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Catalogue

MODEL
B-29

30

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Burnett
**POWER SAWS
& Engineering Co., Ltd.**

1616 Pandora Street, Vancouver, B. C., Canada

Phone: HASTINGS 3253

FOREWORD AND GUARANTEE

THE Burnett Model B-29 Power Chain Saw is the latest power saw developed by Burnett Power Saws & Engineering Company Limited and features the Villiers 250 cc, 2 cycle, British-made gasoline engine. Over a period of more than a year several modifications have been made by us, giving this engine added efficiency when used in the manufacture of power saws.

There has been a great need for a power saw with just a little more power and greater reliability than heretofore. The Burnett Model B-29, we feel sure, is the answer.

At all times during the designing of this machine we have given precedence to reliability, ruggedness and the ability to "take it".

In designing the "B-29" Model we have kept in mind the various suggestions and recommendations which have been made by the logging industry as a whole. This machine has been designed from the viewpoint of the British Columbia logger who has had years of experience with power saws of all kinds in one of the toughest shows in the business. The Model "B-29" Burnett Power Saw was thoroughly field tested under their supervision for over a year before going into production.

We guarantee that all material and workmanship used in the manufacture of the Model "B-29" Burnett Power Saws are of the highest possible quality. This guarantee is to extend and be in force for three months from date the machines are shipped by us. The damages for which we make ourselves liable under this guarantee are limited to the replacement of the part which may have proved defective. This guarantee does not apply to damage caused by misuse and neglect. Great care should be given to proper lubrication as set forth in another part of this booklet.

We reserve the right to make changes in Burnett Power Saws without notice.

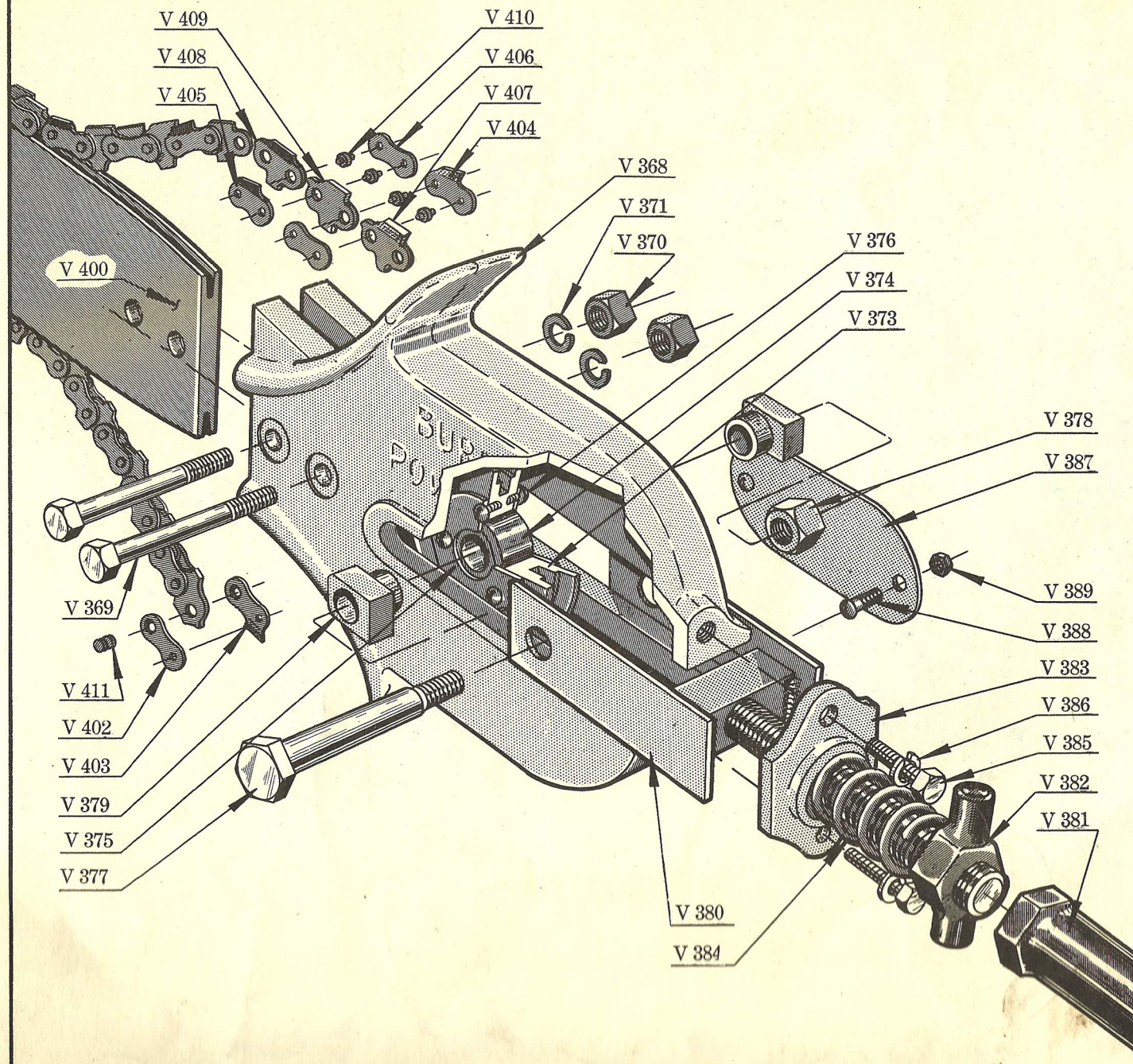
Sole Vancouver Island Distributors:

Power Saw Sales and Service Limited

452 WALLACE STREET

NANAIMO, B. C.

Phones: Nanaimo 1491 (Day Calls) — Nanaimo 1059 (Night Calls)

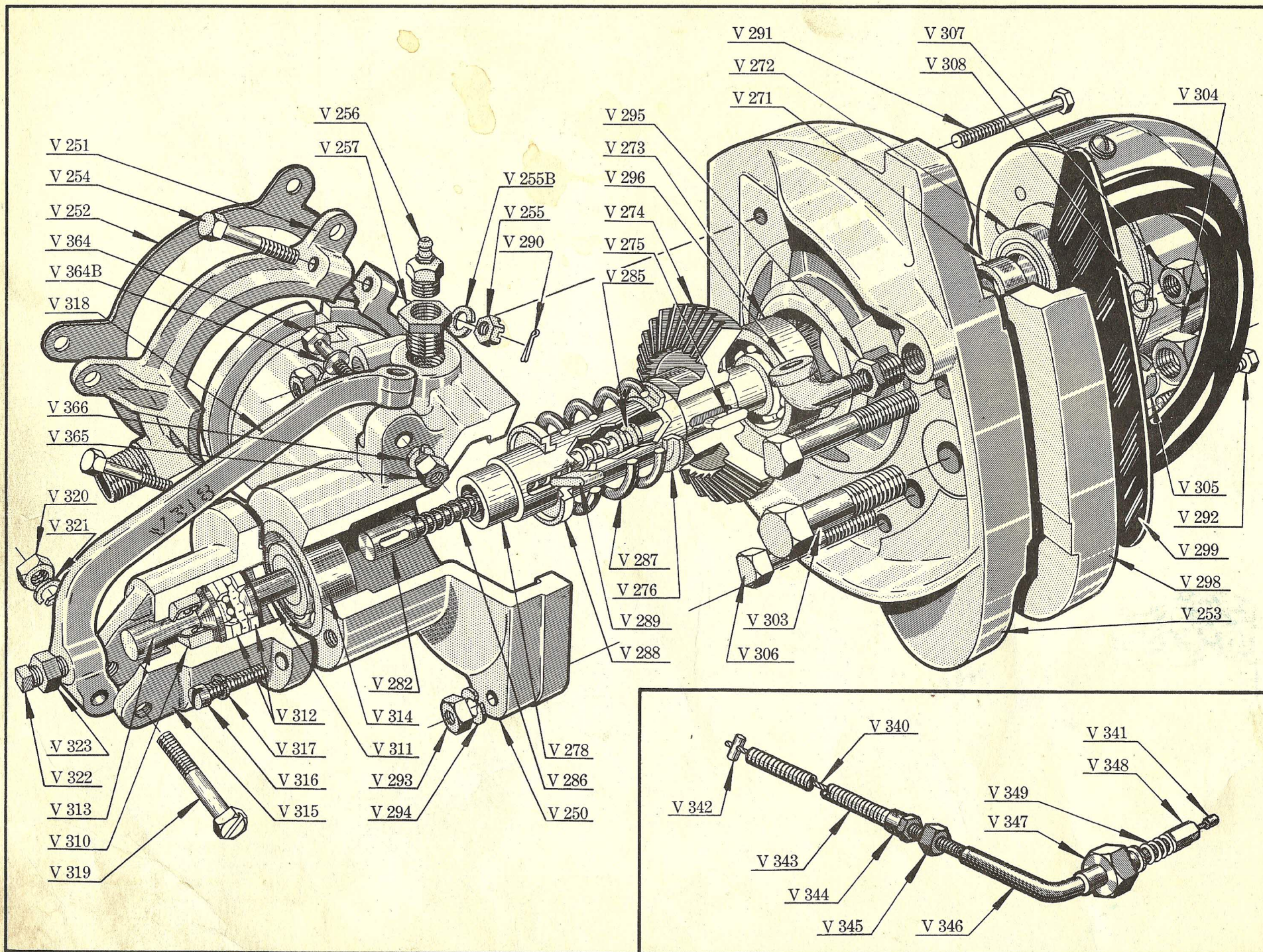


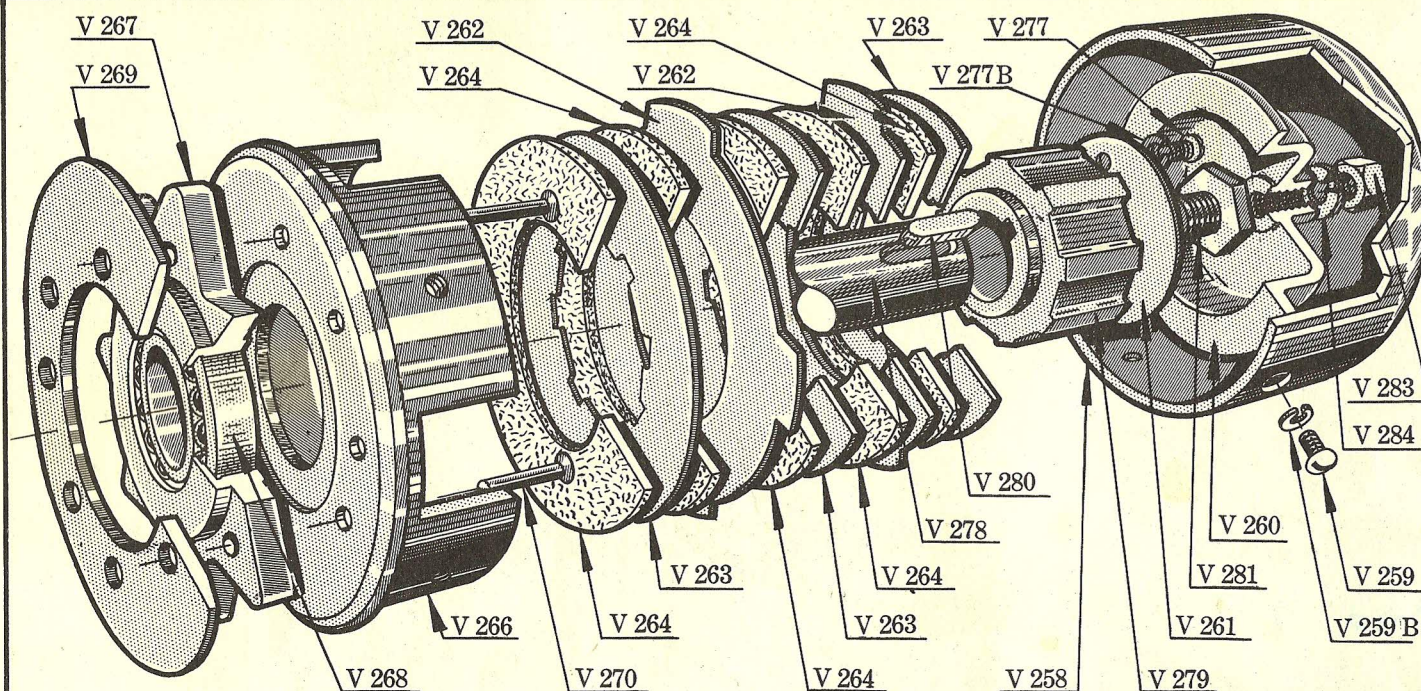
HEAD END ASSEMBLY

Part No.	Description	Quantity
V 367	Head end casting complete	1
V 368	Head end casting only	1
V 369	Bar bolt	2
V 370	Nut	2
V 371	Lockwasher	2
V 373	Idler	1
V 374	Bearing (permanently sealed)	1
V 375	Idler cover	2
V 376	Screw	6
V 377	Idler pin	1
V 378	Nut for pin	1
V 379	Spacer on pin	2
V 380	Fork	1
V 381	Fork handle	1
V 382	Wing locknut	1
V 383	Spring box	1
V 384	Spring	1
V 385	Cap screw	2
V 386	Lockwasher	2
V 387	Head cover	1
V 388	Screw	1
V 389	Nut	1
V 400	Cutter bar (order length req.)	1
V 401	Chain (order length req.)	1
V 402	Master link spacer	1
V 403	Master link cutter	1
V 404	R.H. outside cutter	
V 405	L.H. outside cutter	
V 406	Spacer link	
V 407	Right hand raker	
V 408	Left hand raker	
V 409	Centre raker	
V 410	Rivet	
V 411	Master pin	1

AVOID OVERTIGHTENING THE CHAIN

Correct Saw Chain tension adjustment is made by turning the handle V381 on head until it is possible to lift chain approximately one inch from bar at centre with two fingers.





CLUTCH AND GEAR BOX ASSEMBLY

Part No.	Description	Quantity
V 249	Gear box complete	1
V 250	Gear box only	1
V 251	Brass holding ring	1
V 252	Shim	11
V 253	Gear box cover	1
V 254	Bolt	2
V 255	Nut	2
V 255B	Lockwasher	2
V 256	Alemite plug	1
V 257	Bushing	1
V 258	Outside clutch cover	1
V 259	Screw	4
V 259B	Lockwasher	4
V 260	Inside clutch cover	1
V 261	Spline washer	1
V 262	Large clutch plate	2
V 263	Small clutch plate	3
V 264	Clutch lining	5

Part No.	Description	Quantity
V 265	Clutch casing complete	1
V 266	Clutch casing only	1
V 267	Sprocket	1
V 268	Bearing (permanently sealed)	1
V 269	Back plate	1
V 270	Rivet	8
V 271	Spacer	1
V 272	Oil seal in V 253	1
V 273	Bearing in V 253	1
V 274	Crown gear	1
V 275	Crown gear key	1
V 276	Spring seat	1
V 277	Screw	1
V 277B	Lockwasher	1
V 278	Gear shaft	1
V 279	Spline	1
V 280	Spline key	1
V 281	Hex bushing	1

Part No.	Description	Quantity
V 282	Spindle bolt	1
V 283	Nut	1
V 284	Lockwasher	1
V 285	Felt washer	2
V 286	Spring	1
V 287	Clutch spring	1
V 288	Spring thrust ring	1
V 289	Spindle bolt key	1
V 290	Cotter key	2
V 291	Cap screw (long)	2
V 292	Cap screw (short)	2
V 293	Nut	4
V 294	Lockwasher	4
V 295	Bushing	1
V 296	Street L.	1
V 298	Strut	1
V 299	Flip handle	1
V 303	Strut bolt (large)	1

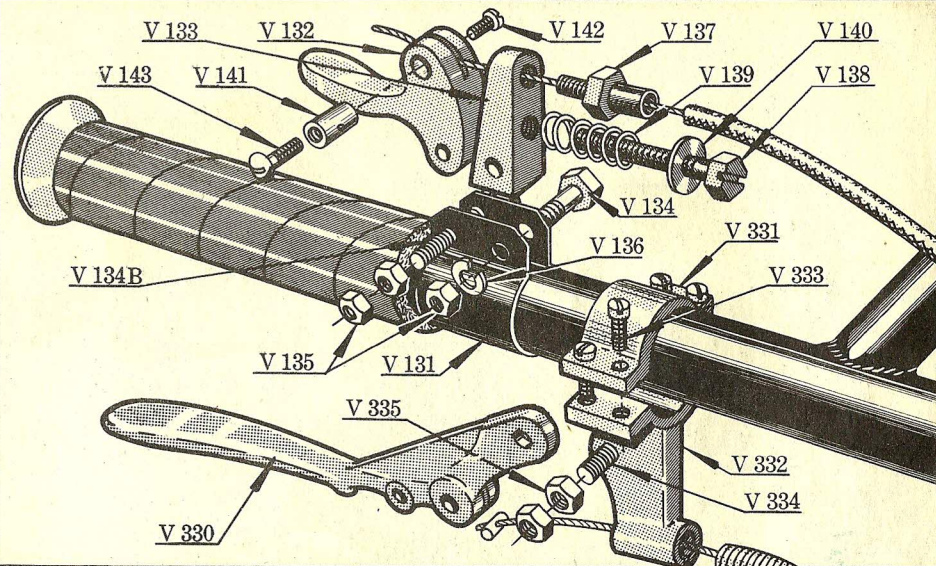
Part No.	Description	Quantity
V 304	Nut	1
V 305	Lockwasher	1
V 306	Strut bolt (small)	2
V 307	Special nut	2
V 308	Lockwasher	2
V 310	Oil seal in V 313	1
V 311	Small pressure pin	1
V 312	Thrust bearing	1
V 313	Large pressure pin	1
V 314	End bearing	1
V 315	Thrust housing	1
V 316	Screw	3
V 317	Lockwasher	3
V 318	Contact arm	1
V 319	Hinge bolt	1
V 320	Jam nut	1
V 321	Lockwasher	1
V 322	Adjusting screw	1
V 323	Locknut	1
V 339	Release cable complete	1
V 340	Bowden wire with nipple	1
V 341	Nipple (elbow end)	1
V 342	Nipple (lever end)	1
V 343	Bowden wire casing	1
V 344	Adjusting screw	1
V 345	Locknut	1
V 346	Elbow	1
V 347	Brass nut	1
V 348	Locking pin	1
V 349	Spring	1
V 364	Clamping bolt	1
V 364B	Flat washer	1
V 365	Nut	1
V 366	Lockwasher	1

**DO NOT RACE MOTOR
UNNECESSARILY**

Adjust screw V138 so that motor will idle
when chain is not cutting.

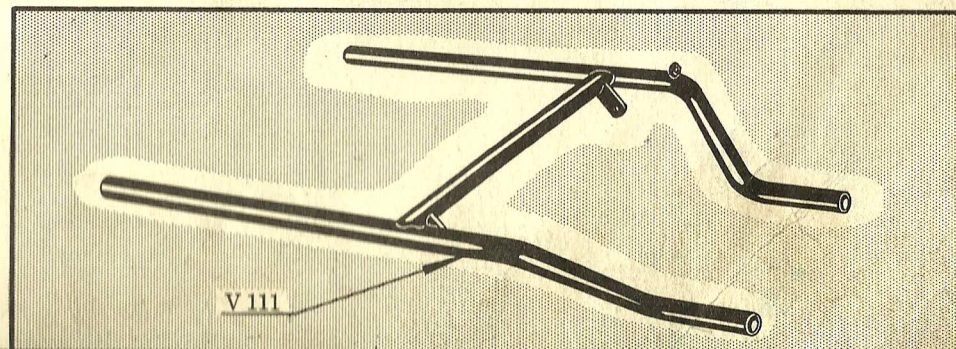
MOTOR ASSEMBLY

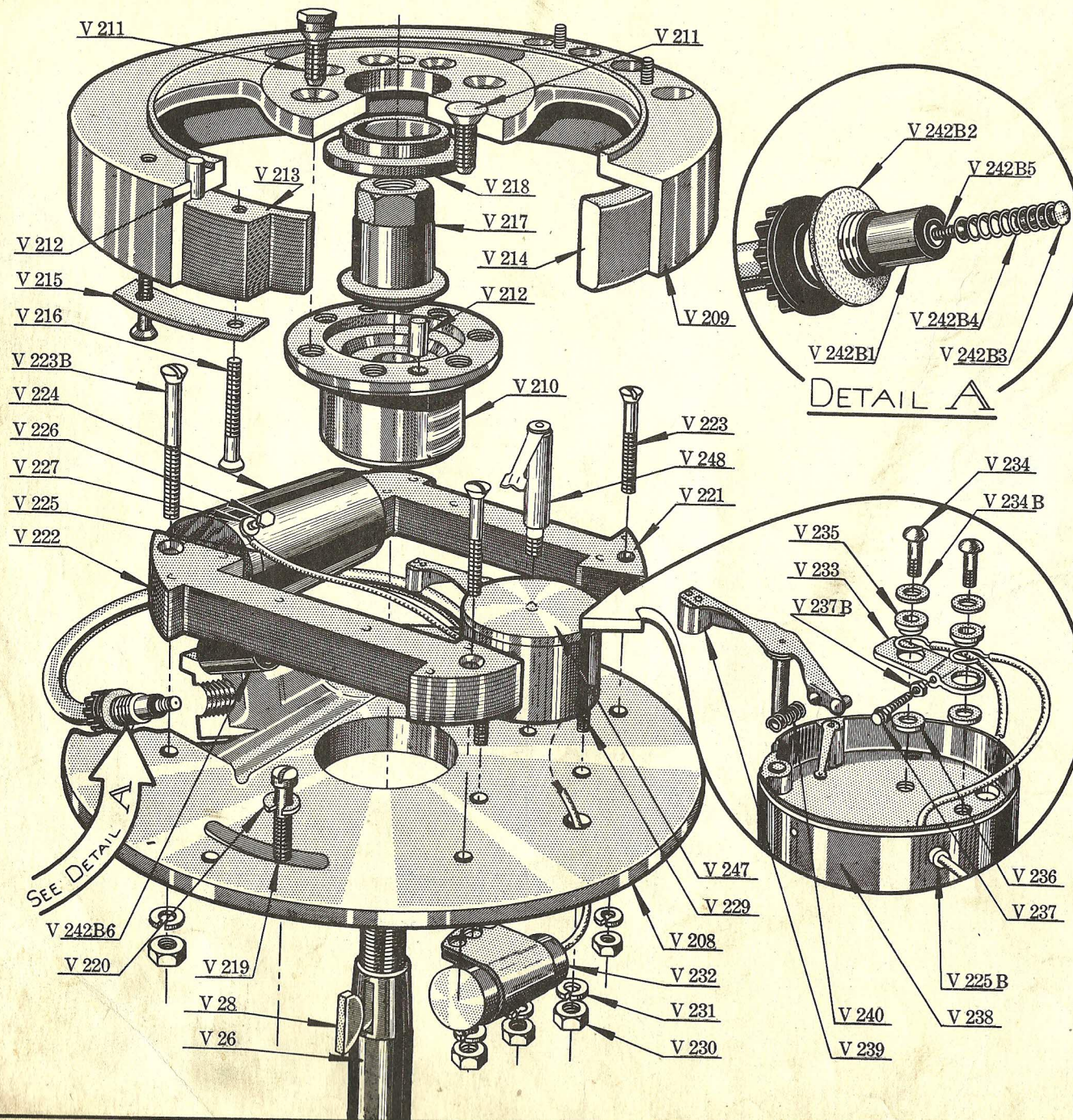
Part No.	Description	Quantity	Part No.	Description	Quantity
V 1	Crankcase complete	1	V 49	Exhaust manifold	2
V 2	Crankcase (mag half)	1	V 50	Gasket (intake)	1
V 3	Crankcase (drive half)	1	V 51	Gasket (exhaust)	2
V 3B	Drain plug insert	1	V 52	Cap screw (short)	2
V 4	Cylinder stud	4	V 53	Cap screw (long)	2
V 5	Nut	4	V 55	Lockwasher	4
V 6	Lockwasher	4	V 56	Spark plug	1
V 7	Crankcase stud	4	V 57	Gasket	1
V 8	Nut	4	V 57B	Spark plug nut	1
V 9	Lockwasher	4	V 58	Ignition wire clip	1
V 10	Bolt	6	V 59	Piston complete	1
V 11	Nut	6	V 60	Piston head <i>ONLY</i>	1
V 12	Lockwasher	6	V 61	Piston ring	2
V 13	Drain plug	1	V 62	Wrist pin	1
V 14	Drain plug gasket	1	V 63	Wrist pin keeper	2
V 15	Oil seal in V 2	2	V 65	Ventilator casing	1
V 16	Small bearing in V 2	1	V 66	Cap screw	6
V 17	Large bearing in V 2	1	V 67	Nut	6
V 18	Bearing spacer	1	V 68	Lockwasher	6
V 19	Large bearing in V 3	1	V 69	Sealing ring complete	1
V 20	Small bearing in V 3	1	V 70	Brass ring	1
V 21	Oil seal in V 3	2	V 71	Felt strip	1
V 22	Gromet	1	V 72	Rivet	7
V 23	Washer	1	V 73	Pull tab	2
V 24	Pinion spacer	1	V 74	Fan complete	1
V 25	Crankshaft complete	1	V 75	Fan only	1
V 26	Crankshaft (mag half)	1	V 76	Starting pulley	1
V 27	Sleeve (short)	1	V 77	Fan bolt	1
V 28	Key	1	V 78	Fan washer	1
V 29	Crankshaft (drive half)	1	V 79	Ventilator cover	1
V 30	Sleeve (long)	1	V 80	Screw	4
V 31	Key for V 26	1	V 81	Lockwasher	4
V 32	Pinion	1	V 92	Gas tank strap	1
V 33	Nut	1	V 93	Anchor pin	1
V 34	Connecting rod	1	V 94	Strap pin	1
V 35	Crankpin	1	V 95	Clamping pin	1
V 36	Con rod bearing	1 set	V 96	Clamping bolt	1
V 37	Nut	2	V 96B	Lockwasher	1
V 38	Con rod bushing	1	V 113	Right brace	1
V 39	Cylinder	1	V 117	Bolt	2
V 40	Cylinder head	1	V 118	Nut	2
V 41	Cylinder head stud	3	V 119	Lockwasher	2
V 42	Nut	3	V 123	Bolt	2
V 43	Washer	3	V 124	Lockwasher	2
V 44	Cylinder gasket	1	V 241B	Ignition wire casing	1
V 45	Intake manifold	1	V 241B1	Ignition wire only	1
V 46	Cap screw	2	V 244	Ignition wire clamp	1
V 47	Spark plug bushing	1	V 245	Screw	1
V 48	Lockwasher	2	V 246	Lockwasher	1



THROTTLE AND SWIVEL RELEASE ASSEMBLY

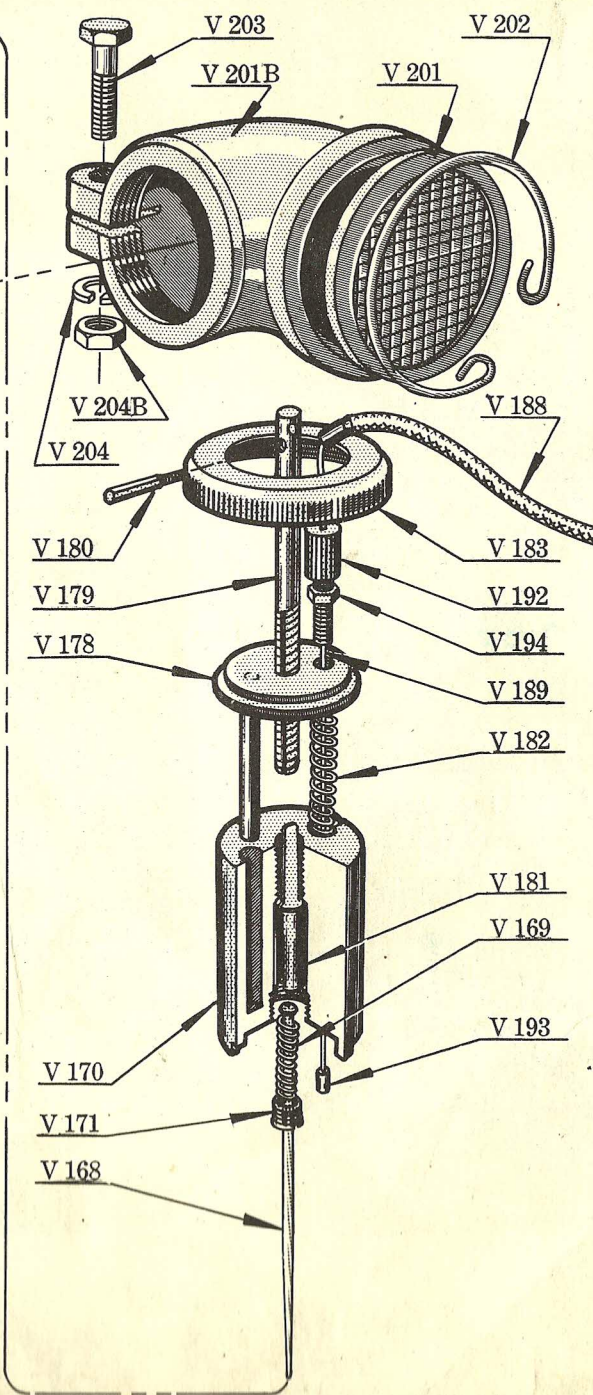
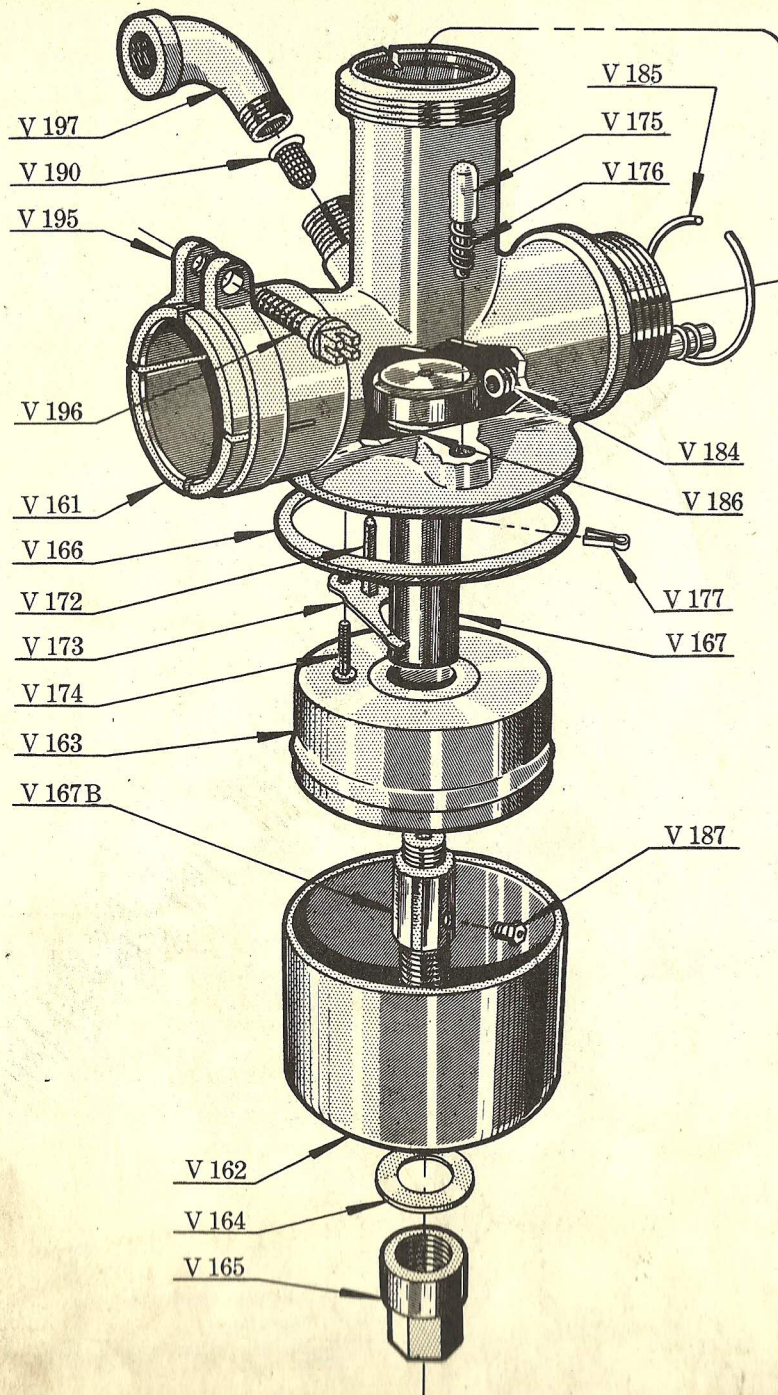
Part No.	Description	Quantity	Part No.	Description	Quantity
V 109	Handlebars complete	1	V 139	Spring	1
V 110	Handlebars with braces	1	V 140	Washer	1
V 111	Handlebars only	1	V 141	Throttle wire clamp	1
V 130	Throttle lever complete	1	V 142	Screw (short)	1
V 131	Clamp	1	V 143	Screw (long)	1
V 132	Lever	1	V 329	Swivel lever complete	1
V 133	Post	1	V 330	Lever only	1
V 134	Bolt (short)	1	V 331	Upper bracket	1
V 134B	Bolt (long)	1	V 332	Lower bracket	1
V 135	Nut	3	V 333	Screw	4
V 136	Lockwasher	1	V 334	Cap screw	1
V 137	End fitting	1	V 335	Nut	2
V 138	Idling screw	1			





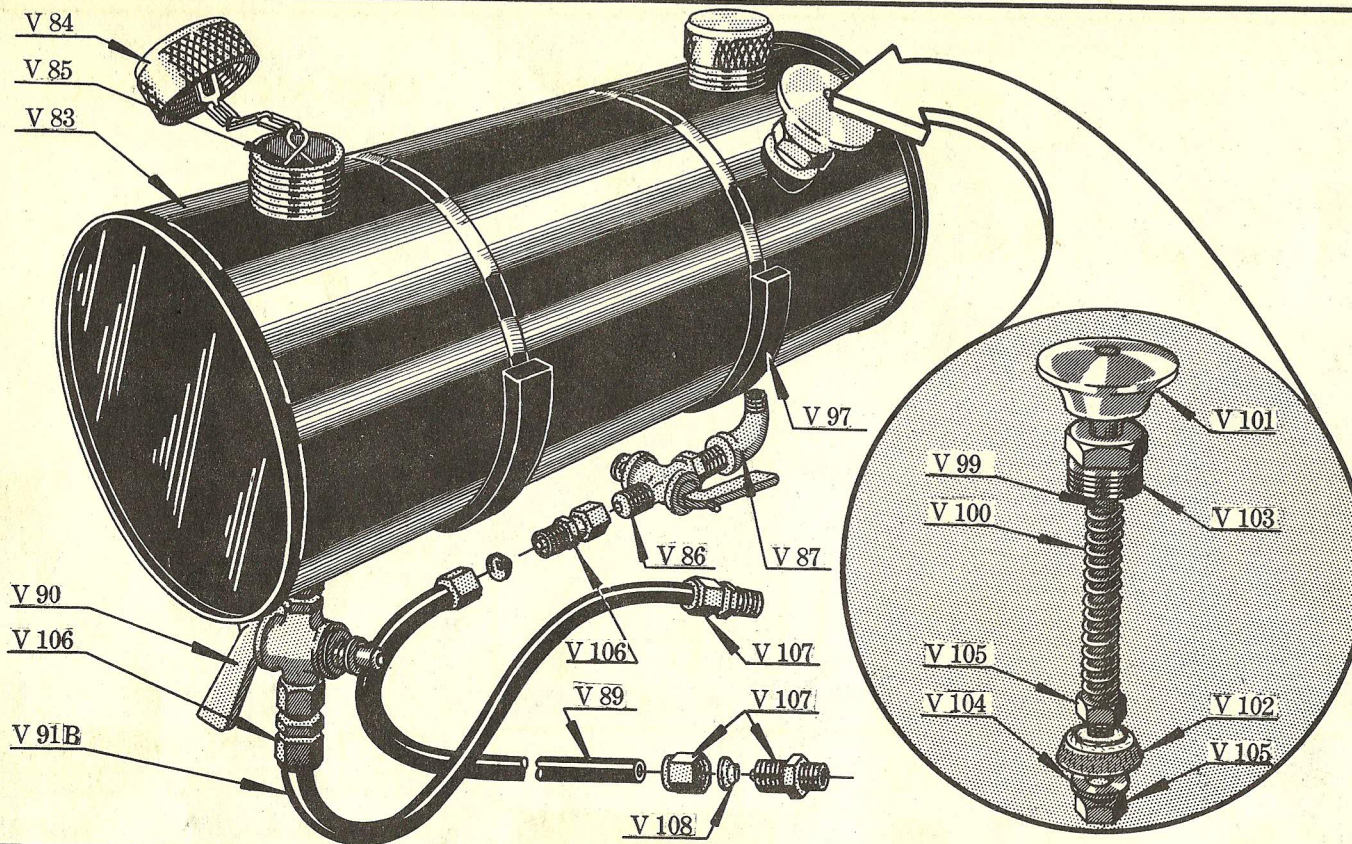
MAGNETO AND FLYWHEEL ASSEMBLY

Part No.	Description	Quantity
V 205	Magneto complete	1
V 206	Mag plate complete	1
V 207	Flywheel complete	1
V 208	Mag plate only	1
V 209	Flywheel only	1
V 210	Cam	1
V 211	Rivet	7
V 212	Dowel pin	2
V 213	Magnet	2
V 214	Pole shoe	2
V 215	Top plate	2
V 216	Screw	4
V 217	Flywheel nut	1
V 218	Flange washer	1
V 219	Screw	2
V 220	Lockwasher	2
V 221	Armature (right)	1
V 222	Armature (left)	1
V 223	Screw (short)	2
V 223B	Screw (long)	2
V 224	Ignition coil	1
V 225	Coil cable	1
V 226	Screw	1
V 227	Washer	1
V 228	Ignition box complete	1
V 229	Stud	2
V 230	Nut	2
V 231	Lockwasher	2
V 232	Condenser	1
V 233	Point clamp	1
V 234	Screw	2
V 234B	Brass washer	2
V 235	Top washer insulator	2
V 236	Bottom washer insulator	2
V 237	Breaker point	1
V 237B	Locknut	1
V 238	Ignition box only	1
V 239	Breaker arm	1
V 240	Spring	1
V 241	Ignition wire complete	1
V 242	Fitting complete	1
V 242B1	Bakelite fitting	1
V 242B2	Felt washer	1
V 242B3	Brass contact	1
V 242B4	Spring	1
V 242B5	Screw	1
V 242B6	Insulator	1
V 247	Ignition box cover	1
V 248	Spring with post	1



CARBURETOR ASSEMBLY

Part No.	Description	Quantity
V 160	Carburetor complete	1
V 161	Main casting	1
V 162	Bowl	1
V 163	Float	1
V 164	Washer	1
V 165	Acorn nut	1
V 166	Gasket	1
V 167	Centrepiece	1
V 167B	Jet	1
V 168	Taper needle	1
V 169	Spring	1
V 170	Throttle	1
V 171	Screw	1
V 172	Check valve	1
V 173	Check valve lever	1
V 174	Check valve pin	1
V 175	Priming pin	1
V 176	Spring	1
V 177	Cotter key	1
V 178	Top plate	1
V 179	Adjusting screw	1
V 180	Handle	1
V 181	Clamp	1
V 182	Spring	1
V 183	Top ring	1
V 184	Compensating tube	1
V 185	Spring	1
V 186	Washer	1
V 187	Limit jet	1
V 188	Throttle wire casing	1
V 189	Throttle wire	1
V 190	Gas screen	1
V 192	Idling screw	1
V 193	Knob	1
V 194	Locknut	1
V 195	Clamp	1
V 196	Screw	1
V 197	Street L	1
V 200	Air filter complete	1
V 201	Screen	1
V 201B	Elbow	1
V 202	Retaining spring	1
V 203	Bolt	1
V 204	Lockwasher	1
V 204B	Nut	1

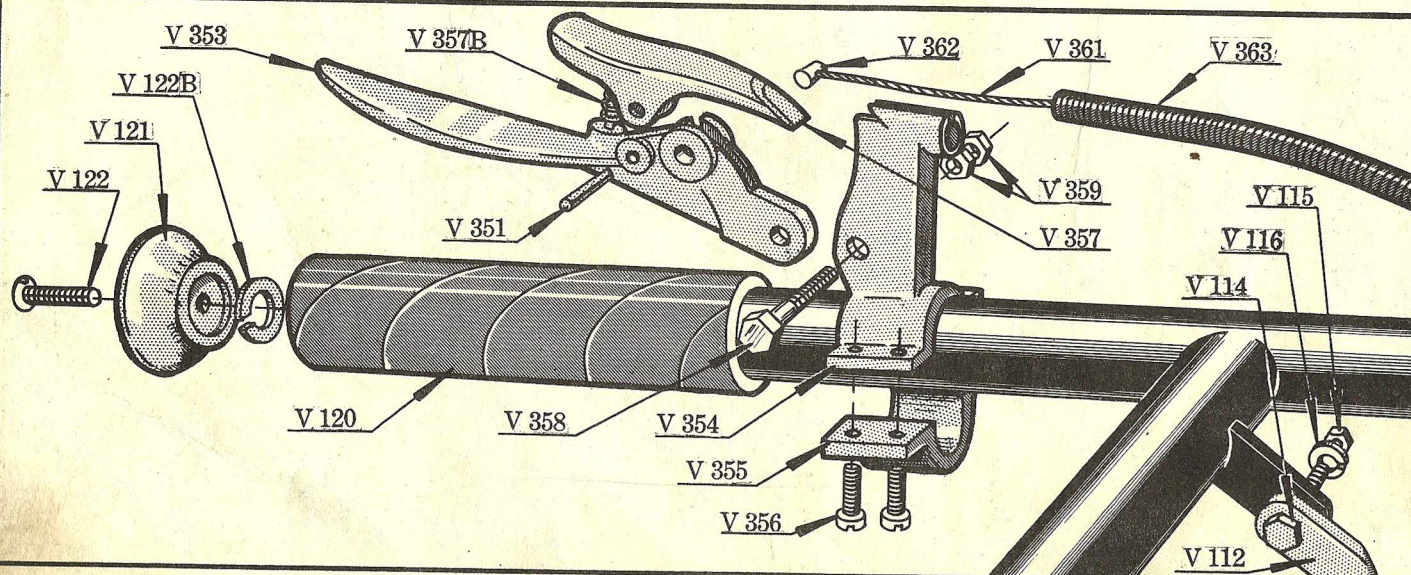


GAS TANK AND OIL PUMP

Part No.	Description	Quantity
V 82	Gas tank complete	1
V 83	Gas tank only	1
V 84	Gas tank cap	2
V 85	Cap spring and chain	2
V 86	Oil shut-off cock	1
V 87	Street L	1
V 88	Oil line complete	1
V 89	Oil line only	1
V 90	Gas shut-off cock	1
V 91	Gas line complete	1
V 91B	Gas line only	1
V 97	Shock strip	2
V 98	Pump complete	1
V 99	Pump shaft	1
V 100	Pump spring	1
V 101	Pump handle	1
V 102	Leather washer	1
V 103	Gland nut	1
V 104	Washer	2
V 105	Nut	2
V 106	Female fitting	2
V 107	Male fitting	2
V 108	Clamping sleeve	4

CLUTCH HANDLE ASSEMBLY

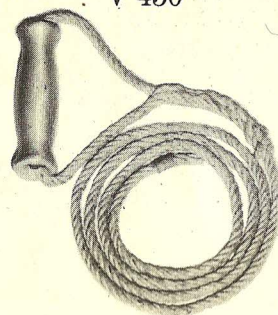
Part No.	Description	Quantity
V 112	Left brace	1
V 114	Cap screw	2
V 115	Nut	2
V 116	Lockwasher	2
V 120	Handlebar grip	2
V 121	Handlebar end	2
V 122	Screw	2
V 122B	Lockwasher	2
V 351	Pin	1
V 352	Clutch lever complete	1
V 353	Lever only	1
V 354	Upper bracket	1
V 355	Lower bracket	1
V 356	Screw	4
V 357	Locking dog	1
V 357B	Spring	1
V 358	Cap screw	1
V 359	Nut	2
V 361	Bowden wire with nipple	1
V 362	Nipple only	1
V 363	Bowden wire casing	1



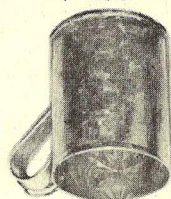
V 440



V 450



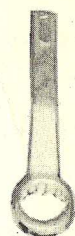
V 456



V 450B

V 449

V 443



V 446

V 442

V 441

V 445

V 444

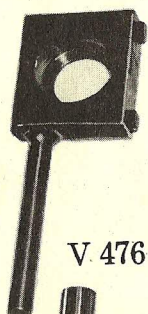
V 448

V 454

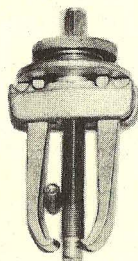
V 457

V 455

V 461



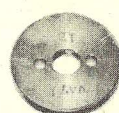
V 460



V 466



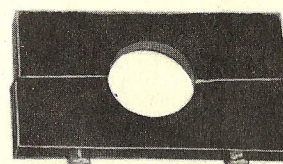
V 471



V 473



V 474



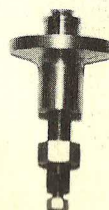
V 476



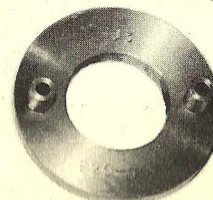
V 465



V 464



V 463



V 477



V 462

V 468



V 467



V 478



V 472



V 470



V 469

OPERATOR'S TOOLS

Part No.	Description	Quantity
V 440	6" pliers	1
V 441	6" Crescent wrench	1
V 442	Screwdriver	1
V 443	1/2 lb. ball pein hammer	1
V 444	1/2" x 6" cold chisel	1
V 445	1/8" x 6" pin punch	1
V 446	1 1/8" x 8" box wrench	1
V 448	Spark plug wrench	1
V 449	Starting rope only	1
V 450	Starting rope with handle	1
V 450B	Handle only	1
V 451	Chain saw axe	
V 452	Axe handle	
V 453	Canvas cover for machine	
V 454	Timing jig	1
V 455	Chain saw bull link	1
V 456	3/4 pt. measuring can	1
V 457	Point wrench	2

SPECIAL ASSEMBLY and DISMANTLING TOOLS

Part No.	Description	Quantity
V 460	Wheel puller	1
V 461	Pinion clamp and wrench	1
V 462	Flywheel hook	1
V 463	Pulling ring	1
V 464	Puller for V 20	1
V 465	Press tool	2
V 466	Press piece	1
V 467	Press piece	1
V 468	Press piece	1
V 469	Carburetor wrench	1
V 470	Carburetor wrench	1
V 471	Plate	1
V 472	Special tool	1
V 473	Steel pressing wedge	1
V 474	Puller for V 17 and V 19	1
V 475	Carburetor reamer	1
V 476	Reamer only	1
V 477	Handle only	1
V 478	Spring compressor	1

INSTRUCTIONS FOR THE OPERATION AND CARE OF MODEL B-29 BURNETT POWER SAW 8 H.P.

ENGINE INSTRUCTIONS—IMPORTANT

LUBRICATION

This is a two cycle motor and the only lubrication of moving parts in engine is supplied through mixture of oil in gasoline.

Mixing the Fuel and Running in a New Engine

Use a good grade of oil such as URSA X2 Star (Texaco) SAE 40 or Castrol 40 in the proportions of 1 part oil to 12 parts gasoline, No. 2 grade. (Not ethyl premium or naphtha gasoline). Motor should be carefully broken in on a mixture of one part oil to 10 parts gasoline. It is advisable to keep carburetor mixture adjustment a little on the rich side rather than too weak.

SHOULD FUEL REMAIN IN TANK FROM PREVIOUS DAY'S WORK IT IS IMPORTANT TO STIR OR SHAKE WELL BEFORE STARTING THE ENGINE.

Important

1. Mix oil and gas well before putting in tank.
2. Keep fuel mixture clean. Strain if possible.
3. Clean out tank, gasoline, gas cock and carburetor periodically.
4. Keep air filter clean.

LUBRICATION OF GEAR BOX

Keep gear box 2/3 full of light weight grease. Check level every other day.

LUBRICATION OF CHAIN

The chain is lubricated by cheap or reclaimed oil which may be diluted with a little fuel oil to make it flow freely.

LUBRICATION OF HEAD END IDLER BEARING

The idler is fitted with a double shield, lifetime packed bearing.

CARE OF MOTOR

1. Do not run motor at high speed until it has been well broken in. Each machine is thoroughly tested and run in on our special dynamometer for 8 hours.
2. Never race motor when not under load.
3. Tighten all nuts and bolts frequently.
4. Keep your motor clean and free from carbon.
5. Check exhaust ports occasionally for carbon.

TO START MOTOR

1. Open gas tank shut-off valve.
2. Open throttle about half way.
3. Turn bar of needle adjusting screw left as far as it will go.
4. Press tickler on side of carburetor until gasoline just commences to flow.
5. Wrap starting rope around pulley—turn motor back against compression and give a sharp quick pull.
6. After engine has warmed up turn bar of needle adjusting rod to the right as far as it will go consistent with good running.
7. **Never** choke carburetor when starting a warm motor.

HARD STARTING OR FAILURE TO START

1. **Gasoline**
 - a. Gas tank empty.
 - b. Shut-off valve closed.
 - c. Clogged fuel lines or screens. Remove shut-off valve, gas line and carburetor and thoroughly clean.
 - d. Water in gas tank or carburetor.
 - e. Motor flooded (accumulation of raw gas in crankcase). Remove plug in bottom of crankcase and drain. Turn motor over a few times. Replace plug.
 - f. Carburetor not properly adjusted.
 - g. Check vent in gas tank cap.
2. **Ignition Trouble**
 - a. Ignition wire from magneto to spark plug disconnected or shorted.
 - b. Breaker points improperly set or dirty. Keep faces of points square and set at exactly .015 gap (1/64).
 - c. Spark plug fouled (shorted) or cracked.
 - d. Spark plug points improperly set. Point gap .018.
 - e. Check timing—firing position 9/16" from top dead centre on compression stroke.
 - f. Approximately once a month a spot of heavy lubricating oil or vaseline should be applied to flywheel cam (V210) and breaker arm fibre (V239) to prevent excessive wear on fibre which would alter ignition point clearance.
3. **Poor Compression**
 - a. Piston rings stuck in grooves — may be badly carbonned.

- b. No oil in fuel.
- c. Loose spark plug.
- d. Cylinder scored.
- e. Drain plug out of base.
- f. Leak in crankcase joint.
- g. Leak around carburetor connection.

PISTON RINGS

When fitting new rings the gap clearance should be from .010 to .012 and burr from filing removed.

TO REMOVE FLYWHEEL

The flywheel may be removed by unscrewing the centre nut (V217). This nut has a flange which draws the flywheel from the shaft as it is unscrewed. The rim of the flywheel should be held while removing this nut. A special tool has been designed for this and is listed as flywheel puller (hook) Part V462.

MAGNETO PLATE

The magneto plate is located on crankcase hub and secured by 2 filister head screws. As the flywheel on the Model "B-29" Burnett Power Saw is keyed to the crankshaft it is necessary to adjust timing by rotating magneto plate to advance or retard firing position.

TIMING

All Model "B-29" Burnett Saws are timed at 9/16 from top dead centre on compression stroke at factory. You will notice a small hole in magneto plate which lines up with small countersunk hole in face of crankcase behind mag plate.

1. Line up small hole in magneto plate and countersunk hole in face of crankcase.
2. Tighten filister head screws to secure mag plate.
3. Place flywheel on crankshaft and turn until points are at widest gap position.
4. Adjust points to .015 clearance.
5. Lock flywheel into position. Always use hook (V462) or hold rim of flywheel while tightening nut. **Pinion should not be held** to prevent turning while flywheel being removed or tightened.
6. Replace ignition box cover, flywheel fan and ventilator cover.
7. Slots have been made in magneto plate so that timing may be advanced or retarded as desired.

CLUTCH

The Burnett Model "B-29" power saw is fitted with a multiple disc-spring loaded type clutch, which is controlled by bowden wire and clutch lever from handle-bars.

When engaged, clutch adjustment should be positive, taking full load from motor when chain is cutting, but should slip when chain is suddenly stopped.

When disengaged, clutch should be free with no movement of chain.

Adjustment of clutch is accomplished as follows:

1. Place clutch lever V353 in upright position and pull all slack in clutch bowden wire and clamp with locking bolt. Contact arm to be about 1 1/4" above lug on gear box. This position will insure necessary room for movement of contact arm when working clutch.
2. Turn adjusting screw V322 in, until a fair amount of tension has been put on bowden wire.
3. Pull clutch lever V353 in down position.
4. Screw inside clutch cover V260 on to spindle bolt, running it down until it is tight against clutch plates, then back off until clutch will turn freely, (approximately one and one half turns back). Fit lock washer and nut and tighten up **securely**. It is most important that inside clutch cover V260 be in correct position because:

Clutch will not release if too far on spindle bolt.

Clutch will slip if not far enough on spindle bolt.

Make final adjustment by turning V322 contact adjusting screw.

If clutch does not hold, screw out **slightly**.

If clutch does not release or drags, screw in **slightly**.

CARE OF CARBURETOR

Carburetor should be taken down at regular intervals and thoroughly cleaned. Care should be taken not to tap side of main casting as this distorts inner bore and throttle will not work freely.

ADJUSTMENT

1. If engine will not take full throttle (that is "rev up") then fuel level in carburetor bowl may need adjustment. This level can be raised or lowered by bending check valve lever V173.
2. Further adjustment can be made by turning bar of needle adjusting rod V179 until engine runs smoothly. When all adjustments are correct engine should respond immediately to throttle.
3. It is advisable to keep carburetor mixture adjustment a little on the rich side rather than too weak. When mixture is rich engine will have tendency to smoke slightly.

SAW CHAIN FILING INSTRUCTIONS FOR BURNETT POWER SAWS

Chains leave the factory ground and filed for service and are of a standard pattern, adaptable with a few minor changes for either **soft** or **hard wood**.

Chains are manufactured from best quality saw steel and are designed for **filing** or **grinding**.

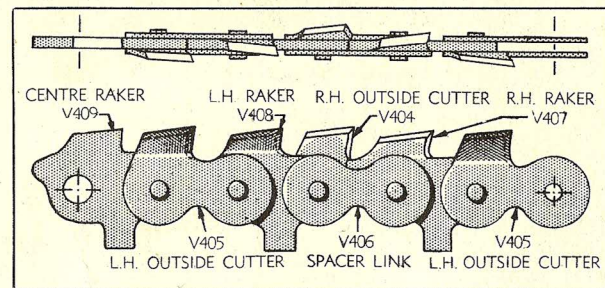


FIG. 1

Great care must be taken with saw chains to insure good results and a minimum of chain trouble.

Figure 1 shows names and sequence of rakers and cutters.

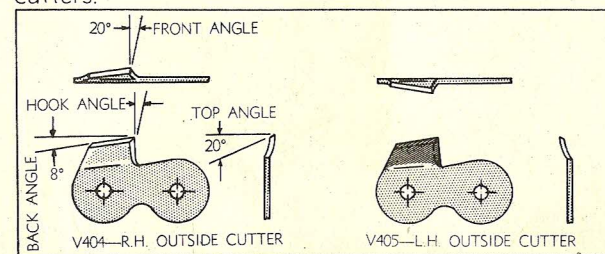


FIG. 2

THE CHAIN TEETH SIDE CUTTERS

The above 2 figures show the front angles, the top angles, and the hook angle. All these angles are recommendations only and should be varied according to type and grade of timber being cut.

The hook angle varies from no hook to as much as 10 degrees. The softer the wood the more hook. This hook will give a shearing action and tend to eliminate "whiskers." Whiskers occur only in fibrous wood and cause friction and bind on the chain.

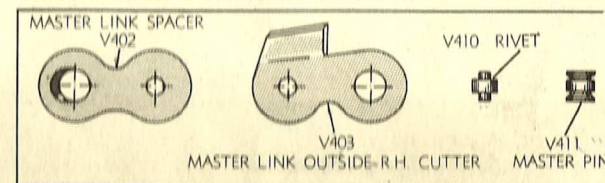


FIG. 3

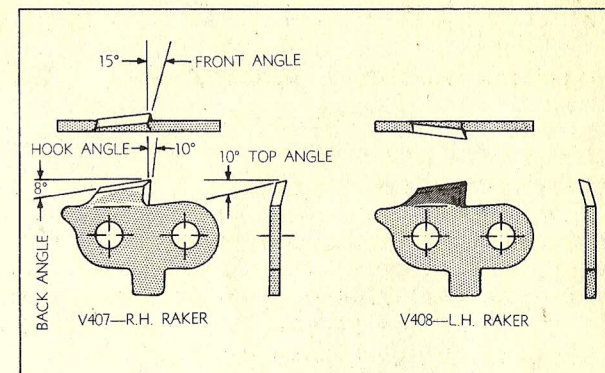


FIG. 4

RIGHT AND LEFT RAKER

The action of these rakers is that of a chisel rather than as a cutter. Both these teeth are lower than the outside cutter. The front and top angles are also different than the outside cutters. The hook angle will vary from 10 to 20 degrees according to nature of wood.

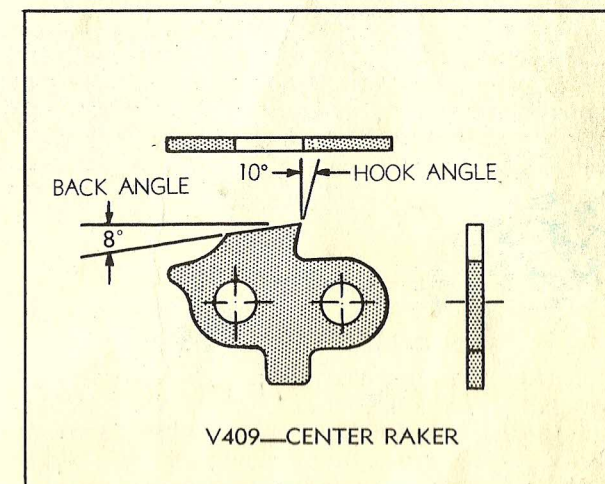


FIG. 5

CENTRE RAKER

The centre raker is jointed lower than the R.H. and L.H. rakers by .010 of an inch. The hook is the same as the other rakers. There is no top angle or front angle. However, sometimes a slight front angle alternating from left to right has given improved results.

The chain should be **uniformly filed** at all times.

SAW CHAIN FILING INSTRUCTIONS FOR BURNETT POWER SAWS—(Cont'd)

SETTING THE CHAIN

Only the outside cutters of a chain require setting and not necessarily every time the chain is filed. Chain should be inspected each time it is filed and if timber bind shows or the tooth shows brightness of metal or rubbing action around point this indicates point is starting to round off and requires setting.

"Timber-Bind" is when the point becomes rounded on the outside of the tooth and instead of point cutting the wood, a spot immediately behind point is rubbing and causes the chain to bind in the wood.

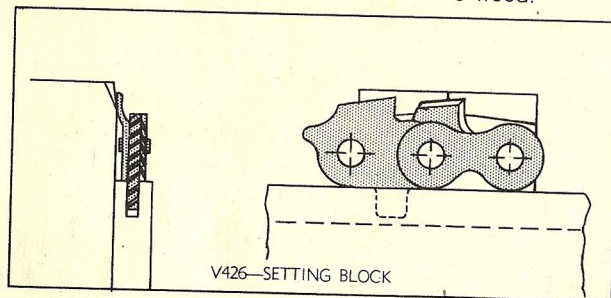


FIG. 6

SETTING BLOCK

The setting block is one of the attachments fitted to the jointing bar. This setting block has two angles and is adjustable for different sets. A sharp blow with a setting hammer on the side of the point will set it over. Care should be taken that both sides of the chain are set uniformly and are the same, otherwise chain may have tendency to "run" in the cut (not cut straight).

Setting should be done and then top faces of chain touched up with file.

JOINTING THE CHAIN

Jointing is required when the heights of the teeth in the chain become uneven or different than standard desired. Unevenness in the chain teeth heights may be caused by careless filing or by fouling a stone or wedge.

All similar teeth must be filed to a uniform height at the **point of the tooth**. Remove as little material as possible from top of teeth when jointing. This will insure longer chain life.

The jointing gauge has a hardened surface with two steps to give the difference in heights required between outside cutters, inside rakers and centre rakers. Inside rakers should be about .015" lower than outside cutters and centre rakers about .025 lower than outside cutters.

To joint a chain, place in the jointing bar and adjust jointing gauge so that centre (highest) surface is flush with lowest side cutter. Slide the chain along and file the tips of the side cutters by filing across the case hardened surface of the jointing gauge. Without altering height of gauge, file all inside rakers to .015 below cutters by using correct step on gauge. Centre rakers are filed next using lowest step on gauge. This will give .025 difference between outside cutters and centre rakers.

The teeth are then filed from the top, maintaining same top angle as on teeth, until file mark from jointing is removed. **This is the only time a chain is filed from the top.**

Always remove the minimum amount of material when jointing the chain.

Care and patience are required to keep your chain in good shape. Accuracy in filing a chain is paramount to successful cutting.

Keep chain riveted up and tight. Soak in oil at every opportunity in order to lubricate and remove any pitchy substances.

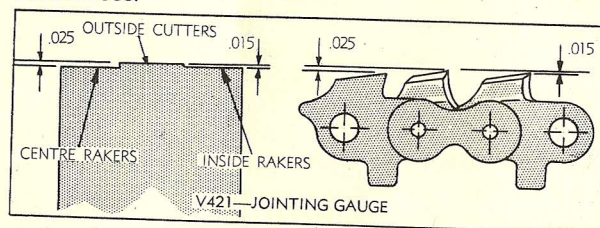


FIG. 7

JOINTING AND FILING

1. Never file chain on top unless chain has been "rocked" or damaged, except when jointing is required. Jointing is required **only** when teeth in a chain become uneven.
2. The cutters and rakers are sharpened by filing from the front of the tooth. This gives longer chain life. Fig. 8 below shows correct way and wrong way to file chain.

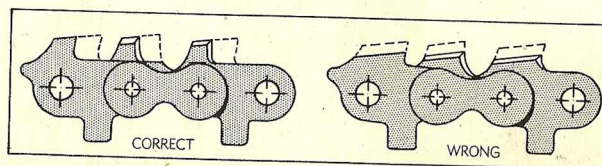


FIG. 8

3. For smooth cutting **remember:**
 - a. All outside cutters must be same height.

- b. All inside rakers to be .015 lower than outside cutters.
- c. All centre rakers to be .025 lower than outside cutters.

The jointing gauge has a hardened surface with two steps to give above mentioned heights.

SAW CHAIN JOINTING AND FILING BAR WITH SETTING ATTACHMENTS

Proper use of this equipment insures accuracy in filing and jointing the saw chain. Remember that a well cared for chain makes for successful cutting—eliminates overload on engine—decreases wear on cutter bar—cuts more timber.

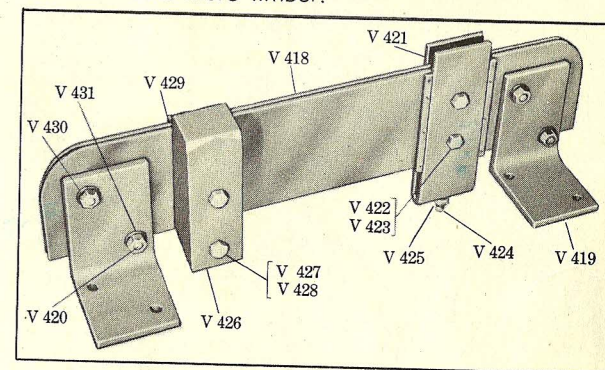


FIG. 9

JOINTING BAR

Part No.	Description	Quantity
V 416	Chain saw files	1
V 417	Jointing bar complete	1
V 418	Bar only	1
V 419	Leg	2
V 420	Bolt	4
V 421	Jointing gauge	1
V 422	Bolt	2
V 423	Nut	2
V 424	Adjusting screw	1
V 425	Locknut	1
V 426	Setting block	1
V 427	Bolt	2
V 428	Nut	2
V 429	Brace block	1
V 430	Nut	4
V 431	Lockwasher	8

THE CUTTER BAR

The cutter bar is manufactured from single ply alloy steel. Care should be taken that bar receives all possible lubrication. Bar is drilled to receive lubrication into slot. Be sure this hole is free at all times. Pressure pump is provided to force obstructions from oil line and cutter bar oil hole.

SPECIFICATIONS

FOREST KING...8 H.P. MODEL..."B29" POWER CHAIN SAW BUILT BY BURNETT...POWERED BY VILLIERS MOTORS

Engine: Villiers British made—single cylinder, two cycle—air cooled 250 cc gasoline engine.

Cylinder Head: Aluminum alloy—no head gasket.

Piston: Aluminum alloy — flattop or deflectorless type. Full floating wrist pin.

Cylinder Block: Cast iron—long wearing—63 mm bore x 83 mm stroke. Villiers patented porting arrangement.

Connecting Rod: Full complement alternate brass and steel rollers using conrod as outer race.

Crank Pin: Hardened and ground—acts as inner race for conrod bearing. Precision taper fit in crankwebs.

Crankshaft Bearing: 2 heavy duty roller and 3 heavy duty ball bearings used on crankshaft

Magneto: Villiers flywheel type magneto. Flywheel keyed to crank shaft. Magneto plate secured to crankcase. Magneto fully enclosed in dust-tight compartment by patented sealing arrangement.

Carburetor: Villiers patented 250 cc type. Few moving parts—economical—easy to adjust—reliable.

Fuel Consumption: 2½ gallons approx. for 8 hours working day.

Fuel Mixture: Use good grade oil, SAE 40—1 part oil to 12 of gasoline.

Engine Speed: 3000 - 3600 RPM.

Drive: Drive pinion fitted directly on crankshaft on taper and keyed. Works with bevel gear in gear box.

Clutch: Multiple disc — spring loaded type — controlled with Bowden wire and lever from handlebars. Easy to adjust—trouble free.

Gears: Hardened to take hard wear.

Cutter Bar: Single ply alloy steel — hardened and ground. Bar swivels 270 degs.—3 positions—controlled by lever from handlebars. Cutting capacity to 84".

Chain: Best quality saw steel designed for filing or grinding.

Oiling System for Chain: Gravity and forced feed from oil section of combination fuel and lubrication tank.

Weight: 8 h.p. Forest King—Model B-29—complete with 4' bar and chain—125 lbs. approx.

CHAIN GRINDER

We have recently designed and are now manufacturing an electric chain grinder. After spot jointing on jointing bar it is possible to set grinder to grind all necessary angles on standard saw chain. **Write us for further information.**