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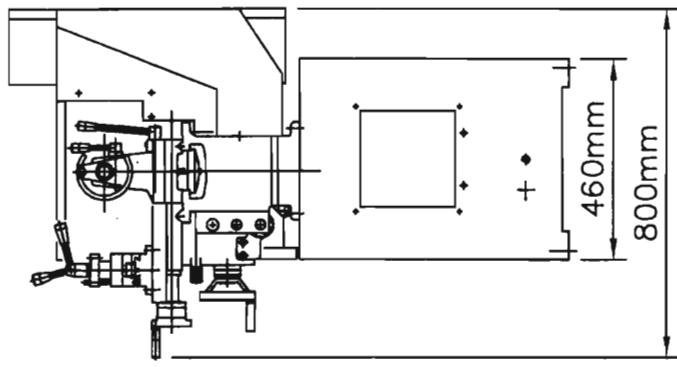
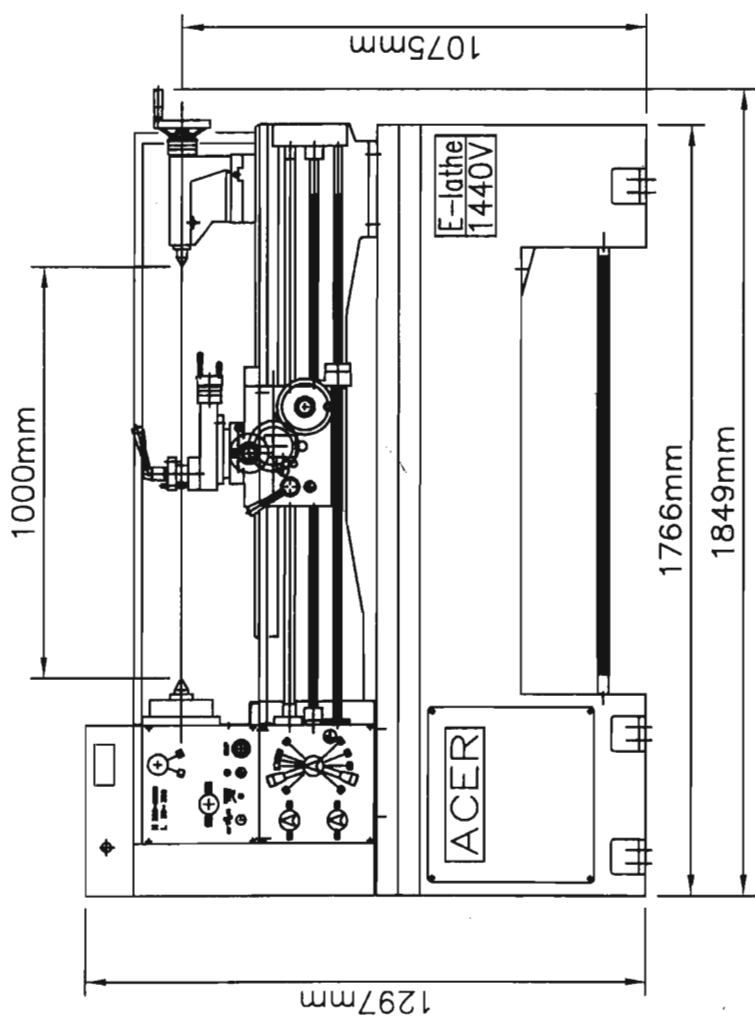
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E-lathe 1440V

SPECIFICATION

MODEL ITEM	E-lathe 1440V	
General Capacity	Center height	7"
	Swing over bed	14"
	Swing over gap (Gap type only)	20-3/4"
	Swing over cross slide	8-5/8"
	Distance between centers	40"
Main Spindle	Spindle nose	D1-4
	Spindle bore diameter	1-1/2"
	Type of center	MT5
	Typers of center	MT3
	Spindle speeds (infinite)	36 ~ 2,200 RPM
Carriage	Cross slide travel	8"
	Compound rest travel	3-1/2"
	Max. size cutting tool	3/4"×3/4"
Tailstock	Spindle diameter	1-7/16"
	Spindle travel	4"
	Typers of center	MT3
Bed	Bed length	54"
	Bed width	9"
	Width of gap	8"
Threading & Feeding	System	Inch
	Pitch of leadscrew	24 ϕ , 4 TPI
	Metric pitch threads	0.4~7mm/pitch(32kinds)
	Inch pitch threads	4~56 TPI(32kinds)
	Module pitch threads	-
	Diameter pitch threads	-
	Range of longitudinal feeds	0.0026"~0.0368"/rev
	Range of cross feeds	0.0008"~0.0122"/rev
Power	Main drive motor (US made)	3HP
	Rapide traverse motor	-
	Coolant pump motor	1/8HP
Floor Dimension	69-1/2"×31-5/8"	
Packing Dimension	76 1/2"×33"×63"	
Net Weight	1,540 lbs	
Gross Weight	1,760 lbs	

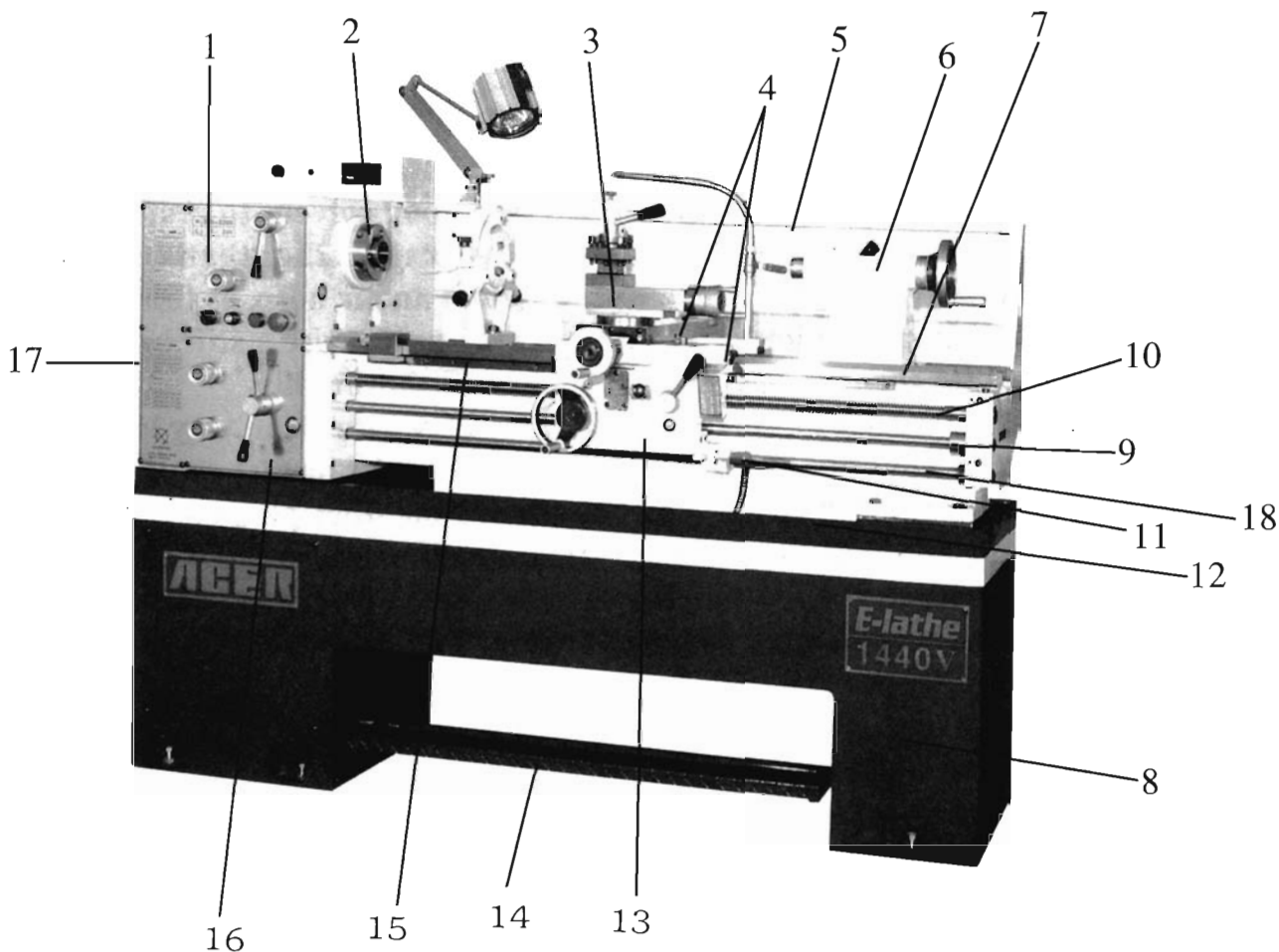


1"=25.4mm

CVE20001

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GENERAL LAYOUT OF E-lathe 1440V



- | | |
|---------------------------|------------------------------------|
| 1. Headstock | 10. Lead Screw |
| 2. Spindle | 11. Spindle Rotation Control Lever |
| 3. Top Slide | 12. Coolant Collecting Pan |
| 4. Saddle and Cross-slide | 13. Apron |
| 5. Splash Guard | 14. Footbrake |
| 6. Tailstock | 15. Gear Rack |
| 7. Bed | 16. Gear Box |
| 8. Mounting Base | 17. End Cover |
| 9. Feed Shaft | 18. Forward/Reverse Control Shaft |

UNCRATING THE MACHINE

Upon receipt of shipment, remove crate carefully but do not remove skid until the lathe has been moved to the select area for lifting.

CLEANING THE MACHINE

Do not move the carriage or tailstock on the bedways before cleaning thoroughly and lubricate the slideways. Use a good solvent to remove cosmoline and dirt accumulated in transit. Use rags rather than cloth to clean the slideways to eliminate lint. Do not use an air hose, as this will force grits and dirt onto important functioning units. Use a stiff bristle brush to get into corners and to clean leadscrew thoroughly.

When the machine has been cleaned satisfactorily, rub clean way lube oil onto all slideways and make sure there are no grits or dirt remains. Before moving the carriage on the bed, remove the filler plug on the top of the carriage and fill in with the specified oil on the lubrication chart. Lubricate carriage ways on bed, then moving the carriage to balance the load. Also check the end gear-train for proper meshing of gears.

****Before operating any control, remove the anticorrosion coating from all slideways and end gear train by using white spirit or kerosene.**

****Do not use cellulose solvents for cleaning as they will damage the paint finish.**

****Oil all ground surfaces immediately after cleaning. Use machine oil or way lube oil to do the work. Use heavy oil or grease on the gear train.**

LIFTING THE MACHINE

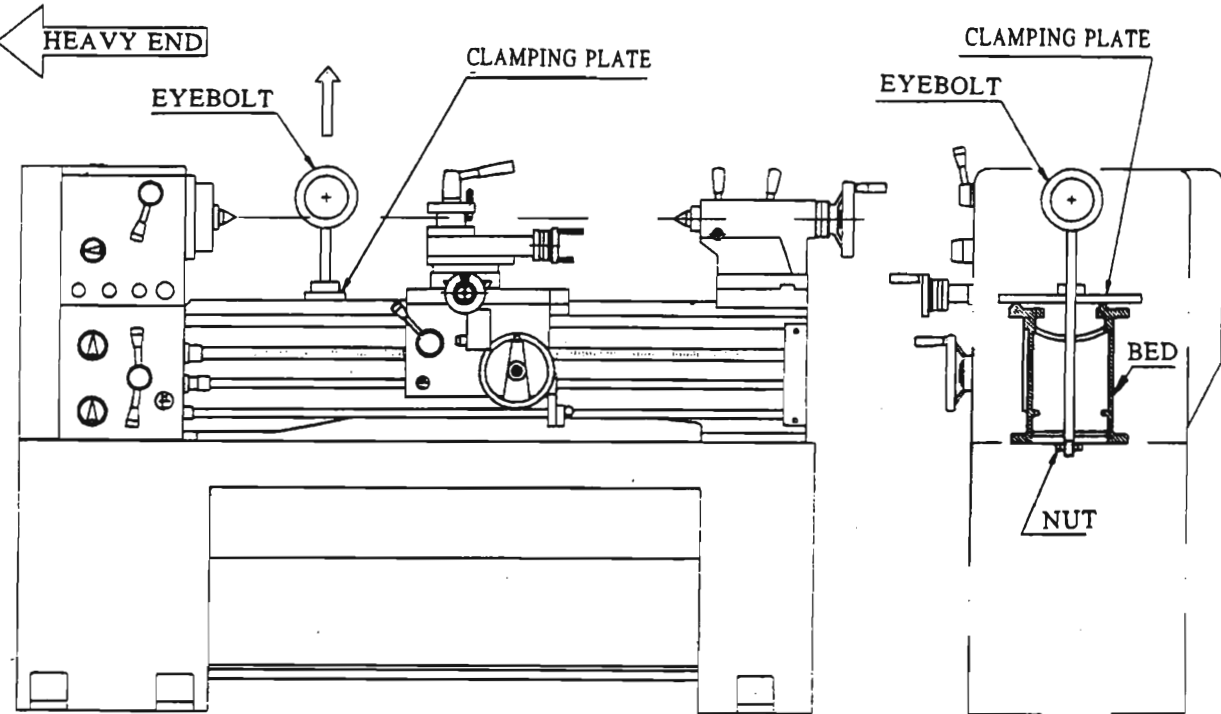
To obtain a balanced condition before lifting, it is necessary to move tailstock to the end of the right hand bed way and clamp it there. Make sure to clean bed ways before moving carriage or tailstock.

Use the bed clamping plate and eyebolt to sling the lathe. Position the saddle and tailstock along the bed to obtain balance. Raise and lowering the machine should be done carefully, especially when you are lowering the machine. Be sure not to bump the machine against the floor.

*****Important: Do not use slings around bed as leadscrew and feed**

shaft may be bent.

*****Please see the following figure....**



NOTE:

Make sure the load is balanced and that sling does not touch the leadscrew or control rod before lifting.

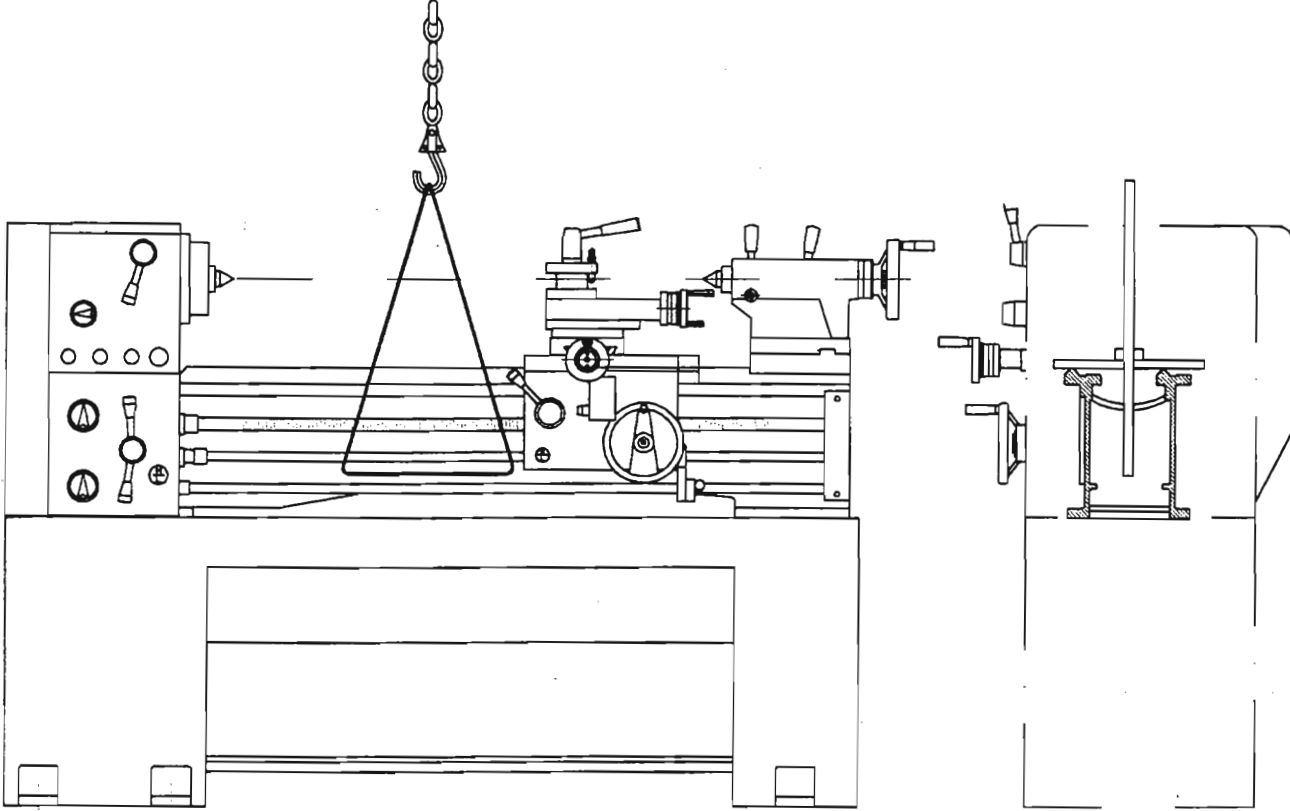
If a crane is used in lifting, exercise care that none of the mechanism is damaged. Chain, wire cable or rope may be used to lift the lathe.

If ropes are used, be certain that they are strong enough to safely carry the weight of the machine. The finished surfaces of the machine must be protected from chains by using wooden blocks.

****After you receive the machine, please check if the packing contents all the accessories you ordered.**

The proper method to lift the machine is shown on next page. Please make sure all parts are set before lifting!

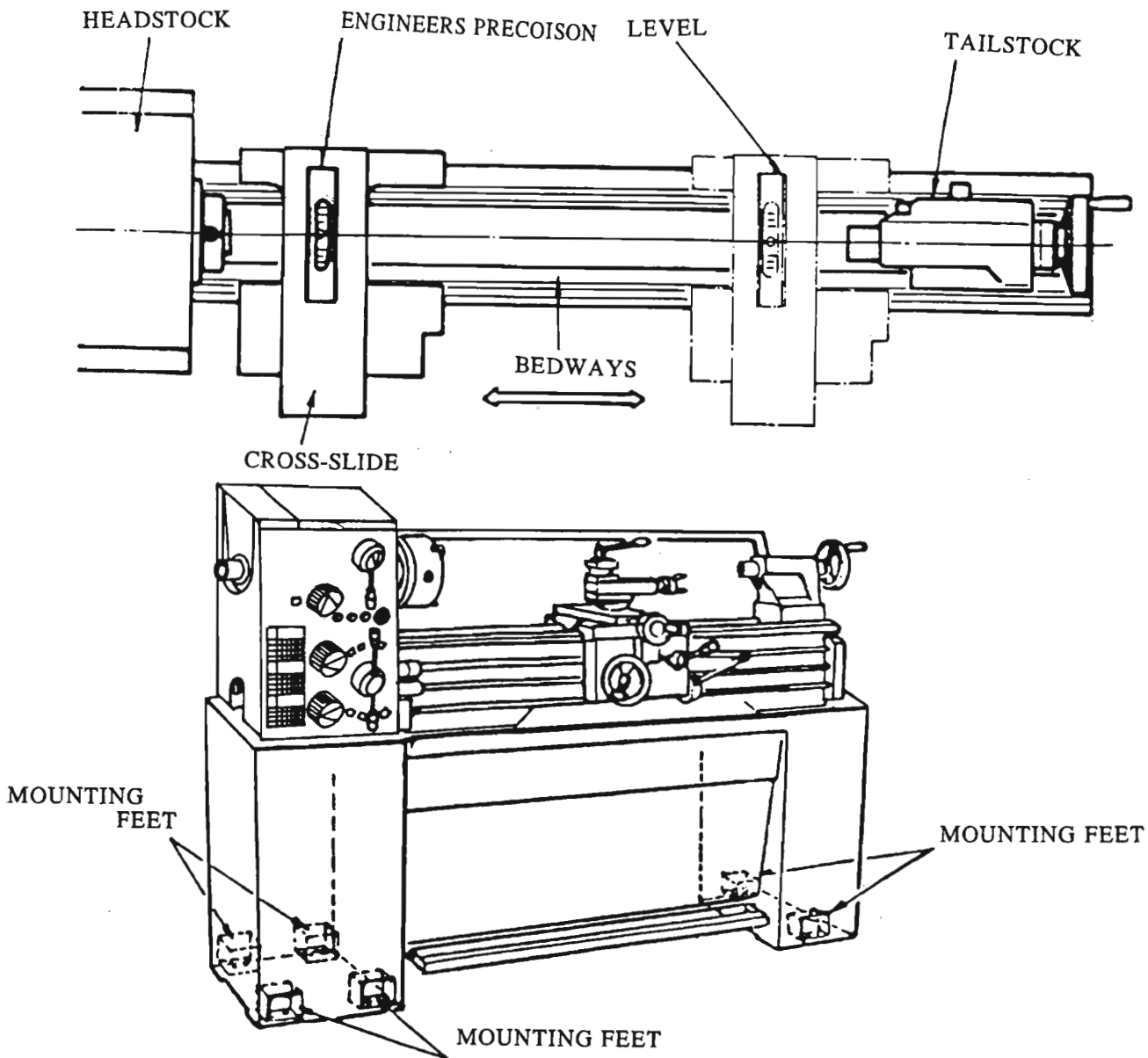
*****The following figures shown lifting by crane and clamping plate.**



INSTALLATION

Located the machine on a solid foundation, and allowing sufficient area all around for easy working and maintenance (see foundation plan). The lathe may be leveled on the foundation or bolted to the foundation. Free standing: Position lathe on foundation and adjust each of the six mounting screws to take equal pressure. Then use an engineer's precision level on the bedway to adjust the screws to level up the machine. Periodically check bed level to ensure continued lathe accuracy.

Fixed installation: Position the lathe over six bolts (1/2 inch or 12mm dia.) that are set into the foundation and are correspond to the mounting feet position. Accurately level the machine, then tight the holding nuts. Re-check be level.

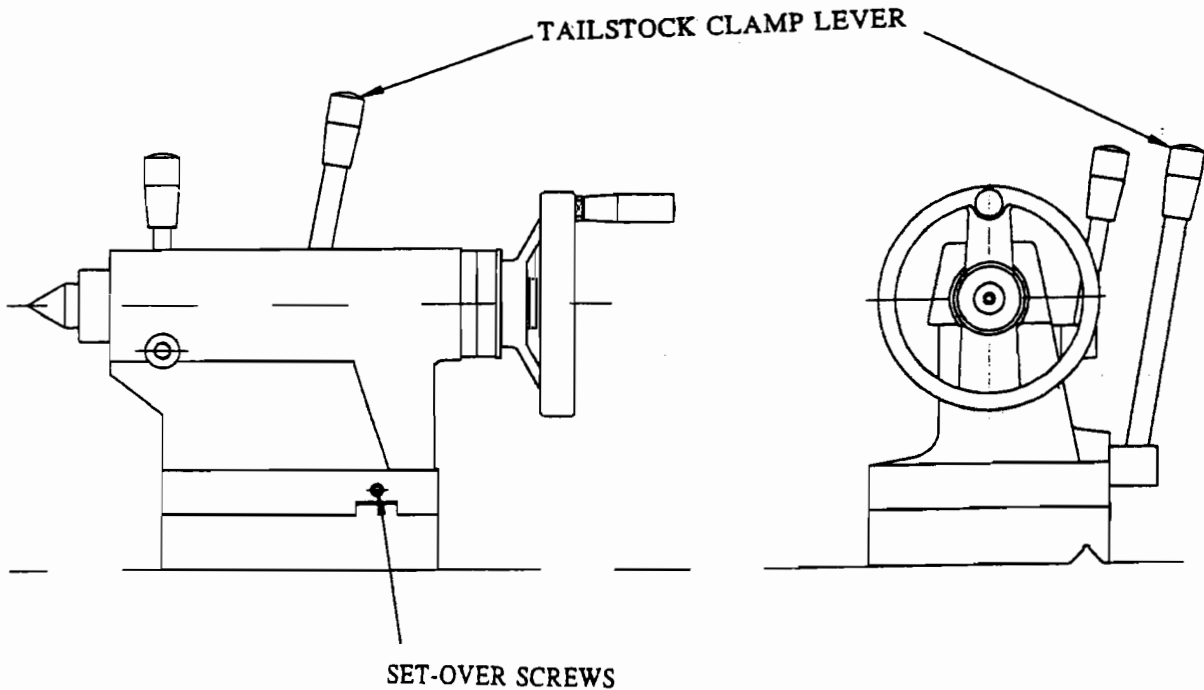
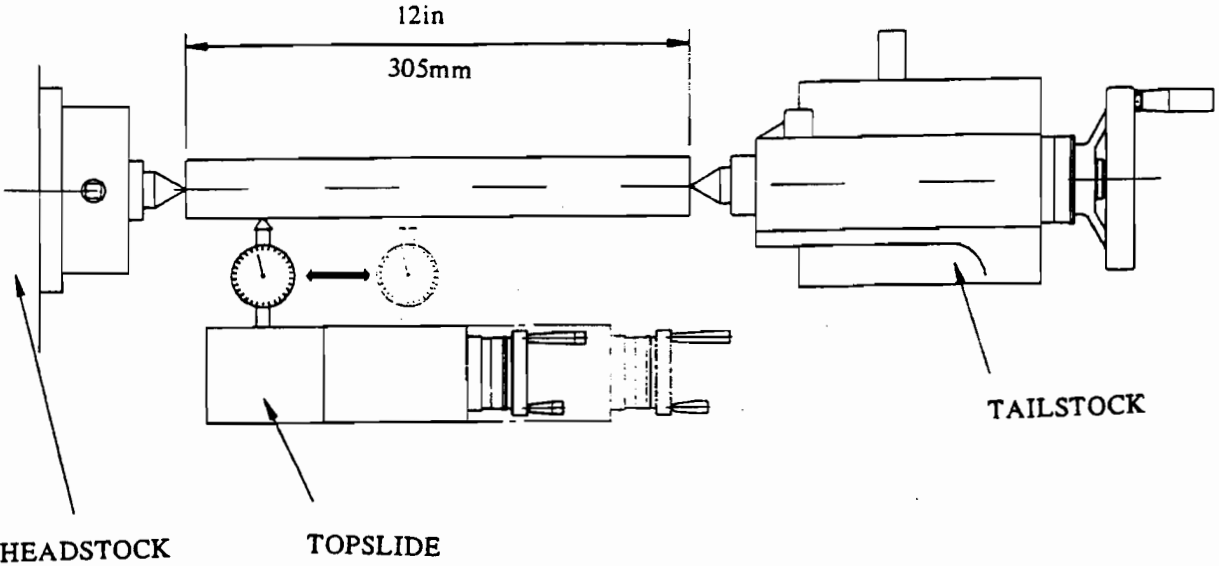


LATHE ALIGNMENT

Tailstock check

Using a 12 inch (305mm) ground steel bar fitted between headstock and tailstock centers, and check the alignment by fitting a dial test indicator to the topslide and traversing the center line of the bar.

To correct error, release the tailstock clamp lever and adjust the two set over screws provided. Continue the checking and correction until the alignment is within the specified tolerance.



LEVELING

Leveling the lathe

The lathe should be kept leveled at all times!

Leveling Procedure:

Clean the bedways thoroughly and make sure the bedways are bright after cleaning, then back off all leveling screws so the base is sitting on the leveling pads. Place a 6" precision machinist spirit level over a parallel if the level had a V base. Otherwise it can be directly placed on top of the flat cross-slide. Place the level lengthwise at the headstock end and level for a zero reading.

Move the level to the tailstock end and adjust the outer end leveling screws to obtain same reading as on the headstock end. Now place the level over a bridge across at the headstock end, take a reading and move the level to the tailstock end. The reading at this end must be exactly the same as the other end. No twist is permissible. Make adjustments to get the same reading at both ends. It will be necessary to repeat this procedure several times before it is done. For making necessary adjustments, you will find that adjustment at one end will affect the reading of the other. After the end leveling screw adjustments are complete, turn down the center leveling screws at the headstock end until they rest under slight tension. The tension should be such that it does not change the level reading.

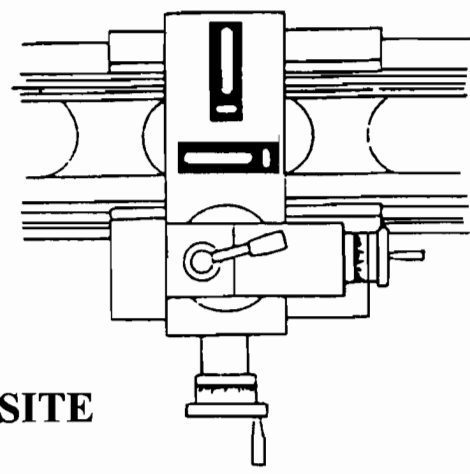
Re-check level at this time and make only minor adjustment if necessary. After the machine has been put to use for a period of time, please check level to observe if original leveling accuracy exists, and make adjustments if necessary.

Note: Mark one end of the level with an erasable marker so that the level points in the same direction for everything.

Carpenter's or combination square level is not accurate and must not be used. Schedule a periodic level check as part of your maintenance schedule.

*****See figure on next page**

POSITIONING OF SPIRIT LEVELS



TRANSPORTATION/INSTALLATION SITE

PREPARATION FOR USE

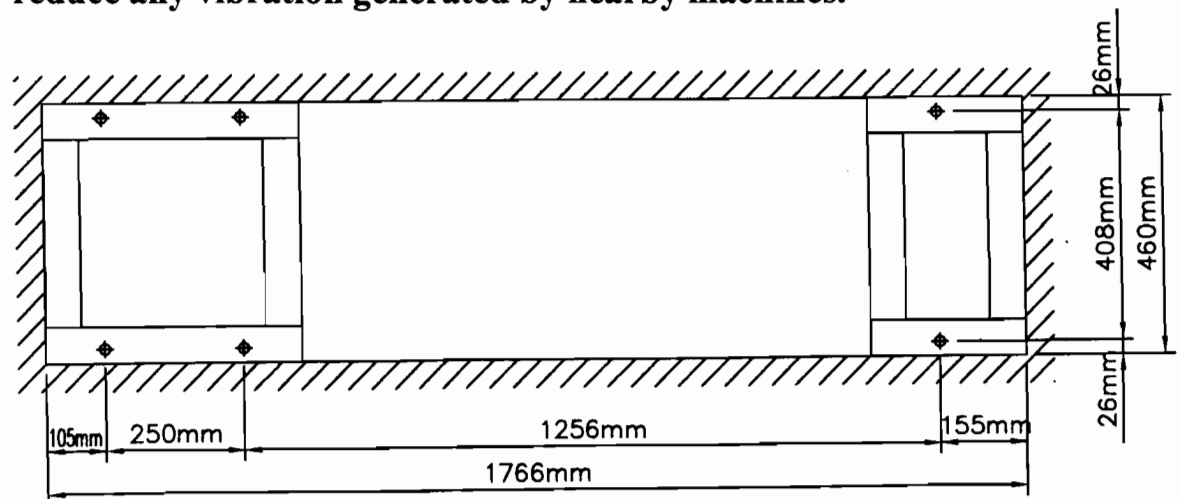
Selecting location for machine:

For best result for any lathe, it is important that the site selected for its location be well lighted as dry as possible and as free as possible from vibration.

The machine should be located so that adequate space is provided for utilization of maximum range, as well as the space required for making adjustments. A minimum of 28 inches clearance space should be provided at the ends and rear of the lathe and at least 40 inches at the front for the operator.

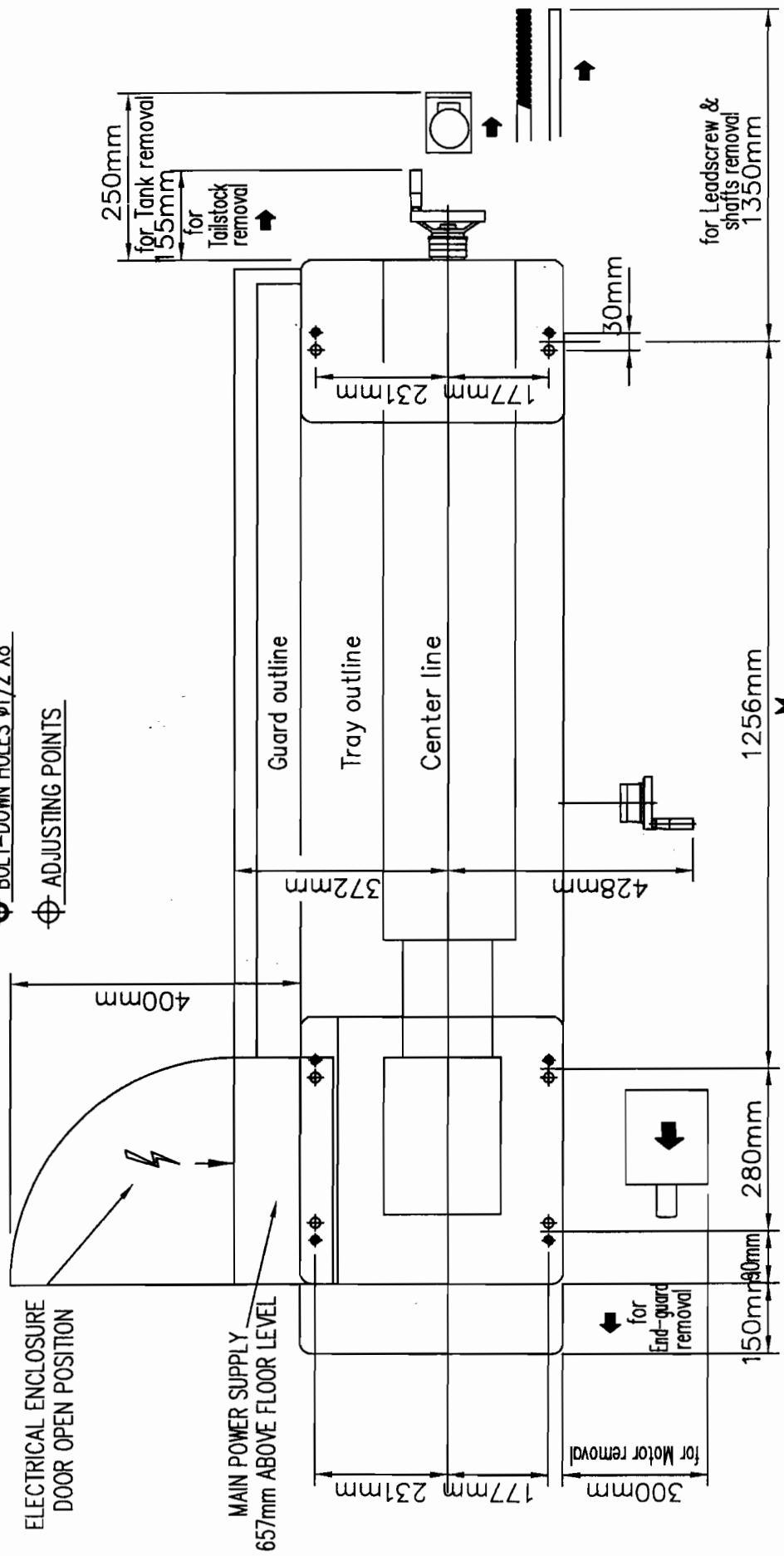
Foundation:

A special foundation is not essential for this machine. However it is advisable to place it on a substantial foundation of concrete if it is possible. If placed on a wooden floor, care should be taken to see that it is adequately supported and free from vibration. If the machine is to be placed on an upper floor, locate it directly over a supporting beam to reduce any vibration generated by nearby machines.



1"=25.4mm

ϕ BOLT-DOWN HOLES $\phi 1/2" \times 8"$
 ϕ ADJUSTING POINTS



1" = 25.4mm

FOUNDATION DIAGRAM

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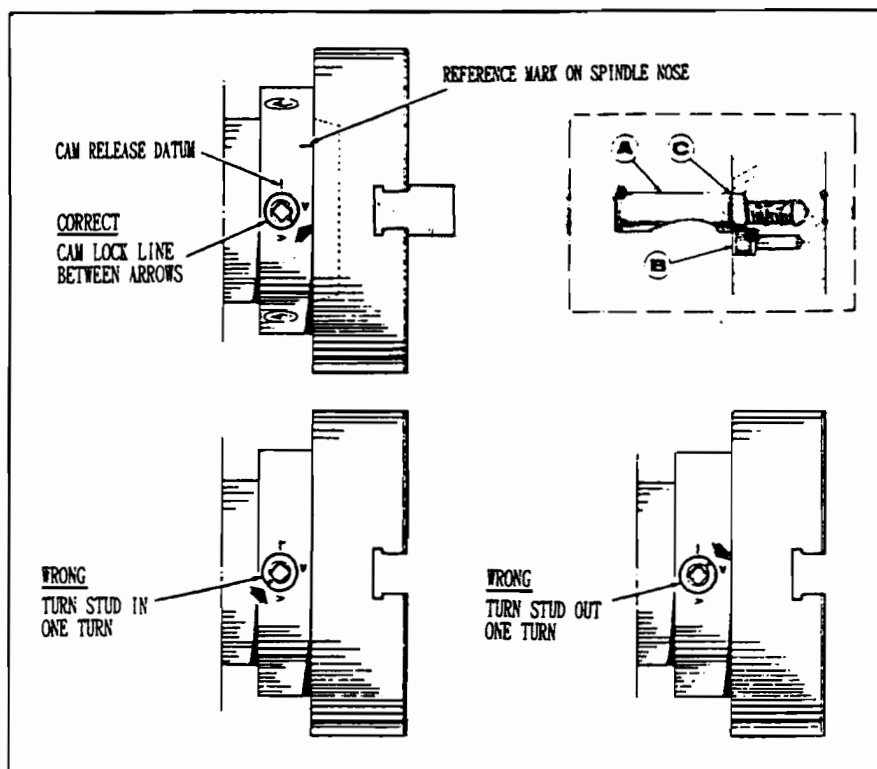
CHUCKS AND CHUCK MOUNTING

When fitting chucks or face plates, first make sure that spindle and chuck tapers are perfectly clean and that all cams lock in the correct positions, see fig. It may be necessary when mounting a new chuck to re-set the camlock studs (A). To do this, remove the cap head locking screws (B) and set each stud so that the scribed ring (C) is flush with the rear face of the chuck with the slot lining up with the locking screw hole. Now mount the chuck or face plate on the spindle nose and tighten the six cams in turn. When fully tightened, the camlock line on each cam should be between the two V marks on the spindle nose.

If any of the cams do not tighten fully within these limit marks, remove the chuck or face plate and re-adjust the stud as indicated in the illustration. Fit and tighten the locking screws (B) at each stud before mounting the chuck for work. A reference mark should be made on each correctly fitted chuck or face plate to coincide with the reference mark scribed on the spindle nose.

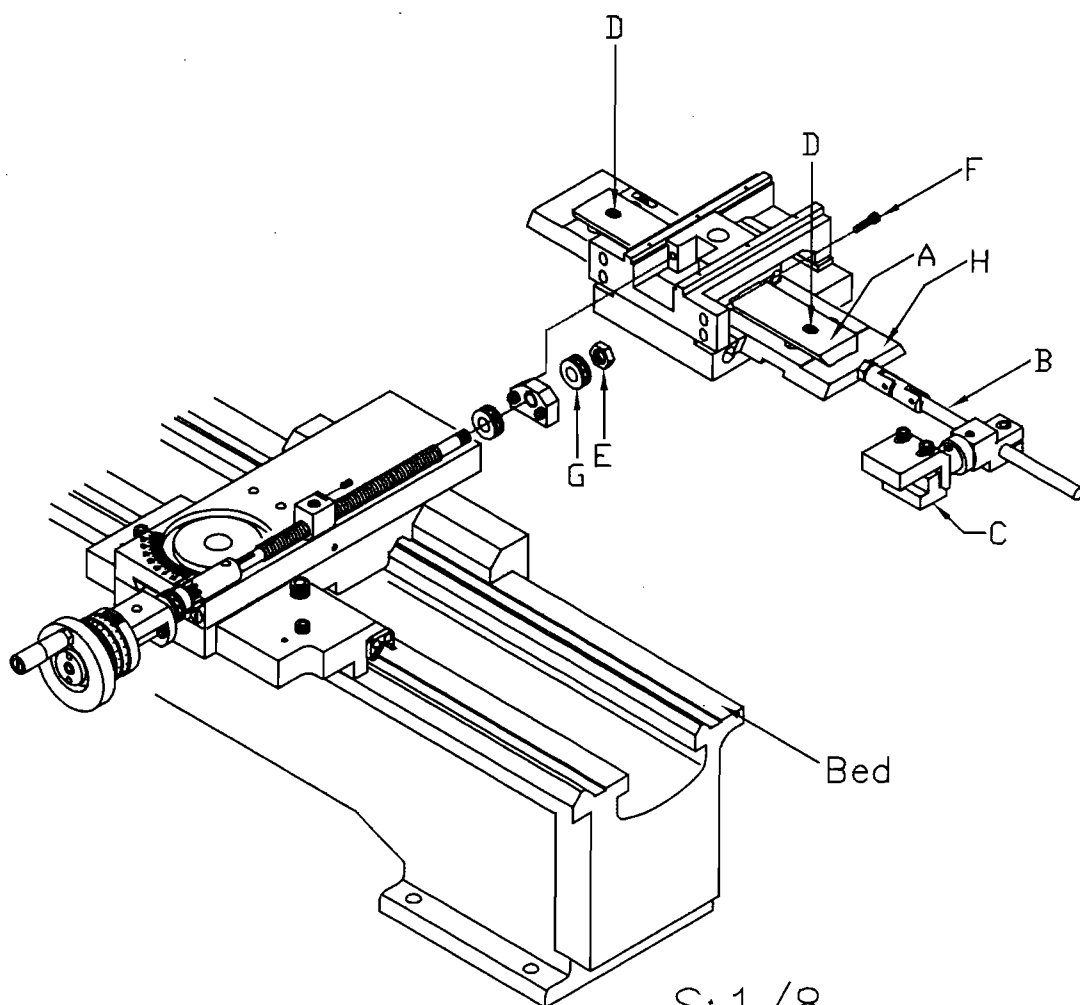
This will assist subsequent remounting: Do not interchange chucks or face plates between lathes without checking for correct cam locking before hand.

*****Important:** Take careful note of speed limitation when using face plate; 10" face plates should not run at speeds greater than 1,000 rev/min, and 12" face plates at no more than 750 rev/min.



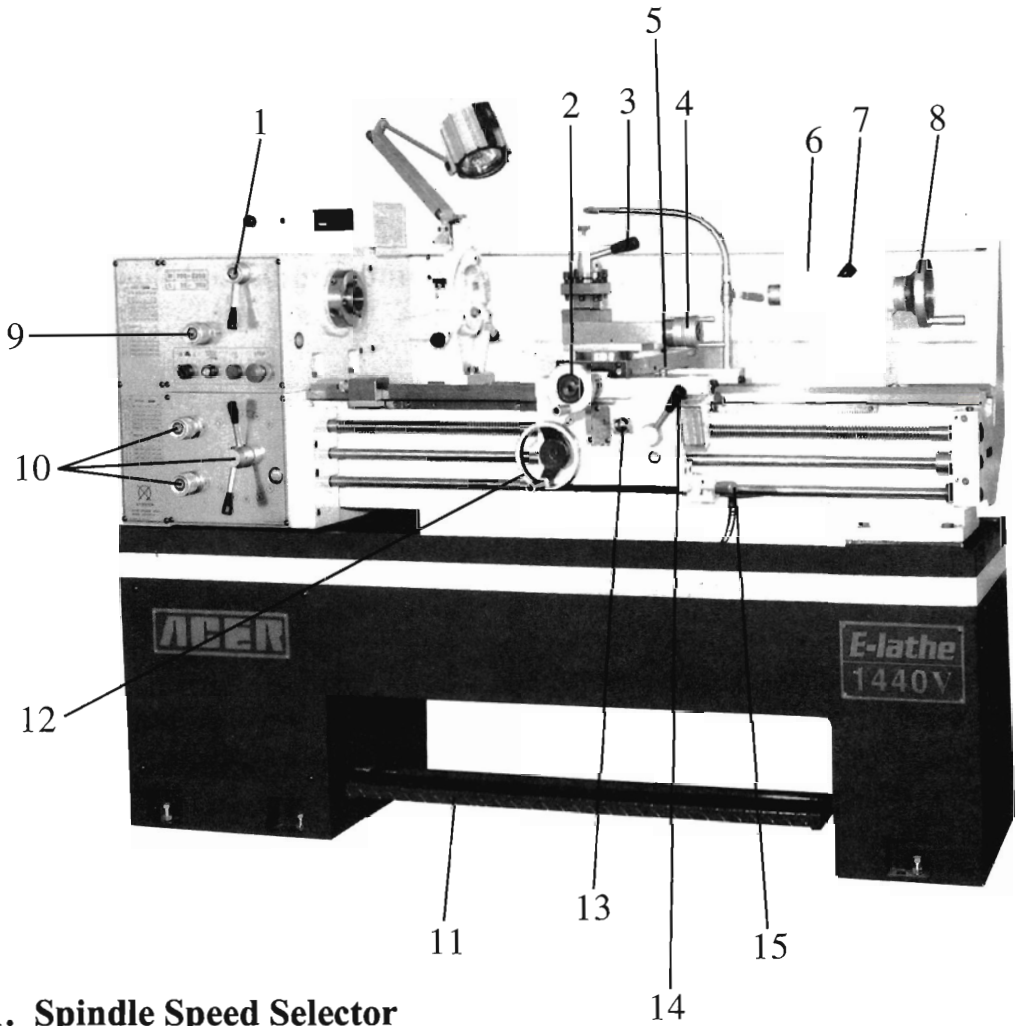
INSTRUCTION FOR ASSEMBLING TAPER TURNING ATTACHMENT ON ACER LATHE

1. Loosen cross feed leadscrew end nut (E).
2. Fitting taper turning attachment onto saddle and then lock by screws (F).
3. Adjust (A) parallel to the bed within 0.015mm/150mm by dial indicator.
4. Install alignment rod (B) on (H).
5. Set bracket (C) on bed.



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LATHE CONTROL

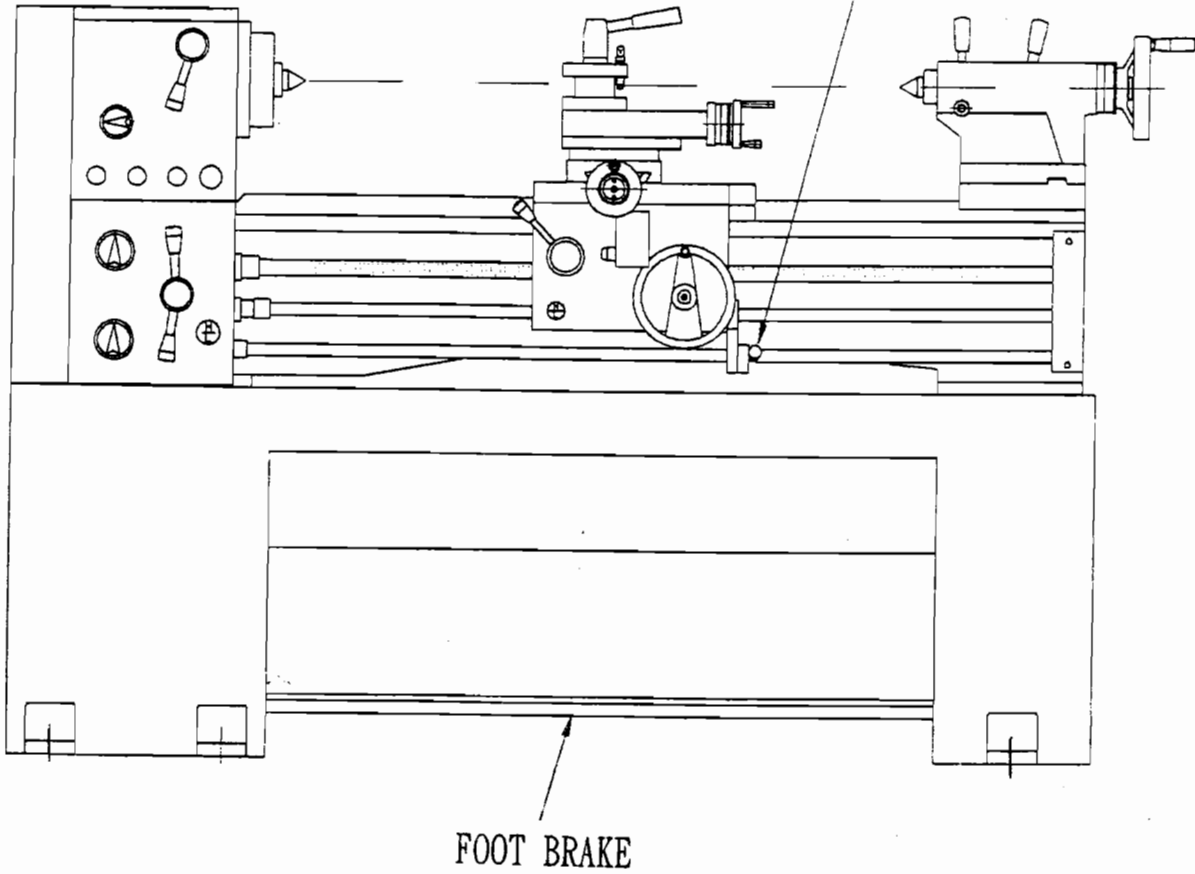


1. Spindle Speed Selector
2. Cross Slide Feed Handwheel
3. Tool Post Clamping Lever
4. Top Slide Handwheel
5. Saddle Clamping Lever
6. Tailstock Barrel Clamping Lever
7. Tailstock Clamping Lever
8. Tailstock Handwheel
9. Left/Right Cutting Lever
10. Feed and Thread Selectors
11. Foot Brake
12. Longitudinal Feed Handwheel
13. Automatic Feed Lever
14. Thread Cutting Half-nut Lever
15. Spindle Rotation (Forward and Reverse)

MAIN MOTOR CONTROL & FOOT BRAKE

MAIN MOTOR CONTROLS

SPINDLE ROTATION LEVER



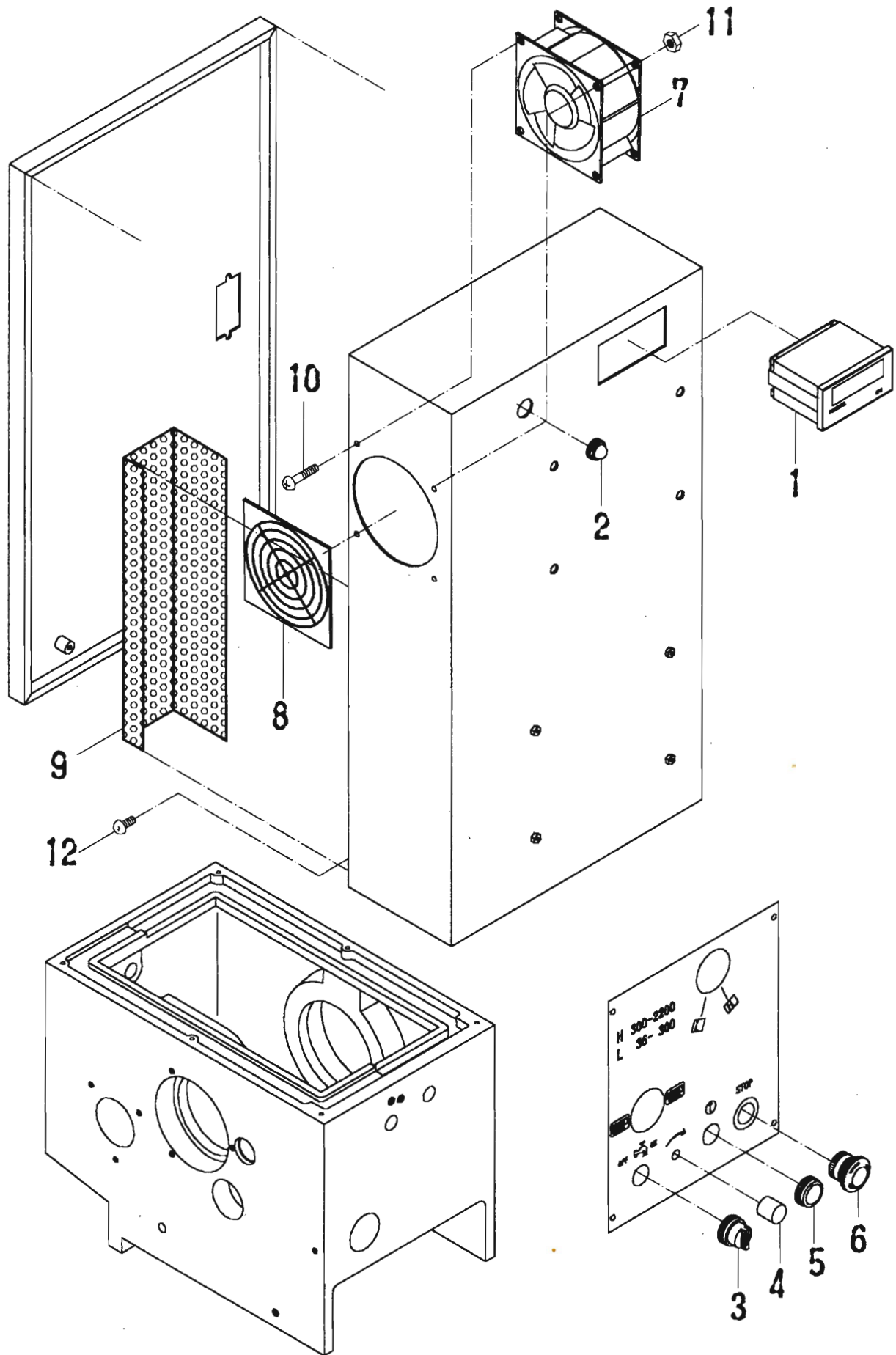
*** Main motor rotation:

Selected by the lever controls (the located on right hand side of the apron). Move lever out and upward to engage forward rotation of spindle. Or out and down to engage reverse rotation. Or returned to the central position to disengage drive.

*** Foot brake:

A foot pedal between two bases operates the spindle brake.

CONTROL PANEL & ITS DISPLAY



CONTROL PANEL & ITS DISPLAY

Description	Parts Number	Qt'y
1. RPM Meter	LPE1440V001	1
2. Indicator Light	LPE1440V002	1
3. Coolant Switch	LPE1440V003	1
4. Potentiometer	LPE1440V004	1
5. Jogging Button	LPE1440V005	1
6. Emergency Switch	LPE1440V006	1
7. Cooling Fan	LPE1440V007	1
8. Fan Cover	LP1440V001	2
9. Resistor Cover	LP1440V002	1
10. Round Head Cap Screw	LP1440V003	4
11. Hex Nut	LP1440V004	4
12. Round Head Cap Screw	LP1440V005	2

Control Panel & Its Display

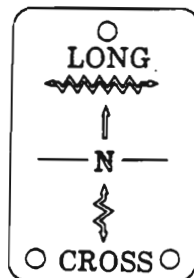
- 1. RPM meter will show the spindle's actual speed.**
- 2. Indicator light will be lighted when power is connected.**
- 3. Coolant pump on/off switch.**
- 4. Potentiometer—Turning the VR will change the spindle speed.**
- 5. Jogging button—Press the green button to rotate the spindle slightly. It will make changing speed range easy.**
- 6. Emergency switch—Press the red mushroom-head button to stop the main motor and coolant pump.**

*****Caution: Do not shift gear range when the spindle is running.**

APRON CONTROLS

In addition to handwheel traverses, the carriage can be power operated through controls on the front of the apron. Automatic feed lever (A): If move upward, carriage will do longitudinal feeding operation. If move lever (A) in middle position, it will do manual operation. If move lever (A) downward, it will do cross feeding operation.

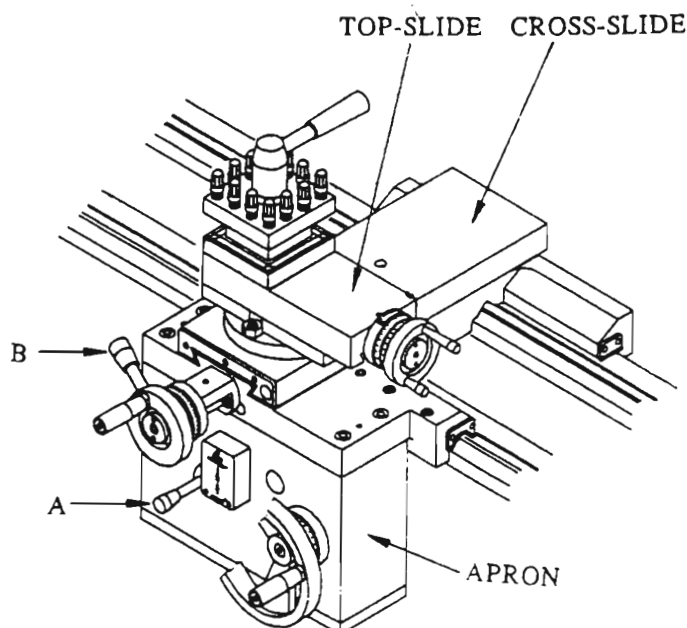
Lever (B) is pressed downward to engage the leadscrew nut for thread cutting. To avoid undue wear, release the nut when not thread cutting. An interlock within the apron prevent inadvertently engagement of automatic feed lever (A) and half nut lever (B) at the same time.



CROSS SLIDE AND TOPSLIDE

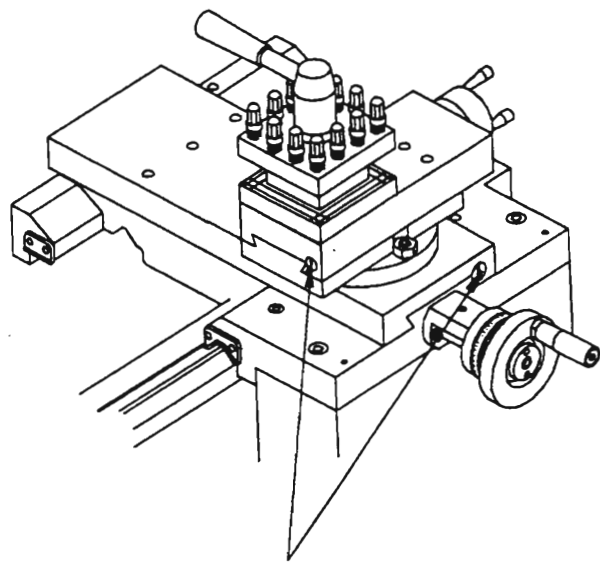
A solid topslide is fitted as standard to the cross-slide, and is carried on a rotative base. The cross slide is marked 45 -0 -45 for accurate indexing. Handwheel dials are graduated in inch-or-metric division to suit the operating screw and nut.

The cross slide can be power operated by pulling downward the automatic feed lever at half sliding feed per spindle revolution or it can be hand operated using the large diameter dial graduated in either inch or metric divisions to suit the operating screw and nut.



SLIDEWAYS ATTENTIONS

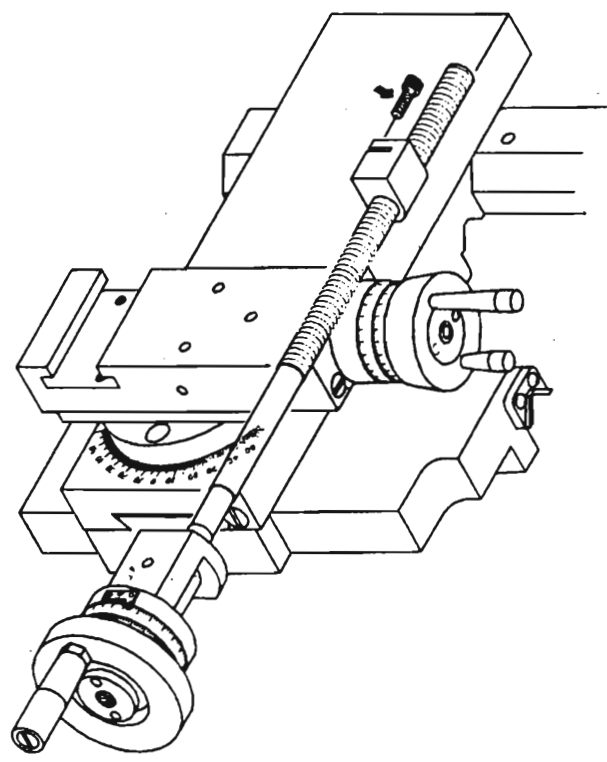
Tapered gibs are fitted to slideways of saddle, cross-slide and top (compound) slides so that any slackness, which may develop can be reduced. Make sure that slideways are thoroughly cleaned and lubricated before attempting adjustment, then reset the gibs by releasing the rear gib screw and tightening the front screw a little at a time. Check constantly for smooth action through out full slide travel; avoid over adjustment, which can result in increased wear rate and stiff or jerky action of the movement.



GIB ADJUSTERS

CROSS-SLIDE NUT

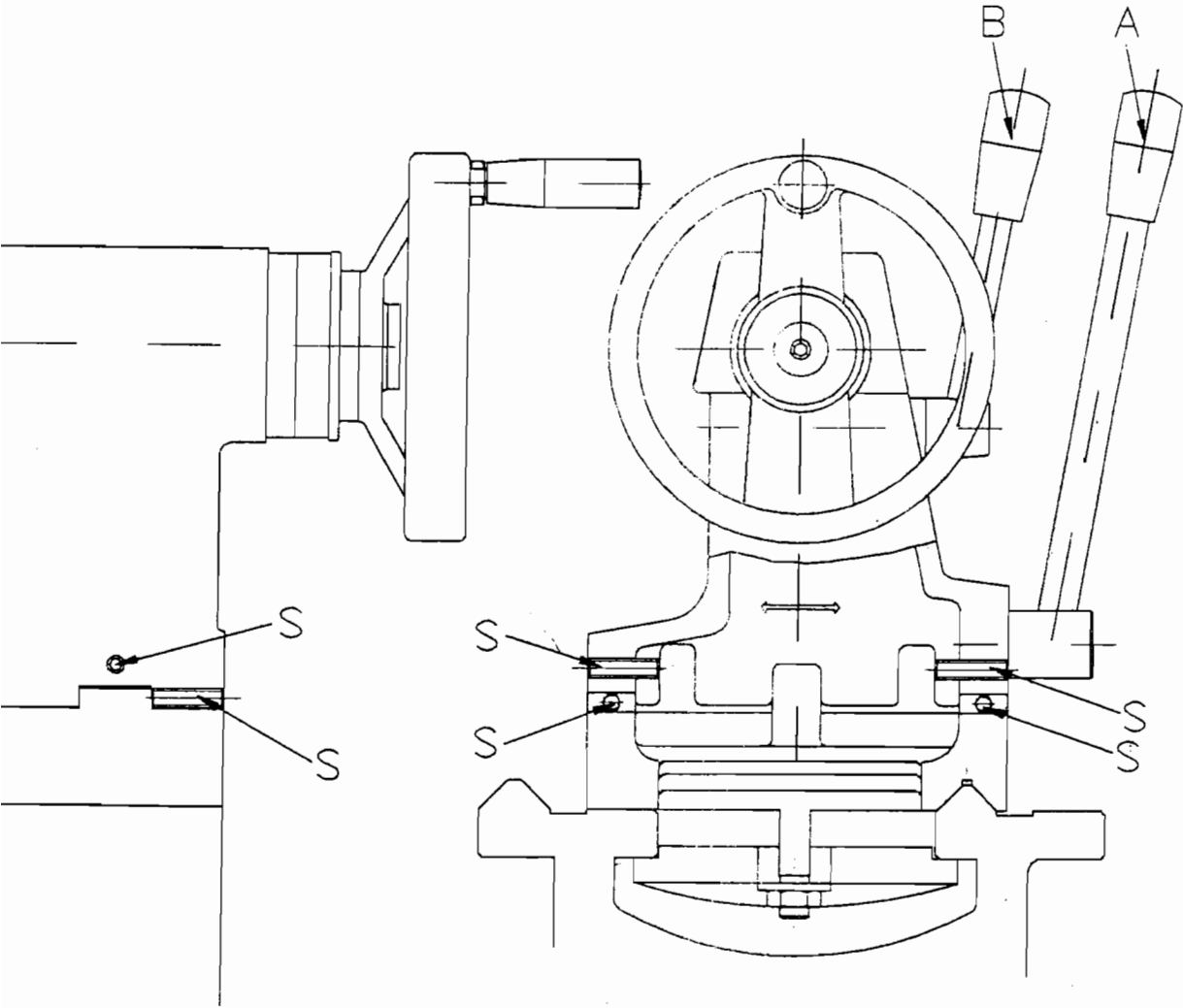
This is adjustable for eliminating slackness, which may develop in operation. Reduce backlash by the cap head screw located at the rear of the nut. Then make only small adjustment by the cap head screw. Before operating the cross slide several times by hand to be sure of smooth operation through out travel.



TAILSTOCK

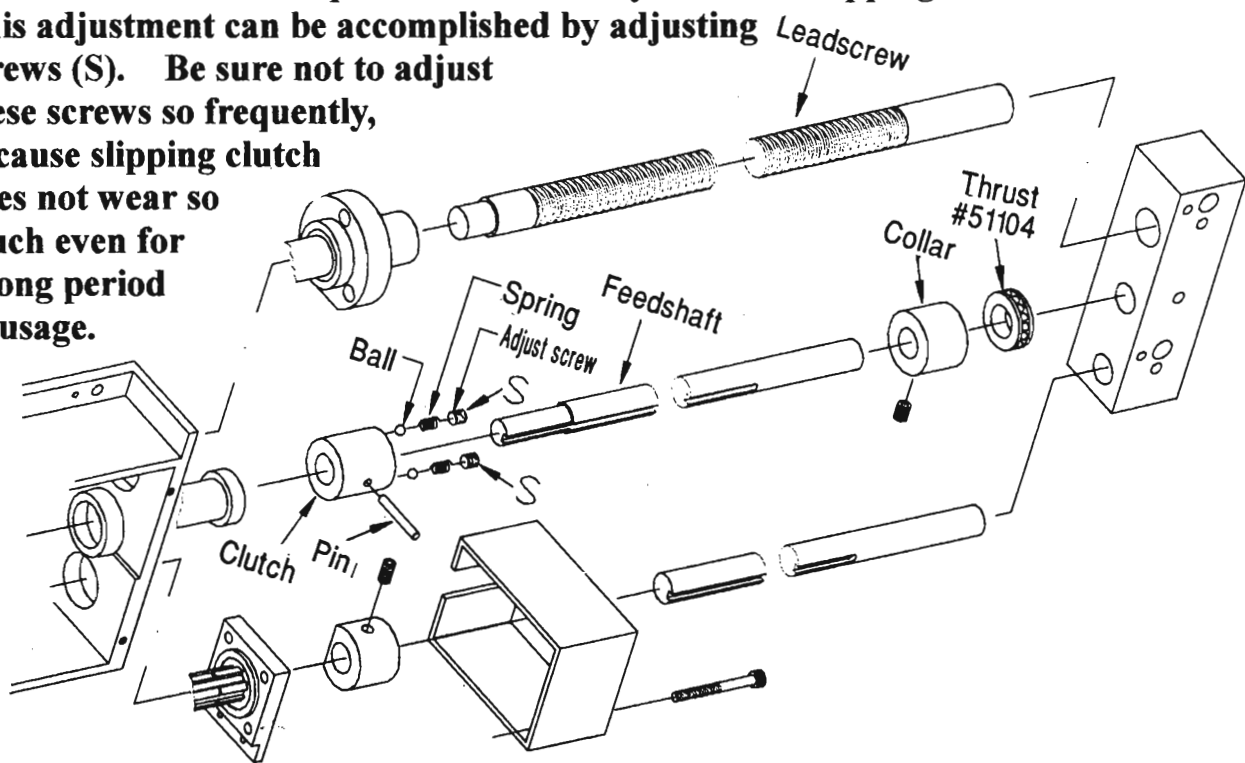
Tailstock can move freely along the bed by unlocking the clamp lever (A). The tailstock barrel is locked by lever (B).

The tailstock can be set over for production of shallow tapers or for re-alignment. Release the clamping lever (A) and adjust screw (S) at each side of the base to move tailstock laterally across the base. Please re-tighten and check alignment after each adjustment.



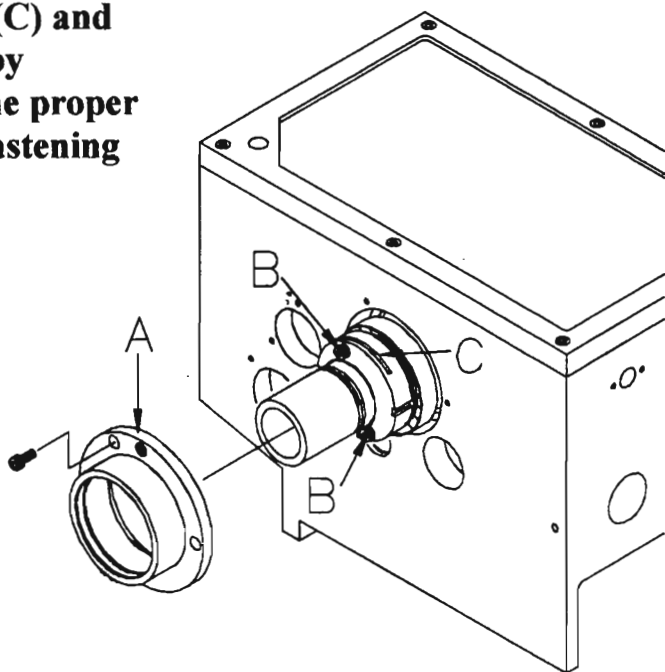
ADJUSTMENT OF SLIPPING CLUTCH

Apron has an overload protection device by means of slipping clutch. This adjustment can be accomplished by adjusting screws (S). Be sure not to adjust these screws so frequently, because slipping clutch does not wear so much even for a long period of usage.



SPINDLE BEARING ADJUSTMENT

When we find the spindle bearings are too tight or loose, we need to open the headstock cover (A) and loosen the set screw (B) on the spindle bearing thrust nut (C) and then adjust the thrust nut by loosening or fastening it. The proper adjustment is finished by fastening the set screw again.



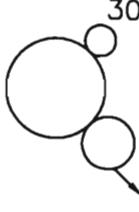




THREADS AND FEEDS

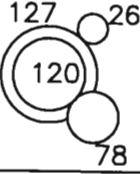

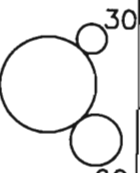


FOR INCH GEAR BOX

Check the chart for the desired feed and turn the change lever (W, X, Y, Z) and (P, Q, R, I, T) and turn the selector knob (A, B), (C, D) in the gear box to obtain the desired speed shown on the right chart.

CAUTION

DO NOT CHANGE GEARS AND FEEDS WHEN SPINDLE IS IN HIGHER SPEED RANGE!

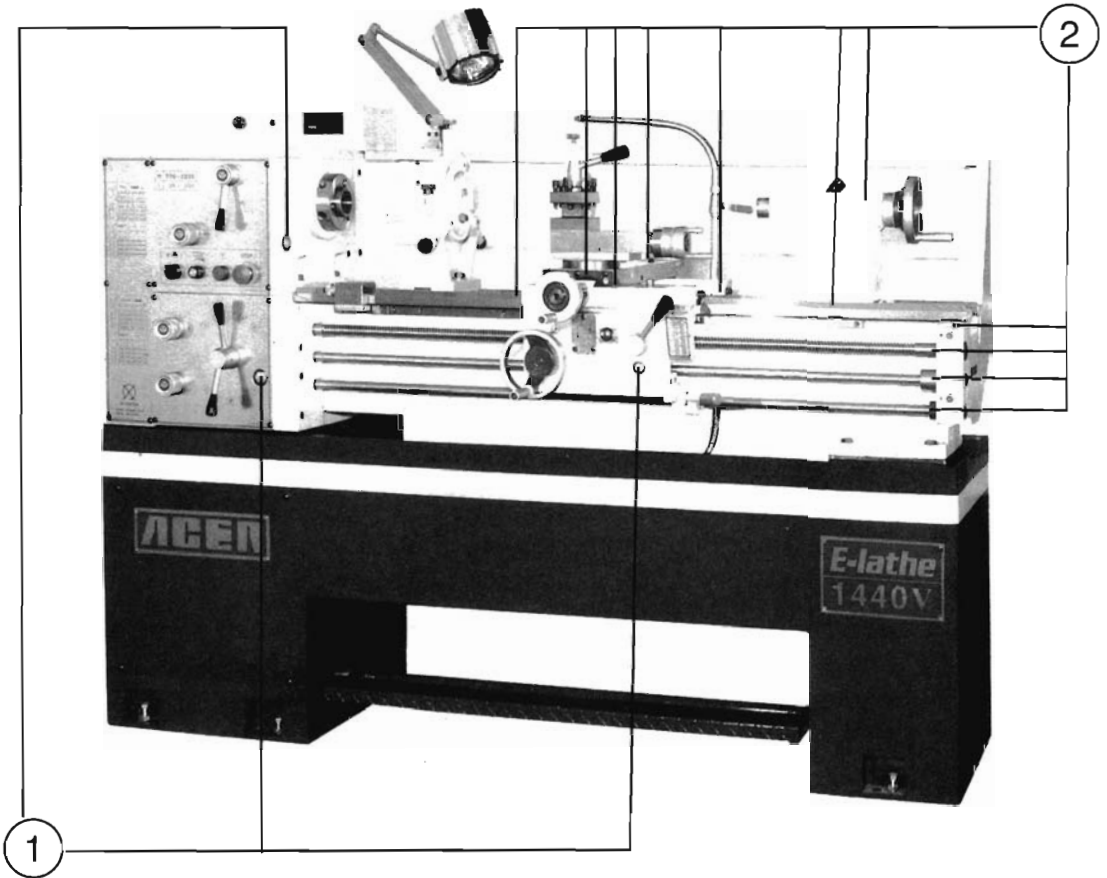
	T.P.I.  INCH							
	N	M	M	M	M	M	M	M
	Y	W	V	V	V	Y	V	U
	60	60	60	66	69	60	78	60
A D	4	4 ¹ / ₂	5	5 ¹ / ₂	5 ³ / ₄	6	6 ¹ / ₂	7
B D	8	9	10	11	11 ¹ / ₂	12	13	14
A C	16	18	20	22	23	24	26	28
B C	32	36	40	44	46	48	52	56
	FEED INCH  $\frac{1}{3}$ 							
	P	P	P	P	P			
	X	W	V	Y	U			
A D	0.0368	0.0327	0.0294	0.0245	0.0210			
B D	0.0184	0.0163	0.0147	0.0122	0.0105			
A C	0.0092	0.0081	0.0073	0.0061	0.0052			
B C	0.0046	0.0040	0.0036	0.0030	0.0026			

	PITCH  MM									
	M	L	K	L	N	K	J	N	J	
	V	V	V	X	V	X	V	X	X	
A D	3.2	3.6	4.0	4.5	4.8	5.0	5.6	6.0	7.0	
B D	1.6	1.8	2.0	2.25	2.4	2.5	2.8	3.0	3.5	
A C	0.8	0.9	1.0		1.2	1.25	1.4	1.5	1.75	
B C	0.4	0.45	0.5		0.6		0.7	0.75		
	FEED MM  $\frac{1}{3}$ 									
	P	P	P	P	P					
	X	W	V	Y	U					
A D	0.935	0.831	0.748	0.623	0.534					
B D	0.467	0.415	0.374	0.311	0.267					
A C	0.230	0.207	0.187	0.155	0.133					
B C	0.116	0.103	0.093	0.077	0.066					

FOR METRIC GEAR BOX

Check the chart for the desired feed and turn the change lever (X, Y, Z) and (R, S, T, P, U) turn the selector knob (A, B), (C, D) in the gear box. To obtain the described speed shown on the left chart.

LUBRICATION CHART



		
TWICE PER DAY 2	OIL DAILY	CHECK DAILY 1

CAUTION ON OILING

The following cautions are very important to be followed when oiling:

1. Use only specified oil or grease with specified quantity. To use oil or grease other than specified and too much oil or grease may adversely affect the performance of the machine.
2. Clean the slideways, oil filler holes, oil tank, etc., before pouring oil and take care not to pollute the oil when pouring it.
3. When pouring oil, place a filter over oil filler hole to eliminate dust and dirt. If a filter is not available, use a wire net of 150 mesh or finer.
4. Successively use the identical oil or grease. Note that the use of oil having different properties might degrade the oil.

5. Even when the new oil is drained and used again for re-assembling, replacement of part or any other reason, be sure to filter the oil, when pouring it again.
6. Do not fully use oil can's oil, but leave a small quantity of oil in this can. This caution allows us to eliminate moisture and sediment from oil.

LUBRICATION CHECKS

A. HEADSTOCK

Headstock bearings and gears are splash lubricated. Ensure that oil level is kept between H-L level marked on the sight glass in the chuck face of headstock. After long time of operation, when the headstock lubrication oil becomes unclean, it should be drained out to refill fresh lubrication oil.

To change oil in the headstock, set apron control lever to central position and stop the main motor. Unscrew the drain plug beside headstock, then the oil tank can be easily drained out for changing oil. A filler plug is fitted beside the left end of the headstock, which is accessible after removal of the end cover.

B. GEAR BOX

The gear box is splash lubricated from an internal reservoir of oil. Check the oil level at the gauge of the gear box constantly to make sure that oil is enough. A weekly check of oil level, and semi-annual change of oil are recommended. Fill oil through a filler cap on the top of the gear box, which is enclosed by the left end cover, and you can drain oil from a drain plug at the bottom of the gear box.

C. APRON

Apron can be filled through the inlet on top of the saddle. Oil level must be kept with the center line of the oil gauge, which is located at the lower right corner of the apron. Oil is drained from the plug at the bottom of the apron.

Fill the apron with Chevron AIO #32 to the gauge level if necessary.

D. OTHER PORTIONS

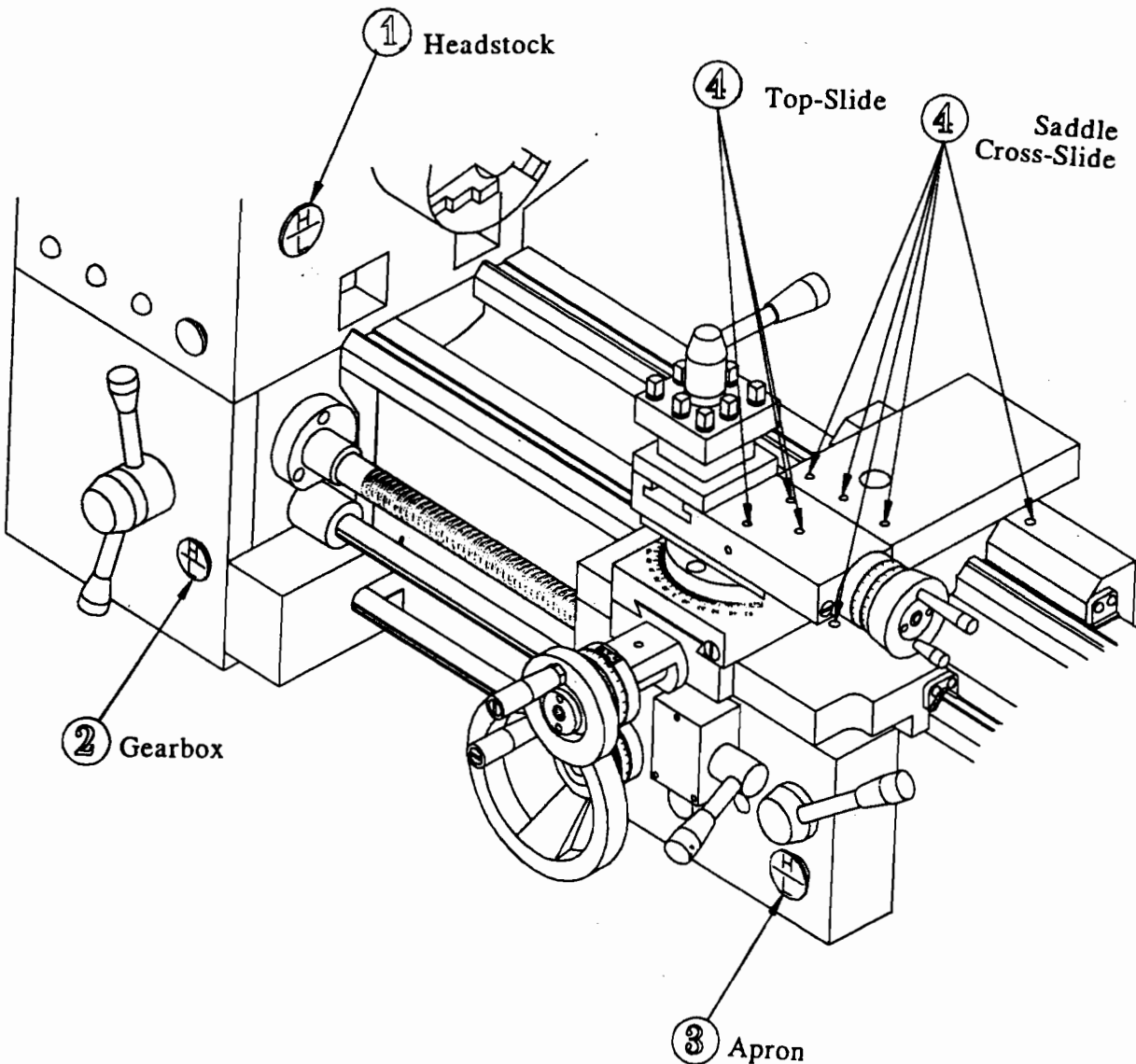
There are oil inlets on the cross slide, compound rest, feed screw shaft bearings, tailstock, feed rod, leadscrew, and bracket that hold screw and rod. They need to be lubricated from time to time.

*****Make sure that the slideways are thoroughly clean and lubricated before operating the lathe.**

LUBRICATION CHECK

BEFORE OPERATING THE MACHINE, PLEASE CHECK THE FOLLOWINGS:

- 1. The headstock is filled with oil to the gauge level. Fill it with Chevron AIO #68, if not enough.**
- 2. The gear box is filled with Chevron AIO #68 to the gauge level.**
- 3. Apron is filled to the gauge level with Chevron #32.**
- 4. In addition, apply oil to the points on the lubrication diagram daily. Please use light machining oil or way lube oil.**



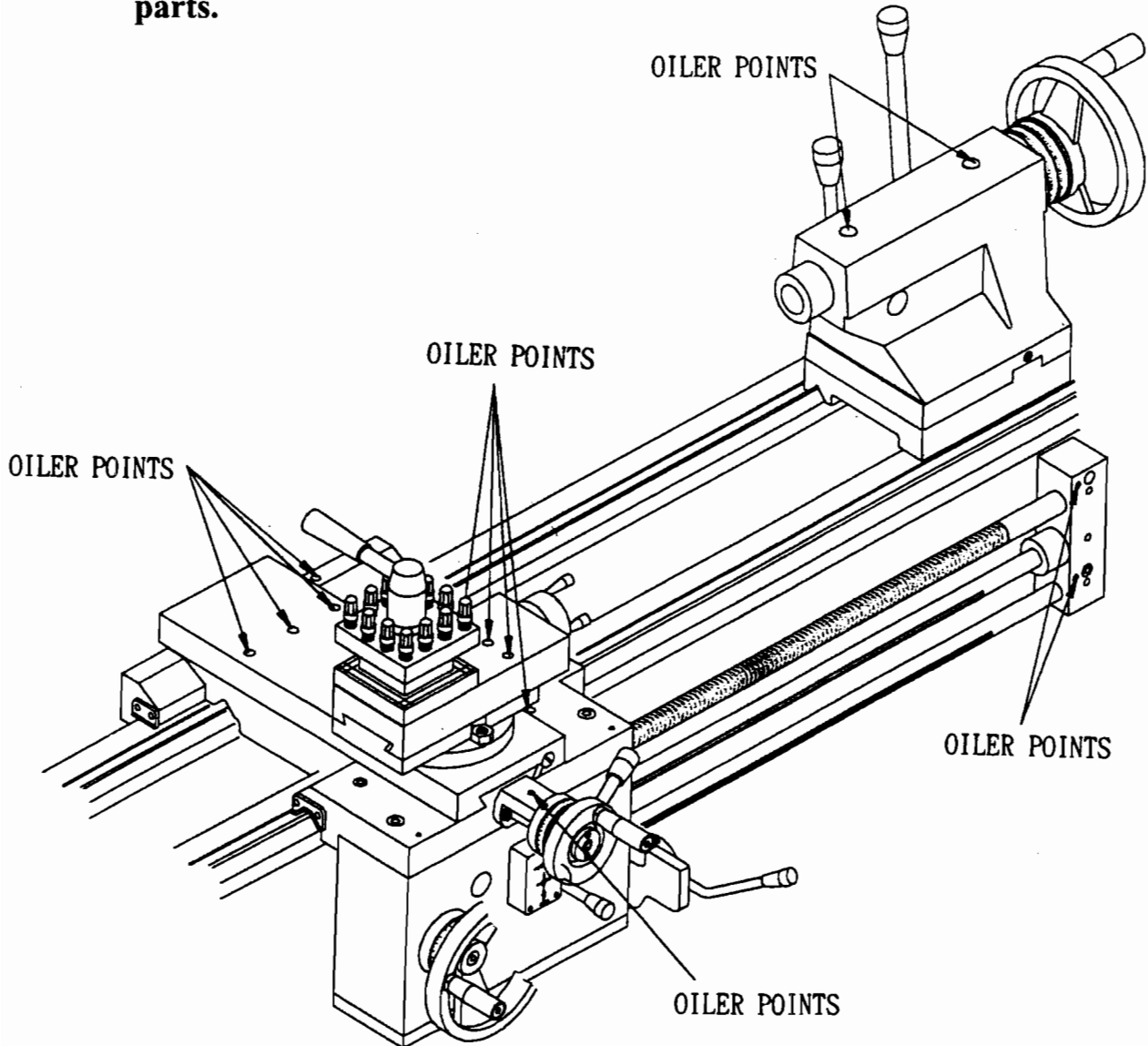
LUBRICATION

In addition to pump feed lubrication system, oil points are provided for the saddle, cross slide, and crossfeed nut. Use a hand-held oil pump to lubricate the points provided on the figure.

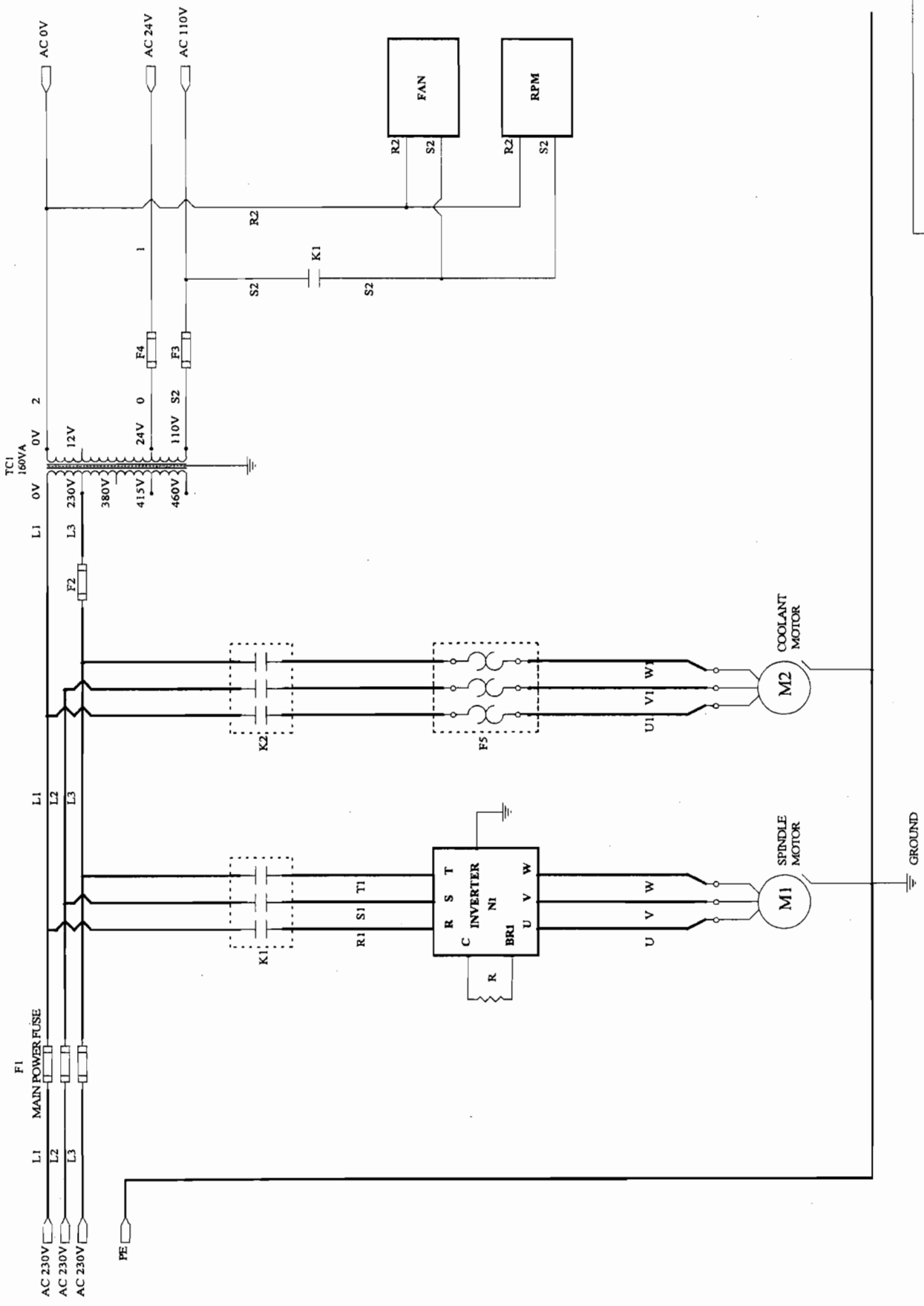
On the tailstock, a standard oil can is used to oil the tail end of the leadscrew.

It is recommended that all slideways, leadscrews, and feed rod are cleaned periodically, and lightly oiled after each period of work.

Note: Usage of incorrect type of lubrication oil can cause damage to the parts.

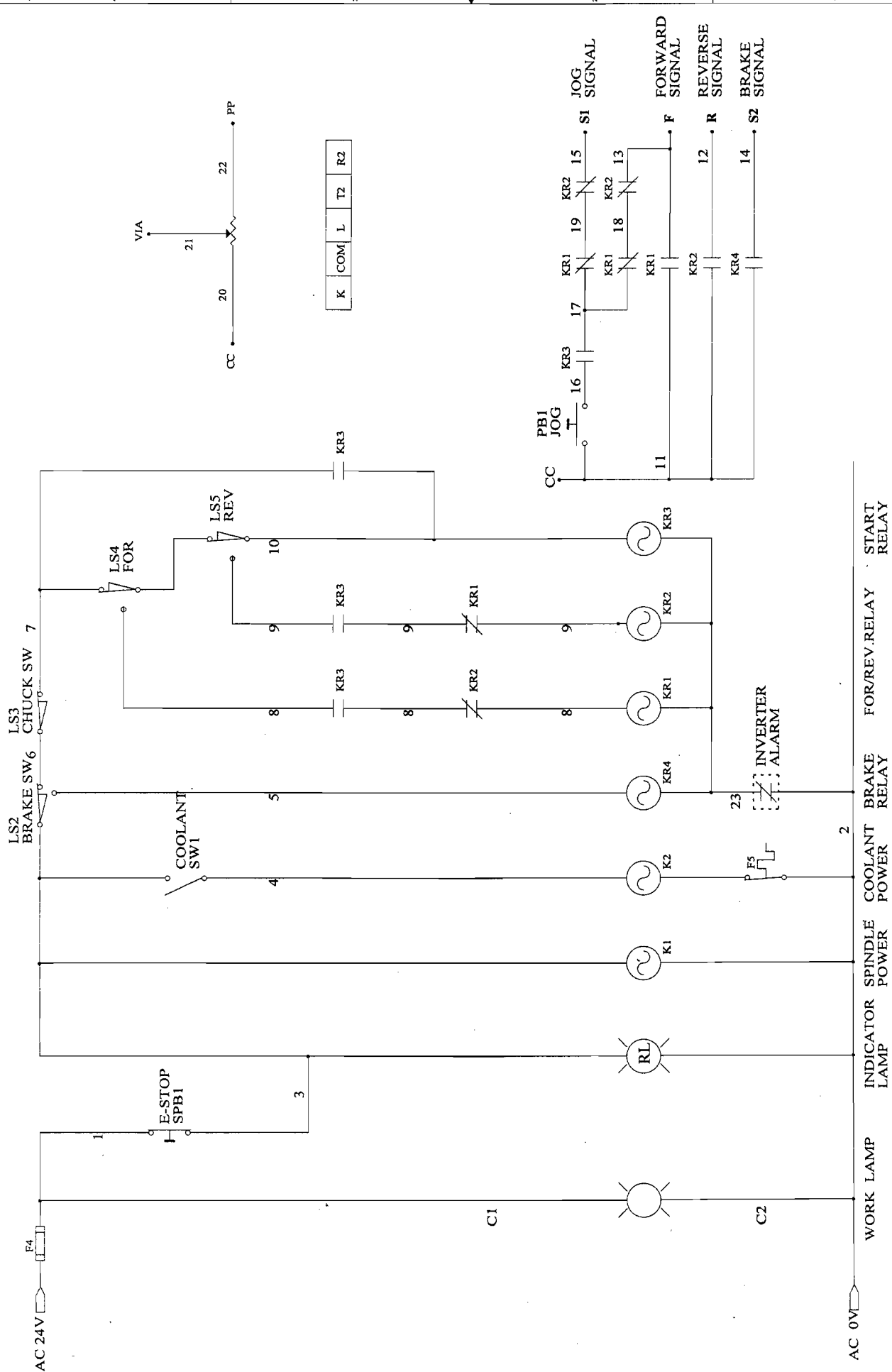


MOTOR WIRING DIAGRAM

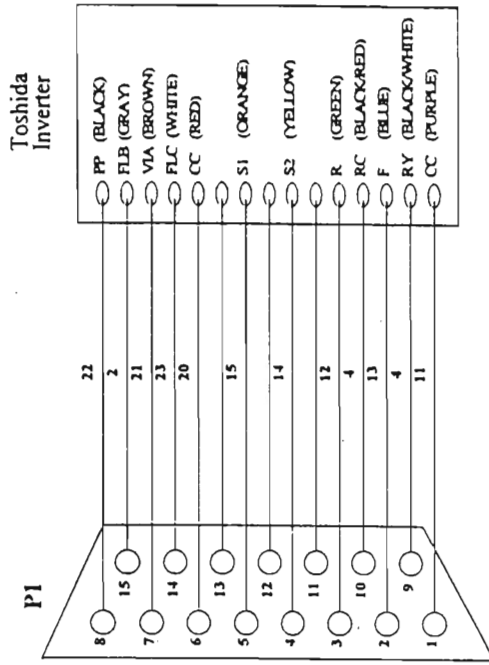
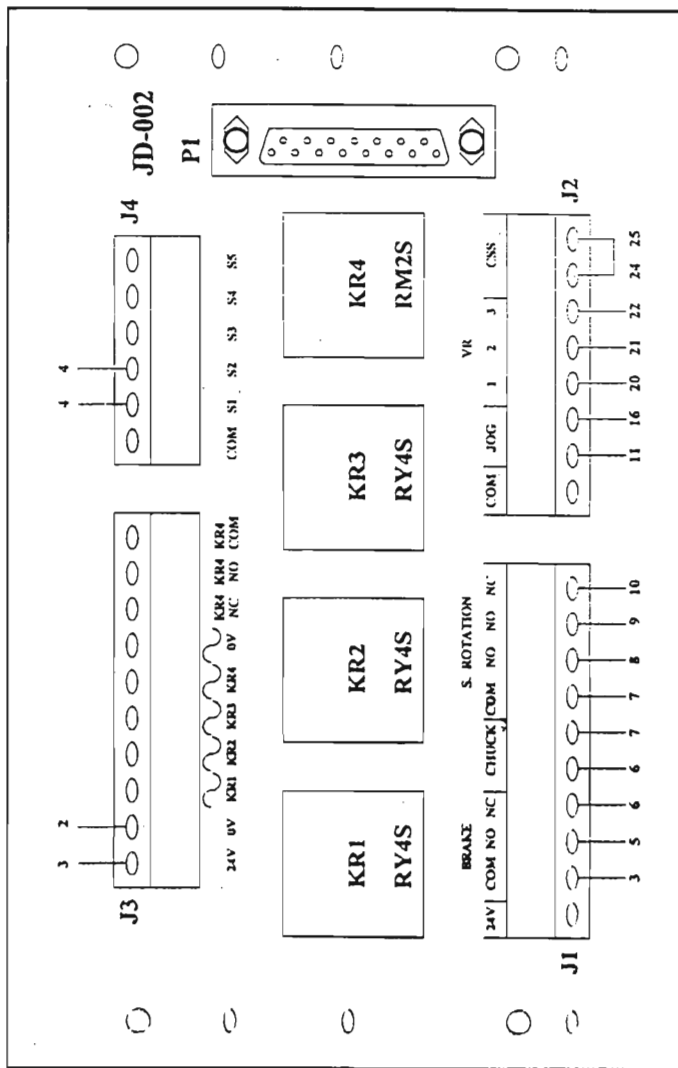


Size	Document Number	Rev
A3	3-HP INVERTER LATHE UNIT	1
Date	Monday, May 12, 2003	Sheet 1 of 1

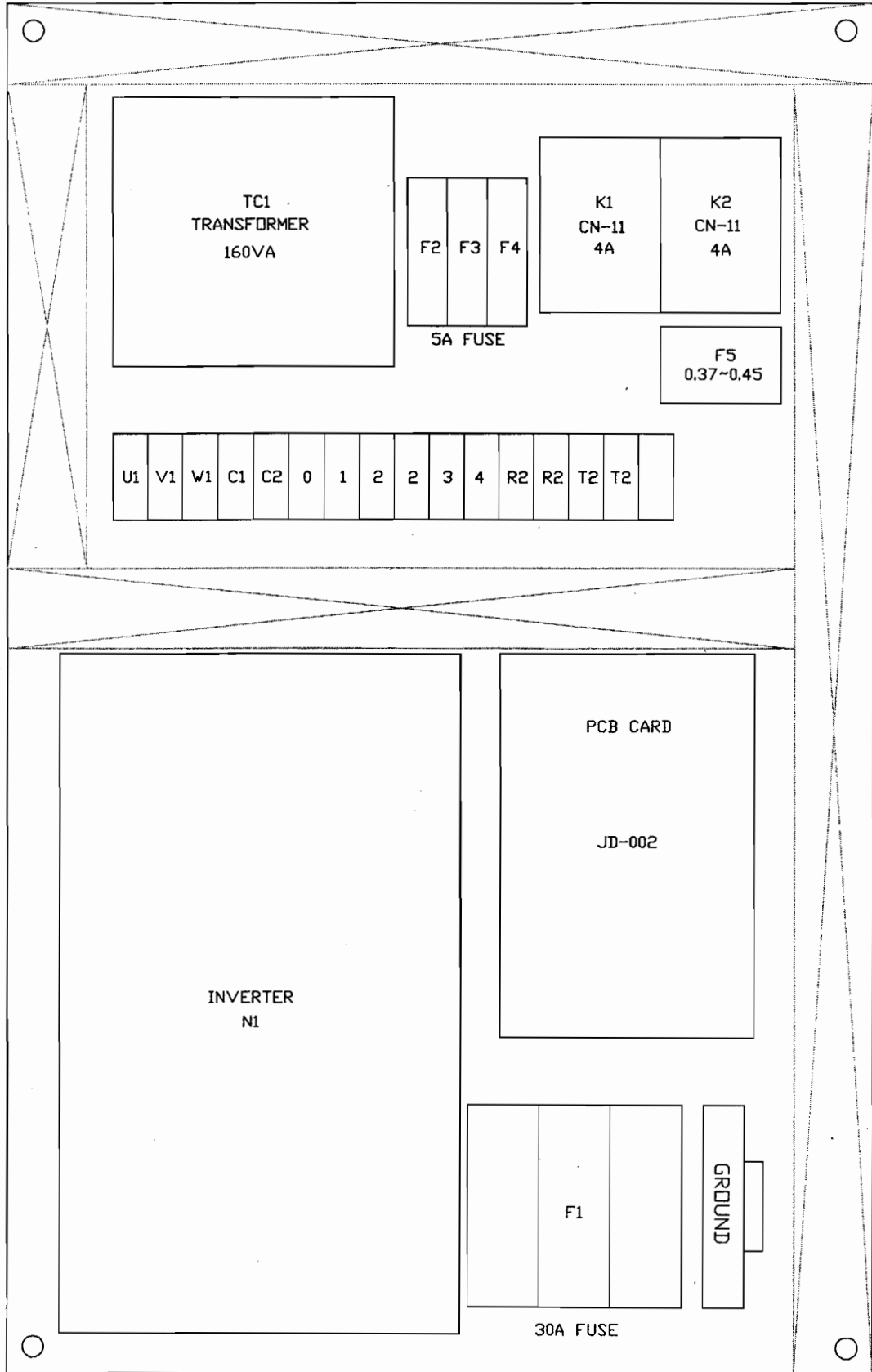
CONTROL WIRING DIAGRAM



Size	Document Number	Rev
A3	3HP INVERTER LATHE UNIT	2
DATE	Monday, Mar, 12, 2003	Sheet 1 of 1



ELECTRIC COMPONENTS LAYOUT

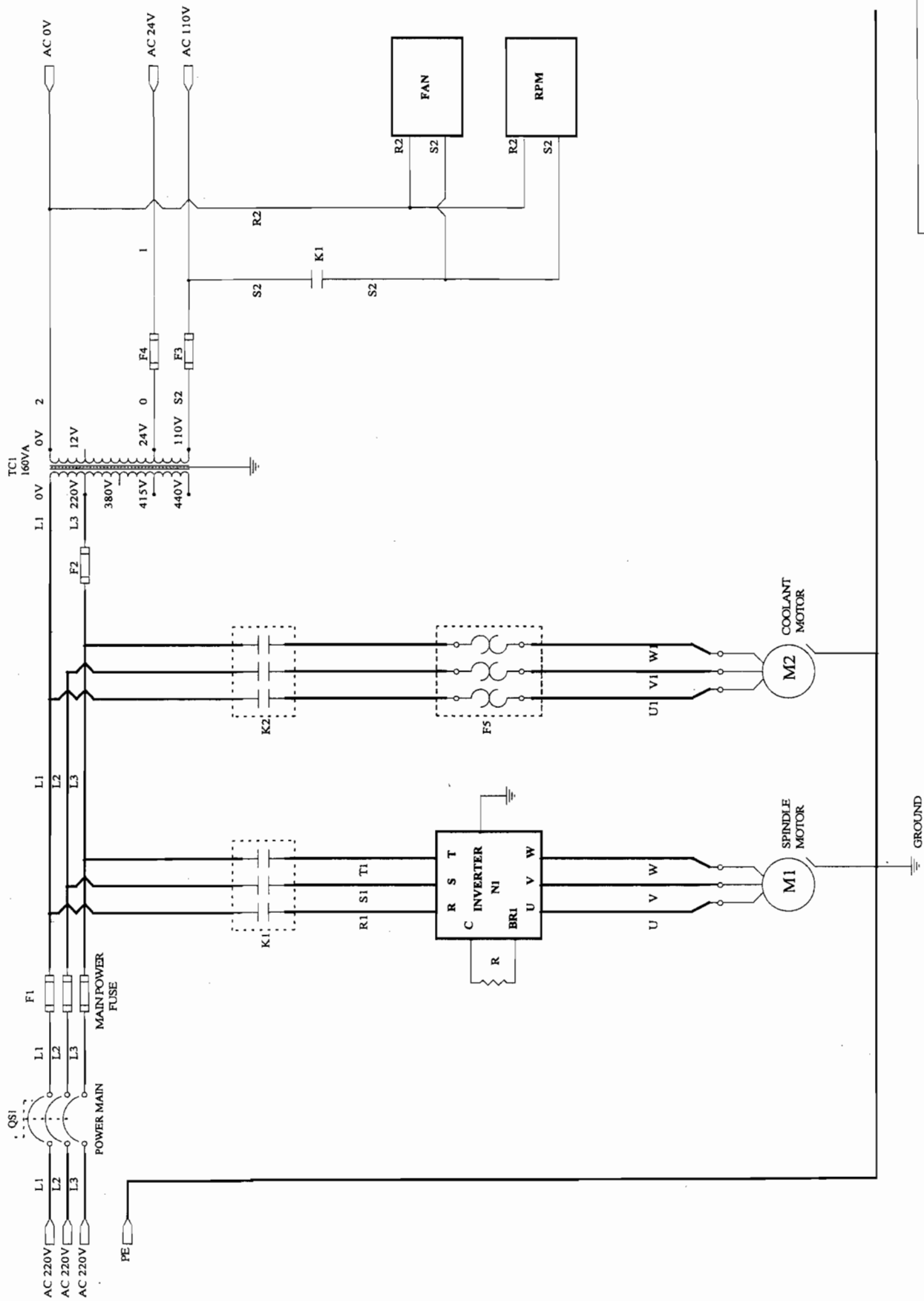


ELECTRIC COMPONENTS

Description	Supplier	Qt'y	Part Name
Transformer, 160VA	Jin-Der	1	TC1
Transformer, 6500VA	Jin-Der	1	T1(230V/460V)
Magnetic Contactor, CN-11	Taian	2	K1,K2
Overload Relay(Coolant Power)	Taian	1	F5
Relay,RY4S,24V	Idec	3	KR1,KR2,KR3
Relay,RM2S,24V	Idec	1	KR4
RPM Meter, 24~220V	Tend	1	RPM
Cooling Fan, (1)115V,.21A	Sunon	2	FAN
(2)110~120V,.27A	Suntronix	2	FAN
Coolant S Switch, 1A, Write	Allen-Bradley	1	SW1
Emergency Switch, 1B, Red	Allen-Bradley	1	SPB1
Jogging Button, 1A, Green	Allen-Bradley	1	PB1
Indicator Light, 24V, Red	Allen-Bradley	1	RL
Main Power Fuse, FSX303	Ginkoka	1	F1
Chuck Limit Switch, TZ-9212	Tend	1	LS3
Foot Brake Lim. Swit, TM1704	Tend	1	LS2
Spindle For/Rev L. S., TM1306	Tend	2	LS4,LS5
End Cover Limit Switch	Tend	1	LS1
Fuse Block/Fuse, FSB-101A	Ginkoka	3	F2,F3,F4
PCB CARD for Inverter	Jin-Der	1	JD-002
Vector Drive Inverter	Toshiba	1	Inverter
DC Bus Resistor	Toshiba	3	R

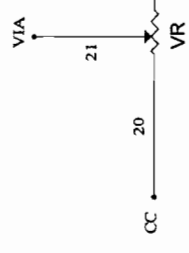
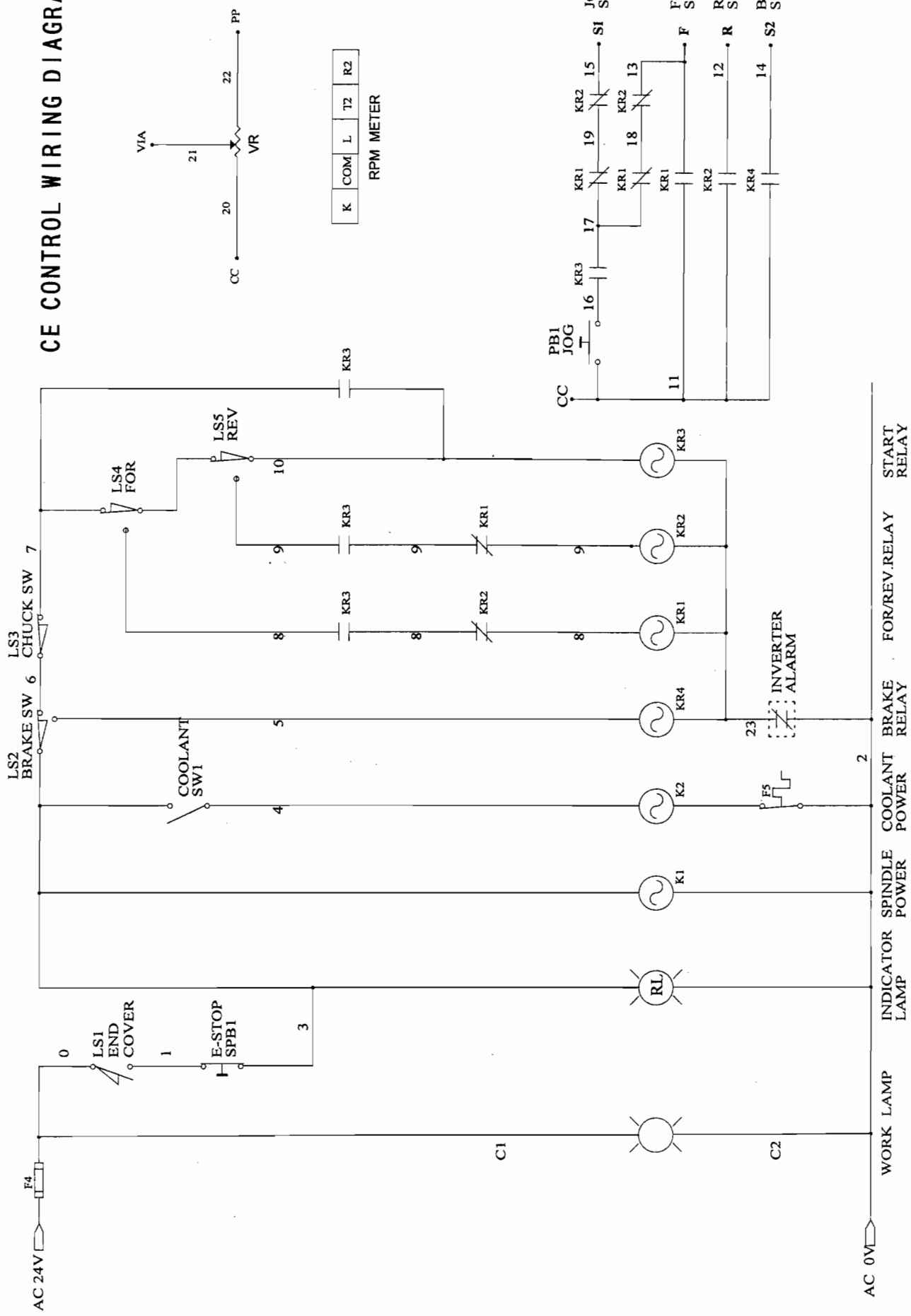
Description	Parts Number	Qt'y
1.Transformer (TC1)	LPE1440V008	1
2.Relay,RY4S,24V	LPE1440V009	3
3.Relay,RM2S,24V	LPE1440V010	1
4.Vector Drive Inverter-S7	MPE9509-4	1
-S9	MPE9509-6	1
5.DC Bus Resistor-For S7	MPE9506-6	3
-For S9	MPE9506-8	3
6.Cooling Fan, 110V	MPE9510-2	1
7.PCB CARD For Inverter	LPEJD-002	1

CE MOTOR WIRING DIAGRAM



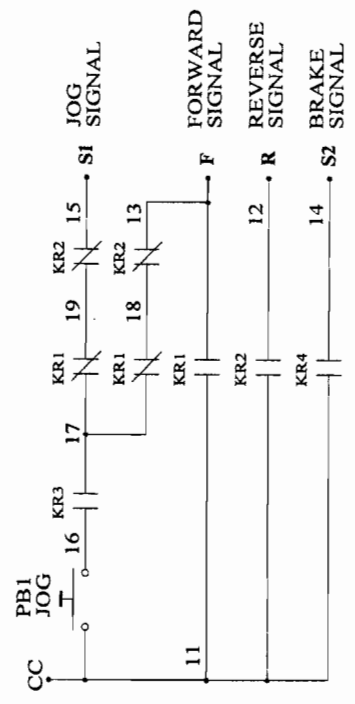
Rev	1
Document Number	3HP INVERTER LATHE UNIT
Drawn	SHR/GBV, May 17, 2003
Sheet	1 of 1

CE CONTROL WIRING DIAGRAM



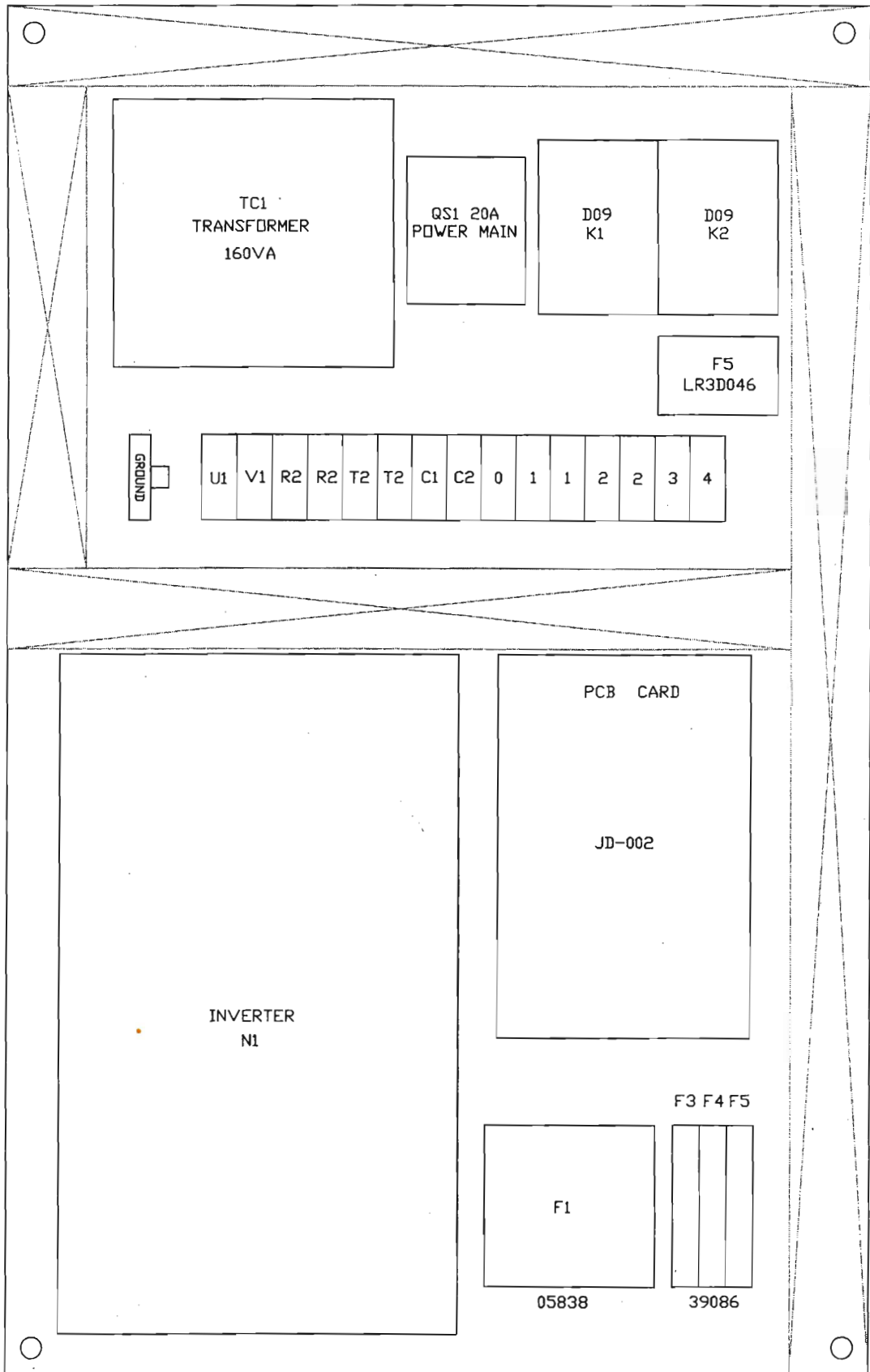
K	COM	L	T2	R2
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RPM METER

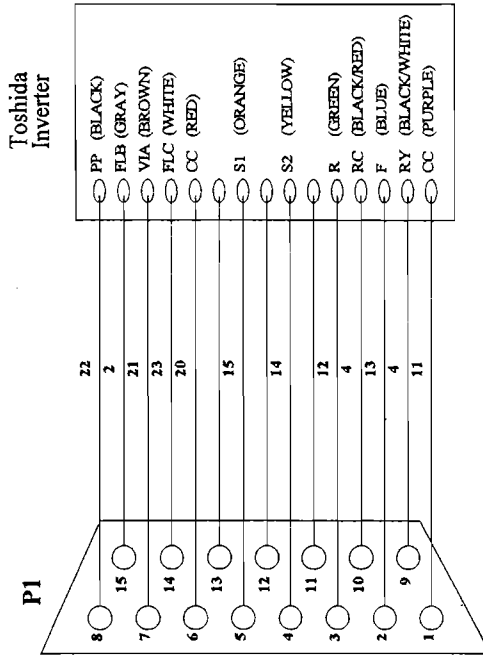
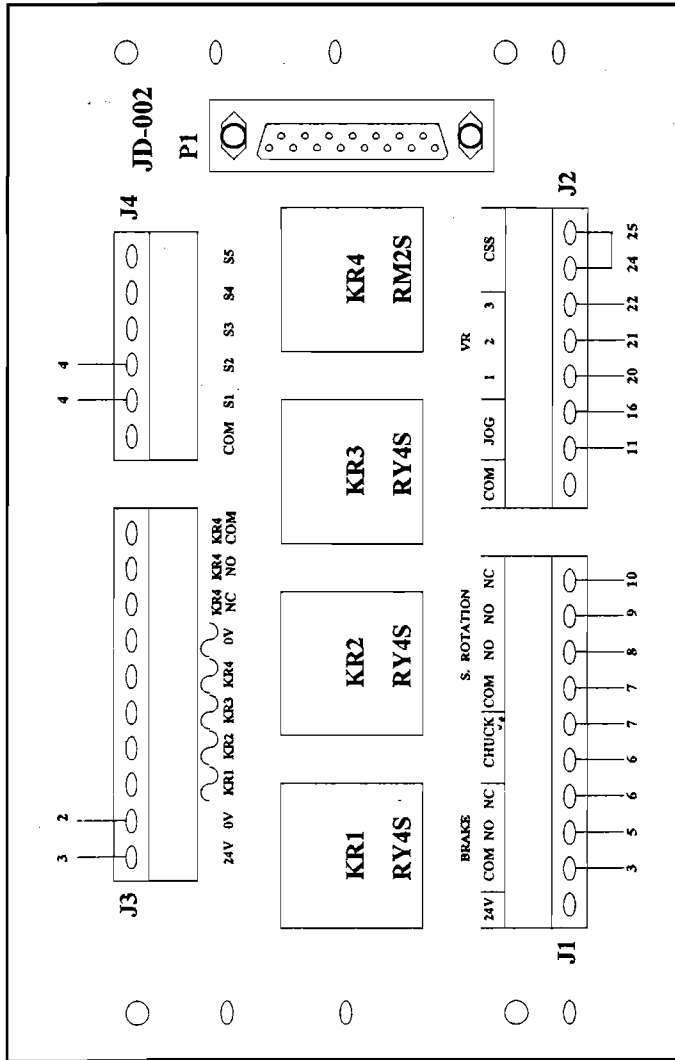


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A3	3-HP INVERTER LATHE UNIT	2
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ELECTRIC COMPONENTS LAYOUT



CE JD-002 CONNECTION

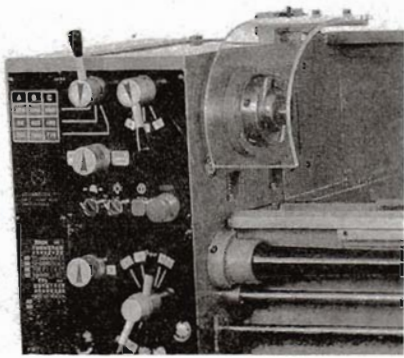


ELECTRIC COMPONENTS

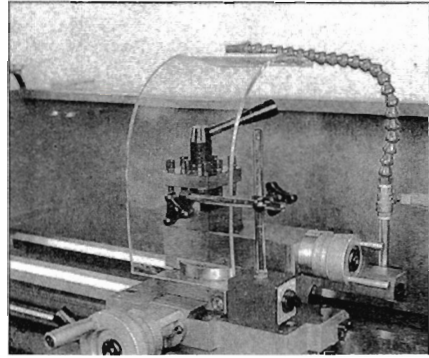
Description	Supplier	Qt'y	Part Name
Transformer, 160VA	Jin-Der	1	T2
Transformer, 6500VA	Jin-Der	1	T1(230v/460v)
Magnetic Contactor, CN-11	Taian	2	K1, K2
Overload Relay, Spindle Motor	Taian	1	RHN-10M
Overload Relay(Coolant Power)	Taian	1	F5
Relay, MY4, 24V	Hon-Chuan	3	KR1,KR2,KR3
Relay, MY2, 24V	Hon-Chuan	1	KR4
RPM Meter, 24~220V	Tend	1	S1
Cooling Fan, (1) 115V, .21A	Sunon	2	FAN
(2) 110~120V,.27A	Suntronix	2	FAN
Coolant S Switch, 1A, Green	Allen-Bradley	1	SW1
Emergency Switch, 1B, Red	Allen-Bradley	1	SPB1
Jogging Button, 1A, Green	Allen-Bradley	1	PB1
Indicator Light, 24V, Red	Allen-Bradley	1	RL
Main Power Fuse, FSX303	Ginkoka	1	F1
Chuck Limit Switch, TZ-9212	Tend	1	LS3
Foot Brake Lim. Swit.,TM1704	Tend	1	LS2
Spindle For/Rev L. S., TM1306	Tend	2	LS4, LS5
End Cover Limit Switch	Tend	1	LS1
Fuse Block/Fuse, FSB-101A	Ginkoka	3	F2,F3,F4
IO Board for Inverter	Jin-Der	1	JD-002
Vector Drive Inverter	Toshiba	1	Inverter
DC Bus Resistor	Toshiba	3	R

Description	Parts Number	Qt'y
1. Transformer (T2)	LPE1440V008	1
2. Relay, MY4, 24V	LPE1440V009	3
3. Relay, MY2, 24V	LPE1440V010	1
4. Vector Drive Inverter-S7	MPE9509-4	1
-S9	MPE9509-6	1
5. DC Bus Resistor-For S7	MPE9506-6	3
-For S9	MPE9506-8	3
6. Cooling Fan, 110V	MPE9510-2	1
7. IO Board for Inverter	LPEJD-002	1

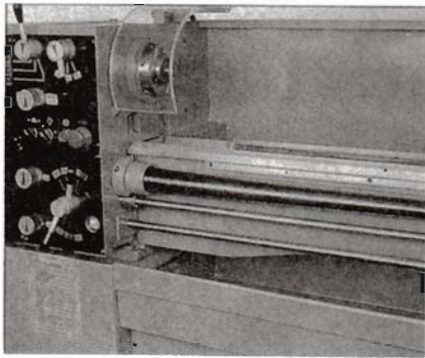
"CE" CHARACTERISTICS:



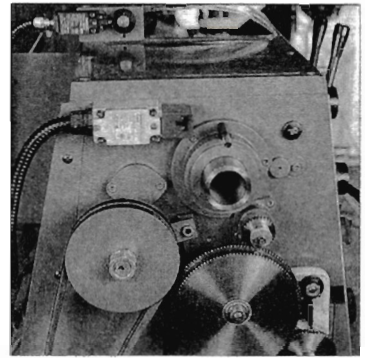
A CHUCK GUARD WITH LIMIT SWITCH IS FITTED. (The machine is stopped automatically when the chuck guard is lifted up.)



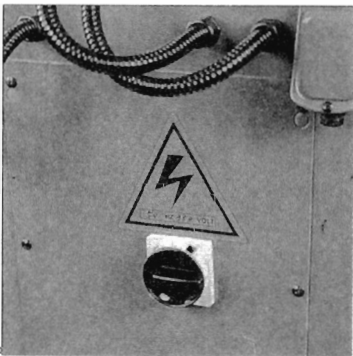
TOOL SLIDE GUARD IS MOUNTED ON THE SADDLE TO ENSURE OPERATION SAFELY.



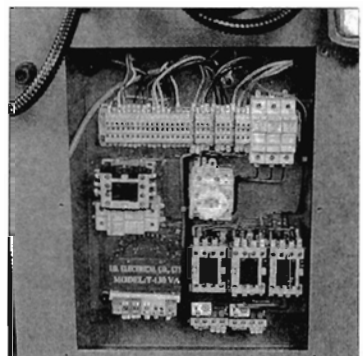
LEAD SCREW IS INSTALLED WITH MOVABLE COVER PROTECTED TO ENSURE OPERATION SAFELY.



END COVER IS CONNECTED WITH A LIMIT SWITCH ON THE SIDE OF HEADSTOCK. (The machine is stopped automatically when the end cover is opened.)



A MAIN SWITCH IS MOUNTED ON THE DOOR OF ELECTRIC BOX TO CONTROL ELECTRIC SUPPLY.

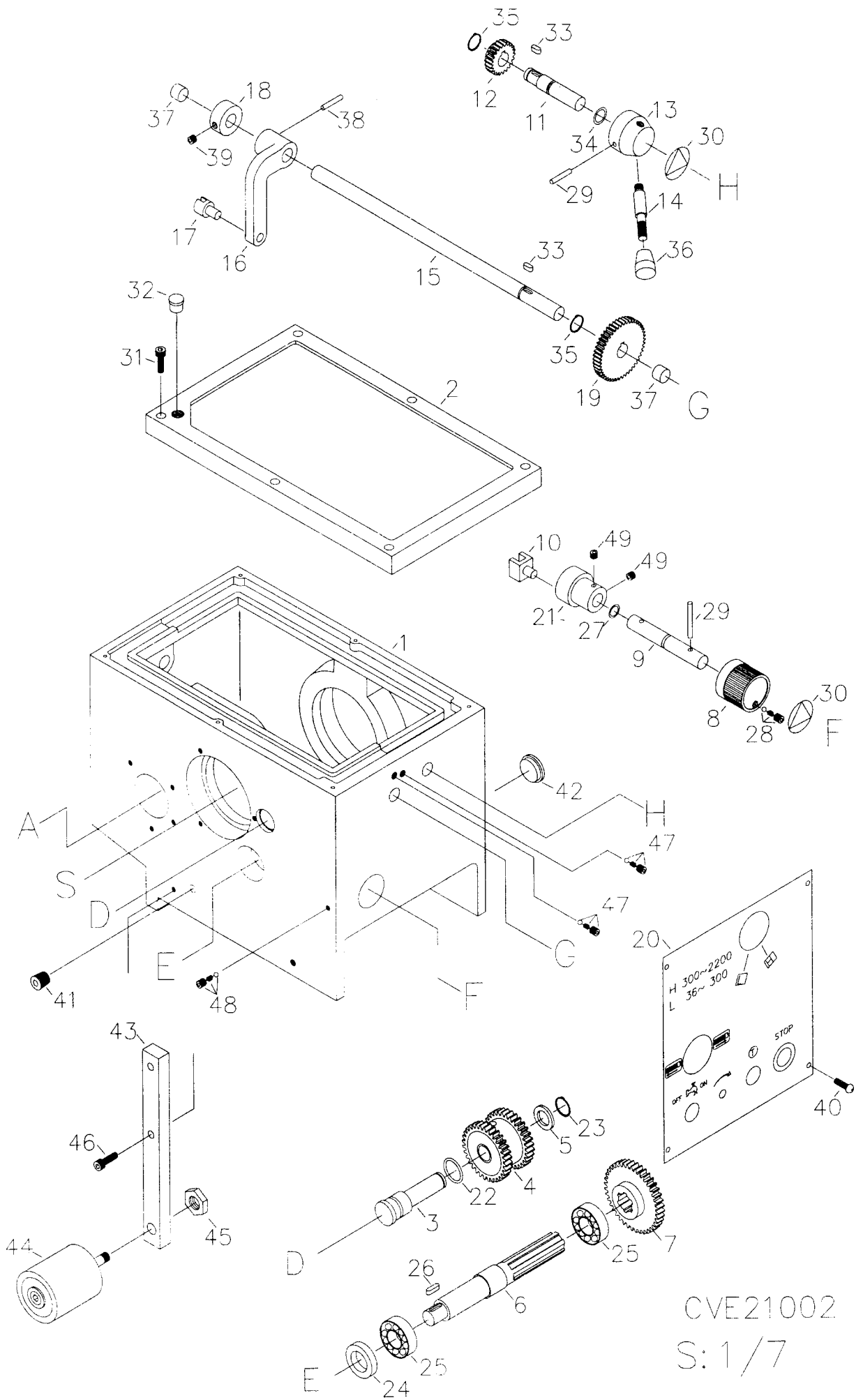


ELECTRIC BOX CONTAINS "CE" STANDARD COMPONENTS.

Mechanical Parts List

When ordering parts, please specify the following:

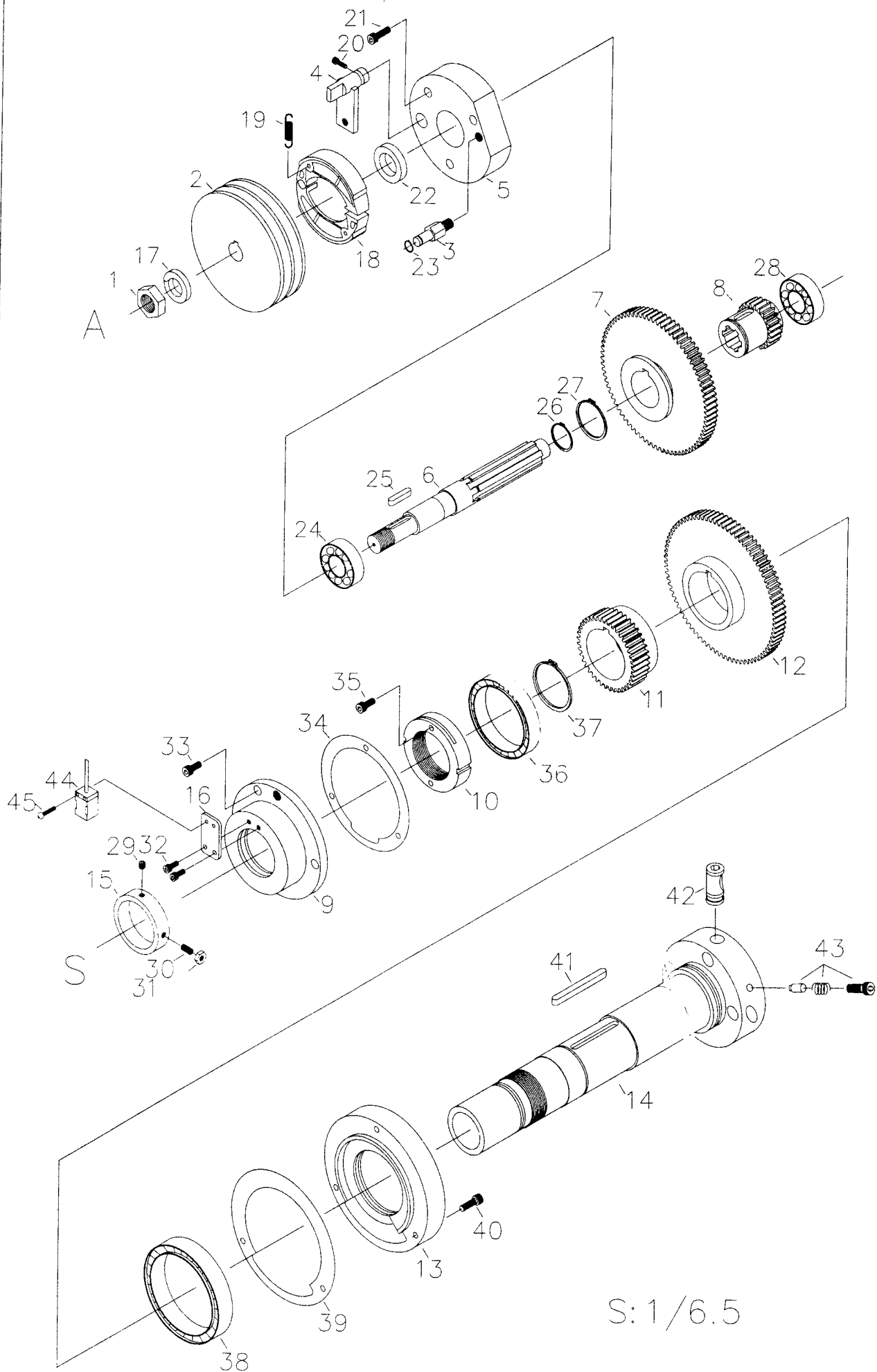
- 1. Model & year of production**
- 2. Serial number**
- 3. Part number, page number & description**
- 4. Quantity**

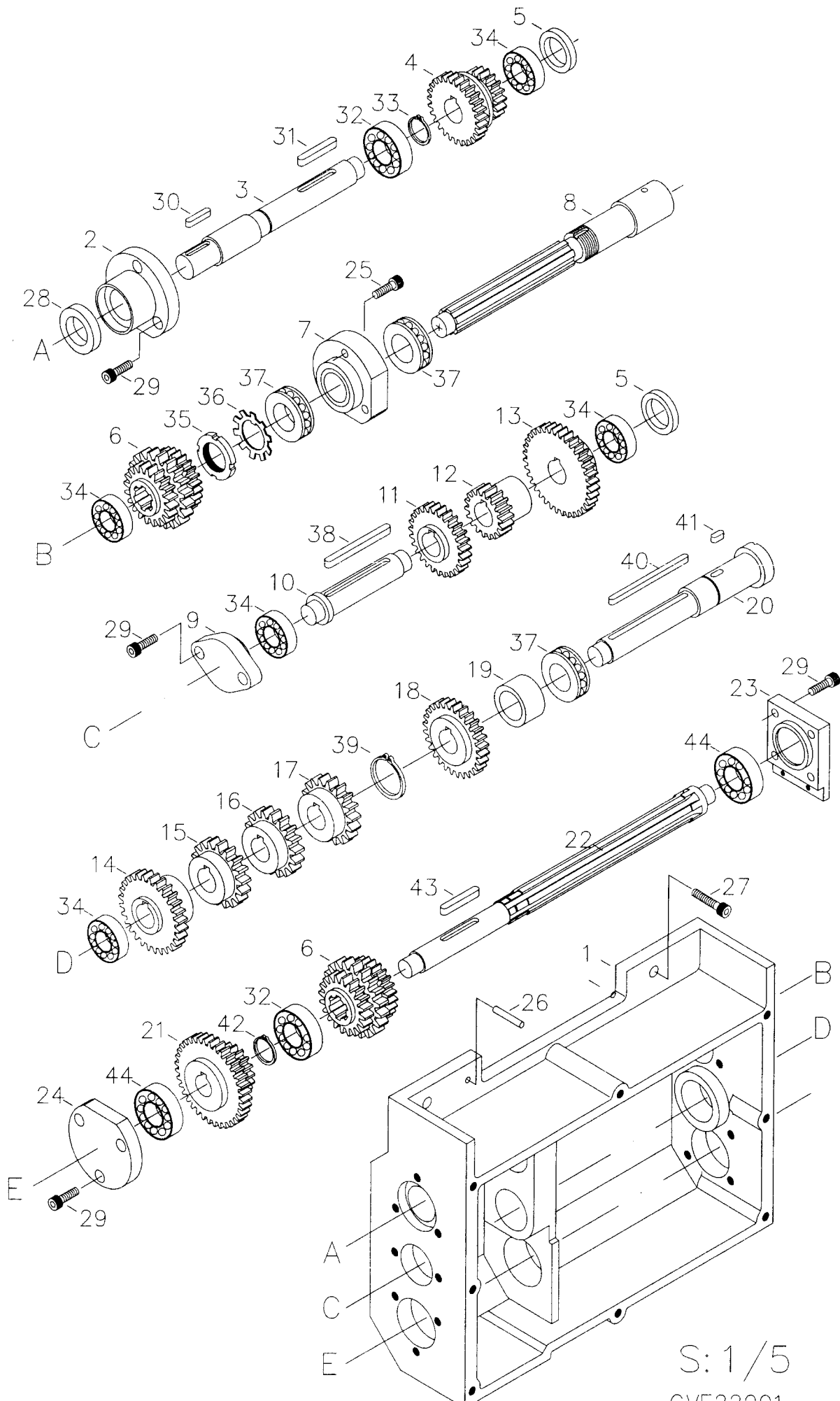


CVE21002
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HEADSTOCK (CASTING & CONTROLS)

REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	VE2101	HEADSTOCK CASTING	1
2	VE2134	HEADSTOCK COVER	1
3	VE2116	SHAFT	1
4	VE2117	GEAR	1
5	VE2118	WASHER	1
6	VE2119	SHAFT	1
7	VE2120	GEAR	1
8	VE2122	HANDLE	1
9	VE2121	SHAFT	1
10	VE2124	GEAR SHIFT FORK	1
11	VE2125	SHAFT	1
12	VE2127	GEAR	1
13	VE2126	HANDLE	1
14	VE2128	CONTROL LEVER	1
15	VE2129	SHAFT	1
16	VE2130	FORK ARMS	1
17	VE2131	GEAR SHIFT FORK	1
18	VE2132	COLLAR	1
19	VE2133	GEAR	1
20	VE2145	DATA PLATE	1
21	VE2123	FORK ARMS	1
22	VE2175	OIL RING	1
23	VE2176	SNAP RING	S18 1
24	VE2177	COLLAR OIL SEAL	1
25	VE2178	BEARING	6005 2
26	VE2179	KEY	5X18L 1
27	VE2180	OIL RING	1
28	VE2181	STEEL BALL SPRING & SET SCREW	4
29	VE2182	SPRING PIN	2
30	VE2183	INDICATOR PLATE	2
31	VE2184	CAP SCREW	M6X25L 6
32	VE2185	PLUG	1
33	VE2186	KEY	5X12L 2
34	VE2187	OIL RING	1
35	VE2188	SNAP RING	S15 1
36	VE2189	PVC KNOB	1
37	VE2190	OIL RING	2
38	VE2191	SPRING PIN	1
39	VE2192	SET SCREW	M8X10L 1
40	VE2193	SCREW	4
41	VE2194	PLUG	1
42	VE2195	OIL SIGHT	1
43	VE2196	ROD	1
44	VE2197	BELT REGUATING SLEEVE	1
45	VE2198	NUT	1
46	VE2199	CAP SCREW	M8X30L 2
47	VE2135	STEEL BALL SPRING & SET SCREW	1
48	VE2136	STEEL BALL SPRING & SET SCREW	1
49	VE2137	SET SCREW	M8X10L 2



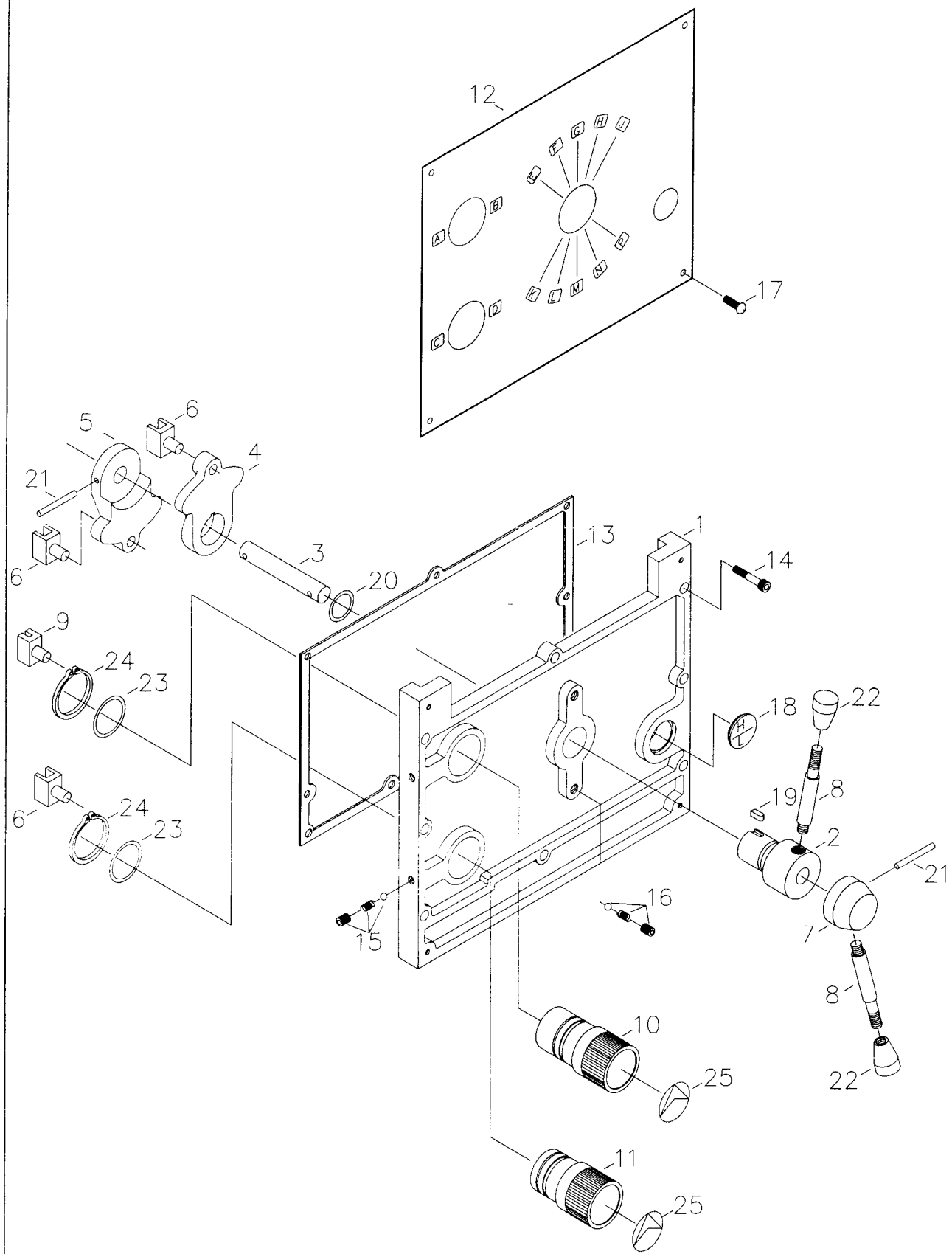


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CVF32001

GEAR BOX (GEAR & SHAFT)

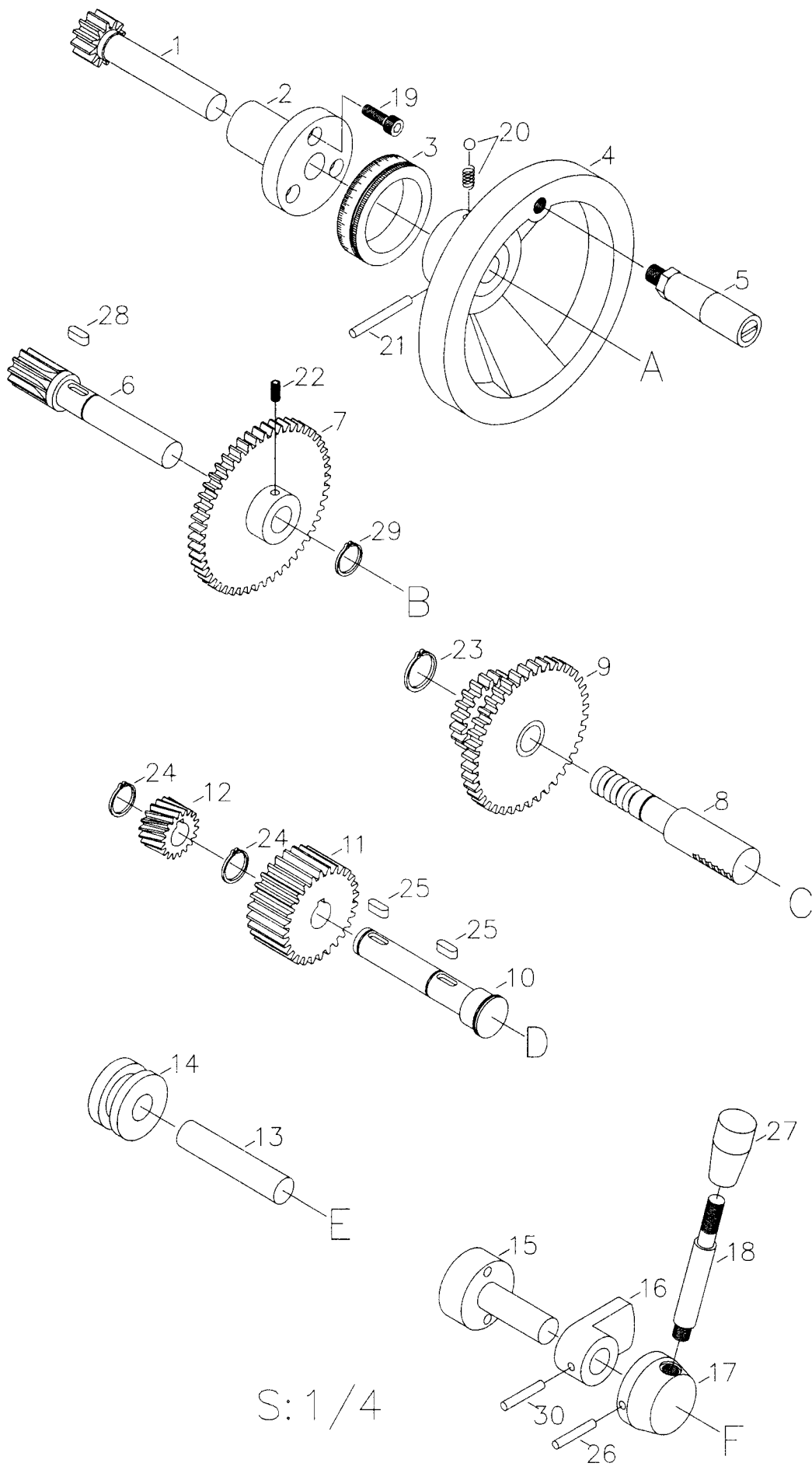
REF.NO.	PART NO.	DESCRIPTION	Q' TY
1	VE2201	GEAR BOX CASTING	1
2	VE2204	COVER	1
3	VE2203	SHAFT	1
4	VE2205	GEAR	1
5	VE2206	SPACER	1
6	VE2209	GEAR	2
7	VE2208	COVER	1
8	VE2207	SHAFT	1
9	VE2214	COVER	1
10	VE2210	SHAFT	1
11	VE2211	GEAR	1
12	VE2212	GEAR	1
13	VE2213	GEAR	1
14	VE2216	GEAR	1
15	VE2217	GEAR	1
16	VE2218	GEAR	1
17	VE2219	GEAR	1
18	VE2220	GEAR	1
19	VE2221	SPACER	1
20	VE2215	SHAFT	1
21	VE2223	COVER	1
22	VE2222	SHAFT	1
23	VE2225	COVER	1
24	VE2224	COVER	1
25	VE2254	CAP SCREW	3
26	VE2255	PIN	2
27	VE2256	CAP SCREW	4
28	VE2257	OIL SEAL	1
29	VE2258	CAP SCREW	15
30	VE2259	KEY	1
31	VE2260	KEY	1
32	VE2261	BEARING	2
33	VE2262	SNAP RING	1
34	VE2263	BEARING	4
35	VE2264	NUT	1
36	VE2265	WASHER	1
37	VE2266	THRUST BEARING	3
38	VE2267	KEY	1
39	VE2236	SNAPRING	1
40	VE2237	KEY	1
41	VE2238	KEY	1
42	VE2239	SNAP RING	1
43	VE2240	KEY	1
44	VE2268	BEARING	2



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GEAR BOX (CASTING & CONTROLS)

REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	VE2202	COVER	1
2	VE2230	HANDLE	1
3	VE2231	SHAFT	1
4	VE2232	HANDLE	1
5	VE2233	SHIFT LEVER	1
6	VE2229	SHAFT FORK	3
7	VE2234	HANDLE	1
8	VE2235	LEVER	2
9	VE2227	SHIFT LEVER	1
10	VE2226	HANDLE	1
11	VE2228	HANDLE	1
12	VE2269	DATA DLATE	1
13	VE2241	GASKET	1
14	VE2242	SCREW	M6X30L 8
15	VE2243	SET SCREW SPRING AND STEEL BALL	2
16	VE2244	SET SCREW SPRING AND STEEL BALL	2
17	VE2245	SCREW	5X10L 2
18	VE2246	OIL SIGHT	1
19	VE2247	KEY	5X12L 1
20	VE2248	OIL RING	P24 1
21	VE2249	KEY	2
22	VE2250	PVC KNOB	2
23	VE2251	OIL RING	P34 2
24	VE2252	SNAP RING	S40 2
25	VE2253	INDEXING PLATE	2

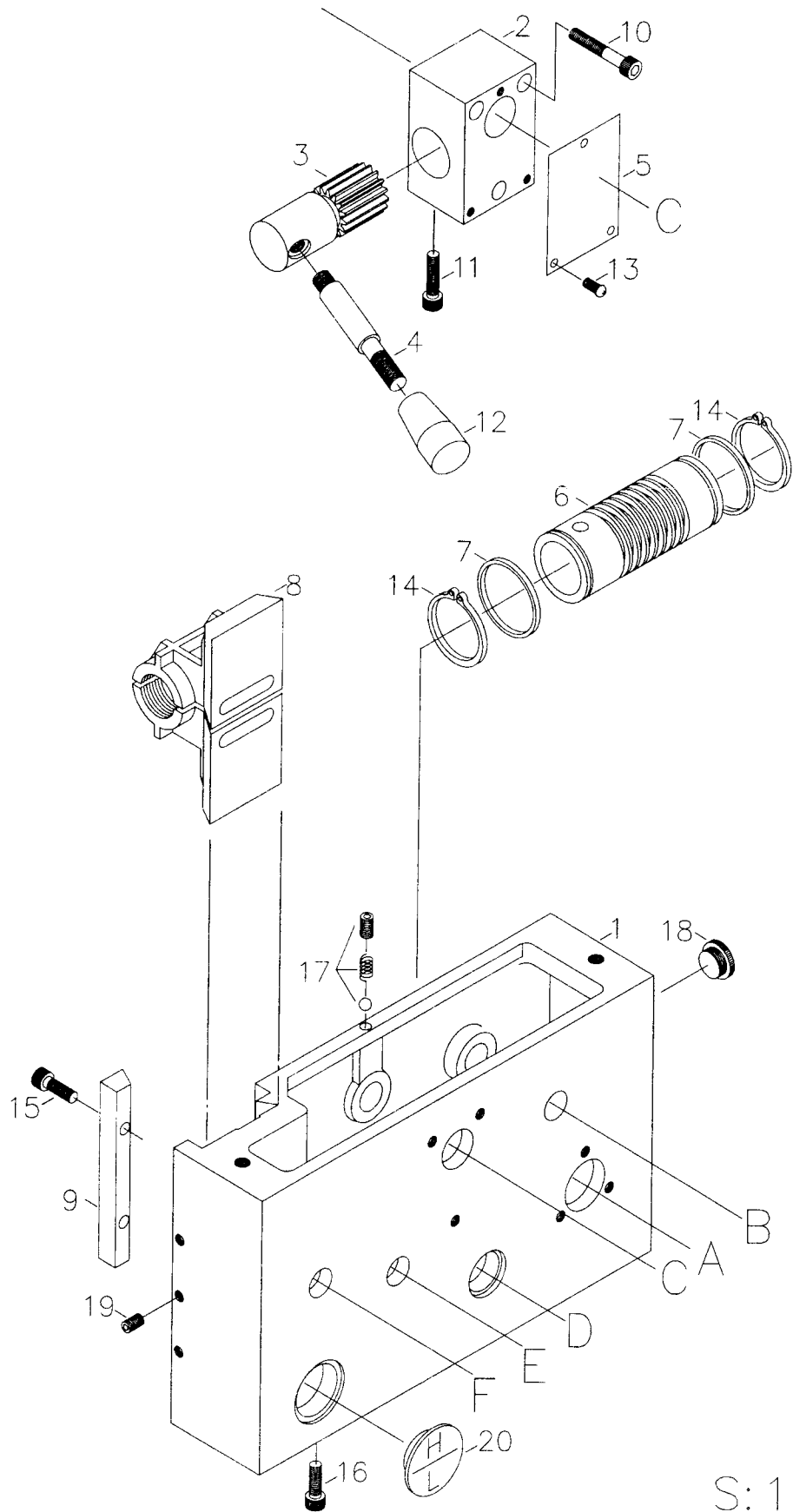


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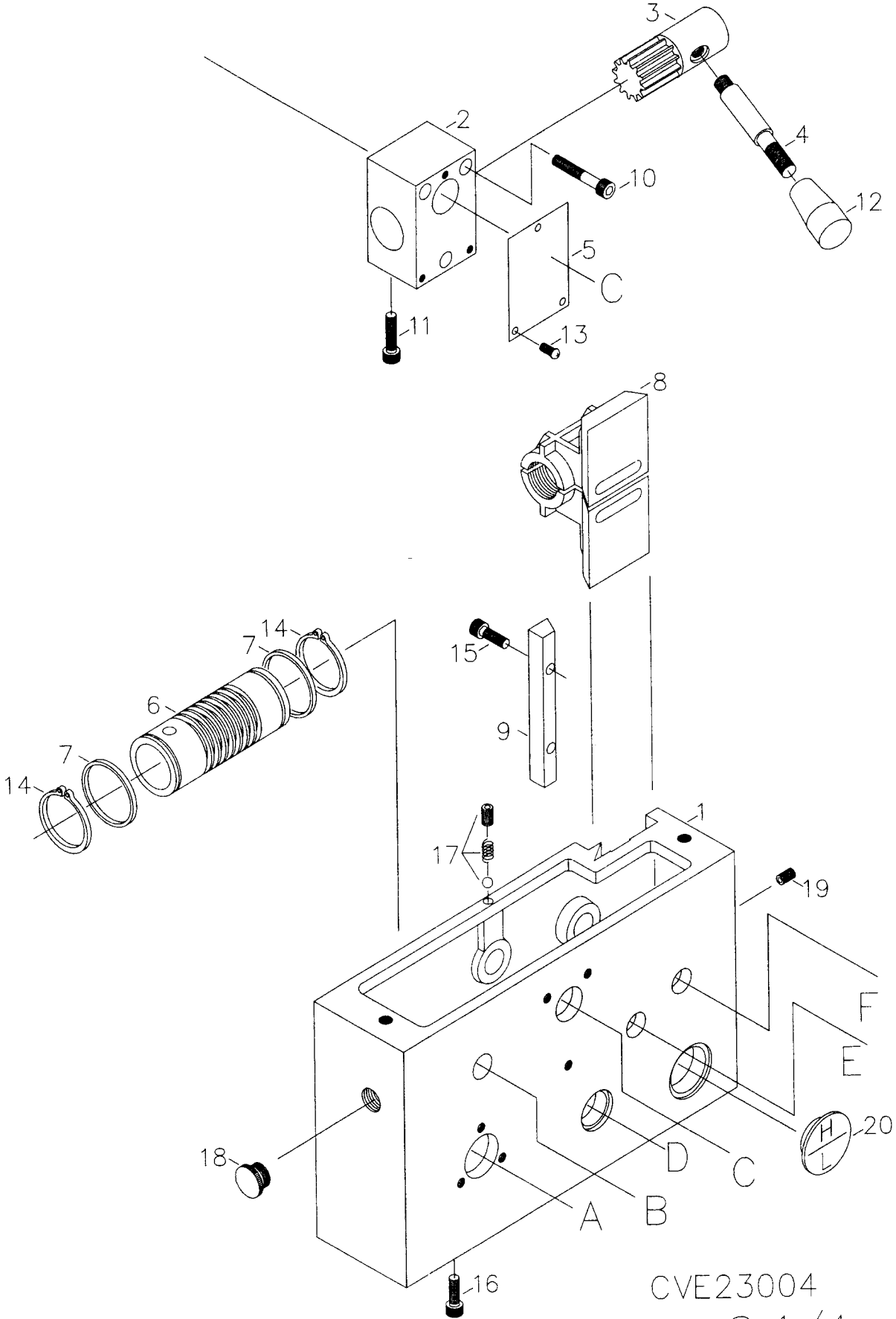
APRON (GEAR & SHAFT)

REF.NO.	PART NO.	DESCRIPTION		Q' TY
1	2302	GEAR SHAFT	M2X12T	1
2	2303	KEEP ASSY		1
3	2304	INDEX RING		1
4	2305	HAND WHEEL		1
5	2306	HANDLE		1
6	2307	GEAR SHAFT	M1.5X13T	1
7	2308	GEAR	M2X50T	1
8	2314	SHAFT		1
9	2315	GEAR		1
10	2311	SHAFT		1
11	2312	GEAR		1
12	2313	GEAR	M1.5X18T	1
13	2319	SHAFT		1
14	2320	COLLAR		1
15	2321	SHAFT		1
16	2322	LEVER		1
17	2323	HANDLE		1
18	VE2318	LEVER		1
19	2340	CAP SCREW	M6X16L	3
20	2341	STEEL BALL AND SPRING		1
21	2342	PIN	5X50	1
22	VE2346	SCREW		2
23	2344	CIR CLIP	E12	1
24	2346	SNAP RING	E12	2
25	2348	KEY	5X14L	2
26	2351	PIN	5X40	1
27	2359	PVC KNOB		1
28	VE2352	KEY	5X18L	1
29	VE2353	SNAP RING	S16	1
30	2343	PIN	5X30	1

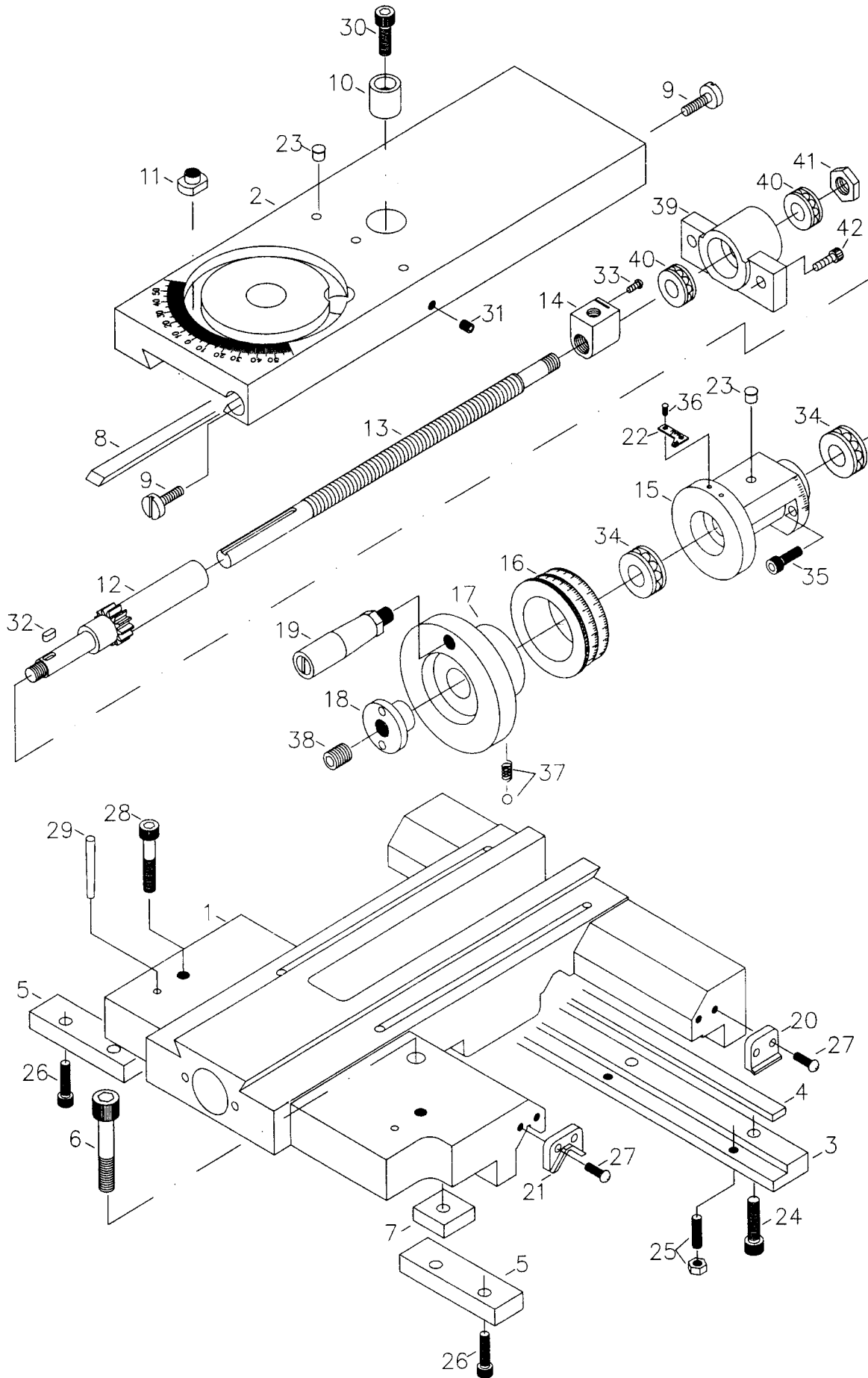
RIGHT APRON (CASTING)



LEFT APRON (CASTING)

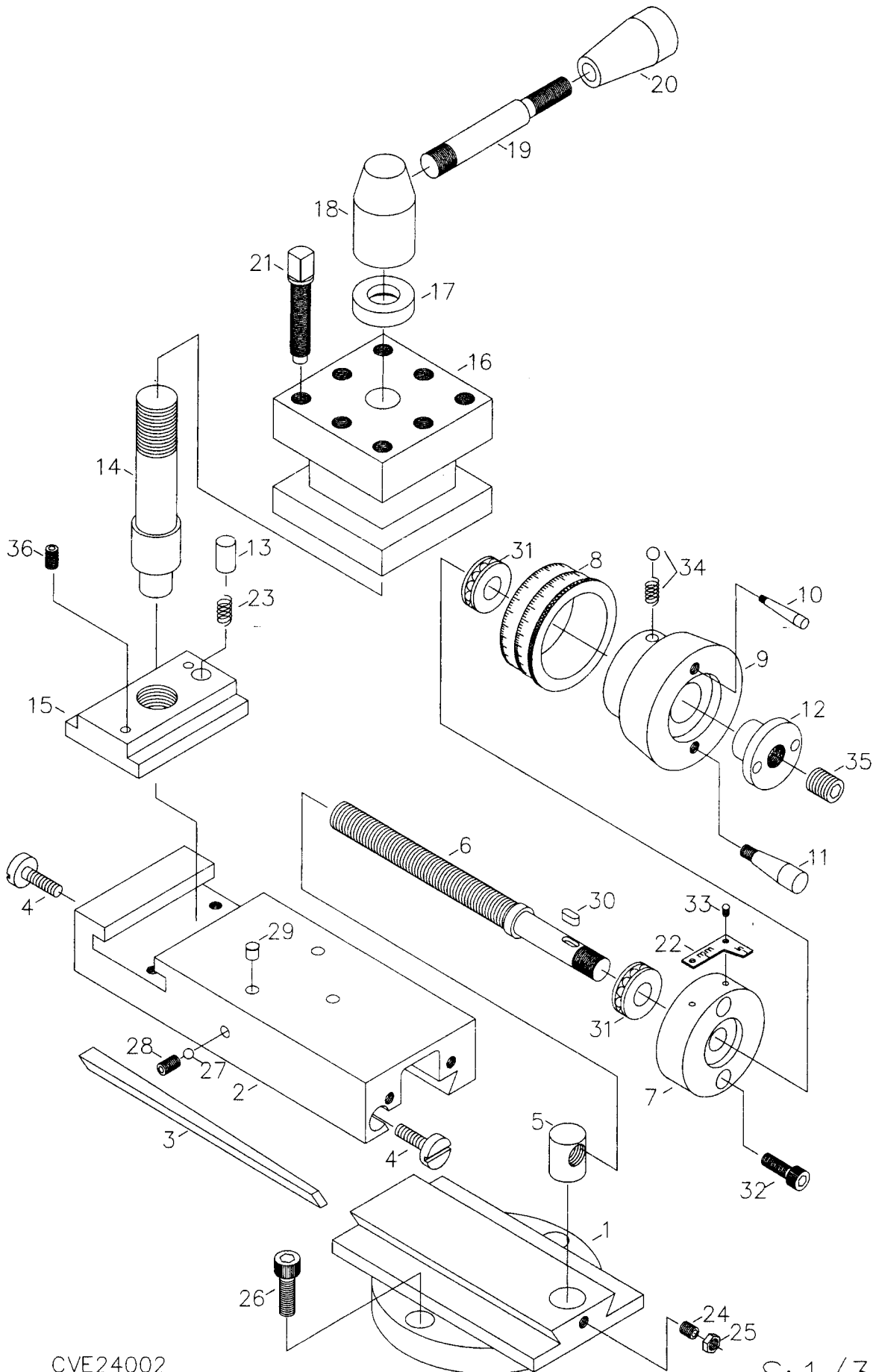


CVE23004
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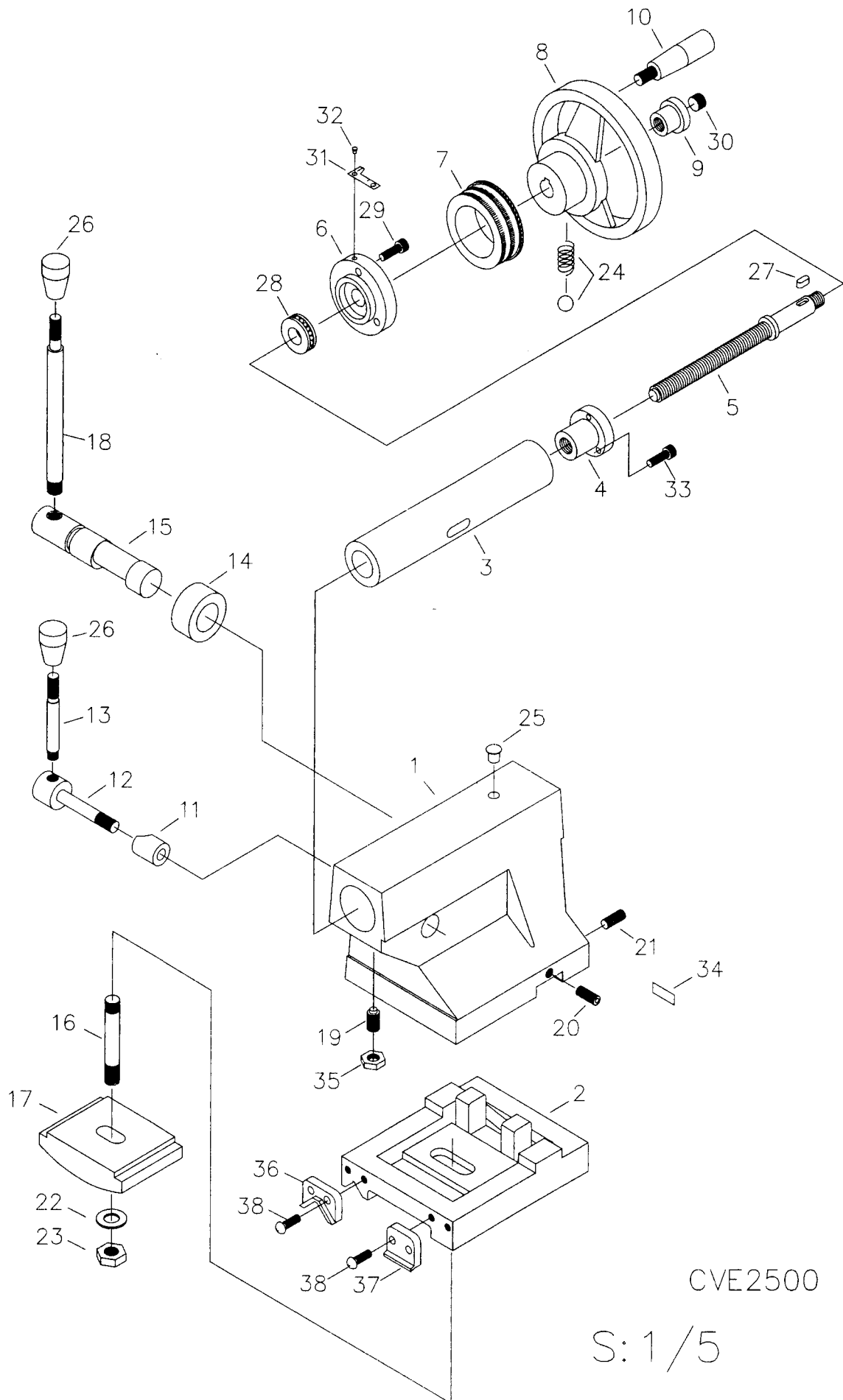
SADDLE & CROSS-SLIDE

REF.NO.	PART NO.	DESCRIPTION	Q' TY
1	VE2401	SADDLE CASTING	1
2	VE2402	CROSS-SLIDE	1
3	VE2403	CLAMP REAR	1
4	VE2404	GIB	1
5	VE2405	CLAMP FRONT	2
6	VE2406	CAP SCREW	7/16X2 1/2
7	VE2407	WASHER	1
8	VE2408	GIB	1
9	2409	GIB SCREW	1
10	VE2410	COLLAR	1
11	2419	NUT	2
12	VE2459	GEAR SHAFT	1
13	VE2458	SCREW	1
14	VE2413	NUT	1
15	VE2414	KEEP ASSY	1
16	2415	INDEX RING	1
17	2417	HAND WHEEL	1
18	2416	PLUG	1
19	2418	HANDLE	1
20	VE2439	WIPER	2
21	VE2440	WIPER	2
22	2465	DIAL	1
23	2468	OILER	1
24	VE2467	CAP SCREW	M8X20L
25	VE2468	SCREW AND NUT	M6X16L
26	VE2469	CAP SCREW	M8X18L
27	VE2470	SCREW	8
28	2466	CAP SCREW	M8X40L
29	2467	PIN	#3X45L
30	VE2473	CAP SCREW	M8X25L
31	2461	CAP SCREW	M8X20L
32	2460	KEY	5X12L
33	VE2476	SCREW	1
34	2457	THRUST	2902
35	2458	CAP SCREW	M6X25L
36	2468	NAIL	2mm
37	2456	STEEL BALL AND SPRING	1
38	2455	SCREW	M12X12L
39	VE2460	KEEP ASSY	1
40	VE2482	THRUST	51101
41	VE2483	NUT	1
42	VE2484	CAP SCREW	M6X35L



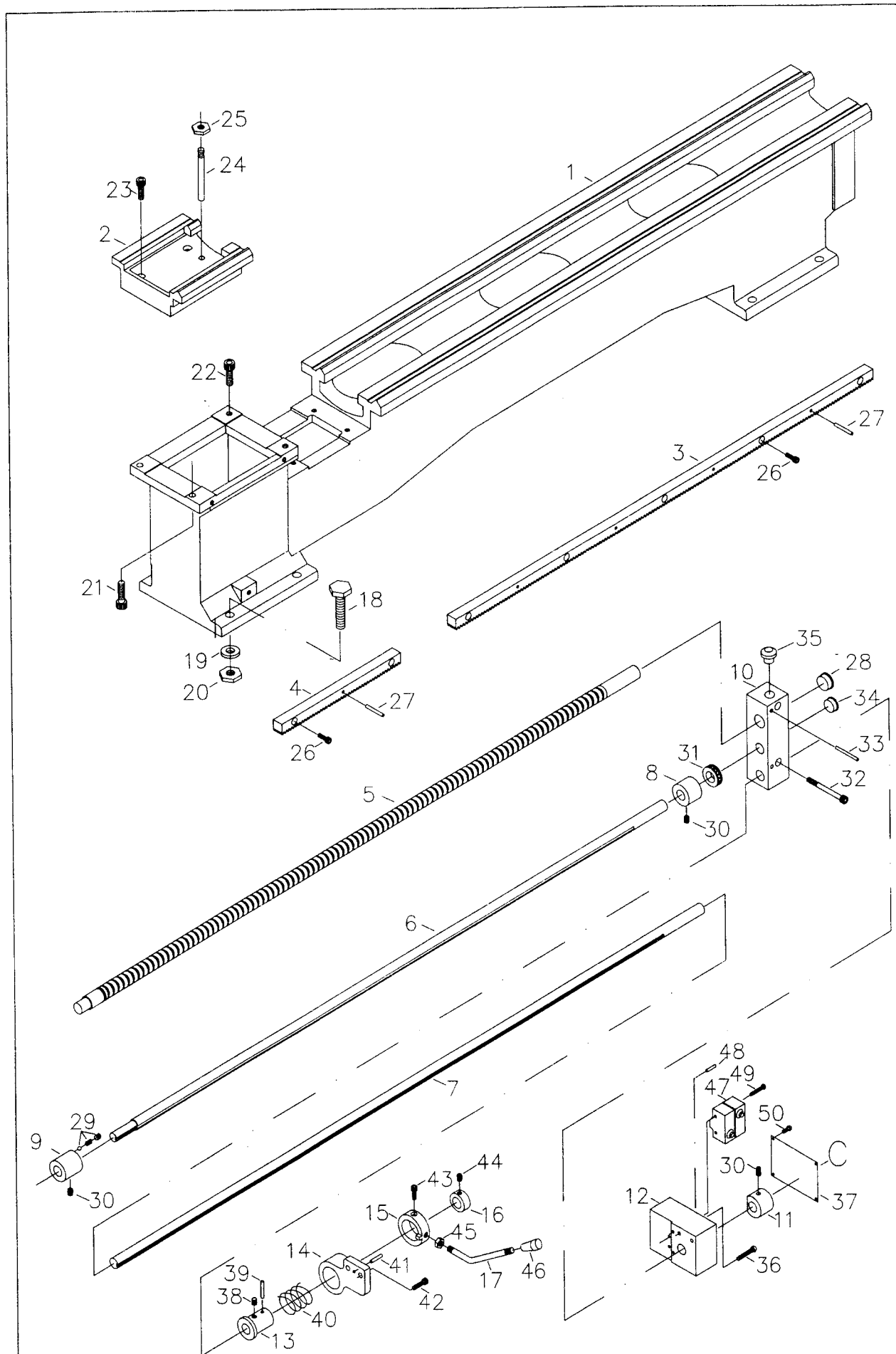
CVE24002

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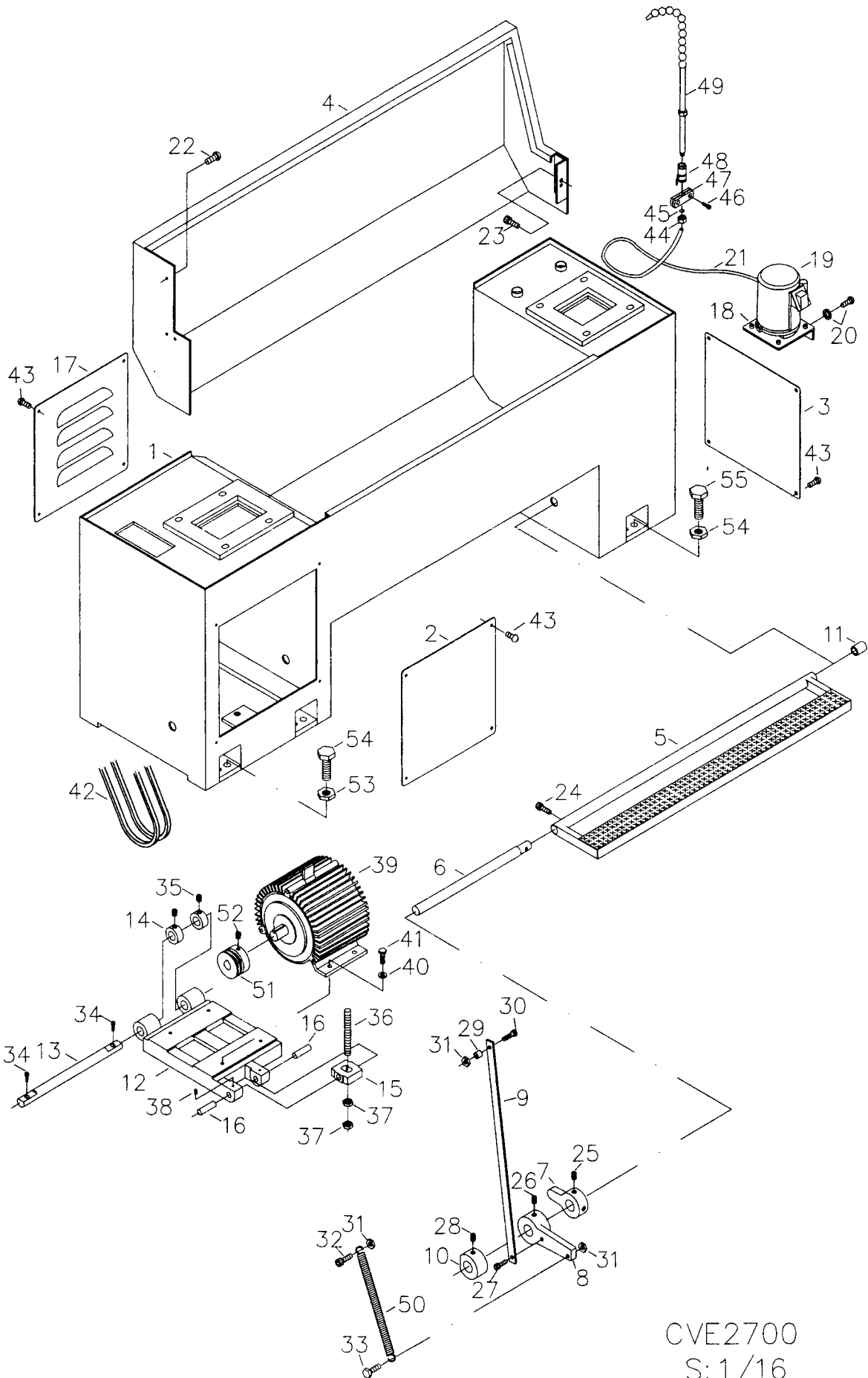
CVE2500

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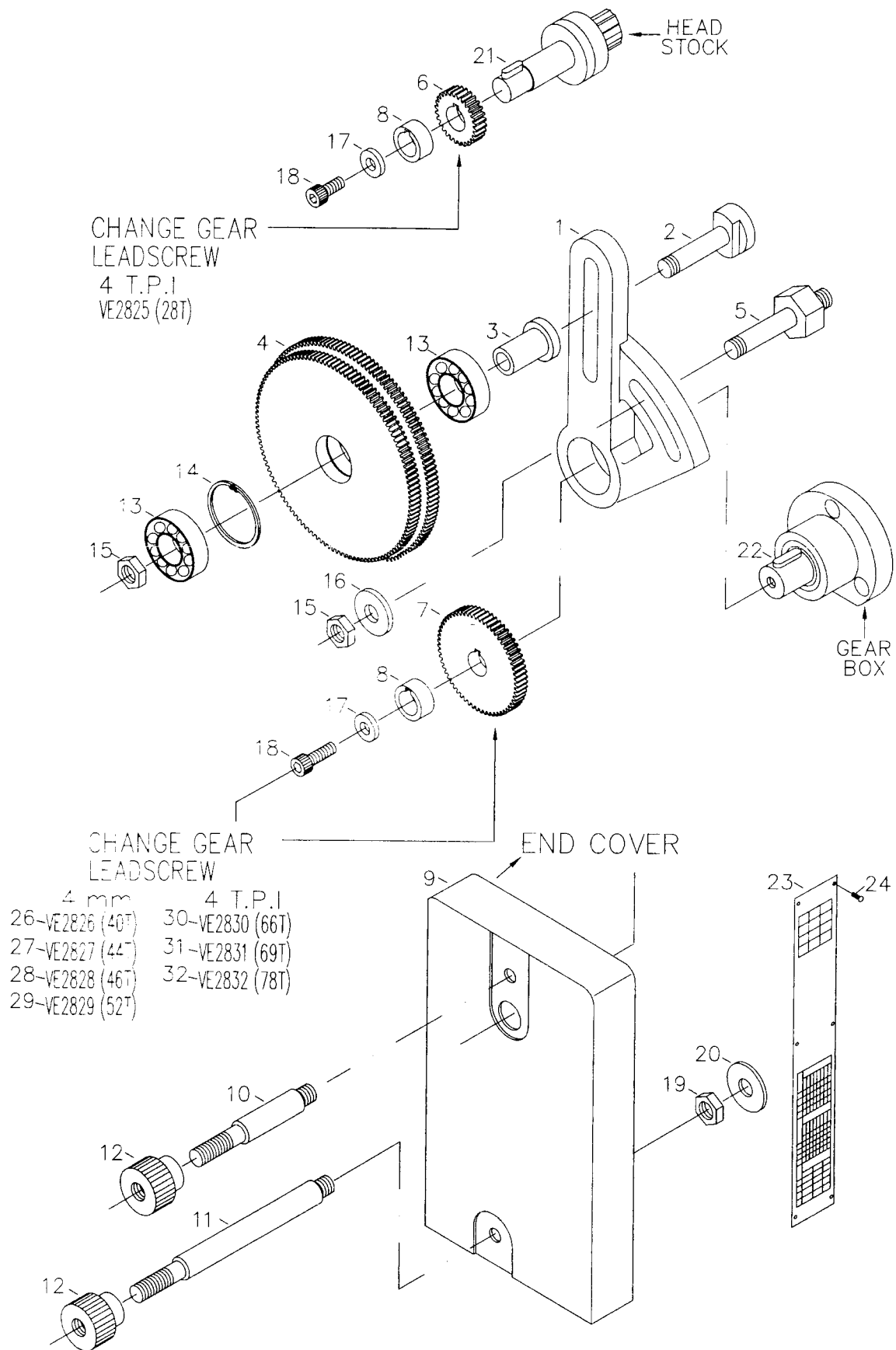
BED RACK LEAD SCREW AND SHAFTS

REF.NO.	PART NO.	DESCRIPTION	Q' TY
1	VE2601	BED	1
2	VE2602	GAP	1
3	2603	RACK	1
4	2604	RACK	1
5	2605	LEAD SCREW	1
6	2606	SHAFT	1
7	VE2607	FOR/REW CONTROL, THIRD-ROD SHAFT	1
8	2609	COLLAR	1
9	2608	COLLAR	1
10	VE2617	END BRACKET	1
11	2611	BUSH	1
12	VE2236	BOX	1
13	2612	BUSHING	1
14	2613	BRACKET	1
15	2614	BUSH	1
16	2615	BUSH	1
17	2616	LEVER	1
18	2634	SCREW	1/2X2" 8
19	2621	WASHER	8
20	2622	NUT	1/2" 8
21	2623	CAP SCREW	M12X40 2
22	2624	CAP SCREW	M12X40L 2
23	2632	CAP SCREW	M10X35L 4
24	VE2629	SCREW TAPER PIN	#6X64L 2
25	VE2630	NUT	M8 2
26	2636	CAP SCREW	M6X20L 7
27	2635	PIN	5
28	VE2633	PLUG	1
29	2638	STEEL BALL AND SPRING	2
30	VE2635	SET SCREW	M8X12L 1
31	2640	THRUST	51104 1
32	2651	SCREW	M8X60L 2
33	2650	PIN	2
34	2658	PLUG	2
35	2699	PLUG	3/8" 1
36	VE2641	CAP SCREW	M6X16L 2
37	VE2642	COVER	1
38	2628	SET SCREW	1
39	2629	PIN	1
40	2643	SPRING	1
41	2646	PIN	1
42	2644	CAP SCREW	M8X20L 2
43	2645	CAP SCREW	M6X12L 1
44	2648	SET SCREW	M8X10L 1
45	2647	NUT	1
46	2630	PVC KNOB	1
47	VE2652	SWITCH	2
48	VE2653	PIN	#5X20L 2
49	VE2654	SCREW	M4X40L 2
50	VE2655	SCREW	M5X10L 2



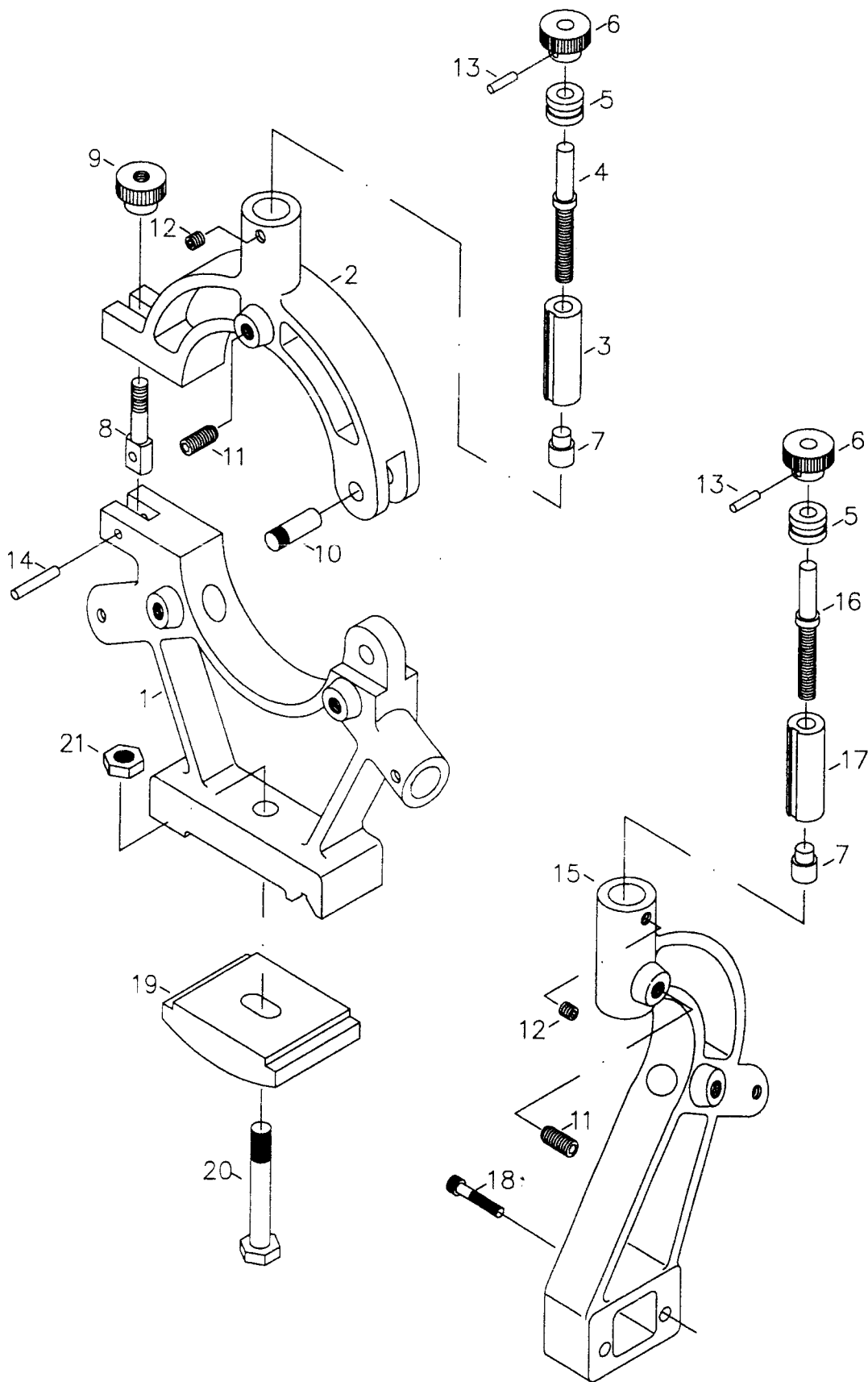
CABINET AND PANELS ,PUMP SYSTEM

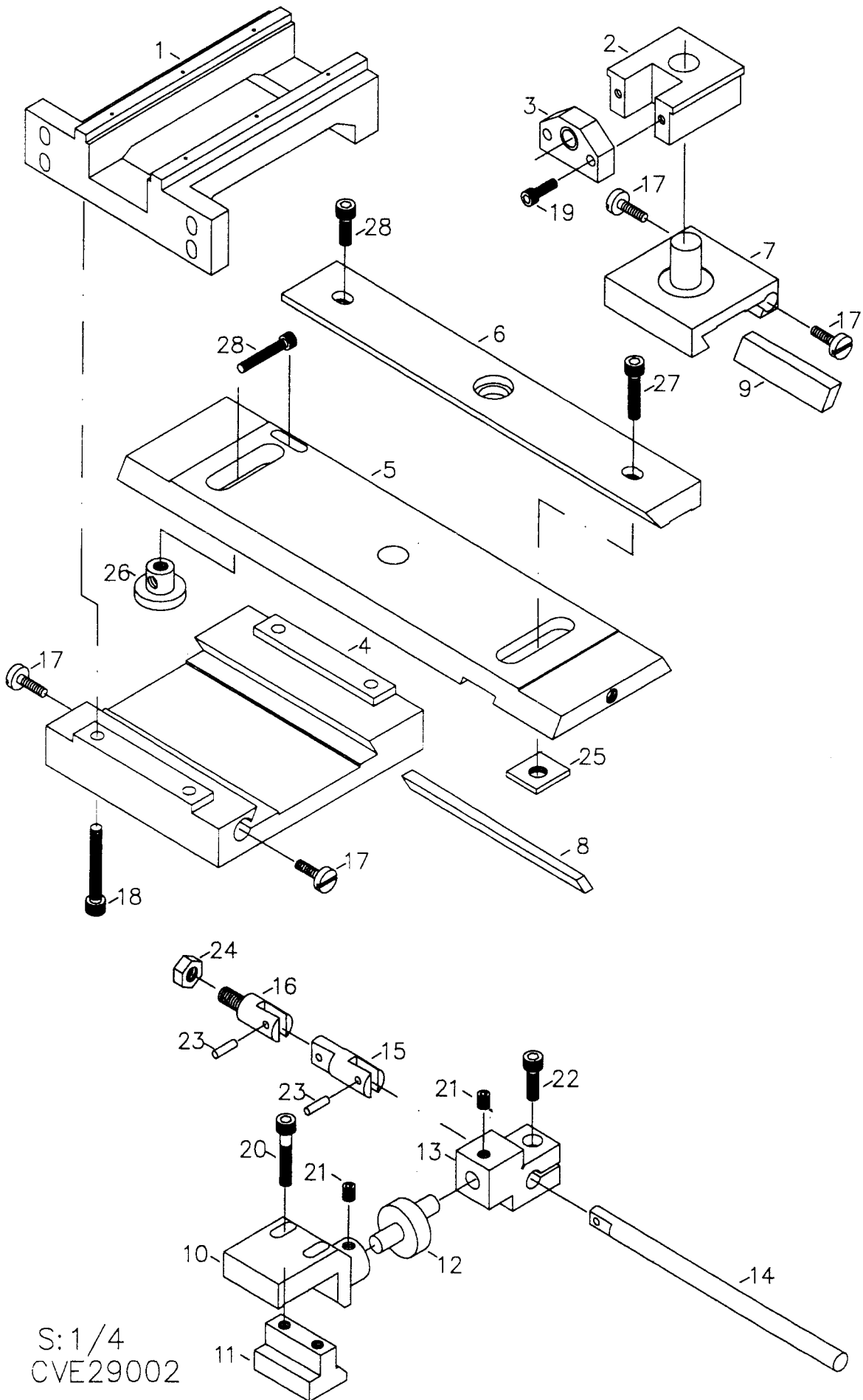
REF.NO.	PART NO.	DESCRIPTION	Q' TY
1	VE2701	PEDESTAL	1
2	VE2708	COVER	1
3	VE2709	COVER	1
4	VE2705	SPLASH GUARD	1
5	VE2703	FOOT BRAKE PEDAL	1
6	VE2715	CONNECTOR SHAFT	1
7	2714	LEVER	1
8	2713	LEVER	1
9	VE2711	BAR	1
10	2712	COLLAR	1
11	VE2716	COLLAR	1
12	VE2722	MOTOR PLATE	1
13	VE2723	SHAFT	1
14	VE2725	COLLAR	2
15	VE2724	CLAMP	1
16	VE2726	SHAFT	2
17	VE2708	COVER	1
18	VE2706	PLATE	1
19	2717	COOLANT PUMP	1
20	VE2733	SCREW AND WASHER	2
21	VE2734	PIPE	1
22	VE2735	CAP SCREW	M6X12L 3
23	VE2736	CAP SCREW	M8X20L 1
24	VE2737	CAP SCREW	M8X20L 2
25	2742	SET SCREW	M10X20L 2
26	2743	SET SCREW	M10X40L 2
27	2731	CAP SCREW	M8X10L 1
28	2742	SET SCREW	M10X20L 1
29	VE2742	WASER	1
30	VE2743	SCREW	1
31	2746	NUT	3
32	2738	SCREW	M8X25L 1
33	2739	SCREW	M8X30L 1
34	VE2747	SCREW	M10X40L 2
35	VE2748	SET SCREW	M12X12L 2
36	VE2749	SCREW	1
37	VE2750	NUT	M16 2
38	VE2751	SET SCREW	M8X10L 2
39	VE2752	MOTOR	1
40	VE2753	WASHRER	4
41	VE2754	SCREW	4
42	VE2755	V-BELT	2
43	VE2756	SCREW	12
44	VE2757	NUT	1
45	VE2758	RING	1
46	VE2759	CAP SCREW	M6X30L 2
47	VE2760	BRACKET	1
48	VE2761	KNOB	1
49	2720	HOSE	1
50	2745	SPRING	1



SWING FRAME & GEARS , END COVER

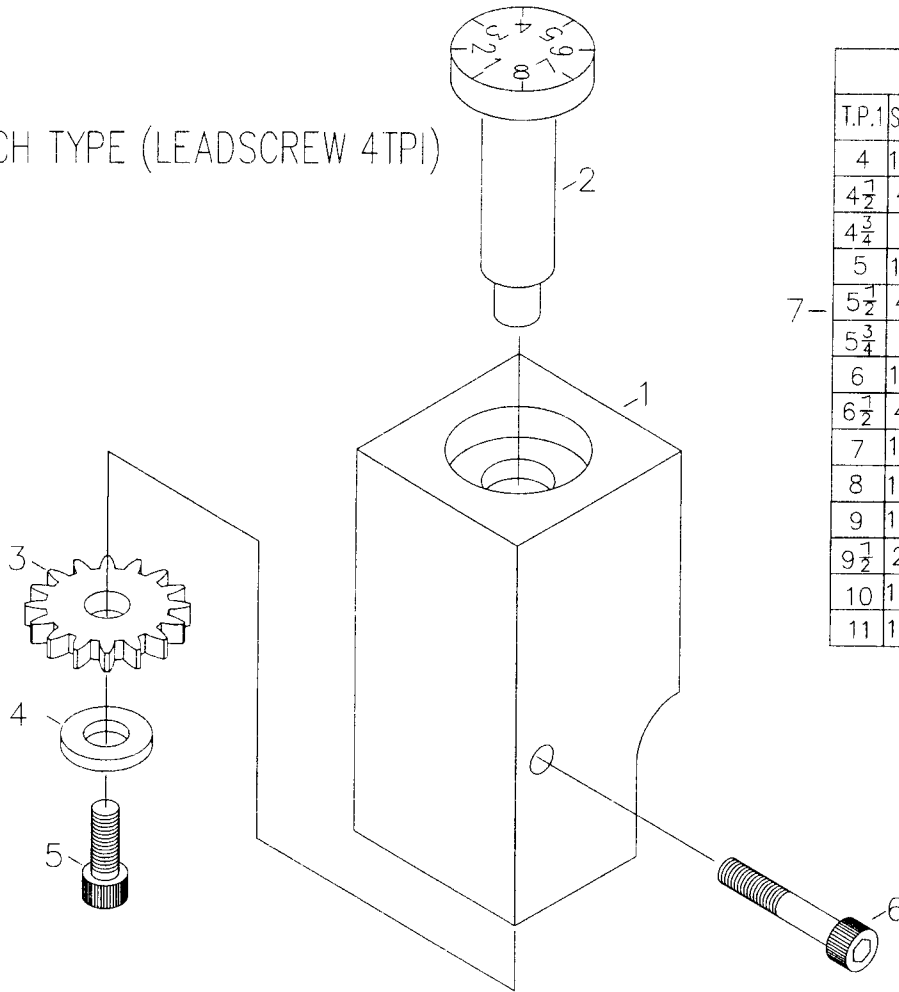
REF.NO.	PART NO.	DESCRIPTION	Q' TY
1	2801	SWING FRAM	1
2	2802	BOLT	1
3	2803	COLLAR	1
4	2804	GEAR	1
5	2805	SCREW	2
6	2807	GEAR (30T)	1
7	2808	GEAR (60T)	1
8	2806	COLLAR	2
9	VE2821	END COVER	1
10	VE2822	STUD	1
11	VE2824	STUD	1
12	2823	NUT	2
13	2833	BEARING	6202 2
14	2836	GIR CLIP	R35 1
15	2835	NUT	2
16	2837	WASHER	1
17	2839	WASHER	2
18	2840	CAP SCREW	M6X16L 2
19	2838	NUT	1
20	2831	WASHER	1
21	2830	KEY	1
22	2841	KEY	1
23	VE2733	DATA PLATE	1
24	VE2851	CAP SCREW	6
25	VE2825	GEAR (28T)	1
26	VE2826	GEAR (40T)	1
27	VE2827	GEAR (44T)	1
28	VE2828	GEAR (46T)	1
29	VE2829	GEAR (52T)	1
30	VE2830	GEAR (66T)	1
31	VE2831	GEAR (69T)	1
32	VE2832	GEAR (78T)	1





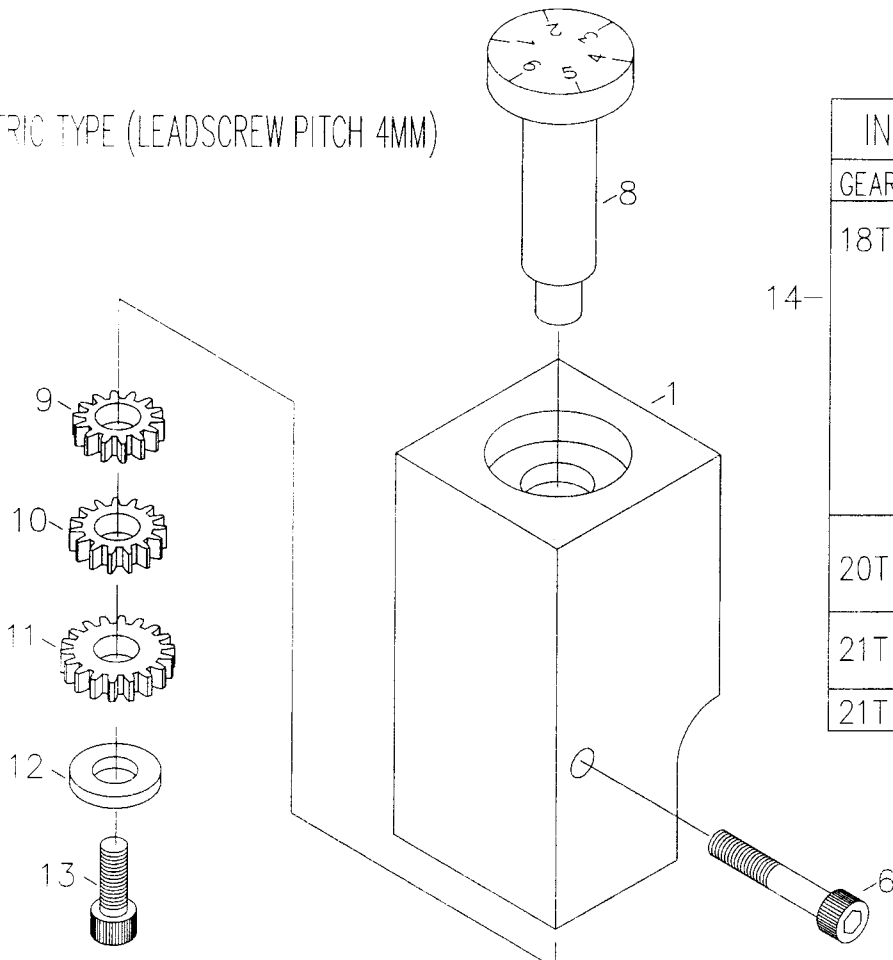
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CVE29002

INCH TYPE (LEADSCREW 4TPI)



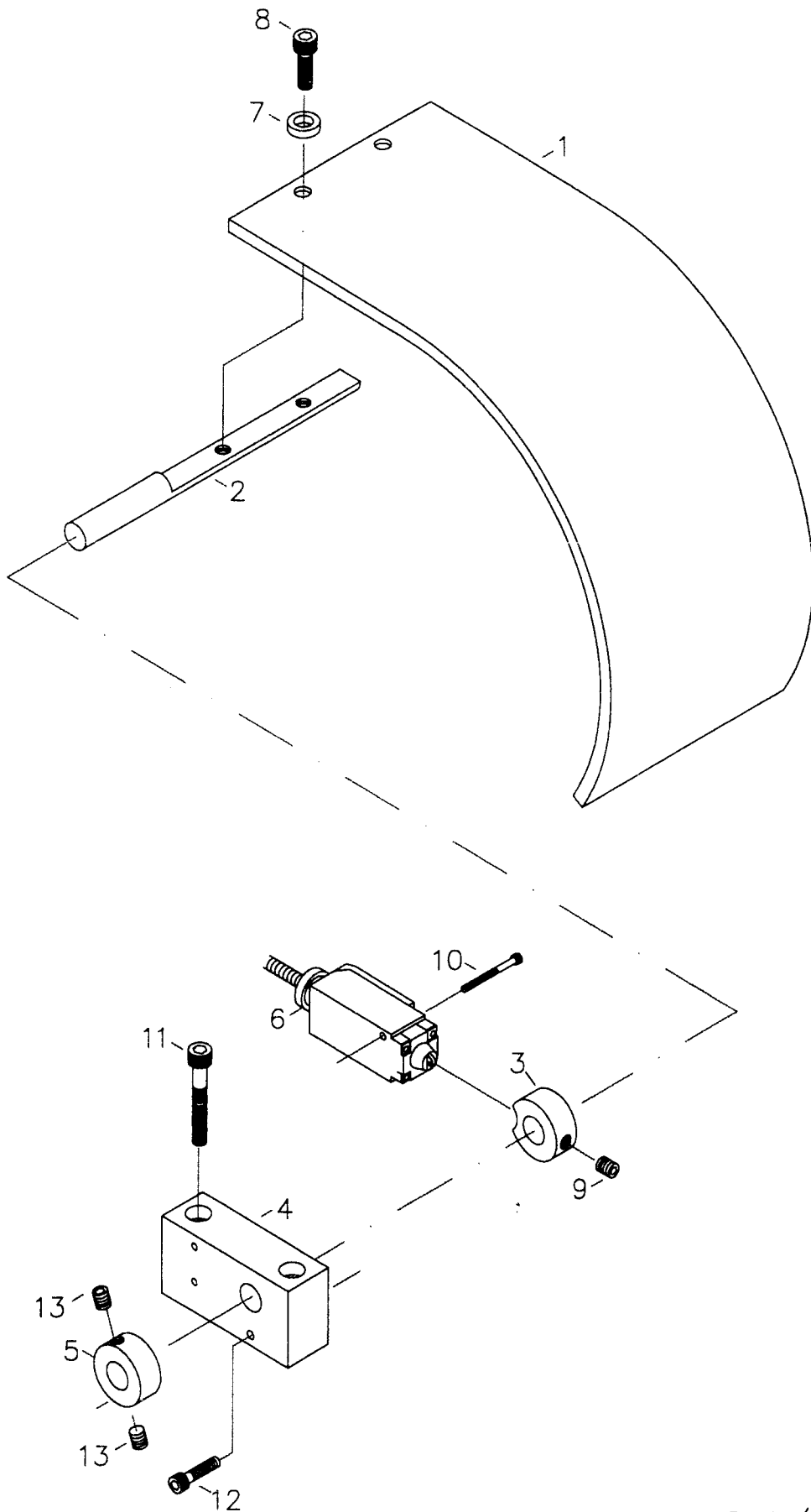
INDICATOR TABLE					
T.P.1	SCALE	T.P.1	SCALE	T.P.1	SCALE
4	1-8	11 $\frac{1}{2}$	4,8	36	1-8
4 $\frac{1}{2}$	4,8	12	1-8	38	
4 $\frac{3}{4}$	1	13	1-4	40	
5	1-4	14	1-8	44	
5 $\frac{1}{2}$	4,8	16	1-8	46	
5 $\frac{3}{4}$	1	18	1-8	48	
6	1-8	19	1-4	52	
6 $\frac{1}{2}$	4,8	20	1-8	56	
7	1-4	22	1-8	64	
8	1-8	23	1-4	72	
9	1-4	24		76	
9 $\frac{1}{2}$	2,4	26		80	
10	1-8	28		96	
11	1-4	32		104	

METRIC TYPE (LEADSCREW PITCH 4MM)



INDICATOR TABLE			
GEAR	PITCH		SCALE
18T	0.45	0.9	1, 4
	2.25	4.5	
	0.3	0.6	1, 3, 5
	0.25	0.75	
	0.5	1.5	
	1	3	
20T	2	6	1-6
	4		
21T	1.25	5	1, 4
	2.5		
21T	1.75	7	1, 3, 5
	3.5		
21T	0.7		1, 4

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ELECTRIC EQUIPMENT

CONSTRUCTION

The electric equipment consists of spindle motor, control panel, magnetic contactor, magnetic switch, control cable and transformer.

- 1. The spindle motor is totally enclosed, 3 phase, 3 HP w/4 poles.**
- 2. The control panel includes power on and off switches, coolant switch, and pilot lamp.**
- 3. The magnetic control panel has spindle motor, reversible magnetic valve, and subsidiary magnetic contactor.**
- 4. The forward and reverse motor control lever is controlled by a micro-switch.**
- 5. A micro switch for foot brake pedal is fitted separately. When the pedal is pushed, the magnetic switch on the spindle motor will cut off automatically.**

RUNNING STEPS

- 1. A power switch is fitted on the control panel. Turn this switch on , then the pilot lamp will come on.**
- 2. Push or pull the motor control level on the apron will start the spindle.**
- 3. When emergency stop is needed, step on the foot brake, then the power to the spindle will shut off automatically. Meanwhile, the brake is activated to stop the spindle.**
- 4. Usually, when the machine needs to stop, move the motor control lever to the middle position. Then the magnetic switch will be cut off, and the machine will stop running.**
- 5. Upon operation is complete, be sure to put the power switch on the control panel to the off position.**

DISMOUNTING THE GAP BED

First take off the four screws mounted on the surface, and remove the pin in the middle, then move the gap bed horizontally to get it off the machine. Be careful with its pin and edges! Hold the gap bed carefully, and do not bump it! Follow the opposite steps to put the gap bed back to the machine. Before re-mounting, gap bed and bed ways have to be cleaned.

NOTES

- 1. Be sure to operate the machine carefully and maintain it well. If so, the machine's longevity and precision can be assured.**
- 2. Everyday, when the operation is complete, be sure to clean out the chips on the machine, and oil the slideways to prevent rust. Turn off the power when done!**
- 3. Everyday, before operation, please make sure to check oil level on each gauge, and fill them if necessary. Especially the gear box, which is easily forgotten by the operator, please fill in oil every morning and in the afternoon before running the machine.**
- 4. For a new machine, after operation of three months, the oil in the headstock must be replaced or filtered if it will be re-used again. This is done so to protect the gears inside the headstock and reduce its noise level.**
- 5. If headstock is over heated, highly wobbled, oil leaked and oil short, please stop the machine and arrange a technician to solve the problem immediately.**
- 6. While clamping the work piece, please do not hit it with hammer or heavy material, otherwise the spindle might be damaged and loose its accuracy.**
- 7. After operation, hand tools, cutting tools, and clamping kits should be placed back to the original area. Please do not leave anything on the slideway or bed ways. This is to prevent collision of tools to the ways that ultimately will affect the accuracy of the machine.**
- 8. Besides the operator, please do not let anybody adjust or move the position of handles or controlling levers, or operate the machine.**
- 9. Please make a schedule of maintenance, and do it according to the schedule. This will elongate the life of the machine and prolong its accuracy.**

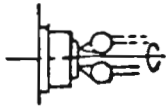
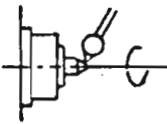
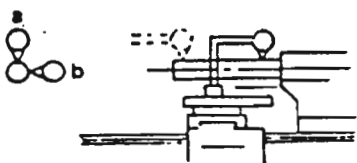
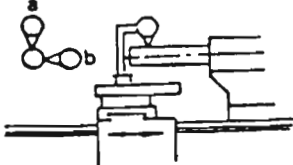
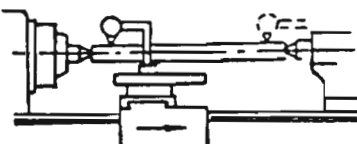
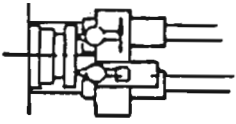
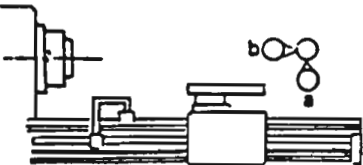
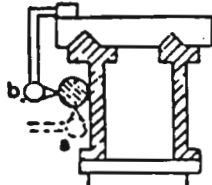
TROUBLE SHOOTING

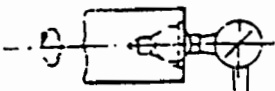
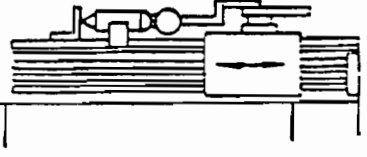
TROUBLES	FACTORS	REMEDY
HEADSTOCK BEARINGS ARE OVER HEATED	<ol style="list-style-type: none"> 1. OIL LEVEL IN HEADSTOCK IS TOO LOW. 2. OIL VISCOSITY IS WRONG. 3. OIL PIPE IS OBSTRUCTED OR LEAKED. 4. MAIN SPINDLE IS WOBBLING OR OVER LOADED. 5. OIL FILTER IS OBSTRUCTED. 	<ol style="list-style-type: none"> 1. CHECK IF OIL LEVEL IN CORRECT POSITION AND FILL IT UP IF NECESSARY. 2. CHECK IF THE RECOMMENDED OIL IS USED. 3. CLEAN OIL PIPE OR REPLACE A NEW ONE IF NEED. 4. CHECK IF THE SPINDLE IS LOCKED UPON FREE RUNNING. 5. FILTER THE OIL OR REPLACE NEW OIL.
OIL LEAKAGE ON SPINDLE FLANGE OR GEAR BOX COVER	<ol style="list-style-type: none"> 1. BOLT IS LOOSE. 2. OIL PACKING IS WORN. 3. OIL VOLUME IS OVER. 4. OIL SEAL IS CRACKED. 5. THE SURFACE FINISH IS COARSE. 	<ol style="list-style-type: none"> 1. LOCK THE BOLT. 2. REPLACE THE PACKING. 3. LOWER THE OIL. 4. REPLACE OIL SEAL. 5. CORRECT THE FINISH.
CHATTER	<ol style="list-style-type: none"> 1. WORKPIECE IS NOT CLAMPED SECURELY. 2. WORKPIECE LEAVES TOO LONG AT LEFT SIDE OF THE CLAMPING POSITION. 3. IMPROPER CUTTING TOOL IS USED. 4. CUTTING TOOL IS TOO HIGH OR TOO LOW TO THE CENTER OF SPINDLE. 5. CHIP IS NOT REMOVED FREELY FROM THE TOOL. 6. WORKPIECE IS TOO LONG. 	<ol style="list-style-type: none"> 1. CLAMP IT SECURELY. 2. LESSEN THE LENGTH TO AVOID WOBBLE HAPPENED. 3. SELECT SUITABLE CUTTING TOOL ACCORDING TO MATERIAL OF WORKPIECE AND THE CUTTING SPEED. FOR SMALL DIAMETER OF WORKPIECE, A SMALL ANGLE OF CUTTING TOOL TO BE USED. IF OPPOSITE, USE THE BIG ANGLE OF CUTTING TOOL. 4. ADJUST THE CUTTING TOOL TO THE CENTER OF SPINDLE. 5. MOUNT A CHIP CUTTER OR ADJUST THE FRONT ANGLE OF CUTTING TOOL. 6. USE A CENTER TO SUPPORT LONGER WORKPIECE.
BENT FINISH ON LONG WORKPIECE CUTTING	<ol style="list-style-type: none"> 1. MATERIAL IS OVER HEATED. 2. DEEP CUT IS MADE. 3. HOT IS HAPPENED TO THE CENTER AND WORKPIECE. 	<ol style="list-style-type: none"> 1. USE COOLANT OIL FOR CUTTING. 2. REDUCE THE DEPTH FOR EACH CUTTING. 3. USE ROLLING CENTER FOR HIGH SPEED RUNNING.
PRECISION IS GETTING WORSE	<ol style="list-style-type: none"> 1. WORKPIECE IS NOT BALANCE CLAMPED. 2. ALWAYS HIT THE WORKPIECE BY HAMMER. ; 3. CENTER OF SPINDLE IS NOT ALIGNMENT WITH THE CENTER OF TAILSTOCK. 4. MACHINE IS OUT OF THE HORIZONTAL. 	<ol style="list-style-type: none"> 1. CLAMP WORKPIECE IN BALANCE 2. DO NOT HIT IT BY HAMMER. 3. ADJUST THE TAILSTOCK TO ALIGNMENT WITH THE CENTER OF SPINDLE. 4. CHECK PERIODICALLY HORIZONTAL OF MACHINE.
LEVER SWITCH IS HARD OPERATED	<p>THE OPERATOR IS NOT FAMILIAR WITH OPERATION OF THE MACHINE.</p>	<p>THE LEVER SWITCH IS FITTED WITH A SAFETY DEVICE. DURING OPERATION, THE LEVER MUST BE MOVED SLIGHTLY TO RIGHT THEN OPERATE UPWARD OR DOWNWARD FOR RUNNING THE SPINDLE CLOCKWISE AND ANTICLOCKWISE.</p>

TOLERANCE PERMISSIBLE DIAGRAM

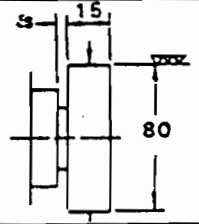
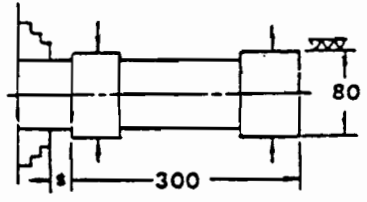
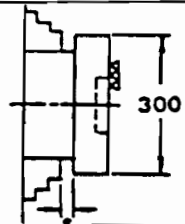
1.ACCURACY TEST.(mm)

NO.	INSPECTION ITEM		DIAGRAM	TOLERANCE PERMISSIBLE
1	Straightness of bed slideway	a.Longitudinal direction (In vertical plane)		0.04
		b.Transverse direction (In vertical plane)		0.04
2	Parallelism of bed slideways.			0.02
3	Spindle nose runout			0.01
4	Spindle taper hole runout	a.Nearest spindle nose		0.01
		b.At a distance of 300mm		0.02
5	Parallelism of center line of main spindle to longitudinal motion of carriage	a.In vertical plane		0.025
		b.In horizontal plane		0.025
6	Movement of compound slide parallel with main spindle in vertical plane (Hand feed)			0.01/150

NO.	INSPECTION ITEM		DIAGRAM	TOLERANCE PERMISSIBLE
7	Main spindle for axial slip. measured at 2 points, displaced by 180°			0.015
8	True running of center point of main spindle.			0.015
9	Parallelism of tailstock spindle with bed ways.	a. In vertical plane (Front end rising)		0.015/100
		b. In horizontal plane (Front end inclined to wards the direction of tool pressure.)		0.015/100
10	Parallelism of bed ways with center line of tailstock spindle hole.	a. In vertical plane (Free end of mandrel rising)		0.02/300
		b. In horizontal plane (Free end of mandrel inclined to wards tailstock end)		0.02/300
11	Difference in center height between headstock and tailstock (Mandrel rising towards tailstock end)			0.025
12	Squareness of motion of cross slide with center line of main spindle			0.02/300
13	Parallelism of center line of lead screw end bearing to carriage slide ways	a. In vertical plane		0.1
		b. In horizontal plane		0.1
14	Diviations in alignment of center line of lead screw end bearing with center line of half nut.	a. In vertical plane		0.15
		b. In horizontal plane		0.15

NO.	INSPECTION	DIAGRAM	TOLERANCE PERMISSIBLE
15	Axial displacement of lead screw by turning		0.01
16	Pitch error of lead screw		0.03/300

2. PRACTICAL

NO.	TESTING ITEM	DIAGRAM	TOLERANCE PERMISSIBLE
1	Accuracy of outside turning		0.01
2	Accuracy of cylindrical turning		0.025
3	Accuracy of face turning		0.02

3. CHECK OF MOTOR SPECIFICATION

ITEM	HP	Ph	V	Hz	R.P.M.
Rating	2 3	1 3		50 60	1420 1700
Actual					