

# SERVICE MANUAL

FOR

**20" HEAVY BAND SAWS**

Serial Number.....

**NOTE!** When ordering Repairs listed in this Manual, be sure to give us the Serial Number(s) of machine.

## PARTS LIST

### FOR

### 20" HEAVY BAND SAW

**Note:**—When ordering repairs, be sure to give us the serial number of machine.

#### Main Assembly — Parts Required on All Models

Part No.	Part Name	Mat.	No. Req.
181	Collar 3/4" Bore .....	C.I.	1
561	Hand Wheel 1/2" Drill .....	C.I.	1
633	Segment .....	C.I.	1
1845	Spring Plug .....	C.I.	1
2104	Hand Wheel .....	C.I.	1
3031	Outer Ball Bearing Cap .....	C.I.	1
3037	Inner Cap — Upper Bearing .....	C.I.	1
3524	Dust Spout .....	C.I.	1
4103	Upper Wheel .....	C.I.	1
4111	Segment Support R. H. ....	C.I.	1
4119	Upper Guard .....	C.I.	1
4120	Door for Upper Guard .....	C.I.	1
4121	Door for Lower Guard .....	C.I.	1
4122	Sub-Table .....	C.I.	1
4133	Standard .....	C.I.	1
4134	Yoke .....	C.I.	1
4135	Gib for Yoke .....	C.I.	1
4142	Ball Bearing Case .....	C.I.	1
4169	Segment Clamp .....	C.I.	1
4210	Table Stop .....	C.I.	1
4213	Body of Saw Guide .....	C.I.	2
4214	Lower Guide Link .....	C.I.	1
4215	Throat Block .....	Masonite	1
4235	Hand Wheel .....	C.I.	1
4250	Hand Wheel .....	C.I.	1
4256	Front Fender Support .....	C.I.	1
4297	Table Segment .....	C.I.	1
4298	Segment Support .....	C.I.	1
4313	Main Table 20" x 24" Regular .....	C.I.	1
4313-B	Main Table 24" x 24" Special .....	C.I.	1

#### Main Assembly Steel

950-A	Guide Pin 5/8" x 2 3/4" .....	CRS	1
951-A	Guide Pin 5/8" x 2 1/4" .....	CRS	1
1934-A	Clamping Nut 7/8" x 1 1/8" .....	CRS	1
1982-A	Upper Shaft 1 1/8" x 10 1/8" .....	MS	1
1983-A	Distance Piece 1" x 5 19/32" .....	MS	1
2082-A	Washer 1/4" x 1" .....	CRS	1
2759-A	Key for Guide Stem 1/8" x 1" x 11/16" .....	Angle Iron	1
2760-A	Guide Stem 7/8" x 17 1/4" .....	CRS	1

### Main Assembly — Steel (Cont'd)

2778-A	Pin for Rear Fender $\frac{1}{4}$ " x $\frac{5}{16}$ "	CRS	2
2800-A	Upper Guide Pin $\frac{5}{8}$ " x 4"	CRS	1
2801-A	Segment Bar $1\frac{3}{8}$ " x $5\frac{5}{8}$ "	CRS	1
2805-A	Guide Blocks $\frac{5}{8}$ " x $\frac{5}{8}$ " x $1\frac{1}{2}$ "	CRS	4
2898-A	Tension Screw $\frac{3}{4}$ " x $5\frac{5}{16}$ "	CRS	1
3800-A	Dust Block	Wood	1
2816-A	Stud $\frac{3}{8}$ " x 2"	CRS	1
2867-A	Index Pointer Support	CRS	1

### Main Assembly — Commercial

257-A	Tilting Spring		1
319-A	Tension Spring		1
1443-A	Disk		2
1446-A	Disk Socket		2
1447-A	Disk Shaft		2
1611-A	Fibre Collar		2
2699-A	Front Fender		1
2700-A	Rear Fender		1
2702-A	Rear Fender Cover		1
2817-A	Guard Latch Spring		1
2819-A	Degree Scale		1
1173-A	Lower Latch Spring		1
SKF 6202Y	Ball Bearing (or Fafnir 202)		1
SKF 6204Y	Ball Bearing (or Fafnir 204)		1
P-8-2	Rubber Tires		2
SK-122	Standard Locating Plate		2
	Saw Blade $\frac{1}{4}$ " x 11' 3"		1

### Direct Motor Drive — Foot Brake Included

4106	Frame	C.I.	1
4151	Motor Base	C.I.	1
4172	Brake Pedal	C.I.	1
4216	Brake Arm	C.I.	1
4234	Lower Wheel	C.I.	1
4485	Brake Shoe and Lever	C.I.	1
4486	Brake Bracket	C.I.	1

### Steel

2811-A	Brake Pedal Rod $\frac{3}{4}$ " x $10\frac{1}{2}$ "	CRS	1
3027-A	Brake Rod $\frac{3}{8}$ " x $23\frac{3}{4}$ "	HRS	1
3030-A	Brake Pin $\frac{3}{8}$ " x $1\frac{3}{8}$ "	CRS	1

### Commercial

3029-A	Spring for Brake		1
	$\frac{3}{8}$ " x 1" x 2" Brake Lining		1

### V-Belt-Driven Parts Only

4103	Lower Wheel .....	C.I.	1
4137	Frame .....	C.I.	1
4138	Motor Base .....	C.I.	1
4173	Thrust Collar .....	C.I.	2
4267	Slide Rails (Motor) .....	C.I.	2
4802	Belt Guard .....	C.I.	1

### Steel Parts

3460-A	Lower Wheel Shaft $1\frac{7}{16}'' \times 12\frac{3}{4}''$ .....	CRS	1
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### Commercial Parts

BS 30-302	V-Belt Sheave 3" OD, 2.8 PD $\frac{3}{4}''$ Hole, $\frac{3}{16}''$ Keyway .....	Pur.	1
BS 60-602	V-Belt Sheave 6" OD, 5.4 PD 1" Bore, $\frac{1}{4}''$ Keyway .....	Pur.	1
3560	Gates V-Belt "B" Size 56" Pitch Length .....	Pur.	1
6206-Y	SKF Ball Bearing (or Fafnir 206) .....	Pur.	2

### B-20-M Metal Band Saw Only

475	Pulley 16", 1-1/16" Bore .....	C.I.	1
518	Hand Wheel 6" D, $\frac{5}{8}''$ Bore .....	C.I.	1
4103	Wheel Lower .....	C.I.	1
4137	Frame .....	C.I.	1
4173	Thrust Collar .....	C.I.	1
4935	Reeves Adj. Screw Nut .....	Br.	1
4973	Gear Case .....	C.I.	1
4974	Gear Case Cap .....	C.I.	1
4975	Gear Case Cap .....	C.I.	3
4976	Bearing Cap and Felt Holder .....	C.I.	1
4977	Wheel Shaft Gear 10" P.D. ....	C.I.	1
4978	Int. Gear - 8" P.D. ....	C.I.	1
4979	Int. Pinion 3.333" P.D. ....	C.I.	1
4980	Pulley Shaft Pinion 2.75" P.D. ....	C.I.	1
4981	Motor Base Bracket .....	C.I.	1
4982	Motor Adj. Arm .....	C.I.	1
4984	Adj. Screw Bracket .....	C.I.	1
4985	Motor Plate .....	C.I.	1
4988	Lower Bearing Thrust Collar .....	C.I.	1
5005	Speed Gauge .....	C.I.	1

### Steel

3433-A	Pulley Shaft $1\frac{3}{8}'' \times 9\frac{1}{4}''$ .....	M.S.	1
3434-A	Int. Gear Shaft $1\frac{3}{8}'' \times 5\frac{3}{4}''$ .....	M.S.	1
3435-A	Motor Adj. Screw $\frac{5}{8}'' \times 40''$ .....	CRS	1
3436-A	Motor Bracket Pin $\frac{3}{4}'' \times 8\frac{7}{8}''$ .....	CRS	1
3460-A	Lower Wheel Shaft $1\frac{7}{8}'' \times 12\frac{3}{4}''$ .....	M.S.	1
3780-A	Gear Case Bracket .....	M.S.	1
2880-A	Collar $\frac{3}{8}''$ Tap .....	CRS	2

## Commercial

171-A	Machine Handle .....	STL	1
3441-A	Washer .....	Pur.	1
6206	SKF Ball Bearing (or FAFNIR 206) .....	Pur.	6
N-06	SKF Nut .....	Pur.	4
W-06	SKF Lock Washer .....	Pur.	4
	3/8" Woodfuff Keys to fit Cutter "G" .....	Pur.	3
P-10-1	No. 25 Reeves - Vari Speed Pulley 3/4" Bore x 3/8" 3/32" Keyway .....	Pur.	1
P-10-19	No. 25 Reeves Belt, 66" Pitch Length .....	Pur.	1

### The Following Parts Are Extra Equipment.

#### Ripping Fence

3681	Binding Block .....	C.I.	1
4056	Ripping Fence .....	C.I.	1
4235	Hand Wheel With Stud .....	C.I.	1
4314	Fence Rail .....	C.I.	1

#### Cut Off Fence

3117	Gauge Holder .....	C.I.	1
3683	Cut Off Fence .....	C.I.	1
2031-A	Gauge Rod 3/8" x 14 5/8" .....	CRS	1
2032-A	Gauge Rod 1/4" x 7 1/2" .....	CRS	1
2462-A	Cut Off Pin 3/8" x 5/8" .....	CRS	1
3864-A	Slide 3/8" x 1" x 18" .....	CRS	1
2818-A	Stud 1/4" x 1 1/4" .....	CRS	1
1243-A	Degree Dial .....	Brass	1

#### Ball Bearing, Side Roller Guide

5412	Body .....	C.I.	2
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#### Steel

4046-A	Guide Pin 1/2" x 1 13/32" .....	HRS	4
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#### Commercial

No. 0	"McGill" B. Bearing Guide Wheel .....	Stl.	2
WC-88008	New Departure Ball Bearing .....		4

#### Hand Wheel Tilting Device For Table

518	Hand Wheel 3/8" Bore .....	C.I.	1
562	Hand Wheel 1/2" Tap .....	C.I.	1
588	Worm .....	C.I.	1
2130	Slotted Segment .....	C.I.	1
5598	Worm Bracket .....	C.I.	1
550-A	Stud 1/2" x 2 1/2" .....	CRS	1
929-A	Worm Shaft 7/8" x 10" .....	CRS	1

#### Spring Counterbalance Parts

323	Spring Case Plate .....	C.I.	1
324	Spring Case .....	C.I.	1
196-A	Chain, 18" Long .....	Brass	1
304-A	Spring .....	S.S.	1

#### Brazing Tongs and Clamp

67	Brazing Clamp .....	C.I.	1
331-A	Brazing Tongs .....	Stl.	1

## Operating Instructions For Crescent

### 20" Heavy Band Saw

**REMOVING RUST PREVENTIVE:** Care should be taken to be sure all rust preventive is removed properly from all parts of machine. Kerosene or Naptha is recommended for this purpose. Do not use a substance that will remove the paint from the machine. Particular care should be taken with the saw guides as they will stick and not operate efficiently if all rust preventative is not removed.

**FOUNDATION:** The first requisite of a good machine is that it should be placed on a substantial foundation and leveled properly. If a new cement foundation is made for this machine then either standard anchor bolts or lag bolts should be imbedded in the cement. A floor plan will be furnished showing bolt spacing. If this equipment is to be placed on an old cement floor then holes should be drilled and expansion bolts used to hold machine firmly. If the foundation is of wood, then common lag screws will be sufficient to support the machine.

After machine is fastened to its foundation it should be checked for level alignment again as it may change after drawing down bolts. Wooden wedges or iron shims are recommended for leveling.

If V-Belt driven, particular care should be taken to have both Sheaves line up with each other as undue wear on belt will occur if the sheaves are in a twist or out of line. A strong straight edge held on the outer edges of both sheaves should be used for this purpose.

**WIRING OF MACHINE:** Wires should be run from a regular line through a fused knife switch, so that current can be entirely shut off from machine. This is recommended by us and compulsory in most states so that operator can adjust and set up machine without endangering himself. This machine is regularly furnished with a manual overload push button starter which automatically cuts off current when machine is overloaded. To reset, wait one or two minutes for the heaters in the starter to solidify, then press start button which will start machine again. If machine is equipped with a magnetic starter, then the current will be cut if machine is overloaded and also if current is under voltage. To start machine again, wait one or two minutes and press reset button on starter, then press start button.

**PLACING SAW BLADE ON WHEEL:** First open upper and lower doors, then remove rear fender cover. Now place saw blade over the wheels and tighten by turning handwheel underneath the upper wheel; now turn upper band wheel to see if blade is tracking on wheel properly. A smaller handwheel near upper wheel bearing will align saw by turning right or left as the case may be.

**ADJUSTING UPPER AND LOWER GUIDES:** The guide jaws should be set so that they will just clear saw blade without rubbing and should be mounted just behind the bottom of the teeth on the blade. The disk should be mounted so it will just clear the saw blade, then when work is being done, the slight pressure of pushing the work against the teeth of the saw blade will cause the blade to rest against the disk with sufficient pressure to make it revolve. This disk should not revolve until work is actually being done. Also when cutting, be sure upper guide is as near to the work as possible so that saw blade is properly supported.

**LUBRICATING MACHINE:** This machine was lubricated before leaving factory and is ready to run. Both upper and lower shafts run in ball bearings so should be checked two or three times a week depending on time machine is in operation. To lubricate the guides merely take out the disk and shaft and put a few drops of oil on the shaft or in the socket part of guide.

## Operating Instructions (Cont'd)

**HOW TO APPLY RUBBER TIRES TO WHEELS:** Note—These rubber tires are smaller than the wheels. You must stretch them until they go on.—First see that the wheels are free from old cement. It may require a good application of gasoline, naphtha, or alcohol to properly clean them. Spread one coat of Elastic Rubber Cement thoroughly over the face of the wheel. **DO NOT APPLY ANY TO RUBBER TIRE.** Then quickly stretch rubber tire and place in position on face of wheel before cement has time to dry as this is quick drying cement. It may require two or three men to help in stretching the tire on the wheel. Let the wheel stand 8 to 10 hours before using.

The Elastic Rubber Cement recommended can be obtained from us. It is sold in pint and quart cans. A pint is sufficient for cementing tires on two wheels, up to 40" in diameter.

A substitute for this cement can be made but it is not as durable and the time involved before the wheel can be used is much longer.

**SUBSTITUTE:** Make a heavy varnish by dissolving gum shellac in alcohol, making it a little thicker consistency than you would use on wood-work. Spread one coat of this varnish on the face of the wheel, and one coat on the inside of the rubber tire. Allow about half an hour for drying, then apply another good coat to the face of the wheel and quickly stretch the tire and place in position on the face of the wheel before the last coat has time to dry. Let the wheel stand for at least 24 hours before using. 48 hours will be all the better. Wheel should stand in a warm place while varnish is hardening.

**HOW TO BRAZE BAND SAW BLADES:** Where the user does not have a modern electric Brazer or Electric Welder the following instructions for brazing will prove very efficient.

First scarf the ends of saw off, beveling with a file to make a lap-joint. Let the bevel run back from the end of the blade the distance of the width of blade. Then put the blade into position in the brazing-clamp, taking care that the back of saw comes perfectly straight, and that the lap-joints come nicely over each other in the middle of the clamp. Take a little pulverized borax, mixed with a few drops of water to form paste, and spread a small portion between the joint. Cut a small piece of soldering material, as large as the joint and insert this also between the laps; the saw is now ready to apply the heat. Heat the tongs to a good red heat and apply them over the joint, holding them in position until the heat dies down to a low red, then the tongs can be removed, and it then remains but to straighten the blade, and file the joint to a uniform thickness with the rest of the blade and the job is done. For a soldering material use silver-solder or very thin sheet brass. The brass is much cheaper and makes fully as good a joint as the silver-solder, but requires a higher heat to melt it. For sheet brass make the tongs nearly to welding heat. For silver-solder, a bright red is sufficient. The best way to pulverize borax is to put about three drops of water until a paste is formed. Always dress the joint down after brazing to the same thickness as the rest of the blade; otherwise, if left thicker, it will make rough work. A gasoline blow-torch (such as is used for paint burner) can be used instead of the tongs when silver-solder is used. Care must be taken to have the joints lay flat together before applying the torch. A piece of very thin wire wrapped tightly around the joint before applying torch will lessen the risk of a bad joint.

## Periodic Inspection of Electric Motors

A systematic and periodic inspection of motors is necessary to insure best operation. Of course, some machines are installed where conditions are ideal, where dust, dirt, and moisture are not present to an appreciable degree; but most motors are located where some sort of dirt accumulates in the windings, lowering the insulation resistance and cutting down creepage distances. Some dusts are highly abrasive and actually cut the insulation in being carried through the ventilating air. Fine cast-iron dust quickly penetrates most insulating materials. Hence the desirability of cleaning the motors periodically. If conditions are extremely severe, open motors might require a certain amount of cleaning each day. For less severe conditions, weekly inspection and partial cleaning are desirable. Most machines require a complete overhauling and thorough cleaning about once a year. For the weekly cleaning the motors should be blown out; see following paragraph:

### Cleaning Electric Motors

About once a year, motors should be taken apart and cleaned as follows:

First, the heavy dirt and grease should be removed with a heavy, stiff brush, wooden or fiber scrapers, and cloths. Dry dust and dirt may be blown off, using dry compressed air at moderate pressure, for example 25 to 30-lb pressure at the point of application, taking care to blow the dirt out from the winding. If the dirt and dust are metallic (conducting, or abrasive, air pressure may drive the material into the insulation and damage it. Hence, for such conditions, pressure is not so satisfactory as a suction system. If compressed air at low pressure is used, care must be taken to direct it properly so that the dust will not cause damage and will not be pocketed in the various corners.

Grease, oil, and sticky dirt are easily removed by applying cleaning liquids like carbon tetrachloride, gasoline, or naphtha. All of these liquids evaporate quickly and, if not applied too generously will not soak or injure the insulation. Carbon tetrachloride is best and is recommended because it is non-inflammable.

In case one of the other liquids must be used, it should be applied in the open or in a well-ventilated room. It must be remembered that gasoline or naphtha vapor is heavier than air and will flow into pits, basements, etc., and may remain there for hours and even days.

Proper ventilation of the room is essential. In using carbon tetrachloride the explosion hazard is obviated, but some ventilation is required to remove the vapor.

There are several good methods of applying the cleansing liquid. A cloth, saturated in the liquid, may be used to wipe the coils. A paint brush is handy to get into corners and crevices, and between small coils. Care should be taken not to soak the insulation as would be the case if coils were dipped into the liquid. While the insulation will dry quickly at ordinary room temperature after such cleansing methods, it is highly desirable to heat it to drive off all moisture before applying varnish.

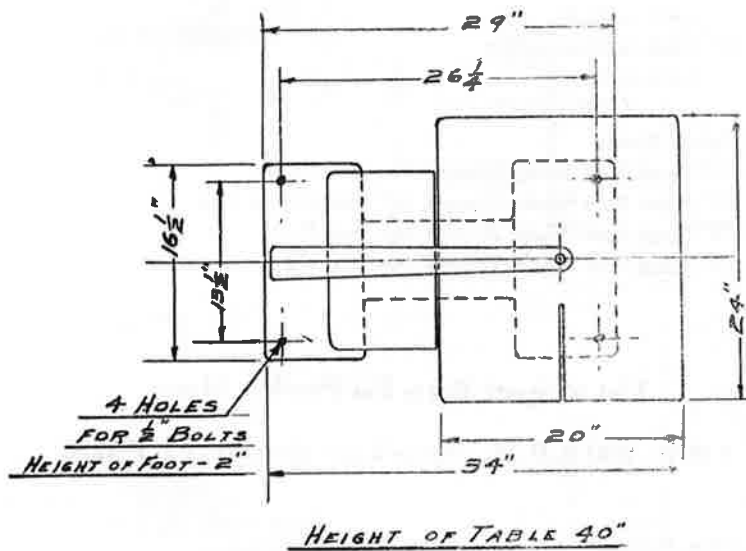
The insulation should be dried out by heating from 90° to 100°C. While the motor is warm, air drying insulating varnish should be applied. For severe acid, alkali, or moisture conditions, a black plastic baking varnish is best, while, for conditions where oil or dusts are present, clear or yellow varnish should be used.

The varnish should be sprayed or brushed on. It is best to dip the windings into the varnish, cleaning off the adjacent metal parts afterwards by using a solvent of the varnish. After applying the varnish, the best results are obtained by baking 6 to 7 hours at about 100°C. Experience with particular conditions of operation, or the condition of the insulation, may indicate the desirability of applying a second coat of the same varnish, followed again by 6 to 7 hours of baking at 100°C.

If the machine must be put back in service quickly, or if the facilities are not available for baking, fairly good results will be obtained by applying one of the quick-drying black or clear varnishes which dry in a few hours at ordinary room temperatures.

CRESCENT MACHINE DIVISION  
Rockwell Manufacturing Company  
Leetonia, Ohio

Floor Plan — 20" Heavy Band Saw



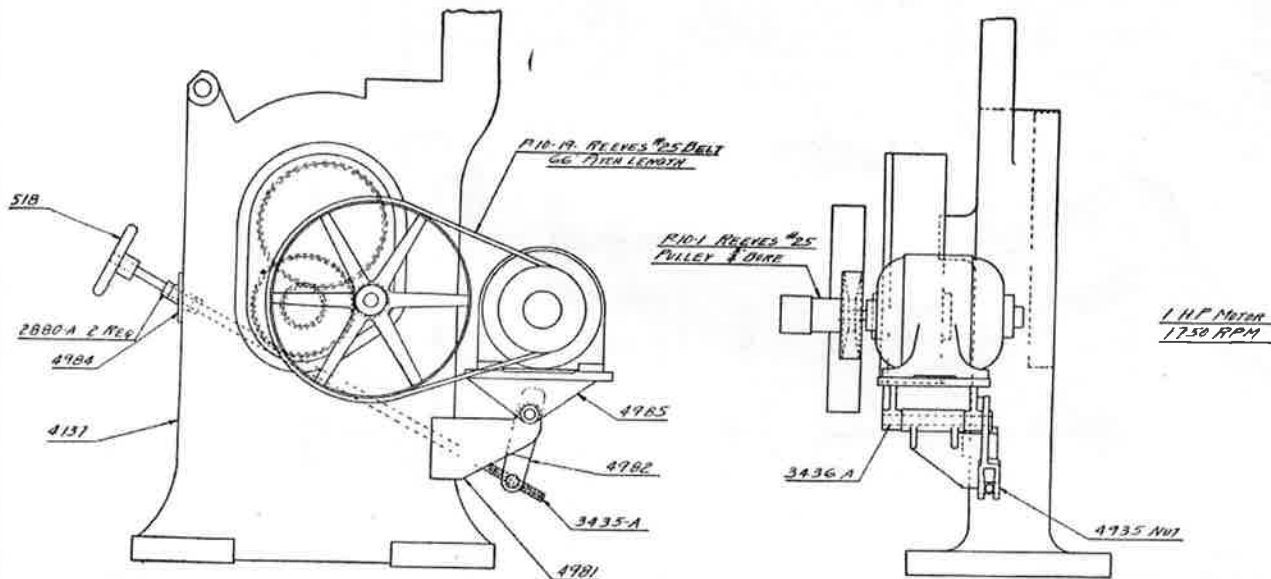
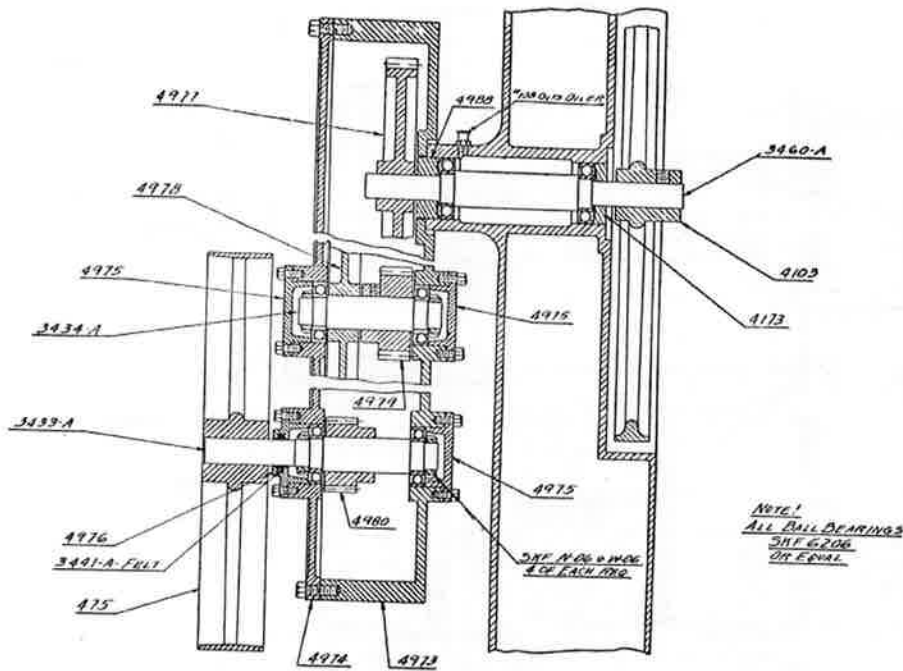
**SUGGESTED SPARE REPAIR PARTS**  
**FOR**  
**20" HEAVY BAND SAW**

- 1 4215 Throat Piece
- 2 P-8-2 Rubber Tires
- 1 257-A Tilting Spring
- 1 319-A Tension Spring
- 1 6202-SKF Ball Bearing (or Fafnir 202)
- 1 6204-SKF Ball Bearing (or Fafnir 204)
- 2 6206-SKF Ball Bearings (or Fafnir 206) — (V-Belt Driven Only)
- 2 No. 0 Disk and Socket set each consisting of the following parts:
  - 1 1443-A Disk
  - 1 1446-A Disk Socket
  - 1 1447-A Shaft
  - 1 1611-A Fibre Collar
- 4 2805-A Guide Blocks
- 2  $\frac{1}{4}$ " x 11'3" Band Saw Blade, Brazed, Set, and Filed.
- 2  $\frac{3}{8}$ " x 11'3" Band Saw Blade, Brazed, Set, and Filed.
- 2  $\frac{1}{2}$ " x 11'3" Band Saw Blade, Brazed, Set, and Filed.
- 2  $\frac{3}{4}$ " x 11'3" Band Saw Blade, Brazed, Set, and Filed.

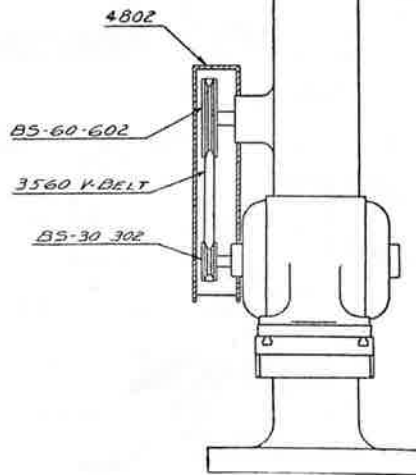
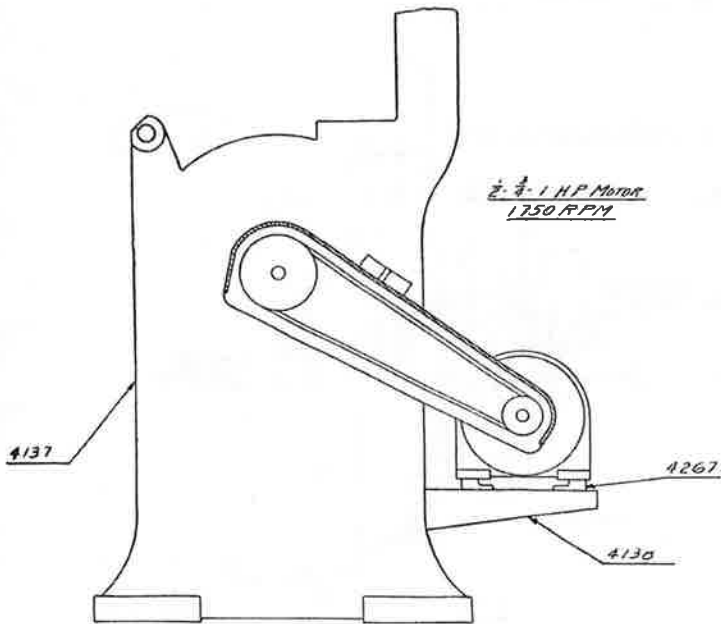
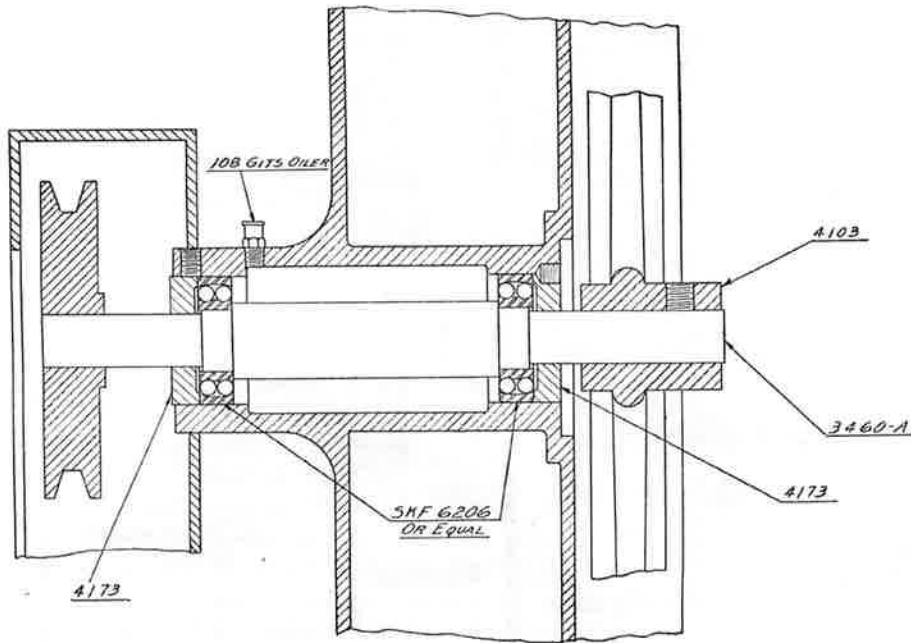
**List of Spare Parts For Peerless Motor**

**1 H.P., 900 R.P.M., Open Type Bearing, Fr. PA225**

- 1 Ball Bearing, Pulley End
- 1 Ball Bearing, Commutator End
- 1 Rotor Complete with Shaft
- 1 Field Shell Casting Complete with Stator, Core and Winding.



DWG NO 4873-A  
THE CASELANT MACHINE CO  
LEWISIA OYO  
32011 BAND SAW  
ASSEMBLY OF DRIVE  
AND GEARING  
SHEET 11 DATE 1-7-41



DRG NO 4477 A  
 THE CRESCENT MACHINE CO  
 222 FORDA DR  
 20 HEAVY BAND SAW  
 ASSEMBLY V-BELT DRIVE  
 Scale 3/16" Dia 3/16" W

