



**jaga**

**TECHNICAL INFORMATION**  
Low-H<sub>2</sub>O fin tube elements

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*The information in this technical brochure is correct at the time of printing. Jaga Inc reserves the right to change product specification at any time in line with our policy of continuous improvement and innovation.*

*Note: dimensions in “( )” are shown in centimeters.*

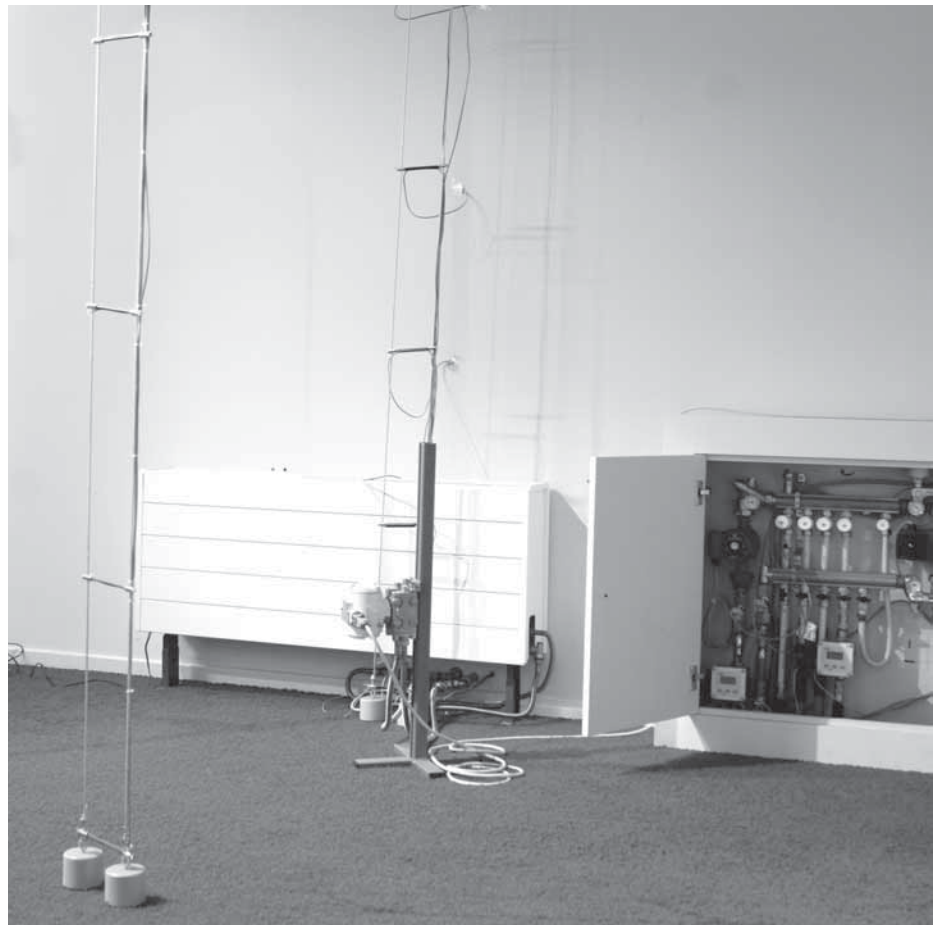
## CORRECTION FACTORS



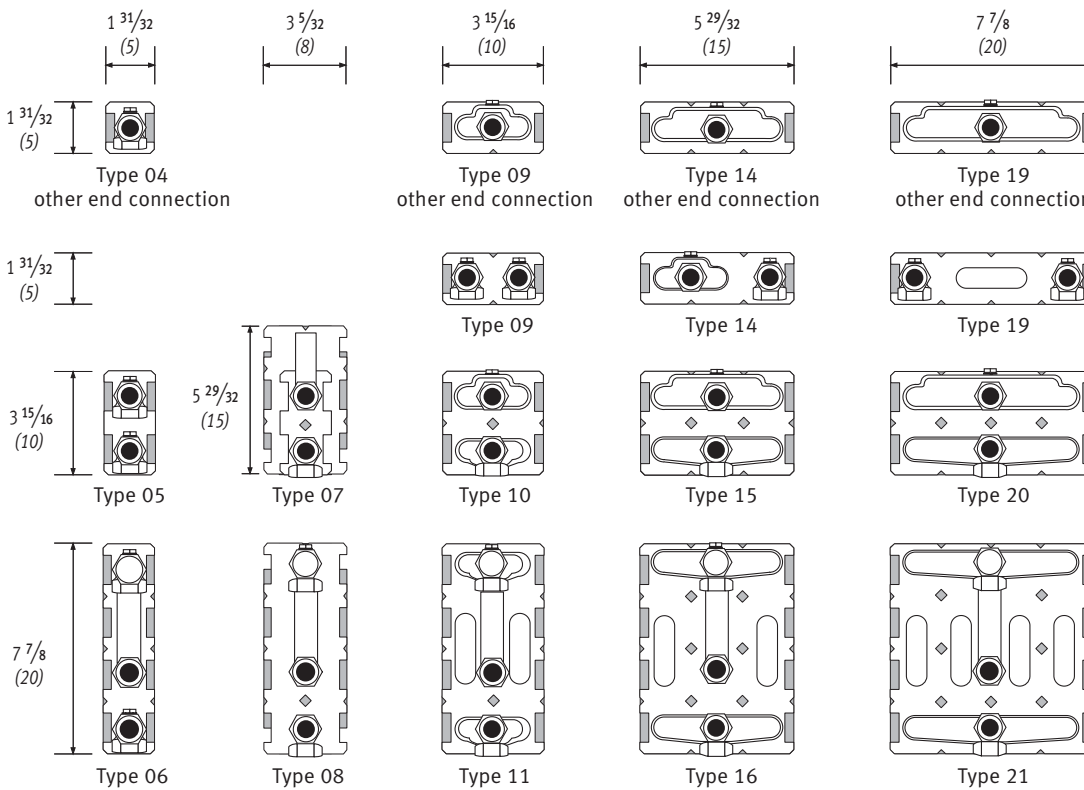
### Why the reference standard EN442?

This European standard is introduced in Europe to certify the output of all heat emitters for central heating systems. This standard Defines procedures for determining the standard thermal output of the heating appliances (radiators and convectors) fed with water or steam at temperatures below 248°F (120°C), supplied by a remote heat source. This also specifies the laboratory arrangements and testing methods to be adopted, the admissible tolerances the criteria for selecting the samples to be tested and for verifying the conformity of the current production with the samples.

Guidelines for testing procedures and conditions are taken into this standard. All outputs are measured and certified for standard water and room temperatures. Standard inlet, return and room temperatures are: 167/149/68, 194/158/68 and 131/113/68°F (75/65/20, 90/70/20 and 55/45/20°C). All alternative temperatures can be calculated according to realistic formulas and graphs. Also there will be tests performed on different products in the same product-range, this includes different flow rates and different cabinet heights. Due to the very strict structure of the test room, an exact reproducibility is obtained. There will be no extra addition to the measured results. All European manufacturers are obliged to participate in this testing procedure. A periodic recheck will be performed on a random selection of appliances. This standard ensures all users that the published heat outputs are officially tested and confirmed by an independent official laboratory.



# OVERVIEW FIN TUBE ELEMENTS



## WATER CONTENT

Type	G/foot	L/meter
04	0.0129	0.16
05	0.0258	0.32
06	0.0515	0.64
07	0.0411	0.51
08	0.0507	0.63
09	0.0250	0.31
10	0.0523	0.65
11	0.1071	1.33
14	0.0378	0.47
15	0.0789	0.98
16	0.1594	1.98
19	0.0507	0.63
20	0.1063	1.32
21	0.2142	2.66

4

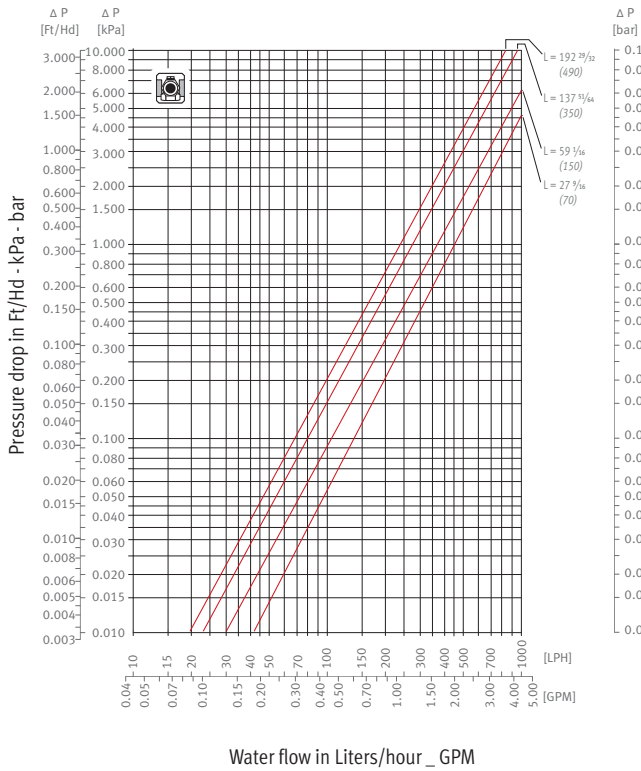
## Fin tube element per appliance. Overview codes:

Element	Knockonwood	Strada	Linea Plus	Tempo	Basic	Maxi	Play	Mini	Build-in	Mini Canal Dimensions duct H x D
04 other end	-	-	-	-	-	-	-	-	-	type 04 3.5" (9) x 5.5" (14) or 4.5" (11) x 5.5" (14)
05	-	-	-	-	-	-	-	type 05	-	type 05 5.5" (14) x 5.5" (14)
06	-	-	-	-	-	-	-	type 06	-	-
07	-	type 6 - H 6***	-	-	-	-	-	-	-	-
08	type 6 - H 8***	type 6 - H 8***	-	-	-	-	-	-	-	-
09	-	-	-	-	-	-	-	-	-	type 09 3.5" (9) x 7" (18) or 4.5" (11) x 7" (18)
09 other end	-	-	-	-	-	-	-	type 09	-	-
10	type 10	type 10	type 10	type 10	type 10	type 10	type 10	type 10	type 10	type 10 5.5" (14) x 10" (26) or 7.5" (19) x 10" (26)
11	type 11	type 11	type 11	type 11	type 11	type 11	type 11	type 11	type 11	-
14	-	-	-	-	-	-	-	-	-	type 14 3.5" (9) x 13.5" (34) or 4.5" (11) x 13.5" (34)
14 other end	-	-	-	-	-	-	-	type 14	-	-
15	type 15	type 15	type 15	type 15	type 15	type 15	type 15	type 15	type 15	type 15 5.5" (14) x 13.5" (34) or 7.5" (19) x 13.5" (34)
16	type 16	type 16	type 16	type 16	type 16	type 16	type 16	type 16	type 16	-
19	-	-	-	-	-	-	-	-	-	type 19 3.5" (9) x 16.5" (42) or 4.5" (11) x 16.5" (42)
19 other end	-	-	-	-	-	-	-	type 19	-	-
20	-	type 20	type 20	type 20	type 20	type 20	type 20	type 20	type 20	type 20 5.5" (14) x 16.5" (42) or 7.5" (19) x 16.5" (42)
21	-	type 21	type 21	type 21	type 21	type 21	type 21	type 21	type 21	-

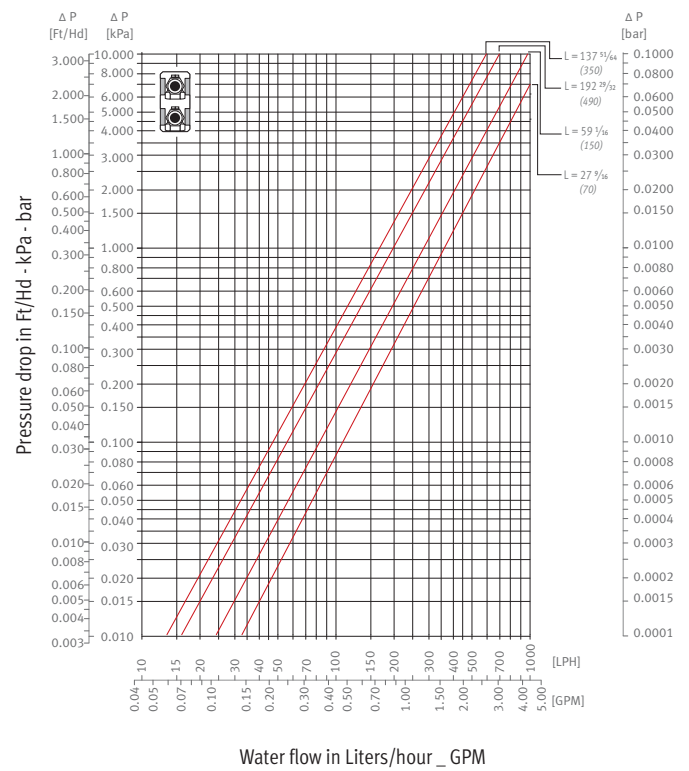
\* Strada type 06 height 8" (20)    \*\* Knockonwood and Strada type 06, all other heights

# PRESSURE DROP

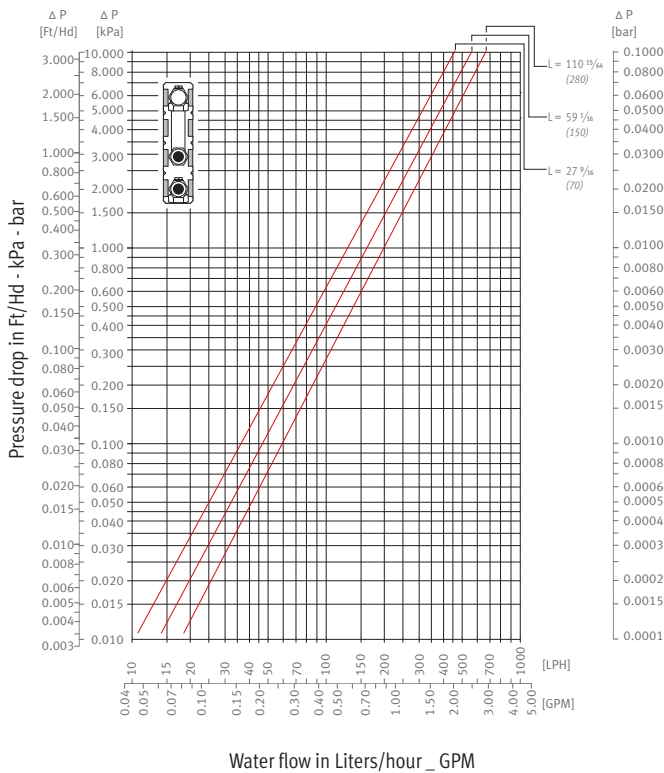
## TYPE 04 OTHER END CONNECTION



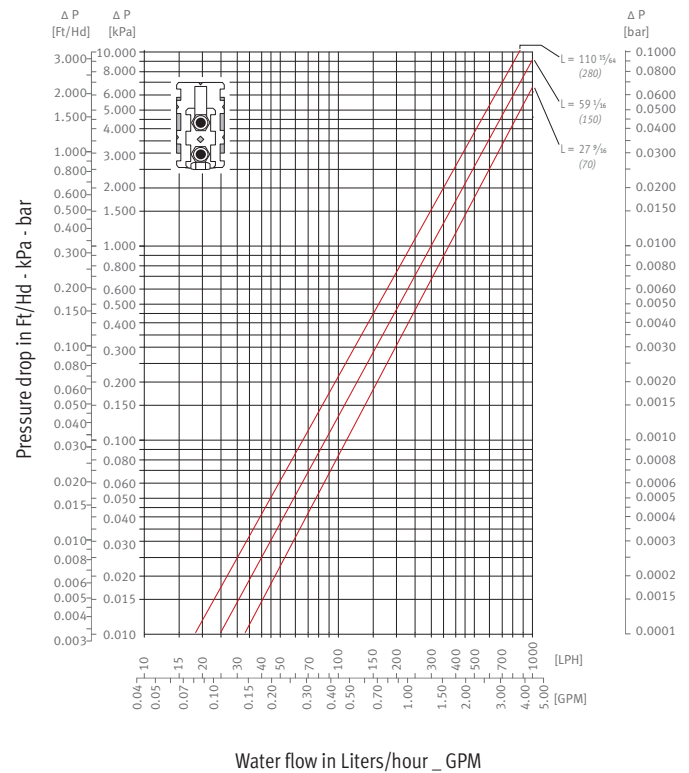
## TYPE 05



## TYPE 06

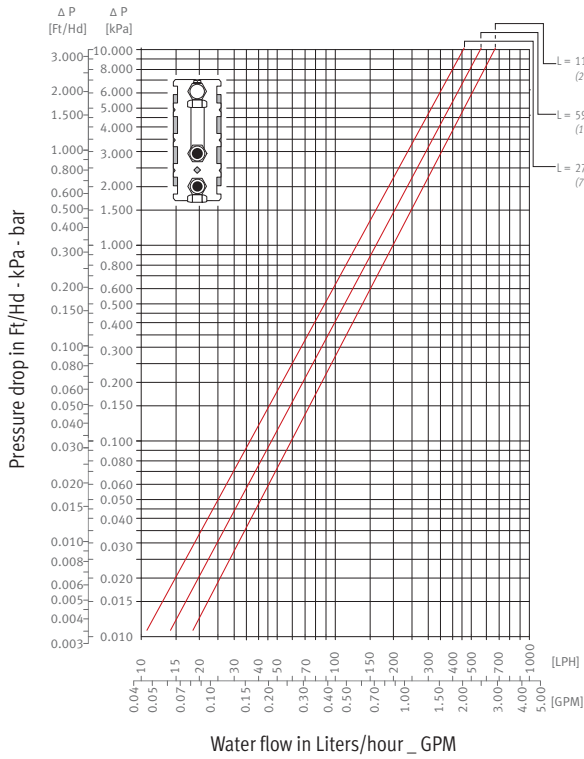


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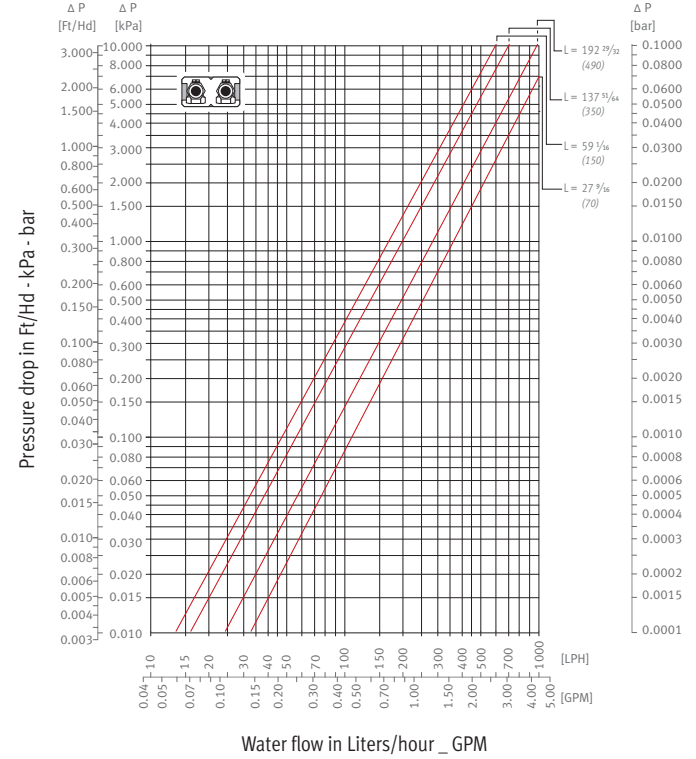


# PRESSURE DROP

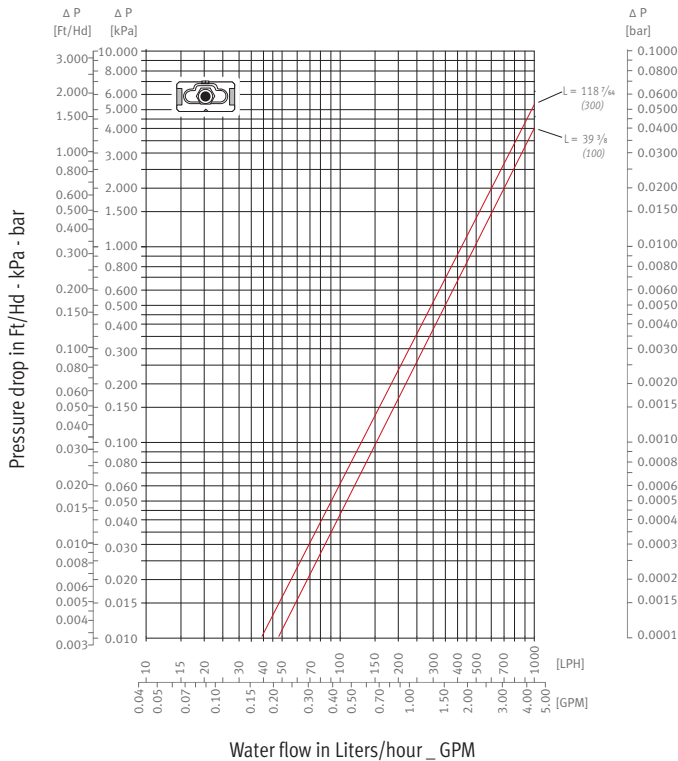
TYPE 08



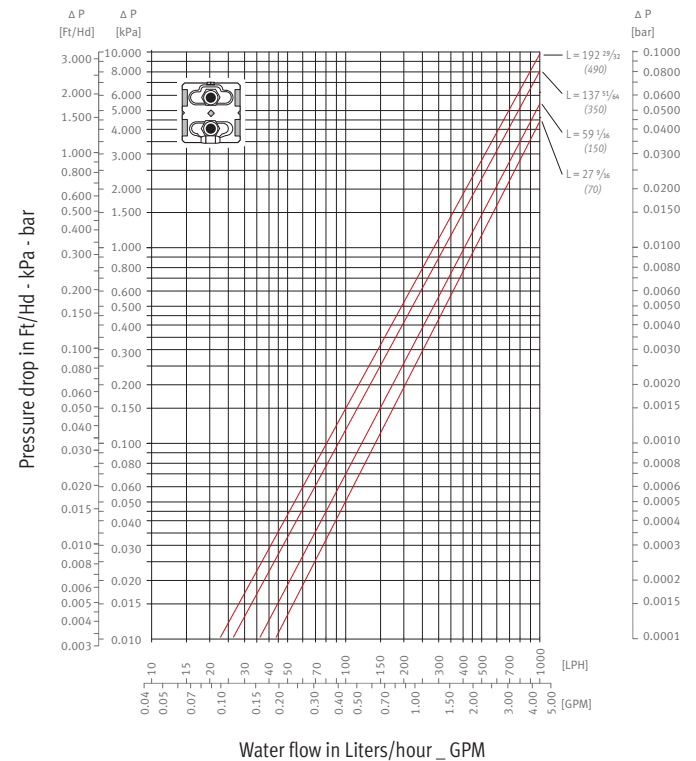
TYPE 09



TYPE 09 OTHER END CONNECTION

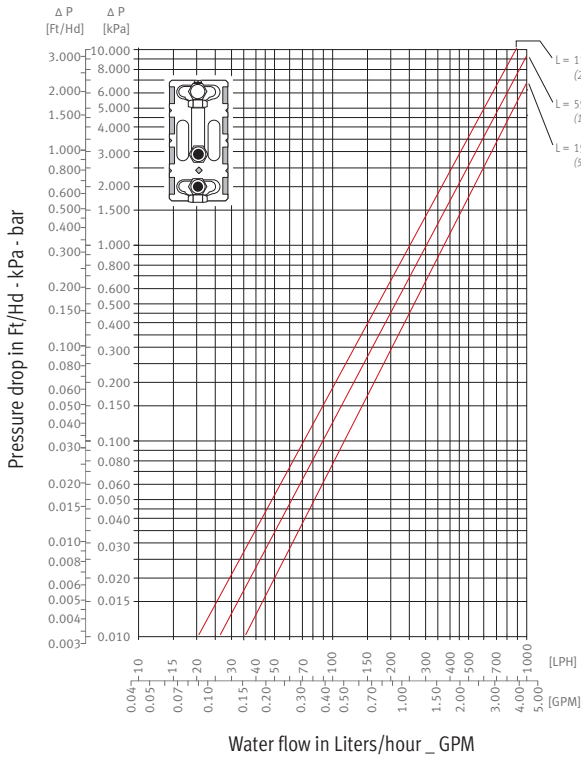


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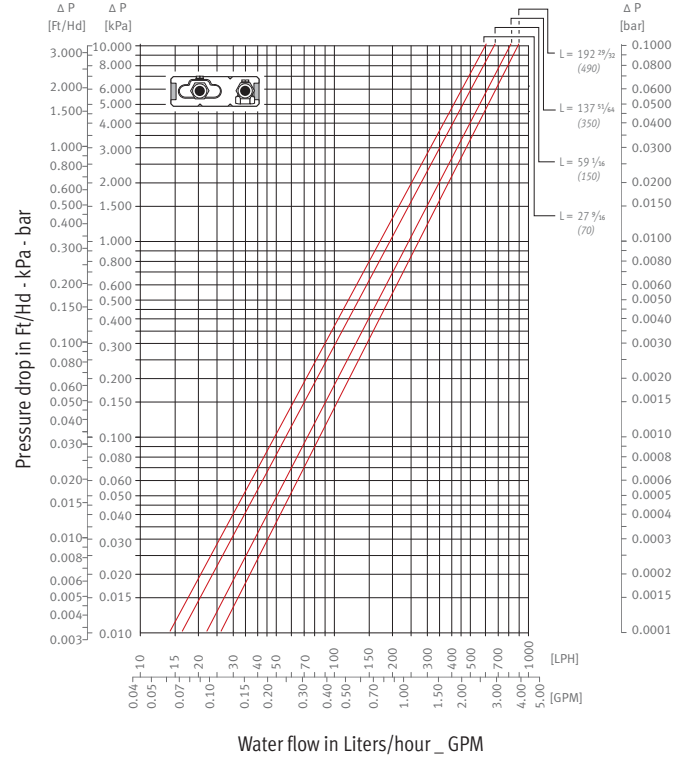


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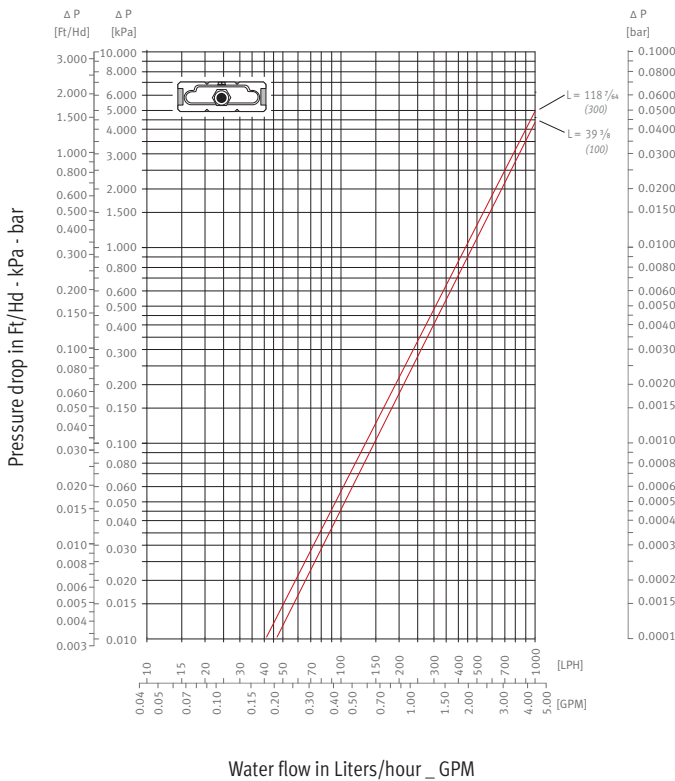
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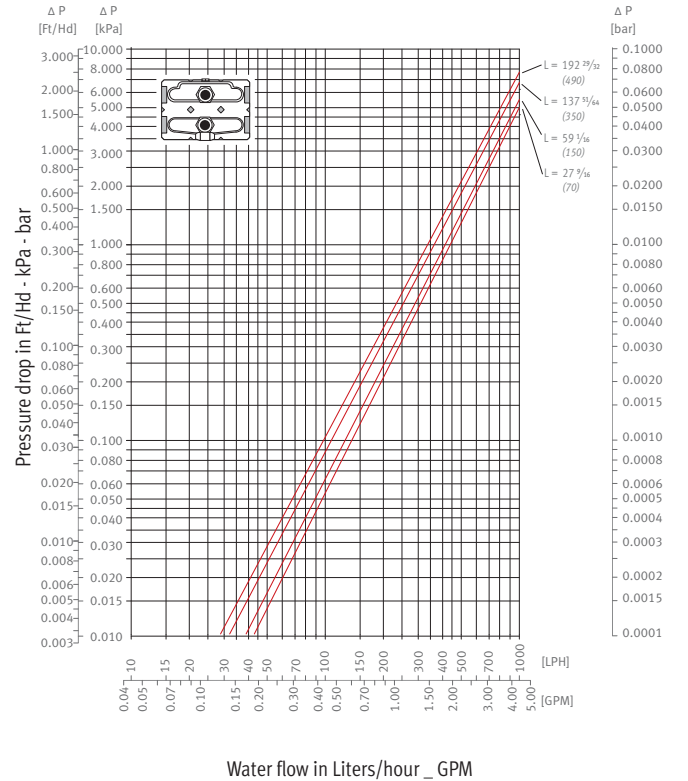
TYPE 14



TYPE 14 OTHER END CONNECTION

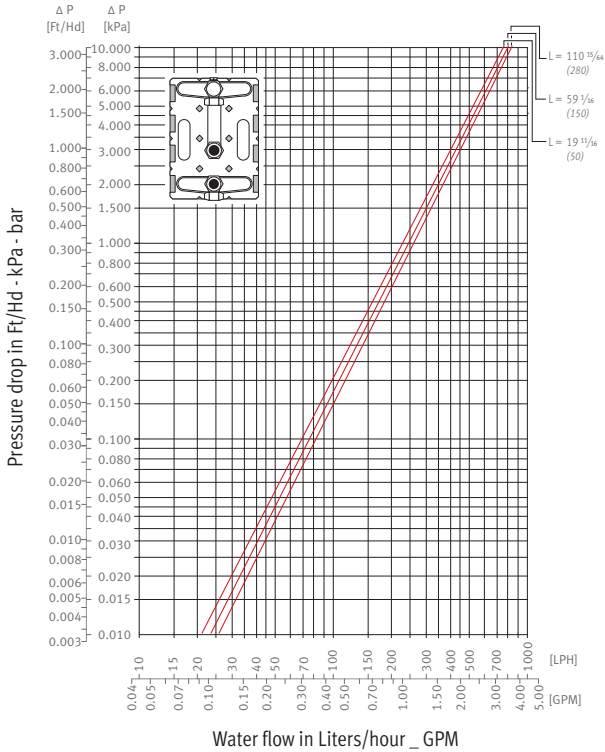


TYPE 15

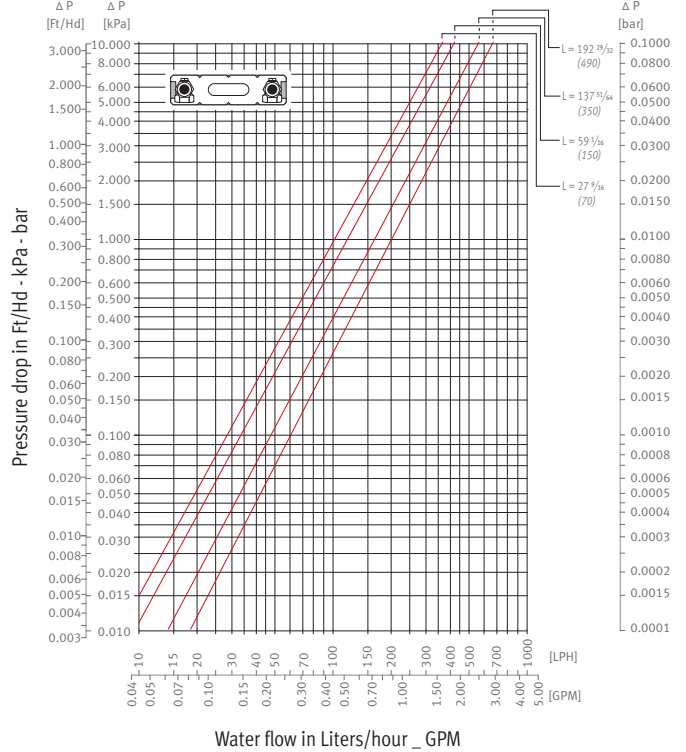


# PRESSURE DROP

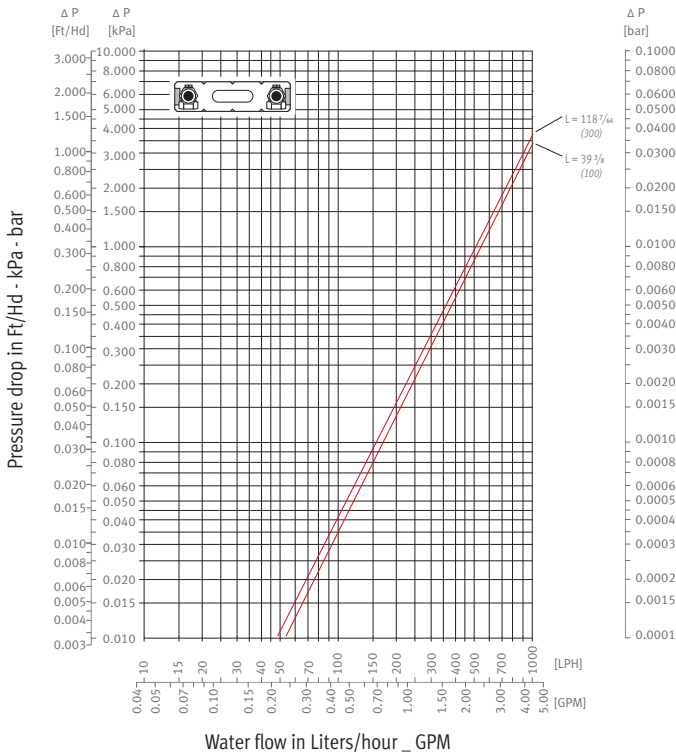
TYPE 16



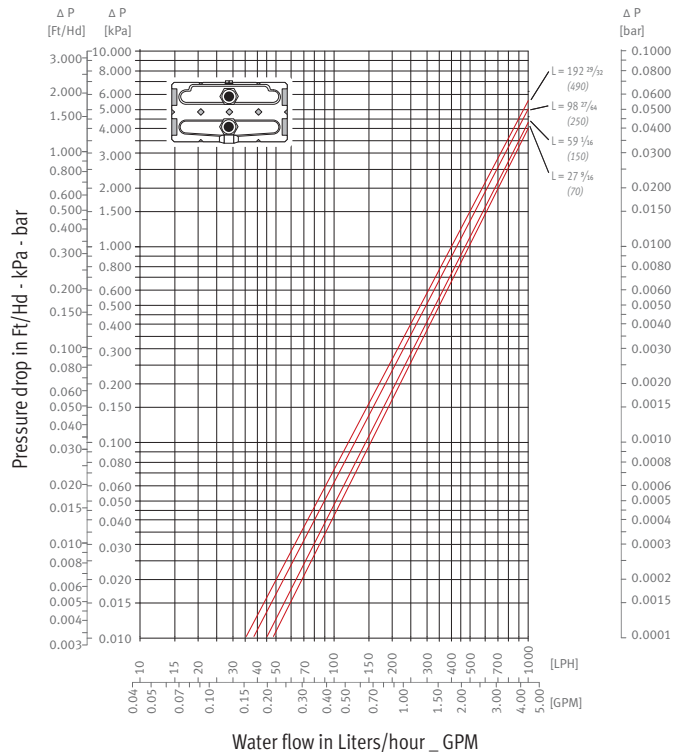
TYPE 19



TYPE 19 OTHER END CONNECTION

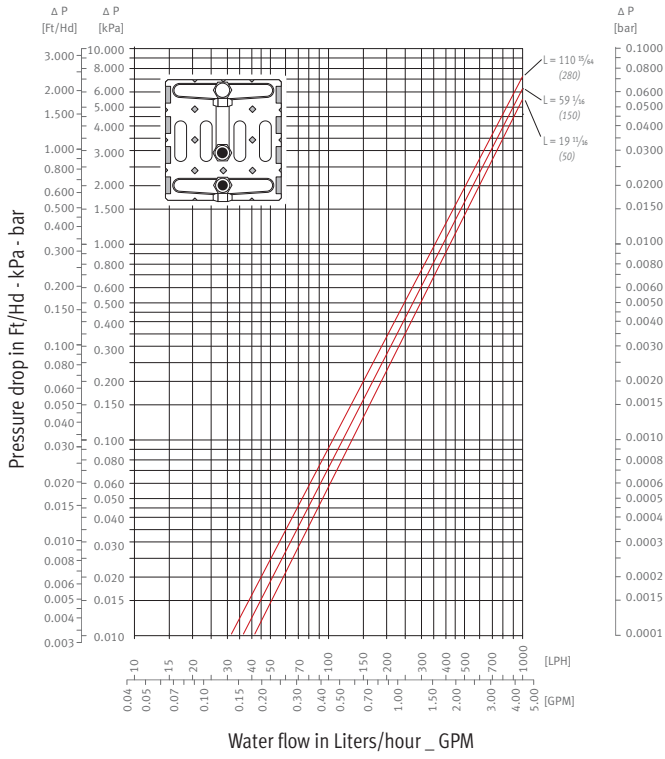


TYPE 20



# PRESSURE DROP

## TYPE 21



## AVERAGE CORRECTION FACTORS MEAN TEMPERATURES BY 1 GPM - REFERENCE: 160°F (71°C)

### KNOCKWOOD

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
06	0.237	0.455	0.712	0.852	1.317	1.485	1.659	1.838	2.024
10	0.245	0.463	0.717	0.855	1.308	1.471	1.640	1.813	1.992
11	0.227	0.444	0.704	0.848	1.329	1.504	1.686	1.875	2.071
15	0.250	0.468	0.720	0.857	1.304	1.464	1.630	1.800	1.975
16	0.228	0.445	0.705	0.848	1.327	1.501	1.682	1.870	2.064

### STRADA

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
06	0.248	0.466	0.719	0.856	1.306	1.467	1.634	1.806	1.982
10	0.252	0.470	0.721	0.858	1.302	1.461	1.625	1.794	1.968
11	0.234	0.451	0.709	0.851	1.321	1.491	1.668	1.851	2.040
15	0.255	0.473	0.724	0.859	1.299	1.456	1.618	1.784	1.955
16	0.232	0.449	0.707	0.850	1.323	1.495	1.673	1.858	2.049
20	0.255	0.473	0.724	0.859	1.299	1.456	1.618	1.784	1.955
21	0.227	0.443	0.704	0.848	1.329	1.504	1.686	1.875	2.071

### LINEA PLUS

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
10	0.248	0.466	0.719	0.856	1.306	1.468	1.635	1.806	1.983
11	0.234	0.452	0.709	0.851	1.320	1.491	1.667	1.849	2.038
15	0.256	0.474	0.724	0.859	1.298	1.455	1.616	1.782	1.953
16	0.232	0.450	0.708	0.850	1.322	1.494	1.671	1.856	2.046
20	0.255	0.474	0.724	0.859	1.299	1.456	1.618	1.784	1.954
21	0.227	0.444	0.704	0.847	1.328	1.504	1.686	1.875	2.071

### TEMPO

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
10	0.253	0.471	0.722	0.857	1.301	1.459	1.622	1.789	1.961
11	0.238	0.455	0.712	0.852	1.316	1.484	1.658	1.837	2.023
15	0.257	0.475	0.725	0.859	1.297	1.453	1.613	1.779	1.948
16	0.231	0.448	0.706	0.849	1.324	1.497	1.676	1.862	2.054
20	0.257	0.475	0.725	0.859	1.297	1.453	1.613	1.778	1.947
21	0.224	0.441	0.735	0.847	1.331	1.508	1.693	1.872	2.082

### MAXI WT

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
10	0.253	0.471	0.722	0.858	1.301	1.459	1.622	1.789	1.961
11	0.257	0.475	0.725	0.852	1.297	1.453	1.613	1.779	1.948
15	0.257	0.475	0.725	0.859	1.297	1.453	1.613	1.778	1.947
16	0.238	0.455	0.712	0.849	1.316	1.484	1.658	1.837	2.023
20	0.231	0.448	0.706	0.859	1.324	1.497	1.676	1.862	2.054
21	0.224	0.441	0.735	0.847	1.331	1.508	1.693	1.872	2.082

### BASIC

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
10	0.254	0.472	0.723	0.855	1.300	1.458	1.621	1.788	1.960
11	0.241	0.459	0.714	0.857	1.313	1.479	1.651	1.828	2.011
15	0.261	0.479	0.727	0.853	1.294	1.447	1.605	1.768	1.934
16	0.237	0.454	0.711	0.860	1.318	1.486	1.661	1.842	2.028
20	0.271	0.489	0.734	0.851	1.284	1.432	1.584	1.739	1.898
21	0.233	0.451	0.741	0.864	1.321	1.492	1.669	1.841	2.042

### PLAY

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
10	0.248	0.466	0.719	0.856	1.306	1.467	1.633	1.805	1.981
11	0.235	0.453	0.71	0.851	1.319	1.488	1.664	1.845	2.033
15	0.251	0.469	0.721	0.857	1.303	1.462	1.626	1.795	1.969
16	0.233	0.45	0.708	0.850	1.322	1.493	1.671	1.854	2.044
20	0.254	0.472	0.723	0.858	1.300	1.457	1.620	1.786	1.957
21	0.230	0.448	0.706	0.849	1.325	1.497	1.677	1.863	2.055

### MINI

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
05	0.247	0.465	0.718	0.854	1.307	1.469	1.636	1.809	1.986
06	0.244	0.462	0.716	0.854	1.310	1.474	1.643	1.817	1.997
09	0.243	0.461	0.715	0.854	1.311	1.476	1.646	1.821	2.002
10	0.244	0.462	0.716	0.855	1.309	1.473	1.642	1.816	1.995
11	0.237	0.455	0.711	0.854	1.317	1.485	1.659	1.839	2.025
14	0.243	0.461	0.715	0.854	1.311	1.475	1.645	1.820	2.000
15	0.244	0.462	0.716	0.854	1.310	1.474	1.644	1.819	1.998
16	0.235	0.453	0.710	0.855	1.319	1.488	1.664	1.845	2.033
19	0.245	0.463	0.716	0.852	1.309	1.473	1.641	1.815	1.994
20	0.242	0.460	0.715	0.851	1.311	1.476	1.646	1.822	2.003
21	0.234	0.452	0.709	0.850	1.320	1.490	1.666	1.848	2.036


### BUILD-IN

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
10	0.253	0.471	0.722	0.857	1.301	1.459	1.622	1.789	1.961
11	0.238	0.455	0.712	0.852	1.316	1.484	1.658	1.837	2.023
15	0.257	0.475	0.725	0.859	1.297	1.453	1.613	1.779	1.948
16	0.231	0.448	0.706	0.849	1.324	1.497	1.676	1.862	2.054
20	0.257	0.475	0.725	0.859	1.297	1.453	1.613	1.778	1.947
21	0.224	0.441	0.735	0.847	1.331	1.508	1.693	1.872	2.082

### MINI CANAL

Type	°F 100 °C (37.75)	120 (48.90)	140 (60.00)	150 (65.55)	180 (82.20)	190 (87.75)	200 (93.35)	210 (98.90)	220 (104.45)
04	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
05	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
09	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
10	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
14	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
15	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
19	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948
20	0.257	0.475	0.725	0.859	1.297	1.453	1.614	1.779	1.948

**WEIGHT IN LBS/FOOT (KG/METER)]**

 **Weight without packaging or options.**

**KNOCKONWOOD**

Height	Type	06	10	11	15	16
12" (030)		5.60	5.25	6.65	6.00	8.20
		(8.30)	(7.80)	(9.90)	(8.90)	(12.20)
19.5" (050)		8.25	8.05	9.15	9.45	13.25
		(12.30)	(12.00)	(13.60)	(14.10)	(19.70)
31.5" (080)		11.70	11.35	12.50	12.50	14.20
		(17.40)	(16.90)	(18.60)	(18.60)	(21.10)

**STRADA**

Height	Type	06	10	11	15	16	20	21
8" (020)		4.50	5.05	---	6.30	---	7.65	---
		(6.70)	(7.50)	---	(9.40)	---	(11.40)	---
14" (035)		6.05	6.60	7.55	8.00	9.55	9.40	11.20
		(9.00)	(9.80)	(11.20)	(11.90)	(14.20)	(14.00)	(16.70)
19.5" (050)		7.45	8.05	9.05	9.70	11.20	11.20	13.10
		(11.10)	(12.00)	(13.50)	(14.40)	(16.70)	(16.70)	(19.50)
25.5" (065)		8.95	9.60	10.60	11.35	12.90	13.05	14.85
		(13.30)	(14.30)	(15.80)	(16.90)	(19.20)	(19.40)	(22.10)
37.5" (095)		11.75	12.70	13.70	14.65	16.20	16.65	18.50
		(17.50)	(18.90)	(20.40)	(21.80)	(24.10)	(24.80)	(27.50)

**LINEA PLUS**

Height	Type	10	11	15	16	20	21
8" (020)		4.10	---	5.10	---	6.10	---
		(6.10)	---	(7.60)	---	(9.10)	---
14" (035)		5.65	6.65	6.80	8.40	8.00	9.80
		(8.40)	(9.90)	(10.10)	(12.50)	(11.90)	(14.60)
19.5" (050)		7.20	8.25	8.60	10.15	9.90	11.70
		(10.75)	(12.25)	(12.80)	(15.10)	(14.70)	(17.40)
25.5" (065)		8.80	9.80	10.30	11.85	11.75	13.55
		(13.10)	(14.60)	(15.35)	(17.65)	(17.50)	(20.20)
37.5" (095)		12.00	13.00	13.80	15.35	15.60	17.40
		(17.85)	(19.35)	(20.55)	(22.85)	(23.20)	(25.90)

**TEMPO**

Height	Type	10	11	15	16	20	21
8" (020)		3.70	---	4.95	---	6.15	---
		(5.50)	---	(7.40)	---	(9.15)	---
12" (030)		4.55	5.60	5.90	7.55	7.20	9.15
		(6.80)	(8.30)	(8.75)	(11.25)	(10.70)	(13.60)
15.5" (040)		5.35	6.40	6.80	8.45	8.20	10.15
		(7.95)	(9.55)	(10.10)	(12.60)	(12.20)	(15.10)
19.5" (050)		4.65	7.20	7.70	9.35	9.25	11.20
		(6.90)	(10.75)	(11.45)	(13.95)	(13.75)	(16.65)
23.5" (060)		7.00	8.05	8.60	10.30	10.20	12.20
		(10.45)	(11.95)	(12.80)	(15.30)	(15.15)	(18.15)
27.5" (070)		7.80	8.85	9.50	11.25	11.20	13.25
		(11.60)	(13.20)	(14.15)	(16.75)	(16.70)	(19.70)
35.5" (090)		9.60	10.60	11.60	13.25	12.95	15.00
		(14.30)	(15.80)	(17.25)	(19.75)	(19.30)	(22.30)

**TEMPO\_FREESTANDING CABINET**

Height	Type	10	11	15	16	20	21
8" (020)		5.65	---	6.90	---	8.05	---
		(8.40)	---	(10.30)	---	(12.00)	---
12" (030)		6.95	8.10	8.35	10.30	9.60	11.70
		(10.35)	(12.05)	(12.40)	(15.30)	(14.30)	(17.40)
15.5" (040)		8.35	9.45	9.80	11.75	11.10	13.20
		(12.40)	(14.10)	(14.55)	(17.45)	(16.55)	(19.65)
19.5" (050)		9.65	10.80	11.20	13.15	12.65	14.75
		(14.35)	(16.05)	(16.65)	(19.55)	(18.85)	(21.95)

**MAXI WT**

Height	Type	10	11	15	16	20	21
17.5" (044)		13.15	14.20	14.70	16.40	16.30	18.30
		(19.55)	(21.10)	(21.90)	(24.40)	(24.25)	(27.20)
23" (059)		16.75	17.85	18.65	20.35	20.50	22.50
		(24.95)	(26.55)	(27.75)	(30.30)	(30.50)	(33.50)
29" (074)		20.50	21.55	22.50	24.20	24.45	26.50
		(30.50)	(32.10)	(33.45)	(36.00)	(36.40)	(39.40)

**BASIC**

Height	Type	10	11	15	16	20	21
8.5" (020)		4.60	5.65	5.95	7.65	6.70	8.75
		(6.85)	(8.40)	(8.85)	(11.35)	(10.00)	(13.00)
12.5" (032)		5.80	6.90	7.25	8.95	8.15	10.10
		(8.65)	(10.25)	(10.80)	(13.30)	(12.10)	(15.05)
16.5" (042)		7.05	8.10	8.55	10.30	9.55	11.50
		(10.50)	(12.05)	(12.75)	(15.30)	(14.20)	(17.15)
20.5" (052)		8.25	9.30	9.90	11.60	10.95	12.95
		(12.30)	(13.85)	(14.75)	(17.25)	(16.30)	(19.25)
24.5" (062)		9.45	10.55	11.20	12.90	12.35	14.35
		(14.10)	(15.70)	(16.70)	(19.20)	(18.40)	(21.35)
28.5" (072)		10.70	11.75	12.55	14.25	13.80	15.75
		(15.95)	(17.50)	(18.65)	(21.20)	(20.50)	(23.45)
36" (092)		13.15	14.20	15.20	16.85	16.60	18.60
		(19.60)	(21.15)	(22.60)	(25.10)	(24.70)	(27.65)

**PLAY**

Height	Type	10	11	15	16	20	21
14" (035)		9.51	10.45	11.35	13.02	13.21	15.19
		(14.15)	(15.55)	(16.89)	(19.38)	(19.66)	(22.6)
19.5" (050)		11.04	11.98	13.06	14.73	15.09	17.06
		(16.43)	(17.83)	(19.43)	(21.92)	(22.45)	(25.39)
25.5" (065)		10.29	11.24	12.62	14.29	14.95	16.93
		(15.32)	(16.72)	(18.78)	(21.27)	(22.25)	(25.19)

**MINI**

Height	Type	05	06	09	10	11	14	15	16	19	20	21
3" (008)		---	---	3.45	---	---	4.10	---	---	4.70	---	---
				(5.25)			(6.15)			(6.95)		
23" (013)		3.80	---	---	4.75	---	---	5.65	---	---	6.51	---
		(5.65)			(7.05)			(8.45)			(9.70)	
29" (023)		---	5.75	---	---	6.85	---	---	8.60	---	---	10.85
			(10.80)			(13.65)			(16.80)			(19.50)

**MINI CANAL excluding grille**

Height	D	5.5" (14)	7" (18)	10" (26)	13.5" (34)	16.5" (42)
3.5" (009)		3.10	3.35	3.90	4.75	5.55
		(4.60)	(5.00)	(5.80)	(7.05)	(8.30)
4.5" (011)		3.35	3.65	4.20	5.05	5.90
		(5.00)	(5.40)	(6.25)	(7.50)	(8.80)
5.5" (014)		3.85	---	5.20	6.40	7.60
		(5.70)	---	(7.75)	(9.50)	(11.30)
7.5" (019)		---	---	6.20	7.45	8.65
		---	---	(9.25)	(11.05)	(12.90)

**MINI CANAL\_GRILLE**

Model	Width grille					
	5" 3/4" (12.8)	6" 3/4" (16.8)	9" 4/64" (24.8)	12" 29/32 (32.8)	16" 1/16 (40.8)	
	Width duct					
	5.5" (14)	7" (18)	10" (26)	13.5" (34)	16.5" (42)	
Roll-up Designo merbau natural/merbau varnished		1.45	2.00	2.35	2.50	3.15
		(2.18)	(3.00)	(3.50)	(4.00)	(4.65)
Roll-up Designo beech natural/beech varnished		1.00	1.30	1.70	2.10	2.40
		(1.50)	(1.90)	(2.50)	(3.10)	(3.60)
Roll-up Designo oak natural/oak varnished		1.05	1.35	1.80	2.25	2.60
		(1.60)	(2.05)	(2.70)	(3.35)	(3.90)
Pebbles - rigid aluminum natural/lacquered		---	---	2.30	2.85	3.95
		---	---	(3.45)	(4.25)	(5.90)
Accordion roll-up aluminum narural		1.65	2.15	3.15 [4.70]	4.20	5.20
		(2.45)	(3.20)	(4.70)	(6.20)	(7.75)
Rigid Designo aluminum natural/black/brown/brass/lacquered		1.10	1.40	2.15	2.75	3.35
		(1.60)	(2.10)	(3.20)	(4.10)	(5.00)

**BUILD-IN**

Height	Type	10	11	15	16	20	21
8" (020)		2.60	---	3.45	---	4.15	---
		(3.90)	---	(5.10)	---	(6.20)	---
12" (030)		3.30	4.35	4.10	5.85	4.90	6.90
		(4.90)	(6.50)	(6.10)	(8.70)	(7.30)	(10.30)
15.5" (040)		3.95	5.05	4.85	6.50	5.70	7.65
		(5.90)	(7.50)	(7.20)	(9.70)	(8.50)	(11.40)
19.5" (050)		4.65	5.70	5.50	7.25	6.45	8.45
		(6.90)	(8.50)	(8.20)	(10.80)	(9.60)	(12.60)
23.5" (060)		5.30	6.30	6.25	7.95	7.20	9.20
		(7.90)	(9.40)	(9.30)	(11.80)	(10.70)	(13.70)
27.5" (070)		6.00	7.00	7.00	8.65	8.00	10.00
		(8.90)	(10.40)	(10.40)	(12.90)	(11.90)	(14.90)
35.5" (090)		7.45	8.55	8.65	10.35	9.55	11.55
		(11.10)	(12.70)	(12.90)	(15.40)	(14.20)	(17.20)

## STANDARD SPECIFICATIONS

### KNOCKONWOOD

#### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Extended air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets: galvanized steel plate thickness 0.039" (0.1), dark grey lacquered. with a maximum intermediate distance of 41 <sup>11</sup>/<sub>32</sub>" (105).
- Cabinet pre-fitted and supplied in one single piece, consshall beting of:
- front panel with grille made from a single curved. finished wood laminate panel at least <sup>5</sup>/<sub>8</sub>" (1.6) thick, FSC-labelled.
- Sides and chassis made from electrolytic galvanized steel plate 0.049" (0.125) thick.
- Strong and functional packaging, can be used as a protective cover during construction works.

#### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- Sides and chassis lacquered in the color sandblast grey metallic. in a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C).UV-resistant due to ASTM G53.
- Front panel with grille finished in veneer. inside koto veneer, outside in: oak / bleached oak / mahogany / wenge-colored oak / beech / bleached beech / maple / walnut / zebrano veneer (FSC-labelled).

The surface temperature remains safe at all times, even at a waterflow of 109.4°F (43°C). Knockonwood complies to the DHSS DN4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Knockonwood

Outputs meet standard EN442.

### STRADA

#### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper, with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Extended air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets: sendzimir, galvanized steel plate thickness 0.039" (0.1), dark grey lacquered. with a maximum intermediate distance of 41 <sup>11</sup>/<sub>32</sub>" (105).
- Front panel: electrolytic, galvanized steel plate of 0.049" (0.125) thick.
- Side panels: electrolytic, galvanized steel plate of 0.049" (0.125) thick.
- Wall slat: electrolytic. galvanized steel plate of 0.049" (0.125) thick
- Inversed aluminum top grille coated in the same color as the cabinet.
- Strong and functional packaging, can be used as a protection cover during construction works.

#### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- The cabinet shall be lacquered in the color white (RAL 9010) / traffic white (RAL 9016) / sandblast grey metallic 001 / other (see color chart). The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

The surface temperature remains safe at all times, even with a waterflow of 109.4°F (43°C). Strada complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc.  
Type: Strada.

Outputs meet standard EN442.

#### Options

- Towel rail in chromium-plated aluminum.

### LINEA PLUS

#### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper. with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets: galvanized steel plate thickness 0.039" (0.1), dark grey lacquered. with a maximum intermediate distance of 41 <sup>11</sup>/<sub>32</sub>" (105).
- Front panel: electrolytic, galvanized steel plate of 0.049" (0.125) thick.
- Side panels: electrolytic, galvanized steel plate of 0.039" (0.1) thick.
- Top grille: electrolytic. galvanized steel plate of 0.039" (0.1) thick with small round perforations.

#### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- The cabinet shall be lacquered in the color white (RAL 9010) / traffic white (RAL 9016) / sandblast grey metallic 001 / other (see color chart).
- The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

The surface temperature remains safe at all times. even with a waterflow of 109.4°F (43°C). Linea Plus complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Linea Plus

Outputs meet standard EN442.

#### Options

- Towel rail in the same color as the radiator.

### TEMPO

#### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper. with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Air vent G<sup>1</sup>/<sub>8</sub>" and drain cock <sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets are included and made of sendzimir galvanized steel plate of 0.039" (0.1); supplied to be installed with a maximum intermediate distance of 41 <sup>11</sup>/<sub>32</sub>" (105).
- The front panels: sendzimir, galvanized steel plates of 0.034" (0.086) thick, double profiled in length. Supplied with small positioning holes and slots to assemble front panels to side panel with easy click system.
- Side panels: sendzimir, profiled galvanized steel plate of 0.039" (0.1) thick.
- The top grille: sendzimir. galvanized steel plate of 0.031" (0.08) thick, profiled backwards angled steel plate with angled topside. At corners the grille shall be supplied with high standard synthetic angled corner pieces in same finish as the cabinet.
- The freestanding cabinet: front and back panels are identical, grille and side panels come adapted to this model. The feet are lacquered dark grey and telescopically adjustable for placement on finished floor /concrete floor.



#### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- The cabinet shall be in a scratch resistant structured polyester finish in RAL 9010. UV-resistant due to ASTM G53.

The surface temperature remains safe at all times, even with a waterflow of 109.4°F (43°C). Tempo complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Tempo

Outputs meet standard EN442.

# STANDARD SPECIFICATIONS

## BASIC

### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper, with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Extended air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets are included and made of electrolytic galvanized steel plate of 0.039" (0.1) and lacquered in the same color as the cabinet; supplied to be installed with a maximum intermediate distance of 41 1<sup>1</sup>/<sub>32</sub>" (105). Each bracket shall be equipped with a pre-mounted lock: the cabinet cannot be detached without tools.
- The one piece cabinet shall be made of electrolytic galvanized steel plate of 0.039" (0.1) thick. The top grille shall be made of send-zimir. galvanized steel plate of 0.031" (0.08) thick, profiled backwards angled steel plate with angled top side, in the same finish as the cabinet. Cabinet and top grille are mechanically connected.

### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- The cabinet shall be lacquered in the color white (RAL 9016) / traffic white (RAL 9010) / sandblast grey metallic 001 / other (see color chart). The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

The surface temperature remains safe at all times, even with a waterflow of 109.4°F. (43°C) Basic complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Basic

Outputs meet standard EN442.

## MAXI WT

### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper, with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Extended air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets are included and made of electrolytic galvanized and dark grey lacquered steel plate of 0.039" (0.1); supplied to be installed with a maximum intermediate distance of 41 1<sup>1</sup>/<sub>32</sub>" (105).

### Cabinet Maxi WT:

- Front panel: pre-mounted and composed of electrolytic galvanized steel plates of 0.059" (0.15) thick, double profiled in length.
- Top grille: electrolytic galvanized steel plate of 0.031" (0.08) thick, profiled backwards angled steel plate with angled top side.
- Side panels: profiled electrolytic galvanized steel plate of 0.059" (0.15) thick.

### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- The cabinet shall be lacquered in the color white (RAL 9016) / traffic white (RAL 9010) / sandblast grey metallic 001 / other (see color chart). The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

The surface temperature remains safe at all times, even with a waterflow of 109.4°F (43°C). Maxi WT complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Maxi WT

Outputs meet standard EN442.

## MINI

### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes of pure red copper, with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end (H = 5 1<sup>1</sup>/<sub>8</sub> - 9 1<sup>1</sup>/<sub>16</sub>" (13 - 23 - 28) or G<sup>1</sup>/<sub>2</sub>" other end (H=3 5<sup>1</sup>/<sub>32</sub>" (8) connection. Air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- The cabinet: in one piece. electrolytic painting, galvanized double profiled steel plate 0.049" (0.125) thick.
- The top grille: electrolytic. galvanized steel plate of 0.031" (0.08) thick, profiled backwards angled steel plate with angled top side.
- The fixed feet are delivered in same color as the cabinet; height 3 1<sup>1</sup>/<sub>16</sub>" (10).

### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- The cabinet shall be lacquered in the color white (RAL 9010) / traffic white (RAL 9016) / sandblast grey metallic 001 / other (see color chart). The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

The surface temperature remains safe at all times, even with a waterflow of 109.4°F (43°C). Mini complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Mini

Outputs meet standard EN442.

## PLAY

### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper, with pure aluminum fins and two brass collectors for left or right G<sup>1</sup>/<sub>2</sub>" same end connection. Extended air vent G<sup>1</sup>/<sub>8</sub>" and drain cock G<sup>1</sup>/<sub>2</sub>" are included. Pressure test: 670 ft/hd (20 bar) Working pressure: 335 ft/hd (10 bar)
- Brackets are included and made of electrolytic galvanized and dark grey lacquered steel plate of 0.039" (0.1); supplied to be installed with a maximum intermediate distance of 33 5<sup>1</sup>/<sub>16</sub>" (86). Pre-mounted casing and delivered as a single piece, consisting of:
  - casing in MDF with polyurethane paint and anodized aluminium spacer rings easy to remove when required
  - MDF case contains no formaldehyde
  - integrated pencil-proof grille with internal
  - Strong and functional packaging, can be used as a protection cover during construction works.

### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%..
- Visible metal parts between the MDF panels are lacquered in black (RAL 9005).
- MDF panels are lacquered in white, black, white-and-black combinations, girl shades, boy shades or RAL-colours on request

The surface temperature remains safe at all times, even with a waterflow of 109.4°F (43°C). Mini complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc  
Type: Play

Outputs meet standard EN442.

### Options

- Integrated valve that can be controlled by thermostat.

## STANDARD SPECIFICATIONS

### BUILD-IN

#### Material

- The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes made of pure red copper, with pure aluminum fins and two brass collectors for left or right G $\frac{1}{2}$ " same end connection.

Air vent G $\frac{1}{8}$ " and drain cock G $\frac{1}{2}$ " are included.

Pressure test: 670 ft/hd (20 bar)

Working pressure: 335 ft/hd (10 bar)

- Brackets are included and made of sendzimir galvanized steel plate of 0.039" (0.1); supplied to be installed with a maximum intermediate distance of 41  $\frac{11}{32}$ " (105).

#### Separation wall

Double profiled, electrolytic galvanized steel plate of 0.028" (0.07) thick; lacquered grey (RAL 7011). To be attached to the lips of the brackets. The separation wall shall be not suitable as definite cabinet.

#### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.

The surface temperature remains safe at all times, even with a waterflow of 109.4°F (43°C). Build-in complies to the DHSS DN 4 1992 regulation and subsequent revisions.

Manufacturer: Jaga Inc

Type: Build-in

Outputs meet standard EN442.

### HOW TO INSTALL

#### Knockonwood Strada Linea Plus Tempo Basic Maxi WT Play Mini Build-in

The building services engineer chooses the heating elements considering the following conditions:

- A heat output calculation according to the standard.

- Tables of heat outputs and dimensions for Knockonwood / Strada / Linea Plus / Tempo / Basic / Maxi WT / Mini / Build-in elements, according to EN 442.

- The normal fitting position for the heating elements shall be under the window, and to achieve the most aesthetically pleasing appearance the cabinet should not be wider than the total width of the window.

The height of the cabinet has to be a function of the heat loss calculations; aesthetically narrower types are preferable. Types 20 and 21 are more suitable for utility areas.

- When only small outputs are required, the cabinet can be extended, if necessary, to fill up the total window space

- The minimum space requirement under the heating elements shall be for Knockonwood / Strada / Linea Plus / Tempo / Basic / Maxi WT / Play / Build-in:

- 3  $\frac{15}{16}$ " (10) for types 06, 10 and 11

- 4  $\frac{23}{32}$ " (12) for types 15 and 16

- 5  $\frac{29}{32}$ " (15) for types 20 and 21

shall be for Mini:

- 1  $\frac{31}{32}$ " (5) for types 05 and 09

- 3  $\frac{15}{16}$ " (7) for types 10 and 14

- 4  $\frac{23}{32}$ " (9) for types 15 and 19

- 5  $\frac{29}{32}$ " (11) for types 20 and 21

- As minimum space between the top of the cabinet and the extended window sills, the above mentioned dimensions have to be applied.

- The fin tube elements will be connected to a one pipe system / two pipe system, with a same side end connection. Mini height 3  $\frac{5}{32}$ " (8) will be connected with an other end connection.

- The fin tube element shall be equipped with two brass collectors for left or right G $\frac{1}{2}$ " same end connection.

The optional flow valve always has to be fitted to the top connection of the fin tube element.

- The optional specially designed thermostatic Jaga Comap / Jaga valves can be connected to plastic central heating service pipes / RPE/ALU, tube / copper tube / steel pipe.

The valve body shall be concealed within the standard cabinet

Jaga / Jaga Deco chrome / Jaga Deco chrome-white / Jaga Comap thermostatic heads silver / not / to be fitted.

- The specially designed thermostatic Jaga Pro-valves / Jaga double angled valves with vertical operating connection can be connected to plastic central heating service pipes / RPE/ALU, tube / copper tube / steel pipe. The valve body is concealed within the standard casing.

Jaga remote controlled thermostatic head white / Jaga Deco thermostatic head chrome-white with sensor at distance / Jaga manual head white / not / to be fitted.

## STANDARD SPECIFICATIONS

### MINI CANAL

#### Mini-duct

Pre-mounted duct, in sendzimir galvanized steel plate of 0.039" (0.1) thick, provided with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%. The well has 6 pre-perforated holes to lead through the tubes. These holes, 2 in the front and 2 in each side are covered with black plugs. Mini Canal with same end connection shall be provided with 3 pre-perforated holes in the front. The mini duct shall be also provided with brackets and anchoring strips in order to fix the duct in the concrete. The frame shall be pre-mounted on the Mini Canal.

K-value = 45.4 BTU/ft<sup>2</sup>F

R-value = 0.022 ft<sup>2</sup>/BTU

#### Aluminum frames

Reinforced L-profile, height 1 15/64" (3.15) x 15/16" (2.4) width. Versions: anodized aluminum in natural color / dark brown / black / brass color / lacquered in a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

The frame shall be pre-mounted on the Mini floor duct.

With removable pieces to avoid deformation of the frame during installation or floor construction.

#### Roll-up Designo wooden grilles

Crossways positioned wooden slats (1 1/32" x 3 1/32") (1.2 x 2.45) with 3 3/64" (1.3) space between. The wood slats are interconnected by a galvanized steel spring and fixed in the correct distance by natural colored aluminum pieces.

Free air flow 52%.

Versions: oak / beech / merbau / oak varnished / beech varnished / merbau varnished.

#### Designo rigid aluminum grilles

Profiled slats placed lengthways (1 3/64" x 5/8") (0.5 x 1.6) with 2 1/64" (0.85) space between, mechanically connected with two crossways supporting slats (1 3/64" x 1 1/16") (0.5 x 2.7) with maximum 12 1/64" (30.5) space between.

Free air flow 62.5%.

Versions: anodized aluminum in natural color / dark brown / black / brass color / lacquered in a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392°F (200°C). UV-resistant due to ASTM G53.

#### Accordion roll-up aluminum grilles

Crossways positioned lightly zigzag bended aluminum slats (1 3/64" x 1 3/16") (0.6 x 2.4). The slats are interconnected by a galvanized steel spring and fixed in the correct distance by transparent synthetic pieces.

Free air flow 55%.

Version: anodized aluminum in natural color

#### Pebbles rigid aluminum grilles

Constructed of foundry aluminum. The Pebbles grille shall be divided in "tiles" of 2 5/64" (1) thickness and 19 11/16" (50) length, ending with an element of min. 7 7/8" (20) length.

Free air flow 66%.

Versions in sandblasted foundry aluminum:

- lacquered in aluminium or sandblast grey. The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392 . UV-resistant due to ASTM G53.

#### Fin tube element

The Low-H<sub>2</sub>O fin tube element shall be composed of round, seamless circulation tubes of pure red copper, with pure aluminum fins and two brass collectors for left or right G 1/2" same end connection.

Other end connection G 1/2": only for fin tube element type 04.

Air vent(s) G 1/8" and drain cock(s) G 1/2" are included.

Pressure test: 670 ft/hd (20 bar)

Working pressure: 335 ft/hd (10 bar)

#### Color

- The fin tube element shall be electrostatically lacquered with anthracite grey epoxy-polyester RAL 7024, gloss degree 70%.
- Lacquered frame and rigid grille in the color... (see color chart).

The coating shall be a scratch resistant epoxy-polyester powder, sprayed electrostatically and baked at a temperature of 392 . UV-resistant due to ASTM G53.

Manufacturer: Jaga Inc.

Type: Mini Canal

Outputs meet standard EN442.

#### Options

- Cover plate: 5 5/64" (2.2) thick fibre-board plate.
  - Bottom end insulation: in dark grey polyethylene foam, thickness 1 3/64" (0.5).
  - 3 Sided insulation: in dark grey polyethylene foam, thickness 1 3/64" (0.5)
  - Cover strip: to hide the bottom side of the frame and to avoid contact noises.
  - Fixing with height control: to adjust the height on uneven and roughcast subfloors.
  - Corners: corner 90°/corner 135°.
- Not possible with Accordion or Pebbles grille.

### HOW TO INSTALL

#### Mini Canal

The building services engineer chooses the heating elements considering the following conditions:

- a heat output calculation according to the standard.
  - the required heat outputs will be determined by the tables and the fitting instruction of the building services engineer.
  - the fin tube element should be connected to a two pipe system with a same end connection, other end connection (just for type 04).
  - the fin tube element shall be equipped with two brass collectors for left or right G 1/2" same end connection. Air vent G 1/8" and drain cock G 1/2" are included. In case of same end connection the flow valve always has to be fitted to the top connection.
  - in order to totally block off the cold draughts from the window it shall be preferable that the fin tube element covers the full length of the window. Concerning the distance in between the window and the Mini Canal allow extra space for curtains, which under no circumstances should hang over the Mini Canal.
- The fin tube element must always be kept accessible for maintenance purposes.



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