Club Car®

2000 MAINTENANCE SERVICE MANUAL

**TURF 1, TURF 2, TURF 6,
CARRYALL 1, CARRYALL 2,
CARRYALL 2 PLUS AND
CARRYALL 6 VEHICLES**

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FOREWORD

Club Car vehicles are designed and built to provide the ultimate in performance efficiency; however, proper maintenance and repair are essential for achieving maximum service life and continued safe and reliable operation.

This manual provides detailed information for the maintenance and repair of Turf and Carryall vehicles and should be used in conjunction with the appropriate maintenance and service supplement.

If you do not have the appropriate maintenance and service supplement, you may order one from your local Club Car representative. Maintenance and service supplements available include:

2000 PowerDrive System 48 Vehicle Maintenance and Service Supplement	**Publication Part No. 102067505**
2000 FE290 Gasoline Vehicle Maintenance and Service Supplement	**Publication Part No. 102067508**
2000 FE350 Gasoline Vehicle Maintenance and Service Supplement	**Publication Part No. 102067509**

This manual and corresponding maintenance and service supplement should be thoroughly reviewed prior to servicing the vehicle. The procedures provided herein must be properly implemented, and the DANGER, WARNING, and CAUTION statements must be heeded.

This manual was written for the trained technician who already possesses knowledge and skills in electrical and mechanical repair. *If the technician does not have such knowledge and skills, attempted service or repairs to the vehicle may render the vehicle unsafe.* For this reason, Club Car advises that all repairs and/or service be performed by an authorized Club Car distributor/dealer representative or by a Club Car factory-trained technician.

It is the policy of Club Car, Inc. to assist its distributors and dealers in continually updating their service knowledge and facilities so they can provide prompt and efficient service for vehicle owners. Regional technical representatives, vehicle service seminars, periodic service bulletins, maintenance and service manuals, and other service publications also represent Club Car's continuing commitment to customer support.

This manual, used in conjunction with the appropriate maintenance and service supplement, covers all aspects of typical vehicle service; however, unique situations do sometimes occur when servicing a vehicle. If it appears that a service question is not answered in this manual, you may write to us at: Club Car, Inc.; P.O. Box 204658; Augusta, GA 30917; Attention: Technical Services, or contact a Club Car Technical Service Representative at (706) 863-3000, ext. 3580.

This manual effective July 26, 1999

⚠ WARNING

- READ SECTION 1 – SAFETY BEFORE ATTEMPTING ANY SERVICE ON THIS VEHICLE.
- BEFORE SERVICING VEHICLE, READ COMPLETE SECTION(S) AND ANY REFERENCED INFORMATION THAT MAY BE RELEVANT TO THE SERVICE OR REPAIR TO BE PERFORMED.

NOTE

- THIS MANUAL REPRESENTS THE MOST CURRENT INFORMATION AT THE TIME OF PUBLICATION. CLUB CAR, INC. IS CONTINUALLY WORKING TO FURTHER IMPROVE OUR VEHICLES AND OTHER PRODUCTS. THESE IMPROVEMENTS MAY AFFECT SERVICING PROCEDURES. ANY MODIFICATION AND/OR SIGNIFICANT CHANGE IN SPECIFICATIONS OR PROCEDURES WILL BE FORWARDED TO ALL CLUB CAR DISTRIBUTORS AND DEALERS AND WILL, WHEN APPLICABLE, APPEAR IN FUTURE EDITIONS OF THIS MANUAL.
- DAMAGE TO A VEHICLE OR COMPONENT THEREOF NOT RESULTING FROM A DEFECT OR WHICH OCCURS DUE TO UNREASONABLE OR UNINTENDED USE, OVERLOADING, ABUSE, OR NEGLECT (INCLUDING FAILURE TO PROVIDE REASONABLE OR NECESSARY MAINTENANCE AS INSTRUCTED IN THE VEHICLE OWNER'S MANUAL), ACCIDENT OR ALTERATION, INCLUDING INCREASING VEHICLE SPEED BEYOND FACTORY SPECIFICATIONS OR MODIFICATIONS WHICH AFFECT THE STABILITY OF THE VEHICLE OR THE OPERATION THEREOF, WILL VOID THE WARRANTY.
- CLUB CAR, INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS AND DESIGNS AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION OR LIABILITY WHATSOEVER.
- THERE ARE NO WARRANTIES EXPRESSED OR IMPLIED IN THIS MANUAL. SEE THE LIMITED WARRANTY FOUND IN THE VEHICLE OWNER'S MANUAL OR WRITE TO CLUB CAR, INC.

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SECTION 1 – SAFETY

To ensure the safety of those servicing Club Car Turf and Carryall vehicles, and to protect the vehicles from possible damage resulting from improper service or maintenance, the procedures in this manual must be followed. It is important to note that throughout this manual there are statements contained within boxes labeled **DANGER**, **WARNING**, or **CAUTION**. These special statements relate to specific safety issues, and must be read, understood, and heeded before proceeding with procedures. There are also boxes labeled **NOTE**, which provide other essential service or maintenance information.

⚠ DANGER

- **A DANGER INDICATES AN IMMEDIATE HAZARD WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.**

⚠ WARNING

- A WARNING INDICATES AN IMMEDIATE HAZARD WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

⚠ CAUTION

- A CAUTION INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN PRODUCT OR PROPERTY DAMAGE OR MINOR PERSONAL INJURY.

NOTE

- A NOTE PROVIDES KEY INFORMATION TO MAKE PROCEDURES MORE EASILY UNDERSTOOD.

GENERAL WARNING

The following safety procedures must be followed whenever the vehicle is being operated, repaired, or serviced. Service technicians should become familiar with these general statements, which can be found throughout this manual. Also, other specific warnings appear throughout this manual and on the vehicle.

⚠ DANGER

- **BATTERY - EXPLOSIVE GASES! DO NOT SMOKE. KEEP SPARKS AND FLAMES AWAY FROM THE VEHICLE. VENTILATE WHEN CHARGING OR USING IN AN ENCLOSED SPACE. ALWAYS WEAR A FULL FACE SHIELD WHEN WORKING ON OR NEAR BATTERIES.**
- **BATTERY - POISON! CONTAINS ACID! CAUSES SEVERE BURNS. AVOID CONTACT WITH SKIN, EYES, OR CLOTHING. ANTIDOTES:**
  - **EXTERNAL: FLUSH WITH WATER. CALL A PHYSICIAN IMMEDIATELY.**
  - **INTERNAL: DRINK LARGE QUANTITIES OF WATER. FOLLOW WITH MILK OF MAGNESIA OR VEGETABLE OIL. CALL A PHYSICIAN IMMEDIATELY.**
  - **EYES: FLUSH WITH WATER FOR FIFTEEN MINUTES. CALL A PHYSICIAN IMMEDIATELY.**

General Warning, Continued:

⚠ DANGER

- **GASOLINE - FLAMMABLE! EXPLOSIVE! DO NOT SMOKE. KEEP SPARKS AND FLAMES AWAY FROM VEHICLE AND SERVICE AREA. SERVICE ONLY IN A WELL-VENTILATED AREA.**
- **DO NOT OPERATE GASOLINE VEHICLE IN AN ENCLOSED AREA WITHOUT PROPER VENTILATION. THE ENGINE PRODUCES CARBON MONOXIDE WHICH IS AN ODORLESS, DEADLY POISON.**
- **A CLUB CAR VEHICLE WILL *NOT* PROVIDE PROTECTION FROM LIGHTNING, FLYING OBJECTS, OR OTHER STORM RELATED HAZARDS. IF CAUGHT IN A STORM WHILE DRIVING A CLUB CAR VEHICLE EXIT THE VEHICLE AND SEEK SHELTER IN ACCORDANCE WITH APPLICABLE SAFETY GUIDELINES FOR YOUR LOCATION.**

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THE VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN ELECTRICAL AND MECHANICAL REPAIR.
- FOLLOW THE PROCEDURES EXACTLY AS STATED IN THIS MANUAL, AND HEED ALL **DANGER**, **WARNING**, AND **CAUTION** STATEMENTS LISTED IN THIS MANUAL AS WELL AS THOSE AFFIXED TO THE VEHICLE.
- IMPROPER USE OF THE VEHICLE OR FAILURE TO PROPERLY MAINTAIN IT, COULD RESULT IN DECREASED VEHICLE PERFORMANCE OR SEVERE PERSONAL INJURY.
- ANY MODIFICATION OR CHANGE TO THE VEHICLE WHICH AFFECTS THE STABILITY OR HANDLING OF THE VEHICLE, OR INCREASES MAXIMUM VEHICLE SPEED BEYOND FACTORY SPECIFICATIONS, COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.
- CHECK THE VEHICLE OWNER'S MANUAL FOR PROPER LOCATION OF ALL VEHICLE WARNING DECALS AND MAKE SURE THEY ARE IN PLACE AND ARE EASY TO READ.
- WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHEN SERVICING THE VEHICLE.
- DO NOT WEAR LOOSE CLOTHING. REMOVE JEWELRY SUCH AS RINGS, WATCHES, CHAINS, ETC. BEFORE SERVICING VEHICLE.
- MOVING PARTS! DO NOT ATTEMPT TO SERVICE THE VEHICLE WHILE IT IS RUNNING.
- HOT! DO NOT ATTEMPT TO SERVICE HOT MOTOR, ENGINE, OR EXHAUST SYSTEMS. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BURNS.
- USE INSULATED TOOLS WHEN WORKING AROUND BATTERIES OR ELECTRICAL CONNECTIONS.
- LIFT ONLY ONE END OF VEHICLE AT A TIME. BEFORE LIFTING, **UNLOAD CARGO BED**, LOCK THE BRAKES AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT VEHICLE.
- TURN THE KEY SWITCH TO **OFF** AND REMOVE KEY. CHOCK THE WHEELS, PLACE THE FORWARD/REVERSE HANDLE IN **NEUTRAL**, AND DISCONNECT BATTERY(IES) PRIOR TO SERVICING THE VEHICLE.

WARNING CONTINUED ON NEXT PAGE...

⚠ WARNING

GASOLINE VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE:
  - DISCONNECT BATTERY CABLES, NEGATIVE (–) FIRST **(FIGURE 1-1, PAGE 1-3)**.
  - DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.
- FRAME GROUND - DO NOT ALLOW TOOLS OR OTHER METAL OBJECTS TO CONTACT FRAME WHEN DISCONNECTING BATTERY CABLES OR OTHER ELECTRIC WIRING. NEVER ALLOW A POSITIVE WIRE TO TOUCH THE VEHICLE FRAME, ENGINE, OR OTHER METAL COMPONENT.

ELECTRIC VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERIES AS SHOWN **(FIGURE 1-2, PAGE 1-3)**.
- **AFTER** DISCONNECTING BATTERIES, DISCHARGE THE CONTROLLER AS FOLLOWS:
  - TURN THE KEY SWITCH TO **ON** AND PLACE THE FORWARD/REVERSE HANDLE IN THE **REVERSE** POSITION.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

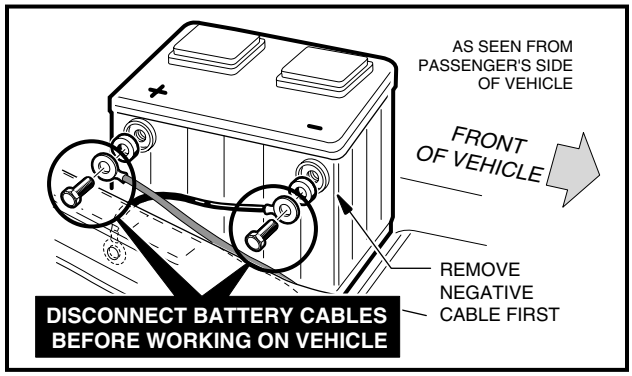

Figure 1-1 Gasoline Vehicle

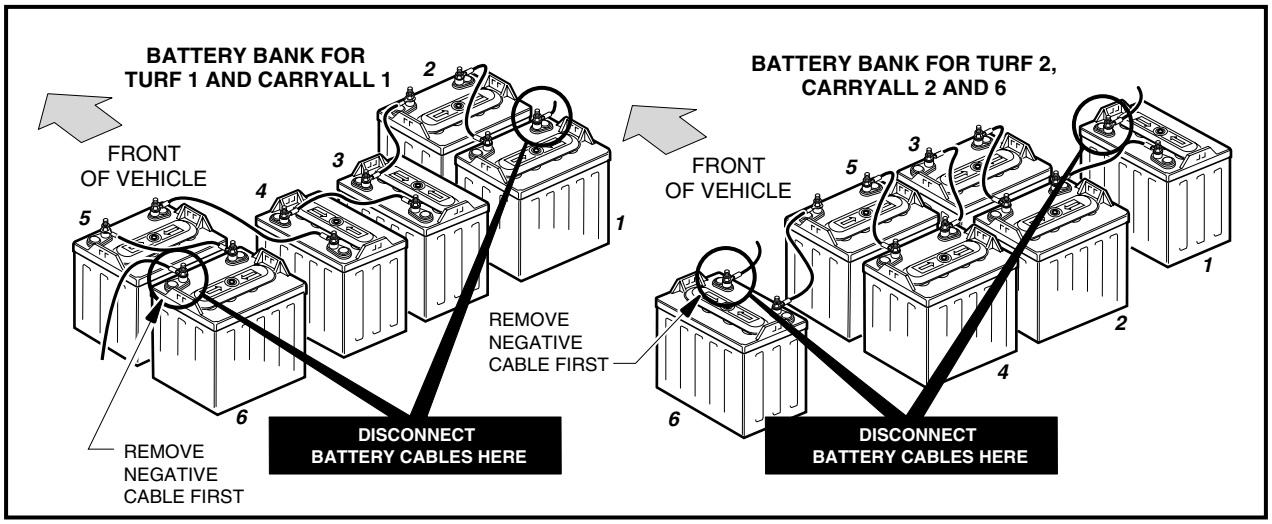

Figure 1-2 PowerDrive Battery Configuration

SECTION 2 – VEHICLE SPECIFICATIONS

GENERAL INFORMATION

Club Car, Inc. reserves the right to change specifications and design of either the gasoline or electric vehicle at any time without notice and without obligation to make these changes on units previously sold.

SPECIFICATIONS	Turf 1 Carryall 1		Turf 2 Carryall 2		Carryall 2 Plus	Turf 6 Carryall 6	
POWER SOURCE	Pedal-Start Gasoline	PowerDrive System 48 Electric	Pedal-Start Gasoline	PowerDrive System 48 Electric	Key-Start Gasoline	Key-Start (CA 6) Pedal-Start (Turf 6) Gasoline	PowerDrive System 48 Electric
Engine: 4 cycle, OHV, 286 cc, 9 hp rated, single cylinder, air cooled, with pressure lubrication system.	•						
Engine: 4 cycle, OHV, 351 cc, 11 hp rated, single cylinder, air cooled, with pressure lubrication system.			•		•	•	
Drive Motor: Direct drive, 48 volts DC, series wound, 3.1 hp.		•		•			•
Fuel System: Side draft carburetor with float bowl, fixed jets, fuel filter, and impulse fuel pump.	•		•		•	•	
Governor: Automatic ground speed sensing, internally geared in unitized transaxle.	•		•		•	•	
Ignition: Transistor electronic ignition with electronic RPM limiter.	•		•		•	•	
Unitized Transaxle: Fully synchronized forward and reverse with neutral (11.8:1 forward, 17.1:1 reverse).	•		•		•	•	
Transaxle: Double reduction helical gear with 12.28:1 direct drive axle.		•		•			•
Electrical System: 12 volt, 500 cca at 0 °F, 650 cca at 32 °F. 105 minute reserve capacity and 35 amp charging capacity.	•		•		•	•	
Electrical System: 48 volts DC, reduced speed reverse.		•		•			•
Batteries: High capacity, deep cycle, Trojan PowerDrive 8 volt, 117 min. capacity.		•		•			•
Charger: Automatic, 17 amp PowerDrive; UL and CSA listed.		•		•			•
Torque Converter: Automatic, variable speed, dry type.	•		•		•	•	
STEERING/SUSPENSION/BRAKES							
Steering: Self-adjusting rack and pinion.	•	•	•	•	•	•	•
Suspension: Front mono-leaf and rear multi-leaf springs with dual hydraulic shocks.	•	•	•	•	•	•	•
Brakes: Mechanical brake cable system to self-adjusting drum brakes on each rear wheel. Park brake is automatically released. Self-adjusting multi-latch ratchet and pawl.	•	•	• Manually Adjusted				

SPECIFICATIONS CONTINUED ON NEXT PAGE...

SPECIFICATIONS	Turf 1 Carryall 1		Turf 2 Carryall 2		Carryall 2 Plus	Turf 6 Carryall 6	
STEERING/SUSPENSION/BRAKES (continued)	Pedal-Start Gasoline	PowerDrive System 48 Electric	Pedal-Start Gasoline	PowerDrive System 48 Electric	Key-Start Gasoline	Key-Start (CA 6) Pedal-Start (Turf 6) Gasoline	PowerDrive System 48 Electric
Brakes: Mechanical brake cable system to manually adjusted drum brakes on all four wheels. Park brake is automatically released. Self-adjusting multi-latch ratchet and pawl.				•	•	•	•
BODY/CHASSIS							
Frame/Chassis: Twin I-Beam welded aluminum.	•	•	•	•	•	•	•
Side and Rear Body: All aluminum	•	•	•	•	•	•	•
Front Body: ArmorFlex®	•	•	•	•	•	•	•
Front Body Finish: Matched paint finish over molded-in color.	•	•	•	•	•	•	•
Tires: 18 x 8.50 - 8 tubeless, 4 ply rated load range front and rear.	•	•					
Tires: 18 x 8.50 - 8 tubeless, 6 ply rated load range front and rear.			•	•	•	•	•
SEATING CAPACITY/FUEL CAPACITY							
Standard Seating Capacity: 2 persons	•	•	•	•	•	•	•
Fuel Tank: 7 gallons (26.5 liters), unleaded gasoline only.	•		•		•	•	
DIMENSIONS/WEIGHT							
Overall Length: Standard flatbed configuration.	100 in. (254 cm)	100 in. (254 cm)	111 in. (282 cm)	111 in. (282 cm)	111 in. (282 cm)	134 in. (340 cm)	134 in. (340 cm)
Overall Width	49.25 in. (120 cm)	49.25 in. (120 cm)	50 in. (127 cm)	50 in. (127 cm)	50 in. (127 cm)	49.25 in. (120 cm)	49.25 in. (120 cm)
Overall Height: At Steering Wheel	48 in. (122 cm)	48 in. (122 cm)	48 in. (122 cm)	48 in. (122 cm)	48 in. (122 cm)	48 in. (122 cm)	48 in. (122 cm)
Wheelbase	65.5 in. (166 cm)	65.5 in. (166 cm)	77.5 in. (197 cm)	77.5 in. (197 cm)	77.5 in. (197 cm)	98.5 in. (250 cm)	98.5 in. (250 cm)
Ground Clearance	4.5 in. (11 cm)	4.5 in. (11 cm)	4.5 in. (11 cm)	4.5 in. (11 cm)	4.5 in. (11 cm)	4.5 in. (11 cm)	4.5 in. (11 cm)
Front Wheel Tread	34.5 in. (88 cm)	34.5 in. (88 cm)	34.5 in. (88 cm)	34.5 in. (88 cm)	34.5 in. (88 cm)	34.5 in. (88 cm)	34.5 in. (88 cm)
Rear Wheel Tread	38.5 in. (98 cm)	38.5 in. (98 cm)	38.5 in. (98 cm)	38.5 in. (98 cm)	38.5 in. (98 cm)	38.5 in. (98 cm)	38.5 in. (98 cm)
Weight: Standard electric vehicle (without batteries)		530 lb. (240 kg)		637 lb. (289 kg)			768 lb. (348 kg)
Weight: Standard gasoline vehicle (dry fuel tank)	658 lb. (298 kg)		749 lb. (298 kg)		786 lb. (357 kg)	893 lb. (405 kg)	
Forward Speed	12-15 mph (19-24 km/h)	12-15 mph (19-24 km/h)	14-16 mph (23-26 km/h)	12-15 mph (19-24 km/h)	17-18 mph (27-29 km/h)	14-16 mph (23-26 km/h)	12-15 mph (19-24 km/h)
Clearance Circle (diameter)	17 ft.-6 in. (533 cm)	17 ft.-6 in. (533 cm)	20 ft.-8 in. (630 cm)	20 ft.-8 in. (630 cm)	20 ft.-8 in. (630 cm)	24 ft.-8 in. (752 cm)	24 ft.-8 in. (752 cm)
Turning Radius per SAE J 695	101 in. (257 cm)	101 in. (257 cm)	120 in. (305 cm)	120 in. (305 cm)	120 in. (305 cm)	144 in. (366 cm)	144 in. (366 cm)

SPECIFICATIONS CONTINUED ON NEXT PAGE...

SPECIFICATIONS	Turf 1 Carryall 1		Turf 2 Carryall 2		Carryall 2 Plus	Turf 6 Carryall 6	
DIMENSIONS/WEIGHT (continued)	Pedal-Start Gasoline	PowerDrive System 48 Electric	Pedal-Start Gasoline	PowerDrive System 48 Electric	Key-Start Gasoline	Key-Start (CA 6) Pedal-Start (Turf 6) Gasoline	PowerDrive System 48 Electric
Intersecting Aisle Clearance:	72 in. (183 cm)	72 in. (183 cm)	77 in. (196 cm)	77 in. (196 cm)	77 in. (196 cm)	89.75 in. (228 cm)	89.75 in. (228 cm)
Floorboard Height:	11.75 in. (30 cm)	11.75 in. (30 cm)	11.75 in. (30 cm)	11.75 in. (30 cm)	11.75 in. (30 cm)	11.75 in. (30 cm)	11.75 in. (30 cm)
Load Bed Height:	27 in. (69 cm)	27 in. (69 cm)	27.625 in. (70 cm)	27.625 in. (70 cm)	27.625 in. (70 cm)	27 in. (69 cm)	27 in. (69 cm)
Seat Height:	30 in. (76 cm)	30 in. (76 cm)	30.25 in. (77 cm)	30.25 in. (77 cm)	30.25 in. (77 cm)	30 in. (76 cm)	30 in. (76 cm)
Load Bed Size: Box bed dimensions.	37.6 in. x 45.1 in. x 9.3 in. (96 x 115 x 23 cm)	37.6 in. x 45.1 in. x 9.3 in. (96 x 115 x 23 cm)	48.8 in. x 49.8 in. x 10.9 in. (124 x126x28 cm)	48.8 in. x 49.8 in. x 10.9 in. (124 x126x28 cm)	48.8 in. x 49.8 in. x 10.9 in. (124 x126x28 cm)	64.2 in. x 44 in. x 18.5 in. (163 x 112 x 47 cm)	64.2 in. x 44 in. x 18.5 in. (163 x 112 x 47 cm)
Load Bed Size: Flat bed dimensions.	35.75 in. x 44.25 in. (91 x 112 cm)	35.75 in. x 44.25 in. (91 x 112 cm)	46.875 in. x 48.3125 in. (119 x 126 cm)	46.875 in. x 48.3125 in. (119 x 126 cm)	46.875 in. x 48.3125 in. (119 x 126 cm)	67.625 in. x 44.1875 in. (172 x 112 cm)	67.625 in. x 44.1875 in. (172 x 112 cm)
Vehicle rated capacity: Level surface only.	800 lb. (363 kg)	800 lb. (363 kg)	1200 lb. (544 kg)	1200 lb. (544 kg)	1200 lb. (544 kg)	1500 lb. (680 kg)	1500 lb. (680 kg)

VEHICLE CAPACITIES

VEHICLE CAPACITIES	Gasoline	Electric
TIRE CAPACITIES		
Turf 1 and Carryall 1	16-18 psi (110-124 kPa)	18-20 psi (124-138 kPa)
Turf 2 and Carryall 2	30-34 psi (207-234 kPa)	
Carryall 2 Plus	30-34 psi (207-234 kPa)	
Turf 6 and Carryall 6	30-34 psi (207-234 kPa)	
LIQUID CAPACITIES		
Engine Crankcase without filter	32 oz. (.95 liters)	
Engine Crankcase with filter	38 oz. (1.12 liters)	
Unitized Transaxle	27 oz. (.8 liters)	
Gasoline Tank	7 gallons (26.5 liters)	
Transaxle		22 oz. (.67 liters)

SECTION 3 – GENERAL INFORMATION

Important features unique to different models covered in this manual are highlighted. Club Car, Inc. recommends the owner(s)/operator(s) read and understand this manual and pay special attention to features specific to their vehicle(s).

Each vehicle is equipped with either a two-position key switch or a three-position key switch. Vehicles equipped with a two-position key switch are periodically referred to as “pedal-start” and vehicles equipped with a three-position key switch are periodically referred to as “key-start”.

MODEL IDENTIFICATION

The serial number of the vehicle is printed on a bar code decal mounted on the frame directly above the accelerator pedal (Example: F0001-123456 for Electric or FG0001-123456 for Gasoline) **(Figure 3-1, Page 3-1)**. There is a second serial number decal mounted on the front body frame behind the center dash panel. The center dash panel must be removed to view this number **(Figure 3-2, Page 3-1)**.

NOTE

- ALWAYS HAVE THE VEHICLE SERIAL NUMBER AT HAND WHEN ORDERING PARTS OR MAKING INQUIRIES **(FIGURE 3-1, PAGE 3-1)**.

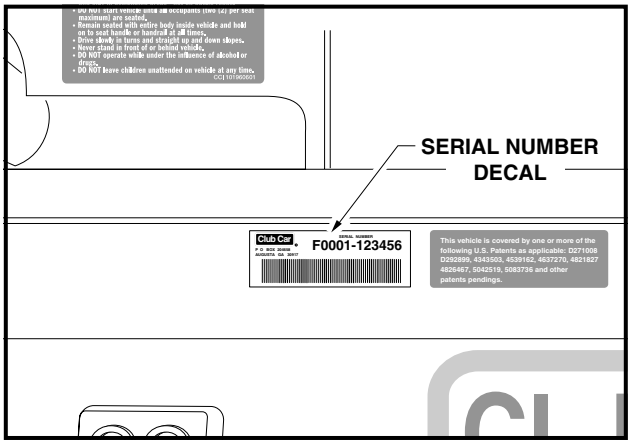

Figure 3-1 Serial Number Decal

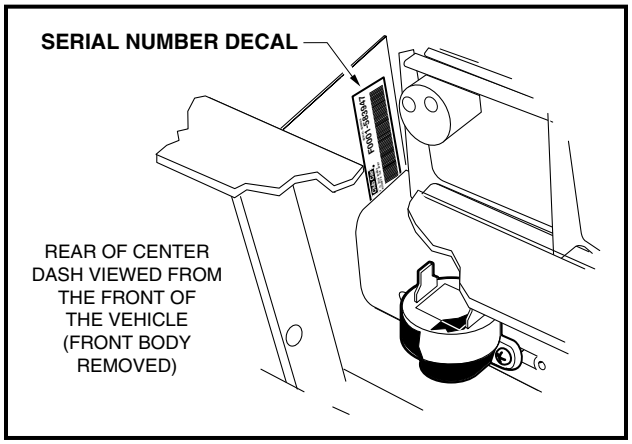

Figure 3-2 Serial Number Decal Behind Dash

PRE-OPERATION CHECKLIST

All Club Car vehicles are thoroughly inspected and adjusted by both the factory and the Club Car dealer. However, before accepting any new Club Car vehicle(s), the responsible individual should become familiar with the controls and operation, and carefully inspect each vehicle to be satisfied that it is in proper working condition before accepting delivery.

Use the following checklist as a guide to inspect the vehicle. This checklist may also be used in conjunction with Periodic Maintenance. **See Section 10 – Maintenance, in the appropriate maintenance and service supplement**. Any problems should be corrected by a Club Car dealer or a Club Car factory trained technician.

- **General:** All the parts should be in place and properly installed. Be sure all nuts, bolts and screws are tight. On gasoline vehicles, check hose clamps for tight fit and the starter belt for tightness.

- **Warning Decals:** Check to ensure all warning and operation decals are in place. **See the Turf or Carryall Owner's Manual.**
- **Tires:** Check for proper tire pressure. **See Section 2 – Specifications**.
- **Batteries (electric vehicles):** Check electrolyte to ensure it is at its proper level. **See Section 13 – Batteries, in the appropriate maintenance and service supplement**. Check battery posts. Wires should be tight and free of corrosion. Charge batteries completely before using vehicle for the first time.
- **Multi-Step Potentiometer (Turf 1 and Carryall 1 electric vehicles):** Be sure potentiometer (wiper switch) cover is properly secured prior to operating the vehicle.
- **Engine (gasoline vehicle):** Check for proper engine oil level. **See Engine Oil, Section 10 – Maintenance, in the appropriate maintenance and service supplement**.
- **Fuel (gasoline vehicle):** Check fuel level. **See Fueling Instructions, Section 10 – Maintenance, in the appropriate maintenance and service supplement**.

⚠ WARNING

- BE SURE THE PLASTIC HAS BEEN REMOVED FROM THE SEAT BOTTOM BEFORE OPERATING THE VEHICLE. FAILURE TO DO SO MAY RESULT IN A FIRE, PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH.

PERFORMANCE INSPECTION

After becoming familiar with the vehicle's controls and after reading and understanding the driving instructions, take the vehicle for a test drive. Use the following checklist as a guide to inspect the new vehicle. Any problems should be corrected by a Club Car dealer or a Club Car factory trained technician.

All Vehicles

- **Brakes:** Be sure the brakes function properly. When brake pedal is fully depressed under moderate pressure, it should ***not*** go more than halfway to the floor, and vehicle should come to a smooth, straight stop. If the brake pedal goes more than halfway to the floor, or if the vehicle swerves or fails to stop, have the brake system checked and adjusted as required. Brake adjustment must be maintained so the brake pedal ***cannot*** be depressed to the floor under any circumstance.
- **Park Brake:** When latched, the park brake should lock the wheels and hold vehicle stationary (on incline of 20% or less). The park brake should release when either the accelerator or brake pedal is depressed.
- **Reverse Buzzer:** The reverse buzzer(s) should sound as a warning when the vehicle is in REVERSE.
- **Steering:** The vehicle should be easy to steer and should not have any play in the steering wheel.
- **Accelerator:**
- **Pedal-Start Vehicles:** With the key switch in the ON position and the Forward/Reverse handle in the FORWARD position, depress accelerator pedal. As pedal is depressed, the engine or motor should start and the vehicle should accelerate smoothly to full speed. When pedal is released it should return to the original position and the engine or motor should stop. Club Car vehicles operate at reduced speed when in REVERSE.
- **Key-Start Vehicles:** After starting engine with the key switch, the vehicle should accelerate smoothly to full speed as the accelerator pedal is depressed. When the pedal is released it should return to the original position and engine should idle.
- **Governor (gasoline vehicles):** Check maximum speed of the vehicle. Turf 1, Turf 2 and Carryall 1 vehicles should operate at 12-15 mph (19-24 km/h) on a level surface. The Turf 6, Carryall 6 and Carryall 2 vehicles should operate at 14-16 mph (23-26 km/h) on a level surface. The Carryall 2 Plus should

operate at 17-18 mph (27-29 km/h) on a level surface. All Club Car vehicles operate at reduced speed when in REVERSE.

- **General:** Listen for any unusual noises such as squeaks or rattles. Check the vehicle's ride and performance. Have a Club Car distributor/dealer or a Club Car factory trained technician investigate anything unusual.

CONTROLS AND INDICATORS

⚠ DANGER

- **DO NOT OPERATE GASOLINE VEHICLE IN AN ENCLOSED AREA WITHOUT PROPER VENTILATION. GASOLINE ENGINES PRODUCE CARBON MONOXIDE GAS, WHICH IS AN ODORLESS, DEADLY POISON.**

⚠ WARNING

- BEFORE ALLOWING THE VEHICLE TO BE DRIVEN, MAKE SURE DRIVER IS FAMILIAR WITH ALL CONTROLS AND OPERATING PROCEDURES.
- DO NOT TAMPER WITH THE GASOLINE VEHICLE GOVERNOR. DOING SO WILL VOID THE WARRANTY, AS WELL AS DAMAGE THE ENGINE AND OTHER COMPONENTS, AND COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH DUE TO ACCIDENT AT UNSAFE SPEED.
- DO NOT MODIFY OR CHANGE THE VEHICLE IN ANY WAY WHICH MIGHT AFFECT ITS STABILITY OR HANDLING, OR INCREASE MAXIMUM SPEED BEYOND FACTORY SPECIFICATIONS. PROPERTY DAMAGE, PERSONAL INJURY OR DEATH COULD RESULT.
- DO NOT SHIFT THE FORWARD/REVERSE HANDLE WHILE THE VEHICLE IS MOVING. TO AVOID INJURY TO AN INATTENTIVE PASSENGER OR DAMAGE TO THE VEHICLE, ALWAYS BRING THE VEHICLE TO A FULL STOP BEFORE SHIFTING THE FORWARD/REVERSE HANDLE.
- RELEASE THE ACCELERATOR PEDAL AND THEN DEPRESS THE BRAKE PEDAL FIRMLY UNTIL THE VEHICLE STOPS. TO AVOID UNINTENTIONALLY STARTING OR ROLLING THE VEHICLE, SET THE PARK BRAKE, TURN THE KEY SWITCH TO **OFF** AND REMOVE THE KEY WHEN LEAVING THE VEHICLE.
- DO NOT EXCEED VEHICLE RATED WEIGHT CAPACITY.

KEY SWITCH

Pedal-Start Vehicles:

The key switch is mounted on the dash to the right of the steering column **(Figure 3-3, Page 3-4)**. It has two positions, OFF and ON, which are clearly labeled. **See following NOTE.**

Key-Start Vehicles:

The key switch is mounted on the dash to the right of the steering column. It has three positions, OFF, ON and START, which are clearly labeled. To start the vehicle, turn the key past the ON position to the START position and hold until the engine is running smoothly. Release the key and it will return to the ON position and the engine should idle **(Figure 3-4, Page 3-4)**.

NOTE

- THE KEY CAN BE REMOVED WHEN THE KEY SWITCH IS IN THE **OFF** POSITION ONLY.

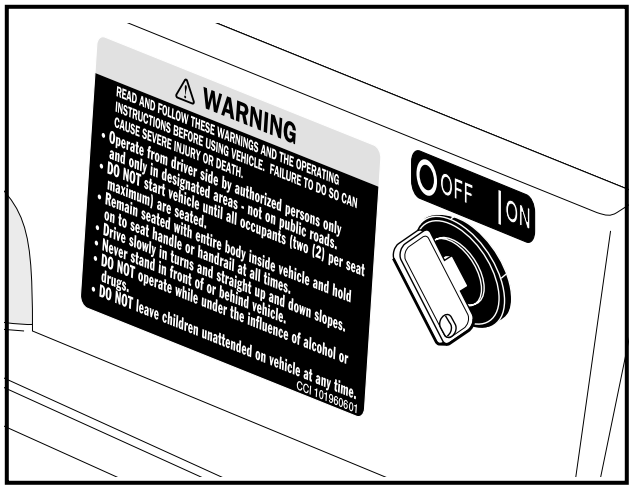

Figure 3-3 Key Switch for Pedal-Start Vehicles

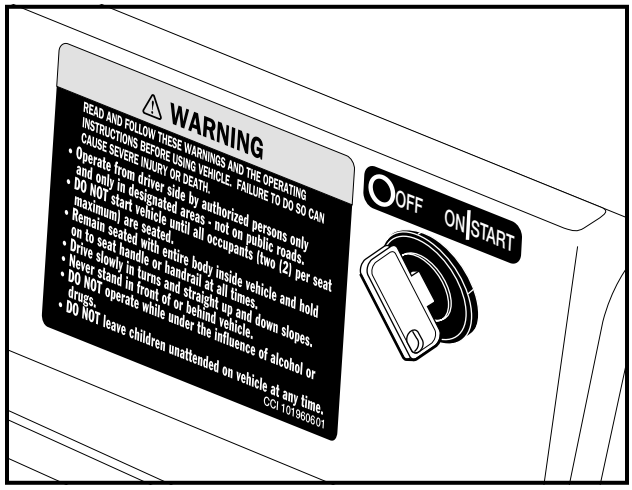

Figure 3-4 Key Switch for Key-Start Vehicles

FORWARD/REVERSE CONTROL

The Forward/Reverse handle is located on the seat support panel **(Figure 3-5, Page 3-4)**. The handle has three distinct positions: **F** (FORWARD), **N** (NEUTRAL) and **R** (REVERSE). Rotate the handle towards the driver, **F** (FORWARD), to operate the vehicle in the forward direction, or towards the passenger, **R** (REVERSE), to operate the vehicle in reverse. Club Car vehicles operate at a reduced speed when in reverse. The reverse buzzer will sound as a warning when the forward/reverse handle is in the REVERSE position.

- **Pedal-Start Vehicles:** When the Forward/Reverse handle is in the straight up or **N** (NEUTRAL) position, the vehicle will not run.
- **Key-Start Vehicles:** When the Forward/Reverse handle is in the straight up or **N** (NEUTRAL) position, the engine will idle. The engine will stop running if the accelerator pedal is depressed while the Forward/Reverse handle is in the NEUTRAL position.

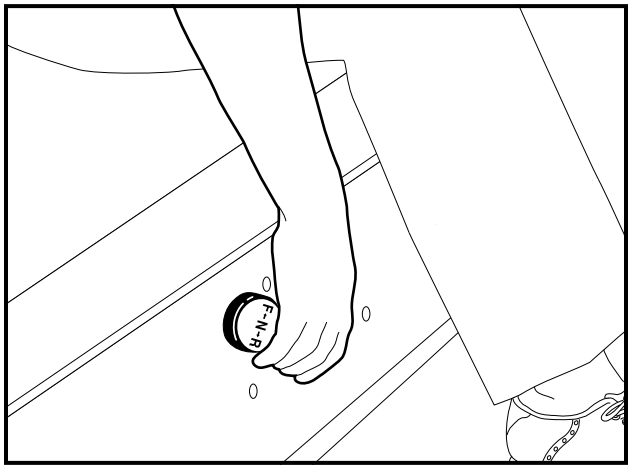

Figure 3-5 Forward/Reverse Handle

ACCELERATOR PEDAL

The accelerator pedal is the pedal on the right, with the word **GO** molded into it **(Figure 3-6, Page 3-5)**. The operation of the accelerator pedal differs from that of an automobile:

- **Pedal-Start Vehicle:** When the key switch is ON, and the Forward/Reverse handle is in either FORWARD or REVERSE, depressing the accelerator pedal will automatically release the park brake and start the vehicle moving in the direction selected (FORWARD or REVERSE). When the accelerator is released, power will be cut off and the engine will stop running.
- **Key-Start Vehicle:** The engine must first be running before shifting the Forward/Reverse handle and depressing the accelerator pedal. As the accelerator pedal is depressed, speed will increase until full speed is reached. When the accelerator is released, the engine will idle.

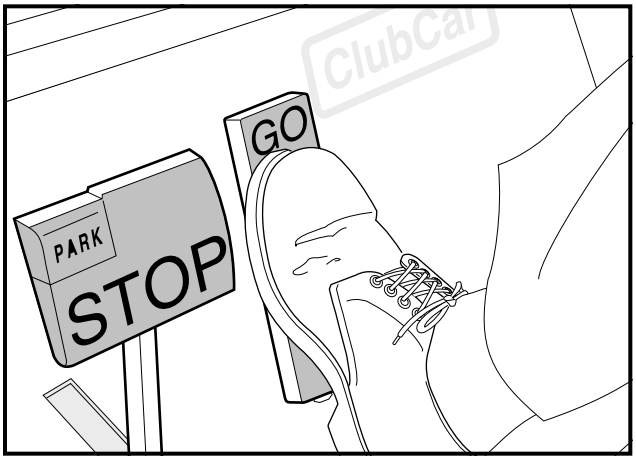

Figure 3-6 Accelerator and Brake Pedals

BRAKE PEDAL

The brake pedal is the large pedal on the left with the word **STOP** molded into it **(Figure 3-6, Page 3-5)**. To slow or stop the vehicle, depress the brake pedal **(Figure 3-7, Page 3-6)**.

PARK BRAKE PEDAL

The park brake pedal is the small raised portion in the upper left corner of the brake pedal. It has the word **PARK** molded into it and the words **PARK BRAKE** marked on top of it **(Figure 3-6, Page 3-5).** To set the park brake, depress the brake pedal firmly and tilt the park brake portion of the pedal forward with your foot **(Figure 3-8, Page 3-6)**. **See following WARNING.**

⚠ WARNING

- THE PARK BRAKE WILL RELEASE AUTOMATICALLY WHEN EITHER THE ACCELERATOR OR BRAKE PEDAL IS DEPRESSED. THE PARK BRAKE HAS MULTIPLE LOCKING POSITIONS AND SHOULD BE FIRMLY PRESSED AND LOCKED TO PREVENT THE VEHICLE FROM ROLLING.

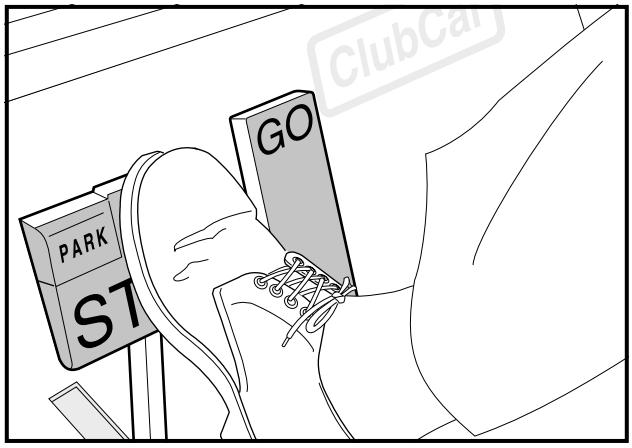

Figure 3-7 Brake Pedal

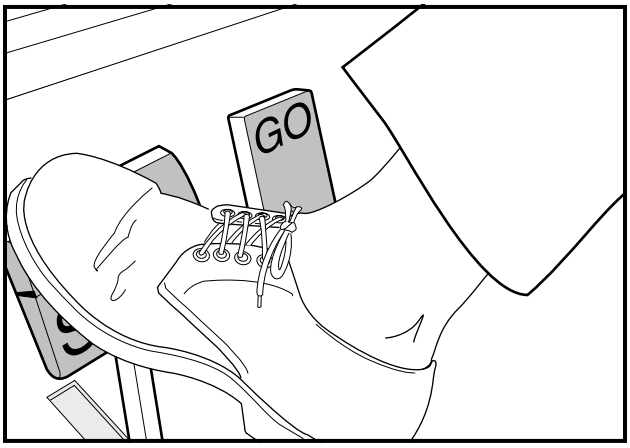

Figure 3-8 Park Brake

NEUTRAL LOCKOUT

Gasoline Vehicles Only

For the convenience of the trained technician, there is a neutral lockout cam (yellow knob) located on the back of the Forward/Reverse handle, inside the engine compartment. If the neutral lockout cam is pulled out approximately 3/8 inch (10 mm) and then rotated one-half turn until it snaps into place, the cam will be in the SERVICE position **(Figure 3-9, Page 3-6)**. **See following WARNING and NOTE.**

⚠ WARNING

- WITH THE CAM IN THE **SERVICE** POSITION AND THE ENGINE RUNNING, THE VEHICLE MAY MOVE SUDDENLY IF THE FORWARD/REVERSE HANDLE IS SHIFTED OR ACCIDENTALLY BUMPED. TO PREVENT THIS, CHOCK THE FRONT AND REAR WHEELS AND ALWAYS FIRMLY SET THE PARK BRAKE BEFORE SERVICING OR LEAVING THE VEHICLE.

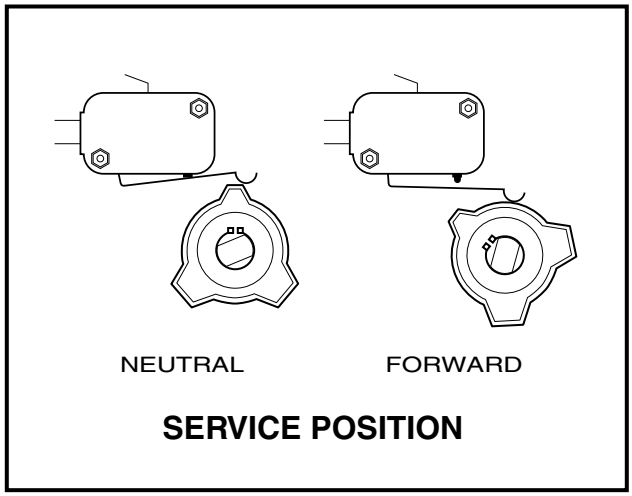

Figure 3-9 Neutral Lockout Cam - Service Position

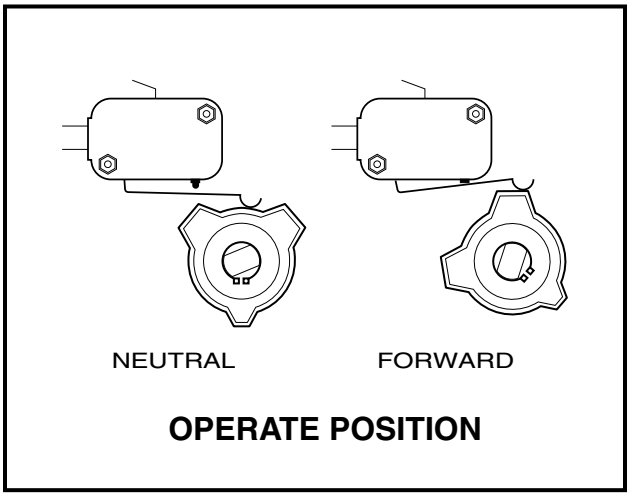

Figure 3-10 Neutral Lockout Cam - Operate Position

- **Pedal-Start vehicles:** When the cam is in the SERVICE position, it will allow the technician to run the engine in NEUTRAL to perform certain maintenance and/or repair functions. With the cam in this posi-

tion, the vehicle will not operate if the Forward/Reverse handle is placed in either the FORWARD or REVERSE position.

NOTE

- BE SURE TO RETURN THE CAM TO THE **OPERATE** POSITION AFTER SERVICING THE VEHICLE OR THE ENGINE WILL NOT RUN WITH THE FORWARD/REVERSE HANDLE IN EITHER THE **FORWARD** OR **REVERSE** POSITIONS.

- **Key-Start vehicles:** When the cam is in the SERVICE position, it will allow the technician to run the engine in FORWARD, REVERSE or NEUTRAL to perform certain maintenance and/or repair functions. However, if the Forward/Reverse handle is in either FORWARD or REVERSE and the accelerator pedal is depressed, the engine will stop running.

NOTE

- BE SURE TO RETURN THE CAM TO THE **OPERATE** POSITION AFTER SERVICING THE VEHICLE, OR THE ENGINE WILL STOP RUNNING WHEN THE ACCELERATOR PEDAL IS DEPRESSED AND THE FORWARD/REVERSE HANDLE IS IN EITHER **FORWARD** OR **REVERSE**.

- **All Gasoline Vehicles:** To put the cam back into the OPERATE position, pull the cam out approximately 3/8 inch (10 mm) and rotate it one half turn until it snaps into place **(Figure 3-10, Page 3-6)**.

CHOKE

Gasoline Vehicles Only

The choke is located on the seat support panel below and to the left of the driver's left knee. If the vehicle is hard to start in cool or cold temperatures, activate the choke:

- **Turf 1 and Carryall 1:** Push in the choke cover to activate it. Hold it during start up and release the choke cover after the engine starts and runs smoothly **(Figure 3-11, Page 3-7)**.
- **Turf 2, Turf 6, Carryall 2, Carryall 6 and Carryall 2 Plus:** Pull out the choke handle to activate the choke. Hold it during start up and release the handle when the engine begins to run smoothly **(Figure 3-12, Page 3-7)**.

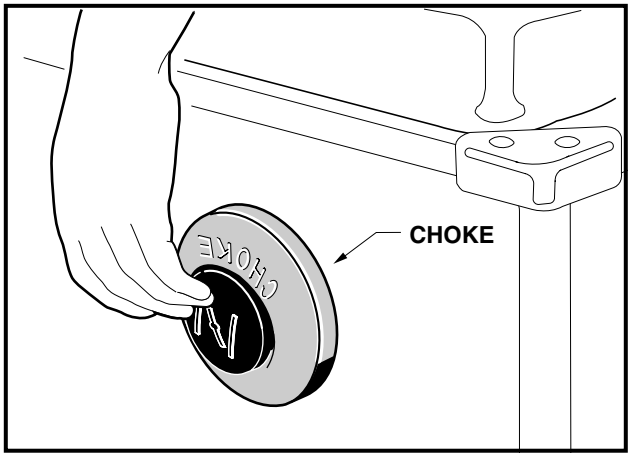

Figure 3-11 Choke Button

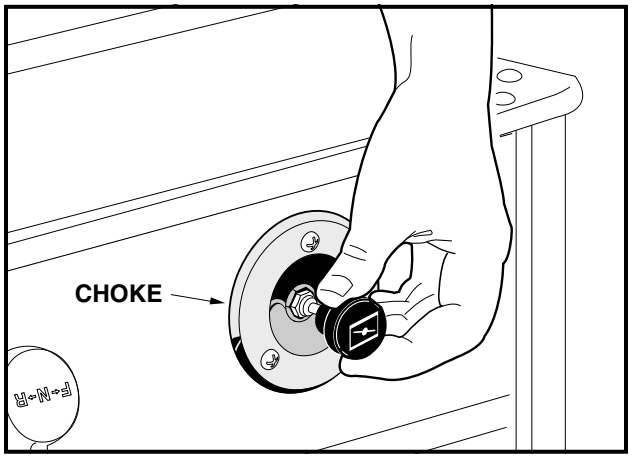

Figure 3-12 Choke Cable

OIL LIGHT

Gasoline Vehicles Only

The gasoline vehicle is equipped with a low oil warning light, located on the dash panel just above the steering column **(Figure 3-13, Page 3-8)**. If the oil warning light comes on, oil should be checked and added to the engine as necessary before continuing to use the vehicle. The vehicle should never be driven when the oil warning light remains on. If the oil warning light goes on and off, the vehicle may be driven, but oil should be checked at the first opportunity. If the oil level is correct and the light stays on, have a Club Car factory trained technician check the vehicle.

⚠ CAUTION

- FAILURE TO ADD OIL IMMEDIATELY WHEN THE OIL WARNING LIGHT STAYS ON MAY RESULT IN PERMANENT ENGINE DAMAGE.

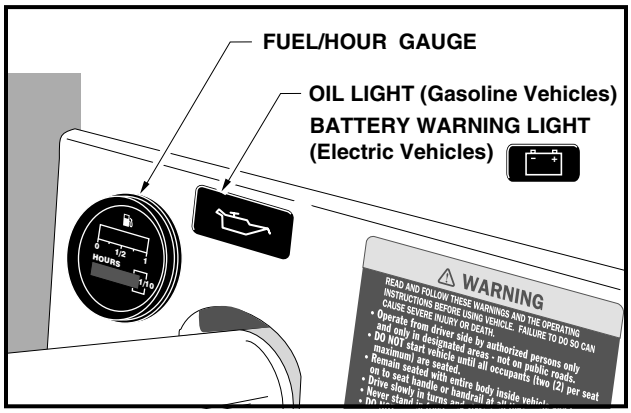

Figure 3-13 Oil Light

FUEL/HOUR GAUGE

Gasoline Vehicles Only

The gasoline vehicle is equipped with a fuel/hour gauge, located on the dash panel **(Figure 3-13, Page 3-8)**. The fuel gauge allows the operator to monitor the fuel level in the vehicle. The hour meter should be used by the trained technician in order to track vehicle usage and determine when periodic service procedures are required.

BATTERY WARNING LIGHT

Electric Vehicles Only

PowerDrive System 48 electric vehicles feature a dash-mounted battery warning light (above steering column) that, when the vehicle is in operation, indicates low battery voltage, or when the vehicle is being charged, indicates a charging problem. The battery warning light is controlled by the PowerDrive onboard computer.

When the vehicle is in operation, the warning light will illuminate and remain illuminated if:

- Batteries voltage drops below 48 volts when there is no load on the batteries (the vehicle is stopped and there are no accessories on).
- Batteries are discharged to less than 25% of their capacity.

If the warning light illuminates repeatedly, with four second intervals, when the vehicle is operating, there will be enough power remaining to drive the vehicle for approximately 30 minutes. However, the vehicle should be charged at the first opportunity. If the warning light illuminates and the vehicle is unable to operate for 30 minutes, have a Club Car distributor/dealer check the vehicle for a possible battery or electrical system problem.

When the batteries receive an incomplete charge because 1) the DC power cord is disconnected, 2) AC power to the charger is interrupted, 3) automatic charger shut-off occurs after 16 hours of operation, or 4) the charger malfunctions, the warning light will indicate as follows:

- The warning light will not illuminate if the charge is 90% or more complete. The onboard computer will retain in memory the amount of charge needed to fully replenish the batteries and will complete the charge during the next charge cycle.
- When the charger is unplugged, the warning light will illuminate and remain illuminated for 10 seconds if the charge is less than 90% complete but the vehicle has enough power for approximately 30 minutes of operation. This will alert the operator that the vehicle may be used, but that it must be charged to completion as soon as possible.
- The warning light will repeatedly illuminate for 10 seconds, at 4 second intervals, if charger times out at 16 hours **(see PowerDrive Battery Charger Owner's Manual)** and the batteries are not sufficiently charged. This indicates an abnormal charge cycle. The charger and batteries should be checked by a Club Car distributor/dealer.
- The warning light will repeatedly illuminate for 10 seconds, at 4 second intervals, during a charge cycle (DC plug is still connected) if AC power to the charger is interrupted. The light will go out when AC power is restored.
- **LED Light:** In addition to the warning light, there is an infrared LED in the dash light assembly which transmits an infrared signal from the onboard computer (OBC). This signal is received by the optional Communication Display Module which provides information on the condition of the vehicle and batteries.

DRIVING INSTRUCTIONS

⚠ WARNING

- ONLY LICENSED DRIVERS SHOULD BE ALLOWED TO DRIVE THIS VEHICLE.
- BEFORE ALLOWING THE VEHICLE TO BE DRIVEN, MAKE SURE THE DRIVER IS FAMILIAR WITH ALL CONTROLS AND OPERATING PROCEDURES.
- NO MORE THAN TWO PEOPLE SHOULD BE IN THE VEHICLE AT ONE TIME.
- DO NOT ALLOW PASSENGERS IN THE CARGO BED.
- THE VEHICLE IS NOT SPECIALLY EQUIPPED FOR HANDICAPPED PERSONS. BE SURE ALL PASSENGERS ARE CAPABLE OF SECURING THEMSELVES IN A MOVING VEHICLE BEFORE ALLOWING THEM TO RIDE IN ONE.
- FOR NIGHT USE, THE VEHICLE MUST BE EQUIPPED WITH HEADLIGHTS, TAILLIGHTS AND REFLECTORS.
- STOP THE VEHICLE BEFORE SHIFTING THE FORWARD/REVERSE HANDLE. FAILURE TO DO SO MAY RESULT IN INJURY TO AN INATTENTIVE PASSENGER AND (OR) DAMAGE TO THE VEHICLE.
- TO AVOID BEING STRUCK, DO NOT STAND IN FRONT OF OR BEHIND THE VEHICLE.

WHEN DRIVING THE VEHICLE:

- OPERATE THE VEHICLE ONLY FROM THE DRIVER SIDE OF THE SEAT.
- TO PREVENT FALLS FROM A MOVING VEHICLE, REMAIN SEATED AND HOLD ON TO HANDRAILS AT ALL TIMES. DRIVER SHOULD KEEP BOTH HANDS ON THE STEERING WHEEL WHEN THE VEHICLE IS IN MOTION.
- TO PREVENT THE POSSIBILITY OF SERIOUS INJURY, KEEP ENTIRE BODY INSIDE THE VEHICLE.
- TO PREVENT OVERTURNING THE VEHICLE, DRIVE SLOWLY IN TURNS AND STRAIGHT UP AND DOWN SLOPES. **DO NOT DRIVE THE VEHICLE ON SLOPES EXCEEDING 20% INCLINE.**
- AVOID STOPPING A LOADED VEHICLE ON A HILL. IF A LOADED VEHICLE MUST BE STOPPED ON A HILL, AVOID SUDDEN STARTS OR ROLLING BACKWARDS AND STOPPING SUDDENLY. FAILURE TO HEED THIS WARNING COULD RESULT IN VEHICLE OVERTURNING.

WARNING CONTINUED ON NEXT PAGE...

⚠ WARNING

- TO AVOID POSSIBLE INJURY TO AN INATTENTIVE PASSENGER AND (OR) DAMAGE TO THE VEHICLE, AVOID SUDDEN STARTS, SUDDEN STOPS AND ABRUPT TURNS.
- DO NOT USE THE VEHICLE ON PUBLIC ROADS. IT IS NOT DESIGNED OR INTENDED FOR STREET USE AND SHOULD NOT BE LICENSED FOR USE ON PUBLIC ROADS.
- THE VEHICLE SHOULD BE DRIVEN ONLY IN SPECIFIED AREAS BY TRAINED DRIVERS.
- DO NOT DRIVE WHILE UNDER THE INFLUENCE OF ALCOHOL, DRUGS OR MEDICATIONS.
- OPERATOR MUST CONTROL VEHICLE SPEED WHEN GOING DOWNHILL.
- **GASOLINE VEHICLE ONLY:** DEPRESS THE BRAKE PEDAL AS NECESSARY AND DEPRESS THE ACCELERATOR PARTIALLY WHEN DESCENDING A HILL. WITH THE ACCELERATOR PEDAL PARTIALLY DEPRESSED, THE GOVERNOR WILL CAUSE THE ENGINE TO ASSIST THE BRAKES IN CONTROLLING DOWNHILL SPEED.

No one should drive the vehicle without first being instructed in the proper operation and use of the vehicle controls. An experienced operator should accompany each first-time driver on a test drive before allowing him/her to operate the vehicle alone.

To ensure safe operation of the vehicle, follow exactly and in order, all of the following procedures. Read and understand all instructions prior to driving the vehicle.

STARTING THE VEHICLE

1. Be sure load is secure.
2. Study and understand all controls.
3. Be sure everyone is seated and holding onto seat handles. Driver should have both hands on the steering wheel.
4. Read safety warnings located above pedals.
5. Make sure wheels are turned in desired direction and that nothing is in your path.

- **Pedal-Start Vehicle:**
  - 5.1. Turn key to the ON position.
  - 5.2. Select direction by placing shift handle in desired position (F = FORWARD or R = REVERSE).
  - 5.3. Slowly depress accelerator pedal. The park brake will release automatically and the vehicle will start to move. As the accelerator pedal is depressed, speed will increase until full speed is reached. **See following WARNING and NOTE.**

- **Key-Start Vehicle:**
  - 5.1. Make sure the Forward/Reverse handle is in the NEUTRAL position.
  - 5.2. Depress and hold the brake pedal.
  - 5.3. Turn the key all the way to the START position and release after engine is started. The engine will idle.
  - 5.4. While keeping the brake engaged, select direction of travel by placing the Forward/Reverse handle in desired position (F = FORWARD or R = REVERSE).
  - 5.5. Release the brake pedal completely, and then slowly depress the accelerator pedal. As the accelerator is depressed, speed will increase until full speed is reached.

⚠ WARNING

- VEHICLE OPERATOR MUST CONTROL SPEED WHEN GOING DOWNHILL.
- **GASOLINE VEHICLE ONLY:** NEVER SHIFT THE VEHICLE OUT OF **FORWARD** WHILE GOING DOWNHILL. IF YOU DO, YOU WILL NOT BE ABLE TO SHIFT INTO **REVERSE** OR BACK INTO **FORWARD** UNTIL STOPPED.

NOTE

- **PEDAL-START VEHICLE:** IF THE VEHICLE IS SHIFTED INTO NEUTRAL, POWER WILL BE CUT OFF AND THE VEHICLE WILL STOP RUNNING.
- **KEY-START VEHICLE:** IF THE ACCELERATOR PEDAL IS DEPRESSED WHILE THE FORWARD/REVERSE HANDLE IS IN **NEUTRAL**, OR IF YOU TRY TO SHIFT FROM **FORWARD** TO **REVERSE** WHILE THE ACCELERATOR PEDAL IS DEPRESSED, THE ENGINE WILL SHUT OFF. TO KEEP THE ENGINE RUNNING, THE ACCELERATOR PEDAL MUST BE RELEASED COMPLETELY BEFORE SHIFTING THE VEHICLE.

STOPPING THE VEHICLE

⚠ WARNING

- DRIVING THROUGH WATER MAY AFFECT THE BRAKES. AFTER DRIVING THROUGH WATER, CHECK EFFECTIVENESS OF THE BRAKES BY GENTLY DEPRESSING THE BRAKE PEDAL. IF THE VEHICLE DOES NOT SLOW DOWN AT THE NORMAL RATE, CONTINUE TO DEPRESS THE BRAKE PEDAL UNTIL THE BRAKES DRY OUT AND NORMAL PERFORMANCE RETURNS.

⚠ CAUTION

- WHEN STOPPED ON A HILL, USE THE BRAKE PEDAL TO HOLD YOUR POSITION. DO NOT USE THE ACCELERATOR PEDAL.

To stop the vehicle, release the accelerator pedal and depress the brake pedal until the vehicle comes to a complete stop.

PARKING AND LEAVING THE VEHICLE

1. After stopping the vehicle, firmly depress the park brake pedal until it locks. This will prevent the vehicle from rolling.
2. Turn the key switch to OFF and place the Forward/Reverse handle in the NEUTRAL position. Remove the key when the vehicle is not in use. For gasoline vehicles, turn the fuel shut-off valve to closed (OFF) position when the vehicle is not in use **(Figure 3-18, Page 3-15)**.

BED LATCH

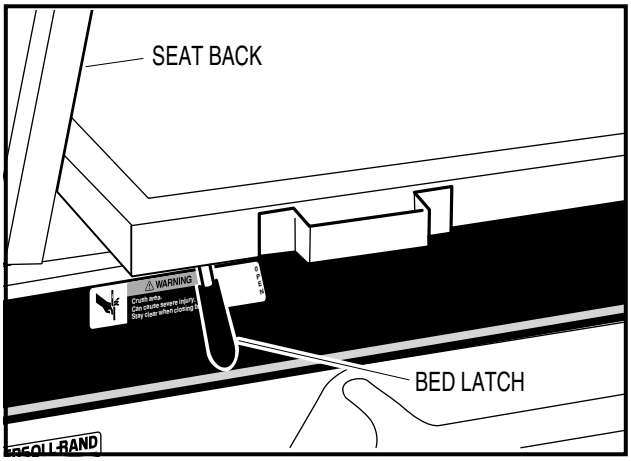

Figure 3-14 Bed Latch

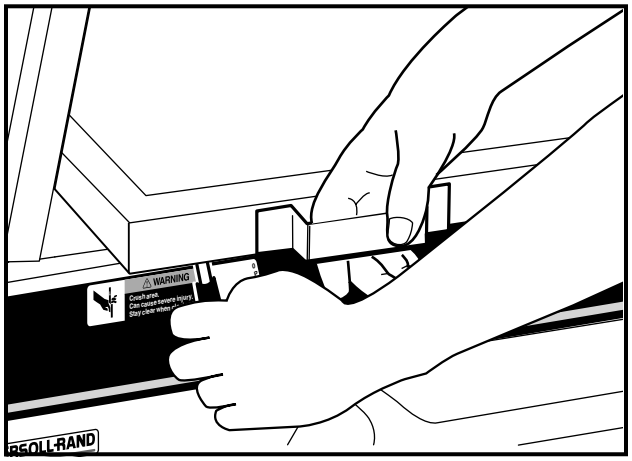

Figure 3-15 Lift Bed

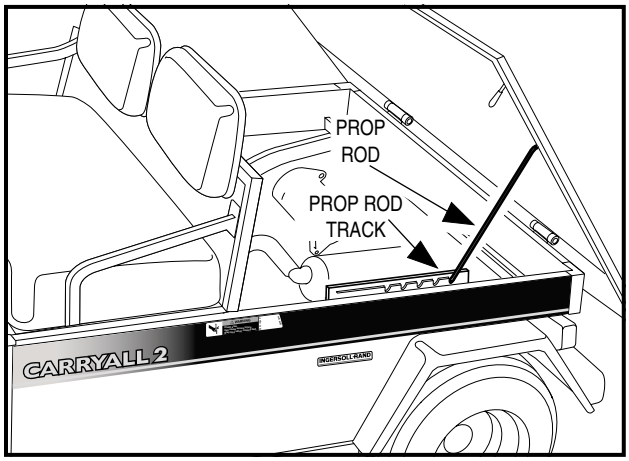

Figure 3-16 Prop Rod

The Turf 1, Turf 2, Carryall 1, Carryall 2, and Carryall 2 Plus are equipped with a bed latch on the driver side of the vehicle as standard equipment **(Figure 3-14, Page 3-11)**. To lift the bed, pull the latch handle toward the rear of the vehicle and lift the bed **(Figure 3-15, Page 3-11)**. To close the bed, lower it gently until the bed latch engages. DO NOT drop the bed.

⚠ WARNING

- KEEP HANDS AND FINGERS CLEAR OF CRUSH AREA BETWEEN THE BED AND THE SEAT BACK SUPPORT.

NOTE

- THE TURF 2, CARRYALL 2 AND CARRYALL 2 PLUS ARE EQUIPPED WITH AN AUTOMATICALLY ENGAGING PROP ROD, UNLESS EQUIPPED WITH THE HYDRAULIC OR ELECTRIC BED LIFT OPTION **(FIGURE 3-16, PAGE 3-12)**.

LOADING AND UNLOADING

Center cargo as far forward as possible in the cargo bed and secure it. **See following WARNING.**

⚠ WARNING

- FIRMLY ENGAGE THE PARK BRAKE BEFORE LOADING THE VEHICLE.
- DO NOT ALLOW PASSENGERS IN THE CARGO BED.
- DO NOT EXCEED THE RATED CAPACITY OF THE VEHICLE: 800 LB. (363 KG) FOR THE TURF 1 AND CARRYALL 1, 1200 LB. (544 KG) FOR THE TURF 2, CARRYALL 2 AND CARRYALL 2 PLUS, AND 1500 LB. (680 KG) FOR THE TURF 6 AND CARRYALL 6. THIS INCLUDES ALL PASSENGERS, THE LOAD IN THE CARGO BED, AND THE SUM OF THE GROSS WEIGHT AND TONGUE WEIGHT OF A TRAILER. MAXIMUM SUM OF THE GROSS WEIGHT AND TONGUE WEIGHT OF TRAILER: 300 LB. (136 KG) FOR THE TURF 1 AND CARRYALL 1, 800 LB. (363 KG) FOR THE TURF 2, CARRYALL 2 AND CARRYALL 2 PLUS, AND 1000 LB. (454 KG) FOR THE TURF 6 AND CARRYALL 6. THE TONGUE WEIGHT OF ANY TRAILER SHOULD NEVER EXCEED 150 LB. (68 KG). OVERLOADING CAN AFFECT VEHICLE HANDLING OR CAUSE COMPONENT FAILURE, RESULTING IN LOSS OF CONTROL OF VEHICLE AND POSSIBLE SEVERE PERSONAL INJURY.
- VEHICLE LOAD AND SPEED MUST BE REDUCED WHEN DRIVING UP OR DOWN SLOPES OR ON UNEVEN TERRAIN. RATED CAPACITY IS FOR LEVEL SURFACES ONLY.

WARNING CONTINUED ON NEXT PAGE...

⚠ WARNING

- REDUCE SPEED AND AVOID SUDDEN STOPS WHEN BACKING UP. FAILURE TO DO SO MAY CAUSE THE VEHICLE TO OVERTURN OR FLIP OVER BACKWARDS.
- DO NOT LOAD THE TAILGATE. THE TAILGATE SHOULD BE IN THE UPRIGHT POSITION AND LATCHED SECURELY WHILE THE VEHICLE IS IN MOTION.
- TO AVOID SHIFTING THE VEHICLE LOAD AND POSSIBLY OVERTURNING THE VEHICLE, AVOID SUDDEN STARTS, SUDDEN STOPS AND ABRUPT TURNS. THE CARGO'S CENTER OF GRAVITY MAY AFFECT THE HANDLING, STEERING AND VEHICLE BRAKING.
- TO PREVENT CARGO FROM SHIFTING AND POSSIBLY INJURING A PASSENGER OR AFFECTING VEHICLE HANDLING, MAKE SURE CARGO IS WELL SECURED.
- AVOID TOP-HEAVY LOADS. THE CENTER OF GRAVITY OF A LOAD SHOULD NEVER EXCEED 15 INCHES (38 CM) ABOVE THE BOTTOM OF THE CARGO BED.

TOWING WITH THE VEHICLE

⚠ WARNING

- NEVER TOW A VEHICLE OR TRAILER ON PUBLIC STREETS OR HIGHWAYS.
- NORMAL VEHICLE OPERATING SPEED SHOULD BE REDUCED WHEN TOWING.
- EXTREME CAUTION SHOULD BE USED WHEN TOWING.
- TOTAL VEHICLE CAPACITY, INCLUDING TOW VEHICLE LOAD AND GROSS TRAILER WEIGHT, MUST NOT EXCEED 800 LB. (363 KG) FOR THE TURF 1 AND CARRYALL 1, 1200 LB. (544 KG) FOR TURF 2, CARRYALL 2 AND CARRYALL 2 PLUS AND 1500 LB. (680 KG) FOR TURF 6 AND CARRYALL 6. DO NOT EXCEED A TONGUE WEIGHT OF 150 LB. (68 KG) FOR ANY TURF OR CARRYALL VEHICLE.
- DO NOT ALLOW PASSENGERS IN THE VEHICLE OR TRAILER BEING TOWED.
- AVOID SUDDEN STARTS, SUDDEN STOPS AND TIGHT TURNS WHEN TOWING.
- AVOID STOPPING ON A HILL WHEN TOWING. IF YOU MUST STOP ON A HILL, AVOID SUDDEN STARTS OR ROLLING BACKWARDS AND STOPPING SUDDENLY. FAILURE TO HEED THIS WARNING MAY CAUSE VEHICLE TO OVERTURN, POSSIBLY RESULTING IN SEVERE PERSONAL INJURY.

Because towing a vehicle or trailer can have adverse effects on vehicle handling, be especially cautious when towing with a Club Car vehicle. Total vehicle capacity, including the tow vehicle load rating and the gross trailer weight of the vehicle or trailer should not exceed the weight specified in the preceding WARNING. The trailer tongue weight should not exceed 150 lb. (68 KG).

Parking the vehicle with a trailer on a hill should be avoided. If you must park on a hill, apply the brakes and have someone chock the tires of the trailer. Brakes should be released to allow the chocks to absorb the load of the trailer. After the tires have been chocked, engage the park brake.

TRANSPORTING ON A TRAILER

If the vehicle must be transported over long distances or on public highways, it should be done on an approved trailer. **See following WARNING.**

⚠ WARNING

- DO NOT ALLOW PEOPLE IN THE TRAILER BEING TOWED.
- AVOID SUDDEN STARTS, SUDDEN STOPS AND TIGHT TURNS WHEN TOWING.
- AVOID STOPPING ON A HILL WHEN TOWING. IF YOU MUST STOP ON A HILL, AVOID SUDDEN STARTS OR ROLLING BACKWARDS AND STOPPING SUDDENLY. FAILURE TO HEED THIS WARNING COULD CAUSE THE VEHICLE TO OVERTURN, POSSIBLY RESULTING IN SEVERE PERSONAL INJURY.
- NORMAL OPERATING SPEED SHOULD BE REDUCED WHEN TOWING A TRAILER.
- NEVER TRANSPORT THE VEHICLE ON A TRAILER WITH A LOAD IN THE VEHICLE CARGO BED.
- FOR USE ON PUBLIC ROADS, THE TRAILER MUST MEET ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS SUCH AS TAILLIGHTS, BRAKE LIGHTS, ETC.
- NEVER TOW A CLUB CAR VEHICLE BEHIND A PASSENGER VEHICLE OR TRUCK ON A PUBLIC ROAD UNLESS IT IS ON AN APPROVED TRAILER.
- ALWAYS USE AN APPROVED TRAILER THAT HAS A LOAD RATING OF AT LEAST 1600 LB. (727 KG) (TURF 1, TURF 2 CARRYALL 1, CARRYALL 2 AND CARRYALL 2 PLUS) (OR 2000 LB. (909 KG) FOR TURF 6 AND CARRYALL 6) PER VEHICLE TO BE TOWED. FOR EXAMPLE: A TWO-CAR TRAILER SHOULD BE RATED AT 2 X 1600 = 3200 LB (2 X 727 = 1454 KG).
- THE VEHICLE TO BE TOWED SHOULD BE TIED SECURELY TO THE TRAILER, WITH THE FORWARD/REVERSE HANDLE IN **NEUTRAL**, KEY SWITCH **OFF**, AND PARK BRAKE FIRMLY DEPRESSED AND LOCKED.
- DUE TO THE ADDED LENGTH OF THE TRAILER, USE CAUTION WHEN TURNING CORNERS.
- REMOVE THE VEHICLE WINDSHIELD BEFORE TRANSPORTING ON A TRAILER.
- **GASOLINE VEHICLE ONLY:** TURN FUEL SHUT-OFF VALVE TO CLOSED (**OFF**) **(FIGURE 3-18, PAGE 3-15)**.

STORAGE – GASOLINE VEHICLE

Read DANGER and WARNING in Section 1 – Safety.

⚠ DANGER

- **NEVER ATTEMPT TO DRAIN GASOLINE WHEN THE ENGINE IS HOT OR WHILE IT IS RUNNING. BE SURE TO CLEAN UP ANY SPILLED GASOLINE BEFORE OPERATING VEHICLE.**
- **STORE GASOLINE IN AN APPROVED GASOLINE CONTAINER ONLY. STORE IN A WELL VENTILATED AREA AWAY FROM SPARKS, OPEN FLAMES, HEATERS, OR HEAT SOURCES.**
- **DO NOT SERVICE, REPAIR, OR OPERATE IN AN ENCLOSED AREA WITHOUT PROPER VENTILATION. THE ENGINE PRODUCES CARBON MONOXIDE WHICH IS AN ODORLESS, DEADLY POISON.**
- **KEEP GASOLINE OUT OF THE REACH OF CHILDREN.**
- **DO NOT SIPHON GASOLINE FROM THE VEHICLE.**

To prepare vehicle for extended storage:

1. Unload the vehicle completely so that only minimum vehicle weight will be on tires.
2. Store vehicle in a cool place. This will prevent battery self-discharge. If the battery appears to be weak, have it charged using an automotive-type 12-volt battery charger rated 10 amps or less.

⚠ WARNING

- TURN THE KEY SWITCH **OFF**, REMOVE THE KEY, AND LEAVE THE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION DURING STORAGE. THIS IS TO PREVENT UNINTENTIONALLY STARTING THE VEHICLE.

WARNING CONTINUED ON NEXT PAGE...

⚠ WARNING

- DO NOT ATTEMPT TO CHARGE A BATTERY IF IT IS FROZEN OR IF THE CASE IS BULGED. PROPERLY DISCARD THE BATTERY. FROZEN BATTERIES CAN EXPLODE.

⚠ CAUTION

- BATTERIES IN A LOW STATE OF CHARGE WILL FREEZE AT LOW TEMPERATURES.

3. Drain carburetor and seal the fuel tank.
   3.1. Place the Forward/Reverse handle in the NEUTRAL position and the neutral lockout cam in the SERVICE position **(Figure 3-9, Page 3-6)**. Turn the fuel shut-off valve to the closed (OFF) position **(Figure 3-17, Page 3-15 and Figure 3-18, Page 3-15)** and run the engine until fuel remaining in the carburetor and fuel lines is used up and the engine stalls. Return the neutral lockout cam to the OPERATE position **(Figure 3-10, Page 3-6)**.

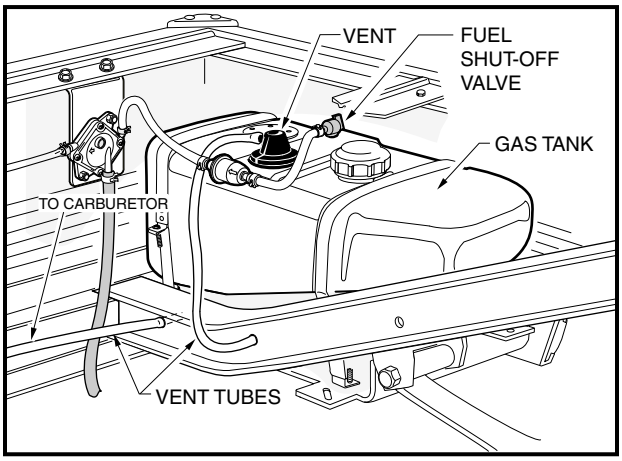

Figure 3-17 Fuel Tank, Vent and Lines

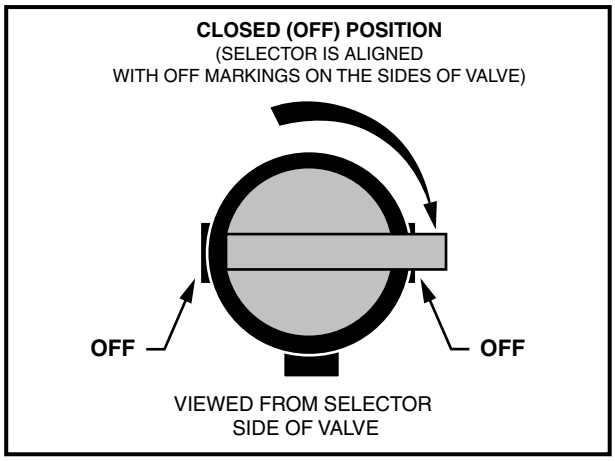

Figure 3-18 Fuel Shut-Off Valve - OFF Position

   3.2. Loosen (do not remove) carburetor drain screw and drain fuel remaining in bowl into a small container, then pour the fuel from the container into vehicle fuel tank. Retighten carburetor drain screw.
   3.3. Disconnect fuel vent line from fuel tank vent nipple.
   3.4. Plug the fuel tank vent nipple so it is air tight. Club Car recommends using a slip-on vinyl cap.
4. To protect the engine, remove the spark plug and pour 1/2 ounce of SAE 10 weight oil into the engine through the spark plug hole. Rotate the engine crankshaft by hand several times and then re-install spark plug.
5. Inflate tires to rated capacity. **See Section 8 – Wheels and Tires.**
6. Grease front suspension and do all semiannual periodic lubrication. **See Section 10 – Maintenance, in the appropriate maintenance and service supplement.**
7. Thoroughly clean front body, rear cargo bed, seats, engine compartment, and underside of vehicle.
8. Do not latch the park brake. Chock wheels to prevent the vehicle from rolling.

RETURN STORED VEHICLE TO SERVICE

1. Restore fuel system to operation.
   1.1. Remove plug from the fuel tank vent nipple and connect the vent line to the nipple. Turn fuel shut-off valve to open (ON) **(Figure 3-17, Page 3-15 and Figure 3-19, Page 3-16)**. Make sure the

valve is fully open. A partially closed fuel valve **(Figure 3-20, Page 3-16)** combined with the use of the choke can result in a fouled spark plug and engine failure.

1.2. Place the Forward/Reverse handle in the NEUTRAL position and the neutral lockout cam in the SERVICE position **(Figure 3-9, Page 3-6)**. Crank the engine until fuel is pumped into the carburetor and fuel lines and the engine starts. Turn engine off and return neutral lockout cam to the OPERATE position **(Figure 3-10, Page 3-6)**.

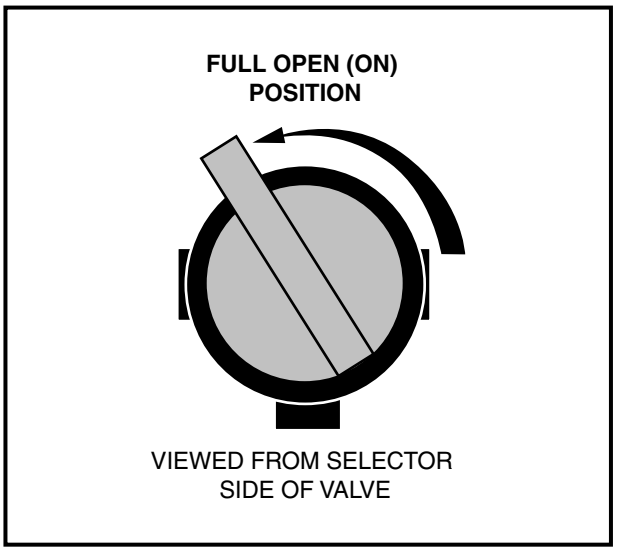

Figure 3-19 Fuel Shut-Off Valve - ON Position

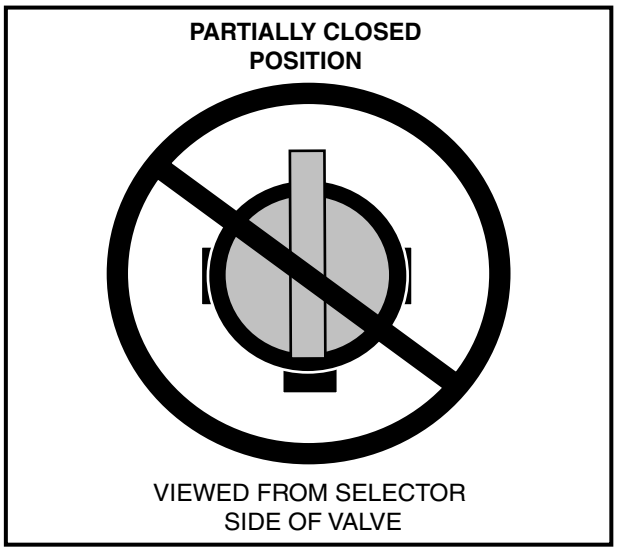

Figure 3-20 Incorrect Fuel Shut-Off Valve Setting

2. Adjust tire pressure to rated capacity. **See Section 8 – Wheels and Tires.**
3. Perform the Pre-Operation Checklist. **See Page 3-1.**

NOTE

- WHEN STARTING THE ENGINE FOR THE FIRST TIME AFTER IT HAS BEEN STORED, IT MAY SMOKE EXCESSIVELY FOR A SHORT WHILE. THIS IS DUE TO THE OIL THAT WAS ADDED TO THE ENGINE TO PREPARE IT FOR STORAGE.

STORAGE – ELECTRIC VEHICLE

Read DANGER and WARNING in Section 1 – Safety.

⚠ WARNING

- TURN THE KEY SWITCH **OFF**, REMOVE THE KEY, AND LEAVE THE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION DURING STORAGE. THIS IS TO PREVENT UNINTENTIONALLY STARTING THE VEHICLE.
- DO NOT ATTEMPT TO CHARGE FROZEN BATTERIES OR BATTERIES WITH BULGED CASES. DISCARD THE BATTERIES. FROZEN BATTERIES CAN EXPLODE.

⚠ CAUTION

- BATTERIES IN A LOW STATE OF CHARGE WILL FREEZE AT LOW TEMPERATURES.

CAUTION CONTINUED ON NEXT PAGE...

⚠ CAUTION

- WHEN WASHING THE VEHICLE, DO NOT DIRECT WATER STREAM AT THE SPEED SWITCH, FORWARD/REVERSE SWITCH, OR OTHER ELECTRONIC COMPONENT.
- IF BATTERY WIRE TERMINALS ARE DAMAGED OR CORRODED, THEY SHOULD BE REPLACED OR CLEANED AS NECESSARY. FAILURE TO DO SO MAY CAUSE THEM TO OVERHEAT DURING OPERATION.

1. Unload the vehicle completely so that only minimum vehicle weight will be on the tires.
2. Fully charge batteries. **See Section 13 – Batteries, in the appropriate maintenance and service supplement**.
3. Wash off any corrosion around the terminals with a solution of baking soda and water (one cup per gallon of water), then rinse solution from the batteries (do not allow this solution to enter the batteries). Let the terminals dry and coat them with Battery Terminal Protector (Club Car Part No. 1014305).
4. Store in a cool, dry place. This will minimize battery self-discharge.
5. Adjust tire pressure to rated capacity. **See Section 8 – Wheels and Tires.**
6. Grease front suspension and do all semiannual periodic lubrication. **See Periodic Lubrication Schedule, Section 10 – Periodic Maintenance, in the appropriate maintenance and service supplement.**
7. Thoroughly clean front and rear body, seats, battery compartment, and underside of vehicle.
8. Do not latch the park brake. Chock wheels to prevent the vehicle from rolling.
9. Keep batteries fully charged during storage. **See Section 13 – Batteries, in the appropriate maintenance and service supplement.** Leave PowerDrive chargers plugged in during storage. The PowerDrive storage charge feature will automatically charge the batteries as needed throughout storage period. If it is not possible to charge the batteries due to the unavailability of AC power, leave them disconnected while vehicle is in storage. **See Section 13 – Batteries, in the appropriate maintenance and service supplement.**

NOTE

- FOR POWERDRIVE VEHICLES, AC POWER MUST BE PRESENT FOR THE AUTOMATIC STORAGE CHARGE FEATURE TO FUNCTION.
- A POWERDRIVE SYSTEM 48 VEHICLE WILL NOT OPERATE WHILE PLUGGED INTO A CHARGER.

RETURN STORED VEHICLE TO SERVICE

1. Fully charge batteries. **See Section 13 – Batteries, in the appropriate maintenance and service supplement.**
2. Adjust tire pressure to rated capacities. **See Section 8 – Wheels and Tires.**
3. Perform the Pre-Operation Checklist. **See Page 3-1.**

SECTION 4 – BODY AND TRIM

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THIS VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN GENERAL BODY AND PAINT REPAIR. FOLLOW ALL PROCEDURES EXACTLY AND HEED ALL WARNINGS STATED IN THIS MANUAL.
- WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHILE SERVICING THE VEHICLE. WEAR A FULL FACE SHIELD WHEN WORKING WITH BATTERIES.
- WEAR A RESPIRATOR APPROVED FOR DUST AND PAINT MIST WHEN CUTTING, SANDING, PAINTING, OR REPAIRING BODY PANELS.
- TURN KEY SWITCH **OFF**, PLACE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION, AND REMOVE KEY BEFORE SERVICING THE VEHICLE.
- DO NOT WEAR LOOSE CLOTHING. REMOVE JEWELRY SUCH AS RINGS, WATCHES, CHAINS, ETC. BEFORE SERVICING VEHICLE.
- USE INSULATED TOOLS WHEN WORKING NEAR BATTERIES OR ELECTRICAL CONNECTIONS.
- MOVING PARTS! - DO NOT ATTEMPT TO SERVICE VEHICLE WITH THE ENGINE/MOTOR RUNNING.
- HOT! - DO NOT ATTEMPT TO SERVICE HOT MOTOR, ENGINE OR EXHAUST SYSTEM. FAILURE TO HEED THIS WARNING CAN RESULT IN SEVERE BURNS.
- **GASOLINE VEHICLE:** TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT THE SPARK PLUG WIRE FROM THE PLUG.
- **ELECTRIC VEHICLE:** TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERIES AS SHOWN IN **SECTION 1, FIGURE 1-2, PAGE 1-3.** THEN DISCHARGE THE CONTROLLER AS FOLLOWS:
  - TURN THE KEY SWITCH TO **ON** AND PLACE THE FORWARD/REVERSE HANDLE IN THE **REVERSE** POSITION.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

⚠ CAUTION

- DO NOT USE DETERGENTS OR CLEANING SOLVENTS THAT CONTAIN AMMONIA, AROMATIC SOLVENTS OR ALKALI MATERIALS ON BODY PANELS OR SEATS.
- DO NOT ALLOW BATTERY ACID TO DRIP ON BODY PANELS. BATTERY ACID WILL CAUSE PERMANENT DAMAGE. WASH SPILLED BATTERY ACID FROM BODY PANELS IMMEDIATELY.

CLEANING THE VEHICLE

Each vehicle is equipped with an injection molded ArmorFlex® front body and aluminum rear body. Use a mild soap or detergent with a sponge or soft cloth for normal cleaning. Battery acid, fertilizers, tars, asphalt, creosote, paint, or chewing gum should be removed immediately to prevent possible stains. Because the finish on the front body is the same as the finish on today's automobiles, commercial automotive cleaning products should be used. For general cleaning of the aluminum rear body, use a mild liquid soap and a sponge or soft bristle brush. To remove oxidation or discoloration from aluminum, use a commercially available aluminum cleaner paste and fine grade (No. 00) steel wool.

SEAT

To preserve seat appearance clean regularly with mild soap or detergent applied with a sponge or soft cloth. Use a soft bristle brush to clean areas that are especially soiled. Use the following guidelines:

Light Soiling – A solution of 10% liquid soap and warm water applied with a soft, damp cloth is recommended. A soft bristle brush may be used if necessary. Wipe off any residue with a water dampened cloth.

For Difficult Stains:

- Dampen a soft, white cloth with a solution of 10% household bleach (sodium hypochlorite) and 90% water. Rub gently to remove stain, then rinse with a water dampened cloth to remove bleach concentration.
- For more difficult stains, perform previous procedure using full-strength bleach; or allow bleach to puddle on affected area for approximately 30 minutes. Rinse with a water dampened cloth to remove any remaining bleach concentration.

⚠ CAUTION

- TO PREVENT DAMAGE TO THE VEHICLE WHEN REMOVING DIFFICULT STAINS OR HEAVY SOILING, REMOVE THE SEAT BOTTOM FROM THE VEHICLE FIRST.

FRONT BODY REPAIR

STRESS LINES OR STREAKS

Repeatedly flexing the front body may cause white stress lines or streaks in the finish. To remove them:

1. Hold a heat gun 12 inches (30 cm) away from the affected area, with the gun on its lowest heat setting.
2. Slowly wave the heat gun back and forth over the affected area until the streak fades.
3. It may be necessary to move the gun closer to the body to fade the streak, but under no circumstance should the gun be held closer than 6 inches (15 cm) to the body.

⚠ CAUTION

- HOLDING HEAT GUN TOO CLOSE TO BODY COULD MELT BODY OR DAMAGE FINISH.

MINOR IMPACT DAMAGE/DEFORMATIONS

Minor impact damage in the front body can be repaired using a procedure similar to the one used to remove stress lines. To remove deformations resulting from minor impact damage:

1. Hold a heat gun 12 inches (30 cm) away from the affected area, with the gun on its lowest heat setting.
2. Periodically remove the heat gun and bend the body, using a push block, in the opposite direction of the deformation.
3. Continue heating and bending the body until the original shape returns. Under no circumstance should the gun be held closer than 6 inches (15 cm) to the body. **See preceding CAUTION.**

MINOR SCRATCHES AND SURFACE BLEMISHES

For minor scratches or blemishes in the ArmorFlex body that do not penetrate the finish:

1. Thoroughly clean the effected affected area using a strong, non-abrasive detergent and hot water, then clean with Ultra-Kleen® Solvent Cleaner to remove any oil-based contaminants.
2. Lightly buff imperfection with a clean, soft cloth or buff pad. Do not use any kind of polishing compound on monocoat finished body assemblies.
3. Wax the entire body part to restore luster and weather protection.

SMALL SCRATCHES THAT CANNOT BE BUFFED OUT

1. Thoroughly clean the affected area and then dry.
2. Using 240 grit or finer sandpaper, lightly sand scratch to feather edges. Finish sand scratch with 320 grit or finer paper to remove gloss from surface. Sand as little body surface as possible beyond scratch.

⚠ CAUTION

- BE CAREFUL NOT TO SAND COMPLETELY THROUGH THE FINISH TO THE BODY MATERIAL. IF THE FINISH IS SANDED THROUGH AND THE THERMO PLASTIC OLEFIN (TPO) BODY MATERIAL IS EXPOSED, REFER TO GOUGES, PUNCTURES, TEARS, LARGE SCRATCHES AND ABRASIONS ON PAGE 4-3.

3. Using the brush provided with the touch-up paint (available from Club Car Service Parts, see color chart below), apply paint to the scratch. Multiple layers of paint may be required to fill the scratch.
4. Allow paint to dry completely (approximately 10 - 20 minutes), then lightly buff the imperfection.
5. Apply wax to the entire body part to restore luster and weather protection.

COLOR	CCI P/N
Beige	101997201
White	101997202
Red	101997203
Gray	101997204
Dark Gray	101997205
Royal Blue (Pacific Blue)	101997206
Black	101997207
Dark Green	101997209
Classic Blue (Navy)	101997211
Burgundy	101997212

GOUGES, PUNCTURES, TEARS, LARGE SCRATCHES, AND ABRASIONS

Touch-up is not recommended. Replace the entire body part or have it repaired by a professional paint and body repair shop with experience repairing TPO bodies.

FRONT BODY

Read DANGER and WARNING on page 4-1.

FRONT BODY REMOVAL

1. Remove screws (8) and locknuts (9) and lift front bumper (6) from vehicle frame **(Figure 4-1, Page 4-4)**.
   1.1. **Turf 1 and Carryall 1 vehicles:** Remove blind rivets (10) **(Figure 4-1, Page 4-4).**
2. Vehicles equipped with a heavy-duty front bumper (1) **(Figure 4-1, Page 4-4):**
   2.1. Remove the two carriage bolts (5), locknuts (3) and spacers (4) from the heavy-duty bumper mounting positions located on both sides of the front body **(Figure 4-1, Page 4-4).**
   2.2. Remove carriage bolts (2) and locknuts (3) from the heavy-duty bumper support braces and remove bumper **(Figure 4-1, Page 4-4).**

3. Remove carriage bolts (15), locknuts (17) and washers (16) from front body trim. Remove screws (14) from top of front body **(Figure 4-1, Page 4-4).**
4. Loosen (do not remove) screws (18) holding front body trim against front body **(Figure 4-1, Page 4-4).**
5. For vehicles equipped with headlights:
   5.1. Disconnect the light wiring harness from the headlight assemblies.
6. Pull front body (12) from under trim (13) and remove from vehicle **(Figure 4-1, Page 4-4).**

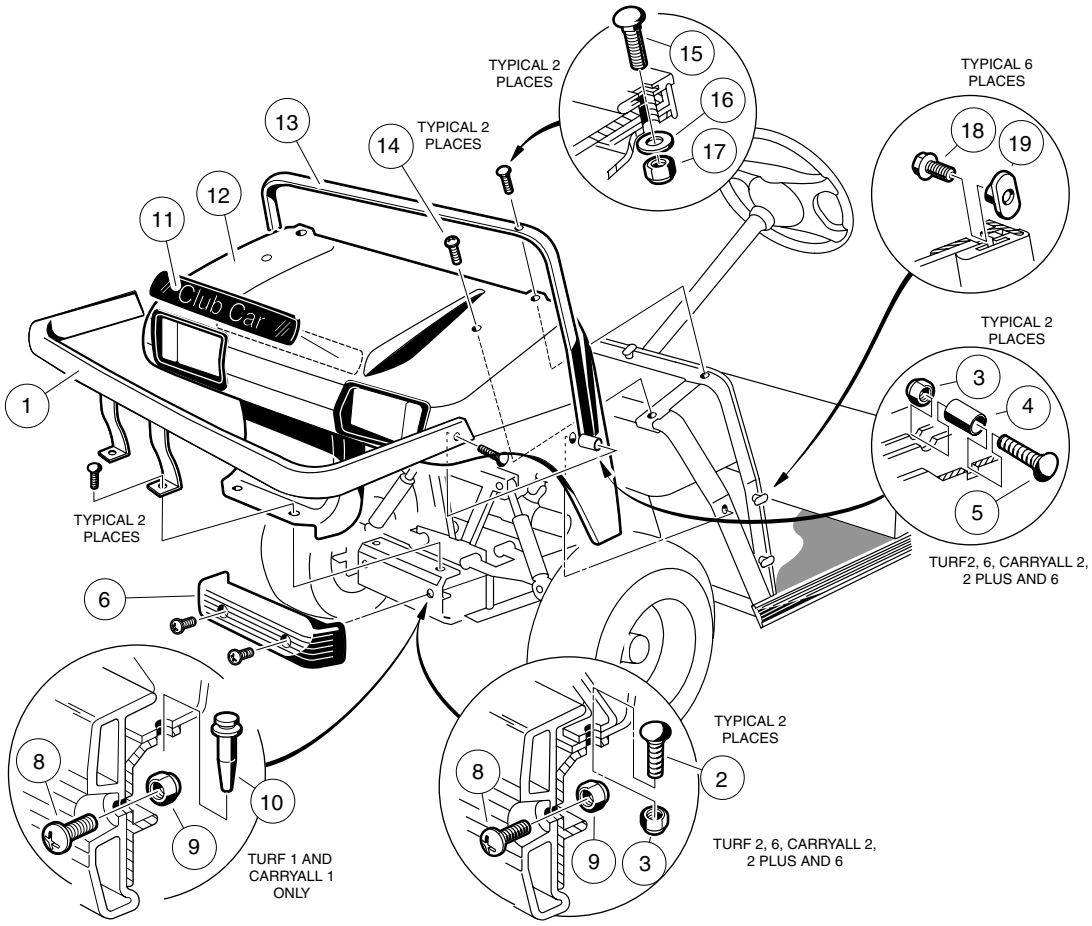

Figure 4-1 Front Body Assembly

FRONT BODY INSTALLATION

1. Install front body (12) under trim (13), align holes and finger tighten screws (14) holding front body against frame **(Figure 4-1, Page 4-4)**.
2. Install carriage bolts (15), washers (16) and locknuts (17) onto front body trim. Tighten bolts to 11 ft-lb (14.9 N·m). Tighten screws (14) to 20 in-lb (2.3 N·m) **(Figure 4-1, Page 4-4).**

NOTE

- IF INSTALLING A NEW FRONT BODY, TWO 5/16 INCH HOLES MUST BE DRILLED AFTER THE BODY HAS BEEN PLACED ON THE VEHICLE. USE THE BODY TRIM (13) AS A GUIDE FOR DRILLING THE HOLES **(FIGURE 4-1, PAGE 4-4)**.

3. Tighten screws (18) holding front body trim against front body to 17 in-lb (1.9 N·m) **(Figure 4-1, Page 4-4).**
4. For vehicles equipped with headlights:
   4.1. Reconnect the light wiring harness to the headlight assemblies.
5. For vehicles equipped with a heavy-duty front bumper:
   5.1. Install two carriage bolts (2) and locknuts (3) from the heavy-duty front bumper support braces and install bumper (1). Tighten bolts to 65 in-lb (7.3 N·m) **(Figure 4-1, Page 4-4).**
   5.2. Install two carriage bolts (5), spacers (4), and locknuts (3) into heavy-duty bumper mounting positions located on sides of front body (12). Tighten bolts to 65 in-lb (7.3 N·m) **(Figure 4-1, Page 4-4).**
6. For Turf 1 and Carryall 1 vehicles, install two push type blind rivets (10) that secure lower front body to frame **(Figure 4-1, Page 4-4),**
7. Install front bumper onto vehicle and install screws (8) and locknuts (9). Tighten to 65 in-lb (7.3 N·m) **(Figure 4-1, Page 4-4).**

TILT BED – TURF 1, 2, CARRYALL 1, 2 AND 2 PLUS

NOTE

- TILT BED REMOVAL AND INSTALLATION WILL BE EASIER WITH A HELPER.

TILT BED REMOVAL

For Turf 6 and Carryall 6 Flat Bed Removal, see Page 4-7.

1. **Turf 2, Carryall 2 and 2 Plus Only:** Raise bed and secure prop rod (17) in prop rod track (18). Hold bed securely in an upright position. Remove cotter pin (23) and flat washer (22) from top end of prop rod where prop rod attaches to bed. Remove prop rod (17) from bed and place prop rod between prop rod track (18) and rear body panel. Lower bed onto vehicle frame **(Figure 4-2, Page 4-6)**.
2. Remove two locknuts (10) from left and right tilt bed hinge assemblies (3) **(Figure 4-2, Page 4-6)**.
3. Apply slight upward pressure (by hand) on the rear of the bed to relieve pressure on the hinges and remove the hinge bolts (9) from the hinge assemblies **(Figure 4-2, Page 4-6)**.
4. Raise rear edge of bed approximately 6 inches (15.2 cm) and pull bed assembly toward rear of vehicle approximately 3 inches (7.6 cm) to release bed latch assembly (2) from latch plate (1) **(Figure 4-2, Page 4-6)**.
5. Lift bed from vehicle.

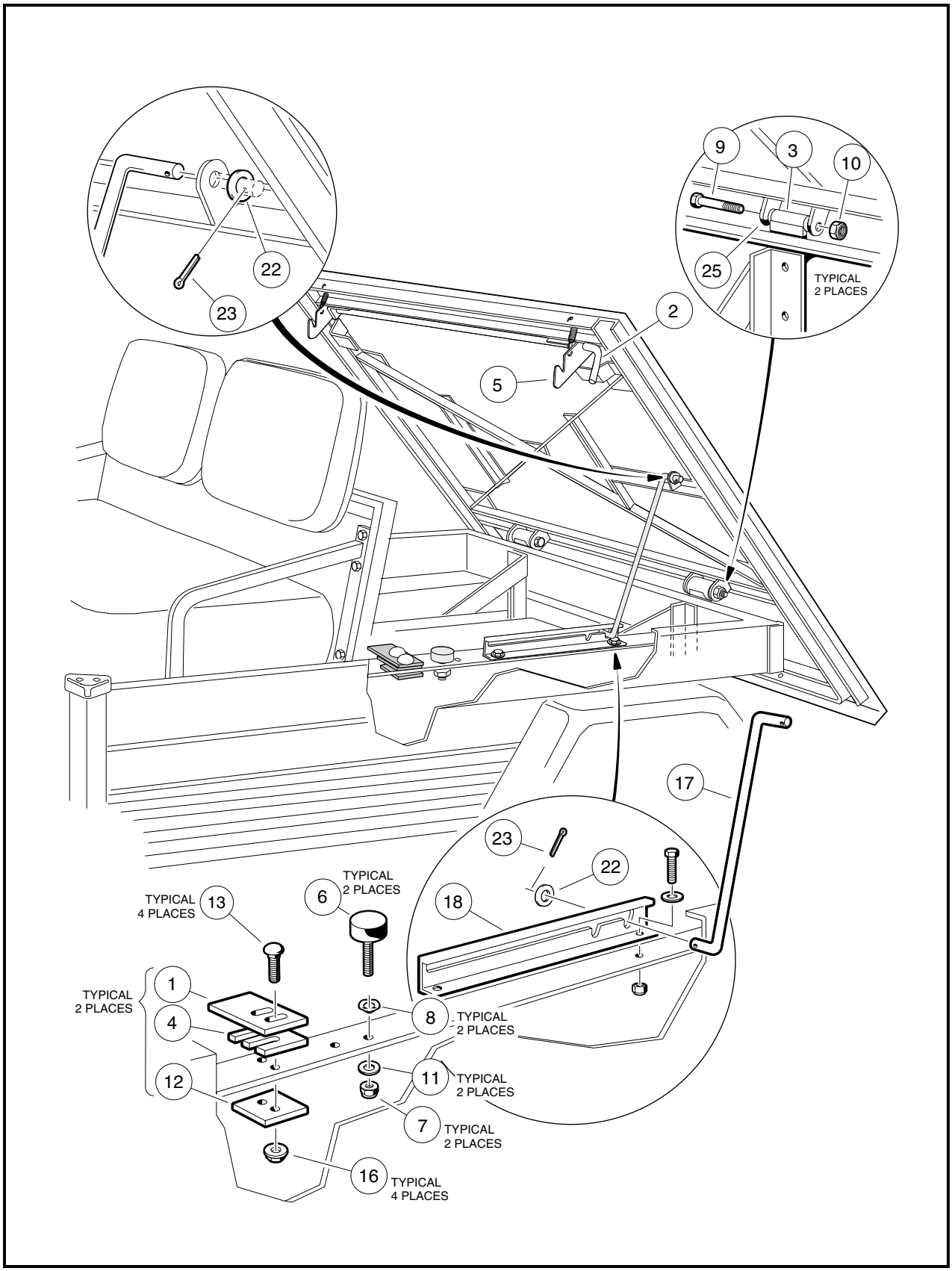

Figure 4-2 Tilt Bed - Turf 1, 2, Carryall 1, 2 and 2 Plus

TILT BED INSTALLATION

1. Hold bed at a slight angle (front of bed lower than rear of bed) to vehicle and place front edge of bed onto vehicle frame. Bed latches (5) should be engaged with latch plates (1) **(Figure 4-2, Page 4-6)**.
2. Lower edge of bed onto vehicle and align hinge brackets (3) with bed hinge (25) **(Figure 4-2, Page 4-6)**.
3. Start the 3/8 x 3-3/8 bolts (9) into left and right hinge assemblies (3 and 25). (It may be necessary to use an alignment tool to align holes in hinge bracket with steel bushing in hinge assembly) **(Figure 4-2, Page 4-6)**.
4. Use a small hammer to lightly tap bolts through hinge assembly.
5. Install the nylon locknut (10) on each bolt (9) and tighten to 15 ft-lb (21 N·m) **(Figure 4-2, Page 4-6)**.
6. **(Turf 2, Carryall 2 and 2 Plus Only)** Lift bed and place the prop rod (17) in bed mounting hole. Install a 3/8 flat washer (22) and cotter pin (23) on prop rod **(Figure 4-2, Page 4-6)**.

FLAT BED – TURF 6 AND CARRYALL 6

NOTE

- FLAT BED REMOVAL AND INSTALLATION WILL BE EASIER WITH A HELPER.

FLAT BED REMOVAL

1. Open access door in bed (5) and remove two locknuts (20), four flat washers (19) and two 1/4 x 4 bolts (18). Close and latch access door **(Figure 4-3, Page 4-8)**.
2. Remove two locknuts (10) from left and right hand flat bed hinge assemblies **(Figure 4-3, Page 4-8)**.
3. Remove two 3/8 x 3 -3/8 bolts (9). Lift bed from vehicle **(Figure 4-3, Page 4-8)**.

FLAT BED INSTALLATION

1. Place bed on vehicle with bed front edge 1 inch from seat back support panel (28) and open access door (5) **(Figure 4-3, Page 4-8)**.
2. Raise rear edge of bed 6 inches from vehicle frame and position bed so the left and right hand bed supports are resting on the support bumpers (24) **(Figure 4-3, Page 4-8)**.
3. Lower rear edge of bed onto vehicle and make sure hinge brackets align with bed hinge **(Figure 4-3, Page 4-8)**.
4. Start 3/8 x 3-3/8 bolts (9) into left and right hand hinge assemblies. (It may be necessary to use an alignment tool to align holes in hinge bracket with steel bushing in hinge assembly) **(Figure 4-3, Page 4-8)**.
5. Install a locknut (10) on each bolt and tighten to 14 ft-lb (18.9 N·m) **(Figure 4-3, Page 4-8)**.
6. Install 1/4 x 4 bolts (18), flat washers (19) and locknuts (20) through the bed frame and vehicle frame on both sides of vehicle. Tighten to 75 in-lb (8 N·m) **(Figure 4-3, Page 4-8)**.
7. Close access door and secure left and right door latches.

FLAT BED TRIM – TURF 6 AND CARRYALL 6

FLAT BED TRIM REMOVAL

1. Release access door latches and open access door (12) **(Figure 4-4, Page 4-9)**.
2. Remove 1/4 inch bolts, flatwashers and locknuts that secure bed to vehicle frame.
3. Raise bed and place prop rod in bed support frame.
4. Remove two 5/16 x 1 bolts (4), flatwashers (5), and locknuts (6) from trim strip (3) on front edge of bed. Remove trim strip from bed **(Figure 4-4, Page 4-9)**.

5. Remove two 5/16 x 1 hex head bolts (4) and locknuts (6) from each of the two handles on rear edge of bed. Remove the two handles (7) and rear trim strip (3) **(Figure 4-4, Page 4-9)**.
6. Remove one 5/16 x 1 hex head bolt (4), flat washer (5), and locknut (6) from front of left hand trim strip (1) **(Figure 4-4, Page 4-9)**.
7. Remove two 5/16 x 1 hex head bolts and locknuts from each of the three stake side brackets (7) on left hand trim strip. Remove brackets and trim from bed **(Figure 4-4, Page 4-9)**.
8. Repeat steps 6 and 7 to remove right hand trim strip and brackets.

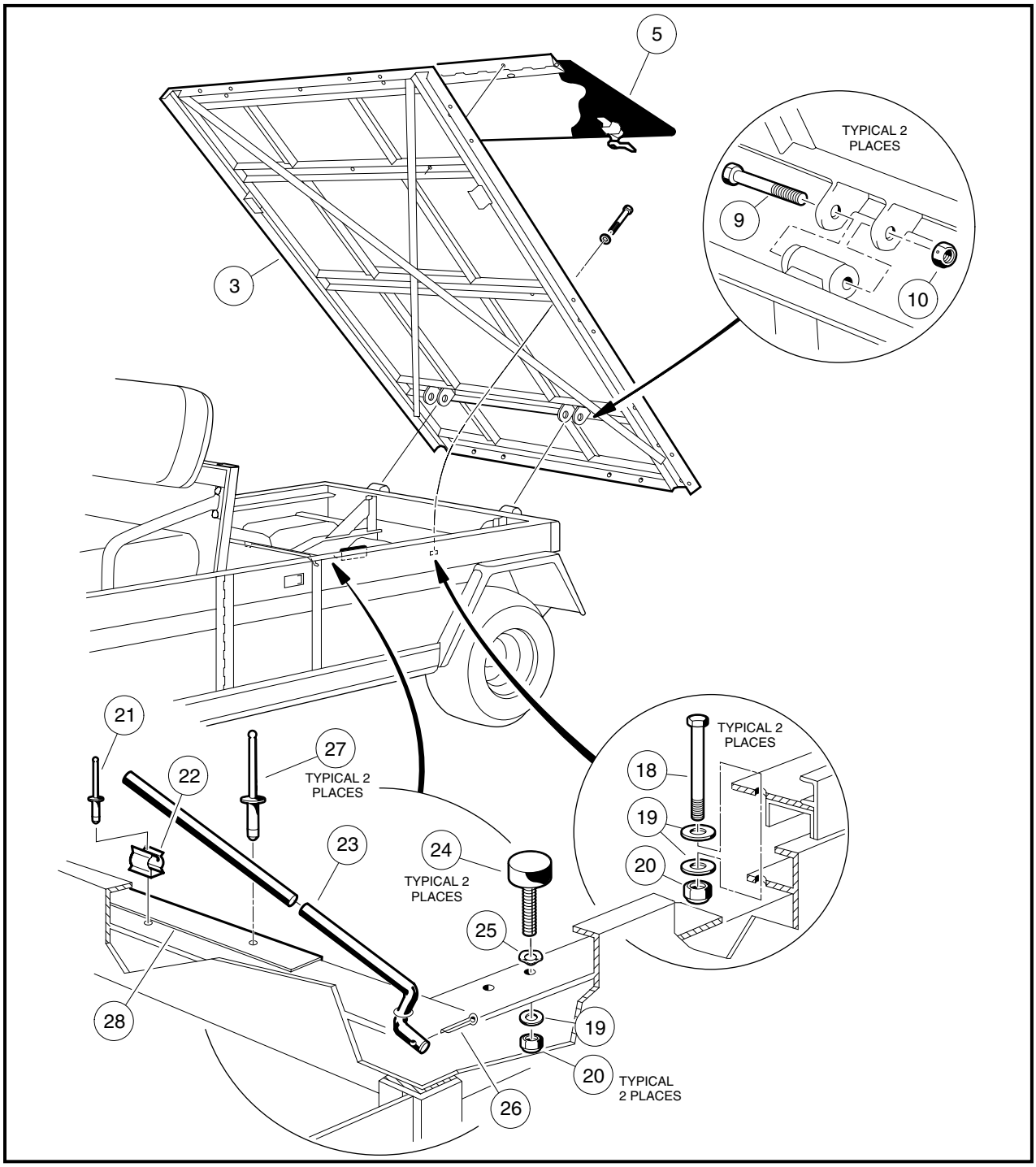

Figure 4-3 Flat Bed - Turf 6 and Carryall 6

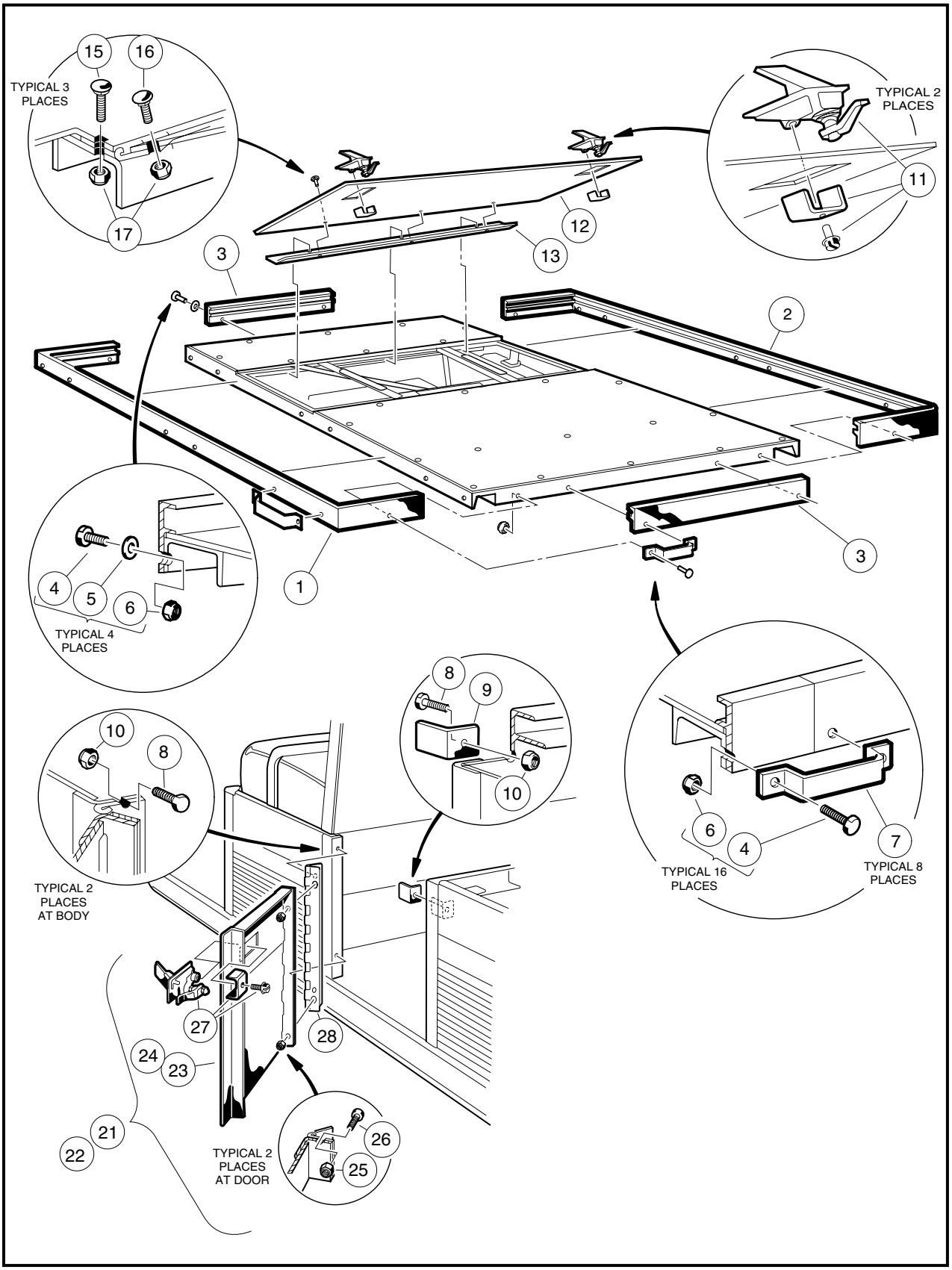

Figure 4-4 Flat Bed Trim, Access Door and Side Door - Turf 6 and Carryall 6

FLAT BED TRIM INSTALLATION

1. Install trim in the reverse order of removal.
2. Tighten bolts (4) to 8 ft-lb. (10.8 N·m) **(Figure 4-4, Page 4-9)**.
3. Install bolts, flatwashers and locknuts that secure bed to vehicle frame. Tighten bolts to 75 in-lb (8 N·m).

ACCESS DOOR – TURF 6 AND CARRYALL 6

ACCESS DOOR REMOVAL

1. Raise levers on left and right hand door latches (11), rotate them 180 degrees and open access door. Rest door against seat back support panel **(Figure 4-4, Page 4-9).**
2. Remove three locknuts (17) and bolts (16) from access door side of hinge **(Figure 4-4, Page 4-9)**.
3. Remove access door from cargo bed **(Figure 4-4, Page 4-9)**.

ACCESS DOOR INSTALLATION

1. Install access door in the reverse order of removal **(Figure 4-4, Page 4-9)**.
2. Tighten nuts (17) to 8 ft-lb. (10.8 N·m) **(Figure 4-4, Page 4-9)**.
3. Close access door and secure both door latches (11) **(Figure 4-4, Page 4-9)**.

SIDE DOOR – TURF 6 AND CARRYALL 6

SIDE DOOR REMOVAL

1. Lift door latch lever (27), rotate 180 degrees, and open side door **(Figure 4-4, Page 4-9)**.
2. Remove two 1/4 x 5/8 bolts (26) and locknuts (25) from door hinge **(Figure 4-4, Page 4-9)**.
3. Remove side door from rear body.

SIDE DOOR INSTALLATION

1. Install side doors in reverse order of removal.
2. Tighten bolts to 35 in-lb (3.9 N·m). **See following NOTE.**

NOTE

- WHEN INSTALLING SIDE DOOR AND HINGE ASSEMBLY, MAKE SURE MOUNTING BOLTS ARE POSITIONED SO THAT WHEN SIDE DOOR IS CLOSED, THE MOUNTING BOLTS DO NOT PREVENT THE SIDE DOOR FROM BEING CLOSED ALL THE WAY.

REAR FENDER

REAR FENDER REMOVAL

Turf 6, Carryall 6 and Other Vehicles With Taillights:

1. Remove Taillight assembly.
   1.1. Remove the two screws (14) that secure taillight (15) to the rear fender **(Figure 4-6, Page 4-12)**.
   1.2. Disconnect the three taillight wires.

All Vehicles:

2. Remove two nylon locknuts (3) and flat washers (1) from front of fender. Remove two 1/4 x 1 bolts (2) from front of fender (6) **(Figure 4-5, Page 4-11 or Figure 4-6, Page 4-12)**.
3. Remove two nylon locknuts (3) and flat washers (1) from top of fender (6). Remove two 1/4 x 1 bolts (2) and flat washers (1) from the top of fender (6) **(Figure 4-5, Page 4-11 or Figure 4-6, Page 4-12)**.

Turf 6 and Carryall 6 Only:

3.1. Remove pan head screws (16) connecting reverse buzzer (17) to rear fender (6) and disconnect the two wires from the reverse buzzer **(Figure 4-6, Page 4-12)**.

All Vehicles:

4. Remove fender (6) from vehicle **(Figure 4-5, Page 4-11 or Figure 4-6, Page 4-12)**.

REAR FENDER INSTALLATION

1. Reverse removal procedure. Tighten bolts (2) to 35 in-lb (4.0 N·m).

TRAILER HITCH – (OPTIONAL ON SOME MODELS)

TRAILER HITCH REMOVAL

1. Remove the tailskirt. **See Tailskirt Removal on page 4-13.**
2. Where the hitch (7) is mounted to frame, remove two nuts (12), lock washers (11) washers (10) and bolts (9) **(Figure 4-5, Page 4-11)**.

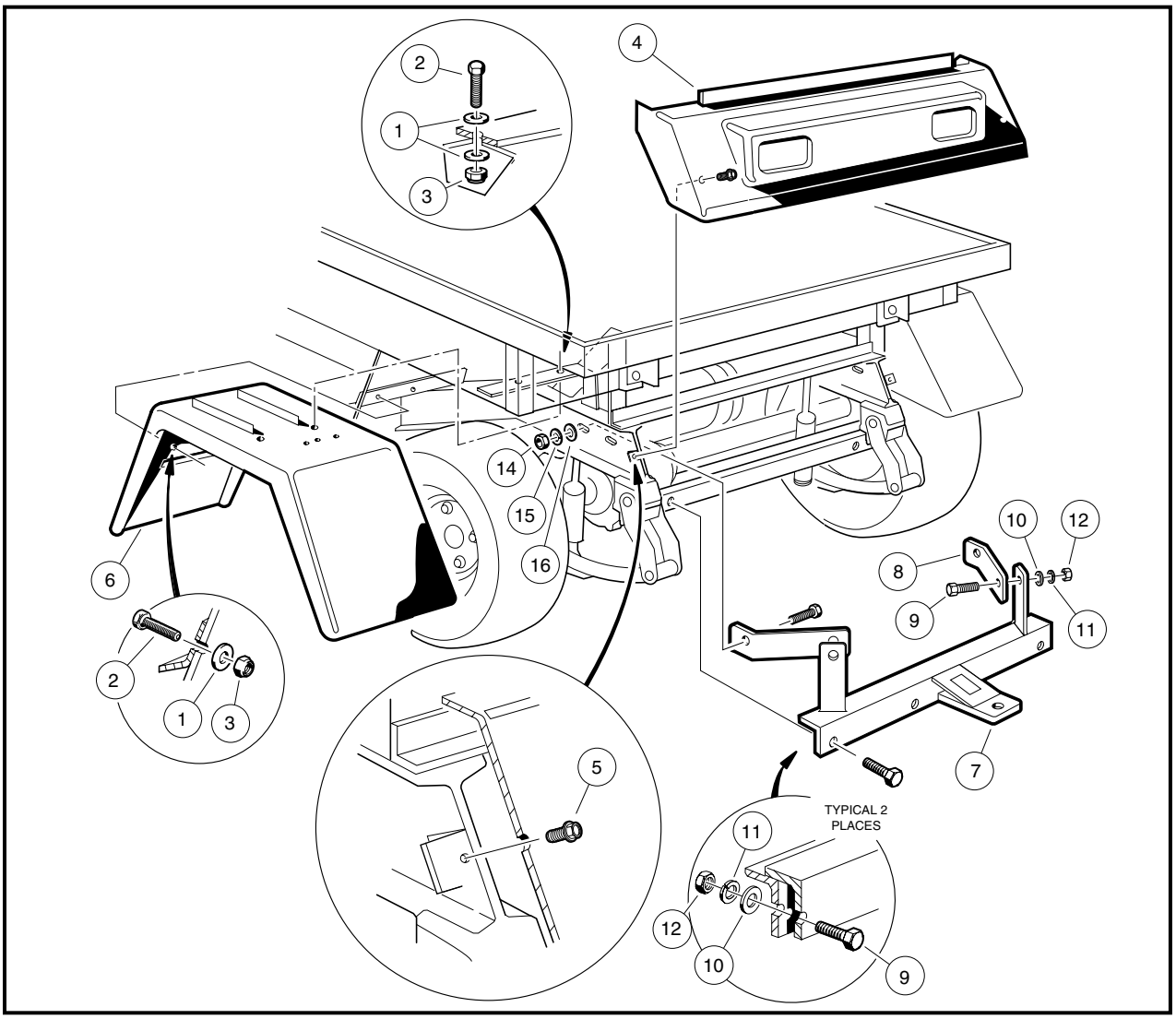

Figure 4-5 Rear Fender, Trailer Hitch and Tail Skirt - Turf 1, 2, Carryall 1, 2 and 2 Plus

3. Where the hitch (7) is mounted to hitch brace (8), remove the nut (12), lock washer (11), washer (10) and bolt (9).
4. Remove hitch (7) from vehicle.

TRAILER HITCH INSTALLATION

1. Reverse removal procedures to install hitch (14) **(Figure 4-5, Page 4-11)**. Tighten hardware to 15 ft-lb (20.3 N·m).

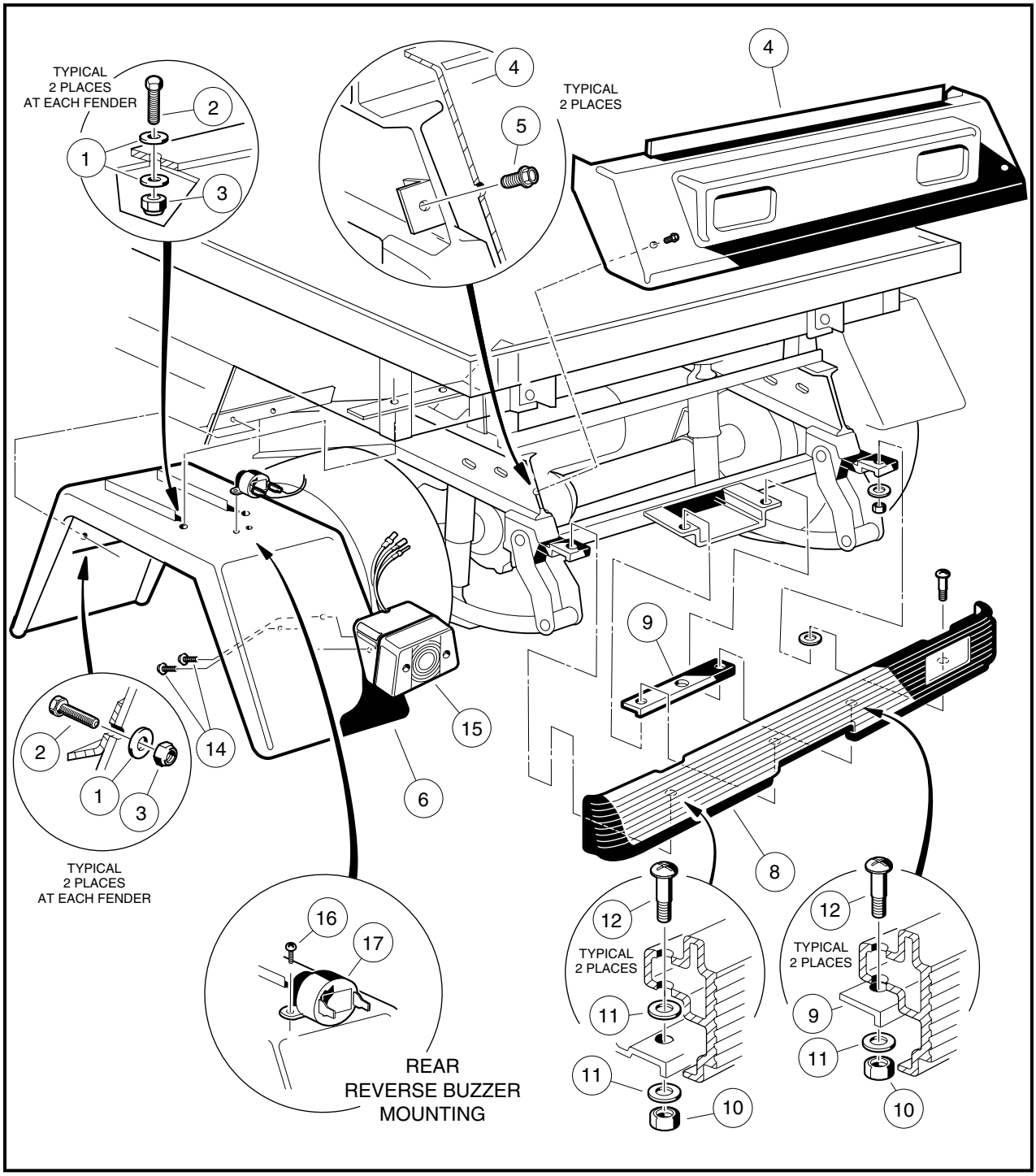

Figure 4-6 Rear Fender and Tail Skirt - Turf 6 and Carryall 6

TAILSKIRT

TAILSKIRT REMOVAL

1. Remove two thread-forming screws (5) from tailskirt (4) and lift tailskirt from vehicle frame **(Figure 4-5, Page 4-11 or Figure 4-6, Page 4-12)**.

TAILSKIRT INSTALLATION

1. Insert upper edge of tailskirt (4) under, and in front of, back edge of rear body **(Figure 4-5, Page 4-11 or Figure 4-6, Page 4-12)**.
2. Align holes in tailskirt (4) with holes in vehicle frame. Position tailskirt flush against frame **(Figure 4-5, Page 4-11 and Figure 4-6, Page 4-12)**.
3. Install two thread-forming screws (5) in tailskirt and tighten to 55 in-lb (6.215 N·m) **(Figure 4-5, Page 4-11 or Figure 4-6, Page 4-12)**.

FLOOR MAT

FRONT FLOOR MAT REMOVAL

1. Remove the brake and accelerator pedals. **See Section 5 – Accelerator and Brake Pedal Group**.
2. Remove horn and/or dimmer switch if equipped.
3. Remove the top edge of the floor mat from the overlapping flange under the dash.
4. Lift the mat from the vehicle.

FRONT FLOOR MAT INSTALLATION

1. Install the floor mat in the reverse order of removal.
2. Install the brake and accelerator pedals. **See Section 5 – Accelerator and Brake Pedal Group.**

REAR FLOOR MAT REMOVAL – TURF 6 AND CARRYALL 6 ONLY

3. On the driver or passenger side of the vehicle, gently pry the edges of the floor mat and pull the floor mat in the direction of the front of the vehicle, so that it is no longer under the lip of the body located directly behind the floor mat.
4. Slightly bend the floor mat on each side of the vehicle to free it from the center body assembly located in front of the floor mat.
5. Lift the floor mat from the vehicle.

REAR FLOOR MAT INSTALLATION – TURF 6 AND CARRYALL 6 ONLY

1. Install the floor mat in the reverse order of removal.

BUMPER

BUMPER REMOVAL

1. Remove four locknuts (10), six flat washers (11), four phillips bolts (12), and mounting plate (9) from rear bumper (8) **(Figure 4-6, Page 4-12)**.
2. Lift bumper from vehicle.

BUMPER INSTALLATION

1. Install the rear bumper in the reverse order of removal. Tighten nuts to 65 in-lb (7.3 N·m) **(Figure 4-6, Page 4-12)**.

SECTION 5 – ACCELERATOR AND BRAKE PEDAL GROUP

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THE VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN ELECTRICAL AND MECHANICAL REPAIR.
- FOLLOW THE PROCEDURES EXACTLY AS STATED IN THIS MANUAL, AND HEED ALL **DANGER**, **WARNING**, AND **CAUTION** STATEMENTS LISTED IN THIS MANUAL AS WELL AS THOSE AFFIXED TO THE VEHICLE.
- IMPROPER USE OF THE VEHICLE OR FAILURE TO PROPERLY MAINTAIN THE VEHICLE, COULD RESULT IN DECREASED VEHICLE PERFORMANCE OR SEVERE PERSONAL INJURY.
- ANY MODIFICATION OR CHANGE TO THE VEHICLE WHICH AFFECTS THE STABILITY OR HANDLING, OR INCREASES MAXIMUM VEHICLE SPEED BEYOND FACTORY SPECIFICATIONS, COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.
- WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHEN SERVICING THE VEHICLE. WEAR A FULL FACE SHIELD WHEN WORKING WITH BATTERIES.
- DO NOT WEAR LOOSE CLOTHING. REMOVE JEWELRY SUCH AS RINGS, WATCHES, CHAINS, ETC. BEFORE SERVICING VEHICLE.
- MOVING PARTS! DO NOT ATTEMPT TO SERVICE THE VEHICLE WHILE IT IS RUNNING.
- HOT! DO NOT ATTEMPT TO SERVICE HOT MOTOR, ENGINE OR EXHAUST SYSTEMS. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BURNS.
- USE INSULATED TOOLS WHEN WORKING AROUND BATTERIES OR ELECTRICAL CONNECTIONS.
- LIFT ONLY ONE END OF VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, **UNLOAD THE CARGO BED** AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT VEHICLE.
- TURN THE KEY SWITCH TO **OFF**, REMOVE THE KEY, CHOCK THE WHEELS, PLACE THE FORWARD/REVERSE HANDLE IN **NEUTRAL** AND DISCONNECT BATTERY(IES) PRIOR TO SERVICING THE VEHICLE.

GASOLINE VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE:
  - DISCONNECT BATTERY CABLES, NEGATIVE (–) FIRST **(FIGURE 1-1, SECTION 1, PAGE 1-3)**.
  - DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.
- FRAME GROUND - DO NOT ALLOW TOOLS OR OTHER METAL OBJECTS TO CONTACT FRAME WHEN DISCONNECTING BATTERY CABLES OR OTHER ELECTRIC WIRING. NEVER ALLOW A POSITIVE WIRE TO TOUCH THE VEHICLE FRAME, ENGINE, OR OTHER METAL COMPONENT.

WARNING CONTINUED ON NEXT PAGE...

⚠ WARNING

ELECTRIC VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERIES AS SHOWN **(FIGURE 1-2 OR 1-3, SECTION 1, PAGE 1-3)**.
- **AFTER** DISCONNECTING BATTERIES, DISCHARGE THE CONTROLLER AS FOLLOWS:
  - TURN THE KEY SWITCH TO **ON** AND PLACE THE FORWARD/REVERSE HANDLE IN THE **REVERSE** POSITION.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

PEDAL GROUP ADJUSTMENT

Read WARNING on pages 5-1 and 5-2.

1. ADJUST BRAKE PEDAL HEIGHT

   1.1. Chock wheels and release park brake. Lift rear of vehicle and place jack stands under the axle tubes to support the vehicle.

   1.2. To provide slack in the brake cables, loosen the equalizer retaining nuts (2 and 3) on the equalizer rod (1) **(Figure 5-1, Page 5-2).**

   1.3. For four-wheel brake vehicles only: loosen the front brake equalizer rod **(Figure 5-1a, Page 5-2)**.

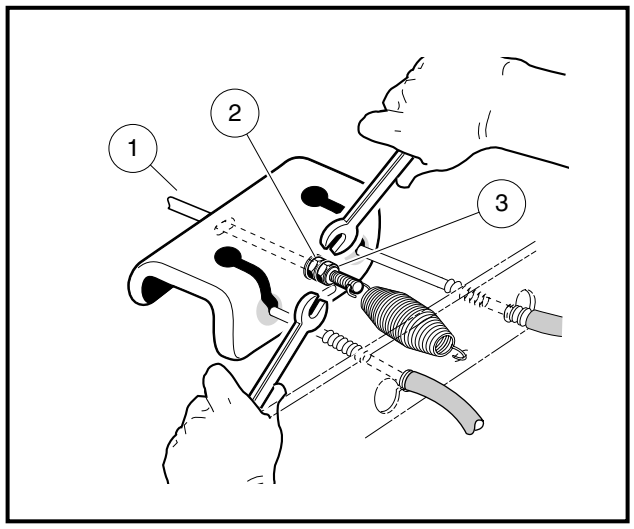

Figure 5-1 Loosen Equalizer Rod Nuts

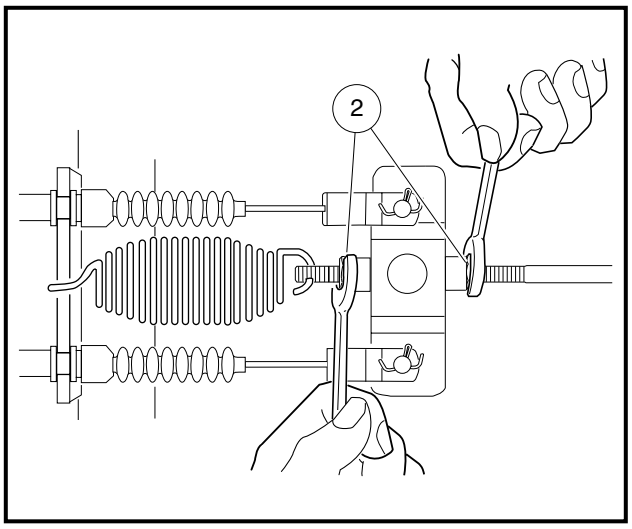

Figure 5-1a Loosen Rear Equalizer Rod Nuts

   1.4. Loosen the brake stop jam nut (31), then relieve pedal pressure on the stop by pushing down slightly on the pedal. Next, adjust the brake stop bumper (22) up or down **(Figure 5-2, Page 5-3)**. Adjusting the bumper upward decreases distance between pedal and floorboard. Adjusting the bumper downward increases distance between pedal and floorboard. Proper brake pedal height is 5-3/4 ±1/4 inch (14.6 ±.6 cm) **(Figure 5-3, Page 5-3)**.

   1.5. Tighten the jam nut (31) to 8 ft-lb (9.5 N·m) **(Figure 5-2, Page 5-3)**.

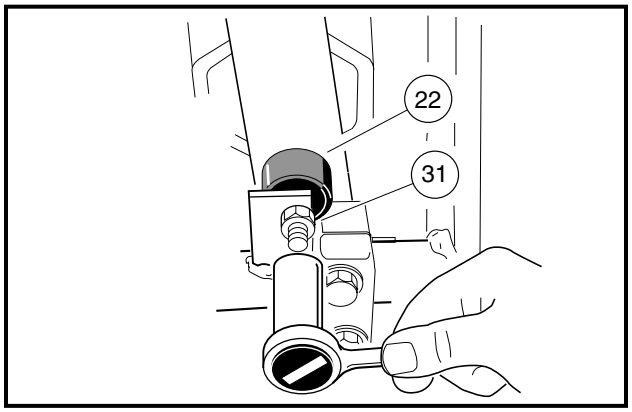

Figure 5-2 Adjust Brake Pedal Height

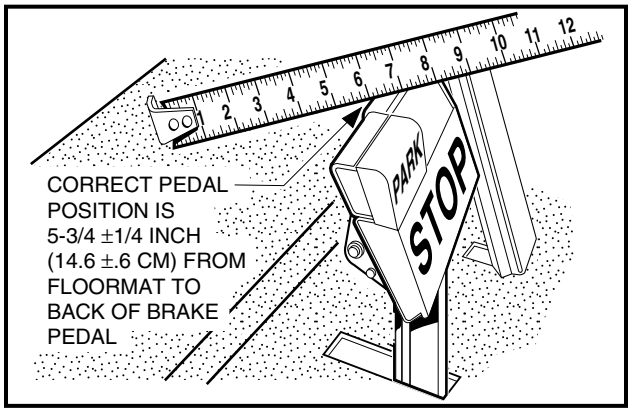

Figure 5-3 Measure Brake Pedal Height

2. ADJUST BRAKE PEDAL FREE PLAY

NOTE

- BRAKE PEDAL FREE PLAY IS THE DISTANCE THE BRAKE PEDAL CAN BE DEPRESSED BEFORE THE BRAKE ACTUATOR ARM (AT THE BRAKE CLUSTER) MOVES.

2.1. Measuring perpendicular from the floorboard to the back of the brake pedal, depress the brake pedal and measure the distance that the pedal moves before all of the slack is taken out of the brake cables **(Figure 5-4, Page 5-3)**.

2.2. Tighten the nut on the equalizer rod so that the brake pedal free play is 1/4 to 1/2 inch (6.35 mm to 12.7 mm) **(Figure 5-4, Page 5-3)**.

2.3. Tighten the jam nut (3) while holding the adjustment nut (2) in the correct position.

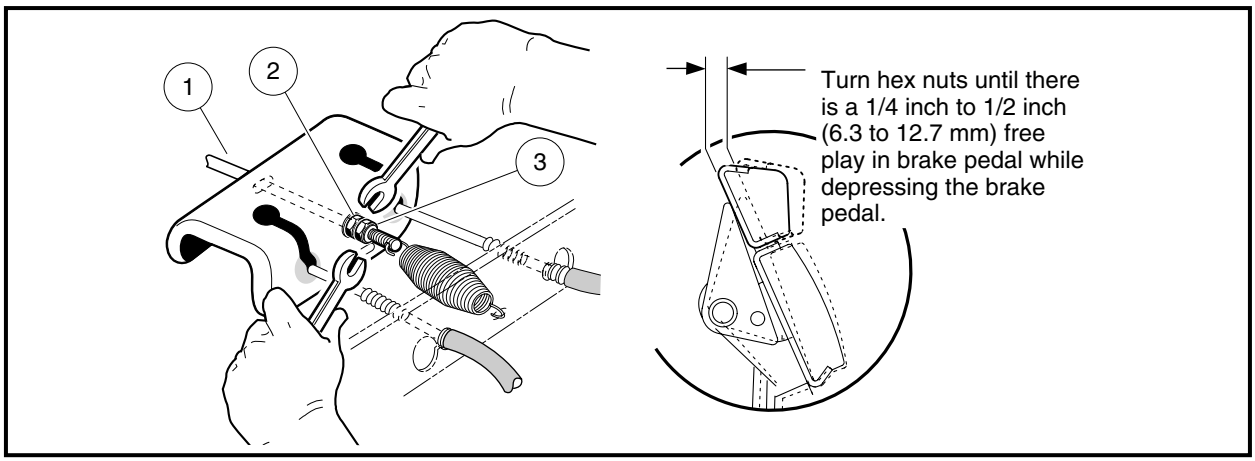

Figure 5-4 Adjust Pedal Free Play

3. ADJUST PARK BRAKE RATCHET/PAWL GAP AND PAWL ENGAGEMENT

3.1. Inspect the park brake pawl and ratchet for excessive wear, grooves, cracks or chips. If either the pawl or ratchet is damaged, both must be replaced.

3.2. Adjust retaining nut (7) on spring support rod until there is a .060 inch (1.5 mm) gap between the pawl and the tips of the ratchet teeth. Use a feeler gauge to verify the gap **(Figure 5-5, Page 5-4)**. The gap should be consistent through range of pawl movement. If the gap is not consistent, loosen the four bolts (6) securing the accelerator pivot rod supports and adjust the supports **(Figure 5-5, Page 5-4)**. If the gap becomes smaller as the park brake pedal is depressed, move the pivot rod supports slightly rearward until the gap is consistent. If the gap becomes larger as the park brake pedal is depressed, move the pivot rod supports slightly forward until gap is consistent. **See following NOTE before proceeding**.

Adjust Park Brake Ratchet/Pawl Gap and Pawl Engagement, Continued:

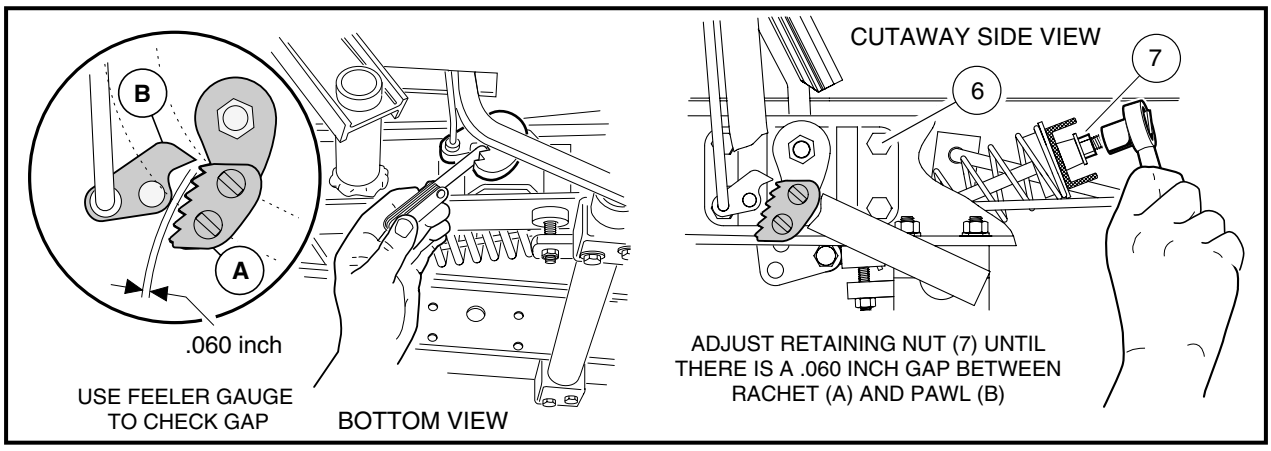

Figure 5-5 Adjust Park Brake Ratchet/Pawl Gap

NOTE

- THE ACCELERATOR ROD OR ACTUATOR ADJUSTMENT MUST ALSO BE CHECKED IF THE RATCHET/PAWL GAP IS ADJUSTED **(SEE ADJUST ACCELERATOR ROD/ACTUATOR LEVER FOR APPROPRIATE VEHICLE)**.
- THE ACCELERATOR ROD MUST BE DISCONNECTED BEFORE PROCEEDING TO STEP 3.3

3.3. With the park brake unlocked, measure and note the distance from the top of the accelerator pedal to the floorboard, and then lock the park brake **(Figure 5-6, Page 5-4)**.

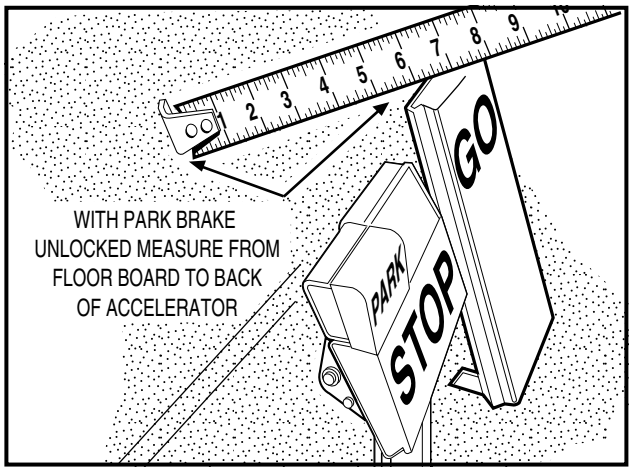

Figure 5-6 Measure Accelerator Pedal Height

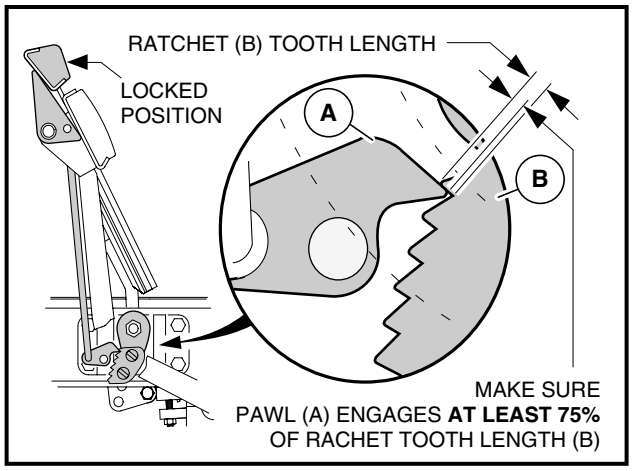

Figure 5-7 Ratchet/Pawl Tooth Engagement

3.4. With the park brake locked, make sure at least 75% of ratchet tooth length engages the pawl **(Figure 5-7, Page 5-4)**. Tooth engagement should be between the two lines marked on the pawl.

3.5. With park brake still locked, measure the distance from the top of accelerator pedal to floorboard. If the measurement has changed, ratchet tooth engagement is too deep and must be adjusted.

3.6. If ratchet/pawl engagement must be adjusted, disconnect the ball joint at the top of the brake rod and rotate the ball joint sleeve clockwise to increase engagement or counterclockwise to decrease engagement. Reconnect ball joint **(Figure 5-8, Page 5-5)**.

3.7. If the accelerator push rod was disconnected from the accelerator pedal, reconnect it.

3.8. Check for proper brake operation prior to driving the vehicle.

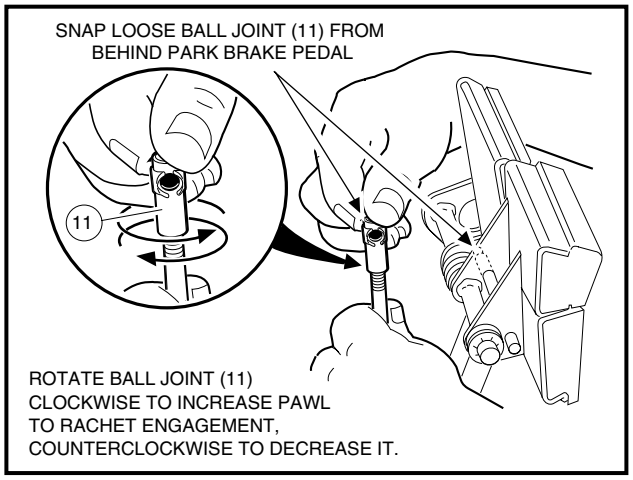

Figure 5-8 Brake Rod Adjustment

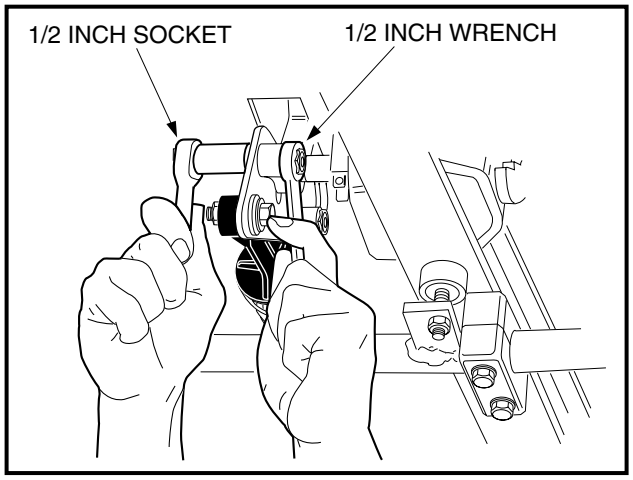

Figure 5-9 Accelerator Pedal Height Adjustment

4. ADJUST ACCELERATOR PEDAL HEIGHT

   4.1. Loosen the nut and bolt **(Figure 5-9, Page 5-5)** securing the accelerator pedal to the pivot plate. Clamp the accelerator pedal adjustment tool (Club Car Part No. 1018710-01) to the accelerator pedal, with the end marked ***accelerator pedal height*** closest to the floorboard, next depress the accelerator pedal until the end of the tool rests against the floorboard (pedal height should be 5-5/8 inches (14.3 cm). Use a rubber strap to hold pedal in position against the floorboard and then tighten nut to 26 ft-lb (35.3 N·m) **(Figure 5-10, Page 5-5)**.

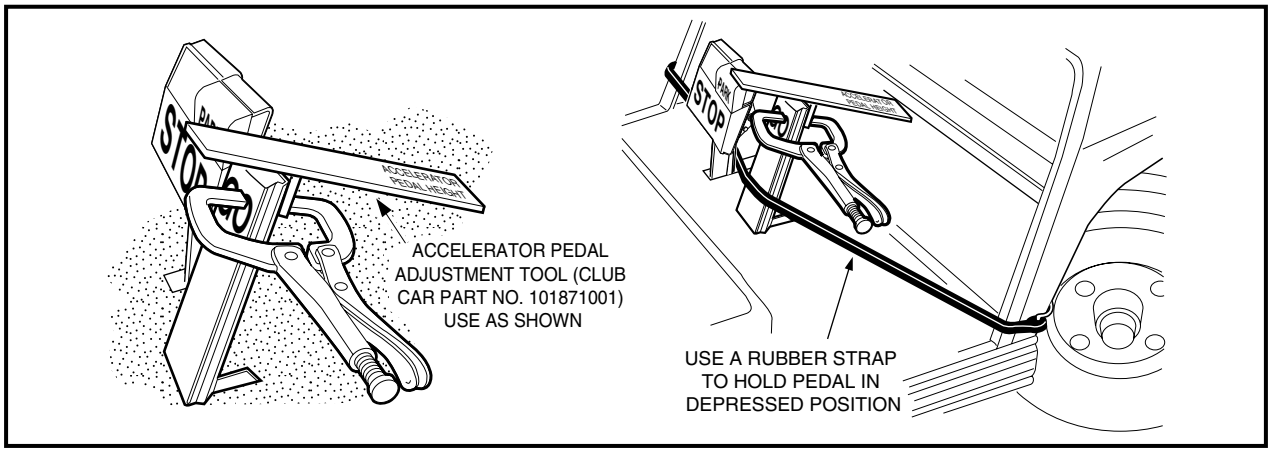

Figure 5-10 Accelerator Pedal Height Adjustment

5. ADJUST THE ACCELERATOR ROD

   - **For gasoline vehicles, proceed to step 5, Adjust Accelerator Rod – Gasoline Vehicles.**
   - **For electric Turf 1 and Carryall 1 vehicles, proceed to step 5, Adjust Accelerator Rod – Turf 1 and Carryall 1 Electric Vehicle Only.**
   - **For electric Turf 2, Carryall 2 and 6 vehicles, proceed to step 6, Adjust The Actuator Lever.**

⚠ DANGER

- **BEFORE SERVICING, TURN THE KEY SWITCH TO *OFF* AND PLACE THE FORWARD/REVERSE HANDLE IN THE NEUTRAL POSITION.**

DANGER CONTINUED ON NEXT PAGE...

Adjust the Accelerator Rod, Continued:

⚠ DANGER

- **TO PREVENT ACCIDENTALLY STARTING THE VEHICLE, DISCONNECT THE BATTERY(IES) AS INSTRUCTED IN WARNING ON PAGES 5-1 AND 5-2. THIS WILL PREVENT THE POSSIBILITY OF THE VEHICLE RUNNING OVER YOU WHEN YOU ARE ADJUSTING THE ACCELERATOR ROD.**

- **Adjust the Accelerator Rod – Gasoline Vehicles:**

5.1. Remove the electrical box screw and cover. **See preceding DANGER.**

5.2. Loosen the jam nuts (25) and disconnect the accelerator rod (17) at the accelerator pedal. Adjust the length of the rod **(Figure 5-14, Page 5-9)** to obtain an accelerator cable cam position of 0° as shown **(Figure 5-11, Page 5-6). See following CAUTION.**

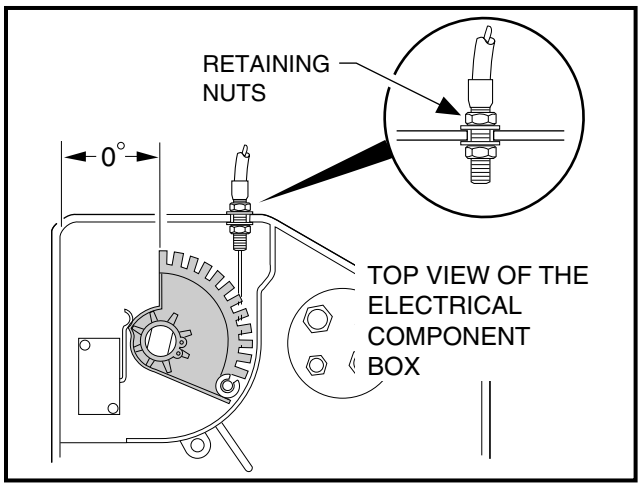

Figure 5-11 Accelerator Cable

⚠ CAUTION

- AFTER ACCELERATOR ROD ADJUSTMENT, MAKE SURE APPROXIMATELY THE SAME AMOUNT OF THREAD IS EXPOSED AT EACH END OF THE ROD.
- IF LEVER ON THE LIMIT SWITCH IN THE ELECTRICAL BOX IS BENT, REPLACE LIMIT SWITCH.
- WHEN LOOSENING JAM NUTS ON THE ACCELERATOR ROD WITH ONE END DISCONNECTED, HOLD THE DISCONNECTED ACCELERATOR ROD WITH LOCKING PLIERS.
- WHEN TIGHTENING JAM NUTS ON THE ACCELERATOR ROD, HOLD THE DISCONNECTED BALL JOINT WITH LOCKING PLIERS.

5.3. Reconnect the accelerator rod at the accelerator pedal.

5.4. Before tightening jam nuts on accelerator rod, set park brake to first ratchet and pawl position. Depress accelerator pedal and make sure the following events occur in the ***exact order shown***:

EVENT	APPROXIMATE PEDAL TRAVEL (REFERENCE ONLY)
Park Brake Release	2° - 4°
Solenoid Activation	4° - 8°
Carburetor Throttle Actuation	8° - 12°

Adjust the Accelerator Rod – Gasoline Vehicles, Continued:

5.5. If the events above occur as they should, hold the ball joint at each end of the accelerator rod with pliers and tighten the accelerator rod jam nut against it.

5.6. Check that events occur as described in step 5.4 above.

NOTE

- ***AFTER*** THE PEDAL GROUP AND ACCELERATOR ROD ARE ADJUSTED, THE FINAL GOVERNED ENGINE RPM SHOULD BE SET PER SPECIFICATIONS IN THE CHART BELOW.

ENGINE RPM AT VEHICLE GROUND SPEED	RPM
Turf 1 and Carryall 1	2860 ± 30
Turf 2 and Carryall 2	3170 ± 30
Carryall 2 Plus	3650 ± 30
Turf 6 and Carryall 6	3050 ± 30

5.7. Install the electrical box cover and screw.

- **Adjust Accelerator Rod – Turf 1 and Carryall 1 Electric Vehicles Only:**

5.1. Remove the driver side wiper switch cover. **See DANGER on page 5-5.**

⚠ CAUTION

- ADJUST ACCELERATOR ROD/WIPER SWITCH ARM EXACTLY AS STATED IN STEP 5.2 BELOW OR THE WIPER SWITCH COULD BECOME DAMAGED AND NOT OPERATE PROPERLY.

5.2. Slowly depress the accelerator pedal to the floor and hold it in this position. With the accelerator pedal fully depressed, the wiper switch arm brush should be positioned entirely on the last fixed contact. It is acceptable for the wiper switch arm to come into contact with the wiper switch housing provided there is no excessive pressure against the housing. To check wiper arm pressure against the housing, keep the accelerator pedal fully depressed and disconnect the accelerator rod from the wiper switch ball stud. Then try to reconnect it. If the accelerator pedal must be released in order to reconnect the accelerator rod, then the wiper switch arm is exerting excessive pressure against the housing; proceed to step 5.3. If the accelerator rod can be easily connected, it is correctly adjusted.

5.3. If accelerator rod is not adjusted correctly, disconnect it from the ball stud at wiper switch and manually rotate bell crank until wiper switch arm brush is positioned ***entirely*** on the last fixed contact.

5.4. While holding the accelerator rod (17) with locking pliers, loosen jam nut (25) and adjust ball joint sleeve (24) to fit on the wiper switch ball stud, with approximately the same number of threads showing at each end of the rod. Then tighten jam nut (25) against sleeve **(Figure 5-14, Page 5-9)**.

5.5. Depress the accelerator pedal several times and then check to be sure the wiper switch arm brush is positioned entirely on the eighth fixed contact, and the wiper switch arm is not exerting excessive pressure against the wiper switch housing.

5.6. Install the wiper switch cover.

6. ADJUST THE ACTUATOR LEVER

- **Adjust the Actuator Lever – Turf 2, Carryall 2 and 6 Electric Vehicles:**

6.1. Connect Calibration Test Module (CTM) (Club Car Part No. 1018871-01) **(Figure 5-12, Page 5-8)** to vehicle.

6.1.1. Disconnect three-pin connector to potentiometer from wire harness as shown **(Figure 5-15, Page 5-10)**.

6.1.2. Connect the three-pin plug of the CTM to the three-pin connector from the potentiometer **(Figure 5-12, Page 5-8) and (Figure 5-13, Page 5-8). See following NOTE**.

NOTE

- AN ADAPTER PLUG ASSEMBLY (CLUB CAR PART NO. 1018945-01) IS AVAILABLE FOR USE ON VEHICLES WITH A THREE-PIN, TRIANGULAR-SHAPED PLUG AT THE POTENTIOMETER.

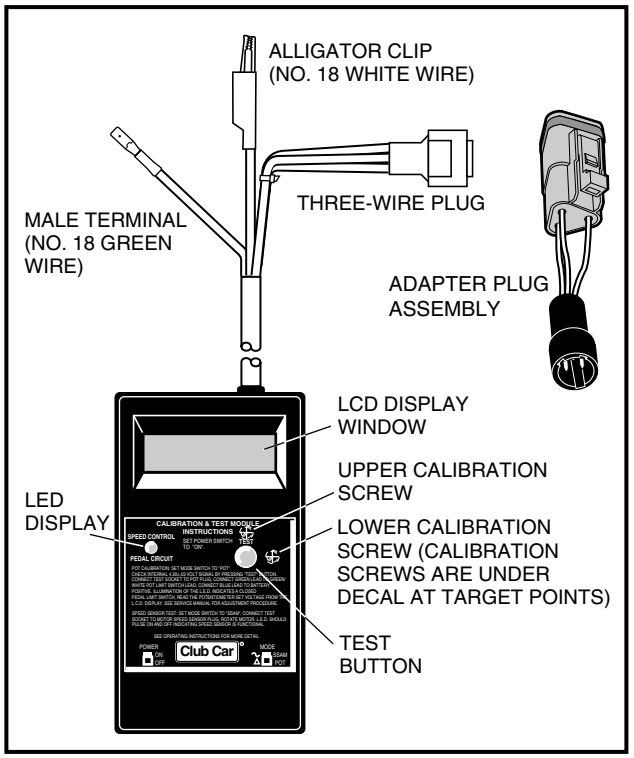

Figure 5-12 Calibration Test Module

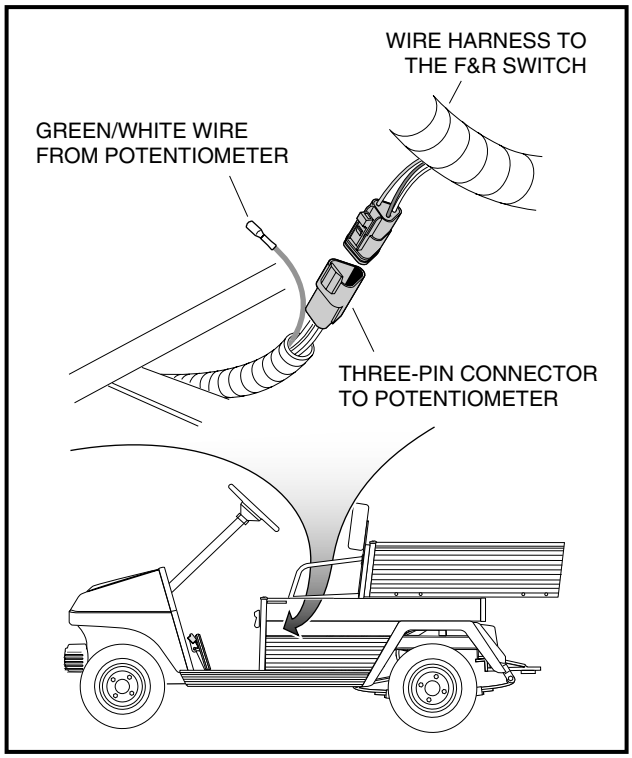

Figure 5-13 Three Wire Connector to Potentiometer

6.1.3. Disconnect the green/white wire from the potentiometer housing assembly **(Figure 5-13, Page 5-8)** at the Forward and Reverse Limit Switch No. 1.

6.1.4. Connect the green/white wire from the potentiometer housing to the green lead from the CTM **(Figure 5-12, Page 5-8)**.

6.1.5. If it is not already disconnected, disconnect the 6 gauge red wire from the positive (+) post of battery No. 1. Connect the CTM alligator clip to the end of the 6 gauge red wire.

6.2. Reposition and clamp the Accelerator Pedal Adjustment tool on the accelerator pedal with the end marked ***micro break point*** toward the floorboard, then depress the pedal until the end of the tool rests against the floorboard (pedal height should be 4-5/8 inches) (11.7 cm). Use a rubber strap to hold the pedal in depressed position and proceed to step 6.3. **(Figure 5-16, Page 5-11)**.

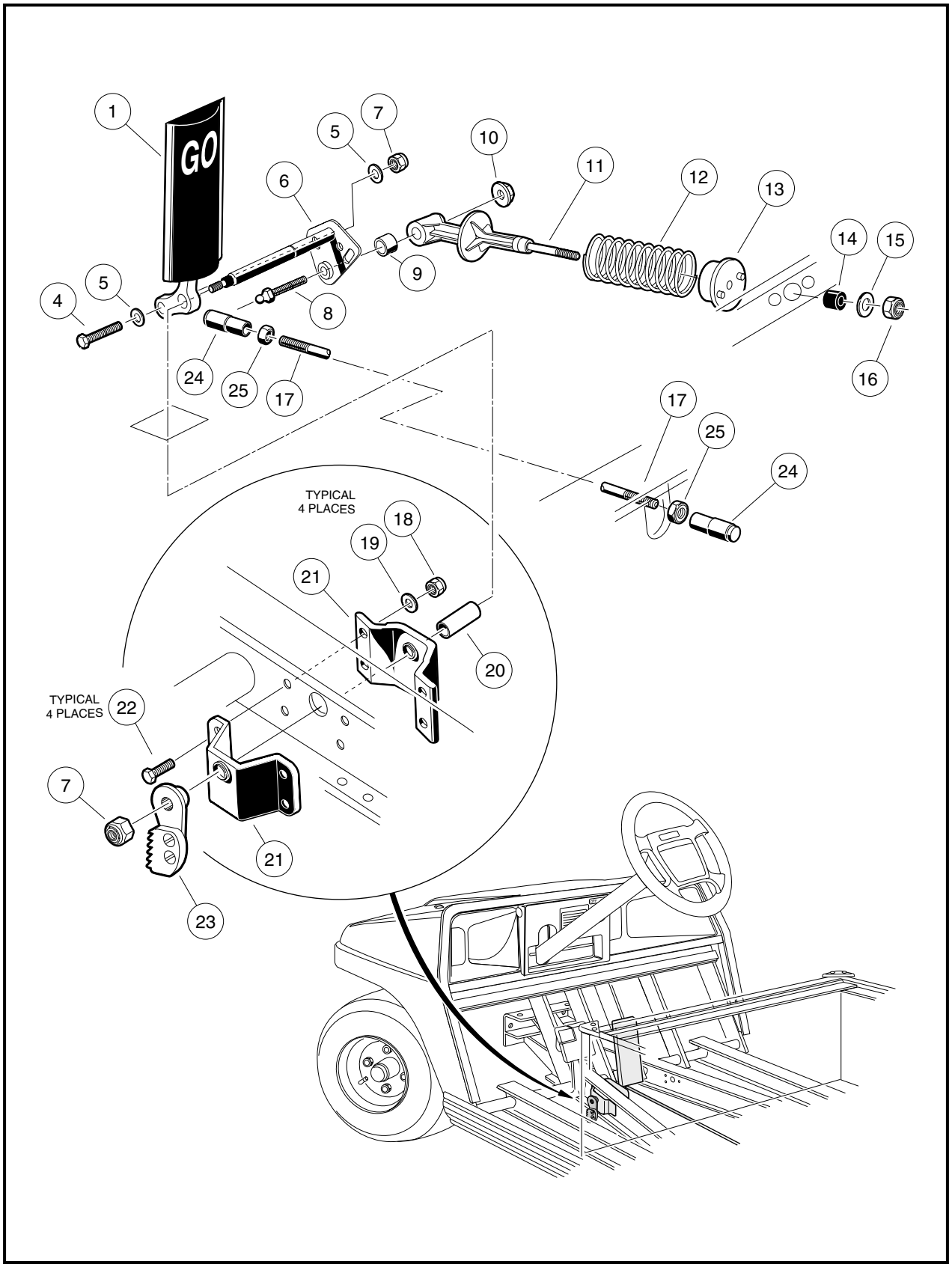

Figure 5-14 Accelerator Pedal – Electric Turf 1, Carryall 1 and all Gasoline Vehicles

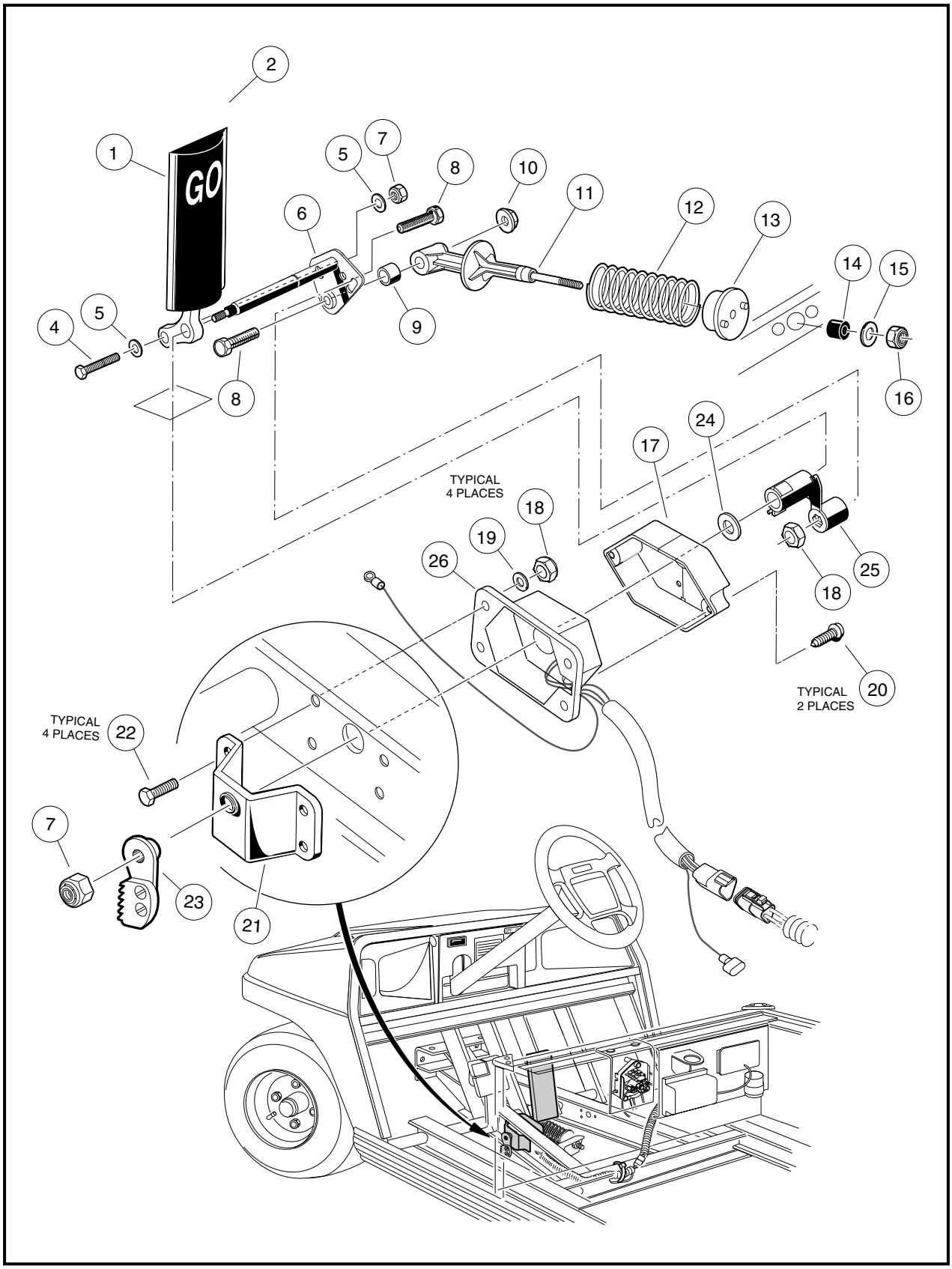

Figure 5-15 Accelerator Pedal – Turf 2, Carryall 2 and 6 Electric Vehicles

Adjust the Actuator Lever, Continued:

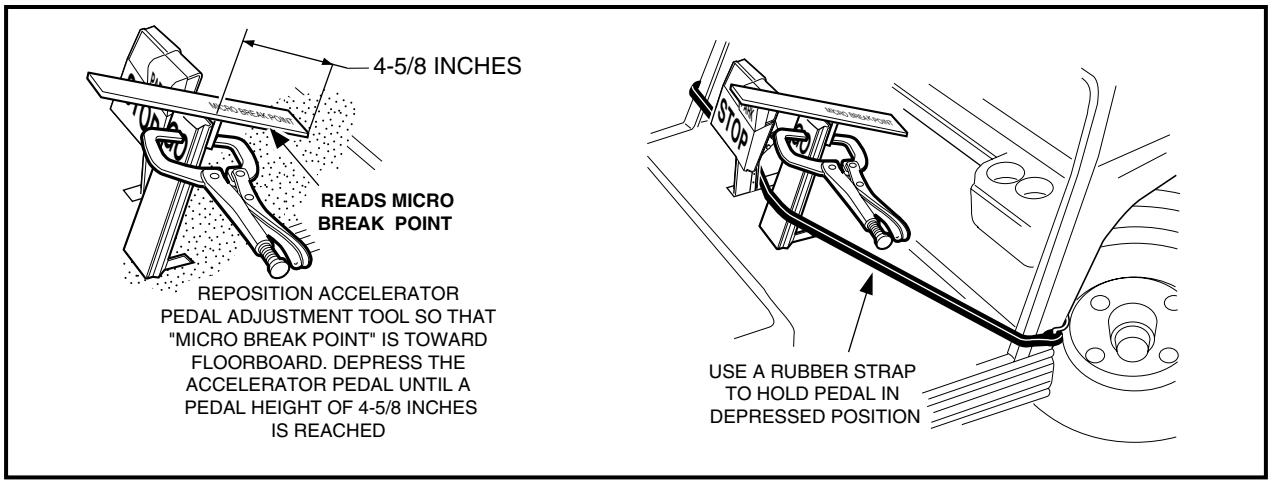

Figure 5-16 Adjust Micro Break Point

6.3. Remove two screws (20) and detach the potentiometer housing cover **(Figure 5-17, Page 5-11)**. Slightly loosen the bolt (9) **(Figure 5-18, Page 5-11)** attaching the actuator lever to the adjustment bracket.

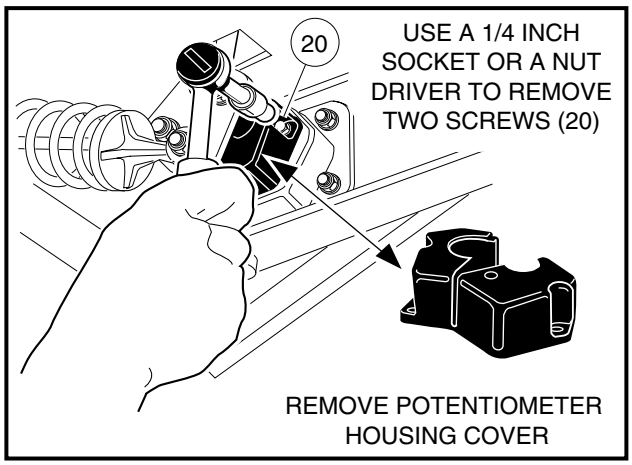

Figure 5-17 Remove Potentiometer Cover

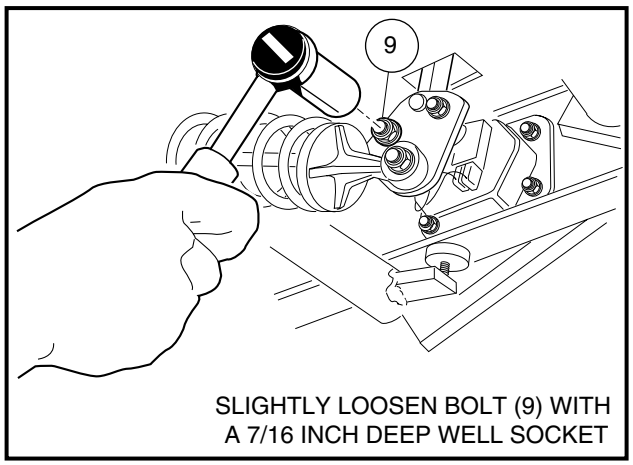

Figure 5-18 Loosen Bolt

6.4. Rotate the actuator lever (25) on the pivot rod weldment (6) clockwise until the red LED is illuminated (limit switch clicks ON). Then rotate the actuator lever (25) on the pivot rod weldment (6) counterclockwise just to the point at which the red LED on the CTM goes out (limit switch clicks off) **(Figure 5-15, Page 5-10)**.

6.5. Tighten the actuator lever bolt (9) **(Figure 5-18, Page 5-11)** to 75 in-lb (8.5 N·m). This step sequence ensures the solenoid will not engage with the accelerator pedal in the fully upright position and with the park brake set. If the red LED is illuminated at this point, repeat step 6.4.

6.6. Meter should indicate 3.38 to 3.42 volts. If not, proceed to step 6.7. If so, proceed to step 6.9.

6.7. Loosen the potentiometer adjustment lock nut **(Figure 5-19, Page 5-12)**.

6.8. Using a potentiometer adjustment tool or very small flat blade screwdriver (electronics type), turn the potentiometer adjustment screw until the CTM reads from 3.38 to 3.42 volts **(Figure 5-20, Page 5-12)**. Then tighten the potentiometer locknut to 5 in-lb (.6 N·m).

6.9. Again loosen actuator lever bolt and rotate actuator lever counterclockwise until red LED goes off.

Adjust the Actuator Lever, Continued:

6.10. With the actuator lever in position, tighten the actuator lever bolt to 75 in-lb (8.5 N·m) This step sequence ensures that the solenoid will not engage with the accelerator pedal in the UP position.

6.11. Recheck voltage reading to ensure CTM indicates 3.38 to 3.42 volts just before the limit switch engages. Voltage reading should be zero VDC when the accelerator pedal is depressed to floor.

6.12. Disconnect the CTM from vehicle and reconnect three-wire connector (from potentiometer) to wire harness. Reconnect green/white wire to the Forward and Reverse Limit Switch No. 1.

6.13. Install the potentiometer housing cover.

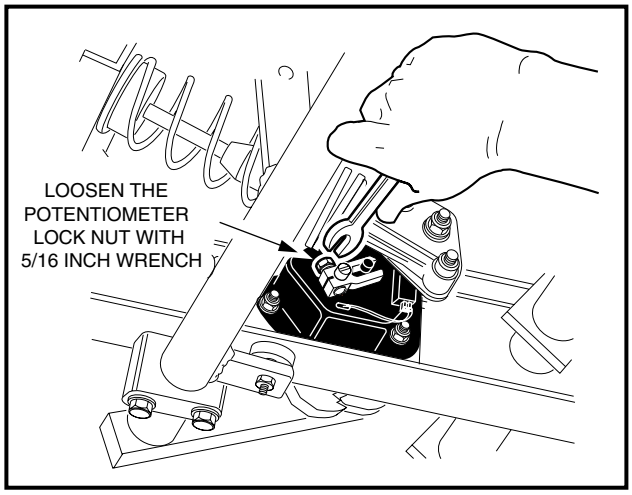

Figure 5-19 Loosen Potentiometer Locknut

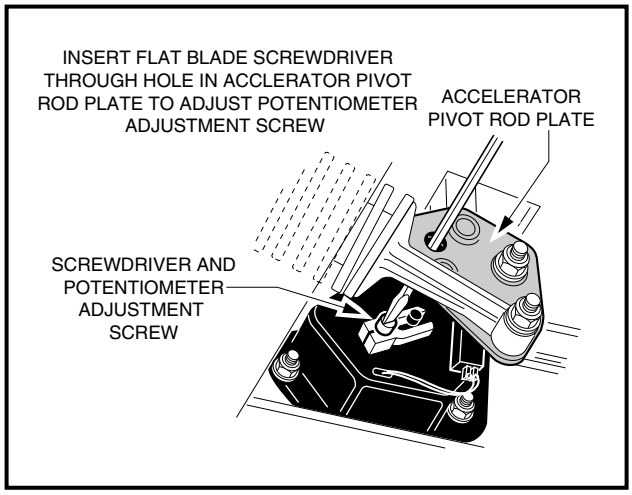

Figure 5-20 Potentiometer Adjustment Screw

PEDAL GROUP DISASSEMBLY AND ASSEMBLY

Read WARNING on pages 5-1 and 5-2.

BRAKE PEDAL REMOVAL

1. Make sure key switch is OFF and the Forward/Reverse handle is in NEUTRAL, then disconnect battery or batteries as instructed in WARNING on pages 5-1 and 5-2.
2. Place chocks under rear wheels and lift front end of vehicle with a chain hoist or floor jack. Place jack stands under the front cross tube of the vehicle frame and lower the vehicle onto the jack stands. **See following WARNING**.

⚠ WARNING

- LIFT ONLY ONE END OF THE VEHICLE AT A TIME. BEFORE LIFTING, UNLOAD CARGO BED, LOCK THE BRAKES AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

3. Remove the brake pedal assembly.
   3.1. Remove nuts (34), flat washers (27 or 35), bolts (28), and mounting blocks (26) (**Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)**. If the mounting blocks (26) show signs of excessive wear,

or are damaged, they must be replaced with new ones before installing pedal assembly (**Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16).**

3.2. Remove shoulder bolts (16) and nuts (15) then disconnect the rod(s) (14 and 36) from the pedal shaft (**Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16). NOTE: Four-wheel brake vehicles have two rod lock nuts**.

3.3. Remove the nut (25) and brake stop (24) **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)**.

3.4. Lift the pedal assembly (10) through the floorboard **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)**.

BRAKE PEDAL INSTALLATION

1. From the top side of the floorboard, insert the brake pedal weldment assembly (10) **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)** through the opening in the floor as shown **(Figure 5-25, Page 5-17)** and install the pedal stop (24) **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)** on the weldment.
2. Attach the equalizer rod(s) (14 and 36) to the brake pedal weldment assembly (10) as shown **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)**. Tighten to 17 in-lb (23 N·m).

- On two-wheel brake vehicles, the equalizer rod is secured to the left (driver side) channel on the brake pedal weldment.
- For Turf 2 and Carryall 2 vehicles with four-wheel brakes and Carryall 2 Plus vehicles, there are two equalizer rods. The long rod (21-1/4 inches) is secured to the left (driver side) channel, and the short rod (9-1/4 inches) is secured to the right (passenger side) channel on the brake pedal weldment.
- On Turf 6 and Carryall 6 vehicles, there are two equalizer rods. The long rod (42-1/4 inches) is secured to the left (driver side) channel on the brake pedal weldment, and the short rod (9-1/4 inches) is secured to the right (passenger side) channel on the brake pedal weldment.

3. Position and attach brake pedal assembly and mounting blocks (26) to vehicle frame as shown. Tighten the bolts and nuts to 50 in-lb (6.5 N·m) **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16)**.
4. Adjust brake pedal height to 6 inches (15.2 cm) **(Figure 5-21, Page 5-13)**.

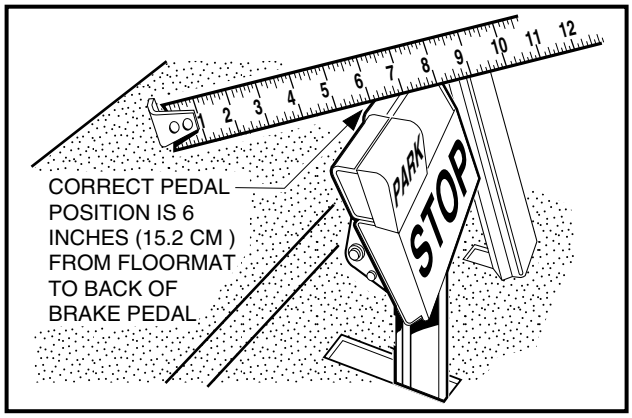

Figure 5-21 Pedal Position

5. Tighten nut (25) on brake stop (24) to 8 ft-lb (9.5 N·m) **(Figure 5-23, Page 5-15 or Figure 5-24, Page 5-16).**
6. Tighten the jam nut (3) while holding the adjustment nut (2) in the correct position on the equalizer rod so brake pedal free-play is 1/4 to 1/2 inch (6.35 to 12.7 mm) **(Figure 5-22, Page 5-14). See following NOTE.**

NOTE

- BRAKE PEDAL FREE-PLAY IS THE DISTANCE THE BRAKE PEDAL CAN BE DEPRESSED BEFORE THE BRAKE ACTUATOR ARM (AT THE BRAKE CLUSTER) MOVES.

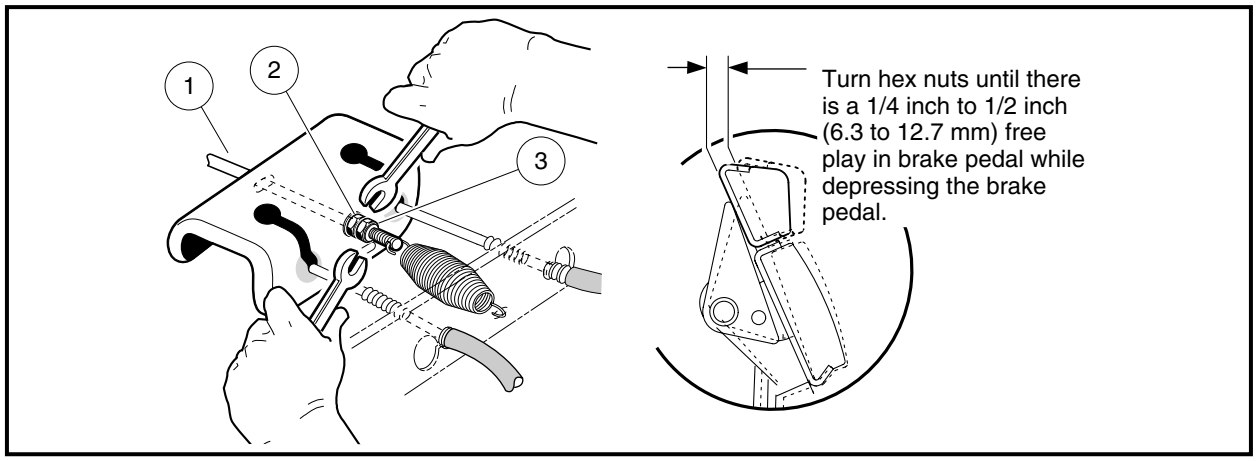

Figure 5-22 Adjust Pedal Free Play

PARK BRAKE REMOVAL

1. Make sure the key switch is OFF and the Forward/Reverse handle is in NEUTRAL, then disconnect the battery or batteries as instructed in the WARNING on pages 5-1 and 5-2.

⚠ CAUTION

- DISCHARGE CONTROLLER ON POWERDRIVE VEHICLES PER INSTRUCTIONS IN THE WARNING ON PAGE 5-2.

2. Place chocks under the rear wheels and lift the front end of the vehicle with a chain hoist or floor jack. Place jack stands under the front cross tube of the vehicle frame and lower the vehicle onto the jack stands. **See WARNING on page 5-12**.
3. Remove the park brake assembly.
   3.1. To remove the park brake rod and pawl assembly (17 through 20), remove the push-on nut (19) and disconnect the ball joint sleeve (21) from the park brake pedal (29) (**Figure 5-23, Page 5-15 and Figure 5-24, Page 5-16). See following NOTE.**

NOTE

- NEW PUSH-ON NUTS (19) AND (32) (**FIGURE 5-26, PAGE 5-17**) MUST BE USED WHEN REASSEMBLING PARK BRAKE.

   3.2. To remove the park brake pedal (1), remove the push-on retainer nut (32), disconnect the torsion spring (22) **(Figure 5-26, Page 5-17)** and slide the pedal off of the shaft. **See preceding NOTE.**
   3.3. Inspect all parts for wear or damage and replace as necessary.

PARK BRAKE INSTALLATION

1. From the bottom side of the floorboard, insert park brake rod (17) through brake pedal assembly opening as shown **(Figure 5-26, Page 5-17)**. Then install park brake pawl (35) onto shaft on brake pedal assembly weldment (10) **(Figure 5-26, Page 5-17)**.
2. Install the spacer (23) and torsion spring (22) on the park brake pedal shaft on the brake pedal weldment **(Figure 5-26, Page 5-17)**.

3. Install the bushings (30) in the park brake pedal and position the park brake pedal on the shaft on the brake pedal assembly weldment (10) **(Figure 5-26, Page 5-17)**. Then attach the ends of the torsion spring to the park brake pedal and to the brake pedal weldment as shown **(Figure 5-27, Page 5-17)**.

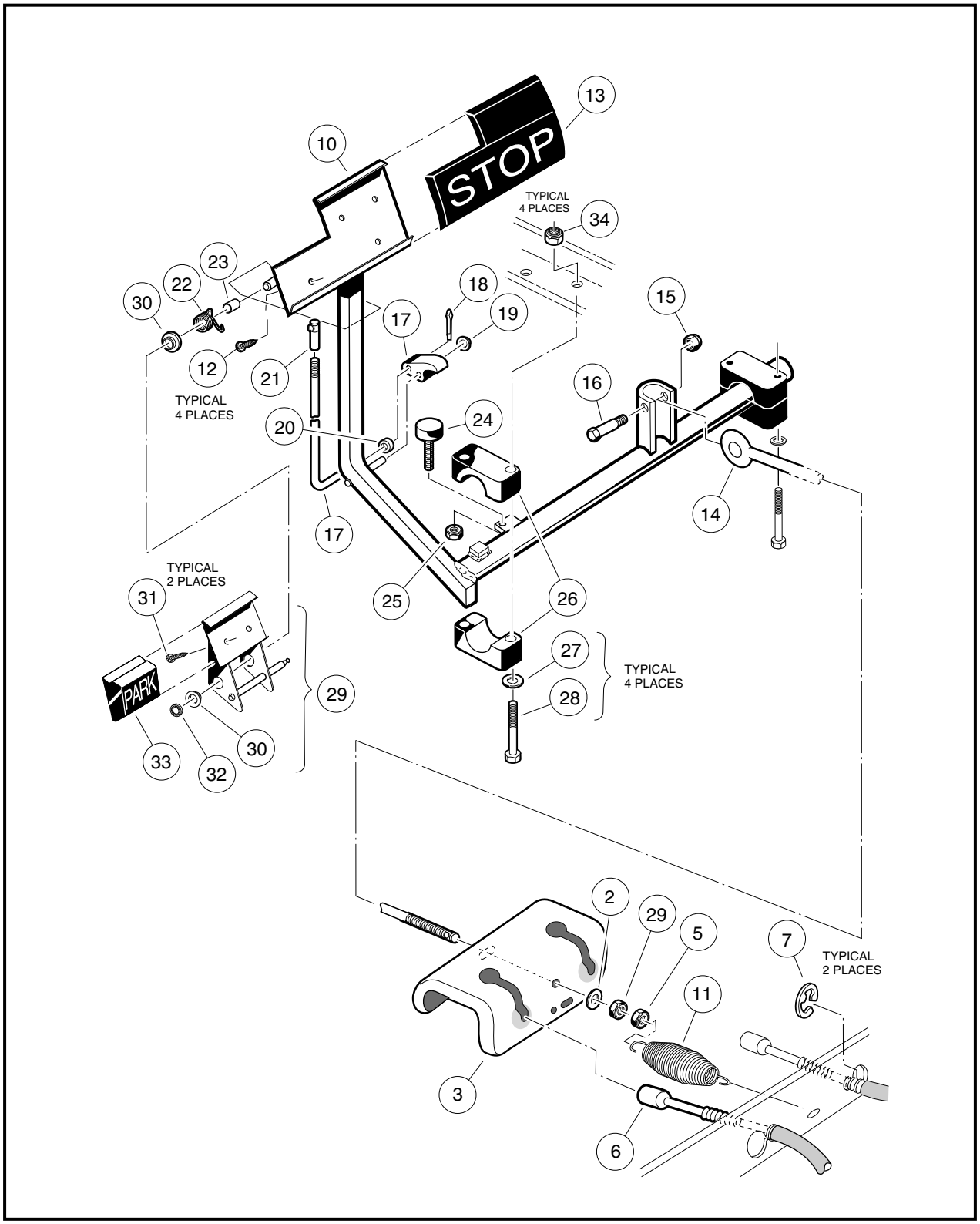

Figure 5-23 Brake and Park Brake Pedal Assembly and Mounting – Two-Wheel Brake Vehicles

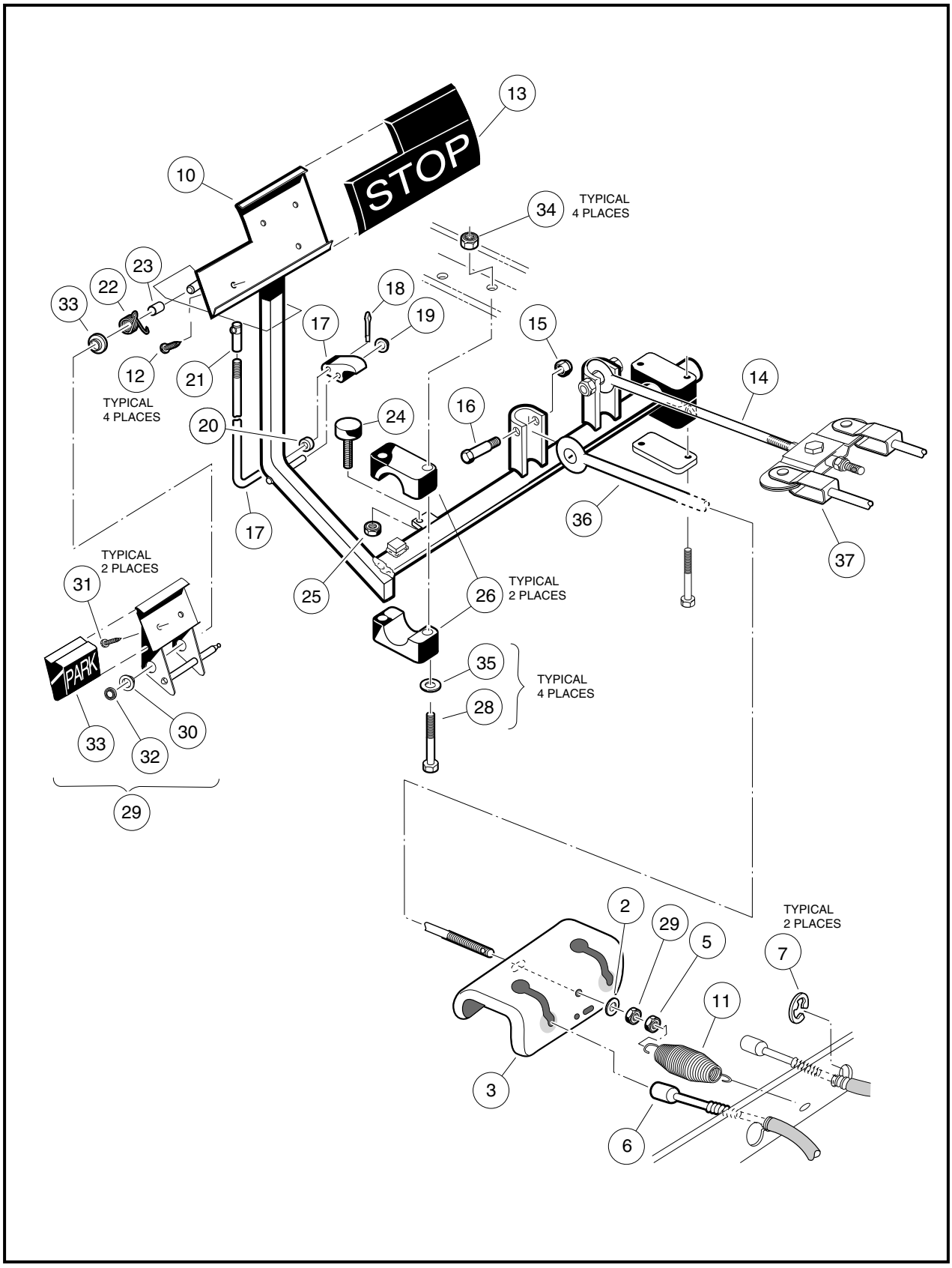

Figure 5-24 Brake and Park Brake Pedal Assembly and Mounting – Four-Wheel Brake Vehicles

Park Brake Installation, Continued:

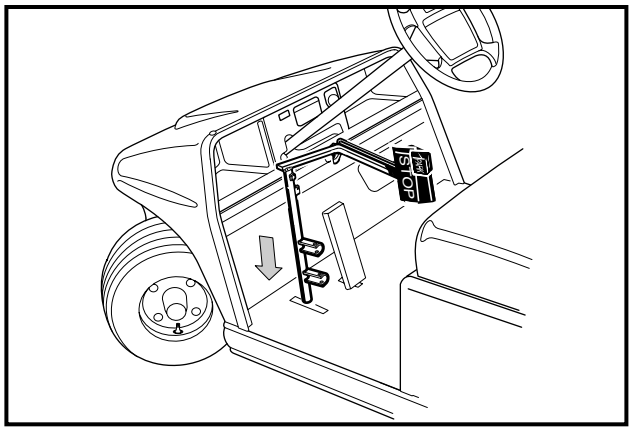

Figure 5-25 Brake Pedal Weldment Through Floor

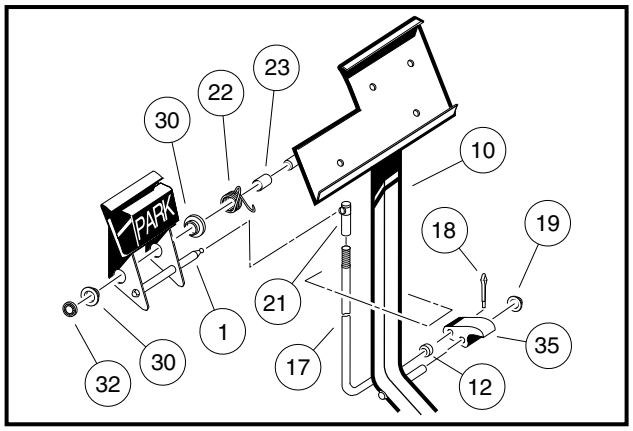

Figure 5-26 Park Brake Assembly

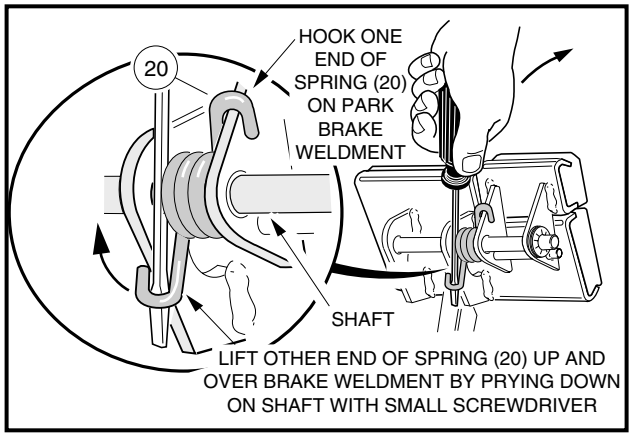

Figure 5-27 Attach Torsion Spring

4. Install the push nut (32) on the park brake pedal shaft **(Figure 5-26, Page 5-17)**.
5. Connect park brake rod (17) with ball joint (21) to the ball stud on the park brake pedal assembly **(Figure 5-26, Page 5-17)**.

ACCELERATOR PEDAL REMOVAL

Electric Turf 1, Carryall 1 and all Gasoline Vehicles

1. Make sure key switch is off and that the Forward/Reverse Switch is in NEUTRAL, then disconnect battery(ies). **See following WARNING.**

⚠ WARNING

- ON GASOLINE VEHICLES, DISCONNECT BOTH BATTERY LEADS, NEGATIVE FIRST.
- ON POWERDRIVE VEHICLES, DISCONNECT BATTERIES AS SHOWN IN FIGURE 1-2, PAGE 1-3. THEN DISCHARGE THE CONTROLLER AS INSTRUCTED IN THE WARNING ON PAGE 1-3.

2. Place chocks under the rear wheels and lift the front end of the vehicle with a chain hoist or floor jack. Place jack stands under the front cross tube of the vehicle frame and lower the vehicle onto the jack stands. **See following WARNING.**

Accelerator Pedal Removal, Continued:

⚠ WARNING

- LIFT ONLY ONE END OF A VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, **UNLOAD THE CARGO BED**, AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

3. Using a 1/2" socket and 1/2" wrench, remove the nut (7), two washers (5), and bolt (4) securing the accelerator pedal (1) to the pivot rod (6) **(Figure 5-14, Page 5-9)**.
4. Disconnect the accelerator rod assembly (17, 25, and 24) **(Figure 5-14, Page 5-9)** at the front and rear ball studs and remove it from the vehicle.
5. Remove the nut (10), ball stud (8), and pivot support bearing (9) from the accelerator pivot rod assembly (6) **(Figure 5-14, Page 5-9)**.
6. Slide the spring retainer (11) off of the accelerator pivot rod.
7. Use a scribe to mark the position of the park brake ratchet (23) on the accelerator pivot rod (6) **(Figure 5-14, Page 5-9). See following NOTE.**

NOTE

- FAILURE TO MARK POSITION OF THE RATCHET COULD CAUSE IT TO BE REINSTALLED IMPROPERLY, RESULTING IN IMPROPER ADJUSTMENT AND POSSIBLE FAILURE OF THE PARK BRAKE.

8. Remove the lock nut (7) from the accelerator pivot rod **(Figure 5-14, Page 5-9)**.
9. Depress the brake pedal slightly and then slide the park brake ratchet (23) **(Figure 5-14, Page 5-9)** toward the end of the accelerator pivot rod. Rotate the ratchet and remove it from the pivot rod.
10. Remove the four bolts (22), washers (19), and nuts (18) that secure the accelerator pivot rod supports (21) to the frame. Remove the pivot rod (6) and spacer (20) from the accelerator pivot rod supports (21) **(Figure 5-14, Page 5-9)**.
11. Remove the accelerator pedal (1) from the vehicle **(Figure 5-14, Page 5-9)**.

ACCELERATOR PEDAL INSTALLATION

Electric Turf 1, Carryall 1 and all Gasoline Vehicles

1. Position the accelerator pivot rod supports (21) on the vehicle frame and install the four bolts (22), flat washers (19), and lock nuts (18). Tighten the nuts with fingers only at this time **(Figure 5-14, Page 5-9)**.
2. Insert the lower end of the accelerator pedal (1) through the floorboard and install the accelerator pivot rod (6) through the uppermost hole in the pedal. Install the bolt (4), two washers (5), and nut (7) through the lower hole in the pedal and through the pivot rod. Tighten the nut with fingers only at this time **(Figure 5-14, Page 5-9)**.
3. Install the plastic spacer (20) on the pivot rod (6) **(Figure 5-14, Page 5-9)**.
4. Insert the pivot rod through the pivot rod supports on the vehicle frame.

5. Tighten the four bolts (22) **(Figure 5-14, Page 5-9)** attaching the pivot rod supports to the frame to 75 in-lb (8.5 N·m).
6. Install the ball stud (8) through the pivot rod. Using needle-nose pliers, install the pivot support bearing (9) and the spring retainer (11) onto the ball stud. Secure these parts with the nut (10) **(Figure 5-14, Page 5-9)**. Tighten the nut to 50 in-lb (5.7 N·m).
7. Depress the brake pedal slightly, and with the park brake ratchet oriented so that the tip of the ratchet is pointed toward the rear of vehicle, slide the ratchet onto the pivot rod (do not slide the ratchet onto the pivot rod splines). Release the brake pedal and allow the ratchet to rotate until its tip is pointed downward **(Figure 5-28, Page 5-21)**. The ratchet should now rotate freely on the rod.
8. Rotate the ratchet clockwise until it touches the park brake pawl, then slide the ratchet onto the splines of the pivot rod (it may be necessary to push the pivot rod toward the driver side of the vehicle to make the splines accessible). The ratchet may have to be rotated counterclockwise slightly to align the splines.
9. Move the pivot rod back toward the driver side of the vehicle and line up the scribed match marks on the pivot rod and ratchet. Rotate the pivot rod back and forth slightly to align the splines and slide the ratchet onto the splines.
10. Install the nylon lock nut (7) on the pivot rod and tighten the nut to 18 ft-lb (24 N·m) **(Figure 5-14, Page 5-9)**.
11. Install the accelerator rod assembly (17, 25, and 24) **(Figure 5-14, Page 5-9)**.
12. Adjust the accelerator pedal height. **See following NOTE.**

NOTE

- THE PROCEDURE FOR ADJUSTING ACCELERATOR PEDAL HEIGHT IS ON PAGE 5-5.

13. Adjust the accelerator rod. **See following NOTE.**

NOTE

- THE PROCEDURE FOR ADJUSTING THE ACCELERATOR ROD IS ON PAGE 5-6 FOR GASOLINE VEHICLES, OR PAGE 5-7 FOR ELECTRIC TURF 1 AND CARRYALL 1 VEHICLES.

ACCELERATOR PEDAL REMOVAL

Turf 2, Carryall 2 and 6 Electric Vehicles

1. Make sure the key switch is OFF and that the Forward/Reverse Switch is in NEUTRAL, then disconnect the batteries as shown **(Figure 1-2, Page 1-3)**. **See following CAUTION.**

⚠ CAUTION

- DISCHARGE CONTROLLER ON POWERDRIVE SYSTEM 48 VEHICLES PER INSTRUCTIONS IN WARNING ON PAGE 1-3.

2. Place chocks under the rear wheels and lift the front end of the vehicle with a chain hoist or floor jack. Place jack stands under the front cross tube of the vehicle frame and lower the vehicle onto the jack stands. **See following WARNING.**

⚠ WARNING

- LIFT ONLY ONE END OF A VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, **UNLOAD THE CARGO BED**, AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

3. Remove the two hex head screws (20) attaching the potentiometer housing cover **(Figure 5-15, Page 5-10)** to the potentiometer and remove the cover.
4. Remove the bolt (8), locknut (10), and pivot support bearing (9) connecting the spring retainer (11) to the pivot rod (6). **(Figure 5-15, Page 5-10)**.
5. Remove the hex head cap screw (4), two flat washers (5), and lock nut (7) from the accelerator pedal and pivot rod assembly (6) **(Figure 5-15, Page 5-10)**.
6. Remove the bolt (8) and locknut (18) from the actuator lever (25) and pivot rod assembly **(Figure 5-15, Page 5-10)**.
7. Remove the brake ratchet retaining nut (7) from the pivot rod assembly (6) **(Figure 5-15, Page 5-10)**.
8. Depress the brake pedal slightly and then slide the park brake ratchet (25) toward the end of the accelerator pivot rod **(Figure 5-15, Page 5-10)**. Rotate the ratchet towards the rear of the vehicle and remove it from the pivot rod.
9. Hold the actuator lever (25) and accelerator pedal (1) in place and remove the accelerator pivot rod and plastic washer (24) **(Figure 5-15, Page 5-10)**.
10. Pull accelerator pedal (1) **(Figure 5-15, Page 5-10)** out of vehicle from the top side of the floorboard.
11. Remove the four hex head cap screws (22), flat washers (19), and lock nuts (18) attaching the accelerator pivot rod support (21) and potentiometer assembly (26) to the vehicle frame **(Figure 5-15, Page 5-10)**, and remove the pivot rod support and the potentiometer assembly.

ACCELERATOR PEDAL INSTALLATION

Turf 2, Carryall 2 and 6 Electric Vehicles

1. Position the accelerator pivot rod support (21) and the potentiometer assembly (26) on the vehicle frame and install the four hex head cap screws (22), flat washers (19), and lock nuts (18). Tighten the nuts finger-tight **(Figure 5-15, Page 5-10)**.
2. Insert the lower end of the accelerator pedal (1) through the floorboard and install the accelerator pivot rod (6) through the uppermost hole in the pedal. Install the bolt (4), two washers (5), and nut (7) through the lower hole in the pedal and through the pivot rod. Tighten the nut finger-tight. Install the actuator lever (25) **(Figure 5-15, Page 5-10)** on the pivot rod and position the pedal and actuator lever on the rod so that about one-half of the total length of the pivot rod is protruding out of the actuator lever.
3. Place the plastic washer (24) on the end of the accelerator pivot rod and align the pivot rod and washer with the hole in the potentiometer housing (26), then insert the pivot rod through the potentiometer, vehicle frame, and pivot rod support until the end of the pivot rod is flush with the outside surface of the pivot rod support (21) **(Figure 5-15, Page 5-10)**.
4. Rotate the potentiometer lever (25) clockwise until lever fork is at the two o'clock position **(Figure 5-29, Page 5-21)**. The lever must be at approximately two o'clock in order for it to mate with the alignment pin on the actuator lever.

5. Rotate the actuator lever until its alignment pin is aligned with the slot in the potentiometer lever fork **(Figure 5-29, Page 5-21)**, then slide the actuator lever toward the potentiometer housing. **See following CAUTION.**

⚠ CAUTION

- DO NOT BEND THE LIMIT SWITCH LEVER. THE CAM ON THE ACTUATOR LEVER SHOULD BE AT THE TWO O'CLOCK POSITION WHEN THE ACTUATOR LEVER IS IN POSITION TO MATE WITH THE POTENTIOMETER LEVER, ALLOWING THE ACTUATOR LEVER TO SLIDE PAST THE LIMIT SWITCH LEVER. IT MAY BE NECESSARY TO HOLD THE LIMIT SWITCH LEVER BACK WITH A FLAT BLADE SCREWDRIVER **(Figure 5-29, Page 5-21)**.

6. Push the accelerator pivot rod (6) through the potentiometer housing until the groove in the pivot rod is even with the end of the actuator lever **(Figure 5-15, Page 5-10)**.
7. Install the spring retainer (11) on the pivot rod (6) **(Figure 5-15, Page 5-10)**.
8. Slide the pivot rod toward the passenger's side of the vehicle until approximately one-half of the length of the pivot rod splines is exposed **(Figure 5-15, Page 5-10)**.
9. Depress the brake pedal slightly, and with the park brake ratchet oriented so that the tip of the ratchet is pointed toward the rear of vehicle, slide the ratchet onto the pivot rod (do not slide the ratchet onto the pivot rod splines). Release the brake pedal and allow the ratchet to rotate until its tip is pointed downward **(Figure 5-28, Page 5-21)**. The ratchet should now rotate freely on the rod.

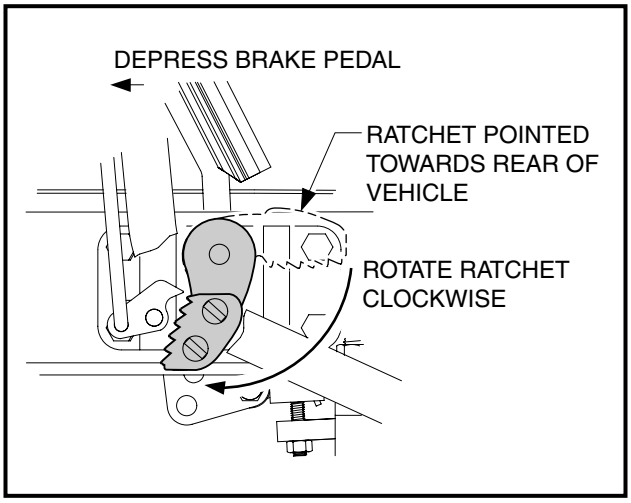

Figure 5-28 Ratchet Installation

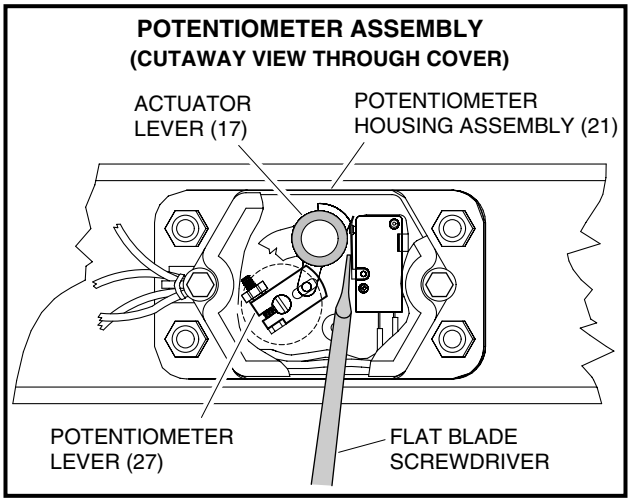

Figure 5-29 Potentiometer Assembly

10. Rotate the ratchet clockwise until it touches the park brake pawl, then slide ratchet onto the splines of the pivot rod (it may be necessary to push the pivot rod toward the driver side of the vehicle to make the splines accessible). The ratchet may have to be rotated counterclockwise slightly to align the splines.
11. Tighten the four bolts that secure the potentiometer assembly and pivot rod support to the vehicle frame to 75 in-lb (8.5 N·m).
12. Use a feeler gauge to check the gap between the ratchet and the pawl. The gap should be .060". Turn the nut (16) on the spring retainer (11) clockwise to widen the gap or counterclockwise to reduce the gap **(Figure 5-15, Page 5-10)**. If the gap is .125" or more, slide the ratchet off the splines, rotate the ratchet clockwise one spline, and then slide the ratchet back onto the splines before adjusting with the spring retainer nut.

Accelerator Pedal Installation, Continued:

Turf 2, Carryall 2 and 6 Electric Vehicles

13. Install the nut (7) **(Figure 5-15, Page 5-10)** on the accelerator pivot rod and tighten it to 18 ft-lb (24 N·m). **See following NOTE.**

NOTE

- MAKE SURE THE ACTUATOR LEVER PIN AND THE POTENTIOMETER LEVER FORK ARE STILL MATED BEFORE TIGHTENING THE ACCELERATOR PIVOT ROD RETAINING NUT.

14. Install the hex head cap screw (8) and lock nut (10) that secure the spring retainer (11) to the pivot rod **(Figure 5-15, Page 5-10)**, and tighten to 50 in-lb (5.7 N·m). **See preceding NOTE.**
15. Install the hex head cap screw (8) and lock nut (18) that attach the actuator lever to the pivot rod **(Figure 5-15, Page 5-10)**, and tighten finger-tight.
16. Adjust the accelerator pedal height. **See following NOTE.**

NOTE

- THE PROCEDURE FOR ADJUSTING THE ACCELERATOR PEDAL HEIGHT IS ON PAGE 5-5.

17. Adjust the actuator lever. **See following NOTE.**

NOTE

- THE PROCEDURE FOR ADJUSTING THE ACTUATOR LEVER IS ON PAGE 5-8.

SECTION 6 – WHEEL BRAKE ASSEMBLIES

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THIS VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN ELECTRICAL AND MECHANICAL REPAIR. FOLLOW ALL PROCEDURES EXACTLY AND HEED ALL WARNINGS STATED IN THIS MANUAL.
- WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHILE SERVICING VEHICLE. WEAR A FULL FACE SHIELD WHEN WORKING WITH BATTERIES.
- SOME BRAKE SHOES CONTAIN ASBESTOS FIBER AND ASBESTOS DUST IS CREATED WHEN THESE BRAKE MECHANISMS ARE HANDLED. WEAR APPROVED EYE AND RESPIRATORY PROTECTION WHEN DISASSEMBLING AND CLEANING BRAKE MECHANISMS. INHALATION OF ASBESTOS COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH. DO NOT USE COMPRESSED AIR OR AEROSOL SPRAYS TO CLEAN THE BRAKE MECHANISM. CLEAN BRAKE MECHANISMS USING THE NEGATIVE PRESSURE ENCLOSURE/HEPA VACUUM SYSTEM OR LOW PRESSURE/WET CLEANING METHOD PER OSHA/29 CFR -1910.1001.
- TURN KEY SWITCH **OFF**, PLACE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION AND REMOVE KEY PRIOR TO SERVICING.
- DO NOT WEAR LOOSE CLOTHING. REMOVE JEWELRY SUCH AS RINGS, WATCHES, CHAINS, ETC. BEFORE SERVICING VEHICLE.
- MOVING PARTS! - DO NOT ATTEMPT TO SERVICE THE VEHICLE WHILE IT IS RUNNING.
- LIFT ONLY ONE END OF THE VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, UNLOAD THE CARGO BED AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.
- USE INSULATED TOOLS WHEN WORKING NEAR BATTERIES OR ELECTRICAL CONNECTIONS.

GASOLINE VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE ALWAYS:
  - DISCONNECT BATTERY CABLES, NEGATIVE (–) FIRST.
  - DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.
- FRAME GROUND - DO NOT ALLOW TOOLS OR OTHER METAL OBJECTS TO CONTACT FRAME WHEN DISCONNECTING BATTERY CABLES OR OTHER ELECTRIC WIRING. NEVER ALLOW A POSITIVE WIRE TO TOUCH THE VEHICLE FRAME, ENGINE OR OTHER METAL COMPONENT.

ELECTRIC VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERIES AS SHOWN IN **SECTION 1, FIGURE 1-2**, **PAGE 1-3**, THEN DISCHARGE THE CONTROLLER AS FOLLOWS:
  - TURN THE KEY SWITCH TO **ON** AND PLACE THE FORWARD/REVERSE HANDLE IN THE **REVERSE** POSITION.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

GENERAL INFORMATION

The Club Car utility vehicles covered in this manual are equipped with two-wheel, self-adjusting brakes, two-wheel manually adjusted brakes, or four-wheel, manually adjusted brakes. **See Section 2 – Specifications.**

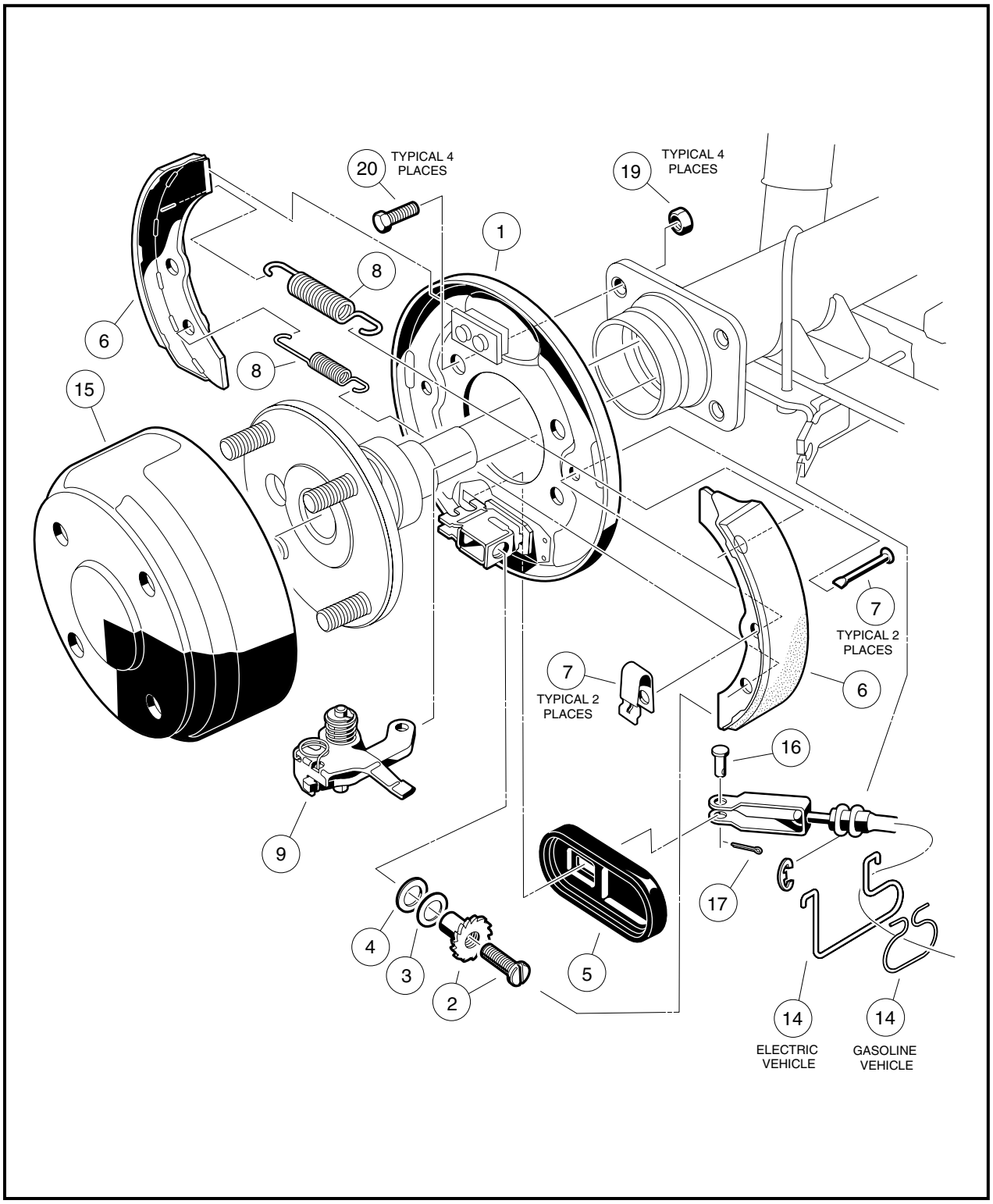

Figure 6-1 Self-Adjusting Brake Assembly

BRAKE SHOE REMOVAL

Read WARNING on page 6-1.

1. To remove rear brake shoes, place chocks at the front wheels, loosen the rear wheel lug nuts and lift the rear of the vehicle with a chain hoist or floor jack. Place jack stands under the axle tubes to support the vehicle.
2. Release park brake if latched and loosen equalizer retaining nuts (1) on equalizer rod (2) to slightly loosen brake cable **(Figure 6-2, Page 6-3)**.

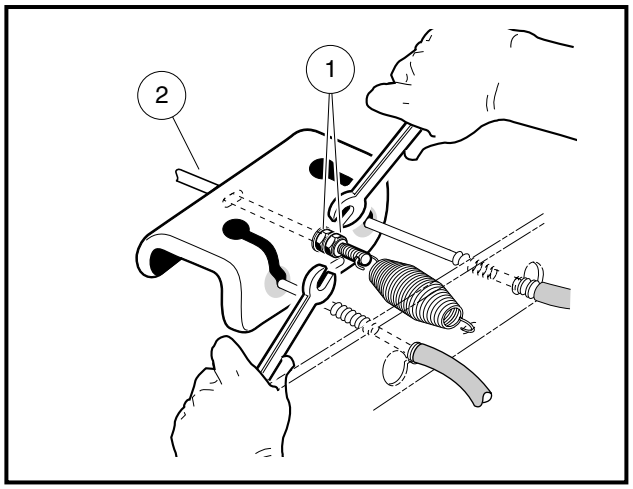

Figure 6-2 Loosen Equalizer Nut

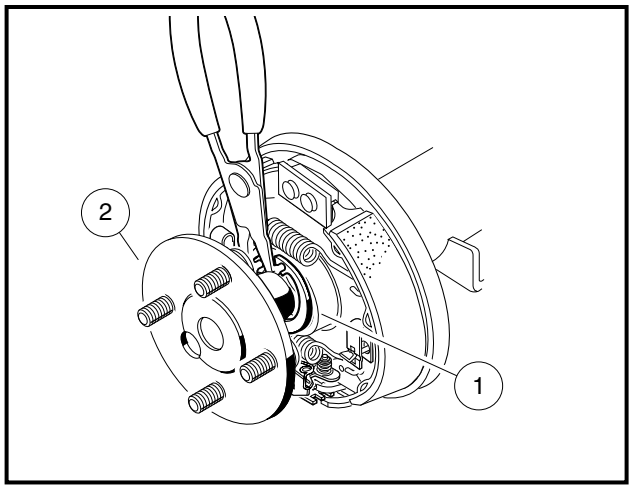

Figure 6-3 Remove Axle Retaining Ring

3. Remove the rear wheels and remove the brake drums. If the brake drums were easily removed, proceed to step 5.

⚠ CAUTION

- WORN OR DAMAGED BRAKE DRUMS CANNOT BE MACHINED TO REFINISH THEM. REPLACE AS NECESSARY.

NOTE

- WHEN SERVICING VEHICLES WITH SELF-ADJUSTING BRAKES WITH BADLY WORN BRAKE SHOES AND WHEN THE DRUMS CANNOT BE REMOVED BY NORMAL METHODS, PROCEED TO STEP FOUR TO MINIMIZE DAMAGE TO THE BRAKE CLUSTER AND BRAKE COMPONENTS.

4. Removing brake drums and badly worn brake shoes.
   4.1. On the back of each brake cluster assembly, locate the heads of two brake shoe retaining pins. It may be necessary to remove sealant material around the head of each pin.
   4.2. Insert a 1/2 x 5/8 inch cold chisel under the head of each pin and shear them off as illustrated **(Figure 6-4, Page 6-4)**. This will release the shoes from the backing plate, allowing them to pivot away from the inside of the brake drum and allow the brake drum to be pulled free. After completing step 5, skip step number 6.
5. Remove the axle.
   5.1. Using 90° snap ring pliers (Club Car Part No. 1012560), remove axle retaining ring (1) **(Figure 6-3, Page 6-3)**.
   5.2. Pull the axle shaft (2) from the axle tube **(Figure 6-3, Page 6-3)**.

Brake Shoe Removal, Continued:

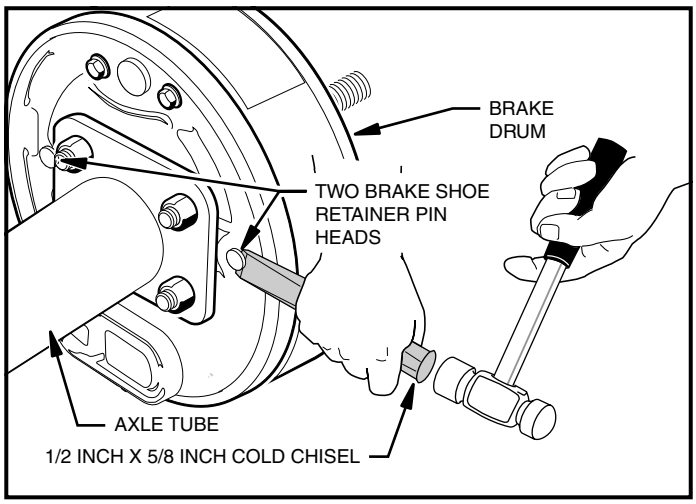

Figure 6-4 Shoe Retainer Pins

6. Using needle nose pliers, rotate the clip retainer pin (1) 90° to remove the shoe retainer clip (2) on each shoe **(Figure 6-5, Page 6-4)**.

⚠ CAUTION

- THE BRAKE SHOES ARE UNDER SPRING PRESSURE AND CAN RELEASE SUDDENLY WHEN BRAKE SHOE RETAINERS ARE REMOVED.

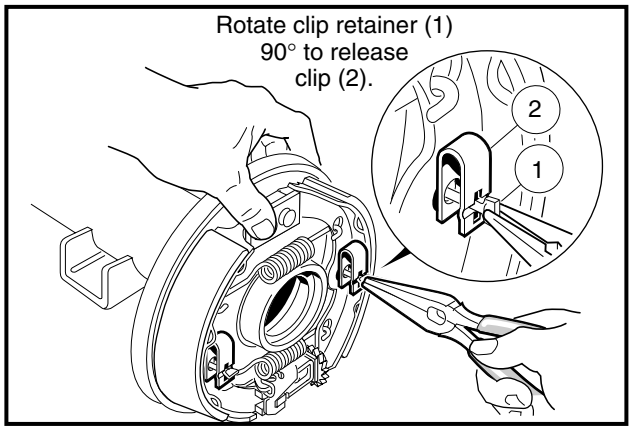

Figure 6-5 Rotate Clip Retainer

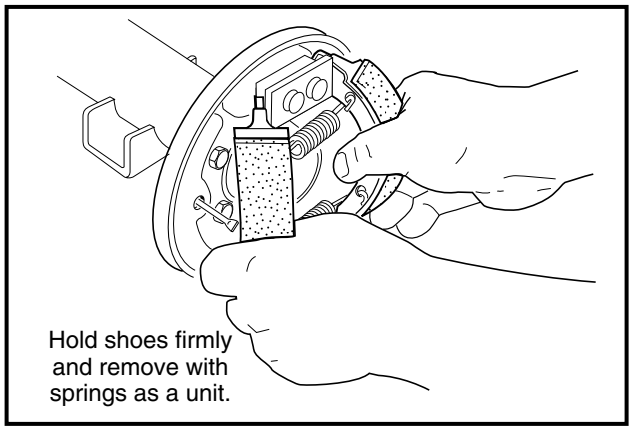

Figure 6-6 Remove Shoes

7. Grasp both brake shoes and pull them, with the springs, out of brake assembly **(Figure 6-6, Page 6-4)**.
8. **Self-Adjusting Brake Vehicles Only:** Remove the adjuster wheel (1) with two washers (2 and 3) from the backing plate **(Figure 6-7, Page 6-5).**

BRAKE ASSEMBLY CLEANING (SELF-ADJUSTING BRAKES)

Read WARNING on page 6-1.

1. Carefully clean the brake backing plate and all of its mechanical components.

2. Remove the rubber boot from backing plate and wipe with a clean damp cloth.
3. Lubricate the slide (1) and slide plate (2) with dry moly lubricant (Club Car Part No. 1012151) on both sides of the backing plate. After lubricating, work the slide back and forth to ensure it slides smoothly and easily **(Figure 6-8, Page 6-5)**. Reinstall rubber boot onto backing plate.

⚠ WARNING

- APPLY GREASE CAREFULLY WHEN PERFORMING THE FOLLOWING STEPS. DO NOT ALLOW ANY GREASE TO GET ONTO THE FRICTION SURFACES OF THE BRAKE SHOE PADS. FAILURE TO HEED THIS WARNING COULD CAUSE DIMINISHED BRAKE PERFORMANCE, POSSIBLY RESULTING IN PROPERTY DAMAGE OR SEVERE PERSONAL INJURY.

4. Use a small brush to carefully apply a liberal amount of white lithium NLGI #2 grease (Dow Corning BR2-Plus or equivalent) on each of the six raised bosses on brake backing plate **(Figure 6-9, Page 6-5)**. **See preceding WARNING.**

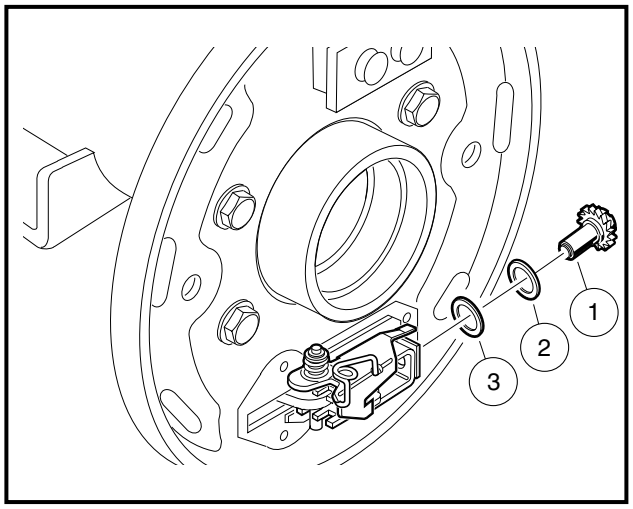

Figure 6-7 Remove Adjuster Wheel

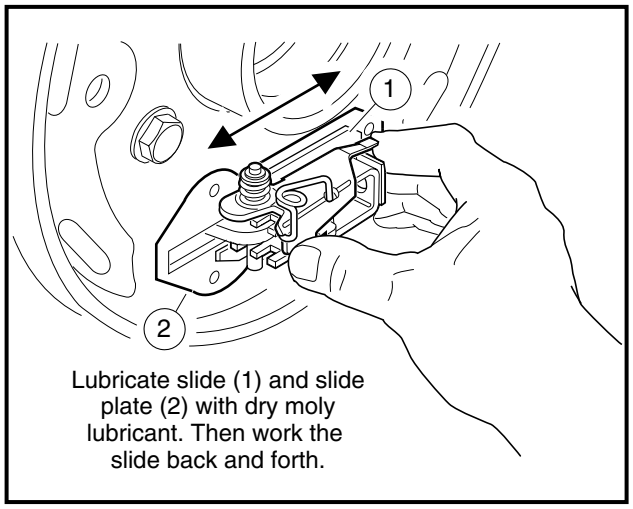

Figure 6-8 Lubricate Slide

5. Use a small brush to carefully apply a liberal amount of white lithium NLGI #2 grease (Dow Corning BR2-Plus or equivalent) to each end of both brake shoes and into the slots in the brake shoe mounting block as shown **(Figure 6-10, Page 6-5). See preceding WARNING.**

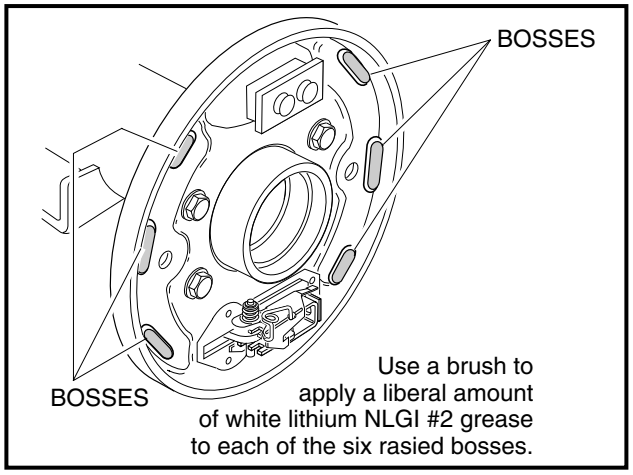

Figure 6-9 Grease Raised Bosses

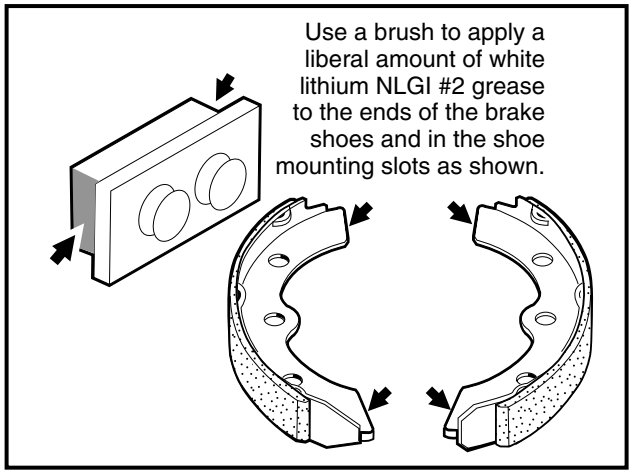

Figure 6-10 Grease Shoes

Brake Assembly Cleaning (Self-Adjusting Brakes), Continued:

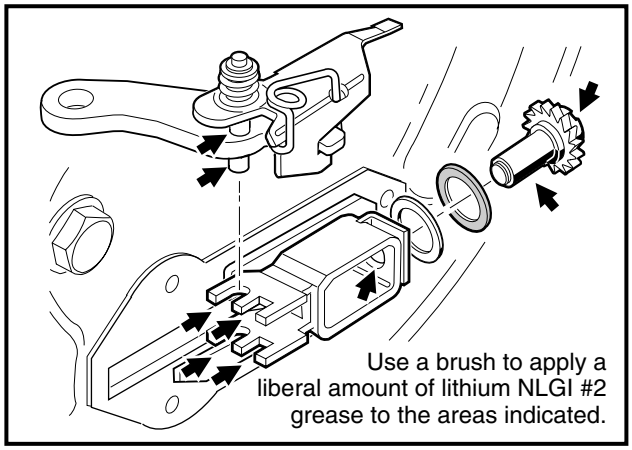

Figure 6-11 Grease Adjuster

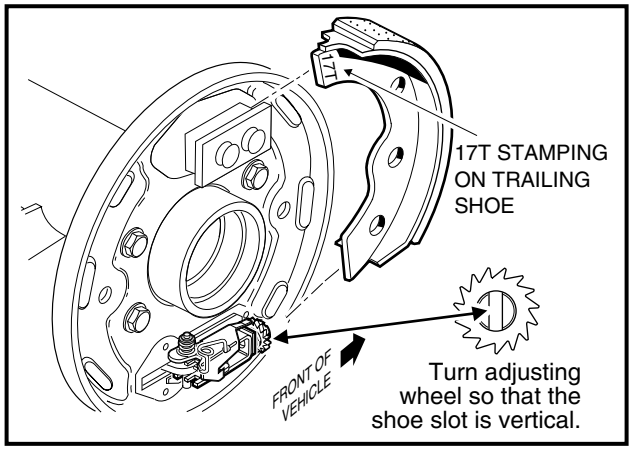

Figure 6-12 Trailing Shoe

6. Use a small brush to carefully apply a liberal amount of white lithium NLGI #2 grease (Dow Corning BR2-Plus or equivalent) to the brake adjuster assembly, adjuster wheel shoe slots, and the shaft of the adjuster wheel as shown **(Figure 6-11, Page 6-6)**. **See WARNING on page 6-5**.
7. Install the adjuster wheel and two washers into the adjuster assembly **(Figure 6-11, Page 6-6)**.

BRAKE SHOE INSTALLATION (SELF-ADJUSTING BRAKES)

Turf 1 and Carryall 1 Vehicles

1. Turn the adjusting wheel screw so the shoe slot is vertical, then position the trailing shoe in the slots in the shoe mounting block and adjuster assembly **(Figure 6-12, Page 6-6)**. **See following NOTE.**

NOTE

- THE TRAILING SHOE HAS ***17T*** STAMPED INTO THE TIP OF THE SHOE FLANGE **(FIGURE 6-12, PAGE 6-6)**. THE LEADING SHOE IS STAMPED ***17L***. WHEN INSTALLING THE SHOES, THE STAMPINGS ON BOTH SHOES SHOULD BE ORIENTED TO THE TOP OF THE BRAKE ASSEMBLY. WHEN INSTALLING THE SHOES ON THE PASSENGER SIDE OF THE VEHICLE, THE SIDE OF THE TRAILING SHOE FLANGE MARKED ***17T*** SHOULD BE FACING OUT AND BE VISIBLE. ON THE DRIVER'S SIDE, THE ***17L*** ON THE LEADING SHOE SHOULD BE FACING OUT AND BE VISIBLE.
- WHEN INSTALLED ON THE BACKING PLATE, THE ***LEADING*** SHOE (STAMPED 17L) IS ***ALWAYS*** ORIENTED TOWARD THE ***REAR*** OF THE VEHICLE.

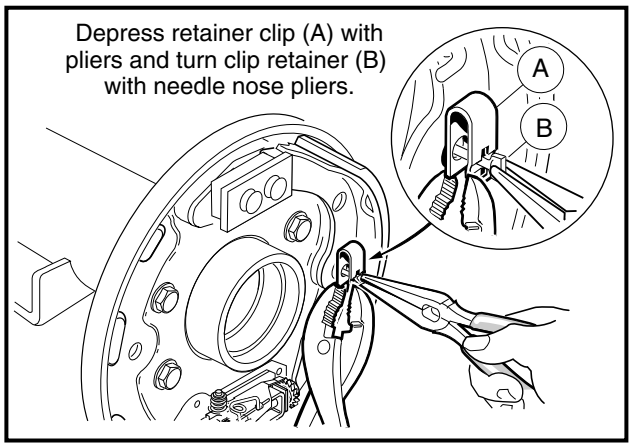

Figure 6-13 Retainer Clip

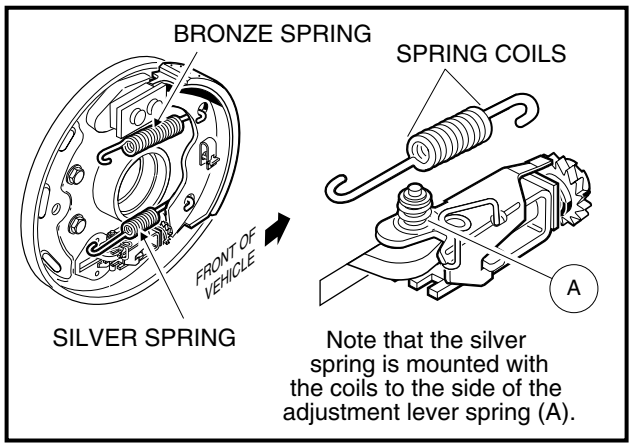

Figure 6-14 Spring Orientation

2. Install the shoe retainer clip. Compress clip while turning retainer pin into position **(Figure 6-13, Page 6-6)**.
3. Attach the springs onto the trailing shoe already installed. Then hold the leading shoe next to the trailing shoe, correctly oriented, and attach the springs to it **(Figure 6-14, Page 6-6)**.
4. While maintaining spring attachment on both shoes, position tips of leading shoe in the mounting slots and then push shoe into place. Hold shoe in position and install retaining clip **(Figure 6-15, Page 6-7)**.
5. After the shoes are installed, move them together up and down and side to side to make sure that they will easily slide approximately 1/4 to 3/8 inch (6.3 to 9.5 mm) without binding. Make sure the shoes are positioned vertically so that the tips of the shoes are positioned flush at the top with the top surfaces of the wedge shapes on the shoe mounting blocks as shown **(Figure 6-16, Page 6-7)**.
6. Place a flat blade screwdriver under the adjusting arm and raise arm off of the adjusting wheel. While holding the arm up, turn the wheel upward until it stops **(Figure 6-17, Page 6-7)**. Remove the screwdriver.

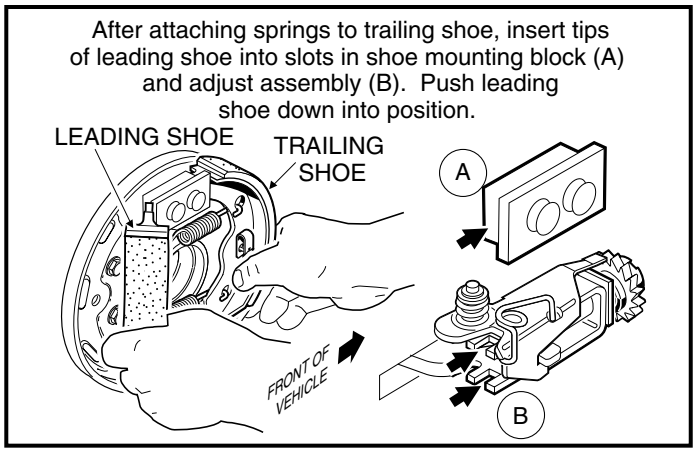

Figure 6-15 Install Leading Shoe

NOTE

- CLEAN ANY RESIDUAL OIL FROM THE EXPOSED END OF THE AXLE SHAFT AND FROM THE OIL SEAL AREA PRIOR TO INSTALLING THE AXLE SHAFT.

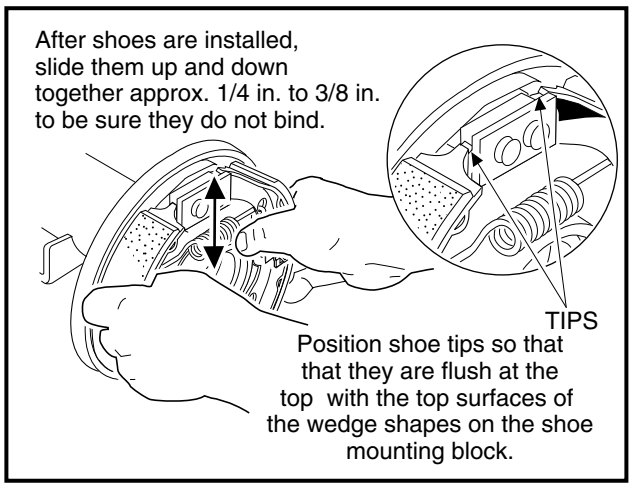

Figure 6-16 Slide Shoes

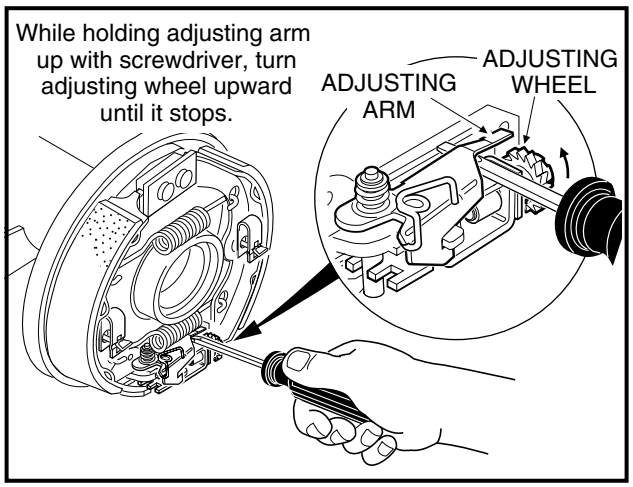

Figure 6-17 Turn Adjusting Wheel (Self-Adjusting Brakes)

7. Install axle shaft (2) into axle tube and install retaining ring (1) **(Figure 6-3, Page 6-3). See following WARNING and CAUTION.**

Brake Shoe Installation (Self-Adjusting Brakes), Continued:

⚠ WARNING

- BE SURE RETAINING RING IS PROPERLY SEATED IN GROOVE. IF RING IS NOT PROPERLY INSTALLED, THE AXLE ASSEMBLY WILL SEPARATE FROM THE TRANSAXLE AND DAMAGE THE AXLE ASSEMBLY AND OTHER COMPONENTS. LOSS OF VEHICLE CONTROL COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

⚠ CAUTION

- BEFORE INSTALLING AXLE SHAFT, CLEAN ANY RESIDUAL OIL FROM THE EXPOSED END OF THE AXLE TUBE AND FROM THE OIL SEAL AREA.

8. Install the brake drum, and make sure it is properly seated. **See following NOTE**.

NOTE

- IF DRUM INSTALLATION IS DIFFICULT, THE BRAKE SHOES MAY NEED TO BE ADJUSTED VERTICALLY IN THE MOUNTING SLOTS.

9. After drum is installed, make sure the axle and drum turn freely, then install wheel and tire assembly. **See Section 8 – Wheels and Tires.**

BRAKE ADJUSTMENT (SELF-ADJUSTING BRAKES)

Read WARNING on page 6-1.

Turf 1 and Carryall 1 Vehicles

1. When cleaning or repair on both wheels is complete, and with brake cable still loose, lower vehicle to floor.
2. Make the brake shoe and drum adjustment by depressing and releasing the brake pedal repeatedly until an audible clicking can no longer be heard **(Figure 5-17, Page 5-7)**.
3. Adjust brake pedal free play by tightening the brake cables at the equalizer rod.

BRAKE ASSEMBLY CLEANING (MANUALLY ADJUSTED BRAKES)

Turf 2, Carryall 2, 2 Plus and 6 Vehicles

1. Carefully clean the brake backing plate and all mechanical components. **See WARNING on page 6-1**.
2. Remove rubber boot from backing plate and wipe with a clean, damp cloth.
3. Lubricate slide (1) and slide plate (2) with dry moly lubricant (Club Car Part No. 1012151) on both sides of the backing plate. After lubricating, work slide back and forth to ensure it slides smoothly and easily **(Figure 6-18, Page 6-8)**. Reinstall rubber boot onto backing plate.

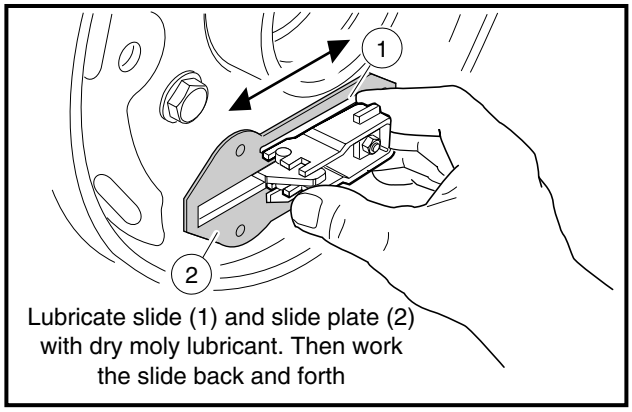

Figure 6-18 Lubricate Slide

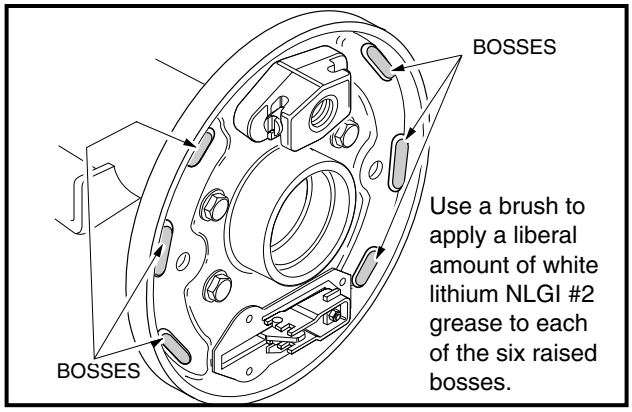

Figure 6-19 Grease Raised Bosses

⚠ WARNING

- APPLY GREASE CAREFULLY WHEN PERFORMING THE FOLLOWING STEPS. DO NOT ALLOW ANY GREASE TO GET ONTO THE FRICTION SURFACES OF THE BRAKE SHOE PADS. FAILURE TO HEED THIS WARNING COULD CAUSE DIMINISHED BRAKE PERFORMANCE, POSSIBLY RESULTING IN PROPERTY DAMAGE OR SEVERE PERSONAL INJURY.

4. Use a small brush to carefully apply a liberal amount of white lithium NLGI #2 (Dow Corning BR2-Plus or equivalent) on each of the six raised bosses on brake backing plate **(Figure 6-19, Page 6-8)**. **See preceding WARNING.**
5. Use a small brush to carefully apply a liberal amount of white lithium NLGI #2 grease (Dow Corning BR2-Plus or equivalent) to each end of both brake shoes and into the slots in the brake shoe mounting block as shown **(Figure 6-20, Page 6-9)**. **See preceding WARNING.**
6. Use a small brush to carefully apply a liberal amount of white lithium NLGI #2 grease (Dow Corning BR2-Plus or equivalent) to the brake actuator assembly as shown **(Figure 6-21, Page 6-9)**. **See preceding WARNING.**

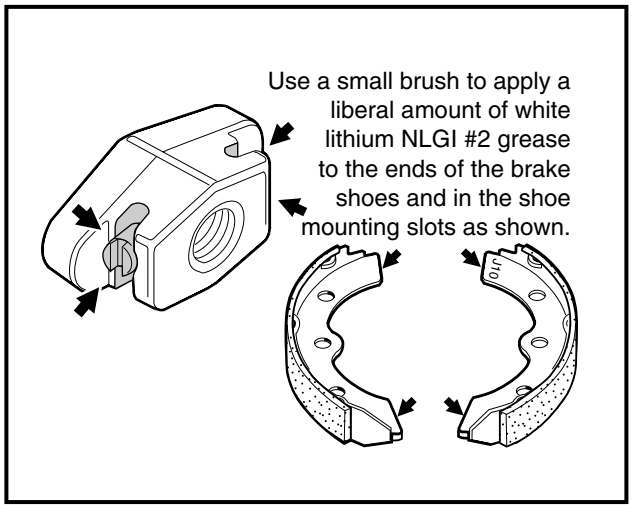

Figure 6-20 Grease Shoes

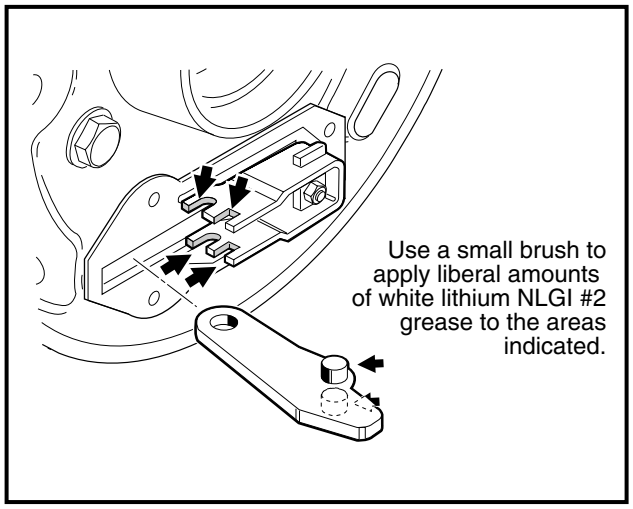

Figure 6-21 Grease Actuator

BRAKE SHOE INSTALLATION (MANUALLY ADJUSTED BRAKES)

Turf 2, Carryall 2, 2 Plus and 6 Vehicles

NOTE

- COMPONENTS OF THE FRONT WHEEL BRAKE ASSEMBLY ARE IDENTICAL TO THE REAR WHEEL MANUALLY ADJUSTED BRAKE ASSEMBLY. THE FRONT BRAKE ASSEMBLY IS ROTATED 90° (WHEN COMPARED TO THE REAR BRAKE ASSEMBLY) SO THE ADJUSTING BOLT ON EACH ASSEMBLY IS ORIENTED TO THE REAR OF THE VEHICLE RATHER THAN AT THE TOP OF THE ASSEMBLY **(FIGURE 6-27, PAGE 6-15)**.

1. Position one shoe in the slots in the mounting block and brake actuator **(Figure 6-22, Page 6-10). See following WARNING.**

Brake Shoe Installation (Manually Adjusted Brakes), Continued:

⚠ WARNING

- WHEN INSTALLING BRAKE SHOES, THE SHOES MUST BE ORIENTED WITH TIPS STAMPED ***J10*** INSERTED INTO THE MOUNTING BLOCK SLOTS RATHER THAN INTO THE BRAKE ACTUATOR SLOTS **(FIGURE 6-22, PAGE 6-10)**. INCORRECTLY INSTALLED BRAKE SHOES WILL BE TOO TIGHT AND MAKE ADJUSTMENT OF THE BRAKE IMPOSSIBLE.

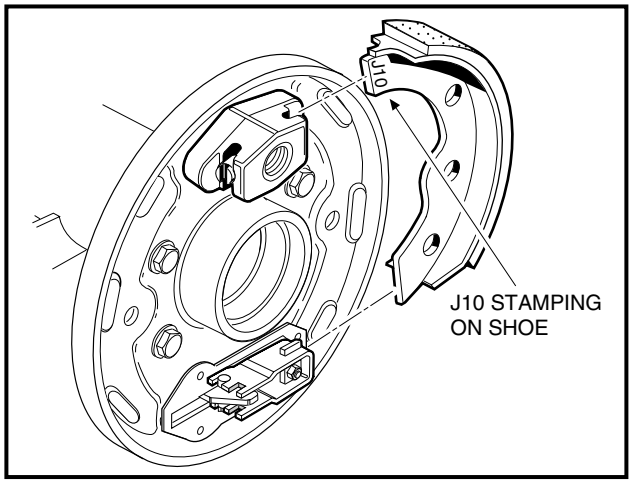

Figure 6-22 Position Shoes

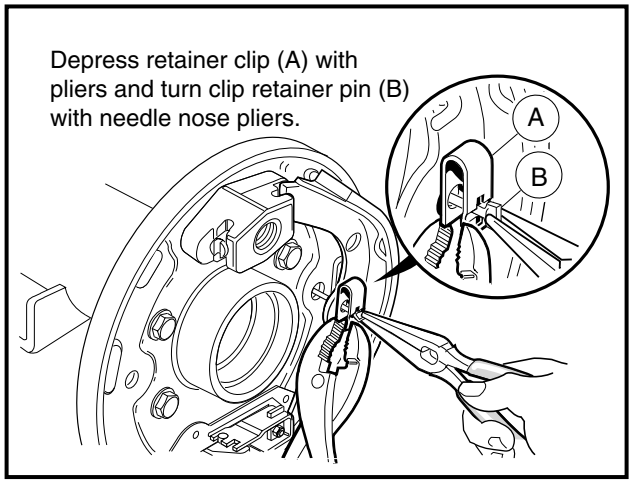

Figure 6-23 Retainer Clip

2. Install shoe retainer clip (1), using pliers to compress clip while turning clip retainer pin (2) into position **(Figure 6-23, Page 6-10)**.
3. Attach the springs (with hooks pointing outwards) onto the shoe already installed. Then hold the other shoe next to it, correctly oriented, and attach the springs to it. **See Figure 6-24, Page 6-10**.

NOTE

- WITH BRAKE SHOE TIPS MARKED ***J10*** ORIENTED TO THE MOUNTING BLOCK, THE STAMPING WILL BE VISIBLE ON ONE SHOE ONLY. THE OTHER ***J10*** STAMPING WILL BE FACING THE BACKING PLATE AND WILL NOT BE VISIBLE.

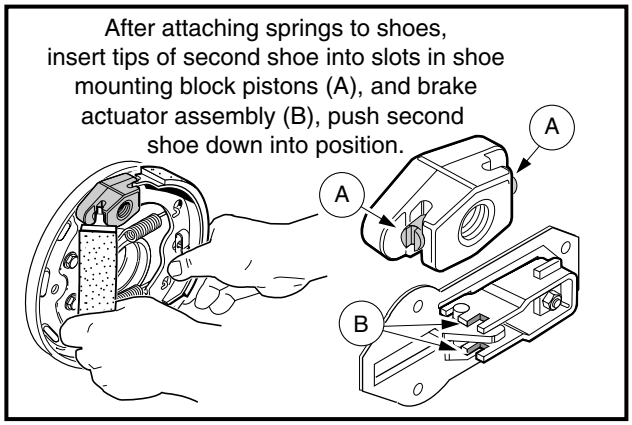

Figure 6-24 Insert Shoes

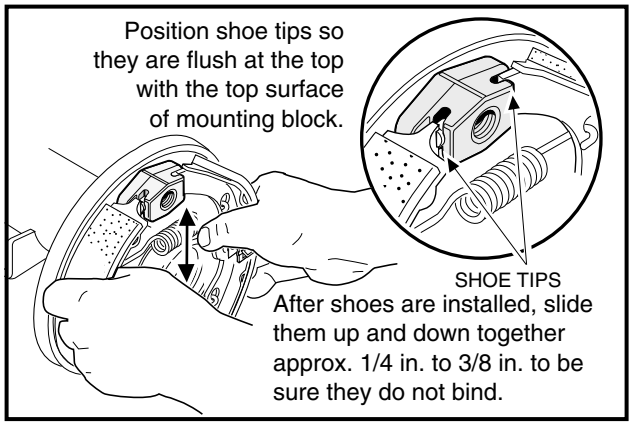

Figure 6-25 Position Shoes

4. While maintaining spring attachment on both shoes, position the tips of the second shoe into mounting slots and then push shoe into place. Hold shoe in position and install the retaining clip and pin **(Figure 6-24, Page 6-10)**.

5. After the shoes are installed, move them together up and down and side to side to make sure that they will easily slide approximately 1/4 to 3/8 inch (6.3 to 9.5 mm) without binding. Make sure the shoes are positioned vertically so the tips of the shoes are positioned flush with the top surface of the shoe mounting blocks as shown **(Figure 6-25, Page 6-10)**.
6. Install axle shaft (2) into axle tube and install retaining ring (1) **(Figure 6-3, Page 6-3)**. **See WARNING on page 6-8.**
7. Install the brake drum and make sure that it is properly seated. **See following NOTE**.

NOTE

- IF DRUM INSTALLATION IS DIFFICULT, THE BRAKE SHOES MAY NEED TO BE ADJUSTED VERTICALLY IN THE MOUNTING SLOTS.

8. After the drum is installed, make sure the axle and drum turn freely.

REAR BRAKE CABLE ADJUSTMENT (MANUALLY ADJUSTED BRAKES)

Read WARNING on page 6-1.

⚠ WARNING

- REAR BRAKE CABLE ADJUSTMENT MUST BE MADE **BEFORE** THE FRONT BRAKE CABLE ADJUSTMENT IS MADE. FAILURE TO MAKE ADJUSTMENTS IN THE EXACT ORDER SPECIFIED WILL RESULT IN INCORRECT BRAKE ADJUSTMENT.

⚠ CAUTION

- PEDAL GROUP ADJUSTMENT MUST BE WITHIN SPECIFICATIONS PRIOR TO BEGINNING REAR BRAKE ADJUSTMENT. SEE SECTION 5 FOR PEDAL GROUP ADJUSTMENT.

1. Chock front wheels, set the park brake, then raise the rear end of the vehicle. Place jack stands under the axle tubes and lower the vehicle onto the jack stands. **See following WARNING.**

⚠ WARNING

- LIFT ONLY ONE END OF A VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, UNLOAD THE CARGO BED AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

2. Release the park brake.
3. Loosen the jam nuts (1) and nylon locknuts (6) on the brake equalizer rods (2 and 3) to provide slack in the brake cables and equalizer assemblies **(Figure 6-28, Page 6-16, Detail B)**.
4. Remove rubber dust cover (4) to uncover brake adjustment bolt (5) on the left rear brake cluster assembly **(Figure 6-28, Page 6-16, Detail A)**.
5. Using a 7 mm open-end wrench, 8-point socket or Club Car brake adjustment tool (Part Number 1013582), turn the brake adjustment bolt **clockwise** until it clicks audibly, then rotate the wheel and tire assembly by hand.

Rear Brake Cable Adjustment (Manually Adjusted Brakes), Continued:

6. Repeat step 5 until the wheel and tire assembly can no longer be rotated by hand.
7. To adjust the brake shoes, turn the adjustment bolt **counterclockwise** until it clicks, and then rotate the wheel and tire assembly by hand. Repeat this procedure until the wheel and tire assembly turns easily by hand and there is still a very slight drag from the brake shoes on the drum. Use the following chart as a guideline to determine the correct number of adjustment clicks.

VEHICLE	NUMBER OF CLICKS PER WHEEL REAR
TURF 2, CARRYALL 2 AND CARRYALL 2 PLUS MODELS	5
TURF 6 AND CARRYALL 6 MODELS	5

8. Repeat steps 4 through 7 for the opposite rear brake cluster.
9. Turn the nylon locknut on the rear equalizer rod clockwise to tighten the brake cables until there is 1/4 to 1/2 inch free play in the brake pedal. Measure and record the exact amount of free play for use in adjusting the front brake cables.

NOTE

- BRAKE PEDAL FREE PLAY IS DEFINED AS THE DISTANCE THE BRAKE PEDAL CAN BE DEPRESSED BEFORE THE BRAKE ACTUATOR ARM (AT THE BRAKE CLUSTER) MOVES.

10. Hold the nylon locknut (6) on the rear brake cable equalizer rod (3) with a wrench and tighten the jam nut until it is secured against the equalizer **(Figure 6-28, Page 6-16, Detail B).**
11. Install the rear wheels and finger tighten the lug nuts.
12. Lower the vehicle and finish tightening the lug nuts (using a crisscross pattern) to 55 ft-lb (74.58 N·m).

FRONT BRAKE CABLE ADJUSTMENT (MANUALLY ADJUSTED BRAKES)

Read WARNING on page 6-1.

⚠ WARNING

- REAR BRAKE CABLE ADJUSTMENT MUST BE MADE **BEFORE** THE FRONT BRAKE CABLE ADJUSTMENT IS MADE. FAILURE TO MAKE ADJUSTMENTS IN THE EXACT ORDER SPECIFIED WILL RESULT IN INCORRECT BRAKE ADJUSTMENT.

1. Chock front wheels, set the park brake, then raise the rear end of the vehicle. Place jack stands under the axle tubes and lower the vehicle onto the jack stands. **See following WARNING.**

⚠ WARNING

- LIFT ONLY ONE END OF A VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, UNLOAD THE CARGO BED AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC JACK) WITH 1000 LB. (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

2. Release the park brake.
3. Remove rubber dust cover (4) to uncover brake adjustment bolt (5) on front left brake cluster **(Figure 6-28, Page 6-16, Detail A)**.

4. Using a 7 mm open-end wrench, 8-point socket, or Club Car brake adjustment tool (Part No. 1013582), turn the brake adjustment bolt **clockwise** until it clicks audibly, then rotate the tire by hand.
5. Repeat step 4 until the tire can no longer be rotated by hand.
6. To adjust the brake shoes, turn the adjustment bolt **counterclockwise** until it clicks, then rotate the wheel and tire assembly by hand. Repeat this procedure until the wheel and tire assembly turns easily by hand and there is either no drag or a very slight drag from the brake shoes on the drum. Use the following chart as a guide line to determine the correct number of adjustment clicks.

VEHICLE	NUMBER OF CLICKS PER WHEEL FRONT
TURF 2, CARRYALL 2 AND CARRYALL 2 PLUS MODELS	6
ALL OTHER FOUR-WHEEL BRAKE MODELS	5

7. Repeat steps 3 through 6 for the right front brake cluster.
8. Turn the nylon locknut (6) clockwise on the front equalizer rod to tighten the brake cables until there is no brake pedal free play **(Figure 6-28, Page 6-16, Detail B)**.
9. After all free play has been removed from the brake cables, turn the nylon locknut (6) counterclockwise to loosen the brake cables until there is the same amount of brake pedal free play as measured in step 9, **Rear Brake Cable Adjustment.**
10. Hold the nylon locknut (6) on the front equalizer rod (2) in place with a wrench and tighten the jam nut (1) until it is secured against the equalizer **(Figure 6-28, Page 6-16, Detail B).**
11. Install rubber dust covers over brake adjustment bolts.
12. Carefully support vehicle with lifting device, remove jack stands and lower vehicle to floor.
13. Test drive vehicle. Rear brakes should actuate slightly ahead of front brakes and vehicle should not pull to left or right when brakes are applied. If either function is not correct, readjust brakes.

BRAKE CLUSTER REMOVAL AND INSTALLATION

Read WARNING on page 6-1.

REAR BRAKE CLUSTER REMOVAL

1. Place chocks at the front wheels, loosen the lug nuts on the rear wheels and lift the rear of the vehicle with a chain hoist or floor jack. Place jack stands under the axle tubes to support the vehicle.
2. Release park brake and loosen equalizer retaining nuts (1 and 6) on equalizer rod (3) to slightly loosen brake cable **(Figure 6-28, Page 6-16, Detail B)**.
3. Remove the rear wheels and then the brake drums.

NOTE

- WHEN SERVICING VEHICLES WITH SELF-ADJUSTING BRAKES WITH BADLY WORN BRAKE SHOES AND WHEN THE DRUMS CANNOT BE REMOVED BY NORMAL METHODS, PERFORM STEP 4 OF “BRAKE SHOE REMOVAL” ON PAGE 6-3 AND CONTINUE WITH THIS PROCEDURE.

4. Remove the axle:
   4.1. Using 90° snap ring pliers, remove the axle retaining ring (1) **(Figure 6-3, Page 6-3)**.
   4.2. Pull the axle shaft (2) from the axle tube **(Figure 6-3, Page 6-3)**.

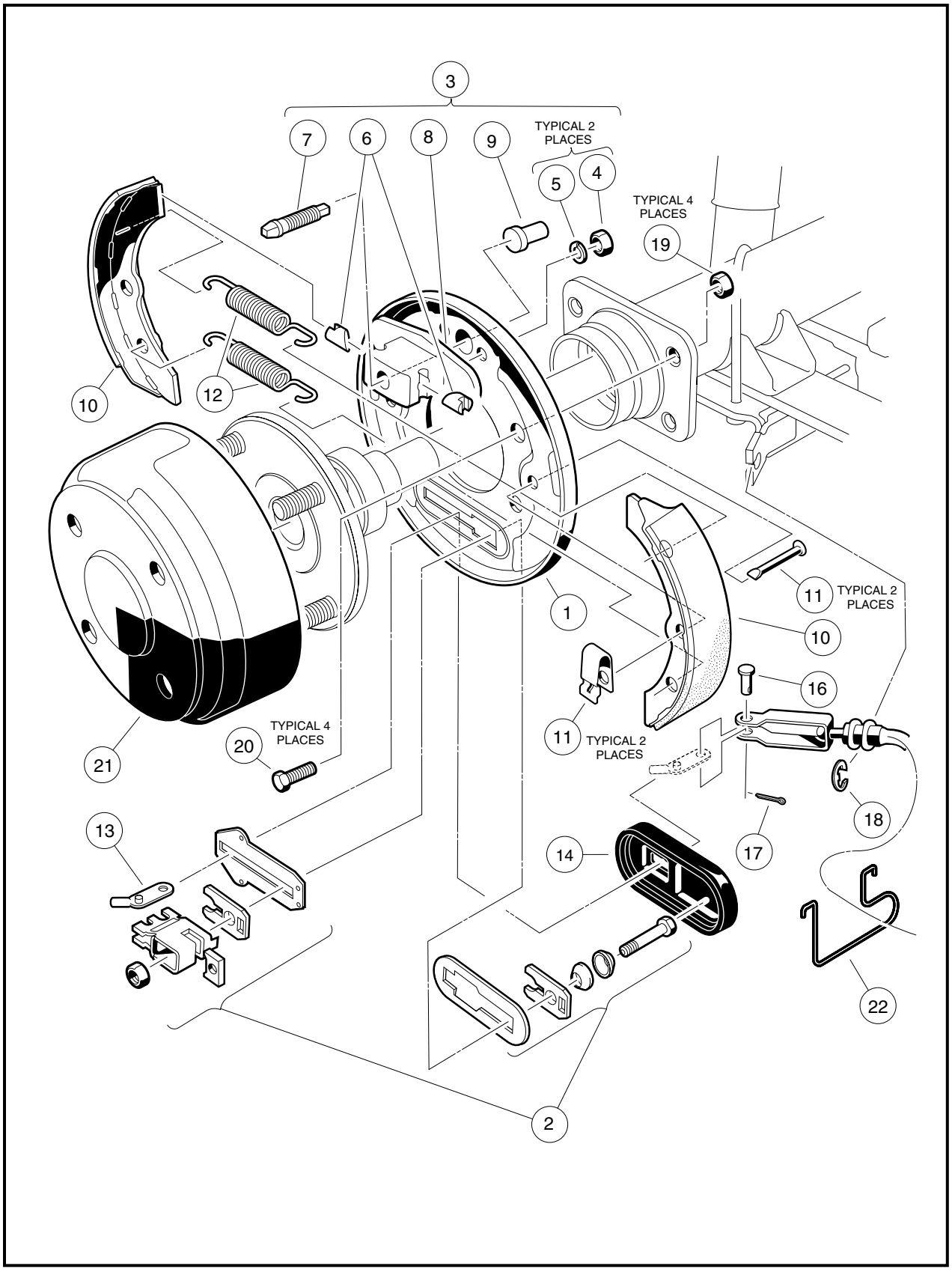

Figure 6-26 Rear Manually Adjusted Brake Assembly

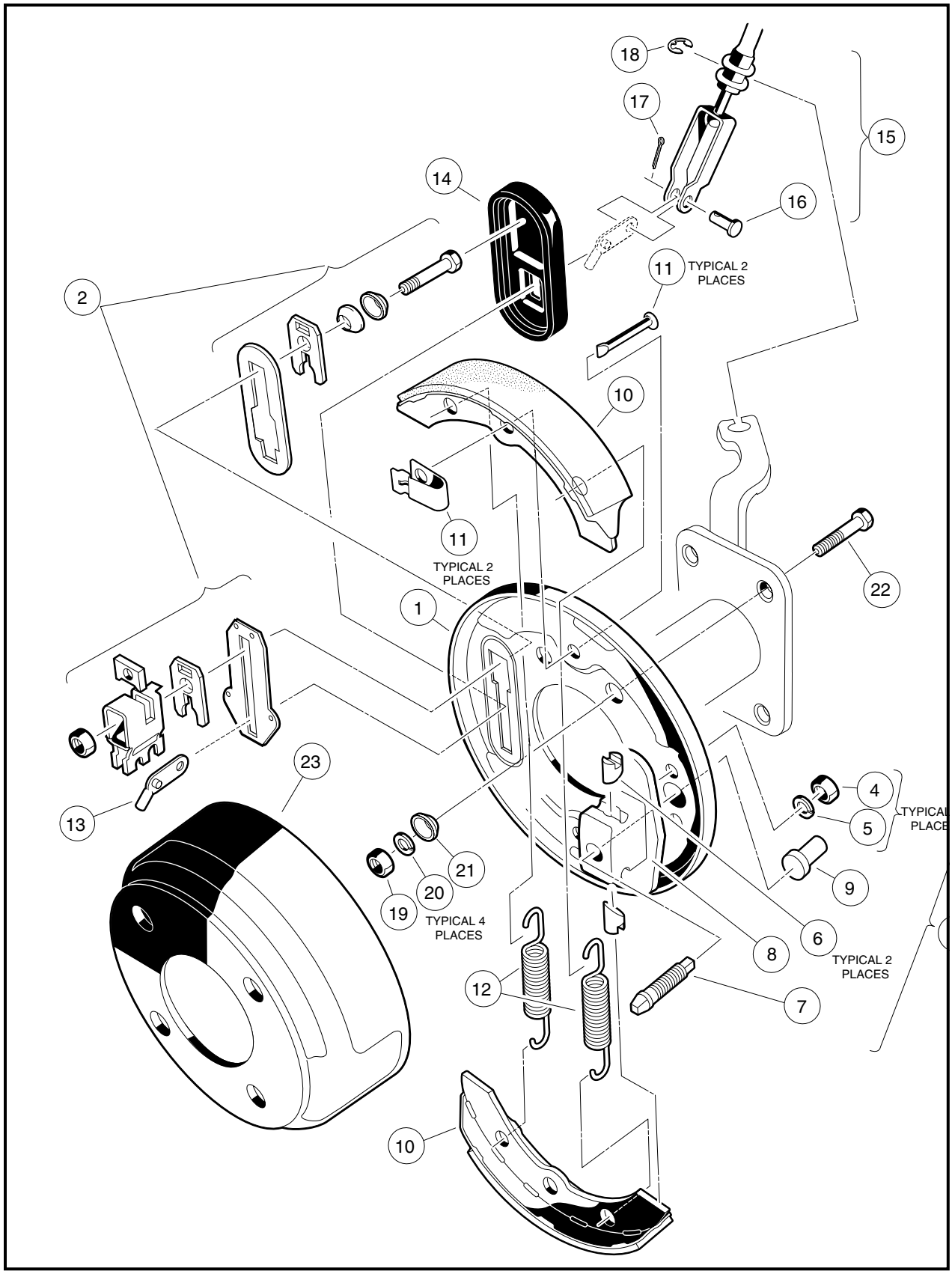

Figure 6-27 Front Manually Adjusted Brake Assembly

Rear Brake Cluster Removal, Continued:

5. Remove cotter pin (17) and clevis pin (16) from brake cable **(Figure 6-26, Page 6-14 or Figure 6-1, Page 6-2)**.
6. Remove 4 bolts (20) and cone locknuts (19) that mount the brake assembly to the transaxle **(Figure 6-26, Page 6-14 or Figure 6-1, Page 6-2)**.
7. Remove rear brake cluster assembly from transaxle.

REAR BRAKE CLUSTER INSTALLATION

1. Install in reverse order of disassembly. Use new cotter pins when installing brake cables.

⚠ CAUTION

- BEFORE INSTALLING AXLE SHAFT, CLEAN ANY OIL FROM AXLE SHAFT AND OIL SEAL AREAS.

2. Be sure bolts (20) and **new** cone locknuts (19) are used to mount the brake assembly **(Figure 6-26, Page 6-14 or Figure 6-1, Page 6-2)**.
3. Tighten bolts to 30 ft-lb (40 N·m). **See following WARNING**.

⚠ WARNING

- BE SURE RETAINING RING IS PROPERLY SEATED IN GROOVE. IF RING IS NOT PROPERLY INSTALLED, AXLE ASSEMBLY WILL SEPARATE FROM TRANSAXLE AND DAMAGE AXLE ASSEMBLY AND OTHER COMPONENTS. LOSS OF VEHICLE CONTROL COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

4. Adjust brakes as previously described in this section for the appropriate vehicle.

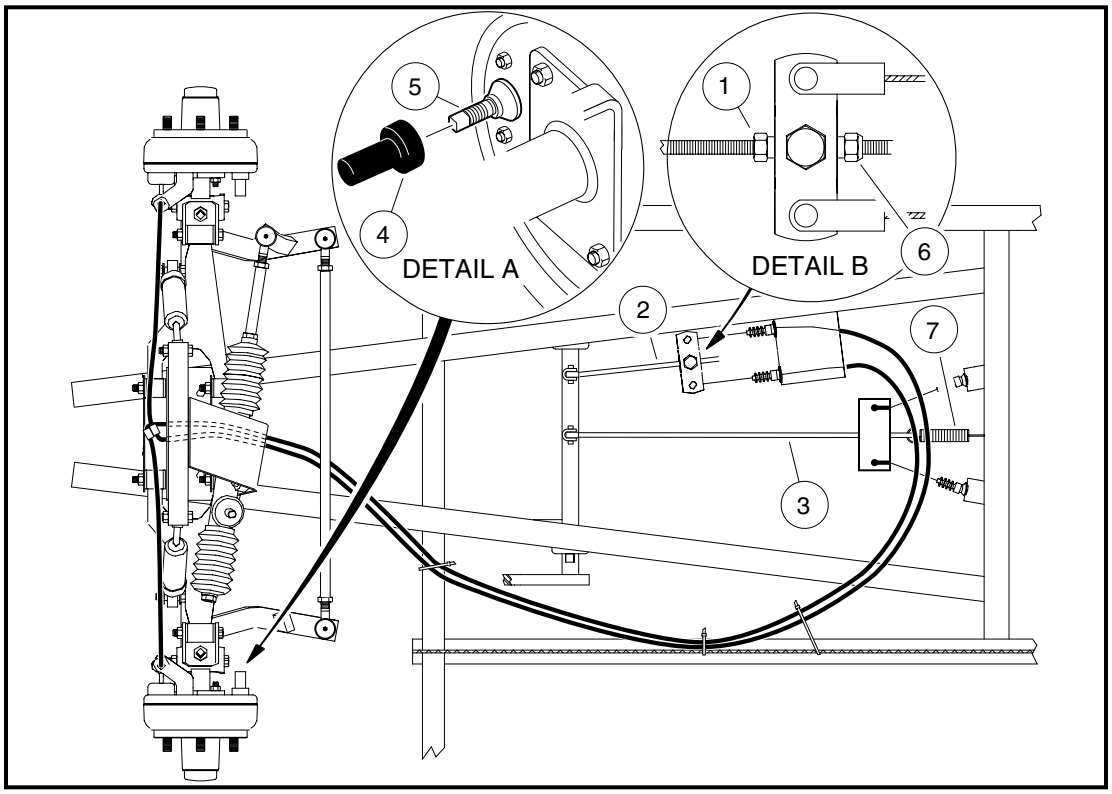

Figure 6-28 Front Brake Cable Routing

FRONT BRAKE CLUSTER REMOVAL

1. Place chocks at rear wheels, loosen lug nuts on front wheels and lift the front of the vehicle with a chain hoist or floor jack. Place jack stands under the round tube crossmember of the frame to support vehicle.
2. Release park brake.
3. Loosen the equalizer retaining nuts (1 and 6) on the front equalizer rod (2) to slightly loosen the brake cable **(Figure 6-28, Page 6-16, Detail B)**.
4. Remove the front wheels and then the brake drums.
5. Remove cotter pin (17) and clevis pin (16) from brake cable **(Figure 6-27, Page 6-15)**.
6. Remove dust cap (6) on hub and bearing assembly **(Figure 6-29, Page 6-17)**.
7. Remove cotter pin (5) and hex nut (7) from spindle shaft **(Figure 6-29, Page 6-17)**.
8. Remove hub and bearing assembly from spindle shaft. Remove four bolts (22), cone washers (21), lock washers (20) and hex nuts (19) that mount the brake assembly to the spindle **(Figure 6-27, Page 6-15)**.
9. Remove brake cluster assembly from spindle.

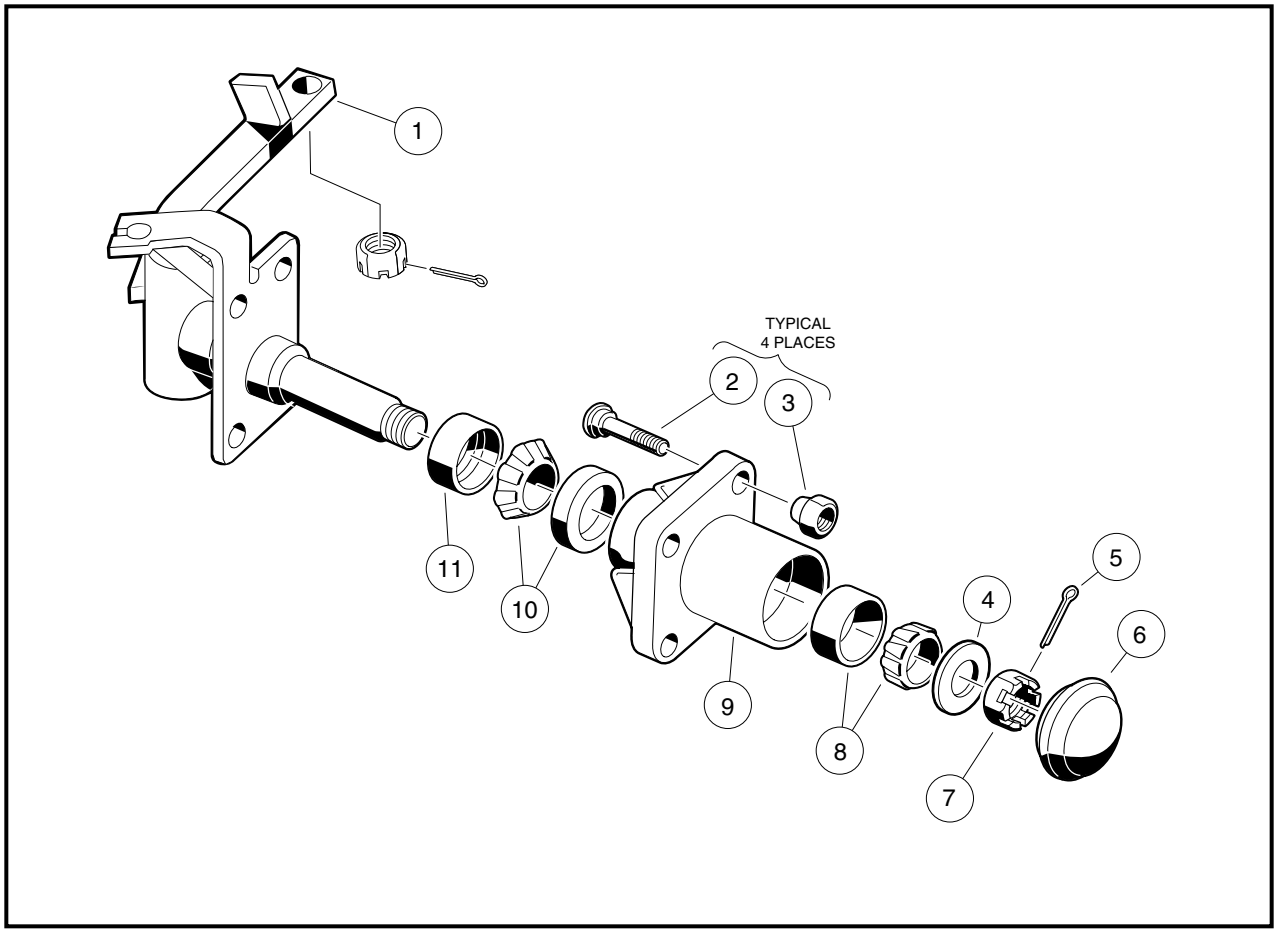

Figure 6-29 Front Spindle Assembly

FRONT BRAKE CLUSTER INSTALLATION

1. Install in reverse order of disassembly. Use bolts (22), cone washers (21), lock washers (20) and hex nuts (19) to mount brake assembly **(Figure 6-27, Page 6-15)**.
2. Tighten bolts to 30 ft-lb (41 N·m). Adjust brakes as previously described in this section for the appropriate vehicle. Use new cotter pins when reconnecting brake cables.

FRONT BRAKE CABLES

Read WARNING on page 6-1.

REMOVAL

1. Remove cotter pin (2) and clevis pin (3) from brake lever arm on front brake cluster **(Figure 6-30, Page 6-18)**.
2. Remove E-clip (1) from brake cable housing at the front spindle bracket and remove cable from spindle **(Figure 6-30, Page 6-18)**.
3. Remove cotter pin (9), clevis pin (10), and E-clip (8) from brake cable at equalizer (18) **(Figure 6-31, Page 6-19)**.
4. Remove bolt (4) and nut (6) from brake cable clamp (5) **(Figure 6-30, Page 6-18)**.
5. Remove cable from vehicle.

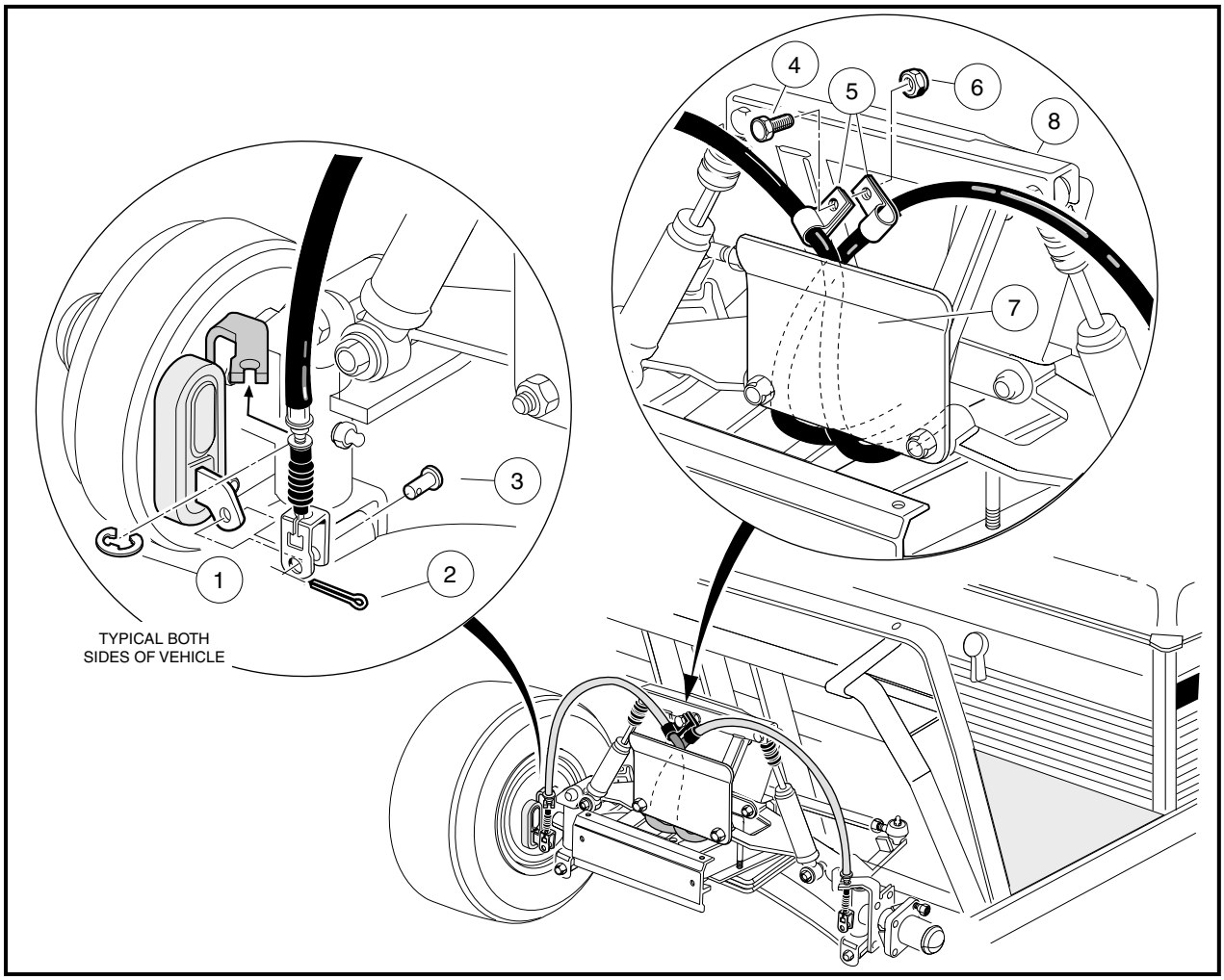

Figure 6-30 Front Brake Cables

INSTALLATION

1. Place brake cable through frame mounting hole behind equalizer and install E-clip (8) on cable housing **(Figure 6-31, Page 6-19)**.
2. Place brake cable clevis (6) on equalizer (18) and install the clevis pin (10) and new cotter pin (9) **(Figure 6-31, Page 6-19)**.

3. Route cable towards the rear of vehicle and over to the driver's side I-beam and secure with wire ties so that the brake cable does not touch the brake equalizer **(Figure 6-28, Page 6-16)**.

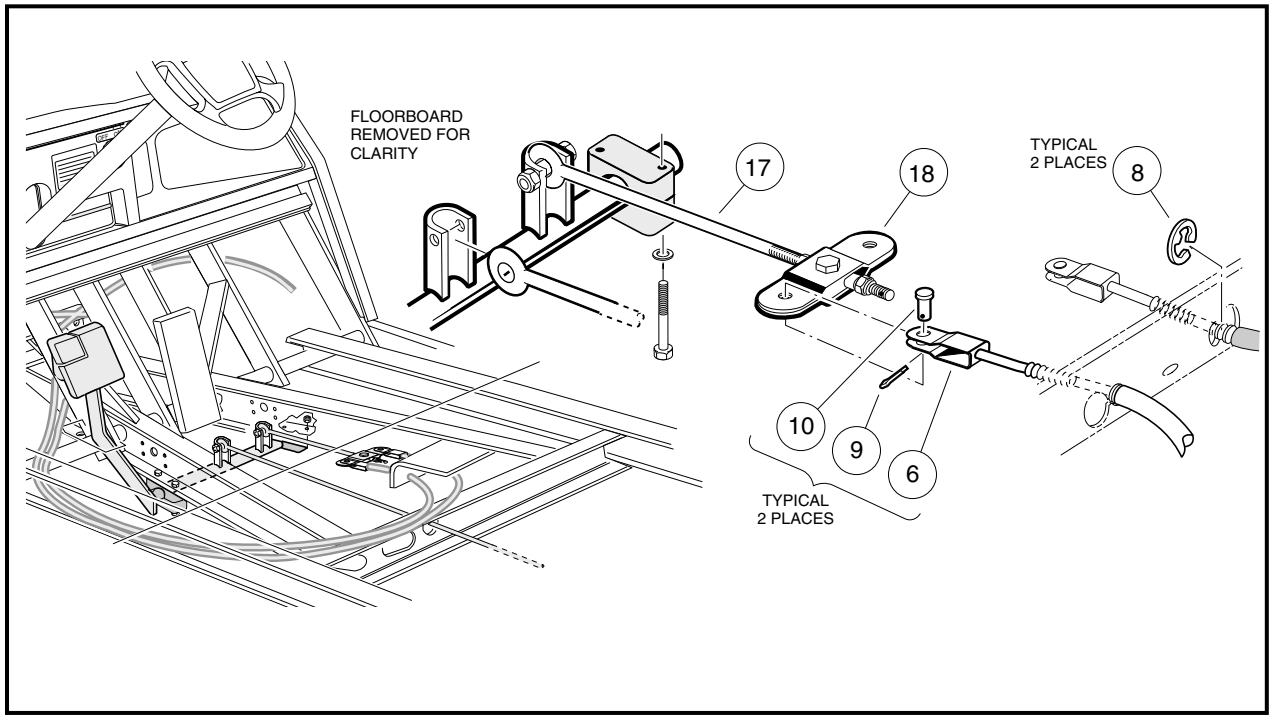

Figure 6-31 Brake Equalizer

- For Turf 6 and Carryall 6 vehicles, the cable should also pass over the brake equalizer rods. On the Turf 6 and Carryall 6 gasoline vehicle, the cable should also pass over the accelerator rod.
- For Turf 2, Carryall 2 and Carryall 2 Plus vehicles, the cable should pass over the inside I-beam **(Figure 6-28, Page 6-16)**.

4. Route cable along I-beam towards front of the vehicle and secure as shown **(Figure 6-28, Page 6-16).**
   - For Turf 2 and Carryall 2 electric and all Turf 6 and Carryall 6 vehicles, route cable through hole in I-beam crossmember.
5. Route brake cable between the shock support (8) and brake cable guide bracket (7) **(Figure 6-30, Page 6-18)**. Secure brake cable retainer clips (5) with a bolt (4) and nut (6) **(Figure 6-30, Page 6-18)**.
6. Install brake cable through the front spindle brackets and install E-clip (1) **(Figure 6-30, Page 6-18).**
7. Install brake cable clevis onto brake lever arm and install clevis pin (3) and a new cotter pin (2) **(Figure 6-30, Page 6-18).**
8. Adjust brakes as described in this section for the appropriate vehicle.

REAR BRAKE CABLES

Read WARNING on page 6-1.

REMOVAL

1. Chock wheels to keep vehicle from unintentionally moving.
2. Release parking brake if latched and loosen equalizer retaining nuts (1) on equalizer rod (2) to slightly loosen brake cables (3) (**Figure 6-32, Page 6-20)**.

3. Rotate brake cables upward and pull ends through holes in top of equalizer.

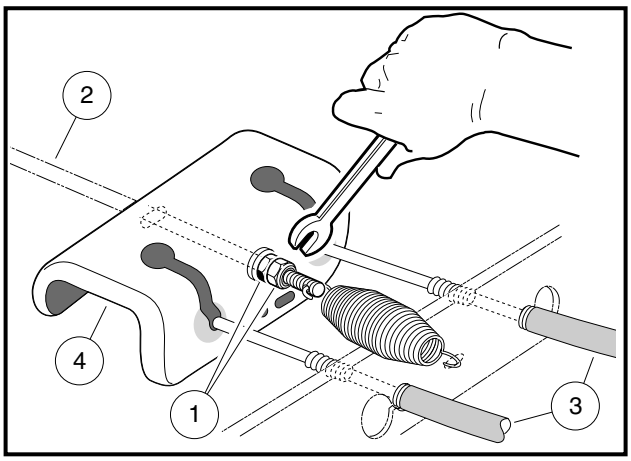

Figure 6-32 Loosen Equalizer Nut

4. Disconnect brake cables at rear wheels.
   4.1. Remove cotter pins (1) clevis pins (2) and E-clips (3) **(Figure 6-33, Page 6-20**).
   4.2. Remove cable (4) from cable support bracket (5).

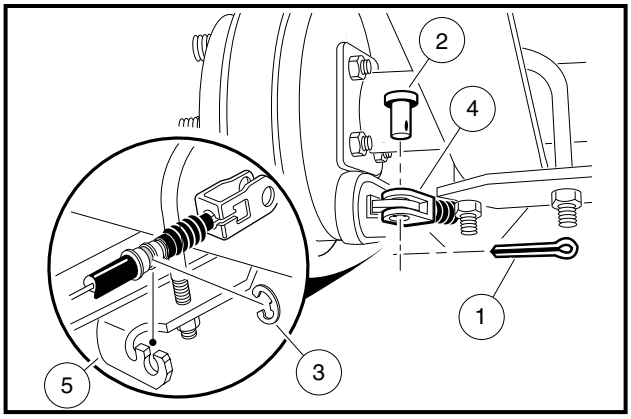

Figure 6-33 Disconnect Cables at Rear Brakes

   4.3. Note location of hangers (for installation of cables). Pull cables out of vehicle.

INSTALLATION

1. Place the cables ends in the equalizer (4) (**Figure 6-32, Page 6-20)**. Route cables through hangers in the same manner as the ones removed.
2. At the rear wheel brakes, connect the cables to the brake actuator arms using clevis pins (2) and new cotter pins (1) (**Figure 6-33, Page 6-20)**.
3. Place cables in cable support bracket (5) and secure with E-clips.
4. Adjust brakes as described in this section for the appropriate vehicle.

SECTION 7 – STEERING AND FRONT SUSPENSION

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THIS VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN GENERAL MECHANICAL REPAIR. FOLLOW ALL PROCEDURES EXACTLY AND HEED ALL **DANGER**, **WARNING** AND **CAUTION** STATEMENTS IN THIS MANUAL.
- ALWAYS WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHILE SERVICING VEHICLE. WEAR A FULL FACE SHIELD WHEN WORKING WITH BATTERIES.
- TURN KEY SWITCH **OFF**, PLACE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION AND REMOVE KEY PRIOR TO SERVICING.
- MOVING PARTS! DO NOT WEAR LOOSE CLOTHING. REMOVE JEWELRY SUCH AS RINGS, WATCHES, CHAINS, ETC. BEFORE SERVICING VEHICLE.
- LIFT ONLY ONE END OF THE VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, **UNLOAD THE CARGO BED**, AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.
- USE INSULATED TOOLS WHEN WORKING NEAR BATTERIES OR ELECTRICAL CONNECTIONS.

GASOLINE VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE:
  - DISCONNECT BATTERY CABLES, NEGATIVE (–) FIRST.
  - DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.
- FRAME GROUND - DO NOT ALLOW TOOLS OR OTHER METAL OBJECTS TO CONTACT FRAME WHEN DISCONNECTING BATTERY CABLES OR ELECTRICAL WIRING. NEVER ALLOW A POSITIVE WIRE TO TOUCH THE VEHICLE FRAME, ENGINE OR OTHER METAL COMPONENT.

ELECTRIC VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERIES AS SHOWN IN **SECTION 1, PAGE 1-3** AND THEN DISCHARGE THE CONTROLLER AS FOLLOWS:
  - TURN THE KEY SWITCH TO **ON** AND PLACE THE FORWARD/REVERSE HANDLE IN THE **REVERSE** POSITION.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

GENERAL INFORMATION

Steering is controlled through a rack and pinion steering assembly that is connected by a steering column to a steering wheel. No manual adjustment to the rack and pinion gear assembly is required. A spring loaded self-adjusting mechanism is incorporated into the assembly.

STEERING WHEEL

Read WARNING on page 7-1.

STEERING WHEEL REMOVAL

1. Remove the two mounting screws (30) and plate (28) **(Figure 7-4, Page 7-4)**.
2. Match mark the steering wheel (25) and steering column (19) so when the steering wheel is removed it can be placed back in exactly the same position on steering column shaft **(Figure 7-4, Page 7-4)**
3. Loosen the steering wheel nut (27) and back it off approximately 1/4 inch (6 mm). Do not remove the nut **(Figure 7-4, Page 7-4)**.
4. Use the steering wheel puller (Club Car Part Number 102061201) to remove steering wheel.
   - 4.1. Place the puller anvil (4) through the top opening of the steering wheel **(Figure 7-1, Page 7-2)**.
   - 4.2. Insert the anvil feet through the two slots in the base plate (marked "B") (5) as shown **(Figure 7-1, Page 7-2)**.
   - 4.3. Rotate the anvil screw (6) clockwise until the base plate contacts the bottom of the steering wheel where it attaches to the steering column **(Figure 7-2, Page 7-2)**.
   - 4.4. Using a 1/2 inch drive air impact wrench, tighten the anvil screw (6) until the steering wheel breaks free from the steering shaft.
   - 4.5. Remove the steering wheel puller.
   - 4.6. Remove the steering wheel nut (27) and the steering wheel (25) from the steering column (20) **(Figure 7-4, Page 7-4)**.

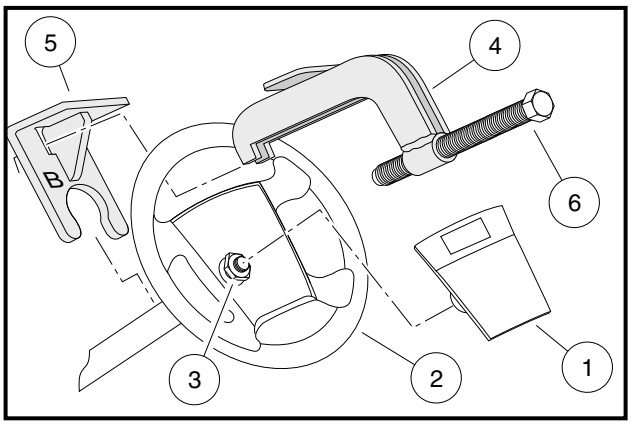

Figure 7-1 Steering Wheel Puller

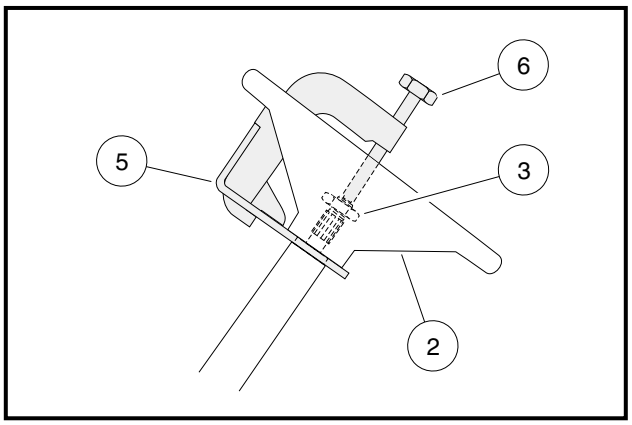

Figure 7-2 Steering Wheel Puller

STEERING WHEEL INSTALLATION

NOTE

- TO MINIMIZE CORROSION AND TO MAKE FUTURE REMOVAL OF THE STEERING WHEEL EASIER, APPLY A SMALL AMOUNT OF OIL OR ANTI-SEIZE COMPOUND TO STEERING SHAFT SPLINES AND TAPER BEFORE INSTALLING THE STEERING WHEEL.

1. Install the steering wheel (25) on the splines of the steering shaft (19). Be sure to align the match marks placed on the wheel and steering column in Step 2 above **(Figure 7-4, Page 7-4).**
2. Install the steering wheel nut (27) and tighten to 13 ft-lb (17.6 N·m) minimum.
3. Install the steering wheel plate (28) and plate mounting screws (30) **(Figure 7-4, Page 7-4)**. Tighten screws to 16 in-lb (1.8 N·m).

STEERING COLUMN

Read WARNING on page 7-1

STEERING COLUMN REMOVAL

1. Remove the steering wheel as previously instructed.
2. Remove the front body as instructed in **Section 4 – Body and Trim**.

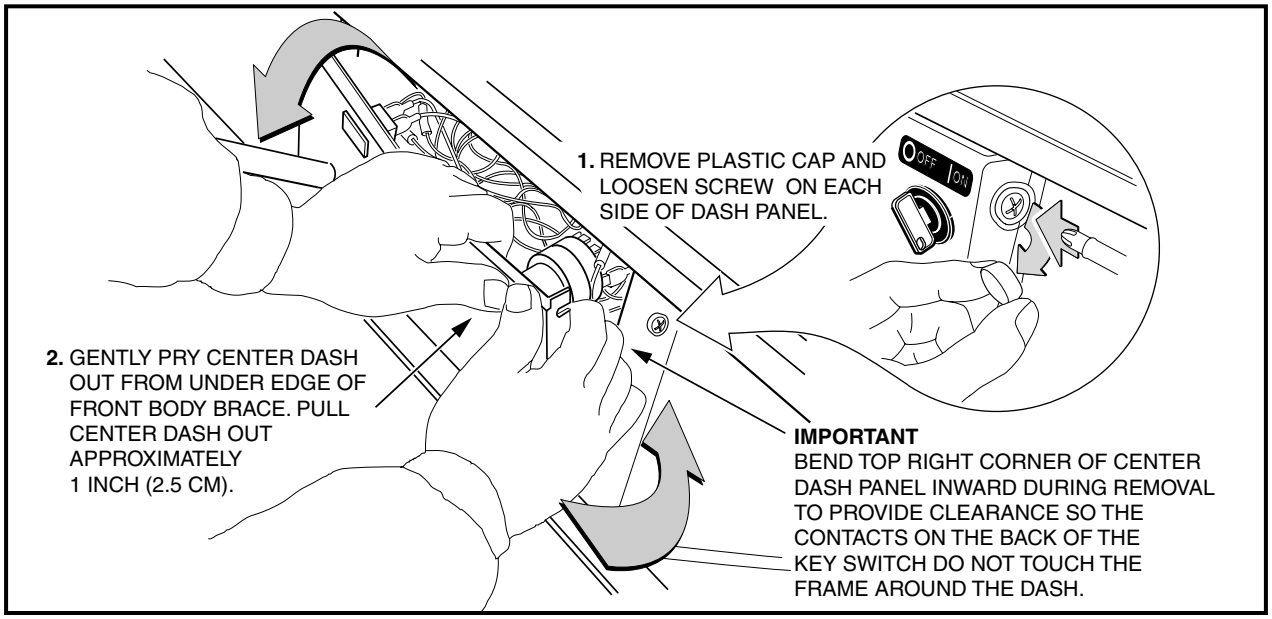

Figure 7-3 Dash Removal

3. Remove the center dash panel **(Figure 7-3, Page 7-3)**.
   3.1. Remove the plastic cap covering the mounting screw on each side of the center dash **(Figure 7-3, Page 7-3)**.
   3.2. Loosen (but do not remove) the screw on each side of the center dash panel.
   3.3. Insert screwdriver at the top center of the dash between dash and cowl brace. Gently pry center dash out slightly from under edge of cowl brace.
   3.4. Pull center dash out approximately 1 inch (2.5 cm) from the frame and then bend the top right corner of the center dash inward while pulling the top of the panel out and down.

NOTE

- BENDING THE TOP RIGHT CORNER OF THE CENTER DASH INWARD DURING REMOVAL WILL PREVENT THE CONTACTS ON THE BACK OF THE KEY SWITCH FROM TOUCHING THE METAL FRAME AROUND THE DASH.

   3.5. Disconnect the wires from the electrical components mounted on the dash panel. Do not allow wires to touch.
   3.6. Slide center dash panel up the steering column.
4. Remove the driver side dash pocket.
   4.1. Remove the flange lock screw from the top of the dash pocket.
   4.2. Drill out the two pop rivets holding the dash pocket in place.
   4.3. Slide dash pocket out of vehicle.

Steering Column Removal, Continued:

5. Remove the upper bolt (2) and lock washer (3) from the universal joint **(Figure 7-4, Page 7-4).**
6. Remove the nuts (9), bolts (8 and 10), and washers (7 and 11) from the steering column mount (4 and 5) **(Figure 7-4, Page 7-4)**.
7. Remove the steering column from the vehicle.

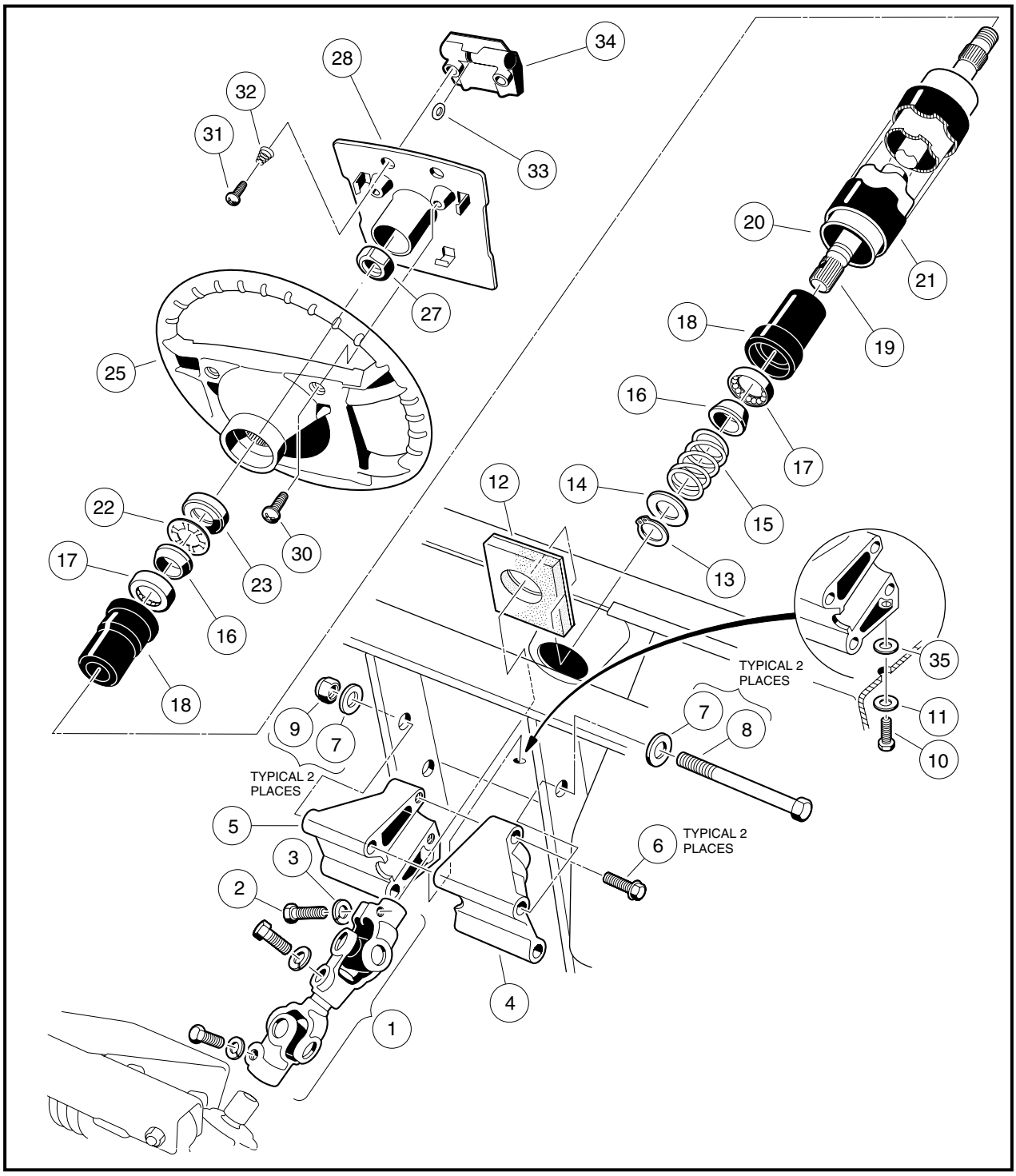

Figure 7-4 Steering Column

STEERING COLUMN DISASSEMBLY

1. Remove screws (6) and mount (4 and 5) from steering column. Remove boot (12) **(Figure 7-4, Page 7-4)**.
2. While supporting steering shaft (19) on a workbench, remove snap ring (13) from shaft **(Figure 7-4, Page 7-4)**.

NOTE

- DO NOT ALLOW THE STEERING SHAFT TO SLIDE OUT OF THE STEERING TUBE WHEN REMOVING THE SNAP RING.

3. Remove the washer (14), spring (15), and wedge (16) **(Figure 7-4, Page 7-4)**.
4. Turn the steering column over and insert a flat blade screwdriver between the seal (23) and the shaft (19). Pry the seal out of the bearing seat (18) **(Figure 7-4, Page 7-4)**.

NOTE

- USE A NEW SEAL AND RETAINING RINGS FOR REASSEMBLY.

5. Slide the shaft out of the tube to expose the retaining ring (22). Use pliers to twist the retaining ring (22) until it breaks off, then remove the wedge (16) **(Figure 7-4, Page 7-4).**
6. Remove the shaft (19) from the bottom of the tube (20) **(Figure 7-4, Page 7-4)**.
7. Use steering shaft (19) to push bearing seat (18) out from the opposite end of the steering tube (20) **(Figure 7-4, Page 7-4)**.
8. Insert a flat blade screwdriver between the bottom of the outer race of the bearing (17) and the bottom lip of the bearing seat (18) and remove the bearing (17) **(Figure 7-4, Page 7-4)**.

⚠ CAUTION

- DO NOT DAMAGE THE BEARING OR BEARING SEAT WHILE REMOVING THE BEARING.

STEERING COLUMN ASSEMBLY

1. Insert bearing seat (18) into both ends of steering tube (20). Place a block of wood on bearing seat and tap lightly on block until bearing seat (18) is fully seated in steering tube (20) **(Figure 7-5, Page 7-6)**.
2. Press the bearing (17) all the way into the bearing seat (18) using a steering column bearing press tool (Club Car Part No. 1014264) or a metal tube approximately six inches (15.2 cm) long with a maximum outer diameter of 1-3/16 inches (3.3 cm) and a minimum inside diameter of 7/8 inch (2.2 cm). Be sure the bearing is installed in the bearing seat as shown **(Figure 7-5, Page 7-6)** so the wedge (16) will ride against the inner race of the bearing.
3. Install the wedge (16), spring (15), washer (14), and snap ring (13) onto the bottom end of the steering shaft (19) **(Figure 7-5, Page 7-6)**.
4. Insert the shaft (19) from the bottom of the steering tube (20) **(Figure 7-4, Page 7-4)**.
5. Turn the assembly over and place the shaft (19) on a bench. Install the wedge (16) and retaining ring (22) onto the top of the shaft. Be sure the prongs on the retaining ring face up and away from the wedge. Use a steering column retaining ring tool (Club Car Part No. 1014259) to seat the retaining ring to the proper depth. Support end of tube while pressing. If you do not have the recommended tool, use the same tube as was used in Step 2 to press the retaining ring onto the top of the shaft. The retaining ring should be pressed onto the shaft until 2 to 2-1/8 inches (5.1-5.4 cm) of the shaft extends from the top of the bearing seat in the steering tube **(Figure 7-5, Page 7-6)**.

Steering Column Assembly, Continued:

6. Press the seal (23) into the bearing seat (18) until it is flush with the top end of the seat **(Figure 7-4, Page 7-4)**. When pressing the seal into the seat, set the steering tube on a bench so that all the pressure is exerted on the steering tube and not on the steering shaft.

STEERING COLUMN INSTALLATION

1. Install boot (12). Reinstall mount (4 and 5) onto the end of the steering column. Tighten bolts (6) to 20 ft-lb (27 N·m) **(Figure 7-4, Page 7-4)**.
2. For ease of assembly and to prevent corrosion, apply a light coat of anti-seize or lubricating compound to both splined ends of the steering shaft.

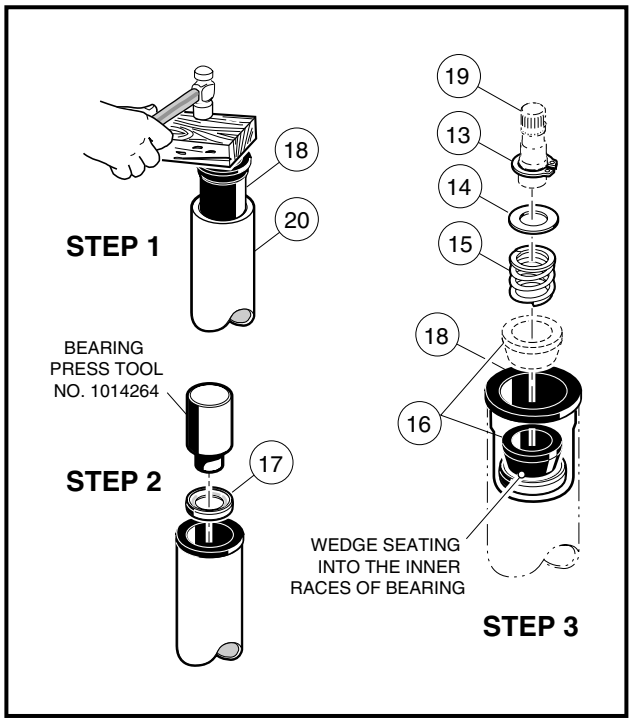

Figure 7-5 Steering Shaft – Bottom End

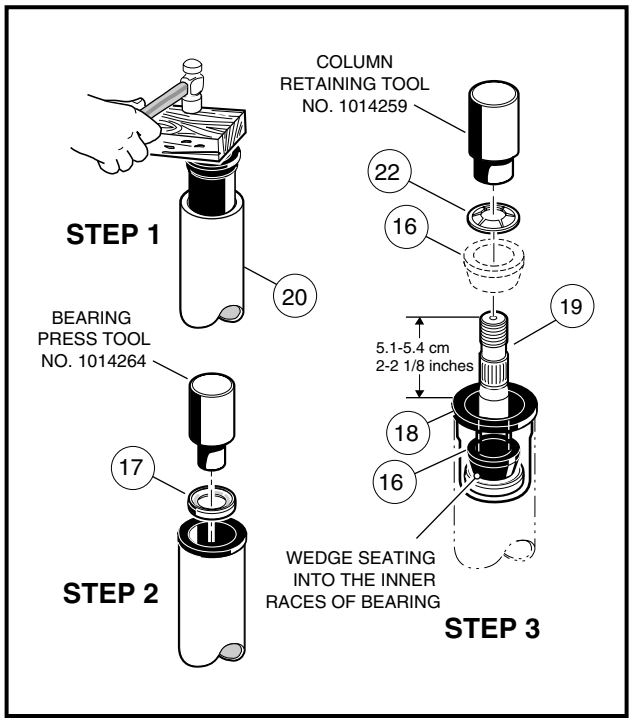

Figure 7-6 Steering Shaft – Top End

3. Position the steering column assembly in the vehicle while inserting the steering column shaft into the upper universal joint (1). The flat portion of the steering shaft spline (19) must be aligned with the bolt hole in the universal joint (1) before sliding the spline into the universal joint. While holding the steering column in place, attach it to the frame using bolts (8) washers (7) and nuts (9) **(Figure 7-4, Page 7-4)**. Thread the nuts onto the bolts but do not tighten them.
4. Reinstall washer (11) and screw (10). Tighten to 20 ft-lb (27 N·m) **(Figure 7-4, Page 7-4)**.
5. Install the bolt (2) and lock washer (3) on the upper universal joint and finger tighten **(Figure 7-3, Page 7-5)**.
6. Tighten the two nuts (9) and bolts (8) to 17 ft-lb (23 N·m) **(Figure 7-4, Page 7-4)**.
7. Tighten the bolt (2) on the upper universal joint to 15 ft-lb (20 N·m) **(Figure 7-4, Page 7-4)**.
8. Check the other two bolts of the universal joint (1) to ensure that they are properly tightened to 15 ft-lb (20 N·m) **(Figure 7-4, Page 7-4)**.
9. Reinstall dash pocket and related hardware.
10. Reinstall center dash panel in reverse order of disassembly. Make sure the key switch terminals do not touch the frame and the center dash panel is properly seated and snapped into place.
11. Install front body and bumper. **See Section 4 – Body and Trim.**

STEERING ADJUSTMENT

Read WARNING on page 7-1.

1. Turn the steering wheel all the way to the right. Note the distance between the passenger side spindle stop (2) and passenger side A-plate (3) (**Figure 7-6, Page 7-7).** The internal stop on the rack must reach its limit of travel against rack and pinion housing at exactly the same time the spindle stops against the passenger side A-plate (with vehicle wheels turned to the right). If simultaneous contact occurs, steering is in correct adjustment; Proceed to step 4. If simultaneous contact does not occur, proceed to step 2.
2. Loosen the nuts (27 and 29) and turn the drag link (28) **(Figure 7-12, Page 7-10)** to adjust the drag link rod. Adjust the link rod with the steering wheel turned all the way to the right, so the passenger side spindle stop lightly touches the passenger side A-Plate. The internal stop on the rack must reach its limit of travel at the same time the spindle stops against the passenger side A-plate (with vehicle wheels turned to the right).

⚠ CAUTION

- THE DRAG LINK HAS BOTH LEFT AND RIGHT-HAND THREADS. THE END OF THE DRAG LINK TOWARD THE SPINDLE HAS LEFT-HAND THREADS, AND THE END TOWARD THE RACK HAS RIGHT-HAND THREADS. TO PREVENT DAMAGE TO THREADED PARTS, CARE SHOULD BE TAKEN WHEN SERVICING THE DRAG LINK.

3. When all adjustments have been completed, tighten the nuts (27 and 29) on the drag link assembly with an open end wrench. Tighten nuts to 21 ft-lb (28.4 N·m) **(Figure 7-12, Page 7-10)**.

⚠ CAUTION

- WHEN TIGHTENING THE NUTS (27 AND 29), MAKE SURE THE DRAG LINK (28) DOES NOT TURN **(FIGURE 7-12, PAGE 7-10)**.

4. Straighten wheels and then turn steering wheel from lock to lock. Wheels should turn smoothly and easily. If steering wheel does not turn smoothly and easily, inspect steering assemblies; e.g., ball joints (23) **(Figure 7-12, Page 7-10)** and (6 and 13) **(Figure 7-21, Page 7-17)**, spindle bushings (3 and 4) **(Figure 7-22, Page 7-18)**, wave washers (20) **(Figure 7-22, Page 7-18)**, and rack assembly (17) **(Figure 7-12, Page 7-10)**. Also inspect front suspension assemblies; e.g., A-Plates (1) **(Figure 7-21, Page 7-17)** urethane bushings (2) **(Figure 7-21, Page 7-17)** and leaf springs (6) **(Figure 7-22, Page 7-18)**. Replace components as necessary.

RACK AND PINION

Read WARNING on page 7-1.

RACK AND PINION REMOVAL

1. Remove the front body as instructed in **Section 4 – Body and Trim.**
2. Remove the cotter pin (22) and ball joint retaining nut (25) **(Figure 7-12, Page 7-10)**.
3. Using a ball joint removal tool, remove the ball joint (23) **(Figure 7-12, Page 7-10)** from the spindle assembly. **See Figure 7-8, Page 7-8.**
4. Remove the bolts (30), washers (31), and locknuts (32) from the steering rack assembly mounting bracket **(Figure 7-12, Page 7-10).**

Rack and Pinion Removal, Continued:

5. Remove the bolt (2) and flat washer (3) on the upper universal joint, then remove the rack assembly and universal joint from the vehicle **(Figure 7-4, Page 7-4)**.

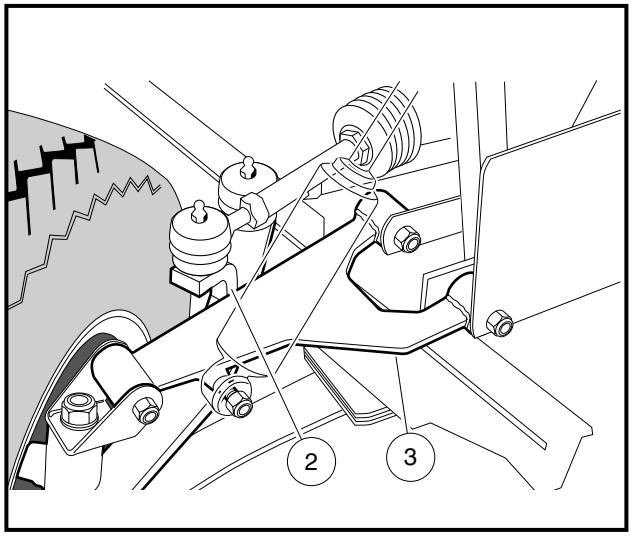

Figure 7-7 Adjust Steering Alignment

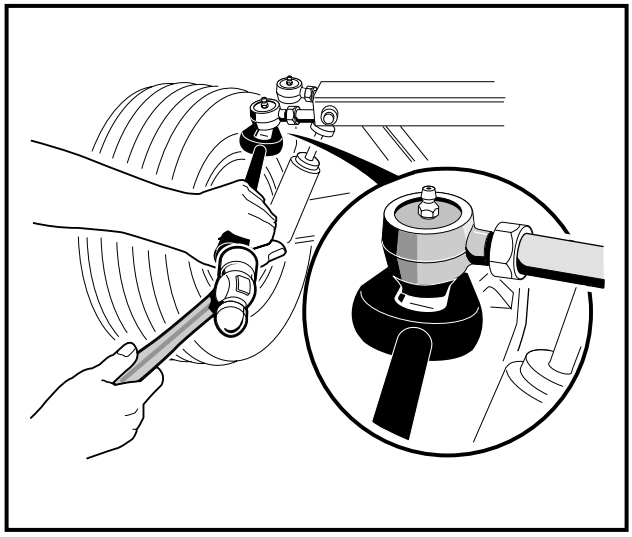

Figure 7-8 Ball Joint Tool

RACK AND PINION DISASSEMBLY

⚠ CAUTION

- THE BALL JOINT (23) **(FIGURE 7-12, PAGE 7-10)** HAS LEFT-HAND THREADS.

1. Remove ball joint and inspect it for excessive wear **(Figure 7-8, Page 7-8)**.
2. Remove the drag link (28) **(Figure 7-12, Page 7-10)**.
3. Remove both bellows clamps (2) (plastic wire ties) **(Figure 7-12, Page 7-10)**.
4. Remove the hex nut (29) and slide off the dust seal bellows (1) **(Figure 7-12, Page 7-10)**.
5. Remove the retaining ring (21), then slide off dust seal bellows (20) **(Figure 7-12, Page 7-10)**.

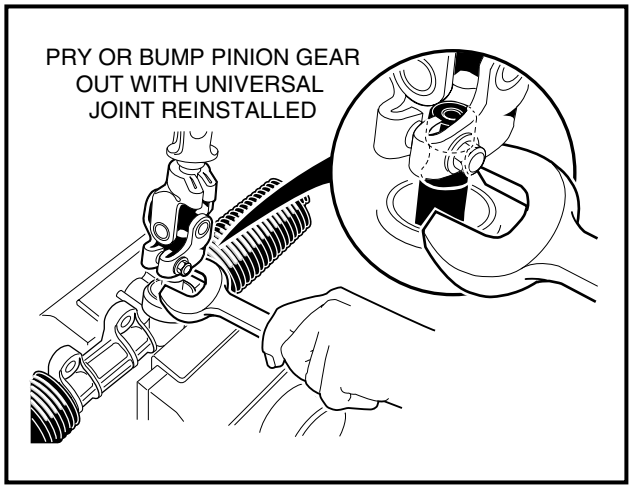

Figure 7-9 Remove Pinion from Housing

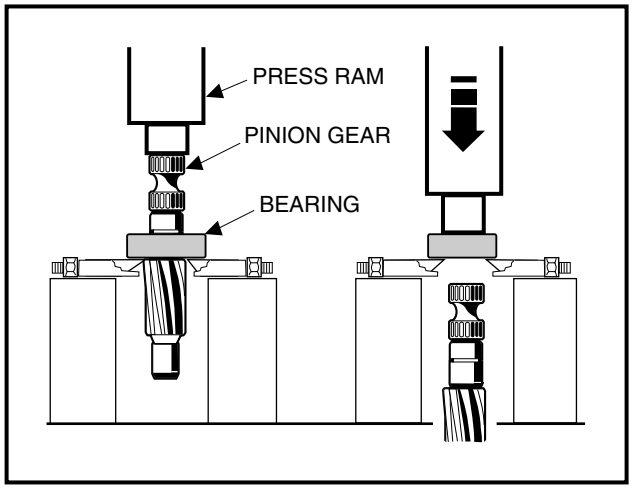

Figure 7-10 Remove Bearing from Pinion

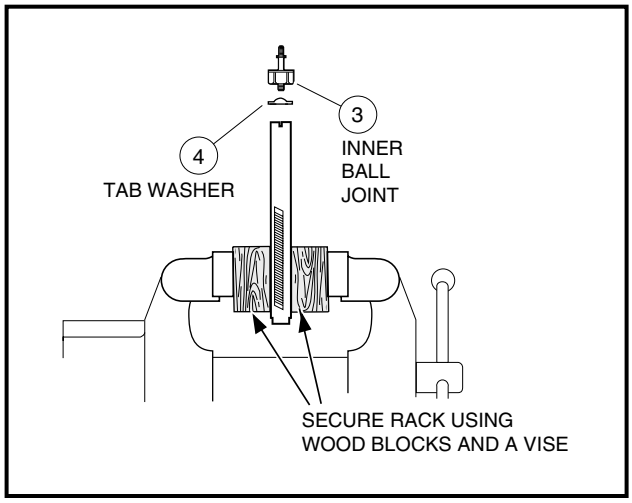

Figure 7-11 Secure Rack in Vise

6. Remove the rack screw locknut (15), rack guide screw (16), rack guide pressure spring (14), and the rack guide (13) **(Figure 7-12, Page 7-10)**.
7. Remove the universal joint assembly from the pinion (8) by fully removing the bolt and then sliding off the universal joint **(Figure 7-12, Page 7-10)**.
8. If necessary, remove the dust seal (12) **(Figure 7-12, Page 7-10). See following NOTE.**

NOTE

- IF THE DUST SEAL (12) IS REMOVED, REPLACE WITH A NEW ONE **(FIGURE 7-12, PAGE 7-10).**

9. Using snap ring pliers, remove the internal snap ring (11) **(Figure 7-12, Page 7-10).**
10. Install the universal joint onto the pinion and place a large open end wrench under the universal joint **(Figure 7-9, Page 7-8)**. Use the wrench as a lever to pull the pinion from the housing.
11. If the ball bearing (9) has been damaged, remove the external snap ring (10) **(Figure 7-12, Page 7-10)** and press the bearing off **(Figure 7-10, Page 7-8)**.
12. Remove retaining ring (19) and stop washer (18), then remove rack (17) from housing (6) **(Figure 7-12, Page 7-10)**.
13. If the inner ball joint (3) is excessively worn, remove the ball joint and tab washer (4) from the rack by securing the rack in a vise **(Figure 7-11, Page 7-9)**. Using wood blocks between the rack and the jaws of the vise to protect the rack from damage, loosen and remove the inner ball joint with a wrench.
14. Inspect the bushing (5) for excessive wear. If wear is excessive, replace the steering box assembly (Club Car Part No. 101878302) **(Figure 7-12, Page 7-10)**.

RACK AND PINION ASSEMBLY

1. Install a new tab washer (4) and an inner ball joint (3) **(Figure 7-11, Page 7-9)**. Install the ball joint onto the rack by securing the rack in a vise using wood blocks between the rack and the jaws of the vise to protect the rack from damage. Tighten the ball joint to 60 ft-lb (81 N·m).
2. Bend the edges of the tab washer (4) up against the ball joint (3) **(Figure 7-11, Page 7-9)**.
3. Apply a liberal amount of EP grease to the teeth of the rack (17), then slide the rack through the bushing (5) and housing (6). Install the stop washer (18) and retaining ring (19) to the end of the rack **(Figure 7-12, Page 7-10)**.

Rack and Pinion Assembly, Continued:

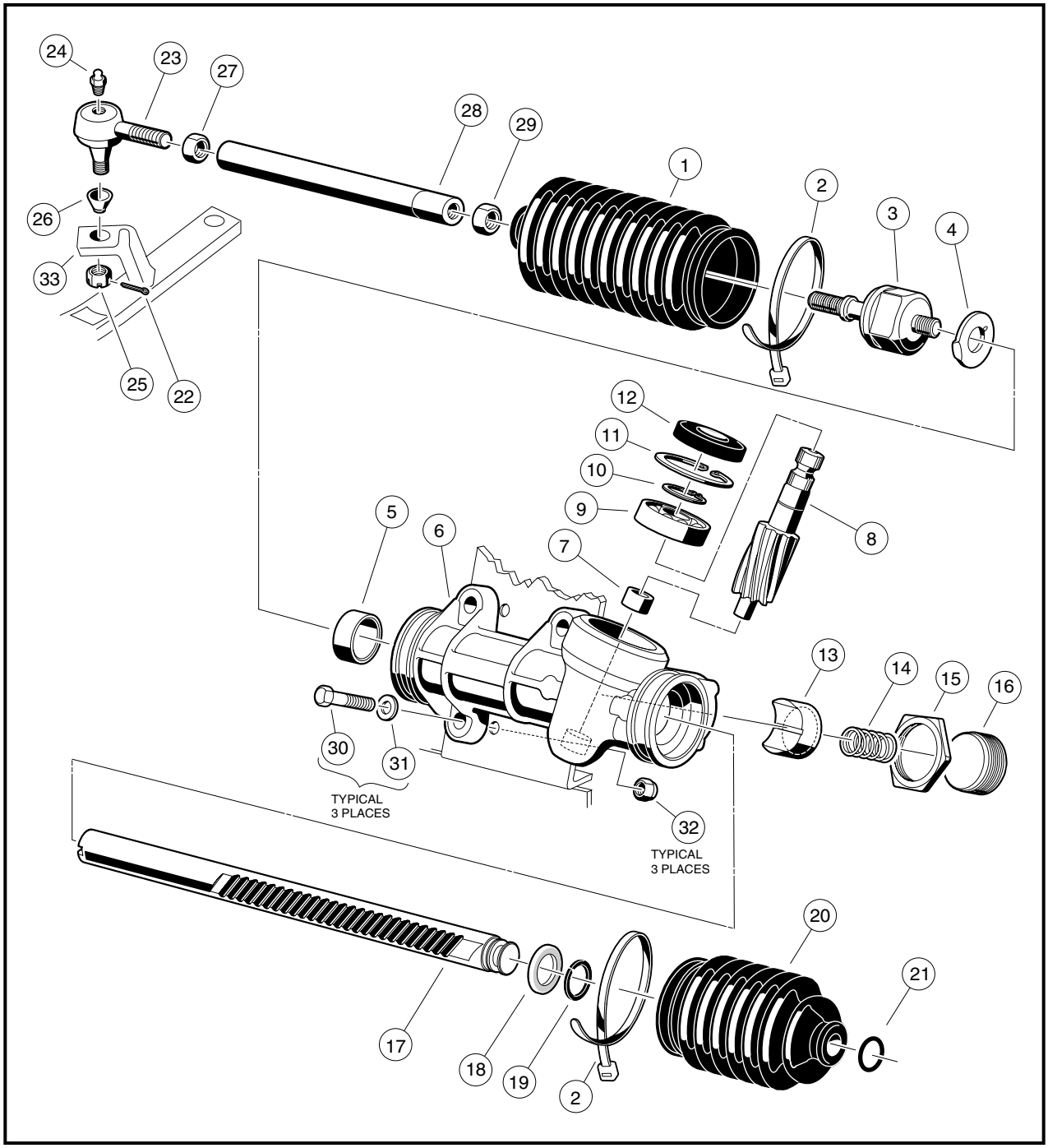

Figure 7-12 Steering Gear

⚠ CAUTION

- IN STEP 4, DO NOT PRESS AGAINST THE OUTER RACE OF THE BEARING.

4. If the bearing (9) was removed, press on a new bearing, exerting all pressure on the inner race (grease the bearing before installing it). Then install the external snap ring (10) **(Figure 7-12, Page 7-10)**.

5. If the needle bearing (7) is damaged, the steering box assembly (Club Car Part No. 101878302) must be replaced **(Figure 7-12, Page 7-10)**.
6. Install pinion (8) and bearing (9) assembly into the housing (6) **(Figure 7-12, Page 7-10)**. Make sure the rack gear teeth will mesh with the gear teeth on the pinion. The rack may need to be rotated slightly while lightly tapping on the pinion-bearing assembly with a rubber mallet. **See following CAUTION**.

⚠ CAUTION

- DO NOT FORCE THE PINION-BEARING ASSEMBLY INTO THE HOUSING. THE GEAR TEETH OR THE SMALL BEARING COULD BE DAMAGED.

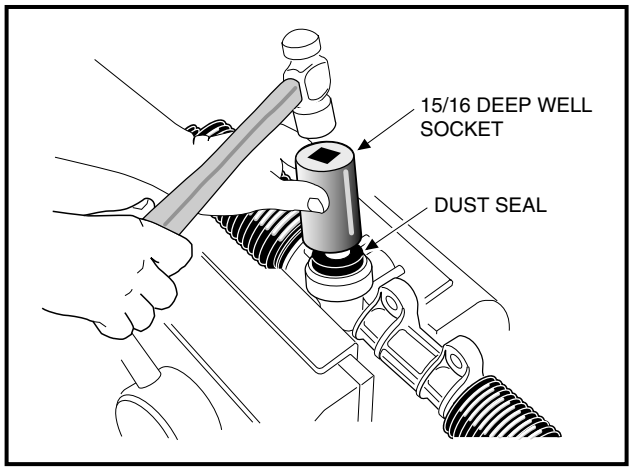

Figure 7-13 Press In Dust Seal

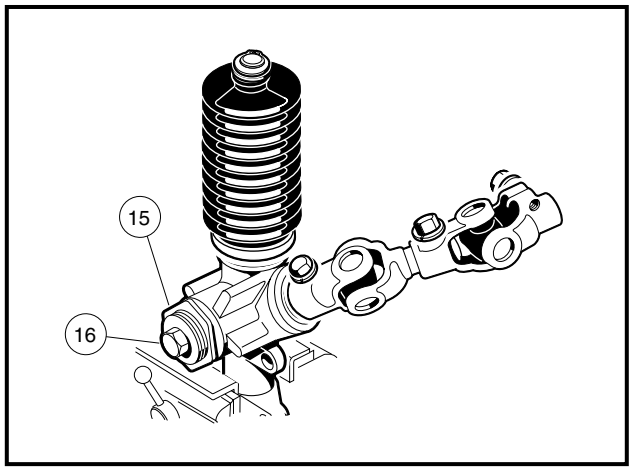

Figure 7-14 Rack and Pinion Adjustment

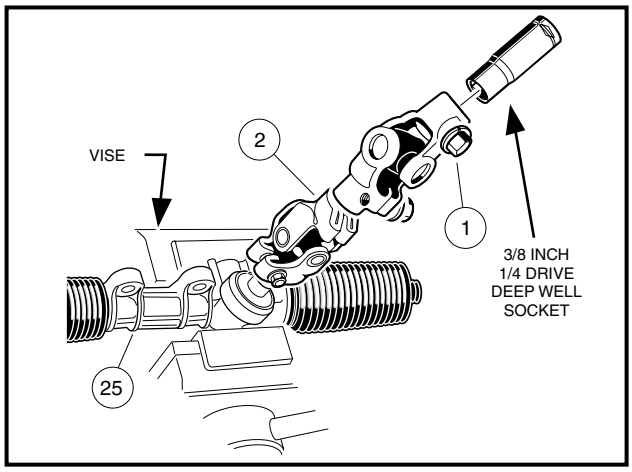

Figure 7-15 Rack and Pinion Resistance

7. Install the internal snap ring (11) **(Figure 7-12, Page 7-10)**.
8. Using a socket to apply pressure evenly, press in a new dust seal **(Figure 7-13, Page 7-11).**
9. Apply a small amount of grease to the rack guide (13) where it comes into contact with the rack (17) **(Figure 7-12, Page 7-10)**.
10. Place a few drops of Loctite® 222 to the threads of the screw (16) **(Figure 7-12, Page 7-10)**.
11. Install the rack guide (13), pressure spring (14), and screw (16). The screw should be threaded in until a rotational torque of 10 in-lb (1.13 N·m) is achieved **(Figure 7-12, Page 7-10)**.

Rack and Pinion Assembly, Continued:

11.1. Reposition the rack and pinion in a vise.

11.2. Insert a 3/8 inch deep well socket into the steering column end of the universal joint (2) and tighten the bolt (1) to 15 ft-lb (20.3 N·m) **(Figure 7-15, Page 7-11)**.

11.3. Use a torque wrench connected to the 3/8 inch deep well socket to measure the resistance of the rack and pinion. Rotational resistance should measure 7 to 15 in-lb (.8 to 1.7 N·m).

11.4. If measured resistance does not equal 7 to 15 in-lb, loosen the locknut (15) and tighten the screw (16) until it bottoms out, then back the screw off one quarter turn. Tighten the locknut to 28 ft-lb (38 N·m) **(Figure 7-14, Page 7-11).**

NOTE

- WHEN TIGHTENING THE LOCKNUT (15) MAKE SURE THE SCREW (16) DOES NOT CHANGE ADJUSTMENT **(FIGURE 7-14, PAGE 7-11)**.

12. Install the dust seal bellows (20) and retaining ring (21) **(Figure 7-12, Page 7-10)**.
13. Install the dust seal bellows (1) and hex nut (29) **(Figure 7-12, Page 7-10)**.
14. Install the universal joint on the pinion. Tighten the bolt to 15 ft-lb (20 N·m).
15. Install new bellows clamps (wire ties) (2) **(Figure 7-12, Page 7-10)**.
16. Install the drag link (28) **(Figure 7-12, Page 7-10)**.

⚠ CAUTION

- THE BALL JOINT (23) **(FIGURE 7-12, PAGE 7-10)** HAS LEFT-HAND THREADS.
- THE TIE ROD AND DRAG LINK HAVE RIGHT-HAND THREADS ON ONE END AND LEFT-HAND THREADS ON THE OTHER END. RIGHT-HAND THREADS ARE IDENTIFIED BY A GROOVE IN THE TIE ROD OR DRAG LINK.

17. Install the ball joint (23) **(Figure 7-12, Page 7-10)**.
18. Adjust the steering. **See "Steering Adjustment" on page 7-7.**

RACK AND PINION INSTALLATION

1. Position the steering gear box assembly on the shock and gear support and install the bolts (30), washers (31), and nuts (32). Do not tighten the mounting bolts **(Figure 7-12, Page 7-10)**.
2. For ease of assembly and to prevent corrosion, apply a light coat of anti-seize and lubricating compound to the splined end of the steering column shaft.
3. Align the flat portion of the steering shaft spline with the bolt hole in the universal joint and then slide the shaft into the upper universal joint. Install the bolt and lockwasher on the upper universal joint and tighten it to 15 ft-lb (20 N·m).
4. Tighten the steering rack mounting bolts (30) to 22 ft-lb (29.8 N·m) **(Figure 7-12, Page 7-10)**.
5. Adjust the steering. **See "Steering Adjustment" on page 7-7.**

TIE ROD AND DRAG LINK

Read WARNING on page 7-1.

TIE ROD AND DRAG LINK REMOVAL

1. Using locking pliers to hold tie rod and drag link, loosen jam nuts (7 and 12) on tie rod ball joints **(Figure 7-21, Page 7-17)** and loosen jam nuts (27 and 29) on the drag link **(Figure 7-12, Page 7-10).**

2. Remove the cotter pins (22) and ball joint retaining nuts (25 or 20) **(Figure 7-12, Page 7-10 or Figure 7-21, Page 7-17)**.
3. Use a ball joint removal tool to remove ball joints (13 and 6) **(Figure 7-21, Page 7-17)** and (23) **(Figure 7-12, Page 7-10)** from the spindles.
4. Remove the ball joints from the tie rod (11) **(Figure 7-21, Page 7-17)**.
5. Remove drag link (28) from inner ball joint assembly (3) and drag link ball joint (23) **(Figure 7-12, Page 7-10)**.

TIE ROD AND DRAG LINK INSTALLATION

1. Thread ball joints (6 and 13) into tie rod (11) to a depth of 1/2 inch (12.5 mm) **(Figure 7-21, Page 7-17)**.

⚠ WARNING

- THE BALL JOINTS MUST BE THREADED INTO THE ROD AT LEAST 5/16 OF AN INCH (8 MM). FAILURE TO THREAD BALL JOINTS IN DEEP ENOUGH MAY CAUSE A BALL JOINT TO SEPARATE FROM THE ROD DURING ADJUSTMENT OR WHILE BEING OPERATED, POSSIBLY RESULTING IN LOSS OF VEHICLE CONTROL AND SEVERE PERSONAL INJURY.

⚠ CAUTION

- THE TIE ROD AND DRAG LINK HAVE RIGHT-HAND THREADS ON ONE END AND LEFT-HAND THREADS ON THE OTHER END. RIGHT-HAND THREADS ARE IDENTIFIED BY A GROOVE IN THE TIE ROD OR DRAG LINK.

2. Install ball joint ends (6 and 13) into the left and right-hand spindle arms (23), then install the retaining nuts (20) and cotter pins (22) **(Figure 7-21, Page 7-17)**.
3. Thread the drag link rod (28) all the way onto the threaded stud of the inner ball joint assembly (3) (right-hand threads) **(Figure 7-12, Page 7-10)**.
4. Thread the ball joint (23) into the drag link rod (28) (left-hand threads) to full thread depth **(Figure 7-12, Page 7-10).**
5. Install the ball joint (23) on the spindle arm riser (33), then install the retaining nut and a new cotter pin **(Figure 7-12, Page 7-10)**. Tighten nut to 18 ft-lb (2.0 N·m).
6. Adjust wheel toe-in **(see page 7-14)** and steering adjustment **(see page 7-7)**.

FRONT SUSPENSION

Read WARNING on page 7-1.

LUBRICATION

Five grease fittings are provided (one in each spindle housing, one in the ball joint on each end of the tie rod, and one in the ball joint of the steering drag link). Lubricate these fittings semi-annually with the proper lubricant. **See the Lubrication Chart in vehicle Owner's Manual**.

⚠ CAUTION

- TO ENSURE PROPER LUBRICATION OF THE FRONT SUSPENSION AND STEERING LINKAGES, RAISE FRONT OF VEHICLE TO LUBRICATE. **SEE WARNING ON PAGE 7-1**.

WHEEL ALIGNMENT

Wheel alignment is limited to equalizing the camber angle of each front wheel and adjusting toe-in of the front wheels. There is also a drag link adjustment to equalize the turning radius in both directions. **See Steering Adjustment, Page 7-7**.

NOTE

- PRIOR TO MAKING ANY FRONT SUSPENSION ADJUSTMENTS, INSPECT COMPONENTS FOR WEAR OR DAMAGE AND REPAIR OR REPLACE AS NECESSARY.

Camber Adjustment

1. Check each front wheel with a framing square. At the floor (or ground), there should be an equal amount of space between each tire and the framing square **(Figure 7-16, Page 7-15)**.
2. Loosen (do not remove) the four bolts (30) that secure the leaf spring (6) to the bottom spring plate (29) **(Figure 7-22, Page 7-18). See also Figure 7-17, Page 7-15**.
3. Loosen (do not remove) the hex nut (8) on the adjustment eccentric (7) **(Figure 7-17, Page 7-15)** in the center of the spring. **See also Figure 7-22, Page 7-18.**
4. Use a 7 mm deep well socket to rotate the eccentric **(Figure 7-17, Page 7-15)**.
5. After adjusting camber, tighten the four spring retaining bolts (30) **(Figure 7-22, Page 7-18)** to 23 ft-lb (31 N·m). Then roll the vehicle forward one full tire revolution and recheck the camber. **See also Figure 7-16, Page 7-15**.
6. Tighten the hex nut (8) on the adjustment eccentric (7) to 10 ft-lb (13.5 N·m) **(Figure 7-22, Page 7-18) See also Figure 7-17, Page 7-15**.

Toe-in Adjustment

1. On a level surface, roll the vehicle forward, then stop. Make sure the front wheels are pointed straight ahead. Do not turn the steering wheel again during this procedure.
2. On each front tire, mark (as closely as possible) the center of the tread face that is oriented toward the rear of the vehicle. The marks should be even with the bottom surfaces of the vehicle frame I-beams.
3. Measure the distance between the marks on the rear-facing surfaces of the tires, and then roll the vehicle forward one and one-half wheel revolutions until the marks appear on the forward facing surfaces of the tires at about the same height from the floor **(Figure 7-18, Page 7-15)**.
4. Measure the distance between the marks on the forward-facing surfaces of the tires.

NOTE

- THE FRONT MEASUREMENT MUST BE LESS THAN THE REAR MEASUREMENT.

5. Subtract the measurement on the front of the tires from the measurement on the rear of the tires. The difference is the toe-in. Proper toe-in is 1/8 to 3/8 of an inch (3.2 to 9.5 mm).
6. If adjustment is necessary, loosen the jam nut on each tie rod ball joint and rotate the tie rod to increase or decrease toe-in **(Figure 7-19, Page 7-15)**. **See following CAUTION.**

⚠ CAUTION

- THE TIE ROD HAS RIGHT-HAND THREADS ON ONE END AND LEFT-HAND THREADS ON THE OTHER END. RIGHT-HAND THREADS ARE IDENTIFIED BY A GROOVE IN THE TIE ROD.

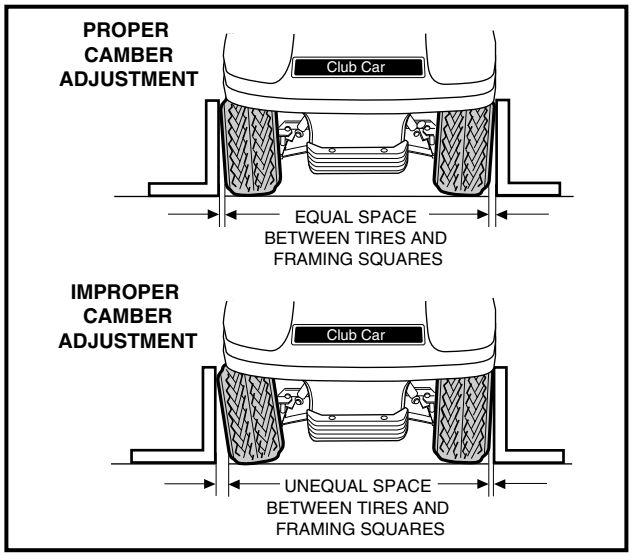

Figure 7-16 Check Camber

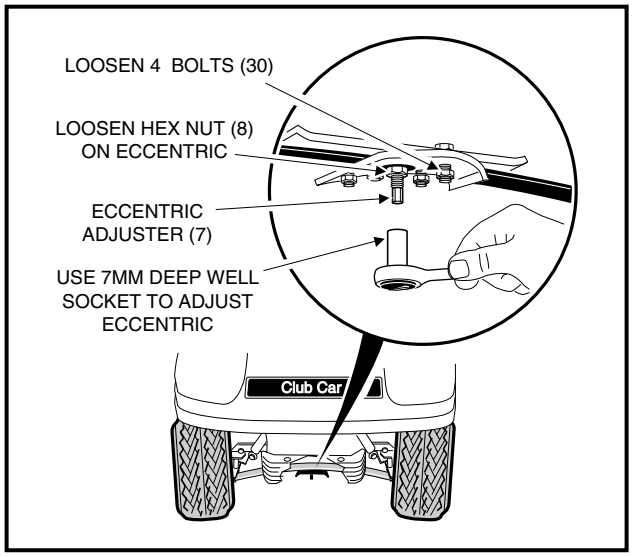

Figure 7-17 Adjust Camber

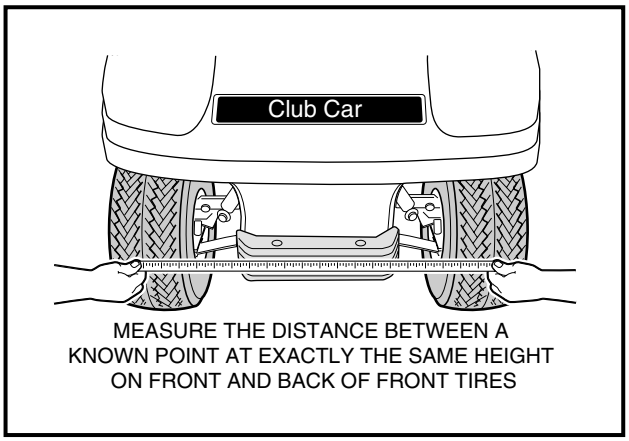

Figure 7-18 Check Toe-In

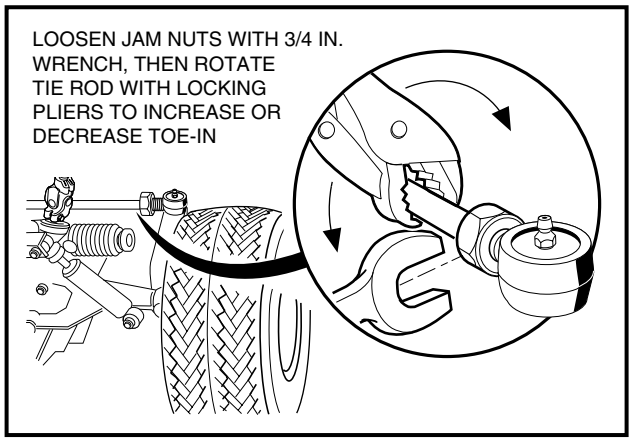

Figure 7-19 Adjust Toe-In

7. Tighten nuts (loosened in Step 6) to 21 ft-lb (28 N·m) and recheck toe-in.
8. After toe-in adjustment is made and with wheels in the straight ahead position, the steering wheel should be at the center of its travel. There should be equal travel to the left and right. **See following NOTE.**

NOTE

- IF THE MINIMUM TURNING RADIUS IS NOT THE SAME FOR BOTH LEFT AND RIGHT TURNS, ADJUST THE STEERING **(SEE PAGE 7-7)**.

FRONT SUSPENSION COMPONENTS

Read WARNING on page 7-1.

LEAF SPRING REMOVAL

1. Loosen lug nuts on both front wheels and raise front of vehicle with a chain hoist or floor jack. Place jack stands under the front cross tube of the vehicle frame and lower the vehicle onto the jack stands.
2. Remove both front wheels.

Leaf Spring Removal, Continued:

3. Remove the nuts (14) and bolts (25) from the bottom of each king pin (26) **(Figure 7-22, Page 7-18)**.
4. Remove the four bolts (30), four nuts (32), four lock washers (31), and bottom spring plate (29) **(Figure 7-22, Page 7-18)**.
5. Remove tapered leaf spring (6) **(Figure 7-22, Page 7-18)**.
6. Check the condition of the urethane bushings (27) and steel sleeves (28) **(Figure 7-22, Page 7-18)**. Replace any that are worn or damaged.

LEAF SPRING INSTALLATION

1. Install urethane bushings (27) and steel bushings (28) into leaf spring eyes **(Figure 7-22, Page 7-18)**.
2. Install tapered leaf spring (6), bottom spring plate (29), four bolts (30), four lock washers (31), and four nuts (32) **(Figure 7-17, Page 7-17)**. Using a crisscross pattern sequence, tighten bolts to 23 ft-lb (31 N·m).
3. Install spring in king pins (26) with bolts (25) and nuts (14) **(Figure 7-22, Page 7-18)**. Tighten to 23 ft-lb (31 N·m).
4. Install the wheels and finger tighten the lug nuts.
5. Lower the vehicle and finish tightening lug nuts (using a crisscross pattern) to 55 ft-lb (74.6 N·m).
6. Adjust camber and toe-in as instructed on page 7-14.

KINGPIN AND STEERING SPINDLE REMOVAL

1. Remove the front hub. **See "Front Wheel Bearings and Hubs" on page 7-22.**
   - **For vehicles with four-wheel brakes, proceed to step 2.**
   - **For vehicles with two-wheel brakes, proceed to step 3.**
2. Disconnect the front brake cables.
   2.1. Remove the cotter pins (1), brake cable clevis pins (2), and cable retaining clips (3). Remove the brake cables (4) from the spindle brackets **(Figure 7-20, Page 7-16)**.
3. Remove cotter pins (22) and nuts (20), then remove ball joints from the spindles **(Figure 7-21, Page 7-17).** Remove drag link ball joint. **See also Tie Rod and Drag Link Removal, page 7-12**.
4. Remove the nut (17) and lock washer (18) from the top of the kingpin (26) **(Figure 7-22, Page 7-18)**.
5. Raise the upper clevis (16) from the kingpin **(Figure 7-22, Page 7-18)**.
6. Remove the thrust washer (19) **(Figure 7-22, Page 7-18)**.
7. Slide the spindle off the kingpin (26) **(Figure 7-22, Page 7-18)**.

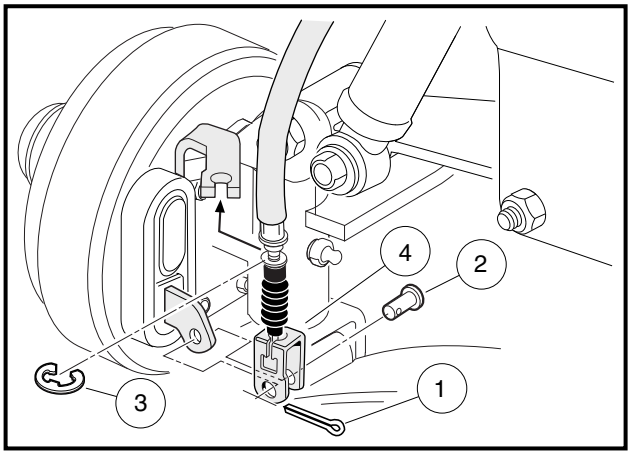

Figure 7-20 Connect Front Brake Cables

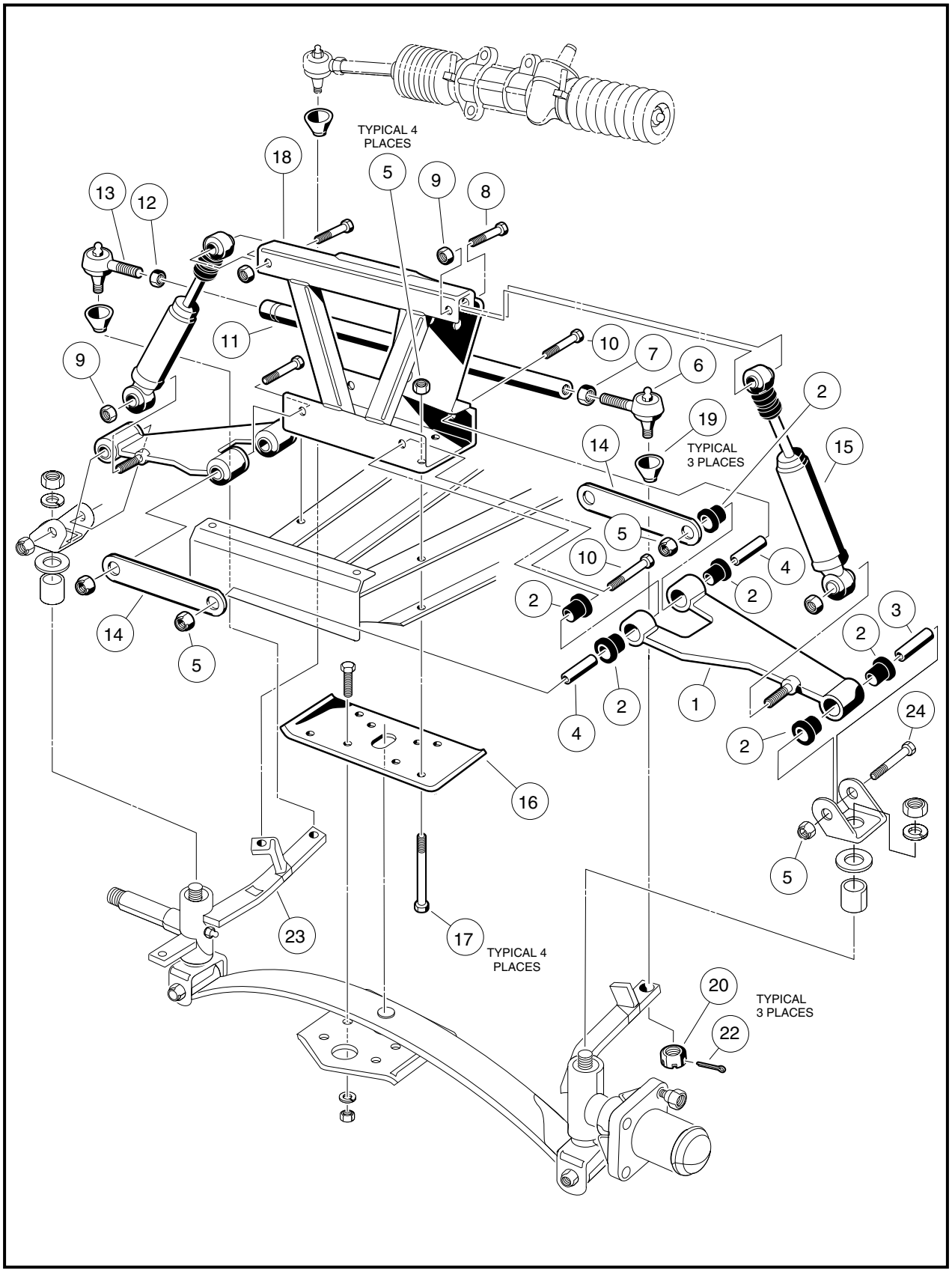

Figure 7-21 Two-Wheel Brake Vehicle – Upper Portion

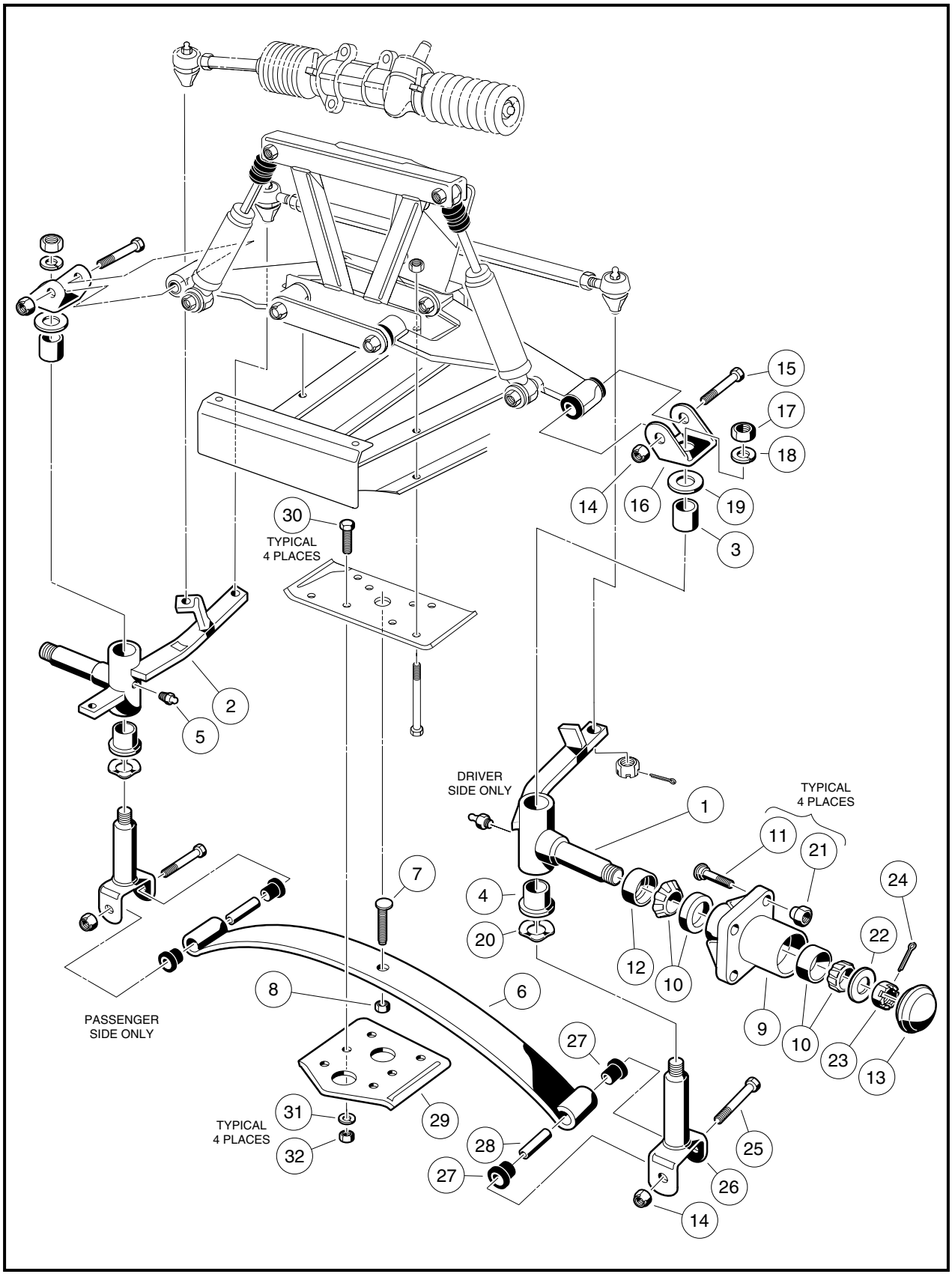

Figure 7-22 Two-Wheel Brake Vehicle - Lower Portion

Kingpin and Steering Spindle Removal, Continued:

8. Remove the wave washer (20) and inspect it **(Figure 7-22, Page 7-18).** If the washer is broken or has a wave bottom to wave crest height dimension of less than .040 inch (0.10 cm), it must be replaced.
9. Remove bolt (25) and nut (14) from bottom of kingpin (26) **(Figure 7-22, Page 7-18)** and remove kingpin.
10. Inspect the kingpin and spindle. If either is worn or damaged, it must be replaced.
11. Inspect the bushings (3 and 4) **(Figure 7-22, Page 7-18 or Figure 7-24, Page 7-21)**. If the bushings are worn or damaged, remove them and press in new ones. **See following NOTE.**

NOTE

- IF THE BUSHINGS ARE REPLACED, REAM NEW BUSHINGS TO .750-.752 (3/4 INCH) (19.05-19.10 MM) IN DIAMETER. THE REAMER SHOULD BE LONG ENOUGH TO REAM BOTH BUSHINGS FROM ONE DIRECTION.

KINGPIN AND STEERING SPINDLE INSTALLATION

1. Inspect all parts and replace them as necessary.
2. Install the kingpin (26) over the leaf spring eye. Insert the bolt (25) and install the nut (14) **(Figure 7-24, Page 7-21)**. Tighten the bolt to 23 ft-lb (31 N·m).
3. Install the wave washer (20) **(Figure 7-24, Page 7-21)**.
4. Install the steering spindle on the kingpin. Then install the thrust washer (19), upper plate clevis (16), lock washer (18), and nut (17). Tighten the nut to 40 ft-lb (54.2 N·m) **(Figure 7-22, Page 7-18)**.
5. Attach the ball joints (6 and 13) to the spindle arm (23), install and tighten the nut (20), and install the cotter pin (22) **(Figure 7-21, Page 7-17)**.
6. Install the drag link ball joint. **See Tie Rod and Drag Link Installation page 7-13.**
7. **For vehicles with four-wheel brakes, proceed to step 7.**
8. **For vehicles with two-wheel brakes, proceed to step 8.**
9. Connect the front brake cables on four-wheel brake vehicle in reverse order of disassembly **(Figure 7-20, Page 7-16)**.
10. Install front hub and wheel. **See "Front Wheel Bearings and Hub Installation" on page 7-23.**

DELTA A-PLATE REMOVAL

1. Loosen lug nuts on both front wheels and raise front of the vehicle with a chain hoist or floor jack. Place jack stands under the front cross tube of the vehicle frame and lower the vehicle onto the jack stands.
2. Remove wheel. Remove bolts (10 and 24), A-Plate straps (14), and nuts (5) **(Figure 7-21, Page 7-17)**.
3. Remove the lower shock absorber mounting nut (9), then slide the shock absorber free of the Delta A-Plate **(Figure 7-21, Page 7-17)**.
4. Remove the Delta A-Plate (1) **(Figure 7-21, Page 7-17)**.
5. Inspect the bushings (2) and sleeves (3 and 4) in the Delta A-Plate and replace them if necessary **(Figure 7-21, Page 7-17)**.

DELTA A-PLATE INSTALLATION

1. Install the A-Plate in reverse order of removal. Tighten the A-Plate suspension bolts (10 and 24) to 20 ft-lb (27 N·m) **(Figure 7-21, Page 7-17)**.
2. Install the wheels and adjust the wheel alignment as instructed on page 7-14 of this manual.

SHOCK ABSORBER REMOVAL

1. Inspect the shock absorbers for fluid leakage at the point where the shaft enters the shock absorber body. Leaking shock absorbers should be replaced.

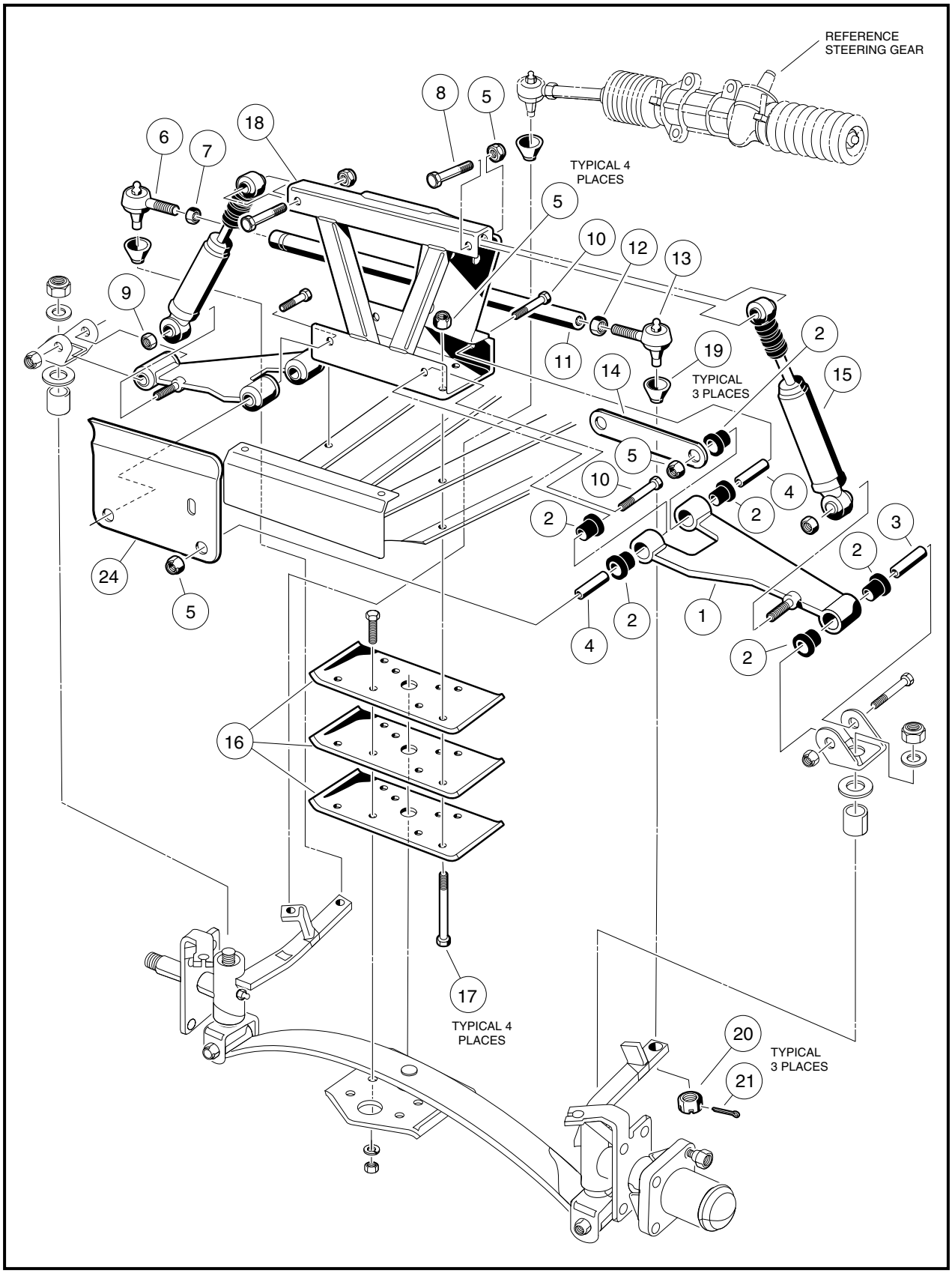

Figure 7-23 Four-Wheel Brake Vehicle - Upper Portion

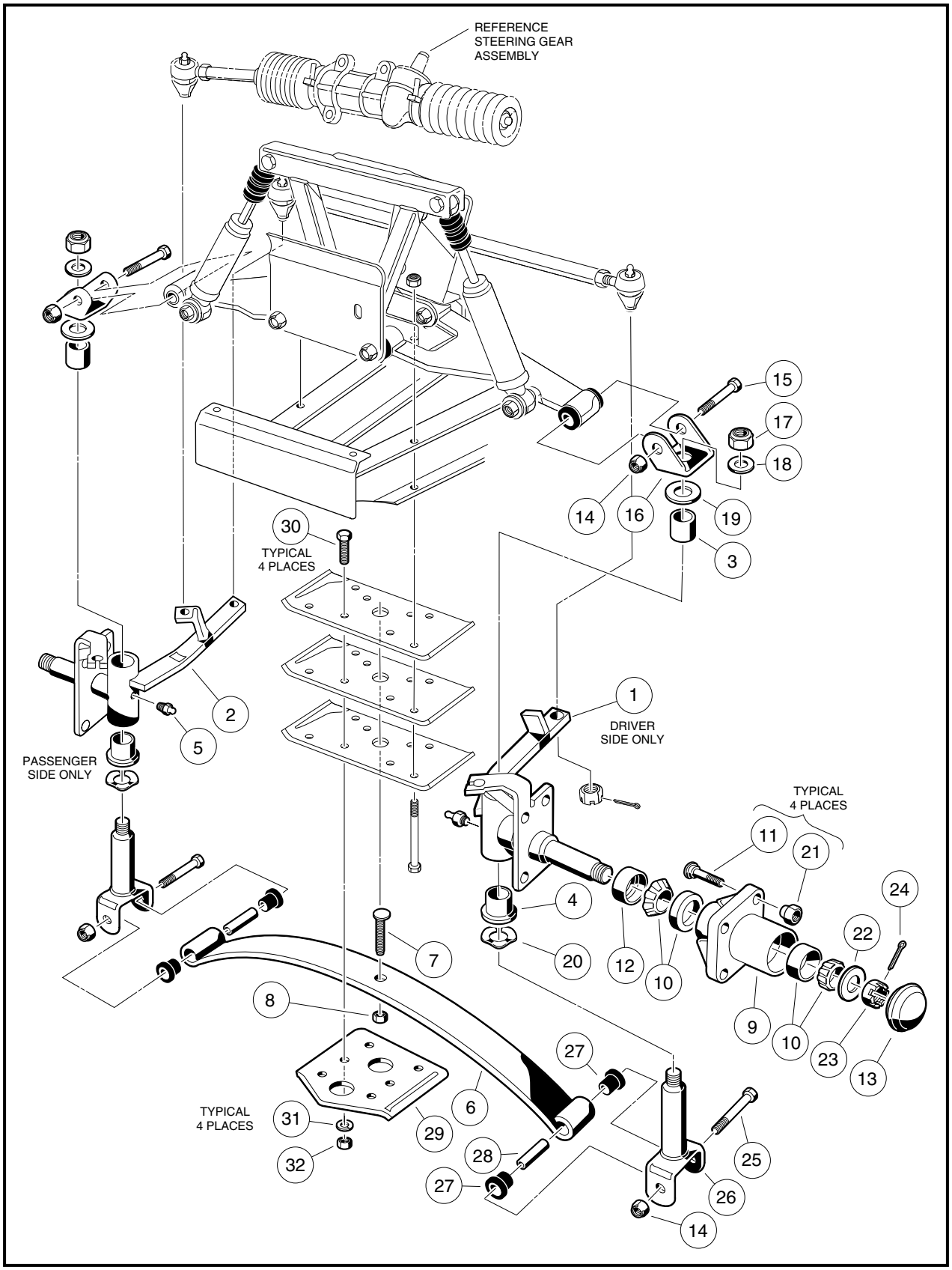

Figure 7-24 Four-Wheel Brake - Lower Portion

Shock Absorber Removal, Continued:

2. Remove the nut (9) attaching the shock absorber to the A-Plate **(Figure 7-21, Page 7-17)**.
3. Remove the nut (9) and bolt (8) attaching the shock absorber to the shock and gear support **(Figure 7-21, Page 7-17)**.
4. Remove the shock absorber.

SHOCK ABSORBER INSTALLATION

NOTE

- WHEN INSTALLING SHOCK ABSORBERS, MAKE SURE FRONT SHOCKS HAVE IDENTICAL PART NUMBERS AND REAR SHOCKS HAVE IDENTICAL PART NUMBERS.

1. Install the shock absorber by reversing the removal procedure.
2. Tighten the nuts to 20 ft-lb (27 N·m).

FRONT WHEEL BEARINGS AND HUBS

Read WARNING on page 7-1.

CHECK FRONT WHEEL FREE PLAY

1. Raise the front of the vehicle.
2. Using your hands, attempt to rock the wheel and hub assembly back and forth on the spindle. If there is any observable movement of the wheel and hub on the spindle, remove dust cap (1) and cotter pin (2) and then tighten the spindle nut (3) until the bearing (5) fully seats in the bearing race (7).
3. Loosen spindle nut one cotter pin position. If the hub does not turn freely, loosen spindle nut one more cotter pin position.
4. Install a new cotter pin (2). If movement continues, replace the wheel bearings (5) as required **(Figure 7-25, Page 7-23)**.

FRONT WHEEL BEARINGS AND HUB REMOVAL

1. Remove the front wheels. **See Section 8, page 8-2.**
2. Remove the front wheel hubs.
   2.1. Remove dust cover (1), cotter pin (2), spindle nut (3), and flat washer (8) **(Figure 7-25, Page 7-23)**.
   2.2. Remove the hub assembly (4) from the spindle shaft **(Figure 7-25, Page 7-23)**.
3. Remove the seal (6) and the bearings (5) from the hub **(Figure 7-25, Page 7-23)**.
4. Inspect the bearing cups (7). If they are worn or pitted, remove the cups by inserting a drift punch from the opposite end of the hub and tapping lightly around them **(Figure 7-25, Page 7-23)**.
5. Clean all parts and inspect them for wear. Replace any damaged or worn parts.

NOTE

- DO NOT USE COMPRESSED AIR TO DRY WHEEL BEARINGS AFTER CLEANING.

6. Inspect the surface of the spindle shaft where the seal (6) seats. It should be clean and smooth **(Figure 7-25, Page 7-23)**.

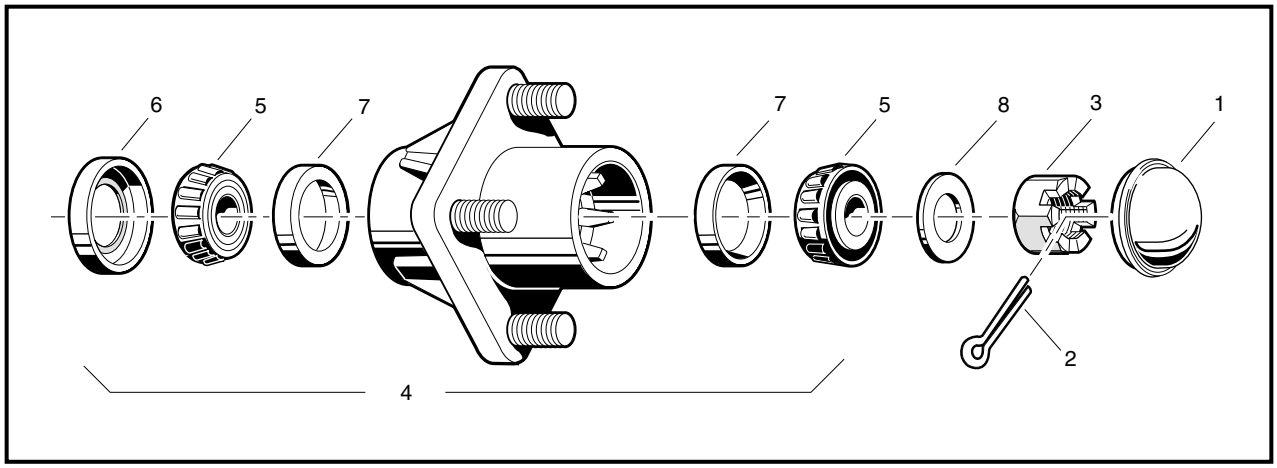

Figure 7-25 Front Wheel Bearings and Hub

FRONT WHEEL BEARINGS AND HUB INSTALLATION

1. Pack the wheel bearings (5) and hub cavities, and lubricate cups (7) with wheel bearing grease or chassis lube. Make sure the grease is forced between the rollers **(Figure 7-25, Page 7-23)**.
2. If bearing cups (7) were removed, press new ones in squarely against stops in the hub **(Figure 7-25, Page 7-23)**.

NOTE

- ALWAYS INSTALL NEW CUPS WHEN NEW BEARINGS ARE INSTALLED.

3. Install the wheel bearings (5) into the hub and install a new seal (6), with the metal edge toward the hub **(Figure 7-25, Page 7-23)**. **See following NOTE**.

NOTE

- APPLY GREASE AROUND DUST SEAL INNER LIP BEFORE INSTALLATION.

4. Install the hub assembly (4) and flat washer (8) on the spindle and start the spindle nut (3) **(Figure 7-25, Page 7-23)**.
5. Tighten the spindle nut until the hub is hard to turn, then back the nut (3) off until the hub turns freely. Install a **new** cotter pin (2) **(Figure 7-25, Page 7-23)**.

NOTE

- WHEN THE COTTER PINS ARE BENT, MAKE SURE THEY DO NOT CONTACT THE HUB OR DUST CAP.

6. Check front wheel free play. **See page 7-22.**
7. Install the dust cap (1) **(Figure 7-25, Page 7-23)**.
8. Repeat the procedure for the opposite wheel.
9. Install the wheels and then finger tighten the lug nuts.
10. Lower the vehicle and finish tightening lug nuts (using a crisscross pattern) to 55 ft-lb (74.6 N·m).

SECTION 8 – WHEELS AND TIRES

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THIS VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN ELECTRICAL AND MECHANICAL REPAIR. FOLLOW ALL PROCEDURES EXACTLY AND HEED ALL WARNINGS STATED IN THIS MANUAL.
- ALWAYS WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHILE SERVICING VEHICLE. WEAR A FULL FACE SHIELD WHEN WORKING WITH BATTERIES.
- TURN KEY SWITCH **OFF,** PLACE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION, AND REMOVE KEY BEFORE SERVICING THE VEHICLE.
- MOVING PARTS! - DO NOT ATTEMPT TO SERVICE THE VEHICLE WHILE IT IS RUNNING.
- ALWAYS USE INSULATED TOOLS WHEN WORKING NEAR BATTERIES OR ELECTRICAL CONNECTIONS.
- LIFT ONLY ONE END OF THE VEHICLE AT A TIME. BEFORE LIFTING, **UNLOAD CARGO BED**, LOCK THE BRAKES AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. ALWAYS USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

GASOLINE VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE:
  - DISCONNECT BATTERY CABLES, NEGATIVE (–) FIRST.
  - DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.
- FRAME GROUND - DO NOT ALLOW TOOLS OR OTHER METAL OBJECTS TO CONTACT FRAME WHEN DISCONNECTING BATTERY CABLES OR OTHER ELECTRICAL WIRING. NEVER ALLOW A POSITIVE WIRE TO TOUCH THE VEHICLE FRAME, ENGINE, OR OTHER METAL COMPONENT.

ELECTRIC VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERIES AS SHOWN IN **SECTION 1, FIGURE 1-2, PAGE 1-3**. THEN DISCHARGE THE CONTROLLER ON POWERDRIVE SYSTEM 48 VEHICLES AS FOLLOWS:
  - TURN THE KEY SWITCH TO **ON** AND PLACE THE FORWARD/REVERSE SWITCH HANDLE IN THE **REVERSE** POSITION.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

GENERAL INFORMATION

Maximum tire life and good vehicle handling qualities are directly related to proper wheel and tire care.

- Keep tires properly inflated as follows: 16-18 psi (110-124 kPa) for Turf 1 and Carryall 1 gasoline vehicles; 18-20 psi (124-138 kPa) for Turf 1 and Carryall 1 electric vehicles; 30-34 psi (207-234 kPa) for all other vehicles.
- Keep lug nuts properly tightened.
- Keep the front end properly aligned and adjusted.

WHEELS

Read WARNING on page 8-1.

WHEEL REMOVAL

1. Slightly loosen the lug nuts on the wheel to be removed.
2. Raise the end of the vehicle from which the wheel is to be removed. Make sure the wheels are off the ground. **See WARNING on page 8-1.**
3. Remove the lug nuts and remove the wheel.

WHEEL INSTALLATION

1. Install wheel(s) and tighten the lug nuts (using a crisscross pattern) until they are snug.
2. Lower the vehicle and finish tightening the lug nuts (using a crisscross pattern) to 55 ft-lb (74.6 N·m).

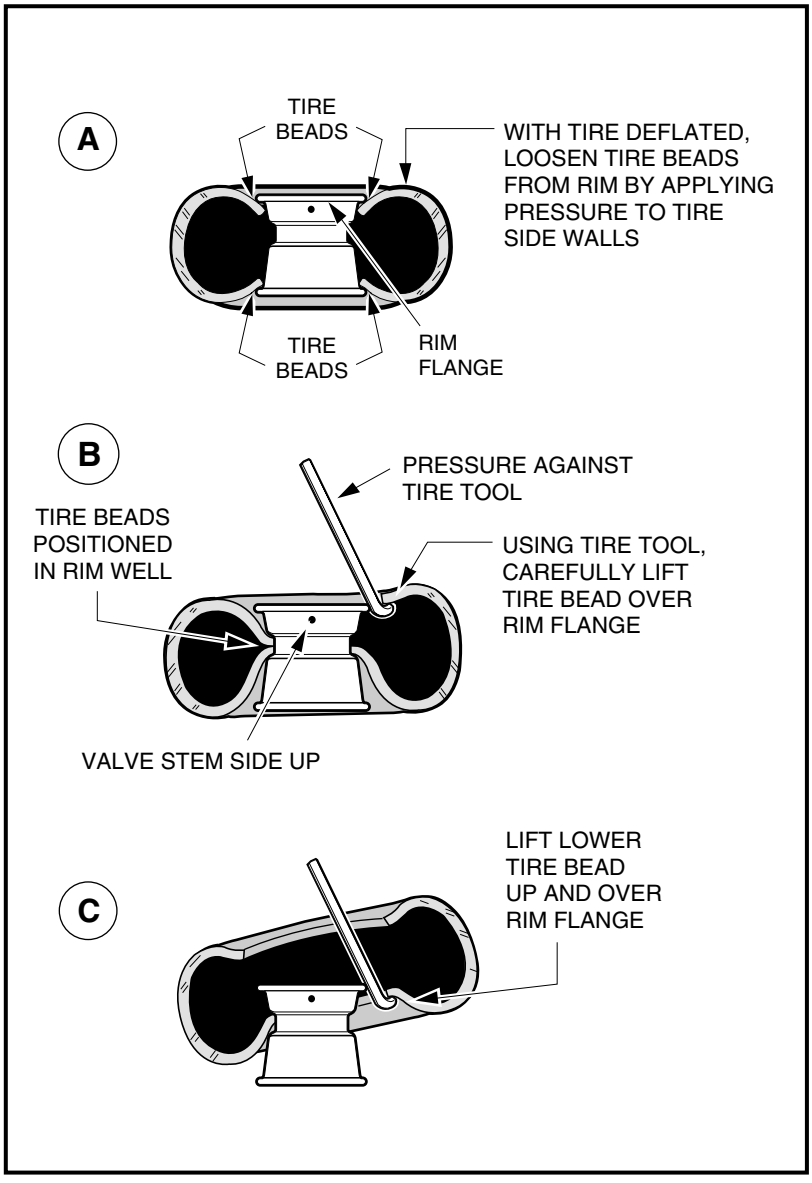

Figure 8-1 Tire Removal

TIRES

Read WARNING on page 8-1.

TIRE REMOVAL

NOTE

- TIRE MUST BE REMOVED OR INSTALLED FROM THE VALVE STEM SIDE OF THE RIM.

1. Remove the tire and wheel assembly from the vehicle as instructed. **See "Wheel Removal" on page 8-2.**
2. Remove the valve cap and valve core and allow air to escape from the tire.
3. If possible, use a tire machine to remove the tire from the rim.
   3.1. If a tire machine is not available, loosen both tire beads by applying pressure to the tire side walls and pushing the tire bead away from the rim flange and into the rim well **(Figure 8-1, Page 8-2)**.
   3.2. With the valve stem side of the wheel up, use a tire tool to carefully start the upper bead over the edge of the rim **(Figure 8-1, Page 8-2)**.

⚠ CAUTION

- TO AVOID DAMAGE TO THE TIRE, DO NOT USE EXCESSIVE FORCE WHEN STARTING THE BEAD OVER THE EDGE OF THE RIM.

   3.3. When the top bead is free of the rim, pull the bead from the bottom side of the rim up into the upper part of the rim well. Insert the tire tool under the lower bead as shown **(Figure 8-1, Page 8-2)** and carefully pry the lower bead over the rim flange.
   3.4. Once the lower bead is started over the rim flange, the tire can be removed from the rim by hand.

TIRE REPAIR

1. Determine the location and cause of the air leak.
   1.1. Remove the wheel as instructed. **See "Wheel Removal" on page 8-2.** Inflate the tire to no more than 20 psi (138 kPa).
   1.2. Immerse the tire in water and then mark the point where bubbles are formed by escaping air.
   1.3. Determine the cause of the air leak and repair as required. **See following NOTE.**

NOTE

- AN AIR LEAK COULD BE DUE TO A PUNCTURED TIRE, FAULTY VALVE CORE, IMPROPERLY SEATED VALVE STEM, OR IMPROPERLY SEATED TIRE BEAD.
- SMALL HOLES IN THE TIRE CAN BE PLUGGED USING A STANDARD AUTOMOTIVE TUBELESS TIRE REPAIR KIT AVAILABLE AT AUTO SUPPLY STORES.

TIRE INSTALLATION

⚠ WARNING

- WHILE MOUNTING OR INFLATING TIRE, KEEP HANDS, FINGERS, ETC. FROM EXPOSED AREAS BETWEEN THE TIRE BEAD AND RIM.

Tire Installation, Continued:

1. Clean both tire beads to remove dirt or other foreign matter.
2. Where the tire beads seat, clean the rim with a wire brush. Wipe away any debris with a clean cloth.

NOTE

- BECAUSE TUBELESS TIRES REQUIRE A PERFECT SEAL IN ORDER TO SEAT, KEEPING THE TIRE AND RIM CLEAN IS VERY IMPORTANT.

3. Apply a liberal amount of tire mounting lubricant (soap and water solution) to both tire beads and rim flanges.
4. Install the tire on the rim from the valve stem side. If there is no tire machine available, use a rubber mallet and tire iron.
5. Remove the valve core and position the tire so both beads are on the rim flange narrow bead seats.
6. Place the tire and wheel assembly against a wall in an upright position and push it against the wall while inflating the tire to 30-35 psi (207-242 kPa). The three-point contact (wall, floor, and hand) will help ensure that beads snap into place and form a proper seal as the tire is inflated **(Figure 8-2, Page 8-4)**. **See following WARNING.**

⚠ WARNING

- DO NOT USE A COMPRESSED AIR SOURCE WITH PRESSURE OVER 100 PSI (690 KPA). DUE TO THE LOW PRESSURE REQUIREMENTS OF A SMALL TIRE, OVER-INFLATION COULD BE REACHED ALMOST INSTANTLY WHEN USING A HIGH PRESSURE AIR SUPPLY. OVER-INFLATION COULD CAUSE THE TIRE TO EXPLODE, POSSIBLY RESULTING IN PERSONAL INJURY.

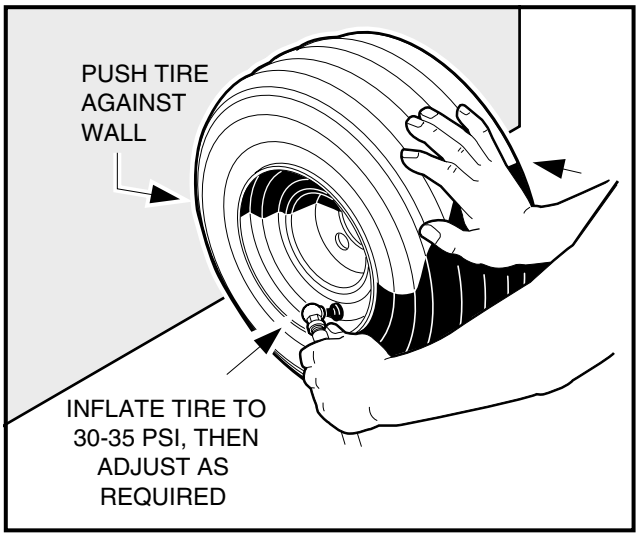

Figure 8-2 Inflate Tire

7. Quickly remove the air nozzle and install the valve core.
8. Adjust air pressure in the tire to 16-18 psi (110-124 kPa) for Turf 1 and Carryall 1 gasoline vehicles; 18-20 psi (124-138 kPa) for Turf 1 and Carryall 1 electric vehicles; or 30-34 psi (207-234 kPa) for all other vehicles, and then immerse the wheel and tire assembly in water to make sure there are no leaks.

SECTION 9 – REAR SUSPENSION

⚠ WARNING

- ONLY TRAINED TECHNICIANS SHOULD REPAIR OR SERVICE THIS VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN MECHANICAL REPAIR. FOLLOW ALL PROCEDURES EXACTLY AND HEED ALL WARNING STATEMENTS IN THIS MANUAL.
- WEAR SAFETY GLASSES OR APPROVED EYE PROTECTION WHILE SERVICING VEHICLE. WEAR A FULL FACE SHIELD WHEN WORKING WITH BATTERIES.
- TURN KEY SWITCH **OFF**, PLACE FORWARD/REVERSE HANDLE IN THE **NEUTRAL** POSITION, AND REMOVE KEY PRIOR TO SERVICING.
- DO NOT WEAR LOOSE CLOTHING. REMOVE JEWELRY SUCH AS RINGS, WATCHES, CHAINS, ETC. BEFORE SERVICING VEHICLE.
- USE INSULATED TOOLS WHEN WORKING NEAR BATTERIES OR ELECTRICAL CONNECTIONS.
- MOVING PARTS! DO NOT ATTEMPT TO SERVICE THE VEHICLE WHILE IT IS RUNNING.
- HOT! DO NOT ATTEMPT TO SERVICE HOT MOTOR, ENGINE, OR EXHAUST SYSTEM. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BURNS.
- LIFT ONLY ONE END OF THE VEHICLE AT A TIME. BEFORE LIFTING, LOCK THE BRAKES, **UNLOAD THE CARGO BED** AND CHOCK THE WHEELS THAT REMAIN ON THE FLOOR. USE A SUITABLE LIFTING DEVICE (CHAIN HOIST OR HYDRAULIC FLOOR JACK) WITH 1000 LB (454 KG.) MINIMUM LIFTING CAPACITY. DO NOT USE LIFTING DEVICE TO HOLD VEHICLE IN RAISED POSITION. USE APPROVED JACK STANDS OF PROPER WEIGHT CAPACITY TO SUPPORT THE VEHICLE.

GASOLINE VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE:
  - DISCONNECT BATTERY CABLES, NEGATIVE (–) FIRST.
  - DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.
- FRAME GROUND - DO NOT ALLOW TOOLS OR OTHER METAL OBJECTS TO CONTACT FRAME WHEN DISCONNECTING BATTERY CABLES OR OTHER ELECTRICAL WIRING. NEVER ALLOW A POSITIVE WIRE TO TOUCH THE VEHICLE FRAME, ENGINE, MOUNTING PLATE, OR OTHER METAL COMPONENT.

ELECTRIC VEHICLES ONLY:

- TO AVOID UNINTENTIONALLY STARTING THE VEHICLE, DISCONNECT BATTERY CABLES, NEGATIVE CABLE FIRST.
- **AFTER** DISCONNECTING BATTERIES, DISCHARGE THE CONTROLLER AS FOLLOWS:
  - TURN KEY SWITCH TO **ON** AND PLACE FORWARD/REVERSE HANDLE IN **REVERSE**.
  - SLOWLY DEPRESS THE ACCELERATOR PEDAL AND KEEP IT DEPRESSED UNTIL THE REVERSE WARNING BUZZER CAN NO LONGER BE HEARD. WHEN THE BUZZER STOPS SOUNDING, THE CONTROLLER IS DISCHARGED.

GENERAL INFORMATION

The rear suspension and power train of the gasoline and electric vehicle move independently from the vehicle frame. The suspension includes two multi-leaf springs controlled by two hydraulic shock absorbers mounted between the spring mounting plate and the frame. On the gasoline vehicle, the engine is mounted on an engine mounting plate that moves with the suspension. At the front of the mounting plate, a snubber controls mounting plate motion. The rear suspension on the gasoline Turf 2, 6, Carryall 2, 2 Plus and 6 vehicles also includes a stabilizer bar that reduces side to side sway.

SHOCK ABSORBERS

Read WARNING on page 9-1.

INSPECTING AND REMOVING SHOCK ABSORBERS

1. Check shock absorbers (7) for fluid leakage around the lower housing of the shock absorber body. Replace leaking shock absorbers **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.
2. To remove a shock absorber (7), remove the nut (5), cup washer and rubber bushing (9 and 10) from the upper shock absorber stem **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.
3. Remove lower mounting hardware (5, 9 and 10) on shock absorber lower mount **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**. **See also Figure 9-1, Page 9-2.**
4. Compress the shock absorber to remove it **(Figure 9-1, Page 9-2)**.

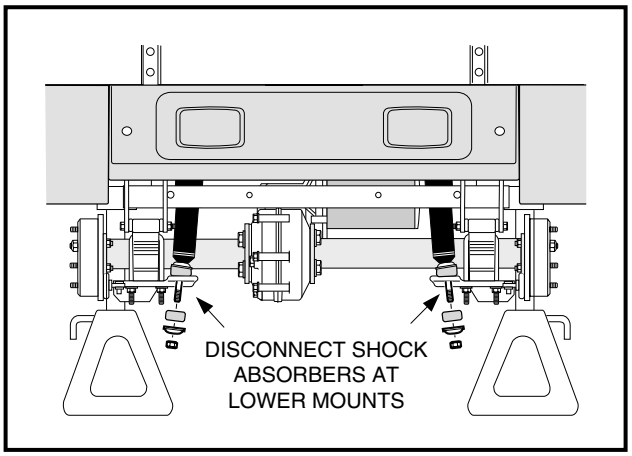

Figure 9-1 Remove Shock Absorbers

INSTALLING SHOCK ABSORBERS

NOTE

- WHEN INSTALLING SHOCK ABSORBERS, MAKE SURE FRONT SHOCKS HAVE IDENTICAL PART NUMBERS AND REAR SHOCKS HAVE IDENTICAL PART NUMBERS.

1. To install, reverse the removal procedure.
2. On the upper shock absorber mount, tighten nut (5) until rubber bushing (10) expands to size of cup washer.
3. On the lower shock absorber mount, install mounting hardware. Tighten the nut (5) until the rubber bushing (10) expands to the same diameter as the cup washer **(Figure 9-1, Page 9-2)**.

MULTI-LEAF SPRINGS

Read WARNING on page 9-1.

NOTE

- THERE ARE TWO DIFFERENT TYPES OF SUSPENSION SYSTEMS COMMON TO CLUB CAR VEHICLES. THE RECOMMENDED METHOD OF DETERMINING THE SUSPENSION TYPE IS TO LOOK FOR THE PRESENCE OF JOUNCE BUMPERS (20) **(FIGURE 9-3, PAGE 9-4)**. VEHICLES WITHOUT JOUNCE BUMPERS UTILIZE A PAIR OF NEWLY DESIGNED LEAF SPRINGS.

REMOVING THE MULTI-LEAF SPRINGS

1. Loosen the lug nuts on the wheel(s) to be removed.
2. Place chocks at the front wheels and lift rear of vehicle with a chain hoist or floor jack **(Figure 9-2, Page 9-3)**. Position jack stands under the frame cross-member between the rear leaf spring front frame mount and the side stringer, just forward of each rear wheel. Lower the vehicle to let the jack stands support the vehicle**. See WARNING on page 9-1.**

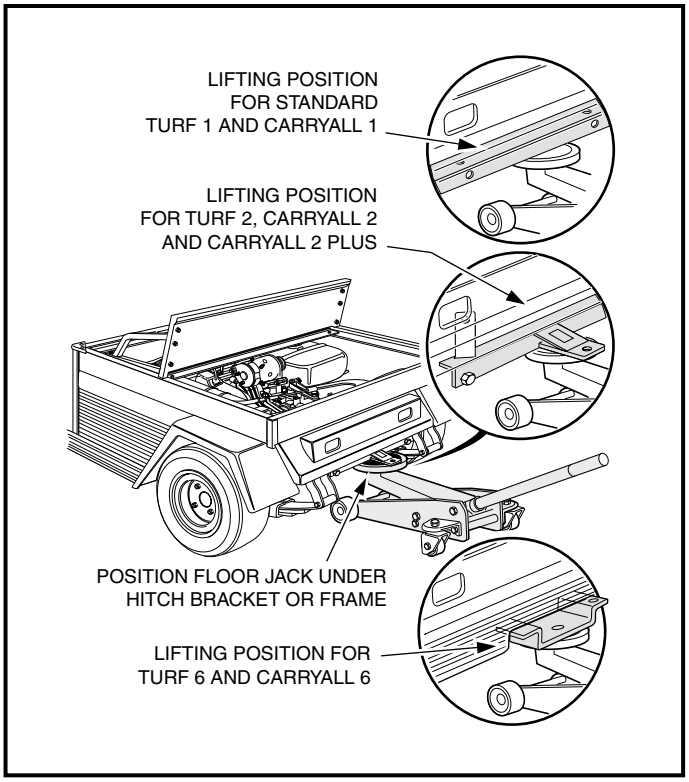

Figure 9-2 Lift Vehicle

3. Place a floor jack under the transaxle housing to support (but not lift) the drive train. Raise it just enough to relieve tension on the shock absorbers without compressing them.
4. Remove tire and wheel assembly on the side from which the spring is to be removed. Thread one lug nut onto a stud on the rear hub. This will keep the brake drum on the hub.
5. Remove lower nut (5), cup washer (9) and rubber bushing (10) from shock absorber (7) **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.
6. **For vehicles with jounce bumpers:**
   - 6.1. Remove the locknuts (14) and flat washers (13) (if present) attaching the U-bolt (11) to the shock mount bracket (16). Remove jounce bumper mount (20) and spacer (21) **(Figure 9-3, Page 9-4)**.
   - 6.2. Allow shock mount bracket (16) to rotate downward and remove spring retainer (22). Do not disconnect brake cable from bracket **(Figure 9-3, Page 9-4)**.
7. **For vehicles without jounce bumpers:**
   - 7.1. Remove the locknuts (14) attaching the U-bolt (11) to the shock mount bracket (16). Do not disconnect brake cable from bracket **(Figure 9-4, Page 9-5)**.
8. Raise axle with floor jack until axle saddle (23) is 1 inch (2.5 cm) above spring **(Figure 9-3, Page 9-4)**.

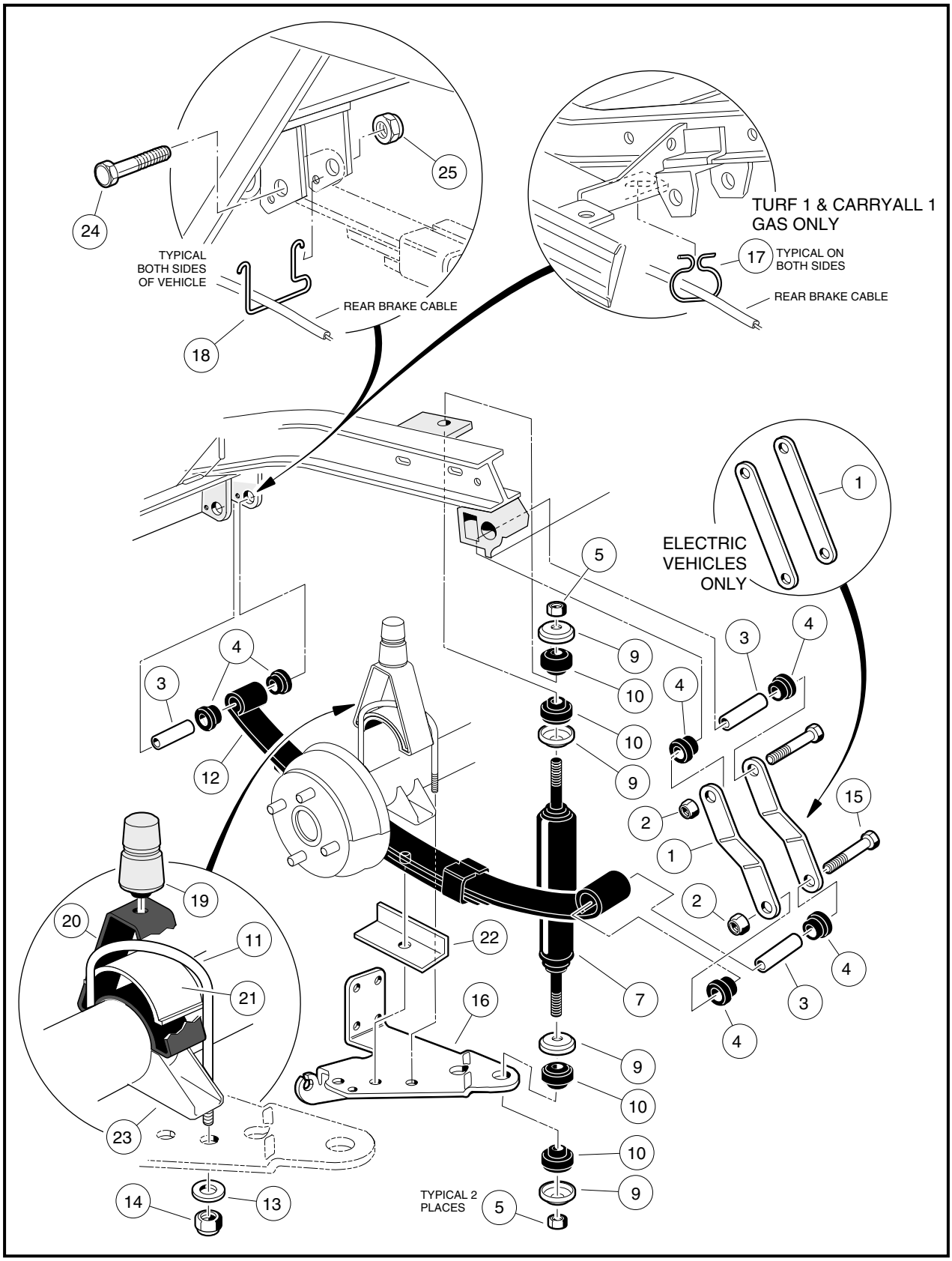

Figure 9-3 Rear Suspension - Vehicles With Jounce Bumpers

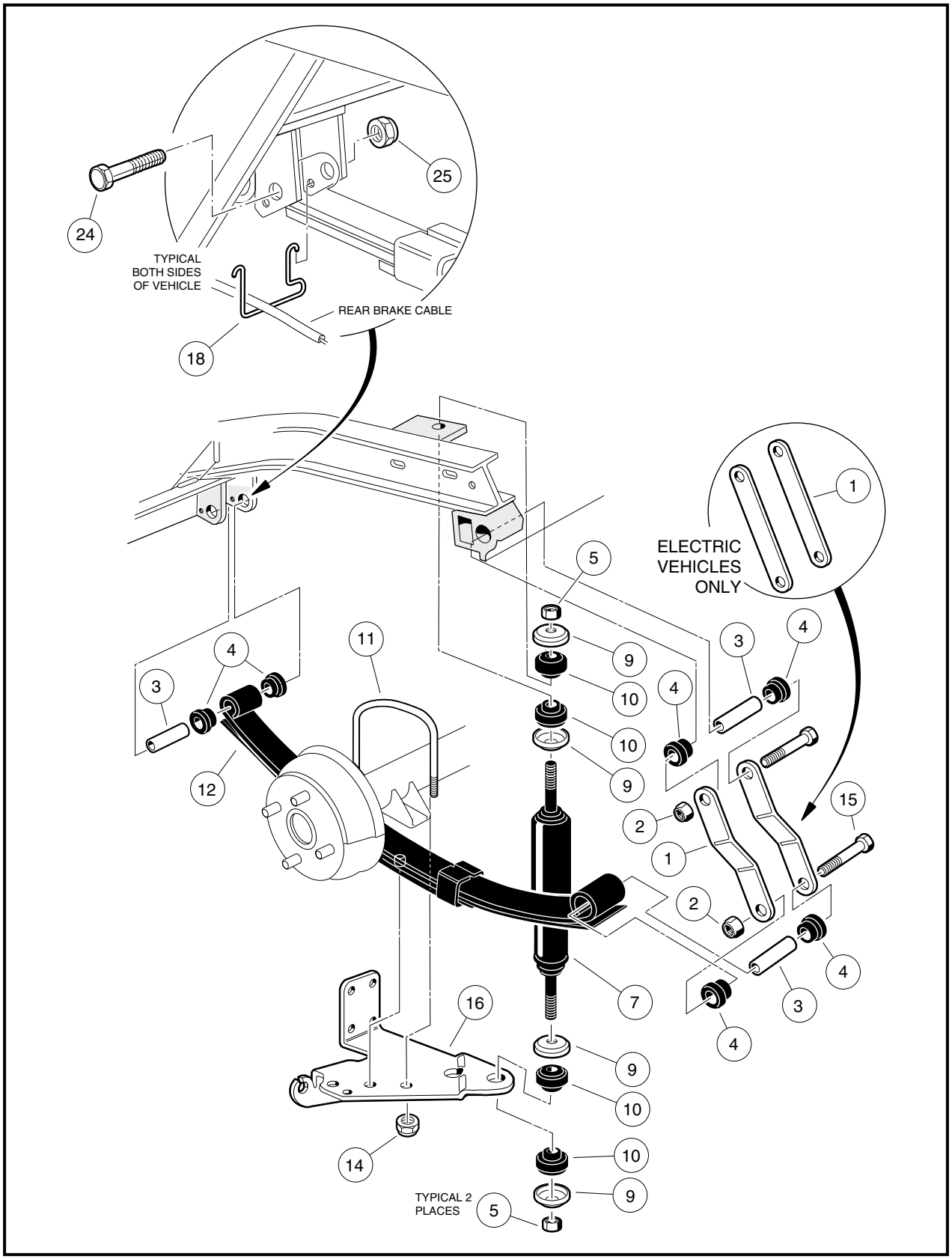

Figure 9-4 Rear Suspension - Vehicles Without Jounce Bumpers

Removing the Multi-Leaf Springs, Continued:

9. Remove bolt (15) and locknut (2) attaching the leaf spring (12) to the rear shackle (1) **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.
10. Allow rear of leaf spring (12) to rest on the ground and remove the bolt (24) and locknut (25) attaching the front of the spring to the vehicle frame **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**. Remove spring from vehicle.
11. Inspect the rubber bushings (4) and steel sleeves (3) in the spring eyes and replace them if they are worn or damaged **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.

INSTALLING THE MULTI-LEAF SPRINGS

NOTE

- WHEN INSTALLING REAR LEAF SPRINGS, MAKE SURE THAT BOTH SPRINGS HAVE IDENTICAL PART NUMBERS.

1. Install rubber bushings (4) and steel sleeves (3) into leaf spring eyes if bushings were removed **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.
2. Place front of leaf spring (12) into vehicle frame and insert bolt (24) through frame and leaf spring eye. Install locknut (25) and tighten to 15 ft-lb (20.3 N·m) **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.
3. Align the other end of leaf spring with the holes in the spring shackles (1). Insert bolt (15) through leaf spring eye and shackles. Install locknut (2) and tighten to 15 ft-lb (20.3 N·m). Lower transaxle onto leaf spring (12) **(Figure 9-3, Page 9-4 or Figure 9-4, Page 9-5)**.

⚠ CAUTION

- WHEN PLACING TRANSAXLE ON SPRING, BE SURE TO POSITION LOCATING BOLT ON THE SPRING IN THE LOCATING HOLE IN THE TRANSAXLE SADDLE (23) **(FIGURE 9-3, PAGE 9-4)**.

4. **For vehicles with jounce bumpers:**
   - 4.1. Install spring retainer (22) and shock mount bracket (16) onto locating bolt at bottom center of leaf-spring **(Figure 9-3, Page 9-4)**. **See preceding NOTE.**
   - 4.2. Position jounce bumper mount (20) with spacer (21) onto axle tube. Install U-bolt (11), flat washers (13) (if present) and locknuts (14). Tighten U-bolt to 25 ft-lb (34 N·m) **(Figure 9-3, Page 9-4)**.
5. **For vehicles without jounce bumpers:**
   - 5.1. Install shock mount bracket (16) onto locating bolt at bottom center of leaf-spring **(Figure 9-4, Page 9-5)**. **See preceding NOTE.**
   - 5.2. Install U-bolt (11) and locknuts (14). Tighten U-bolt to 25 ft-lb (34 N·m) **(Figure 9-4, Page 9-5)**.
6. Install shock absorber. **See Page 9-2**.

NOTE

- WHEN INSTALLING SHOCK ABSORBERS, MAKE SURE REAR SHOCKS HAVE IDENTICAL PART NUMBERS.

SNUBBER

Read WARNING on Page 9-1.

The snubber is installed on the gasoline vehicle only.

SNUBBER REMOVAL

1. Support the drive train with a floor jack under the engine mounting plate so that the snubber is raised slightly and does not rest on the vehicle frame.
2. Remove the two bolts (2) and two locknuts (1) securing the snubber bracket to the engine mounting plate **(Figure 9-5, Page 9-7)**.
3. Slide snubber and bracket assembly toward battery to remove it from vehicle.

SNUBBER INSTALLATION

1. Install in the reverse order of removal.
2. Tighten snubber bracket mounting nuts (1) to 13 ft-lb (17.6 N·m) **(Figure 9-5, Page 9-7)**.
3. Tighten snubber bracket mounting nuts (1) to 13 ft-lb (17.6 N·m) **(Figure 9-5, Page 9-7)**.

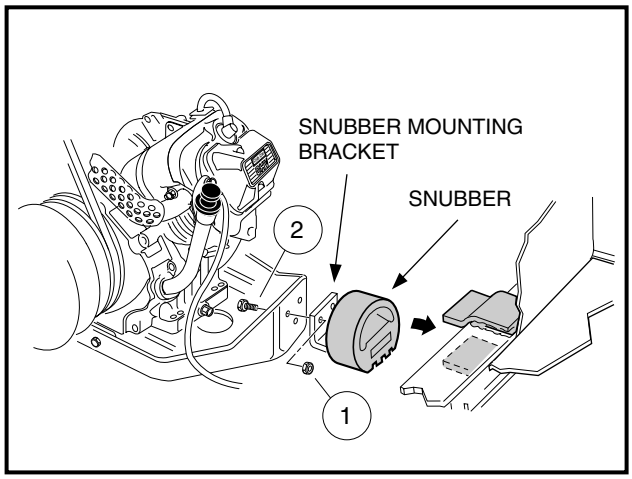

Figure 9-5 Snubber Brackets

STABILIZER BAR

Read WARNING on page 9-1.

A stabilizer bar is installed on gasoline Turf 2, Turf 6, Carryall 2, Carryall 2 Plus and Carryall 6 vehicles.

STABILIZER BAR REMOVAL

1. Place chocks at the front wheels and lift the rear of the vehicle with a chain hoist or floor jack. Position jack stands under the frame cross-member between the spring mount and the side stringer, just forward of each rear wheel. Lower vehicle to let the jack stands support the vehicle.
2. Remove bolt (6), lock washer (7), flat washers (4), compression mounts (3) and spacer (2) from left and right stabilizer bar links (5). Do not remove the stabilizer bar links from frame **(Figure 9-6, Page 9-8).**

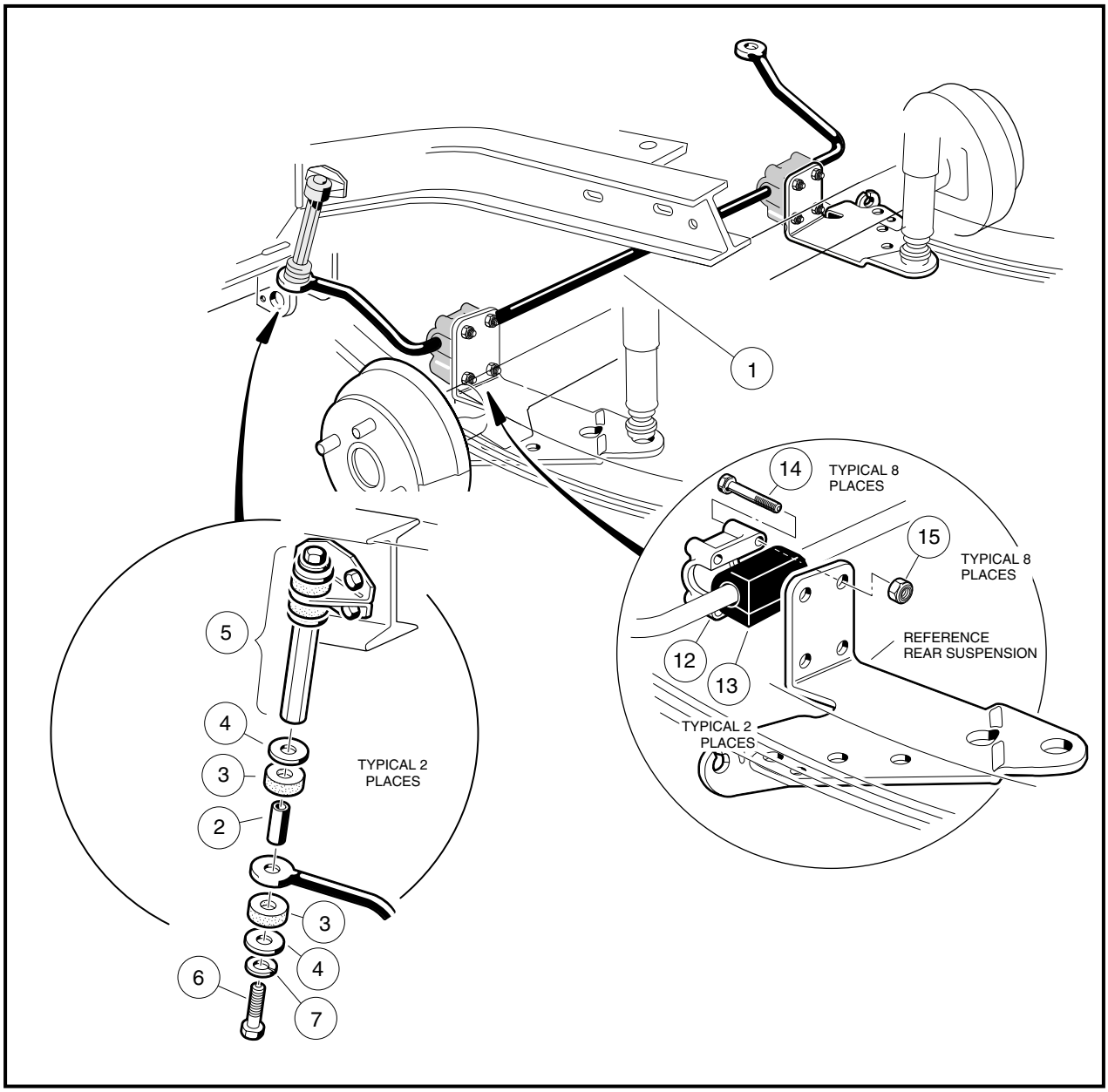

Figure 9-6 Stabilizer Bar

3. Remove bolts (14) and locknuts (15) from the left and right stabilizer bar bushing support (12) and remove supports and stabilizer bar (1) from vehicle **(Figure 9-6, Page 9-8)**.
4. Remove bushings (13) from stabilizer bar (1) **(Figure 9-6, Page 9-8)**.

STABILIZER BAR INSTALLATION

1. Position stabilizer bar at the transaxle mounting brackets. Install a bushing (13) onto bar, making sure the bushing is located in the center of the four mounting holes in the bracket **(Figure 9-6, Page 9-8)**.
2. Place the bushing support (12) onto the bushing. Install four hex head bolts (14) through the bushing support and transaxle mounting bracket **(Figure 9-6, Page 9-8)**.
3. Install four locknuts (15) and tighten to 75 in-lb (8.4 N·m).
4. Repeat steps 1, 2 and 3 for the other side of the stabilizer bar.

5. Place lock washer (7), flat washer (4), spacer (2) and compression mount (3) onto bolt (6). Install bolt through mounting hole in stabilizer bar and place another compression mount (3) and flat washer (4) onto bolt **(Figure 9-6, Page 9-8)**.
6. Install the bolt (6) with lock washer (7) through the upper stabilizer bar link mount (8) into the stabilizer bar link (5) and finger tighten.
7. Repeat steps 5 and 6 for the other side of the stabilizer bar.
8. Tighten bolts (6) in the stabilizer bar links (5) to 17 ft-lb (23 N·m).
9. Place jack under transaxle and raise vehicle enough to remove jack stands. Lower the vehicle to the ground.

JOUNCE BUMPERS

Read WARNING on page 9-1.

REMOVAL

1. Grip jounce bumper (19) and pull from bumper mount (20) **(Figure 9-3, Page 9-4).**

INSTALLATION

1. Insert jounce bumper (19) into bumper mount (20) **(Figure 9-3, Page 9-4)**. Make sure the entire circumference of bumper is seated firmly in mounting hole.

A

B

C

D

F

G

H

T

W

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