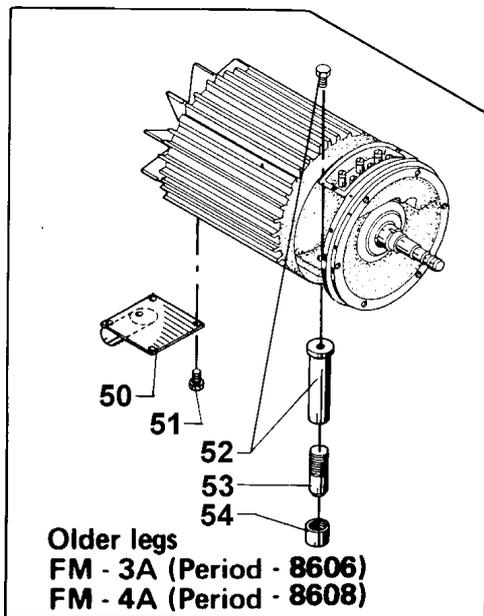
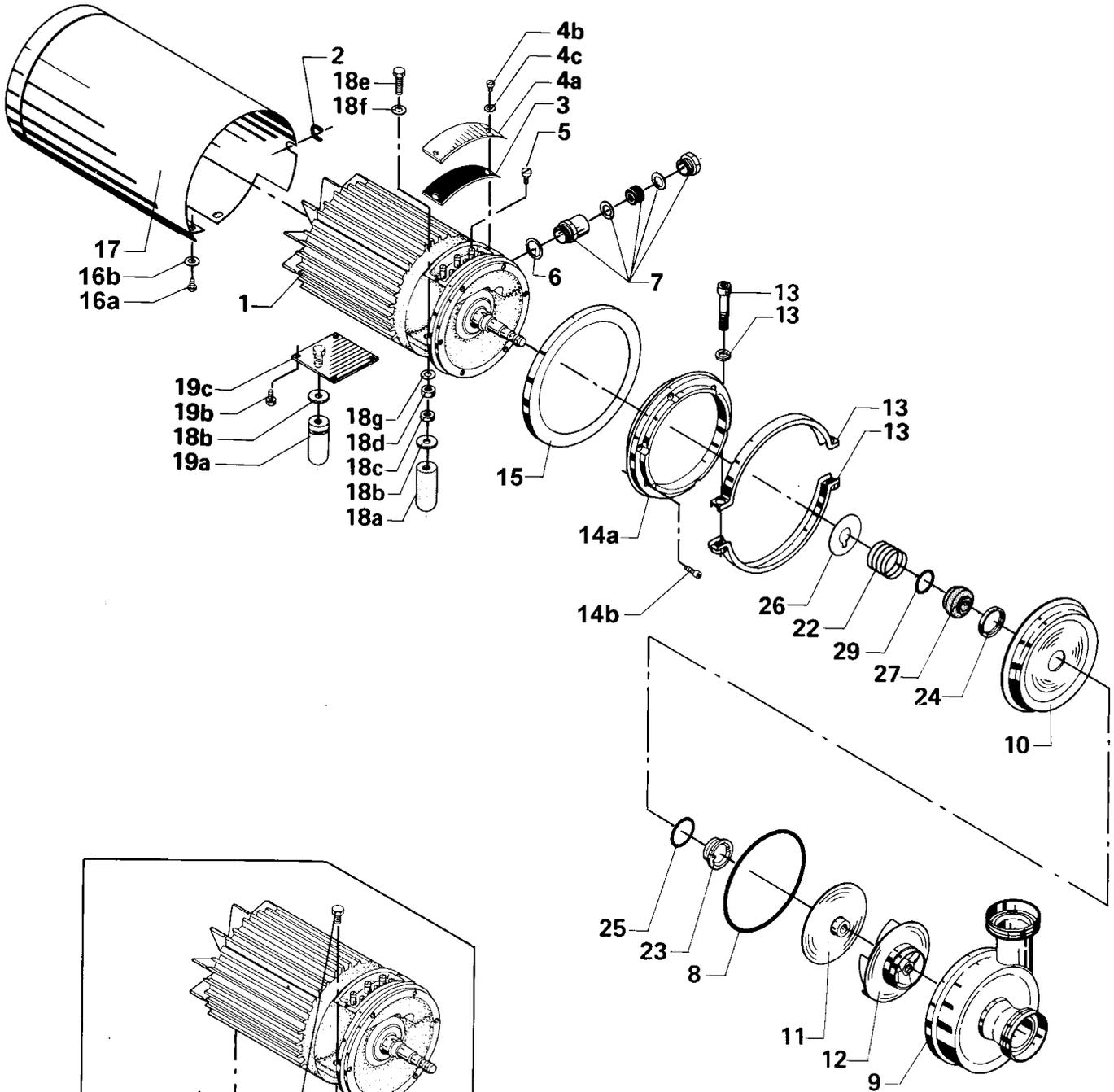


**Centrifugal Pumps – Single Shaft Seal  
Types FM-3A & FM-4A**



## Centrifugal Pumps – Single Shaft Seal Types FM-3A & FM-4A



### Single Shaft Seal

Pos.	Qty.	Denomination	FM-3A/4A
1	1	Motor 7.5 kW 220/380 V .....	31801-1107-1
	1	Motor 7.5 kW 230-260/400-440 V .....	31801-1107-2
	1	Motor 7.5 kW 380/660 V .....	31801-1107-3
	1	Fan .....	31438-0203-2
	1	Rotor with shaft .....	31458-0054-1
2	1	Cable protection .....	31438-0161-1
3	1	Packing .....	31458-0018-1
4a	1	Cover .....	31458-0017-1
4b	2	Screw .....	2211721-08
4c	2	Washer .....	9611-99-0752
5	1	Set screw for earth cable .....	9611-99-2035
6	1	Packing .....	31439-0049-1
7	1	Compression gland, 22.5 mm .....	31801-0154-4
8A	1	O-ring, NBR (Standard) .....	31439-0112-1
	1	O-ring, EPDM .....	31439-0112-4
	1	O-ring, FPM .....	31439-0112-5
	1	O-ring, PTFE .....	31439-0112-3
9	1	Pump casing with sanitary fittings. 76 mm inlet and outlet	
		ISO male .....	31458-0060-1
		SMS .....	31458-0060-2
		DIN .....	31458-0060-3
		ISO clamp .....	31458-0060-4
		BS .....	31458-0060-5
10	1	Back plate .....	31439-0101-1
13	1	Clamp set .....	9611-92-1001
14a	1	Flange .....	31458-0014-1
14b	6	Screw .....	2217751-22
15	1	Lining .....	31458-0025-1
16a	2	Screw .....	2210938-23
16b	2	Washer .....	9611-99-1831
17	1	Shroud .....	31458-0053-1
18a	2	Front leg .....	31460-1248-5
18b	3	Washer .....	31460-0104-1
18c	2	Nut .....	9611-99-1829
18d	2	Nut .....	9611-99-1829
18e	2	Screw .....	9611-99-1833
18f	2	Washer .....	9611-99-0706
18g	2	Spring washer .....	9611-99-0676
19a	1	Back leg .....	31458-0078-1
19b	4	Screw .....	221030-13
19c	1	Bracket for leg .....	31458-0079-1
24	1	Nut .....	31437-0120-1
26	1	Thrower .....	31439-0037-1

Pos.	Qty.	Denomination	FM-3A	FM-4A
11	1	Impeller cover .....	31439-0099-1	31459-0004-1
12*	1	Impeller (ø210) .....		31459-0002-1
	1	Impeller (ø185) .....		31459-0002-2
	1	Impeller (ø165) .....	31458-0015-1	31459-0002-3
	1	Impeller (ø145) .....	31458-0015-3	

\* Sometimes reduced impeller diameter. Check the diameter of the original impeller.

Accessorise (delivered with every new pump)

1	Spanner for impeller .....	31439-0104-1
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Δ	Service kit, NBR .....	9611-92-1058
Δ	Service kit, EPDM .....	9611-92-1059
Δ	Service kit, FPM .....	9611-92-1060
Δ	Service kit, PTFE .....	9611-92-1061

Parts marked with Δ are included in the Service kits.

Recommended spare parts: Service kits.

Pos.	Qty.	Denomination	FM-3A/4A
Δ		Shaft seal, complete, NBR (Standard) .....	9612-4392-01
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-1
27	1	Rotating seal ring .....	31439-0165-1
29	1	O-ring .....	31439-0168-1
Δ		Shaft seal, complete, EPDM .....	9612-4392-03
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-3
27	1	Rotating seal ring .....	31439-0165-1
29	1	O-ring .....	31439-0168-4
Δ		Shaft seal, complete, FPM .....	9612-4392-04
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-3
27	1	Rotating seal ring .....	31439-0165-1
29	1	O-ring .....	31439-0168-5
Δ		Shaft seal, complete, PTFE .....	9612-4392-02
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-3
27	1	Rotating seal ring .....	31439-0165-1
29	1	O-ring .....	31439-0168-3

#### Alternatives

		Shaft seal, complete, NBR (Standard) .....	9612-4392-05
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-1
27	1	Rotating seal ring SiC .....	31439-0165-1
29	1	O-ring .....	31439-0168-1

		Shaft seal, complete, EPDM .....	9612-4392-07
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-3
27	1	Rotating seal ring SiC .....	31439-0165-1
29	1	O-ring .....	31439-0168-4

		Shaft seal, complete, FPM .....	9612-4392-08
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-3
27	1	Rotating seal ring SiC .....	31439-0165-1
29	1	O-ring .....	31439-0168-5

		Shaft seal, complete, PTFE .....	9612-4392-06
22	1	Spring .....	31438-0057-1
23	1	Stationary seal ring SiC .....	31437-0225-1
25	1	Seal .....	31437-0121-3
27	1	Rotating seal ring SiC .....	31439-0165-1
29	1	O-ring .....	31439-0168-3

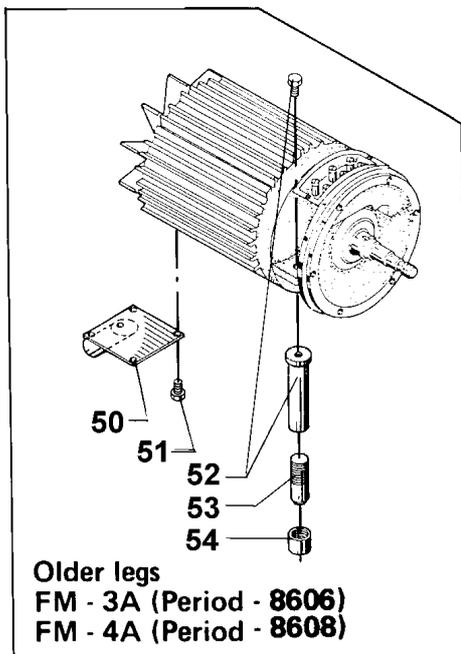
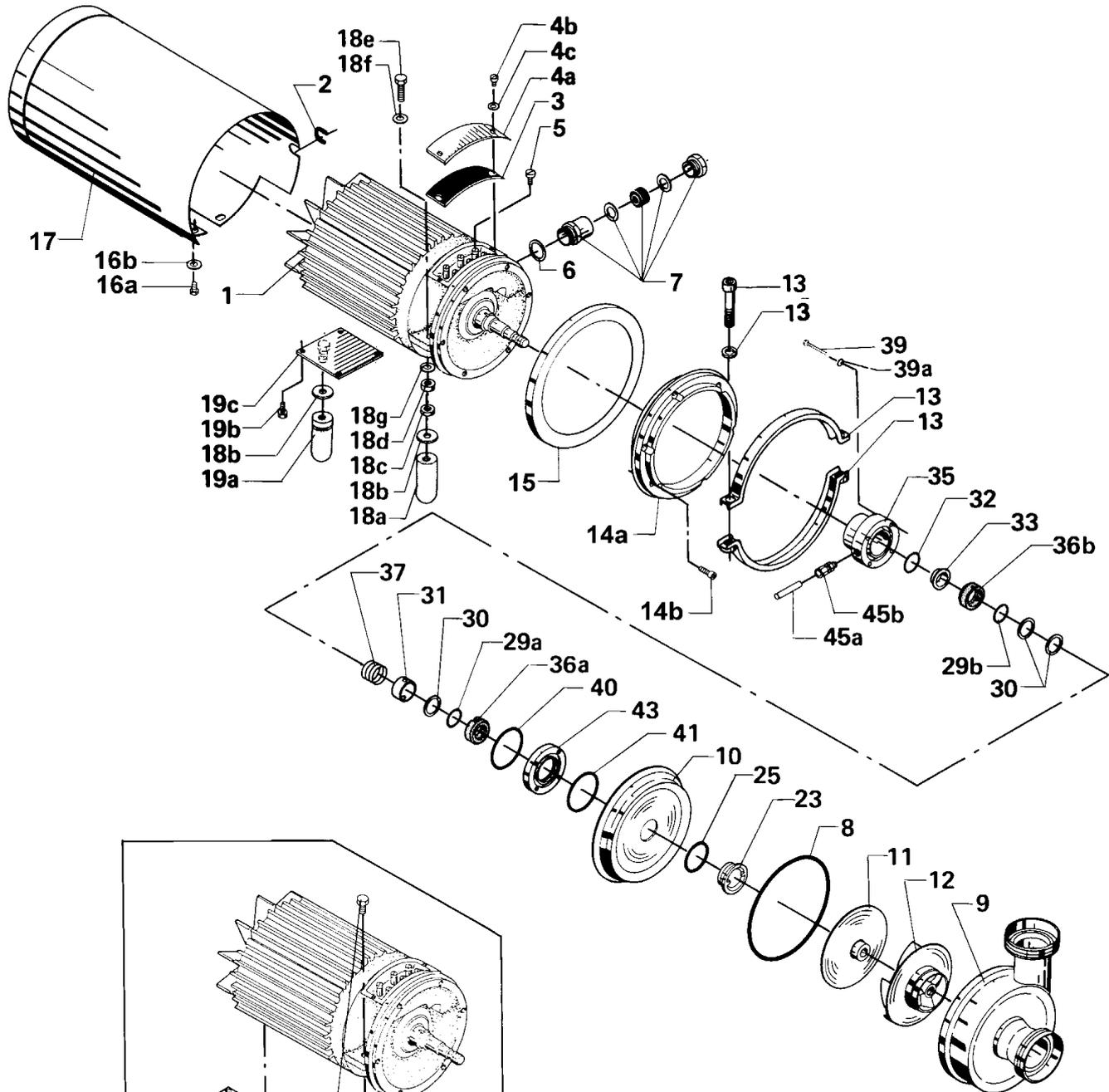
#### Older legs (Period -8608)

50*	1	Back leg .....	31458-0041-1
51	4	Screw .....	221030-13
52**	2	Front leg .....	31458-0022-1
	2	Screw for pos. 52 .....	2217759-05
53**	2	Adjustable leg .....	31437-0074-1
54	2	Lock nut .....	31437-0073-1

\* Can be replaced by 9611-92-1002, complete plast leg.

\*\* Can be replaced by 9611-92-1003, complete plast leg.

Centrifugal Pumps – Flushed Shaft Seal  
Types FM-3A & FM-4A



Centrifugal Pumps – Flushed Shaft Seal  
Types FM-3A & FM-4A



Pos.	Qty.	Denomination	FM-3A/4A	Pos.	Qty.	Denomination	FM-3A/4A	Pos.	Qty.	Denomination	FM-3A/4A
1	1	Motor 7.5 kW 220/380 V .....	31801-8515-1	Δ Shaft seal, complete, NBR (Standard) .....		9612-4393-01		<b>Alternatives</b>			
1	1	Motor 7.5 kW 230-260/400-440 V .....	31801-8515-2	23 1 Stationary seal ring SiC .....		31437-0225-1		Shaft seal, complete, NBR (Standard) .....		9612-4393-01	
1	1	Motor 7.5 kW 380/660 V .....	31801-8515-3	25 1 Seal .....		31437-0121-1		23 1 Stationary seal ring SiC .....		31437-0225-1	
1	1	Fan .....	31438-0203-2	29a 1 O-ring, front .....		31439-0168-1		25 1 Seal .....		31437-0121-1	
1	1	Rotor with shaft .....	31458-0054-2	29b 1 O-ring, back .....		31439-0168-1		29a 1 O-ring, front .....		31439-0168-1	
2	1	Cable protection .....	31438-0161-1	30 3 Washer .....		104125		29b 1 O-ring, back .....		31439-0168-1	
3	1	Packing .....	31458-0018-1	31 1 Spacer .....		31437-0212-1		30 3 Washer .....		104125	
4a	1	Cover .....	31458-0017-1	32 1 O-ring .....		223406-51		31 1 Spacer .....		31437-0212-1	
4b	2	Screw .....	2211721-08	33 1 Stationary seal ring .....		31450-0007-1		32 1 O-ring .....		223406-51	
4c	2	Washer .....	9611-99-0752	36a+b 2 Rotating seal ring .....		31437-0211-1		33 1 Stationary seal ring .....		31450-0007-1	
5	1	Set screw for earth cable .....	9611-99-2035	37 1 Spring .....		104154		36a 1 Rotating seal ring SiC .....		31437-0211-1	
6	1	Packing .....	31439-0049-1	40 1 O-ring .....		223406-60		36b 1 Rotating seal ring .....		31437-0211-1	
7	1	Compression gland, 22.5 mm .....	31801-0154-4	41 1 O-ring .....		223406-58		37 1 Spring .....		104154	
8A	1	O-ring, NBR (Standard) .....	31439-0112-1	Δ Shaft seal, complete, EPDM .....		9612-4393-03		40 1 O-ring .....		223406-60	
1	1	O-ring, EPDM .....	31439-0112-4	23 1 Stationary seal ring SiC .....		31437-0225-1		41 1 O-ring .....		223406-58	
1	1	O-ring, FPM .....	31439-0112-5	25 1 Seal .....		31437-0121-3		Shaft seal, complete, EPDM .....		9612-4393-03	
1	1	O-ring, PTFE .....	31439-0112-3	29a 1 O-ring, front .....		31439-0168-4		23 1 Stationary seal ring SiC .....		31437-0225-1	
9	1	Pump casing with sanitary fittings, 76 mm inlet and outlet		29b 1 O-ring, back .....		31439-0168-4		25 1 Seal .....		31437-0121-3	
		ISO male .....	31458-0060-1	30 3 Washer .....		104125		29a 1 O-ring, front .....		31439-0168-4	
		SMS .....	31458-0060-2	31 1 Spacer .....		31437-0212-1		29b 1 O-ring, back .....		31439-0168-4	
		DIN .....	31458-0060-3	32 1 O-ring .....		223406-51		30 3 Washer .....		104125	
		ISO clamp .....	31458-0060-4	33 1 Stationary seal ring .....		31450-0007-1		31 1 Spacer .....		31437-0212-1	
		BS .....	31458-0060-5	36a+b 2 Rotating seal ring .....		31437-0211-1		32 1 O-ring .....		223406-51	
10	1	Back plate .....	31439-0101-1	37 1 Spring .....		104154		33 1 Stationary seal ring .....		31450-0007-1	
13	1	Clamp set .....	9611-92-1001	40 1 O-ring .....		223406-60		36a 1 Rotating seal ring SiC .....		31437-0211-1	
14a	1	Flange .....	31458-0014-1	41 1 O-ring .....		223406-58		36b 1 Rotating seal ring .....		31437-0211-1	
14b	6	Screw .....	2217751-22	Δ Shaft seal, complete, FPM .....		9612-4393-04		37 1 Spring .....		104154	
15	1	Lining .....	31458-0025-1	23 1 Stationary seal ring SiC .....		31437-0225-1		40 1 O-ring .....		223406-60	
16a	2	Screw .....	2210938-23	25 1 Seal .....		31437-0121-3		41 1 O-ring .....		223406-58	
16b	2	Washer .....	9611-99-1831	29a 1 O-ring, front .....		31439-0168-5		Shaft seal, complete, FPM .....		9612-4393-04	
17	1	Shroud .....	31458-0053-1	29b 1 O-ring, back .....		31439-0168-5		23 1 Stationary seal ring SiC .....		31437-0225-1	
18a	2	Front leg .....	31460-1248-5	30 3 Washer .....		104125		25 1 Seal .....		31437-0121-3	
18b	3	Washer .....	31460-0104-1	31 1 Spacer .....		31437-0212-1		29a 1 O-ring, front .....		31439-0168-5	
18c	2	Nut .....	9611-99-1829	32 1 O-ring .....		223406-51		29b 1 O-ring, back .....		31439-0168-5	
18d	2	Nut .....	9611-99-1829	33 1 Stationary seal ring .....		31450-0007-1		30 3 Washer .....		104125	
18e	2	Screw .....	9611-99-1833	36a+b 2 Rotating seal ring .....		31437-0211-1		31 1 Spacer .....		31437-0212-1	
18f	2	Washer .....	9611-99-0706	37 1 Spring .....		104154		32 1 O-ring .....		223406-51	
18g	2	Spring washer .....	9611-99-0676	40 1 O-ring .....		223406-60		33 1 Stationary seal ring .....		31450-0007-1	
19a	1	Back leg .....	31458-0078-1	41 1 O-ring .....		223406-58		36a+b 2 Rotating seal ring .....		31437-0211-1	
19b	4	Screw .....	221030-13	Δ Shaft seal, complete, PTFE .....		9612-4393-02		37 1 Spring .....		104154	
19c	1	Bracket for leg .....	31458-0079-1	23 1 Stationary seal ring SiC .....		31437-0225-1		40 1 O-ring .....		223406-60	
35	1	Seal housing .....	31439-0114-1	25 1 Seal .....		31437-0121-3		41 1 O-ring .....		223406-58	
39	4	Screw .....	9611-99-0208	29a 1 O-ring, front .....		31439-0168-3		Shaft seal, complete, PTFE .....		9612-4393-02	
39a	4	Washer .....	9611-99-0800	29b 1 O-ring, back .....		31439-0168-3		23 1 Stationary seal ring SiC .....		31437-0225-1	
43	1	Fastening ring .....	31439-0113-1	30 3 Washer .....		104125		25 1 Seal .....		31437-0121-3	
45a	2	Flushing tube .....	31439-0122-5	31 1 Spacer .....		31437-0212-1		29a 1 O-ring, front .....		31439-0168-3	
45b	2	Fitting .....	2525524-02	32 1 O-ring .....		223406-51		29b 1 O-ring, back .....		31439-0168-1	
46	1	Assembly mandrel (not shown) .....	31439-0118-1	33 1 Stationary seal ring .....		31450-0007-1		30 3 Washer .....		104125	
				36a+b 2 Rotating seal ring .....		31437-0211-1		31 1 Spacer .....		31437-0212-1	
				37 1 Spring .....		104154		32 1 O-ring .....		223406-51	
				40 1 O-ring .....		223406-60		33 1 Stationary seal ring .....		31450-0007-1	
				41 1 O-ring .....		223406-58		36a 1 Rotating seal ring SiC .....		31437-0211-1	
								36b 1 Rotating seal ring .....		31437-0211-1	
								37 1 Spring .....		104154	
								40 1 O-ring .....		223406-60	
								41 1 O-ring .....		223406-58	
								Accessories (delivered with every new pump)			
								1 Spanner for impeller .....		31439-0104-1	
								Δ Service kits, NBR .....		9611-92-1066	
								Δ Service kits, EPDM .....		9611-92-1067	
								Δ Service kits, FPM .....		9611-92-1068	
								Δ Service kits, PTFE .....		9611-92-1069	
								Parts marked with Δ are included in the service kits.			

\* Sometimes reduced impeller diameter. Check the diameter of the original impeller.

Recommended spare parts: **Service kits.**

**Older legs (Period -8608)**

50*	1	Back leg .....	31458-0041-1
51	4	Screw .....	221030-13
52**	2	Front leg .....	31458-0022-1
	2	Screw for pos. 52 .....	2217759-05
53**	2	Adjustable leg .....	31437-0074-1
54	2	Lock nut .....	31437-0073-1

\* Can be replaced by 9611-92-1002, complete plast leg.

\*\* Can be replaced by 9611-92-1003, complete plast leg.