



# PANEL PLUS HORIZONTAL WALL-MOUNTED

Clean lines for modern interiors

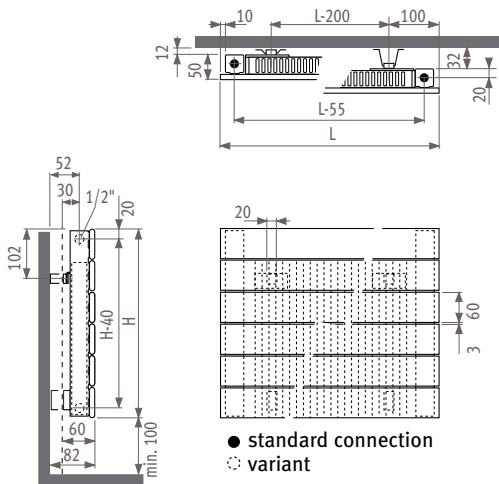


**jaga**

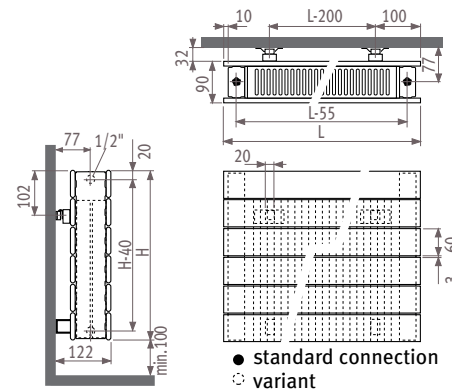
# Panel Plus Horizontal - wall-mounted

## Dimensions

Panel Plus Horizontal Wall / Type 11  
Product code: PPHW



Panel Plus Horizontal Wall / Type 22  
Product code: PPHW



Available lengths	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Available heights	370	430	500	560	620	690	750	810	870	940			

## Connections

### Standard connection

Order code: 18.

Connection 18 or 81.

### Side end connection

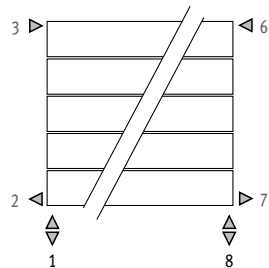
One-side: code 32 or 67

Cross-over: code 37 or 62

### Single point connection

Order codes: 11(left) or 88 (right)

Always use a vertical diffusion tube ( $\varnothing$  10 to 12mm) of minimum length and a reduction washer.



### Key:

1 = flow

2 = return

## Options

### Extended wall fixings

#### Type 11 only

Note: The space between the rear of the collector and the wall is 32mm instead of 12mm

All dimensions are shown in millimetres

## Outputs

Outputs in watts at 75/65/20°C & 55/45/20°C, in accordance with EN442

### Panel Plus Horizontal Type 11

	code	height	length	type	colour	connection	(Example order code shown is for a 370mm high radiator, 600mm long)							
ORDER CODE:	PPHW.	037	060	11	001	18/GR								
Height	Length >	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
<b>370</b>	75/65/20	380	507	633	760	887	1013	1140	1267	1394	1520	1647	1774	1900
	55/45/20	201	268	335	402	469	535	603	670	737	803	871	938	1004
<b>430</b>	75/65/20	425	566	708	849	991	1132	1274	1415	1557	1698	1840	1981	2123
	55/45/20	225	299	374	449	524	598	673	748	823	898	973	1047	1122
<b>500</b>	75/65/20	468	624	780	936	1091	1247	1403	1559	1715	1871	2027	2183	2339
	55/45/20	247	330	412	495	577	659	742	824	907	989	1071	1154	1236
<b>560</b>	75/65/20	510	680	850	1020	1190	1360	1530	1700	1870	2040	2210	2380	2549
	55/45/20	270	359	449	539	629	719	809	899	988	1078	1168	1258	1347
<b>620</b>	75/65/20	551	735	919	1102	1286	1470	1653	1837	2021	2205	2388	2572	2756
	55/45/20	291	389	486	583	680	777	874	971	1068	1166	1262	1360	1457
<b>690</b>	75/65/20	592	789	986	1183	1381	1578	1775	1972	2169	2367	2564	2761	2958
	55/45/20	313	417	521	625	730	834	938	1042	1146	1251	1355	1459	1563
<b>750</b>	75/65/20	632	842	1053	1263	1474	1684	1895	2105	2316	2526	2737	2948	3158
	55/45/20	334	445	556	667	779	890	1001	1112	1224	1335	1446	1558	1668
<b>810</b>	75/65/20	671	895	1119	1342	1566	1790	2013	2237	2461	2684	2908	3132	3356
	55/45/20	355	473	591	709	827	946	1064	1182	1300	1418	1536	1655	1773
<b>870</b>	75/65/20	710	947	1184	1420	1657	1894	2131	2367	2604	2841	3077	3314	3551
	55/45/20	375	500	626	750	875	1001	1126	1251	1376	1501	1626	1751	1876
<b>940</b>	75/65/20	749	999	1248	1498	1748	1997	2247	2496	2746	2996	3245	3495	3745
	55/45/20	396	528	659	791	924	1055	1187	1319	1451	1583	1714	1847	1979

#### Supplied as Standard

- Colours: 001 Sandblast grey metallic 201 white or 233 traffic white
- Connection 18 underneath
- Chrome-plated air vent and drain plug
- Pre-mounted grille
- Wall fixing

All dimensions are shown in millimetres



Output measured in accordance with EN442, at a water temperature of 75/65°C and a room temperature of 20°C (ΔT=50).

## Outputs

Outputs in watts at 75/65/20°C & 55/45/20°C, in accordance with EN442

### Panel Plus Horizontal Type 22

	code	height	length	type	colour	connection	(Example order code shown is for a 370mm high radiator, 600mm long)							
ORDER CODE:	PPHW.	037	060	22	201	18/GR								
Height	Length >	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
<b>370</b>	75/65/20	659	879	1098	1318	1538	1757	1977	2197	2416	2636	2856	3075	3295
	55/45/20	331	441	551	662	772	882	993	1103	1213	1323	1434	1544	1654
<b>430</b>	75/65/20	742	989	1236	1483	1730	1978	2225	2472	2719	2966	3214	3461	3708
	55/45/20	343	487	621	745	869	993	1117	1241	1365	1489	1614	1738	1862
<b>500</b>	75/65/20	819	1092	1365	1638	1911	2185	2458	2731	3004	3277	3550	3823	4096
	55/45/20	411	548	685	822	959	1097	1234	1371	1508	1645	1782	1919	2056
<b>560</b>	75/65/20	892	1190	1487	1784	2082	2379	2676	2974	3271	3569	3866	4163	4461
	55/45/20	448	597	747	896	1045	1194	1343	1493	1642	1792	1941	2090	2240
<b>620</b>	75/65/20	961	1281	1601	1922	2242	2562	2882	3203	3523	3843	4163	4484	4804
	55/45/20	482	643	804	965	1126	1286	1447	1608	1769	1929	2090	2251	2412
<b>690</b>	75/65/20	1025	1367	1709	2051	2392	2734	3076	3418	3760	4101	4443	4785	5127
	55/45/20	515	686	858	1030	1201	1373	1544	1716	1888	2059	2231	2402	2574
<b>750</b>	75/65/20	1086	1448	1810	2172	2534	2896	3258	3620	3982	4344	4706	5068	5430
	55/45/20	545	727	909	1091	1273	1455	1636	1818	2000	2182	2364	2546	2727
<b>810</b>	75/65/20	1143	1524	1905	2286	2667	3048	3430	3811	4192	4573	4954	5335	5716
	55/45/20	574	765	957	1148	1340	1531	1723	1914	2106	2297	2488	2680	2871
<b>870</b>	75/65/20	1197	1596	1995	2394	2793	3192	3591	3990	4389	4788	5186	5585	5984
	55/45/20	601	802	1002	1202	1403	1603	1804	2004	2205	2405	2605	2805	3006
<b>940</b>	75/65/20	1247	1663	2079	2495	2910	3326	3742	4158	4574	4989	5405	5821	6237
	55/45/20	626	835	1044	1253	1462	1671	1880	2088	2297	2506	2715	2924	3133

#### Supplied as Standard

- Colours: 001 Sandblast grey metallic 201 white or 233 traffic white
- Connection 18 underneath
- Chrome-plated air vent and drain plug
- Pre-mounted grille
- Wall fixing

All dimensions are shown in millimetres



Output measured in accordance with EN442, at a water temperature of 75/65°C and a room temperature of 20°C (ΔT=50).

# Connection Sets

The order code of the connection set will be completed with the sleeve coupling code

## Set 31

For connection to the wall

Two pipe

Code	Thermostatic head
CODE.MW2.MW.1...	white
CODE.MW2.MC.1...	chrome
CODE.MW2.MB.1...	black



### Thermostatic heads

DW



Chrome/ White

DC



Chrome

## Set 32

For connection to the floor

Two pipe



Code	Thermostatic head
CODE.MF2.MW.1...	white
CODE.MF2.MC.1...	chrome
CODE.MF2.MB.1...	black

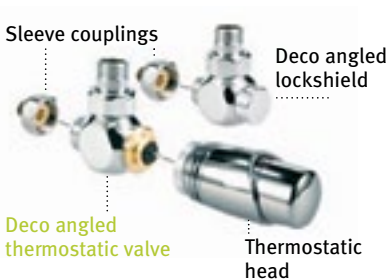


## Set 33 | Set 36

For connection to the wall

Two pipe



33 – Standard Kv	36 – Reduced Kv
CODE.JW2.DW.1...	CODE.RW2.DW.1... 
CODE.JW2.DC.1...	CODE.RW2.DC.1... 



## Set 34 | Set 37

For connection to the floor

Two pipe



34 – Standard Kv	37 – Reduced Kv
CODE.JF2.DW.1...	CODE.RF2.DW.1... 
CODE.JF2.DC.1...	CODE.RF2.DC.1... 

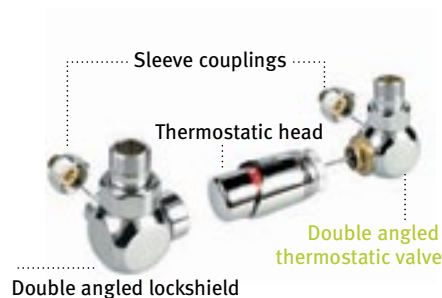


## Set 35 | Set 38

For connection to the wall

Two pipe

35 – Standard Kv	38 – Reduced Kv
CODE.JH2.DW.1...	CODE.RH2.DW.1... 
CODE.JH2.DC.1...	CODE.RH2.DC.1... 





# Connection Sets

The order code of the connection set will be completed with the sleeve coupling code

## Set 81

For connection to the wall

Two pipe



Code	Thermostatic head
CODE.OW2.DW.1...	
CODE.OW2.DC.1...	



## Set 82

For connection to the floor

Two pipe

Code	Thermostatic head
CODE.OF2.DW.1...	
CODE.OF2.DC.1...	

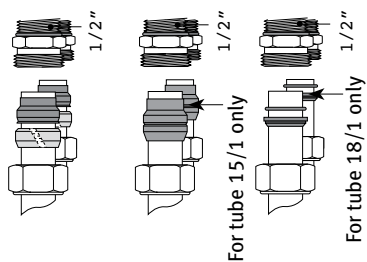


# Sleeve Couplings

## For Jaga valve - M24

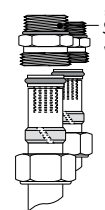
For flexible steel or copper tube

Code	Tube Ø
110	10/1
112	12/1
114	14/1
115	15/1
116	16/1
118	18/1



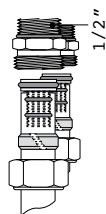
For synthetic tube

Code	Tube Ø
212	12/2
214	14/2
219	16/1.5
216	16/2
217	17/2
218	18/2



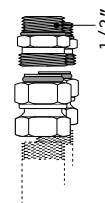
For RPE/ALU tube

Code	Tube Ø
314	14/2
316	16/2
326	16/2.2
318	18/2



Steel tube for CH

Code	Tube Ø
501	1/2"
503	3/8"



Complete ordering code with sleeve couplings according to the material used and diameter of the tube. *The correct type of sleeve coupling is determined by the ordering code of the connection set* Example: COLO. PW2.DW. 32. (insert relevant code from above)

## Correction factors

### Average correction factors according to EN442 - 75/65/20°C

TV	TL	TR_20	25	30	35	40	45	50	55	60	65	70	75	80	85
90	20	0.63	0.69	0.75	0.81	0.87	0.94	1.00	1.07	1.13	1.20	1.27	1.34	1.41	1.48
	24	0.54	0.59	0.65	0.71	0.77	0.83	0.90	0.96	1.03	1.09	1.16	1.23	1.29	1.36
85	20	0.57	0.63	0.69	0.75	0.81	0.87	0.94	1.00	1.07	1.13	1.20	1.27	1.314	
	24	0.48	0.54	0.59	0.65	0.71	0.77	0.83	0.90	0.96	1.03	1.09	1.16	1.23	
80	20	0.51	0.57	0.63	0.69	0.75	0.81	0.87	0.94	1.00	1.07	1.13	1.20		
	24	0.43	0.48	0.54	0.59	0.65	0.71	0.77	0.83	0.90	0.96	1.03	1.09		
75	20	0.46	0.51	0.57	0.63	0.69	0.75	0.81	0.87	0.94	1.00	1.07			
	24	0.37	0.43	0.48	0.54	0.59	0.65	0.71	0.77	0.83	0.90	0.96			
70	20	0.41	0.46	0.51	0.57	0.63	0.69	0.75	0.81	0.87	0.94				
	24	0.32	0.37	0.43	0.48	0.54	0.59	0.65	0.71	0.77	0.83				
65	20	0.35	0.41	0.46	0.51	0.57	0.63	0.69	0.75	0.81					
	24	0.27	0.32	0.37	0.43	0.48	0.54	0.59	0.65	0.71					
60	20	0.30	0.35	0.41	0.46	0.51	0.57	0.63	0.69						
	24	0.23	0.27	0.32	0.37	0.43	0.48	0.54	0.59						
55	20	0.26	0.30	0.35	0.41	0.46	0.51	0.57							
	24	0.18	0.23	0.27	0.32	0.37	0.43	0.48							
50	20	0.21	0.26	0.30	0.35	0.41	0.46								
	24	0.14	0.18	0.23	0.27	0.32	0.37								
45	20	0.16	0.21	0.26	0.30	0.35									
	24	0.13	0.17	0.22	0.26	0.31									
40	20	0.10	0.14	0.18	0.23	0.27									
	24	0.12	0.16	0.21	0.26										
35	20	0.06	0.10	0.14	0.18										
	24	0.08	0.12	0.16											
30	20	0.03	0.06	0.10											
	24	0.05	0.08												

The indicated outputs with  $\Delta T$  50°C and  $\Delta T$  30°C are the exact outputs.  $\Delta T$  50°C outputs are measured in accordance with EN442 and  $\Delta T$  30°C outputs are calculated according to EN442.

An average correction factor is given in this table for outputs at other  $\Delta T$  and is applicable for all dimensions.

**KEY**  
 Tv = flow temperature  
 Tr = return temperature  
 Tl = desired air temperature

## How to choose the right radiator?

### Rapid estimation of heat losses

Calculate the volume of the room (L x W x H) and multiply this by the Watts/m<sup>3</sup> figure given in the table below. Choose according to the level of insulation and the desired room temperature.

Insulation	20°	24°
excellent	45	55
good	65	75
average	85	95
poor	100	115

Required output in Watts/m<sup>3</sup>

### Example

Use the table to determine the relevant correction factor with a water temperature of 80/60°C with a room temperature of 24°C.

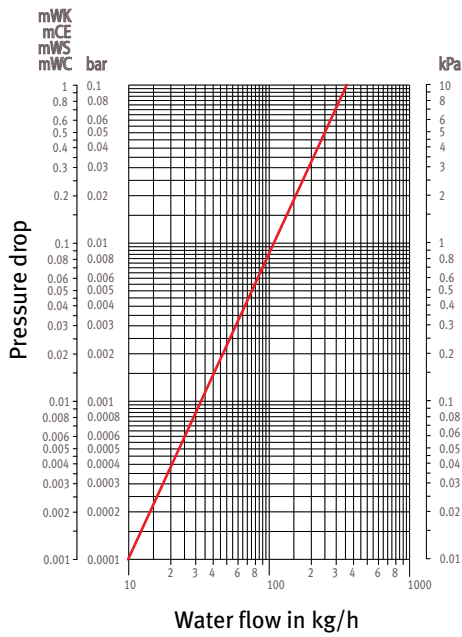
The correction factor = 0.90

Required output 1000 watts : 1000 divided by 0.90 = 1111 watts therefore search in this leaflet's standard output table for a product with an output of at least 1111 watts. Alternatively use the "Radiator Finder" search function on [www.jaga.co.uk](http://www.jaga.co.uk) to identify all Jaga heating products with this required output.



Output calculated in accordance with EN442, at a water temperature of 75/65°C and a room temperature of 20°C ( $\Delta T=50$ ).

## Pressure drop



## Weight & water content

### Weight in kg/cm

H	P11	P22
120	0.062	0.113
180	0.087	0.162
240	0.105	0.196
310	0.130	0.245
370	0.156	0.294
430	0.181	0.343
500	0.206	0.392
560	0.231	0.440
620	0.257	0.489
690	0.274	0.523
750	0.292	0.557
810	0.310	0.591
870	0.328	0.625
940	0.346	0.659

### Weight content in litres/cm

H	P11	P22
120	0.014	0.021
180	0.021	0.032
240	0.024	0.044
310	0.030	0.055
370	0.036	0.066
430	0.042	0.078
500	0.048	0.089
560	0.054	0.100
620	0.060	0.111
690	0.066	0.122
750	0.072	0.133
810	0.078	0.145
870	0.084	0.156
940	0.090	0.167



## Product description

### Panel Plus Horizontal Wall-mounted

#### Material

Composed of steel single or double vertical collectors at rear end with steel horizontal radiation tubes. The radiation tubes are welded on the inside of the collector by gas, and with steel as a sole addition. Therefore no welding seams are visible on the outside of the radiator.

Pressure test: 6 bar

Working pressure: 4.6 bar

#### Composition

The oval radiation tubes (60 x 10.4 x 1.5mm) are horizontally and parallel placed lengthways on the vertical collector with an interdistance of 3mm.

The radiation tubes are provided with convection fins.

All fixing points are welding to the radiator.

The supports to fit the wall are supplied with the standard delivery.

No transparency.

#### Finish

The radiators are sandblasted, degreased, phosphated, electrostatically lacquered with epoxy-polyester powder and finally stove enameled at 200°C. This high quality finish offers an optimal scratch resistance and is very easy to maintain.

Thickness of the lacquer: min 80 µ

#### Connections

The sockets ½" are integrated in the collectors and hence invisible. The customer may choose and order connections for top, bottom or the side end of the radiator. Provided with a chrome plated air vent ½" and drain plug ½"

#### How to install

The building services engineer chooses the radiators considering the following conditions:

- A heat output calculation according to the standard.
- The heat output and the dimensions of the Panel Plus radiators according to EN 442.
- The radiators may be wall fitted with the wall fixings supplied, positioned perpendicular to the wall with 2 side end fixings left and 1 foot right or positioned perpendicular to the wall with 2 side end fixings right and 1 foot left.
- The specially designed thermostatic connection sets/ thermostatic Jaga Deco/ Jaga Deco Pro (single point)/ manual Jaga Deco valves can be connected to plastic central heating service pipes/ RPE/ALU. Tube / copper tube/ steel pipe.
- Jaga thermostatic heads/Jaga Deco thermostatic heads chrome/ White/ Jaga Comap thermostatic heads silver/not to be/ to be fitted.

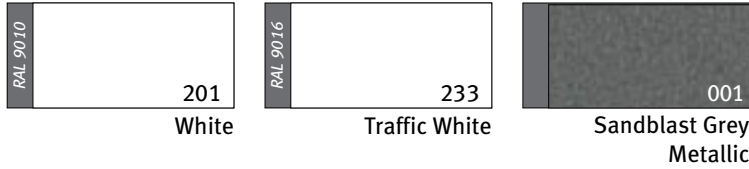
#### Options

Jaga Deco valves

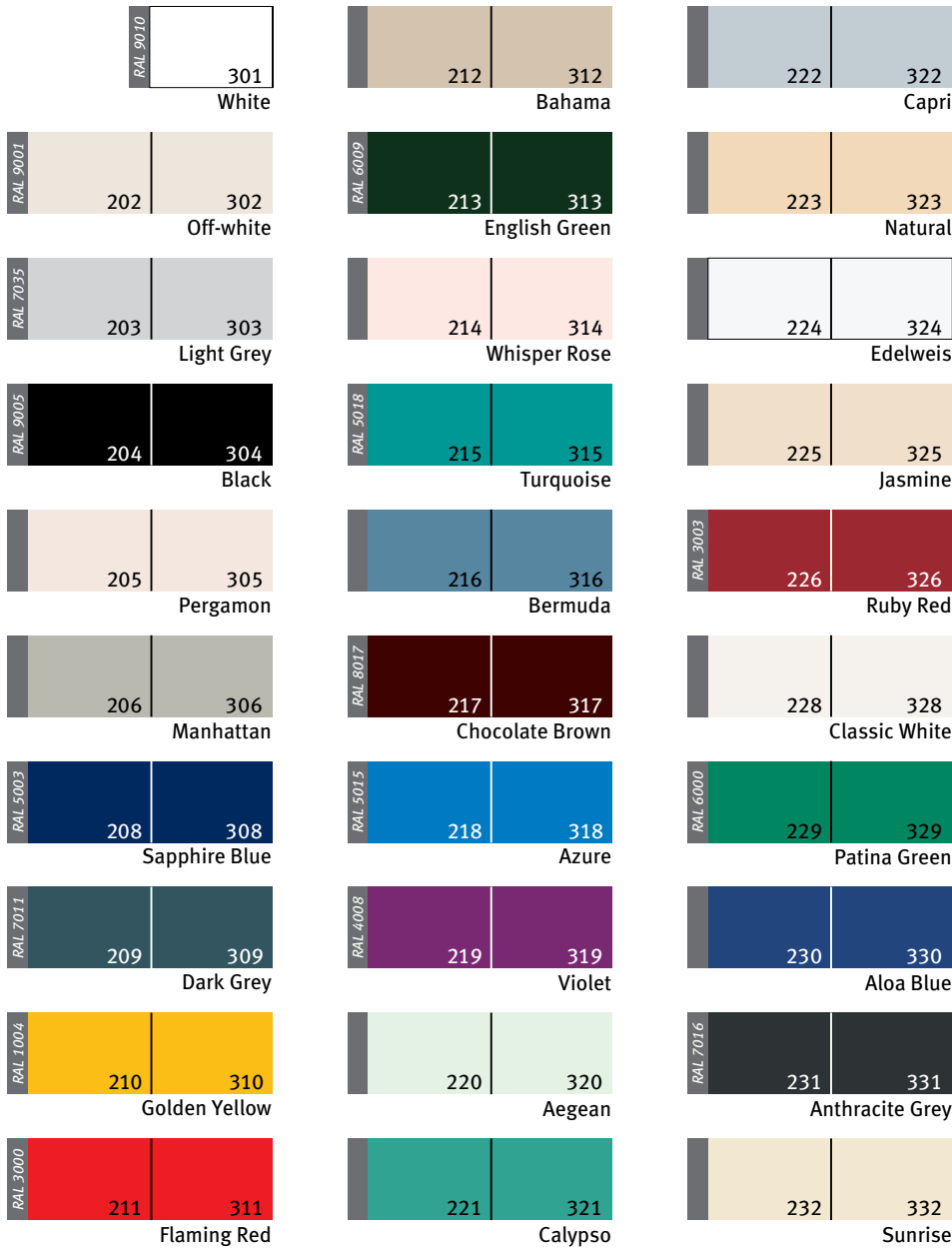
# Jaga colours

## For Panel Plus

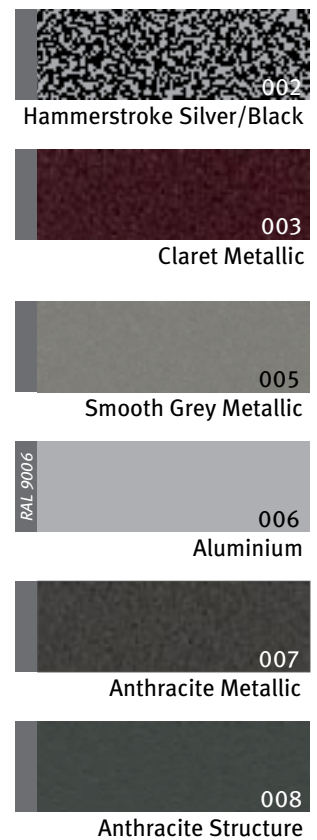
### Standard colours



### Premium colours



### Special colours



As it's impossible to reproduce colours with 100% accuracy, this colour chart is intended as a guide only. Colour swatches are available on request.

# Jaga Guarantee Information

- 1** The guarantee is valid only if the equipment is properly and correctly used, by its first owner and if installed in accordance with the norms and instructions as detailed in the instruction leaflet and current industry standard practices.
- 2** The guarantee only applies to the equipment and the spare parts supplied by Jaga. Jaga has the choice between repair and replacement of the equipment or the spare parts. If any modifications have been made by Jaga to the standard product design, Jaga reserves the right to replace the guaranteed equipment with equivalent products or spare parts.
- 3** The period of guarantee is mentioned in this certificate. The guarantee decreases every year on a straight line basis by an equal percentage in order to reach a zero guarantee at the end of the guarantee period (e.g. for a period of 10 years the annual decrease of the guarantees 10% of the invoiced value). Repaired or replaced product is guaranteed through to the end of the original guarantee period.
- 4** The guarantee is valid only on products displaying the appropriate identification information concerning product type and series. No guarantee is granted on equipment or spare parts lacking this information, on equipment where this information has been removed or altered, or on equipment that has been repaired or modified by persons not authorised by Jaga to carry out this work.
- 5** The customer is responsible for any damage caused as a result of errors in installation or use of incorrect fittings, or for any damage caused by electrical connections, faulty or damaged electrical installations or appliances, erroneous voltage or hydraulic pressure and all other errors not directly related to the product delivered by Jaga. The guarantee is also revoked when unsuitable parts or components are used. The guarantee for our heat exchangers is not valid if they are regularly drained, or if they are heated by means of industrial water, steam or water saturated by excessive quantities of oxygen. The quality of the system after has to be in accordance with the VDI 2035-2 directives. The guarantee is also not applicable if the heat exchangers are placed in unsuitable atmospheric surroundings, such as but not exclusively ammonia, caustic substances etc.
- 6** This guarantee excludes damage due to incorrect handling and/or use of the equipment, or due to formation of lime deposits, incorrect use of the safety valve, or to all equipment that is incorporated into the building in a way that means it cannot be accessed normally.
- 7** Any work undertaken or product supplied as a result of a guarantee claim that proves not to be valid will be charged for. Product supplied will be invoiced at the customer's standard purchasing terms, and labour will be charged at £50 per hour with a minimum labour charge of £200.
- 8** The guarantee period starts from the date of the invoice for supply of the products covered by the guarantee. If the invoice is not available, the date of production will be used based on the product ID number/series.
- 9** Only the courts of judicial district Hasselt (Belgium) are authorised to deal with disputes arising from this guarantee. It will apply Belgian law even when sales involved are subjects of EU member states as well as non-EU member countries.

Casings and components

GUARANTEE  
**10**  
YEAR

Valves

GUARANTEE  
**3**  
YEAR