

TOYOTA L/C TRANSFER CASE TWIN STICK to TR4050 TRANSMISSION

KIT CONSISTS OF:

No:	Qty	Part No.	Description
1	1	302060	BOOT- TWIN STICK
2	1	302063	BOOT RING- ATLAS TWIN STICK
3	1	302203	ROD END-FEMALE 5/16-24 RH
4	2	303121	NUT-1/2-13 HX JAM BLACK ZINC
5	1	303363	STUD BOLT- 3/8-24 X 11.5 SPORTSMOBILE
6	1	715574B	BOLT- SHOULDER 5/8 x 2 1/4 (1/2-16)
7	1	*715575	BLOCK- RANGE PIVOT
8	1	715576	LEVER- T-CASE HI/LOW
9	1	*715577	MODE PIVOT BLOCK
10	2	715580	ROD END-FEMALE 3/8 -24 W/STUD HIGH/LOW SHIFT
11	1	715581	ROD END-FEMALE 5/16 -24 W/ STUD MODE HANDLE
12	1	715584AA	KNOB- BLACK SET
13	1	715585	SHAFT- TOYOTA TWIN STICK MODE
14	1	*715586C	LEVER- MODE & RANGE 24"
15	1	*715586C	LEVER- MODE & RANGE 24"
16	1	*715588C	ELBOW- MODE SHIFT ROD
17	1	715589	CLEVIS PIN 5/16 x 1-1/8 LONG (1" usable length)
18	1	715590	COTTER PIN 3/32 X 1
19	4	**715591	BUSHING-TWIN STICK PIVOT
20	2	723131	5/16 -24 HEX JAM NUT zinc
21	1	723154	THREADED ROD- 5/16 -24 X 5"
22	2	723719	HEX JAM NUT 3/8 -24 PLATED
23	1	723769	3/8 -24 X 3/8 CUP POINT Socket Set Screw
24	2	725003	FLAT WASHER 1/2 PLATED-SAE ZINC
25	1	716076	WHITE NYLON WASHER - USED BETWEEN THE TWO SHIFTERS ON THE DOWEL BOLT

APPLICATIONS:

1) TR4050 transmission

*ITEMS MUST BE WELDED BEFORE INSTALLING

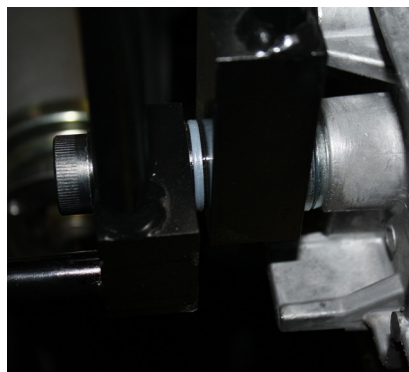
**ITEMS MUST BE INSTALLED AFTER WELDING

**715591 IS A PRESS FIT INTO THE PIVOT BLOCK

NOTES:

This assembly will require the installation of a new mode shaft into the transfer case. Refer to the exploded assembly view on the following pages for part identification and part assembly.

This kit is a universal type kit that requires the handles to be bent and welded to fit your vehicle.



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P/N: 715574

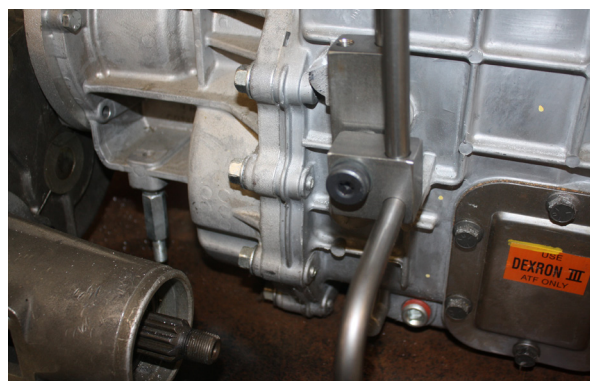
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The TR4050 has two bosses on the side of the transmission. We opted to use the one that has a cast hole. The hole is approximately .363" and .800" deep. The hole needs to be drilled to .4218" and then tapped with a 1/2-13 thread. This allows for the shoulder bolt to support the new twin stick handles.



The second boss on the transmission will need to be removed due to interference with the shifter base. Depending on the handle bent position you may need to remove part of the transmission near the top cover.



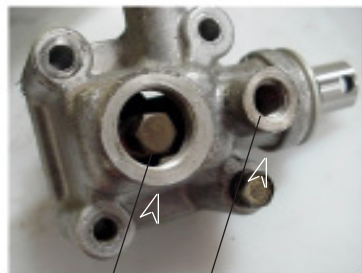
Test fit the handles to make sure they don't interfere with the transmission. Note: the hole depth with the taper of the tap does not put full threads in the bottom of the hole, thus not allowing the bolt to be fully installed. The handles are spaced off the transmission with the two 1/2" flat washers to allow the bolt to be tighten fully, this also provides additional clearance for the handles to the transmission.

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INSTALLATION OF PART #715585:

This kit requires the installation of a new mode selector shaft into your stock transfer case. This shaft can be installed with the transfer case still in the vehicle. The mode shaft is installed into an aluminum housing that is bolted to the front output shaft housing of the transfer case. This mode shaft housing bolts on using (4) 12mm bolts. By removing these bolts, the mode housing can be removed from the transfer case. Set the mode housing on a bench and remove the plug bolt to expose



— shift fork bolt
— detent ball and spring

the bolt that couples the shift fork to the mode shaft. Remove the shift fork bolt through this access hole. Remove the shifter detent ball and spring by removing the detent bolt. Remove the rubber boot from the mode housing and pull the mode shaft from the housing. Install the new mode shaft through the seal and into the housing with the detent notches in the correct orientation. Reinstall the shift fork bolt into the shift fork and new mode shaft. Insert the detent ball, spring and cap into the housing. Slide the rubber boot back onto the mode shaft. Install the mode housing back onto the transfer case, making sure to silicone between the surfaces to secure for no leaks.

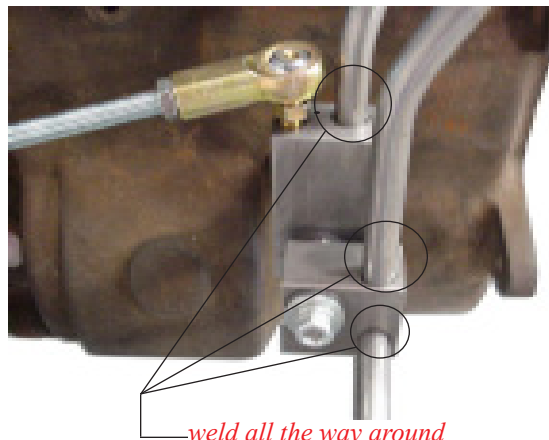


INSTALLATION

Install the transfer case high/low shifter arm to the top cover of the transfer case. Since Land Cruisers had two shaft configurations, we have provided two tapped holes on this lever. Match the tapped hole with the flat portion of the shaft.

Temporarily install the pivot shaft and both shift blocks (P/N 715575 & 715577) onto the Advance Adapters bracket. These two blocks should be pointing straight up at the middle of their range. Paying attention to the orientation of the blocks and where the stock hole in the floor is located, carefully bend the shift handles (P/N 715586A) to fit your particular application. Make sure the handles clear each other as they travel along their path. It may be necessary at this point to enlarge the hole in the floor to gain clearance for both handles.

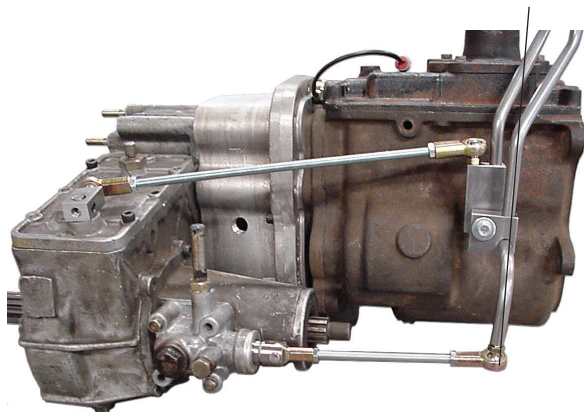
Now weld each handle to its corresponding shift block, as shown. Mode shift link P/N 715588 comes pre-bent, but the distance it sticks out of the mode block (P/N 715577) needs to be set for your application. Weld the mode shift link to the mode block so that it is in-line with the mode shaft (P/N 715585) and so that the link is parallel to the long edge of the block (straight down). See pictures "vertical alignment" and "horizontal alignment" below for a visual description. Note that the mode shift link may need to be cut on the non-threaded end to achieve the desired alignment.



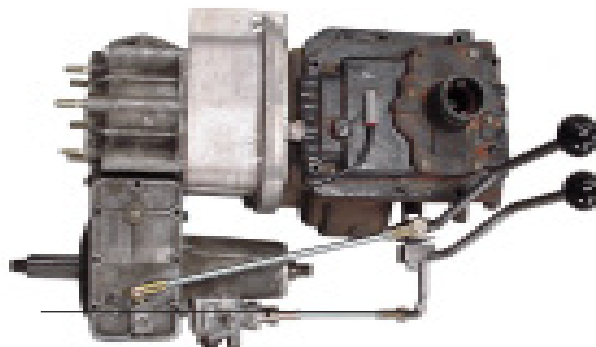
— weld all the way around

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*Vertical alignment of
Part numbers 715588 & 715587*



Horizontal alignment with Part No. 715588

After welding is complete, press the bushings into both shift blocks until they are completely seated in both the pivot block holes. This would be the best time to paint the two welded handle assemblies. Make sure to mask off the bushings so paint does not get into the inside diameter. Now assemble the pivot shaft (P/N 715579), both handles (715586 & 715587), the 5-16" flat washer, the 5/16" lock washer, and the 5/16"-18 nut together as a unit. Push the handles up through the floor and thread the pivot shaft into the side of the transmission.

Now install the two 3/8" jam nuts and ball joints onto the 3/8" all thread and bolt this assembly to the high/low shift handle and arm. Adjust the length so that the handle is pointing straight up when the transfer case is in neutral. Cutting of the all thread may be necessary to achieve this. Repeat this same process for the mode shifter assembly using the ball joint, jam nut, and male heim joint. The male heim joint mounts to the mode shaft with the supplied clevis pin and cotter pin.



*Twin sticks through modified hole
in floor.*

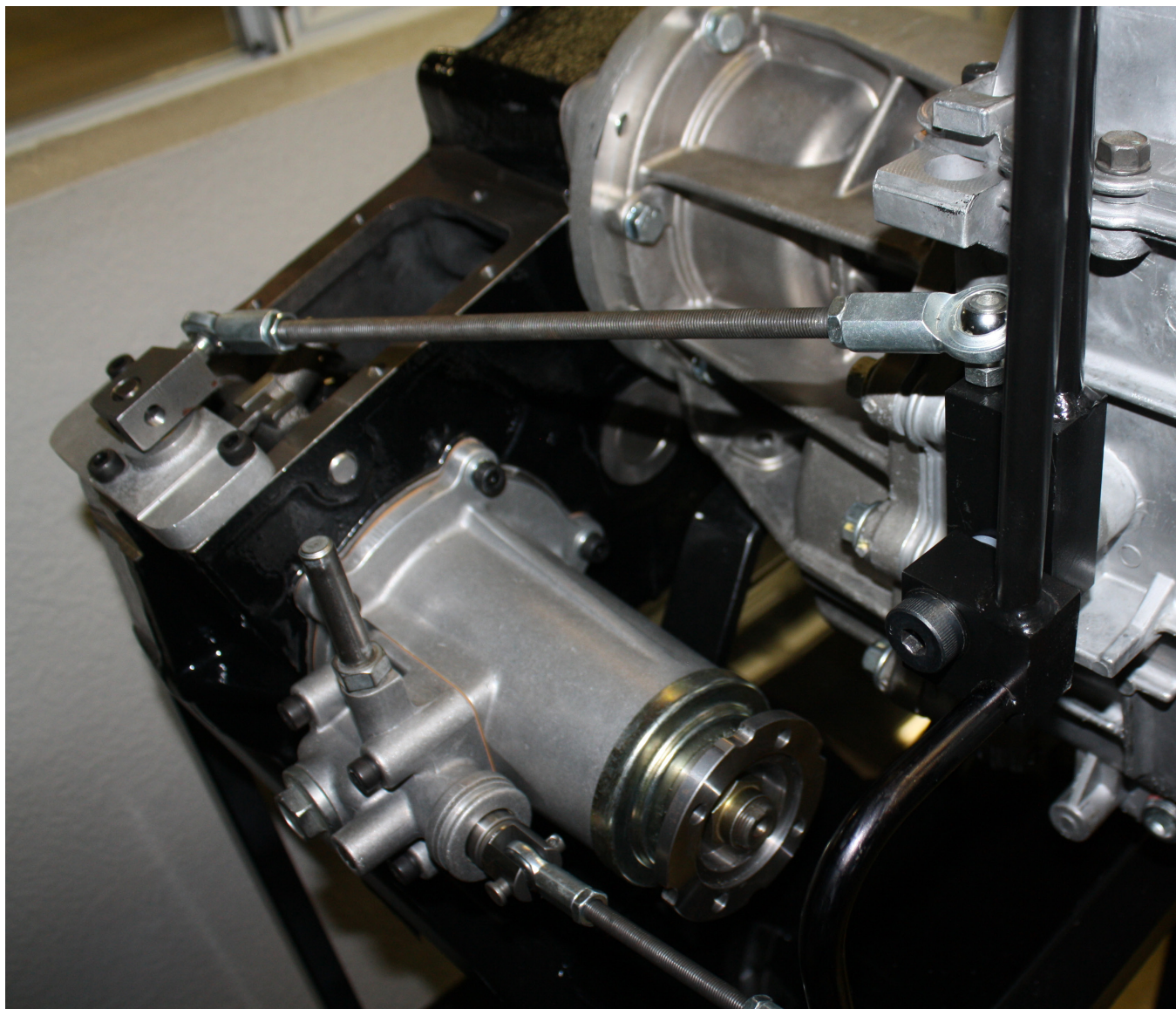
Once the transfer case shifts in a satisfactory manner, mount the shift boot over the hole in the floor using the metal ring supplied. Use approximately 4 self tapping screws to go through the boot, metal ring, and floor. Finish the installation by adding the 1/2" jam nuts and the shift knobs.



Finished installation

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