

E7650/E7650R

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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.

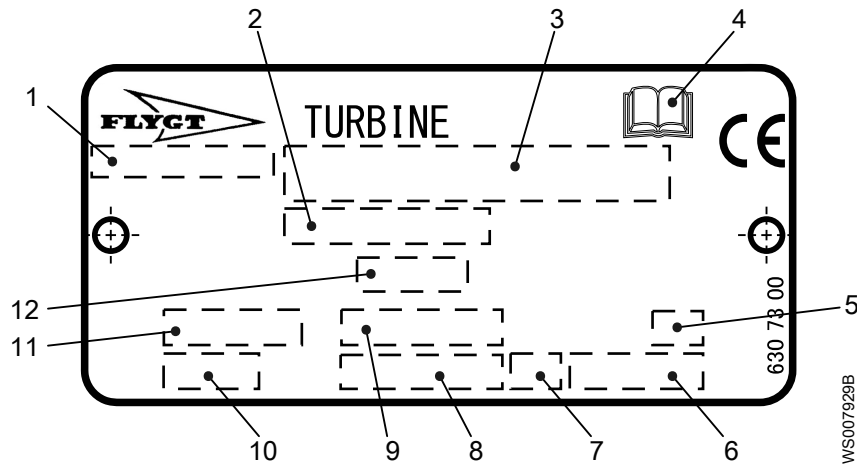
Data for ordering spare parts

The following information is needed for spare part orders:

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

Product Description

The data plate



1. Country of origin
2. Product number
3. Serial number: Product code-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. Column diameter
12. Runner code

Product denomination

Reading instruction

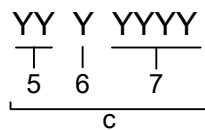
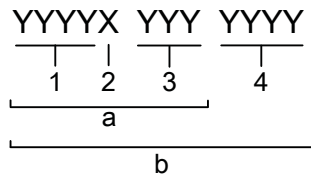
In this section, code characters are illustrated accordingly:

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



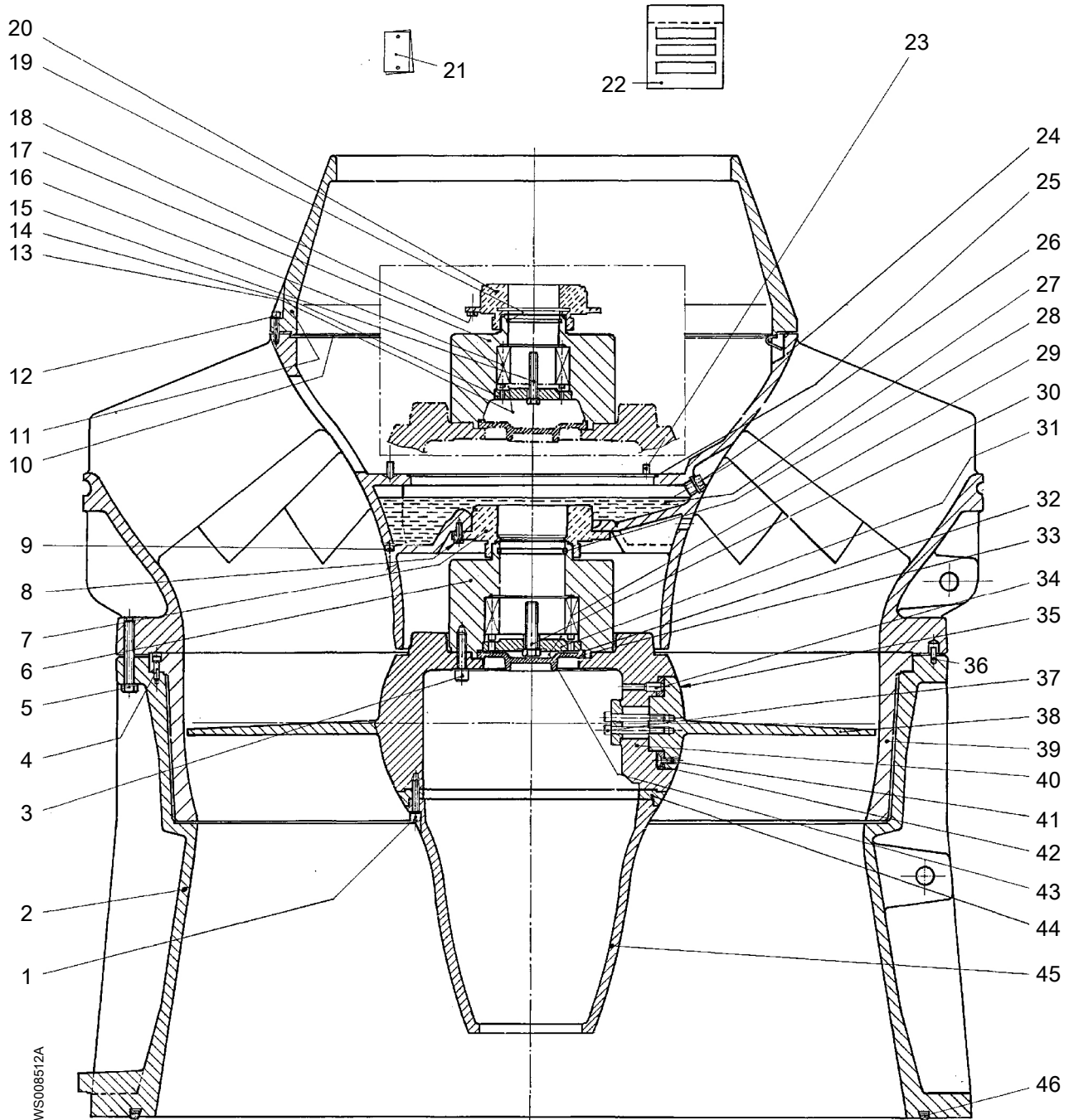
WS007962A

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

Parts

Turbine E7650: fixed runner



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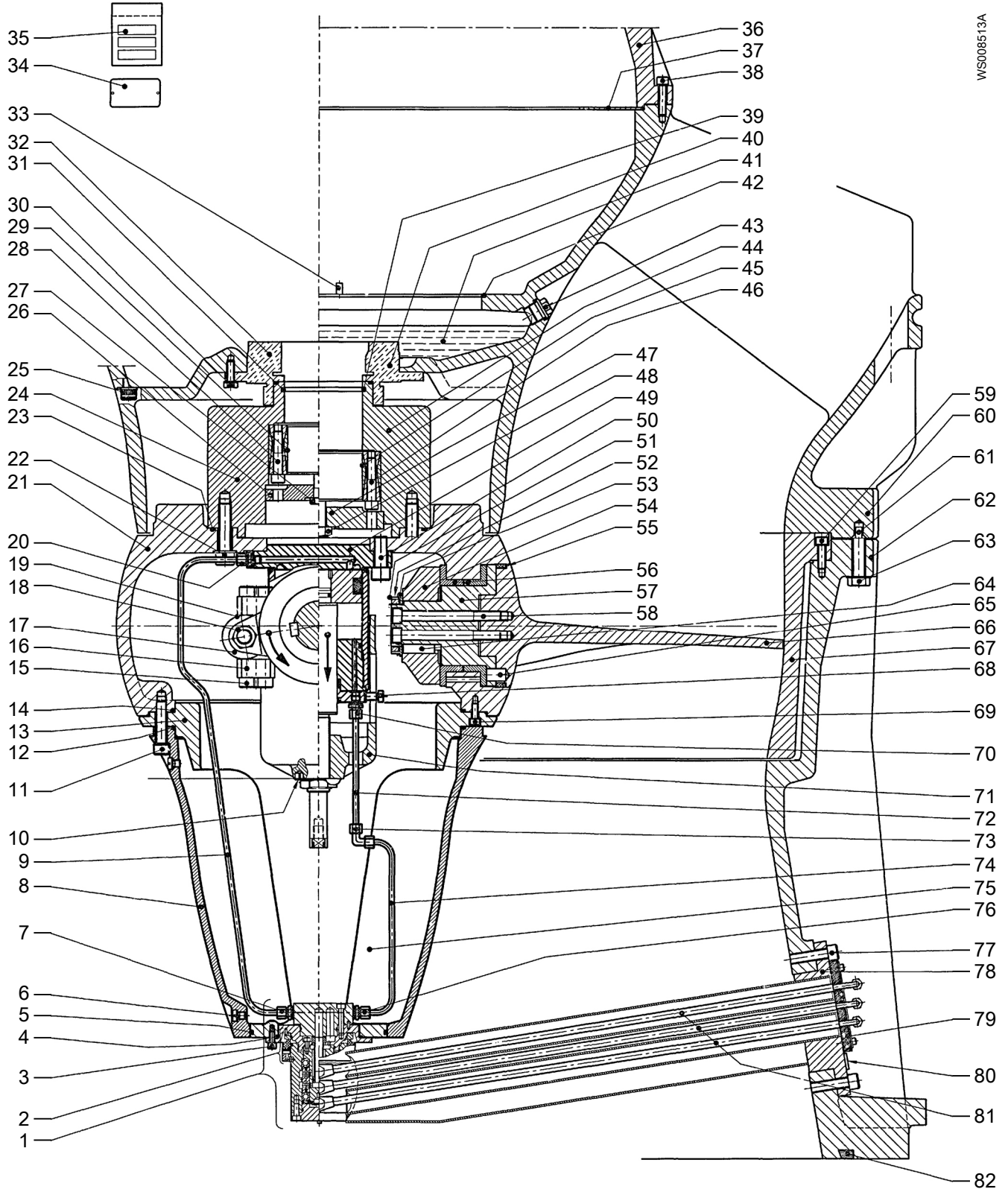
Item	Denomination	Part No.	Qty.
1	Screw	82 01 11	6
	Spring washer	82 48 68	6
2	Outlet cone	466 12 00	1
3	Screw	82 01 28	12
	Washer	82 35 26	12

Item	Denomination		Part No.	Qty.
4	Screw		82 00 71	2
	Spring washer		82 48 65	2
5	Screw		81 43 77	24
	Washer		82 35 26	24
6	Hub	For gear 350-2X / 360-2X	593 23 00	1
7	Seal unit	For gear 350-2X / 360-2X	433 74 01	1
8	Screw	For gear 350-2X / 360-2X	81 41 56	6
	Washer	For gear 350-2X / 360-2X	82 35 20	6
9	Screw		83 03 87	10
	Washer		82 35 23	10
	Locking liquid		90 32 55	*
10	Guiding ring		471 93 00	1
11	Inlet cone		471 92 00	1
12	Screw		82 00 73	11
	Spring washer		82 48 65	11
13	Grease	For gear 350-1X / 360-1X	90 20 54	50 g (1.8 oz)
14	Supporting washer	For gear 350-1X / 360-1X	426 07 00	1
15	Screw	For gear 350-1X / 360-1X	84 34 13	1
16	Locking assembly	For gear 350-1X / 360-1X Torque: 225 Nm (166 ft-lb)	84 60 11	1
17	Hub	For gear 350-1X / 360-1X	593 25 00	1
18	Screw	For gear 350-1X / 360-1X	81 41 56	3
	Washer	For gear 350-1X / 360-1X	82 35 20	3
19	O-ring	For gear 350-1X / 360-1X	82 74 14	1
20	Mechanical seal	For gear 350-1X / 360-1X	556 60 00	1
21	Data plate		630 73 00	2
	Drive screw		82 20 88	2
22	Packing kit		395 02 01	1
23	Tension pin		80 58 95	1
24	Turbine housing	TH1 (70°), for gear 350-2X / 360-2X	466 18 00	1
		TH1 (70°), for gear 350-1X / 360-1X	466 18 01	
		TH2 (63°), for gear 350-2X / 360-2X	466 18 02	
		TH2 (63°), for gear 350-1X / 360-1X	466 18 03	
		TH3 (57°), for gear 350-2X / 360-2X	466 18 04	
		TH3 (57°), for gear 350-1X / 360-1X	466 18 05	
		TH0 (77°), for gear 350-2X / 360-2X	466 18 06	
		TH0 (77°), for gear 350-1X / 360-1X	466 18 07	
25	O-ring		82 75 13	1

Item	Denomination		Part No.	Qty.
26	Plug	Torque: 80 Nm (59 ft-lb)	82 62 71	1
	O-ring		82 77 30	1
27	Oil		90 17 57	33 L (35 quarts)
28	O-ring	For gear 350-2X / 360-2X	82 74 20	1
29	Locking assembly	For gear 350-2X / 360-2X Torque: 225 Nm (166 ft-lb)	84 60 12	1
30	Screw	For gear 350-2X / 360-2X	84 34 57	1
31	Supporting washer	For gear 350-2X / 360-2X	427 23 00	1
32	O-ring		82 74 95	1
33	Cover		427 22 00	1
34	Parallel pin		80 31 17	12
35	Gasket		505 13 00	4
36	Tension pin		80 58 95	1
37	Screw		82 01 17	12
	Plate		498 21 00	4
38	Turbine blade	Opposite blades, difference in weight 450 g (15.9 oz) max	471 91 02 (bronze)	4
			471 91 03 (stainless steel)	4
39	Wear ring		466 09 00 (bronze)	1
			466 09 01 (stainless steel)	1
40	Propeller hub		496 26 00	1
41	Screw		82 38 62	12
42	Supporting washer	For blade angle 8°	428 44 22	4
		For blade angle 9°	428 44 21	
		For blade angle 10°	428 44 20	
		For blade angle 11°	428 44 19	
		For blade angle 12°	428 44 18	
		For blade angle 13°	428 44 17	
		For blade angle 14°	428 44 16	
		For blade angle 15°	428 44 15	
		For blade angle 16°	428 44 14	
		For blade angle 17°	428 44 13	
		For blade angle 18°	428 44 12	
		For blade angle 19°	428 44 11	
		For blade angle 20°	428 44 10	
		For blade angle 21°	428 44 09	
		For blade angle 22°	428 44 08	
		For blade angle 23°	428 44 07	
		For blade angle 24°	428 44 06	
		For blade angle 25°	428 44 05	
		For blade angle 26°	428 44 04	
		For blade angle 27°	428 44 03	
For blade angle 28°	428 44 02			
For blade angle 29°	428 44 01			

Item	Denomination		Part No.	Qty.
		For blade angle 30°	428 44 00	
		For blade angle 31°	428 44 51 S	
		For blade angle 32°	428 44 50 S	
43	Grease	For gear 350-2X / 360-2X	90 20 54	100 g (3.53 oz)
44	Supporting washer		466 15 00	1
45	Casing		466 14 01	1
46	G-ring		82 83 38	1

Turbine E7650R: adjustable runner



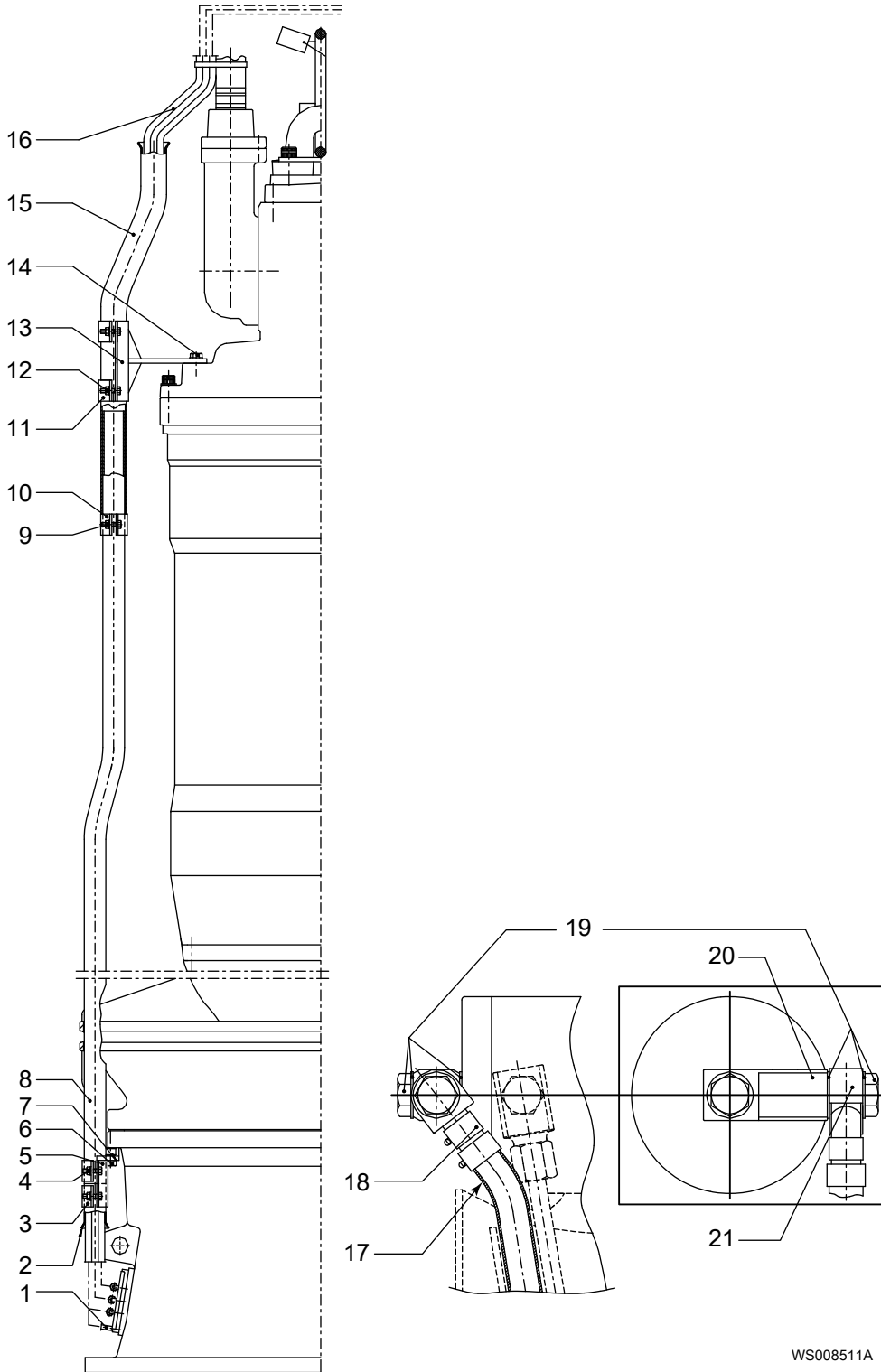
Item	Denomination		Part No.	Qty.
1	Swivel unit	Complete with mechanical seal	605 14 00	1
2	Mechanical seal	Part of 605 14 00	527 76 00	1

Item	Denomination		Part No.	Qty.
3	Screw		82 00 32	6
	Washer		82 35 16	6
4	O-ring		82 74 79	1
5	O-ring		82 74 93	1
6	Screw		303 44 03	3
	O-ring		82 73 85	3
7	Coupling		84 49 64	1
	Seal washer		82 48 36	1
8	Casing		466 14 01	1
9	Pipe		498 02 00	1
10	Lock washer		82 53 20	1
11	Screw		82 01 11	6
	Spring washer		82 48 68	6
12	O-ring		82 75 10	1
13	Stand		496 21 00	1
14	O-ring		82 75 10	1
15	Screw	Torque: 375 Nm (277 ft-lb)	84 51 88	24
16	Plate		496 83 00	8
17	Cam roller		80 10 41	4
18	Nut	Torque: 133 Nm (98.1 ft-lb)	82 25 48	8
19	Grease		90 20 54	100 g (3.53 oz)
20	Coupling		84 49 64	1
	Seal washer		82 48 36	1
21	Propeller hub		496 26 02	1
22	Screw		82 01 28	12
	Washer		82 35 26	12
23	O-ring		82 75 04	1
24	Hub	For gear 350-1X / 360-1X	593 25 00	1
25	Screw		83 03 87	10
	Washer		82 35 23	10
	Locking liquid		90 32 55	*
26	Supporting washer	For gear 350-1X / 360-1X	426 07 00	1
27	Screw	For gear 350-1X / 360-1X	84 34 13	1
28	Locking assembly	For gear 350-1X / 360-1X Torque: 225 Nm (166 ft-lb)	84 60 11	1
29	Grease	For gear 350-1X / 360-1X	90 20 54	50 g (1.8 oz)
30	Screw		81 41 56	<ul style="list-style-type: none"> • 3, for gear 350-1X / 360-1X • 6, for gear 350-2X / 360-2X
	Washer		82 35 20	<ul style="list-style-type: none"> • 3, for gear 350-1X / 360-1X • 6, for gear 350-2X / 360-2X
31	O-ring	For gear 350-1X / 360-1X	82 74 14	1

Item	Denomination		Part No.	Qty.
32	Mechanical seal	For gear 350-1X / 360-1X	556 60 00	1
33	Tension pin		80 58 95	1
34	Data plate		630 73 00	2
	Drive screw		82 20 88	2
35	Packing kit		395 02 01	1
36	Inlet cone		471 92 00	1
37	Guiding ring		471 93 00	1
38	Screw		82 00 73	11
	Spring washer		82 48 65	11
39	O-ring	For gear 350-2X / 360-2X	82 74 20	1
40	Seal unit	For gear 350-2X / 360-2X	433 74 01	1
41	Oil		90 17 57	33 L (35 quarts)
42	O-ring		82 75 13	1
43	Plug	Torque: 80 Nm (59 ft-lb)	82 62 71	1
	O-ring		82 77 30	1
44	Hub	For gear 350-2X / 360-2X	593 23 00	1
45	Grease	For gear 350-2X / 360-2X	90 20 54	100 g (3.53 oz)
46	Locking assembly	For gear 350-2X / 360-2X Torque: 225 Nm (166 ft-lb)	84 60 12	1
47	Supporting washer	For gear 350-2X / 360-2X	427 23 00	1
48	Screw	For gear 350-2X / 360-2X	84 34 57	1
49	Hydraulic cylinder		496 38 00	1
50	Screw		82 01 26	4
51	Nut		82 22 39	4
52	Lock washer		82 51 39	4
53	Washer		496 84 03	4
54	Driver		496 31 00	4
55	Seal ring		84 91 53	4
56	Bearing bush		569 51 03	8
	Grease		90 20 54	40 g (1.4 oz)
57	Shaft		496 81 00	4
58	Screw	Torque: 375 Nm (277 ft-lb)	84 52 00	12
59	Screw		82 00 71	2
	Spring washer		82 48 65	2

Item	Denomination	Part No.	Qty.	
60	Turbine housing	TH1 (70°), for gear 350-2X / 360-2X	466 18 08	1
		TH1 (70°), for gear 350-1X / 360-1X	466 18 09	
		TH2 (63°), for gear 350-2X / 360-2X	466 18 10	
		TH2 (63°), for gear 350-1X / 360-1X	466 18 11	
		TH3 (57°), for gear 350-2X / 360-2X	466 18 12	
		TH3 (57°), for gear 350-1X / 360-1X	466 18 13	
		TH0 (77°), for gear 350-2X / 360-2X	466 18 14	
		TH0 (77°), for gear 350-1X / 360-1X	466 18 15	
61	Tension pin		80 58 95	1
62	Outlet cone		466 12 01	1
63	Screw		81 43 77	24
	Washer		82 35 26	24
64	Parallel key		80 79 39	4
65	Parallel pin		80 32 00	12
66	Turbine blade	Opposite blades, difference in weight 450 g (15.9 oz) max	471 91 04 (bronze)	4
			471 91 05 (stainless steel)	4
67	Wear ring		466 09 00 (bronze)	1
			466 09 01 (stainless steel)	1
68	Screw	Torque: 50 Nm (37 ft-lb)	80 12 35	1
	Locking liquid		90 32 55	*
69	Screw		82 00 51	2
70	Coupling		84 49 64	1
	Seal washer		82 48 36	1
71	Drive housing		496 18 01	1
72	Pipe		496 85 01	1
73	Angle coupling		80 14 27	1
74	Pipe		496 71 03	1
75	Oil		90 17 52	3 L (3 quarts)
76	Coupling		84 49 64	1
	Seal washer		82 48 36	1
77	Screw		82 01 07	4
78	Protective pipe		498 32 01	1
79	Bracket unit		614 24 00	1
80	Protective plug		82 69 41	2
81	Pipe unit		592 85 04	3
	Coupling		84 49 52	3
	Shrink hose		94 03 26	0.45 m (1.5 ft)
82	G-ring		82 83 38	1

Turbine installation: adjustable runner



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Item	Denomination	Part No.	Qty.
1	Hose	94 06 09	Specify length: length of Hose unit + 2 m (7 ft)
	Hose clamp	84 54 10	1
	Coupling	80 48 53	1
2	Pipe	599 25 00	1

Item	Denomination		Part No.	Qty.
3	Clamp		598 85 00	2
4	Washer		82 35 76	4
	Nut		82 23 33	4
	Screw		81 41 34	4
5	Bracket		604 27 00	1
6	Screw		84 34 30	1
7	Washer		82 35 26	1
8	Pipe		<ul style="list-style-type: none"> • 614 10 00 (drive units 7X5) • 604 96 00 (drive units 8X5) • 604 24 00 (drive units 9X5) 	1
9	Washer		82 35 76	2
	Nut		82 23 33	2
	Screw		81 41 34	2
10	Clamp		598 85 00	1
11	Clamp		599 24 00	2
12	Washer		82 35 76	4
	Nut		82 23 33	4
	Screw		81 41 34	4
13	Bracket		<ul style="list-style-type: none"> • 614 11 00 (drive units 7X5) • 604 25 00 (drive units 8X5, 9X5) 	1
14	Screw		<ul style="list-style-type: none"> • 82 01 43 (drive units 7X5) • 84 34 03 (drive units 8X5, 9X5) 	1
	Washer	Drive units 8X5, 9X5	82 35 23	1
15	Pipe		613 55 00	1
16	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	3 (Specify the length through the part number.)
17	Protective sleeve		615 30 00	1
18	Hose clamp		84 54 10	2
19	Seal washer		82 48 36	4
	Hollow screw	Torque: 55 Nm (41 ft-lb)	509 70 00	2
20	Coupling unit		615 84 00	1
21	Coupling		601 32 00	1

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- 1) The tissue in plants that brings water upward from the roots
- 2) A leading global water technology company

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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