

# Tech Guide

## Ford Godzilla 7.3 Supercharger

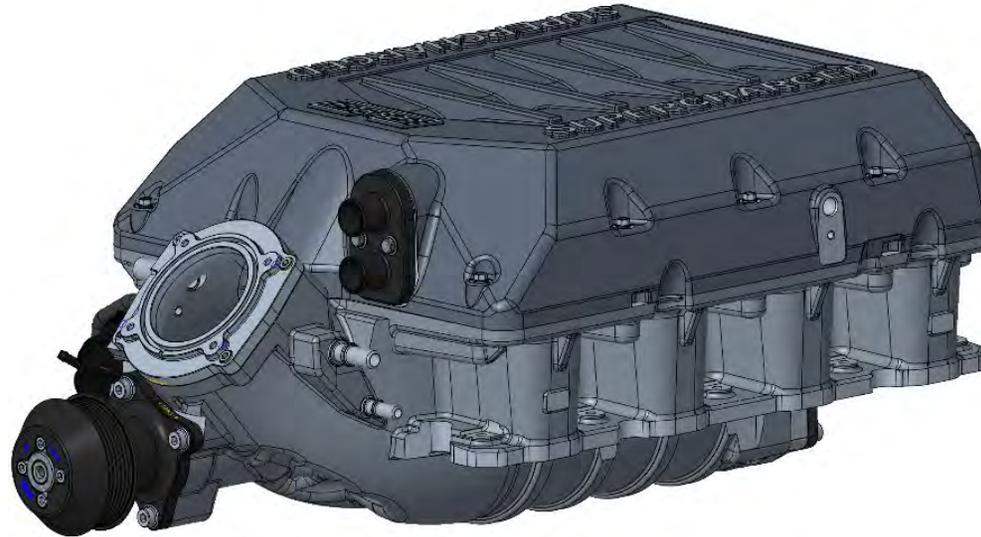


18/07/2022

Harrop Engineering develops and manufactures premium supercharger kits in Melbourne, Australia. Through 60 years of automotive performance Engineering, Harrop Engineering have successfully manufactured and supplied Superchargers to Automotive OEM programmes including TRD, Lotus Cars and Ford Australia. Harrop Engineering is certified to meet ISO 9001 standards of quality. OEM Quality, performance and vehicle integration are the foundation of Harrop Supercharger kits.



E N G I N E E R I N G   P E R F O R M A N C E   S I N C E   1 9 5 5



### Key Features:

- Engine kit P/N - 99-AMFD15068
- TVS2650
- Inverted Large plenum design
- Single intercooler brick
- OEM throttle body adaptor (115mm with adaptor removed)
- Bosch TMAP 0281002514 2.5Bar
- 25mm water in / out intercooler lines
- 6PK supercharger drive from OEM belt path
- Retains OEM fuel rail / injector style (long body Bosch)

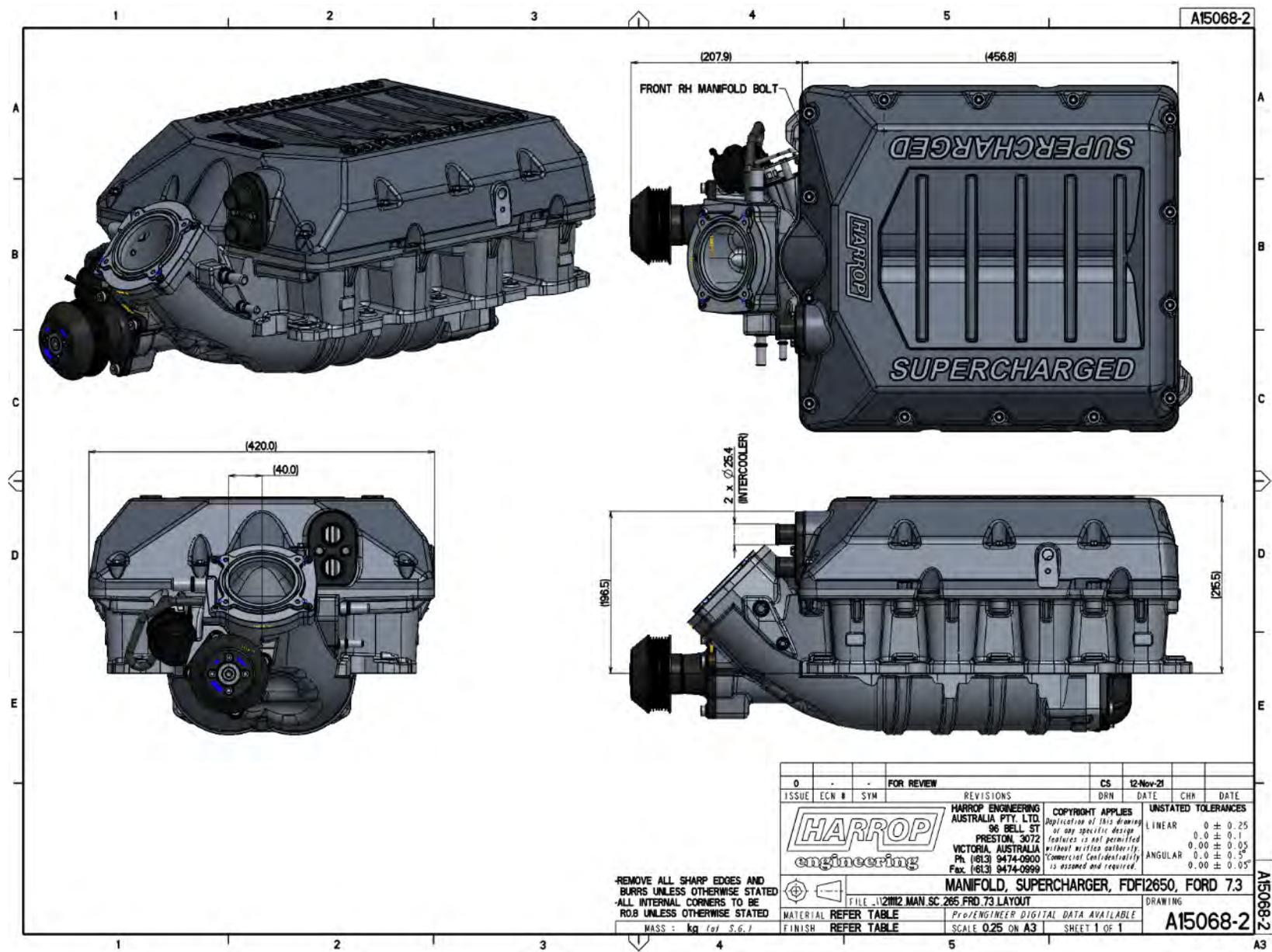
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A15068-2 18/07/2022



ISSUE	ECN #	SYM	FOR REVIEW	REVISIONS	CS	12-Nov-21	DRN	DATE	CHN	DATE
			<b>HARROP ENGINEERING AUSTRALIA PTY LTD</b> 96 BELL ST PRESTON, 3072 VICTORIA, AUSTRALIA Ph: (613) 9474-0900 Fax: (613) 9474-0999		<b>COPYRIGHT APPLIES</b> <i>Replication of this drawing or any specific design features is not permitted without written authority. Commercial Confidentiality is assumed and required.</i>		<b>UNSTATED TOLERANCES</b> LINEAR 0 ± 0.25 0.00 ± 0.1 0.00 ± 0.05 ANGULAR 0.0 ± 0.5° 0.00 ± 0.05°			
REMOVE ALL SHARP EDGES AND BURRS UNLESS OTHERWISE STATED ALL INTERNAL CORNERS TO BE R0.8 UNLESS OTHERWISE STATED MASS : kg (ref S.G.)										
			<b>HARROP engineering</b>		<b>MANIFOLD, SUPERCHARGER, FDF12650, FORD 7.3</b>		<b>A15068-2</b>			
			FILE: V210112.MAN.SC.265.FRD.73.LAYOUT		MATERIAL REFER TABLE		FINISH REFER TABLE		SCALE 0.25 ON A3 SHEET 1 OF 1	

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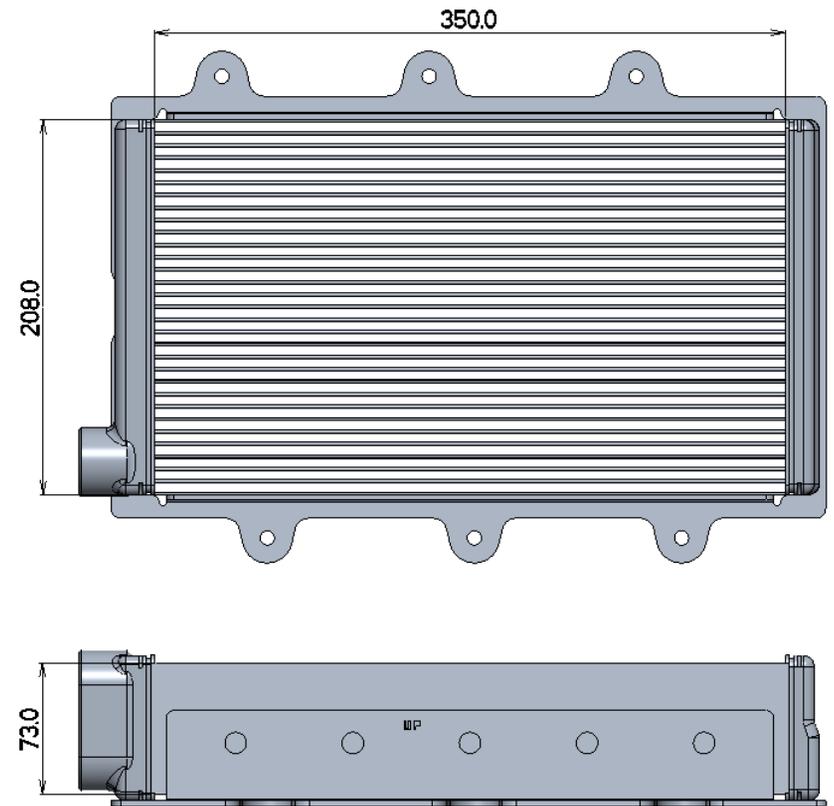
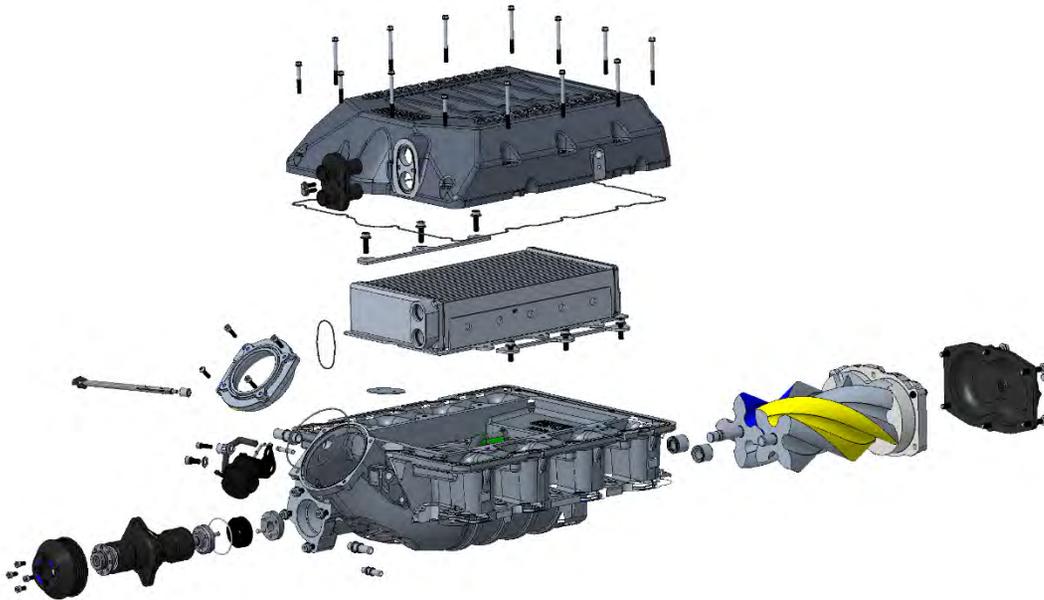
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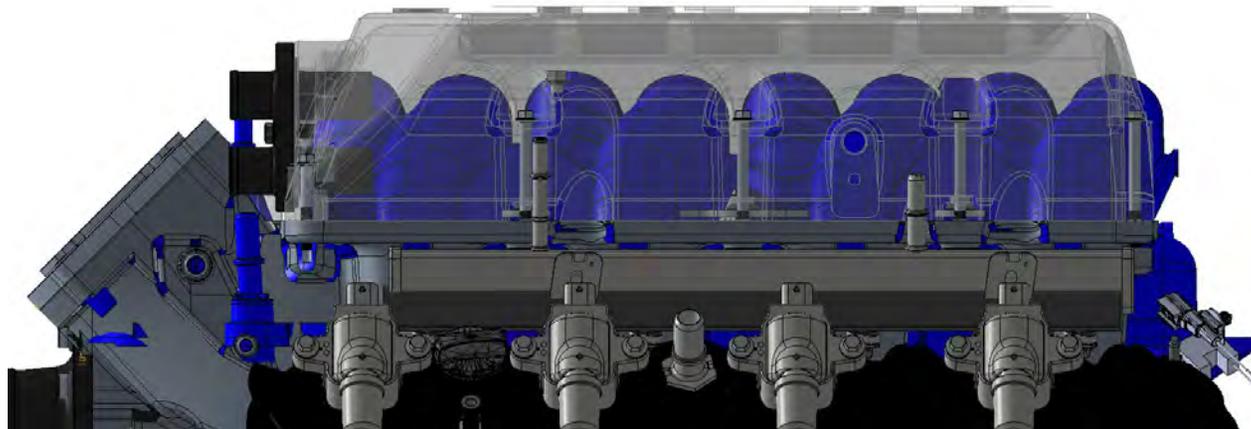
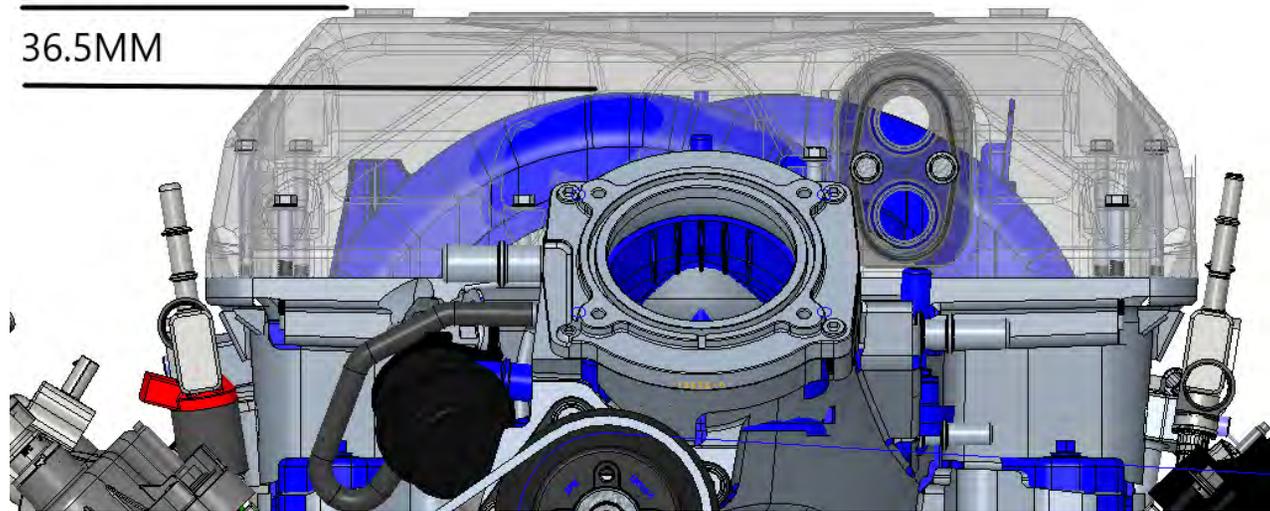
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### Intercooler layout/dimensions:



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### Supercharger manifold assembly vs OEM 7.3 Godzilla manifold:



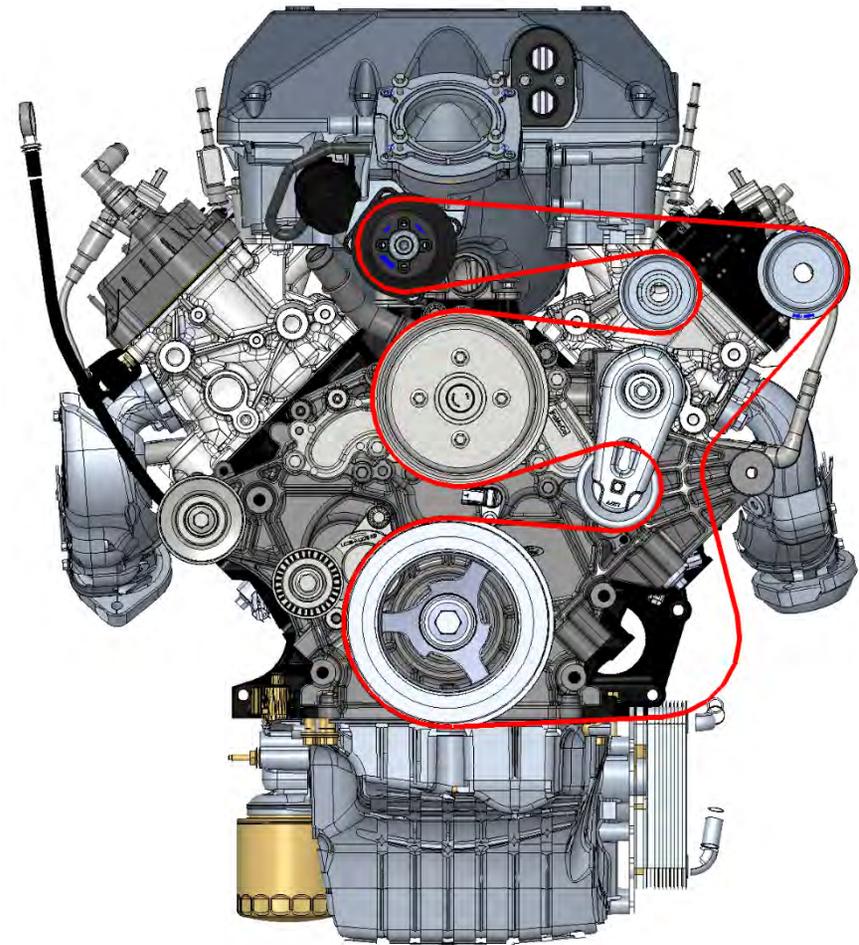
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### **6PK belt path**

- Shown with single alternator in F250 location including P/S pump

### **6PK Pulleys / belt length (No P/S pump)**

- 65mm - 99-PLY13099 - 6PK2555
- 70mm - 99-PLY11625 - 6PK2555
- 75mm - 99-PLY11624 - 6PK2555
- 80mm - 99-PLY11623 - 6PK2567
- 85mm - 99-PLY11622 - 6PK2580
- 90mm - 99-PLY12655 - 6PK2590



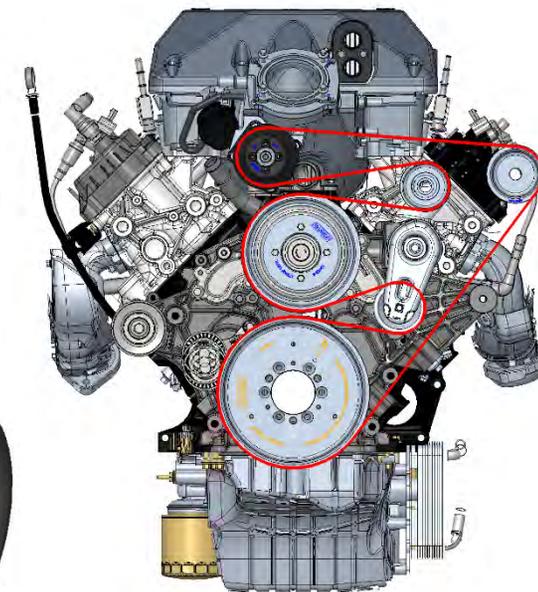
### 12PK belt path

- Shown with single alternator in F250 location
- 12PK 220mm crank pulley installed on ATI balancer (ATI918073) Harrop complete ATI balancer assembly part number including the pulley **99-APLY15811**
- Requires base 12PK FEAD drive kit that includes alternator and water pump pulleys, Harrop part number **99-AKIT15814**
- Retains rear 6PK A/C drive
- Belt - Gates HD K121049HD (12PK2666)
- Supercharger pulleys 65mm-80mm to be selected from table in combination with tensioner and idler pulleys from chart below.
- Speeds shown below assume **7000** engine RPM
- Recommend a crankshaft keyway is added for ATI balancer / 12PK
- 12PK Pulley only, PN 99-PLY15482

**99-AKIT15814**



**99-APLY15811**

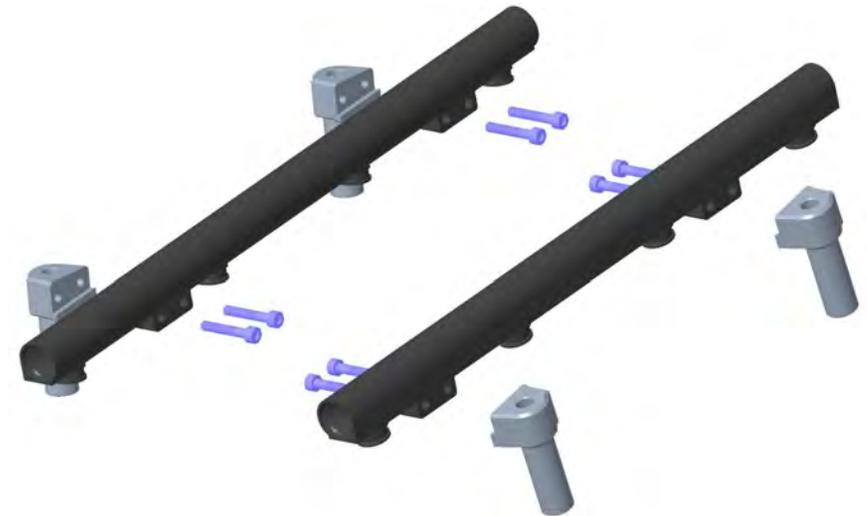
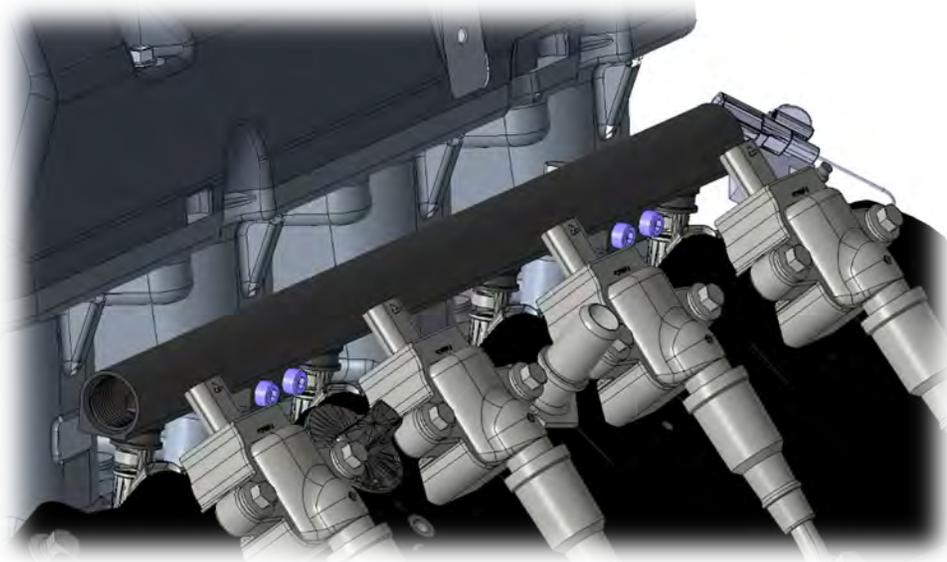


Crank Pulley (mm)	S/C Pulley (mm)	S/C Pulley Part #	Tensioner Pulley (mm)	Tensioner Pulley Part #	Idler Pulley (mm)	Idler Pulley Part #	Belt	Ratio	S/C Speed	S/C Speed Gain
ø 220	ø 65	99-PLY15491	ø 75	99-APLY15332	ø 75	99-APLY15332	65-12PK2666	3.385	23692	1692
ø 220	ø 70	99-PLY15492	ø 75	99-APLY15332	ø 75	99-APLY15487	65-12PK2666	3.143	22000	1467
ø 220	ø 75	99-PLY15493	ø 70	99-APLY15487	ø 70	99-APLY15487	65-12PK2666	2.933	20533	1283
ø 220	ø 80	99-PLY15494	ø 70	99-APLY15487	ø 70	99-APLY15487	65-12PK2666	2.750	19250	0

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### *Fuel rail – optional*

- PN **99-ARAL15519** (comes as a kit, components as per RH image)
- Extruded fuel rail including billet mounts
- -8 both ends
- For use with long body Bosch injectors



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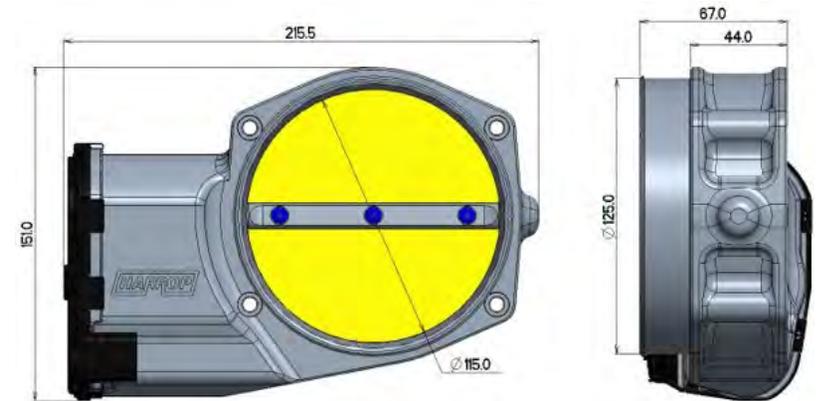
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## Ford Godzilla 7.3 Supercharger



### Throttle body options

- 115 Throttle body, direct bolt on to Supercharger inlet
- Compact design (67mm thick) to allow for hood clearance
- Analogue throttle body option (**99-AHSG15694**) or Digital throttle body option (**99-AHSG15584**).
- 45 Degree 115mm billet optional adaptor (**99-ADP15833**)



115mm Throttle body option, no adaptor



115mm throttle body and optional 45 degree adaptor



Optional 115mm 45 degree adaptor  
Part No. **99-ADP15833**



Optional standard T/B 45 degree adaptor  
Part No. **99-ADP15842**

When ordering Supercharger assembly combined with the 115mm throttle body option, select from the following PN's:

**99-AHSG15694** -OPTION for Analogue

**99-AHSG15584** -OPTION for Digital

Note: **45Degree adaptors must be ordered separately**

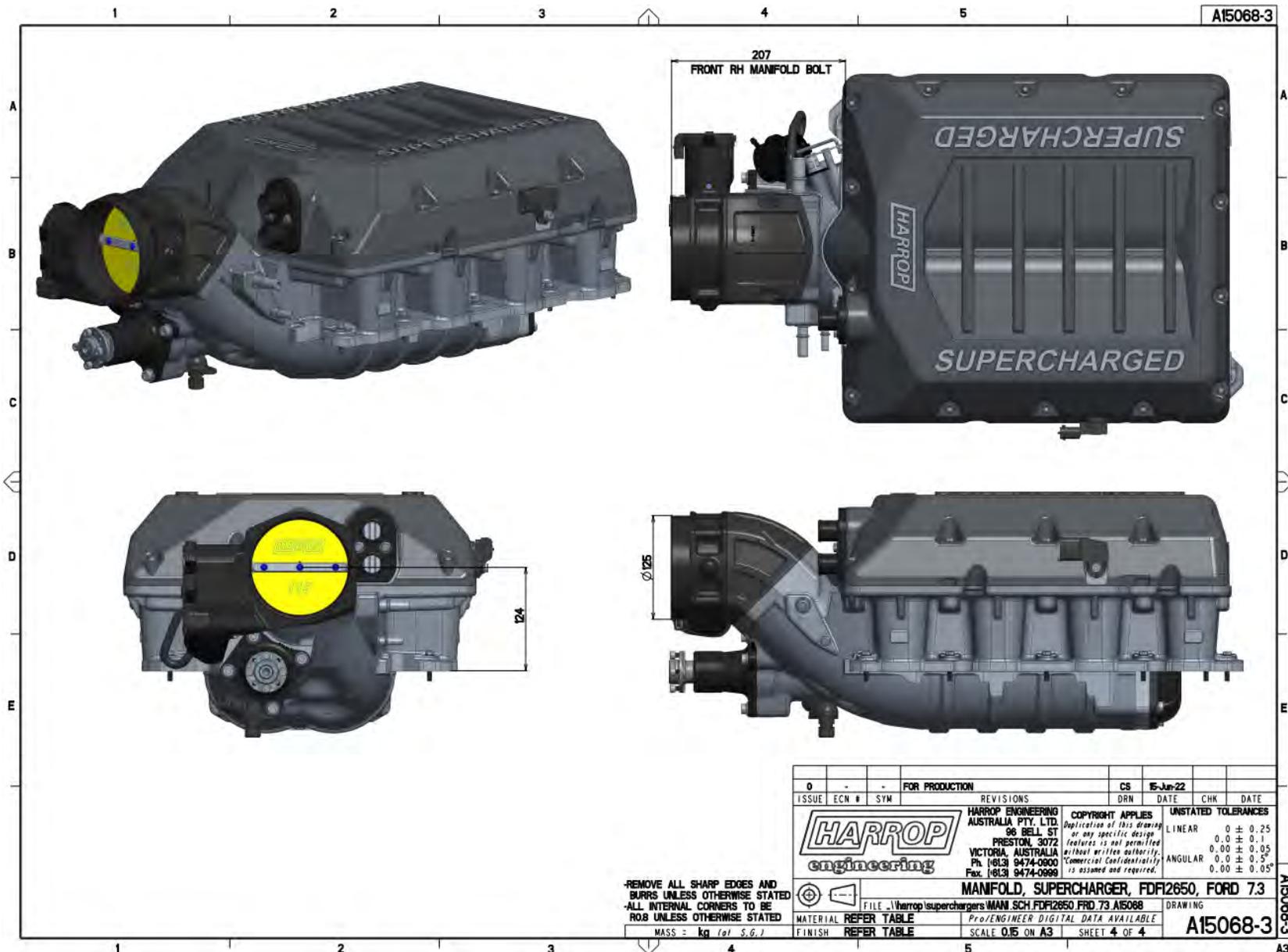
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0	-	-	FOR PRODUCTION	CS	15-Jun-22		
ISSUE	ECN #	SYM	REVISIONS	DRN	DATE	CHK	DATE
			<b>HARROP ENGINEERING</b> AUSTRALIA PTY. LTD. 96 BELL ST PRESTON, 3072 VICTORIA, AUSTRALIA Ph: (613) 9474-0500 Fax: (613) 9474-0599	<b>COPYRIGHT APPLIES</b> Duplication of this drawing or any specific design features is not permitted without written authority. Commercial Confidentiality is assumed and required.		<b>UNSTATED TOLERANCES</b> LINEAR 0 ± 0.25 0.0 ± 0.1 0.00 ± 0.05 ANGULAR 0.0 ± 0.5° 0.00 ± 0.05°	
			<b>MANIFOLD, SUPERCHARGER, FDF12650, FORD 7.3</b>		DRAWING		
			FILE: \\harrop\superchargers\MAN_SCH_FDF12650_FRD_73_A15068		MATERIAL REFER TABLE Pro/ENGINEER DIGITAL DATA AVAILABLE		
			FINISH REFER TABLE		SCALE 0.15 ON A3 SHEET 4 OF 4		

REMOVE ALL SHARP EDGES AND  
BURRS UNLESS OTHERWISE STATED  
ALL INTERNAL CORNERS TO BE  
ROB UNLESS OTHERWISE STATED  
MASS = kg (at S.G.)

### **External oil pump – optional (99-AKIT15522)**

- Designed for use where OEM sump and oil pump can not be used
- Replaces A/C compressor
- To suit Peterson 04-1020 or 04-1024 pump (to be confirmed)
- Utilizes ATI Balancer (ATI918073) with hub modifications and the fitment of external oil pump drive pulley.

Oil Pump Drive (t) **35**

Oil Pump Driven (t) **56**

**Drive Ratio 0.625**



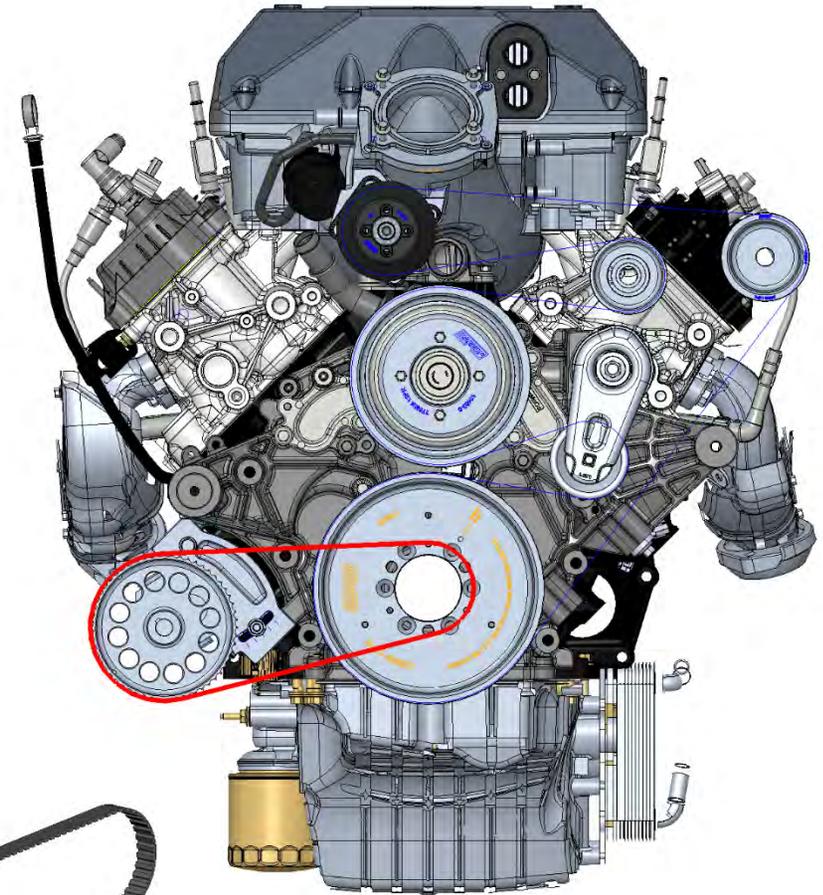
**99-APLY15761 (12PK)**



**99-APLY15861 (6PK)**



**99-AKIT15522**



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### Performance Table:

ENGINE	COMPONENTS	POWER CORRECTION	POWER HP	TORQUE ft lbs	BOOST	SC PULLEY DIAMETER	FUEL
Stock 7.3L Godzilla	87mm Ford GT350 Throttle Body	SAE 2004	495 hp	567 ft lbs	-	-	98 RON
Stock 7.3L Godzilla	Calibration - Fuel and Timing	SAE 2004	550 hp	581 ft lbs	-	-	98 RON
Stock 7.3L and Harrop TVS2650 Supercharger	Addition of larger TVS2650 Supercharger, 87mm Ford GT350 Throttle Body	SAE 2004	803 hp	789 ft lbs	12 PSI	85MM	98 RON
Stock 7.3L and Harrop TVS2650 Supercharger	Above combination running on E85 fuel	SAE 2004	944 hp	972 ft lbs	18 PSI	65MM	E85
Stock 7.3L and Harrop TVS2650 Supercharger	Above combination with the addition of 102mm Throttle Body	SAE 2004	1015 hp	988 ft lbs	20 PSI	65MM	E85
Dandy Engines built 7.3L Godzilla and Harrop TVS2650 Supercharger	Upgraded rods, pistons, camshaft. Harrop oil pump, Harrop 12pk Front Drive System and Harrop 115mm Throttle Body	SAE 2004	1190 hp	967 ft lbs	15 PSI	80MM	E85
Dandy Engines built 7.3L Godzilla and Harrop TVS2650 Supercharger	Upgraded rods, pistons, camshaft. Harrop oil pump, Harrop 12pk Front Drive System and Harrop 115mm Throttle Body	SAE 2004	1317 hp	1158 ft lbs	19 PSI	65MM	E85

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