

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.

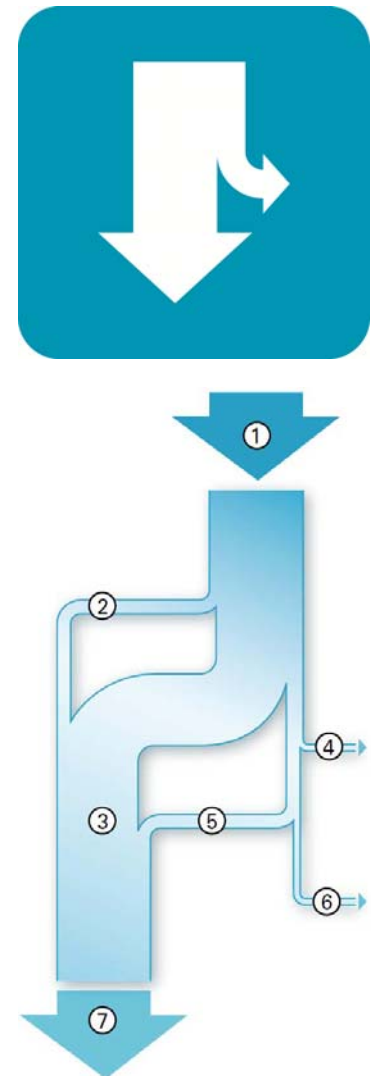
As much as 94% of the electrical energy used by an industrial air compressor is converted into heat and loss through radiation in the compression process. The remaining 6% is converted into compressed air heat losses. Therefore, a properly designed heat recovery unit can recover anywhere from 50-94% 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	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.

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.



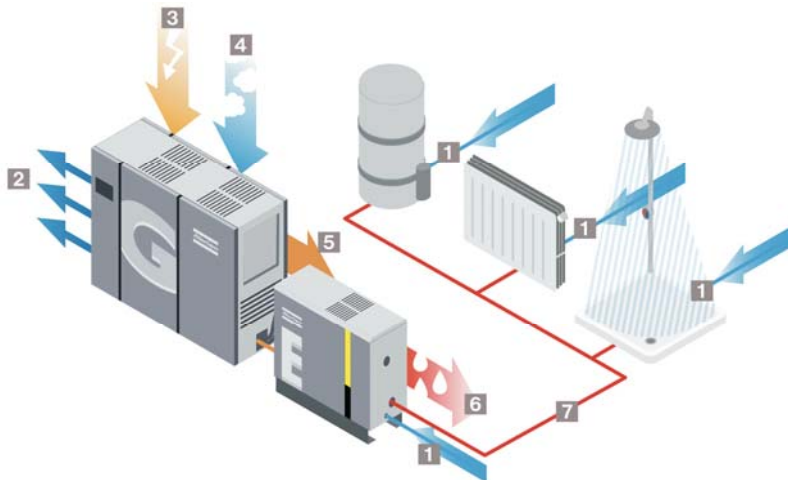
1. **Total energy** transmitted by the engine
2. Heat from the **engine** 9%
3. Heat from the **oil cooler** 72%
4. Heat dissipated in the **ambient air** 2%
5. Heat from the **after cooler** 13%
6. Heat remaining in the **compressed air** 4%
7. **Recoverable energy** 94%



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

Type	Dimensions L x W x H mm	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	1028 x 637 x 862	12	3.2	1.9	0.5
ER-S1	1028 x 637 x 862	15	4.0	2.4	0.6
ER-S1	1028 x 637 x 862	18	4.8	2.9	0.8
ER-S1	1028 x 637 x 862	22	5.8	3.6	1.0
ER-S1	1028 x 637 x 862	32	8.5	5.2	1.4
ER-S2	1028 x 637 x 862	39	10.3	6.4	1.7
ER-S2	1028 x 637 x 862	48	12.7	7.9	2.1
ER-S2	1028 x 637 x 862	59	15.6	9.8	2.6
ER-S3	1028 x 637 x 862	80	21.1	13.3	3.6
ER-S3	1028 x 637 x 862	98	25.9	16.2	4.3
ER-S4	1028 x 637 x 862	118	31.2	19.6	5.2
ER-S4	1028 x 637 x 862	193	50.9	32.2	8.5
ER-S5	1028 x 637 x 902	216	56.7	35.8	9.5
ER-S5	1028 x 637 x 902	337	89.0	56.2	14.9



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

