

Manufacture: GILDEMEISTER

Mach type: LATHE

Model No: NEF_660

ID No: JHB9704M003

Serial No: 1248-07427

Drawing No: 1248-07427-A

Sheet No: Z_0F_7

Revised by DSCR-M MECHANICSBURG, Pa.

JR

070MA0-2 8/97

PARTS LIST

SYM.	AMT	DESCRIPTION	PART NO.	MAKE
CB1	1	MOTOR CIRCUIT PROTECTOR 30 A.	C370HMCP1	C.H.
X,Z L.S.'S	4	LIMIT SWITCH PRECISION	E50KL535	C.H.
T1	1	TRANSFORMER CONTROL 750 VA	TA-2-81216	ACME
T2	1	TRANSFORMER CONTROL 100 VA	TA-83220	ACME
3T	1	3 PH. GEN. PURPOSE TRANS. 9.0 KVA	76-0209SH	DONGAN
MAIN DISCO.	1	DISCONNECT 100 AMP 600 VOLT	1494V-DS100	A.B.
TAILSTOCK L.S.	1	LIMIT SWITCH MINATURE	MS09S05-02	TELE.
X,Z HOME L.S.'S	4	SPECIAL PURPOSE LIMIT SWITCH	E50TD1	C.H.
M2,M3	2	INTERGAL PROTECTED STARTER	LDILB030FC	TELE.
M1	1	REV. INTERGAL STARTER	LD5LD030FC	TELE.
M1 O.L.	1	OVERLOAD MODULE	LB1LD03M55	TELE.
M2 O.L.	1	OVERLOAD MODULE	LB1LB03P02	TELE.
M3 O.L.	1	OVERLOAD MODULE	LB1LB03P03	TELE.
	3	SINGLE PHASE R-C NETWORK	RCS1A6V	R&K ELECT.
	3	3 PHASE R-C NETWORK	RCY6A-30V	R&K ELECT.
X,Z SRVO DRIVE	2	DIGITAL AMPLIFIER	DDS2.1-W050-DA01	INDRAMAT
SERVO PWR SUP.	1	POWER SUPPLY	TVM 2.4-050	INDRAMAT
	2	10 PIN PHOENIX CONNECTORS	NPN	
	1	TVMELEC. CONNECTION ACCESSORIES	NPN	INDRAMAT
MCR	1	MACHINE TOOL RELAY	MT4640MF	FURNAS
	1	24VDC POWER SUPPLY	B50050	MK
	1	CONTROL CABINET FRAME	X-FPCA1688	HOFFMAN
	1	FRAME SHELF	X-FSH88	HOFFMAN
	1	AIR CONDITIONER 240VAC	X-AC426T88	HOFFMAN
	1	BRACKET	X-ACBB	HOFFMAN
	3	SUBPANEL	X-PP88	HOFFMAN
	1	TOP DOOR WINDOW	X-DWT88PC	HOFFMAN
	1	GRID PLATE	X-GH6P8	HOFFMAN
	1	KEYBOARD COMPARTMENT	X-KBC8	HOFFMAN
	1	SOLID BOTTOM DOOR	X-DS88	HOFFMAN
	2	PUSHBUTTON HANDLE	X-FHKPB	HOFFMAN
	1	SOLID BASE	X-B088	HOFFMAN
	2	SOLID SIDE	X-SS168	HOFFMAN
	1	FRAME SHELF	X-FSH88	HOFFMAN
	1	DISCONNECT DOOR	X-DSC168	HOFFMAN
	6	FASTNER PACKAGE	X-GFM6	HOFFMAN
9/230	1	PROCESSOR 9/SER.-32 BIT	8520-SP1	A.B.
X,Z TERMINATION PANELS	2	ENCODER TERMINATION PANELS	1771-HTE	A.B.
	2	CONNECTOR VIDEO	8520-D15M	A.B.
	2	CABLE FOR TERMINATION PANEL	8500-TPC	A.B.
	1	FIRMWARE EXECUTIVE	8520-EXEC1	A.B.
	1	FIRMWARE/CMOS OPTION PLUG	8520-S	A.B.

PENDANT

HPG
HIGH DENSITY
I/O BOARD

1	OPTION GROUP 1-2-3-4	8520-1-2-3-4	A.B.
1	BATTERY LITHIUM	8520-LIBAT	A.B.
1	MONO OPERATOR PANEL ASSEMBLY PUSHBUTTON STYLE 115/230 VAC	8520-MPA2	A.B.
1	CONNECTOR VIDEO	8520-D15F	A.B.
1	CONNECTOR MTB PANEL	8520-D25F8	A.B.
1	CONNECTOR RS-232	8520-D25M	A.B.
1	MANUAL AMP REF	8520-ARM2	A.B.
1	MANUAL PAL REF	8520-PRM2	A.B.
1	MANUAL LATHE USER	8520-LUM	A.B.
1	MINI-DNC	8520-MDNC	A.B.
1	HAND PULSE GENERATOR	8500-HPG2	A.B.
1	HIGH DENSITY I/O	8500-HDM1	A.B.
1	CONNECTOR INPUT CONNECTIONS	8520-D37F	A.B.
1	CONNECTOR OUTPUT CONNECTIONS	8520-D37M	A.B.
1	CABLE FIBER OPTIC	8500-FOC5	A.B.
2	PENDANT BASE	C-CS6BB	HOFFMAN
1	SQUARE PENDANT	C-CS6T20	HOFFMAN
1	JOINT SETUP	CCS6SJ	HOFFMAN
1	PENDANT ROTATION	C-CS56RL	HOFFMAN
1	ELBOW	CCS6EL	HOFFMAN
1	FLANGE COUPLING	CCS6FC	HOFFMAN
1	HANDLE PACKAGE	CCCHS	HOFFMAN

COSA CORPORATION



17 PHILIPS PARKWAY/ MONTVALE, NEW JERSEY 07645/(201) 391-0700

TELEX NUMBER: 134396

CABLE ADDRESS: COSACO MONTVALE

NID 031359
NID 031360

February 1, 1983

Trident Refit Facility
Code 210
Bremerton, WA 98315

ATT: Mr. Lloyd Harris

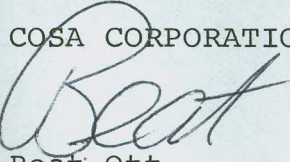
Dear Lloyd:

As per our phone conversation of today's date, enclosed please find a set of mechanical drawings for the N.E.F. 480.

I trust this will be of help to you. If you require any additional information, please feel free to call.

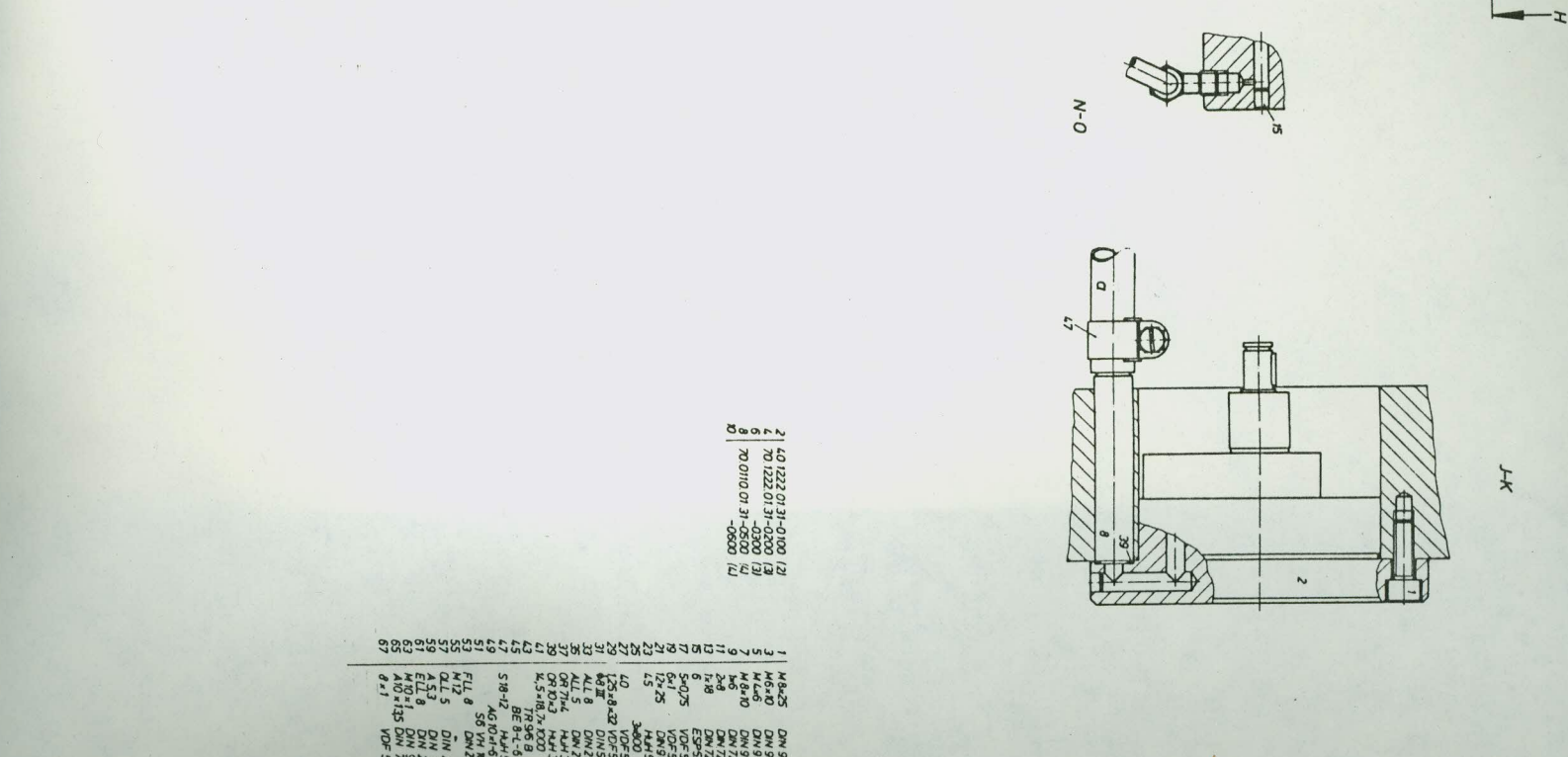
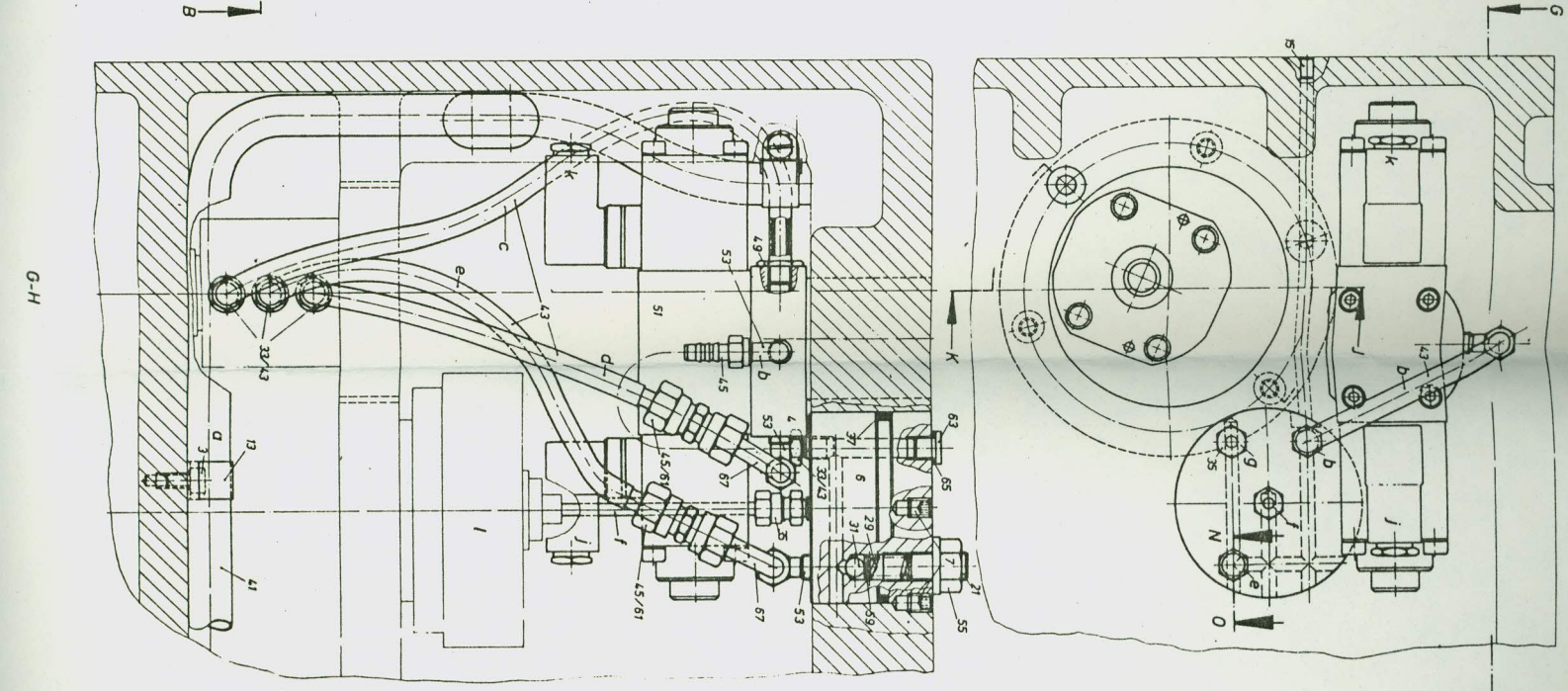
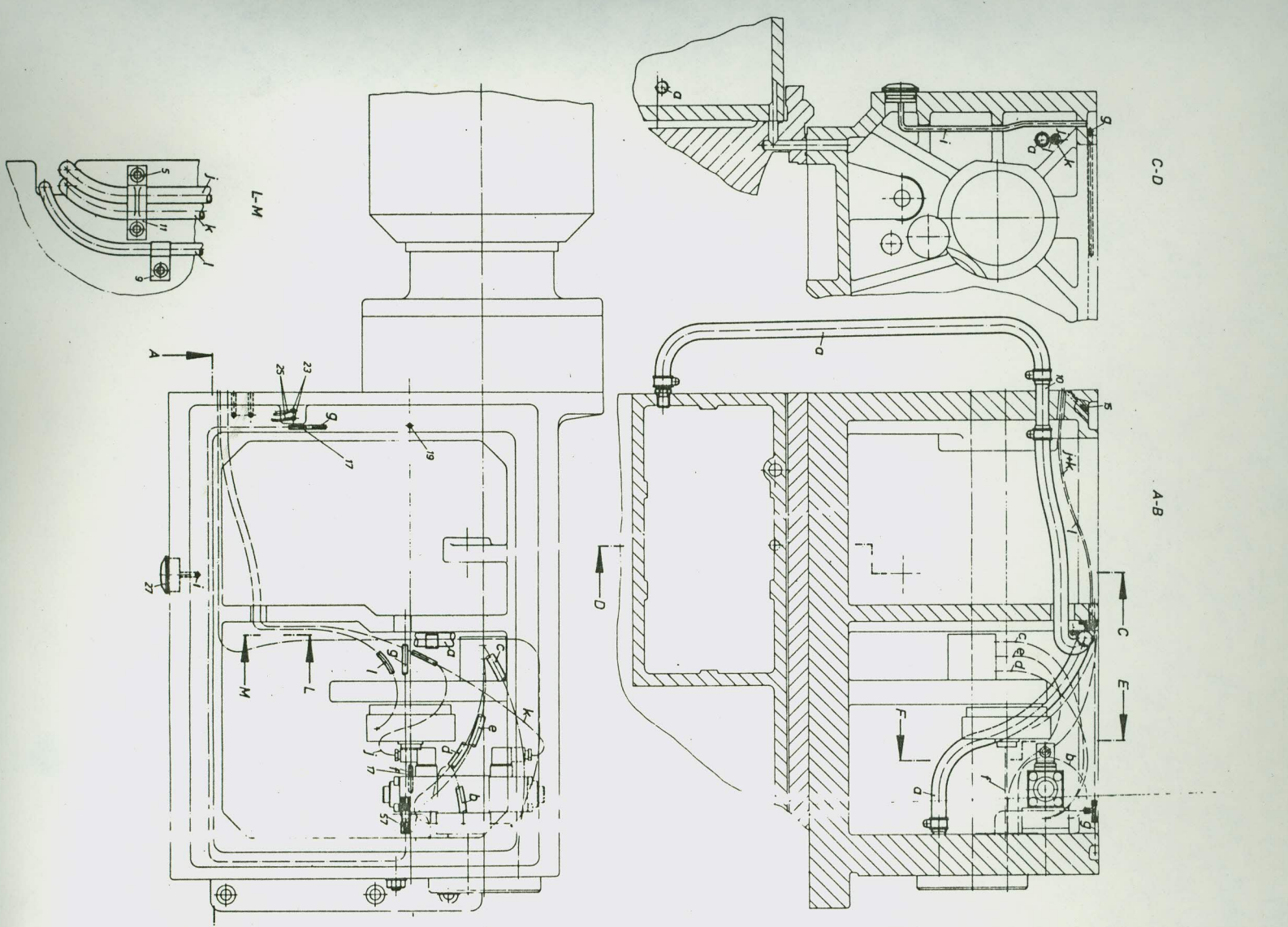
Sincerely,

COSA CORPORATION


Beat Ott
Service Manager

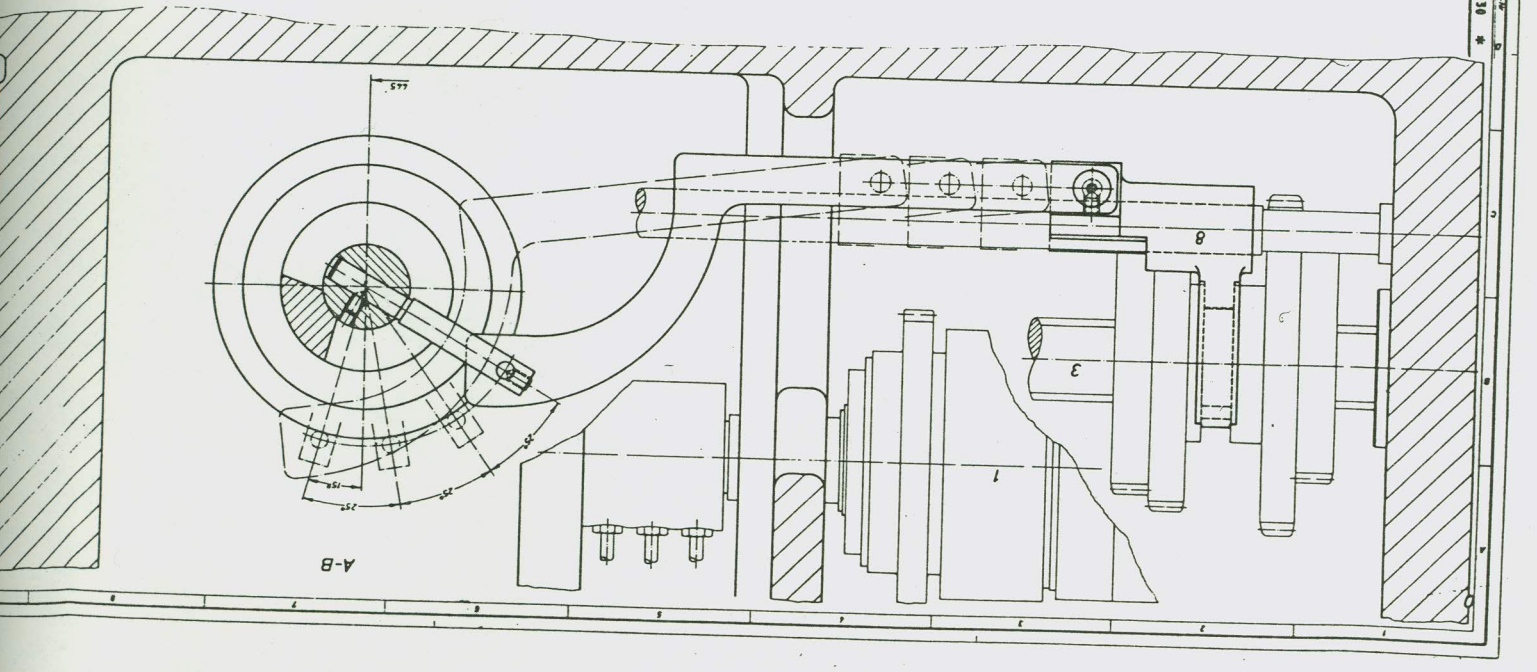
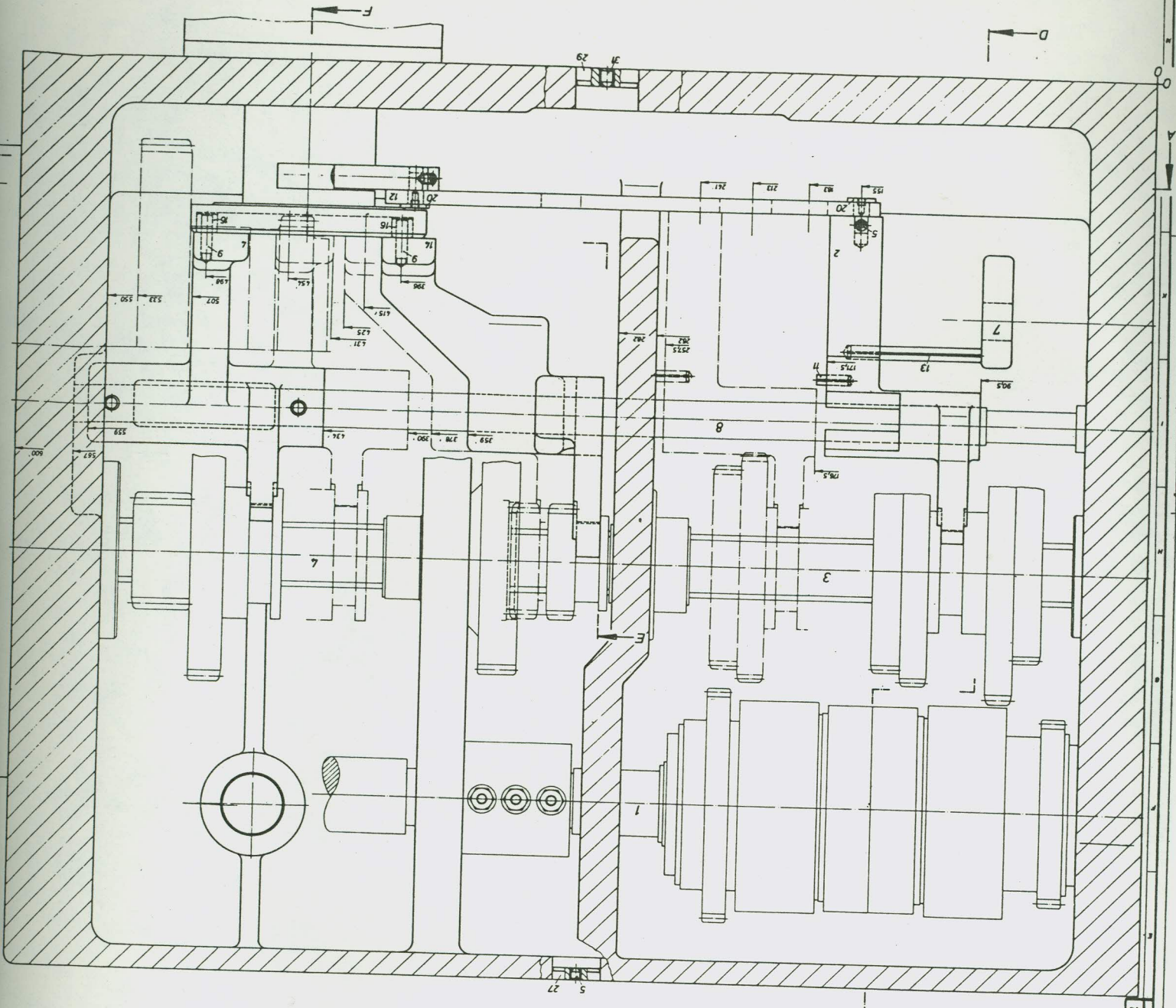
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Enclosure

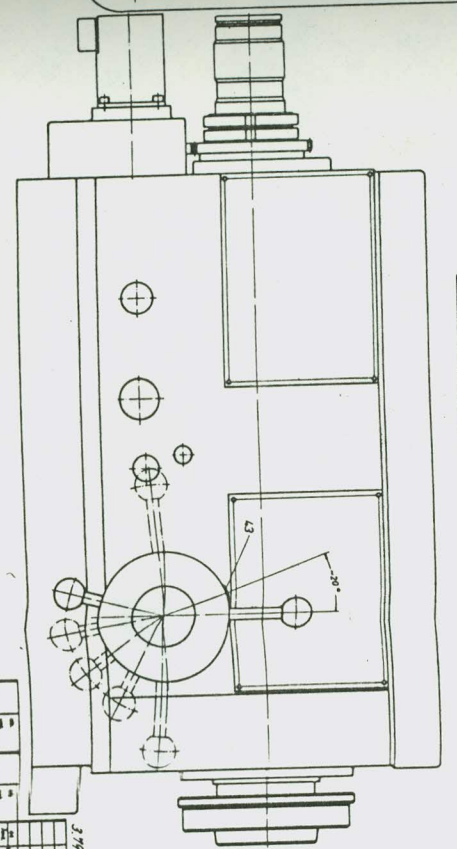
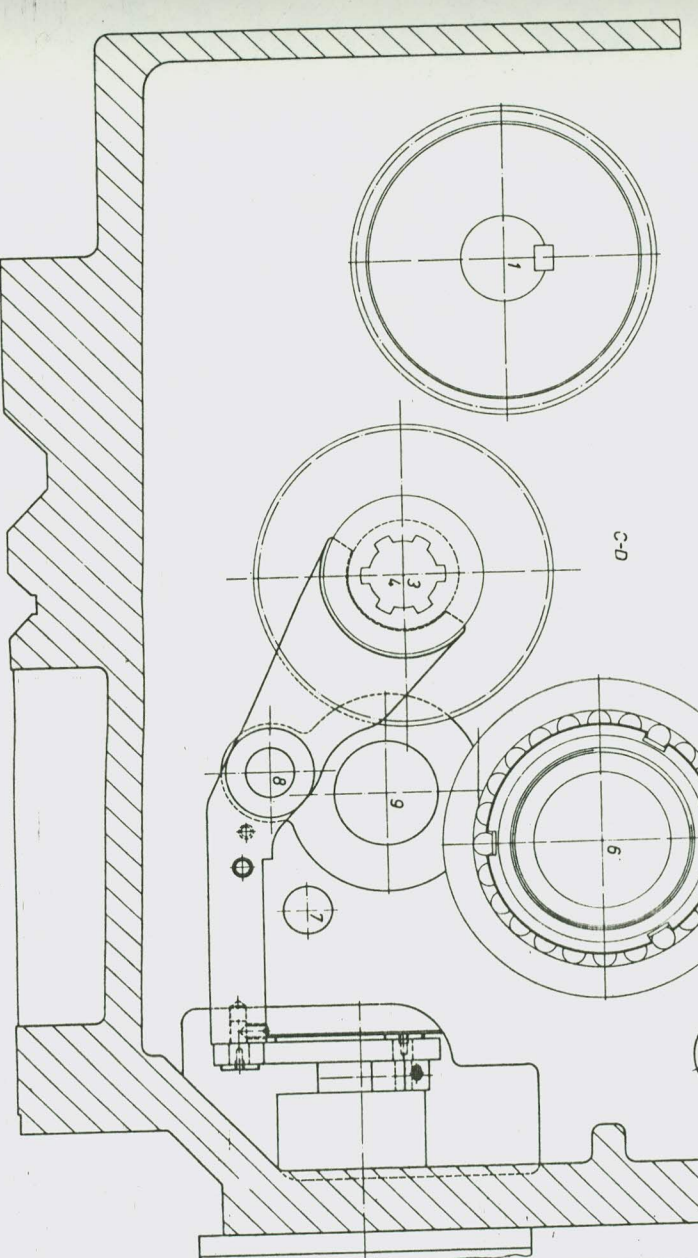
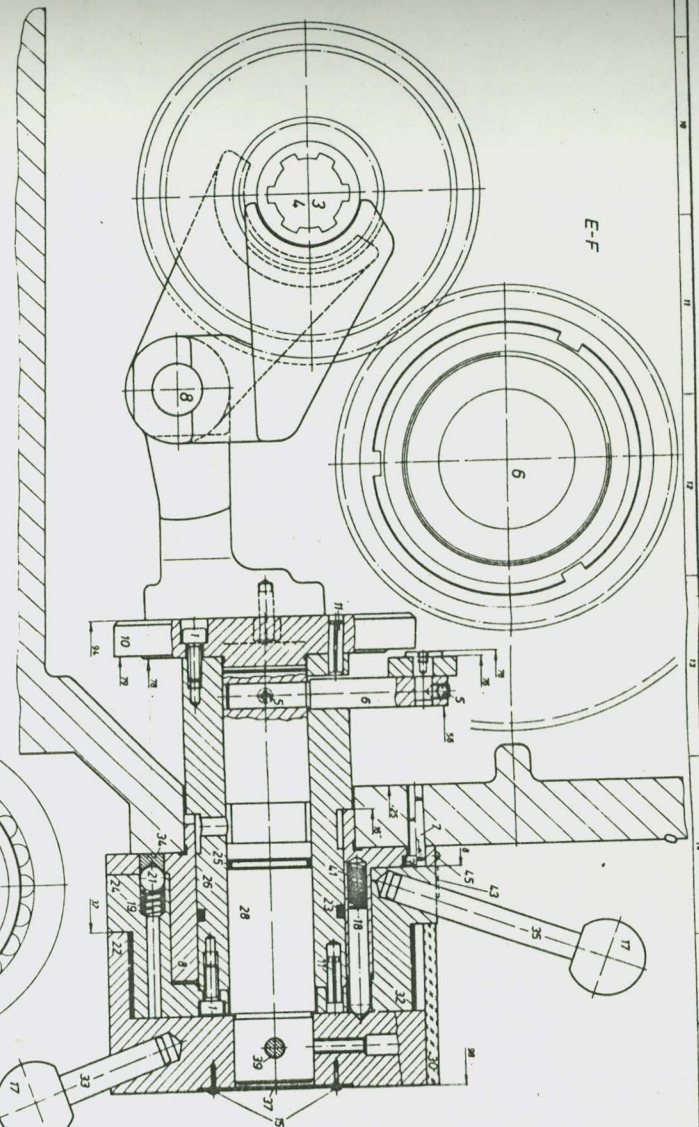


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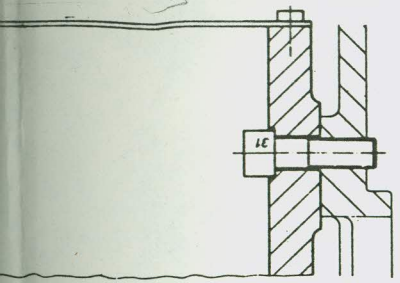


21	70 0170 01 33-3900 (L)	1	M5x8	DIN 913
4	-0,00 (L)	51	M6x8	DIN 7984
8	5,000 (L)	7	6x24	DIN 914
10	-5000 (L)	9	6x26	DIN 7978
12	-5000 (L)	11	6x30	DIN 6329
14	-5000 (L)	13	6x32	DIN 1481
16	40 0170 01 33-3000 (L)	15	2x6	DIN 1476
18	70 0170 04 08-0700 (L)	17	KN 32	DIN 319
20	70 0170 04 08-0700 (L)	19	10x8x24	DIN 510
22	70 0222 01 33-0700 (L)	20	10x8x24	DIN 510
24	70 0170 01 31-0700 (L)	21	OR 31x2	ESD 570
26	-0,00 (L)	23	M4x30	H4H 313
28	-0,00 (L)	25	OR 31x2	ESD 570
30	-0,00 (L)	27	M4x30	H4H 313
32	70 0170 01 31-0700 (L)	29	M4x30	H4H 313
		31	12x30	VDF 5322
		33	12x30	VDF 5322
		35	12x30	VDF 5322
		37	6x20	DIN 7978
		39	1,25-6,3-22	VDF 5400
		43	0	H4H 413
		45	2x6	DIN 1476

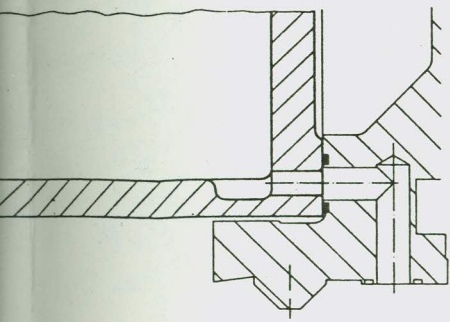
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- 31 M12x1.0 DM 912
- 33 M12x2.0 DM 912
- 35 10x1.0 DM 778
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- 1 M8x25 DM 912
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- 3 M2x80 DM 912
- 4 701222 02 01-0101 111
- 5 M8x16 DM 912
- 6 401222 02 01-0101 141
- 7 25x30 RH 8008
- 9 M30x15 DM 1804
- 11 ZAMM 3062
- 13 BA0.55x7 DM 3750
- 15 M10 DM 924
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- 21 710110 25 BK
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- 27 M8 DM 924

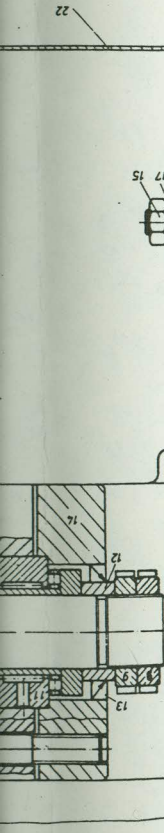
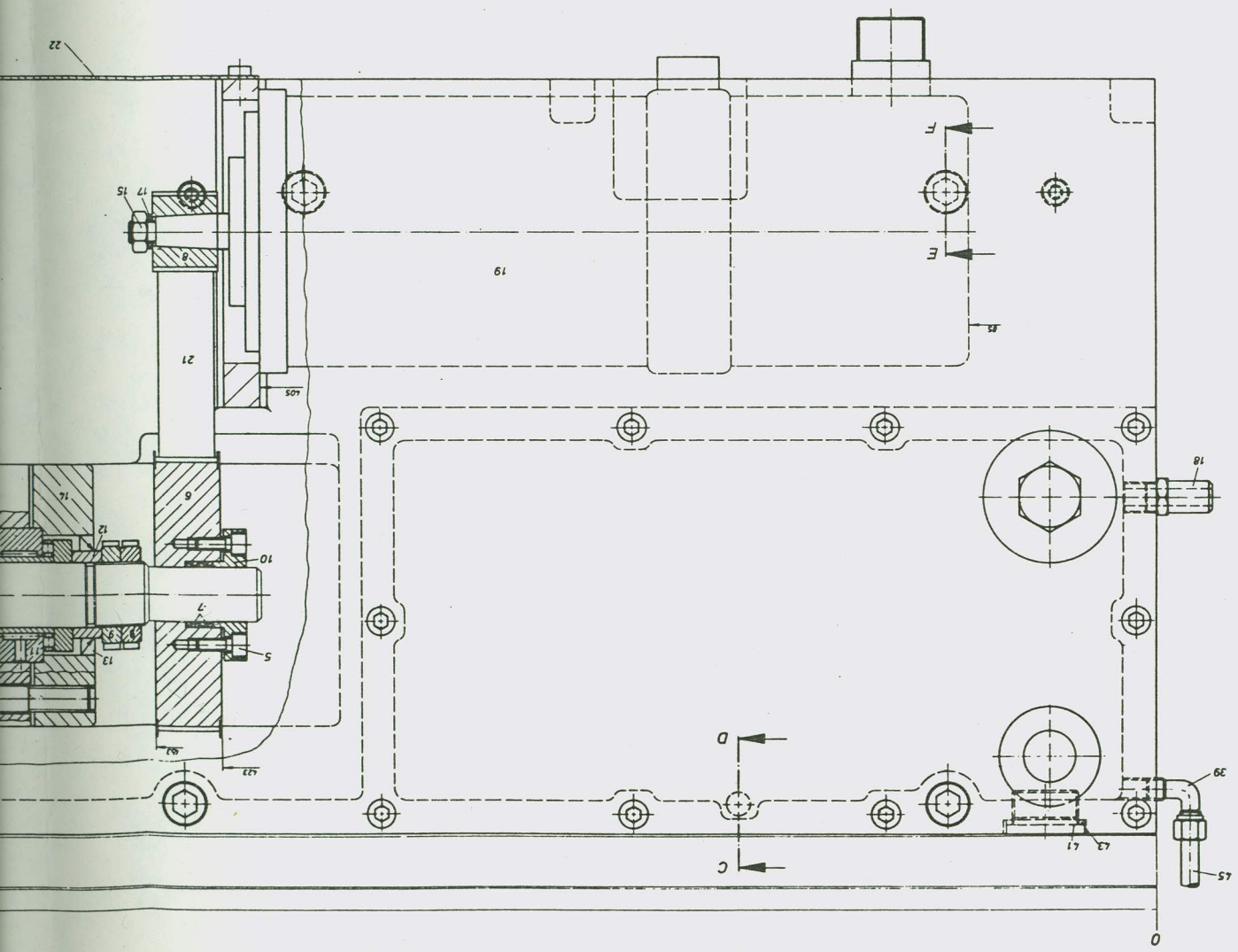
- 39 PTL 8 DM 2253
- 1 M30x15 DM 908
- 2 30x30 CU DM 7603
- 3 8x1 VWR 5700
- 4 M8x10 DM 7984
- 5 A 32x80 CU DM 7503



E-F



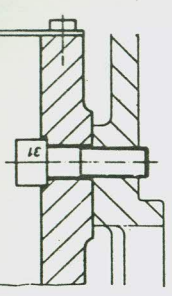
C-D



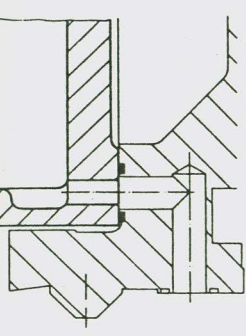
- 27 MB DM 93A
- 25 MB4LO DM 912
- 23 LO VOF 57A1
- 21 701610 25 BK
- 19 OC MBDM 5
- 17 10 DM 79A0
- 15 10 DM 92A
- 13 810-55A7 DM 3750
- 11 2AM 30A2
- 9 M30L5 DM 180A
- 7 25A0 MFM 800A
- 5 MB16 DM 912
- 3 MB40 DM 912
- 2 701222 02 01-0101 111

- 22 601222 02 01-0900 1A1
- 20 70122 02 01-1600 1A1
- 18 701222 01-0700 1A1
- 16 601110 02 01-1100 1A1
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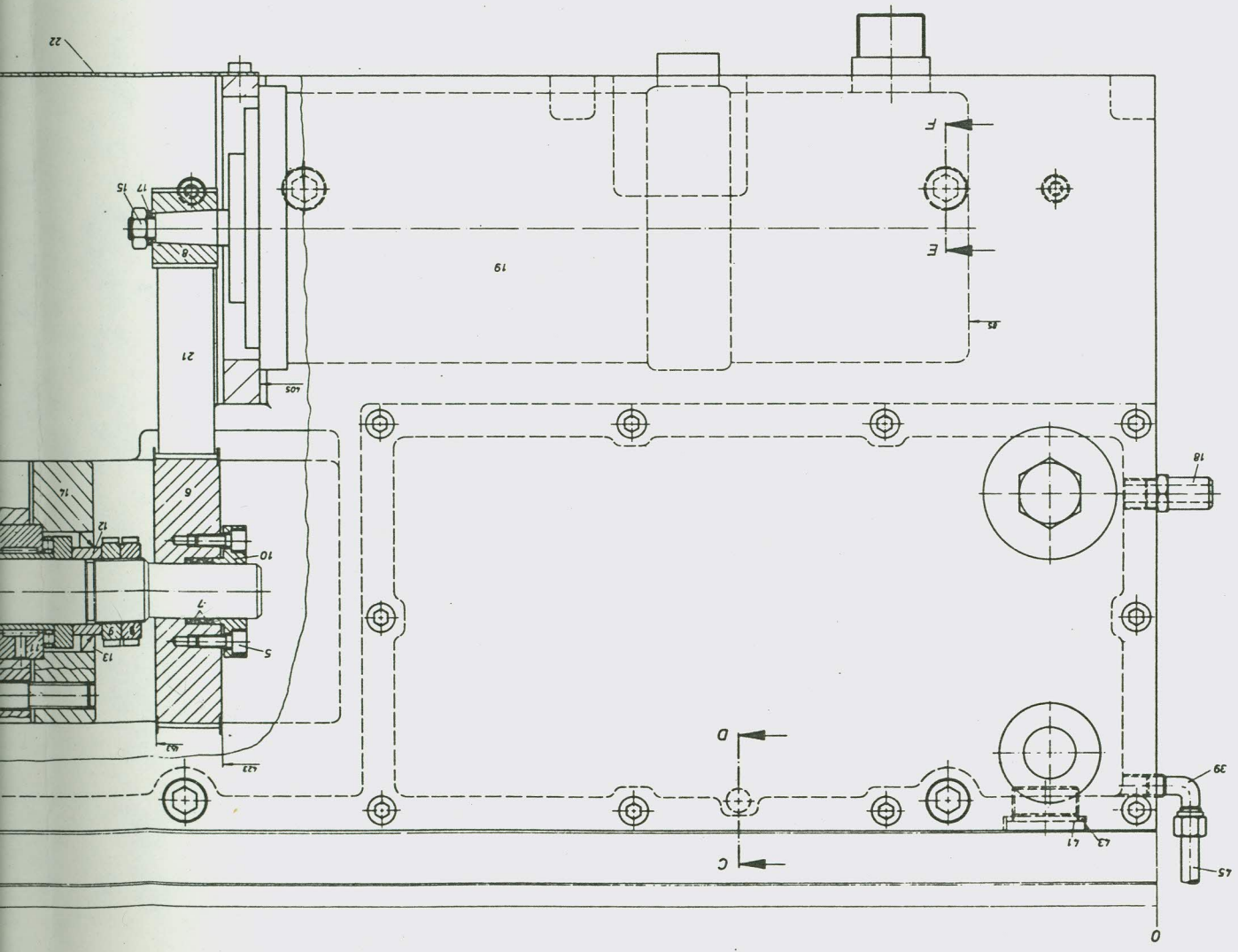
- 39 PTL 8 DM 2353
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- 63 30A 3F CU DM 7603
- 65 8-1 VRF 570
- 67 MB 10 DM 790A
- 69 A 52-80 CU DM 7503

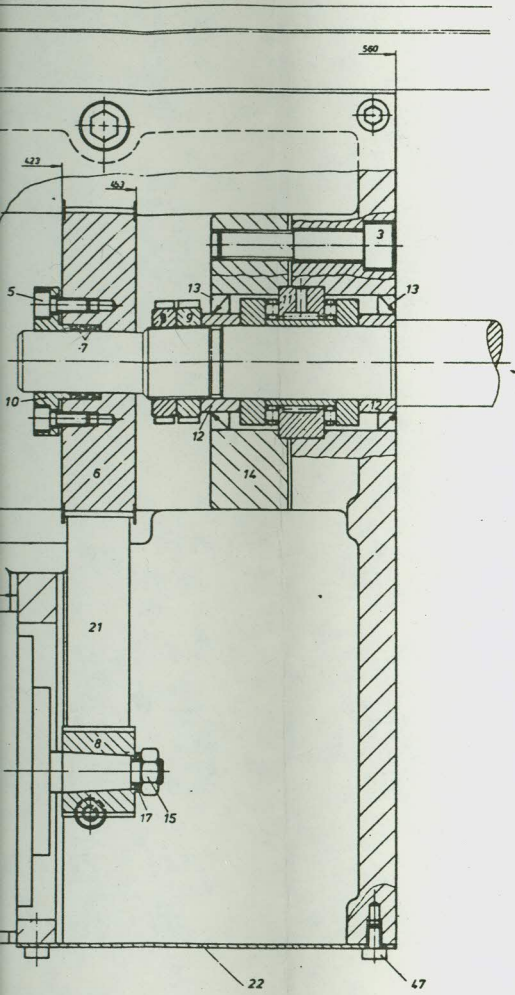


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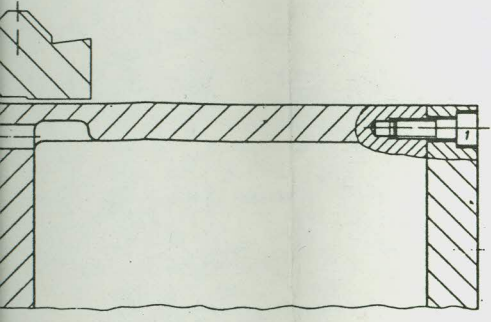


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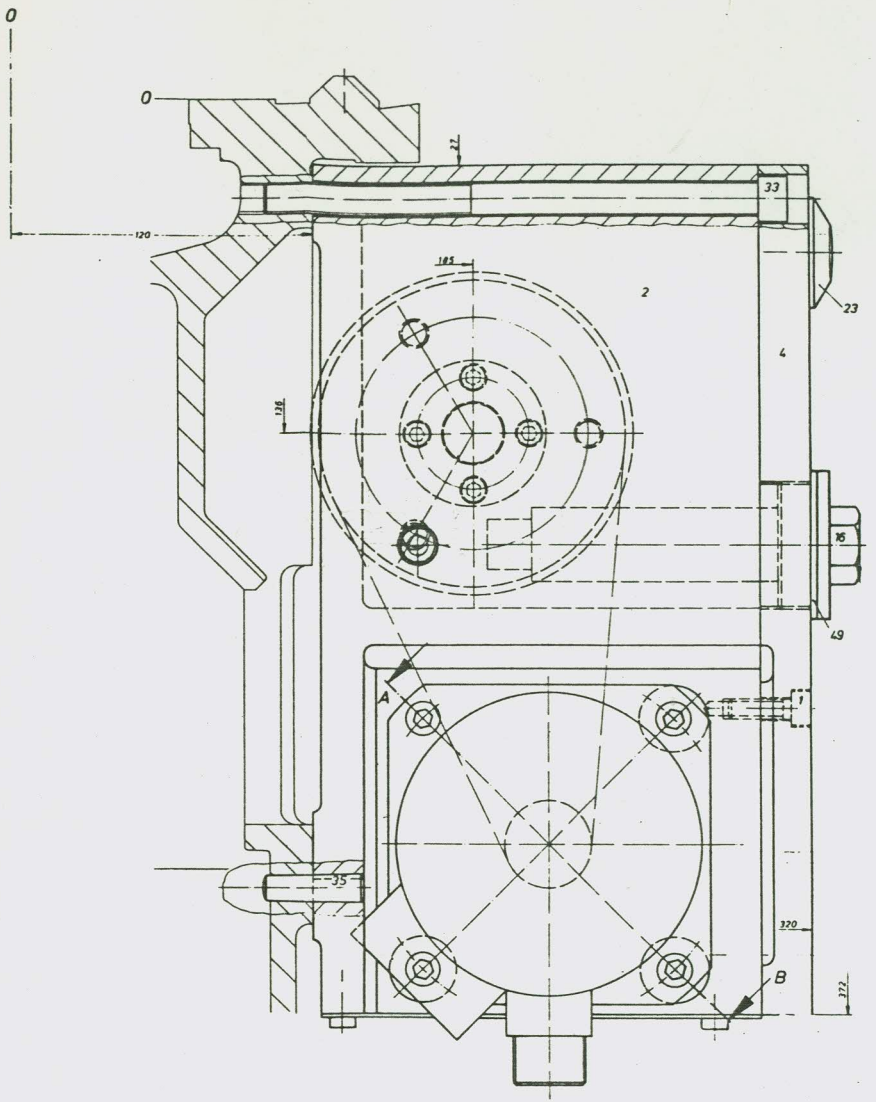
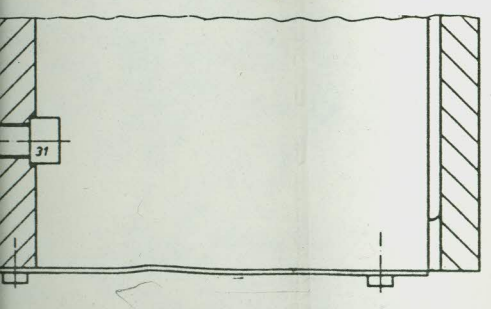




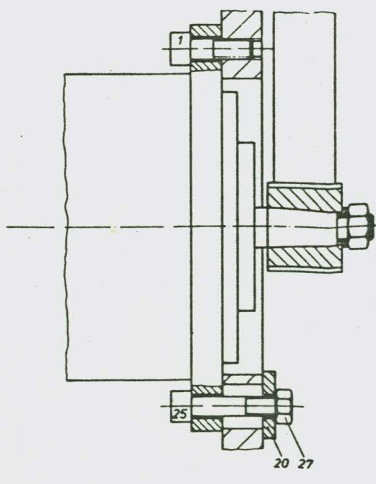
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E-F



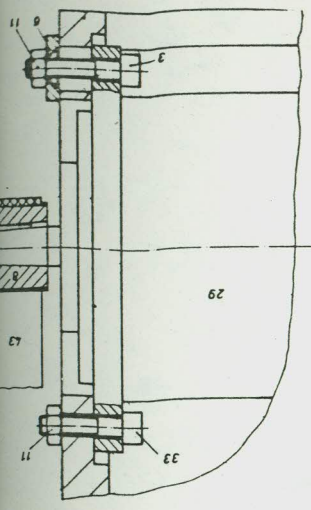
A-B



3.79

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100	100	100	100	100	100	100	100	100	100

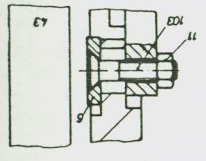
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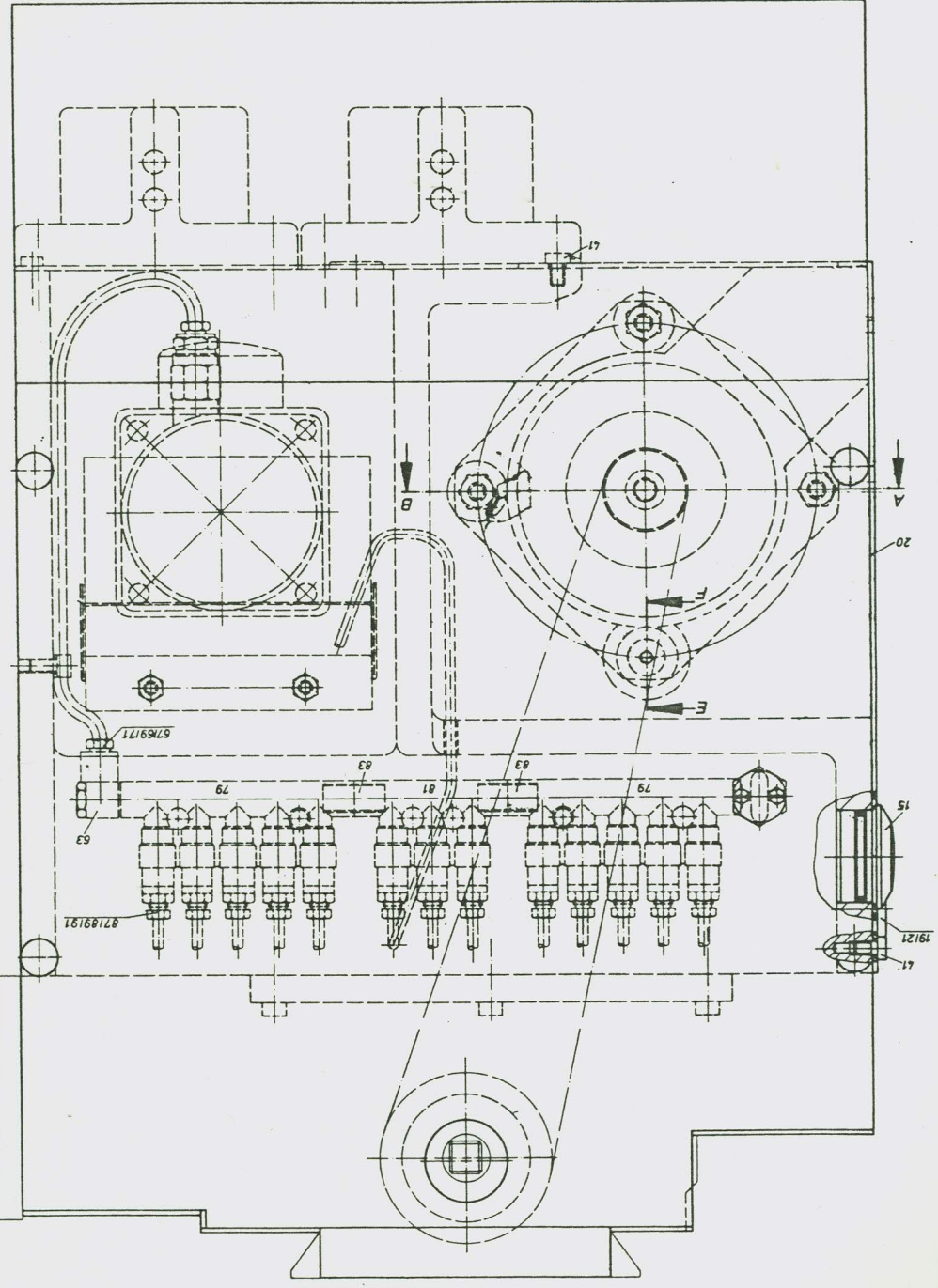
A-B

- | | | | |
|-----|------------------|-----|--------|
| 103 | M 8 x 20 DIN 913 | 67 | L 4.25 |
| 102 | M 8 x 20 DIN 913 | 68 | L 4.25 |
| 99 | M 8 x 20 DIN 913 | 69 | L 4.25 |
| 98 | M 8 x 20 DIN 913 | 70 | L 4.25 |
| 97 | M 8 x 20 DIN 913 | 71 | L 4.25 |
| 96 | M 8 x 20 DIN 913 | 72 | L 4.25 |
| 95 | M 8 x 20 DIN 913 | 73 | L 4.25 |
| 94 | M 8 x 20 DIN 913 | 74 | L 4.25 |
| 93 | M 8 x 20 DIN 913 | 75 | L 4.25 |
| 92 | M 8 x 20 DIN 913 | 76 | L 4.25 |
| 91 | M 8 x 20 DIN 913 | 77 | L 4.25 |
| 90 | M 8 x 20 DIN 913 | 78 | L 4.25 |
| 89 | M 8 x 20 DIN 913 | 79 | L 4.25 |
| 88 | M 8 x 20 DIN 913 | 80 | L 4.25 |
| 87 | M 8 x 20 DIN 913 | 81 | L 4.25 |
| 86 | M 8 x 20 DIN 913 | 82 | L 4.25 |
| 85 | M 8 x 20 DIN 913 | 83 | L 4.25 |
| 84 | M 8 x 20 DIN 913 | 84 | L 4.25 |
| 83 | M 8 x 20 DIN 913 | 85 | L 4.25 |
| 82 | M 8 x 20 DIN 913 | 86 | L 4.25 |
| 81 | M 8 x 20 DIN 913 | 87 | L 4.25 |
| 80 | M 8 x 20 DIN 913 | 88 | L 4.25 |
| 79 | M 8 x 20 DIN 913 | 89 | L 4.25 |
| 78 | M 8 x 20 DIN 913 | 90 | L 4.25 |
| 77 | M 8 x 20 DIN 913 | 91 | L 4.25 |
| 76 | M 8 x 20 DIN 913 | 92 | L 4.25 |
| 75 | M 8 x 20 DIN 913 | 93 | L 4.25 |
| 74 | M 8 x 20 DIN 913 | 94 | L 4.25 |
| 73 | M 8 x 20 DIN 913 | 95 | L 4.25 |
| 72 | M 8 x 20 DIN 913 | 96 | L 4.25 |
| 71 | M 8 x 20 DIN 913 | 97 | L 4.25 |
| 70 | M 8 x 20 DIN 913 | 98 | L 4.25 |
| 69 | M 8 x 20 DIN 913 | 99 | L 4.25 |
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| 67 | M 8 x 20 DIN 913 | 101 | L 4.25 |

E-F



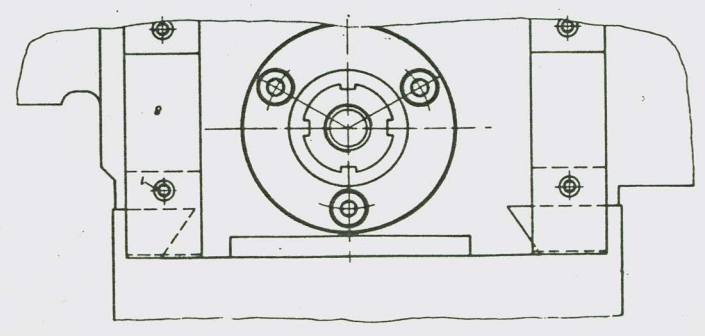
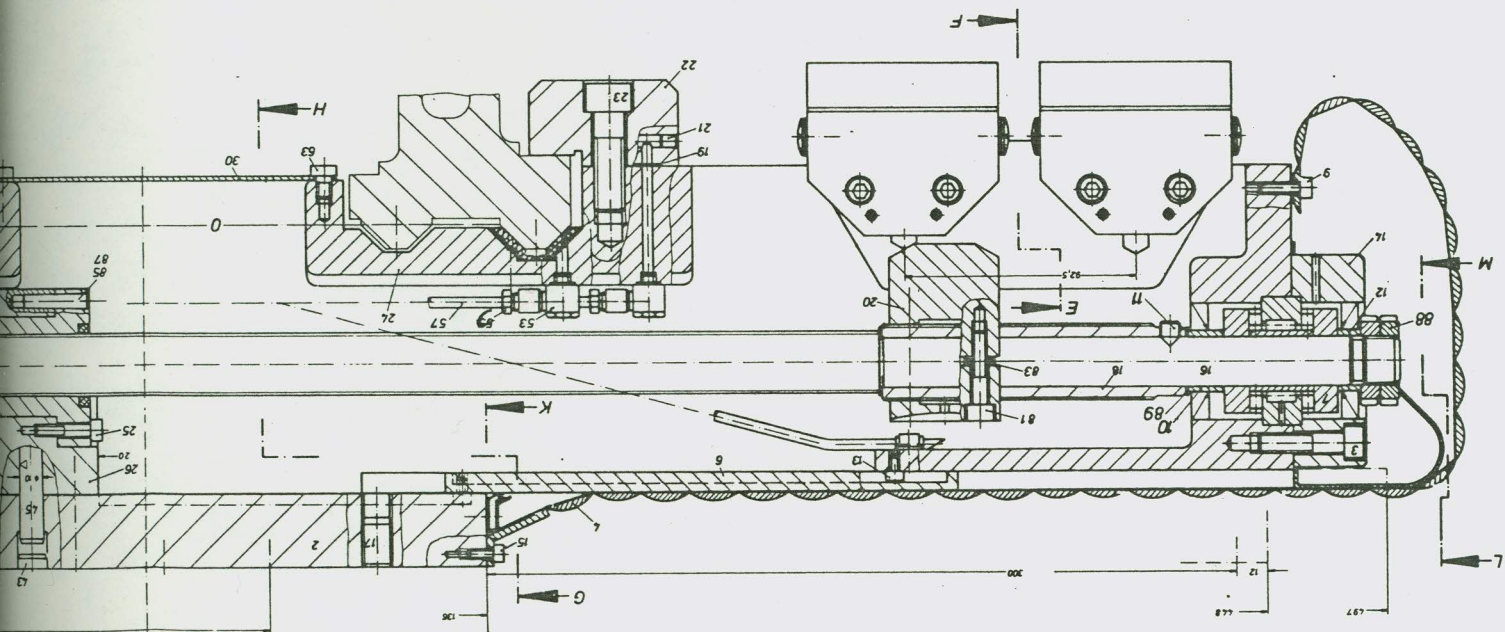
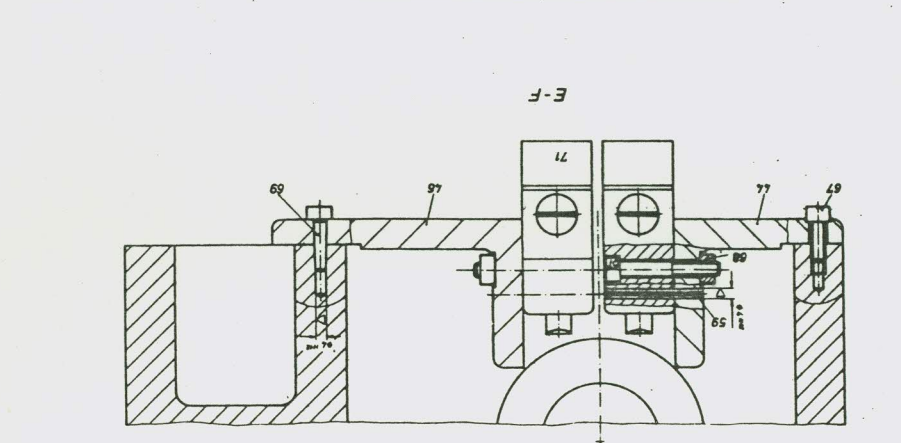
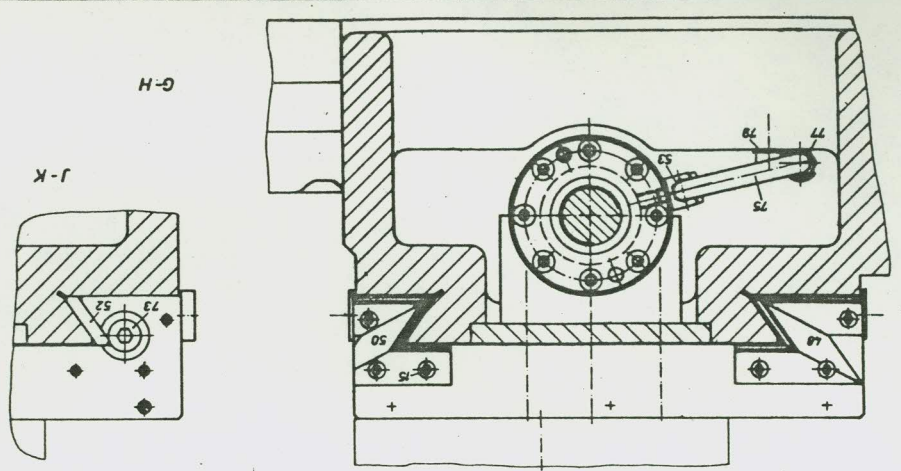
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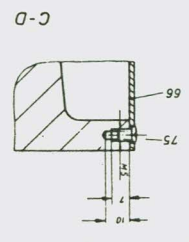
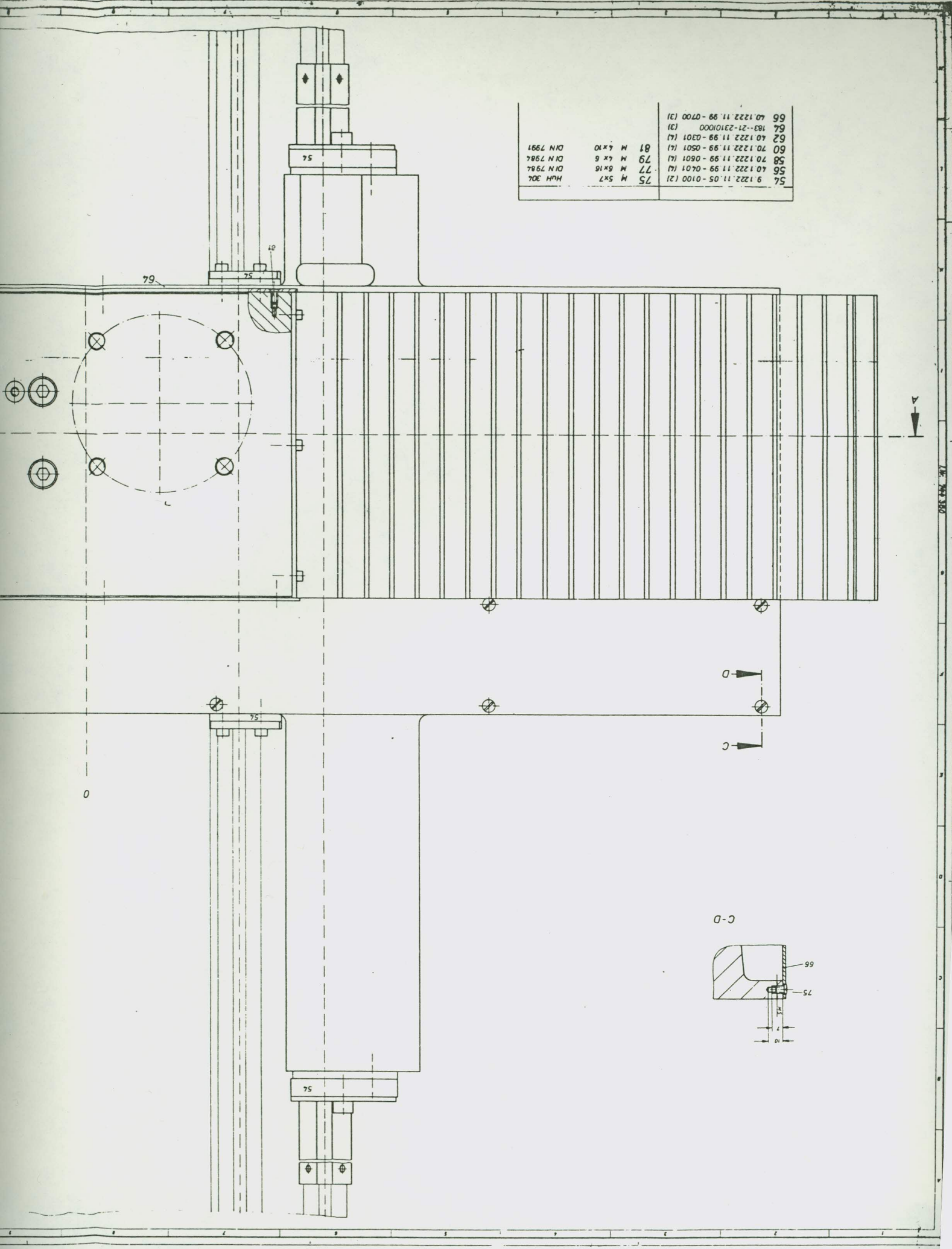
19121

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4	M 8x35	70.1222.11.01-0800 (11)
5	A 25x47x 7	70.1222.11.01-0800 (11)
6	M 5x16	70.1222.11.01-0800 (11)
7	ZAHN 2052 TN	70.1222.11.01-0800 (11)
8	M 5x16	70.1222.11.01-0800 (11)
9	M 5x16	70.1222.11.01-0800 (11)
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13	M 4x 6	70.1222.11.01-0800 (11)
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18	M 12x20	70.1222.11.01-0800 (11)
19	OR 8x Z	70.1222.11.01-0800 (11)
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79	M 6x10	70.1222.11.01-0800 (11)
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81	M 6x10	70.1222.11.01-0800 (11)
82	M 6x10	70.1222.11.01-0800 (11)
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87	M 6x10	70.1222.11.01-0800 (11)
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93	M 6x10	70.1222.11.01-0800 (11)
94	M 6x10	70.1222.11.01-0800 (11)
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98	M 6x10	70.1222.11.01-0800 (11)
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100	M 6x10	70.1222.11.01-0800 (11)

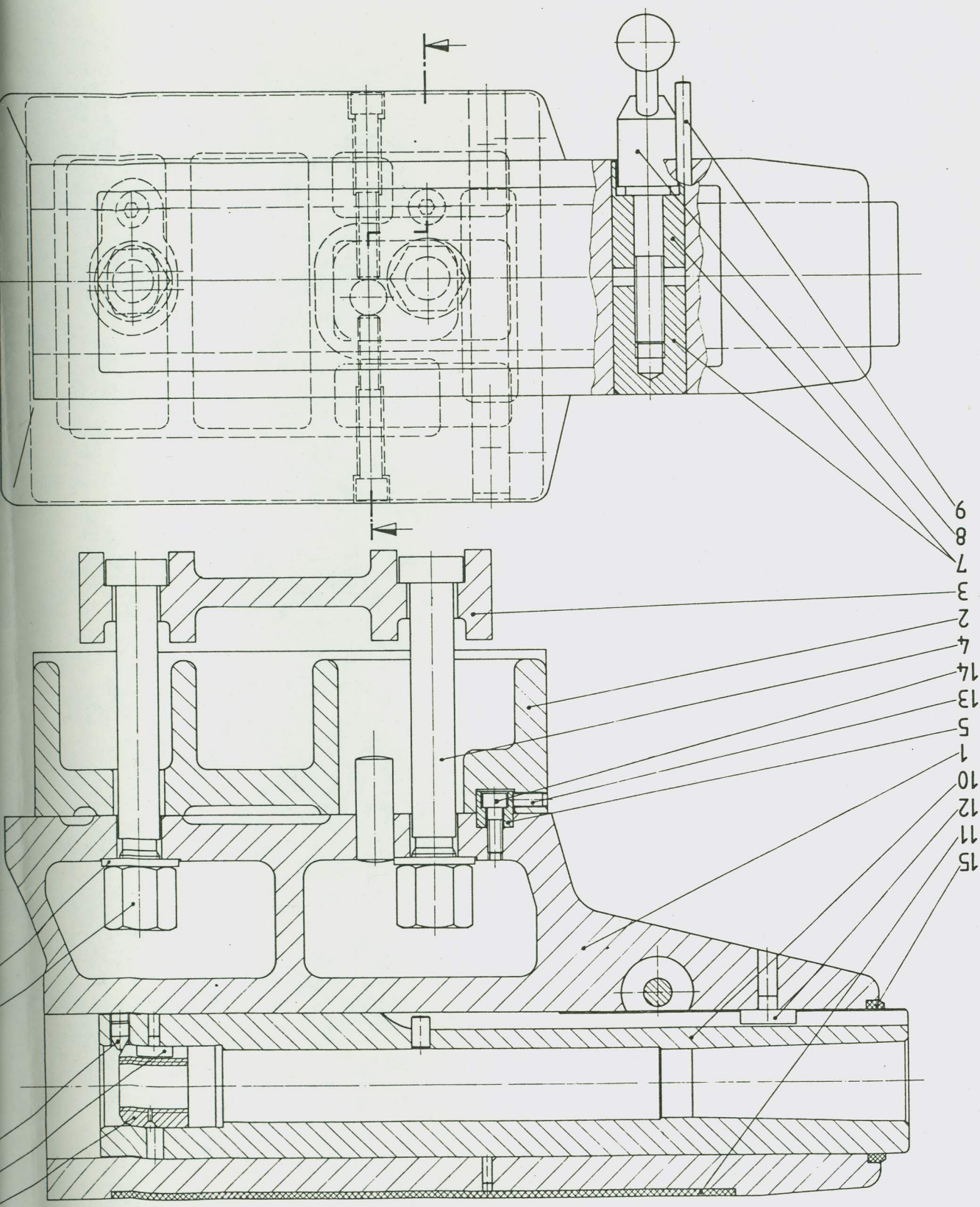


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54	M 5x7	M 5x7	9.1222.11.99-0100 (2)
56	M 6x16	M 6x16	40.1222.11.99-0401 (2)
77	M 6x8	M 6x8	40.1222.11.99-0501 (2)
79	M 4x10	M 4x10	40.1222.11.99-0501 (2)
81	M 4x10	M 4x10	40.1222.11.99-0700 (2)
62	M 4x10	M 4x10	183-21-23101000 (2)
66	M 4x10	M 4x10	40.1222.11.99-0700 (2)

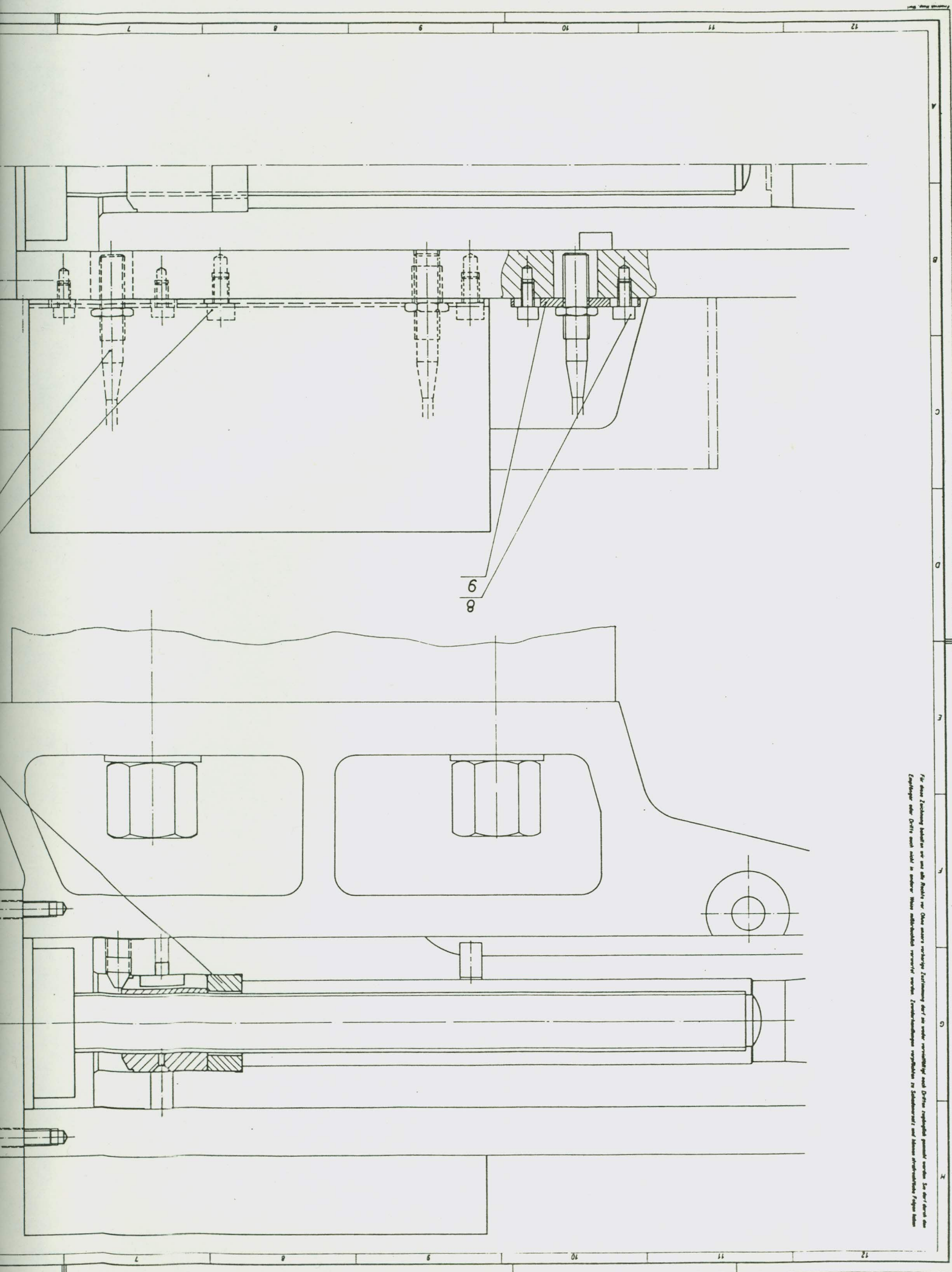


1:1

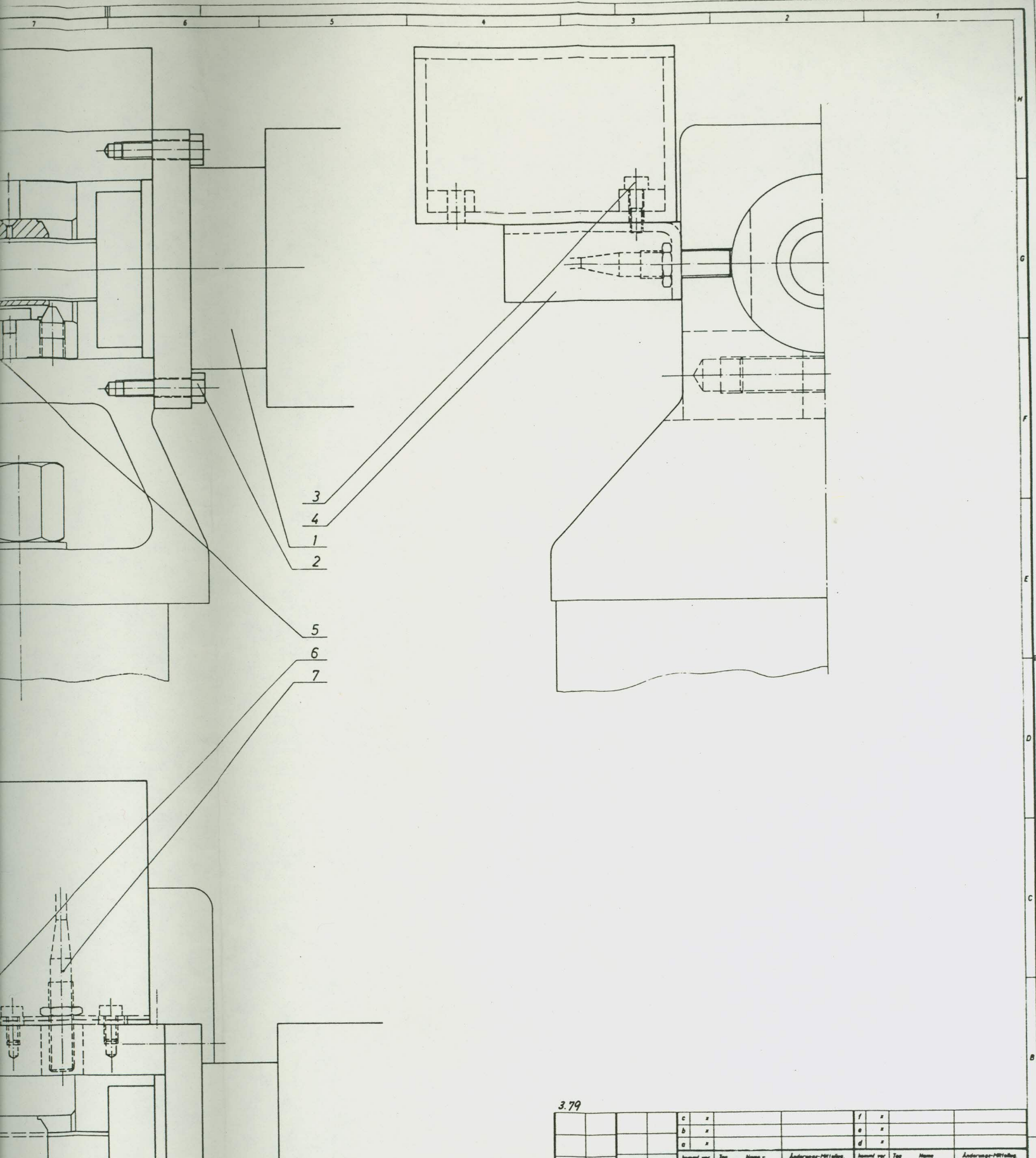


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Die hier beschriebenen Teile sind nur als Beispiele zu verstehen. Für die Ausführung sind die Zeichnungen der einzelnen Teile zu Rate zu ziehen. Die hier beschriebenen Teile sind nur als Beispiele zu verstehen. Für die Ausführung sind die Zeichnungen der einzelnen Teile zu Rate zu ziehen.



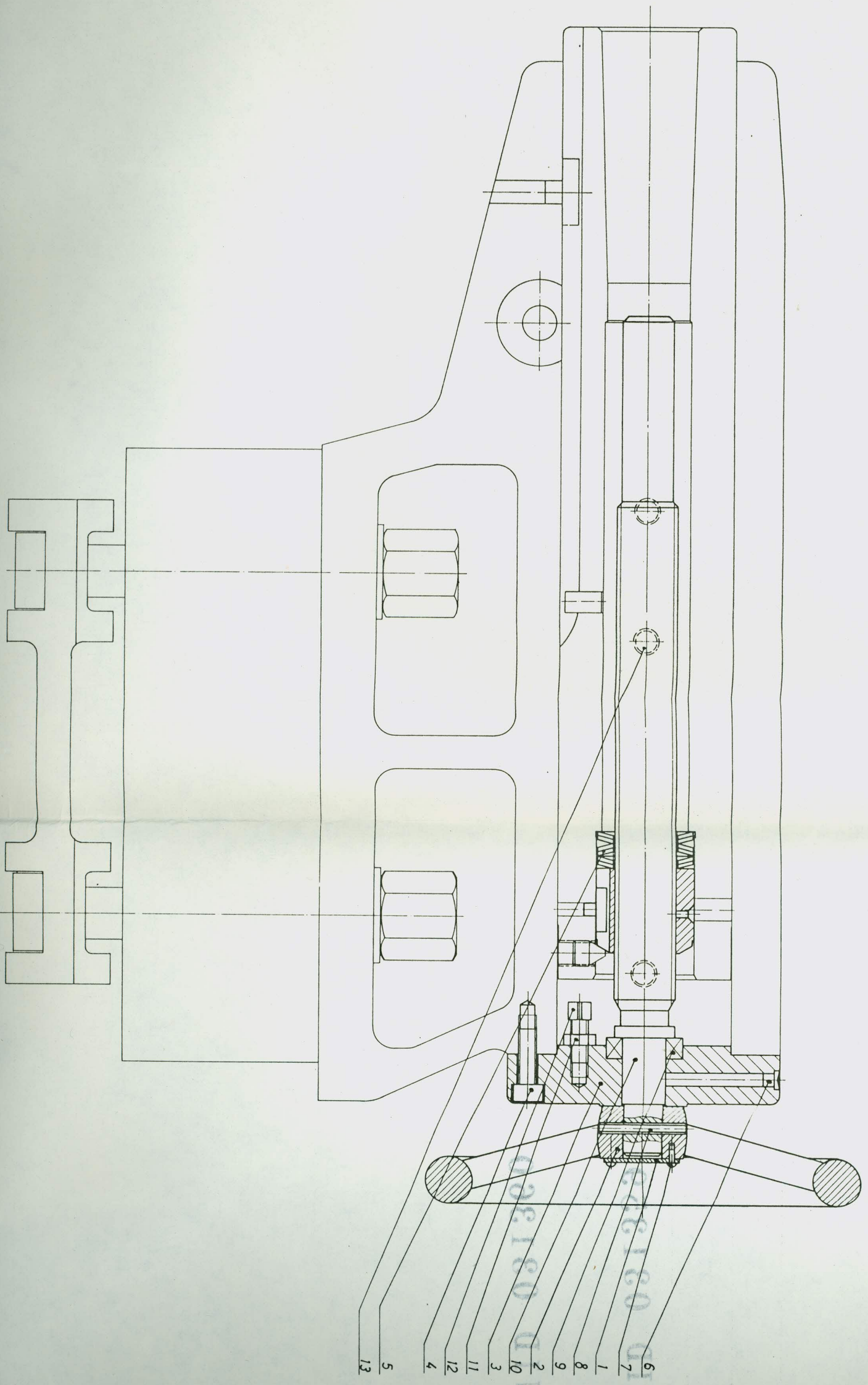
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3.79

c	x			f	x		
b	x			e	x		
a	x			d	x		
Anzahl vor		Tag		Name		Änderungs-Mitteilung	
Bearbeiter		47		H. H.		183-54.20/000	
Gezeichnet		H. H.		H. H.		183-54.20/000	
Geprüft		H. H.		H. H.		183-54.20/000	
Monteur		H. H.		H. H.		183-54.20/000	
Prüfmaß		Abmaß		Werkstoff		Modell-Nr.	
1:1						183-54.20/000	
Prüfmaß		Abmaß		Modell-Nr.		Erstellt durch:	
						Erz. Nr.:	
						Erfasst von:	

Für diese Zeichnung behalten wir uns alle Rechte vor. Ohne unsere vorherige Zustimmung darf sie weder vervielfältigt noch Dritten zugänglich gemacht werden. Sie darf durch den Empfänger oder Dritte auch nicht in anderer Weise mehrfachlich vervielfältigt werden. Zweckerhandlungen verpflichten zu Schadenersatz und können strafrechtliche Folgen haben.



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2



Operating instructions
N.E.F.
Machine data

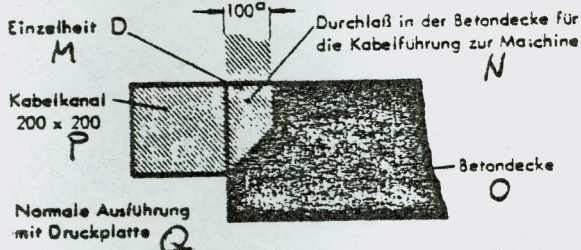
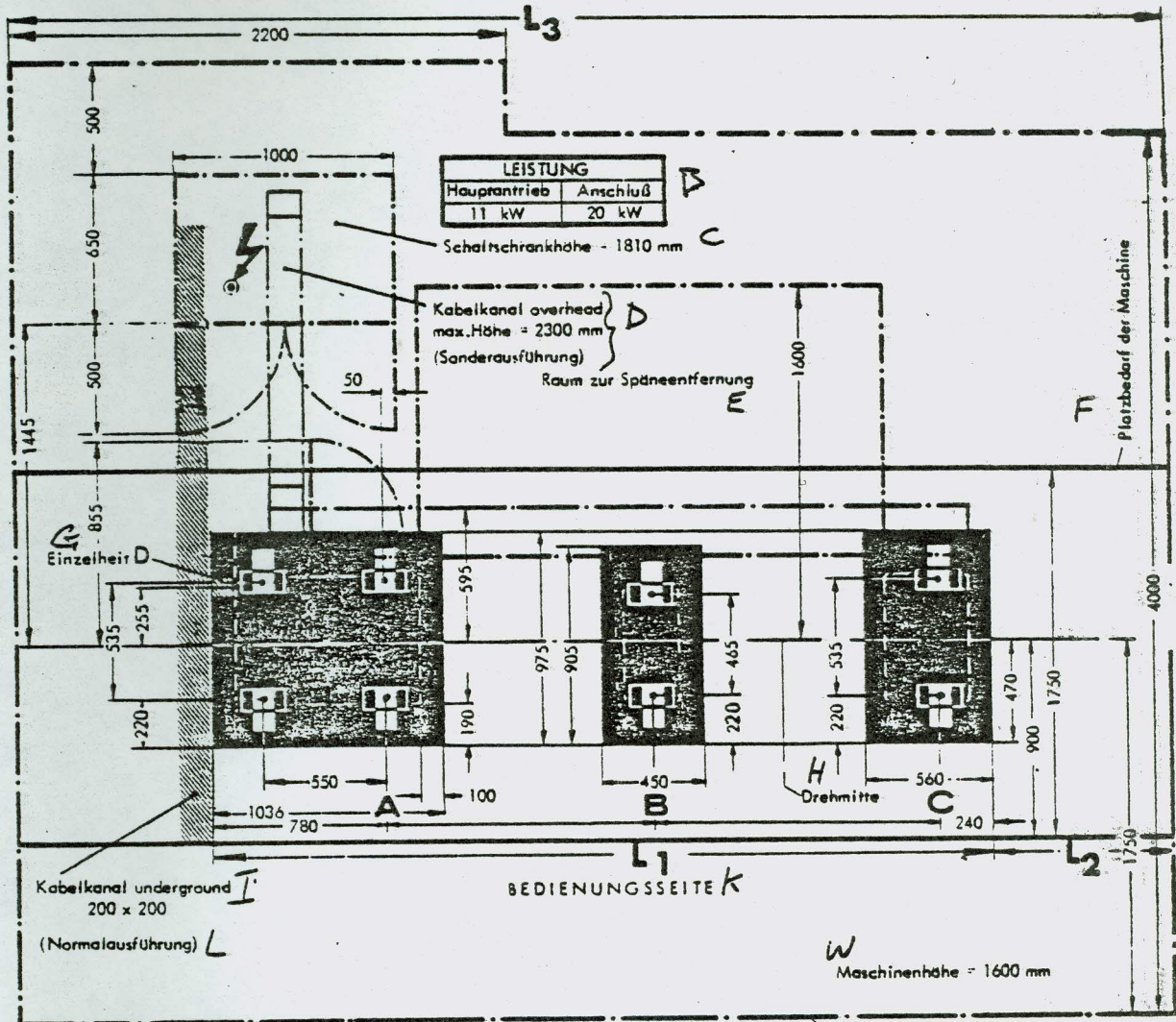
183--59
1000/000
5.78

<u>Technical data</u>	<u>N.E.F. 480</u>	<u>N.E.F. 660</u>
Swing dia. above bed	480 mm	660 mm
Swing dia. above facing slide	200 mm	320 mm
Facing traverse	290 mm	400 mm
Centre distance	1000/2000 mm	1000/1500/2000 mm
Spindle speed range	31.5...2240rpm	9...1800 rpm
Ratio	1.12/1.25	1.25
Spindle speeds selected by program	2	2
Centre height above flat slideway	240 mm	325 mm
Width of bed	333 mm	450 mm
Spindle nose to DIN 55 022	6	11
Spindle dia. in front bearing	90 mm	140 mm
Spindle bore dia.	56 mm	103 mm
Quill dia.	80/MT5	100/MT5
Quill stroke	160 mm	225 mm
Drive rating	11 kW	18.5 kW(22 kW on request)
Max. main sp. torque	1120 Nm	2500 Nm
Net weight of machine	approx.2100/2600 kg	approx.5200/5500/5800 kg
Max. rapid traverse rate, longitudinal	6000 mm/min.	8000 mm/min.
Max. rapid traverse rate, transverse	5000 mm/min.	5000 mm/min.

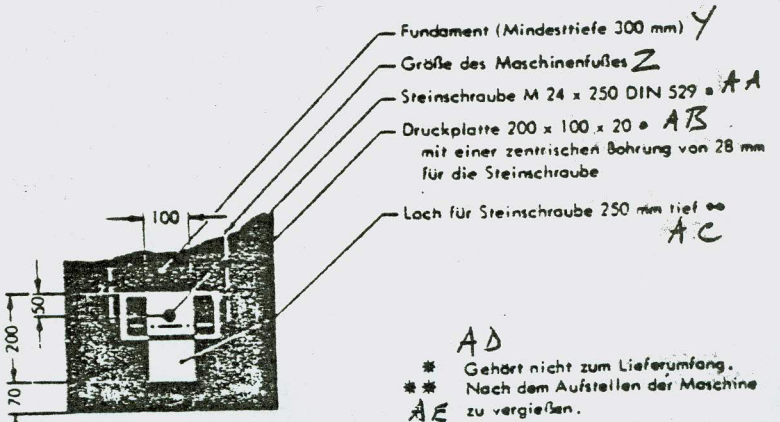
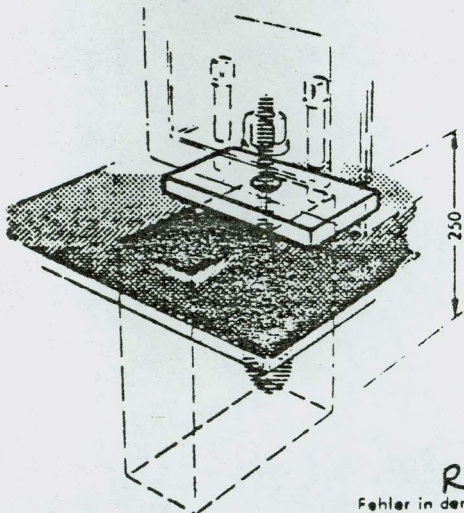
- A) A foundation of at least 300 mm depth is required. A continuous concrete floor can also be used as a foundation.
- B)

RATING	
Main drive	Connection
11 kW	20 kW
- C) Height of control cabinet 1810 mm
- D) Overhead cable channel,
max. height = 2300 mm
(special version)
- E) Space required for chip removal
- F) Space required by machine
- G) Detail D
- H) Turning centre line
- I) Underground cable channel 200 x 200
- K) OPERATOR SIDE
- L) (Standard version)
- M) Detail D
- N) Opening in concrete floor for cable entry into machine
- O) Concrete floor
- P) Cable channel 200 x 200
- Q) Normal version with pressure plate
- R) Max. acceptable straightness and flatness error
of foundation 10 mm
- S) Turning length
- T) Distance between point
- U) Centre pedestal
- V) Number of pressure plates
- W) Height of machine 1600 mm
- X) Space required for operating and maintenance
- Y) Foundation (minimum depth 300 mm)
- Z) Size of machine pedestal

A Es wird ein Fundament benötigt, dessen Tiefe mindestens 300 mm betragen soll. Es kann auch eine durchgehende Betondecke als Fundament verwendet werden.



Drehlänge S	T Maß zwischen Punkt						U Mittelluß	V Anzahl der Druckplatten
	A	B	C	L ₁	L ₂	L ₃		
1000	●—1580—●	●—1323—●	●—1257—●	2600	800	4225	-	6
2000	●—1580—●	●—1323—●	●—1257—●	3600	1050	5475	1	8



AD
 * Gehört nicht zum Lieferumfang.
 ** Nach dem Aufstellen der Maschine zu vergießen.
AE

R Fehler in der Geradheit und Ebenheit des Fundaments max. 10 mm.



Installation

Installation of this turning machine requires a foundation of at least 300 mm thickness which must reach down to solid sub-soil. The foundation should be arranged strictly in accordance with the attached foundation plan and should be completely level and horizontal.

A special foundation may not be required but this is strictly subject to the condition that the available floor on which the machine is to be installed has a minimum load carrying capacity of 3 kg/cm².

Levelling and bolting-down

To obtain the designed machining accuracy of this turning machine it has to be carefully levelled on its foundation.

Initially, the machine is placed on the foundation so that it rests on the levelling bolts with steel support plates and foundation bolts in situ. Subsequently, the machine is coarsely levelled and the foundation bolts grouted in. Actual final levelling is started when the grout has set.

Acceptable deviations over full slideway capacity:

0.01 mm per 1000 mm in transverse direction.

0.02 mm per 1000 mm in longitudinal direction.

Spirit levels of adequate sensitivity are essential and these are placed on the machine bed slideway vees in longitudinal and transverse direction. Actual levelling is effected with the levelling bolts situated in the pedestals adjacent to the foundation bolts. The foundation bolts which hold the machine down should be tightened carefully so that the machine bed does not suffer distortion.

After final connection of the machine, again check the levels and readjust if necessary.

A precision machine tool requires accurate installation. Good turning results (geometrical accuracy, freedom from chatter when recessing) can only be ensured through adequately rigid connection to foundation or floor. Should users nevertheless desire to install the machine on anti-vibration mounts, full details should be obtained from the supplier in question.



Cleaning

Before taking the machine into production it is essential to remove carefully any rust preventatives and dirt from bright parts.

Moving parts must not under any circumstances be moved until all slideway surfaces and other bright surfaces are completely clean, dry and slightly oiled.

Cleaning requires a suitable medium such as paraffin. Do not use petrol or cellulose thinners. Compressed air should not be used for cleaning purposes.

Initial starting-up

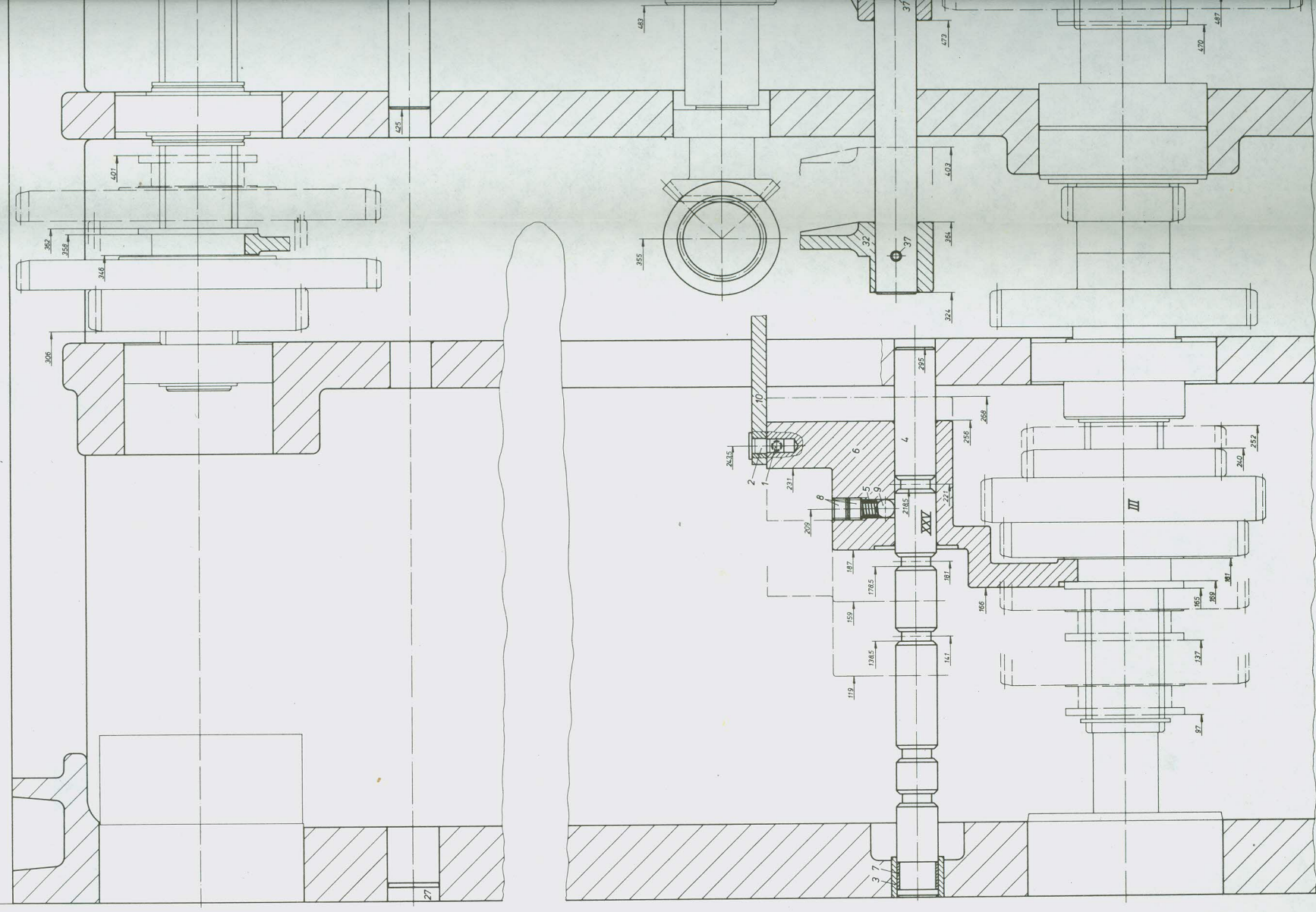
Before taking the machine into operation for the first time it is essential to take due note of the lubrication schedule and the lubrication instructions applicable to this turning machine.

The electrical system of the machine is connected to the mains supply by turning the main switch on the control cabinet to "On".

All machine traverses can be initiated either manually or automatically by the NC system. Further details on this subject appear in the programming instructions.

When starting the machine for the first time, the various functions should be checked by manual initiation. These functions are: main spindle clockwise and anti-clockwise rotation, feed and rapid traverse action in X and Z direction.

0 1 2 3 4 5 6 7 8 9



XXV

- 1 M6x8 DIN 914
- 2 70 010 01 01 08 - 0700 (L)
- 3 22x28x27,00 DIN 1850
- 4 70 1036 01 25 - 0100 (B)
- 5 135x8x16 VDF 5400
- 6 70 1036 01 25 - 0300 (B)
- 7 6N22x15
- 8 70 1036 01 25 - 0800 (L)
- 9 70 1428 01 25 - 0100 (L)
- 10 70 1428 01 25 - 0100 (L)

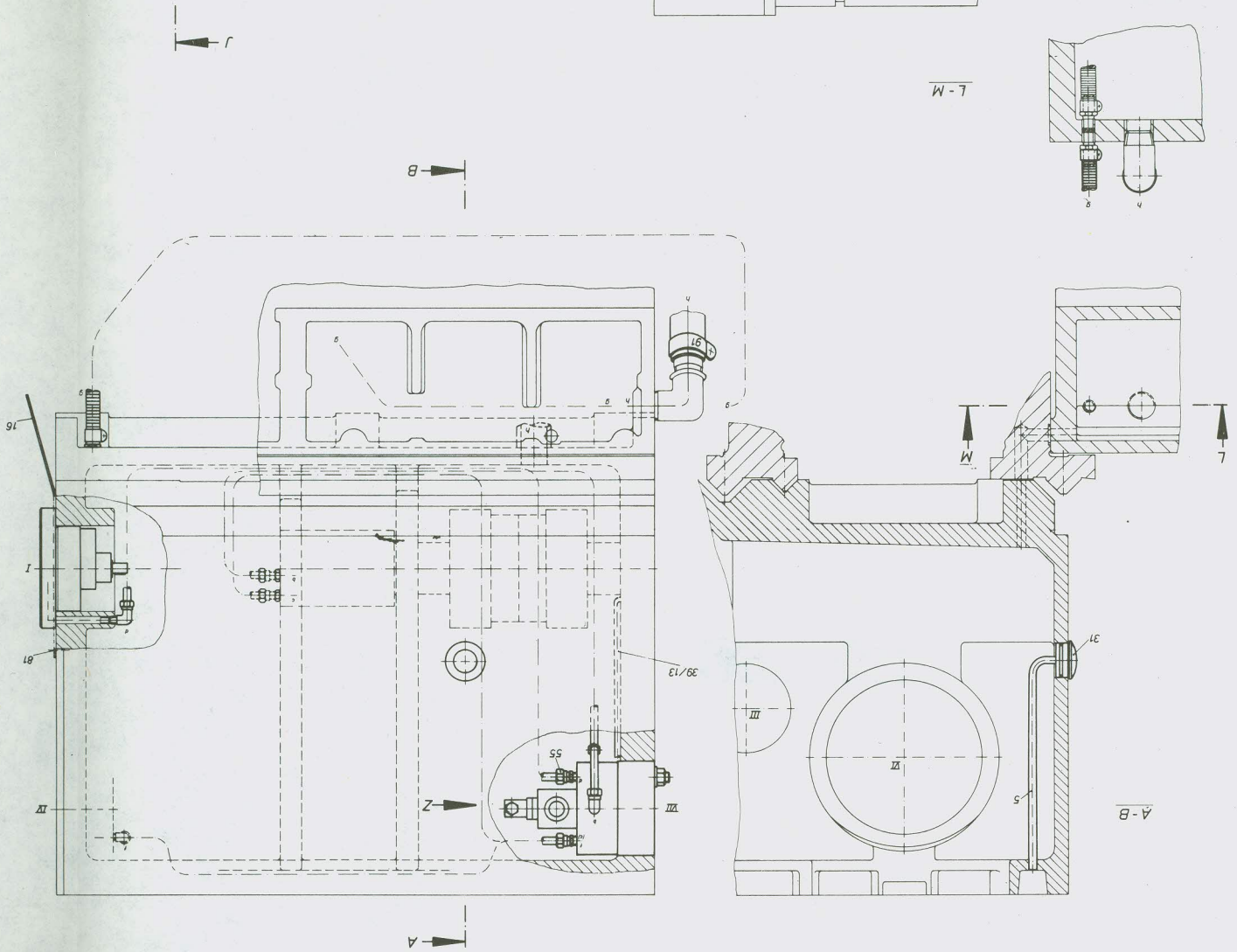
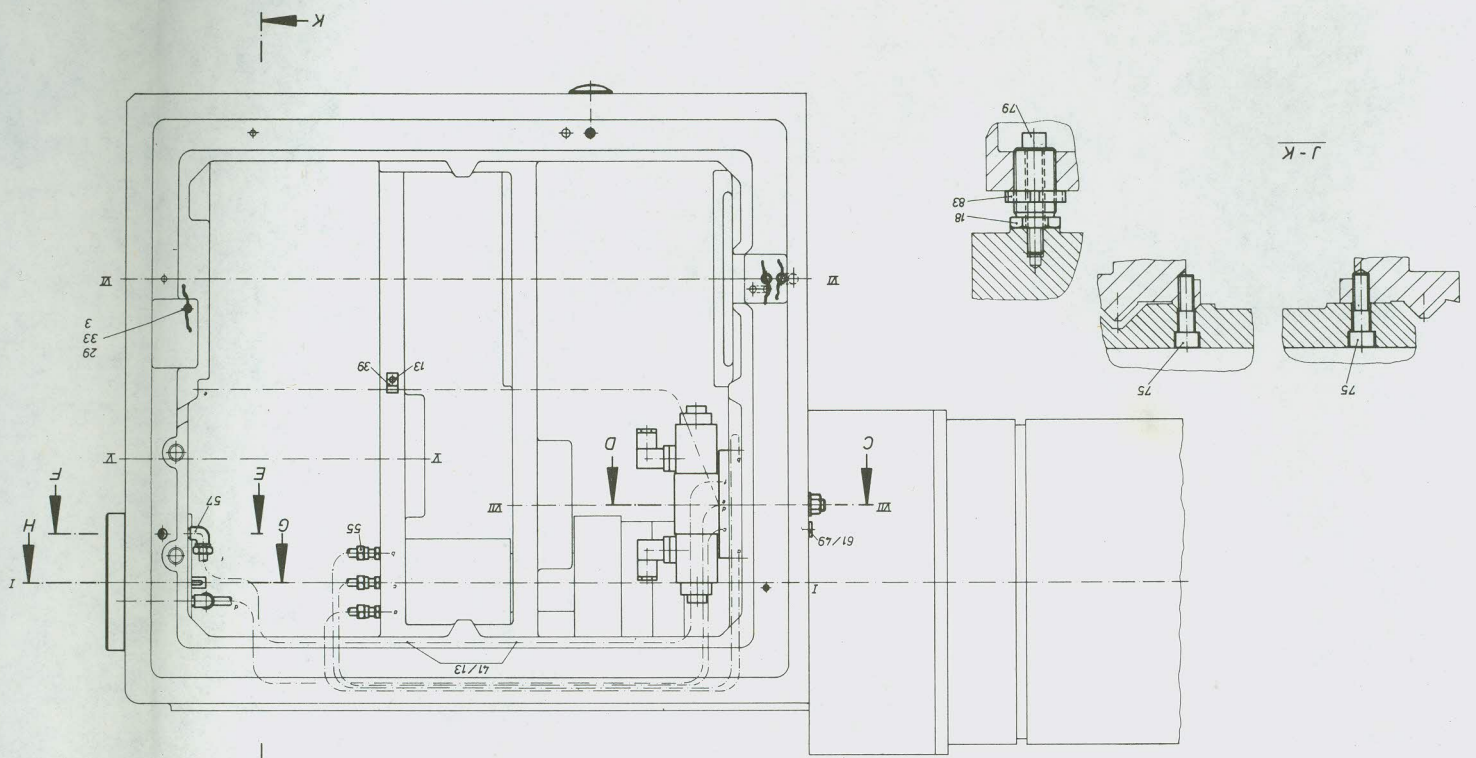
XXVI

- 21 8x4x25 DIN 1424
- 22 70 1036 01 26 - 0101 (B)
- 23 22x28x70,00 DIN 1850
- 24 6N22x15
- 25 6N22x15
- 26 70 1036 01 27 - 0400 (L)
- 27 42x4x10 VDF 5220
- 28 70 010 01 27 - 0201 (B)
- 29 16 VDF 5810

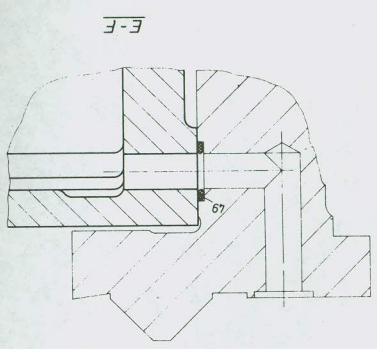
XXVII

- 37 6x40 DIN 1491
- 39 8x4x25 DIN 1424
- 41 22x28x70 DIN 1850
- 43 622x6 ESP 5220
- 45 16 VDF 5810
- 28 70 010 01 27 - 0201 (B)
- 30 70 1036 01 27 - 0302 (B)
- 32 70 1036 01 27 - 0400 (L)
- 34 70 1036 01 27 - 0500 (L)

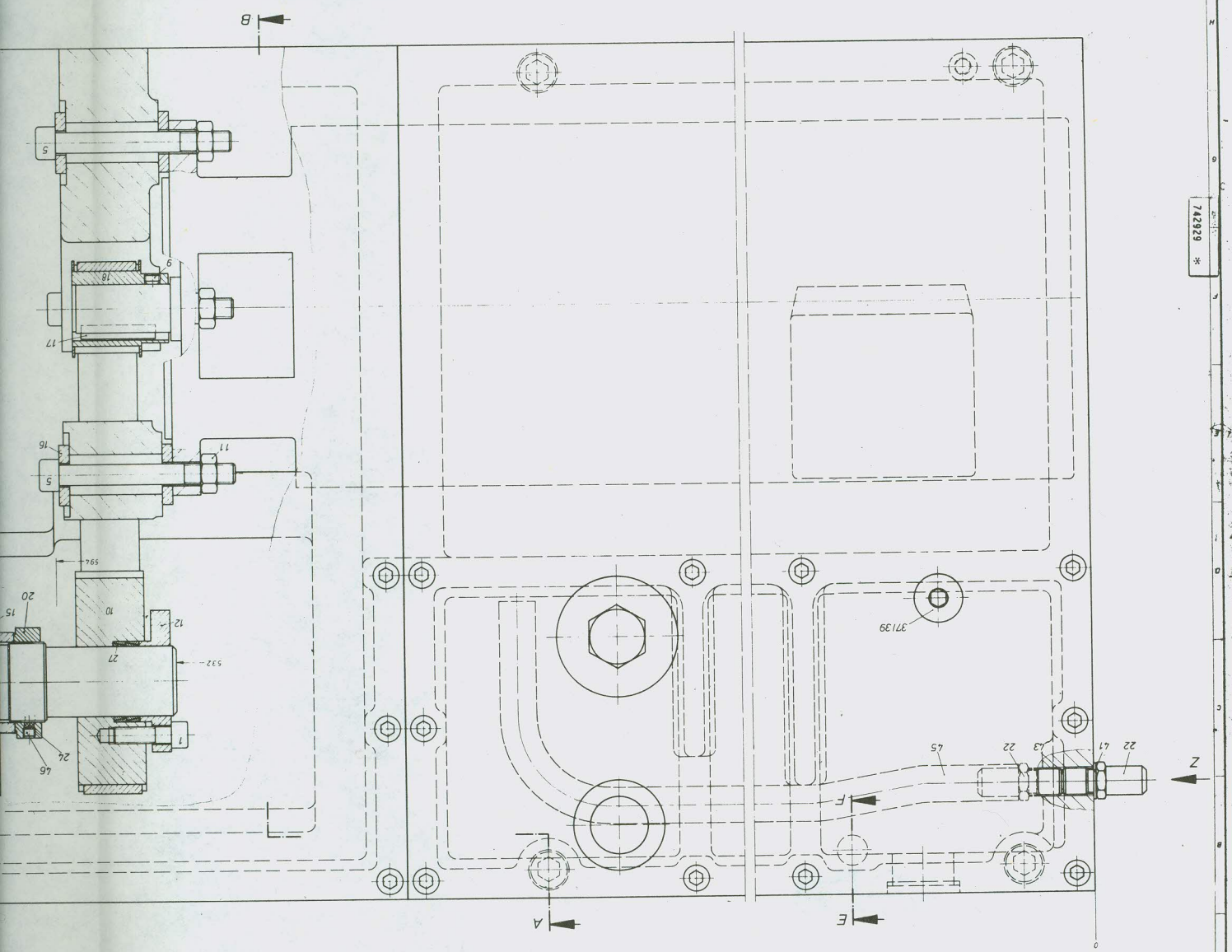
1 2 3 4 5 6 7 8 9



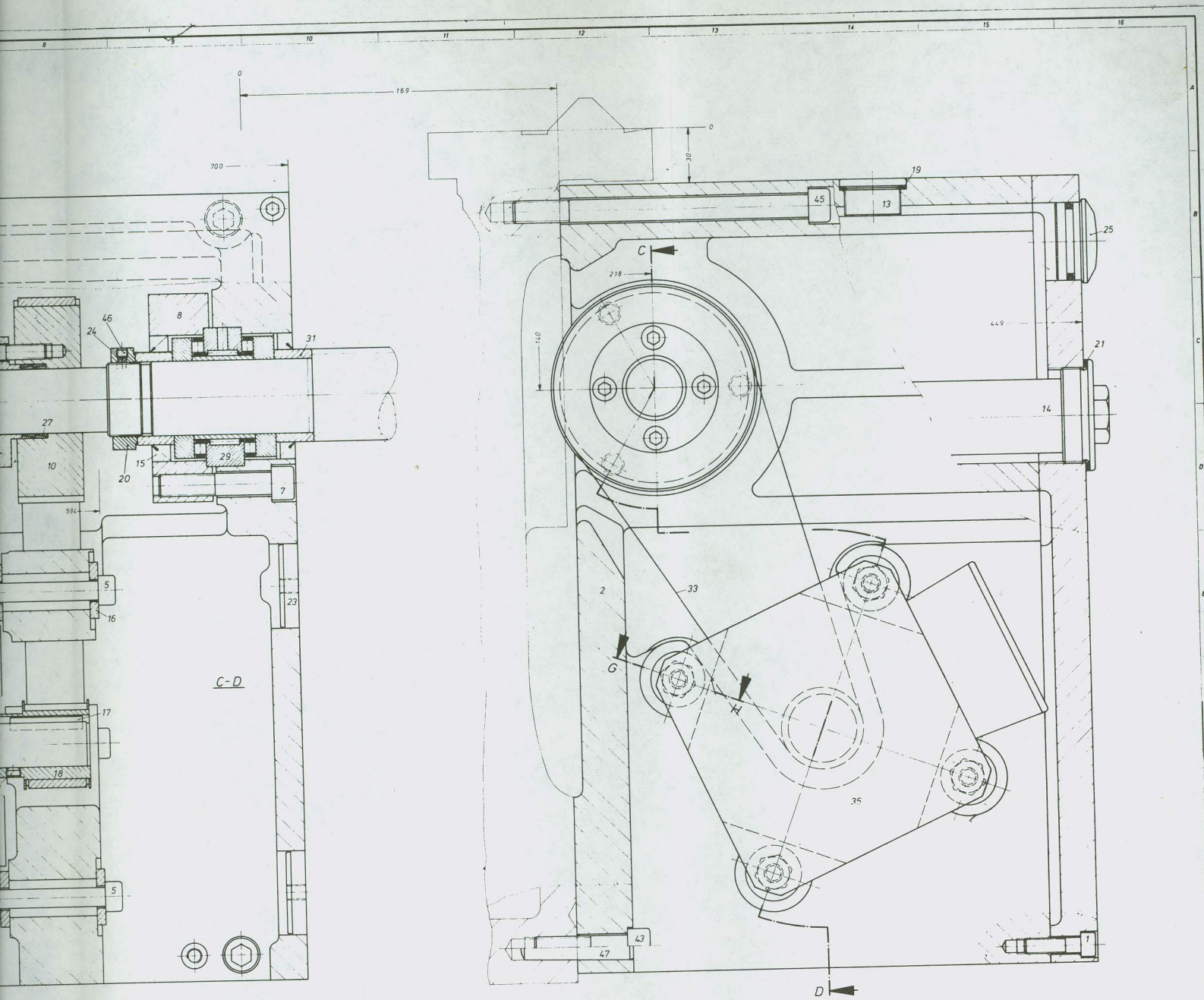
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|----|-------------------|----|------------------------|
| 49 | M12 x 50 DIN 912 | 26 | 701263 0201-0400(L) |
| 47 | M12 x 60 DIN 912 | 22 | 70 1222 02 01-0700 (L) |
| 45 | M12 x 80 DIN 912 | 20 | 701263 0201-0300(L) |
| 43 | M12 x 100 DIN 912 | 18 | 40 1248 02 01-0600 (L) |
| 41 | M12 x 120 DIN 912 | 16 | 70 1248 02 01-0300 (L) |
| 39 | M12 x 140 DIN 912 | 14 | 40 1248 02 01-0700 (L) |
| 37 | M12 x 160 DIN 912 | 12 | 70 1248 02 01-0800 (L) |
| 35 | M12 x 180 DIN 912 | 10 | 40 1248 02 01-0500 (L) |
| 33 | M12 x 200 DIN 912 | 8 | 70 1248 02 01-0600 (L) |
| 31 | M12 x 220 DIN 912 | 6 | 70 1248 02 01-0300 (L) |
| 29 | M12 x 240 DIN 912 | 4 | 70 1248 02 01-0200 (L) |
| 27 | M12 x 260 DIN 912 | 2 | 70 1248 02 01-0100 (L) |
| 25 | M12 x 280 DIN 912 | | |
| 23 | M12 x 300 DIN 912 | | |
| 21 | M12 x 320 DIN 912 | | |
| 19 | M12 x 340 DIN 912 | | |
| 17 | M12 x 360 DIN 912 | | |
| 15 | M12 x 380 DIN 912 | | |
| 13 | M12 x 400 DIN 912 | | |
| 11 | M12 x 420 DIN 912 | | |
| 9 | M12 x 440 DIN 912 | | |
| 7 | M12 x 460 DIN 912 | | |
| 5 | M12 x 480 DIN 912 | | |
| 3 | M12 x 500 DIN 912 | | |
| 1 | M12 x 520 DIN 912 | | |

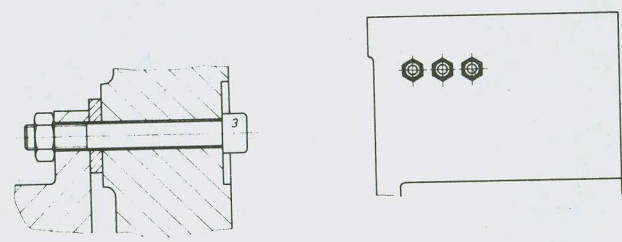


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A-B

Z

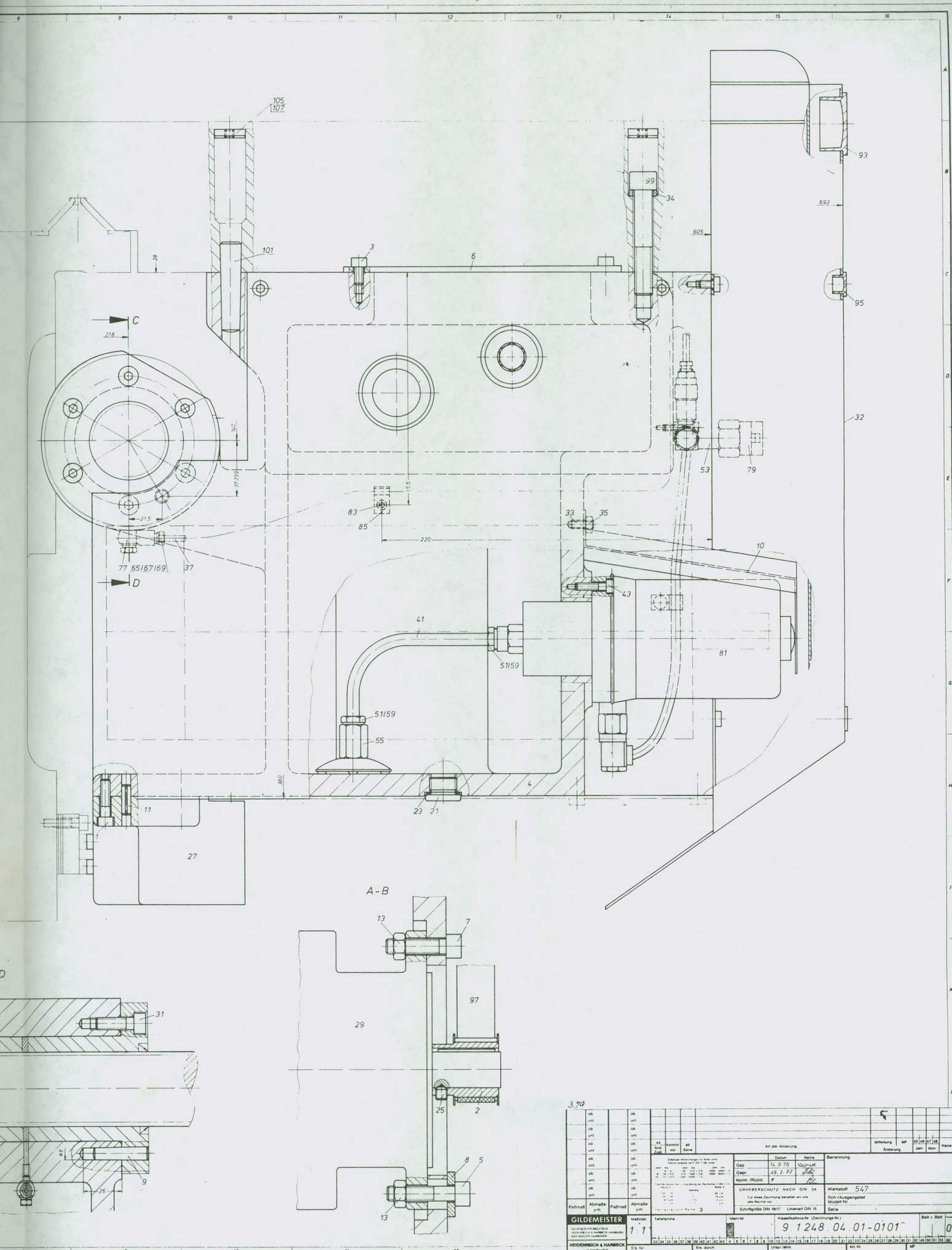


G-H

3.79

Art der Änderung	Datum	Name	Bemerkung	Entwurf	WF	Prüf	Mont.
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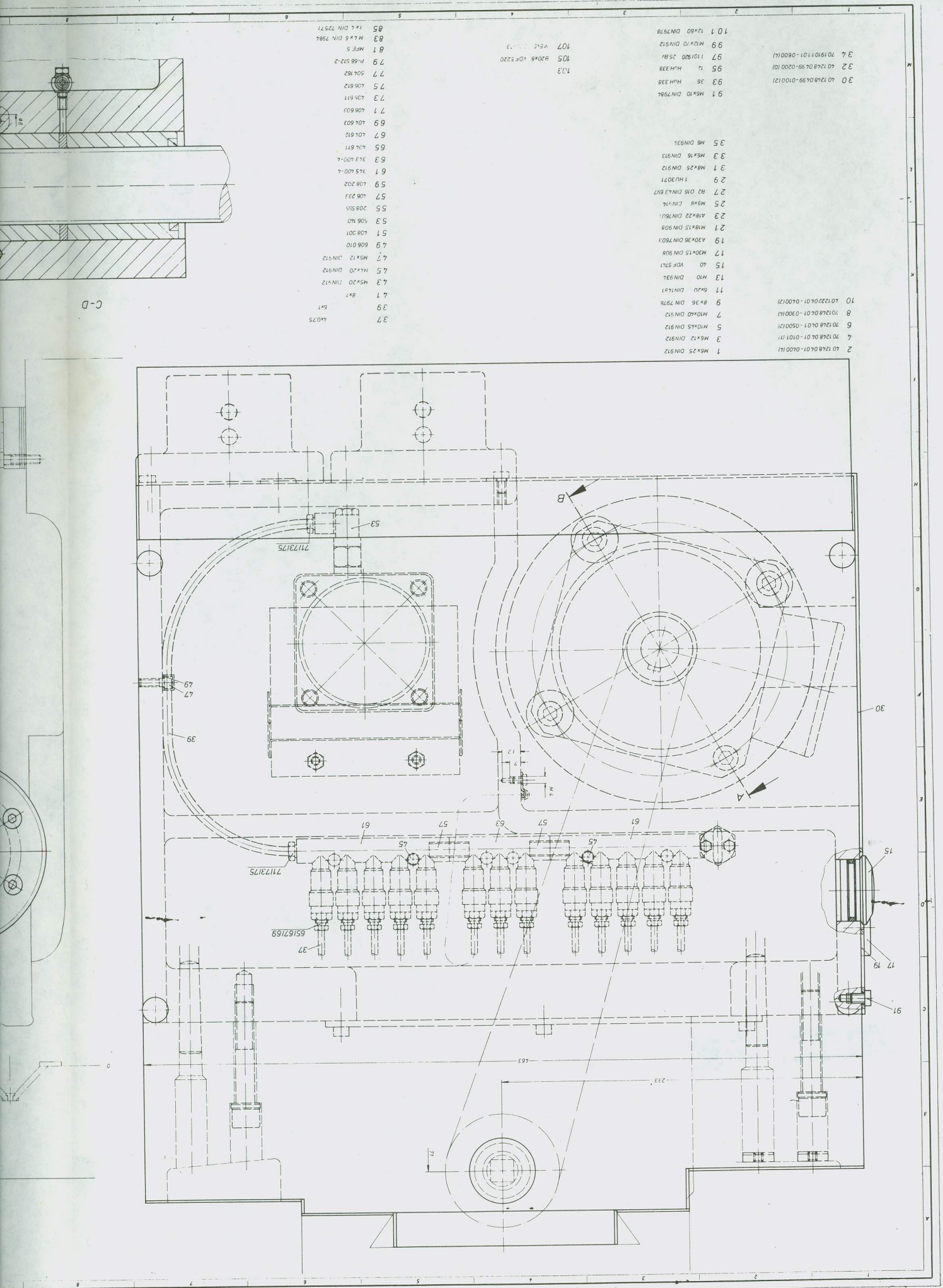
GILDEMEISTER
 HEIDENRICH & HAMBROCK
 9.1248.02.01-0100
 HEIDENRICH & HAMBROCK
 HEIDENRICH & HAMBROCK
 HEIDENRICH & HAMBROCK



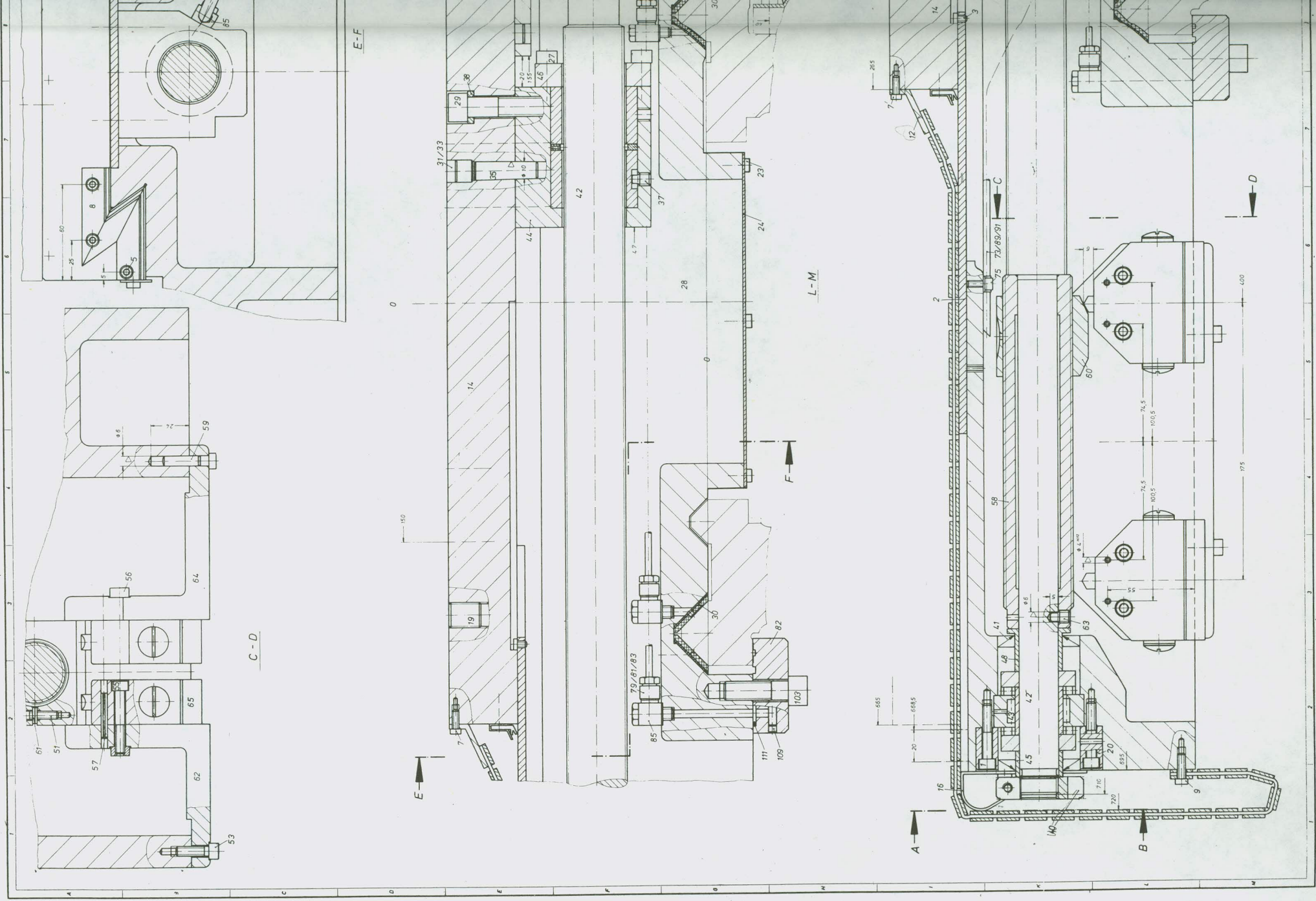
3.70

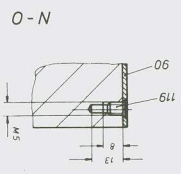
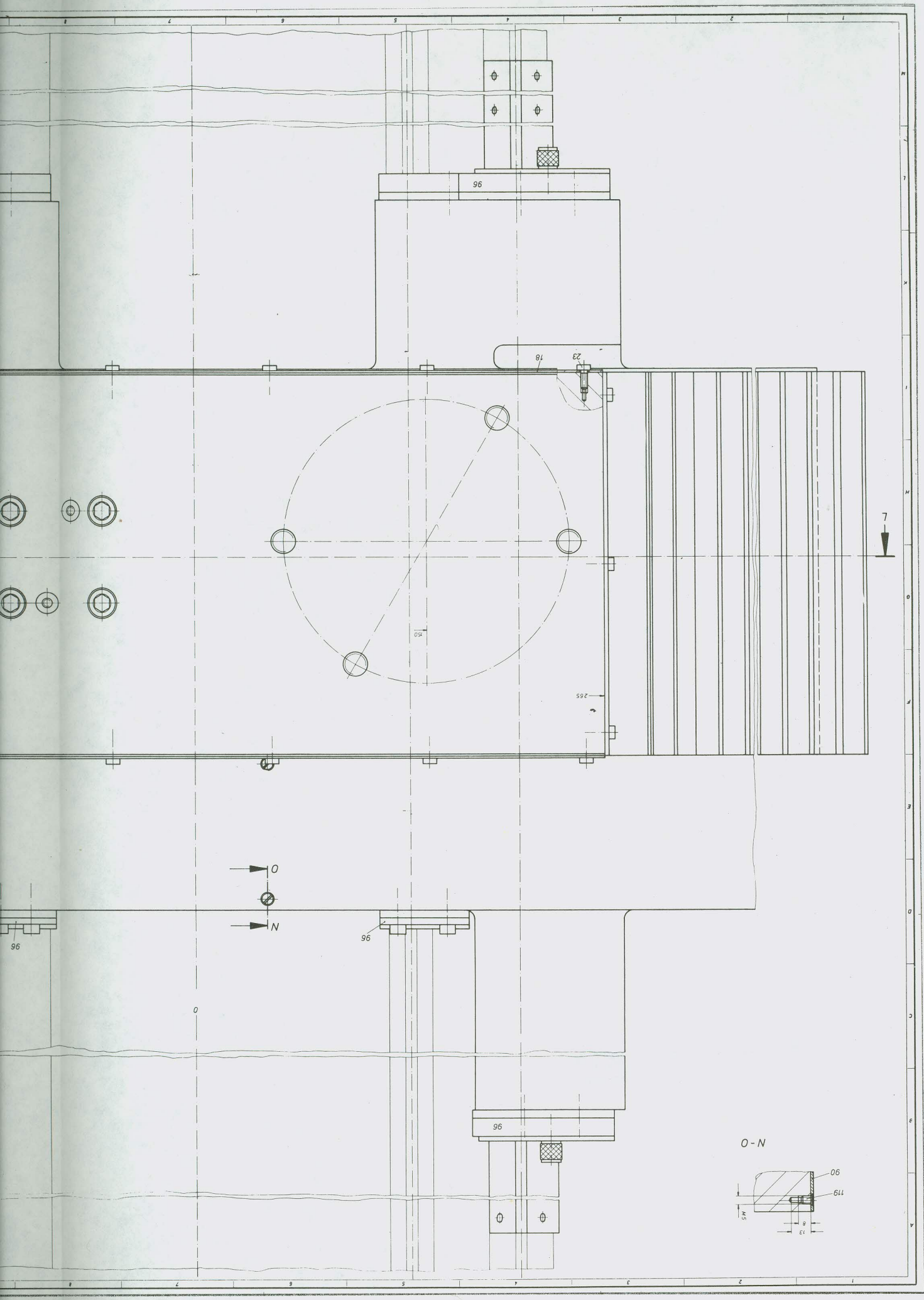
Art der Änderung	Änderung	Art	Monat	Jahr	Blatt	Blatt
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100	12.9.75	12.9.75				
101	12.9.75	12.9.75				
102	12.9.75	12.9.75				
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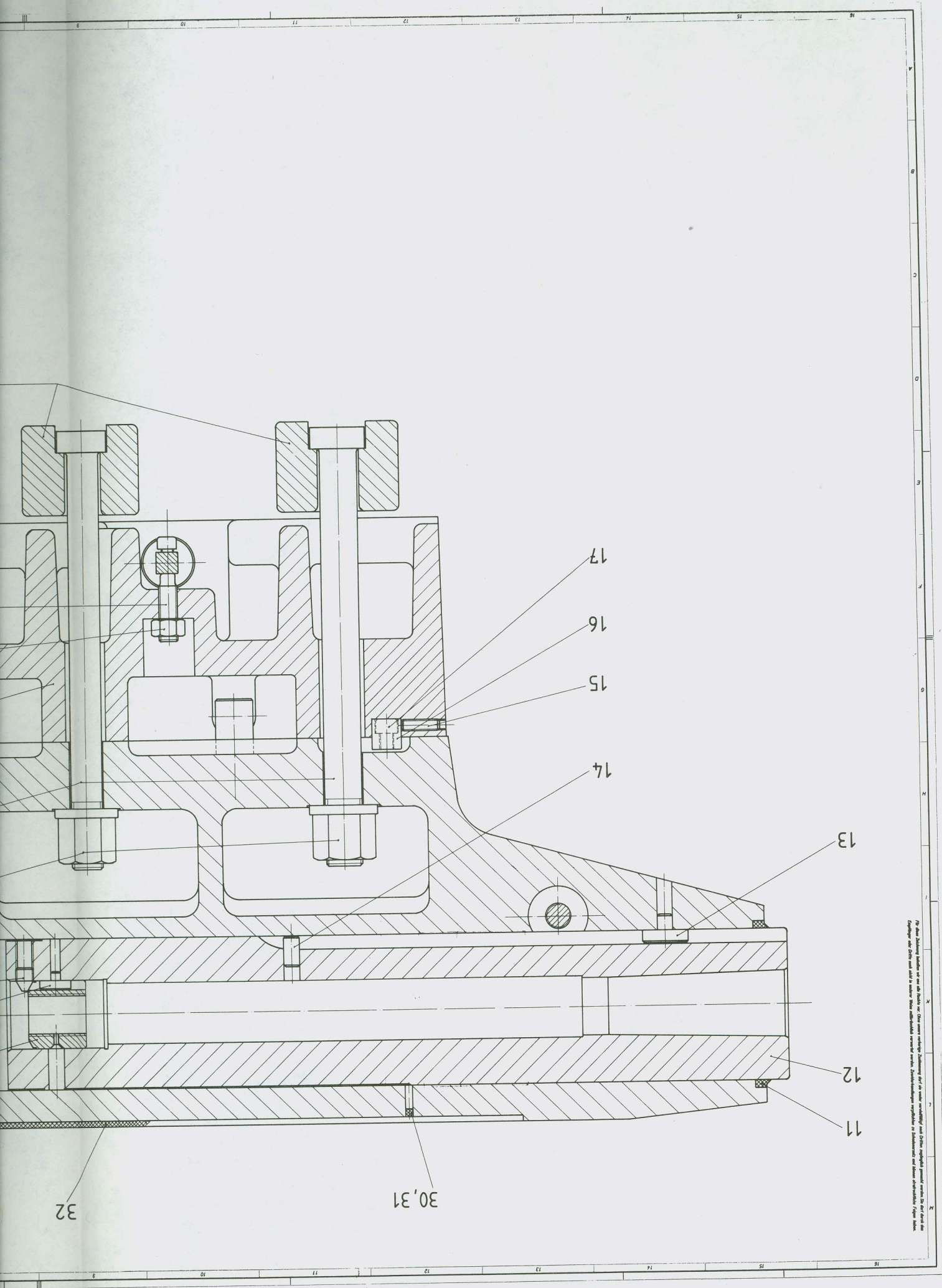
GILDEMEISTER Maßstab 1:1
HEIDENREICH & HARBECK HAMBURG
 Datum: 12.9.75
 Zeichner: [Signature]
 Norm./Richt: [Signature]
 URBERSCHUTZ NACH DIN 24
 Schriftdröße DIN 1817 Linienstärke DIN 15
 Werkstoff: 547
 Rost-/Ausgangsmat. Modell-Nr.
 Serie:
 Klassifikations-Nr. (Zeichnungs-Nr.): 9 1248 04.01-0101
 Blatt-Nr.: 0

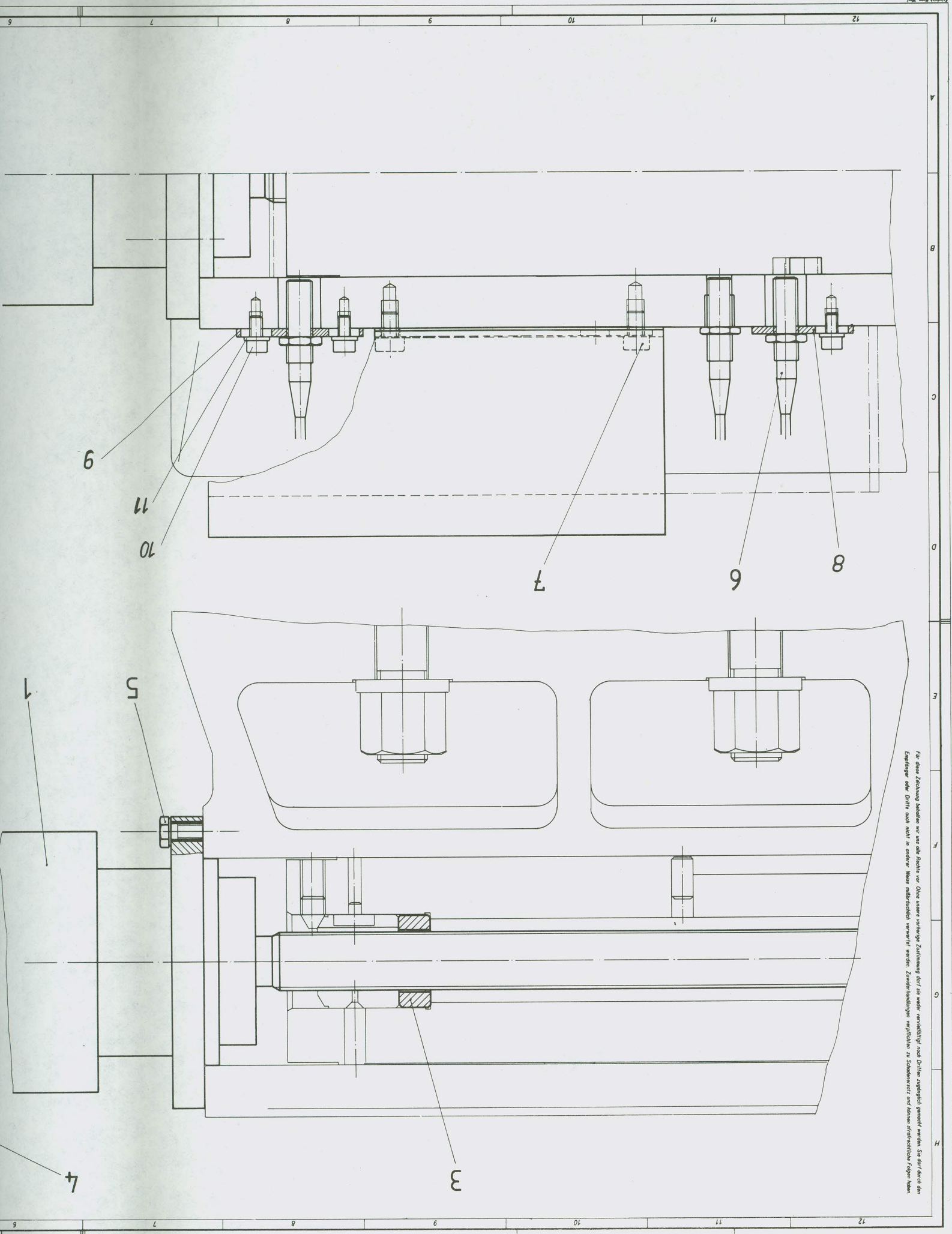


C-D









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The required spindle speed can be established from the speed and performance table duly taking into consideration the cutting speed (v) and the turning diameter.

The cutting speed is dictated by both material and tool.

The main drive motor transmits power to the main spindle via a 4-speed headstock transmission. Every transmission stage allows the selection of two speeds with ratio 1 : 1 or 1 : 1.6, alternatively on the N.E.F. 660 - 1 : 1 or 1 : 1.25. The overall range of 24 speeds is shown below.

The basic range is selected with the rear lever(s). The actual speed required is chosen with the front lever.

Selections may only be made when the main spindle is at a standstill.

The selector levers must engage fully in the desired position.

Do not leave selector levers in intermediate positions.

Make selections smoothly.

The main spindle can be rotated by hand when in neutral "0".

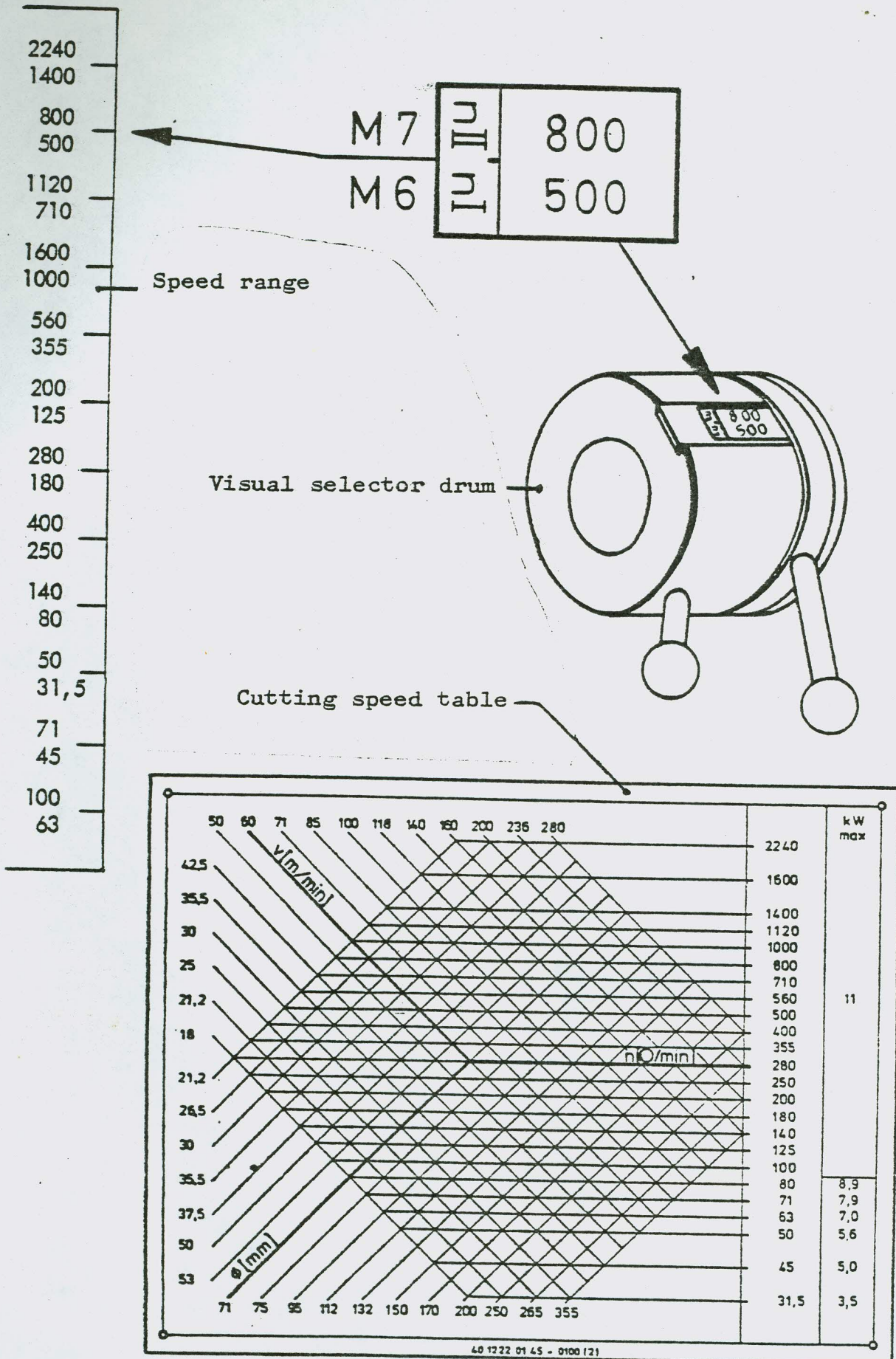
Starting the drive motor, determining the direction of rotation and selecting the transmission stage (1 : 1 or 1 : 1.6 or 1 : 1.25) is only possible through the address letter M and the control system.

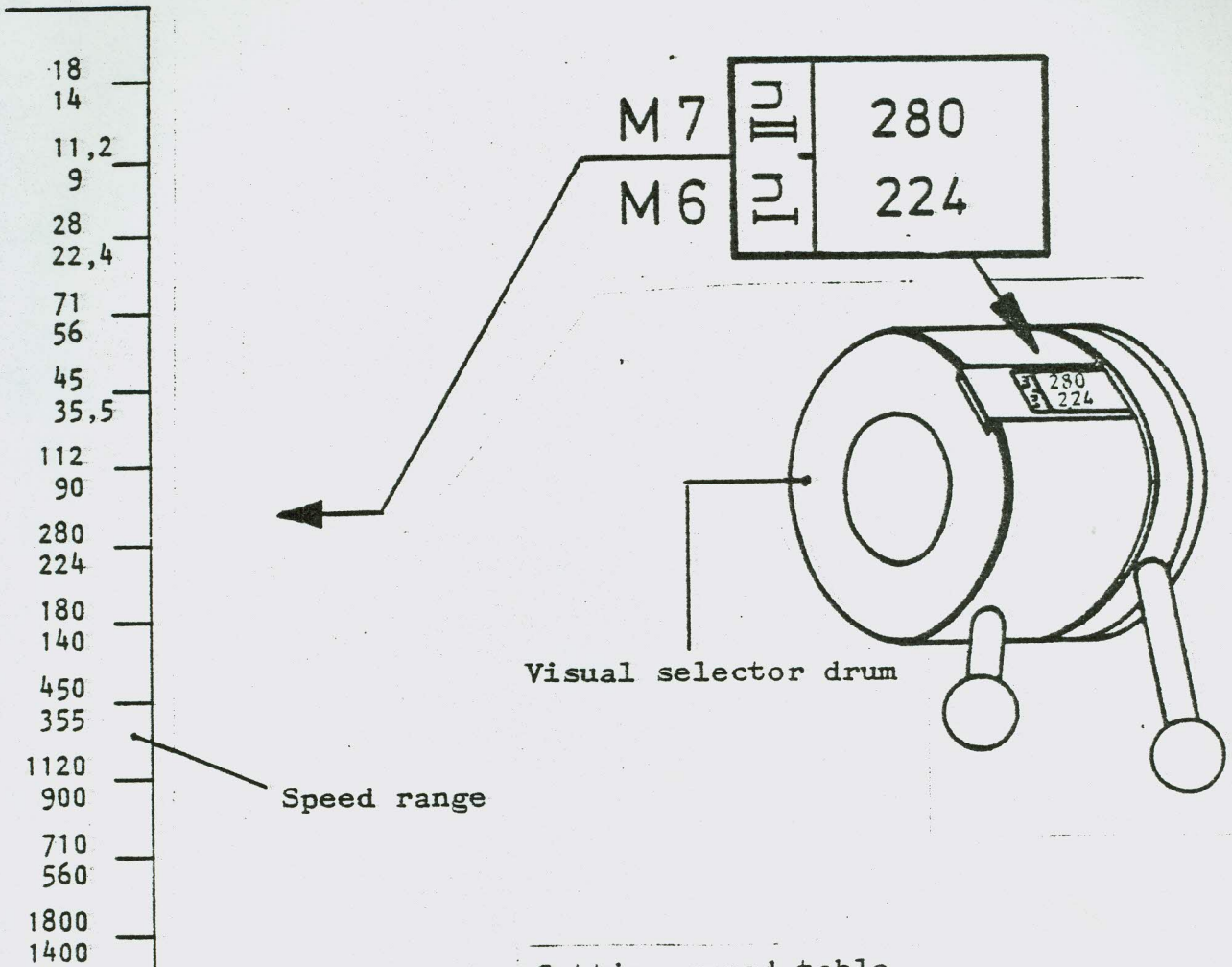
The drive motor is stopped by the main switch on the control cabinet or by the EMERGENCY STOP button.

Starting and stopping of the main spindle is also obtained through address letter M or the appropriate selector switch.

M function in conjunction with drive motor and rotation:

- | | |
|---|----------------------------------|
| M3 = Motor anti-clockwise | Main spindle runs clockwise |
| M4 = Motor clockwise | Main spindle runs anti-clockwise |
| M5 = Spindle stop | |
| M6 = Speed selector stage 1 : 1.6 (1 : 1.25), in accordance with n1 | |
| M7 = Speed selector stage 1 : 1, in accordance with n2. | |





		28	35,5	45	56	71	90	112	140	180	224	280			
v [m/min]	1800												1800	kW max.	
	1400												1400		
	1120												1120		
	900												900		
	710												710		
	560												560		18,5
	450												450		(22)
	355												355		
	280												280		
	224												224		
n [o/min]	180												180		
	140												140		
	112												112		
	90												90		
	71												71	18	
	56												56	14	
	45												45	112	
	35,5												35,5	9	
	28												28	71	
	22,4												22,4	56	
φ [mm]	18												18	45	
	14												14	355	
	11,2												11,2	28	
	9												9	22	
	7,1												7,1		
		80	100	125	160	200	250	315	400	500	630				



All the transmission units and bearing points in the headstock are supplied with lubricants by a circulating lubrication system. A lubrication gear pump in the headstock is driven directly from the main drive shaft. The lubrication system thus remains operative for as long as the drive motor is running. Correct function is indicated through a sight glass in the front face of the headstock where lubricant can be seen to drip slowly.

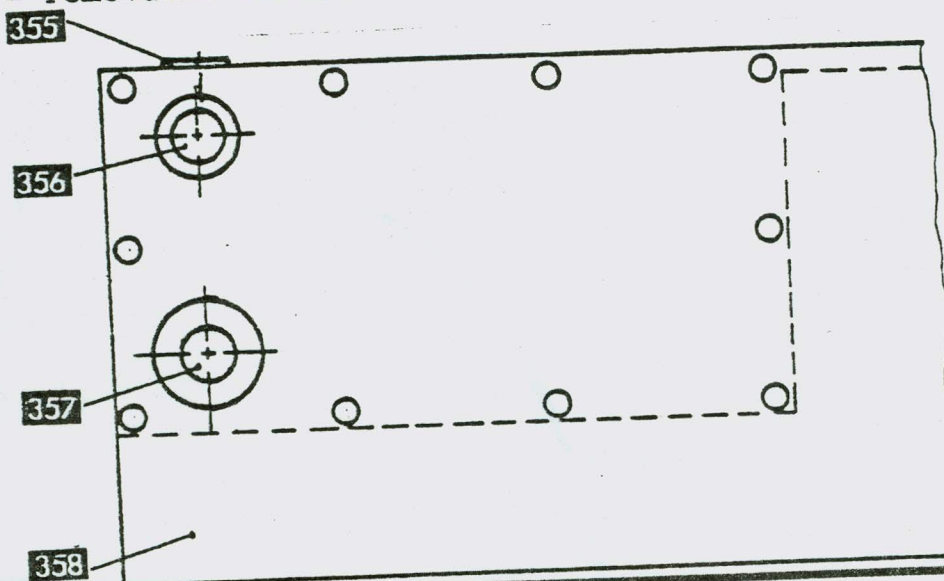
The lubricant level should be checked daily prior to starting work by observing sight glass 356 on the lube oil tank. When the motor is at rest, the sight glass should be filled with lubricant to half its height.

If lubricant requires topping up, unscrew the filler plug 355 in the lube oil tank.

The first oil change should be carried out after 500 working hours. For subsequent oil changes, see lubrication schedule. Oil changes should be carried out immediately after stopping the machine when the latter has attained its normal working temperature. Suspended particles are then still in movement and will thus be drained off with the used oil (drain aperture 357). The threaded drain plug in the draining aperture is connected to a magnetic rod-type filter. This is pulled out when the oil is changed and any contaminants should then be completely removed.

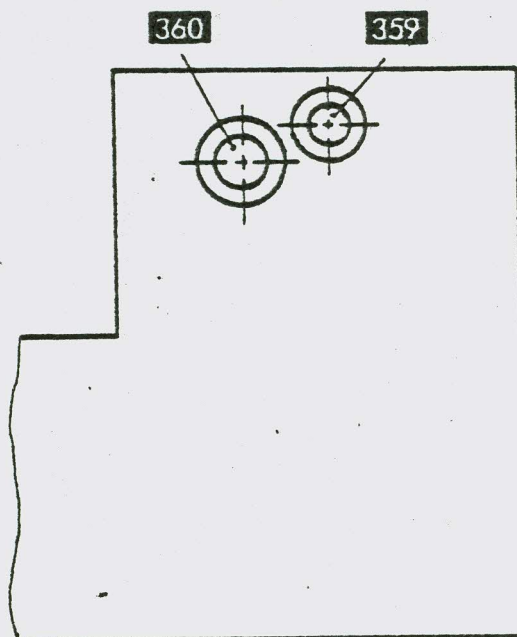
CAUTION. Cover 358 must be unscrewed to allow cleaning of the oil tank.

After unscrewing the cover, remove any sealant residues from it. When refitting, do not forget to apply new sealant. (e.g.: Atomsit = removable seal).



All saddle lube points are supplied with lubricant from a pressure system. A motor-driven gear pump delivers a pre-determined amount of lubricant in intervals of 5 minutes. The system becomes operative as soon as the main drive motor is witted on. Lubricant thus delivered is taken to the individual lube points via plunger-type distributors.

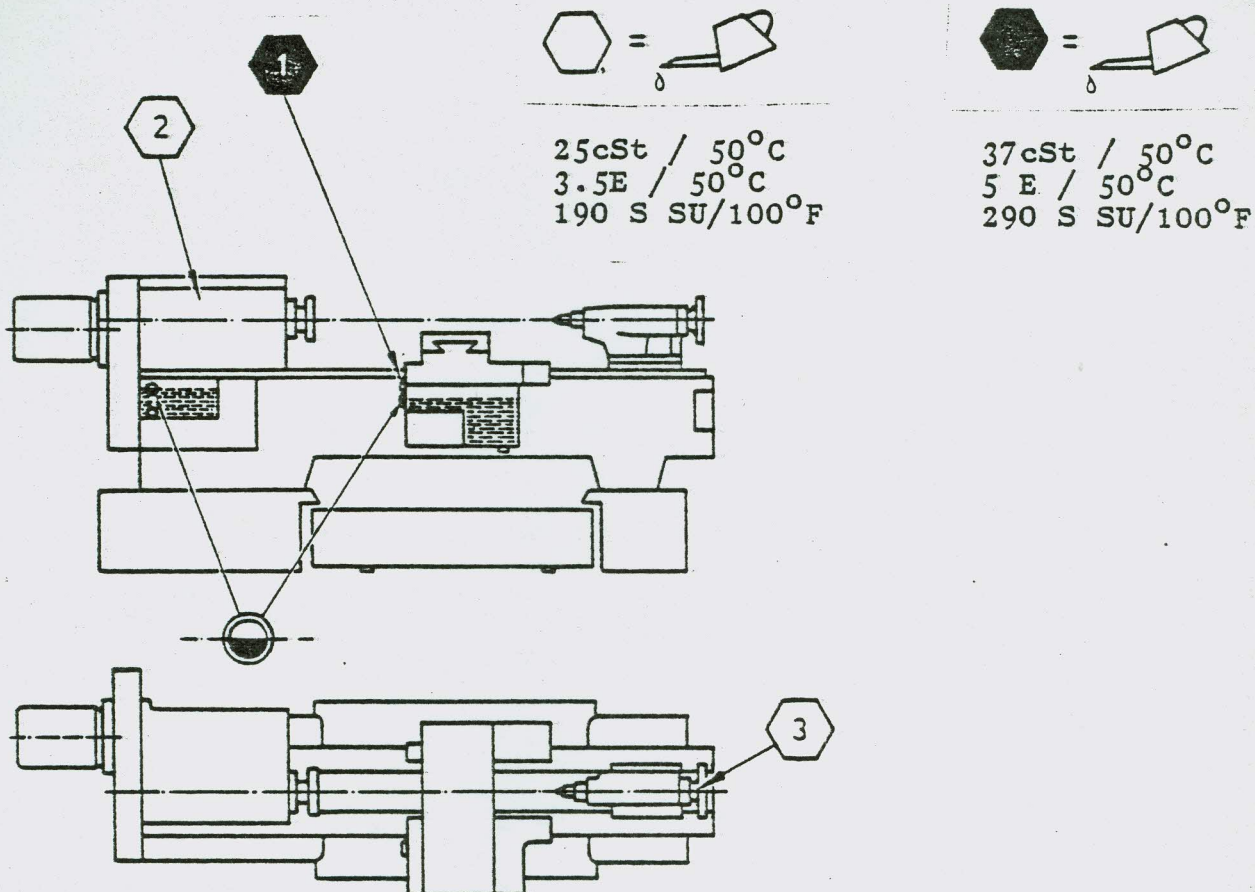
A pressure switch is incorporated to provide continuous monitoring of pump function. Should saddle lubrication fail, the working sequences automatically cut out in the sequence: feed main drive. The fault indicator lamp lights up on the control cabinet in this case.



TOPPING UP LUBRICANT. Consumption in single-shift operation is approximately 0.2 litres per week. However, this information can only be taken as a guideline because actual consumption depends on the type of work done. The tank should always be filled to the centre of sight glass 360.

- To allow filling in oil, unscrew the plug 359.

The lube points on the machine appear in the lube schedule together with information regarding time and volumes. The sight glasses shown must be filled to half their height when the machine is at a standstill. All time data concerning lubrication and oil changes refer to single-shift production.



N.E.F.480

N.E.F.660

No.	1	2	3
h	50	1200	8
cm ³	4000	7500	1
in ³	245	470	0.06
			 3-4x

No	1	2	3
h	50	1200	8
cm ³	16000	12000	1
in ³	975	730	0,06
			 3-4x

Alloyed, refined machine oil, corrosion-preventing, non-foaming, water-repellent, age-resisting, pressure-proof.