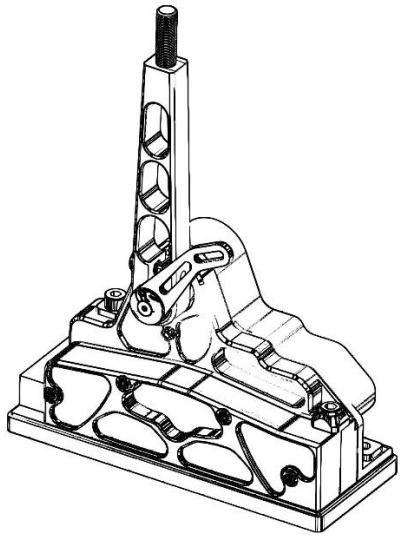
# S1 Sequential

Sequential shifter

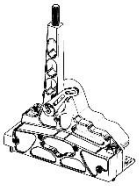
Contents and assembly instructions

**Ford t56/Ford tr-6060/Magnum xl/Viper**



# Parts List

Sequential shifter x1



Base plate x1

Base spacer x1

Drill Square x1

Shaft fitting x1

Square washer x4

Reverse lockout cover x1

M8x12 (reverse cover) x1

M4x8 (rps) x2

M5x25 (drill square) x1

M5x30 countersunk (drill square) x1

M8x16 countersunk (base plate to gearbox) x2

M8x16  8mm shank (base plate to gearbox) x2

M8x35 hex (front left mounting bolt) x1

M8x35 socket head (rear left mounting bolt) x1

M8x80 socket head (rear right mounting bolt) x1

M8x60 socket head (front right mounting bolt) x1

M12x50 grub screw (top of lever)

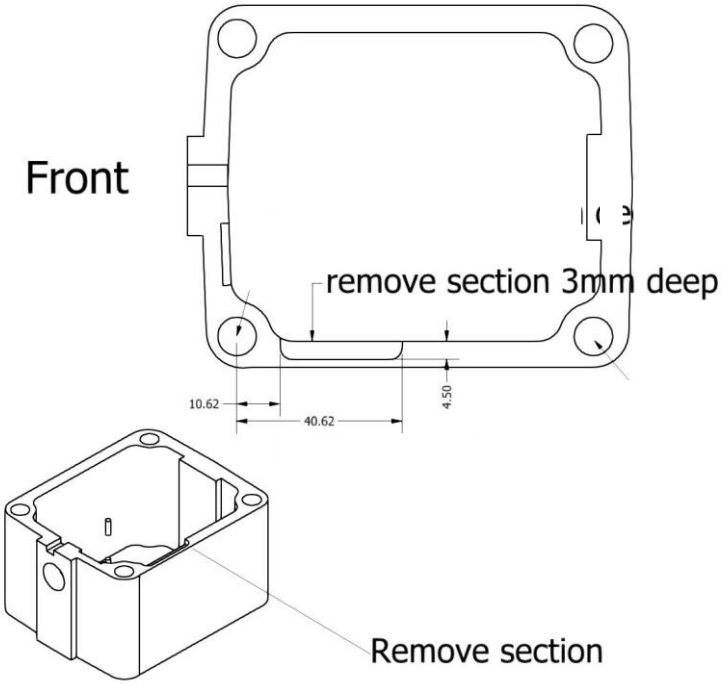
Roll pin 6x32 (drill square)

Please read instructions fully before fitting

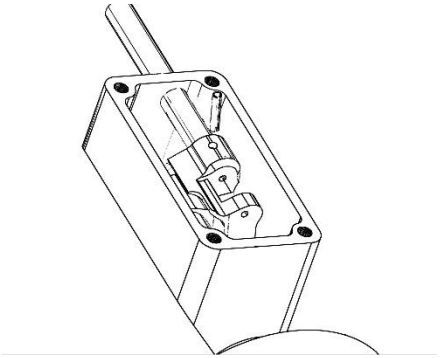
# Installation

1. Remove old shifter and offset lever. The offset lever is the cast part that is secured to the selector shaft with a roll pin.
2. Remove factory electronic reverse lock out and fit supplied cover with sealant.
3. The Ford t56, Viper, tr-6060 & Magnum XL cases will need a small amount of material removed from the

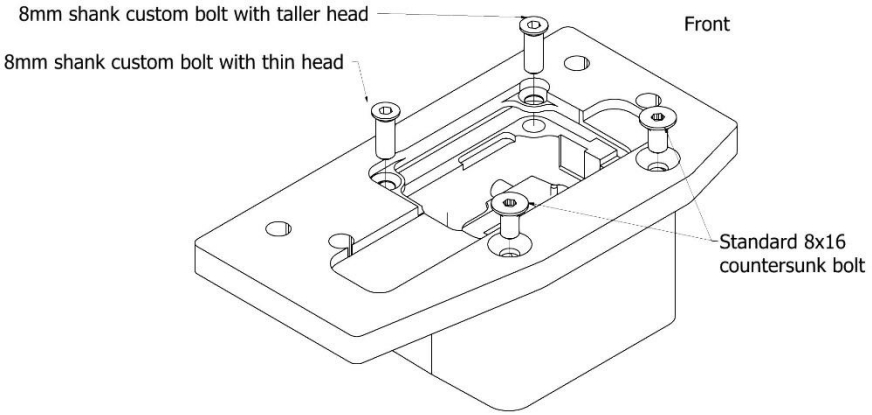
case as pictured for clearance. We recommend sealing off the inside of the housing with tape the removing filings with a vacuum.



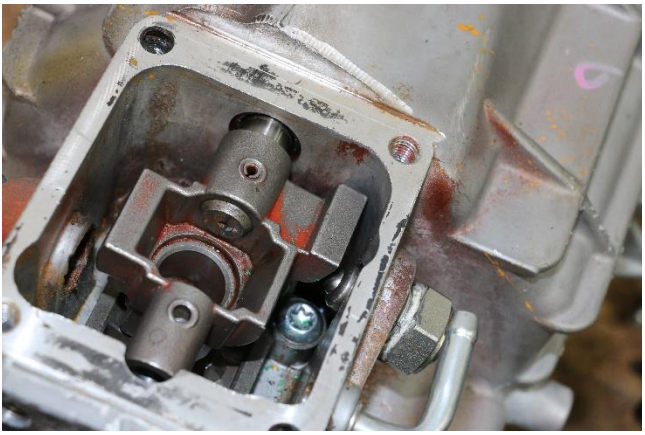
4. Fit shaft fitting in place of offset lever with the 3/16th inch roll pin.



5. Move shaft and shaft fitting through all forward gears to check clearance to housing.
6. Apply a thin sealant to the base plate the fit with the two 8x16mm countersunk bolts on the right side when looking from the back of the gearbox.
7. The bolts for the left side are custom made with an 8mm shank and one has a slightly thinner head for clearance, this one must be installed in the rear position.



Magnum/Magnum xl / tr6060.



on these gearboxes this ball plunger must be removed and replaced with the provided bung. Other gearboxes use this plunger to centre the shift rod longitudinally this is normal on t56.

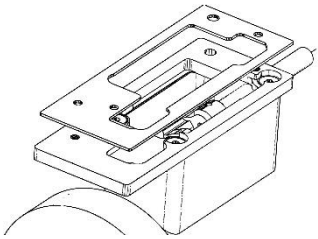
in this set up it can be retained and will make selecting neutral easier. The easiest way to check is to rotate the

shaft fitting while in neutral, if it stays to the side with minimal force ( 1st or 5th side of the gate you have the t56 style if it has a strong return to centre force you have the Magnum/Tr6060 style.

**Check shift throw**

Its very important to check the throw of the gearbox at this point. Measure the throw of the gearbox between 3rd and 4th gears, make sure that each gear is fully selected by turning the input or output shaft as you do this. If this measurement is 17.5mm you have a Tr-6060 or Magnum transmission and your shifter should have a blue or purple cam if it measured 22mm you have a T-56 and your shifter should have a red or orange cam.

9. Fit base spacer with a thin layer of sealant.



Observe how the shifter functions especially how the reverse selector works. The shift pattern is N-1-2-3-4-5-6

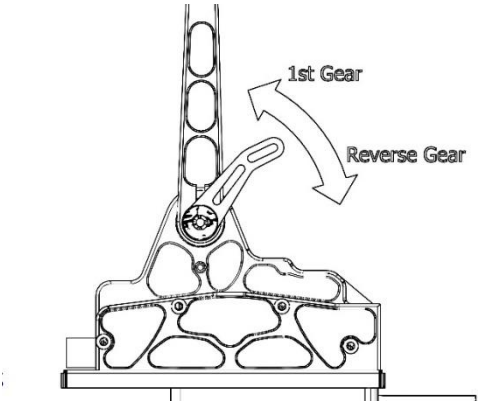
Pulling the back shifts up gears. Pushing the lever forwards shifts down gears.

Neutral is only a half shift to the stop under 1st gear and must be selected softly shifting hard to neutral may damage the shifter or make reverse selection difficult.

To select reverse first down shift to neutral then move the lever clockwise when viewed from the right side of the shifter, once the lever has moved up 3 clicks through the internal gate the main shift lever is pulled back to engage reverse gear.

To select neutral gear from reverse, push the main lever forwards a half shift to the stop then move the reverse gear selector anticlockwise. Be sure the reverse selector has been moved the whole way before engaging 1st gear. It may be fiddly at first but it's very quick and simple once it's been done a few times.

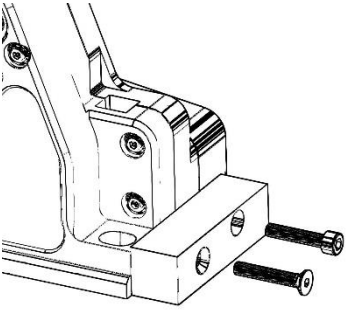
Never force the reverse selector if it doesn't move easily select a gear again and gently re-select neutral.



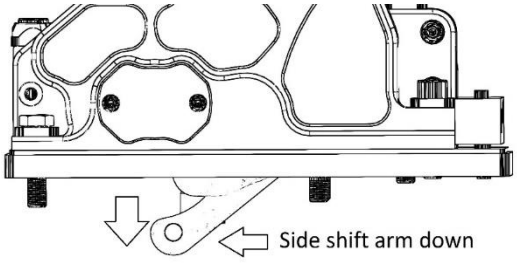

10. The reverse selection lever can be mounted facing forwards or backwards to suit the vehicle. The bolt

retaining this part is held with Loctite, you will probably need heat to remove it.

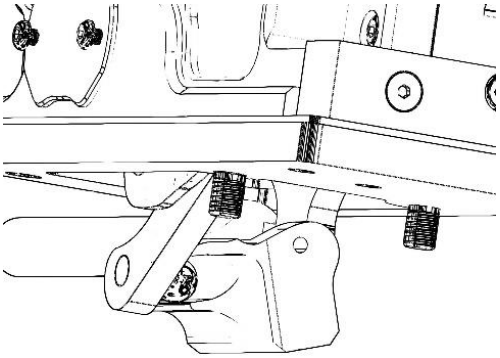
11. Attach the part “drill square” with the m5x25 cap head bolt and the M5x30 countersunk bolt as pictured.

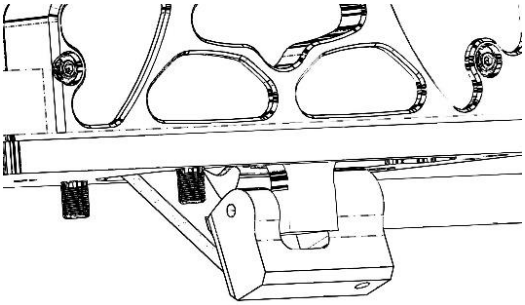


12. Put the gearbox in neutral gear and rotate the selector shaft all the way to the reverse position.
13. Put the shifter in the neutral position. Shifting may be difficult when the shifter is not mounted in the car. It is easiest to hold the lever and push the front of back edge of the shifter on a solid surface.
14. Move the reverse selector to the 1st gear position and observe the side shift arm moving down.



15. Slide the ball shaped fitting on the side shift arm into the groove on the left side of the shaft fitting as you lower the shifter onto the base plate. Check that the shifter slides all the way flush with the base, do not force it down with bolts.



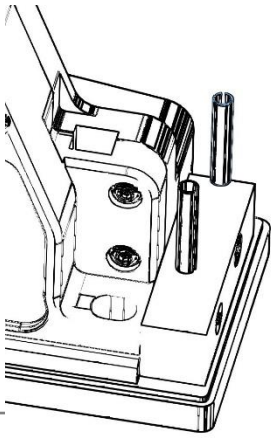


16. Fit and slightly tighten the three 8mm cap head bolts to attach the shifter to base plate then rotate the

reverse selector back and forth a few times to get a feel of it.

Rotate the reverse selector all the way to the 1st gear position and you should now be able to select gears. If the shifter has not been placed exactly in the centre it may jam or get tight to move near the end of lever travel it is often most obvious when you go to change out of that gear where it will be much harder to move than in the opposing gear, this indicates that you need to move the shifter very slightly back or forth. If the problem is on an odd number gear you need to move the shifter slightly forwards, if the problem is on an even numbered gear move it slightly backwards. Take your time with this get it right the first time then tighten the bolts and check it shifts as it should in all gears. Check front bolts are not touching the gearbox housing.

17. Once you are certain its correct drill two 6mm holes in the drill square and through the base spacer for the 6mm roll pins. Be careful not to drill through the mounting bolts securing the drill square to the shifter body.



18. Remove shifter and apply a thin sealant refit bolts finger tight and fit the roll pins to locate the shifter then fit and tighten all 4 shifter bolts.
19. If needed the lever handle can be adjusted for angle. If you cannot easily rotate the handle once loosened removed the bolt and insert it from the other side with a piece of metal inserted to cover the hole in this way the bolt its self can be used to loosen the grip on the shaft.

    If you have any issues with the shifter or electronics, please contact us even if you are unsure if its faulty or an error on your part and we will find you a solution.

## Things to remember

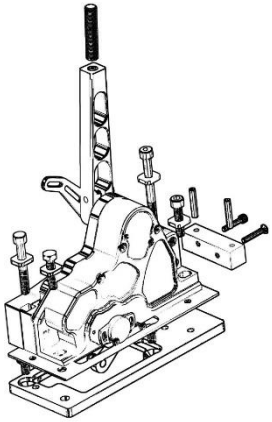
1. A gearbox with any shifter fitted may not shift through all gears when the car is not moving. A lot of people don't notice this as with a H-pattern shifter there is no motivation to shift through all 6 gears while stationary. It may be necessary to release the clutch slightly with the engine running while engaging each gear so the internals can rotate and line up. A lot of t56 show this the most on reverse gear.
2. Clean transmission fluid is very important in these boxes and it wears out fast when driven hard.

3. Clutch operation is also very important many cars have poor shift just from the clutch not fully disengaging. If the car moves forwards even a little when first gear is engaged the clutch is not fully releasing. Clutch fluid also gets old and causes issues in a lot of cars.
4. Most t56 shifting issues we have seen are actually clutch issues. The most next common problem is broken shift for pads.

## Shifter removal

1. Use a punch to knock the roll pins all the way out of the base plate.
2. Undo all bolts and remove

## Bolt fitment exploded view



# Gear indicator fitment & programming

**Small Housing Style**

*Nice and compact in a black casing.*

**Gauge Pod Style**

*Designed for a standard 52mm / 2 $^{1}/_{16}$ in gauge pod.*

This gear indicator differs slightly from most by using not just an analog signal to determine gear but also an input from a reverse switch which is necessary with our shifter.

It is that required that the installer has the appropriate knowledge to complete the job, if cannot use a multimeter to test voltage and resistance it is best to get this job done by a professional.

# Fitment

Mount the gear indicator in the desired position using double sided tape for the small flat style gear indicator or a 52mm, 2 1/16 in gauge cup for the pod mount style and connect all wires.

Wire Colours

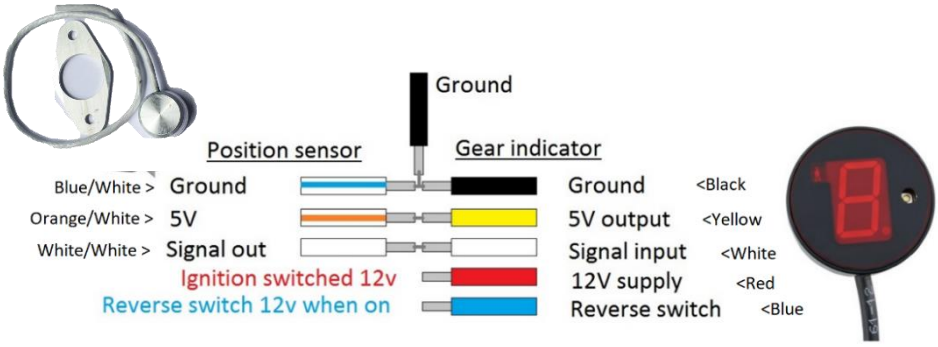
Black = Ground

Red = 12v (ignition switched maximum 18 V)

Yellow = 5v output for position sensor

White = Signal input (signal output from sensor)

Blue = Reverse input



# Sensor fitment

Position sensors now have a revised design that allows them to be rotated 360 degrees under the mounting bracket. To determine the correct position it is best to use a multimeter between the white signal wire and ground to ensure the sensor is positioned so it will not cross the dead zone in operation where the output will instantly jump from a low to high voltage. The sensor is secured with the supplied 4mm stainless steel screws.

# Set up

**These Gear indicators now ship programmed but this may still need to be reprogrammed for your specific set up.**

# Programming

1. Hold the programming button down while the ignition power is switched on this will put the gear indicator into programming mode. The programming button can be accessed through the 4mm hole on the front of the gear indicator. This should be done with a nonconductive object to prevent any accidental damage.

2. The gear indicator will now pulse the gear it is waiting to be entered starting with neutral.

3. Select the gear displayed on the shifter/transmission then press the program button to set the position in the gear indicator.

4. Once you have programmed the number of gears your transmission has turn off power to the gear indicator for all the settings to be saved.

5. Reverse can be displayed my either a high or low power (under 1V=low, over 4V= high) on the blue wire this will come from the reverse switch on the side of the transmission.

6. The reverse input will override all other gear positions.

7. Generally earlier cars and most conversions switch to 12v with reverse is engaged and many late model cars have a 12v supply to the sensor that gets pulled to ground when reverse is engaged. To select positive or negative trigger press the program button for 1 second at any time at least 5 seconds after start up and the input trigger behaviour will switch.

When you select positive trigger, the display will flash “P” with you select negative trigger the display will flash “N”.

If you're not sure what to do and you definitely have a reverse switch wire that changes when reverse is selected just try pushing the button and see what happens.

# Trouble shooting

**Gear indicator does not light up**: Check that there is at least 10v between the black and red wires.

**I program the gear indicator, but it does not save**: Check that the sensor output changes with gear position (measure between black and white wires). Check that the Yellow wire to the sensor has between 4 & 5 volts (measure between black and yellow wires).

**Gear indicator only shows "R" or "A"**: This is the same letter the "A" is the closest we can get to an "R" on the seven-segment display. The "R" will mean that the reverse input is triggered so invert its behaviour by pressing the program button for one second at least 5 seconds after power has been switched on.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