

Hutchison-Hayes Separators, Inc.

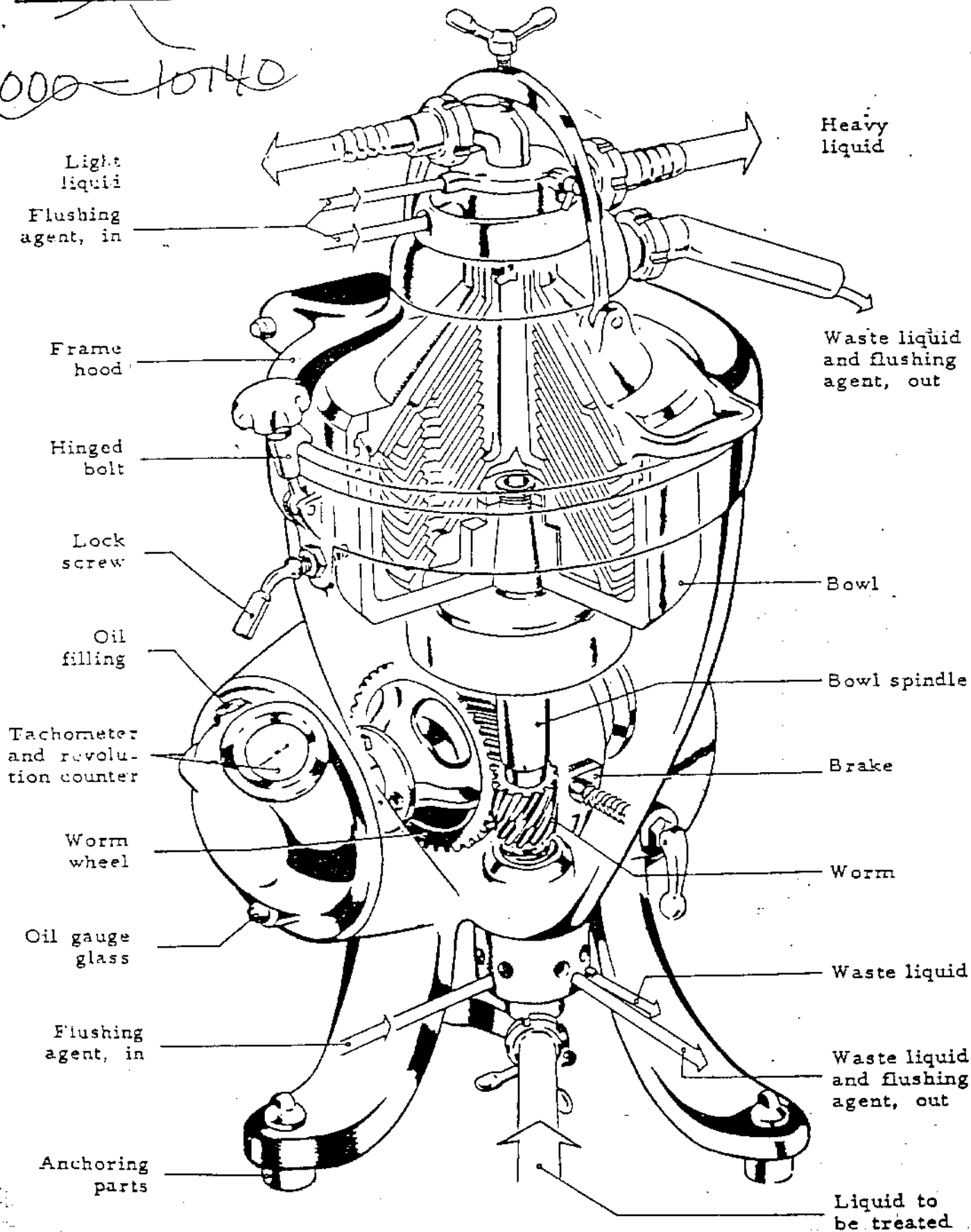
Model TVG 509-00H (-21) Parts List With Diagrams

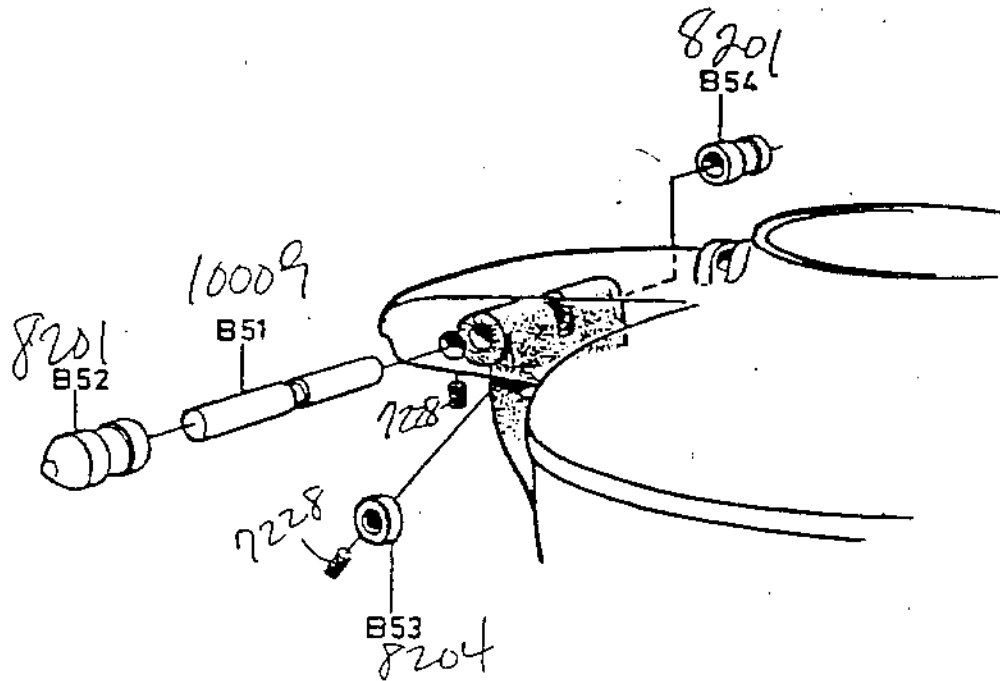
P.O. Box 2965 ♦ Houston, Texas 77252
3520 East Belt ♦ Houston, Texas 77015
(713) 455-9600 ♦ Fax (713) 455-7753

~~NFA LAVAL
DE LAVAL~~

TVB / TVG 509 - 00H (-21)

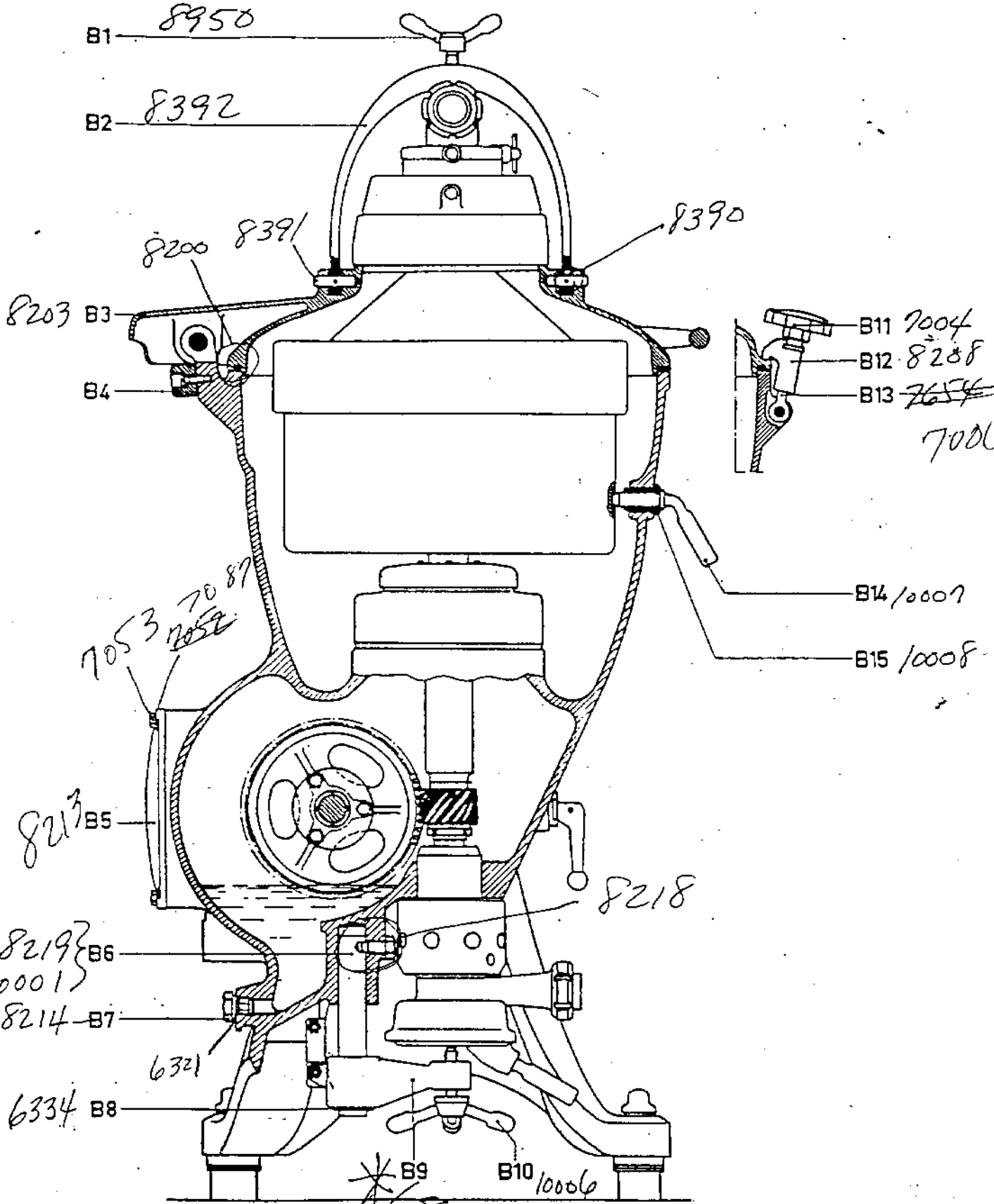
10000-10140





Letter- ing	Part number	Quan- tity	
B51	10009 68793	1	Hinge pin for frame hood
B52	8201 68126	1	Sleeve
	7228 34939	1	Set screw for sleeve
B53	8204 68128	1	Stop ring
	7228 34939	1	Set screw for stop ring
B54	8201 68126	1	Sleeve
	7228 34939	1	Set screw for sleeve

ALFA LAVAL
DE LAVAL



* (SEE PARTS LIST)

10001 - 10008

Letter- Part Quan-
ing number tity

B1 ~~8950~~ 43596 1 Clamp screw for outlet
 B2 ~~8392~~ 68498 1 Clamping stirrup
~~8391~~ 520823-1 2 Pivot for clamping stirrup
~~8390~~ 68499 2 Slotted pin for pivot
 B3 ~~8203~~ 68101 1 Frame hood
~~8200~~ 38343 1 Rubber ring (frame hood - frame)
 B4 ~~8211~~ 71617 1 Buffer for frame hood
~~10000~~ 68781 1 Screw for buffer
 B5 ~~8213~~ 11531 1 Frame cover
~~7053~~ 66378 4 Screw for frame cover
~~7052~~ 65451 4 Washer for screw

B6 see table 1 Pivot for
clamping
arm

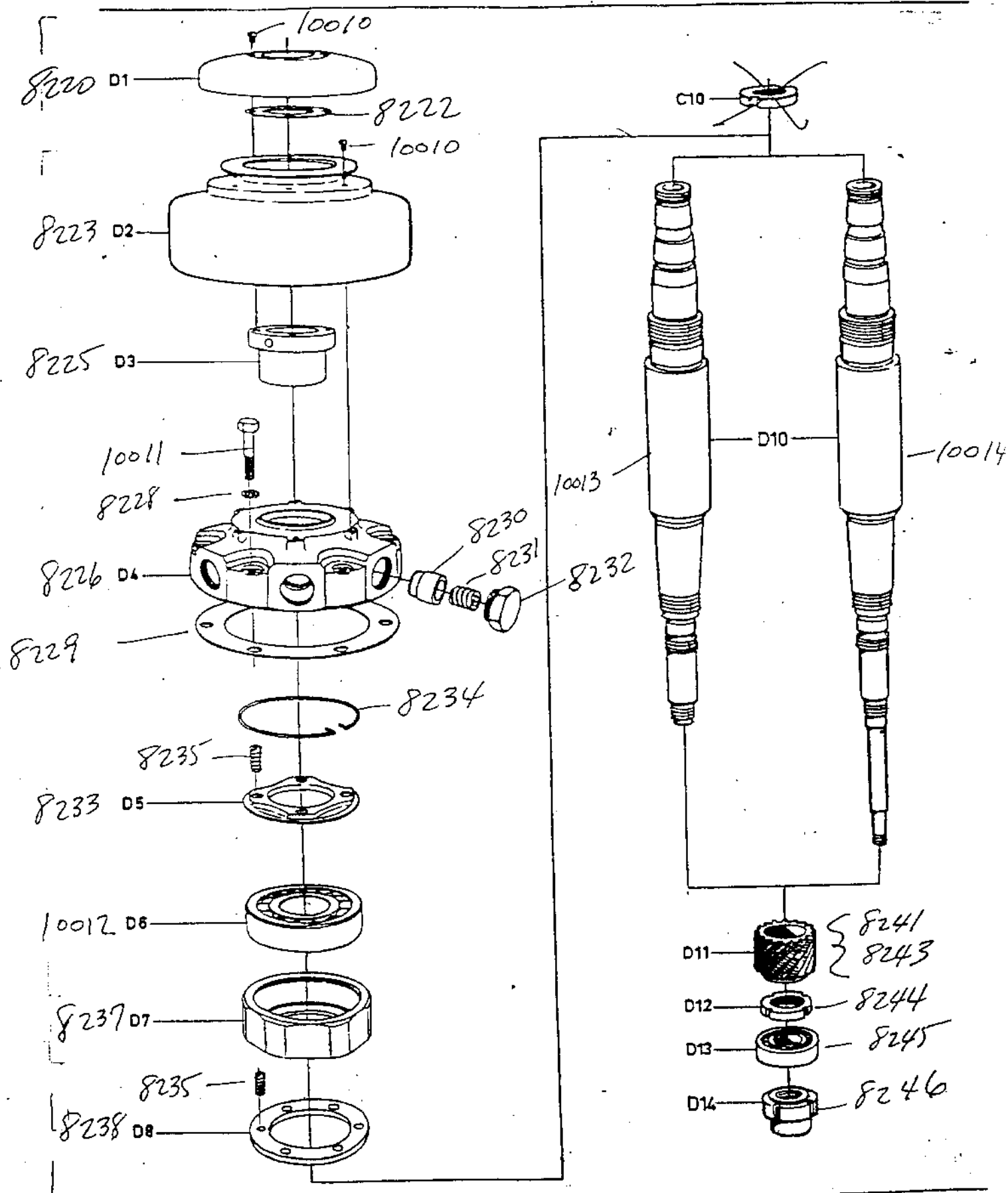
Machine without built-in feed pump	Machine with built-in feed pump
67653	517156-1

~~8218~~ 8949 1 Screw for pivot *8219*
 B7 ~~8214~~ 11494 1 Drain screw for lubricating oil *10001*
~~6321~~ 35002 1 Packing for drain screw
 B8 ~~6334~~ 11576 1 Lock washer for clamping arm
 B9 see table 1 Clamping arm

Machine without built-in feed pump	Machine with built-in feed pump
11568 1 Clamping arm with set screw and nut	<i>1001</i> 517189-80 1 Clamping arm with set screw and nut, set shoe and screw
11593 1 Set screw	<i>1002</i> 11568 1 Clamping arm with set screw and nut
41274 1 Nut	<i>1003</i> 11593 1 Set screw
	<i>1004</i> 41274 1 Nut
	<i>1005</i> 517190-1 1 Set shoe
	<i>1005</i> 73041 1 Screw

* 8320
* 10002
* 10003

10006 B10 785362-80 1 Clamp screw for inlet
 B11 ~~7004~~ 67885 2 Hand wheel for hinged bolt
 B12 ~~8208~~ 67382 2 Clamping shoe for hinged bolt
~~7006~~ B13 ~~7654~~ 68121 2 Hinged bolt
~~7085~~ 67789 2 Hinge pin for hinged bolt
~~7007~~ 67783 2 Slotted pin for hinge pin
10007 B14 62626 2 Lock screw for bowl
10008 B15 68660 2 Bushing for lock screw



Letter- Part Quan-
ing number tity

D1	8220	11482	1	Throw-off collar
	10010	46026	4	Screw
	8222	11529	1	Packing (throw-off collar - lock nut)
D2	8223	11485	1	Top bearing cap
	10010	46026	6	Screw (top bearing cap - spring casing)
D3	8225	11526	1	Lock nut
D4	8226	11524	1	Spring casing
	8227	64740	6	Screw (spring casing - frame)
	8228	41381	6	Spring washer for screw
	8229	11528	1	Packing (spring casing - frame)
	8230	10593	6	Buffer
	8231	31366	6	Spring
	8232	11525	6	Screw plug
D5	8233	10795	1	Protecting disc
	8234	9878	1	Elastic steel ring
	8235	9699	4	Stop spring
D6	10012	69547x)	1	Single-row rigid ball bearing
D7	8237	9880	1	Ball bearing sleeve
D8	8238	11527	1	Ring
	8235	9699	6	Supporting spring

D10 see table 1 Bowl spindle

Machine without built-in feed pump	Machine with built-in feed pump
517152-1	517153-1

10013

10014

D11 see table 1 Worm

D.C.	A.C.	
	50 C/S	60 C/S
11521	11521	11731

D12 8244 11522 1 Round nut

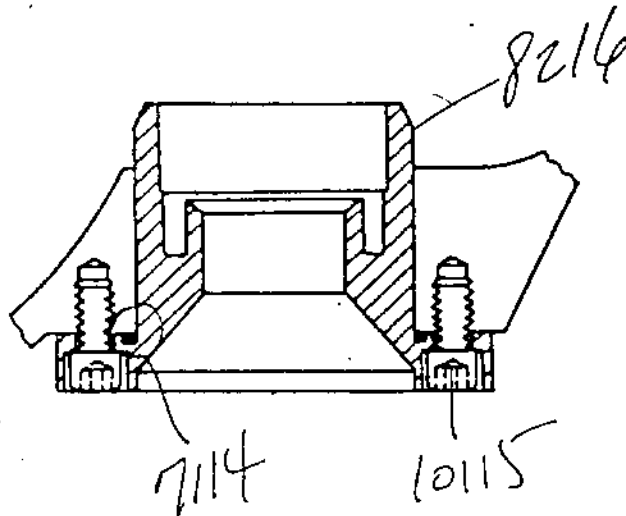
8241 8241 8243

D13 8245 11464x) 1 Self-aligning ball bearing

D14 8246 517155-1 1 Lock nut

C9 Round nut - see SEPARATOR BOWL

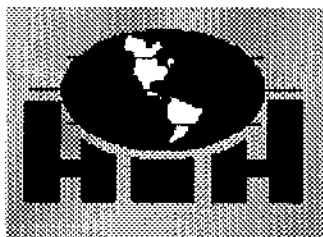
x) Special design - can be ordered only from an authorized DE LAVAL representative



Part number	Quantity
-------------	----------

517150-808216	1
74356 7114	1
11537 10115	6

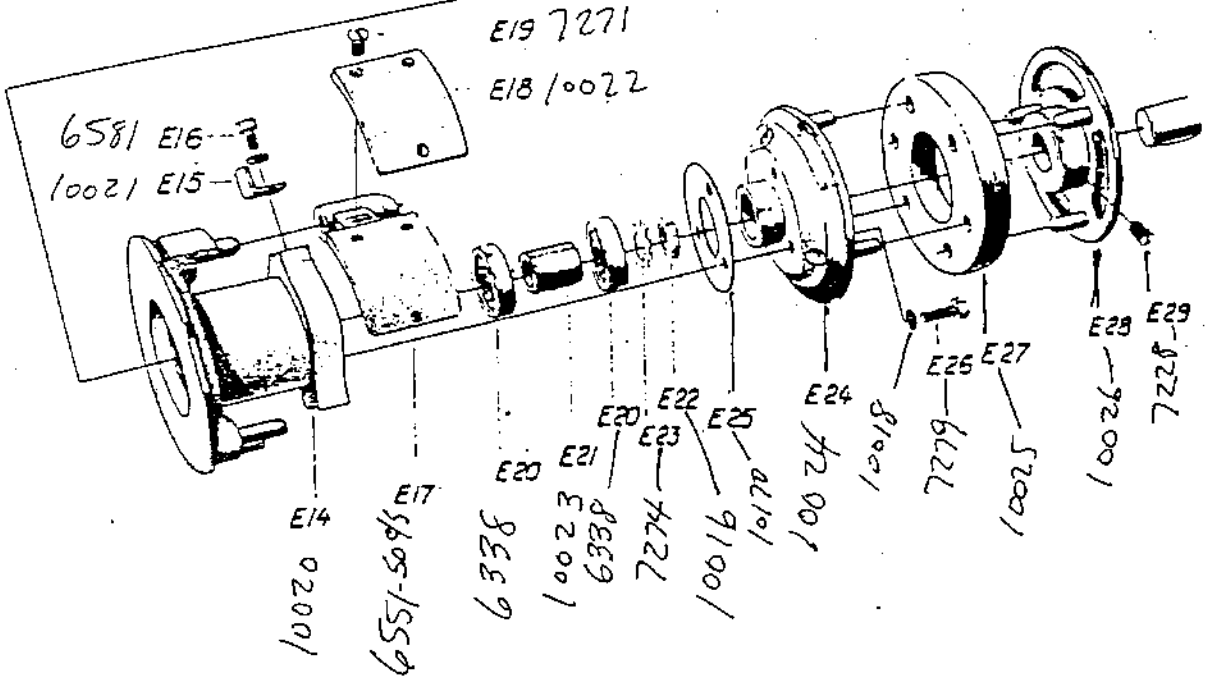
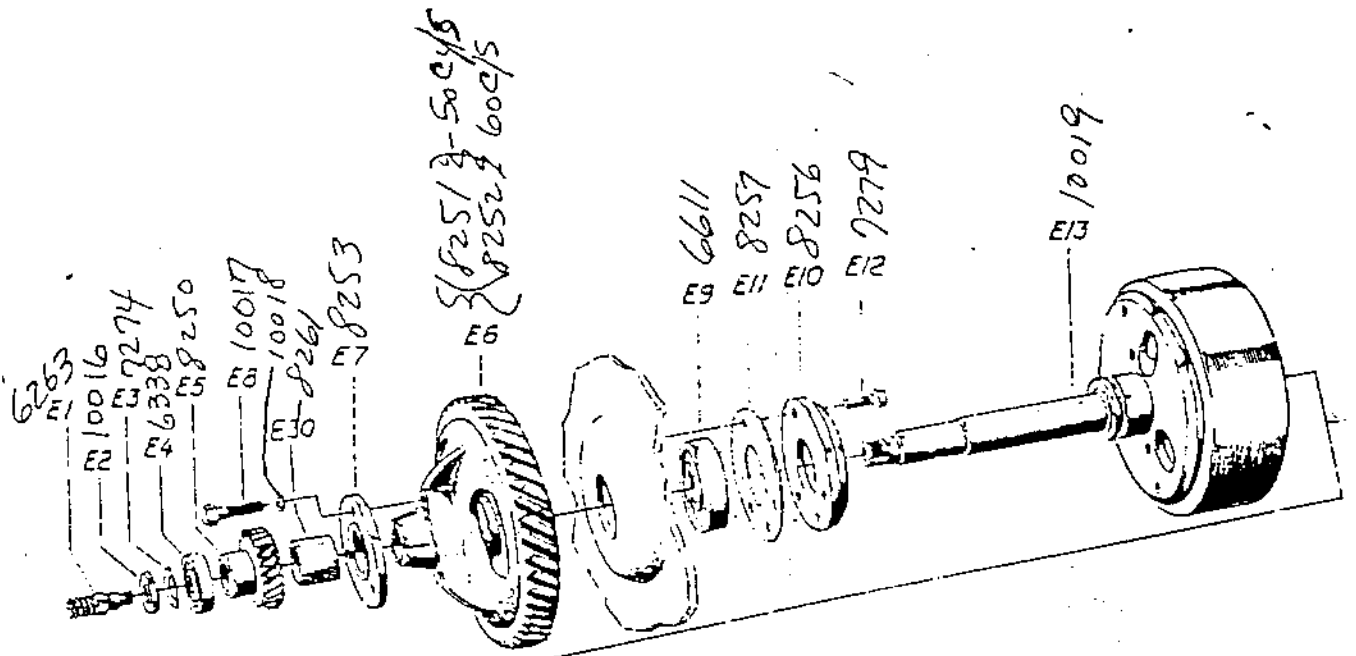
Bottom bearing housing
Rubber ring
Screw



Hutchison-Hayes Separators, Inc.

This is a Spacer Page

P.O. Box 2965 ♦ Houston, Texas 77252
3520 East Belt ♦ Houston, Texas 77015
(713) 455-9600 ♦ Fax (713) 455-7753



Letter- Part Quan-
ing number tity

E1	6323	11545	1	Worm gear for revolution counter
E2	10016	38682	1	Round nut with lock washer
E3	7274	38159	1	Lock washer for round nut E2
E4	6338	11455	1	Ball bearing, "loose"
E5	8250	11548	1	Gear wheel for tachometer

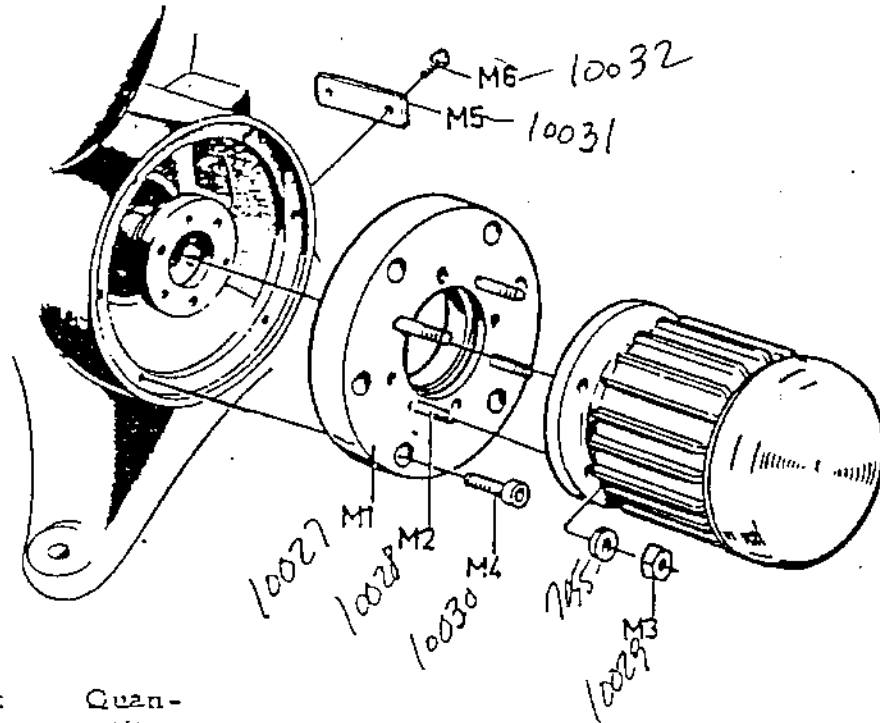
A.C.		D.C.
50 C/S	60 C/S	
11539	11736	11539

E6	see table		1	→ Worm wheel
E7	8253	11540	1	Lock ring for worm wheel ⁸²⁵¹ 8252 8251
E8	10017	32957	3	Screw for lock ring
	10018	9488	3	Spring washer
E9	8255	6611	1	Ball bearing, "fixed"
E10	8256	11546	1	Protecting cover for ball bearing E9
E11	8257	11547	1	Packing for protecting cover
E12	7279	34963	3	Screw for protecting cover
E13	10019	69871	1	Worm wheel shaft with conveyor pulley and round nuts
E14	10020	11504	1	Nave for coupling pulley
E15	10021	65157	2	Holding bracket, with screw E16 and spring washer for friction block
7267 E16	6584	65159	2	Screw for holding bracket
	8253	40040	2	Spring washer for screw E16

A.C.		D.C.
50 C/S	60 C/S	
43705	o	43705

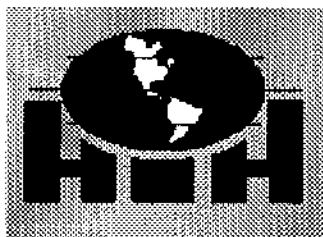
E17	see table		2	Friction block with pad and screws
6346 E18	10022	71627	2	Pad (with screws) 6551 6551
E19	7271	8341	6	Screw for pad
E20	6338	11455	2	Ball bearing for nave
E21	16023	11506	1	Spacing sleeve for ball bearing E20
E22	10016	38682	1	Round nut, with lock washer, for ball bearing E20
E23	7274	38159	1	Lock washer for round nut E22
E24	10024	11507	1	Coupling pulley for worm wheel shaft
E25	10110	11509	1	Packing for coupling pulley
E26	7279	34963	3	Screw for coupling pulley
	10018	9488	3	Spring washer
E27	10025	36121	1	Elastic plate
E28	10026	11516	1	Coupling pulley, with set screw, for drive shaft
E29	7228	34939	1	Set screw
E30	8261	43583	1	Spacing sleeve for worm wheel shaft

DIRECT DRIVE - flange motor



Letter- ing	Part number	Quan- tity	
M1	10027 517118-86	1	Motor adapter, complete
M2	10028 68354	4	Stud bolt (motor - motor adapter)
M3	10029 64383	4	Nut
M4	7055 68631	4	Washer
M4	10030 66376	6	Screw (motor adapter - frame)
M5	10031 419798-1	1	Cover for aperture for connection box x)
M6	10032 66379	2	Screw for cover

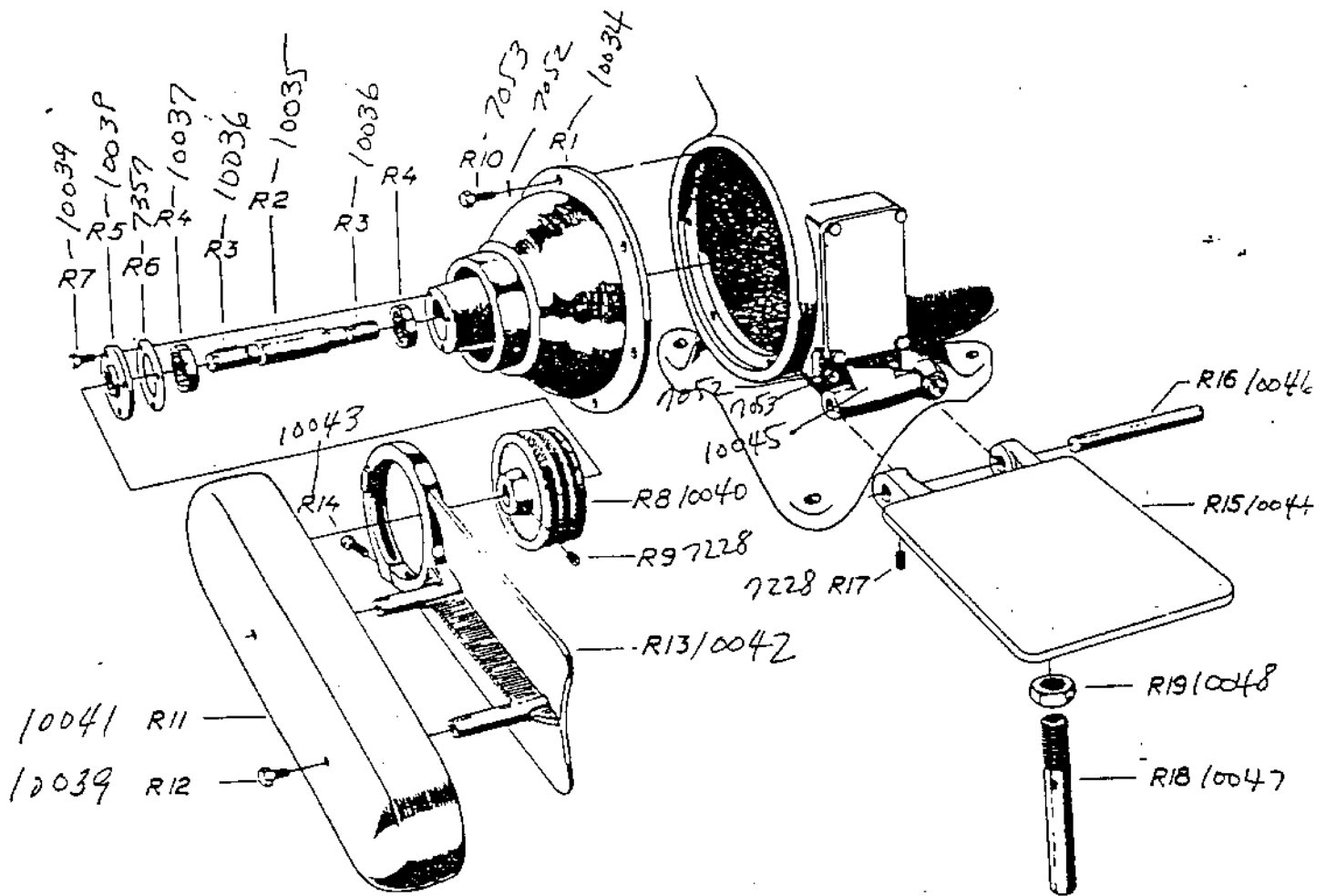
x) In some machines the frame is provided with a connection box in which the motor cable is connected to the supply cable. Connection box is NOT used in this machine.



Hutchison-Hayes Separators, Inc.

This is a Spacer Page

P.O. Box 2965 ♦ Houston, Texas 77252
3520 East Belt ♦ Houston, Texas 77015
(713) 455-9600 ♦ Fax (713) 455-7753

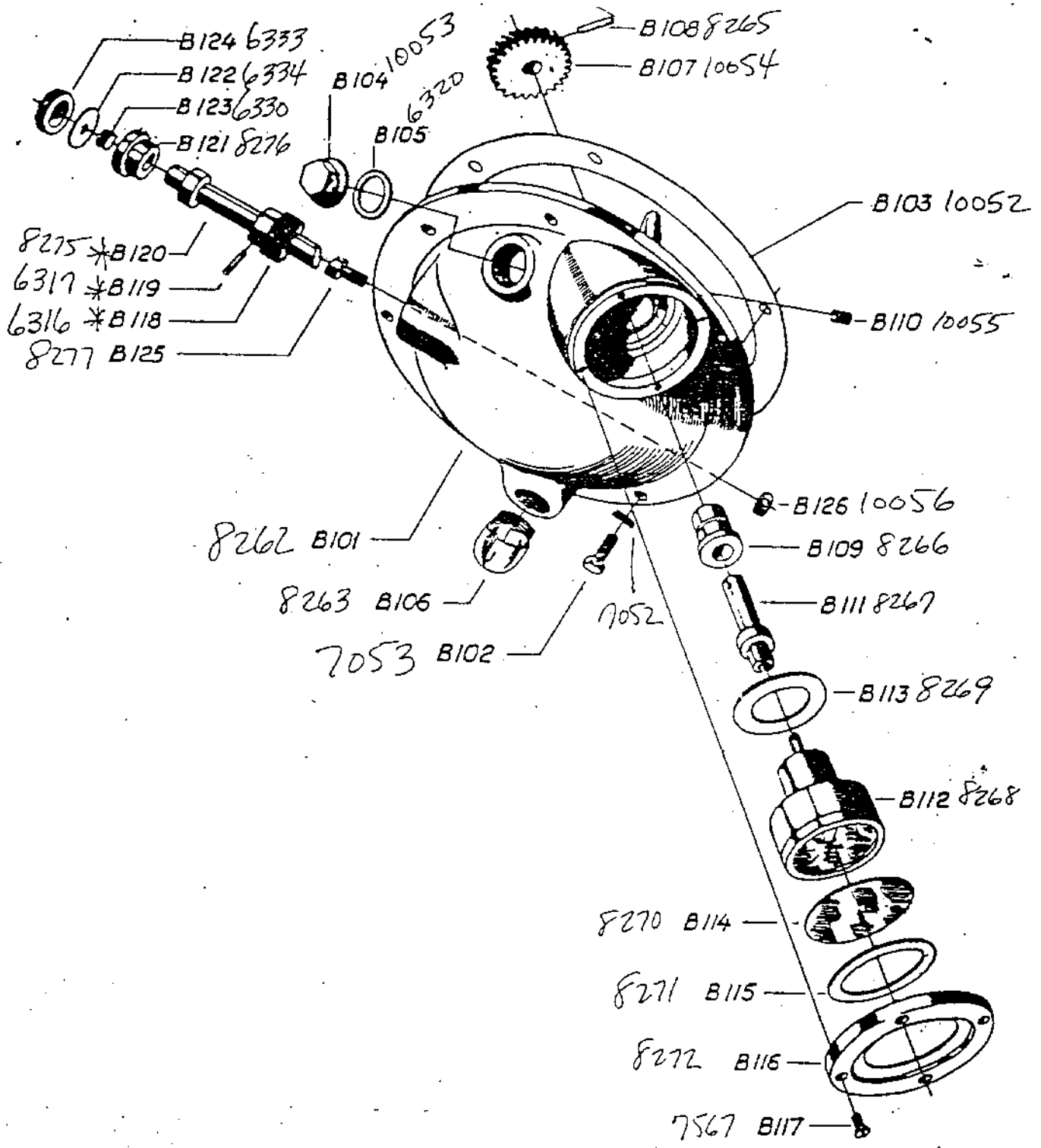


V BELT DRIVE - motor on adjustable plate

Letter-	Part	Quan-
ing	number	tity

	10033	11603	1	Belt gearing, complete
R1	10034	11604	1	End shield
R2	10035	11605	1	Shaft with keys
R3	10036	11607	2	Flat key for shaft R2
R4	10037	7142	2	Single row rigid ball bearing
R5	10038	11608	1	Protecting cover
R6	7357	11609	1	Packing for protecting cover R5
R7	10039	40988	3	Screw for protecting cover R5
R8	10040	11610	1	V belt pulley with set screw
R9	7228	34939	1	Set screw for V belt pulley R8
R10	7053	66378	6	Screw for belt gearing
7087	7052	65451	6	Washer for screw
R11	10041	11617	1	Belt guard
R12	10042	40988	2	Screw for belt guard R11
R13	10043	11620	1	Support for belt guard R11
R14	10044	41268	1	Screw for support R13
R15	10045	11612	1	Motor plate
-	10045	11614	1	Support for motor plate R15
-	7053	66378	2	Screw for support
7087	7052	65451	2	Washer for screw
R16	10046	11613	1	Shaft
R17	7228	34939	1	Set screw for shaft R16
R18	10047	11615	1	Adjusting screw for motor plate R15
R19	10048	11616	1	Nut for adjusting screw R18
-	10049	36724	4	Screw for motor
* -	10050	63159	3	V belt
* -	10051	11658	1	V belt pulley for motor, with set screw (shaft bore centre drilled or turned and key groove according to order)
* -	7228	34939	1	Set screw for V belt pulley

* NOT PICTURED



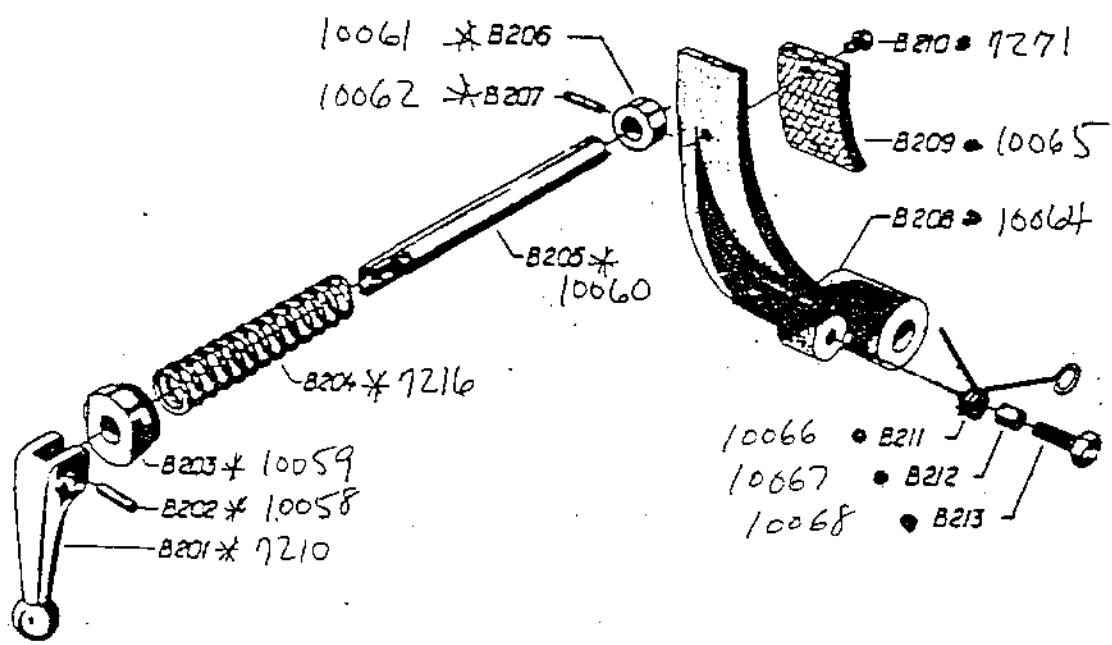
Here

REVOLUTION COUNTER - TACHOMETER

10052-10056



Letter- ing	Part number	Quan- tity	
B101	8262 11549	1	Cover for gear housing
B102	7053 66378	8	Screw
	7052 65451	8	Washer for B102
B103	10052 11566	1	Packing
B104	10053 65293	1	Screw plug for oil filling hole
B105	6320 33787	1	Packing
B106	8263 11493	1	Gauge glass for lubricating oil
B107	10054 11562	1	Gear wheel, with pin
B108	8265 12526	1	Pin
B109	8266 11559	1	Bushing for B111
B110	10055 60655	1	Stop screw
B111	8267 11560	1	Tachometer shaft
B112	8268 8866	1	Tachometer with glass
	9491	1	Glass
B113	8269 11564	1	Packing for B112
B114	8270 73204	1	Protecting glass
B115	8271 8068	1	Packing
B116	8272 8066	1	Lock ring
B117	7567 11565	4	Screw for lock ring B116
* B118	12087 11551	1	Revolution counter shaft, complete
B118	6316 11553	1	Gear wheel with pin
B119	6317 63796	1	Pin
B120	8275 11552	1	Shaft
B121	8276 11555	1	Bushing for revolution counter shaft
B122	6334 11556	1	Packing
B123	6330 11557	1	Push-button
B124	6333 11558	1	Lock ring
B125	8277 11550	1	Plug
B126	10056 22164	1	Nut



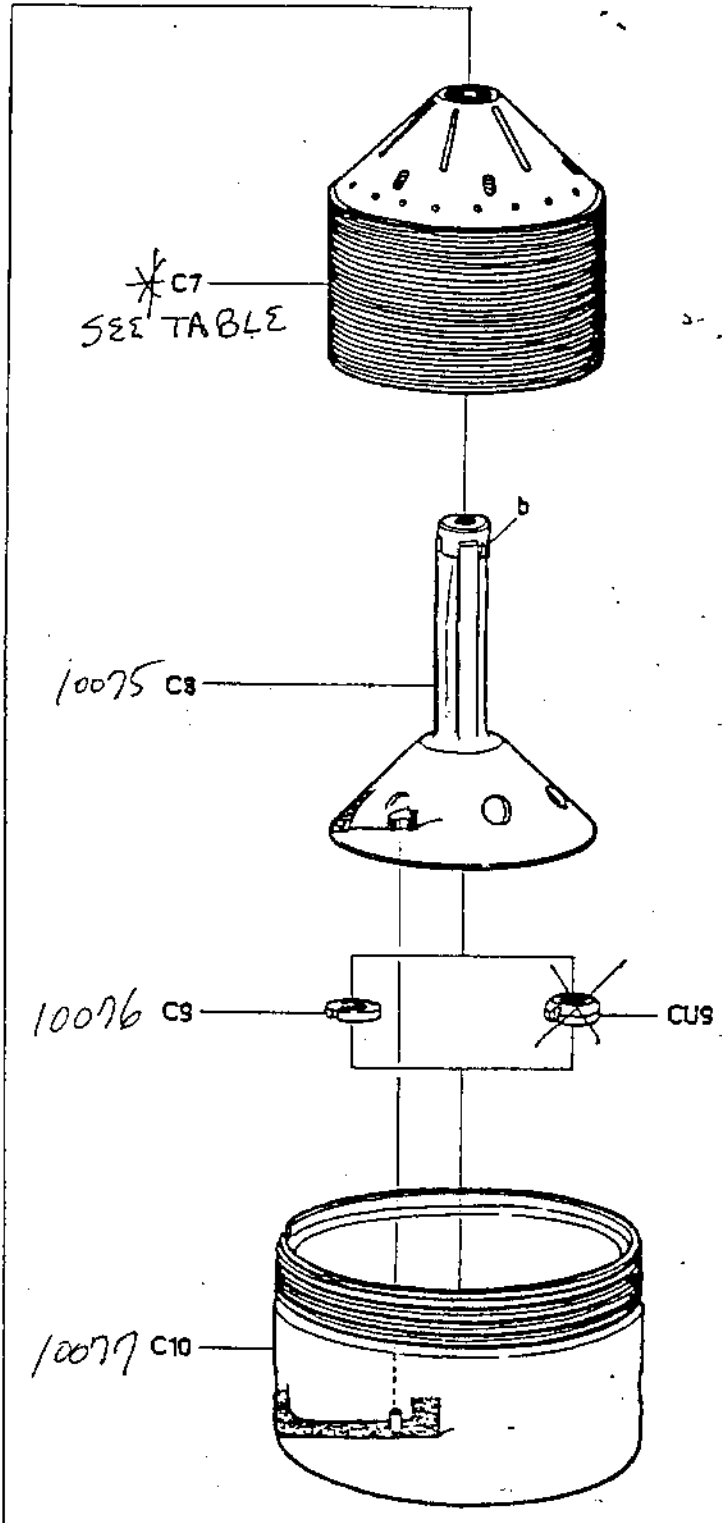
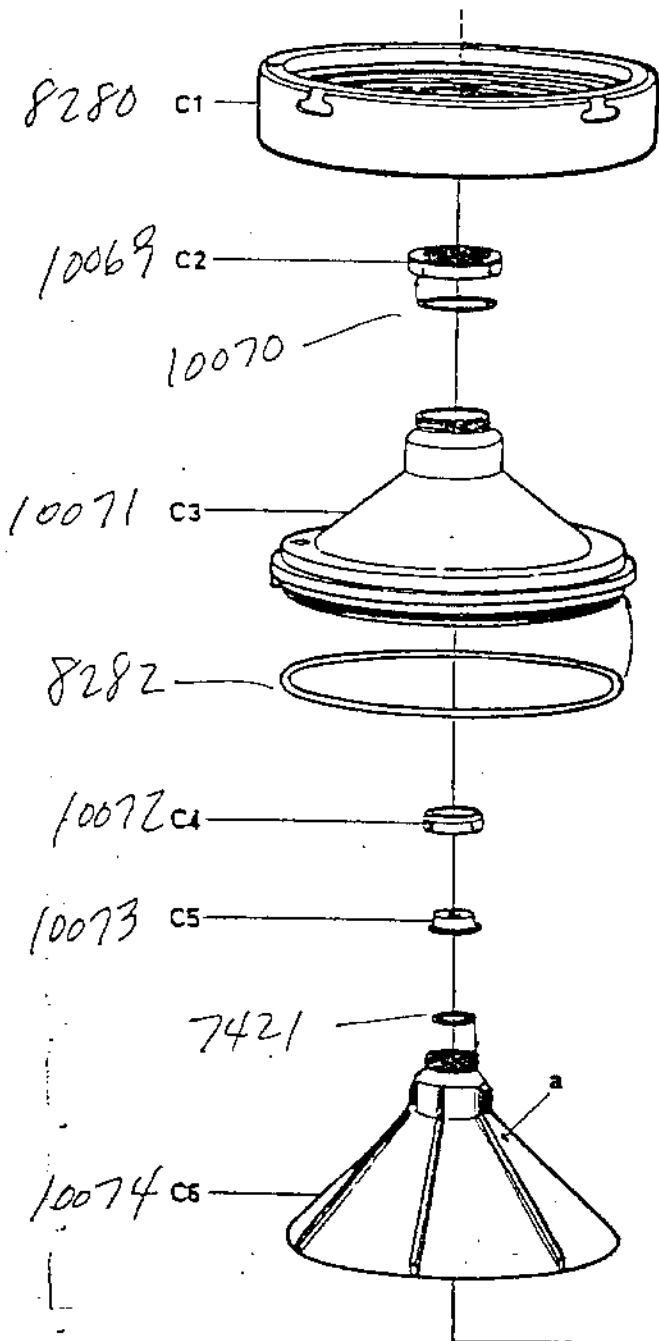
BRAKE

10057 - 10068



Letter- ing	Part number	Quan- tity	
* B201-207	10069 69869		Operating means for brake, complete
B201	7210 67609	1	Brake handle
B202	10058 11532	1	Pin
B203	10059 11503	1	Guide plug
B204	7216 39096	1	Spring
B205	10060 69870	1	Brake spindle
B206	10061 11501	1	Collar
B207	10062 11502	1	Pin
• B208-213	10063 69867		Brake shoe, complete
B208	10064 69868	1	Brake shoe
B209	10065 66548	1	Lining for brake, with screws
B210	7271 8341	2	Screw
B211	10066 11497	1	Stop spring
B212	10067 11498	1	Spacing sleeve
B213	10068 40965	1	Screw

DE LAVAL



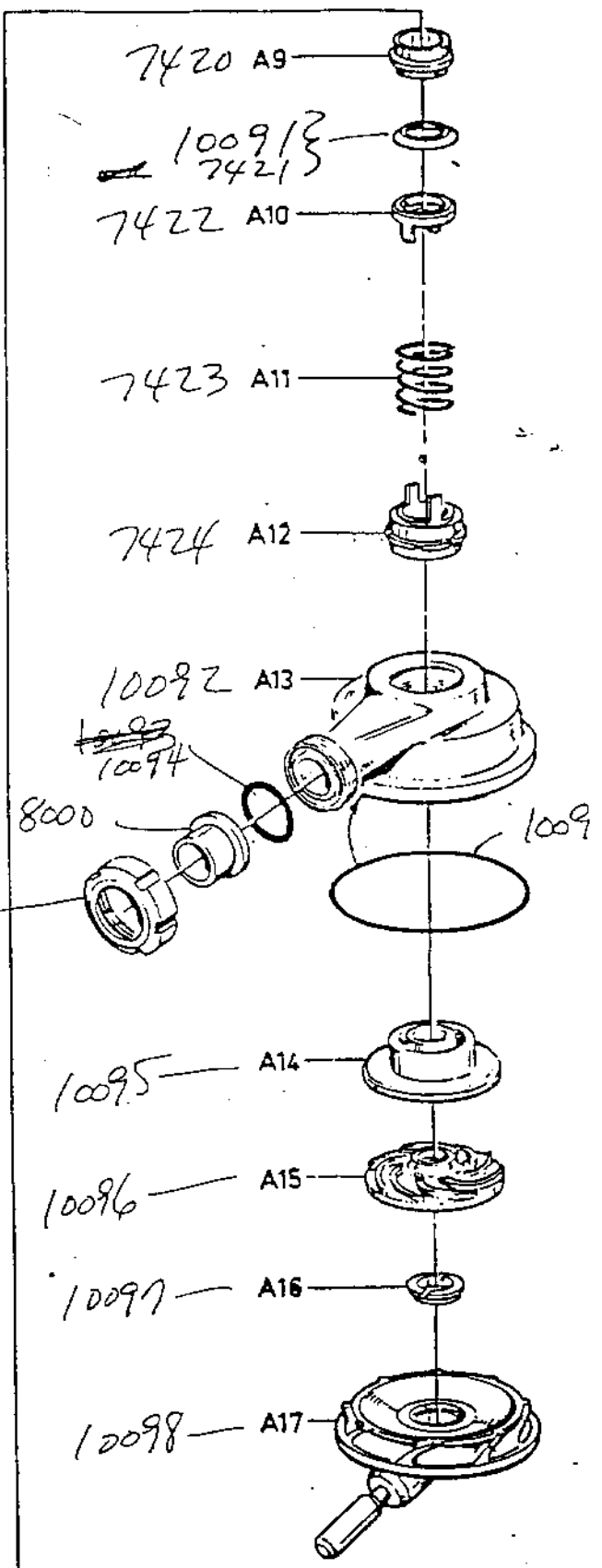
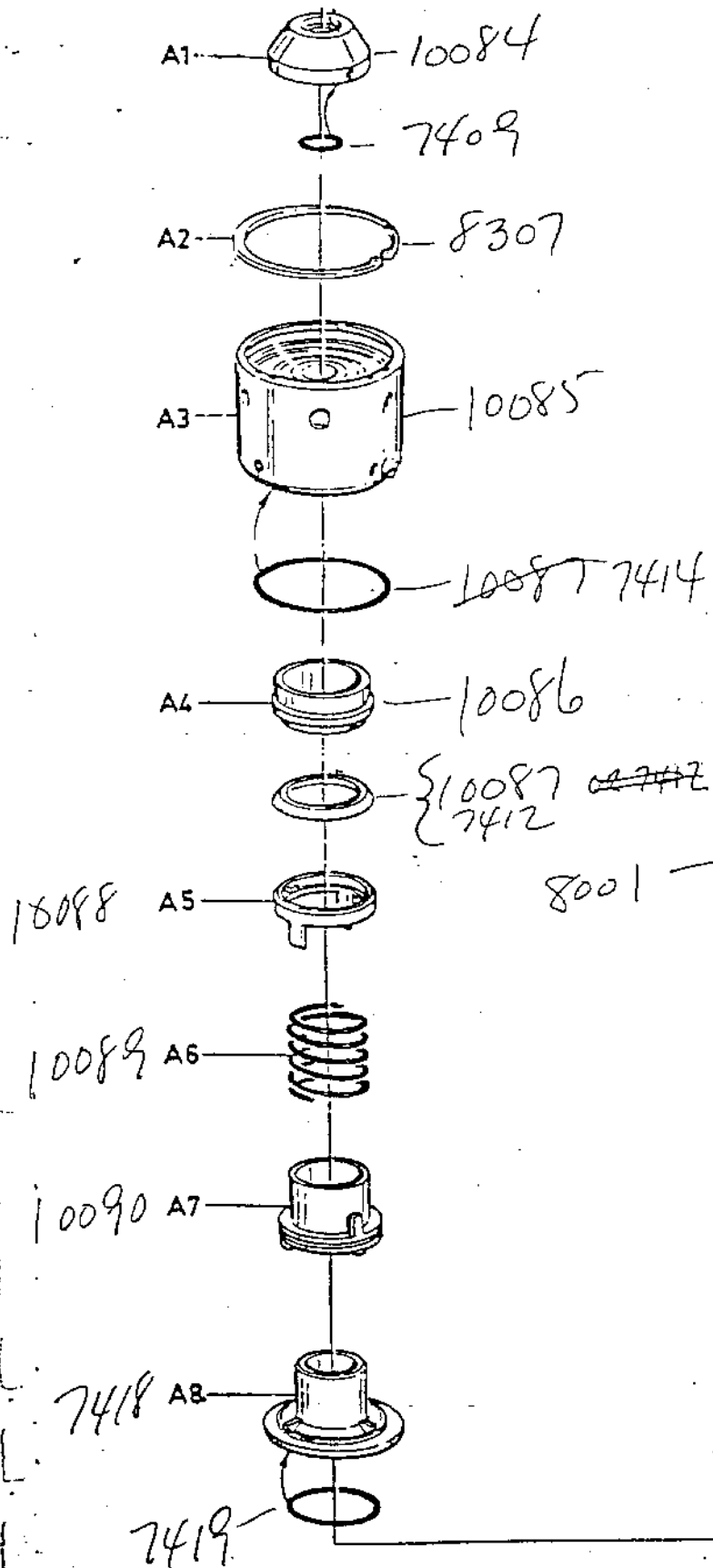
Letter- ing	Part number	Quan- tity	
	see table	-	Bowl, complete (without cap nut)
C1	8280 11806x)	1	Lock ring for bowl
C2	10069 520869-80	1	Wear ring
	10070 70941	1	Rubber ring (wear ring - bowl hood)
C3	10071 68575x)	1	Bowl hood
	8282 36589	1	Rubber ring (bowl hood - bowl body)
C4	10072 71540	1	Lock ring for wear washer
C5	10073 71505	1	Wear washer
	7421 64708	1	Rubber ring (top disc - wear washer)
C6	10074 73246x)	1	Top disc
C7	see table	-	Bowl discs
C8	10075 68566x)	1	Distributor
C9	10076 68122	1	Round nut
C10	10077 71529x)	1	Round nut - not used in these types
C10	10077 71529x)	1	Bowl body

	TVB 509-10H (-60)	TVG 509-70H (-60)
	TVB 509-10H-21 (-60)	TVG 509-70H-21 (-60)
Complete bowl	518922-82 10078	518922-83 10079
Bowl discs, set	68569x) 10080	520821-80x) 10082
spare disc	68570 10081	520822-80 10083

REPLACEMENT
x) Exchange of this part ^{REQUIRES} necessitates a rebalancing of the bowl, ^{PLEASE} send the COMPLETE bowl to an authorized ALFA LAVAL/DE LAVAL representative.

ASSEMBLY IN FOR SERVICE.

ALFA LAVAL
DE LAVAL



DE LAVAL 10084 - 10098

INLET - with built-in pump

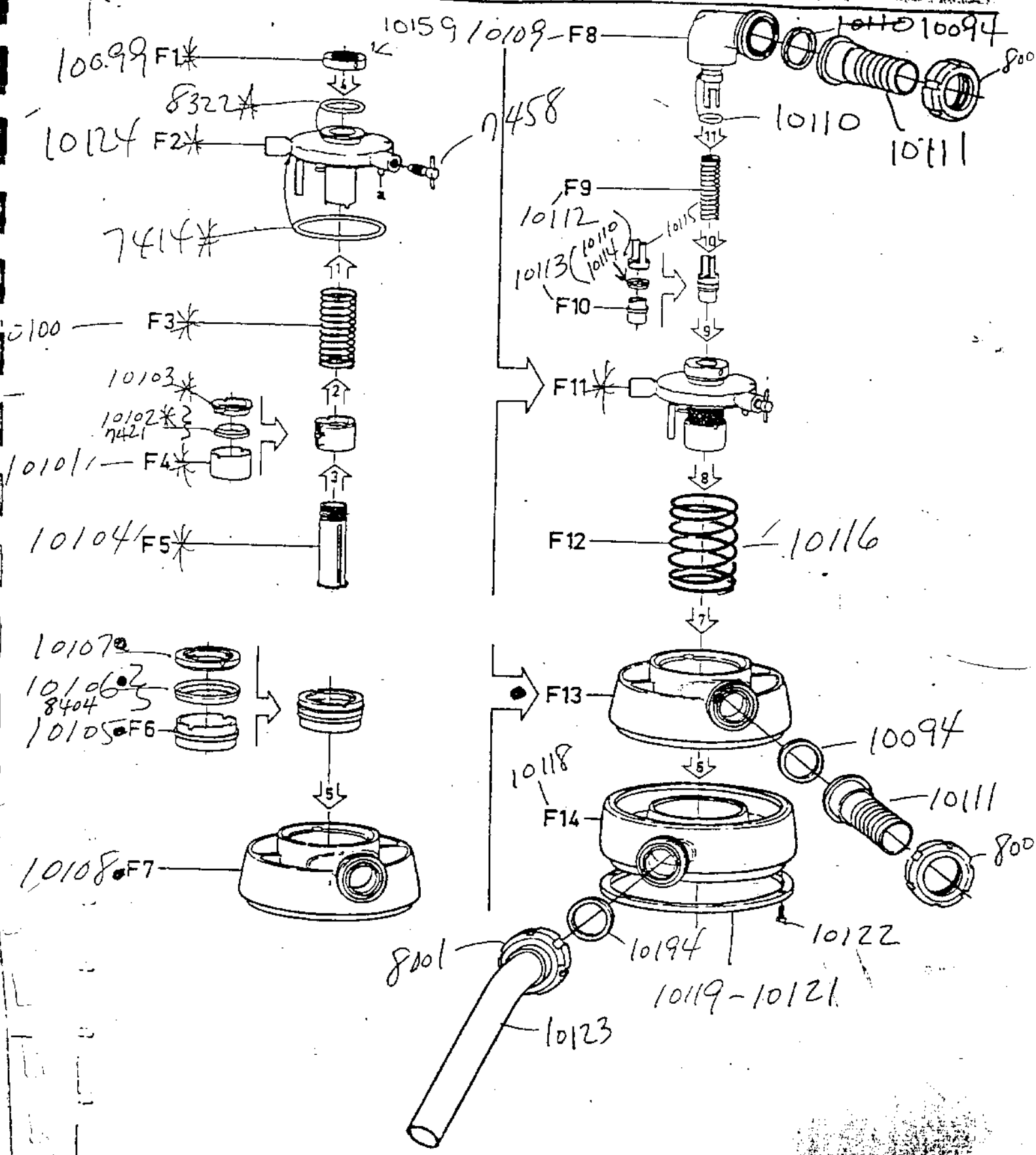
Letter- ing	Part number	Quan- tity	
A1	10084 517160-80	1	Wear nut
	7409 68085	1	Rubber ring (wear nut - bowl spindle)
A2	8367 517166-1	0-2	Height adjusting ring
A3	10085 517165-80	1	Inlet cap
	7414 70943	1	Rubber ring (inlet cap - flushing chamber sleeve)
A4	10086 71557x1)	1	Outer seal ring
	10089 71566	1	Outer packing collar
A5	10088 517175-80	1	Outer gland
A6	10087 226214-8	1	Outer spring
A7	10090 517177-1	1	Flushing diversion sleeve
A8	7418 517178-80	1	Flushing chamber sleeve
	7419 73212	1	Rubber ring (flushing chamber sleeve - pump housing)
A9	7420 517167-1x1)	1	Inner seal ring
	10091 517170-1	1	Inner packing collar
A10	7422 517173-80	1	Inner gland
A11	7423 226214-6	1	Inner spring
	APD Item 100		
A12	7424 517180-1	1	Lock sleeve
A13	10092 517182-1	1	Pump housing
A	10093 64100	1	Rubber ring (pump housing - pump housing cover)
#	10094 73222	1	Packing for pipe coupling
	8600 190629x2)	1	Connecting sleeve
A14	8001 190615x2)	1	Coupling nut
	10095 73215	1	Pump wheel, top part
A15	10096 11954	1	Pump wheel, bottom part
A16	10097 11836	1	Nozzle for pump housing cover
A17	10098 11833	1	Pump housing cover

Rubber rings can be used for the seal rings instead of packing collars. The rubber rings are supplied on special request.

7412	64702	1	Outer rubber ring
7421	64708	1	Inner rubber ring

- x1) Leave the ring in the protective wrapping until mounting
- x2) Not included in the regular equipment

ALFA LAVAL
DE LAVAL



Letter-	Part	Quan-	
ing	number	tity	
F1	10099 71596	1	Lock nut
→ F2	10125 518918-80	1	Sealing cover
	8322 14238	1	Rubber ring (sealing cover - discharge bend).
	7414 70943	1	Rubber ring (sealing cover - outlet cover)
	7458 68710	1	Shut-off screw
F3	10100 226214-11	1	Middle spring
F4	10101 71558x1)	1	Middle seal ring
	10102 71567	1	Packing collar
	10103 518919-1	1	Gland
F5	10104 71595	1	Outlet sleeve
F6	10105 518915-1x1)	1	Outer seal ring
	10106 518916-1	1	Packing collar
	10107 518917-1	1	Gland
F7	10108 73242	1	Outlet cover
F8	10109 518921-2	1	Discharge bend
	10110 67035	1	Rubber ring (discharge bend - outlet sleeve)
→	10094 73222	1	Packing for pipe coupling
→	10111 71631x2)	1	Hose nipple
	8001 190615x2)	1	Coupling nut
F9	10112 226214-10	1	Inner spring
F10	10113 71559x1)	1	Inner seal ring
	10114 71568	1	Packing collar
	10115 518920-1	1	Gland
*F11	o	1	Unit comprising the assembled parts F1-F5 *
F12	10116 226214-12	1	Outer spring
F13	o	1	Unit comprising the assembled parts F6-F7
→	10094 73222	1	Packing for pipe coupling
→	10111 71631x2)	1	Hose nipple
	8001 190615x2)	1	Coupling nut
F14	10118 71585	1	Waste liquid receptacle
	10119 68088	1	Height adjusting ring, 4 mm
	10120 68089	1	Height adjusting ring, 6 mm
	10121 68090	1	Height adjusting ring, 8 mm
	10122 68091	6	Screw
	10123 69897	1	Discharge pipe
→	10094 73222	1	Packing for pipe coupling
	8001 190615	1	Coupling nut

The seal rings can be provided with rubber rings instead of packing collars.
The rubber rings can be supplied on special request.

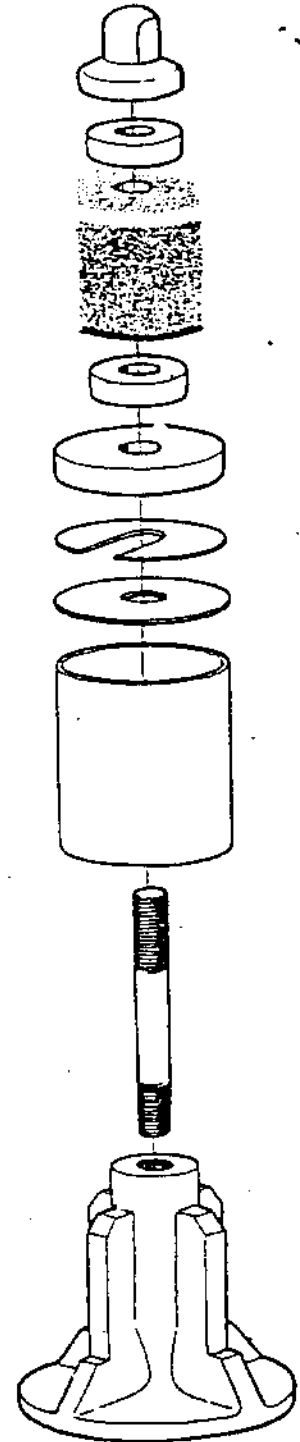
→	8464 70942	1	Rubber ring for outer seal ring
	7421 64708	1	Rubber ring for middle seal ring
→	10110 67035	1	Rubber ring for inner seal ring

ANCHORING PARTS



Part number Quan-
 tity

10201	11669	3	Cap nut
10202	11668	3	Small rubber cushion
10202	11668	3	Small rubber cushion
10203	11667	3	Large rubber cushion
10204	11666	6	Spacing washer
10205	11665	3	Steel washer
10206	11664	3	Sleeve
10207	11663	3	Anchor screw
10208	11662	3	Anchoring foot



Letter- Part Quan-
ing number tity

FOR INLET - with built-in pump

— A1	10084	517160-80	1	Wear nut
	7409	68085	2	Rubber ring (wear nut - bowl spindle)
	7414	70943	2	Rubber ring (inlet cap - flushing chamber sleeve)
— A4	10086	71557x1)	2	Outer seal ring
—	10087	71566	2	Outer packing collar
	7419	73212	2	Rubber ring (flushing chamber sleeve - pump housing)
A9	7420	517167-1x1)	2	Inner seal ring
—	10091	517170-1	2	Inner packing collar
—	10093	64100	2	Rubber ring (pump housing - pump housing cover)
—	10094	73222	1	Packing for pipe coupling

FOR BRAKE

— B209	10065	66548	2	Lining (with screws) for brake shoe
--------	-------	-------	---	-------------------------------------

FOR SEPARATOR BOWL

— C2	10069	520869-80	1	Wear ring
—	10070	70941	2	Rubber ring (wear ring - bowl hood)
—	8282	36589	2	Rubber ring (bowl hood - bowl body)
— C5	10073	71505	1	Wear washer
	7421	64708	2	Rubber ring (top disc - wear washer)

C7 see table 1

Bowl disc

TVB 509-10H(-60)	TVG 509-70H(-60)
TVB 509-10H-21(-60)	TVG 509-70H-21(-60)
68570	520822-80

10081

10083

FOR VERTICAL DRIVING DEVICE

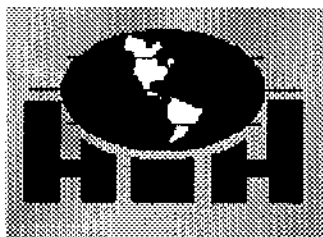
— D6	10012	69547x2)	1	Single-row rigid ball bearing for top bearing
D13	8245	11464x2)	1	Self-aligning ball bearing for bottom bearing
	7114	74356	2	Rubber ring for bottom bearing bushing

x1) Leave the ring in the protective wrapping until mounting

x2) Special ball bearing - new bearings can be ordered only from an authorized ALFA-LAVAL/DE LAVAL representative.

Letter- ing	Part number	Quan- tity	
			FOR HORIZONTAL DRIVING DEVICE
E18	1002271627	2	Pad (with screws) for friction block
			FOR OUTLET
	8322 14238	2	Rubber ring (sealing cover - discharge bend)
	7414 70943	2	Rubber ring (sealing cover - outlet cover)
F4	10101 71558x1)	2	Seal ring, middle
	10102 71567	2	Packing collar for middle seal ring
10136 - F6	10124 18915-1x1)	2	Seal ring, outer
	10106 518916-1	2	Packing collar for outer seal ring
	10110 67035	2	Rubber ring (discharge bend - outlet sleeve)
F10	10113 71559x1)	2	Seal ring, inner
	10114 71568	2	Packing collar for inner seal ring
	10094 73222	2	Packing for pipe coupling

x1) Leave the ring in the protective wrapping until mounting

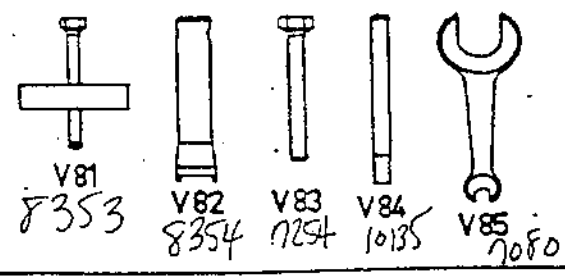
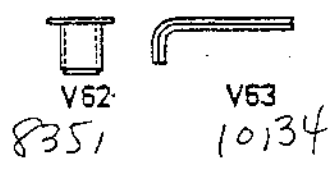
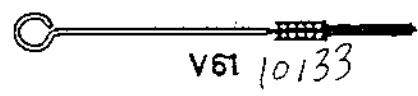
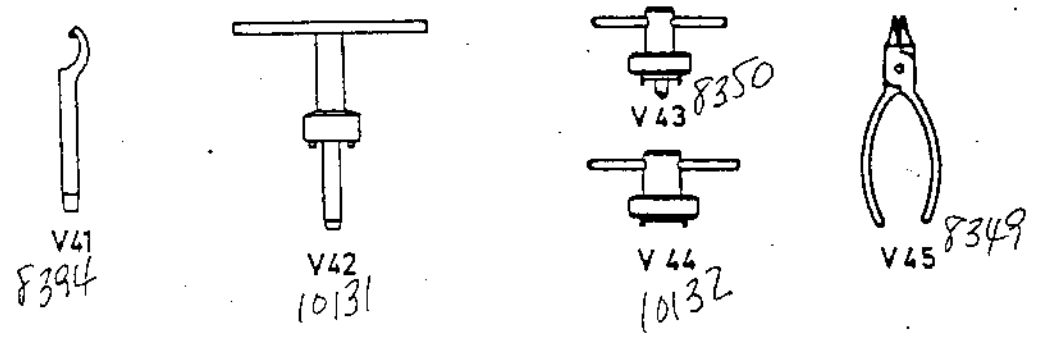
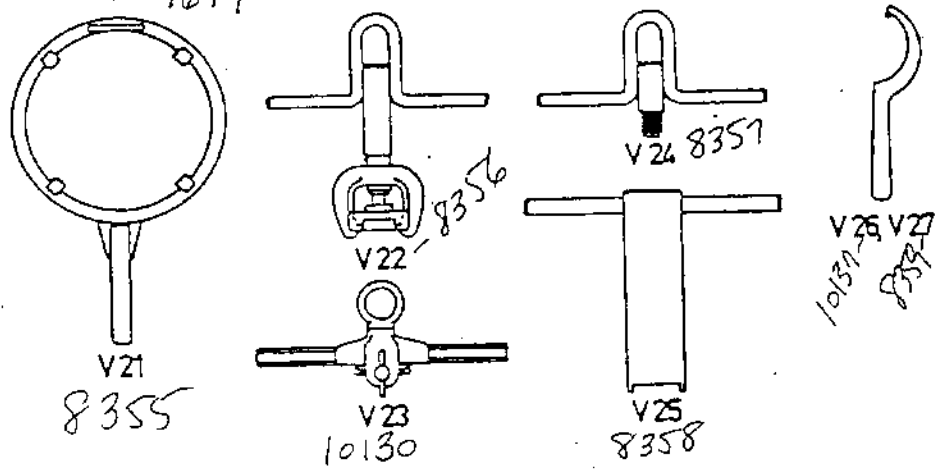
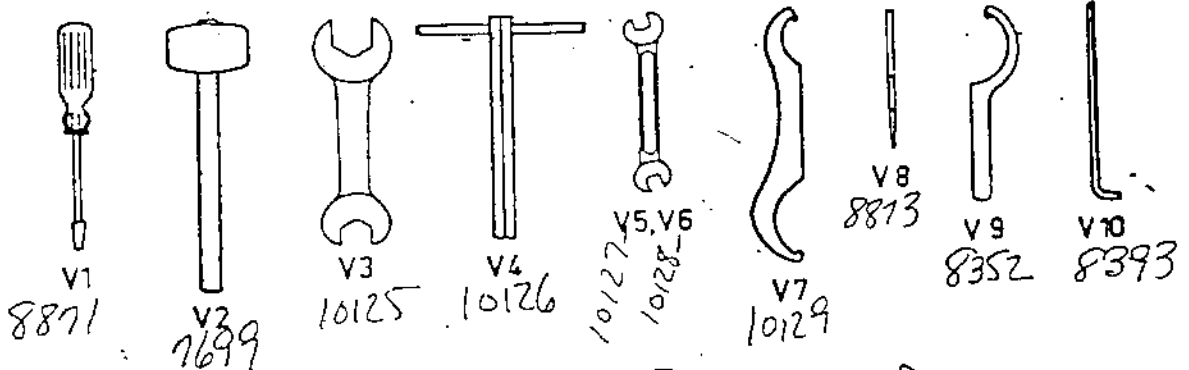


Hutchison-Hayes Separators, Inc.

This is a Spacer Page

P.O. Box 2965 ♦ Houston, Texas 77252
3520 East Belt ♦ Houston, Texas 77015
(713) 455-9600 ♦ Fax (713) 455-7753

ALFA LAVAL
DE LAVAL



~~DE LAVAL~~

10125 - 10138

(TOOLS)

Letter- Part · Quan-
ing number tity

V1	8871	66772	1	Screw driver
V2	7699	64324	1	Tin mallet
V3	10125	8432	1	Screw spanner - 29/32" - 1 5/32" (23-31 mm)
V4	10126	11647	1	Socket wrench - 19/32" (15 mm)
V5	10127	66770	1	Screw spanner - 1/2" - 19/32" (13-15 mm)
V6	10128	66784	1	Screw spanner - 13/16" - 29/32" (21-23 mm)
V7	10129	73800	1	Hook spanner
V8	8873	2279	1	Drift
V9	8352	66988	1	Hook spanner - nut diam. 3 5/32" (82 mm)
V10	839351	7188-1	1	Tool for removal of rubber rings

FOR SEPARATOR BOWL

V21	8355	68500	1	Spanner for bowl lock ring
V22	8356	71612	1	Lifting tool for bowl body
V23	10150	71610	1	Lifting tool for bowl hood
V24	8357	71608	1	Lifting tool for distributor
V25	8358	68143	1	Pin spanner - nut diam. 2 3/8" (60 mm) - for round nut
V26	10137	1647	1	Hook spanner - nut diam. 3 7/8" (98 mm) - for wear ring
V27	8359	64574	1	Hook spanner for lock ring of wear washer

FOR INLET AND OUTLET

V41	8394	64511	1	Hook spanner - nut diam. 1 31/32" (50 mm) - for lock nut for outlet sleeve
V42	10131	43717	1	Pin spanner - pin spacing 1 1/8" (29 mm) - for feed pump and lock sleeve - only for machine with built-in feed pump
V43	8350	517185-80	1	Pin spanner - pin spacing 1 17/32" (39 mm) - for wear nut - only for machine without built-in feed pump
V44	10132	517186-80	1	Pin spanner - pin spacing 1 31/32" (50 mm) - for wear nut and flushing chamber sleeve - only for machine with built-in feed pump
V45	8349	66445	1	Snap ring plier for height adjusting ring

FOR VERTICAL DRIVING DEVICE

V61	10133	9689	1	Brush for bowl spindle
V62	8351	11738	1	Protecting sleeve for bowl spindle
V63	10134	66416	1	Hexagonal hole wrench - 5/16" (8 mm) - for screw of bottom bearing bushing

FOR HORIZONTAL DRIVING DEVICE AND MOTOR

V81	8353	11645	1	Puller tool for nave of friction coupling
V82	8354	62522	1	Pin spanner - nut diam. 1 1/2" (38 mm) - for round nut for ball bearings of worm wheel shaft
V83	7254	65389	2	Jack screw for pulling off fixed ball bearing of worm wheel shaft
V84	10135	11649	2	Guide bolt for motor - only for flange motor (4-drive)
V85	7080	39456	1	Screw spanner for nut for the adjusting screw of motor plate - only for motor on adjustable plate (6-drive)