

# 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.

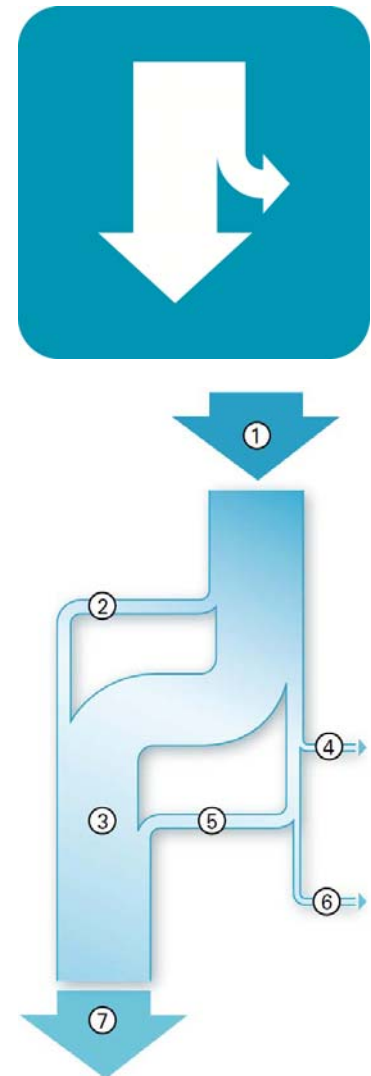
As much as 94% of the electrical energy used by an industrial air compressor is converted into heat and loss through radiation in the compression process. The remaining 6% is converted into compressed air heat losses. Therefore, a properly designed heat recovery unit can recover anywhere from 50-94% 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 & associated ancillaries (fans, pumps..)
One size fits all	Standardization.
Plug and play concept	Fully pre-assembled Energy Recovery unit. Easy to connect to the compressor.
Stand-alone unit	Simplified maintenance operations on compressor.
Control of ancillary equipment	Optimize energy consumption in the complete compressor room.
Heat recovery	Reduced impact on the environment.
Minimum footprint	Easy installation because of reduced size.
Stainless Steel or copper brazed heat exchanger	For optimal selection depending on your application.

### Optional:

Energy counter	Shows exact energy saving from your ER with the possibility of connecting to your back office.
Extended connection kits	Kit containing all required parts to cover the maximum connection distance of 6m.



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 after cooler 13%
6. Heat remaining in the compressed air 4%
7. Recoverable energy 94%



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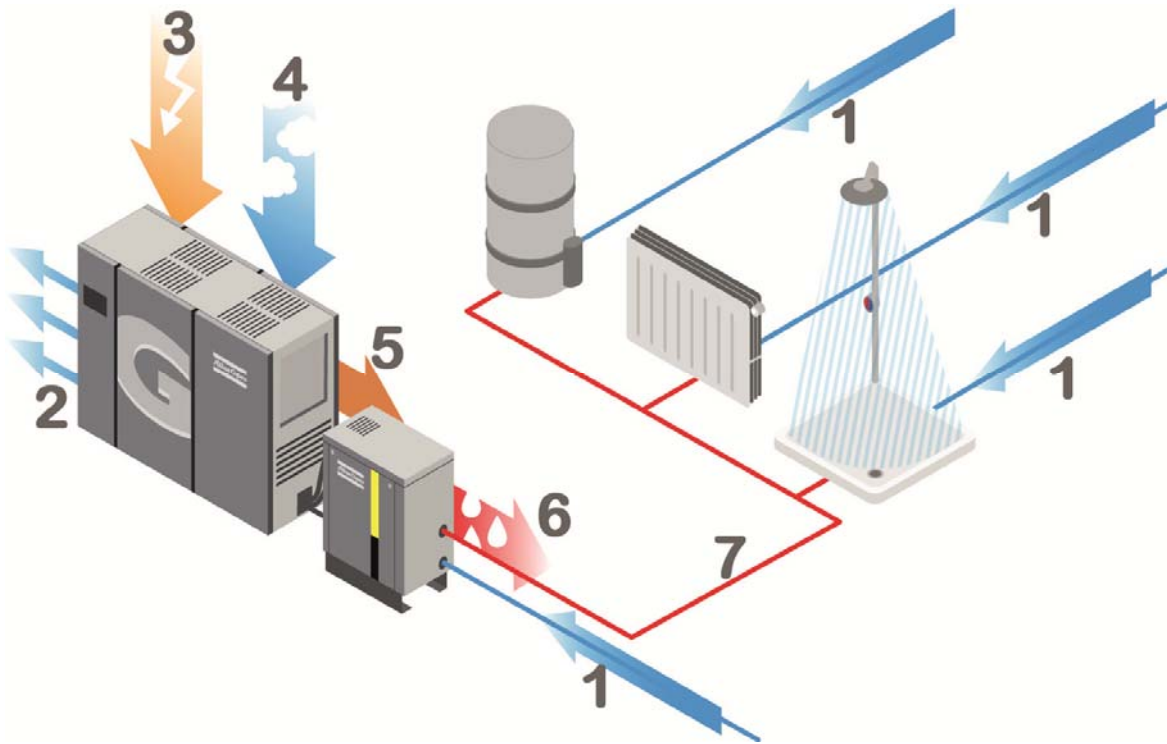


Type	GA, GA+ & (nominal kW)	GA VSD power (hp)	Recoverable energy (kW)	energy (hp)	Savings Heating (L)	potential oil (Gal)	Reduce CO2 (ton)
ER-S1	11	15	9	12	4.224	1.116	9.292
ER-S1	15	20	12	16	5.760	1.522	12.672
ER-S1	18	25	14	19	6.720	1.775	14.784
ER-S1	22	30	18	24	8.640	2.283	19.008
ER-S1	30	40	24	32	11.520	3.044	25.344
ER-S2	37	50	30	40	14.400	3.804	31.680
ER-S2	45	60	36	48	17.280	4.565	38.016
ER-S2	55	75	44	59	21.120	5.580	46.464
ER-S3	75	100	60	80	28.800	7.609	63.360
ER-S3	90	120	72	97	34.560	9.131	76.032
ER-S4	110	150	88	118	42.240	11.160	92.928
ER-S4	180	241	144	193	69.120	18.262	152.064
ER-S5	200	268	160	215	76.800	20.291	168.960
ER-S5	315	422	262	338	120.960	31.958	266.122

Type	Low temperature rise ( $\Delta T = 10\text{ }^{\circ}\text{C}, 50\text{ }^{\circ}\text{F}$ ) high water flow		High temperature rise ( $\Delta T = 60\text{ }^{\circ}\text{C}, 140\text{ }^{\circ}\text{F}$ ) low water flow	
	l/min	GPM	l/min	GPM
ER-S1	12	3.2	1.9	0.5
ER-S1	15	4.0	2.4	0.6
ER-S1	18	4.8	2.9	0.8
ER-S1	22	5.8	3.6	1.0
ER-S1	32	8.5	5.2	1.4
ER-S2	39	10.3	6.4	1.7
ER-S2	48	12.7	7.9	2.1
ER-S2	59	15.6	9.8	2.6
ER-S3	80	21.1	13.3	3.6
ER-S3	98	25.9	16.2	4.3
ER-S4	118	31.2	19.6	5.2
ER-S4	193	50.9	32.2	8.5
ER-S5	216	56.7	35.8	9.5
ER-S5	337	89.0	56.2	14.9



# Atlas Copco Air Optimization Energy Recovery



1) Cold water 2) Compressed air 3) Electric power 4) Air 5) Oil circuit 6) Energy recovery 7) Warm water

Type Part numbers	Stainless Steel Heat Exchanger	Copper Brazed Heat Exchanger	Canopy Dimensions (LxWxH mm)
ER-S1	2230 0080 91	2230 0085 91	477x450x807
ER-S2	2230 0080 92	2230 0085 92	477x450x807
ER-S3	2230 0080 93	2230 0085 93	477x450x807
ER-S4	2230 0080 94	2230 0085 94	877x500x807
ER-S5	2230 0080 96	2230 0085 96	877x500x807

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