

Rotrex™ C8 Supercharger range

Technical Data Sheet

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General Description

The Rotrex C8 is the most compact centrifugal supercharger on the market today. Rotrex C8 is a range of centrifugal superchargers for large variety of applications where the compactness is one of the key issues. Countless number of small applications can now be boosted by this very efficient and silent unit which supplies air flow up to 0.065 kg/s.

Impeller speeds of up to 240,000 rpm are achieved through the patented hi-speed planetary traction drive which blends together the smallest size with exceptional performance and durability.

The excellent efficiency, as well as very low noise and vibration characteristics of these superchargers are state of the art among forced induction systems and very often the reason why C8 is the only choice for many other applications operating on low-pressure compressed air.



Applications

The C8 can supply clean pressurized air for applications such as small combustion engines, exhaust gas after-treatment systems, agriculture applications, fuel cell power plants etc.

The groundbreaking compact size enables a very flexible supercharger installation on all applications with considerable space constraints where also the weight and efficiency are essential.

For better flexibility and further customization the supercharger is designed to employ a unified pulley adapter which can accommodate different input layouts. The C8 is normally driven through a pulley ring bolted onto the pulley adapter, thus ensuring a low cost durable and efficient transmission.

The supercharger can be ordered with the compressor housing mounted in one of six different outlet positions with 60 degree intervals to allow easy adoption to any application. For specific outlet positions please refer to dimension drawing found in this document.

Oil system

The supercharger features an integrated dual-action oil pump that works as a dry sump scavenging pump in addition to being the oil supply pump. The self-contained oil system allows flexible positioning of the supercharger on the vehicle and has the benefit of fitting the supercharger without worrying about tampering with the oil system of the engine or any other accessory.

The Rotrex C-type supercharger has been developed and extensively tested with the special Rotrex traction fluid. To maintain the ultimate level of performance and durability it is very important that the unit is exclusively run with special Rotrex traction fluid. Make sure the inlet oil temperature is within the range specified in the table on the next page. Any deviation from the standard Rotrex oil circuit requires approval from Rotrex.

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Characteristics

Characteristic	Symbol	C8-6	C8-8	C8-8
Power range ¹	P_{range}	20-40kW (27-55hp)	30-55kW (41-75hp)	30-55kW (41-75hp)
Max flow rate	M_{flow}	0.048 kg/s	0.065 kg/s	0.065 kg/s
Max pressure ratio	PR_{max}	1.97	2.23	2.23
Drive ratio	N	1 : 12.52		
Max drive efficiency	η_{max}	95 %		
Minimum pulley diameters	$\varnothing_{\text{pulley}}$	\varnothing 55 mm		
Unit weight	m	1.4 Kg (3.1 lbs)		
Rotational direction ²	Rin	CCW	CCW	CW
Peak input shaft speed	$R_{\text{in,max}}$	19,170 rpm	19,170 rpm	19,170 rpm
Peak impeller speed	$R_{\text{out,max}}$	240,000 rpm	240,000 rpm	240,000 rpm
Min inlet oil temperature	$To_{\text{il,in,min}}$	-40°C (-40°F)		
Max inlet oil temperature	$To_{\text{il,in,max}}$	+80°C (176°F)		
Mounting torque Pulley adapter bolts	M6	12.1 Nm (8.9 ft-lb)		
Mounting torque Bracket bolts	M4x40	3.5 Nm (2.6 ft-lb)		
Mounting torque Oil banjo bolts	M10x1	21 Nm (15.5 ft-lb)		

¹ Power output is dependent on engine type, cooling, cam-timing etc.

² Rotational direction as seen from the pulley side. CW: Clockwise, CCW: Counter clockwise

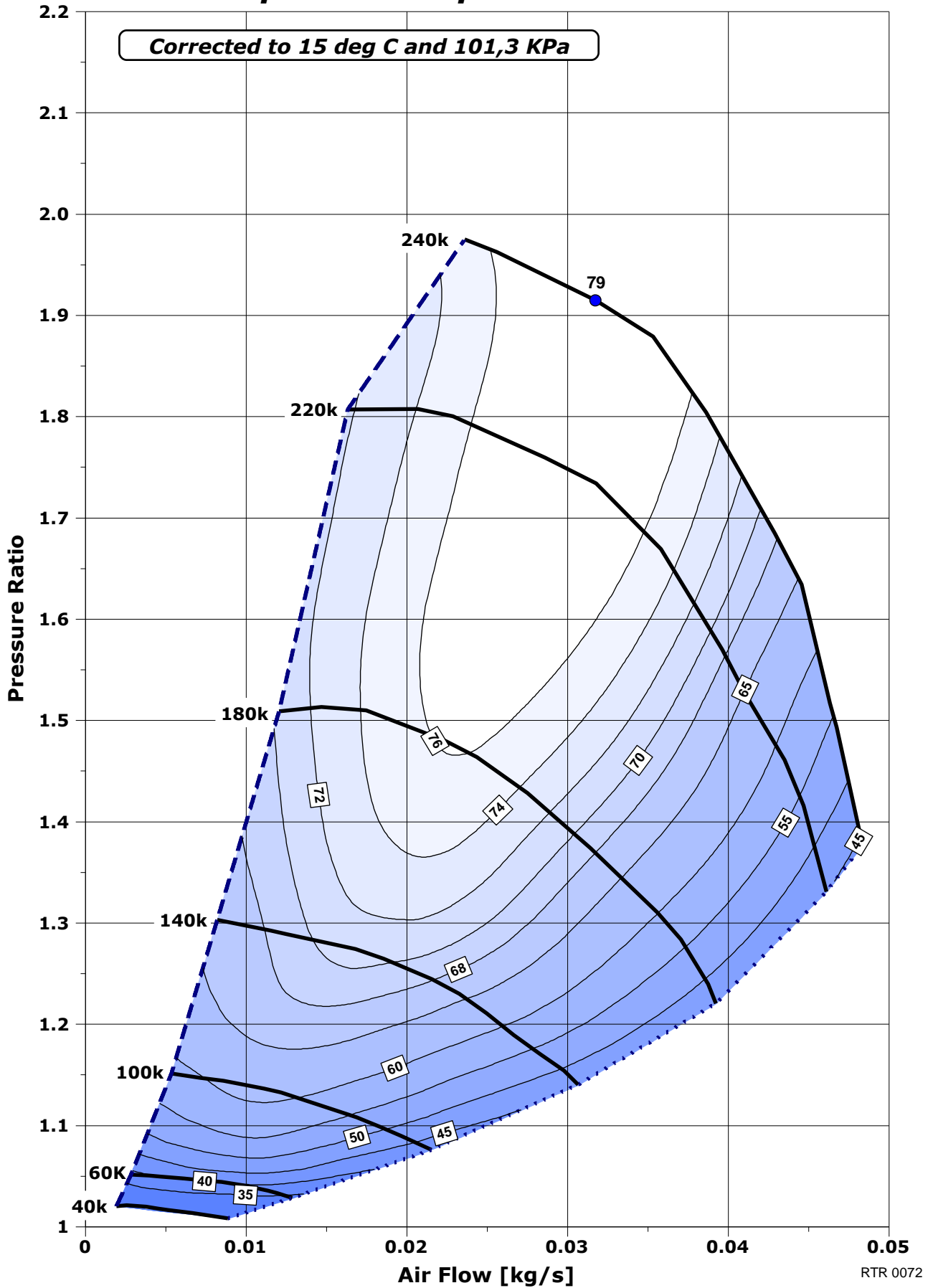
Conversion Toolbox

Temperature conversion	$^{\circ}\text{C} = \frac{5}{9} \times (^{\circ}\text{F} - 32)$ OR $^{\circ}\text{F} = \frac{9}{5} \times ^{\circ}\text{C} + 32$	
Kg/s to CFM conversion	$\text{CFM} = \frac{\text{kg}}{\text{s}} \times 1731.8$	$\frac{\text{kg}}{\text{s}} = \frac{\text{CFM}}{1731.8}$ @15°C and 0.1013MPa
Kg/s to lb/min conversion	$\frac{\text{kg}}{\text{s}} = 0.0075 \cdot \text{lb} / \text{min}$	$\text{lb} / \text{min} = \frac{\text{kg} / \text{s}}{0.0075}$

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C8-6 Compressor map

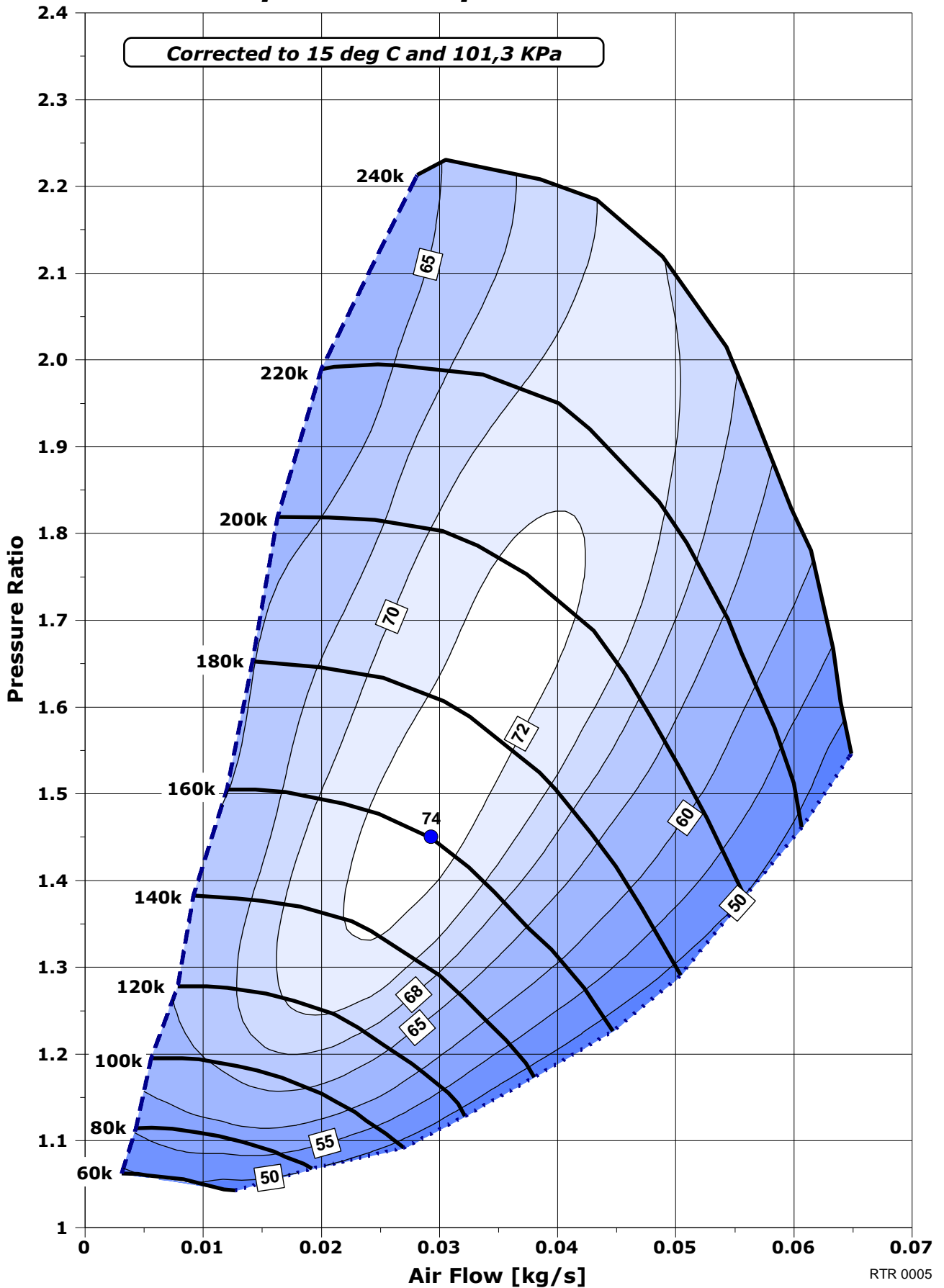


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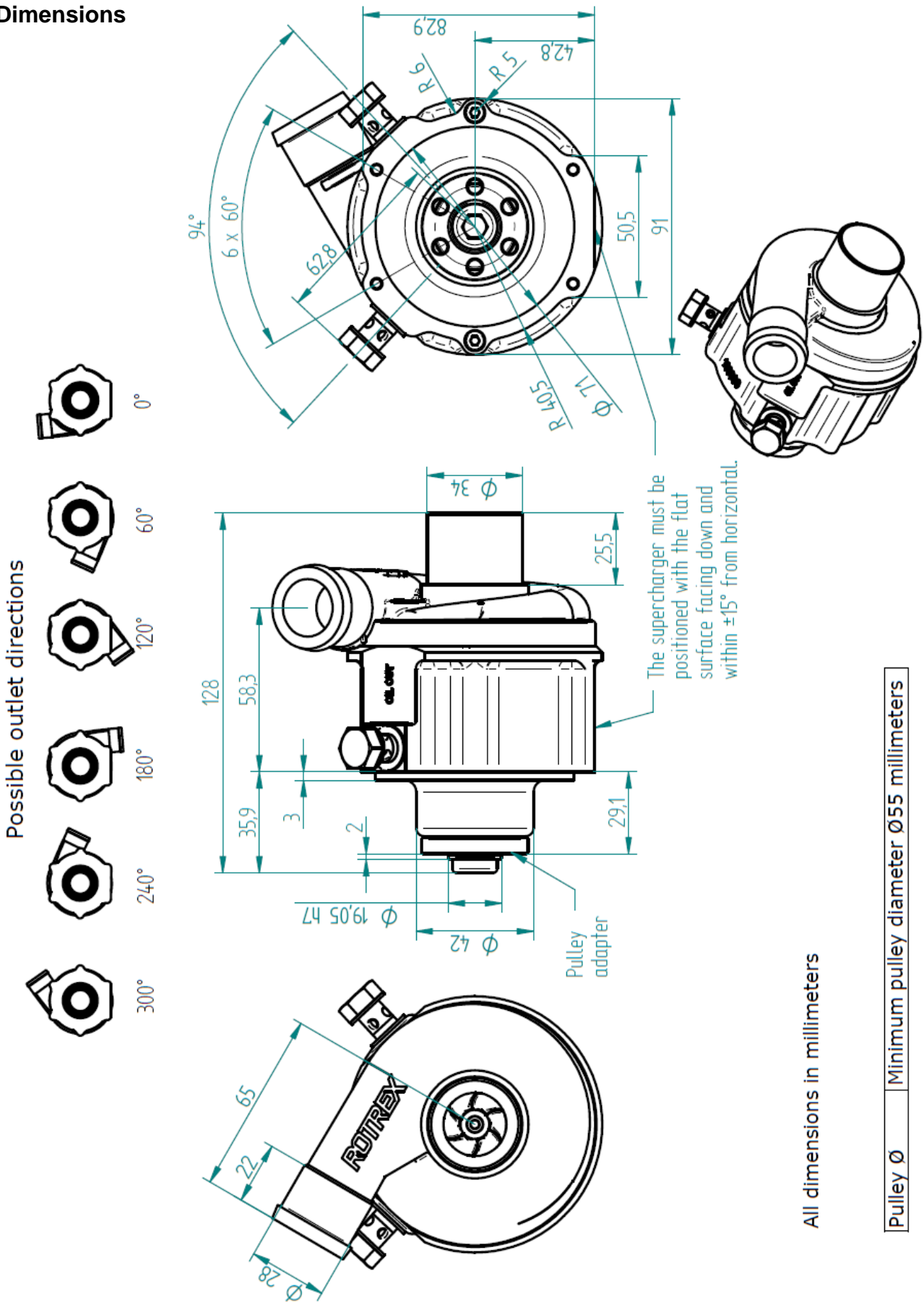
C8-8 Compressor map



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Dimensions



All dimensions in millimeters

Pulley Ø Minimum pulley diameter Ø55 millimeters