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MESSRS. CCA PHILADELPHIA

ULTRA FORMER  
INSTRUCTION MANUAL

NOV. 20. 1970.

2

Introduction to the Ultra Former

Machine Wet End Instruction Manual

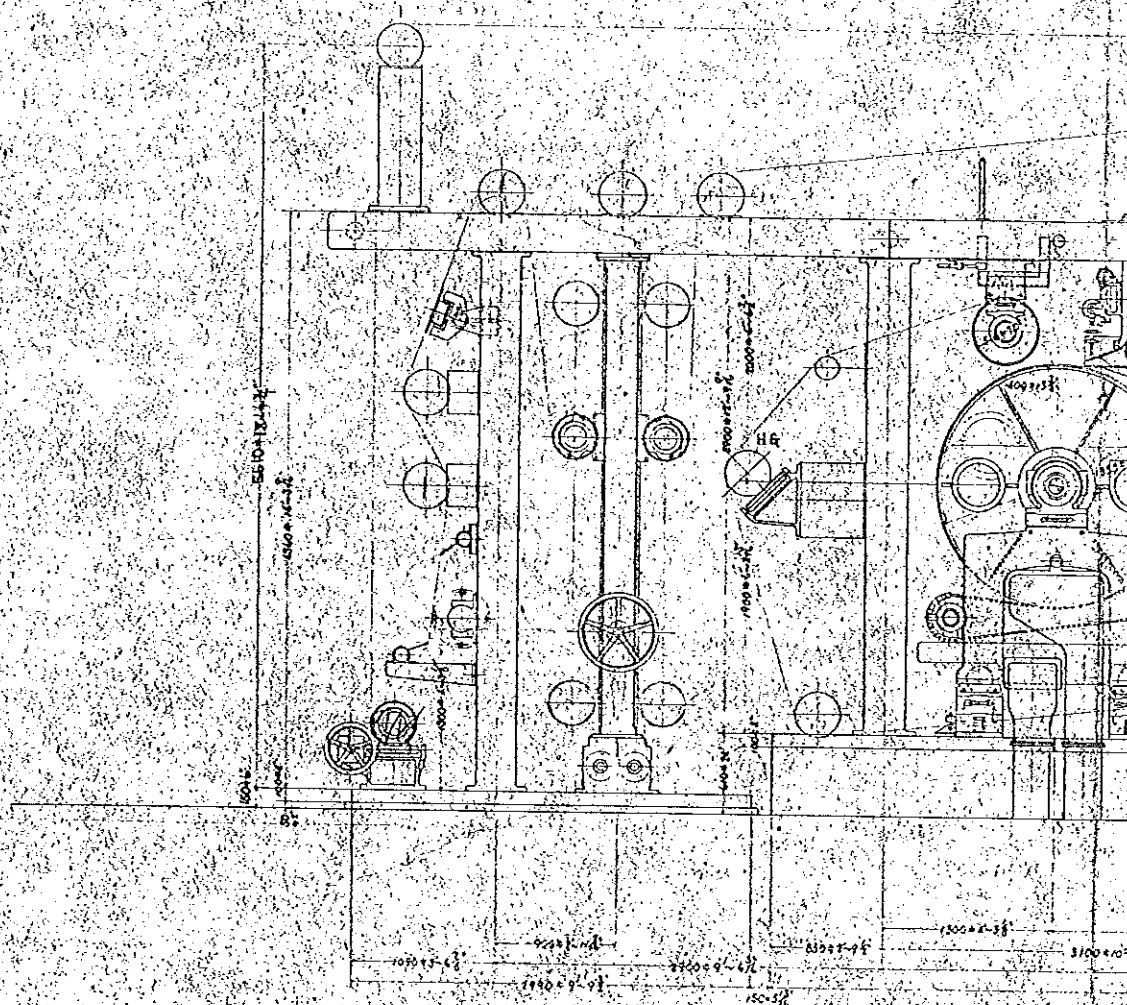
The Instruction Manual has been prepared to be provided to the operator of the Ultra Former Machine Wet End with a comprehensive study of the many parts and systems that are combined each other.

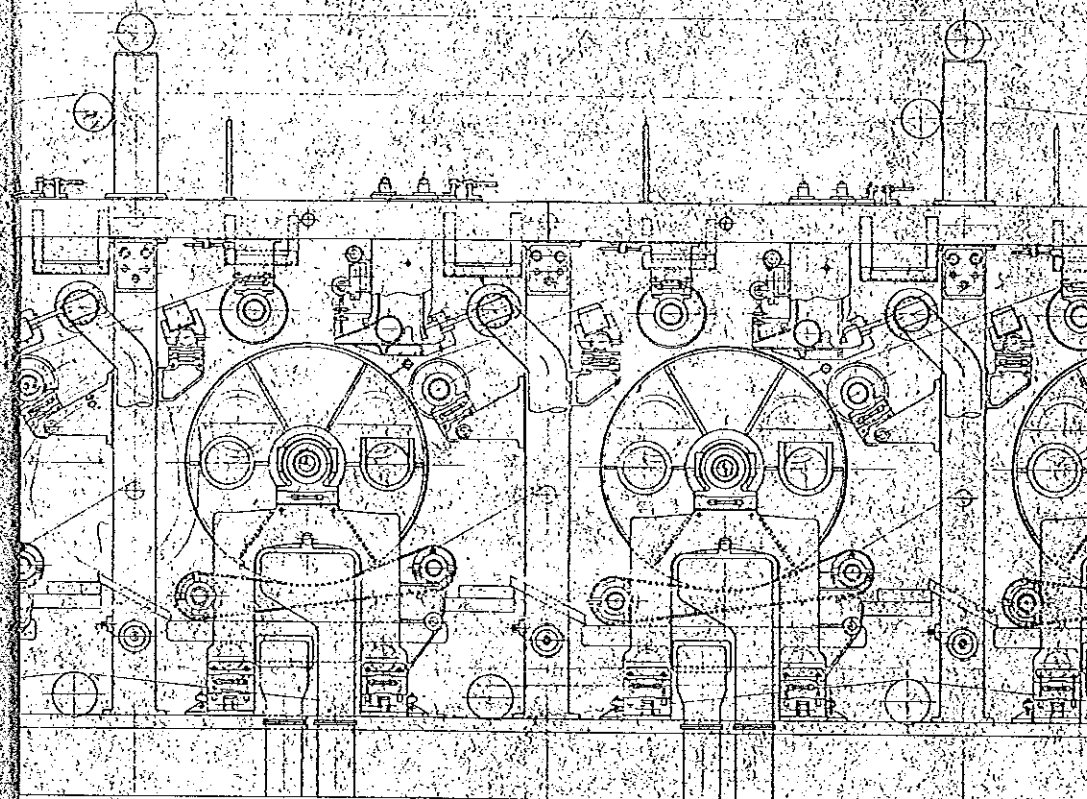
The each drawing is numbered and please make reference to these numbers, when placing order for spare parts.

If you have further questions, please do not hesitate to contact with Kobayashi Engineering Works, Ltd.

I N D E X

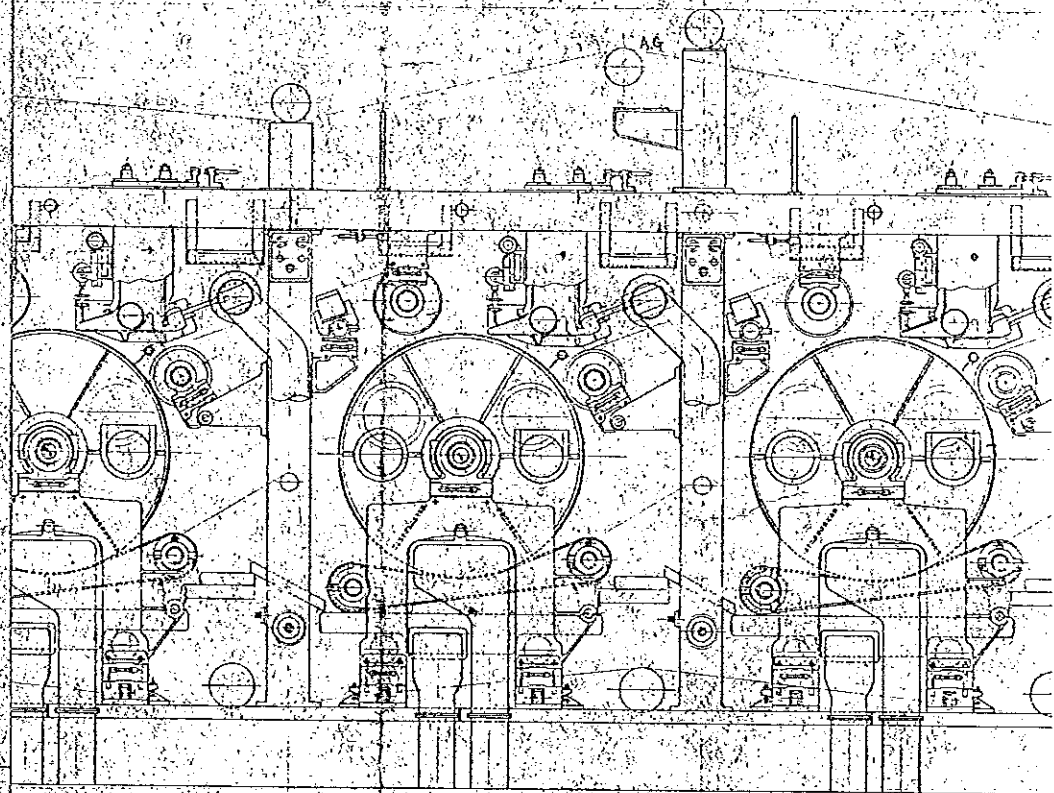
- A           ULTRA FORMER PART
- B           TOP FELT SQUEEZE PART
- C           FELT STRETCHER
- D           ULTRA FORMER START UP PROCEDURE



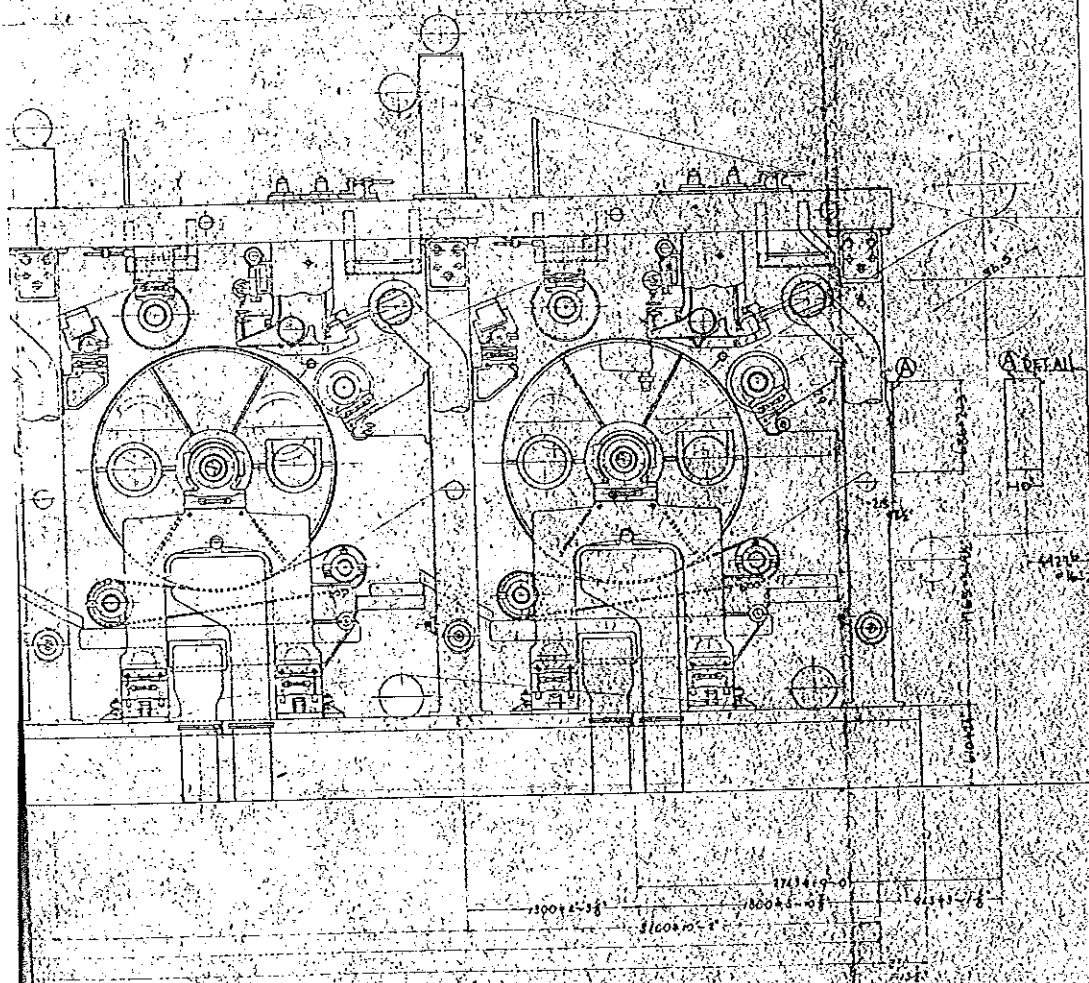


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1100



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⊕ HELPER DRIVE

☐ FURNISHED BY THE CUSTOMER

NOV 15 '88				1.02
YES				1.02
DATE	SIN	REVISION	BY	A-110

IN: A000040	
ASSEMBLY DRAWING	
168' ULTRA FORMER	
WET END MODIFICATION	
DESIGN NO.	1564-0103
DATE	SCALE
1.20	1.20
KAIHARA ENGINEERING WORKS, LTD.	
FUJI SHIZUKA JAPAN	

FIG.-1



A ULTRA FORMER PART

ULTRA FORMER PARTGENERAL

One complete Ultra-Former Part consisting of eight (8) Ultra Former units will be supplied.

One Ultra Former unit consists of cylinder mold, flow box, forming roll, couch roll, stock inlet, suction box, holding belt unit and etc.

The stock is jetted onto the cylinder mold from the nozzle slice of the flow box located above the cylinder mold at a rate conforming to the speed of machine.

The stock is allowed to form and is then sandwiched between the cylinder and the transfer felt which is coming in from the direction of the forming roll.

The water is gradually removed from the stock and then extracted more thoroughly at the couch roll. The formed sheet is then carried on the surface of the felt and fed into the next Ultra Former unit.

The wet sheet from the last Ultra Former unit is carried into the primary press section.

I N D E X

## Introduction

## Ultra Former Part . . .

- 1 Assembling sequence for the Ultra Former
- 2 Components & operation manual
  - (1) Flow box
    - a) Stock inlet
    - b) Flow box
    - c) Slice
  - (2) Cylinder mold
    - a) How to produce a vacuum in the cylinder mold
    - b) Pull out procedures for the Ultra Former cylinder mold
    - c) Wire exchanging procedure
  - (3) Wire cylinder cleaning device
    - a) Cylinder oscillating shower
  - (4) Forming roll
  - (5) Holding belt unit
    - a) Crown roll
    - b) Tension roll
    - c) Holding belt
  - (6) Couch roll
  - (7) Suction tube and suction box
  - (8) Save all
  - (9) Side frame for the cylinder mold

# 1 Assembling sequence for the Ultra Former

The Ultra Former is generally assembled by the following sequence. (See FIG.-2)

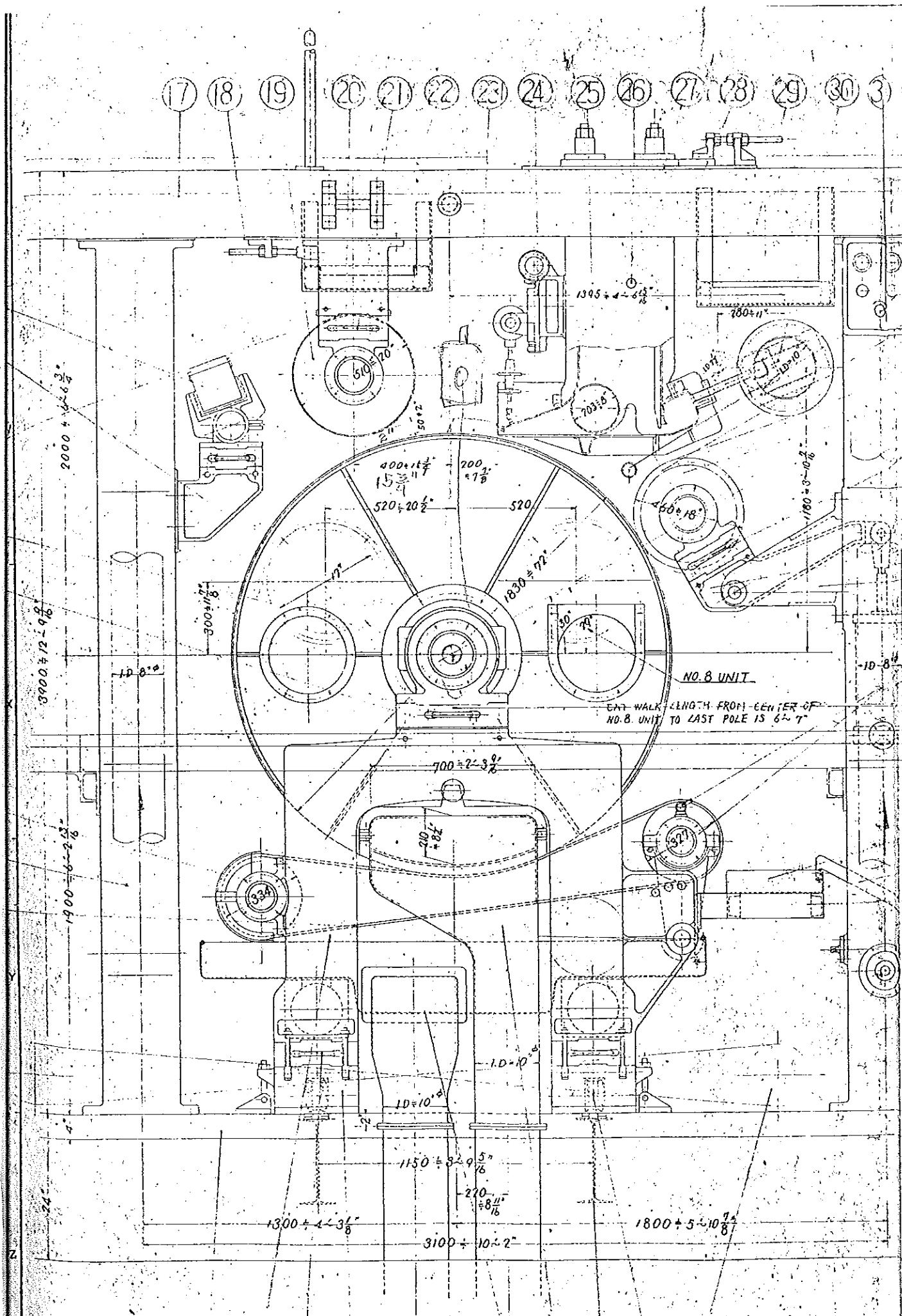
- (1) Install the sole plate (8) to be equal distance from machine center, parallel, and on the same level.
- (2) Install the vertical frames (6) on the sole plate (8).
- (3) Set the drive side of the horizontal frame (17) on the drive side of the vertical frame (6).
- (4) Set the rail (14) on the sole plate (8) and also install the pull out rail on the floor.
- (5) Guide the cylinder mold unit, which has been pre-assembled at Kobayashi, into the machine on the rail (14).
- (6) Install the felt roll (16) on the sole plate (8).
- (7) Set the connecting save all (40) to the save all (39).
- (8) Set the suction box brackets and suction box (1) on the vertical frames (6).
- (9) Assemble the diaphragm bellows (38), the couch roll bracket (36), and the swing arm (35) on the tender side of the vertical frame (6).
- (10) Set the couch roll (33) on the swing arm (35) using the pull out piece (34).
- (11) Fix the drive side of the flow box (25) on the drive side of the horizontal frame (17) and support the tender side of the flow box (25) from the upper beam (Not part of the machine).
- (12) Set the tender side of the horizontal frame (17) on the tender side of the vertical frame (6).

- (13) Fix the tender side of the flow box (25) on the tender side of the horizontal (17).
- (14) Install the foam killer (26) in the flow box (25).
- (15) Install the forming roll (19) mounted on the bracket which is installed underneath the horizontal frame (17).
- (16) Set the shower pipe (32).
- (17) Connect the vacuum pipe (46) to the side cover (47) and to the vertical frame (6).
- (18) Set the rectifier roll motor (45) on the bracket and connect the rectifier roll (28) and the motor (44).
- (19) Set the control panel and the manometer on the vertical frame (6).
- (20) Connect the pipes (29), (32) to the main water pipe.
- (21) After completion of assembly check that all roll centers are level and straight.
- (22) Adjust the position of the forming roll (19) and alicie lip clearance, when the machine will be started up.

## Parts List of FIG.-2

<u>No.</u>	<u>Parts Name</u>
1.	Suction box
2.	Bracket
3.	Housing of wire cylinder
4.	Pull out piece
5.	Crown roll
6.	Vertical frame
7.	Holding belt
8.	Sole plate
9.	Side frame
10.	Pull out piece
11.	Stand
12.	Save all
13.	Drop bent
14.	Parmanent rail
15.	Roller
16.	Felt roll
17.	Horizontal frame
18.	Adjust screw
19.	Forming roll
20.	Housing of forming roll
21.	Pull out piece
22.	Bracket
23.	Deckele plate
24.	Slice lip lifting device

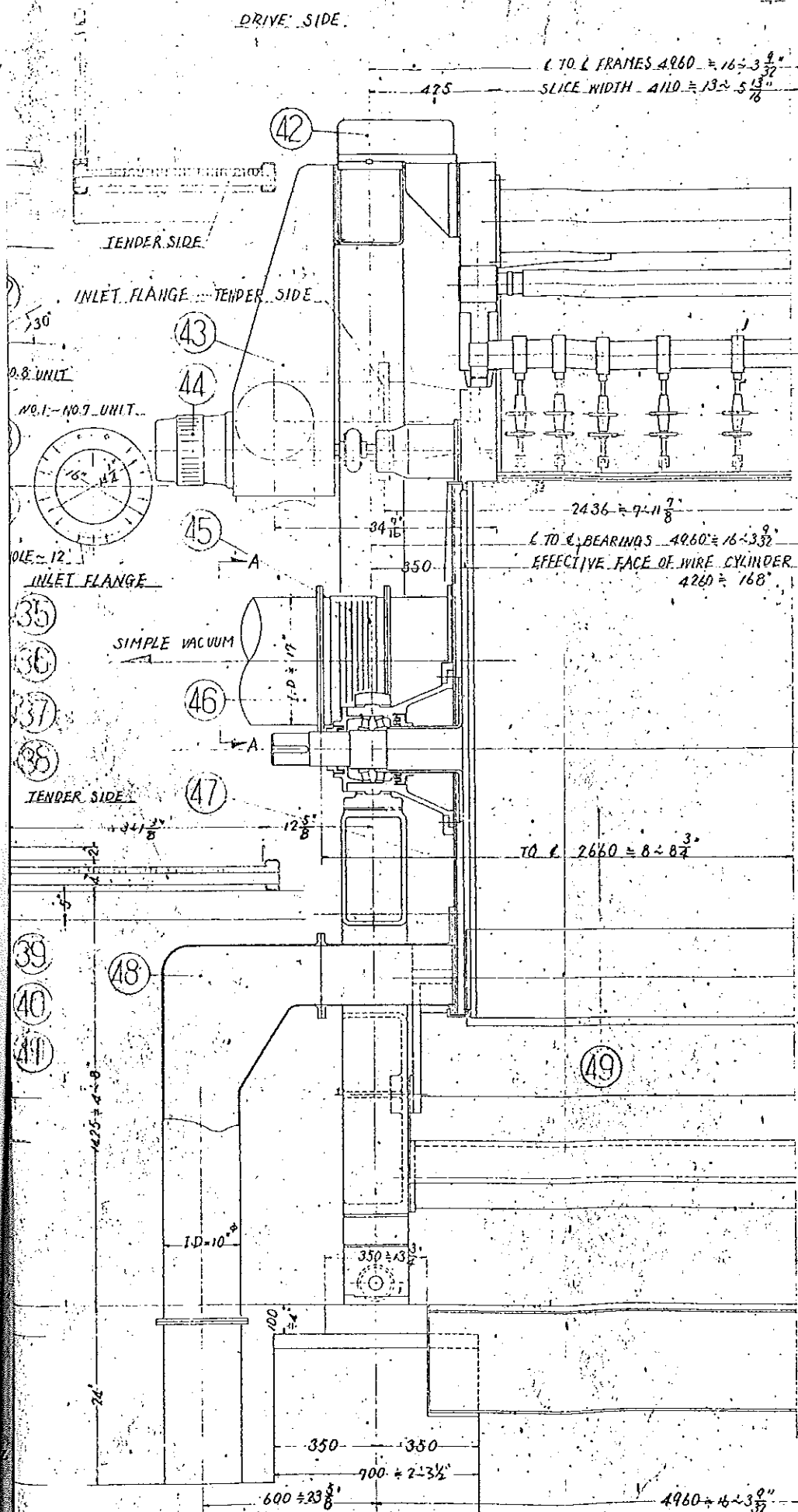
<u>No.</u>	<u>Parts Name</u>
25.	Flow box
26.	Foam killer
27.	Flow box adjusting device
28.	Rectifier roll
29.	Recirculation pipe
30.	Stock inlet
31.	Controll panel
32.	Shower pipe
33.	Couch roll
34.	Pull out piece
35.	Swing arm of couch roll
36.	Bracket
37.	Tension roll
38.	Diaphragm bellows
39.	Save all
40.	Connecting save all
41.	Bracket
42.	Side bracket of flow box
43.	Motor base
44.	Geared motor
45.	Flexible hose
46.	Simple vacuum pipe
47.	Side cover
48.	Drop bent
49.	Wire cylinder



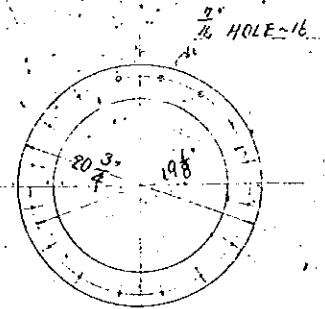


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100


第 角 図 法



DIMENSIONS OF DUCT FLANGES  
BASED ON NATIONAL METAL  
FABRICATORS' CATALOGUE



A - A VIEW

 HELPER DRIVE

PARTS TO BE EQUIPPED TO TENDER SIDE.

FURNISHED BY THE CUSTOMER

AUG. 1978			COLORUED PARTS MODIFIED	T.O. 150		Y. ACK.
J.N. 1978			COLORUED PARTS MODIFIED	X Kunder		
APR. 1970				K. Kunder		J. Edgar
DATE	SYM		REVISION		BY	APP.

DESCRIBED QUANTITIES ARE FOR A SET  
OF 8 INCHES  
TO BE MANUFACTURED SETS

168" ULTRA FORMER  
WET END MODIFICATION  
ASSEMBLY OF ULTRA  
FORMER

PRODUCTION  
F N° A 000040

DRAWING NO. 1564-1030-1

SCALE	DRAWN	TRACED	CHECKED BY	DATE
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KORAYASHI

## 2 Components and operation manual

The detail specification of the principal components of the Ultra Former and the operation manual are as follows.

### (1) Flow box

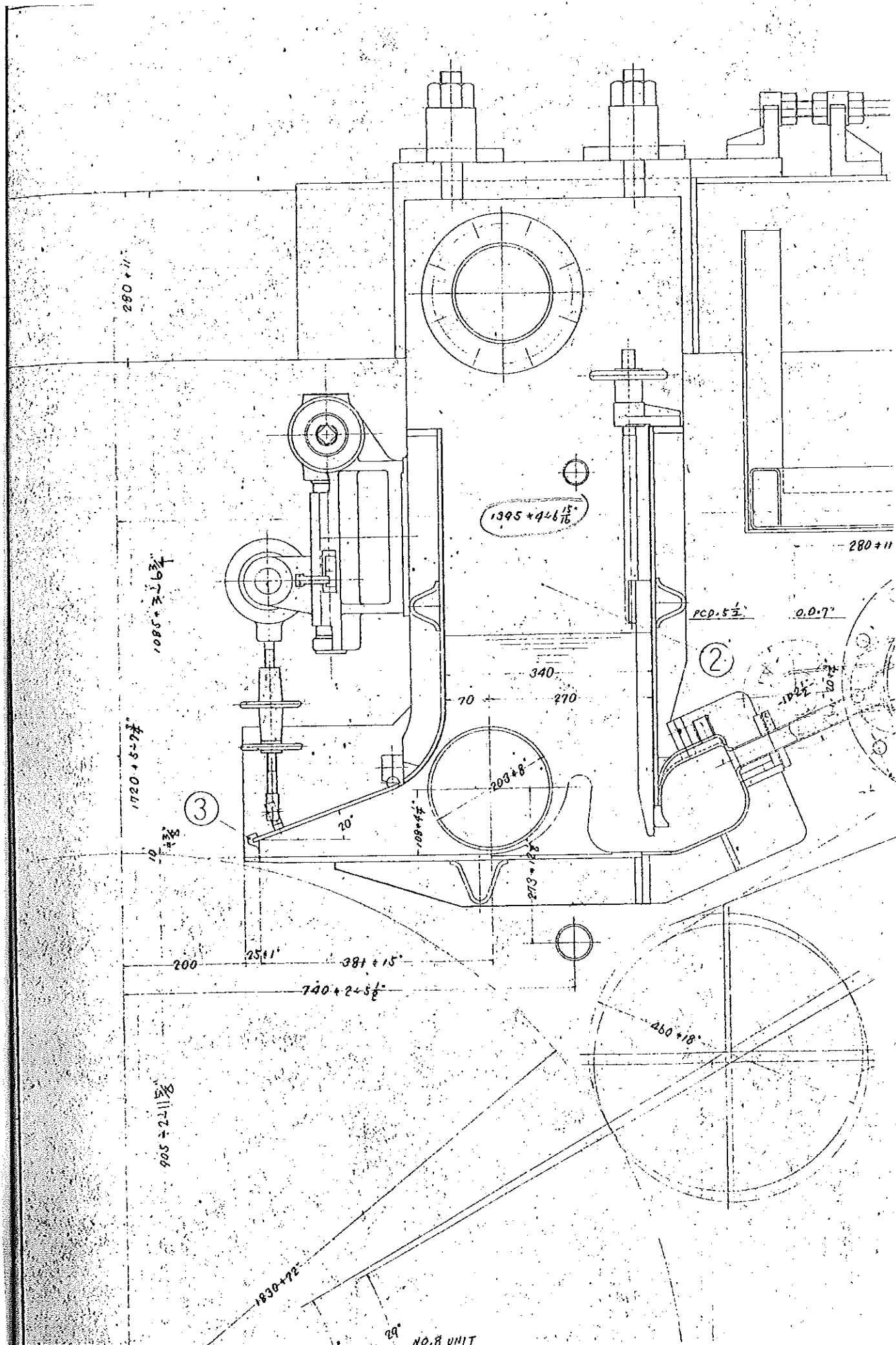
Eight (8) open type flow boxes are furnished for use over the cylinder mold to supply the stock onto the cylinder mold at a rate conforming to the speed of machine.

One flow box consists of a stock inlet (1), a flow box (2) and a slice (3).

(See FIG.-3)

## Parts List of Flow box (FIG.-3)

<u>No.</u>	<u>Parts Name</u>
1.	Stock inlet
2.	Flow box
3.	Slice



材料公差 (記号ナキモノ) 単位				ア ラ カ	
寸 法	公差	単位	公差	単位	公差
1/16"	±0.005		1/8"	±0.010	
1/8"	±0.010		3/16"	±0.015	
1/4"	±0.015		1/2"	±0.020	
3/8"	±0.020		1"	±0.030	
1/2"	±0.030		1 1/2"	±0.040	
3/4"	±0.040		2"	±0.050	
1"	±0.050		2 1/2"	±0.060	
1 1/4"	±0.060		3"	±0.070	
1 1/2"	±0.070		3 1/2"	±0.080	
1 3/4"	±0.080		4"	±0.090	
2"	±0.090		4 1/2"	±0.100	
2 1/4"	±0.100		5"	±0.110	
2 1/2"	±0.110		5 1/2"	±0.120	
2 3/4"	±0.120		6"	±0.130	
3"	±0.130		6 1/2"	±0.140	
3 1/4"	±0.140		7"	±0.150	
3 1/2"	±0.150		7 1/2"	±0.160	
3 3/4"	±0.160		8"	±0.170	
4"	±0.170		8 1/2"	±0.180	
4 1/4"	±0.180		9"	±0.190	
4 1/2"	±0.190		9 1/2"	±0.200	
4 3/4"	±0.200		10"	±0.210	
5"	±0.210		10 1/2"	±0.220	
5 1/4"	±0.220		11"	±0.230	
5 1/2"	±0.230		11 1/2"	±0.240	
5 3/4"	±0.240		12"	±0.250	
6"	±0.250		12 1/2"	±0.260	
6 1/4"	±0.260		13"	±0.270	
6 1/2"	±0.270		13 1/2"	±0.280	
6 3/4"	±0.280		14"	±0.290	
7"	±0.290		14 1/2"	±0.300	
7 1/4"	±0.300		15"	±0.310	
7 1/2"	±0.310		15 1/2"	±0.320	
7 3/4"	±0.320		16"	±0.330	
8"	±0.330		16 1/2"	±0.340	
8 1/4"	±0.340		17"	±0.350	
8 1/2"	±0.350		17 1/2"	±0.360	
8 3/4"	±0.360		18"	±0.370	
9"	±0.370		18 1/2"	±0.380	
9 1/4"	±0.380		19"	±0.390	
9 1/2"	±0.390		19 1/2"	±0.400	
9 3/4"	±0.400		20"	±0.410	
10"	±0.410		20 1/2"	±0.420	
10 1/4"	±0.420		21"	±0.430	
10 1/2"	±0.430		21 1/2"	±0.440	
10 3/4"	±0.440		22"	±0.450	
11"	±0.450		22 1/2"	±0.460	
11 1/4"	±0.460		23"	±0.470	
11 1/2"	±0.470		23 1/2"	±0.480	
11 3/4"	±0.480		24"	±0.490	
12"	±0.490		24 1/2"	±0.500	
12 1/4"	±0.500		25"	±0.510	
12 1/2"	±0.510		25 1/2"	±0.520	
12 3/4"	±0.520		26"	±0.530	
13"	±0.530		26 1/2"	±0.540	
13 1/4"	±0.540		27"	±0.550	
13 1/2"	±0.550		27 1/2"	±0.560	
13 3/4"	±0.560		28"	±0.570	
14"	±0.570		28 1/2"	±0.580	
14 1/4"	±0.580		29"	±0.590	
14 1/2"	±0.590		29 1/2"	±0.600	
14 3/4"	±0.600		30"	±0.610	
15"	±0.610		30 1/2"	±0.620	
15 1/4"	±0.620		31"	±0.630	
15 1/2"	±0.630		31 1/2"	±0.640	
15 3/4"	±0.640		32"	±0.650	
16"	±0.650		32 1/2"	±0.660	
16 1/4"	±0.660		33"	±0.670	
16 1/2"	±0.670		33 1/2"	±0.680	
16 3/4"	±0.680		34"	±0.690	
17"	±0.690		34 1/2"	±0.700	
17 1/4"	±0.700		35"	±0.710	
17 1/2"	±0.710		35 1/2"	±0.720	
17 3/4"	±0.720		36"	±0.730	
18"	±0.730		36 1/2"	±0.740	
18 1/4"	±0.740		37"	±0.750	
18 1/2"	±0.750		37 1/2"	±0.760	
18 3/4"	±0.760		38"	±0.770	
19"	±0.770		38 1/2"	±0.780	
19 1/4"	±0.780		39"	±0.790	
19 1/2"	±0.790		39 1/2"	±0.800	
19 3/4"	±0.800		40"	±0.810	
20"	±0.810		40 1/2"	±0.820	
20 1/4"	±0.820		41"	±0.830	
20 1/2"	±0.830		41 1/2"	±0.840	
20 3/4"	±0.840		42"	±0.850	
21"	±0.850		42 1/2"	±0.860	
21 1/4"	±0.860		43"	±0.870	
21 1/2"	±0.870		43 1/2"	±0.880	
21 3/4"	±0.880		44"	±0.890	
22"	±0.890		44 1/2"	±0.900	
22 1/4"	±0.900		45"	±0.910	
22 1/2"	±0.910		45 1/2"	±0.920	
22 3/4"	±0.920		46"	±0.930	
23"	±0.930		46 1/2"	±0.940	
23 1/4"	±0.940		47"	±0.950	
23 1/2"	±0.950		47 1/2"	±0.960	
23 3/4"	±0.960		48"	±0.970	
24"	±0.970		48 1/2"	±0.980	
24 1/4"	±0.980		49"	±0.990	
24 1/2"	±0.990		49 1/2"	±1.000	
24 3/4"	±1.000		50"	±1.010	
25"	±1.010		50 1/2"	±1.020	
25 1/4"	±1.020		51"	±1.030	
25 1/2"	±1.030		51 1/2"	±1.040	
25 3/4"	±1.040		52"	±1.050	
26"	±1.050		52 1/2"	±1.060	
26 1/4"	±1.060		53"	±1.070	
26 1/2"	±1.070		53 1/2"	±1.080	
26 3/4"	±1.080		54"	±1.090	
27"	±1.090		54 1/2"	±1.100	
27 1/4"	±1.100		55"	±1.110	
27 1/2"	±1.110		55 1/2"	±1.120	
27 3/4"	±1.120		56"	±1.130	
28"	±1.130		56 1/2"	±1.140	
28 1/4"	±1.140		57"	±1.150	
28 1/2"	±1.150		57 1/2"	±1.160	
28 3/4"	±1.160		58"	±1.170	
29"	±1.170		58 1/2"	±1.180	
29 1/4"	±1.180		59"	±1.190	
29 1/2"	±1.190		59 1/2"	±1.200	
29 3/4"	±1.200		60"	±1.210	
30"	±1.210		60 1/2"	±1.220	
30 1/4"	±1.220		61"	±1.230	
30 1/2"	±1.230		61 1/2"	±1.240	
30 3/4"	±1.240		62"	±1.250	
31"	±1.250		62 1/2"	±1.260	
31 1/4"	±1.260		63"	±1.270	
31 1/2"	±1.270		63 1/2"	±1.280	
31 3/4"	±1.280		64"	±1.290	
32"	±1.290		64 1/2"	±1.300	
32 1/4"	±1.300		65"	±1.310	
32 1/2"	±1.310		65 1/2"	±1.320	
32 3/4"	±1.320		66"	±1.330	
33"	±1.330		66 1/2"	±1.340	
33 1/4"	±1.340		67"	±1.350	
33 1/2"	±1.350		67 1/2"	±1.360	
33 3/4"	±1.360		68"	±1.370	
34"	±1.370		68 1/2"	±1.380	
34 1/4"	±1.380		69"	±1.390	
34 1/2"	±1.390		69 1/2"	±1.400	
34 3/4"	±1.400		70"	±1.410	
35"	±1.410		70 1/2"	±1.420	
35 1/4"	±1.420		71"	±1.430	
35 1/2"	±1.430		71 1/2"	±1.440	
35 3/4"	±1.440		72"	±1.450	
36"	±1.450		72 1/2"	±1.460	
36 1/4"	±1.460		73"	±1.470	
36 1/2"	±1.470		73 1/2"	±1.480	
36 3/4"	±1.480		74"	±1.490	
37"	±1.490		74 1/2"	±1.500	
37 1/4"	±1.500		75"	±1.510	
37 1/2"	±1.510		75 1/2"	±1.520	
37 3/4"	±1.520		76"	±1.530	
38"	±1.530		76 1/2"	±1.540	
38 1/4"	±1.540		77"	±1.550	
38 1/2"	±1.550		77 1/2"	±1.560	
38 3/4"	±1.560		78"	±1.570	
39"	±1.570		78 1/2"	±1.580	
39 1/4"	±1.580		79"	±1.590	
39 1/2"	±1.590		79 1/2"	±1.600	
39 3/4"	±1.600		80"	±1.610	
40"	±1.610		80 1/2"	±1.620	
40 1/4"	±1.620		81"	±1.630	
40 1/2"	±1.630		81 1/2"	±1.640	
40 3/4"	±1.640		82"	±1.650	
41"	±1.650		82 1/2"	±1.660	
41 1/4"	±1.660		83"	±1.670	
41 1/2"	±1.670		83 1/2"	±1.680	
41 3/4"	±1.680		84"	±1.690	
42"	±1.690		84 1/2"	±1.700	
42 1/4"	±1.700		85"	±1.710	
42 1/2"	±1.710		85 1/2"	±1.720	
42 3/4"	±1.720		86"	±1.730	
43"	±1.730		86 1/2"	±1.740	
43 1/4"	±1.740		87"	±1.750	
43 1/2"	±1.750		87 1/2"	±1.760	
43 3/4"	±1.760		88"	±1.770	
44"	±1.770		88 1/2"	±1.780	
44 1/4"	±1.780		89"	±1.790	
44 1/2"	±1.790		89 1/2"	±1.800	
44 3/4"	±1.800		90"	±1.810	
45"	±1.810		90 1/2"	±1.820	
45 1/4"	±1.820		91"	±1.830	
45 1/2"	±1.830		91 1/2"	±1.840	
45 3/4"	±1.840		92"	±1.850	
46"	±1.850		92 1/2"	±1.860	
46 1/4"	±1.860		93"	±1.870	
46 1/2"	±1.870		93 1/2"	±1.880	
46 3/4"	±1.880		94"	±1.890	
47"	±1.890		94 1/2"	±1.900	
47 1/4"	±1.900		95"	±1.910	
47 1/2"	±1.910		95 1/2"	±1.920	
47 3/4"	±1.920		96"	±1.930	
48"	±1.930		96 1/2"	±1.940	
48 1/4"	±1.940		97"	±1.950	
48 1/2"	±1.950		97 1/2"	±1.960	
48 3/4"	±1.960		98"	±1.970	
49"	±1.970		98 1/2"	±1.980	
49 1/4"	±1.980		99"	±1.990	
49 1/2"	±1.990		99 1/2"	±2.000	
49 3/4"	±2.000		100"	±2.010	
50"	±2.010		100 1/2"	±2.020	
50 1/4"	±2.020		101"	±2.030	
50 1/2"	±2.030		101 1/2"	±2.040	
50 3/4"	±2.040		102"	±2.050	
51"	±2.050		102 1/2"	±2.060	
51 1/4"	±2.060		103"	±2.070	
51 1/2"	±2.070		103 1/2"	±2.080	
51 3/4"	±2.080		104"	±2.090	
52"	±2.090		104 1/2"	±2.100	
52 1/4"	±2.100		105"	±2.110	
52 1/2"	±2.110		105 1/2"	±2.120	
52 3/4"	±2.120		106"	±2.130	
53"	±2.130		106 1/2"	±2.140	
53 1/4"	±2.140		107"	±2.150	
53 1/2"	±2.150		107 1/2"	±2.160	
53 3/4"	±2.160		108"	±2.170	
54"	±2.170		108 1/2"	±2.180	
54 1/4"	±2.180		109"	±2.190	
54 1/2"	±2.190		109 1/2"	±2.200	
54 3/4"	±2.200		110"	±2.210	
55"	±2.210		110 1/2"</		

V

X

Y

Z

280 ± 11

1085 ± 3 ± 63

1720 ± 5 ± 73

10 ± 3

200

125 ± 1

381 ± 15

740 ± 2 ± 58

1 THRU 7

150 - 8

905 ± 2 ± 115

1830 ± 72

1

2

3

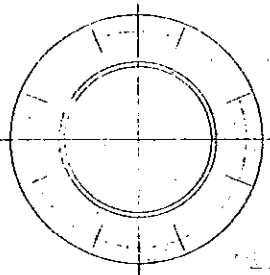
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5

6

7

8



1395 ± 4 ± 15

PCD ± 5 ± 1

0.0 ± 0.7

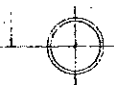
340

70

270

203 ± 8

273 ± 12



460 ± 18

280 ± 1

102 ± 10

製 図 号		ア ラ リ	
製造公差 (12号ナキモノ) 単位		ア ラ リ	
寸 法	単位	寸 法	単位
1/16	0.0156	1/8	0.0312
1/8	0.0312	3/16	0.0469
1/4	0.0625	1/2	0.0938
3/8	0.1250	5/8	0.1562
1/2	0.2500	3/4	0.1875
5/8	0.3125	7/8	0.2188
3/4	0.3750	1 1/8	0.2500
1 1/4	0.5000	1 1/2	0.3125
1 3/4	0.6250	2	0.3750
2	0.7500	2 1/2	0.4375
2 1/2	0.8750	3	0.5000
3	1.0000	3 1/2	0.5625
3 1/2	1.1250	4	0.6250
4	1.2500	4 1/2	0.6875
4 1/2	1.3750	5	0.7500
5	1.5000	5 1/2	0.8125
5 1/2	1.6250	6	0.8750
6	1.7500	6 1/2	0.9375
6 1/2	1.8750	7	1.0000
7	2.0000	7 1/2	1.0625
7 1/2	2.1250	8	1.1250
8	2.2500	8 1/2	1.1875
8 1/2	2.3750	9	1.2500
9	2.5000	9 1/2	1.3125
9 1/2	2.6250	10	1.3750
10	2.7500	10 1/2	1.4375
10 1/2	2.8750	11	1.5000
11	3.0000	11 1/2	1.5625
11 1/2	3.1250	12	1.6250
12	3.2500	12 1/2	1.6875
12 1/2	3.3750	13	1.7500
13	3.5000	13 1/2	1.8125
13 1/2	3.6250	14	1.8750
14	3.7500	14 1/2	1.9375
14 1/2	3.8750	15	2.0000
15	4.0000	15 1/2	2.0625
15 1/2	4.1250	16	2.1250
16	4.2500	16 1/2	2.1875
16 1/2	4.3750	17	2.2500
17	4.5000	17 1/2	2.3125
17 1/2	4.6250	18	2.3750
18	4.7500	18 1/2	2.4375
18 1/2	4.8750	19	2.5000
19	5.0000	19 1/2	2.5625
19 1/2	5.1250	20	2.6250
20	5.2500	20 1/2	2.6875
20 1/2	5.3750	21	2.7500
21	5.5000	21 1/2	2.8125
21 1/2	5.6250	22	2.8750
22	5.7500	22 1/2	2.9375
22 1/2	5.8750	23	3.0000
23	6.0000	23 1/2	3.0625
23 1/2	6.1250	24	3.1250
24	6.2500	24 1/2	3.1875
24 1/2	6.3750	25	3.2500
25	6.5000	25 1/2	3.3125
25 1/2	6.6250	26	3.3750
26	6.7500	26 1/2	3.4375
26 1/2	6.8750	27	3.5000
27	7.0000	27 1/2	3.5625
27 1/2	7.1250	28	3.6250
28	7.2500	28 1/2	3.6875
28 1/2	7.3750	29	3.7500
29	7.5000	29 1/2	3.8125
29 1/2	7.6250	30	3.8750
30	7.7500	30 1/2	3.9375
30 1/2	7.8750	31	4.0000
31	8.0000	31 1/2	4.0625
31 1/2	8.1250	32	4.1250
32	8.2500	32 1/2	4.1875
32 1/2	8.3750	33	4.2500
33	8.5000	33 1/2	4.3125
33 1/2	8.6250	34	4.3750
34	8.7500	34 1/2	4.4375
34 1/2	8.8750	35	4.5000
35	9.0000	35 1/2	4.5625
35 1/2	9.1250	36	4.6250
36	9.2500	36 1/2	4.6875
36 1/2	9.3750	37	4.7500
37	9.5000	37 1/2	4.8125
37 1/2	9.6250	38	4.8750
38	9.7500	38 1/2	4.9375
38 1/2	9.8750	39	5.0000
39	10.0000	39 1/2	5.0625
39 1/2	10.1250	40	5.1250
40	10.2500	40 1/2	5.1875
40 1/2	10.3750	41	5.2500
41	10.5000	41 1/2	5.3125
41 1/2	10.6250	42	5.3750
42	10.7500	42 1/2	5.4375
42 1/2	10.8750	43	5.5000
43	11.0000	43 1/2	5.5625
43 1/2	11.1250	44	5.6250
44	11.2500	44 1/2	5.6875
44 1/2	11.3750	45	5.7500
45	11.5000	45 1/2	5.8125
45 1/2	11.6250	46	5.8750
46	11.7500	46 1/2	5.9375
46 1/2	11.8750	47	6.0000
47	12.0000	47 1/2	6.0625
47 1/2	12.1250	48	6.1250
48	12.2500	48 1/2	6.1875
48 1/2	12.3750	49	6.2500
49	12.5000	49 1/2	6.3125
49 1/2	12.6250	50	6.3750
50	12.7500	50 1/2	6.4375
50 1/2	12.8750	51	6.5000
51	13.0000	51 1/2	6.5625
51 1/2	13.1250	52	6.6250
52	13.2500	52 1/2	6.6875
52 1/2	13.3750	53	6.7500
53	13.5000	53 1/2	6.8125
53 1/2	13.6250	54	6.8750
54	13.7500	54 1/2	6.9375
54 1/2	13.8750	55	7.0000
55	14.0000	55 1/2	7.0625
55 1/2	14.1250	56	7.1250
56	14.2500	56 1/2	7.1875
56 1/2	14.3750	57	7.2500
57	14.5000	57 1/2	7.3125
57 1/2	14.6250	58	7.3750
58	14.7500	58 1/2	7.4375
58 1/2	14.8750	59	7.5000
59	15.0000	59 1/2	7.5625
59 1/2	15.1250	60	7.6250
60	15.2500	60 1/2	7.6875
60 1/2	15.3750	61	7.7500
61	15.5000	61 1/2	7.8125
61 1/2	15.6250	62	7.8750
62	15.7500	62 1/2	7.9375
62 1/2	15.8750	63	8.0000
63	16.0000	63 1/2	8.0625
63 1/2	16.1250	64	8.1250
64	16.2500	64 1/2	8.1875
64 1/2	16.3750	65	8.2500
65	16.5000	65 1/2	8.3125
65 1/2	16.6250	66	8.3750
66	16.7500	66 1/2	8.4375
66 1/2	16.8750	67	8.5000
67	17.0000	67 1/2	8.5625
67 1/2	17.1250	68	8.6250
68	17.2500	68 1/2	8.6875
68 1/2	17.3750	69	8.7500
69	17.5000	69 1/2	8.8125
69 1/2	17.6250	70	8.8750
70	17.7500	70 1/2	8.9375
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71 1/2	18.1250	72	9.1250
72	18.2500	72 1/2	9.1875
72 1/2	18.3750	73	9.2500
73	18.5000	73 1/2	9.3125
73 1/2	18.6250	74	9.3750
74	18.7500	74 1/2	9.4375
74 1/2	18.8750	75	9.5000
75	19.0000	75 1/2	9.5625
75 1/2	19.1250	76	9.6250
76	19.2500	76 1/2	9.6875
76 1/2	19.3750	77	9.7500
77	19.5000	77 1/2	9.8125
77 1/2	19.6250	78	9.8750
78	19.7500	78 1/2	9.9375
78 1/2	19.8750	79	10.0000
79	20.0000	79 1/2	10.0625
79 1/2	20.1250	80	10.1250
80	20.2500	80 1/2	10.1875
80 1/2	20.3750	81	10.2500
81	20.5000	81 1/2	10.3125
81 1/2	20.6250	82	10.3750
82	20.7500	82 1/2	10.4375
82 1/2	20.8750	83	10.5000
83	21.0000	83 1/2	10.5625
83 1/2	21.1250	84	10.6250
84	21.2500	84 1/2	10.6875
84 1/2	21.3750	85	10.7500
85	21.5000	85 1/2	10.8125
85 1/2	21.6250	86	10.8750
86	21.7500	86 1/2	10.9375
86 1/2	21.8750	87	11.0000
87	22.0000	87 1/2	11.0625
87 1/2	22.1250	88	11.1250
88	22.2500	88 1/2	11.1875
88 1/2	22.3750	89	11.2500
89	22.5000	89 1/2	11.3125
89 1/2	22.6250	90	11.3750
90	22.7500	90 1/2	11.4375
90 1/2	22.8750	91	11.5000
91	23.0000	91 1/2	11.5625
91 1/2	23.1250	92	11.6250
92	23.2500	92 1/2	11.6875
92 1/2	23.3750	93	11.7500
93	23.5000	93 1/2	11.8125
93 1/2	23.6250	94	11.8750
94	23.7500	94 1/2	11.9375
94 1/2	23.8750	95	12.0000
95	24.0000	95 1/2	12.0625
95 1/2	24.1250	96	12.1250
96	24.2500	96 1/2	12.1875
96 1/2	24.3750	97	12.2500
97	24.5000	97 1/2	12.3125
97 1/2	24.6250	98	12.3750
98	24.7500	98 1/2	12.4375
98 1/2	24.8750	99	12.5000
99	25.0000	99 1/2	12.5625
99 1/2	25.1250	100	12.6250
100	25.2500	100 1/2	12.6875
100 1/2	25.3750	101	12.7500
101	25.5000	101 1/2	12.8125
101 1/2	25.6250	102	12.8750
102	25.7500	102 1/2	12.9375
102 1/2	25.8750	103	13.0000
103	26.0000	103 1/2	13.0625
103 1/2	26.1250	104	13.1250
104	26.2500	104 1/2	13.1875
104 1/2	26.3750	105	13.2500
105	26.5000	105 1/2	13.3125
105 1/2	26.6250	106	13.3750
106	26.7500	106 1/2	13.4375
106 1/2	26.8750	107	13.5000
107	27.0000	107 1/2	13.5625
107 1/2	27.1250	108	13.6250
108	27.2500	108 1/2	13.6875
108 1/2	27.3750	109	13.7500
109	27.5000	109 1/2	13.8125
109 1/2	27.6250	110	13.8750
110	27.7500	110 1/2	13.9375
110 1/2	27.8750	111	14.0000
111	28.0000	111 1/2	14.0625
111 1/2	28.1250	112	14.1250
112	28.2500	112 1/2	14.1875
112 1/2	28.3750	113	14.2500
113	28.5000	113 1/2	14.3125
113 1/2	28.6250	114	14.3750
114	28.7500	114 1/2	14.4375
114 1/2	28.8750	115	14.5000
115	29.0000	115 1/2	14.5625
115 1/2	29.1250	116	14.6250
116	29.2500	116 1/2	14.6875
116 1/2	29.3750	117	14.7500
117	29.5000	117 1/2	14.8125
117 1/2	29.6250	118	14.8750
118	29.7500	118 1/2	14.9375
118 1/2	29.8750	119	15.0000
119	30.0000	119 1/2	15.0625
119 1/2	30.1250	120	15.1250
120	30.2500	120 1/2	15.1875
120 1/2	30.3750	121	15.2500
121	30.5000	121 1/2	15.3125
121 1/2	30.6250	122	15.3750
122	30.7500	122 1/2	15.4375
122 1/2	30.8750	123	15.5000
123	31.0000	123 1/2	15.5625
123 1/2	31.1250	124	15.6250
124	31.2500	124 1/2	15.6875
124 1/2	31.3750	125	15.7500
125	31.5000	125 1/2	15.8125
125 1/2	31.6250	126	15.8750
12			

a) Stock inlet

The manifold type stock inlet which is designed to create a constant flow pressure at all points across the full width of the machine will be supplied for entering stock into the flow box.

The tapered inlet, manifold piping and recirculation piping exposed to stock or water are made of stainless steel. The stock inlet is shown in FIG.-4.

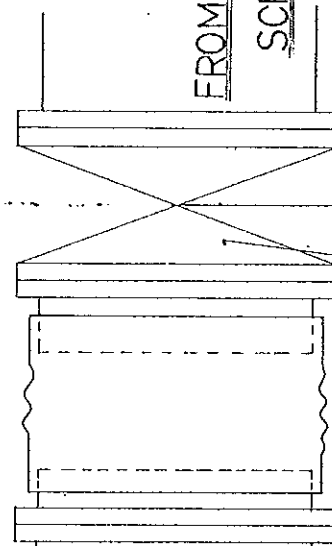


## Parts List of Stock inlet (FIG.-4)

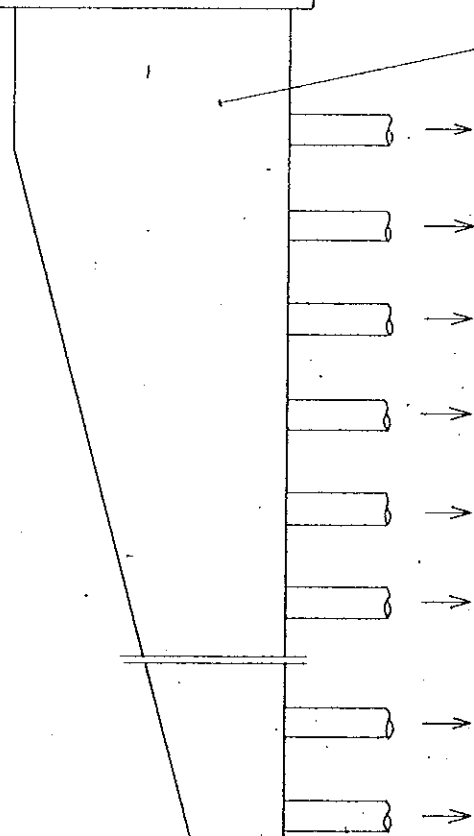
<u>No.</u>	<u>Parts Name</u>
1.	No.1 valve
2.	Manifold
3.	No.2 valve
4.	Over flow pipe

STOCK INLET

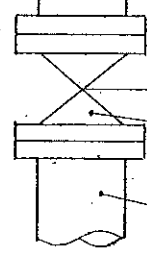
FROM  
SCREEN



1



2



3

4

b) Flow box

The flow box which is located over the cylinder mold consists of a rectifier roll driven by a geared motor, a box body and a gate.

The supporting structure of this flow box is adjustable horizontally, and vertically so that the box can be moved every direction above the cylinder mold.

The stock is fed into the flow box through a manifold pipe and rectified by the rectifier roll.

All parts of the flow box which is exposed to stock are made of stainless steel.

The flow box is shown in FIG.-6.

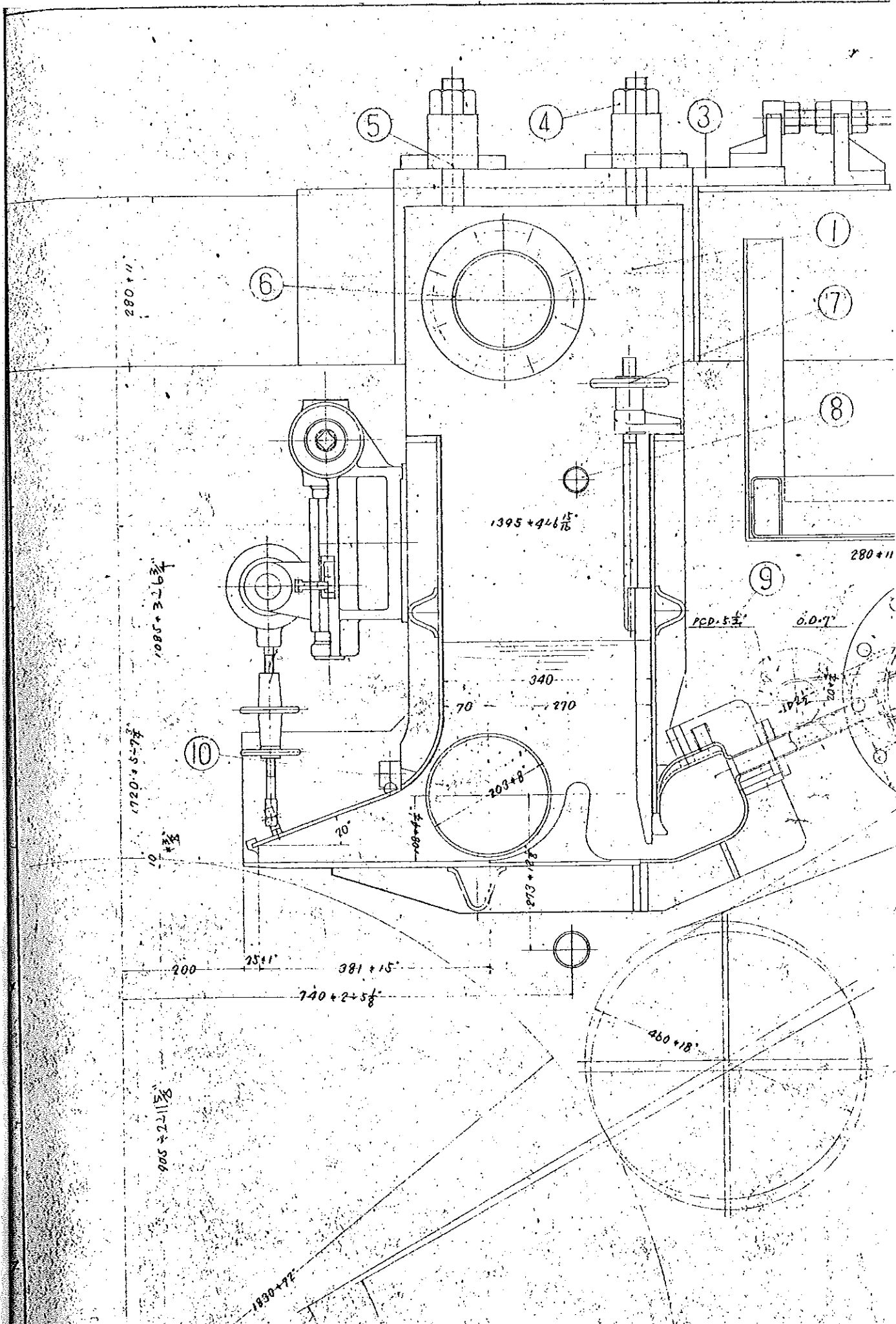
The operating procedure is as follows:

- 1) Turn the hand wheel (7) and let the gate down.
- 2) Open the valve and the water will spray from the shower pipe (Foam killer) (8).

Note: The water head in the flow box will be shown in FIG.-6.

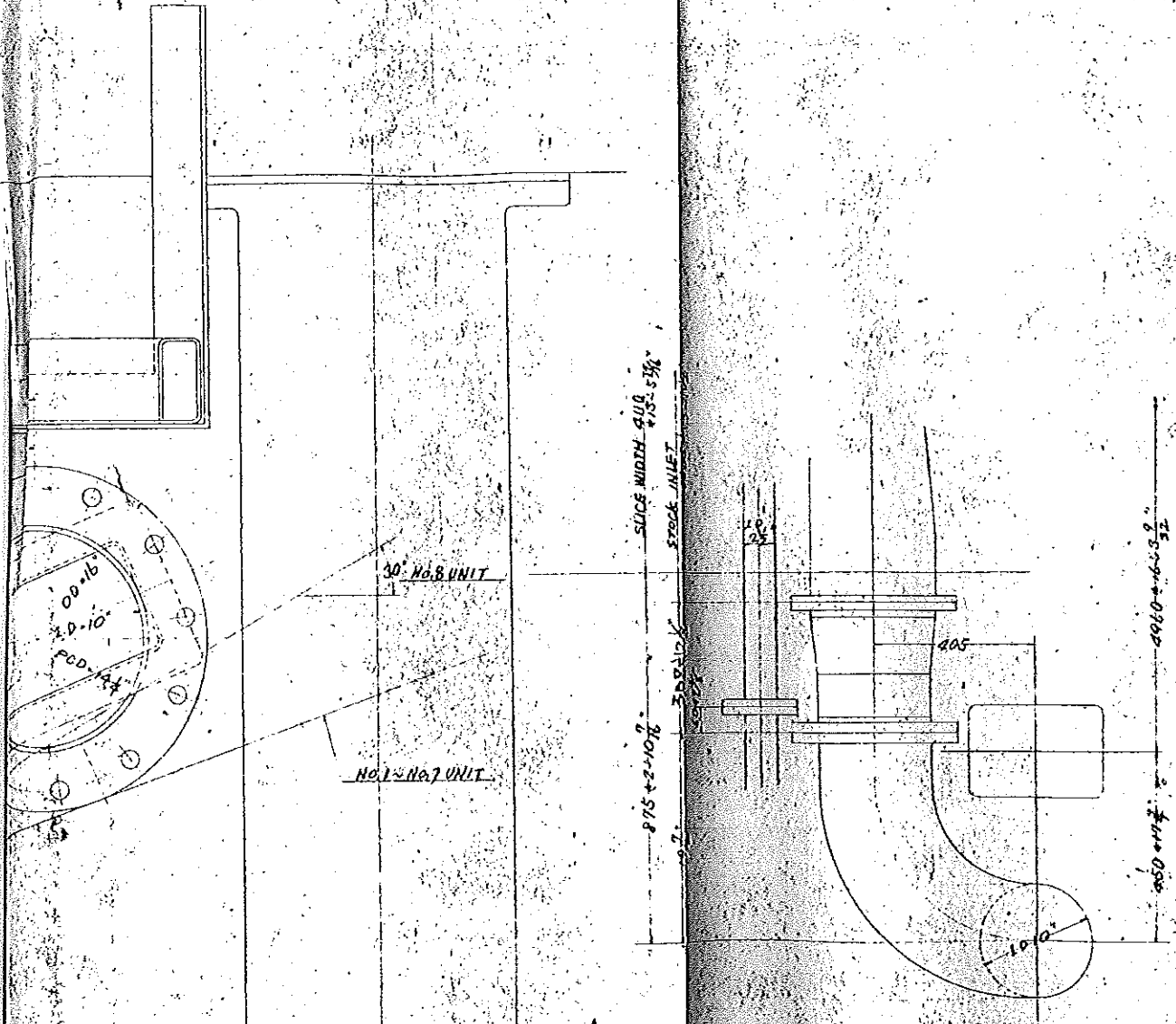
## Parts List of Flow box (FIG.-6)

<u>No.</u>	<u>Parts Name</u>
1.	Flow box
2.	Adjust screw
3.	Slide base
4.	Adjust screw
5.	Flow box lifting device
6.	Connecting frame
7.	Hand wheel
8.	Foam killer
9.	Gate
10.	Rectifier roll



材料	数量	単位	備
鋼板	1.00	枚	
鋼管	1.00	本	
ボルト	1.00	本	
ナット	1.00	本	
ワッシャー	1.00	枚	
リベット	1.00	本	
溶接	1.00	本	
塗装	1.00	本	
その他	1.00	本	
合計	1.00	本	

## 第 角 図 法



FURNISHED BY THE CUSTOMER

DESCRIBED QUANTITIES ARE FOR SET  
(組 入 材 量)  
TO BE MANUFACTURED SETS  
(組 作 台 数)

168" ULTRA FORMER  
NET END MODIFICATION

ASSEMBLY OF FLOW BO

PRODUCTION No. A000040

DRAWING No. 1169-9030

SCALE DRAWER TRACER CHECKED BY

1/4 K. Kondo Y. Oishi

KOBAYASHI

DATE	SYM	REVISION	BY	APP.D

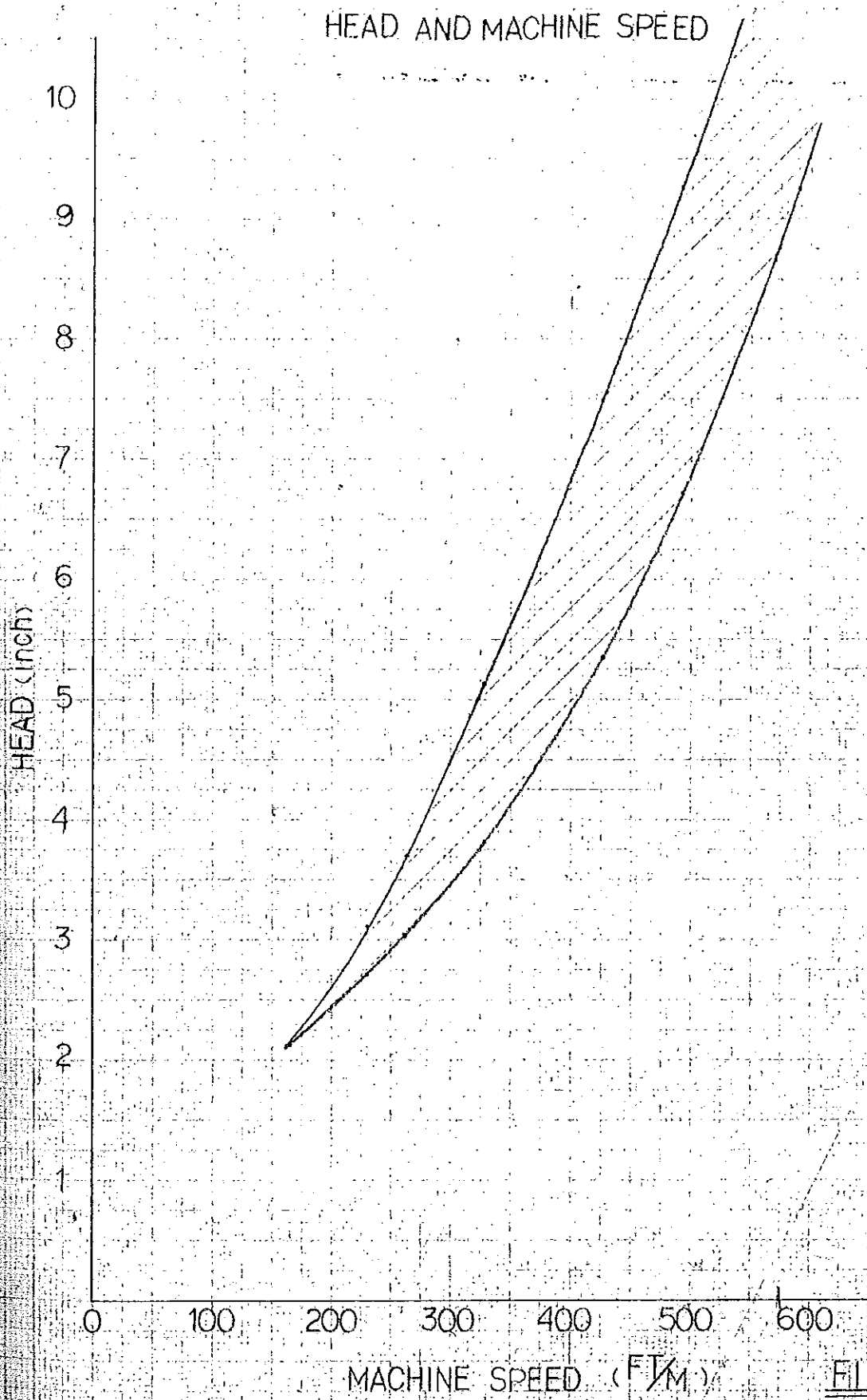


FIG.-6

c) Slice

The rectified stock is jetted onto the cylinder mold through the nozzle type slice.

The slice is made of stainless steel plates.

Across the cylinder mold the slice has a lip with screws at close interval to adjust the opening of the slice.

By regulating the screws the opening of the slice will be adjusted.

The slice is shown in FIG.-7.

The operating procedure is as follows:

- 1) Using the gauge turn the screw (3) and make the lip (7) and the bottom slice (8) parallel.
- 2) Turn the hand wheel (4) and open the lip (7).



## Parts List of Slice (FIG.-7)

<u>No.</u>	<u>Parts Name</u>
1.	Foam killer shower
2.	Gear box
3.	Screw
4.	Hand wheel
5.	Screw
6.	Slice body
7.	Slice lip
8.	Bottom slice

## (2) Cylinder mold

Eight (8) cylinder molds are installed to form the wet sheet, sandwiching the stock between the wire and the transfer felt.

The cylinder mold is made of the out side and intermediate bronze spiders fixed to a hollow steel shaft.

In order to prevent the mold from rusting a ring should be inserted between each spider boss, stainless steel ring plates are wound around the outer surface of the spider. Stainless steel cross bars are run through the ring plates.

The cylinder mold is accurately tested for the dynamic balance. The journal of the cylinder mold is mounted on spherical roller bearings which are enclosed in the cast iron housings. The housings are fitted onto the side cover of the cylinder mold. The operating procedure is as follows:

### a) How to produce a vacuum in the cylinder mold.

(See FIG.- 8)

- 1) Start up the vacuum pump connected with the wire cylinder (2).
- 2) Seeing the manometer (6), open the butterfly valve (5).

## Parts List of Cylinder mold (FIG.- 8)

<u>No.</u>	<u>Parts Name</u>
1.	Bend
2.	Wire cylinder
3.	Sight glass
4.	Flexible hose
5.	Butterfly valve
6.	Manometer

CYLINDER MOLD DRIVE SIDE

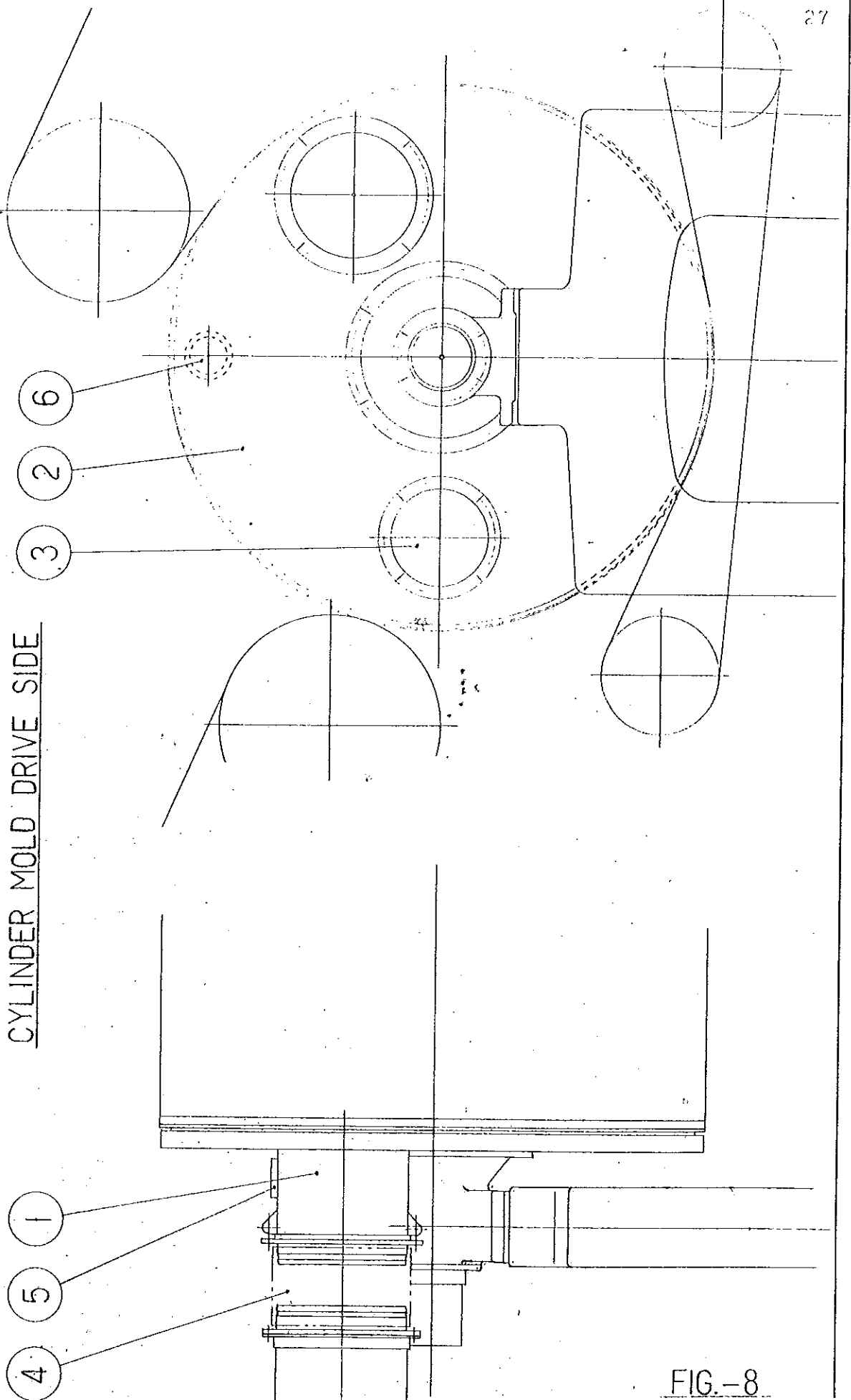


FIG.-8

b) Pull out procedures for the Ultra Former cylinder mold.

The cylinder mold of the Ultra Former is pulled out to exchange the cylinder wire by the following sequence: (See FIG.- 9)

- 1) In order to pull out the cylinder, the stands (3) should be installed on the plate (4) and the pull out rail (2) should be set on them.
- 2) Pull out the wire cylinder after removing the pull out piece of the cylinder side frame.

Parts List of Pull out procedure for the  
cylinder mold (FIG.- 9)

<u>No.</u>	<u>Parts Name</u>
1.	Rail
2.	Pull out rail
3.	Stand
4.	Plate

CYLINDER PULL OUT DEVICE

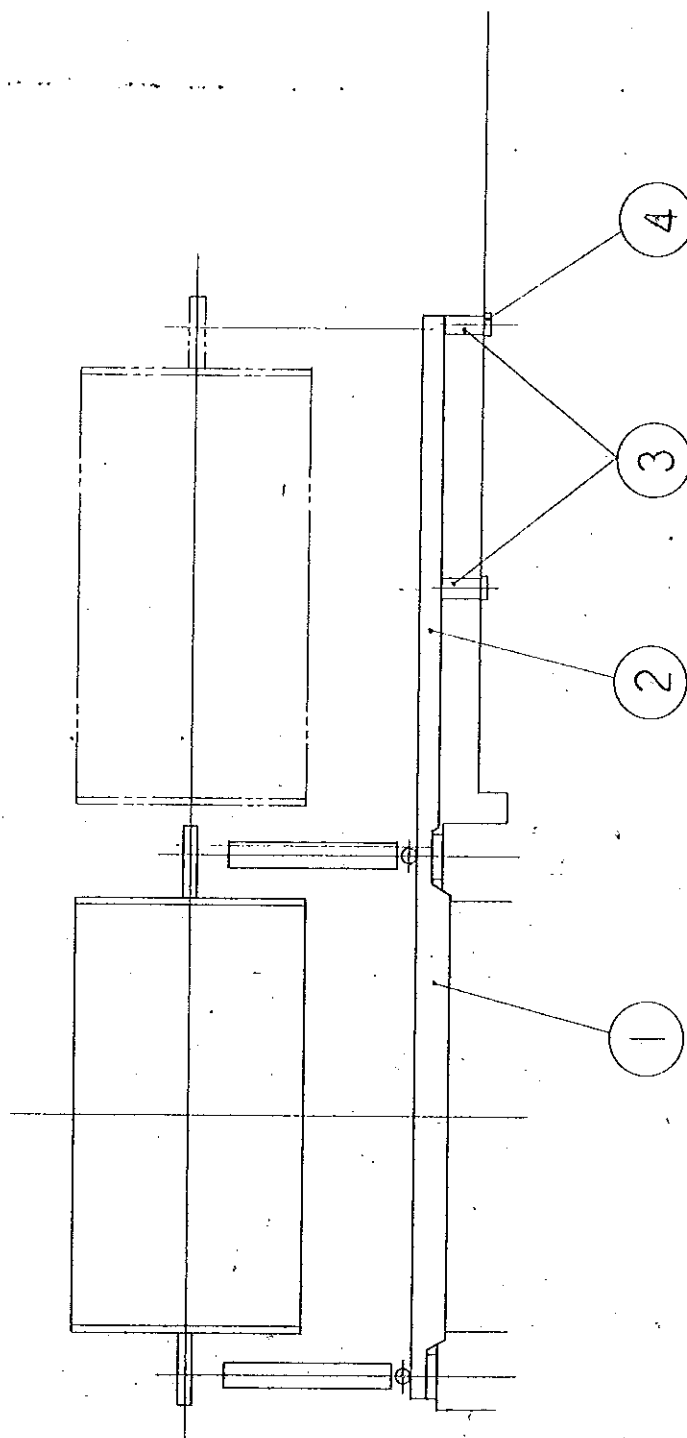


FIG.-9

c) Wire exchanging procedure

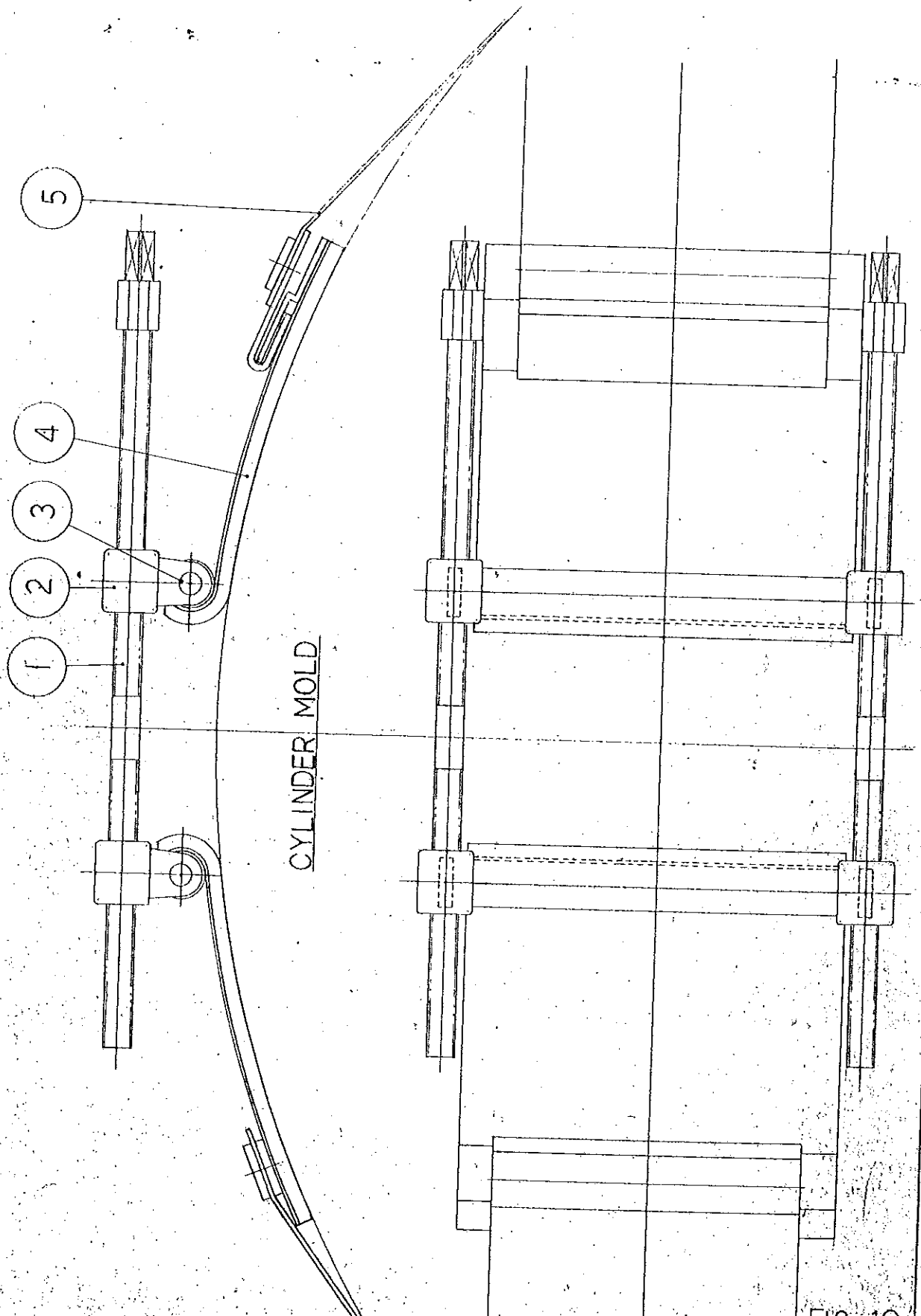
Wire exchanging device is shown in FIG.-10.

- 1) Remove the worn out wire, after pulling out the cylinder mold.
- 2) Wind the new wire around the wire cylinder.
- 3) Cover the new wire on the cylinder with the lesycon belt, and spread it.
- 4) Connect the push plate (4) with lesycon belt (5).
- 5) Turn the screw shaft (1) by using lever to tighten the wire around the cylinder.
- 6) Cut the wire the same length as the wire cylinder.
- 7) Weld the wires together.



## Parts List of Wire exchanging device (FIG.-10)

<u>No.</u>	<u>Parts Name</u>
1.	Screw shaft
2.	Screw guide
3.	Pin
4.	Push plate
5.	Lesycon belt



(3) Wire cylinder cleaning device

- As shown in FIG.-2, one type of shower is oscillated above the wire cylinder to clean the wire and to remove any plug from the wire.

a) Cylinder oscillating shower

The cylinder oscillating shower is oscillated by the harmonic drive transmission (2) driven by the general purpose motor (1).

Water flows into the shower pipe (6) through the hose (5) and is jetted onto the wire from the nozzle (8).

This shower is oscillated 4.5 inches, 5.7 returns per minutes, so that the wire is cleaned uniformly.

Parts List of Cylinder oscillating  
shower (FIG.-11)

<u>No.</u>	<u>Parts Name</u>
1.	General purpose motor
2.	Harmonic motor
3.	Swing arm
4.	Lever
5.	Hose
6.	Shower pipe
7.	Bush
8.	Nozzle
9.	Side frame of Flow box

第 四 章

HARMONIC DRIVE TRANSMISSION ---  
U.S.M. CORPORATION HDC-1M-200.  
OUTPUT AT 58 RPM

GEAR NO. TOR 1 HP  
WESTINGHOUSE - FRAME NO. 1821  
OUTPUT AT 20RPM

6 700, 4  
C 101 FRAMES 20060-21635  
2110-1345

GENERAL PURPOSE NO. 70R 1/8 HP  
GENERAL ELECTRIC 574 38 PO 230 EX  
OUTPUT AT 1140 RPM

EFFECTIVE FACE OF HOLES .0030 ± .0015"  
SHOWER PIPE LENGTH .0750 ± .0187"

578045 2.

BRUSHING - 2.5%

Form 042



1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

FURNISHED BY THE CUSTOMER

[illegible][illegible]

PROVISION

FILE

#### (4) Forming roll

The forming roll adjusts the opening between the transfer felt and the cylinder mold in which the wet sheet is formed. The forming roll is built of steel tubing covered with rubber and mounted on spherical roller bearings which are enclosed in cast iron housings with the end plates having seals.

The operating sequence is as follows:

(See FIG.-12)

- a) How to move the forming roll horizontally,  
Turn the adjust screw (4).

## Parts List of Forming roll (FIG.-12)

<u>No.</u>	<u>Parts Name</u>
1.	Hand rail
2.	Bracket
3.	Slide base
4.	Adjust screw
5.	Bracket
6.	Pull out piece
7.	Housing
8.	Forming roll
9.	Cat walk

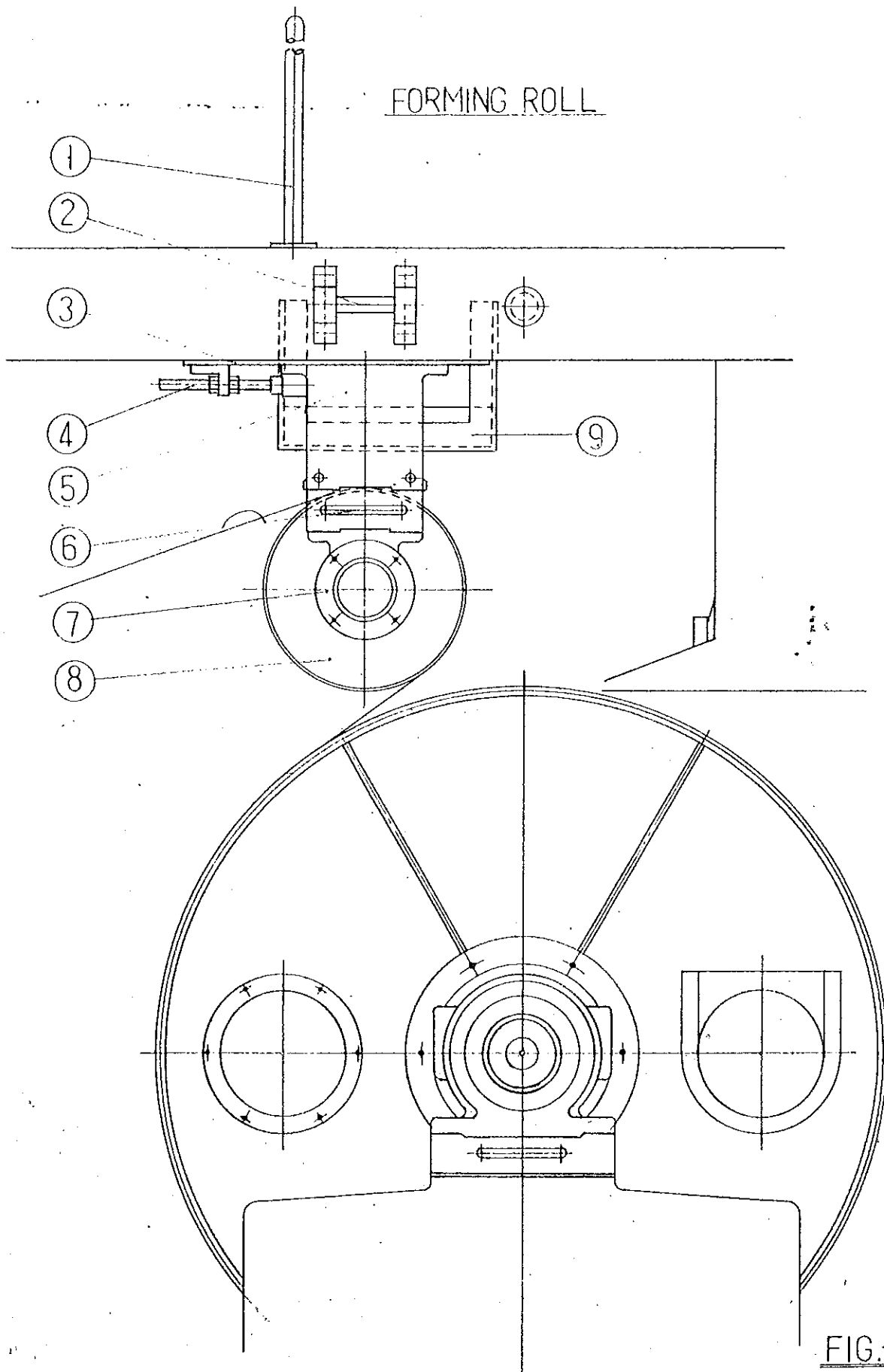


FIG.-12



(5) Holding belt unit

A holding belt unit consisting of a crown roll, a tension roll, an endless belt is installed under the cylinder mold to hold the transfer felt.

a) Crown roll

The crown roll is made of steel tubing covered with synthetic resin. It has the proper crown to prevent the belt from moving either to the drive side or to the tender side.

The roll is mounted on the spherical roller bearings which are enclosed in the cast iron housings. The roll is set on the cylinder side frames and adjustable vertically.

b) Tension roll

The tension roll is made of steel tubing covered with synthetic resin.

This roll is mounted on the spherical roller bearings which are enclosed in the cast iron housings.

The cast iron housings are fixed on the swing arm and adjustable radially for proper tension control. The tension roll and gear box are connected by chain to move the tension roll radially.

c) Holding belt

The holding belt is endless and made of rubber.

The operating procedure is as follows:

(See FIG.-13)

- 1) Operate the ratchet handle which is located inside the vertical frame and move the tension roll (1) radially referring the felt tension.

## Parts List of Holding belt unit (FIG.-13)

<u>No.</u>	<u>Parts Name</u>
1.	Tension roll
2.	Housing
3.	Swing arm
4.	Worm gear
5.	Worm wheel
6.	Side frame
7.	Holding belt
8.	Belt shift
9.	Crown roll
10.	Housing

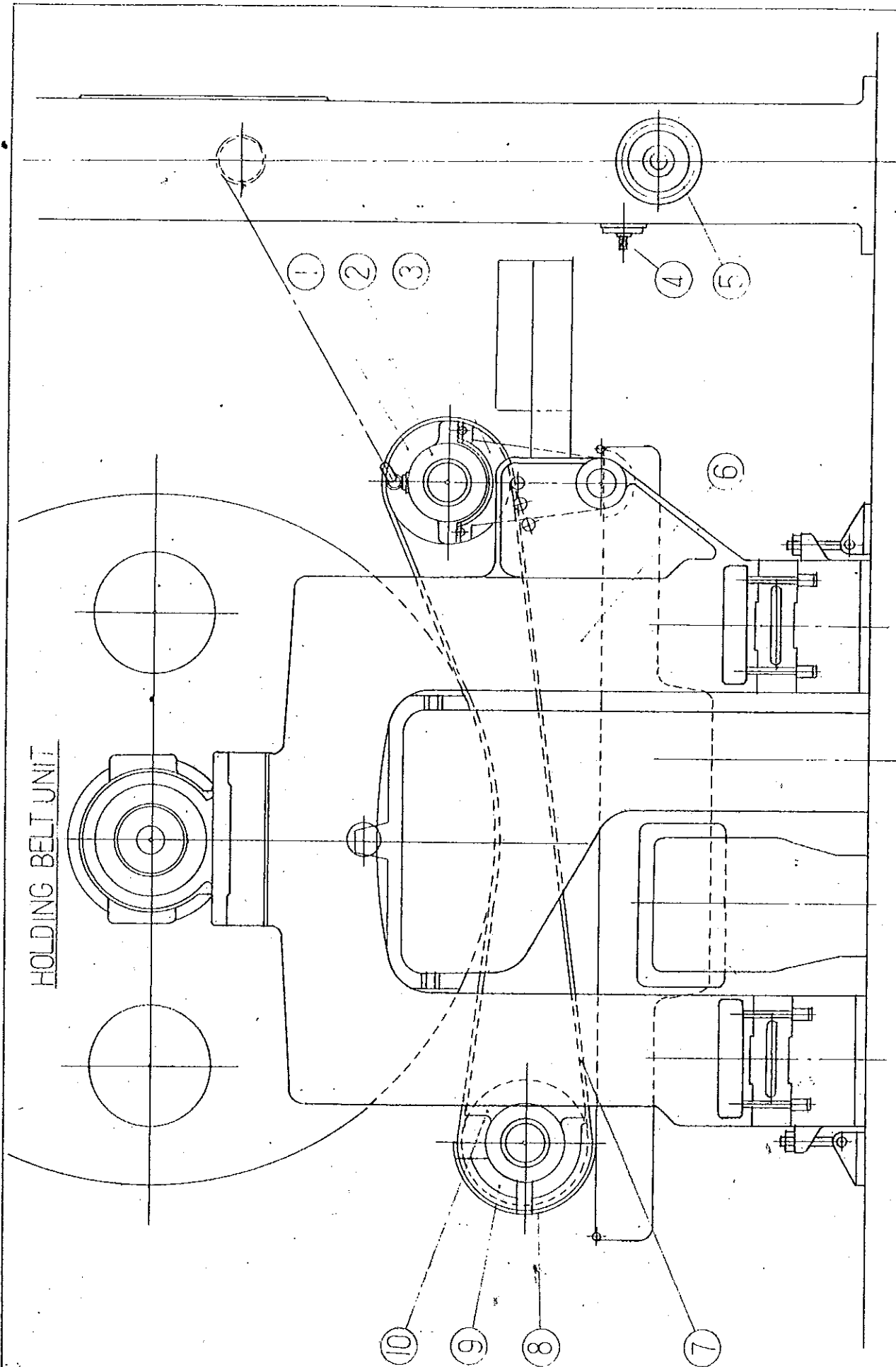


FIG.-13

(6) Couch roll

The couch roll strips the wet sheet from the wire on the cylinder mold, and moves it to the transfer felt.

The wet sheet is then, carried on the surface of the felt.

The couch roll is made of steel tubing covered with rubber and mounted on spherical roller bearings which are enclosed in cast iron housings with end plated having seals.

The operating sequence is as follows:

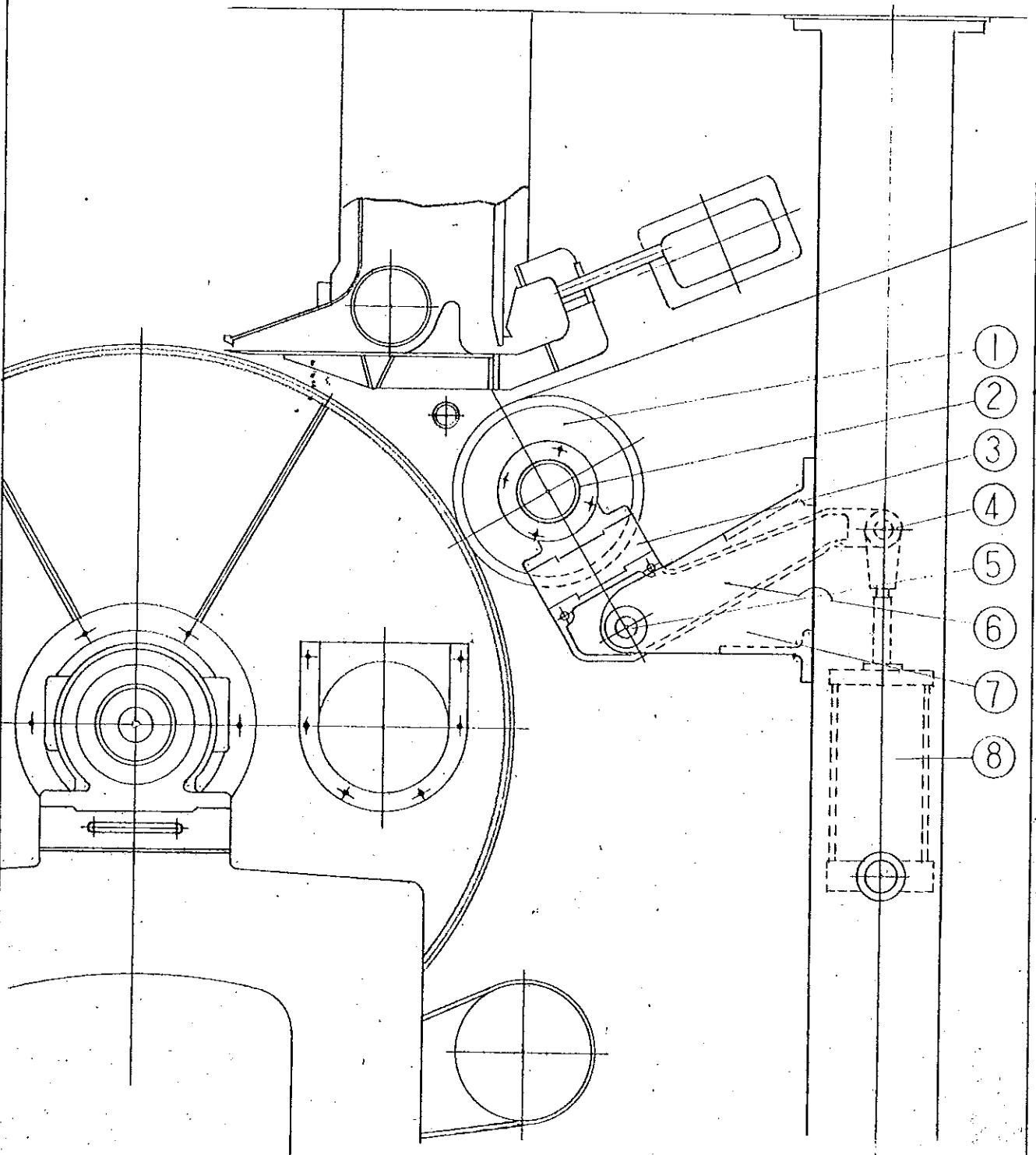
(See FIG.-14)

- a) Checking the pressure gauge on the control panel.
- b) Open the valve of the pressure line and then the couch roll (1) moves toward the cylinder mold.

## Parts List of the Couch roll (FIG.-14)

<u>No.</u>	<u>Parts Name</u>
1.	Couch roll
2.	Housing
3.	Pull out piece
4.	Pin
5.	Pin
6.	Swing arm
7.	Bracket
8.	Diaphragm bellows

# COUCH ROLL



### (7) Suction box

The suction boxes remove water from the wet sheet through the transfer felt by sucking.

A suction box consists of suction plate furnished by the customer made of high molecular polyethylene, box made of stainless steel and hose joint which is connected with the vacuum line.

The operating sequence is as follows:

(See FIG.-15-A,B)

- a) Using the set plate (2), connect the suction box (3) with the suction plate (1).
- b) Set the suction box (3) on the bracket (4).
- c) Adjust the bracket (4) to parallel with the felt and affix the bracket (4) by the tap bolt.
- d) Open the valve of the vacuum line and then the suction tube begins to remove water from the wet sheet through the transfer felt.
- e) When changing the felt, the pull out piece (7) should be pulled out.

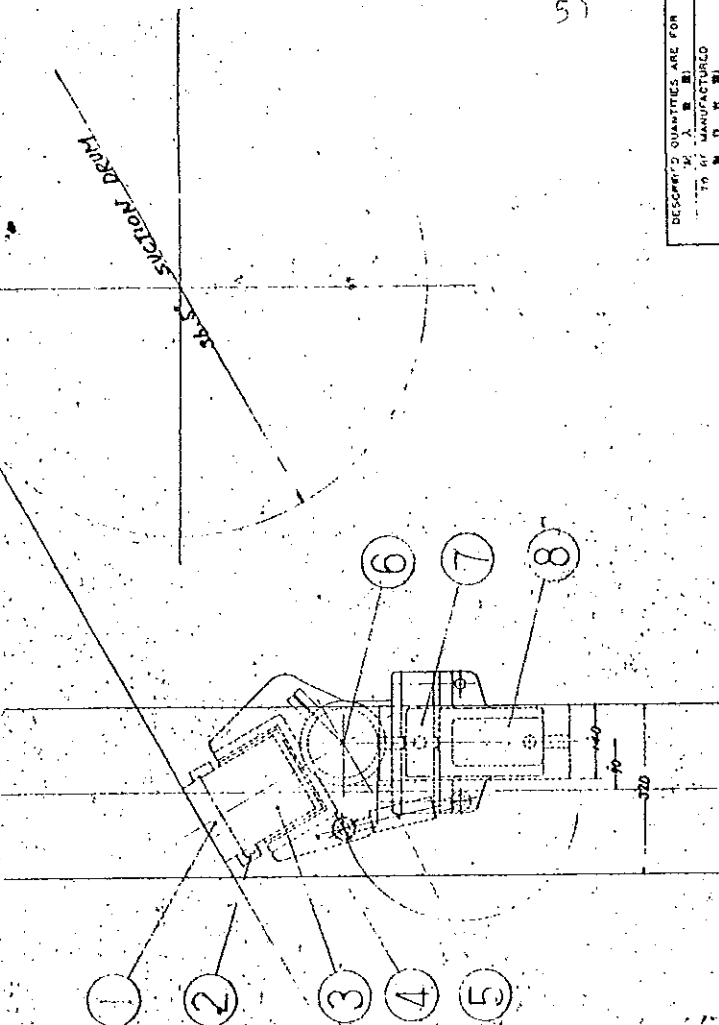
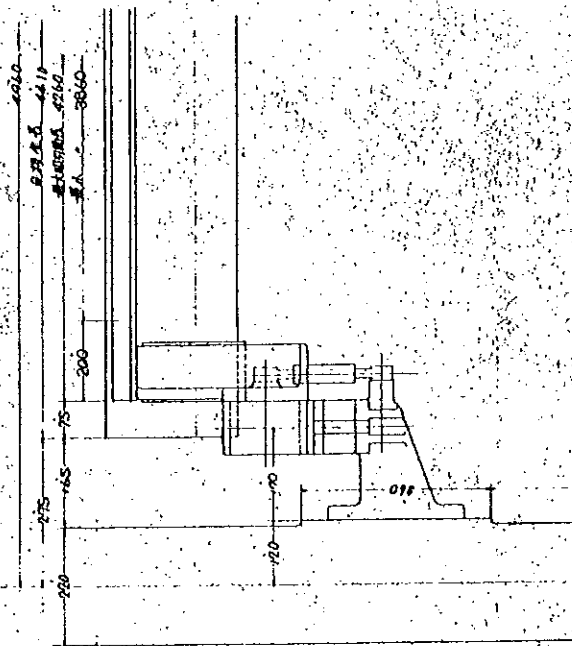


## Parts List of Suction box (FIG.-15-A,B) .

<u>No.</u>	<u>Parts Name</u>
1.	Suction plate
2.	Set plate
3.	Suction box
4.	Bracket
5.	Turn buckle
6.	Ful crum
7.	Pull out piece
8.	Bracket



# SUCTION BOX FOR NO.8 UNIT



51

DESIGNED QUANTITIES ARE FOR SET	
NO. 1	SETS
NO. 2	SETS
NO. 3	SETS
NO. 4	SETS
NO. 5	SETS
NO. 6	SETS
NO. 7	SETS
NO. 8	SETS
4260 60 フルボボ-ワークス改修	
フルボボ-ワークス	
No.8 用	
サクションボックス取付図	
PRICE	A 000040
DRAWN	1564-1720
SCALE	1:5
DATE	9/17
NO.	34-1
KOBAYASHI ENGINEERING WORKS LTD.	

FIG.-15-B

(8) Save all

The save all is shown in FIG.-17.

Stainless steel drop vent (9) and save all (8) are located under each cylinder mold.

The save all collects the white water from the cylinder mold and then discharges it to the drive side of the machine.

(9) Side frame for the cylinder mold

The side frame is shown in FIG.-16.

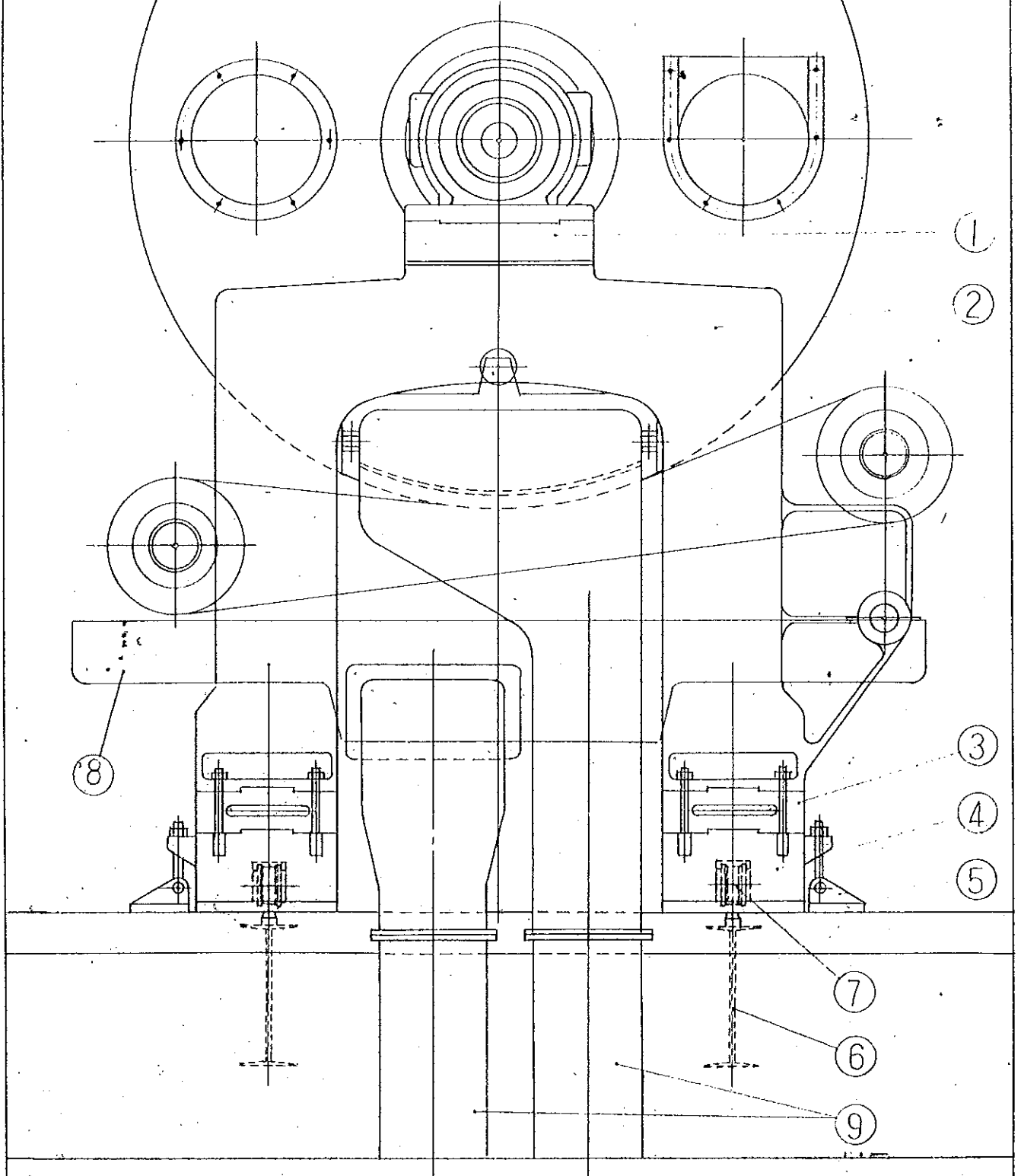
The tender and drive sides of the side frame (2) are used to support the cylinder mold.

This frames is made of cast iron. Also it has rails (6) and a lifting device, so that the cylinder mold can be pulled out to exchange the wire. (Ref. FIG.-9)

## Parts List of Save all &amp; Side frame (FIG.-16)

<u>No.</u>	<u>Parts Name</u>
1.	Pull out piece
2.	Side frame
3.	Pull out piece
4.	Stand
5.	Bracket
6.	Rail
7.	Roller
8.	Save all
9.	Drop vent

SAVE ALL &amp; SIDE FRAME



B TOP FELT CLEANING PART

## TOP FELT CLEANING PART

### GENERAL

When white water goes through the felt, the porosity will decrease markedly as a result of impurities which accumulate between the yarns of the felt.

Therefore, we arranged the top felt cleaning device to remove the accumulated impurities from felt.

The felt squeeze part consists of the felt stretchers which keep the tension constant; felt guiders which hold the felt on the correct path and prevent the felt from moving sideways; felt washing devices which clean the felt by whipper and showers.



I N D E X

(1) Felt cleaning device . . . . .

(1) Felt cleaning device

Felt cleaning device is shown in FIG.-17.

The whipper is placed outside of the felt; it revolves in the opposite direction against that of the felt.

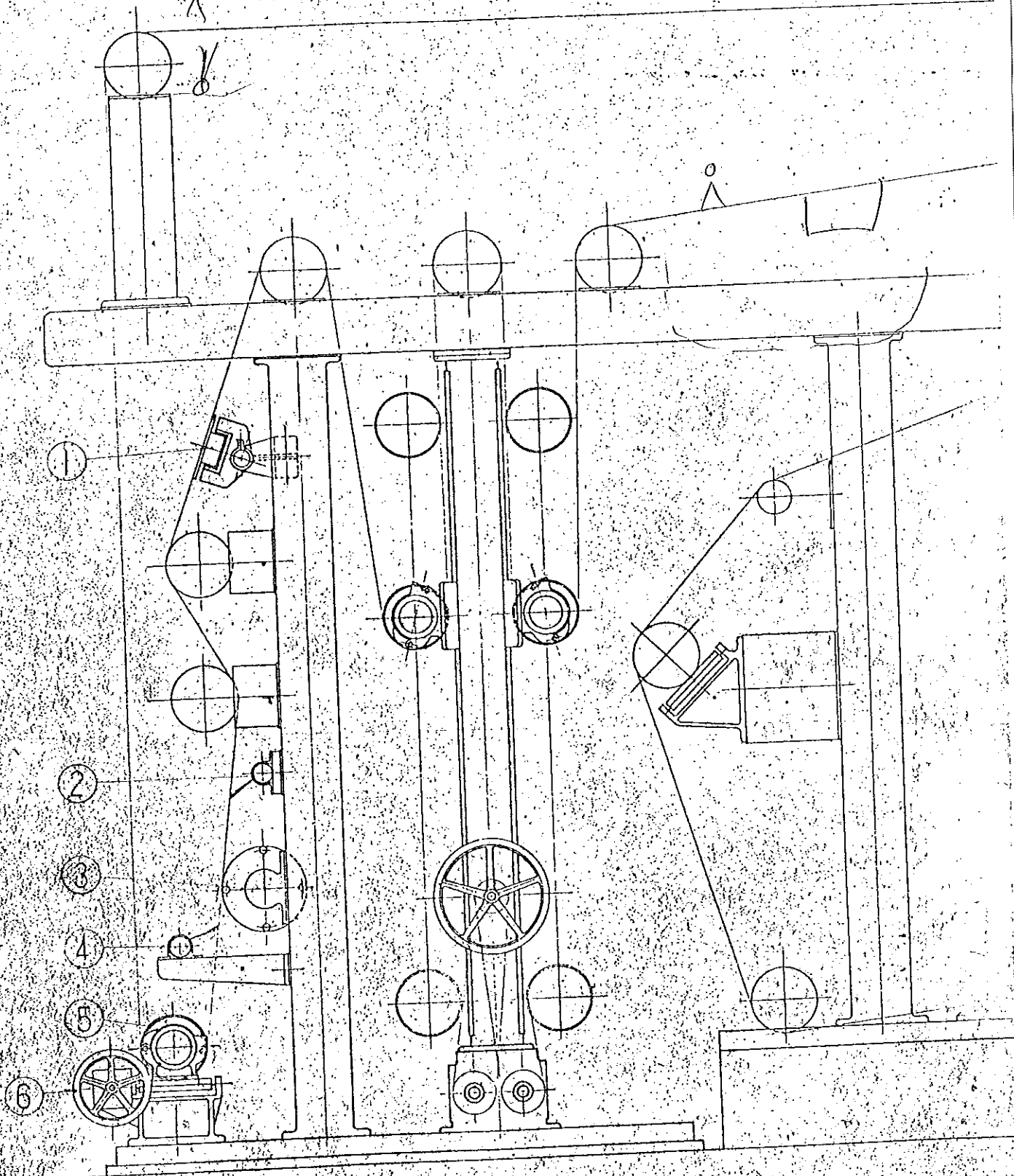
The rapid motion of the whipper causes the felt to vibrate forcibly against the whipping pipe, which beats out dirt from the felt.

Shower pipes (2),(4) which are set both sides of the felt wash out loosened dirt. The worm roll (5) can be adjusted by turning the hand wheel (6) about  $\pm 2$  inches.

## Parts List of Felt cleaning device (FIG.-17)

<u>No.</u>	<u>Parts Name</u>
1.	Suction box
2.	Shower pipe
3.	Whipper
4.	Shower pipe
5.	Worm roll
6.	Hand wheel

FELT SQUEEZE PART.



C FELT STRETCHER

## COMPONENT & OPERATING MANUAL

### Felt stretcher

FIG.-18 shows felt stretcher for the felt. The felt worm roll (2) is supported by journals and a screw shaft (4) in each portion after bearing (3) fits inside the guide rail (9).

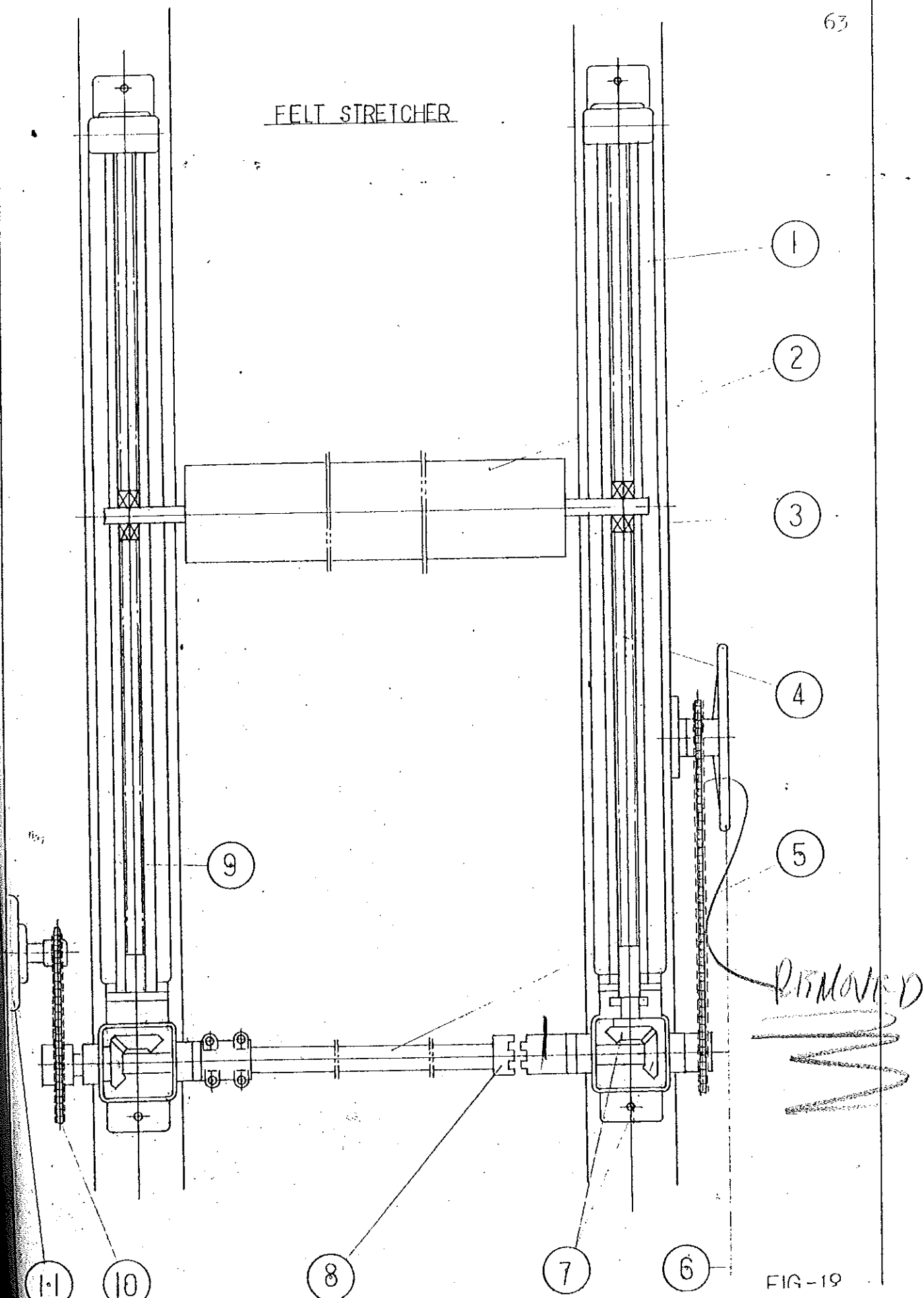
Screw shaft (4) that runs inside the guide rail.

The screw shaft (4) can rotate to adjust the position of the bracket. The screw have bevel gears (7) at one end, the gears (7) is meshing with those on the connecting pipe (5). By rotating the air motor (11), the connecting pipe (5) and the bevel gears (7) rotate; this causes the screw shafts in the pipe on either side of the machine, to rotate equally until the brackets carry the felt worm roll to the correct position to keep the felt in the required state of tension. This felt stretcher can also be adjusted by rotating the hand wheel (6).

## Parts List of Felt Stretcher (FIG.-18)

<u>No.</u>	<u>Parts Name</u>
1.	Cross frame
2.	Felt worm roll
3.	Bearing
4.	Screw shaft
5.	Connecting pipe
6.	Hand wheel
7.	Bevel gear
8.	Joint
9.	Guide rail
10.	Chain & chain wheel
11.	Air motor

## FELT STRETCHER





D ULTRA FORMER START UP PROCEDURE

I N D E X

- 1           How to put the bottom felt on the machine'
  - (1)       Preparation
  - (2)       Underneath the cylinder mold
  - (3)       Cylinder part
  - (4)       Couch roll
  - (5)       Forming roll
  - (6)       Suction box
- 2           Start up preparation
  - (1)       Flushing
    - a)       Air piping
    - b)       Fresh water piping
    - c)       Vacuum piping
    - d)       White water piping
  - (2)       Ultra Former start up procedure
- 3           Proper roll maintenance
  - (1)       Storage
  - (2)       Handling
  - (3)       Grinding

# 1. How to put the bottom felt on the machine

## (1) Preparation

- 1) Detach the couch roll from the cylinder mold.
- 2) Lower the holding belt all the way through.
- 3) Take the edge plate off.
- 4) Take the splash guard and tray off.
- 5) Take the hoses off.
- 6) Put the felt underneath the cylinder molds and set the felt in the return roll.
- 7) Separate the upper felt to tender side and the lower felt to drive side (Tender side's felt will be set in cylinder part first, and after that, set the other felt in felt rolls.)

## (2) Underneath the cylinder mold

- 1) Loosen the bolts for the pull out pieces, both lengths of the side frame of the cylinder mold, and then open the bolts both sides.
- 2) Hang the chain block on the horizontal frame over the cylinder mold.
- 3) Put rubber sheet between the cylinder mold and the bottom lip of the slice.
- 4) Raise the cylinder mold carefully and slowly up to about 3/8".
- 5) Take the both pull out piece off.
- 6) Pull the tender side's felt out. (Take care of not tearing the felt.)

- 7) Reset the pull out pieces on.
- 8) Lower the cylinder mold all the way through but remain with the chain block on.
- 9) Fasten the bolts up.

(3) Cylinder part

- 1) Loosen the bolts for the cylinder pull out piece (only tender side) and open the bolts both sides.
- 2) Check the rubber sheet between the cylinder mold and lip again.
- 3) Raise the cylinder mold carefully and slowly up to about  $3/8$ ".
- 4) Take the pull out piece off.
- 5) Insert the felt, which is pulled out before, into the cylinder mold side.
- 6) Reset the pull out piece on.
- 7) Lower the cylinder mold all the way through.
- 8) Fasten the bolts up.
- 9) Take the chain block and rubber sheet off.

(4) Couch roll

- 1) Pull the felt up to the couch roll.
- 2) Hang the hanger for the couch roll on the horizontal frame.
- 3) Loosen the bolts for the couch roll housing, only tender side, and raise the couch roll carefully and slowly up to about  $3/8$ ".
- 4) Take the pull out piece off.
- 5) Insert the felt into the couch roll side.

- 6) Reset the pull out piece on.
- 7) Loosen the hanger all the way through.
- 8) Fasten the bolts up.
- 9) Take the hanger off.

(5) Forming roll

- 1) Pull the felt up to the forming roll.
- 2) Hang the hanger for the forming roll on the horizontal frame.
- 3) Loosen the bolts for the forming roll housing, only tender side, and raise the lever by turning the hand wheel. Make sure to check the position before.
- 4) Take the pull out piece off.
- 5) Insert the felt into the forming roll side.
- 6) Reset the pull out piece on.
- 7) Lower the lever up to the original position.
- 8) Fasten the bolts up.
- 9) Take the hanger off.

(6) Suction box

- 1) Pull the felt up to the suction box.
- 2) Hang the hanger for the suction box.
- 3) Loosen the bolts for the pull out piece and raise the suction box.
- 4) Take the pull out piece off.
- 5) Pull the felt out.
- 6) Reset the pull out piece on.
- 7) Take the hanger off.
- 8) Set the felt on the suction box.

## 2. Start up preparation

### (1) Flushing

#### a) Air piping

- 1) Close all inlet valves to instruments, open only end valve in main line.
- 2) After finished the main line flushing, open all inlet valves and take connections off each instrument. Flush all lines.

#### b) Fresh water piping

- 1) Close all inlet valves, open only end valve in main line.  
Flush the main line until getting clear water.
- 2) After this is finishing the main line flushing, open all inlet valves and take connections off each instrument. Flush all lines. However, if it is impossible to take off connection, shower, take off cap or plug.

#### c) Vacuum piping

- 1) Attach strainers in each vacuum pump inlet to protect foreign substances (a piece of stone, wood or metal).
- 2) Open up each vacuum pump inlet.
- 3) Supply seal water and priming water of each vacuum pump.
- 4) Start vacuum pump and drain pump.
- 5) Supply fresh water from around vacuum pump inlet, and flush until pump drained.

- 6) After finishing flushing, take strainers off and wash drain tank off.

d) White water piping

- 1) Wash white water pits off.
- 2) Fill up water in pits. At the same time, check foreign substances in the head boxes and take drain cap off the both sides of the head box.
- 3) Run the white water pump and circulate water continuously. (Don't run the screen, because the foreign substances in it will damage the screen.)
- 4) Open flow valve for head box slowly. Flush stock inlet and head box.

After finishing, wash cylinder mold and save all, and recheck white water pit.

### 3. Ultra Former start up procedure

- 1) Start line shaft.
- 2) Check tensions of bottom and top felt stretchers and holding belt.
- 3) Touch all rolls except couch rolls -- No loading.
- 4) Turn all showers on.
- 5) Start running the machine slowly about 50 - 100 ft/min.
- 6) Check felt tension and guides.
- 7) Stop only machine, after about 15 minutes running.
- 8) Start machine again and then increase the speed to proper running speed slowly. At the same time, put proper pressure on each couch roll.
- 9) Recheck top and bottom felt tension and guides operation.
- 10) Fill white water pits with water.
- 11) Fill wet broke pit with water and start agitator.
- 12) Start vacuum pump and simple vacuum fan.
- 13) Start screens and fan pumps. (Beginning with No.1 units continuing in order.)
- 14) Adjust stock flow valve opening to synchronize stock velocity at slice lip with machine speed.
- 15) Check to make sure of proper water circulation.  
Pit - Fan pump - Screen - Flow box - Cylinder mold - Save all - Pit.



- 16) : Close all shower valves for suction rolls except for necessary one.
- 17) Raise pressure of all rolls up to proper nip pressure.
- 18) Put stock on beginning with No.1 cylinder mold continuing in order.
- 19). Adjust stock flow speed of every cylinder mold, deckle showers, and suction pressure of cylinder mold and felt suction tubes.  
Cylinder mold except  
No.1 & No.2:        Below 2" Aq  
Felt suction tube: 2" Hg. but close No.1 units.
- 20) Adjust and align nozzles for both edge cutter.

#### 4. Proper roll maintenance

##### (1) Storage

- 1) Store rolls in a cool, dark and damp room.  
Keep away from sunlight or sudden temperature change.
- 2) Cold rolls which have been stored should be allowed to reach ambient temperature before use. (Ideal storage temperature: about 60°F.)
- 3) Rolls should be stored in shipping cases if possible. Otherwise, they should be protected with strong wrapping paper, covered with old felts, burlap, or pulp laps.
- 4) Always support the roll on its journal, giving it a quarter turn about every two months. Don't allow it to rest on the rubber cover, even for a short time.
- 5) Store rolls away from traffic lanes to avoid damage by passing equipment. And make sure no grease or oil come in contact with the rubber cover.

##### (2) Handling

- 1) If possible, handle rolls with a crane which has two hoists, and a separate chain and sling for each journal. (If the crane has only one lift, use a yoke with adjustable sling at each end.)

2) You can use a wide, flat belt as a sling. Be sure there's nothing on its surface to scratch the cover and, for safety, provide padding.

3) If rolls must be transported on small factory trucks, provide padding to eliminate any contact with wood or metal.

### (3) Grinding

1) Don't finish grind the roll when removing it from the machine to put it in storage. Rough grinding can be done at this time-- but finish grinding should wait until just before installation, to insure a fresh surface when the roll is started up.

(If rolls are to be stored for only a brief period-- two months or less-- finish grinding may be done before storage.)

2) Take your time. Good grinding jobs can't be hurried.

3) The wheel should be kept well dressed, with slightly rounded corners. Dressing should be done while the wheel is mounted in the grinder, preferably with a diamond.

4) During grinding, be sure to remove all traces of cracks or checks. If you don't the covering will check prematurely when placed in service.

- 5) To remove a very deep cut, you'll save time by turning off the covering to the depth of the cut with a tool in a lathe, and then finishing in the grinder.
- 6) During grinding, roll should revolve at about 20 to 22 RPM. Only on very hard rolls should the speed of the roll be reduced when finishing up, and then to about 11 RPM, or slowest speed the grinder will run. This will help eliminate chatter marks.

7) Grinding cycle

The grinding cycle of covering rubber depends on the type of machine, operating speed, kind of product, stock and other Various conditions, however, the followings would be generally desired.

- |                 |               |
|-----------------|---------------|
| *1) Touch roll  | .... 3 months |
| 2) Forming roll | .... 6 months |

\*This should be checked most often and carefully. The roll should be removed and reground when the edge of covering rubber is found worn.