WEDDLE HV TRANSAXLE INSTALLATION

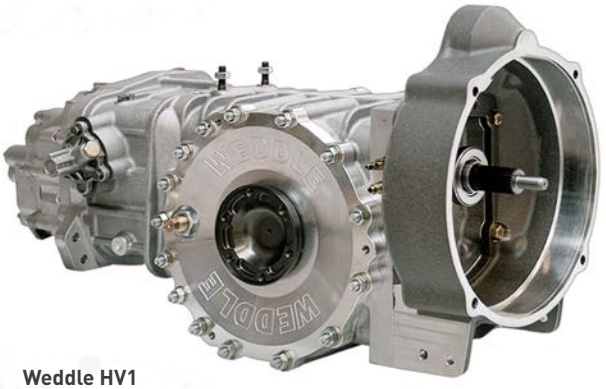
Weddle HV25

INTRODUCTION

The Weddle HV1, HV24 and HV25 transaxles are "H" pattern synchromesh 4-speed and 5-speed transaxles. All Weddle HV transaxles are available in mid or rear engine configurations with a variety of gearing choices and options.

The HV1 is the original Weddle gearbox. This entry-level unit should be limited to a max of 400 hp from 4 cylinder or V6 engines. It is not recommended for the torque of a V8.

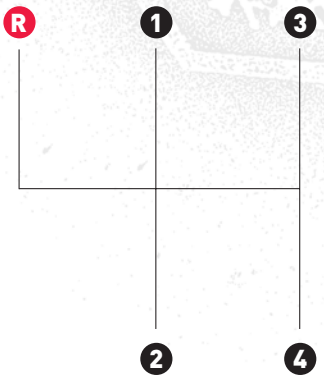
The HV24 and HV25 are more robust units with wider gears, extra bearings, larger bearings, and a redesigned shift mechanism. These units were designed for mild V8 powered vehicles in the 550 hp to 650 hp range. Actual power handling will depend on application, please call Weddle Industries for info regarding your specific project.



Weddle HV1

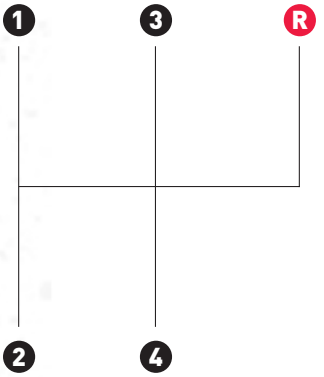
SHIFTER AND SHIFT PATTERN

The shift pattern on the HV1 has reverse to the left and forward, 1st through 4th are next to it in a standard 4-speed "H" pattern arrangement. The Weddle Industries Vanagon shift linkage (Weddle part #8-094LR) bolts to the side of the transaxle and will redirect the shift shaft to a forward pointing orientation in a REAR engine application. This linkage will work with a VW style shifter in the cab. A shifter with a reverse lock out is highly recommended. For an HV1 in a mid-engine application use the mid-engine linkage assembly (Weddle part #8-094LM) and the Albins shifter (Weddle part #8-AGB2).



Weddle HV1 Shift Pattern

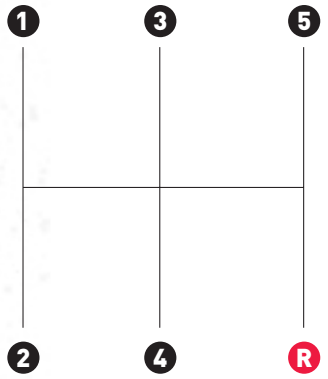
The shift pattern on the HV24 has 1st gear to the left and forward with reverse being to the far right and forward. **The shift pattern on the HV25 has 1st to the left and forward with 5th gear being to the right and forward.** Reverse on the 5-speed is to the right and back, directly back from 5th. The shift mechanism is spring loaded in the trans and will sit in the ¾ shift gate when in neutral.



Weddle HV24 Shift Pattern

Special shifters are required for the HV24 and HV25 transaxles to have a reverse lock out in the proper location (Weddle part #8-HV24 and 8-HV25). **Note**: those part numbers are for rear engine applications using the shift shaft that exits the trans above the nosecone. A linkage kit and shifter are also available for the HV25 in a mid-engine application (Weddle part #8-HV25M and 8-HV25LM). This linkage will work with a VW-style shifter in the cab (Weddle part # 8-VWB).

It is highly recommended that a shifter with a reverse lock out be used. Reverse gear on the HV2 transaxles is fully synchronized; if reverse is selected by accident while moving forward it will go right in. This can result in damage to the transaxle and other driveline components.



Weddle HV25 Shift Pattern

The HV24 and HV25 transaxles have internal springs that locate the shifter in the 3/4 gate when in neutral. The side to side stop and reverse lock out will need to be adjusted once the shift linkage is installed. The stops are NOT set to the proper location when the shifter is delivered and must be set in the car.

The HV2 transaxles have two shift shafts exiting the transaxle, which are joined together with a ball and socket arrangement internally. This means that when one shaft is rotated the other will move in and out. This was done to make installations more straightforward whether it was being used in mid or rear engine applications. Please make sure to leave room around the shaft not being used.

BELL HOUSING AND STARTER

The Weddle HV transaxles come standard with VW-style bell housings with a Chevy bell housing option. Please note that the Chevy bell housing is not as deep as a traditional GM unit, most off the shelf GM clutches will not fit as a result. Weddle Industries has several off-road specific, large diameter clutch kits available that will fit. Most 228mm clutch kits will fit in the VW bell housing. Please call for details.

The VW-style bell housing will use the early style VW starter (Weddle part #9101 or 9101-XHD). The Chevy bell housing will use the standard GM starter mounted on the engine block (Weddle part # 910-LS).

SLAVE CYLINDER

The HV transaxles utilize a hydraulic slave cylinder located in the bell housing. AN-4 inlet and 'bleeder' fittings will be accessed externally beside the bell housings. Please read all the instructions pertaining to measuring T/O bearing air gap, bleeding hydraulic system, and pedal stop adjustment.

CLUTCH/THROWOUT BEARING CLEARANCE

The HV transaxle can be fitted with a convex or flat face throwout bearing, depending on the type of clutch that will be used. In either case, it is critical that there is proper clearance ('air gap") between the throwout bearing and the fingers of the pressure plate. **For the clutch to function properly, the air gap must be 4mm-9mm (.160"-.350")**. The only way to verify that you have the proper air gap is to carefully measure the distance from the mating surface of the bell housing to the thrust face of the throwout bearing and subtract the distance from the engine block/adapter plate to the fingers of the clutch where it contacts the throwout bearing. This measurement must be taken with the hydraulic slave cylinder fully collapsed (bleed screw open). If the air gap does not fall within the parameters listed above, we can supply you with parts and/or information on how to bring the air gap within the required specification.

CV BOLT LENGTH

Before installing your axle assemblies for the first time, you must **measure the length of your CV bolts to make sure that they will not damage the final drive seals (located immediately behind the drive flanges)**.

CLUTCH MASTER CYLINDER

Depending on driver preference, we recommend either a 5/8" (16mm) or 3/4" (19mm) diameter clutch master cylinder piston. The smaller diameter piston will result in a longer pedal throw with less effort. The larger diameter piston will have a shorter throw with more effort.

PEDAL STOP

With a hydraulic throwout bearing, it is absolutely mandatory that you have a positive stop to limit the travel on your clutch pedal. **If you don't have a pedal stop, it is possible to over-extend the slave cylinder piston, which will allow hydraulic fluid to spew out into the bell housing. If this happens, you will have to take the engine back out of the car to repair the slave cylinder and/or clutch.**

BLEEDING THE HYDRAULIC SLAVE CYLINDER

Before adjusting the pedal stop, the air must be bled out of the clutch hydraulic system. **IMPORTANT: Make sure to open the bleed screw before depressing the clutch pedal!** This will allow excess air to escape from the system without moving the throwout bearing. Do not fully depress the clutch pedal with the bleed screw closed or you will over-extend the piston. This can cause permanent damage to the clutch diaphragm, the slave cylinder, or both.

ADJUSTING THE PEDAL STOP

Once you have performed the initial bleeding of the system, the pedal stop can be adjusted. With the engine turned off and the car in 4th gear, jack up one rear wheel. Slowly depress the clutch pedal until you can just turn the rear wheel by hand. Give the pedal an additional 1/2" (13mm) of travel, measured at the foot pad. Once the clutch pedal stop is adjusted correctly, you should bleed the system again to make sure that it is completely free of air. No additional adjustments should be needed, as the hydraulic system will compensate for clutch wear.

LUBRICATION

- Oil capacity HV1 – 5 qts.
- Oil capacity HV24 – 6 qts.
- Oil capacity HV25 – 6.5 qts.

Note: Running an oil cooler system will add to the oil capacities listed above.

To install a oil cooling system on the HV1 a 12V external pump will be needed as well as a filter. The internal spray bar option should have also been purchased with the transaxle. Please see the oil cooling system install notes in the 'Tech Info' section of the Weddle Industries website. The pdf is titled "CS-INST, Installation notes for Trans Oil Circulation System".

The HV2 transaxles are available with an internal oil pump and oil distribution system. If the transaxle was ordered with this option is must be used. The pump will be operating any time the vehicle is in motion. If the outlet is plugged, oil will be forced through the pressure relief valve of the oil pump circuit. This will result in dramatically more load on the pump possibly causing premature wear or failure as well as creating more heat in the trans. At the minimum, the pump supply line must be in place and the pump outlet line must be run to the cooler return fitting. Please see diagram below for fitting locations and descriptions.

In most applications, a small cooler with fan pack will be sufficient. See Weddle Industries part numbers 9-CTC1, 9-CTC-MOUNT, 9-CTC-AN8, and 9-CTC-TS.

WEDDLE HV OIL PLUMBING

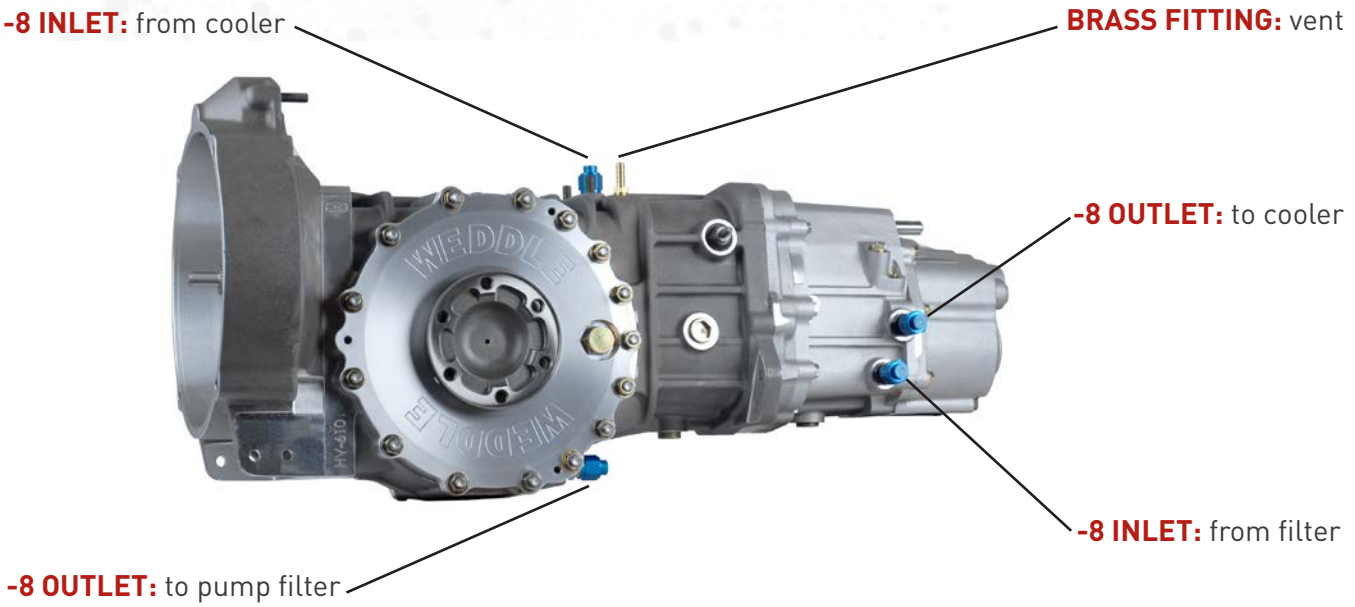
When running oil lines refer to the below diagram. There should be a filter between the scavenge fitting and the inlet to the oil pump (Weddle part #9-PUMP3). This will prevent any debris in the oil from being run through the pump gears and damaging them. Please note on the HV25 the oil return from the cooler can be in the location shown in the diagram or on the nosecone.

BREAK IN PROCEDURE

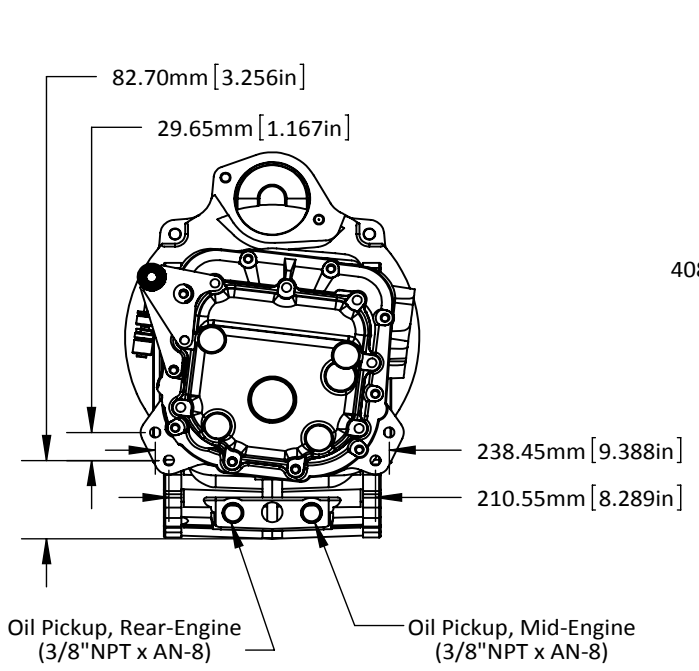
The HV transaxle may be very stiff to shift for the first 40-50 miles of operation. Please follow this break in procedure for best results. This will help seat the synchronizers on their respective gears as well as break in the gear surfaces.

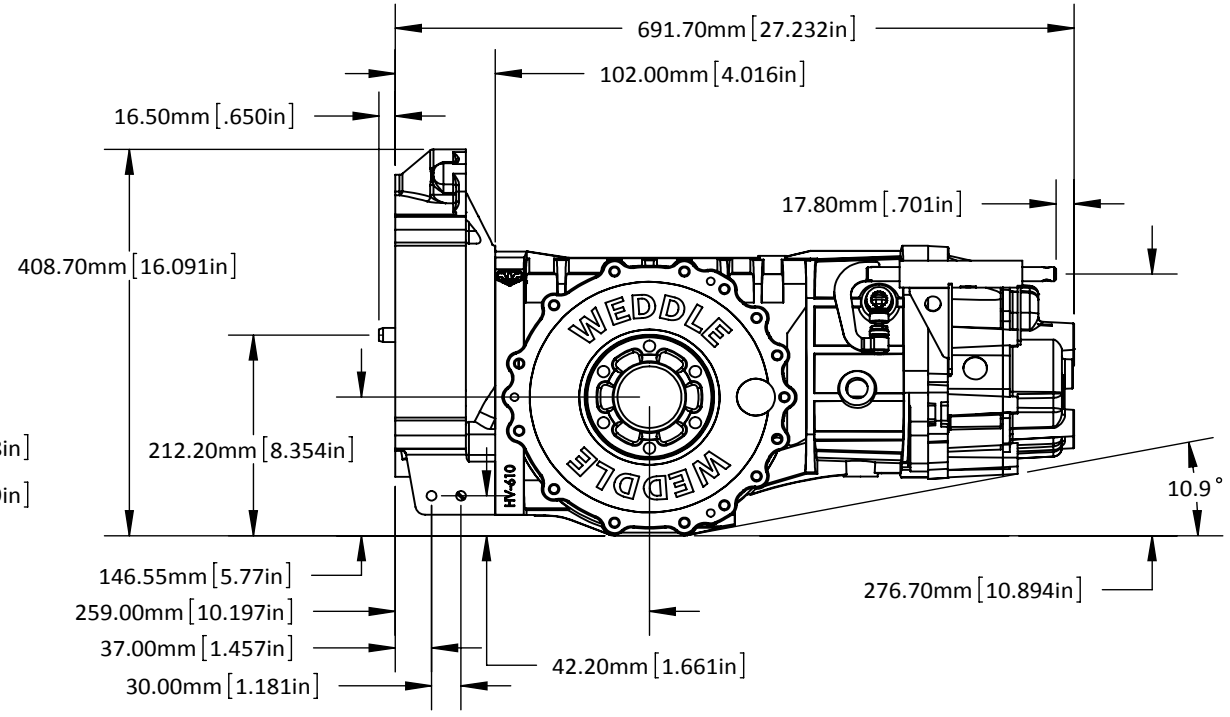
With the engine running and trans in neutral push in the clutch and shift the trans into every gear. Repeat this for every gear approximately 10-12 times to help break in the synchronizers. Heat cycle the trans several times when the trans is first road tested. Heat cycle by driving the vehicle easily, shifting slowly through every gear while getting the trans up to operating temperature. Stop and let trans cool for 30 minutes. Repeat three times. Continue to drive the vehicle at 75% for the first 100 miles.

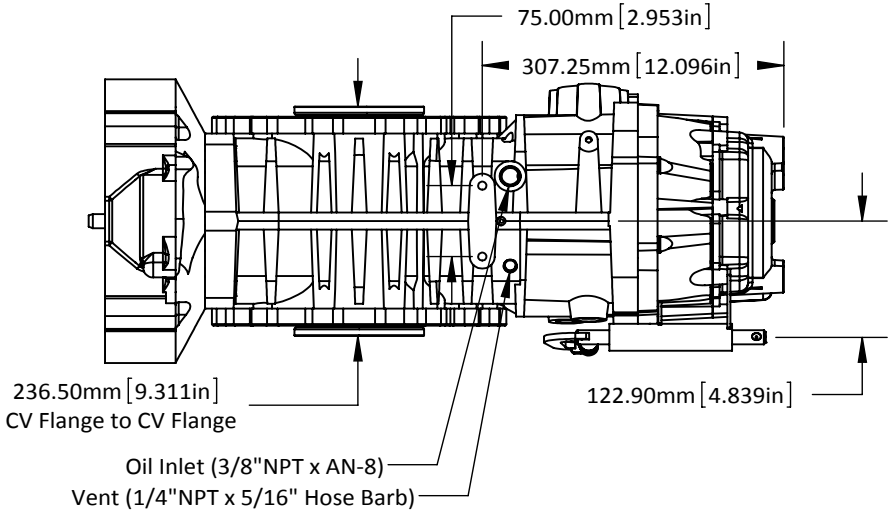
Please call Weddle Industries if you have any further questions.



WEDDLE HV1 EXTERNAL REFERENCE DIMENSIONS







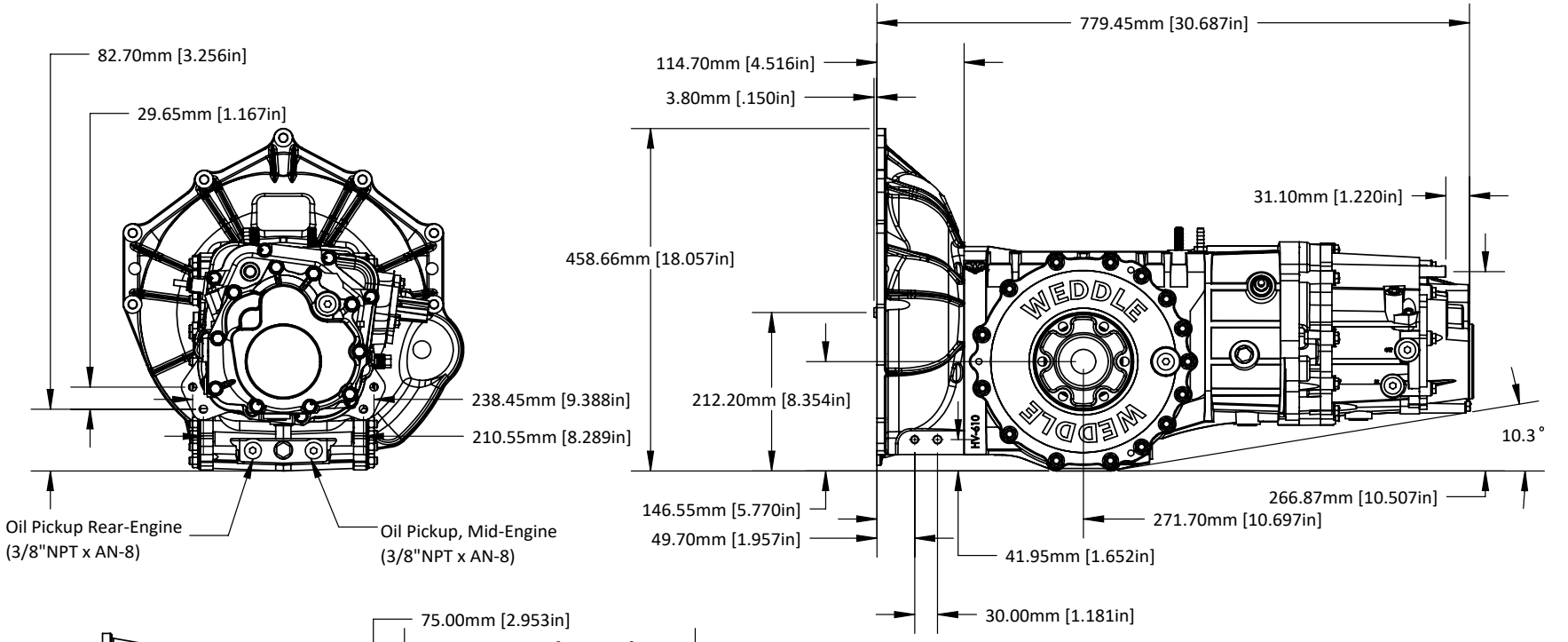
Notes:

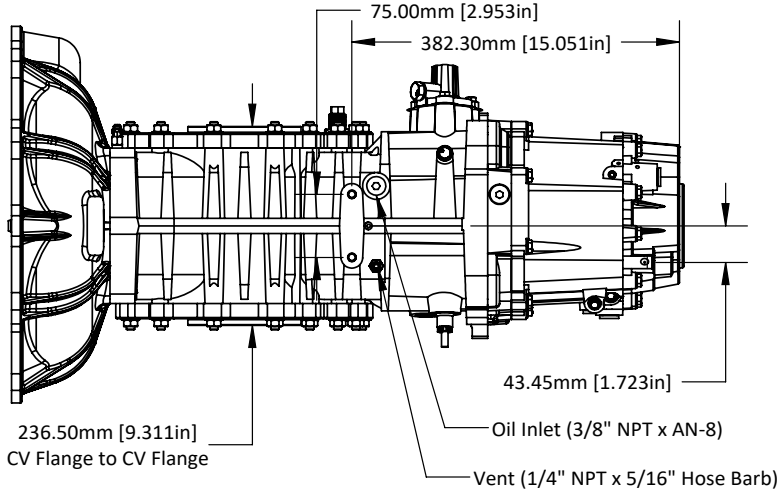
1. Dimensions are approximate.
2. Input splines: ∅28.58, 26 splines, 30° P.A. (1-1/8" Chevy fine spline).
3. Complete transaxle weight 65 kg (143lb.) with steel diff.

WEDDLE INDUSTRIES
7200 Hollister Ave, Suite C
Goleta, CA 93117
Ph 805-562-8600 • Fax 805-562-8661
info@weddleindustries.com

Drawing No: HV-DIM-HV1
Drawing Name: HV1 External Reference Dims
Drawn By: DY
Revised: 03/17/2022

WEDDLE HV24 CHEVY BELLHOUSING EXTERNAL REFERENCE DIMENSIONS



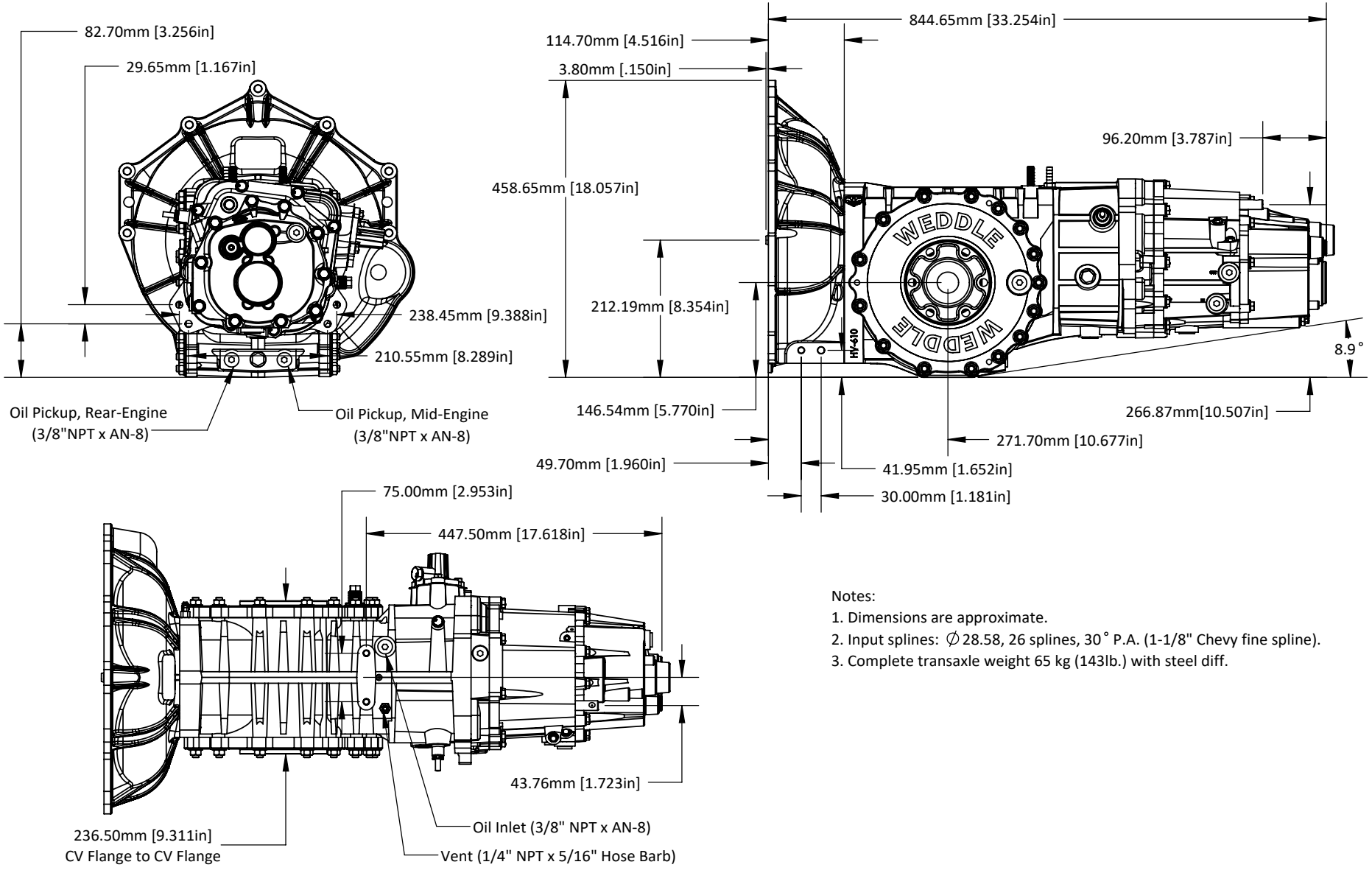


Notes:
1. Dimensions are approximate.
2. Input splines: ∅28.58, 26 splines, 30° P.A. (1-1/8" Chevy fine spline).
3. Complete transaxle weight 65 kg (143lb.) with steel diff.

WEDDLE INDUSTRIES
7200 Hollister Ave, Suite C
Goleta, CA 93117
Ph 805-562-8600 • Fax 805-562-8661
info@weddleindustries.com

Drawing No: HV-DIM-HV24-CH
Drawing Name: HV24 CH External Reference Dims
Drawn By: DY
Revised: 03/28/2022

WEDDLE HV25 CHEVY BELLHOUSING EXTERNAL REFERENCE DIMENSIONS

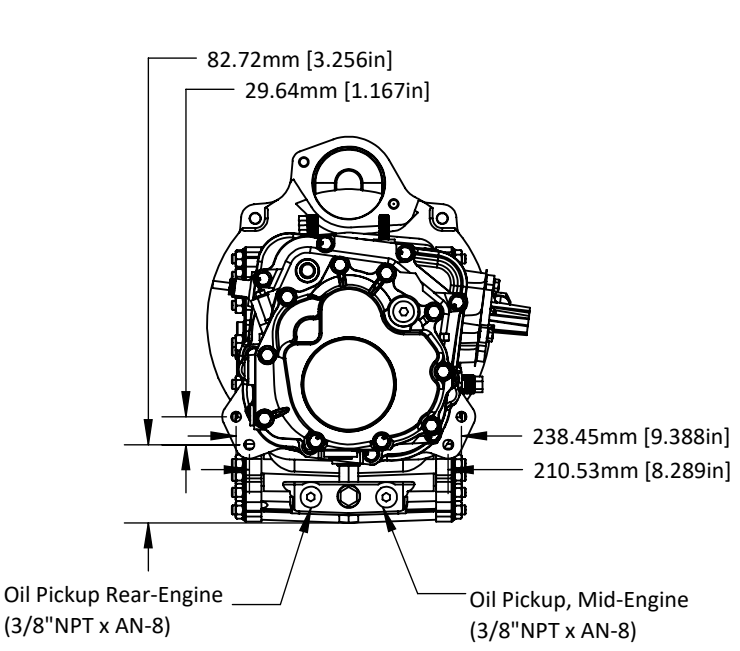


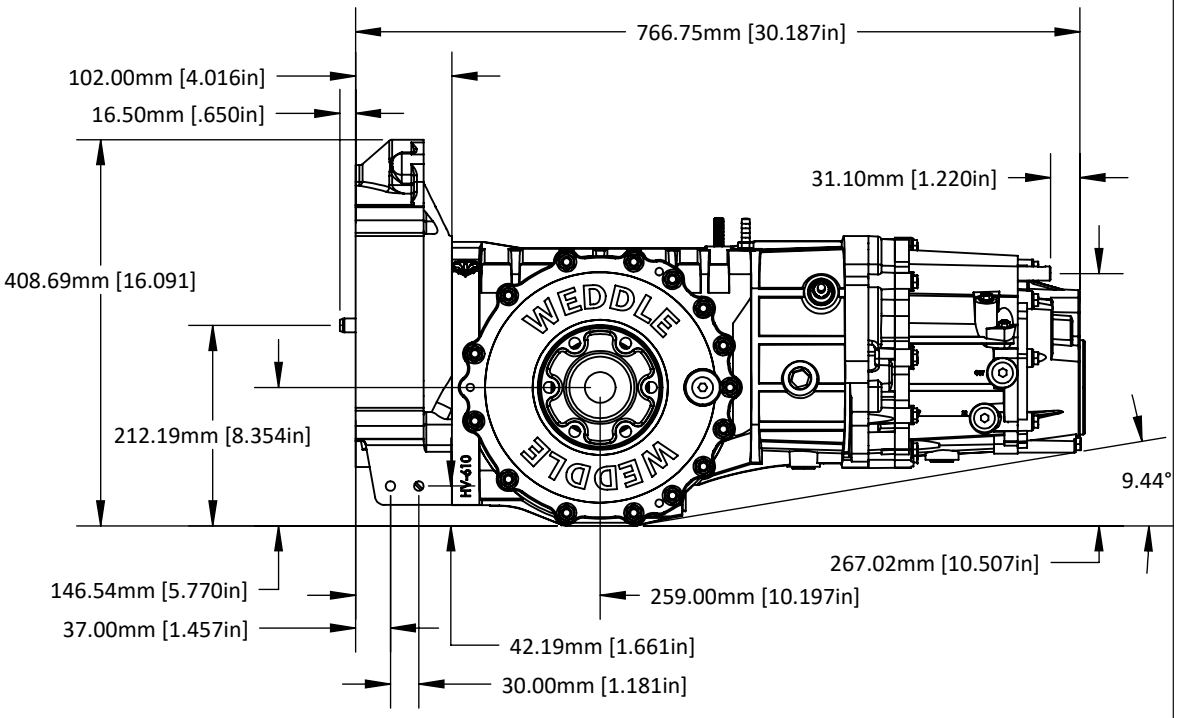
Notes:
1. Dimensions are approximate.
2. Input splines: ∅28.58, 26 splines, 30˚ P.A. (1-1/8" Chevy fine spline).
3. Complete transaxle weight 65 kg (143lb.) with steel diff.

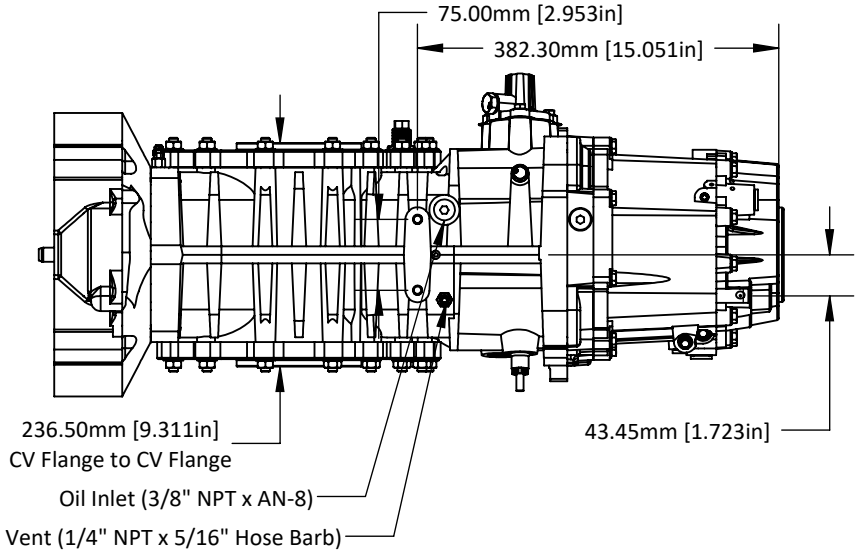
WEDDLE INDUSTRIES
7200 Hollister Ave, Suite C
Goleta, CA 93117
Ph 805-562-8600 • Fax 805-562-8661
info@weddleindustries.com

Drawing No: HV-DIM-HV25-CH
Drawing Name: HV25 CH External Reference Dims
Drawn By: DY
Revised: 03/17/2022

WEDDLE HV24 EXTERNAL REFERENCE DIMENSIONS





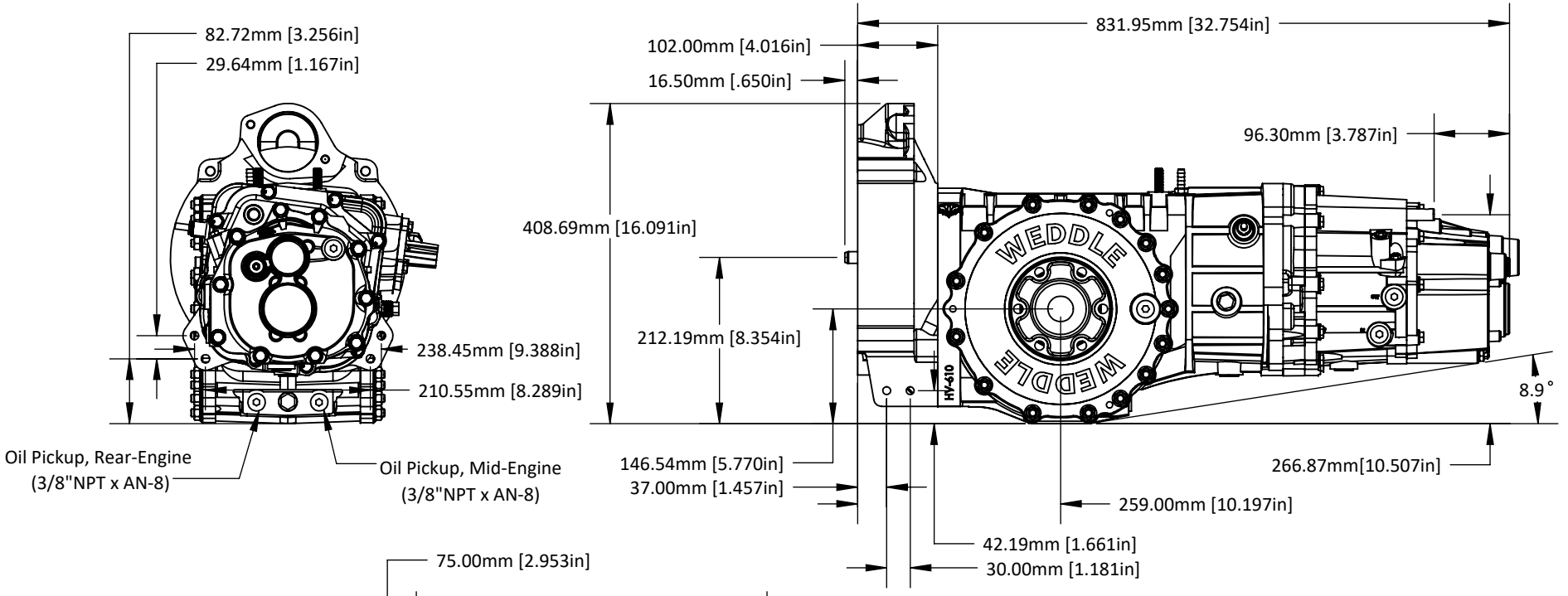


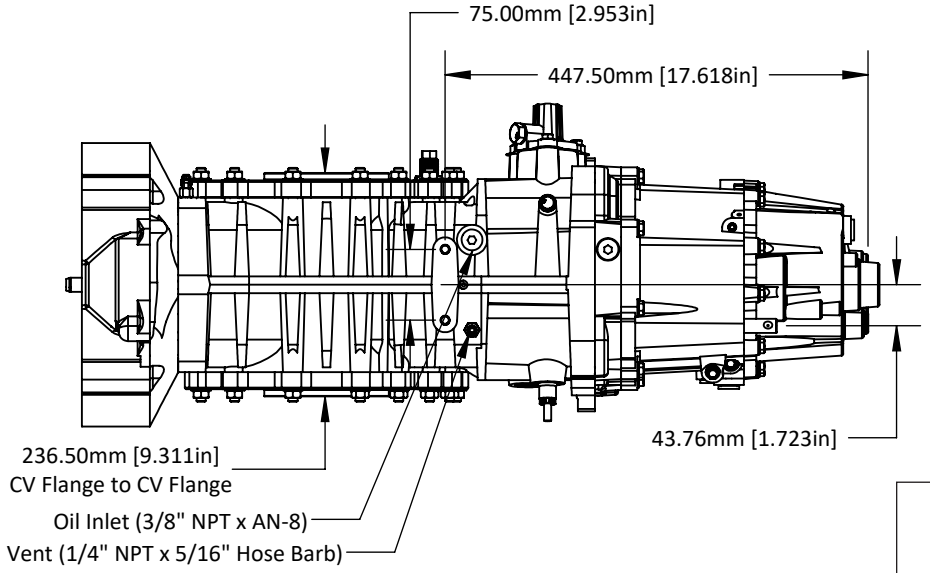
Notes:
1. Dimensions are approximate.
2. Input splines: ∅28.58mm, 26 splines, 30˚ P.A. (1-1/8" Chevy fine spline).
3. Complete transaxle weight 65 kg (143lb.) with steel diff.

WEDDLE INDUSTRIES
7200 Hollister Ave, Suite C
Goleta, CA 93117
Ph 805-562-8600 • Fax 805-562-8661
info@weddleindustries.com

Drawing No: HV-DIM-HV24-VW
Drawing Name: HV24 External Reference Dims
Drawn By: DY
Revised: 03/17/2022

WEDDLE HV25 EXTERNAL REFERENCE DIMENSIONS





Notes:

1. Dimensions are approximate.
2. Input splines: ∅28.58mm, 26 splines, 30° P.A. (1-1/8" Chevy fine spline).
3. Complete transaxle weight 65 kg (143lb.) with steel diff.

WEDDLE INDUSTRIES
7200 Hollister Ave, Suite C
Goleta, CA 93117
Ph 805-562-8600 • Fax 805-562-8661
info@weddleindustries.com

Drawing No: HV-DIM-HV25-VW
Drawing Name: HV25 External Reference Dims
Drawn By: DY
Revised: 03/17/2022