Rotrex™ C38R Supercharger range

Technical Data Sheet

Product:	C38R range
Version:	1.0
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General Description

The C38R is the most powerful centrifugal supercharger of the Rotrex standard product range. Countless number of large scale applications can be boosted by this very efficient and silent unit which supplies air flow up to 0.84 kg/s. Additionally the C38R shares identical packaging and bracketry dimensioning with the C38 range, thereby allowing direct retro-fit for power upgrades of existing kits and installations.

Impeller speeds of up to 90,000 rpm are achieved through the patented hi-speed planetary traction drive which combines small size with exceptional performance and durability.

The very low noise and vibration characteristic as well as the high efficiency of these superchargers set the industry standard for what is achievable.

Applications

The C38R range is designed for high performance four stroke gasoline engines with a supercharged output 720kW. For extreme applications where one supercharger is not sufficient, it is possible to use two units to support large amounts of power in a twin-charger configuration. The C38R is also ideal for the supply large amounts of clean pressurized air for other applications such as industrial systems, fuel cell power plants etc.

The C38R further pushes the limits of groundbreaking compactness thus maintaining a very flexible supercharger installation particularly on engine applications with tight space and where weight and size are essential.

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.

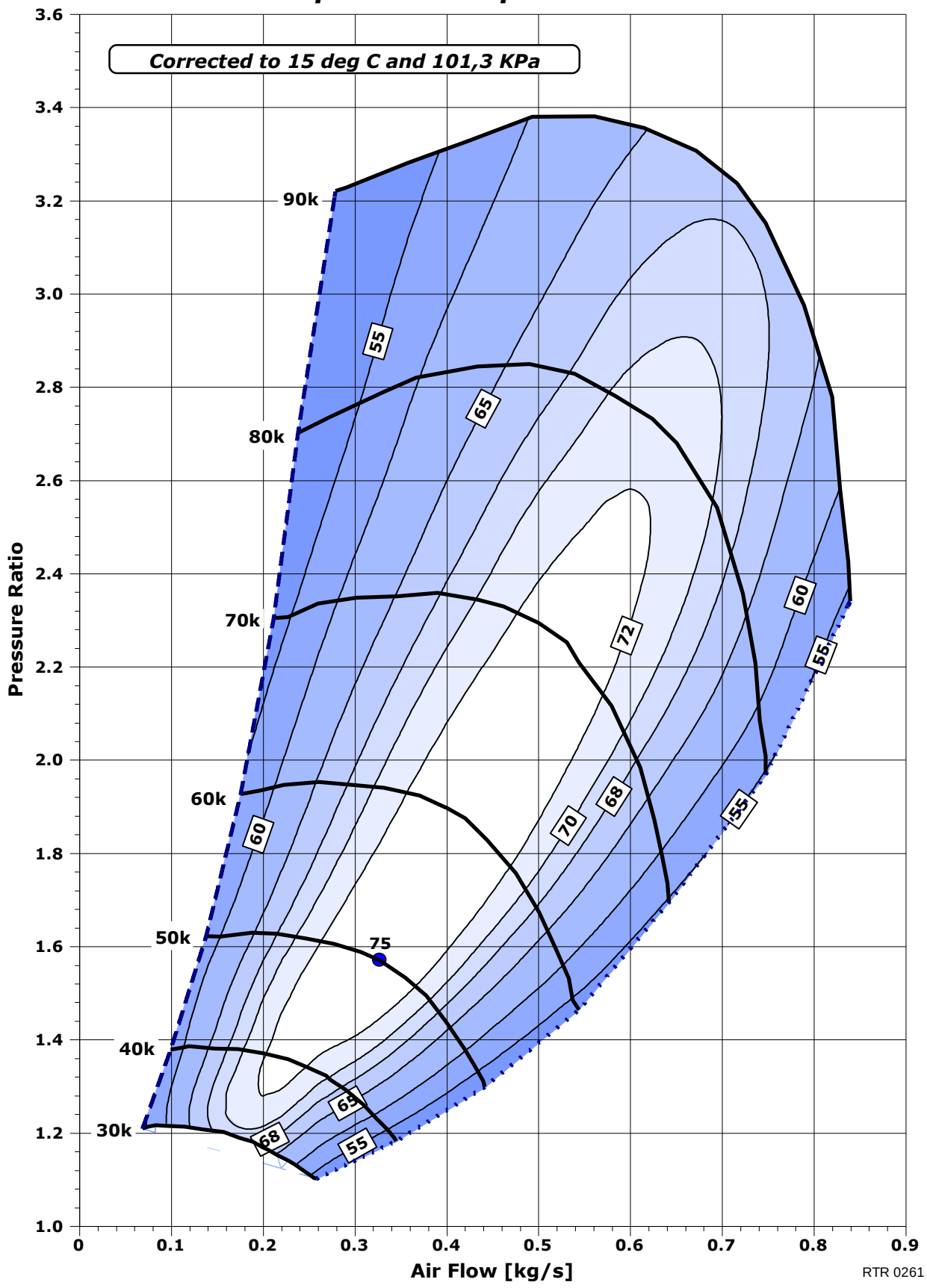
Characteristics

Characteristic	Symbol	C38R-112
Power range[1]	P_{range}	340-720kW (455-965hp)
Max flow rate	M_{flow}	0.84 kg/s
Max pressure ratio	PR_{max}	3.38
Drive ratio	N	1:6.0
Max drive efficiency	η_{max}	97%
Pulley type	-	Pulley adapter
Unit weight	M	6.4 Kg (14.1 lbs)
Rotational direction	$Rin_{direction}$	Clockwise rotation, as seen from pulley side
Peak input shaft speed	Rin_{max}	15,000 rpm
Peak impeller speed	$Rout_{max}$	90,000 rpm
Min inlet oil temperature	$Toil,in_{min}$	-40°C (-40°F)
Max inlet oil temperature	$Toil,in_{max}$	+80°C (176°F)
Mounting torque Pulley ring bolts	M6	10Nm (7.4 ft-lb)
Mounting torque Bracket bolts	M8x85	15Nm (11 ft-lb)
Mounting torque Oil banjo bolts	M10x1	21Nm (15.5 ft-lb)

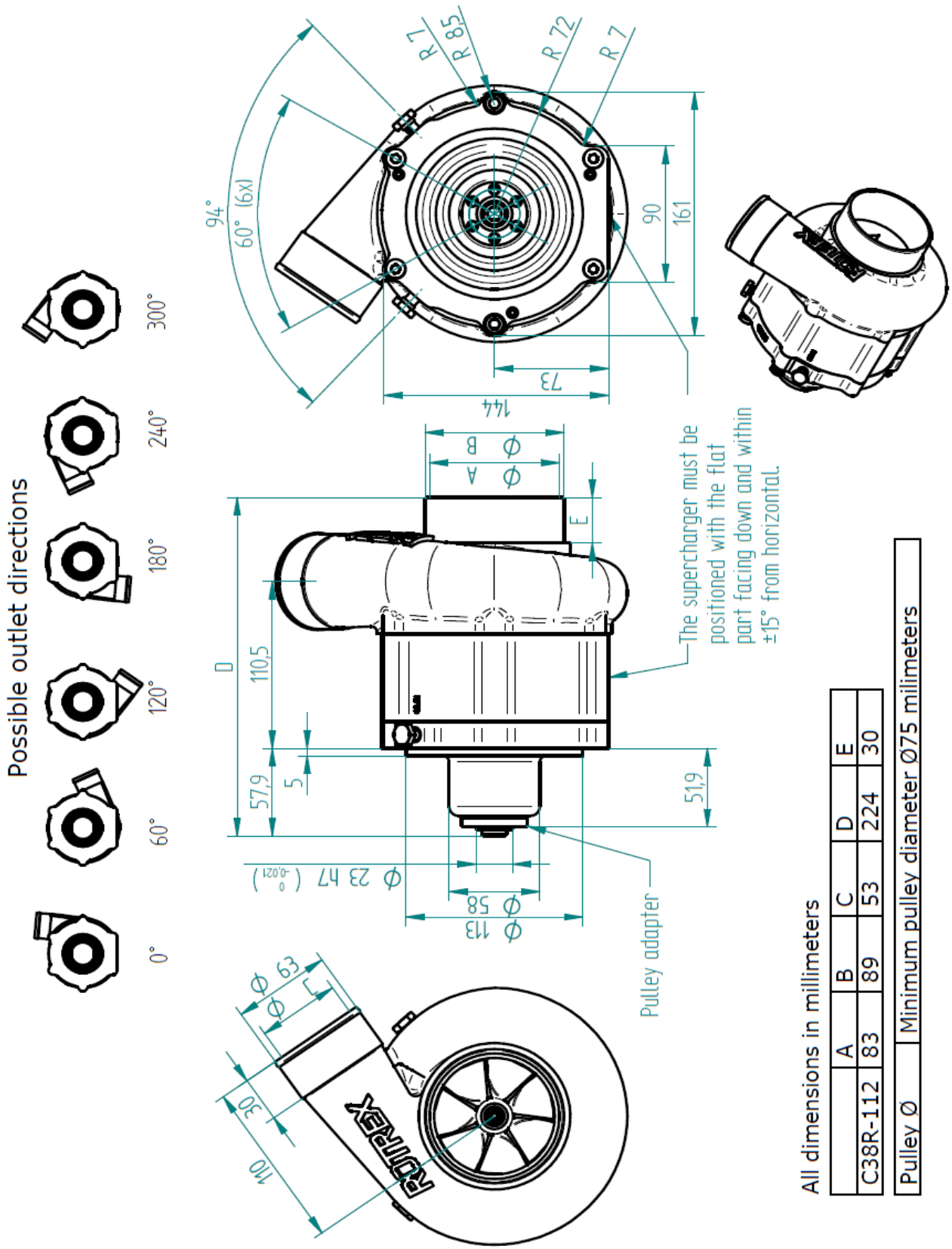
[1] Power output is dependent on engine type, cooling, cam-timing etc.

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

C38R-112 Compressor map



Dimensions



All dimensions in millimeters

	A	B	C	D	E
C38R-112	83	89	53	224	30

Pulley Ø	Minimum pulley diameter Ø75 milimeters