SPRINTEX® SUPERCHARGERS

Series 5

S5 – 150 , S5 – 210 , S5 – 335

THE PRODUCT

Sprintex Series 5 Supercharger Range

Series 5 Superchargers: S5-150, S5-210, S5-335

1. Specifications

Model No.	S5 – 150		S5 – 210		S5 – 335	
	SI Units (Metric)	**Imperial Units**	**SI Units (Metric)**	**Imperial units**	**SI Units (Metric)**	**Imperial units**
Dimensions (short drive)	Length 204 mm Width 144 mm Height 94 mm	8.04 in 5.67 in 3.70 in	Length 240 mm Width 185 mm Height 119 mm	9.46 in 7.29 in 4.69 in	Length 301 mm Width 185 mm Height 119 mm	9.46 in 7.29 in 4.69 in
Available Drive Extensions	100 mm 127 mm 161 mm	3.94 in 5.00 in 6.34 in	100 mm 150 mm 200 mm	3.94 in 5.00 in 6.34 in	100 mm 150 mm 200 mm	3.94 in 5.00 in 6.34 in
Weight (Kg)	4.5 kg	9.92 lb	9.3 kg	20.50 lb	10.9 kg	24.03 lb
Displacement	0.59 Litres/rev	36 Cubic inches/rev	0.94 Litres/rev	57 Cubic inches/rev	1.46 Litres/rev	89 Cubic inches/rev
Max Air Flow	150 Litres/sec	318 Cubic feet/min	210 Litres/sec	445 Cubic feet/min	335 Litres/sec	710 Cubic feet/min
Built in Pressure Ratio	1.4PR		1.4 & 1.8PR		1.4 & 1.8PR	
Max RPM (continuous)	16,000 rpm		15,000 rpm		15,000 rpm	

Table 1 Supercharger specifications

2. Standards

Full load performance characteristics of Sprintex Series 5 screw type superchargers have been obtained based on the tests conducted on test rigs built to the SAE standard SAE J1723.

As per the SAE standard, supercharger speed, pressure ratio, corrected air flow, temperature differential, etc. were recorded at each test point, computations carried out and results are provided in line with the standard.

The SI system of units applies throughout this report. Imperial units are also given when appropriate.

3. Internal views of Typical Sprintex Superchargers

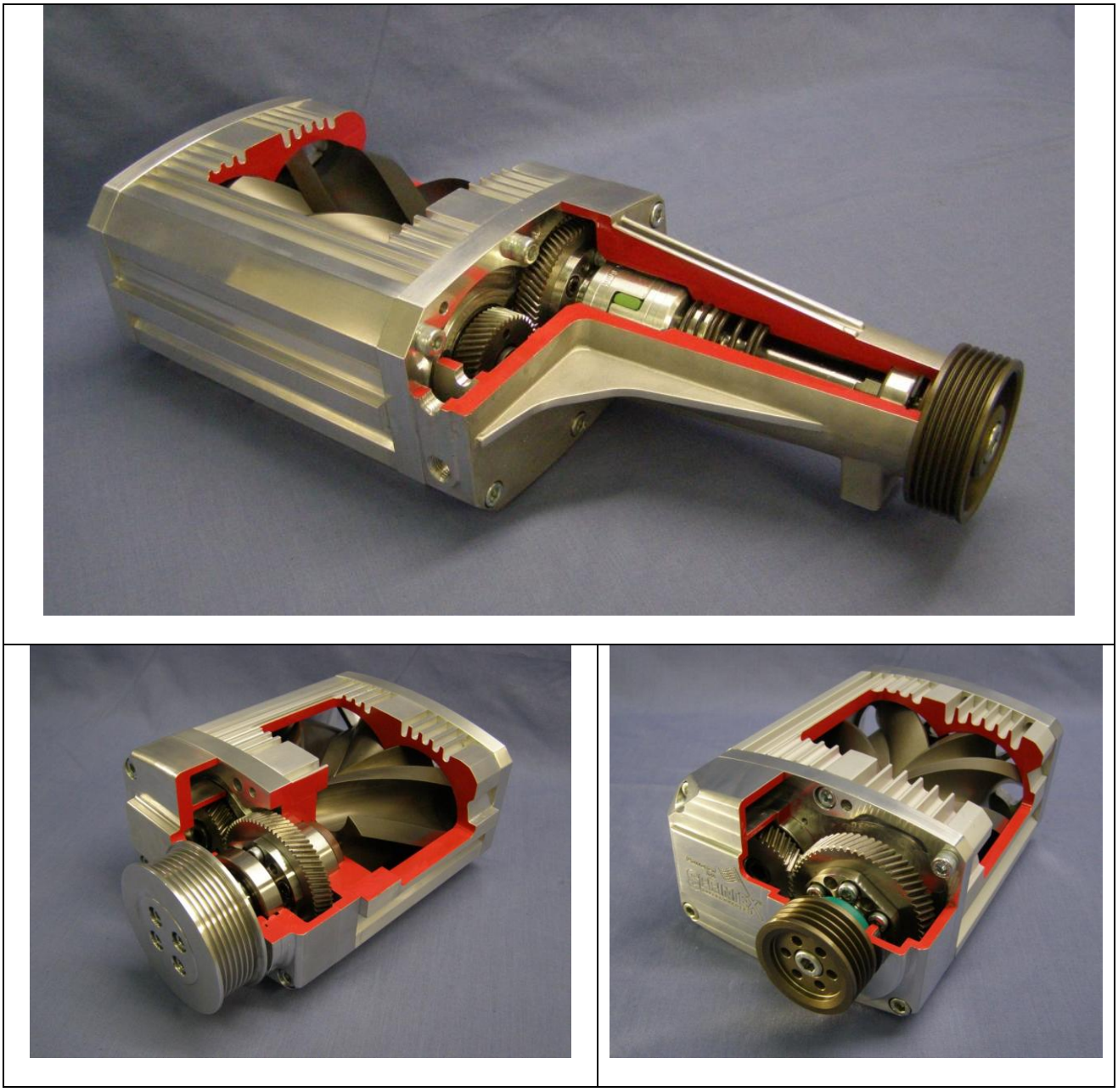


Figure 1 Typical Sprintex superchargers cut-out to expose internal parts

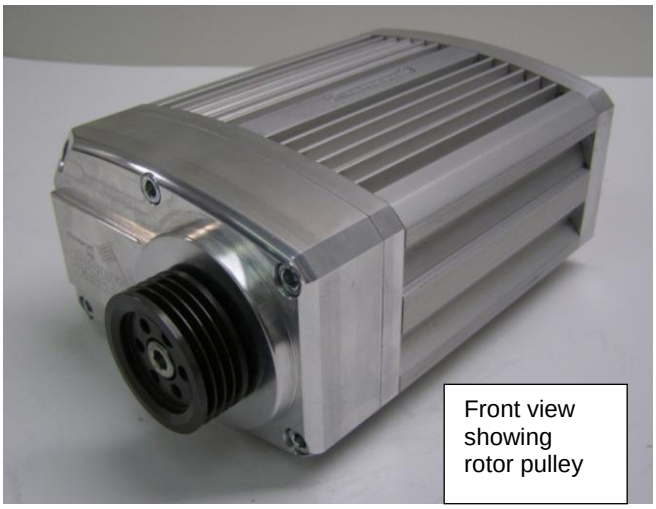
Supercharger S5-150

Front view showing the rotor pulley

Rear view showing the intake plate / port

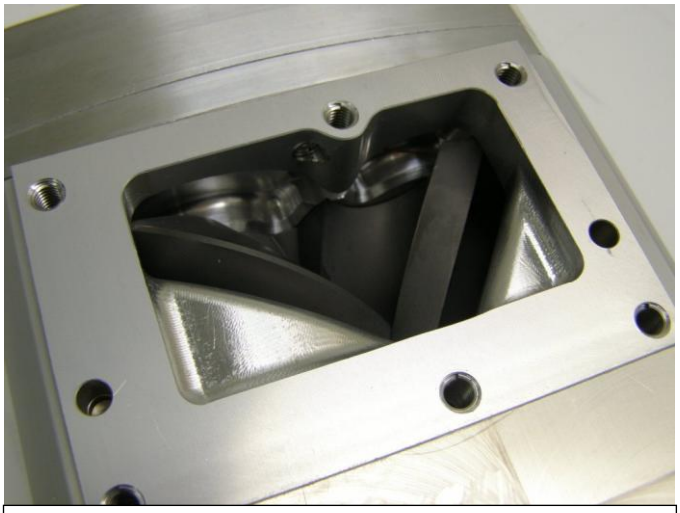
Side view showing the discharge port

Figure 2 Views of the Supercharger S5 – 150

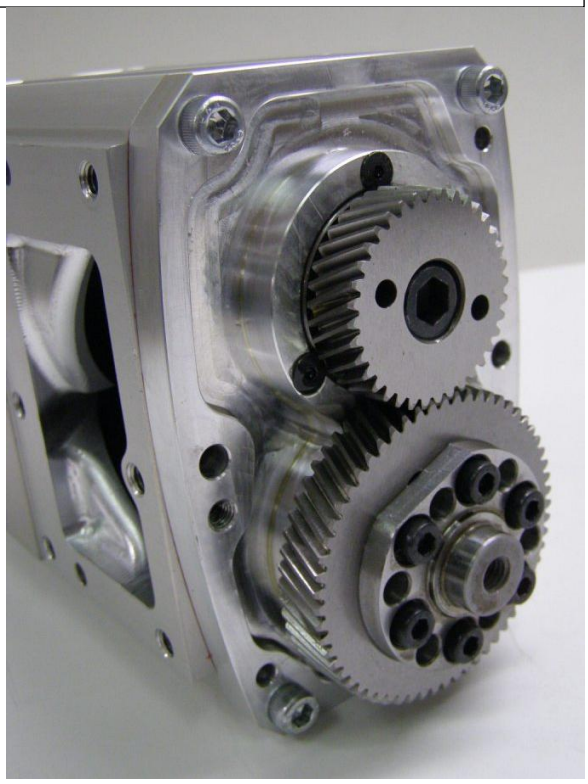


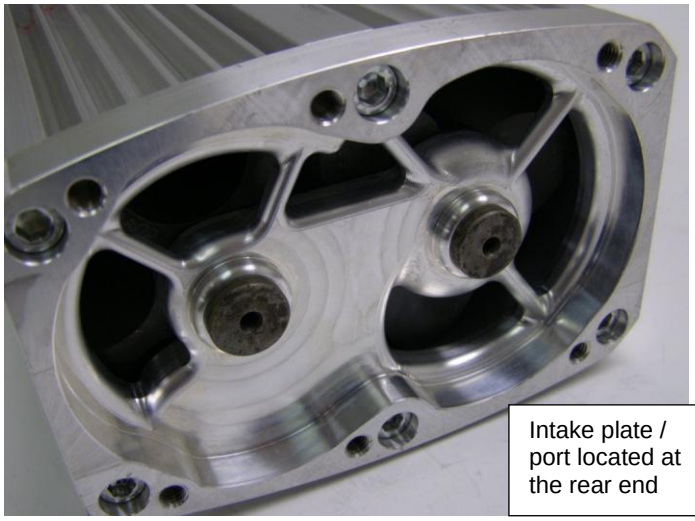
Front view showing rotor pulley

Front cover with pulley removed to expose gears



Internal rotors seen through the discharge port



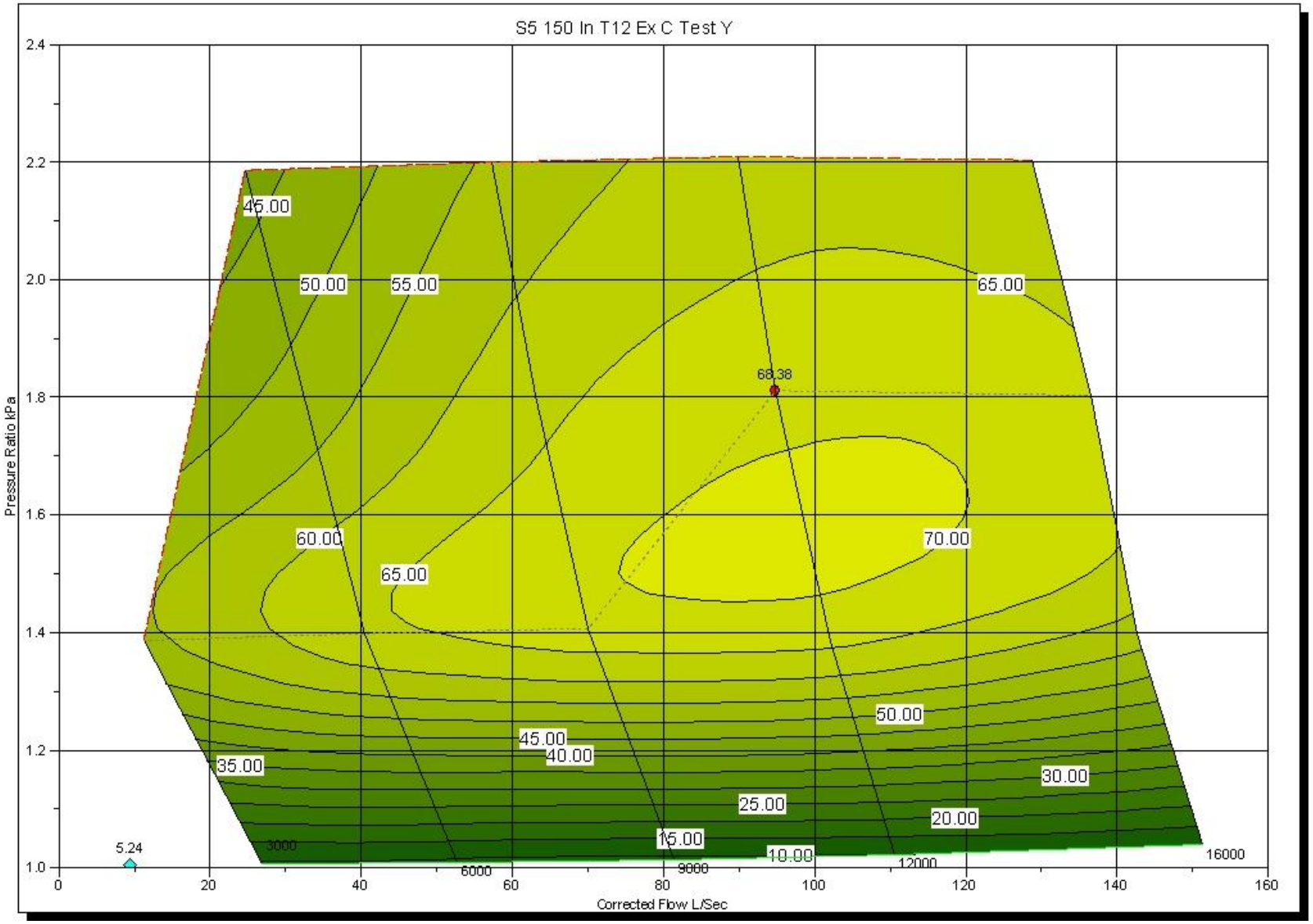


Intake plate / port located at the rear end

Figure 3 More views of the Supercharger S5 – 150

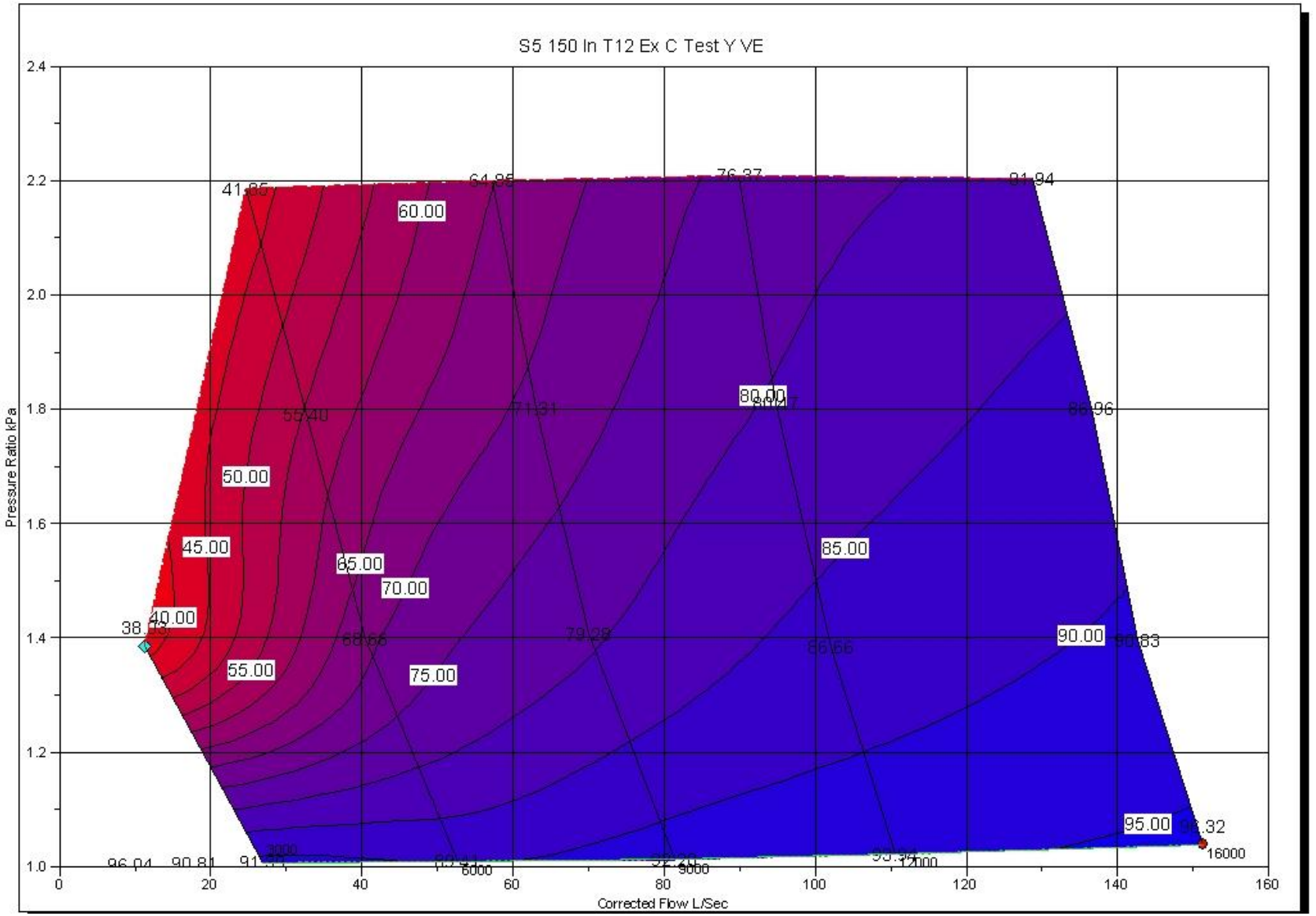
S5 - 150

Isentropic Efficiency versus supercharger speed at various pressure ratio



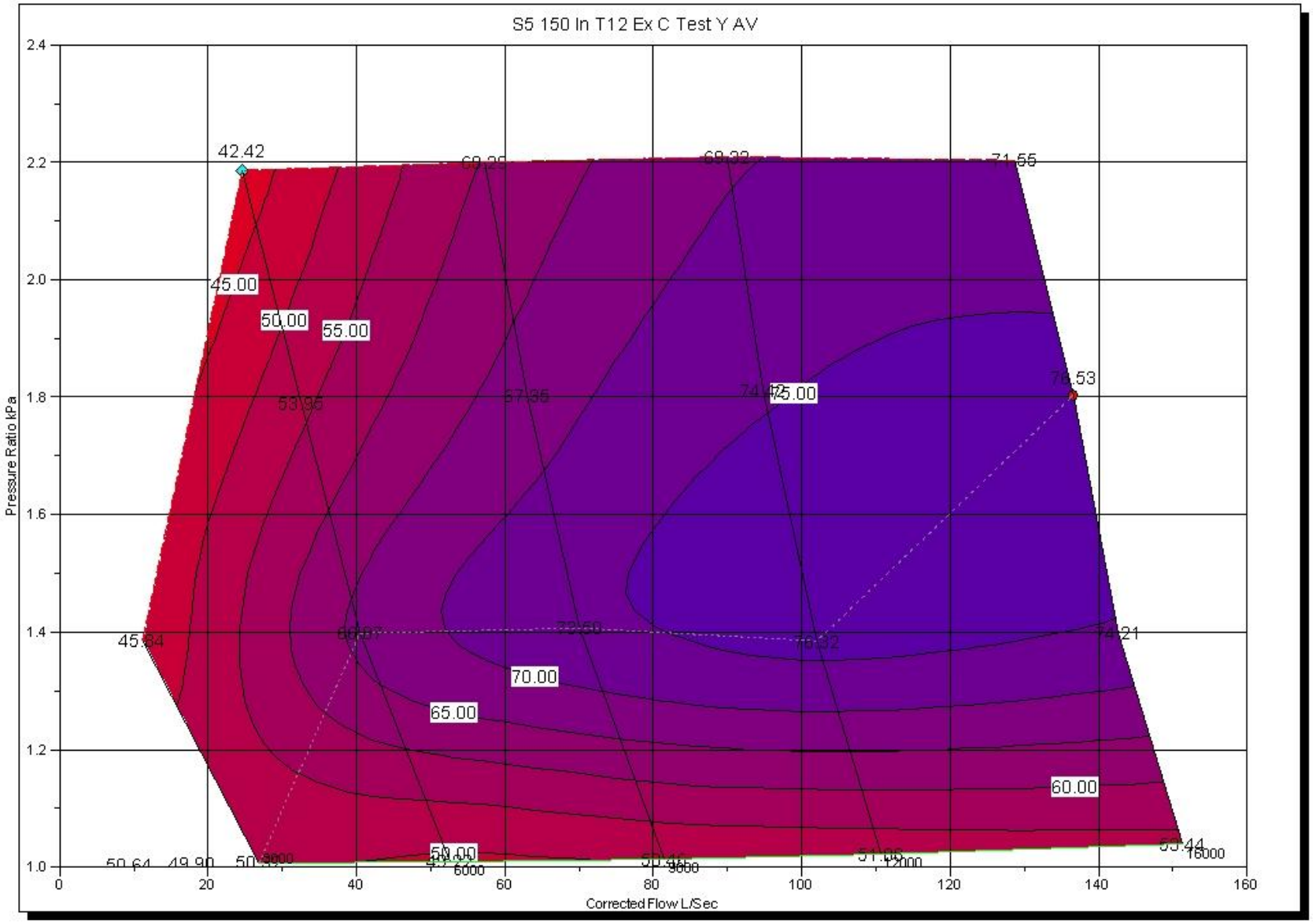
S5 - 150

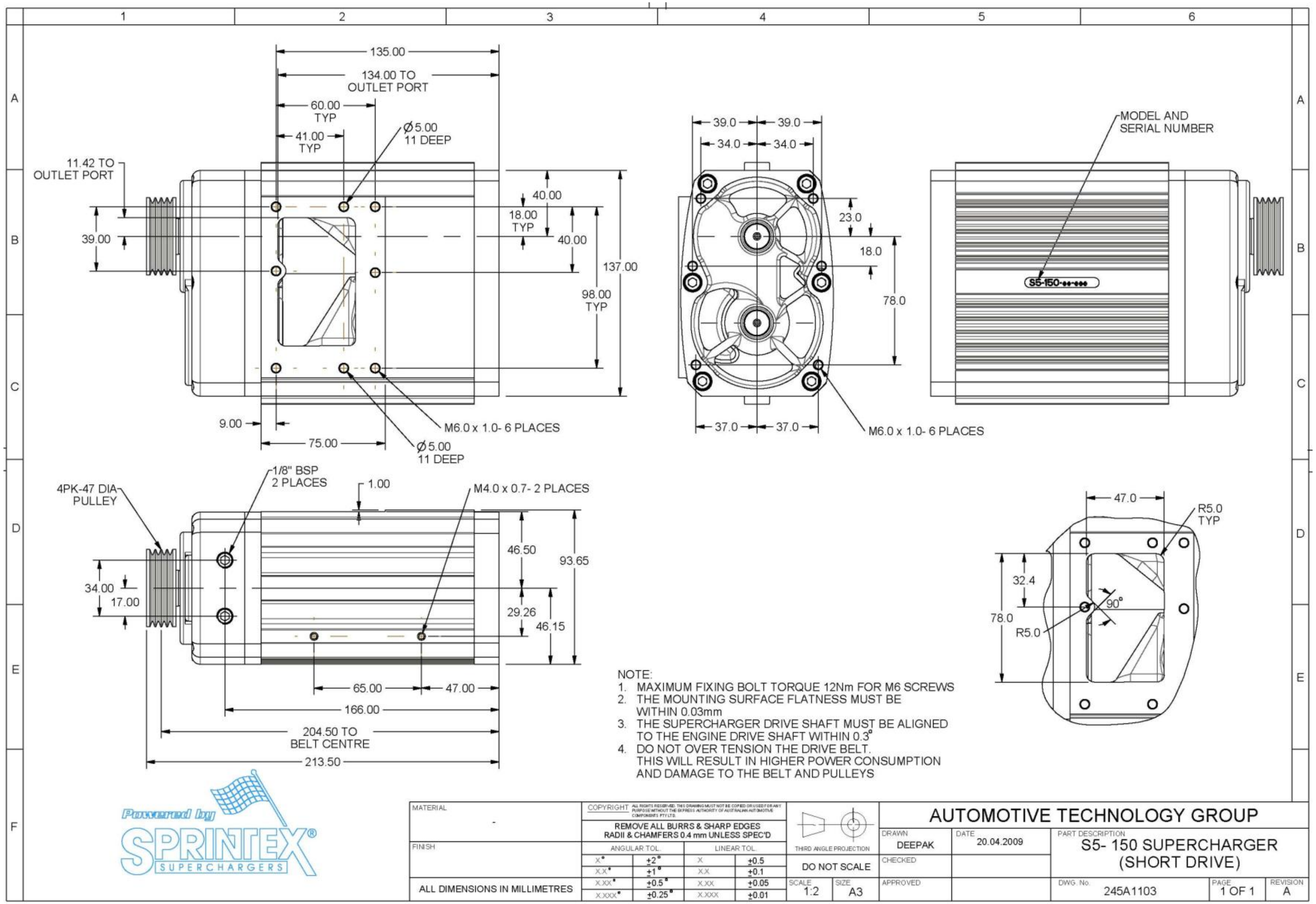
Volumetric efficiency versus supercharger speed at various pressure ratio



S5-150

Average supercharger efficiency at various speed and pressure ratio




135.00
134.00 TO OUTLET PORT
60.00 TYP
41.00 TYP
Ø5.00 11 DEEP
11.42 TO OUTLET PORT
39.00
40.00
18.00 TYP
40.00
137.00
98.00 TYP
9.00
75.00
M6.0 x 1.0- 6 PLACES
Ø5.00 11 DEEP
39.0
39.0
34.0
34.0
23.0
18.0
78.0
37.0
37.0
M6.0 x 1.0- 6 PLACES
MODEL AND SERIAL NUMBER
S5-150-••-•••
4PK-47 DIA PULLEY
1/8" BSP 2 PLACES
1.00
M4.0 x 0.7- 2 PLACES
34.00
17.00
46.50
93.65
29.26
46.15
65.00
47.00
166.00
204.50 TO BELT CENTRE
213.50
47.0
R5.0 TYP
32.4
78.0
R5.0
90°
NOTE:
1. MAXIMUM FIXING BOLT TORQUE 12Nm FOR M6 SCREWS
2. THE MOUNTING SURFACE FLATNESS MUST BE WITHIN 0.03mm
3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
4. DO NOT OVER TENSION THE DRIVE BELT. THIS WILL RESULT IN HIGHER POWER CONSUMPTION AND DAMAGE TO THE BELT AND PULLEYS
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MATERIAL -
FINISH
ALL DIMENSIONS IN MILLIMETRES
COPYRIGHT
REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D
ANGULAR TOL. X° ±2° X.X° ±1° X.XX° ±0.5° X.XXX° ±0.25°
LINEAR TOL. X ±0.5 X.X ±0.1 X.XX ±0.05 X.XXX ±0.01
THIRD ANGLE PROJECTION
DO NOT SCALE
SCALE 1:2
SIZE A3
AUTOMOTIVE TECHNOLOGY GROUP
DRAWN DEEPAK
DATE 20.04.2009
CHECKED
APPROVED
PART DESCRIPTION S5- 150 SUPERCHARGER (SHORT DRIVE)
DWG. No. 245A1103
PAGE 1 OF 1
REVISION A

Supercharger S5-210

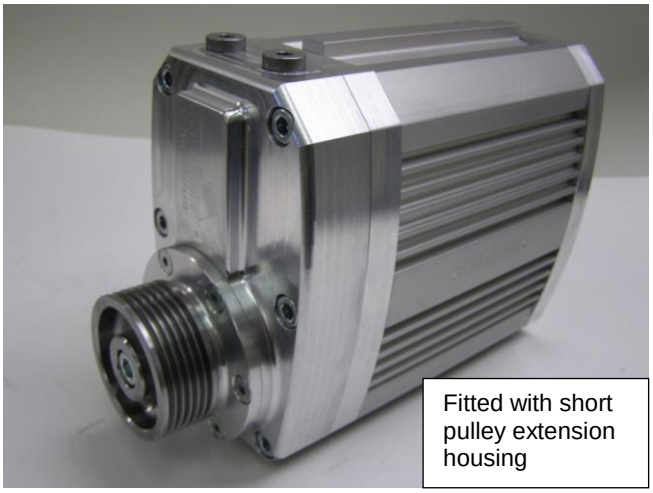
Front view showing the medium length extension housing with rotor pulley

Front view showing the discharge port

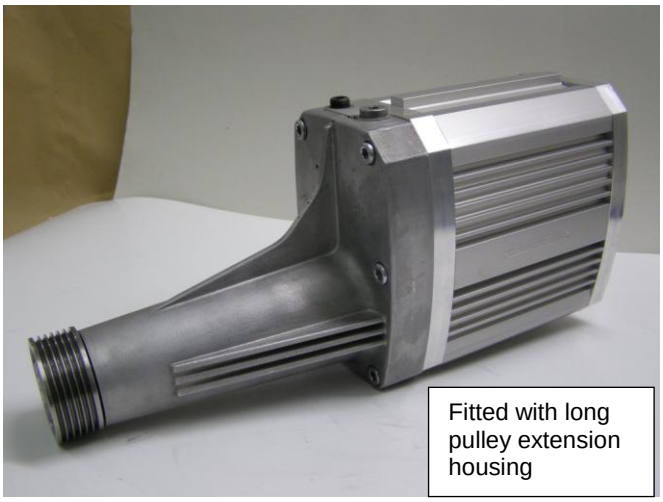
Side view showing the intake plate / port

Figure 4 Views of the Supercharger S5– 210

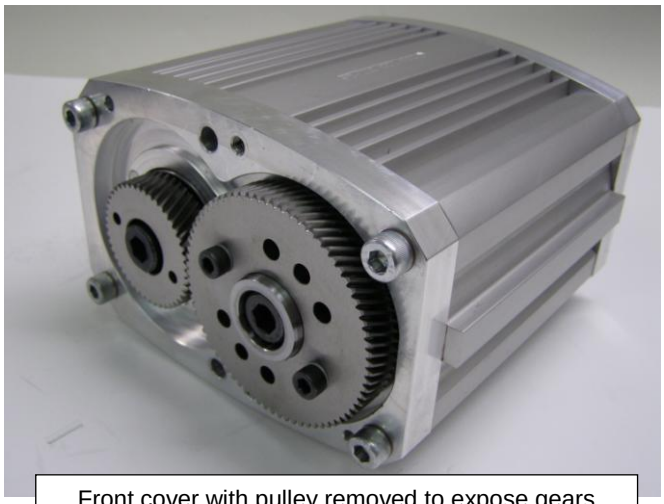
Fitted with hub



Fitted with short pulley extension housing



Fitted with long pulley extension housing



Front cover with pulley removed to expose gears

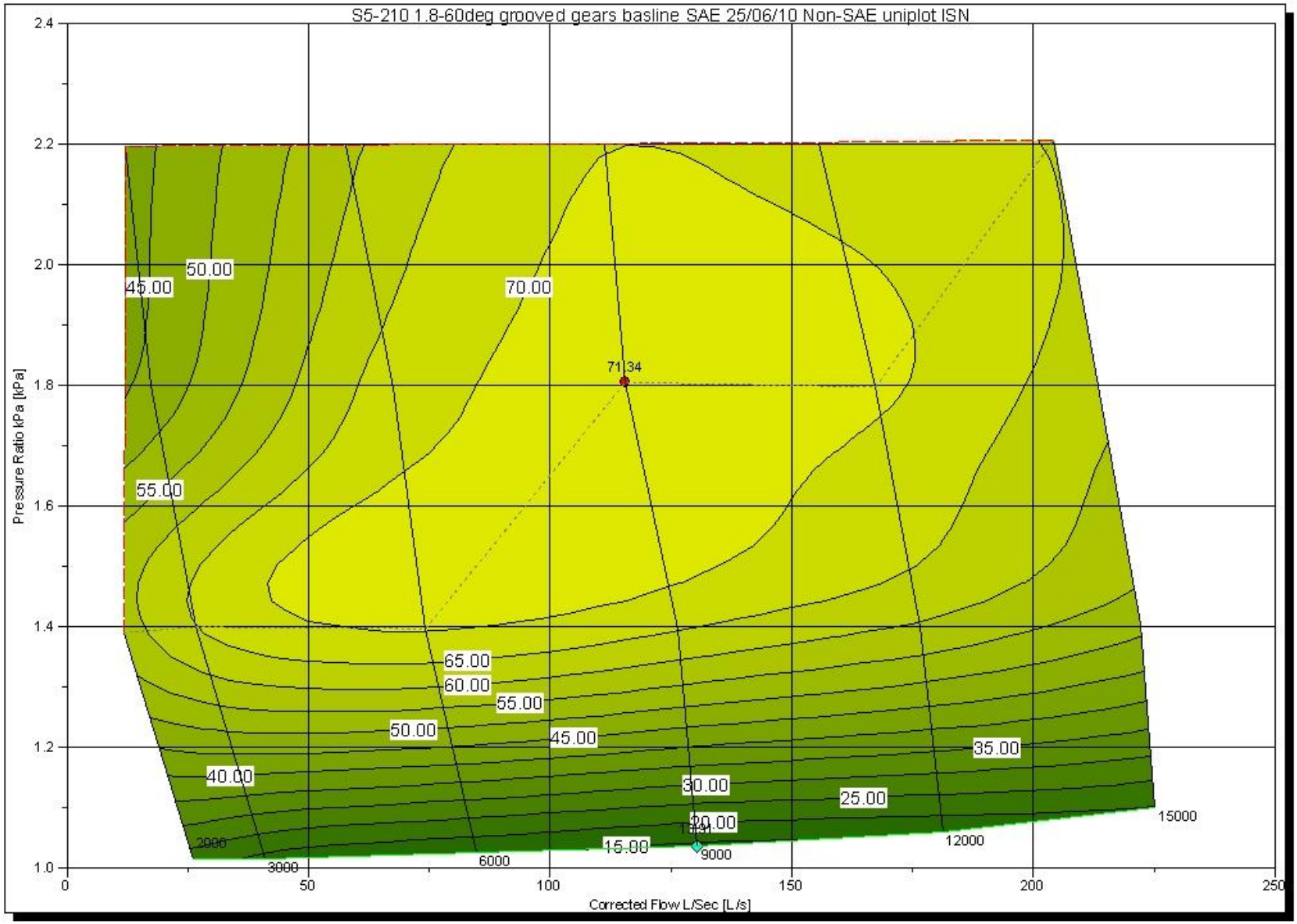
Discharge port showing rotors

Intake plate/port located at the rear end

Figure 5 More views of the Supercharger S5– 210

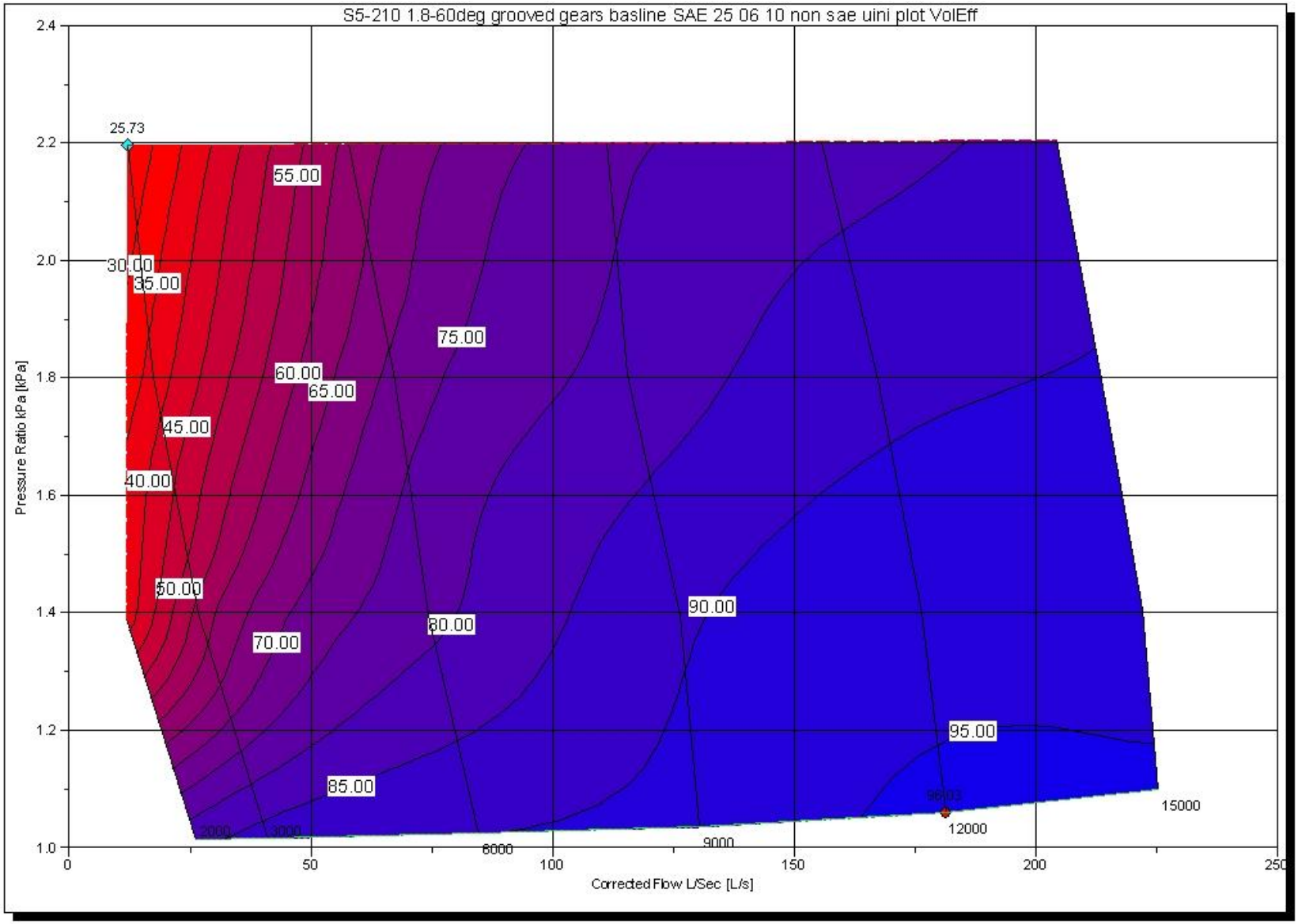
S5 - 210

Isentropic efficiency versus supercharger speed at various pressure ratio



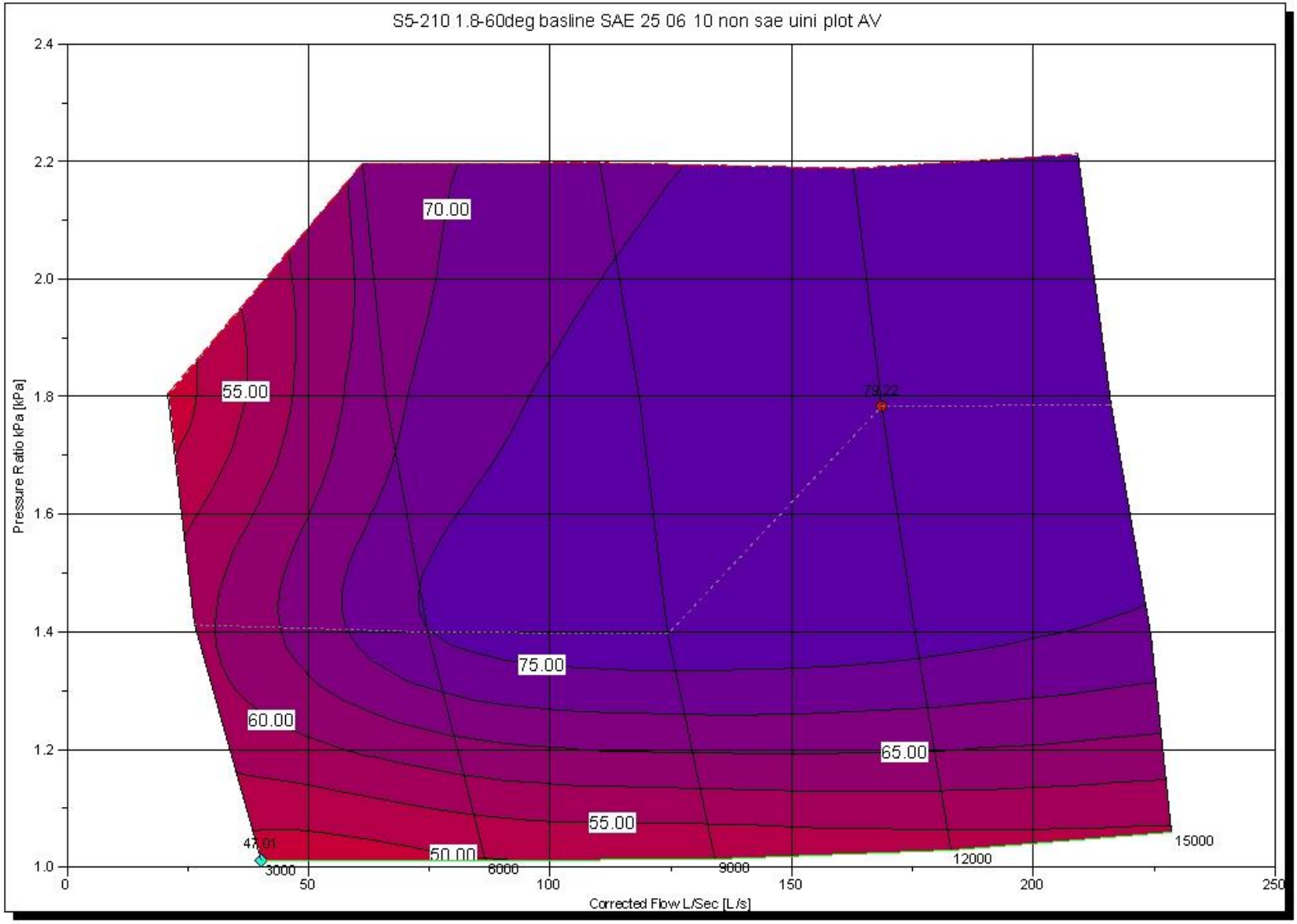
S5 - 210

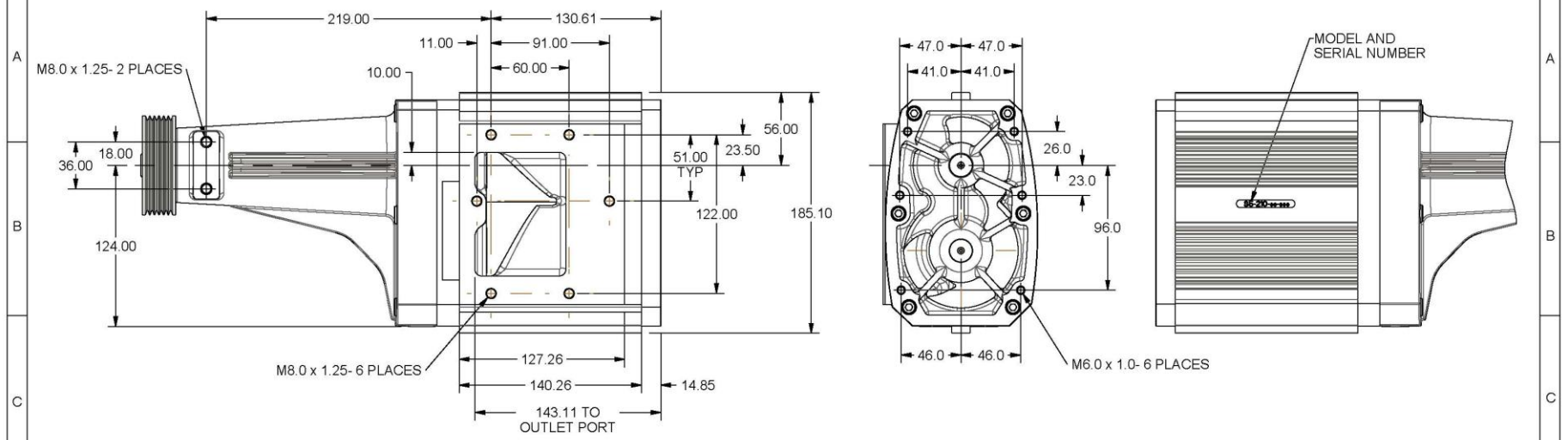
Volumetric efficiency versus supercharger speed at various pressure ratio

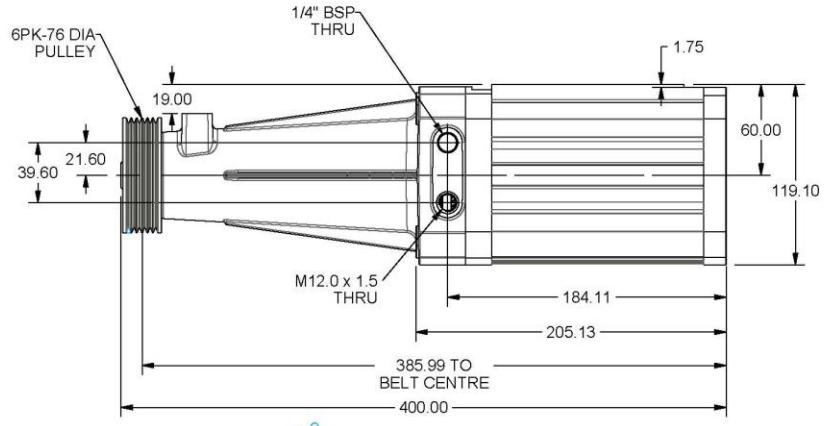


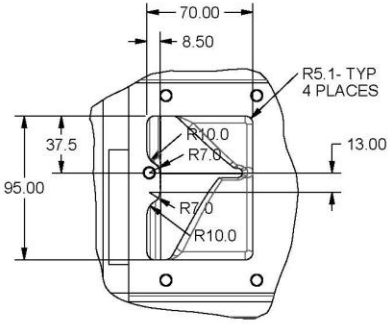
S5 - 210

Average supercharger efficiency at various speed and pressure ratio









NOTE:
1. MAXIMUM FIXING BOLT TORQUE 25Nm FOR M8 SCREWS
2. THE MOUNTING SURFACE FLATNESS MUST BE WITHIN 0.03mm
3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
4. DO NOT OVER TENSION THE DRIVE BELT. THIS WILL RESULT IN HIGHER POWER CONSUMPTION AND DAMAGE TO THE BELT AND PULLEYS

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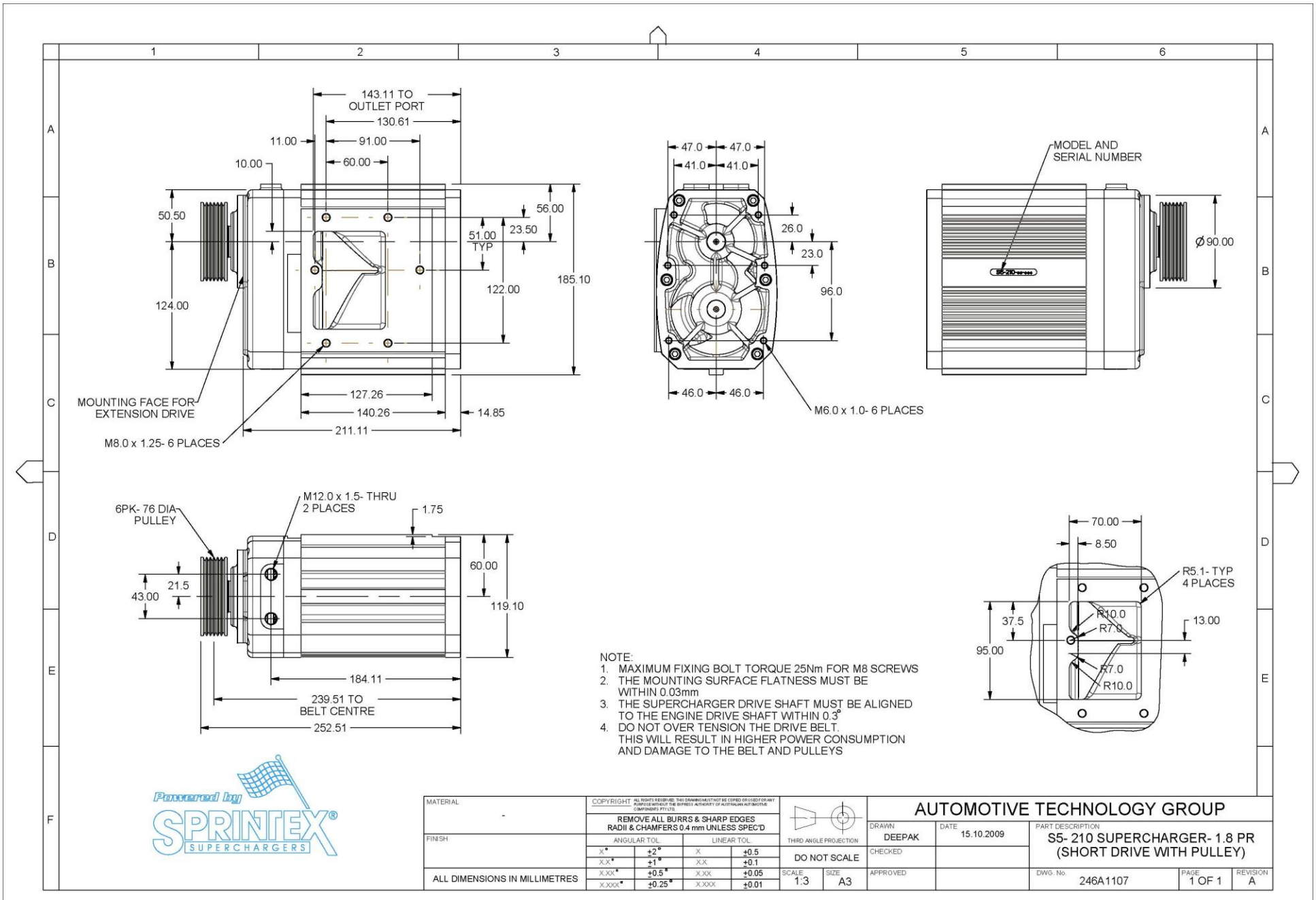
FINISH	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D	THIRD ANGLE PROJECTION	DRAWN: DEEPAK — DATE: 15.10.2009 — PART DESCRIPTION: S5- 210 SUPERCHARGER- 1.8 PR (LONG DRIVE)
	ANGULAR TOL: X° ±2°; XX° ±1°; XXX° ±0.5°; XXXX° ±0.25° — LINEAR TOL: X ±0.5; XX ±0.1; XXX ±0.05; XXXX ±0.01	DO NOT SCALE	CHECKED
ALL DIMENSIONS IN MILLIMETRES		SCALE 1:3 — SIZE A3	APPROVED — DWG. No. 246A1103 — PAGE 1 OF 1 — REVISION A



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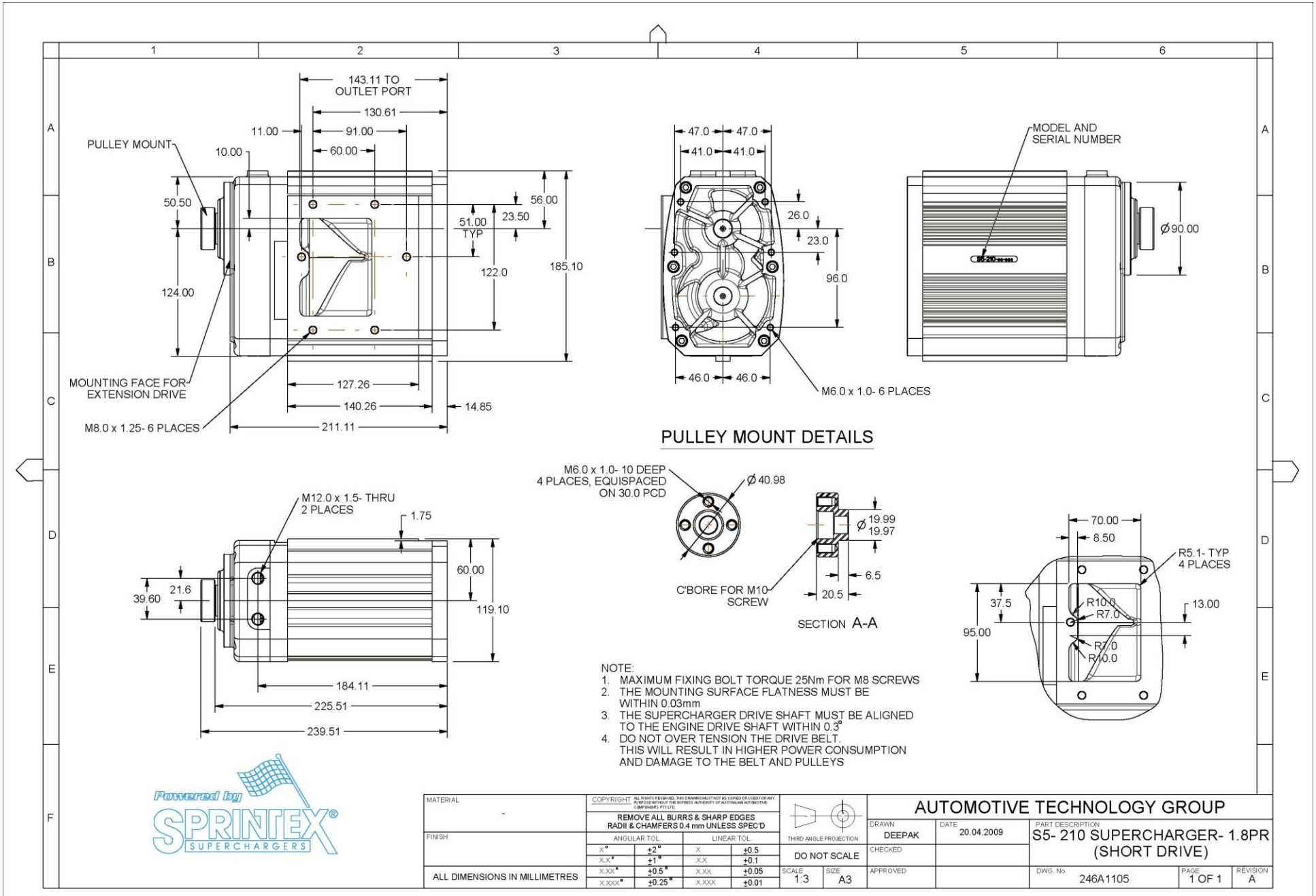
FINISH	ANGULAR TOL: X° ±2°; XX° ±1°; XXX° ±0.5°; XXXX° ±0.25°	LINEAR TOL: X ±0.5; XX ±0.1; XXX ±0.05; XXXX ±0.01	THIRD ANGLE PROJECTION	DRAWN: DEEPAK	DATE: 15.10.2009	PART DESCRIPTION: S5- 210 SUPERCHARGER- 1.8 PR (SHORT DRIVE WITH PULLEY)	
ALL DIMENSIONS IN MILLIMETRES			DO NOT SCALE	CHECKED			
			SCALE 1:3	SIZE A3	APPROVED	DWG. No. 246A1107	PAGE 1 OF 1 / REVISION A



NOTE:
1. MAXIMUM FIXING BOLT TORQUE 25Nm FOR M8 SCREWS
2. THE MOUNTING SURFACE FLATNESS MUST BE WITHIN 0.03mm
3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
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FINISH	ANGULAR TOL: X° ±2°, X.X° ±1°, X.XX° ±0.5°, X.XXX° ±0.25° / LINEAR TOL: X ±0.5, X.X ±0.1, X.XX ±0.05, X.XXX ±0.01	DO NOT SCALE	DRAWN: DEEPAK; DATE: 20.04.2009; CHECKED; APPROVED
ALL DIMENSIONS IN MILLIMETRES	SCALE: 1:3; SIZE: A3		PART DESCRIPTION: S5- 210 SUPERCHARGER- 1.8PR (SHORT DRIVE); DWG. No. 246A1105; PAGE: 1 OF 1; REVISION: A

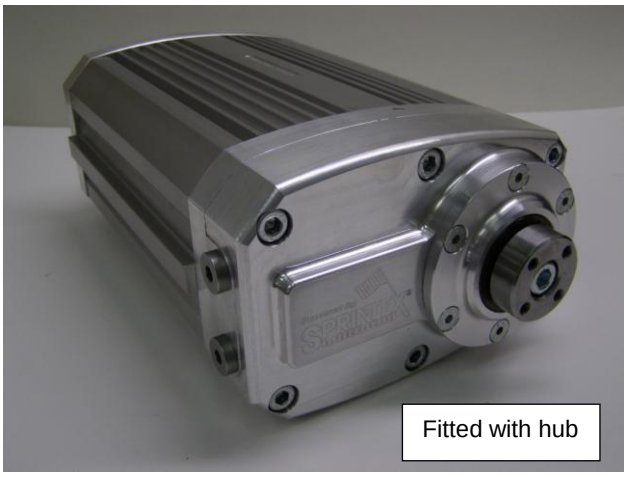
Supercharger S5-335

Front view showing the long extension housing with pulley

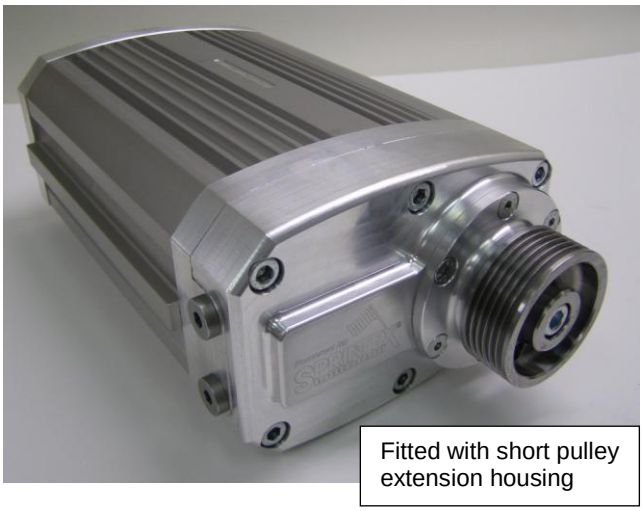
Rear view showing the intake plate / port

Side view showing the discharge port

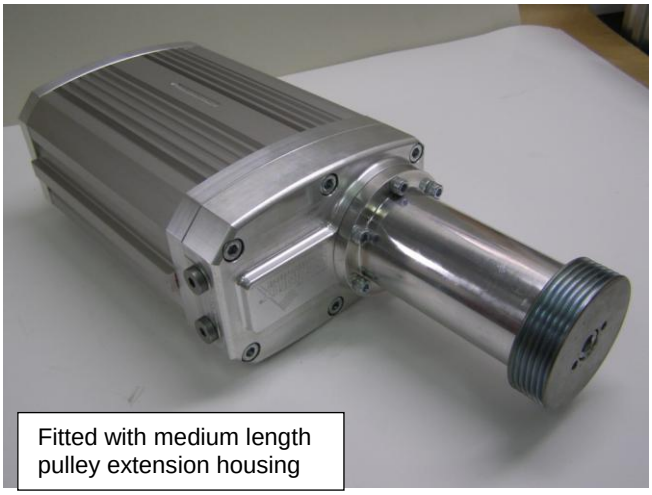
Figure 6 Views of the Supercharger S5 – 335



Fitted with hub

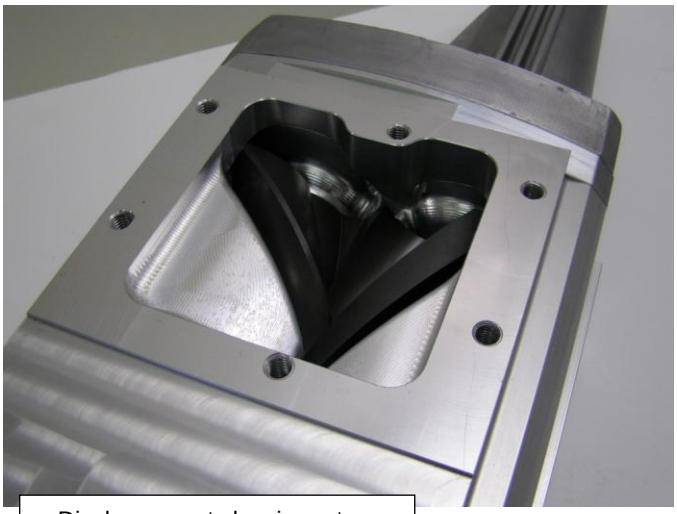


Fitted with short pulley extension housing



Fitted with medium length pulley extension housing

Front cover with pulley removed to expose gears



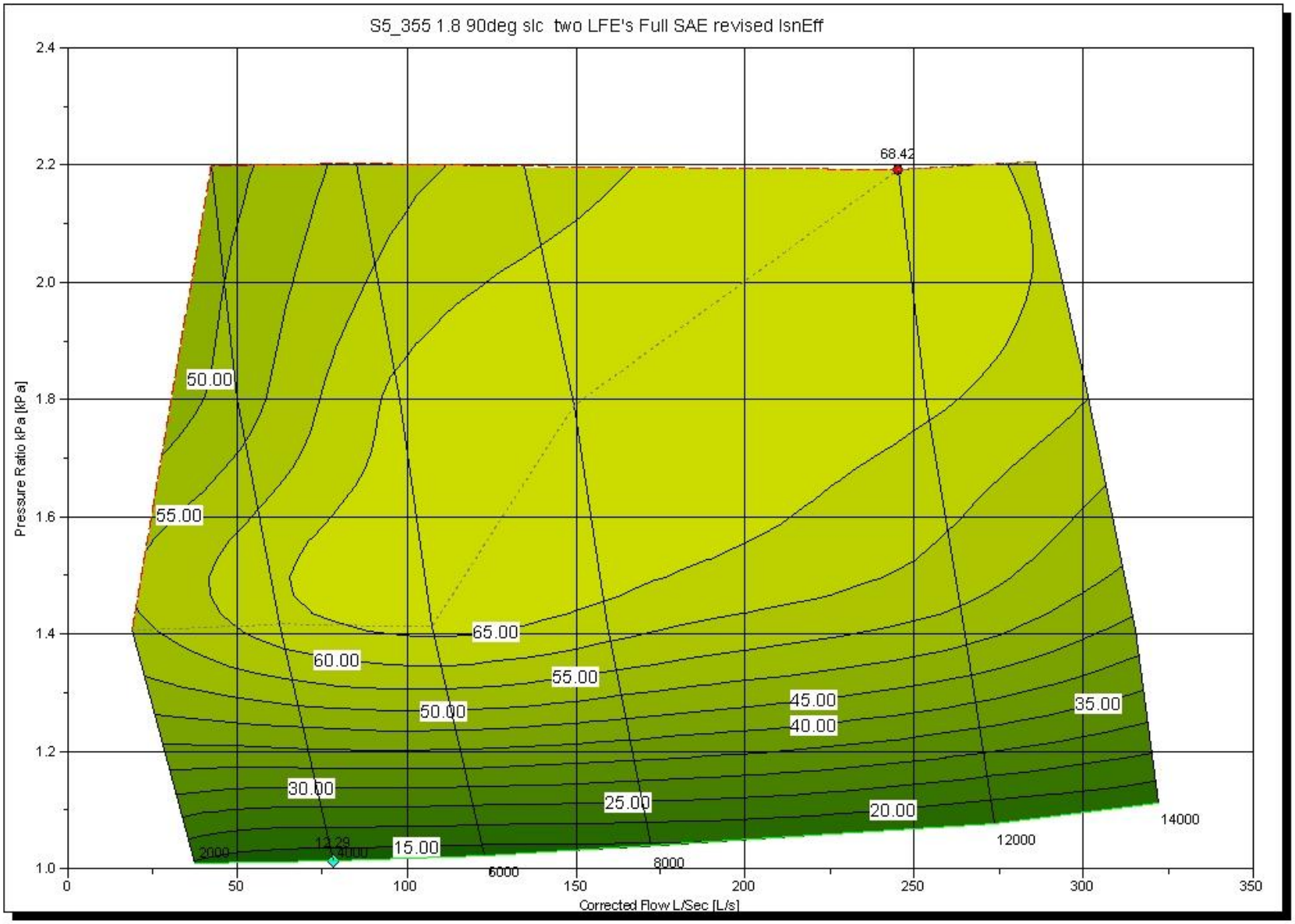
Discharge port showing rotors

Intake plate/port located at the rear end

Figure 7 More views of the Supercharger S5 – 335

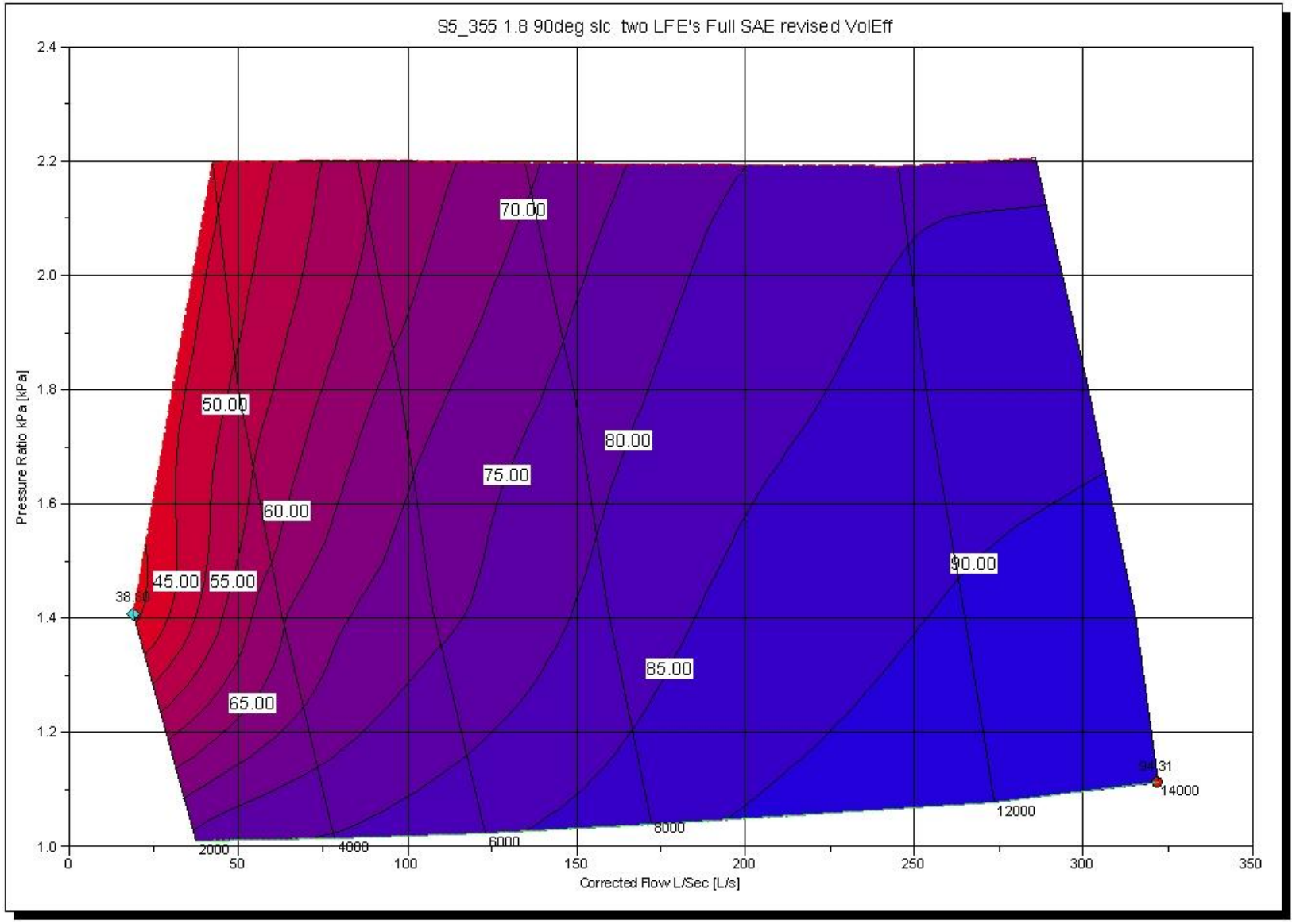
S5 - 335

Isentropic efficiency versus supercharger speed at various pressure ratio



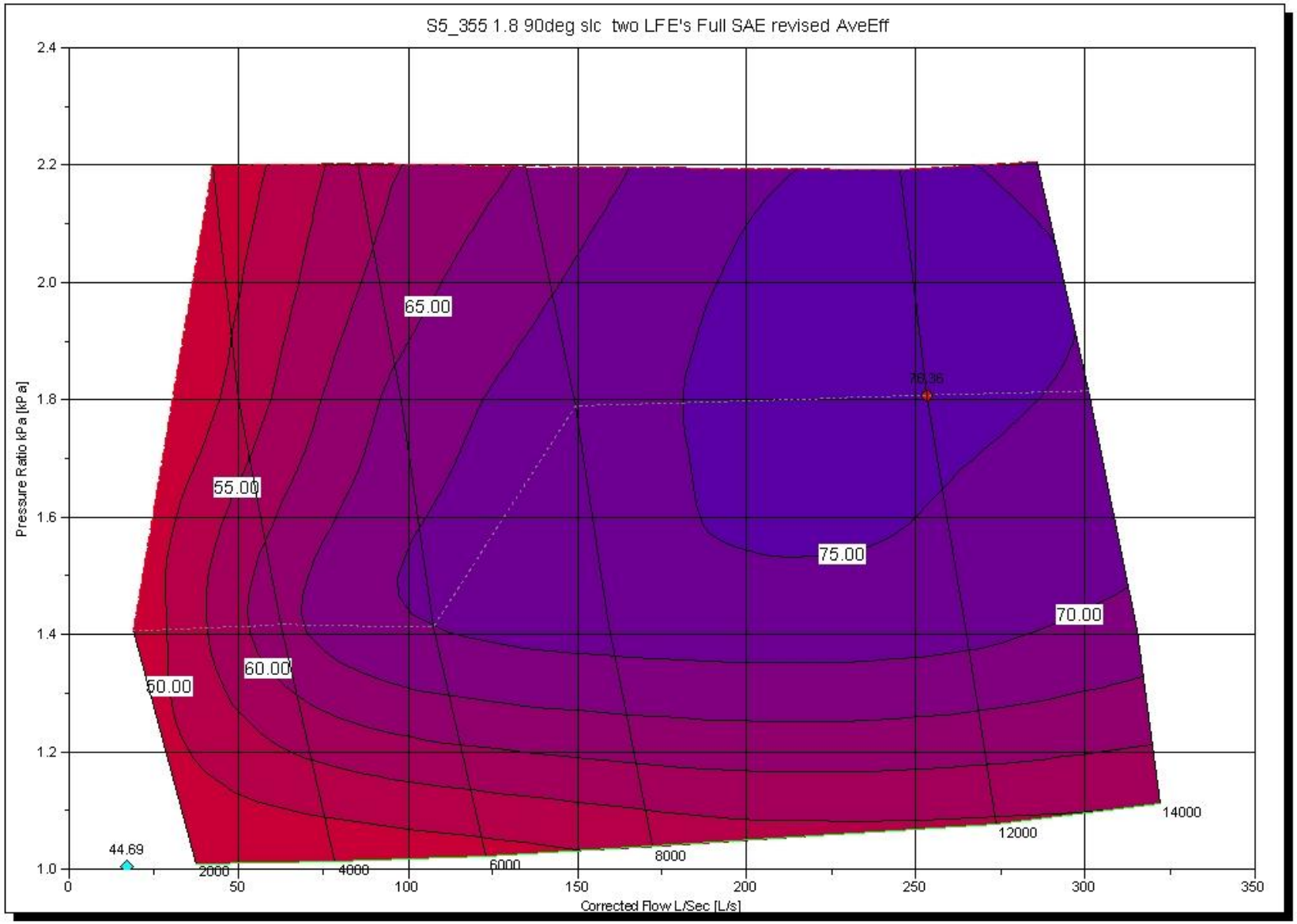
S5 - 335

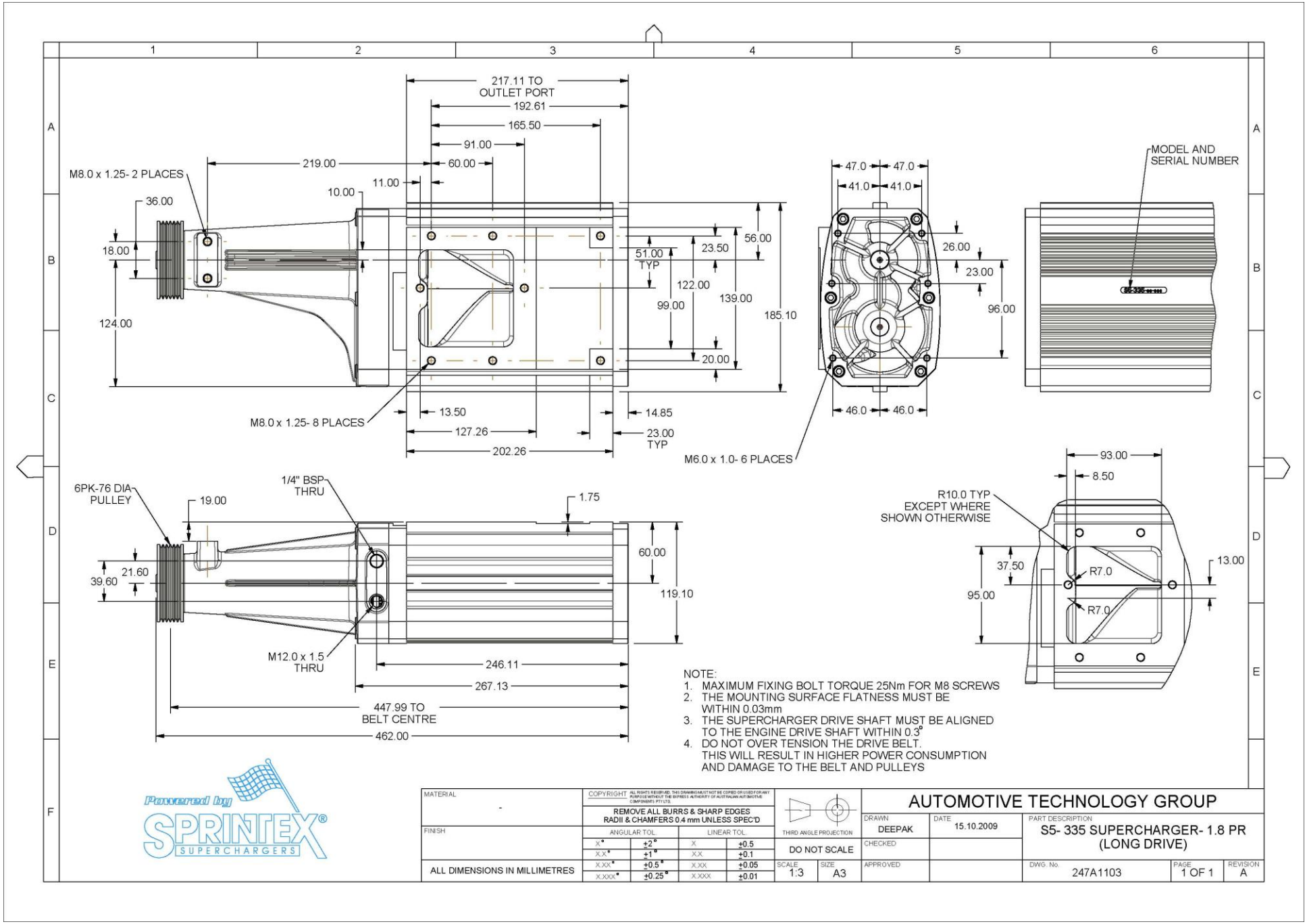
Volumetric efficiency versus supercharger speed at various pressure ratio



S5 - 335

Average supercharger efficiency at various speed and pressure ratio





NOTE:
1. MAXIMUM FIXING BOLT TORQUE 25Nm FOR M8 SCREWS
2. THE MOUNTING SURFACE FLATNESS MUST BE WITHIN 0.03mm
3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
4. DO NOT OVER TENSION THE DRIVE BELT. THIS WILL RESULT IN HIGHER POWER CONSUMPTION AND DAMAGE TO THE BELT AND PULLEYS

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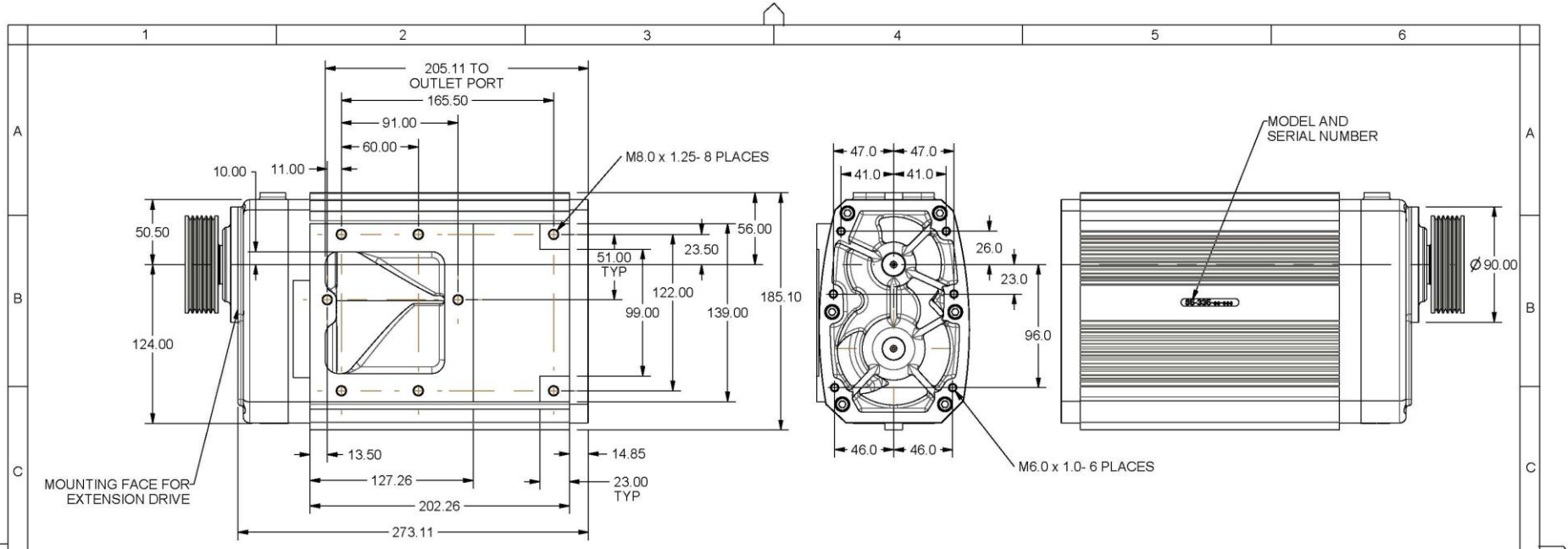
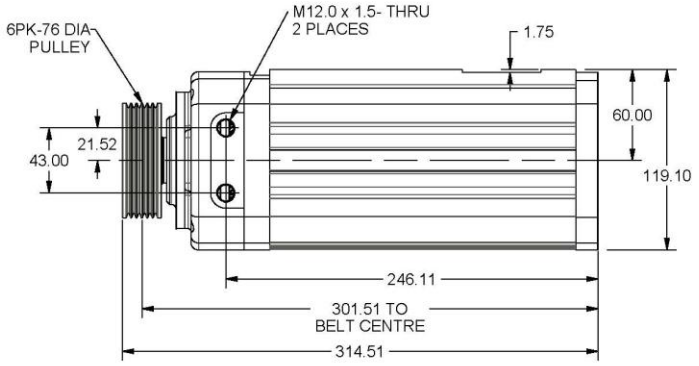
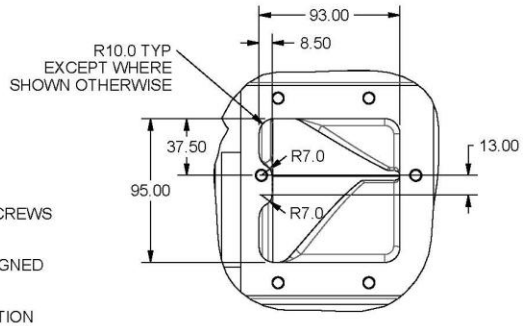
	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D				DRAWN: DEEPAK	DATE: 15.10.2009	PART DESCRIPTION: S5- 335 SUPERCHARGER- 1.8 PR (LONG DRIVE)
FINISH	ANGULAR TOL		LINEAR TOL		THIRD ANGLE PROJECTION	CHECKED	
	X° ±2°		X ±0.5		DO NOT SCALE		
	XX° ±1°		XX ±0.1		SCALE 1:3 SIZE A3	APPROVED	DWG. No. 247A1103 PAGE 1 OF 1 REVISION A
ALL DIMENSIONS IN MILLIMETRES	XXX° ±0.5°		XXX ±0.05				
	XXXX° ±0.25°		XXXX ±0.01				







NOTE:
1. MAXIMUM FIXING BOLT TORQUE 25Nm FOR M8 SCREWS
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3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
4. DO NOT OVER TENSION THE DRIVE BELT. THIS WILL RESULT IN HIGHER POWER CONSUMPTION AND DAMAGE TO THE BELT AND PULLEYS

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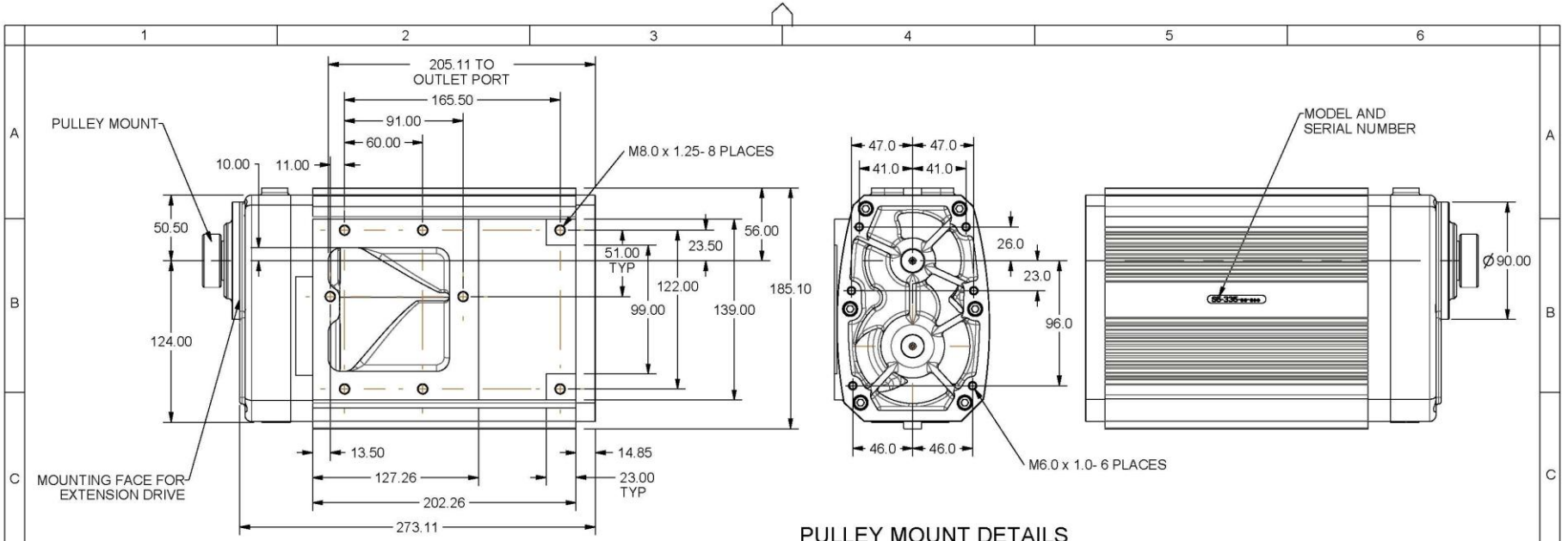
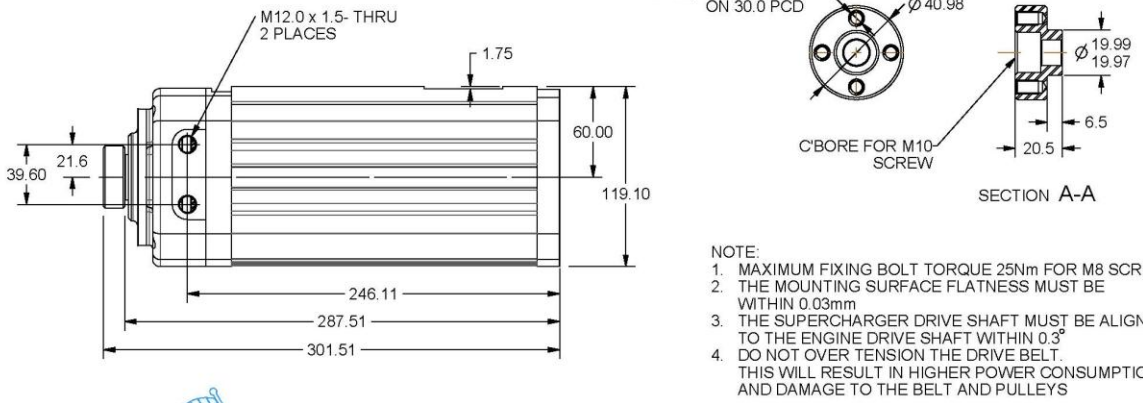
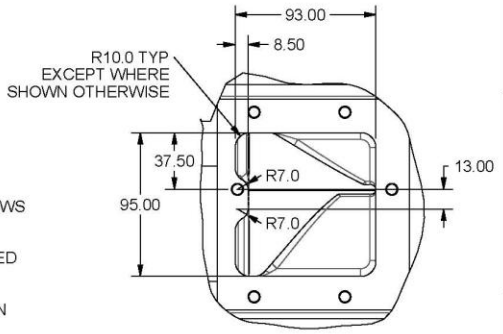
	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D				DRAWN: DEEPAK	DATE: 15.10.2009	PART DESCRIPTION: S5- 335 SUPERCHARGER- 1.8 PR (SHORT DRIVE WITH PULLEY)
FINISH	ANGULAR TOL		LINEAR TOL		THIRD ANGLE PROJECTION		
	X° ±2°		X ±0.5		DO NOT SCALE	CHECKED	
	XX° ±1°		XX ±0.1				
ALL DIMENSIONS IN MILLIMETRES	XXX° ±0.5°		XXX ±0.05		SCALE 1:3	SIZE A3	APPROVED
	XXXX° ±0.25°		XXXX ±0.01				DWG. No. 247A1107
							PAGE 1 OF 1
							REVISION A



PULLEY MOUNT DETAILS





NOTE:
1. MAXIMUM FIXING BOLT TORQUE 25Nm FOR M8 SCREWS
2. THE MOUNTING SURFACE FLATNESS MUST BE WITHIN 0.03mm
3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
4. DO NOT OVER TENSION THE DRIVE BELT. THIS WILL RESULT IN HIGHER POWER CONSUMPTION AND DAMAGE TO THE BELT AND PULLEYS

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FINISH	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D			THIRD ANGLE PROJECTION	DRAWN: DEEPAK	DATE: 20.04.2009	PART DESCRIPTION: S5- 335 SUPERCHARGER- 1.8 PR (SHORT DRIVE)
	ANGULAR TOL: X° ±2°, XX° ±1°, XXX° ±0.5°, XXXX° ±0.25°		LINEAR TOL: X ±0.5, XX ±0.1, XXX ±0.05, XXXX ±0.01	DO NOT SCALE	CHECKED		
ALL DIMENSIONS IN MILLIMETRES				SCALE: 1:3 SIZE: A3	APPROVED		DWG. No. 247A1105 PAGE 1 OF 1 REVISION A