

# **UNIQUE MOTORCARS**

## **427 S/C & 289 FIA REPLICA**



# **ASSEMBLY MANUAL**

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## TABLE OF CONTENTS

<b>SUBJECT</b>	<b>PAG E</b>
<b>REMOVING BODY FROM FRAME</b>	<b>2</b>
<b>COMPLETING THE CHASSIS</b>	<b>3</b>
<b>PREPARING THE BODY FOR PAINT</b>	<b>4</b>
<b>PAINTING THE ENGINE COMPARTMENT</b>	<b>5</b>
<b>RACING STRIPES</b>	<b>6</b>
<b>INITIAL WIRING</b>	<b>7</b>
<b>RE-INSTALLING THE BODY &amp; ACCESSORIES</b>	<b>7</b>
<b>FINAL WIRING</b>	<b>7</b>
<b>INTERIOR INSTALLATION</b>	<b>8</b>
<b>PARTS LIST</b>	<b>9</b>
<b>INTERIOR CARPET LAYOUT</b>	<b>11</b>
<b>TRUNK CARPET LAYOUT</b>	<b>12</b>
<b>BRAKE PEDAL ADJUSTMENTS</b>	<b>13</b>
<b>BRAKE BLEEDING &amp; BIAS</b>	<b>14</b>
<b>THROTTLE LINKAGE ADJUSTMENT</b>	<b>15</b>
<b>FORD TOP-LOADER 4-SPEED SPECIFICATIONS</b>	<b>17</b>

This assembly manual is designed to take our Deluxe Pallet Kit to the finished, Turn-Key stage. If you build your car in this order, it will be an enjoyable project with satisfying results. However, if you decide to take shortcuts, please be prepared to deal with the problems which you will encounter along the way. The biggest mistake you can make is to paint the body without taking it off the frame and then try to install your engine and exhaust system.

### **PHASE ONE:** **REMOVE BODY FROM FRAME**

In order to build a quality COBRA REPLICA you must remove the body from the frame. This allows you to install the engine, transmission, drive shaft, and exhaust system while the body is being painted. To remove the body, the following items **MUST** be removed:

1. BODY BOLTS:           1 IN EACH FRONT INNER FENDER  
                              3 IN EACH SIDE OF THE COCKPIT  
                              2 IN TRUNK AT TANK MOUNT
2. STEERING COLUMN: UNBOLT STEERING LINKAGE AT BOTH YOKES AND SET ASIDE. UNBOLT STEERING COLUMN CLAMPS (1 ON THE DRIVERS FOOTBOX, 1 ON THE COWL BRACE)
3. DASH: REMOVE THE FIVE PHILLIPS HEAD SCREWS ALONG THE TOP EDGE OF THE DASH AND TWO BOLTS ON THE UNDERSIDE AT THE CENTER OF THE DASH.
4. WINDSHIELD: REMOVE THE TWO BOLTS ON EITHER SIDE OF THE COWL BRACE AND TWO SCREWS IN CENTER BRACKET.
5. BUMPERS: REMOVE BOLTS AT FRAME MOUNTS. FRONT ACCESS IS THROUGH WHEEL OPENING. REAR ACCESS IS IN TRUNK.
6. ROLL BAR: REMOVE BOLTS AT ALL THREE MOUNTING POINTS.
7. RADIATOR: REMOVE TOP BRACKET FROM HOOD HINGE SUPPORT. REMOVE TWO BOTTOM MOUNTING BRACKETS. RADIATOR DROPS OUT BOTTOM. BE CAREFUL NOT TO DAMAGE RADIATOR COOLING FINS.
8. MASTER CYLINDERS: REMOVE ALL MASTER CYLINDERS. IT IS **NOT** NECESSARY TO REMOVE PEDAL ASSEMBLIES.

To lift the body off the frame requires four people. Place one person at each wheel opening. After the body is removed, it should be placed on some type of support (saw horses work well) to help the body maintain its proper fit.

## **PHASE TWO:** **COMPLETING THE CHASSIS**

The **UNIQUE MOTORCARS DELUXE PALLET CAR KIT** includes a rolling chassis. To complete your chassis and have it ready for the painted body to be re-installed on the frame, the following items must be completed.

### **1. ENGINE AND TRANSMISSION:**

Bolt to the frame mounts using stock replacement rubber mounts as outlined below. These mounts are readily available from a good local auto parts dealer.

### **2. SHIFTER:**

Install Shifter and Linkage on transmission following instructions included with shifter kit. Do not install shift handle until body is re-installed.

## **ENGINE MOUNTS**

<b>ENGINE TYPE</b>	<b>SIZE</b>	<b>ANCHOR PART #</b>
<b>FORD</b>	<b>SMALL BLOCK</b>	<b>2287 (2)</b>
<b>FORD</b>	<b>427-428 (3 BOLT MOUNT)</b>	<b>2240 &amp; 2241</b>
<b>FORD</b>	<b>427-428 (2 BOLT/EARLY)</b>	<b>2141 (2)</b>
<b>CHEVY</b>	<b>SMALL OR BIG BLOCK</b>	<b>2285 (2)</b>

## **TRANSMISSION MOUNTS**

MAKE	TYPE	ANCHOR PART #
FORD	TOPLOADER 4 SPD.	2258
CHEVY	TURBO 350	2378
CHEVY	TURBO 400	2268

### 3. DRIVE SHAFT:

Slip the transmission yoke in first, then bolt the differential flange in place using 3/8" SAE X 1 1/4" Grade 8 bolts and lock-nuts. If you are installing a driveshaft safety loop (recommended), now is the time to do so. There is a flange on the inside of the frame (on either side of the driveshaft) to bolt the safety loop to using Grade 8 bolts and lock-nuts. The safety loop kit may require slight modification for fit.

### 4. EXHAUST SYSTEM:

Bolt the Headers in place and attach Sidepipes to Headers using the factory bolt-points under the frame. Unique Motorcars recommends the use of Red High Heat Silicone, Permatex # PTX/26B as a seal between the Headers & Sidepipe Flages.

With the above items installed, you are finished with the Chassis and ready to install the painted Body.

## PHASE THREE: PREPARING THE BODY FOR PAINT

The UNIQUE MOTORCARS 427 S/C COBRA REPLICA body is manufactured with a black gel-coat finish. This surface makes it very easy for you or your painter to visually locate any areas that need to be marked for future body work. UNIQUE recommends the body be allowed to sit outside in the direct sunlight for at least two days prior to beginning body prep for paint. This allows the body to "post-cure" and will help prevent any ripple or heat distortion after the body is painted.

Remove any bolt-on accessories (light fixtures, latches, emblems, etc.) from the body prior to painting.

1. Wipe down the entire body with a prep-solvent cleaner to remove any films from the molding process.
2. Block sand the gel coat and finish the mold seams.
3. Sand all trim edges smooth.
4. Final fit doors, hood, and deck lid and create a uniform gap.
5. Prep engine compartment.
6. Spray epoxy or polyurethane primer and block sand body and engine compartment.
7. Remove doors, hood, and deck lid as follows:
  - Doors: Remove Allen Head Shoulder Bolts from top and bottom of hinge bracket.
  - Hood & Deck Lid: Remove Pivot Bolts from hinge brackets.  
**DO NOT REMOVE HINGE BRACKETS FROM CAR!**
8. Prep doors, hood, and deck lid inner panels and put in primer.  
**DO NOT REMOVE HINGES FROM HOOD AND DECK LID!**

At this point the body is ready for paint. **FIBERGLASS MUST BE SEALED WITH A POLYURETHANE OR AN EPOXY SEALER PRIOR TO PAINTING!** Laquer Primers are not sufficient for fiberglass.

It is best to paint the car with the doors, hood, and deck lid off. You should re-install the hood and deck lid to mask for racing stripes, then remove the hood and deck lid before painting the stripes. This allows for a more finished look at the hood and deck lid openings and no overspray.

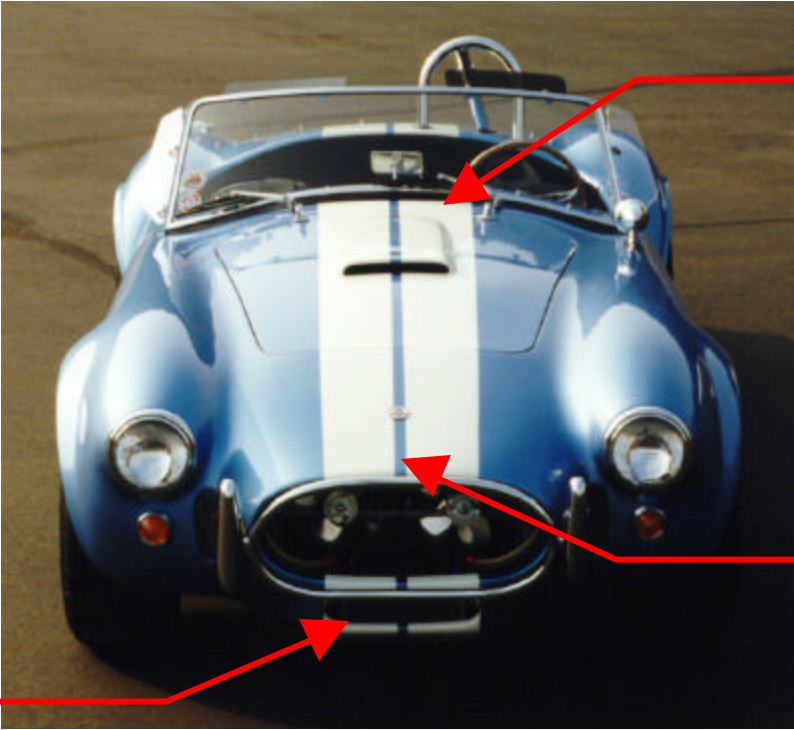
### ENGINE COMPARTMENT

Mask around the outside of the hood opening to prevent overspray. Be sure to mask both side vents, the nose openings, and the front bumper support openings. Even though the original COBRA had white fiberglass footboxes and firewall, *UNIQUE* recommends that you paint the engine compartment black for easier maintenance. You may desire to paint it the same color as the exterior of the car. This is a matter of personal preference. If you have purchased aluminum engine panels, now is the time to

install these. Also, heater must be installed at this time, if one is desired.

### RACING STRIPES

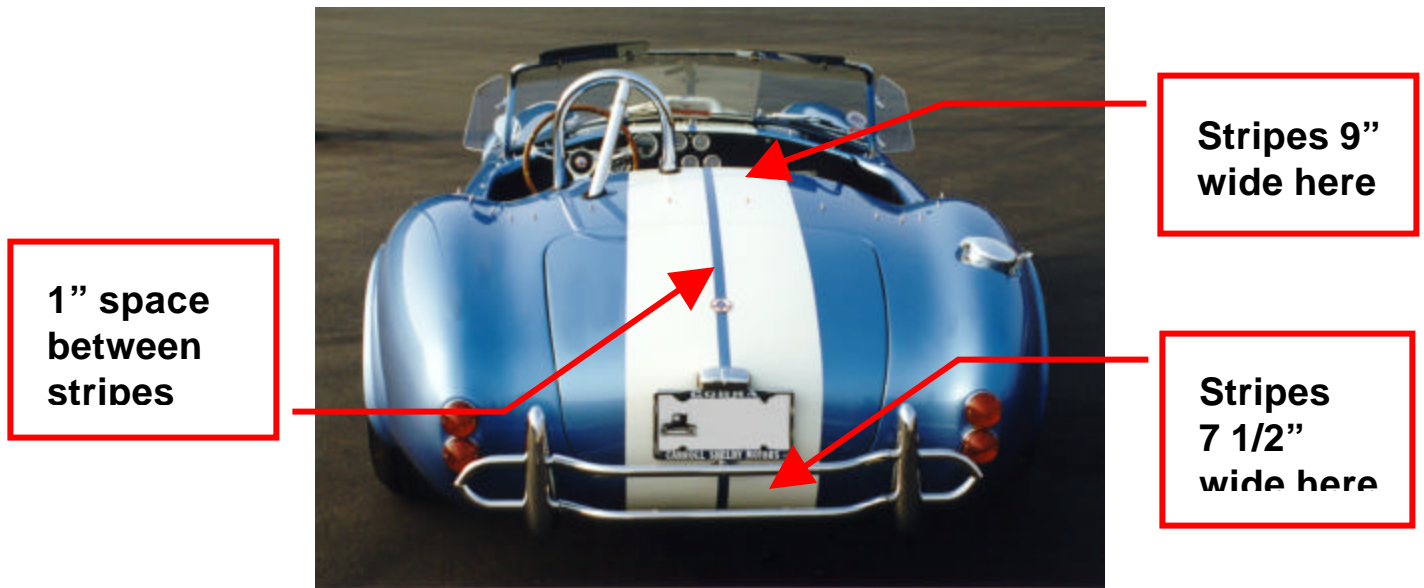
The original 427 S/C usually had a double racing stripe with the following specifications: There was a 1" space between the stripes. The stripes measured 7 1/2" wide at the nose and widened to 9" at the cowl. They continued behind the seats at 9" wide and narrowed back down to 7 1/2" at the bottom of the body beneath the trunk opening.



**Stripes  
9" wide**

**Stripes  
7 1/2"  
wide here**

**1" Space  
between  
stripes**



#### **PHASE FOUR: INITIAL WIRING**

Prior to reinstalling the body to the frame, *UNIQUE* recommends that you install the wiring harness and attach it to the body. Use the drawing included in the manual for your wiring harness for proper placement. You should also re-install and wire the fuse panel, dash, windshield wiper assembly, headlights, parking lights, tail lights, gas tank, fuel sending unit and install steering column while there is easy access.

#### **PHASE FIVE: RE-INSTALLING THE BODY & ACCESSORIES**

Before replacing the body, the following accessories should be re-installed:

1. The windshield assembly (don't forget the surround plates).
2. Fuel filler cap and connector pipe to gas tank.
3. Master cylinders.

Save the doors, hood and decklid for later. You are now ready to re-mount the body to the frame.



Position the rolling chassis directly in front of the body. Place one person at each wheel opening and lift the body. Carefully walk the body forward and slowly set the body down on the chassis. It will rest on the shifter handle bracket. It is usually easy to see where the shifter hole needs to be cut. If not, you can mark it from underneath and then cut (this will require removing the body once more). The simplest way to locate the shifter bracket is to tap on the fiberglass tunnel with a lightweight hammer until you feel or hear metal to metal contact. Once you have located the shifter mount cut as small a hole as possible with a jigsaw or abrasive cut-off wheel. The body should then drop down into place. At this time you should re-mount the body at the factory bolt points. Reverse the procedure on page four PHASE ONE.

### **FINAL WIRING:**

Follow the instructions included in the wiring harness manual.

## **INTERIOR INSTALLATION**

### **CARPETS**

See the carpet illustration in back of manual. All carpet pieces are numbered in the proper installation sequence. Trim unbound carpet pieces to fit and glue all interior carpet pieces in place using a heavy duty spray adhesive such as 3M #90 (2 cans needed). Spray the back of the carpet pieces and the body panel. Allow to set for 1-2 minutes or until tacky to the touch, and then position carpets.

### **HINGE COVERS**

These vinyl trim pieces are clearly labeled "Hinge Covers". They must be installed before installing the door panels. Glue these directly to the steel hinges using the 3M carpet adhesive. The "French Stitch" seam should be flush with the top of the hinge.

### **DOOR PANELS**

First glue carpet pieces #9 & #10 to appropriate inner door panels. These pieces should be centered from side to side and flush at the

top bound edge. Re-install door lock mechanism in it's original position. Next attach vinyl door panel to the door using chrome upholstery screws. Door panel is made to fit around door lock mechanism.

### SEAT INSTALLATION

To install seats, first position seat to fit driver and mark location with chalk or tape. Take seat from car and remove bottom cushion by taking out the four upholstery screws on the bottom of the bucket. After the cushion has been removed, reposition the bucket to the chalk or tape marks. Then drill three 5/16" holes through the bottom of the bucket and floor plate. Before re-installing the seat cushion, place a 5/16" x 2" elevator bolt through each of the mounting holes and fasten to the bottom of the bucket with 5/16" nuts. When you have finished re-installing the seat cushion with the four upholstery screws, your seat bucket should have three "mounting studs" sticking out the bottom. Place the seat in the car and the mounting studs should go through the mounting holes drilled in the floor plate. Finally, tighten nuts with fender washers and lockwashers from underneath the car to the mounting studs.

### PARTS LIST

#### ENGINE MOUNTS:

ENGINE TYPE	SIZE	ANCHOR PART #
FORD	SMALL BLOCK	2287 (2)
FORD	427-428 (3 BOLT MOUNT)	2240 & 2241
FORD	427-428 (2 BOLT/EARLY)	2141 (2)
CHEVY	SMALL OR BIG BLOCK	2285 (2)

#### TRANSMISSION MOUNTS:

MAKE	TYPE	ANCHOR PART #
FORD	TOPLOADER 4 SPD.	2258
CHEVY	TURBO 350	2378
CHEVY	TURBO 400	2268

#### SPEEDOMETER PART NOS.:

MAKE	DESCRIPTION	FORD PART #
FORD	CABLE HOUSING	C5-TZ-17260-N
FORD	GEAR FOR 3.31 DIFFERENTIAL	C2-DZ-17271-J
FORD	GEAR FOR 3.54 DIFFERENTIAL	C4-DZ-17271-A

FORD	TRANS. GEAR FOR TOPLOADER FORD	C4-DZ-17285-A
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**CLUTCH ARM & BRACKET:**

MAKE	DESCRIPTION	FORD PART #
FORD	CLUTCH ARM (SMALL INPUT SHAFT)	C80Z-7515-A
FORD	CLUTCH ARM (BIG INPUT SHAFT)	C80Z-7515-D
FORD	CLUTCH ARM BRACKET	C8AZ-7522-B
FORD FE	CLUTCH ARM (SMALL INPUT SHAFT)	DOTZ-7515A
FORD FE	CLUTCH ARM (BIG INPUT SHAFT)	C80Z-7515D

**CLUTCH SLAVE CYLINDER:**

MAKE	DESCRIPTION	PART #
RAYBESTOS	CLUTCH SLAVE CYLINDER	SC-33721

**RADIATOR HOSES:**

MAKE	DESCRIPTION	PART #
GATES	FORD 289,302,351W,351C 1 1/2" UPPER	20541
GATES	1 3/4" LOWER	20957
GATES	FORD 390,427,428 1 3/4" UPPER	20957
GATES	2" LOWER (1 EACH)	21305
GATES	2" LOWER (1 EACH)	21943

**MISCELLANEOUS PARTS:**

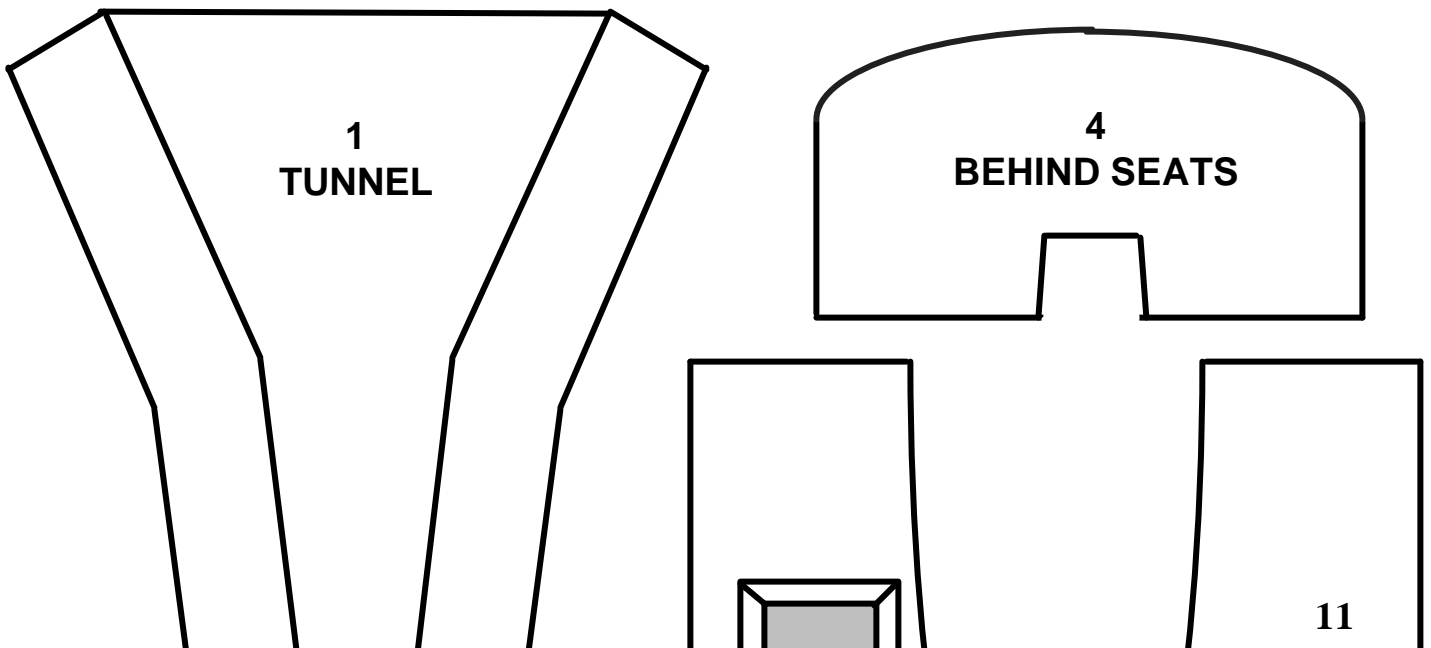
OIL FILTER (SHORT)	PUROLATOR	PER-241
WIPER ARM (2 EACH)	ANCO	41-01
WIPER BLADE (2 EACH)	ANCO	20-11
WEATHER STRIP ADHESIVE	3M	8008
SPRAY CARPET ADHESIVE (2 CANS)	3M	90
SILICONE HEADER SEAL	PERMATEX	PTX/26 B
BATTERY DISCONNECT SWITCH	MOROSO	74101
SHIFTER BOOT & TRIM RING	UNIQUE	
INLINE RADIATOR FILLER NECK	MOROSO	63730
PUSH NUTS FOR EMBLEMS (8 EACH)		1/8"
12 VOLT BATTERY		
RADIATOR CAP		15 LB.
3" LAP BELTS	LAKWOOD	50820

**3" SIMPSON 5 POINT HARNESS  
BLACK RUBBERIZED UNDERCOATING  
CHROME UPHOLSTERY SCREWS (10)  
5/16" X 2" ELEVATOR BOLTS (6 EACH)  
5/16" X 1" S.S. SOCKET HEAD & NUTS (8)  
FOR HEADER FLANGES**

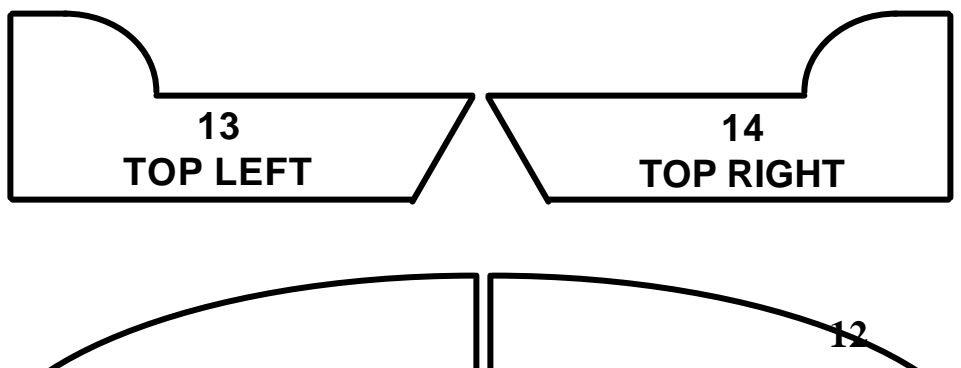
**SIMPSON**

**29070**

**INTERIOR CARPET**

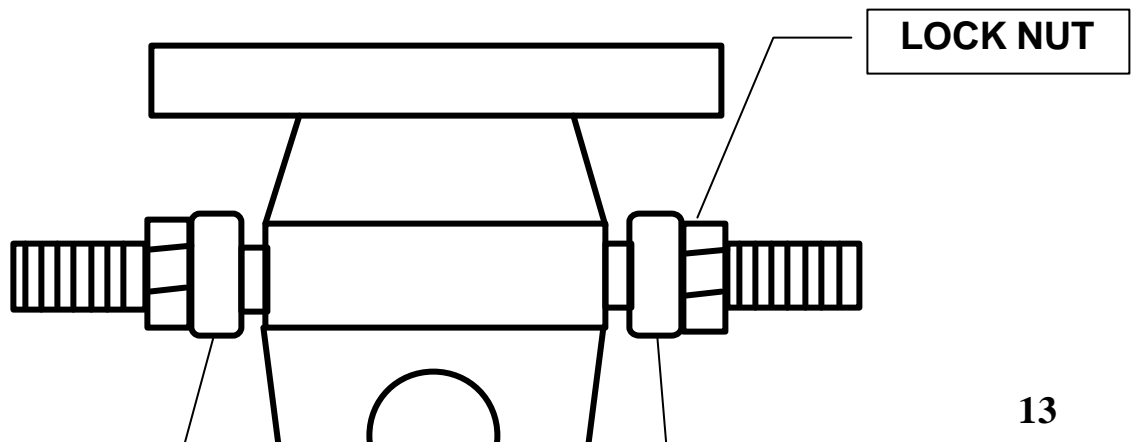


**TRUNK CARPET**

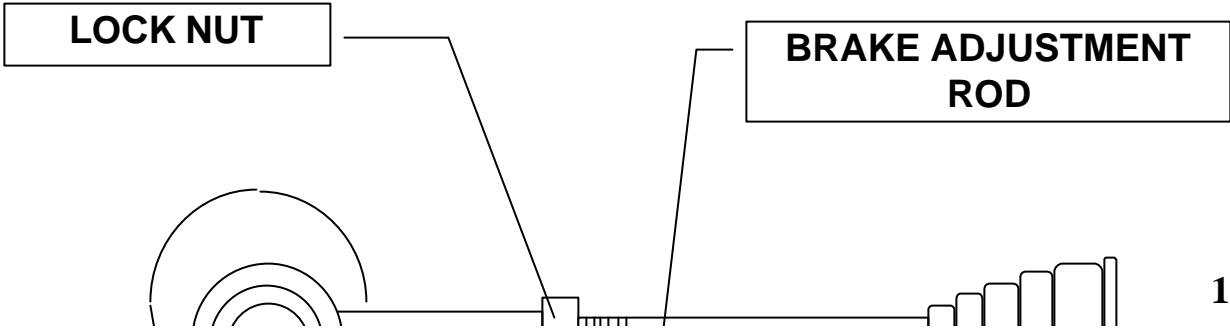




**BRAKE PEDAL ASSEMBLY FRONT VIEW**



**BRAKE PEDAL ASSEMBLY SIDE VIEW**



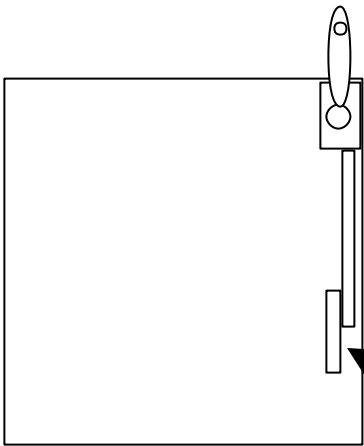
**When bleeding brakes, you must bleed the rear brakes by disconnecting the brake adjustment rod for the front brakes. When bleeding the front brakes, you must disconnect the rear brake adjustment rod. After bleeding both front and rear brake systems, reconnect both rod ends to brake pedal crossmember. You can also lengthen the brake rods to get more pedal. To accomplish this, loosen the locknut on the two brake adjustment rods, and lengthen the rods by screwing them out. Tighten the locknut back when desired pedal position is obtained**

## **THROTTLE LINKAGE**

**THE FOLLOWING DRAWINGS ARE FOR THE THROTTLE LINKAGE INSTALLATION FOR UNIQUE MOTORCARS 289 - 427 REPLICA.**



**PLACE FOOT PEDAL ASSEMBLY INSIDE DRIVERS FOOTBOX AND POSITION IT AS HIGH IN THE UPPER RIGHT HAND CORNER AND TOWARD ENGINE AS IT WILL GO. DRILL A 5/8" HOLE AT THE LINKAGE SHAFT LOCATION SO LINKAGE CAN EXIT BOX.**

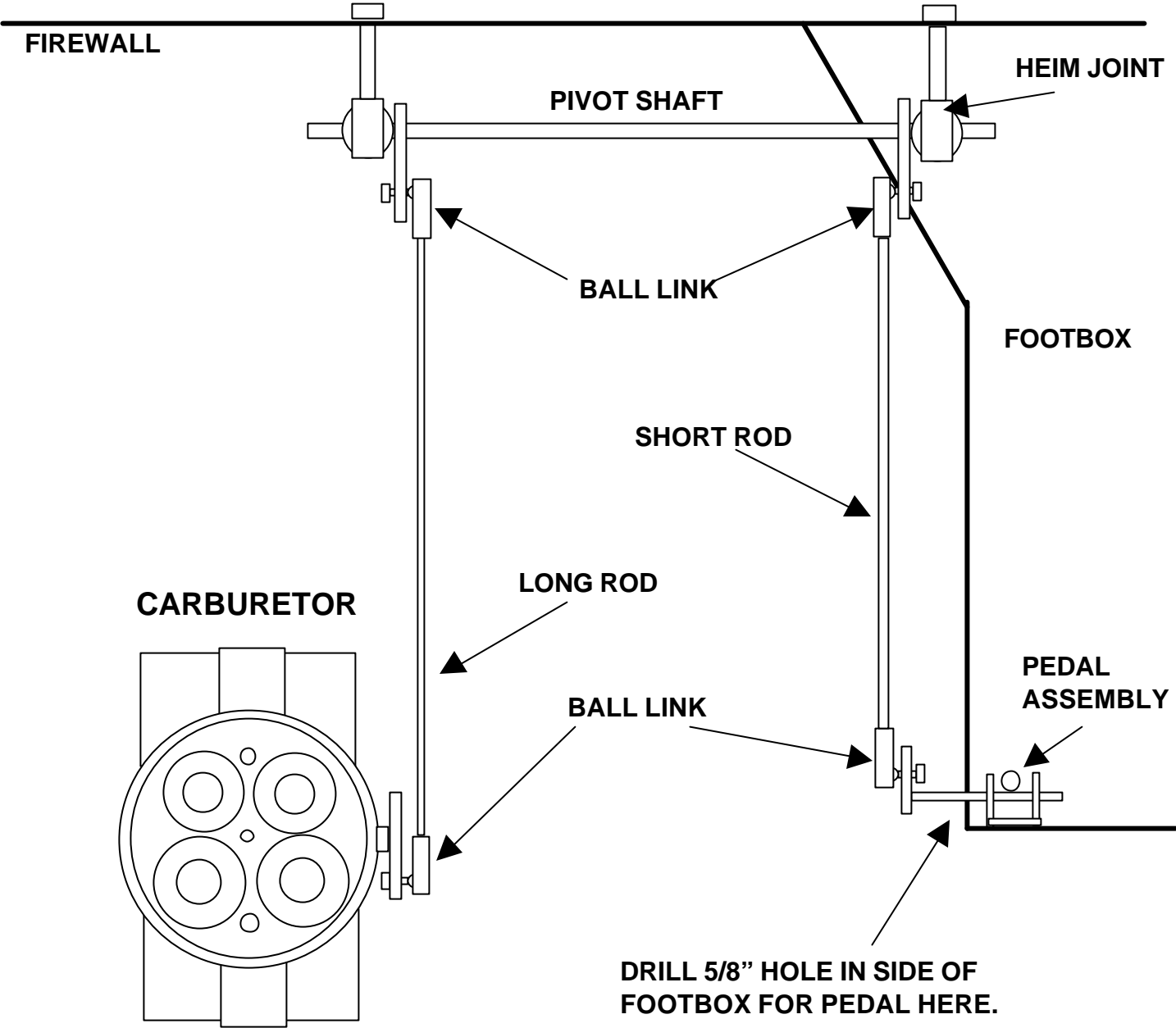


**WARNING! PEDAL MUST BE ADJUSTED SO WHEN AT FULL THROTTLE THE PEDAL IS AGAINST THE BULKHEAD. (INSIDE FRONT WALL OF DRIVERS**

**PEDAL MUST BE IN THIS POSITION AT FULL THROTTLE! ADJUST ACCORDINGLY.**

**MOUNT PIVOT SHAFT ON FIREWALL. TRY TO KEEP RODS AS STRAIGHT AND LEVEL AS POSSIBLE. DRILL 1/4" HOLES IN FIREWALL FOR BOLTS TO HOLD HEIM JOINTS. IT MAY BE NECESSARY TO CLEAN OFF COATING ON SHAFT WITH A FILE OR SANDPAPER SO HEIM JOINTS REST ALL THE WAY AGAINST LINKAGE ARMS. THE PIVOT SHAFT HAS A SHORT ARM AND A LONG ARM. THE SHORT ARM GOES ON THE PEDAL ROD SIDE, AND THE LONG ARM GOES ON**

THE CARBURETOR SIDE. IT MAY BE NECESSARY TO CUT THE CARBURETOR SHAFT LENGTH ON DIFFERENT APPLICATIONS. (DEPENDS ON ENGINE, CARB USED, ETC.)



**FORD TOPLOADER FOUR SPEED TRANSMISSION**

FORD used the Top-Loader 4 Speed Transmission in most of the models produced from 1964 to 1973. From 1964 to 1965 1/2, the Top-Loader featured a narrow, four hole case and a 25 spline output shaft. FORD changed to a wider eight hole case in 1965 1/2. FORD built the Top-Loader with two different types of frame mounting bases on the bottom of the housing. The Sealed Power Part #270-2501 for Ford Applications will work with both types of mounting flanges.

### GEAR RATIO CHART

	1ST	2ND	3RD	4TH
CLOSE	2:32	1:69	1:29	1:00
WIDE	2:78	1:93	1:36	1:00

### FORD TOP-LOADER TRANSMISSION SPECIFICATIONS

MAKE	ENGINE	GEAR RATIO	# OUTPUT SPLINES	OVERALL LENGTH
<b>FALCON</b>				
63-65 1/2	260,289 (5 BOLT)	WIDE	25	24"
65 1/2-68	289(6 BOLT), 302	WIDE	28	24"
<b>COMET</b>				
70-75	200,250,302	WIDE	28	24"
<b>MAVERICK</b>				
70-75	200,250,302	WIDE	28	24"
<b>COUGAR</b>				
67-73	427,428,429	CLOSE	31	24" NASCAR
67-69	390	CLOSE/WIDE	28	24"
67-73	289,302,351	CLOSE/WIDE	28	24"
<b>SUNBEAM TIGER</b>				
ALL	260,289	CLOSE/WIDE	28	25 1/2"
<b>TORINO, FAIRLANE</b>				
66-68	390	CLOSE/WIDE	28	24"
67-68	427,428	CLOSE	31	24" NASCAR

69-71	427,428,429	CLOSE	31	27"
66-68	289,302	CLOSE/WIDE	28	24"
69-73	302,351,390	WIDE	28	24"
69-73	302,351,390	CLOSE	31	27"
<b>GALAXIE</b>				
63-70	427,428,429,460	CLOSE	31	27"
63-70	390	CLOSE/WIDE	28	27"
63-70	289,302,351	CLOSE/WIDE	28	27"
<b>LTD</b>				
63-70	427,428,429,460	CLOSE	31	27"
63-70	390,289,302,351	CLOSE/WIDE	28	27"
63-70	289,302,351	CLOSE/WIDE	28	27"
<b>7 LITRE</b>				
63-70	427,428,429,460	CLOSE	31	27"
63-70	390	CLOSE/WIDE	28	27"
63-70	289,302,351	CLOSE/WIDE	28	27"
<b>MUSTANG (ALL)</b>				
64-65 1/2	260,289 (5 BOLT)	WIDE	25	24"
65 1/2-73	170,200,250,289,289H.P.,302,351W,351 BOSS, 351C	CLOSE WIDE	28	24"
67-73	427,428,429	CLOSE	31	24" NASCAR
67-70	390	CLOSE/WIDE	28	24"
69-70	429 BOSS	CLOSE	31	24" NASCAR

**RELATED INFORMATION  
TRANSMISSION MOUNTS:**

MAKE	TYPE	ANCHOR PART #
FORD	TOPLOADER 4 SPD.	2258
CHEVY	TURBO 350	2378
CHEVY	TURBO 400	2268

**SPEEDOMETER PART NOS.:**

MAKE	DESCRIPTION	FORD PART #
FORD	CABLE HOUSING	C5-TZ-17260-N
FORD	GEAR FOR 3.31 DIFFERENTIAL	C2-DZ-17271-J
FORD	GEAR FOR 3.54 DIFFERENTIAL	C4-DZ-17271-A

**ALIGNMENT SPECIFICATIONS  
FOR CUSTOM COIL-OVER FRONT  
AND JAGUAR REAR SUSPENSIONS**

**L & R FRONT CAMBER SPECIFIED RANGE:**

**0.3 Degrees Negative to 1.3 Degrees Positive**

**L & R FRONT CASTER SPECIFIED RANGE:**

**0.1 Degrees Positive to 1.6 Degrees Positive**

**L & R FRONT TOE:**

**1.5 mm**

**FRONT CROSS CASTER:**

**0.7 Degrees Negative to 0.7 Degrees Positive**

**FRONT TOTAL TOE:**

**3.0 mm**

**L & R REAR CAMBER SPECIFIED RANGE:**

**0.5 Degrees Negative to 0.5 Degrees Positive**

**L & R REAR TOE SPECIFIED RANGE:**

**1.0 mm Negative to 1.0mm Positive**

**REAR TOTAL TOE SPECIFIED RANGE:**

**2.0 mm Negative to 2.0 mm Positive**

**REAR THRUST ANGLE SPECIFIED RANGE:**

**15.00 Degrees Negative to 15.00 Degrees Positive**