1075 North Ave. Sanger, CA 93657-3539 toll free: 800-445-3767 web: www.belltechcorp.com

INSTALLATION INSTRUCTIONS

6680
FLIP KIT
DODGE RAM 1500

Congratulations! You were selective enough to choose a BELLTECH PRODUCT. We have spent many hours developing our line of products so that you will receive maximum performance with minimum difficulty during installation.

Note: Confirm that all of the hardware listed in the parts list is in the kit. **Do not** begin installation if any part is missing. Read the instructions thoroughly before beginning this installation.

Warning: **DO NOT** work under a vehicle supported by only a jack. Place support stands securely under the vehicle in the manufacturer's specified locations unless otherwise instructed.

Warning: **DO NOT** drive vehicle until all work has been completed and checked. Torque all hardware to values specified.

Reminder: Proper use of safety equipment and eye/face/hand protection is absolutely necessary when using these tools to perform procedures!

Note: It is very helpful to have an assistant available during installation.

RECOMMENDED TOOLS:

- Properly rated floor jack, support stands, and wheel chocks
- Combination wrench set
- Torque wrench: *0-75 lb ft. range*
- Ratcheting socket wrench and socket sets
- Safety Glasses

KIT INSTALLATION

1) Open the hardware kit and remove all of the contents. Refer to the part list (Page 5 & 6) to verify that all parts are present.

2) Park the vehicle on a smooth, level concrete or seasoned asphalt surface and activate the parking brake. Block the FRONT wheels of the vehicle with appropriate wheel chocks; making sure the vehicle's transmission is in 1st gear (manual) or "Park" (automatic).

3) Removal of the vehicle bed will ease the accomplishment of this installation. Remove the bad chassis securing hardware, all applicable wiring harnesses and grounding straps. Also remove the fuel filler neck flange from inside of the fuel fill door location by removing the three screws. (PHOTO 1) Lift the bed from the vehicle and set aside.

4) Block the front wheels and with a floor jack rated for this load placed under the center of the rear axle-housing, jack up the rear of the vehicle. (PHOTO 2) Locate jack stands rated for this load, forward of the rear leaf spring pack forward hangers. (PHOTO 3) Lower the vehicle so that it rests on the jack stands. With the floor jack located under the center of the rear axle housing, check the vehicle for stability while on the jack stands.

5) Remove and retain the upper and lower shock hardware, remove the shocks. (PHOTO 4) Remove the rear wheels and tires.

6) Raise the floor jack located under the center of the rear axle housing until it touches the housing. Raise the jack another ¼" to ½" to remove as much tension from the leaf spring pack as possible. **CAUTION: Leaf springs under tension can store considerable energy. Use care when working around leaf springs.** With the jack supporting the rear axle housing remove the rear axle retaining U-bolt nuts and U-bolts. (PHOTO 5) Lower the rear axle to the point that it drops clear of the bottom of the leaf spring pack. NOTE: Do not allow the rear axle assembly to lower to the point that the brake lines and other components could be damaged by over extension.

7) Remove the nut from the lower leaf spring shackle bolt and loosen the nut on the rear upper leaf spring eyebolt. (PHOTO 6)

8) On the driver's side of the vehicle only, remove the extended non-threaded section of the forward leaf spring eyebolt with a hacksaw or suitable tool. (PHOTO 7)

9) Remove the nut from the forward leaf spring eye bolt, and supporting the leaf spring end, withdraw the bolt inward and allow the leaf spring end to come clear of the hanger. In the same manner, support the rear end of the leaf spring pack and remove the lower shackle eyebolt. Lift the leaf spring assembly clear of the rear axle housing and set aside.

10) As part of this installation, it will be necessary to replace the leaf spring center bolt and nut. Clamp the leaf spring pack together with a set of C-clamps or a suitable tool. Remove the stock leaf spring center bolt and nut and replace them with the kit-supplied hardware. (PHOTOS 8 & 9) Install the leaf spring center bolt from the bottom of the leaf spring pack and torque the nut to 55-60 Ft.-lbs.

11) Situate the rear axle tube saddle and the kit supplied shim on the leaf spring pack over the leaf spring center nut. Mark the leaf spring pack center nut at a point 1/16" to 1/8" below the level of a line drawn across the axle tube saddle. (PHOTO 10)

12) Using a cutoff wheel, hacksaw or suitable toll, cut off the spring center bolt nut at this marked point. **CAUTION: Always wear eye protection when using power tools.**

13) On the driver's side of the vehicle, remove the bolt securing the brake line transition bracket and secure the brake line bracket and wiring harness away from the inside of the chassis rail.

14) Locate the kit-supplied template on the chassis rail according to the instructions printed on the template. (PHOTO 11)

15) Using a center punch and hammer, or suitable marker, mark the chassis at the points marked "B" on the template. On the line that connects points "B" and "C" on the template, transfer another mark to the chassis at the lowest point that the line lays on the chassis side rail. (PHOTO 12) Remove the template and draw a straight line between the locations marked "B" and then from those locations down toward each of the lower marked locations on the chassis side rail. At the point that the marked line runs off the bottom of the chassis side rail, mark a line across the bottom of the chassis side rail with the aid of a combination square or suitable tool.

16) Drill through the chassis side rails at the locations transferred from the template locations "B" with a 3/8" drill bit. This procedure can be made easier by starting with a smaller "pilot" drill and then moving up gradually in drill bit size until the final drill bit size is reached. (PHOTO 13 & 14)

CAUTION: Always wear eye protection when using power tools.

17) Using a die grinder with a cutoff wheel, or similar tool, cut along the lines connecting the transfer marks from the template. Take care not to cut into the outer radius of the drilled holes. (PHOTO 15) CAUTION: Always wear eye protection when using power tools. CAUTION: Do not use a cutting torch to remove the marked area of the chassis.

18) Align the C-section over the frame rail by installing a punch or screwdriver of the proper size through the alignment hole of the C-section into the corresponding hole in the vehicle chassis rail. Center punch the chassis rail using the holes in the C-section as a guide. (PHOTO 16)

19) Drill through the chassis rail using a ½" drill bit at each of the bolthole locations. This procedure can be made easier by first drilling with a smaller "pilot" drill and then working up in drill bit size gradually until the final drill bit size is reached. (PHOTO 17) Deburr all sharp edges using a flat file or suitable tool.

CAUTION: Always wear eye protection when using power tools.

20) Install the kit supplied hardware in the locations drilled and torque to 140-145 Ft.-lbs. On an extended cab vehicle the frame is stamped with a slight offset so that full contact with the C-section may not be achieved at the first bolt torquing sequence. It s advisable to recheck the bolt torque several times during the installation process to be sure that bolt torque has stabilized.

21) Install the kit supplied axle housing bump stops in the holes in the "notch" in the C-sections. Torque the bump stop nut to 1015 Ft.-lbs. On the driver side of the vehicle, install the kit supplied brake line transition mount bracket onto the stud of the bump stop before installing the bump stop nut.

22) (PHOTO 18) Position the OEM brake line transition bracket behind the flange of the kit supplied bracket and reinstall the OEM bolt. (PHOTOS 19 &20) Torque this bolt to 15 FT.-lbs.

23) Jack up the rear axle assembly so that the rear leaf spring can be reinstalled in its hangers while passing under the rear axle assembly. Re-install the rear leaf spring in the reverse order of removal as outlined in steps 5, 6 & 7. Tighten the hardware enough to maintain the nuts on the appropriate bolts but do not tighten to full torque at this time.

24) With the rear axle assembly clear of the leaf spring pack, install the rear axle tube saddle so that the "ears" of the saddle locate under the edges of the axle tube pad. (PHOTOS 21 & 22) Make sure that the hole in the bottom of the saddle is located forward of the saddle side-to-side centerline during the installation process. Install the kit supplied shim, between the saddle and the leaf spring with the thickest portion of the shim facing forward and the cutout in the shim butted against the leaf spring center bolt.

25) Lower the rear axle tube down into the axle tube saddles and install the kit supplied U-bolts, spring bottom plate, washers and nuts. Be sure that the spring bottom plate is installed with the center hole forward of the side-to-side centerline of the plate. (PHOTO 23)

26) Tighten the U-bolt nuts to maintain the axle in the saddle, but do not tighten the U-bolts to final torque at this time.

27) Repeat steps 4 through 23 for the remaining side of the vehicle. After both sides of the vehicle have been modified, torque the U-bolt nuts to 85-110 Ft.-lbs. Torque the U-bolts in increments allowing the U-bolt circumference to settle against the rear axle housing tube. The U-bolt torque will have to be rechecked after the first 10 miles, 100 miles, and then after 1,000 miles.

28) On an extended cab vehicle, while supporting the propeller shafts, unbolt the center carrier bearing from the center carrier-bearing mount. (PHOTOS 24 & 25) Secure the propeller shafts against the chassis rail. Using a die grinder with a cutoff wheel, or suitable tool, grind a slot in the heads of the rivets that secure the center carrier bearing cross member to the vehicle chassis. (PHOTO 26)

29) **CAUTION**: On the driver side of the vehicle use care when slotting the rivet heads so that the brake, fuel, and electrical components attached to the inside chassis rail are not damaged. Using an air chisel or suitable tool, remove the rivet heads and punch the remaining rivet shanks through the chassis rail. (PHOTO 27) **CAUTION**: **Always wear eye protection when using power tools**. Remove the OEM center carrier-bearing mount. (PHOTO 28)

30) Install the kit supplied center carrier bearing mount and 7/16" hardware and torque the kit supplied hardware to 88-93 Ft.-lbs. Lift the center carrier bearing to the cross member and install the kit supplied hardware. Torque this hardware to 88-93 Ft.-lbs. (PHOTOS 29 & 30)

31) With a jack rated for this load under the tail shaft of the transmission, raise the jack until it contacts the transmission rear housing. Remove the two bolts that secure the stock transmission rubber mount to the transmission steel plate. Remove and retain the flange bolts that secure the transmission mount plate to the transmission. (PHOTO 31) Raise the jack until there is sufficient clearance to remove the transmission plate, slide it forward to disengage it from the tailpipe stabilizer arm and remove the transmission plate from the vehicle.

32) Remove and retain for later use the 8 nuts and bolts that secure the transmission cross member to the vehicle chassis. Lift the cross member and slide it toward the rear of the vehicle to remove it from the chassis. (PHOTO 32) Remove and retain the flange nuts that secure the rubber transmission mount to the cross member. Retain the rubber mount to reuse.

33) Install the kit supplied transmission plate to the bottom of the transmission making sure that the spacer is toward the transmission housing. Re-install the original flange bolts back into the transmission using a nonpermanent-locking agent such as Loc-Tite. Toque these bolts 50 FT.-lbs.

34) Install the kit supplied transmission cross member in the reverse order of the removal of the stock part. The angled cut on the cross member side plates go toward the front of the vehicle. Re-install the original bolts and nuts and torque this hardware to 50 Ft.-lbs. (PHOTO 33)

35) Raise the rear of the transmission as necessary to slide the stock rubber mount into position. **CAUTION**: Raising the rear end of the transmission to far could result in transmission component damage. Install, but do not tighten, the two flange nuts retained in step 30. Install the kit supplied transmission spacer bar between the stock rubber mount and the transmission plate. (PHOTO 34) Install the kit supplied hardware and torque to 20-25 Ft.-lbs. (PHOTO 35)

36) Lower the transmission back onto it's mount and torque the rubber mount flange nuts to 50 Ft.-lbs. **CAUTION**: Raising the rear of the transmission reduces the cooling fan-to-fan shroud clearance. Check this clearance after installation of the spacer and modify the shroud, if necessary, to maintain ½" clearance between these parts.

37) Re-install the shock absorbers, wheels and tires. Torque the lower shock nut to 100 Ft.-lbs. and the upper shock nut to 70 Ft.-lbs. Torque the wheel lug nuts to 95 Ft.-lbs. **CAUTION**: After final installation is completed and the vehicle is on it's wheels on the ground, check shock absorber travel. Available shock absorber travel should be the same, or greater than, available suspension travel or suspension component damage may result. If available shock absorber travel does not meet minimum specifications replace the shock absorber with a quality aftermarket lowered application shock absorber and torque the fasteners to the stated specifications.

38) Raise the rear of the vehicle to clear the jack stands. Remove the jack stands and lower the vehicle back to the ground.

39) There are two bed cross rails that will contact the C-sections and need to be relieved so that bed damage does not occur when the bed securing hardware is tightened. Re-install the vehicle bed. Mark the cross rails on either side of the C-sections. Remove the bed and using a die grinder and cutoff wheel, or a tool that is suitable. Cut-out the area directly over the C-sections to a depth of approximately 3/8". The cutout segments should be approximately 3 inches wide each.

40) Re-install the bed and re-check for interference between the C-sections and the bed cross rails. If there is no interference, proceed to secure the bed of the vehicle to the chassis.

41) Torque all leaf spring eye bolt/nut combinations to 100 Ft.-lbs. All hardware being fastened to the vehicle's original fastening points should be torqued to the proper specifications. To prevent chassis damage, never over-torque the hardware.

42) Check that all components and fasteners have been properly installed, tightened and torqued.

43) Check brake hoses, and other components for any possible interference.

44) Lift vehicle and remove support stands. Carefully lower vehicle to ground.

45) Immediately test-drive the vehicle in a remote location so that you can become accustomed to the revised driving characteristics and handling. Be aware that the vehicle will handle substantially different now that it has been modified.

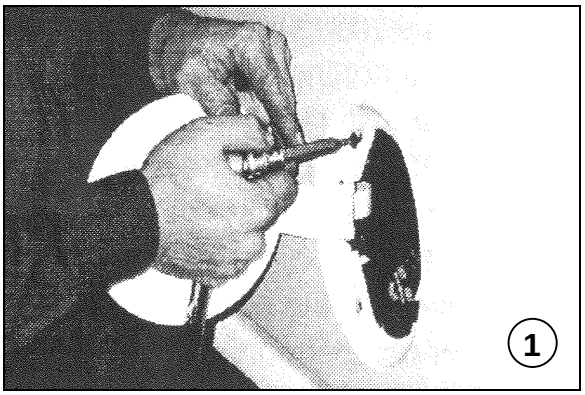
46) Installation is complete. Check all of the hardware and re-torque at intervals for the first 10, 100, 1000 miles.

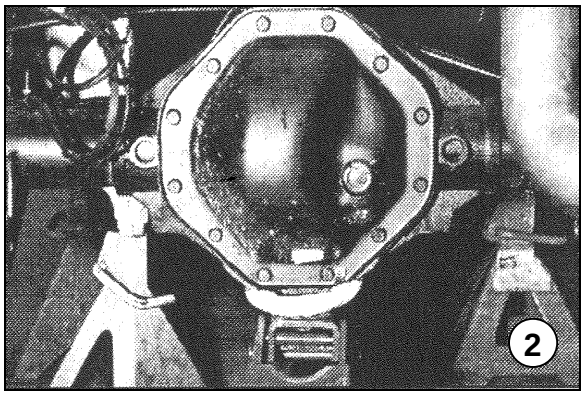
PART LIST FOR 6680 FLIP KIT

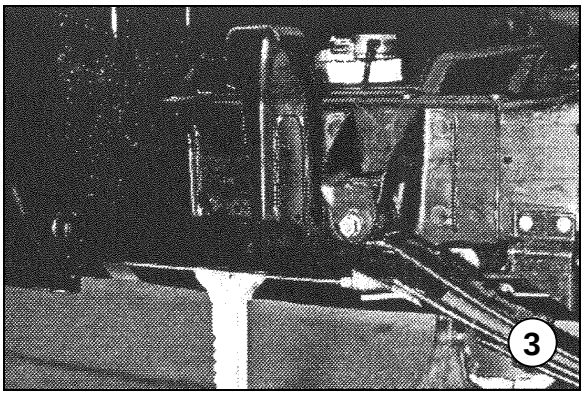
PART No.	DESCRIPTION	QTY.
6680-001	C-Section, LH	1
6680-002	C-Section, RH	1
6680-005	Saddle	2
6680-010	Brake Line Bracket	1
6680-050	Trans. Cross member	1
6680-052	Trans. Plate	1
110408	½"-20 x 1-1/4" Bolt	16
110660	½" Flat Washer	32
110402	½"-20 Lock Nut	16
6925-003	5/8"-18 x 3 ½" x 9 7/8" U-Bolt	4
6600-010	U-Bolt Plate	2
110505	5/8"-18 Lock Nut	8
110502	5/8" Flat Washer	8
110303	7/16-20 Lock Nut	2
110313	7/16"-20 x 3" Bolt	2
110645	7/16" Flat Washer	4
4975-001	2° Pinion Shim	2
4915-001	Bump Stop	2
110252	3/8"-24 x 5" Bolt	2
110257	3/8"-24 x 1 1/8" Nut	2
6680-012	1-1/2" x 1" Transmission Spacer	1

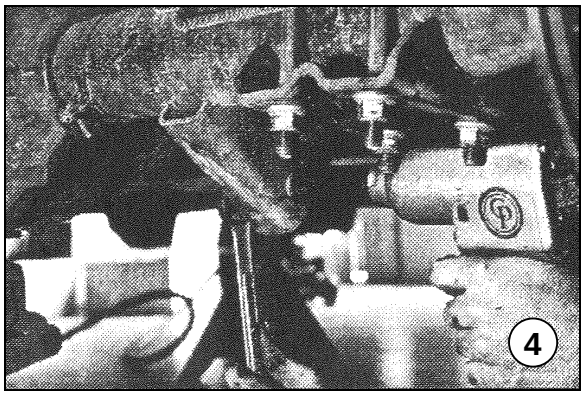
PART LIST FOR 6681 FLIP KIT

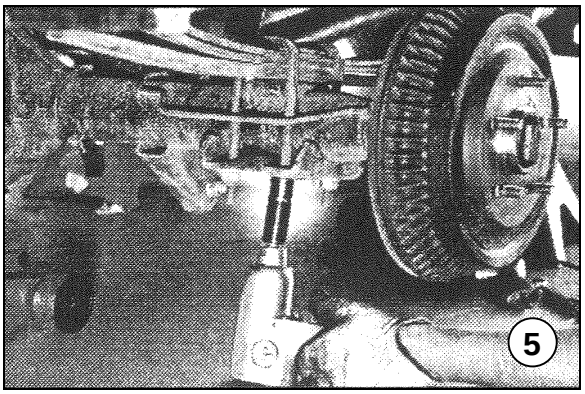
Part No.	Description	Qty.
6710-001	C-Section, LH	1
6710-003	C-Section, RH	1
6680-005	Saddle	2
6680-010	Brake Dist. Bracket	1
6680-050	Trans. Cross Member	1
6680-052	Trans. Plate	1
110408	½”-20 x 1-1/4” Bolt	20
110660	½” Flat Washer	40
110402	½”-20 Lock Nut	20
6925-003	5/8” U-Bolt	4
6600-010	U-Bolt Plate	2
110505	5/8”-18 Lock Nut	8
110502	5/8” Flat Washer	8
110648	7/16”-20 x 7/8” Bolt	6
110313	7/16”-20 x 3” Bolt	2
110303	7/16”-20 Lock Nut	8
110645	7/16” Flat Washer	16
6681-005	Bearing Mount	1
6680-012	1-1/2” x 1” Transmission Spacer	1
4977-001	4° Pinion Shim	2
110252	3/8”-24 x 5” Bolt	2
110257	3/8”-24 Nut	2
4915-001	Bump Stop	2
6680-T	Template	1







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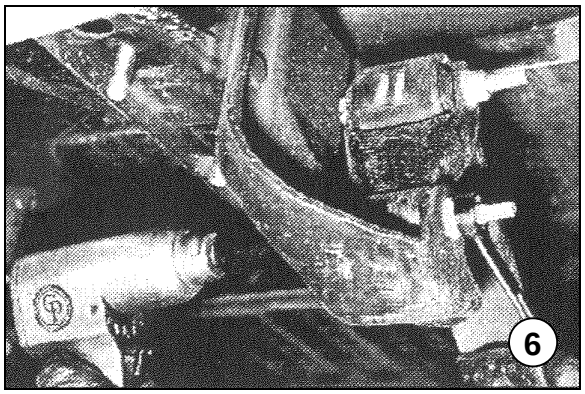
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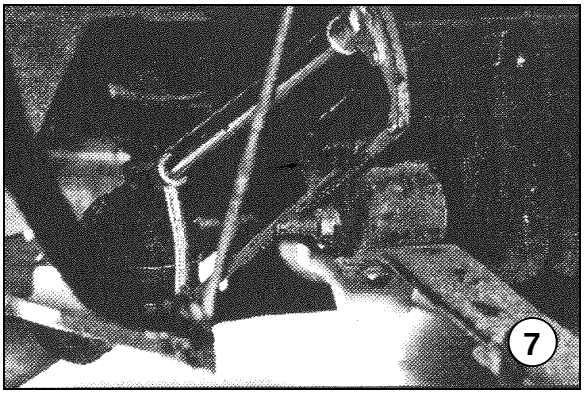
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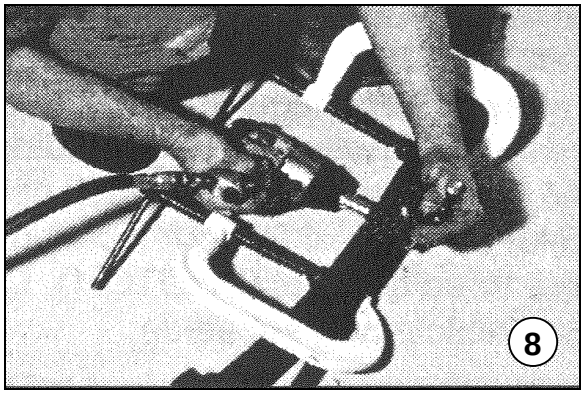
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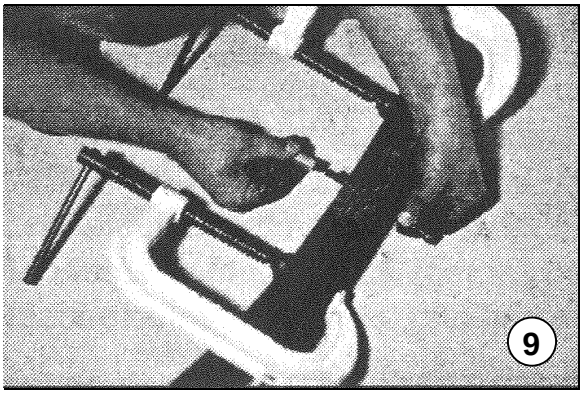
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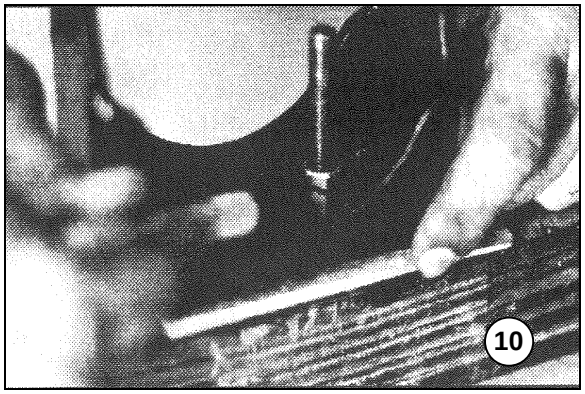
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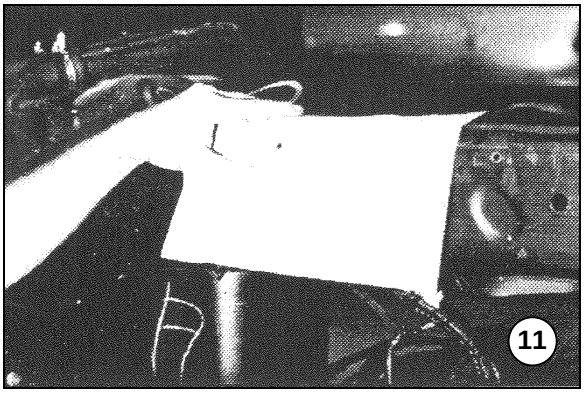
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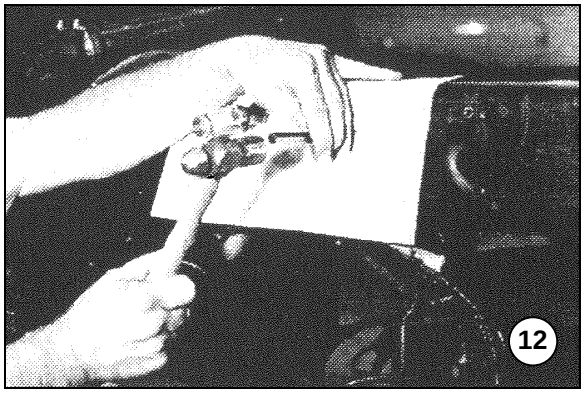
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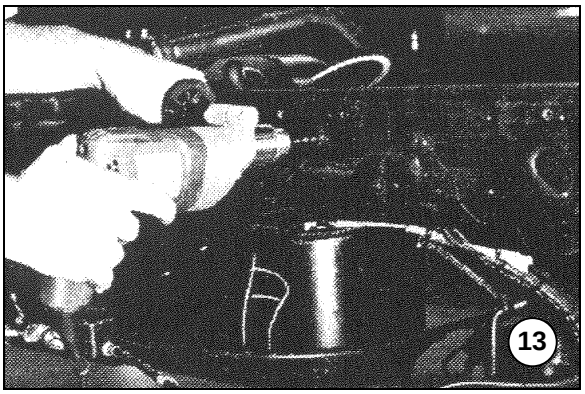
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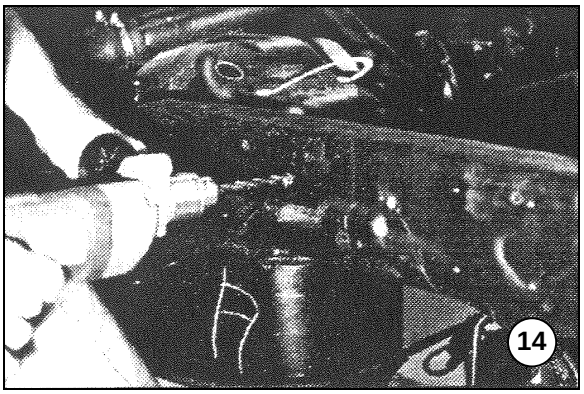
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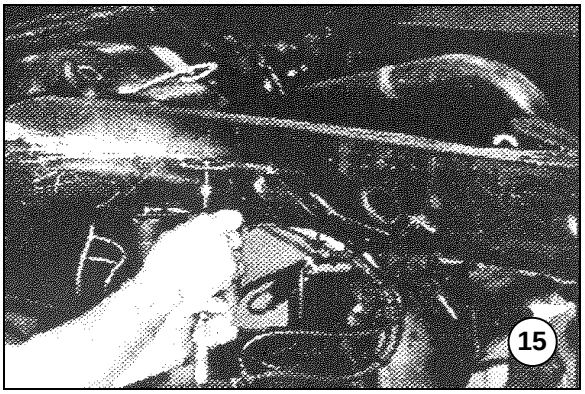
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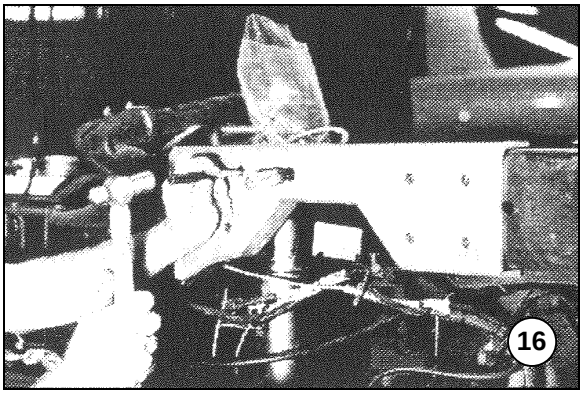
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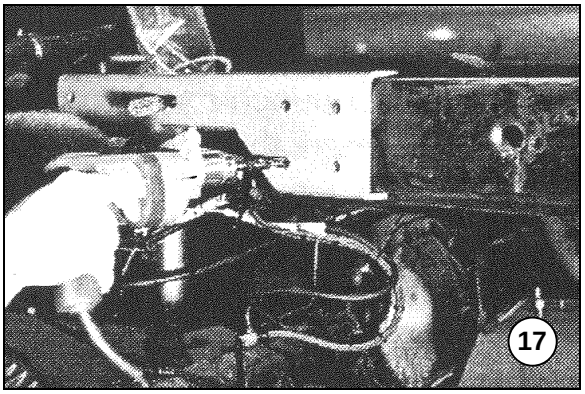
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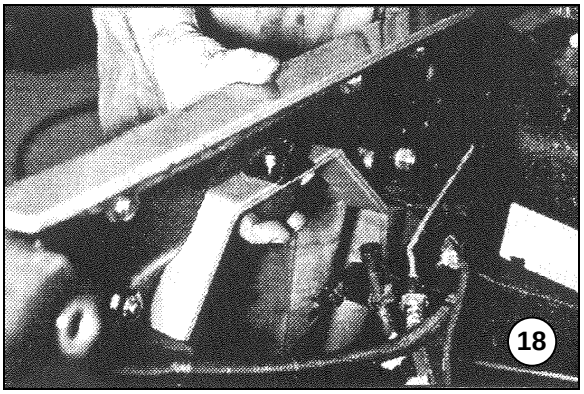
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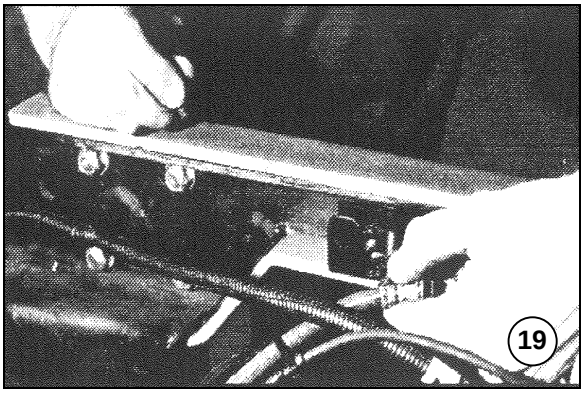
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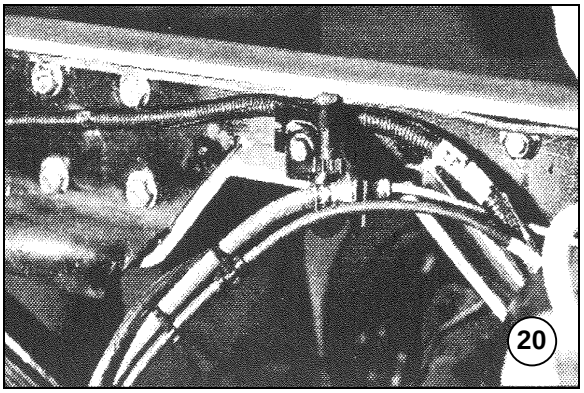
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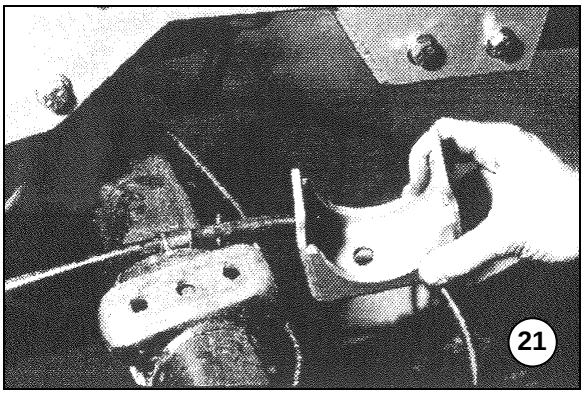
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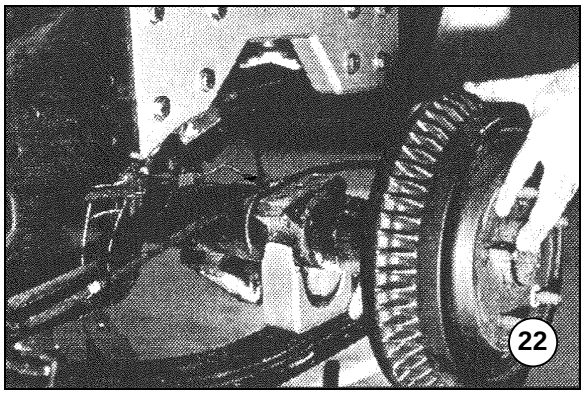
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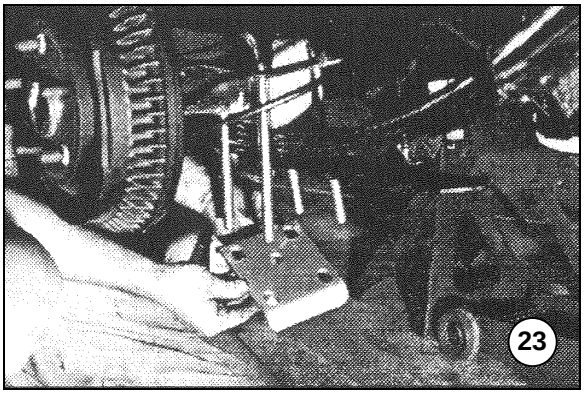
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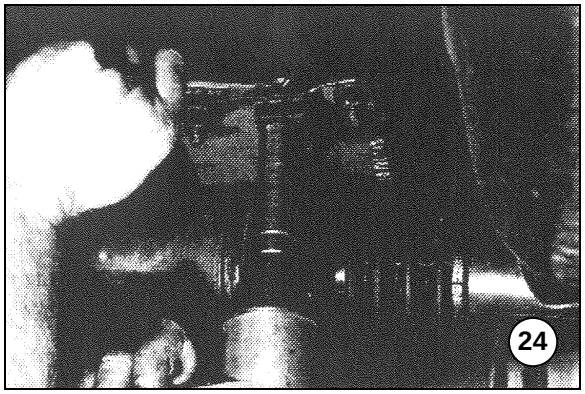
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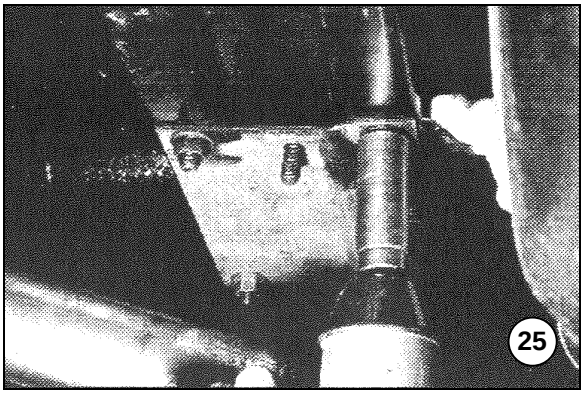
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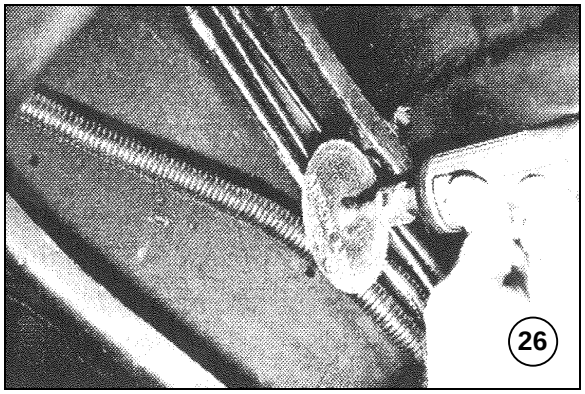
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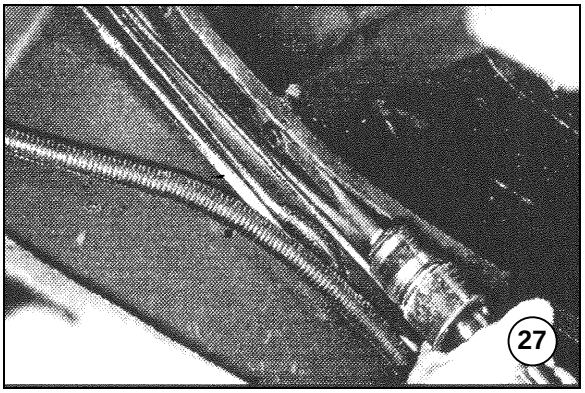
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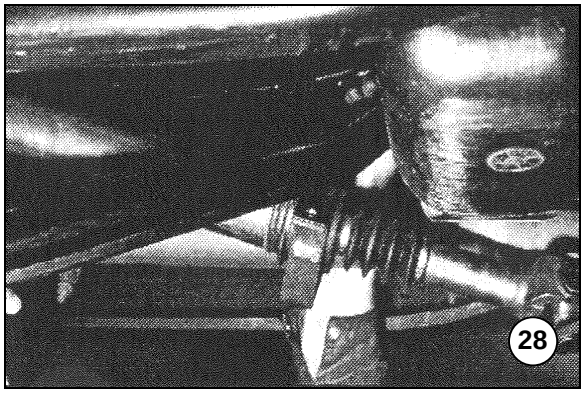
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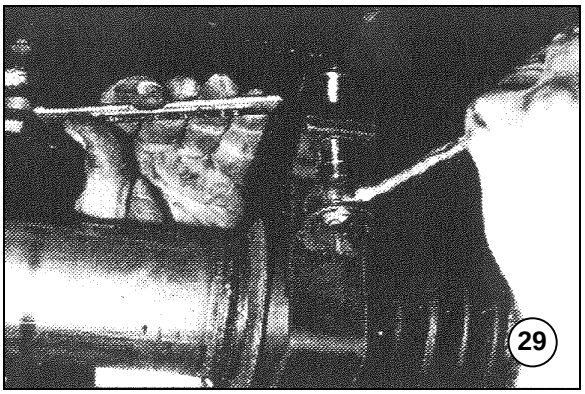
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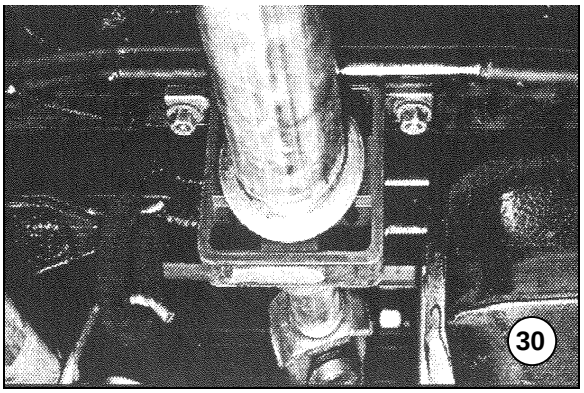
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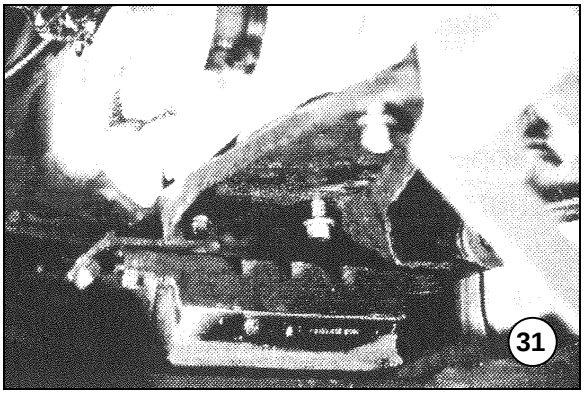
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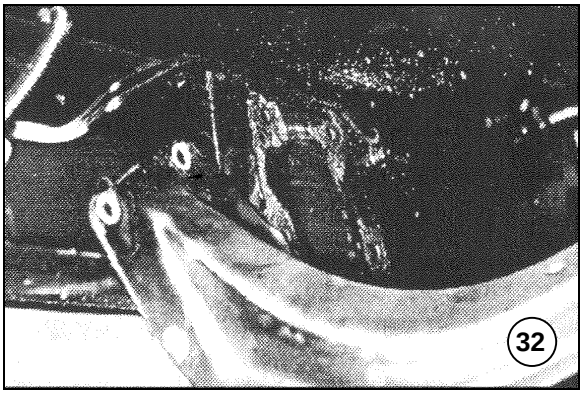
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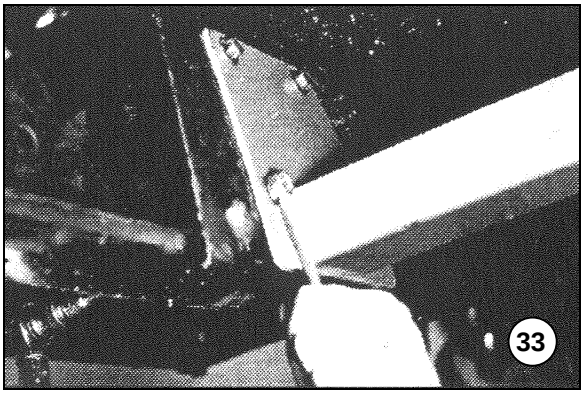
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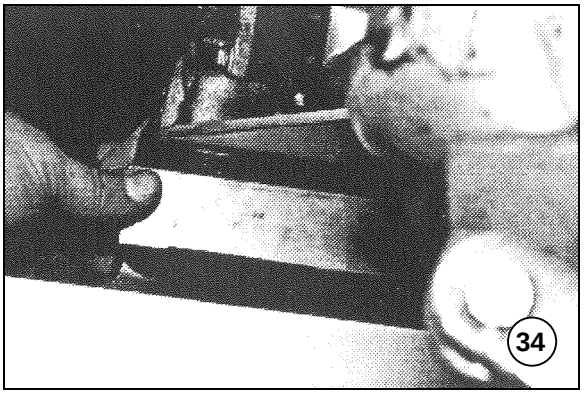
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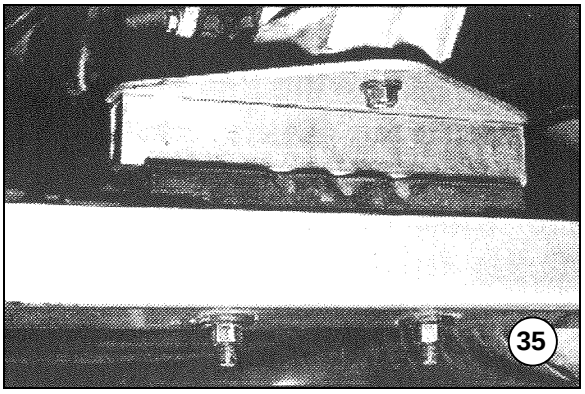
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