# Rotrex™ C30 Supercharger range

## Technical Data Sheet

| | |
|---|---|
| Product: | C30 range |
| Version: | 5.0 |
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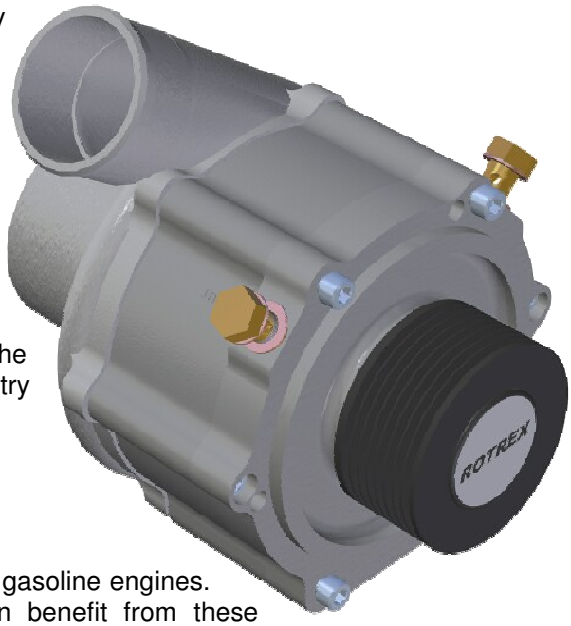
### General Description

The C30 is a range of centrifugal superchargers with a very versatile application range. Countless number of medium size applications can be boosted by this very efficient and silent unit which supplies air flow up to 0.39 kg/s.




Impeller speeds of up to 100,000 rpm for the C30-94 and up to 120,000 rpm for the C30-64, C30-74 and C30-84 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 C30 range of superchargers is designed for four stroke gasoline engines. However two stroke engines or even diesel engines can benefit from these superchargers with remarkable results. Depending on the application the C30 will support engine outputs up to 320kW. Where one supercharger is not enough, it is possible to use two units to support large amounts of power in a twin-charger configuration. The C30 can also supply clean pressurized air for other applications such as industrial systems, exhaust gas after-treatment systems, agriculture applications, fuel cell power plants etc.

The groundbreaking compact size enables a very flexible supercharger installation particularly on engine applications with tight space and where weight and size are essential.

Rotrex uses as standard an 8 ribbed poly V-belt pulley in high strength steel. Pulley diameter ranges from 70 to 110mm in 5mm steps.

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.

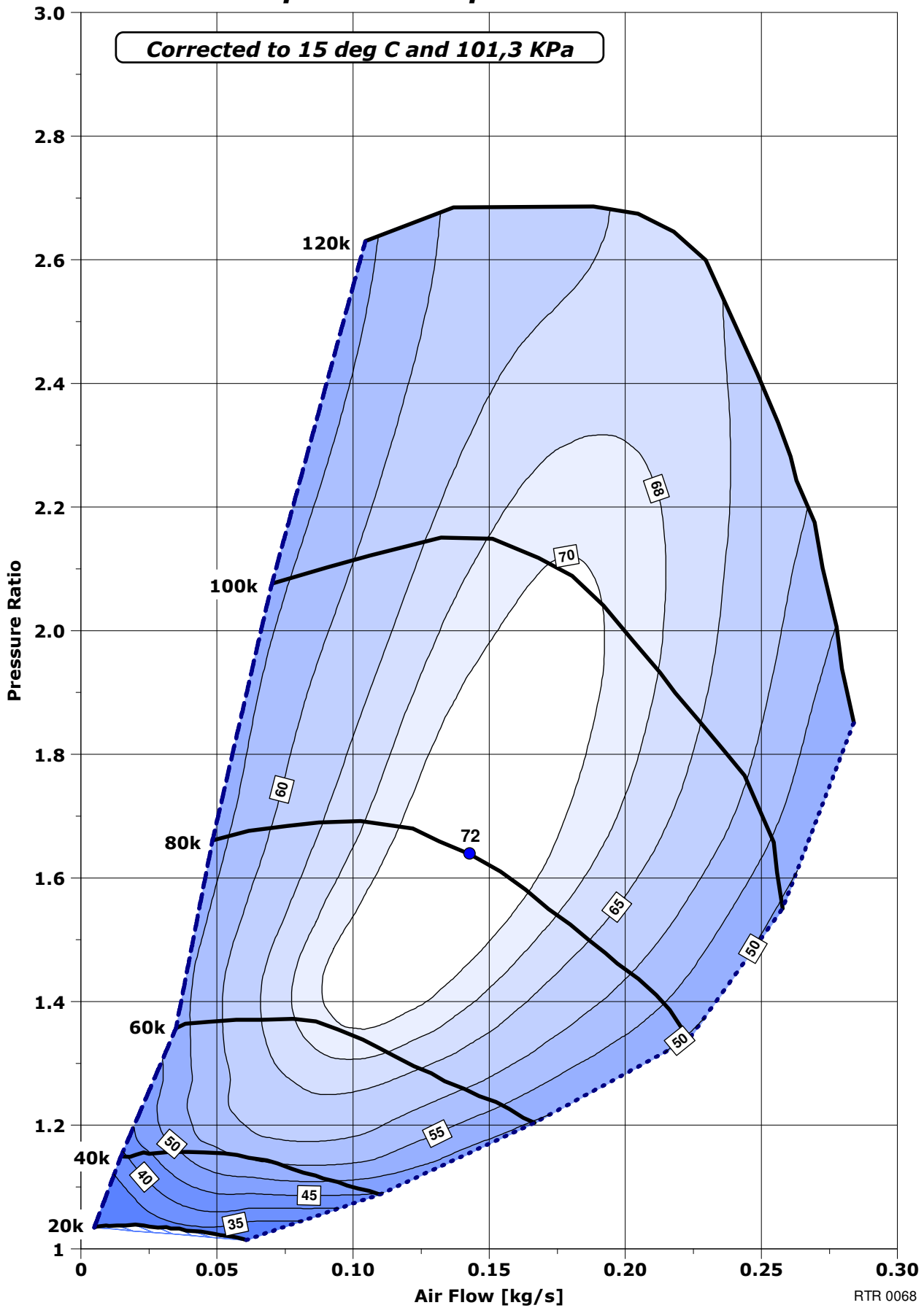
## Characteristics

| Characteristic | Symbol | C30-64 | C30-74 | C30-84 | C30-94 |
|---|---|---|---|---|---|
| Power range[1] | $P_{range}$ | 120-235kW (163-320hp) | 135-255kW (184-347hp) | 140-265kW (190-360hp) | 145-320kW (197-435hp) |
| Max mass flow rate | $M_{flow}$ | 0.28 kg/s | 0.31 kg/s | 0.32 kg/s | 0.39 kg/s |
| Max pressure ratio | $PR_{max}$ | 2.68 | 2.82 | 2.82 | 2.52 |
| Drive ratio | N | 1:9.49 | | | |
| Max drive efficiency | $\eta_{max}$ | 97% | | | |
| Pulley diameters available | $Ø_{pulley}$ | 70, 75, 80, 85, 90, 95, 100, 105, 110 mm<br>8 rib steel - PK profile | | | |
| Unit weight | M | 5.1 Kg (11.2 lbs) | | | |
| Rotational direction | $Rin_{direction}$ | Clockwise rotation, as seen from pulley side | | | |
| Peak input shaft speed | $Rin_{max}$ | 12,600 rpm | | | 10,500 rpm |
| Peak impeller speed | $Rout_{max}$ | 120,000 rpm | | | 100,000 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 bolt | M10 | 50Nm (37 ft-lb) | | | |
| Mounting torque Bracket bolts | M6x78 | 9Nm (6.6 ft-lb) | | | |
| Mounting torque Oil banjo bolts | M10x1 | 21Nm (15.5 ft-lb) | | | |

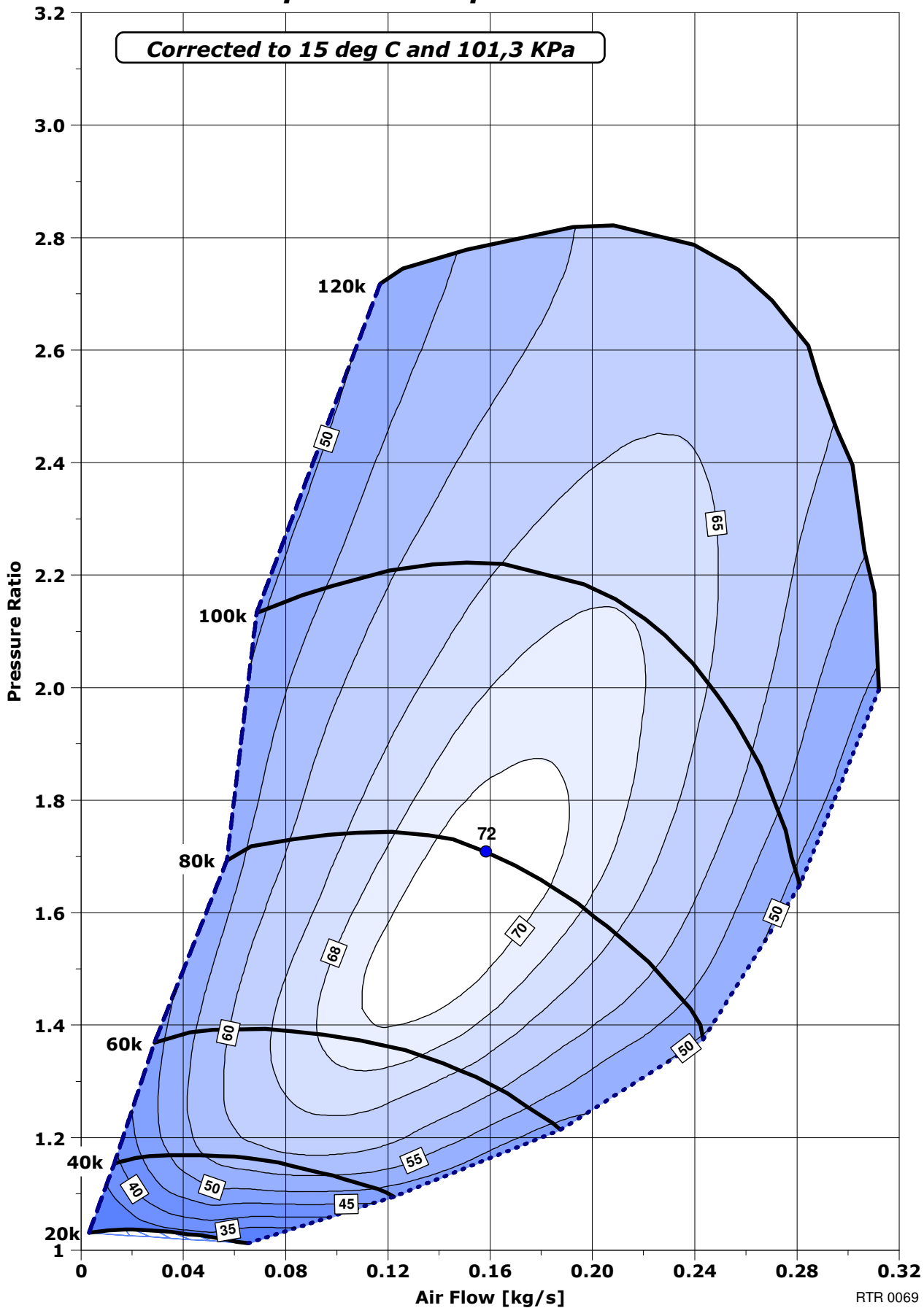
[1] Power output is dependent on engine type, cooling, cam-timing etc.

| Conversion Toolbox | |
|---|---|
| Temperature conversion | $°C = \frac{5}{9} \times (°F - 32)$ 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 | $\frac{kg}{s} = 0.0075 \cdot lb/min$ $lb/min = \frac{kg/s}{0.0075}$ |

## C30-64 Compressor Map



## C30-74 Compressor Map

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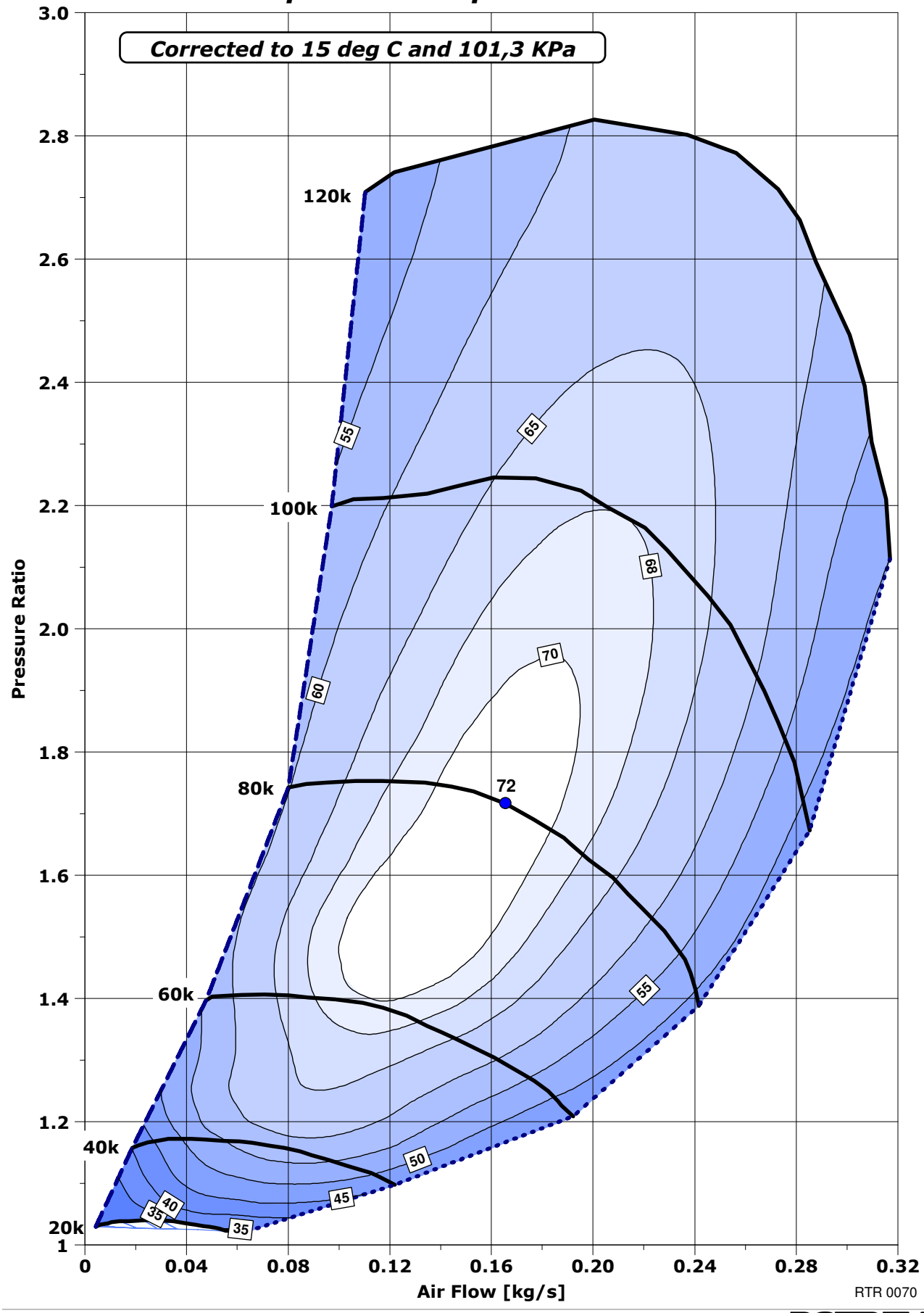
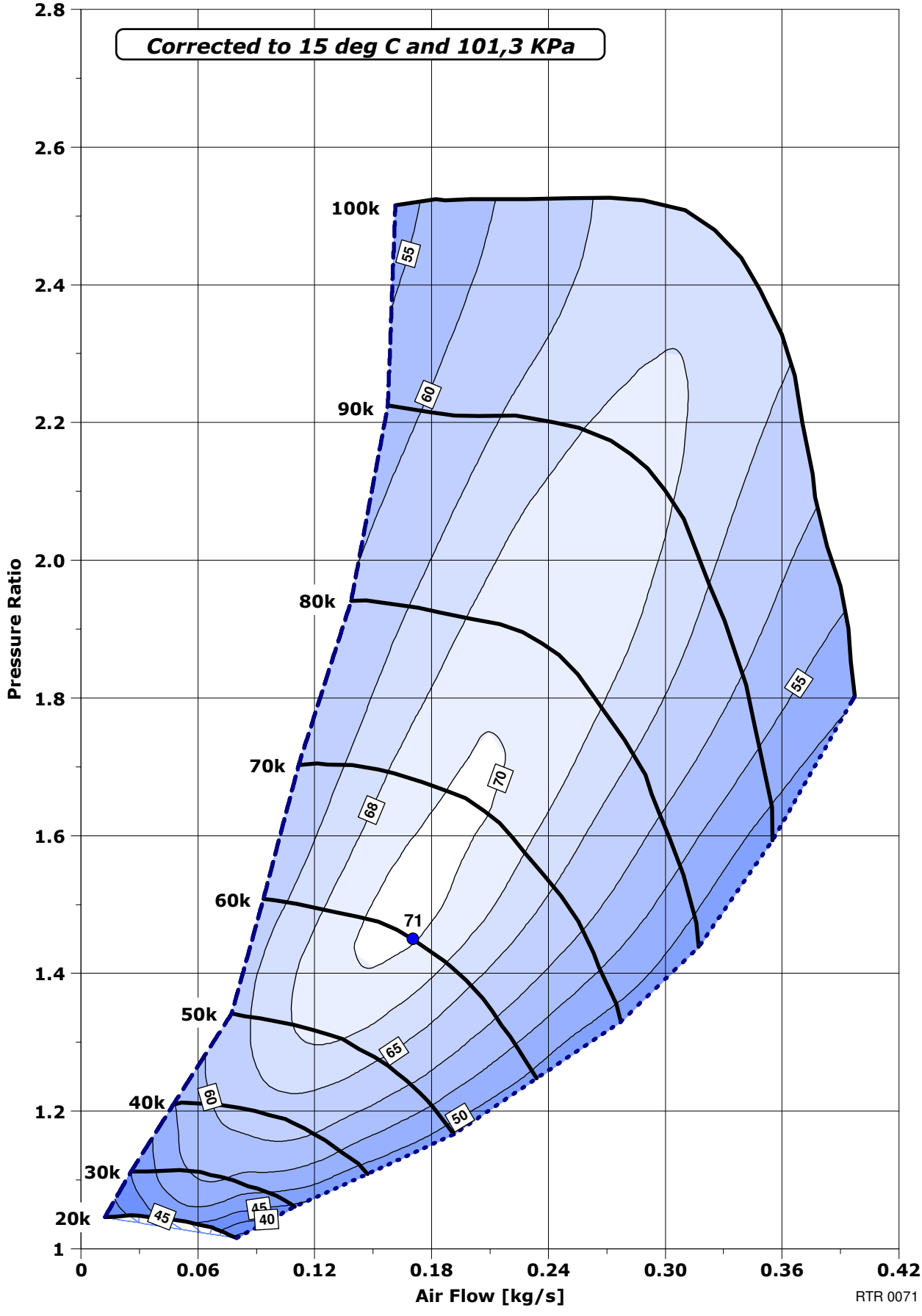
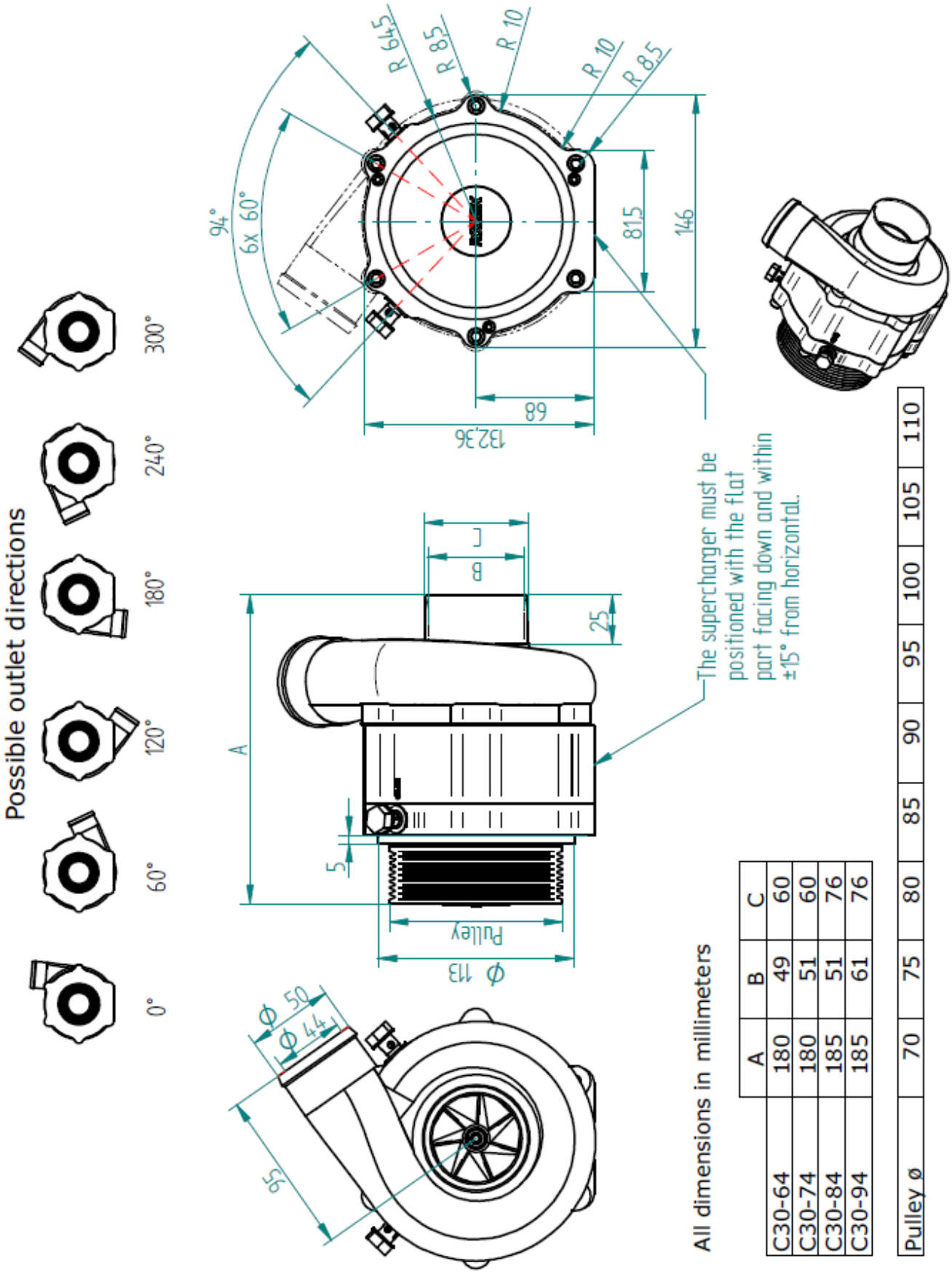
## C30-84 Compressor Map



## C30-94 Compressor Map



## Dimensions




All dimensions in millimeters

| | A | B | C |
|---|---|---|---|
| C30-64 | 180 | 49 | 60 |
| C30-74 | 180 | 51 | 60 |
| C30-84 | 185 | 51 | 76 |
| C30-94 | 185 | 61 | 76 |

| Pulley ø | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 |
|---|---|---|---|---|---|---|---|---|---|