



## SPRINTEX® SUPERCHARGERS

### Series 5

S5 – 150 , S5 – 210 , S5 – 335



**THE PRODUCT**

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## **Sprintex Series 5 Supercharger Range**

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

### **1. Specifications**

<b>Model No.</b>	<b>S5 – 150</b>		<b>S5 – 210</b>		<b>S5 – 335</b>	
	<b>SI Units (Metric)</b>	<b>Imperial Units</b>	<b>SI Units (Metric)</b>	<b>Imperial units</b>	<b>SI Units (Metric)</b>	<b>Imperial units</b>
<b>Dimensions (short drive)</b>	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
<b>Available Drive Extensions</b>	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
<b>Weight (Kg)</b>	4.5 kg	9.92 lb	9.3 kg	20.50 lb	10.9 kg	24.03 lb
<b>Displacement</b>	0.59 Litres/rev	36 Cubic inches/rev	0.94 Litres/rev	57 Cubic inches/rev	1.46 Litres/rev	89 Cubic inches/rev
<b>Max Air Flow</b>	150 Litres/sec	318 Cubic feet/min	210 Litres/sec	445 Cubic feet/min	335 Litres/sec	710 Cubic feet/min
<b>Built in Pressure Ratio</b>	1.4PR		1.4 & 1.8PR		1.4 & 1.8PR	
<b>Max RPM (continuous)</b>	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

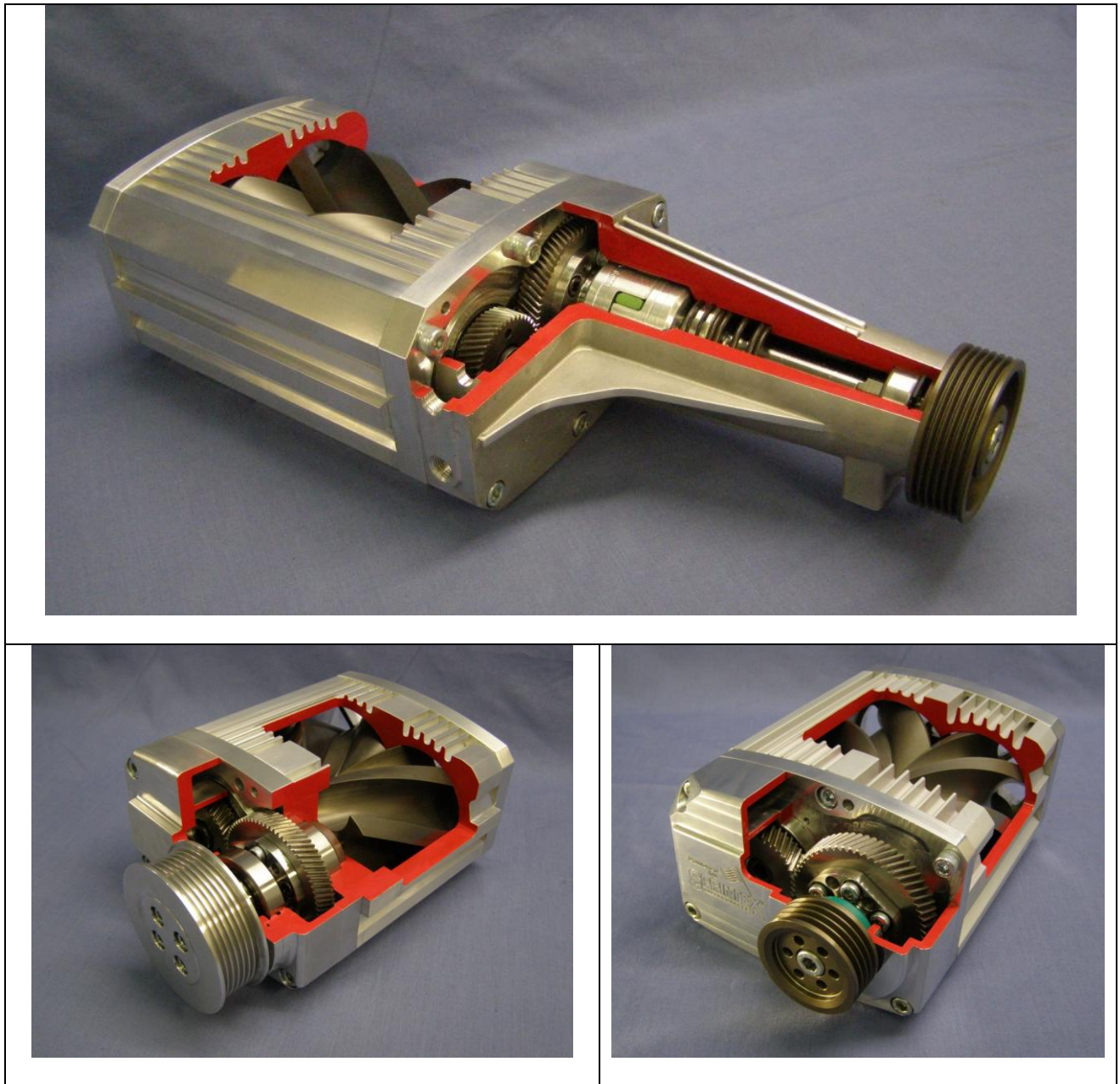


Figure 1 Typical Sprintex superchargers cut-out to expose internal parts

## Supercharger S5-150



Front view showing the rotor pulley

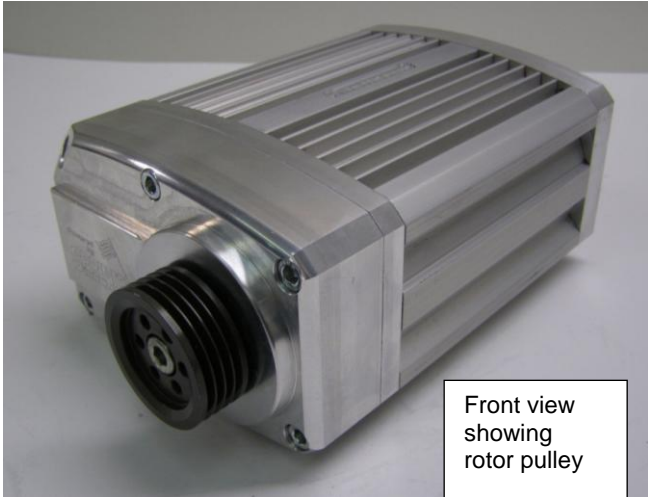


Rear view showing the intake plate / port



Side view showing the discharge port

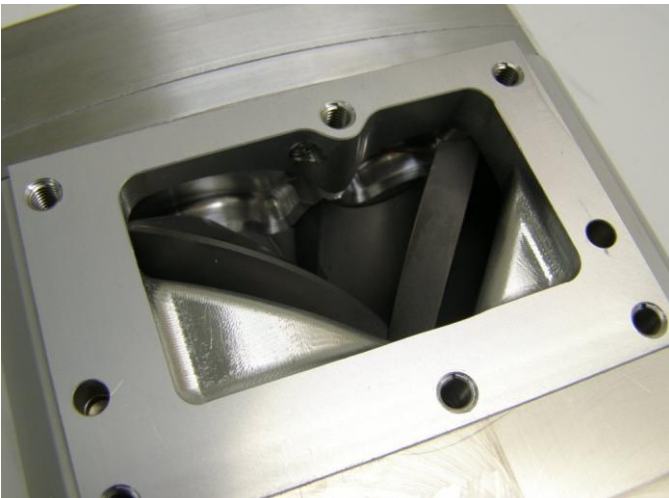
**Figure 2 Views of the Supercharger S5 – 150**



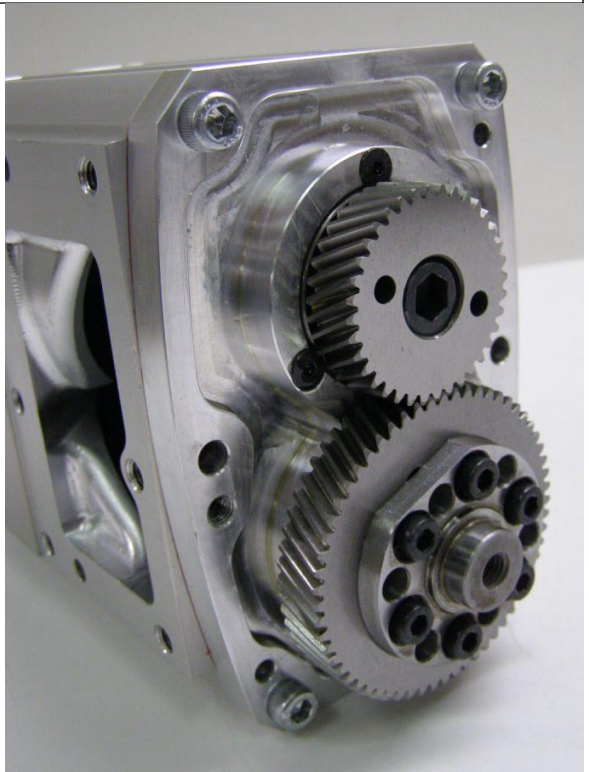
Front view showing rotor pulley



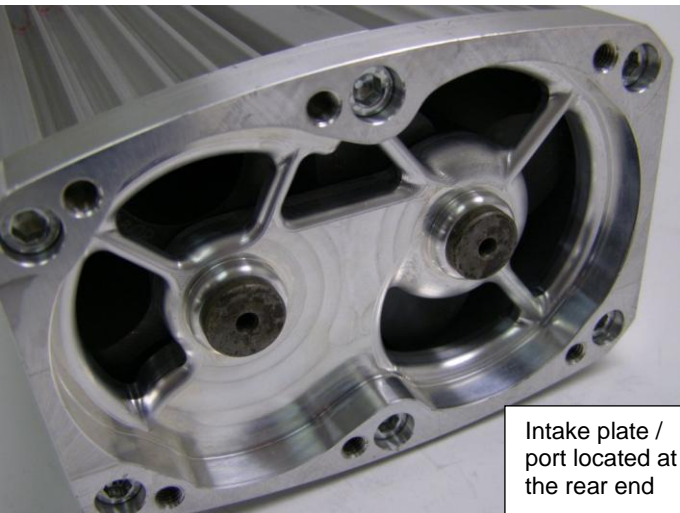
Front cover with pulley removed to expose gears



Internal rotors seen through the discharge port



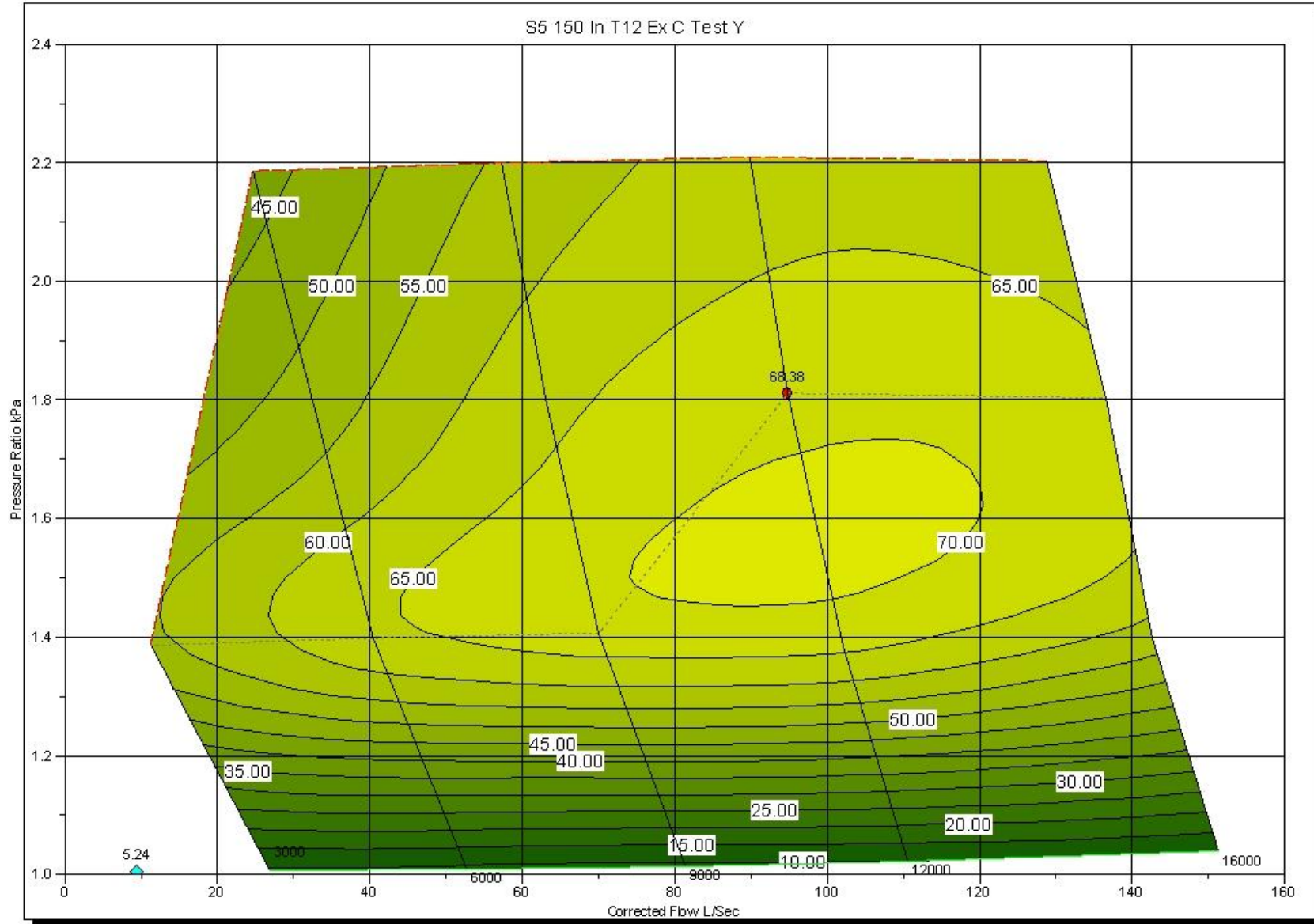
Detailed view of the gear train



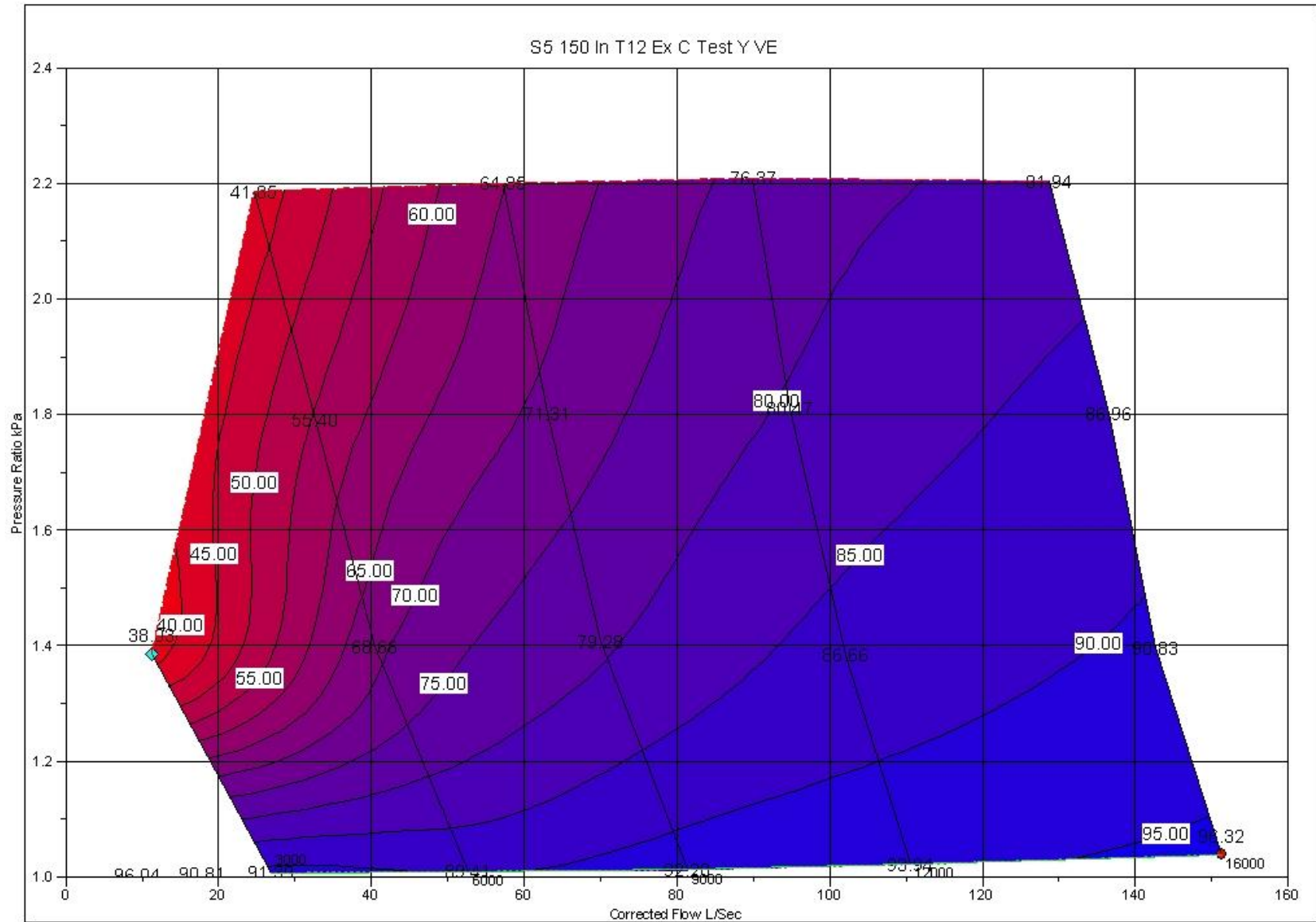
Intake plate / port located at the rear end

Figure 3 More views of the Supercharger S5 – 150

### S5 - 150 Isentropic Efficiency versus supercharger speed at various pressure ratio

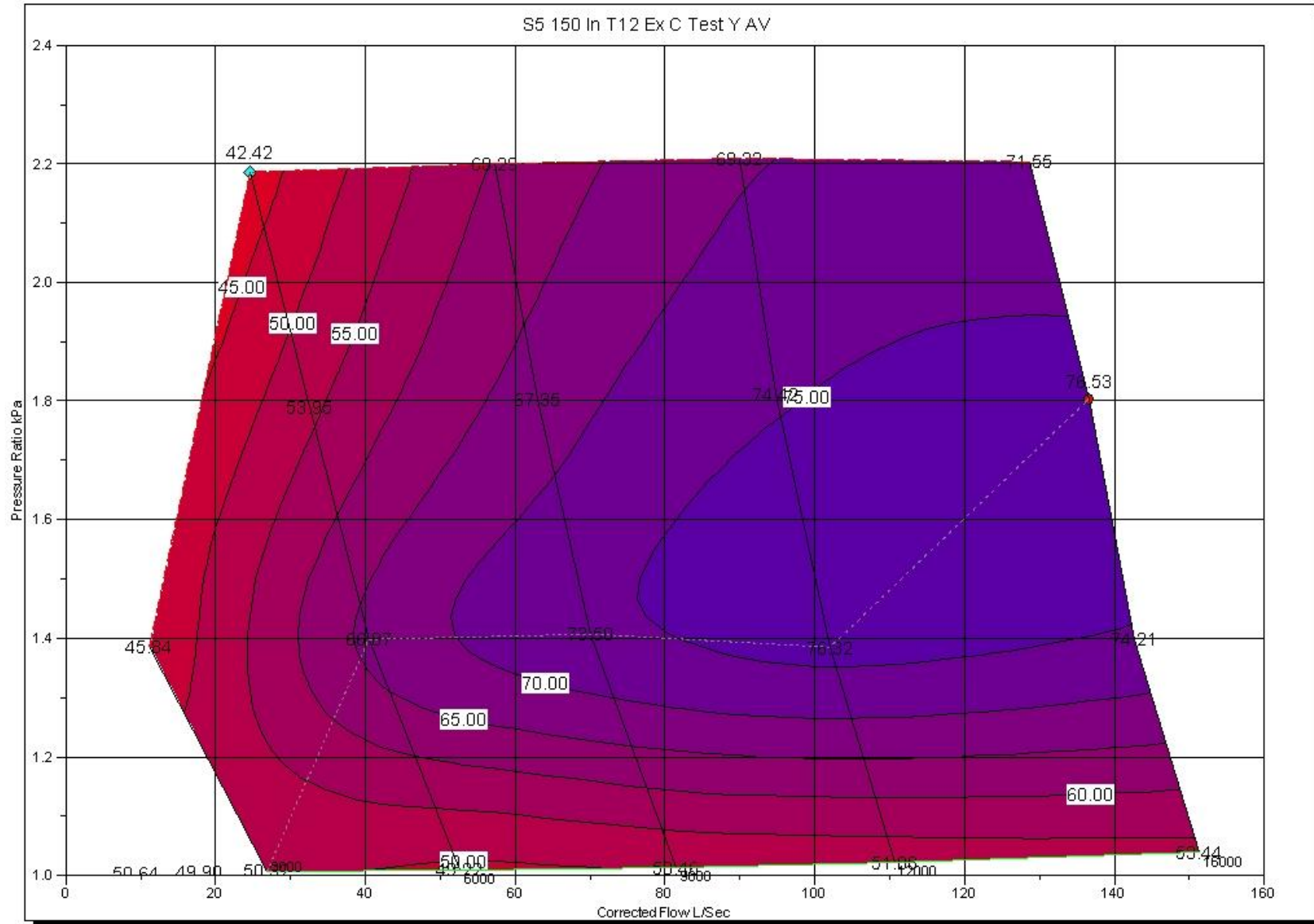


**S5 - 150**  
**Volumetric efficiency versus supercharger speed at various pressure ratio**



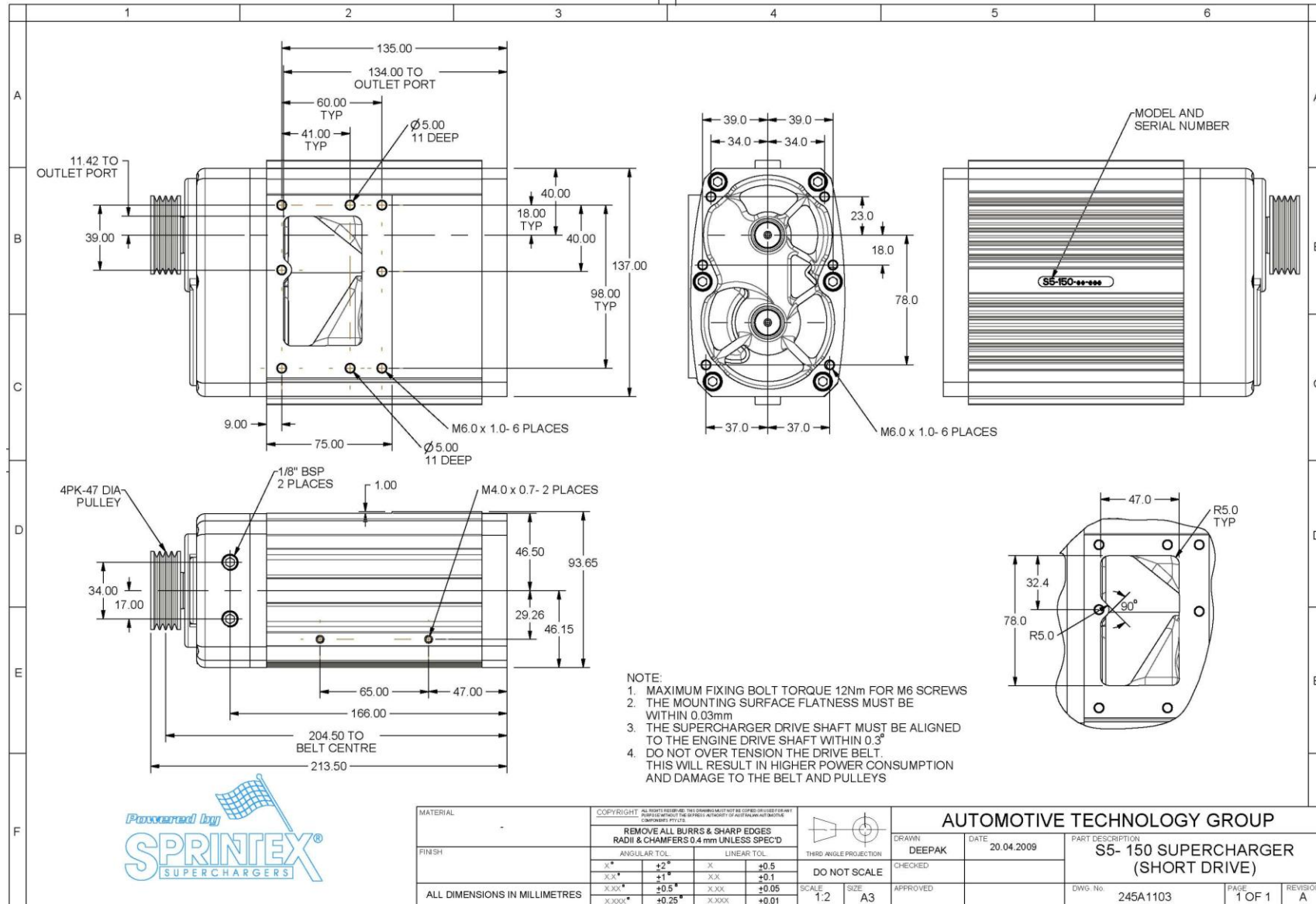
### S5-150

Average supercharger efficiency at various speed and pressure ratio





# Supercharger S5 - 150



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	REMOVE ALL BURRS & SHARP EDGES RADI & CHAMFERS 0.4 mm UNLESS SPEC'D					DRAWN DEEPAK	DATE 20.04.2009	PART DESCRIPTION S5- 150 SUPERCHARGER (SHORT DRIVE)
FINISH	ANGULAR TOL		LINEAR TOL		DO NOT SCALE	CHECKED	APPROVED	DWG. No. 245A1103
	X*	+2°	X	+0.5				
ALL DIMENSIONS IN MILLIMETRES	XX*	+1°	XX	+0.1	SCALE 1:2	SIZE A3		
	XX*	+0.5*	XX	+0.05				
	XXX*	+0.25*	XXX	+0.01				

## 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**

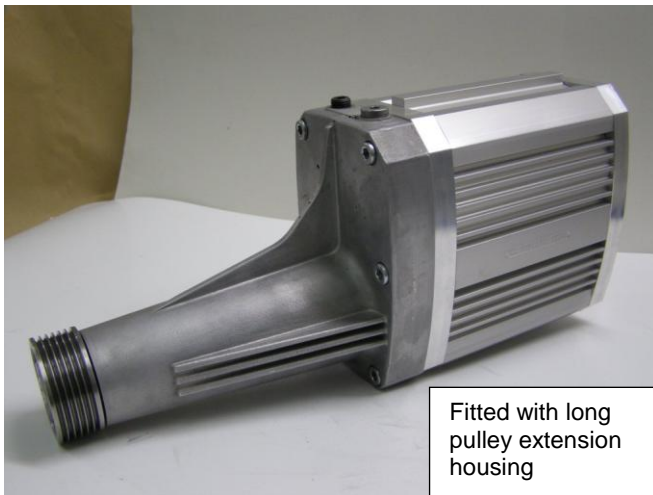
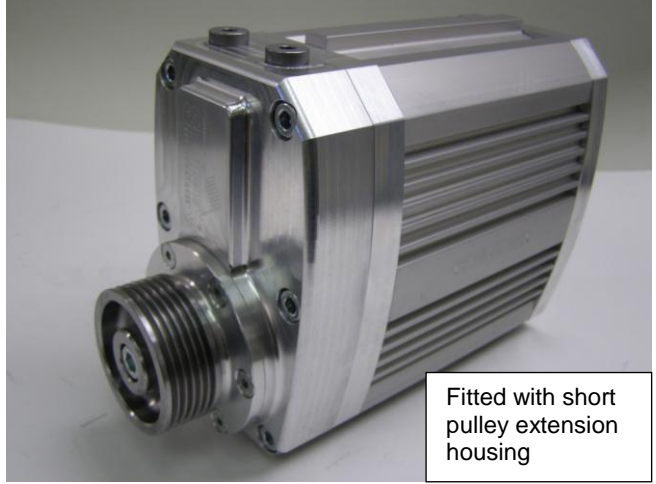
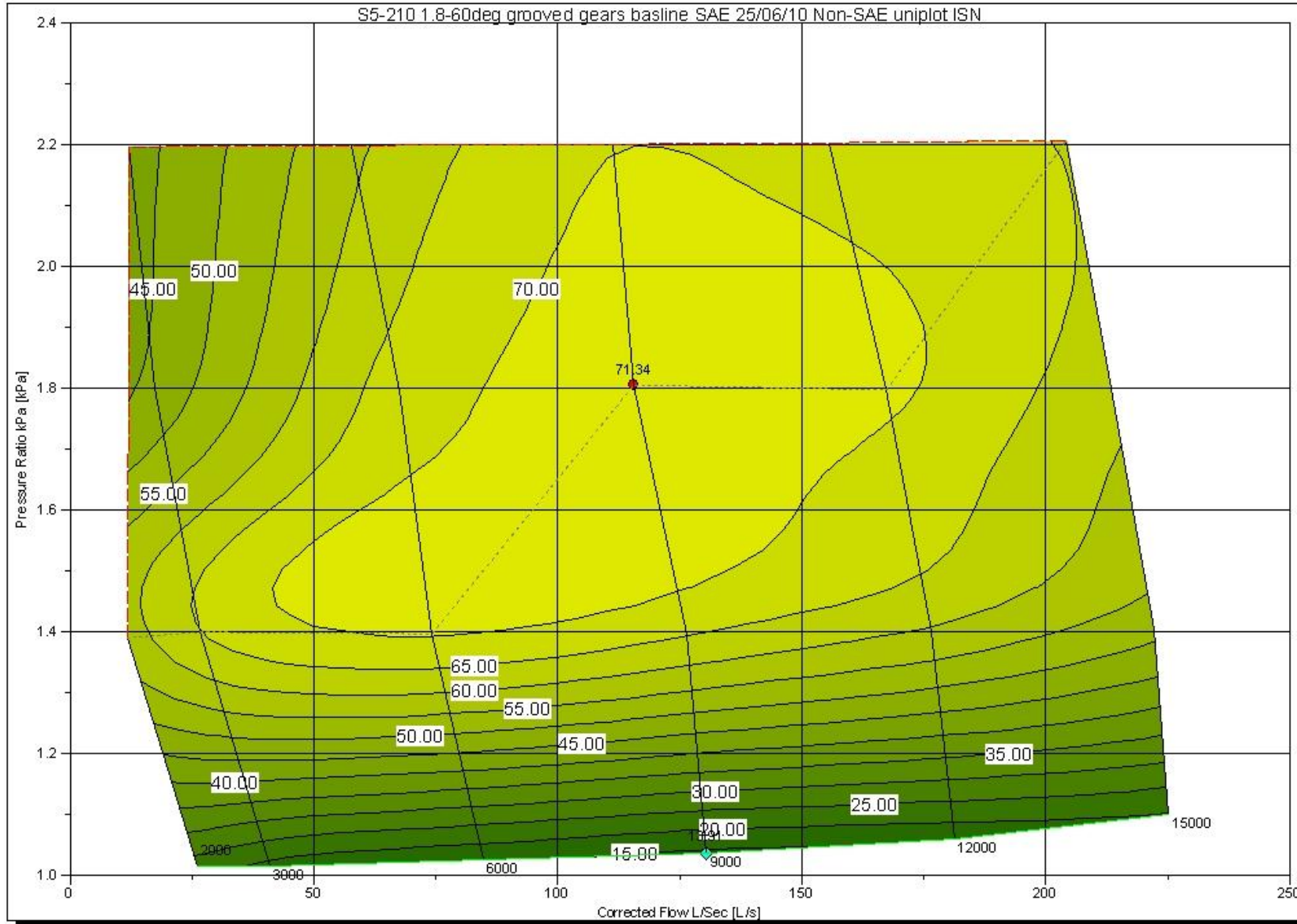
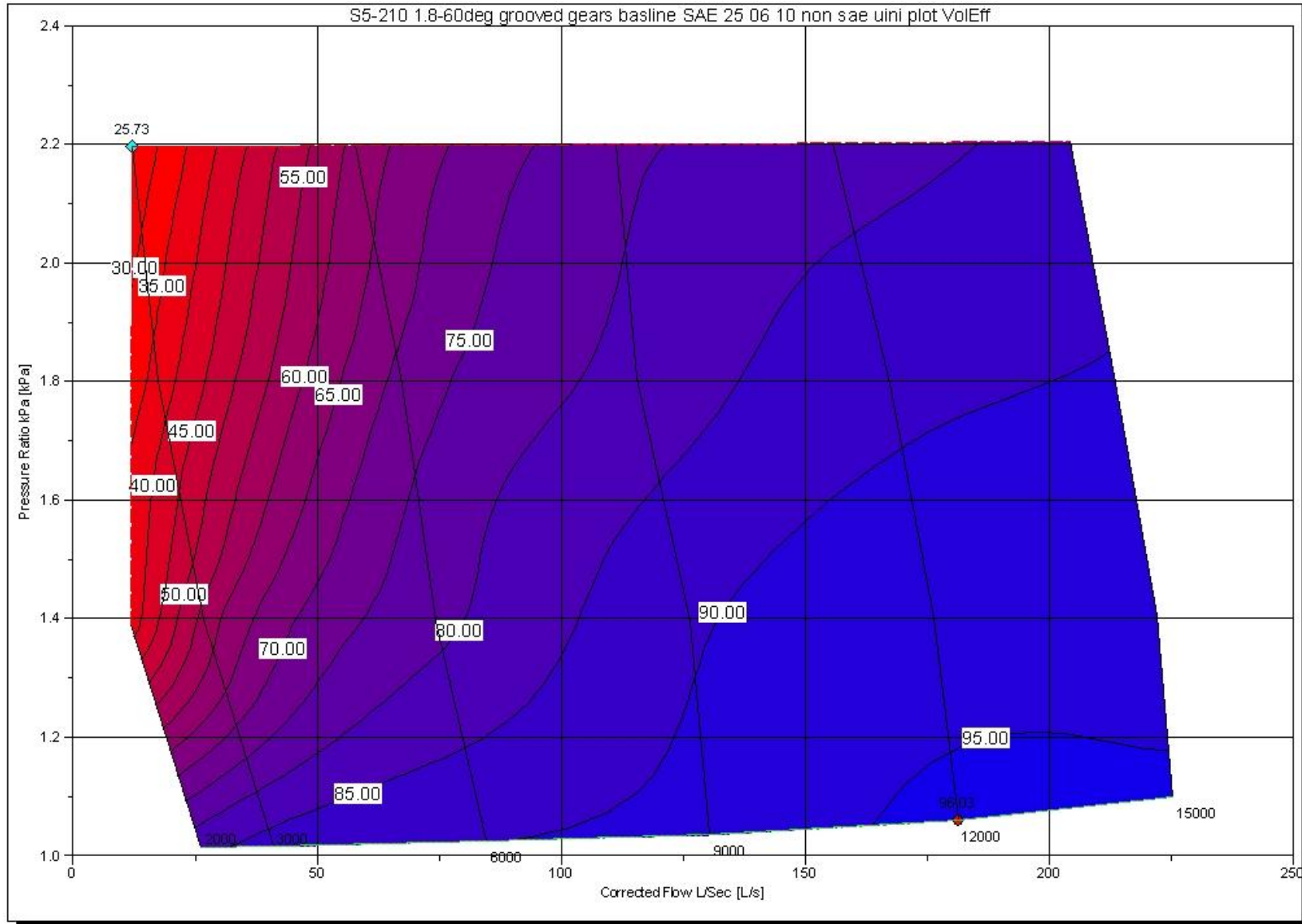


Figure 5 More views of the Supercharger S5– 210

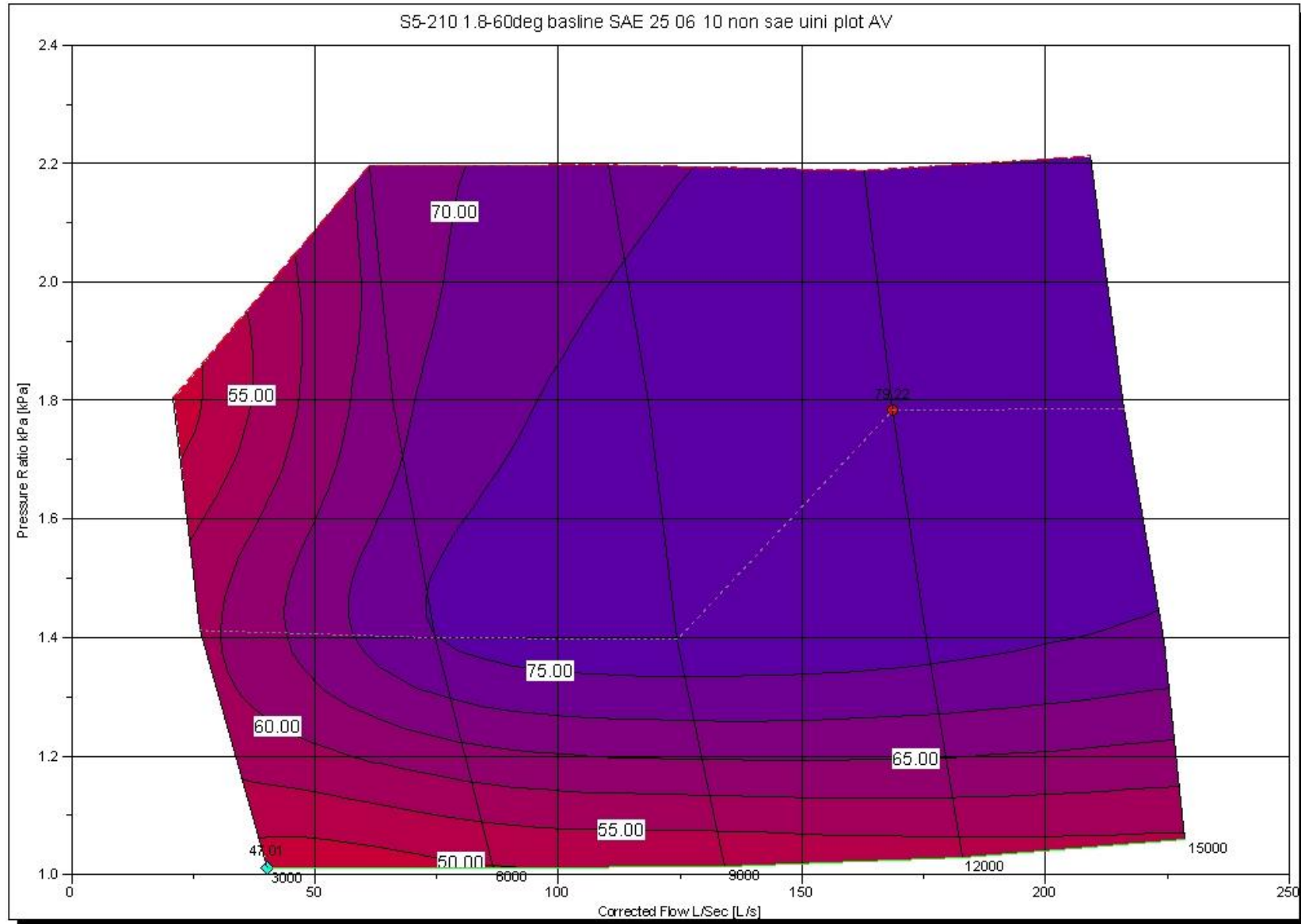
**S5 - 210**  
**Isentropic efficiency versus supercharger speed at various pressure ratio**



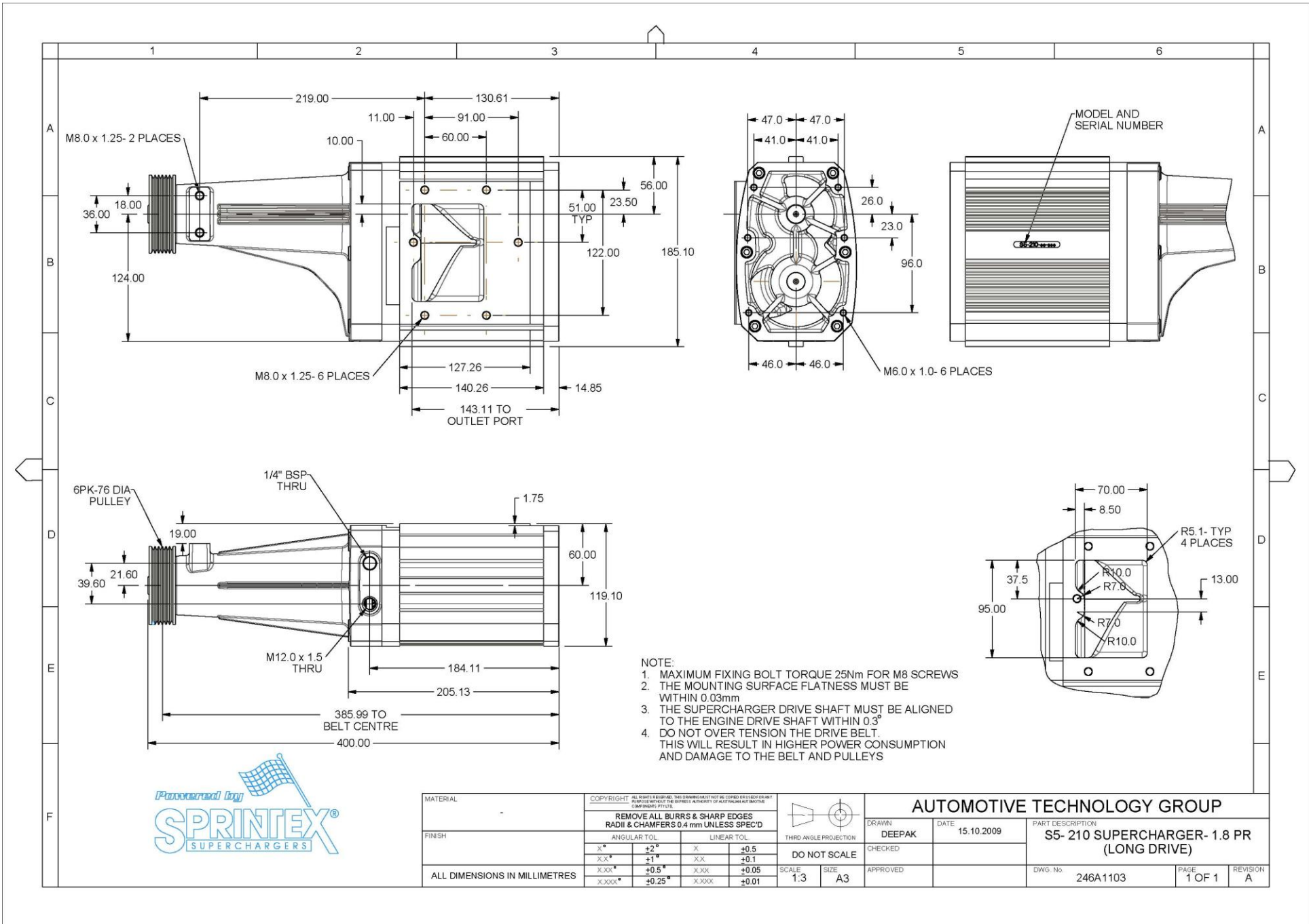
**S5 - 210**  
**Volumetric efficiency versus supercharger speed at various pressure ratio**



**S5 - 210**  
**Average supercharger efficiency at various speed and pressure ratio**



# Supercharger S5 – 210

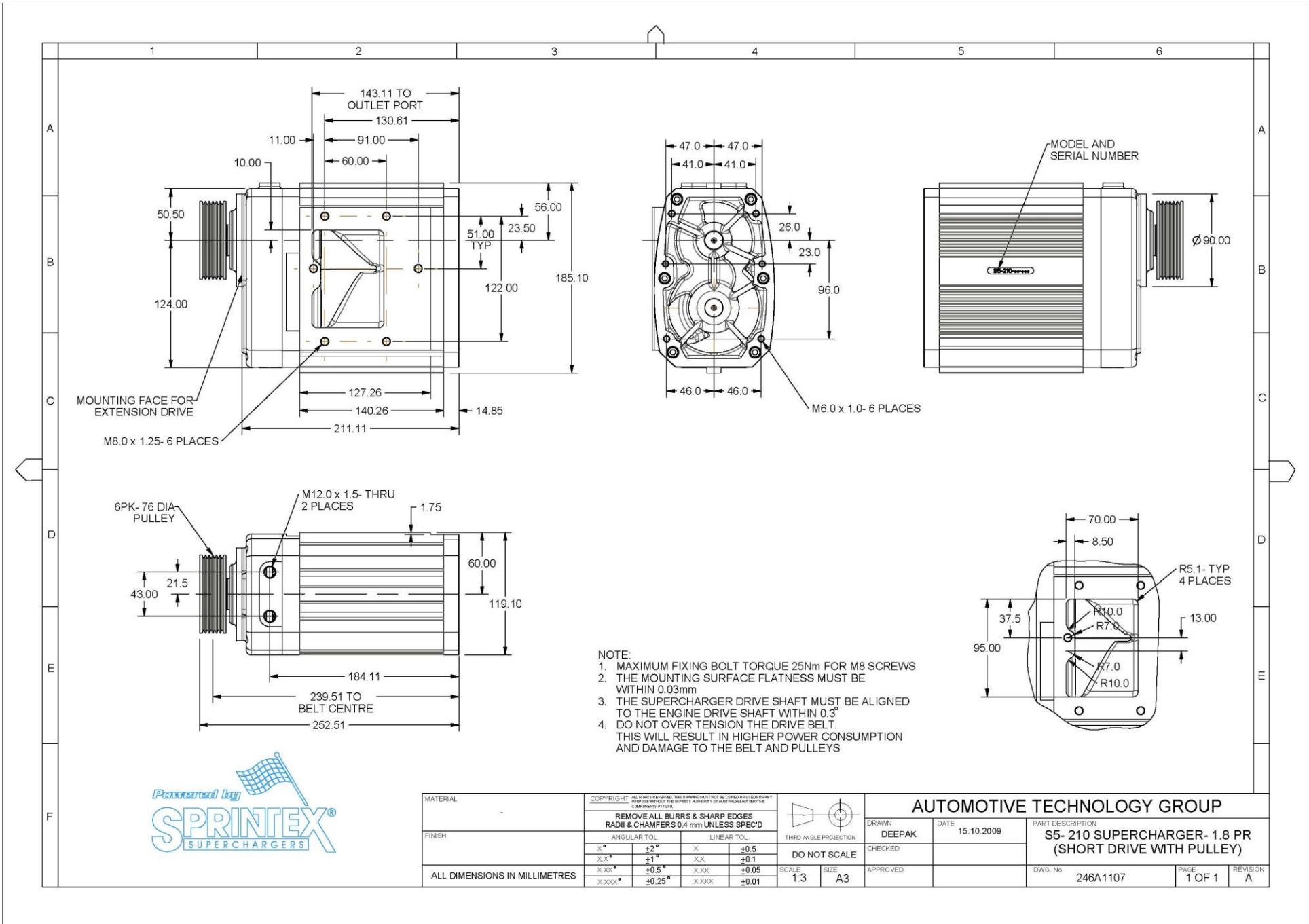


- NOTE:
1. MAXIMUM FIXING BOLT TORQUE 25Nm FOR M8 SCREWS
  2. THE MOUNTING SURFACE FLATNESS MUST BE WITHIN 0.03mm
  3. THE SUPERCHARGER DRIVE SHAFT MUST BE ALIGNED TO THE ENGINE DRIVE SHAFT WITHIN 0.3°
  4. DO NOT OVER TENSION THE DRIVE BELT. THIS WILL RESULT IN HIGHER POWER CONSUMPTION AND DAMAGE TO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



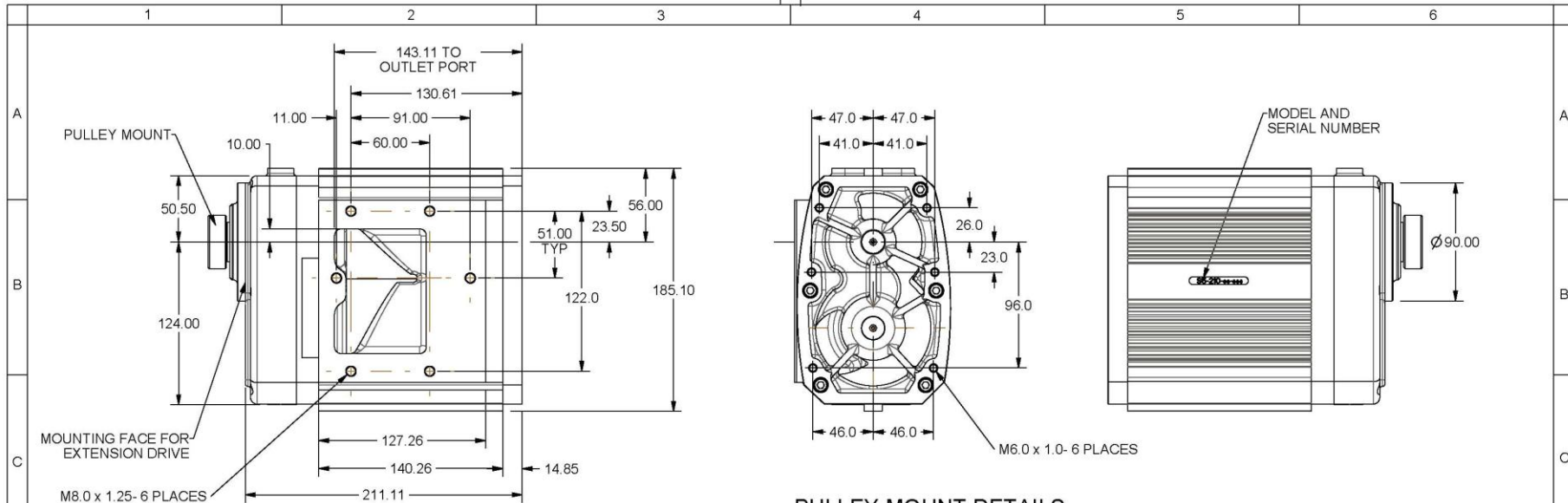
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FINISH	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D				THIRD ANGLE PROJECTION	DRAWN DEEPAK
	ANGULAR TOL		LINEAR TOL		DO NOT SCALE	DATE 15.10.2009
	x°	+2°	x	+0.5	CHECKED	PART DESCRIPTION
	xx°	+1°	xx	+0.1	APPROVED	S5- 210 SUPERCHARGER-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

# Supercharger S5 – 210

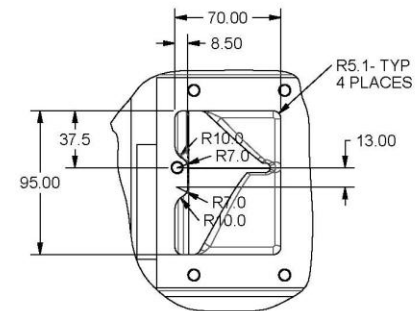
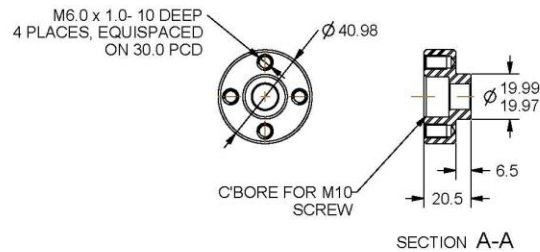
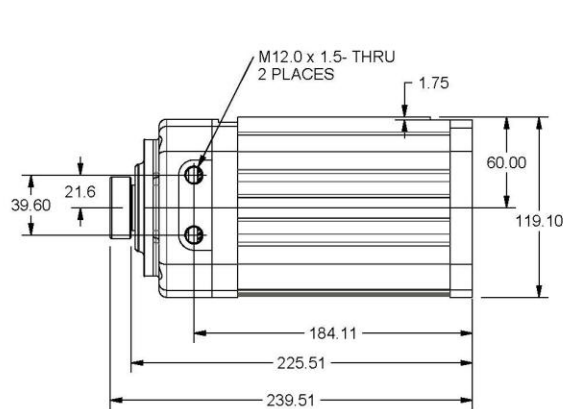


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FINISH	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D				THIRD ANGLE PROJECTION 	DRAWN	DEEPAK
	ANGULAR TOL		LINEAR TOL			DATE	15.10.2009
	X*	+2*	X	+0.5		PART DESCRIPTION	
	XX*	+1*	XX	+0.1		S5- 210 SUPERCHARGER- 1.8 PR (SHORT DRIVE WITH PULLEY)	
ALL DIMENSIONS IN MILLIMETRES				SCALE	1:3	APPROVED	
				SIZE	A3	DWG. No.	246A1107
						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
	ANGULAR TOL	LINEAR TOL	DO NOT SCALE	DATE 20.04.2009
	X°	+2°	X	+0.5
	XX°	+1°	XX	+0.1
	XXX°	+0.5°	XXX	+0.05
	XXXX°	+0.25°	XXXX	+0.01
ALL DIMENSIONS IN MILLIMETRES	SCALE 1:3	SIZE A3	CHECKED	PART DESCRIPTION S5- 210 SUPERCHARGER- 1.8PR (SHORT DRIVE)
	APPROVED		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**

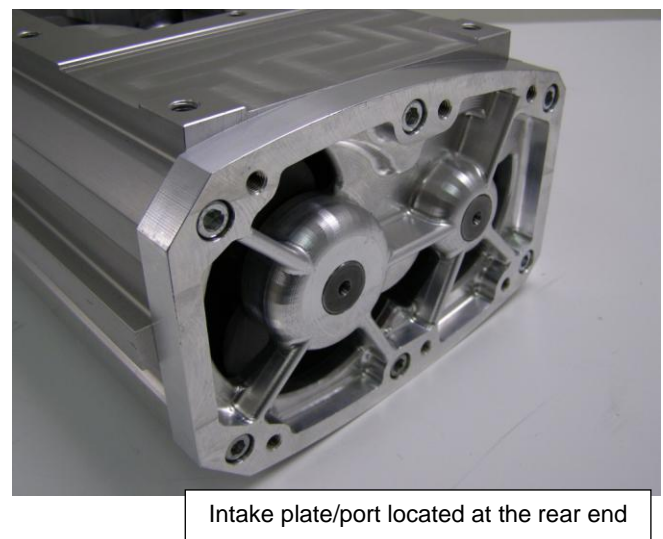
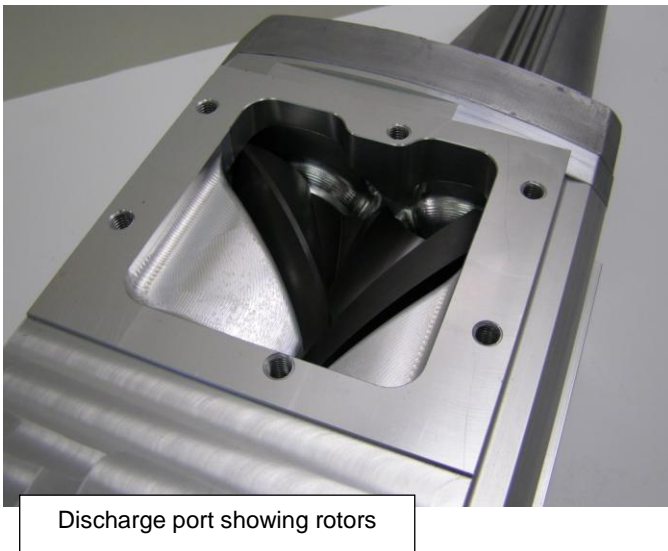
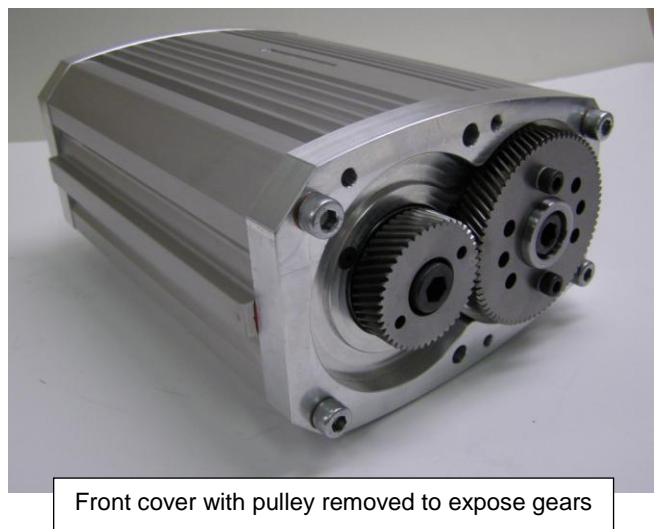
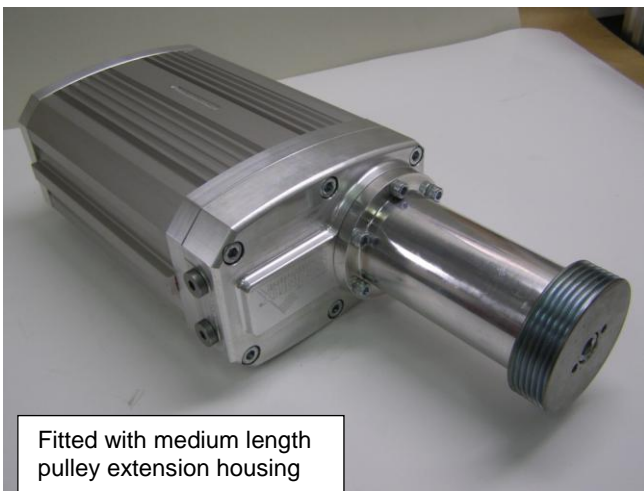
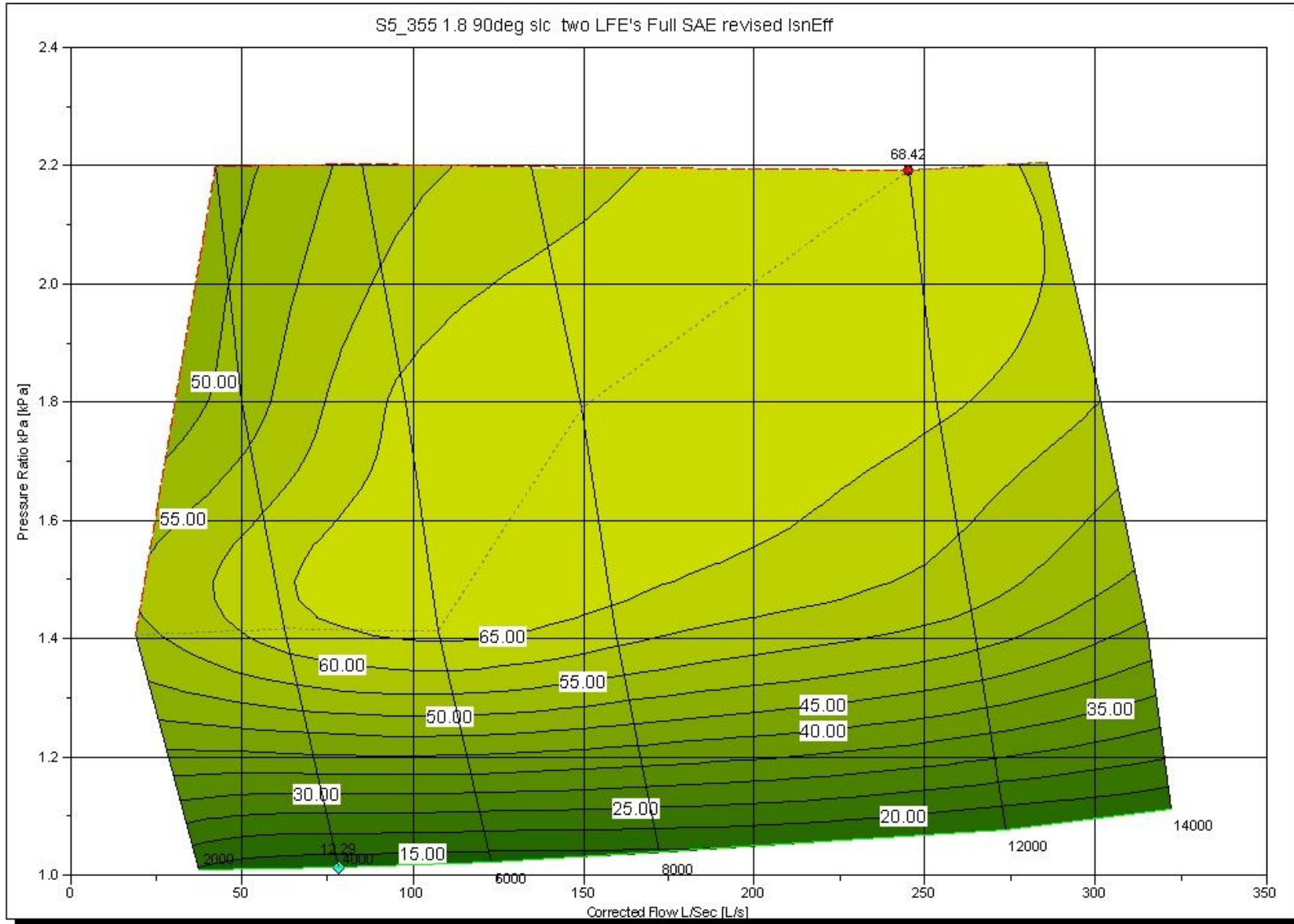
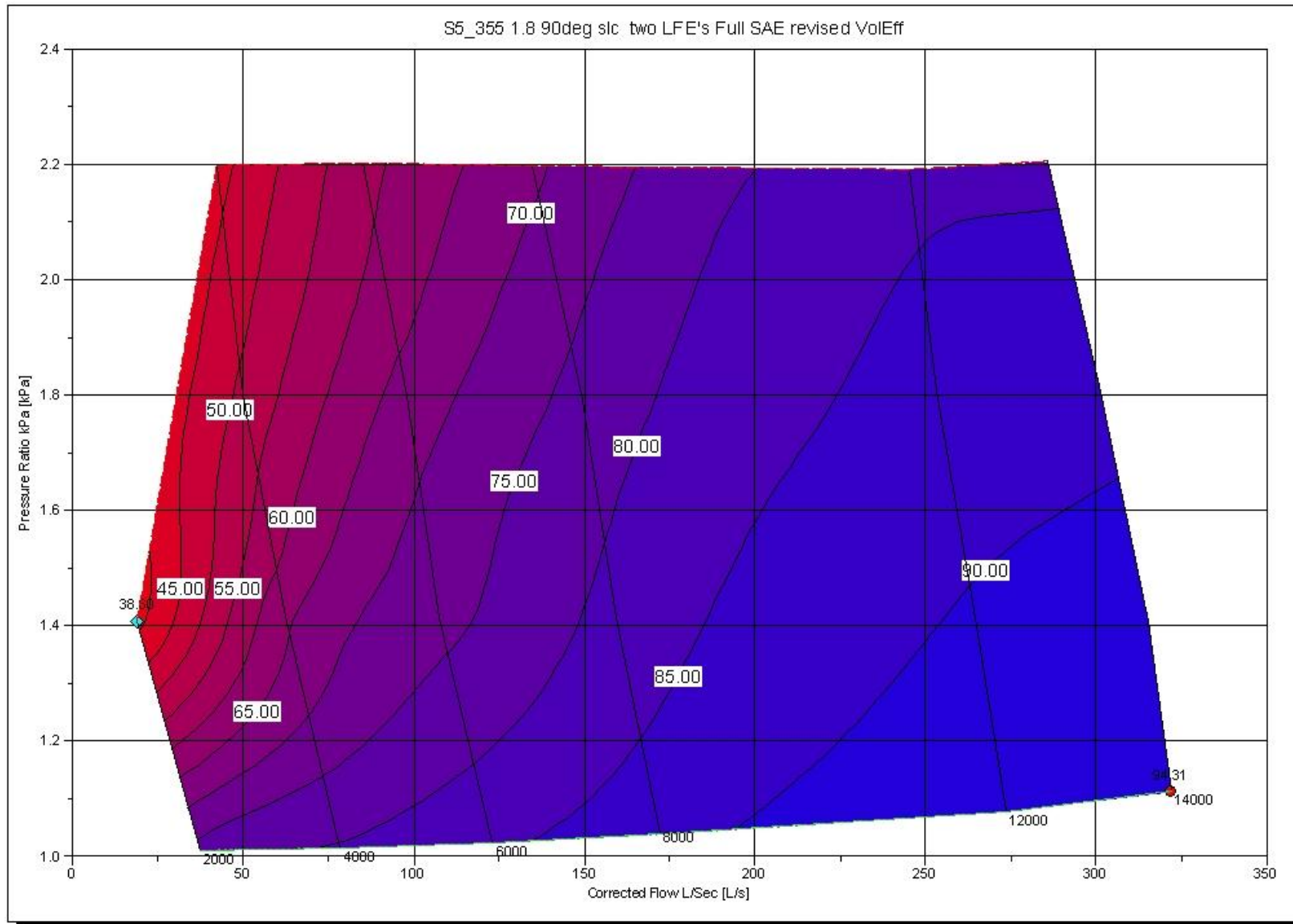


Figure 7 More views of the Supercharger S5 – 335

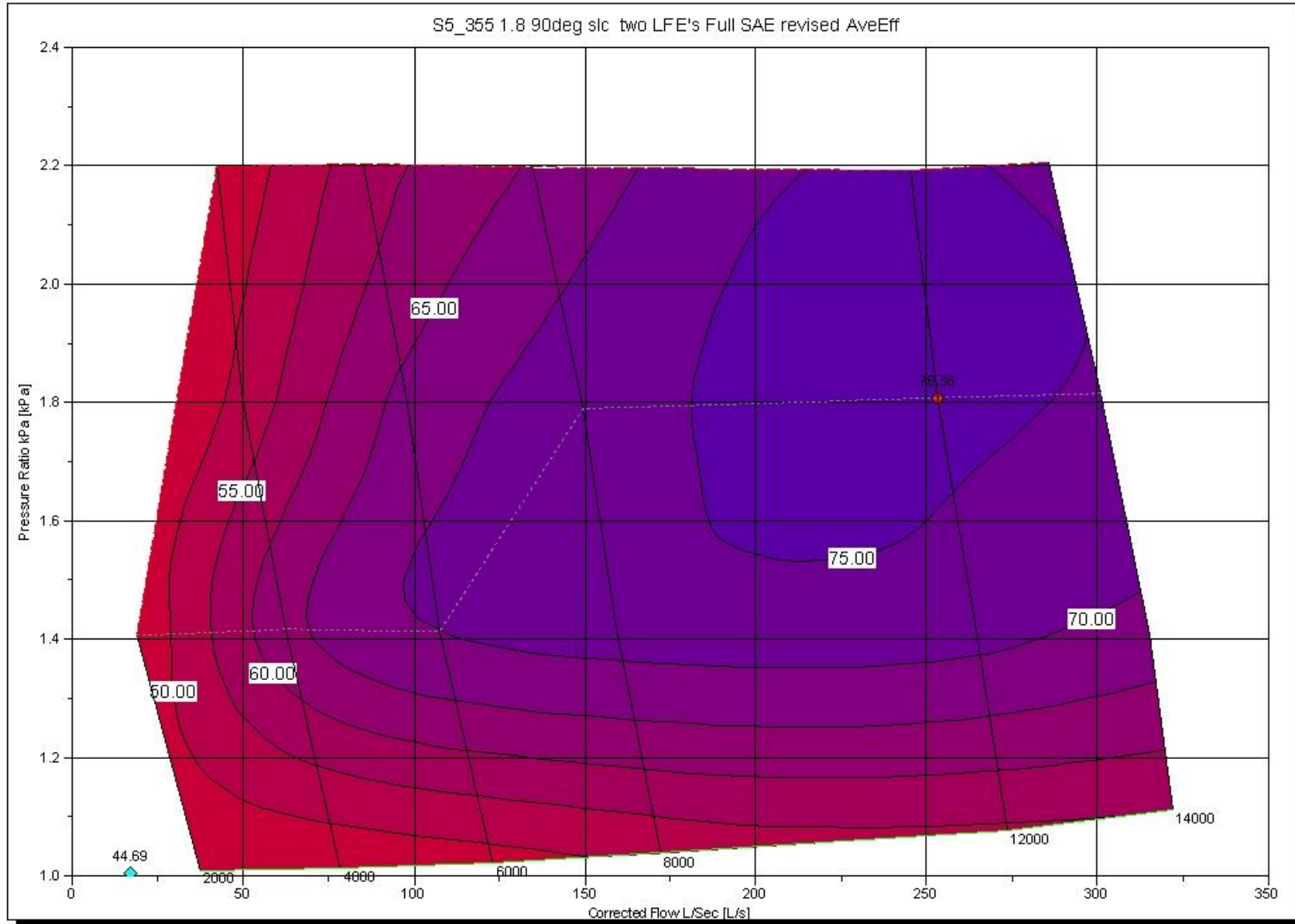
### S5 - 335 Isentropic efficiency versus supercharger speed at various pressure ratio



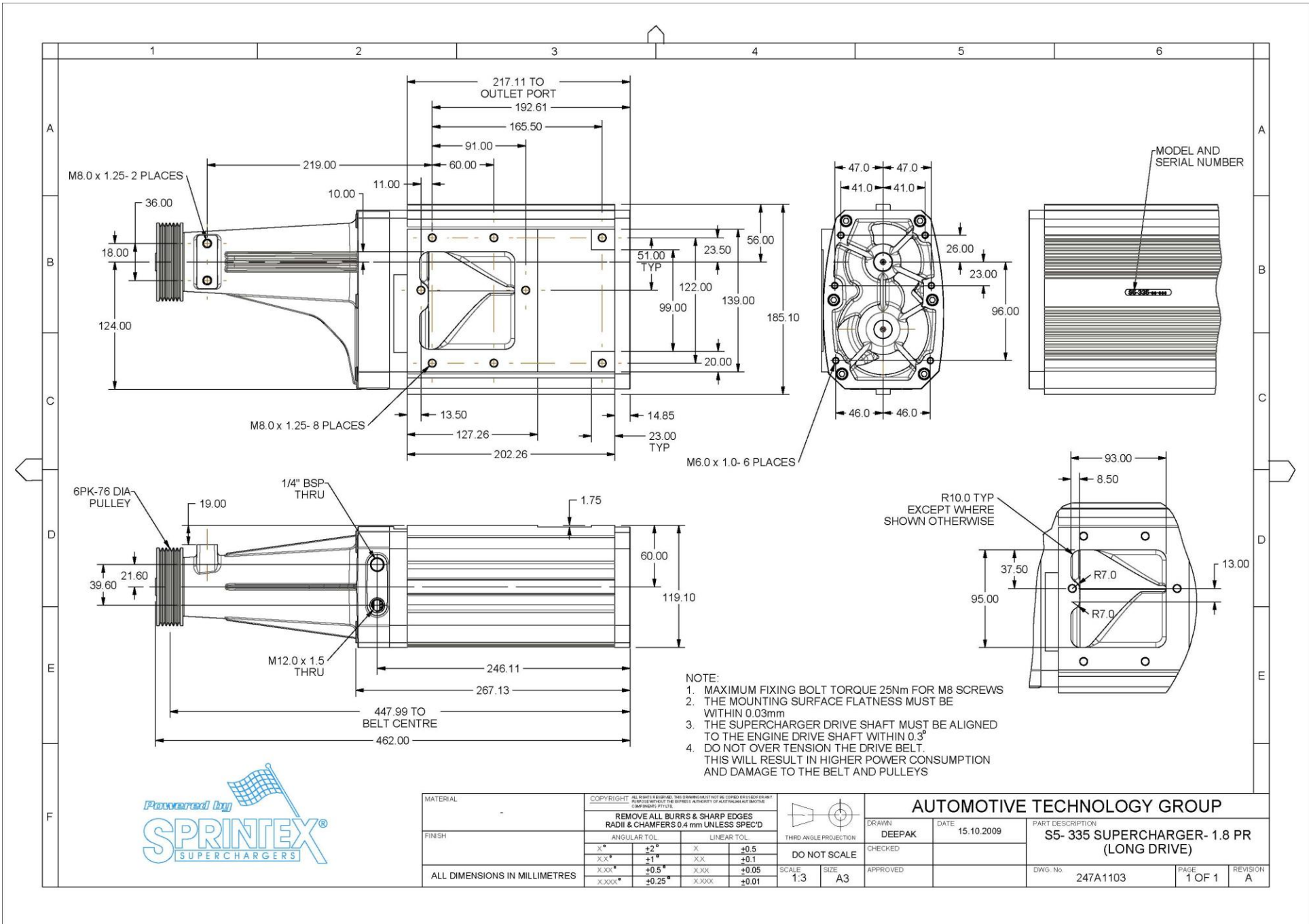
### S5 - 335 Volumetric efficiency versus supercharger speed at various pressure ratio



**S5 - 335**  
**Average supercharger efficiency at various speed and pressure ratio**



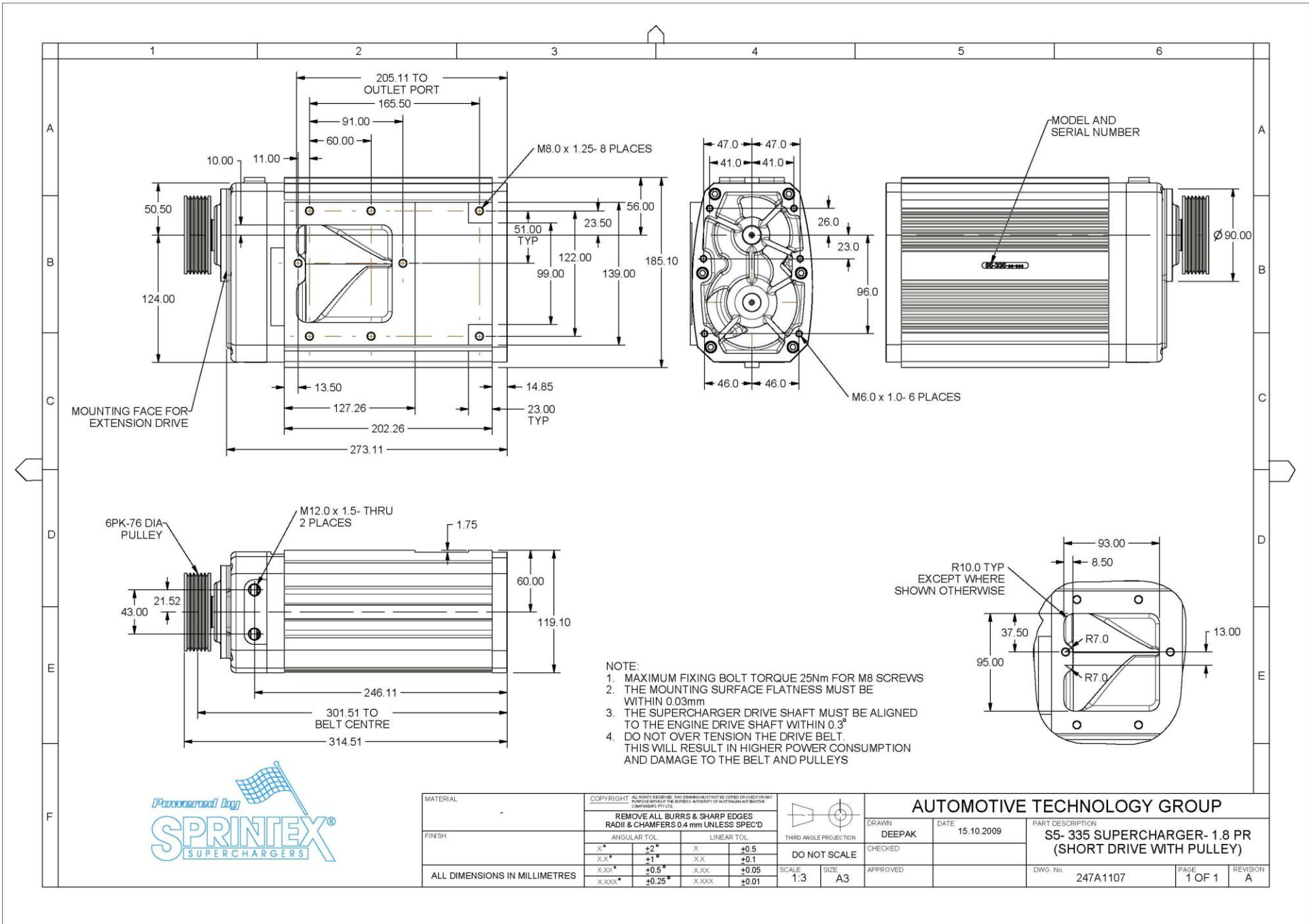
# Supercharger S5 – 335



- 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

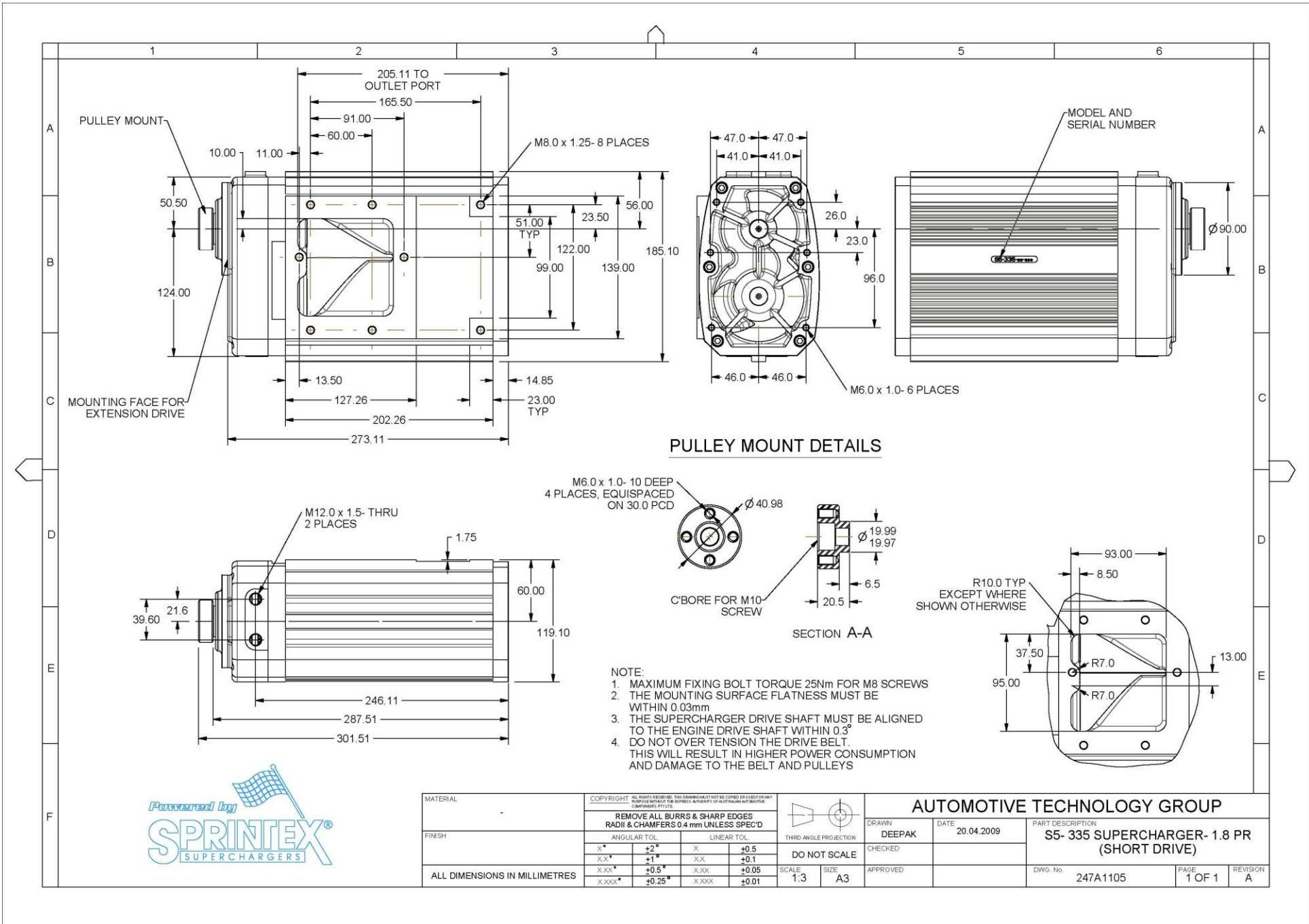


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FINISH	REMOVE ALL BURRS & SHARP EDGES RADII & CHAMFERS 0.4 mm UNLESS SPEC'D				THIRD ANGLE PROJECTION	DRAWN DEEPAK
	ANGULAR TOL		LINEAR TOL		DO NOT SCALE	DATE 15.10.2009
	x°	+2°	x	+0.5	CHECKED	PART DESCRIPTION
	xx°	+1°	xx	+0.1	APPROVED	S5- 335 SUPERCHARGER-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



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





- 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
	ANGULAR TOL	LINEAR TOL			DATE 20.04.2009	PART DESCRIPTION
	X°	+2°	X	+0.5	CHECKED	S5- 335 SUPERCHARGER- 1.8 PR
	XXX°	+1°	XXX	+0.1	APPROVED	(SHORT DRIVE)
	XXXX°	+0.5°	XXXX	+0.05	SCALE 1:3	DWG. No. 247A1105
ALL DIMENSIONS IN MILLIMETRES	XXXX°	+0.25°	XXXXX	+0.01	SIZE A3	PAGE 1 OF 1
						REVISION A

