

# Rotrex™ C8T Supercharger range

## Technical Data Sheet

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### General Description

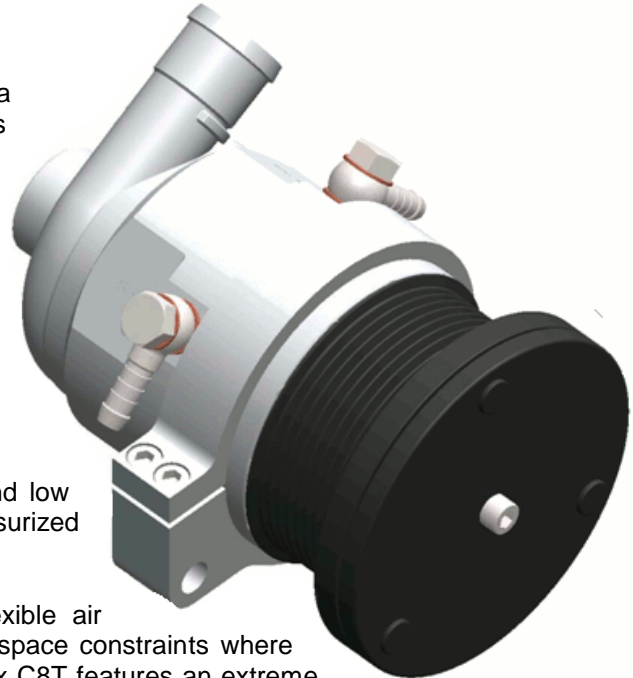
The Rotrex C8T range of centrifugal air pumps includes a step-up gear and an electromagnetic clutch. The benefits of the C8T range are the extreme compactness, excellent efficiency, as well as very low noise and vibration characteristics. The cost effective C8T range is state of the art air pumps capable of delivering an efficient air supply.

Impeller speeds of up to 220,000 rpm are achieved through the patented hi-speed planetary traction drive and step up gear, combining the smallest size with exceptional performance and durability.

The C8T range is specially designed for small size and low rpm applications. The C8T can also supply clean pressurized air to other automotive and industrial applications.

The groundbreaking compact size enables a very flexible air pump installation on all applications with considerable space constraints where also the weight and efficiency are essential. Also Rotrex C8T features an extreme total gear ratio of 1:55 that enables high output speeds where only limited input speeds can be achieved - without the need for large pulley ratios.

For better flexibility and further customization the air pump is designed to employ a unified bracket which can accommodate different mounting layouts. Primarily C8T is driven through an electromagnetic pulley clutch, thus ensuring a low cost durable and efficient transmission.



### Oil system

The air pump 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 flexibility in the positioning of the air pump and has the benefit of fitting the air pump without worrying about tampering with any existing oil systems.

To maintain the ultimate level of performance and durability it is very important that the unit is run exclusively with Rotrex's special traction fluid. Make sure the 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	C8T-6	C8T-8
Power range <sup>1</sup>	$P_{range}$	20-39kW (27-53hp)	30-51kW (41-70hp)
Max flow rate	$M_{flow}$	0.046 kg/s	0.061 kg/s
Max pressure ratio	$PR_{max}$	1.81	1.99
Drive unit-ratio	N	1 : 55	
Max drive efficiency	$\eta_{max}$	95 %	
Minimum pulley diameters	$\varnothing_{pulley}$	$\varnothing$ 87 mm	
Unit weight	m	4.0 Kg (8.2 lbs)	
Peak input shaft speed	$Rin_{max}$	4000 rpm	4000 rpm
Peak impeller speed	$Rout_{max}$	220,000 rpm	220,000 rpm
Rotational direction	$Rin_{direction}$	Clockwise, as seen from pulley side	
Min inlet oil temperature	$Toil_{in_{min}}$	-40°C (-40°F)	
Max inlet oil temperature	$Toil_{in_{max}}$	+80°C (176°F)	
Mounting torque Bracket clamp bolts	M6x15	12.1 Nm (8.9 ft-lb)	
Mounting torque Bracket bolts (Depending on the bolts used)	M10	40 Nm (29.5 ft-lb) DIN 6912 Bolts	
Mounting torque Oil banjo bolts	M10x1	21 Nm (15.5 ft-lb)	
Electromagnetic clutch voltage	$V_{clutch}$	12 – 24 Volt (max 2.5 - 3.0 Amps)	
Electromagnetic clutch wires <sup>2</sup>		330 mm lead wires, NO. 18 gage stranded, 16/30 single conductor, SAE J1128	

<sup>1</sup>. Power output is dependent on engine type, cooling, cam-timing etc.

<sup>2</sup>. Optional DT04-2P connector with W2P lock and 0460-202-16141 terminals

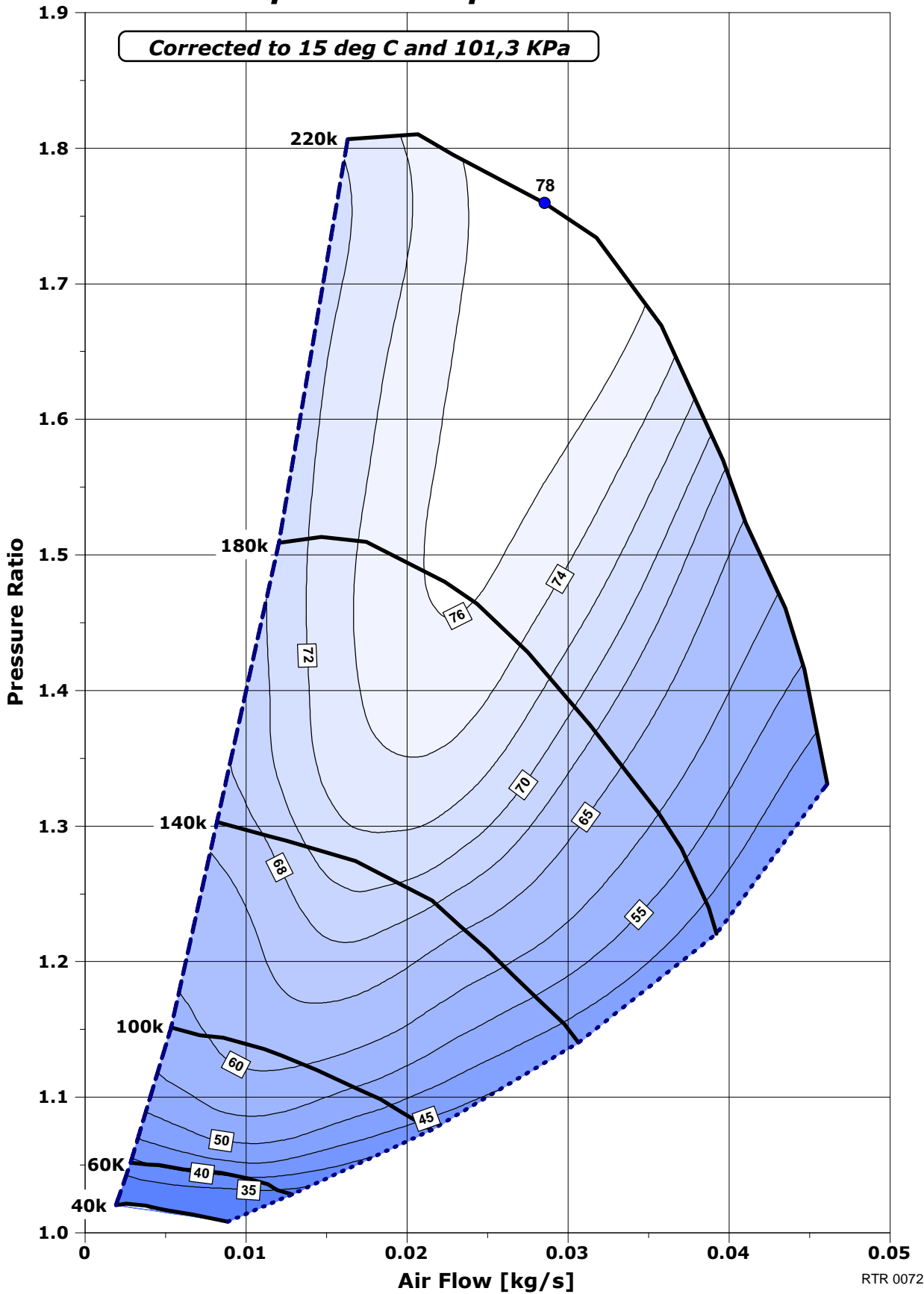
### Conversion Toolbox

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

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## C8T-6 Compressor map

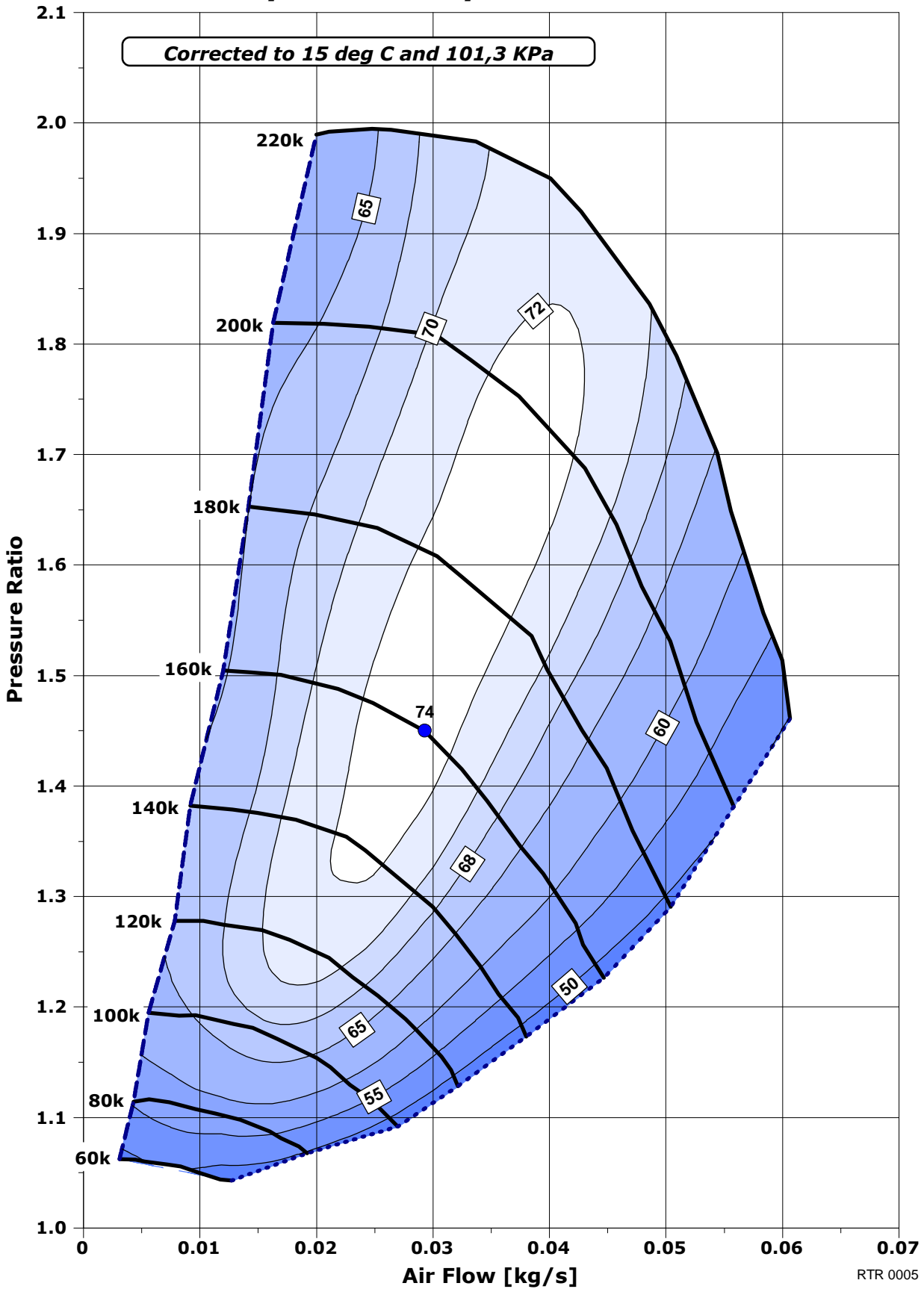


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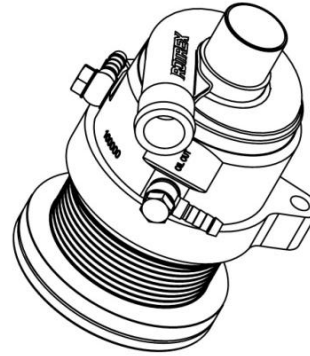
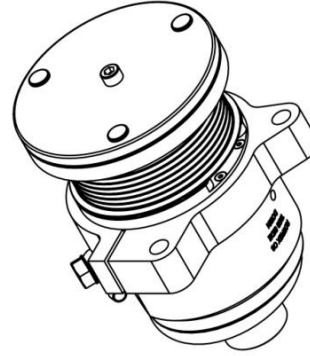
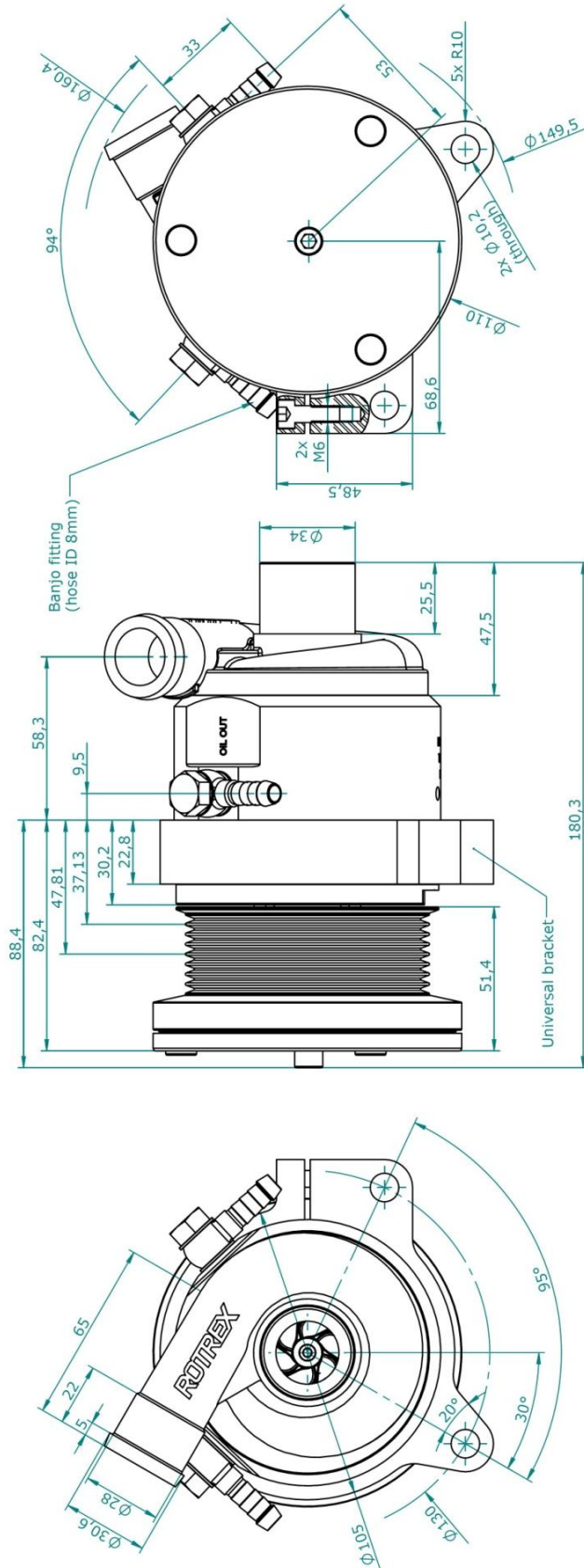
## C8T-8 Compressor map



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## Dimensions



The supercharger must be positioned with the imprinted text "ROTREX C8 THIS SIDE DOWN" facing downwards and within  $\pm 15^\circ$  from horizontal.

After the final installation the supercharger must be held tight inside the universal bracket. The 2x M6 allen socket bolts to be tightened - maximum tightening torque 15 Nm.

All dimensions in millimeters

Pulley  $\Phi$  Nominal pulley diameter  $\Phi 87$  millimeters