



S-ASX-NT

Commercial Natural Refrigerant Air-To-Water Heat Pumps

60 – 90 kW



Air-to-Water Heat Pump

The S-ASX-NT range comprises 4 models offering LTHW heating, as well as Hot Water production, in 60,70,80 and 90kW outputs in the A7W35 condition. The NT product designation refers to the R290 natural refrigerant utilised in this range of machines which delivers high heating efficiency with an ultra-low GWP of 3. These machines use tandem scroll compressors and are capable of delivering up to 72°C at the outlet. Depending on the model the units achieve a COP of 4.34 to 4.39 at nominal output in the A7W35 condition. The control system allows the unit to be operated in a cascade of up to 16 units.

All the machines are suitable for outside installation and are supplied as standard with low noise set-up, soft start compressors, an integrated fully modulating circulating pump and a loose supplied degassing valve to safeguard against hydraulic contamination.

Heat energy from the ambient air is obtained from the R290 refrigerant circulating inside a bank of copper and aluminium fins and then this energy is passed, after the compression cycle, to the heating circuit through a stainless steel brazed heat exchanger. The circuit is controlled by the standard supplied temperature probes and pressure transducers and is protected by high and low pressure switches. Additionally, as the R290 refrigerant is classified as highly flammable, the unit is designed with leakage sensors, alarms, separated electrical control and inverter casings, as well as an ATEX classified evacuation fan built in as safety features. The plate heat exchanger and all hydraulic pipework is thermally insulated to avoid condensation and avoid heat loss.

The S-ASX-NT units are fully reversible and can operate in cooling mode in the summer months achieving minimum EER of 3.34 at 35°C ambient air and 18°C flow.

Please visit our website for further information on our products and services

www.strebel.co.uk

Trusted By
Commercial
Heating Engineers
Since 1975

Natural Refrigerant and Embodied Carbon

R290, or propane as it is more commonly known, is significantly less harmful to the environment than HFC refrigerants. Put simply, with a GWP of only 3, if R290 were to be released into the atmosphere it would not contribute to ozone depletion as much as other commonly used ASHP refrigerants.

Embodied carbon, calculated using the CIBSE TM65 'mid-level' method, is a measure of the total carbon footprint of a device including elements of material components, manufacturing, transport as well as 'after-use' disposal. All S-ASX-NT units benefit from relatively low tonnage of embodied carbon due to the low GWP of R290 refrigerant. Full information is available in the Technical section online.



S-ASX-NT 60 & 70 Units

- Three fan model with twin scroll compressor
- SCOP 4.05 / 3.01 at 35°C / 65°C
- Up to 72°C outlet temperature

S-ASX-NT 80 & 90 Units

- Four Fan model with twin scroll compressor
- SCOP 4.08 / 3.03 at 35°C / 65°C
- Up to 72°C outlet temperature

S-ASX-NT Safety Devices

- Calibrated refrigerant leak detector
- ATEX safety evacuation fans supplied with alarm
- IP65 Control panel separation with double wall
- Loose supplied Degassing valve



S-ASX-NT 60-70

R290 Safety Considerations

As R290 is classified as a flammable refrigerant (A3) the S-ASX-NT range is fitted with specific safety devices to mitigate the risk of uncontrolled refrigerant leakage. In addition, operators and plant owners must ensure that there are suitable measures in place to avert the risk of any ignition sources close to the plant location.

Electrics and Control Panel

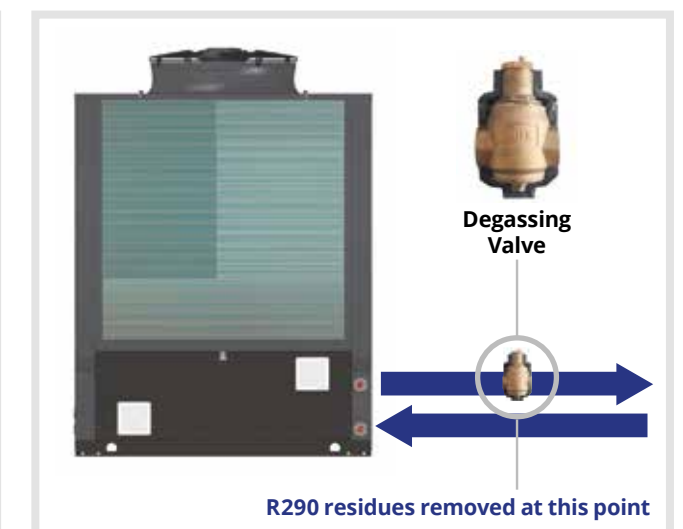
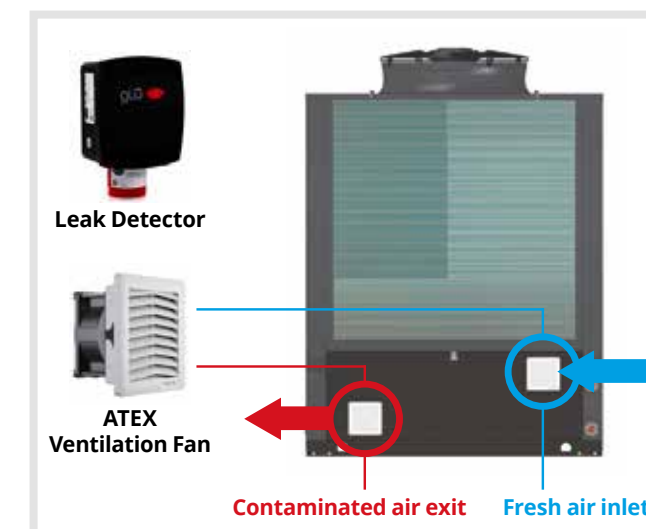
A double wall spark protection system is designed on all S-ASX-NT units with an initial physical barrier being protected by a fully isolated IP65 electrical panel box.

Leak Detector and Evacuation Fan System

A leak detector is fitted inside the unit to measure the concentration of R290 which, if exceeded, will sound an alarm and shut the unit down whilst also activating an ATEX approved ventilation fan.

Degassing Valve

Supplied loose on all units is a degassing valve which must be installed on the flow pipe from each unit to eliminate any potential contamination of refrigerant through a leak in the integral plate heat exchanger.



Strebel S-ASX-NT Technical Specifications

Model			60	70	80	90
Efficiency label at 35°C			A++	A++	A++	A++
Efficiency label at 55°C			A++	A++	A++	A++
SCOP at 35°C			4.05	4.06	4.08	4.07
SCOP at 45°C			3.53	3.54	3.57	3.56
SCOP at 55°C			3.32	3.33	3.35	3.33
SCOP at 65°C			3.01	3.01	3.03	3.03
A7W35	Heating capacity	kW	55.1	66.7	79.9	91
	Power input	kW	12.7	15.3	18.2	20.8
	COP		4.34	4.36	4.39	4.38
	Water flow rate	l/h	9494	11509	13787	15704
	Pressure drops	kPa	27	26	26	24
A7W45	Heating capacity	kW	52.1	63.2	75.7	86.2
	Power input	kW	14.7	17.8	21.1	24.1
	COP		3.54	3.55	3.59	3.58
	Water flow rate	l/h	9023	10939	13104	14926
	Pressure drops	kPa	24	24	23	22
A7W55	Heating capacity	kW	49.1	59.6	71.4	81.3
	Power input	kW	16.1	19.5	23.2	26.5
	COP		3.05	3.06	3.08	3.07
	Water flow rate	l/h	5346	6481	7764	8843
	Pressure drops	kPa	9	9	9	9
A7W65	Heating capacity	kW	46.3	56.2	67.3	76.6
	Power input	kW	18.1	21.9	26.1	29.8
	COP		2.56	2.57	2.58	2.57
	Water flow rate	l/h	4050	4910	5882	6700
	Pressure drops	kPa	5	5	6	5
A7W70	Heating capacity	kW	44.9	54.4	65.2	74.2
	Power input	kW	20.9	25.2	30.0	34.3
	COP		2.15	2.16	2.17	2.16
	Water flow rate	l/h	7850	9517	11400	12985
	Pressure drops	kPa	19	18	18	17
A2W35	Heating capacity	kW	44.6	54	64.7	73.7
	Power input	kW	12.3	14.9	17.7	20.2
	COP		3.63	3.62	3.66	3.65
	Water flow rate	l/h	7691	9324	11168	12721
	Pressure drops	kPa	18	18	18	17
A2W45	Heating capacity	kW	42.2	51.2	61.3	69.8
	Power input	kW	14.2	17.1	20.4	23.3
	COP		2.97	2.99	3	3
	Water flow rate	l/h	7316	8869	10624	12101
	Pressure drops	kPa	16	16	16	15
A2W55	Heating capacity	kW	39.9	48.4	57.9	66
	Power input	kW	15.5	18.8	22.4	25.6
	COP		2.57	2.57	2.58	2.58
	Water flow rate	l/h	4340	5262	6303	7179
	Pressure drops	kPa	6	6	6	6
A2W65	Heating capacity	kW	37.8	45.8	54.8	62.4
	Power input	kW	17.4	21.1	25.1	28.7
	COP		2.17	2.17	2.18	2.17
	Water flow rate	l/h	3300	4001	4792	5459
	Pressure drops	kPa	4	4	4	4
A2W70	Heating capacity	kW	36.7	44.5	53.2	60.6
	Power input	kW	20.0	24.2	28.8	32.9
	COP		1.84	1.84	1.85	1.84
	Water flow rate	l/h	6417	7780	9319	10615
	Pressure drops	kPa	13	13	13	12
A-4W35	Heating capacity	kW	39	47.3	56.7	64.5
	Power input	kW	11.9	14.3	17	19.5
	COP		3.28	3.31	3.34	3.31
	Water flow rate	l/h	6738	8169	9786	11146
	Pressure drops	kPa	14	14	14	13
A-4W45	Heating capacity	kW	37.3	45.2	54.2	61.7
	Power input	kW	13.6	16.4	19.5	22.3
	COP		2.74	2.76	2.78	2.77
	Water flow rate	l/h	6465	7838	9388	10694
	Pressure drops	kPa	13	13	13	12
A-4W55	Heating capacity	kW	35.6	43.2	51.7	58.9
	Power input	kW	14.8	17.9	21.3	24.3
	COP		2.41	2.41	2.43	2.42
	Water flow rate	l/h	3877	4700	5630	6413
	Pressure drops	kPa	5	5	5	5
A-4W65	Heating capacity	kW	34.2	41.5	49.7	56.6
	Power input	kW	16.5	20	23.8	27.2
	COP		2.07	2.08	2.09	2.08
	Water flow rate	l/h	2990	3624	4342	4945
	Pressure drops	kPa	3	3	3	3
A-4W70	Heating capacity	kW	33.5	40.6	48.6	55.4
	Power input	kW	19.0	23.0	27.3	31.2
	COP		1.76	1.77	1.78	1.78
	Water flow rate	l/h	5864	7110	8516	9701
	Pressure drops	kPa	11	11	11	10

Strebel S-ASX-NT Technical Data

Model		60	70	80	90
Power supply	V-p-Hz				
Compressor type		High Temperature Scroll			
No. compressors/ No. refrigerant circuits	Qty	2,1			
Refrigerant		R290			
Plant heat exchanger	Stainless steel brazed plates				
Source heat exchanger	Finned coil copper - hydrophilic aluminium				
Fans	axial EC				
No. Fans	Qty	3	3	4	4
Hydraulic fittings		2" M	2" M	2" M	2" M
Weight	kg	619	641	762	785
Maximum power input	kW	27	31	38	42
Low Noise Acoustic Setting (as standard)					
Sound power level	dB(A)	77	77	78	78
Sound pressure at 1m	dB(A)	59	60	60	61
Sound pressure at 5m	dB(A)	50	50	51	52
Sound pressure at 10m	dB(A)	45	45	46	47

The acoustic data performances are referred to units operating in heating mode at nominal conditions A7W35.

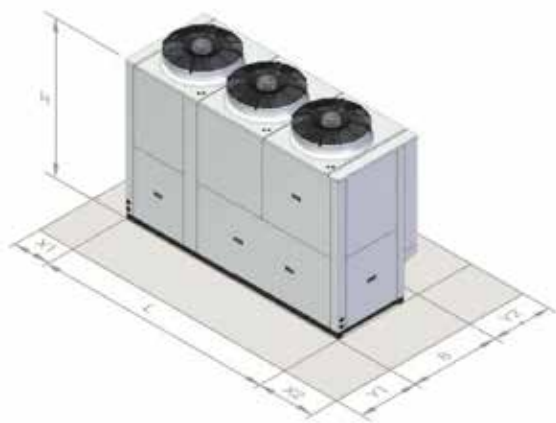
The sound power level is measured in accordance to ISO 3744 standard.

The sound pressure level is calculated according to ISO 3744 and is referred to a distance of 1/5/10 metres form the external surface of the unit.

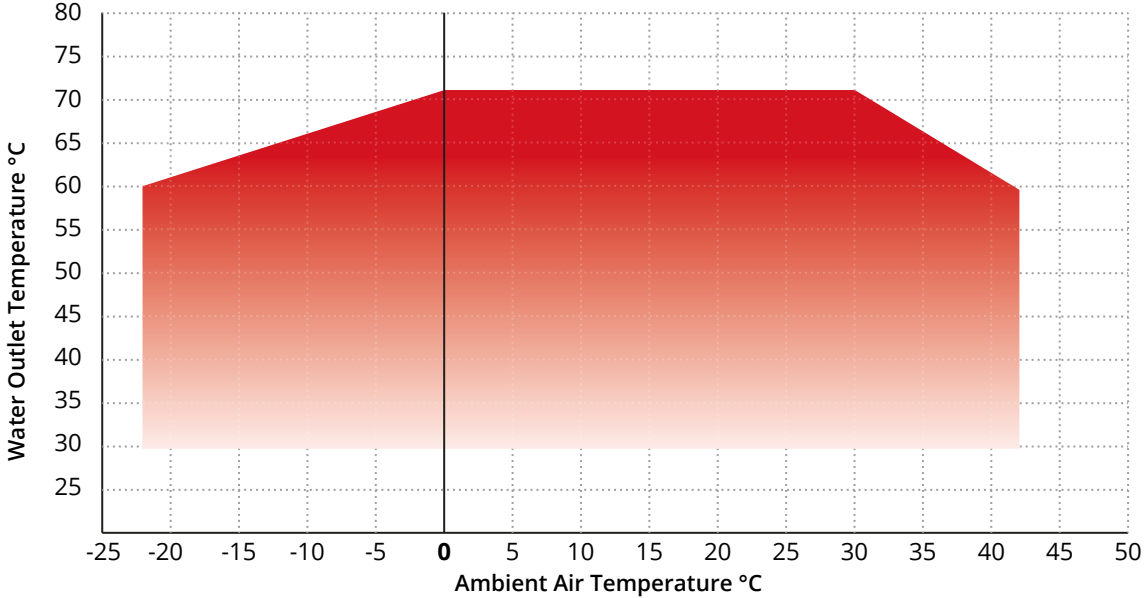
Unit Dimensions

		60	70	80	90
L	mm	2480	2480	3230	3230
B	mm	930	930	930	930
H	mm	1830	1830	1830	1830
X1	mm	200	200	200	200
X2	mm	500	500	500	500
Y1	mm	1000	1000	1000	1000
Y2	mm	500	500	500	500

X1, X2, Y1, Y2 : Maintenance Operating Area



Operating Range



The graph to the left shows the operating area inside which the correct working of the unit is assured.

A7W65 = source : air in 7°C d.b. 6°C w.b. / plant : water in 55°C out 65°C
A7W55 = source : air in 7°C d.b. 6°C w.b. / plant : water in 47°C out 55°C
A7W45 = source : air in 7°C d.b. 6°C w.b. / plant : water in 40°C out 45°C
A7W35 = source : air in 7°C d.b. 6°C w.b. / plant : water in 30°C out 35°C
A2W65 = source : air in 2°C d.b. 1 °c w.b. / plant : water 55°C out 65°C
A2W55 = source : air in 2°C d.b. 1 °c w.b. / plant : water 47°C out 55°C
A2W45 = source : air in 2°C d.b. 1 °c w.b. / plant water 40°C out 45°C
A2W35 = source : air in 2°C d.b. 1 °c w.b. / plant water 30°C out 35°C
A-4W65 = source : air in -4°C d.b. -5°C w.b. / plant : water in 55°C out 65°C
A-4W55 = source : air in -4°C d.b. -5°C w.b. / plant : water in 47°C out 55°C
A-4W45 = source : air in -4°C d.b. -5°C w.b. / plant : water in 40°C out 45°C
A-4W35 = source : air in -4°C d.b. -5°C w.b. / plant : water in 30°C out 35°C

Seven Reasons to Use Strebel

We are proud of our history and the disciplines instilled in the company by our founder Josef Strebel.

It's the Strebel way - uncompromising product quality and customer care.

S	AFETY	At the heart of everything we do
T	RUSTED	By engineers since 1893
R	OBUST	High quality components
E	ASE	Of installation
B	EST	Practice throughout design, manufacturing and installation
E	NGINEERED	For long trouble free product life
L	OGICAL	Sophisticated control software

Services and Warranty

Installation, Service and Spares

All heat pumps should be installed in accordance with the relevant installation instructions by experienced engineers. Upon request Strebel Service engineers can verify heat pump installation at time of commissioning but will not carry out wiring, or make changes to incorrect wiring, between heat pump and storage vessel as this is the responsibility of the installer.

Our Service Department offers a range of servicing options that can be tailored to meet individual requirements. Please contact us for more information.

Availability of Spares to the right specification at the right time is essential to the successful operation of any plant room item. At our central Warehouse facility we stock a wide range of commonly used parts which can be dispatched directly to site for the following day assuming the order is received the morning before.



Warranty

All Strebel heat pumps are offered with the standard 2-year warranty on the main units. The date of the warranty will be considered to run from the time the heat pump is commissioned on site.

2 YEAR
WARRANTY



Customer Support

As with all Strebel products, the S-ASX-VP heat pump range is fully supported by our excellent customer service team and experienced technical engineers. Whether you are looking for product advice or for maintenance and repair, our service team are on hand to support you and can be contacted easily via telephone or online.

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