



MACHINERY DIVISION

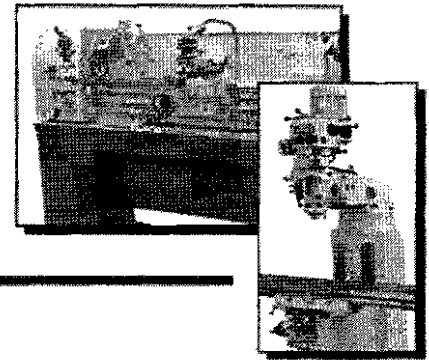
6465 18 MILE ROAD
STERLING HEIGHTS, MI 48314

PHONE:

(586) 731-3600 • 1-800-860-1740

FAX:

(586) 731-7464 • 1-800-862-1740



MODEL 20" VS DRILL PRESS

THANK YOU FOR PURCHASING WITH KBC MACHINERY. ALL KBC MACHINES ARE BACKED BY OUR 1 YEAR PARTS REPLACEMENT WARRANTY. WHEN USED AS INTENDED, AND WITH PROPER MAINTENANCE THIS MACHINE WILL PROVIDE YOU WITH YEARS OF TROUBLE-FREE SERVICE. IF YOU NEED PARTS SIMPLY FILL OUT THE PARTS REQUEST FORM, AND FAX OR E-MAIL YOUR REQUEST. ALL OTHER QUESTIONS PLEASE CONTACT US @ :

**KBC MACHINERY
6465 18 MILE ROAD
STERLING HEIGHTS, MI 48314
PH (800) 860-1740
FAX (800) 862-1740
MACHINERY@KBCTOOLS.COM
WWW.KBCTOOLSANDMACHINERY.COM**



PARTS REQUEST FORM

YOUR COMPANY NAME:

STATE/PROVINCE

YOUR NAME

PHONE # + EXT

FAX #

MACHINE INFO:

MAKE/MANUFACTURER

MODEL NUMBER

YEAR MADE

SERIAL#

PARTS REQUESTED:

PART#

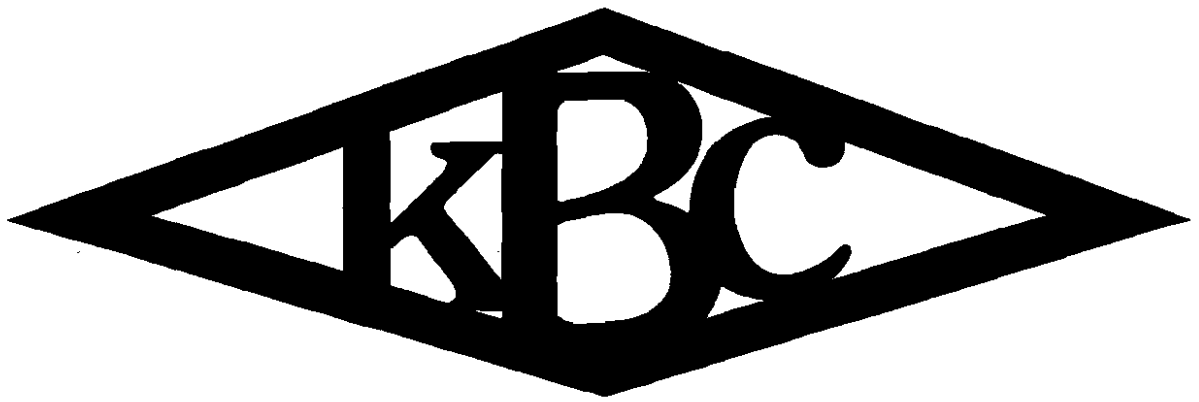
DESCRIPTION

PLEASE INCLUDE COPY(S) OF THE PARTS DRAWING FROM THE
MANUAL AND CIRCLE THE PARTS NEEDED

FAX PARTS REQUEST TO (800) 862-1740

E-MAIL PARTS REQUEST TO: machinery@kbctools.com

THANKS; KBC MACHINERY - MICHIGAN



machinery

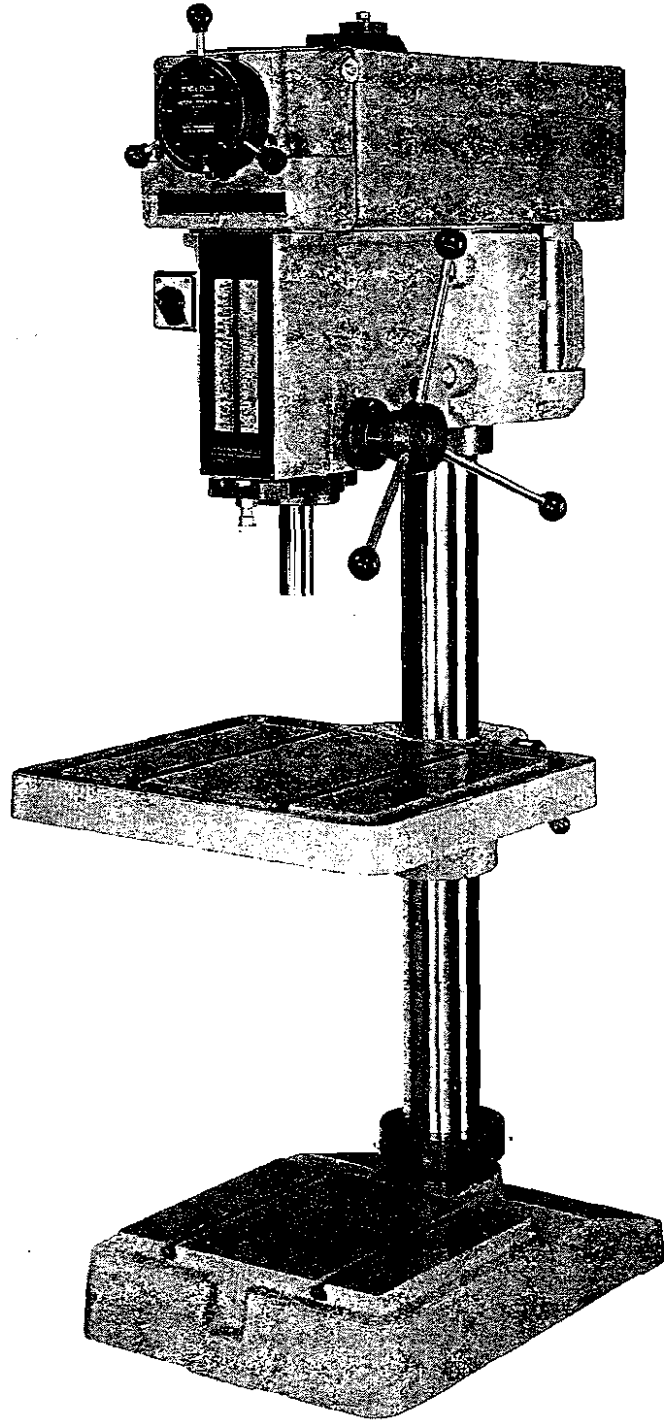
VARIABLE SPEED DRILLING

KBC-20VS



OPERATOR'S MANUAL

20" Variable Speed Drill Press



WARNING

1. Read the operator's manual carefully. Learn the tools applications and limitations, as well as the specific potential hazards peculiar to it. Know your power tool.
2. Always wear approved safety glasses/faceshields while using this machine.
3. Make certain the machine is properly grounded.
4. Before operating the machine, remove tie, rings, watches, other jewelry, and roll up sleeves above the elbows. Remove all loose clothing and confine long hair. Do NOT wear gloves.
5. Keep the floor around the machine clean and free of scrap material, oil and grease.
6. Keep machine guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
7. Do NOT over reach. Maintain a balanced stance at all times so that you do not fall or lean against blades or other moving parts.
8. Support the workpiece adequately at all times during an operation to maintain control of your work. Never hold the workpiece by hand while drilling.
9. Make all machine adjustments or maintenance with the machine unplugged from the power source.
10. Use the right tool. Don't force a tool or attachment to do a job which it was not designed for.
11. Do NOT make cuts requiring more power than is available on the machine.
11. Make certain the motor switch is in the OFF position before connecting the machine to power.
12. Give your work undivided attention. Looking around, carrying on a conversation, and "horse-play" are careless-acts that can result in serious injury.
13. Make a habit of checking to see that keys and adjusting wrenches are removed before turning on the machine.
14. Keep visitors a safe distance from the work area.
15. Use recommended accessories; improper accessories may be hazardous.
16. Replace warning labels if they become obscured or removed.
17. Failure to comply with these warnings may result in serious injury to the operator.

SPECIFICATIONS:

MODEL	20VS-DT-1	20VS-DT-TAP
DRILLING CAPACITY		
CAST IRON.....	1-1/2"	1-1/2"
STEEL.....	1-1/4"	1-1/4"
TAPPING CAPACITY.....	----	3/4"
COLUMN DIAMETER.....	4"	4"
MAXIMUM DISTANCE SPINDLE TO COLUMN.....	10"	10"
SPINDLE TRAVEL.....	6-1/2"	6-1/2"
SPINDLE DISTANCE TO BASE.....	39"	39"
SPINDLE DISTANCE TO TABLE.....	28-1/2"	28-1/2"
TABLE SIZE.....	22"x19-1/2"	22x19-1/2"
NUMBER OF T-SLOTS.....	2	2
T-SLOT SIZE.....	5/8"	5/8"
CENTERS.....	8-7/8"	8-7/8"
SPINDLE TAPER.....	MT-3	MT-3
SPINDLE SPEEDS.....	VARIABLE	VARIABLE
SPINDLE RPM.....	300-2,000	150-2,000
MOTOR.....	1-1/2 HP,1 Ph	2 HP,3 Ph
.....	115/230V	2-SPEED
.....	PREWIRED 115V220V ONLY
OVERALL HEIGHT.....	69"	69"
BASE SIZE.....	26"x19"	26"x19"
TABLE TRAVEL.....	20"	20"
NET WEIGHT (APPROX.).....	720 LBS.	740 LBS.
SHIPPING WEIGHT (APPROX.).....	754 LBS.	774 LBS.

CLEANING

After uncrating, remove protective coating from all bright surfaces with a soft cloth moistened with kerosene. Do not use acetone, gasoline or lacquer thinner - these will damage painted surfaces. To prevent rust, wax the table with paste wax.

INSTALLATION

The most accurate and vibration-free operation will require the machine to be bolted to the floor. While this is not absolutely necessary, it is highly recommended. The drill press should be level and rest solidly on the floor. Place shims under the three bolt holes to level the drill press. Equal pressure should be applied to all three nuts when tightening to prevent distorting the base.

RAISING HEAD

The drill press head is lowered on the column to ease crating and transportation. Before operating the drill press, the head will need to be raised to the operational level:

1. Loosen table lock (A). Fig. 1.
2. Cut a 2"x4" approximately 16" in length. Raise table (B) and place 2"x4" between table and head (C) as close to the column (D) as possible. **Caution:** do not place 2"x4" under lock collar (E).
3. Using table lift crank (F), raise head to the point where head bore and column are flush. **Caution:** Do not raise head any farther or it may fall off column! A ladder will be needed to observe the column through the top of the belt cover.
4. Tighten two head locking bolts (A), Fig. 2. This will hold head in place until lock collar can be moved into position. Now 2"x4" can be removed safely.
5. After head is set at desired height, loosen two set screws (B) on the lock collar (C). Fig. 2
6. Slide lock collar up column until flush with head. Firmly tighten two set screws.

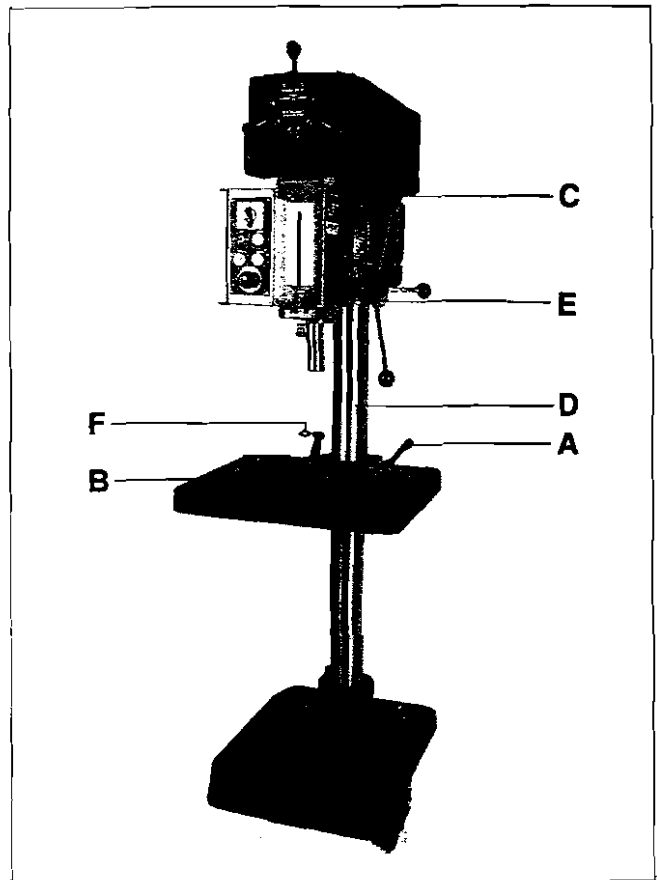


Fig. 1

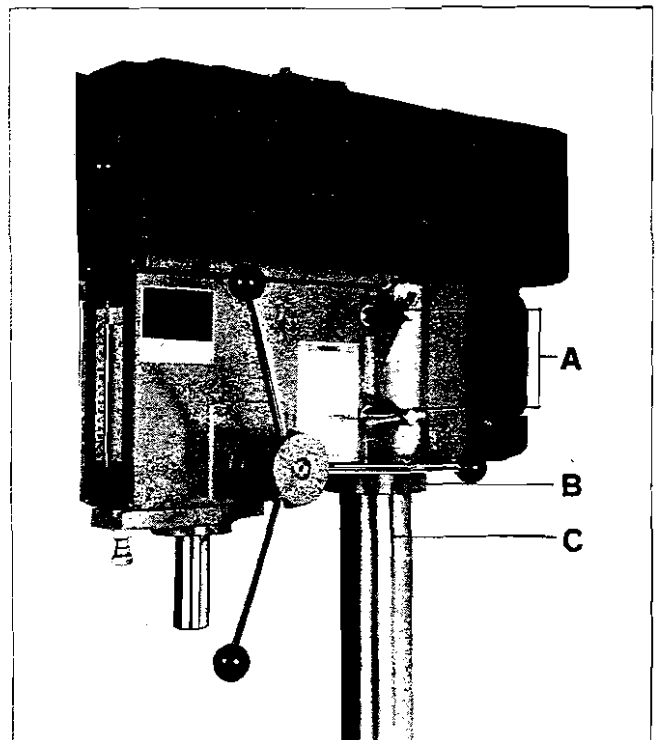


Fig. 2

RAISING THE RACK

Some drilling operations will require the table to be moved closer to the spindle than the rack will allow as set at the factory. To raise the rack:

1. Tighten table lock handle (A). Fig. 3
2. Loosen two set screws (A, Fig. 4) on column bearing collar (B). **Caution:** Do not loosen two screws with lock nuts on them (C).
3. Raise rack (B, Fig. 4) to desired level by turning table handle (C).
4. Tighten two set screws (A, Fig. 4) to keep rack in position. Now table can be raised to the desired position.

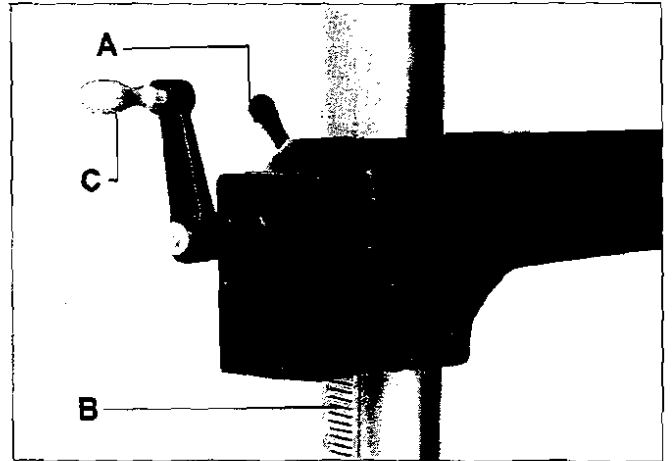


Fig. 3

CONTROL PANEL - (Fig. 5)

High-Low Switch(A) - center position is neutral, low selects low speed of motor, high selects high speed of motor.

Drill-Tap Switch(B) - center position (off) , drill function selected by pushing to the left, tapping function selected by pushing to right.

Power Indicating Lamp(C) - indicates power to the main panel when lit. Will light only in drill or tap mode.

Motor Start Button(D) - activates motor in drill or tap mode.

Tap Return Button(E) - reverses spindle rotation - tap will withdraw.(tap mode only)

Emergency Stop Button(F) - disconnects power to the motor. Resets by depressing and turning 90 degrees.

CONTROL PANEL - (Not Shown)

On-Off Switch - turns power to the machine on and off.

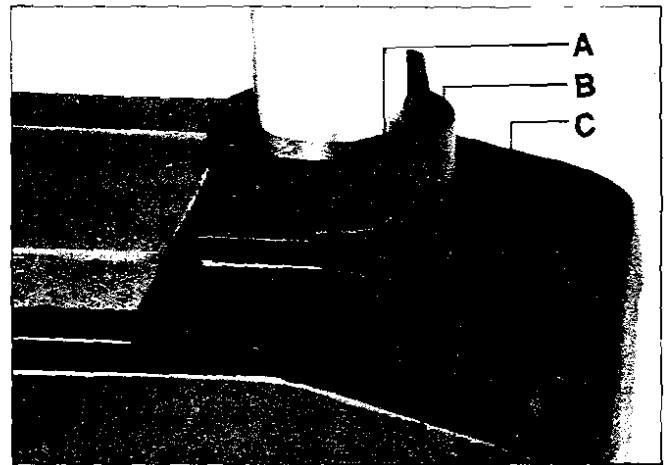


Fig. 4

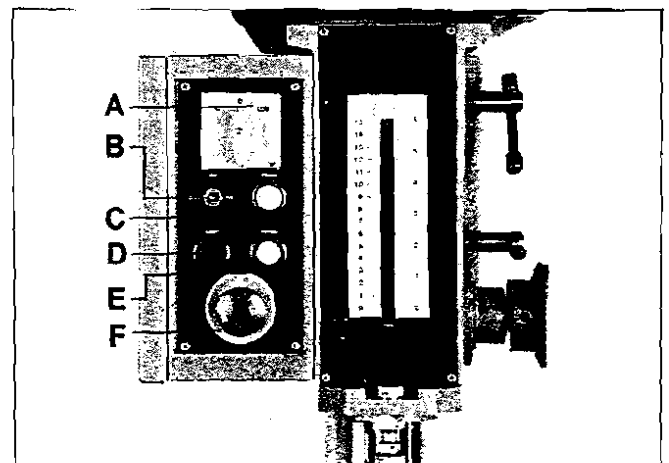


Fig. 5

CHANGING SPINDLE SPEEDS

CAUTION!

Do not turn handwheel control unless motor is running. The speed control linkage will be damaged if the motor is not running.

To change speeds, turn handwheel control (A, Fig. 6) until pointer shows desired speed.

Note: speeds are approximate.

ADJUSTING DEPTH STOP FOR DRILLING

Adjust zero reading on scale by:

1. Lower quill to bottom of stroke by turning handle (A, Fig. 7) counter-clockwise until it stops and hold in that position.
2. Turn knurled knob (B, Fig. 7) until pointer reads zero.
3. To set depth stop, turn knurled knob (B, Fig. 7) to desired depth.

ADJUSTING DEPTH STOP FOR TAPPING

To adjust the depth stop for tapping, follow the instructions for adjusting the depth stop for drilling. The major difference in the tap mode are two micro switches. One micro switch automatically reverses (counter-clockwise) the spindle direction at a predetermined depth. The other micro switch forwards (clockwise) the direction of the spindle once it is fully retracted.

ADJUSTING SPINDLE RETURN SPRING

1. To increase tension, lower quill to bottom of stroke by turning handle (A, Fig. 7) and turn spring cap counter-clockwise.
2. To decrease tension, pull out spring cap and turn clockwise.

LUBRICATION

1. Use a light grease weekly (if needed) on the spindle splines in the spindle pulley drive.

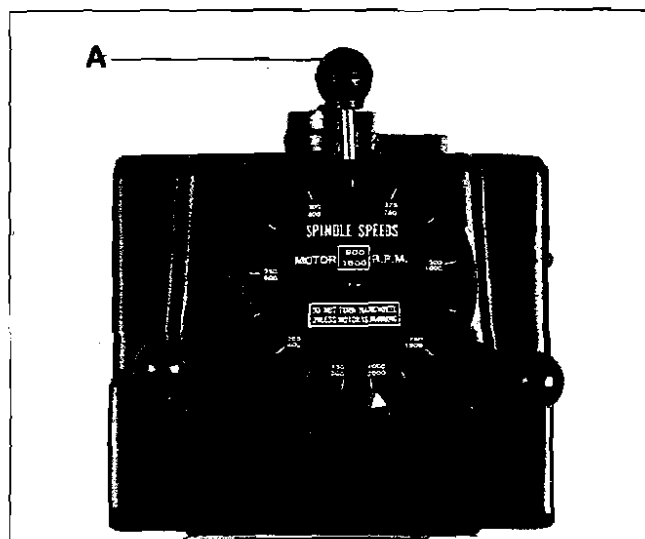


Fig. 6

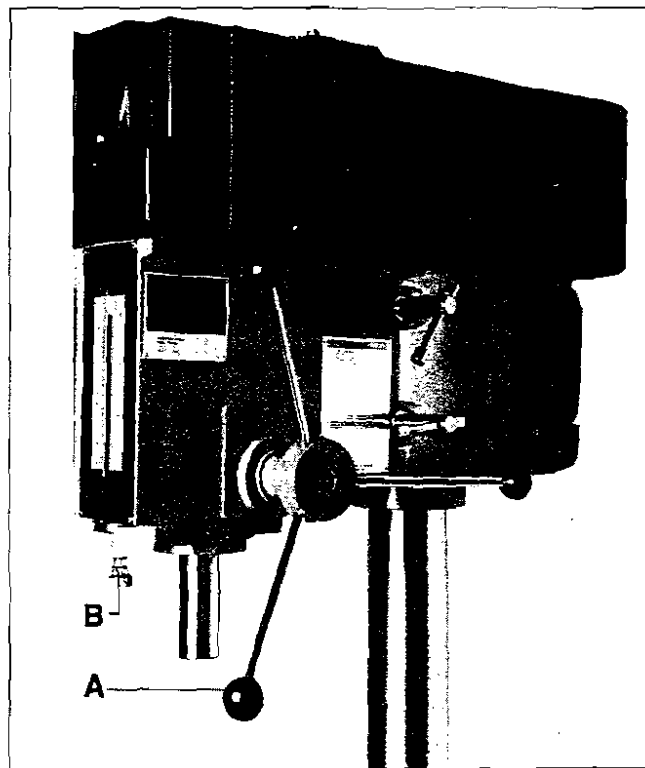


Fig. 7

2. Keep quill and column covered with a light film of oil. Check daily.
3. Lubricate lift rack weekly with SAE No. 20 oil. Before oiling, clean rack with kerosene.
4. Clean and repack the table lift with gear grease twice a year.

VARIABLE DRIVE LUBRICATION

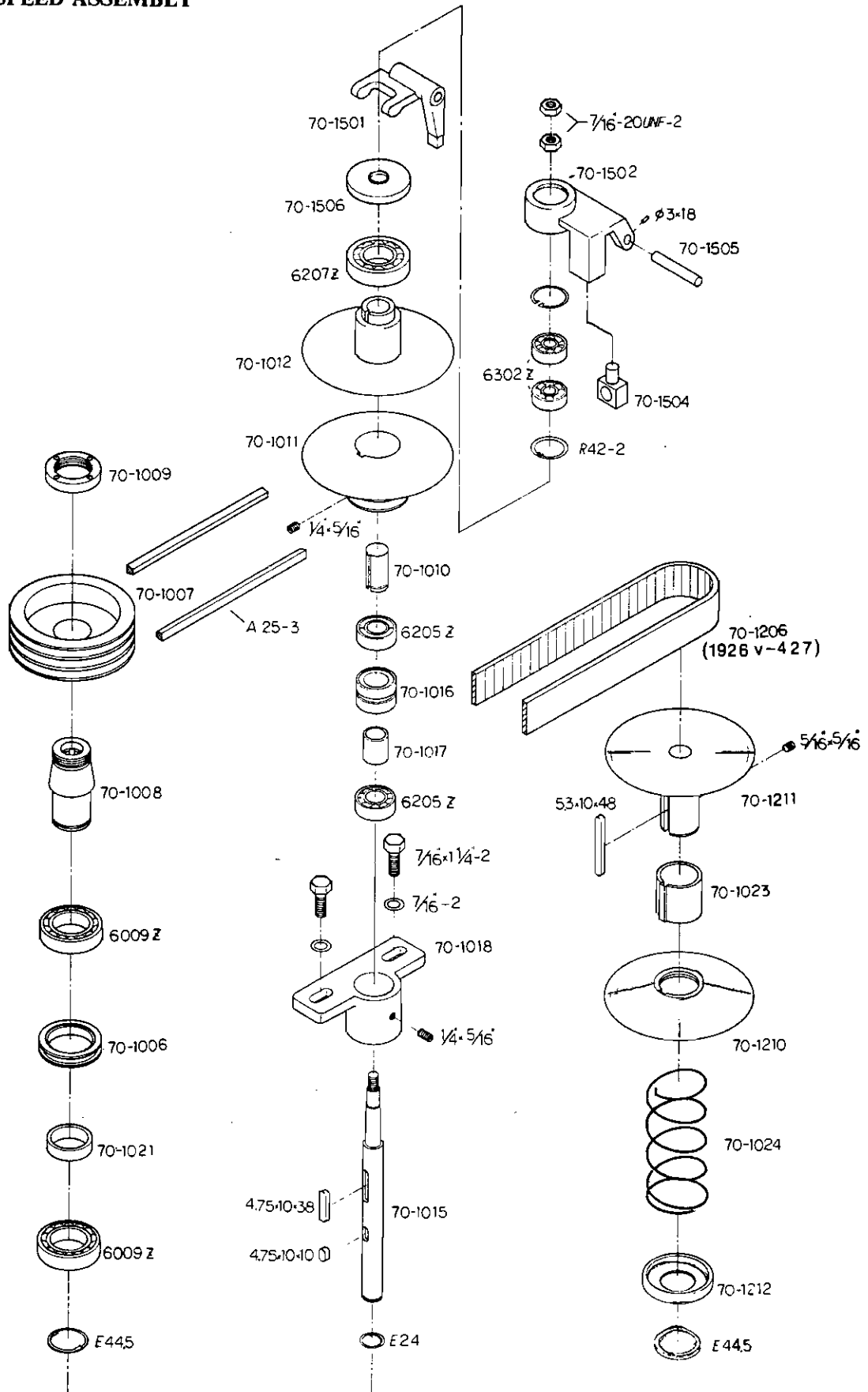
1. Grease speed control fork weekly with molybdenum based grease.
2. Oil upper end of counter shaft spindle and push rod daily with SAE #20 oil.
3. Twice a year, clean and grease cam in hand wheel.

PARTS LIST FOR THE 1/3 INDUSTRIAL DRILL PRESS

HEAD ASSEMBLY

INDEX NO.	PART NO.	DESCRIPTION	SIZE	QTY.
.....	70-1507	PUSH ROD TUBE		1
.....	70-1509	PUSH ROD		1
.....	70-1508	SPINDLE COVER		1
.....	70-1516	CAM SPRING		1
.....	70-1512	HUB		1
.....	70-1515	HANDLE		3
.....	70-1515-1	BALL		3
.....	A-632	BALL BEARING		1
.....	71-1610	SPEED DIAL		1
.....	70-1513	BOLT		1
.....	70-1901	MOTOR (STD)	1-1/2 HP	1
.....	70-1903	MOTOR (OPT)	2 HP	1
.....	71-1009	MOTOR MOUNT BOLT		4
.....	71-1001B	HEAD		1
.....	70-1026B	LOCK SCREW		2
.....	70-1019B	HEAD LOCK		2
.....	70-1020B	HEAD LOCK		2
.....	70-1022	LOCK HANDLE		2
.....	70-1407B	HUB		1
.....	70-1408	HANDLE		3
.....	70-1408-1	BALL		3
.....	71-1401B	PINION		1
.....	71-1402B	PINION SUPPORT		1
.....	71-1402-1	BUSHING		2
.....	71-1004B	NUT		1
.....	BB-6206Z	BALL BEARING		1
.....	71-1003B	QUILL		1
.....	BB-5206	BALL BEARING		1
.....	71-1002	SPINDLE		1
.....	70-1014	BELT COVER		1
.....	70-1014-1	TOP PLATE		1

VARIABLE SPEED ASSEMBLY



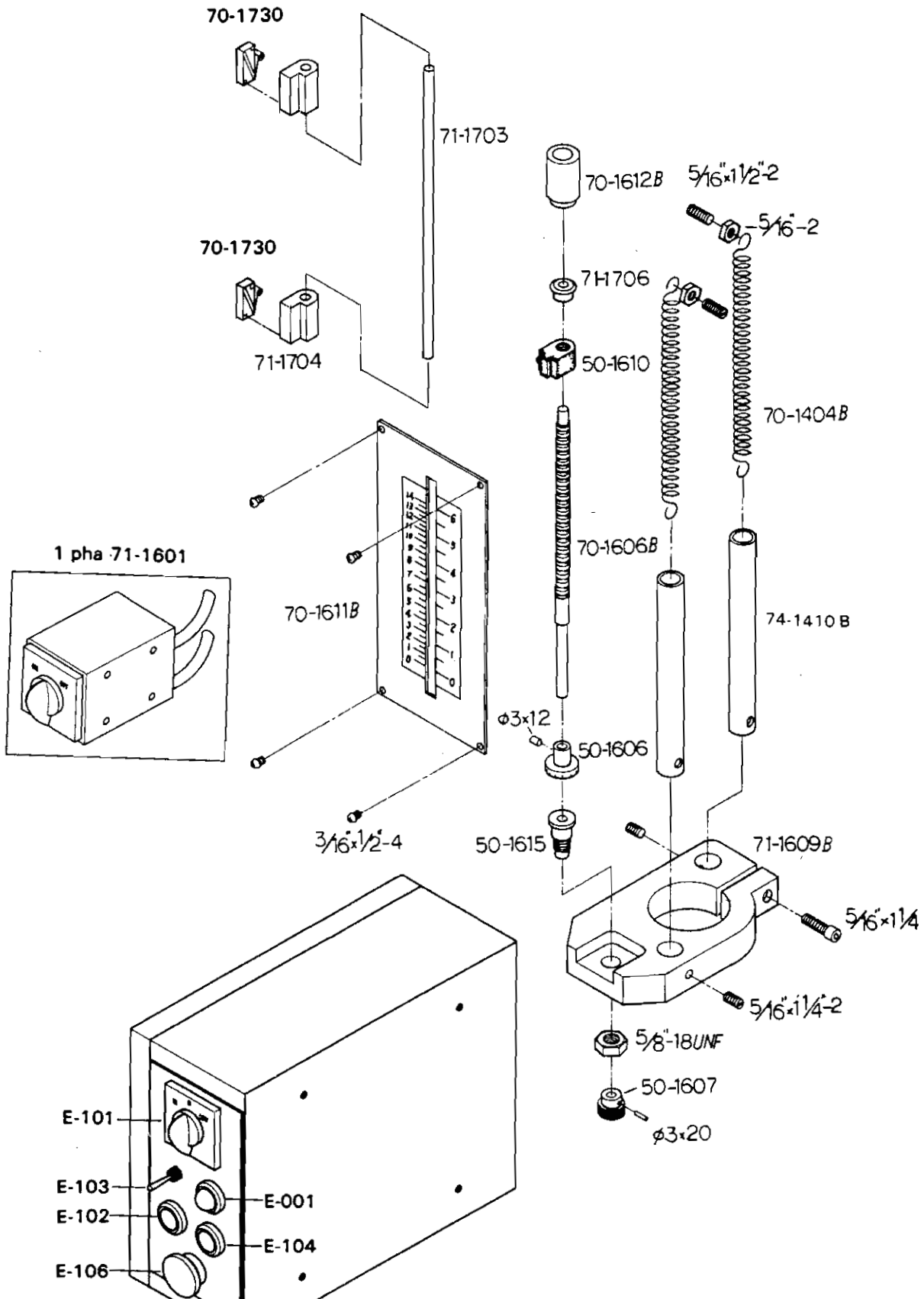
VARIABLE SPEED ASSEMBLY

..... 70-1206	BELT (1926V-427).....	1
..... 70-1211	UPPER MOTOR PULLEY.....	1
..... 70-1023	MOTOR PULLEY SLEEVE.....	1
..... 70-1210	LOWER MOTOR PULLEY.....	1
..... 70-1024	PULLEY SPRING.....	1
..... 70-1212	SPRING HOUSING.....	1
..... 70-1505	HINGE PIN.....	1
..... 70-1502	SPINDLE CONTROL SUPPORT.....	1
..... 70-1504	SUPPORT SWIVEL.....	1
..... BB-6302Z.....	BALL BEARING.....	2
..... 70-1501	SPEED CONTROL FORK.....	1
..... 70-1506	BEARING CUP.....	1
..... BB-6207Z.....	BALL BEARING.....	1
..... 70-1012	UPPER VARIABLE SPEED PULLEY.....	1
..... 70-1011	LOWER VARIABLE SPEED PULLEY.....	1
..... 70-1010	SPINDLE PULLEY SLEEVE.....	1
..... BB-6205Z.....	BALL BEARING.....	2
..... 70-1016	CONTROL SHAFT SLEEVE.....	1
..... 70-1017	SLEEVE.....	1
..... 70-1018	BEARING HOUSING.....	1
..... 70-1015	CONTROL SHAFT SPINDLE.....	1
..... 70-1009	NUT.....	1
..... 70-1007	SPINDLE PULLEY.....	1
..... A-25-3	BELT.....	3
..... 70-1008	SPINDLE DRIVER.....	1
..... BB-6009Z.....	BALL BEARING.....	2
..... 70-1006	BEARING SPACER SLEEVE.....	1
..... 70-1021	BEARING INNER SLEEVE.....	1

COLUMN, TABLE, AND BASE ASSEMBLY

..... 70-3008	HANDLE.....	1
..... 70-1306	LIFT CRANK.....	1
..... BB-51102	THRUST BEARING	1
..... 70-1302	WORM SHAFT.....	1
..... 71-1301	GEAR BOX.....	1
..... 70-1305	WORM GEAR SHAFT	1
..... 71-1302	GEAR.....	1
..... 70-1303	WORM GEAR.....	1
..... 71-3003	GEAR RACK.....	1
..... 71-3005	COLUMN.....	1
..... 71-1008	COLLAR.....	1
..... 71-2001	TABLE.....	1
..... 71-2005	LOCK HANDLE.....	1
..... 71-2004	TABLE LOCK NUT.....	1
..... 71-2003	TABLE LOCK SCREW.....	1
..... 71-2002	TABLE LOCK.....	1
..... 70-2005	BEARING RING.....	1
..... 70-2004	COLUMN BEARING COLLAR.....	1
..... 70-2006	BUSHING.....	6
..... 71-3001	BASE.....	1

DEPTH STOP AND CONTROL BOX ASSEMBLY



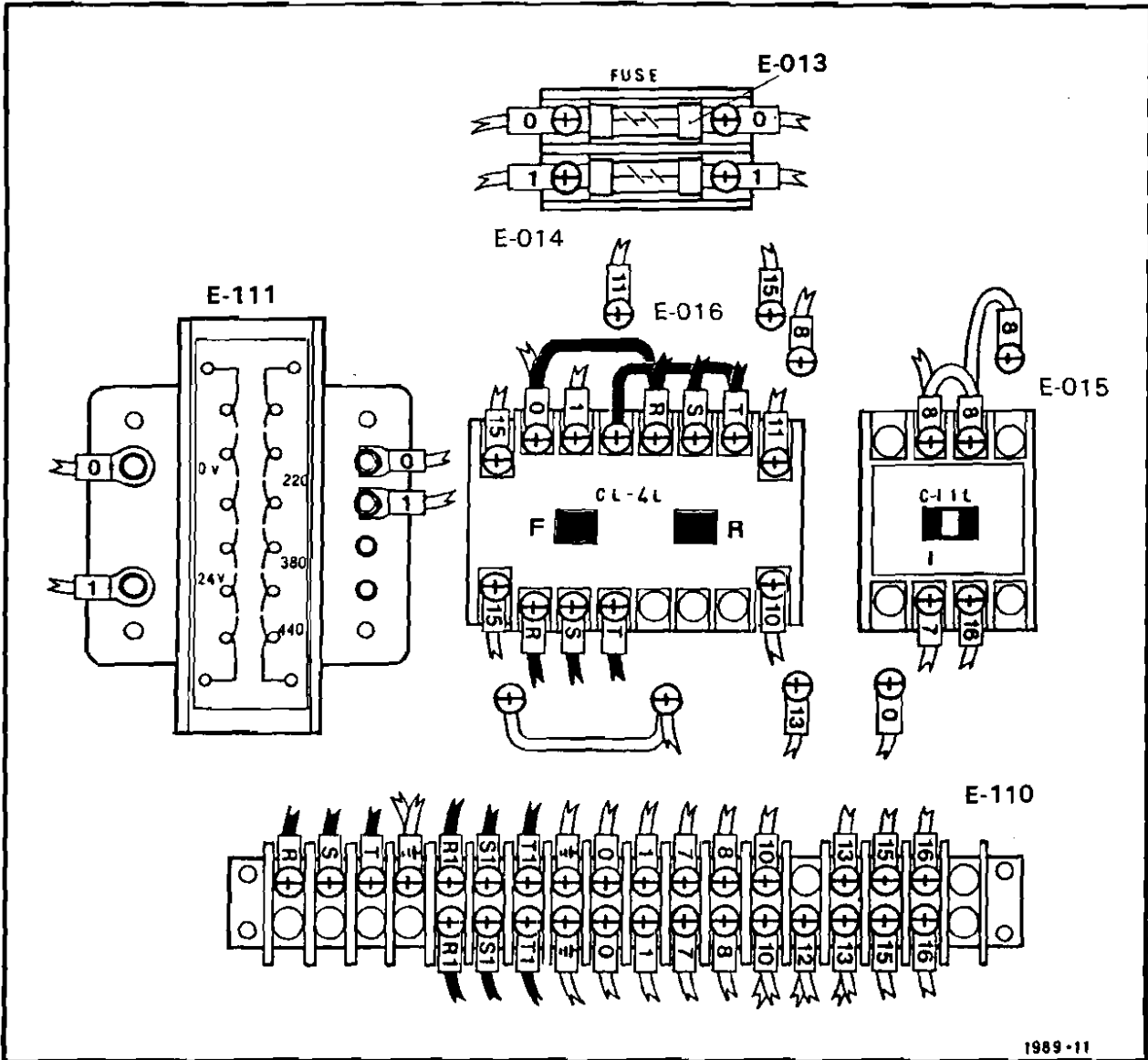
DEPTH STOP AND CONTROL BOX ASSEMBLY

..... 71-1601	ON-OFF SWITCH	1
..... 70-1730	LIMIT BLOCK	2
..... 71-1704	LIMIT SUPPORT	2
..... 71-1703	LIMIT GUIDE.....	1
..... 70-1611B.....	SCALE.....	1
..... 70-1612B.....	STROKE STOP BRACKET.....	1
..... 71-1706	TAPPING CONTROL NUT.....	1
..... 50-1610	DEPTH INDICATOR.....	1
..... 70-1606B	SCREW.....	1
..... 50-1606	MICRO-DIAL.....	1
..... 50-1615	SCREW SUPPORT	1
..... 70-1404B.....	SPRING.....	2
..... 70-1410B.....	SPRING PROTECTOR	2
..... 71-1609B.....	BRACKET	1
..... 50-1607	KNOB.....	1
..... 71-1701	CONTROL BOX	1
..... JDP-20VS-3CB.....	CONTROL BOX	1
..... E-001.....	POWER ON LIGHT	1
..... E-101.....	HIGH-LOW SWITCH	1
..... E-102.....	START BUTTON	1
..... E-103.....	DRILL-TAP SWITCH	1
..... E-104.....	RETURN SWITCH.....	1
..... E-106.....	EMERGENCY STOP SWITCH.....	1

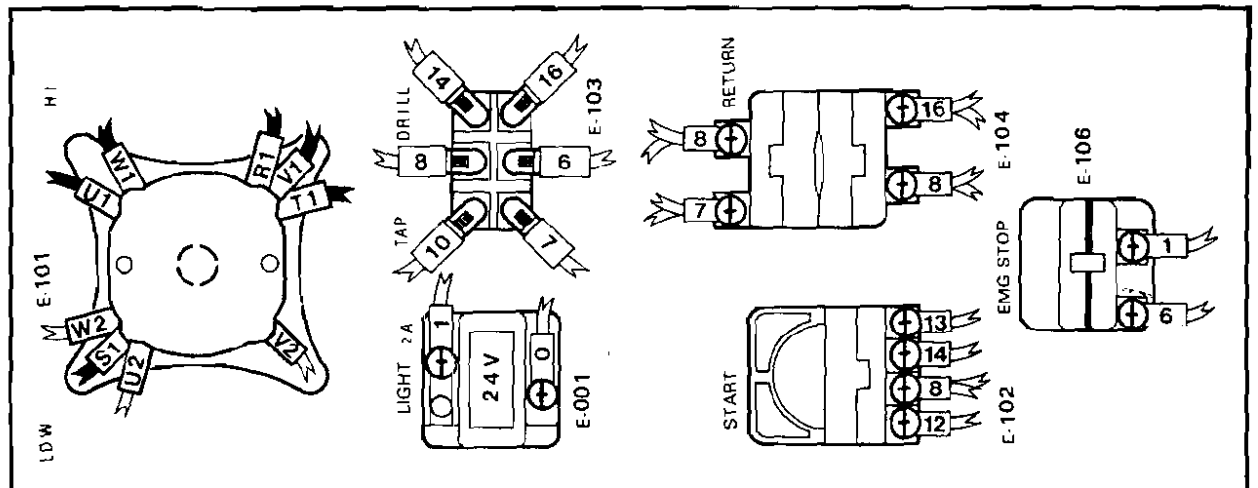
ELECTRICAL PANEL COMPONENTS

..... E-101.....	HIGH-LOW SWITCH	1
..... E-102.....	START BUTTON	1
..... E-103.....	DRILL-TAP SWITCH	1
..... E-104.....	RETURN SWITCH	1
..... E-106.....	EMERGENCY STOP SWITCH.....	1
..... E-013.....	FUSE (2 AMP)	1
..... E-014.....	FUSE SEAT	1
..... E-111.....	TRANSFORMER	1
..... E-016.....	MAGNETIC STARTER (CL-4L).....	1
..... E-015.....	MAGNETIC STARTER (C-11L).....	1
..... E-110.....	TERMINAL RELAY	1

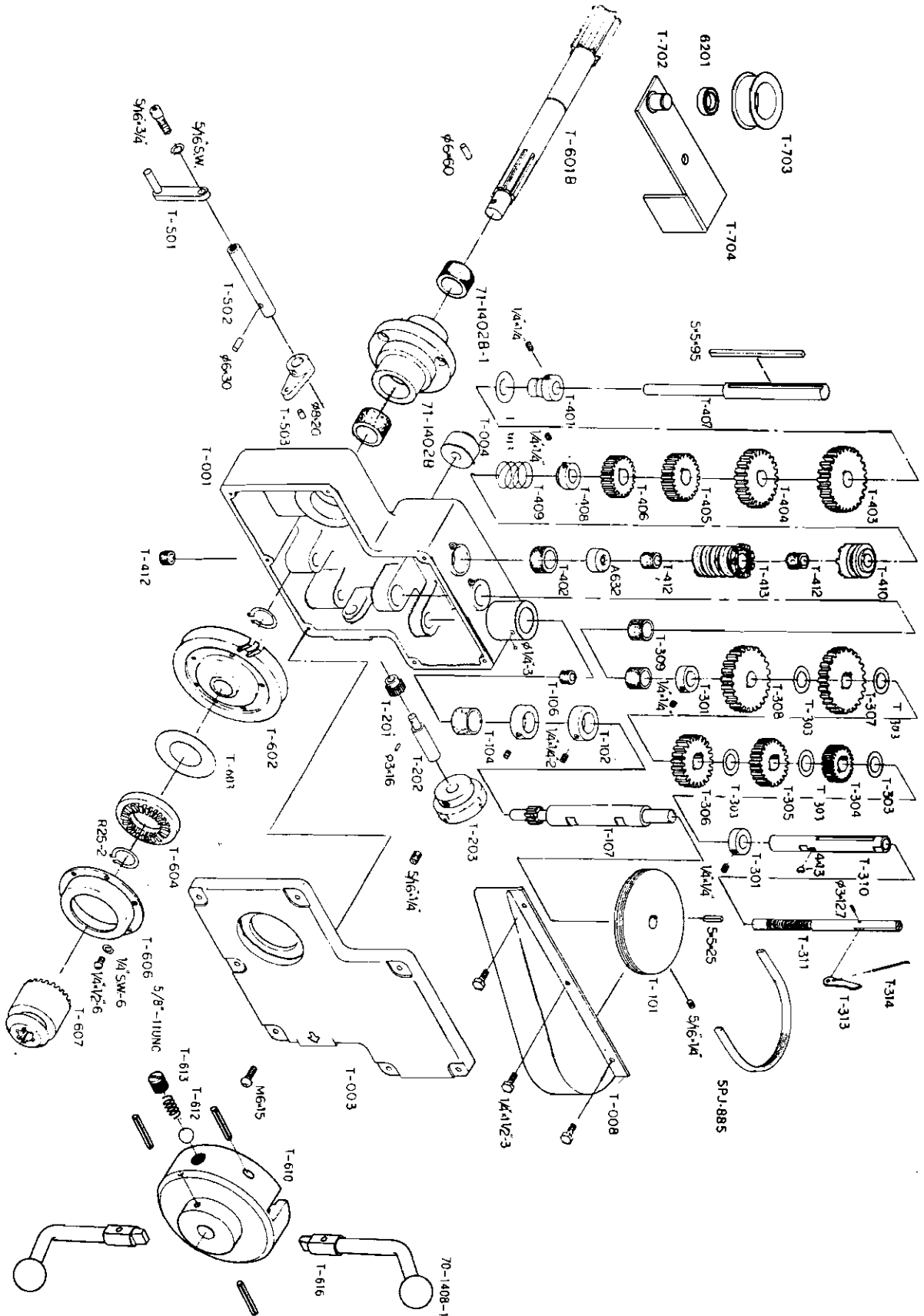
ELECTRICAL PANEL COMPONENTS-JDP-20VS-3 ONLY



1989-11



GEAR BOX ASSEMBLY



GEAR BOX ASSEMBLY

T-001	GEAR BOX	1
T-003	GEAR BOX COVER	1
T-004	COLLAR	1
T-008	BELT COVER	1
T-101	PULLEY	1
T-102	COLLAR	2
T-104	NEEDLE BEARING	2
T-106	BUSHING	1
T-107	SHAFT	1
T-201	GEAR	1
T-202	SHAFT	1
T-203	HANDLE WHEEL	1
T-301	COLLAR	2
T-303	SPACER	6
T-304	GEAR	1
T-305	GEAR	1
T-306	GEAR	1
T-307	GEAR	1
T-308	GEAR	1
T-309	BUSHING	2
T-310	DRIVE SHAFT	1
T-311	ADJUST SCREW	1
T-313	KEY	1
T-314	SPRING	1
T-401	COLLAR	1
T-402	BUSHING	1
T-403	GEAR	1
T-404	GEAR	1
T-405	GEAR	1
T-406	GEAR	1
T-407	SHAFT	1
T-408	SPRING COLLAR	1
T-409	SPRING	1
T-410	CLUTCH	1
T-412	BUSHING	4
T-413	WORM	1
T-501	CLUTCH LEVER	1
T-502	SHAFT	1
T-503	CLUTCH CRANK	1
T-602	WORM GEAR	1
T-603	PLATE	1
T-604	CLUTCH	1
T-606	CLUTCH COVER	1
T-607	CLUTCH	1
T-610	HANDLE HUB	1
T-612	CLUTCH SET	1
T-613	CLUTCH SET SPRING	1
T-616	HANDLE	2
T-701	TENSION BLOCK	1
T-702	BEARING SHAFT	1
T-703	TENSION WHEEL	1
T-704	TENSION PLATE	1