Air / Water-Cooled Shell & Tube Aftercoolers

Water-cooled shell and tube aftercoolers can be used to cool compressed air easily and effectively.

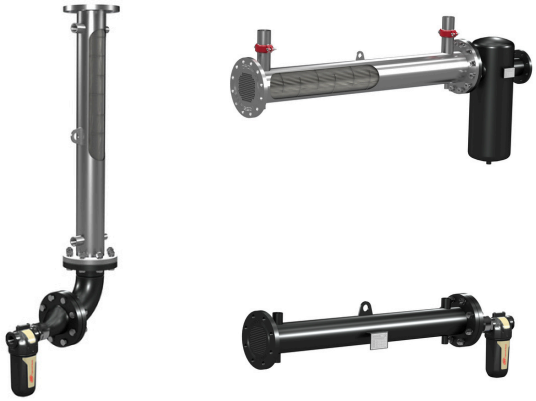
The counter-current heat exchanger allows the compressed air temperature to be reduced to the required conditions, optimising the downstream process. This is the case for adsorption dryers which prefer moderate inlet temperatures achievable with the W.
The air temperature obtained is slightly higher than the water temperature.

Cooling compressed air, which is in most cases humid, leads to the formation of condensate, which can be separated by a condensate separator installed at the heat exchanger outlet.

Separators included in aftercoolers up to WA350, have an aluminium body and cyclone cartridge and are equipped with an automatic float-controlled condensate drain. Separators from A450 onwards have a carbon steel body and a cyclone separator with manual drain. Reductions for connection to the compressed air system are optional.

Design Conditions

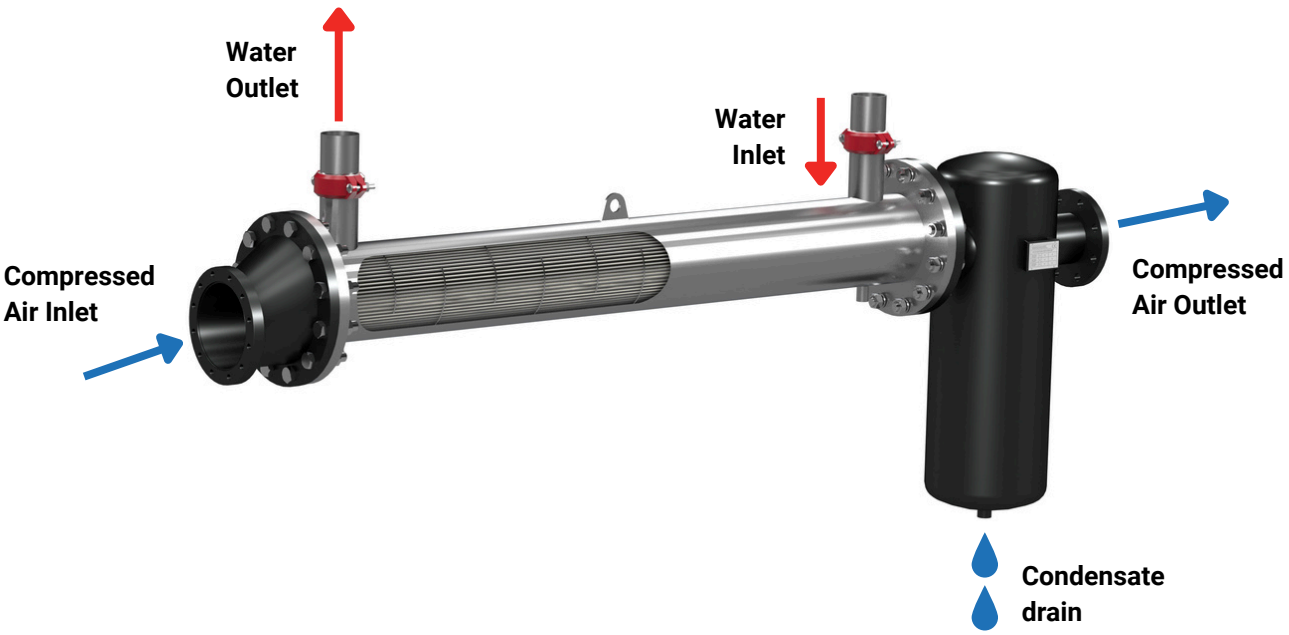
- Flow rate: 2.7-633.3 m3/min
- Maximum compressed air inlet temperature: 200°C
- Maximum compressed air pressure: 16 barg
- Maximum water inlet temperature: 90°C
- Maximum water pressure: 10 bar
- Minimum ambient temperature: 1°C



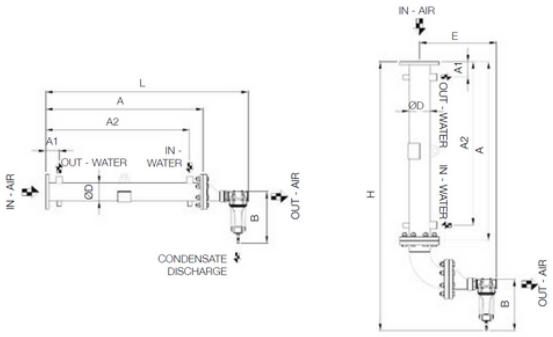
Operating principles

In the heat exchanger, the compressed air flow passes through stainless steel pipes immersed in cold water, on the shell side. The cold water flow proceeds in countercurrent and is diverted by the diaphragms used to increase the heat exchange coefficient.

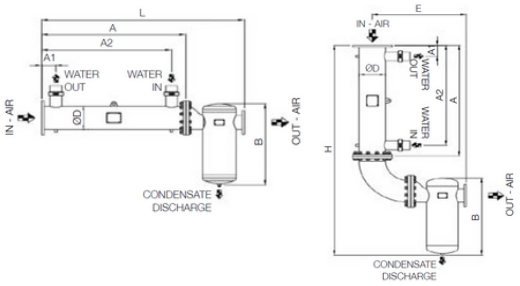
The W range, with an appropriate exchanger sizing, has limited pressure drops on the compressed air side, and simultaneous excellent thermal performance. The cyclone separator, installed at the tube outlet, provides a swirling motion that separates the condensate from the compressed air, conveying it by gravity towards the drain.



WA27 to WA350



A450 to A6300



Technical Data

WA27 to WA350

Models	Max Air Flow m3/h	Air Inlet Connections BSP / DN	Air Outlet Connections BSP / DN	Water Connections BSP / DN	Drain Connection BSP	Dimensions [mm]								Weight [kg]			
						A	A1	A2	B	D	E	L	H	WA	WAV	WA_S	WAV_S
WA27	160	DN100	1"1/2 BSPT	1" BSP	1/4" BSP	85	915	1000	356	114.3	548	1278	1555	34	52	34	52
WA42	250	DN100	1"1/2 BSPT	1" BSP	1/4" BSP	85	1065	1150	356	114.3	548	1433	1715	40	55	40	55
WA75	450	DN100	1"1/2 BSPT	1" BSP	1/4" BSP	85	1215	1300	357	114.3	548	1583	1865	45	58	45	58
WA125	750	DN100	2" BSPT	DN40	1/4" BSP	92	1300	1500	474	114.3	595	1831	2164	47	60	47	60
WA160	1000	DN125	3" BSPT	DN40	1/4" BSP	100	1400	1500	700	139.7	730	1929	2413	65	85	65	85
WA270	1600	DN125	3" BSPT	DN50	1/4" BSP	105	1445	1550	700	139.7	730	1979	2463	71	88	71	88
WA350	2100	DN150	3" BSPT	DN65	1/4" BSP	112	1488	1600	700	168.3	816	2044	2571	95	120	95	120

A450 to A6300

Models	Max Air Flow m3/h	Air Inlet Connections BSP / DN	Air Outlet Connections BSP / DN	Water Connections BSP / DN	Drain Connection BSP	Dimensions [mm]								Weight [kg]			
						A	A1	A2	B	D	E	L	H	A	AV	A_S	AV_S
A450	2700	DN200	DN100	DN65	3/4" BSP	112	1488	1600	840	193.7	1005	2120	2620	105	145	105	145
A560	3400	DN200	DN100	DN80	3/4" BSP	112	1475	1600	840	219.1	1005	2120	2620	170	210	170	210
A800	4800	DN250	DN150	DN100	3/4" BSP	137	1263	1400	995	273	1169	1975	2650	250	310	250	310
A1000	6200	DN250	DN150	DN100	3/4" BSP	137	1262	1400	1014	273	1239	2045	2665	270	330	270	330
A1250	7500	DN250	DN150	DN100	1" BSP	138	1513	1650	1049	273	1169	2365	2900	310	370	310	370
A1830	11000	DN300	DN200	DN125	1" BSP	150	1500	1650	1258	323.9	1462	2415	3175	445	535	445	535
A2500	15000	DN400	DN250	DN150	1-1/2" BSP	200	1350	1553	1463	403.4	1895	2540	3400	650	820	650	820
A3800	23000	DN450	DN250	DN200	1-1/2" BSP	250	1350	1600	1689	457.2	2131	2720	3725	875	1100	875	1100
A5100	31000	DN500	DN300	DN200	2" BSP	250	1500	1750	1961	508	2477	3100	4155	1510	1825	1510	1825
A6300	38000	DN600	DN350	DN200	2" BSP	250	1500	1750	2041	609.6	2834	3235	4415	1625	2120	1625	2120

Performances & specifications: +/- 5%
WA = Horizontal – Painted. WAV = Vertical – Painted. WA_S = Horizontal – Stainless Steel. WAV_S = Vertical – Stainless Steel.

Performance referred to: compressed air inlet temperature 120°C; compressed air inlet pressure 7 barg; water inlet temperature 15°C; compressed air outlet temperature 35°C.

Design conditions: maximum compressed air inlet temperature 200°C maximum compressed air pressure 16 barg; maximum water inlet temperature 90°C; maximum water pressure 10 bar; minimum ambient temperature 1°C.

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