

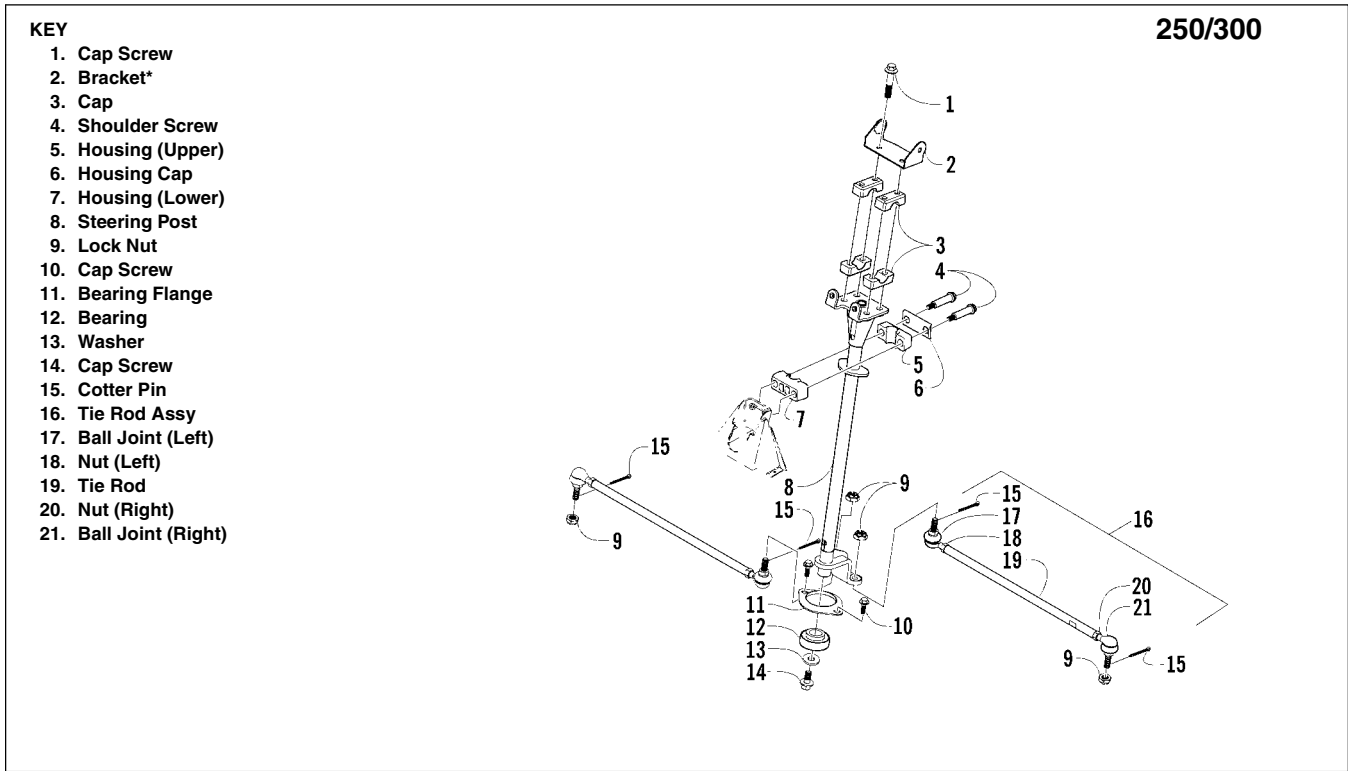
SECTION 8 - STEERING/FRAME

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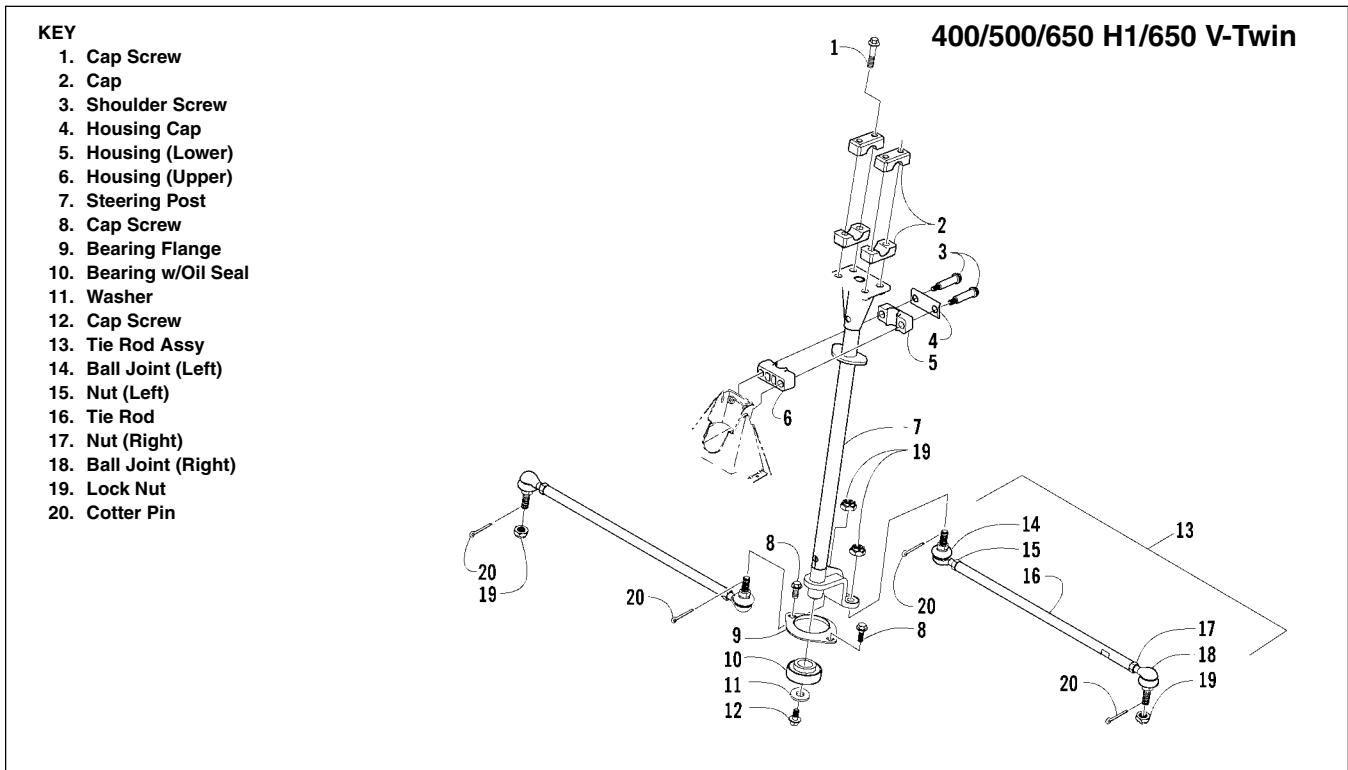
Steering Post/ Tie Rods

■ NOTE: Some components may vary from model to model. The technician should use discretion and sound judgment.



* 250

0739-476



0739-774

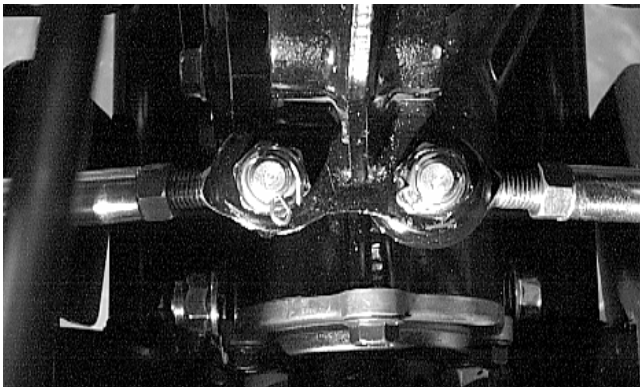
REMOVING (250/300/400 FIS/ACT)

1. Remove the seat (see Seat in this section).
2. Turn the gas tank valve to the OFF position; then remove the left-side panel (see Front Fender/Side Panels in this section).
3. Disconnect the fuel hose to the carburetor.
4. Remove the screws and washers securing the gas tank; then remove the tank.



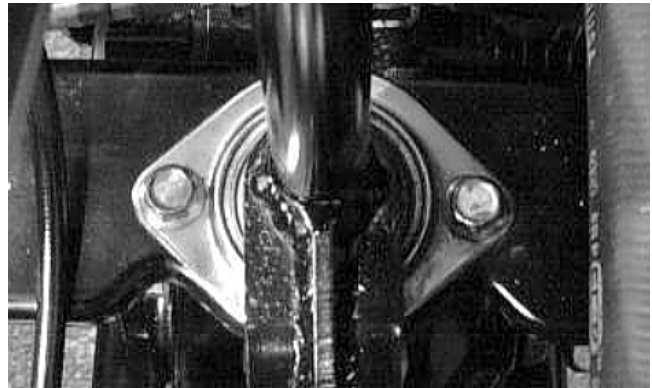
AL617D

5. Remove the cotter pin and slotted nut securing each tie rod end to the steering post arm. Remove the tie rod ends from the arm.



AF778D

6. Remove the cotter pin and slotted nut securing the side tie rod ends to the knuckles. Remove the tie rod ends from the knuckles; then remove the tie rods.
7. Remove the cap screws securing the steering post bearing flange.



AL600D

8. On the 250 model, remove the screws securing the console. Account for a spacer.



CH084D

9. On the 300/400 TBX/ACT models, remove the reinstallable rivets and the screws securing the instrument pod.



CD536

10. Remove the retaining ring securing the ignition switch.



AF757D

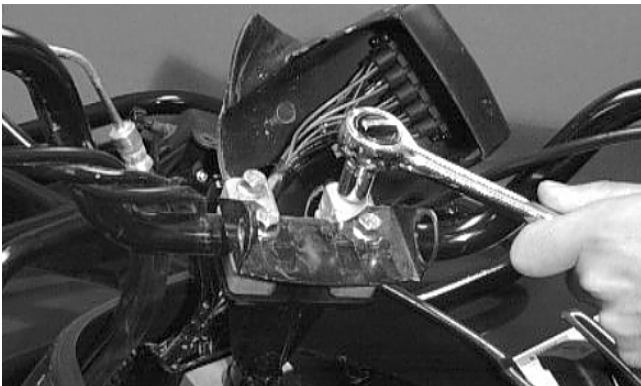
11. Remove the four cap screws securing the handlebar caps (blocks) to the steering post; then move the handlebar out of the way.



AL618D

REMOVING (500/650 H1/650 V-Twin)

1. Remove the ignition switch retaining ring; then remove the reinstallable rivets securing the instrument pod to the mounting bracket and remove the pod.

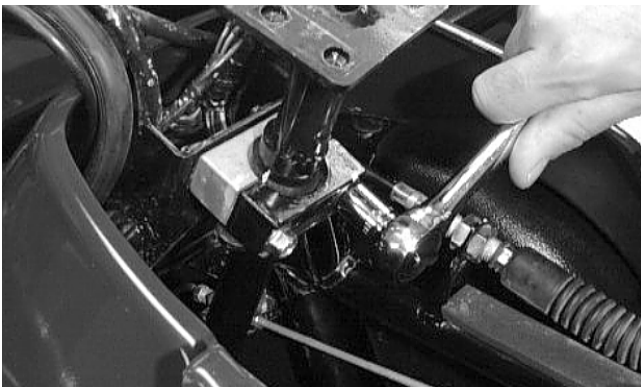


AL614D

12. Remove the two cap screws securing the upper steering post bearing housings to the frame.



CD676



AL619D

13. Remove the steering post.



CD759

2. Remove the reinstallable rivets securing the radiator access cover and remove the cover.



CD666

3. Remove four reinstallable rivets securing the steering post cover and remove the cover.



CD667

4. Unlatch the storage compartment lid; then slide the storage compartment cover assembly forward and lift off.



CD669

5. Remove the storage compartment box.



CD671

6. Remove the four cap screws securing the handlebar caps and speedometer bracket to the steering post; then move the handlebar and speedometer out of the way. Account for four handlebar caps.



CD762

7. Remove two cap screws securing the upper steering post bearing to the frame. Account for two bearings and two housings.



CD760

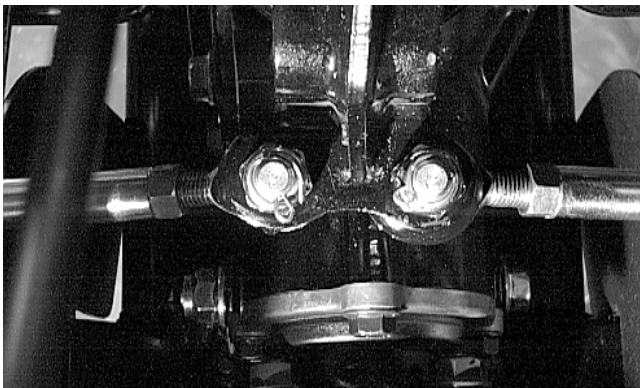
8. Using a suitable lift stand, raise the ATV enough to remove the front wheels; then remove the left-side and right-side splash panels.

8



CD685

- Remove the cotter pins and slotted nuts from the inner and outer tie rod ends; then remove the tie rods from the steering post arm and the left-side and right-side steering knuckles.

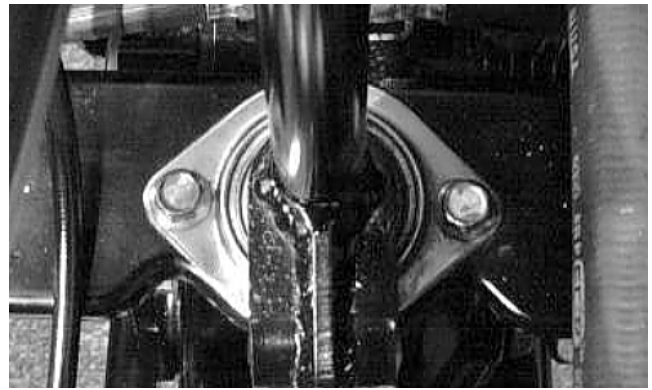


AF778D



KX039

- Remove two cap screws securing the lower steering post bearing flange to the frame; then remove the steering post.



AL600D

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

- Wash the tie rod ends in parts-cleaning solvent. Dry with compressed air. Inspect the pivot area for wear. Apply a low-temperature grease to the ends.

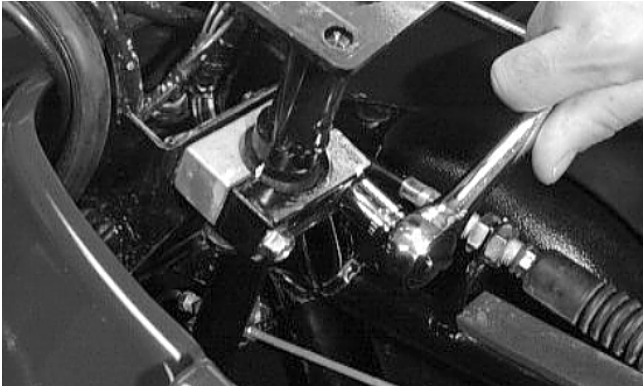
WARNING

Always wear safety glasses when using compressed air.

- Inspect the tie rods for damaged threads or wear.
- Inspect the tie rods for cracks or unusual bends.
- Inspect all welded areas for cracks or deterioration.
- Inspect the steering post and steering-post brackets for cracks, bends, or wear.
- Inspect the bearing halves, bearing caps, and bearing housings for cracks or wear.
- Inspect the handlebar tube for cracks, wear, or unusual bends.
- Inspect the handlebar grips for damage or wear.

INSTALLING (250/300/400 FIS/ACT)

- Place the steering post into position; then place the upper steering post bearings and housings on the steering post and install the two cap screws through the housings and into the frame. Tighten the cap screws to specifications.



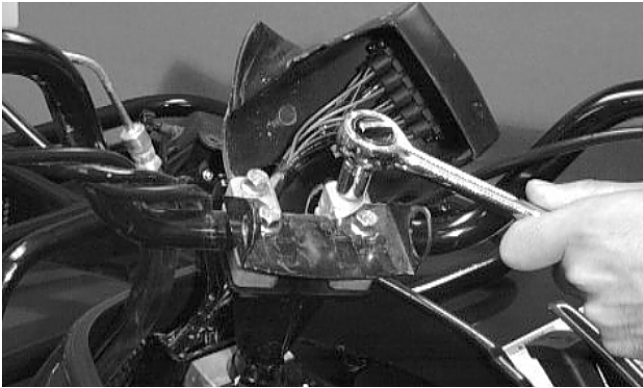
AL619D

2. Place the handlebar into position and secure with the handlebar caps (blocks). Tighten the four cap screws to specifications.



CH084D

4. On the 300/400 TBX/ACT models, place the ignition switch into position; then place the instrument pod into position and secure with the reinstallable rivets, screws, and the retaining ring.



AL614D

3. On the 250 model, place the ignition switch into position; then place the console in position and secure with the screws, a spacer, and the retaining ring (opposite the screw).



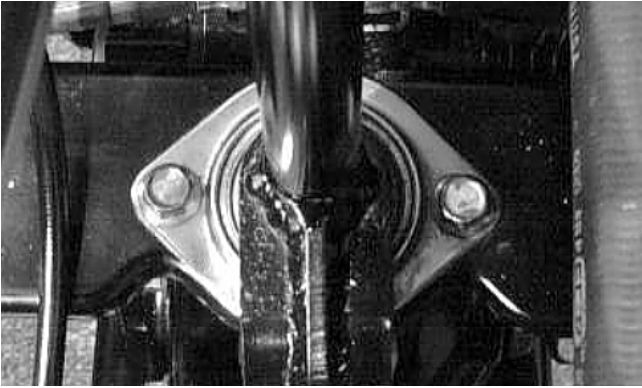
CD536

5. On the 400 FIS models, secure the front of the instrument pod with reinstallable rivets and the ignition switch retaining ring.

6. Place the steering post bearing flange into position. Secure with the cap screws tightened to specifications.



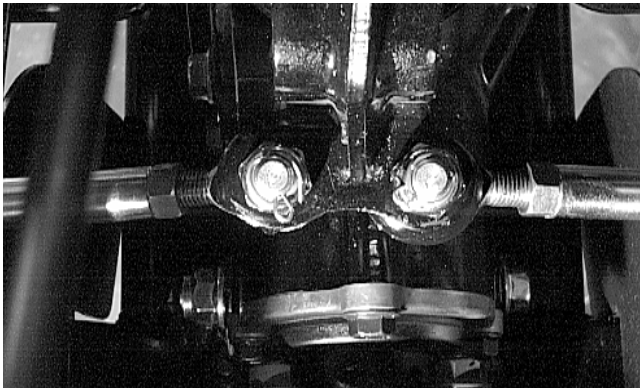
CH087D



AL600D

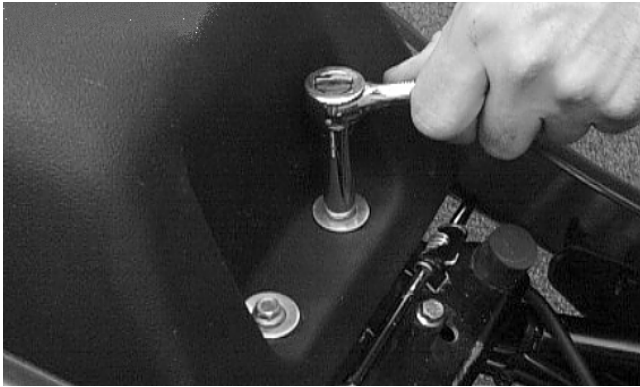
7. Insert the tie rod ends into the knuckles; then install the slotted nuts and tighten to specifications. Lock the nuts with new cotter pins.

8. Insert the tie rod ends into the steering post arm; then install the slotted nuts and tighten to specifications. Lock the nuts with new cotter pins.



AF778D

9. Place the gas tank into position. Secure with screws and washers.



AL617D

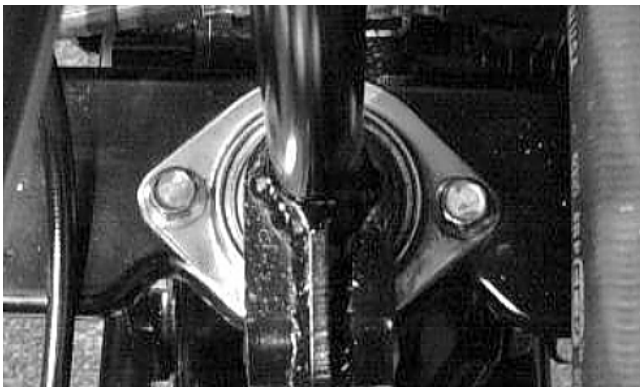
10. Connect the fuel hose to the carburetor.

11. Install the left-side panel (see Front Fender/Side Panels in this section); then install the seat (see Seat in this section).

■ **NOTE:** Turn the gas tank valve to the ON position only if starting the engine.

INSTALLING (500/650 H1/650 V-Twin)

1. Place the steering post into position; then secure the lower bearing flange to the frame with two cap screws. Tighten to specifications.



AL600D

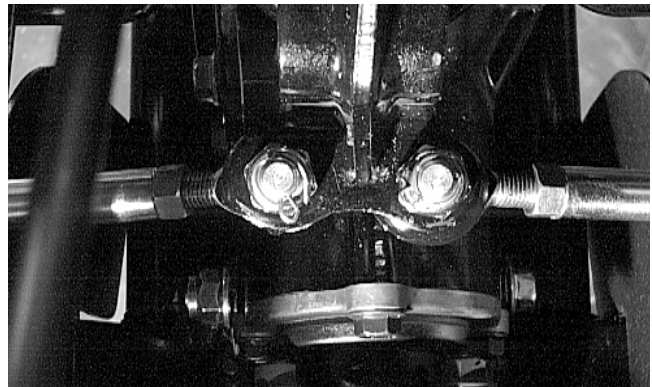
2. Place the upper steering post bearings into the housings; then position on the steering post and secure the housings to the frame with two cap screws. Tighten to specifications.



CD760

3. Install the tie rods and secure with the slotted nuts. Tighten to specifications; then install new cotter pins.

■ **NOTE:** If the slots do not align with the holes in the tie rod ends, tighten the nuts just enough to allow installation of the cotter pins.



AF778D

4. Install the splash panels; then install the front wheels and tighten to specifications using a crisscross pattern.

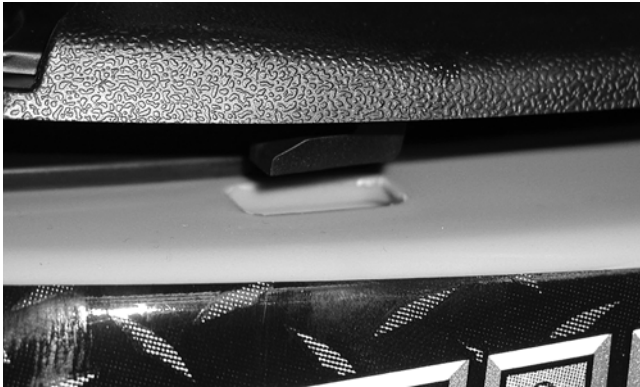
5. Lower the ATV and place the handlebar and caps into position on the steering post; then position the speedometer on top of the caps and secure with the four cap screws. Tighten to specifications.

6. Install the storage compartment box; then attach the storage compartment cover assembly by engaging the lugs into the slots and sliding rearward. Lock the storage compartment lid to hold the assembly in place.

8. Install the steering post access cover and secure with four reinstallable rivets; then install and secure the radiator access cover.



CD671



CD670

7. Place the instrument pod into position over the speedometer; then secure with two reinstallable rivets and the ignition switch locking ring.



CD677



CD676

Handlebar Grip

REMOVING

1. Remove the plug from the head of the rivet.
2. Using a 1/8-in. drill bit, drill out the rivet.
3. Using compressed air between the grip and the handlebar, twist the grip back and forth until it slides free of the handlebar.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect the grip for wear, cuts, or cracks.
2. Inspect the grip for deterioration.

INSTALLING

■ **NOTE:** Before installing a grip, use contact spray or alcohol to clean the inside of the grip and the handlebar of glue residue, oil, or any other contaminant.

1. Apply a liberal amount of Handlebar Grip Adhesive (p/n 0636-071) to the inside of the grip.
2. Align the rivet hole in the grip with the rivet hole in the handlebar; then align the notch (inside the grip) with the slot in the handlebar and slide the grip onto the handlebar until it is fully seated.
3. Wipe off any excess glue; then secure the grip with a new rivet.
4. Install the plug on the head of the rivet.

Steering Knuckles

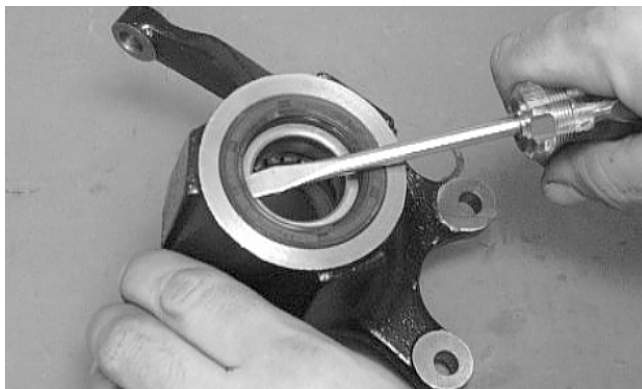
REMOVING AND DISASSEMBLING

1. Secure the ATV on a support stand to elevate the wheel; then remove the wheel.

⚠ WARNING

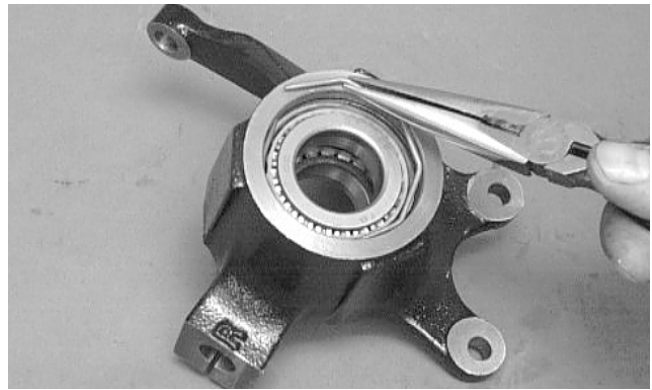
Make sure the ATV is solidly supported on the support stand to avoid injury.

2. Remove the wheel cap from the hub; then remove the cotter pin from the nut.
3. Remove the nut securing the hub.
4. Remove the brake caliper.
5. Remove the hub assembly.
6. Remove the cotter pin from the tie rod end and remove the tie rod end from the knuckle.
7. Remove the two cap screws securing the ball joints in the knuckle.
8. Tap the ball joint end out of the knuckle; then remove the knuckle.
9. Remove the seal from the knuckle.



AF725D

10. Remove the bearing retainer.



AF726D

11. Remove the bearings.

⚠ CAUTION

Use extreme care when removing the bearing. If the bearing is allowed to fall, it will be damaged and will have to be replaced.

CLEANING AND INSPECTING

NOTE: Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

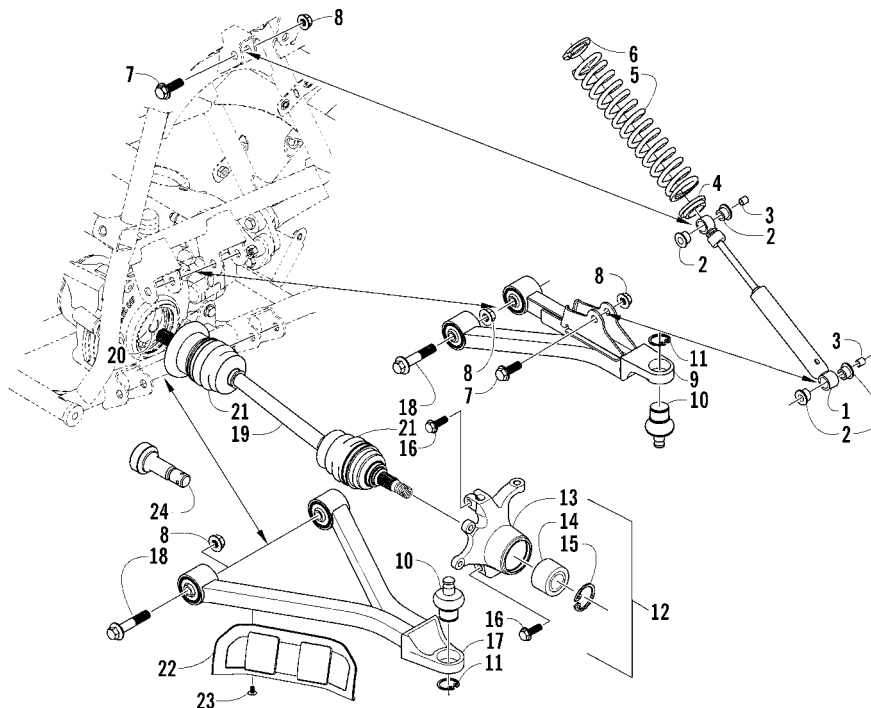
1. Clean all knuckle components.
2. Inspect the bearing for pits, gouges, rusting, or premature wear.
3. Inspect the knuckle for cracks, breaks, or porosity.
4. Inspect threads for stripping or damage.

ASSEMBLING AND INSTALLING

KEY

1. Shock Absorber
2. Bushing
3. Sleeve
4. Retainer
5. Spring
6. Retainer
7. Cap Screw
8. Lock Nut
9. A-Arm Assy
10. Ball Joint
11. Ball Joint Clip
12. Knuckle Assy
13. Knuckle
14. Bearing
15. Retaining Ring
16. Cap Screw
17. A-Arm
18. Cap Screw
19. Drive Axle (4x4)
20. Clip (4x4)
21. Boot Repair Kit (4x4)
22. Boot Guard (4x4)
23. Body Screw (4x4)
24. Stub Axle (2x4)

FRONT - 250/300

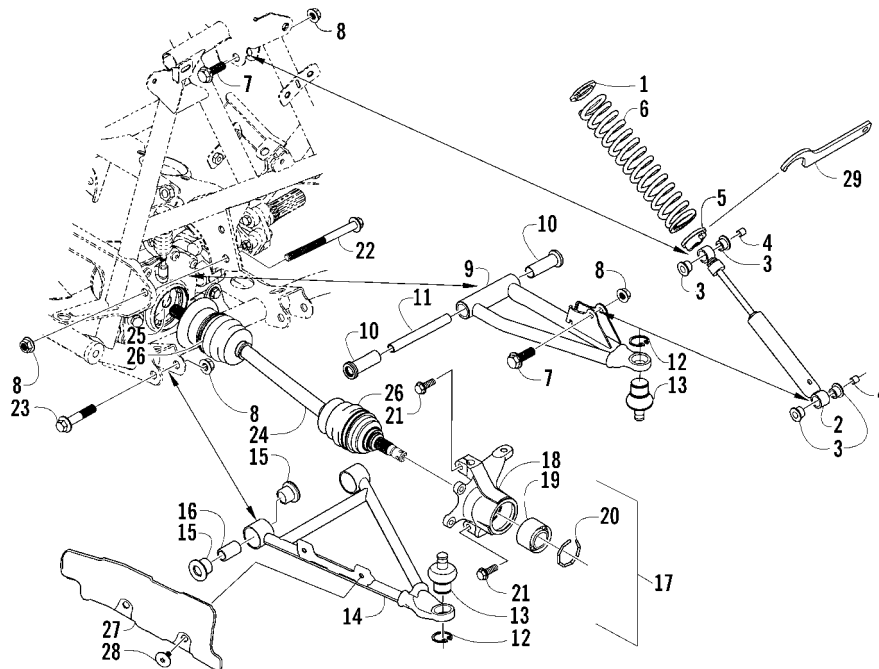


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KEY

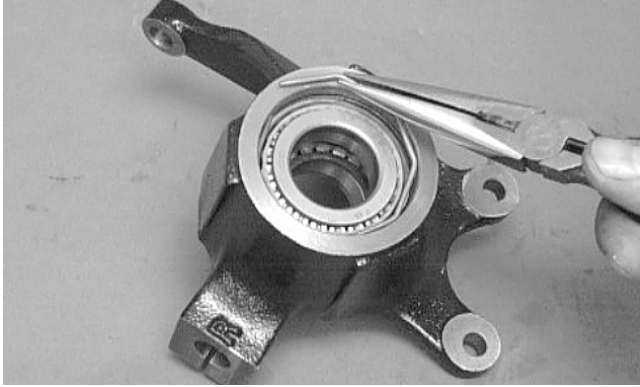
1. Retainer
2. Shock Absorber
3. Bushing
4. Sleeve
5. Adjuster Cam
6. Spring
7. Cap Screw
8. Lock Nut
9. A-Arm Assy
10. Bushing
11. Collar
12. Ball Joint Clip
13. Ball Joint
14. A-Arm
15. Bushing
16. Collar
17. Knuckle Assy
18. Knuckle
19. Wheel Hub Bearing
20. Retaining Ring
21. Cap Screw
22. Cap Screw
23. Cap Screw
24. Drive Axle
25. Clip
26. Boot Repair Kit
27. Boot Guard
28. Body Screw
29. Spanner Wrench

FRONT - 400/500/650 H1/650 V-Twin



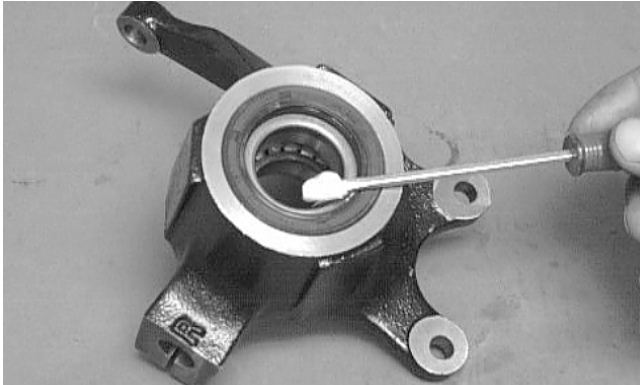
0739-603

1. Install the bearing.
2. Install the bearing retainer.



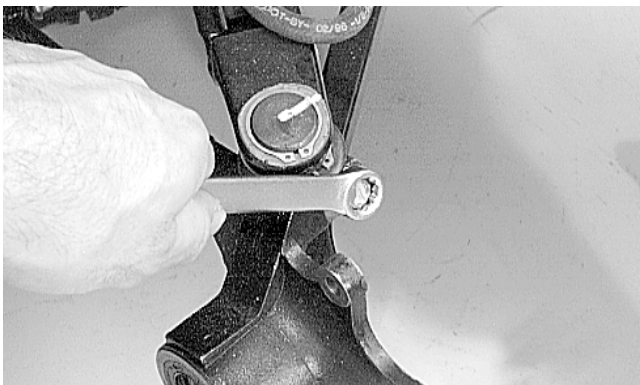
AF726D

3. Install a new seal into the knuckle making sure the seal is flush with the knuckle.
4. Apply grease to the seal.



AF724D

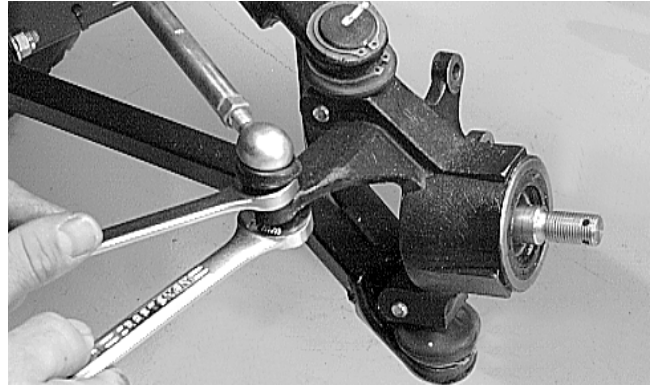
5. Install the knuckle to the upper and lower ball joints and secure with the two cap screws. Tighten to specifications.



AF760D

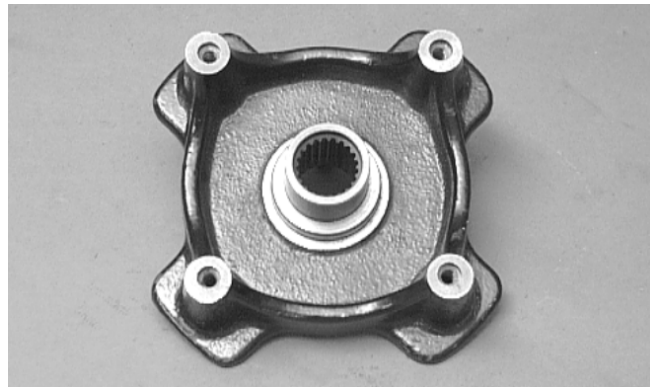
6. Install the tie rod end and secure with the nut. Tighten to specifications; then install a new cotter pin and spread the pin.

■ **NOTE:** During assembling, new cotter pins should be installed.



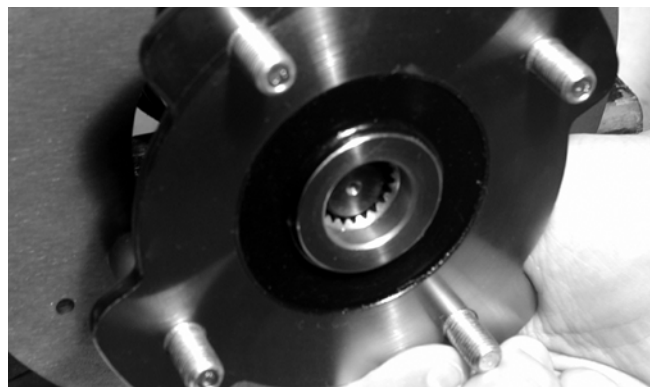
AF759D

7. Apply a small amount of grease to the hub splines.



AF736D

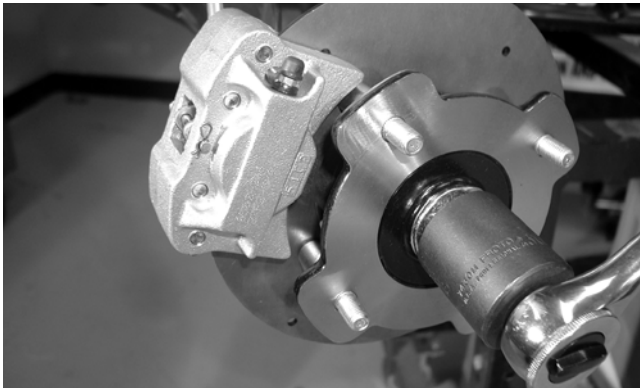
8. Install the hub assembly onto the splines of the shaft.



CD009

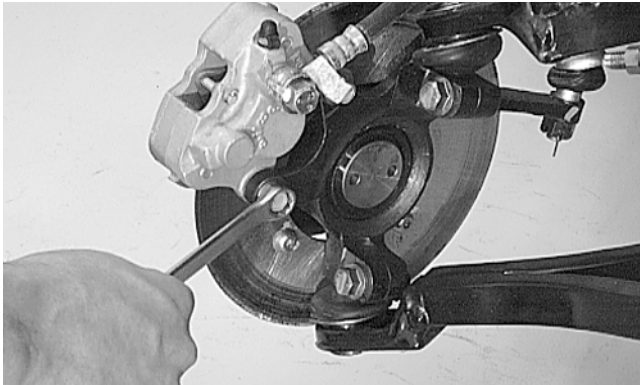
9. Secure the hub assembly with the nut. Tighten only until snug.

Measuring/Adjusting Toe-In



CD015

- Secure the brake caliper to the knuckle with the two cap screws. Tighten to specifications.



AF746D

- Pump the hand brake lever; then engage the brake lever lock.
- Secure the hub nut (from step 9) to the shaft. Tighten to specifications.
- Install a new cotter pin and spread the pin to secure the nut.
- Install the wheel; then using a crisscross pattern, tighten to specifications.



CD006

- Remove the ATV from the support stand.



CD005

- Place the ATV in a level position taking care not to push down or lift up on the front end; then turn the handlebar to the straight ahead position.

■ **NOTE:** When measuring and adjusting, there should be a normal operating load on the ATV (without an operator but with Arctic Cat approved accessories).

- Measure the distance from the outside edge of each handlebar grip to the seat catch brackets.



CD012A

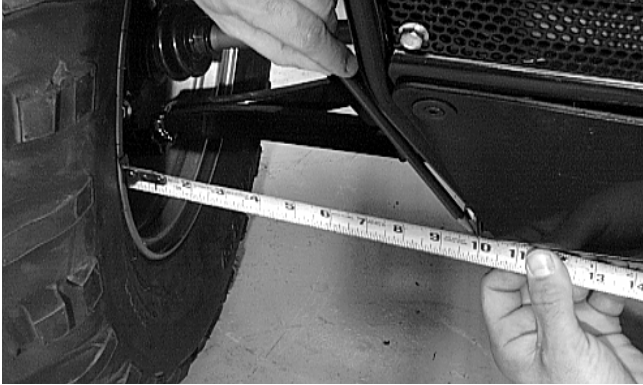
- Adjust the handlebar direction until the two measurements are equal; then secure the handlebar to the rear rack using tie-down straps.

■ **NOTE:** Care must be taken not to allow the handlebar to turn while securing it.



CD014

6. Measure the distance from the inside of each front rim to the lower frame tube.



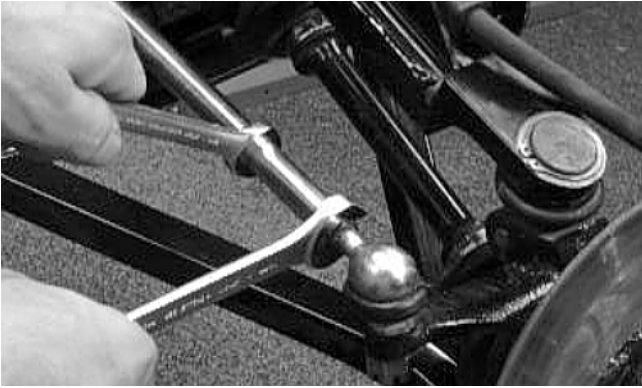
AF785D



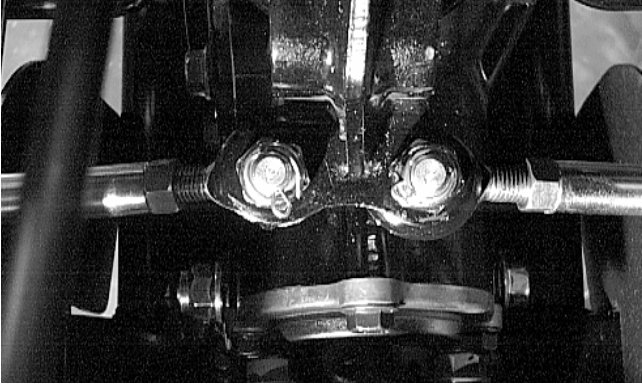
AF786D

■ **NOTE:** The distances from the inside rims to the frame tubes should be equal. If the measurements are equal, proceed to step 8; if the measurements are not equal, proceed to step 7.

7. To make the measurements equal, loosen the appropriate tie rod jam nuts and adjust accordingly; then proceed to step 8.



AF617D



AF778D

■ **NOTE:** The front wheels do not have to be removed to adjust the tie rod. Also, care should be taken not to disturb the handlebar position.

8. Using a permanent marker of some type, mark the center of each front tire (at a height parallel to the belly panel).



AF789D

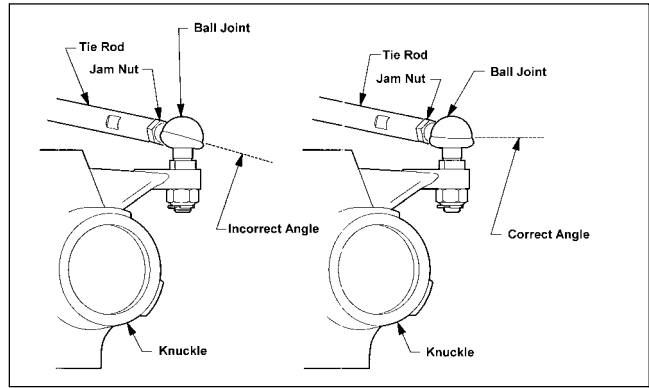
9. Measure the distance between the marks (at a height parallel to the belly panel) at the front side; then record the measurement.

10. Push the ATV forward until the marks are parallel to the belly panel on the back side; then measure the distance between the marks.

11. The difference in the measurements must show 3.2-6.4 mm (1/8-1/4 in.) toe-in (the front measurement 3.2-6.4 mm (1/8-1/4 in.) less than the rear measurement).

12. If the difference in the measurements is not within specifications, adjust both tie rods equally until within specifications.

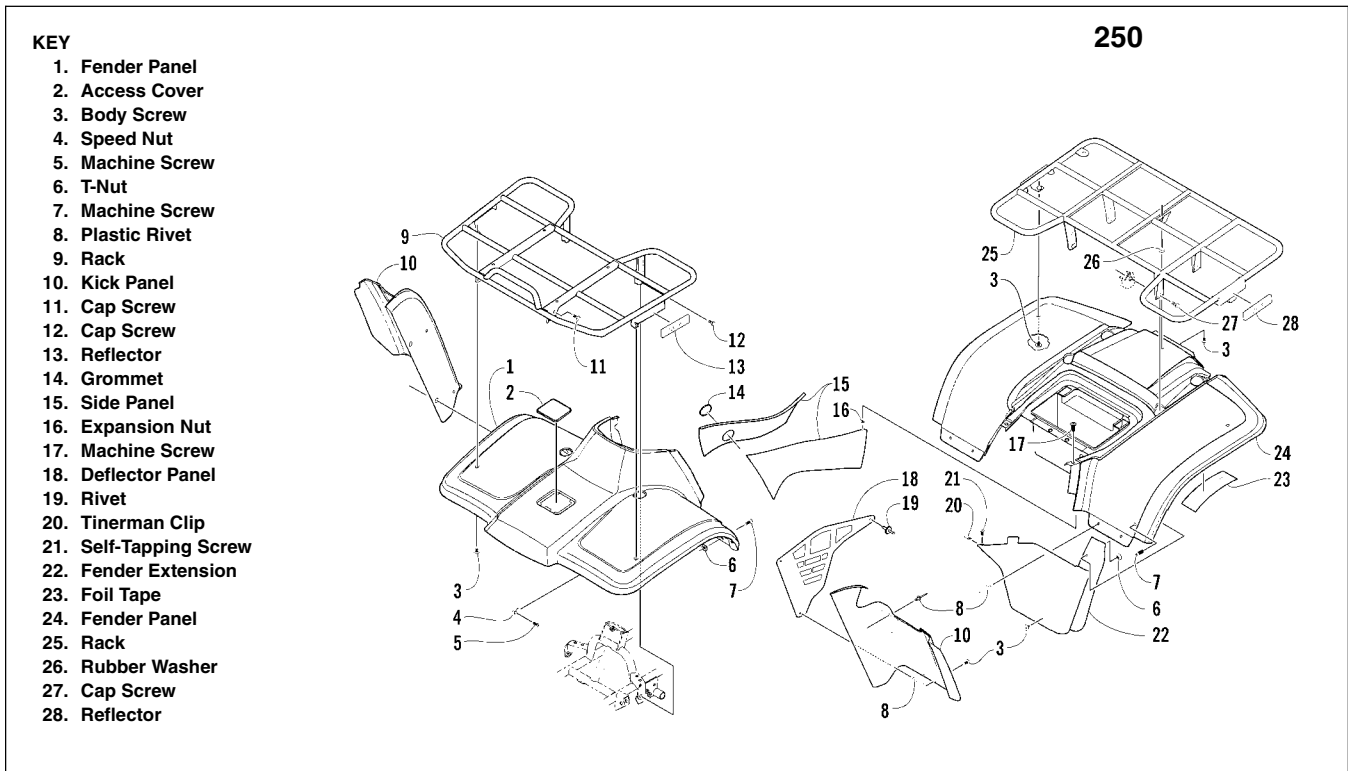
■ **NOTE:** Prior to locking the jam nuts, make sure the ball joints are at the center of their normal range of motion and at the correct angle.



733-559A

Body Panel Assembly Schematics

■ **NOTE:** Some components may vary from model to model. The technician should use discretion and sound judgment.



0739-717

KEY

1. Rack
2. Decal
3. Bushing
4. Bushing
5. Cap Screw
6. Cap Screw
7. Decal
8. Flare
9. Stamped Nut
10. Fender Panel
11. Access Cover
12. Machine Screw
13. Speed Nut
14. Machine Screw
15. Shoulder Screw
16. T-Nut
17. Self-Tapping Screw
18. Grommet
19. Side Panel
20. Expansion Nut
21. Deflector Panel
22. Rivet
23. Plastic Rivet
24. Fender Panel
25. Cable Tie
26. Kick Panel

Front - 300

0739-437

KEY

1. Rack
2. Decal
3. Decal
4. Bushing
5. Bushing
6. Cap Screw
7. Decal
8. Machine Screw
9. Plastic Rivet
10. Fender Panel
11. Foil Tape
12. Flare
13. Self-Tapping Screw
14. Shoulder Screw
15. T-Nut
16. Machine Screw
17. Fender Extension
18. Clip
19. Self-Tapping Screw

Rear - 300

0739-438

400 FIS/ACT/TRV

KEY

1. Rack	25. Cable Tie
2. Decal	26. Kick Panel
3. Bushing	27. Rivet
4. Bushing	28. Machine Screw
5. Cap Screw	29. T-Nut w/Teeth
6. Cap Screw	30. Flare Extension
7. Reflector	
8. Flare	
9. Stamped Nut	
10. Fender Panel	
11. Access Cover	
12. Body Screw	
13. Speed Nut	
14. Machine Screw	
15. Self-Tapping Screw	
16. Grommet	
17. Side Panel	
18. Heat Shield	
19. Expansion Nut	
20. Shoulder Screw	
21. T-Nut w/Teeth	
22. Rivet	
23. Fender Panel (Auto/TRV)	
24. Fender Panel	

0739-507

Rear - 400 FIS/ACT

KEY

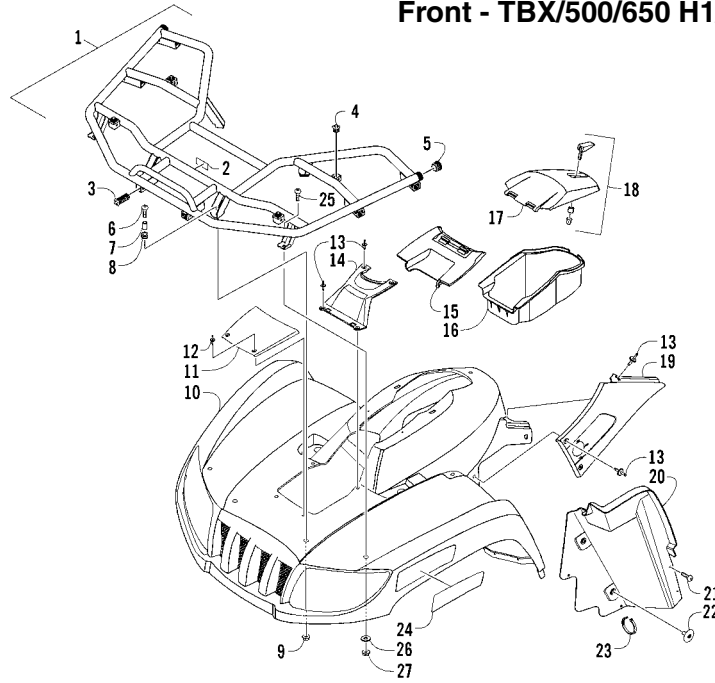
1. Rack
2. Decal
3. Decal
4. Bushing
5. Bushing
6. Cap Screw
7. Reflector
8. Body Screw
9. Rivet
10. Fender Panel
11. Shield
12. Key
13. Spring
14. Machine Screw
15. Heat Shield
16. Heat Shield
17. Flare
18. Self-Tapping Screw
19. Shoulder Screw
20. T-Nut w/Teeth
21. Fender Extension
22. Heat Shield
23. Self-Tapping Screw
24. Clip

0739-511

KEY

- 1. Rack
- 2. Decal
- 3. Bushing
- 4. Bushing
- 5. Plug
- 6. Machine Screw
- 7. Spacer
- 8. Grommet
- 9. Lock Nut
- 10. Fender Panel
- 11. Access Cover
- 12. Rivet
- 13. Rivet
- 14. Cover
- 15. Cover
- 16. Storage Compartment
- 17. Compartment Lid
- 18. Latch
- 19. Side Panel
- 20. Splash Panel
- 21. Self-Tapping Screw
- 22. Body Screw
- 23. Cable Tie
- 24. Reflector
- 25. Shoulder Screw
- 26. Washer
- 27. Lock Nut

Front - TBX/500/650 H1/650 V-Twin

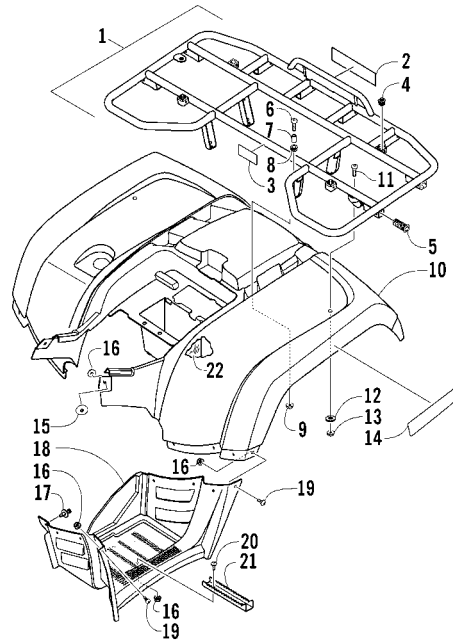


0739-662

KEY

- 1. Rack
- 2. Decal
- 3. Decal
- 4. Bushing
- 5. Bushing
- 6. Machine Screw
- 7. Spacer
- 8. Grommet
- 9. Lock Nut
- 10. Fender Panel
- 11. Shoulder Screw
- 12. Washer
- 13. Lock Nut
- 14. Reflector
- 15. Body Screw
- 16. Lock Nut
- 17. Rivet
- 18. Footwell
- 19. Machine Screw
- 20. Shoulder Screw
- 21. Foot Peg
- 22. Heat Shield

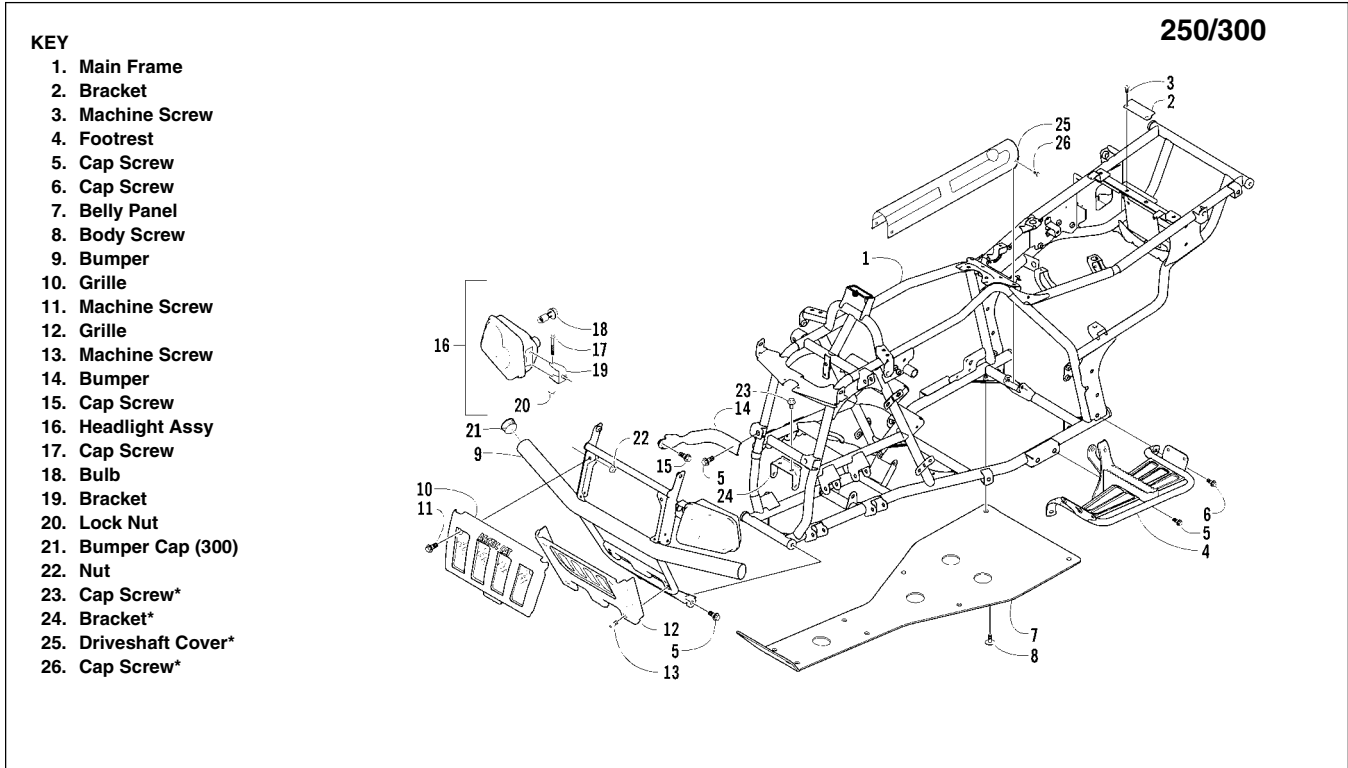
Rear - 500/650 H1/650 V-Twin



0739-665

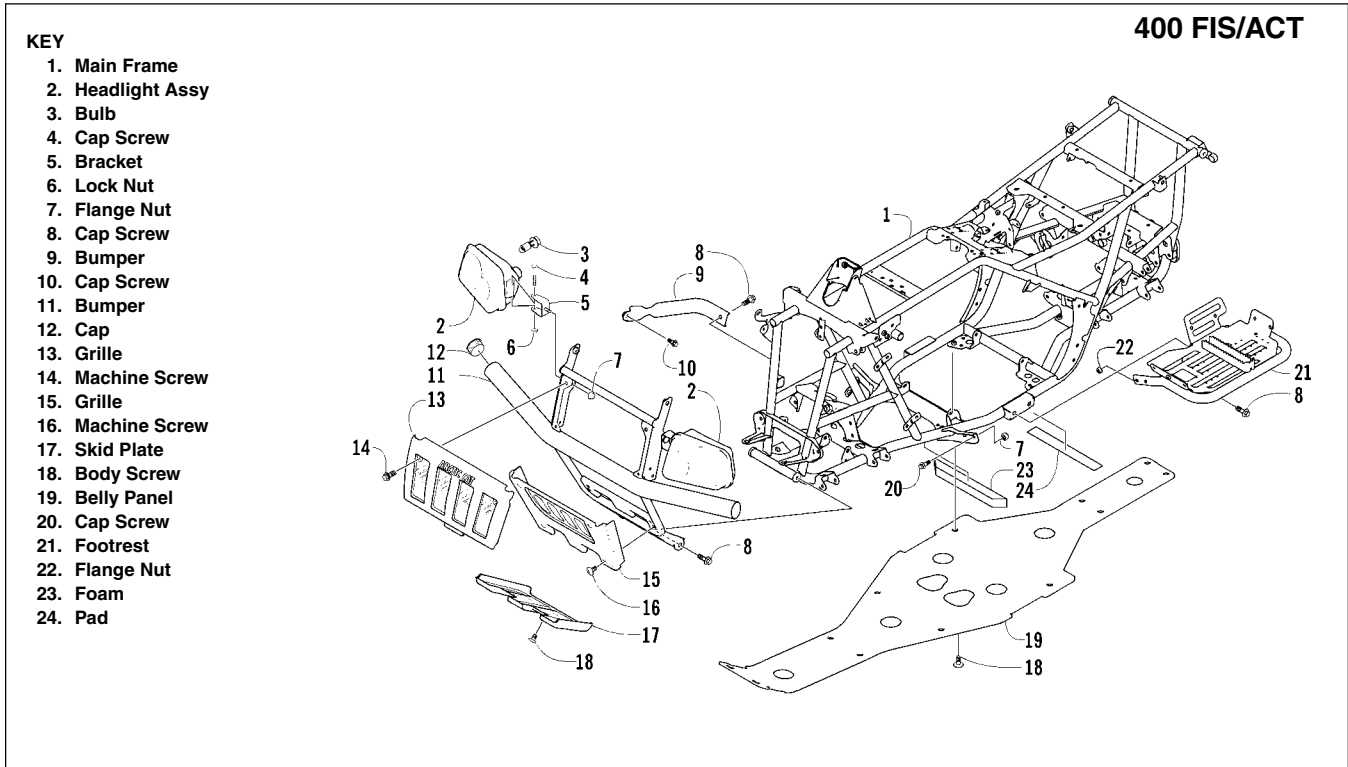
Frame/Exhaust Assembly Schematics

■ NOTE: Some components may vary from model to model. The technician should use discretion and sound judgment.



*4x4 Models

0737-752



0739-524

500 FIS

KEY

1. Main Frame
2. Headlight Assy
3. Bulb
4. Socket
5. Mounting Stud
6. Adjuster
7. Spring
8. Knob
9. Cap Screw
10. Mounting Channel
11. Bracket
12. Cap Screw
13. Bumper
14. Grille
15. Machine Screw
16. Body Screw
17. Lock Nut
18. Brace
19. Cap Screw
20. Belly Panel
21. Foam
22. Pad
23. Flange Nut
24. Cap Screw
25. Footrest
26. Support Rod

0739-686

TRV

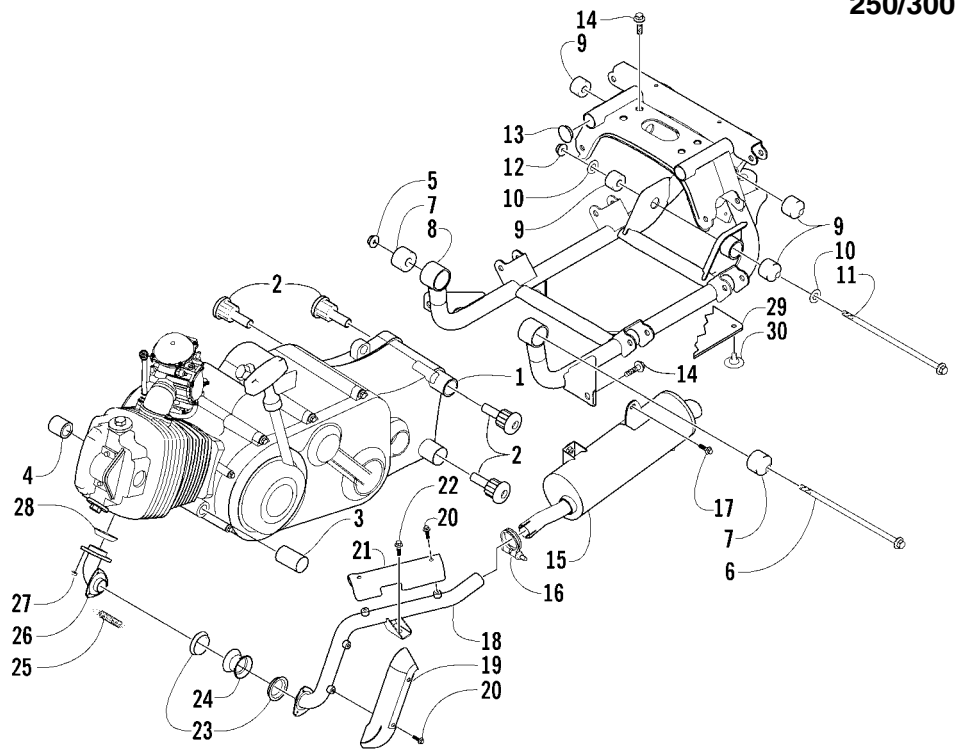
KEY

1. Main Frame
2. Headlight Assy
3. Bulb
4. Cap Screw
5. Bracket
6. Flange Nut
7. Flange Nut
8. Cap Screw
9. Bumper
10. Bumper Cap
11. Grille
12. Machine Screw
13. Skid Plate
14. Belly Panel
15. Body Screw
16. Grille
17. Machine Screw
18. Cap Screw
19. Mounting Channel
20. Cap Screw
21. Flange Nut
22. Footrest
23. Footrest
24. Machine Screw
25. Rubber Mount
26. Support Rod
27. Cap Screw
28. Washer
29. Pad
30. Foam

0739-649

250/300

- KEY**
- 1. Engine
 - 2. Engine Mount
 - 3. Spacer
 - 4. Spacer
 - 5. Nut
 - 6. Cap Screw
 - 7. Engine Mount
 - 8. Sub-Frame
 - 9. Engine Mount
 - 10. Washer
 - 11. Cap Screw
 - 12. Nut
 - 13. Cap
 - 14. Cap Screw
 - 15. Muffler
 - 16. Clamp
 - 17. Cap Screw
 - 18. Exhaust Pipe
 - 19. Cover
 - 20. Cap Screw
 - 21. Cover
 - 22. Cap Screw
 - 23. Gasket
 - 24. Coupler
 - 25. Extension Spring
 - 26. Header Pipe
 - 27. Nut
 - 28. Seal
 - 29. Belly Panel*
 - 30. Body Screw*

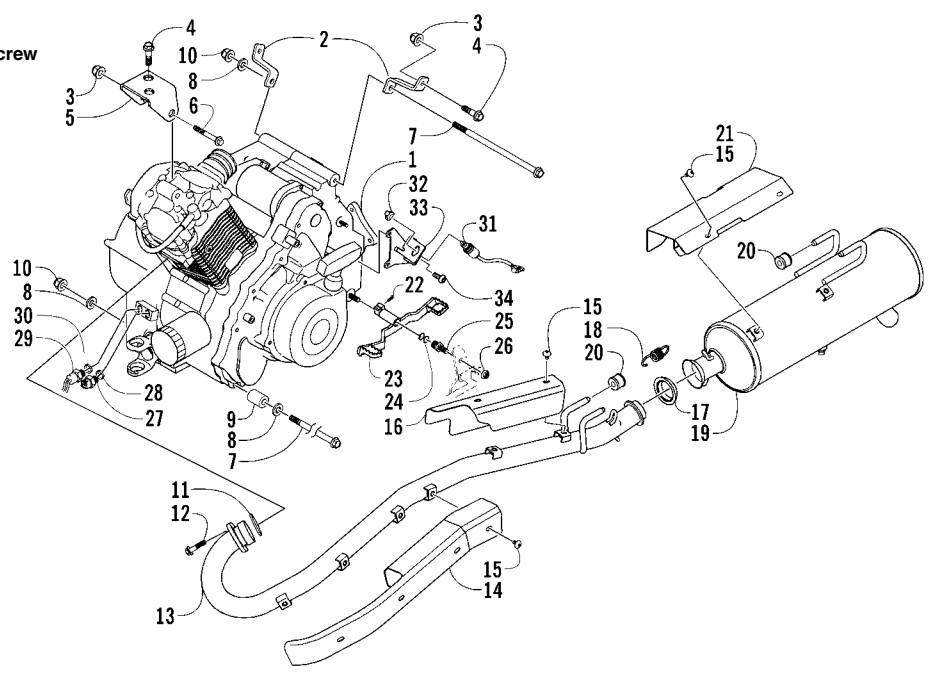


* 300

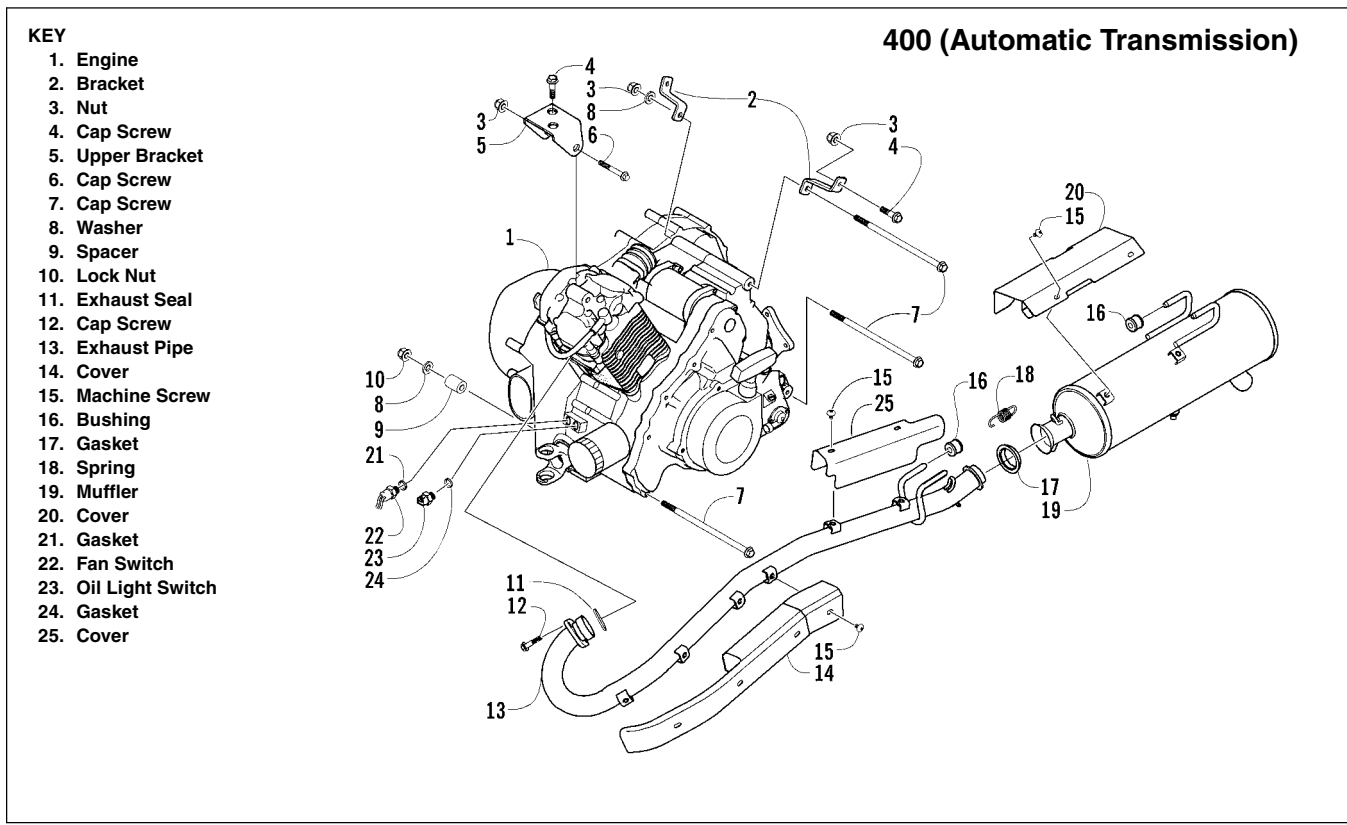
0738-333

400 (Manual Transmission)

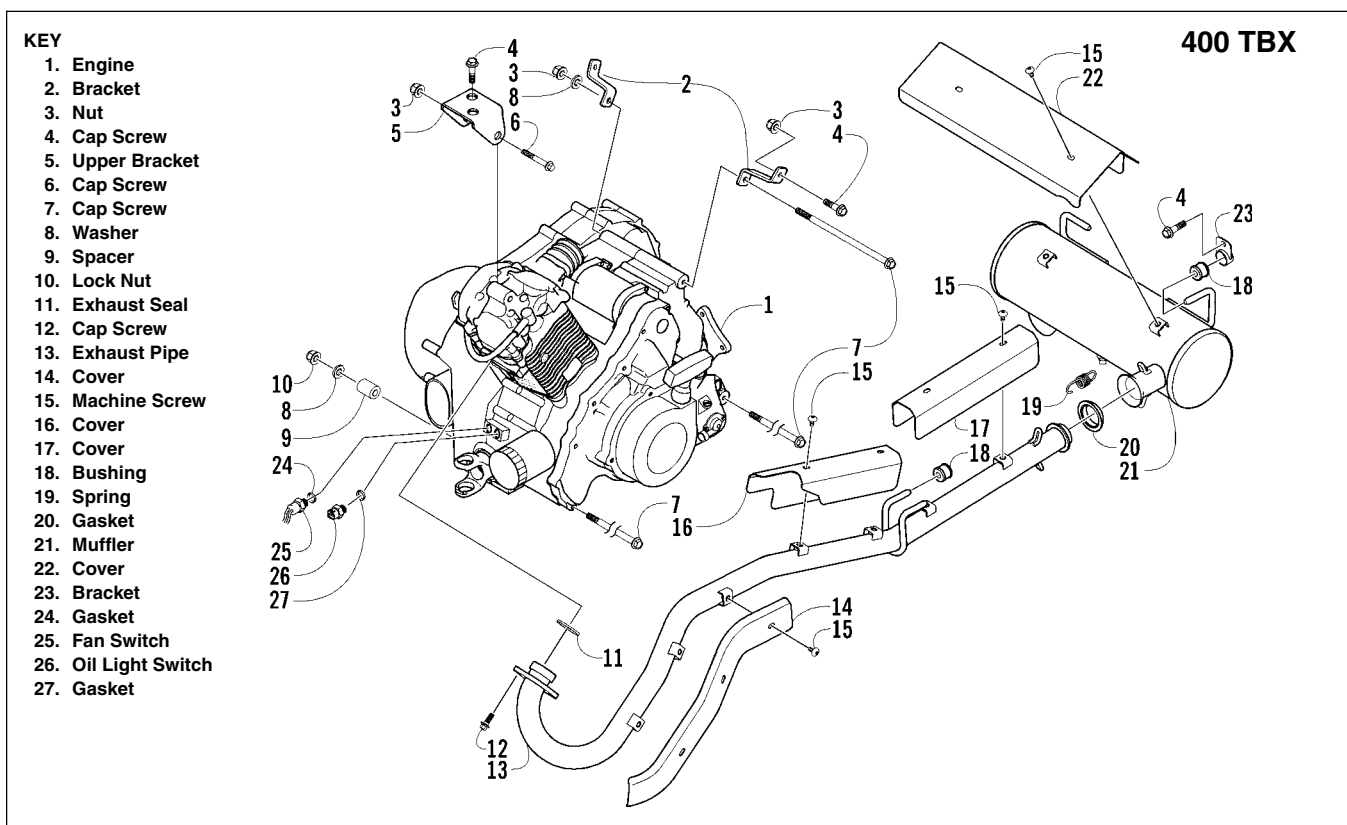
- KEY**
- 1. Engine
 - 2. Bracket
 - 3. Nut
 - 4. Cap Screw
 - 5. Engine Bracket
 - 6. Cap Screw
 - 7. Cap Screw
 - 8. Washer
 - 9. Spacer
 - 10. Lock Nut
 - 11. Exhaust Seal
 - 12. Cap Screw
 - 13. Exhaust Pipe
 - 14. Cover
 - 15. Machine Screw
 - 16. Cover
 - 17. Gasket
 - 18. Spring
 - 19. Muffler
 - 20. Bushing
 - 21. Cover
 - 22. Machine Screw
 - 23. Shift Lever
 - 24. O-Ring
 - 25. Pin
 - 26. Nut
 - 27. Oil Light Switch
 - 28. Gasket
 - 29. Fan Switch
 - 30. Gasket
 - 31. Reverse Switch
 - 32. Retainer
 - 33. Bracket
 - 34. Machine Screw



0739-589



0739-572



0738-812

KEY

1. Engine
2. Cap Screw
3. Washer
4. Spacer
5. Lock Nut
6. Bracket
7. Cap Screw
8. Nut
9. Cap Screw
10. Upper Bracket
11. Exhaust Seal
12. Cap Screw
13. Exhaust Pipe
14. Cover
15. Machine Screw
16. Cover
17. Cover
18. Bushing
19. Spring
20. Gasket
21. Muffler
22. Cover
23. Bracket

500 TRV

0739-653

KEY

1. Engine
2. Cap Screw
3. Washer
4. Spacer
5. Lock Nut
6. Cap Screw
7. Bracket
8. Cap Screw
9. Nut
10. Seal
11. Cap Screw
12. Exhaust Pipe Assy
13. Shield
14. Shield
15. Shield
16. Shield
17. Shield
18. Shield
19. Band Tie
20. Exhaust Pipe
21. Bushing
22. Clamp
23. Seal
24. Muffler
25. Bushing
26. Shoulder Screw
27. Cover
28. Machine Screw

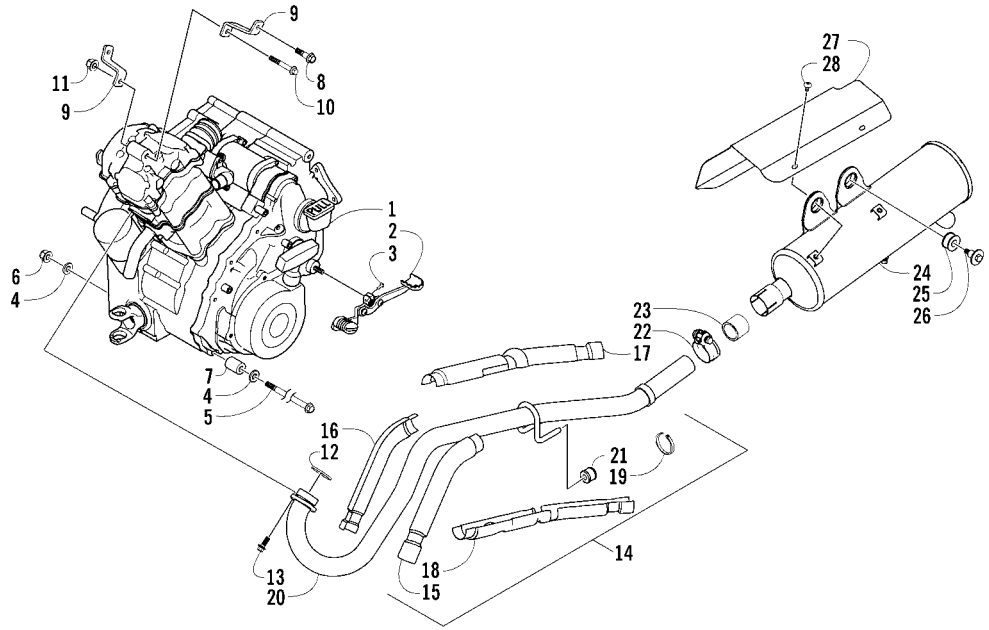
500/500 TBX (Automatic Transmission)/650 H1

0739-711

500 (Manual Transmission)

KEY

- 1. Engine
- 2. Shift Lever
- 3. Machine Screw
- 4. Washer
- 5. Cap Screw
- 6. Lock Nut
- 7. Spacer
- 8. Cap Screw
- 9. Bracket
- 10. Cap Screw
- 11. Nut
- 12. Exhaust Seal
- 13. Cap Screw
- 14. Exhaust Pipe Assy
- 15. Shield
- 16. Shield
- 17. Shield
- 18. Shield
- 19. Band Tie
- 20. Exhaust Pipe
- 21. Bushing
- 22. Clamp
- 23. Seal
- 24. Muffler
- 25. Bushing
- 26. Shoulder Screw
- 27. Cover
- 28. Machine Screw

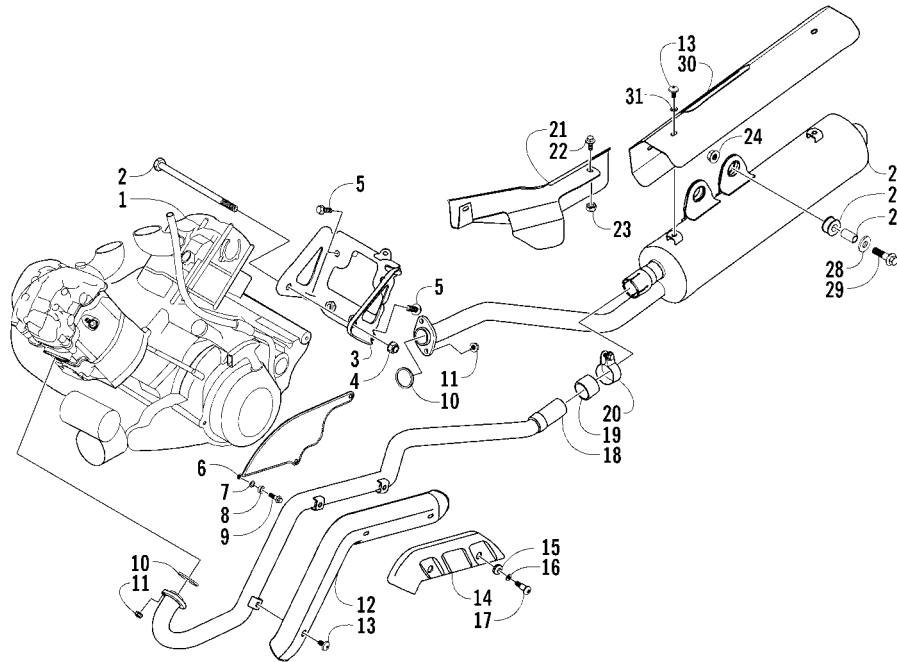


0739-742

650 V-Twin

KEY

- 1. Engine
- 2. Cap Screw
- 3. Engine Bracket
- 4. Nut
- 5. Cap Screw
- 6. Heat Guard Plate
- 7. Collar
- 8. Damper
- 9. Cap Screw
- 10. Exhaust Gasket
- 11. Nut
- 12. Front Exhaust Cover
- 13. Machine Screw
- 14. Exhaust Pipe Cover
- 15. Grommet
- 16. Washer
- 17. Shoulder Screw
- 18. Exhaust Pipe
- 19. Exhaust Seal
- 20. Clamp
- 21. Rear Exhaust Cover
- 22. Cap Screw
- 23. Nut w/Washer
- 24. Lock Nut
- 25. Muffler
- 26. Muffler Bushing
- 27. Collar
- 28. Washer
- 29. Cap Screw
- 30. Muffler Cover
- 31. External Tooth Lock Washer



0739-131

Front Rack

REMOVING

1. Remove the two cap screws securing the fenders to the rack.



AF600DA

2. Remove the cap screws securing the rack to the frame and front bumper assembly.
3. Remove the front rack from the ATV.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all rack components with parts-cleaning solvent.
2. Inspect all welds for cracking or bending.
3. Inspect threaded areas of all mounting bosses for stripping.
4. Inspect for missing decals and/or reflectors.

INSTALLING

1. Place the rack into position on the frame and bumper. Start the cap screws and finger-tighten only.
2. Install the two cap screws securing the rack to the fenders. Tighten all hardware securely.

Front Bumper Assembly

REMOVING

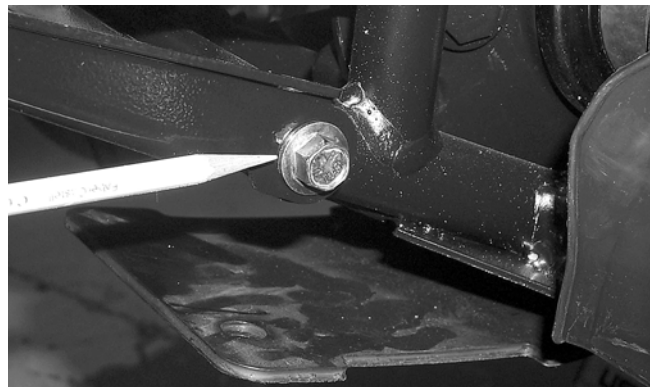
■ **NOTE:** Remove the headlights with the front bumper.

1. Remove the main wiring harness connectors from the four headlights.
2. Remove the two screws securing the grille to the front bumper.
3. Remove the two push nuts securing the fender extension to the front bumper. Push the fender extension studs out of the front bumper.



CC856

4. Remove the four cap screws securing the front skid plate to the front bumper.
5. Remove the two cap screws securing the front bumper to the frame.



CC858

6. Remove the two cap screws securing the front bumper to the front bumper supports.

5. Connect the wiring to each of the headlights.



CC857

7. Remove the front bumper with headlights.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all bumper components with parts-cleaning solvent.
2. Inspect all welds for cracking or bending.
3. Inspect threaded areas of all mounting bosses for stripping.
4. Inspect the wiring harness and headlights for damage.
5. Inspect the screen for damage or air-flow obstructions.

INSTALLING

1. Place the front bumper assembly into position on the frame and secure with four cap screws. Tighten securely.
2. Secure the front skid plate to the front bumper with the four cap screws. Tighten securely.
3. Place the two fender extension studs through the front bumper and secure with the existing push nuts.



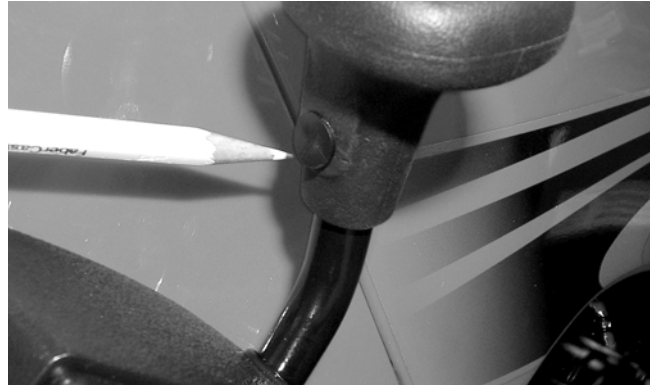
CC856

4. Position the grille in the front bumper and secure.

Front Fender/ Side Panels (250/300/400 FIS/ACT/TRV)

REMOVING

1. Remove the front rack (see Front Rack in this section).
2. Remove the three cap screws securing the two side panels to the frame and rear fenders; then remove the side panels.
3. Using a small flat-blade screwdriver, carefully remove the retaining pin securing the gear shift knob to the shift lever; then remove the knob from the lever.



CC852

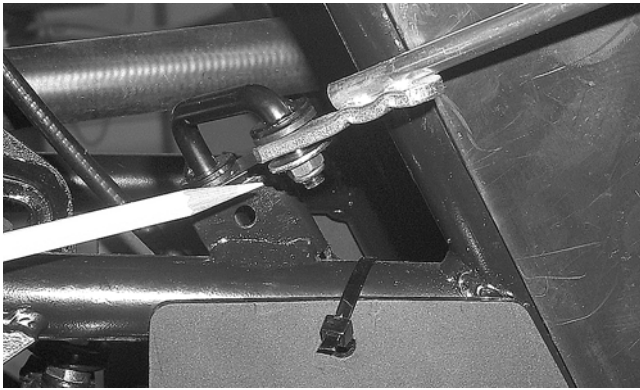
4. Remove the three machine screws securing the gear shift linkage cover to the fender and remove the cover.

■ **NOTE:** The cover is located inside the left-front wheel well.



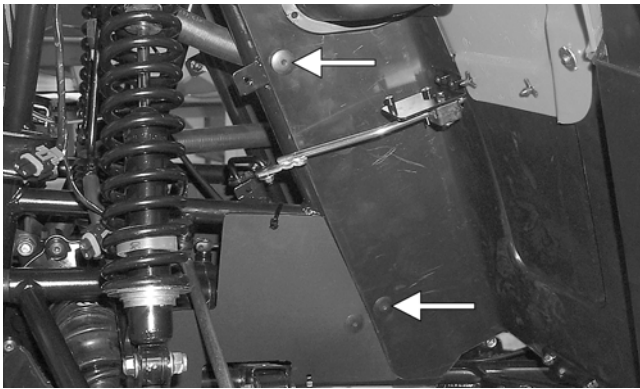
CC851

5. Remove the nut securing the drive selector linkage. Account for a washer and bushing.

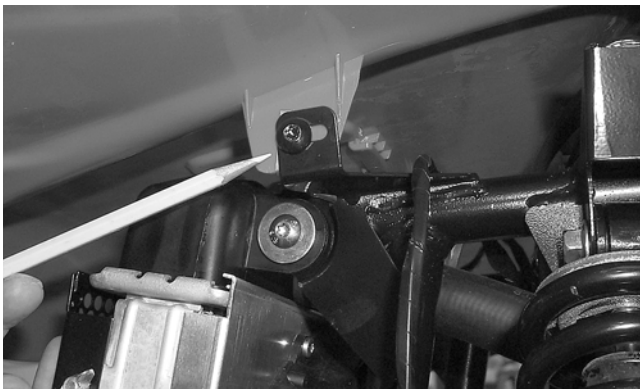


CC853

6. Remove the six cap screws securing the fender to the frame.

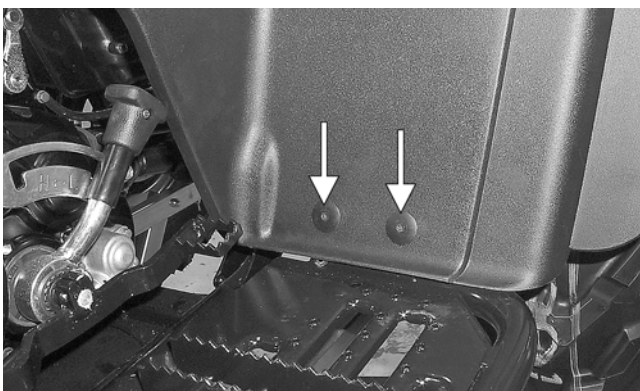


CC854A



CC855

7. Remove the four cap screws and nuts securing the fender to the footrests.



CC861A

8. Disconnect the wires from the accessory plug (if equipped); then remove the accessory plug from the fender.

9. Remove the fenders from the ATV.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

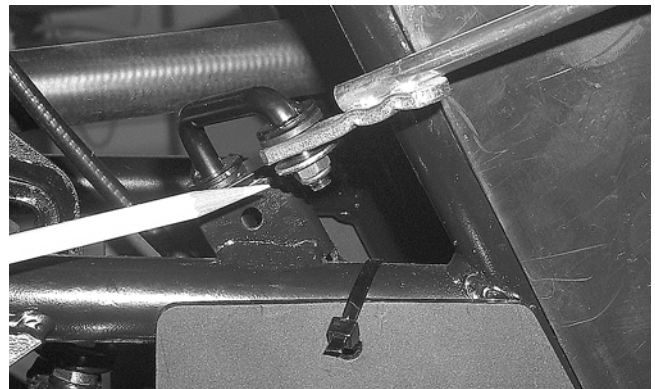
1. Clean all fender components with part-cleaning solvent and soap and water.
2. Inspect fenders for cracks and/or loose rivets.
3. Inspect for any missing decals.

INSTALLING

1. Place the fenders into position on the ATV.
2. Install the accessory plug (if equipped) into the fender; then connect the two accessory plug wires.

■ **NOTE:** The accessory plug red wire goes on the center connector.

3. Install the cap screws (five per side) securing the fenders to the frame and footrests and finger-tighten; then tighten the ten fasteners securely.
4. Connect the drive selector linkage using existing hardware. Tighten securely.



CC853

5. Install the gear shift linkage cover in the left-front fender well. Tighten securely.



CC851

6. Place the gear shift knob into position on the shift lever and secure with the retaining pin.
7. Place the side panels into position and secure.
8. Install the front rack (see Front Rack in this section).



CD667

2. Unlock the storage compartment lid; then slide the storage compartment cover assembly forward and lift off the storage compartment.



CD669

Front Body Panel/ Side Panels

(400 TBX/500/650 H1/650 V-Twin)

REMOVING

1. Remove the reinstallable rivets securing the radiator access cover and remove the cover; then remove four reinstallable rivets securing the steering post cover and remove the cover.



CD666



CD671

3. Remove the storage compartment box; then remove the seat.

4. Remove the ignition switch lock collar and two reinstallable rivets securing the instrument pod; then remove the instrument pod.

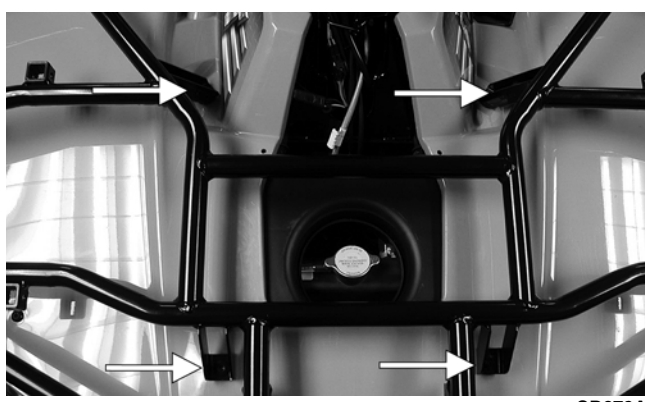


CD676

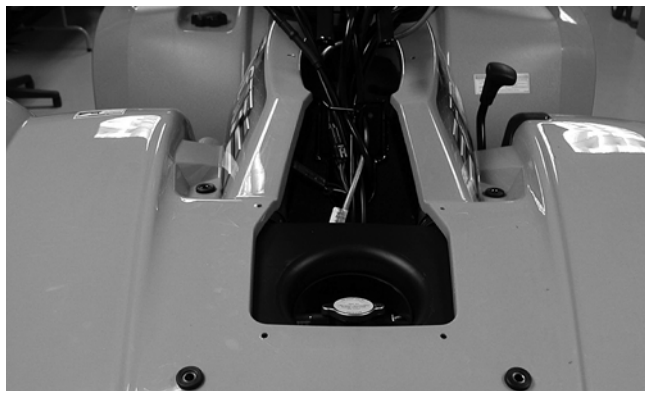


CD678

5. Remove four machine screws and lock nuts securing the front rack to the frame; then remove the front rack. Account for four grommets and four bushings.

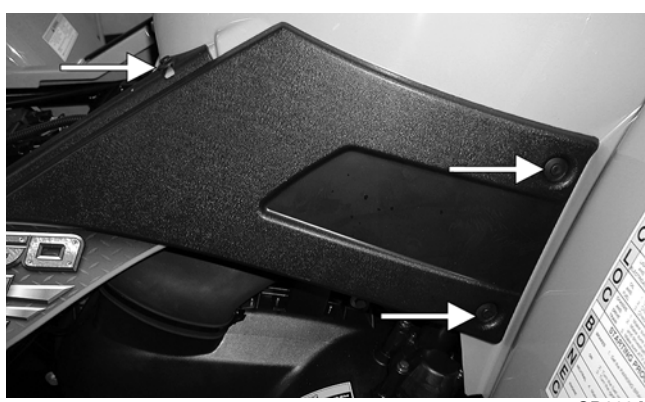


CD679A

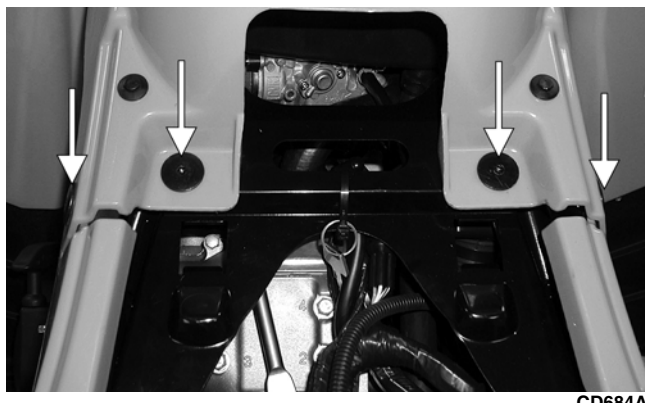


CD680

6. Remove three reinstallable rivets securing the right side panel; then remove two torx-head cap screws securing the rear of the front panel to the frame.



CD683A



CD684A

7. Remove the torx-head cap screws and nylon ties securing the left-side and right-side splash panels; then remove the panels.

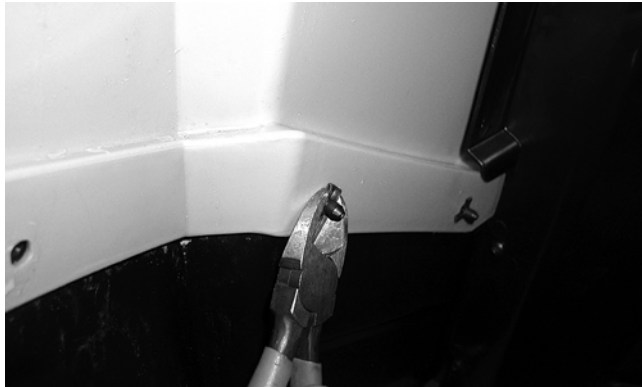


CD685

8. Remove one shoulder screw and four plastic rivets on each side to separate the front panel lower fenders from the left-side and right-side footwells.



CD691

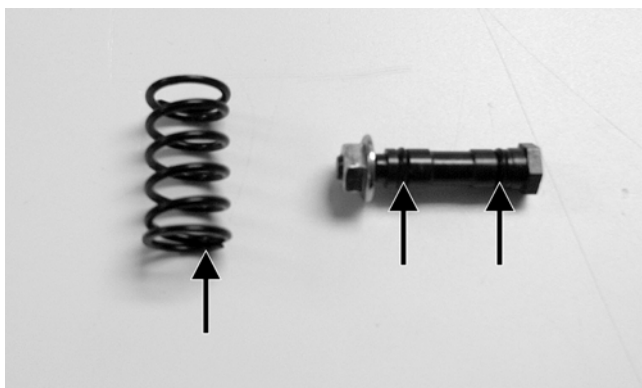


CD682

9. Remove the shift knob retaining pin and remove the shift knob; then remove the shift lever pivot axle nut and remove the axle and shift lever. Account for a spring and two O-rings.



CD779



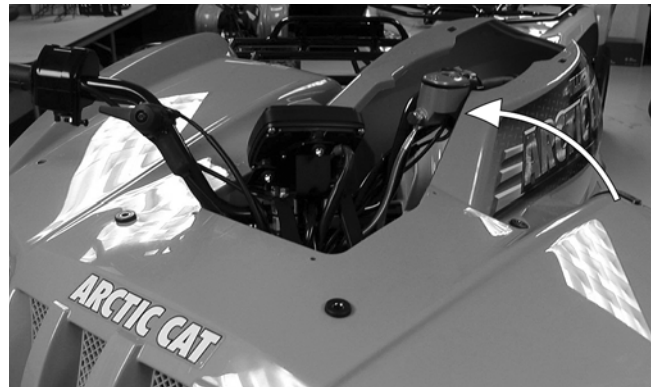
CD780A

10. Disconnect four headlight connectors and secure the wires out of the way; then disconnect the wires to the front accessory plug.



CD681

11. Rotate the handlebar to the full-left position; then lift and slide the panel to the rear and lift the rear up to clear the handlebar.



CD765A

■ **NOTE:** It may be necessary to rotate the body panel to the right to align the opening with the handlebar.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all fender components with part-cleaning solvent and soap and water.
2. Inspect fenders for cracks and/or loose rivets.
3. Inspect for any missing decals.

INSTALLING

1. Rotate the handlebar to the full-left position; then place the front body panel over the handlebar and rotate and lower into position.



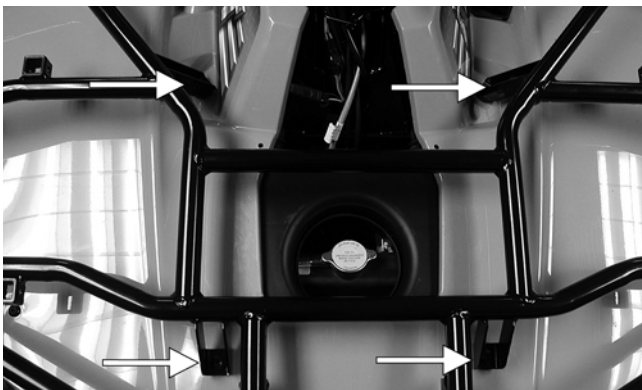
CD765

2. Connect the headlight connectors to the appropriate headlights and the front accessory plug wires to the accessory plug.



CD681

3. Make sure the four rubber grommets and bushings are in place; then place the front rack into position and secure with four machine screws and flange nuts. Tighten securely.

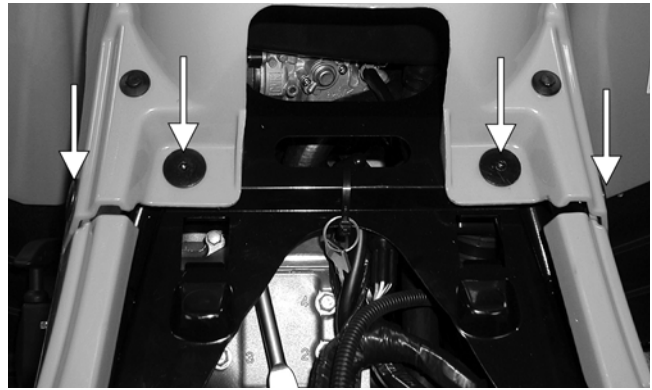


CD679A

4. Install one machine screw and flange nut and four plastic rivets on each side to secure the front fenders to the footwells. Tighten the flange nuts securely.

■ **NOTE:** If the footwells have been removed, see **Footrests** in this section.

5. Install four cap screws securing the front body panel to the frame and rear panel.



CD684A

6. Install the shift lever spring, shift lever, and pivot axle; then tighten the axle nut securely.



CD779

7. Install the left-side and right-side splash panels and tighten the cap screws securely. Install new nylon ties in the appropriate locations.

8. Install the instrument pod and ignition switch; then secure with two reinstallable rivets and the ignition switch lock collar.

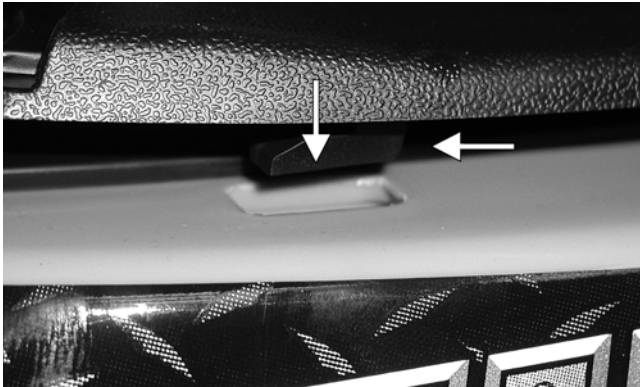


CD676

9. Set the storage compartment box into position; then install the storage compartment cover making sure the mounting lugs engage the slots. Slide rearward to secure and lock by engaging the lid lock.



CD671



CD670A

10. Install the steering post cover and secure with the reinstallable rivets; then install and secure the radiator access panel.
11. Install the left and right side panels and secure with reinstallable rivets.



CD683A

Fender Flares/ Extensions

(250/300/400 FIS/ACT/TRV)

REMOVING

1. Using a side-cutter, remove the appropriate plastic rivets.

■ **NOTE:** To remove a front extension, first remove the grille; then remove the push nuts securing the extension to the bumper.

2. Remove the cap screws securing the extensions or flares to the frame and footrest.
3. Remove the self-tapping screws securing the extension to the fender.

INSTALLING

1. Place the flare or extension into position. Using the Plastic Rivet Setter (p/n 0444-056), secure with Plastic Rivets (p/n 0423-046) or suitable substitute.
2. Secure the extensions or flares with the cap screws and self-tapping screws.

Footrests

REMOVING (250/300/400 FIS/ACT)

1. Remove the cap screws securing the fender extension to the footrest. Account for all cap screws and one nut.

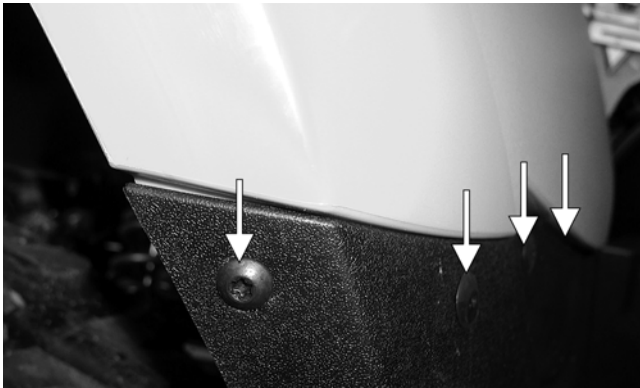
■ **NOTE:** It will be easiest to remove the front inner cap screw by removing the nut from inside the wheel well.

2. On the right-side footrest, disconnect the foot brake switch from the main wiring harness.
3. Remove the cap screws securing the footrest to the frame; then remove the footrest.

■ **NOTE:** On the right-side footrest, it will be necessary to remove the foot brake cable from the brake pedal.

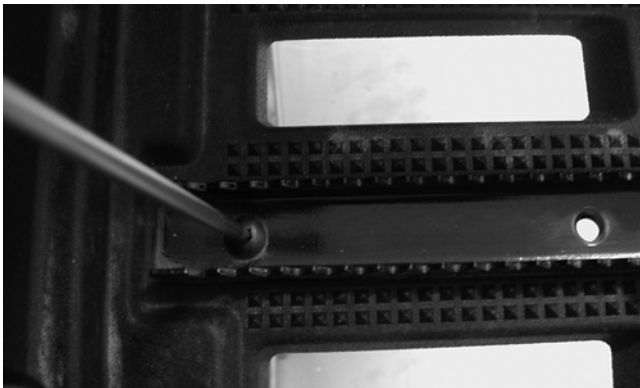
REMOVING (TBX/500/650 H1/650 V-Twin)

1. Remove the plastic rivets securing the front and rear fenders to the footwells; then remove one shoulder screw and flange nut securing the outer edge of each fender to the footwell.



CD691A

2. Remove the cap screws securing the foot pegs to the footrests; then remove the foot pegs and footwells.



CD782

3. Remove the cap screws and flange nuts securing the footrests to the frame; then remove the footrests.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean the footrest in parts-cleaning solvent.
2. Inspect the footrest weldments for cracks or unusual bends.
3. Inspect all tubing for cracks or unusual bends.

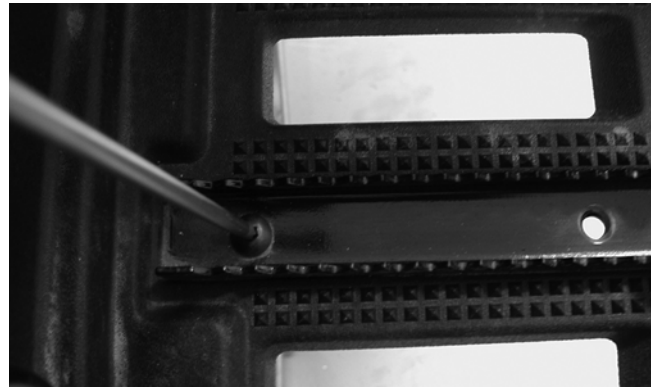
INSTALLING (250/300/400 FIS/ACT)

1. Connect the foot brake cable to the brake pedal (right-side footrest).
2. Place the footrest into position on the frame and loosely secure with the four cap screws.
3. Secure the fender extension to the footrest with existing hardware. Tighten securely.

4. Tighten the 10 mm footrest cap screws (from step 2) to specifications; then tighten the 8 mm cap screws (from step 2) to specifications.
5. Connect the foot brake switch to the main wiring harness. Ensure that the harness is properly secured to the frame and away from any moving parts.

INSTALLING (TBX/500/650 H1/650 V-Twin)

1. Secure the footrests to the frame with four cap screws and two flange nuts; then tighten securely.
2. Place the footwells onto the footrests; then put the foot pegs in position and secure with two cap screws.



CD782

3. Install plastic rivets, cap screws, and flange nuts securing the front and rear fenders to the footwells.

Belly Panel

REMOVING

1. Remove the machine screws and shoulder washers securing the belly panel to the underside of the frame.
2. Remove the belly panel.

INSTALLING

1. Place the belly panel into position on the underside of the frame.
2. Install the machine screws and shoulder washers. Tighten securely.

Exhaust System

REMOVING MUFFLER

1. Remove the cap screws securing the muffler to the frame and account for all mounting hardware.
2. Loosen the clamp at the muffler/exhaust pipe juncture; then remove the muffler.



CH056D

INSPECTING MUFFLER

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Inspect muffler externally for cracks, holes, and dents.
2. Inspect the muffler internally by shaking the muffler back and forth and listening for rattles or loose debris inside the muffler.

■ **NOTE:** For additional details on cleaning the muffler/spark arrester, see Section 2.

INSTALLING MUFFLER

1. Install the muffler on the frame and into the muffler/exhaust pipe juncture accounting for all mounting hardware.
2. Tighten cap screws securely; then tighten the juncture clamp.



CH056D

Rear Rack

REMOVING

1. Remove the cap screws securing the rear rack to frame and rear fenders. Account for any washers.
2. Lift the rack upward and remove from the frame.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all rear rack components with parts-cleaning solvent.
2. Inspect all welds for cracking or bending.
3. Inspect threaded areas of all mounting bosses for stripping.
4. Inspect for missing decals and/or reflectors.

INSTALLING

1. Place the rack into position on the frame; then install the cap screws and any washers.
2. Tighten all fasteners securely.

Rear Fender (250/300/400 FIS/ACT)

REMOVING

1. Remove the seat (see Seat in this section).
2. Remove the rear rack (see Rear Rack in this section).
3. Remove side panels (see Front Fender/Side Panels in this section).
4. Remove the cap screws and washers securing the fender to the frame and footrests.
5. On the 400 models:
 - A. Remove the battery hold-down and tool kit and disconnect the battery cables (negative cable first) and the vent hose; then remove the battery.
 - B. Remove the two screws securing the fuse panel to the fender; then disconnect all wires from the back of the panel.
 - C. Route the battery cables, fuse panel wiring, and vent hose out of the fender through the hole at the bottom of the battery compartment.
6. Disconnect the taillight wiring harness three-prong connector; then remove the fender.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all rear fender components with soap and water.
2. Inspect side panels, fender extensions, and rear fenders for cracks and loose rivets.
3. Inspect threaded areas of all mounting bosses for stripping.
4. Inspect for missing decals.

INSTALLING

1. Place the fender into position on the frame.
2. On the 400 models:

- A. Route the battery cables, fuse panel wiring, and vent hose into the fender through the hole at the bottom of the battery compartment.
 - B. Using the cover of the fuse panel and the appropriate wiring diagram (see Section 5) as guides, connect the fuse panel wires.
 - C. Secure the fuse panel to the fender with the two screws. Tighten securely.
3. Secure the fender to the frame and footrests with existing cap screws and washers. Tighten securely.
 4. On the 400 models, place the battery in position in the compartment; then install the vent hose, battery cables (positive cable first), the tool kit, and the battery hold-down.
 5. Route the taillight wiring harness over the rear frame; then connect the three-prong connector.
 6. Install the side panels (see Front Fender/Side Panels in this section).
 7. Install the rear rack (see Rear Rack in this section).
 8. Install the seat (see Seat in this section).

Rear Body Panel/Rack (500/650 H1/650 V-Twin)

REMOVING

1. Remove four machine screws and flanged nuts securing the rear rack; then remove the rear rack. Account for four bushings.



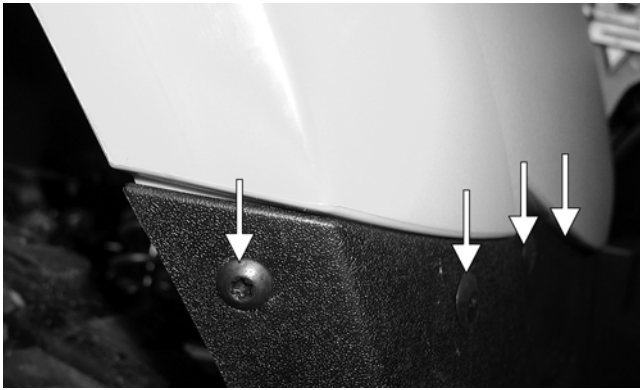
CD690A

2. Remove one shoulder screw and lock nut and three plastic rivets (on each side) securing the rear body panel to the footwells.

CLEANING AND INSPECTING

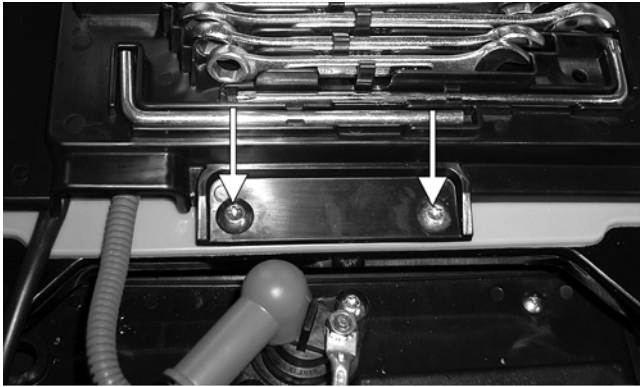
■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all rear body panel components with parts-cleaning solvent and soap and water.
2. Inspect side panels and rear body panel for cracks and loose rivets.
3. Inspect threaded areas of all mounting bosses for stripping.
4. Inspect for missing decals.



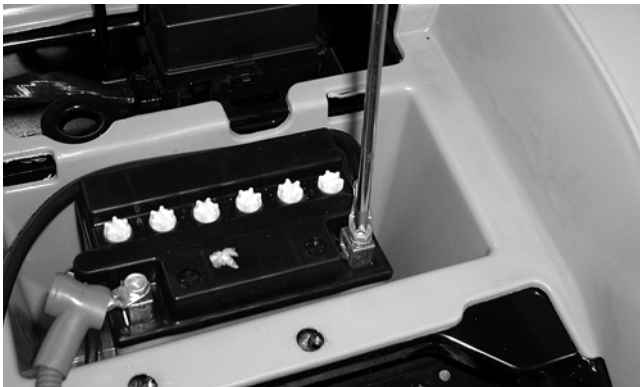
CD691A

3. Remove two machine screws securing the battery cover and remove the cover.



CD687A

4. Disconnect the battery (negative cable first); then remove the battery.



CD688

5. Disconnect the tail/brakelight; then remove the gas tank cap and lift off the rear body panel. Install the gas tank cap.

■ **NOTE:** If the front body panel has not been removed, the left-side and right-side panels and the two machine screws must be removed (see Front Body Panel/Side Panels) in this section.

INSTALLING

1. Remove the gas tank cap and set the rear body panel in position; then install the cap and connect the brake/taillight connector.
2. Place the rear rack in position with four bushings and secure with four machine screws and flanged nuts. Tighten securely.



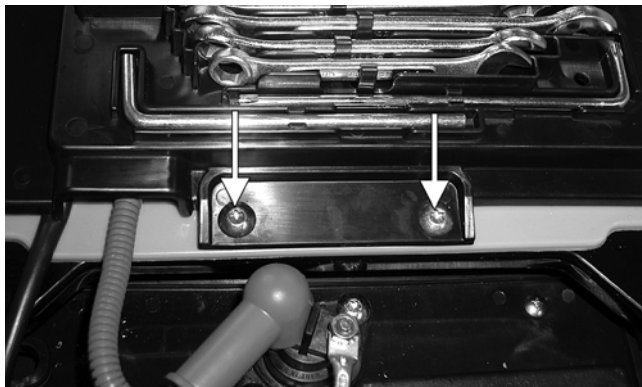
CD690A

3. Install one shoulder screw and three plastic rivets (on each side) to secure the front of the rear body panel to the footwells.



CD691

4. Place the battery into the battery box; then connect the battery (positive cable first) and secure with the battery cover.



CD687A

5. Secure the front and rear panels with two machine screws; then install the left and right side panels.

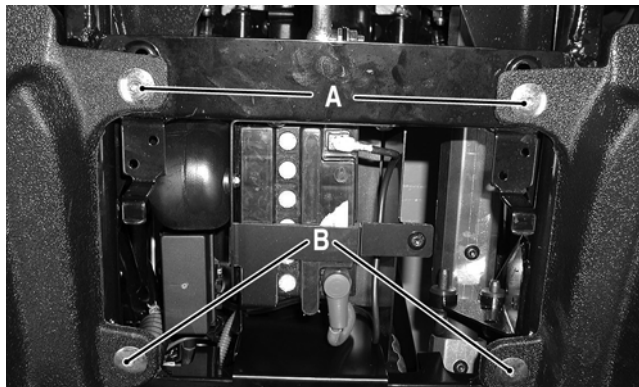
■ **NOTE:** If the front body panel has not been installed (see Front Body Panel/Rack) in this section.

6. Place the seat into position making sure it locks securely.

Side Storage Box (TBX Models)

REMOVING

1. Rotate the cargo box latch handle (located on the left and right sides between the cargo box and the rear tire) and fully raise the cargo box.
2. Pull the seat lock lever forward (located below the right side of the seat), raise the front end of the seat, and slide it forward and off the ATV.
3. Remove the two cap screws (located inside the side storage box) securing the box to the footrest.
4. Remove the screw securing the box to the side panel.
5. Remove cap screws (A and B) securing the box to the frame.



CD045A

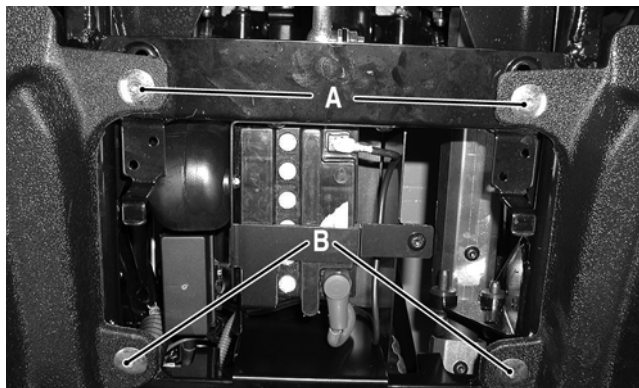
CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all side storage box components with soap and water.
2. Inspect the box for cracks, tears, and loose mounting hardware.
3. Inspect the box hatch O-ring seals for cuts or tears.

INSTALLING

1. Place the side storage box into position on the frame; then secure with the two cap screws (A and B). Tighten cap screws to specifications.



CD045A

2. Secure the box to the side panel with the existing screw.
3. Secure the box to the footrest with existing hardware. Tighten securely.
4. Install the seat.
5. Lower the cargo box and press down firmly on the front of the box. The cargo box will automatically lock into position.

Cargo Box (TBX Models)

REMOVING

1. Rotate the cargo box latch handle (located on the left and right sides between the cargo box and the rear tire) and fully raise the cargo box.



CD771

2. Remove the retaining ring from the lower end of the box lift support; then separate the lift support from the lift support stud. Lower the cargo box.
3. Remove the two cap screws and lock nuts securing the cargo box to the frame; then remove the cargo box and discard the lock nuts.



CD122

■ **NOTE:** Never reuse a lock nut. Once a lock nut has been removed, it must be replaced with a new lock nut.

CLEANING AND INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

1. Clean all cargo box components with soap and water.
2. Inspect the cargo box for cracks, tears, and loose mounting hardware.

3. Inspect the welds of the cargo box frame for cracking or bending.
4. Inspect the cargo box gate latches for smooth operation.

INSTALLING

1. Place the cargo box into position on the frame. Secure with cap screws and new lock nuts. Tighten to specifications.



CD122

2. While an assistant holds the cargo box in the raised position, place the lower end of the cargo box onto the lift support stud; then secure with the retaining ring.
3. Lower the cargo box and press down firmly on the front of the box. It will automatically lock into position.

Adjusting Headlight

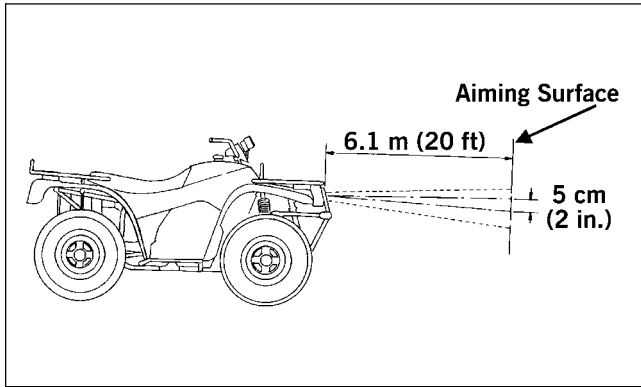
The headlights can be adjusted vertically and horizontally. The geometric center of the HIGH beam light zone is to be used for vertical and horizontal aiming.

1. Position the ATV on a level floor so the headlights are approximately 6.1 m (20 ft) from an aiming surface (wall or similar aiming surface).

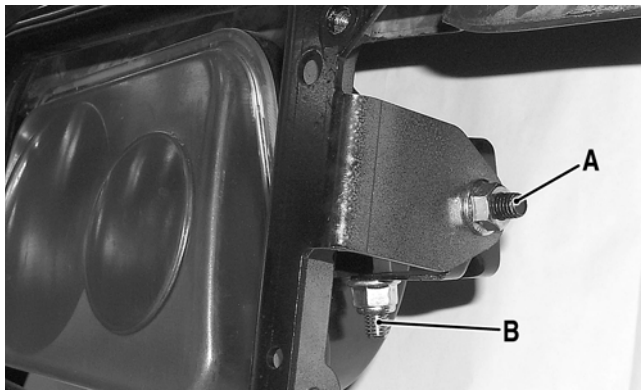
■ **NOTE:** There should be an average operating load on the ATV when adjusting the headlight aim.

2. Measure the distance from the floor to the mid-point of each headlight.
3. Using the measurements obtained in step 2, make horizontal marks on the aiming surface.
4. Make vertical marks which intersect the horizontal marks on the aiming surface directly in front of the headlights.
5. Switch on the lights. Make sure the HIGH beam is on. DO NOT USE LOW BEAM.

- Observe each headlight beam aim. Proper aim is when the most intense beam is centered on the vertical mark 5 cm (2 in.) below the horizontal mark on the aiming surface.



ATV-0070

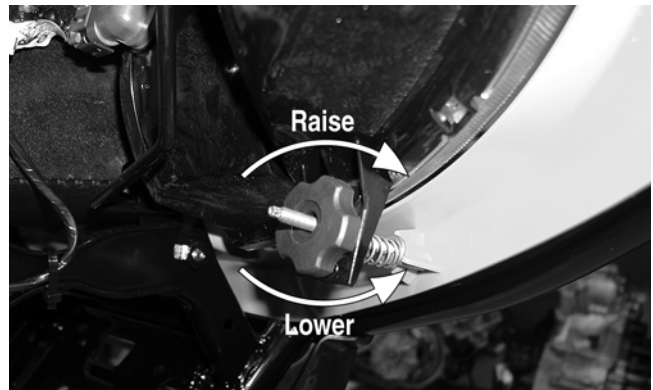


AF926A

■ **NOTE:** On the 250/300/400 FIS/ACT models, it will be necessary to remove the two machine screws securing the front grille and removing the grille for steps A and B.

■ **NOTE:** Steps A and B are for the 250/300/400 FIS/ACT models; step C is for the TBX/500/650 H1/650 V-Twin models.

- Adjust each headlight until correct aim is obtained.
 - Horizontal - Loosen nut (A) and adjust for proper aiming. Tighten the nut securely.
 - Vertical - Loosen nut (B) and adjust for proper aiming. Tighten the nut securely.
 - Turn the adjustment knob counterclockwise to lower the beam and clockwise to raise the beam.

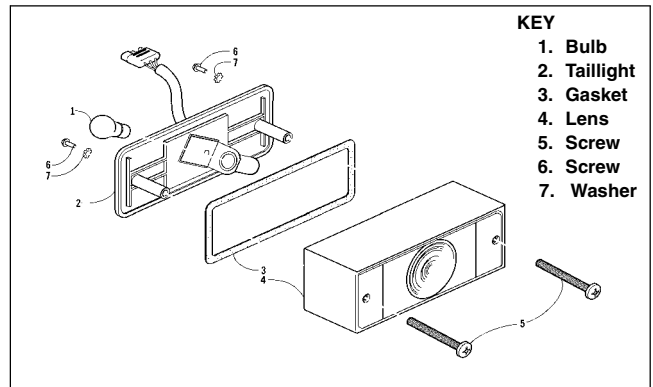


CD714A

⚠ WARNING

Do not operate the ATV unless the headlight beam is adjusted properly. An incorrectly adjusted beam will not provide the operator the optimum amount of light.

Taillight Assembly



0732-336

REMOVING

- Unplug the three-prong connector and free the taillight wiring harness from the frame.
- Remove the torx-head cap screws securing the taillight assembly to the frame. Account for any washers.
- Remove the taillight assembly.

INSPECTING

■ **NOTE:** Whenever a part is worn excessively, cracked, or damaged in any way, replacement is necessary.

- Inspect wiring harness, three-prong connector, lens, base, cap screws, and socket for damage.
- Inspect all wires for corroding, pinching, and cracking.

3. Inspect the bulb for wattage, voltage, and proper operation.

INSTALLING

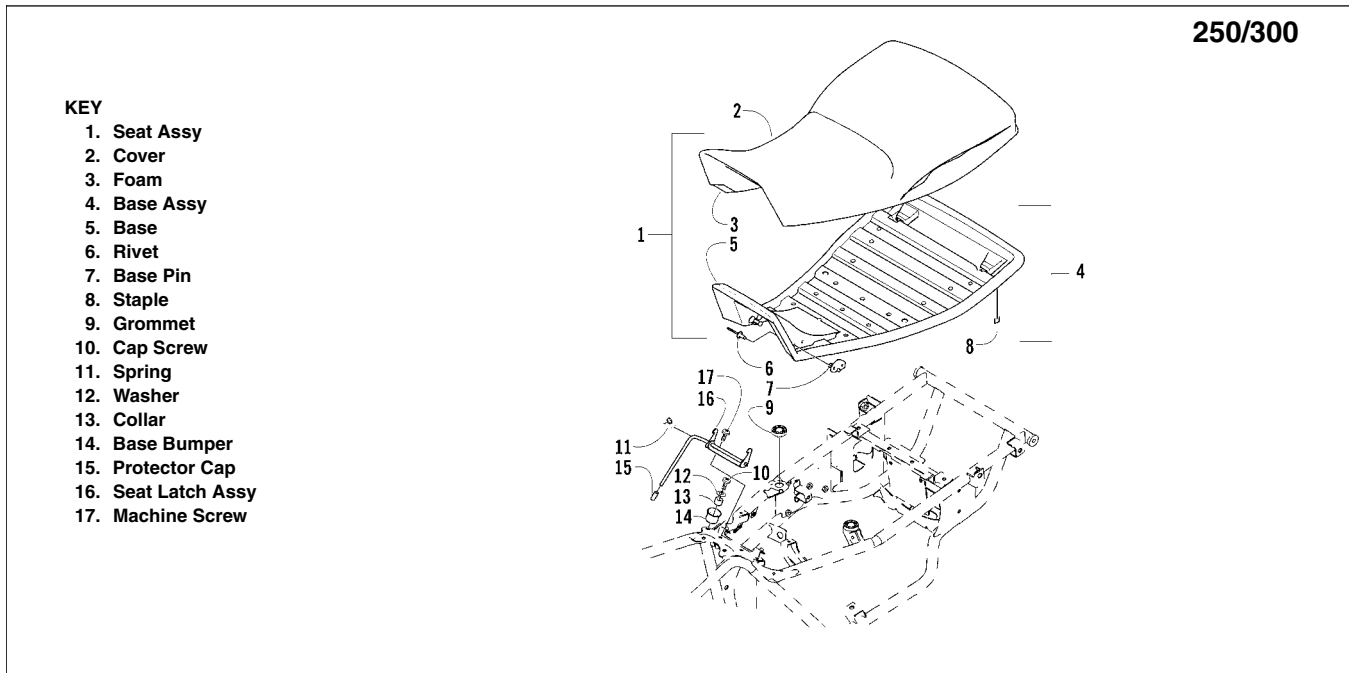
1. Place the assembly into position on the frame and secure with torx-head cap screws and any washers.

2. Tighten the cap screws securely.
3. Route the wiring harness over the rear frame; then connect the three-prong connector.

Seat

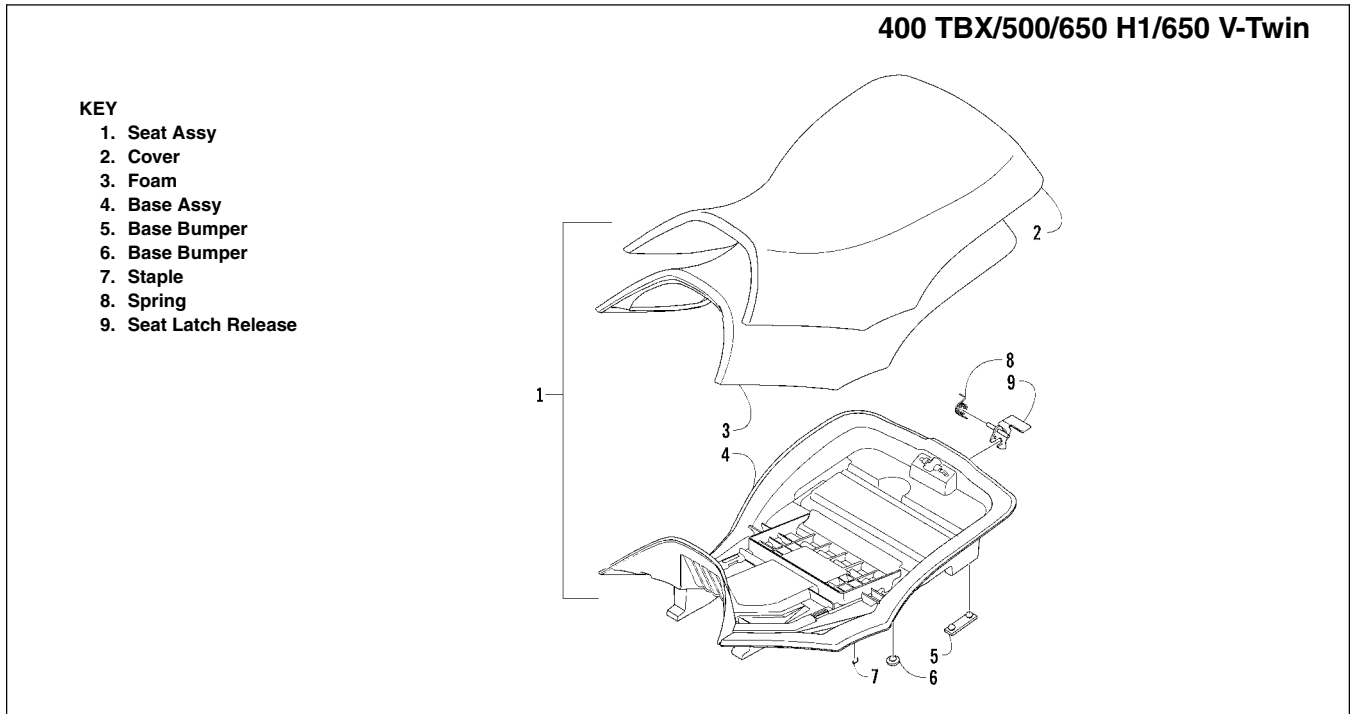
■ **NOTE:** Some components may vary from model to model. The technician should use discretion and sound judgment.

REMOVING/INSTALLING (250/300)



0737-462

REMOVING/INSTALLING (400 TBX/500/650 H1/650 V-Twin)

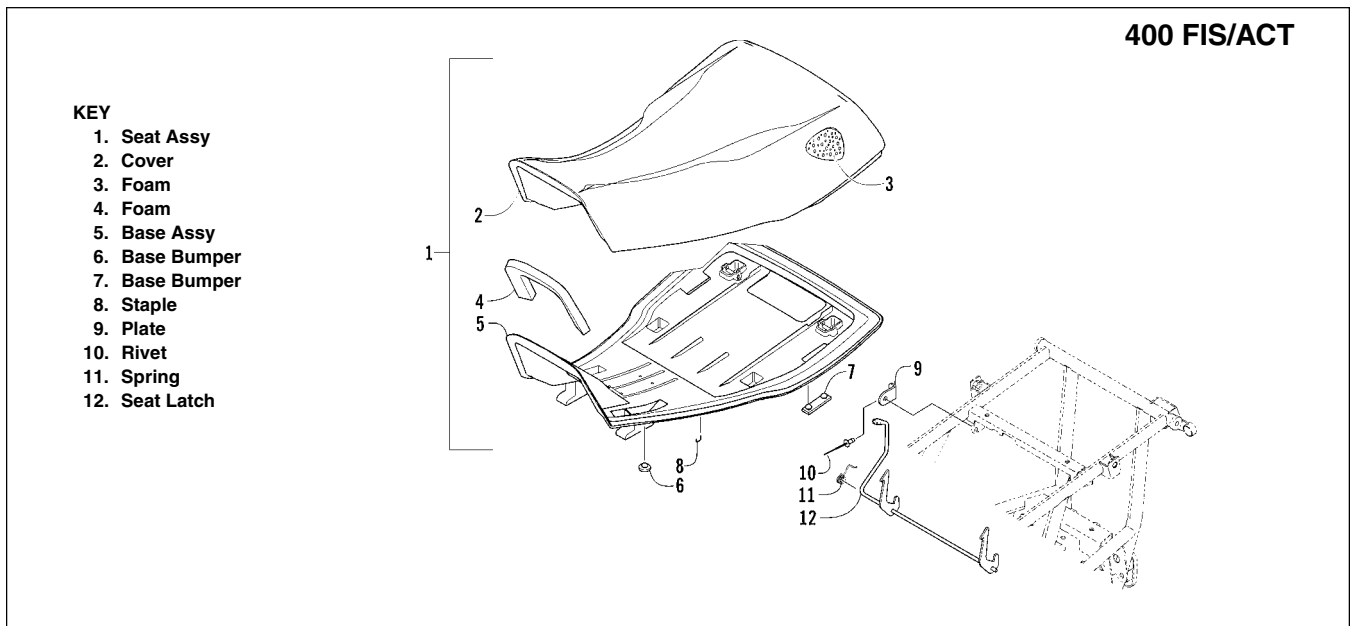


0739-690

1. To remove the seat, lift up on the latch release (located at the rear of the seat). Raise the rear of the seat and slide it rearward.

2. To lock the seat into position, slide the front of the seat into the seat retainers and push down firmly on the rear of seat. The seat should automatically lock into position.

REMOVING/INSTALLING (400 FIS/ACT)



0738-364

1. To remove the seat, pull the seat lock lever backward (located under the rear rack between the storage compartment and the frame). Raise the rear of the seat and slide it rearward.

2. To lock the seat into position, slide the front of the seat into the seat retainers and push down firmly on the rear of seat. The seat should automatically lock into position.

REMOVING/INSTALLING (500 TRV)

KEY			
1. Seat Assy	24. Bracket		
2. Foam	25. Rivet		
3. Cover	26. Machine Screw		
4. Foam	27. Backrest Assy		
5. Base Assy	28. Cover		
6. Bumper	29. Axle		
7. Bumper	30. Cup Washer		
8. Staple	31. Tension Block		
9. Plate	32. Machine Screw		
10. Spring	33. Support		
11. Latch	34. Cap Screw		
12. Cap	35. Handhold		
13. Machine Screw	36. Grip		
14. Seat Assy	37. Body Screw		
15. Cover	38. Screw		
16. Foam	39. Lock Nut		
17. Base	40. Cap Screw		
18. Plate	41. Decal		
19. Rivet			
20. Bracket			
21. Latch			
22. Spring			
23. Channel			

0738-304

1. To remove the front seat, pull the seat lock lever forward (located below the right side of the seat). Raise the front end of the seat and slide it forward.

2. To lock the seat into position, slide the rear of the seat into the seat retainers and push down firmly on front of seat. The seat should automatically lock into position.

■ **NOTE:** The front seat must be removed prior to removing the rear seat.

3. To remove the rear seat, turn the backrest from the upright position; then pull the seat latch. Pull the seat backward slightly to unhook the front clips; then lift seat and slide it forward.

4. To lock the seat into position, slide the front clips into position on the frame making sure the seat is all the way forward; then push down on the rear of the seat to lock it into place.