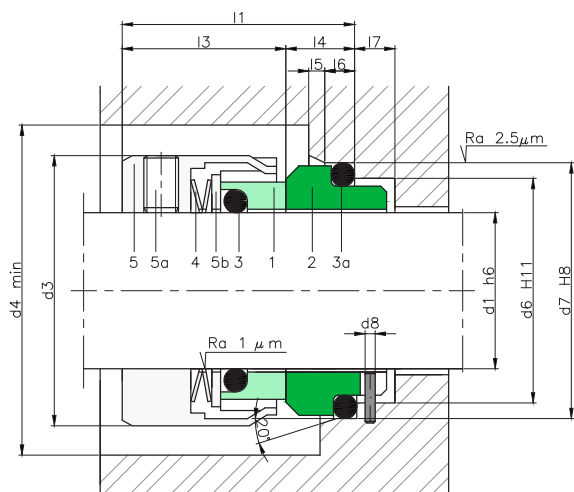


LWS10



COMPONENTS:

- 1 Rotating contact surface
- 2 Stationary contact surface
- 3 O-rings
- 3a O-rings
- 4 Spring
- 5 Metal frame
- 5a Set screws
- 5b Ring



Tolerance: d_1 14...25 mm ± 1.0 ; 28...63 mm ± 1.5 ; > 65 mm ± 2.0

SECTORS:



CHARACTERISTICS:

- **Unbalanced.**
- System attached to the shaft by allen screws.
- **Not dependent on the rotation direction.**

OPERATING LIMITS:

$$d_1 = 14 \div 150 \text{ mm} \quad p = 10 \text{ kg/cm}^2$$

$$v = 20 \text{ m/s} \quad t = -15 \div +200^\circ\text{C} (*)$$

(*) The temperature resistance depends on the material of the secondary seals used.

The operating limits are defined by the PV factor which is determined for the sealing system characteristics and those of the application.

DESCRIPTION:

Recommended for working with sticky fluids and fluids laden with particles and fibres. Unlike the multispring models, the wave spring model cannot be blocked or obstructed and its open leaf design produces a self-cleaning effect.

Standard L9 type stationary part.

Seal compliant with standard EN 12756 (KU).

Available with a pumping ring on the casing to reduce the temperature between the contact surfaces and facilitate the barrier fluid movement in the case of double mounting (reference LWS10-F).

Contact surface kits supplied available.

DIMENSIONS CHART

Dimensions in mm

Shaft	Rotary part			Stationary part								Total length
mm	d ₃	d ₄	l ₃	d ₆	d ₇	d ₈	l ₄	l ₅	l ₆	l ₇	l ₁	
14	25	30	25.0	21	25	3	10.0	1.5	4	8.5	35.0	
16	27	32	25.0	23	27	3	10.0	1.5	4	8.5	35.0	
18	33	38	26.0	27	33	3	11.5	2.0	4	9.0	37.5	
20	35	40	26.0	29	35	3	11.5	2.0	5	9.0	37.5	
22	37	42	26.0	31	37	3	11.5	2.0	5	9.0	37.5	
24	39	44	28.5	33	39	3	11.5	2.0	5	9.0	40.0	
25	40	45	28.5	34	40	3	11.5	2.0	5	9.0	40.0	
28	43	48	31.0	37	43	3	11.5	2.0	5	9.0	42.5	
30	45	50	31.0	39	45	3	11.5	2.0	5	9.0	42.5	
32	47	52	31.0	42	48	3	11.5	2.0	5	9.0	42.5	
33	48	53	31.0	42	48	3	11.5	2.0	5	9.0	42.5	
35	50	55	31.0	44	50	3	11.5	2.0	5	9.0	42.5	
38	55	60	31.0	49	56	4	14.0	2.0	6	9.0	45.0	
40	57	62	31.0	51	58	4	14.0	2.0	6	9.0	45.0	
43	60	65	31.0	54	61	4	14.0	2.0	6	9.0	45.0	
45	62	67	31.0	56	63	4	14.0	2.0	6	9.0	45.0	
48	65	70	31.0	59	66	4	14.0	2.0	6	9.0	45.0	
50	67	72	32.5	62	70	4	15.0	2.5	6	9.0	47.5	
53	70	75	32.5	65	73	4	15.0	2.5	6	9.0	47.5	
55	72	77	32.5	67	75	4	15.0	2.5	6	9.0	47.5	
58	79	84	37.5	70	78	4	15.0	2.5	6	9.0	52.5	
60	81	86	37.5	72	80	4	15.0	2.5	6	9.0	52.5	
63	84	89	37.5	75	83	4	15.0	2.5	6	9.0	52.5	
65	86	91	37.5	77	85	4	15.0	2.5	6	9.0	52.5	
68	89	94	34.5	81	90	4	18.0	2.5	7	9.0	52.5	
70	91	96	42.0	83	92	4	18.0	2.5	7	9.0	60.0	
75	99	104	42.0	88	97	4	18.0	2.5	7	9.0	60.0	
80	104	109	41.8	95	105	4	18.2	3.0	7	9.0	60.0	
85	109	114	41.8	100	110	4	18.2	3.0	7	9.0	60.0	
90	114	119	46.8	105	115	4	18.2	3.0	7	9.0	65.0	
95	119	124	47.8	110	120	4	17.2	3.0	7	9.0	65.0	
100	124	129	47.8	115	125	4	17.2	3.0	7	9.0	65.0	

Dimensions subject to changes or modifications.

Shaft	Rotary part			Stationary part								Total length
mm	d ₃	d ₄	l ₃	d ₆	d ₇	d ₈	l ₄	l ₅	l ₆	l ₇	l ₁	
105	138	143	47	122.2	134.3	5	20	2	10	--	67	
110	143	148	47	128.2	140.3	5	20	2	10	--	67	
115	148	153	47	136.2	148.3	5	20	2	10	--	67	
120	153	158	47	138.2	150.3	5	20	2	10	--	67	
125	158	163	47	142.2	154.3	5	20	2	10	--	67	
130	163	168	47	146.2	158.3	5	20	2	10	--	67	
135	168	173	47	152.2	164.3	5	20	2	10	--	67	
140	173	178	47	156.2	168.3	5	20	2	10	--	67	
145	178	183	47	161.2	173.3	5	20	2	10	--	67	
150	183	189	47	168.2	180.3	5	22	2	10	--	69	

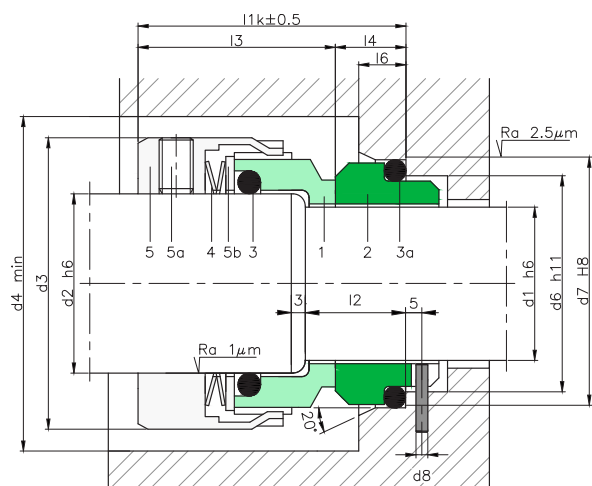
* Multispring design manufacture for d₁>100 mm.

LWS10B



COMPONENTS:

- 1 Rotating contact surface
- 2 Stationary contact surface
- 3 O-rings
- 3a O-rings
- 4 Spring
- 5 Metal frame
- 5a Set screws
- 5b Ring

**SECTORS:**

CHARACTERISTICS:

- **Balanced.**
- System attached to the shaft by allen screws.
- **Not dependent on the rotation direction.**

OPERATING LIMITS:

$d_1 = 14 \div 100 \text{ mm}$ $p = 25 \text{ kg/cm}^2$

$v = 20 \text{ m/s}$ $t = -50 \div +220^\circ\text{C} (^{\circ})$

(*) The temperature resistance depends on the material of the secondary seals used.

The operating limits are defined by the PV factor which is determined for the sealing system characteristics and those of the application.

DESCRIPTION:

The balanced contact surface design allows the mechanical seal to be used in applications with high pressures without suffering premature wear. Recommended for working with sticky fluids and fluids laden with particles and fibres. Unlike the multispring models, the wave spring model cannot be blocked or obstructed and its open leaf design produces a self-cleaning effect. Standard L9 type fixed stationary part, standardised seal, compliant with EN 12756 (KB).

The casing can incorporate a pumping ring to reduce the temperature between the contact surfaces and facilitate the barrier fluid movement in the case of double mounting (reference LWS10B-F).

DIMENSIONS CHART

Dimensions in mm

Shaft		Rotary part			Stationary part						Total length
d ₁	d ₂	d ₃	d ₄	l ₃	d ₆	d ₇	d ₈	l ₂	l ₄	l ₆	l _{IK}
14	18	33	37	32.5	21	25	3	18	10.0	9	42.5
16	20	35	39	32.5	23	27	3	18	10.0	9	42.5
18	22	37	41	33.5	27	33	3	20	11.5	9	45.0
20	24	39	43	33.5	29	35	3	20	11.5	9	45.0
22	26	41	45	33.5	31	37	3	20	11.5	9	45.0
24	28	43	47	36.0	33	39	3	20	11.5	9	47.5
25	30	45	49	36.0	34	40	3	20	11.5	9	47.5
28	33	48	52	38.5	37	43	3	20	11.5	9	50.0
30	35	50	54	38.5	39	45	3	20	11.5	9	50.0
32	38	55	59	38.5	42	48	3	20	11.5	9	50.0
33	38	55	59	38.5	42	48	3	20	11.5	9	50.0
35	40	57	61	38.5	44	50	3	20	11.5	9	50.0
38	43	60	64	38.5	49	56	4	23	14.0	10	52.5
40	45	62	66	38.5	51	58	4	23	14.0	10	52.5
43	48	65	69	38.5	54	61	4	23	14.0	10	52.5
45	50	67	71	38.5	56	63	4	23	14.0	10	52.5
48	53	70	74	38.5	59	66	4	23	14.0	10	52.5
50	55	72	76	42.5	62	70	4	25	15.0	11	57.5
53	58	79	83	42.5	65	73	4	25	15.0	11	57.5
55	60	81	85	42.5	67	75	4	25	15.0	11	57.5
58	63	84	88	47.5	70	78	4	25	15.0	11	62.5
60	65	86	90	47.5	72	80	4	25	15.0	11	62.5
63	68	89	93	47.5	77	83	4	25	15.0	11	62.5
65	70	91	95	47.5	75	85	4	25	15.0	11	62.5
70	75	99	103	52.0	83	92	4	28	18.0	12	70.0
75	80	104	108	52.0	88	97	4	28	18.0	12	70.0
80	85	109	113	51.8	95	105	4	28	18.2	13	70.0
85	90	114	118	56.8	100	110	4	28	18.2	13	75.0
90	95	119	123	56.8	105	115	4	28	18.2	13	75.0
95	100	124	128	57.8	110	120	4	28	17.2	13	75.0
100	105	129	133	57.8	115	125	4	28	17.2	13	75.0

Dimensions subject to changes or modifications.

LWS12



COMPONENTS:

- 1 Rotating contact surface
- 2 Stationary contact surface
- 3 O-rings
- 3a O-rings
- 4 Spring
- 5 Set screws
- 5a Metal frame

SECTORS:



CHARACTERISTICS:

- **Unbalanced.**
- System attached to the shaft by allen screws.
- **Not dependent on the rotation direction.**

OPERATING LIMITS:

$$d_i = 20 \div 100 \text{ mm} \quad p = 10 \text{ kg/cm}^2$$

$$v = 20 \text{ m/s} \quad t = -15 \div +200^\circ\text{C} (*)$$

(*) The temperature resistance depends on the material of the secondary seals used.

The operating limits are defined by the PV factor which is determined for the sealing system characteristics and those of the application.

DESCRIPTION:

Its mounting dimensions make it a perfect seal for installing in small spaces. The wave spring is not blocked or obstructed when working with fluids laden with particles and fibres, or viscous fluids. Standard L1 DIN stationary part.

DIMENSIONS CHART

Dimensions in mm

Shaft	Rotary part			Stationary part						Total length
mm	d ₃	d ₄	l ₃	d ₆	d ₇	d ₈	l ₄	l ₅	l ₆	l ₁
20	31	36	20.5	29	35	3	10.0	2.0	5	30.5
22	33	38	20.5	31	37	3	10.0	2.0	5	30.5
24	36	41	22.5	33	39	3	10.0	2.0	5	32.5
25	39	44	23.5	34	40	3	10.0	2.0	5	33.5
28	42	47	23.5	37	43	3	10.0	2.0	5	33.5
30	44	49	24.5	39	45	3	10.0	2.0	5	34.5
32	46	51	24.5	42	48	3	10.0	2.0	5	34.5
33	47	52	24.5	42	48	3	10.0	2.0	5	34.5
35	49	54	24.5	44	50	3	10.0	2.0	5	34.5
38	53	58	27.0	49	56	4	11.0	2.0	6	38.0
40	55	60	28.0	51	58	4	11.0	2.0	6	39.0
43	58	63	28.0	54	61	4	11.0	2.0	6	39.0
45	60	65	28.0	56	63	4	11.0	2.0	6	39.0
48	63	68	28.0	59	66	4	11.0	2.0	6	39.0
50	66	71	27.0	62	70	4	13.0	2.5	6	39.0
53	69	74	27.0	65	73	4	13.0	2.5	6	39.0
55	71	76	27.0	67	75	4	13.0	2.5	6	39.0
58	77	82	29.0	70	78	4	13.0	2.5	6	42.0
60	79	84	29.0	72	80	4	13.0	2.5	6	42.0
63	82	87	32.0	75	83	4	13.0	2.5	6	45.0
65	84	89	32.0	77	85	4	13.0	2.5	6	45.0
68	87	92	33.5	81	90	4	15.0	2.5	7	48.5
70	89	94	32.0	83	92	4	15.0	2.5	7	47.0
75	94	99	32.0	88	97	4	15.0	2.5	7	47.0
80	100	105	32.5	95	105	4	15.5	3.0	7	48.0
85	105	110	32.5	100	110	4	15.5	3.0	7	48.0
90	112	117	38.5	105	115	4	15.5	3.0	7	54.0
95	117	122	38.5	110	120	4	15.5	3.0	7	54.0
100	122	127	38.5	115	125	4	15.5	3.0	7	54.0

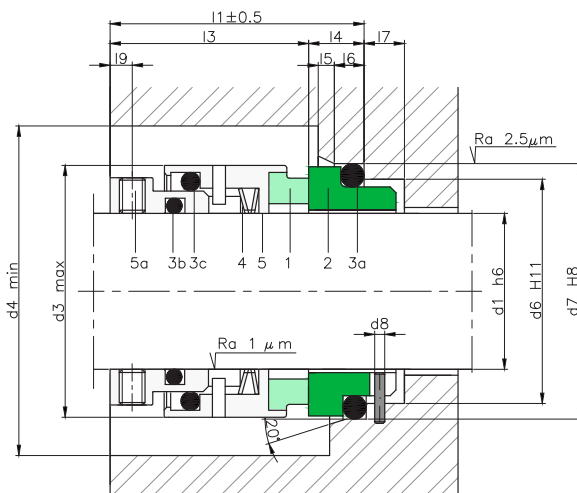
Dimensions subject to changes or modifications.

LWS30 / LWS30A



COMPONENTS:

- 1 Rotating contact surface
- 2 Stationary contact surface
- 3a O-rings
- 3b O-rings
- 3c O-rings
- 4 Spring
- 5 Metal frame
- 5a Set screws



SECTORS:



CHARACTERISTICS:

- **Balanced.**
- System attached to the shaft by allen screws.
- **Not dependent on the rotation direction.**

OPERATING LIMITS:

$$d_1 = 18 \div 100 \text{ mm} \quad p = 35 \text{ kg/cm}^2$$

$$v = 20 \text{ m/s} \quad t = -15 \div +200^\circ\text{C} (*)$$

(*) The temperature resistance depends on the material of the secondary seals used.

The operating limits are defined by the PV factor which is determined for the sealing system characteristics and those of the application.

DESCRIPTION:

The wave spring is protected from the fluid. Ideal for using in cleaning processes since the possibility of particles adhering to the seal is considerably reduced.

Internally balanced, with no need for a stepped shaft (LWS10B). Suitable for working in applications with high pressures. The O-ring resting on the shaft does not cause wear as there is no axial movement (changes in pressure).

Seal compliant with standard EN 12756 (KU).

Standard L16 type stationary part (LWS30).

DIMENSIONS CHART

Dimensions in mm

Shaft	Rotary part					Stationary part								Total length
mm	d ₃	d ₄	l ₃	l _{3A}	l ₉	d ₆	d ₇	d ₈	l ₄	l _{4A}	l ₅	l ₆	l ₇	l ₁
18	32	34	30.5	28.5	3.0	27	33	3	7.0	9.0	2.0	4	8.5	37.5
20	34	36	30.5	28.5	3.0	29	35	3	7.0	9.0	2.0	5	8.5	37.5
22	36	38	30.5	28.5	3.0	31	37	3	7.0	9.0	2.0	5	9.0	37.5
24	38	40	33.0	31.0	3.5	33	39	3	7.0	9.0	2.0	5	9.0	40.0
25	39	41	33.0	31.0	3.5	34	40	3	7.0	9.0	2.0	5	9.0	40.0
28	42	44	35.5	33.0	3.5	37	43	3	7.0	9.5	2.0	5	9.0	42.5
30	44	46	35.5	33.0	3.5	39	45	3	7.0	9.5	2.0	5	9.0	42.5
32	47	48	35.5	33.0	3.5	42	48	3	7.0	9.5	2.0	5	9.0	42.5
33	47	49	35.5	33.0	3.5	42	48	3	7.0	9.5	2.0	5	9.0	42.5
35	49	51	35.5	33.0	3.5	44	50	3	7.0	9.5	2.0	5	9.0	42.5
38	54	58	37.0	34.5	4.0	49	56	4	8.0	10.5	2.0	6	9.0	45.0
40	56	60	37.0	34.5	4.0	51	58	4	8.0	10.5	2.0	6	9.0	45.0
43	59	63	37.0	34.5	4.0	54	61	4	8.0	10.5	2.0	6	9.0	45.0
45	61	65	37.0	34.5	4.0	56	63	4	8.0	10.5	2.0	6	9.0	45.0
48	64	68	37.0	34.5	4.0	59	66	4	8.0	10.5	2.0	6	9.0	45.0
50	66	70	38.0	35.5	4.5	62	70	4	9.5	12.0	2.5	6	9.0	47.5
53	69	73	38.0	35.5	4.5	65	73	4	9.5	12.0	2.5	6	9.0	47.5
55	71	75	38.0	35.5	4.5	67	75	4	9.5	12.0	2.5	6	9.0	47.5
58	78	83	42.0	39.5	4.5	70	78	4	10.5	13.0	2.5	6	9.0	52.5
60	80	85	42.0	39.5	4.5	72	80	4	10.5	13.0	2.5	6	9.0	52.5
63	83	88	42.0	39.5	4.5	75	83	4	10.5	13.0	2.5	6	9.0	52.5
65	85	90	42.0	39.5	4.5	77	85	4	10.5	13.0	2.5	6	9.0	52.5
68	88	93	41.5	39.0	4.5	81	90	4	11.0	13.5	2.5	7	9.0	52.5
70	90	95	48.5	46.0	5.0	83	92	4	11.5	14.0	2.5	7	9.0	60.0
75	99	104	48.5	46.0	5.5	88	97	4	11.5	14.0	2.5	7	9.0	60.0
80	104	109	48.5	46.0	5.5	95	105	4	11.5	14.0	3.0	7	9.0	60.0
85	109	114	48.5	46.0	5.5	100	110	4	11.5	14.0	3.0	7	9.0	60.0
90	114	119	52.0	49.5	5.5	105	115	4	13.0	15.5	3.0	7	9.0	65.0
95	119	124	52.0	49.5	5.5	110	120	4	13.0	15.5	3.0	7	9.0	65.0
100	124	129	52.0	49.5	5.5	115	125	4	13.0	15.5	3.0	7	9.0	65.0

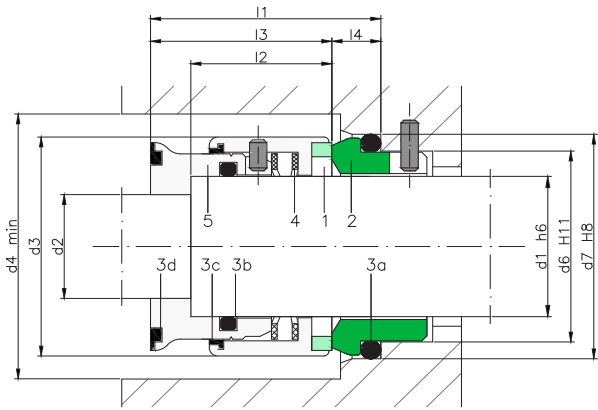
Dimensions subject to changes or modifications.

LWS31



COMPONENTS:

- 1 Rotating contact surface
- 2 Stationary contact surface
- 3a O-rings
- 3b O-rings
- 3c Elastomeric cup
- 3d Elastomeric cup
- 4 Springs
- 5 Metal frame



SECTORS:



CHARACTERISTICS:

- **Balanced.**
- Shaft fixing system **WITHOUT** screws.
- **Sentido rotación independiente.**

OPERATING LIMITS:

$d_1 = 20 \div 35 \text{ mm}$ $p = 35 \text{ kg/cm}^2$
 $v = 20 \text{ m/}$ $t = -40 \div +150^\circ\text{C (*)}$

(*) The temperature resistance depends on the material of the secondary seals used.

The operating limits are defined by the PV factor which is determined for the sealing system characteristics and those of the application.

DESCRIPTION:

A wave spring mechanical seal in which the spring is isolated and protected from the product. Its hygienic design reduces the likelihood of traces of product being deposited on its surface, thereby eliminating the risk of contamination.

DIMENSIONS CHART

Dimension in mm

Shaft	Rotary part					Stationary part			Total length
mm	d ₂	d ₃	l ₄	l ₂	l ₃	d ₆	d ₇	l ₄	l ₁
20	13.5	34	39	23	29	29	35	8.5	37.5
25	18.5	39	44	24.5	31.5	34	40	8.5	40
35	22.5	49	54	26	34	44	50	8.5	42.5

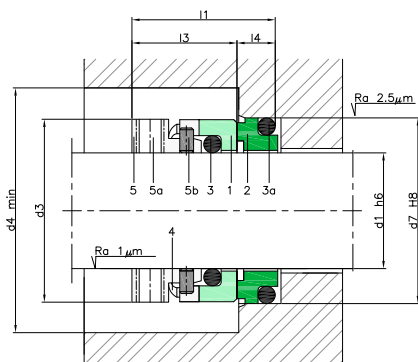
Dimensions subject to changes or modifications.

LWS70 / LWS71

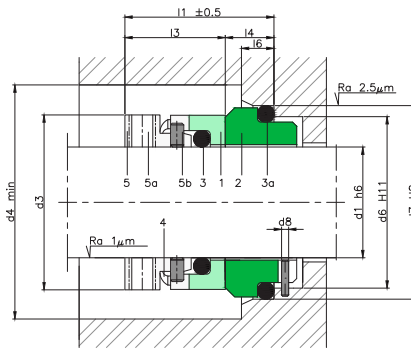


COMPONENTS:

- 1 Rotating contact surface
- 2 Stationary contact surface
- 3 O-rings
- 3a O-rings
- 4 Spring
- 5 Metal frame
- 5a Set screws
- 5b Coupling pin



TYPE LWS70



TYPE LWS71

SECTORS:



CHARACTERISTICS:

- Unbalanced.
- System attached to the shaft by Allen screws.
- Not dependent on the rotation direction.

OPERATING LIMITS:

$$d_1 = 15.8 \div 100 \text{ mm} \quad p = 10 \text{ kg/cm}^2$$

$$v = 15 \text{ m/s}$$

$$t = -15 \div +200^\circ\text{C} (*)$$

(*) The temperature resistance depends on the material of the secondary seals used.

The operating limits are defined by the PV factor which is determined for the sealing system characteristics and those of the application.

DESCRIPTION:

This mechanical seal is designed for internal and external mounting. Its small mounting size makes it ideal for using in lobe pumps. The wave spring cannot be blocked or obstructed when working with fluids laden with particles, sticky or viscous fluids.

The fact that the rotating part of the mechanical seal is made of stainless steel (the most habitual combination) makes it a resistant, robust seal.

DIMENSIONS CHART

Dimensions in mm

(mm)	d ₃	d ₄	l ₃	LWS70			LWS71					
				d ₇	l ₄	l ₁	d ₆	d ₇	d ₈	l ₄	l ₆	l ₁
15,8	27	30	19,1	28,5	6,3	25,4	-	-	-	-	-	-
16	27	31	19,1	28,5	6,3	25,4	21	27	3	8,6	7	27,7
18	29	33	19,1	-	-	-	27	33	3	10	9	29,1
19,1	30	33	19,1	31,7	6,3	25,4	-	-	-	-	-	-
20	32	36	19,1	-	-	-	29	35	3	10	9	29,1
22	34	38	19,1	-	-	-	31	37	3	10	9	29,1
24	34	38	19,1	35,4	7,6	26,7	33	39	3	10	9	29,1
25	35	39	19,1	-	-	-	34	40	3	10	9	29,1
28	40	44	19,1	42	7,6	26,7	37	43	3	10	9	29,1
28,6	39,5	42,5	19,1	41,2	7,6	26,7	-	-	-	-	-	-
30	41	45	19,1	42,7	7,6	26,7	39	45	3	10	9	29,1
31,7	42,4	45,4	19,1	44,2	7,6	26,7	-	-	-	-	-	-
32	43	47	19,1	44,4	7,6	26,7	42	48	3	10	9	29,1
33	44	48	19,1	-	-	-	42	48	3	10	9	29,1
35	46	50	19,1	47,6	7,6	26,7	44	50	3	10	9	29,1
38	52	56	21,1	53,9	8,1	29,2	49	56	4	11	10	32,1
40	55	59	21,1	-	-	-	51	58	4	11	10	32,1
43	58	62	21,1	-	-	-	54	61	4	11	10	32,1
44,4	58,2	61,2	21,1	60,3	8,1	29,2	-	-	-	-	-	-
45	60	64	21,1	-	-	-	56	63	4	11	10	32,1
47,6	61,4	64,4	21,1	63,5	8,1	29,2	-	-	-	-	-	-
48	62	66	21,1	-	-	-	59	66	4	11	10	32,1
50	62	66	21,1	63,9	8,1	29,2	62	70	4	13	11	34,1
50,8	64,6	67,6	22,1	66,6	9,6	31,7	-	-	-	-	-	-
53	71	75	22,1	-	-	-	65	73	4	13	11	35,1
53,9	71	74	22,1	73	9,6	31,7	-	-	-	-	-	-
54	71	74	22,1	73,9	9,6	31,7	-	-	-	-	-	-
54,6	72	75	22,1	75	9,6	31,7	-	-	-	-	-	-
55	72	76	22,1	75	9,6	31,7	67	75	4	13	11	35,1
58	78	82	25,8	-	-	-	70	78	4	13	11	38,8
60	79	83	25,8	-	-	-	72	80	4	13	11	38,8
63	79,3	82,3	25,8	83	9,1	34,9	75	83	4	13	11	38,8
63,5	79,3	82,3	25,8	88,9	9,1	34,9	-	-	-	-	-	-
65	87	91	25,8	-	-	-	77	85	4	13	11	38,8
68	89	93	25,8	-	-	-	81	90	4	15,3	12	41,1
68,8	88,9	91,9	25,8	95,2	9,1	34,9	-	-	-	-	-	-
70	89	93	25,8	-	-	-	83	92	4	15,3	12	41,1
73	94	97	25,8	98,4	9,1	34,9	-	-	-	-	-	-
75	96	100	25,8	100,4	9,1	34,9	88	97	4	15,3	12	41,1
76,2	96,9	99,9	25,8	101,6	9,1	34,9	-	-	-	-	-	-
80	101	105	25,8	104	9,1	34,9	95	105	4	15,7	13	41,5
85	108	112	25,8	-	-	-	100	110	4	15,7	13	41,5
90	113	117	25,8	-	-	-	105	115	4	15,7	13	41,5
95	116	120	25,8	125	9,1	34,9	110	120	4	15,7	13	41,5
100	121	125	25,8	130	9,1	34,9	115	125	4	15,7	13	41,5

Dimensions subject to changes or modifications.