VIBRATORY PLATE COMPACTOR

P2000 and P5000

OPERATION, MAINTENANCE and PARTS MANUAL

Publication M29865
(Revised 12/14)

MODEL NUMBER: _____

SERIAL NUMBER: _____

SOLD & SERVICED BY: _____

_____

_____

MASTER EQUIPMENT

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www.Master.Equipment

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INTRODUCTION

GENERAL

The MASTER Model P2000 and P5000 Vibratory Plate Compactors are similar in design and construction and alike in principle. Both models employ a single eccentric. On the Model P2000 the eccentric is center mounted and on the Model P5000 the eccentric is mounted inside the forward part of the machine. Additional performance and size differences between the two compactors are tabulated in Table 1 - Specifications.

The Model P2000 compactor is designed to compact asphalt and general purpose fill. The Model P5000 compactor is designed to compact select fill and granular material.

DESCRIPTION

These compactors (see Figure 1) are designed to isolate the vibration within the lower plate area. The operators handle is connected to the lower plate assembly through shock absorbing mounts located at the center of the machine which results in less operator fatigue. Vibration waste in the engine base assembly is reduced through the roll bar design.

The roll bar configuration completely protects all working parts, engine, fuel tank, and air filter. In addition, this design places the air filter above the dust concentration level. Additionally, these machines feature a self-cleaning lower plate, retractable starter - backed-up by a sheave mount for rope starting. A multi-force throttle adjustment is also included to adapt the machine to soil conditions.

The engine base is fabricated from heavy sheet steel to which the roll bar is bolted and provides the platform to mount the engine. Resilient mounts connect the engine base to the compactor base which contacts the surface to be worked. An eccentric weight shaft supported by a heavy duty roller bearing at each end is totally enclosed inside the weight tube compartment of the compactor base. The pulley attached to the weight shaft is driven by a V-belt through a centrifugal clutch keyed onto the engine shaft. A belt guard encloses the belt area.

The centrifugal clutch disengages at idle speed and will engage to drive the eccentric weight shaft when the throttle lever is advanced into the compaction force range. As the weight shaft rotates, it transmits a high speed vibratory motion to the base compacting the area under the base. As the surface becomes more firm, the vibratory action will cause the unit to walk forward as it performs its compacting function.

A water tank and piping is available for the P2000.

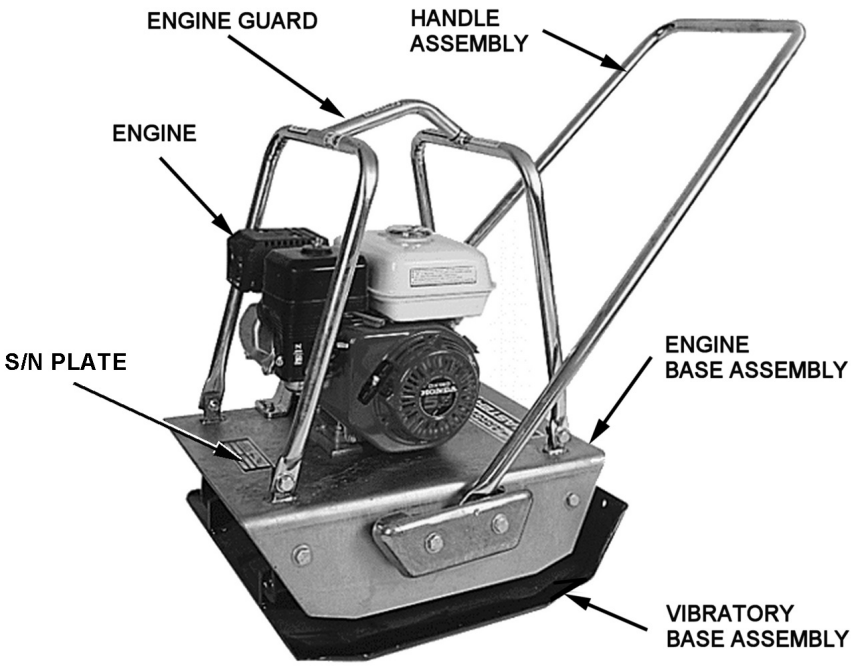

Figure 1 - P-Series Vibratory Plate Compactor

Table 1 - Specifications

	MODEL P2000	MODEL P5000
Operating Weight	200 lbs. (90.7 kg.) without water 210 lbs. (83.5 kg.) with water system	245 lbs. (124.9 kg.)
Overall Dimen. (L x W x H)	34.50" x 21.50" x 37.00" (87.6cm x 54.6cm x 94.0cm)	38" x 21.5" x 36" (96.5cm x 54.6cm x 91.4cm)
Shipping Weight	225 lbs. (102kg.)	275 lbs. (124.7 kg.)
Container Size (L x W x H)	24" x 24" x 49" (61cm x 61cm x 124.5cm)	24" x 24" x 49" (61cm x 61cm x 124.5cm)
Overall Plate Size (W x L)	21.5" x 21.6" (54.6cm x 54.8cm)	21.5" x 21.6" (54.6cm x 54.8cm)
Effective Plate Size	244 $in.^2$ (1574 cm^2)	244 $in.^2$ (1574 cm^2)
Exciter Speed	6040 RPM maximum 3890 RPM minimum	5160 RPM maximum 3940 RPM minimum
Type of Power Unit	Kohler Command Model CH6T-15102 OHV Robin Model EX170D OHV Briggs & Stratton Model 121332 OHV Honda Model GX160 OHV	Kohler Command Model CH6T-15102 OHV Robin Model EX170D OHV Briggs & Stratton Model 121332 OHV Honda Model GX160 OHV

Table 1 - Specifications (cont'd.)

	MODEL P2000	MODEL P5000
Power Unit Idle RPM	1800	1800
Power Unit Operating RPM	Kohler 3600 Robin 3600 Briggs & Stratton 3600 Honda 3600	Kohler 3600 Robin 3600 Briggs & Stratton 3600 Honda 3600
Hp Rating	Kohler 6.0 hp (4.5 kW) Robin 6 hp (4.5 kW) Briggs & Stratton 5.0 hp (3.7 kW) Honda 5.5hp (4.1 kW)	Kohler 6.0 hp (4.5 kW) Robin 6 hp (4.5 kW) Briggs & Stratton 5.0 hp (3.7 kW) Honda 5.5hp (4.1 kW)
Fuel Tank Capacity*	Kohler 3.0 qts (2.8 l) Robin 3.8 qts (3.6 l) Briggs & Stratton 3.0 qts (2.8 l) Honda 3.3 qts (3.1 l)	Kohler 3.0 qts (2.8 l) Robin 3.8 qts (3.6 l) Briggs & Stratton 3.0 qts (2.8 l) Honda 3.3 qts (3.1 l)
Maximum Forward Speed	60 ft./min. (18.3 m/min.)	135 ft./min. (41.2 m/min.)
Centrifugal Force	2700 lbs. (12 015 N)	5300 lbs. (23 585 N)
Maximum Area Capacity	6300 $ft.^2$/hr. (585 m^2/hr.)	14,175 $ft.^2$/hr. (1313 m^2/hr.)
Water Tank Capacity*	6.0 qts. (5.7 l)	Not applicable

(Water tank and distribution system offered as an option)

* Quarts are in U.S. measure.

Note: Master Equipment has a policy of continuous product research and improvement, and reserves the right to change design and specifications without notice.

SET-UP AND OPERATION

NOTICE Compactors are designed for use only on compressible soils and materials. Damage to the unit will result if operated on non yielding surfaces, such as concrete or bricks. Operation on a non yielding surface voids the warranty.

PRE-START CHECK

Visually inspect each unit before the initial start. Check for loose or missing parts and any damage that may have occurred in shipment.

NOTICE The fuel has been drained from the engine prior to shipping.

CRANKCASE OIL

Fill the crankcase with a good quality oil that meets the API (American Petroleum Institute) service designation SJ or later. Recommended oil numbers for ambient temperatures are as follows:

TEMPERATURE	GRADE
Above 40° F (5.5° C)	SAE 30 or 10W40
Below 40° F (4.5° C)	SAE 5W20 or 5W30

⚠CAUTION Do not check oil while the engine is operating. Hot oil could cause burns by blowing out of oil fill tube due to crankcase pressure.

NOTICE Do not overfill crankcase. Too much oil causes higher operating temperatures. Excess oil may cause foaming or clogging of the breather system.

RECOMMENDED FUEL

Use clean, fresh, regular grade, unleaded gasoline. Do not use premium grades.

NOTICE Do not mix gasoline with oil or damage to the engine could occur. These engines are 4-cycle units with separate crankcase for oil.

⚠WARNING A hot muffler is a potential fire hazard: allow it to cool before refilling fuel tank. Never fill the fuel tank when the engine is running. Do not overfill the fuel tank; this could result in fuel splashing out when the engine is running causing a possible fire.

STARTING

⚠WARNING This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine' s exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department.

General Starting Instructions:

Refer to the engine manual for directions on starting and operating the engine. See that the engine has an adequate supply of fuel and oil of the grade recommended in the engine manual.

Turn the fuel valve on. Move the choke lever to the closed position. (If the engine is warm, leave the choke open.) Move the throttle lever about 1/3 from the minimum position. Refer to the examples in Figures 3, 4 and 4a.

When the engine starts, place throttle lever in the idle position and let the engine run at idle speed to permit it to warm up. When the engine is warm the unit is ready for use. The setting of the throttle lever determines the compaction force. Pushing the throttle lever forward provides a high compaction force. Pulling throttle lever back will provide a lower compaction force or idle.

COMPACTING

The multi-force control lever permits the unit to be operated at a speed which is best suited for the soil condition. As explained in the INTRODUCTION Section, the compactor tends to "walk" forward as the soil beneath the machine becomes firm so that its most effective speed will be the speed at which the unit moves forward fastest. *DO NOT TRY TO PUSH THE MACHINE OR TO HOLD IT BACK*. The handle should be used to guide the unit which will set its own pace. The maximum travel rate for the Model P-2000 compactor is 60 ft./min. The Model P-5000 will move forward at a travel rate up to 130 ft./min. The travel rate of these machines depends on the conditions of the soil. The looser the soil or surface to be compacted, the slower the forward progress of the machine.

WORKING ON GRADES

As long as the machine can be guided by its handles, there are no problems in compacting on a slight grade. When side-slip occurs, either of the two following options may be used.

1. Tie a rope to the unit and have a man hold the machine's weight against the pull of the slope.

2. Change the pattern to compact up the grade. If the grade is too steep for the machine to climb, tie a rope to the unit and have a man take up the weight of the machine. Do not pull hard enough to force the natural pace.

MAINTENANCE

CARE OF THE UNIT

Neglect and dirt are the main cause of wear and shortened life of equipment. To obtain the full useful life of your compactor, establish and follow a reasonable program of preventive maintenance.

PREVENTIVE MAINTENANCE

In addition to the routine services listed in Tables 2 & 3, there are other important preventative maintenance steps that should be taken to keep the engine in top condition.

LUBRICATING OIL

Oil level (check daily):

Oil Change:
See Table 3 for oil change intervals on specific engines.

Oil type:
Use only oils recommended in Pre-Start Check (OPERATION section). See Temperature - Viscosity Guide for proper grade. Special oils are not required for new engines, however, place engine under load immediately as this promotes final setting of the rings.

AIR CLEANER

Check the engine manual for instructions under the type of air cleaner you have. Service air cleaner as directed.

COOLING SYSTEM

Dust and/or dirt may clog cooling system after prolonged service in dusty environmental condition. Continued operation with a clogged cooling system cause severe overheating and possible engine damage. Remove blower housing and clean regularly. DO NOT operate engine with blower housing or cooling shrouds removed.

COMPACTOR BASE

Clean the bottom of the compactor base as soon as it begins to pick up soil being compacted. The unit cannot do a good job if the bottom surface is not smooth and clean.

Dirt is a major cause of wear. Do not allow dirt to accumulate on the equipment.

Check bolts, screws and nuts for looseness frequently. Tighten any loose hardware.

Change the oil (10W30) in the weight shaft housing after the first four weeks of service then every 12 months thereafter.

After every 4 weeks of operation check oil level in weight shaft housing as follows:

1. Brush or wipe away loose or accumulated dirt around plug.

2. Remove pipe plug and measure depth of oil in weight shaft housing using a clean rod. **OIL LEVEL MUST BE 5/8 TO 3/4 IN. DEEP IN HOUSING WHEN MACHINE IS LEVEL.** Fill oil to proper level, clean the magnetic plug and reinstall it.

NOTICE Use care to prevent dust and dirt from entering weight shaft housing when checking oil level.

3. If oil level is frequently and/or excessively low, check for any indication of oil leakage through the oil seals, see OVERHAUL INSTRUCTIONS section for specific instructions or tear down.

DRIVE BELT REPLACEMENT

1. To change the drive belt, remove the belt guard.

2. Loosen engine mounting hardware only enough to move engine forward.

3. Work drive belt from clutch and weight shaft pulley.

4. Insert new belt through slot in engine base and work it onto weight shaft pulley and clutch.

5. Move engine back and tighten mounting hardware. The belt is properly adjusted when the belt may be deflected 3/4 of an inch (maximum).

⚠CAUTION When removing or installing the drive belt, be careful not to get your fingers caught between the belt and pulley.

Table 2 - Daily Maintenance Checks

ITEM	CHECK
Engine Oil Level	Check before each use - check engine oil with machine on a level surface, with engine OFF. Be sure oil level is maintained within the engine manufacturer's specified operating range (refer to engine owner's manual). See Table 3 for oil change intervals.
Fuel Supply	Check before each use - fill the fuel tank with clean fresh fuel. Regular grade unleaded gasoline is recommended.
Air Intake Areas[1]	Check before each use - air intake areas must be clean and unobstructed.
Air Cleaner[1]	Check before each use - check for dirty and damaged parts. Make sure the air cleaner and cover are in place and securely fastened. Refer to Table 3 for service intervals.

Table 3 - Maintenance Schedule

Recommended Maintenance[1]	Service interval - perform service at every indicated month or operating interval, whichever comes first.			
	Engine Make			
	Kohler	Robin	Briggs & Stratton	Honda
Change Engine Oil	After first 5 hrs. of operation, then every 100 hrs. thereafter.	After first 20 hrs. of operation, then every 100 hrs. thereafter.	After first 5 hrs. of operation, then every 50 hrs. thereafter.	After first month or 20 hrs. of operation, then every 6 months or 100 hrs.
Service Air Cleaner[2]	Precleaner - every 25 hrs. Paper Element - every 100 hrs.	Every 50 hrs. (weekly)	Every 3 months or 25 hrs.	Every 3 months or 50 hrs.
Clean & Gap Spark Plug	Every 100 hrs. Gap - 0.040" (1.0 mm)	Every 200 hrs. Gap - 0.024"-0.027" (0.6 - 0.7 mm)	Every 100 hrs. Gap - 0.030" (0.76 mm)	Every 6 months or 100 hrs. Gap - 0.028"-0.031" (0.7 - 0.8 mm)
Clean Engine Cooling System & All External Surfaces	Every 6 months or 50 hrs.			
Clean Fuel Strainer[3] Yearly or	Yearly or 300 hrs.	200 hrs. (monthly)	Replace in line filter every 100 hrs. or every season	Every 2 Years

Notes:

[1] Refer to Engine Owner's Manual for specific maintenance instructions and procedures.

[2] Intervals stated are for good, clean operating conditions. Service more frequently when used in dirty, dusty conditions.

[3] These items should be serviced by an authorized engine dealer, unless the owner has the proper tools and is mechanically proficient.

BASEPLATE OVERHAUL INSTRUCTIONS

DISASSEMBLY

If it should become necessary to disassemble the compactor to replace an oil seal or bearings, proceed as follows:

1. Remove the drive belt as described in the MAINTENANCE section.
2. Remove the hardware attaching the engine base assembly to the vibratory base assembly.
3. Lift off the engine base assembly and its mounted components as an assembly. Remove the stone guard if it is a separate piece.
4. Take out the taper bushing by removing its attaching screws, then insert screws into the two threaded holes in the bushing to use as jackscrews and force the pulley off the taper bushing. Remove the bushing, pulley and key.
5. Remove one of the upper screws and washers attaching the weight cap to the vibratory base assembly. Loosen the pipe plug and drain the oil out through the screw hole. Remove the remaining screws.

NOTE - It may be necessary to heat the screws to break the Loctite® bond. Wipe up as much of the oil as possible and use care when heating the screws to prevent distorting the vibratory base wall.

6. Use two 5/16-18 screws for P2000 and three 5/16-18 screws for P5000 and insert them into the threaded holes in the weight caps to use as jackscrews to force the weight caps off.
7. The bearing cones will remain on the weight shaft and may be inspected without removal. The bearing cups and oil seal will remain in their weight caps for inspection.
8. If there is any doubt about the condition of the bearing cups or the oil seal, replace them. Bearing cups cannot be serviced separately. If the bearing cups are damaged, the entire weight cap must be replaced The bearings must NEVER be reassembled with old and new parts mixed.

PREPARATION FOR REASSEMBLY

Before beginning reassembly, make sure there is Loctite® 242, 515, and 680, at hand. A 1/4" allen socket or 1/2" hex socket, a 12-inch extension, and a ratchet are required to install the screws that secure the weight caps to the vibratory base assembly. A torque wrench is also required to insure that the weight caps are properly torqued.

REASSEMBLY OF BEARINGS AND OIL SEAL

1. Clean up the mounting surface of the weight caps and vibratory base. Be sure to scrape off all the old sealant and any shim stock adhering to the mounting surface. Clean the surface with solvent and wipe dry. Make sure that all traces of old Loctite® (white powder) and sealants have been removed from screws and threaded holes. Be sure all surfaces are free of oil, grease, paint, and other surface treatments before reassembly.
2. Coat the outside diameter of the oil seal with Loctite® 680 and push it into place in the open weight cap.
3. Press the bearing cones onto the weight shaft, squarely against the shaft shoulder. Be sure to apply force to the race only, never to the rollers, when installing bearing cones onto the shaft.
4. Coat only the vertical face of the open weight cap with Loctite® 515 Gasket Eliminator (NO SUBSTITUTES) as shown in Figure 2. Do not get gasket material on the surface of the weight cap that slides into the base.
5. Use a 0.030 shim or shim as needed and carefully install the open weight cap into the base assembly.

IMPORTANT - DO NOT get any gasket material inside the compactor base or on any surface of the weight cap that slides into the base assembly.

6. Coat the threads of the screws with Loctite® 242, then secure the weight cap, using the screws and washers. Torque the screws to 30 ft. lb.

NOTE - Use only the factory specified hardware (washers and screws) when installing the weight caps. NO SUBSTITUTES!!

7. Turn the compactor base on its side (open cap down). A block of wood makes a suitable support for the base to rest on.
8. Wrap the keyway end of the weight shaft with Teflon or cellophane tape. Install the weight shaft into the base assembly and carefully slide the keyway end through the hole in the open weight cap.

IMPORTANT - Use extreme care when installing the weight shaft to prevent damage to the oil seal.

9. Use a 0.030 shim or shim as required and carefully install the closed weight cap into the base assembly. Secure it in place with three mounting screws. Torque the screws to 30 lb-ft.

IMPORTANT - DO NOT use the Loctite® 515 Gasket Eliminator material at this point. This step is required to determine the correct shim pack for the closed weight cap.

10. Check the endplay on the weight shaft. Correct shaft endplay is 0.004-0.007 for the P2000 compactor and 0.005-0.007 for the P5000 compactor. Add or remove shims to achieve the correct shaft endplay.

11. When the correct shim pack is determined, remove the closed weight cap. Coat only the vertical face of the closed weight cap with Loctite® 515 Gasket Eliminator (NO SUBSTITUTES) as shown in Figure 2. Do not get gasket material on the surface of the weight cap that slides into the base.

12. Carefully install the closed weight cap into the base assembly.

IMPORTANT - DO NOT get any gasket material inside the compactor base or on any surface of the weight cap that slides into the base assembly.

13. Coat the threads of the screws with Loctite® 242, then secure the weight cap, using the screws and washers. Torque the screws to 30 ft. lb.

NOTE - Use only the factory specified hardware (washers and screws) when installing the weight caps. NO SUBSTITUTES!!

14. Lay the base Assembly flat. Remove the tape from the weight shaft and insert the key into the keyway. Slide the pulley onto the shaft and insert the bushing. Draw the pulley onto the tapered bushing, being careful to keep the screw holes aligned. Coat the threads of screws with Loctite® 242. Start the bushing screws into the pulley. Tighten the bushing screws alternately to pull the bushing squarely into the pulley. Using a strap wrench, restrain the pulley and tighten the two screws to 10 ft. lb. torque.

15. After installation is complete, turn the pulley slowly to check that the weight shaft turns freely in the bearings. There must be no binding or roughness in the bearings.

16. Seat the engine group onto the shock isolators and install the mounting hardware.

17. Engage the V-belt over the weight shaft pulley and the pulley on the engine clutch. Slide the engine back to tighten the belt until the deflection is not more than 3/4 inch at the mid run under a firm thumb push. Hold the engine to be sure it remains square as the mounting bolts are tightened.

18. Allow the Loctite® compounds to set up for 12 to 24 hours before adding oil to the compactor base.

19. Add 2 quarts of premium grade 10W30 oil to the compactor base of the P2000 or 3 quarts to the compactor base of the P5000. Check the compactor base oil level as described in the MAINTENANCE section and install the pipe plug.

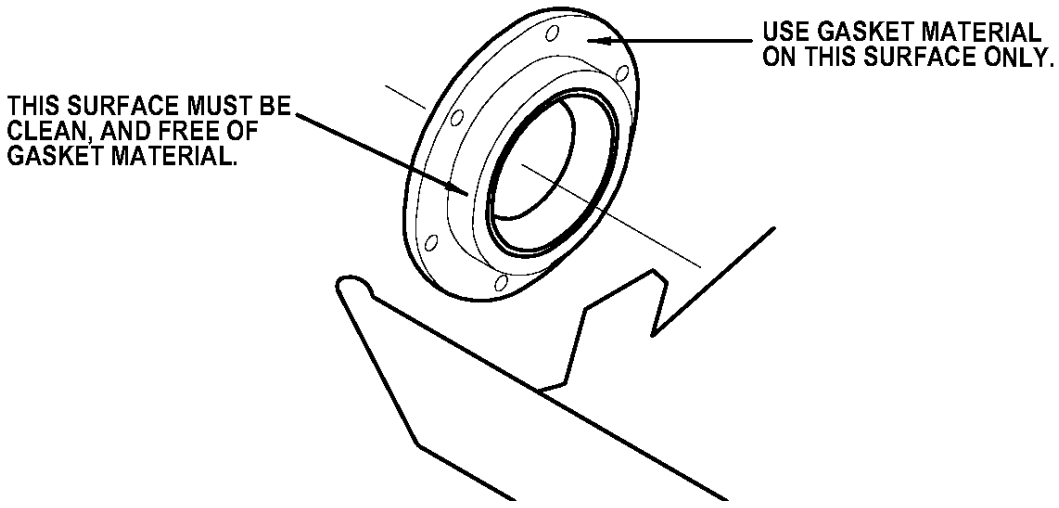

Figure 2
Application of Gasket
Material to Weight Caps

ADJUSTING ENGINE SPEED

Later model engines have the throttle lever located on the engine. If adjustment is needed, refer to Engine Manual.

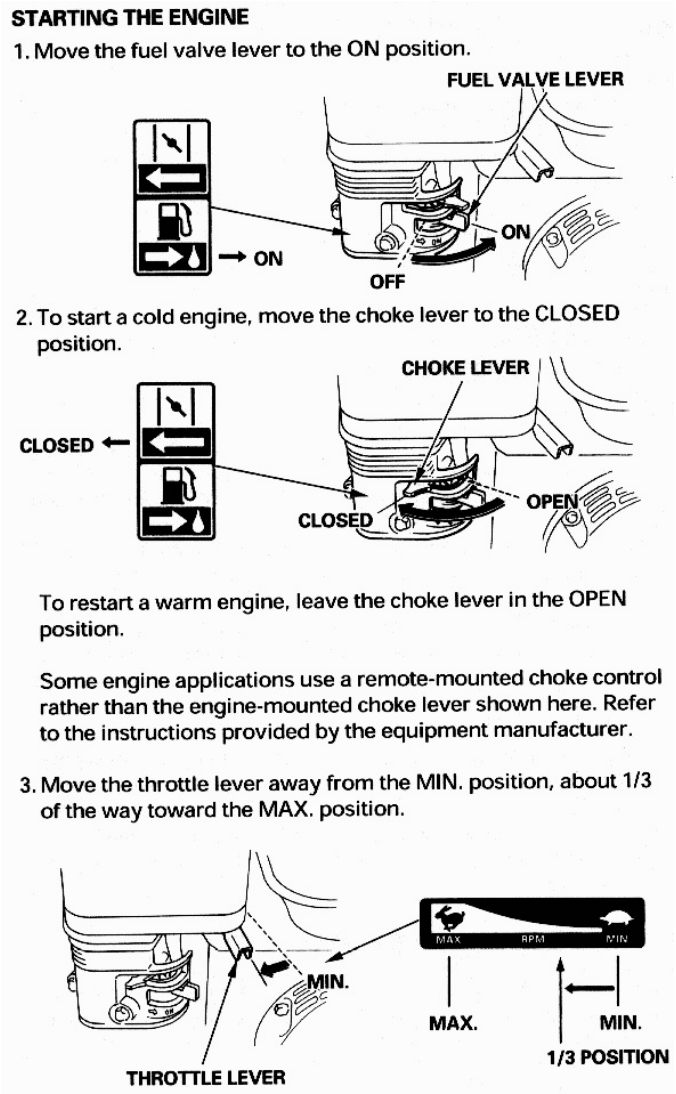

Figure 3
Honda Engine

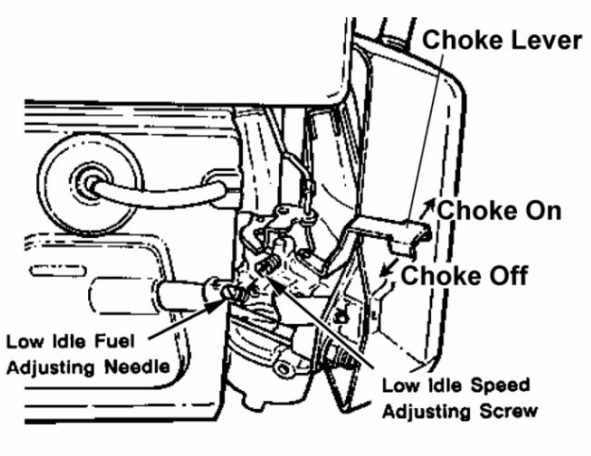

Figure 4
Kohler Engine

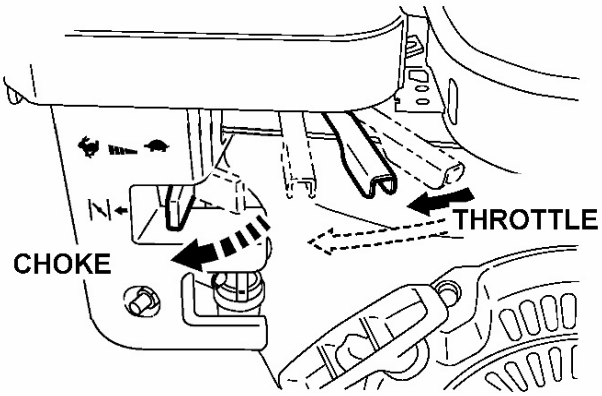

Figure 4a
Robin Engine

WATER PIPE ASSEMBLY REPAIR (Option)

If it is necessary to replace the foam insert in the water pipe assembly because of damage or aging, proceed as follows:

1. Disconnect plastic water feed hose from small pipe on the square water tube and remove the three bolts.

2. Take off water pipe assembly and scrape all foam rubber off back of support plate.

3. Use self-adhesive to attach new foam insert to support plate.

4. Replace water tube on machine and wait at least 12 hours (at 70° F) for adhesives to cure before using the machine.

TROUBLE SHOOTING

Trouble Shooting Chart

TROUBLE	PROBABLE CAUSE	REMEDY
Unit will not travel	Loose belt	Slide engine to tighten belt (See MAINTENANCE Section)
	Broken belt	Replace Belt (See MAINTENANCE Section)
	Engine RPM settings incorrect	Adjust engine RPM Idle - 1800 ± 50 RPM Operation - 3600 ± 50 RPM
	Too much oil in base	Remove oil level plug and check oil level. Drain oil as needed to obtain the proper base oil level. Reinstall the oil level plug. (See MAINTENANCE Section)
	Clutch slipping	Check clutch shoes. Replace damaged or worn shoes. Check engine speed
Bearing failure	RPM too high	Adjust governor setting (Refer to SPECIFICATIONS Section for settings and OVERHAUL INSTRUCTIONS Section for procedures)
	Not enough oil in base	Fill oil to proper level.
	Bearing caps improperly torqued	Retorque bearing caps to 30 ft. lb.
	Improper end play on weight shaft	Shim as necessary to provide the correct shaft end play (See OVERHAUL INSTRUCTIONS Section)
	Oil loss at bearing caps	Rebuild base (See OVERHAUL INSTRUCTIONS Section)
Engine problems	Refer to engine manufacturer's manual	

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PARTS

GENERAL

For your convenience, distributors have been established throughout the country. These distributors carry a supply of parts and all requests for parts should be placed with them. If some particular part is not available the distributor can obtain it promptly from the factory.

Order engine parts from the nearest engine service station. Refer to your engine instruction and parts book for the engine manufacturer's service station nearest you.

When ordering parts, it is absolutely necessary that the following information be furnished:

A. The model number and serial numbers found on the unit nameplate (not engine nameplate).

B. Quantity.

C. Part name and number. (Use part numbers from the parts listings. Do Not refer to the key numbers.)

The Illustrated Parts List contains a complete listing of replaceable parts for the models covered in this manual.

Figure 5
ENGINE and BASE ASSEMBLY

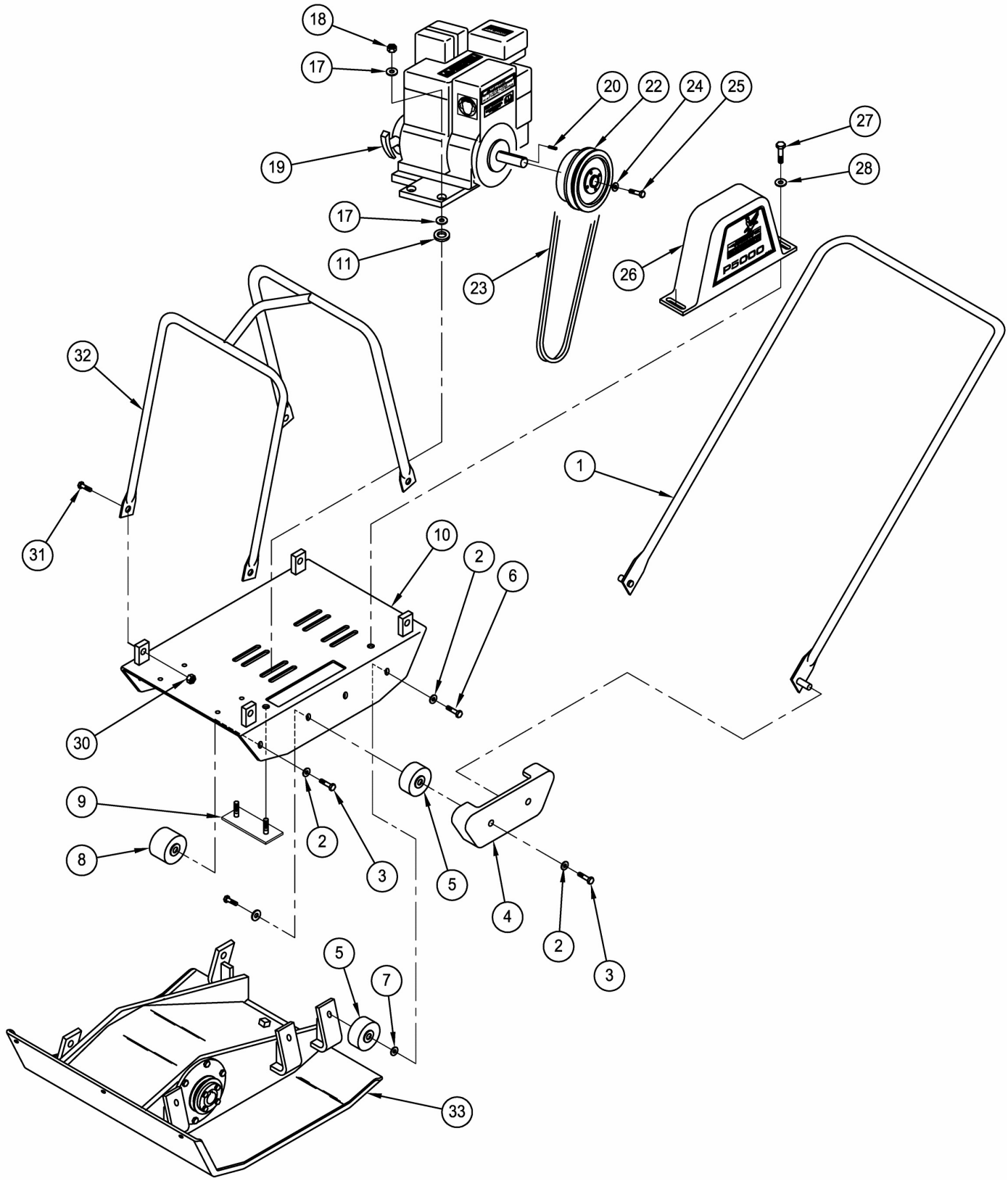


Figure 5
ENGINE and BASE ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY
1	M48354	Handle Assy.	1
2	WP-8C	1/2" Flat Washer (P2000)	12
3	H5C8-6C	1/2-13 X 3/4" Hex Hd. Screw	17
4	M23042	Handle Mount	2
5	M17885	Shock Isolator	5
6	H5C8-8C	1/2-13 X 1" Screw	1
7	WF-8C	1/2" Flatwasher	2
8	M22583	Shock Isolator (P2000)	3
	M22583	Shock Isolator (P5000)	4
9	M45865	Bar & Screw Assy.	2
10	M46129-01	Engine Base Weldment P2000	1
	M46129-02	Engine Base Weldment P5000	1
11	805433	Washer	4
12	1000416-15	Throttle Wire	1
13	1000417-24	Throttle Wire Housing	1
14	NEF-3C	10-32 Esna Nut	2
15	M8838	Throttle Control	1
16	RF3-12C	10-32 X 1-1/2" Rd. Hd. Screw	2
	WP-3C	10-32 Flat Washer	2
17	WP-5C	5/16" Flat Washer	4
18	NTC-5Z	5/16-18 Torque Nut	4
19	M32678	Robin Gasoline Engine	1
	M33008	Honda Engine	1
	M48199	Kohler Engine (1994 - . . . .)	1
	M46547	Briggs & Stratton Engine	1
	M48636	Kawasaki Engine	1
20	K3-12	3/16 X 1-1/2" Square Key	1
21	-	-	
22	M48769	Centrifugal Clutch	1
	M48769-30	Clutch Springs	2
23	M46858	V Belt	1
24	805433	Special Washer (Honda, B&S, Kohler, Kawasaki)	1
	805433-3	Special Washer (Robin)	1
25	H8F5-8C	5/16-24 X 1" Hex Hd. Screw (Honda, B&S, Kohler, Kawasaki)	1
	H8F6-8C	3/8-24 X 1" Hex Hd. Screw (Robin)	1
26	M45856	Belt Guard	1
27	H5C6-8C	3/8-16 X 1" Hex Hd. Screw	4
28	WF-6C	3/8" Flat Washer	4
30	NEC-8C	1/2-13 Esna Nut	4
31	H5C8-16C	1/2-13 X 2" Hex Hd. Screw	4
32	M22267-02	Engine Guard	1
33	. . . . .	Base Assembly (See Figure 6 & 7)	1

Figure 6
BASE PLATE ASSEMBLY - P2000

ITEM	PART NO.	DESCRIPTION	QTY
	M46027-01	Base Plate Assembly	1
1	M25868-1	Base Plate Weldment	1
2	M46557	Weight Shaft Assembly (Includes #4)	1
3	KW606	3/16" X 3/4" Woodruff Key	1
4	M6952	Bearing Cone	2
5	M48583	Magnetic Pipe Plug	1
6	M46556	Open Weight Cap Assembly (Includes # 9)	1
7	WH-4C	5/16" Hardened Washer	12
8	H8C5-10	5/16"-18 X 1-1/4" Screw	12
9	M22599	Oil Seal	1
10	M22291	Pulley	1
11	M18000	Bushing & Screws	1
12	M46555	Closed Weight Cap Assembly	1
13	M22602-1	0.005 Blue Gasket	A/R
	M22602-2	0.010 Brown Gasket	A/R
	M22602-3	0.020 Yellow Gasket	A/R
	M22602-4	0.002 Red Gasket	A/R
14	WLH-5C	5/16 MH Lockwasher	12

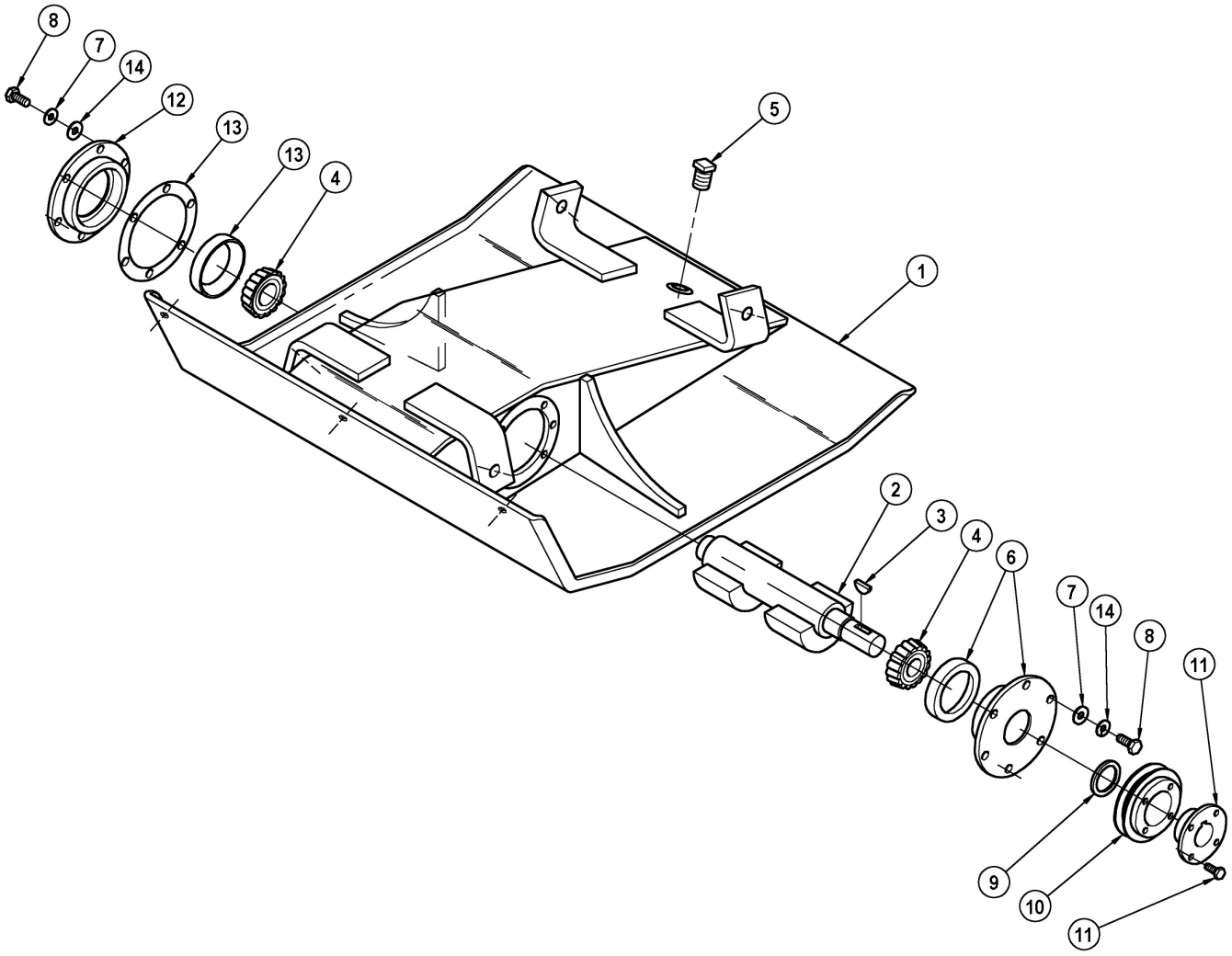


Figure 7
BASE PLATE ASSEMBLY - P5000

ITEM	PART NO.	DESCRIPTION	QTY
	M46027-02	Base Plate Assembly	1
1	M48583	Magnetic Pipe Plug	1
2	M19614	Bushing & Screws	1
3	M22748	Pulley	1
4	H8C5-10	5/16"-18 X 1-1/4" Screw	12
5	WH-4C	5/16" Hardened Washer	12
6	M22262	Oil Seal	1
7	M46559	Open Weight Cap Assembly (Included #6)	1
8	M46558	Closed Weight Cap Assembly	1
9	M22369-1	0.005 Blue Gasket	A/R
	M22369-2	0.010 Brown Gasket	A/R
	M22369-4	0.002 Red Gasket	A/R
10	M31467-01	Base Plate Weldment	1
11	M9201	Bearing Cone	2
12	KW807	1/4" X 7/8" Woodruff Key	1
13	M46560	Weight Shaft Assembly (Includes #11)	1
14	WLH-5C	5/16 MH Lockwasher	12

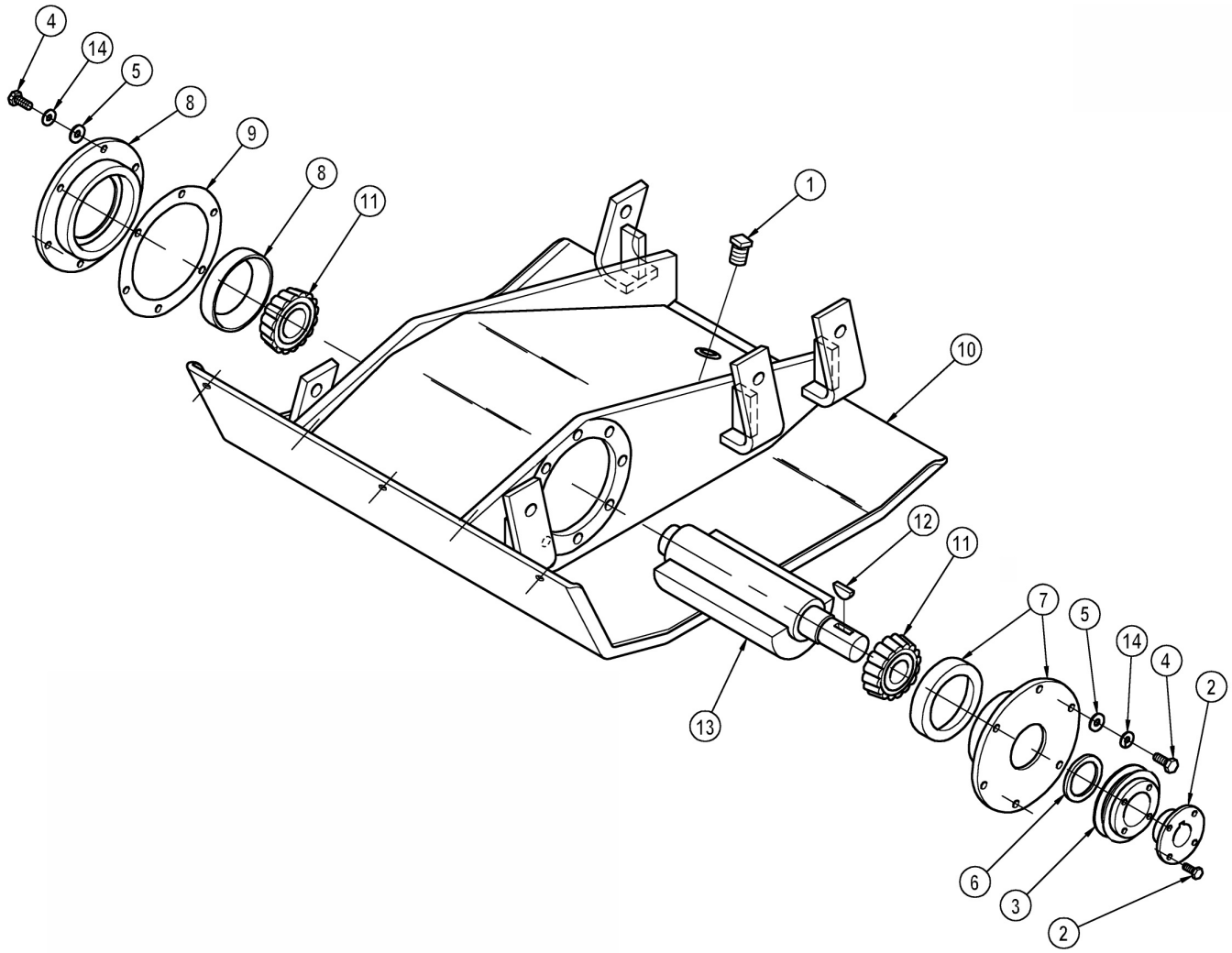
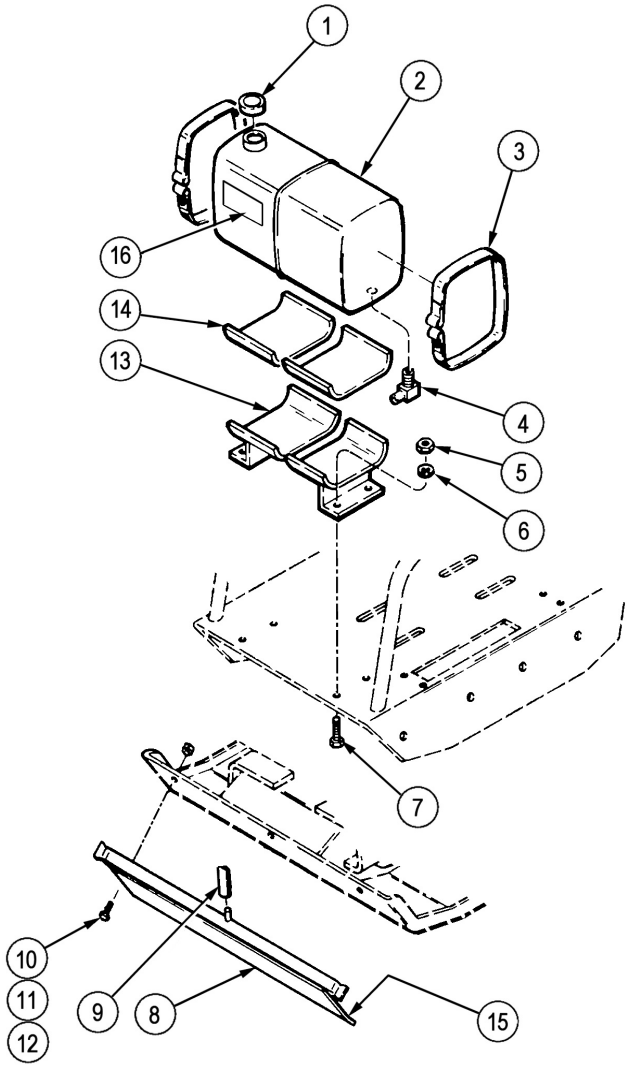


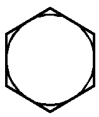
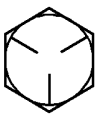
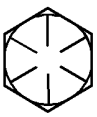
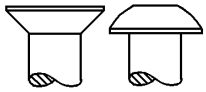
Figure 8
WATER TANK KIT ASSEMBLY - Option
(M46028-01 Ref.)

ITEM	PART NO.	DESCRIPTION	QTY
1	M11151	Water Tank Cap	1
2	M22750	Water Tank	1
3	M22653	Clamp	2
4	M24205	Water Valve	1
5	NEC-5C	5/16"-18 Lock Nut	4
6	WP-5C	5/16" Washer	4
7	H5C5-6C	5/16"-18 X 3/4" Hex Hd. Screw	4
8	M45859	Water Tube Assy.	1
9	M14929-3	8" Water Hose	1
10	HFC6-10C	3/8"-16 X 1-1/4" Hex Hd. Screw	2
11	NTC-6C	3/8"-16 Lock Nut	2
12	WS-6C	3/8" Washer	2
13	M22652-1	Tank Support Assy.	1
14	M22752	Pad	2
15	M45852	Foam Water Tube Gasket (Fits inside item #8)	1
16	M22751	Decal, Water Only	1
17	M48621	Bracket - Channel (Kohler only)	2
18	WB5	Washer - Beveled 5/16" (Kohler only)	4



Bolt and Cap Screw Torque Specifications

Table 4 - Bolt and Cap Screw Torque Specifications

MATERIAL SPEC AND MARKING	Hex Head Bolts & Hex Head Cap Screws			Socket Head Cap Screws	
	SAE Grade 2 ASTM A307 (No Mark) 	Grade 5* ASTM A449 	Grade 8* ASTM A354 	Grade 8 	** 

*** Manufacturer's marks may vary**

**** For Flat and Button Head Socket Cap Screws, use Grade 5 minimum recommended torque values.**

Size (inches)	Grade 2 Recommended Torque ***				Grade 5 Recommended Torque ***				Grade 8 Recommended Torque ***			
	lb-ft		N•m		lb-ft		N•m		lb-ft		N•m	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1/4	5	6	6.8	8.1	9	11	12.3	14.9	12	15	16.3	20.3
5/16	10	12	13.6	16.3	17	21	23.1	28.5	24	29	32.5	39.3
3/8	20	23	27	31	35	42	48	57	45	54	61	73
7/16	30	35	41	47	54	64	73	87	70	85	95	115
1/2	45	52	61	70	80	96	108	130	110	125	149	170
9/16	65	75	88	102	110	125	149	170	160	175	217	237
5/8	95	105	129	142	150	175	203	237	220	245	298	332
3/4	150	185	203	251	270	300	366	407	380	425	515	576
7/8	160	200	217	271	400	450	542	610	600	660	814	895
1	250	300	339	406	580	680	786	922	900	990	1220	1342
1-1/8					800	880	1085	1193	1280	1440	1736	1953
1-1/4					1120	1240	1519	1681	1820	2000	2468	2712
1-3/8					1460	1635	1980	2217	2380	2720	3227	3688
1-1/2					1940	2180	2631	2956	3160	3560	4285	4827

***** Use minimum recommended torque value when threads are coated with lubricant, such as engine oil, or fasteners with phosphate and oil coatings. Use maximum recommended torque value for dry fasteners or zinc plated fasteners without any lubricant.**

NOTES:

1. **This specification is intended to be a general guideline for coarse threaded hardware in ferrous materials (steel, Cast-iron).**
2. **Thread engagements in non-ferrous materials (aluminum, brass, plastic, etc.) may not be adequate to allow torque specified above.**
3. **Where a particular application gives specific torque values, use them in lieu of those given above.**

WARRANTY

(Limited See Below)

MASTER - LIGHT EQUIPMENT

Subject to all of the terms stated hereon, ARROW-MASTER, INCORPORATED (the "Company") warrants to the original wholesale or O.E.M. purchaser and/or to the original retail purchaser only, that those components of each new trowel, compactor, vibrator, screed and chainsaw (the "Product") and any replacement components or parts which are manufactured by it, under normal use and service will be free during the warranty period from defects in material and workmanship. This warranty expires upon the occurrence of the earliest of any of the following: (1) the Product has been in operation more than 12 months after the date of delivery to its original user-purchaser (such date to be determined from the delivery record if any filed with the Company at East Moline, Illinois; otherwise such date shall be the date of delivery to the original dealer or distributor); (2) the Product is used for any purpose other than those purposes for which it was designed; (3) the Product is repaired other than by a Distributor of the Company or is altered outside the Company's factory in any way so as in the Company's judgement to affect adversely its safety or reliability; (4) the Product has been subject to misuse, negligence or accident; (5) the Product is used for other than commercial or industrial use.

Any Product components or other Products furnished by the Company but manufactured by others are warranted only to the extent of the original manufacturer's warranty to the Company. With regard to any ARROW-MASTER Products other than original Product components or replacement parts, these Conditions of Sale and Limited Warranty shall apply unless otherwise specified in writing.

This warranty shall not apply to normal maintenance services (such as pre-delivery servicing, tightening of fasteners, adjustments) or to normal replacement of service items. Downtime and loss of rental or revenue are specifically excluded.

Should the goods, equipment or merchandise described hereon prove defective within the above warranty period, the Company will, at its option, repair or replace the same if returned by the Purchaser, freight prepaid, to an authorized Distributor of the Company for that product, provided that the Company is given written notice of any such claimed defect promptly and within the warranty period herein provided. The Company reserves the right to require the shipment of the allegedly defective product to the Company's plant, freight prepaid, for its examination prior to making warranty decision. Such product, if determined by the Company to be defective in materials or workmanship, will be repaired or replaced at the place of business of the Distributor where such product shall have been returned. Repair and/or replacement at the option of the Company shall be the sole and exclusive remedy of buyer for breach of the above express warranty, or otherwise.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, THE COMPANY MAKES NO WARRANTY EITHER EXPRESS OR IMPLIED, THAT THE GOODS, EQUIPMENT OR MERCHANDISE SHALL BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE OR USE, NOR DOES IT MAKE ANY OTHER WARRANTY, EXPRESS, IMPLIED OR STATUTORY. NO WARRANTY AGAINST INFRINGEMENT IS MADE. The Company shall have no liability for incidental, consequential, special, general or other damages arising from the use of its product including but not limited to failure of the goods, equipment or merchandise to perform any general or particular function or purpose whether such damage or failure is due to a mistake or deficiency in any design, formula, plan, specifications, advertising material, printed instructions, defective materials, defective or improper workmanship, defective or improper assembly or otherwise, the sole liability of the Company being to repair or replace, at its option, defects in material or workmanship as stated in the preceding paragraph. The Company specifically does not warrant that the product shall meet or comply with the requirements of any particular state, or municipal safety codes or regulations; this includes jurisdictions outside the United States.

MASTER EQUIPMENT
850 State Hwy 55, Brooten MN 56316

THIS WARRANTY WAS EFFECTIVE JANUARY 1, 2015

ANY PRODUCT SHIPPED BY COMPANY PRIOR TO THIS DATE WAS COVERED BY WARRANTY IN EFFECT AT DATE OF SHIPMENT FROM COMPANY.

MASTER EQUIPMENT

MASTER - LIGHT EQUIPMENT

CONDITIONS OF SALE

NOTICE TO CUSTOMER: **PLEASE READ CAREFULLY, THESE TERMS AND CONDITIONS CONTAIN DISCLAIMER OF WARRANTIES AND STRICT LIMITATIONS OF LIABILITY AND REMEDIES.**

CAPTIONS USED HEREIN ARE FOR CONVENIENT REFERENCE AND SHALL NOT AFFECT MEANING

DAMAGE TO PRODUCT. The Company shall not have any responsibility or liability for damage to Products in shipment, during assembly, installation, erection or arising from accidents, abuse or improper operation of the goods, equipment or merchandise.

SUPERSEDENCE. These terms and conditions shall supersede and, in case of conflict, shall control over any other terms or provisions in any oral or written purchase order or other document pertaining to the goods, equipment or merchandise described hereon, including any negotiations between the parties or contained in any product catalog or descriptive literature pertaining to the goods, equipment or merchandise referred to herein.

OTHER WARRANTORS. No distributor, dealer, franchisee independent sales representative or other person, firm or corporation has authority to make or assume any other obligation, warranty or liability on behalf of the Company, or to waive, modify or change these terms and conditions.

ENGINEERING, PRODUCT, SAFETY, INSPECTION AND MAINTENANCE INFORMATION. The authorized Distributor of Company's products is required to deliver to each original retail purchaser the Operator's and Maintenance Manual with Safety Rules, the Parts Manual and this Warranty. All users are cautioned to examine this information thoroughly and in full at the time of purchase and before starting or attempting to operate any Hammer
or other Product of the Company. Notify Company if above documents are not received in good condition.

STOPPAGES. In the event of stoppage or partial stoppage of our plants or shipments of the items ordered by our customer, due to causes beyond our control, such as (but not limited to) strikes, differences with workmen, fires, floods, accidents, scarcity of labor, materials, power, fuel, transportation difficulties, war (whether in this country or abroad) governmental regulations, orders or proclamations, laws, acts of public enemies, mobs or rioters, or acts of God, deliveries hereunder may be suspended or partially suspended, during the continuance of such interruption.

APPLICABLE LAWS. The provisions of this instrument shall be constructed in accordance with, and the rights and liabilities of both the manufacturer and purchaser thereunder, shall be controlled by the laws of the State of Illinois, U.S.A., in force as of the date of shipment by the manufacturer.

MISCELLANEOUS TERMS. Prices and discounts subject to change without notice. Orders accepted with the understanding that price and discounts prevailing at the time of shipment shall apply.

Material may not be returned to Company without prior written permission. A restocking and re-shipping charge may be made, at Company's option, on items returned to Company. Returned items must be freight prepaid, and all transportation charges previously paid by Company will be charged back.

WARRANTY SERVICE

Warranty Service will be performed by Authorized MASTER EQUIPMENT Dealers upon delivery of machine, or defective parts to such dealers. The Purchaser shall pay the cost of any premium for overtime labor requested by the Purchaser and any charge for making service calls and for transporting the machine and/or parts thereof to and from the place where warranty work is performed.

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CALIFORNIA PROPOSITION 65 WARNING:
Operation of this equipment and/or engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.