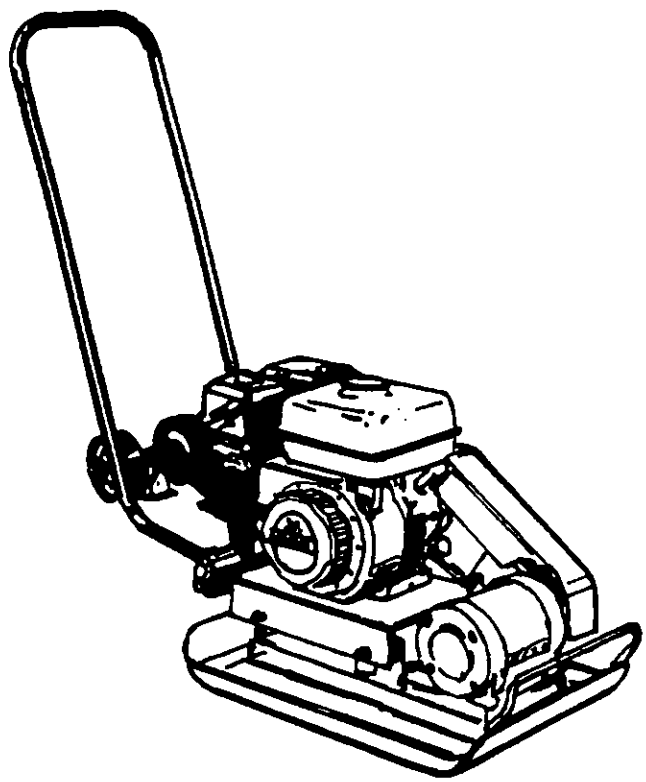
INGERSOLL-RAND

HX40 SERIES

OPERATING & MAINTENANCE INSTRUCTIONS AND PARTS MANUAL

Vibratory Plate Compactor

(Effective S/N. 356)



Do not remove operation manual from machine. Replace manual if damaged

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HX40 ENGLISH COMM.NO. 10571636 Revised (01-13)

EC DECLARATION OF CONFORMITY

CE

WITH EC DIRECTIVES

89/392/EEC, 91/368/EEC, 93/44/EEC. 93/68/EEC.

WE,

ERRUT PRODUCTS LTD.
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PO Box 2, Chorley New Road
Horwich
Bolton BL6 6JN
United Kingdom

DECLARE THAT, UNDER OUR SOLE RESPONSIBLITY FOR MANUFACTURE AND SUPPLY, THE PRODUCT(S),

MODEL(S)	TYPE	SER. NO.
HX40 SERIES HX40H SERIES	VIBRATORY BASEPLATE COMPACTOR	Effective with 356

TO WHICH THIS DECLARATION RELATES, IS (ARE) IN CONFORMITY WITH THE PROVISIONS OF THE ABOVE DIRECTIVES USING THE FOLLOWING PRINCIPAL STANDARDS:

- **prEN 500-1**
- **prEN 500-4**
- **the EN and ISO standards mentioned in chapter 2 of prEN 500-1**

Issued at Chesterfield, UK 06/04/1996 by:
R. Steel, Technical Manager

R. STEEL

Issued at Horwich on 01/04/1996 by:
W. Porritt, Quality Assurance Manager

W. PORRITT

UK

FOREWORD

Basic operation and designated use of the machine/plant.

The machine has been built in accordance with state-of-the-art standards and the recognized safety rules. Nevertheless, its use may constitute a risk to life and limb of the user or of third parties, or cause damage to the machine and to other material property.

The machine must only be used in technically perfect condition in accordance with its designated use and the instructions set out in the operating manual, and only by safety-conscious persons who are fully aware of the risks involved in operating the machine. Any functional disorders, especially those affecting the safety of the machine, should therefore be rectified immediately.

Designated Use:
The machine is designed exclusively for the compaction of soil and asphaltic road construction materials. Using the machine for purposes other than those mentioned above is considered contrary to its designated use. The manufacturer/supplier cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user.

Operating the machine within the limits of its designated use also involves observing the instructions set out in the operating manual and complying with the inspection and maintenance directives.

Operator exposure to vibration.
In accordance with requirements of clauses 2.2 of Annex [of the Machinery Directive 89/92/EEC and Directive 91/368/EEC, the machine series model have been tested and the weighted root mean square acceleration to which the operator's arm is exposed recorded exceeds 2.5 m/s^2

Operator exposure to Airborne Noise Emission.
In accordance with requirements of clauses 1.7.5f of Annex I of the Machinery Directive 89/392/EEC and Directive 91/368/EEC, the machine has been tested and noise emission, dependant on engine model is as quoted in Table I.

Tests were conducted according to Standards BS 6842 / EN28662-5, with machine running at rated engine speed on an elastic surface in a grassed area

Identification data
An exact description of the model type and its serial number of your machine will facilitate fast and efficient response from our parts and service support operations,

Always provide the model of your machine and its serial number when you contact the local Ingersoll-Rand service or parts office.

We advise you to enter your machine data in the following lines to maintain machine and engine information:

Model.: HX40
Serial No.....
Year of manufacture.....
Engine Serial No. and type of engine.

TABLE I - NOISE EMMISSION

Model	Engine Make	Noise Level at Operator's Ear (dbA)	Sound Power Level (dbA)
HX40	HONDA	93	90
HX40R	ROBIN	93	90
HX40H	HONDA	93	90
HX40HR	ROBIN	93	90
HX40Y	YANMAR	94	91
HX40HY	YANMAR	94	91
HX40Z	HATZ	95	92
HX40HZ	HATZ	95	92

HX-40
REVERSIBLE PLATE COMPACTOR
OPERATION AND
MAINTENANCE MANUAL
COMMUNICATION NO. 10571636

This manual should be used with all related supplemental books, engine and transmission manuals, and parts books. Related Service Bulletins should be reviewed to provide information regarding some of the recent changes.

If any questions arise concerning this publication or others, contact your local distributor for the latest available information.

Contents of this manual are based on information in effect at the time of publication and are subject to change without notice.

SECTION

SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES

OVERVIEW

BEFORE YOU OPERATE, MAINTAIN OR IN ANY OTHER WAY, OPERATE THIS MACHINE:

READ and STUDY this manual. KNOW how to safely use the unit's controls and what you must do for safe maintenance.
ALWAYS wear or use the proper safety items required for your personal protection.

If you have ANY QUESTIONS about the safe use or maintenance of this unit,
ASK YOUR SUPERVISOR OR CONTACT ANY INGERSOLL-RAND DISTRIBUTOR.
NEVER GUESS - ALWAYS CHECK!

PRE-START INSPECTION

INSPECT your machine. Have any malfunctioning, broken or missing parts corrected or replaced before use.

VERIFY that all the instruction and safety labels are in place and readable. These are as important as any other equipment on the compactor.

NEVER fill the fuel tank, with the engine running, while near an open flame, or when smoking. ALWAYS wipe up any spilled fuel **immediately**.

CHECK for WARNING tags placed on the machine. DO NOT operate the equipment until repairs have been made and the WARNING tags are removed by authorized personnel.

KNOW the location of the Emergency Shut-Down Control if the machine is so equipped.

OPERATING

Always make sure that no person or obstruction is in your line of travel. Watch your step to avoid tripping.

USE extreme caution and be observant when working in close quarters or congested areas.

DO NOT run the engine in a closed building for an extended length of time. EXHAUST FUMES CAN KILL.

DO NOT operate the compactor on non-compactable material, such as concrete or hardened asphalt.

MAINTENANCE

AVOID, whenever possible, servicing, cleaning or examining the unit with the engine running.

The engine must be switched off before any work is carried out on the machine and, to prevent accidental starting, the following instructions must be followed.

(a) Petrol engines - ALWAYS disconnect the spark plug before performing any work on the unit.
(b) Diesel Engines - ON/OFF switch must be at 'OFF' position.

DO NOT alter the engine governor settings from that indicated in the engine manual.

ALWAYS replace damaged or lost decals. Refer to the Parts Manual for the proper location and part number of all decals.

SECTION 2 - INTRODUCTION

Safe operation depends on reliable equipment and the use of proper operating procedures. Performing the checks and services described in this manual will help keep your compactor in good condition. These recommended operation procedures will help you to avoid unsafe practices.

Safety notes have been included throughout this manual to help you avoid injury and prevent damage to the equipment. These notes are not intended to cover all eventualities; it is impossible to anticipate and evaluate all possible methods of operation. Therefore, you are the only person who can guarantee safe operation and maintenance.

It is important that any procedure not specifically recommended in this manual be thoroughly evaluated from the standpoint of safety before it is implemented.

Continuing improvement and advancement of product design may cause changes to your machine which may not be included in this publication.

Each publication is reviewed and revised, as required, to update and include these changes in later editions.

Ingersoll-Rand reserves the right to modify or make changes within a specific model series group without notice and without incurring any liability to retrofit units previously shipped from the factory. Contact your Ingersoll-Rand Distributor for non-routine maintenance information that is not covered in this publication.

Note:

The model series referred to in this manual has optional engines as listed below. It is important to relate the instructions in this manual to the particular engine installed on your machine. The instructions relate to the Standard engine most commonly installed in this model series. Therefore it is important to read this manual together with the engine manufacturer's instruction manual provided with the machine. The engine manufacturer's manual will contain further detailed and specific instructions on operation and maintenance.

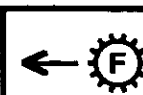
Engine availability.

Compactor Model	Make	Engine Model	Engine Remarks
HX40	Honda	GX120	Standard
HX40W	Honda	GX120	Standard
HX40H	Honda	GX120	Standard
HX40HW	Honda	GX120	Standard
HX40R	Robin	EY20	Optional
HX40WR	Robin	EY20	Optional
HX40HR	Robin	EY20	Optional
HX40HWR	Robin	EY20	Optional
HX40R	Robin	EY20	Optional
HX40Y	Yanmar	L40	Optional
HX40HY	Yanmar	L40	Optional
HX40WY	Yanmar	L40	Optional
HX40HWY	Yanmar	L40	Optional
HX40Y	Yanmar	L40	Optional

SECTION 3 - SYMBOL IDENTIFICATION AND METRIC CONVERSION

INTERNATIONAL MACHINE SYMBOLS

The following explains the meaning of international symbols that may appear on your machine.

ENGINE ON	 ENGINE OFF	 CAUTION	 DIESEL FUEL	 WATER	 FORWARD	 REVERSE
 GREASE	 OIL	 FREQUENCY	 VIBRATION	 ENGINE ON	 VIBRATION	 ENGINE STOP EMERGENCY
 ENGINE ON	 ENGINE OIL	 LIFT POINT	 LINEAR INCREASE	 ROTATIONAL INCREASE	 LOW SPEED	 HIGH SPEED
 CHOKE	 FUEL					

SECTION 3 - SYMBOL IDENTIFICATION AND METRIC CONVERSION

METRIC CONVERSION

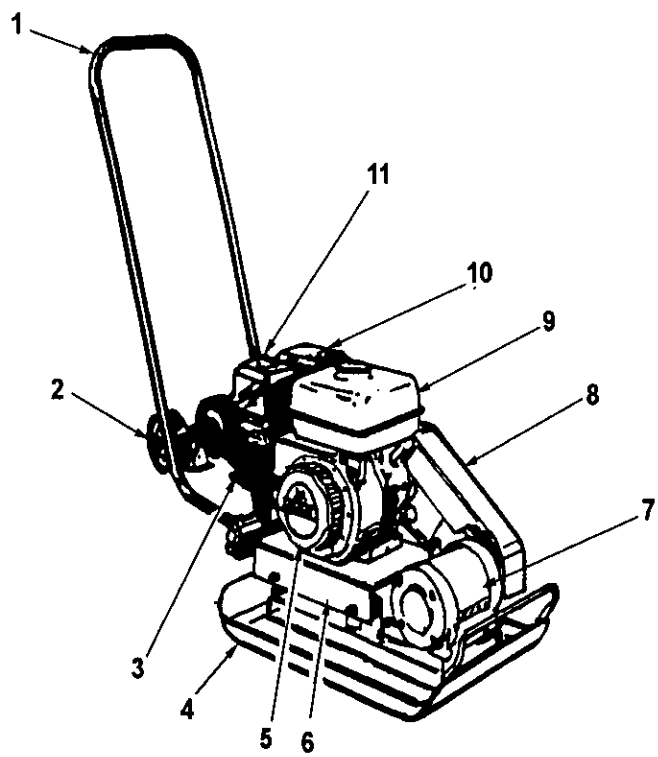
TO CONVERT	INTO	MULTIPLY BY
bars	pounds per sq. in.	14.50
bars	kilopascals	100.0
centigrade	Fahrenheit	(C° x 9/5) + 32
centimeters	inches	0.3937
centimeters	millimeters	10.0
circumference	radians	6.283
cubic centimeters	cubic inches	0.06102
degrees (angle)	radians	0.1745
degrees per second	revolutions per minute	0.1667
feet	meters	0.3048
feet per minute	meters per minute	0.3048
gallons	liters	3.785
Hertz	vibrations per minute	60.0
horsepower	kilowatts	0.7457
inches	centimeters	2.540
inches	millimeters	25.40
kilograms	pounds	2.205
kilograms-meter	pounds-foot	7.233
kilopascals	pounds per sq. in.	0.1450
kilopascals	bars	0.01
kilowatts	horsepower	1.341
liters	gallons (U.S. liquid)	0.2642
liters	pints (U.S. liquid)	2.113
liters	quarts (U.S. liquid)	1.057
meters	feet	3.281
meters	inches	39.37
meters per minute	feet per second	0.05468
miles per hour	kilometers per hour	1.609
millimeters	inches	0.03937
Newtons	pounds	4.448
Newtons-meter	pounds-foot	0.737
pints (liquid)	liters	0.4732
pounds	kilograms	0.4536
pounds	Newtons	0.225
pounds-foot	kilograms-meter	0.138
pounds-foot	Newtons-meter	1.356
pounds per sq. in.	bars	0.06895
pounds per sq. in.	kilopascals	6.895
quarts (liquid)	liters	0.9463
radians	degrees	57.30
radians per second	revolutions per minute	9.549
revolutions per minute	degrees per second	6.0
revolutions per minute	radians per second	0.1047
temperature (C) + 17.78	temperature (°F)	1.8
temperature	temperature (°C)	5/9
tons (short)	tons (metric)	0.9078
vibrations per minute	Hertz	0.0167

SECTION 4 - OPERATING CONTROLS AND INSTRUMENTS

GENERAL ARRANGEMENT

A general arrangement of the machine, Refer Figure 4-1, indicates the location of the major componants.

Illustration shows unit equipped with Honda Engine



Item	Description	Item	Description
1	Guiding Handle	7	Eccentric Housing Assembly
2	Transport Wheel (Optional)	8	V-belt and Guard Assembly
3	Recoil Starter	9	Fuel Tank
4	Baseplate	10	Exhaust Muffler
5	Engine Assembly (Honda Shown)	11	Air Cleaner Assembly
6	Engine Mounting Plate		

Figure 4-1 General Arrangement of HX-40 Series Vibratory Plate Compactor.

FUEL VALVE LEVER

The Fuel ON/OFF Valve lever is located on the engine, Refer Figure 4-2.

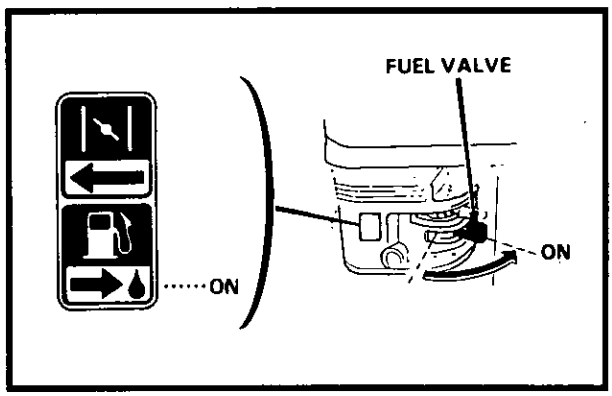


Figure 4-2 Fuel ON/OFF Valve

CHOKE LEVER

The Choke Lever is located on the engine, below the Fuel Valve lever, refer Figure 4-3.

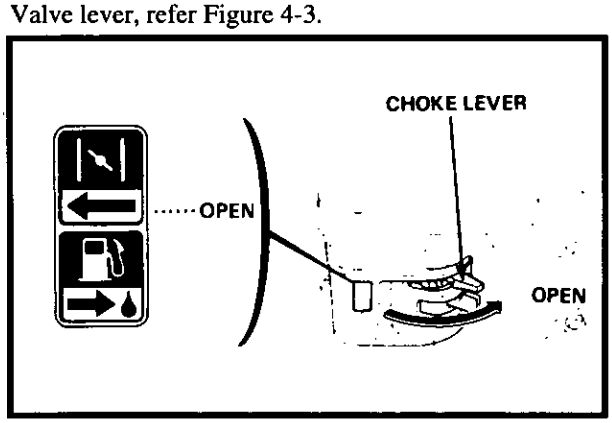


Figure 4-3 Choke Lever

The Choke Lever used to control the ratio of the air to gasoline fuel mixture.

When the engine is cool or just started, the choke should be closed. As the engine warms up, the choke lever can be opened approximately one half to completely open depending upon how well the engine runs.

THROTTLE/VIBRATION CONTROL LEVER

The Throttle Lever, refer Figure 4-4, is located on the engine and is used to control the engine speed and vibration ON/OFF.

Pull the lever toward the operator for high engine idle speed / vibration 'ON'.

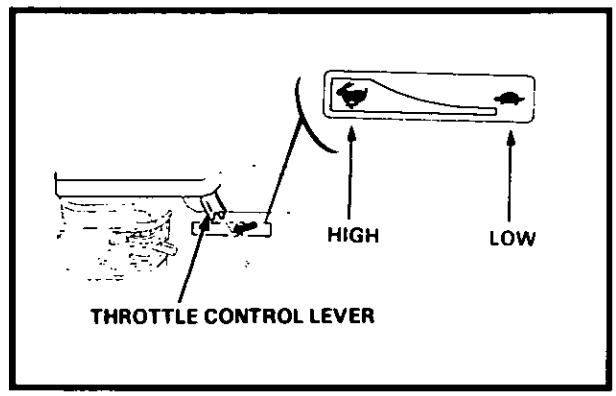


Figure 4-4 Throttle Control Lever (Engine Speed)

Push the lever forward away from the operator for low engine idle speed / vibration 'OFF'.

DIRECTION CONTROL LEVER

The increase in engine speed to high idle will cause the plate to vibrate and move in a forward direction of travel when performing compaction operations.

RECOIL STARTER

CAUTION

Avoid pulling the rope completely out. If you do, the recoil starter could be damaged and the rope broken. Allow the rope to return to the original position.

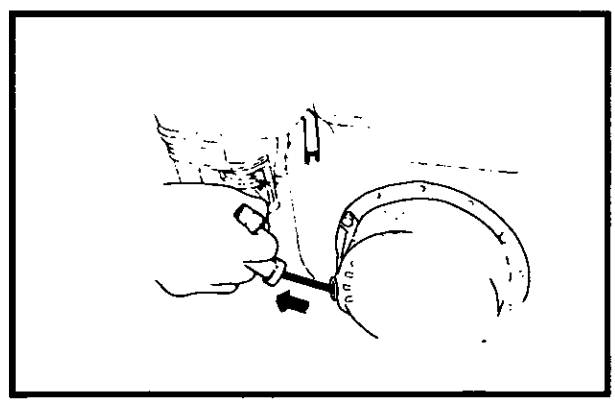


Figure 4-5 Recoil Starter

The Recoil Starter is provided to start the engine, refer Figure 4-5.

Pull the handle of the rope forcibly while holding the operating handle. After start-up of the engine, allow the engine to warm-up at a slow speed without load for approximately three minutes.

ENGINE STOP (ON/0FF SWITCH)

The Engine ON/OFF Switch is located on the engine and is used when starting/stopping the engine, refer Figure 4-6.

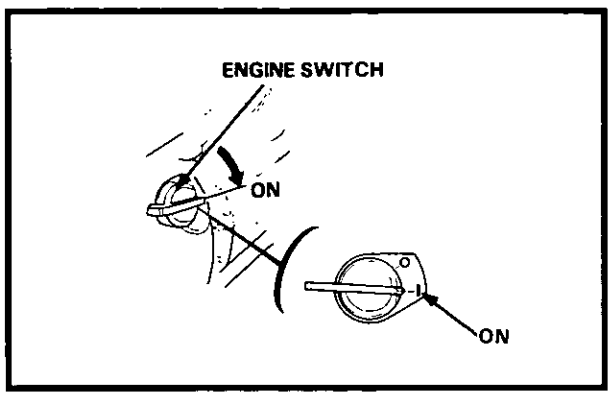


Figure 4-6 Engine ON/OFF Switch

EMERGENCY STOP

The Engine ON/OFF Switch is used to stop the engine in case of emergency. Turn the switch to the OFF position.

TRANSPORT

Optional transporter and lifting frame is provided as optional equipment.

SECTION 5 - OPERATING INSTRUCTIONS

PREPARATION

The Vibratory Plate has been throughly tested prior to despatch and the fuel tank has been drained for transit.

However the following checks should be made prior to putting the compactor into operation:-

SAFETY CHECKS - PRE-STARTING

Before starting each day, in addition to the 4 hour /daily routine maintenance, check or inspect the following items to ensure trouble free performance.

WARNING

Improper maintenance can be hazardous.

Read and understand SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES before you perform any maintenance, service or repairs.

1. Check fluid lines, hoses, fittings, filler openings, drain plugs, muffler, safety shrouds and any other areas for signs of leakage or damage. Fix any leaks and correct any damage before operating.

2. Inspect the entire unit for loose bolts/nuts, damaged or missing parts and repair or replace them as needed.

3. Check the engine oil level. If the level is low, add fresh oil to upper level on the oil level gauge. Refer Figure 5-1.

4. Check the eccentric housing oil level and add oil as needed to bring to correct level, Refer Figure 5-2.

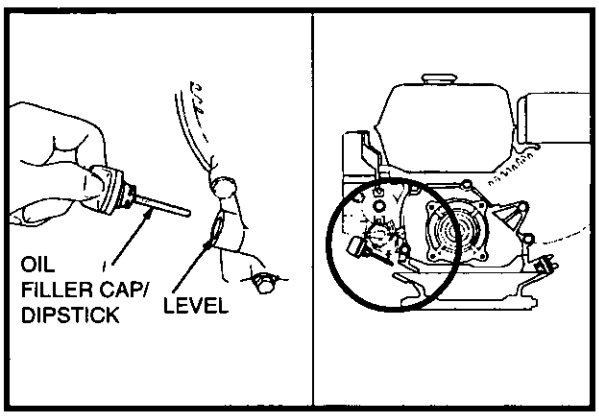


Figure 5-1 Engine Oil Level

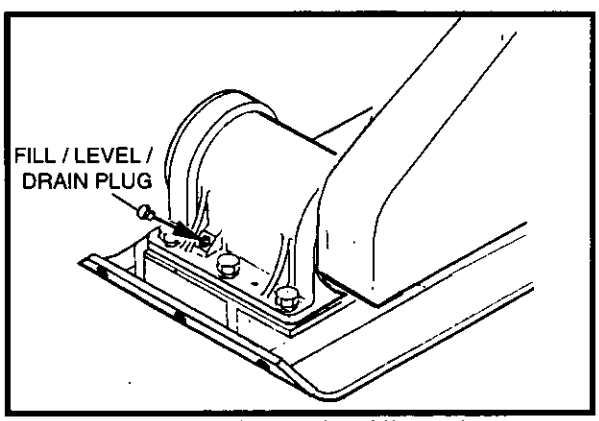


Figure 5-2 Eccentric Housing Oil Level

WARNING

Fuel is flammable. May cause injury and property damage.

Shut down the engine, extinguish all open flames and do not smoke while filling the fuel tank.

Always wipe up any spilled fuel.

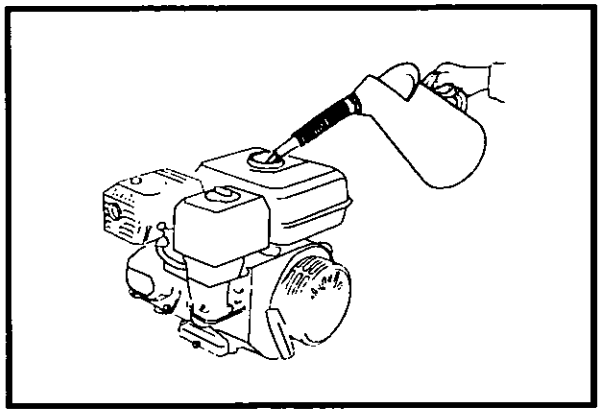


Figure 5-3 Fuel Fill

5. Check the fuel level. If necessary fill the fuel tank with the correct fuel, Refer Figure 5-3.

6. DO NOT operate faulty equipment.

7. Be observant of people and obstructions within the work area.

BEFORE OPERATING THE UNIT

1. READ this Instruction Manual and the Engine Manufacturer's Manual for correct engine starting procedure..

2. Ensure that the 10 Hour or Daily Routine Maintenance is performed.

START-UP PROCEDURE

IF YOU ARE IN DOUBT OF THE OPERATION OF THIS UNIT AFTER READING THESE PROCEDURES - SEE YOUR SUPERVISOR. READ ALL OF THE INSTRUCTIONS PRIOR TO STARTING THE MACHINE.

1. Open the fuel cock located under the fuel tank, Refer Figure 5-4.

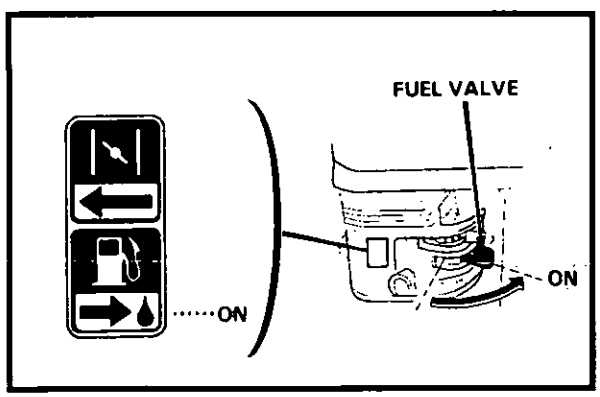


Figure 5-4. Fuel ON/OFF Valve

2. Close the choke lever, Refer Figure 5-5.

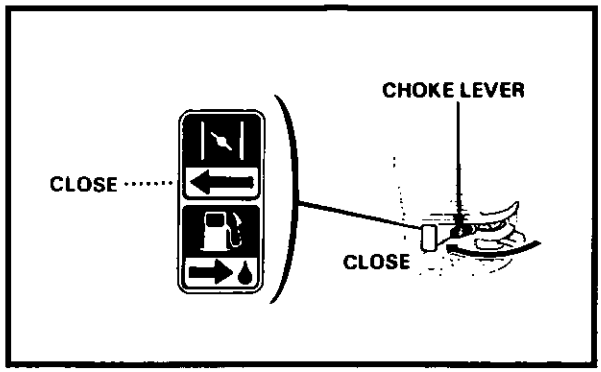


Figure 5-5 Choke Lever - Closed

As the engine warms up, gradually open the choke lever halfway or completely, depending upon engine condition, Refer Figure 5-6.

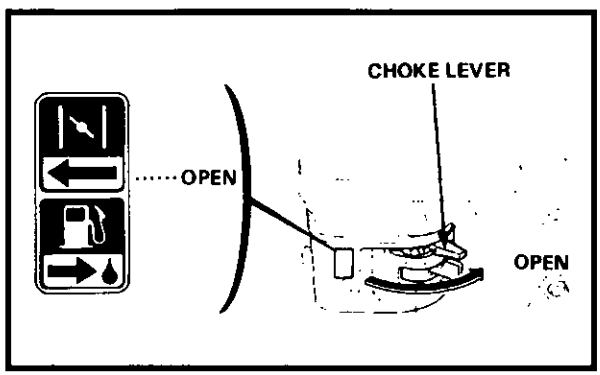


Figure 5-6 Choke lever - Open

3. Position the Throttle Lever at the low Idle speed position = 🐢, Refer Figure 5-7.

⚠ WARNING

There is no neutral position, the compactor does not move at low idle engine speed.

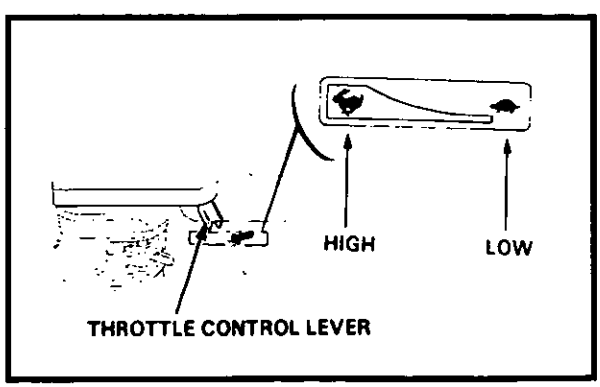


Figure 5-7 Throttle Control Lever (Engine Speed)

4. Start the engine by turning the engine switch to the ON position = I. Refer Figure 5-8.

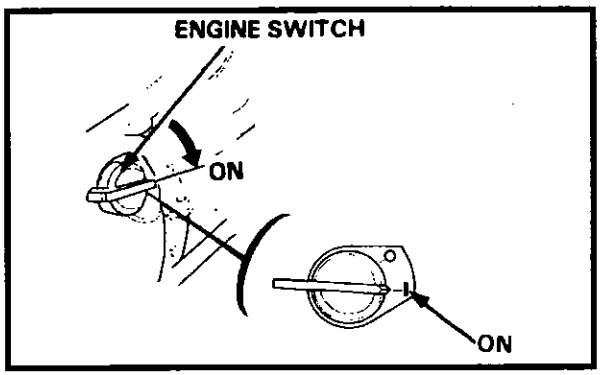


Figure 5-8 Engine ON/OFF Switch

Pull the starter grip likely until resistance is felt, then pull forcibly while holding the operation handle, Refer Figure 5-9.

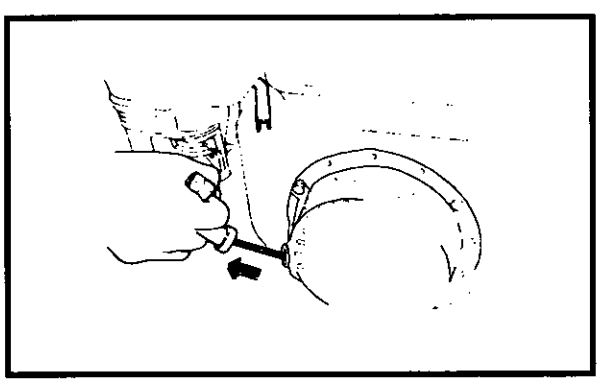


Figure 5-9 Recoil Starter operation

⚠ CAUTION

Avoid pulling the rope completely out. If you do, the recoil starter could be damaged and the rope broken. Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

5. After start-up of the engine, open the choke lever gradually.

6. Allow the engine to warm up at slow speed without load.

COMPACTOR OPERATION

⚠ CAUTION

There is no neutral position, the compactor does not move at low idle speed.

1. After the engine has warmed up, quickly move the Throttle Lever to High Idle position 🐇 when the centrifugal clutch will engage automatically, causing the compactor to simultaneously vibrate and move forward.

2. The Machine Handle is used to steer the compactor during operation.

3. If speed of engine is reduced to reduce speed over ground, output of machine will be reduced due to reduction of vibrations from the eccentric housing assembly

4. Manually guide the vibrating plate covering the working area. Continue with passes until the required compaction is produced.

NOTE

When compacting on slopes it is advisable to tie a rope to the compactor which can be held by another person to take the weight of the machine.

CARE DURING OPERATION

1. If the Air Filter becomes choked with sand or dust, the engine rpm. will drop. Clean the element.

2. If the engine runs at normal speed. but the compactor will not vibrate, check the V-belt tension and the centrifugal clutch for correct operation.

SHUT-DOWN PROCEDURE

Emergency Stop.

To stop the engine in an emergency, turn the engine switch to the OFF position = O.

Normal Shut-down.

For normal shut-down use the following procedure:

1. Position the Throttle Control Lever to the "low" idle position = 🐢, and allow the engine to idle for two to three minutes.

2. The centrifugal clutch will automatically disengage and stop the vibration.

3. Stop the engine by turning the engine ON/OFF switch to the right to position O, Refer Figure 5-10.

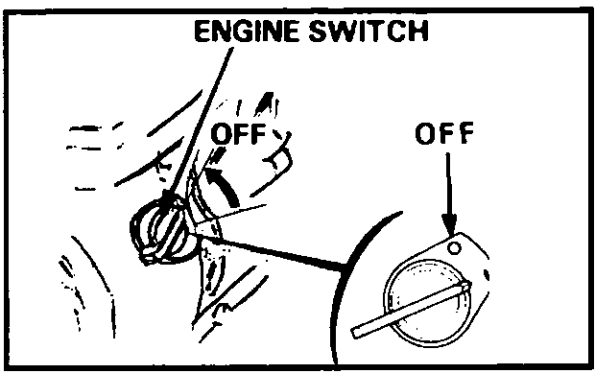


Figure 5-10 Engine Switch - OFF Position.

4. Close the fuel cock valve.

STORAGE

1. Drain the fuel tank and the carburetor.

2. Close the fuel cock valve.

3. Pull the handle on the recoil starter until it becomes hard to pull.

4. Clean the unit of all dirt, grease or other material.

5. Store in a clean, dry location. Use the cover if storage will be for a long time.

SECTION 6 - FUEL AND LUBRICATION SPECIFICATIONS

GENERAL INFORMATION

Lubrication is an essential part of preventive maintenance, affecting to a great extent the useful life of the unit. Different lubricants are needed and some components in the unit require more frequent lubrication than others.

Specific recommendations of brand and grade of lubricants are not made here due to regional availability, operating conditions, and the continual development of improved products. Where questions arise, refer to the requirements and specifications in the manufacturer's manual.

All oil levels are to be checked with the machine parked on a level surface, and while the oil is cold, unless otherwise specified.

NOTE:
For detailed information on specific engine requirements it is essential to consult the Engine Manufacturer's Operation and Maintenance Manual supplied with the machine.

FLUID/OIL	APPROXIMATE CAPACITY
NORMAL FUEL	
HONDA GX120 / ROBIN EY20	
UNLEADED PETROL	2.5 Liters
YANMAR L40 / HATZ E673	
No.2 DIESEL FUEL	2.5 Liters
ECCENTRIC HOUSING OIL	
SHELL TURBINE OIL T32	0.15 Liters
ENGINE OIL	
HONDA GX120	
SAE 10W-30 (BELOW 14 °F)	
SAE 20 (14 °F TO 68 °F)	
SAE 30 (68 °F TO 104 °F)	0.6 Liters
ROBIN EY20	
SAE 10W-30 (BELOW 14 °F)	
SAE 10W-40 (14 °F TO 104 °F)	0.6 Liters
YANMAR L40	
SAE 10W-30 (BELOW 14 °F)	
SAE 10W-40 (14 °F TO 104 °F)	0.75 Liters
HATZ E673	
SAE 10W-30 (BELOW 14 °F)	
SAE 10W-40 (14 °F TO 104 °F)	1.0 Liters

SECTION 7 - INITIAL BREAK-IN MAINTENANCE

WARNING

Improper maintenance can be hazardous.

Read and understand SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES before you perform any maintenance, service or repairs.

Any new equipment requires an initial modification of the maintenance schedule to properly break-in the various systems and component units.

Perform this one time initial break-in maintenance after 20 to 100 hours of operation IN ADDITION TO the 4 hour, 40 hour and 100 hour maintenance tasks which are described on the following pages.

After this initial phase, the regular intervals should be followed. Refer Section 8 Routine Maintenance Schedule Chart..

WARNING

Hot oil and/or components can burn.

Oil must be at normal operating temperature when draining.

Avoid contact with hot oil or components.

ENGINE OIL

Drain the engine oil after the first 20 hours of operation. Fill with the correct amount of the recommended oil. Check the oil level with the oil check gauge, Refer Figure 7-1.

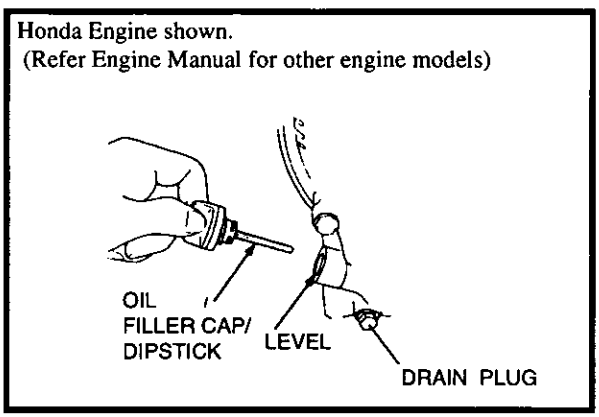


Figure 7-1 Engine Oil Level

NOTE:

For detailed information on specific engine requirements it is essential to consult the Engine Manufacturer's Operation and Maintenance Manual supplied with the machine.

ECCENTRIC HOUSING OIL

Drain the Eccentric Housing Oil after the first 100 hours of operation. Remove the Fill/Level/Drain Plug, and place the machine so that the level plug hole is at lowest point to permit complete emptying of the housing..

Drain out the oil and fill with the correct amount of the recommended oil, Refer Section 6, Fuel and Lubrication Specifications.. Clean and replace the plug securely.

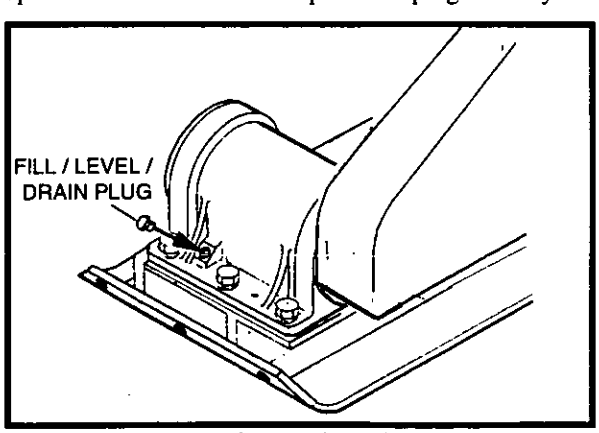


Figure 7-2 Eccentric Housing Oil Level

SECTION 8 - ROUTINE MAINTENANCE SCHEDULE

GENERAL MAINTENANCE INFORMATION

To prevent minor irregularities from developing into serious conditions, several other services or checks are recommended for the same intervals as the periodic lubrication.

The purpose of these services or checks are to ensure the uniterrupted and safe operation ofa the unit by revealing the need for adjustment caused by normal wear.

I. **Prior to conducting any maintenance work, ensure that the following instructions are observed:**
   1. **Place the machine on a firm, level and clean working surface.**
   2. **Ensure the engine is shutdown and allowed to cool.**
   3. **Thoroughly wash all fittings, caps, plugs, etc., with a non-flammable, non-toxic cleaning solution before servicing, to prevent dirt from entering while performing the service.**

II. **Prior to conducting any maintenance work, ensure that the following instructions are observed:**
   1. **When draining fluids, ensure that adequate sealable containers are available and that every care is taken to prevent spillage.**
   2. **Always ensure waste fluids are disposed of in an enviromentally safe manner.**
   3. **Always ensure used filters are stored in secure containers and disposed of in an enviromentally safe manner.**
   4. **Always ensure the Engine Manufacturer's Instruction Manual is followed for the particular engine installed in your machine..**

The maintenance chart in this section shows those items requirieng regular service and the intervals at which they should be performed.
A regular service program should be geared to the items listed under each interval. These intervals are based on average operating conditions. In the event of extremely severe, dusty or wet operating conditions, more frequent maintenance than specified may be necessary.

MAINTENANCE SCHEDULE CHART

	As required	4h	8h	40h	100h	500h.	Page Ref.
Torque up any loosebolted connections	■						15-1
Check V-Belts (Refer Section 13)	■	■	■				13-1
Check Check Air cleaner connections and ducts for leaks.	■	■	■				9-1
Clean/replace air cleaner elements	■						9-1
Clean the machine.	■						-
Check and replace shock mounts that are torn or severely cracked	■						13-1
Check engine oil level (Dipstick marks)		■	■				9.1
Change engine oil				■			9.1
Check oil level in eccentric housing					■		11-1
Change eccentric housing oil						■	12-1
Check/clean cooling fins of cylinders, engine	■				■		-
Check valve clearance (Refer engine manual)					■	-	13-1

SECTION 9 - 4 HOUR OR DAILY ROUTINE MAINTENANCE

WARNING

Improper maintenance can be hazardous.

Read and understand SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES before you perform any maintenance, service or repairs.

WARNING

Hot oil and/or components can burn.

Oil must be at normal operating temperature when draining.

Avoid contact with hot oil or components.

ENGINE OIL

Check the engine oil level twice daily, (every 4 hours), Refer Figure 9-1.

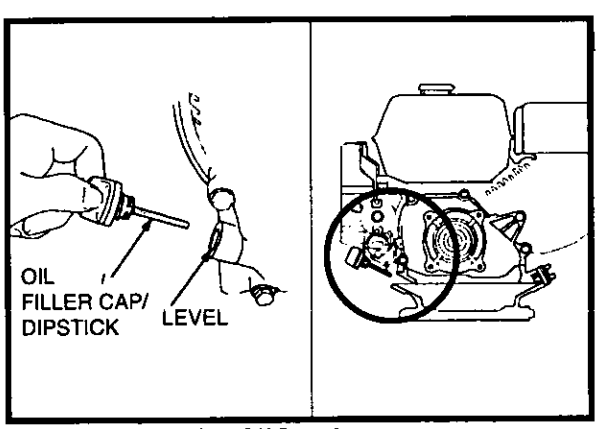


Figure 9-1 Engine Oil Level

V-BELTS

Check the V-belts daily, Refer Figure 9-2.

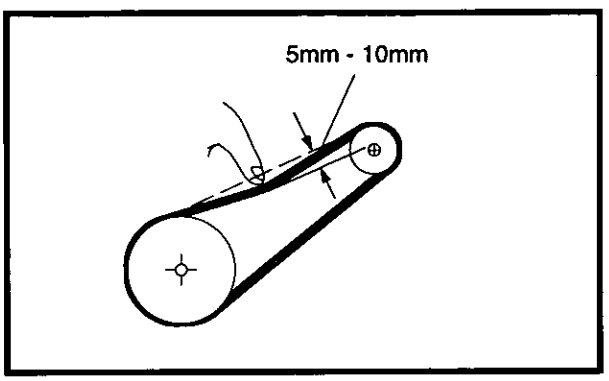


Figure 9-2 Checking belt tension

To check for correct tension, press belt down lightly with a finger at a point midway between the pulleys.
The tension correct if the finger pressure causes a deflection no greater than 5 mm (3/16") to 10 mm (3/8"), Refer Fig. 9-2. Should adjustment be required refer to Section 13, Routine Adjustments.

AIR CLEANER FILTER

The air cleaner filter requires cleaning daily.
A dirty air cleaner will restrict air flow to the carburettor. To prevent carburettor malfunction, service the air cleaner regularly. Service more frequently when operating in extremely dusty conditions.

WARNING

Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

CAUTION

Never run the engine without the air cleaner. Rapid engine wear will result.

The air cleaner used on Honda engine units is a dual element dry type. The following procedure is recommended..

Honda Engine Shown (Refer Engine Manual for other engine models)

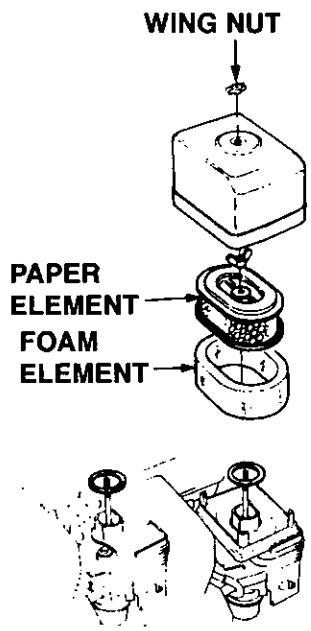


Figure 9-3 Dual Element Air Cleaner.

1. Remove the wing nut and the air cleaner cover. Remove the elements and separate them. Carefully check both elements for holes or tears and replace if damaged.

2. Foam element: Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly.
Soak the element in clean engine oil and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the foam.

3. Paper Element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibres. Replace the element if it is excessively dirty.

NOTE:

For detailed information on specific engine requirements it is essential to consult the Engine Manufacturer's Operation and Maintenance Manual supplied with the machine.

SECTION 10 - 40 HOUR OR WEEKLY ROUTINE MAINTENANCE

Contents **Page**

WARNING

Hot oil and/or components can burn.

Oil must be at normal operating temperature when draining.

Avoid contact with hot oil or components.

ENGINE OIL

Change the engine oil weekly, (every 40 hours), Refer Figure 10-1.

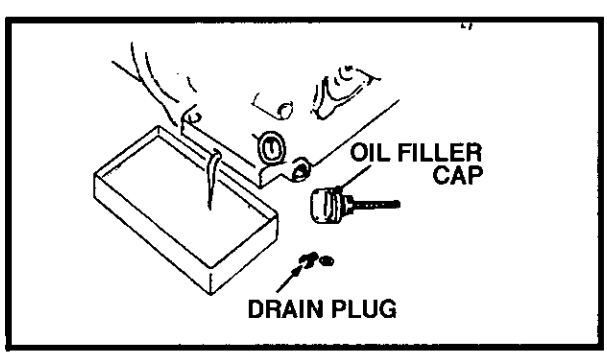


Figure 10-1. Engine Oil Change

1. Remove the oil filler cap and drain plug to drain the oil.

2. Install the drain plug, and tighten securely.

3. Refill with the recommended engine oil (Refer Section 6, FUEL AND LUBRICATION SPECIFICATIONS, and check the oil level.

4. Install the oil filler cap.

NOTE:
Refer to engine manufacturer's manual for details on specific engine models..

SECTION 11 - 6 MONTH OR 100 HOUR ROUTINE MAINTENANCE

Contents Page

WARNING

Hot oil and/or components can burn.

Oil must be at normal operating temperature when draining.

Avoid contact with hot oil or components.

ECCENTRIC HOUSING OIL

With the machine on level surface, check the Eccentric Housing Oil level every 100 hours.

The oil level should reach the bottom of the threads of the oil level plug hole as shown in Figure 11-1.

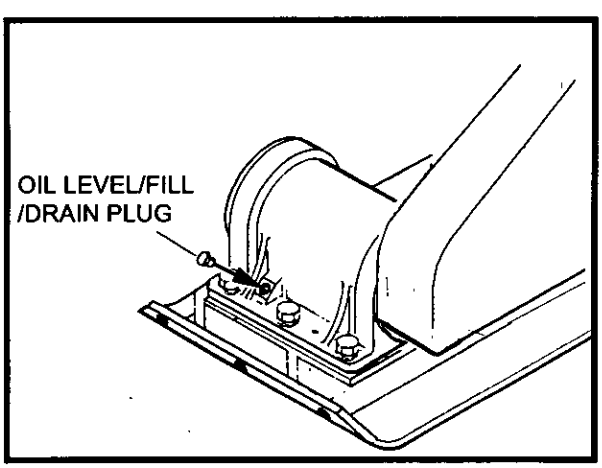


Figure 11-1 Eccentric Housing Oil Level

If the level is lower, add correct oil specification, refer SECTION 6, until level is correct..

Contents Page

SEDIMENT CUP CLEANING

WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in the area.**
- **After installing the sediment cup, check for leaks, and make sure the area is dry before starting the engine.**

1. Turn the fuel valve to OFF.
2. Remove the sediment cup and O-ring, refer Figure 11-2.

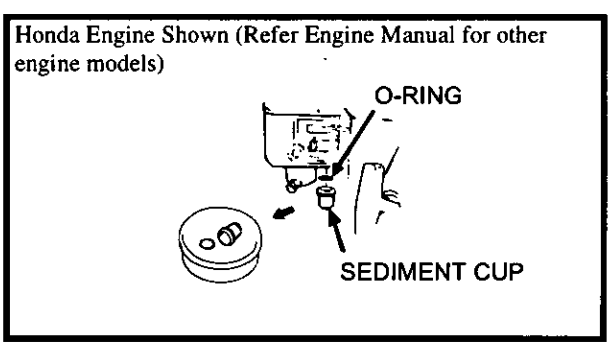


Figure 11-2 Sediment Cup and O-ring.

3. Wash both in nonflammable or high flash point solvent.
4. Dry them thoroughly and reinstall securely.
5. Turn the fuel valve ON and check for leaks.

SPARK PLUG SERVICE

To ensure proper engine operation, the spark plug must be properly gapped and free from deposits.

1. Remove the spark plug cap and use the proper size spark plug wrench to remove the spark plug.

WARNING

If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

2. Visually inspect the spark plug. Discard the spark plug if there is apparent wear, or if the insulator is cracked or chipped. Clean the spark plug with wire brush if it is to be reused.

3. Measure the gap with a feeler gauge. Correct as necessary by bending the side electrode.
The gap should be: 0.70 - 0.80mm (0.28 - 0.32 in.)

4. Check that the spark plug washer is in good condition and the thread the spark plug in by hand to prevent cross-threading.

5. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.
NOTE:
When installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer. When reinstalling a used spark plug, tighten 1/8 - 1/4 turn after

SECTION 12 - 500 HOUR OR SEMI-ANNUAL ROUTINE MAINTENANCE

WARNING

Hot oil and/or components can burn.

Oil must be at normal operating temperature when draining.

Avoid contact with hot oil or components.

ECCENTRIC HOUSING OIL

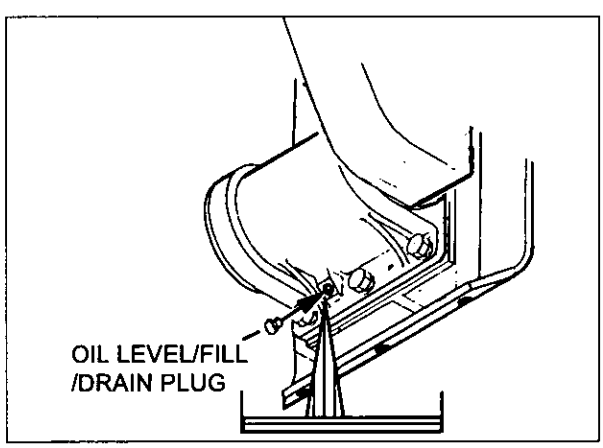


Figure 12-1 - Eccentric Housing Oil change.

After initial 100 hours oil change, the eccentric housing oil is changed every 500 hours.

1. Allow unit of warm up before draining.

2. Drain completely by position the machine with the drain port at lowest point, refer Figure 12-1.

3. Place the machine on level surface

4. Refill with oil of the correct specification, refer SECTION 6, FUEL AND LUBRICATION SPECIFICATIONS..

5. The oil level is correct when it reaches the bottom of the threads of the oil level plug hole as shown in Figure 12-2.

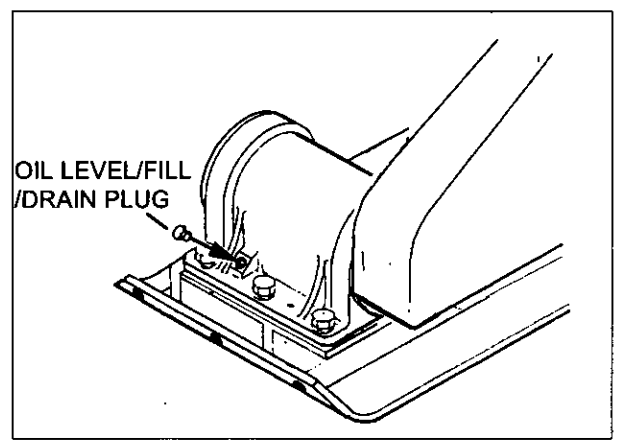


Figure 12-2 - Eccentric Housing Oil Level.

ENGINE VALVE CLEARANCE

Refer to Engine manual for instructions on engine adjustments such as valve clearance adjustment, every 500 hours.

SECTION 13 - ROUTINE ADJUSTMENTS

V-BELT ADJUSTMENT

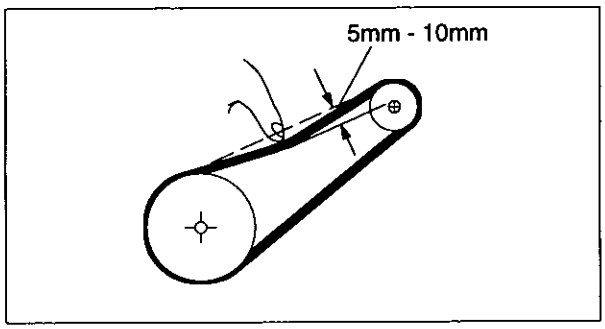


Figure 13-1 - V-Belt Adjustment.

- **Tension of the belts.**

The tension of the belts should be taut enough so that if the belts are pressed down lightly with a finger between the two pulleys, deflection would be approximately 5mm (3/16") to 10mm (3/8", refer Figure 13-1

- **Tensioning Method Procedure**

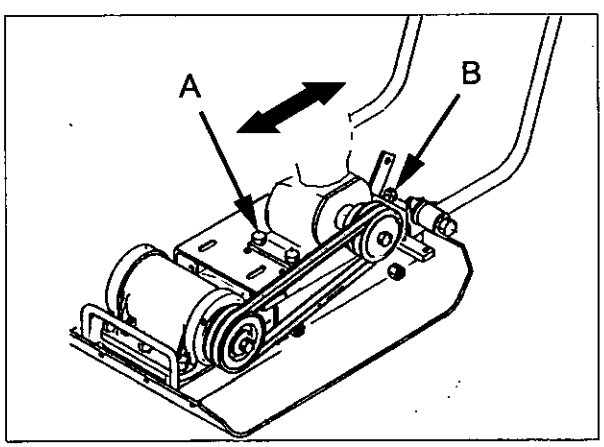


Figure 13-2 - V-Belt Alignment Adjustment.

1. First loosen the engine mounting bolts 'A', refer Figure 13-2 .

2. Progressively move the engine backwards by turning the tensioning bolt 'B', until the required belt tension is produced.

3. With the required belt tension, retighten the engine mounting bolts.

Note:
If the engine is used with the belt tension too weak, the belt will not only slip but also the belt wear rate will be higher.

- **V-belt Alignment Adjustment Procedure.**

Note:
Misalignment of the V-belt in the pulles will cause accelerated belt wear.

1. After replacing the belts or checking belt tension, it is important to check the gap between the engine mounting plate and the machine body.
The gap should be equal at all four corners. This ensures that the engine shaft and the eccentric shaft run parallel.

2. If necessary adjust the space washers on the anti-vibration mounts until the required alignment is acheived.

VIBRATION FREQUENCY CHECK

The vibration frequency depends on the engine speed.

Check the engine speed with the throttle set on High Idle. The engine speed should be adjusted to the value stated in the Technical Specifications, Section 15.

If trouble is experience with excessive vibration, have the engine speed checked.

Prolonged running with excessive vibration will greatly reduce V-belt and vibration shock mount life.

Also for maximum compaction performance it is essential to maintain correct vibration frequency of the vibrating plate.

When running correctly the machine should 'hum' with very little vibration felt at the handle. In this condition the machine will travel forward, on the ground, with very little effort.

ENGINE ADJUSTMENTS.

Refer to the Engine Manufacturer's Manual for instructions on routine engine adjustments.

SECTION 14 - MISCELLANEOUS AND OPTIONAL EQUIPMENT

POLYURATHANE PADS

Refer to SECTION 16, PARTS, Page 16-2 for installation details on this option. These optioan pads may be retrofited to standard units or are factory supplied.

WATER SPRINKLER

Refer to SECTION 16, PARTS, Page 16-4 for installation details on this option. This may be retrofited to standard units or is factory supplied on Units with 'W' designation in the Model Type.

TRANSPORTER

Refer to SECTION 16, PARTS, Page 16-4 for installation details on this option. This may be retrofited to standard units or is factory supplied.

LIFTING FRAME

Refer to SECTION 16, PARTS, Page 16-4 for installation details on this option. These optioan pads may be retrofited to standard units or are factory supplied.

SECTION 15 - SPECIFICATIONS

TECHNICAL SPECIFICATION

MODEL	HX-40
OPERATING WEIGHT	78 kg (Petrol) 117 kg (Diesel)
VIBRATION FREQUENCY	80 HZ
CENTRIFUGAL FORCE	12 kN
TRAVEL SPEED	24 m./min.
OVERALL LENGTH	1050 mm
OVERALL HEIGHT	940 mm.
OVERALL WIDTH	400 mm
PLATE SIZE	400 mm x 600 mm
*ENGINE (MAKE & MODEL)	Honda GX120
ENGINE HORSEPOWER RATING	3 kW @ 2600 rpm
FUEL TANK CAPACITY	2.5 Liters
FUEL	Unleaded Petrol
STARTING SYSTEM	Recoil Starter

* Optional engines are:	
ENGINE (MAKE & MODEL)	Robin EY20
ENGINE HORSEPOWER RATING	3.7 kW @ 3600 rpm
ENGINE (MAKE & MODEL)	Yanmar L40
ENGINE HORSEPOWER RATING	3.1 kW @ 3600 rpm
ENGINE (MAKE & MODEL)	Hatz E673
ENGINE HORSEPOWER RATING	4 kW @ 3600 rpm

ENGINE RPM SPECIFICATION

Note:
For engine rpm settings, refer to the engine manual

SECTION 16 - PARTS MANUAL

HX-40 SERIES

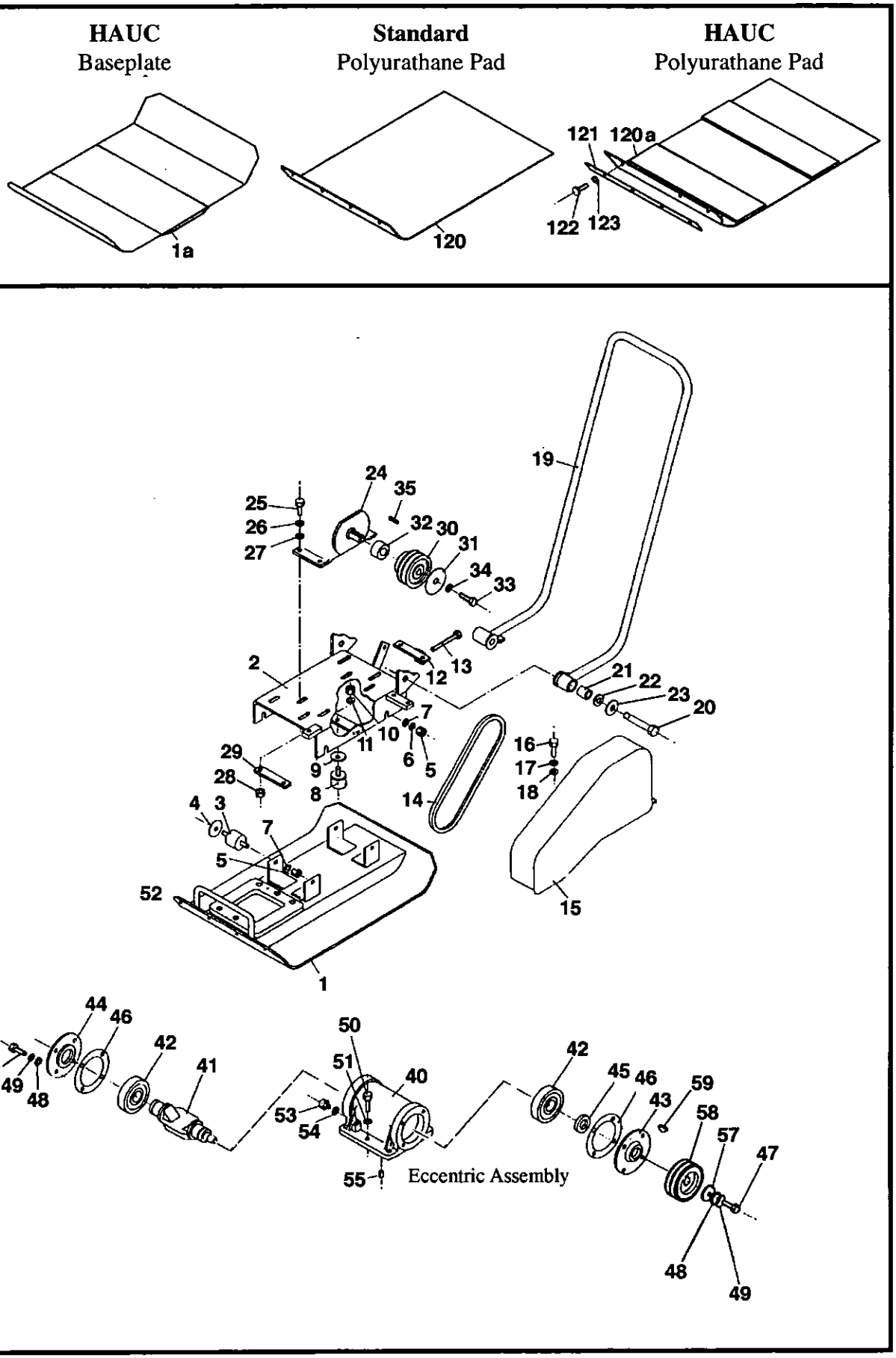
PLATE COMPACTOR

Effective S/N. 356

WHEN ORDERING REPLACEMENT PARTS

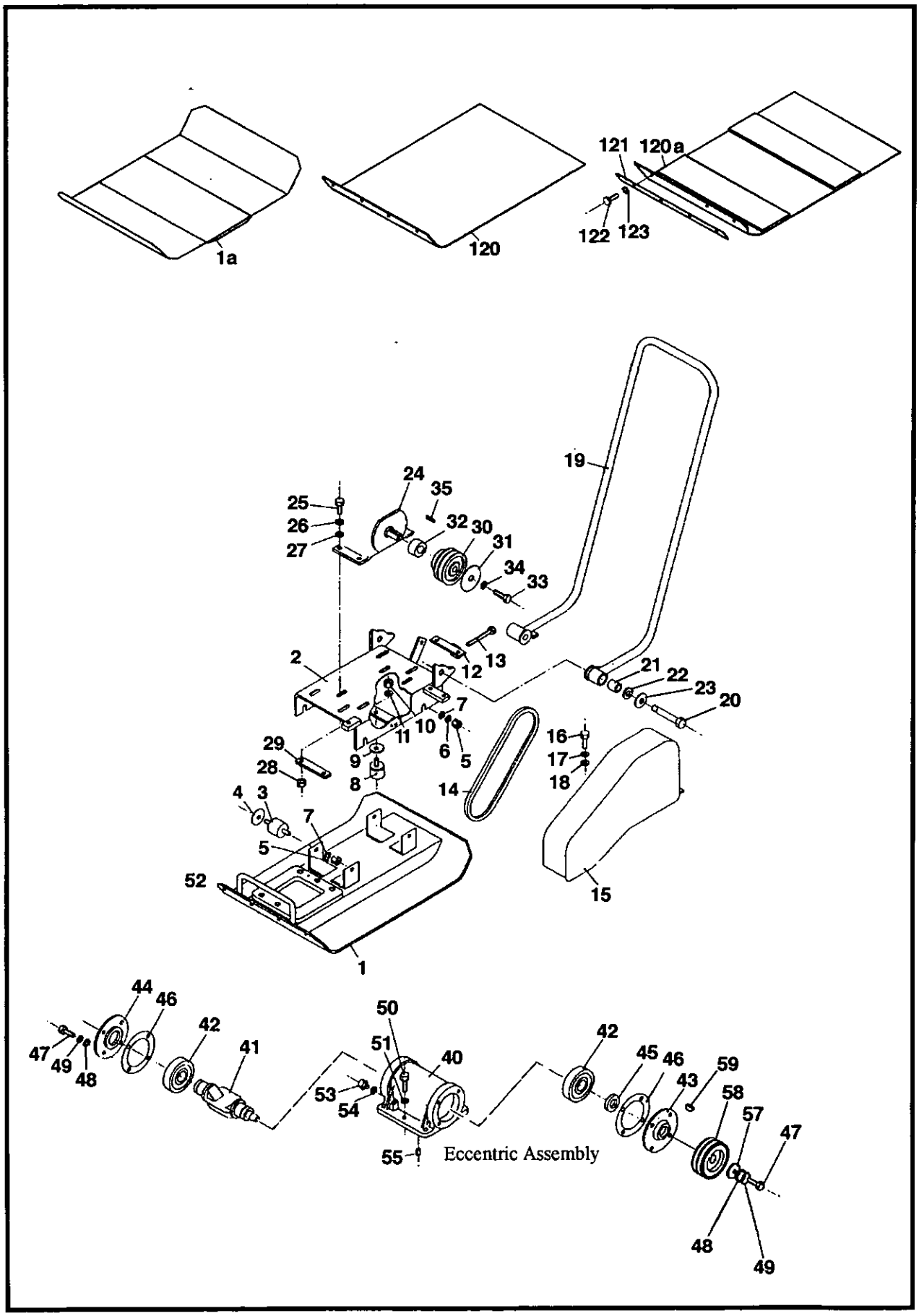
Find the appropriate parts from those listed among the illustration views and furnish with the parts order :
Model, Serial Number, Part Number, Part Name and the required quantity.
The number given in the Reqd.No. column indicates the quantity of parts used for one unit.

Note:
The parts listed in the parts book are subject to change without notice.


HAUC
Baseplate
Standard
Polyurathane Pad
HAUC
Polyurathane Pad
1a
120
121
120a
122
123
Eccentric Assembly

SECTION 16 - PARTS
HX-40 SERIES
GENERAL ASSEMBLY - EXPLODED ASSEMBLY

Item	Comm. No.	Description	Qty.	Spec.
1	10570356	Baseplate - HX40	1	
1a	10570828	Baseplate - HX40H - (Petrol Engined)	1	
1a	10570372	Baseplate - HX40H - Diesel	1	
2	10570265	Bedplate	1	
3	92991934	Anti-Vibration Mounting	4	
4	10571529	Spacer	4	
5	92304526	Nut	8	M10-1.50
6	10570570	Lockwasher	8	M10
7	92061498	Washer	4	M10 TYPE A
8	92991942	Anti-Vibration Damper	1	
9	10571529	Spacer	1	
10	92304526	Nut	1	M10-1.50
11	92329275	Spring Lockwasher	1	M10 TYPE A
12	10571487	Belt Tensioner	1	
13	10570455	Bolt	1	M8-120
14	92992015	Belt	1	A890
14	10570257	Belt - (Hatz)	1	A970
15	92992007	Belt Guard	1	
15	10571578	Belt Guard - (Yanmar)	1	
15	10570273	Belt Guard - (Hatz)	1	
16	10570489	Setscrew - (Except Hatz)	3	M8-25
16	10570489	Setscrew - (Hatz)	5	M8-25
17	90105313	Spring Washer - (Except Hatz)	3	M8 TYPE A
17	90105313	Spring Washer - (Hatz)	5	M8 TYPE A
18	93450369	Washer - (Except Hatz)	3	M6 TYPE A
18	93450369	Washer - (Hatz)	5	M8 TYPE A
19	92993245	Handle	1	
20	92991967	Handle Support Pin	2	
20	10570380	Handle Support Pin - (Yanmar)	2	
21	92991959	Anti-Vibration Bush	2	
22	92991975	Handle Spacer	2	
23	92991983	Spacer	2	
24	10571438	5 h.p. Honda Petrol Engine	1	
24	10571412	5 h.p. Robin Petrol Engine - OPTION		
24	10571420	5 h.p. Briggs & Stratton Petrol Engine - OPTION		
24	10571396	5 h.p. Hatz Diesel Engine - OPTION		
24	10571404	4 h.p. Yanmar Diesel Engine - OPTION		
25	10570505	Setscrew- (Except Hatz)	4	M8-40
25	10570604	Setscrew- (Hatz)	4	M10-35
26	90105313	Spring Washer - (Except Hatz)	4	M8 TYPE A
26	92329275	Spring Washer - (Hatz)	4	M10 TYPE A
27	93450369	Washer- (Except Hatz)	4	M8 TYPE A
27	92061498	Washer- (Hatz)	4	M10 TYPE A
28	92304526	Nut-(Hatz)	4	M10-1.50
29	10571479	Engine Backing Plate - (Petrol Engined)	1	
30	93458388	Clutch	1	
31	93463156	Clutch Cover	1	
32	93463164	Clutch Spacer	1	
33	93463172	Setscrew - (Petrol Engined)	1	5/16" x 1" UNF
34	90105313	Spring Washer - (Petrol Engined)	1	M8 TYPE A
35	10570703	Key-(Petrol Engined)	1	3/16" SQ. x 1 1/4"
-	**92992023**	**Vibrator Unit Complete**		
40	92992031	Housing	1	
41	92992049	Shaft	1	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Eccentric Assembly
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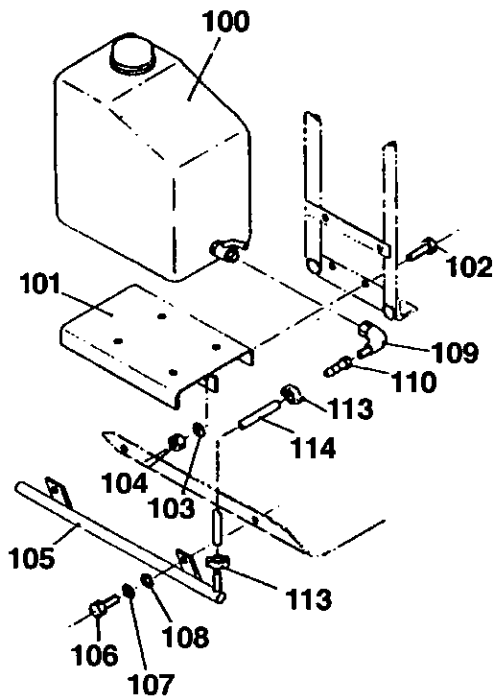
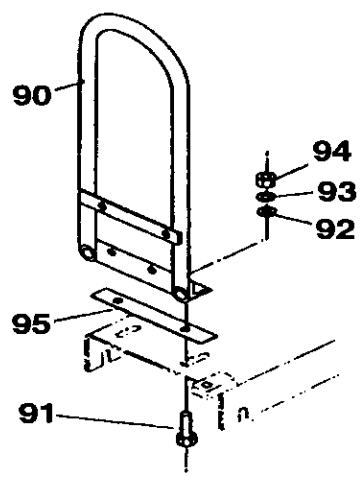
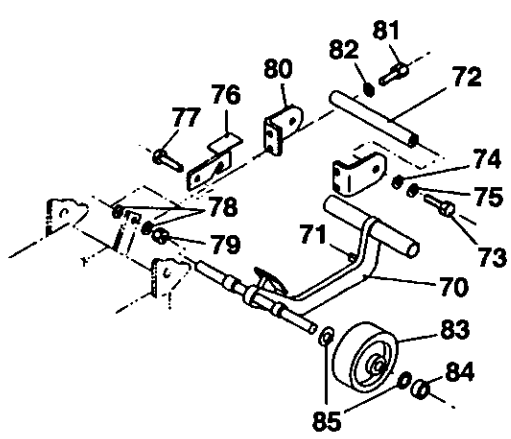
Item	Comm. No.	Description	Qty.	Spec.
42	92992056	Bearing	2	
43	92992064	Bearing Cover 'A'	1	
44	92992072	Bearinq Cover 'B'	1	
45	10572080	Oil Seal	1	
46	92992098	Gasket	2	
47	10570489	Setscrew	9	M8-25
48	93450369	Washer	9	M6 TYPE A
49	90105313	Spring Washer	9	M8 TYPE A
50	10570612	Setscrew	6	M14-35
51	92304690	Spring Washer	6	M14
53	92992122	Oil Drain Plug	1	
54	92992130	Washer	1	M16 TYPE A
55	10570695	Spirol Pin	2	5 x 10
57	10570455	Washer	1	
58	92992114	Pulley	1	
59	92992106	Key	1	
-	**10571594**	**Polyurathane Pad - HX40 (Optional)**		
120	10571610	Pad	1	
121	10571511	Clamp Bar	1	
122	10570497	Setscrew	4	M8-30
123	90105313	Spring Washer	4	M8 TYPE A
-	**92991447**	**Polyurathane Pad - HX40H (Optional)**		
120a	10570406	Pad	1	
121	10571511	Clamp Bar	1	
122	10570497	Setscrew	4	M8-30
123	90105313	Spring Washer	4	M8 TYPE A
NI	10571461	Belt Tensioner - (Hatz)	1	
NI	92304526	Nut- (Hatz)	1	M10-1.50
NI	10571537	Throttle Lever - (Hatz)	1	
NI	10570281	Belt Guard Backplate - (Hatz)	1	
NI	10570414	Clutch Top Hat	1	
NI	10571602	Stub Shaft c/w Screws - (Hatz)	1	
NI	10571495	Front Engine Mtg Bracket - (Hatz)	1	
NI	10571503	Rear Engine Mtg Bracket - (Hatz)	1	
NI	10571339	Ear Protection Label	1	



Water Spray System



Lifting Frame Assembly



Transporter Assembly

OPTIONAL EQUIPMENT - EXPLODED ASSEMBLIES

Item	Comm. No.	Description	Qty.	Spec.
-	**92988898**	**Transporter Complete (Optional)**		
70	10570299	Undercarriage	1	
71	10570307	Dowel	1	
72	88107339	Pivot Shaft	1	
73	10570596	Setscrew	2	M10-30
74	92061498	Washer	2	M10 TYPE A
75	92329275	Spring Washer	2	M10 TYPE A
76	93450039	Release Bracket	1	
77	93450047	Bolt	1	M10-40
78	92061498	Washer	2	M10 TYPE A
79	92304526	Nyloc nut	1	M10
80	10570802	Pivot Bracket	2	
81	10570596	Setscrew	4	M10-30
82	92329275	Spring Washer	4	M10 TYPE A
83	92994086	Wheel	2	
84	10571354	Shaft Collar	2	
85	10570554	Washer	4	M20 TYPE A
-	**92988914**	**Lifting Frame Complete (Optional)**		
90	**10571545**	**Lifting Frame**	**1**	
91	93450047	Bolt	2	M10-40
92	92061498	Washer	4	M10 TYPE A
93	92329275	Spring Washer	2	M10 TYPE A
94	92304526	Nyloc nut	2	M10
95	**93450195**	**Anti-Vibration Pad**	**1**	
-	**10570802**	**Water Spray System (HX40) (Optional)**		
100	92988062	Water Tank	1	
101	10571552	Water Tank Mounting	1	
102	10570588	Setscrew	4	M10-25
103	92061498	Washer	4	M10 TYPE A
104	92304526	Nyloc nut	4	M10
105	10570331	Water Spray - HX40	1	
106	10570471	Setscrew	2	M8-20
107	93450369	Washer	2	M8 TYPE A
108	90105313	Spring Washer	2	M8 TYPE A
109	92996123	90 Degree Elbow	1	
110	10571321	Hosetail	1	
113	92996149	Reinforced Hose	1	
114	92996156	Hose Clip	2	

Always use genuine Ingersoll-Rand Spare Parts

SECTION 16 - PARTS
HX-40 SERIES
OPTIONAL ENGINE COMBINATIONS

Item	Comm. No.	Description	Qty.	Spec.
-		HX40 without Engine		-
-		HX40H without Engine		-
-	92949932	HX40 with 5 h.p. Honda Petrol Engine		29-1-106
-		HX40H with 5 h.p. Honda Petrol Engine		29-1-106
-	92992973	HX40 with 5 h.p. Robin Petrol Engine		29-2-206
-	92992981	HX40H with 5 h.p. Robin Petrol Engine		29-2-206
-		HX40 with 5 h.p. Briggs & Stratton Petrol Engine		29-1 -001
-		HX40H with 5 h.p. Briggs & Stratton Petrol Engine		29-1 -001
-		HX40 with 5 h.p. Hatz Diesel Engine		29-0-400
-		HX40H with 5 h.p. Hatz Diesel Engine		29-0-400
-		HX40 with 4 h.p. Yanmar Diesel Engine		29-0-600
-		HX40H with 4 h.p. Yanmar Diesel Engine		29-0-600