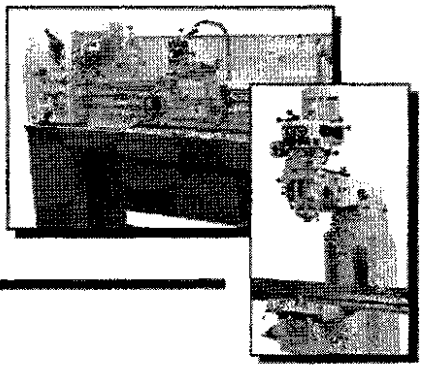
MACHINERY DIVISION
6465 18 MILE ROAD
STERLING HEIGHTS, MI 48314
PHONE:
(586) 731-3600 • 1-800-860-1740
FAX:
(586) 731-7464 • 1-800-862-1740



MODEL 28 VS/ST
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/MANFACTURER _____

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

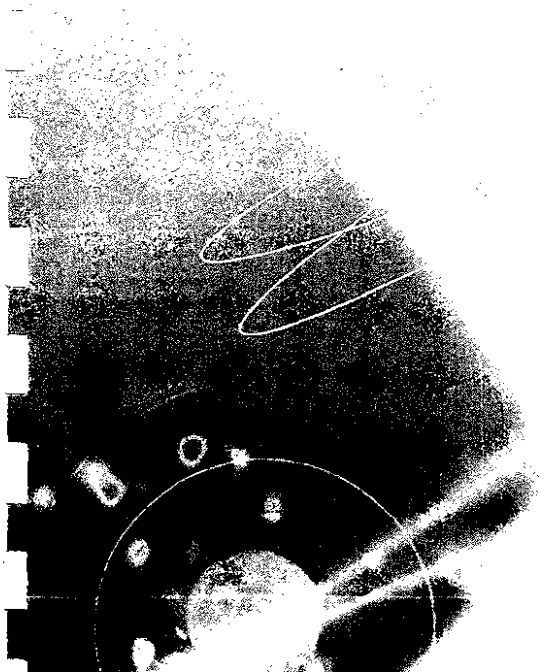
FAX PARTS REQUEST TO (800) 862-1740
E-MAIL PARTS REQUEST TO: machinery@kbctools.com

THANKS; KBC MACHINERY - MICHIGAN

KBC machinery

VARIABLE SPEED DRILLING

KBC-28VS



PRODUCT STANDARDS MANUAL

TABLE OF CONTENTS

TECHNICAL INFORMATION

Capacity	1⅝" (40 mm)
Drill to center of cirele	.28" DIA
Spindle nose	NO, 4 Morse taper
Spindle travel	7¼" (180 mm)
Column	6.3" (160 mm)
Quill	3" (75 mm)
T-slots	5/8" (16 mm)
Spindle to base	43.3" (1100mm)
Table travel L-R	10.63" (270mm)
Table travel F-R	8.66" (220mm)
Net weight	750kgs
Spindle rpm.	150–2000 for 60HZ 120–1600 for 50HZ
Packing	46.52" × 42.35" × 85.29"
Motor	2HP 3ph

CAUTION

1-Please do not use power down feed for tapping job.
2-Please disengage manual fine feed clutch by pulling the knob in left side-when you use power down feed.
3-Please disengage power down feed clutch when you use manual fine feed.
4-Please disengage both manual & power down feed clutch when you use manual down feed.

Fig. 1

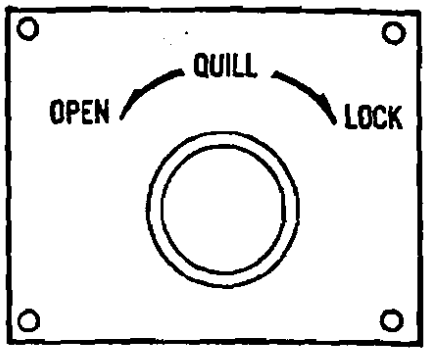
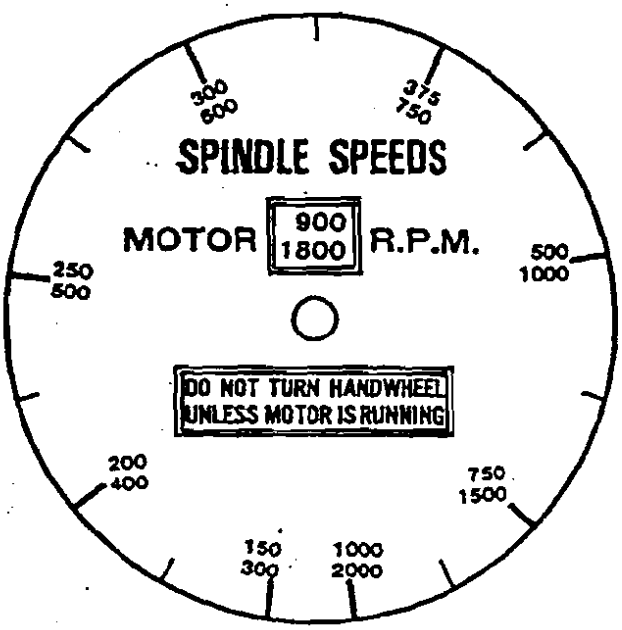


Fig. 2



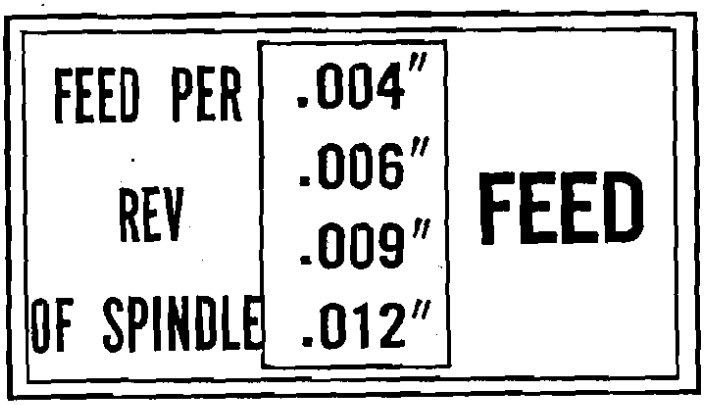


Fig. 3

ELECTRICAL LABELS

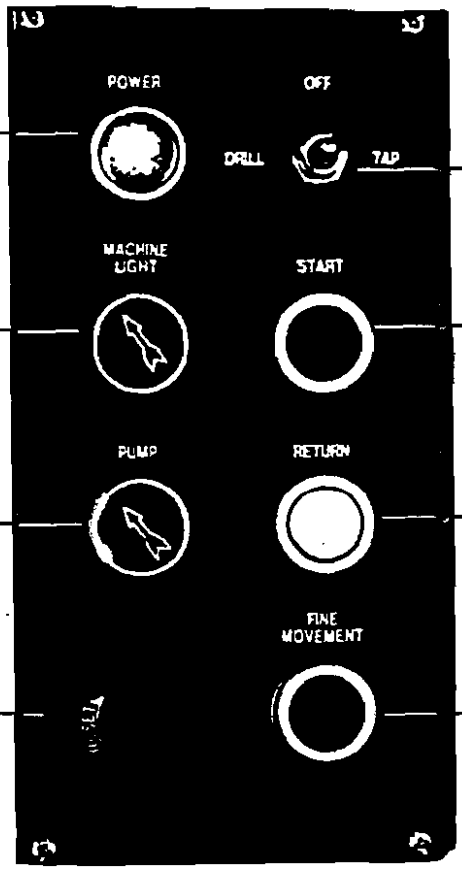
ELECTRICAL INFORMATION OF SPINDLE MOTOR

TYPE	ASEC
OUT PUT	2/1 HP
VOLT	220 V
HZ	60 HZ
AMPER	5.3/6.2
PHASE	3
KW	1.5/0.75
POLE	4/8 p
RPM	1720/860
AMB	40°C
CLASS	E

ELECTRICAL PARTS LIST

Part. No.	Specification	Location
LS	MJ 1307	Door limit switch
LS1	V–1A	FOR. For tapping
LS2	V–1A	REV. For tapping
L1	C–11L	Relay
L2	C–11L	Relay-pump
OL1	TH–10–6.5A	Over relay-spindle motor
OL–2	TH–10–2.1A	Over relay-pump
F1	Glass fuse 1A	
F2	"	
F3	"	
PB1	2A	Start bottom
PB2	1A1B	REV. bottom
PB3	1A1B	Movement bottom
SW1	6P	Select switch
SW2	1A	Machine light switch
SW3	1A	Pump switch
T	TR96x40	Transformer

ELECTRICAL INFORMATION AS FOLLOW



POWER INDICATING LAMP

DRILL-TAP SELECT SWITCH

MACHINE LIGHT SWITCH

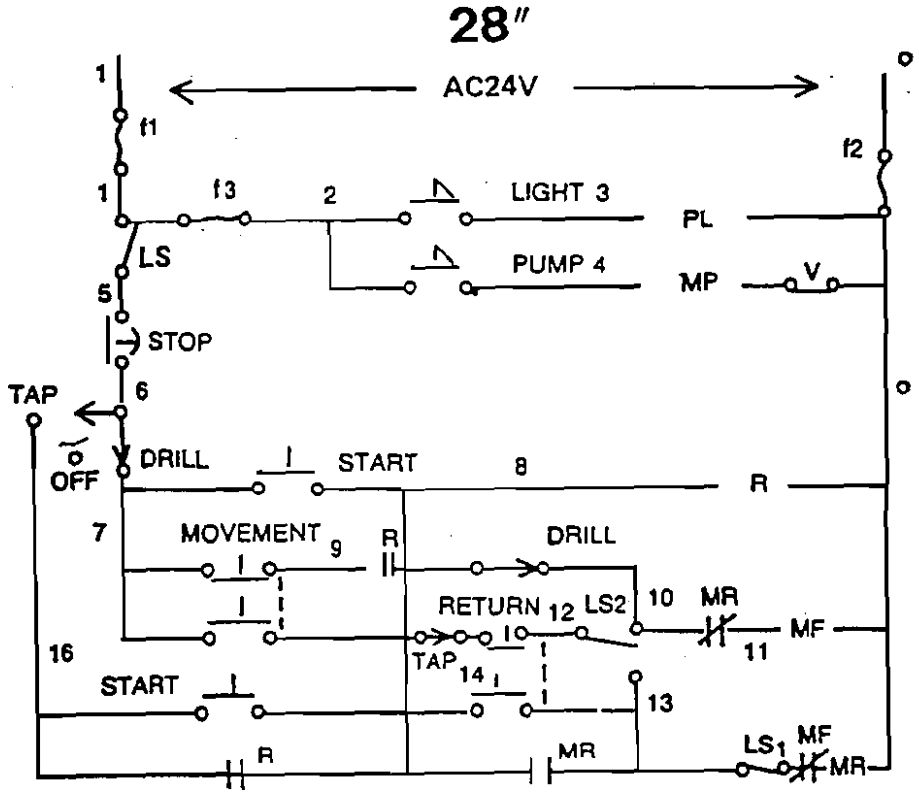
MOTOR START BUTTON

COOLANT PUMP SWITCH

RETURN BOTTON FOR TAPPING

EMERGENCY STOP BUTTON

FINE MOVEMENT (JOGGING)



WARNING LABEL

1. THIS MACHINE IS DESIGNED AND INTENDED USE BY PROPERLY TRAINED PERSONNEL ONLY.
2. DO NOT ATTEMPT TO USE THIS MACHINE UNTIL YOU ARE TOTALLY FAMILIAR WITH ITS OPERATION AND SAFETY FEATURES.
3. FOLLOW ALL RECOMMENDED SAFETY PRACTICES AND PROCEDURES THAT APPLY TO YOUR ACTIONS AND CONDUCT.
4. NOTIFY YOUR SUPERVISOR WHEN YOU OBSERVE ANY UNSAFE PRACTICE OR CONDITION.
5. SAFETY GLASS/FACE SHIELDS AND PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN AT ALL TIMES AS SPECIFIED BY YOUR EMPLOYER.
6. ANY EMPLOYEE WHO ADJUSTS OR INSTALLS SAFETY EQUIPMENT, DEVICES, GUARDS OR SHIELDS SHOULD DO SO AS INSTRUCTED BY THE EMPLOYER.
7. OPERATORS, SET-UP OPERATORS, HELPERS OR SET-UP PERSONNEL NOT ALTER, REMOVE OR DISABLE ANY SAFETY EQUIPMENT.
8. IT IS THE RESPONSIBILITY OF THE OPERATOR , SET-UP OPERATOR OR SET-UP PERSONNEL, AS DESIGNATED BY THE EMPLOYER, TO CHECK THE SET-UP DURING EACH SHIFT TO ENSURE FREQUENT CHECKING.
9. OPERATORS SHOULD NOT WEAR CLOTHING, JEWELRY OR UNRESTRAINED HAIR STYLES THAT WILL BE
10. OPERATORS MUST MAINTAIN AN ORDERLY WORK AREA. PARTICULAR ATTENTION SHOULD BE GIVEN TO THE STORAGE OF TOOLS OR PARTS THAT COULD BE DISLODGED AND FALL OR ROLL INTO THE PATH OF THE CUTTER.
11. DISCONNECT MACHINE FROM POWER SOURCE BEFORE PERFORMING ANY MAINTENANCE, OR WHEN

12. DO NOT PERFORM ANY SET-UP WORK WHILE MACHINE IS RUNNING.

28" VS DRILL PRESS OPERATING INSTRUCTIONS:

LEVELING THE DRILL PRESS
DRILL PRESS SHOULD BE LEVEL AND REST SOLIDLY ON FLOOR; PLACE SHIMS UNDERNEATH THE THREE FOUNDATION HOLES TO LEVEL THE DRILL PRESS. EQUAL PRESURE BE APPLIED TO FOUNDATION BOLTS TO PREVENT DESTORTING THE BASE.

RAISING TABLE TO OPERATING POSITION WITH LIFT MECHANISM
1-LOOSEN 2-TABLE LOCK.
2-USE TABLE LIFT CRANK, RAISE TABLE TO THE POSITION REQUIRED
3-LOCK TABLE WITH HANDLE SECURELY.

LUBRICATION
1-SPINDLE PULLEY DRIVE-USE A LIGHT GREASE ONCE A WEEK ON SPINDLE SPLINES.
2-KEEP QUILL AND COLUMN COVERED WITH LIGHT FILM OF OIL EACH DAY.
3-LUBRICATE LIFT LOCK REGULARLY WITH "S.A.E." NO.20 OIL, BEFORE OILING, CLEAN RACK WITH KILOSENE.
4-TABLE LIFT MECHANISM GREASE-ONCE PER SIX MONTHS, CLEAN AND PACK WITH GEAR GREASE.
5-X.Y. TABLE-LUBRICATE WITH "S.A.E." NO.20 OIL EACH DAY.

LUBRICATING VARIABLE DRIVE
1-OIL HOLE IN SPEED CONTROL FORK (70-1501)- ONCE PER 2-WEEKS WITH "S.A.E." NO. 20 OIL.
2-OIL UPPER END OF COUNTER SHAFT SPINDLE (70-1015) AND PUSH ROD (91-1507) OCCASIONALLY WITH "S.A.E." NO. 20 OIL.
3-CLEAN AND GREASE CAM (70-1516) IN HANDLE WHEEL (70-1512) ONCE PER SIX MONTHS.

CHANGING SPINDLE SPEEDS
WHEN CHANGING SPEEDS ON VARIABLE DRIVE, PLEASE TURN HANDWHEEL CONTROL TO THE SPEED YOU DESIRE.
CAUTION : DO NOT TURN HANDWHEEL UNLESS MOTOR IS TURNING.

REPLACING BELTS
1-REMOVE BELT GUARD.
2-REMOVE TWO SCREWS AND LOOSEN NUT AND REMOVE GUARD, HANDWHEEL AND TUBE ASSEMBLY.
3-REMOVE VARIABLE SPEED BELT.
4-REPLACE BELT AND REASSEMBLE.

SWITCH BOARD OPERATING INSTRUCTION

1–Connect power to the bottom of electric box and power source indicating light on.

2–Turn Low/Hi switch to low or hi position as you desired.

3–Turn select switch to drill or tapping as desired.

4–Push "Start" button for drill or Tapping.

5–Push "Return" button to reverse spindle should the tap bind or hang up during the tapping cycle.

6–Motor will not automatically restart when power is restored except you push "Start" button again.

CAUTION: Push "Reset" button always when changing tooling or in case of immergency stop.

AUTOMATICALLY TAP REVERSING SWITCH

When mode selector is set for tapping, spindle reverse itself automatically when pre-selected depth has been reached. Then, when spindle is fully retracted, the cycle completion switch automatically returns the spindle to primary tapping rotation ready for the next cycle.

SPINDLE BELTS

1–Remove belt guard (74–1014)

2–Remove two scews, loosen nut and remove guard, handwheel tube assembly.

3–Remove VS belt.

4–Loosen 2 scews in countershaft housing (70–1018) slide housing towards front of head.

5–Remove spindle belts.

6–Replace belts and reassemble.

ADJUSTING DEPTH SCALE STOP

When setting drill or tapping scale depth, turning scale gauge leader scew nut at below scale bracket to the position desired, then pull down feed handle to the preset depth and slide downpower down feed depth stop to touch the clutch lever (T501) when power down feed is used.

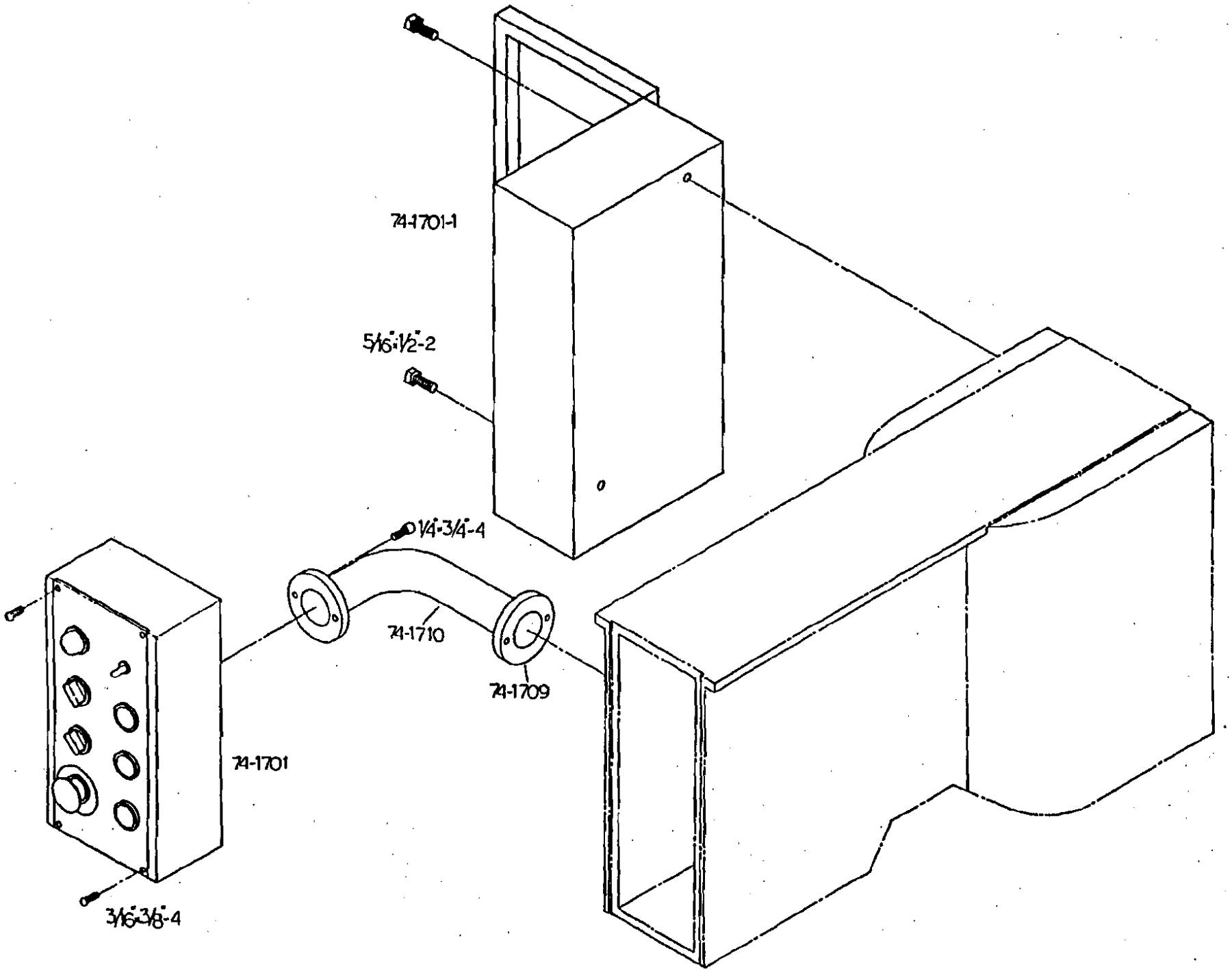
DOWN FEED OPERATING INSTRUCTION

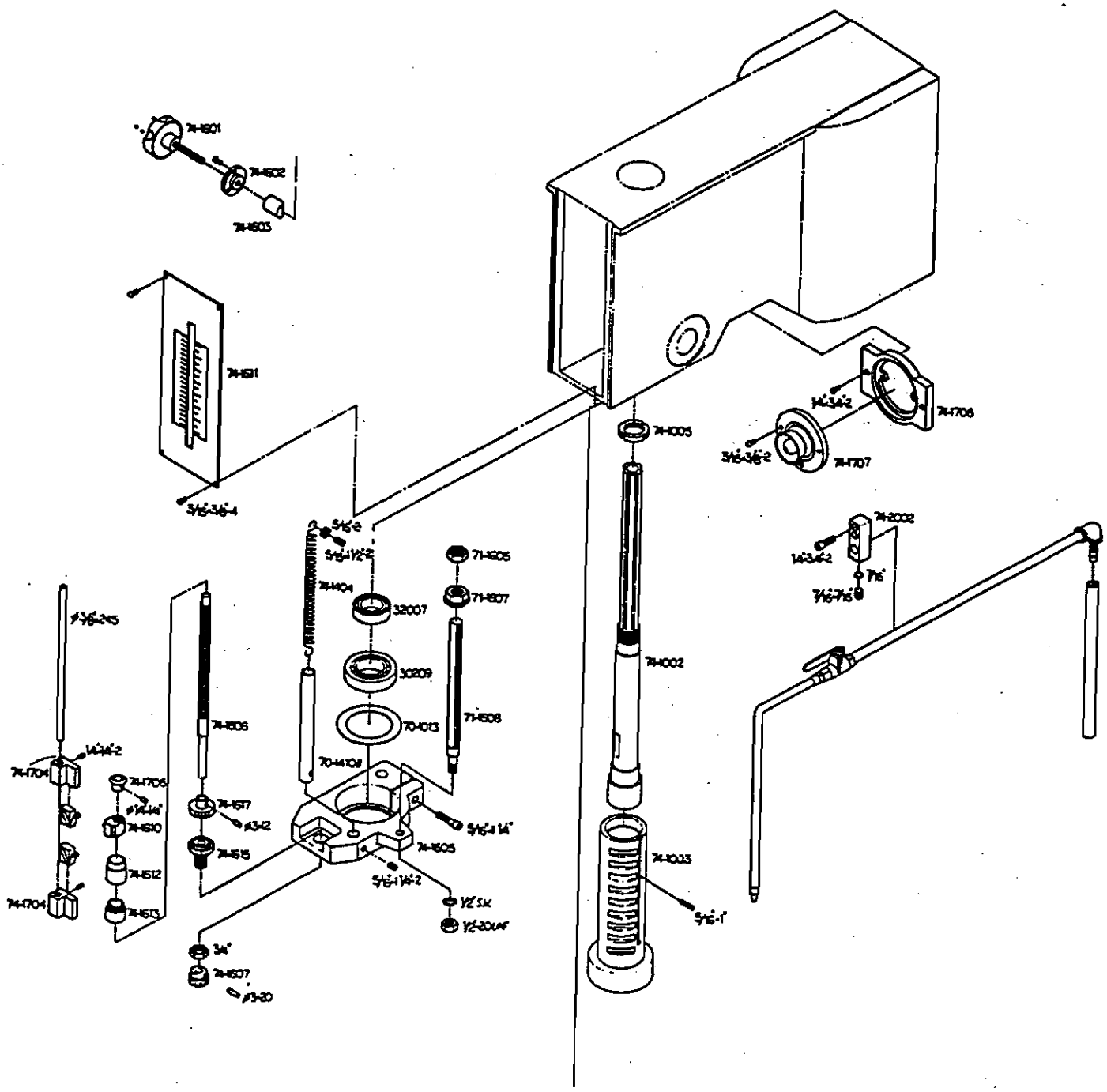
1–When power down feed is used, disengage manual fine feed clutch by pulling knob in left side and engage power down feed clutch in right side.

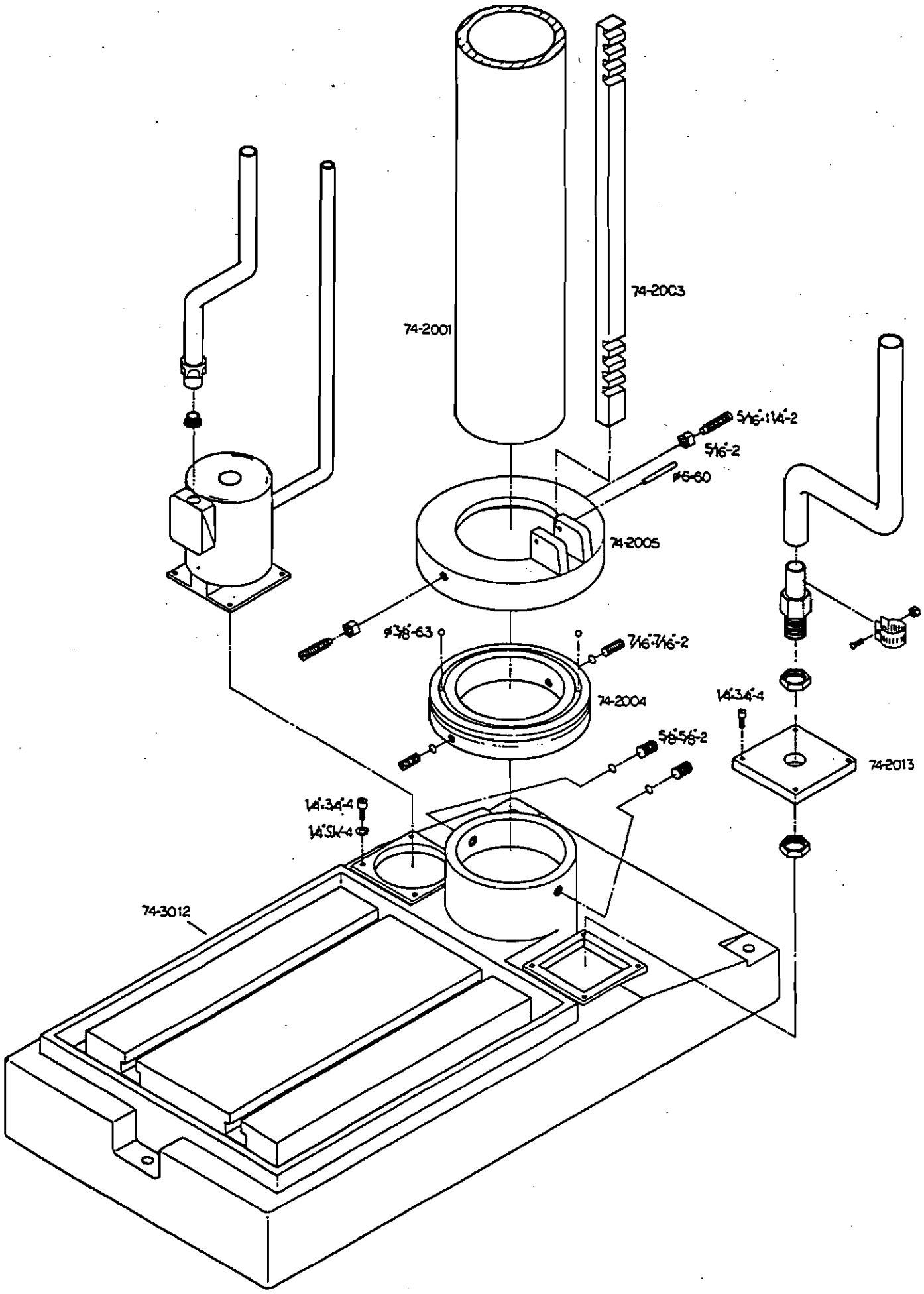
2–When manual fine feed is used, disengage power down feed clutch in right side and engage manual fine feed clutch by pushing knob in left side.

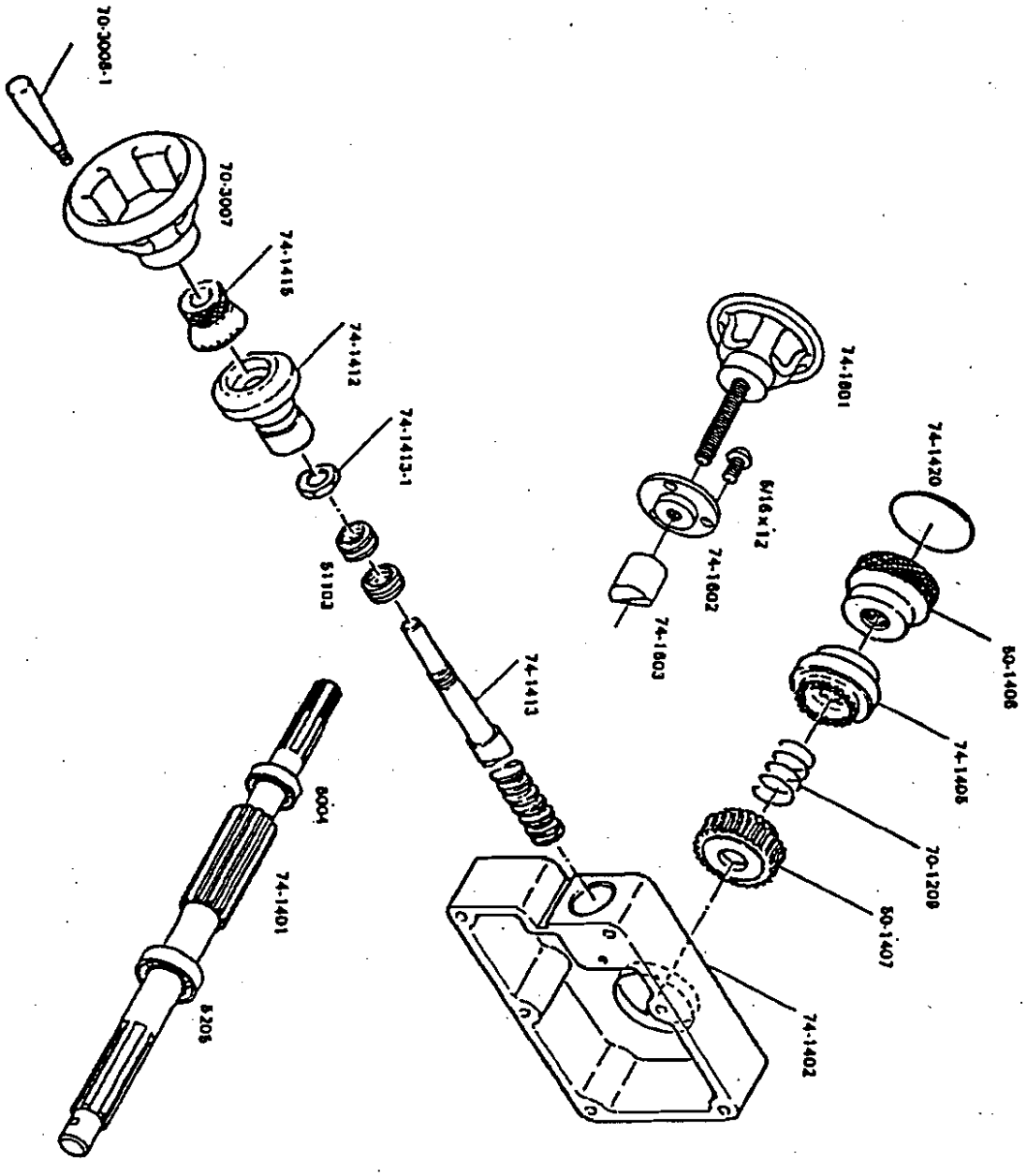
GENERAL SAFETY INSTRUCTIONS :

1.KEEP GUARDS IN PLACE -
SAFETY GUARDS MUST BE KEPT IN PLACE AND IN WORKING ORDER.
2.REMOVE ADJUSTING KEYS AND WRENCHES -
BEFORE TURNING ON MACHINE. CHECK TO SEE
3. REDUCE THE RISK OF UNINTENTIONAL STARTING-
MAKE SURE SWITCH IS IN THE "OFF" POSITION BEFO PLUGGING IN THE TOOL.
4.DO NOT FORCE TOOLS -
THEY WILL DO A JOB BETTER AND SAFER AT THE RATE FOR WHICH T WERE DESIGNED.
5. USE RIGHT TOOLS-
DO NOT FORCE A TOOL OR AN ATTACHMENT TO DO A JOB FOR WHIC NOT DESIGNED.
6. SECURE WORK -
USE CLAMPS OR A VISE TO HOLD WORK WHEN PRACTICAL. IT'S SAFER THAN USING YOUR HAND AND IT FREES BOTH HANDS TO OPERATE TOOLS.
7.MAINTAIN TOOLS WITH CARE -
KEEP TOOLS SHARP AND CLEAN FOR THE BEST AND SAFEST PERFORMANCE. FOLLOW INSTRUCTIONS FOR LUBRICATING AND CHANGING ACCESSORIES.
8. DISCONNECT TOOLS FROM POWER -
BEFORE SERVICING, OR WHEN CHANGING ACCESSORIES SUCH AS BITS, BLADES, CUTTERS, ETC. DISCONNECT FROM POWER.
9.USE RECOMMENDED ACCESSORIES -
CONSULT THE OWNER'S MANUAL FOR RECOMMENDED ACCESSORIES. THE USE OF IMPROPER ACCESSORIES MAY CAUSE RISK OF INJURIES
10.CHECK DAMAGED PARTS -
CHECK FOR ALIGNMENT OF MOVING PARTS, BINDING OF MOVING PARTS, BREAKAGE OF PARTS, MOUNTING, AND ANY OTHER CONDITIONS THAT MAY AFFECT THE TOOLS OPERATION. A GUARD OR OTHER PART THAT IS DAMAGED SHOULD BE PROPERLY REPAIRED OR REPLACED.
11.TURN POWER OFF. NEVER LEAVE TOOL RUNNING UNATTENDED -
DO NOT LEAVE TOOL UNTIL IT COMES TO A COMPLETE STOP.
12. KEEP WORK AREA CLEAN -
CLUTTERED AREAS AND BENCHES INVITE ACCIDENTS.
13. DO NOT USE IN DANGEROUS ENVIRONMENT -
DO NOT USE POWER TOOLS IN DAMP OR WET LOCATIONS, OR EXPOSE THEM TO RAIN. KEEP WORK AREA WELL LIGHTED.
14.KEEP CHILDREN AWAY -
ALL VISITORS SHOULD BE KEPT AT A SAFE DISTANCE FROM THE WORK AREA.
15.MAKE WORKSHOP CHILD PROOF -
USE PADLOCKS. MASTER SWITCHES, AND REMOVE STARTER KEYS.
16. WEAR PROPER APPAREL -
LOOSE CLOTHING, GLOVES, NECKTIES, RINGS, BRACELETS OR OTHER JEWELRY MAY GET CAUGHT IN MOVING PARTS. NON-SLIP FOOT WEAR IS RECOMMENDED. WEAR PROTECTIVE HAIR COVERING TO CONTAIN LONG HAIR.
17.ALWAYS USE SAFETY GLASSES AND DUST MASK -
USE FACE OR DUST MASK IF CUTTING OPERATION IS DUSTY. EVERY DAY EYEGLASSES ONLY HAVE IMPACT RESISTANT LENSES. THEY "ARE NOT" SAFETY GLASSES.
18. DO NOT OVERREACH -
KEEP PROPER FOOTING AND BALANCE AT ALL TIMES.
19. NEVER STAND ON TOOL -
SERIOUS INJURIES COULD OCCUR IF A MOVING PART IS UNINTENTIONALLY CONTACTED.


74-1701-1
5/16"-1½"-2
¼"-3/4"-4
74-1710
74-1709
74-1701
3/16"-3/8"-4

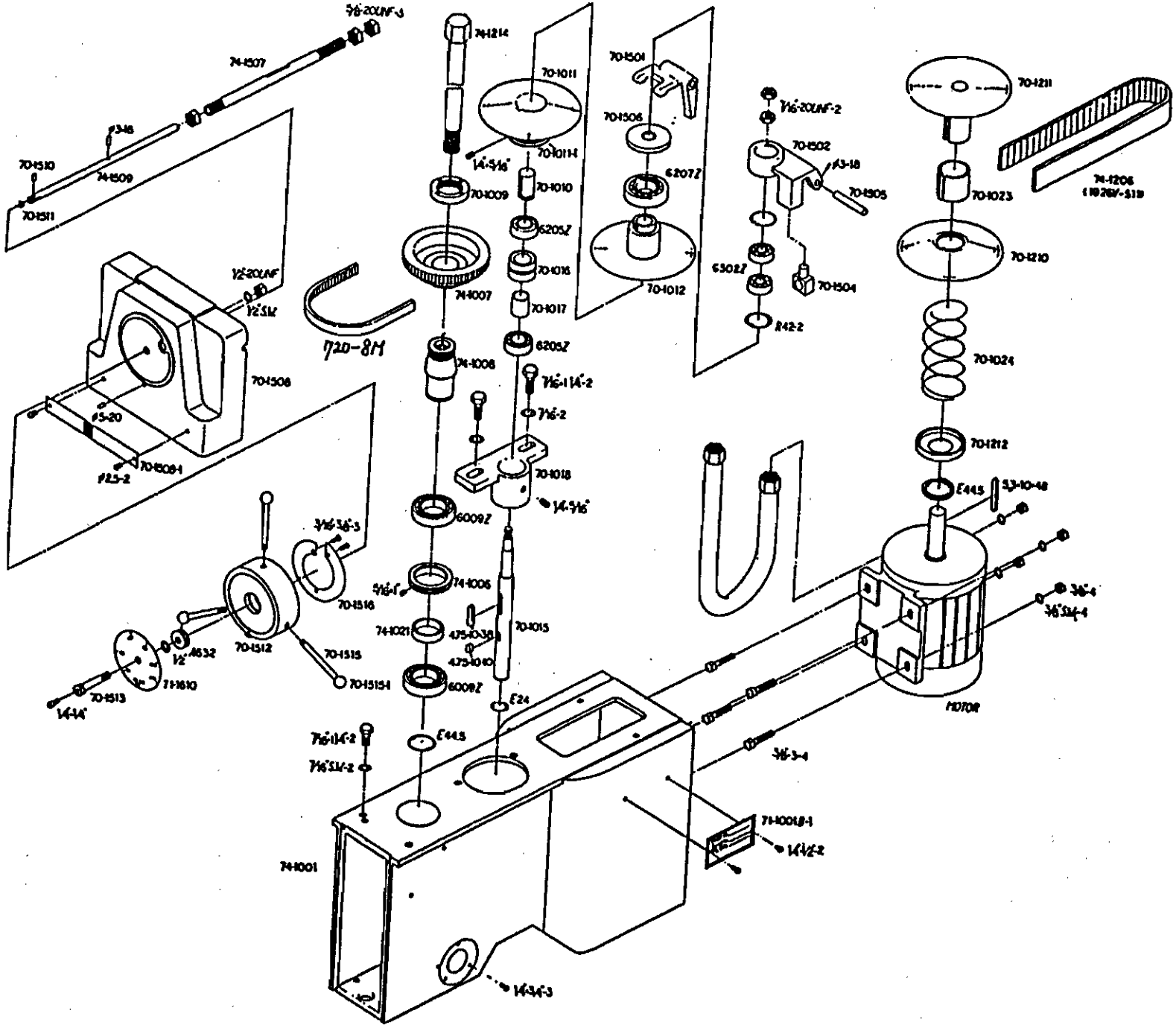

74-1601
74-1602
74-1603
74-1611
5/16-3/8-4
74-1005
74-1708
1/4-3/4-2
3/16-3/8-2
74-1707
74-2002
1/4-3/4-2
7/16
7/16-7/16
5/16-2
5/16-1 1/2-2
74-1604
71-1605
71-1607
32007
30209
70-1013
71-1608
70-1410B
74-1002
74-1606
74-1607
74-1610
74-1612
74-1613
74-1615
74-1704
74-1705
74-1605
5/16-1 1/4
5/16-1 1/4-2
1/2 SK
1/2-20UNF
3/4
74-1607
74-1033
5/16-1


74-2003
74-2001
5/16-1 1/4-2
5/16-2
ø6-60
74-2005
ø3/8-63
7/16-7/16-2
74-2004
5/8-5/8-2
1/4-3/4-4
1/4-3/4-4
1/4-SW-4
74-2013
74-3012



FINE FEED ASSEMBLY

70-3008-1	HANDLE	1
70-3007	HAND WHEEL	1
74-1415	DIAL	1
74-1412	COLLAR	1
74-1413-1	NUT	2
BB-51103	THRUST BEARING	2
74-1413	WORM	1
74-1402	WORM GEAR CASE	1
74-1420	PLATE	1
50-1406	NUT	1
74-1405	CLUTCH	1
70-1209	SPRING	1
50-1407	WORM GEAR	1
74-1601	LOCK HAND WHEEL	1
74-1602	NUT	1
74-1603	CAM	1
74-1401	PINION	1
BB-6004	BALL BEARING	1
BB-6205	BALL BEARING	1


5/8-20UNF-3
74-1507
3/8
70-1510
74-1509
70-1511
1/2-20UNF
1/2 SLK
70-1508
Ø5-20
Ø2.5-2
70-1508-1
720-8M
74-1214
70-1011
70-1011-1
14-5/16"
70-1009
70-1010
6205Z
70-1016
70-1017
74-1007
6205Z
74-1008
7/16-1 1/4-2
7/16-2
70-1018
14-5/16"
6009Z
3/16-3/8-3
5/16-F
74-1006
70-1516
74-1021
475-10-38
70-1015
475-1040
1/2"
A532
70-1512
70-1515
70-1515-1
71-1610
70-1513
14-14"
6009Z
E24
7/16-1 1/4-2
E445
7/16 SLK-2
74-1001
14-3/4-3
70-1501
70-1506
62072
70-1012
7/16-20UNF-2
70-1502
Ø3-18
70-1505
63022
70-1504
842-2
70-1211
70-1023
74-1206
70-1210
70-1024
70-1212
E445
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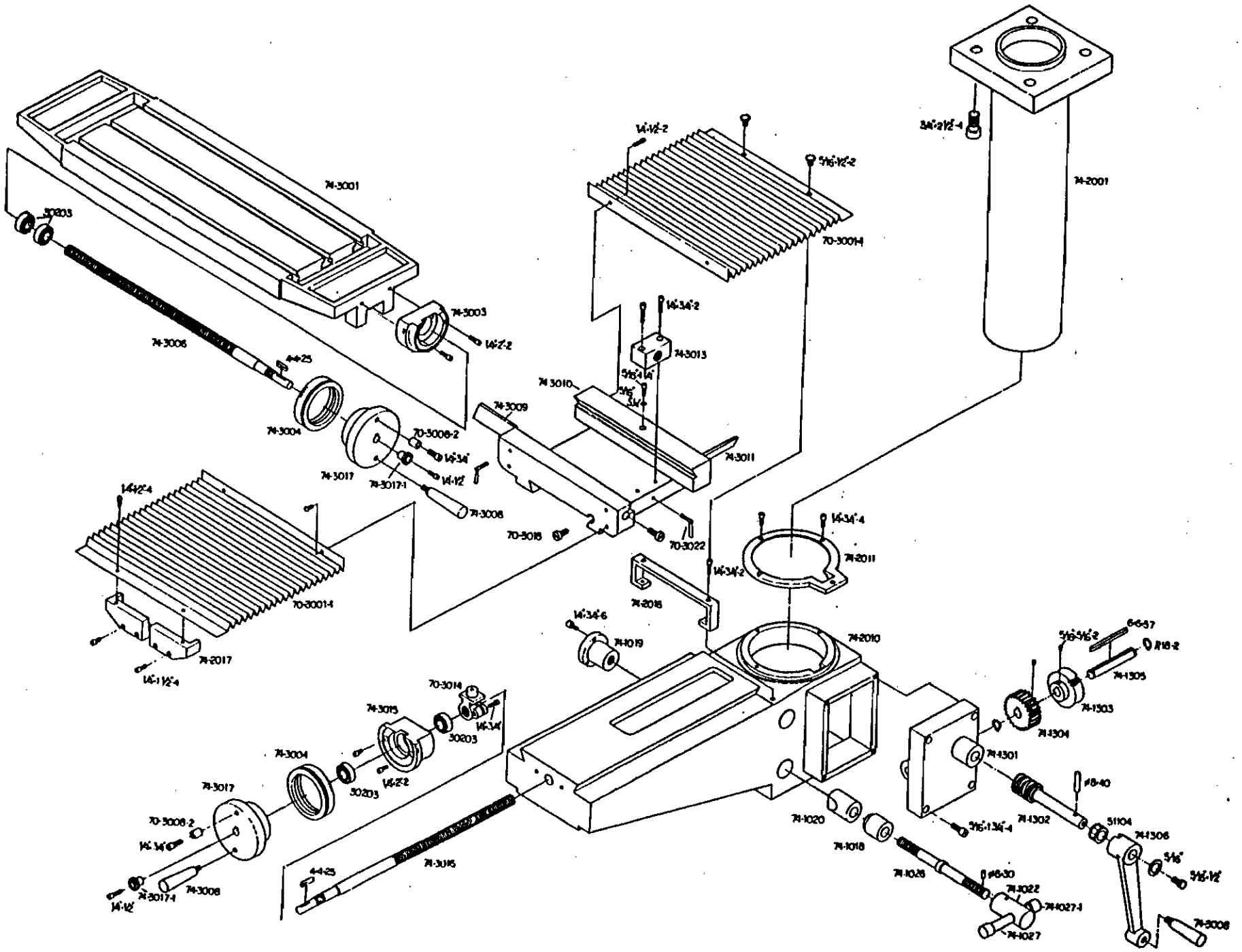
3/8-4
3/8 SLK-4
MOTOR
3/8-3-4
71-1001B-1
14-1/2-2


74-3001
30203
74-3006
74-3003
14-12-2
4-4-25
74-3004
74-3017
70-3006-2
14-34
14-12
74-3017-1
74-3008
14-12-4
70-3001-4
74-2017
14-1 1/2-4
74-3009
74-3010
74-3013
14-34-2
5/16-14
5/16
3/4
74-3011
70-3018
70-3022
14-12-2
5/16-12-2
70-3001-4
74-2001
3/4-2 1/2-4
14-34-4
74-2011
14-34-2
74-2018
14-34-6
74-1019
74-2010
70-3014
74-3015
14-34
30203
74-3004
14-12-2
30203
74-3017
70-3006-2
14-34
74-3008
14-12
74-3017-1
4-4-25
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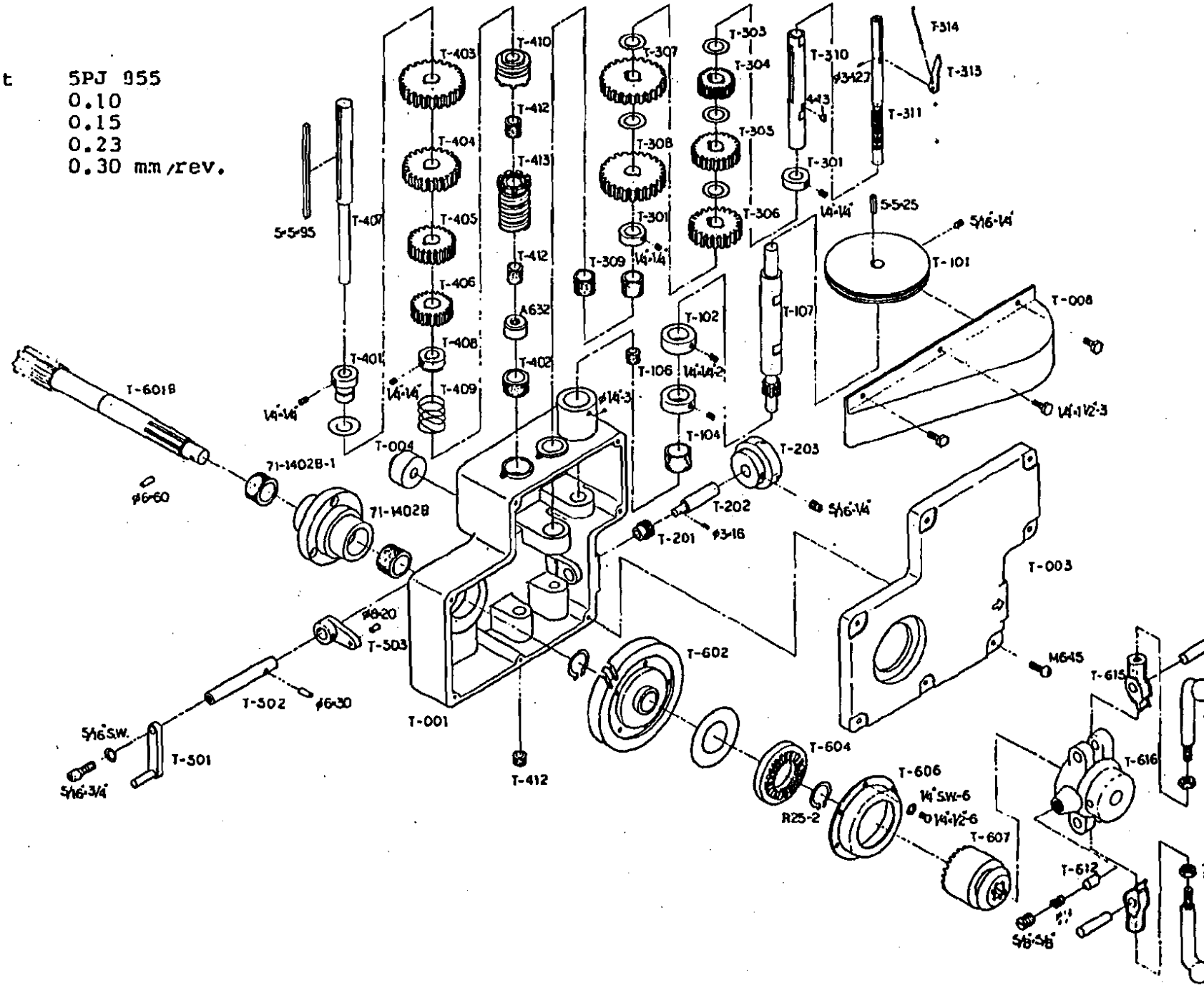
74-1020
74-1018
74-1028
#8-30
74-1022
74-10027-1
74-1027
5/16-13 3/4-4
74-1301
74-1304
74-1303
5/16-5/16-2
6-6-57
3/16-2
74-1305
#8-40
74-1302
51104
74-1306
5/16
5/16-12
74-3008

Drive belt 5PJ 955
Feeding 0.10
0.15
0.23
0.30 mm/rev.



PARTS LIST

74–1704	2	Limit support
74–1706	1	Upper limit driver
74–1610	1	Depth indicator
74–1612	1	Stroke control block
74–1606	1	Leader screw
74–1617	1	Micro-dial
74–1615	1	Screw support
74–1607	1	Adjusting knob
74–1605	1	Depth stop bracket
71–1605	1	Nut
71–1607	1	Depth control nut
71–1608	1	Leader screw
701410B	2	Spring protector
74–1404	2	Spring
74–1611	1	Plate
74–1005	2	Bearing nut
74–1002	1	Spindle
74–1003	1	Quill
74–1707	1	Machine light
74–1708	1	Machine light supporter
74–2002	1	Pipe support
74–3012	1	Base
74–2004	1	Column collar
74–2005	1	Bearing ring
74–2003	1	Rack gear
74–2001	1	Column
74–2013	1	Plate

PARTS LIST

70–1010	1	Spindle pulley sleeve
70–1011	1	Lower variable pulley
70–1012	1	Upper variable pulley
70–1015	1	Counter shaft sleeve
70–1017	1	Sleeve
70–1018	1	Counter shaft bearing housing
70–1023	1	Motor pulley sleeve
70–1024	1	Pulley sleeve
70–1026	1	Variable speed belt
70–1210	1	Motor pulley-upper
70–1211	1	Motor pulley-lower
70–1212	1	Spring retainer
70–1501	1	Speed control fork
70–1502		Speed control support
70–1503	1	Bearing cup
70–1504	1	Support swivel
70–1505	1	Hinge pin
70–1506	1	Cam ring
74–1214	1	Draw bar
70–1009	1	Nut
70–1007	1	Pulley
74–1007	1	Pulley
74–1008	1	Spindle driver
74–1006	1	Bearing spacer sleeve
74–1021	1	Bearing inner sleeve
74–1508	1	Spindle cover
70–1513	1	Bolt
71–1610	1	Speed chart
70–1512	1	Hub
70–1515	3	Stud
74–1507	1	Push rod tube
74–1509	1	Push rod
70–1510	1	Pin
70–1511	1	Roller

PARTS LIST

74–1019	2	Column lock
74–1020	2	Column lock
74–1022	2	Lock shaft handle
7401026	2	Lock screw
74–1301	1	Gear box
74–1302	1	Gear shaft
74–1303	1	Worm gear
74–1304	1	Gear
74–1305	1	Worm gear shaft
74–1306	1	Lift crank
74–2001	1	Column
74–2004	1	Column collar
74–2005	1	Bearing ring
74–2010	1	knee
74–3003	1	Gear rack
74–3008	1	Handle
74–3012	1	Base
74–2010	1	Knee
74–3001	1	Table
74–3002	1	Bearing support
74–3004	2	Dial
74–3006	1	Leader screw
74–3008	2	Handle
74–3010	1	Sadle
74–3011	1	Gib
74–3013	1	Leader screw
74–3017	2	Hand wheel
70–3005	4	Adjusting nut
70–3008–2	2	Stop handle
70–3014	1	Leader screw nut
70–3018	1	Adjusting screw
70–3022	3	Stop screw

PARTS LIST

T–001	1	Gear box
T–003	1	Gear box cover
T–004	1	Collar
T–008	1	Belt cover
T–101	1	Pulley
T–102	1	Collar
T–104	1	Needle bearing
T–106	1	Cop. bushing
T–107	1	Shaft
T–201	1	Gear
T–202	1	Shaft
T–203	1	Handle wheel
T–301	1	Collar
T–303	6	Spacer
T–304	1	Gear
T–305	1	Gear
T–306	1	Gear
T–307	1	Gear
T–308	1	Gear
T–309	1	Cop. busher
T–310	1	Drive shaft
T–311	1	Adjust screw
T–313	1	Key
T–314	1	Spring
T–410	1	Collar
T–402	1	Cop. bushing
T–403	1	Gear
T–404	1	Gear
T–405	1	Gear
T–406	1	Gear
T–407	1	Shaft
T–408	1	Spring collar
T–409	1	Spring
T–410	1	Clutch
T–412	4	Cop. bushing
T–413	1	Worm
T–501	1	
T–502	1	Shaft
T–503	1	Clutch crank
T–601	1	Pinion
T–602	1	Worm gear
T–604	1	Clutch
T–606	1	Clutch cover
T–607	1	Clutch
T–610	1	Handle hub
T–615		Clutch forx
T–616	2	Handles
T–612	1	Clutch set
70–1408–1	2	Tub