TRUNDLES

VIPER CLUTCH INSTALL GUIDE

Thanks for purchasing the Trundles Automotive Viper Clutch.

Over the years we have noticed an extreme lack of knowledge in the industry around clutch adjustment especially when running more complex systems such as clutch boosters.

All of the pointers below do not just apply to this particular clutch installs but should be in fact checked on all clutch systems.

Ensure you thoroughly read all of the instructions before beginning the install as 99% of the failures we see are due to incorrect setup.

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Once you have removed the gearbox from your vehicle we recommend to thoroughly clean the bell housing of any debris and closely inspect the input shaft for any wear. It is also extremely important to ensure the motor has no oil leaks and also that the gearbox has no oil leaks into the bell housing area. If any oil is present you will need to rectify it. i.e new rear main seal etc.

Once the old flywheel clutch and release bearing is removed there are a few pointers that we have seen people get caught out by in the past. Take great care when replacing your Spigott bush - if you do not use finesse when fitting the bush will become mushroomed and be too tight on the input shaft. Ensure you check the measurement once fitted and if it is to tight you may need to dress the bush accordingly.

FITTING THE RELEASE BEARING

Remove the clutch fork and closely inspect it for wear on the contact faces and also on the release bearing carrier. Replace if required. Please ensure the release bearing is fitted in the correct direction as per the picture supplied. Apply a small amount of grease on the pivot points, excess use will result in the clutch becoming contaminated and premature failure.

When fitting the flywheel ensure the bolts are torqued to the manufacturers specifications along with the clutch. Ensure Locktite high strength is used on the flywheel bolts. Use an alignment tool or get the plate centralised around the outer edge - we often prefer the later. Ensure that your fingers do not contact the clutch plate, cover or flywheel surfaces and they are liberally cleaned with CRC Brake Cleaner or similar.

Flywheel bolt torque 147-167nm

Clutch cover bolt torque 22-29nm

GEARBOX FITMENT

Ensure you use a clear floor hoist and the gearbox is securely tied to the transmission jack. You may be required to jack the front of the motor to get the correct angle for the gearbox fitment, you should not have to force the gearbox to enable install - if you do it may result in the clutch plate getting bent.

SLAVE CYLINDER AND PIVOT ADJUSTMENTS

On most TD42 motors the clutch fork is between 30 and 40mm off the slave cylinder housing once assembled, if this is not the case then you have been supplied 10mm washers that you can space the clutch pivot with to get the clutch fork closer. Once this is in spec make sure you have a minimum of 5mm freeboard at the slave cylinder; if you do not, shorten the pushrod and radius the end nicely. This is also a good time to ensure the clutch fork boot is in good condition, if it is not it is imperative that it gets replaced to stop contaminates entering the clutch assembly when offroad.

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We also recommend replacing the shifter boots and bushes whilst you are at it. We also strongly recommend inspecting the inside of the slave cylinder bore for corrosion and dirt contamination as this can result in the slave cylinder sticking and temporary lack of freeboard which brings me to my next point.

Gear Shifter Boot - part number 74963-06J00 $60 inc gst.
Clutch Fork Boot - part number 30542-01J00 $30 inc gst.
Gear Shifter Bush - part number upper 32850-v5001 $50 inc gst.
Gear Shifter Bush - part number lower 32861-01G00 $15 inc gst.
Replacement Slave Cylinder - part number 32987342 - $65 inc gst.

EXHAUST PROXIMITY

We have had a lot of cases that people have clutches slip only when the vehicle gets up to operating temperature. The large majority of the time this is due to aftermarket exhaust systems being too close to the slave cylinder and/or the heat proof shroud missing.

We recommend having a minimum of 75+mm air gap. A good rule of thumb is that if it would burn your hand then it can cause the seal pinch in the slave cylinder bore. Please remember that exhaust down pipes can reach up to 500 degree temperatures which reiterates the importance of these checks.

MASTER CYLINDER ADJUSTMENT AND HYDRAULIC RESIDUAL PRESSURE CHECKS / BOOSTER TO MASTER CLEARANCE ADJUSTMENTS

This would be the leading cause of clutch failure that we see in both stock and aftermarket clutches.

When fitting the clutch you may find that it will not go into gear nicely, there is a few ways you can improve this but they require close attention to other adjustments once taken out.
Initially we recommend backing off the 14mm head bolt to allow the pedal to come up higher and therefore enabling a fuller stroke of the master cylinder. We then suggest you undo the jam nut under the dash and wind out the master cylinder pushrod to complete the adjustment to enable the full stroke - if you go too far this will not allow the piston to fully return in the master cylinder which can result in hydraulic residual pressure building up.

A good way to confirm this is to unbolt the 2x master cylinder bolts in the engine bay and ensure there is no preload present.

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We suggest you get someone to pump the clutch a few times with the vehicle running and ensure that once released the slave cylinder has minimum 5mm of freeboard immediately.

We strongly recommend rechecking this measurement between trips as due to the high torque output and environment that these vehicles work in and as the clutch wears, the fingers will rise on the pressure plate cover which will result in no freeboard and premature clutch failure.

If after the above adjustments you have not been successful in making the clutch dis-engage nicely we strongly recommend upgrading to a Y61 Master Cylinder that we have in stock.

ANY FURTHER ISSUES

If you are having issues still with the clutch feel free to email us at sales@trundlesautomotive.com for assistance.

Please note this manual is largely based on a well serviced system.
Please ensure your clutch is bled correctly and pay particular attention to your clutch hose condition - if your vehicle has a body lift it may well be damaged as a result!

We have never had one of these clutches fail in our race vehicle and we largely base this on continual maintenance and setup knowledge that we carry out before each race meet.

If you are unable to rectify we will do a 15 minute inspection of the install - free of charge, if you can bring it to our workshop at 159 Gill Street, New Plymouth.

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