



S-ASX-NTVi Commercial Natural Refrigerant Air-To-Water Heat Pumps

80 & 120kW



Air-to-Water Heat Pump

The S-ASX-NTVi range comprises 2 models offering LTHW heating, as well as Hot Water Production, in 80kW and 120kW outputs in the A7W35 condition. The NTVi product designation refers to multiple low volume circuits of the R290 natural refrigerant utilised in this range of machines which delivers highly efficient heating with an ultra-low GWP of 3, as well as cascading vapour injection scroll driven inverter compressors enabling effective and smooth load matching. The V frame format ensures the smallest possible unit footprint whilst also maximising incoming air flow for high output and efficiency. All the S-ASX-NTVi machines are capable of delivering up to a maximum of 80°C at the outlet, but are recommended to operate in stable condition at 78°C with a 5°C delta T. The control system allows the unit to be operated in a cascade of up to 16 machines.

All the machines are supplied with low noise set-up as standard with 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-NTVi units are fully reversible and can operate in cooling mode in the summer months. Full EER data is available on request.

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-NTVi 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.



Strebel S-ASX-NTVi Technical Data

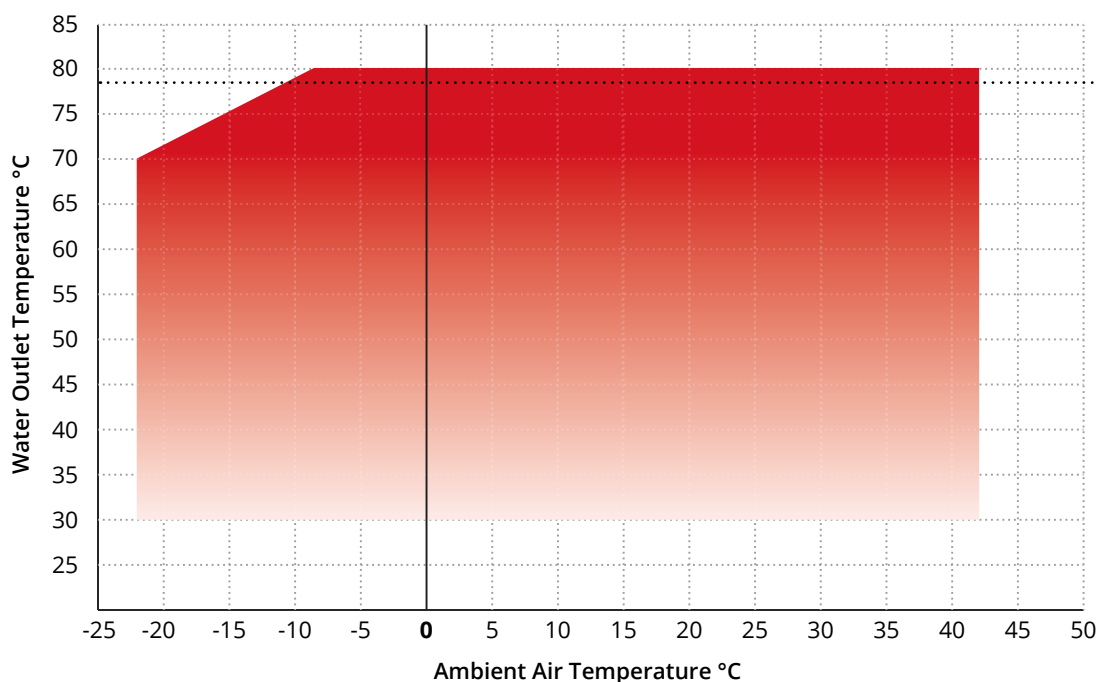
Model		80	120
Power supply	V-p-Hz	400 - 3 - 50	
Compressor type		Vapour injection scroll driven inverter	
Compressor Modulation	%	35-100	
No. Compressors	Qty	2	3
No. refrigerant circuits		2	3
Refrigerant		R290	
Refrigerant charge	kg	4.8 x 2	4.8 x 3
Plant heat exchanger type		Stainless steel brazed plates	
Source heat exchanger		Finned coil copper hydrophilic aluminium	
Fans		axial EC	
No. Fans	Qty	2	3
Hydraulic fittings		2"	2 1/2"
Weight	kg	1050	1600
Electrical Power supply	Amps	102	152
Low Noise Acoustic Setting (as standard)			
Sound power level	dB(A)	80	82
Sound pressure at 1 metre	dB(A)	61	63
Sound pressure at 5 metres	dB(A)	53	55
Sound pressure at 10 metres	dB(A)	48	50

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 from the external surface of the unit.

Operating Range



78°C

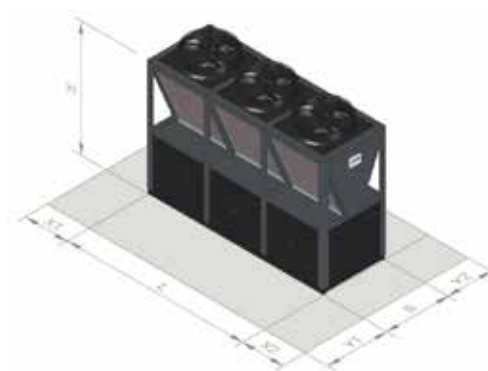
Stable operating outlet temperature

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

Unit Dimensions

		80	120
L	mm	2260	3330
B	mm	1190	1190
H	mm	2450	2450
X1	mm	1000	1000
X2	mm	1000	1000
Y1	mm	600	600
Y2	mm	600	600

Unit Dimensions shown for maintenance purposes only. Safety and ATEX 2 clearance shown in the O&M manual.



S-ASX-NTVi Safety Devices

As R290 is classified as a flammable refrigerant (A3) the S-ASX-NTVi 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.

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

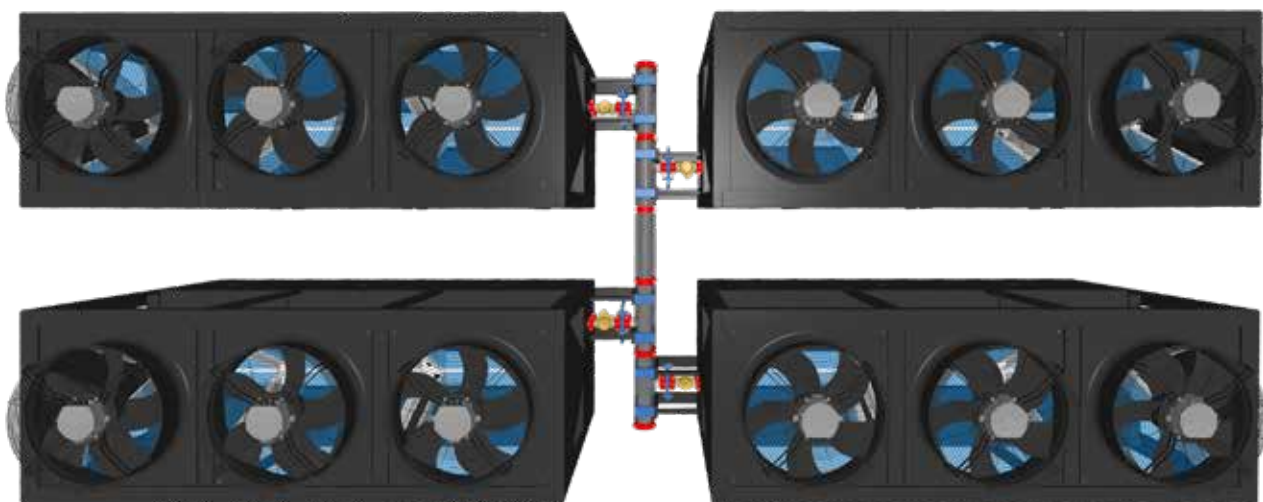
Multiple Unit Cascading

The S-ASX-NTVi units are available to be installed in cascade format, up to a maximum of 16 machines, with DN100 pipework connection kits. The connection kits comprise pre-assembled insulated stainless steel manifolds with grooved connections, butterfly isolation valves, "Y" filter, and deaerator filters as well as insulated pipework lengths as appropriate to the number of units to be cascaded together. The connection kits supplied are provided for installation by others. As such a maximum of 1.92MW output can be achieved with a cascade of 16 of the S-ASX-NTVi120 units.

Cascades can be arranged either in a linear 'coil facing coil' format or an 'end to end' format as shown. Depending on which is preferred the associated cascade kits will be offered during the detailed design phase.



Cascaded 'coil facing coil' installation with four units of S-ASX-NTVi120 with pre-assembled cascade connection kits.



Cascaded 'end to end' installation with four units of S-ASX-NTVi120 with pre-assembled cascade connection kits.

Strebel S-ASX-NTVi Technical Specifications

Model			80			120		
Efficiency label at 35°C			A++			A++		
Efficiency label at 55°C			A++			A++		
SCOP at 35°C			4.14			4.14		
SCOP at 45°C			3.59			3.60		
SCOP at 55°C			3.36			3.36		
SCOP at 65°C			3.02			3.02		
			Min	Nominal	Max	Min	Nominal	Max
A7W35	Heating capacity	kW	36.7	79.9	97.1	55.1	120.0	146.0
	Power input	kW	7.3	17.4	24.2	11.0	26.0	36.3
	COP		5.00	4.59	4.01	5.01	4.62	4.02
A7W45	Heating capacity	kW	37.2	80.8	98.2	55.8	121.0	147.0
	Power input	kW	9.2	21.6	30.2	13.7	32.4	45.2
	COP		4.06	3.74	3.25	4.07	3.73	3.25
A7W55	Heating capacity	kW	37.7	82.0	99.6	56.6	123.0	149.0
	Power input	kW	11.5	27.1	37.7	17.2	40.5	56.5
	COP		3.28	3.03	2.64	3.29	3.04	2.64
A7W65	Heating capacity	kW	38.5	83.7	102.0	57.7	125.0	153.0
	Power input	kW	14.5	34.2	47.7	21.7	51.3	71.4
	COP		2.66	2.45	2.14	2.66	2.44	2.14
A7W78	Heating capacity	kW	40.1	87.2	106.0	60.2	131.0	159.0
	Power input	kW	20.0	47.2	65.7	30.0	70.7	98.5
	COP		2.00	1.85	1.61	2.01	1.85	1.61
A2W35	Heating capacity	kW	31.0	67.3	81.8	46.5	101.0	123.0
	Power input	kW	7.4	17.4	24.2	11.0	26.1	36.3
	COP		4.21	3.87	3.38	4.23	3.87	3.39
A2W45	Heating capacity	kW	31.5	68.4	83.2	47.2	103.0	125.0
	Power input	kW	9.2	21.7	30.2	13.8	32.5	45.2
	COP		3.43	3.15	2.75	3.42	3.17	2.77
A2W55	Heating capacity	kW	32.1	69.7	84.8	48.1	105.0	127.0
	Power input	kW	11.5	27.1	37.7	17.2	40.6	56.5
	COP		2.79	2.57	2.25	2.80	2.59	2.25
A2W65	Heating capacity	kW	32.9	71.6	87.0	49.4	107.0	130.0
	Power input	kW	14.5	34.2	47.7	21.8	51.3	71.5
	COP		2.27	2.09	1.82	2.27	2.09	1.82
A2W78	Heating capacity	kW	34.7	75.3	91.6	52.0	113.0	137.0
	Power input	kW	20.0	47.2	65.7	30.0	70.7	98.5
	COP		1.74	1.60	1.39	1.73	1.60	1.39
A-4W35	Heating capacity	kW	28.1	61.1	74.3	42.2	91.6	111.0
	Power input	kW	7.4	17.5	24.3	11.1	26.2	36.4
	COP		3.80	3.49	3.06	3.80	3.50	3.05
A-4W45	Heating capacity	kW	28.7	62.4	75.8	43.1	93.5	114.0
	Power input	kW	9.2	21.7	30.2	13.8	32.5	45.3
	COP		3.12	2.88	2.51	3.12	2.88	2.52
A-4W55	Heating capacity	kW	29.4	63.9	77.6	44.1	95.8	116.0
	Power input	kW	11.5	27.1	37.8	17.2	40.6	56.6
	COP		2.56	2.36	2.05	2.56	2.36	2.05
A-4W65	Heating capacity	kW	30.3	65.9	80.1	45.5	98.9	120.0
	Power input	kW	14.5	34.3	47.7	21.8	51.4	71.5
	COP		2.09	1.92	1.68	2.09	1.92	1.68
A-4W78	Heating capacity	kW	32.2	70.0	85.0	48.3	105.0	127.0
	Power input	kW	20.0	47.2	65.7	30.1	70.8	98.6
	COP		1.61	1.48	1.29	1.60	1.48	1.29

Sizing Guidance

When sizing it is imperative to base selection using the highlighted nominal machine output at the design condition. The minimum and maximum outputs are shown only for information purposes to demonstrate the operational output envelope limits. For clarity using maximum output as the basis for selection is not considered sound engineering practice, and will negatively impact operational effectiveness and longevity.

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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