Atlas Copco Air Optimization

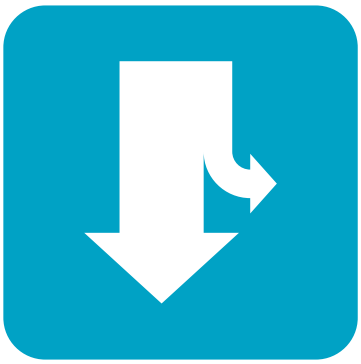
Energy Recovery

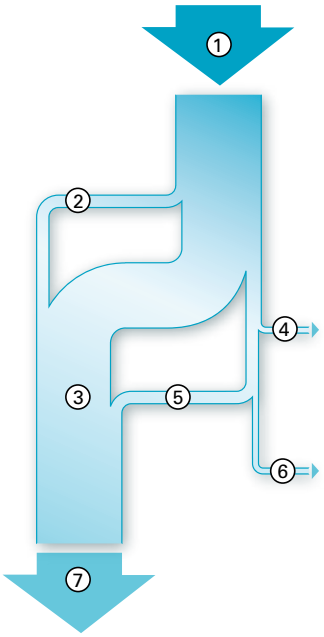
ER, reinventing warm water

The way to achieve the highest energy savings is to recover wasted energy through radiation losses by the use of heat recovery systems.

As much as 94% of the electrical energy used by an industrial air compressor is converted into heat and loss through radiation in the compression process. The remaining 6% is converted into compressed air heat losses. Therefore, a properly designed heat recovery unit can recover anywhere from 50-94% of this available thermal energy (as low-grade heat) to heat air or water (up to 90°C or 140°F).

Pre-heated water can be used in the application process to reduce the use of traditional energy sources reducing the amount of CO2 emissions.





Features	Benefits
Energy savings	Reduction of external fuel inputs for the process and associated ancillaries (fans, pumps, ...).
One size fits all	Standardization.
Plug and play concept	All major mechanical parts are pre-mounted in the canopy. No chance for wrong connections of flexible hoses and parts.
Stand alone unit	Easier access to motor overhaul operations, thermostatic valve housing and simplified maintenance operations.
Control of ancillary equipment	Optimize energy consumption in the complete compressor room.
Heat recovery	Reduced impact on the environment.

① **Total energy** transmitted by the engine
② Heat from the **engine** 9%
③ Heat from the **oil cooler** 72%
④ Heat dissipated in the **ambient air** 2%
⑤ Heat from the **aftercooler** 13%
⑥ Heat remaining in the **compressed air** 4%
⑦ **Recoverable energy** 94%

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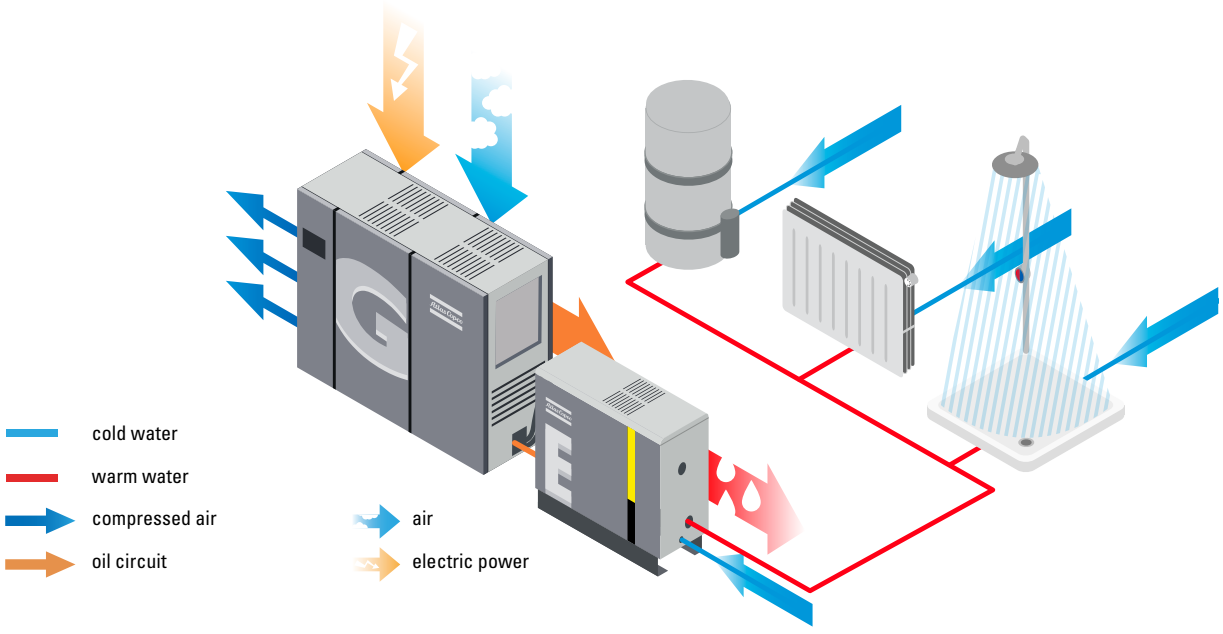
Type	GA, GA+ & GA VSD (nominal power)		Recoverable energy		Savings potential for 4000 running hours	
	kW	hp	kW	hp	Heating oil (l)	CO2 (ton)
ER-S1 (2230 0060 90)	11	15	9	12	4.224	9.292
	15	20	12	16	5.760	12.672
	18	25	14	19	6.720	14.784
	22	30	18	24	8.640	19.008
	30	40	24	32	11.520	25.344
ER-S2 (2230 0060 91)	37	50	30	40	14.400	31.680
	45	60	36	48	17.280	38.016
	55	75	44	59	21.120	46.464
ER-S3 (2230 0060 92)	75	100	60	80	28.800	63.360
	90	120	72	97	34.560	76.032
ER-S4 (2230 0060 93)	110	150	88	118	42.240	92.928
	180	241	144	193	69.120	152.064
ER-S5 (2230 0060 94)	200	268	160	215	76.800	168.960
	315	422	252	338	120.960	266.112

Type	Dimensions	Low temperature rise (ΔT = 10 °C, 50 °F) high water flow		High temperature rise (ΔT = 60 °C, 140 °F) low water flow	
	L x W x H	l/min	GPM	l/min	GPM
ER-S1	1028 x 637 x 862 mm	12	3.2	1.9	0.5
		15	4.0	2.4	0.6
		18	4.8	2.9	0.8
		22	5.8	3.6	1.0
		32	8.5	5.2	1.4
ER-S2		39	10.3	6.4	1.7
		48	12.7	7.9	2.1
		59	15.6	9.8	2.6
ER-S3		80	21.1	13.3	3.6
		98	25.9	16.2	4.3
ER-S4		118	31.2	19.6	5.2
		193	50.9	32.2	8.5
ER-S5	1028 x 637 x 902 mm	216	56.7	35.8	9.5
		337	89.0	56.2	14.9



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