MERCEDES TEXTILES LIMITED
FORESTRY PRODUCTS

INNOVATION DELIVERED.

WICK® 375
SHOP MANUAL

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TABLE OF CONTENTS
WICK® 375 PUMP

1.0 GENERAL DESCRIPTIONS

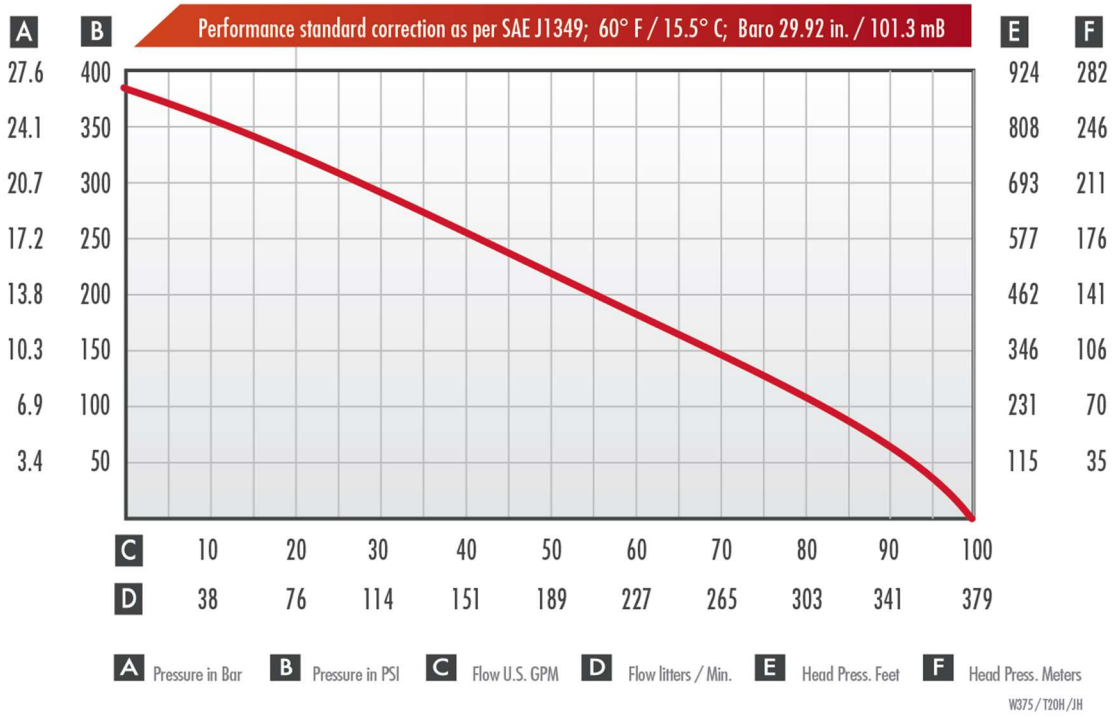
1.1 ABOUT THE WICK® 375

The WICK® 375 is the culmination of modern pump and engine design resulting in unsurpassed performance that will prove to be the future standard of portable fire pumps. The 10 HP, 210cc modern 2-stroke Solo engine is coupled to a detachable 4-stage foam-compatible pump using a one-piece stainless steel clamp. This pump has the best performance of all pumps in its class and is capable of moving water over long distances. It is applicable in situations where long hose lays, high pressures, and high performance is required. The following are highlights of some of its features:

- User friendly and easy pull-starting.
- Detachable rewind starter for emergency rope start.
- Low tone muffler which significantly reduces noise.
- Standard Mercury style fuel quick-connect.
- Electronic over-speed protection cut-out switch.

Note: USDA Qualified to meet Specification 5100-274C

1.2 SPECIFICATIONS



Pump
Horizontal, 4 stage, detachable centrifugal pump
Suction: 2" N.P.S.H.
Discharge: 1 ½" N.P.S.H.

Overall dimensions
Length: 22.75" (57.8 cm.)
Width: 14.25" (36.2 cm.)
Height: 14.25" (36.2 cm.)
Weight: 56 Lbs. (25.4 kg.)

Engine
Solo two-cycle, air cooled engine.
Spring rewind, manual pull starter.
High speed cutout switch (for loss of prime).
Displacement: 210 cc.
Ignition: Flywheel magneto / solid state breaker less
Power: 10HP
Cylinder: Nikasil treated
Fuel Mix: 24:1 (call manufacturer for any variance)
Fuel Mix Oil: API-TC/JASO-FD
Spark Plug: Bosch W5AC / NGK B7HS /BR7HS / Champ. L77J / DENSO W22FS-U, W22FSR
Spark Plug Gap: .021 inch / .53 mm

2.0 OPERATING INSTRUCTION

2.1 WATER HOOK-UP & PRIMING

1. Connect foot valve strainer to suction hose.
2. Fill suction hose with water.
3. Connect suction hose to pump and ensure coupling is tight.
4. Prime pump with hand primer or by jogging foot valve up and down under the water until water comes out of discharge. Ensure foot valve is neither touching bottom of river or lake or too close to the surface to draft air.
5. When pump is equipped with an integral hand primer, open priming valve located on top of pump before priming.
6. When water is ejected from the top of hand primer, close priming valve.
7. Attach discharge hose.

CAUTION: DO NOT RUN PUMP WITHOUT WATER INSIDE

Note: Be sure priming valve is closed before starting engine.

2.2 FUELLING / OIL TYPE

1. Attach “quick connect” fuel line to coupling on unit.
2. Fuel Mix: Using a high-quality gas and two stroke oil (meeting class API-TC or JASO-FD), mix fuel to oil at a 24:1 ratio (consult manufacturer for any variance).
3. When mixing, pour a small amount of gasoline into tank, add all the oil required and stir, then add the remaining fuel to the tank and stir again.

2.3 STARTING

2.3.1 COLD START

See FUELLING instructions above

1. Place ignition switch to “On” position.
2. Close choke >> Turn lever to Start position
3. Position the throttle lever in the “Start Warm-up” position.
4. Pull starter grip slowly until resistance is felt, then pull upwards firmly and quickly.
5. Do not allow the grip to snap back into place. Guide it back to the resting position.
6. When the engine tries to start (generally after 2-3 pulls, not more than 5 pulls) push the choke in.
7. Continue pulling until engine starts. (Engine will not run in choke position.)

Note: The choke should be pushed in after the slightest "pop" or attempt to start. In this respect, 2-cycle engines start much differently than automotive type engines.

2.3.2 WARM OR HOT START

Follow the Cold Start instructions but leave the choke open (in the off position).

2.3.3 OTHER STARTING CONDITIONS

When starting a new Wick® 375, or if the unit ran out of fuel, the primer bulb should be pressed until fuel can be seen inside the transparent tube under the carburetor. Follow normal starting procedures.

If the engine does not start during very hot weather or with hot fuel from a prior operation, start with a “Closed Choke” and a “Low Speed Throttle Setting” until firing occurs, then open the choke.

If all other starting procedures fail, hold the throttle wide open, use no choke, and pull over repeatedly to clear fuel vapor and start engine.

2.4 SHUTTING DOWN THE ENGINE

1. Move throttle to idle position (down).
2. Allow unit to idle for ½ - 1 minute.
3. Move switch on fan cowl beside carburetor to Off/Stop position.
4. After removing suction and discharge hose, drain pump by lifting unit and rotating in two directions.

CAUTION: PUMP MUST BE PROTECTED FROM FREEZING

2.5 PERFORMANCE VS. ENGINE LIFE

While this pump unit is capable of delivering extended high performance when needed, it is highly recommended to run at reduced throttle setting when possible, as this will greatly extend the life of the engine. Maximum throttle for best longevity is "3/4-7/8 throttle".

2.6 FUEL MIX SCREWS (CARBURETOR ADJUSTMENT)

This engine is equipped with adjustable fuel mix screws for low speed and high speed. This is to allow operators to adjust for different altitudes.

While it is difficult to fine tune an engine without a cylinder head temperature gauge, a general setting can be done by finding the maximum speed and enriching the mixture by 1/4 turn counter clockwise, thus the speed should reduce. Usually this setting is 1-1/8 turns out from closed.

CAUTION: Extreme caution should be used when adjusting the high-speed mixture screw. By setting this screw for maximum speed it is possible to damage the engine due to excessive heat.

Note 1: The idle speed screw (while not as critical) should be set to 1 turn out, or depending on altitude adjust for best starting, but never less than 3/4 turns out.
Note 2: Should the high speed screw be turned out (c.c.w.) past 1-1/8 and no noticeable drop in RPM occurs, there could be a blocked fuel filter in line or a blocked interior fuel screen. This should be cleaned or replaced to prevent overheating.

2.7 ELECTRONIC LOSS OF PRIME HIGH-SPEED CUT-OUT SWITCH

The Wick® 375 is equipped with a patented "Electronic Cut-Out Switch" to prevent damage to the unit from loss of prime. For instance, should a substantial amount of air enter the suction side of the pump, the engine will increase in speed and at over 7300RPM the cut-out switch will stop the engine, then automatically reset after 3 seconds.

Note 1: There is no manual reset required before re-starting the engine, and no adjustments are required.
Note 2: Use only original parts when servicing the engine. Do not substitute components since this could affect the performance and criteria of the cut-out switch.

2.8 SHUT-OFF CONDITIONS

Running the pump at shut off for long periods (no water flow but under pressure - i.e. with hose clamped off), will cause excessive heat to build up and possibly damage the seal and components. If shut off is unavoidable, allow 2 gallons per minute to flow to carry heat away from pump. Ensure that pump is set up with water as per 2.1.

Note: Do not run pump at shut-off (no water flowing / high pressure) longer than 2 minutes.

3.0 MAINTENANCE

3.1 AIR CLEANER

Under ordinary operating conditions, the air cleaner should be cleaned daily. However, under extremely dirty conditions, more frequent cleaning is recommended. To clean the air cleaner, remove nut on intake housing, remove foam filter, brush off large debris, rinse in mineral spirits until clean, squeeze out remaining liquid and reinstall. Ensure backup screen is installed next to carburetor before installing foam.

IMPORTANT: Dirt that enters the engine through the carburetor is one of the greatest causes of engine wear. Therefore, it is very important that the air cleaner be serviced regularly.

3.2 STARTER SCREEN

The screen keeps debris, etc., from entering the fan housing and clogging the air cooling passages. Because this engine is air-cooled, it is necessary to keep this screen clean at all times to permit the unrestricted passage of air into the fan housing.

3.3 SPARK PLUG

Check and clean spark plugs regularly (every 15 hours of operation). A fouled, dirty or carboned spark plug causes difficult starting and poor engine performance.

3.4 MUFFLER SCREWS

Re-torque the muffler to cylinder screws after the first 4 hours and check every 15 hours after. Torque to 18.5 ft. lbs. Check torque on the muffler mount bracket studs after 4 hours and every 15 hours after. Torque value 12 lbf.ft.

3.5 FUEL INLET FILTERS

Every 50 hours or if engine shows sign of overheating; the fuel inlet filters should be checked. When engine is running at full speed, back out the high-speed jet (c.c.w) 1/4 - 1/2 turn, the engine should slow down immediately. If it does not, there could be debris blocking the fuel screens. Change inline fuel filter first and retest. If performance remains the same open carburetor and clean interior screen.

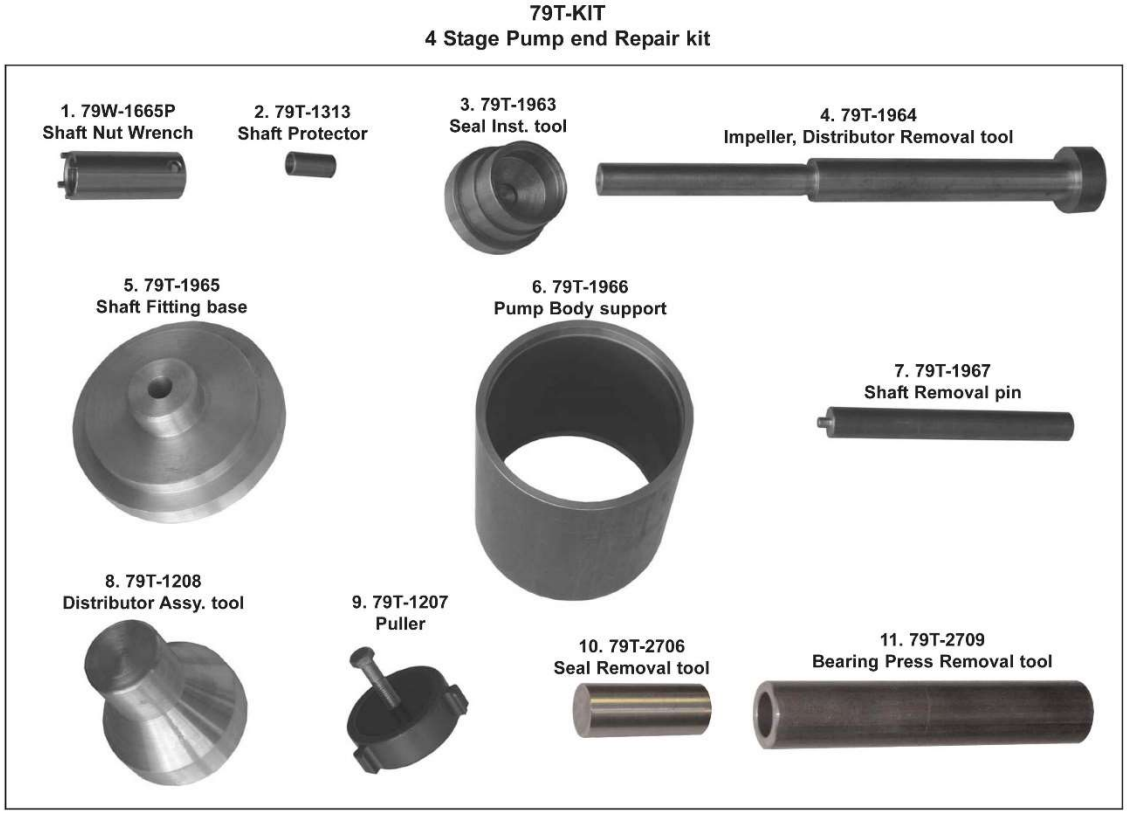
3.6 PUMP DISASSEMBLY

For illustrative purposes refer to drawing in section 5.5

1. Remove the 6 **Bearing Retaining Screws (17)** located under the **Drive Collar (8)**
2. Remove **Screw (23)** and **Shaft Nose (22)** from the suction end of the shaft.
3. Remove the 8 **Screws (14)**. The **Suction Cover (6)** can now be pulled off {use *Puller tool, 79T-1207*}.
4. Using a small screw driver (or pick), pry tab of **Lock Washer (21)** from **Shaft Nut (12)**.
5. Remove **Shaft Nut (12)** {use *Shaft nut wrench, 79W -1665P*} and remove the **Lock Washer (21)**
6. Remove the **1st Impeller (5)**
7. The **Shaft (7)** can now be pressed through the pump:
    a. Support the pump {with *Pump body support tool, 79T -1966*}.
    b. Protect the small end of the **Shaft** (7) from damage {using *Shaft protector tool, 79T -1313*}.
    c. Press the **Shaft (7)** completely through {using *Shaft removal pin tool, 79T -1967*}.
8. The inner Components can now be pressed out from the bearing end:
    a. Invert the pump {on the *Pump body support, 79T -1966*}.
    b. Note that the parts inside have to be guided during this operation {use *Imp Dist removal tool, 79T -1964*}.
    c. A manual press is preferred, as it allows the mechanic to feel the components passing through the inside contour of the body.
9. Remove the **Seal (11)** by inverting the pump {again on *the Pump body support, 79T-1966*} and pressing from the inside of the Pump Body {use *Seal removal tool 79T -2706*}.

IMPORTANT: DAMAGE to internal components can result from incorrect procedures.

Note 1: If seal is to be reused cushion the seal when dropping out of the body, as dropping on a hard surface may cause damage.
Note 2: Special tools are needed to service the pump. See 79T-KIT illustration below.



3.7 PUMP ASSEMBLY

Note: Inspect all components for wear, damage or corrosion. Replace components as required. Always use new "O" Ring Seals.

1. Place **Body (1)** on smooth surface or {use *Shaft fitting base, 79T-1965*) to protect the body from damage, then press in the **Rotary Seal (11)** into **Body (1)**. It is important that it be installed correctly, if leakage or damage to the body is to be avoided {use *Seal installation tool, 79T -1963*}.

2a. Place **Bearing Retainer (8)** over **Shaft (7)** with small shoulder facing up. Support shaft under aluminum collar between drive pins. Then place **Bearing (10)** onto shaft pilot and press into place, until it touches aluminum shaft collar. Press on bearing inner race only {use *Bearing press removal tool, 79T-2709*}

Note: Pressing on bearing outer race (ring) may damage bearing.

2b. Install **Drive Bushing (9)** on **Shaft (7)** and press into place over the flats on the pump **Shaft (7)**. The Drive Bushing faces should touch the inner race of the bearing.

3. Press in the **Shaft Sub-assembly (7)**, making sure that the drive pins in the **Drive Bushing (9)** fit into the slots on the seal to align shaft {use *Shaft fitting base, 79T-1965*}. Secure with the **6 Bearing Retainer Screws (17) at 1.85 lbf.ft**.

Note: In some models, lock washers are also used.

4. Place the **No.4 Impeller (4)** on the **Shaft (7)**, making sure it engages with the **Drive Bushing slots (9)**.
5. Use grease to hold the **O Ring (15)** in its groove on the **Distributor (2)** and carefully install over the Impeller. Ensure it is located in the lowest counter bore of the Body.
6. Place the **No. 3 Impeller (4)** on the shaft making sure it engages **Impeller No 4**.
7. Install **O rings (16)** on **Distributors (3)** and lubricate with Vaseline.
8. Place distributor on the pump body bore (vanes pointing up) {using *Dist. assy. tool, 79T-1208*}, and with a hand press, apply short stokes until the distributor is pressed through the first flat section into the open waterway. (This can be felt as the distributor free falls onto the next flat.)
   The distributor must then be re-centered by hand and repressed as before. This is repeated until the distributor is in contact with the first distributor already installed.
9. Place the **No. 2 Impeller (4)** on the shaft making sure it engages **Impeller No 3**.
10. Repeat operation No. 7 – No. 8.
11. Place the **No.1 Impeller (5)** on the shaft making sure it engages **Impeller No 2**.
12. Place **Lock Washer (21)** over **Shaft (7)** engaging tab in the milled slot in the shaft thread.
13. Screw **Locknut (12)** onto **Shaft (7)** and tighten to 20 lbf.ft {use *Shaft nut wrench, 79W-1665P*} until slot in nut is aligned with a tab from the Lock washer. Push tab into slot on nut to lock in place.
14. Install **O ring (16)** on **Suction Nozzle (6)**. Using bench press, press Suction Cover until it rests on **Distributor (3)**. (.020 to .040" gap between **Body (1)** and **Suction Cover (6)** is normal.)
15. Install **8 Lock washers (19)** and **Screws (14)** and tighten evenly to 2.5 lbf.ft.
16. Attach **Shaft Nose (22)** to end of **Shaft (7)** using **screw with special plastic locking insert (23) tighten to 3.5 lbf.ft.**
17. If required, install **Priming Adaptor (26)**. Use Loctite on tapered thread.
18. Install **Cap (27)** and **Gasket (29)**.
19. Install **Plug (28)**. **Note:** Apply Teflon paste or tape on threads before installing plug.

If Pump is Equipped with a grease Nipple:

20. Grease the Pump Bearing, using an 11" (280mm) long grease gun. Apply 8 strokes of grease (PT# 79W-GREASE).
    The Pump is now ready for testing.
    Note: After testing, the Pump should be re-greased as a small amount of water may have passed through the seal during the first few seconds of rotation. Apply 2 strokes from the grease gun.

3.8 STORING MOTOR

The following steps should be taken to prepare your engine for storage.

1. Disconnect fuel line.
2. Start engine and allow to run until it stops from lack of fuel. This will use up all the fuel in the carburetor and prevent the formation of deposits due to evaporation of fuel.
3. Drain all fuel from the gasoline tank.
4. Remove spark plug and pour approximately 1/4 cup of motor oil into cylinder. Replace spark plug.
5. Crank engine two or three times to distribute oil throughout cylinder. This will coat the cylinder walls with oil and prevent rust from forming during the storage period.

3.9 PUMP GREASE (If Applicable)

Standard pump is equipped with a sealed bearing which requires no maintenance. If equipped with grease nipple then:

1. Pump must be greased every 30 hours of operation.
2. Use a high-quality LOW temperature bearing grease (only use fresh clean grease) >> Part No 79W-GREASE

IMPORTANT:DO NOT USE GRAPHITE.

3. Clean fitting on pump before applying grease.
4. Pump grease slowly until fresh grease appears around bearing retainer (Page 14, Item 8).
5. Wipe off excess grease before running pump.

3.10 SPARK ARRESTOR (OPTIONAL)

When pump unit is fitted with an optional spark arrestor, the spark arrestor should be checked for blockage every 75 hours. (The time interval will vary with the type of fuel/oil mix).

1. Remove metal screw on outlet tube of muffler and pull screen assembly out.
2. Remove carbon deposit build-up from screen (if needed, scrape with a plastic tool to remove build-up).
3. Be careful not to damage the screen.
4. Scrape inside of outlet tube if needed and replace screen assembly and screw

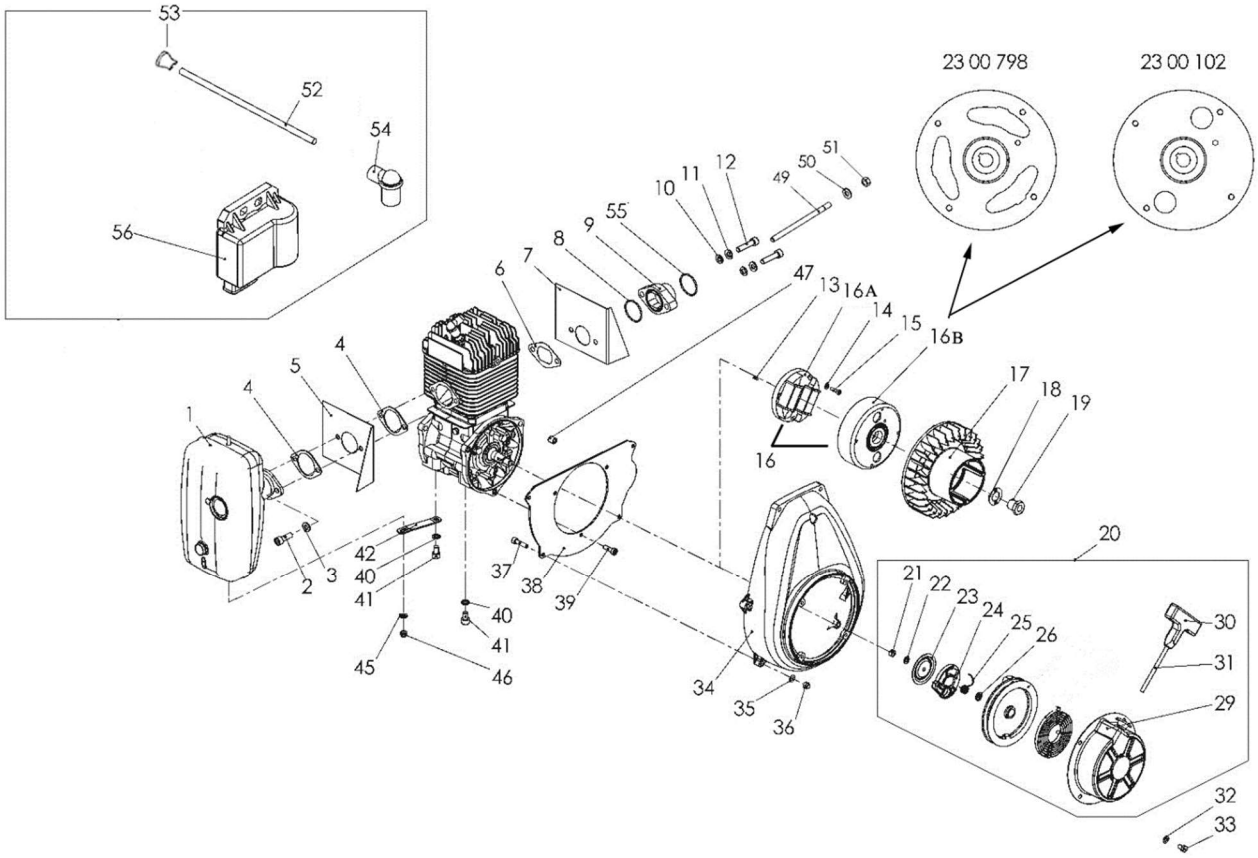
4.0 TROUBLESHOOTING

CAUSE	RECOMMENDATION
Engine fails to start.	
Stop switch off.	Turn to the ON/RUN position.
No fuel in tank.	Fill tank.
Gasoline shut-off closed.	Open shut-off valve.
Fuel line or fuel tank screen clogged.	Clean fuel line and screen.
Flooded.	Disconnect fuel line and open throttle full with choke open, then crank engine to start, reconnect fuel line and throttle back to idle.
Spark plug shorted or fouled.	Install new spark plug.
Spark plug broken (cracked porcelain or electrode is broken).	Install new spark plug.
Magneto lead wire short broken or disconnected from spark plug	Replace lead wire or attach to spark plug.
Magneto inoperative (no spark from lead wire).	Contact the factory or your nearest authorized dealer.
Engine hard to start.	
Water in gasoline or stale fuel mixture.	Drain entire fuel system and refill.
Too much oil in fuel mixture.	Drain and refill with correct mixture.
Engine over or under choked.	If flooded by over choking, proceed according to instructions in previous section. If under choked, move choke lever to closed position and crank 2 or 3 times.
Carburetor out of adjustment.	See Fuel Mix Screws, section 2.6.
Gasket leaks (carburetor or reed plate gaskets).	Replace gaskets.
Weak spark at lead wire.	Contact the factory or your nearest authorized dealer.
Engine misses.	
Dirt in fuel line/carburetor	Remove and clean.
Carburetor improperly adjusted.	See Fuel Mix Screws, section 2.6.
Spark plug fouled, broken or incorrect gap setting.	Clean or replace spark plug and set gap as per spec.
Weak or intermittent spark at lead wire	Contact the factory or your nearest authorized dealer.
Engine lacks power.	
Air cleaner clogged.	Clean air cleaner.
Carburetor out of adjustment.	See Fuel Mix Screws, section 2.6.
Muffler clogged.	Clean carbon from muffler.
Clogged exhaust ports.	Remove muffler, rotate engine until the piston is at bottom of cylinder. With a wooden scraper or blunt tool, remove all carbon from exhaust ports. Be careful not to scratch or damage piston or cylinder walls. Blow any loose carbon with compressed air. Start engine and run briefly to remove all carbon, then install muffler and gasket.
Poor Compression	Contact the factory or your nearest authorized dealer.
Blocked Filter inline or inside carburetor	Change inline filter or dismantle carburetor and clean screen

Engine overheats.	
Insufficient oil in fuel mixture.	Mix fuel as shown in starting instructions.
Air flow obstructed.	Clean flywheel and cylinder fins and screen.
Improperly adjusted high speed mix screw.	Adjust, see section 2.6.
Blocked Filter inline or inside carburetor	Change inline filter or dismantle carburetor and clean screen
Engine noisy or knocking.	
Loose flywheel.	Tighten flywheel.
Spark plugs incorrect heat range.	Replace with plugs specified for engine.
Worn bearings, piston rings or cylinder walls.	Contact the factory or your nearest authorized dealer.
Bent fan housing.	Remove fan housing and straighten bent portion.
Engine "stalls" under load.	
Carburetor main adj. too "lean".	See Fuel Mix Screws, section 2.6.
Engine overheats.	See above.
Blocked Filter inline or inside carburetor	Change inline filter or dismantle carburetor and clean screen

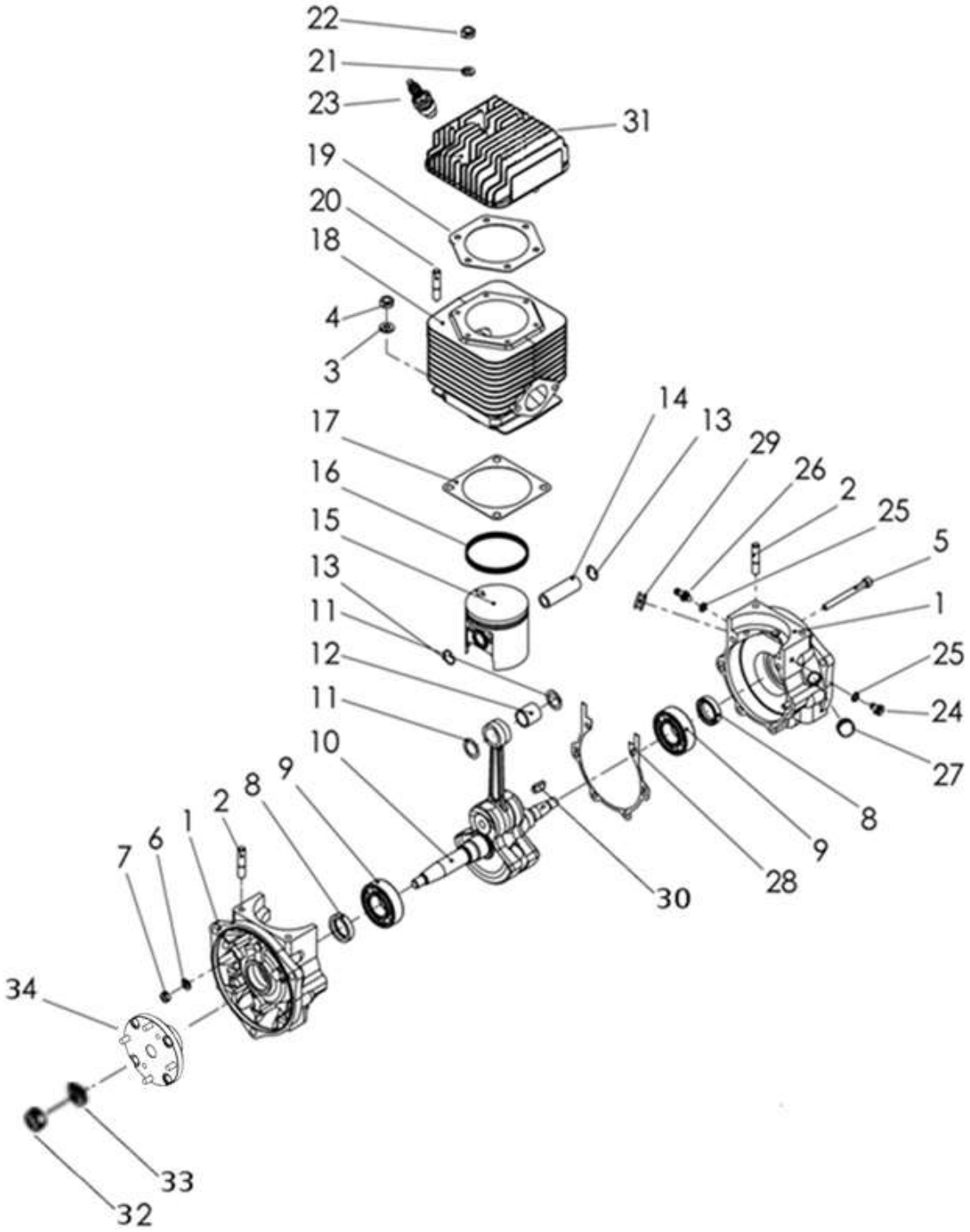
5.0 PARTS LIST

5.1 ENGINE PARTS



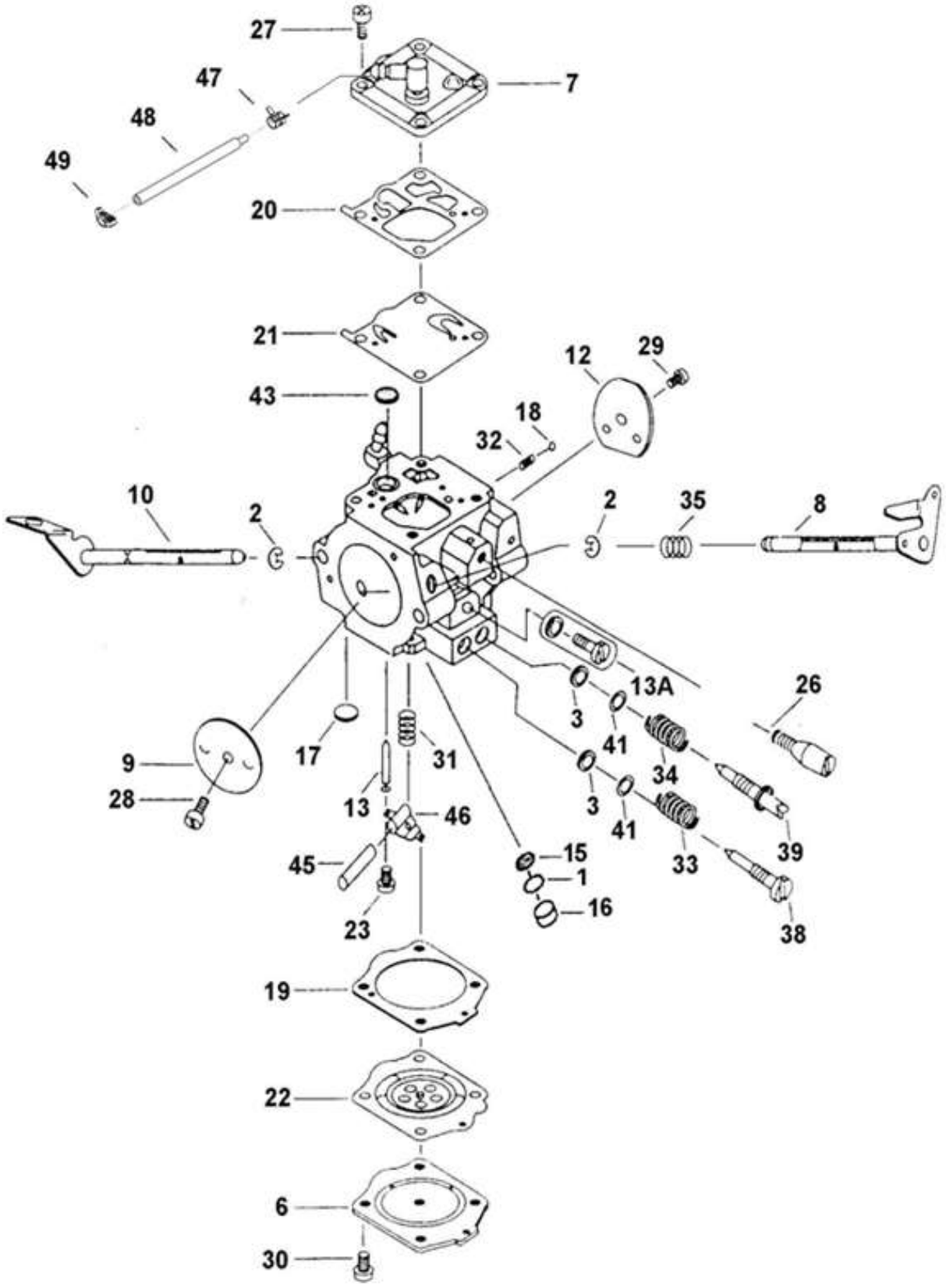
ITEM	PART NO.	DESCRIPTION	QTY/ASSY
1	71W37-1976B	Muffler	1
2	72PSO10-0010138	F.H. Screw, 18.5 lbf.ft	2
3	72PSO10-0034115	Tension washer	2
4	71W37-1321	Exhaust Gasket	2
5	72PSO10-2043119	Air guide plate, exhaust side	1
6	71W37-2164	Intake Gasket	1
7	72PSO10-2043118	Air guide plate, carb side	1
8	72PSO10-0062229	O-Ring - Intake	1
9	72PSO10-2300540	Manifold	1
10	72PSO10-0030131	Washer	2
11	72PSO10-0034115	Tension washer	2
12	72PSO10-0010137	F.H. Screw, 4 lbf.ft	2
13	72PSO10-0075101	Key – Shaft, Woodruff	1
14	72PSO10-0072148	Tension washer	2
15	72PSO10-0018326	F.H. Screw, 1.5 lbf.ft	2
16	72PSO10-2300798	Rotor Ducati Assy (old model)	1
16	72PSO10-2300102	Rotor Ducati Assy (new model)	1
16A	72PSO10-ARMASSY	Stator Plate c/w Coils	1
16B	72PSO10-RING102	Magnet, Flywheel	1
16B	72PSO10-RING798	Magnet, Flywheel (Old Model) ***(Not Available)***	1
17	71W37-1597-O	Fan, Flywheel (w/ Item 16 old)	1
17	71W37-1597	Fan, Flywheel (w/ Item 16 new)	1
18	72PSO10-0035101	Safety washer	1
19	72PSO10-0021102	Flywheel Nut (Loctite 242), 33.5 lbf.ft	1
20	72PSO10-2600305	Starter assembly complete	1
21	72PSO10-0020102	Hex. Nut 7, lbf.ft	1
22	72PSO10-26030509	Spring washer	1
23	72PSO10-26030507	Friction plate	1
24	72PSO10-26030506	Starter pawl	1
25	72PSO10-26030511	Spring	1
26	72PSO10-26030508	Pressure washer	1
29	72PSO10-26030501	Starter housing	1
30	72PSO10-26030504	Starter grip	1
31	72PSO10-26030505	Starter rope	1,09m
32	72PSO10-0034114	Spring ring	4
33	72PSO10-0012114	Hex. Screw, 10 lbf.ft	4
34	72PSO10-2013207	Fan cover	1
35	72PSO10-0034202	Tension washer	4
36	72PSO10-0028111	Hex. Nut, self-securing, 9.5 lbf.ft	4
37	72PSO10-0018348	F.H. Screw, 9.5 lbf.ft	4
38	72PSO10-2042872	Intermediate plate	1
39	72PSO10-0018347	F.H. Screw, 15 lbf.ft	3
40	78WL05P	Lock washer	8
41	78SC0830MP	Screw, 15 lbf.ft	4
42	71W37-1606	Exhaust bracket	1
45	72PSO10-0034115	Tension washer	2
46	72PSO10-0020208	Hex. Nut, self-securing, 12 lbf.ft	2
47	72PSO10-0065224	Thread sleeve	3
49	72PSO10-0015283	Stud bolt, 3 lbf.ft	2
50	72PSO10-0072144	Tension washer	2
51	72PSO10-0028137	Hex. Nut, 1.6 lbf.ft	2
52	71W37-SPWR07M	Spark Plug Wire 7mm dia.	1
53	72PSO10-0084203	Protection Cap	1
54	72PSO10-0084536	Spark plug cap	1
55	72PSO10-0062230	O-Ring - Intake	1
56	71W37-COILOS	Ignition Coil Assembly	1
Not Illus.	78E-COEN1	Electronic Cut-Out Switch	1

5.2 ENGINE MOTOR PARTS



ITEM	PART NO.	DESCRIPTION	QTY/ASSY
1	72PSO10-2100883	Crankcase	1
2	72PSO10-0015208	Stud bolt	4
3	72PSO10-0034128	Spring washer	4
4	72PSO10-0020109	Hex. Nut, 15 lbf.ft	4
5	72PSO10-0010225	F .H. Screw	6
6	72PSO10-0034114	Spring ring	6
7	72PSO10-0020102	Hex. Nut, 10 lbf.ft	6
8	72PSO10-0054177	Oil seal	2
9	72PSO10-0050118	Ball bearing	2
10	72PSO10-2200780	Crankshaft	1
11	72PSO10-0031251	Friction washer	2
12	72PSO10-0052167	Needle bearing	1
13	72PSO10-0055187	Circlip	2
14	72PSO10-2031534P	Piston pin	1
15	72PSO10-2200587	Piston with rings	1
16	72PSO10-2048266	Piston rings	2
17	72PSO10-2061288	Cylinder foot gasket	1
18	72PSO10-2011688	Cylinder	1
19	72PSO10-2061303	Cylinder head gasket	1
20	72PSO10-0015206	Stud-Cylinder Head	6
21	72PSO10-0072143	Tension washer	6
22	72PSO10-0028100	Nut-Head Thermag, 10 lbf.ft	6
23	71W37-W5AC	Spark plug, 14.5 lbf.ft	1
24	72PSO10-0012114	Hex. Screw/Plug	1
25	72PSO10-0061254	Sealing ring	2
26	72PSO10-006710125	Nipple Fuel Pump	1
27	71W37-2190	Grommet Muffler Side	1
28	72PSO10-2061287	Crankcase gasket	1
29	72PSO10-0066107	Grommet	1
30	72pso10-0075101	Key	1
31	72PSO10-2012759	Cylinder Head	1
32	78NL121.5MS	Jam Nut M12-1.5, 35 lbf.ft	1
33	78WL12MP	Lock washer M12	1
34	71W37-1898A	Collar Coupling with Pins	1

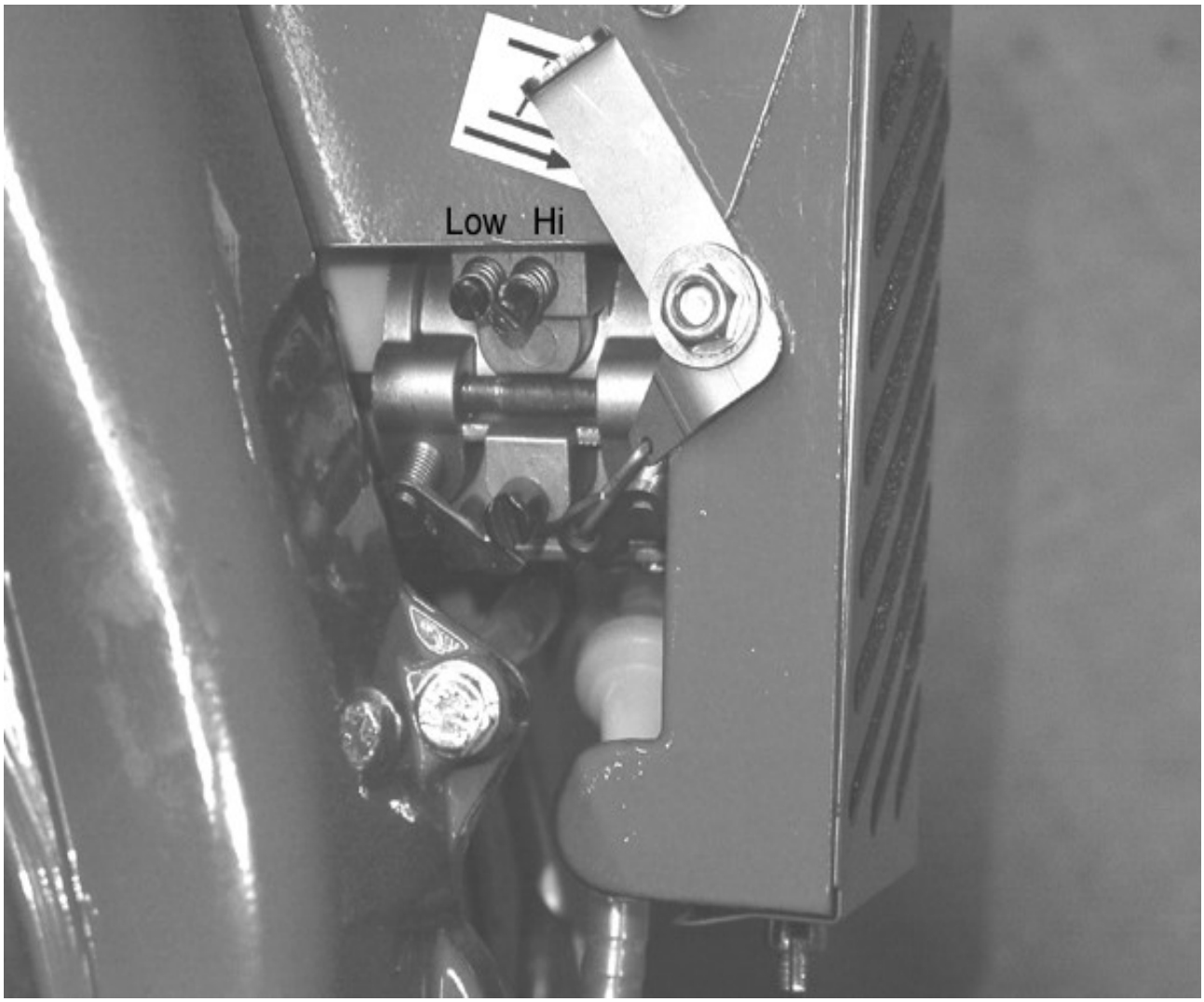
5.3 CARBURETOR



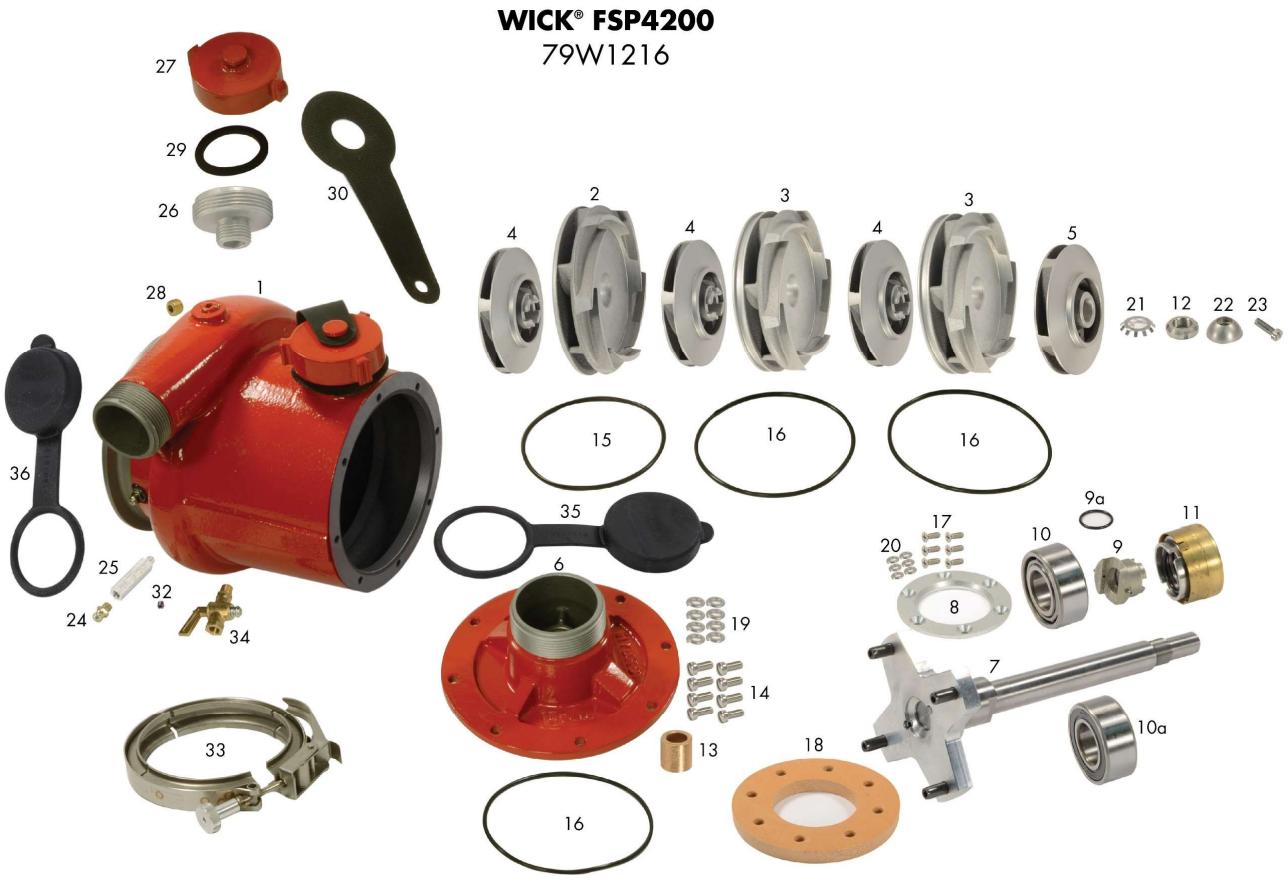
ITEM	PART NO.	DESCRIPTION	QTY/ASSY
	22.82	Venturi (mm)	
	71W37-CARB	Carburetor (Complete)	
	71W37-CARB-SASK	Carburetor (Complete) for Saskatchewan Government	
A	72PSO10-K20WGA	Kit-Repair (Incl. Needles, O-Ring, Screen, Gasket, Diaphragm)	
1	Included in item A	*Ring - Screen Retainer	1
2	72PSO10-1673	Ring - Shaft Retainer	2
3	72PSO10-1675	O-ring - Needles	2
6	72PSO10-21199	Cover-Metering Diaphragm	1
7	72PSO10-213027	Cover - Fuel Pump	1
8	72PSO10-301165	Shaft Assembly-Throttle	1
9	72PSO10-34272	Valve - Throttle	1
10	72PSO10-40942	Shaft Assembly-Choke	1
12	72PSO10-62158	Valve-Choke	1
13	72PSO10-8275	*Valve-Inlet Needle	1
13A	72PSO10-84603	Governor-kit	1
15	Included in item A	*Screen - Check Valve	1
16	Included in item A	*Plug - Cup	1
17	72PSO10-88171	*Plug-Welch (5/16)	1
18	72PSO10-8913	Ball-Choke Friction	1
19	72PSO10-9294	**Gasket-Metering Diaphragm	1
20	72PSO10-92293	**Gasket-Fuel Pump	1
21	72PSO10-95120	**Diaphragm-Fuel Pump	1
22	72PSO10-95537	**Diaphragm Assy.-Metering	1
23	72PSO10-96156	Screw-Metering Lever Pin	1
26	72PSO10-96449	Screw-Idle Adjust Kit	1
27	72PSO10-96543	Screw-Fuel Pump Cover	4
28	72PSO10-96564	Screw-Throttle Valve	1
29	72PSO10-96564	Screw-Choke Valve	1
30	72PSO10-96589	Screw-Metering Cover	4
31	72PSO10-98192	Spring-Metering Lever	1
32	72PSO10-98162	Spring-Choke Friction	1
33	72PSO10-98368	Spring-Needle (idle)	1
34	72PSO10-98368	Spring-Needle (power)	1
35	72PSO10-983062	Spring Throttle Return	1
38	72PSO10-1023005	Needle-Idle	1
39	72PSO10-1023006	Needle-Power	1
41	72PSO10-136106	Washer-Needle	2
41A	72PSO10-136194	Washer-Throttle Shaft	1
43	72PSO10-14070	*Screen-Fuel Inlet	1
45	72PSO10-14460	*Pin-Metering Lever	1
46	72PSO10-16655	*Lever-Metering	1
47	78CLH05BSC	Spring Band Clamp	1
48	71W37-3331	Pulse Line	1
49	78CLH05SGP	Snap Grip Clamp	1
Not Illus.	78FL03FF	In Line Fuel Filter 3/16"	1
Not Illus.	71W37-FILKIT	Replacement filter kit , WICK-375A (incl. filter & Tygon fuel line)	

*,** Contents in Repair Kit (72PSO10-K20WGA)

5.4 CARBURETOR ADJUSTEMENT SCREWS



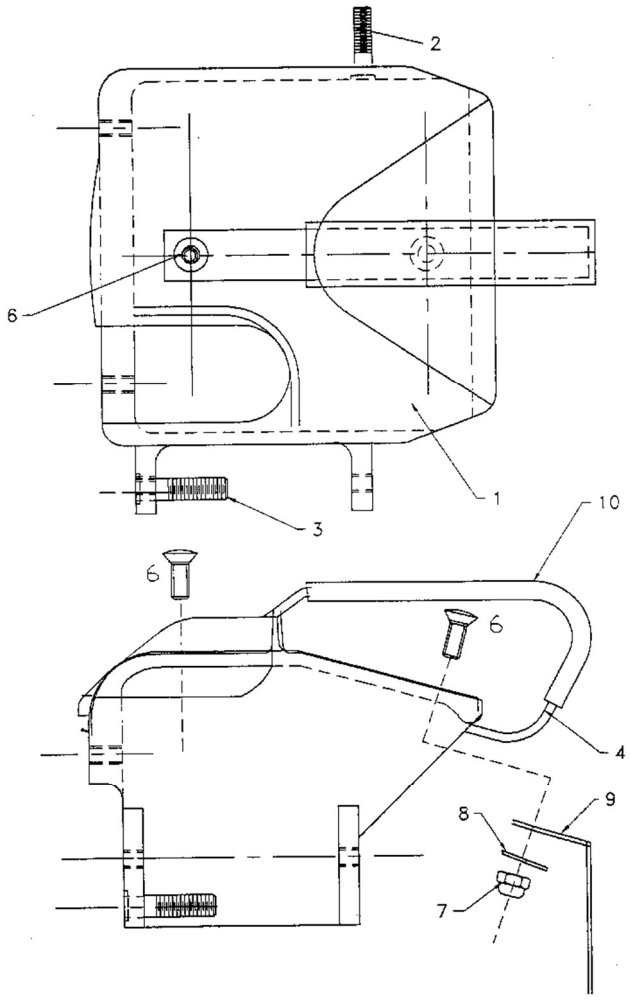
5.5 PUMP END ASSEMBLY



ITEM	PART NO.	DESCRIPTION	QTY/ASSY
1	79W128	Pump Body	1
2	79W126	Distributor	1
3	79W129	Distributor	2
4	79W127	Impeller	3
5	79W1211	Impeller	1
6	79W1212AS	Suction Cover Painted	1
7	79W122C	Shaft Assembly	1
8	79W123	Retainer	1
9	79W124AS	Drive Bushing	1
9a	78ORI-017N	O-RING SEAL	1
10	79W1248	Bearing	1
10a	79W1248S	Sealed Bearing	1
11	79W1228T	Seal	1
12	79W1250	Nut, 20 lbf.ft	1
13	79W1240	Bushing	1
14	78SF042810S	Screw, 2.5 lbf.ft	8
15	79W1226	O-Ring	1
16	79W1227	O-Ring	3
17	79W1225	Screw, 1.85 lbf.ft	6
18	79W1217	Buffer Coupling	1
19	78WL04SS	Lock Washer	8
20	79W1224	Lock Washer	6
21	79W1249	Lock Washer	1
22	79W1213	Shaft Nose	1
23	78SF042812S	Screw, 3.5 lbf.ft	1
24*	79W1229	Grease Fitting	1
25*	79W1287	Extension	1
26	6108TM24PM	Priming Adaptor	1
27	79W1210	Priming Cap	1
28	6402TMPLG	Plug	1
29	5924FGPS	Gasket	1
30	79W1962	Priming Cap Retainer	1
31*	79W-GREASE	Grease	1
32*	78SS103204S	Plug 10-32 x ¼, cup point	1
33	79W212	Pump Mounting Clamp	1
34	78VSO02F02M	Shut-Off Valve	1
35	79W1913	Rubber Cap 2”	1
36	79W1912	Rubber Cap 1 ½”	1

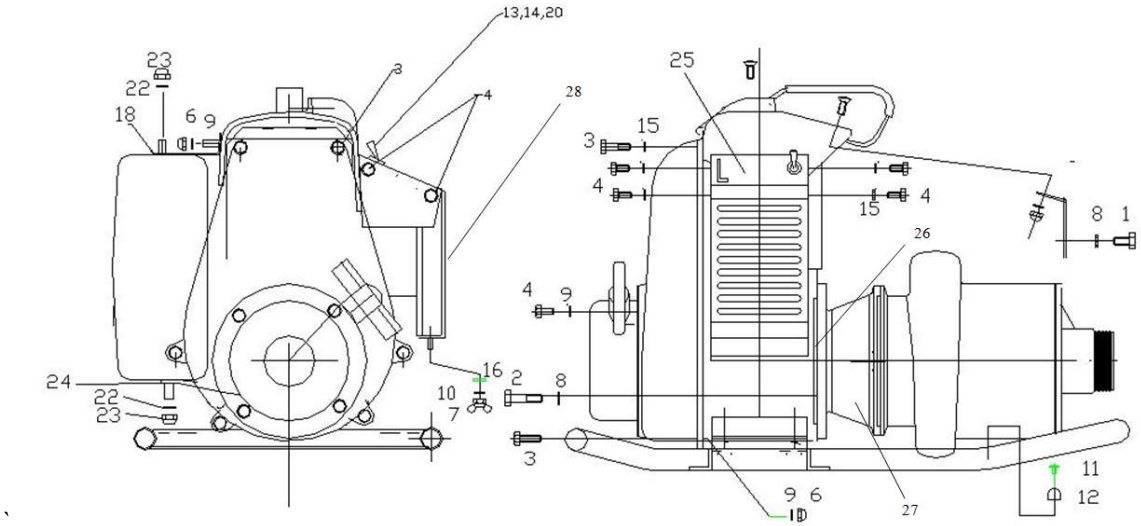
* NOT REQUIRED WITH SEALED BEARING ITEM 10a

5.6 COVER ASSEMBLY



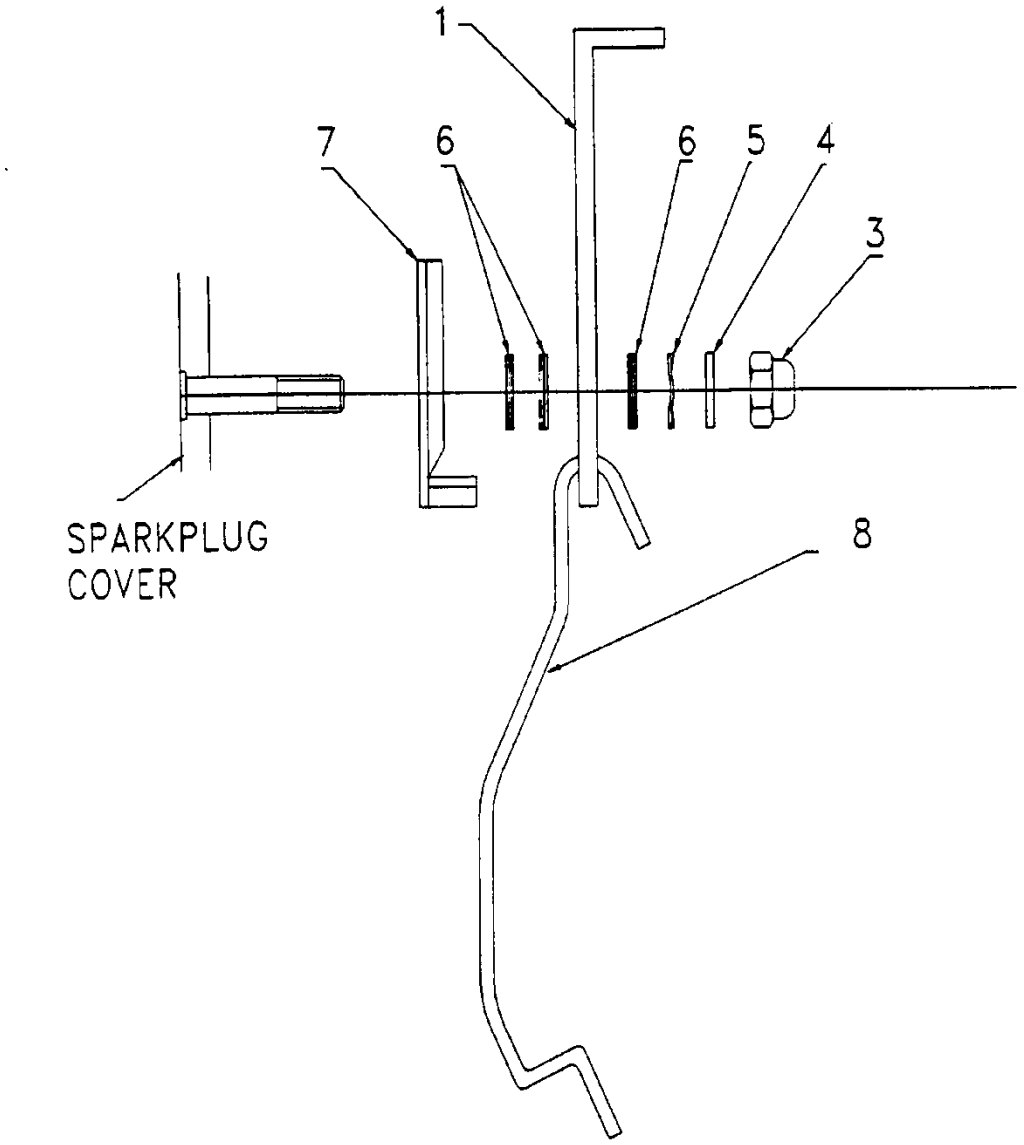
ITEM	PART NUMBER	DESCRIPTION	QTY/ASSY
1	71W37-1926SA	Spark Plug Cover Machine	1
2	78STC0620MS	Stud Self Clinching M6 X 20	1
3	78STC051820P	Stud Self Clinching 5/16-18 NC	1
4	71W37-1314S	Handle (Includes Rubber)	1
6	78SM0616MPO	Screw - Use Loctite 242 on Rear Screw	2
7	78NL06MP	Locknut, 7.5 lbf.ft	1
8	78WT06MP	Lock washer	1
9	71W37-1306	Bracket	1
10	71W37-HDLTUB	Rubber Tube for Handle (7.25")	1

5.7 HARDWARE ASSEMBLY



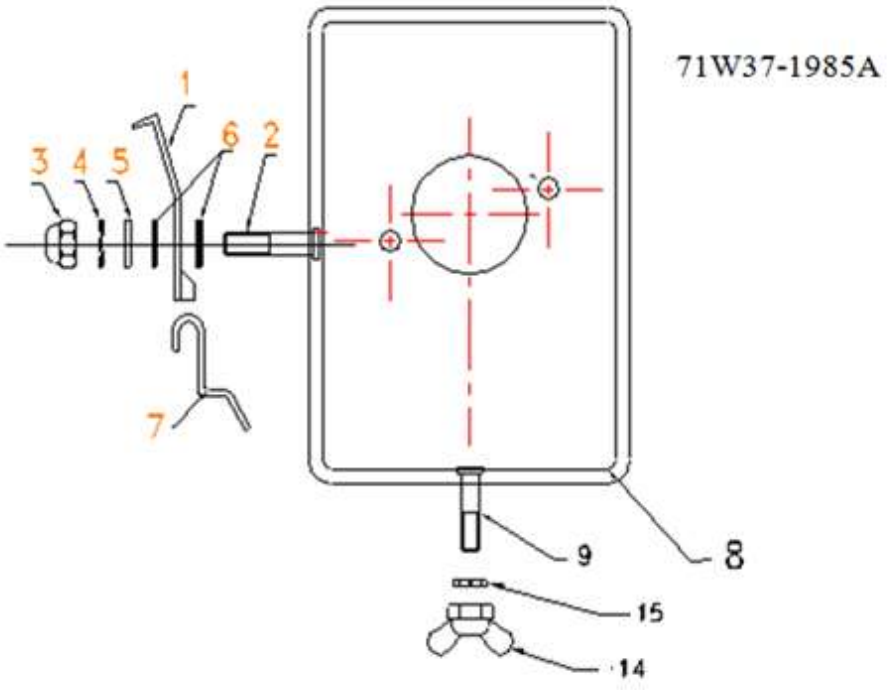
ITEM	PART NUMBER	DESCRIPTION	QTY/ASSY
1	78SC0812MP	Cap Screw M8 X 12 HEX. HD. 18 lbf.ft	1
2	78SC0830MP	Cap Screw M8 X 30 HEX. HD. 18 lbf.ft	3
3	78SC0625MP	Cap Screw M6 X 25 HEX. HD. Use Loctite 242, 10 lbf.ft	6
4	78SC0612MP	Cap Screw M6 X 12 HEX. HD. 10 lbf.ft	8
6	78NL06MP	Nut M6, 9 lbf.ft	9
7	78NW1024L	Wing nut #10-24 Nylon Insert	1
8	78WL05P	Lock washer 5/16	4
9	78WT06MP	Lock washer M6	10
10	78WL10P	Lock washer #10	1
11	78RV0209AP	Pop Rivet	2
12	71W25-1186-11	Rubber Pad	1
13	78NL121.5MS	Low Nut M12-1.5	1
14	78WL12MP	Lock washer M12	1
15	78WL04SS	Lock washer	6
16	78WF030901S	Washer	1
18	71W37-1306	Bracket - Cover to Muffler	1
19	71W37-1629A	Frame (includes Item 12)	1
20	78ESWT-1	Single Pole Toggle Switch	1
22	72PSO10-0034115	Tension washer	1
23	72PSO10-0020208	Hex. Nut, self-securing, 12 lbf.ft	1
24	71W37-1606	Exhaust bracket	1
25	71W37-1302N	Control Panel	1
26	71W37-1923	Mounting Flange W375	1
27	71W37-1898A	Collar Coupling	1
28	71W37-1317A	Filter Box Machined	1
NI	71W37-DEC	Decal -Panel - Operating Instructions	1

5.8 THROTTLE LEVER ASSEMBLY



ITEM NO.	PART NO.	DESCRIPTION	QTY/ASSY
1	71W37-1301	Throttle Lever	1
3	78NL0518P	Locknut	1
4	78WF0510P	Washer Plain 5/16	1
5	78WS08MP	Washer Spring Tension 5/16	1
6	78WF050901	Washer Fibre 5/16	3
7	71W37-1979	Detent Spring	1
8	71W37-1318	Link Throttle	1

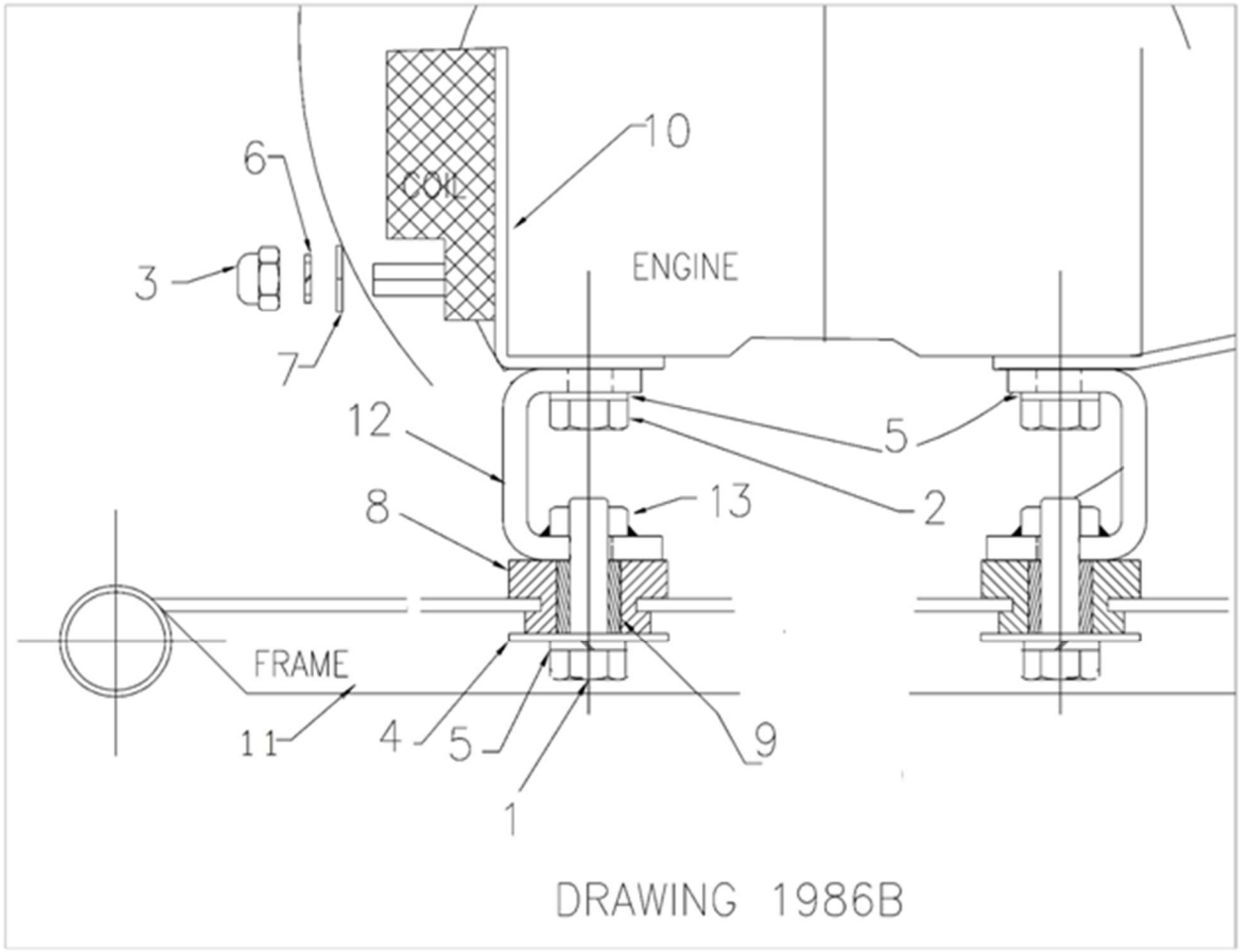
5.9 FILTER BOX ASSEMBLY PT. No. 71W37-1985A (does not include items 10, 11, 12)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY/ASSY
1	71W37-1305	Choke Lever	1
2	78STC0620MS	Stud Self Clinching M6 X 20	1
3	78NL06MP	Locknut M6	1
4	78WS06M	Washer Spring M6	1
5	78WF04P	Washer Spring	1
6	78WF040801	Washer Fiber 1/4	2
7	71W37-1319	Link Choke	1
8	71W37-1317A	Filter Box Machined, Painted (c/w items 2 and 9)	1
9	78STC102412P	Stud Self Clinching 10-24 NC	1
10*	71W37-1304A	AIR FILTER FOR WICK® 375	1
11*	71W37-2162	Filter Cover	1
12*	71W37-1325	Filter Support Screen	1
13*	71W37-1320	Filter Box Gasket	1
14	78NW1024L	Wing nut #10-24 Nylon Insert	1
15	78WL10P	Lock washer #10	1

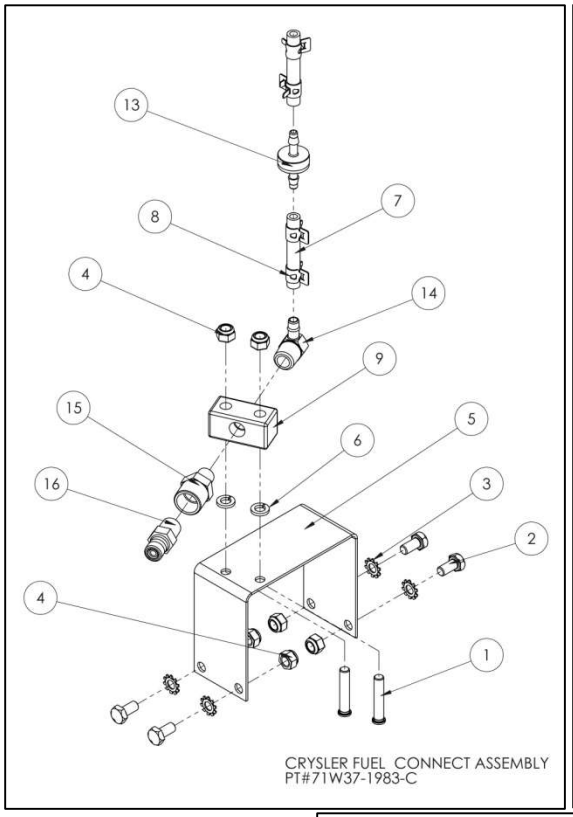
*Not Illustrated

5.10 ENGINE / FRAME MOUNTING

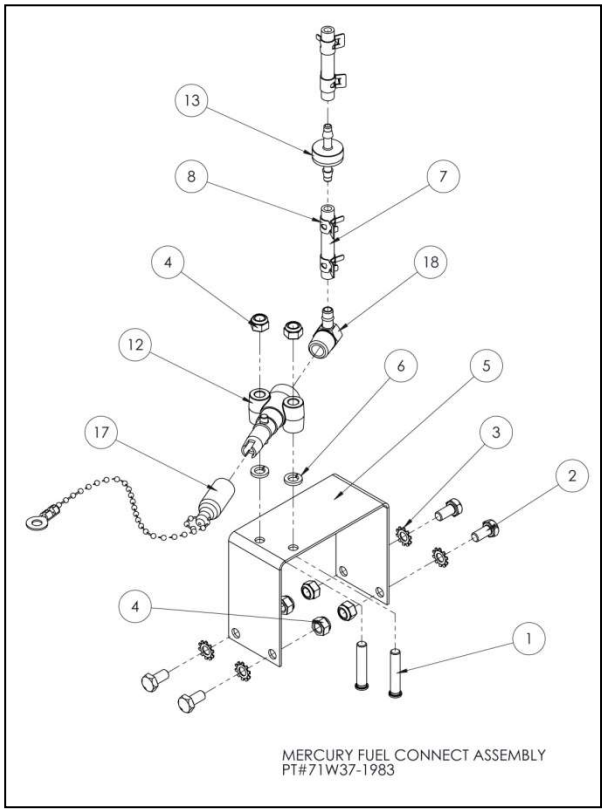


ITEM NO.	PART NUMBER	DESCRIPTION	QTY/ASSY
1	78SC0830MP	Cap Screw M8 X 30 HEX HD. 18.5 lbf.ft	4
2	78SCO820MP	Cap Screw M8 X 20 HEX HD. 18.5 lbf.ft	4
3	78NL06MP	Locknut M6 Nylon Insert, 10 lbf.ft	2
4	78WF0518P	Washer Plain 5/16 ID X 1 1/4 OD.	4
5	78WL08S	Lock washer 5/16	8
6	78WL04SS	Lock washer 1/4	2
7	78WF04P	Washer Plain 1/4	2
8	71W25-1186-10	Motor Mount	4
9	78SP0509S	Spacer	4
10	71W37-1309	Bracket Coil	1
11	71W37-1629A	Frame	1
12	71W37-1623	Bracket	2
13	78NH08MSS	Nut	4

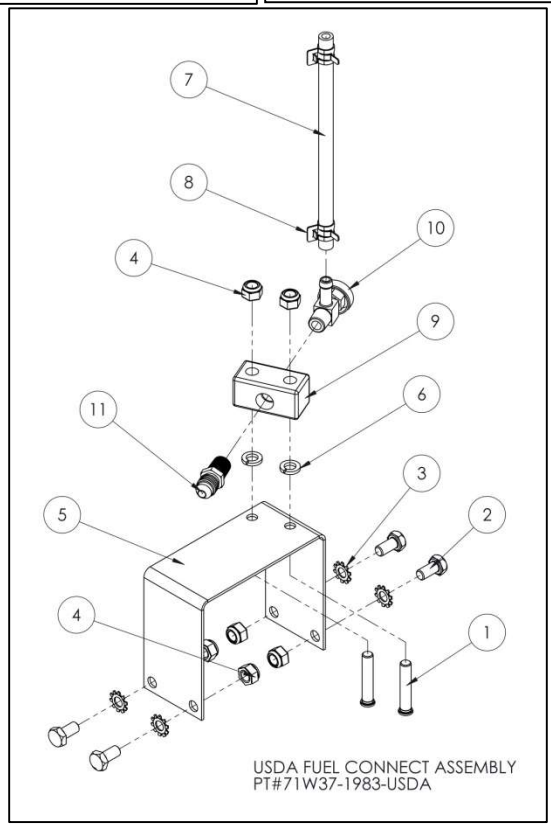
5.11 FUEL CONNECT ASSEMBLY



CRYSLER FUEL CONNECT ASSEMBLY
PT#71W37-1983-C



MERCURY FUEL CONNECT ASSEMBLY
PT#71W37-1983



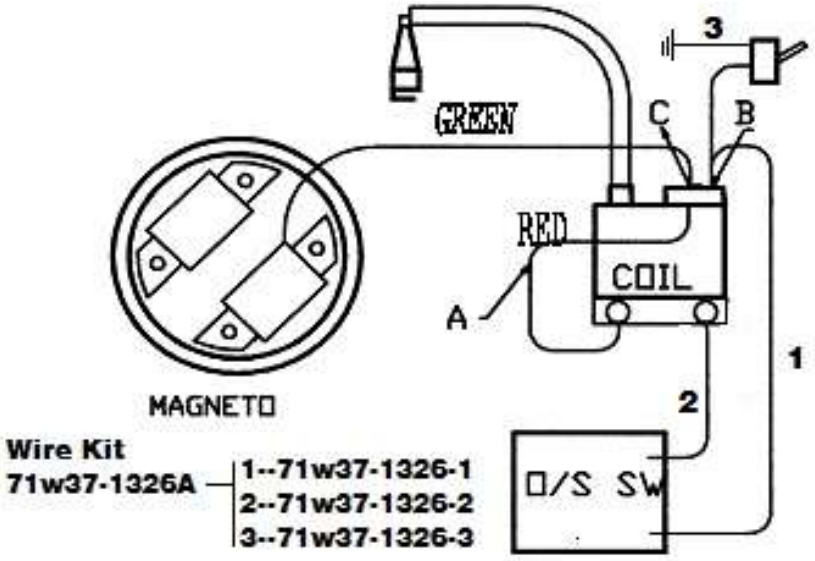
USDA FUEL CONNECT ASSEMBLY
PT#71W37-1983-USDA

ITEM	PART NO.	DESCRIPTION	QTY/ASSY
1	78STC0630MS	Stud Self Clinching M6 X 30	2
2	78SC0612MP	Cap Screw M6 X 12, 9 lbf.ft	4
3	78WT06MP	Tooth Lock washer M6	4
4	78NL06MP	Locknut M6, 9 lbf.ft	6
5	71W37-1316	Bracket	1
6	78WL04SS	Lock Washer 1/4"	2
7	0850305FL	Fuel Line (Order quantity in inches)	5"
8	78CLH05SGP	Spring Clamps 5/16"	2 or 4
9	71W37-2155*	* Block Fuel Connection - W375 USDA	1
10	78VSO04	Fuel Line Valve (USDA)	1
11	6402TM04SM*	* Adaptor Fitting 1/8" NPT Male x 1/4" SAE Male	1
12	70FLPFLMV-M	Fuel Line Male Valve Fitting - MERCURY	1
13	78FL03FF	Fuel Filter 3/16" (also under carburetor)	1
14	6402TM04BELB*	* Brass 1/8" Male NPT x 1/4"Hose Barb Elbow	1
15	6402TM04TFR	Adaptor Fitting 0.125 NPTM x 0.25 NPTF	1
16	70FLPFLMV	Fuel Line Male Valve Fitting -CHRYSLER	1
17	70FLPFL-DCAPM	Dust Cap for Male MERCURY	1
18	78FBP0404MEL	Brass 1/4" Male NPT x 1/4"Hose Barb Elbow	
	71W37-FILKIT	Replacement filter kit, WICK-375A (Includes Items 7, 8, 13)	1

5.12 CUT-OUT SWITCH RETROFIT KIT (71W37-COR)

ITEM	PART NO.	DESCRIPTION	QTY/ASSY
1	78NL05MP	LOCK NUT M5, PLATED	2
2	78SM0520MPCH	Mach Screw M5x20 CHEESE HD, PHIL. 3 lbf.ft	2
3	78WF05MP	Washer 5mm, PLATED	2
4	78SP1005	Spacer #10 X 5/16"Lg., Plated	2
5	78E-COEN1	CUT OUT SWITCH, ELECTRONIC	1
6	71W37-1960	BRACKET, CUTOUT SWITCH	1

5.13 BASIC WIRING / CUT-OUT SWITCH



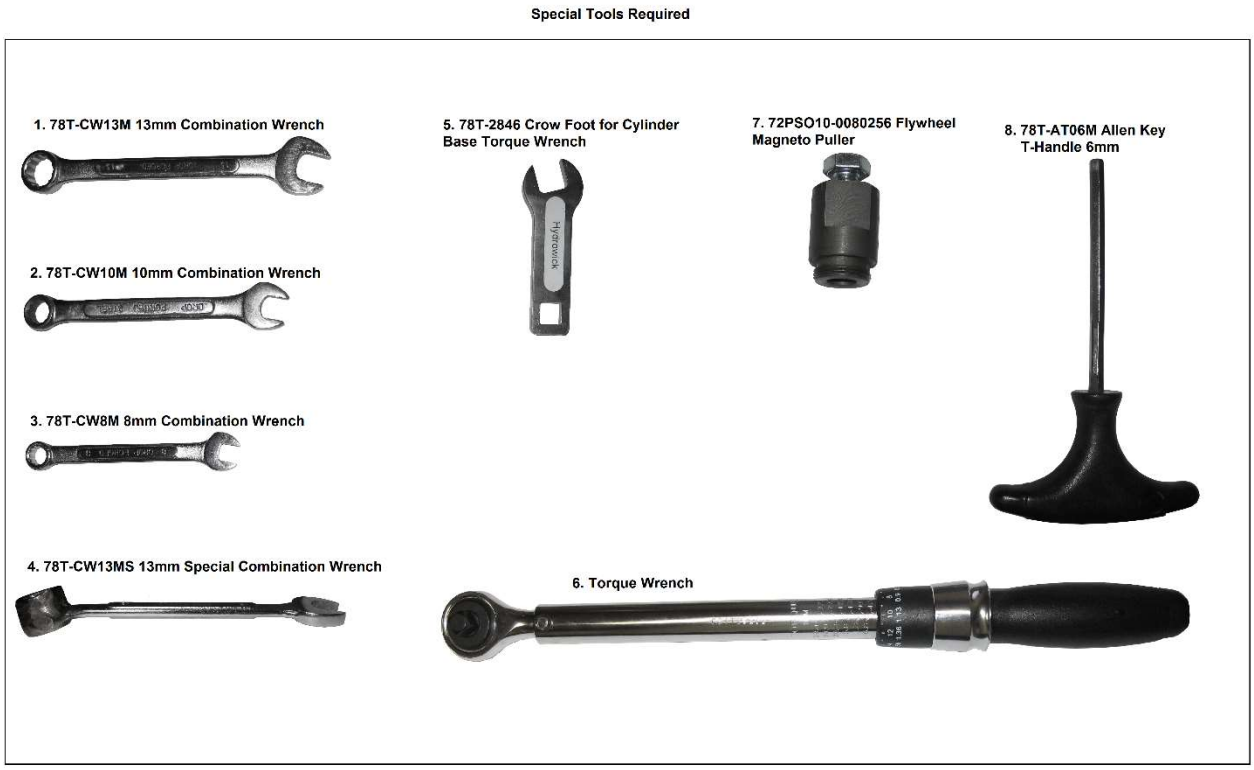
GROUND TERMINAL

TERMINAL TO COIL STOP TERMILAL

Fig 1: PT# 78E-COEN1

6.0 ENGINE SERVICE (Refer to Section 5.0 Parts Lists for illustration)

6.1 SPECIAL TOOLS REQUIRED



6.2 ENGINE TOP END

6.2.1 CYLINDER HEAD

The Cylinder Head (31) can be pulled from the Cylinder after removing the 6 Nuts (22) and Washers (21). When reinstalling the Head, always use a new Gasket (19).

Note that the Washers (21) are to be installed with the concaved face towards the Head.

Torque to 10 lbf.ft (14 N-m)

6.2.2 CYLINDER

The Cylinder (18) can be removed from the Crankcase (1) by first removing the 4 Nuts (4) and Washers (3) then pulling it away from the Crankcase and sliding it off the Piston (15).

Check cylinder bore for damage, scoring or wear. (Maximum Wear .004” / .1 mm. diameter)

(Piston to wall max side clearance .02 mm -.09 mm: .0008”-.0035”)

6.2.3 PISTON

Remove Clips (13) and slide out the Piston pin (14) pull the Piston (15) away from the Crankshaft (10). Note that there are 2 Washers (11) one on each end of the Pin Bearing (12) (take care that they do not drop into the Crankcase when the Pin is removed).

The Piston Pin Bearing (12) will now slide out. An “arrow” stamped on the top of the Piston (15) always faces the Exhaust Port.

Check the Piston, Pin and bearing for wear, scores or damage.

(Piston to wall max side clearance .02 mm -.09 mm: .0008”-.0035”)

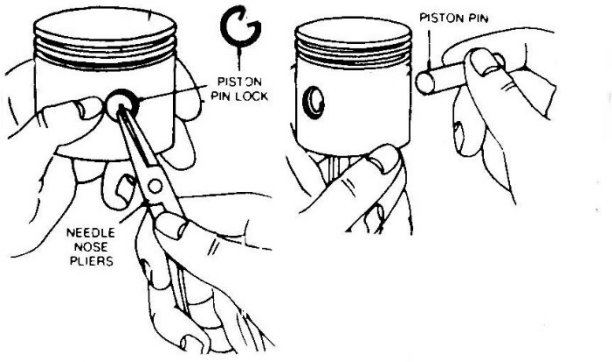
(Piston pin bore limit 16.006 mm (.6306”)

(Piston pin limit 16.0014 mm. (.63004)

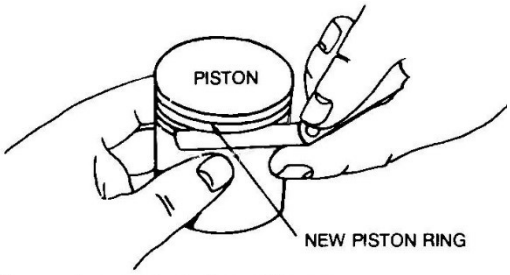
Check the size of the Rings (16) by comparing them to a new set or insert into the Cylinder just above the Ports and measure the gap between the ends, the tolerance is .012” to .015 “(0.3 to 0.4 mm). In order to make sure that the Cylinder is not worn, insert new rings in the Cylinder and compare the gap.

Maximum Ring end gap .5mm, .0195”

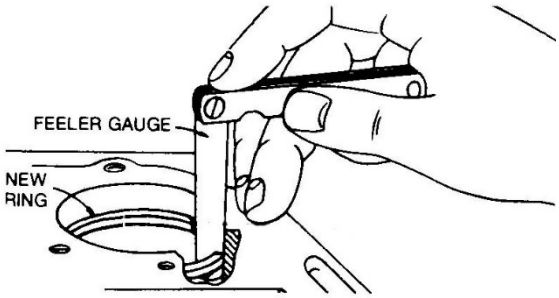
The grooves of the Piston can be cleaned from Carbon by using an old Ring or a Groove cleaning tool. Check the side clearance of the Ring in the groove .002” to .003” (.05 to .08mm). When refitting the rings, note that the Ring grooves are pinned to prevent the rings from rotating.



Removing the wrist pin and connecting rod from the piston



Measuring piston ring side gap



Measuring the piston ring gap

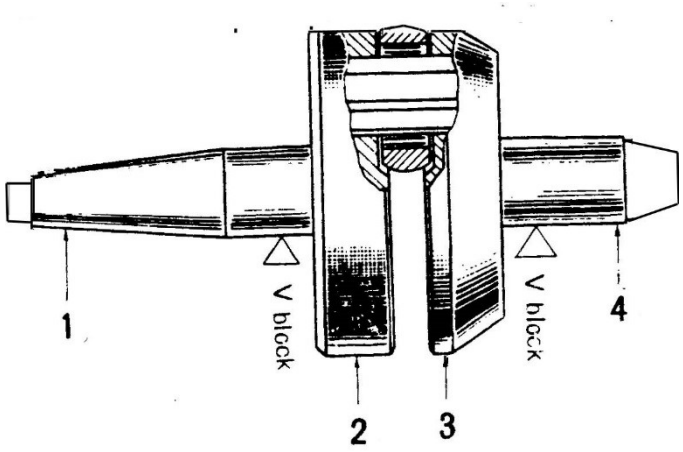
6.3 CRANKSHAFT & CRANKCASE

To remove the Flywheel (16B, pg8), use puller #72PSO10-0080256.

To remove the Crankshaft (10) it is necessary to first remove the 6 Bolts (5) and split the Crankcase (1). It may be necessary to Heat the area around Bearing Housing to a Maximum temperature of 400º F. (200°C). Remove Seals (8).

The Crankshaft (10) is a Factory assembled Unit and must be replaced as a unit if it shows signs of excessive wear or damage. An overheated Bearing (9) can indicate a bent shaft.

The Shaft should also be checked for being bent or twisted, this can be done by mounting the Shaft on V blocks and measuring the run out with a Dial Indicator.



Maximum diametric run out .03mm, .0012”

Do not remove Bearings from Crankshaft unless they are worn or noisy.

The bearings fit tight on the Crankshaft and have to be removed with the correct Bearing Puller.

New Bearings (9) should be heated on a Hotplate to a temperature of 300°F (150°C) and then installed. Making sure they sit against the face of the Crank.

The Crankshaft is not repairable. If the Crankshaft is damaged or worn, a new unit will have to be installed in the Engine.

When Reinstalling use Loctite 242 on Flywheel Nut.

Always use new Seals and Gasket in the Crankcase whenever the Crankshaft is removed for service.

To re-assemble the Crankcase, Heat one half of the Crankcase to a Maximum of 400º F. (200°C). And press the Crankshaft with the Bearings (9&10) all the way into the Housing. Repeat this procedure for the other side. Use a new Gasket (4) between the halves.

When the Crankcase has cooled, the new Seals (8) can be installed. Make sure that the lip of the Seal faces inwards and the outside edge of the Seal is flush with the Crankcase flange. Always install new Seals as heat can damage the Rubber parts

6.4 REMOVING CARBON

As part of the normal service, Carbon, which builds up on the Cylinder Head and around the Exhaust Port has to be removed. Care must be taken not to scratch the Metal surfaces or to let the loose Carbon get onto or into any of the Engine Parts. On the Cylinder Head, only the soft Carbon has to be removed.

6.5 TORQUE SETTINGS

- **Spark Plug** 14.5 lbf.ft (20 Nm)
- **Cylinder-to-Base Nuts** 15 lbf.ft (21 Nm)
- **Cylinder Head Screws** 10 lbf.ft (14 Nm)
- **Crankcase Halves** 10 lbf.ft (14 Nm)
- **Flywheel Nut** 33.5 lbf.ft (45.5 Nm) Use Loctite 242 on nut.
- **Muffler-to-Cylinder Screws** 18.5 lbf.ft (25Nm)
- **Muffler Bracket Studs** 12 lbf.ft (16.8 Nm)Apply High Temperature Never Seize
- **Engine and Frame Mounting Screws** 18 lbf.ft (24.5 Nm)
- **Plastic Manifold to Cylinder (#72PSO10-0010137)** 4 lbf.ft (5.6 Nm)
- **Air Filter Box to Carburetor/Manifold (# 72PSO10-0028137)** 1.6 lbf.ft (2.24 Nm)

6.6 WEAR LIMITS

- **Cylinder** Maximum Wear 0.1mm, (.004") diameter
- **Piston-to-Wall** max side clearance .02 mm -.09 mm: (.0008"-.0035")
- **Piston** to wall max side clearance .02 mm -.09 mm: (.0008"-.0035")
- **Piston Pin Bore** limit 16.006 mm (.6306")
- **Piston Pin** limit 16.0014 mm. (.63004)
- **Rings** Maximum Ring end gap .5mm, (.0195") Minimum .3mm., (.011")
- **Side clearance of the Ring** in the groove .05 to .08mm: (.002" to .003").
- **Crankshaft Bearing** Maximum diametric run out .03mm, (.0012")

6.7 ELECTRICAL

6.7.1 IGNITION SYSTEM

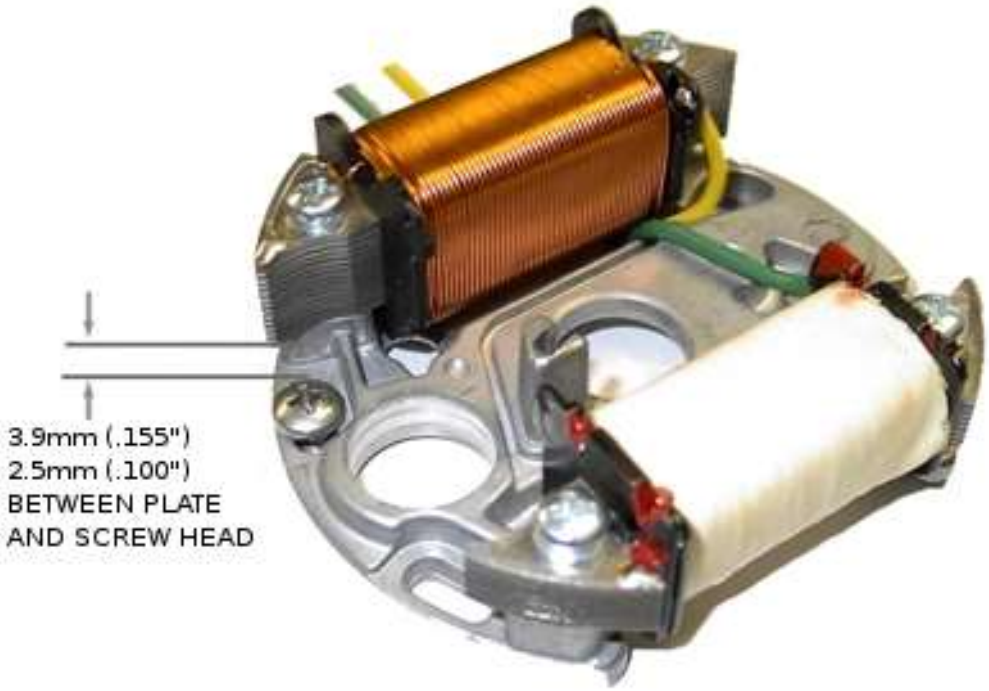
For illustrative purposes refer to drawing in section 5.13
The Ignition system is solid state, which, apart from the Sparkplug requires no service or adjustment. Parts found to be faulty must be replaced.

If the Ignition system is suspected, follow these diagnostics:

1. Remove the Sparkplug and check for spark using a new Sparkplug. Make sure the kill Switch is in the ON position.
2. If no spark is seen, remove Terminal B from the Coil. This removes the Kill Switch and the Over speed Switch from the circuit. Re-test for Spark. Either could be faulty or there could be a short in one of the Leads.
3. Disconnect Terminal C from the Coil and check the continuity to ground of the Coil and the Lead (Green) to the Magneto Coil. An open circuit indicates a faulty Coil. On the Coil, the Ground wire (red) should be checked for being either broken or disconnected. A dead short on the Magneto lead can indicate a short to Ground on the Lead itself.
4. Check the resistance of the Sparkplug Lead. It should be between 10KΩ and 20KΩ if the reading is higher, replace the lead with a resistor type cable.
5. A weak Spark could indicate a problem in the Magneto. Check for Metal chips or dirt between the Magnets and the Coils. Also check that the Gap between them is within limits.

6.7.2 IGNITION TIMING

Ignition timing can be reset by loosening two screws on the coil/stator plate and rotating the plate until there is a 2.5mm (.100") - 3.9 mm (.155”) gap between the head of the screw and the cast boss on the plate. (See photo this page)



7.0 WINTER STORAGE

- Make sure all pump ends, sprinklers and hoses are well drained.
- Disconnect pump end unit and rotate in several directions to remove as much water as possible.
- Add one cup (¼ litre) of antifreeze/glycol through the discharge end of the pump end unit
- Disconnect the fuel line (if applicable) or empty the fuel tank. Run the motor until it quits to vacate any fuel in the carburetor.
- Remove Pump end
- Store hose in a dry location, and free from mice or other rodent infested areas, they love to chew on hose

Note: Pump end must be protected from freezing (see warranty)

8.0 WARRANTY FOR WICK® 375 WATER PUMP

8.1 COVERAGE

Subject to the conditions, limitations and exclusions set forth below, this warranty covers defects in material and workmanship under normal use and service for the lesser of one hundred and eighty (180) days or fifty (50) hours of operation, from the date of purchase by the consumer.

8.2 REMEDIES

Mercedes Textiles Ltd. will repair or replace, without charge for parts or labour, any part it supplies which it deems defective pursuant to the coverage described above, at any authorized Mercedes Textiles Ltd. distributor or designated dealer. To obtain this repair or replacement, the consumer must return the Wick® 375 pump to the Mercedes Textiles Ltd. distributor or designated dealer.

8.3 EXCLUSION

This warranty does not cover parts or accessories not supplied by Mercedes Textiles Ltd. or damage incurred through the use of such parts and accessories. This warranty shall not apply to the Wick® 375 pump when used in a manner that Mercedes Textiles regards as an unusual or unapproved operation.

In addition, this warranty shall not apply to any Wick® 375 pump engine that was:

1. Operated without oil or with improper fuel mixture, or with any oil other than a BIA certified TC, or premium TCW3 (for air-cooled engines), oil.
2. Modified or altered, including but not limited to, modifications resulting in increased revolutions.
3. Damaged by overheating due to excessive dirt in cooling fins, or by dirt entering the engine.
4. Merely requiring normal tune-up or adjustment of carburetor, breaker points or spark plugs.
5. Improperly repaired in a manner which affected the quality or reliability of the Wick® 375 industrial engine.
6. Subjected to more than normal usage. This relates to circumstances where an examination of the engine indicates that the malfunction is the result of normal wear of a part or parts operating under adverse conditions where a shorter service life could be expected. Warranty coverage is not applicable to engines where a normal use has exhausted the service life of a part.
7. The result of failure of the owner to observe operating instructions.
8. Failure to observe proper winter storage procedures.

Mercedes Textiles Ltd. cannot assume responsibility for consequential damages such as loss of use of the product, loss of time, inconvenience, expense for gasoline, telephone, travel, transportation or lodging, loss or damage to personal property, or loss of revenue.

This is the only warranty, expressed or implied, made by Mercedes Textiles Ltd. applicable to its Wick® 375 pump, and Mercedes Textiles does not authorize any person, firm, corporation or representative to make any warranty or to assume any other liability for Mercedes Textiles Ltd.

Note: All specifications are subject to change without notice.

INNOVATION DELIVERED.

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