

# SERVICE MANUAL

FOR

**V - 14 LATHE**



Reg. U. S. Patent Office

**The Crescent Machine Company**

Subsidiary of The Rockwell Manufacturing Co.

Leetonia, Ohio, U. S. A.

FOR

# SERVICE

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# MANUAL

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FOR

## V - 14 LATHE

Serial Number.....

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



Reg. U. S. Patent Office

### The Crescent Machine Company

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# PARTS LIST

FOR

## V-14 LATHE

NOTE: When ordering repairs for this machine, be sure to give the serial number of the machine.

### Main Assembly — Parts Required on All Models

Part No.	Name	Mat.	Req.
VL-1	Frame .....	C.I.	1
VL-2	Bed — 48" Centers .....	C.I.	1
VL-3	Leg .....	C.I.	1
VL-4	L. H. Bearing Cap .....	C.I.	1
VL-5	L. H. Bearing Housing .....	C.I.	1
VL-6	R. H. Bearing Cap .....	C.I.	1
VL-7	R. H. Bearing Housing .....	C.I.	1
VL-8	Indexing Wheel .....	C.I.	1
VL-9	Door .....	C.I.	1
VL-10	Tool Rest Holder .....	C.I.	1
VL-12	Tail Stock .....	C.I.	1
VL-13	Tail Stock Clamp Block .....	C.I.	1
VL-14	Hand Wheel 6" Diameter, 3/4" Bore .....	C.I.	1
VL-15	Tool Rest Holder Clamping Block .....	C.I.	1
VL-16	Countershaft Base .....	C.I.	1
VL-17	Countershaft Base .....	C.I.	1
VL-18	Hand Wheel 6 3/8" Diameter, 5/8" Bore .....	C.I.	1
VL-19	Motor Rails .....	C.I.	2
VL-20	Speed Scale .....	Al.	1
VL-23	Tool Rest Adapter .....	C.I.	1
4235	Hand Wheel with Stud .....	C.I.	2
4237	Clamping Handle .....	C.I.	2
4266	Handle .....	C.I.	2
4493	Tool Rest 6" .....	C.I.	1
4494	Tool Rest 12" .....	C.I.	1
4499	Inside Face Plate 6" Diameter .....	C.I.	1
5055	Outside Face Plate 8" Diameter .....	C.I.	1

### Main Assembly — Steel

VL-1A	Knurled Hand Wheel 2" Diameter, 3/8" Tap .....	C.R.S.	1
VL-2A	Tail Stock Rod 3/8" x 10 13/16" .....	C.R.S.	1
VL-3A	Tail Stock Spindle 1" x 11 5/8" .....	H.R.S.	1
VL-5A	Clamping Link (Tail Stock) 1 1/2" x 4" .....	C.R.S.	1
VL-6A	Clamping Shaft 1" x 6 5/8" .....	C.R.S.	1
VL-7A	Clamping Link 1" x 3 5/8" .....	C.R.S.	1
VL-8A	Tool Rest Holder Clamping Shaft 1" x 12 1/4" .....	C.R.S.	1
VL-9A	Pulley Shaft 3/4" x 13 7/8" .....	C.R.S.	1
VL-10A	Head Stock Spindle 1 1/2" x 24 5/8" .....	St. Tub.	1
VL-11A	Collar 1 1/2" x 1/2" .....	C.R.S.	1
VL-12A	Adjusting Screw 5/8" x 33 3/4" .....	C.R.S.	1
VL-13A	Indexing Pin 3/8" x 1 1/8" .....	C.R.S.	1

RECOMMENDED SPARE PARTS LIST

FOR

V-14 LATHE

Main Assembly — Steel (Continued)

VL-17A	Shelf .....	Wood	1
VL-18A	Shelf Support .....	Angle Iron	1
VL-19A	Pointer .....	H.R.S.	1
VL-22A	Tool Rest Adapter Shaft 1 1/8" x 3 1/2" .....	C.R.S.	1
VL-25A	Bushing .....	Tub.	1
VL-26A	Clamping Plug (Tail Stock) .....	C.R.S.	1
171-A	Handle .....	Stl.	2
2420-A	Tail Stock Center .....	C.R.S.	1
3172-A	Head Stock Spindle Nut 1 1/2" Hex. x 1" .....	C.R.S.	1
3516-A	Spur Center .....	H.R.S.	1
3534-A	Tapered Spur Center .....	H.R.S.	1

Main Assembly — Commercial

6306 SKF	Ball Bearings .....		2
1-LA-30	3" P. D. Sheave 3/4" Bore "A" Size .....		1
1-LA-40	4" P. D. Sheave 1 1/2" Bore "A" Size .....		1
860	Reeves Vari-Speed Motor Pulley 3/4" Bore .....		2
A-38	V-Belt .....		1
A-51	V-Belt .....		1
613	Gits Oiler .....		2
P-14-1	Pillow Block 3/4" Bore Type R.S.U. ....		2
196-A	Safety Chain 8" .....		1

Commercial

Blue Print Holder

Steel

Commercial

## RECOMMENDED SPARE PARTS LIST

FOR

### V-14 LATHE

Part No.	Name	Mat.	Req.
1	No. VL-10A Head Stock Spindle		
2	No. VL-25A Bushing		
1	No. 2420-A Tail Stock Center		
1	No. 3172-A Head Stock Spindle Nut		
1	No. 3516-A Spur Center		
1	No. 3534-A Tapered Spur Center		
2	No. 6306SKF Ball Bearings		
1	No. A-38 V-Belt		
1	No. A-51 V-Belt		
2	No. P-14-1 Pillow Blocks		

### RECOMMENDED EXTRA EQUIPMENT

FOR

### V-14 LATHE

#### Metal Spinning Attachment

5098	Tail Stock Center Cap .....	Al.	1
5223	Face Plate .....	C.I.	1

Steel

3582-A	Tail Stock Center Shank .....	M.S.	1
3583-A	Center .....	T.S.	1
3584-A	Tool Rest .....	M.S.	1
3585-A	Tool Rest Stud .....	C.R.S.	1
3586-A	Tool Rest Pin .....	C.R.S.	1

Commercial

7304	S. K. F. Ball Bearing .....		1
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#### Blue Print Holder

VL-21	Base .....	C.I.	1
5170	Arm .....	Wood	1

Steel

3640-A	Standard 1/2" x 36" .....	C.R.S.	1
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Commercial

P-13-1	Spring Clothes Pins .....		1
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## RECOMMENDED EXTRA EQUIPMENT (Cont'd.)

### RECOMMENDED EXTRA EQUIPMENT (Cont'd.)

#### 24" Double Tool Rest

VL-10	Tool Rest Holder .....	C.I.	1
VL-15	Tool Rest Holder Clamping Block .....	C.I.	1
4247	Handle .....	C.I.	1
4266	Handle .....	C.I.	1

#### Steel

VL-7A	Clamping Link 1" x 3 $\frac{5}{8}$ " .....	C.R.S.	1
VL-8A	Tool Rest Clamping Shaft 1" x 12 $\frac{1}{4}$ " .....	C.R.S.	1
3718-A	Tool Rest Pin 1 $\frac{1}{8}$ " x 6" .....	C.R.S.	1
3719-A	Tool Rest Bar $\frac{1}{2}$ " x 2" x 24" Long .....	C.R.S.	1
VL-25A	Bushing .....	Tub.	1

#### Steady Rest

2104	Handwheel $\frac{3}{8}$ " Tap .....	C.I.	1
VL-26	Frame .....	C.I.	1
VL-27	Clamping Block .....	C.I.	1

#### Steel

4200-A	Rods $\frac{3}{8}$ " x 2 $\frac{3}{4}$ " .....	C.R.S.	3
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#### Tail Stock Center

No. 3963-A Tail Stock Center  $\frac{3}{4}$ " Cup

#### Sanding Disc

No. 4040 Sanding Disc, 10"

#### Chucks

3" Jaw Chuck; Threaded for Spindle

4" Jaw Chuck; Threaded for Spindle

**RECOMMENDED EXTRA EQUIPMENT (Cont'd.)****Wood Turning Tools**

No. P-6-15	3/8" Skew Chisel
No. P-6-11	1/2" Skew Chisel
No. P-6-16	5/8" Skew Chisel
No. P-6-17	3/4" Skew Chisel
No. P-6-12	1" Skew Chisel
No. P-6-18	1 1/2" Skew Chisel

No. P-6-4	3/8" Gouge
No. P-6-13	1/2" Gouge
No. P-6-20	5/8" Gouge
No. P-6-5	3/4" Gouge
No. P-6-6	1" Gouge
No. P-6-23	1 1/2" Gouge

No. P-6-24	3/8" Rd. Point Chisel
No. P-6-25	1/2" Rd. Point Chisel
No. P-6-26	5/8" Rd. Point Chisel
No. P-6-27	3/4" Rd. Point Chisel
No. P-6-28	1" Rd. Point Chisel

No. P-6-29	3/8" Spear Point Chisel
No. P-6-14	1/2" Spear Point Chisel
No. P-6-30	5/8" Spear Point Chisel
No. P-6-31	3/4" Spear Point Chisel
No. P-6-32	1" Spear Point Chisel

## OPERATING INSTRUCTIONS

### FOR

### V-14 LATHE

It is suggested that the machine be placed on a solid and level foundation and securely bolted or lagged into place, by placing six bolts or lag screws through the cores holes provided in the base of the machine. The mounting of this machine is one of the most important details not to be overlooked.

It is suggested that a carpenter's level be used to true up the machine. This is accomplished as follows: 1. Place a carpenter's level parallel to the floor line on the bed of the machine and if the machine is not level add shims under the foot of the low side until the machine is level; 2. Securely bolt or lag the machine to floor.

Two spur centers are provided as standard equipment. The larger spur center is recommended for turning large post and the smaller spur center is recommended for small diameter work. Whenever hard wood such as hickory, oak or birch is being turned it is recommended that the spur center be removed from the machine and driven into the wood, but care should be taken so that the threads on the spur center are not marred during this operation. It is recommended that a raw hide or wooden mallet be used to drive the spur center into the wood.

When the material is placed into the lathe the tail stock center should be pushed far enough into the wood to provide a good bearing surface but not too far so as to keep the wood from turning freely. The tail stock quill should be lubricated before being placed into the wood and the operator should oil the quill while the machine is running so that the tail stock quill will not burn or bind. The tail stock center shaft does not turn while the machine is running, but has a lateral transversal which allows the tail stock to move forward or backwards. The tail stock center shaft requires little attention; the only attention it needs is to be lubricated occasionally. The small handwheel located at the rear of the tail stock is used to eject the tail stock center and when it is removed a bit can be placed through the hollow center and a boring operation can then be accomplished.

When discs of diameters up to 7" are to be turned the 6" or 8" face plates provided as standard equipment is placed on the head stock spindle onto which the material to be turned is mounted.

When larger discs are to be turned the stock is fastened to the 8" outside face plate that is provided as standard equipment. For this type of turning a stand is required for holding the tool rest. These stands are furnished as extra equipment.

A scale and pointer visible from the operator's position indicates the speed at which the arbor is running. Slower speeds are recommended for larger diameter work, while faster speeds are recommended for small diameter work and sanding.

The head stock has two convenient cup feed oilers, which should be kept full at all times. Periodically the old oil should be drained by turning the oiler upside down and draining the old oil out of the oiler and then returned to the original position and refilled with a good grade of motor oil. The eccentric levers on the tool rest and tail stock should be lubricated occasionally to keep them in good working order.

For the fluting operation an enclosed drum is attached to the rear of the spindle with holes drilled for indexing. Numbers are stamped on the drum to indicate multiples of flutes desired. A pin is placed through the drum cover to hold the spindle in the desired position for the fluting operation.



## 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 in 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.

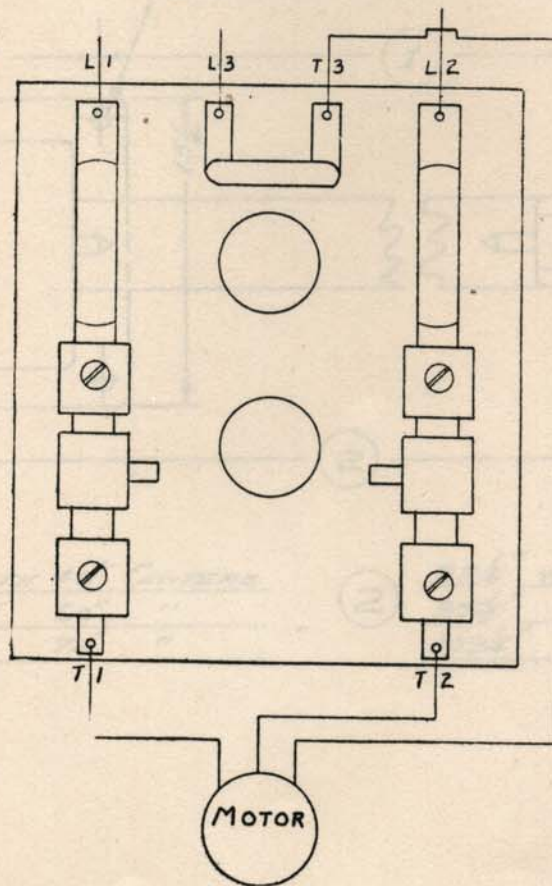
If the machine must be put back in service quickly, or if facilities are not available for baking, fairly good results will be obtained by applying one of the quick-drying black or clear varnishes which dry in a few hours at ordinary room temperatures.

THE CRESCENT MACHINE COMPANY

Lectonia, Ohio

Square D Manual Starter — Class 2510 — Type W-10

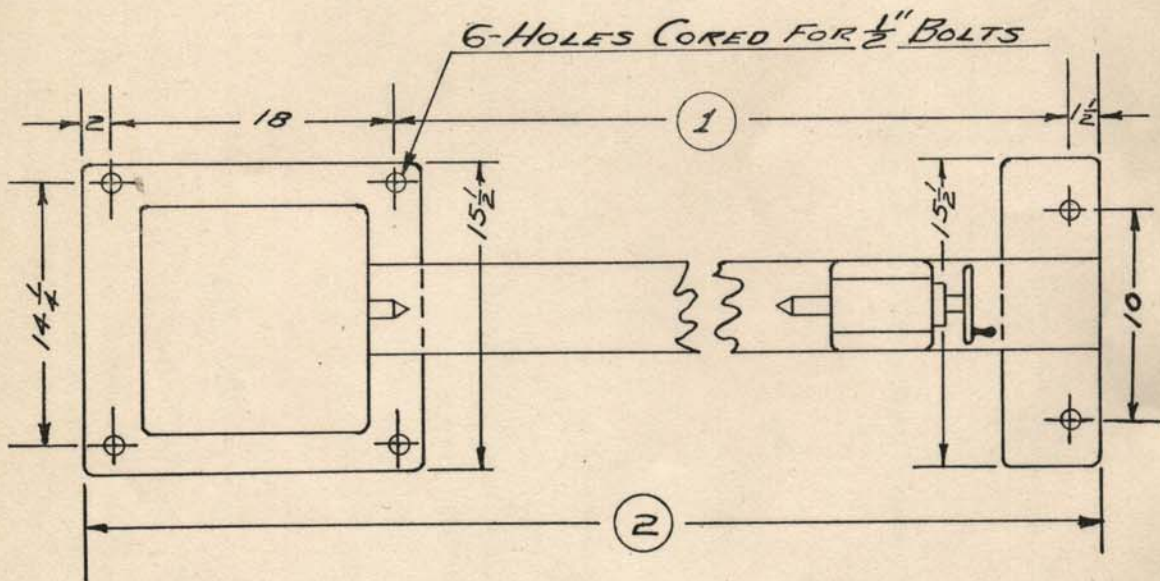
220-440-550 Volts — 60 Cycles — 3 Phase



THE CRESCENT MACHINE COMPANY

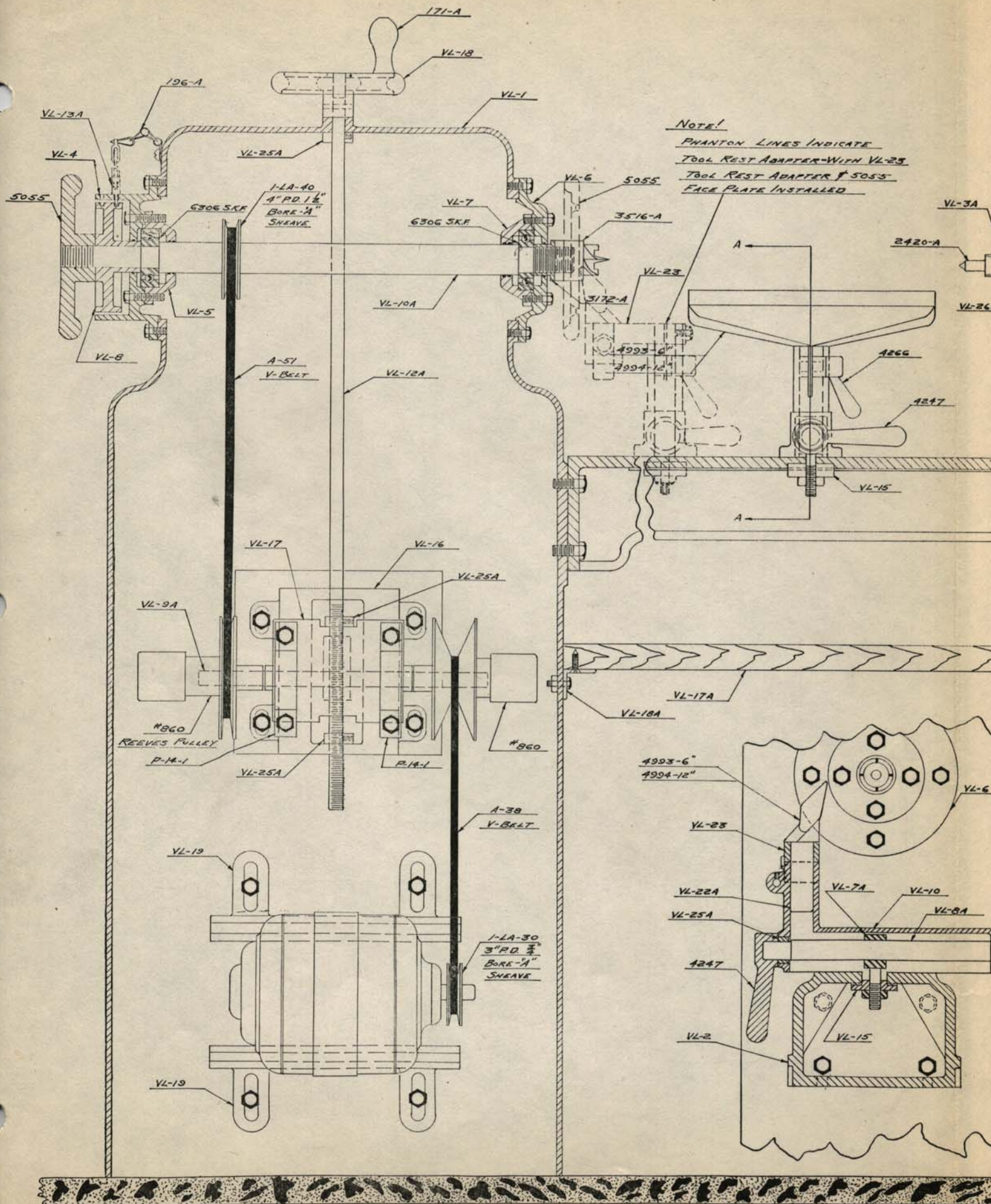
Leetonia, Ohio

Floor Plan — V-14 Lathe



①	$63\frac{3}{4}$ " WITH 48" CENTERS
	$75\frac{3}{4}$ " " 60" "
	$87\frac{3}{4}$ " " 72" "

②	$85\frac{1}{4}$ " WITH 48" CENTERS
	$97\frac{1}{4}$ " " 60" "
	$109\frac{1}{4}$ " " 72" "



# CRESCENT-V -14" LATHÉ

VL-28-A

