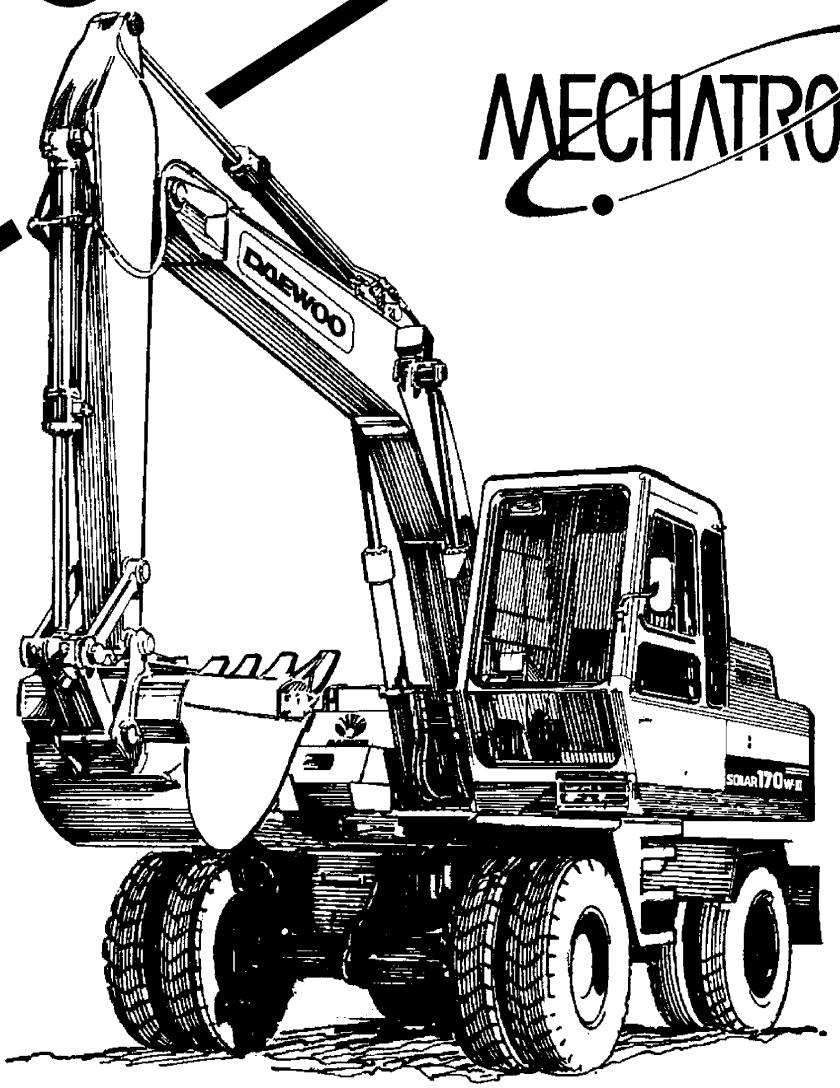
DAEWOO

SOLAR 170W-III

MECHATROPIA™



DAEWOO HYDRAULIC EXCAVATOR

Operation and Maintenance Manual

Printed in U.S.A.

Serial Number 0001 thru 0736

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Operation

Be Prepared – Get to Know All Operating and Safety Instructions

This is the Safety Alert Symbol. Wherever it appears – in this manual or on safety signs on the machine – you should be alert to the potential for personal injury or accidents. Always observe safety precautions and follow recommended procedures.

Operate While Seated at the Operator's Station ONLY

Never reach in through a window to work a control. Do not try to operate the excavator unless you're in the command position – seated at the controls. You should stay alert and focused on your work at all times but DO NOT twist out of the seat if job activity behind you (or to the side) requires your attention.

Use a spotter or signal person if you can't see clearly and something is happening behind you.

Replace damaged safety labels and lost or damaged owner's manuals.

Do not let anyone operate the machine unless they've been fully and completely trained, in safety and in operation of the machine.

Learn the Signal Words Used with the Safety Alert Symbol

The words **"CAUTION," "WARNING,"** and **"DANGER"** used throughout this manual and on labels on the machine indicate degree of risk of hazards or unsafe practices. All three degrees of risk indicate that safety is involved. Observe precautions indicated whenever you see the Safety Alert "Triangle," no matter which signal word appears next to the "Exclamation Point" symbol.

⚠ CAUTION!!!

Indicates potential of a hazardous situation that, if not avoided, could result in minor or moderate injury. It may also be used to alert against a generally unsafe practice.

⚠ WARNING!!!

Indicates potential of a hazardous situation that, if not avoided, could result in serious injury or death. It may also be used to alert against a highly unsafe practice.

⚠ DANGER!!!

Indicates imminent hazard of a situation that, if not avoided, is very likely to cause death or extremely serious injury. It may also be used to alert against equipment that may explode or detonate if handled or treated carelessly.

Before Starting the Engine

Do a "pre-start" safety check:

- Walk around your machine before getting in the operator's cab. Look for evidence of leaking fluid, loose fasteners, misaligned assemblies or any other indications of possible equipment hazard.
- All equipment covers and machinery safety guards must be in place, to protect against injury while the machine is being operated.
- Look around the work-site area for potential hazards, or people or property that could be at risk while operation is in progress.
- NEVER start the engine if there is any indication that maintenance or service work is in progress, or if a warning tag is attached to controls in the cab.
- A machine that has not been used recently, or is being operated in extremely cold temperatures, could require a warmup or maintenance service prior to start up.
- Check gauges and monitor displays for normal operation prior to starting the engine. Listen for unusual noises and remain alert for other potentially hazardous conditions at the start of the work cycle.
- Check tire inflation and check tires for damage or uneven wear. Perform maintenance before operation.

Excavator Rated Lift Capacity Tables (Continued)

Lift Ratings for Standard Configuration, Mono Boom, Long Arm, Dozer or Stabilizer on Ground, Over FRONT () in Kg (Lb)

Boom Length	Arm Length	Counterweight	Bucket Size
5.15 m (16' 11")	2.6 m (8' 6") (Standard)	2,500 kg (5,512 lb)	0.66 m^3 (.85 yd^3)

Lift Height	3.0 m Radius (9' 9")	4.0 m Radius (13' 1")	5.0 m Radius (16' 4")	6.0 m Radius (19' 7")	7.0 m Radius (23' 0")	Maximum Reach
7 m (23' 0")			3,710 kg (8,181 lb)			*1,360 kg (2,999 lb) @ 7.12 m (23' 4")
6 m (19' 7")			3,670 kg (8,092 lb)	*3,230 kg (7,122 lb)		*1,240 kg (2,734 lb) @ 7.79 m (25' 6")
5 m (16' 4")			*3,940 kg (8,688 lb)	*3,710 kg (8,181 lb)		*1,180 kg (2,602 lb) @ 8.25 m (27' 1")
4 m (13' 1")		*5,230 kg (11,532 lb)	*4,410 kg (9,131 lb)	*3,950 kg (8,710 lb)	*2,750 kg (6,064 lb)	*1,140 kg (2,514 lb) @ 8.56 m (28' 1")
3 m (9' 9")		*6,310 kg (13,914 lb)	*5,010 kg (11,047 lb)	*4,270 kg (9,415 lb)	*3,780 kg (8,335 lb)	*1,140 kg (2,514 lb) @ 8.71 m (31' 6")
2 m (6' 6")		*7,300 kg (16,097 lb)	*5,560 kg (12,260 lb)	*4,370 kg (10,121 lb)	*4,000 kg (8,820 lb)	*1,170 kg (2,580 lb) @ 8.72 m (28' 6")
1 m (3' 3")		*7,850 kg (17,309 lb)	*5,980 kg (13,186 lb)	*4,860 kg (10,716 lb)	*4,110 kg (9,063 lb)	*1,240 kg (2,734 lb) @ 8.62 m (28' 3")
Ground Line		*8,000 kg (17,640 lb)	*6,170 kg (13,605 lb)	*4,970 kg (10,959 lb)	*3,720 kg (8,202 lb)	*1,350 kg (2,977 lb) @ 8.35 m (27' 5")
–1 m (–3' 3")	*9,370 kg (20,661 lb)	*7,810 kg (17,221 lb)	*6,100 kg (13,450 lb)	*4,870 kg (10,738 lb)		*1,540 kg (3,395 lb) @ 7.93 m (26' 0")
–2 m (–6' 6")	*9,330 kg (20,572 lb)	*7,220 kg (15,920 lb)	*5,700 kg (12,568 lb)	*4,870 kg (10,738 lb)		*1,840 kg (4,057 lb) @ 7.33 m (24' 0")
–3 m (–9' 9")	*7,900 kg (17,419 lb)	*6,190 kg (13,649 lb)	*4,740 kg (10,451 lb)			*2,430 kg (5,358 lb) @ 6.42 m (21' 0")

The preceding weight loads are in compliance with SAE (J1097) and ISO applicable, recommended standards for hydraulic excavators performing lifting operation on a firm supporting surface. An asterisk (*) next to the lift rating indicates rated load does not exceed 87% of hydraulic capacity. All other ratings have been determined not to exceed 75% of tipping capacity.

DO NOT attempt to lift or hold any load that exceeds rated load capacity at the specified distances (from the machine's rotation centerline and height – see "lift radius" and "lift height" in the reference drawing).

The weight of slings and any auxiliary lifting device (and/or the weight difference of any attachment heavier than standard configuration) must be deducted from the rated lift capacity to determine allowable net lifting load. The lift point should be located on the back of the bucket, as shown in the reference drawing on the facing page.

IMPORTANT

Press the "Lifting Mode" switch on the Instrument Panel before using the excavator for lifting work. Engine and hydraulic oil should both be fully warmed up to operating temperature before starting a lift.

SWITCHES

Switches on Instrument Panel

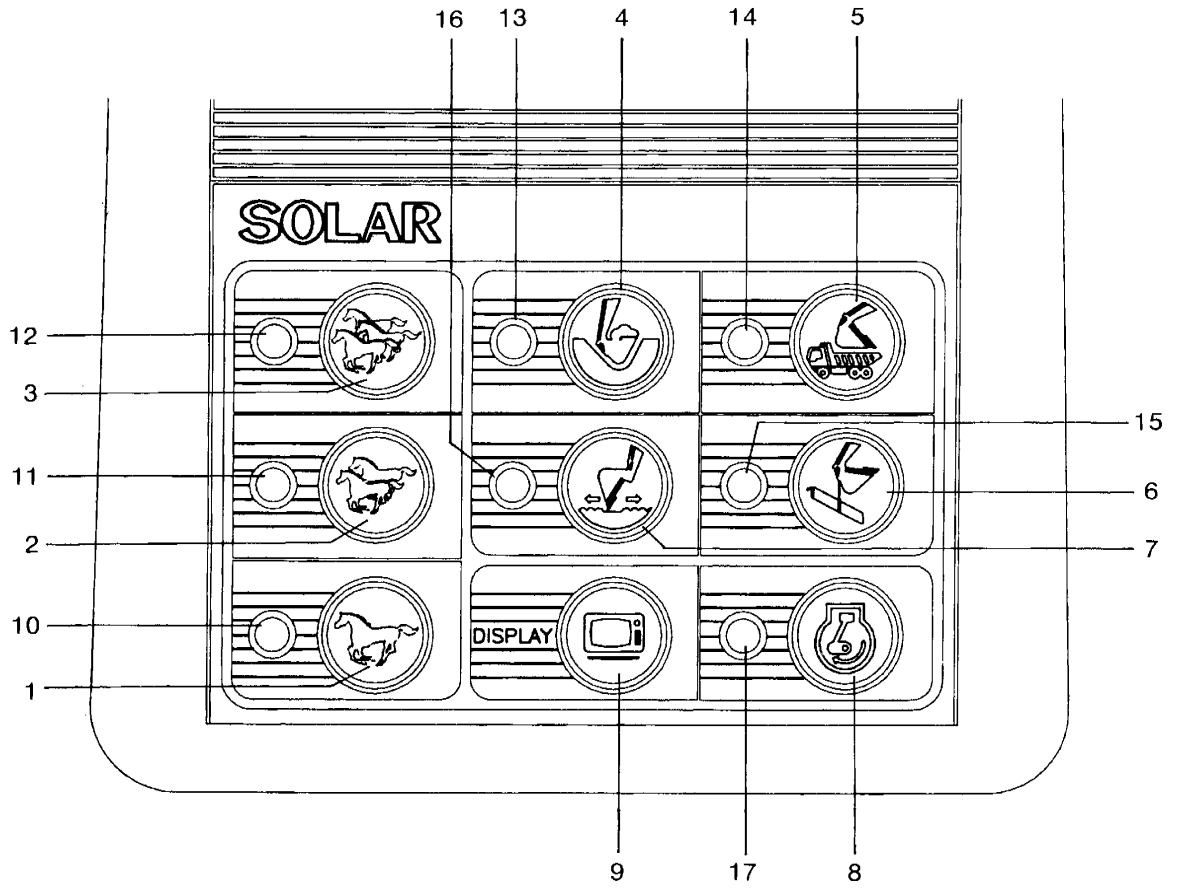


FIGURE 2-27

0020

	POWER MODE	WORK MODE	OTHERS
SWITCH	1. I - Power Selection Switch	4. Digging Mode Switch	8. Auto Idle Switch
	2. II - Power Selection Switch	5. Loading Mode Switch	
	3. III - Power Selection Switch	6. Lifting Mode Switch	9. Multi-function Display Switch
		7. Leveling Mode Switch	
LAMP	10. I - Power Indicator Light	13. Digging Mode Indicator Light	17. Auto Idle Indicator Light
	11. II - Power Indicator Light	14. Loading Mode Indicator Light	
	12. III - Power Indicator Light	15. Lifting Mode Indicator Light	
		16. Leveling Mode Indicator Light	

Adjusting the Operator's Seat

The operator's seat can be adjusted in several directions to provide the safest and most desired working position. See Figure 2-51. The adjustments can be made as follows:

1. The operator's seat can be adjusted to allow the operator to safely reach the joysticks. Hold Lever 1 and push to the right while sliding the seat to the desired position. Release Lever 1 and the seat will lock into position.

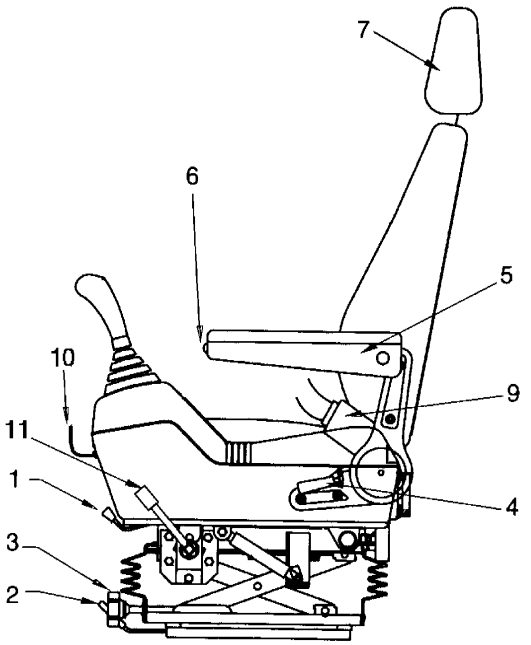
   The angle of each armrest is independently adjustable. Push Button 6, located at the front of each armrest, to adjust.

2. Once the seat/joystick position has been adjusted, the entire seat assembly can be moved to allow the operator to safely reach the travel controls. Hold Lever 2 and push to the right while sliding the seat assembly to the desired position. Release Lever 2 and the seat assembly will lock into position.

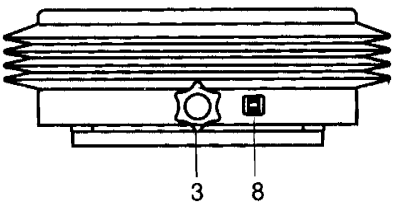
3. Seat height can be adjusted by grasping underneath the front of the seat and lifting backwards. The adjustment range has three positions to select.

4. The operator's seat has spring loaded shock absorbers. Adjust the seat to the operator's weight by turning Control Knob 3 until the approximate operator weight is visible in the small window (8).

1. Front/Rear Adjustment Lever
2. Seat Assembly Front/ Rear Adjustment Lever
3. Weight Adjustment Knob
4. Seat Back Tilt Adjustment
5. Arm Rest
6. Arm Rest Adjustment Lock Button
7. Head Rest
8. Weight Adjustment Window
9. Seat Belt
10. Safety Lever Release Reminder
11. Safety Release Lever



SIDE VIEW



FRONT VIEW

FIGURE 2-51

0035

pedal functions only as a hydraulic proportioning valve control, enabling control of only travel speed and not engine RPM.

4. Test the brakes before beginning over the road travel.
5. During forward motion you can shift from speed range 1 to speed range 2. Downshifting from speed range 2 to speed range 1 should not be done if the machine is traveling at a high rate of speed. Damage to the transmission could result.
6. To stop the machine, slowly release the accelerator pedal. The dynamic braking action of the machine's momentum against the engine's back pressure will begin to slow the machine. Step on the brake to bring the machine to a full and controlled stop.

NOTE

As the brake pedal is applied, and if it is pressed all the way to the floor, a mechanical lock will engage and hold the pedal in the fully applied position (1, Figure 3-3A). Step on the release lever and the brake pedal will return to the upright position.

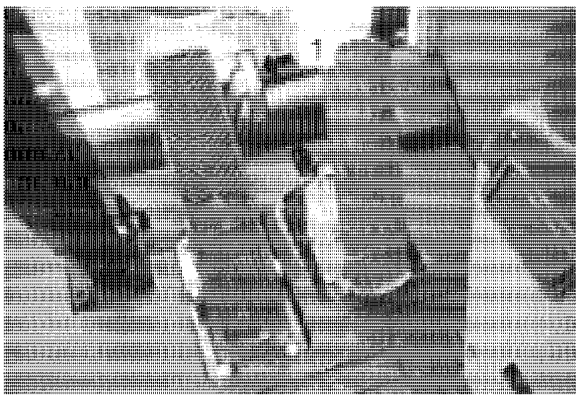


FIGURE 3-3A 0799

IMPORTANT

If the engine speed is controlled by the manual engine speed control dial, when the machine comes to a stop, the engine will continue to run at the preset RPM. If the engine speed is being controlled by the accelerator pedal, it will decrease and the machine will slow down as the pedal is released.

7. After traveling a long distance, the front attachment, outriggers or dozer blade may begin to drift due to normal internal hydraulic leakage. Position the machine in a safe location and move the function lock to the full front function position and reposition the front attachment, outriggers or dozer blade.

Traveling on a Work-site

1. Avoid obstacles, never drive over them.
2. Keep away from the shoulders or edges of slopes or excavations.
3. Always travel directly up or down a slope, never sideways.
4. Avoid changing directions or sudden starts or stops on a slope.
5. On a slope, make sure to fully extend the arm and lower the boom until the bucket is 20 – 30 cm (8" – 12") above the ground. See Figure 3-4. If the machine starts to slide or slip, lower the bucket to the ground to regain control. If the engine stalls, lower the bucket, make sure that all controls are in the neutral position and restart the engine.
6. Never travel up or down a slope with a vertical angle greater than 20°, or sideways on a slope with a vertical angle of greater than 5°.

Traveling on a Slope

1. If the engine stops when traveling on a slope, lower the bucket to the ground, make sure all controls are in the neutral position and restart the engine.
2. Before driving down a slope, test the brakes to make sure that they are fully functional.
3. Never drive down a slope with the transmission in neutral.
4. When driving down a slope, allow the dynamic braking action of the machine's momentum against the engine's back pressure to slow the machine. Step on the brake to bring the machine to a full and controlled stop. Do not over use the brakes on a slope or they can burn out.
5. Make sure to fully warm up the engine and the hydraulic system before attempting to travel on a slope.

7. Make sure that there is adequate clearance from overhead electrical supply lines. See Figure 3-26.

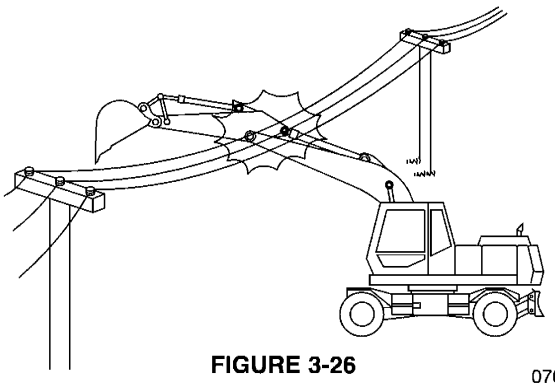


FIGURE 3-26 0760

8. If the excavation is in an underground location, make sure that there is adequate overhead clearance and that there is adequate ventilation. See Figure 3-27.

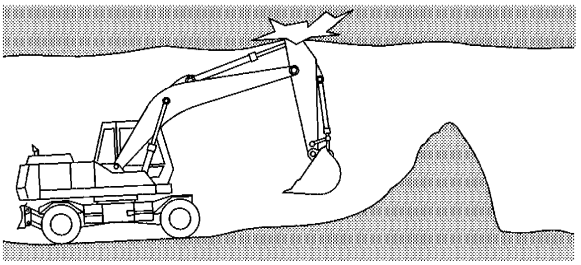


FIGURE 3-27 0761

9. DO NOT use the bucket as a hammer or ramming device. See Figure 3-28.

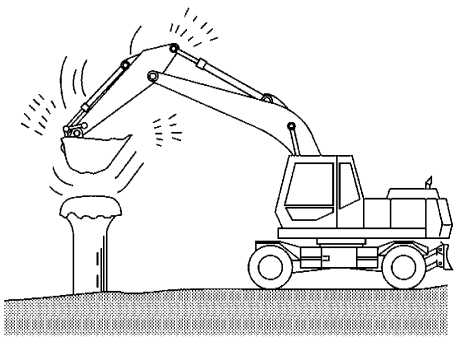


FIGURE 3-28 0762

If the optional long fronts or attachments or heavy duty front end attachments are used, the machine balance will be altered. Follow these additional operating precautions:

⚠WARNING!!!

1. **DO NOT travel downhill with the front end attachments raised.**
2. **DO NOT travel across slopes; travel straight up or down slope.**
3. **Use extreme caution when swinging the upper frame when positioned on a slope.**
4. **Allow extra swing stopping room. The additional momentum generated by the longer or heavier front end equipment will increase the amount of time needed to stop the swing motion.**
5. **Make sure that all optional equipment has been authorized and installed properly.**

Check the Operation of All Control Console Monitors

1. Start the engine and observe all of the control console monitors.
2. Repair or replace any monitors that are not functioning.

Start Engine, Check Starting Ability, Observe Exhaust Color at Start, and at Normal Operating Temperature. Listen for Any Abnormal Sounds

Check Operation of All Controls

IMPORTANT

Cold weather operation requires that the operator fully warm up the hydraulic oil before beginning machine operation. Follow all warm up instructions listed in the Operating Instruction section of this manual. Make sure to cycle oil through all of the components, including all cylinders, both travel motors and the swing motor. Cold hydraulic oil in the lines and components needs to be warmed before beginning full operation. If this is not done, damage to the cylinders or hydraulic motors can occur.

1. With the engine at rated speed, operate all of the controls.
2. Follow cold weather "Hydraulic System Warm-up" procedures listed on Page 3-4.
3. Note any slow operations or unusual movements. Determine the cause and repair the fault before operating.

Check the Operation of All Exterior Lights

1. Make sure that all of the turn signal lights, headlights and marker lights are operational. Replace all bulbs that are burned out.
2. Check the horn to make sure that it sounds as loudly as possible.

Inspect the Structure for Cracks and Faulty Welds

1. During the daily walk-around inspection and when greasing the machine, look for any visible damage to the machine. Repair or replace any damaged parts before operating the machine.

Check the Operation of the Parking and Travel Brakes

1. Start the engine and apply the parking brake. The indicator light on the steering column display should be illuminated and all machine functions should be locked out.
2. Move the parking brake lever to the attachment lock position and drive the machine forward. Apply the travel brakes to make sure that they are working properly.

Check All Lug Nuts

1. Check to make sure that all of the lug nuts for the wheels are secure and tight. Retighten any lug nut that appears to be loose.

Inspect All Tires for Signs of Damage or Abnormal Wear

1. Inspect all of the tires to make sure that they are properly inflated and that there are no visible signs of damage.
2. Make sure that there are no signs of abnormal wear to the tires. This could be an indication that the wheel alignment is out of alignment.

11. Locate the pilot system filter assembly. See Figure 4-46.

12. Unscrew the canister (5, Figure 4-46) and remove the O-ring (3) and filter cartridge (4).

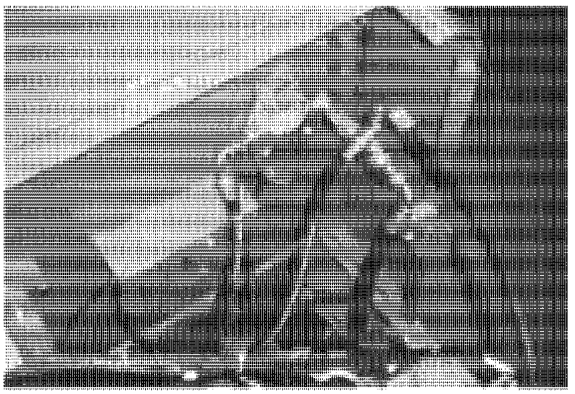


FIGURE 4-46 0817

NOTE

The canister will be filled with oil. Use caution when removing this assembly.

13. Insert a new filter cartridge and O-ring. Apply a small amount of oil around the entire O-ring and reinstall the canister assembly onto the engine.

Dimensions for Transportation

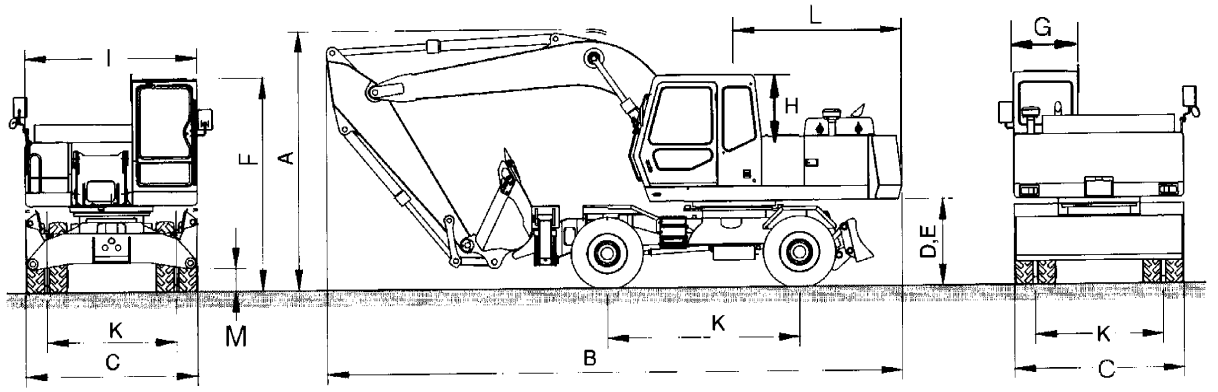
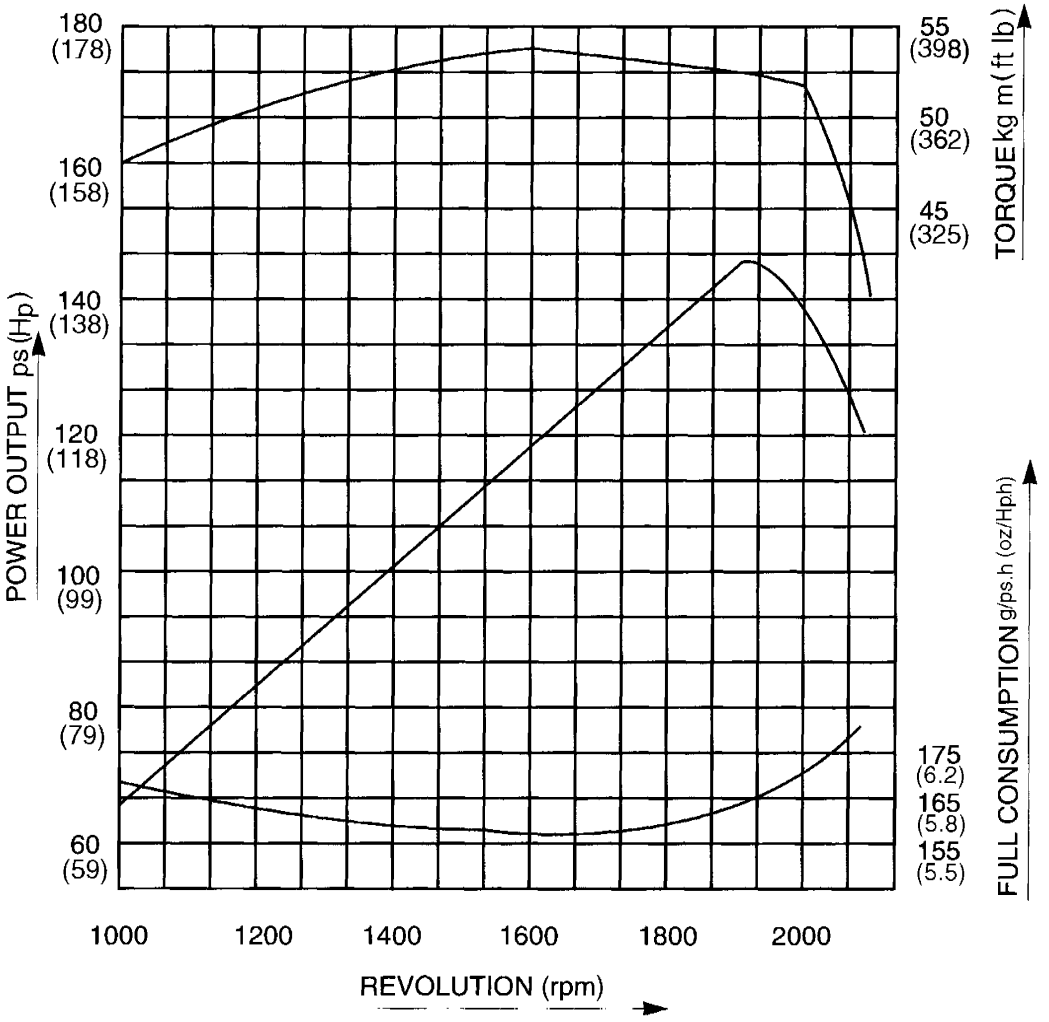


FIGURE 5-3

1496

Boom Type	Upper Boom	5,150 mm (16' 10")
	Lower Boom	
Arm Type		2,600 mm (8' 6")
Bucket Type		0.66 m^3 (0.86 yd^3)
A	Shipping Height (Boom)	3,770 mm (12' 4")
B	Shipping Length	8,375 mm (27' 6")
C	Shipping Width	2,490 mm (8' 2")
D	Counterweight Clearance	1,259 mm (4' 2")
E	Frame Clearance	1,259 mm (4' 2")
F	Height Over Cab	3,104 mm (10' 2")
G	Cab Width	915 mm (36")
H	Cab Height Above House	940 mm (3' 1")
I	House Width	2,490 mm (8' 2")
J	Wheel Base	2,800 mm (9' 2")
K	Tread Width	1,874 mm (6' 1")
L	Counterweight Swing Clearance	2,450 mm (8' 1")

Performance Curves



- Power Output : 146 ps (144 Hp) 12,000 RPM
- Torque : 53 kg m (383 ft lb) 11,600 RPM
- Fuel Consumption : 170 g/ps·h (6 oz/Hp·h)

1499