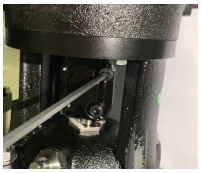
SUMMIT SERIES

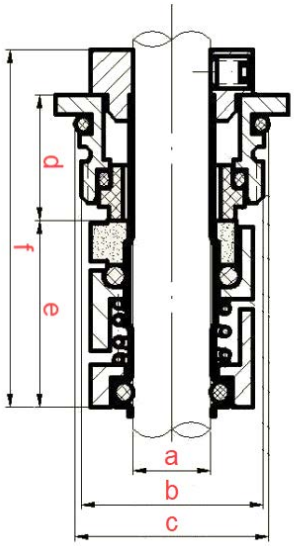
Vertical multi-stage pumps

VMS 1 - 7 Series Assembly Procedures

WATER SUPPLY • INDUSTRIAL BOOSTING • INDUSTRIAL LIQUID TRANSFER • WATER TREATMENT • IRRIGATION

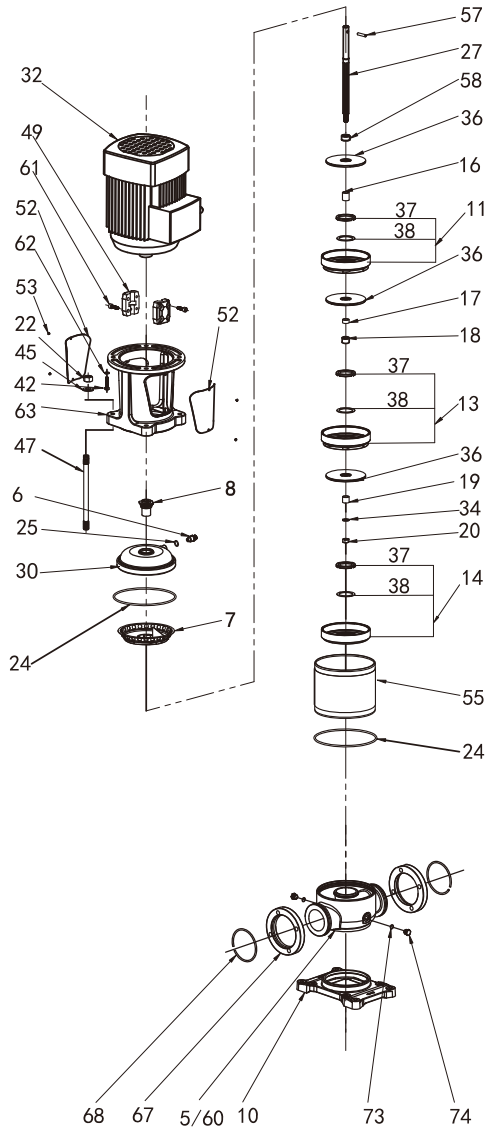
BiANCO NXT pumps

Summit Series VMS pump assembly tools						
	Tool name	**Tool specification**	**Application**	**Where to use it**	**Remarks**	**Tool picture**
1	Rubber hammer		All models	Knock the seal base to make it tighter if necessary		
2	Double offset ring spanners	10mm	M6	For nuts #22 and Bolts #42 & #80		
		14mm	M8			
		17mm	M10			
		19mm	M12			
		22mm	M14			
		24mm	M16	For nuts #6 & #74		
3	Allen keys	2.5mm	For mechanical seal screw VMS 1-20	Mechanical Seal retaining screws Loosening and tightening of the shaft coupling		
		3mm	For mechanical seal screw VMS 32-90			
		5mm	M6			
		6mm	M8			
		8mm	M10			
4	Phillips screwdriver		M4	Coupling guard retaining screws		
			M5			
5	Open spanner	12mm Across Face	NJK12 (VMS 1-5)	For mechanical seal.		
		16mm Across Face	NJK16 (VMS 10-20)			
6	Jig	Assembly Jig #1	VMS 1-5	Shaft support.		
		Assembly Jig #2	VMS 10-20	Shaft support.		



AS - L - 12

a = Dia 12 h6
b = M28 x 1.5
c = Dia 29 H8
d = 19
e = 29
f = 55



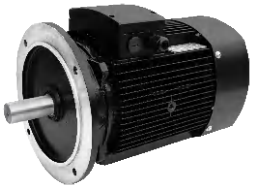
5 Flange inlet and outlet
6 Air vent plug
7 Top diffuser
8 Mechanical seal
10 Base plate
11 Diffuser
13 Support diffuser
14 Inducer
16 Impeller sleeve
17 Short impeller sleeve
18 Wear ring
19 Inlet impeller cover
20 Lock nut
22 Nut
24 O-ring
25 O-ring
27 Pump shaft
30 Seal base
32 Motor
34 Washer
36 Impeller
37 Choma cover
38 Choma
42 Blot
45 Washer
47 Stay bolt
49 Coupling
52 Coupling guard
53 Screw
55 Cylinder
57 Shaft pin
58 Locating sleeve
60 Common inlet and outlet chamber
61 Socket head cap screw
62 Washer
63 Bracket
67 Flange
68 Flange retaining ring
73 O-ring
74 Drain plug

Exploded view VMS Series 1 - 7

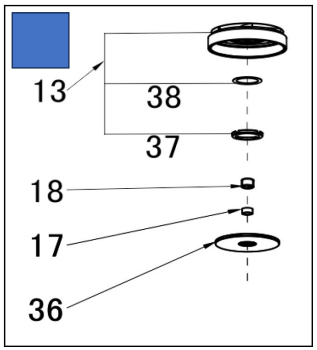
SUMMIT VMS Series 1 - 7 components list

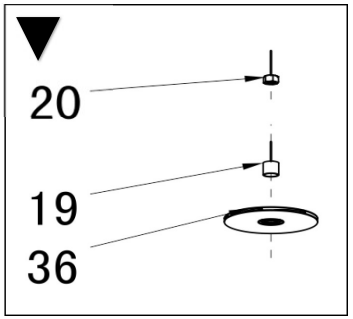
No.	Name	Photo	No.	Name	Photo
5	Inlet & outlet chamber		17	Short impeller sleeve	
6	Air vent		18	Wear ring	
7	Top diffuser		19	Inlet impeller cover	
8	Mechanical seal		20	Lock nut	
10	Base plate for flange connection		22	Nut	
11	Diffuser		24	O ring	
13	Support diffuser		25	O ring	
14	Inducer		27	Shaft	
16	Impeller sleeve		30	Seal base	

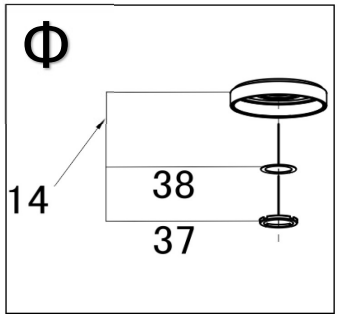
SUMMIT VMS Series 1 - 7 components list

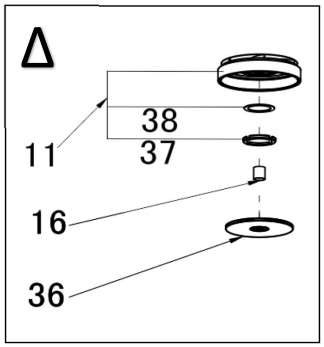
No.	Name	Photo	No.	Name	Photo
32	Motor		57	Shaft pin	
34 45 62	Washer		58	Locating sleeve	
36	Impeller		61	Socket Head Cap Screw	
42	Bolt		63	Bracket	
47	Staybolt		67	Flange	
49	Coupling		68	Retaining ring	
52	Coupling guard		73	O-ring	
53	Screw		74	Drain plug	
55	Cylinder				

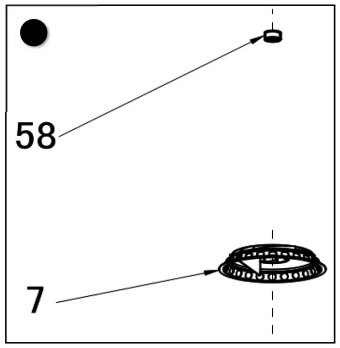
VMS 1 ~ 7 Component Order











Stack assembly

1

Fit the shaft (#27) into the shaft holding jig. Press the locating sleeve (#58) onto the shaft, and down onto the locating circlip.

2

Install the impeller (#36), diffuser (#11) and impeller sleeve (#16) in sequence. The impeller (#36) should rotate freely

3

Repeat step 2 according to the Pump Stack distribution diagram on the previous page

4

The sleeve in the support diffuser (#13) is a combination of a short impeller sleeve (#17) and wear ring (#18). Note that the wear ring (#18) is in full contact with the supporting parts in support diffuser (#13)

5

After placing the last impeller, install the inlet impeller cover (#19) and tighten the nut (#20)

6

Tighten the nut (#20) with a torque wrench 45 ±5 Nm

7

Note that the top diffuser (#7) and the inducer (#14) need to be inserted when assembling the pump body.
The top diffuser (#7) is placed on top (left side), and the inducer (#14) is placed on the bottom (right side)

Pump Body Assembly Part A

1

Place the base plate (#10)

2

Install the inlet / outlet chamber (#5) on base plate (#10).

Note that the direction of inlet / outlet chamber and the arrow direction of the shaft are the direction of the water flow

3

Spray vegetable oil on to the inlet / outlet chamber (#10) and O-ring (#24). Stretch and place the O-ring into the inlet / outlet chamber (#10) recess

4

Place O-rings (#25 & #73) onto the drainage plug (#74) as shown. Install the drainage nut (#74) into the inlet / outlet chamber (#60) and tighten

5

Fit and press the Cylinder (#55) firmly into place.

Take care not to damage the O-ring.

6

Fit the stack by lowering it into the inlet /outlet chamber (#60)

7

Install the four stay bolts (#47). Do not expose thread from the base plate more than 2 mm

8

Install spring (#56) into seal base (#30). Edges of spring must point downward as shown for all models. Place O-ring (#24) into recessed area of seal base with some oil.

9

Lower and fully press into seal base (#30) onto the cylinder (#55) taking care not to break O -ring (#24)

10

Seat the bracket (#63). Fit washers (#45) and nuts (#22) on the four stay bolts (#47) and tighten them. Torque requirement 50 ± 5Nm.

Pump Body Assembly Part B

11

Place O-ring (#25) on air vent nut (#6). Install the air vent nut (#6) and tighten it

12

Place the mechanical seal (#8) onto the shaft (#27) and tighten it.
Torque: 30 ±2 Nm.

13

Tighten the three locating grub screws at the top of the mech seal (#8)

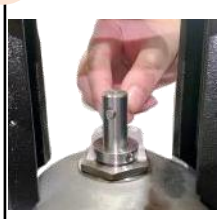
14

Lift up the pump shaft (#27) and plug in the mechanical seal spacer 'gasket'.

15

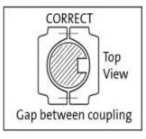
Use a lifting device to lift the motor (#32) and place it on the bracket (#63). Tighten motor retaining bolts

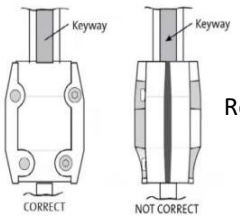
16



Install the shaft pin (#57)

17





Ensure the gap between the two coupling halves is even.

Install the coupling (#49)
Tighten the cap screws (#61)

Torque:
M6: 18-20Nm
M8: 40-45Nm
M10: 80-85Nm.

Remove the mechanical seal spacer and rotate the coupling to check the assembly rotates freely

18

Install the coupling guard (#52) on the bracket (#63) and tighten the screws (#53)

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