



CXR-9

REVERSIBLE PLATE COMPACTOR

COMMUNICATION NO. 92990092

INGERSOLL-RAND®
CONSTRUCTION EQUIPMENT

**ROAD MACHINERY DIVISION
SHIPPENSBURG, PA.**

Operation, Maintenance & Parts Manual

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Revised (10-12)

**DO NOT REMOVE
OPERATION MANUAL
FROM MACHINE.
REPLACE MANUAL IF
DAMAGED.**

IMPORTANT SAFETY INSTRUCTIONS

This manual provides important information to familiarize you with safe operating and maintenance procedures for your Machine. Even though you may be familiar with similar equipment you **MUST** read and understand this manual before operating this unit.

Safety is everyone's business and is one of your primary concerns. Knowing the guidelines covers in the following paragraphs and in Section 1 will help provide for your safety, for the safety of those around you, and for the machine's proper operation.

LOOK FOR THESE SYMBOLS WHICH POINT OUR ITEMS OF EXTREME IMPORTANCE TO YOU AND YOUR CO-WORKERS' SAFETY. READ AND UNDERSTAND THOROUGHLY. HEED THE WARNINGS AND FOLLOW THE INSTRUCTIONS.



DANGER

DANGER is used to indicate the presence of an immediate hazard which **WILL** result in **SEVERE** personal injury or death.



WARNING

WARNING is used to indicate the presence of a hazard or unsafe practice which could result in **SEVERE** personal injury or death.



CAUTION

CAUTION is used to indicate the presence of a hazard or unsafe practice which could result in **MINOR** personal injury or product or property damage.

NOTICE

NOTICE is used to indicate installation, operation, or maintenance information which is important but not hazard related.



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INSTRUCTIONS

1. Insert latest changed pages. Destroy superseded pages.
2. The portion of text affected by changes is indicated by a vertical line in the outer margins of the page.
3. Changes to illustrations are indicated by miniature pointing hands.
4. Changes to wiring diagrams are indicated by shaded areas.

REVISION LOG

CXR-9
REVERSIBLE PLATE COMPACTOR
OPERATION AND
MAINTENANCE MANUAL
COMMUNICATION NO. 92990092

REVISION LEVEL	DATE	REVISION LEVEL	DATE	REVISION LEVEL	DATE
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CXR-9
REVERSIBLE PLATE COMPACTOR
OPERATION AND
MAINTENANCE MANUAL
COMMUNICATION NO. 92990092
SECTION

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.

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SECTION 1 - SAFETY PRECAUTIONS AND GUIDELINES

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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.

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.

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

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.

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.

SECTION 2 - INTRODUCTION

EXCELLENT CHOICE! The Ingersoll-Rand 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 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 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 MACHINE SYMBOLS	1	METRIC CONVERSION	2
INTERNATIONAL HIGHWAY SYMBOLS	1		











































INTERNATIONAL MACHINE SYMBOLS

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

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

INTERNATIONAL HIGHWAY SYMBOLS

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

									
road bends	dangerous bend	double bend	dangerous descent	steep ascent	carriageway narrows	carriageway narrows	"end of priority" sign	oncoming traffic has priority	priority over oncoming traffic
									
swing bridge	road leads onto quay or river bank	uneven road	ridge	dip	slippery road	loose gravel	no entry for power driven vehicles	no entry for vehicles exceeding width	no entry for vehicles exceeding length
									
falling rocks	pedestrian crossing	road works	light signals	two-way traffic	other dangers	level crossing	level crossing	no entry	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	no entry for vehicles exceeding weight	no entry for vehicle axle weight exceeding	no u-turn
									
			no entry for power driven vehicles	no turn direction shown					

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	$(C^{\circ} \times 9/5) + 32$
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

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CHOKE LEVER _____	1	RECOIL STARTER _____	1
THROTTLE LEVER _____	1	STOP BUTTON _____	1
DIRECTION CONTROL LEVER _____	1		

CHOKE LEVER

The Choke Lever is located on the engine and is 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 LEVER

The Throttle Lever is located on the handle and is used to control the engine speed. Push the lever forward away from the operator for slow speed and pull the lever toward the operator for high speed.

DIRECTION CONTROL LEVER

Move the Direction Control Lever from Right to Left position to move forward while performing compaction operations. Move the lever from Left to Right position to move in reverse while performing compaction operations.



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.

RECOIL STARTER

The Recoil Starter is used to start the engine. 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.

STOP BUTTON

The Stop Button is located on the engine and is used to shut-down the engine. When depressed and held the engine will come to a stop.

SECTION 5 - OPERATING INSTRUCTIONS

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PREPARATION _____	1	COMPACTOR OPERATION _____	2
SAFETY CHECKS - PRE-STARTING _____	1	CARE DURING OPERATION _____	2
BEFORE OPERATING THE UNIT _____	1	SHUT-DOWN PROCEDURE _____	2
START-UP PROCEDURE _____	1	STORAGE _____	3

PREPARATION

The Reversible Vibratory Plate has been thoroughly 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 10 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.

4. Check the eccentric housing oil level and add oil as needed to bring to correct 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.

5. Check the fuel level. If necessary fill the fuel tank with the correct fuel.
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 Manual.
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.

SECTION 5 - OPERATING INSTRUCTIONS

1. Open the fuel cock located under the fuel tank.
2. Close the choke lever. When the engine is warm, open the choke lever half way or completely, depending upon engine condition.
3. Position the Throttle Lever at the low Idle speed position and position the Propulsion Control Lever in the required direction of travel position.



WARNING

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

Before increasing the engine rpm above low idle, ensure that the Propulsion Control Lever is in the correct travel direction position.



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.

4. Pull the handle of the recoil starter forcibly while holding the operation handle.
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

1. Move the Direction Control Lever from Right to Left position to move forward while performing compaction operations. Move the lever from Left to Right position to move in reverse while performing compaction operations.



CAUTION

There is no neutral position, the compactor does not move at low idle speed. When beginning to compact ensure that the Propulsion Control Lever is in the correct direction position before accelerating the engine.

2. Open the Throttle Lever and the centrifugal clutch will engage automatically, causing the compactor to simultaneously vibrate and move.
3. The Propulsion Control Lever may be moved at any time during operation to effect Forward and Reverse passes of the compactor.
4. The Machine Handle is used to steer the compactor during operation.
5. 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
6. Continue with Forward and Reverse 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

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 moving the Throttle Control Lever to the completely closed position (STOP)
4. Close the fuel cock valve.

SECTION 5 - OPERATING INSTRUCTIONS

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

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GENERAL INFORMATION _____	1	FUEL SPECIFICATIONS _____	1

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.

FLUID/OIL	APPROXIMATE CAPACITY
NORMAL FUEL	
AUTOMOTIVE GASOLINE _____	3 QUARTS
ECCENTRIC HOUSING OIL	
SAE 10W30 _____	1 PINT
ENGINE OIL _____	1 PINT
SAE 10W30 (BELOW 14 °F)	
SAE 20 (14 °F TO 68 °F)	
SAE 30 (68 °F TO 104 °F)	

SECTION 7 - INITIAL BREAK-IN MAINTENANCE

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ENGINE OIL	1	ECCENTRIC HOUSING OIL	2



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 10 hour, 50 hour and 100 hour maintenance tasks which are described on the following pages. After this initial phase, the regular intervals should be followed.



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.

ECCENTRIC HOUSING OIL

Drain the Eccentric Housing Oil after the first 100 hours of operation. Remove the drain plug, and the fill plug. Drain out the oil and fill with the correct amount of the recommended oil.

SECTION 8 - 10 HOUR OR DAILY ROUTINE MAINTENANCE

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



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. Do not screw the gauge in first. This will give a false reading on the gauge. Additional detailed engine oil specifications can be found in SECTION 6 - FUEL AND LUBRICATION SPECIFICATIONS of this manual.

FUEL



WARNING



Fuel is flammable. May cause severe injury or death.

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

Always wipe up any spilled fuel.

Clean around the fuel tank cap before removing and fill the tank with the recommended gasoline/oil mixture per the specifications in SECTION 6 - FUEL AND LUBRICATION SPECIFICATIONS of this manual.

AIR CLEANER

1. Remove the outer urethane foam and inner element.
2. Clean the case and the foam and element in kerosene and dry.



WARNING



Fuel and/ or solvents are extremely flammable.

May cause injury or death.

Never use fuel or solvents to clean the elements.

3. Lubricate the foam and element in a mixed oil composed of gasoline and oil in a 3:1 ratio. Apply also to the inside of the element case.

4. Squeeze out the excess mixed oil and install the foam and element into the case.

FASTENING HARDWARE

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

SECTION 9 - 20 HOUR OR WEEKLY ROUTINE MAINTENANCE

Contents	Page	Contents	Page
ENGINE OIL _____	1	AIR CLEANER _____	1



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

Change the engine oil and refill with new oil per the procedures in SECTION 7 - INITIAL BREAK-IN MAINTENANCE.

First change - after 20 hours operation. Second change and thereafter - after each 50 hours operation.

To change the oil, remove the drain plug and drain off contaminated oil. Refit the drain plug. Fill with fresh oil through the oil filler plug.

AIR CLEANER

Clean the element by using compressed air and washing in petrol. Replace the element after drying.



WARNING



Fuel and/ or solvents are extremely flammable.

May cause injury or death.

Never use fuel or solvents to clean the elements.

SECTION 10 - 50 HOUR ROUTINE MAINTENANCE

Contents	Page	Contents	Page
ENGINE OIL _____	1	PETROL ENGINE _____	1

ENGINE OIL

Change the engine oil and refill with new oil per the procedures in SECTION 9 - 20 HOUR OR WEEKLY ROUTINE MAINTENANCE.

PETROL ENGINE

Examine spark plug, remove carbon and reset gap to 0.5 - 0.6mm. If necessary replace the spark plug.

SECTION 11 - 200 HOUR OR QUARTERLY ROUTINE MAINTENANCE

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ENGINE V-BELT _____	1	ENGINE _____	1
ANTI-VIBRATION MOUNTS _____	1		

ENGINE V-BELT

1. Remove the belt cover and V-belt and check centrifugal clutch and replace if there is any damage or wear.
2. Check V-belt for wear and if necessary replace.
3. Ensure that drive pulley to exciter rotates smoothly and change oil in exciter.



CAUTION

Take care that no dust or dirt enters the exciter assembly when changing oil.

ANTI-VIBRATION MOUNTS

Check the anti-vibration mounts for distortion or separation and replace if necessary.

ENGINE

For engine inspection procedures check in the relevant engine manual.

SECTION 12- 500 HOUR OR SEMI-ANNUAL ROUTINE MAINTENANCE

NOTE

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

SECTION 13 - 1000 HOUR OR ANNUAL ROUTINE MAINTENANCE

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ECCENTRIC HOUSING OIL _____	1		

ECCENTRIC HOUSING OIL

Change the Eccentric Housing Oil per the procedures in
SECTION 7 - INITIAL BREAK-IN MAINTENANCE.

SECTION 14 - ROUTINE ADJUSTMENTS

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ENGINE RPM	1	V-BELT TENSION	1

ENGINE RPM

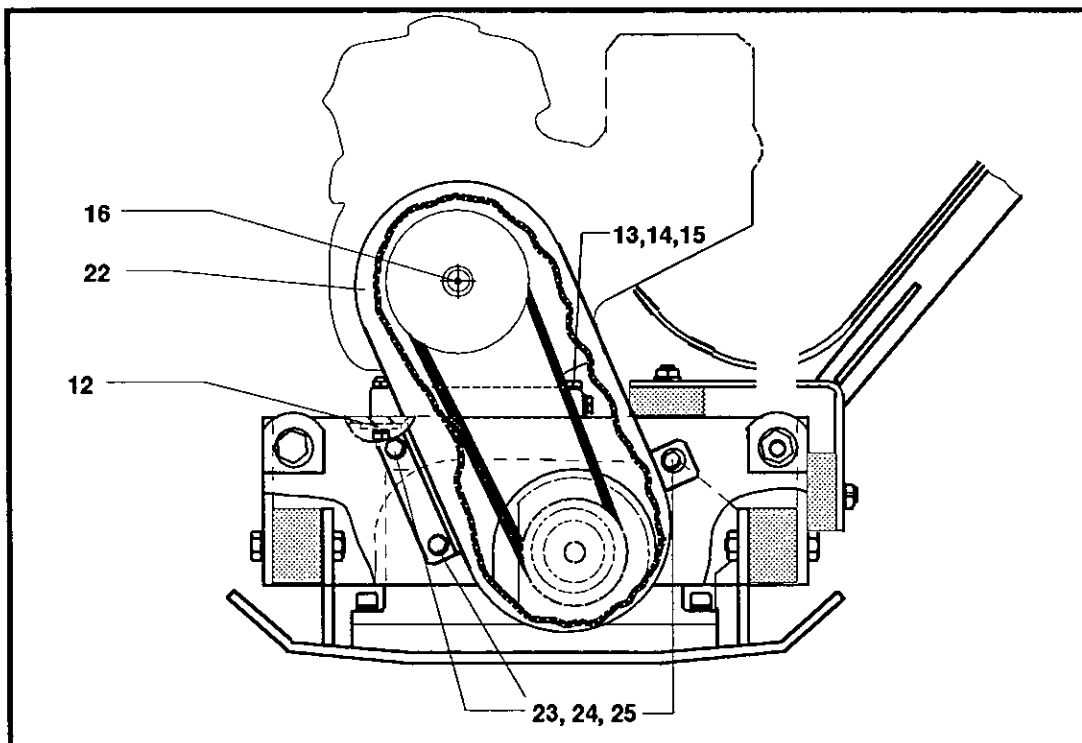
Adjust the engine rpm per the specifications and procedures in the engine manual.

V-BELT TENSION

Adjust the tension on the v-belt so that a light pressure on the belt between the two pulleys will deflect the belt $\frac{3}{16}$ inch to $\frac{3}{8}$ inch.

(A). FITTING NEW DRIVE BELT

1. Remove guard securing screws and washers (items 24, 25 and 23).
2. Remove guard (item 22).
3. Slacken engine securing nuts and washers (4 off items 13, 14 and 15) from engine clamp plate (item 12).
4. Push engine towards handle and depressing belt side of lifting frame against anti-vibration mounts slip belt off clutch pulley (item 16).
5. To fit new belt reverse instructions 1 - 4.



14-1 Fitting New Drive Belt

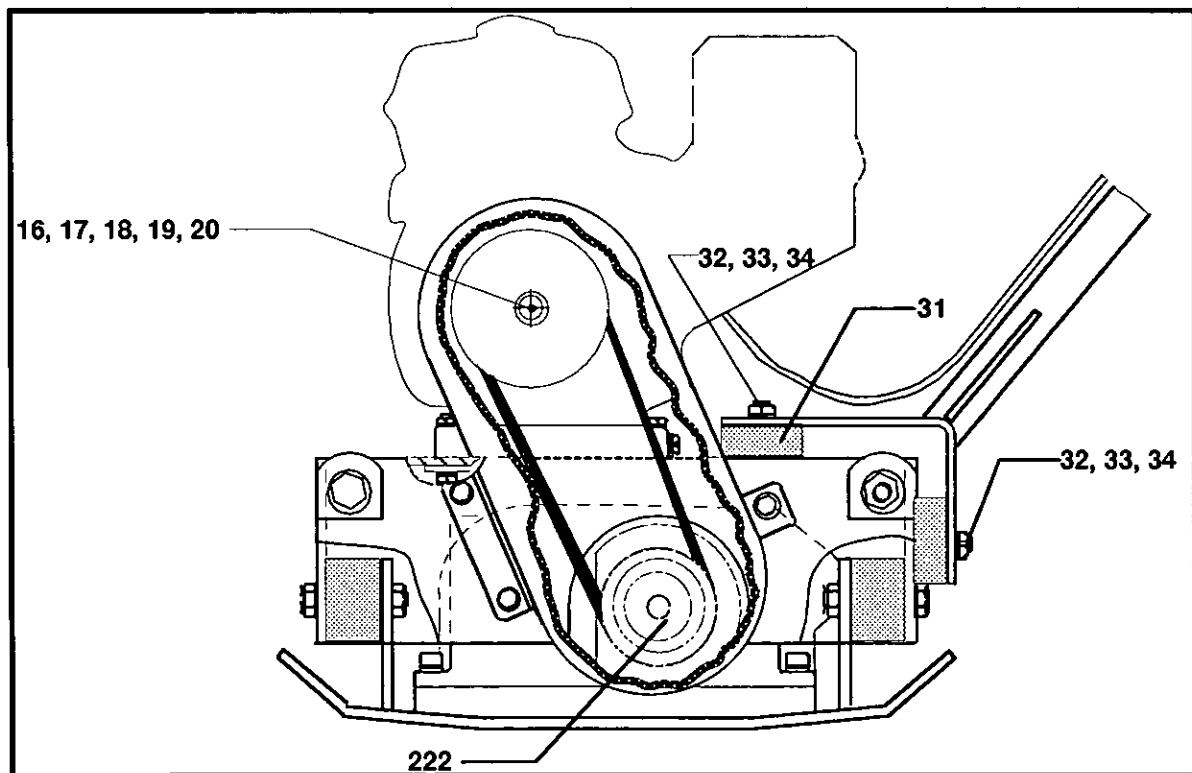
SECTION 14 - ROUTINE ADJUSTMENTS

(B). FITTING NEW CLUTCH

1. Use instructions 1 - 4 (above).
2. Loosen screw (item 19). Remove securing washer (item 17).
3. Remove clutch/pulley (item 16).
4. Fit new clutch/pulley ensuring that the drive key (item 18) is fitted to engine shaft in correct position.
5. Reverse instructions (B.1 - 3), ensuring that pulley/clutch and pulley on exciter (item 222) are correctly aligned.
6. Fit countersunk head screw with loctite.

(C). FITTING NEW ANTI-VIBRATION MOUNTS TO HANDLE SUPPORT

1. Remove anti-vibration mounts fixing nuts and washers (items 32, 33 and 34).
2. Lift handle upward to release anti-vibration mount (item 31).
3. Unscrew anti-vibration mounts (item 31).
4. Fit new anti-vibration mounts (item 31).
5. Reverse instructions (C. 1 - 3).



14-2 Fitting New Clutch and Anti-Vibration Mount

SECTION 14 - ROUTINE ADJUSTMENTS

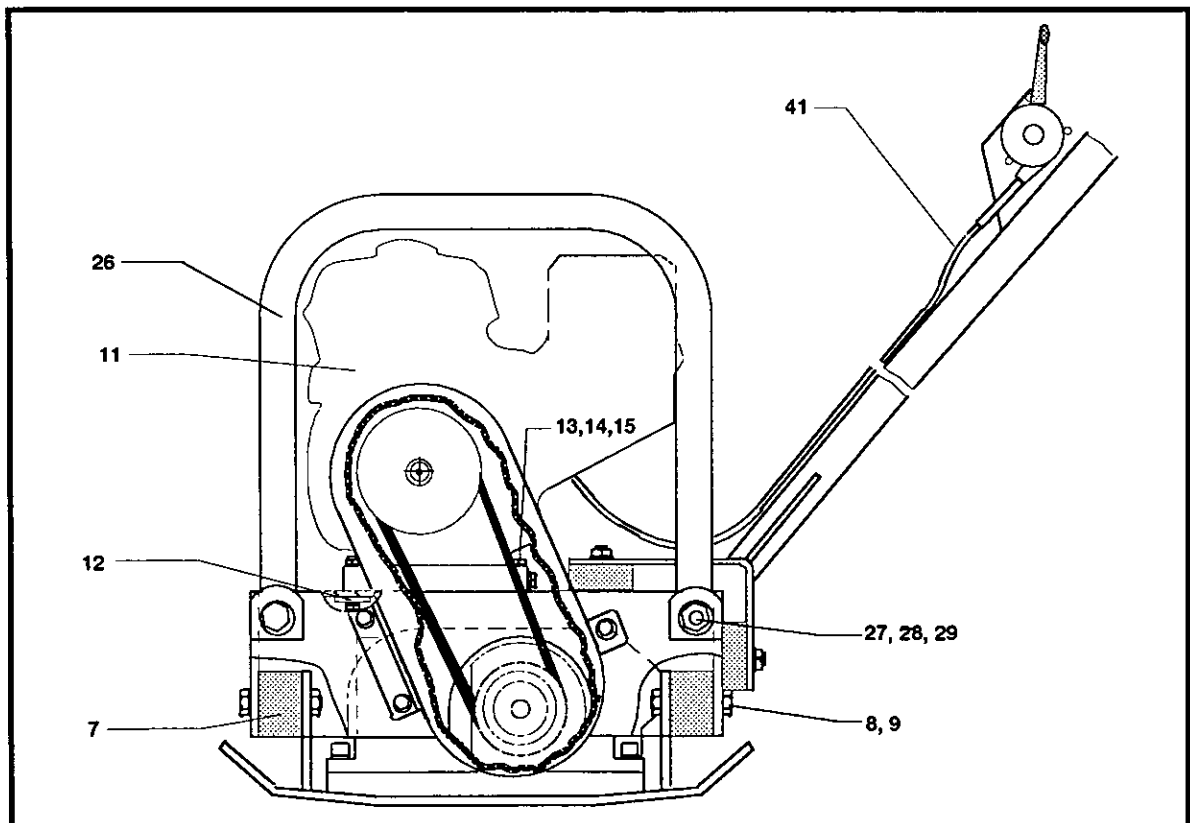
(D). FITTING NEW ANTI-VIBRATION MOUNTS TO ENGINE BASE

1. Use instructions (A. 1 - 4) inclusive.
2. Use instructions (C. 1 - 2) inclusive.
3. Disconnect throttle control cable (item 41).
4. Remove handle assembly.
5. Remove anti-vibration mounts fixing nuts and washers (4 off - items 8 and 9).
6. Lift off entire engine plate assembly.
7. Remove anti-vibration mounts inner fixing nuts and washers (4 off - items 8 and 9).
8. Remove anti-vibration mounts (4 off - item 7).
9. Replace anti-vibration mounts and reverse instructions (D. 1 - 7) inclusive.

N.B. ENSURE FIXINGS ARE TIGHT.

(E). REMOVAL AND RE-FITTING ENGINE

1. Use instructions (A. 1 - 4) inclusive.
2. Use instructions (C. 1 - 2) inclusive.
3. Disconnect throttle control cable (item 41).
4. Remove anti-vibration mounts fixing nuts and washers (4 off - items 8 and 9).
5. Lift off entire engine plate assembly.
6. Remove lifting frame securing bolts and washers (4 off - items 27, 28 and 29).
7. Remove lifting frame (item 26).
8. Remove engine fixing nut, washer and spring washer (4 off - items 13, 14 and 15). Remove engine location plates (2 off - item 12).
9. Lift off engine (item 11).
10. Reverse instructions (E. 1 - 5).



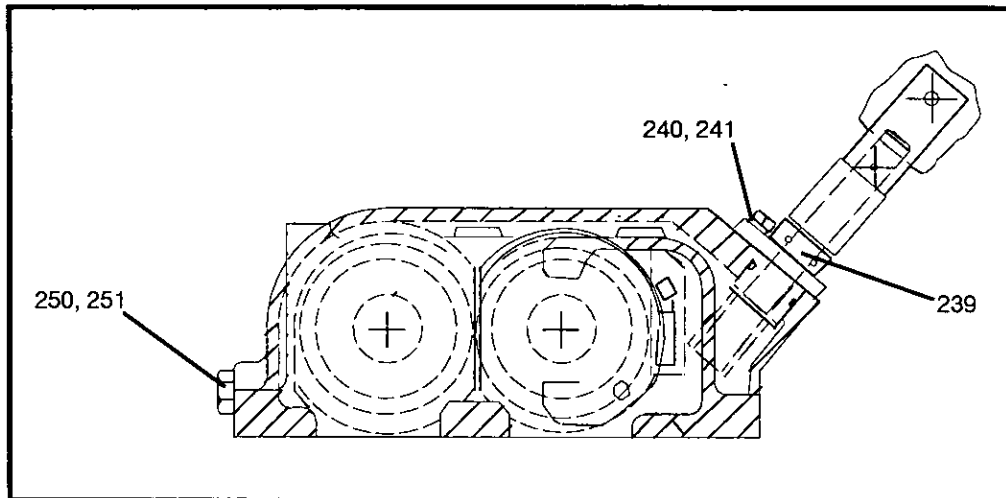
14-3 Fitting Anti-Vibration Mount and Re-Fitting Engine

SECTION 14 - ROUTINE ADJUSTMENTS

(F). REPLACING ECCENTRIC HOUSING OIL

1. Use instructions (D. 1, 2, 5 & 6) inclusive.
2. Remove complete engine base with handle assembly.
3. Remove selector drive bracket securing bolts and spring washers (3 off - items 240 and 241).
4. Remove selector drive bracket assembly (item 239).
5. Remove filler plug and seal (items 250 and 251).
6. Incline machine to drain out all old oil.
7. Replace filler plug and seal (items 250 and 251).
8. Use 800 millilitres of engine oil 10W40 grade to replenish Eccentric Housing Oil through drive bracket opening. **CAUTION: DO NOT OVERFILL.**
9. Reverse instructions (F. 1 - 4). Ensure that the square shaft is aligned and that the direction control lever operates correctly, clockwise reverse, and anti-clockwise forward.

N.B. ENSURE FIXINGS ARE TIGHT.



14-4 Replacing Eccentric Housing Oil

SECTION 15 - MISCELLANEOUS AND OPTIONAL EQUIPMENT

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TRANSPORT CART	1		

TRANSPORT CART

The optional transport cart may be attached to the compactor with the attachment pin, allowing the compactor to be easily moved from location to location.

SECTION 16 - SCHEMATICS

NOTE

No Schematics are necessary for this unit.

SECTION 17 - SPECIFICATIONS

Contents	Page	Contents	Page
SAE TORQUE CHART _____	1	SPECIFICATIONS _____	3
ISO METRIC TORQUE CHART _____	2		

Use the following Recommended Torque Chart for bolts and nuts of SAE Grade 5 or better quality. If other torques are required, they will be indicated in the text.

NOTE

Torque values are based on plain, unplated hardware, degreased, dried, clamping steel to steel.

SAE Grade 5 (Modified)

Proof Load = 74 - 85 KSI			
	Clamp Load (lbs)	Torque (lbs. ft.)	Torque (NM)
1/4 - 20	2020	96 lbs. inch	11
1/4 - 28	2320	120 lbs. inch	14
5/16 - 18	3340	17	23
5/16 - 24	3700	19	26
3/8 - 16	4940	30	41
3/8 - 24	5600	35	47
7/16 - 14	6800	50	68
7/16 - 20	7550	55	75
1/2 - 13	9050	75	102
1/2 - 20	10700	90	122
9/16 - 12	11600	110	149
9/16 - 18	12950	120	163
5/8 - 11	14400	150	203
5/8 - 18	16950	180	244
3/4 - 10	21300	260	353
3/4 - 16	23800	300	407
7/8 - 9	27000	400	542
7/8 - 14	29800	440	597
1 - 8	35500	580	786
1 - 12	38800	640	868
1 1/8 - 7	42300	800	1085
1 1/8 - 12	47500	880	1193
1 1/4 - 7	53800	1120	1519
1 1/4 - 12	59600	1240	1681
1 3/8 - 6	64100	1460	1980
1 3/8 - 12	73000	1680	2278
1 1/2 - 6	78000	1940	2631
1 1/2 - 12	87700	2200	2983

All threaded fasteners will be Loctited except the following:

1. Wheel Nuts.
2. Nylon Insert Nuts.
3. Whizlock Bolts and Nuts.
4. Fasteners less than 1/4 inch diameter.
5. If instructed to not apply Loctite.

Type of Loctite to be used:

1. No. 242 for 5/16 diameter and below.
2. No. 271 for greater than 5/16 diameter.
3. No. 242 for aluminum.

All Loctited fasteners will be degreased and dried. When accelerated Loctite cure times are required, Loctite primer must be used.

SECTION 17 - SPECIFICATIONS

Use the following Recommended Torque Chart for bolts and nuts of ISO Metric strength class 8.8 and 10.9. If other torques are required, they will be indicated in the text.

NOTE

Torque values are based on dry, zinc-plated capscrews. These values will be approximately 30 percent less if lubricated capscrews are used.

BOLT SIZE (MM)	GRADE 8.8 POUNDS-FOOT (Kg-Meters)	GRADE 10.9 POUNDS-FOOT (Kg-Meters)
6	8 (1.1)	11 (1.5)
8	20 (2.8)	27 (3.8)
10	39 (5.5)	53 (7.4)
12	68 (9.5)	93 (13.0)
14	107 (15.0)	148 (21.0)
16	156 (22.0)	230 (32.0)
20	306 (43.0)	449 (63.0)
24	529 (74.0)	777 (109.0)
30	1050 (147.0)	1544 (216.0)
36	1835 (257.0)	2696 (377.0)

SECTION 17 - SPECIFICATIONS

SPECIFICATIONS

MODEL	CXR-9
WEIGHT	93 Kg.
VIBRATION FREQUENCY	85 HZ (5100 VPM)
CENTRIFUGAL FORCE	2200 Kg.
TRAVEL SPEED	20 mt/min Depending upon Surface.
OVERALL LENGTH	850 mm
OVERALL HEIGHT	965 mm
PLATE SIZE	520 mm x 330 mm
ENGINE (MAKE & MODEL)	Honda GX120
ENGINE OUTPUT	2.6 KW/ 3.5 HP (at 3400 RPM)
FUEL	Automotive gasoline
FUEL CAPACITY	2.5 Litres
STARTING SYSTEM	Recoil starter

ENGINE RPM SETTINGS

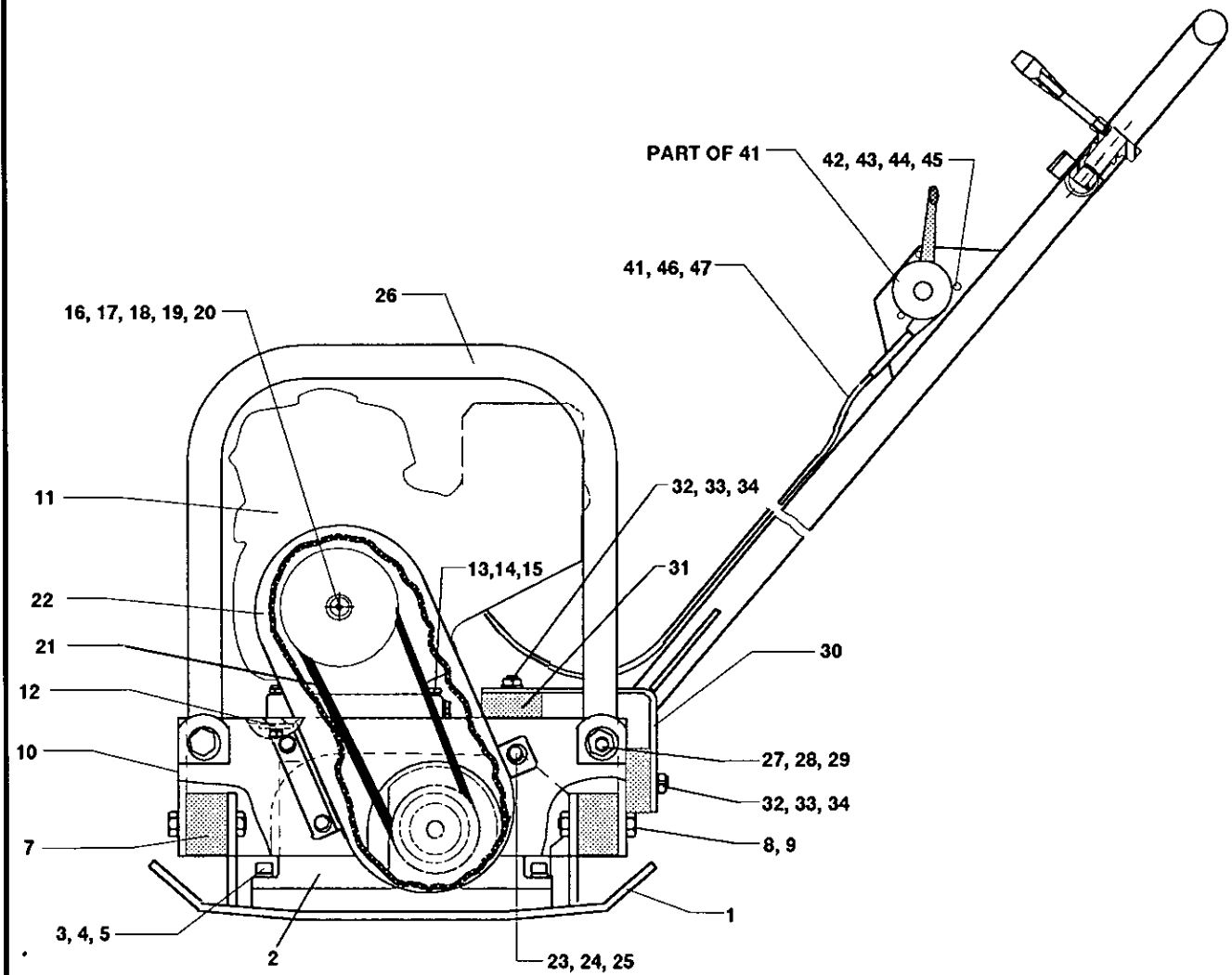
NOTE

For engine rpm settings, refer to the engine manual.

SECTION 18 - PARTS

**CXR-9 REVERSIBLE
PLATE COMPACTOR**

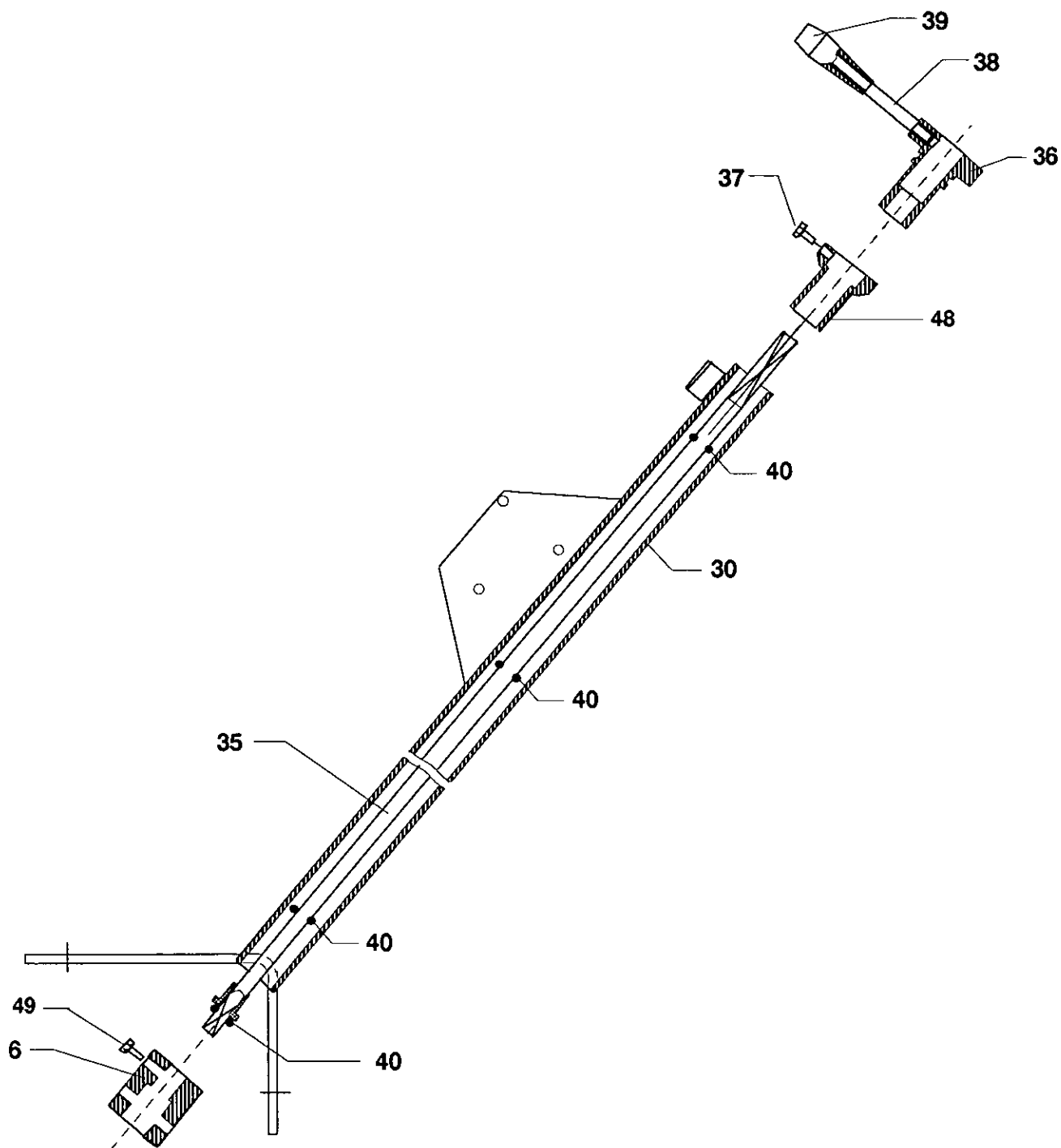
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SECTION 18 - PARTS
CXR-9

Item	Comm. No.	Qty.	Description	German	Spec.
1	92990803	1	Base Plate		
2	92990811	1	Eccentric Assembly		
3	39125000	8	S.H.C.S.		M10 x 1.5p x 45
4	92991561	2	S.H.C.S.		M10 x 1.5p x 140
5	92304674	10	Spring Washer - B		M10
7	92990837	4	Anti Vibration Mount		
8	92304526	8	Hex Nut Plain		M10 x 1.5p
9	92304674	8	Spring Washer - B		M10
10	92990845	1	Engine Deck Fabrication		
11	92990852	1	ENGINE ASSEMBLY		Honda GX120 QH
12	92990860	2	Engine Clamp Plate		
13	92991579	4	Nyloc Nut		M8 x 1.25p
14	92304666	4	Spring Washer - B		M8
15	90523861	4	Plain Washer - A		M8
16	92990878	1	Clutch Assembly		
17	92990886	1	Clutch Securing Washer		
18	92990894	1	Key		
19	92991587	1	C'sk Hd. Socket Screw		5/16" x 1"
20	92990902	2	Spacers		
21	92991595	1	Vee Belt		
22	92990910	1	Belt Guard		
23	92304344	3	H.H.S.S.		M8 x 1.25p x 20
24	92304666	3	Spring Washer - B		M8
25	90523861	3	Plain Washer - A		M8
26	92990928	1	Lifting Frame Assy.		
27	92280973	4	H.H.S.S.		M12 x 1.75p x 35
28	92304682	4	Spring Washer - B		M12
29	92061506	4	Plain Washer - A		M12
30	92990936	1	Handle Fabrication		
31	92990944	4	Handle A/V Mounts		
32	92304526	4	Hex. Nut Plain		M10 x 1.5p
33	92304674	4	Spring Washer - B		M10
34	92061498	4	Plain Washer - A		M10
41	92990951	1	Engine Speed Control		
42	92991603	3	H.H.S.S.		M5 x 0.8p x 25
43	92304492	3	Hex Nut Plain		M5 x 0.8p
44	92991611	3	Spring Washer -B		M5
45	92991629	3	Plain Washer -A		M5
46	92990969	1	Clevis		
47	92990977	4	Cable Clips		

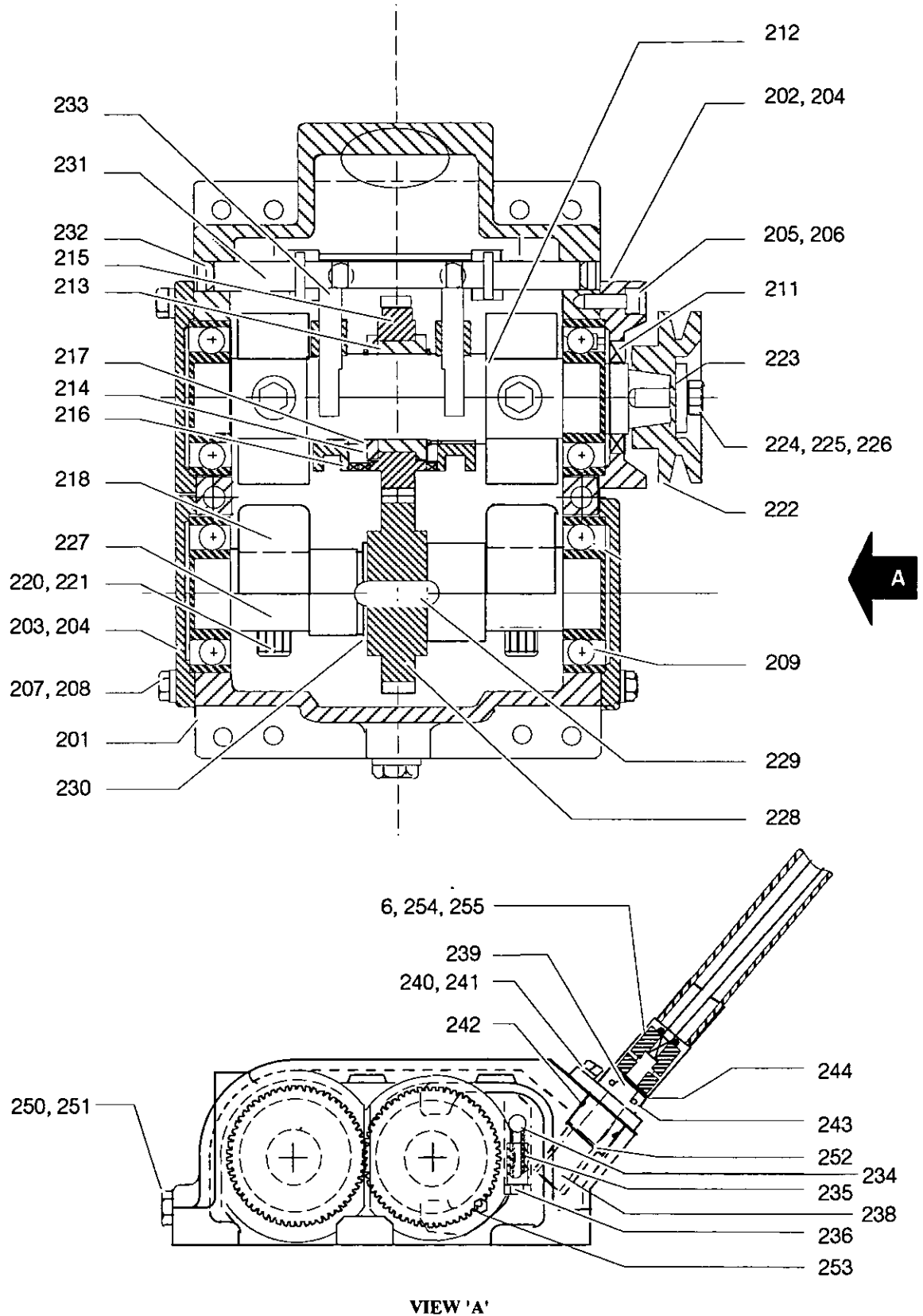
SECTION 18 - PARTS
CXR-9



SECTION 18 - PARTS
CXR-9

Item	Comm. No.	Qty.	Description	German	Spec.
6	92990829	1	Eccentric Control Boss		
35	92990985	1	Eccentric Control Shaft		
36	92990993	1	Eccentric Control Knob		
37	92991702	1	H.H.S.S.		M6 x 1.0p x 15
38	92991009	1	Handle Rod		
39	92991017	1	Handle Knob		
40	92991025	4	O-Ring		
48	92991678	1	Handle Fabrication Boss		
49	92991637	1	H.H.S.S.		1/4" WHIT x 1/2"

SECTION 18 - PARTS CXR-9



SECTION 18 - PARTS
CXR-9

Item	Comm. No.	Qty.	Description	German	Spec.
6	92990829	1	Eccentric Control Boss		
201	92991041	1	Eccentric Housing		
202	92991058	1	Bearing Cap		
203	92991066	3	Bearing Cap		
204	92991074	4	Gasket		
205	92061498	4	S.H.C.S.		M8 x 20
206	92304666	4	Spring Washer		M8
207	92304344	12	H.H.S.S.		M8 x 20
208	92304666	12	Spring Washer		M8
209	92991082	4	Ball Bearing		
211	92991090	1	Oil Seal		
212	92991108	1	Drive Shaft		
213	92991116	1	Collar		
214	92991124	1	Spacer		
215	92991132	1	Drive Gear		
216	92991140	2	Clutch		
217	92991157	2	Circlip		
218	2991165	4	Eccentric Weight		
220	92991538	4	S.H.C.S.		M12 x 50
221	92061506	4	Plain Washer		M12
222	92991173	1	'V' Pulley		
223	92991181	1	Key		
224	92991546	1	Washer		
225	92304344	1	H.H.S.S.		M8 x 20
226	92304641	1	Spring Washer		M5
227	92991199	1	Secondary Shaft		
228	92991207	1	Gear		
229	92991215	1	Key		8 x 12 x 35
230	92991223	1	Circlip		
231	92991231	1	Selector Shaft		
232	92991249	2	O-Ring		
233	92991256	1	Selector Fork		
234	92991264	2	Steel Ball		
235	92991272	2	Coil Spring		
236	92991280	2	Tension Pin		3 x 20 LG
238	92992278	1	Selector Drive Gear		
239	92991298	1	Selector Drive Bracket		
240	92304666	3	Spring Washer		M8
241	92304344	3	H.H.S.S.		M8 x 20
242	92991306	1	O-Ring		
243	92991314	1	O-Ring		
244	92991322	1	Spacer		
250	92991330	1	Filler Plug		
251	92991348	2	Seal		
252	92991355	1	Disc Spring		
253	92991363	1	Plug		
254	92991371	1	Hex HD High Tensile Bolt		M5 x 40 Long

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**CXR-9 REVERSIBLE
PLATE COMPACTOR**

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92304641	18-7	92991249	18-7
92304666	18-3	92991256	18-7
92304674	18-7	92991264	18-7
92304682	18-3	92991272	18-7
92990803	18-3	92991280	18-7
92990811	18-3	92991298	18-7
92990829	18-5	92991306	18-7
92990837	18-3	92991314	18-7
92990845	18-3	92991322	18-7
92990852	18-3	92991330	18-7
92990860	18-3	92991348	18-7
92990878	18-3	92991355	18-7
92990886	18-3	92991363	18-7
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92990969	18-3	92991428	18-7
92990977	18-3	92991436	18-7
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CONSTRUCTION AND DRILLING EQUIPMENT SOLD BY DISTRIBUTORS

Warranty

Ingersoll-Rand, through its distributor, warrants that each item of equipment manufactured by it and delivered hereunder to the initial user to be free of defects in material and workmanship for a period of three (3) months from initial operation or six (6) months from the date of shipment to the initial user, whichever first occurs.

With respect to the following types of equipment, the warranty period enumerated will apply in lieu of the foregoing warranty period.

- A. Drill Mountings and Klemm Rotary Heads – The earlier of six (6) months from initial operation or nine (9) months from date of shipment to the initial user.
- B. Portable Compressors and Portable Generator Sets (GENSET) – The earlier of twelve (12) months from shipment to, or the accumulation of 2,000 hours of service by, the initial user.
- C. All Compressor Air Ends, GENSET Generators and Paving Breakers – The earlier of twenty-four (24) months from shipment to, or the accumulation of 4,000 hours of service by, the initial user. For Air Ends, the warranty against defects will include replacement of the complete Air End, provided the original Air End is returned assembled and unopened.
- D. Allatt Pavers, Forklifts, Landfill Machines, Milling Machines, Pedestrian Compactors (including baseplates, upright and walk behinds) and Rotary Drills – The earlier of (6) months from shipment to, or the accumulation of 1,000 hours of service by, the initial user.
- E. Jackhammers and Self-Propelled Compactors – The earlier of twelve (12) months from shipment to, or accumulation of 1,000 hours of service by, the initial user.
- F. Downhole Drills – In lieu of the repair or replacement of defective parts Ingersoll-Rand may elect to issue full or partial

credit toward the purchase of a new part. The extent of credit issued will be determined by pro rating against the normal service life of the part in question.

- G. Spare Parts (excluding downhill drills) – Three (3) months from date of shipment.

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 and workmanship during the 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 type equipment involved or other establishment authorized by Ingersoll-Rand. User must present proof of purchase and date at the time of exercising warranty.

This warranty does not apply to failures occurring as a result of abuse, misuse, negligent repairs, corrosion, erosion and normal wear and tear, alterations or modification 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.

Accessories or equipment furnished by Ingersoll-Rand, but manufactured by others, including, but not limited to, engines, tires, batteries, engine electrical equipment, hydraulic transmissions, carriers, shall carry whatever warranty the manufacturers have conveyed to Ingersoll-Rand and which can be passed on to the initial user.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), EXPRESSED OR IMPLIED, AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

The remedies of the user set forth under the provisions of warranty outlined above are exclusive and the total liability of Ingersoll-Rand or its distributors with respect to this sale or the equipment and service furnished hereunder, in connection with the performance or breach thereof, or from the sale, delivery, installation, repair or technical direction covered by or furnished under this sale, whether based on contract, warranty, negligence, indemnity, strict liability or otherwise shall not exceed the purchase price of the unit of equipment upon which such liability is based.

Ingersoll-Rand, its supplier(s) and its distributors shall in no event be liable to the user, any successors in interest or any

beneficiary or assignee relating to this sale for any consequential, incidental, indirect, special or punitive damages arising out of this sale or any breach thereof, or any defects in, or failure of, or malfunction of the equipment under this sale whether based upon loss of use, lost profits or revenue, interest, lost goodwill, work stoppage, impairment of other goods, loss by reason of shutdown or non-operation, increased expenses of operation of the equipment, cost of purchase of replacement power or claims of users or customers of the user for service interruption whether or not such loss or damage is based on contract, warranty, negligence, indemnity, strict liability or otherwise.

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