

Instructions Created by an:



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Suzuki Samurai Replacement Clutch Cable (SKU# STM-CC)

Installation Instructions



CAUTION: Safety glasses should be worn at all times when working with vehicles and related tools and equipment.



**FOR ADDITIONAL COPIES OF THESE
AND OTHER INSTRUCTIONS GO TO:**

www.lowrangeoffroad.com and click on the
"INSTRUCTIONS" tab.

Suggested Tools:

- Combination Wrenches: 10,12, (2)14, & (2)17mm
- Ratcheting Box End Wrench:14mm
- Sockets: 10mm
- Ratchet: 3/8dr
- Measuring Tape

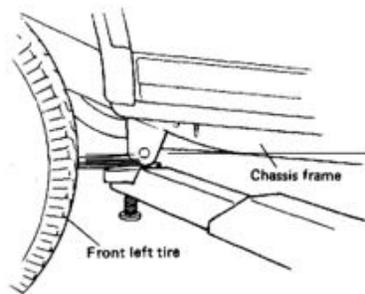
Lifting and Supporting the Vehicle



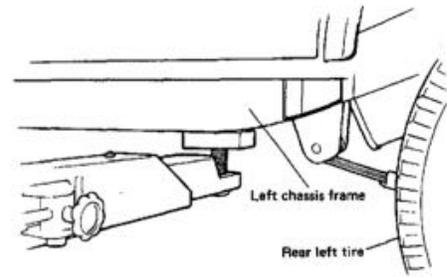
Lifting Option 1

Lift and support the vehicle on a twin post lift.

CAUTION: Always follow the safety guidelines associated with the lift you are using.



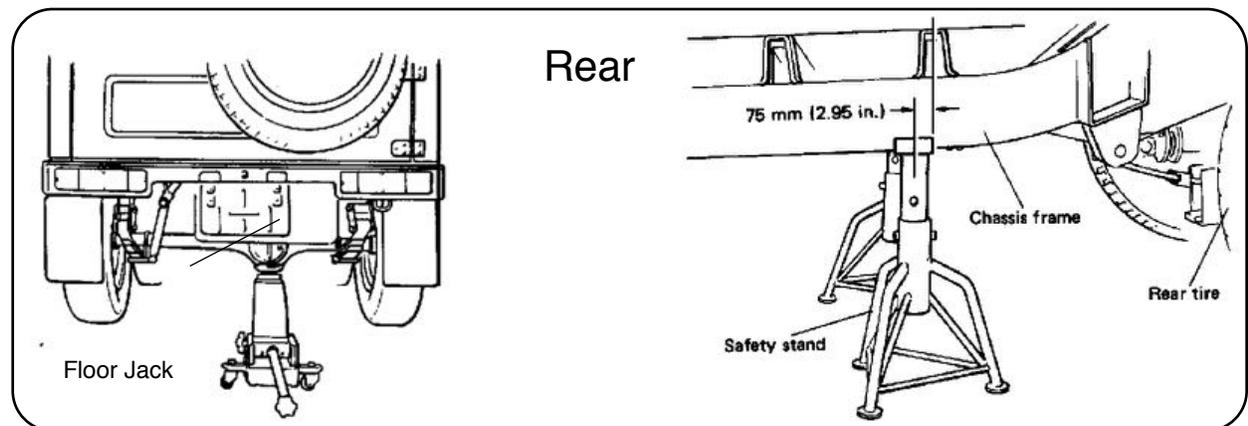
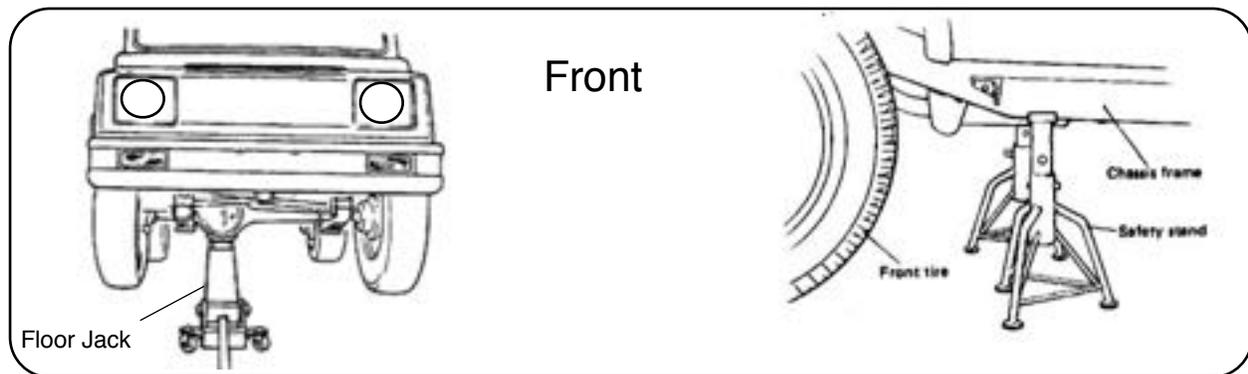
Front Support Location



Rear Support Location

Lifting Option 2

We used a twin post lift for these instructions, but this job could also be done with a floor jack and (4) safety stands.



Clutch Cable Parts Identification

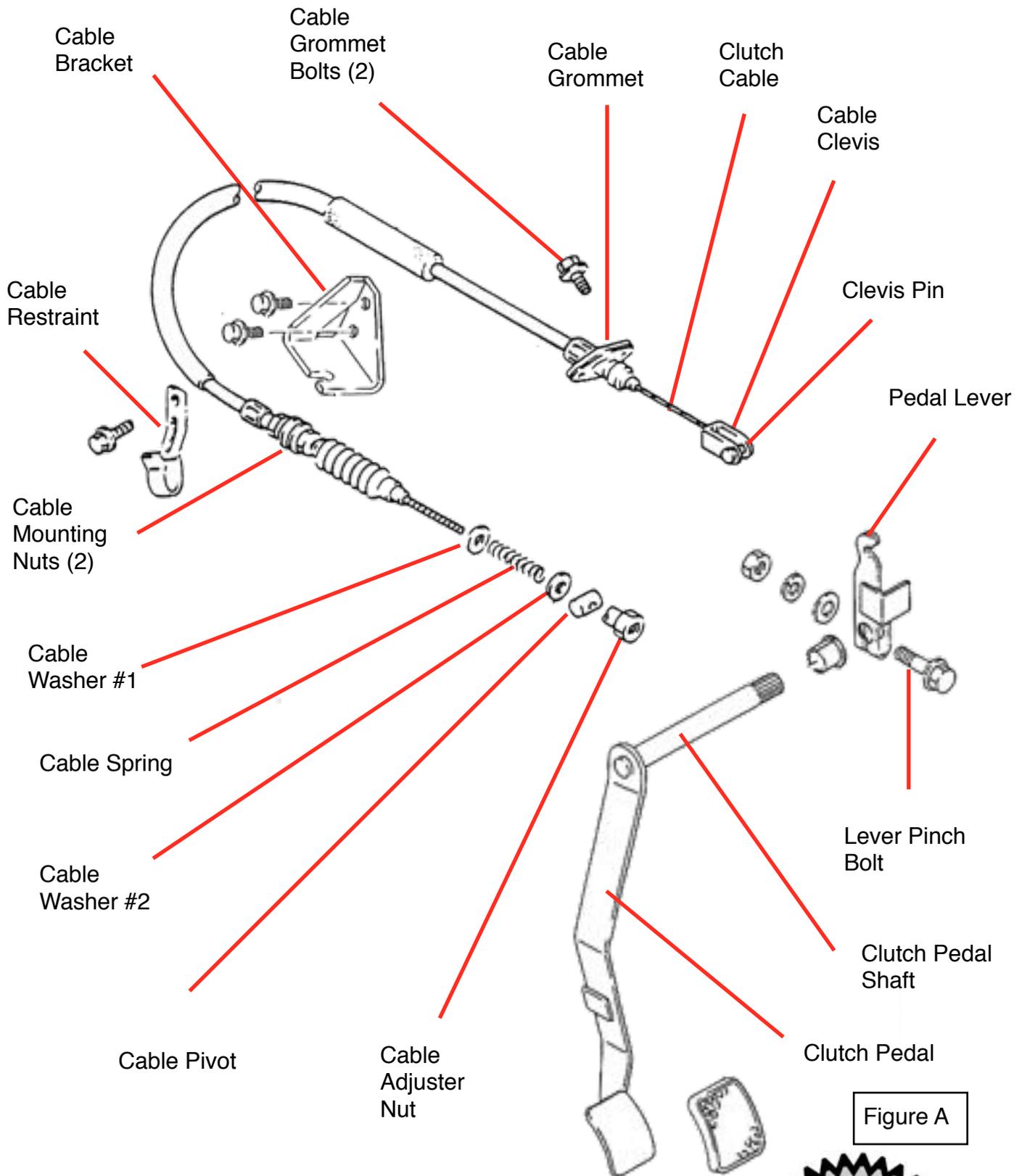


Figure A

Removing the Old Clutch Cable



Step 1

So that the new cable can be installed with approximately the same adjustment as the old one, count the number of threads the clutch cable extends past the adjustment nut.



Step 2

While holding the clutch cable secure with a 10mm open end wrench, loosen the clutch cable adjustment nut using a 14mm ratcheting box end wrench.



Step 3

Remove the cable adjustment nut.



Step 4

Remove the clutch cable pivot.



Step 5

Remove the clutch cable from the clutch lever and remove the spring and both washers.

Tech Tip 5A

While you are working in this area, inspect the clutch release arm. (See Figure B) The arm should be secure on the clutch release shaft. Also, check to see that the arm is aligned with the shaft properly. (See Figure C). If the punch marks are **NOT** aligned properly, you will need to remove the arm from the shaft and reinstall it with the marks aligned. (See tech Tip 5B)

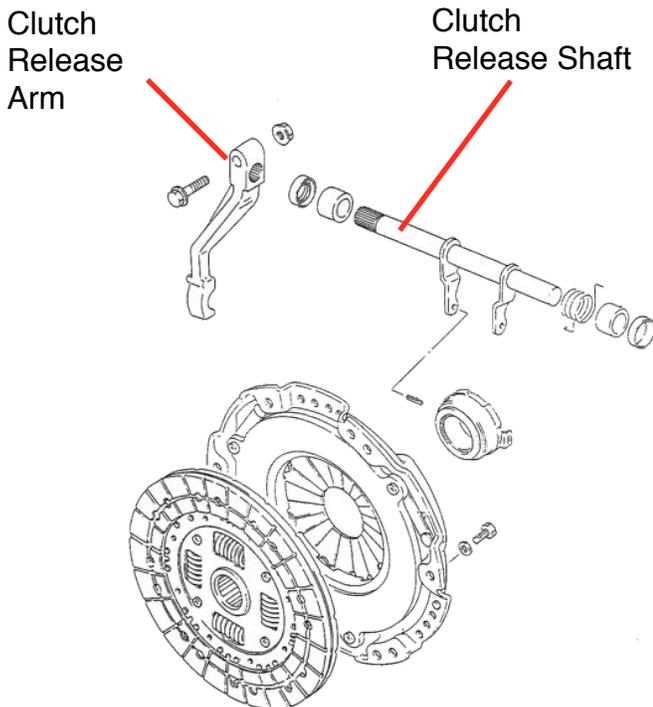


Figure B

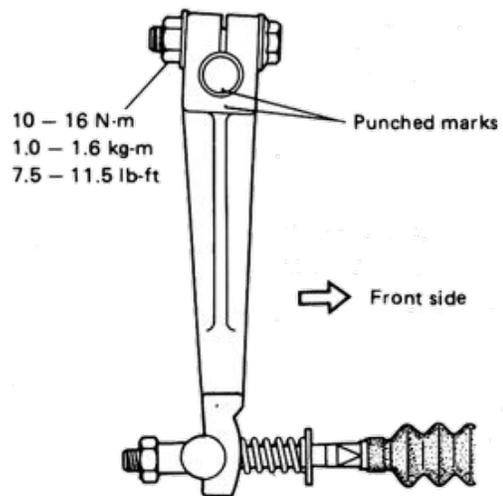


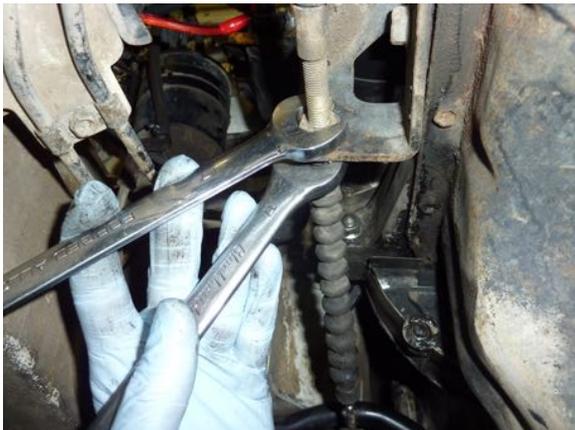
Figure C





Tech Tip 5B

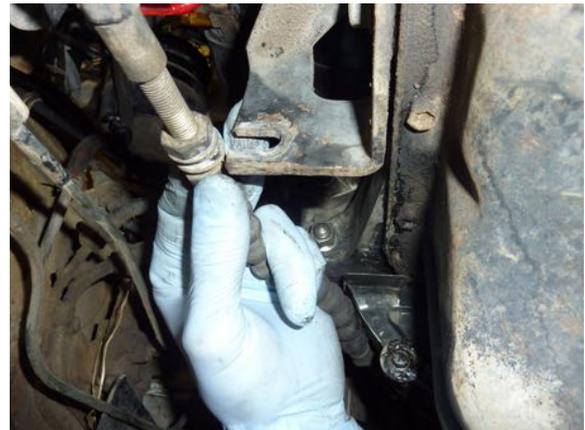
This shows the punch marks on the release shaft and the release arm.



Step 6

Loosen the clutch cable mounting nuts using two 17mm open end wrenches.

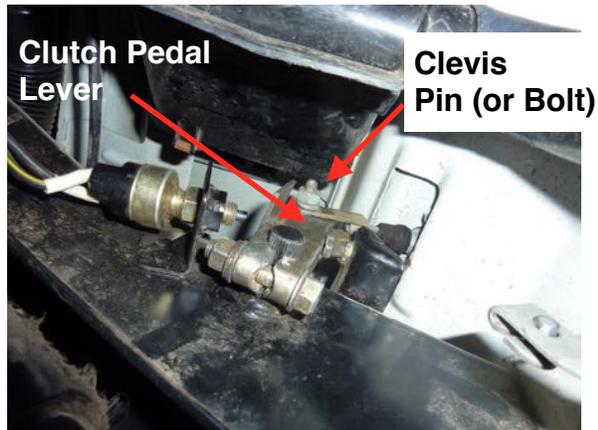
Note: This bracket is below the starter on the passenger side of the engine.



Step 7

Remove the clutch cable from the bracket.





Step 8

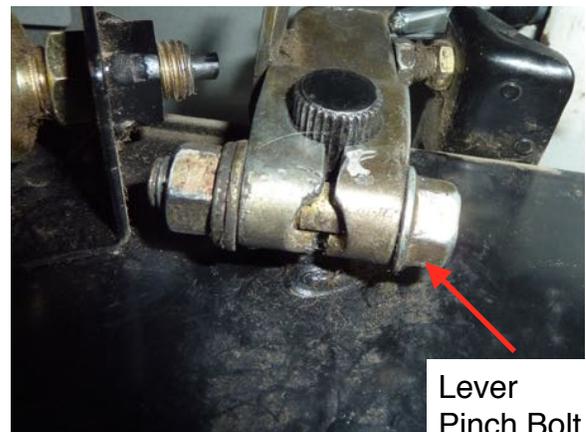
From under the dash, above the accelerator pedal, disconnect the cable clevis pin (or bolt) from the clutch pedal lever.

Note: The vehicle we worked with had a bolt and nut through the clevis. Most cables have a pin in the clevis. The clutch pedal lever has a simple hook at the top. All that is needed, is to unhook the cable clevis from the lever. You do not need to remove the pin (or bolt) from the clevis



Tech Tip 8A

This shows the clevis pin (bolt) unhooked from the pedal lever.



Tech Tip 8B

While you are working in this area, inspect the clutch pedal shaft splines and the pedal lever. Check to see that the pinch bolt is tight and that the pedal lever is secure on the clutch shaft. A common problem is that the pinch bolt becomes loose, allowing the lever to slip on the splines. When this happens the splines become damaged. If this happens, the Clutch Pedal Shaft and the Pedal Lever will need replacing. Click [HERE](#) for instructions on replacing these and other related parts.



Step 9

Remove the clutch cable grommet bolts using a 10mm socket.



Step 10

Pull the clutch cable through the bulkhead.



Step 11

Bend open the cable restraint that is connected to the driver side radiator bracket.



Step 12

Remove the clutch cable.

Note: Closely observe the routing of the old clutch cable so you can route the new cable in the same path.

Installing the New Clutch Cable



Step 13

Begin feeding the new cable in through the lower radiator bracket as shown.



Step 14

Be sure it is routed in the same path as the old one.



Step 15

Bend the cable restraint back as it was originally, securing the clutch cable.



Step 16

Feed the new cable clevis through the bulkhead as shown.



Step 17

Hook the clevis pin over the clutch pedal lever.



Step 18

Align the holes and install the grommet bolts.



Step 19

Install the (2) washers and spring on the clutch cable with the washers on opposite ends of the spring.



Step 20

Insert the cable through the clutch release arm.





Step 21

Install the clutch pivot.



Step 22

Install the clutch adjustment nut.



Step 23

Thread the adjustment nut to approximately the same number of turns as it was originally in Step 1.

Note: This will be a starting point for the final clutch adjustment to be done later.



Step 24

Place the cable in the cable bracket and tighten the nuts using two 14mm open end wrenches.

Adjusting the New Clutch Cable

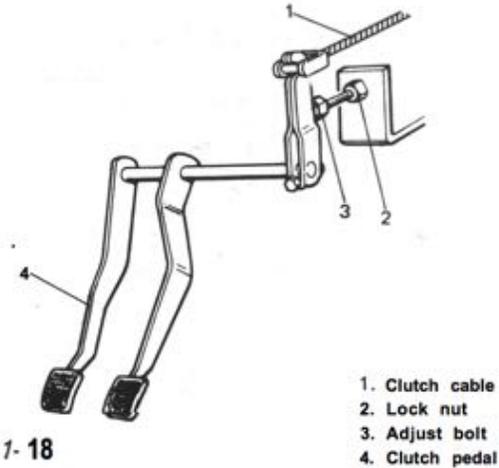


Fig. 11-18

Step 25

Check the clutch pedal position in relation to the brake pedal. The clutch pedal should be level with the brake pedal. If it is **NOT** level, advance to **Step 26**. If it **IS** level skip to **Step 27**.

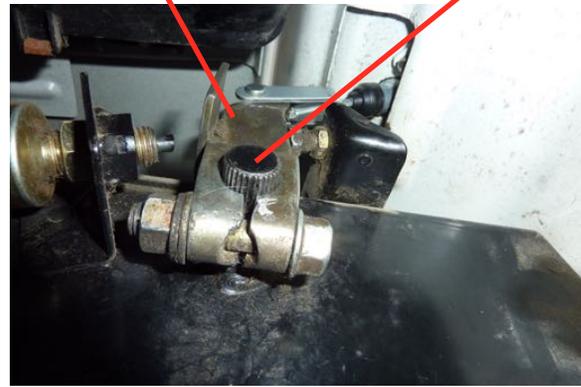
Step 26

Clutch Pedal Height is adjusted by loosening the lock nut and turning the adjustment bolt up or down until the clutch pedal is level with the brake pedal. Be sure to tighten the lock nut after adjustment.

Adjust Bolt Lock Nut



Pedal Lever Pedal Shaft



Tech Tip 26A

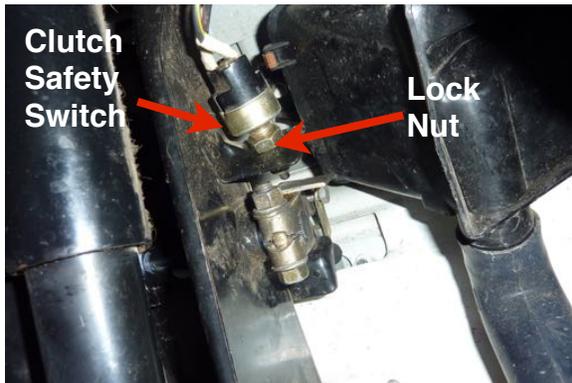
This shows the pedal height lock nut and adjust bolt.

Tech Tip 26B

If the pedal will not adjust to the specified height, it will be necessary to removing the pedal lever from the pedal shaft and replace it in a different position on the splines.



Clutch Safety Switch Check & Adjustment



Step 27

The clutch safety switch check is done by placing the shifter in the neutral, setting the park brake, turning the key to the start position, and slowly depressing the clutch pedal until the engine cranks. The pedal position at which the engine cranks is called the “Pedal Crank Point”. The engine should crank when the clutch pedal reaches 2 to 3 inches from the floor. If the engine cranks when the pedal is not within the specified range, loosen the lock nut using a 14mm open end wrench and rotate the clutch safety switch. To raise the “Pedal Crank Point”, turn the switch clockwise. To lower the “Pedal Crank Point”, turn the switch counterclockwise. After adjustment, tighten the lock nut. Check the “Pedal Crank Point” again. If it is within specifications you are done. If not, keep adjusting the switch until the specified Crank Point is achieved.

Important Note:

Clutch Pedal Free Play is very important. If clutch pedal free play is too great, you could experience a grinding or hard shifting when changing gears. If free play is too little, premature throwout bearing failure could result and in extreme cases the clutch will slip causing the clutch disc to wear out extremely fast.

Clutch Pedal Free-Play Adjustment

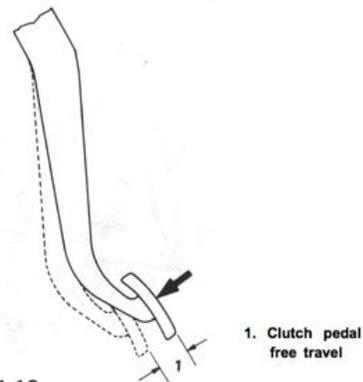
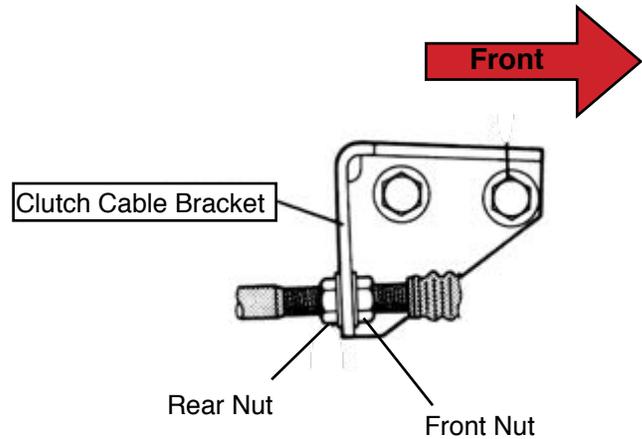
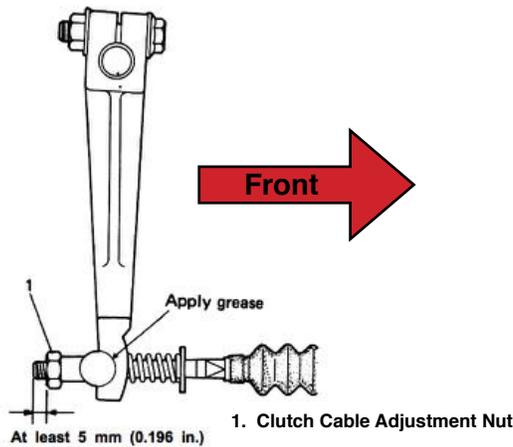


Fig. 11-19

Clutch pedal free travel	20 - 30 mm (0.8 - 1.1 in.)
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Step 28

Depress the clutch pedal with your hand and stop when resistance is felt. Measure the distance the pedal traveled. This measurement is called “pedal free play”. The pedal free play should be within .8 to 1.1 inches (or 20 to 30 mm). If pedal free play is NOT within specification the clutch will require adjustment.



Step 28 Continued

The clutch adjustment is performed at the clutch adjustment nut. (See Photograph below) To increase clutch pedal free play, turn the clutch adjustment nut **COUNTERCLOCKWISE**. To decrease clutch pedal free play, turn the clutch adjustment nut **CLOCKWISE**.

Note: After adjusting pedal free play, there should be **AT LEAST** .2" (or 5 mm) of cable end extending past the nut. If there is, you are done. If there is less than .2" extending past the cable joint nut, proceed to the next step.

Step 29

If there is less than .2" (5mm) of the threaded clutch cable extending past the nut you will need to adjust the cable in the cable bracket. (See figure above) Loosen the rear nut (turning the wrench upward) and tighten the front nut (turning the wrench upward) until it is tight. Then check and adjust the clutch pedal free play again as explained in **Step 28**. If there is still not enough (.2" minimum) clutch cable end extending out of the cable adjustment nut, repeat **Step 28** until there is.



Photograph of Clutch Cable adjustment Nut



Photograph of Clutch Cable Bracket.





Congratulations:

You have successfully installed a clutch cable. We hope these instructions have been helpful. If you have suggestions for improvement please sales@lowrangeoffroad.com with your comments.



As always, If you experience any difficulty during the installation of this product please contact Low Range Off-Road Technical Support at 801-805-6644 M-F during regular store hours. Thank you for purchasing from Low Range Off-Road.



These instructions are designed as a general installation guide. Installation of many Low Range Off-Road products require specialized skills such as metal fabrication, welding and mechanical trouble shooting. If you have any questions or are unsure about how to proceed, please contact our shop at 801-805-6644 or seek help from a competent fabricator. Using fabrication tools such as welders, torches and grinders can cause serious bodily harm and death. Please operate equipment carefully and observe proper safety procedures.

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