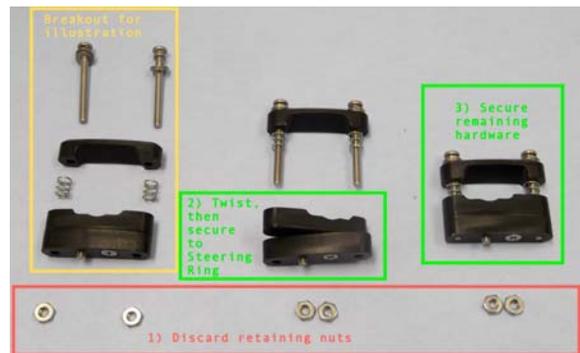


## HMMWV Bracket Installation

### Steering Ring Clamps (M998 Steering Clamp Set)

One screw secures each clamp to the steering ring, and two separate screws secure the steering wheel and steering ring together. Note that each clamp is slightly different (i.e. the “Kairos” clamp has a right spoke well), therefore each clamp’s bottom needs to be kept with its top. Clamp colors may differ from images.

1. Determine the location for each clamp, as follows:
  - a. Ensure the HMMWV tires and steering wheel are centered, and the Steering Ring is installed (as per Steering Ring installation documentation).
  - b. The protruding screw of the unlabeled clamp will be placed in the bottom-center-most Steering Ring screwhole.
  - c. The left (“Kairos”) and right (“Pronto4”) clamps will be secured with 15 empty screwholes between.
2. Remove the retaining nuts for one clamp without dislodging the other hardware.
3. Remove the bottom portion of the clamp.
4. Manually twist the bottom portion of the clamp to the open position. This will provide access to the clamp’s retaining screw head (an 8-32 screw).



5. Use a Phillips #2 driver to secure the bottom of the clamp to the location identified in step 1.
6. Manually twist the bottom portion of the clamp to the closed position.
7. Use a Phillips #2 driver to secure the top of the clamp, along with all intermediary hardware (e.g., washers, spring) over the Steering Wheel spoke, through the bottom portion of the clamp, and into the Steering Ring.



### CAUTION

The top of the Steering Ring has 56 #8-32 bolt holes. These are designed to receive a bolt no deeper than 0.225 inches. A deeper bolt will interfere with the drive mechanism of the steering actuator and cause damage. Failure to use all provided hardware (i.e., screw, lock washer, (3) flat washers) will also cause interference and damage.

### Steering Bias Bracket Overview and Options

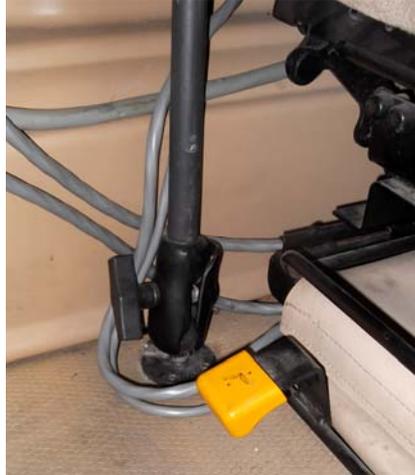
The Steering Bias Pole Base Plate (method 1) may be easier to install than the Underseat Steering Bias Plate and is compatible with all HMMWVs and Hummers. However, it requires drilling holes through the floorboard. The Underseat Steering Bias Plate (method 2) uses existing HMMWV hardware as an alternative, non-penetrative method of securing the Ram-Mount for a M1151 (may not be useable on other models).

### Steering Bias Bracket – Method 1 – Penetrative

1. Determine where the RAM mount is being placed (as per Steering Ring Installation documentation).
2. Use 5/32 inch bit to drill corresponding holes through the floorboard.
3. Place each of the four #10-32 bolts (included with the Installation Hardware Kit) through the RAM mount and drilled holes.
4. Underneath the vehicle, locate the protruding bolts.



5. Secure a #10-32 washer and nyloc (included with the Installation Hardware Kit) on each of the protruding bolts.



### Steering Bias Bracket – Method 2 – Non-Penetrative

1. Remove the two driver seat bolts corresponding to the two large mounting holes in the Underseat Steering Bias Plate.
2. Slide the Underseat Steering Bias Plate between the floorboard and seat, aligning it to the removed driver seat bolt holes.
3. Re-secure the driver seat bolts through the (2) large holes in the bracket.
4. Determine where the RAM mount is being placed (as per Steering Ring Installation documentation).
5. Place one each of the four #8-32 bolts, lockwashers, and flat washers through the RAM mount and corresponding threaded holes on the Underseat Steering Bias Plate.



## Brake Bracket Overview and Options

Both the Brake Mounting Plate (p/n: MCH-00048) and the H1 Brake Cable Anchor (p/n: MCA-00112) require drilling holes through the vehicle. The Brake Mounting Plate Brake (method 1) requires drilling through the driver-side firewall, but is compatible with all HMMWVs and Hummers. The HMMWV Brake Cable does not go directly through the firewall; instead, it is connected to a seam between the right and left side of the firewall on a M1151 (may not be useable on other models).

### Brake Bracket – Method 1 – Firewall Penetrative



1. Locate and mark the mounting location of the Brake Cable Bracket (as per Brake Cable Installation documentation; bracket is included with the Brake Attachment Set, p/n: 3RD-00010-01).
2. Use a 9mm bit to drill a hole at the mounting location.
3. From the driver side wheel well, slide the M8x20 bolt through the lockwasher and the Brake Mounting Plate, then through the firewall hole.



4. From the driver side foot well, manually screw the brake bracket's standoff (included with the Hardware Installation Kit) onto the protruding M8 bolt.
5. Use two 13mm wrenches to secure the Brake Mounting Plate in place.
6. Continue following the Brake Cable Installation documentation.



## **Brake Bracket – Method 2 – Less-Penetrative**

1. Locate and mark the mounting location of the Brake Cable Bracket (as per Brake Cable Installation documentation; bracket is included with the Brake Attachment Installation Kit).
2. On the firewall seam, parallel to the Brake Cable Bracket mounting location, mark one location 0.5 inch above and a second location 0.5 inch below (total of 1.0 inch apart).
3. Use a 1/4 inch bit to drill holes at the two seam marks.
4. Use a #2 Phillips driver to separate the components of the HMMWV Brake Cable Anchor.
5. Sandwich the firewall seam with the HMMWV Brake Cable Anchor's L-block and rectangular block, ensuring the screwholes align with the previously drilled holes.
6. Use a #2 Phillips driver to secure the two blocks with the previously removed washers and screw.
7. Manually screw the Brake Bracket's Gimbal Joint (included with the Brake Attachment Set) into the exposed hole on the HMMWV Brake Cable Anchor.
8. Continue following the Brake Cable Installation documentation.

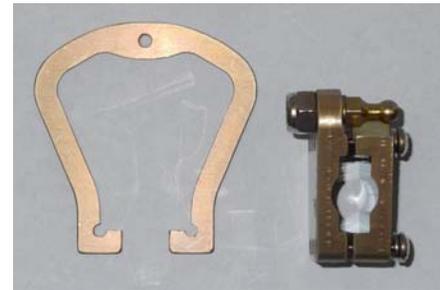


## **Transmission Brackets Overview and Options**

All installations require installation of the Transmission Button Bias and Transmission Bracket Set.

The Transmission Cable must also be bracketed near the shifter. If possible, use of the Transmission Bracket Plate (method 2) is recommended. It is the easier method and is non-penetrative. However, the plate was designed for the M1151 model and may not be useable on other models. A U-Bolt (method 1) can be used on all models, but is more difficult to install.

### Transmission Button Bias and Transmission Bracket Set



1. Completely and continuously depress the transmission shift safety button.
2. Slide the Transmission Button Bias over the transmission shift handle.
3. Use a Steel Nylon Zip Tie to secure the Transmission Button Bias over the transmission handle. There is an extra zip tie provided.
4. Release the transmission shift safety button. Verify the vehicle can be shifted without manually depressing the transmission shift safety button.
5. Use a pair of snips to trim the excess zip tie tail.



6. Use a #1 Phillips driver to loosen the four screws connecting the Transmission Bracket halves.
7. Sandwich the Transmission Bracket halves around the transmission shifter, with the quick-connect ball at the bottom of the shifter arm.
8. Use a #1 Phillips driver to *equally* tighten all four screws.
9. Loosen each screw one full turn.
10. With the vehicle safely positioned, and a safety operator in the driver's seat, shift the vehicle into the gear closest to the dash. With the quick-connect ball toward the rear of the vehicle, move the Transmission Bracket to the lowest point on the shifter arm that does NOT result in the bracket touching the transmission cover.
11. Use a #1 Phillips driver to equally tighten all four screws.
12. Connect the quick-connect end of the Transmission Cable to the Transmission Bracket's quick-connect.
13. With a safety operator still in the driver's seat and the vehicle still in reverse, slide the shifter end of the cable out of the cable's sheath to its fully extended position, and the Transmission Cable straight toward the vehicle's rear.
14. Manually move the two nuts on the threaded portion of the Transmission Cable nearest the shifter to their respective extremes on the threaded portion of the Cable's sheath.
15. Continue with the selected Transmission Bracket installation method (detailed below).



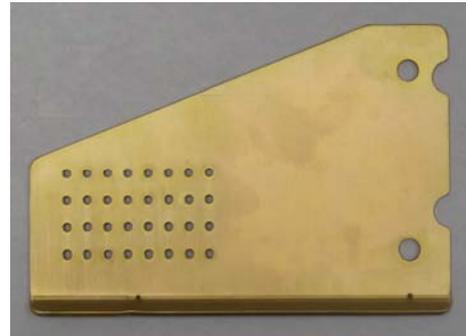
### **Transmission Bracket – Method 1 – Penetrative**

1. Ensure the Transmission Button Bias and Transmission Bracket Set have been installed as detailed above, that there is still a safety operator in the driver's seat, and that the transmission shifter is in the gear closest to the dash.
2. On either side of the Transmission Cable's threaded portion, mark the midpoint.
3. Use a 1/4 inch bit to drill through each mark.
4. Slide the U-Bolt over the Transmission Cable and through the drilled holes.
5. Underneath the vehicle, locate the protruding portions of the U-Bolt.
6. Use a 7/16 inch, deep socket wrench to secure both sides of the U-Bolt.
7. Use two 15/16 inch wrenches to secure the Transmission Cable nuts around the U-Bolt.



### Transmission Bracket – Method 2 – Non-Penetrative

1. Ensure the Transmission Button Bias and Transmission Bracket Set have been installed as detailed above, and that there is still a safety operator in the driver's seat, and the vehicle is still in reverse.
2. Use a wrench to remove the two rear nuts from the transmission arm faceplate.
3. Place the Transmission Bracket Plate under the Transmission Cable and onto the protruding transmission arm faceplate bolts.
4. Use a wrench to re-secure the two rear nuts to the transmission arm faceplate.



5. Place the center of the Transmission Cable's threaded portion into the Transmission Cable Bracket (included with the Mechanical Installation Kit, p/n:MCA-00099) such that the four corner through-holes of the Transmission Cable Bracket correspond to threaded holes on the Transmission Bracket Plate. It will be necessary to move the rubber cable sheath cover and remove one nut from the cable sheath. It does NOT matter whether the Transmission Cable Bracket faces to the front or rear.
6. Use a #2 Phillips to secure each corner with a lockwasher and a 5/16 inch 8-32 screw (included with the Mechanical Installation Kit).
7. Use two wrenches to secure the Transmission Cable nuts around the Transmission Cable Bracket.

