Part Number: M-2300-Y
Part Description: S550 Mustang-Shelby Brake Upgrade Kit
Installation Instructions

Please visit www.performanceparts.ford.com for the most current instruction and warranty information.

PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION. AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD PERFORMANCE TECHLINE AT 1-800-367-3788

The use of a floor hoist is recommended for this installation. If you do not have access to one, use a hydraulic floor jack and jack stands to raise the vehicle.

!!!CAUTION: JACK STANDS MUST BE USED ON A LEVEL SURFACE AND BE SECURELY SEATED. FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY OR VEHICLE DAMAGE!!!
This Kit contains the following

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Description</th>
<th>Qty.</th>
<th>Req.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR3Z-1125-E</td>
<td>RH-FRONT ROTOR</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>FR3Z-1125-F</td>
<td>LH-FRONT ROTOR</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>CM-2C100-AA</td>
<td>ADAPTER, FRONT CALIPER</td>
<td>2</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>W716471-S439</td>
<td>M12 X 38MM BOLT</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>W717394-S439</td>
<td>M14 X 103MM BOLT</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2078-E</td>
<td>RH GT350 FRONT JOUNCE HOSE</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2078-F</td>
<td>LH GT350 FRONT JOUNCE HOSE</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>W711784-S300</td>
<td>FLOW BOLT WASHERS</td>
<td>8</td>
<td>7 &amp; 27</td>
<td></td>
</tr>
<tr>
<td>W712276-S430</td>
<td>BANJO BOLT M10X1.5</td>
<td>4</td>
<td>7 &amp; 27</td>
<td></td>
</tr>
<tr>
<td>CM-5B758-BA</td>
<td>IRS GT350 KNUCKLE WITH BEARING, RH</td>
<td>1</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>CM-5B759-BA</td>
<td>IRS GT350 KNUCKLE WITH BEARING, LH</td>
<td>1</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>FR3V-2C220-AC</td>
<td>RH LOADED PARK BRAKE ASSEMBLY</td>
<td>1</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>FR3V-2C221-AC</td>
<td>LH LOADED PARK BRAKE ASSEMBLY</td>
<td>1</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>W705821-S439</td>
<td>M12 X 45MM BOLT</td>
<td>8</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>FR3Z-4K138-C</td>
<td>RH GT350 HALF SHAFT</td>
<td>1</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>FR3Z-4K139-C</td>
<td>LH GT350 HALF SHAFT</td>
<td>1</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>CV6Z-3B477-A</td>
<td>NUT, REAR HUB</td>
<td>2</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2C026-C</td>
<td>REAR ROTOR</td>
<td>2</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>FR3V-2010-BE</td>
<td>LOADED CALIPER, FRONT RIGHT - RED</td>
<td>1</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>FR3V-2011-BE</td>
<td>LOADED CALIPER, FRONT LEFT - RED</td>
<td>1</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2A785-A</td>
<td>RH-BRKT - PARK BRAKE CABLE</td>
<td>1</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2A785-B</td>
<td>LH-BRKT - PARK BRAKE CABLE</td>
<td>1</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>W718407-S439</td>
<td>M12 x46mm BOLT</td>
<td>4</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2A635-G</td>
<td>PARK BRAKE CABLE, RIGHT</td>
<td>1</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>FR3Z-2A635-H</td>
<td>PARK BRAKE CABLE, LEFT</td>
<td>1</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>FR3V-2D242-HE</td>
<td>Loaded caliper, rear right</td>
<td>1</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>FR3V-2D243-HE</td>
<td>Loaded caliper, rear left</td>
<td>1</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>
Vehicle Prep

- With the vehicle in NEUTRAL, position it on a hoist.
- Remove the wheels.

NOTICE: If the fluid is spilled on the paintwork, the affected area must be immediately washed down with cold water.

Front Brake Kit

- Remove the Calipers
  NOTE: 4 Piston Calipers shown, 2 and 6 Piston similar

- Remove the brake caliper flow bolt and disconnect the brake hose. Discard the washers.

- Remove the 2 bolts and the brake caliper.
- **Remove the Rotor**

- **Remove the brake disc.**

- **Remove and replace the Flexible Brake Hose**

  **NOTE:** *Be sure to use a proper Line Wrench to avoid damaging the Fitting.*
  - 1. Disconnect the brake tube fitting.

  *Torque: 155 lb.in (17.5 Nm)*
  - 2. Remove the bolt and the front brake flexible hose.

  *Torque: 18 lb.ft (25 Nm)*
  - Install the supplied Flexible Brake Line in the reverse order.
- Remove the Rotor Dust Shields

NOTE: 4 Piston Shield shown, 2 and 6 Piston similar.

- Remove the 3 bolts and the brake disc shield.

- Install the supplied Rotors
- Install the supplied Calipers

- Install the supplied Front Caliper Adapter Brackets using the OE Caliper bolts.  
  *Torque: 85 lb.ft (115 Nm)*

  !!!! IMPORTANT !!!! Be sure the protrusions on the Adapter Bracket faces the INSIDE of the vehicle.

- Install the Caliper using the supplied bolts to the Caliper Adapter Bracket.  
  *Torque: 136 lb.ft (185 Nm)*
- Connect the Flexible Brake Hose using 2 new Copper washers per side of the vehicle as shown.  
  Torque: 35 lb.ft (48 Nm)

Rear Brake Kit

- Remove the Exhaust System

  NOTE: Do not excessively bend, twist or allow the exhaust to hang from the flexible joint or damage to the exhaust system may occur.

  NOTE: Do not use oil or grease-based lubricants on the isolators. They may cause deterioration of the rubber.

  NOTE: Removal steps in this procedure may contain installation details.

  NOTE: Clean all exhaust connections before reassembly.
- Convertible top vehicles only, remove the retainers and the brace.

Torque: 46 lb.ft (63 Nm)
- Loosen the clamps and separate the muffler and tailpipe from the RH catalytic converter and LH muffler inlet pipe.  
  *Torque: 35 lb.ft (48 Nm)*

- Remove the LH and RH rear exhaust hanger isolator bracket bolts from the rear sub frame.  
  *Torque: 18 lb.ft (25 Nm)*  
  Unhook the rear exhaust hanger isolators and remove the muffler and tailpipe.
- Remove Driveshaft

- Index mark the driveshaft and the pinion flange for reference during installation. Remove the driveshaft to pinion flange bolts.
- **NOTICE:** Do not over articulate the driveshaft or damage may occur.

- Support the driveshaft.

  **NOTE:** The driveshaft coupler is a tight fit, and may not be able to remove from the PTU coupler until the center bearing retainers are removed.

- Using a screwdriver inserted into the slot on the pinion flange, pry the driveshaft from the pinion flange.

- Separate the driveshaft from the pinion flange.

- Mark the driveshaft flex coupling to the transmission flange. Remove the driveshaft to transmission flange bolts. Position and support the driveshaft aside.
- If equipped.
  Remove the driveshaft center bearing bolts and remove the driveshaft.

- **Remove the Rear Calipers**

- Loosen the parking brake cable adjustment nut.
- Disconnect the parking brake cable from the lever.
- Detach the parking brake cable from the bracket and position aside the parking brake cable.

NOTICE: Make sure that all openings are sealed.
- Remove the brake caliper flow bolt and disconnect the brake hose from the brake caliper. Discard the washers.

- Remove the 2 bolts and the brake caliper.

- Remove the brake disc.
- Remove rear Knuckles

- Remove and discard the spindle nut.
- Remove the wheel speed sensor bolt and position aside the wheel speed sensor.
- Remove the parking brake cable bracket bolt and position the parking brake cable bracket aside.
- Support the suspension at curb height.

- Remove the lower arm vertical link upper bolt only. It is not necessary to remove the bottom bolt.

- **NOTE:** Support the halfshaft.
- Remove the wheel knuckle-to-upper arm bolt and nut.

- Remove the wheel knuckle-to-toe link bolt and nut.
- Remove the wheel knuckle-to-lower arm bolt. Remove the knuckle.
- NOTICE: Never pick up or hold the halfshaft by only the inner or outer Constant Velocity (CV) joint. Damage to the CV joint will occur.
- NOTICE: Never use a hammer to remove or install the halfshafts. Damage to the CV joint may occur.
- NOTICE: Never use the halfshaft assembly as a lever to position other components. Damage to the halfshaft or CV joint may occur.
- NOTICE: Do not allow the boots to contact sharp edges or hot exhaust components. Damage to the halfshaft boots will occur.
- NOTICE: Do not drop assembled halfshafts. The impact may cut the boots from the inside without evidence of external damage.

- Using a pry bar, remove the halfshaft.
- Upon removal, inspect the inner splines and ensure the circlip is still on the shaft. If not, you must look into the differential and retrieve it before installing the new halfshafts.

- Install the supplied halfshafts until the halfshaft circlip is fully seated.

- **NOTICE:** After insertion, pull the halfshaft inner end to make sure the circlip is locked.

- **NOTE:** *When seated correctly, the halfshaft retainer circlip can be felt as it snaps into the differential side gear groove.*
Replace the Parking Brake Cables

- Push inward on the 2 tabs and detach the RH cable from the bracket.
- Next, push inward on the 2 tabs and detach the LH cable from the bracket.
- Rotate the cable, slide the pin upwards and detach the cable from the equalizer.

- Remove the parking brake cable bracket bolt.

Torque: 18 lb.ft (25 Nm)
- Remove the parking brake cable bracket nut.  
  *Torque: 18 lb.ft (25 Nm)*

- Remove the parking brake cable bracket bolt.  
  *Torque: 18 lb.ft (25 Nm)*

- Remove the parking brake cable bracket bolts.  
  1. *Torque: 20 lb.ft (27.5 Nm)*  
  2. *Torque: 18 lb.ft (25 Nm)*
- Install the supplied Parking Brake Cables in the reverse order of removal.

- **Assemble the Rear Knuckles**

- You will need to transfer the original Wheel Hubs from the OE Knuckles to the supplied Ford Performance Knuckles.
- Remove and discard the 4 wheel bearing/wheel hub bolts and remove the wheel bearing and wheel hub.

LH SIDE SHOWN
- Position the supplied LH Parking Brake/Backing Plate on the Supplied LH Knuckle. Install the Wheel Hub using the supplied bolts (longer than the OE bolts) sandwiching the Backing Plate between the Knuckle and the Hub. Repeat for the RH side.
  Torque: 98 lb.ft (133 Nm)

- **Install the Ford Performance Knuckle Assemblies**

  ![Diagram of brake assembly]

  NOTICE: Tighten the suspension bushing fasteners with the suspension loaded or with the weight of the vehicle resting on the wheels and tires, otherwise incorrect clamp load and bushing damage may occur.

- 1. Position the wheel knuckle and install the wheel knuckle-to-lower arm bolt.
  Torque: 203 lb.ft (275 Nm)
2. Install the wheel knuckle-to-toe link bolt and nut.
   Torque: 129 lb.ft (175 Nm)
3. Install the wheel knuckle-to-upper arm bolt and nut.
   Torque: 76 lb.ft (103 Nm)
- Position the lower arm vertical link and install the 2 new lower arm vertical link bolts. 
  Tighten the lower arm vertical link upper bolt. 
  Torque: 76 lb.ft (103 Nm) 
  Tighten the lower arm vertical link lower bolt. 
  Torque: 129 lb.ft (175 Nm)

!!!! IMPORTANT !!!! Torque sequence is critical to the proper Wheel Bearing Preload. Failure to use the following torque sequence could lead to premature failure of the bearing. Over tightening could also result in the failure of the threaded portion of the halfshaft.

- Install the new spindle nut. 
  Torque: 
  Stage 1: 98 lb.ft (133 Nm) 
  Stage 2: 45°
- Install the supplied rear Brake Rotors. The Rotors are not directional.

LOADED CALIPER, FRONT
FR3V-2010-BE Right
FR3V-2011-BE Left

BRKT – PARK BRAKE CABLE
FR3Z-2A785-A Right
FR3Z-2A785-B Left

M12 x 46 mm BOLT
(W718407-S439)
- Install the Supplied Rear calipers with the bleeder screws facing **UP**.

- The Caliper Bolts will pass through the new, supplied, Parking Brake Cable Bracket, then through the Knuckle and thread into the caliper. The above pic is of the LH side.
  *Torque: 85 lb.ft (115 Nm)*
- Attach the parking brake cable to the lever first then, through the top of the bracket. Both sides.

- Attach the Hydraulic Brake Line using 2 new copper washers. 
  \textit{Torque: 30 lb.ft (40 Nm)}
- Position the parking brake cable bracket and install the parking brake cable bracket bolt.  
  Torque: 21 lb.ft (28 Nm)
- Position the wheel speed sensor and install the wheel speed sensor bolt.  
  Torque: 80 lb.in (9 Nm)

Set the Parking Brake Preload
- Set the Parking Brake Handle to the first click/position.

- **NOTICE:** While adjusting the parking brake cables, check for rotation of the rear wheels often to prevent over tightening the cables. The cables must only be tightened until the rear wheels do not spin freely. Make sure the rear wheel are not locked.

- Raise the vehicle and tighten the parking brake cable adjustment nut until the rear wheels meet the following criteria.
  - The rear wheel do not spin freely (have resistance).
  - The rear wheels are not locked.

- Lower the vehicle, and with the wheels off the ground in the full rebound position, release the parking brake and confirm both rear wheels spin freely.

### Install the Driveshaft

- **NOTE:** *If equipped.*
  Inspect the flex coupling for cracks. If cracks are present, replace the flex coupling.
- NOTICE: The help of a assistant may be needed. Do not over articulate the driveshaft or damage may occur.
- NOTE: Align the flex coupling before installing the center bearing bolts.
  If equipped.
- Install the driveshaft.
  Torque: 35 lb.ft (48 Nm)

- 1. Align the index-mark on driveshaft flex coupling to the transmission flange.
- 2. Install the new driveshaft flex coupling to transmission flange bolts.
  Torque: 81 lb.ft (110 Nm)
- Align the index-mark on driveshaft to the rear axle pinion flange.

**NOTICE:** Make sure the drive shaft is fully seated in the rear pinion before starting bolts.

- Install the new driveshaft-to-pinion flange bolts in a star pattern.  
  *Torque: 41 lb.ft (55 Nm)*

**Install the Exhaust System**
- Hook the rear exhaust hanger isolators and install the muffler and tailpipe.
- Install the LH and RH rear exhaust hanger isolator bracket bolts to the rear subframe.
- **Torque:** 18 lb.ft (25 Nm)

- Connect the muffler and tailpipe to the RH catalytic converter and LH muffler inlet pipe. Tighten the clamps.
- **Torque:** 35 lb.ft (48 Nm)
- Clean the retainers and apply the thread lock.
- Convertible top vehicles only, install the retainers and the brace.  
  *Torque: 46 lb.ft (63 Nm)*

**Brake Bleeding Procedure**

- Make sure the fluid reservoir is filled with clean specified brake fluid.

- **NOTICE:** *If the fluid is spilled on the paintwork, the affected area must be immediately washed down with cold water.*

- **NOTE:** *Master cylinder pressure bleeder adapter tools are available from various manufacturers of pressure bleeding equipment. Follow the instructions of the manufacturer when installing the adapter.*

- Install the bleeder adapter to the brake master cylinder reservoir and attach the bleeder tank hose to the fitting on the adapter.

- **NOTE:** *Make sure the bleeder tank contains enough clean, specified brake fluid to complete the bleeding operation.*

- Open the valve on the bleeder tank and apply **207-345 kPa (30-50 psi)** to the brake system.
- Bleeding steps must be followed in the order indicated in the graphic. 
  *Bleed the inner bleeder screw first, followed by the outer bleeder screw.*

- If equipped, remove the bleeder screw cap.

- Partially fill a clean brake fluid container with clean specified brake fluid.
Submerge a hose into the brake fluid in the container and connect the hose to bleeder screw.

- Loosen the bleeder screw.
  Loosen: 180°

- Leave open until clear, bubble-free brake fluid flows, then tighten the bleeder screw.

- Disconnect the hose and tighten the bleeder screw to specification.

- Repeat for each Caliper on the vehicle. Inner first, then outer.

- If equipped, install the bleeder screw cap.

1. Install the wheels and lower the vehicle back to the ground.

WARNING: When a wheel is installed, always remove any corrosion, dirt or foreign material present on the mounting surface of the wheel and the mounting surface of the wheel hub, brake drum, or brake disc. Make sure that any fasteners that attach the rotor to the hub are secured so they do not interfere with the mounting surfaces of the wheel. Failure to follow these instructions when installing wheels may result in the wheel nuts loosening and the wheel coming off while the vehicle is in motion, which could result in loss of control, leading to serious injury or death to the vehicle occupant(s).

NOTICE: Make sure to apply a thin coat of anti-seize lubricant only to the interface between the wheel pilot bore and the hub pilot. Do not allow the anti-seize to make contact with the wheel-to-brake disc/drum mounting surface, wheel studs, wheel nuts, brake pads or brake disc friction surfaces, or damage to components may occur.

Clean the mounting surface of the wheel. Apply the substance from the specified tube.

Material: Motorcraft® High Temperature Nickel Anti-Seize Lubricant / XL-2
2. NOTE: Only tighten the nuts finger tight at this stage.

Position the wheel and install the wheel nuts.

Torque the wheels
Torque: **148 lb.ft (200 Nm)**

3. Tighten the wheel nuts in a star pattern. Final tightening to be performed with vehicle resting on tires.

- NOTE: Final tightening to be performed with vehicle resting on tires.
WARNING: Retighten wheel nuts within 160 km (100 mi) after a wheel is reinstalled. Wheels can loosen after initial tightening. Failure to follow this instruction may result in serious injury to vehicle occupant(s).

NOTICE: Failure to tighten the wheel nuts in a star/cross pattern can result in high brake disc runout, which accelerates the development of brake roughness, shudder, and vibration.

NOTE: The wheel nut torque specification is for clean, dry wheel stud and wheel nut threads.