40 Huntingwood Drive Huntingwood NSW 2148

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INSTALLATION MANUAL

AEROFLOW PERFORMANCE

NITRO SHIFTER

WARNING!

BEFORE PROCEEDING WITH INSTALLATION PLEASE READ INSTRUCTIONS CAREFULLY. THIS PRODUCT REQUIRES DETAILED KNOWLEDGE OF AUTOMOTIVE SYSTEMS. WE RECOMMEND THAT THIS INSTALLATION BE CARRIED OUT BY A QUALIFIED AUTOMOTIVE TECHNICIAN.

The shifter mechanism is precision-assembled at our factory. Any modification or disassembly of the shifter will void its warranty, and can cause it to malfunction.

Installation of this shifter may require modification or complete removal of your vehicle's console, depending on the space available in your vehicle.

INTRODUCTION

Congratulations on your purchase of this quality Aeroflow Performance Nitro shifter. Aeroflow Performance products cannot and will not be responsible for any damage, or other conditions resulting from misapplication of the parts described herein. However, it is our intention to provide the best possible products for our customer, products that perform properly and satisfy your expectations. Should you have any questions? Please call technical support at +61 2 8825 1900 and have the product part number on hand when calling.

The Nitro shifter by Aeroflow Performance is a full ratchet shifter that not only performs great on the street but also on the drag strip. This positive ratchet design self-centres the handle in the middle of the shifter so all the user has to do is click once up or click once down for each gear, it's just that simple! No reason to ever miss a gear either up or down by over shifting. With this self-centred design it allows maximum clearance for tight fitting consoles in all vehicle applications.

To back up the incredible ratchet mechanism inside this Nitro shifter it is in-cased in a full billet bolt together bespoke outer cover to give that high quality finish. Featuring a bolt on top plate with a rubber insert to keep unwanted dirt and dust out of the mechanism. As well as a reverse lockout feature that only requires one hand to operate.

The Nitro shifter includes a LED lit gear position indicator, two micro-switches for reverse lights and a neutral safety switch preventing accidental starts when in gear all to keep the engineer happy and your vehicle safe. A billet gear knob with interchangeable inserts sits on top the shifter stick.

Included with this kit is an Aeroflow Performance 5-foot-long race shifter cable, all necessary hardware, detailed instructions for an easy installation you can do at home, cable brackets and transmission shifter levers to suit the following automatic transmissions:

- TH350, TH400, 700R4, 200R4, 4L60, 4L60E - 4L80E without PRNDL switch.
- Ford C4, C5, C6.
- Chrysler 1966 and later Torqueflite A727 and A904.

The following bracket and levers kits are sold separately and designed to work with all Bang Shift performance shifters.

- GM 4L60E, 4L65E, 4L80E, 4L85E with PRNDL switch brackets sold separately, AF72-9052.
- Holden Trimatic, Drivers Side AF72-2000 or Passenger Side AF72-2001
- GM Powerglide brackets sold separately, AF72-9051.
- Ford AOD brackets sold separately, AF72-9055.

Overall dimensions

Length - 280mm (11.02”)

Width - 80mm (3.14’)

Height 280mm (11.02”)

DESCRIPTION	QUANTITY	DESCRIPTION	QUANTITY
SHIFTER ASSEMBLY	1	9/32" I.D. FLAT WASHERS (THICKNESS 5/64")	12
PARK LIMITER PIN	1	1/4-20" BOLT (UHL 1-7/32")	4
5 FOOT RACE SHIFTER CABLE	1	1/4-20" BOLT (UHL 1/2")	1
MICRO SWITCH	2	1/4-20" HEX NUT	6
CHRYSLER / AMC SELECTOR LEVER	1	1/4" I.D. SPLIT LOCK WASHER	5
CHRYSLER / AMC CABLE BRACKET	1	#4 SPLIT LOCK WASHER	2
FORD C4 and C6 SELECTOR LEVER	1	1/4-20" BOLT (UHL 1-1/2")	1
FORD C4 CABLE BRACKET	1	5/16-18" BOLT (UHL 1")	2
FORD C6 CABLE BRACKET	1	7/16" I.D. SPACER (9/32" LONG)	2
GM TH & ELECTRONIC (NO PRNDL SWITCH) SELECTOR LEVER	1	10-32 JAM NUT (COMES INSTALLED ON CABLE END)	1
GM TH & ELECTRONIC (NO PRNDL SWITCH) CABLE BRACKET	1	1/4" I.D. C-CLIP	3
2-SPEED FORWARD PATTERN INDICATOR WINDOW	1	1/16" COTTER PIN (1" LONG)	1
3-SPEED FORWARD PATTERN INDICATOR WINDOW	1	1/4" FEMALE WIRE TERMINAL (BLUE ACCEPTS 16-14 AWG)	4
4-SPEED FORWARD PATTERN INDICATOR WINDOW	1	CABLE SWIVEL	1
2-SPEED REVERSE PATTERN INDICATOR WINDOW	1	INDICATOR BULB HOLDER & BRACKET	1
3-SPEED REVERSE PATTERN INDICATOR WINDOW	1	INDICATOR T-10 LED LIGHT BULB	1
4-SPEED REVERSE PATTERN INDICATOR WINDOW	1	RUBBER GROMMET	1
BILLET ROUND GEAR KNOB WITH INSERT	1	5/16"FLAT WASHER	2

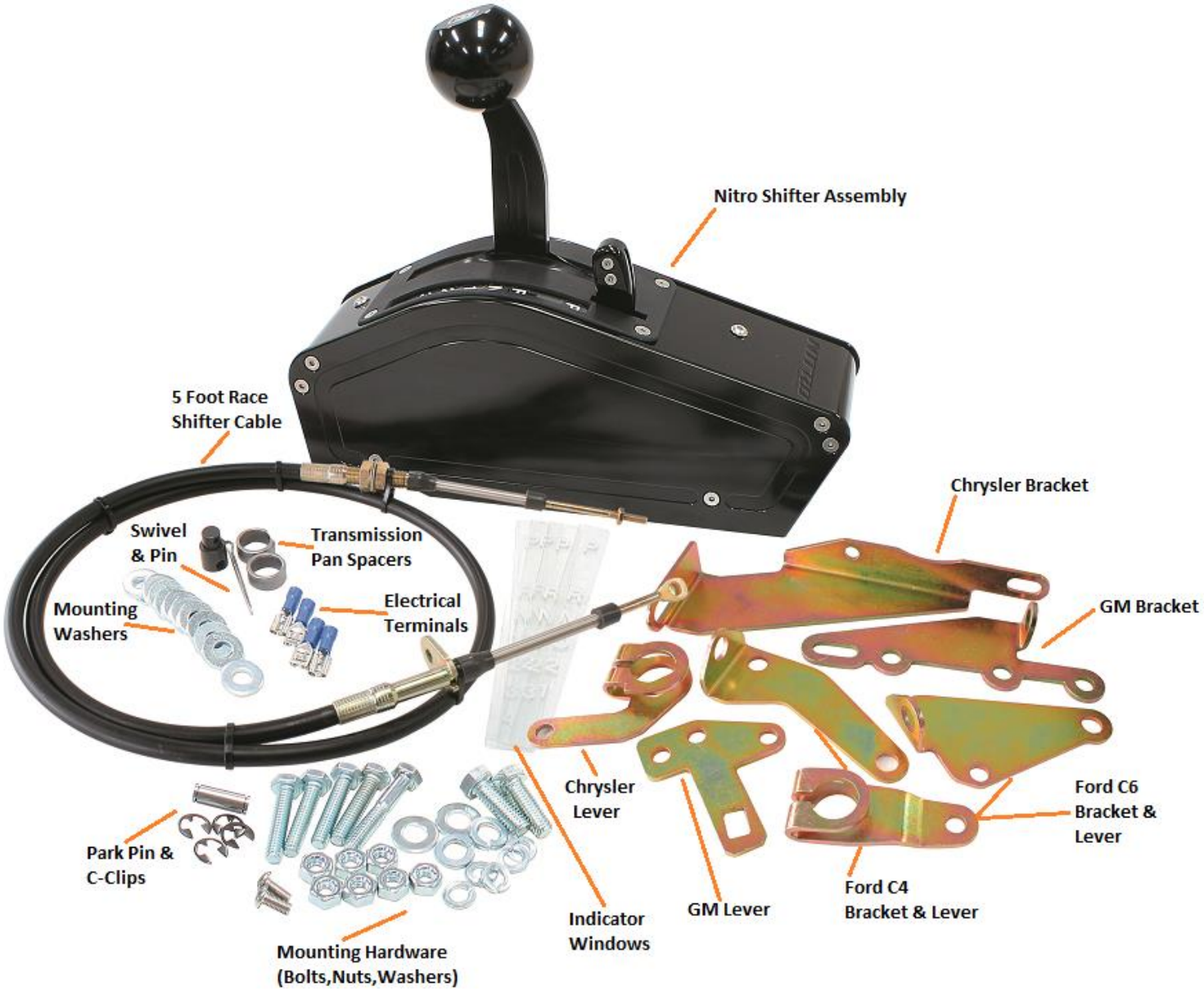
SAFTEY WARNINGS

- AVOID SERIOUS INJURY OR DEATH BY CRUSHING! When you raise the vehicle to work under it, securely support it on a lift or jack stands. NEVER work under a vehicle that is supported only by jacks. DO NOT attempt installation until you are confident the vehicle is safely secured.
- Perform this installation with the engine turned off and negative battery terminal is off
- This shifter uses a cable to shift the transmission only. It is NOT intended or designed to operate a locking steering column.
- PERIODIC INSPECTION AND MAINTENANCE OF YOUR SHIFTER IS RECOMMENDED TO ENSURE THAT THE MECHANISM IS WELL LUBRICATED, FREE FROM DIRT OR RUST AND THAT THE CABLE IS PROPERLY ADJUSTED. LACK OF MAINTENANCE COULD RESULT IN A FAILURE INCLUDING A FAILURE OF THE REVERSE LOCKOUT SAFETY FEATURE.

For more information or technical enquires

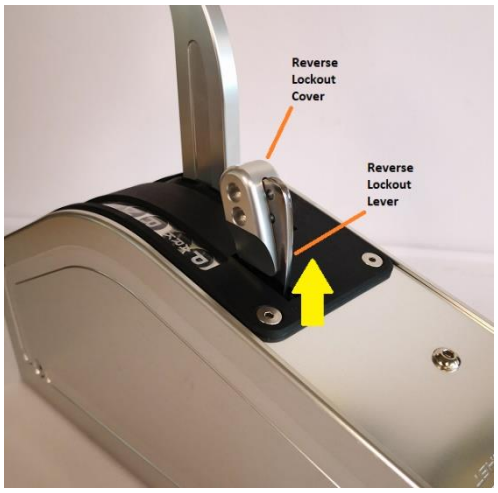
Contact: Aeroflow Performance on

Phone: (02) 8825 1979 Website: www.aeroflowperformance.com

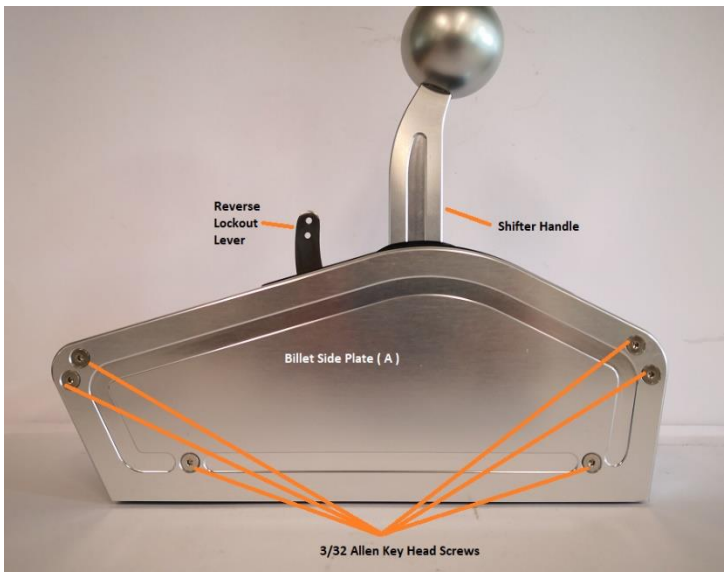


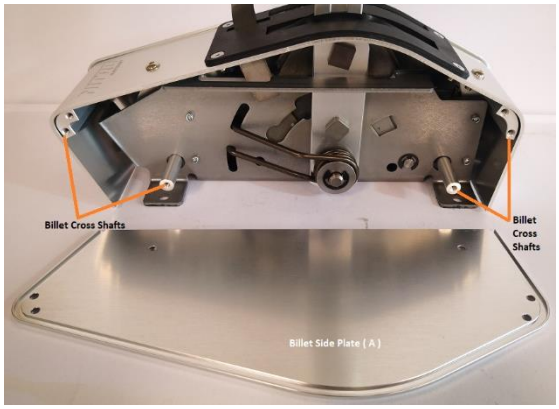
ASSEMBLING & DISASSEMBLING NITRO SHIFTER

1. This procedure outlined below is a guideline to disassembling and reassembly your Nitro shifter from Aeroflow Performance.
2. Remove the revere lockout cover from the reverse lockout lever on the assembly by unscrewing the two allen key screws (using a 7/64” allen key) on the side of the cover and sliding the reverse lockout covers upwards over the lever to remove.

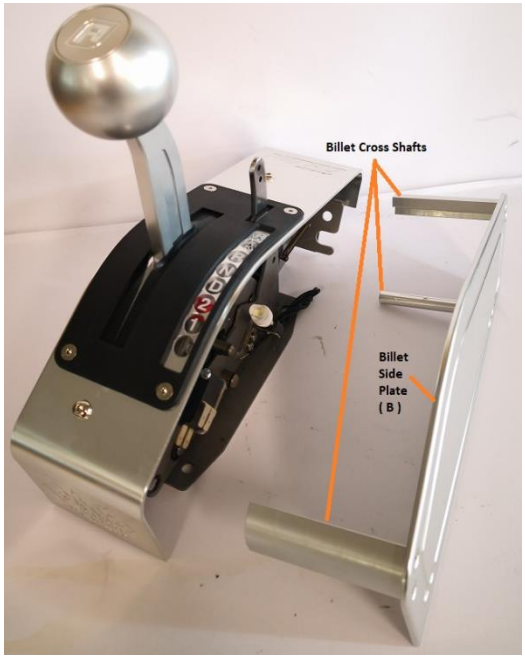


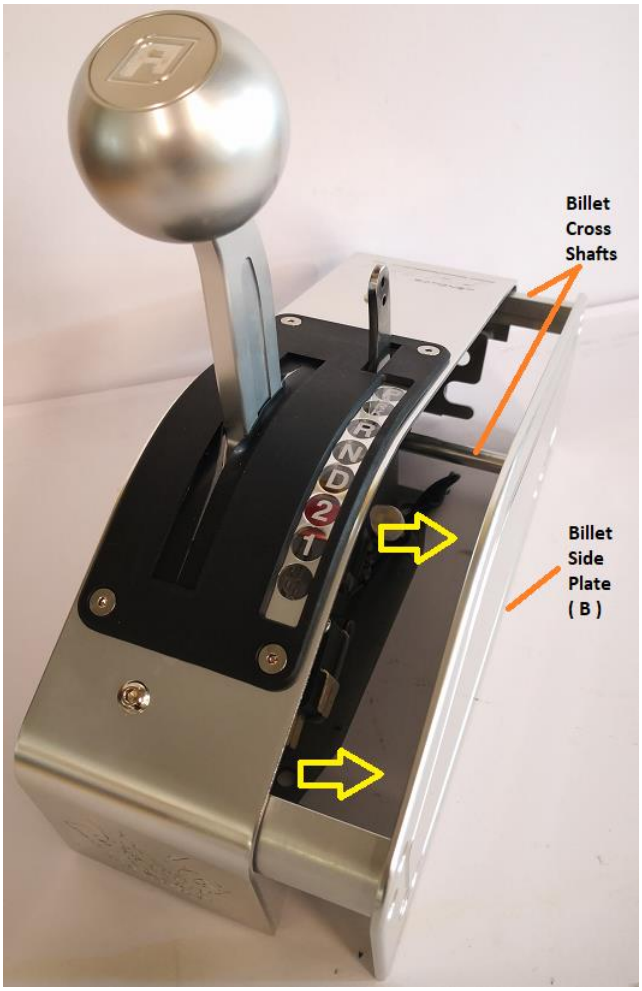
3. Remove all six allen key screws (using a 3/32” allen key) on the left hand side (passenger side) billet side plate (**A**) on the base assembly of the shifter. This can also be done via the drivers right hand side (drivers side) billet side plate (**B**) depending on application and whichever is more accessible. **NOTE:** only one side will need to be removed in order to side the second side plate away from the shifter.



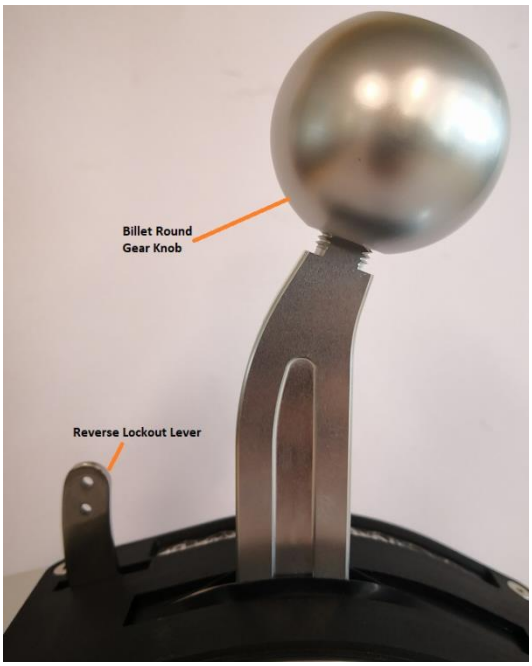


4. Slide the right hand side (driver side) billet side plate (**B**) away from the shifter assembly (remove the opposite billet side plate if you swapped them around in STEP 3). You will see that **FOUR** billet cross shafts will still be attached the billet side plate (**B**). These cross shafts can be left installed on the side plate if your application allows the room to side out the plate. You may also choose to remove all 6 allen keys from this billet side plate as well. If you choose to do this ensure not to lose or damage any of the cross shafts once both side plates are removed.

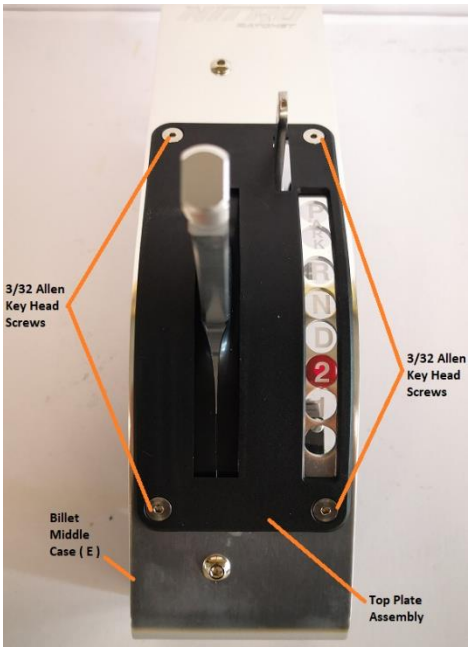


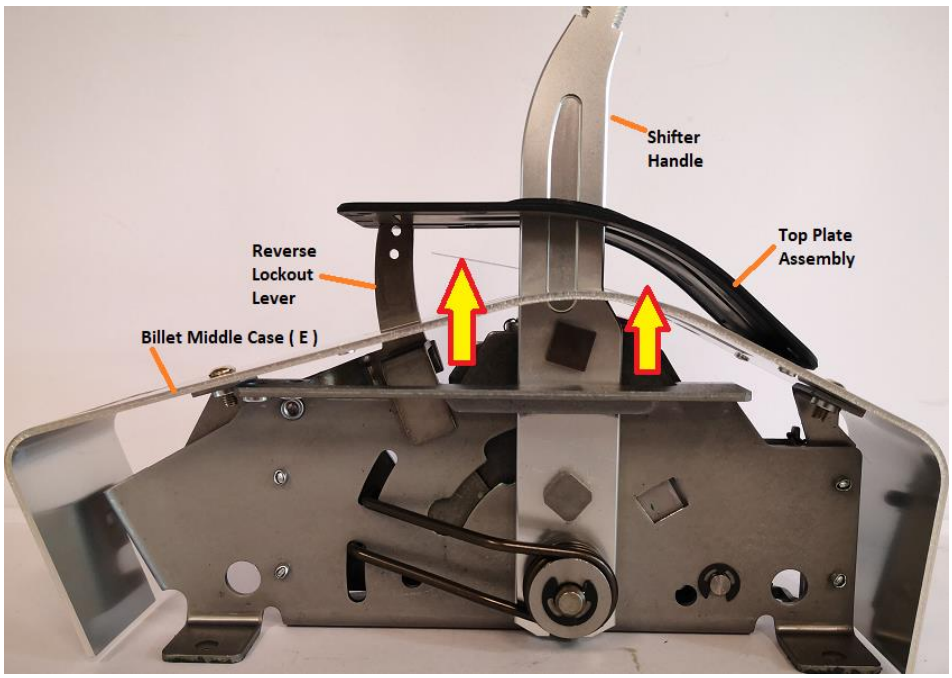


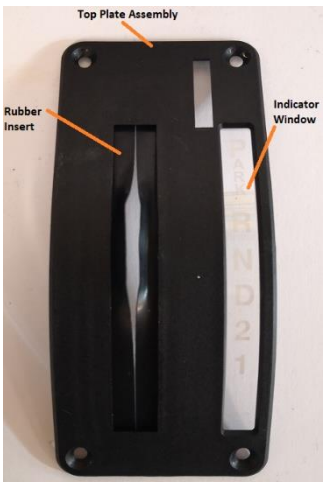
5. Unscrew the billet round gear knob from the shifter handle.



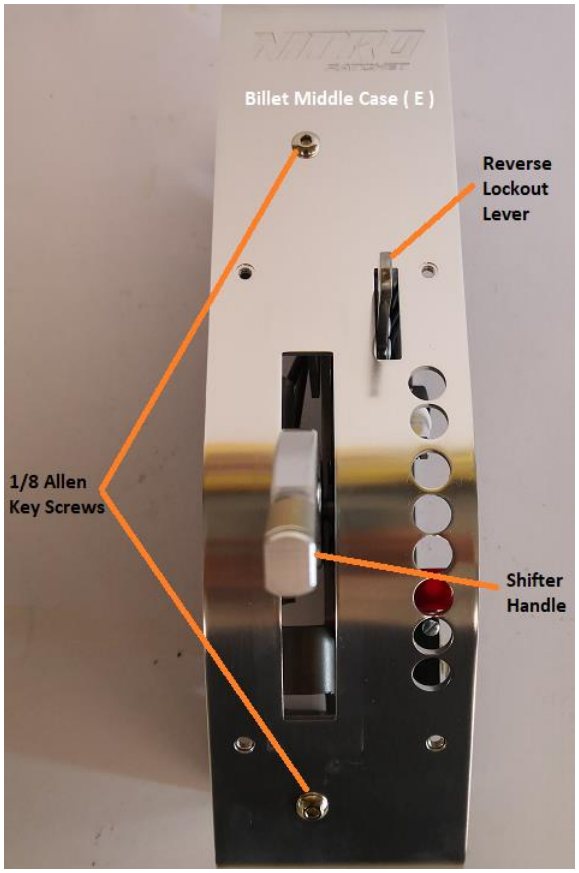
6. Remove the top plate assembly by unscrewing the four allen key screws (using a 3/32" allen key) on the top of the shifter base assembly. Lift the top plate over the shifter handle stick and set aside. Ensure not to damage the rubber protection strip when lifting the top plate assembly over the shifter handle

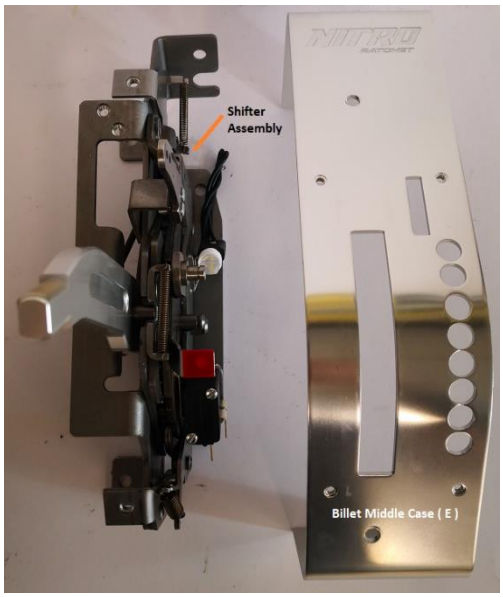






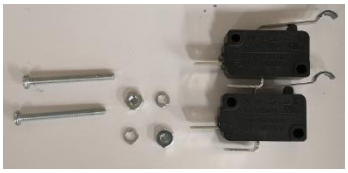
7. Moving onto the final piece of the assembly the billet middle casing (**E**). Unscrew the two button allen screws (using a 1/8" allen key) holding the case down to the shifter assembly. Position the shifter into the Park Position (ratchet all the way forward) ensuring to push the reverse lockout to enter the Park Position. Lift the back half of the case (**E**) and push the reverse lock out forward while lifting the front half of the middle case (**E**). Once it is past the shifter assembly lift it over the shifter handle and reverse lockout.





8. Now the shifter assembly is bare. To reinstall the billet cover, follow the steps in reverse.

Micro Switches



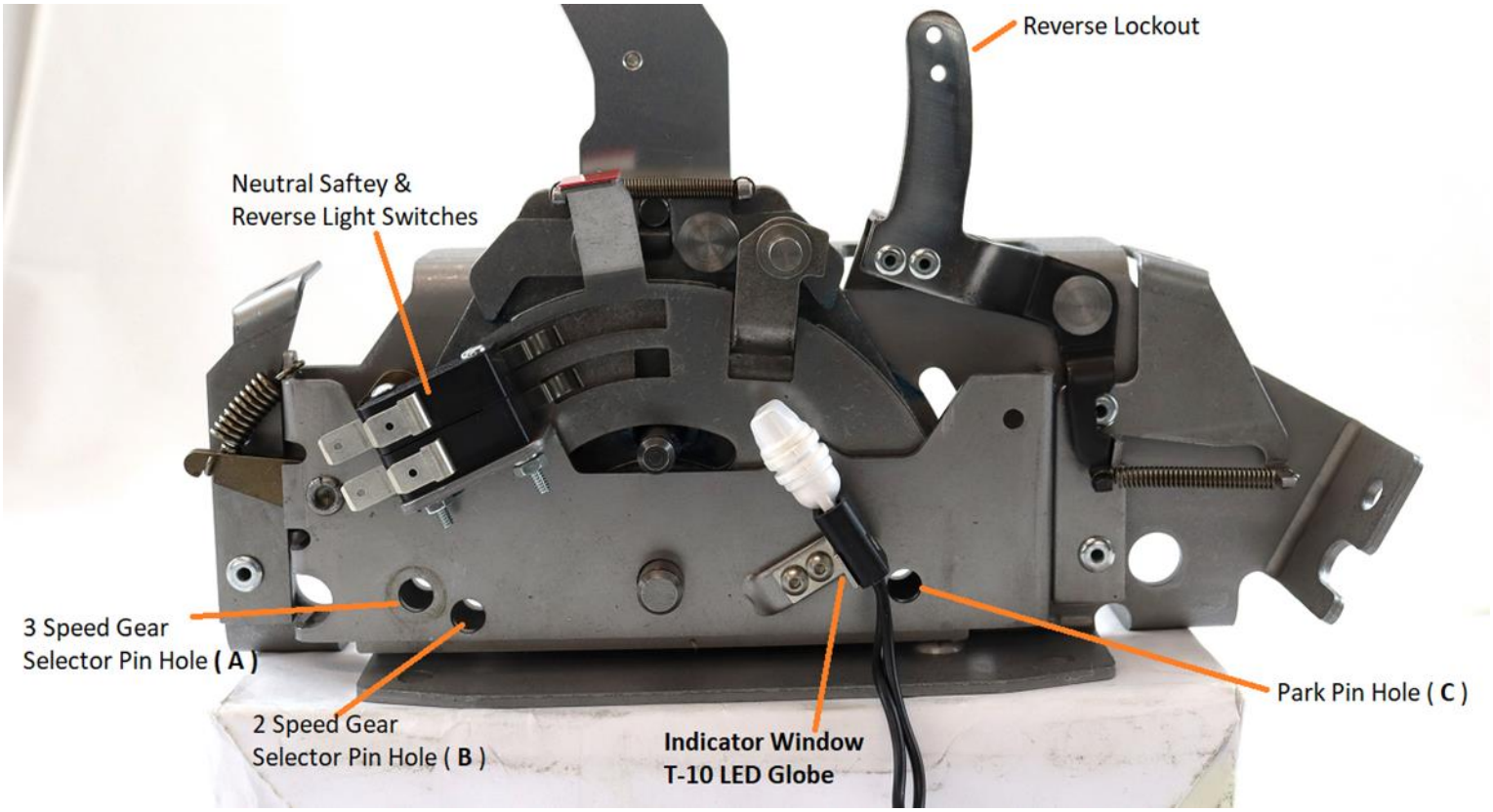
To change or adjust the two micro switches installed into the shifter assembly. Remove the driver's side billet side plate (A) by removing all the allen key screws and removing the side plate from the shifter assembly. You should now be able to see both micro switches. Using a flat head screw driver and a spanner to hold the nut underneath. Undo both screws from the assembly. The micros switches will now be free from the shifter assembly to adjust or replace. Reinstall the driver's side billet plate once you have finished installing or adjusting your micros switches.

Indicator Window Light

To change the indicator window light bulb. Remove the driver's side billet side plate (A) by removing all the allen key screws and removing the side plate from the shifter assembly. You should now be able to gain access to the globe which should just pull out from the holder. Install the new bulb and test before reinstalling the driver's side billet plate. If the new bulb doesn't light up when powered on remove it and turn it 180° as the LED is polarity sensitive. The LED globe included in this shifter is able to be dimmable with the use of an external controller to adjust the brightness.

Indicator Window

The Nitro Shifter comes standard to suit a forward pattern 3 speed transmission. If your transmission is different, you will be required to change the indicator window to suit your application. Remove the reverse lockout billet cover, unscrew the billet round gear knob from the shifter assembly. Remove the four allen key screws holding the top plate assembly and lift off the top plate assembly from the shifter. The indicator window will be sitting in the groove on the driver's side of the top plate assembly. Swap the indictor window out to suit your application (various indictor windows are supplied in the kit or sold separately). Reinstall the top plate assembly, billet round gear knob and reverse lockout cover once you have finished installing the indicator window.



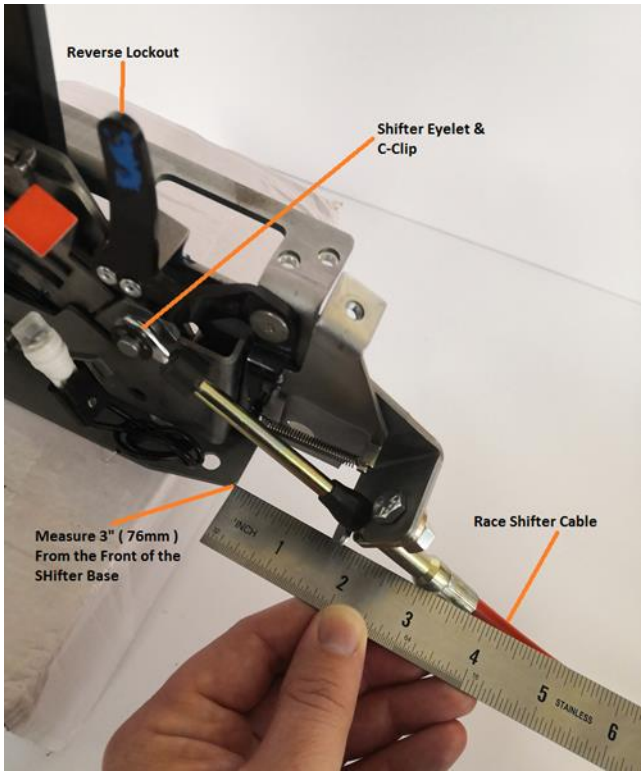
INSTALLATION OF NITRO SHIFTER

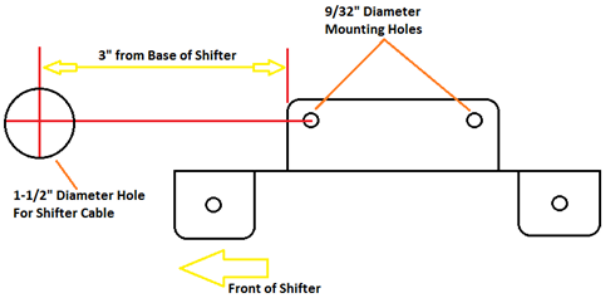
*If you are installing this shifter with a GM four speed automatic transmission, you must remove both the 2 speed and 3 speed selector pins and the C-Clips in the shifter assembly. Removing this selector pin gives the shifter four forward positions rather than three. For GM Powerglide options you must place the selector pin in hole (**B**) to allow the use of only two forward gears (requires Powerglide bracket & lever kit AF72-9051 sold separately) .*

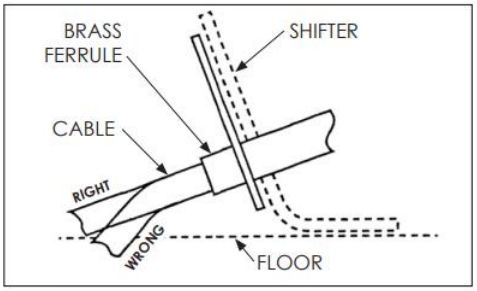
*The Ford or Chrysler three speed automatic transmissions install the selector pin into hole (**A**), since these transmissions have only three forward positions. If you are installing this shifter with a Ford or Chrysler four speed automatic transmission you must install the park selector pin and the C-Clips in hole (**C**). This Park pin limits the shifter travel into the Park position, so that it does not stretch the cable since Ford and Chrysler transmissions have less travel between Reverse and Park than GM transmissions do.*

This procedure outlined below is a guideline to mounting your Nitro shifter from Aeroflow Performance.

1. Remove the stock shifter linkage from the vehicle.
    - I. For column shifters: Remove all rods, levers or cables from the column and transmission. Place the column shift lever into the PARK position. Remove the pin holding the shift lever into the column and remove the lever assembly.
    - II. For console shifters: Remove the shifter mechanism form the console. Disconnect the rod/cable from the transmission. Remove the cable bracket if equipped. If there is any cable or linkage it must be placed into the PARK before removed.
    - III. While removing the stock shifter be sure to check for any neutral safety or back up light switches and wiring. Label all wires to simplify installation later on.
2. Disassemble the shifter to a bare assembly for mounting following the steps from the ASSEMBLING & DISASSEMBLING NITRO SHIFTER.
3. Pull the carpet (if installed) away from the area where the shifter will be mounted. Temporarily place the shifter into the desired position. Make sure the shifter handle will clear both console and seats when in operation both forward and rearward positions. Once it is in a convenient location for ease of operation. When you are satisfied mark the position of the 4 mounting holes of the shifter to the floor.
4. Drill the 4 mounting holes with a 9/32” drill bit through the floor. Put the shifter into place. The shifter may require shims to level the shifter out. The twelve 9/32” flat washers that are provided in the kit are designed to fit between the shifter and the floor if necessary. Temporarily hold the shifter in place with the four 1/4-20” (UHL 1-1/4”) bolts.
5. To drill the hole for the shifter cable to run through the floor. Measure 3” (76mm) from the front of the shifter mounting base to mark the centre of the shifter cable hole. Drill or cut a 1-1/2” (38.10mm) hole for the cable to run through the floor, this is assuming the floor area forward of the shifter is at the same height as the base of the shifter. This distance will change if the cable goes through the floor at a different level to the base of the shifter.
    - I. After this hole has been cut ensure to de blur all edges and add the supplied rubber grommet to protect the cable from rubbing against the metal.
    - II. If the floor is only made from thin material ensure to support the floor with extra bracing to reinforce and provide a stable mounting platform for the shifter cable.
    - III. Do not kink the cable anywhere along its length or it will lock up. The cable should be kept straight for at least 2” (50.8mm) after it leaves the brass ferrule though the floor.

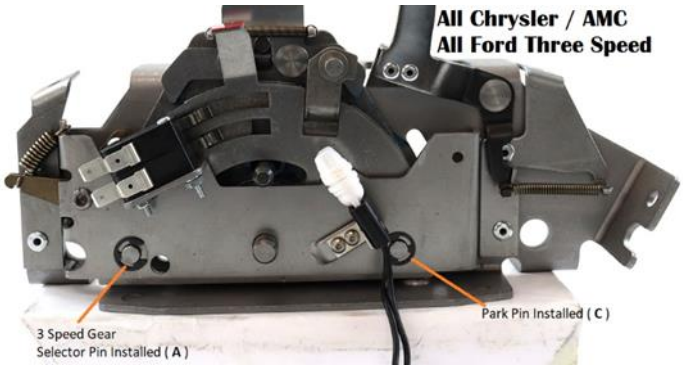


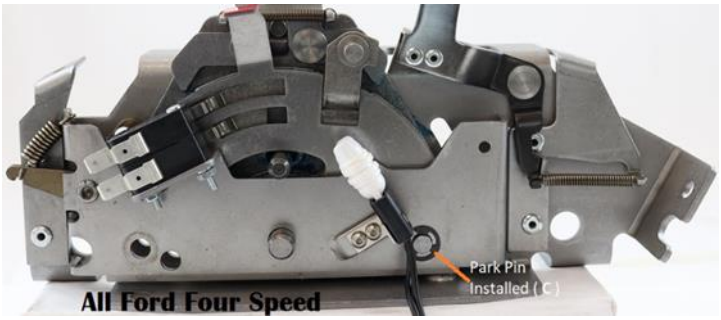


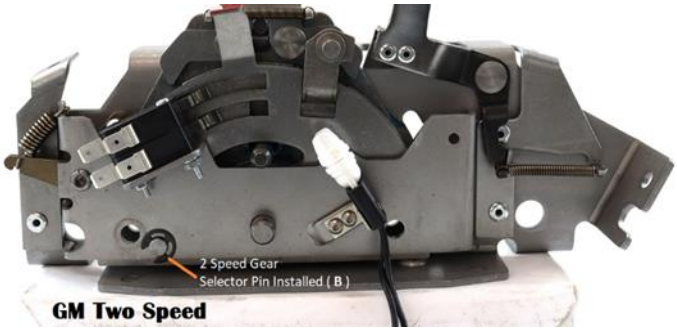


6. Return the carpet (if installed) and cut the holes for the shifter mounting holes. Next cut a 1-1/2” slit in the carpet for the cable to go through.
7. The Park and Gear Selector pins must be now be installed into the shifter for your application. The Park limiter pin must be used with all Chrysler / AMC and Ford transmissions to avoid stretching the shifter cable. As the GM transmissions have a longer selector travel. Please refer to the chart below:

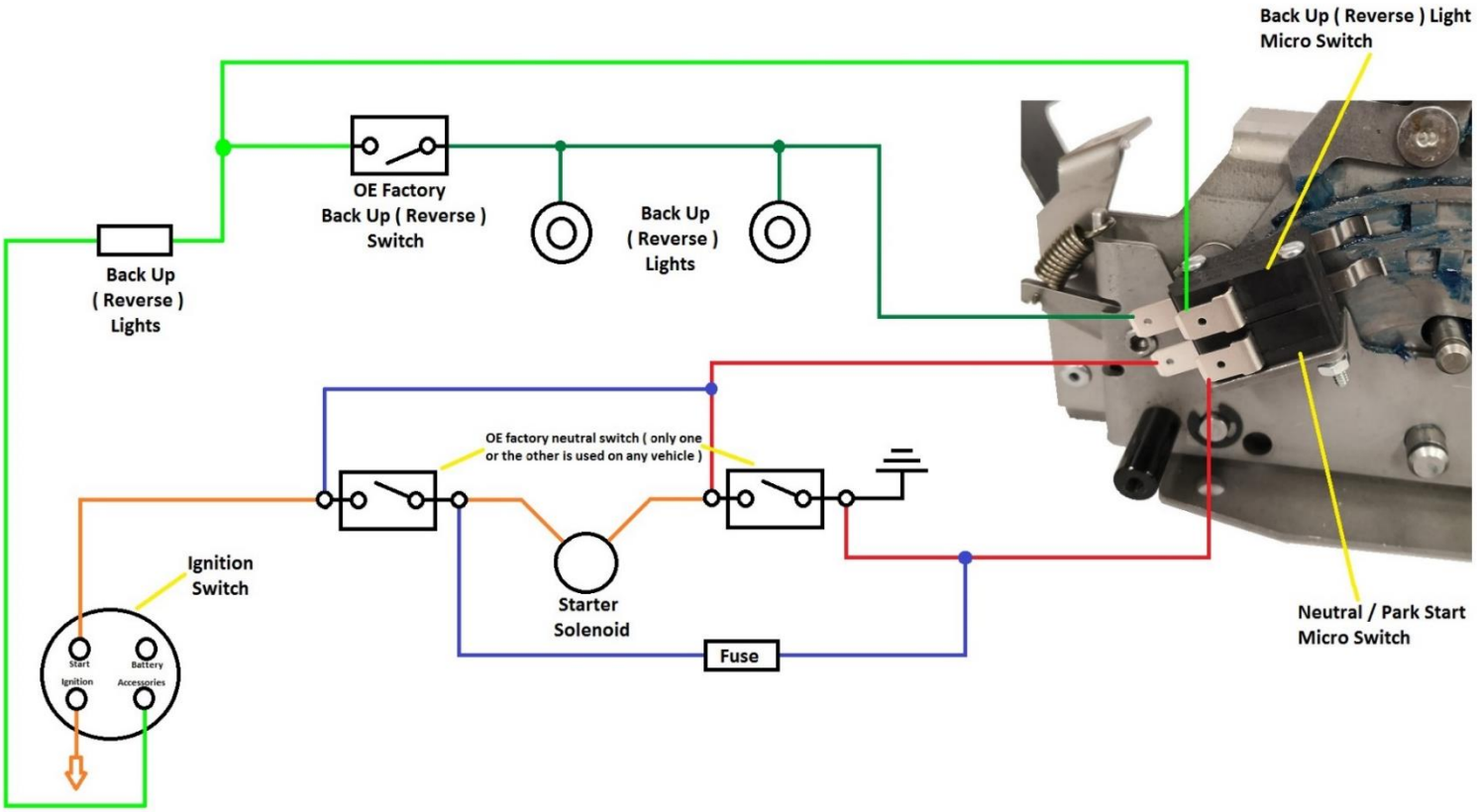
TRANSMISSION	PARK PIN (C)	3 SPEED GEAR SELECTOR PIN (A)	2 SPEED GEAR SELECTOR PIN (B)
All Chrysler / AMC	Installed Pin	Installed Pin	No Pin Installed
All Ford Three Speed	Installed Pin	Installed Pin	No Pin Installed
All Ford Four Speed	Installed Pin	No Pin Installed	No Pin Installed
GM Two Speed	No Pin Installed	No Pin Installed	Installed Pin
GM Three Speed	No Pin Installed	Installed Pin	No Pin Installed
GM Four Speed	No Pin Installed	No Pin Installed	No Pin Installed







8. Install the shifter cable to the shifter assembly. Secure the cable eye to the shifter pin with the 1/4" ID C-clip first. Then secure the cable mount tab to the outside surface of the shifter base. Use the provided 1/4-20" (UHL 1/2") and 1/4" nut and apply a small amount of thread locking fluid to the bolt. Install the C-Clip to secure the shifter cable in place onto the shifter assembly.
9. The two micro switches provided are preinstalled onto the shifter mechanism with the 4-40 pan head slotted screws (UHL 1-1/4") with lock washers and 4-40 hex nuts to hold them into place.
    - **I.** Ensure to check the correct placement of each switch and they are wired correctly. The bottom micro switch is the NEUTRAL SAFTEY SWITCH which closes in NEUTRAL and PARK only. The top micro switch is the BACKUP LIGHT SWITCH which closes in REVERSE only.
    - **II.** The micro switch mounting holes normally allow the required positioning for proper activation. However, if necessary, the switch arms may be carefully bent.
    - **III.** Adjust the switches by loosening the screws and sliding the switches to the correct positions as required. Then retighten the screws to secure the switches.
    - **IV.** DO not over tighten these screws only tighten until the lock washer is squeezed flat. Over tightening will damage the micro switches.
    - **V.** Always check the operation of these micro switches before attempting to drive or operate the vehicle. Disconnect an appropriate ignition source for testing. Attempt to start the car in each gear on the shifter. It should only crank the car over in the PARK and Neutral positions and not in any drive gear such as REVERSE or DRIVE.
    - **VI.** Ensure the backup lights on the rear of the vehicle correctly illuminate in the REVERSE gear only.



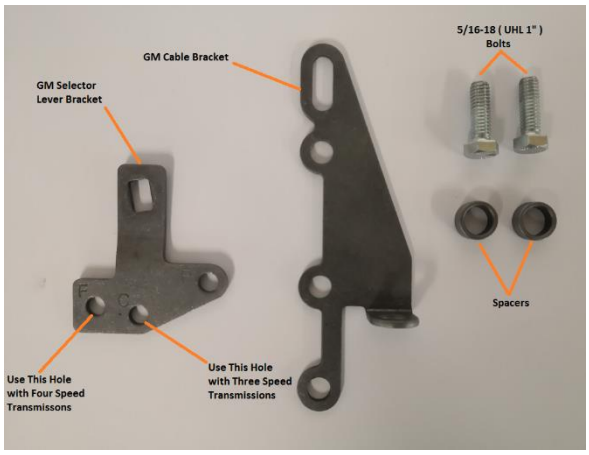
10. Slide the cable through the hole in the floor. Bolt the shifter into position using the four 1/4-20" (UHL 1-1/4") bolts, lock washers and 1/4" nuts (if required install the twelve 1/4" flat washers to level out the shifter). Do not bend the shifter mount tabs as this will interfere with the operation of the shifter mechanisms.
11. Route the shifter cable based on your application and setup.
    - **I.** Avoid any sharp bends which may kink or otherwise damage the cable and not allow smooth operation. Large, wide loops give the shifter cable smoother operation which will improve the shifter cable life.
    - **II.** Use clamps or mounting tabs to secure the cable housing to prevent any contact with vehicle components.
    - **III.** We recommend to heat sleeve or build a heat shield around the shifter cable to ensure it is protected against hot components such as exhaust systems. As heat will severely damage the shifter cable housing causing it to melt or become brittle over time.
    - **IV.** Seal the cable hole in the floor to keep out exhaust fumes, water, dust etc. out of the cabin of the vehicle.
12. Depending on the model of the transmission of your application following the below steps for GM, Ford or Chrysler.

SHIFTER BRACKETS INSTALL LIST

These installations listed below are general guidelines based off each manufacture transmissions. Installations may vary between each year and model transmission.

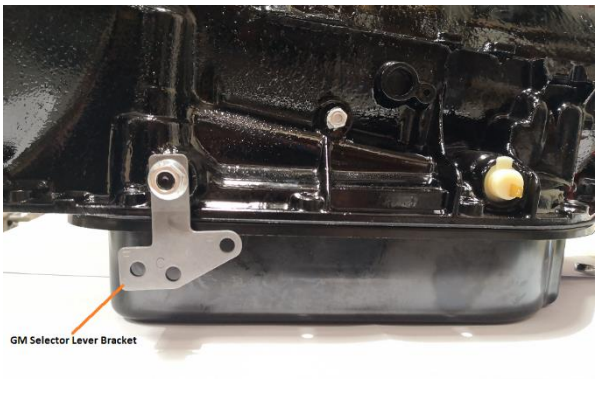
GENERAL MOTORS (TH200, TH250, TH350, TH400, TH700, 4L60, 4L60e, 4L65e)

1. Get the GM selector lever and cable bracket from the parts kit supplied.

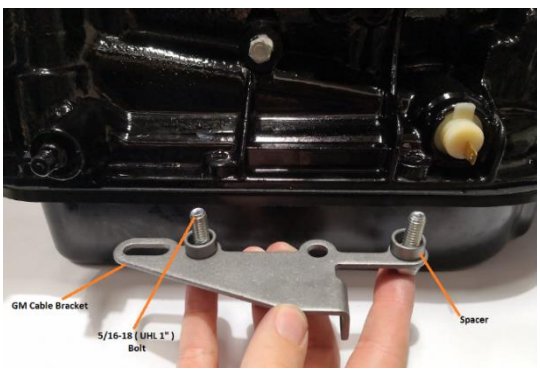


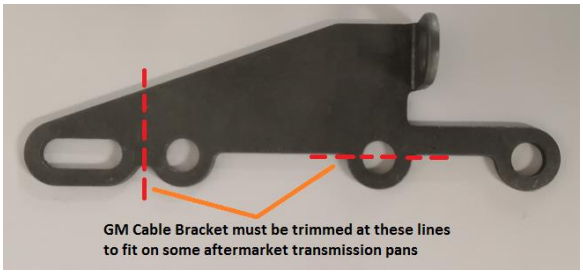
2. Disconnect the stock linkage bracket from the side of the transmission. Remove and retain the selector lever nut. Remove and discard the selector lever and shifter linkage.

3. Install the selector lever bracket using the stock selector lever nut, and tighten the nut to 23 ft-lbs (30 Nm) torque. The lever should travel smoothly back and forth, with a positive “click” in each detent.



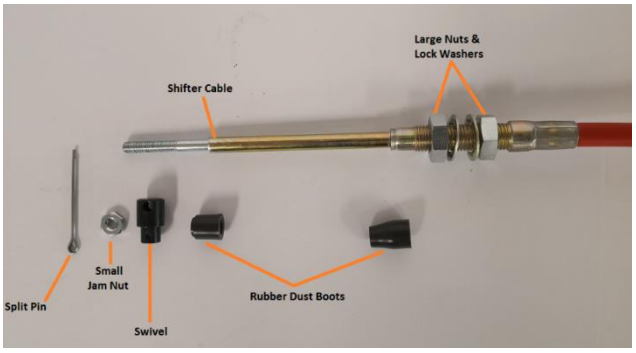
4. Route the shifter cable to avoid kinks and sharp bends to allow a smooth operation. Route the cable away from hot engine or exhaust parts. We recommend the use of a heat guard or heat shield to protect the shifter cable from extreme heat components on the vehicle. Be sure to correctly secure your shifter cable so it does not contact any moving objects.
5. Remove the two oil pan bolts to the rear of the selector shaft. Get the GM cable bracket and determine which cable bracket holes will be used on your transmission.
6. Install the GM cable bracket using either the factory OEM oil pan bolts or the supplied 5/16”-18 (UHL 1”) bolts only use these supplied bolts if you plan to run the spacers also supplied.
   - **I.** For stamped steel pans, install the two spacers between the pan and bracket.
   - **II.** For cast aluminium pans with thick pan rails, the bracket may need to be trimmed to fit and the spacers are not used.

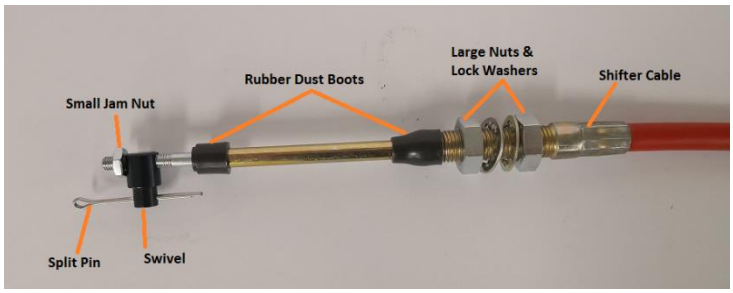




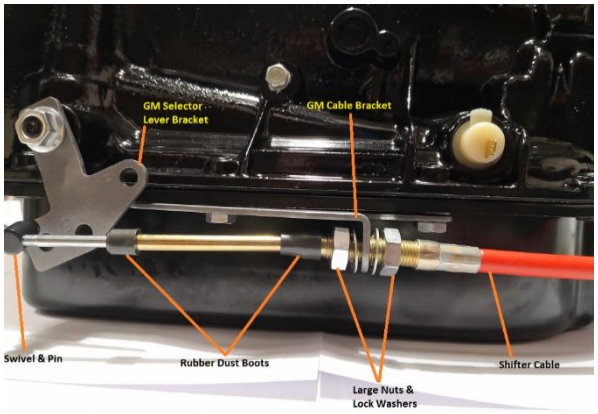
7. Tighten the bolts to 9 ft-lbs (12 Nm) torque.
   Note: Do not over-tighten the bolts, as this can damage the transmission pan and gasket.

8. To attach the shifter cable to the cable bracket, remove the small jam nut, two small rubber dust boots, and one of the large nuts and lock washer from the cable. Then insert the cable through the cable bracket, reinstall the lock washer and nut on the cable (loosely at this stage, to allow room for adjustment), and reinstall the two rubber dust boots.

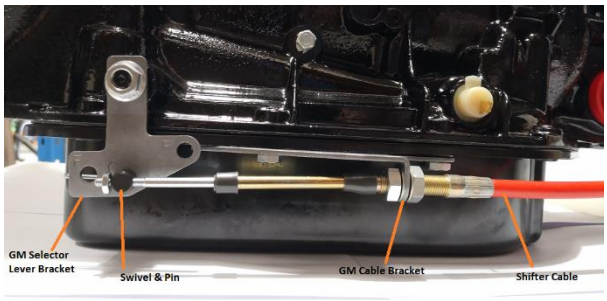


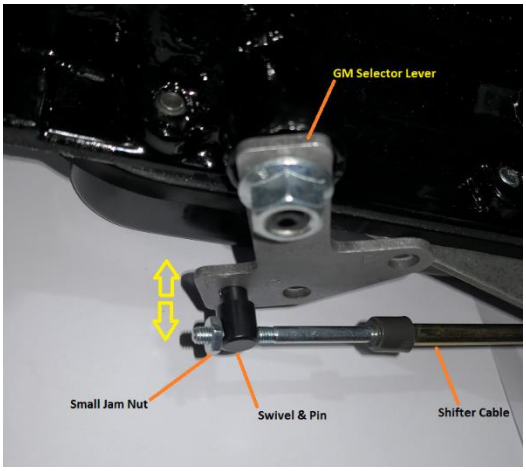


9. Thread the swivel & pin onto the cable to about the middle of the threaded section, then reinstall, but do not tighten the jam nut at this stage. Before proceeding, verify that forward gear selector pin and C-Clips are installed in the correct position that is required for your application.

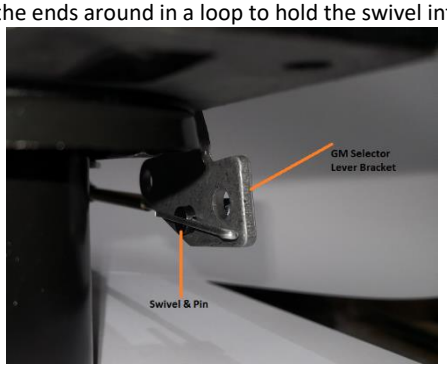


10. Move the transmission selector lever by hand to the full rear position (Low). Shift the shifter mechanism to the Low gear position (ratcheted all the way back). Adjust the large nuts on the cable so that the swivel will slide into the hole on the selector lever. Tighten the large nuts completely. Be sure that the swivel will slide freely in and out of the hole in the selector lever.
Note: The shifter will not operate correctly unless the correct hole in the shift lever is used as shown in the step 1.
11. Leave the swivel out of the hole and move the selector lever to Park, all the way forward. Also move the shifter to Park position. Reinsert the swivel into the hole in the selector lever. Check to see that the swivel will slide freely in and out of the hole in the selector lever in this position. If it does not slip in freely, adjust the swivel slightly until it will slip into the hole in the lever.





12. Move the shifter back to the Low gear position and check that the swivel will still slide easily in and out of the hole in the selector lever. (If you do not use the correct hole in the lever, it will be impossible to correctly adjust the cable). Operate the shifter through all the gear positions. Check to make sure the swivel will slide in and out of the selector lever hole in each gear position. The shift cable is now correctly adjusted. Install the split pin supplied into the swivel and split the ends around in a loop to hold the swivel into place.

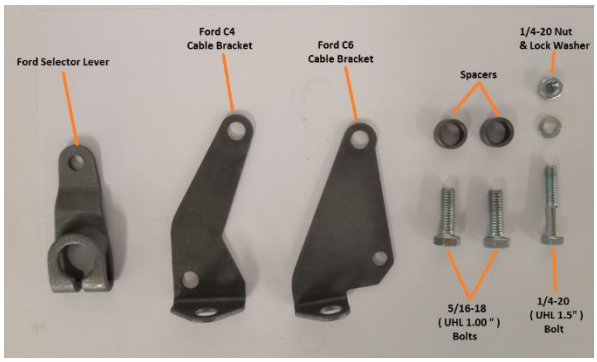


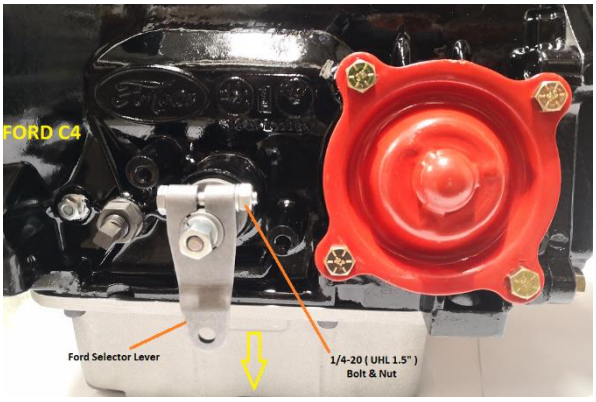
<u>If you have a problem, DO NOT FORCE THE SHIFTER, this will damage the cable, the shifter or the transmission. Simply start at the beginning and carefully check all your steps.</u>

13. The factory neutral safety and backup light switches may be located on the shifter (either factory mounted steering column or console mounted shifter) or it may be mechanical in the steering column that prevents the key from turning to the Start position unless the shifter is in the Park or the Neutral position. If the key will not turn to the Start position unless the stock shifter is in Park or Neutral, you have a mechanical interlock, otherwise you have a neutral safety switch. Disconnect the battery ground cable to prevent shorts.
14. If you have a neutral safety switch, locate and identify the neutral safety wires (engine will not crank unless these wires are connected together). Extend the wires from the GM switch to the shifter. Strip off the insulation of the wires and install the slip-on terminals supplied in the kit. Crimp the terminals onto the wires. Connect the neutral safety wires to the LOWER switch and the backup light wires to the UPPER switch. Tape the terminal connections and all other connections to prevent shorts.
15. If you have a mechanical interlock cut the wire that goes from the Start position on the ignition switch to the solenoid on the starter. Run wires from both ends of the cut wire to the Nitro shifter. Put the slip-on terminals on the ends of the lengthened wires and crimp the terminals onto the wires. Connect the wires to the LOWER switch on the shifter. The backup light switch is usually located on the steering column behind the instrument panel. Lengthen these wires and run them to the UPPER switch on the shifter. Tape the terminal connections and all other connections to prevent shorts.
16. Reconnect the battery ground cable, disconnect the coil wire and set the parking brake. Check the switch operation by attempting to start the motor in each shifter position. The starter must crank only when the shifter is in the Park or the Neutral position. Check the backup light operation when the shifter is shifted to the Reverse position. Adjust the switches if required. Reconnect the coil wire.
17. Proceed to FINISHING INSTALLATION to finish the installation of your Nitro shifter.

FORD (C4 , C6)

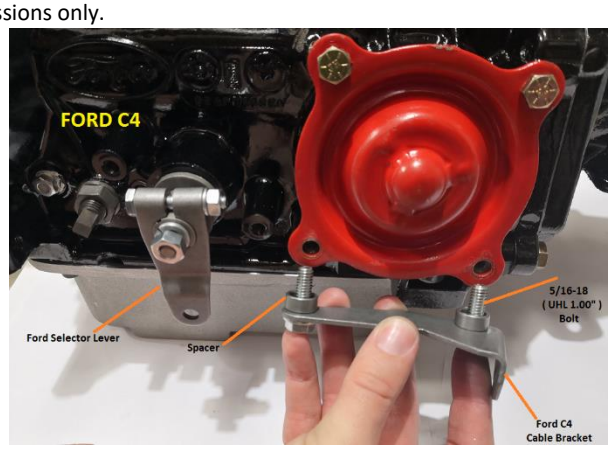
1. Remove the nut and the lock washer holding the downshift linkage onto the downshift lever shaft from the transmission. The downshift lever is the outer lever on C4 and C6 transmissions. Pull the lever off the shaft and allow the linkage to hang free. Remove and discard the stock shifter linkage rods from the transmission. Some transmissions (depending on model and year) will have a neutral safety/backup light switch on the transmission shift lever. If your transmission is equipped with this switch, remove the two bolts holding the switch in place and slide it off the shift shaft. Disconnect the switch at the factory plug and discard it.





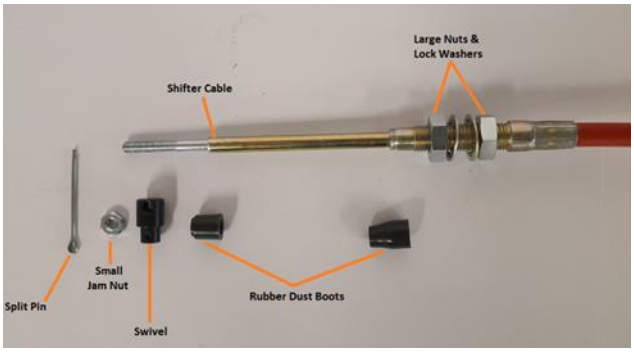
2. Install the Ford selector lever supplied in the kit. **Note:** The Ford selector lever must point downward for correct operation. If the shifter lever on your transmission points down, you will have to remove the lower part of the shifter lever arm by cutting it off to clear the Ford selector lever supplied. Install the Ford selector lever onto the shifter shaft of the transmission. Align the Ford selector lever so when it points straight down it travels in equal arcs in both directions from the center. Tighten the 1/4”-20 (UHL 1.5”) bolt and the nut. The Ford selector lever should travel smoothly from front to back with a positive click in each gear position.

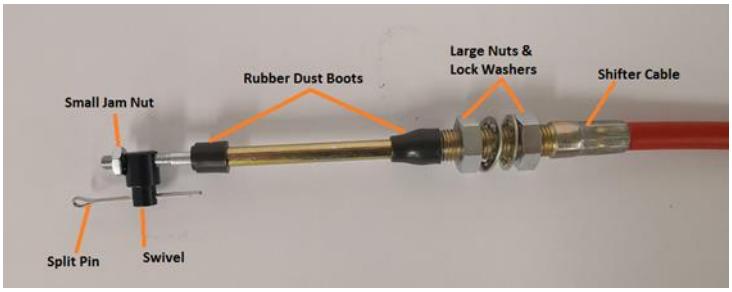
3. To correctly install the Ford cable bracket onto the transmission for C4 transmissions only.
    I. Remove the two lower bolts from the rear servo cover. Install the Ford cable bracket in position on the two lower bolts of the rear servo. The spacers must be used for this application to space out the cable bracket correctly to align with the selector shaft. Two new 5/16-18 (UHL 1.00”) bolts are supplied to replace the two OE bolts from the rear servo that are no longer required. Reinstall the two servo cover bolts with the correct Ford C4 cable bracket and both spacers slotted in-between the cable bracket the rear servo cover. Tighten to 12-13 ft. lbs (16-17 Nm) **NOTE:** Do not overtighten as this can damage the servo cover.



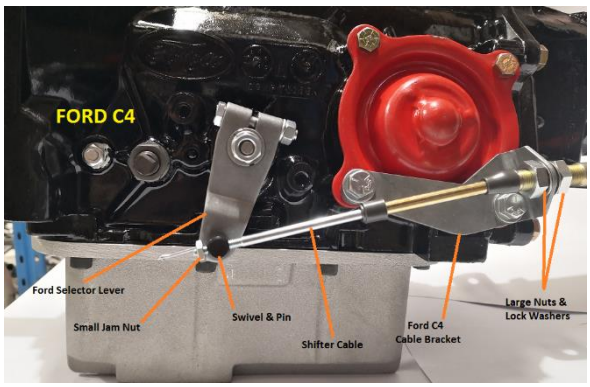
4. To correctly install the Ford cable bracket onto the transmission for C6 transmissions only.
    I. Remove the two transmission oil pan bolts from the left rear corner of the transmission oil pan. Install the Ford cable bracket into position with the two spacers provided in the kit between the pan and the bracket. If your transmission is equipped with a cast aluminium transmission oil pan or your transmission oil pan has thick rails, these spacers do not have to be used and the factory oil pan bolts can be reused. If using the spacers install the two supplied 5/16-18” (UHL 1.00") bolts and tighten to 12-13 ft. lbs (16-17 Nm). Do not overtighten as this can damage the transmission pan gasket.

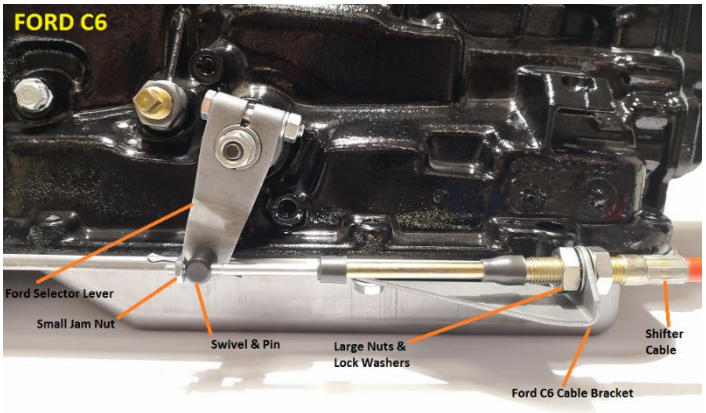
5. Route the shifter cable to avoid kinks and sharp bends to allow a smooth operation. Route the cable away from hot engine or exhaust parts. We recommend the use of a heat guard or heat shield to protect the shifter cable from extreme heat components on the vehicle. Be sure to correctly secure your shifter cable so it does not contact any moving objects.
6. Remove the small jam nut, two small rubber dust boots, one large nut, and a large lock washer from the threaded end of the shifter cable. Slide the end of the shifter cable into the Ford cable bracket. Install the large nut and the lock washer loosely over the end of the cable. Reinstall the two small rubber dust boots onto the end of shifter cable. Install the swivel on the threaded end of the cable and position it in the center of the threaded portion.



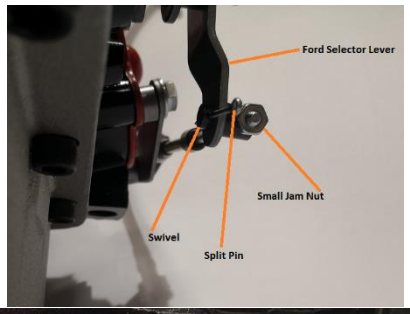


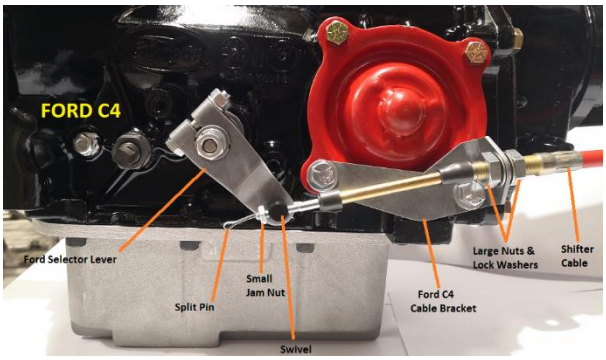
7. Move the transmission Ford selector lever by hand all the way to the rear position (Low Gear). Shift the shifter assembly to the Low Gear position. Adjust the large nuts on the cable so that the swivel will slide into the hole on the selector lever. Tighten the large nuts completely. Be sure that the swivel will slide freely in and out of the hole in the selector lever.

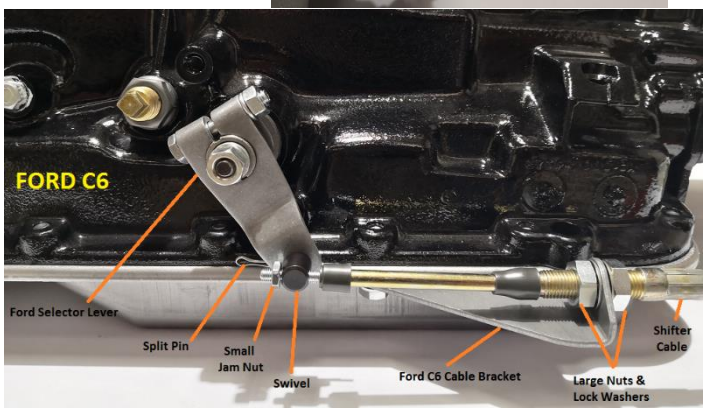




8. With the swivel in the selector lever, shift the shifter to the Park position, as far forward as the shifter will go without forcing it. The shifter lever on the transmission should be all the way forward. Check to see that the swivel will slide freely in and out of the hole in the lever in this position. If it does not slip in freely, adjust the swivel slightly until it will slip into the hole in the lever in both Low and Park positions. Operate the shifter through all the gear positions. Check to make sure the swivel will slide in and out of the selector lever hole in each gear position. The shifter cable is now correctly adjusted. Install the split pin supplied into the swivel and split the ends around in a loop to hold the swivel into place. Reinstall the downshift linkage, tightening the nut securely.





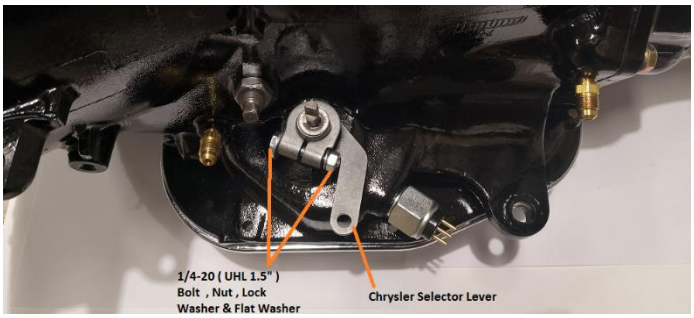


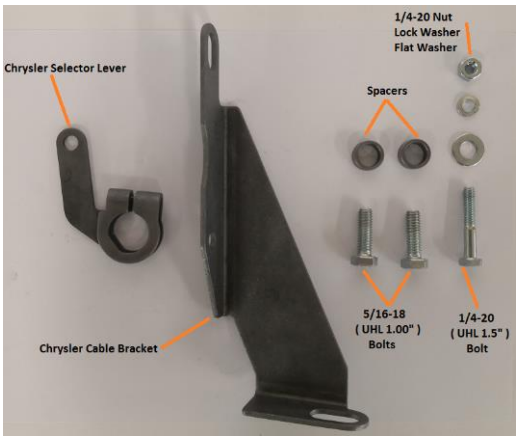
<u>If you have a problem, DO NOT FORCE THE SHIFTER, this will damage the cable, the shifter or the transmission. Simply start at the beginning and carefully check all your steps.</u>

9. On the C4 transmission it is necessary to completely remove the stock neutral safety/backup light switch. To install the supplied neutral safety/back up switches provided disconnect the battery ground cable to the neutral safety and the reverse light switches. Locate and identify the neutral safety wires (engine will not crank unless these wires are connected together). Extend the wires from the Ford switch to the shifter. Strip off the insulation of the wires and install the slip-on terminals supplied in the kit. Crimp the terminals onto the wires. Connect the neutral safety wires to the LOWER switch and the backup light wires to the UPPER switch. Tape the terminal connections and all other connections to prevent shorts.
10. Reconnect the battery ground cable, disconnect the coil wire and set the parking brake. Check the switch operation by attempting to start the motor in each shifter position. The starter must crank only when the shifter is in the Park or the Neutral position. Check the backup light operation when the shifter is shifted to the Reverse position. Adjust the switches if required. Reconnect the coil wire.
11. Proceed to FINISHING INSTALLATION to finish the installation of your Nitro shifter.

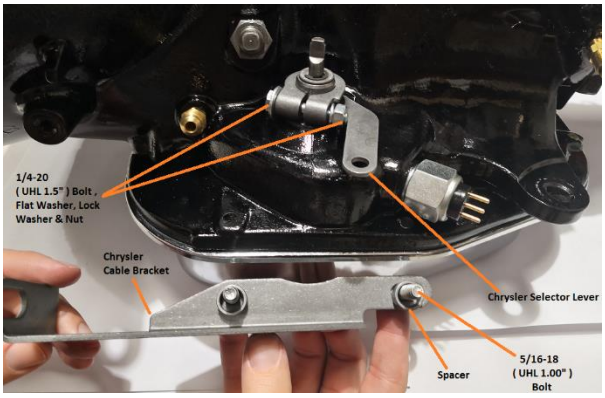
CHRYSLER

1. Loosen the pinch bolt on the throttle lever on the transmission. This is the lever on the small diameter shaft. Pry the lever off and allow the linkage to hang free. Remove and discard the stock shifter lever and the stock shifter linkage. Install the Chrysler selector lever in position with the supplied ¼-20 (UHL 1.5”) bolt with the flat washer, lock washer and nut. Tighten the bolt around the Chrysler selector lever. Make sure the lever is not pushed down that it is touching the transmission case. This will cause the lever to bind on the case. The lever should travel smoothly from front to back with a positive click in each gear position. Reinstall the stock throttle lever into position on the small diameter shaft and tighten the pinch bolt securely. The throttle lever must operate smoothly.

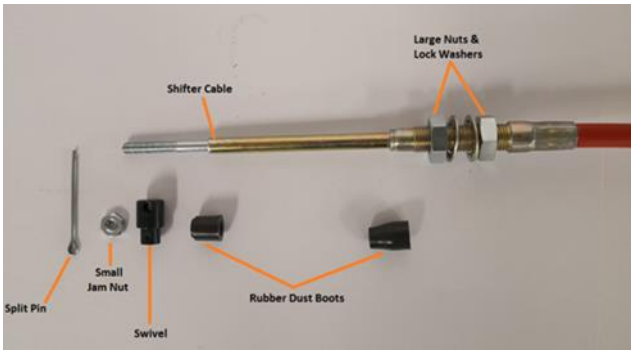


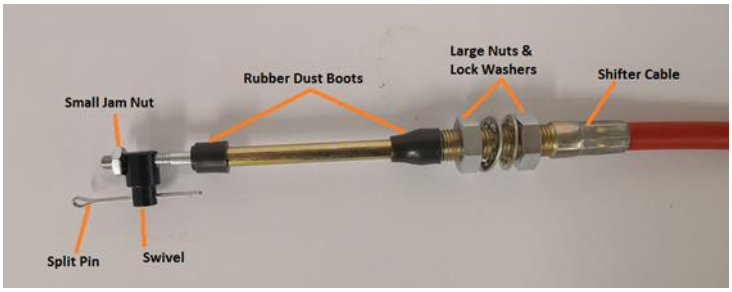


2. Remove the two transmission oil pan bolts directly below the shifter lever. Install the Chrysler cable bracket into position with two spacers between the pan and the bracket. (If your transmission is equipped with a cast aluminium oil pan these spacers do not have to be used). Install the two supplied 5/16-18" (UHL 1.00") bolts and tighten to 12-13 ft. lbs (16-17 Nm). Do not overtighten as this can damage the transmission pan gasket.

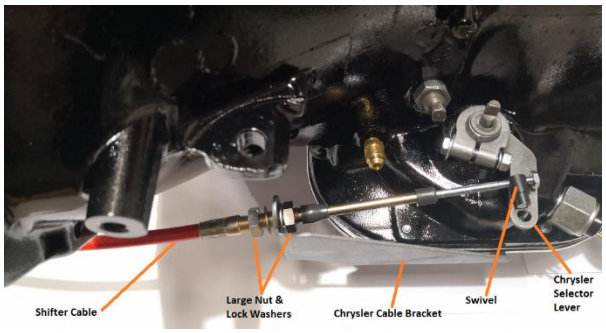


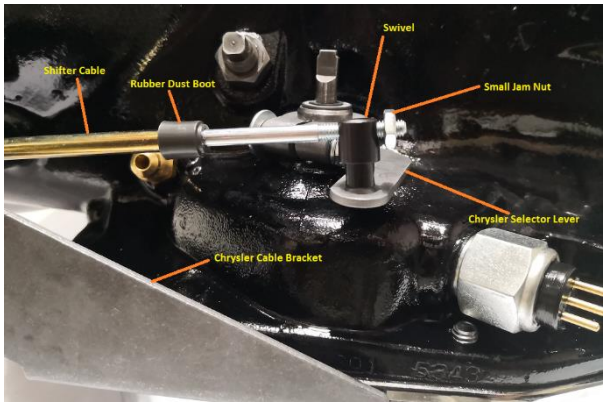
3. Route the shifter cable to avoid kinks and sharp bends to allow a smooth operation. Route the cable away from hot engine or exhaust parts. We recommend the use of a heat guard or heat shield to protect the shifter cable from extreme heat components on the vehicle. Be sure to correctly secure your shifter cable so it does not contact any moving objects.
4. Remove the small jam nut, two small rubber dust boots, one large nut, and a large lock washer from the threaded end of the shifter cable. Slide the end of the shifter cable into the Chrysler cable bracket. Install the large nut and the lock washer loosely over the end of the cable. Reinstall the two small rubber dust boots onto the end of shifter cable. Install the swivel on the threaded end of the cable and position it in the center of the threaded portion.



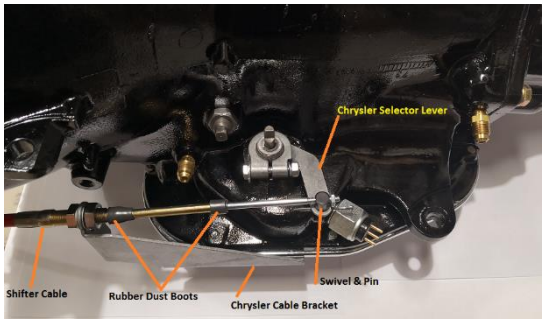


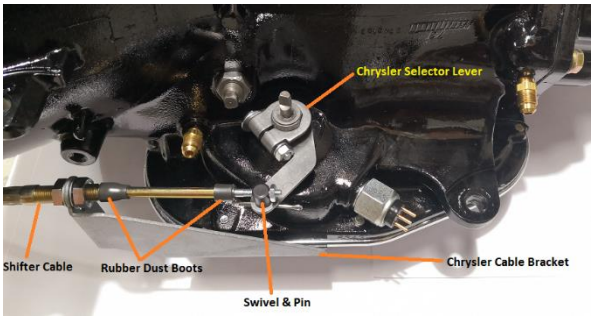
5. Move the transmission Chrysler selector lever by hand all the way to the front position (Low Gear). Shift the shifter assembly to the Low Gear position. Adjust the large nuts on the cable so that the swivel will slide into the hole on the selector lever. Tighten the large nuts completely. Be sure that the swivel will slide freely in and out of the hole in the selector lever.





6. With the swivel in the selector lever, shift the shifter to the Park position, as far forward as the shifter will go without forcing it. The shifter lever on the transmission should be all the way forward. Check to see that the swivel will slide freely in and out of the hole in the lever in this position. If it does not slip in freely, adjust the swivel slightly until it will slip into the hole in the lever in both Low and Park positions. Operate the shifter through all the gear positions. Check to make sure the swivel will slide in and out of the selector lever hole in each gear position. The shifter cable is now correctly adjusted. Install the split pin supplied into the swivel and split the ends around in a loop to hold the swivel into place. Reinstall the downshift linkage, tightening the nut securely.





If you have a problem, DO NOT FORCE THE SHIFTER, this will damage the cable, the shifter or the transmission. Simply start at the beginning and carefully check all your steps.

7. Early Chrysler transmissions from 1966-1968 the neutral safety switch will continue to function as normal. It will not be necessary to hook up the neutral safety switch wires on the shifter or use the switches provided.
8. The backup safety switch must be wired in to the shifter for the reverse lights to function. Disconnect the battery ground cable before wiring the backup light switch. Locate the original backup light switch on the steering column or the console shifter. Run these wires to the UPPER switch on the Nitro Shifter. Reconnect the ground wire and check the light for proper operation. Adjust the switches on the shifter if required.
9. Late Chrysler transmissions from 1969-onwards the neutral safety switch and backup switch will continue to function as normal. It will not be necessary to hook up the neutral safety switch wires on the shifter or use the switches provided.
10. Proceed to FINISHING INSTALLATION to finish the installation of your Nitro shifter.

FINISHING INSTALLATION

1. With the shifter assembly bolted to the floor and shifter cable and micro switches installed be sure the shifter operates correctly in all gears.
2. Move to the top plate to assemble the correct indicator window for your application. Depending on your transmission which may be 2, 3 or 4 speeds. The supplied indictor windows are for forward pattern and reverse pattern transmissions (all variations are sold separately)
3. To wire the indicator LED globe and socket assembly. Run a power wire from an appropriate source. The vehicle's instrument light circuit is a good place to start. Connect it to the one of the wires of the socket assembly. Connect the other unused wire to a suitable chassis ground. Ensure to use correct soldering technique and heat shrink all electrical connections. Secure all wires away from any moving components of the shifter assembly and also from any heat source that may be present. Install the T-10 LED globe and check to see if the globe illuminates when the lights of the vehicle are switched on. If the globe does not illuminate remove and turn the globe 180 degrees and reinstall into the socket assembly.
4. Reassemble the billet middle case, top plate assembly, billet side plates, billet round gear knob and reverse lockout handle to the shifter assembly.
5. Following the below checklist to ensure each step was carried out correctly before a road test is carried out

- ○ Shifter is in a convenient position for drivers reach and ample room around the shifter for the range of motion required.
- ○ Shifter cable is connected to the shifter pin and sifter cable housing is securely fastened to the shifter base.
- ○ Shifter assembly is securely mounted to the floor.
- ○ Shifter cable is routed clear of any areas of extreme heat, correctly heat shielded if required and does not have any kinks and allowed to move freely.
- ○ The appropriate selector lever is used and installed on the transmission.
- ○ The cable bracket bolts are tightened to 12-13 ft-lbs (16 Nm)
- ○ Shifter is properly adjusted, cable boots are installed, cable nuts are tightened and swivel is secured with jam nut and split pin.
- ○ The neutral safety switch is connected and properly adjusted to prevent engine start in FORWARD and REVERSE drive gears.
- ○ Shifter moves freely into and out of all positions, as described in Shifter Operation.

CAUTION: *If your shifter is not working properly do not attempt to drive your car! Verify you have followed all instructions. If the shifter is defective return, it to the place it was purchased from.*

NITRO SHIFTER OPERATION

The Nitro shifter is a ratchet shifter. You push the shifter handle forward for forward shifts and pull it back towards the operator for down shifts (this is installed with a standard forward pattern valve body). The ratchet shift allows firm, positive, no miss upshifts and downshifts. Move the shifter knob forward or backwards as far as it will go to select the next gear. Then let the spring return the stick to the central neutral position. When you shift from Drive to Neutral, the reverse lockout prevents the shifter from shifting any further (to prevent accidental selection of Reverse). To shift to Reverse the reverse lockout lever must be pushed forward. When the reverse lockout lever is pushed forward (with the shifter in Neutral) the lever snaps into the up position and is held there until the shifter is shifted to Reverse, so only one hand is needed. On GM TH-200, TH-250, TH-350, TH-400, TH200 4R, TH700 R4, 4L60, 4L60E, 4L65E and Powerglide transmissions it is necessary to shift the ratchet twice to get from Reverse to Park. These transmissions have twice the travel from Reverse to Park as between the other gears. If you only ratchet once out of Reverse you will not be fully in Park gear and the car may move.

Congratulations! Your Aeroflow Performance Nitro shifter is now installed and ready to use.

IMPORTANT: RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE