ASSEMBLY
AND
SERVICE MANUAL
FOR THE
E.R.A. 289FIA/USRRC

Revision 3b

The Manual

The text and layout of this manual was done with Word for Windows. Some of the illustrations were hand drawn and scanned, some were done in DesignCad 2D and 3D. Spelling errors are the fault of the spel chekker...

NOTE ON MANUAL UPDATES

This manual was current at the time of your car's delivery. Any critical corrections will be mailed to you. If we can think of any thing that can be helpful but are non-critical, I will post them on the internet at:

http://www.erareplicas.com/fiaman/

The latest entire manual in PDF format is posted at
http://www.erareplicas.com/owners/.

Thanks,
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Contents

This manual is arranged by **assembly sequence,** not topic. For information on a specific topic - assembly or service, see the index.

NOTE ON MANUAL UPDATES 2

read me first 6

SECTION A: PARTS NEEDED 7

Picking up your kit 8

special notes 9

ENGINE 11

Alternator 11

Clutch Notes 11

Ignition Notes 11

TRANSMISSION 12

Bell-housing 13

Speedometer drive gears 15

Shift linkage 15

Rear Drive/Suspension Assembly 16

Steering Gear 16

Front Rotors and Calipers 17

Drive Shaft 17

Oil Cooler and oil Filter 17

Steering Column (Upper) 17

Steering Wheel 17

Seat Belts 17

Wiper Motor and Components 17

Front Shock Absorbers 18

Front Coil Springs: 18

Exhaust System 18

Wheels 19

Tires 19

Radiator Hoses 20

Expansion Tank 20

Jack, etc. 20

PART NUMBERS AND SOURCES: 21

SOURCE MASTER LIST 25

TOOLS NEEDED 26

Shipping companies (partial list) 26

SUPPLIES NEEDED 27

SECTION B: PARTS PREPARATION 29

ENGINE/components 31

Rear Suspension - jaguar 35

Rear suspension, E.R.A. 37

Shift handle 41

Shift LInkage 41

steering gear 42

Steering Column (Upper) 42

Wipers 43

DAMPERS AND SPRINGS 46

REAR HUB ADAPTERS- BOLT-ON WHEELS: 46

SECTION C CHASSIS PREPARATION 47

BODY REMOVAL: 49

CHASSIS PAINT: 51

SECTION D BODY/CHASSIS ASSEMBLY 53

Interior panels 54

Horns 54

BRAKE AND CLUTCH PEDAL 56

BODY MOUNTING 56

Attach Rocker panels 57

BODY PREParation AND PAINT 58

Front Splash Panels 60

Fresh Air Inlet Ducts 60

fresh Air hoses 61

Rear wheelhouse panels 61

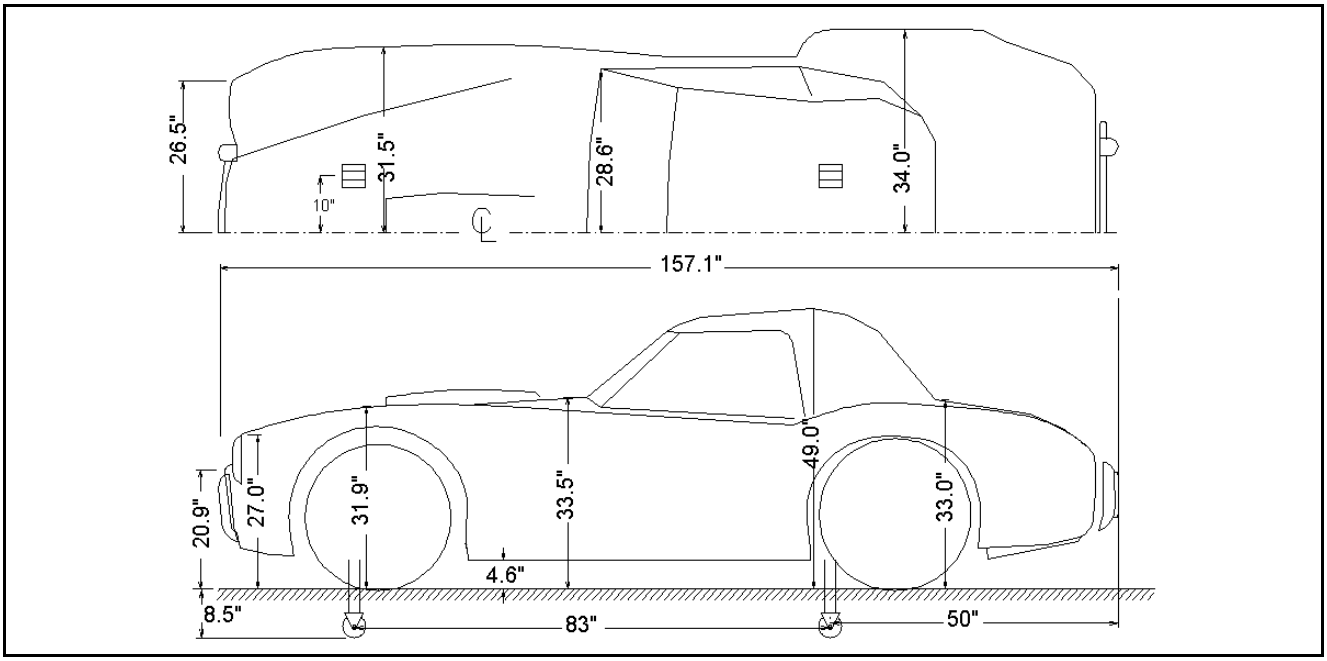
Detail Undercoating 61
Tonneau snaps 62
Front brake scoops 62
SECTION E *63*
CHASSIS ASSEMBLY *63*
BRAKE, FUEL LINES 65
Battery cables 65
SECTION F *67*
MECHANICAL COMPONENTS *67*
FRONT SUSPENSION 68
REAR SUSPENSION, Jaguar 71
Rear suspension, E.R.A. 73
DRIVE SHAFT 74
Voltage Regulator 75
ENGINE AND TRANSMISSION 76
LOWER STEERING COLUMN: 79
SECTION G BODY II *81*
WIRING AND ELECTRICAL 82
INTERIOR PANELS 83
Roll bar 88
RADIATOR/fans 88
OIL COOLER (optional) 90
Fuel Tank 91
Fuel Filler Cap 91
Windshield Wipers 92
Windshield Washer 93
Windwings and sunvisors 93
Windshield 94
HEATER / DEFROSTER 95
Dashboard 96
Speedometer Cable 97
Battery and Cables 98
STEERING COLUMN and WHEEL 98
SHIFT LEVER 99
Tunnel 99
Carpets 101
Hand Brake Lever Cover 103
Seat mounting 104
Seat belt/shoulder harness 104
Grill 105
BUMPERS/Jack-pads 105
Lights 106
License plate light 107
BACK-UP LIGHT (optional) 107
Mirrors 108
Grab handle 109
Top Snaps 109
Door trim 110
Emblems 110
License plate(s) 111
Convertible top 112
Side curtains 114
Fitting the tonneau cover 114
SECTION H FINAL OPERATIONS *115*
Install wiper arms 117
Brake Hydraulics 118
Jacking the car 119
Bolt-on wheel notes 119
Pin drive wheel notes 119
SUSPENSION ADJUSTMENTS 120
Brake balance adjustment 123
Add Fluids 124
cooling system 124
Headlight ADJUSTMENT 125
Final Checks 126
RECOMMENDED SERVICE 127
Fuses 127
REFERENCE 128

PICKING UP YOUR KIT

The kit can be transported from our factory in an enclosed trailer, standard automobile trailer or rampback hauler. Shipping space for the parts in cartons will also be required, although most will fit inside the kit. We have used several shipping commercial companies with excellent results. See page 26 for names.

DIMENSIONS AND WEIGHTS

800 lb. bare + 200 lb. of boxes + 600 lb. for roller



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TRAILER REQUIREMENTS

If you didn't buy a "roller" from us, the kit is usually shipped on the dolly wheels that we use for assembly if your trailer is well sprung. The dolly wheels require a $300 **refundable** deposit. Many people keep the wheels until their kit is completed - it's very convenient for the kit to be mobile (and at the correct height) during construction.

The track of the Cobra dolly wheels is only about 20". Your trailer may require additional boards to support the dolly wheels. Without tires or dolly wheels, you can put tires as buffer between the chassis and the trailer. The kit will have to be lifted on and off the trailer manually. Have 3 strong friends to unload! If you're coming on a weekend to pick up your kit, please warn us if you aren't coming with extra people too. **Don't tie down the dolly wheels to secure the kit. Tie to the chassis or suspension.** In the absence of suspension pieces to tie to, wrap soft tie straps around the front crossmember and the upper mounting bolts for the rear subframe.

TIE-DOWNS

You or your shipping agent will require ratchet tie-downs, come-alongs and/or strong straps. We recommend either 4 diagonal connections or 2 longitudinal and 4 lateral ones for a total of 6. Don't forget that the **trailer must have anchor points to tie to**.

To avoid scratching the paint on the chassis, use 2" wide loops (or double 1" wide loops) or ratchet straps, 5000 lb. minimum rating. Make sure that your trailer has places to tie to. If you use chains or a come-along, bring padding or nylon straps for intermediate connections to the chassis.

INCLEMENT WEATHER:

A plastic cover will quickly shred at highway speeds. A high quality cloth car cover can be used to cover up the plastic, but it must be held down with rope all over. Looseness will allow any cover to quickly beat itself (and your paint job) to death.

PART NUMBERS AND SOURCES:

Source addresses, etc. are found on page 25.

PART	PART NUMBER	SOURCE
Alternator		
Ford Small Block	Delco 321-147 (rebuilt) or any '70's Ford with separate regulator.	Most Fords, 1971-1980
Insert to reduce head threads	F4ZZ-6E086-A - see mounting, page 31	Ford
Ballast resistor	Nieh FF-109 / Borg RU-6 / SMP RU-4 / Wells F795, (1.4-1.6 ohms)	Aftermarket
Fan belt	Gates 7450 XL(most app's)	
Front Brakes, Suspension		
Brake Rotor/Hub (bolt-on wheels)	GM 334348 Bendix 141040	GM dealer or many (Front) GM cars 1970-78 (see page 17)
Brake Calipers (Front)	GM 18002421, 18003761 Rebuilts: Bendix L55001, L55002 (Includes pads)	GM dealer Local parts place
Pads	Bendix D52S (Semi-metallic for street use)	
Mounting pin kit		
Banjo bolt	GM 487293	
Dust Shield	GM 344023, 344024	GM dealer
Brake reservoir, standard optional (3)	BMW 34 32 1 112 399 ERA steel cans (optional)	ERA, BMW dealer
Bearings-Front Wheel		
Outer	GM 7450627, Timken LM11910/LM11949	GM or local auto parts
Inner	GM 7450630, Timken LM67010/LM67048	"
Seal, inner	GM 3966202, National 8871	"
Spindle nut	GM 387137	"
Spindle washer	GM 457707	"
Shock absorbers	Spax G135 PAS 200	E.R.A.
(See spec's on page 46)	Koni 8212-1126SPA1 (Double external damping adjustment w/aluminum body)	E.R.A., Summit Racing, Jegs
Coil Springs	12" x 250 lbs/in or 12" x 275 lbs/in (See page 18)	E.R.A., Carrera, Dillon, AFFCO, Eibach
Battery	Group 45 (preferred) or Group 51 (Get the **heaviest duty** possible in this size)	Misc.
Bell-housing See mod's necessary on page 32.	Lakewood 15202 for Top-Loader, R.G. Lakewood 15203 for T-5, Tremec	Various, E.R.A.
Cables, Battery		
Trans case to chassis ground	12" long, ($^{7}/_{16}$")eye/eye woven style	E.R.A., parts supplier
Battery pos to starter solenoid	135" long, eye/terminal clamp (1 gage min.) *If you want an in-line cutoff*, see page 66.	" "
Battery neg to ground	32" long, eye/terminal clamp (1 gage min.)	
Starter solenoid to starter	24" long, eye/eye (4 gage min.)	" "
Drive Shaft Components	(see page 41 for parts reference)	

SECTION A -PARTS NEEDED-

ENGINES AND ENGINE PARTS	Complete rebuilt Ford units are available from several suppliers	Ask us
Mounts		
Ford 260, 289, 302, 351	63-65 Mustang w/260-289 cid, Ford C4DZ-6038A (right), C4DZ-6038B (left) Republic 31-2221 (right), 31-2220 (left) MityMount (HD) FM132	Aftermarket, Mustangs Unlimited, E.R.A., Dealer
Oil Pan, Extra Capacity **289-351W**	Custom steel pan as used on original Cobra. The pan can have a maximum depth of 8.5", F or R sump. Deeper pans will hang below the chassis.	E.R.A., Canton Racing Products, Aviaid
351 Cleveland	Canton 15-710 pan, 15-711 pickup	
Oil Filter	See the note on page 17.	
Exhaust System	Under-car-complete	E.R.A.
	Competition style pipes w/primaries:	E.R.A.
Fuel Filter	In-line between tank and steel line on chassis ($^3/_8$")	local auto parts store
Hand Brake Lever	Jaguar XKE Series I, II (1961-1970)	Jaguar Dealer
or	E.R.A. Reproduction Lever	E.R.A.
Hand Brake Lever Cable	Custom for E.R.A. subframe	E.R.A.
Emergency brake linkage, ERA rear suspension	Custom, by E.R.A.	
Cooling system parts		
Water neck/thermostat housing	Ford Motorsport M8592-B302 (angled 30deg up)	
Hoses: Upper	Gates 21178 or equivalent (requires trimming)	Local auto parts store
Lower w/L or R outlet	Gates 20390 or equivalent (See page 35 for trim)	
Bypass	Gates 28466 ($^5/_8$" x $^5/_8$"), 28474 (¾" x ¾") or 20662 ($^5/_8$" x $^3/_4$")	
Heater	Gates 28472 (to thermostat housing) $^5/_8$" ID straigth hose (~50" to water pump)	
Radiator expansion tank	Harrison 3155416	E.R.A.

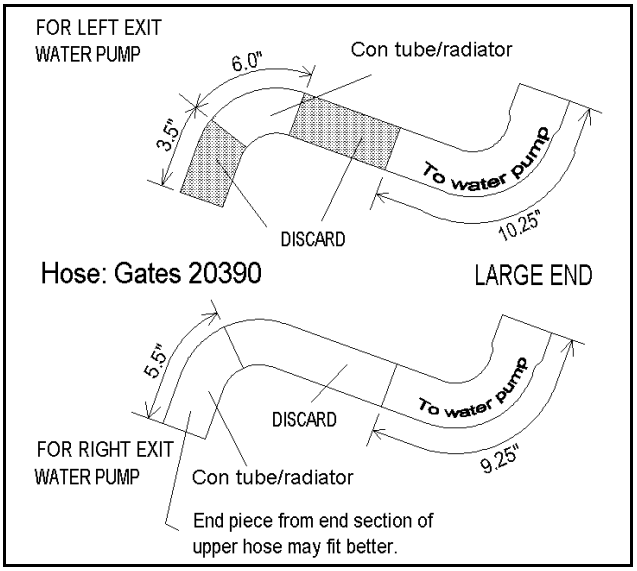
Rear suspension	**Jaguar based** or custom **ERA design** with outboard brakes.	
Jaguar Rear Suspension Assembly (Core)	1964-1974 Jaguar XKE, Series 2, 1965-1983 Jaguar XJ-6	Wrecking yard or E.R.A.
Sub-frame	Custom E.R.A. for Jag based or ERA outboard braked design	E.R.A.
Rebuilding Parts for rear suspension	Bearings, brake parts, etc., see page 128	SICP, E.R.A., Jag Dealer
Coil-over dampers	See length specifications on page 46.	
Standard XKE W/O height adjustment	Spax S 200/415 (Externally adjustable damping)	E.R.A.(Jag rear)
Height adjustable	Spax G640 S200	E.R.A.
Coil Spring (4 rqd) - std Spax Spax with height adjustment	10" x 350 lbs/in 8" x 350 lbs/in	E.R.A., Carrera, Dillon, AFFCO, Eibach
Differential/LSD rebuilding	Various ratios of Dana 44 gears	Reider Racing/Michigan Driveline
Spare Tire	Space Saver w/ 4 $^{3}/_{4}$" bolt circle (Bolt-on wheels only)	G.M. cars
Speedo cable drive ***Richmond Gear***	***See notes on page 13 and 15 for gears*** **Cable**: Champ 400020 **Adapter**: GM 345212 **O Ring**: $^{7}/_{8}$"OD x $^{5}/_{8}$"ID **Retainer:** 3708148 **Drive gear:** GM 39879XX where XX=number of teeth	E.R.A., dealer, auto parts store
Speedo cable, drive gears, etc.	***See calculation notes on page15.***	E.R.A., Dan Williams
Top Loader, T-5, Tremec		
Cable	AC 11589234 ('67 Mustang)	
Speedo drive gear	C4DZ-17285A (LH, 7 tooth, black)	Ford dealer
	C8AZ-17285A (RH, 7 tooth, yellow)	
Speedo driven gears	20LH tooth: C2DZ-17271H	
	19LH tooth: C4DZ-17271A	
	18LH tooth: C2DZ-17271K	
	17LH tooth: C2DZ-17271G	
Retaining clip	C1DZ-17292A	
Steering gear	Subaru 631-300-540 (Subaru 1977-79 **Stage 2**)	E.R.A., Dealer, wrecking yard
Steering column, **upper**	E.R.A. Reproduction or Triumph Spitfire, GT-6 (1972-mid 1977)	E.R.A., wrecking yard
Steering wheel	Moto-Lita	E.R.A.
Wheel hub-Triumph column	Moto-Lita (wheel must be drilled for pattern)	E.R.A.
E.R.A. column	Comes with E.R.A. column	
Steering wheel Center button	Reproduction of original either "AC" or "Cobra" motif	E.R.A.

Transmission: **See notes on page12.**	Ford Top Loader T-5, Tremec Richmond Gear 5-spd	Dan Williams, GT Performance Mustangs Unlimited, GT Performance E.R.A., Richmond Gear
Mounts:		
Ford Top-loader w/ 2 holes along longitudinal centerline or 2 holes perpendicular to centerline 5.6" apart	Ford C8ZZ-6068 A, or Republic 31-2284	Ford dealer, E.R.A., Mustangs Unlimited, auto parts supplier
Ford C-6 Automatic	Ford C9AZ-6068H, or Republic 31-2375	" "
Ford T-5.	Ford C8ZZ-6068 A, or Republic 31-2284	" "
Richmond Gear, Tremec 5 speed	Republic 31-2224 Tremec requires adapter from E.R.A.	Auto parts supplier
Throw-out fork	Ford C8OZ-7515D (must be narrowed for all but big spline Top Loader)	Dealer, E.R.A.
Pivot bracket for above	Ford C8AZ-7522B	Dealer, E.R.A.
Shift Linkage (4-spd. Top-loader)	Original Ford unit, Hurst or other after-market units	Mid-sixties Ford
Richmond Gear 5 speed	Long or Hurst	E.R.A.
Shift Lever: duplicates original	To adapt to all transmissions	E.R.A., 1965-67 Mustang and some other Ford cars of this period
Voltage Regulator	Ford Regulator D4TZ-10316 A, D9PZ-10316 A or aftermarket equivalent for 1967-on Ford alternator with external regulator.	Ford dealer, E.R.A. has electronic regulators with the sam cover that the mechanical regulator (NLA) used.
Windshield Wipers		
Motor and Drive Parts	From 1969-1976 Triumph Spitfire, GT-6 or TR-6	E.R.A.
Arms	Lucas BHA-520l	E.R.A., Lucas parts dealer
Blades	Lucas GWB-164	E.R.A.,
Chrome Bezels (Bush Kit)	Lucas 60600 429	E.R.A., Lucas parts dealer
Wheels:		
Bolt-on	American Racing Torq-Thrust, 15" x 7", 15" x 8.5" For 12" brakes, see notes on page 17.	Summit Racing, others
Pin-drive	7½ x 15 and 9½ x 15 Various widths in 17"	E.R.A., PS Engineering
Spare Tire/Wheel (Bolt-on)	GM (Camaro) space saver *See note on page 119.	

RADIATOR HOSES:

LOWER

A single hose hose can be cut to function as the two connectors used between the radiator and water pump. Cut and trim the hoses as shown, as appropriate for the exit side of your water pump. See page 89 for installation of the hoses.



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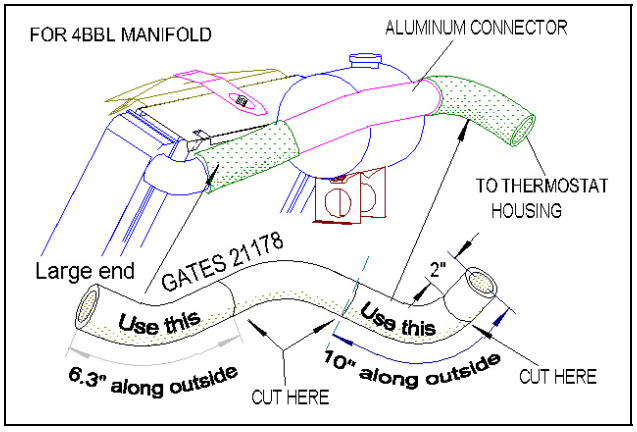
UPPER

4 bbl and single outlet Weber manifold

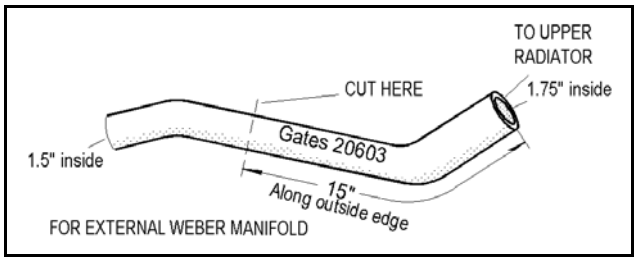


b\uwathose1

Use a short neck thermostat housing (20° up) on the intake manifold. Cut and trim the hose as shown:

Weber Manifold (two outlets)

Use a drilled freeze plug in the upper hose to restrict flow.



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SMALL HOSES:

If you are not using a heater, connect the water pump inlet to the expansion tank.

REAR SUSPENSION - JAGUAR

DISASSEMBLY

Components must be thoroughly checked and rebuilt if necessary: brake calipers, emergency brake pads and linkage, universal joints on half-shafts, hub carrier and lower control arm bearings. Bearings, etc. are listed on page 128. We have found that the **Spicer®** U-joints listed are the only brand that meets the standards required of the Jaguar half-shafts (and we've tried quite a few).

Replace any corroded or damaged brake lines. Be sure to use lines with the proper end flare and fittings. Note that some British fittings have a convex (bubble) flare that mates with a concave receptacle in the caliper. While this is similar to some metric fittings, the threads are SAE. It is not possible to make these flares with a conventional flaring tool. Aftermarket suppliers and Jaguar dealers have these British style lines.

Mount the brass junction block on the left front of the cage, with the fitting for the flex hose up. If your rear suspension core has the junction block pointing forward, fabricate a small bracket from $^{1}/_{8}$" steel strap. Install the hose (mounted on the chassis, originally) onto the junction with a copper "0" ring.

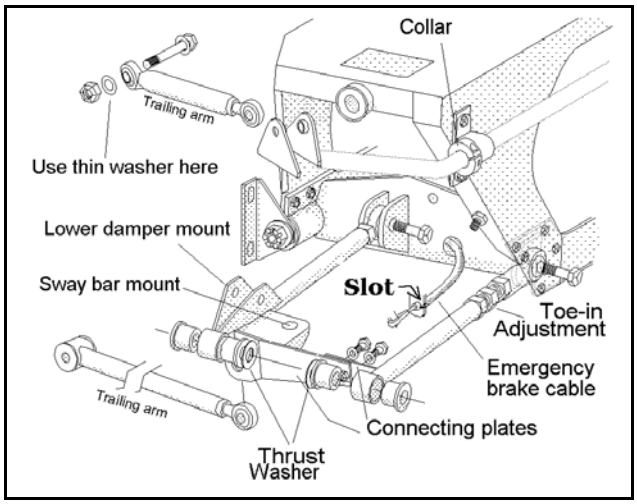
CONTROL ARMS

Install a male (right-hand-thread) rod end onto each front lower radius arm so that the bushing center to rod end center distance is 16". Leave the jam nuts loose.

Install the steel brake lines onto the subframe.

Install the front lower radius arms onto the lower differential bracket as shown, leaving the inner bolt loose.

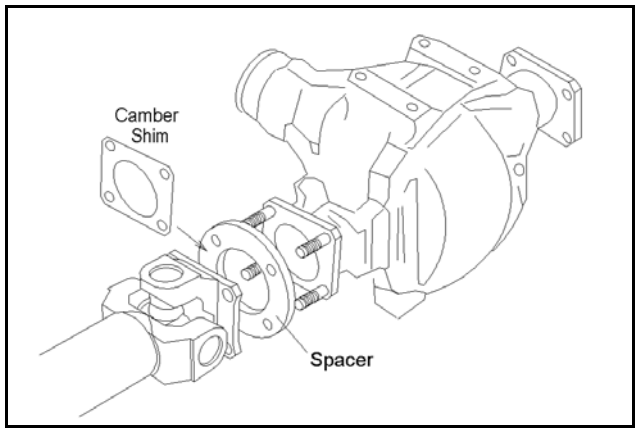
Install the coil-over damper onto the upper mount using a $^1/_2$" x 2 $^3/_4$"L bolt with flat washers and stover nut. Install the coil-over onto the lower arm (spacers, too), tightening the top and bottom bolts.



fia\man\d\rsasblyt

Insert the thrust washers and inner bushings into the hub carrier assembly. Lightly lubricate the inside with heavy grease (silicone or moly base is best). Install the hub carrier onto the front radius arm. Loosely install the second bush half, washer and castle nut.

Install the rear radius arm onto the hub carrier in the same manner. Slide the other (inside) end into the bracket on the subframe and temporarily secure with a bolt. Insert the $^3/_8$"-16 x $^5/_8$"L bolts through the connecting plates. Tighten each castle nut to 15 lb-ft and back off to the nearest hole. Secure with a cotter pin.



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Bolt the half-shaft inner ends and spacer onto each differential output flange. If you wish, install Jaguar shims with about .060" total thickness between the half-shaft and the spacer. This will make minor camber adjustments easier after basic alignment has been done.

Slide the axle into the hub carrier, using a small amount of light grease on the splines. For competition, you might want to use a little shaft-and-bearing mount on the splines, but be aware that disassembly requires heat. Secure with a flat washer and castle nut.

Tighten all the lower hub carrier pivot shaft nuts to 20 lbft, back off $^1/_3$ of a turn to the nearest cotter pin hole and insert cotter pin. Insert any shim washers necessary between the rear flank of the rod ends and the cage bracket. Install a flat washer and lock nut.

Install the caliper using M10 x 30 allen screws and ribbed lock washers.

Install the upper trailing arm bracket with bolts, flat washers and lock nuts so that the bracket angles in toward the front.

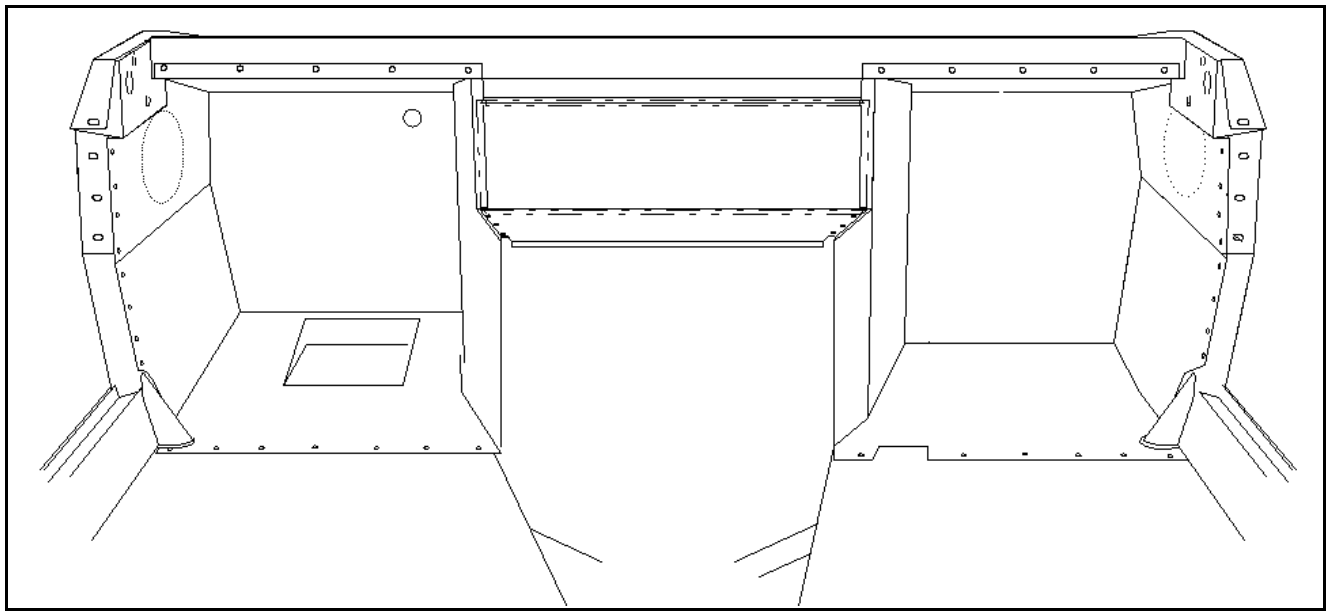
Install the upper trailing arms onto the hub carrier bracket.

Install the lower trailing arm onto the lower radius arm with flat washers and lock nut. Tighten nut to 35 lbft. The front of the trailing arm is attached the same as the Jag suspension.

EMERGENCY BRAKE CABLE

Route the long cables through the hole in the subframe as shown above. Pass it through the internal holes, the holes above the front mount (page 39), and into the balance bar shown on page 36. If you supplied the calipers, cut a slot in the cable mount big enough for the cable to fit through.

FOOTBOXES



D\footbox

For installation of stereo speakers in the sides of the footboxes, holes must be cut into the fiberglass. Inquire for the exact location of the holes and recommended speaker size.

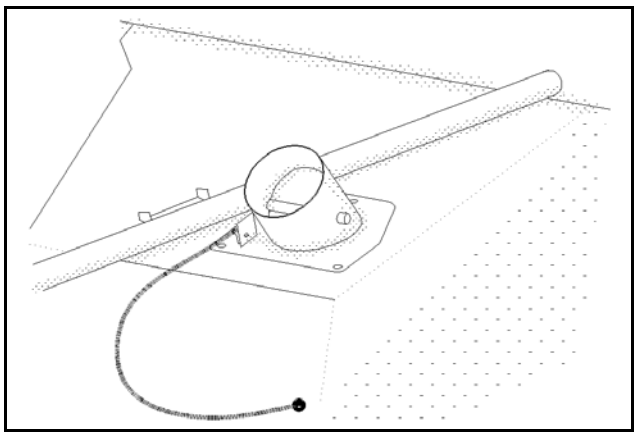
RIGHT

Push the box forward into the corner and clamp into place so that the original assembly holes line up. If there are no problems, remove the footbox, apply caulking, and fasten the foot box to the chassis in the same manner as the floors.

LEFT

Lift the footbox up and slip in from the center of the car towards the outside. Don't rivet the area where the foot boxes overlap one another. (The rivets will show in the engine compartment) Just add sealant and rivet the portion against the transverse support tube and the lower rear section that extends towards the transmission. Footbox components

FRESH AIR CONTROL VALVES



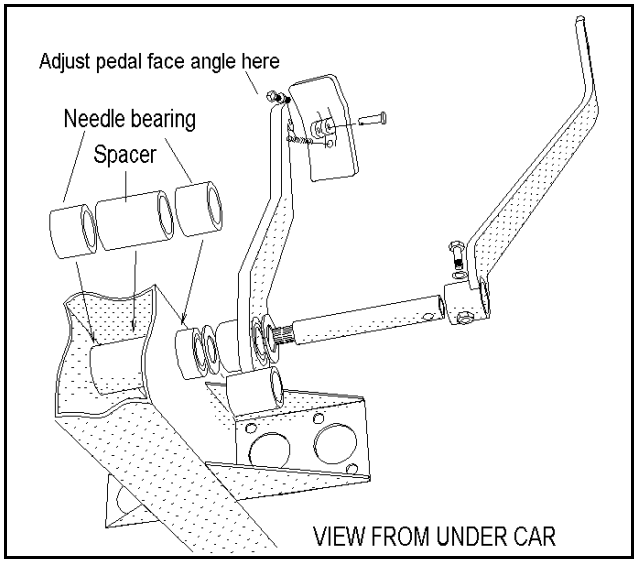
d\lvent

(Passenger's side assembly is a mirror image.)

Screw on top of the drivers foot box after putting a bead of caulk on the bottom flange.

Clamp the duct hose in place. The actuating cable will be attached later.

BRAKE AND CLUTCH PEDAL



f\brpedal

INSTALLATION

If necessary, clean and grease the needle bearings in the chassis and in the brake pedal.

Slide the pivot shaft through the chassis bearings with the splined end toward the inside. If the engine is installed, the shaft must be installed from the outside of the chassis.

Install the thrust washer(s) , brake pedal and clutch pedal onto the shaft. Secure the clutch pedal with the shoulder screw.

Install the clutch throw-out arm onto the splined end of the shaft. Orient the throw-out arm approximately opposite the pedal. See the illustration on page 117.

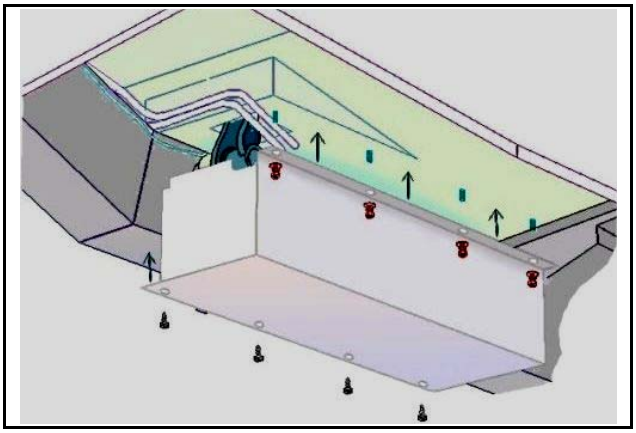
To adjust the orientation of the clutch arm, change the length of the connecting rod between the clutch pedal throw-out arm and the clutch master cylinder:

Remove the retaining clip and the clevis pin.

Loosen the jam nut at the clevis. Turn the threaded rod to change the length as necessary.. When finished, tighten the arm set screw.

For **balance bar** parts installation, see page 123.

Temporarily install the brake master box. It will have to be removed later to connect the brake switch wiring.



BODY MOUNTING

Preparation Is Everything! Before starting, have all tools and materials ready and read the text below.

Attach the body with sealant and rivets. With assistance, carefully spread the body sides while slipping the lower body flanges over the door hinge mounts. Lower the body down over the cowl supports and onto the chassis. Watch for the left front brake line that runs behind the wheelhouse panel. Use small blocks of wood, etc. to keep the body at least 3" above the bonding strips and chassis.

Mix a trial batch of bonding adhesive (see Supplies and Materials" on page 27) to check the set-up time before you start. You must have enough time to apply the adhesive and carry out the all the subsequent installation steps before hardening. Use less catalyst or hardener to increase working time.

Use a caulking gun to apply body sealant (also used on the floors and foot boxes) to the chassis and corresponding body parts.

Apply the bonding adhesive between the surfaces indicated on the diagram.

Check the body and chassis seams from underneath and seal openings with either the brush-on undercoating or the caulking used to mount the body. Pay particular attention to the rear closing panels where they overlap onto the upper trunk panel and the junction at the upper front corner of these panels.

If you wish to rust-proof the inside of the chassis main rails, drill holes in the bottom of the chassis at the front and rear of the bottom rails. You may then spray a wax type material into the chassis, even up above the rear suspension. Close the holes with plastic or metal plugs.

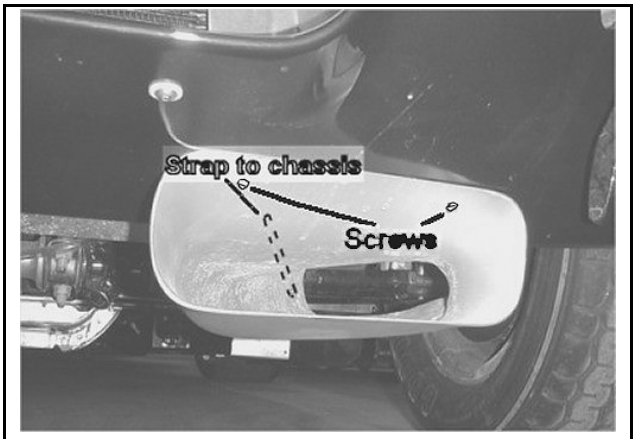
TONNEAU SNAPS

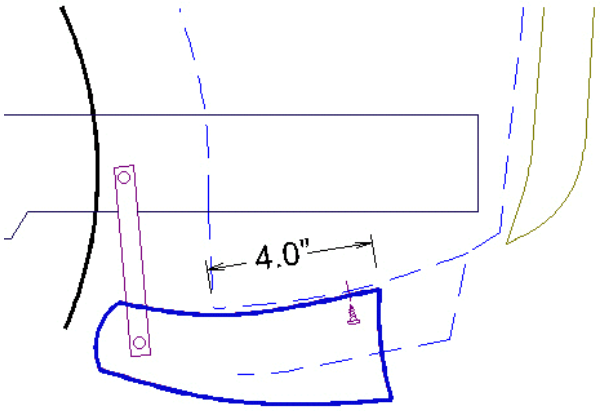
This operation can be left until last, so that the paint can be buffed one final time.

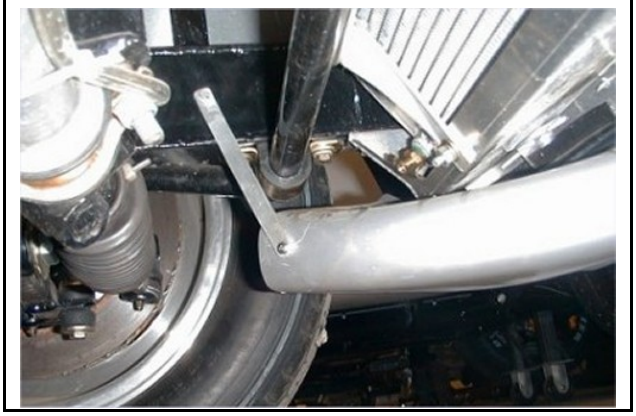
Chase the holes with a #25 drill (.150”). Install the tonneau snaps with the fiber washers. Don't force! The snap screws may twist off, leaving you with half a broken screw in the body. For extra safety and ease, use a #10 steel screw to “chase” the threads into the fiberglass before you install the snaps.

FRONT BRAKE SCOOPS

Using two #10 sheet metal screws, mount the scoops 5.4” from the centerline of the car and set back as shown. A strap attached to the inside of the chassis supports the rear edge.







FRONT SUSPENSION

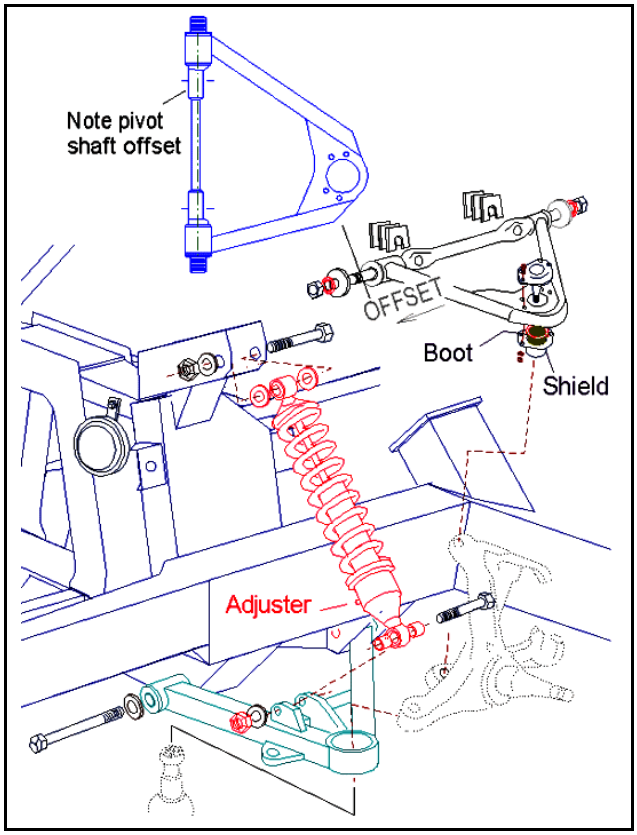
LOWER CONTROL ARM

Lubricate the chassis receptacle/brackets and the sides of the control arm bushings with silicone grease or petroleum jelly. Use a gentle oscillating motion when inserting the control arm into the mounts.

Insert the 5 $^{1}/_{2}$" x $^{5}/_{8}$" bolt with a heavy washer through the front bushing into the chassis. Use a flat washer under the lock-nut.

Use the 3" x $^{5}/_{8}$" bolt through the rear mount with flat washers and lock-nut.

Torque the pivot bolts to 50 ft-lb.



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UPPER CONTROL ARM

The arms are installed with the ball joint hole **offset** towards the **front** of the car. The inner pivot axis is offset to the **outside** of the chassis mount. See above. Use a little silicone sealer where the ball joint passes through the hole in the control arm. This will prevent grease from leaking out of the rubber boot.

Install the arms with 3 shims front and rear between the pivot shaft and the chassis mounting brackets as a preliminary camber setting. Leave the pivot shaft end nuts slightly loose. Tighten the nuts to 60 lbft after the suspension is at normal ride height.

STEERING KNUCKLE

Install the knuckle on the lower ball joint with a washer and nut. Torque to 40 lb-ft. Tighten further to where the cotter pin can be inserted.

Rotate the upper control arm down, engaging the ball joint stud into the knuckle.

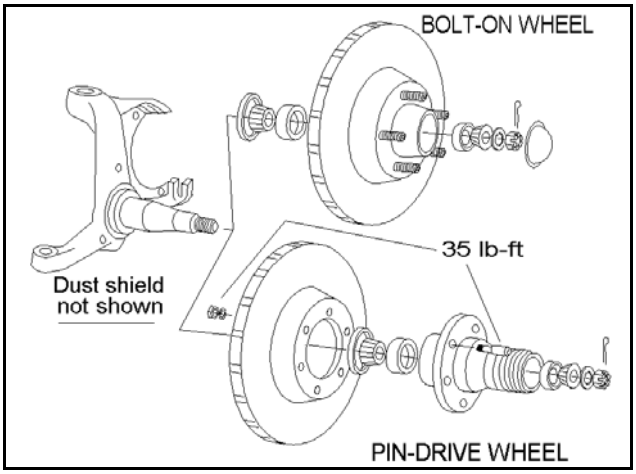
Install washers and nuts, torque to 30 lb-ft minimum and install cotter pin at the next line-up.

Insert the tie rod stud into the steering arm from the bottom. Fit the washer and nut, torquing to 20 lb-ft minimum. Install the cotter pin.

If you have difficulty getting **grease** into a ball joint, back off the Zerk fitting about one turn.

ROTOR/HUB

GM BRAKES



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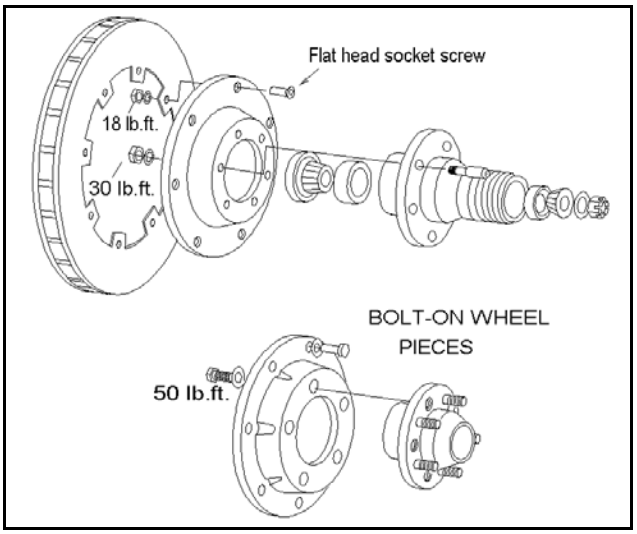
12" BRAKES: HUB AND ROTOR MOUNTING



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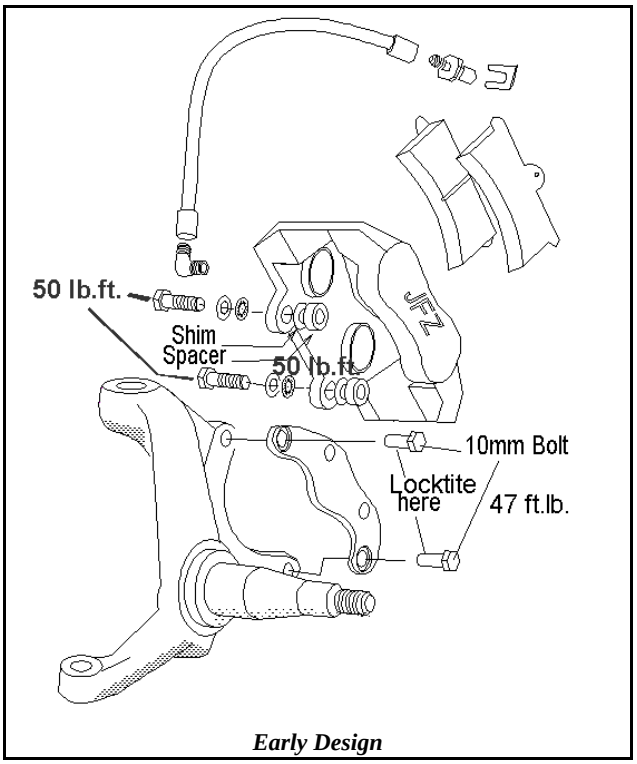
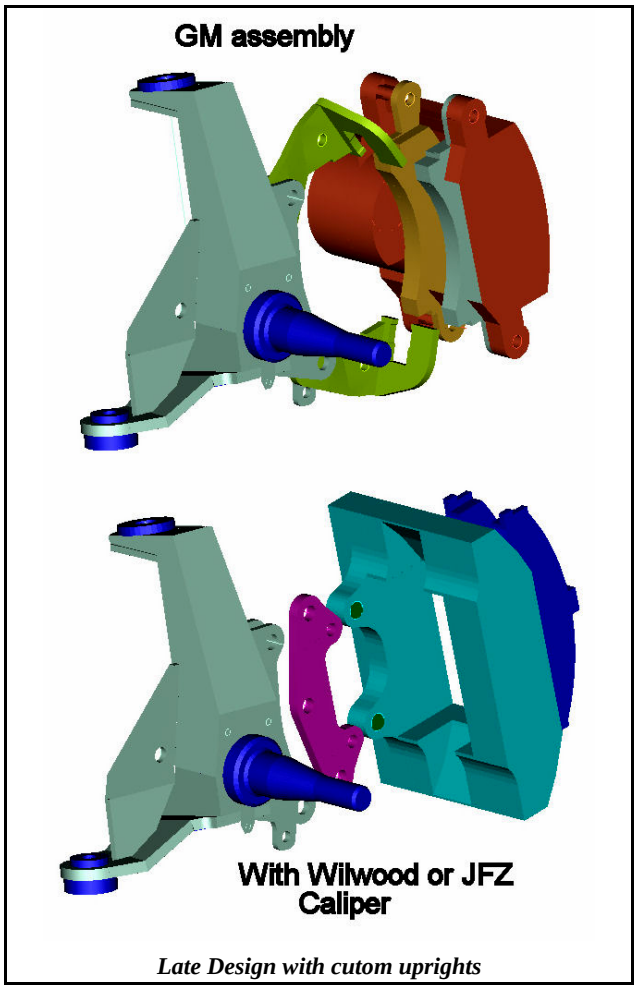
OPTIONAL WILWOOD CALIPER MOUNTING



Early Design

f\jfz1



Late Design with cutom uprights

GENERAL INSTALLATION

Replacement parts are listed on page 128.

Pin drive: If the rotor is not already installed on the pin drive hub, **torque** the drive pins to 35 lb-ft (with high-strength thread locking compound, i.e. Locktite® red) and the nuts to 35 lb-ft.

If you ever need to remove the pins, they will have to be heated to 300 deg. to weaken the bond. **Excessive heat** will weaken the pins.

Always grind the rotor after installing the wheel bearing races. If you don't have a special driver for the races, let the auto machine shop install them.

Clean off the **grinding dust** thoroughly before putting grease in the hub and installing the bearings and inner seals.

Install the **dust shields** onto the steering knuckles if desired.

Install the hub onto the stub axle with a special (tanged) washer and castle nut.

With new wheel bearings, torque the **axle nut** to 20 lb-ft. Loosen the nut and re-torque to 15 lb-inches, then tighten to the nearest cotter pin hole. Install the cotter pin through the access hole in the side of the pin-drive hub.

Install the brake calipers and pads using new hardware kits. Use **silicone grease** on all sliding surfaces.

Connect the brake line to the caliper, using the supplied banjo bolt and copper washer. If you still get seepage past the copper washer but the seat is not too bad, you may use a special sealing washer available from Earls or E.R.A.

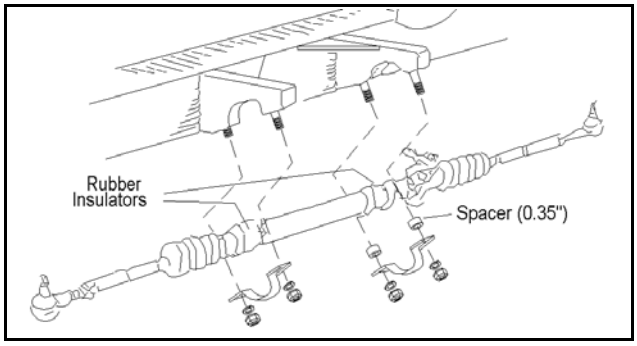
COIL-OVER DAMPER

See page 68. **Spacers** for the lower mounts are provided with the dampers. Orient the damping screw adjuster toward the centerline of the car. Use a washer on either side of the top mount. Secure the top with a 2 $^{3}/_{4}$" long bolt in from the back. A 2 $^{1}/_{2}$" bolt is supplied for the bottom attachment. Again, slide the bolt in from the back.

STEERING GEAR

With the ERA Mustang steering gear conversion, the lower steering column must be installed before the steering gear. See page 79.

Prepare the rack and pinion assembly as described on page 42.



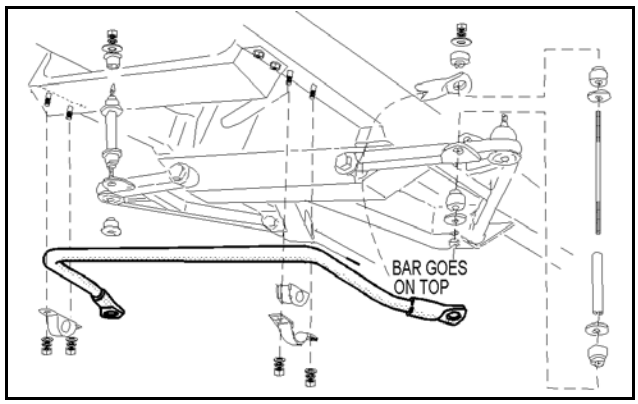
d\subaru

Raise the rack into position into the chassis mounts and secure with the mounting clamps provided. Note the spacers used between the left side clamp and the chassis. Torque the nuts to 18 lbft.

ANTI-SWAY BAR

Threaded holes are already on the chassis. Chase any paint in the threads before installing the ($^{5}/_{16}$-18) bolts, washers and nuts. The $^{15}/_{16}$" front bar is mounted under the front frame extensions, just behind the radiator.

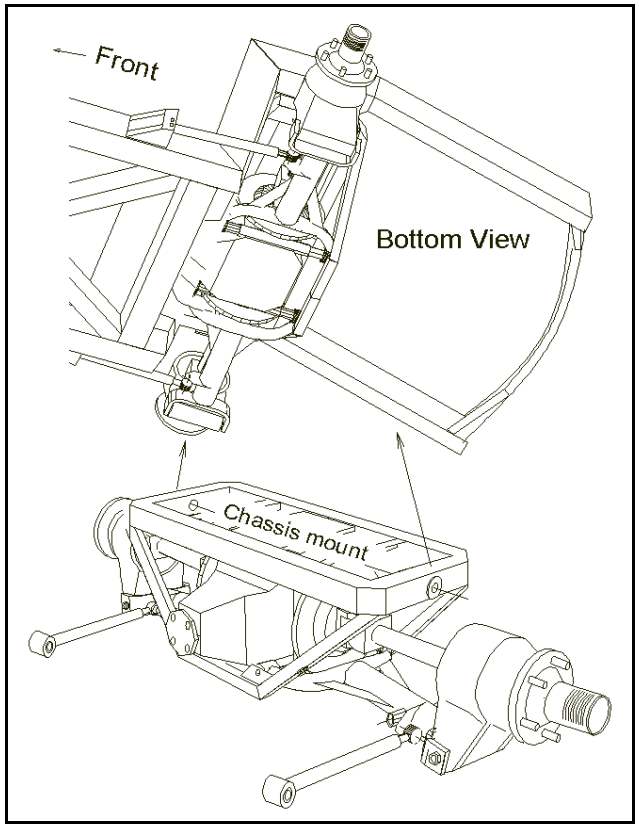
- Bolt the bar in place with the rubber/urethane bushes and clamps. The ends slant up slightly toward the outside.
- Install the connecting links between the tab on the lower control arm and the pads on the ends of the sway bar.
- Tighten the link bolts so that the rubber bush expands to the diameter of the cupped washer. Do not over-tighten.



d\fswayb

REAR SUSPENSION, JAGUAR

INSTALLATION



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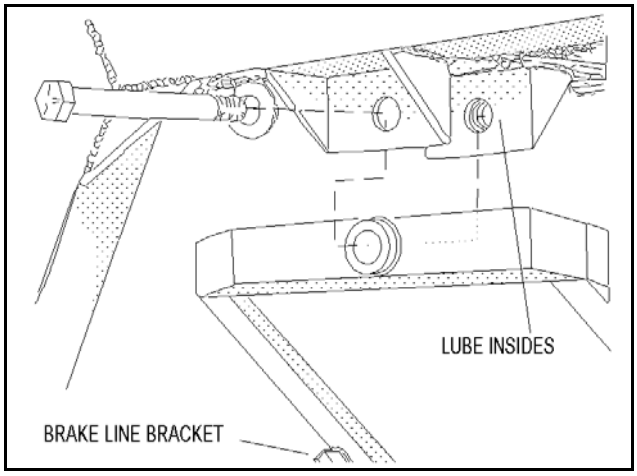
Thread the trailing arms onto the rod-ends (with jam nuts) already installed on the lower control arms. See page 37. Thread on until two or three threads are left showing, but leave the jam nuts loose.

Support the chassis with jack-stands so that there is at least 19”-20” between the spare tire well bottom and the floor. This will allow you to fit the assembly on the jack and still slide it under the car from the back.



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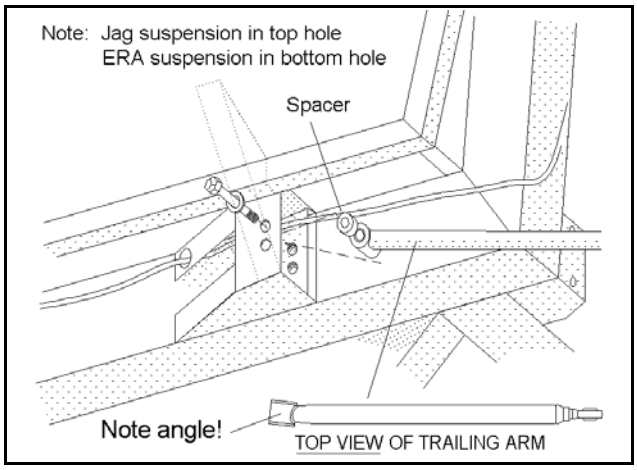
Raise the rear suspension assembly into position with a floor jack, guiding the forward ends of both trailing arms into the brackets on the sides of the frame.

Lubricate the insides of the upper chassis brackets with lithium grease so that the sides of the rubber bushing will slide into them. Guide the suspension assembly into the chassis brackets. Using a little light oil on the threads, install the $^{5}/_{8}$" bolts with flat washers, but don't tighten yet.



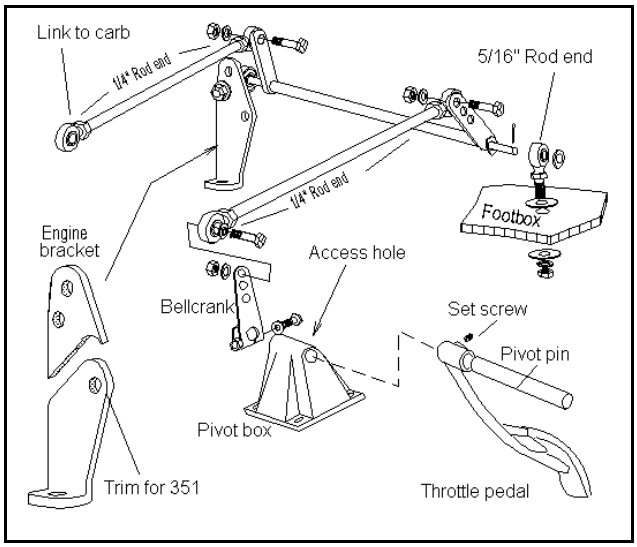
fia\man\d\trailarm

Note that the trailing arm bushing is **angled** slightly relative to the trailing arm tube.

On one side of the car: Rotate the trailing arm so that the bushing angle matches the chassis bracket. Holding the bushing against the inside of the chassis bracket, sight through from the outside hole. Use a large screwdriver to move the assembly so that the sight is straight into the threaded portion of the chassis bracket.

ACCELERATOR PEDAL AND LINKAGE

All components come preassembled in the standard kit. See also the picture on page 67.



d\throtlnk

When assembling the longitudinal links onto the sides of the bellcranks, pick the straightest front-to-rear paths. The diagram above is typical but may not be ideal for your setup.

To remove the pedal from the pivot box, remove the setscrew through the access hole in the casting. Remove the bellcrank and slide the shaft out.

ADJUSTING THE LINKAGE

Wire the carburetor linkage fully open.

Install the cross-shaft support onto the engine, orienting it so that the shaft is as parallel to the firewall as possible and fairly horizontal.

Install the link from the carb to the cross-shaft, adjusting the length so that the cross-shaft bellcrank is angled back, about 30 degrees toward the firewall.

Adjust the bellcrank on the pedal shaft so that it is angled back toward the firewall about 20 degrees when the pedal is bottomed out on the floor.

Install the link from the pedal to the cross-shaft so that the pedal is about $^{1}/_{2}$" from hitting the floor.

Remove the wire holding the carburetor linkage and check whether the pedal is at a convenient height. If it is too high, change the link footbox link to a lower hole on the cross-shaft. If it is too low, change the engine link to a lower hole on the cross-shaft.

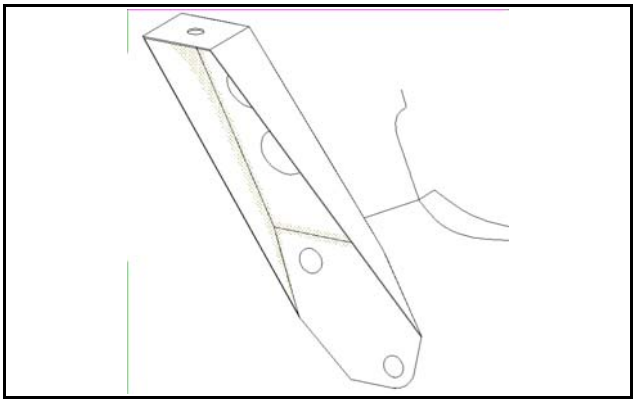
Install the return springs and check whether you're still getting full throttle.

Tighten all bolts and jam nuts, check for interference, and grease all the pivot points.

If you want the "smooth look" shown below, cut some $^{5}/_{16}$" brake line to length to cover the middle section of the threaded rods.

Note: This linkage can be adapted to most engines. If yours requires something different, call us.

For **Weber carburetors**, a duplicate of the original bellcrank pivot stand is available from E.R.A. If you are using a blow shield with a wide flange on a 289/302, the flange must be trimmed around the bracket.



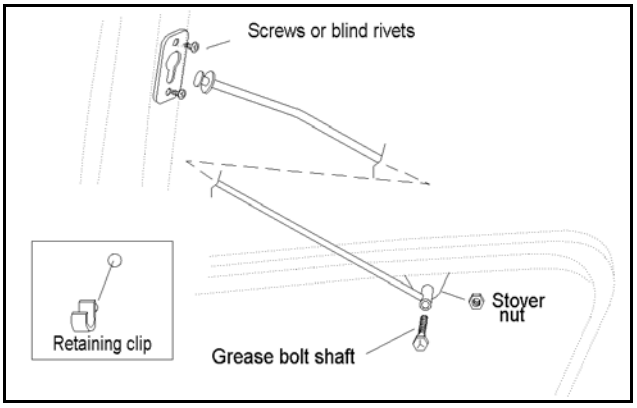
ENGINE AND TRANSMISSION

Refer to page 31 for engine and transmission preparation. **To check compatibility**, trial fit the transmission to the engine **before** any attempt to install either into the chassis. Note that **the engine and transmission are offset toward the passenger side of the car** by one inch to balance the driver's weight and to give more legroom for the driver.

If you are using a blow shield, check the **concentricity** of the hole that locates the transmission. Put a dial indicator on the flywheel and indicate the hole ID. If the eccentricity exceeds the recommendations (generally about 0.010"), you must use **offset dowels** to locate the bell housing on the engine block.

HOOD STAY

The upper and lower hood stay brackets are (factory) attached as shown.



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If you removed the **keyhole receptacle** from the hood inner panel when it was painted, install as shown.

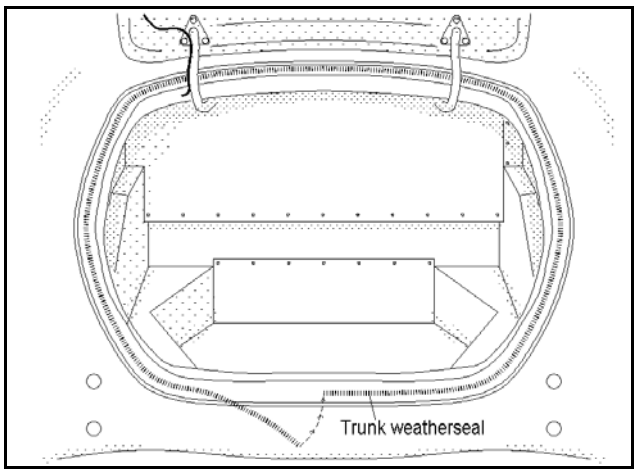
The plastic rod retainer fits into a square hole in the wheelhouse panel. It may be removed by squeezing from the backside.

TRUNK LID

Install the trunk lid liner (the fuzzy stuff that was with the optional "street" carpet kit) onto the inside of the trunk lid with contact cement. Trim the material so that it can be pushed just under edge of the fiberglass inner panel.

Glue the half-round **weatherseal** provided with the kit onto the trunk opening flange of the body, leaving about $^{1}/_{8}$"-$^{3}/_{16}$" distance between the edge of the seal and the up-curve of the outer lip. To keep from making a mess with the contact cement, you can use masking tape to border where the weatherseal will be placed.

Do not stretch the seal while installing. Start the process at the center of the bottom lip, in front of the latch. Continue over the top and back down to the center. Trim the excess so that the ends meet tightly. See the picture on page 87.



ebod\TRNKSEAL

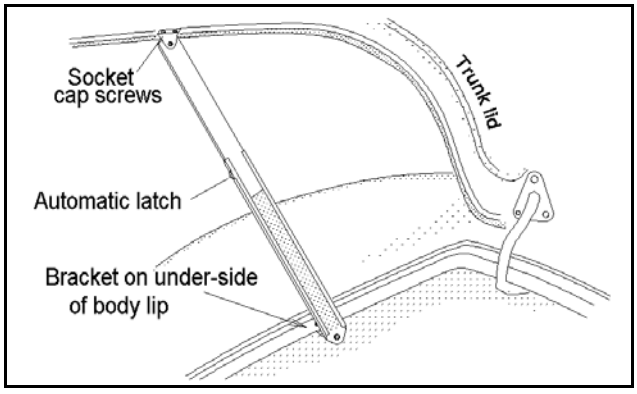
Bolt the trunk hinges (they are marked with a **T** on the lid side) loosely onto the body with any shims found earlier.

Loosely bolt the trunk lid (with factory shims) onto the hinges. Carefully close the lid, not letting the front edge contact the body. Center the lid in the opening. Slowly lift the lid just enough to get your arm (and a wrench) inside and snug the bolts on the lid part of the hinges. Remember to check the front edge while lifting lid.

The lid can be adjusted further by moving the lid and hinges in unit at the connection on the inner panel. Tighten bolts and recheck fit.

TRUNK STAY

Attach the trunk stay to the trunk lid as shown, using the sheet metal screws at the bottom, stainless steel dome head screws at the top.



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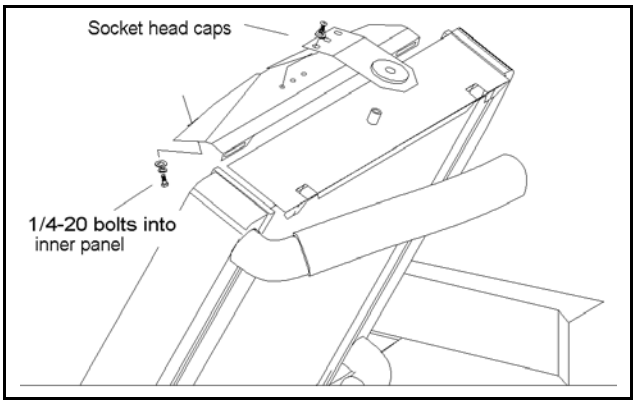
TRUNK LATCH

Attach the trunk handle and latch to the trunk lid as shown. Don't forget the gasket under the handle.

Attach the latch striker and bracket to the trunk floor.



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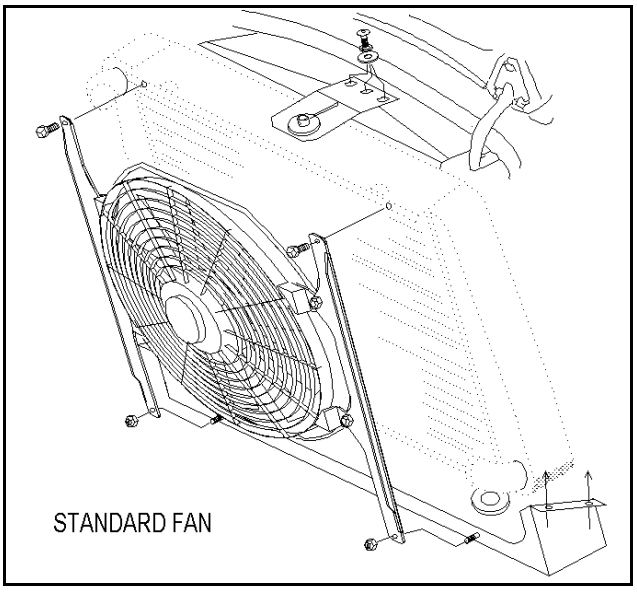
Fit the rubber grommets and steel sleeves to the upper radiator support. Install the support over the studs on top of the radiator with the large washers, lockwashers and nuts.

Move the radiator forward and attach the support to the body. Attach the support straps (or optional rear fan, see below) between the upper and lower radiator supports.

OPTIONAL FANS

STANDARD



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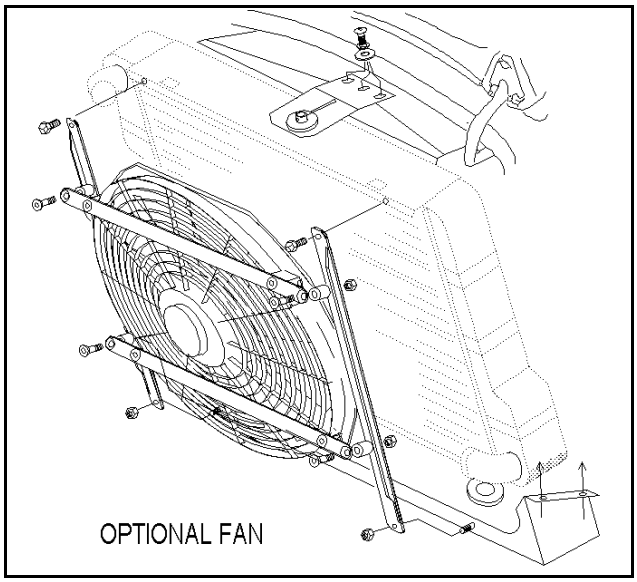
15" REAR MOUNTED



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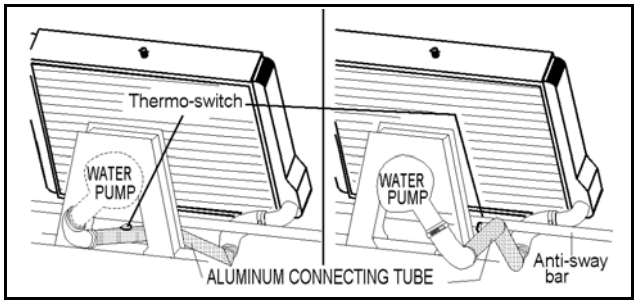
HOSES

Mounting for the optional expansion tank is shown on page 34. lnstall the radiator into the chassis as shown above. The hose part numbers and instructions for modifying the front lower hose are covered on page 35. Note that a connecting tube (availble from ERA) is required for the upper hose. Assemble the upper hose as shown on page 35.



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The radiator cooling fan thermostatic switch is in the lower hose connector. Connect the harness wires as shown on page 82 and detailed in the wiring instructions. (There is also an over-ride switch on the dashboard).

BATTERY AND CABLES

The battery is mounted in a hidden compartment behind the right rear wheel. Installation of the **support tray** is described on page 75.

BATTERY

INSTALLATION/SERVICE

See the illustration on page 75.

If necessary, remove the right rear wheel.

Remove the screws and nuts holding the splash panel at the rear of the wheel well.

Place the battery onto the tray with the posts toward the outside, away from the chassis. Attach the 135"long battery cable (use a 60" if you are using the cut-off switch. See page 75) to the positive terminal on the battery (toward the rear of the car). The cable is routed around the back of the battery support. The power cable is then routed as per the instructions on page 66.

Attach the ground cable to the front terminal.

Slide the hold-down rods up through the holes at the front and back of the bottom of the battery support, and through the holes in the corner bracket. Secure with lock nuts and washers.

STEERING COLUMN AND WHEEL

Before the Triumph steering column is installed, check that the signal canceling cam on the steering column shaft is oriented correctly. See page 43.

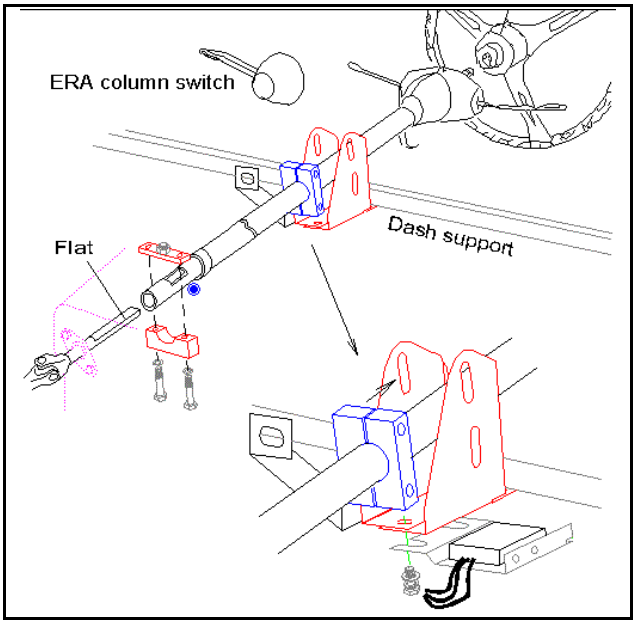
The **steering wheel center cap** (see page 99) is installed after final suspension alignment.

Lower steering column installation is described on page 79.

Prepare the triumph steering column as described on page 42.

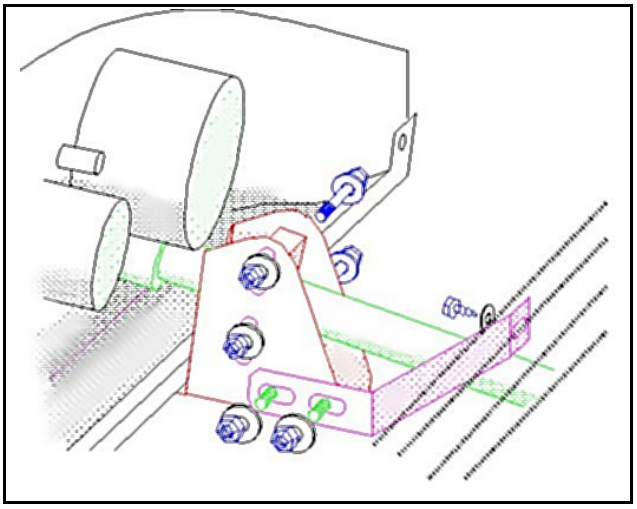
*The **steering wheel center cap** (see page 99) is installed after final suspension alignment.*

ASSEMBLY



Insert the upper column and housing through the hole in the dashboard, engaging the lower column as the upper one is slid in.

Hold the clamp halves of the upper column around the column, oriented as shown, and slide the clamps together back into the mounting bracket. Insert the cross-bolts as shown below.



With the driver's seat correctly positioned in relationship to the pedals, slide the steering column and housing in or out to suit your driving position. Adjust the height of the column to your preference, and tighten the cross-bolts.

Align the flat of the lower column with the notch in the upper tube and fit the clamp over the column tube. Snug the bolts slightly but don't tighten.

INSTALL WIPER ARMS

Without the arms installed, cycle the motor through high and low speed. When you turn off the switch, check to see that the drive posts return to the far right (passenger's side) position.

Press the arm onto the post so that the blade falls at the base of the windshield, just above the frame. See above.

Check the sweep of the wiper and adjust if necessary.

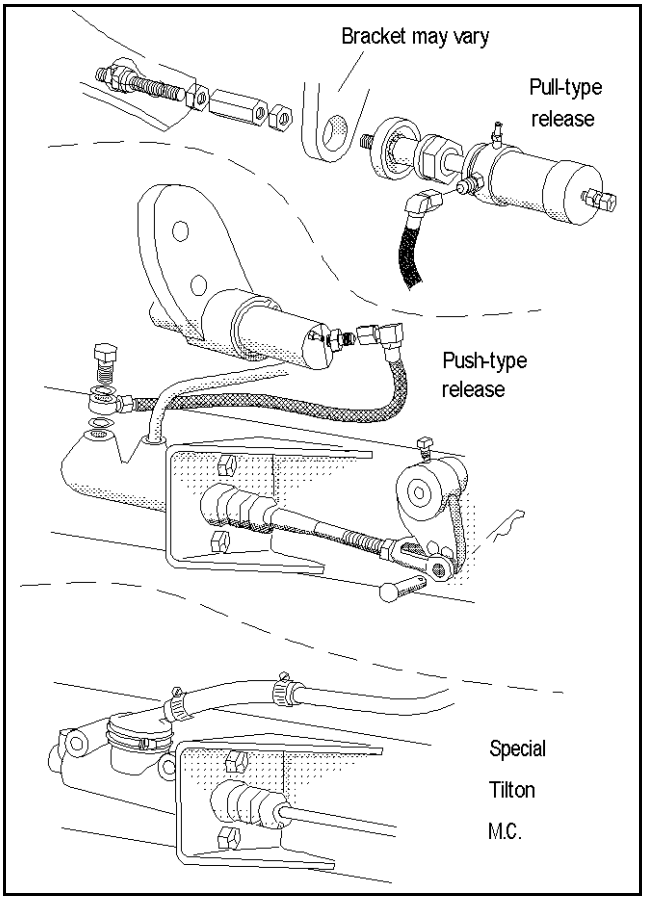
Removal:

Use a screwdriver to pry between the post base and the edge of the arm, opposite to the blade.

CLUTCH HYDRAULICS

HOSE INSTALLATION

See page 33 for an illustration of the slave cylinder.
Ask about oncentric slave cylinder installations



h\clhose

Check the tightness of all fittings before bleeding.

BLEEDING

The car must be level for this operation

Fill the brake/clutch reservoir with DOT 3 or DOT 4 fluid. Silicone fluid is not recommended.

Attach a small hose to the slave cylinder bleeder nipple, emersing the other end of the hose in a small cup of fluid. Loosen the nipple about $^{2}/_{3}$ turn with a $^{9}/_{32}$" or 7 mm wrench.

Work the arm on the clutch pedal shaft (instead of pushing on the clutch pedal itself) until only clear fluid comes out of the hose.