SOLAR 75-V (S/N 1001 THRU 1153)

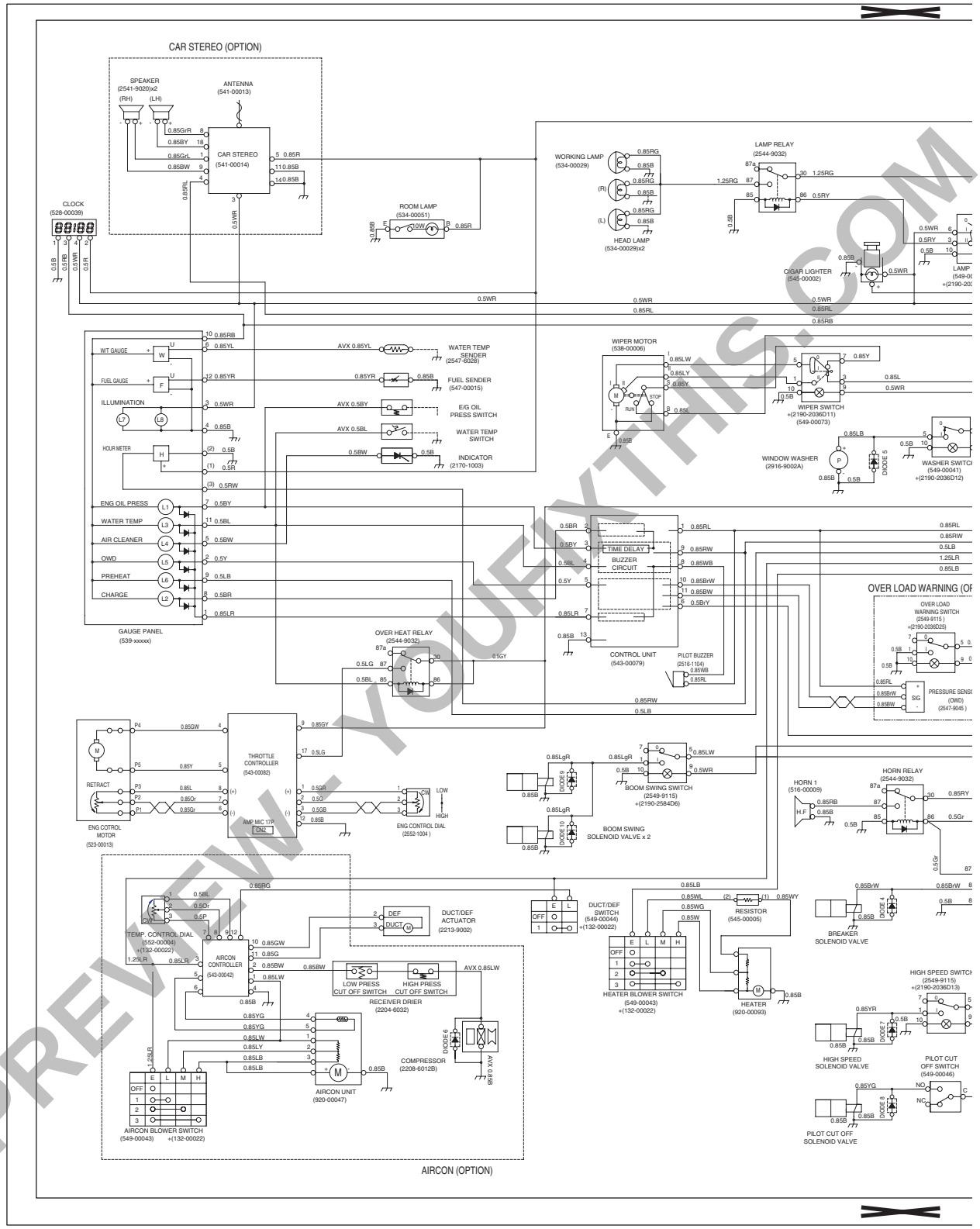


Figure 2

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SOLAR 75-V (STANDARD)

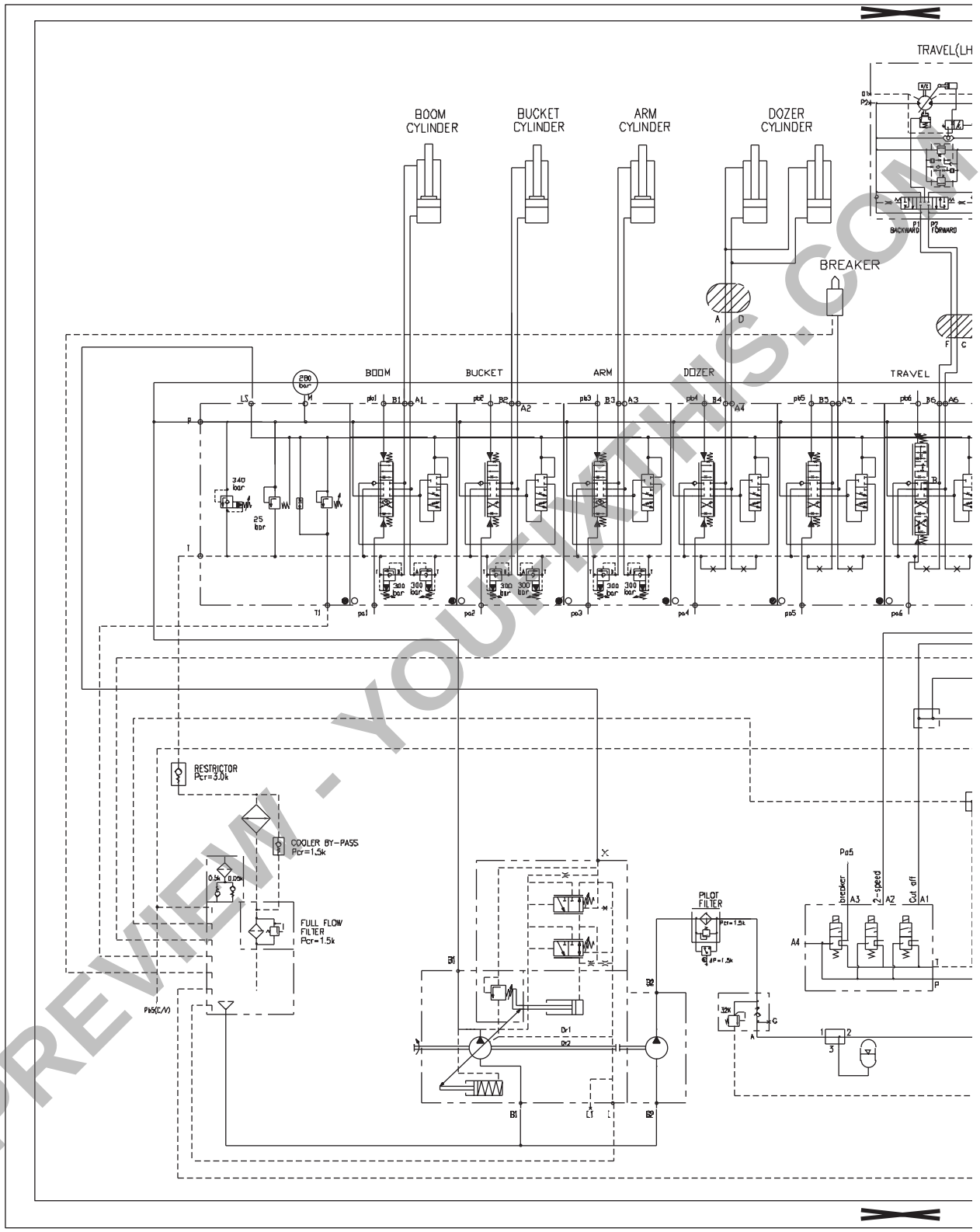


Figure 2

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COMPONENT LOCATIONS

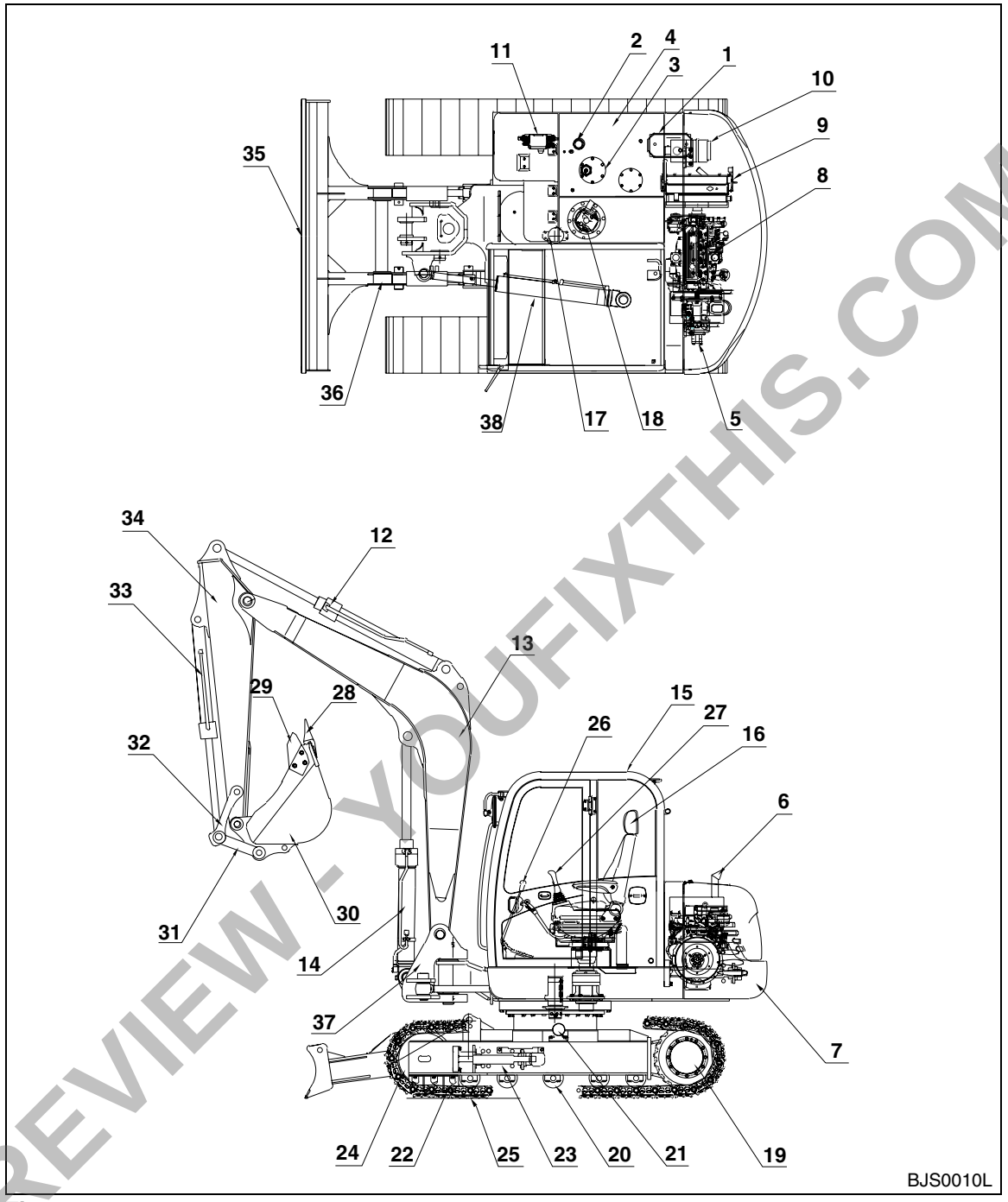


Figure 1

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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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TROUBLESHOOTING

Refrigerant Pressure Check

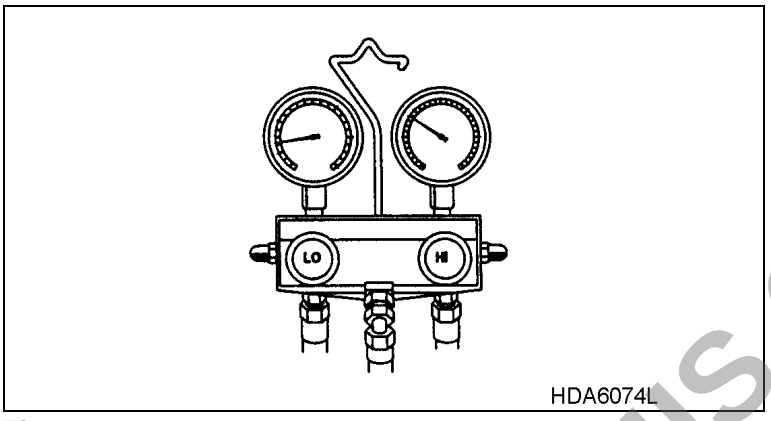


Figure 3

1. Open all doors and windows.
2. Install manifold gauge set.
3. Start engine and maintain engine speed at 1,800 - 2,000 rpm.
4. Check high / low-pressure of refrigerant.

1	**High-pressure: 8 - 10 kg/cm^2 (114 - 142 psi)** **Low-pressure: Approximately 1 kg/cm^2 (14 psi)**		
Possible Cause: Low Refrigerant Level			
Step	**Inspection Item**		**Remedy**
1	Check for traces of refrigerant oil.	Yes	Reassemble using correct tightening torque.
		No	Go to next step.
2	Using a leak detection device or soapy water check for refrigerant leakage at all major components and joints.	Yes	Repair leaking component.
		No	Recharge system to correct pressure.

2	**High-pressure: Over 23 kg/cm^2 (327 psi)** **Low-pressure: Approximately 2.5 - 3 kg/cm^2 (35 - 42 psi)**		
Possible Cause: Overcharge, Frost on condenser			
Step	**Inspection Item**		**Remedy**
1	Check for condenser pin damage or contamination.	Yes	Clean, repair or replace condenser.
		No	Refrigerant overcharge.

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GENERAL SPECIFICATIONS

Shipping Weight	8 metric tons (17,643 lb), includes 10% fuel, boom, 1,800 mm (5' 10") arm, 0.28 m^3 backhoe bucket and standard shoes
Operating Weight	Subtract weight of full fuel tank and operator.
Shipping Weights With Optional Track Shoes	Add 20 kg (44 lb) for Rubber shoe
Major Component Weights	Standard Boom 410 kg (904 lb)
	1,800 mm (5' 10") Arm 177 kg (390 lb)
	Boom Swing Cylinder 68 kg (150 lb)
	Boom Cylinder 104 kg (230 lb)
	Arm Cylinder 79 kg (174 lb)
	Bucket Cylinder 55 kg (121 lb)
	Counterweight 860 kg (1,896 lb)
	Upper Turntable 770 kg (1,698 lb)
	Lower - below Swing Bearing 630 kg (1,389 lb)
Digging Forces:	
Bucket Cylinder	KN or 5,500 kg (12,130 lb)
Arm Cylinder	KN or 4,500 kg (9,925 lb) with 1,800 mm (5' 10") standard arm
Fuel Tank Capacity	110 liters (28.5 U.S. gal)
Hydraulic System Capacity	150 liters (39.6 U.S. gal)
Hydraulic Reservoir Capacity	93 liters (24.6 U.S. gal)
Bucket Heaped Capacity Range	PCSA 0.12 - 0.28 m^3 (0.16 - 0.37 yd^3)
	IMPORTANT: Refer to the Load Weight, Bucket and Arm Length Compatibility Table for information on which bucket sizes may be used safely with which arm length, for load material weights.
Shoe Type	Triple Grouser
Shoe Width and Optional Sizes	450 mm (18") - standard
	450 mm (18") - Rubber Type - optional
Ground Pressure Ratings:	
Standard 450 mm (23.6") shoe -	0.38 kg/cm^2 (5.40 psi)
Transport Dimensions	
Overall Shipping Length (standard arm)	6,280 mm (20' 7")
Overall Shipping Length (2.2 m (7' 3") option arm)	5,930 mm (19' 5")
Overall Shipping Width	2,210 mm (7' 3")
Overall Shipping Height (to top of cabin) -standard arm	2,630 mm (8' 8")
Overall Shipping Height (to top of cylinder hose) - 2.2 m (7' 3") option arm	3,215 mm (10' 7")

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IMPORTANT

Hydraulic system operating conditions (repetitive cycling, heavy work loads, fluid circulating under high-pressure) make it extremely critical that dust, grit or any other type of contamination be kept out of the system. Observe fluid and filter change maintenance interval recommendations and always preclean any exterior surface of the system before it is exposed to air. For example, the reservoir fill cap and neck area, hoses that have to be disassembled, and the covers and external surfaces of filter canisters should all be cleaned before disassembly.

MAINTENANCE SERVICE AND REPAIR PROCEDURE

GENERAL PRECAUTIONS

Fluid level and condition should always be checked whenever any other type of maintenance service or repair is being performed.

NOTE: *If the unit is being used in an extreme temperature environment (in sub-freezing climates or in high temperature, high humidity tropical conditions), frequent purging of moisture condensation from the hydraulic reservoir drain tap should be a regular and frequent part of the operating routine. In more moderate, temperate climates, draining reservoir sediment and moisture may not be required more than once or twice every few months.*

Inspect drained oil and used filters for signs of abnormal coloring or visible fluid contamination at every oil change. Abrasive grit or dust particles will cause discoloration and darkening of the fluid. Visible accumulations of dirt or grit could be an indication that filters are overloaded (and will require more frequent replacement) or that disintegrating bearings or other component failures in the hydraulic circuit may be imminent or have already occurred. Open the drain plugs on the main pump casings and check and compare drain oil in the pumps. Look for evidence of grit or metallic particles.

Vibration or unusual noise during operation could be an indication of air leaking into the circuit (Refer to the appropriate Troubleshooting section for component or unit for procedures.), or it may be evidence of a defective pump. The gear type pilot pump could be defective, causing low pilot pressure, or a main pump broken shoe or piston could be responsible.

NOTE: *If equipped, indicated operating pressure, as shown on the multidisplay digital gauge on the Instrument Panel ("F-Pump" and "R-Pump") will be reduced as a result of a mechanical problem inside the pump. However, pressure loss could also be due to cavitation or air leakage, or other faults in the hydraulic system.*

Check the exterior case drain oil in the main pumps. If no metallic particles are found, make sure there is no air in the system. Unbolt and remove the tank return drain line from the top part of the swing motor, both travel motors and each main pump. If there is air in any one of the drain lines, carefully prefill the assembly before bolting together the drain line piping connections. Run the system at low rpm.

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TRACK 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
Solar 55-V PLUS	1001 and Up
Solar 75-V PLUS	1001 and Up

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TABLE OF CONTENTS

Safety

Track Excavator Safety S0102035K

Specifications

Specifications for Solar 75-V S0202025K

General Maintenance

General Maintenance Procedures S0302000

Standard Torques S0309000

Upper Structure

Counterweight S0403005K

Fuel Tank S0405015K

Swing Bearing S0407000

Lower Structure and Chassis

Track Assembly S0505075K

Engine and Drive Train

Air Conditioner S0605015

Hydraulics

Accumulator S0703010K

Center Joint (Swivel) S0704015K

Cylinders S0705000

Travel Motor (with Gearbox) S0707355K

Swing Motor S0707380

Main Pump (Rexroth) S0708375K

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SWING BEARING

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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
Solar 75-V	1001 and Up
Solar 130LC-V	0001 and Up
Solar 140LC-V	1001 and Up
Solar 170LC-V	1001 and Up
Solar 175LC-V	1001 and Up
Solar 220LC-V	0001 and Up
Solar 220LL	1001 and Up
Solar 225LC-V	1001 and Up
Solar 225NLC-V	1001 and Up
Solar 250LC-V	1001 and Up
Solar 255LC-V	1001 and Up
Solar 290LC-V	0001 and Up
Solar 290LL	1001 and Up
Solar 300LC-V	1001 and Up
Solar 300LL	1001 and Up
Solar 330LC-V	1001 and Up
Solar 340LC-V	1001 and Up
Solar 400LC-V	1001 and Up
Solar 420LC-V	1001 and Up
Solar 450LC-V	1001 and Up
Solar 470LC-V	1001 and Up

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Pilot Control Valve (Work Lever / Joystick)..... S0709453K
Main Control Valve (REXROTH) S709466K
Travel Control Valve (With Damper)..... S0709820K
Hydraulic Schematic (Solar 75-V)..... S0792096K

Electrical System

Electrical System S0802095K
Electrical Schematic (Solar 75-V) S0892096K

Attachments

Boom and Arm..... S0902025K
Bucket.....S0904000

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WORKING RANGE

⚠ WARNING!

The actual value for dimension "L" Digging Reach, depends on the stability and support provided by ground conditions. Digging too far underneath the excavator if soil conditions are wet, loose or unstable can collapse ground support, which could cause injury and/or equipment damage.

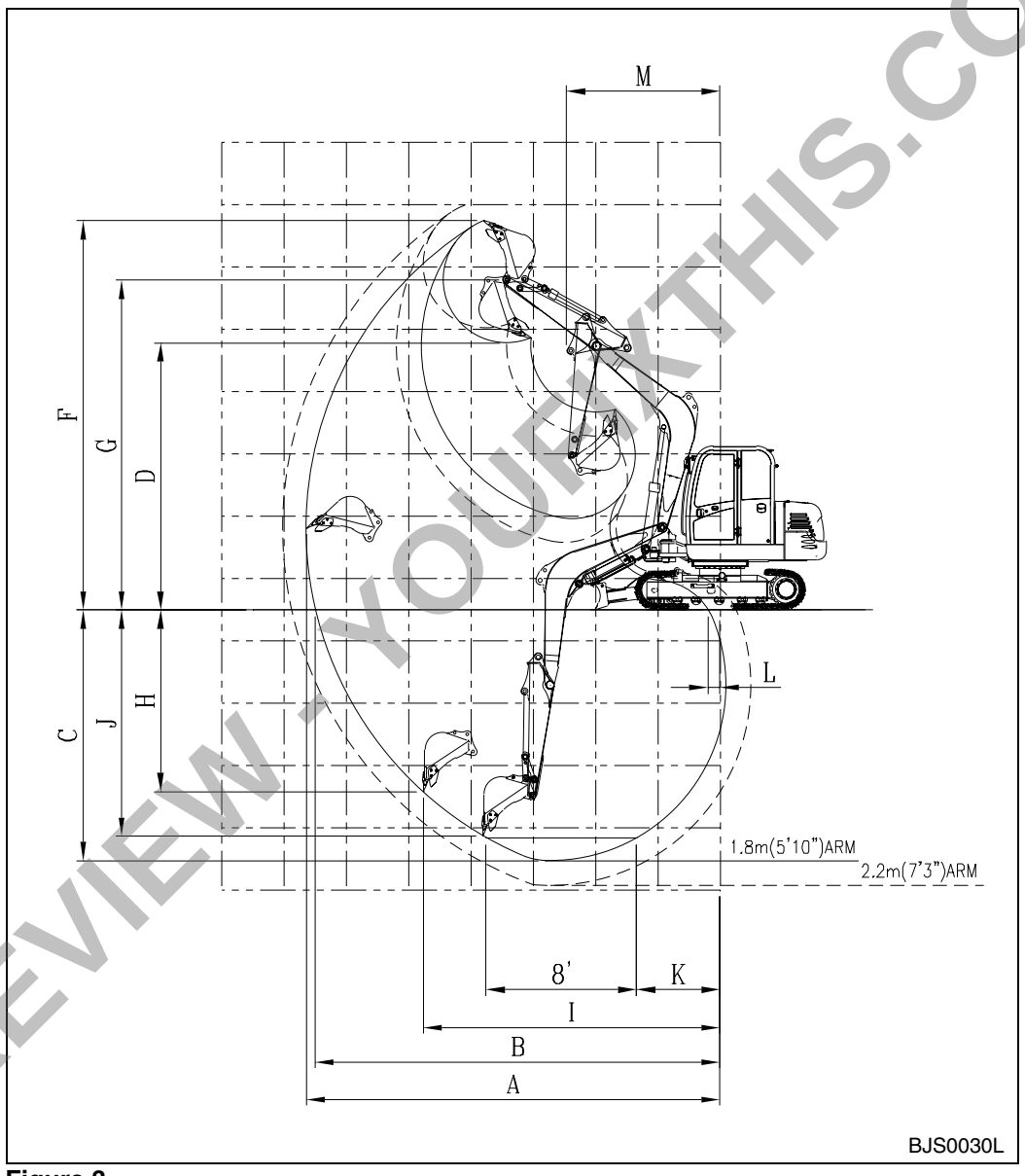


Figure 3

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7	**High-pressure: Over 7 - 11 kg/cm^2 (100 - 156 psi)** **Low-pressure: 4 - 6 kg/cm^2 (57 - 85 psi)**
Possible Cause: Low refrigerant pressure due to poor compressor compression	
Inspect and replace compressor if necessary.	

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MODEL	CYLINDER	$\phi A^{+0.2}_{+0.1}$	$B^{+0.2}_{+0.1}$	MODEL (CYLINDER)
S55-V	ARM	85 mm (3.35 in)	32 mm (1.26 in)	S55W-V (ARM)
	BOOM	110 mm (4.33 in)	21.5 mm (0.85 in)	S55-V (BOOM (OP)) S55W-V (BOOM)
	SWING	80 mm (3.15 in)	30 mm (1.18 in)	S55W-V (BUCKET, SWING) S55-V PLUS (BUCKET) MEGA 300-III (P/S)
	DOZER	100 mm (3.94 in)	18 mm (0.71 in)	S55W-V (DOZER)
S55-V PLUS	ARM	90 mm (3.54 in)	27 mm (1.06 in)	
	BOOM	115 mm (4.53 in)	20 mm (0.79 in)	
S70-III	BUCKET	85 mm (3.35 in)	28.5 mm (1.12 in)	S55-V (ARM) S80W-II (BUCKET, DOZER)
S75-V	BOOM	115 mm (4.53 in)	25 mm (0.90 in)	
	ARM	95 mm (3.74 in)	23.5 mm (0.92 in)	
	BUCKET	85 mm (3.35 in)	23 mm (0.90 in)	
	SWING	110 mm (4.33 in)	31.5 mm (1.24 in)	
S130LC-V S140LC-V	ARM	115 mm (4.53 in)	28.5 mm (1.12 in)	S170W-V (BOOM) S180W-V (BOOM) S210W-V (BUCKET) S220LC-V (BUCKET) S220LL (BUCKET (HEEL)) S225LC-V (BUCKET) S225NLC-V (BUCKET)
S220LC-V	BOOM	120 mm (4.72 in)	28.5 mm (1.12 in)	S220N-V (BUCKET (OP)) S225LC-V (BOOM) S225NLC-V (BUCKET (OP)) S225NLC-V (BOOM)
S220LL	ARM (STICK)	165 mm (6.50 in)	34.5 mm (1.36 in)	S400LC-V (BOOM) S420LC-V (BOOM)
S250LC-V	ARM	140 mm (5.51 in)	28.5 mm (1.12 in)	S220LL (BOOM (HOIST)) S255LC-V (ARM) S290-V (BOOM, BUCKET, S/BUCKET) S300LC-V (BOOM, BUCKET. S/BUCKET)
	BOOM	130 mm (5.12 in)	28.5 mm (1.12 in)	S250LC-V (BUCKET) S255LC-V (BOOM, BUCKET)
S290LC-V	ARM	150 mm (5.91 in)	28.5 mm (1.12 in)	S290LL (BOOM (HOIST), BUCKET (HEEL)) S290LC-V (S/ARM) S300LC-V (ARM, S/ARM) S340LC-V (BOOM, BUCKET, BUCKET (OP)) S360LC-V (BOOM, BUCKET, BUCKET (OP)) S370LC-V (BOOM, BUCKET, BUCKET (OP))
S360LC-V	ARM	170 mm (6.69 in)	34.5 mm (1.36 in)	S340LC-V (ARM) S370LC-V (ARM) S450LC-V (BOOM, BUCKET) S470LC-V (BOOM, BUCKET)

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SPARE PARTS KITS

Sealing set completely (sealing sets are based on the type of the pump, picture shows for example A 10 VSO DFR, without pilot valve seals). Sealing material: drive shaft sealing ring FPM, others NBR.

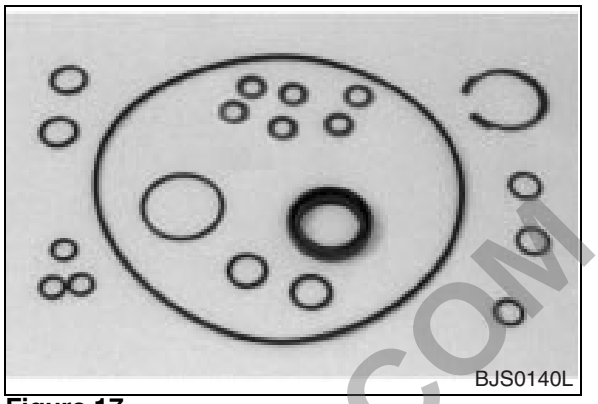


Figure 17

Same like K1, see picture on top. Only difference: all material FKM

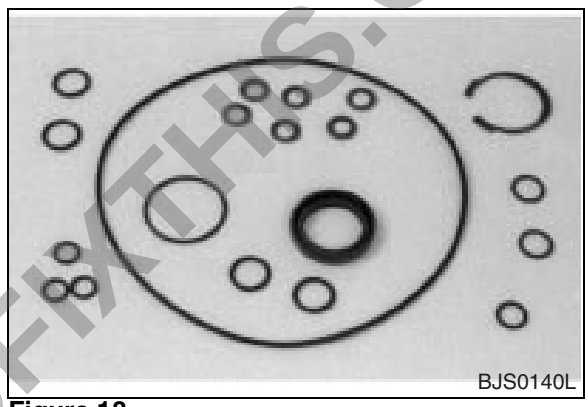


Figure 18

Drive shaft: our spare part supply offers you the following drive shaft types:
ISO - key design, SAE key design, SAE splined design



Figure 19

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8. Install three screws, one bolts and washers (7, Figure 42), and cover (4).
9. Install two screws, two bolts and washers (6, Figure 42), and cover (3). Push cap (5) into cover (3).
10. Install four bolts and washers (2, Figure 42), and cover (1).

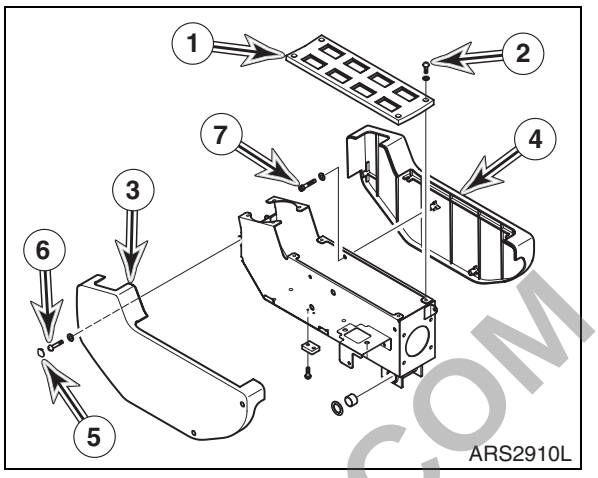


Figure 42

START-UP PROCEDURES

1. Start engine and set throttle at "LOW IDLE."
2. Set safety lever on "UNLOCK" position.

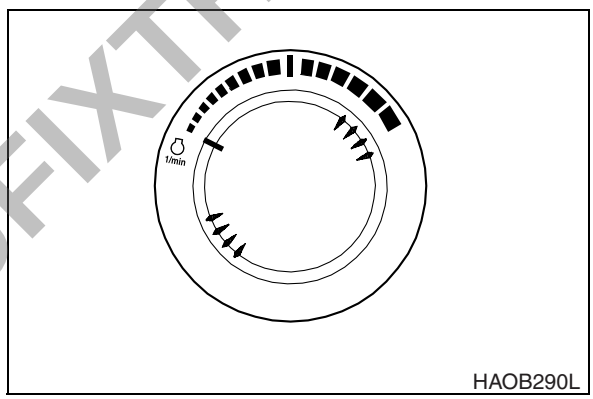


Figure 43

3. Slowly cycle boom, arm, bucket cylinders and swing motor about five times without a load to vent air from pilot lines. Do this for 5 minutes.

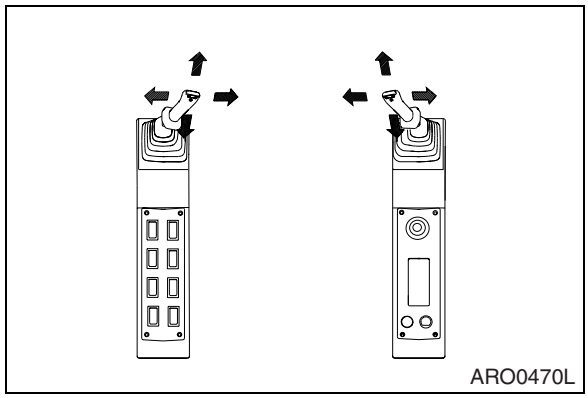


Figure 44

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TABLE OF CONTENTS

Overview 3
Electric Supply System 4
Engine Starting Circuit 6
    Operation During Start Process 6
    Operation After Start Process 8
Engine Preheating System 10
Engine Stop System 12
Charging System 13
Instrument System 14
    Instrument Panel 15
    Operation 17
    Circuit Diagram of Instrument Panel 19
    Control Unit 20
Engine Control System 22
    Engine Control Circuit Diagram 22
Engine Control Motor 23
Engine Control Dial 24
Engine Overheat Protection System 26

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