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# E7600/E7600R

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# 1 Introduction

## Purpose of this manual

The purpose of this manual is to provide necessary information on spare parts and accessories order.

## Disclaimer

Always use genuine Flygt parts. The use of other spare parts or accessories can invalidate any claims for warranty or compensation. Xylem does not take any responsibility for damages that are caused by the use of non-original parts. For more information, contact your local sales and service representative.

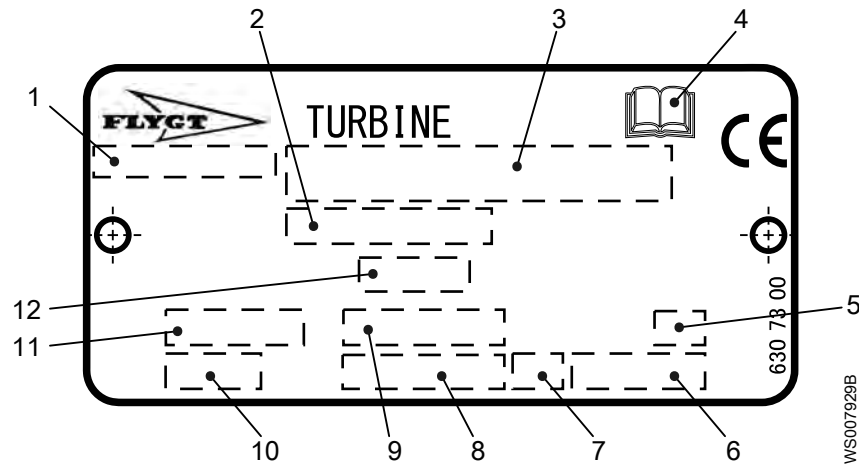
## Data for ordering spare parts

The following information is needed for spare part orders:

- Serial number of the product
- Part number
- Quantity of bulk material, see \* in tables

# 2 Product Description

## 2.1 The data plate



1. Country of origin
2. Product number
3. Serial number
4. Read the care and maintenance instructions
5. Blade angle
6. Product weight: generator + turbine + gear (if applicable)
7. Direction of rotation: runner/generator
8. Rated speed
9. Blade angle interval
10. Turbine housing
11. Turbine column diameter
12. Runner code

## 2.2 Product denomination

### Reading instruction

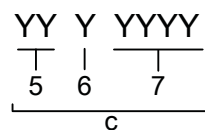
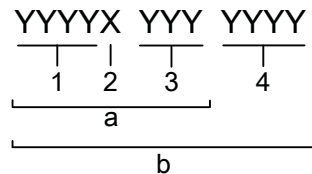
In this section, code characters are illustrated accordingly:

X = letter

Y = digit

The different types of codes are marked up with a, b, and c. Code parameters are marked up with numbers.

### Codes and parameters



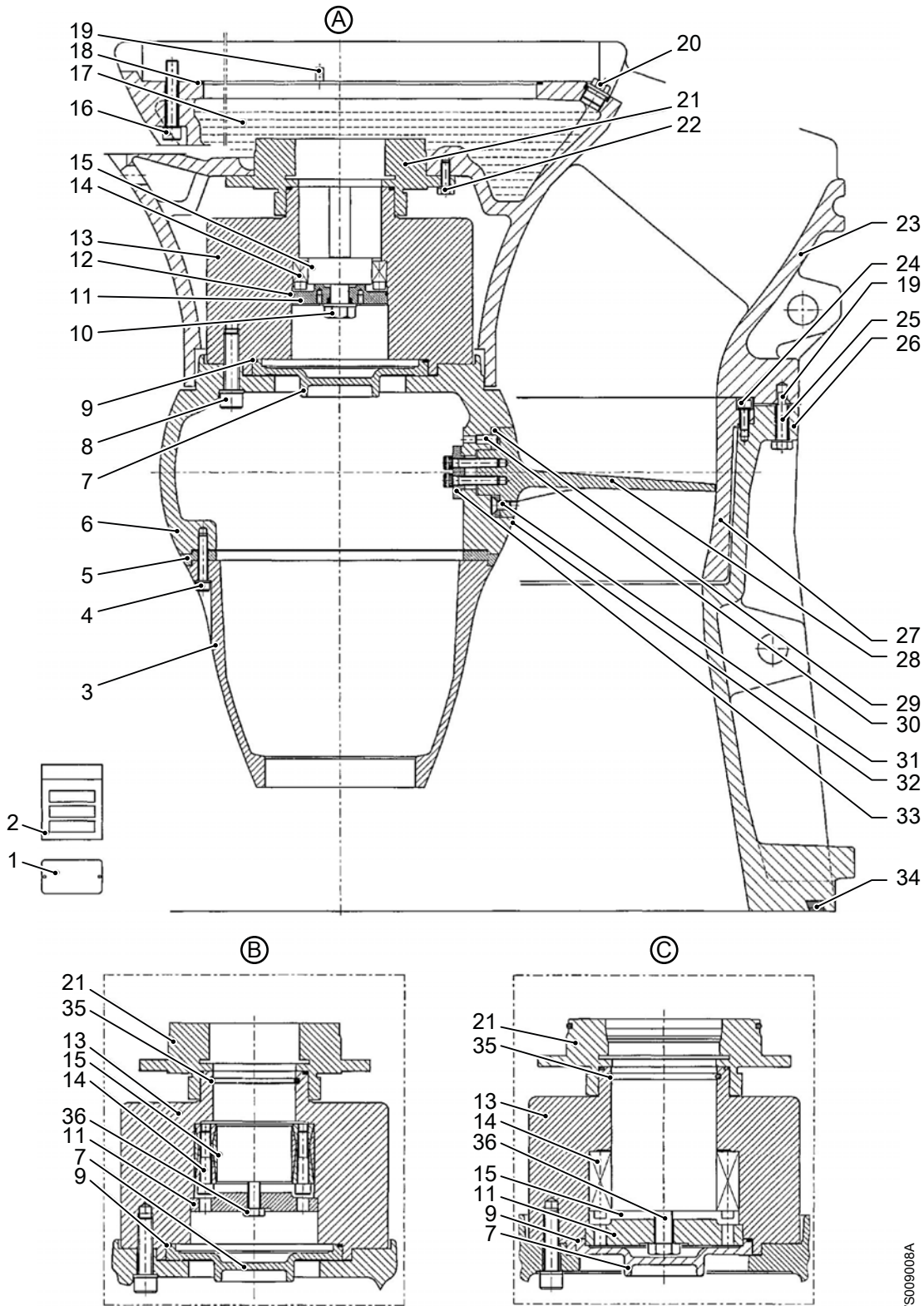
WS007962A

Type of Callout	Number	Indication
Type of code	a	Product code
	b	Product number
	c	Serial number

Type of Callout	Number	Indication
Parameter	1	Turbine unit
	2	"R" (only for adjustable-blade hydroturbines)
	3	Generator unit
	4	Sequence number
	5	Production year
	6	Production cycle
	7	Running number

# 3 Parts

## 3.1 Turbine E7600: fixed runner



W5009008A

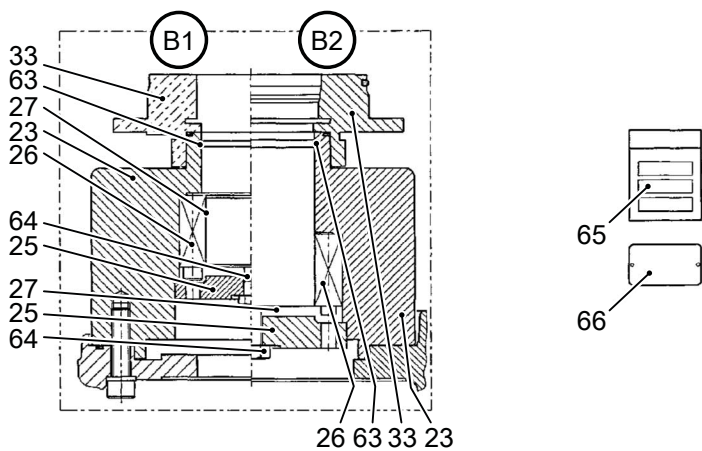
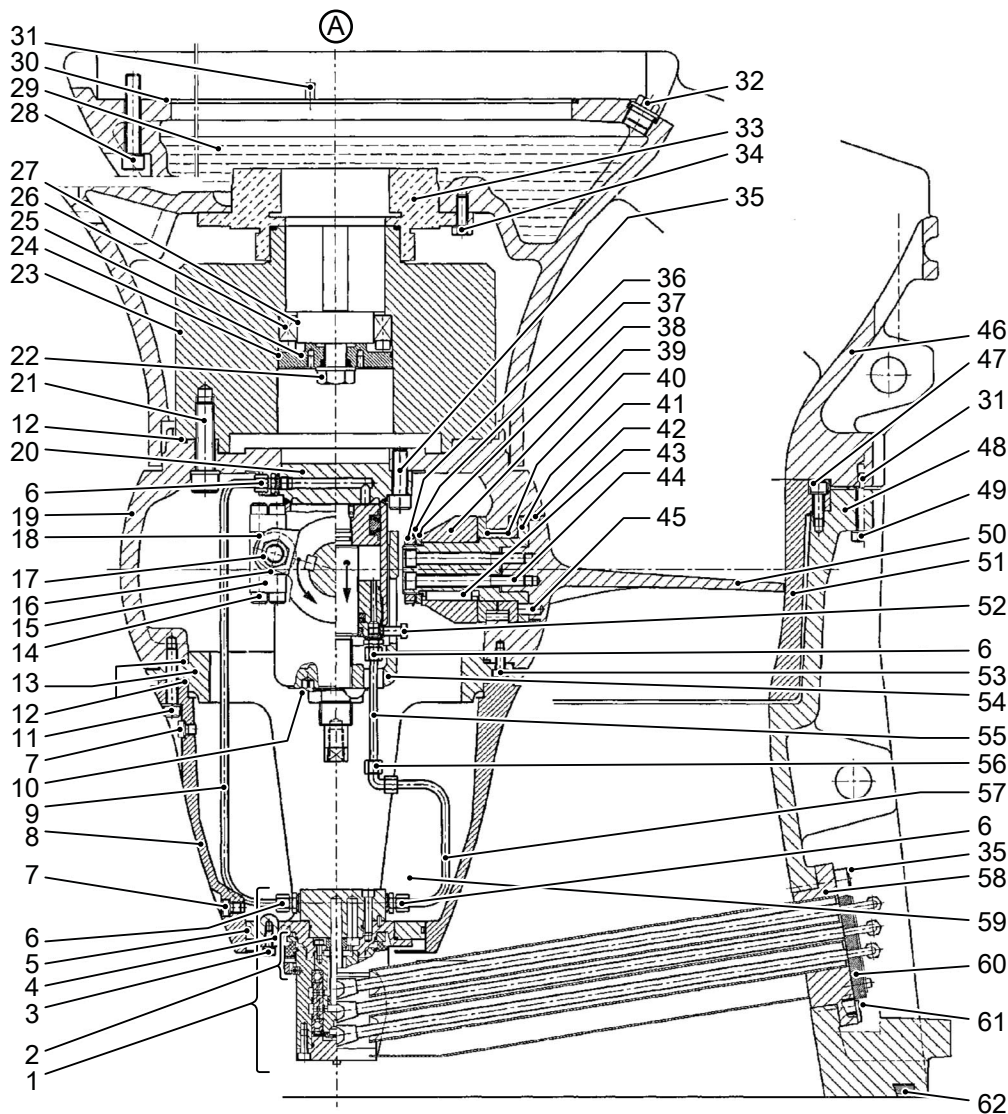
Item	Denomination
A	Direct drive (905, 935)
B	Direct drive (965)
	Gear drive, small hub
C	Gear drive, large hub

Item	Denomination	Part No.	Qty.	
1	Data plate	630 73 00	2	
	Screw	82 20 88	2	
2	Packing kit	395 02 01	1	
3	Casing	472 09 01	1	
4	Screw	82 00 75	6	
	Spring washer	82 48 65	6	
5	Supporting washer	472 10 00	1	
6	Propeller hub	Four runner blades	496 28 02	1
		Five runner blades	526 27 00	
7	Cover	427 22 00	1	
8	Screw	82 01 28	<ul style="list-style-type: none"> <li>• 12 (four runner blades)</li> <li>• 15 (five runner blades)</li> </ul>	
	Spring washer	82 48 71	<ul style="list-style-type: none"> <li>• 12 (four runner blades)</li> <li>• 15 (five runner blades)</li> </ul>	
9	O-ring	82 74 95	1	
10	Screw	Direct drive (905, 935)	84 34 53	1
	Washer		82 35 28	1
	O-ring		82 77 14	1
11	Supporting washer	Direct drive (905, 935)	570 16 00	1
		Direct drive (965)	426 07 00	
		Gear drive, small hub		
		Gear drive, large hub	427 23 00	
12	O-ring	Direct drive (905, 935)	82 74 77	1
13	Hub	Direct drive (905, 935), four runner blades	598 87 00	1
		Direct drive (905, 935), five runner blades	598 87 01	
		Direct drive (965), four runner blades	593 25 01	
		Gear drive, small hub, four runner blades		
		Direct drive (965), five runner blades	593 26 01	
		Gear drive, small hub, five runner blades		
Gear drive, large hub, four runner blades	593 23 01			
Gear drive, large hub, five runner blades	593 24 01			

Item	Denomination		Part No.	Qty.
14	Locking assembly	Direct drive (905, 935) Torque: 70 Nm (52 ft-lb)	84 59 17	1
		Direct drive (965) Gear drive, small hub Torque: 225 Nm (166 ft-lb)	84 60 11	
		Gear drive, large hub Torque: 225 Nm (166 ft-lb)	84 60 12	
15	Grease		90 20 54	<ul style="list-style-type: none"> <li>• 50 g (1.8 oz) for Direct drive + Gear drive, small hub</li> <li>• 100 g (3.5 oz) for Gear drive, large hub</li> </ul>
16	Screw		82 01 14	14
	Washer		82 40 54	14
	Locking liquid		90 32 55	*
17	Oil		90 17 57	24 L (25 quarts)
18	O-ring		82 75 13	1
19	Tension pin		80 58 95	2
20	Plug	Torque: 80 Nm (59 ft-lb)	809 33 00	1
	O-ring		82 77 30	1
21	Mechanical seal	Gear drive, small hub	556 60 00	1
		Direct drive	556 60 02	
	Seal unit	Gear drive, large hub	433 74 01	
22	Screw		81 41 56	<ul style="list-style-type: none"> <li>• 3, for Direct drive + Gear drive, small hub</li> <li>• 6, for Gear drive, large hub</li> </ul>
	Washer		82 35 20	<ul style="list-style-type: none"> <li>• 3, for Direct drive + Gear drive, small hub</li> <li>• 6, for Gear drive, large hub</li> </ul>
23	Turbine housing	TH1 (70°)	471 99 01	1
		TH2 (63°)	471 99 03	
		TH3 (57°)	471 99 05	
		TH4 (50°)	471 99 07	
24	Screw		82 00 69	2
	Spring washer		82 48 65	2
25	Screw		84 34 13	24
	Washer		82 35 23	24
26	Outlet cone		471 98 00	1
27	Wear ring	Bronze	471 97 00	1
		Stainless steel	471 97 01	
28	Turbine blade Opposite blades, difference in weight 110 g (3.9 oz) max	Bronze	472 02 02	<ul style="list-style-type: none"> <li>• 4 (four runner blades)</li> <li>• 5 (five runner blades)</li> </ul>
		Stainless steel	472 02 03	
29	Supporting washer	For blade angle 8°	428 43 22	<ul style="list-style-type: none"> <li>• 4 (four runner blades)</li> <li>• 5 (five runner blades)</li> </ul>

Item	Denomination		Part No.	Qty.
		For blade angle 9°	428 43 21	
		For blade angle 10°	428 43 20	
		For blade angle 11°	428 43 19	
		For blade angle 12°	428 43 18	
		For blade angle 13°	428 43 17	
		For blade angle 14°	428 43 16	
		For blade angle 15°	428 43 15	
		For blade angle 16°	428 43 14	
		For blade angle 17°	428 43 13	
		For blade angle 18°	428 43 12	
		For blade angle 19°	428 43 11	
		For blade angle 20°	428 43 10	
		For blade angle 21°	428 43 09	
		For blade angle 22°	428 43 08	
		For blade angle 23°	428 43 07	
		For blade angle 24°	428 43 06	
		For blade angle 25°	428 43 05	
		For blade angle 26°	428 43 04	
		For blade angle 27°	428 43 03	
		For blade angle 28°	428 43 02	
		For blade angle 29°	428 43 01	
		For blade angle 30°	428 43 00	
30	Parallel pin		80 30 78	<ul style="list-style-type: none"> <li>• 12 (four runner blades)</li> <li>• 15 (five runner blades)</li> </ul>
31	Screw		82 38 41	<ul style="list-style-type: none"> <li>• 12 (four runner blades)</li> <li>• 15 (five runner blades)</li> </ul>
32	Gasket		505 13 00	<ul style="list-style-type: none"> <li>• 4 (four runner blades)</li> <li>• 5 (five runner blades)</li> </ul>
33	Plate		509 44 00	<ul style="list-style-type: none"> <li>• 4 (four runner blades)</li> <li>• 5 (five runner blades)</li> </ul>
	Screw	Torque: 60 Nm (44 ft-lb)	82 00 75	<ul style="list-style-type: none"> <li>• 12 (four runner blades)</li> <li>• 15 (five runner blades)</li> </ul>
34	G-ring		82 83 46	1
35	O-ring	Direct drive (965)	82 74 14	1
		Gear drive, small hub		
		Gear drive, large hub	82 74 20	
36	Screw	Direct drive (965)	84 34 13	1
		Gear drive, small hub		
		Gear drive, large hub	84 34 57	

### 3.2 Turbine E7600R: adjustable runner



WS009009A

Item	Denomination
A	Direct drive (905, 935)
B1	Direct drive (965)
	Gear drive, small hub

**Item**                      **Denomination**  
 B2                              Gear drive, large hub

Item	Denomination	Part No.	Qty.	
1	Swivel unit	605 14 00	1	
2	Mechanical seal	527 76 00	1	
3	Screw	82 00 32	6	
	Washer	82 35 16	6	
4	O-ring	82 74 79	1	
5	O-ring	82 74 90	1	
6	Nut	85 02 76	4	
	Coupling	85 02 87	4	
7	Screw	303 44 03	3	
	O-ring	82 73 85	3	
8	Casing	472 09 01	1	
9	Pipe	496 33 10	1	
10	Lock washer	82 53 20	1	
11	Screw	82 00 75	6	
	Spring washer	82 48 65	6	
12	O-ring	82 75 04	3	
13	Stand	496 23 00	1	
14	Screw	Torque: 150 Nm (111 ft-lb) 84 51 50	16	
15	Plate	496 82 00	8	
16	Cam roller	80 10 40	4	
17	Nut	Torque: 109 Nm (80 ft-lb) 82 25 47	8	
18	Grease	90 20 54	100 g (3.5 oz)	
19	Propeller hub	496 28 04	1	
20	Hydraulic cylinder	496 39 00	1	
21	Screw	82 01 28	12	
	Spring washer	82 48 71	12	
22	Screw	Direct drive (905, 935)	84 34 53	1
	Washer		82 35 28	1
	O-ring		82 77 14	1
23	Hub	Direct drive (905, 935)	598 87 00	1
		Direct drive (965)	593 25 01	
		Gear drive, small hub		
		Gear drive, large hub	593 23 01	
24	O-ring	Direct drive (905, 935)	82 74 77	1
25	Supporting washer	Direct drive (905, 935)	570 16 00	1
		Direct drive (965)	426 07 00	
		Gear drive, small hub		
		Gear drive, large hub	427 23 00	

Item	Denomination		Part No.	Qty.
26	Locking assembly	Direct drive (905, 935) Torque: 70 Nm (52 ft-lb)	84 59 17	1
		Direct drive (965) Gear drive, small hub Torque: 225 Nm (166 ft-lb)	84 60 11	
		Gear drive, large hub Torque: 225 Nm (166 ft-lb)	84 60 12	
27	Grease		90 20 54	<ul style="list-style-type: none"> <li>• 50 g (1.8 oz) for Direct drive + Gear drive, small hub</li> <li>• 100 g (3.5 oz) for Gear drive, large hub</li> </ul>
28	Screw		82 01 14	14
	Washer		82 40 54	14
	Locking liquid		90 32 55	*
29	Oil		90 17 57	24 L (25 quarts)
30	O-ring		82 75 13	1
31	Tension pin		80 58 95	2
32	Plug	Torque: 80 Nm (59 ft-lb)	809 33 00	1
	O-ring		82 77 30	1
33	Mechanical seal	Gear drive, small hub	556 60 00	1
		Direct drive	556 60 02	
	Seal unit	Gear drive, large hub	433 74 01	
34	Screw		81 41 56	<ul style="list-style-type: none"> <li>• 3, for Direct drive + Gear drive, small hub</li> <li>• 6, for Gear drive, large hub</li> </ul>
	Washer		82 35 20	<ul style="list-style-type: none"> <li>• 3, for Direct drive + Gear drive, small hub</li> <li>• 6, for Gear drive, large hub</li> </ul>
35	Screw		82 01 07	8
36	Nut		82 22 36	4
37	Lock washer		82 51 36	4
38	Washer		496 84 02	4
39	Driver		496 76 00	4
40	Bearing bush		569 51 01	8
	Grease		90 20 54	40 g (1.4 oz)
41	Shaft		496 80 01	4
42	Seal ring		84 91 49	4
43	Parallel key		80 79 25	4
44	Screw	Torque: 150 Nm (111 ft-lb)	84 51 62	12
45	Parallel pin		80 30 77	12
46	Turbine housing	TH1 (70°)	471 99 09	1
		TH2 (63°)	471 99 11	
		TH3 (57°)	471 99 13	
		TH4 (50°)	471 99 15	

Item	Denomination		Part No.	Qty.
47	Screw		82 00 69	2
	Spring washer		82 48 65	2
48	Outlet cone		471 98 01	1
49	Screw		84 34 13	24
	Washer		82 35 23	24
50	Turbine blade Opposite blades, difference in weight 110 g (3.9 oz) max	Bronze	472 02 04	4
		Stainless steel	472 02 05	
51	Wear ring	Bronze	471 97 00	1
		Stainless steel	471 97 01	
52	Screw	Torque: 40 Nm (30 ft-lb)	80 12 34	1
	Locking liquid		90 32 55	*
53	Screw		82 00 49	2
54	Drive housing		496 19 01	1
55	Pipe		496 85 10	1
56	Coupling		85 02 75	1
	Nut		85 02 76	1
57	Pipe		496 71 14	1
58	Protective pipe		813 14 00	1
59	Oil		90 17 52	3 L (3.2 quarts)
60	Pipe unit	See <a href="#">Adjustable runner: pipe unit</a> on page 13	813 27 00	1
61	Protective plug		82 69 41	2
62	G-ring		82 83 46	1
63	O-ring	Direct drive (965)	82 74 14	1
		Gear drive, small hub		
		Gear drive, large hub	82 74 20	
64	Screw	Direct drive (965)	84 34 13	1
		Gear drive, small hub		
		Gear drive, large hub	84 34 57	
65	Packing kit		395 02 01	1
66	Data plate		630 73 00	2
	Screw		82 20 88	2

## 3.2.1 Adjustable runner: pipe unit

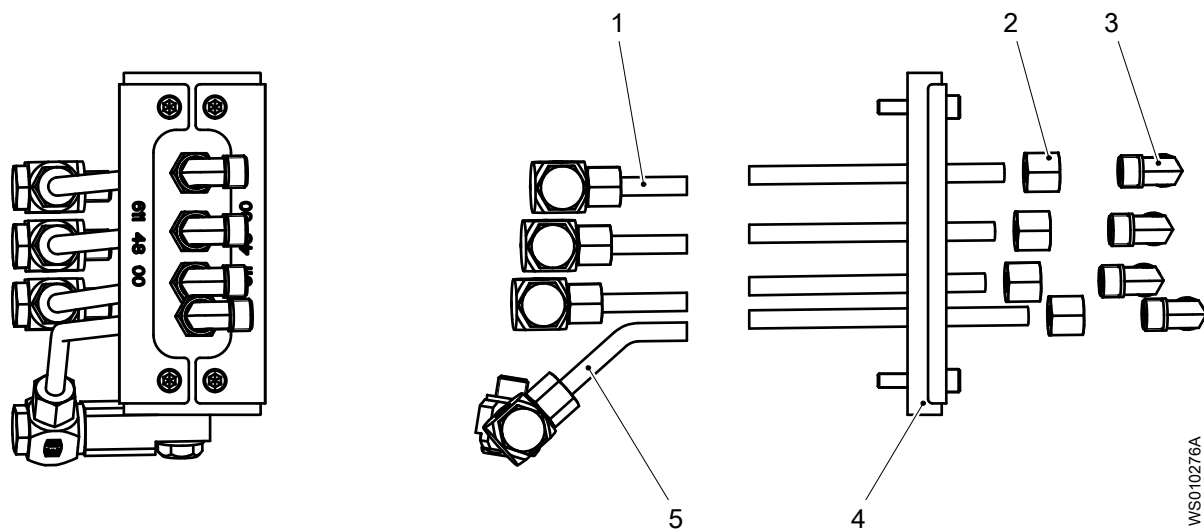
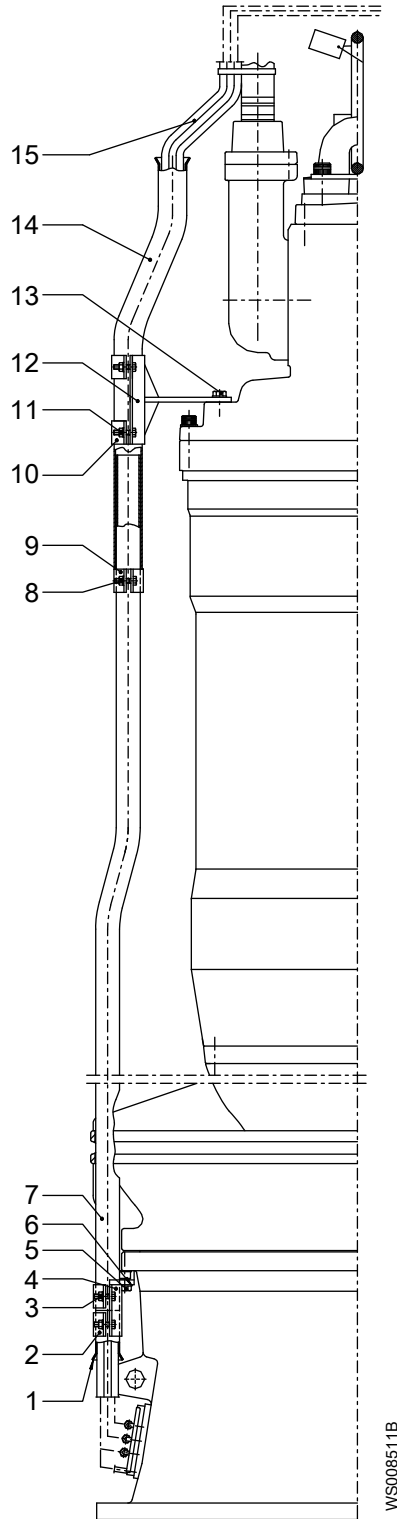


Table 1: The parts of the pipe unit 813 27 00

Item	Denomination	Part No.	Qty.
1	Pipe unit	813 25 00	3
2	Nut	85 02 76	4
3	Coupling	85 02 75	4
4	Bracket unit	813 21 00	1
5	Pipe unit	813 23 00	1

### 3.3 Turbine installation: adjustable runner



Item	Denomination	Part No.	Qty.
1	Pipe	599 25 00	1
2	Clamp	598 85 00	2
3	Washer	82 35 76	4
	Nut	82 23 33	4
	Screw	81 41 34	4

Item	Denomination		Part No.	Qty.
4	Bracket		599 21 00	1
5	Screw		81 49 36	1
6	Washer		82 35 23	1
7	Pipe		<ul style="list-style-type: none"> <li>• 613 60 01 (drive units 7X5, gear drive)</li> <li>• 599 27 00 (drive units 8X5, gear drive)</li> <li>• 610 79 00 (drive units 9X5, gear drive)</li> <li>• 610 79 01 (drive units 9X5, direct drive)</li> </ul>	1
8	Washer		82 35 76	2
	Nut		82 23 33	2
	Screw		81 41 34	2
9	Clamp		598 85 00	1
10	Clamp		599 24 00	2
11	Washer		82 35 76	4
	Nut		82 23 33	4
	Screw		81 41 34	4
12	Bracket		<ul style="list-style-type: none"> <li>• 614 11 00 (drive units 7X5)</li> <li>• 604 25 00 (drive units 8X5, 9X5)</li> </ul>	1
13	Screw		<ul style="list-style-type: none"> <li>• 82 01 43 (drive units 7X5)</li> <li>• 84 34 03 (drive units 8X5, 9X5)</li> </ul>	1
	Washer	Drive units 8X5, 9X5	82 35 23	1
14	Pipe		613 55 00	1
15	Hose unit	The length is stated by the last two digits in the part number. Lengths: 8-30 m (26-98 ft)	600 97 08-600 97 30	4 (Specify the length through the part number.)





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- 2) A leading global water technology company

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