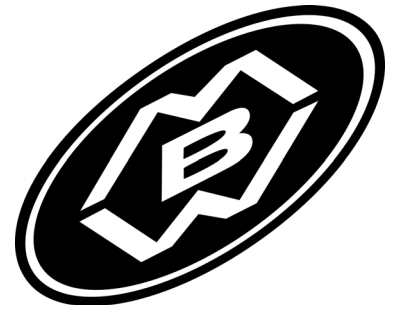


OPERATOR'S SAFETY AND SERVICE MANUAL



R422

This manual covers the following serial numbers
and higher for each model listed:

R422.....4220900



SMART RAMMERS

MBW, Inc.
250 Hartford Rd • PO Box 440
Slinger, WI 53086-0440
Phone: (262) 644-5234
Fax: (262) 644-5169
Email: mbw@mbw.com
Website: www.mbw.com

MBW (UK) Ltd.
Units 2&3 Cochrane Street
Bolton BL3 6BN
England, UK
Phone: 44 (0) 01204 387784
Fax: 44 (0) 01204 387797
E-mail: mbwuk@btinternet.com

MBW FRANCE S.A.R.L.
Phone: +33 (0) 3 44 07 15 96
Fax: +33 (0) 3 44 07 41 28

L19903 / 04.19.U
©MBW, Inc. 2015
Printed in the USA

CAUTION

Machine is top heavy and could fall if not lifted from this bar.

420 = #119 (54kg)
440/270/450 = #143 (65kg)
460/470/480 = #160 (73kg)

20258

WARNING

OPERATION OF THIS EQUIPMENT MAY CREATE SPARKS THAT CAN START FIRES AROUND DRY VEGETATION. A SPARK ARRESTER MAY BE REQUIRED. THE OPERATOR SHOULD CONTACT LOCAL FIRE AGENCIES FOR LAWS OR REGULATIONS RELATING TO FIRE PREVENTION.

19791

UNLEADED GASOLINE

14781

CAUTION

Read Operating Instructions before operating this piece of equipment.

Keep unauthorized and untrained people away from this equipment.

ROTATING & MOVING PARTS! Make sure all guards and safety devices are in place.

Wear OSHA approved hearing protection, foot protection, eye protection and head protection.

Avoid breathing dust from operating machine, wear OSHA specified dust mask/respirator.

SHUT OFF the motor before servicing or cleaning.

DO NOT RUN in an enclosed area. The engine produces carbon monoxide, a **POISONOUS GAS**. Failure to comply could result in serious bodily injury.

13483

U.S. PATENT 8,057,125
19895

U.S. PATENT 8,202,022
20425

THROTTLE

↑ RUN
↓ IDLE

14770
14770

AIR CLEANER INSTRUCTIONS

CLEAN ELEMENT DAILY. MORE OFTEN UNDER DUSTY CONDITIONS. TAP ELEMENT LIGHTLY ON A FLAT SURFACE. IF DUST DOES NOT DROP OFF EASILY OR IF ELEMENT IS BENT OR CRUSHED, REPLACE IT!

WARNING: DO NOT OPERATE ENGINE WITHOUT AIR CLEANER ELEMENT - INTERNAL DAMAGE WILL RESULT!

06079

R422

21444



DANGER PELIGRO

Compressed spring could cause severe injury. See manual for disassembly instructions.

La resorte comprimida podría causar la herida severa. Consulte el libro para ver el desmontaje correcto.

01326

WARNING

Operating, servicing and maintaining this equipment can expose you to chemicals, including engine exhaust, phthalates and lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm. Avoid breathing engine exhaust. Do not operate equipment in confined areas. For more information go to www.P65Warnings.ca.gov

21820

WWW.MBW.COM

21743

REMINDER

CHECK ENGINE OIL DAILY. ENGINE MUST BE LEVEL.

15137



OPTIMAL OPERATING SPEED

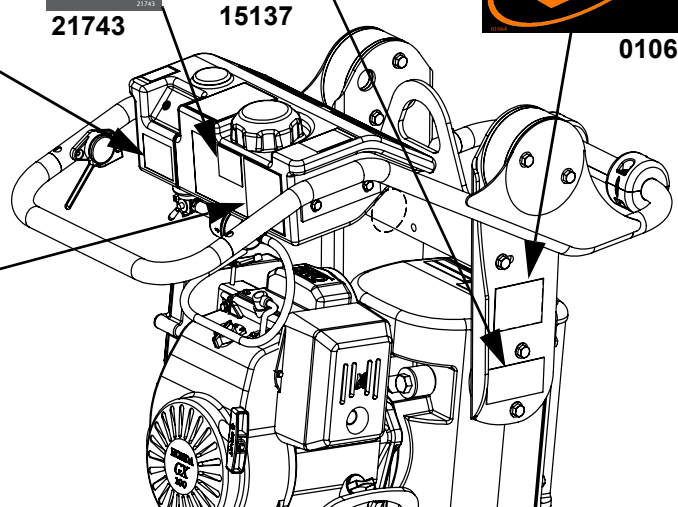
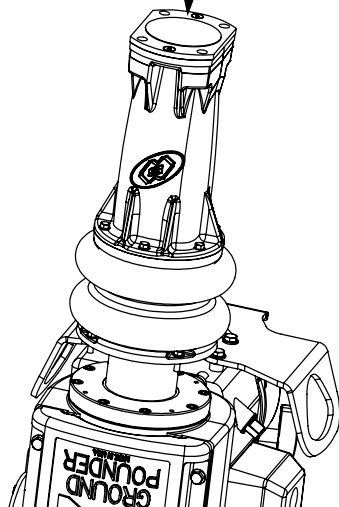
420-421/422...	3500 RPM
440/442.....	3500 RPM
480-481.....	3200 RPM
482-483.....	3200 RPM

15287

OPERATING INSTRUCTIONS

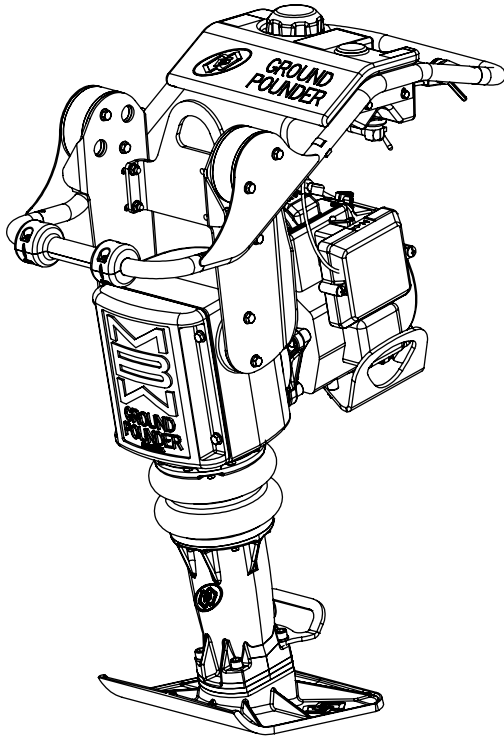
1. Check fuel level.
2. Open fuel valve.
3. Set throttle at idle position.
4. Choke engine. A warm engine may not need to be choked.
5. Pull starter rope.
6. After starting, open choke gradually and let engine warm up at idle.
7. To start compacting: open throttle fully.
8. To stop: return throttle to idle and allow engine to run for a few minutes before turning off.
9. Turn engine switch to off and close fuel valve.

14773

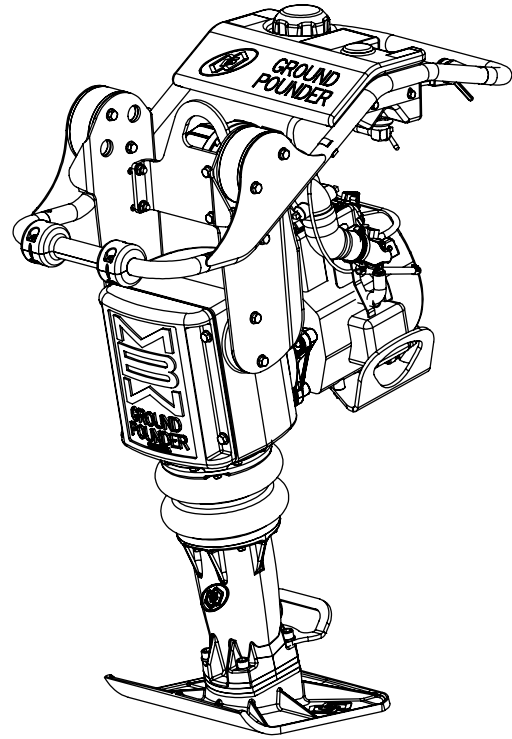


Safety Decals (Decal Set #17777)

SPECIFICATIONS



422H/422H12



422HA

	422H/422H12	422HA
Operating Weight - lbs(kg)	145 (66)	149 (68)
Height - in(cm)	38.25 (97.2)	
Width - in(cm)	15 (38)	
Length - in(cm)	28.25 (71.8)	
Engine	Honda GX100/GXR120	Honda GX100
Shoe (W x L) in (cm)	11 x 13 (28 x 33)	
Operating Noise Level¹ dBA	93 dBA	
Compaction Force lbf (kN)	3200 (14.2)	
Travel Speed ft/min(m/min)	55 (16.8)	
Compaction Area sqft/hr (sqm/hr)	3025 (281)	
Percussion Rate blows/min	up to 720	
Engine Speed rpm	3500-3600	
Fuel Capacity - gal(L)	1.1 (4.2)	
Gearbox Oil Capacity ounces(L)	10 (0.3)	
Engine Oil Capacity ounces(L)	9.6 (0.28)	

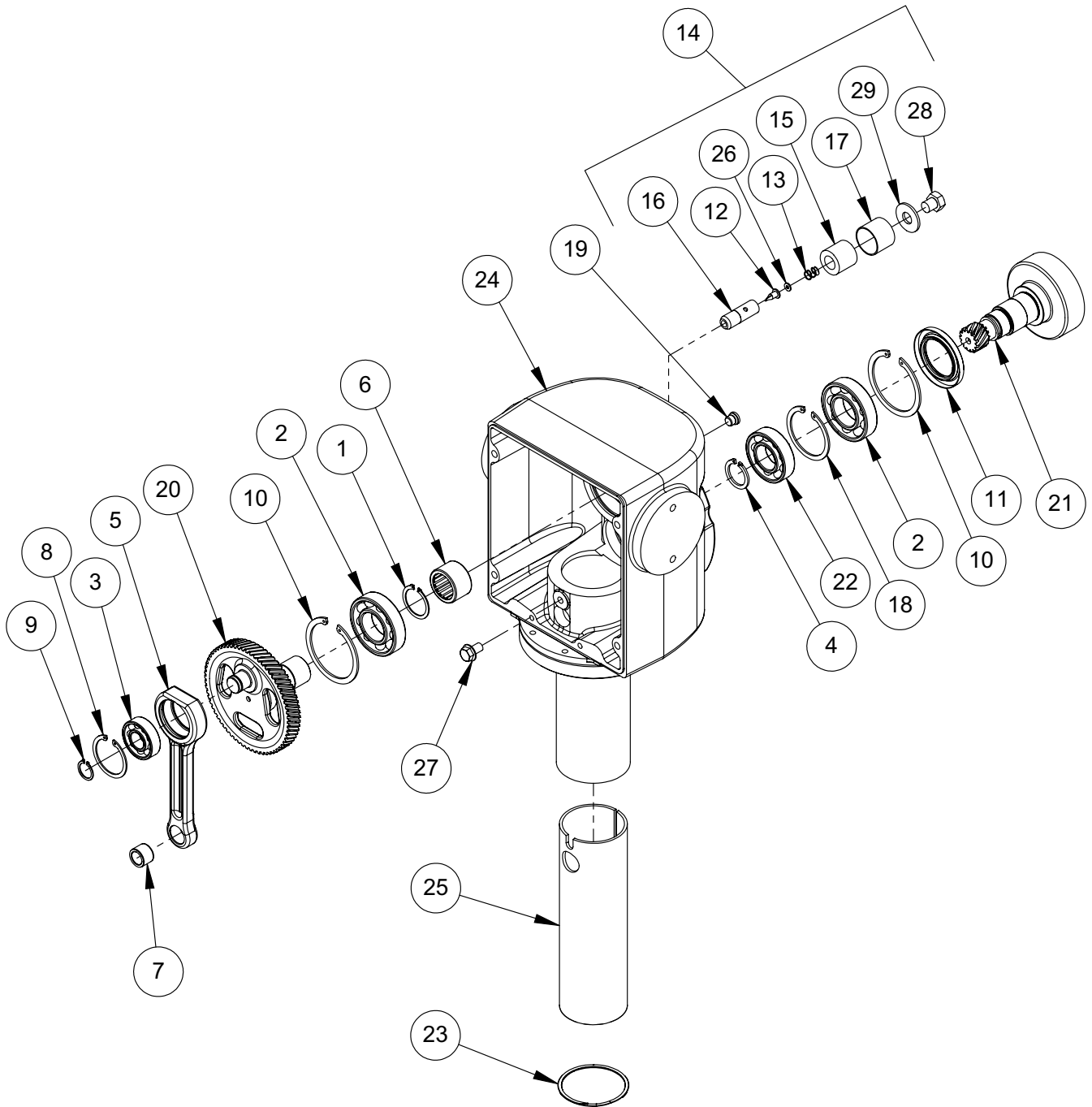
Specifications subject to change without notice

1. Noise levels are taken at the operating position and are based on operating conditions. Background noise will increase noise levels.

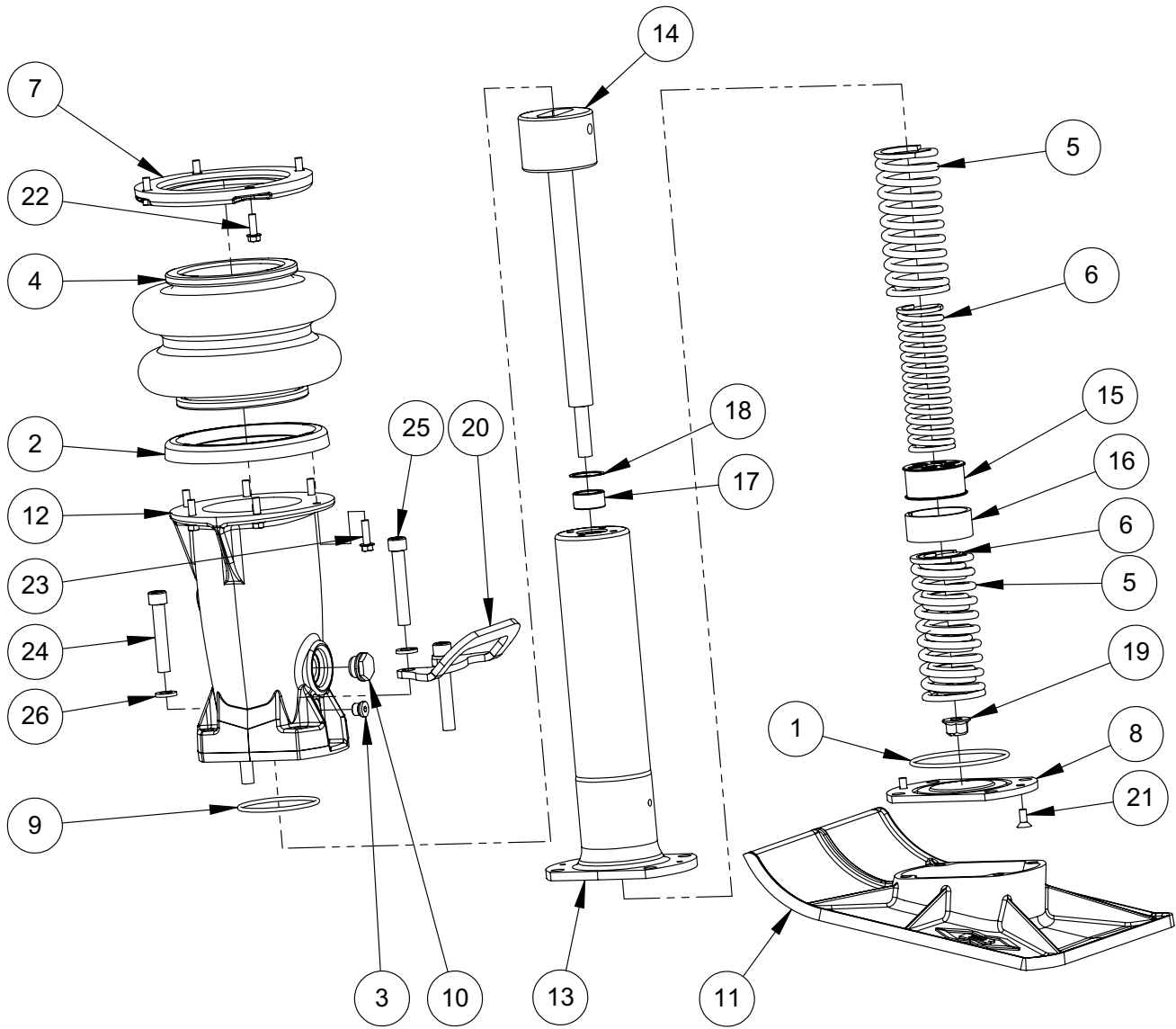
2. Noise level is operating on loose gravel surface. Hearing protection may be required.

3. Not all product variations shown.

- No universal method or formula has been accepted for determining "Compaction Force". All manufactures employ their own method or formula.

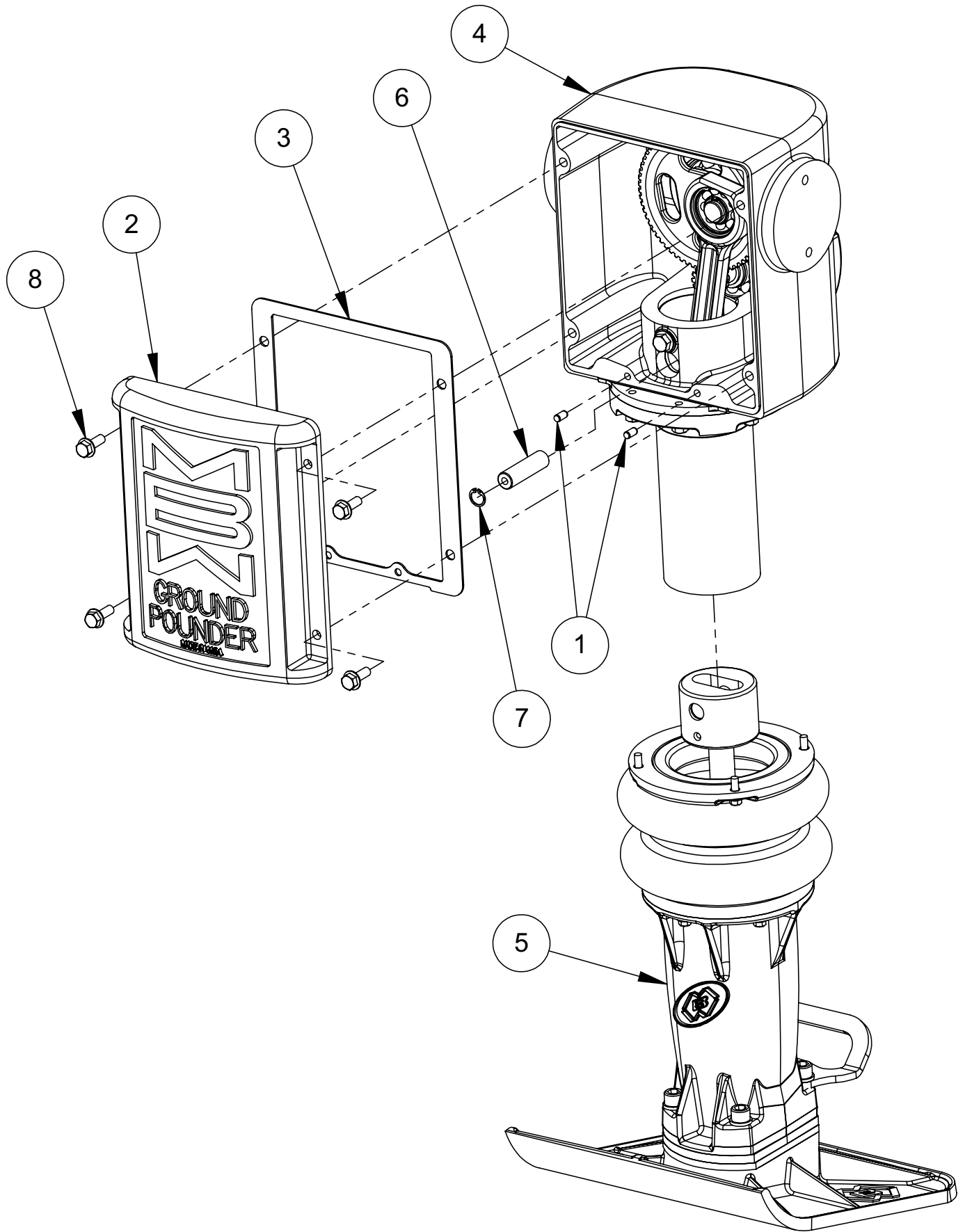


Gearbox Assembly

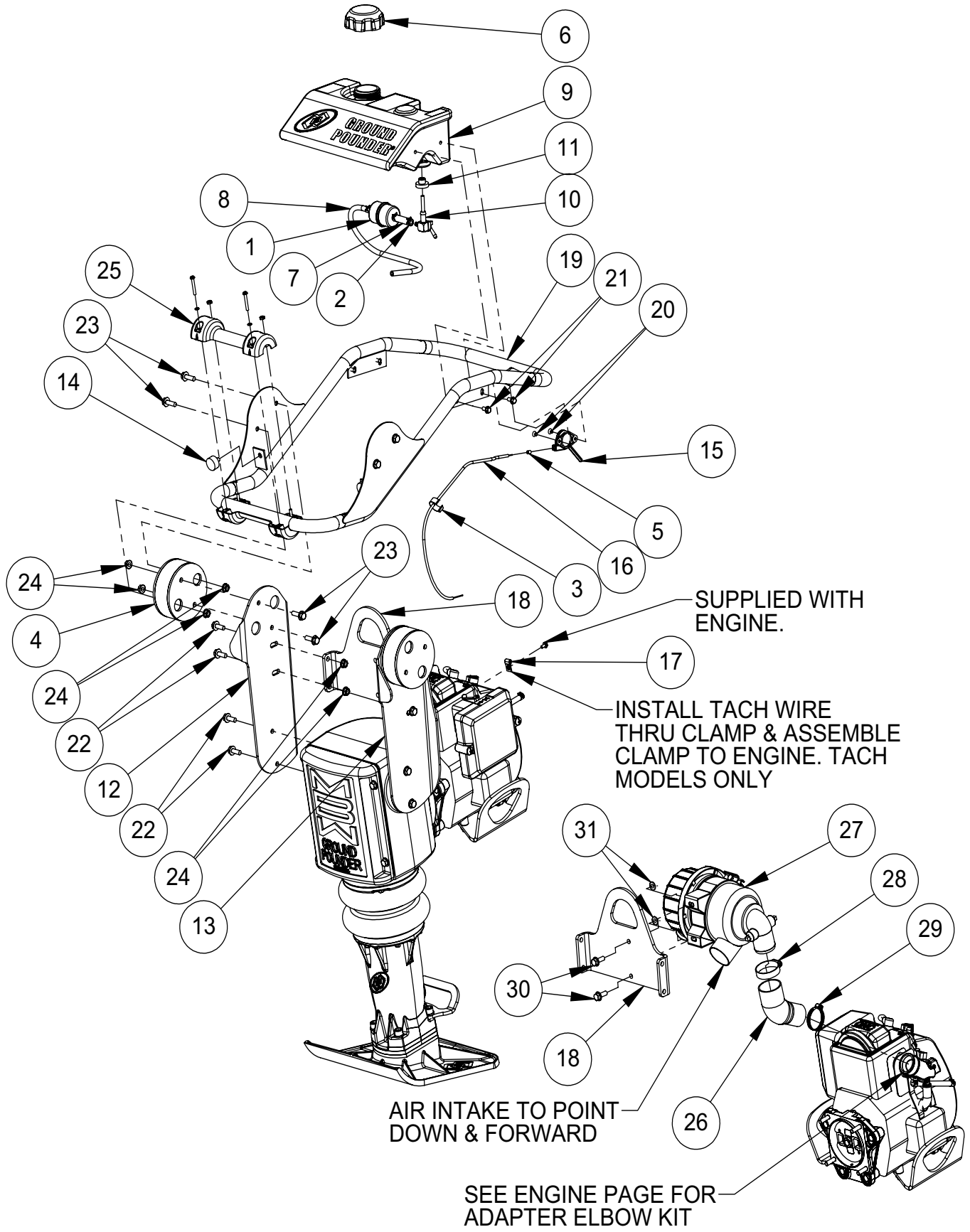


Lower Unit Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1.	06239	O-RING, 3.36 ID X 0.139 DIA	1
2.	07154	RING, CLAMPING, LOWER	1
3.	09618	FITTING, PLUG PARKER 4HP50N	1
4.	11694	BELLOWS, 4 PLY	1
5.	16305	SPRING, COMPRESSION, 2.313 OD	2
6.	16306	SPRING, COMPRESSION, 1.700 OD	2
7.	16311	RING, CLAMPING, UPPER	1
8.	16325	COVER, SPRINGBOX	1
9.	16330	O-RING, 2.72 ID X 0.139 DIAMETER	1
10.	18276	PLUG, OIL LEVEL	1
11.	19618	SHOE, 11" CAST IRON	1
12.	20023	SPRING BOX GUARD	1
13.	20037	SPRING BOX, 422	1
14.	20335	KIT, RAM SHAFT (Includes items: #19 & #7 from page 18)	1
15.	20039	SPRING SEPARATOR	1
16.	(See kit 20176)	SLIDE BEARING, SPRING SEPARATOR	1
17.	(See kit 20176)	SLIDE BEARING, SPRING BOX	1
18.	20044	RETAINING RING	1
19.	20498	LOCK NUT, DEFORMED FLANGE, 1/2-13	1
	F081318HCS	HEX HEAD SCREW, 1/2-13 x 2-1/4 GD 5, ZP (For serial number 4220810 and below)	1
	F08LW	LOCK WASHER, 1/2 ZP (For serial number 4220810 and below)	1
20.	20883	LIFT HANDLE, LOWER	1
21.	F042005FSS	FSS, 1/4-20 x 5/8"	2
22.	F042006FWS	FLANGE WHIZ LOCK SCREW, 1/4-20x3/4 ZP	4
23.	F042007FWS	FLANGE WHIZ LOCK SCREW, 1/4-20x7/8 ZP	6
24.	F072020SCS	SOCKET HEAD CAP SCREW, 7/16-20 X 2-1/2 GR5 ZP	2
25.	F072022SCS	SOCKET HEAD CAP SCREW, 7/16-20 X 2-3/4 GR5 ZP	2
26.	F07LW	LOCKWASHER, 7/16 ZP	4
		KITS:	
	20176	KIT, SLIDE BEARINGS Includes items 16, 17, 18 & slide bearing in gear box)	
	20173	SPRING BOX ASM. (Includes Items 1, 5, 6, 8, 13, 15, thru 19, 24 & 25)	
	20884	KIT, LOWER LIFT HANDLE	

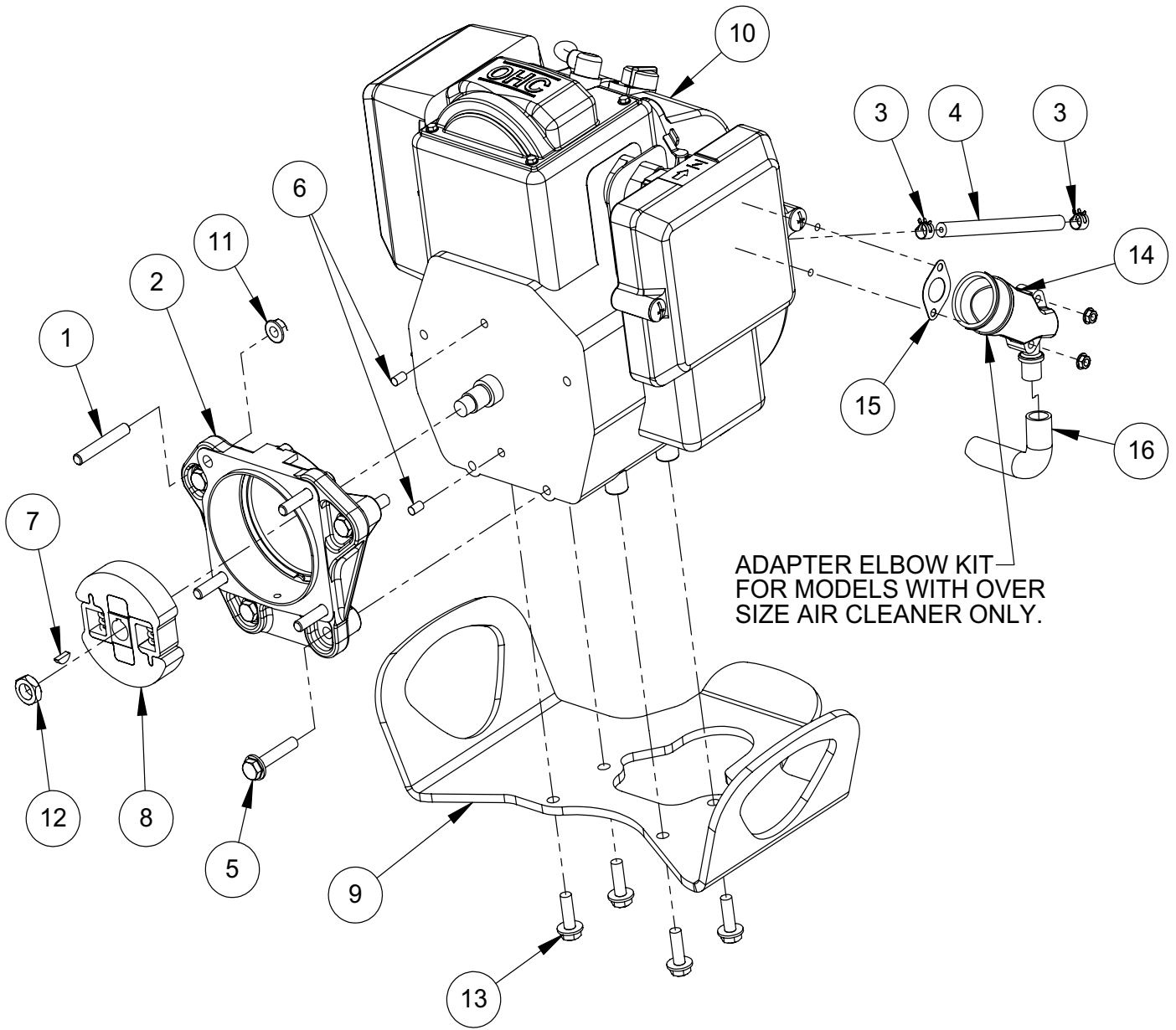


Gearbox and Lower Unit Assembly



Handle Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1.	01045 21700	FILTER, FUEL, IN-LIN (FLOAT CARBURETOR ONLY) FUEL FILTER, INLIN (DIAPHRAM CARBURETOR)	1
2.	01052	CLAMP, HOSE	4
3.	01145	CLAMP, SPRING	1
4.	07351	TORSION MOUNT	2
5.	07916	FERRULE, THROTTLE LEVER	1
6.	20476	CAP, 2-1/4" (EPA)	1
7.	15183	HOSE, FUEL 2" LONG	1
8.		HOSE, FUEL, 3/16" I.D., (SEE ENGINE ASSEMBLY PAGE)	
9.	20422	KIT, TANK, FUEL (INCLUDES ITEMS #2, #6 & #7)	1
10.	16414	VALVE, FUEL	1
11.	16586	GROMMET, 1/2"	1
12.	18510	BRACKET, HANDLE, RIGHT	1
13.	18511	BRACKET, HANDLE, LEFT	1
14.	18515	SNUBBER	2
15.	18742	THROTTLE, RATCHET STYLE	1
16.	19899	THROTTLE CABLE ASSEMBLY	1
17.	14946	CLAMP, TACH WIRE	1
18.	20713	BRACKET, LIFTING	1
19.	20719	HANDLE, COATED	1
	18883	HANDLE, COATED (For serial number 4220899 and lower "HL")	
20.	F032402FSS	FLAT HEAD SCREW, #10-24x1/4"	2
21.	F042004FWS	FLANGE SCREW, 1/4"-20 x 1/2" ZP	4
22.	F051807FWS	FLANGE SCREW, 5/16"-18 x 7/8" ZP	8
23.	F051808FWS	FLANGE SCREW, 5/16"-18 x 1" ZP	8
24.	F0518FN	NUT, FLANGE 5/16"-18 ZP	12
25.	20549	KIT, HANDLE ROLLER	1
		<u>AIR CLEANER COMPONENTS FOR "HA" MODELS ONLY</u>	
26.	20544	ADAPTER TUBE, AIR CLEANER	1
27.	20714	AIR CLEANER	1
28.	09215	CLAMP, WORM DRIVE, 2-1/4"	1
29.	20716	CLAMP, WORM DRIVE, 2"	1
30.	F051807FWS	FLANGE SCREW, 5/16"-18 x 7/8" ZP	2
31.	F0518FN	NUT, FLANGE 5/16"-18 ZP	2
	20715	REPLACEMENT AIR FILTER (NOT SHOWN)	
	20718	EJECTOR BOOT, ALR CLEANER HOUSING (NOT SHOWN)	
	17602	KIT, TACHOMETER, NOT SHOWN.	
	20305	FUEL HOSE ASM. (Includes items:1, 2, 7 & 8)	
	20345	HC HANDLE REPLACEMENT KIT	



Engine Assembly

