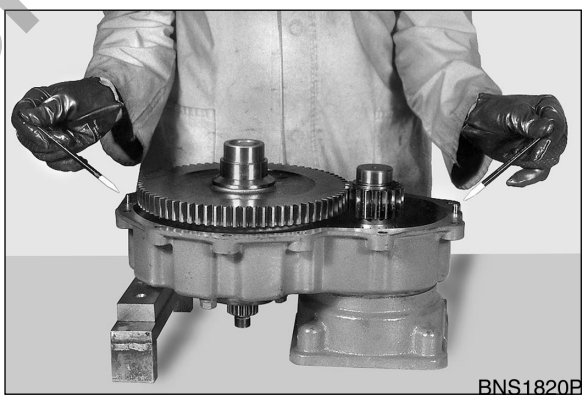


Figure 66

15. Spread LOCTITE 510 on the surface and assemble the cover.

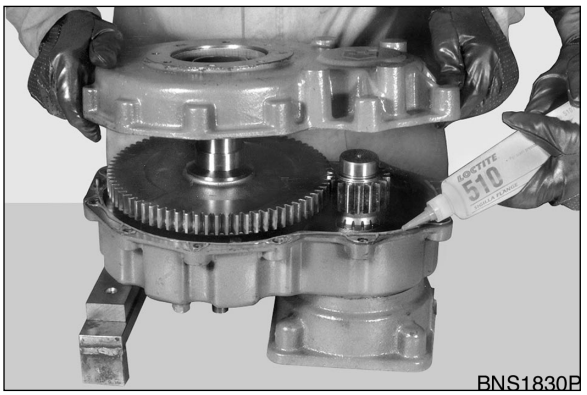


Figure 67

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MODEL	CYLINDER	øA	øB	C	D	MODEL (CYLINDER)
S250LC-V	ARM	145 mm (5.71 in)	105 mm (4.13 in)	12 mm (0.47 in)	5 mm (0.20 in)	S255LC-V (ARM) S290LL (BOOM, BUCKET) S330LC-V (BUCKET (OP), BOOM, BUCKET) S340LC-V (BUCKET (OP), BOOM, BUCKET) S370LC-V (BUCKET (OP), BUCKET) S390LL (BOOM, BUCKET)
S290LC-V	S/ARM	147 mm (5.79 in)	107 mm (4.21 in)	12 mm (0.47 in)	5 mm (0.20 in)	S290LC-V (ARM) S300LC-V (ARM, S/ARM) S370LC-V (BOOM)
S290LL	ARM	155 mm (6.10 in)	115 mm (4.53 in)	12 mm (0.47 in)	5 mm (0.20 in)	S140W-V (ARTI.) S160W-V (ARTI.) S400LC-V (ARM) S420LC-V (ARM)
S450LC-V	ARM	170 mm (6.69 in)	129 mm (5.08 in)	12 mm (0.47 in)	5 mm (0.20 in)	S470LC-V (ARM)
S55W-V	ARM	106 mm (4.17 in)	66 mm (2.60 in)	12 mm (0.47 in)	5 mm (0.20 in)	
	BOOM	112 mm (4.41 in)	72 mm (2.84 in)	12 mm (0.46 in)	5 mm (0.20 in)	S55-V PLUS (ARM, BOOM) S75-V (ARM, SWIVNG)
B55W-1	ARM	106 mm (4.17 in)	66 mm (2.60 in)	12 mm (0.47 in)	5 mm (0.20 in)	
	BOOM	112 mm (4.41 in)	72 mm (2.84 in)	12 mm (0.46 in)	5 mm (0.20 in)	S55-V PLUS (ARM, BOOM) S75-V (ARM, SWIVNG)
S80W-II	ARM	120 mm (4.72 in)	79 mm (3.11 in)	10 mm (0.39 in)	5 mm (0.20 in)	S70-III (ARM) S80W-II (BOOM) MEGA 130-III (LIFT) S140W-V (DOZER) S160W-V (DOZER)
	BOOM	120 mm (4.72 in)	79 mm (3.11 in)	10 mm (0.39 in)	5 mm (0.20 in)	S70-III (BOOM, DOZER) S75-V (DOZER) S130LC-V (DOZER) MEGA 200-III TC (BUCKET) MEGA 130-III (BUCKET)
	BUCKET	110 mm (4.33 in)	69 mm (2.72 in)	10 mm (0.39 in)	5 mm (0.20 in)	S70-III (BUCKET)
S130W-V	BOOM	120 mm (4.72 in)	80 mm (3.15 in)	12 mm (0.47 in)	5 mm (0.20 in)	S75-V (BOOM)
S170W-V	ARM	140 mm (5.52 in)	98 mm (3.86 in)	12 mm (0.47 in)	5 mm (0.20 in)	S170LC-V (ARM) S180W-V (ARM) S250LC-V (BOOM, BUCKET) S255LC-V (BOOM, BUCKET) S290LC-V (S/BUCKET, BUCKET) S300LC-V (S/ BUCKET, BUCKET)
S210W-V	DOZER	132 mm (5.20 in)	92 mm (3.62 in)	12 mm (0.47 in)	5 mm (0.20 in)	S180W-V (DOZER) S180W-V (OUTRIGGER) S210W-V (OUTRIGGER)
P/S: Power Steering						

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Remove fixing screw (cylinder).
Remove cylinder.

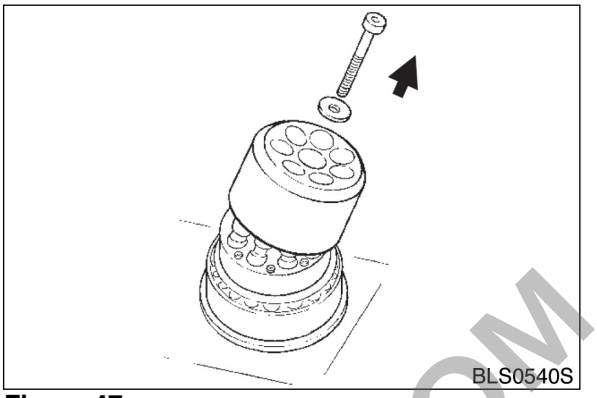


Figure 47

Disassemble retaining plate.

NOTE: *Screws are glued.*
Use Torx-tools.

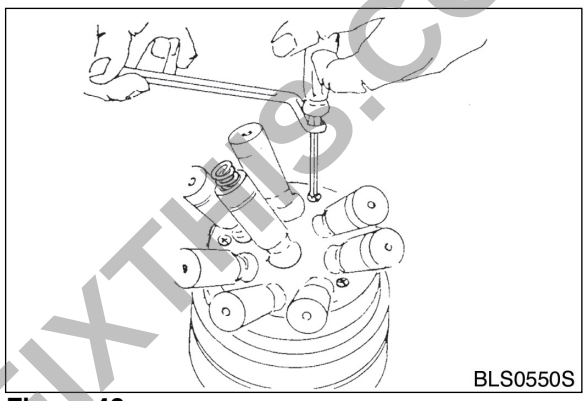


Figure 48

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