

**Note:** Please be aware that this procedure may exceed your technical abilities. Please read instructions completely and carefully before attempting installation. If you are unsure of your abilities, please consult a service professional.

**WARNING: INSTALL & USE AT YOUR OWN RISK!** Always wear and use all proper safety gear at all times when installing this product. We have made every attempt to ensure that these instructions are concise and easy to follow, but if any mistakes are found, or you require additional information, we can be reached M-F from 8:00am-5:00pm EST by calling 419-265-9399 or via email at sales@tcbroschoppers.com. TC Bros Choppers LLC assumes no liability for any personal injury or property damage caused by the installation and/or use or misuse of this or any other product.

**Recommended Tools for Installation:**

- 1.) Combination Wrenches in 1/2", 9/16" and 3/4" sizes
- 2.) Adjustable Wrench with minimum 1" capacity (a.k.a. "Crescent Wrench")
- 3.) Torque Wrench that measures in ft-lbs or N-m (torque values given are for dry fasteners)
- 4.) Standard Hex Key Wrenches (a.k.a. "Allen Wrenches")
- 5.) Ratchet and Socket set
- 6.) Soft faced mallet (Rubber or plastic is preferred)
- 7.) Loctite® #243 Medium Strength Threadlocker (Blue) or equivalent

**MID CONTROLS INSTALLATION INSTRUCTIONS:**

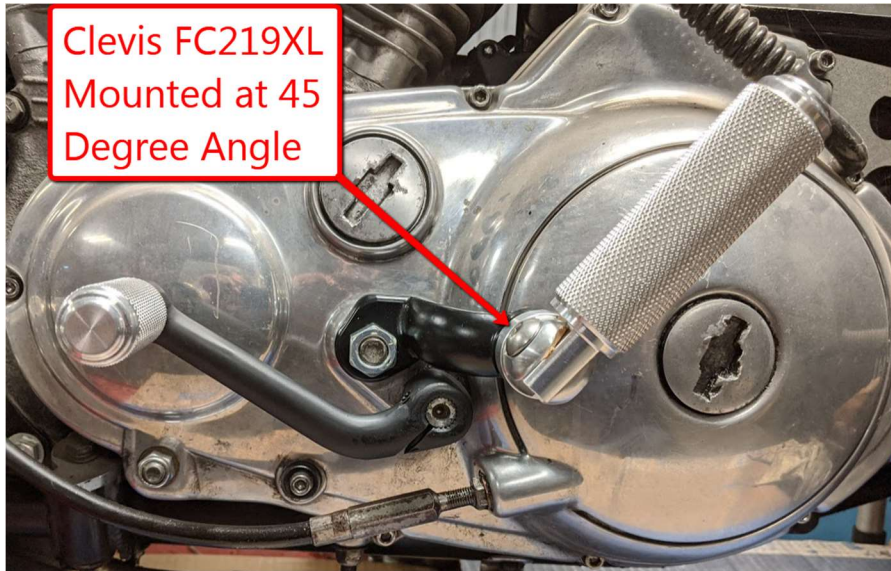
- 1.) Some exhaust systems may require removal in order to install this product. Remove only if necessary.
- 2.) If your bike has factory mid controls, remove shifter, brake pedal, footpegs, mounting brackets, rear brake master cylinder, and brake side sprocket cover (a.k.a. pulley cover). NOTE: DO NOT disconnect brake master cylinder from brake hose or you will have to bleed your brakes at the end of this installation.
- 3.) If your bike has factory forward controls, first disconnect linkage rods, then remove all forward controls mounts and hardware including rear brake master cylinder (do not disconnect brake hose). Remember that the factory front forward controls mounts also act as front engine mounts. For the cleanest looking installation, it is recommended to use a set of original front engine mounts from a mid-controls model Sportster (Left side: HD #16212-84 & Right Side: HD #16210-84A). If you wish to re-use your stock forward control mounting brackets, you may want to remove the spacers that thread into the mounting brackets so that they no longer protrude outward from your bike. **See Figure 1.**
- 4.) Please refer to supplied parts diagrams on following pages for part number references for remainder of installation instructions. **NOTE: Apply threadlocker to all threaded mounting hardware during installation.**
- 5.) Install the shift lever assembly (part #102-0074) to the splined shifter shaft protruding from your engine by tapping it into position with a soft faced mallet until it is fully seated onto the shaft. **See figure 2.** Apply threadlocker to 1/4-20x1" socket head bolt (part #119-0222) and loosely install into hole in shift lever. Using a torque wrench, torque the (part #119-0222) socket head bolt to 8ft-lbs (10.8 N-m) to securely clamp shift lever to shift shaft.
- 6.) Loosely secure footpeg mounting clevis (part #FC219XL) to LH mount (part #MC161XL) using 3/8-16x7/8" bolt (part #119-0282). *Remember Apply threadlocker to 3/8-16x7/8 bolt.*
- 7.) Install shifter LH mount (part #MC161XL) loosely to bike using 1/2-13 hex nut (part #119-0015). Be sure spring pin (part # 119-0283) is inserted into primary case and LH mount for proper alignment. *Remember to apply threadlocker.* **See figure 2.** Using a torque wrench, torque the 1/2-13 hex nut (part #119-0015) to 49 ft-lbs (66.4 N-m).
- 8.) Continue installing the LH mount to engine be sure to orient the footpeg mounting clevis (part #FC219XL) so that the milled slot of the clevis is approximately at a 45 degree angle to the ground. **See figure 2** This angle will

- assist the peg in folding if it were ever to contact the ground while riding. You most likely will not be able to reach the head of the 119-0282 bolt with a torque wrench, so just tighten securely using a 9/16" combination wrench. While you are tightening the 119-0282 bolt, it is helpful to hold the footpeg mounting clevis (part #FC219XL) from rotating with an adjustable wrench placed against the outer machined flat surfaces of the clevis.
- 9.) If you purchased TC Bros. Choppers part #102-0087 Mid Controls Kit including footpegs, it is time to begin installation of the toe peg (part #FP884XL) to the shift lever (part #102-0074). First apply threadlocker to the inside of the hole in the FP884XL toe peg and thread the 5/16-24x1½" set screw (part #119-0198) into the toe peg until there is 5/8" (15.9mm) of thread (half the length of the set screw) protruding from the peg. It is helpful to use a 5/32" hex key wrench (a.k.a. "Allen Wrench") to thread the screw into the toe peg. After allowing the threadlocker to dry in the toe peg for at least 5 minutes, apply threadlocker to the remaining threads protruding from the toe peg and loosely install to shift lever (part #102-0074). Finish installation by securely tightening toe peg to shift lever by hand. You may want to wear a leather glove to protect your hand from the knurled surface of the toe peg. If you purchased part #102-0086 Mid Controls Kit with no footpegs, install your toe peg to the manufacturer's recommend specifications.
  - 10.) If you purchased TC Bros. Choppers part #102-0087 Mid Controls Kit including footpegs, it is time to begin installation of the foot peg (part #FP883XL) to the footpeg mounting clevis (part #FC219XL). Install footpeg using the supplied 3/8-16x1¼ (part #119-0040) button head bolt and 3/8-16 (part #119-0155) locknut. If you purchased part #102-0086 Mid Controls Kit with no footpegs, install your footpeg in the same manner as just described. This step completes the installation of the shifter side mid control assembly.
  - 11.) Begin installation of the brake side mid control assembly by removing any linkage components by unscrewing them from the pivot located at the front of your rear master cylinder. **See figure 3.**
  - 12.) Install 5/16-24x1-½" set screw (part #119-0218) by threading approximately ½" (25.4mm) into the rear master cylinder pivot.
  - 13.) Loosely install quantity two 5/16-24 jam nuts (part #119-0103) onto threaded portion of part #119-0218 that is protruding from rear master cylinder.
  - 14.) Loosely install 5/16-24 steel clevis (part #119-0217) onto threaded portion of #119-0218 that is protruding from rear master cylinder. Be sure to thread clevis far enough onto part #119-0218 so that all threads in clevis are fully engaged.
  - 15.) Remove OEM rear master cylinder support plate from sprocket cover (a.k.a. pulley cover) that was removed in step 2.
  - 16.) Place support plate (part #MC150XL) onto sprocket cover (a.k.a. pulley cover) so that the holes are aligned with the corresponding holes in the sprocket cover and the bent edge of the support plate is facing inward towards sprocket cover. **See figure 4.**
  - 17.) Liberally apply threadlocker to ½-13x1½" hex bolt (part #119-0219) and place it through hole in sprocket cover as well as support plate (part #MC150XL) so that the head of the bolt (part #119-0219) is against the inside of the sprocket cover.
  - 18.) Install the brake side mid control pivot assembly to the sprocket cover by loosely threading the ½-13x1½" hex bolt (part #119-0219) into the footpeg mounting clevis (part #FC888XL). Be sure to orient the footpeg mounting clevis (part #FC888XL) so that the milled slot of the clevis is approximately at a 45 degree angle to the ground when the sprocket cover is reinstalled. This angle will assist the peg in folding if it were ever to contact the ground while riding. Tighten securely using a torque wrench to 49 ft-lbs (66.4 N-m). While you are tightening the 119-0219 bolt, it is helpful to hold the footpeg mounting clevis (part #FC888XL) from rotating with an adjustable wrench placed against the outer machined flat surfaces of the clevis.
  - 19.) Reinstall sprocket cover (a.k.a. pulley cover) to engine using factory hardware that was removed in step 2. Torque to factory specifications as described in your service manual.
  - 20.) Install master cylinder onto sprocket cover using original factory bolts and lockwashers that were removed in step 2. Tighten securely to factory torque specifications.
  - 21.) Loosely install brake side mid control assembly to master cylinder by placing clevis pin (part #119-0215) through both the clevis (part #119-0217) and corresponding hole in the pivot plate (part #MC151XL). Pivot plate orientation should be pointing to approximately halfway between 2:00 and 3:00 (slightly upward, pointing towards the front of the bike). **See figure 5.** NOTE: DO **NOT** install cotter pin (part #119-0216) at this time.

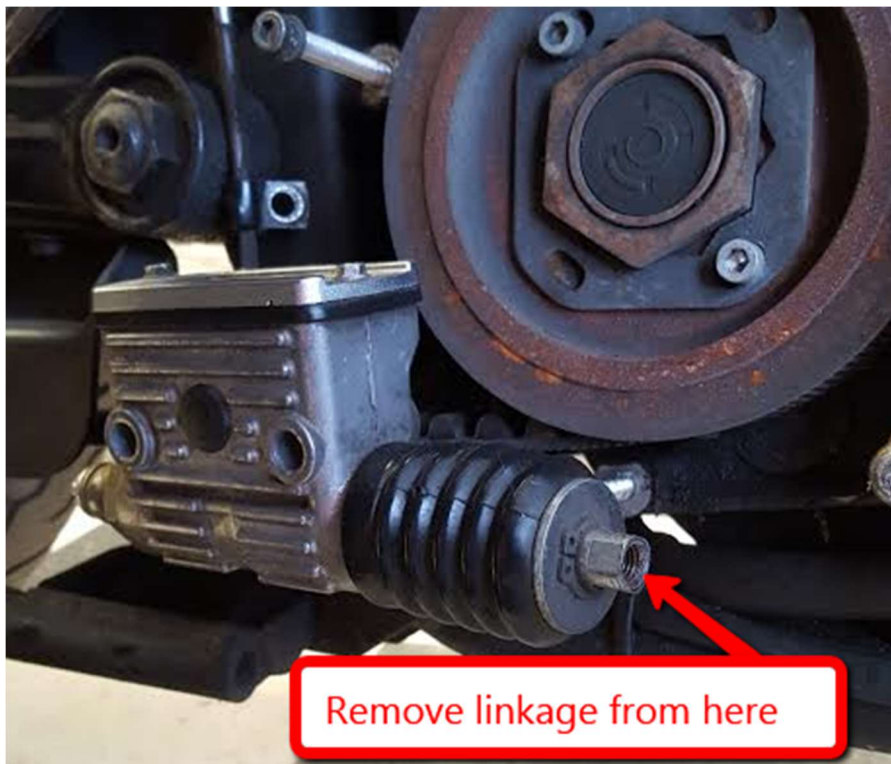
- 22.) While seated on the bike, check that the shift and brake levers are in a comfortable position and you can operate them easily with your feet. You can adjust the position of the shift lever by first removing part #119-0222 socket head bolt that you installed in step 8. Once the bolt is removed, you can remove the lever from the splined shifter shaft, rotate it to the desired position, and reinstall as described in step 8. You can adjust the position of the brake pedal by first removing part #119-0215 clevis pin that was installed in step 20. The position of the pedal is determined by the length of linkage rod protruding from the rear master cylinder. A longer linkage rod raises the brake pedal toe peg height, whereas a shorter linkage rod lowers it. Once you have the pedal in a comfortable position that allows you to easily actuate your rear brake while seated on the bike, it is time to secure the linkage rod length. This is done by first tightening one of the part #119-0103 5/16-24 jam nuts against the part #119-0217 clevis and the other against the face of the rear master cylinder pivot using a ½" combination wrench. Take care to maintain a minimum of ½" (12.7mm) of linkage rod thread engagement in both the rear master cylinder and in the #119-0217 clevis. Finish the installation by placing the part #119-0216 cotter pin through the hole in the 119-0215 clevis pin and bending the tabs of the cotter pin so that it cannot fall out. At this time, the mid control installation is complete.
- 23.) Now that both sides of the mid controls have been installed and adjusted properly, take a moment **BEFORE RIDING YOUR MOTORCYCLE** to double check that all fasteners were tightened securely and threadlocker was applied during installation.



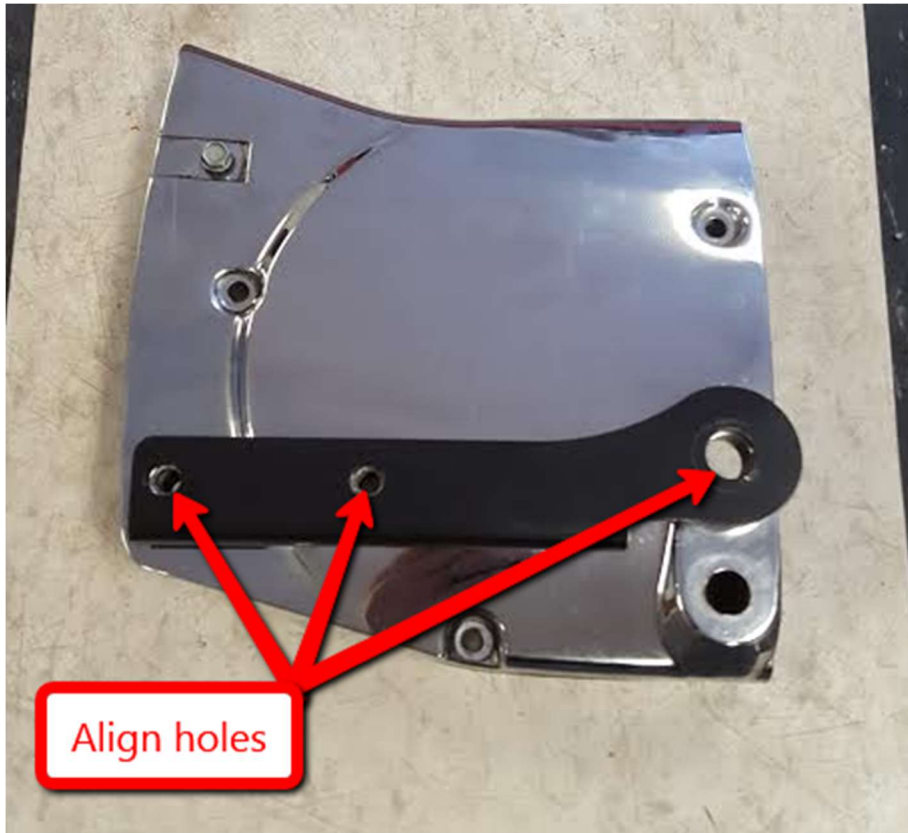
**FIGURE 1**



**FIGURE 2**



**FIGURE 3**

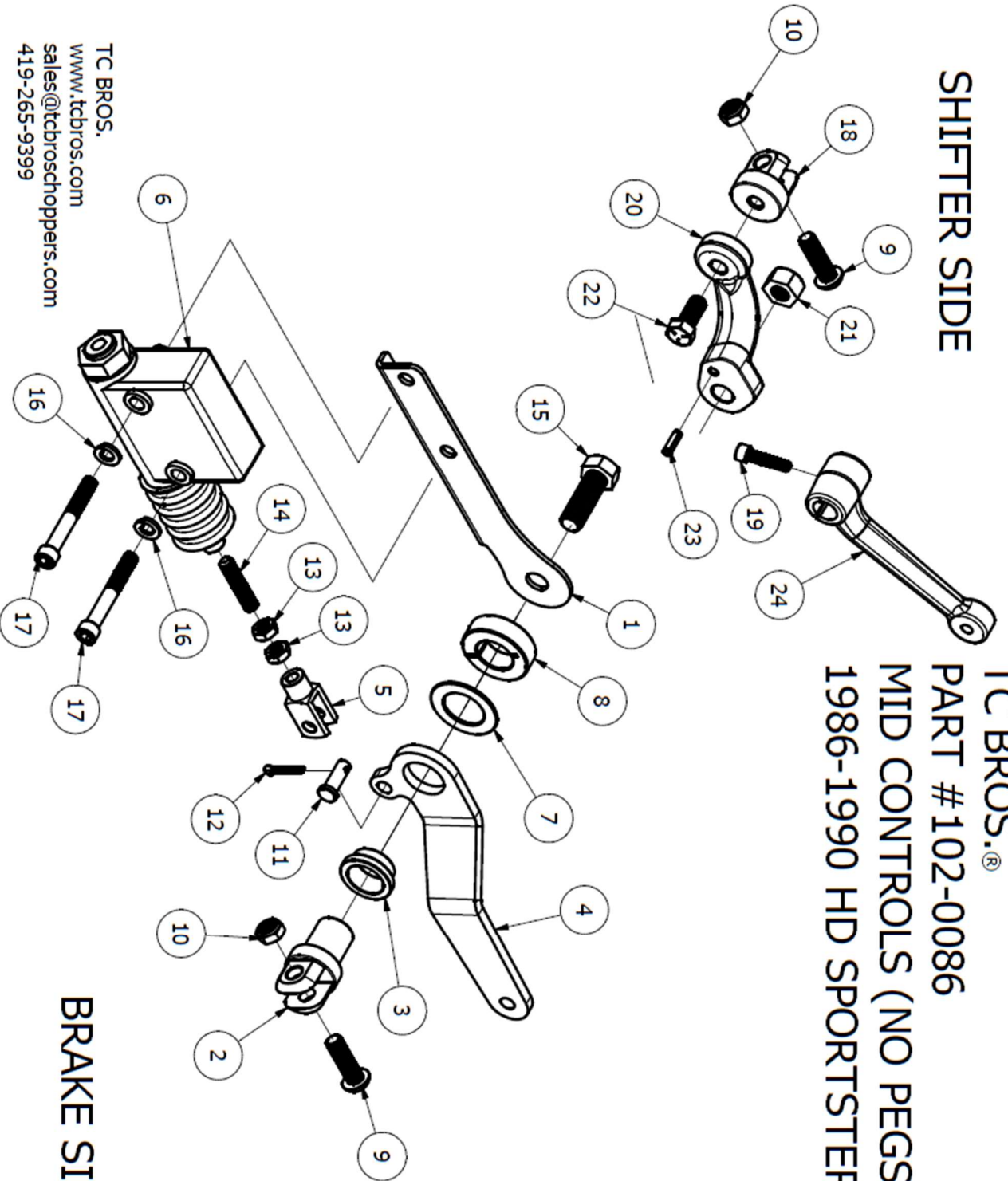


**FIGURE 4**



**FIGURE 5**

# SHIFTER SIDE



TC BROS.®

PART # 102-0086

MID CONTROLS (NO PEGS)

1986-1990 HD SPORTSTER® MODELS

# BRAKE SIDE

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# TC BROS.®

PART #102-0086

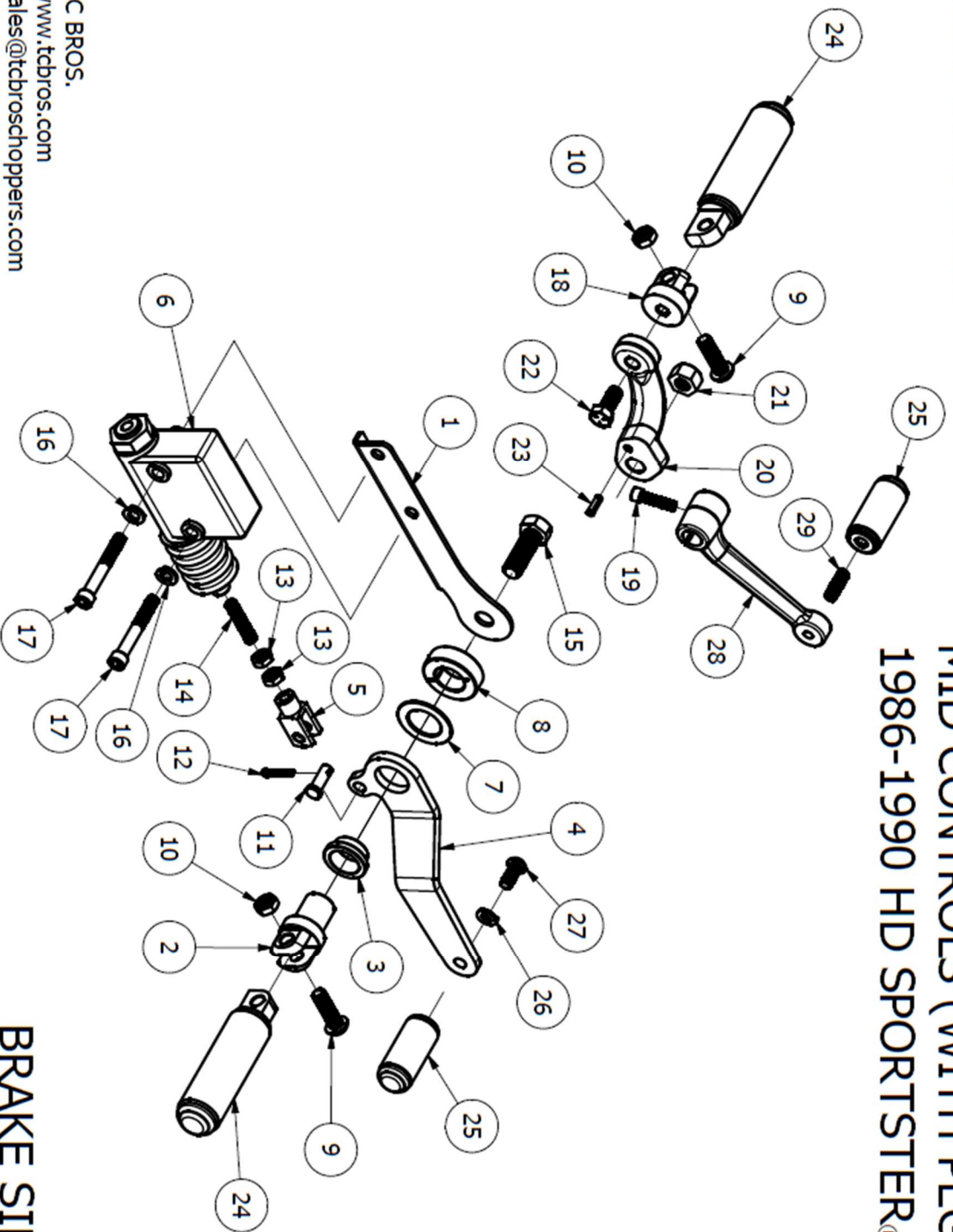
## MID CONTROLS (NO PEGS) PARTS LIST 1986 - 1990 HD SPORTSTER® MODELS

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	MC150XL	SUPPORT PLATE
2	1	FC888XL	FC CLEVIS
3	1	119-0153	7/8"IDx1"ODx1/2"LG BRONZE FLANGE BUSHING
4	1	MC151XL	MID BRAKE PIVOT
5	1	119-0217	5/16-24 STEEL CLEVIS ZINC PLT
6	1	OEM 86-03 MC	OEM 86-03 MASTER CYLINDER (NOT INCLUDED)
7	1	119-0154	1"ID x1-5/8"OD x1/16"TH BRONZE THRUST WASHER
8	1	119-0152	7/8 IDx1-5/8 OD ALUMINUM SHAFT COLLAR
9	2	119-0040	3/8-16x1-1/4 SS BUTTON HEAD BOLT
10	2	119-0155	3/8-16 THIN HEX LOCKNUT SS
11	1	119-0215	5/16 OD x 5/8 LONG STEEL CLEVIS PIN ZINC PLT
12	1	119-0216	1/8 x 3/4 COTTER PIN
13	2	119-0103	5/16-24 SS JAM NUT
14	1	119-0218	5/16-24 x 1.5in Lg SS Set Screw
15	1	119-0219	1/2-13x1-1/2 HEX BOLT
16	2	OEM WASHER	OEM 5/16 LOCK WASHER (NOT INCLUDED)
17	2	OEM BOLT	OEM 5/16-18x2-1/4 BOLT (NOT INCLUDED)
18	1	FC219XL	FC CLEVIS
19	1	119-0222	1/4-20x1 SOCKET HEAD CAP SCREW
20	1	MC161XL	LH MOUNT
21	1	119-0015	1/2-13 HEX NUT
22	1	119-0282	3/8-16x7/8" BOLT
23	1	119-0283	3/16" x 5/8" SPRING PIN
24	1	MC174XL	BLACK SHIFT LEVER 86-90

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# SHIFTER SIDE

TC BROS.®  
PART #102-0087  
MID CONTROLS (WITH PEGS)  
1986-1990 HD SPORTSTER® MODELS



# BRAKE SIDE

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# TC BROS.®

PART #102-0087

MID CONTROLS (WITH PEGS) PARTS LIST

1986 - 1990 HD SPORTSTER® MODELS

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	MC150XL	SUPPORT PLATE
2	1	FC888XL	FC CLEVIS
3	1	119-0153	7/8"IDx1"ODx1/2"LG BRONZE FLANGE BUSHING
4	1	MC151XL	MID BRAKE PIVOT
5	1	119-0217	5/16-24 STEEL CLEVIS ZINC PLT
6	1	OEM 86-03 MC	OEM 86-03 MASTER CYLINDER (NOT INCLUDED)
7	1	119-0154	1"ID x1-5/8"OD x1/16"TH BRONZE THRUST WASHER
8	1	119-0152	7/8 IDx1-5/8 OD ALUMINUM SHAFT COLLAR
9	2	119-0040	3/8-16x1-1/4 SS BUTTON HEAD BOLT
10	2	119-0155	3/8-16 THIN HEX LOCKNUT SS
11	1	119-0215	5/16 OD x 5/8 LONG STEEL CLEVIS PIN ZINC PLT
12	1	119-0216	1/8 x 3/4 COTTER PIN
13	2	119-0103	5/16-24 SS JAM NUT
14	1	119-0218	5/16-24 x 1.5in Lg SS Set Screw
15	1	119-0219	1/2-13x1-1/2 HEX BOLT
16	2	OEM WASHER	OEM 5/16 LOCK WASHER (NOT INCLUDED)
17	2	OEM BOLT	OEM 5/16-18x2-1/4 BOLT (NOT INCLUDED)
18	1	FC219XL	FC CLEVIS
19	1	119-0222	1/4-20x1 SOCKET HEAD CAP SCREW
20	1	MC161XL	LH MOUNT
21	1	119-0015	1/2-13 HEX NUT
22	1	119-0282	3/8-16x7/8" BOLT
23	1	119-0283	3/16" x 5/8" SPRING PIN
24	2	FP883XL	HD FOOTPEG
25	2	FP884XL	HD TOE PEG
26	1	119-0018	5/16 SS LOCK WASHER
27	1	119-0157	5/16-24x3/4 SS BUTTON HEAD BOLT
28	1	MC174XL	BLACK SHIFT LEVER 86-90
29	1	119-0302	5/16"-24 x 1" SET SCREW

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# TC BROS.®

PART #102-0086 & #102-0087

1986-1990 HD SPORTSTER® MID CONTROLS

HARDWARE DIAGRAM (FULL SIZE)

