

SERVICE MANUAL

FOR

S-5 & S-55 SHAPER

MACHINE REFERENCE NUMBERS INSIDE COVER



The Crescent Machine Company
Leetonia, Ohio, U. S. A.

SERVICE MANUAL

FOR

S-5 & S-55 SHAPER

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



The Crescent Machine Company
Leetonia, Ohio, U. S. A.

PARTS LIST

FOR

S-5 SINGLE SPINDLE SHAPER

Part No.	Name	Mat.	No. Req.
559	Hand Wheel 8 " - 7/8" Bore -----	C.I.	1
561	Hand Wheel 3 1/4" -----	C.I.	1
700	Wrench -----	C.I.	1
706	Table -----	C.I.	1
718	Hand Wheel Bracket -----	C.I.	1
801	Mitre Gear -----	C.I.	2
804-B	Throat Collar -----	C.I.	1
2024-B	Throat Collar -----	C.I.	1
2310	Gib -----	C.I.	1
3398	Frame -----	C.I.	1
3405	Belt Tightener -----	C.I.	1
5117	Sash -----	C.I.	1
5118	Upper Cap -----	C.I.	1
5119	Upper Oil Slinger -----	Al.	1
5120	Upper Oil Reservoir -----	C.I.	1
5121	Lower Oil Retainer -----	C.I.	1
5122	Lower Oil Slinger -----	Al.	1
5123	Bottom Cap -----	C.I.	1
5176	Short Motor Base (Replaces No. 3399) -----	C.I.	1
5181	Belt Guard (Replaces No. 3406) -----	C.I.	1
5120-B	Inner Part of Upper Oil Reservoir -----	C.I.	1

STEEL PARTS

831-A	Pulley Wrench 3/8" x 5" -----	CRS	1
928-A	Guide Pin 5/8" x 3 3/4" -----	CRS	2
929-A	Hand Wheel Shaft 7/8" x 10 " -----	CRS	1
3598-A	Upper Baffle 2 7/8" x 1/4" -----	CRS	1
3599-A	Baffle - Lower, 2 3/8" Dia. x 1/4" -----	CRS	1
3639-A	Raising Screw 1 1/8" x 13 1/4" -----	M.S.	1
4155-A	Raising Screw Collar 1/4" x 1 7/8" (Pr. on Sc.) -----	CRS	1

COMMERCIAL PARTS

172-A	Machine Handle -----	1
263-A	Knife -----	2
P-15-2	"Rusco" Fabric Belt 3" x 74" -----	1
6307-YC-172	SKF Ball Bearing or Fafnir 307 OWW -----	1
6309-YC-172	SKF Ball Bearing or Fafnir 309 OWW -----	1
	Rockwood Cork Pulley, No. 2496 -----	1
	Gits Brass Oil Gauge, No. 4202 -----	2
	"Kavass" Bantam Thrust Bearing -----	1

S-5 SINGLE SPINDLE SHAPER

1" SOLID SPINDLE

Part No.	Name	Mat.	No. Req.
3653-A	Spindle 3" x 24 1/4" -----	1035 SAE	1
3661-A	Ball Collar 2 7/32" x 7/8" x 1.0001" Bore -----	HRS	1
3662-A	Socket Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	1
4093-A	Knife Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	2
4096-A	Spindle Nut 2 1/4" x 1 7/8" -----	S.T.	1
754-A	Lock Washer -----		1

COMMERCIAL PARTS

1" Nut USS 8 Threads per In., R. H. -----	2
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1" DETACHABLE SPINDLE

2244-A	Detachable Spindle 1" x 9 3/4" -----	HRS	1
3574-A	Spindle 3" x 17 3/4" -----	HRS	1
3647-A	Spindle Nut 2 1/4" x 1" -----	Tub.	1
3656-A	Nut 2 7/16" x 1 3/4" -----	MS	1
3661-A	Ball Collar 2 7/32" x 7/8" x 1.001" Bore -----	HRS	1
3662-A	Socket Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	1
4093-A	Knife Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	2
754-A	Lock Washer -----		1

COMMERCIAL PARTS

Nut 1" USS 8 Threads per In., R. H. -----	Pr.	2
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1 1/8" DETACHABLE SPINDLE

3574-A	Spindle 3" x 17 3/4" -----	1035 SAE	1
3647-A	Spindle Nut 2 1/4" x 1" -----	Tub.	1
3879-A	Detachable Spindle 1 1/8" x 9 3/4" -----	MS	1
3656-A	Detachable Spindle Nut 2 7/8" x 1 3/4" -----	MS	1
4094-A	Knife Collars 2 7/32" x 5/8" x 1.126" Bore -----	HRS	2
4177-A	Ball Collars 2 7/32" x 7/8" x 1.126" Bore -----	HRS	1
4178-A	Socket Collar 2 7/32" x 5/8" x 1.126" Bore -----	HRS	1

COMMERCIAL PARTS

1 1/8" Nut USS & 7 Threads per In., R. H. -----	Pur.	2
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1 1/4" DETACHABLE SPINDLE

3574-A	Spindle 3" x 17 3/4" -----	HRS	1
3647-A	Spindle Nut, 1" x 2 1/4" -----	Tub.	1
3656-A	Nut, 2 7/8" x 1 3/4" -----	MS	1
4322-A	Detachable Spindle 1 1/4" x 9 3/4" -----	MS	1
4323-AB to 4323-AE	Plain Collars 2 7/32" O. D. -----	MS	1Set
4324-A	Knife Collar 2 7/32" x 5/8" x 1.26" Bore -----	HRS	2
4325-A	Ball Collar 2 7/32" x 7/8" x 1 1/8" Bore -----	HRS	1
4326-A	Socket Collar 2 7/32" x 5/8" x 1.26" Bore -----	HRS	2

COMMERCIAL PARTS

1 1/4" Nut USS 7 Threads per In. -----	1
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BRAKE FOR S-5 SINGLE SPINDLE SHAPER

3415	Brake Lever Bearing -----	C.I.	1
3416	Connecting Rod End -----	C.I.	2
3418	Brake Adjuster -----	C.I.	1
3419	Brake Shoe -----	C.I.	1
3855	Brake Pedal -----	C.I.	1
3856	Pedal Hinge -----	C.I.	1

STEEL PARTS

2249-A	Brake Lever $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " x 18 $\frac{1}{6}$ " -----	M.S.	1
3234-A	Brake Rod $\frac{5}{8}$ " x 11 $\frac{5}{8}$ " -----	M.S.	1

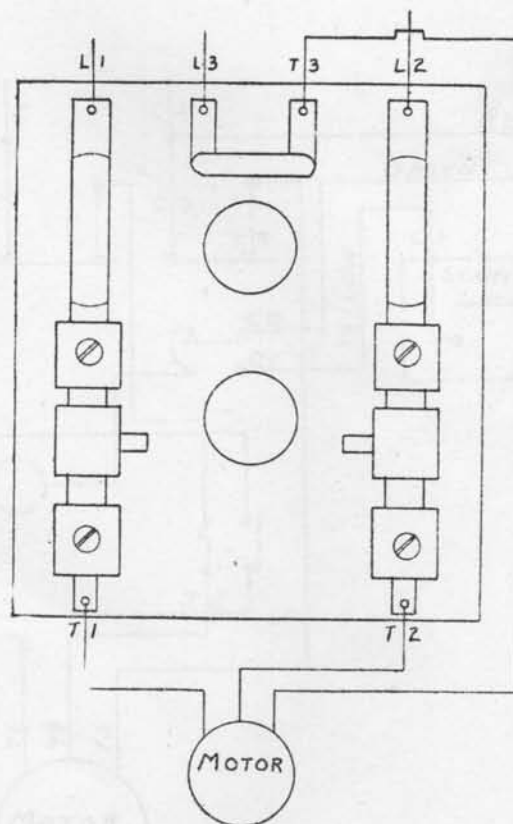
COMMERCIAL PARTS

956-A	Spring -----	Spr. Stl.	1
3618-A	Spring (Cut Down) -----	Spr. Stl.	1

The Crescent Machine Company
Leetonia, Ohio, U. S. A.

SQUARE D MANUAL STARTER — CLASS 2510 — TYPE W-10

220-440-550 VOLTS — 60 CYCLES — 3 PHASE

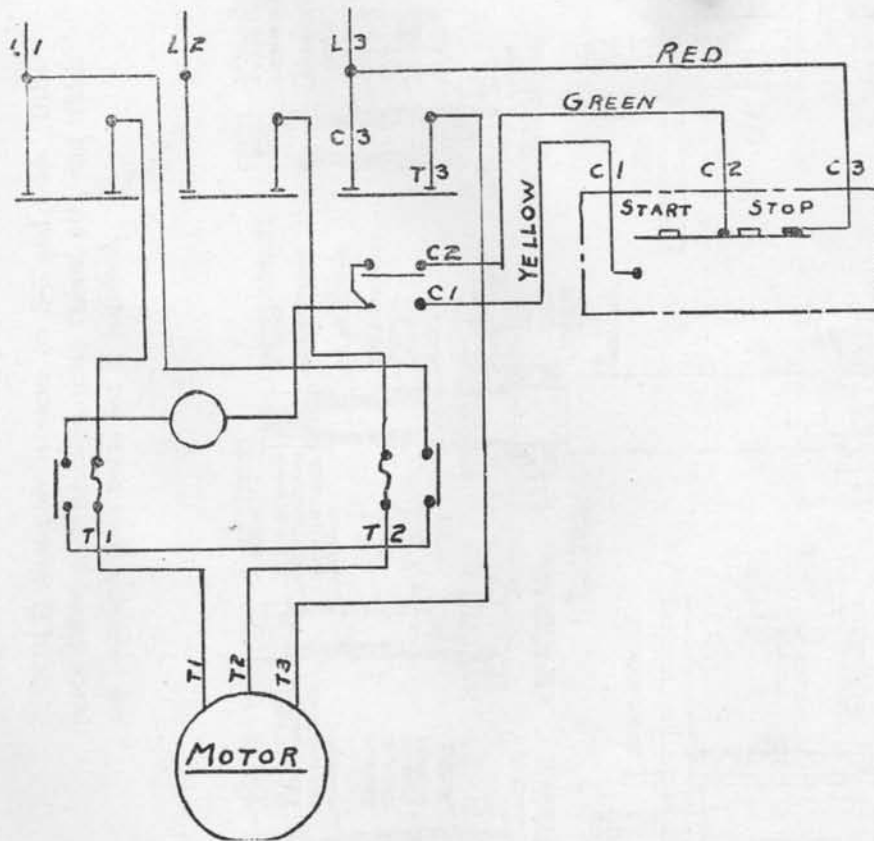


The Crescent Machine Company

Leetonia, Ohio, U. S. A.

SQUARE D AUTOMATIC STARTER — SIZE 1; 3 POLE — CLASS 8536

TYPE SG-18-A — 3 PHASE — 60 CYCLES — 440 VOLTS



S-55 DOUBLE SPINDLE SHAPER

Part No.	Name	Mat.	No. Req.
MAIN ASSEMBLY			
559	Hand Wheel $\frac{7}{8}$ " Bore -----	C.I.	2
567	Table -----	C.I.	1
674	Door -----	C.I.	1
700	Hexagon Wrench -----	C.I.	1
801	Bevel Pinion -----	C.I.	4
804-B	Thrust Block with Rubbing Collar -----	C.I.	2
903	Gib R. H. -----	C.I.	1
904	Gib L. H. -----	C.I.	1
2024-B	Throat Block with Rubbing Collar -----	C.I.	2
3405	Belt Tightener -----	C.I.	2
3669	Frame -----	C.I.	1
5118	Upper Cap -----	C.I.	2
5119	Upper Oil Slinger -----	Al.	2
5120	Upper Oil Reservoir -----	C.I.	2
5120-B	Inner Part of Upper Oil Reservoir -----	C.I.	2
5121	Lower Oil Retainer -----	C.I.	2
5122	Lower Oil Slinger -----	Al.	2
5123	Bottom Cap -----	C.I.	2
5330	Sash R. H. -----	C.I.	1
5331	Sash L. H. -----	C.I.	1
5376	Belt Guard R. H. -----	C.I.	1
5377	Belt Guard L. H. -----	C.I.	1
5378	Motor Base -----	C.I.	1
5473	Raising Bracket -----	C.I.	1

STEEL PARTS

434-A	Gear Shaft $\frac{7}{8}$ " x $7\frac{1}{2}$ " -----	CRS	2
831-A	Pulley Wrench $\frac{3}{8}$ " x 5" -----	CRS	2
850-A	Latch Pin $\frac{5}{8}$ " x $4\frac{1}{4}$ " -----	CRS	1
928-A	Table Knocker $\frac{5}{8}$ " x $3\frac{3}{4}$ " -----	CRS	4
2673-A	Binding Block $\frac{3}{4}$ " x $1\frac{15}{16}$ " -----	CRS	2
3598-A	Upper Baffle 2 $\frac{7}{8}$ " -----	CRS	2
3599-A	Lower Baffle 2 $\frac{3}{8}$ " -----	CRS	2
3639-A	Raising Screw 1" x $13\frac{1}{4}$ " -----	CRS	2
4155-A	Raising Screw Collar $\frac{1}{4}$ " x $1\frac{7}{8}$ " x $\frac{7}{8}$ " (Pressed on Screw) -----	CRS	2

COMMERCIAL PARTS

263-A	Knife $\frac{1}{4}$ " x $1\frac{7}{8}$ " x 2" -----	T.S.	4
2496	Rockwood Cork Pulley $3\frac{1}{2}$ " x 6" x $1\frac{1}{4}$ " Bore x $\frac{1}{8}$ " x $\frac{1}{4}$ " Key way -----		2
6307-YC-172	SKF Ball Bearing or 307 Fafnir 307 OWW -----	Stl.	2
6309-YC-172	SKF Ball Bearing or Fafnir 309 OWW -----	Stl.	2
4202	Gits Brass Oil Gauge Style F. G. -----	Brass	4
P-15-3	Rusco Endless Belts 3" x 68" -----	Fabric	2
	"Kavass" Bantam Thrust Bearing -----	Stl.	2

1" SOLID SPINDLE

3653-A	Spindle R. H. 3" x 24 1/4" -----	HRS	1
3653-AB	Spindle, L. H. 3" x 24 1/4" -----	HRS	1
3660-AE	Plain Collar 3/4" x 1" x 2 7/32" -----	HRS	2
3661-A	Ball Collar 2 7/32" x 7/8" x 1.001" Bore -----	HRS	2
3662-A	Socket Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	2
4093-A	Knife Collar 2 7/32" x 5/8" x 1.00" Bore -----	HRS	4
4096-A	Spindle Nut 2 1/4" x 1 7/8" (one r.h., one l.h.) ---	Tub.	2

COMMERCIAL PARTS

	1" Nut USS 8 Threads per In. (1 r.h., 1 l.h.) ---		2
754-A	Lock Washer -----		2

1" DETACHABLE SPINDLE

2244-A	Detachable Spindle 1" x 9 3/4" (1 l.h., 1 r.h.) ----	HRS	2
3574-A	Spindle 3" x 17 3/4" (1 l.h., 1 r.h.) -----	HRS	2
3647-A	Spindle Nut 2 1/4" x 1" (1 r.h., 1 l.h.) -----	Tub.	2
3656-A	Nut 2 7/16" x 1 3/4" (1 r.h., 1 l.h.) -----	MS	2
3660-A-E	Plain Collar 3/4" x 1" x 2 7/32" -----	HRS	2
3661-A	Ball Collar 2 7/32" x 7/8" x 1.001" Bore -----	HRS	2
3662-A	Socket Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	2
4093-A	Knife Collar 2 7/32" x 5/8" x 1.001" Bore -----	HRS	4
754-A	Lock Washer -----		2

COMMERCIAL PARTS

	Nut 1" USS 8 Thrds. per In. (1 r.h., 1 l.h.) -----		2
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1 1/8" DETACHABLE SPINDLE

3574-A	Spindle (1 l.h., 1 r.h.) 3" x 17 3/4" -----	HRS	2
3647-A	Spindle Nut (1 l.h., 1 r.h.) 2 1/4" x 1" -----	Tub.	2
3879-A	Detachable Spindle 1 1/8" x 9 3/4" (1 l.h., 1 r.h.) --	HRS	2
3656-A	Spindle Nut 2 7/16" x 1 3/4" (1 r.h., 1 l.h.) -----	M.S.	2
3921-A-E	Plain Collar 2 7/32" x 5/8" x 3/4" Thick -----	M.S.	2
4094-A	Knife Collars 2 7/32" x 5/8" 1.126" Bore -----	HRS	4
4177-A	Ball Collars 2 7/32" x 7/8" x 1.126" Bore -----	HRS	2
4178-A	Socket Collars 2 7/32" x 5/8" x 1.126" Bore -----	HRS	2

COMMERCIAL PARTS

	1 1/8" Nut USS 7 Thrds per In. (1 r.h., 1 l.h.) ----		2
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S-55 DOUBLE SPINDLE SHAPER

HAND BRAKE

5390	Adj. Lug Bracket -----	C.I.	2
5391	Eccentric Arm -----	C.I.	2
5392	Shoe Block -----	C.I.	2
5393	Eccentric Arm Holder -----	C.I.	2

STEEL

3996-A	Brake Arm 5/8" x 21 3/4" -----	CRS	2
3997-A	Eccentric Rod 1" x 7 1/2" -----	CRS	2
3998-A	Tension Rod 4 1/2" x 1/4" -----	CRS	2
4000-A	Shoe -----	Maple Wood	2
4024-A	Stud 1" x 3" -----	CRS	2
4025-A	Connecting Link 1" x 4" -----	CRS	2

COMMERCIAL

2892-A	Spring -----	Pur.	2
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S-5 AND S-55 SHAPER

SHAPER FENCE

561	Scallop Handwheel -----	C.I.	1
562	Scallop Handwheel $\frac{5}{8}$ " Tap -----	C.I.	2
1137	Spring Clip -----	C.I.	1
1841	Stationary Half -----	C.I.	1
1842	Sliding Half -----	C.I.	1

STEE PARTS

40-A	Shaper Fence Screw $\frac{3}{4}$ " x 6" -----	CRS	1
86-A	Pressure Bar 1" x 6" -----	CRS	1
567-A	Slide Shaft 1" x 12" -----	CRS	1
725-A	Key $\frac{3}{8}$ " x $\frac{3}{8}$ " x 2" -----	CRS	1
912-A	Front Board $\frac{7}{8}$ " x $3\frac{3}{8}$ " x 20" -----	Wood	1
913-A	Rear Board $\frac{7}{8}$ " x $3\frac{3}{8}$ " x 20" -----	Wood	1
208-A	Stud $\frac{5}{8}$ " x $2\frac{1}{2}$ " -----	CRS	2

COMMERCIAL PARTS

510-A	Flat Pressure Spring -----	Spr. Steel	2
965-A	Spring Clip -----	Mall	1

S-5 AND S-55 SHAPER GUARD

272	Collar -----	C.I.	1
5037	Cross -----	C.I.	1
5038	Yoke -----	C.I.	1

STEEL PARTS

3493-A	Vertical Support Shaft $1\frac{1}{4}$ " x $16\frac{1}{2}$ " -----	CRS	1
2608-A	Wood Shoe -----	Wood	1

COMMERCIAL PARTS

3495-A	Spring $\frac{3}{16}$ " x $11\frac{1}{2}$ " x $16\frac{3}{8}$ " -----		1
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PLAIN COLLARS — 1.001" BORE

3660-AB	Collar $\frac{1}{4}$ " Thick -----	M.S.	1
3660-AC	Collar $\frac{3}{8}$ " Thick -----	M.S.	1
3660-AD	Collar $\frac{1}{2}$ " Thick -----	M.S.	1
3660-AE	Collar $\frac{3}{4}$ " Thick -----	M.S.	1

All Collars 2 $7/32$ " Outside Diameter

PLAIN COLLARS — 1.125" BORE

3921-AB	Collar $\frac{1}{4}$ " Thick -----	M.S.	1
3921-AC	Collar $\frac{3}{8}$ " Thick -----	M.S.	1
3921-AD	Collar $\frac{1}{2}$ " Thick -----	M.S.	1
3921-AE	Collar $\frac{3}{4}$ " Thick -----	M.S.	1

All Collars 2 $7/32$ " Outside Diameter

GROUND-TO-PATTERN SHAPER KNIVES — PRINT SK-196

$\frac{1}{4}$ " Tongue Cutter
 $\frac{1}{4}$ " Groove Cutter
 $\frac{3}{8}$ " Tongue Cutter
 $\frac{3}{8}$ " Groove Cutter
 $\frac{1}{2}$ " Quarter Round Cutter
 $\frac{3}{4}$ " Quarter Round Cutter
 $\frac{1}{2}$ " x $\frac{3}{4}$ " Shoe Mould
1" O. G. Moulding Cutter
Glue Joint Tongue Cutter
Glue Joint Groove Cutter
 $1\frac{3}{4}$ " O. G. Sash Cutter
Cove Moulding Cutter

OPERATING SUGGESTIONS AND CARE OF CRESCENT S-5 AND S-55 SHAPERS

The machine should be placed on a solid foundation, or floor properly supported so that the vibration is at a minimum.

The machine should be leveled both ways and wooden wedges are recommended for leveling.

We wish to caution that the spindle should be raised or lowered only when the machine is running. Otherwise unnecessary stretch and strain is placed on the woven belts.

Should the belt get loose due to natural strain it can be tightened by moving the motor outward. A set screw is provided for this. The belt must be reasonably tight for best performance.

Care should be taken that in mounting the cutters on the spindle that they very nearly balance as they are high speed and the working results will be more satisfactory and safer.

A special light grade of oil is recommended for the spindle as indicated on the machine. **WATCH THE OIL LEVEL.** We recommend oiling every twenty-four hours and draining about every three months.

THE CRESCENT MACHINE COMPANY
Leetonia, Ohio

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 by 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 or 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 to 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, a 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 for 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 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.

SUGGESTED SPARE PARTS

FOR

S-5 SHAPER

1 pr.	263-A	2" Straight Knives
1 pr.	264-A	2 1/2" Straight Knives
One Set		of Knives per SK 196 consisting of:
1 pr.	1/4"	Tongue Cutters
1 pr.	1/4"	Groove Cutters
1 pr.	3/8"	Tongue Cutters
1 pr.	3/8"	Groove Cutters
1 pr.	1/2"	Quarter Round Cutters
1 pr.	3/4"	Quarter Round Cutters
1 pr.	1/2" x 3/4"	Shoe Mold Cutters
1 pr.	1"	O. G. Sash Cutters
1 pr.		Tongue Glue Joint Cutters
1 pr.		Groove Glue Joint Cutters
1 pr.		Cove Molding Cutters
1 pr.	1 3/4"	O. G. Sash Cutters
2	6307-YC-172 SKF	Ball Bearings
2	6309-YC-172 SKF	Ball Bearings
2	P-15-3	Rusco Endless Belts
2	"Kavass"	Bantam Thrust Bearings

SUGGESTED SPARE PARTS

FOR

S-55 SHAPER

1 pr.	263-A	2" Straight Knives
1 pr.	264-A	2½" Straight Knives
One Set		of Knives per SK 196 consisting of:
1 pr.	¼"	Tongue Cutters
1 pr.	¼"	Groove Cutters
1 pr.	⅜"	Tongue Cutters
1 pr.	⅜"	Groove Cutters
1 pr.	½"	Quarter Round Cutters
1 pr.	¾"	Quarter Round Cutters
1 pr.	½"x¾"	Shoe Mold Cutters
1 pr.	1"	O. G. Sash Cutters
1 pr.		Tongue Glue Joint Cutters
1 pr.		Groove Glue Joint Cutters
1 pr.		Cove Molding Cutters
1 pr.	1¾"	O. G. Sash Cutters
2	6307-YC-172 SKF	Ball Bearings,
2	6309-YC-172 SKF	Ball Bearings,
2	P-15-3	Rusco Endless Belts,
2	"Kavass"	Bantam Thrust Bearings,

MOTOR SPARES

1	Ball Bearing, Pulley End,
1	Ball Bearing, Commutator End,
1	Stator,
1	Rotor, with Shaft,

MAGNETIC STARTER SPARES

One set of repair parts consisting of:
 Stationary contacts, movable contact finger, contact finger spring,
 2 magnetic coils, auxiliary stationary contact and 4 thermal units,
 auxiliary movable contact, and auxiliary stationary contact assem-
 blies,