

Manual Addendum for Typhoon™ 1 Model 2948 Series 2 ULV Applicator

The following pages should be used instead of the manual when referring to components on your machine.

Page 5: Specifications page now lists Kohler engine instead of Vanguard.

Page 11: Electric remote choke is no longer used with Kohler engines. Manual remote choke diagram is shown with the new Kohler engine.

Page 35: Kohler engine assembly is shown instead of the Vanguard engine, digital tachometer/hour meter no longer being used.

Page 38: Item 57 was p/n: 64730, now 647302

Page 40: Item 54 was p/n: 64730, now 647302

Page 45: Completely new page

Page 47: Had reference to Vanguard services center, now Kohler service center.

Page 48: Had reference to Vanguard services center, now Kohler service center. Also under 7. Engine backfires: section C. used to say "Inlet Value Sticking", now "Intake Valve".

MACHINE SPECIFICATIONS FOR TYPHOON 1, MODEL 2984

- TYPE:** ULV, NON-THERMAL AEROSOL APPLICATOR
- ENGINE:** 9.5 HP KOHLER, 4-CYCLE, OVERHEAD VALVE,
GASOLINE POWERED, ELECTRIC START.
OIL CAPACITY: 1.16 QTS. (1.1 LTRS.)
- BLOWER:** HIGH VOLUME, POSITIVE DISPLACEMENT, ROTARY TYPE,
OPERATING DATA: 8.5 PSI @ 2750 RPM
MAXIMUM OUTPUT: 12 PSI (.82 BAR)
205 CFM (5.8 CU.M/MIN)
- FORMULATION PUMP:** 3-TYPES AVAILABLE:
1) HIGH VOLUME, CORROSION RESISTANT DIAPHRAM PUMP
2) STAINLESS STEEL GEAR PUMP WITH OPTIONAL RADAR
SYNCFLOW CONTROL.
3) FMI CERAMIC PISTON PUMP WITH CARBON CYLINDER.
- SPRAY NOZZLE:** HIGH EFFICIENCY SINGLE NOZZLE; ADJUSTABLE AND
REMOVABLE FOR CLEANING.
- LIQUID TANKS:** BOTH FORMULATION AND FLUSH TANKS ARE CORROSION
RESISTANT, HIGH DENSITY POLYETHYLENE.
CAPACITIES: FORMULATION- 15 U.S. GAL. (57 LITERS)
FLUSH- 1.0 U.S. GAL. (3.8 LITERS)
- BATTERY:** 250 COLD CRANKING AMPS
- PARTICLE SIZE:** MEETS ALL CURRENTLY AVAILABLE CHEMICAL
MANUFACTURERS LABEL REQUIREMENTS WITH AT LEAST
95% OF DROPLETS PRODUCED UNDER 20 MICRONS
VOLUME-MEDIAN-DIAMETER.
- WEIGHT:** EMPTY: 297 LBS. (135 KG.)
FILLED: 412 LBS. (187 KG.)

DIMENSIONS:

LENGTH: 41.5 in. (105 cm)

WIDTH: 29.0 in. (74 cm)

HEIGHT: 32.0 in. (81 cm)

BASE FRAME: 26 x 36 in. (66 x 91 cm)

SHIPPING WEIGHT: 411 LBS. (186 KG)**SHIPPING VOLUME:** 42.0 cu.ft. (1.18 cu.m.)**SHIPPING DIMENSIONS (CRATED):**

46.0 in. (116 cm)

36.0 in. (91.4 cm)

39.0 in. (99 cm)

3.2

MACHINE INSTALLATION (CONT'D)

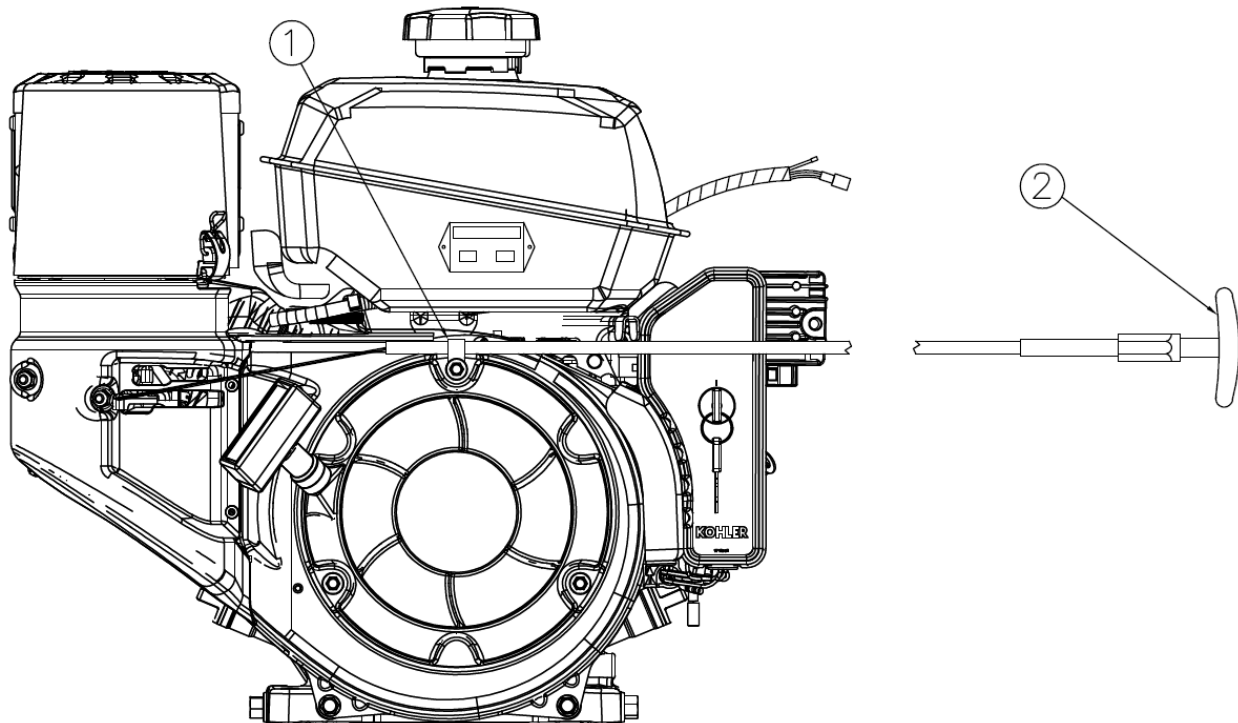
3. Once the cable has been routed to the cab, reseal all drilled openings to prevent moisture and/or exhaust gases from entering the cab.

MANUAL REMOTE CHOKE:

4. Remove the cover from around the fuel shut-off, and choke levers. Doing this will allow you access the choke cable mounting hole, on the choke lever. While facing the "pull start" side of the engine, you will need to remove the bolt located at the top left side of the engine shroud. You will also need to remove the top center bolt on the pull rope (recoil) shroud. Insert the choke cable end into the small hole on choke lever. Secure the choke cable assembly to the engine using the two clamps provided at the locations where the two bolts were previously removed. Install the fuel shut-off, and choke lever cover back onto the engine.

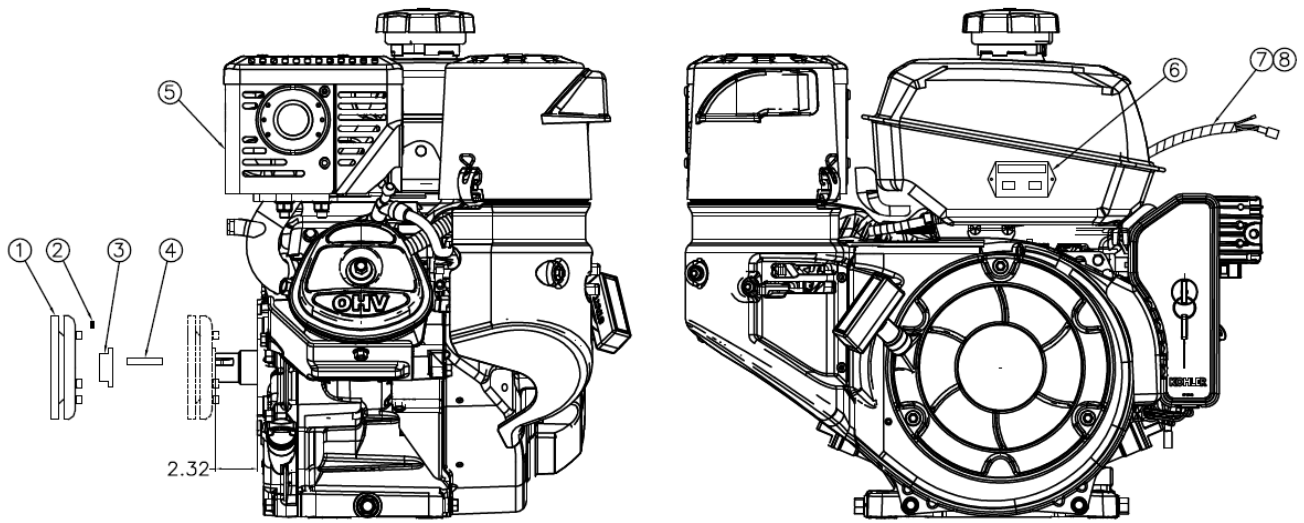
Note:

*The **MANUAL REMOTE CHOKE CABLE** is provided for cold starting of the engine from the vehicle cab. Once the engine has been allowed to warm-up, choking the engine should not be needed for restarting. Be careful not to have too many bends when routing the choke cable assembly. Doing so will cause the cable to bind inside of the cable casing and restrict its movement.*



MANUAL REMOTE CHOKE KIT P/N 64659-1

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	2	86690	CLAMP, TUBE, .25
2	1	64658-1	CABLE, CHOKE (FORMED)



ENGINE ASSEMBLY P/N 64730-2

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	63458-1	FLANGE AY, OUTSIDE MNT.
2	1	139009	SCREW, SET, 1/4-28 x 1/4
3	1	63460-7	1" SH BUSHING
4	1	62549	KEY 1/4 x 1-3/4
5	1	49150	ENGINE, KOHLER 9.5 HP
6	1	64016	HOURMETER/TACHOMETER
7	1	49078	HARNES, ADAPTER (B&S)
8	1	85685	CONNECTOR 3M

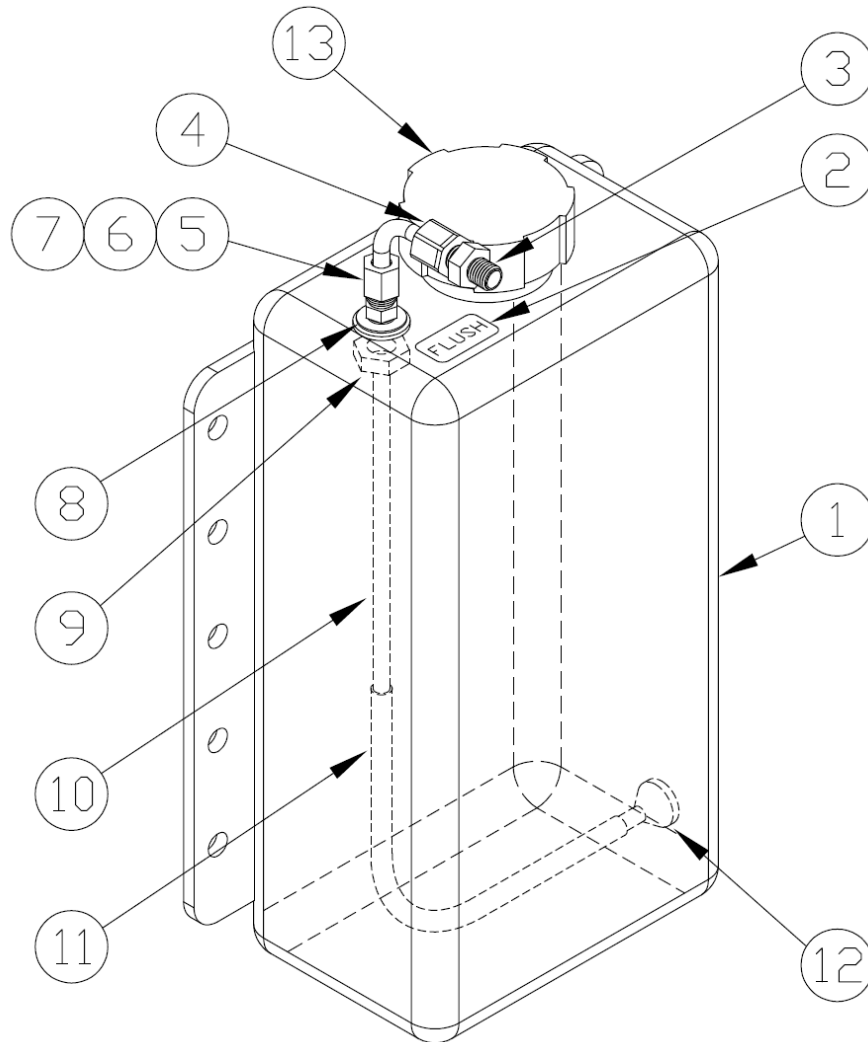
PARTS LIST FOR TYPHOON 1 DIAPHRAGME PUMP, EXP. DIAGRAM

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>ITEM DESCRIPTION</u>	<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>ITEM DESCRIPTION</u>
1	1	64004	TANK AY, 15G POLY	33	1	64602	FRAME AY
2	2	63268	TIE DOWN AY	34	4	63327	FOOT, EPDM RUBBER
3	1	64620-1	TRAY SPILL	35	1	64632-2	ID LABEL, MOD 2984-2
4	4	63151	BOLT, EYE, 1/4-20 x 2"	36	2	64631	STRAP, BATTERY RETAINER
5	4	63621	WASHER, FENDER	37	4	114653	NUT, HEX 8-32
6	4	134551	NUT, 1/4-20, HEX	38	1	64637-1	BOX BATTERY, MACHINED
7	2	62875-2	STRAP, TANK AY	39	4	120382	BOLT, 3/8-16 x 1.75
8	2	63150	PLUG, 2" SQUARE CAP	40	4	122168	WASHER, LOCK, 3/8 SPLIT
9	1	64610	POST AY, TALL FORMULATION	41	4	120394	WASHER, FLAT, 3/8 REG
10	1	62884	BRACKET, FLUSH TANK	42	2	62873	HOLD DOWN, BLOWER
11	1	64618	BRACKET, PRESSURE GAUGE	43	8	63432	BOLT, 5/16-18 x 1.5
12	1	64381	GAUGE AY, PRES 0-15 (PSI) PM	44	8	63477	WASHER, FENDER 1.25 O.D.
13	10	121887	BOLT, 1/4-20 x 3/4 HEX	45	4	62899	ISOLATOR
14	12	120392	WASHER, FLAT 1/4 REG	46	2	63285	CLAMP, CABLE 5/8
15	4	9419454	NUT, NYLOCK 1/4-20	47	1	63469	GUARD, COUPLING 2985
16	1	63337-1	TANK AY, 1 GAL. FLUSH	48	10	120380	WASHER, LOCK, 1/4 SPLIT
17	1	64612	POST AY	49	1	64735	LABEL, TRI-TYPHOON
18	1	64639-1	VALVE AY, 3-WAY, 2984	50	1	64615	PLATE AY, BLOWER/ENGINE
19	8	122007	BOLT, HEX 5/16-18 x 3/4	51	4	63430	WASHER, ENGINE SPACER
20	12	120214	5/16 SPLIT WASHER, ZINC	52	1	63458-2	INSERT, DAYCO COUPLING
21	12	120393	WASHER, FLAT, 5/16 SAE	53	4	63063	SPACER (BLK ANOD.), BLOWER
22	1	64714	ENCL AY, DIAPH PUMP	54	1	63345	BLOWER AY, 33 URAI
23	4	63148	MOUNT, SHOCK (1/4-20)	55	1	63019	CLAMP, V-INSERT
24	4	120423	WASHER, LOCK, 1/4 INTO	56	1	64635	BOOM AY, TYPHOON 1
25	4	120375	NUT, HEX, 1/4-20 ZN PL	57	1	64730-2	ENGINE AY
26	1	64717	BRACKET AY VALVE SUPPORT	58	1	64653	MANUAL, TYPHOON 1
27	1	64746	STRAP VALVE METERING	59	1	64657	BOW AY, REMOTE
28	1	64740	BRACKET AY, TOP	60	1	64701	KIT, TYPHOON 1 SERVICE (EXPORT)
29	4	64680	SLEEVE, SHOCK MOUNT	*61	1	64629	ADJUSTABLE BOOM AY
30	4	49053	BUMPER, RUBBER 2.5"	*62	1	62895-4	SEWER KIT (TYPHOON 1)
31	4	121900	BOLT, 1/4-20 x 1, HEX	*63	1	62895-7	KIT, REMOTE NOZZLE ATTACHMENT
32	4	9616904	WASHER, 1/4 FLAT				*OPTIONAL

PARTS LIST FOR TYPHOON 1 GEAR PUMP EXPL. DIAGRAM

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	64004	TANK AY, 15G POLY	32	1	64632-2	ID LABEL, MOD 2984-2
2	2	63268	TIE DOWN AY	33	2	64631	STRAP, BATTERY RETAINER
3	1	64620-1	TRAY, SPILL	34	4	114653	NUT, HEX 8-32
4	4	63151	BOLT, EYE 1/4-20 x 2"	35	1	64637-1	BOX, BATTERY, MACHINED
5	4	63621	WASHER, FENDER	36	4	120382	BOLT, 3/8-16 x 1.75"
6	4	134551	NUT, 1/4-20, HEX	37	4	122168	WASHER, LOCK, 3/8 SPLIT
7	2	62875-2	STRAP, TANK AY	38	4	120394	WASHER, FLAT, 3/8 REG
8	2	63150	PLUG, 2" SQUARE CAP	39	2	62873	HOLD DOWN, BLOWER
9	1	64610	POST AY, TALL FORMULATION	40	8	63432	BOLT, 5/16-18 x 1.5"
10	1	62884	BRACKET, FLUSH TANK	41	8	63477	WASHER, FENDER 1.25 OD
11	1	64618	BRACKET, PRESSURE GAGE	42	4	62899	ISOLATOR
12	1	64381	GAGE AY, PRES. 50-15 PSI (PM)	43	2	63285	CLAMP, CABLE 5/8
13	10	121887	BOLT, 1/4-20 x 3/4 HEX	44	1	63469	GUARD, COUPLING 2985
14	12	120392	WASHER, FLAT 1/4 REG	45	10	120380	WASHER, LOCK, 1/4 SPLIT
15	4	9419454	NUT, NYLOCK 1/4-20	46	1	64638	LABEL, TYPHOON 1 LOGO
16	1	63337-1	TANK AY, 1 GAL. FLUSH	47	1	64615	PLATE AY, BLOWER/ENGINE
17	1	63173	POST AY	48	4	63430	WASHER, ENGINE SPACER
18	1	64679	SOL. VLV AY (3-WAY)	49	1	63458-2	INSERT, DAYCO COUPLING
19	8	122007	BOLT, HEX 5/16-18 x 3/4	50	4	63063	SPACER (BLACK AND.), BLOWER
20	12	120214	5/16 SPLIT LOCKWASHER, ZINC	51	1	63345	BLOWER AY, 33 URAI
21	12	120393	WASHER, FLAT 5/16 SAE	52	1	63019	CLAMP, V-INSERT
22	1	64656-R	ENCLOSURE AY, FMI RADAR	53	1	64635	BOOM AY, TYPHOON 1
23	4	63418	MOUNT, SHOCK (1/4-20)	54	1	64730-2	ENGINE AY
24	4	120423	WASHER, LOCK INTO	55	1	64653	MANUAL, TYPHOON 1
25	4	120375	NUT, HEX, 1/4-20 ZN PL	56	1	64657	BOX AY, REMOTE
26	4	64680	SLEEVE, SHOCK MOUNT	*57	1	64701	KIT, TYPHOON 1 SERVICE (EXPORT ONLY)
27	4	49053	BUMPER, RUBBER 2.5"	*58	1	64629	ADJUSTABLE BOOM AY (OPTIONAL)
28	4	121900	BOLT, 1/4-20 x 1", HEX	*59	1	62895-4	SEWER KIT, TYPHOON 1 (OPTIONAL)
29	4	9616904	WASHER, 1/4 FLAT	*60	1	62895-7	KIT, REMOTE NOZZLE ATT (OPTIONAL)
30	1	64602	FRAME AY	*61	1	64733	KIT, RADAR, SYNCFLOW, G.P. (OPTIONAL)
31	4	63327	FOOT, EPDM RUBBER				* OPTIONAL

FLUSH TANK ASSEMBLY (1 GALLON), P/N: 63337-1



<u>ITEM</u>	<u>QUANTITY</u>	<u>PART NUMBER</u>	<u>ITEM DESCRIPTION</u>
1	1	63302-6	TANK, 1 GAL. (MACHINED)
2	1	62592	LABEL, FLUSH
3	1	62553-1	CONNECTOR, UNION, 1/4 T
4	1	62550-1	NUT, .25, STEEL GRIP
5	1	114628	SLEEVE, 1/4 T
6	1	145463	NUT, 1/4 T
7	1	10105	CONNECTOR, STANDPIPE
8	1	53131	WASHER, FLAT
9	1	74288	NUT, LOCK, 1/8 NPSL
10	1	63336	STANDPIPE, FLUSH TANK
11	1	62054-14	TUBING, .25
12	1	62346	FILTER, PLASTIC, PICK-UP
13	1	63302-2	CAP AY., 2 QT. VENTED

TROUBLE SHOOTING

<u>SYMPTOMS</u>	<u>POSSIBLE CAUSE</u>	<u>CORRECTIVE ACTION</u>
1. Starter fails to crank engine.	<ul style="list-style-type: none"> a. Battery cable connections loose, dirty, or damaged. b. Dead battery c. Defective starter switch d. Starter defective e. Blower locked up 	<ul style="list-style-type: none"> a. Clean & tighten cable connections. Replace a damaged cable b. Replace or charge battery c. Check starter button on engine d. Replace starter e. Inspect blower for rotation
2. Engine hard to start or stops running	<ul style="list-style-type: none"> a. START-STOP switch on engine in stop position or faulty b. machine ON-OFF switch located on remote box in OFF position or faulty. c. No fuel or contaminated fuel d. Clogged fuel filter e. Spark plugs faulty f. Fuel pump on carburetor defective g. Terminals loose or wiring defective h. Spark plug wire disconnected 	<ul style="list-style-type: none"> a. Place switch in start position b. Place switch in ON position or replace faulty switch c. Add fuel or clean tank and refuel d. Clean or replace fuel filter e. Clean or replace plugs f. Consult nearest Kohler service Center g. Tighten loose terminals, replace defective wiring h. Connect spark plug wire
3. Engine misses or runs erratically	<ul style="list-style-type: none"> a. Spark plug faulty b. Spark plug wire disconnected c. Contaminated fuel d. Clogged fuel filter e. Carburetor mounting gasket leaks f. Cylinder head gasket leaks g. Carbon build-up beneath cylinder head 	<ul style="list-style-type: none"> a. Clean or replace plugs b. Connect spark plug wire c. Replace fuel d. Clean or replace e. Tighten bolts, replace gasket if necessary f. Tighten cylinder head bolts. g. See engine manual

TROUBLE SHOOTING

(continued)

<u>SYMPTOMS</u>	<u>POSSIBLE CAUSE</u>	<u>CORRECTIVE ACTION</u>
4. Engine knocks or develops noise center	<ul style="list-style-type: none"> a. Crankcase oil low b. Spark arrestors clogged c. Flywheel loose 	<ul style="list-style-type: none"> a. Fill oil to proper level, after oil fill, if noise continues, consult nearest Briggs service center. b. Clean or replace c. Consult nearest Kohler service
5. Engine will not idle smoothly	<ul style="list-style-type: none"> a. Carburetor dirty or out of adjustment b. Springs on speed control lever fell off 	<ul style="list-style-type: none"> a. Clean or adjust carburetor b. Replace springs
6. Engine overheats	<ul style="list-style-type: none"> a. Crankcase oil low b. Air shroud clogged c. Exhaust restricted d. Spark arrester clogged 	<ul style="list-style-type: none"> a. Add oil to proper levels b. Clean or replace air shroud c. Replace muffler d. Clean or replace
7. Engine backfires	<ul style="list-style-type: none"> a. Gasoline mixture too lean b. Defective spark plugs c. Intake valve 	<ul style="list-style-type: none"> a. Adjust carburetor b. Clean, adjust, or replace c. Free, clean and adjust valve
8. Engine Compression low	<ul style="list-style-type: none"> a. Valve clearance improper b. Defective cylinder head c. Defective valves or piston d. Cylinder head gasket leaks 	<ul style="list-style-type: none"> a. Adjust valve b. Consult nearest Kohler service center c. Consult nearest Kohler service center d. Tighten head bolts or replace bolts