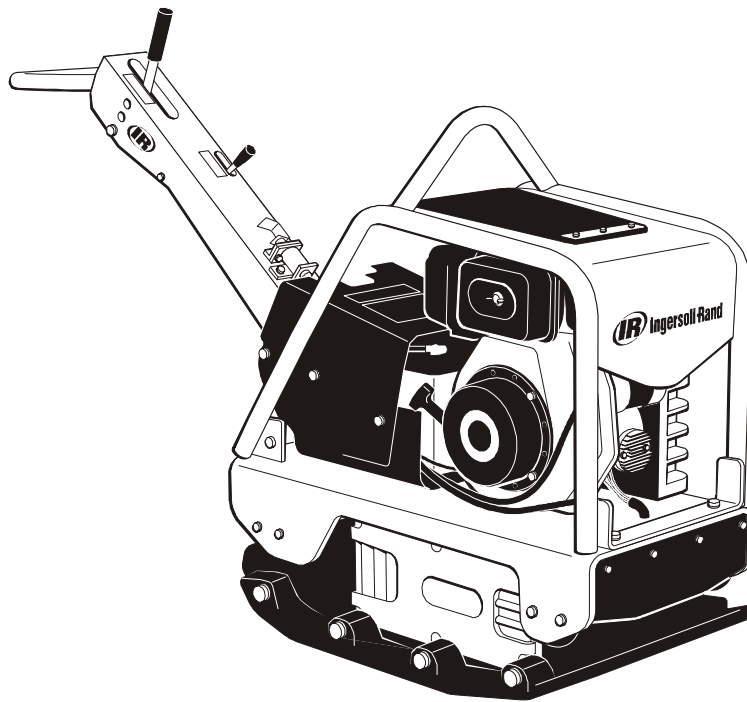




# OPERATION / MAINTENANCE AND PARTS MANUAL BXR-70 REVERSIBLE PLATE COMPACTOR



021601AB

**Read this instruction manual before operating this equipment**

**CPN 13192471**

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**August 3, 2001  
Revised (01-13)**

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***\*\*Always use Ingersoll-Rand Replacement parts!\*\****

## STANDARD ABBREVIATIONS

AC	Alternating Current
A/R	As Required
ARC	Authorized Rebuilt Component
Assy	Assembly
BHCS	Button Head Cap Screw
Cu Yd	Cubic Yard
Cyl	Cylinder
DC	Direct Current
Dia	Diameter
Eff	Effective
FHCS	Flat Head Cap Screw
F-N-R	Forward-Neutral-Reverse
FOPS	Falling Object Protection System
F/P	Fork Positioning
Gr	Grade
HHCS	Hex Head Cap Screw
HHMS	Hex Head Machine Screw
HSBHCS	Hex Socket Button Head Cap Screw
ID	Inside Diameter
LH	Left Hand
M	Metric
MIK	Maintenance Interval Kit
mm	Millimeter
Nat Asp	Naturally Aspirated
Neg	Negative
NSS	Not Sold Separately
NSVA	Non Serviceable Assembly
OD	Outside Diameter
Pos	Positive
PSI	Pounds per Square Inch
Q/A	Quick-Attach

Ref	Reference
RH	Right Hand
RHSS	Round Head SelfTapping Screw
ROPS	Roll-Over Protection System
RPM	Revolutions Per Minute
SAE	Society of Automotive Engineers
Sec	Section
SFH	Slotted Fillister Head
SHCS	Socket Head Cap Screw
SMV	Slow Moving Vehicle
S/N	Serial Number
SPST	Single Pole/Single Throw
S.T.	Self-Tapping
Std	Standard
Str	Straight
Sw	Swivel
Tach	Tachometer
Temp	Temperature
Thd	Thread
Thk	Thick
Typ	Typical
UNC	Unified Coarse
UNF	Unified Fine
Univ	Universal
Var	Variable
V	Volt
VPM	Vibrations Per Minute
Wgt	Weight
w/	With
w/o	Without
Wp	Weatherproof

*\*\*Always use Ingersoll-Rand Replacement parts!\*\**

## RECOMMENDED SERVICE PARTS

BXR-70 Current Production

Quantities are for one unit having the operating hours listed below

### 0 to 1,000 operating hours

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>CPN</u>
<b>Engine</b>			
	Fuel Filter+	1	59853366
	Fuel Tank Cap	1	59854182
	Air Cleaner Element+	1	59853812
	Fuel Strainer Assembly	1	59305490
	Starter Rope	1	58922303
	Starter Knob	1	58922295
	Stop Button	1	59853390
<b>Main Body Assembly</b>			
	V-belt	1	59832444

+ Designates parts that are to be replaced within the specified time intervals as stated in the maintenance schedule.

## RECOMMENDED SERVICE PARTS

BXR-70 Current Production

Quantities are for one unit having the operating hours listed below

### 1,000 to 3,000 operating hours

<u>Assembly</u>	<u>Description</u>	<u>Qty</u>	<u>CPN</u>
<b>Engine</b>			
	Recoil Starter	1	58922261
	Speed Control Assembly	1	59320374
<b>Controls</b>			
	Operating Handle	1	59239392
	Throttle Lever	1	59830315
	Throttle Cable	1	59391508
	Control Lever	1	59391425

+ Designates parts that are to be replaced within the specified time intervals as stated in the maintenance schedule.

## RECOMMENDED SERVICE PARTS

BXR-70 Current Production

Quantities are for one unit having the operating hours listed below

### 3,000 operating hours plus

<u>Assemble</u>	<u>Description</u>	<u>Qty</u>	<u>CPN</u>
<b>Engine</b>	Muffler	1	59309252
	Intake Valve	1	59330688
	Exhaust Valve	1	59330696

+ Designates parts that are to be replaced within the specified time intervals as stated in the maintenance schedule.



**BXR-70 REVERSIBLE PLATE COMPACTOR  
OPERATION AND MAINTENANCE MANUAL  
COMMUNICATION NO. 13192471**

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This manual should be used with all related supplemental books, engine and transmission manuals, and part 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.

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## SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES

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### OVERVIEW

Before you operate, maintain, or in any other way, use this machine, read and study this manual. Know how to safely use the compactor's controls and what you must do for safe maintenance.

**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.

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. •

**ALWAYS** wear or use the proper safety items required for your personal protection.

For reasons of security, long hair must be tied back or otherwise secured, garments must be close-fitting and no jewellery - such as rings - may be worn. Injury may result from being caught up in the machinery or from rings catching on moving parts. •

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.**

Never make any modifications, additions or conversions which might affect safety without the supplier's approval. This also applies to the installation and adjustment of safety devices and valves as well as to welding work on load-bearing elements. •

Observe all fire-warning and fire-fighting procedures. •

### PRE-START INSPECTION

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

Check the machine at least once per working shift for obvious damage and defects. Report any changes (incl. changes in the machine's working behaviour) to the competent organisation/person immediately. If necessary, stop the machine immediately and lock it. •

Take the necessary precautions to ensure that the machine is used only when in a safe and reliable state.

Operate the machine only if all protective and safety oriented devices, such as removable safety devices, emergency shut-off equipment, sound-proofing elements and exhausts, are in place and fully functional. •

## SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES

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The electrical equipment of machines is to be inspected and checked at regular intervals. Defects such as loose connections or scorched cables must be rectified immediately. •

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

In the event of safety-relevant modifications or changes in the behaviour of the machine during operation, stop the machine immediately and report the malfunction to the competent authority/person. •

Always wear the prescribed ear protectors. •

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.

Before beginning work, familiarize yourself with the surroundings and circumstances of the site, such as obstacles in the working and travelling area, the soil bearing capacity and any barriers separating the construction site from public roads. •

When travelling on public roads, ways and places always observe the valid traffic regulations and, if necessary, make sure beforehand that the machine is in a condition compatible with these regulations •

Always keep at a distance from the edges of building pits and slopes. •

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

Observe the adjusting, maintenance and inspection activities and intervals set out in the operating instructions, including information on the replacement of parts and equipment. These activities may be executed by skilled personnel only. •

Ensure that the maintenance area is adequately secured. •

Observe the adjusting, maintenance and inspection activities and intervals set out in the operating instructions, including information on the replacement of parts and equipment. These activities may be executed by skilled personnel only. •

After cleaning, examine all fuel, lubricant, and hydraulic fluid lines for leaks, loose connections, chafe marks and damage. Any defects found must be rectified without delay. •

Always tighten any screwed connections that have been loosened during maintenance and repair. •

## SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES

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Any safety devices removed for set-up, maintenance or repair purposes must be refitted and checked immediately upon completion of the maintenance and repair work. •

Ensure that all consumables and replaced parts are disposed of safely and with minimum environmental impact. •  
AVOID, whenever possible, servicing, cleaning or examining the unit with the engine running.

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

ALWAYS disconnect the spark plug before performing any work on the unit.

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.

Carry out welding, flame-cutting and grinding work on the machine only if this has been expressly authorized, as there may be a risk of explosion and fire. •

Before carrying out welding, flame-cutting and grinding operations, clean the machine and its surroundings from dust and other inflammable substances and make sure that the premises are adequately ventilated (risk of explosion). •

## SECTION 2 - INTRODUCTION

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EXCELLENT CHOICE! The Ingersoll-Rand Reversible Plate Compactor you have chosen will give you many hours of maintenance free operation resulting in a faster return of your investment.

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 machine 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 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.

## SECTION 3 - SYMBOL IDENTIFICATION AND METRIC CONVERSION

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INTERNATIONAL HIGHWAY SYMBOLS _____	2
METRIC CONVERSIONS _____	4

### INTERNATIONAL MACHINE SYMBOLS

























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

	OIL PRESSURE		HORN		LOW ENGINE RPM.
	WATER TEMPERATURE		CAUTION		BRAKE - PARK
	ON/OFF		DIESEL FUEL		VIBRATION
	LIGHTS		SLOW		AMPLITUDE
	WATER		FAST		FREQUENCY
	BATTERY		TRANSMISSION		CAUTION - PRESSURIZED
	AMMETER OR VOLTMETER		GREASE		
	AIR PRESSURE		OIL		
	LOW AIR PRESSURE		HYDRAULIC OIL		
	ENGINE RPM		HOURS		
	BRAKE		NEUTRAL		



















## SECTION 3 - SYMBOL IDENTIFICATION AND METRIC CONVERSION

### INTERNATIONAL HIGHWAY SYMBOLS

The following symbols may also appear in a yellow square instead of a red triangle.

	road bends		uneven road
	dangerous bend		ridge
	double bend		dip
	dangerous descent		slippery road
	steep ascent		loose gravel
	carriageway narrows		no entry for power driven vehicles
	carriageway narrows		no entry for vehicles exceeding width
	"end of priority" sign		no entry for vehicles exceeding length
	oncoming traffic has priority		falling rocks
	priority over oncoming traffic		pedestrian crossing
	swing bridge		road work
	road leads onto quay or river bank		light signals

SECTION 3 - SYMBOL IDENTIFICATION AND METRIC CONVERSION

	two-way traffic		no entry for vehicles exceeding weight
	other dangers		no entry for vehicle axle weight exceeding
	level crossing		no u-turn
	level crossing		no turn direction shown
	no entry		no entry for power driven vehicles
	closed to all vehicles in both directions		
	Intersection, user must give way		
	intersection user must give way		
	Intersection user must give way		
	"give way" sign		
	stop sign (new)		
	stop sign (old)		
	"priority road" sign		



### SECTION 3 - SYMBOL IDENTIFICATION AND METRIC CONVERSION

TO CONVERT OMREGNET FRA	INTO TIL	MULTIPLY BY MULTIPLICERES MED
bar	pound/sq.in	14.50
bar	kilopascals	100.
centigrade	fahrenheit	$(C^{\circ} \times 9/5) + 32$
centimeters	inches	0.3937
centimeters	millimeters	10.0
circumference	radians	6.283
cubic centimeters	cu.inches	0.06102
degrees (angle)	radians	0.01745
degrees/sec.	revolutions/min	0.1667
feet	meters	0.3048
feet/min	meters/min.	0.3048
foot-pounds	kg-meters	0.1383
gallons	liters	3.785
Hertz	vibrations/min.	60.
horsepower	kilowatts	0.7457
inches	centimeters	2.540
inches	millimeters	25.40
kilograms	pounds	.250
kilogram meters	-pounds	7.233
kilopascal	pounds/sq.in	0.1450
kilopascal	bars	0.01
kilowatts	horsepower	1.341
liters	gallons (U.S. liq)	0.2642
liters	pints (U.S. liq)	2.113
liters	quarts (U.S. liq)	1.057
meters	feet	3.281
meters	inches	39.37
meters/min	feet/sec	0.05468
miles/hr	kms/hr	1.609
millimeters	inches	0.03937
Newtons	pounds	4.448
Newton-meter	pound-feet	0.737
pints (liq)	liters	0.4732
pounds	kilograms	0.4536
pounds	Newtons	0.225
pound feet	Newton-meter	1.356
pounds/ft.	kgs/meter	1.488
pounds/sq in	bars	0.06895
pounds/sq in	kilopascals	6.895
quarts (liq)	liters	0.9463
radians	degrees	57.30
radians/sec	revolutions/min	9.549
revolutions/min	degrees/sec	6.0
revolutions/min	radians/sec	0.1047
temperature (°C) + 17.78	temperature (°F)	1.8
temperature (°F) - 32	temperature (°C)	5/9
tons (short)	tons (metric)	0.9078
vibrations/min	Hertz	0.0167

## SECTION 4 - OPERATING INSTRUCTIONS

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### **WARNING**



**Improper maintenance can be hazardous.**

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

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### **SAFETY CHECKS - PRE-STARTING**

Before starting each day, in addition to the 10 hour daily routine maintenance, check or inspect the following items to ensure trouble free performance.

1. Check fluid lines, hoses, fittings, filler openings, drain plugs, pressure cap, muffler, safety shrouds and the area underneath the unit for signs of leakage or damage. Fix any leaks and correct any damage before operating.
2. Inspect the entire unit for damaged or missing parts and repair or replace them as needed.
3. Check the fuel level. If necessary, fill the fuel tank with the proper fuel.
4. Check all fastening hardware to ensure it is adequately tightened and that none is missing or broken.
5. Do not operate faulty equipment.
6. Be observant of people and obstructions within the work area.

Please read "INSTRUCTIONS FOR USE" for ROBIN engine EY15 and this instruction manual for correct use and care. Please check if the unit is correctly maintained in good operating condition.

## SECTION 4 - OPERATING INSTRUCTIONS

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### INSPECTION PRIOR TO OPERATION

#### CHECK ENGINE OIL

Before checking or refilling engine oil, be sure the rammer is located on a stable level surface. Do not thread the gauge into oil filler to check oil level. If the oil level is below the lower level line on the dipstick, refill with the proper oil to the upper level (to the neck of oil filler). See section 9.

#### CHECK ENGINE FUEL

### ⚠ WARNING

Do not refuel while smoking, near an open flame or other potential hazards.

#### CLEANING AIR CLEANER

Check Air Cleaner to be sure it is clean and not contaminated. If it needs cleaning perform the following steps: Remove the outer urethane foam and inner element. Wash the element in kerosene or diesel fuel. Saturate it in a mixture of 3 parts kerosene or diesel fuel and 1 part engine oil. Shake off excessive oil and reinstall. Wash the air cleaner case using kerosene. After cleaning it up, apply engine oil on the inner part of the case.

### ⚠ CAUTION

If the air cleaner element is seriously contaminated engine start up may fail or poor output and malfunction of the engine may result.

#### CHECK EACH PART FOR LOOSE OR BROKEN BOLTS AND NUTS

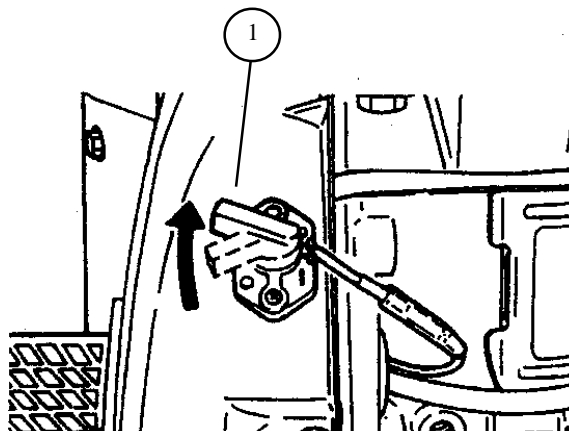
Tighten loose bolts and nuts, if any. Check each part for fuel or oil leak. Replace broken or damaged parts, if any, with new ones.

### OPERATION

#### STARTING

1. Turn the STOP SWITCH (1, Figure 4-1) clockwise to the position "I" (ON).

Figure 4-1

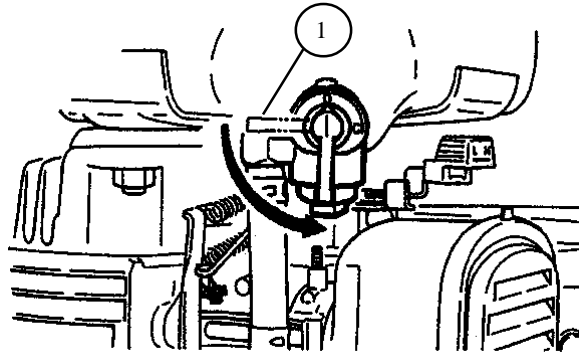


## SECTION 4 - OPERATING INSTRUCTIONS

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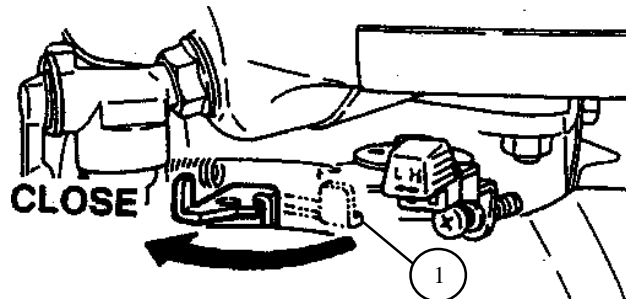
2. Open the FUEL COCK (1, Figure 4-2) located under the fuel tank.

Figure 4-2



3. Close the CHOKE LEVER (1, Figure 4-3). If the engine is cold or the ambient temperature is low, close the Choke Lever (1, Figure 4-2) fully. If the engine is warm or the ambient temperature is high, open the Choke Lever half-way, or keep it fully open.

Figure 4-3



4. Position THROTTLE LEVER (Figure 4-5) to "LOW" speed position.

### **⚠ CAUTION**

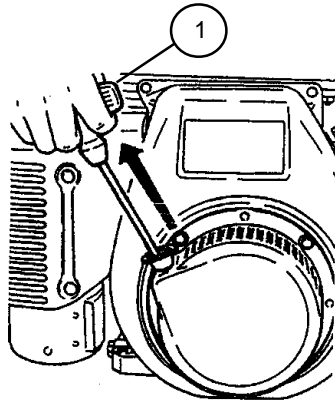
Avoid fully pulling out the rope. Return the Handle to its original position.

5. Pull the STARTER HANDLE (1, Figure 4-4) of RECOIL STARTER slowly until resistance is felt. This is the "COMPRESSION" point. Return the Handle to its original position and pull swiftly. After starting the engine, allow the Starter Handle to return to its original position while still holding the Handle.

## SECTION 4 - OPERATING INSTRUCTIONS

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Figure 4-4

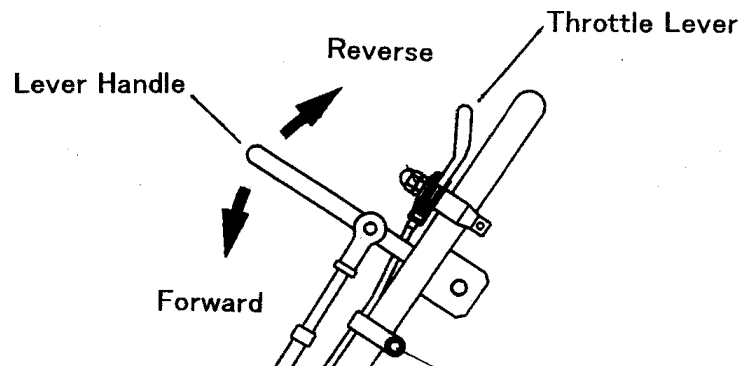


After the engine starts, set the Throttle Lever (Figure 4-5) at the low speed position "LOW" and warm it up without load for a few minutes. Fully open CHOKE LEVER (1, Figure 4-3) gradually.

### RUNNING

1. Shift the Throttle Lever (Figure 4-5) to "HIGH" speed position quickly. The rammer starts to vibration and move forward.

Figure 4-5



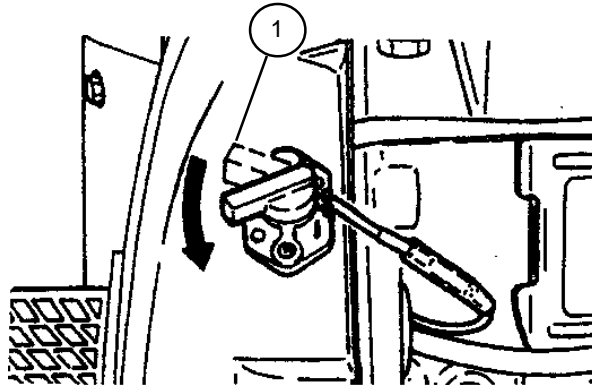
### STOPPING

1. Shift the throttle lever (Figure 4-5) to "LOW" speed position.
2. Allow the engine to run at low speed for 2-3 minutes before stopping.
3. Turn the STOP SWITCH (1, Figure 4-6) counterclockwise to the position "O"(OFF).

## SECTION 4 - OPERATING INSTRUCTIONS

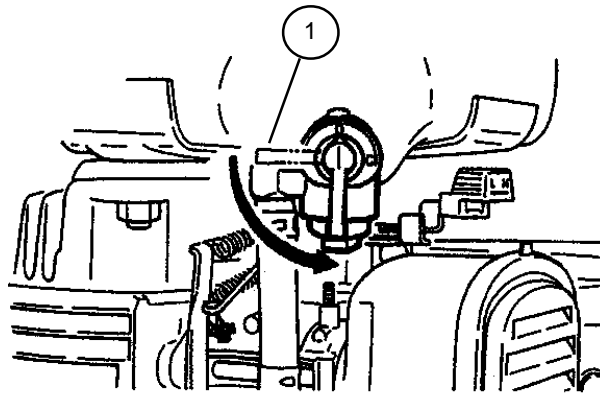
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Figure 4-6



4. Close the fuel cock (1, Figure 4-7).

Figure 4-7



**⚠ CAUTION**

Do not stop engine suddenly while running at high speed

## SECTION 4 - OPERATING INSTRUCTIONS

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### LONG TERM STORAGE

# WARNING

Discharge fuel (No Smoking !)

1. Remove the strainer cup of the fuel cock, place the strainer over a container and open the fuel cock to discharge fuel from the fuel tank. Remove the carburetor float chamber bolt from the bottom and discharge fuel from the carburetor
2. Close the fuel cock.
3. Change the engine oil with fresh oil.
4. Remove the spark plug, pour about 5 cc of the engine oil into the cylinder, slowly pull the starter handle of the recoil starter 2 or 3 times, and re-install the spark plug.
5. Slowly pull the recoil starter handle until resistance is felt and leave it in that position.
6. Clean the unit and engine.
7. Store the unit and engine indoors in a well-ventilated, low humidity area. Use the cover to avoid dirt, etc. if storage will be for a long time.

# CAUTION

Always stop the engine and allow to cool down before covering the unit.

## SECTION 5 - FUEL AND LUBRICATION SPECIFICATIONS

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### 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 engine 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.

TABLE 5-1 FLUID CAPACITIES

FUEL/OIL	APPROXIMATE CAPACITY
ENGINE FUEL (Unleaded Gasoline) _____	0.6 liters (0.63 qts)
VIBRATORY SHAFT CASE (JIS Turbine Oil #1 - (Viscosity 32) _____	0.42 Pints
ENGINE OIL (SAE 10W30) _____	1.06 Quarts

## 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.

### CHECK FUEL

1. Stop the engine and open the fuel tank cap.
2. Use the automobile unleaded gasoline only.
3. Close the fuel cock before filling the fuel tank.
4. When filling the fuel tank, always use the fuel filter.
5. Wipe off any spilled fuel before starting the engine.



## SECTION 6 - INITIAL BREAK-IN MAINTENANCE

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### **WARNING**



Improper maintenance can be hazardous.

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

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### 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 filler cap/dip stick. See Section 9.

### **WARNING**



Hot oil and/or components can burn.

Oil must be at normal operating temperature when draining.

Avoid contact with hot oil or components.

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## SECTION 6 - INITIAL BREAK-IN MAINTENANCE

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### GENERAL MAINTENANCE

Perform the following maintenance checks after the initial break in period.

1. Engine RPM is adjusted to: 3,600 - 3,700 min<sup>-1</sup> (3,600 - 3,700 rpm ) (With load ).
2. Check Bolts and Nuts for looseness. Tighten it if necessary.
3. Check for fuel and oil leak.
4. Keep the RUBBER BUFFER away from oil and fuel.
5. Check the V-Belt and Timing Belt for wear, damage and cracks. If necessary, replace the belt with new one.
6. Please refer to "INSTRUCTION FOR USE" for ROBIN engine EY15D regarding the how-to maintenance for engine.

## SECTION 7 - TROUBLE SHOOTING - GENERAL MAINTENANCE

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TRUBLE SHOOTING	1
GENERAL MAINTENANCE	2

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### TROUBLESHOOTING

#### 1) Engine fails to start.

a) Spark plug is defective	Clean or replace.
b) Air in the fuel system.	Bleed air completely.
c) Fuel tank is empty.	Fill Tank
d) Carburetor is clogged.	Clean or replace, if necessary.
e) Excessive fuel.	Open fuel drain cock and excess fuel. Clean spark plug.

#### 2) Engine runs irregularly.

a) Fuel line sucks air.	Retighten the fuel pipe joints and bleed air.
b) Air cleaner is clogged.	Clean air cleaner or replace element.
c) Engine stalls during operation.	Clean fuel system and retighten the fuel pipe joints.
d) Low compression.	Replace head gasket or retighten spark plug.

#### 3) Machine fails to vibrate.

a) Incorrect setting RPM of engine.	Adjust.
b) Throttle cable is slacked.	Adjust.
c) Centrifugal clutch is slipped.	Overhaul or replace, If necessary.
d) Belt is slipped.	Adjust or replace, If necessary.

#### 4) The travelling is bad or the vibration is diffuse.

a) Incorrect setting RPM of engine.	Adjust.
b) Air cleaner is clogged.	Clean air cleaner or replace element.
c) Centrifugal clutch is slipped.	Overhaul or replace, If necessary.
d) Belt is slipped.	Adjust or replace, If necessary.

## SECTION 7 - TROUBLE SHOOTING - GENERAL MAINTENANCE

---

### GENERAL MAINTENANCE

1. Engine RPM is adjusted to: 3,600 - 3,700 min<sup>-1</sup> (3,600 - 3,700 rpm ) (With load ).
2. Check Bolts and Nuts for looseness. Tighten it if necessary.
3. Check for fuel and oil leak.
4. Keep the RUBBER BUFFER away from oil and fuel.
5. Check the V-Belt and Timing Belt for wear, damage and cracks. If necessary, replace the belt with new one.
6. Please refer to "INSTRUCTION FOR USE" for ROBIN engine EY15D regarding the how-to maintenance for engine.

### AIR CLEANER

Keep the Air Cleaner Element clean. Take out the outer urethane foam and inner element. Wash the element in kerosene or diesel fuel. Saturate it in a mixture of 3 parts kerosene or diesel fuel and 1 part engine oil. Shake off excessive oil and reinstall. Wash the air cleaner case using kerosene. After cleaning it up, apply the engine oil on the inner part of the case.

## CAUTION

If the air cleaner element is seriously contaminated, start-up failure, poor output and malfunction of the engine may result.

## SECTION 8 - 10 HOUR OR DAILY ROUTINE MAINTENANCE

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ENGINE OIL _____	1
AIR CLEANER _____	1
FASTENING HARDWARE _____	1

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### **WARNING**



**Improper maintenance can be hazardous.**

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

---

It is recommended that the following steps be performed at the beginning and end of each 8 to 10 hour shift or daily, whichever comes first.

#### **ENGINE OIL**

Check the engine's oil level at the start of each day and maintain it to the full mark on the dipstick. Insert the dipstick and check the full mark on the dipstick. See Section 9.

### **WARNING**

**Fuel is flammable. May cause severe injury or death.**

**Shutdown the engine, extinguish all open flames and do not smoke while working with fuel.**

**Always wipe up spilled fuel**

---

#### **AIR CLEANER**

If the machine is operating in a dusty environment check the air cleaner daily. Keep the Air Cleaner Element clean. To clean the element, remove the case and element. Wash the case and element in kerosene. Saturate the element in a mixture of 3 parts kerosene or diesel fuel and 1 part engine oil. Shake off excess oil and reinstall. Apply a film of engine oil to the interior surface of the case and install it on the engine.

### **CAUTION**

**If the air cleaner element is seriously contaminated, start-up failure, poor output and malfunctions of the engine may result.**

---

#### **FASTENING HARDWARE**

Check all fastening hardware to ensure it is all adequately tightened and that none is missing or broken.

## SECTION 9 - 50 HOUR OR WEEKLY ROUTINE MAINTENANCE

### Contents

Page

### ENGINE OIL

1

#### CHECK AND CHANGE ENGINE OIL

Before checking or refilling engine oil, be sure the machine is located on a stable level surface and stopped.

When checking oil do not thread the oil gauge (1, Figure 9-1) into oil filler to check oil level. If the oil level is below the lower level

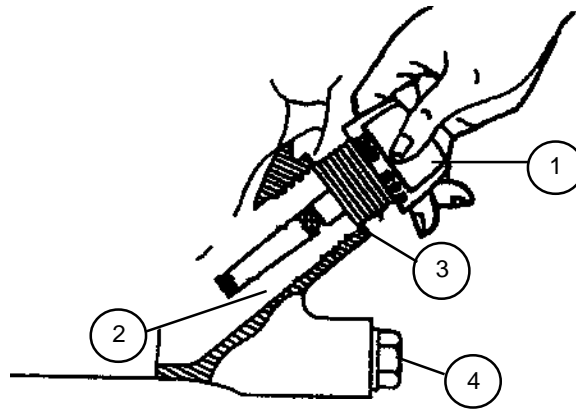
(2, Figure 9-1) line on the dipstick, refill with the proper oil to the upper level (3, Figure 9-1)(to the neck of oil filler).

When changing oil stop the engine, loosen the drain plug (4, Figure 9-1), reinstall the drain plug before refilling oil.

Add new oil at the oil gauge (1, Figure 9-1) port.

Always use the best grade and clean oil. Contaminated oil, poor quality oil and shortage of oil cause damage to engine or shorten the engine life.

Figure 9-1



#### Changing and filling:

Capacity of engine oil ..... 0.6 liters (0.63 US quarts )

Recommend engine oil ..... SAE 10W30

Use class SE, SF (API classification ) or higher grade oil.

Initial oil change ..... After 20 hours of operation.

Thereafter ..... Every 50 hours of operation.

**SECTION 10 - 100 HOUR OR MONTHLY ROUTINE MAINTENANCE**

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**NOTE**

***\* No 100 Hour or Semi-Annual Routine Maintenance is required.\****

**SECTION 11 - 250 HOUR OR QUARTERLY ROUTINE MAINTENANCE**

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**NOTE**

***\* No 250 Hour or Semi-Annual Routine Maintenance is required.\****



**SECTION 12- 500 HOUR OR SEMI-ANNUAL ROUTINE MAINTENANCE**

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***NOTE***

***\* No 500 Hour or Semi-Annual Routine Maintenance is required. \****

**SECTION 13 - 1000 HOUR OR ANNUAL ROUTINE MAINTENANCE**

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***NOTE***

***\* No 1000 Hour or Annual Routine Maintenance is required. \****

## SECTION 14 - ROUTINE ADJUSTMENTS

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### *NOTE*

*\* No Routine Adjustments required.\**

## SECTION 15 - MISCELLANEOUS AND OPTIONAL EQUIPMENT

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### *NOTE*

*\* No Miscellaneous or Optional Equipment \**

## SECTION 16 - SCHEMATICS

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### **NOTE**

***\* No Schematics are necessary for this unit. \****

# **SECTION 17 - PARTS MANUAL**

## **BXR-70 REVERSIBLE PLATE COMPACTOR**

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*For Internal Breakdowns - See Section I.*

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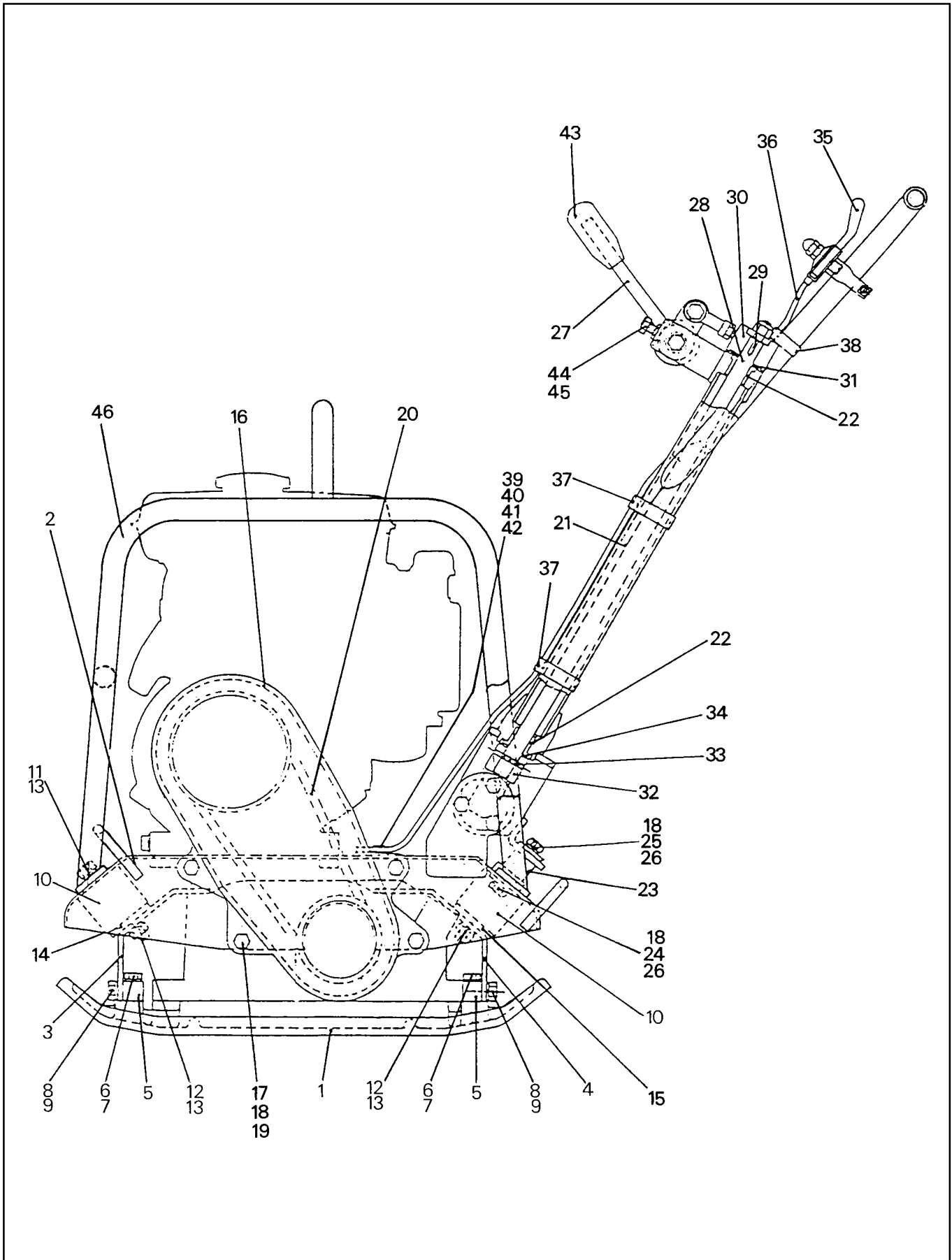
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# MAIN BODY ASSEMBLY, VIBRATION AND CONTROLS INSTALLATION



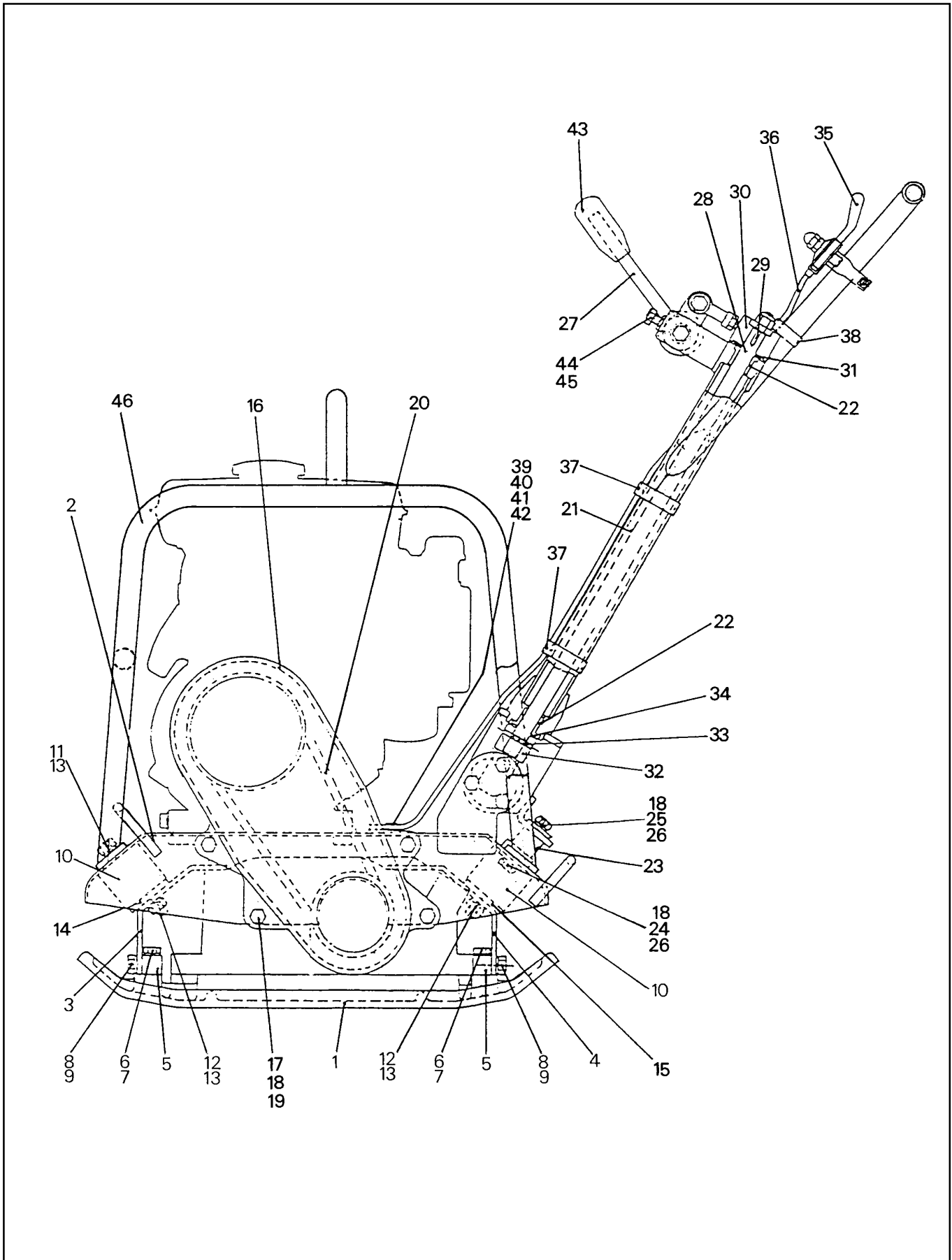


MAIN BODY ASSEMBLY, VIBRATION AND CONTROLS INSTALLATION

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
BOM 13208335				
1	59391185	Vibration Plate	1	
2	59391193	Engine Bed	1	
3	59391201	Forward Bracket	2	
4	59391219	Rear Bracket	2	
5	59391227	Block	4	
6	59391235	Bolt	8	M8 x 35
7	59391243	Lockwasher	8	M8
8	59391250	Bolt	4	M10 x 25
9	59391268	Lockwasher	4	M10
10	59391276	Rubber Buffer	4	
11	59391284	Bolt	4	M10 x 25
12	59391292	Nut	4	M10
13	59391300	Lockwasher	8	
14	59391318	Washer	2	
15	59391326	Washer	2	
16	59391334	Pulley Cover	1	
17	59391342	Bolt	4	M8 x 30
18	59391359	Lockwasher	6	
19	59392969	Washer	4	M8
20	59832444	V-belt	1	
21	59239392	Operating Handle	1	
22	59391375	Bushing	2	
23	59391383	Collar	1	
24	59391391	Bolt	1	M8 x 20
25	59391409	Bolt	1	M8 x 25
26	59391417	Washer	2	
27	59391425	Control Lever	1	
28	59391433	Shaft	1	
29	59391441	Key	1	
30	59391458	Boss	1	
31	59391466	Friction Spring	2	
32	59391474	Holder	1	
33	59391482	Spring Pin	1	
34	59391490	Washer	1	
35	59830315	Throttle Lever	1	
36	59391508	Throttle Cable	1	
37	59391516	Wire Band	2	

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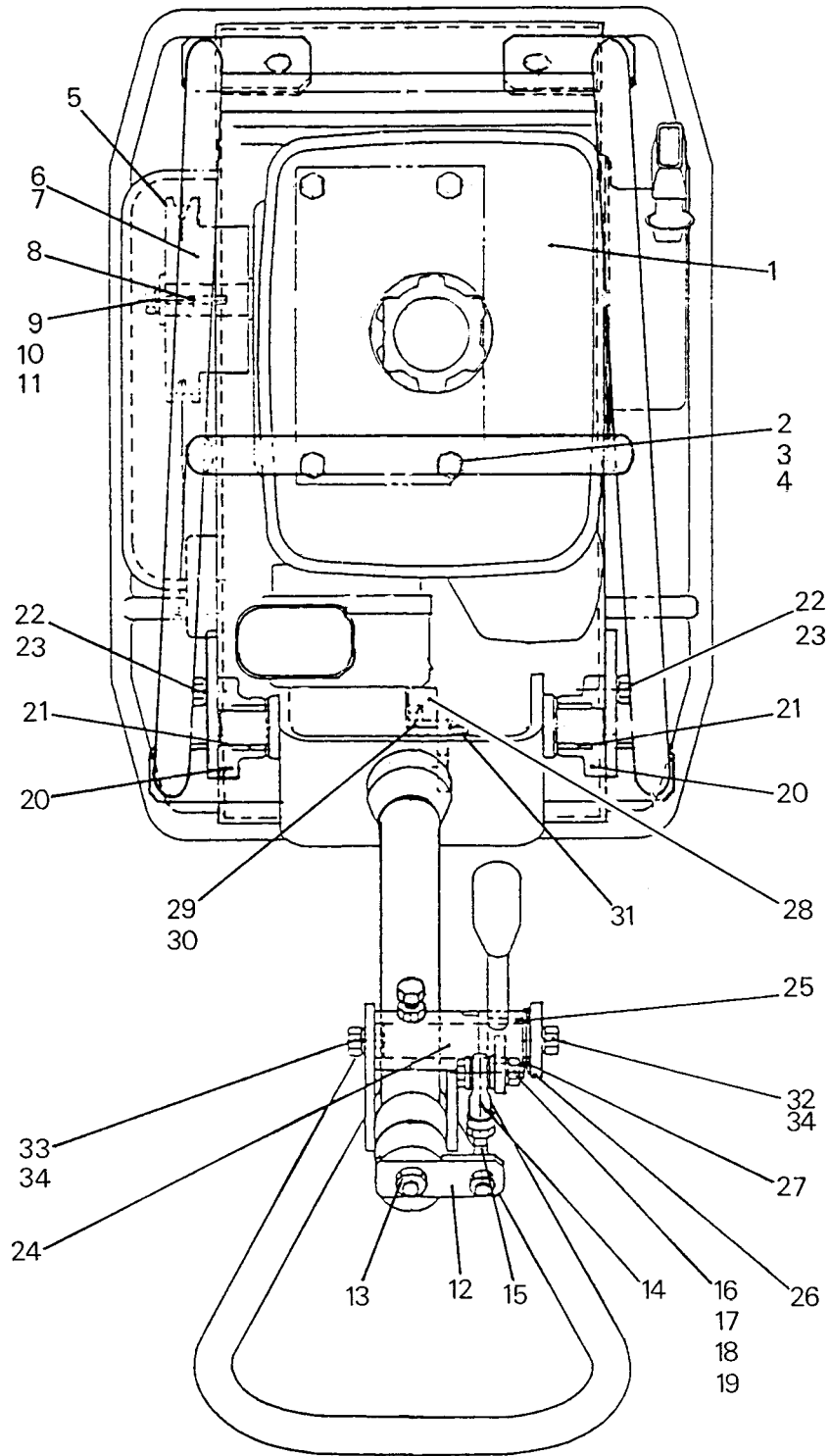
MAIN BODY ASSEMBLY, VIBRATION AND CONTROLS INSTALLATION (CONTINUED)



MAIN BODY ASSEMBLY, VIBRATION AND CONTROLS INSTALLATION (CONTINUED)

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
38	59391524	Wire Band	1	
39	59391532	Wire Fitting	1	
40	59391540	Return Spring	1	
41	59391557	Bolt	1	M6 x 12
42	59391565	Lockwasher	1	M6
43	59391573	Lever Knob	1	
44	59391581	Bolt	1	M8 x 20
45	59391599	Nut	1	M8
46	59391607	Engine Guard	1	

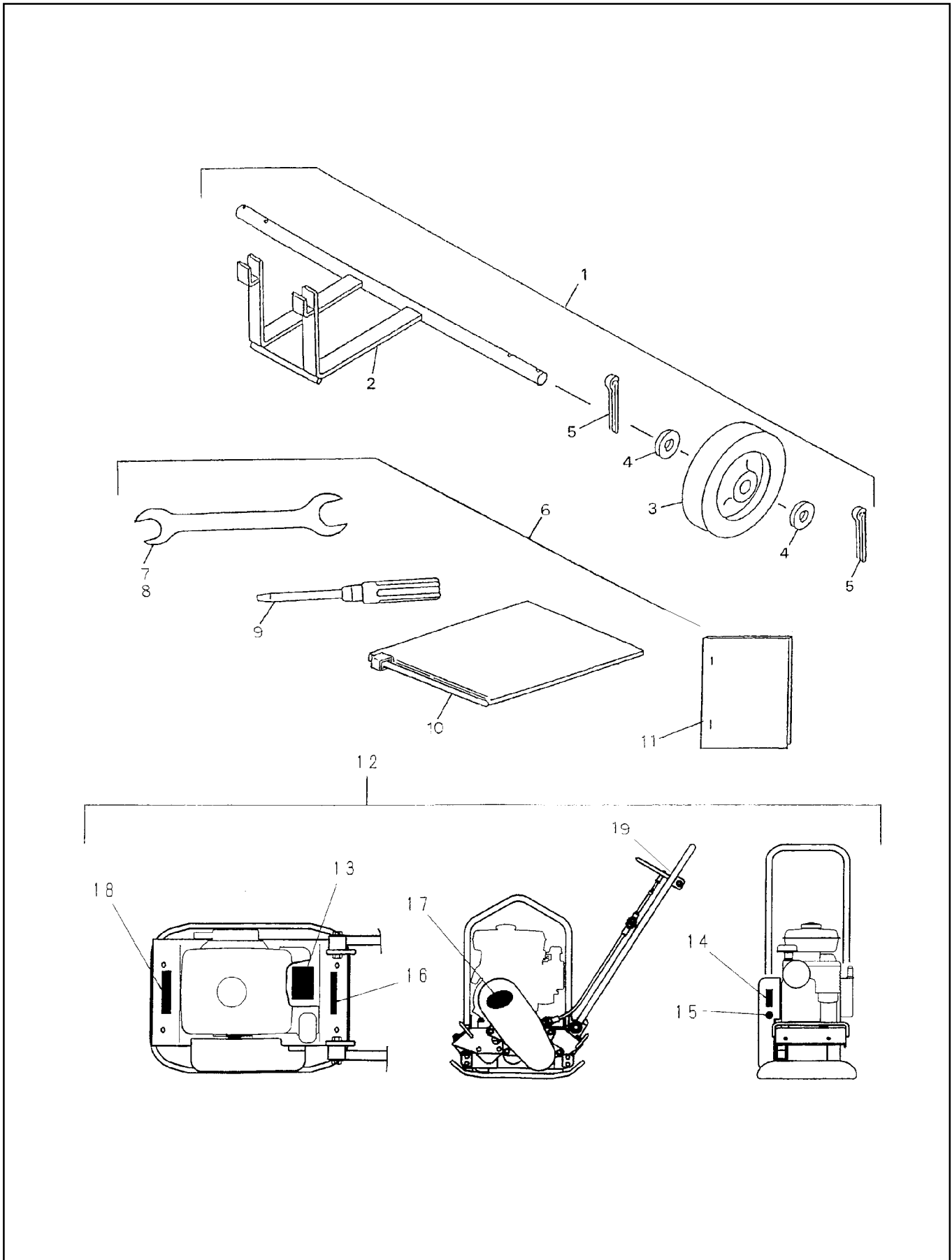
# MAIN BODY ASSEMBLY, ENGINE, CLUTCH AND RELATED PARTS



MAIN BODY ASSEMBLY, ENGINE, CLUTCH AND RELATED PARTS

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
		BOM 13208343		
<b>1</b>	<b>59836347</b>	<b>Engine Assembly</b>	<b>1</b>	<b>See Breakdown - I.1</b>
2	59391615	Bolt	4	
3	59391623	Lockwasher	4	M8 x 40
4	59391631	Washer	4	M8
5	59391649	Clutch Assembly (Includes Items 6 thru 11)	1	M8
6	59391656	-Clutch Shoe	1	
7	59391664	-Drum	1	
8	59391672	-Key	1	
9	59391680	-Bolt	1	
10	59391698	-Lockwasher	1	
11	59391706	-Lockwasher	1	
12	59391714	Link	1	M8
13	59391722	Nylon Nut	1	
14	59391730	Rod End	1	M10
15	59391748	Rod End	1	
16	59391755	Bolt	2	
17	59391763	Nut	3	M8-35
18	59391771	Lockwasher	2	
19	59391789	Washer	4	
20	59391797	Boss	2	
21	59391805	Bushing	2	
22	59391813	Bolt	6	
23	59391821	Lockwasher	6	M8 x 20
24	59391839	Shaft	1	M8
25	59391847	Bushing	1	
26	59391854	Washer	1	
27	59391862	Friction Spring	2	
28	59391870	Washer	1	
29	59391888	Bolt	1	M8 x 30
30	59391896	Washer	1	M8
31	59391904	Nylon Nut	1	M8
32	59391912	Bolt	1	M8 x 20
33	59391920	Bolt	1	M8 x 25
34	59391938	Lockwasher	2	M8

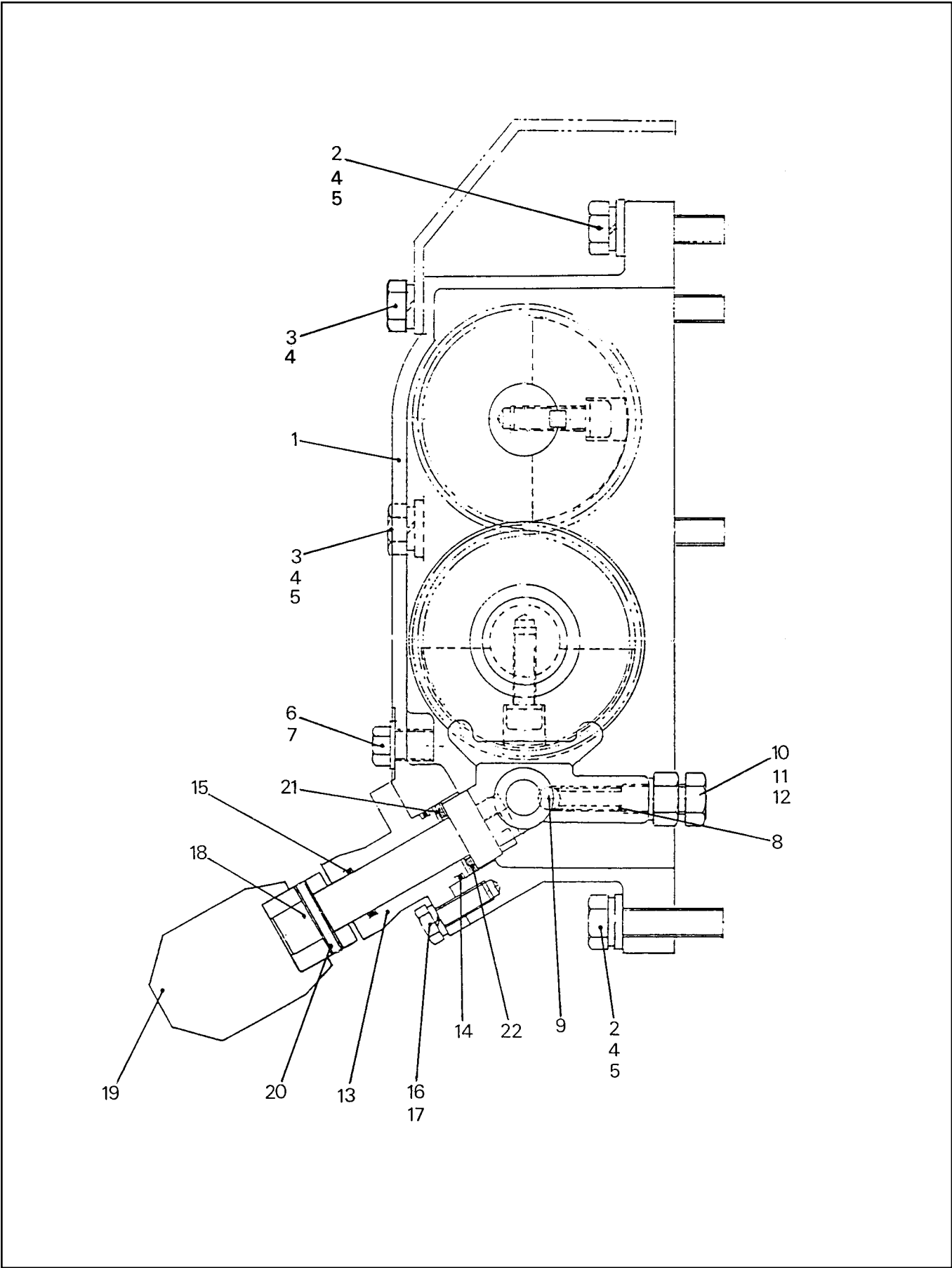
# CARRYING CART ASSEMBLY, TOOLS & DECALS



CARRYING CART ASSEMBLY, TOOLS & DECALS

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
		<small>BOM 13208350</small>		
1	58837105	Carrying Cart Assembly (Includes Items 2 thru 5)	1	
2	59393322	-Cart Shaft	1	
3	59843706	-Tire & Wheel Assembly	2	
4	59839159	-Washer	4	M20
5	59839167	-Cotter Pin	4	5 x 40
6	54754866	Tool Kit (Includes Items 7 thru 10)	1	
7	59830018	-Double Ended Spanner	1	17 x 19
8	59830000	-Double Ended Spanner	1	10 x 13
9	59838805	-Slotted Screwdriver	1	
10	59839050	-Tool Bag	1	
11	13192471	Operation/Maintenance & Parts Manual	1	
12	54719992	Decal Kit (Includes Items 13 thru 19)	1	
13	59188011	-Name Plate	1	
14	59188458	-Decal: Warning	1	
15	59188300	-Decal: Caution	1	
16	13200191	-Decal: I-R Logo	1	
17	54679162	-Decal: I-R Emblem	1	
18	13200217	-Decal: BXR-70	1	
19	59841767	-Decal: High-Low	1	

VIBRATION UNIT ASSEMBLY, CASE AND RELATED PARTS

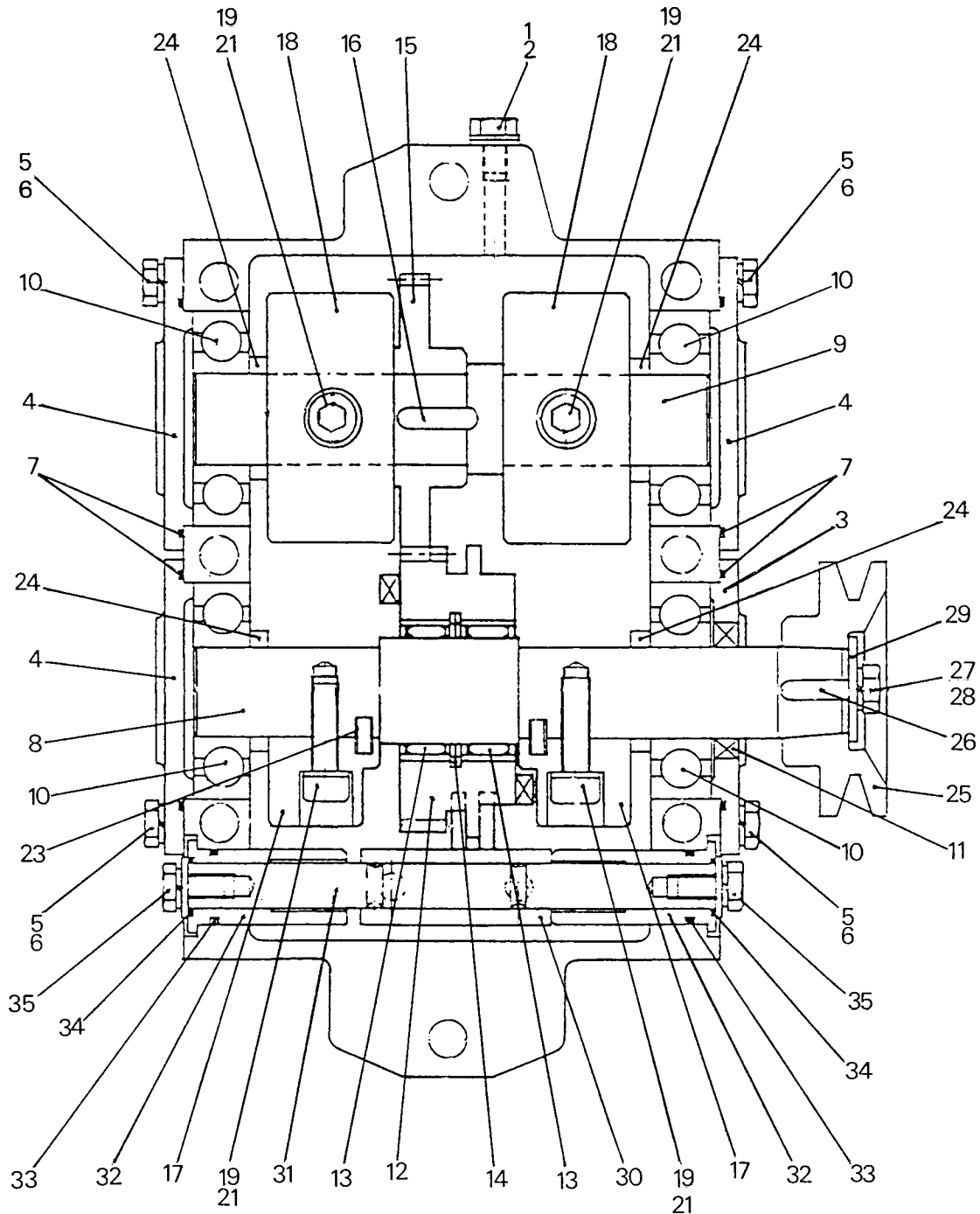




VIBRATION UNIT ASSEMBLY, CASE AND RELATED PARTS

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
BOM 13208376				
1	59391946	Vibration Case	1	
2	59391953	Bolt	2	M10 x 45
3	59391961	Bolt	6	M10 x 130
4	59391979	Lockwasher	8	M10
5	59391987	Washer	4	
6	59391995	Bolt	1	M14 x 20
7	59392803	Packing	1	
8	59392811	Coil Spring	2	
9	59392829	Steel Ball	2	
10	59392837	Bolt	2	M12 x 25
11	59392845	Nut	2	M12
12	59392852	Lockwasher	2	M12
13	59392860	Bracket	1	
14	59392878	O-ring	1	
15	59392886	O-ring	1	
16	59392894	Bolt	4	M8 x 25
17	59392902	Lockwasher	4	M8
18	59392910	Shaft	1	
19	59392928	Holder	1	
20	59392936	Spring Pin	1	
21	59392944	Washer	1	
22	59392951	Friction Spring	3	

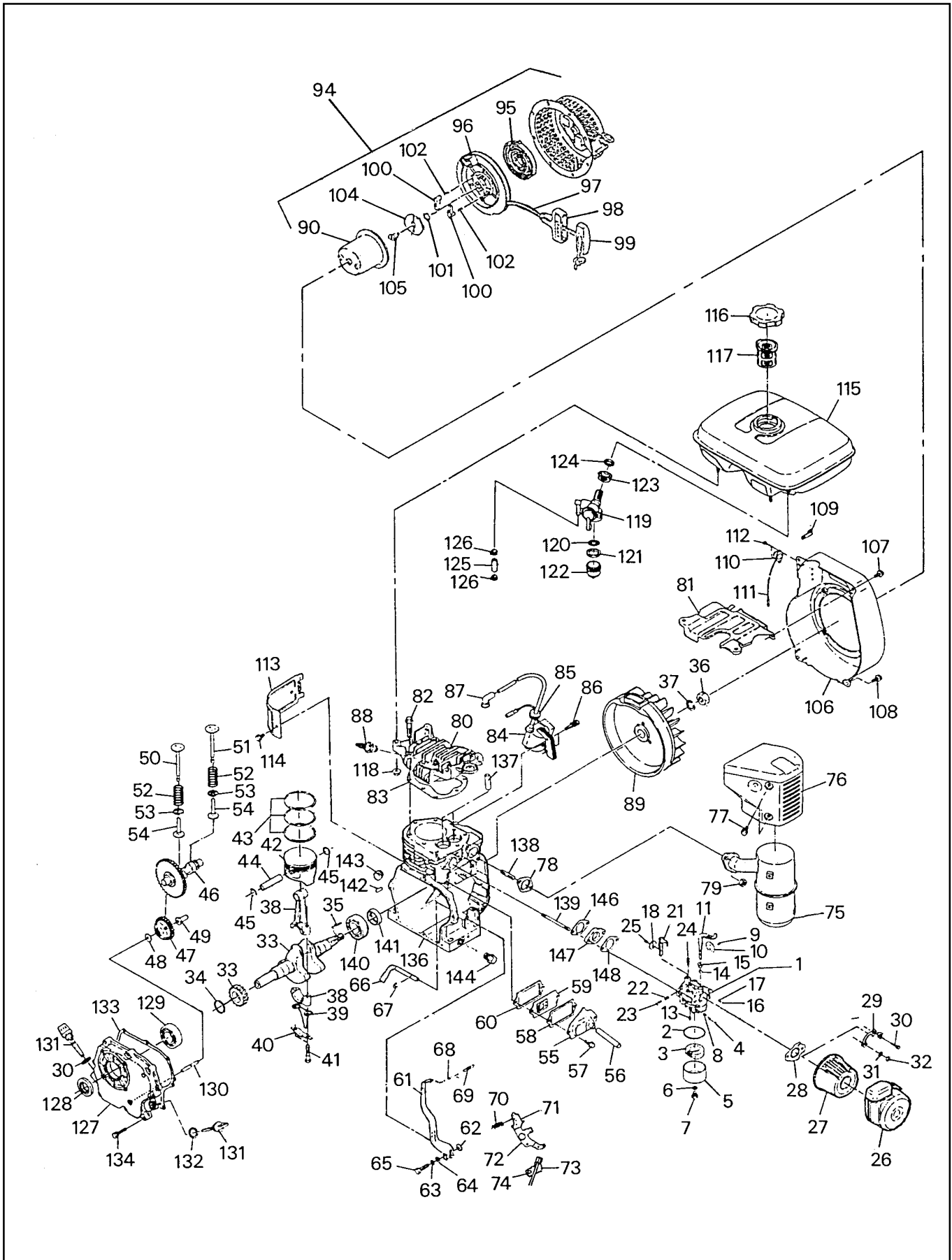
# VIBRATION UNIT ASSEMBLY INTERNAL COMPONENTS



VIBRATION UNIT ASSEMBLY INTERNAL COMPONENTS

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
BOM 13208384				
1	59392977	Bolt	1	M8 x 16
2	59392985	Packing	1	
3	59392993	Bearing Cover	1	
4	59393009	Bearing Cover	3	
5	59393017	Bolt	16	M8 x 20
6	59393025	Lockwasher	16	
7	59393033	O-ring	4	
8	59393041	Shaft	1	
9	59393058	Shaft	1	
10	59393066	Bearing	4	
11	59393074	Oil Seal	1	
12	59393082	Gear	1	
13	59393090	Needle Bearing	2	
14	59393108	Snap Ring	2	
15	59393116	Gear	1	
16	59393124	Key	1	
17	59393132	Weight	2	
18	59393140	Weight	2	
19	59393157	Bolt	4	M10 x 35
21	59393173	Spring Pin	2	
23	59393199	V-pulley	1	
24	59393207	Key	1	
25	59393215	Bolt	1	M8 x 25
26	59393223	Lockwasher	1	M8
27	59393231	Washer	1	
28	59393249	Fork	1	
29	59393256	Fork Shaft	1	
30	59393264	Fork Shaft Bracket	2	
31	59393272	O-ring	2	
32	59393280	O-ring	2	
33	59393298	Bolt	2	M8 x 16
34	59393306	Lockwasher	2	M8
35	59393314	Washer	2	

# ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN

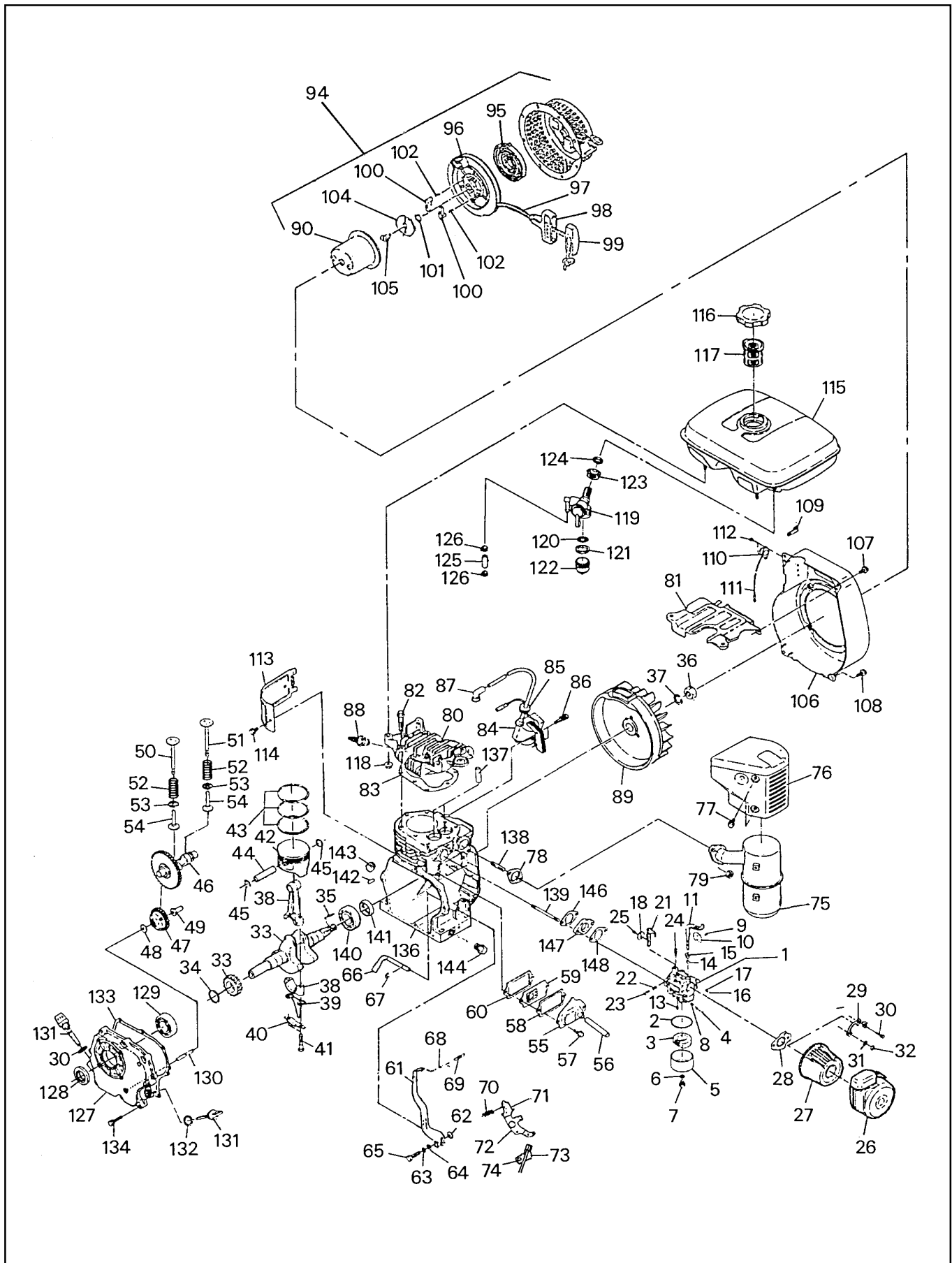


ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
BOM 58836347				
1	58922386	Carburetor Assembly	1	
2	59321901	-Float Chamber Packing	1	
3	59321919	-Float Assembly	1	
4	59321927	-Float Pin	1	
5	59321935	-Float Chamber Body	1	
6	59321943	-Packing	1	
7	59321950	-Bolt	1	
8	59330753	-Main Jet	1	
9	59321976	-Screw	1	
10	59321984	-Choke Valve	1	
11	59321992	-Choke Lever	1	
13	59322008	-Needle Valve Assembly	1	
14	59322016	-Ring	1	
15	59322024	-Ring	1	
16	59543231	-Steel Ball	1	
17	59580845	-Spring	1	
18	59330761	-Throttle Valve	1	
21	59322040	-Shaft Assembly	1	
22	59543157	-Spring	1	
23	59322057	-Screw	1	
24	59319772	-Pilot Jet	1	
25	59322073	-Screw	1	
26	58922394	Air Cleaner	1	
27	59853812	-Air Cleaner Element	1	
28	59305607	-Gasket	1	
29	59322081	Lockwasher	1	
30	59322099	Bolt & Washer Assembly	1	
31	59322107	Spring Washer	2	
32	59322115	Nut	2	
-	NSVA	Crankshaft Assembly	0	
33	59330613	-Crankshaft Complete	1	
34	59320135	-Spacer	1	0.6
-	59320143	-Spacer	1	0.8
-	59320150	-Spacer	1	1
35	59320168	Key	1	
36	59320184	Nut	1	
37	59320192	Spring Washer	1	

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# ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)

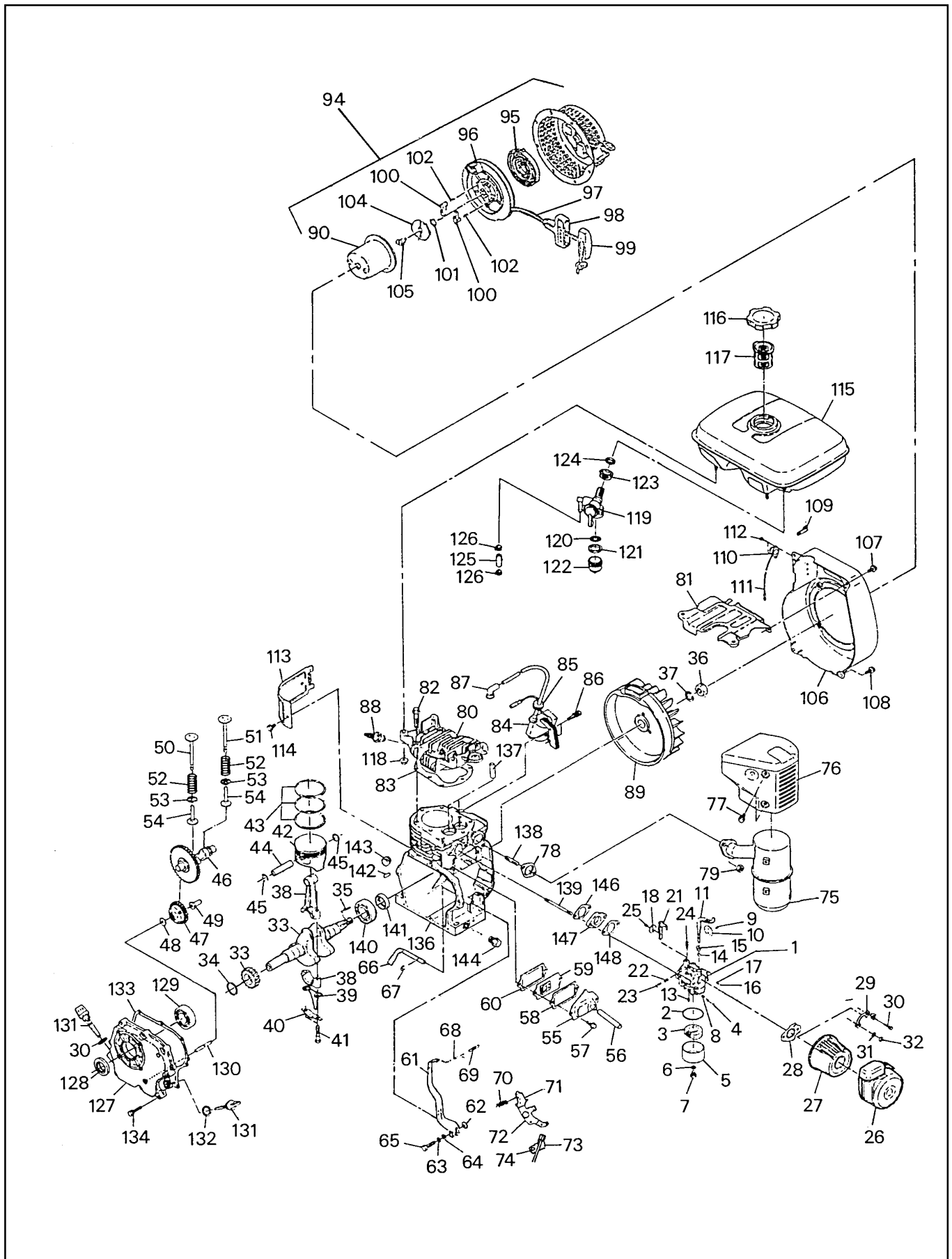


ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
38	59322230	Connecting Rod Assembly	1	
39	59330654	-Oil Scraper	1	
40	59330662	-Lockwasher	1	
41	59330670	-Bolt	2	
-	NSVA	Piston Group	0	
42	59854158	-Piston (Standard)	1	
43	59853804	-Ring Set (Standard)	1	
44	59854166	-Pin	1	
45	59854174	-Clip	1	
-	NSVA	Camshaft Group	0	
46	59330621	-Cam Shaft	1	
47	59322222	-Governor Gear	1	
48	59320218	-Spacer	1	
49	59320226	-Sleeve	1	
-	NSVA	Intake And Exhaust Group	0	
50	59330688	-Intake Valve	1	
51	59330696	-Exhaust Valve	1	
52	59320283	-Valve Spring	2	
53	59320291	-Spring Retainer	2	
54	59330704	-Tappet	2	
-	NSVA	Tappet Group	0	
55	59320077	-Tappet Cover	1	
56	59320085	-Rubber Pipe	1	
57	59320101	-Flange Bolt	2	
58	NSS	-Gasket	1	
59	59320093	-Breather Plate	1	
60	NSS	-Gasket	1	
-	NSVA	Governor Lever Group	0	
61	59322248	-Governor Lever	1	
62	59320325	-Nut	1	
63	59542597	-Spring Washer	1	
64	59542878	-Washer	1	
65	59320333	-Bolt	1	
66	59320341	-Shaft	1	
67	59320358	-Clip	2	
68	59320366	-Rod	1	
69	59853895	-Rod Spring	1	
70	59853887	-Governor Spring	1	

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# ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)



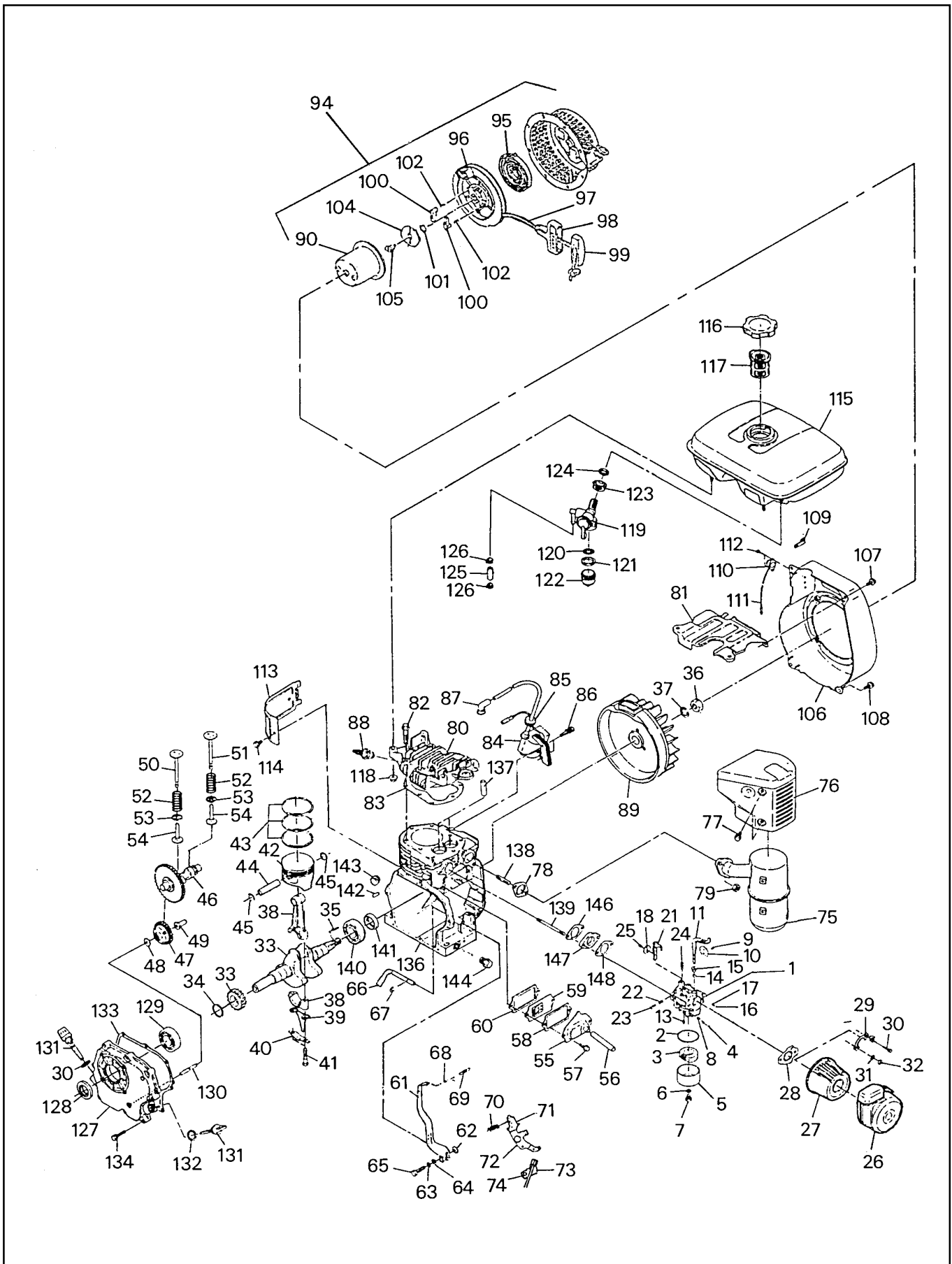


ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
71	59320374	Speed Control Assembly	1	
72	59320382	-Link Pivot	1	
73	59320390	Wire Bracket	1	
74	59321703	Flange Bolt	1	
-	NSVA	Muffler Group	0	
75	59309252	-Muffler	1	
76	59321125	-Muffler Cover	1	
77	59321778	-Flange Bolt	3	
78	NSS	-Gasket	1	
79	59320119	-Nut	2	
-	NSVA	Cylinder Head Group	0	
80	59322255	-Cylinder Head	1	
81	59330720	-Head Cover	1	
82	59320069	-Flange Bolt	8	
83	NSS	-Gasket	1	
84	59330795	Ignition Coil	1	
85	59322131	-Grommet	1	
86	59322149	Bolt and Washer Assembly	2	
87	59585398	Spark Plug Cap	1	
88	58922402	Spark Plug	1	
-	NSVA	Flywheel Group	0	
89	59330787	-Flywheel	1	
90	58922378	-Starter Pulley	1	
-	NSVA	Recoil Starter Assembly	0	
94	58922261	-Recoil Starter	1	
95	58922279	-Spiral Spring	1	
96	58922311	-Reel	1	
97	58922303	-Rope	1	
98	58922295	-Starter Knob	1	
99	58922287	-Knob Cap	1	
100	58922337	-Ratchet	2	
101	58922345	-Friction Spring	1	
102	58922329	-Return Spring	1	
104	58922352	-Ratchet Guide	1	
105	58922360	-Set Screw	1	

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# ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)

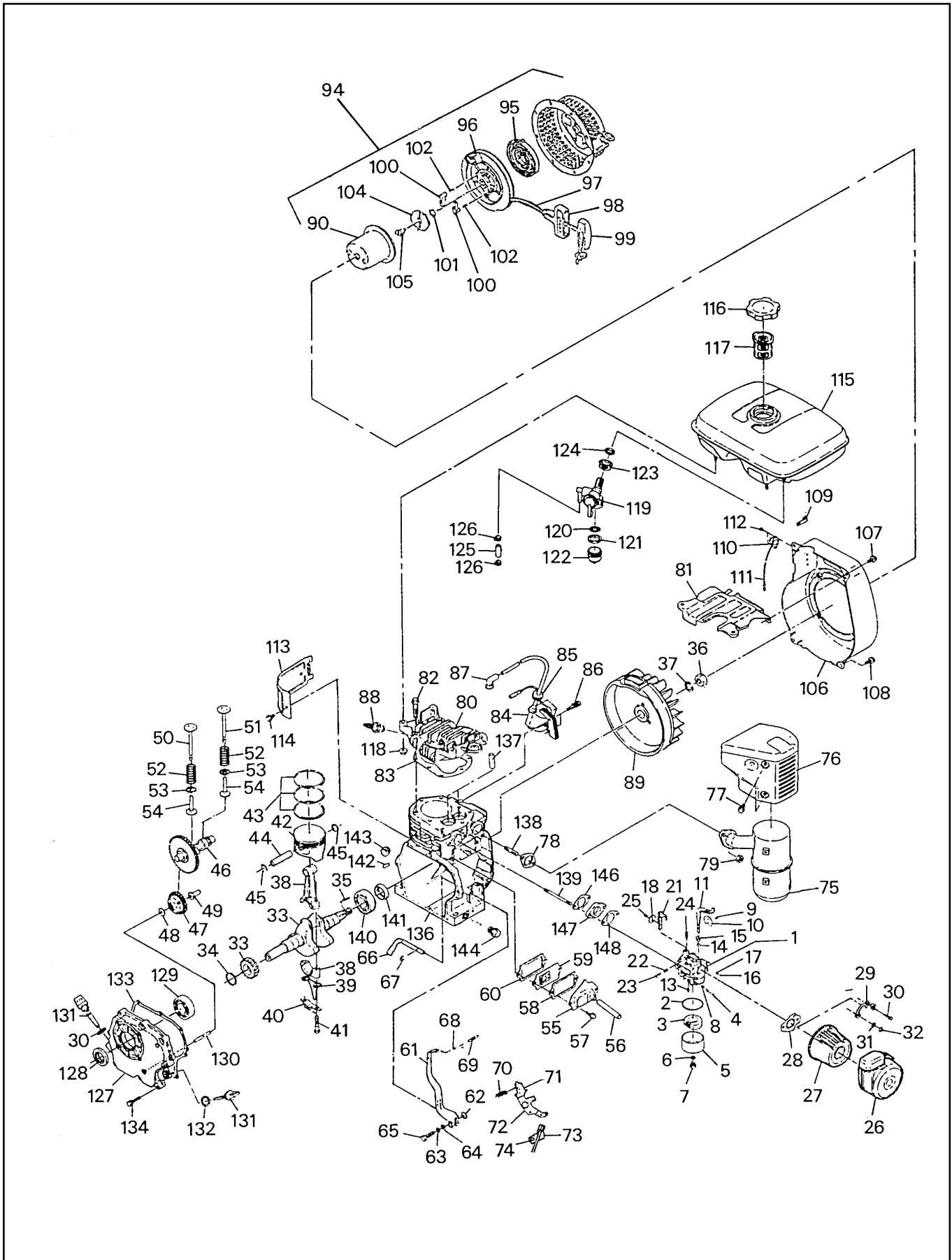


ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
-	NSVA	Blower Housing Group	0	
106	59330712	-Blower Housing	1	
107	59321752	-Flange Bolt	2	
108	59321745	-Flange Bolt	2	
109	59321802	-Clamp	1	
110	59853390	-Stop Button	1	
111	59321786	-Wire	1	
112	59321794	-Tapping Screw	2	
113	59330738	Cylinder Baffle	1	
114	59321745	-Flange Bolt	2	
-	NSVA	Fuel Tank Group	0	
115	59322263	-Fuel Tank	1	
116	59854182	-Fuel Tank Cap	1	
117	59853366	-Fuel Filter	1	
118	59321893	-Flange Nut	2	
119	59305490	Fuel Strainer Assembly	1	
120	59321828	-Screen	1	
121	59321836	-Rubber Packing	1	
122	59321844	-Cup	1	
123	59321851	-Nut	1	
124	59321869	-Rubber Packing	1	
125	59321877	Rubber Pipe	1	
126	59321885	Hose Clamp	2	
127	NSS	Main Bearing Cover	1	
128	59853291	-Oil Seal	1	
129	59854133	-Bearing	1	
130	NSS	-Pin	1	
131	59854141	Oil Dipstick	2	
132	NSS	Gasket	2	
133	NSS	Gasket	1	
134	59320010	Bolt and Washer Assembly	8	
136	NSS	Crankcase - Complete	1	
137	59319970	-Valve Guide	2	
138	59319988	-Stud	2	
139	59319996	-Stud	2	
140	59854133	-Ball Bearing	1	
141	59965152	-Oil Seal	1	
142	59320002	-Dowel Pin	2	
143	59320028	Grommet	1	
144	59320036	Plug	2	

(Continued on next page)

ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)



ENGINE ASSEMBLY (58836347) - INTERNAL BREAKDOWN (CONTINUED)

ITEM	COMM. NO.	DESCRIPTION	QTY	DIMENSIONS/NOTES
146	58922410	Gasket	2	
-	NSS	Gasket	1	
147	59961102	Insulator	1	
148	NSS	Gasket	1	
**	59853853	Gasket Set (Includes Items 58,60,78,83,133 134,146,147 and 148)	1	

# HOW TO USE THIS MANUAL

This Parts Manual applies to all **BXR-70 Vibratory Compactors**

---

## ***When the Comm. # is not Known - Use the Word Index:***

- Ingersoll-Rand's Word Index will make this item easy to locate. The Word Index is found in the very back of the book. The items listed are in alphabetical order and may be repeated several times depending on their functional descriptions.
- Let's assume you need to replace the **AIR CLEANER ELEMENT**.

Use any of the functional words in the item description to locate the desired item. Example: The first listing for the **Air Cleaner Element** in the **Word Index** is: **Air Cleaner Element**. The index shows the component will be found on page **I.1.3** which is the **Parts List** page number for the **Engine Assembly**.

<b>A</b>		
Air Cleaner Element _____		I.1.3
Air Cleaner _____		I.1.3
<b>B</b>		
Button, Stop _____		I.1.9

- The item is also listed as:

**Element, Air Cleaner**

## ***Using the Parts Identification Pages:***

- The **PARTS IDENTIFICATION PAGES** consist of the **PARTS ILLUSTRATION** (even numbered pages) and the **PARTS LIST** (odd numbered pages).
- The **Parts Illustration** shows the assembly with its component parts identified by **Item Numbers**.
- On the **Parts List**, the components are listed in **Item Number** order as found in the **ITEM** column. Other information provided by the **Parts List** is the **Comm. Number** which will be required to order Genuine Ingersoll-Rand Replacement Parts, a **functional description**, the **quantity** required to assemble one complete assembly, and any additional **notes/ dimensions** required to help place your parts order.
- **For the example: The Air Cleaner Element is listed as Item 27, and the Comm. Number for the Element is 59853812, Quantity of 1.**

## ***When the Comm. # is not known - Use the Table of Contents:***

- Turn to the **TABLE OF CONTENTS** pages in the front of this manual. These pages show the major systems of the machine divided into **FUNCTIONAL GROUPS** (identified by capital letters).
- Find the **Functional Group** that best describes the area of the machine you are interested in. For example: [Engine Assembly](#).
- See the sample **Table of Contents** shown below:

### **INTERNAL BREAKDOWNS**

<b>I</b>	
<b>Engine Assembly - (58836347)</b> .....	<b>I.1.2</b>

Listed under the **Functional Group** of [Internal Breakdowns](#) are **SECTIONS** (identified by numbers that describe major repairable components of that group. Find the listing that refers to the [Robin Engine](#).

- Since the [Air Cleaner Element](#) is what needs to be replaced, refer to the parts listing for the [Engine](#). The [Air Cleaner](#) used on your machine is found in **Functional Group I.; Section 1**, this makes up the first part of the page number. Turn to that section of the parts manual and find the parts listing on page [I.1.3](#) for the [Air Cleaner \(58922394\)](#).

## ***When the Comm. # is Known - Use the Numerical Index:***

- If you already know the **Comm. Number** (part number) for the item required, a **NUMERICAL INDEX** is provided in the back of the manual to assist you. Look up the **Comm. Number** desired and the **Numerical Index** will show the **Functional Group, Section, and Page Number** where the item can be found.

For our [Air Cleaner Element](#) Example: The **Comm. Number for the Air Cleaner Element 59853812** is found in the **Numerical Index**, it shows that component will be found on page [I.1.3](#).

# HOW TO USE THIS INDEX

---

## ***When the Description is Known - Use the Word Index:***

- Ingersoll-Rand's Word Index makes **any** item easy to locate.
- Use any of the **functional** words in the item description to locate the desired item. The items listed are in alphabetical order in the first column of the index and may be **repeated** several times depending on their **functional descriptions**.

If searching for the *Air Cleaner Element*, the first listing in the **Word Index** is:

*Air Cleaner Element*

The item is also listed as:

*Element, Air Cleaner*

- The alpha-numeric listing in the second column of the index is the location of the item in the manual. The location is identified as; the **Functional Group**, **Section Number**, and **Parts List Page Number**. Example: **I.1.3** would be Functional Group **I**, Section **1**, Page **3**.

The index shows the filter will be found on page **I.1.3** which is the **Parts List** page number for the

*Engine Assembly (58836347)*



## WORD INDEX

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Air Cleaner \_\_\_\_\_ I.1.3

### B

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## Concrete and Light Compaction Equipment Warranty

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Ingersoll-Rand Company (“Ingersoll-Rand”) warrants to its and its affiliates’ authorized dealers and distributors (“Dealer”), who in turn warrant to the initial user only that each new product of Concrete and Light Compaction Equipment (the “Product”) sold by the Dealer will be free from proven defects in material and workmanship for the earlier to occur of twelve (12) months from the date of shipment to the initial user or eighteen (18) months from date of delivery from the factory to the Dealer.

### **US and Canada**

For Products purchased in the United States or Canada that have remained therein throughout the warranty period, Ingersoll-Rand will provide a new part or repaired part, at its election, in place of any part, which is found upon its inspection to be defective in material or workmanship during the warranty period prescribed above. Such part will be repaired or replaced without charge to the initial user during normal working hours at the place of business of an Ingersoll-Rand distributor authorized to sell the Product or other establishment authorized by Ingersoll-Rand. In order to be eligible for this warranty service, the initial user must present proof of purchase at the time of exercising warranty.

### **Europe, Asia, South America & Latin America**

For Products purchased in Europe, Asia, South America & Latin America, Ingersoll-Rand will provide a new part or repaired part, at its election, in place of any part, which is found upon its inspection to be defective in material or workmanship during the warranty period prescribed above. Labor cost to replace the part is the responsibility of the user. User must present proof of purchase at the time of exercising warranty.

The above warranty does not apply to failures occurring as a result of abuse, misuse, negligent repairs, corrosion, erosion, events beyond the control of Ingersoll-Rand (including weather events, terrorism, etc.), normal wear and tear, alterations or modifications made to the product without express written consent of Ingersoll-Rand, or failure to follow the recommended operating practices and maintenance procedures as provided in the product’s operating and maintenance publications. This warranty does not cover replacement of scheduled service items such as oil, filters, and wear items.

Components and accessories manufactured by others, including, but not limited to, engines, shall carry whatever warranty the manufacturers have conveyed to Ingersoll-Rand to be passed on to the initial user.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, (EXCEPT THAT OF TITLE). ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.

IN NO EVENT SHALL INGERSOLL-RAND OR ANY OF ITS AFFILIATES, SUBSIDIARIES OR AUTHORIZED DEALERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOSS OR INTERRUPTION OF BUSINESS, LOST PROFITS, OR LOSS OF MACHINE USE, WHETHER BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY, STATUTE OR OTHERWISE, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE TOTAL CUMULATIVE LIABILITY OF INGERSOLL-RAND, ITS AFFILIATES, SUBSIDIARIES AND AUTHORIZED DEALERS WITH RESPECT TO THE PRODUCT FURNISHED HEREUNDER SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED, EXCEPT FOR CLAIMS FOR PERSONAL INJURY.



**Road Development**

Ingersoll-Rand Company  
312 Ingersoll Drive  
Shippensburg, PA 17257

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