

TiALSport Turbine Housing Data Sheet

Within this sheet you'll find the technical data needed to select and utilize a TiALSport turbine housing.

For any further technical questions, please email tech@tialsport.com

Configurations

TiALSport turbine housings are available in several variations, with multiple A/R values.

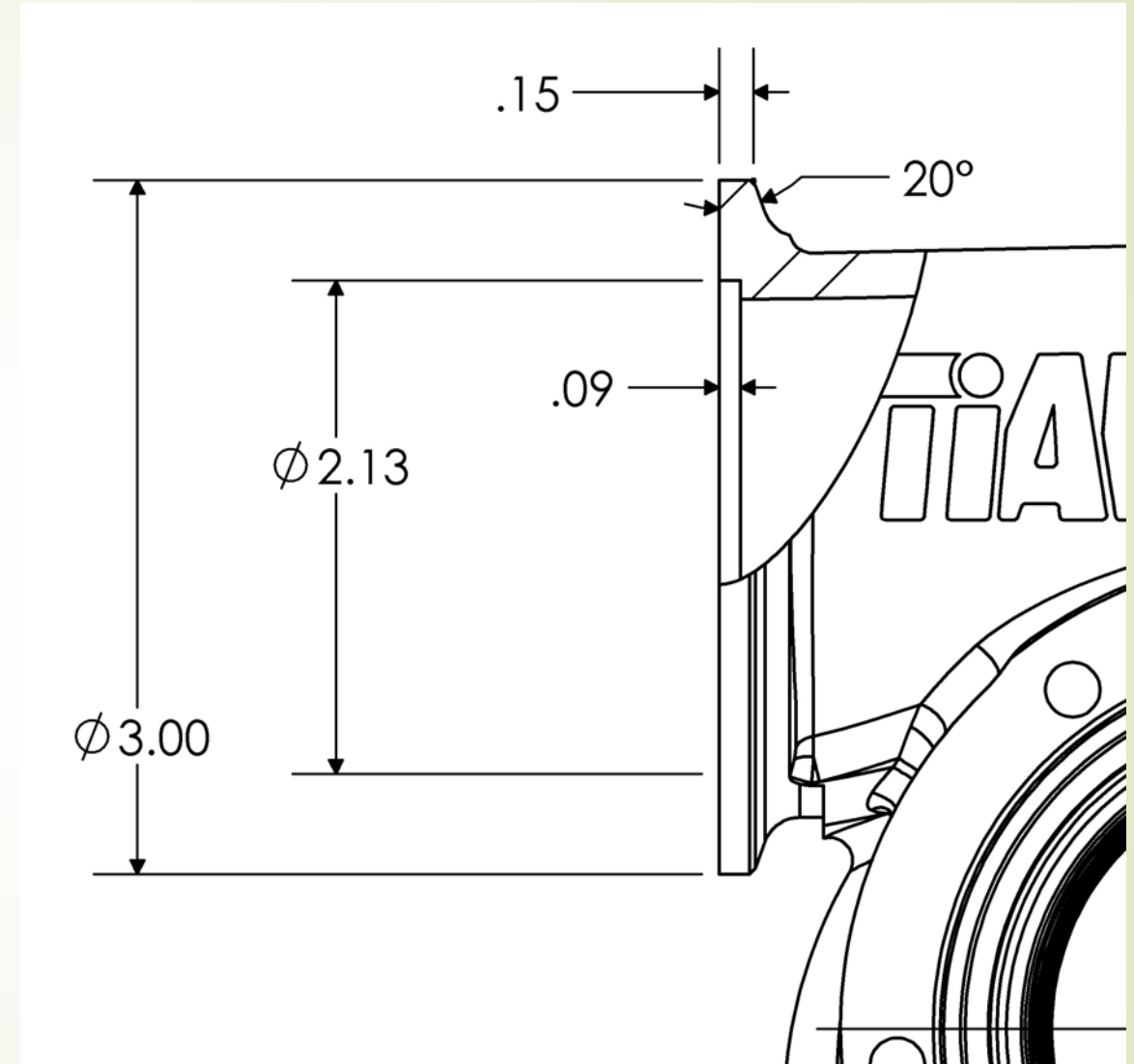
- ▶ All housings are designed, engineered, tooled, molded, cast and machined at our on-site foundry in Owosso, MI, USA.
- ▶ Housings are cast in a proprietary high-strength SS Superalloy for light weight, high strength and corrosion resistance even at elevated temperatures.
- ▶ Leak-proof v-flanges are offered in addition to industry-standard bolted flanges. Corresponding fabrication flanges are offered in 304SS.
- ▶ Seven externally-wastegated (EWG) housing families are offered, with a minimum of 3 A/R values per family.
- ▶ One internally-wastegated (IWG) family is offered, with 2 A/R values, and water-cooled (H2O IWG) versions are offered.
- ▶ Turbine wheel inducers from 50 to 120mm are accommodated within our housing line.



Connections

TiALSport established the standards for v-flanged turbine housings in the early 2000's. We've recently begun producing bolted-flange options.

- The V25V family services turbine inducers from 50-60mm
- The V3V family services turbine inducers from 60-65mm
- The V35V family services turbine inducers from 62-80mm
- The V4V family services turbine inducers from 80-90mm
- The V45V family services turbine inducers from 90-100mm
- The V5V family services turbine inducers from 100-120mm
- The F3V family services turbine inducers from 60-80mm
- The IWG family services turbine inducers from 50-73mm
- Options for G Series, GT Series and GTX Series are available.
- Options for EFR and SXE Series are available
- Options for Xona Rotor products are available



Accessories

Attachment hardware is available for all housing models, featuring 304SS v-flanges, U.S.-made v-clamps.

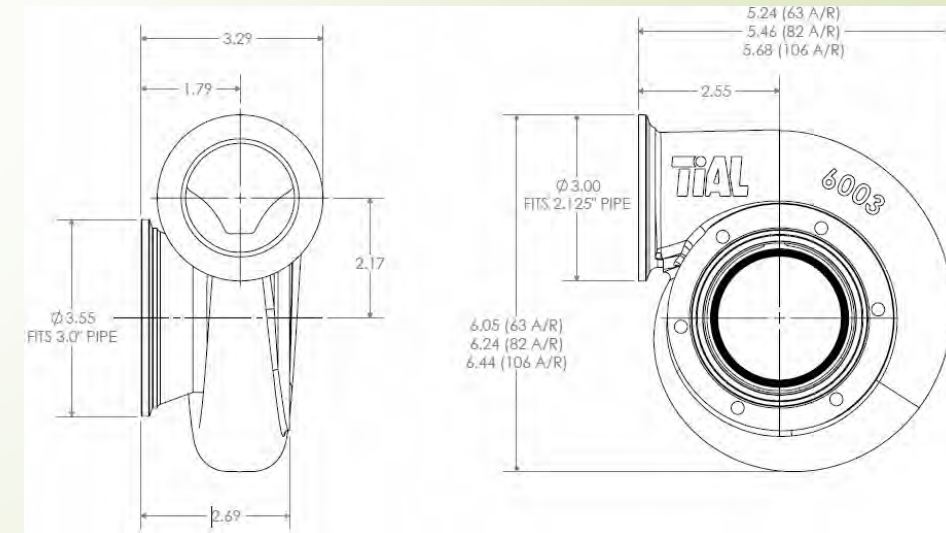
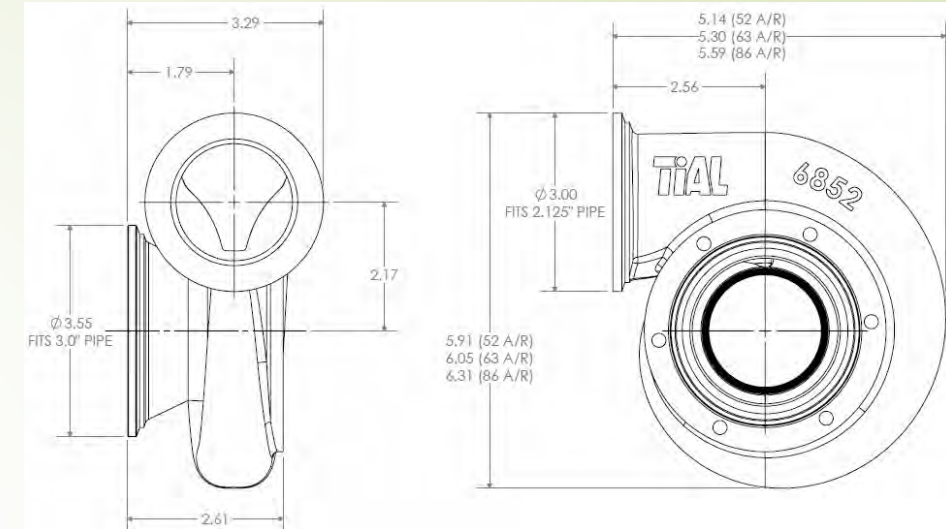
- ▶ V25V through V35V housing have the same fitment and flange sizes, inlet and outlet.
- ▶ IWG housings have the same inlet flange and centerline as V25V through V35V, but use a larger outlet flange dimension and greater axial placement.
- ▶ F3V housings are direct replacements for popular "GT" series housing using a "T3" inlet flange.
- ▶ V4V and V45V housing use the same fitment and inlet flange sizes, but the outlet flange of the V45V has a larger pilot feature.
- ▶ Clamp/bolt kits for the V25 through V35V and IWG housings **are included** with each housing, but are available separately as well.
- ▶ CHRA clamps for all other models are **not included**.

P/N	Description	T/H Model
001814	Turbine inlet v-flange	V25V through V35V, IWG
002505	Turbine inlet v-clamp	V25V through V35V, IWG
002500	Turbine outlet v-flange	V25V through V35V
002501	Turbine outlet v-flange	F3V Only
002506	Turbine outlet v-clamp	V25 through V35V
004626	Turbine outlet flange	IWG Only
004623	Turbine outlet clamp	IWG Only
002494	Turbine inlet flange	V4V, V45V
002509	Turbine inlet v-clamp	V4V, V45V
002493	Turbine outlet flange	V4V Only
006447	Turbine outlet flange	V45V Only
002512	Turbine outlet v-clamp	V45, V45V
003958	Turbine inlet flange	V5V
003962	Turbine inlet v-clamp	V5V
003959	Turbine outlet flange	V5V
003963	Turbine outlet v-clamp	V5V
006445	CHRA v-clamp	V5V
004242	Clamp/bolt kit	V25 through V35V, IWG

Dimensions- V25V and V3V

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

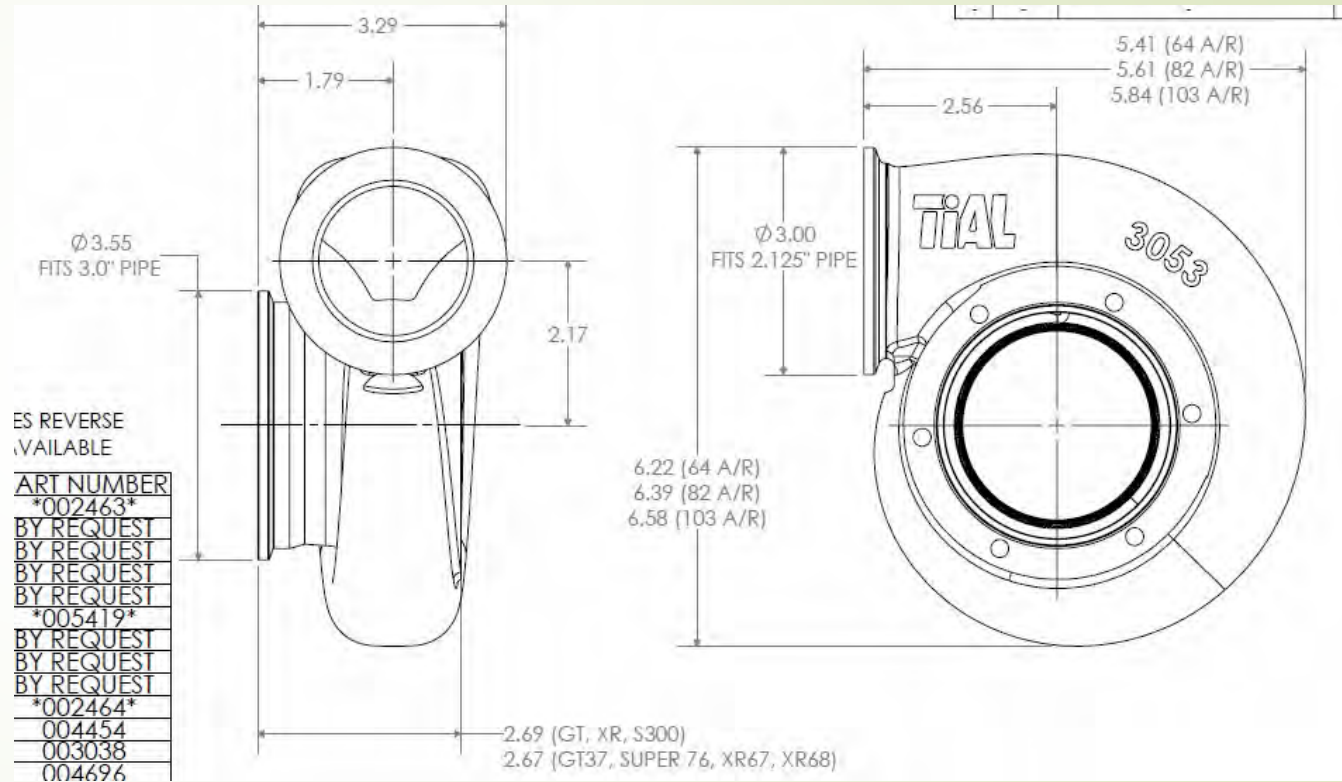
- V25V housings are offered in 0.52, 0.63 and 0.86A/R volutes.
- These are designed for turbine inducers from 50-60mm.
- V25V housings are currently only offered in standard-rotation configuration
- V3V housings are offered in 0.63, 0.86 and 1.06A/R volutes.
- These are designed for turbine inducers from 60-65mm.
- V3V housings are currently only offered in standard-rotation configuration.



Dimensions- V35V

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

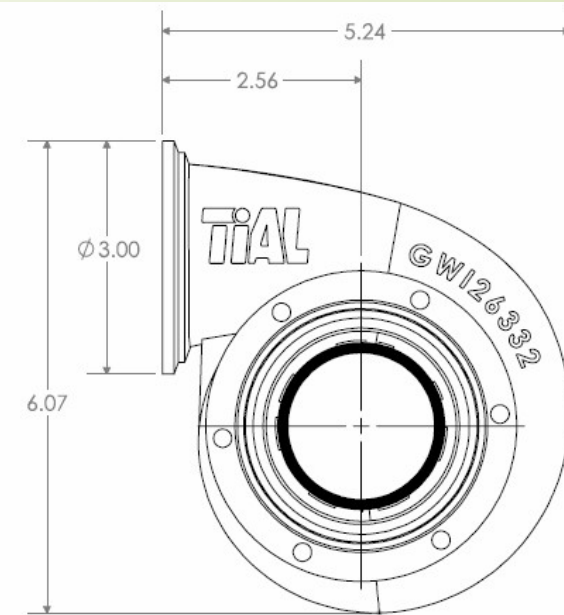
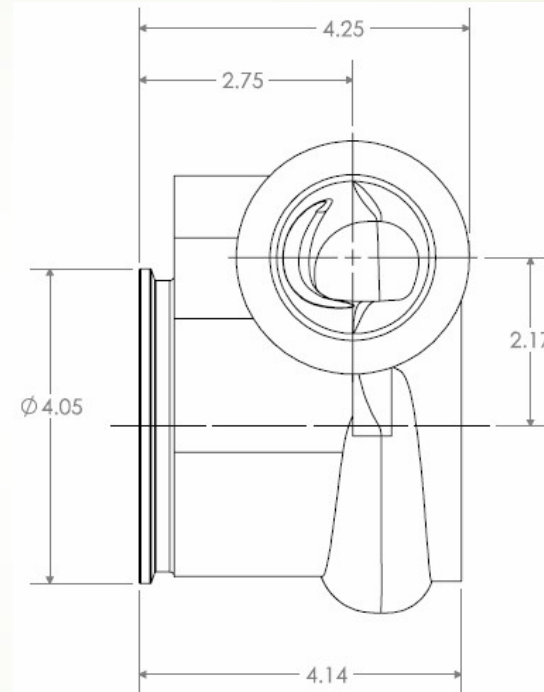
- ▶ V35V housings are offered in 0.63, 0.82 and 1.03A/R volutes
- ▶ These are designed for turbine inducers from 62-80mm.
- ▶ V35V housings are offered in both standard- and reverse-rotation configurations.



Dimensions- IWG

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

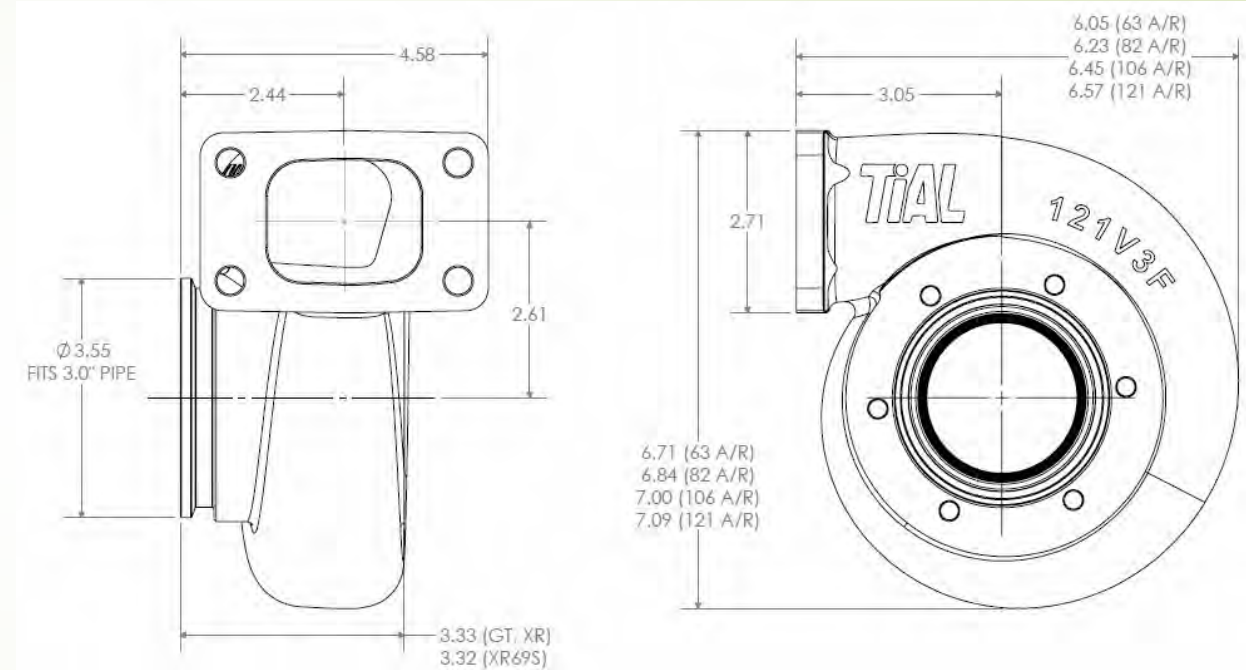
- IWG housings are offered in 0.62 and 0.80A/R volutes
- These are designed for turbine inducers from 50-73mm.
- IWG housings are currently offered in standard-rotation configuration only.
- These housings have the same inlet v-flange size and placement as all V25V through V35V housings, but use a larger outlet flange with a greater axial distance and location.
- IWG housings use the TiALSport patented WG flow path shroud design.
- IWG housings use a 42mm valve and 38mm port.
- The lever position and length are optimized by using the TiALSport MVI 2.5 actuator and patented actuator bracket design.
- A water-cooled version (IWG/H2O) is available for marine applications.



Dimensions- F3V

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

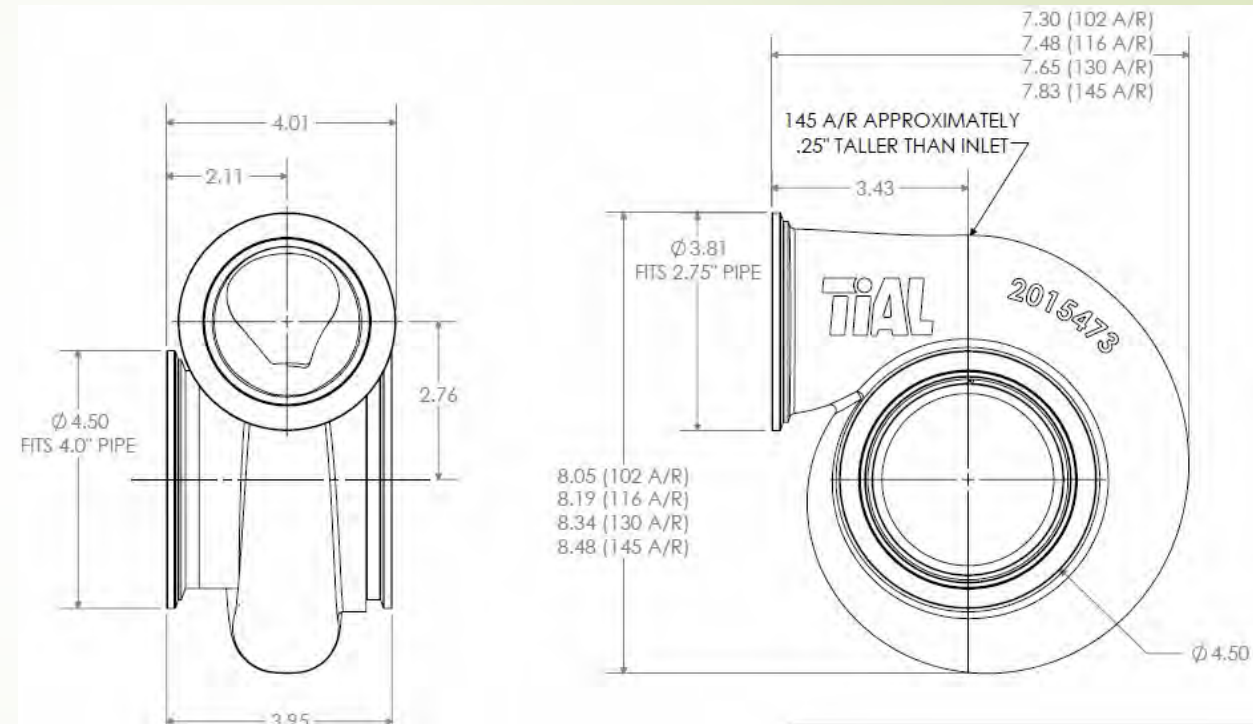
- ▶ F3V housings are offered in 0.53, 0.82, 1.06 and 1.21A/R, to provide the widest flow range possible.
- ▶ These are designed for turbine inducers from 60-80mm
- ▶ F3V housings are currently offered in standard-rotation configuration only.
- ▶ F3V housings are fitment-compatible with popular "GT-style" housings using the T3 inlet flange design.
- ▶ F3V housings use a unique v-flange, but the same v-clamp as V25V through V35V



Dimensions- V4V

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

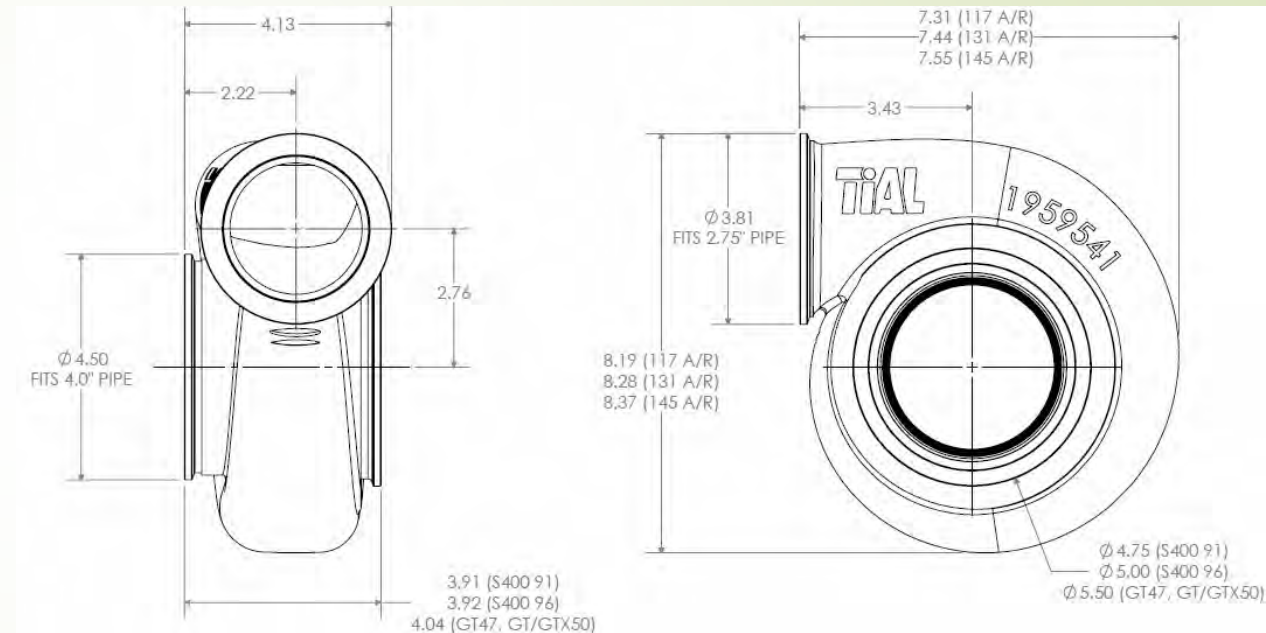
- ▶ V4V housings are offered in 1.02, 1.16, 1.30 and 1.45A/R volutes.
- ▶ These are designed for turbine inducers from 80-90mm.
- ▶ V4V housings are currently offered in standard-rotation configuration only.
- ▶ V4V housings are direct-fitment compatible with HKS "T51R" designs.
- ▶ V4V housings **are not** direct-fitment compatible with O.E. GT/GTX designs.
- ▶ V4V housings **are** direct-fitment compatible with the V45V housings, but use an outlet flange with a smaller pilot dimension.
- ▶ A water-cooled version is available for marine applications.



Dimensions- V45V

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

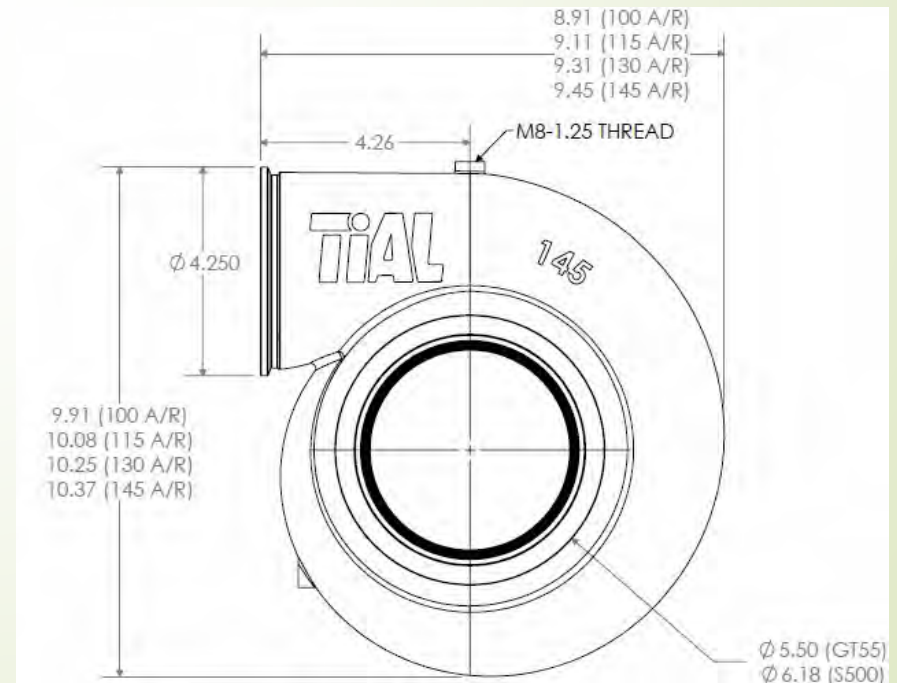
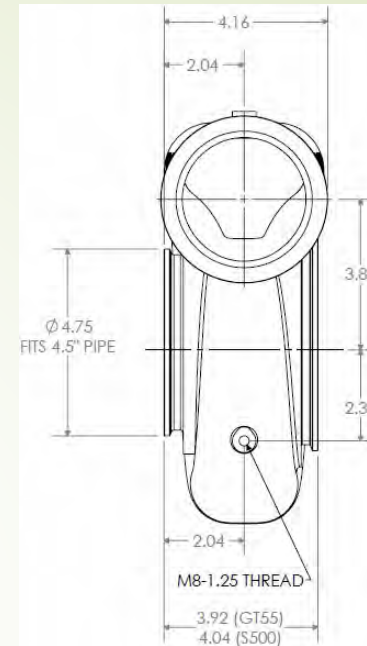
- ▶ V45V housings are offered in 1.17, 1.31 and 1.45A/R volutes.
- ▶ These are designed for turbine inducers from 90-100mm.
- ▶ V45V housings are currently offered in standard-rotation configuration only.
- ▶ V4V housings are direct-fitment compatible with HKS "T51R" designs.
- ▶ V4V housings **are not** direct-fitment compatible with O.E. GT/GTX designs.
- ▶ V45V housings **are** direct-fitment compatible with the V4V housings, but use an outlet flange with a larger pilot dimension.



Dimensions- V5V

Housing dimensions vary with both frame size and A/R values. The following pages will provide specific dimensional values for confirmation of fitment.

- ▶ V5V housings are offered in 1.00, 1.15, 1.30 and 1.45A/R volutes
- ▶ These are designed for turbine inducers from 100-120mm.
- ▶ V5V housings are currently offered in standard-rotation configuration only.
- ▶ V5V housings are direct-fitment compatible with PTE designs.
- ▶ V5V housings **are not** direct-fitment compatible with O.E. GT/GTX designs.
- ▶ V5V housings are currently not offered in an SFI-certified design.



Housing FAQ

- ▶ **Are these housings interchangeable with (insert brand here) housings?**
- ▶ *Sometimes.* TiALSport began producing v-flanged turbine housings for the performance aftermarket in 2000, many years prior to any other manufacturer, so the fitment had been established for some time prior to other designs being released. Some companies designed around the same fitment, some did not. If you are not sure of the fitment, refer to the drawings in the previous pages, or contact the Team at tech@tialsport.com and we will be happy to help you confirm.
- ▶ **What material are TiALSport housings made from?**
- ▶ *TiALSport housings are investment-cast from stainless steel superalloys, which are proprietary variations of both Nitronic 50 and Haynes HR120, depending on the model. These alloys are chosen for their unique combinations of high strength, light weight and corrosion resistance.*
- ▶ **Where are TiALSport housings manufactured?**
- ▶ *TiALSport proudly designs and engineers all housings internally, and we also design and manufacture our own mold tools, from which wax molds are produced, then processed into castings, which are then finish-machined using CNC equipment. This is all done under one roof, in our facility here in Owosso, Michigan.*
- ▶ **Can you make housings for (insert make and model here) turbochargers?**
- ▶ *We are constantly reviewing offerings from other companies to determine if there is a path for us to provide alternatives to O.E. designs. This means there are housing models always in development, so if your specific model isn't currently serviced, please feel free to contact us directly at the email address above. If it's a popular model, chances are pretty good we're already working on a solution.*