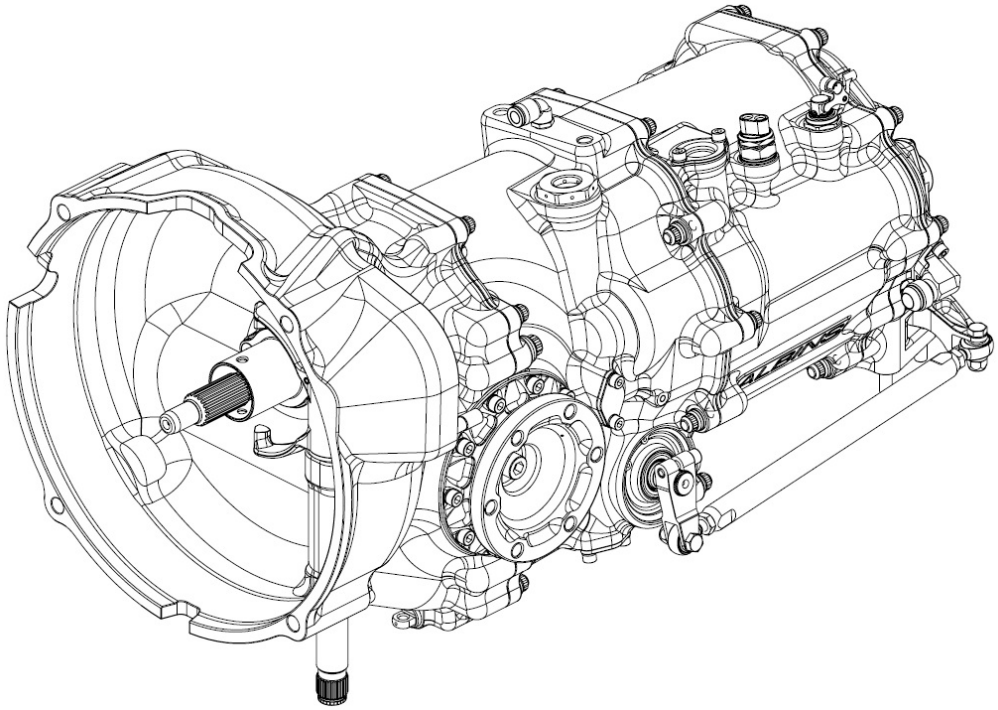
A17 - 915 -

Summary Information

Sequential Transaxle – 6 speed



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Document Revision	R01
Build Maturity	Production

Table of Contents

1 - Overview

The A17-915 transmission is intended for off-road/motorsport use and has been designed as a direct replacement for the OEM Porsche 915 transmission. As such no structural modifications to the vehicle are necessary. The OEM connection points for the OEM cable operated clutch and throttle linkages have also been respected. *However, Albins cannot guarantee direct fitment for every single factory produced Porsche 915 vehicle*.

Refer to Section 7 for installation drawings of the transmission.

The A17-915 uses a sequential shift pattern with 6 forward gears and 1 constant mesh reverse gear with a mechanical reverse lockout when using shift-lever actuation. When a paddle-shift system is used, the reverse lock-out can be deleted. Due to the sequential nature of the A17-915 the OEM shifter mechanism must be replaced.

Due to the unique Albins selector barrel profile, gear changes are very smooth during the shift. Gear engagement is achieved by a 6 dog design.

Refer to 'Albins Sequential Shift Strategy' document for shift cut recommendations.

The A17-915 has been rated to a torque capacity of 600Nm.

The A17-915 is lubricated and cooled through the transmission oil which is circulated throughout the system via the internal oil pump.

It is intended that the oil flows from the pump to the cooler and is returned to the transmission through the inlet port. The oil is then distributed through specially designed internal ports situated throughout the transmission.

All bearings are roller or ball bearings for low friction and ease of service. A conventional two bearing layout is used in the design, with an unconventional location for the reverse gear set allowing an extremely compact gearset for increased rigidity.

Inspection ports are positioned at key points on the transmission housing allowing quick inspection of the gears and dog condition without the need to disassemble the transmission.

Refer to 'Albins Dog Wear Guide' document for more information on component inspection.

The gears and shafts of the A17-915 are heat treated, gear-profile ground, shot peened and isotropically polished as standard allowing for tight tolerances to be maintained.

The Limited Slip differential is a plate type diff with a variety of ramp angles available.

2 - Interface Details

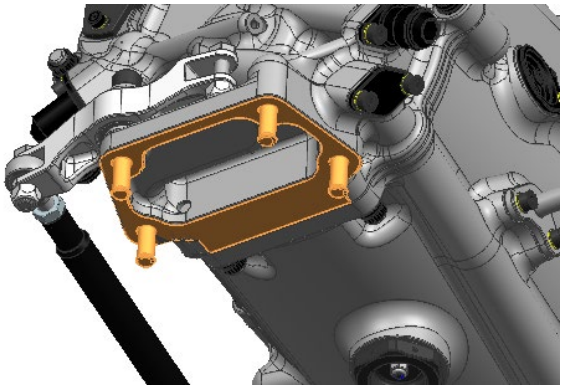

Figure 1 – OEM-915 Cross Member Interface

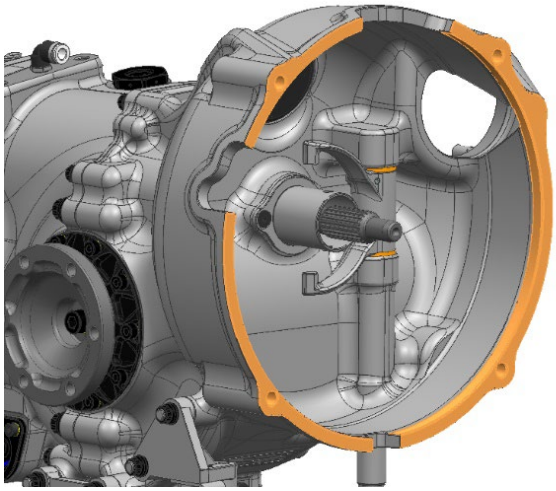

Figure 2 – OEM-915 Engine Interface

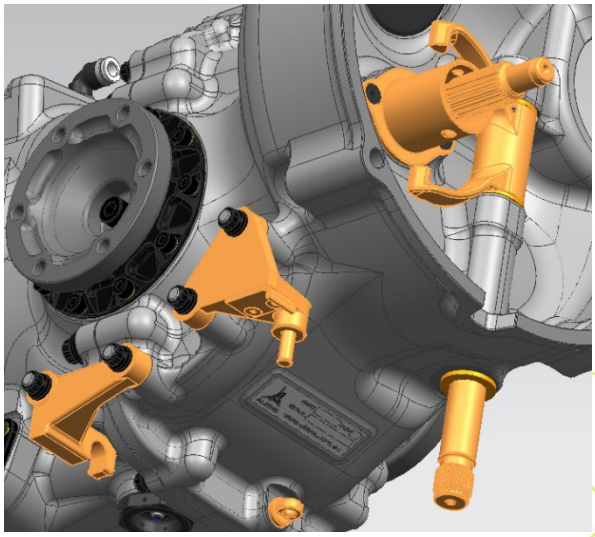

Figure 3 – OEM-915 Compatible Clutch Actuation. Brackets are not included.

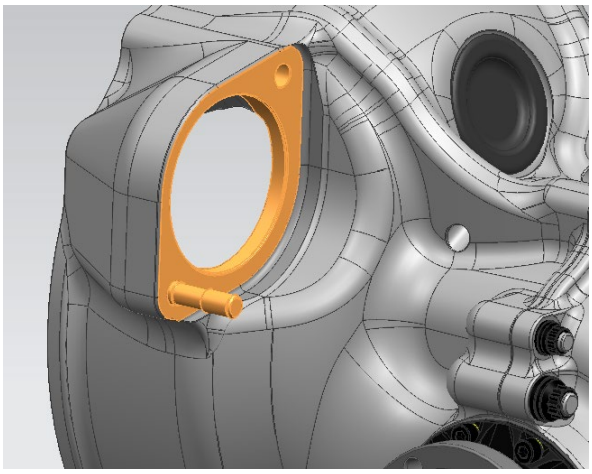

Figure 4 – OEM-915 Compatible Starter Motor

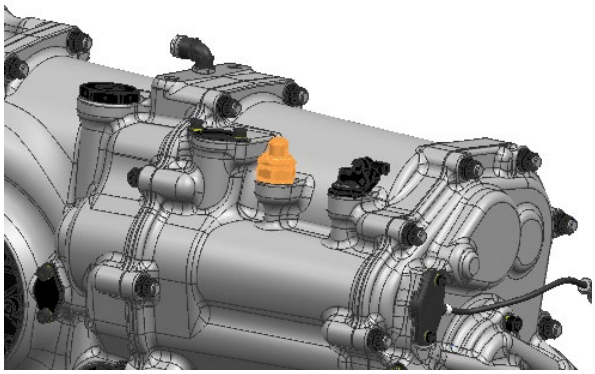

Figure 5 – OEM-915 Reverse Switch

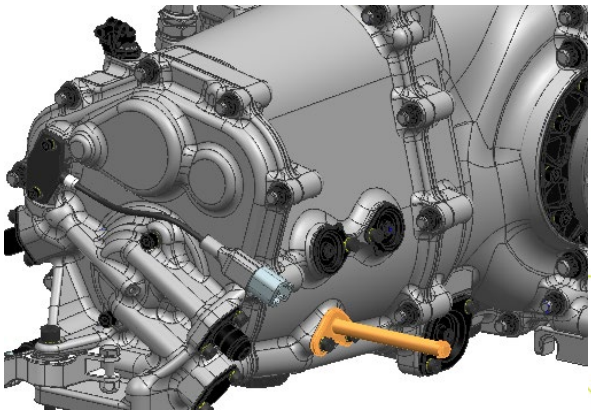

Figure 6 – OEM-915 Throttle Linkage Pivot included.

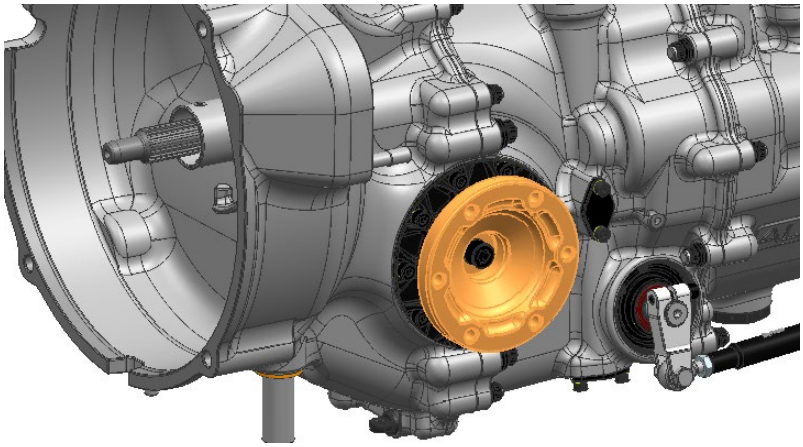

Figure 7 – OEM-915 Drive Shaft Compatible

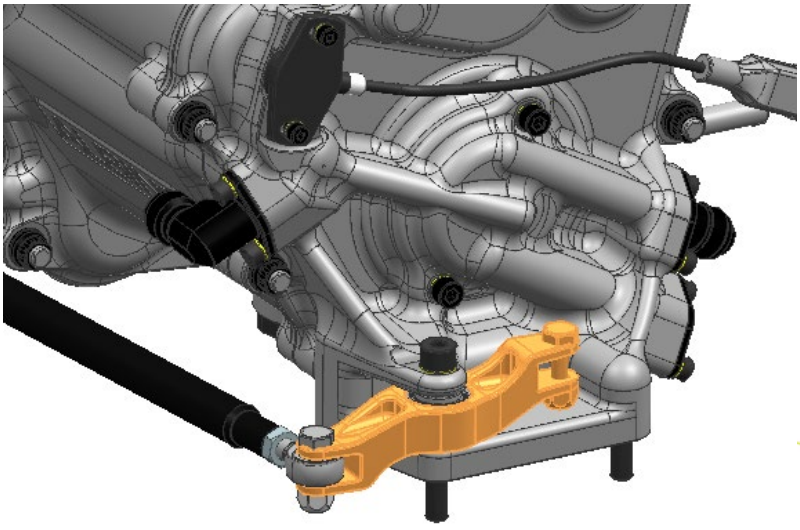

Figure 8 – OEM-915 Location of Shift Rod connection to suit ART4E rod end.

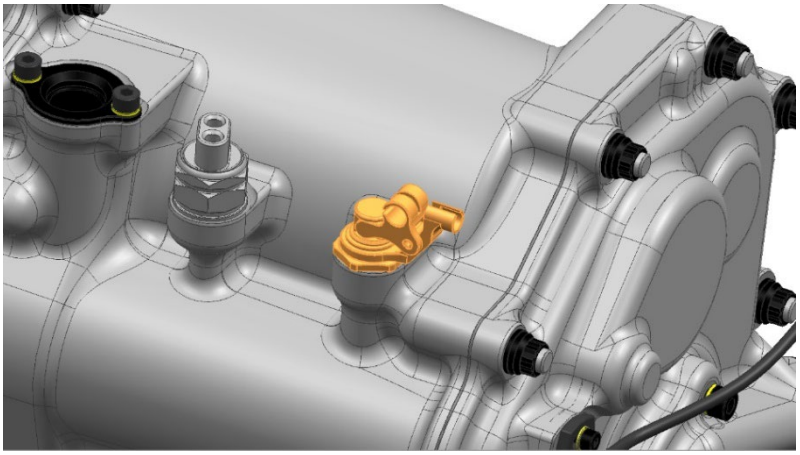

Figure 9 – A17-915 Cable operated Reverse Lockout.

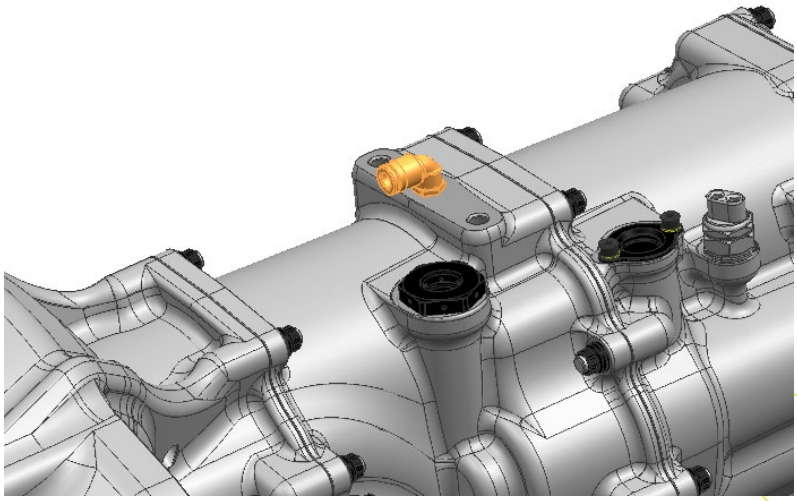

Figure 10 – A17-915 Oil Breather swivel push-lock to 'catch can' via 5/16" tube

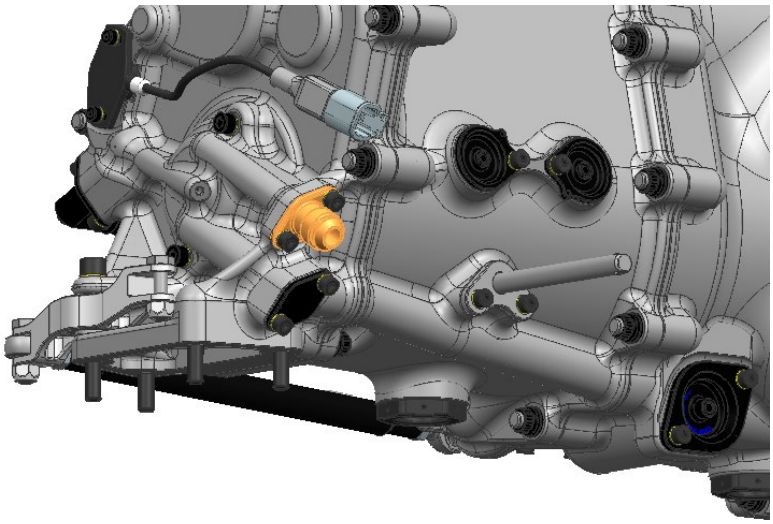

Figure 11 – A17-915 Oil line AN-8 fitting from transmission to oil cooler.

Figure 12 – A17-915 Oil line AN-8 fitting from oil cooler to transmission.

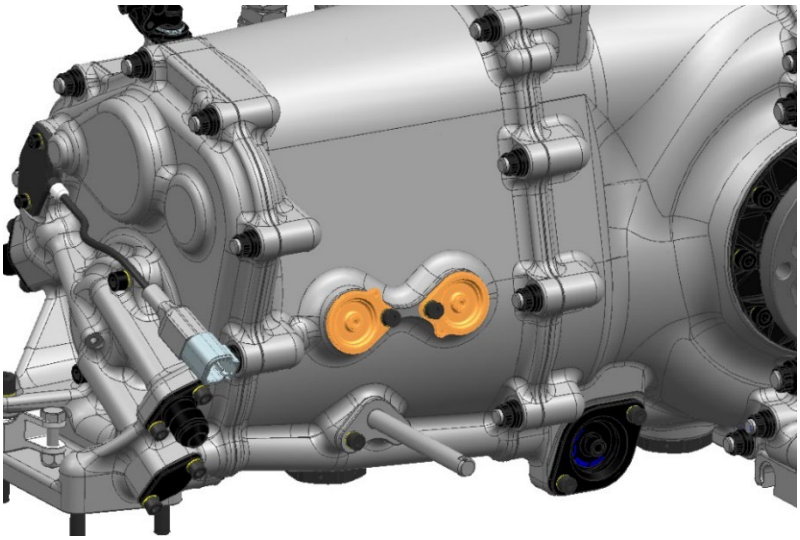

Figure 13 – A17-915 Inspection Plugs.

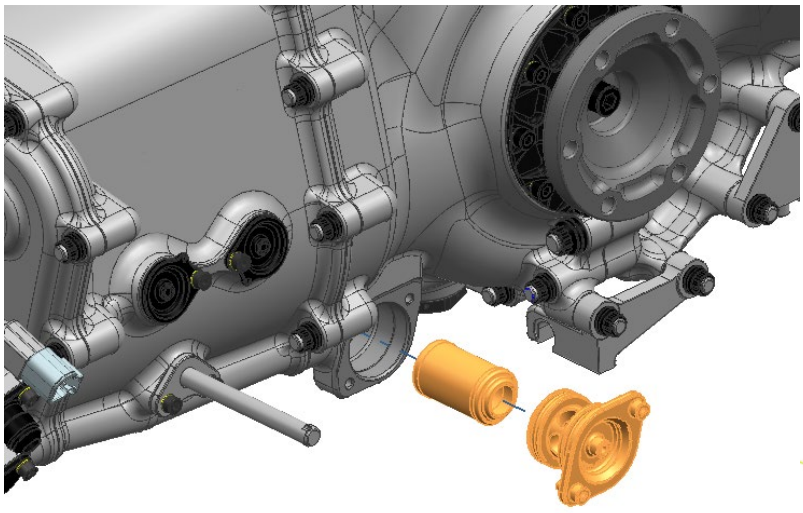

Figure 14 – A17-915 Oil Filter.

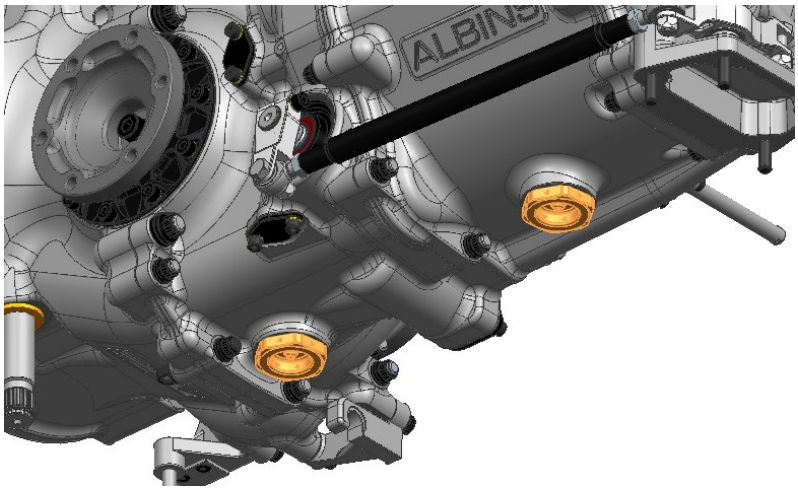

Figure 15 – A17-915 Drain Plugs with Magnets.

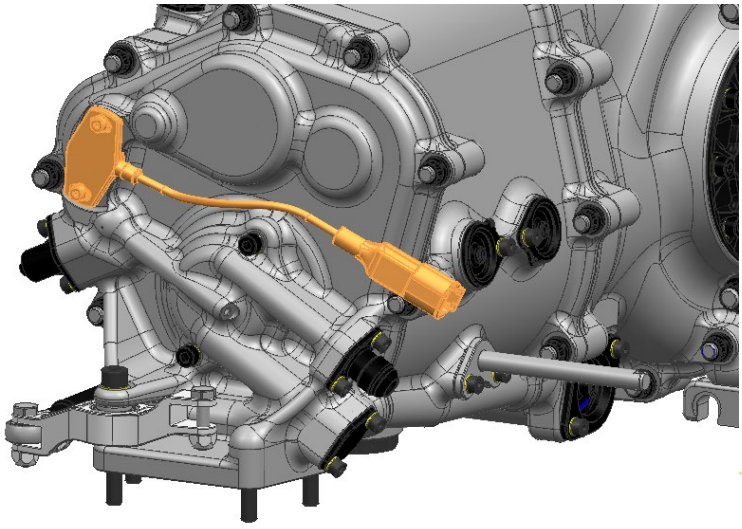

Figure 16 – A17-915 Barrel position sensor. Deutsch DTM 4 pin connector.

3 - Technical Specifications

- Mass (dry) — 55.0 kg
- Gears — 6 forward and 1 reverse.
- Lubrication
  - Specification — SAE 75W-140 Gear Oil, Synthetic[1]
  - Quantity — Approximately 2.25 litres, excluding oil cooler and lines.
  - Operating Temp — 80 - 110°C[2]

- Torque Capacity[3] — Up to 600Nm
- Gear select travel — 21.5° in either direction (43.0° total)
- Reverse lock out travel — 3.5 mm to disengage
- Gear position travel — 45° rotation between gears.

a. Standard Attachments

- Temperature sensor — Albins Part P13097 - M12x1.5mm port.
- Throw out bearing — OEM Porsche 915 pull lever
- Clutch/Input spline — OEM Porsche 915 20 Tooth
- Mounting — 4x M8x1.25 Studs to suit OEM Porsche 915 cross member
- Oil Filter — Albins Part P32915

b. Optional Attachments

- Sequential shifter — Albins Part P36980
- Gear position sensor — Albins Part P36732.
- Paddle shift system — Various options possible - Engine Management System dependent.
- Bell housing — Standard matches OEM Porsche 915, options possible

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[1] *Recommended for **dedicated motorsport applications**. Other applications may require different viscosities.*
[2] *To maximise the life of the transmission, Albins recommend the oil is allowed to reach a minimum of 60°C before applying full load conditions.*
[3] *Torque ratings are provided as a recommendation only - various factors impact the transmission durability including engine and shift-cut management strategy, vehicle use, environment, system temperature and traction.*

c. Notes

- Gear position wiring — Refer to current revision DWG for P36732
- Reversing Lamp wiring — The OEM switch has been retained, but is relocated away from the OEM position. The OEM wiring therefore requires modification, or a separate extension loom.
- Shift linkage detail — Rod end ART 4 E *(or equivalent)*
- Breather line — 5/16" push-on pneumatic line with 100 – 150mm of vertical run as close to the transmission as practical. Where a catch-can is fitted, it should be positioned higher than the breather outlet.
- OEM Speedo cable — No provision has been made for connection of the OEM Speedo cable.

It is recommended the Albins A17 sequential shifter mechanism is used. This has been specifically designed for use with the A17-915.

Where the Albins A17 shifter is not used, it is highly recommended the shifter mechanism have travel stops at the gear lever. Although the A17-915 transmission has internal travel limit stops, additional stops on the gear lever prevent overloading the connecting rod and associated system components.

The travel limits for both gear shifting and reverse lock-out must be observed to ensure reliable and consistent operation.

Before operation, the throw out bearing to clutch finger clearance should be checked. Confirm clearance with clutch manufacturer.

A clutch pedal stop must be fitted to prevent over-travel of the clutch spring.

4 - Gear Ratios

All gears within the A17-915 transmission are constant mesh. 1st gear is integral with the primary shaft, the remaining gears can be swapped with those on the A17-915 ratio chart. The overall ratio can be tailored to specific requirements through changing the crown wheel and pinion final drive gear set.

While reverse gear is rated to over 120Nm (input), Albins recommends an engine management strategy to reduce engine output in reverse gear.

More gear and final drive ratios are available. Refer 'Albins A17-915 Ratio Chart' spreadsheet.

a. Selector / Shift direction

Up and down-shifting the transmission through the gears is achieved by actuation of the shift rocker at the front of the transmission as seen in Figure 2.

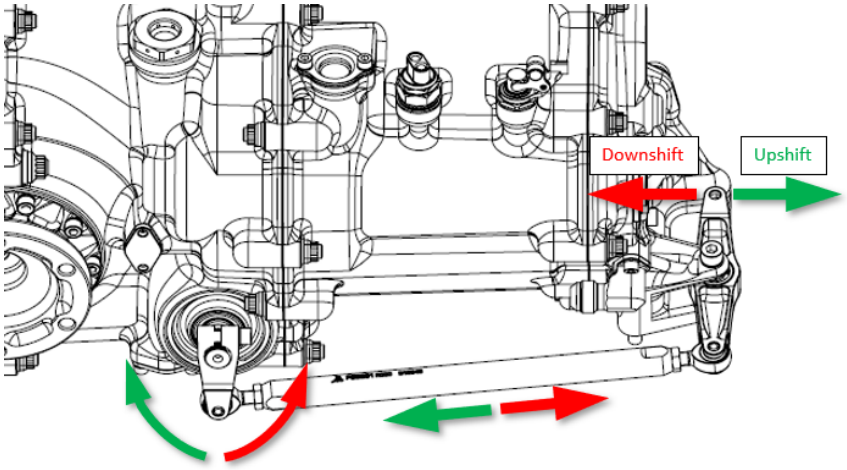

Figure 17 – A17-915 external shift directionality

When using the standard (P36737) shift rocker, which has a ratio of 1:1, it is recommended no more than 15.0mm in either direction (30.0mm total) is used to actuate a shift event.

This equates to 15.3mm (30.6mm total) travel or 21.5° (43.0° total) rotation, when using the standard (P19050) gear lever as shown in Figure 2.

The internal shift mechanism is a low-maintenance ratchet-pawl system designed to give smooth actuation and positive feedback to the driver.

Please refer to 'Albins Sequential Shift Strategy' document for shift cut recommendations.

5 - Servicing

The Albins A17-915 is a low-maintenance unit designed to give reliable and trouble-free power transmission. Using the transmission in accordance with Albins recommendations will ensure a long and happy life of the product.

a. Albins Servicing

Albins highly recommend the A17-915 is serviced by Albins or an accredited Albins service centre.

b. Lubrication

The internal oil pump is driven by the secondary shaft and is in operation whenever the output shafts are rotating. Albins recommend an Albins supplied filter element and some form of temperature monitoring. The A17-915 has -8AN fittings for fitment of an external oil cooler.

c. Draining the Transmission Oil

- Two drain plugs at the bottom of the transmission are used for oil draining.

d. Filling the Transmission Oil

- Oil is to be filled/pumped through the oil-cooler inlet hose. This will fill the oil cooler prior to the transmission.

6 - Variations

The A17-915 is designed specifically as a Porsche OEM replacement. However, it is a modular design that can be tailored for specific vehicle use and any number of applications. Please contact Albins for more information.

7 - Dimensions

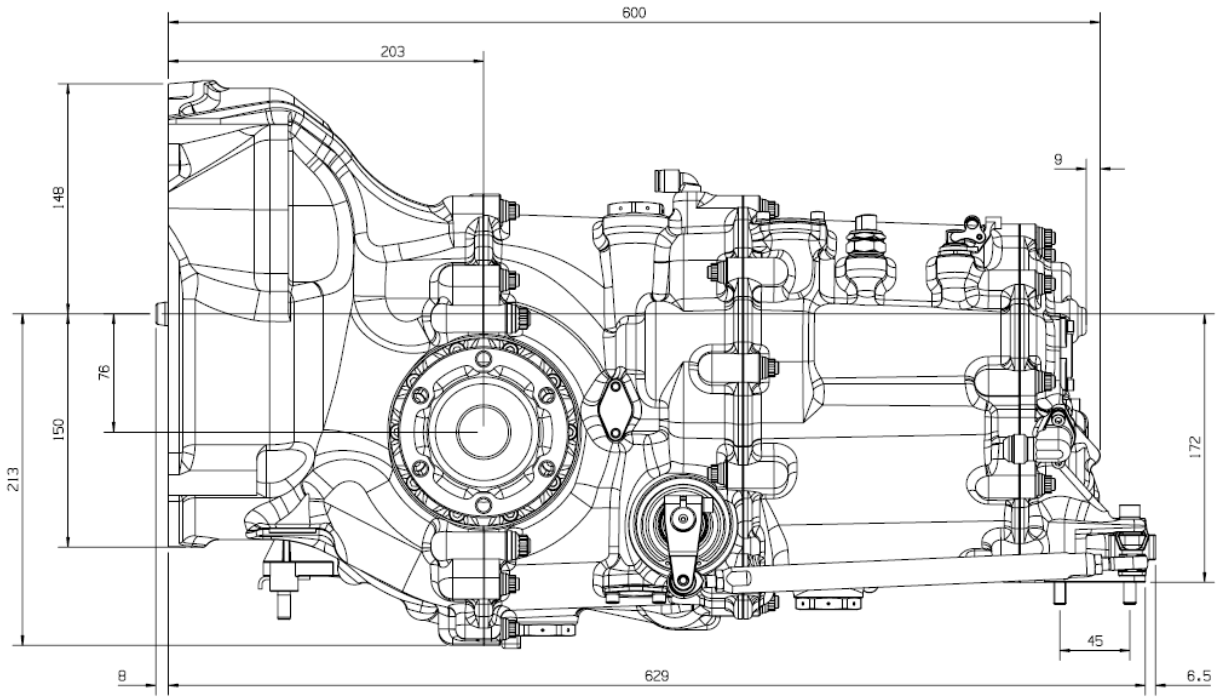

Figure 18 – A17-915 Right Side View

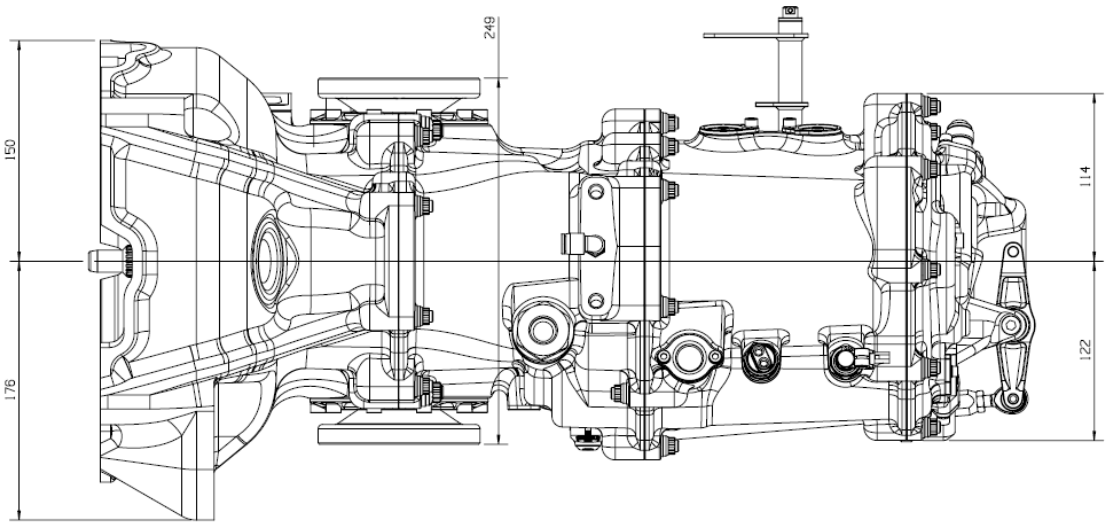

Figure 19 - A17-915 Top View

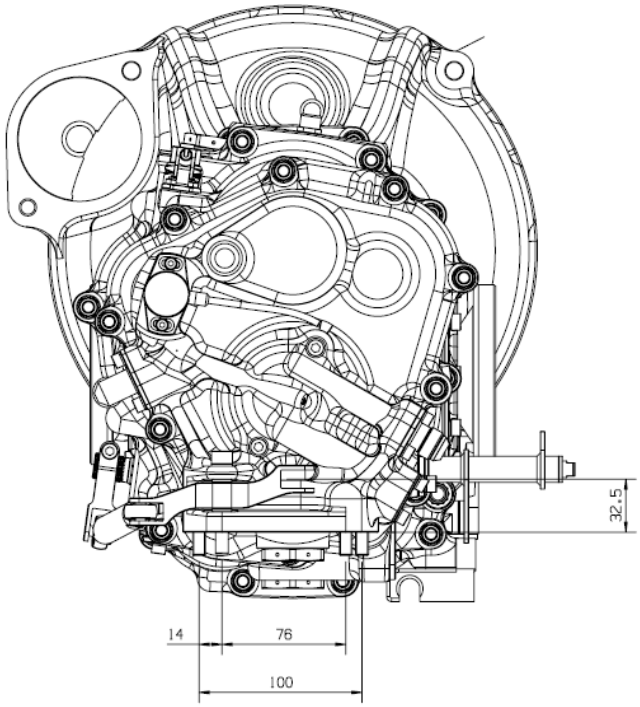

Figure 20 - A17-915 Front View

8 - Disclaimer

The performance gained from installing Albins products may place vehicles within an "off road use only" category. Albins will not accept responsibility for any restrictions placed on vehicles. Albins will not accept responsibility for damage to vehicles as a result of the installation of Albins products. A vehicle modified with Albins products may not meet the legal requirements for operation on public roads and highways. Albins is not responsible for any damage, premature wear or failure of any component after servicing by a service provider not accredited by Albins.