

INSTRUCTION MANUAL AND PARTS LIST
No. 1048 - 9001 - 010

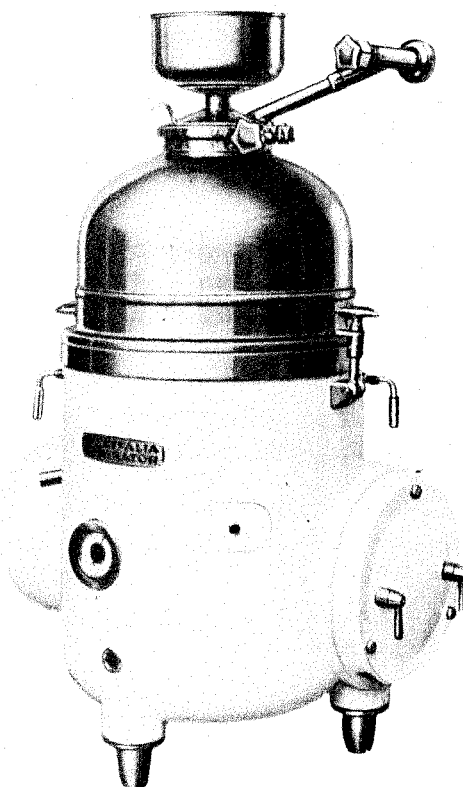
WESTFALIA

Milk Separators

Model

MN 3004 and MTA 50-03-024

MN 3004 D and MTA 50-03-124



MN 3004 and MTA 50-03-024
with normal motor and centrifugal clutch

MN 3004 D and MTA 50-03-124
with special type motor, without centrifugal clutch

WESTFALIA SEPARATOR AG./4740 OELDE 1 (W.-GERMANY)
CABLES: WESTFALIA OELDE · PHONE: (02522) 771 · TELEX: 89474

IMPORTANT HINTS TO OPERATORS

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- 1) Never start the separator before brakes and bowl locking screws are off.
- 2) When machine is new, make first oil change after 3 to 4 weeks. When broken in, change oil every 2 to 3 months.
- 3) When making oil change, clean gear chamber. Use oil as stated on page 11 only.
- 4) Make sure oil level is always at middle of oil sight glass.
- 5) Check regularly for water in oil. To do this, loosen oil drain screw and allow a small amount of oil to drain out.
- 6) After removing bowl bottom, place protection hood 24 (fig.10) over spindle to prevent wash liquid from seeping into gear chamber.

Do not flush inside of upper frame part with water hose; wash by hand.
- 7) Prior to installing bowl bottom, put two or three drops of oil on guide surfaces of spindle cap and of spindle guiding ring, so that spindle cap can be easily moved on worm spindle.
- 8) Prior to assembling the bowl, threads of bowl bottom and of bowl locking ring as well as centering and bearing surfaces should be carefully cleaned and greased. If bowl is made of solid stainless steel, Molykote paste should be vigorously rubbed and brushed into metal surfaces to prevent jamming.
- 9) Do not loosen any part of separator or of feed and discharge connections before bowl has come to a complete stop.
- 10) Do not place bowl parts on stone floor. Put them on a rubber or wooden surface. Never place bowl top into bowl locking ring. Put distributor on base 10, and stack discs on drying rack 1 (fig.10).
- 11) Never use blow-torch on bowl or expose bowl to heat of direct fire.
- 12) After about 3 weeks of operation, add the numbered spare disc.

Vertical Section
WESTFALIA Milk Separator MN 3004D, MN 5004D
with Special Type Motor, without Centrifugal Clutch
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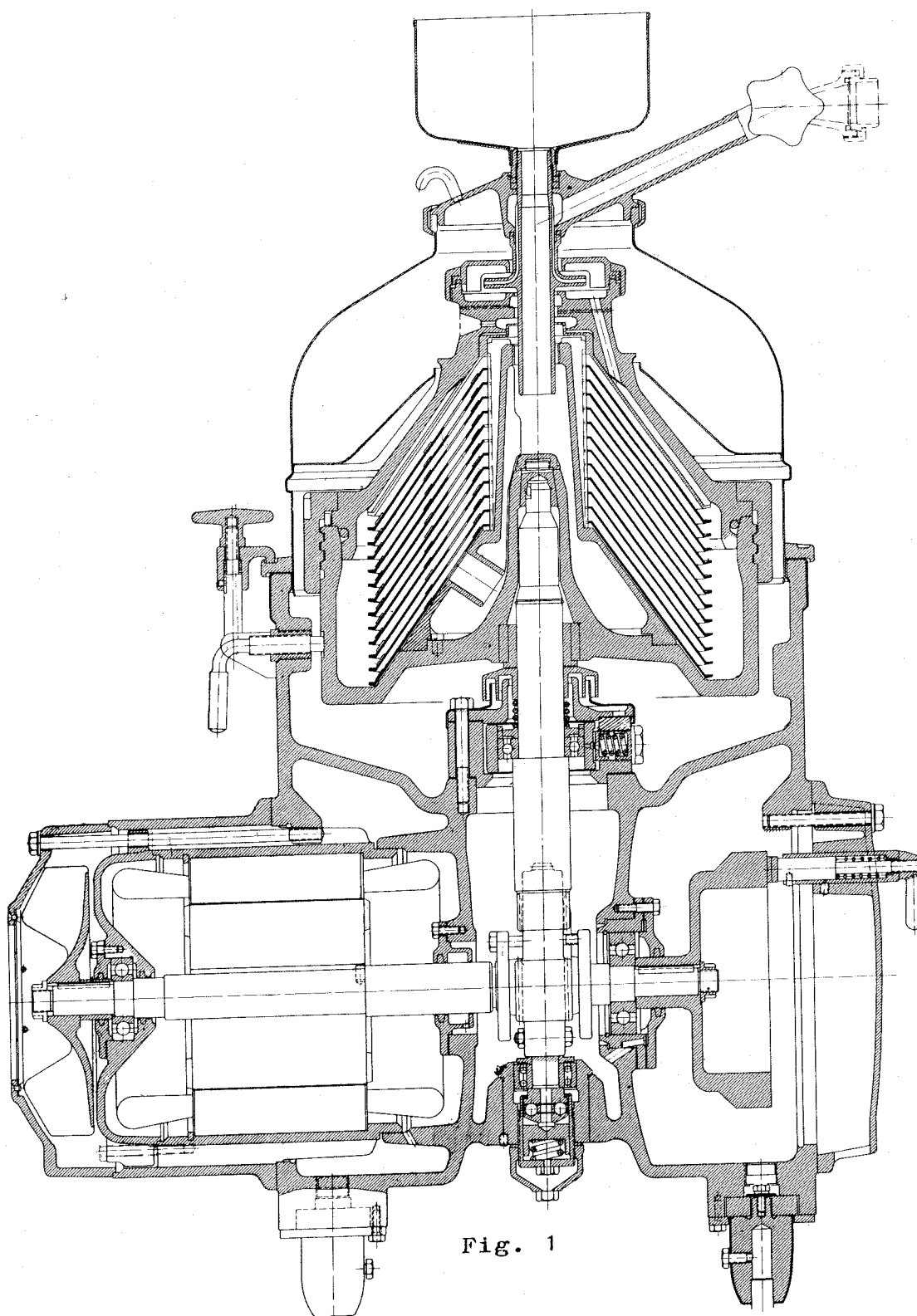


Fig. 1

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WORKING INSTRUCTIONS

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1. INSTALLATION

Foundation frame 1a (fig.6) should be imbedded in the floor in such a way that the three raised blocks are flush with the floor (see installation plan, page 36). Fill up the space below the frame with cement. Then make sure that the raised blocks are absolutely level and grout the frame in with cement inside and outside. To accelerate setting of cement, add some commercial rapid binding agent.

To fasten the separator on the foundation frame, proceed as follows (see fig.6):

Screw bolts 1b into the three raised blocks on the foundation frame and put feet 2a with flanges 3 on these bolts. Rubber cushion 2b on each foot is held by washer 2c, lock washer 2d, and screw 2f. Lift separator frame onto feet assemblies. Insert screws 4 through flanges and tighten into frame. Finally tighten screw 2g.

2. MOTOR CONNECTION

2.1 Three phase AC motor for MN 3004D: 4.5 kW
for MN 5004D: 5.5 kW

Milk separators MN 3004D and MN 5004D are powered by a totally enclosed torque controlled built-in motor for clutchless drive. This motor must be started by means of a star-delta switch. The starting time in star connection is 10 minutes. Do NOT switch from star to delta connection before this time has elapsed.

When using a hand-operated star-delta switch, refer to the following table:

Separator Model	50 Cycle		Manual Star-Delta-Switch	Minimum Section of Lead-in Wires ²	Rated Current of Fuses
	Voltage V	Rated Current Amps.			
MN 3004D	220	18.2	60	6	50
	380	10.5	60	4	35
MN 5004D	220	26.0	60	6	50
	380	15.0	60	4	35

We recommend, however, the use of an AUTOMATIC star-delta switch, specially designed for WESTFALIA separators. This switch is equipped with one release each for the start and for the run, ensuring a full motor protection. Switching from star to delta connection after about 10 minutes, and from start release to working release which takes place 1 1/2 to 2 minutes later, is effected by built-in timers. The automatic star-delta switch is operated by a push-button station which mostly exists on the dairy switchboards. In addition, it is recommended that two indicating lights, one for the start, and one for the run be installed. When ordering an automatic star-delta switch state working voltage of three-phase network and control voltage.

2.2 Three phase AC motor for MN 3004: 4.5 kW
for MN 5004: 5.5 kW

Separators MN 3004 and MN 5004 are powered by a totally enclosed built-in three phase AC motor with centrifugal clutch. This motor can be started either across the line by means of a three-pole switch, or through a star-delta switch (as per the following table). When using a star-delta starter, switch over from star to delta connection after 4 to 6 seconds.

Separator Model	50 Cycle		Manual Three-Pole Switch or Star-Delta Switch	Minimum Section of Lead-in Wires	Rated Current of Fuses
	Voltage V	Rated Current Amps.			
MN 3004	220	17,3	60	6	50
	380	10,0	60	4	35
MN 5004	220	21,8	60	6	50
	380	12,6	60	4	35

If for across-the-line starting a three phase contactor with overload release is used, the release must be adjusted to 1.5 to 1.8 times the value of the rated current because of the increased starting current. To obtain, however, a PERFECT motor protection, switch over to a second contactor equipped with a release that is adjusted to the rated current of the motor, as soon as the separator bowl has reached its operating speed.

2.3 Direction of rotation and speed of separator bowl

The bowl must turn clockwise, when looked at from above.

Bowl speed: for MN 3004D and MN 3004: 6500 RPM
for MN 5004D and MN 5004: 6000 RPM.

3. REMOVING THE HORIZONTAL GEAR PARTS MN 3004D, MN 5004D

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3.1 Removing the motor shaft (fig.3)

- 1) Unscrew hexagon head screws 10 and remove fan cover 16.
- 2) Unscrew hexagon head screws 19 (holding bearing shield).
- 3) Unscrew hexagon head screws 35 and remove protecting cover 33.
- 4) Remove wheel protecting cover.
- 5) Loosen screws 30a as well as clamp plates 30b and 30c of worm wheel.
- 6) Unscrew nut 8k while locking motor shaft 8a by putting a screw driver into the bore of brake drum 8g.
- 7) Pull brake drum off the motor shaft.
- 8) Loosen motor shaft by rapping gently with a rubber hammer against the free shaft end and pull out motor shaft with parts 8b-f, h, 11-15 and 17-18, while holding worm wheel to prevent damage to gear teeth. Ball bearing 38 remains in bearing housing 42.

3.2 Removing the worm wheel (fig.3)

- 1) Remove the motor shaft (see sect.3.1).
- 2) Take worm wheel assembly with clamp plates, 30a-s), out of gear chamber.

3.3 Removing the stator (fig.3)

- 1-6) See sect.3.1 items 1 and 3 to 7.
Do NOT loosen screws 19 (holding bearing shield).
- 7) Loosen motor shaft 8a by rapping gently with a rubber hammer against the free shaft end and pull it out together with stator assembly 20 (including motor housing and terminal box), and parts 8b-f, h, 11-15, 17, and 18. While pulling out, hold worm wheel to prevent damage to gear teeth.
- 8) Unscrew nut 8d and remove fan 8b.
- 9) Unscrew hexagon head screws 19 and pull off bearing shield 17 with parts 8f, 11-15, and 18.
- 10) Pull stator assembly 20 (including motor housing and terminal box) off the motor shaft.

3.4 Removing ball bearing 13 (motor side, fig.3)

- 1) Remove the motor shaft (see sect. 3.1).
- 2) Unscrew nut 8d and remove fan 8b.
- 3) Pull distance sleeve 8f off the motor shaft.
- 4) Pull off bearing shield 17 together with parts 11-15, and 18.
- 5) Unscrew hexagon head screws 11 and remove bearing cover 14 with felt ring 12 and gasket 15.
- 6) Push ball bearing 13 out of bearing shield.

3.5 Removing ball bearing 38 (brake side, fig.3)

- 1) Remove the motor shaft (see sect. 3.1).
- 2) Unscrew hexagon head screws 32 and remove bearing cover 31 with parts 38-43.
- 3) Push ball bearing 38 out of bearing housing 42.

4. REMOVING THE HORIZONTAL GEAR PARTS MN 3004, MN 5004 =====

4.1 Removing the clutch shoes (fig.4)

- 1) Unscrew hexagon head screws 34 and remove protecting cover 32.
- 2) Unscrew nut 39 while locking motor shaft 8a by putting a screw driver into the bore of clutch drum 31f.
- 3) Pull clutch driver 31k with clutch shoes 31g and snap ring 31h off the motor shaft.
- 4) Pull clutch shoes off the pins of clutch driver.

4.2 Removing the centrifugal clutch (fig.4)

- 1) Remove clutch shoes (see sect. 4.1).
- 2) Remove wheel protecting cover.
- 3) Loosen screws 30a as well as clamp plates 30b and 30c of worm wheel.
- 4) Remove screws 38 through bores of clutch drum 31f.
- 5) Use special puller to remove clutch drum assembly 31a-f together with parts 40 to 44.

4.3 Removing the motor shaft (fig.4)

- 1) Remove clutch shoes (see sect. 4.1).
- 2) Unscrew hexagon head screws 10 and remove fan cover 16.
- 3) Unscrew hexagon head screws 19 (holding bearing shield).
- 4) Loosen motor shaft assembly 8a-g by rapping gently with a rubber hammer against the free shaft end, and pull it out with parts 11 to 15, 17, and 18.

4.4 Removing the worm wheel (fig.4)

- 1) Remove centrifugal clutch (see sect. 4.2).
- 2) Remove motor shaft (see sect. 4.3, item 2-4). While pulling out motor shaft assembly, hold worm wheel to prevent damage to gear teeth.
- 3) Take worm wheel assembly with clamp plates, 30a-h, out of gear chamber.

4.5 Removing the stator (fig.4)

- 1) Remove clutch shoes (see sect. 4.1).
- 2) Unscrew hexagon head screws 10 and remove fan cover 16.
- 3) Loosen motor shaft assembly 8a-g by rapping gently with a rubber hammer against the free shaft end, and pull it out together with stator assembly 20 (including motor housing and terminal box), and parts 11-15, 17, and 18.
- 4-6) Refer to sect. 3.3, item 8-10.

4.6 Removing ball bearing 13 (motor side, fig.4)

- 1) Remove motor shaft (see sect. 4.3).
- 2-6) Refer to sect. 3.4, item 2-6.

4.7 Removing ball bearing 42 (brake side, fig.4)

- 1) Remove centrifugal clutch (see sect. 4.2).
- 2) Use screw driver to force snap ring 41 out of groove of clutch drum 31f.
- 3) Pull ball bearing 42 off the neck of clutch drum.

5. REMOVING THE VERTICAL GEAR PARTS (fig.3 or 4)

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- 1) Unscrew hexagon head screws 29k.
- 2) Remove snap ring 25m.
- 3) Pull off spindle guiding ring 25k.
- 4) Pull of spindle cap 25f.
- 5) Pull out worm spindle 25a together with parts 25b-d, g, and h, and with the parts of "neck bearing bridge assembly with covering" 29a-h, m-p.

6. ADJUSTING THE BOWL HEIGHT (fig.3 or 4)

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Loosen clamp ring 2a (fig.8) by opening handle 2h. Screw off bottom bearing cap 27. Then adjust height of bowl by turning bottom bearing threaded piece 26b so that when lifting the skimmilk discharge assembly (fig.9), the distance between holding ring of hood and skimmilk discharge is 4 mm ($5/32$ "). By a full turn of the bottom bearing threaded piece, the bowl can be raised or lowered by 2mm ($5/64$ ").

After adjusting to proper height or if it is not possible to adjust bowl to sufficient height, check distance between distance ring 29p and neck bearing protection cap 29m. This should be about 2 mm ($5/64$ "). The distance is correct if after removing the bowl, worm spindle 25a can be lifted by about 2 mm. If this is not possible, unscrew hexagon head screws 29k, remove spindle cap 29f, neck bearing protection shield 29n, neck bearing protection cap 29m, and spindle spring 25h, and check whether the two cams of distance ring 29p are located 2 mm below the upper edge of neck bearing pressure ring 29c. If necessary, file the cams to obtain proper distance.

The bowl height is adjusted at the factory prior to shipment of the separator. It must be checked for re-adjustment after each assembly of vertical gear parts, of a new bowl or a new centripetal pump.

7. LUBRICATING THE GEAR

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All bearing points of the separator, except the ball bearing 13 on the motor side, are splash lubricated from a central oil bath.

Prior to the first start of the separator, fill gear chamber with oil through oil filling bore at wheel protection cover until oil level is at the middle of sight glass. The separator requires about 2.5 litres of a well refined lubricating oil with a viscosity of 6 to 8E at 50°C. For order-number see page 35.

When machine is new, make first oil change after 3 to 4 weeks. When broken in, change oil every 2 to 3 months. When making oil change, flush gear chamber thoroughly with oil to clean out bronze particles.

Grease ball bearing 13 (fig.3 or 4) on motor side every six months and proceed as follows:

- 1) Unscrew nut 8d and remove fan 8b.
- 2) Unscrew hexagon head screws 11 and remove bearing cover 14 with felt ring 12 and gasket 15.
- 3) Fill in ball bearing grease. Make sure not to fill bearing completely.

8. ASSEMBLING THE BOWL AND THE FEED AND DISCHARGE SYSTEM

(for tools, see fig. 10)

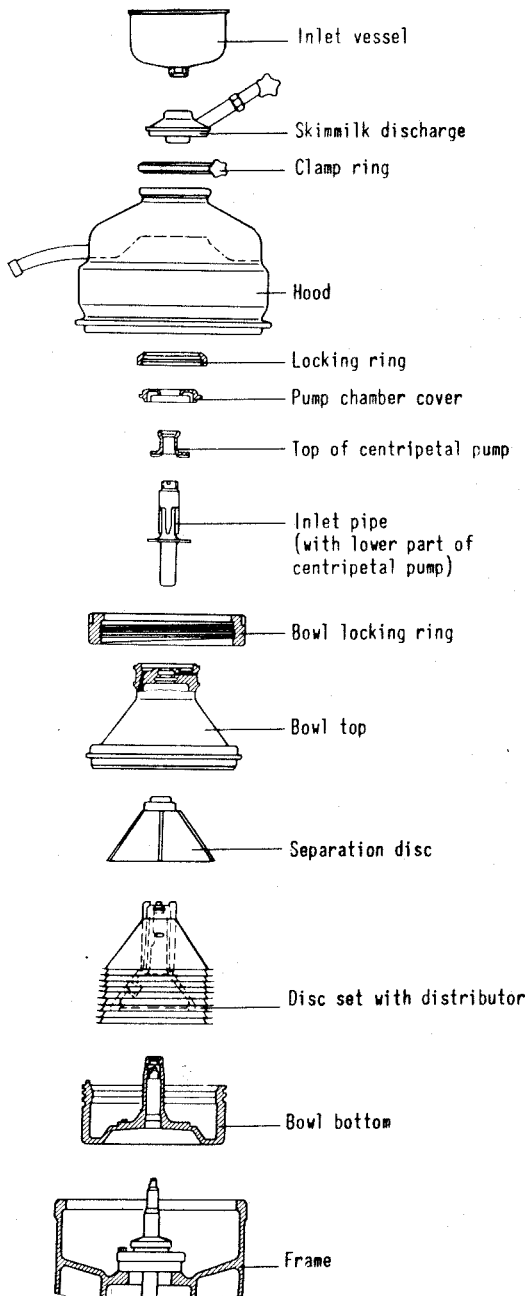


Fig. 2

Parts of bowl and feed and discharge system in the order of assembly.

For correct assembly of bowl and of feed and discharge system see fig.2. All bowl parts are marked with an "O" and all "O" marks must be aligned. Make sure that bore of bowl nave is dry and clean.

Prior to installing bowl bottom, put 2 or 3 drops of oil on guide surfaces of spindle cap 25f and of spindle guiding ring 25k (fig.3 or4), so that both parts can be easily moved on spindle.

Make sure that the "O" mark at the top of worm spindle 25a is in line with the "O" mark on one of the reinforcements holding bowl locking screws 3 (fig.3 or4).

- 1) By means of lifting device 13, place bowl bottom on worm spindle and be sure that "O" mark on locating cam is above the "O" mark on one of the reinforcements holding the bowl locking screws. The bowl locking screws must fit in the corresponding slots of the bowl bottom.
- 2) Turn locking screws slightly into recesses of bowl bottom.
- 3) Use tool 15 to place distributor into bowl bottom; watch for proper alignment.
- 4) Stack discs on neck of distributor in numerical order, disc No.1 on bottom.
- 5) Put on the specially shaped upper disc.
- 6) Insert gasket in bowl top.
- 7) Put on bowl top with the aid of lifting tongs 20.
- 8) Carefully clean and grease threads of bowl bottom and of bowl locking ring as well as centering and bearing surfaces. If bowl is made of solid stainless steel, Molykote paste should be vigorously rubbed or brushed into metal surfaces to prevent jamming.

Screw on bowl locking ring by hand in counter-clockwise direction and tighten it by rapping handle of wrench 22 with a mallet until "O" marks on ring and on bowl top are in line. Do NOT slip a pipe over wrench handle to obtain leverage!

- 9) Insert inlet pipe in distributor neck.
- 10) Put on upper part of centripetal pump.
- 11) Insert gasket in centripetal pump chamber cover.
- 12) Put on centripetal pump chamber cover.
- 13) Screw on centripetal pump chamber cover locking ring in counter-clockwise direction and tighten it by rapping handle of wrench 21 lightly with a mallet.
- 14) Mount the hood and fasten it with hinge screws.
- 15) Mount the skimmilk discharge and fasten it with clamp ring.
- 16) Install inlet vessel and tighten it, however without applying too much effort, - while holding inlet pipe with socket wrench 12, if necessary.

For the arrangement of the feed pipe with WESTFALIA High-Pressure Float for maintaining equal feed, see page 37-.

Check gaskets in bowl top, centripetal pump chamber cover, and in skimmilk discharge for wear. Replace them, if necessary.

After dismantling the bowl, place bowl parts on a rubber or wooden surface. Stack discs on drying rack 1 and put distributor on base 10. Never place bowl top on stone floor or into bowl locking ring.

9. THE SEPARATOR IN OPERATION

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After opening the feed cock, adjust cream quantity at skimmilk discharge valve. By turning the adjusting screw in clockwise direction more cream with a lower fat content is obtained.

If, in spite of an open skimmilk valve the cream flow is too important, inspect gaskets of skimmilk discharge or of centripetal pump chamber cover and check whether the overlapping edges at the seats of these gaskets are damaged; it might also be possible that the counterpressure is too high for the installed centripetal pump. In both cases, skimmilk penetrates into the cream catcher and the cream is diluted.

The built-in centripetal pump -3 47/64" for MN 3004D and MN 3004 and 3 15/16" for MN 5004D and MN 5004 (until 4 kg/cm²) is in general sufficient to press the milk without any additional pump through the heater or other apparatus.

In some cases, especially when using heaters with a low counterpressure it may be suitable to install in the line to follow or ahead of the heater a throttling valve which should be set at about 21 - 26 psig.

If overflow occurs in spite of an open skimmilk valve, the built-in centripetal pump is too small in diameter. Reduce feed rate for the time being and check with the factory for larger diameter centripetal pumps.

The separating temperature should be about 40°C , (104°F). If the milk has a tendency to precipitate too great an amount of albumin, a separating temperature of about 35°C (95°F) may be more suitable.

In case of variations of cream flow, the vent holes of the upper part of the bowl top below the centripetal pump chamber are plugged; if necessary, use a wire to keep the vent holes open.

Possible causes for inefficient separation

- 1) Unfavourable pre-treatment of milk (pumps, agitator, high temperature)
- 2) Variations in feed temperature in RPM of bowl or throughflow capacity.
- 3) Leakage at separation disc.

Take skimmilk samples at screwed union of skimmilk discharge assembly.

If the trouble cannot be found with the separator or with the equipment ahead of the separator, check condition of chemicals used to analyse the skimmilk. Make a test in filling water instead of skimmilk into butyrometers.

After separation, feed warm water to the separator, until milk is completely discharged; then rinse with cold water.

L I S T O F P A R T S
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IMPORTANT !

When ordering parts, please indicate the following:

- 1) Model }
- 2) Serial No. }

of Separator:

Both designations are shown on the
name-plate.

The Serial No. also appears in the
upper frame part and on the bowl
locking ring.

- 3) Description }
- 4) Part No. }

of the part to be replaced:

For details, refer to List of Parts.

The Part No. is also shown on all major
parts.

- 5) Bowl No.

when ordering bowl parts only.

The bowl No. appears, in large figures,
on the bowl locking ring and on the
bowl bottom.

FRAME AND GEAR PARTS MN 3004D, MN 5004D (for 50 cycle)
for special motor without centrifugal clutch

List of Parts shown in Fig.3

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D	MN 5004D
-	Separator assembly	1	1048-0017	1051-0017
-	Frame assembly	1	1032-1100-090	1033-1100-170
1	Frame (one piece) assembly	1	1032-1006-040	1033-1006-040
1a	Bottom bearing housing	1	1033-1112-009	1033-1112-009
-	Threaded pin M 8x10 DIN 551-40 (for 1a)	1	0019-4940-000	0019-4940-000
2	Threaded shell	2	0019-0789-640	0019-0781-640
3	Bowl locking screw	2	0019-0529-160	0019-0529-160
-	Hinge screw assembly (4a-f)	2	1033-1127-000	1033-1127-000
4a	Handle nut	2	0013-2896-690	0013-2896-690
4b	Hinge screw	2	0019-1166-640	0019-1166-640
4c	Claw	2	1022-1130-000	1022-1130-000
4d	Cylindrical pressure spring	2	0006-4138-500	0006-4138-500
4f	Threaded pin M 6x8 DIN 417-Ms verchr.	2	0019-3792-640	0019-3792-640
5	Cylindrical pin 10h8x45 DIN 7-18Cr 8N	2	0026-1115-300	0026-1115-300
6	Hexagon screw M 8x25 DIN 931-50 Kupr.verchr.	4	0019-6490-550	0019-6490-550
7	Cam	2	1022-1095-000	1022-1095-000
-	Gear assembly (50 cycle)	1	1032-3300-050	1033-3300-080
-	Motor shaft assembly (8a-k)	1	1032-3399-020	1033-3399-080
8a	Motor shaft with rotor ass.	1	1032-3395-020	1033-3395-080
8b	Fan	1	1033-3311-010	1033-3311-010
8c	Key (for fan)	1	0026-1741-160	0026-1741-160
8d	Nut M 22x1,5 WSN 13-40/3, 18Cr 8N	1	0013-3270-300	0013-3270-300
8f	Distance sleeve	1	0026-5988-060	0026-5988-060
8g	Brake drum	1	1033-3371-000	1033-3371-000
8h	Key (for brake drum)	1	0026-1741-160	0026-1741-160
8k	Nut M 22x1,5 WSN 13-40/1, Stahl	1	0013-3135-060	0013-3135-060
9	Washer	3	0026-1371-640	0026-1371-640
10	Hexagon screw M 12x280 DIN 931-40 verchr.	3	0019-6566-040	-
	M 12x270 DIN 931-40 verchr.	3	-	0019-6565-040
11	Hexagon screw M 8x20 DIN 933-50 kad.	3	0019-6903-090	0019-6903-090
12	Felt ring 40/52Ø x 5,5	1	0004-1953-830	0004-1953-830
13	Grooved ball bearing 6307 DIN 625	1	0011-6307-000	0011-6307-000
14	Bearing cover (drive side)	1	1033-3375-000	1033-3375-000
15	Gasket 81/114Ø x 1	1	0004-1816-700	0004-1816-700
16	Fan cover ass.	1	1033-1065-110	1033-1065-110
17	Bearing shield	1	1033-3069-000	1033-3069-000
18	Felt ring 40/52Ø x 5,5	1	0004-1953-830	0004-1953-830
19	Hexagon screw M 10x75 DIN 931-8G kad.	3	0019-6519-150	0019-6519-150
20	* Stator ass. 3FM 64-6-0,85	1	1032-4..5-00.	-
20	* Stator ass. 3FM 66-6-0,86	1	-	1033-4..5-00.

* When ordering this part, please state voltage, frequency, and varnish coat.

List of Parts shown in Fig.3

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D	MN 5004D
21	Oil collector	1	1033-3349-010	1033-3349-010
22	Hexagon screw M 8x20 DIN 933-50 kad.	3	0019-6903-090	0019-6903-090
23	Gasket 91/129 $\varnothing$ x 1	1	0004-1838-700	0004-1838-700
24	Felt ring 50/67 $\varnothing$ x 7	1	0004-1955-830	0004-1955-830
-	Worm spindle assembly (25a-m) (50 cycle)	1	1032-3429-000	1033-3429-000
25a	Worm spindle (50 cycle)	1	1032-3420-000	1033-3420-000
25b	Lower ball bearing locking ring	1	0008-2508-000	0008-2508-000
25c	Pendulum ball bearing 2305M/C 412 DIN 630	1	0011-2305-030	0011-2305-030
25d	Grooved ball bearing 6208/C 412 DIN 625 (upper)	1	0011-6208-010	-
	6209/C 412 DIN 625 (upper)	1	-	0011-6209-010
25f	Spindle cap	1	0008-4001-600	0008-4501-600
25g	Upper ball bearing locking ring	1	0008-4008-000	0008-4508-000
25h	Spindle spring	1	0006-4230-160	0006-4231-160
25k	Spindle guiding ring	1	1071-3416-000	1072-3416-000
25m	Snap ring	1	0026-1470-170	0026-1447-500
-	Bottom bearing assembly (26a-f)	1	0010-4200-000	0010-4200-000
26a	Snap ring	1	0026-1482-170	0026-1482-170
26b	Bottom bearing threaded piece	1	0010-4202-000	0010-4202-000
26c	Cylindrical pressure spring	1	0006-4250-160	0006-4250-160
26d	Bottom bearing pressure piece	1	0010-4201-200	0010-4201-200
26f	Set of bottom bearing running parts	1	0010-4210-000	0010-4210-000
27	Bottom bearing cap	1	0010-4203-200	0010-4203-200
28	Gasket 55/70 $\varnothing$ x 2	1	0004-5048-740	0004-5048-740
-	Neck bearing bridge ass. with covering (29a-p)	1	0008-4000-200	0008-4500-200
29a	Gasket 126/177 $\varnothing$ x 0,3 (lower)	1	0004-5001-770	-
29a	Gasket 129/182 $\varnothing$ x 0,3 (lower)	1	-	0004-5017-770
-	Neck bearing bridge ass. (29b-g)	1	0008-4010-200	0008-4510-200
29b	Neck bearing bridge	1	0008-4006-230	0008-4506-230
29c	Neck bearing pressure ring	1	0008-4007-090	0008-4507-090
29d	Spring piston	6	0026-1289-110	0026-1289-110
29f	Set of neck bearing springs 21,95 $\varnothing$ /4,5 $\varnothing$ x 32 - 5 1/2 Wdg.1	1	0006-4216-060	-
	21,95 $\varnothing$ /5,5 $\varnothing$ x 30,8-4 1/2 Wdg.1	1	-	0006-4306-060
29g	Threaded nipple	6	0019-6601-030	0019-6601-030
29h	Upper gasket 109/177 $\varnothing$ x 0,3	1	0004-5000-770	-
29h	Upper gasket 115/182 $\varnothing$ x 0,3	1	-	0004-5016-770
29k	Hexagon screw M 12x90 DIN 931-50 kad.	3	0019-6544-090	0019-6544-090
29m	Neck bearing protecting cap	1	0008-4002-230	0008-4502-230
29n	Neck bearing protecting shield	1	0008-4003-080	0008-4503-080
29p	Distance ring	1	0008-4009-000	0008-4509-000

List of Parts shown in Fig.3

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D	MN 5004D
30	Worm wheel ass. with clamp plates (30a-s) (50 cycle)	1	1032-3449-000	1033-3449-000
-	Worm wheel ass. (30a-n) (50 cycle)	1	1032-3440-000	1033-3440-000
30a	Toothed rim (50 cycle)	1	1032-3443-009	1033-3443-009
30b	Cylindrical screw CN 10x35 DIN 84-40	6	0019-2440-000	0019-2440-000
30c	Wheel body ass.	1	1033-3445-000	1033-3445-000
30d	Hexagon screw M 10x50 DIN 933-50 kad.	3	0019-6941-090	0019-6941-090
30f	Hexagon nut M 10 DIN 934-40 kad.	3	0013-0279-030	0013-0279-030
30g	Pressure ring	1	1033-3442-000	1033-3442-000
30h	Bent pressure spring	4	0006-4213-160	0006-4213-160
30k	Pressure ring	1	1033-3433-000	1033-3433-000
30m	Bushing	1	1033-3444-000	1033-3444-000
30n	Notched set pin 10x25 DIN 1472-Stahl	3	0026-1560-120	0026-1560-120
30p	Clamp plate (with thread)	1	1072-3447-000	1072-3447-000
30r	Clamp plate (without thread)	1	0743-3446-000	0743-3446-000
30s	Hexagon screw M 10x90 DIN 931-80 kad.	3	0019-6522-150	0019-6522-150
31	Bearing cover	1	1033-3376-000	1033-3376-000
32	Hexagon screw M 8x35 DIN 931-50 kad.	4	0019-6493-090	0019-6493-090
33	Protecting cap	1	1033-1066-020	1033-1066-020
34	Washer	3	0026-1371-640	0026-1371-640
35	Hexagon screw M 12x100 DIN 933-Ms verchr.	3	0019-6984-640	0019-6984-640
-	Brake assembly (36a-f)	2	1073-1043-000	1073-1043-000
36a	Brake housing	2	0021-3544-640	0021-3544-640
36b	Brake bolt ass.	2	1073-1031-000	1073-1031-000
36c	Tapered handle	2	0021-3515-690	0021-3515-690
36d	Cylindrical pressure spring	2	0006-4338-160	0006-4338-160
36f *	Brake lining	2	0021-4100-860	0021-4100-860
- *	Countersunk rivet 4x13 DIN 661-Cu (for 36f)	4	0026-1262-550	0026-1262-550
37	Threaded pin M 8x10 DIN 438-40	2	0019-3973-000	0019-3973-000
38	Grooved ball bearing 6407/C 412 DIN 625	1	0011-6407-010	0011-6407-010
39	Felt ring 50/57ø x 7	1	0004-1955-830	0004-1955-830
40	Snap ring	1	0026-1460-170	0026-1460-170
41	Gasket 125,5/162ø x 1 (for 31)	1	0004-5428-700	0004-5428-700
42	Bearing housing	1	1033-3131-020	1033-3131-020
43	Gasket 125,5/162ø x 1 (for 42)	1	0004-5428-700	0004-5428-700
44	Foot assembly (see fig.6)	3	see page 27	see page 27

* This part is included in brake bolt assembly 36b, but it is also available as separate item.

TACHOMETER DRIVE AND TACHOMETER
 MN 3004D, MN 5004D, and MN 3004, MN 5004
 =====

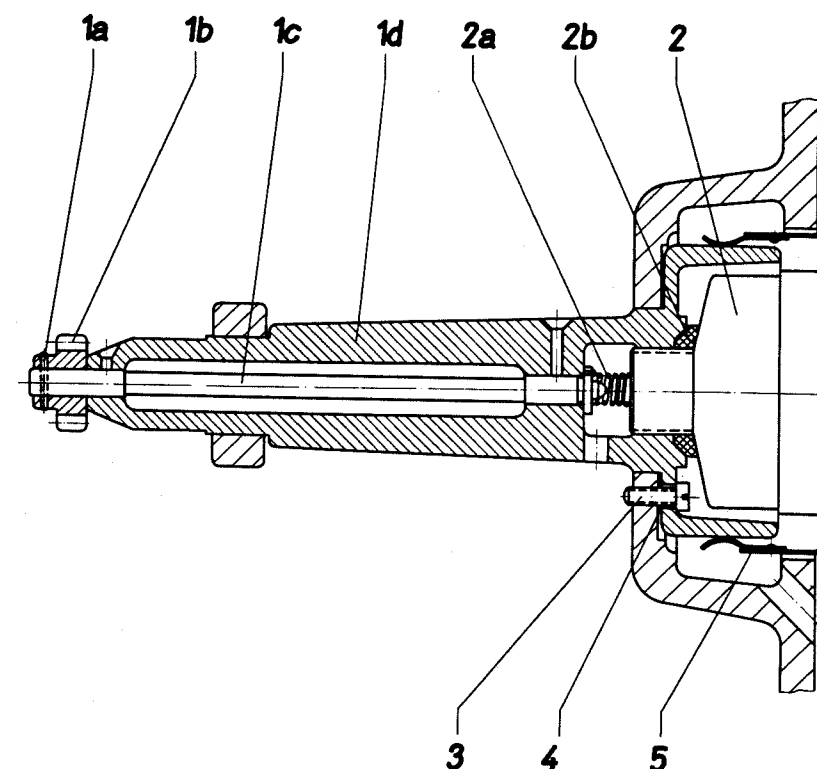


Fig. 5

Fig. 4
 see inner page

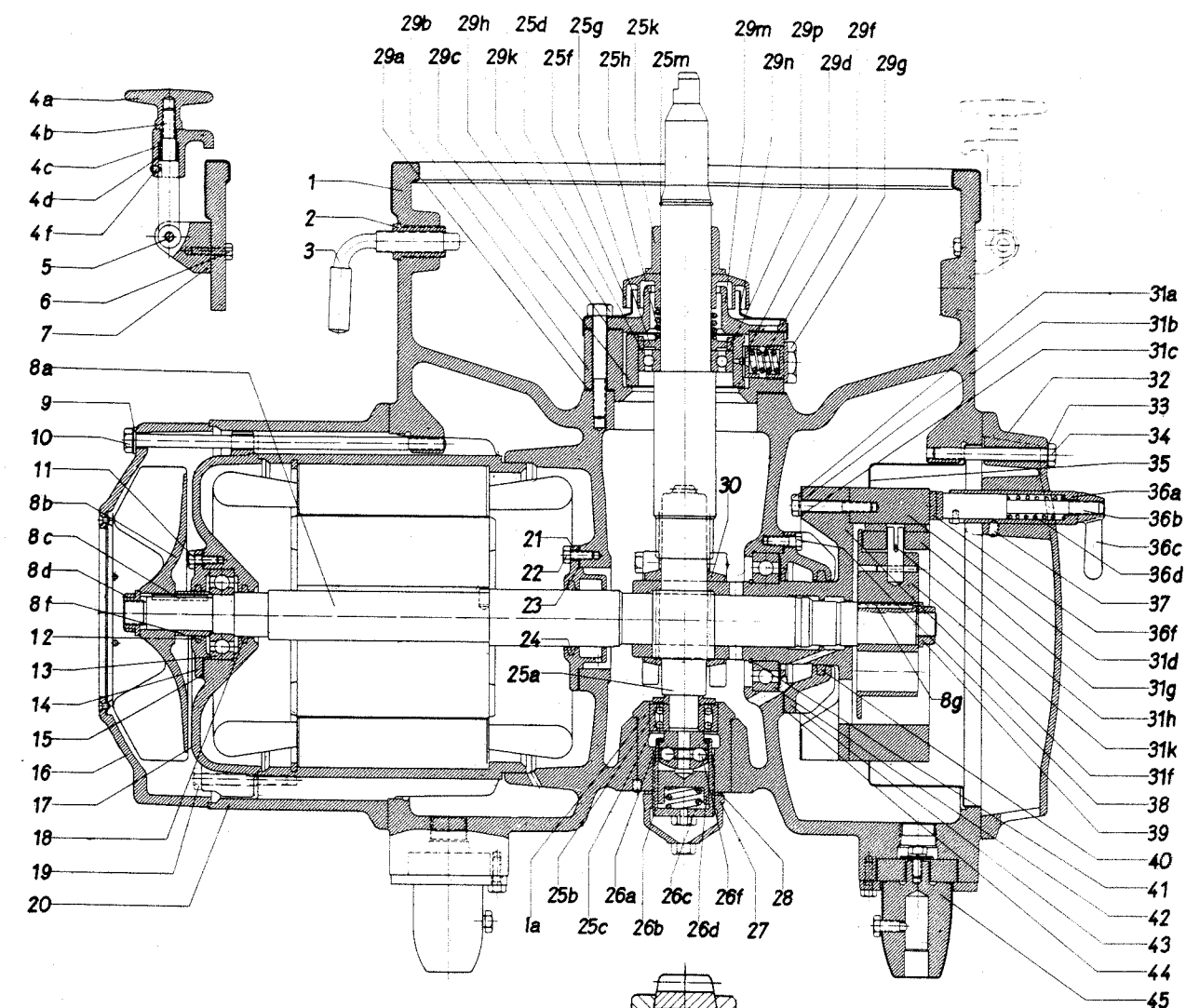
Item No.	Part Description	Quantity	Part - No.	
			MN 3004D MN 3004	MN 5004D MN 5004
-	Tachometer drive assembly (1a-d)	1	1032-3490-000	1033-3490-000
1a	Cylindrical notched pin 2,5x16 DIN 1473, Stahl	1	0026-1561-120	0026-1561-120
1b	Toothed wheel	1	1033-3483-010	1033-3483-010
1c	Shaft assembly	1	1032-3485-000	1033-3485-000
1d	Tachometer housing	1	1032-3493-000	1033-3493-010
2	Tachometer assembly	1	8473-3000-020	8473-3000-020
2a	*Cylindrical pressure spring	1	0006-4013-160	0006-4013-160
2b	*Felt ring 29/40ø x 10	1	0004-1974-830	0004-1974-830
-	*Sight glass	1	0001-0050-820	0001-0050-820
3	Cylindrical screw M6x18 DIN 84-40 kad.	3	0019-2250-030	0019-2250-030
4	Gasket 58/82ø x 1	1	0004-5212-700	0004-5212-700
5	Cap ass.	1	1033-3494-010	1033-3494-010

* This part is included in tachometer assembly 2, but it is also available as separate item.

List of Parts shown in Fig. 4

Item No.	Part Description	Quantity	Part - No.	
			MN 3004	MN 5004
<u>Parts that are not shown in Fig. 4</u>				
Wheel protecting cover		1	1033-1004-000	1033-1004-000
Gasket 174x294x1	} (for wheel protecting cover)	1	0004-5643-700	0004-5643-700
Washer		4	0026-1371-640	0026-1371-640
Hexagon screw M 12x35 DIN 931-its verchr.		4	0019-6533-640	0019-6533-640
Oil fill plug		1	1072-1005-010	1072-1005-010
Gasket 27/38ø x 2 (for oil fill plug)		1	0004-5036-740	0004-5036-740
Sight glass assembly		1	0001-0006-640	0001-0006-640
Gasket 35/44ø 1,5 (for sight glass)		1	0004-5034-760	0004-5034-760
Oil drain screw		1	0019-0291-640	0019-0291-640
Gasket 17/28ø x 2 (for oil drain screw)		1	0004-1874-710	0004-1874-710
Inspection cover assembly		1	1033-1060-000	1033-1060-000
Sludge discharge tube		1	0018-0164-300	0018-0062-400

FRAME AND GEAR PARTS MN 3004, MN 5004
with normal motor and centrifugal clutch
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(Scale 2,5 : 1)

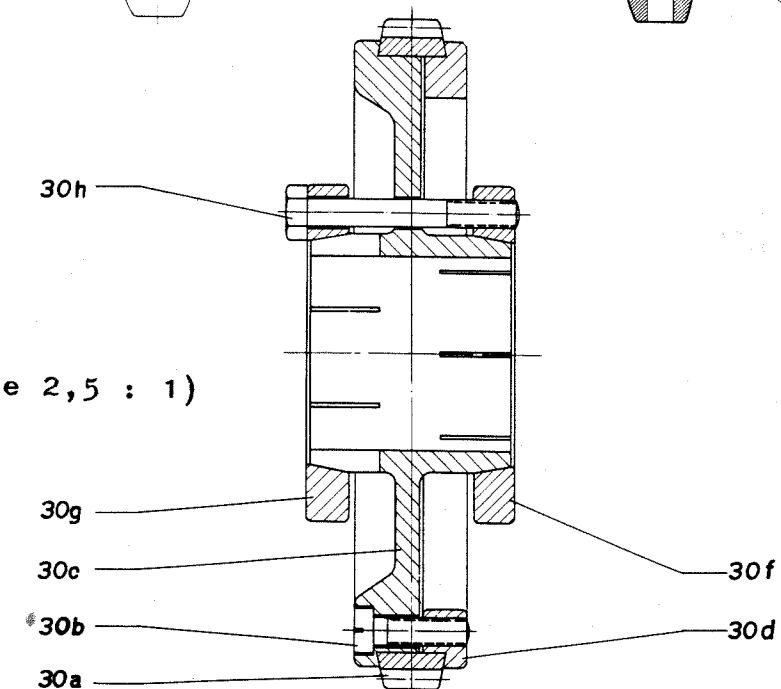


Fig.4

Parts that are not shown in Fig.3

Part Description	Quantity	Part - No.	
		MN 3004D	MN 5004D
Wheel protecting cover	1	1033-1004-000	1033-1004-000
Gasket 174x294x1	1	0004-5643-700	0004-5643-700
Washer	4	0026-1371-640	0026-1371-640
Hexagon screw M 12x35 DIN 931-Ms verchr.	4	0019-6533-640	0019-6533-640
Oil fill plug	1	1072-1005-010	1072-1005-010
Gasket 27/38 $\varnothing$ x 2 (for oil fill plug)	1	0004-5036-740	0004-5036-740
Sight glass ass.	1	0001-0006-640	0001-0006-640
Gasket 35/44 $\varnothing$ x 1,5 (for sight glass)	1	0004-5034-760	0004-5034-760
Oil drain screw	1	0019-0291-640	0019-0291-640
Gasket 17/28 $\varnothing$ x 2 (for oil drain screw)	1	0004-1874-710	0004-1874-710
Inspection cover assembly	1	1033-1060-000	1033-1060-000
Sludge discharge tube	1	0018-0164-300	0018-0062-400

FRAME AND GEAR PARTS MN 3004D, MN 5004D
for special motor without centrifugal clutch
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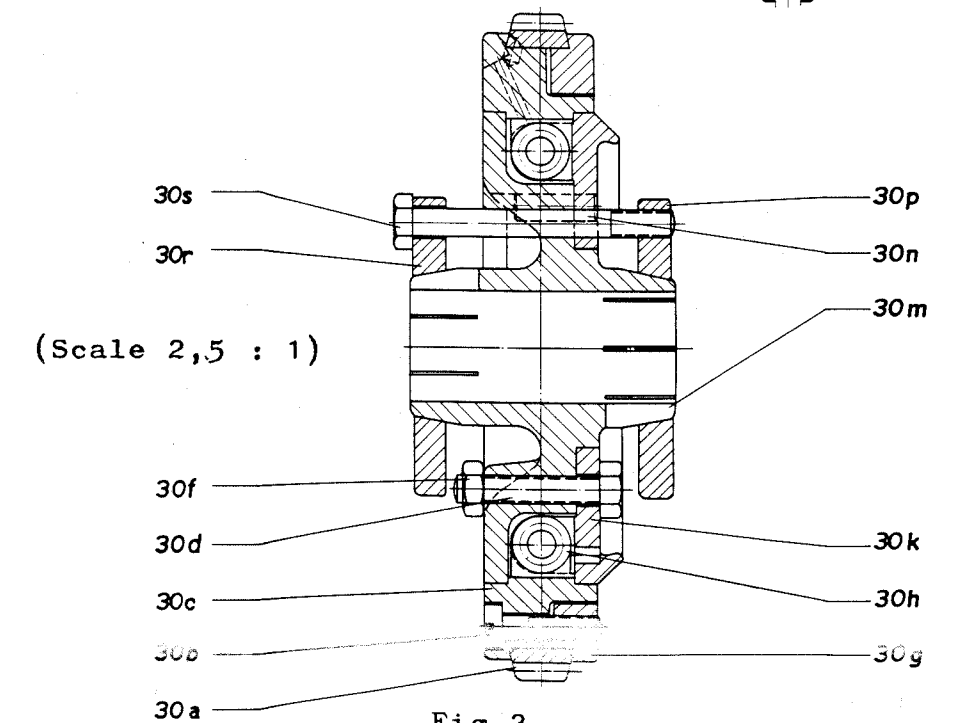
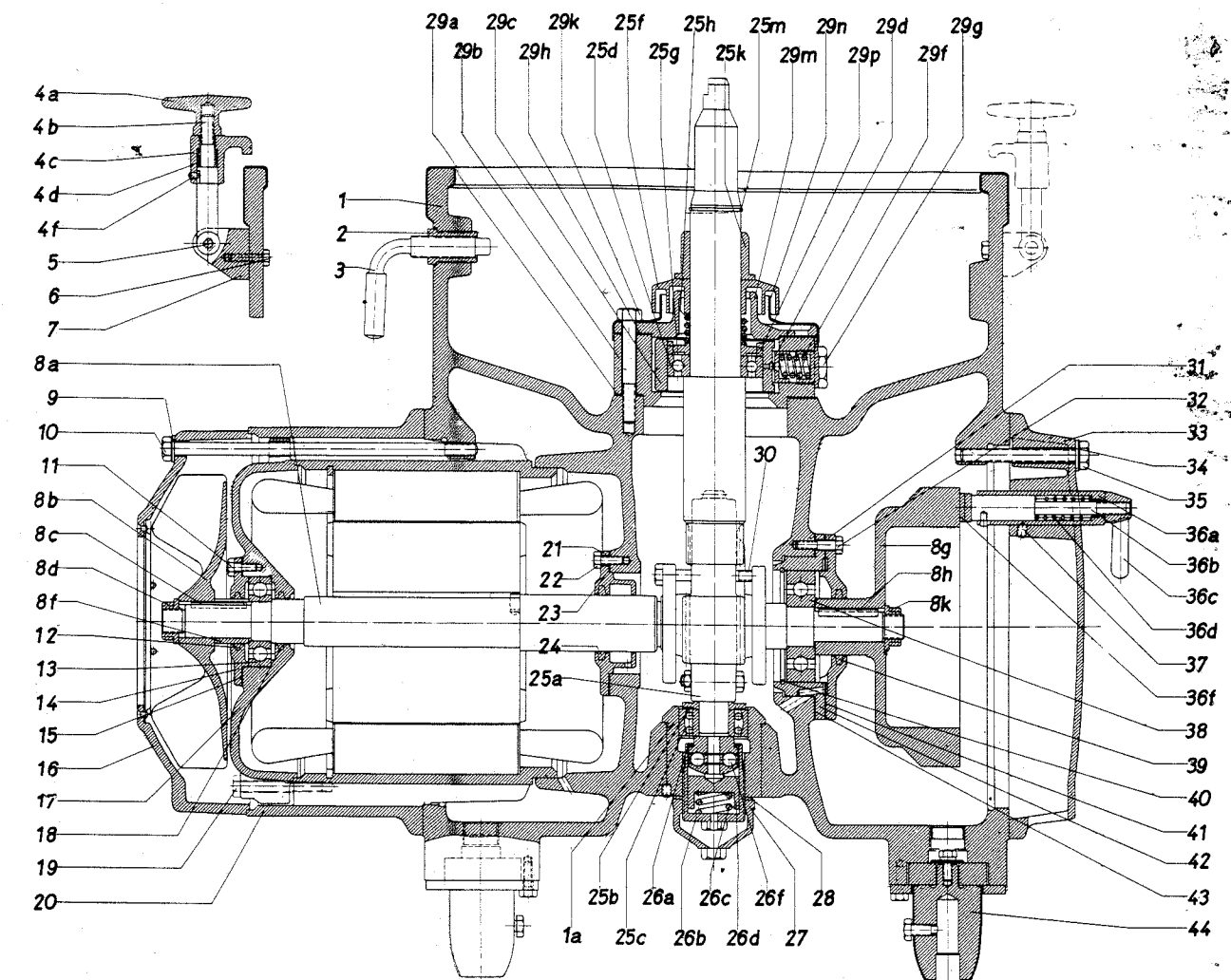


Fig.3

FRAME AND GEAR PARTS MN 3004, MN 5004 (for 50 cycle)
with normal motor and centrifugal clutch
=====

List of Parts shown in Fig.4

Item No.	Part Description	Quantity	Part - No.	
			MN 3004	MN 5004
-	Separator assembly	1	1048-0018	1051-0018
-	Frame assembly	1	1032-1100-100	1033-1100-180
1	Frame (one piece) assembly	1	1032-1006-040	1033-1006-040
1a	Bottom bearing housing	1	1033-1112-009	1033-1112-009
-	Threaded pin M 8x10 DIN 551-40 (for 1a)	1	0019-4940-000	0019-4940-000
2	Threaded shell	2	0019-0789-640	0019-0781-640
3	Bowl locking screw	2	0019-0529-160	0019-0529-160
-	Hinge screw assembly (4a-f)	2	1033-1127-000	1033-1127-000
4a	Handle nut	2	0013-2896-690	0013-2896-690
4b	Hinge screw	2	0019-1166-640	0019-1166-640
4c	Claw	2	1022-1130-000	1022-1130-000
4d	Cylindrical pressure spring	2	0006-4138-500	0006-4138-500
4f	Threaded pin M 6x8 DIN 417-4s verchr.	2	0019-3792-640	0019-3792-640
5	Cylindrical pin 10h8x45 DIN 7 - 18Cr 8Ni	2	0026-1115-300	0026-1115-300
6	Hexagon screw M 8x25 DIN 931-50 Kupro.verchr.	4	0019-6490-550	0019-6490-550
7	Cam	2	1022-1095-000	1022-1095-000
-	Gear assembly (50 cycle)	1	1032-3300-070	1033-3300-100
-	Motor shaft assembly (8a-g)	1	1032-3399-010	1033-3399-010
8a	Motor shaft with rotor ass.	1	1032-3395-010	1033-3395-010
8b	Fan	1	1033-3311-010	1033-3311-010
8c	Key (for fan)	1	0026-1741-160	0026-1741-160
8d	Nut M 22x1,5 MSN 13-40/3, 18Cr 8Ni	1	0013-3270-300	0013-3270-300
8f	Distance sleeve	1	0026-5988-060	0026-5988-060
8g	Key (for drive pulley)	1	0026-1741-160	0026-1741-160
9	Washer	3	0026-1371-640	0026-1371-640
10	Hexagon screw M 12x280 DIN 931-40 verchr. M 12x270 DIN 931-40 verchr.	3 3	0019-6566-040 -	- 0019-6565-040
11	Hexagon screw M 8x20 DIN 933-50 kad.	3	0019-6903-090	0019-6903-090
12	Felt ring 40/52Ø x 5,5	1	0004-1953-830	0004-1953-830
13	Grooved ball bearing 6307 DIN 625	1	0011-6307-000	0011-6307-000
14	Bearing cover (drive side)	1	1033-3375-000	1033-3375-000
15	Gasket 81/114Ø x 1	1	0004-1816-700	0004-1816-700
16	Fan cover	1	1033-1065-110	1033-1065-110
17	Bearing shield	1	1033-3069-000	1033-3069-000
18	Felt ring 40/52Ø x 5,5	1	0004-1953-830	0004-1953-830
19	Hexagon screw M 10x75 DIN 931-86 kad.	3	0019-6519-150	0019-6519-150
20	* Stator assembly 3FM 64-6	1	1032-4..5-01.	-
20	* Stator assembly 3FM 66-6	1	-	1033-4..5-01.
21	Oil collector	1	1033-3349-010	1033-3349-010
22	Hexagon screw M 8x20 DIN 933-50 kad.	3	0019-6903-090	0019-6903-090
23	Gasket 91/129Ø x 1	1	0004-1838-700	0004-1838-700
24	Felt ring 50/67Ø x 7	1	0004-1955-830	0004-1955-830

* When ordering this part, please state voltage, frequency, and varnish coat.

Fig.3
see inner page

List of Parts shown in Fig. 4

Item No.	Part Description	Quantity	Part - No.	
			MN 3004	MN 5004
-	Worm Spindle ass. (<u>50 cycles</u>) (25a-m)	1	1032-3429-000	1033-3429-000
25a	Worm spindle (<u>50 cycles</u>)	1	1032-3420-000	1033-3420-000
25b	Lower ball bearing locking ring	1	0008-2508-000	0008-2508-000
25c	Pendulum ball bearing 2305H/C 412 DIN 630	1	0011-2305-030	0011-2305-030
25d	Upper grooved ball bearing 6208/C 412 DIN 625	1	0011-6208-010	-
	6209/C 412 DIN 625	1	-	0011-6209-010
25f	Spindle cap	1	0008-4001-600	0008-4501-600
25g	Upper ball bearing locking ring	1	0008-4008-000	0008-4508-000
25h	Spindle spring	1	0006-4230-160	0006-4231-160
25k	Spindle guiding ring	1	1071-3416-000	1072-3416-000
25m	Snap ring	1	0026-1470-170	0026-1447-500
-	Bottom bearing ass. (26a-f)	1	0010-4200-000	0010-4200-000
26a	Snap ring	1	0026-1482-170	0026-1482-170
26b	Bottom bearing threaded piece	1	0010-4202-000	0010-4202-000
26c	Cylindrical pressure spring	1	0006-4250-160	0006-4250-160
26d	Bottom bearing pressure piece	1	0010-4201-200	0010-4201-200
26f	Set of bottom bearing running parts	1	0010-4210-000	0010-4210-000
27	Bottom bearing cap	1	0010-4203-200	0010-4203-200
28	Gasket 55/70 ϕ x 2	1	0004-5048-740	0004-5048-740
-	Neck bearing bridge assembly with covering (29a-p)	1	0008-4000-200	0008-4500-200
29a	Lower gasket 126/177 ϕ x 0,3	1	0004-5001-770	-
29a	Lower gasket 129/182 ϕ x 0,3	1	-	0004-5017-770
-	Neck bearing bridge assembly (29b-g)	1	0008-4010-200	0008-4510-200
29b	Neck bearing bridge	1	0008-4006-230	0008-4506-230
29c	Neck bearing pressure ring	1	0008-4007-090	0008-4507-090
29d	Spring piston	6	0026-1289-110	0026-1289-110
29f	Set of neck bearing springs 21,95 ϕ /4,5 ϕ x 32 - 5 1/2 Wdg.	1	0006-4216-060	-
	21,95 ϕ /5,5 ϕ x 30,8-4 1/2 Wdg.	1	-	0006-4306-060
29g	Threaded nipple	6	0019-6601-030	0019-6601-030
29h	Upper gasket 109/177 ϕ x 0,3	1	0004-5000-770	-
29h	Upper gasket 115/182 ϕ x 0,3	1	-	0004-5016-770
29k	Hexagon screw M 12x90 DIN 931-50 kad.	3	0019-6544-090	0019-6544-090
29m	Neck bearing protecting cap	1	0008-4002-230	0008-4502-230
29n	Neck bearing protecting shield	1	0008-4003-080	0008-4503-080
29p	Distance ring	1	0008-4009-000	0008-4509-000
30	Worm wheel ass. with clamp plates (<u>50 cycles</u>) (30a-h)	1	1032-3449-010	10 33-3449-010
-	Worm wheel assembly (<u>50 cycles</u>) +(30a-d)	1	1032-3440-010	1033-3440-010
30a	Toothed rim (<u>50 cycles</u>)	1	1032-3443-009	1033-3443-009
30b	Cylindrical screw CN 10x35 DIN 84-40	6	0019-2440-000	0019-2440-000
30c	Wheel body assembly	1	1033-3445-010	1033-3445-010
30d	Pressure ring	1	1033-3442-000	1033-3442-000

List of Parts shown in Fig. 4

Item No.	Part Description	Quantity	Part - No.	
			MN 3004	MN 5004
30f	Clamp plate (with thread)	1	1084-3447-000	1084-3447-000
30g	Clamp plate (without thread)	1	0931-3446-000	0931-3446-000
30h	Hexagon screw M 10x75 DIN 931-8G kad.	3	0019-6519-150	0019-6519-150
-	Centrifugal clutch ass. (31a-k)	1	1073-3385-140	1073-3385-180
-	Clutch pulley assembly (31a-f, 41)	1	1073-3370-000	1073-3370-000
31a	Hexagon screw M 10x65 DIN 931-8G kad	4	0019-6517-150	0019-6517-150
31b	Lock washer	4	0026-1337-170	0026-1337-170
31c	Washer	1	1073-3367-000	1073-3367-000
31d	Ring	1	3313-3366-000	3313-3366-000
31f	Clutch pulley	1	1073-3365-000	1073-3365-000
31g	Clutch shoe assembly	2	1073-3397-020	1073-3397-030
-	* Clutch lining	2	0021-3380-890	0021-3380-890
-	* Pan-head rivet A 5x20 DIN 7338	8	0026-5530-550	0026-5530-550
31h	Cylindrical pressure spring	2	0006-4124-160	0006-4124-160
31k	Clutch driver	1	1073-3479-000	3048-3479-020
32	Protection cap	1	1033-1066-020	1033-1066-020
33	Washer	3	0026-1371-640	0026-1371-640
34	Hexagon screw M 12x100 DIN 933-MS verchr.	3	0019-6984-640	0019-6984-640
35	Baffle	1	1033-1118-010	1033-1118-010
-	Cylindrical pressure spring (for 35)	1	0006-4108-150	0006-4108-150
--	Brake assembly (36a-f)	2	1073-1043-000	1073-1043-000
36a	Brake housing	2	0021-3544-640	0021-3544-640
36b	Brake bolt assembly	2	1073-1031-000	1073-1031-000
36c	Tapered handle	2	0021-3515-690	0021-3515-690
36d	Cylindrical pressure spring	2	0006-4338-160	0006-4338-160
36f	** Brake lining	2	0021-4100-860	0021-4100-860
-	** Countersunk rivet 4x13 DIN 661-Cu (for 36f)	4	0026-1262-550	0026-1262-550
37	Threaded pin M 8x10 DIN 438-40	2	0019-3973-000	0019-3973-000
38	Hexagon screw M 8x25 DIN 931-50 kad.	4	0019-6490-090	0019-6490-090
39	Nut M 22x1,5 WSN 13-40/1, Stahl	1	0013-3135-060	0013-3135-060
40	Felt ring 75/94ø x 8,2	1	0004-1963-830	0004-1963-830
41	+) Securing ring	1	0026-5874-170	0026-5874-170
42	Grooved ball bearing 6214/C 412 DIN 625	1	0011-6214-010	0011-6214-010
43	Bearing cover	1	0931-3375-010	0931-3375-010
44	Gasket 125,5/162ø x 1	1	0004-5428-700	0004-5428-700
45	Foot assembly (see fig.6)	3	see page 27	see page 27

* This part is included in clutch shoe assembly 31g, but it is also available as separate item.

** This part is included in brake bolt assembly 36b, but it is also available as separate item.

+) This part is included in clutch pulley assembly 31a-f, but it is also available as separate item.

FOUNDATION FRAME AND FOOT
 MN 3004D, MN 5004D, and MN 3004, MN 5004
 =====

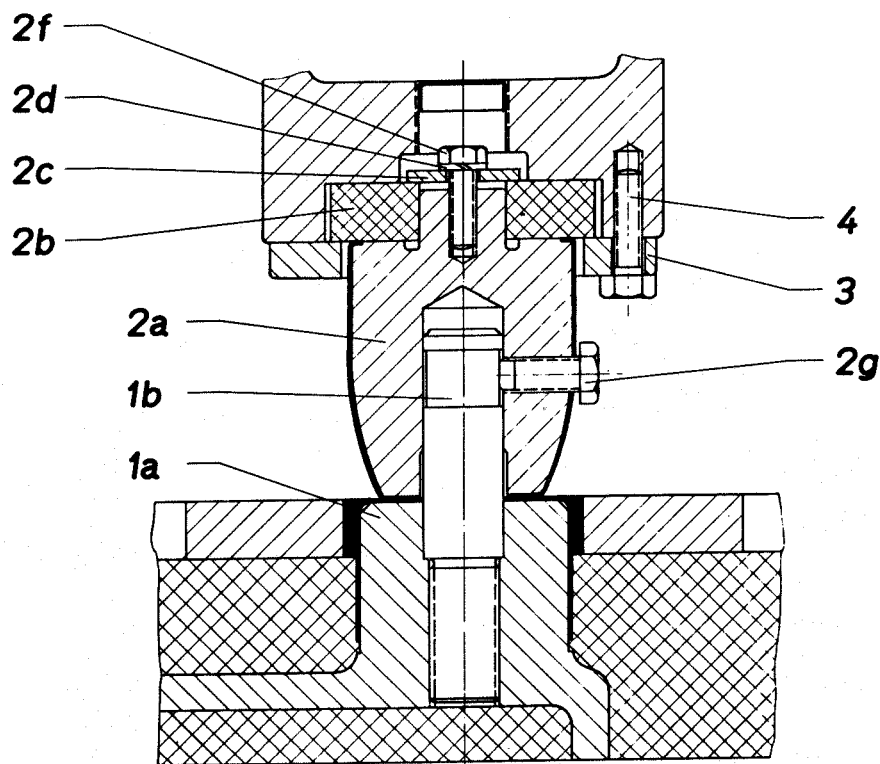


Fig. 6

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D MN 3004	MN 5004D MN 5004
-	Foundation frame assembly (1a-b)	1		1033-1020-020
1a	Foundation frame	1		1033-1003-020
1b	Bolt	3		1033-1033-010
-	Foot assembly (2a-g) (see also fig.3, item 44 or fig.4, item 45)	3		1033-1015-000
2a	Foot with covering	3		1033-1011-000
2b	Rubber cushion	3		0021-3017-750
2c	Washer	3		0026-1355-000
2d	Lock washer	3		0026-1325-170
2f	Hexagon screw M 8x20 DIN 933-Ms verchr.	3		0019-6903-640
2g	Hexagon screw AM 10x25 DIN 561-Ms verchr.	3		0019-5195-640
3	Flange	3		0001-0515-040
4	Hexagon screw M 8x25 DIN 931-50 Kupr.verchr.	9		0019-6490-550

BOWL
MN 3004D, MN 5004D, and MN 3004, MN 5004
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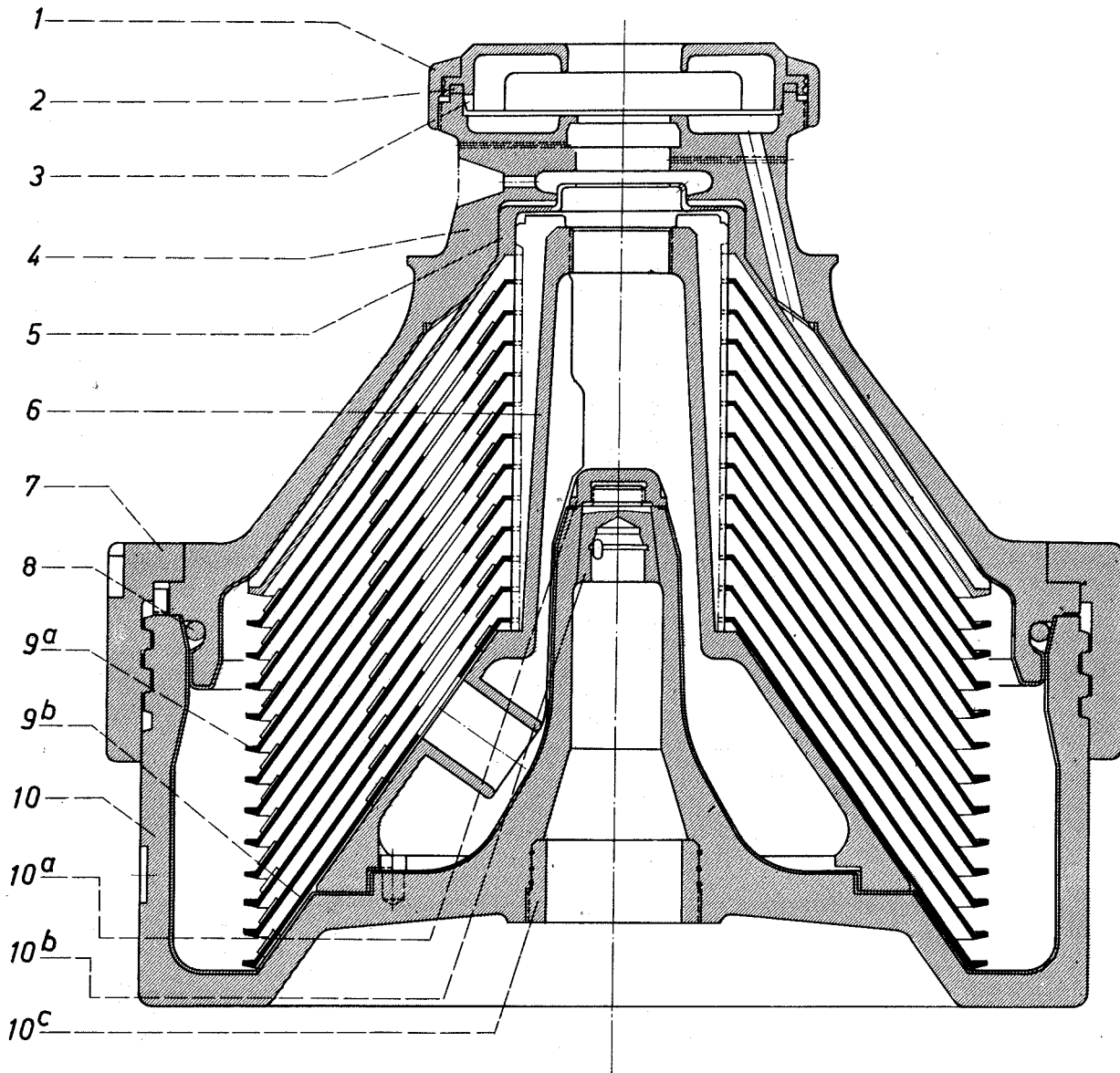


Fig. 7

BOWL MN 3004D, MN 5004D, and MN 3004, MN 5004

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Distributor, discs and centripetal pump chamber cover made of 18Cr 8Ni stainless steel. Bowl bottom and bowl top
tinned steel design, interior lined with 18Cr 10Ni 2Mo stainless steel.

List of Parts shown in Fig.7

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D MN 3004	MN 5004D MN 5004
-	Bowl assembly(1-10c)	1	1048-6600-000	1051-6600-080
1	Centripetal pump chamber			
	locking ring	1	1071-6631-010	1072-6631-030
2	Gasket 123/135 ϕ x 4	1	0007-2132-750	-
2	Gasket 140/152 ϕ x 4	1	-	0007-2133-750
3	Centripetal pump chamber cover	1	0939-6642-030	0940-6642-080
4 *	Bowl top assembly	1	1048-6610-000	1051-6610-000
5	Separating disc assembly	1	1095-6650-039	1096-6650-119
-	Gasket 100/4,7 ϕ (for separating disc)	1	-	0007-2054-750
6 *	Distributor assembly	1	1048-6620-030	1051-6620-060
7 *	Bowl locking ring	1	1071-6631-000	1072-6631-010
8	Gasket 299/9 ϕ	1	0007-2039-750	-
8	Gasket 347/9 ϕ	1	-	0007-2047-750
- *	Disc set assembly (9a-b)	1	1065-6660-010	1066-6660-010
-	Upper disc ass.	1	1065-6661-010	1066-6661-010
9a	Disc ass.	about 85	1065-6663-010	-
9a	Disc ass.	about 105	-	1066-6663-010
9b	Lower disc ass.	1	1065-6662-010	1066-6662-010
10 *	Bowl bottom	1	1032-6604-020	1033-6604-040
10a**	Nut M 24x1,5 WSN 13-42/2, 18Cr 8Ni	1	0013-3158-300	0013-3158-300
10b**	Driving head ass.	1	1072-6635-020	1072-6635-020
10c**	Bowl guiding ring	1	0020-7214-359	0020-7217-359

BOWL MN 3004D, MN 5004D, and MN 3004, MN 5004

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All parts are made of stainless steel, except centripetal pump chamber locking ring and bowl locking ring.

-	Bowl assembly (1-10b)	1	1048-6600-020	1051-6600-010
11	Centripetal pump chamber			
	locking ring	1	1071-6631-010	1072-6631-030
2	Gasket 123/135 ϕ x 4	1	0007-2132-750	-
2	Gasket 140/152 ϕ x 4	1	-	0007-2133-750
3	Centripetal pump chamber cover	1	0939-6642-080	0940-6642-080
4 *	Bowl top assembly	1	1048-6610-010	1051-6610-010
5	Separating disc assembly	1	1095-6650-039	1096-6650-119
-	Gasket 100/4,7 ϕ (for separating disc)	1	-	0007-2054-700
6 *	Distributor assembly	1	1048-6620-030	1051-6620-060
7 *	Bowl locking ring	1	1071-6631-000	-
7 *	Bowl locking ring assembly	1	-	1072-6631-020
8	Gasket 299/9 ϕ	1	0007-2039-750	-
8	Gasket 347/9 ϕ	1	-	0007-2047-700
- *	Disc set assembly (9a-b)	1	1065-6660-010	1066-6660-010
-	Upper disc ass.	1	1065-6661-010	1066-6661-010
9a	Disc ass.	about 85	1065-6663-010	-
9a	Disc ass.	about 105	-	1066-6663-010
9b	Lower disc ass.	1	1065-6662-010	1066-6662-010
10 *	Bowl bottom ass.	1	1032-6604-010	1033-6604-010
10a**	Nut M 24x1,5 WSN 13-42/2, 18Cr 8Ni	1	0013-3158-300	0013-3158-300
10b**	Driving head ass.	1	1072-6635-020	1072-6635-020

* This part can only be replaced by a WESTFALIA factory engineer or by a special repair shop authorized by WESTFALIA, because
of special re-fitting to machine and possible re-balancing of bowl.

** This part is included in bowl bottom assembly 10, but it is also available as separate item.

HOOD (with clamp ring)
MN 3004D, MN 5004D, and MN 3004, MN 5004
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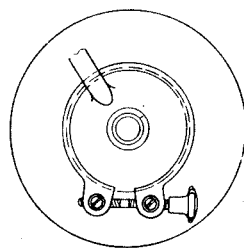
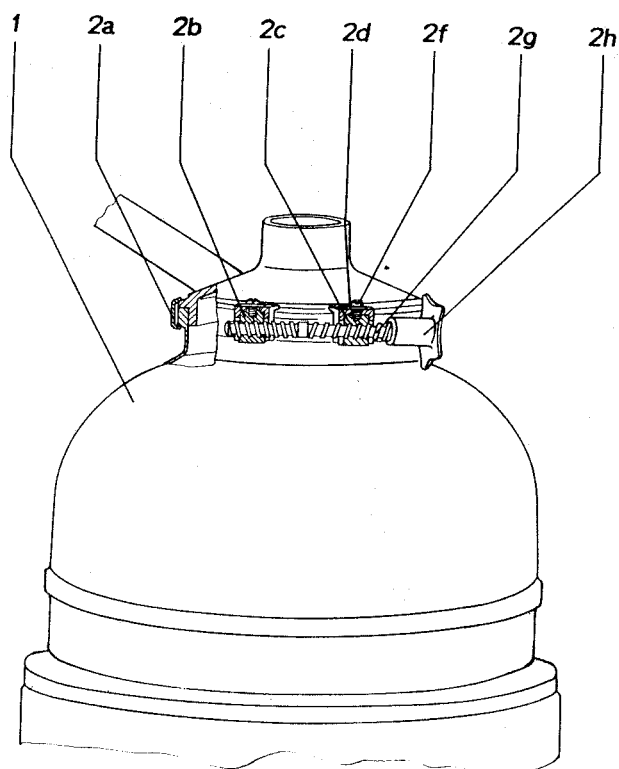


Fig. 8

HOOD (with clamp ring)
 MN 3004D, MN 5004D, and MN 3004, MN 5004
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List of Parts shown in Fig.8

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D MN 3004	MN 5004D MN 5004
-	Hood assembly (1-2h)	1	1032-7759-040	1033-7759-060
1	Hood	1	1032-7765-030	1033-7765-050
-	Clamp ring ass. (2a-h)	1	1033-7719-010	1033-7719-010
2a	Clamp ring	1	1033-7718-000	1033-7718-000
2b	Threaded piece (right-hand-thread)	1	1033-7717-010	1033-7717-010
2c	Threaded piece (left-hand-thread)	1	1033-7717-000	1033-7717-000
2d	Washer	2	0026-1343-300	0026-1343-300
2f	Lens head screw AM 6x10 DIN 85-Ms verchr.	2	0019-2507-640	0019-2507-640
2g	Threaded bolt	1	1033-1129-000	1033-1129-000
2h	Handle	1	0021-3122-640	0021-3122-640
-	Cylindrical pin (for 2h) 5h8x24 DIN 7 - 18Cr 10Ni 2Ti	1	0026-1075-400	0026-1075-400

FEED AND DISCHARGE SYSTEM AND CENTRIPETAL PUMP
 MN 3004D, MN 5004D, and MN 3004, MN 5004
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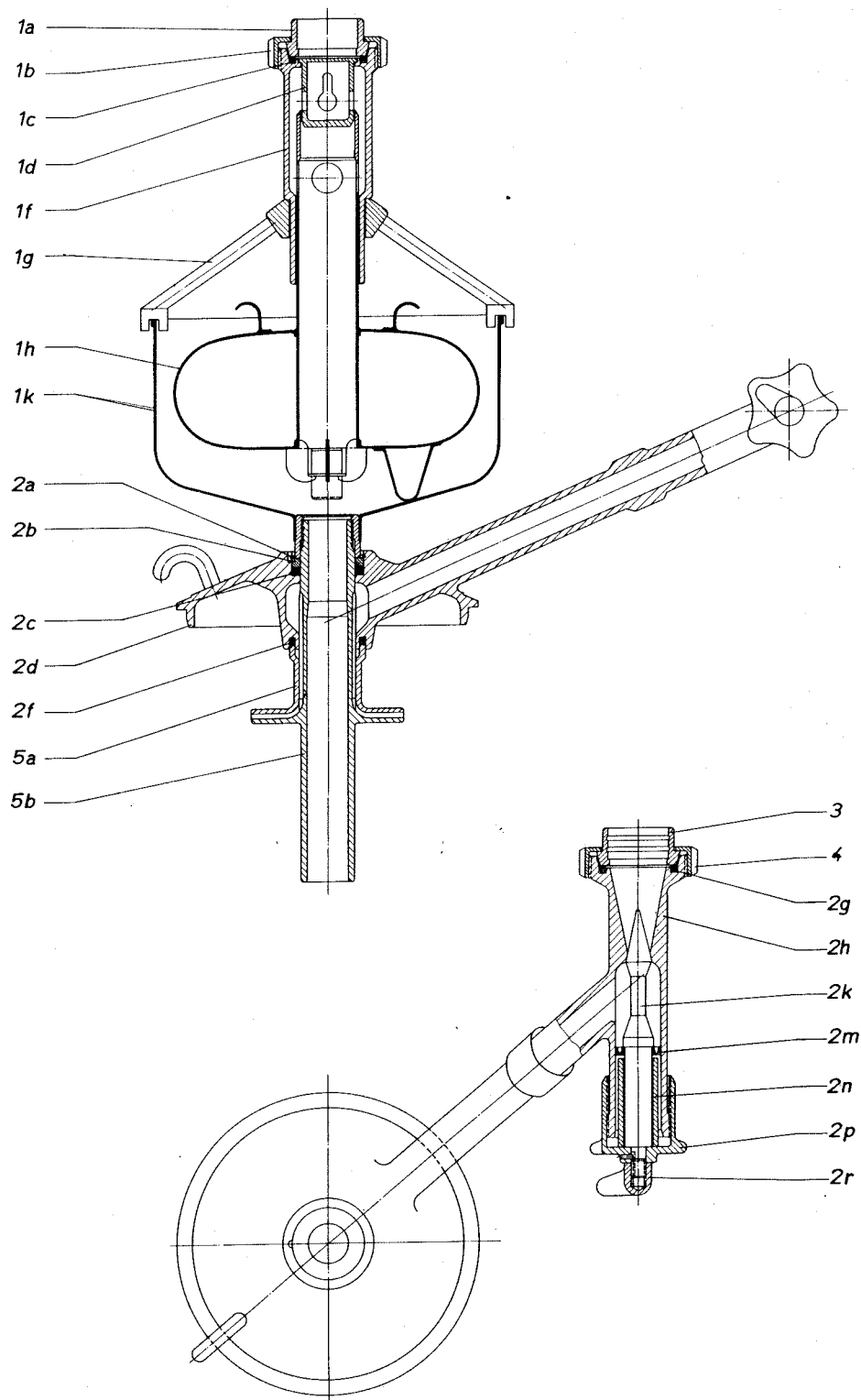


Fig. 9

FEED AND DISCHARGE SYSTEM AND CENTRIPETAL PUMP
MN 3004D, MN 5004D, and MN 3004, MN 5004

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(Bronze chromed)

List of Parts shown in Figure 9

Item No.	Part Description	Quantity	Part - No.	
			MN 3004D MN 3004	MN 5004D MN 5004
-	Open feed assembly (1a-k)	1	1032-2170-060	1033-2170-170
-	Connecting piece assy. (1a-f)	1	1032-2165-020	1033-2165-120
1a	Cone connection NW 40	1	0018-3949-300	0018-3949-300
1b	Grooved coupling nut	1	0013-2844-300	0013-2844-300
1c	Gasket G 40 DIN 11851	1	0007-2210-750	0007-2210-750
1d	Throttling piece	1	1032-2163-000	1033-2163-000
1f	Connecting piece	1	1033-2164-020	1033-2164-020
1g	Support	1	1032-2206-030	1032-2206-030
1h	High pressure float	1	1033-7730-010	1033-7730-010
1k	Inlet vessel	1	0807-7700-030	0809-7700-030
-	Discharge assembly (2a-4)	1	1048-2299-100	1051-2299-100
-	Skimmilk discharge ass. (2a-r)	1	1048-2295-040	1051-2295-050
2a	Snap ring	1	0026-5549-500	0026-1462-500
2b	Washer	1	0026-5649-660	0026-5653-660
2c	Upper gasket 30/42ø x 6	1	0007-2301-750	-
2c	Upper gasket 35/47ø x 6	1	-	0007-2288-750
2d	**Skimmilk discharge	1	1048-2285-020	1051-2285-020
2f	Lower gasket 36/44ø x 4	1	0004-2234-750	-
2f	Lower gasket 40/48ø x 5	1	-	0007-2229-750
-	**Skimmilk valve assembly (2g-r)	1	1051-2290-100	1051-2290-100
2g	Gasket 42/52ø x 5	1	0007-2210-750	0007-2210-750
2h	Valve housing	1	1051-2291-080	1051-2291-080
2k	Valve cone	1	1073-2278-020	1073-2278-020
2m	Grooved ring 18/30ø x 6	1	0004-5718-840	0004-5718-840
2n	Distance sleeve	1	0026-5998-610	0026-5998-610
2p	Adjusting screw	1	1033-2276-000	1033-2276-000
2r	Hat nut	1	0013-2852-640	0013-2852-640
3	Cone connection (for pipe 38/40 mm - 1 1/2" dia.)	1	0018-3949-300	0018-3949-300
4	Grooved coupling nut	1	0013-2844-640	0013-2844-640
-	Centripetal pump assembly (5a-b)	1		
	95 mm - 3 3/4" dia., for maximum discharge pressure 4.0 atü = 57 psig.	1	0939-2213-110	-
	100 mm - 3 15/16" dia., for maximum discharge pressure 4.0 atü = 57 psig.	1	-	0940-2213-040
5a	Top of centripetal pump	1	0939-2253-020	0940-2253-020
5b	Inlet pipe	1	0939-2246-050	0940-2246-050

* This part is included in valve cone assembly 1f, but it is also available as separate item.

** Skimmilk discharge 2d and skimmilk valve assembly 2g-r are not available as separate items, but only as complete assemblies.

TOOLS AND ACCESSORIES
MN 3004D, MN 5004D, and MN 3004, MN 5004
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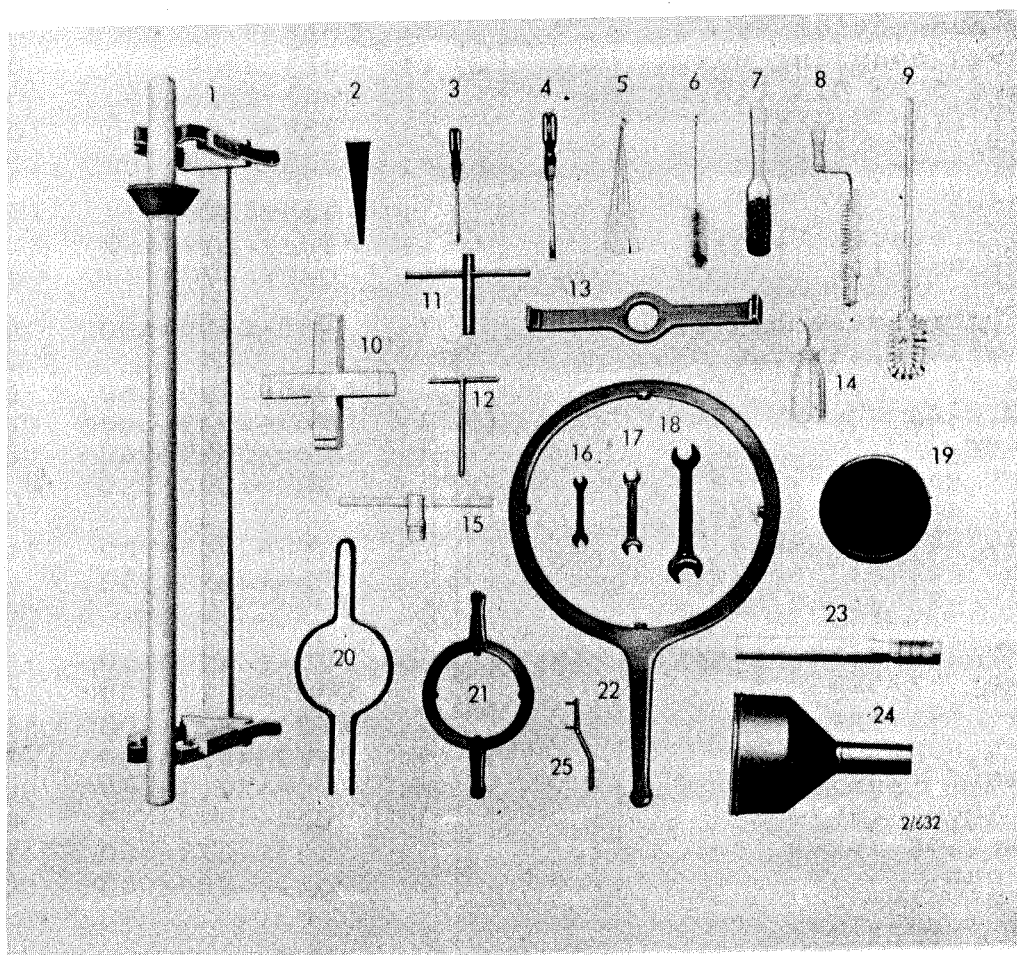


Fig. 10

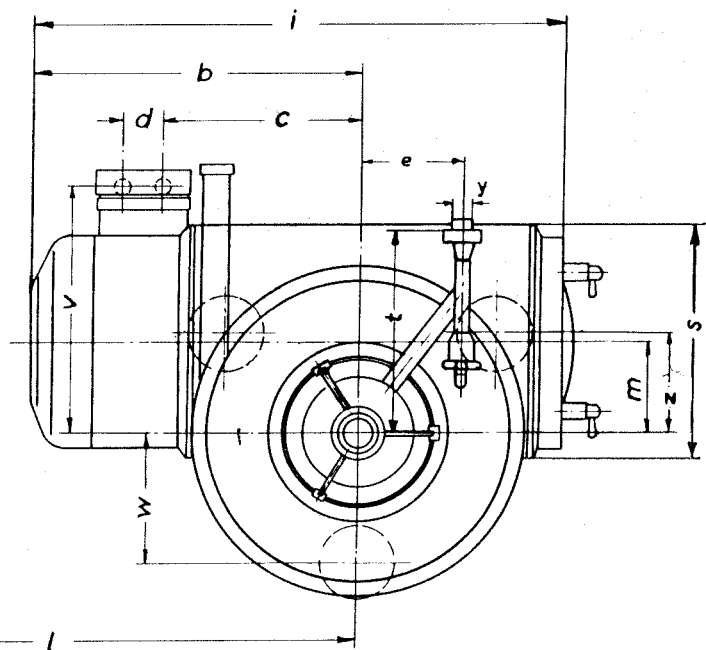
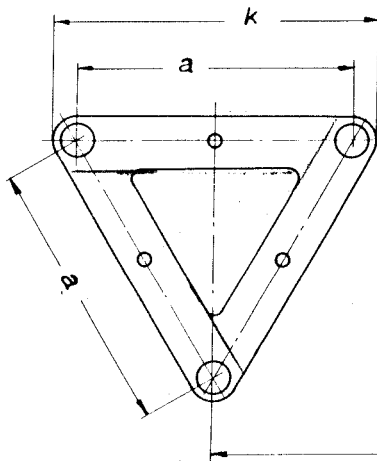
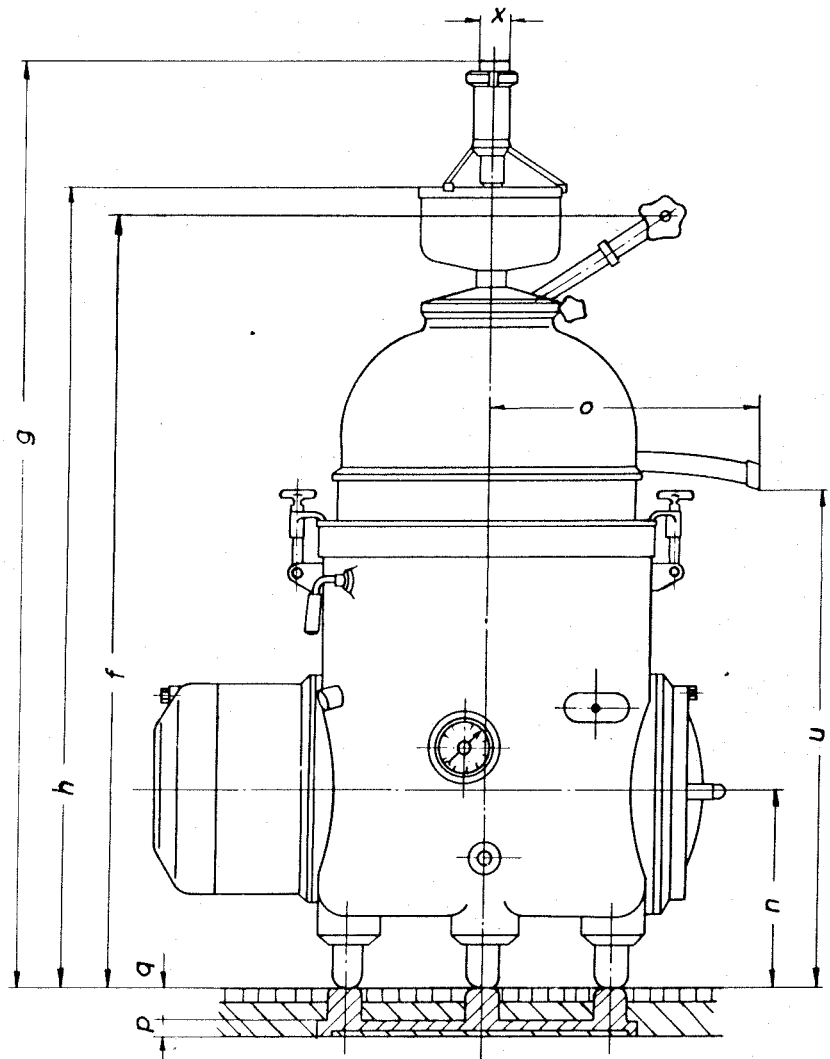
TOOLS AND ACCESSORIES
MN 3004D, MN 5004D, and MN 3004, MN 5004
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List of Parts shown in Fig. 10

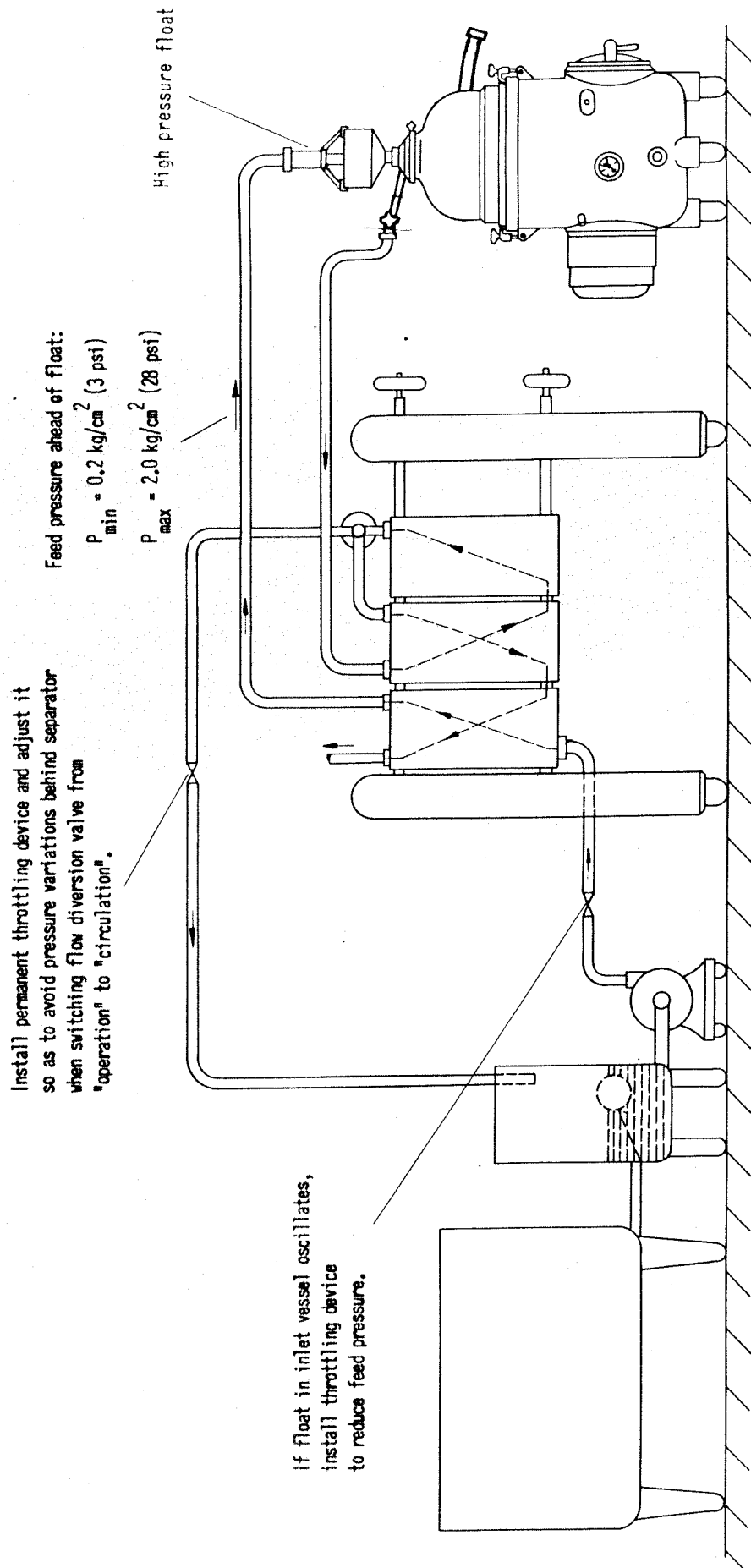
Item No.	Part Description	Quantity	Part - No.	
			MN 3004D MN 3004	MN 5004D MN 5004
-	Set of tools	1	1032-9900-000	1033-9900-030
-	Set of accessories	1	1033-9901-000	1033-9901-000
1	Drying rack (for discs)	1	1072-9923-000	1072-9923-000
-	Hexagon haad wood screw M 8x55 DIN 571-4D (for drying rack)	4	0019-5308-000	0019-5308-000
2	Oil filler	1	0003-0400-000	0003-0400-000
3	Screw driver 0,8x5,5x200	1	0003-4636-050	0003-4636-050
4	Screw driver 1,6x10x290	1	0003-4637-050	0003-4637-050
5	Pipe brush 15 mm dia.x85x285	4	0003-4544-960	0003-4544-960
6	Pipe brush 45 mm dia.x110x270	1	0003-4552-960	0003-4552-960
7	Brush 50x125x285 (for discs)	1	0003-4690-960	0003-4690-960
8	Rotating brush	1	0003-4667-800	0003-4667-800
9	Brush 70x100x500 (for distributor)	1	0003-4695-960	0003-4695-960
10	Base (for distributor)	1	0003-4623-950	0003-4625-950
11	Hexagon socket wrench 19 DIN 659	1	0003-4229-030	0003-4229-030
12	Socket wrench (for inlet pipe)	1	0003-0130-000	0003-0130-000
13	Bowl lifting device	1	1071-9905-010	1072-9905-010
14	Pressure oil can	1	0003-0256-890	0003-0256-890
15	Distributor lifting device	1	0807-9839-010	1033-9970-000
16	Double wrench 10x14 DIN 895	1	0003-4202-110	0003-4202-110
17	Double wrench 17x19 DIN 895	1	0003-4205-110	0003-4205-110
18	Double wrench 27x32 DIN 895	1	0003-4211-110	0003-4211-110
19	Oil cup	1	0003-0274-000	0003-0274-000
20	Lifting tongs (for bowl top)	1	0003-3462-170	0003-3466-170
21	Annular wrench (for centripetal pump chamber locking ring)	1	0003-3988-000	0003-3992-000
22	Annular wrench (for bowl locking ring)	1	0003-4049-030	0003-4056-030
23	Mallet	1	0003-0200-000	0003-0200-000
24	Neck bearing protection hood	1	0003-0296-000	0003-0296-000
25	Wrench for sight glass	1	0003-4585-000	0003-4585-000
-	Can containing 3 litres of lubricating oil 53; viscosity at 50°C: 45 to 61 cSt = 6 to 8E (SAE 30)	2	0015-0002-080	0015-0002-080
26	Clutch puller	1	1033-9911-000	1033-9911-000

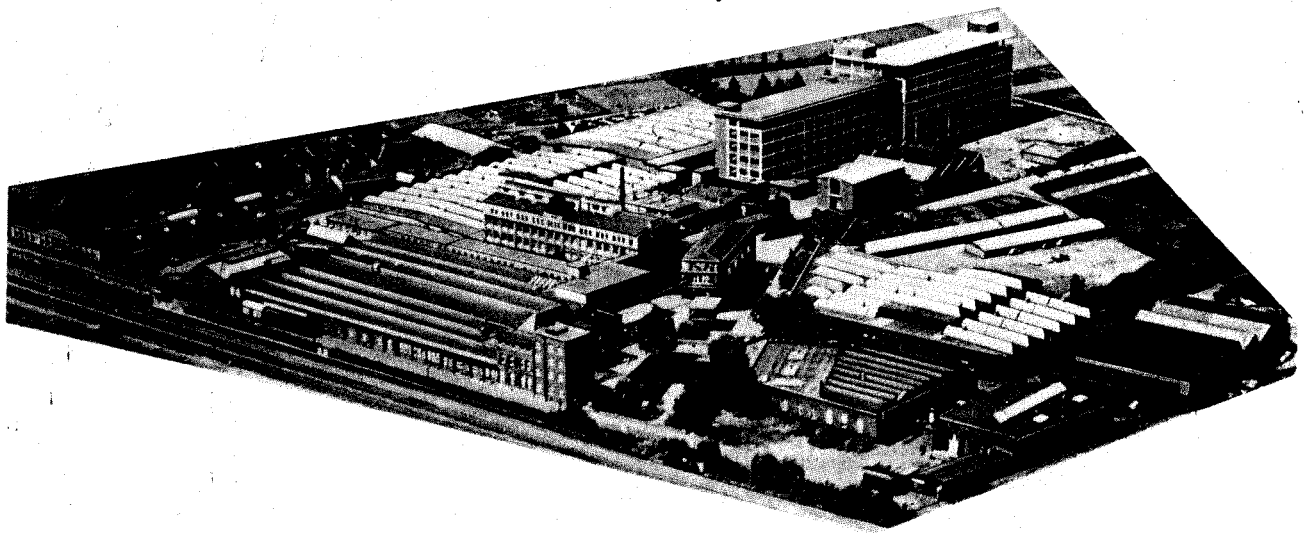
INSTALLATION PLAN
MN 3004D, MN 5004D, and MN 3004, MN 5004
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Model	MN 3004	MN 5004
Capacity Imp.gals./h	660	1100
a	16 1/2"	16 1/2"
b	20 1/16"	20 1/16"
c	12 3/16"	12 3/16"
d	2 5/8"	2 5/8"
e	7 9/16"	8 1/16"
f	44"	47 1/8"
g	54 5/16"	57 3/16"
h	46 5/8"	49 7/16"
i	33 1/2"	33 1/2"
k	19 1/16"	19 1/16"
l	51 3/16"	51 3/16"
m	5 1/2"	5 1/2"
n	12 3/8"	12 3/8"
o	17 1/2"	17 1/2"
p	1"	1"
q	2 3/16"	2 3/16"
s	15"	15"
t	12 1/16"	13"
u	27 1/2"	29 1/2"
v	14 1/2"	14 1/2"
w	6 7/8"	8 1/16"
x	1 1/2"	1 1/2"
y	1 1/2"	1 1/2"
z	7 1/16"	6 5/16"
Bowl speed, rpm	6500	6000
Motor speed, rpm	950	950
Motor power, kw	4,5	5,5
Total weight of machine, lbs	1200	1434
Weight of bowl, lbs	244	389



Arrangement of feed line when using the WESTFALIA float type OR





WESTFALIA SEPARATOR AG., OELDE/GERMANY