

LYNGSON



DBH UPGRADE SET

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CLIMATE DESIGNERS

DBH UPGRADE SET

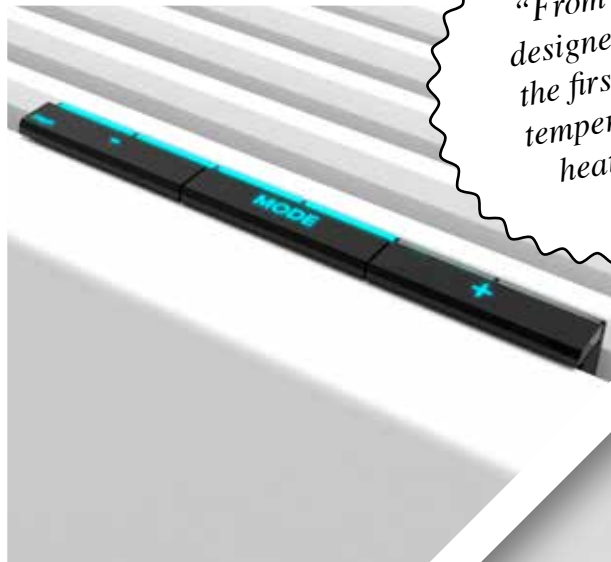
The easiest way to an environmentally friendly HVAC installation

- **switch to low temperature heating with heat pump or low temperature boiler**
- **suitable for environmentally friendly light cooling (non-condensing)**
- **with breeze feature**
- **easy installation on all Jaga Low-H₂O heating units**

The DBH Upgrade set is a booster that was specially developed for Jaga Low-H₂O heating units in order to increase the power and to enable low energy consumption cooling. This set makes it possible to greatly reduce the water temperature of your C.V. installation without having to install larger heating units or having to modify the pipes. Upgrading your existing Jaga heating units with the DBH set is the easiest option towards a low temperature installation or an emission-free heat pump installation for both heating and light cooling.

Also suitable for Jaga light cooling

“From the designers of the first low temperature heater.”



LYNGSON





ERS

DBH  



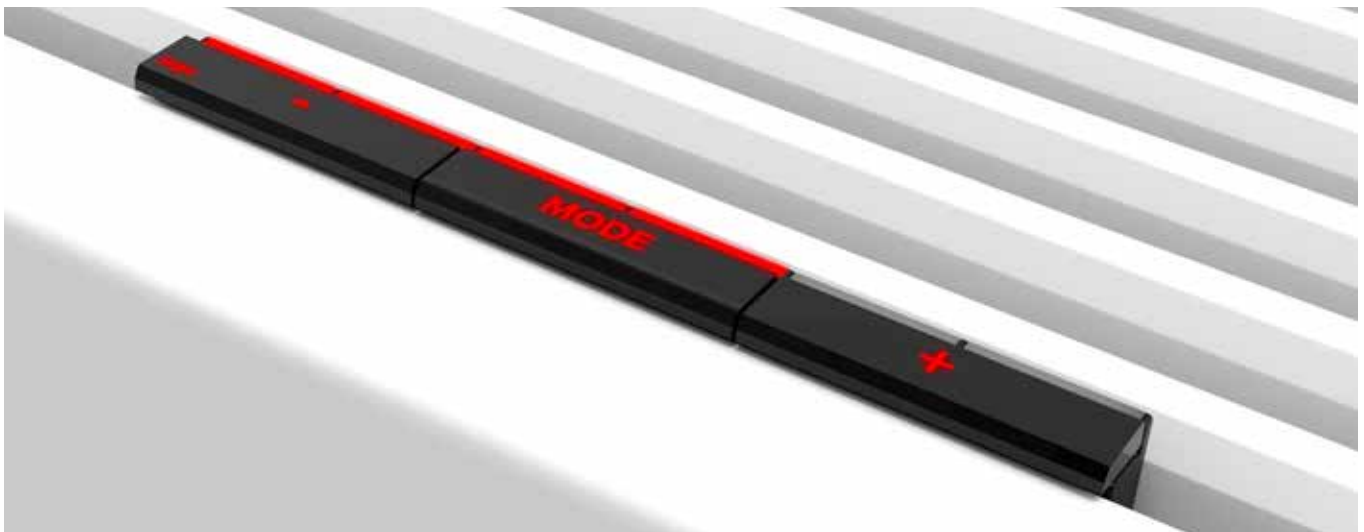

DBH UPGRADE SET

TURN YOUR STANDARD JAGA HEATING UNIT INTO AN ENVIRONMENTALLY FRIENDLY POWERHOUSE

- **Efficient and effortless heating with the lowest water temperature**
- **Energy-efficient non-condensing cooling in combination with any heat pump that can supply cooling water**
- **Improves the seasonal efficiency of each heat pump**
- **Makes sure that the condensing boilers are operating at their lowest temperature and as efficiently as possible.**



MULTIFUNCTIONAL INTELLIGENCE



DBH SWITCHES FULLY AUTOMATICALLY BETWEEN HEATING AND LIGHT COOLING

Auto-change-over mode (standard)

You do not have to do anything at all to switch between heating and cooling down. Due to its accurate room – and water temperature sensors, the hybrid is fully automated. To achieve the requested temperature you can set 3 different fan speeds, depending on the room where the heating unit is located: bedroom

mode max. 26 dB(A), comfort mode max. 30 dB(A) or maximum mode for rapid heating and cooling.

With breeze feature

The Hybrid heater's DBH system can also be activated if there is no cooling water, so without a heat pump. The vicinity of the heater can already feel less warm with just the air movement of the fans.

A RENOVATION EXAMPLE BEFORE / AFTER

BEFORE

Heating only



Strada H50 L100 Type 11



OUTPUTS WITHOUT DBH

TEMP. PROFILE

75/65	1386 WATTS
55/45	665 WATTS
45/35	388 WATTS

AFTER

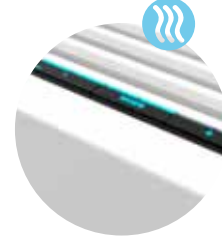
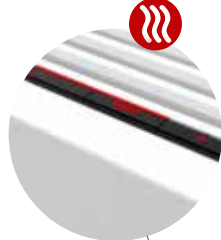
Heating

+

Breeze

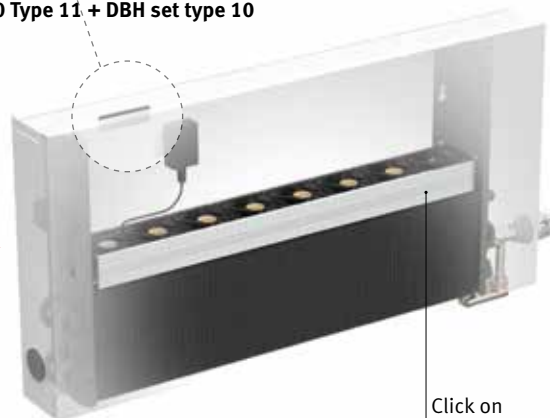
+

Cooling



Light cooling®
for all heat pumps
with cooling function

Strada H50 L100 Type 11 + DBH set type 10



Click on
DBH-units

OUTPUT WITH DBH

TEMP. PROFILE

TEMP. PROFILE	POSITION 2	POSITION 3
55/45	1303 WATTS	1600 WATTS
45/35	823 WATTS	1011 WATTS
35/30	495 WATTS	608 WATTS

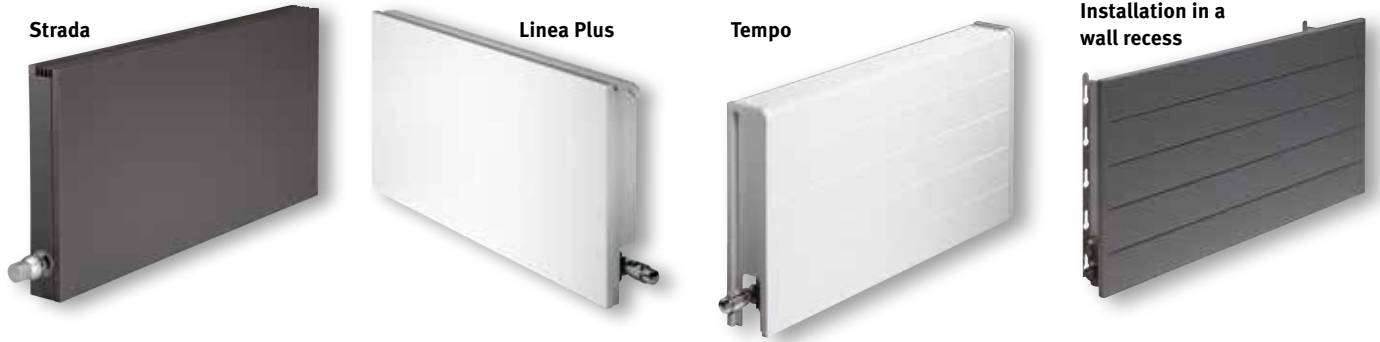
COOLING WITH DBH

473 WATTS
at temp. profile
16/18/27°

Also suitable
for Jaga light
cooling

DBH UPGRADE CONFIGURATOR

FOR WHICH RADIATORS?



Almost all Jaga Low-H₂O heating units can be equipped with the DBH Upgrade set:
Strada, Linea Plus, Tempo, Installation in a wall recess
For more info on the DBH Upgrade Set, see www.jaga.com/Products/Horizontal/dbh-upgrade

HOW DO I CHOOSE THE RIGHT SET?

Measure the width and length of your Low-H₂O heating unit.
Thickness 11,5 cm = DBH unit type 10
Thickness 16,5 cm en 21,5 cm = DBH unit type 15
The length of the cover determines how long the DBH-set should be.

DBH UNIT 10

- Suitable for type 10 and 11:
- Strada
 - Linea Plus
 - Tempo
 - Installation in a wall recess



DBH UNIT 15

- Suitable for type 15,16, 20 and 21:
- Strada
 - Linea Plus
 - Tempo
 - Installation in a wall recess



TYPE 10

TYPE 11



TYPE 15

TYPE 16

TYPE 20

TYPE 21

REPLACEMENT OF OTHER HEATING UNITS

Regular panel heaters are not suitable for a DBH- upgrade. You can, however, replace it with a Jaga heating unit that has same dimensions as the old heating unit. This way you can switch to a heating unit that is powerful enough to run at lower water temperatures without losing space to an extra or a larger heating unit.
For all info on Strada Hybrid (incl. DBH system) see www.jaga.com/strada/hybrid

75/65



55/45



EASY INSTALLATION

OPERATION OF THE DBH SYSTEM

Standard Auto-change-over mode

The desired room temperature is set via a room thermostat or the heating unit's thermostat head. The DBH set has accurate sensors for both the room and water temperature. DBH automatically switches between standby / heating / cooling based on the measured values.

- Suitable for heating or heating and cooling with the thermostat head HC or the manual button MA.
- noise level monitoring, officially measured according to ISO 3741: 2010
- With breeze feature for a fan effect, does not depend on the water temperature.
- Colored LEDs indicate the feature and the fan speed.

⚠ Het DBH-systeem zal niet de warmtepomp of de boiler regelen en kan daarom niet vervangen worden voor een kamerthermostaat.

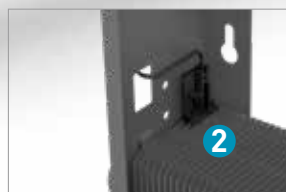


NEGLIGIBLE ELECTRICITY CONSUMPTION

The DBE system is no fan convector, and certainly not an electric radiator! In operation, the electricity consumption is no more than 7 watts/metre. The annual consumption is negligible and is more than compensated by the energy efficiency of the Low-H₂O technology in the radiator.



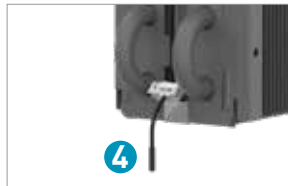
Stick the controller against the console.



Click the water temperature sensor on the coil.



Connect the DBH unit to the controller and click it on the coil



Fix the room temperature sensor.



Put the cover back on the heating unit, but without the grille. Place the controls on the front panel.



Put the plug in the wall socket and put the grille back on the heating unit

NOISE AND POWER ACCORDING TO THE LATEST EUROPEAN STANDARDS

The heat output of Jaga radiators with DBH was measured according to the latest European standards regarding heating units with integrated fans. Jaga is one of the first to comply with the new reference standard **EN 16430**. The sound power (L_w) of the DBH is measured in accordance with **ISO 3741:2010**. As is customary for the sound pressure (L_p), room attenuation of 8 dB(A) is assumed for room content of 100 m³ and a reverberation time of 0.5 sec.

HOW TO SELECT DBH?

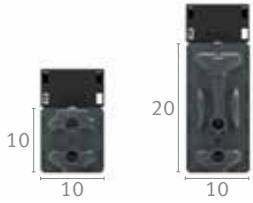
DBH is selected in **comfort mode, position 2** in bold in the output tables. This guarantees a quiet operation at a maximum of 30 dB(A). Position 1 is an extremely quiet bedroom setting with a maximum of 26 dB(A). Position 3 provides a maximum boost and the very high output serves primarily to heat up and cool down a room as quickly as possible. In this mode the noise is between 42 and 46 dB(A).

How loud is a decibel?

dB(A)	Perception	Examples
10	hardly to hear	breathing, a falling leaf
20	just audible	radio studio, rustling of tree leaves
30	very quiet	library (30 to 40), whispering
40	quiet	living room, quiet classroom, soft buzz, fridge
50	limited sound	air conditioning, normal conversation, dishwasher

DBH SET 10 + LOW-H₂O TYPE 10 / TYPE 11

TYPE 10 TYPE 11



STANDARD DELIVERY

- DBH unit(s)
- control board with microcontroller and remote control
- AC adapter 230 V/ 24VDC

OUTPUT EXPLANATION

HEATING CAPACITY

Due to the perfect combination of the DBH system and the extremely powerful Low-H₂O coil, the heater's height no longer influences the heat capacity. Thanks to the DBH system, maximum output is available for even the smallest heaters!

COOLING CAPACITY

The cooling capacity remains constant for all types with a maximum height of 50 cm. If the height exceeds 50 cm, the cooling capacity for types 11, 16 and 21 is reduced by approximately 5% for each additional 10 cm of height.

Cooling capacity correction factors for types 11, 16 and 21

Height	Correction factor
20-30-40-50	1.00
60	0.95
65	0.92
70	0.90
80	0.85
90	0.80
95	0.77
100	0.75

DBH SET 10

DBHS.	LENGTH RADIATOR DBH UNIT		POSITION	SOUND PRESSURE dB(A)	ELECTRICITY CONSUMPTION W	WATTS WITH TYPE 10			WATTS WITH TYPE 11						
	LLL	BB /ACO				HEATING Room temperature 20°C			COOLING Room temperature 27°C						
						55/45	45/35	35/30	16/18	20/22	55/45	45/35	35/30	16/18	20/22
						Watts	Watts	Watts	Watts	Watts	Watts	Watts	Watts	Watts	Watts
DBHS. 050	10	/ACO	1	26.0	3.6	371	237	144	90	54	499	315	190	148	91
			2	30.0	4.1	398	253	154	96	58	534	337	203	158	97
			3	38.8	5.1	465	296	180	113	68	624	394	237	185	113
DBHS. 060	10	/ACO	1	26.0	4.8	482	307	186	117	70	647	409	246	191	117
			2	30.0	5.4	516	329	199	125	75	693	438	263	205	125
			3	40.0	6.8	610	389	236	148	89	819	518	311	242	148
DBHS. 070	10	/ACO	1	26.0	5.5	589	375	228	143	86	791	500	301	234	143
			2	30.0	5.9	632	403	244	153	92	849	536	322	251	154
			3	41.0	7.9	756	481	292	183	110	1015	641	386	300	184
DBHS. 080	10	/ACO	1	26.0	6.3	695	443	269	168	101	933	589	355	276	169
			2	30.0	6.8	746	475	289	181	109	1002	633	381	296	181
			3	41.8	9.1	901	574	348	218	132	1210	764	460	358	219
DBHS. 090	10	/ACO	1	26.0	6.7	799	509	309	193	117	1072	678	408	317	194
			2	30.0	7.4	859	547	332	208	125	1154	729	438	341	209
			3	42.4	10.3	1046	666	405	253	153	1405	887	534	415	254
DBHS. 100	10	/ACO	1	26.0	7.8	901	574	348	218	132	1210	764	460	358	219
			2	30.0	8.7	971	618	375	235	142	1303	823	495	385	236
			3	43.0	12.2	1191	759	461	289	174	1600	1011	608	473	290
DBHS. 110	10	/ACO	1	26.0	8.4	1011	644	391	245	148	1357	858	516	401	246
			2	30.0	9.3	1089	694	421	264	159	1462	924	556	432	265
			3	43.5	14.0	1337	852	517	324	195	1795	1134	682	531	325
DBHS. 120	10	/ACO	1	26.0	8.9	1102	702	426	267	161	1479	935	562	437	268
			2	30.0	9.9	1190	758	460	288	174	1598	1010	607	473	289
			3	44.0	14.8	1482	944	573	359	216	1990	1257	756	589	360
DBHS. 140	10	/ACO	1	26.0	10.1	1298	827	502	314	189	1743	1101	662	515	315
			2	30.0	11.2	1406	895	544	341	205	1887	1192	717	558	342
			3	44.8	17.5	1773	1129	685	429	259	2380	1504	904	704	431
DBHS. 160	10	/ACO	1	26.0	11.0	1490	949	576	361	218	2001	1264	760	592	362
			2	30.0	12.4	1618	1030	626	392	236	2172	1372	825	642	393
			3	45.5	19.2	2063	1314	798	500	301	2771	1750	1053	819	501
DBHS. 180	10	/ACO	1	26.0	12.2	1700	1083	657	412	248	2283	1442	867	675	413
			2	30.0	13.7	1845	1176	714	447	269	2478	1566	942	733	449
			3	46.0	22.0	2354	1499	910	570	344	3161	1997	1201	935	572
DBHS. 200	10	/ACO	1	26.0	13.4	1865	1188	721	452	272	2505	1582	952	741	453
			2	30.0	14.8	2033	1295	786	493	297	2730	1725	1037	807	494
			3	46.5	24.0	2644	1685	1023	641	386	3551	2243	1349	1050	643
DBHS. 220	10	/ACO	1	26.0	13.4	2038	1298	788	494	297	2736	1729	1040	809	495
			2	30.0	14.8	2226	1418	861	539	325	2990	1889	1136	884	541
			3	46.9	24.0	2935	1870	1135	711	428	3941	2490	1498	1166	713
DBHS. 240	10	/ACO	1	26.0	14.8	2209	1407	854	535	323	2967	1874	1127	877	537
			2	30.0	16.6	2420	1542	936	586	353	3250	2053	1235	961	588
			3	47.2	28.0	3225	2055	1247	781	471	4331	2736	1646	1281	784
DBHS. 260	10	/ACO	1	26.0	16.2	2391	1523	925	579	349	3211	2028	1220	950	581
			2	30.0	18.6	2637	1680	1020	639	385	3541	2237	1346	1047	641
			3	47.8	31.4	3516	2240	1360	852	513	4722	2983	1794	1396	855
DBHS. 280	10	/ACO	1	26.0	16.2	2479	1579	959	588	354	3385	2138	1286	956	585
			2	30.0	18.6	2737	1743	1058	649	391	3737	2361	1420	1056	646
			3	47.8	31.4	3645	2322	1410	864	521	4978	3145	1892	1406	861

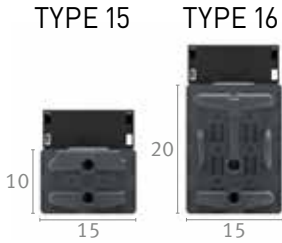
Output measured in accordance with EN 16430

SUITABLE FOR TYPE 10 & TYPE 11:



For more info on the DBH Upgrade Set, see www.jaga.com/Products/Horizontal/dbh-upgrade

DBH SET 15 + LOW-H₂O TYPE 15 / TYPE 16



STANDARD DELIVERY

- DBH unit(s)
- control board with micro-controller and remote control
- AC adapter 230 V/ 24VDC

OUTPUT EXPLANATION

HEATING CAPACITY
Due to the perfect combination of the DBH system and the extremely powerful Low-H₂O coil, the heater's height no longer influences the heat capacity. Thanks to the DBH system, maximum output is available for even the smallest heaters!

COOLING CAPACITY
The cooling capacity remains constant for all types with a maximum height of 50 cm. If the height exceeds 50 cm, the cooling capacity for types 11, 16 and 21 is reduced by approximately 5% for each additional 10 cm of height.

Cooling capacity correction factors for types 11, 16 and 21	
Height	Correction factor
20-30-40-50	1.00
60	0.95
65	0.92
70	0.90
80	0.85
90	0.80
95	0.77
100	0.75

DBH SET 15

LENGTH RADIATOR	DBH UNIT		POSITION	SOUND PRESSURE dB(A)	ELECTRICITY CONSUMPTION W	WATTS WITH TYPE 15			WATTS WITH TYPE 16		
	LLL	BB /ACO				HEATING room temperature 20°C			COOLING room temperature 27°C		
DBHS.	55/45	45/35	35/30	16/18	20/22	55/45	45/35	35/30	16/18	20/22	
DBHS. 050	15	/ACO	1	---	---	---	---	---	---	---	
			2	---	---	---	---	---	---	---	
			3	---	---	---	---	---	---	---	
DBHS. 060	15	/ACO	1	26.0	4.8	548	349	212	131	78	
			2	30.0	5.5	588	375	227	140	83	
			3	41.1	7.2	778	496	301	186	110	
DBHS. 070	15	/ACO	1	26.0	5.1	613	390	237	135	80	
			2	30.0	5.6	658	419	254	145	86	
			3	41.1	7.2	871	555	337	192	114	
DBHS. 080	15	/ACO	1	26.0	6.0	798	509	309	190	113	
			2	30.0	6.7	856	545	331	204	121	
			3	42.4	9.0	1149	732	444	274	163	
DBHS. 090	15	/ACO	1	26.0	7.0	914	583	354	218	129	
			2	30.0	7.7	980	624	379	234	139	
			3	43.3	10.7	1334	850	516	318	189	
DBHS. 100	15	/ACO	1	26.0	7.0	1029	656	398	246	146	
			2	30.0	7.7	1102	702	426	263	156	
			3	44.1	10.7	1519	968	588	362	215	
DBHS. 110	15	/ACO	1	26.0	7.9	1092	696	422	250	148	
			2	30.0	8.8	1169	745	452	267	159	
			3	44.1	12.5	1612	1027	623	369	219	
DBHS. 120	15	/ACO	1	26.0	8.7	1269	808	491	303	180	
			2	30.0	9.8	1358	865	525	324	192	
			3	44.8	14.3	1890	1204	731	451	267	
DBHS. 140	15	/ACO	1	26.0	9.6	1504	958	582	359	213	
			2	30.0	10.5	1611	1026	623	384	228	
			3	45.4	14.4	2261	1440	874	539	320	
DBHS. 160	15	/ACO	1	26.0	11.5	1729	1101	669	412	245	
			2	30.0	12.8	1846	1176	714	440	261	
			3	46.4	19.6	2631	1676	1018	628	372	
DBHS. 180	15	/ACO	1	26.0	11.5	1850	1179	716	421	250	
			2	30.0	12.8	1975	1258	764	449	266	
			3	46.4	19.6	2816	1794	1089	640	380	
DBHS. 200	15	/ACO	1	26.0	13.2	2218	1413	858	529	314	
			2	30.0	14.7	2337	1489	904	557	331	
			3	47.1	23.5	3372	2148	1304	804	477	
DBHS. 220	15	/ACO	1	26.0	15.5	2462	1568	952	587	348	
			2	30.0	16.8	2565	1634	992	612	363	
			3	47.8	27.5	3743	2384	1447	893	530	
DBHS. 240	15	/ACO	1	26.0	16.4	2707	1724	1047	646	383	
			2	30.0	17.7	2805	1787	1085	669	397	
			3	48.1	29.7	4113	2620	1591	981	582	
DBHS. 260	15	/ACO	1	26.0	16.4	2828	1802	1094	654	388	
			2	30.0	17.7	2931	1867	1134	678	402	
			3	48.1	29.7	4298	2738	1662	994	590	
DBHS. 280	15	/ACO	1	26.0	19.3	3195	2036	1236	762	452	
			2	30.0	20.4	3267	2081	1263	779	462	
			3	48.9	34.5	4855	3093	1877	1158	687	

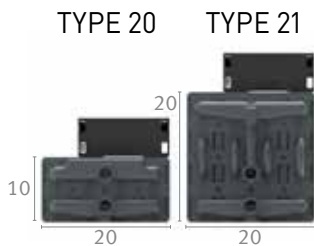
Output measured in accordance with EN 16430

SUITABLE FOR TYPE 15 & TYPE 16:



For more info on the DBH Upgrade Set, see www.jaga.com/Products/Horizontal/dbh-upgrade

DBH SET 15 + LOW-H₂O TYPE 20 / TYPE 21



STANDARD DELIVERY

- DBH unit(s)
- stuurprint met microcontroller en bediening
- AC adapter 230 V/ 24VDC

OUTPUT EXPLANATION

HEATING CAPACITY

Due to the perfect combination of the DBH system and the extremely powerful Low-H₂O coil, the heater's height no longer influences the heat capacity. Thanks to the DBH system, maximum output is available for even the smallest heaters!

COOLING CAPACITY

The cooling capacity remains constant for all types with a maximum height of 50 cm. If the height exceeds 50 cm, the cooling capacity for types 11, 16 and 21 is reduced by approximately 5% for each additional 10 cm of height.

Cooling capacity correction factors for types 11, 16 and 21

Height	Correction factor
20-30-40-50	1.00
60	0.95
65	0.92
70	0.90
80	0.85
90	0.80
95	0.77
100	0.75

DBH SET 15

WATTS WITH TYPE 20

WATTS WITH TYPE 21

DBHS.	LENGTH RADIATOR DBH UNIT		POSITION	SOUND PRESSURE dB(A)	ELECTRICITY CONSUMPTION W	HEATING Room temperature 20°C			COOLING Room temperature 27°C		HEATING Room temperature 20°C			COOLING Room temperature 27°C	
	LLL	BB /ACO				55/45	45/35	35/30	16/18	20/22	55/45	45/35	35/30	16/18	20/22
DBHS. 050	15	/ACO	1	---	---	---	---	---	---	---	---	---	---	---	---
			2	---	---	---	---	---	---	---	---	---	---	---	---
			3	---	---	---	---	---	---	---	---	---	---	---	---
DBHS. 060	15	/ACO	1	26.0	4.8	771	491	298	166	102	1048	676	416	234	151
			2	30.0	5.5	825	526	319	178	109	1125	725	447	251	162
			3	41.1	7.2	976	622	378	211	129	1488	960	591	332	214
DBHS. 070	15	/ACO	1	26.0	5.1	864	550	334	171	105	1149	741	456	240	155
			2	30.0	5.6	926	590	358	183	112	1234	796	490	258	166
			3	41.1	7.2	1108	706	428	219	134	1633	1054	648	341	220
DBHS. 080	15	/ACO	1	26.0	6.0	1112	708	430	240	147	1527	985	606	341	220
			2	30.0	6.7	1194	761	462	258	158	1638	1056	650	366	236
			3	42.4	9.0	1441	918	557	311	190	2197	1417	872	490	316
DBHS. 090	15	/ACO	1	26.0	7.0	1278	814	494	276	169	1749	1128	694	390	252
			2	30.0	7.7	1374	876	532	297	182	1874	1209	744	418	270
			3	43.3	10.7	1674	1066	647	361	221	2552	1646	1013	570	367
DBHS. 100	15	/ACO	1	26.0	7.0	1441	918	557	311	191	1969	1270	782	439	283
			2	30.0	7.7	1553	989	601	335	205	2108	1360	837	471	303
			3	44.1	10.7	1906	1214	737	412	252	2906	1875	1154	649	418
DBHS. 110	15	/ACO	1	26.0	7.9	1541	982	596	317	194	2067	1333	821	446	287
			2	30.0	8.8	1660	1058	642	342	209	2213	1428	879	477	308
			3	44.1	12.5	2038	1298	788	419	256	3051	1968	1211	658	424
DBHS. 120	15	/ACO	1	26.0	8.7	1762	1123	682	381	233	2426	1565	963	542	349
			2	30.0	9.8	1904	1213	736	411	252	2598	1676	1032	580	374
			3	44.8	14.3	2371	1510	917	512	313	3615	2332	1435	807	520
DBHS. 140	15	/ACO	1	26.0	9.6	2076	1323	803	448	274	2877	1856	1143	642	414
			2	30.0	10.5	2249	1432	870	486	297	3082	1988	1224	688	443
			3	45.4	14.4	2836	1807	1097	612	375	4324	2789	1717	965	622
DBHS. 160	15	/ACO	1	26.0	11.5	2384	1519	922	515	315	3307	2133	1313	738	476
			2	30.0	12.8	2588	1649	1001	559	342	3530	2277	1402	788	508
			3	46.4	19.6	3301	2103	1276	713	436	5033	3246	1998	1123	724
DBHS. 180	15	/ACO	1	26.0	11.5	2574	1640	995	526	322	3497	2256	1388	750	483
			2	30.0	12.8	2794	1780	1081	571	349	3733	2408	1482	801	516
			3	46.4	19.6	3564	2270	1378	728	446	5322	3433	2113	1142	736
DBHS. 200	15	/ACO	1	26.0	13.2	2984	1901	1154	644	394	4242	2736	1684	947	610
			2	30.0	14.7	3253	2072	1258	702	430	4469	2883	1775	998	643
			3	47.1	23.5	4230	2695	1636	914	559	6450	4161	2561	1440	928
DBHS. 220	15	/ACO	1	26.0	15.5	3260	2077	1261	704	431	4709	3038	1870	1051	677
			2	30.0	16.8	3562	2269	1377	769	471	4905	3164	1948	1095	706
			3	47.8	27.5	4695	2991	1816	1014	621	7159	4618	2843	1598	1030
DBHS. 240	15	/ACO	1	26.0	16.4	3534	2251	1367	763	467	5177	3339	2056	1155	745
			2	30.0	17.7	3872	2466	1497	836	512	5365	3461	2130	1197	772
			3	48.1	29.7	5160	3287	1996	1114	682	7868	5075	3124	1756	1132
DBHS. 260	15	/ACO	1	26.0	16.4	3688	2349	1426	768	470	5367	3462	2131	1168	752
			2	30.0	17.7	4067	2591	1573	848	519	5562	3588	2209	1210	780
			3	48.1	29.7	5423	3455	2097	1130	692	8157	5262	3239	1774	1144
DBHS. 280	15	/ACO	1	26.0	19.3	4141	2638	1602	894	547	6112	3943	2427	1364	879
			2	30.0	20.4	4572	2913	1768	987	604	6249	4031	2481	1395	899
			3	48.9	34.5	6090	3879	2355	1315	805	9285	5990	3687	2072	1336

Output measured in accordance with EN 16430

SUITABLE FOR TYPE 20 & TYPE 21:



For more info on the DBH Upgrade Set, see www.jaga.com/Products/Horizontal/dbh-upgrade