

# Tech Guide

## LSA / H2650i SUPERCHARGER LID & INTERCOOLER RANGE

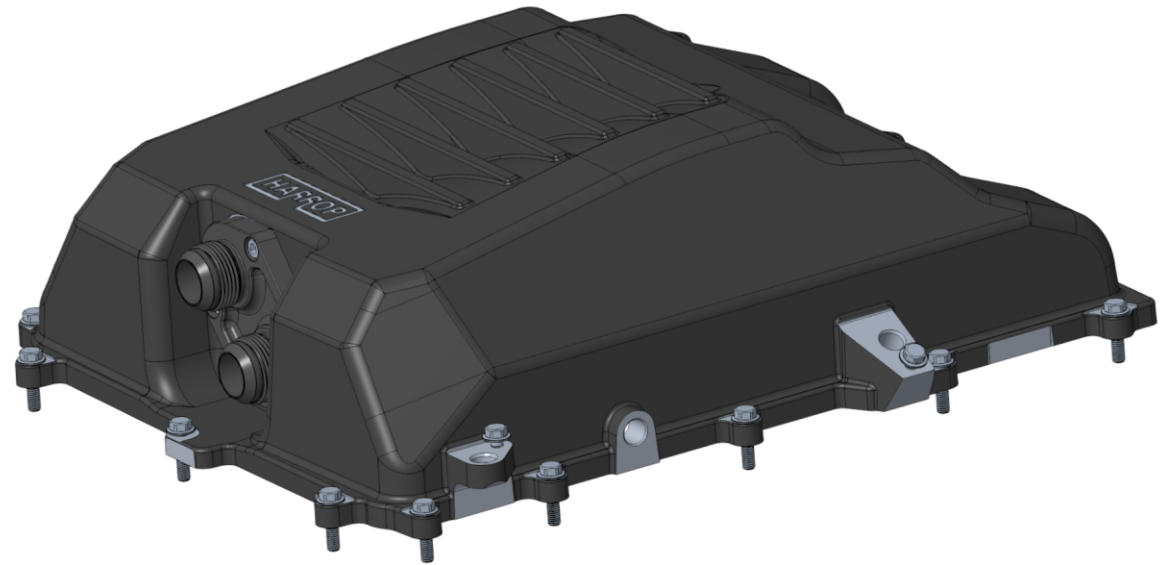


Harrop Engineering develops and manufactures premium supercharger kits for customers globally. Since 1955 Harrop have successfully designed and manufactured components for OEM's, Motorsport Teams, Car Builders and Enthusiasts. Harrop Engineering Australia and USA is certified to ISO 9001 standards with superior quality, performance and vehicle integration the foundation of Harrop Performance Products.



### Standard Features – Harrop LSA / H2650i Large Lid

- Fully designed and manufactured in Australia from cast aluminium by Harrop Engineering.
- Developed to suit GM VF Holden/HSV & Chevy SS platforms fitted with the new Harrop 2650i LSA Supercharger or factory LSA 1900 Supercharger. Factors such as hood, scuttle, firewall and engine variations on other vehicle platforms may restrict fitment of this lid and must be validated prior to installation. Refer dimensions (Page 6-7)
- Designed to provide larger plenum volume and better airflow distribution to the rear cylinders over the standard LSA lid
- Incorporates all factory mounting positions for IAT and MAP sensors
- Various intercooler water in/out configurations(AN16 shown)
- Includes the release of an upgraded intercooler core with the lid design supporting fitment of either upgraded or standard OEM LSA intercooler core
- The standard engine cover will fit with trimming



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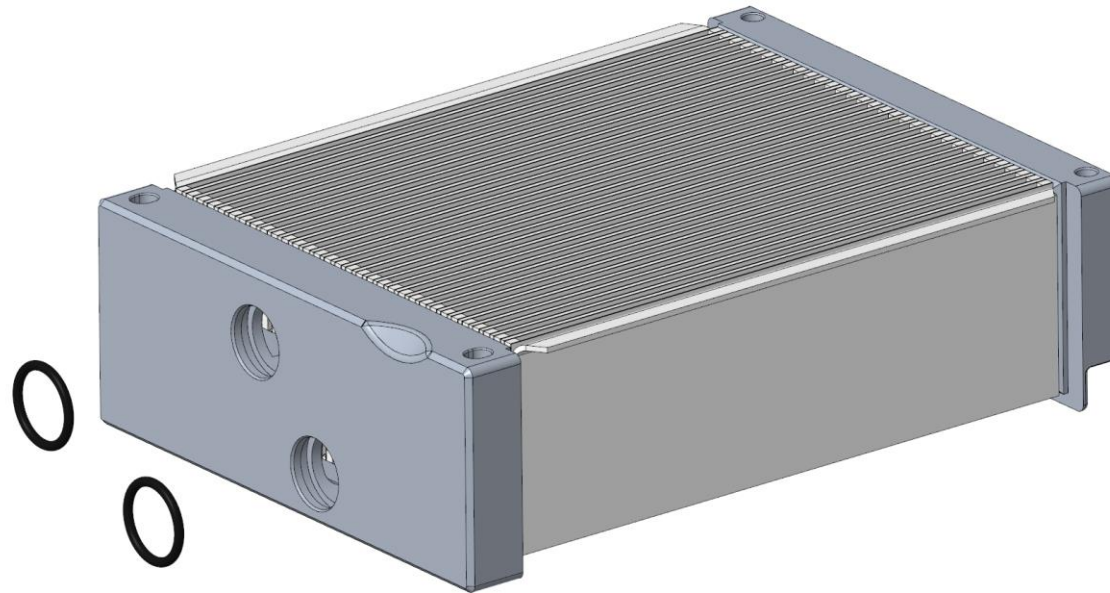


### Harrop - LSA Large Core (LSA / H2650i Large Lid)

#### Features

- P/N 99-ACOR17151
- More than twice the size of the OEM HSV & ZL1 intercooler core for improved cooling efficiency and thermal performance
- Billet tanks to withstand higher boost pressure
- Intercooler O-Ring – **Order separately**  
2 x P/N: 50-BS214-VITON

Intercooler	Length (mm/ inch)	Width (mm/ inch)	Thickness (mm/ inch)	Cubic (mm/ inch)	HSV / ZL1 LSA Extra core volume
LSA - HSV & ZL1	197 (7.76)	174 (6.85)	56 (2.22)	1919cc (118ci)	-
LSA - CTSV	197 (7.76)	174 (6.85)	69 (2.70)	2365cc (143ci)	1.2x (21%)
LSA - Harrop Large	284 (11.18)	208 (8.19)	73 (2.87)	4312cc (263ci)	2.2x (122%)



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### LSA OEM Intercooler

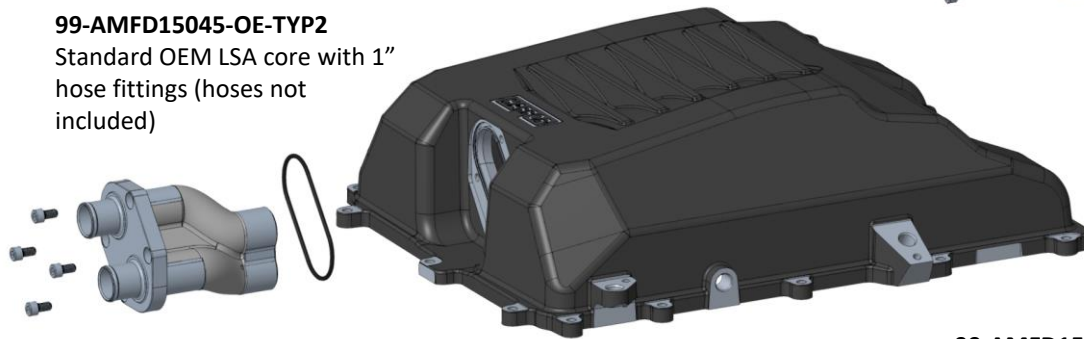
- Large lid – 99-AMFD15045
- LSA OEM Intercooler

### Harrop Lid Configurations

*(Not supplied with IAT sensor, MAP sensors, lid gasket GM part No. 12613457 and core seal GM part no. 12612467)*

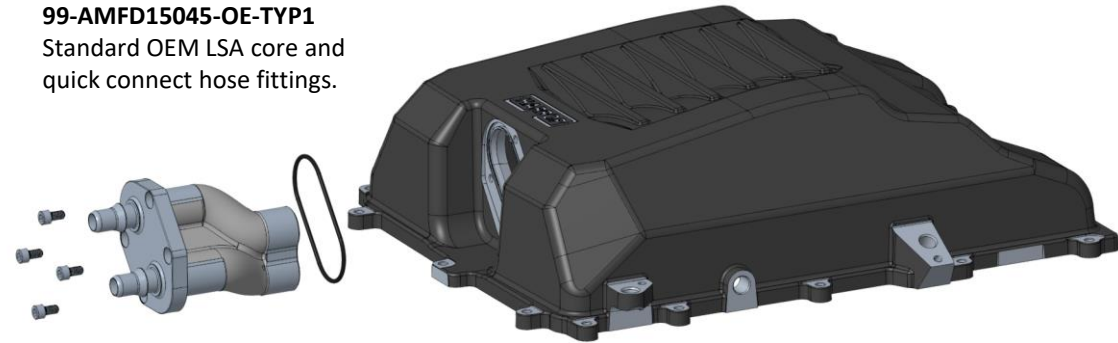
### 99-AMFD15045-OE-TYP2

Standard OEM LSA core with 1" hose fittings (hoses not included)



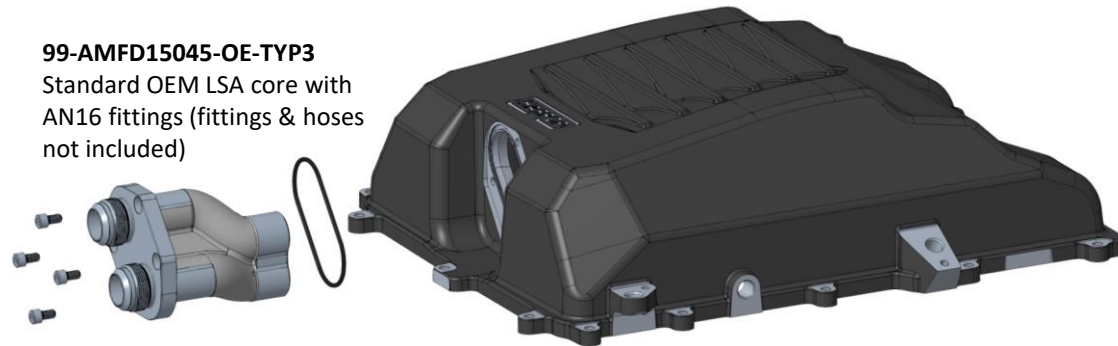
### 99-AMFD15045-OE-TYP1

Standard OEM LSA core and quick connect hose fittings.



### 99-AMFD15045-OE-TYP3

Standard OEM LSA core with AN16 fittings (fittings & hoses not included)



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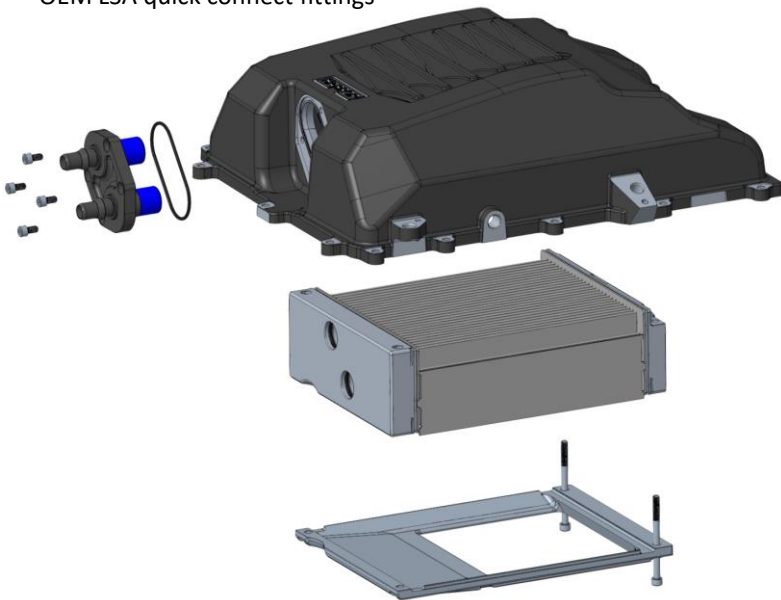


### Harrop Intercooler

- Large lid
- Harrop Intercooler
- Requires intercooler seal: **98-SEL16680**

### 99-AMFD15045-HE-TYP1

OEM LSA quick connect fittings

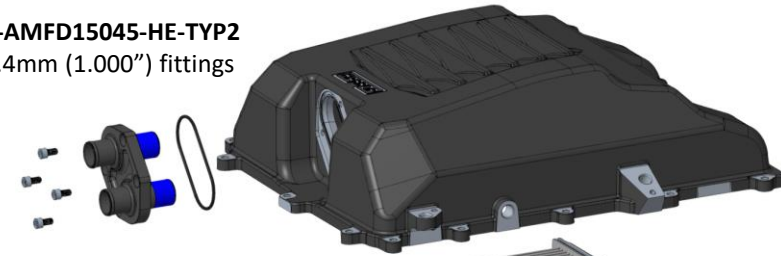


Intercooler seal: **98-SEL16680**



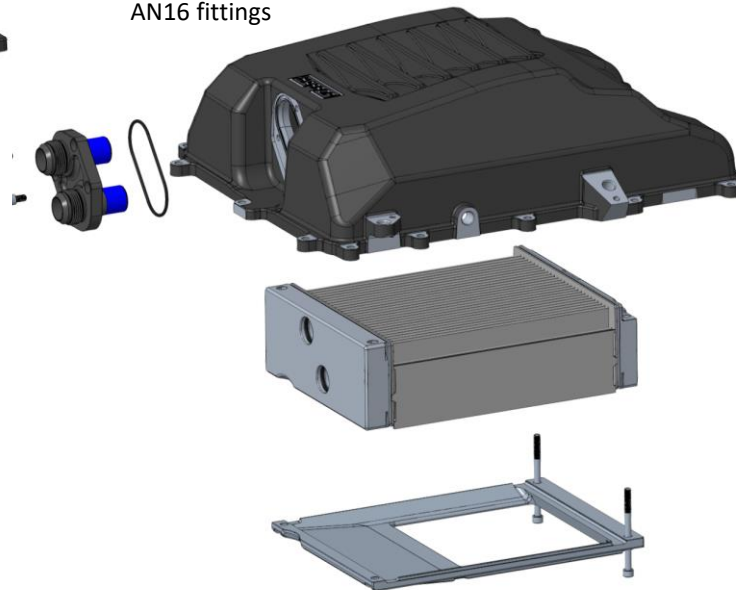
### 99-AMFD15045-HE-TYP2

25.4mm (1.000") fittings



### 99-AMFD15045-HE-TYP3

AN16 fittings



• **NOTE**

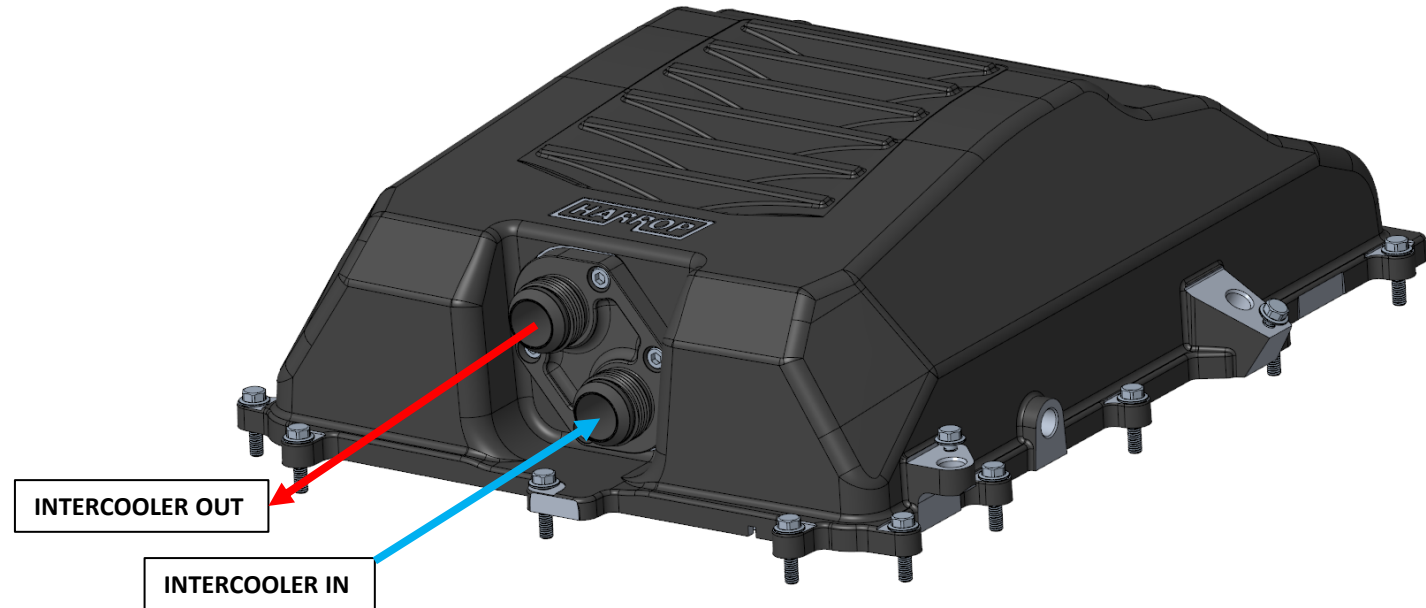
Front bolts are not installed in intercooler mounting plate  
These holes are used for assembly fixturing only

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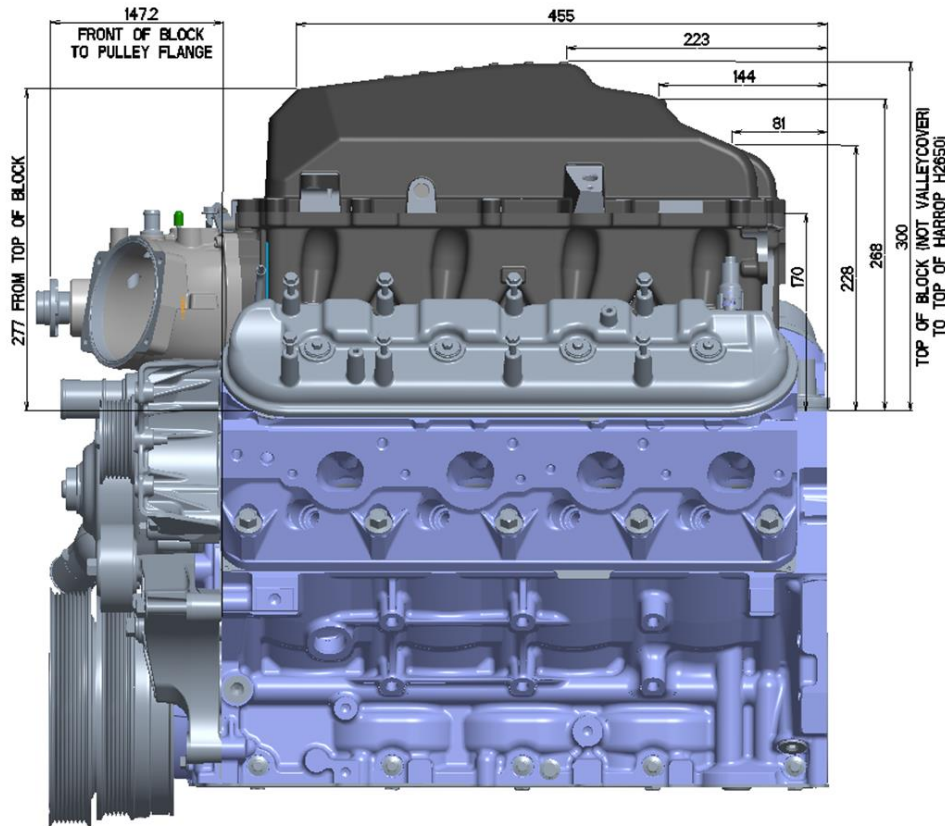


Large Lid - Intercooler connection

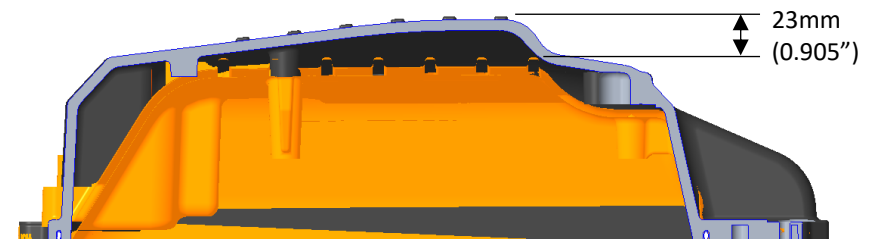


### Dimensions & Specifications

- Large lid - 99-AMFD15045

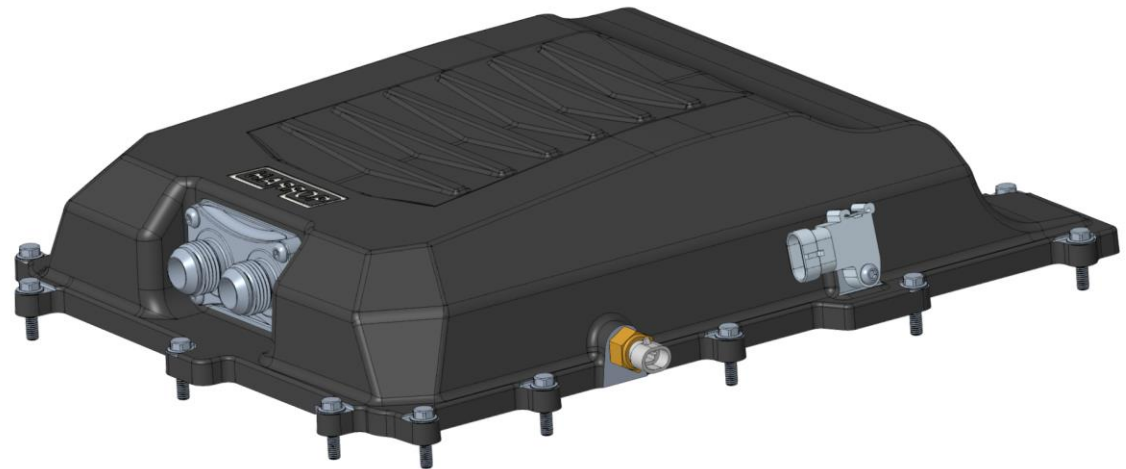


Lid height comparison – OEM LSA vs. Harrop tall lid



### Standard Features – Harrop LSA / H2650i Billet Low Lid

- Fully designed and manufactured in Australia by Harrop Engineering, CNC machined from billet 6061 Aluminum
- Developed to suit Harrop 2650i LSA Supercharger or factory LSA 1900 Supercharger. Factors such as hood, scuttle, firewall and engine variations may restrict fitment of this lid and must be validated prior to installation. Refer dimensions (Pages 15-17)
- Designed to provide lower installation height than OEM LSA
- Incorporates all factory mounting positions for IAT and MAP sensors
- Various intercooler water in/out configurations (AN12 shown)
- Includes the release of an upgraded intercooler core with the lid design supporting fitment of either upgraded or standard OEM LSA intercooler core
- Capable of over 1,200hp with supporting engine combinations. Refer performance summary (Pages 13-14)

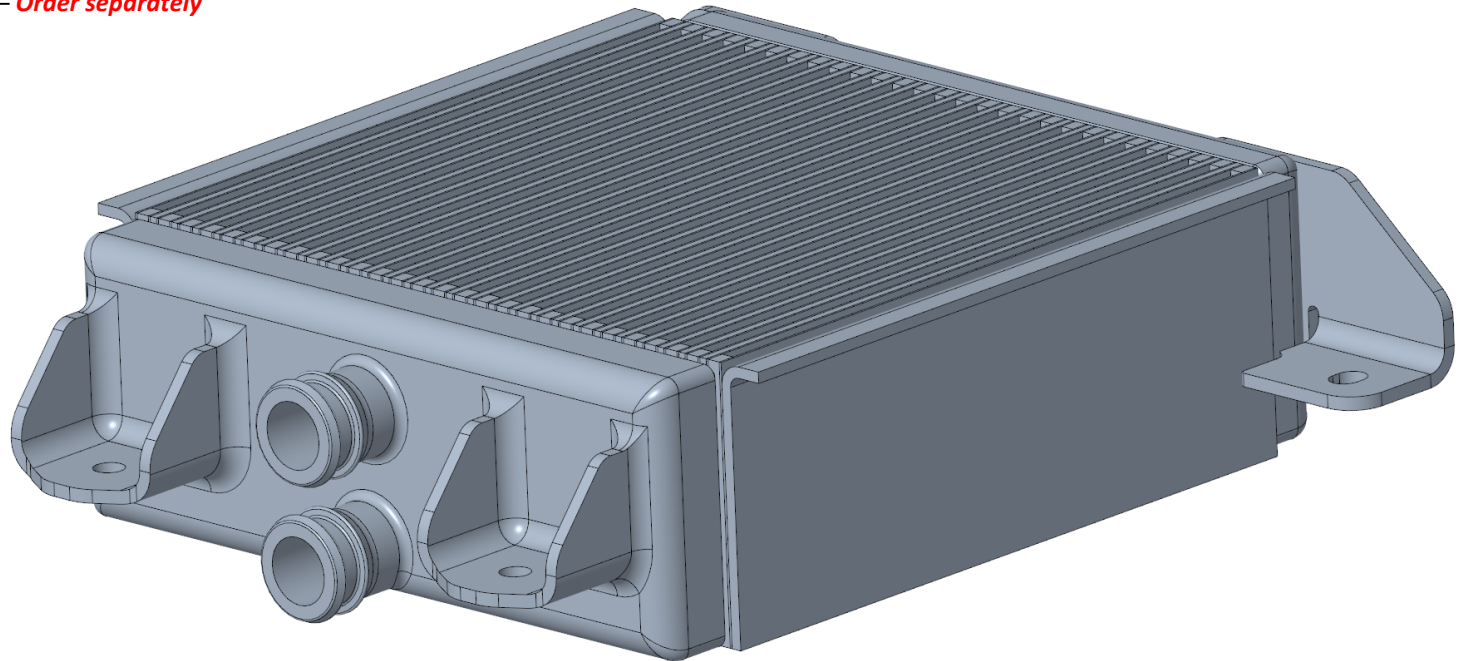


### Harrop Intercooler Core upgrade (LSA / H2650i Low lid)

Part # - 99-ACOR16906

#### Features

- Direct OEM replacement
- High density, High efficiency core design
- Billet tanks to withstand higher boost pressure
- 63mm thick core vs 56.5mm OEM core
- Uses OEM LSA intercooler seal / O-rings – *Order separately*
  - 1ea - 65-12613457 per core
  - 2ea - 65-12608997 per core

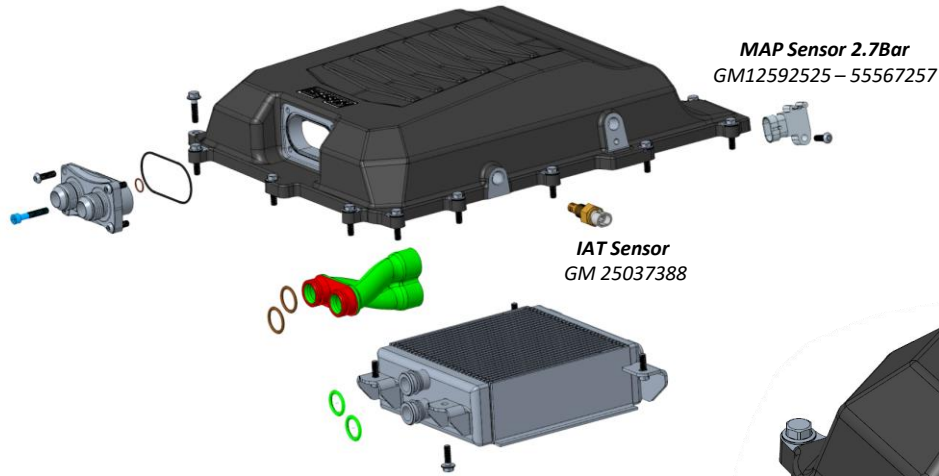


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## LSA / H2650i SUPERCHARGER LID & INTERCOOLER RANGE



- Harrop LSA Intercooler
- Billet Low Lid - PN 99-AMFD17108

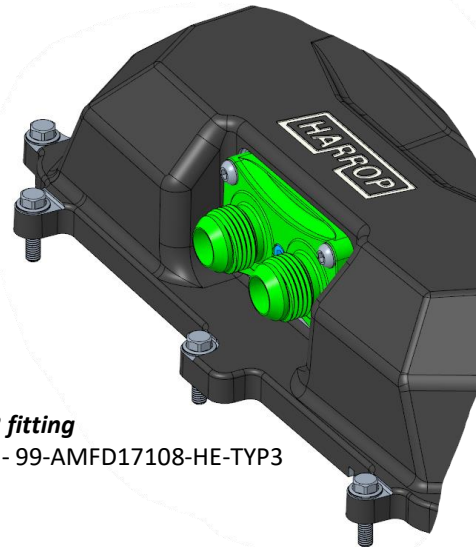


### Harrop Lid Configurations

(Not supplied - lid gasket GM part No. 12613457 and core seal GM part no. 12612467)

- **AN12 fitting**
- Billet - 99-AMFD17108-HE-TYP3

- **Quick connect fitting (LSA)**
- Billet - 99-AMFD17108-HE-TYP1



- **1" Hose fitting**
- Billet - 99-AMFD17108-HE-TYP2

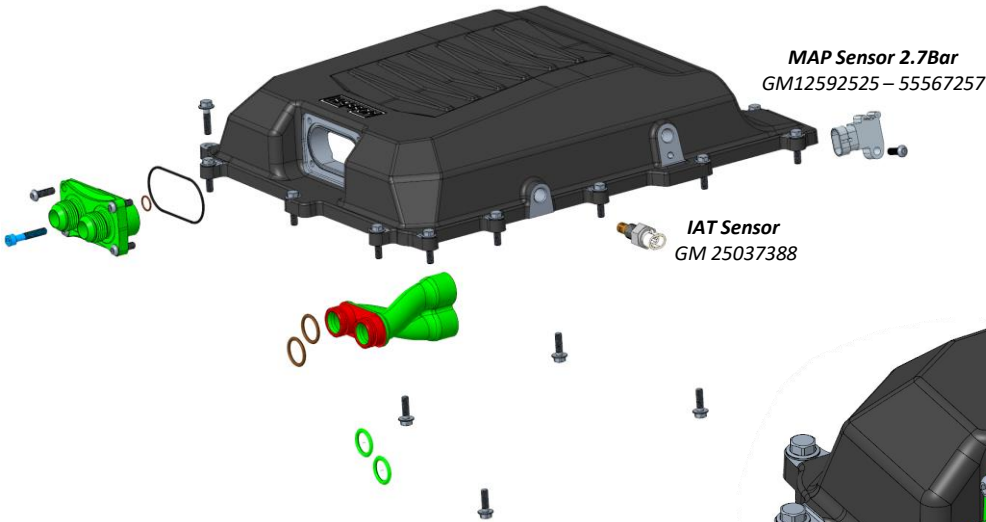
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## LSA / H2650i SUPERCHARGER LID & INTERCOOLER RANGE



- LSA OEM Intercooler - **Not Included**
- Billet Low Lid - PN 99-AMFD17108

- **Quick connect fitting (LSA)**
- Billet - 99-AMFD17108-OE-TYP1



### Harrop Lid Configurations

(Not supplied – LSA OEM Intercooler, lid gasket GM part No. 12613457 and core seal GM part no. 12612467)

- **AN12 fitting**
- Billet - 99-AMFD17108-OE-TYP3

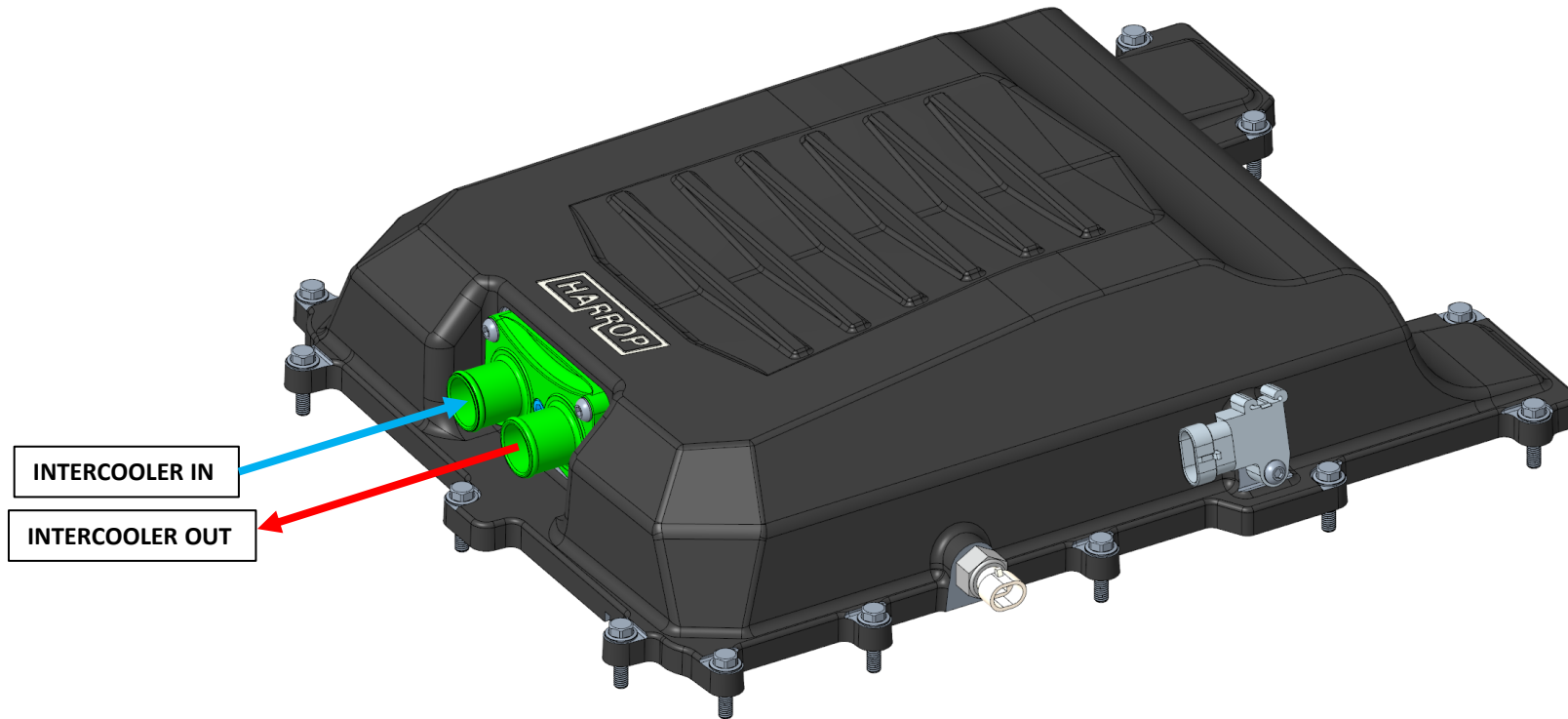
- **1" Hose fitting**
- Billet - 99-AMFD17108-OE-TYP2

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## LSA / H2650i SUPERCHARGER LID & INTERCOOLER RANGE

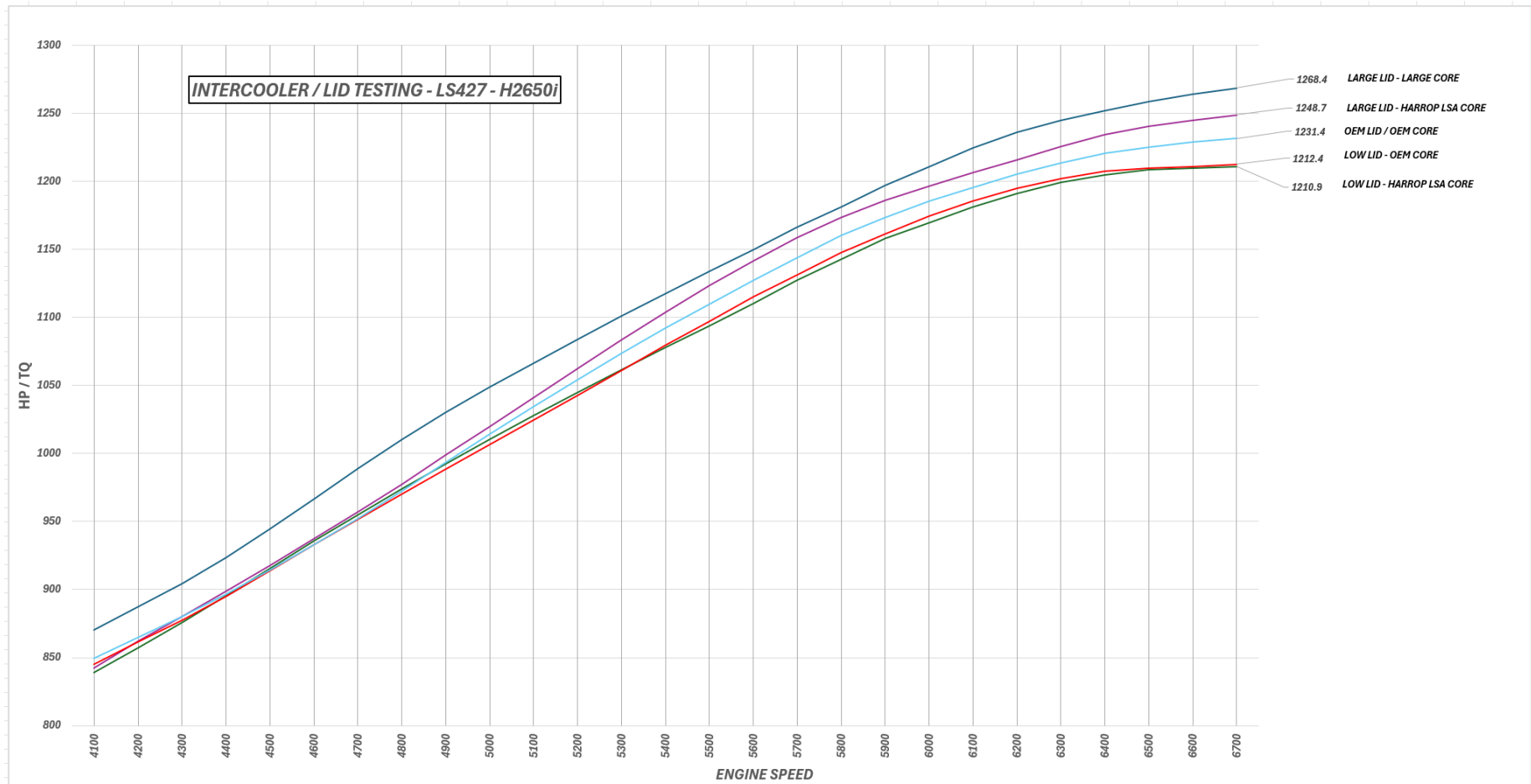


### Low Lid - Intercooler connection





### Engine Dyno Data – All Lids + Intercooler combinations





### Engine Dyno Data – All Lids & Intercooler combinations

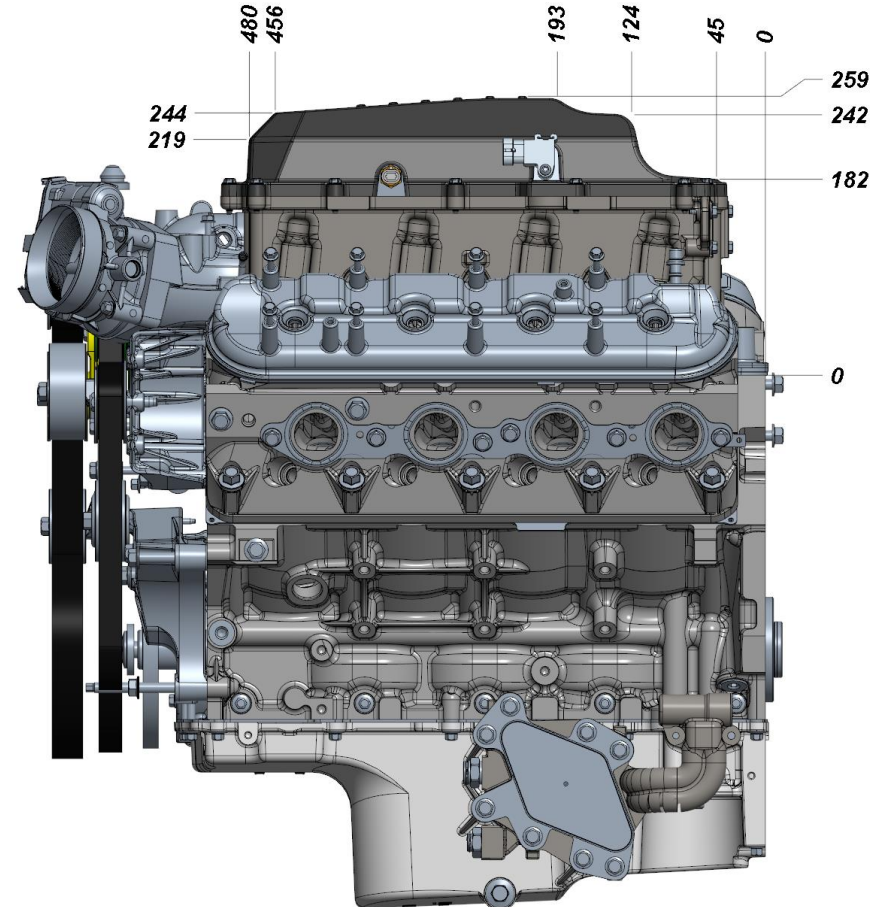
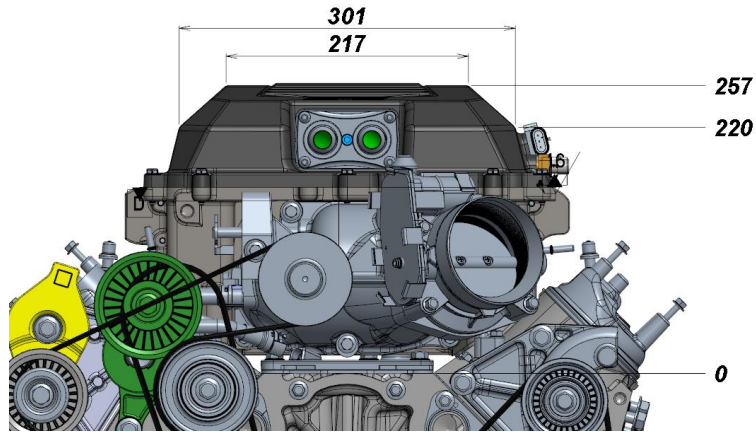
#### Engine Specs

- 427ci LS
- Higgins heads
- FuelTech FT600
- Fueltech 170lb injectors
- Harrop H2650i Supercharger
- 115mm integrated throttle
- Harrop 12PK drive system
  - 254mm Crank
  - 75mm Supercharger

<i>Combination (Lid / Core )</i>	<i>Boost (PSI)</i>	<i>IAT Start (C)</i>	<i>IAT Finish (C)</i>	<i>Delta T (C)</i>	<i>Cool flow (L/min)</i>	<i>Power (HP)</i>
<i>Large Lid - LSA - Harrop Large</i>	23	27	46.5	19.5	40	1268.4
<i>Large Lid - LSA - Harrop</i>	22.5	42	66.5	24.5	31	1248.7
<i>OEM Lid - LSA - Harrop</i>	22.3	43	69	26	30	1231.4
<i>Low Lid - LSA - OEM</i>	22.8	43.5	69.5	26	30	1212.4
<i>Low Lid - LSA - Harrop</i>	22.6	40	65.5	25.5	30	1210.9

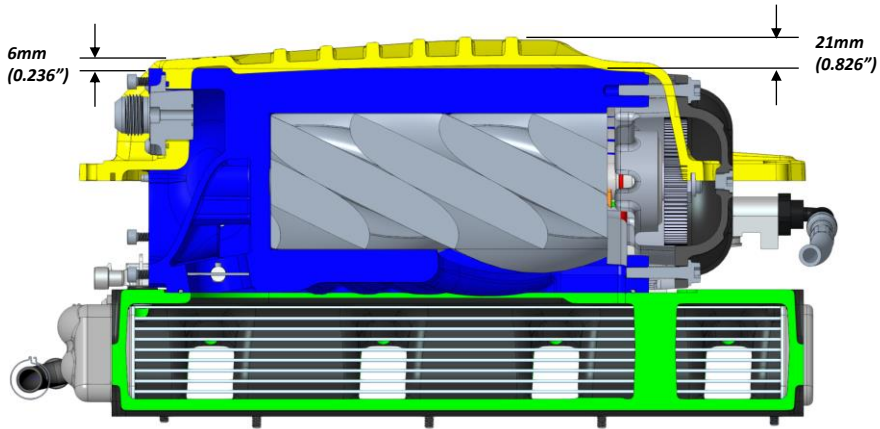
### Dimensions (LSA engine, H2650i / OEM LSA Supercharger)

- Billet - 99-AMFD17108-TYP1
- Dimensions shown from valley plate block face and rear block face

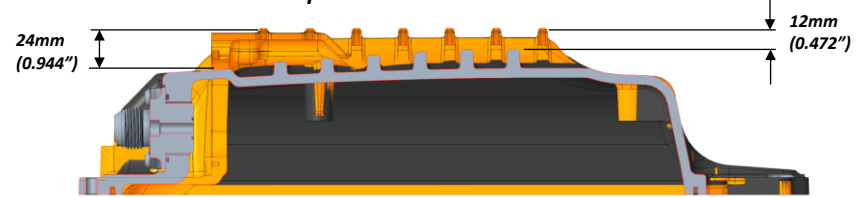


### Height comparison

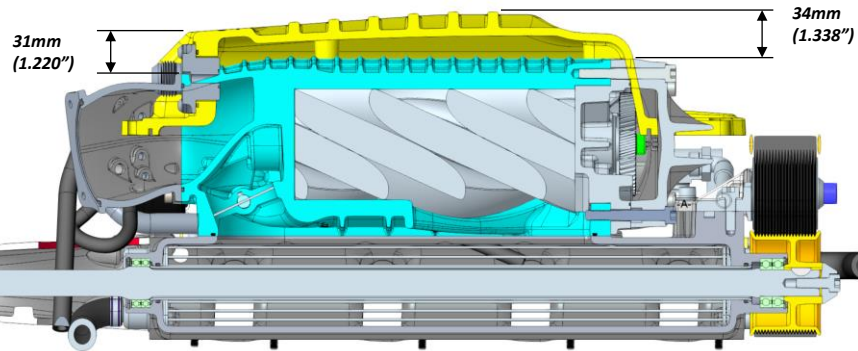
*Harrop LSA Low lid (Yellow) vs. FDFI2650 (Blue)*



*Harrop LSA Low lid vs. OEM LSA*



*Harrop LSA Low lid vs. LS HTV2300 (Cyan)*



*Harrop LSA Tall Lid vs. Harrop LSA Low lid*

