

C38R Technical Data Sheet



Key features



Highest Performance

Higher speed = Higher efficiency



Lowest Charge Air Temperatures

Higher power and less knock



Robust

Minimum 150.000 Miles, SAE standards



Fits all engine bays

Unique compact and flexible design



Power range: 340-940kW (455 - 1240 hp)

GENERAL DESCRIPTION

The C38R are the most powerful centrifugal superchargers in the Rotrex standard product range and are available as a clockwise- or counterclockwise-rotating version. Countless number of large-scale applications can be boosted by these very efficient and silent units which can supply air flow up to 1,1 kg/s. Additionally the C38R shares identical packaging and bracketry dimensioning with the C38 range, thereby allowing direct retrofit 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.

The C38R range is designed for high performance four stroke gasoline engines with a supercharged output 940kW. 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 ground-breaking compactness thus maintaining a very flexible supercharger installation particularly on engine applications with tight space and where weight and size are essential. The C38R is available as a clockwise and a counterclockwise version.

The superchargers feature 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.

C38R range supercharger

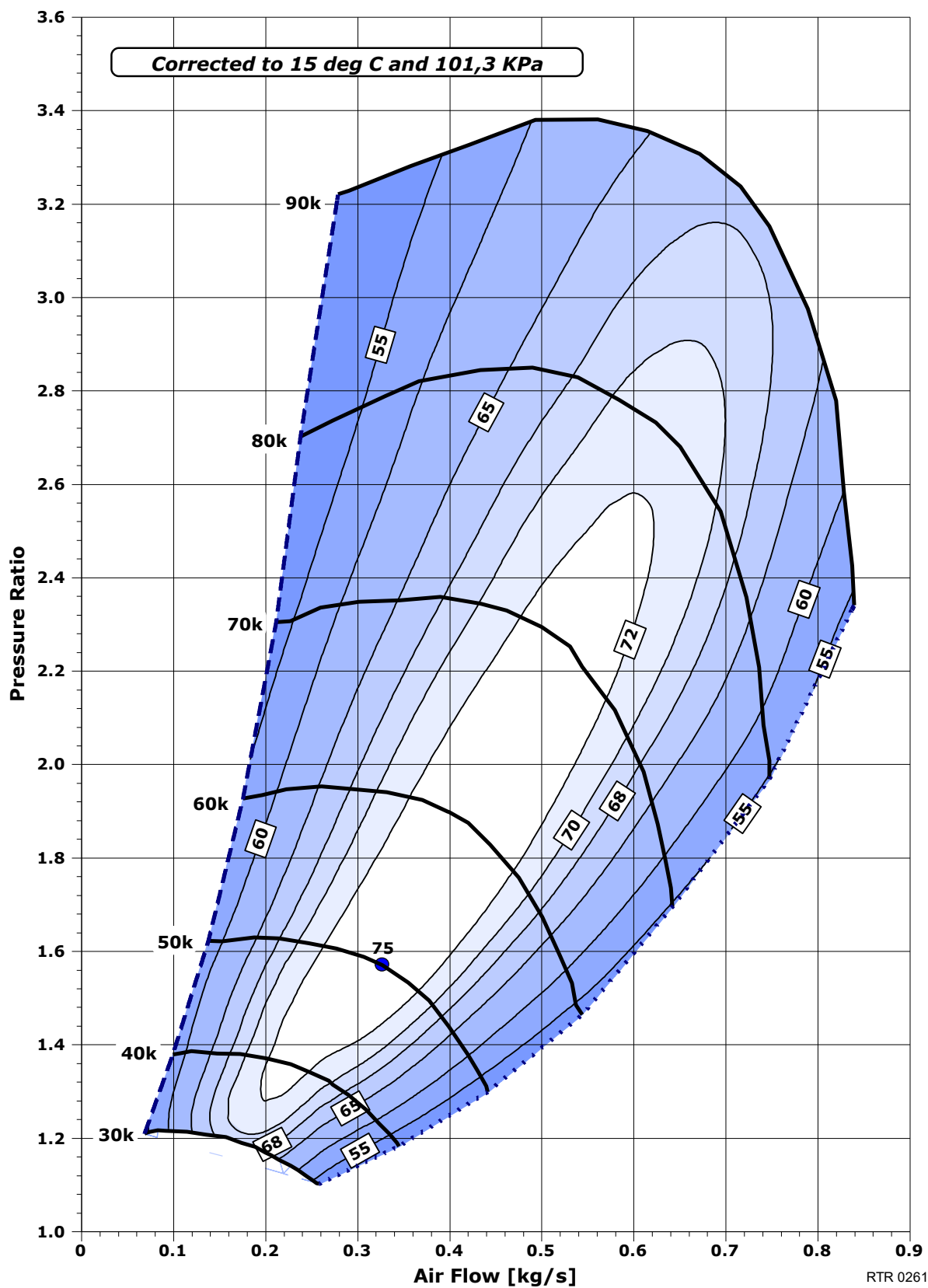
Characteristic	Symbol	C38R-112		C38R-122	
Rotational direction ¹	R _{in} direction	CW	CCW	CW	CCW
Power range ²	P _{range}	340-720kW (455-965hp)		460-940kW (616-1240hp)	
Max mass flow rate	M _{flow}	0.84 kg/s		1.1 Kg/s	
Max pressure ratio (P _{out} /P _{in})	PR _{max}	3.38		2.82	
Mass moment of inertia	I _{Supercharger}	9.915·10 ⁻³ kg·m ²		12.281·10 ⁻³ kg·m ²	
Drive ratio	N	1:6.0			
Max drive efficiency	η _{max}	97%			
Unit weight	M	6.4 Kg (14.1 lbs)		6.9 Kg (15.2 lbs)	
Pulley type	-	Fitted with pulley adapter			
Steel Pulley ring diameters available	Ø _{pulley}	75, 80, 85, 90, 95, 100, 105, 110 mm 10 rib steel - PK profile			
Peak input shaft speed	R _{in} max	15,000 rpm			
Peak impeller speed	R _{out} 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	M6x10	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] Rotational direction as seen from pulley side, CW: Clockwise, CCW: Counterclockwise.

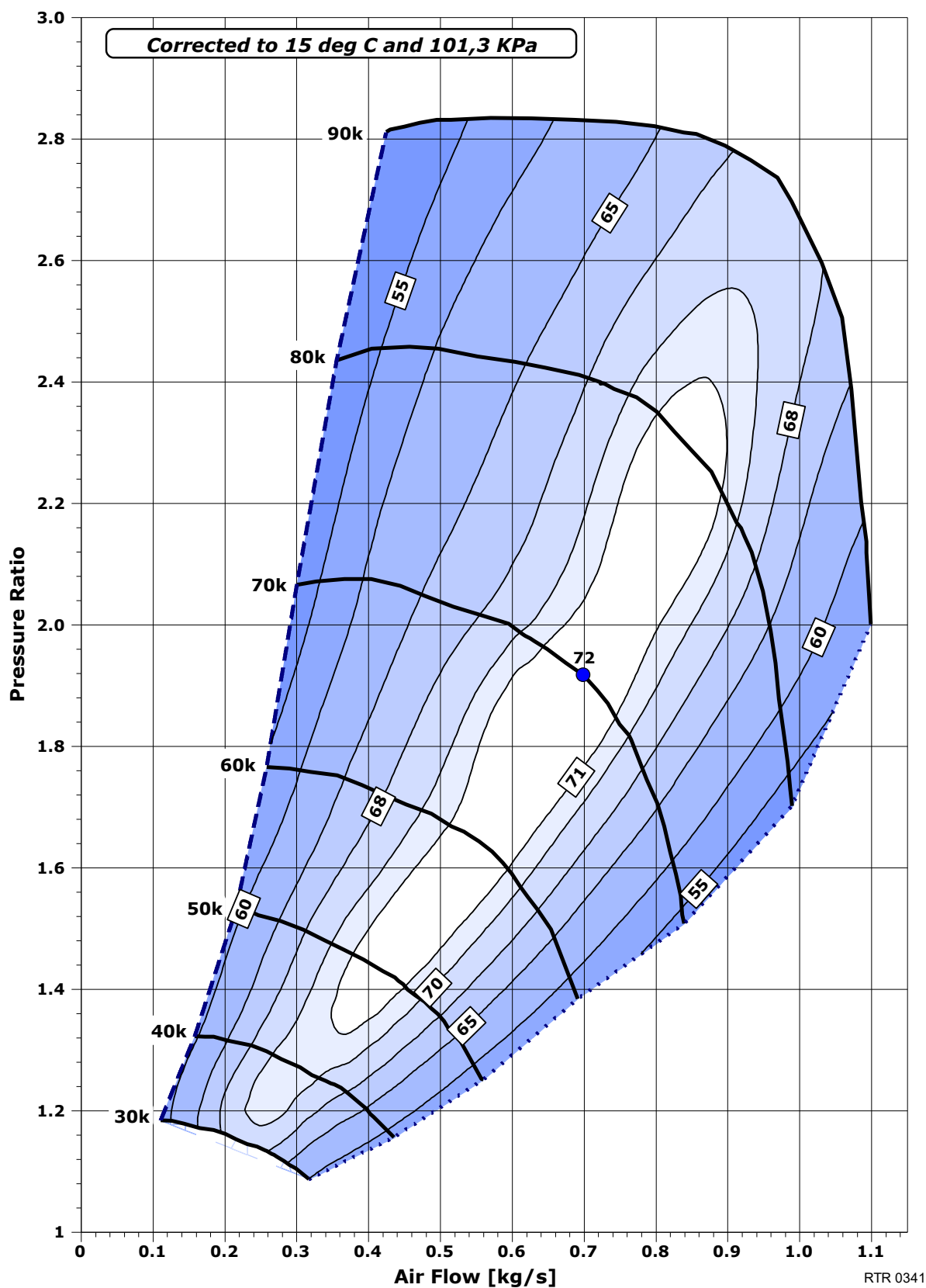
[2] Power output is dependent on engine type, cooling, cam-timing etc.

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 lb/min conversion	$\frac{\text{kg}}{\text{s}} = 0.0075 \frac{\text{lb}}{\text{min}}$ $\frac{\text{lb}}{\text{min}} = \frac{\frac{\text{Kg}}{\text{s}}}{0.0075}$
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 0.1013 MPa

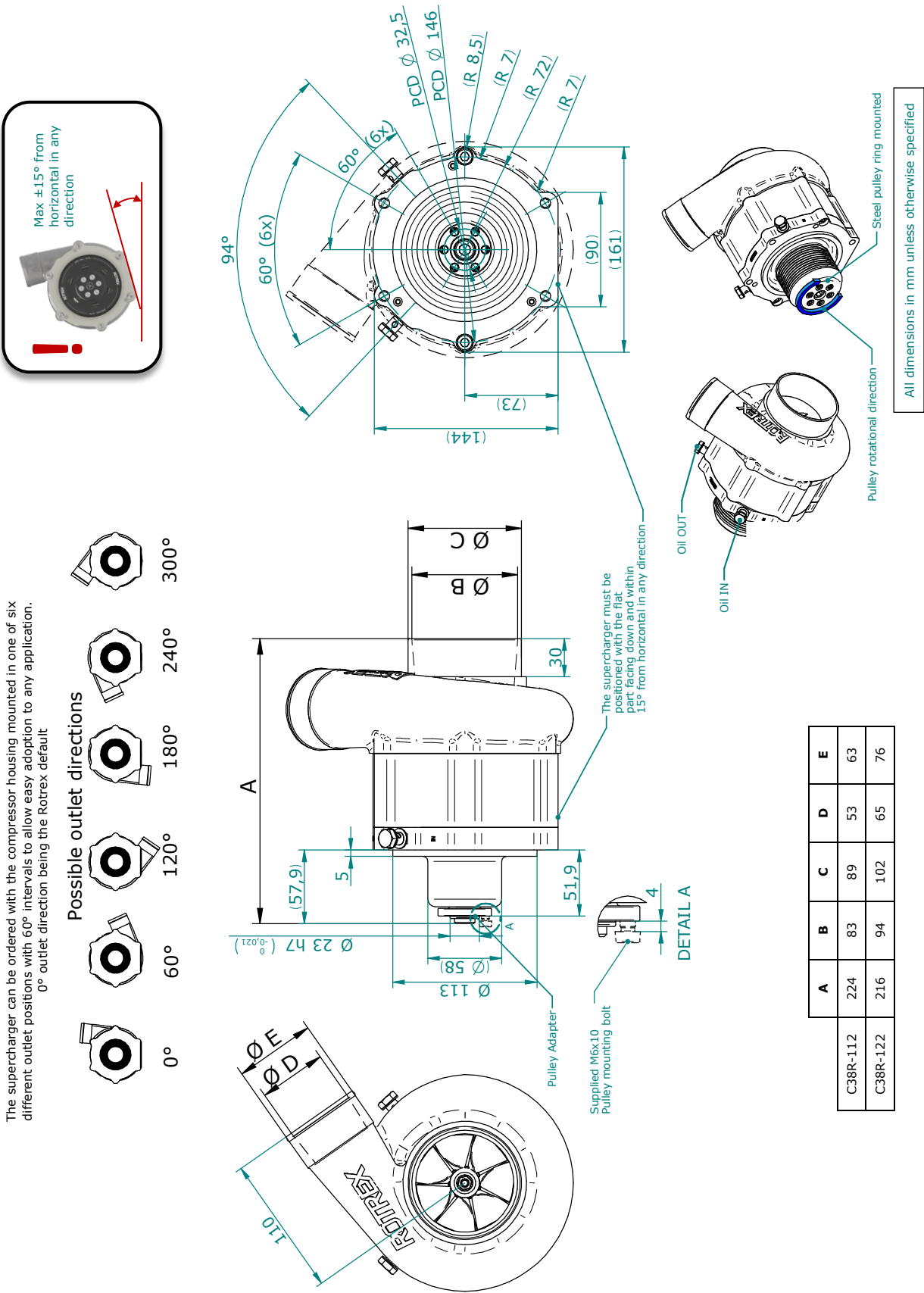
C38R-112 CW and CCW compressor map



C38R-122 compressor map



C38R CW Dimensions



C38R CCW Dimensions

