

Partner 2B

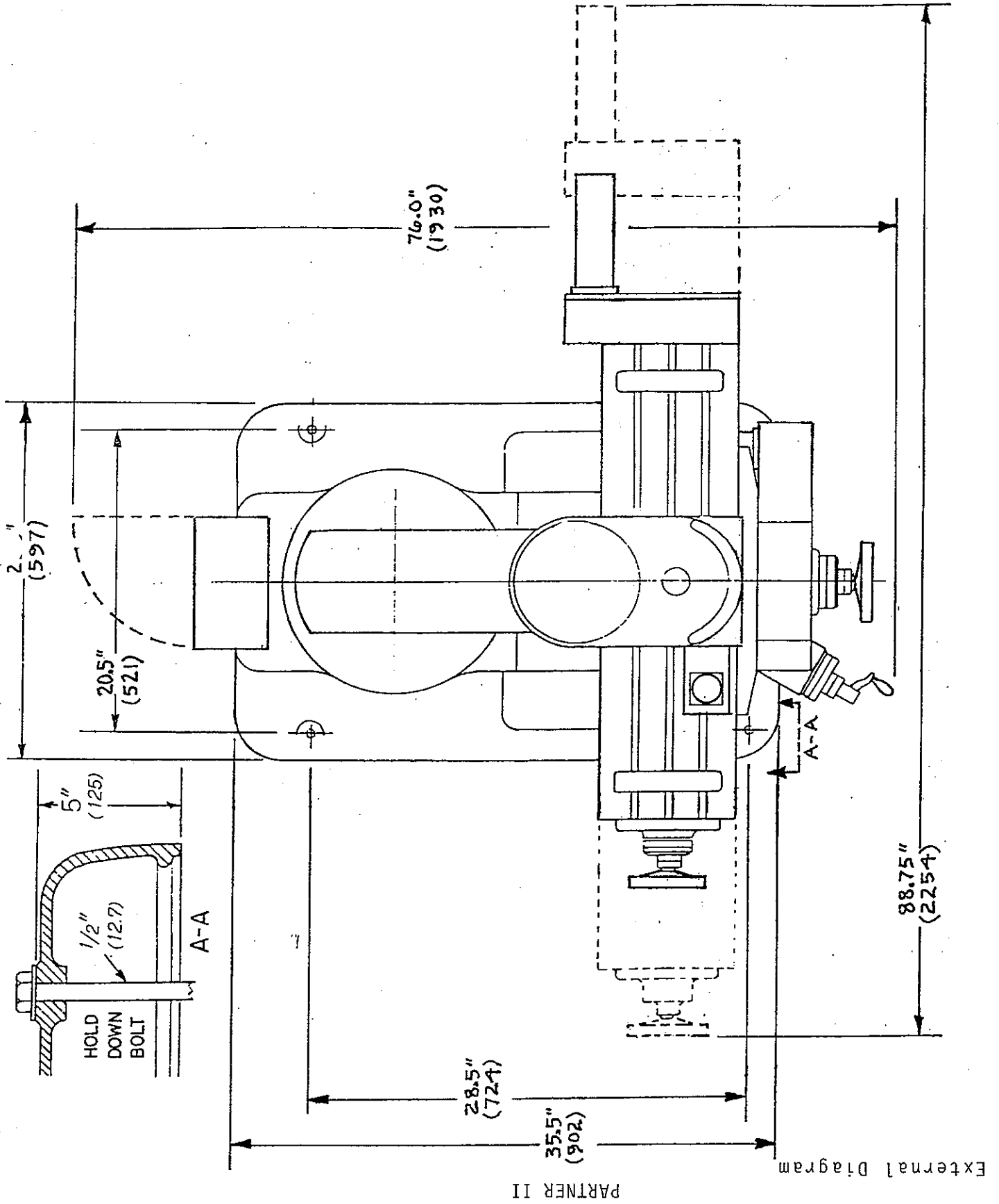
Electrical and Mechanical Manual

7

Milltronics Manufacturing Company

1400 Mill Lane
Waconia, MN USA 55387

952-442-1410



LIFTING AND PLACING ON SOLID FOUNDATION

The machine should be lifted by using the I-bolt on top of the machine.

The column and base are a one-piece casting. When setting the machine on a concrete foundation, it is advisable to use a little grout (thin mortar) to take care of any unevenness in the concrete as well as to provide a solid foundation at all points.

When setting the machine on a floor that is uneven, shims should be used to correct this condition. See Figure 1 for installation layout.

NOTE

IT IS RECOMMENDED THAT THE MACHINE BE SECURED TO THE FLOOR TO PREVENT MOVEMENT OR TIPPING DUE TO OFF-CENTER LOADING.

Before securing machine to floor (i.e. tightening hold down bolts), make certain all four corners are making contact with the floor or shims, after machine is leveled. If this is not done, it is possible to twist the column and put a bind in the ways.

LEVELING MACHINE:

Set the machine by levelling the work table lengthwise and crosswise with a precision level.

CONNECTING POWER SUPPLY:

To connect the power have a qualified electrician proceed as follows:

1. Check motor wiring to ensure it is compatible with power supply.
2. Connect machine wiring to power supply making sure connection complies to all local electrical codes.
3. Check for correct spindle rotation.

ADJUSTMENT OF KNEE GIB

Remove chip wiper and adjust screw until smooth movement is attained. Replace chip wiper.

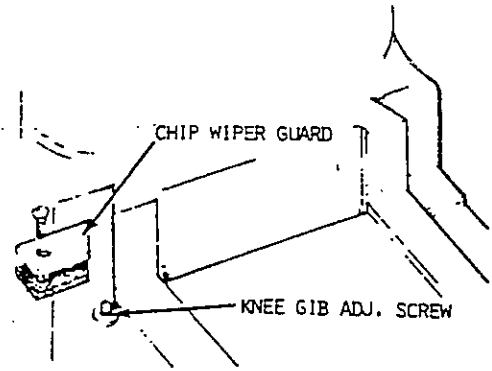


Figure 2. Knee-Column Gib

LUBRICATION

The machine has an automatic lubrication system that oils all necessary parts. The recommended way oil is Mobil VAC-2.

SPINDLE BRAKE

The brake lever can be moved in either direction to stop the spindle. It also will activate automatically when the spindle is turned off. There are no adjustments on the brake, so it must be replaced when worn out.

CAUTION

BE CERTAIN THAT THE SPINDLE BRAKE IS RELEASED BEFORE STARTING THE MOTOR. THIS IS IMPORTANT AS THE MOTOR CAN BE DAMAGED IF THE SWITCH IS TURNED ON WITH THE BRAKE IN THE LOCKED POSITION.

HI-NEUTRAL-LO LEVER

The lever is used to put the head into either direct drive or backgear. Rotate the spindle by hand to facilitate meshing of the clutch or gears.

Neutral can be obtained at mid-way position, and is provided to permit free spindle rotation for indicating and set-up.

In high speed (Direct Drive) the spindle is driven by tapered clutch teeth. If the clutch is not meshed tightly, clutch rattle will be heard. This can be corrected by moving the detent plate upward as the clutch wears. This is also the reason for possible loss of neutral, requiring the reversal of the detent plate.

CAUTION

DO NOT shift Hi-Lo Lever while the motor is running.

RECOMMENDATIONS

Use 2, 3, or 4 flute end mills. Eight flute end mills are usually not as satisfactory for general milling. When using shell mills, face mills, or any other tooling, proper machining practice should be observed.

CAUTION

DO NOT TRY TO CHANGE SPINDLE SPEED ON VARI-DRIVE HEAD UNTIL MOTOR IS RUNNING. THIS COULD CAUSE PARTS BREAKAGE.

Spindle Feeds are adjusted by turning speed change handwheel on the front of the belt housing. There are two ranges shown: 60 to 500, and 500 to 4200.

60 - 500 RPM is obtained through the back-gear drive and is referred to as low range. To engage the back-gears, use the lever marked Hi-Neutral-Lo on the right side of the head. Move this lever to the "LO" position and use low range on the variable speed dial.

When shifting to "LO," DO NOT FORCE THE LEVER if the back gears do not mesh. Hold the lever so that the gears are clear of one another, rotate the spindle nose by hand until the gears line up, and then put the unit in "LO" (back gear).

500 - 4200 RPM is direct drive and is the high range. The same procedure as previously described is used to select this range except the Hi-Neutral lever is set in the Hi position.

Wear on the vari-drive belt will cause a slight change in the speeds to that shown in windows on the dial. This can be corrected as follows. Crank the speed change handwheel snugly against the high speed stop. (This will be near the 4200 reading on the dial.) Use a tachometer to determine the spindle speed, then turn the pivot stud, after loosening the jam nut, until the spindle speed registers 4200 on the tachometer; tighten the jam nut.

Now reposition the speed dial plate to match the tachometer reading. This is done by loosening the Hex nut until the spindle speed registers 4200 on the tachometer; tighten the jam nut.

DO NOT LOOSEN THE 3 HEX NUTS on the upper part of the Quill Housing. These are set at the factory and are used only for alignment.

REMOVING THE MOTOR

Run the head to the lowest speed of either range and shut off the motor. This puts the Vari-Drive belt in the best position for disassembly.

1. DISCONNECT THE POWER.
2. Remove the cover (B, Figure 3) at the lower end of the motor shaft. Use two cover screws (A) to fasten the spring (C) on the lower end of the motor shaft to the lower motor vari-drive pulley. This will reduce the hazard of personal injury that is always present when a heavy spring is under compression. When the pulley, spring retainer, and spring are securely fastened as a single unit, crank the speed change handwheel to the top speed position.
3. Now remove the screws (D) that fasten the motor to the belt housing. The motor should be lifted slightly and pulled firmly away from the spindle and toward the rear of the belt housing. This will pull the vari-drive belt deeply into the spindle pulley providing the slack needed to slip the belt over the motor pulley.
4. Now lift the motor high enough to rest the motor base GENTLY on the adjusting screw (E) seen directly in front of the motor flange. The belt can now be slipped over the lower pulley and the motor removed from the housing.

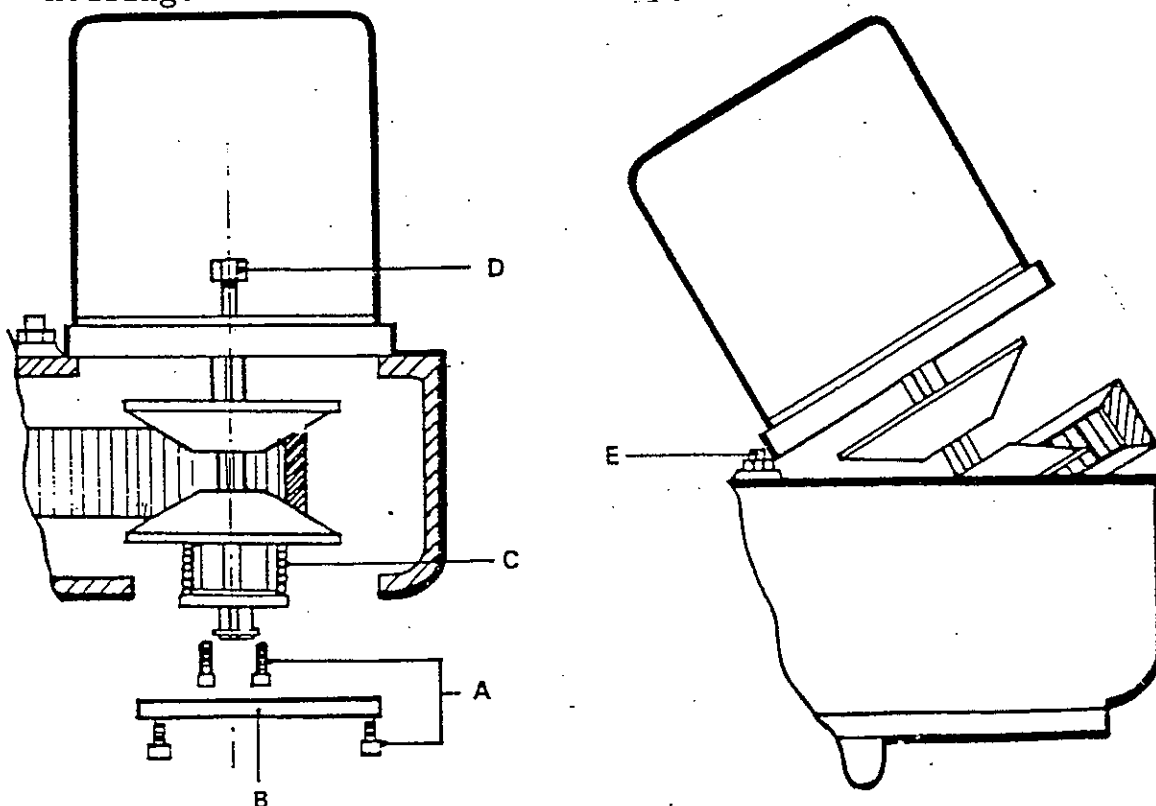


Figure 3. Removing the Motor (Side View)

CHANGING VARI-DRIVE BELT

Complete the previous procedures for removing the motor, then remove the three screws (A, Fig 4) and lift out the top bearing cap (B). Looking down inside of the housing, locate and remove two socket head cap screws and sleeves (C). Next, remove the six screws (D) then holding the belt housing (E) to the base.

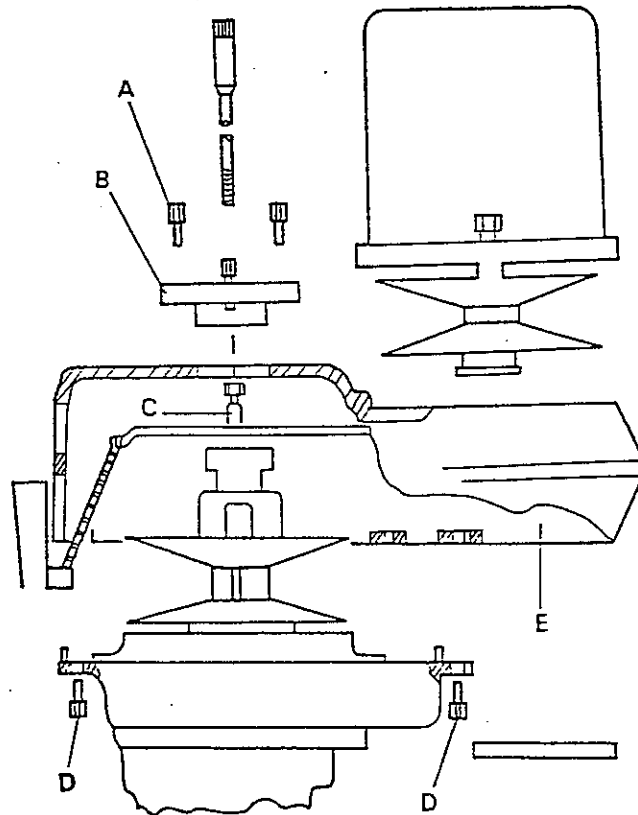


Figure 4. Removing the Vari-Drive Belt

Remove the old belt and replace it with a new belt. Do not use a substitute belt purchased from other than a # 383032B-13 of Bando V/S Belt. Vibration and heat could result from the use of the wrong belt.

CHANGING THE TIMING BELT (Figure 5)

Complete the operation for removing the motor. Then put the Hi-Neutral-Lo lever in the Lo position, remove the drawbar (A, Figure 5), and lower the spindle.

Remove screws (B) holding the upper and lower housing together, including the two lower screws (C) in speed changer bracket just below the speed dial.

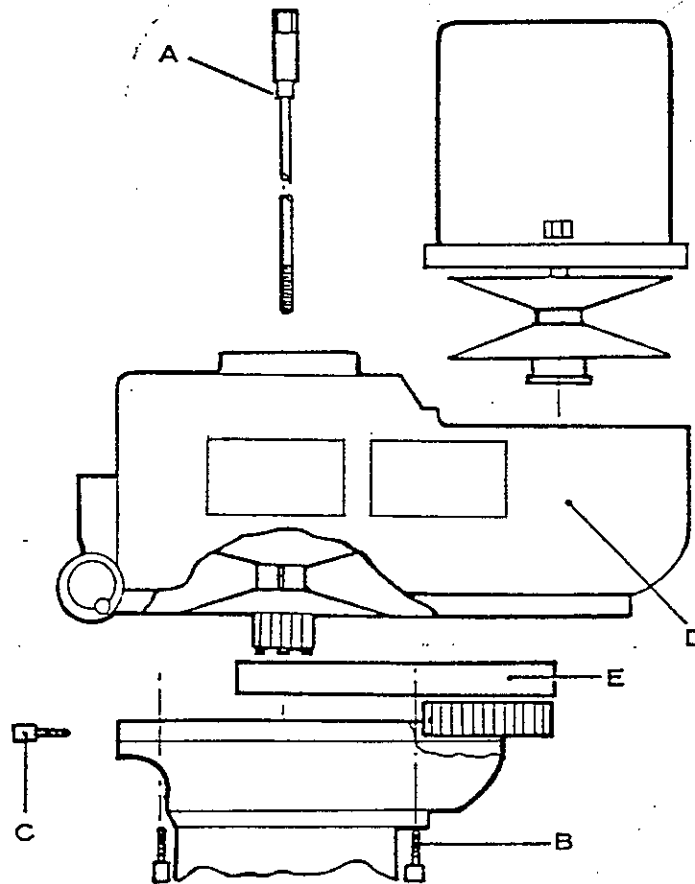


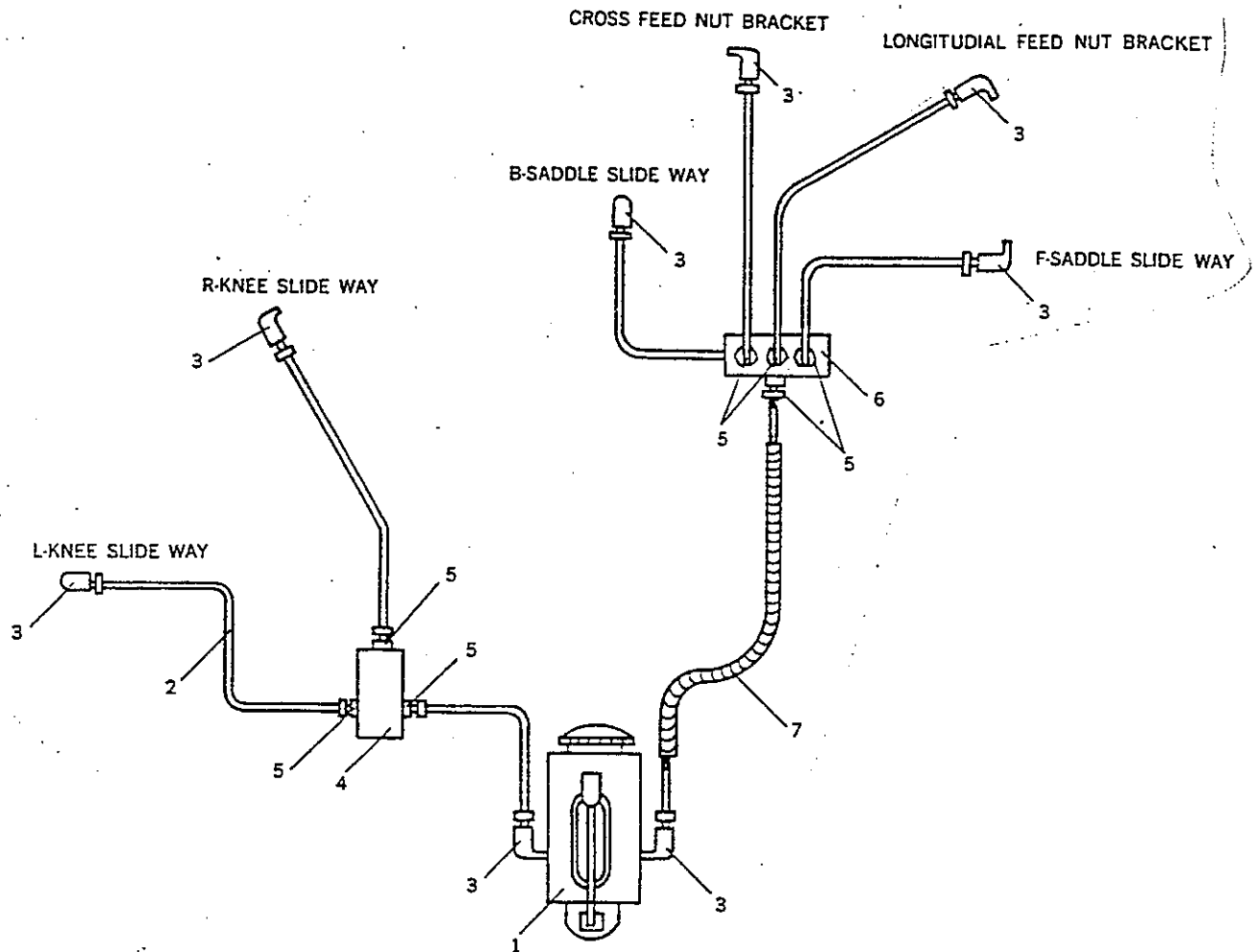
Figure 5. Removing Timing Belt

A slight blow under the speed changer bracket may be needed to separate the upper housing (D) from its base.

As the housings are being separated, the HTD belt (E) still connects them, resisting the separating movement. The separation can be assisted by gently pushing the belt off the large pulley as the upper housing is being raised.

Remove the old belt and replace with a new belt.

CENTRAL LUBRICATING OIL-FEEDING EQUIPMENT



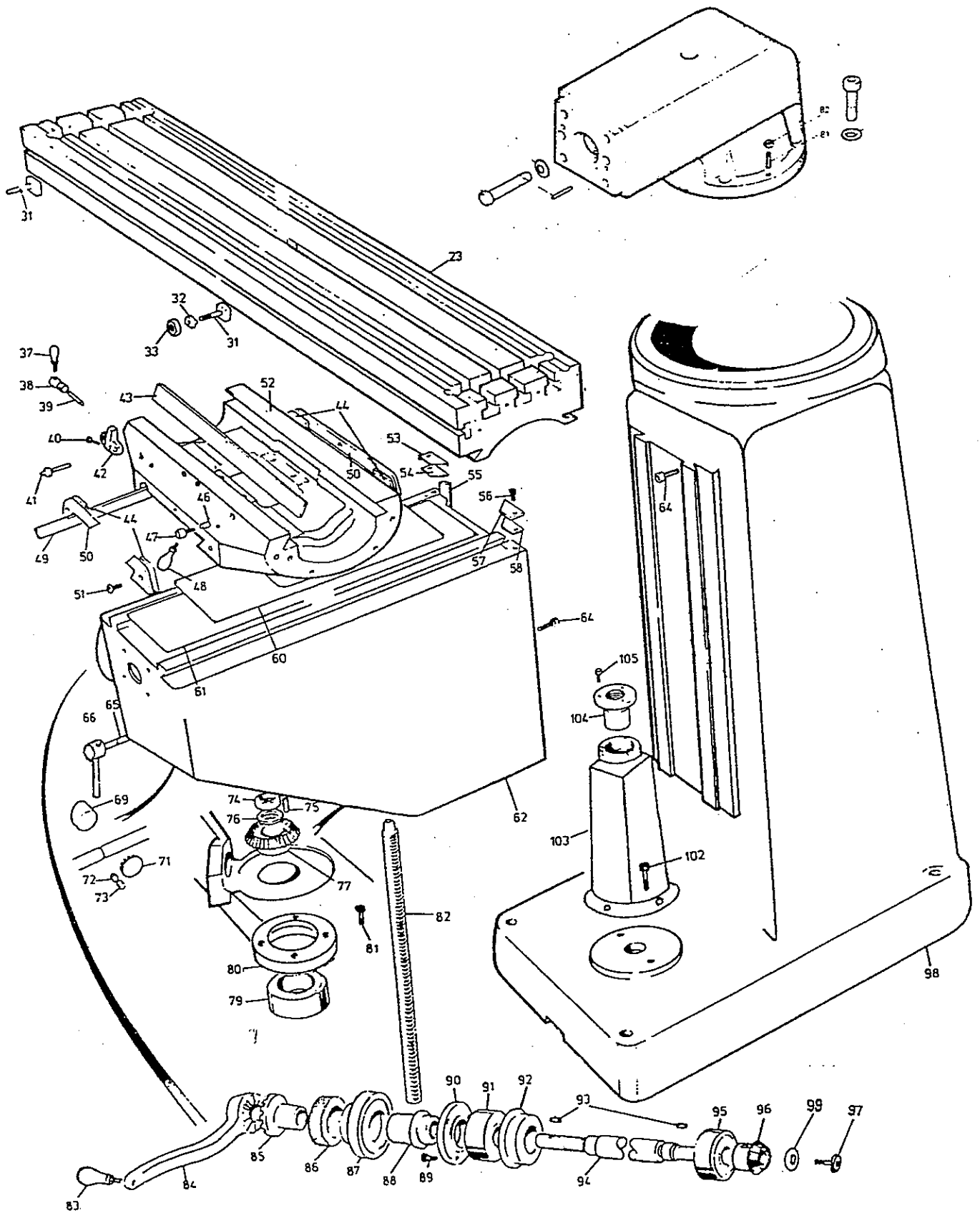
ITEM NO.	PARTS NO.	DESCRIPTION
1	9001	Autolube Pump
2	9002	Aluminum Pipe
3	9003	Elbow Joint (8 Req.)
4	9004	T-Joint
5	9005	Straight Joint (7 Req.)
6	9006	Oil Regulating Distributor
7	9007	Outside Steel Flexible Tube

BASIC MACHINE

ITEM NO.	PARTS NO.	DESCRIPTION
23	2001	Table 42" or 48"
31	2031	Stop Piece T-Bolt (3 Req.)
32	2030	Table Stop Piece (2 Req.)
33	2032	Hex Nut (3 Req.)
37	3031	Table Lock Bolt Handle
38	3030	Saddle Lock Bolt
39	3032	Saddle Lock Plunger
40	3036	Socket HD Cap Screw (2 Req.)
41	3028	Gib Adjusting Screw (3 Req.)
42	3035	Table Stop Bracket
43	3026	Saddle/Table Gib
44	3037	Felt Wipers (4 Req.)
46	3029	Table Lock Plunger
47	3030	Table Lock Bolt
48	3031	Table Lock Bolt Handle
49	3027	Saddle/Knee Gib
50	3037-2	Saddle Knee Wiper Plate (4 Req.)
51	3038	Oval Head Screw (8 Req.)
52	3001	Saddle
53	4028-2	Left Hand Column Wiper Holder
54	4028-1	Knee Wiper Felt
55	4038	Knee/Column Gib
56	4029	Allen Cap Screw (2 Req.)
57	4028-3	Right Hand Column Wiper Holder
58	4028	Knee Wiper Felt
60	3040	Chip Guards—Upper
61	3039	Chip Guards—Lower
62	4001	Knee 12"
64	1001-1	Stop Screw
65	4048	Knee Lock Shaft Assembly
69	4001-1	Knee Lock Plunger
71	4045	Knee Binder Plug (Plastic)
72	4049	Dog Point Set Screw
73	4049	Set Screw

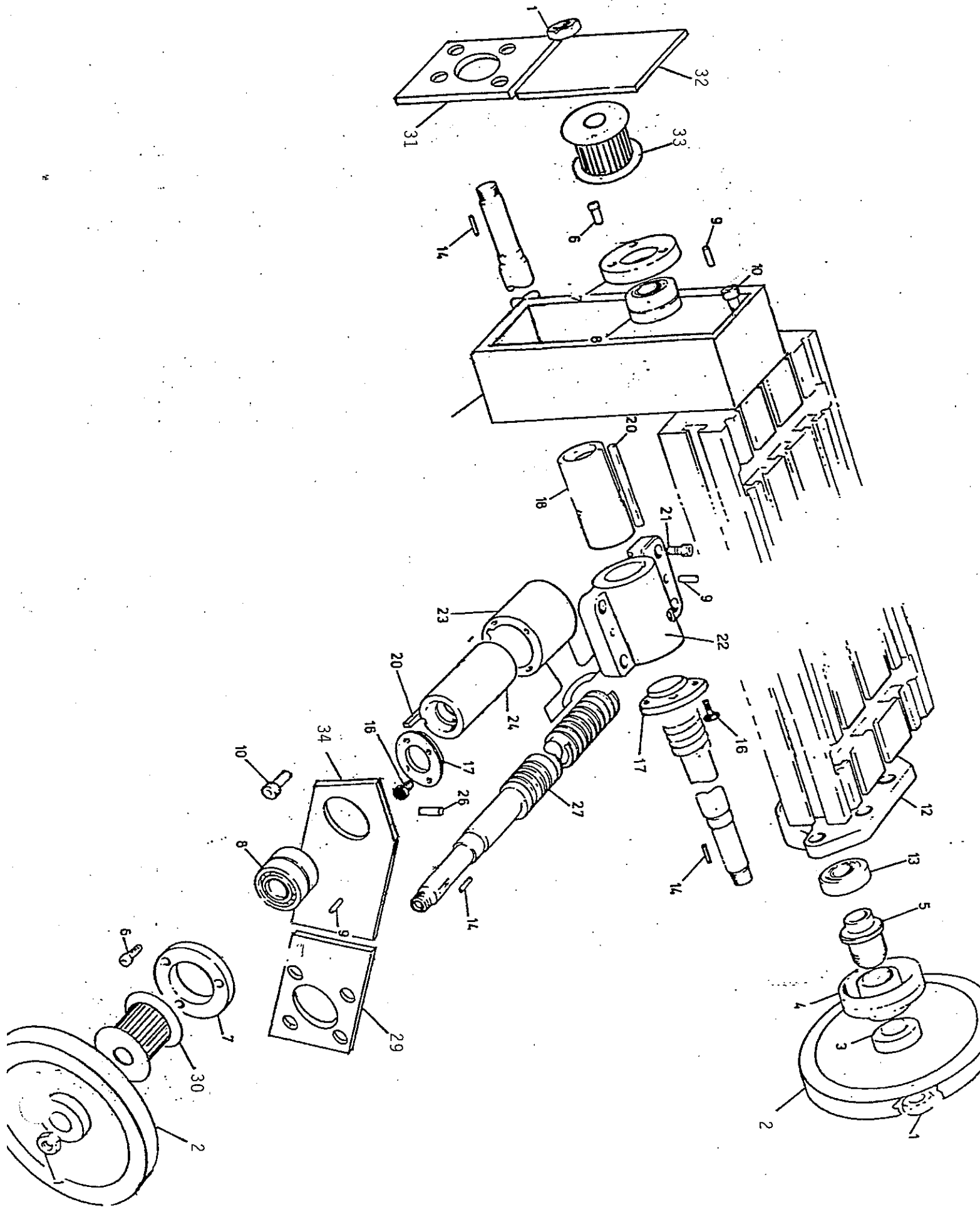
ITEM NO.	PARTS NO.	DESCRIPTION
74	4023	Jam Nut
75	4020	Key
76	4022	Washer
77	4019	Bevel Gear
79	4040	Sealed Ball Bearing
80	4039	Bearing Retainer Ring
81	4041	Socket Head Cap Screw
82	4021	Elevating Screw Assembly
83	4003	Handle
84	4002	Elevating Crank
85	4013	Gearshaft Clutch Insert
86	2016	Dial Lock Nut
87	4010	Dial with 100 Graduations
88	4011	Dial Holder
89	4009	Socket Head Cap Screw
90	2011	Bearing Retaining Ring
91	2008	Grease Sealed Bearing
92	4006	Bearing Cap
93	4015	Key
94	4017	Elevating Shaft for 12" Knee
95	2008	Grease Sealed Bearing
96	4014	Bevel Pinion
97	4042	Set Screw
98	1001	Column
99	4017-1	Washer
102	4027	Socket Head Cap Screw
103	4026	Pedestal
104	4024	Elevating Screw Nut
105	4025	Socket Head Cap Screw
118	5003	Spider
119	5010	Ram Lock Stud
120	5012	Ram Pinion
121	5013	Ram Pinion Handle
122	5014	Plastic Ball
123	5005	Chamfered X Hardened Washer

Basic Machine



LEADSCREW ASSEMBLY

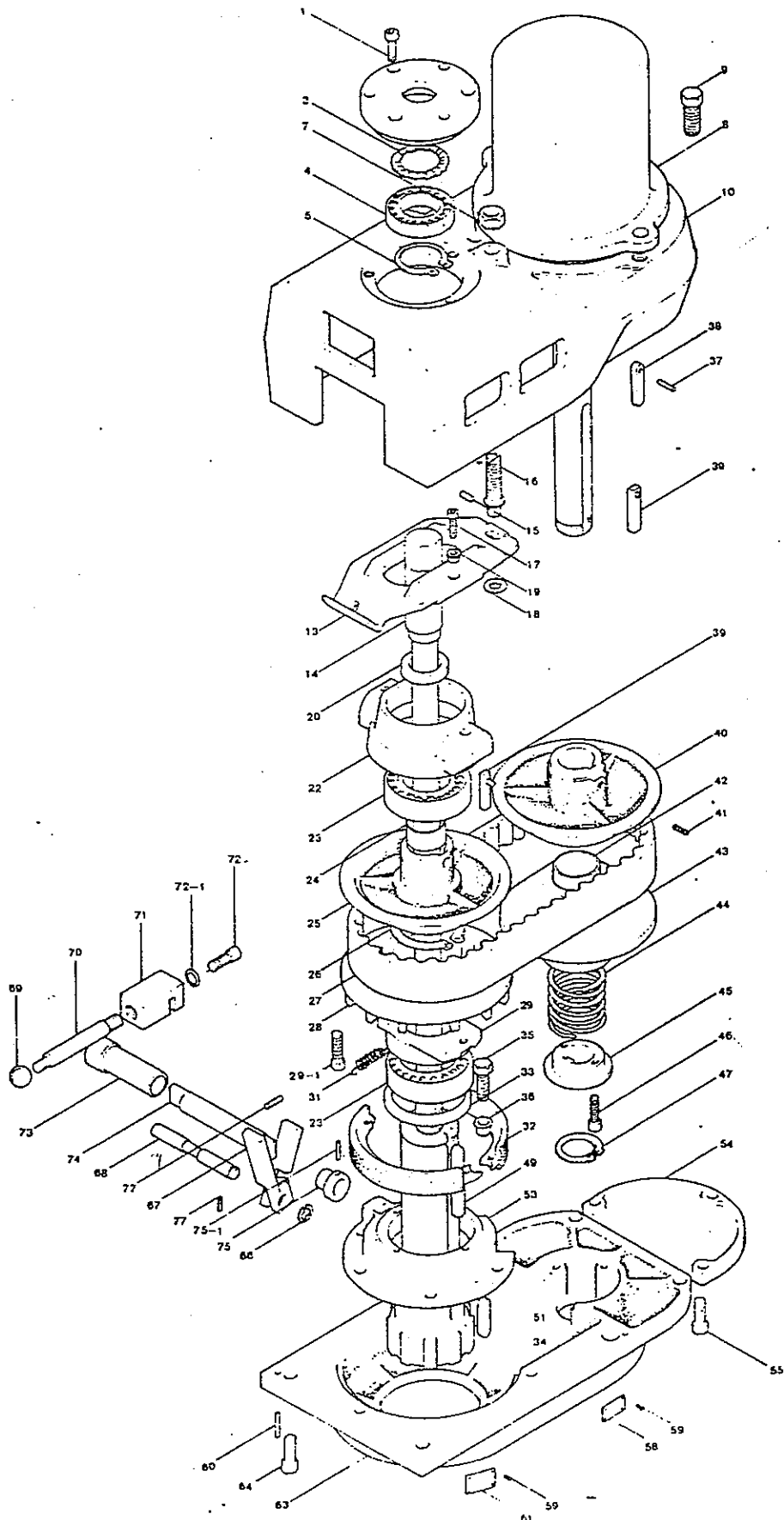
<u>Item No.</u>	<u>Parts No.</u>	<u>Description</u>
1	2004	Jam nut (3 req.)
2	2018	Crank handle (2 req.)
3	2016	Dial lock nut (3 req.)
4	2012	Dial with 200 graduations (2 req.)
5	2014	Dial holder (2 req.)
6	2036	Socket cap screw (6 req.)
7	2011	Bearing retainer ring (2 req.)
8	2008	Grease sealed ball bearings (2 req.)
9	2027	Roll pin (10 req.)
10	2026	Socket cap screw (12 req.)
11	2006	Left bearing bracket
12	2006	Right bearing bracket
13	2008	Grease seal ball bearing
14	2003	Key (3 req.)
15	2002	Longitudinal feed screw 42" or 48"
16	3021	Socket cap screw (8 req.)
17	3019	Cross feed nut retaining plate (2 req.)
18	3020	Longitudinal feed nut
20	3041	Key (2 req.)
21	3024	Socket cap screw (8 req.)
22	3023	Longitudinal feed nut bracket
23	3022	Cross feed nut bracket
24	3020	Cross feed nut
26	3005-1	Stop screw
27	3002	Cross feed screw for 12" knee
28	3005	Cross feed bearing bracket
29	5033	Y-axis motor bracket
30	5019	Y-axis timing pulley
31	5027	X-axis motor bracket
32	5020	X-axis timing belt cover
33	5022	X-axis timing pulley
34	5021	Y-axis bearing plate



VARI-SPEED HEAD BACK GEAR

ITEM NO.	PARTS NO.	DESCRIPTION	ITEM NO.	PARTS NO.	DESCRIPTION
1	8001	Socket Cap Screw	39	8039	Key for Adj Varidisc Motor Shaft (2 Req.)
3	8003	Spring Washer	40	8040	Stationary Motor Varidisc
4	8004	Ball Bearing	41	8041	Socket Set Screw
5	8005	Snap Ring	42	8042	Plastic Insert (2 Req.)
7	8007	Hex Jam Nut	43	8043	Adjustable Motor Varidisc Assembly
8	8008	Motor 3HP	44	8044	Spring for Varidisc Motor Shaft
9	8009	Hex HD Screw (2 Req.)	45	8045	Adjustable Varidisc Spring Collar
10	H8010	Belt Housing	46	8046	Socket HD Cap Screw (2 Req.)
13	8013	Speed Change Plate	47	8047	RET. Ring
14	8014	Drawbar	49	8049	Plastic Key
15	8015	Cotter Pin	51	8051	Key
16	8016	Speed Change Plate Pivot Stud	53	H8053	Belt Housing Base
17	8017	Socket HD Screw (2 Req.)	54	8054	Motor Pulley Cover
18	8018	Washer	55	8055	Socket Cap Screw (3 Req.)
19	8019	Pivot Sleeve (2 Req.)	58	8058	Hi-Low Range Nameplate
20	8020	Draw Bar Washer	59	8059	Drive Screw (8 Req.)
22	8022	Spindle Pulley Bearing Sliding Housing	60	8060	Taper Pin (2 Req.)
23	8023	Ball Bearing (2 Req.)	61	8061	Quill Feed Nameplate
24	8024	Plastic Insert (2 Req.)	63	H8063	Gear Housing
25	8025	Adjustable-Driven Varidisc	64	H8064	Socket Cap Screw (3 Req.)
26	8026	Snap Ring No.	66	8066	Snap Ring
27	8027	Belt	67	8067	Brake Finger Pivot Stud (2 Rea.)
28	8028	Stationary Driven Varidisc	68	8068	Brake Operating Finger
29	8029	Brake Bearing Cap	69	8069	Bakelite Ball Handle
29-1	8029-1	Socket HD Cap Screw (4 Req.)	70	8070	Brake Lock Handle
31	8031	Brake Spring 2(2 Req.)	71	3A8071	Brake Lock Stud
32	8032	Brake Shoe Assembly	72	8072	Socket Set Screw
33	8033	Spindle Pulley Spacer	72-1	8072-1	Washer
34	8034	Spindle Pulley Hub	73	H8073	Sleeve for Brake Lock Shaft
35	8035	Hex HD. Screw	74	3A8074	Brake Lock Shaft
36	8036	Brake Shoe Pivot Sleeve	75	8075	Bushing (2 Req.)
37	8037	Roll dowel Pin	75-1	8075-1	Pin
38	8038	Drive Key	77	8077	Socket Set Screw

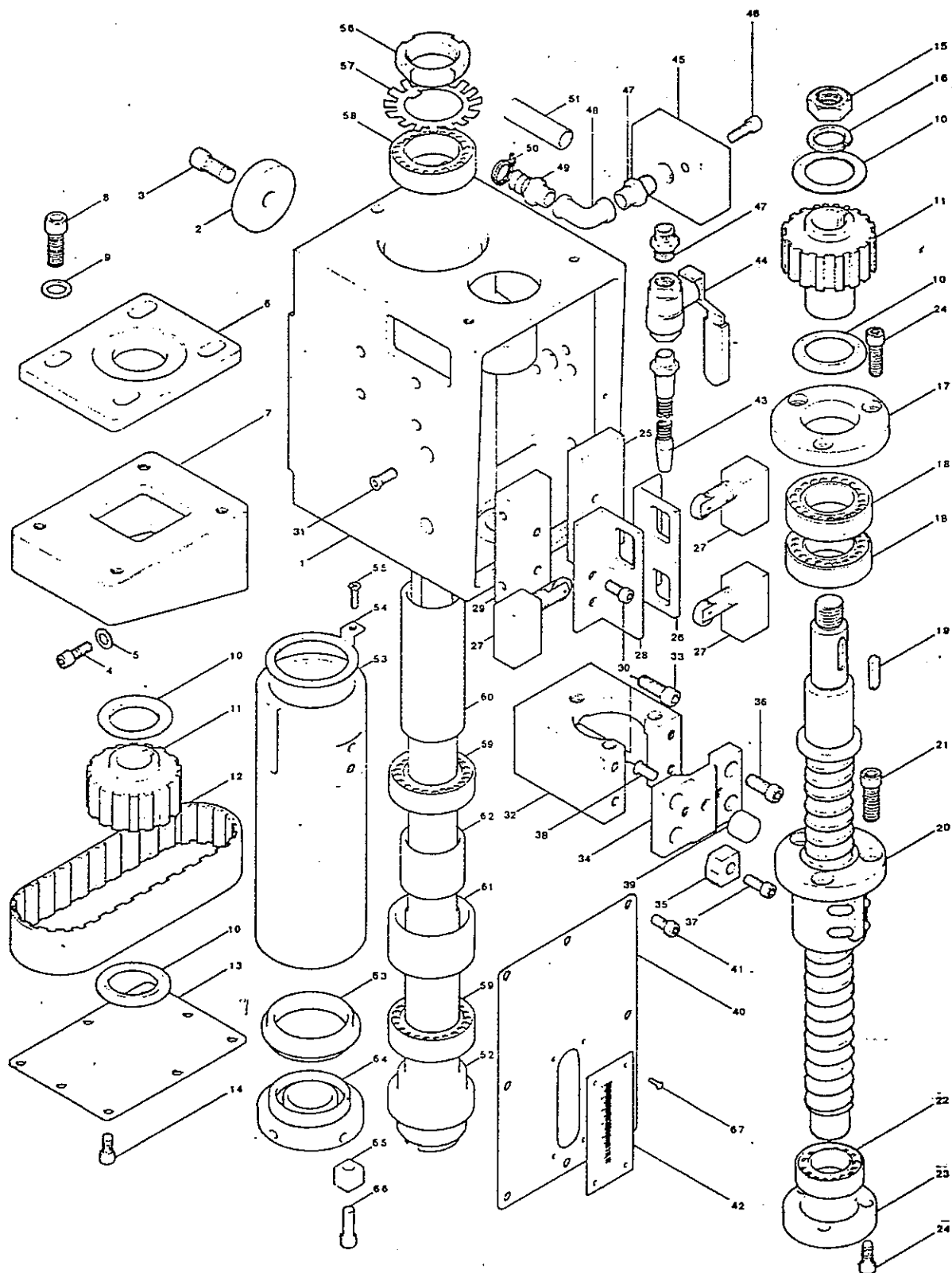
VARI-SPEED HEAD BACK GEAR



CNC HEAD

ITEM NO.	PARTS NO.	DESCRIPTION	ITEM NO.	PARTS NO.	DESCRIPTION
1	3A-6001	Quill Housing	35	3A-6035	Limit Dog (2 Req.)
2	3A-6002	Housing Washer	36	3A-6036	Socket Cap Screw (4 Req.)
3	3A-6003	Socket Cap Screw	37	3A-6037	Socket Cap Screw (2 Req.)
4	3A-6004	Socket Cap Screw (4 Req.)	38	3A-6038	RD. HD. Screw
5	3A-6005	Washer (4 Req.)	39	3A-6039	Micro. Meter Scale Rod
6	3A-6006	Z Axis Motor Adjustable Bracket	40	3A-6040	Face Plate
7	3A-6007	Z Axis Motor Bracket	41	3A-6041	Socket Cap Screw (8 Req.)
8	3A-6008	Socket Cap Screw (4 Req.)	42	3A-6042	Micrometer Scale
9	3A-6009	Washer (4 Req.)	43	3A-6043	Spraying Pipe
10	3A-6010	Pulley Flange (4 Req.)	44	3A-6044	Water Switch
11	3A-6011	Timing Belt Pulley (2 Req.)	45	3A-6045	Water Switch Bracket
12	3A-6012	Timing Belt	46	3A-6046	Socket Head Cap Screw (2 Req.)
13	3A-6013	Bracket Cover	47	3A-6047	Inserting Pipe Joint (2 Req.)
14	3A-6014	Socket Cap Screw (6 Req.)	48	3A-6048	Elbow
15	3A-6015	Jam Nut	49	3A-6049	Pipe Joint
16	3A-6016	Washer	50	3A-6050	Tube Bundle
17	3A-6017	Bearing Retainer Ring	51	3A-6051	Net Plastic Pipe
18	3A-6018	Bearing	52	3A-6084	Spindle
19	3A-6019	Key	53	3A-6085	Quill
20	3A-6020	Z Axis Feed Ball Screw	54	6088	Felt Washer
21	3A-6021	Socket Cap Screw (3 Req.)	55	6089	Socket Head Cap Screw
22	3A-6022	Bearing	56	6090	Locknut
23	3A-6023	Bearing Retainer Ring	57	6091	Lock Washer
24	3A-6024	Socket Cap Screw (3 Req.)	58	6092	Bearing
25	3A-6025	Right Limit Switches Bracket	59	6093	Bearing (2 Req.)
26	3A-6026	Right Limit Switches Adj. Bracket	60	6094	Sleeve
27	3A-6027	Micro Switch (3 Req.)	61	6095	Bearing Spacer-Large
28	3A-6028	Left Limit Switches Adj. Bracket	62	6096	Bearing Spacer-Small
29	3A-6029	Left Limit Switches Bracket	63	6097	Spindle Dirt Shield
30	3A-6030	Socket Cap Screw (4 Req.)	64	3A-6098	Nose-Piece
31	3A-6031	Socket Cap Screw (4 Req.)	65	3A-6099	Keeper Key
32	3A-6032	Z Axis Nut Bracket	66	3A-6100	Socket Head Cap Screw (2 Req.)
33	3A-6033	Socket Cap Screw (2 Req.)	67	3A-6042-1	RD. HD. Screws (4 Req.)
34	3A-6034	Limit Dog Bracket			

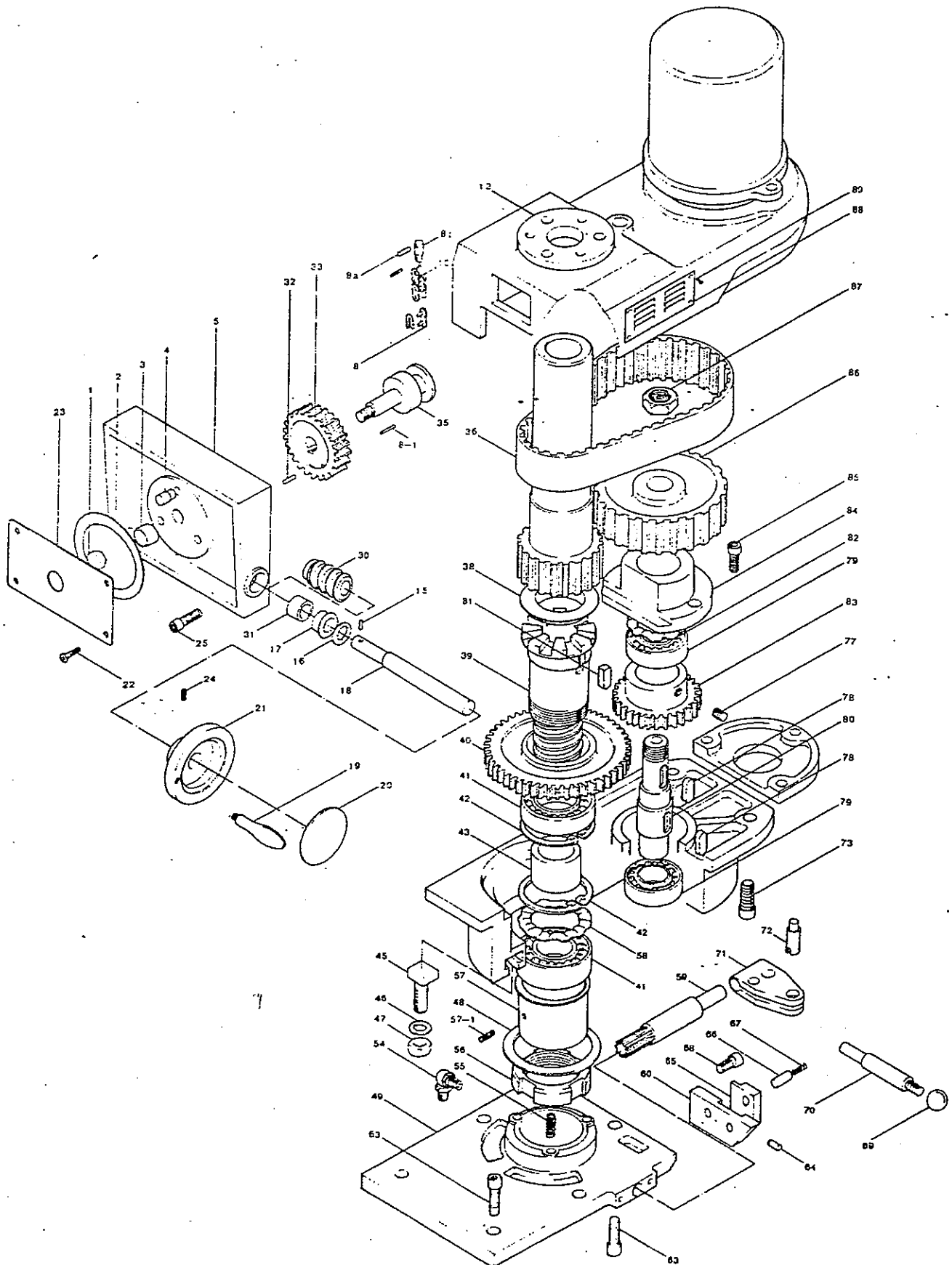
CNC HEAD



VARI-SPEED HEAD TOP HOUSING

ITEM NO.	PARTS NO.	DESCRIPTION	ITEM NO.	PARTS NO.	DESCRIPTION
1	H7001	Hex Cap Nut	47	7047	Jam Nut (3 Req.)
2	7002	Vari-Speed Dial	48	7048	Ball Bearing Gear Sleeve Washer
3	7003	Bronze Bearing	49	3A7049	Fixed Clutch Bracket
4	7004	Full Dog Socket Set Screw	54	7054	Oil Cup
5	H7005	Speed Changer Housing	55	7055	Compression Spring (3 Req.)
8	7008	Chain Joint	56	7056	Bearing Locknut
8-1	7008-1	Roll Pin	57	7057	Bearing Sleeve
8a	7008a	Roll Pin	57-1	7057-1	Socket Set Screw
8b	7008b	Speed Change Stud	58	7058	Wave Spring Washer
10	7010	Speed Change Chain	59	7059	Bull Gear Shift Pinion
13	7013	Top Bearing Cap	60	7060	Hi-Low Detent Plate
15	7015	Roll Pin	63	3A7063	Socket Cap Screw (3 Req.)
16	7016	Spring	64	7064	Socket Set Screw
17	7017	Bronze Bearing	65	7065	Adjustable Plate
18	H7018	Speed Change Shaft	66	7066	Hi-Low Detent Plunger
19	H7019	Handle	67	7067	Spring
20	7020	Caution Plate	68	7068	Socket Cap Screw (2 Req.)
21	H7021	Speed Change Handwheel	69	7069	Bakelite Ball Handle
22	7022	Flat HD. Cap Screw (4 Req.)	70	7070	Hi-Low Shift Crank
23	7023	Face Plate	71	7071	Hi-Low Pinion Block
24	7024	Set Screw	72	7072	Roll Pin
25	H7025	Socket HD Cap Screw (4 Req.)	73	7073	Socket Cap Screw (6 Req.)
30	7030	Worm Gear	77	7077	Socket Set Screw
31	7031	Bronze Bearing	78	7078	Key (2 Req.)
32	7032	Roll Pin	79	7079	Ball Bearing (2 Req.)
33	7033	Speed Changer Spur Gear	80	7080	Gear Shaft
35	H7035	Speed Change Chain Drum	81	7081	Key
36	7036	Belt	82	7082	Wave Spring Washer
38	7038	Timing Pulley Clutch Sleeve	83	7083	Bull Gear Pinion
39	7039	Spline Gear Hub	84	7084	Bull Gear Pinion Bearing
40	7040	Spindle Bull Gear Assembly	85	7085	Socket HD Cap Screw (2 Req.)
41	7041	Ball Bearing (1 Req.)	86	7086	Timing Belt Pulley
42	7042	Snap Ring (2 Req.)	87	7087	Jam Nut
43	7043	Bull Gear Bearing Spacer	88	7088	Ventilator (2 Req.)
45	7045	Vert. Tee Bolts (3 Req.)	89	7089	Round HD. Machine Screw (12 Req.)
46	7046	Steel Washer (3 Req.)			

VARI-SPEED HEAD TOP HOUSING



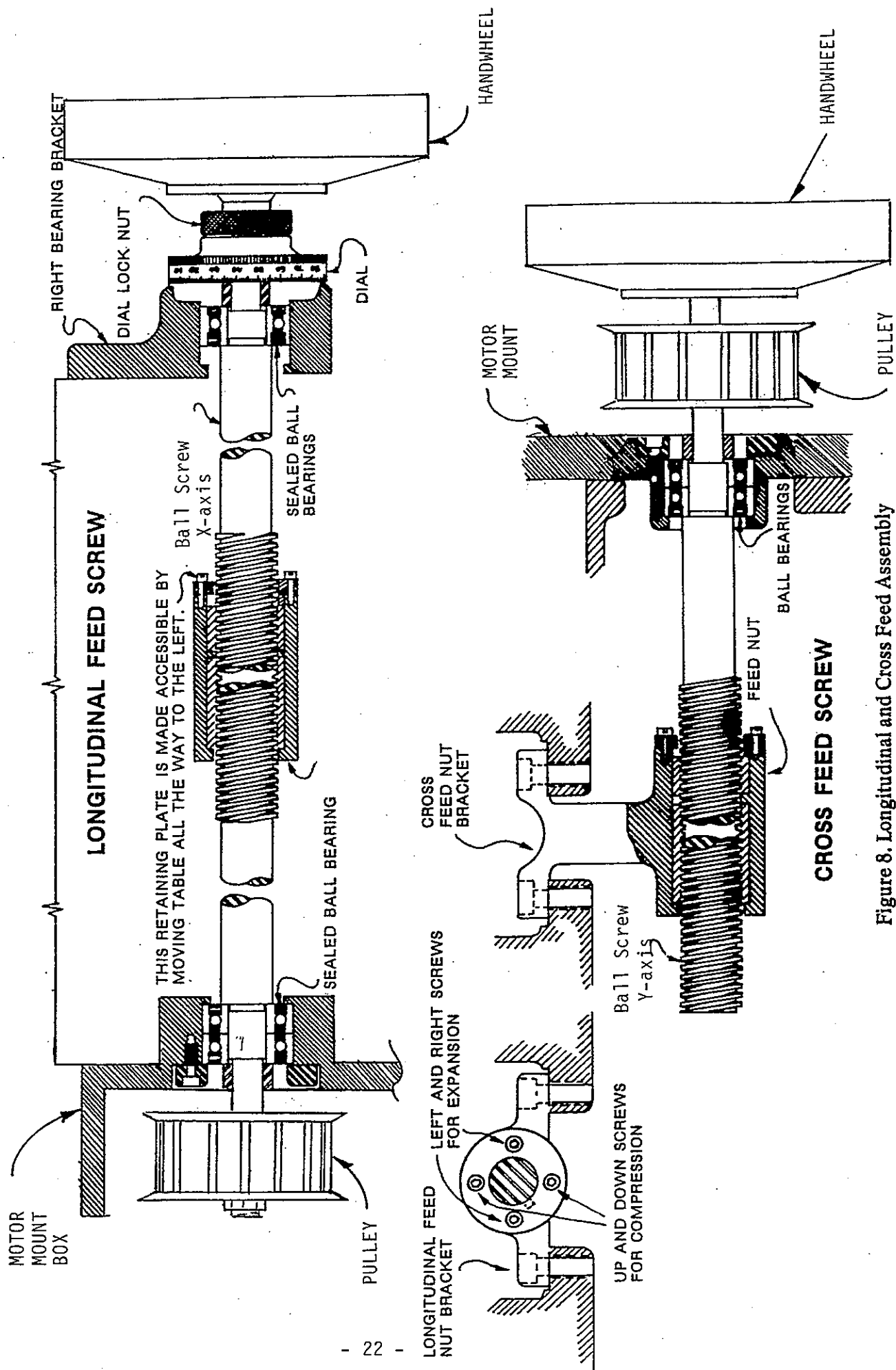
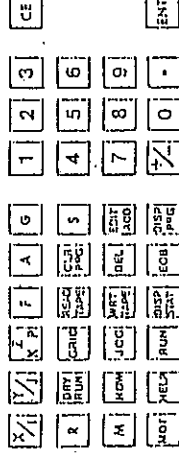
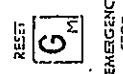
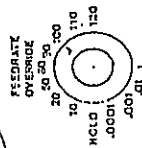
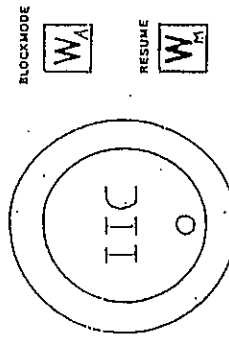
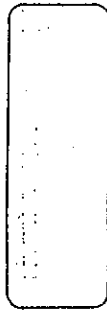
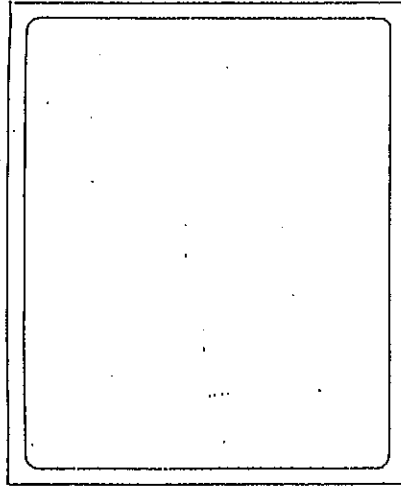


Figure 8. Longitudinal and Cross Feed Assembly

CENTURION IV



CENTURION IV

SWITCH LEGEND
 COLOR CONTACT
 W-WHITE M-MOMENTARY
 G-GREEN A-ALTERNATE
 R-RED

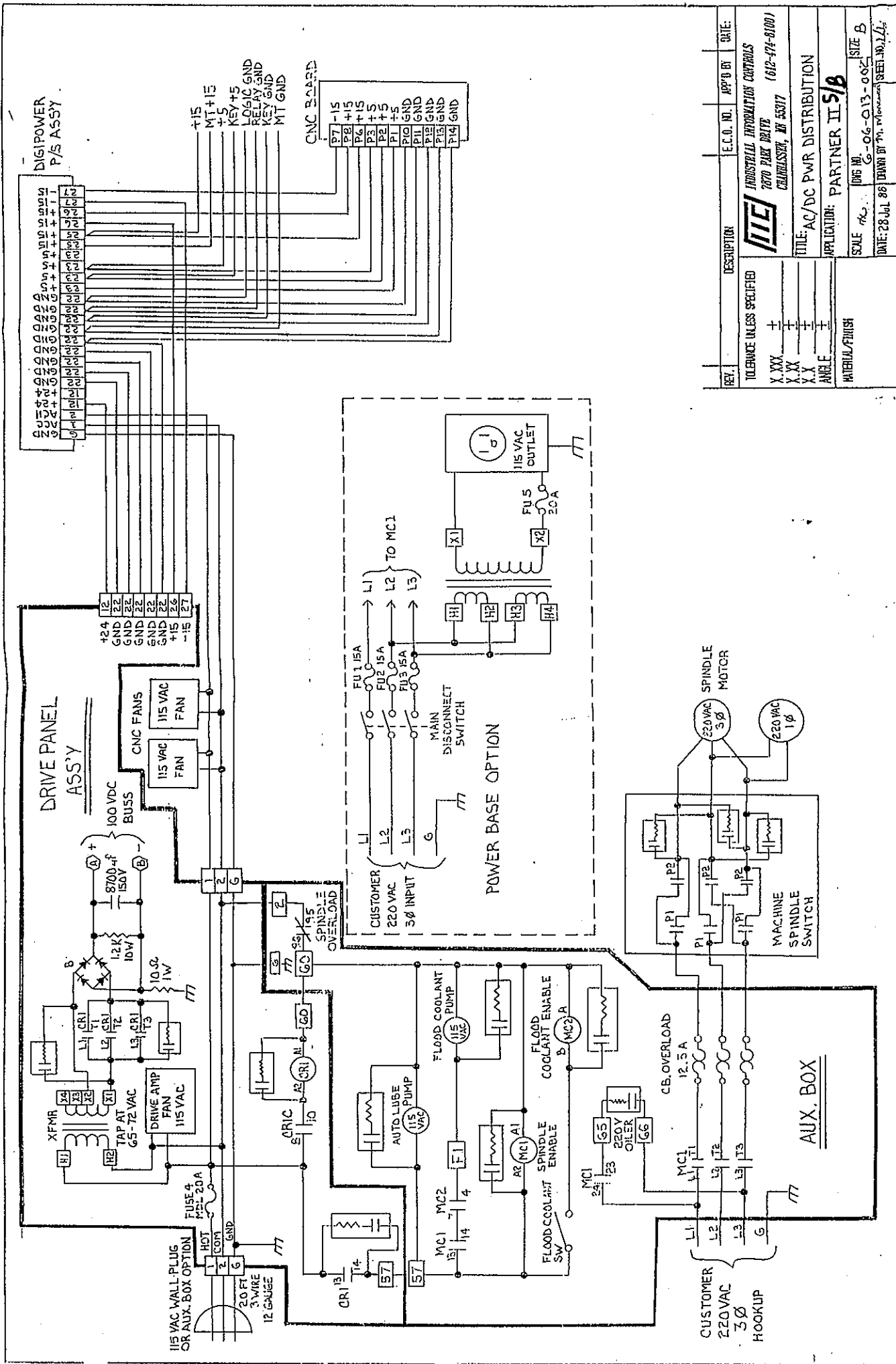
REV.	DESCRIPTION	E.C.O. NO.	APP'D BY	DATE
	INDUSTRIAL INFORMATION CONTROLS 7070 PARK DRIVE CHILMARK, MA 01937			
	TOLERANCE UNLESS SPECIFIED			
	X .XX ±			
	X .X ±			
	X ±			
	ANGLE ±			
	MATERIAL FINISH			
	1/4 GA. CRS			
	PAINT WHITE			
	TITLE: CENTURION IV FRONT PANEL			
	APPLICATION: PARTNER II 5/8			
	SCALE: 1/8" = 1"			
	DATE: 7 OCT 86			
	DRAWN BY: JLG			
	SEEK NO. 1061			

1. 115 VAC HOT
2. 115 VAC COMMON
3. E-STOP/RESET
4. E-STOP
6. X OVERTRAVEL
7. X/Y OVERTRAVEL
8. Y/Z OVERTRAVEL
9. Z OVERTRAVEL
12. +24 VDC
21. EXCESS ERROR
22. POWER SUPPLY COMMON
23. +5 VDC (LOGIC)
25. +15 VDC (LOGIC)
26. +15 VDC (ANALOG)
27. -15 VDC (ANALOG)
28. X SIGNAL
29. X TACH (+)
30. X TACH (-)
34. X GRID
35. X MOTOR (+)
36. X MOTOR (-)
37. Y SIGNAL
38. Y TACH (+)
39. Y TACH (-)
43. Y GRID
44. Y MOTOR (+)
45. Y MOTOR (-)
46. Z SIGNAL
47. Z TACH (+)
48. Z TACH (-)
52. Z GRID
53. Z MOTOR (+)
54. Z MOTOR (-)
57. SWITCHED 115 VAC HOT
60. SWITCHED 115 VAC COMMON
- F1. FLOOD COOLANT COMMON
65. 220 OILER HOT
66. 220 OILER HOT
76. +15 VDC TO SERVO AMP
77. -15 VDC TO SERVO AMP
78. LUBE FAULT
- L1. 220 VAC 3 PH. A
- L2. 220 VAC 3 PH. B
- L3. 220 VAC 3 PH. C
- G. CHASSIS GROUND

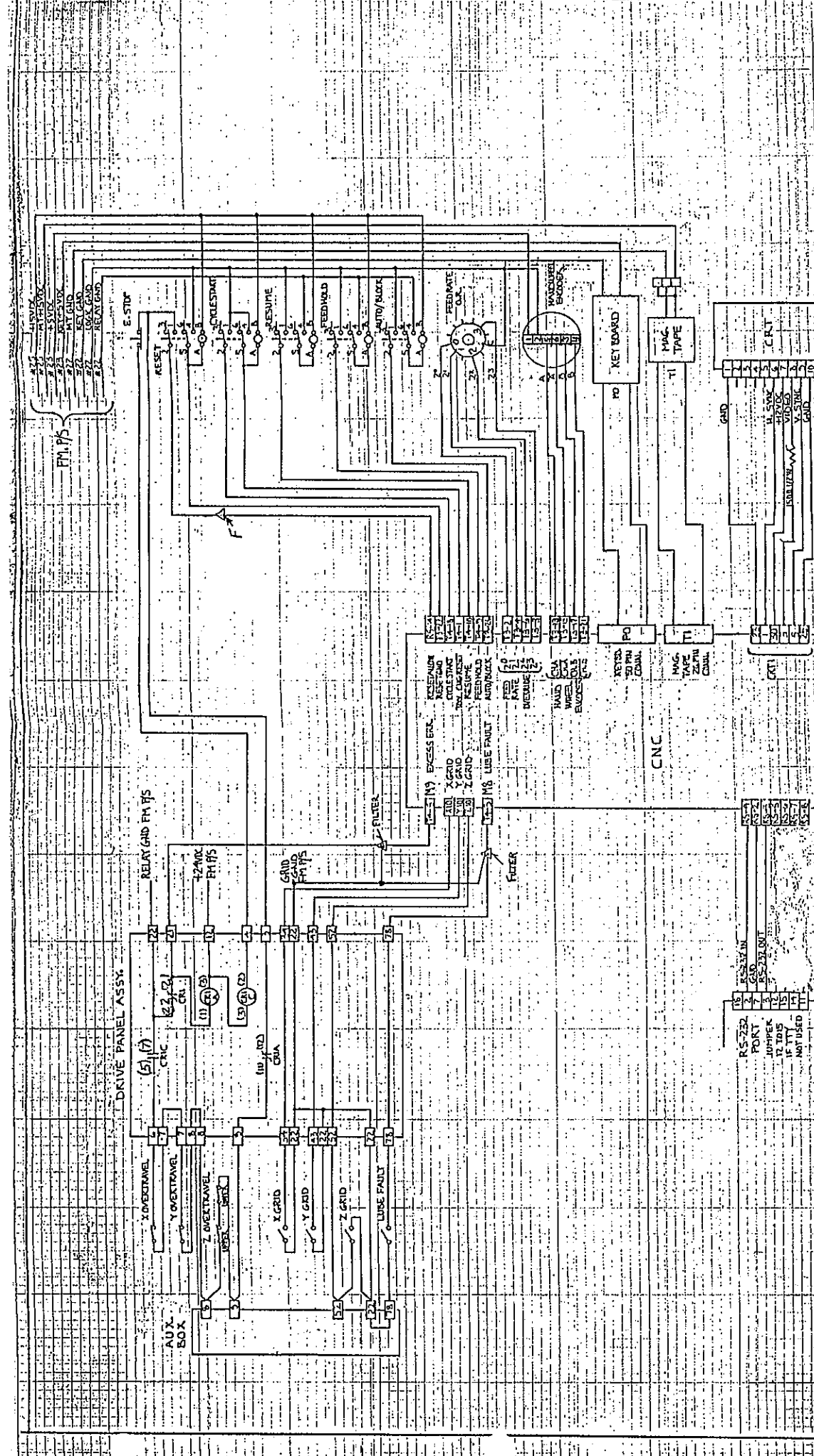
FUSES:

- FU-1. 30A (NON-30)
- FU-2. 30A (NON-30)
- FU-3. 30A (NON-30)
- FU-4. 20A (SFE-20)
- FU-5. 20A (SFE-20)

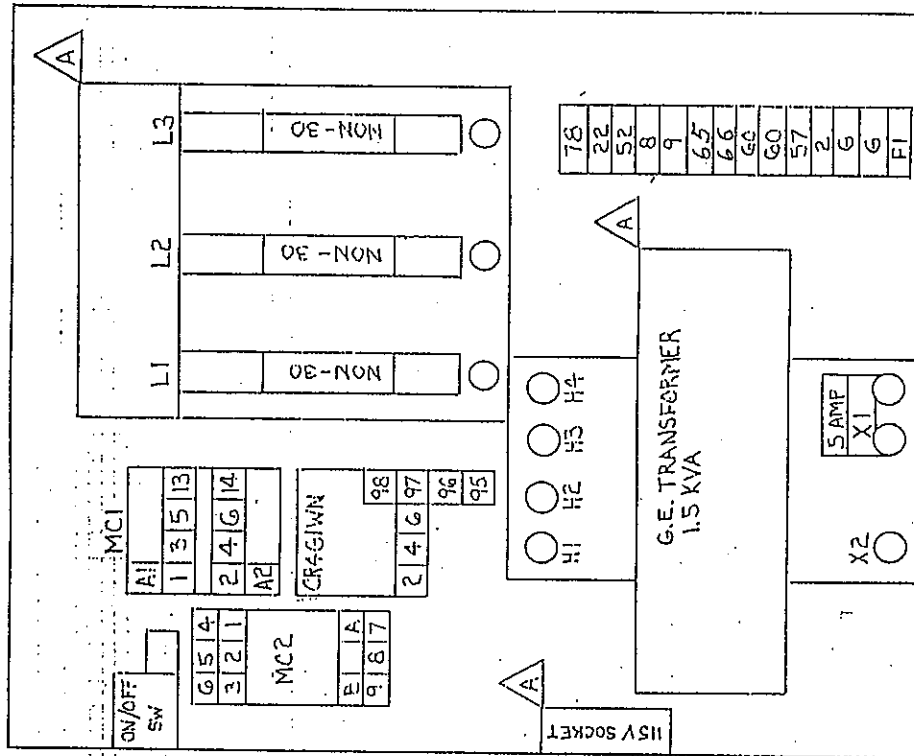
REV. 1		DESCRIPTION	E.C.D. NO.	APP'D BY	DATE
A		ADD TB'S 65466			9-88
TOLERANCE UNLESS SPECIFIED		INDUSTRIAL INFORMATION CONTROLS			
X.XXX	±	7870 PINE DRIVE (612-474-8100)			
X.XX	±	CHICAGO, IL 60637			
X.X	±	TITLE: MAG. & AUX. PANEL TERM.			
ANGLE	±	APPLICATION: PARTNER II			
MATERIAL/FINISH		SCALE	DWG NO.	SIZE	
		AS	6-04-013-105	B	
DATE:	28 Jul 88	DESIGN BY	REV. NO.	SHEET NO.	



REV.	DESCRIPTION	E.C.O. NO.	APP'D BY	DATE:
1	INDUSTRIAL INFORMATION CONTROLS			
	7870 PWR BASE (612-474-8000)			
	CHAMBERS, MI 48317			
	TITLE: AC/DC PWR DISTRIBUTION			
	APPLICATION: PARTNER II 5/B			
	SCALE: 1/8" = 1"			
	DATE: 28 JUL 88			
	DOWN BY: P. MONTAGNA			
	SIZE: B			
	SEE: NO. 1/L			

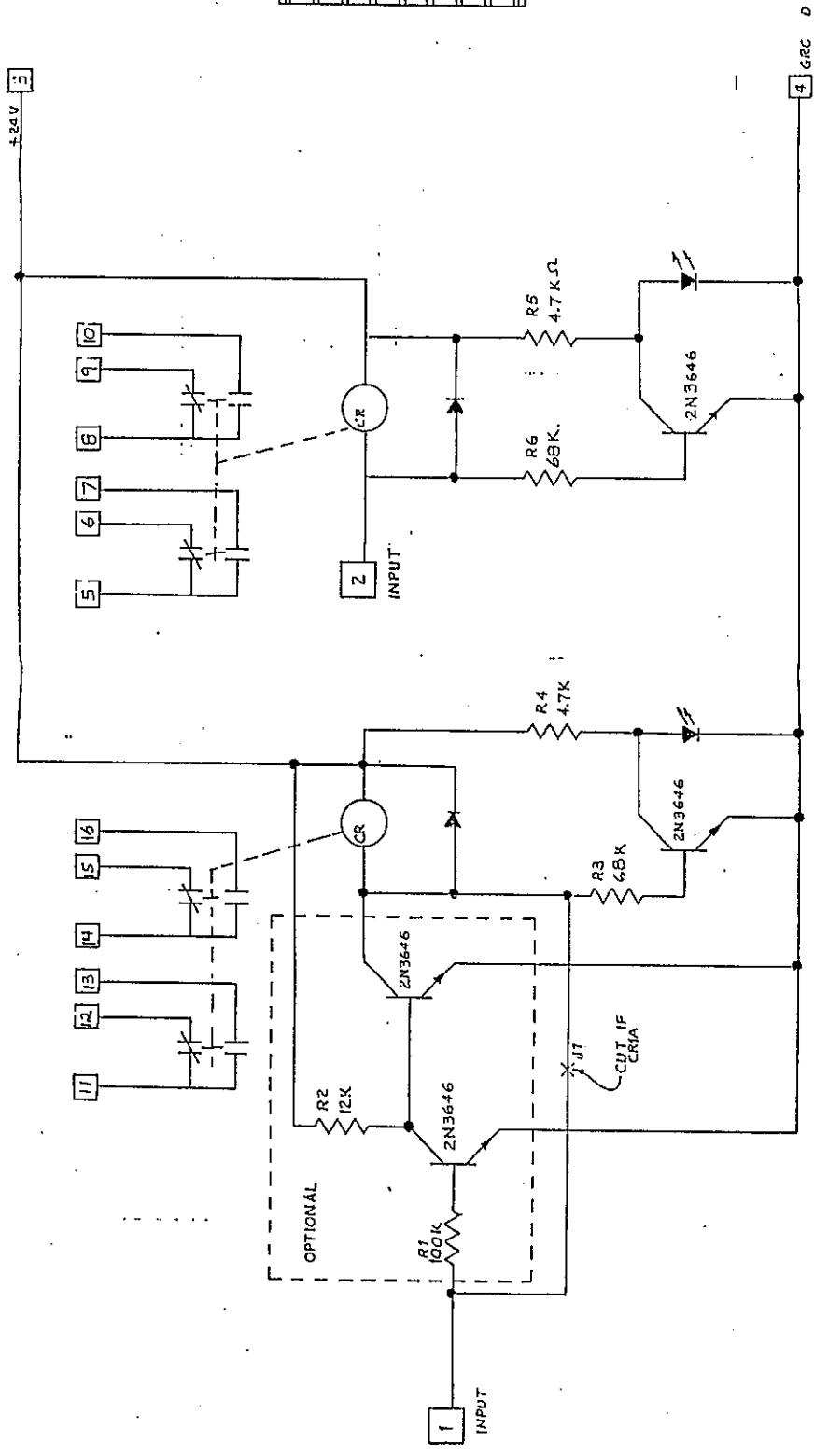


PARTNER-II		MACHINE CONTROL	
REV	DATE	REV	DATE
1	10/10/80	1	10/10/80
2	11/10/80	2	11/10/80
3	12/10/80	3	12/10/80
4	01/11/81	4	01/11/81
5	02/11/81	5	02/11/81
6	03/11/81	6	03/11/81
7	04/11/81	7	04/11/81
8	05/11/81	8	05/11/81
9	06/11/81	9	06/11/81
10	07/11/81	10	07/11/81
11	08/11/81	11	08/11/81
12	09/11/81	12	09/11/81
13	10/11/81	13	10/11/81
14	11/11/81	14	11/11/81
15	12/11/81	15	12/11/81
16	01/12/82	16	01/12/82
17	02/12/82	17	02/12/82
18	03/12/82	18	03/12/82
19	04/12/82	19	04/12/82
20	05/12/82	20	05/12/82
21	06/12/82	21	06/12/82
22	07/12/82	22	07/12/82
23	08/12/82	23	08/12/82
24	09/12/82	24	09/12/82
25	10/12/82	25	10/12/82
26	11/12/82	26	11/12/82
27	12/12/82	27	12/12/82
28	01/01/83	28	01/01/83
29	02/01/83	29	02/01/83
30	03/01/83	30	03/01/83
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32	05/01/83	32	05/01/83
33	06/01/83	33	06/01/83
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42	03/02/84	42	03/02/84
43	04/02/84	43	04/02/84
44	05/02/84	44	05/02/84
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53	02/03/85	53	02/03/85
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65	02/04/86	65	02/04/86
66	03/04/86	66	03/04/86
67	04/04/86	67	04/04/86
68	05/04/86	68	05/04/86
69	06/04/86	69	06/04/86
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73	10/04/86	73	10/04/86
74	11/04/86	74	11/04/86
75	12/04/86	75	12/04/86
76	01/05/87	76	01/05/87
77	02/05/87	77	02/05/87
78	03/05/87	78	03/05/87
79	04/05/87	79	04/05/87
80	05/05/87	80	05/05/87
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85	10/05/87	85	10/05/87
86	11/05/87	86	11/05/87
87	12/05/87	87	12/05/87
88	01/06/88	88	01/06/88
89	02/06/88	89	02/06/88
90	03/06/88	90	03/06/88
91	04/06/88	91	04/06/88
92	05/06/88	92	05/06/88
93	06/06/88	93	06/06/88
94	07/06/88	94	07/06/88
95	08/06/88	95	08/06/88
96	09/06/88	96	09/06/88
97	10/06/88	97	10/06/88
98	11/06/88	98	11/06/88
99	12/06/88	99	12/06/88
100	01/07/89	100	01/07/89

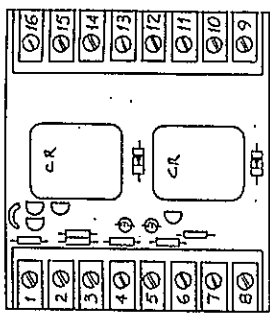


NOTE:
 1) A DENOTES 220 V OPTION PACKAGE

REF.	ADD TB'S 65F66	E.C.O. NO.	AP'D BY	DATE
INDUSTRIAL INFORMATION CONTROLS				
7870 PART 0817 (612-174-0100)				
CENTRALISER, IN 55317				
TITLE: AUXILIARY BOX LAYOUT				
APPLICATION: PARTNER II 5/8				
SCALE	1/2	DWG NO.	6-09-013-106	SHEET NO. B
DATE	26 Jul 88	EDN BY	TL. M. O'NEILL	SHEET NO.



PARTS LIST	
DESCRIPTION	QTY.
RELAY DRDT 24V	2
4.7 K RES.	2
68 K RES.	2
100K RES.	1
12K RES.	1
TRANSISTOR 2N3646	4
DIODES IN4005	2
L.E.D.	2
JUMPER J1	1



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USED ON

CENTURION IV

INDUSTRIAL INFORMATION CONTROLS, INC.
14277 MARTIN DRIVE
ROSHARON, MINNESOTA 55344

TITLE

RELAY BOARD

PART NO.

6-09-002-022

REV	DATE	APPD	REV	DATE	APPD
3	5-28-84		1	1-19-84	
2	2-2-84				
1	1-19-84				

NO SCALE

SHEET 101

POWER SUPPLY DATA

- NOTES:
1. 'P' DESIGNATES MALE
 2. AMP PLUG, CD-17
 3. (WC-06) FOR P-PLUG
 4. ALL LENGTHS: 38 IN.
 5. STAND ALONE MODELS: LENGTH: 30 IN.
 6. BEND J2 WIRES TO RIGHT FOR STAND ALONE MODELS. BEND J2 WIRES TO LEFT FOR ALL OTHER APPLICATIONS.
 7. ADD MOV TO TB 1 & 2

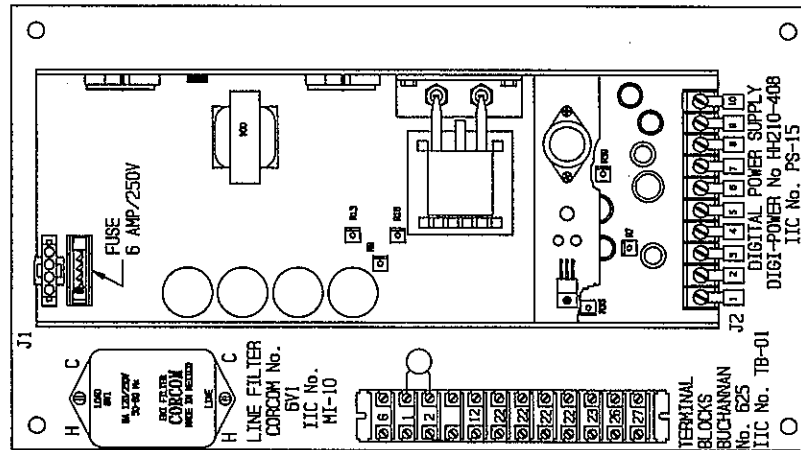
- POWER SUPPLY DATA
- J1-1 115VAC HOT OUTPUT
 - J1-2 NOT USED
 - J1-3 CHASSIS GROUND
 - J1-4 115VAC COMMON INPUT
 - J2-1 NOT USED (POWER FAIL)
 - J2-2 GND. (POWER FAIL RET.)
 - J2-3 -15VDC • 1.5A OUTPUT
 - J2-4 GROUND
 - J2-5 +24VDC • 2.0A OUTPUT
 - J2-6 +15VDC • 4.0A OUTPUT
 - J2-7 GROUND
 - J2-8 +5VDC • 20A OUTPUT
 - J2-9 +5VDC • 20A OUTPUT
 - J2-10 +5VDC • 20A OUTPUT
 - J1 CONNECTOR - AMP P/N 350779-1
 - J1 SOCKET - AMP P/N 350689-1
 - R9-11M ADJ.: PRESET TO 120% TOTAL POWER OUTPUT
 - R13-0VP ADJ.: PRESET TO 140% (ALL OUTPUTS)
 - R16-B4 ADJ.: PRESET (INTERNAL VOLTAGE)

ASSEMBLY WIRING (ALL 14 GA.)

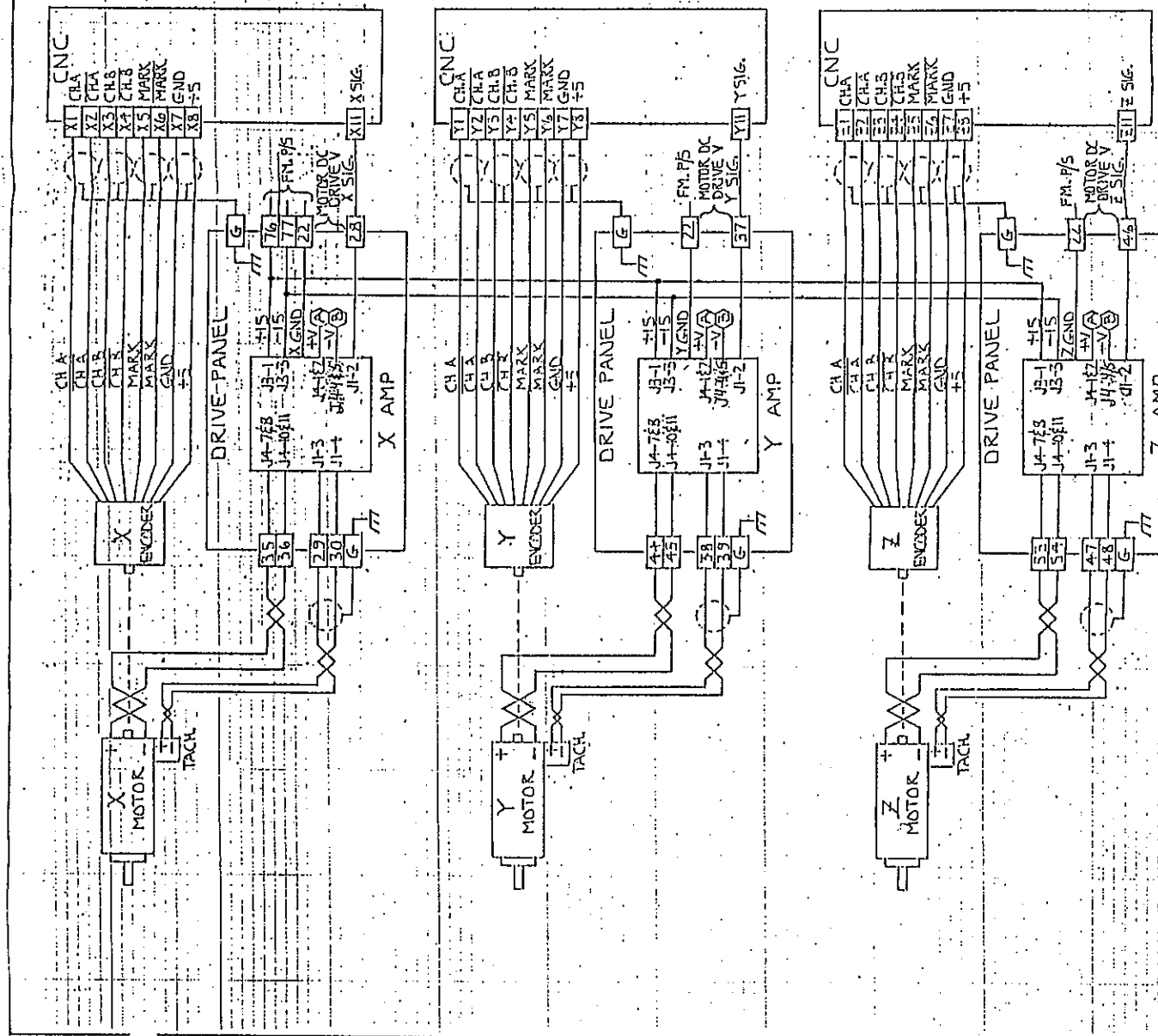
FROM	TO	FROM	TO
J1-3	TB-6	J2-5	P-4
LF-6ND	TB-6	J2-6	TB-26
LF-LINE-C	TB-1	J2-6	P-6
J1-4	LF-LOAD-H	J2-6	P-8
LF-LINE-H	TB-2	J2-7	TB-22
J1-1	LF-LOAD-C	J2-7	P-13
J2-2	TB-22	J2-8	TB-22
J2-2	P-10	J2-8	P-11
J2-3	TB-27	J2-8	P-12
J2-3	P-7	J2-9	P-1
J2-4	TB-22	J2-9	P-2
J2-4	P-14	J2-10	TB-23
J2-5	TB-12	J2-10	P-3

TRIM POT DEFINITIONS

- R 9 11M ADJUST R35 +5V ADJUST
- R13 0VP ADJUST R57 -15V ADJUST
- R16 +3V ADJUST R58 +15V ADJUST



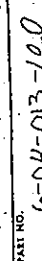
A	ADD MOV	19	M.F.	5/89
REV.	DESCRIPTION	E.C.O. NO.	APPRO BY	DATE
TOLERANCE UNLESS SPECIFIED X.XXX ± X.XX ± X.X ± X ±				
MATERIAL/FINISH				
TITLE: DIGITAL PWR. PANEL ASSY. APPLICATION: GENERAL PRODUCTS SCALE: 2.5:1 DATE: 17 NOV 88 DRAWN BY: REUTER CHECKED BY: 1 OF 1				

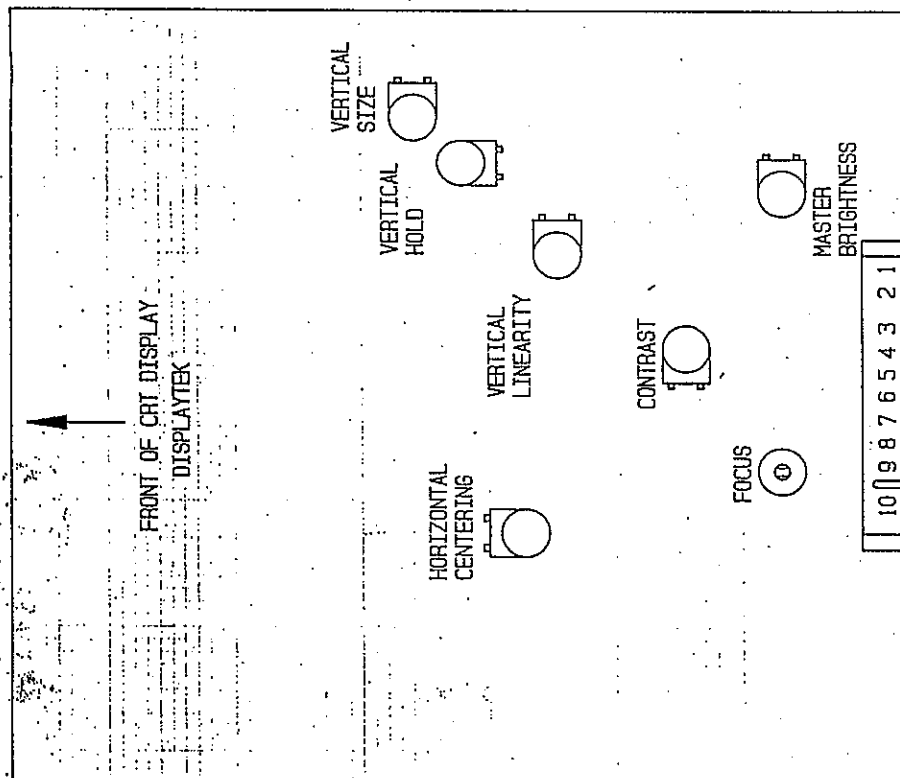


REV.	DESCRIPTION	E.C.O. NO.	APP'D BY	DATE
A	J4-3/4 TO 4/5 XY2 AMPS			1988

TOLERANCE UNLESS SPECIFIED	
X.XXX	±
X.XX	±
X.X	±
ANGLE	±
MATERIAL FINISH	

INDUSTRIAL INFORMATION CONTROLS	
7870 PLEX DRIVE	
CHASSIS, IN 55317	
TITLE: MOTOR DRIVER CONTROL	
APPLICATION: PARTNER II 3/8	
SCALE	1/4" = 1"
DATE	1988-01-10
DESIGN BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE





REV.	DESCRIPTION	E.C.O. NO.	APPRO BY	DATE
	TOLERANCE UNLESS SPECIFIED			
	X.XX			
	X.XX			
	X.XX			
	ANGLE			
	MATERIAL/FINISH			
				
INDUSTRIAL INFORMATION CONTROLS 7870 PINE DRIVE CHAMBERS, MI 48107				
TITLE: CRT ADJUSTMENT INDICATOR APPLICATION: CENTURION IV				
SCALE	DATE	DRAWN BY	DATE	SIZE
				B

