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PETERBOROUGH, CANADA

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Part No. 426902

NU-17

instruction manual

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Part No. 426002

GENERAL INFORMATION

If you are a new owner, some of the terms applied to Power Chain Saws may need explanation, therefore we suggest you study illustrations portrayed throughout this Manual.

A complete knowledge of your Chain Saw is as important as knowing the operation of your motor vehicle. Throughout the pages following in this Operator's Manual you will find detailed instructions on the care and maintenance of your Chain Saw. Adherance to these instructions will give you better performance, more efficient operation and lower maintenance costs.

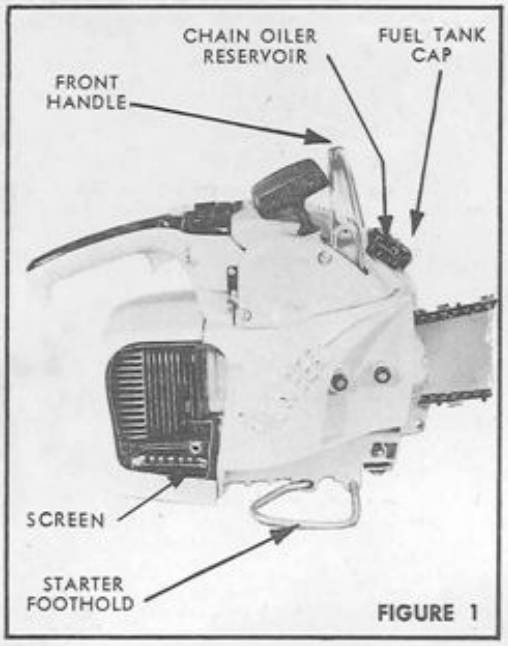


FIGURE 1

Your Power Saw has received a factory run-in, but the operator should treat his saw as any new equipment for a 10-day break in period. Always let your motor idle to warm up before operating at full capacity. Take time to clean and retension all nuts and screws; KEEP YOUR EQUIPMENT CLEAN. The operator's initial care will most assuredly result in a longer life for his Chain Saw.

The following instructions are IMPORTANT and will add to the life of your chain and cutter bar with assured efficient operation.

1. Install your chain properly and bear in mind that the sharp cutting edge of the chain moves forward from the motor around the nose of the bar. Adjust the chain tension as noted in Figure 4.
2. Run the chain at low speed for almost five minutes giving plenty of oil during this period.
3. Switch off your engine and readjust chain tension. A loose chain may jump the bar or damage your sprocket assembly. Never adjust chain with motor running.
4. Recheck this tension often until your chain is fully broken in.
5. Keep your chain well lubricated during cutting periods.
6. If possible, leave your chain in an oil bath overnight. This insures internal lubrication which is very important to the inner bearing surfaces of the chain.
7. Keep your chain sharp. A light touch-up with a round file will prevent damage caused to cutters and side links while operating dull. A very dull chain takes an extra amount of filing life from the chain.
8. Study your Chain Pocket Instructor which deals explicitly with the care and maintenance of your cutting attachments. Remember, proper maintenance pays off in both time and money.

PREPARING YOUR CHAIN SAW FOR USE

As this is a new saw it will be necessary to assemble or attach the pivot grip, foothold loop, cutter bar and chain to the motor unit and properly adjust the chain tension. Follow these steps for correct assembly.

1. Remove the strut and outer guide plate from the motor unit. (Figure 2.)
2. Install the pivot grip and securely tension the bolts. (Purchase from your dealer)
3. Install the cutter bar by placing over the two studs located on the side of the crankcase. You will note the adjusting slots which permit the forward and backward movement of the cutter bar during chain tension.
4. Install the outer guide plate making sure the contoured flange of the plate is outermost to permit free movement of the chain.
5. Install the strut or chain cover. Replace the two washers and strut nuts but do not fully tension until the adjusting pin inside the strut has properly engaged in the slot of your cutter bar.
6. Tighten your chain, using the adjusting screw. (Figure 3). Grip the chain and assure its free movement around the bar. CAUTION — Use gloves or a cloth to protect your hands as illustrated in Figure 4.
7. Secure the two hexagonal nuts which attach the strut assembly and cutter bar to the motor unit.
8. Now that you have secured all the nuts, again check the movement of your chain by revolving it around the bar by hand.
9. Foothold Loop. See page 25

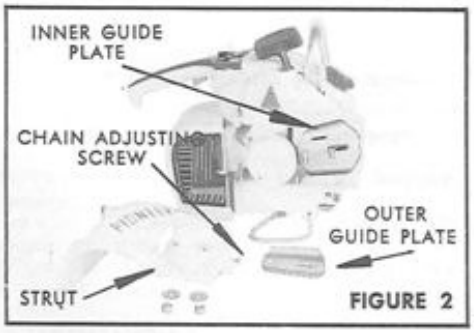


FIGURE 2

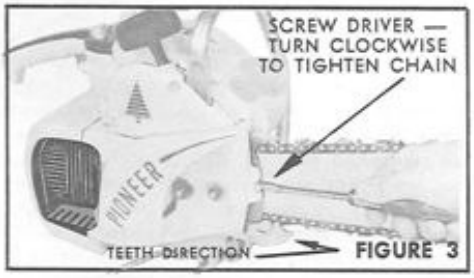


FIGURE 3

FUEL AND LUBRICATION

The lubrication of all internal moving parts of your Chain Saw is solely supplied by oil previously mixed with gasoline. Therefore you will realize the importance of properly preparing your fuel mixture. Factory recommendation is: 1 Part of SAE 40 motor oil to 16 parts of regular gasoline, or a ratio of 1 pint of oil to 2 gallons of regular gasoline. Do NOT use high test or leaded gasoline.

MIXING PROCEDURE: Pour into a clean metal container half the amount of gasoline to be mixed, then add all the oil required. Shake or stir until thoroughly mixed.

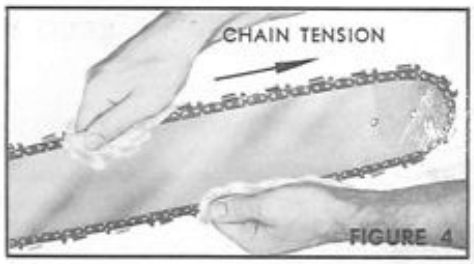


FIGURE 4

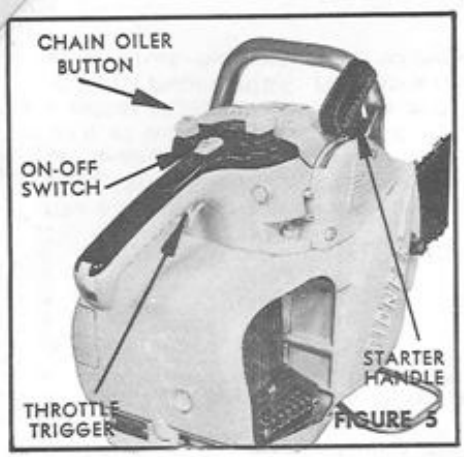


FIGURE 5

FIGURE 6

Then add the balance of the gasoline to make the correctly proportioned fuel mixture. Now again shake or stir this mixture until it is properly and permanently blended. DO NOT MIX DIRECTLY INTO YOUR CHAIN SAW FUEL TANK. As you pour the mixture into your Chain Saw fuel reservoir use a fine screen in the funnel to eliminate any water or foreign particles. (Figure 8) Before removing the gas cap for refuelling, clean away any dirt and oil from around the filler cap.

CHAIN OILER

Your Chain Saw is equipped with an efficient manually operated chain oiler. Proper lubrication of the cutting chain is essental to minimize pitch fouling, wear and power loss by friction. This is carried out through the chain oiler. Study the instrument panel on your saw and note the position of the oiler button. (Figure 7) A depression of the button with your thumb feeds the essential oil direct to the chain. Use clean oil of a good SAE 10 variety. There may be local conditions or seasonal temperatures which necessitate the variance in oil weight. See your local Chain Saw dealer and follow his recommendation. We recommend that you obtain a chain oil of a penetrating type with tacky qualities in order that it will not be thrown off the end of the chain before accomplishing its full lubrication.

STARTING INSTRUCTIONS

1. Check the position of your carburetor setting as outlined on Pages 4 and 5.
2. Fill fuel tank with properly mixed fuel as previously explained. Fill your chain oil reservoir with the recommended oil. Figure 1.
3. To start the motor, place the chain saw in a convenient position where it will sit firmly when you pull the starter handle.
4. Slide your ignition switch on the control panel forward to the ON position. Figure 7.
5. This model "400" is equipped with a Primer Pump. The standard manual choke system has been eliminated.
6. On a new saw, or with a completely dry system, several strokes of the primer button will be necessary to load the primer pump.

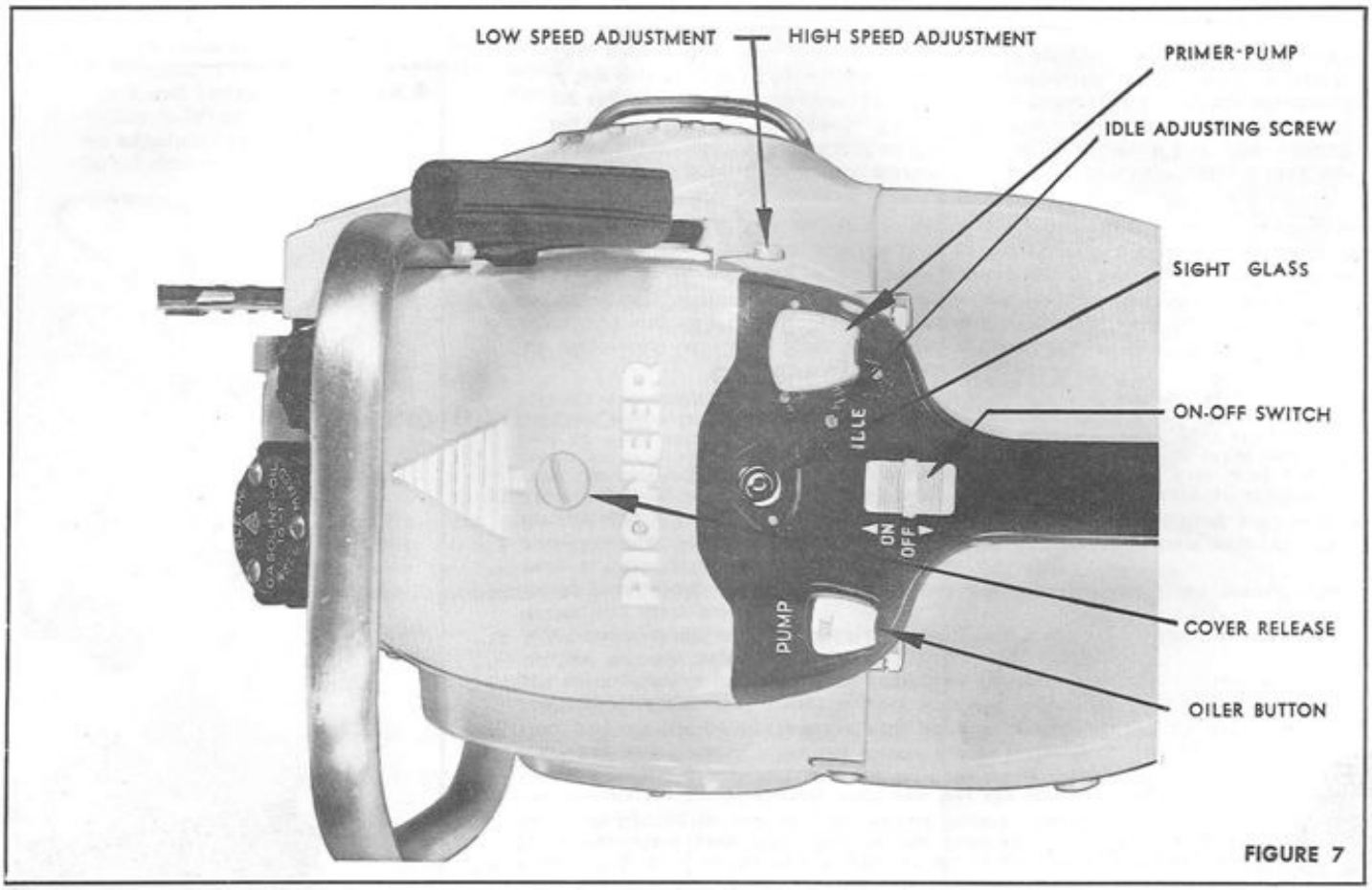


FIGURE 7

FIGURE 8

7. For initial or cold starting, two strokes of the primer button is all that is necessary once fuel is noted through the sight glass.
8. Take a firm hold on the rear handle, at the same time hold throttle trigger to full open. Place your right foot on the foothold loop. This will prevent the unit from tipping as you pull the starter handle. Figure 6.
9. Pull the starter handle slightly until you feel the starter engage, then give the starter handle sharp, firm, long pulls until the motor starts.
10. When the motor starts, allow the starter handle to recoil to its correct position.
11. Until you are completely familiar with this new system, the primer may be used and treated as a manual choke; in other words, if your motor fires then falters, give one extra prime, more if required, until your motor is drawing its correct fuel mixture through the carburetor.
12. A hot motor should restart without priming. Hold the throttle fully open and give starter long sharp pulls.
13. Should your motor, when hot, fail to restart and is not flooded, after several trial pulls a single prime may facilitate starting.
14. Avoid flooding. Do not prime a hot motor without first trying to start with only the throttle open. A fuel flooded motor may take 6 to 8 pulls to clear itself and restart.
15. After warm-up, for peak cutting performance it may be necessary to slightly vary the carburetor adjustments. Adjust the low speed needle first until you obtain an even idling speed. The high speed adjustment should be made under load, or while cutting, with full throttle until, by a knowledge of your saw, you feel the motor is giving you maximum power and cutting speed. Once these settings are accomplished, retain these positions for the future.

CARBURETOR ADJUSTMENTS

All carburetors on Chain Saws are tested and adjusted at the factory. Little adjustment, if any, is required. Before making any adjustment, note the present position and move only slightly in the direction indicated on your instrument panel.

1. The idle speed adjusting screw, lower right on your instrument panel, controls the idling speed of your motor and is so set that the motor will idle without moving the chain. This adjustment should not require further attention on your part. (Figure 7).
2. The low speed adjustment needle, marked L on side of carburetor body, is the lower of two adjustment needles located on the right side of motor. Fig. 9. This controls the fuel mixture at idling speed. To make any slight adjustment, it opens by turning slightly to the left and closes by turning to the right. For a complete adjustment of this control, shut off by turning to the right until seated. Do not close too tightly. Then open ¾ of a turn. This may vary slightly according to the individual chain saw and operation needs.

3. The high speed adjustment needle, marked H on the side of the carburetor body, is the upper of the two adjustment needles located on the right side of the motor, Fig. 9, and controls the fuel mixture when throttle is fully open. To adjust, turn slightly to left to open, slightly to the right to close. To completely readjust, turn the adjustment needle completely to the right until it seats, then open ¾ of a turn. Do not close too tightly. Fig. 9.

Excessive smoking, lack of power and excessive vibration indicates that the carburetor fuel mixture adjustments are set too rich. No power and stalling under load or cutting conditions indicates that the carburetor fuel mixture adjustments are set too lean. Only when these conditions occur should the carburetor adjustment be tampered with. See Starting Instructions.

OPERATING INSTRUCTIONS

If you have not previously operated a chain saw, carefully prepare the unit as already suggested then cut a few lengths from a small log to get the feel of the chain saw in action. When starting a cut, don't race the motor and jam the saw into the wood. Place your pivot grip against the log then bring your motor slowly up to full throttle and, at the same time, raise your rear handle which will cause the chain to engage and cutting action to commence.

Your chain saw is a direct drive type and because of its high speed cutting action do not exert pressure to force it through the wood. A light but firm touch will get more wood cut with less effort on your part. When coming to the end of the cut, be prepared to release the throttle immediately the cut is finished. This prevents racing of your motor or the same action as declutching your car with your foot still on the throttle.

Be generous with the chain oil. Check the reservoir supply frequently. In cutting pitchy wood or in cold weather it may be necessary to thin your chain oil with kerosene. Kerosene helps the oil to flow more freely and keeps wood resins from fouling your chain.

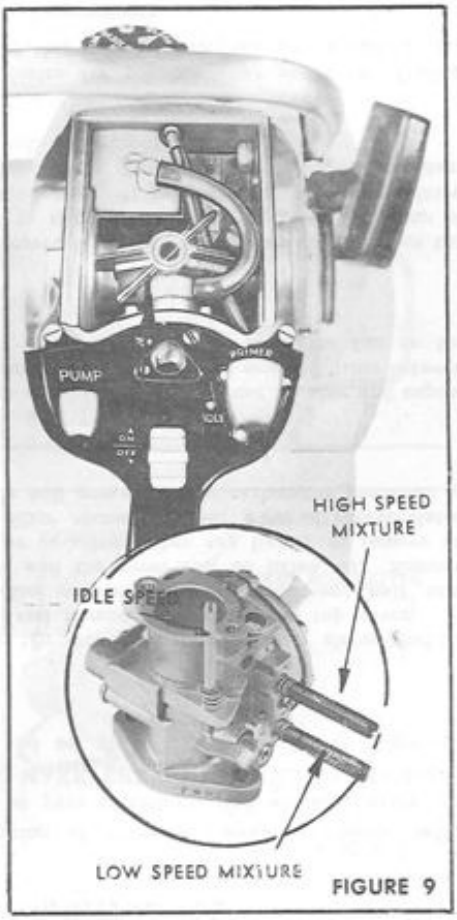


FIGURE 9

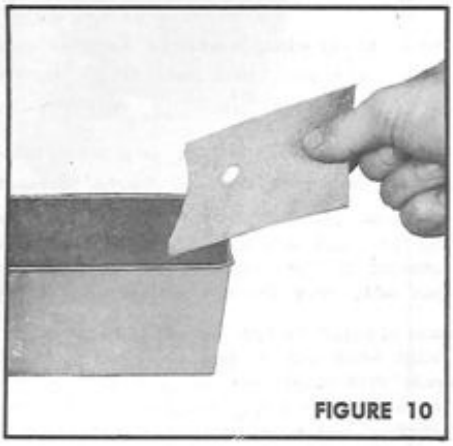


FIGURE 10

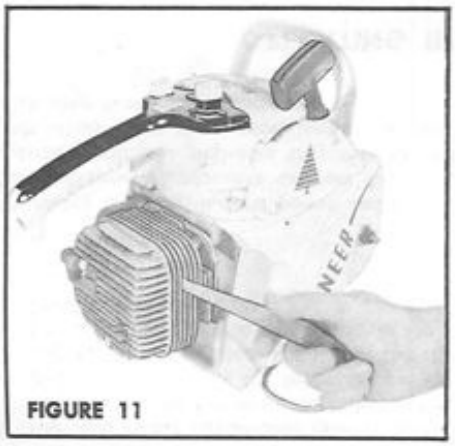


FIGURE 11

PREVENTIVE MAINTENANCE

Preventive maintenance is the elimination of potential causes of trouble before they occur. To realize the full value of your investment and prevent unnecessary repair bills together with loss of use, MAKE PREVENTIVE MAINTENANCE A MUST. Check your chain saw daily and set up a system of regular inspections and tune-ups.

1. AIR CLEANER: Your air cleaner is the specially processed filter element which fits securely on top of the air box and immediately under the top cover. To service, with a screw driver turn the centrally located screw one half turn to the left which releases the catch and the cover can be lifted off. Remove the screen and wash in clean gasoline or solvent then tap lightly to remove all moisture. (Figure 10). While the filter element is off, wipe all accumulated dust away from the carburetor. This will prevent many carburetor problems at a later date.

2. CYLINDER HEAD AND FINS: Once a week remove the rear housing and expose your power head. With a thin tool remove any accumulated sawdust from between the fins. This increases the cooling effect of forced air from the fan on the flywheel. (Figure 11).

3. EXHAUST PORTS: While the rear cover is off remove the two stud nuts on the exhaust chamber. Turn your motor to a position where the piston is clear of the exhaust ports. With a blunt edged tool, carefully remove any accumulated carbon and wipe away small particles before reinstalling the exhaust chamber. Replace the exhaust gasket if required. (Figure 12).

4. IGNITION: Check your spark plug wire for possible wear or break. During reassembly be careful that no part of this wire is permitted to rub against the flywheel.

5. SPARK PLUG: As in the case of all 2-cycle motors your spark plug should be checked and kept clean of carbon and readjusted to a gap of .025 inches.

6. MAGNETO: Do not inspect, remove or adjust the magneto unless absolutely necessary. To check the breaker point gap which should be maintained at .020 inches, remove the plastic cover and slowly turn the engine over until the points are open by the cam, then with a feeler gauge, check to .020. It is recommended that all magneto service work be carried out by your chain saw dealer. (Figure 13).

7. CARBURETOR: As mentioned on Page 4 and 5 do not change the carburetor needle settings unnecessarily. However, under preventive maintenance, inspection and cleaning of the pick-up head and line are necessary in case foreign particles may have entered the fuel mixture. It is also recommended that the cover of the fuel filter box be removed and the fuel filter felt cleaned or replaced. (Figure 9). Should the carburetor, for any reason, need a complete overhaul, this should be performed by your servicing dealer.

8. CLUTCH: The clutch assembly of your chain saw is of a centrifugal type and fully automatic. The clutch engages when the throttle is opened to a point where the engine revolutions cause the clutch shoes to engage. Do not slip your clutch through overloading as it will wear out the linings. Practice immediately releasing the throttle if the chain is pinched as well as at the end of a cut. (Figure 14).

9. CUTTER BAR: Make sure the cutter bar is clean at all times to assure sufficient chain lubrication. The lubricating oil enters the cutter bar groove when your manual oil pump is operated, the chain oil is then picked up by the moving chain and lubrication carried out throughout the length of the bar. (Figure 15). Check the cutter bar for wear at regular intervals and make a practice of turning it over from time to time to make sure that any wear encountered is evenly distributed. Should a wire edge be noted along the rail

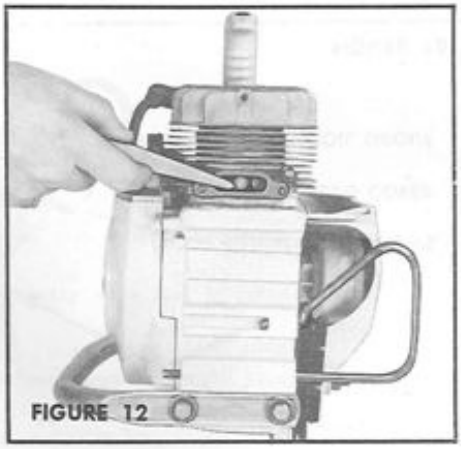


FIGURE 12

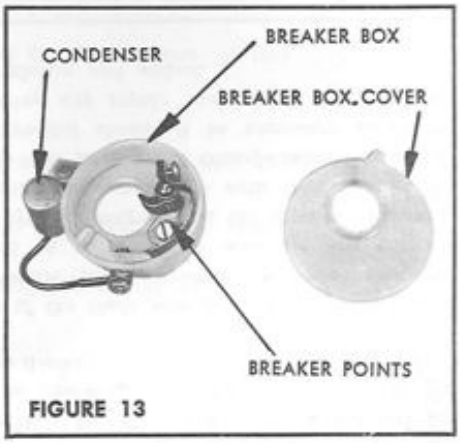


FIGURE 13

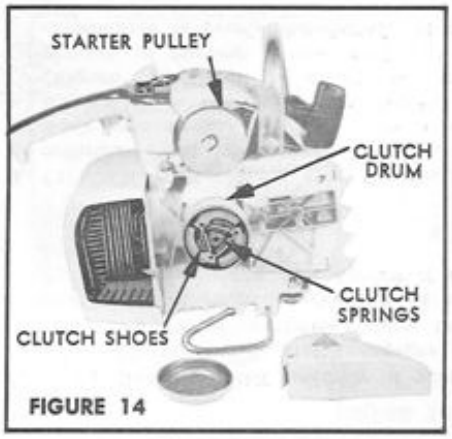


FIGURE 14

of the bar this should be removed with a flat file. The recommended tool for the servicing of cutter bars and the checking of chain is Bar Gauge No. 426235, obtainable through your service dealer.

10. Figure 16 illustrates the magneto side of the chain saw with the covers off and points on maintenance which may require your attention are noted thereon. Keep the adjustment screws tensioned at all times to maintain the correct amount of clearance gap between the flywheel magnet and the three laminations of the coil assembly. When adjustment is necessary set with feeler gauge to .008. Check the position of the switch wire to prevent damage when installing covers. Use Tool #470382 to pull flywheel should it be necessary to check your breaker points or condenser. During any repair work check the condition of the sealing gasket between the crankcase and airbox.

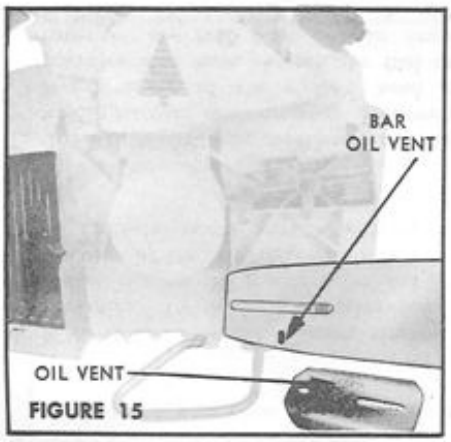


FIGURE 15

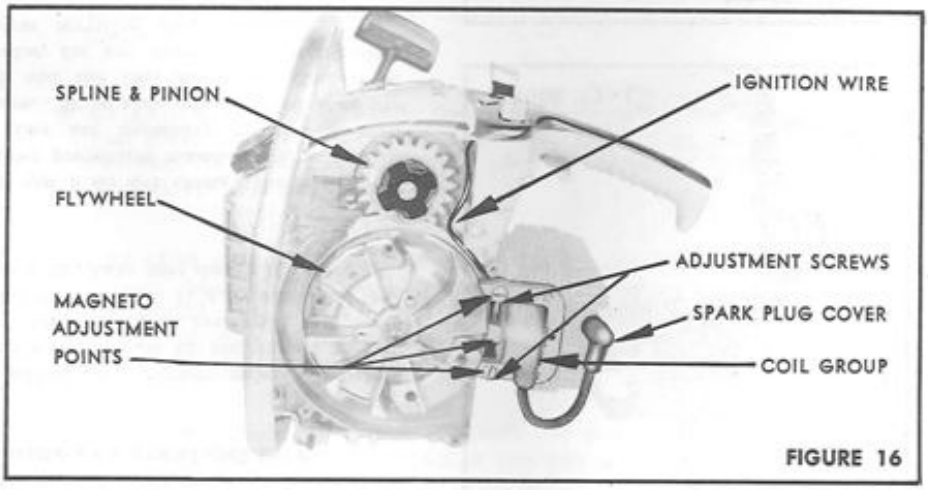


FIGURE 16

PRIMER PUMP INSTRUCTIONS

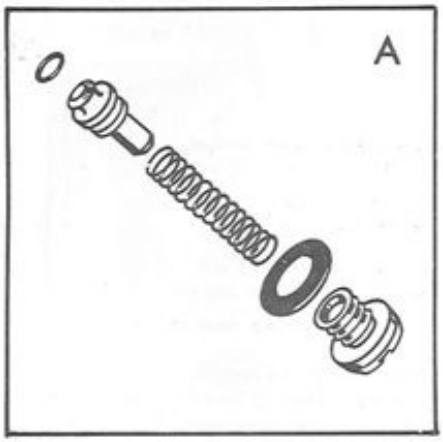
1. This model "400" is equipped with a Primer Pump. The standard manual choke system has been eliminated.
2. On a new saw, or with a completely dry system, several strokes of the primer button will be necessary to load the primer pump.
3. For initial or cold starting, two strokes of the primer button is all that is necessary once fuel is noted through the sight glass.
4. Until you are completely familiar with this new system, the primer may be used and treated as a manual choke; in other words, if your motor fires then falters, give one extra prime, more if required, until your motor is drawing its correct fuel mixture through the carburetor.
5. A hot motor should restart without priming. Hold the throttle fully open and give starter long sharp pulls.
6. Should your motor, when hot, fail to restart and is not flooded, after several trial pulls a single prime may facilitate starting.
7. Avoid flooding. Do not prime a hot motor without first trying to start with only the throttle open. A fuel flooded motor may take 6 to 8 pulls to clear itself and restart.

Carburetor Adjustment:

Your carburetor has been factory tested and set, with Hi Speed adjustment range ¾ to 1 full turn and your Low Speed range 1 to 1¼ turns.

NOTE: Always maintain your settings on the rich side while cutting to obtain full power and a cooler operating motor.

Check position of carburetor adjustments as recommended (slightly rich), then give two strokes of the primer pump button after fuel is noted in the sight glass.

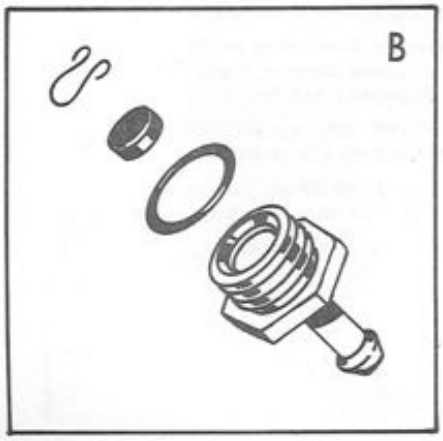


PRIMER PUMP - SERVICING

If fuel is not noted in the sight glass while priming, check tank for sufficient fuel.

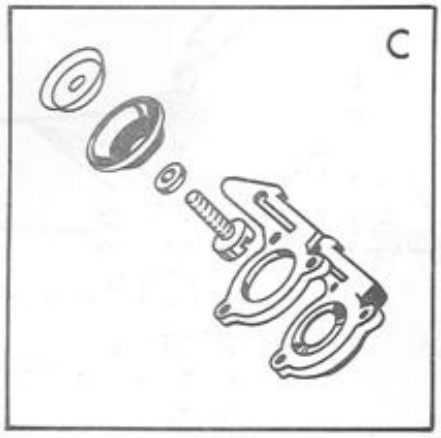
Next, remove top cover and air filter. Check fuel line to pump inlet housing and connection of fuel line to pickup line in the airbox.

If all connections are secure, disconnect fuel line and pickup line in the airbox. Remove the two screws at the front end of the control panel and lift complete assembly off rear handle.



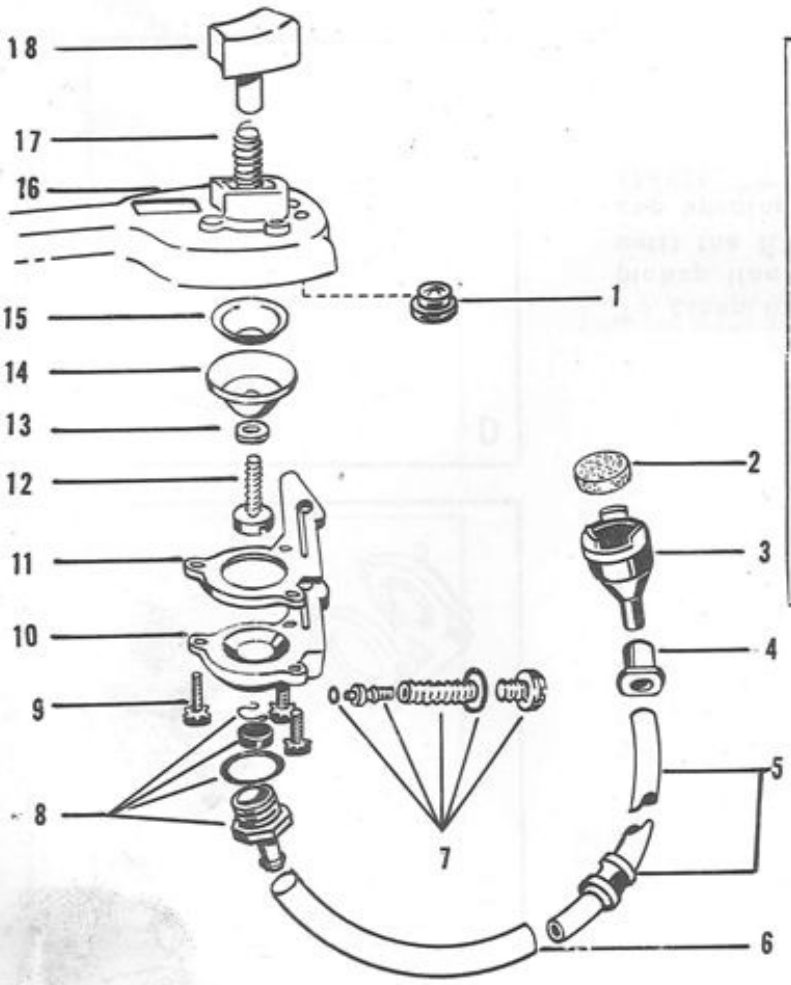
Remove exit valve, illustrated in Figure A. Examine for dirt, then wash in clean fuel mixture. Before reinstalling give one stroke of the primer button. Sufficient fuel is contained in the system to flush out any dirt in the exit valve seat.

To examine the inlet valve, disconnect fuel line from valve housing, part number 426833. Remove valve housing Wash in clean fuel mixture. Examine for dirt. To examine valve disc, remove clip, part number 426824. See Figure B.



To examine or service the pump diaphragm, remove four body screws, part number 307192. Remove pump body, part number 426832. Remove primer button screw, part number 426821. This permits examination and cleaning of the pump diaphragm, part number 426815. See Figure C for assembly sequence.

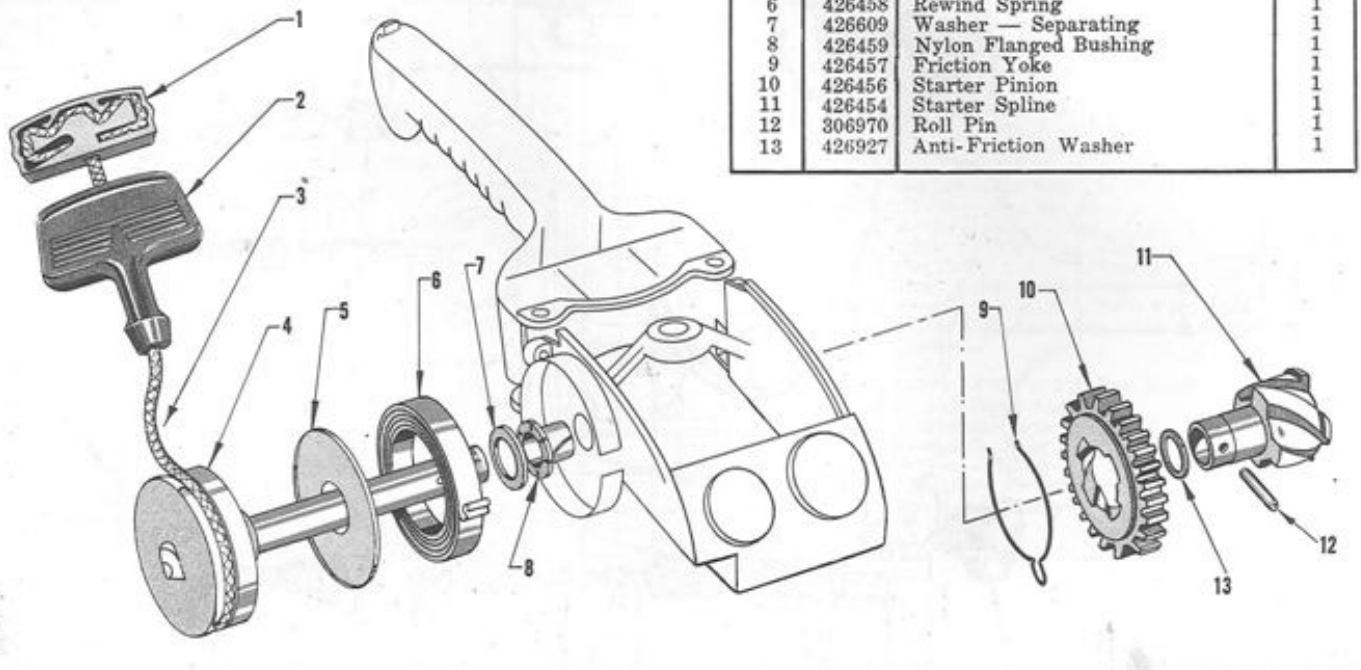
To clean or service the filter, disconnect fuel line and pickup line in airbox. Slowly draw the pickup line back until the filter body can be reached and drawn out the gas cap opening far enough to service the filter, part number 426826. To install, reverse procedure. See Figure D.

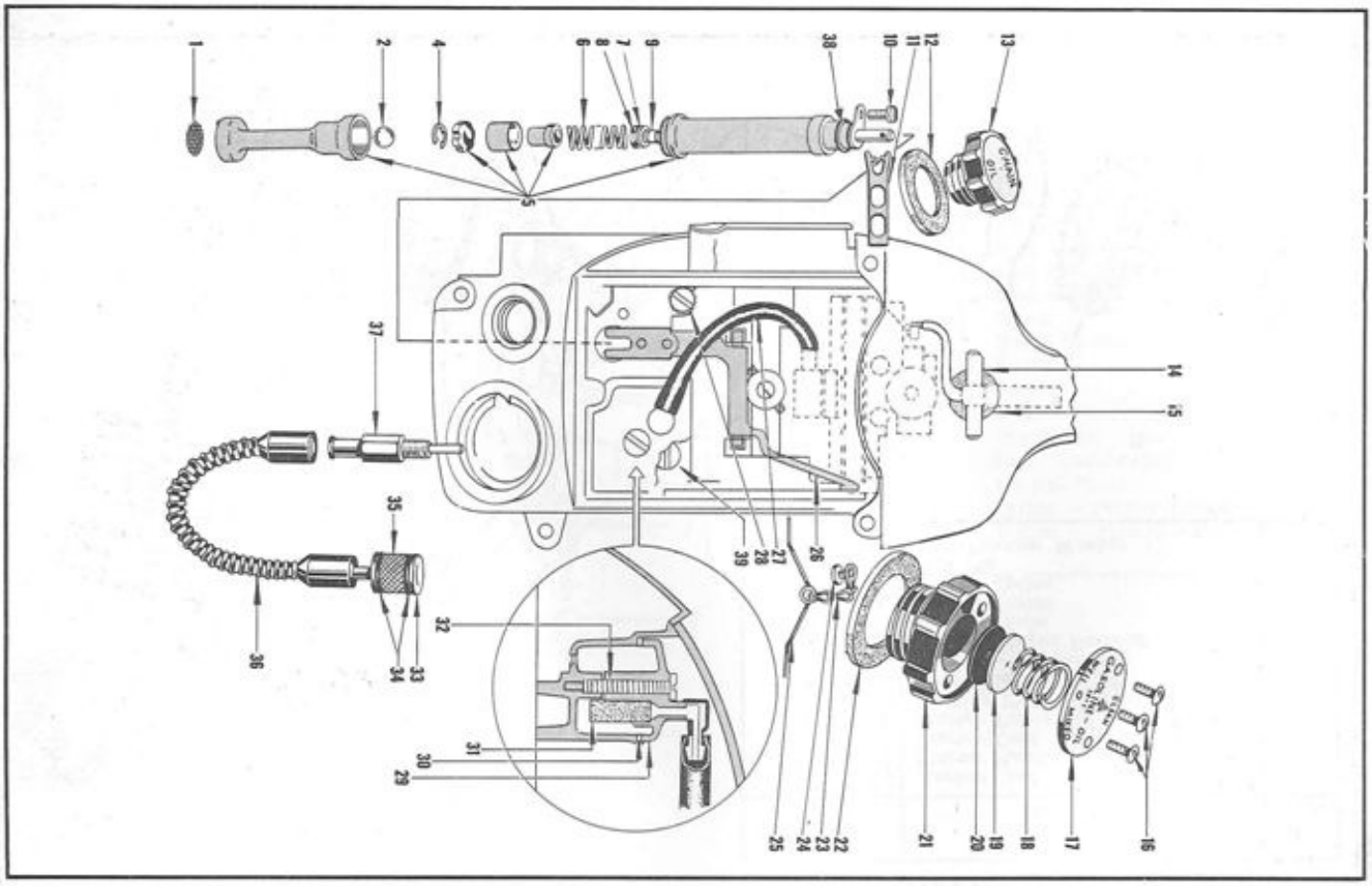


Item No.	Part No.	Description	Qty. Req'd
1	426831	Sight Glass	1
2	426826	Fuel filter—Primer	1
3	426823	Filter Body—Primer	1
4	426819	Seal Primer pickup line	1
5	470727	Primer Pick-up line Assy	1
6	426828	Fuel Line—Primer	1
7	470729	Exit Valve Assy	1
8	470728	Inlet Valve Housing Assy	1
9	307192	Screw	4
10	426832	Body—Primer Pump	1
11	426820	Gasket	1
12	426821	Screw	1
13	426926	Washer Diaphragm	1
14	426815	Diaphragm	1
15	426818	Cup - Diaphragm	1
16	426890	Control Panel	1
17	426822	Spring — Primer Button	1
18	426830	Button — Primer Pump	1

STARTER PARTS LIST

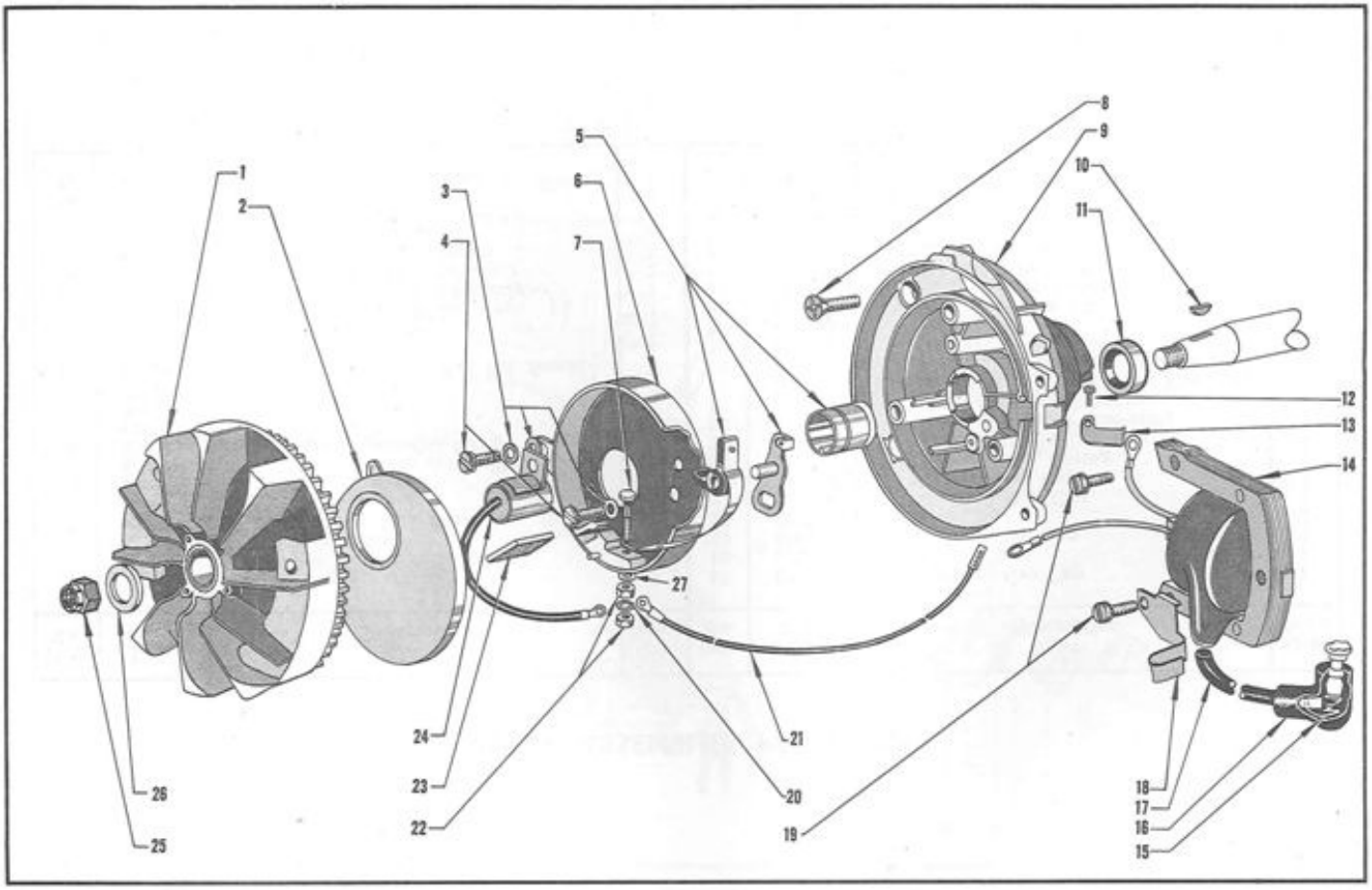
Item No.	Ref. No.	Description	Qty. Req'd.
1	304323	Anchor-Cord	1
2	602773	Starter Handle	1
3	426752	Starter Cord	1
4	470588	Starter Pulley	1
5	426524	Backing Plate — Rewind Spring	1
6	426458	Rewind Spring	1
7	426609	Washer — Separating	1
8	426459	Nylon Flanged Bushing	1
9	426457	Friction Yoke	1
10	426456	Starter Pinion	1
11	426454	Starter Spline	1
12	306970	Roll Pin	1
13	426927	Anti-Friction Washer	1





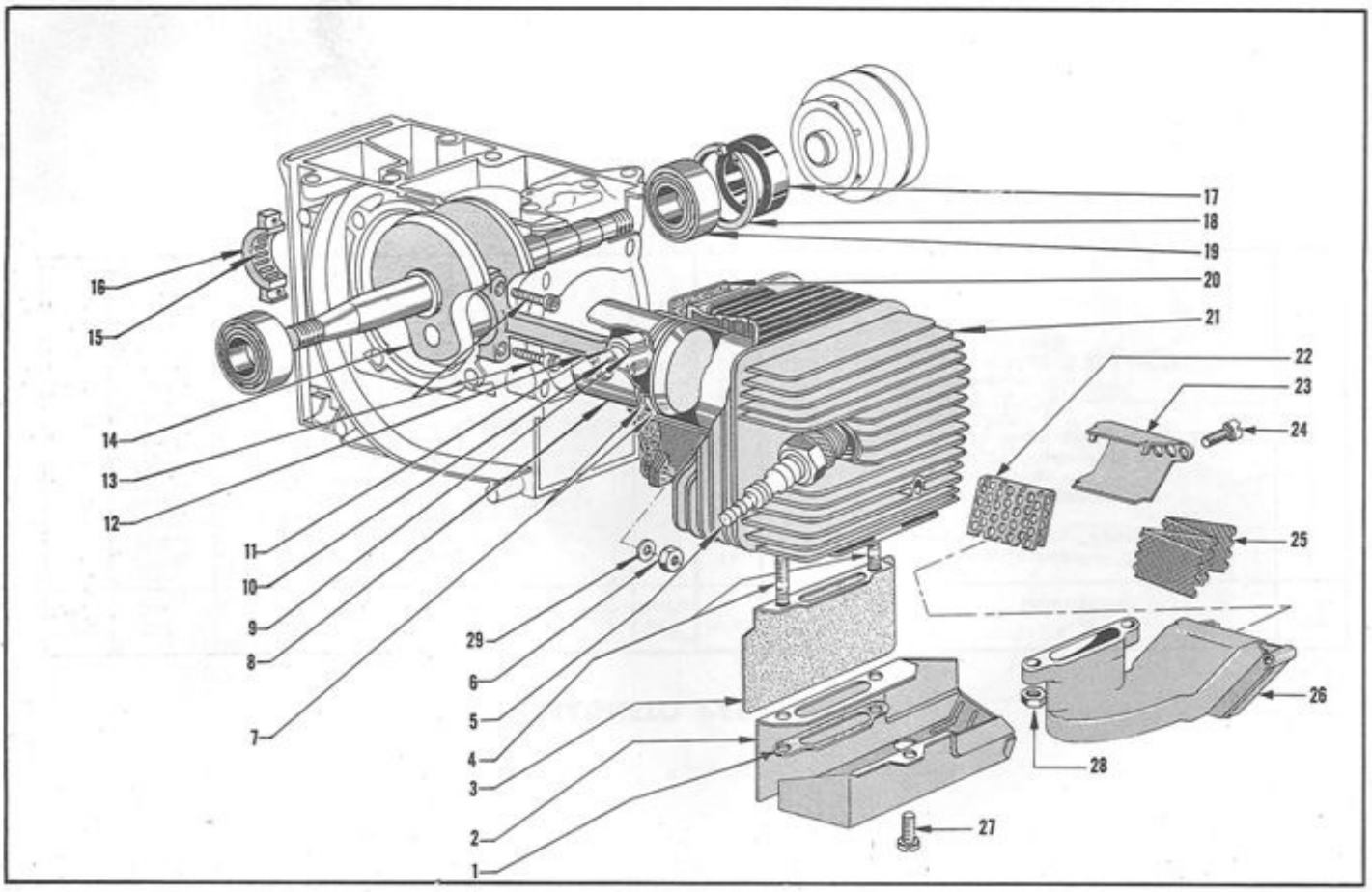
PICKUP ASSEMBLIES PARTS LIST

Item No.	Ref. No.	Description	Qty. Req'd	Item No.	Ref. No.	Description	Qty. Req'd
	470596	Oil Pump Assembly (Includes Parts Marked x)	1	18	426844	*Spring—Gas Cap	1
				19	425994	*Valve Plate	1
1	426474	xGauze—Filter	1	20	426013	*Valve—Gas Cap	1
2	426227	xBall—9/32 Dia. Steel	1	21	425716	*Gas Cap	1
				22	425087	*Gasket—Gas Cap	1
4	202755	xRetaining Ring	1	23	425719	*Chain—Gas Cap	1
5	470638	xOil Pump Body Assembly	1	24	425029	*Rivet—Lock Spring	1
6	426471	xSpring—Rod—Oil Pump	1	25	425718	*Lock Spring—Gas Cap	1
7	425028	x"O" Ring	1	26	470589	Oil Pump Lever Assembly	1
8	300154	xWasher	1	27	426465	Fuel Line—Carburetor	1
9	426470	xRod—Oil Pump	1	28	551705	Screw ¼ x 20 x 1 Sems Pan Head	1
10	305230	Screw-10x24x⅛ Pan Hd. Sems—Pump to Airbox	1	29	470672	Filter Cap Assembly (Cap & Elbow)	1
				30	426464	Gasket	1
11	426476	xClip—Oil Pump	1	31	426563	Felt	1
12	425074	Gasket—Oiler Filler Cap	1	32	307190	Screw—1024 x 1¼ Pan Head	1
13	470360	Oiler Filler Cap Assembly	1	33	470090	Pickup Head Assembly (Includes Parts Marked **)	1
14	426542	Pivot Pin—Throttle Lever	1				
15	426535	Seal—Throttle Trigger	1	34	304614	**Retaining Ring	2
	470726	Gas Cap Assembly (Includes Parts Marked *)	1	35	425317	**Screen—Pickup	1
				36	425343	Flex Fuel Pickup Line	1
16	425633	*Screw #6 x ⅜	3	37	426466	Fuel Line Adapter	1
17	426845	*Cover Plate—Gas Cap	1	38	303059	**"O" Ring	1
				39	426751	Screw—Air Box Filter Weil to C—Case	1



MAGNETO PARTS LIST

Item No.	Ref. No.	Description	Qty. Req'd	Item No.	Ref. No.	Description	Qty. Req'd
1	470604	Flywheel Assembly	1	15	510231	*Spring Terminal—"Sparky"	1
2	426516	Breaker Housing Cover	1	16	510232	*Rubber Cover—"Sparky"	1
3	303497	Washer—Plain	3	17	426527	*H.T. Lead	1
4	307193	Screw—Sems	2	18	426669	Clip—High Tension Wire	1
5	470788	Breaker Point Set	1	19	510397	Screw—Sems	2
6	426515	Breaker Housing	1	20	307247	Washer—Shakeproof #6	1
7	426522	Screw—Terminal	1	21	470784	Switch Wire Ass'y.—Mag. End	1
8	426567	Screw—¼ x 20 x ⅜ Phillips Flat Hd.	4	22	302437	Hex Nut	2
9	426440	Bearing Housing	1	23	510189	Oil Wick	1
10	425061	Woodruff Key—Flywheel	1	24	426528	Condenser	1
11	425076	Seal—Mag. End	1	25	425916	Flexloc Nut..7/16 Left Hand	1
12	307192	Screw—6/32 x ⅜ Pan Head Sems	1	26	304671	Washer—Plain	1
13	426508	Lead Clamp	1	27	307189	Washer	1
14	470685	Coil & Lamination (Includes Parts Marked *)	1				



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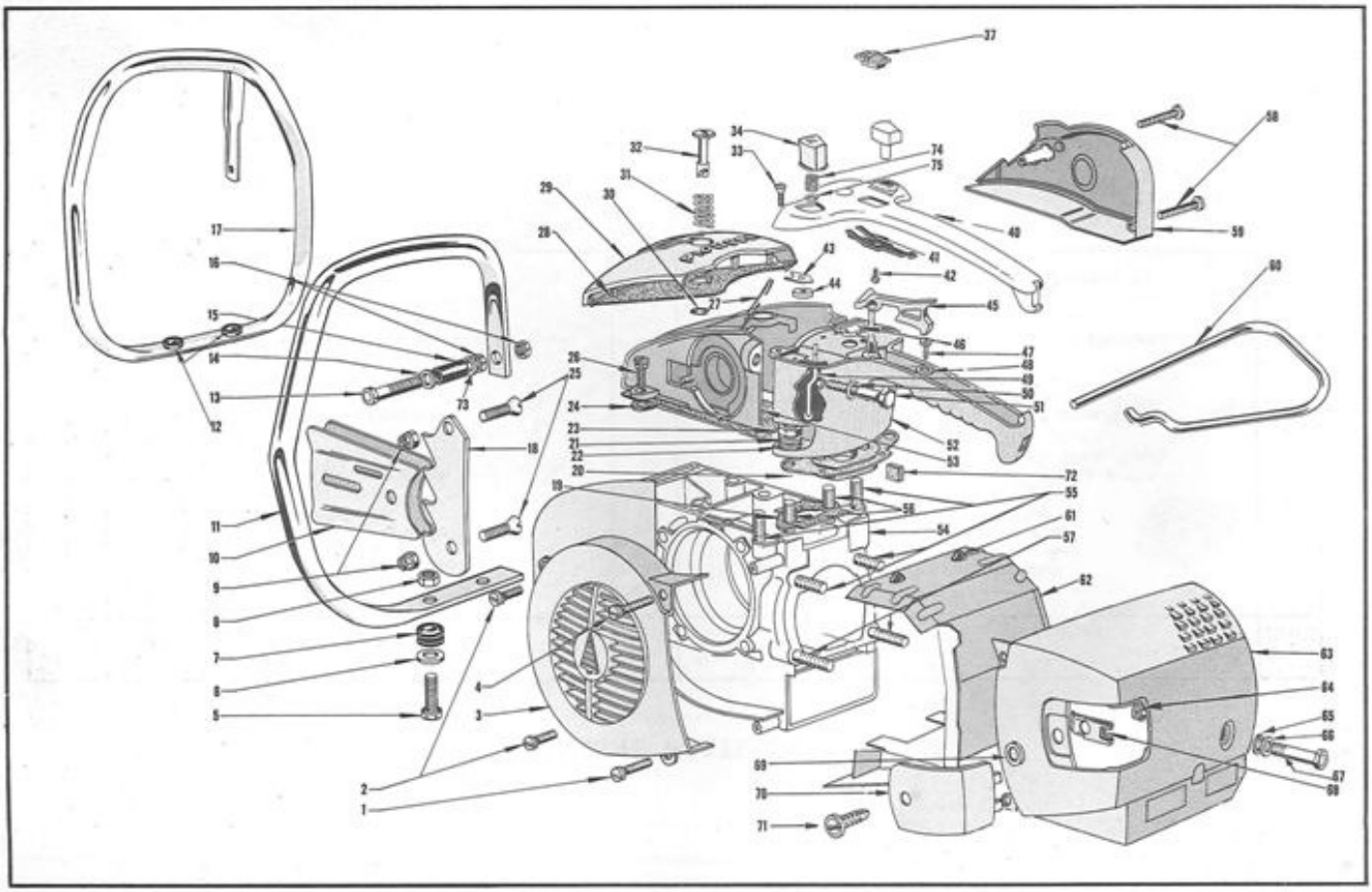
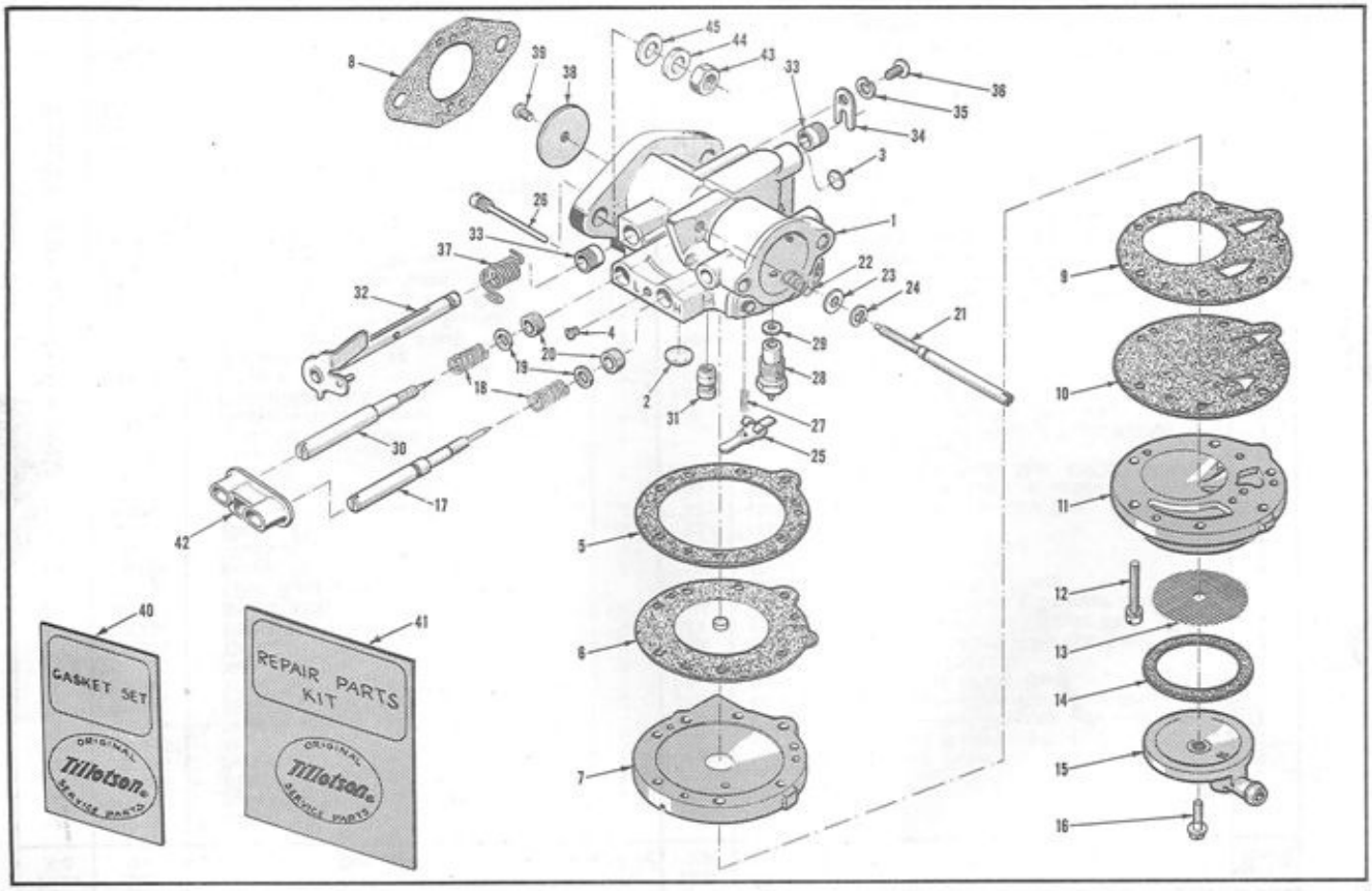
ENGINE PARTS LIST

Item No.	Ref. No.	Description	Qty. Req'd	Item No.	Ref. No.	Description	Qty. Req'd
1	426444	Gasket—Muffler	1	15	425089	Bearing Needles	12
2	426743	Shroud—Muffler	1	16	470731	Bearing Cage Set	1
3	426740	Gasket—Shield—Muffler	1	17	425077	Seal—Drive End	1
4	425334	Stud—Exhaust	2	18	425067	Retaining Ring	1
5	076152	Spark Plug	1	19	425066	Main Bearing	2
6	306397	Nut—Cylinder Base	4	20	426453	Cylinder Base Gasket	1
7	470777	Piston Ring	1	21	470592	Cylinder Block With Studs	1
8	425640	Piston	1	22	426741	** Screen Plate—Muffler	1
9	425060	*Wrist Pin Bearing	1	23	426748	** Exhaust Deflector—Muffler	1
10	425062	Wrist Pin Clip	2	24	307613	** Screw—Deflector to Body	2
11	425641	Wrist Pin	1	25	426742	** Screen—Muffler	1
12	470168	Conrod Assembly Complete (Includes Parts Marked *)	1	26	426744	** Muffler Body	1
				27	303311	Screw—Muffler to Shroud	1
13	304610	*Socket Head Screw	2	28	304609	Exhaust Stud Nuts	2
14	426402	Crankshaft	1		470688	Muffler Assembly (Includes Parts Marked *)	1
				29	306396	Washer	4



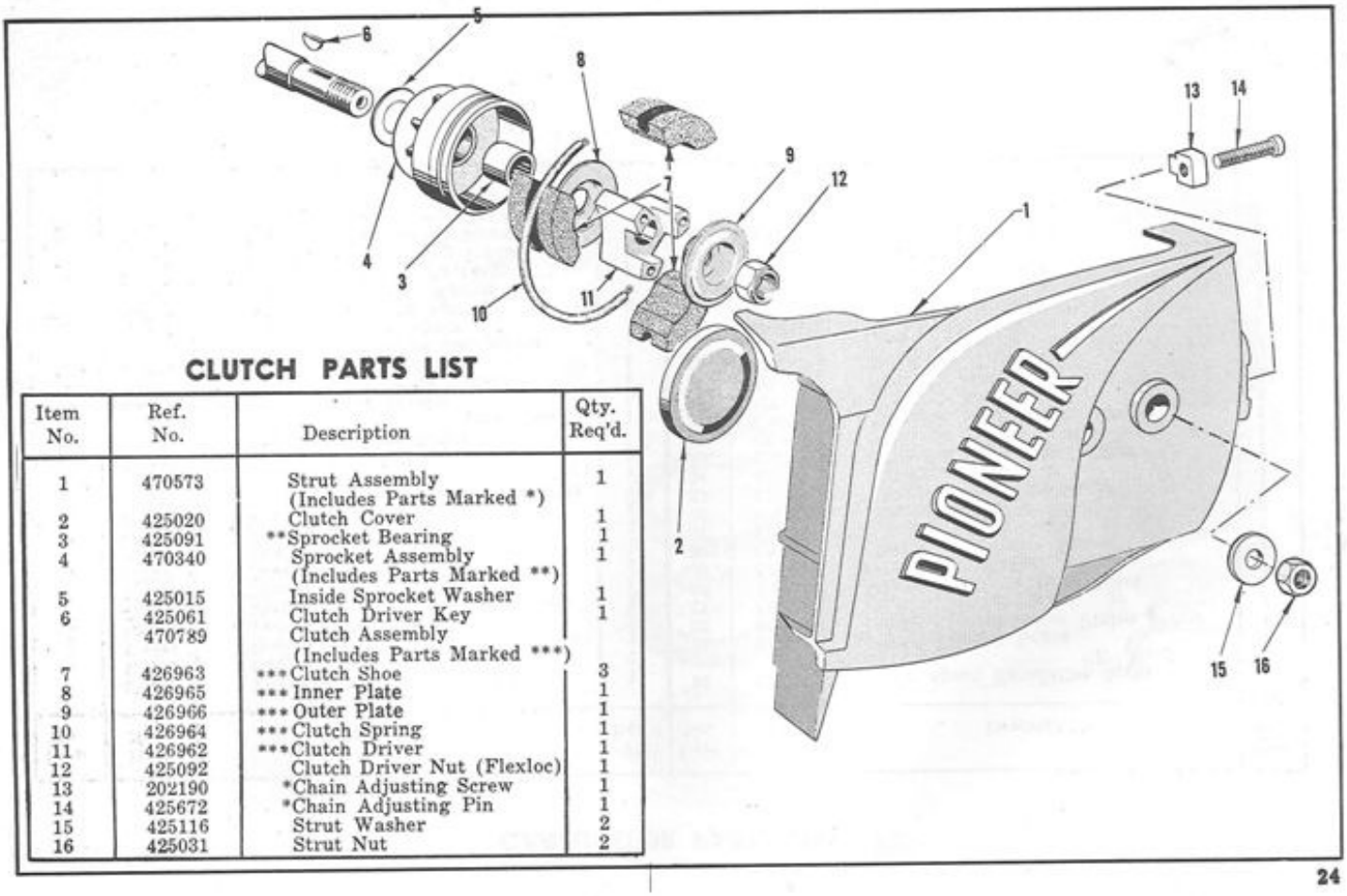
OUTER ASSEMBLIES PARTS LIST

Item No.	Ref. No.	Description	Qty. Req'd	Item No.	Ref. No.	Description	Qty. Req'd
1	304606	Screw, 10-24 x ¾ Pan Hd. Sems	1				
2	302948	Screw, 10-24 x ⅝ Pan Hd. Sems	2				
3	426425	Blower Cover	1				
4	305725	Screw, 10 x 24 x 1⅜ Pan Hd. Sems	1	40	426890	Control Panel	1
5	304625	Screw, ¼ x 28 x ⅞ Hex Head	2	41	426489	Contact Switch Spring	1
6	426549	Washer—Shock Absorber	2	42	426662	Screw—Self Tapping 6-20 x ⅜	1
7	307417	Shock Absorber—Lower	2	43	426485	Retainer—Oiler Push Rod Seal	1
8	426942	Stake Nut—¼ x 28 UNF Standard	2	44	426486	Felt Seal—Push Rod	1
9	425713	Nut—Flexloc	2	45	426534	Trigger Throttle	1
10	425674	Guide—Plates	2	46	426490	Terminal Block—Switch Lead	1
11	426496	Front Handle	1	47	426664	Screw—Throttle Trigger Stop	1
12	307417	Shock Absorber—Lower (For Wrap Around Handlebar)	2	48	426706	Washer—Throttle Trigger Stop	1
				49	426484	Push Rod—Oil Pump	1
13	131054	Screw, ¼ x 28 x 1¼ Hex Head	1	50	306488	Washer—Sems	2
14	302471	Washer	1	51	304913	Screw—Hex Head	2
15	426492	Shock Absorber—Upper	1	52	426889	Rear Handle	1
16	426576	Stake Nut—¼ x 28 Thin	2	53	426888	Front Section—Air Box	1
17	470671	Wrap Around Handlebar—Optional Extra	1	54	470564	Crankcase Ass'y. w/studs (Includes Parts Nos. 426702, 425578 and 426642)	1
18	470670	Pivot Grip (Includes Parts Nos. 425713 and 130491)	1	55			
					426642	Stud—2 Cyl. Top—2 Rear Handle	4
19	426705	Gasket—Carb.—Lower	1	56	426702	Stud—Carburetor Mounting	2
20	426780	Insulating Block—Carb.	1	57	425578	Stud—Cylinder, Bottom	2
21	303887	Washer—Plain	2	58	305725	Screw—1024 x 1⅜	2
22	426703	Washer—Insulating	2	59	426445	Pulley Cover	1
23	306397	Nut—¼ x 28 UNF Plain	2	60	426661	Foothold Loop	1
24	426651	Gasket—Air Box Front Section	1	61	426746	Rubber Bumper	2
25	130491	Screw—¼ x 28 x ⅞ Flat Head	2	62	470691	Inner Shroud Ass'y. (Includes 426746)	1
26	302948	Screw—10-24 x ⅝ Sems	2	63	470611	Cylinder Shroud Ass'y. (Includes Parts Marked x)	1
27	426548	Dzus Fastener Clip	1	64			
28	426491	Air Filter Element	1		426749	Spacer—Inner Insulating	1
29	470586	Top Cover Assembly (Includes Parts Marked *)	1	65	426703	Washer—Outer Insulating	1
				66	302474	Washer—Plain	1
30	426572	*Retaining Ring E-Truarc X5133-31	1	67	302030	Screw, ¼ x 20 x 1¼	1
31	426540	*Spring—Top Cover	1	68	426547	xFastener Speed Nut	1
32	426541	*Fastener Head (Dzus)	1	69	426546	xxRetaining Washer	1
33	200608	Screw—6-32 x ⅜ Flat Head	2	70	470616	xInspection Cover Assembly (Includes Parts Marked xx)	1
34	426487	Button—Oiler	1	71			
					426545	xxFastener Screw	1
				72	426708	Crankcase Drain Felt	1
37	426488	Button—Ignition Switch	1	73	306407	Washer—Outside Shock Absorber Upper	1
				74	426307	Spring	1
				75	300154	Washer	1



CARBURETOR PARTS LIST

Item No.	Ref. No.	Description	Qty. Req'd	Item No.	Ref. No.	Description	Qty. Req'd
	470756	Tillotson Carburetor—Complete	1	24	426917	Idle Speed Regulating Screw "E" Ring	1
1	470780	Body (Service)	1	25	425489	*Inlet Control Lever	1
2	425394	*Body Channel Welch Plug	1	26	470395	*Inlet Control Lever Pinion Screw	1
3	426910	Body Channel Welch Plug	1	27	426922	*Inlet Tension Spring	1
4	425391	Diaphragm Chamber Drain Screw	1	28	470734	*Inlet Needle Seat & Gasket	1
5	425496	**Diaphragm Gasket	1	29	425486	**Inlet Seat Gasket	1
6	470361	*Diaphragm	1	30	426923	*Main Adjustment Screw	1
7	425491	Diaphragm Cover	1	31	470772	Nozzle Check Valve	1
8	426395	**Flange Gasket	1	32	470773	Throttle Shaft & Lever	2
9	425506	**Fuel Pump Gasket	1	33	425469	Throttle Shaft Bushing	1
10	425495	*Fuel Pump Diaphragm (Use 426909 For Service)	1	34	425459	Throttle Shaft Clip	1
11	425490	Fuel Pump Body	1	35	425387	Throttle Shaft Clip Lockwasher	1
12	426146	Fuel Pump Body Screw & Lockwasher	1	36	425390	Throttle Shaft Clip Ret. Screw	1
13	425494	*Fuel Strainer Screen	1	37	426924	*Throttle Shaft Return Spring	1
14	425493	**Fuel Strainer Cover Gasket	1	38	425446	Throttle Shutter	1
15	425492	Fuel Strainer Cover	1	39	426145	*Throttle Shutter Screw & Lockwasher	1
16	425741	*Fuel Strainer Cover Ret. Screw	1	40	470782	*Gasket & Packing Set (Includes Parts Marked **)	1
17	426921	*Idle Adjustment Screw	1	41	470783	Repair Parts Kit (Includes Parts Marked *)	1
18	425449	*Adjustment Screw Spring	2	42	426878	Grommet	1
19	426919	**Adjustment Screw Washer	2	43	306397	Nut—Plain ¼ x 28	1
20	426920	**Adjustment Screw Packing	2	44	303887	Washer—Plain	1
21	470781	*Idle Speed Regulating Screw	1	45	426703	Washer—Insulating	1
22	425386	*Idle Speed Regulating Screw Spring	1				
23	426916	Idle Speed Regulating Screw Spring Washer	1				



CLUTCH PARTS LIST

Item No.	Ref. No.	Description	Qty. Req'd.
1	470573	Strut Assembly (Includes Parts Marked *)	1
2	425020	Clutch Cover	1
3	425091	**Sprocket Bearing	1
4	470340	Sprocket Assembly (Includes Parts Marked **)	1
5	425015	Inside Sprocket Washer	1
6	425061	Clutch Driver Key	1
	470789	Clutch Assembly (Includes Parts Marked ***)	
7	426963	***Clutch Shoe	3
8	426965	*** Inner Plate	1
9	426966	*** Outer Plate	1
10	426964	***Clutch Spring	1
11	426962	***Clutch Driver	1
12	425092	Clutch Driver Nut (Flexloc)	1
13	202190	*Chain Adjusting Screw	1
14	425672	*Chain Adjusting Pin	1
15	425116	Strut Washer	2
16	425031	Strut Nut	2

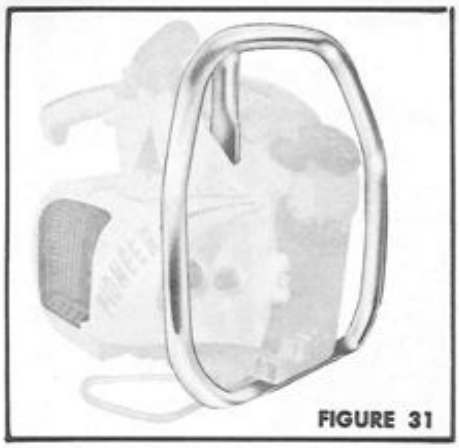


FIGURE 31

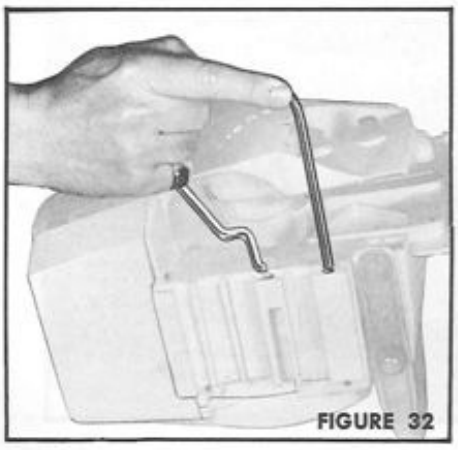


FIGURE 32

ACCESSORIES

Wrap Around Handle Bar No. 470671

To meet certain market demands we have produced, as an extra accessory, a complete wrap around front handle, No. 470671, as illustrated.

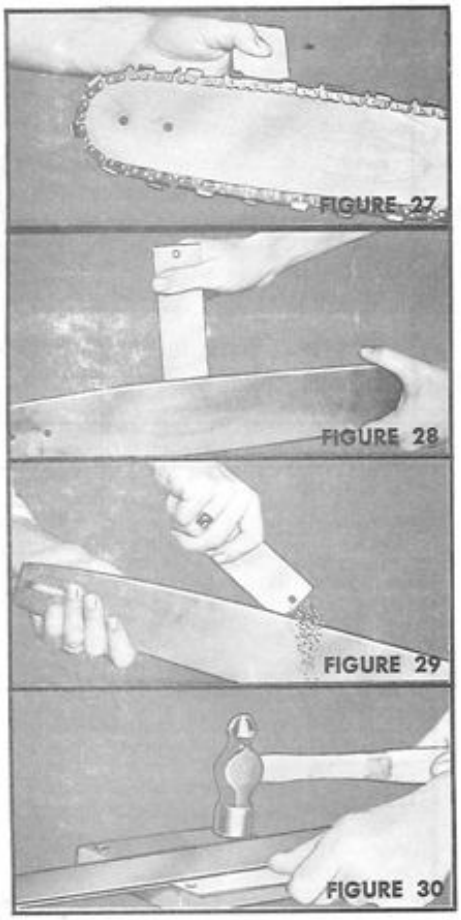
To install on your motor which carries as standard equipment the semi-wrap around, No. 426496, the following procedure is suggested.

1. Remove the pulley cover.
2. Remove the strut assembly.
3. Remove the top bolt which secures the present handle to the air box, then the two base nuts and washers which completely releases the present semi-wrap around from your motor.
4. Using the same bolts and nuts install the new wrap around to your motor, then replace the pulley cover and strut.

Foothold Loop No. 426661

Your Foothold Loop is quickly installed as illustrated by following these brief installation instructions:

1. Place the motor on its left side.
2. Insert the long end of the Foothold Loop into the front hole in the base casting.
3. Relieve the spring tension by a pulling action to permit the short end of the loop with its tang to enter the rear casting hole.
4. Press the Foothold Loop inwards until the tang of the short end engages inside the casting.



BAR AND CHAIN SERVICING

Tool No. 426235

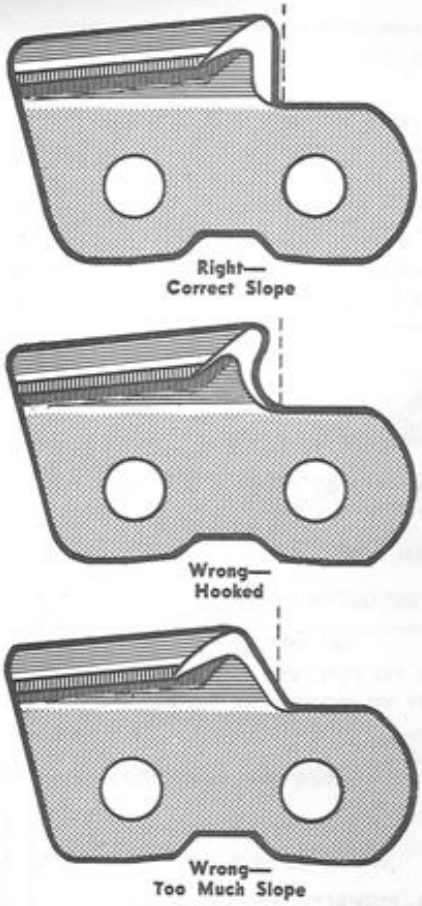
1. This illustration recommends the use of the die cut corner, sheared at 35° for the maintaining of correct top angle on all cutters. This important feature of chain filing is outlined in all chain instruction pieces and the Operator's Manual. (Figure 27).

2. Front end of the cutter bar tool is marked to indicate the minimum safety depth of the bar groove to avoid the chain drive lugs riding on the bottom of the groove causing extensive chain and bar damage. (Figure 28).

3. By using either of the sharp corners of this tool the bar groove can be cleaned regularly. The removal of the accumulated sawdust, old oil and chain filings will overcome the common fault of a chain riding up in the groove resulting in both chain weave and breakage. (Figure 29).

4. To carry out minor repairs such as a pinched bar, enter one corner of the tool in the groove near the pinched section, then tap the tool with a light hammer until the entire length of the gauge enters into the groove. While in this position lightly tap along the bar rail which will straighten out the pinch and give chain clearance.

   A further use for the side of this tool is to close up the rails to correct groove width, as illustrated, for proper chain performance. This overcomes chain weave and rapid deterioration of both the bar and chain. (Figure 30).



SHARPENING AND JOINTING

Sharpening

Tighten chain firmly on the cutter bar to hold secure. When sharpening take a firm grip on the file and use it with a steady thrust. Don't swing the file during the stroke. Keep consistent cutting angles (minimum 35°) on all teeth (figure 17). Make certain the file is also bearing against the top cutting face.

Keeping one fifth of the diameter of the file above the top cutting edge of the tooth will give a nice hollow ground cutting edge which will cut fast and dull slowly. Don't file off any more metal than necessary to give a sharp cutting edge.

Make sure your file is really sharp because the chain teeth are made of a heat treated steel alloy. Also, a dull file can surface harden the cutter edges and make them extremely hard to sharpen. Use only a sharp ¼ inch full round file. Be careful to keep the cutting teeth the same length. If the teeth are not uniform, the longer ones will take a deeper bite and cause the saw to cut in an arc.

When you have finished sharpening the chain, slack off the chain slightly and run it free while oiling it heavily to make sure that all filings are flushed from the cutter bar groove. Be sure to re-tension chain correctly.

Chain Tension

The importance of correct chain tension cannot be overstressed. Check the instructions given under General Instructions carefully. PARTICULAR CARE must be used to properly break in a new Chain.

Correct chain tension is especially important on bar lengths of 32 inches and over, to prevent the chain jumping the bar and causing damage to the equipment and loss of time to the operator.

When the chain is correctly filed, properly lubricated, correctly jointed and proper chain tension maintained, it will cut smoothly and be easier on the motor, bar, chain and the operator.

KEEP YOUR CHAIN PROPERLY MAINTAINED

1. Maintain top angle basic 35 degrees.
2. File with straight even strokes.
3. Keep all cutters the same length.
4. Use ¼" full round file.

Filing with the tooth, to maintain the approximate 30 degree angle from the vertical as illustrated in Figure 18A. hold the file approximately 5 degrees from horizontal, with the handle low, (Figure 18).

1. Use correct ¼" full round file.
2. Keep 1/5 of file diameter above top edge of cutter. This produces the correct undercut, see Figure 19-A.
3. File held too high results in blunt slow cutting edge, (Figure 19-B).
4. File held too low results in thin, quick dulling edge with hook, (Figure 19-C).

Jointing

The chain is precision ground and has a standard joint of .025 inch. Experience has shown that .025 inch is best for average conditions. However, to suit particular cutting conditions the joint can be changed as long as the joint heights are kept uniform (figure 19). If you change the joint use Gauge Part No. 470163, available at your servicing dealer, and proceed with caution since the chain can be easily damaged by over filing. In filing the runners, maintain the rounded corners. Improperly filed runners will make some teeth cut more than others and the saw action will be rough and tend to cut off line.

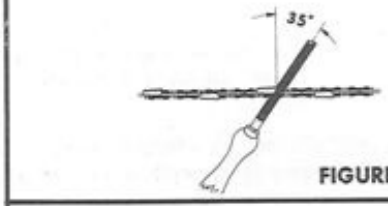


FIGURE 17

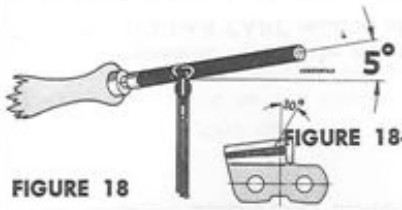


FIGURE 18-A

FIGURE 18


FIGURE 19-B


FIGURE 19-A

FIGURE 19-C

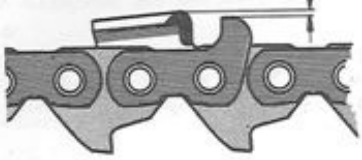


FIGURE 19

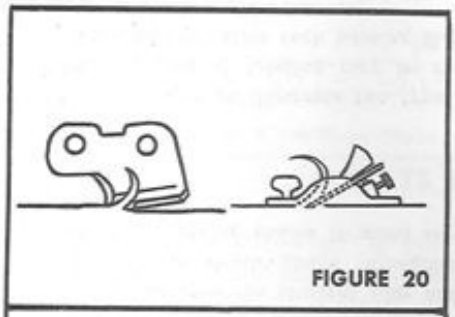


FIGURE 20

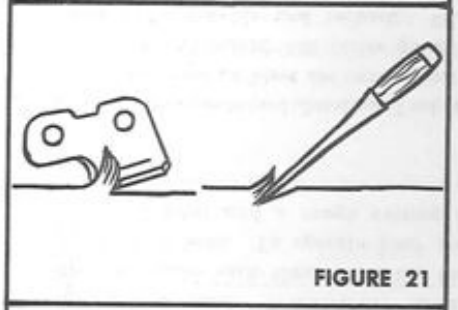


FIGURE 21

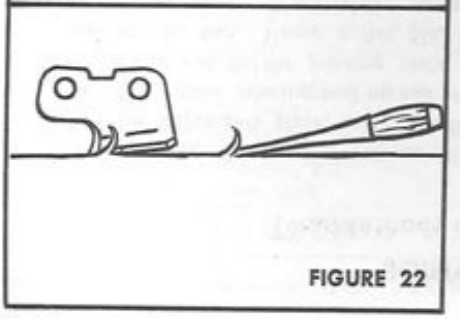


FIGURE 22

CORRECT JOINT AND CUTTING ACTION

Maintain recommended depth of .025 on the depth gauge.

Check your joint reguarly. Make a practice of jointing your chain after every second filing. This will result in a fast cutting, smooth operating chain with less effort on your part. Visualize your cutters as a properly adjusted planer blade with ALL depth gauges jointed evenly. (Figure 20).

EXCESSIVE JOINT

Lack of care in jointing may result in excessive or uneven joint. This will cause the cutters to bite in, chain will grab, resulting in overloading of attachments, poor performance and damage to both chain and bar will result. In this illustration we have used a deep biting chisel to convey the action of excessive or uneven jointing with its accompanying chain result. (Figure 21).

INSUFFICIENT JOINT

FAILING TO CHECK OR JOINT REGULARLY. Cutters cannot bite into the wood, chain will not cut efficiently or to capacity. This will require extra pressure on your part resulting in excessive wear to the bottom of the cutters and links plus rapid wear to the cutter bar rails. Again using a chisel we illustrate the chain at work with insufficient joint. (Figure 22).

JOINTING

Two Methods in General Use

1. Using Jointing Gauge #470163 as illustrated is simple and accurate. First preset the adjustable plate, using the feeler gauge supplied, to the recommended joint. Next place jointing tool on top of the chain with the depth gauge protuding through the slot in the jointing plate and resting on the two cutters near the centre of the bar. Using a flat file, file the depth gauge to the level of the jointing tool plate. WARNING: Always work near the centre of the bar and move the chain each time, NOT the tool. This is necessary due to the contour of all cutter bars. To operate your jointing tool at various positions could give an uneven joint and a rough cutting chain. (Figure 23).

2. If the above mentioned Jointing Tool is not available place a straight edge, long enough to cover at least six cutters, on top of the chain. Next check the existing joint with a standard .025 feeler gauge. If you cannot insert the feeler give one stroke of a flat file and recheck. When correctly jointed you should just feel the drag between the straight edge and the top of the depth gauge. Repeat this step for each depth gauge throughout the entire chain. (Figure 24). This method of jointing chains is much slower and less accurate than with a proper jointing tool.

3. Figures 25 and 26 illustrate two types of depth gauges used in standard chains. Either method of jointing may be carried out on chains of these types. We recommend that after each jointing that the front of the depth gauge be rounded off to maintain original contour.

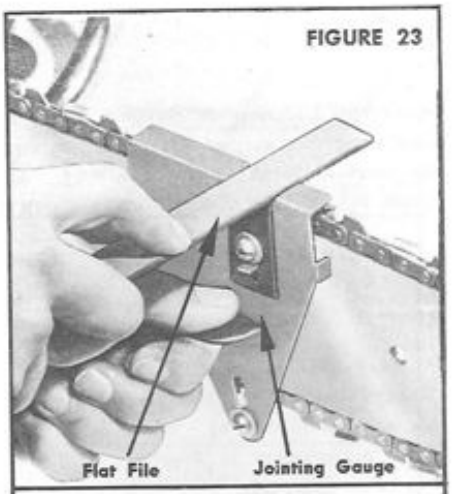
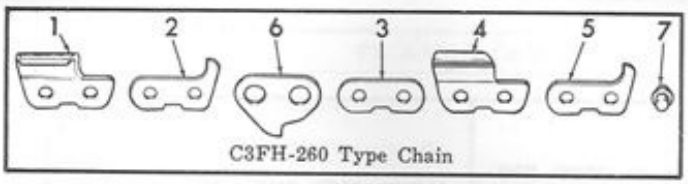


FIGURE 23

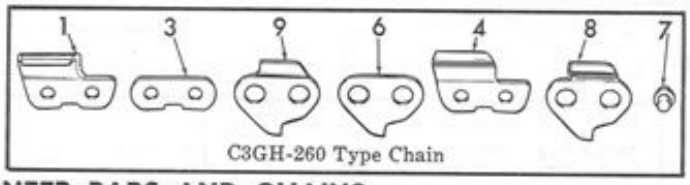

FIGURE 24


FIGURE 25


FIGURE 26



C3FH-260 Type Chain



C3GH-260 Type Chain

ALWAYS USE GENUINE PIONEER BARS AND CHAINS

We have two types of chain available for your chain saw.

1. General Purpose - C3FH-260. Recommended for use where the length of the cutter bar is greater than the diameter of the timber being cut.
2. C3GH-260. Recommended for use in larger timber where the diameter of the log is greater than the length of the cutter bar, referred to as blind or end cutting.

Ref. No.	Part No. C3FH 260	Description
1	425250	Right Cutter
1	470295	Right Cutter with 2 Rivets, Pre-Set
2	425284	Side Link with Jointer, LH
3	425246	Side Link
3	470294	Side Link kith 2 Rivets, Pre-Set
4	425251	Left Cutter
5	425921	Side Link with Jointer, RH
5	470296	Side Link with Jointer, 2 Rivets, Pre-Set, RH
6	425248	Center Link
7	425345	Rivet
	470054	Chain Repair Kit

Ref. No.	Part No. C3GH-260	Description
1	425294	Right Cutter
1	470304	Right Cutter with 2 Rivets, Pre-Set
3	425286	Side Link
3	470303	Side Link with 2 Rivets, Pre-Set
4	425296	Left Cutter
6	425248	Center Link
7	425345	Rivet
8	425347	Center Link with Jointer, RH
9	425348	Center Link with Jointer, LH
	470301	Chain Repair Kit

CUTTER BARS		TOOLS	
Part No.	Length	Tool No.	Description
470060	*16"	425733	Spark Plug Wrench
470061	*20"	425580	Strut Wrench
470062	*24"	425592	¼" Full Round File
470063	*28"	470163†	Jointing Gauge
470064	*32"	426235	Bar Tool

*Cutting chains of comparable length are available from your dealer.

†Available from your dealer.

CHAIN DIAGNOSIS

TROUBLE	PROBABLE CAUSE	REMEDY
Chain stretched beyond adjustment.	Dull cutters. Lack of lubrication.	Remove a side and drive link. Increase lubrication.
Chain breakage.	Excessive pressure by operator. Excessive joint. Lack of lubrication. Dull cutters.	Replace damaged parts. Check balance of oil. Increase lubrication. Rejoint chain. File chain.
Chain stiff. Hard to tension.	Lack of lubrication. Poor maintenance.	Clean chain in solvent. Oil bath overnight. Check oil pump and vent holes.
Chain stalls in cut and/or scored drum.	Clutch slipping. Excessive pressure by operator. Clutch springs not releasing.	Check lining for wear. Check springs for tension. Apply less pressure, correctly filed chain will self-feed.
Chain cuts rough or digs in.	Cutter angles incorrectly filed. Too much or uneven joint.	Check your filing instructions. Refile to correct angles. Check joint, rejoint your chain.
Chain jumps bar.	Incorrect chain tension. Damaged cutter bar. Damaged drive links. Worn or damaged sprocket.	Correct chain tension. Check bar for damage, repair or replace. Check drive links for damage. Replace links or entire chain.
Chain cuts angle.	Cutter angles not the same on both sides. Uneven joint. Cutter bar rails uneven.	Refile cutters to same angle. Check rails, if worn have bar serviced or replace. Rejoint. Increase lubrication.
Worn drive sprockets.	Incorrect chain tension. Lack of lubrication. Dull cutters.	Replace sprocket. Correct chain tension. Increase lubrication. File cutters and joint chain.
Excessive wear drive links and/or side straps.	Lack of lubrication. Excessive tension. Dull chain. Worn sprocket.	Increase lubrication. Check oil pump. Extensive damage can be occasioned in a few hours. Check tension. File chain. Check sprocket.

SERVICE DIAGNOSIS

TROUBLE	PROBABLE CAUSE	REMEDY
Motor fails to start.	Fuel tank empty.	Fill with correct fuel mixture.
	Ignition switch off.	Turn on or check for short.
	Motor not choked.	Move choke lever down.
	Carburetor.	See carburetor adjustments.
	Over choking.	Unchoke, open throttle and pull starter 3 or 4 times. If motor is continually flooding check for plugged carburetor breather.
	Spark plug.	Remove plug, clean and adjust. Re-attach wire and hold metal seat of plug against motor. Pull starter. A blue spark should jump gap between electrodes.
	Magneto.	Disconnect wire from spark plug. Hold so metal end is ¼ inch from clean metal surface. (Away from gas tank.) Pull starter. There should be a strong spark across the gap. If no spark the trouble is breaker points, coil, condenser, shorted wire, or switch.
	*Plugged or frost-covered pickup in fuel tank.	Remove and clean. Check for ice, water, and dirt in fuel tank filter screen and water trap felt.
	*Plugged impulse hole in carburetor or misaligned carburetor manifold gasket.	Remove and clean. Check for ice, water, and dirt in fuel tank filter screen and water trap felt.
	*Frozen gas line or ice in filter or carburetor	Remove and clean. De-ice additive used in prescribed proportion will counteract this. (One teaspoon to a full tank of fuel.)

*Probable causes indicate conditions which may be experienced during cold weather operation.

SERVICE DIAGNOSIS (CONT.)

TROUBLE	PROBABLE CAUSE	REMEDY
Motor cuts out, leans out or misfires.	Short circuit in ignition system.	Check all wires and connections.
	Partial stoppage in fuel system.	Clean out carefully and check carburetor.
	Fouled, wet or damaged spark plug.	Clean and adjust or replace.
	Magneto. Faulty breaker points, coil, condenser, ignition wire or connection.	Check.
	Inlet control lever sticking on the inlet control lever screw shaft.	Remove and clean control lever, or replace.
	Improper sequence of fuel pump diaphragm and gasket.	Fuel pump diaphragm must be next to fuel pump body.
	Dirty or leaking carburetor filter.	Remove and clean. Properly secure filter to fuel pump body.
	Dirt in fuel lines or carburetor passages.	Check and clean.
	Air leak in fuel lines.	Replace.
	†Improper inlet lever setting.	Adjust.
Motor lacks power.	Incorrect fuel mixture.	Drain tank, refill with correct mixture.
	Carburetor out of adjustment.	Adjust carburetor.
	Exhaust ports or muffler clogged.	Clean.
	Air Intake filter clogged.	Clean.
	Poor compression.	See your servicing dealer.

†Inlet Needle Lever Adjustment: The correct lever setting is level with the face of the diaphragm chamber. Adjust short part of the lever to obtain correct setting. Do not jamb the needle into the seat.

SERVICE DIAGNOSIS (CONT.)

TROUBLE	PROBABLE CAUSE	REMEDY
Motor overheats	Cylinder fins or air system clogged.	Clean.
	Incorrect fuel mixture.	Drain tank, refill with correct mixture.
	Carburetor lean.	Adjust.
	Loose cylinder head nuts.	Tighten.
	Leaking cylinder head or base gaskets.	Check and replace if necessary.
Chain stalls in cut.	Clutch slipping.	Check linings, if worn replace.
	Improper filing or jointing.	Check filing and jointing instructions, or see your servicing dealer.
	Cutter bar and chain pinched in log.	Use wedge if necessary to open cut wider to free bar and chain.
Chain moves when throttle is closed.	Idling speed too fast.	Adjust idle speed. (page 5).
Chain cuts roughly or digs in.	Top and front angles on cutters incorrectly filed. Too much joint.	Check filing and jointing instructions, or see your servicing dealer.
Chain oiler stops pumping.	Dirt in pump assembly or discharge vent.	Remove and clean pump and feed line. Fill with clean oil. (SAE 10.)

NOTE: If motor idling is erratic or races away and then drops, it may indicate the possibility of excess air entering the crankcase. If this condition exists, the motor would continue to idle with the idle stop screw backed completely off. Check the following points: (1.) Cocked throttle shutter. (2.) Leaking carburetor gasket. (3.) Loose carburetor nuts. (4.) Leaking crankshaft seals. (5.) Improper carburetor adjustments.

SAFETY PRECAUTIONS

Refuel your saw with the use of funnel on an area that has been cleared down to bare ground.

If gas is spilled on the saw, wipe it off or let it evaporate before starting the motor.

Move the saw 10 feet at least from the fueling spot before starting the motor.

Never ask anyone to hold the saw while starting the motor.

During operation keep inquisitive bystanders clear at all times.

Clear inflammable material away before cutting.

Let a hot saw cool before refueling.

Never start cutting until you have a clear place to work, a secure place to stand and a safe exit path from a falling tree.

Before starting motor examine carefully the lean of the tree, look up for loose limbs or bark and intertwined branches.

Wherever possible place the pivot grip against the tree or log before starting the cut.

When undercutting, wherever possible have chain in an inverted position.

Never operate a chain saw in a closed room as the exhaust fumes can be deadly.

Never touch or try to stop a moving chain.

Before you start the motor make sure the saw is not touching anything.

When removing saw from cut, shut the motor off before the chain leaves the tree.

When operating the chain saw be relaxed but in full control of the saw at all times.

Never carry your saw with the motor running when walking through a bushy area. A branch or twig may open the throttle and make the chain revolve.

Never operate the saw if the chain is dull or if repairs are needed.

Never attempt to sharpen or remove the chain while the motor is running.

Keep the muffler on the saw.

Keep the saw free of sawdust.

Keep the spark plug and wire connections tight.

Keep a filled fire extinguisher and shovel handy.

WARRANTY

WE WARRANT EACH NEW PIONEER ENGINE TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE, OUR OBLIGATION UNDER THIS WARRANTY BEING LIMITED TO MAKING GOOD ANY PART OR PARTS THEREOF WHICH SHALL, WITHIN 30 DAYS FROM DATE OF PURCHASE, AND WHICH UPON EXAMINATION SHALL DISCLOSE TO OUR SATISFACTION TO HAVE BEEN THUS DEFECTIVE. ....

THE BARS AND CHAIN ARE WARRANTED SEPARATELY FOR A PERIOD OF THIRTY DAYS AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP UNDER THE SAME CONDITIONS HERETOFORE MENTIONED. ....

THIS WARRANTY BEING EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS EXPRESSED OR IMPLIED, AND OF ALL OTHER LIABILITIES IN CONNECTION WITH THE SALE OR USE OF ANY PIONEER SAWS. ....

TO MAKE A CLAIM UNDER THIS WARRANTY, CONTACT THE DEALER FROM WHOM THE SAW WAS PURCHASED, OR THE NEAREST AUTHORIZED PIONEER SAW DEALER. ALL CLAIMS MUST BE ACCOMPANIED WITH THE MODEL AND SERIAL NUMBER OF THE SAW.

To assure you of your WARRANTY, fill out the Warranty Cards and immediately forward them as directed.

CONSULT YOUR LOCAL SALES AND SERVICE DEALER

When a service problem arises do not hesitate to consult your local Pioneer Chain Saw Dealer. Your dealer was appointed after careful consideration of his ability in providing prompt and effective service. Only he can offer the complete technical knowledge and skill to maintain your chain saw in tip-top condition.

Your dealer also stocks a complete line of genuine factory replacement parts. Therefore, when you require replacement parts order them from your local dealer.

When ordering, specify:

1. Model and Serial Number of your chain saw.
2. Quantity, part number and description of part in full.
3. Complete shipping instructions.

REGISTER YOUR MODEL AND SERIAL NUMBER IN THE SPACES PROVIDED BELOW.

Model Number.....
Serial Number.....