TAYLOR-DUNN

MANUAL MC-425-01

OPERATORS and MAINTENANCE MANUAL

This Manual Covers Serial Numbers: 119429 & up

MODELS:

C4-25

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Introduction

ABOUT THIS MANUAL

This manual provides you with information you need to safely operate and maintain this vehicle.

We assume that those who will perform maintenance or repair operations are trained vehicle service technicians capable of performing minor and major repairs and are qualified to use the tools required.

We also assume that they have or will attend a training program designed to familiarize them with the safe operation and use of this particular vehicle.

This manual contains the following major sections:

SECTION 1: INTRODUCTION

Contains information about how to use this manual, a description of the Huskey, how to do an incoming inspection and vehicle specifications.

SECTION 2: SAFETY RULES AND OPERATIONAL INFORMATION

Provides safety rules and guidelines describes the driver training program and explains the operation of each control on the Huskey.

SECTION 3: MAINTENANCE PROCEDURES

Contains a scheduled maintenance checklist, lubrication diagram, troubleshooting guide, and detailed maintenance procedures.

SECTION 4: ILLUSTRATED PARTS

Includes an illustration and parts list for each assembly that has replaceable parts for the Huskey.

SPECIALLY REQUESTED OPTIONS ARE NOT COVERED IN THIS MANUAL. THE SERVICE AND REPAIR OF THESE OPTIONS MAY BE COVERED IN A SEPERATE SUPPLEMENT OR THEY MAY BE SHOWN WITH THEIR PARTS IN AN ILLUSTRATED PARTS LIST.

NOTATIONAL CONVENTIONS

The following types of notations are used throughout this manual:

⚠WARNING ***A warning alerts you of something that may cause injury to yourself or others. Be sure you exercise special care and follow any instructions provided in a warning message.***

⚠CAUTION *A caution informs you of something that may cause damage to the vehicle. Be sure you exercise special care and follow any instructions provided in a caution message.*

A NOTE PROVIDES ADDITIONAL INFORMATION ABOUT A SUBJECT.

VEHICLE DESCRIPTION

This manual applies to vehicles with serial numbers starting at 128406.

The Huskey is designed to be driven on smooth surfaces in and around industrial plants, nurseries, institutions, motels, mobile home parks and resorts. It is not to be driven on public highways.

The Huskey is available in speeds ranging approximately from 7 m.p.h. to 15 m.p.h.. These are the speeds at which the truck can travel on a level surface with no load. Exceeding these speeds may result in steering difficulty, motor damage, and/or loss of control. It is equally important that the vehicle not be towed faster than 5 m.p.h..

The Huskey is a tow truck that can tow up to 15,000 pounds. Various options are available to enable you to customize the vehicle to suit your particular needs (consult your Taylor-Dunn® salesperson or representative for current options).

This vehicle conforms to requirements for Type E vehicles as described in O.S.H.A. Standard Section 1910.178 (Powered Industrial Trucks) and with all applicable portions of the American National Standard for Operator Controlled Industrial Tow Tractors (ANSI B56.9).

The model and serial number for this vehicle are imprinted on a decal located on the inner left side of the front cowl. The vehicle serial number is stamped in the frame, either to the right of the battery connector mount or in the left rear corner next to the battery.

STANDARD SPECIFICATIONS Huskey

SPECIFICATION TABLE	
ITEM	SPECIFICATION
Standard Dimensions	199.4 L X 96.5 W X 142.2 H Centimeters
	78.5 L X 38 W X 56 H Inches
Dry Weight	750 kg (Less Batteries)
	1650 Lbs.
Turning Radius	175.3 Centimeters
	69 Inches
Brakes	Front Disc
	Rear Disc
Motor	DC Series Wound, 13hp @ 2400 rpm
Tires	4.80 X 8 Load Range C
Tire Pressure	90 psi max.
Maximum Towed Load	7,000 kg (On Level Surface)
	15,000 Lbs. (On Level Surface)
Battery	48V, 1,000 Lbs.(min) - 1,400 Lbs.(max) Cable Position 'A', 30" Long. Battery Connector - SB350 Blue

TAKING DELIVERY OF YOUR VEHICLE

THIS VEHICLE SHOULD BE INSPECTED IMMEDIATELY AFTER DELIVERY. Use the following guidelines to make sure there are no obvious problems.

INSPECTING THE VEHICLE

- Examine the contents of all packages and accessories that may have come in separate packages with this vehicle. Make sure everything listed on the packing slip is there. Nothing should look broken or damaged.
- Examine any visible wiring for obvious signs of damage. Check that all connections are secure.
- Check that battery connections are tight and all cells are filled.
- Inspect the tires for obvious wear or damage. Check the tire pressure. Make sure that all wheel lugs are secure.
- Check the body, seat, trim, and other external parts for obvious damage.

CHECKING THE CONTROLS

Operate each of the following controls before turning on the key-switch:

- Accelerator pedal
- Brake pedal
- Forward - reverse selector switch
- Battery disconnect switch
- Key-switch
- Parking brake
- Steering wheel
- Horn
- Lights

Each control should operate smoothly and easily without sticking or requiring undue effort.

WHAT TO DO IF YOU FIND A PROBLEM

If you find a problem with this vehicle you must immediately file a claim with the carrier. The claim must be filed within 48 hours of receiving this vehicle. Forward a copy of the damage claim to your Taylor-Dunn® dealer.

Do not repair modify or adjust any part of this vehicle unless you are authorized to do so. Incorrect repairs may result in injury to yourself and others and cause the invalidation of your warranty.

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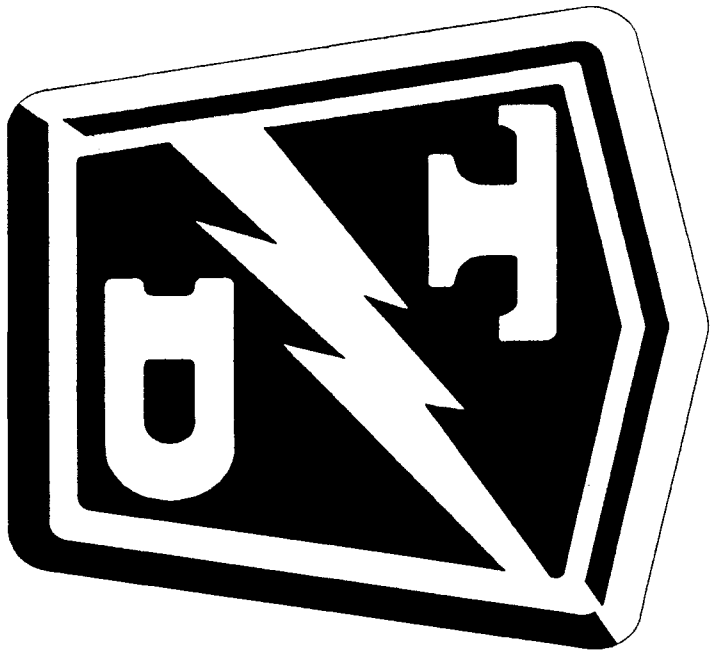

Safety Rules and Operational Information

SAFETY RULES AND GUIDELINES

It is the responsibility of the owner of this vehicle to assure that the operator understands the various controls and operating characteristics of this vehicle and obeys the following safety rules and guidelines (extracted from the American National Standards Institute Operator Controlled Industrial Tow Tractors ANSI B56.9).

This vehicle is designed to be driven over smooth surfaces in and around places such as warehouses, nurseries, motels, parks, and resorts. Before you drive this vehicle please observe the following safety rules and guidelines:

This vehicle is not designed to be driven on public highways. The drive is built to order. It is available in speeds ranging from 7 m.p.h. to 15 m.p.h.. This is the speed at which the truck travels on a level surface with no load. Do not exceed this speed. Exceeding this speed may result in steering difficulty, motor damage, and/or loss of control. It is not designed to be towed more than 5 m.p.h..

- Do not drive this vehicle unless you are a qualified and trained operator.
- Keep all body parts (head, arms', legs') inside this vehicle while it is moving.
- Drive slowly when making a turn especially if the ground is wet slippery or when driving on an incline.
- This vehicle may overturn easily if turned sharply when driving at high speeds, especially when on an incline.
- Drive only on level surfaces or on surfaces having an incline of no more than 10% (5.6 degrees.).
- Do not drive over loose objects, holes, or bumps.
- Observe all traffic regulations and speed limits.
- Keep to the right under normal conditions.
- Maintain a safe distance from all objects.
- Keep the vehicle under control at all times.
- Yield right of way to pedestrians, ambulances, fire trucks, or other vehicles in emergencies.
- Do not overtake another vehicle at intersections, blind spots, or other dangerous locations.
- Keep a clear view ahead at all times.

DRIVER TRAINING PROGRAM

The owner of this vehicle shall conduct an Operator Training program for all those who will be operating this vehicle. The training program shall not be condensed for those claiming to have previous vehicle operation experience. Successful completion of the Operator Training program shall be required for all personnel who operate this vehicle.

The Operator Training program shall include the following:

- Operation of this vehicle under circumstances normally associated with your particular environment.
- Emphasis on the safety of cargo and personnel.
- All safety rules contained within this manual.
- Proper operation of all vehicle controls.
- A vehicle operation and driving test.

DRIVER QUALIFICATIONS.

Only those who have successfully completed the Operator Training program are authorized to drive this vehicle. Operators must possess the visual, auditory, physical, and mental ability to safely operate this vehicle as specified in the American National Standards Institute Operator Controlled Industrial Tow Tractors (ANSI B56.9).

The following are minimum requirements necessary to qualify as an operator of this vehicle:

- Demonstrate a working knowledge of each control.
- Understand all safety rules and guidelines as presented in this manual.
- Know how to properly load and unload cargo.
- Know how to properly park this vehicle.
- Recognize an improperly maintained vehicle.
- Demonstrate ability to handle this vehicle in all conditions. .

Vehicle Controls and Instruments

The following describes the use of each control on this vehicle.

NOTE SOME CONTROLS ARE OPTIONAL EQUIPMENT THAT MAY NOT BE INSTALLED ON THIS VEHICLE.

KEY-SWITCH

A key-switch located on the instrument panel starts the vehicle. Rotate the key clockwise to turn the vehicle on counterclockwise to turn the vehicle off.

⚠WARNING ***The key-switch should be in the off position whenever the operator leaves the driver's seat.***

This switch is also designed to secure and disable the vehicle. You can remove the key only when the key-switch is in the OFF position.

SEAT INTERLOCK SWITCH

A switch located on the rear of the seat back disables the vehicle when the driver leaves the seat. The driver must be seated for the vehicle to operate.

This is a safety feature and should never be bypassed.

FORWARD-REVERSE SWITCH

The forward-reverse rocker switch, located on the dash, determines the direction of travel (forward or reverse) of the vehicle. Push the top of the switch to make the vehicle go forward. Push the bottom of the switch to go in reverse.

⚠CAUTION *DO NOT SHIFT from forward to reverse or vice-versa while the vehicle is in motion. Make sure the vehicle is completely stopped before shifting.*

⚠WARNING ***The Forward-Reverse switch has a neutral position. The Forward-Reverse switch should be in the neutral position with the park brake set whenever the operator leaves the driver's seat.***

ACCELERATOR PEDAL

The accelerator pedal located to the right of the brake pedal, controls the speed of the vehicle and is designed for right foot operation. It operates the same way as the accelerator pedal in an automobile and controls the vehicle's speed.

Depress the pedal to speed the vehicle up. Release the pedal to slow down.

NOTE THE FOOT BRAKE PEDAL WILL NEED TO BE USED TO SLOW THIS VEHICLE ON A DOWNGRADE.

STEERING

The steering wheel and steering system is an automotive type . To turn right, turn the steering wheel to the right (clockwise). To turn left, turn the steering wheel to the left (counter clockwise).

TILT STEERING COLUMN RELEASE LEVER

The steering column can be tilted by using the lever on the lower left side of the column. Pull the lever toward you to relaase the column. Then move the column to the position you are most comfortable.

TURN SIGNAL

The turn signal lever is located on the left side of the steering column, just above the tilt steering column lever. Push the lever up to activate the right turn signal and pull it down toward you to activate the left turn signals.

HAZARD LIGHTS SWITH

The hazard light switch is located on the right side of the steering column. It is a small push pull switch. To activate the hazard lights pull this switch out. To turn the hazard lights off push the switch in.

FOOT BRAKE PEDAL

The foot brake pedal located to the right of the steering column is for operation with the right foot only. It works the same as the brake in an automobile. Applying pressure to the brake pedal slows the vehicle according to the amount of pressure you apply. Removing your foot from the pedal releases the braking action.

PARK BRAKE LEVER

The park brake is actuated with a hand lever located to the right of the seat. To set the park brake pull the lever back until it locks. To release the park brake depress the button on the end of the handle.

⚠CAUTION *Do not operate the vehicle with the parking brake applied. Severe motor/control damage will result.*

HORN BUTTON

The horn button is located in the center of the steering wheel. Depress the button to sound the horn, release it to turn it off.

INSTRUMENT PANEL

The headlight switch is located at the left side top of the instrument panel.

BATTERY STATUS/HOUR METER

The battery status/hour meter is located in the center of the instrument panel. This tracks the number of hours the vehicle has been in operation and also monitors the state of charge on the batteries.

When fully charged the far right LED (green) is on. As the battery discharges the LED moves to the left (green to yellow). When one LED (red) on the left side is flashing the battery is at energy reserve. When the two left LED's (red) are flashing the battery is empty.

HIGH/LOW SWITCH

The high/low switch is located under the light switch.


Indicates slow (low power) speed.


Indicates fast (high power) speed.

Driving

Slow down and sound the horn when approaching a corner or other blind intersection.

No horseplay or dangerous driving.

Do not drive this vehicle in hazardous areas unless this vehicle is approved and labeled for such operation.

Immediately report any accident or vehicle problem to your supervisor.

Loading and Unloading

Do not load items in the utility tray that can easily fall off this vehicle. The utility tray is limited to 50 pounds.

Do not carry any passengers .

Be extra careful when towing cargo that is wider or higher than this vehicle.

Parking

Set the parking brake and place the forward/reverse lever in neutral before leaving the vehicle.

If you will be away from this vehicle turn off the key-switch, remove the key and take the key with you.

- If you park this vehicle on an incline block the wheels as well as setting the parking brake.
- Do not block fire aisles, fire equipment or stairways.

Towing

To tow this vehicle attach a tow strap to the front bumper tow bar and place the forward/ reverse switch in the neutral position.

Use another driver to steer this vehicle while it is being towed; be sure the driver uses the brakes when the towing vehicle slows or stops.

⚠WARNING ***Do not exceed 5 M.p.h. or carry any passengers while towing this***

vehicle.

Storing and returning to service

Do not store batteries in a discharged condition. Fill, charge and clean batteries fully before putting in storage

Lube all grease fittings.

Spray all exposed metal surfaces with a light oil.

Clean and dry all exposed electrical connections.

Inflate tires to proper pressure and then block them off the ground.

If stored for a prolonged period the batteries should be charged as follows;

Storage temperature	Charge
Below 40° F	Every 6 months
40° - 60° F	Every 2 months
Above 60° F	Once a month

RETURNING TO SERVICE

Check state of charge of batteries and charge if necessary.

Perform ALL maintenance checks in the periodic check list in section 3.

Test drive before putting into normal service.

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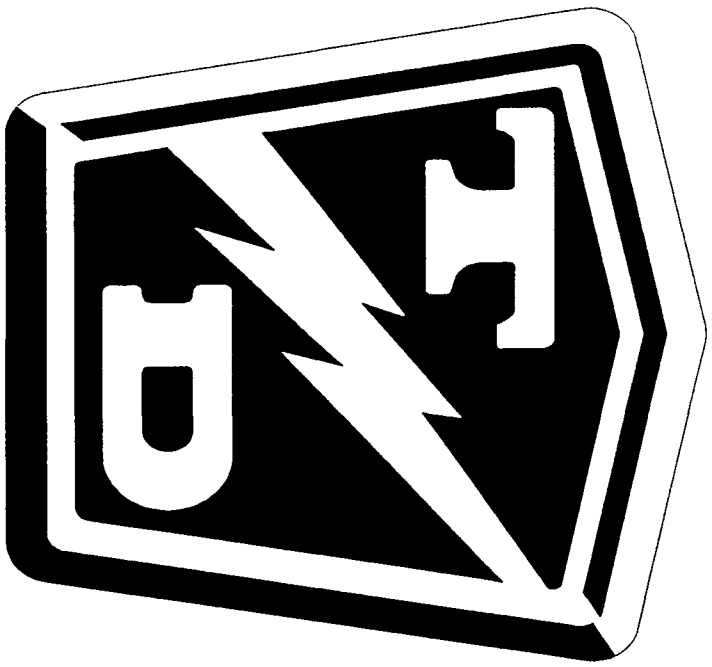


Maintenance and Service Procedures

This section explains how to perform the scheduled maintenance procedures. Use the Maintenance Checklist to determine how often you should perform each procedure. Vehicle maintenance or repairs should only be performed by a qualified mechanic.

This section contains the following:

- Maintenance guidelines.
- Maintenance checklist.
- Lubrication chart.
- Troubleshooting guide.
- Detailed maintenance procedures.

Maintenance Guidelines

- Allow only qualified and authorized personnel to maintain repair adjust and inspect the vehicle.
- Before starting any repairs or maintenance immobilize the vehicle by turning the key switch off, removing the key and setting the park brake.
- Disconnect both of the main battery leads before working on or disconnecting any electrical component or wire.
- Block the chassis with jack stands before working under a raised vehicle.
- Conduct vehicle performance checks in an authorized area where safe clearance exists.
- Before starting the vehicle, follow the recommended safety procedures in Section 2, "Safety Rules and Operational Information."
- Avoid fire hazards and have fire protection equipment present in the work area. Do not use an open flame to check level or leakage of battery electrolyte. Do not use open pans of fuel or flammable fluids for cleaning parts.
- Ventilate the work area properly.
- Regularly inspect and maintain in a safe working condition, brakes, steering mechanisms, speed and directional control mechanisms, warning devices, lights, governors, guards and safety devices.
- Inspect and maintain battery limit switches, protective devices, electrical conductors and connections in conformance with Taylor-Dunn's recommended procedures.
- Keep the vehicle in clean condition to minimize fire hazards and facilitate detection of loose or defective parts.

Severe Duty Inspection: If these vehicles are operated in severe conditions all service procedures should be carried out twice as often as stated in the table on the next page. In addition the whole vehicle should be inspected monthly for signs of damage and repaired immediately.

The following list is meant as a guide and is not all inclusive.

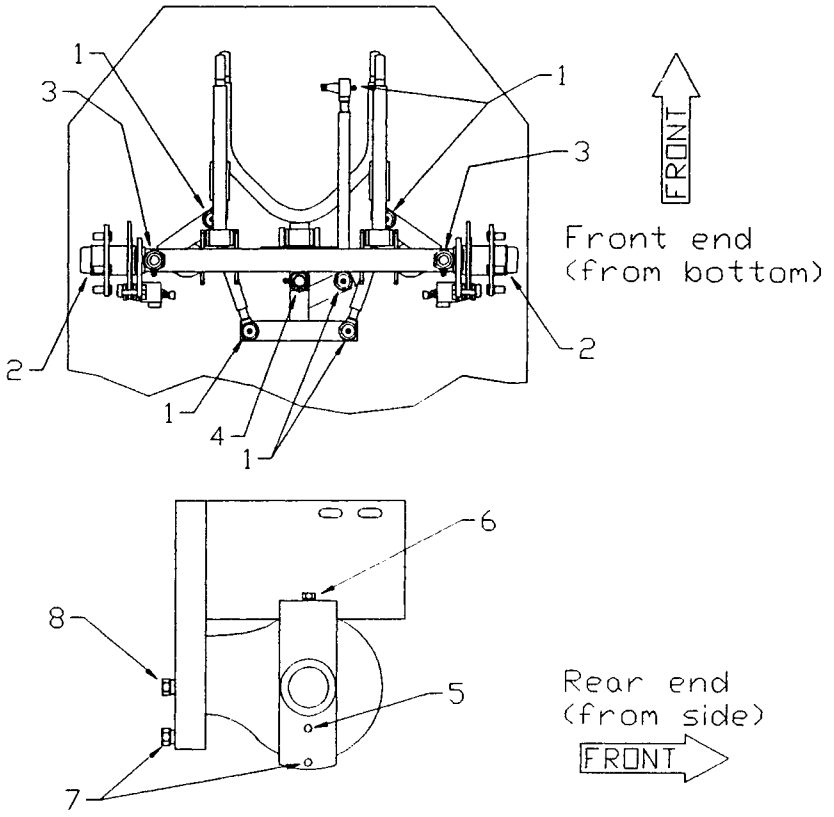
SEVERE CONDITIONS refer to operation:

- In extreme in temperature.
- On bumpy, dusty, or ill maintained roads.
- In excessivly wet areas.
- In corrosive or contaminated areas.
- At or near maximum capacity for more than 50% of the operating time.
- On multiple shifts.

Periodic Maintenance Checklist					
Maintenance Item	Weekly (20hrs)	Monthly (80hrs)	Quaterly (250hrs)	Semi - Annual (500hrs)	Annualy (1000hrs)
Check Condition of Tires (pg 3-45)	X				
Check and Fill Batteries (pg 3-42)	X				
Check Brake System (pg 3-7 to 3-18)		X			
Check Steering System (pg 3-19 to 3-24)		X			
Lubricate Vehicle (pg 3-4)			X		
Clean and Tighten All Wire Connections			X		
Wash and Service Batteries (pg 3-42 to 3-43)			X		
Check Park Brake (pg 3-15)				X	
Check Front Wheel Bearings (pg 3-25)				X	
Check Rear Axle Oil (pg 3-31)				X	
Change Rear Axle Oil (pg 3-31)					X
Check and Tighten all Nuts and Bolts					X
Clean and Repack Front Wheel Bearings (pg 3-25)					X

The page numbers listed in the table above are meant only as a guide to help you find the general infromation in this manual.

C4-25 LUBRICATION CHART



#	Description	Locations	Lubricant Type
1	Steering Ball Joints	6	General Purpose Grease
2	Front Wheel Bearings	4	High Temperature Wheel Bearing Grease
3	King Pin	2	General Purpose Grease
4	Steering Pivot Pin	1	General Purpose Grease
5	Drive Level Plug	1	
6	Drive Fill Plug	1	SAE 140 API GL-5 Hypoid Gear Oil
7	Drive Drain Plug	2	
8	Chain Case Fill/Level Plug	1	SAE 140 API GL-5 Hypoid Gear Oil

TROUBLESHOOTING GUIDE

Symptom	Probable Cause
Steering Pulls in One Direction	Front End Out of Alignment (pg 3-20)
	Low Tire Pressure (pg 3-45)
Hard Steering	Dry Lube Points in Steering Linkage (pg 3-4)
	Damaged King Pin/Ball Joint (pg 3-24)
	Low Tire Pressure (pg 3-45)
Excessive Steering Play	Worn Ball Joints (pg 3-24)
	Mis-Adjusted or Worn Steering Gear (pg 3-27)
	Loose Steering Linkage (pg 3-24)
Lack of Power or Slow Operation	Brakes or Parking Brakes Dragging (pg 3-15)
	Worn Drive Gears
	Front End Out of Alignment (pg 3-20)
	Defective Speed Control (pg 3-46)
Abnormal Noise	Worn Drive Gears or Bearings
	Worn Front /Rear Axle Bearings (pg 3-25)
	Loose Lug Nuts
	Motor Bearings Worn (pg 3-40)
Oil Leak in Rear Bearing Area	Rear Wheel Bearing and/or Gasket Failed (pg 3-31)
	Drive Over Filled
Brake Pedal Soft or Spongy	Air in Brake Lines
Brake Pedal Low	Brake Worn (1/16" Wear Limit)
	Brake Fluid Low
	Brakes Out of Adjustment
Braking Power Low	Brake Worn (1/16" Wear Limit)
	Brake Pads Contaminated with Fluid
	Brake Pedal Linkage Binding
	Brakes Out of Adjustment
	Air in Brake Lines

The page numbers listed in the table above are meant only as a guide to help you find the general infromation in this manual.

NOTES

Brakes

This section covers the installation and repair of brakes that are installed on the C4-25. Before continuing be prepared to dispose of any and all used brake fluid. Do not attempt to reuse any fluids that are discharged from the brake system while servicing it.

Be sure that you are fully aware of the brake system installed on the vehicle you are working on, before continuing.

⚠CAUTION *BRAKE FLUID IS CORROSIVE AND WILL DAMAGE PAINTED AREAS. AVOID SPILLING FLUID ON ANY SURFACE*

⚠WARNING ***The OEM does not supply asbestos fiber-brake pads/shoes with this or any vehicle. However, there is the possibility that the OEM brake pads/shoes were replaced with those containing asbestos fibers. Since this possibility does exit the brake pads should be handled as if, they do contain asbestos.***

Never use an air hose or dry brush to clean brake assemblies. Use an OSHA, approved vacuum cleaner or any alternate method approved by OSHA to minimize the hazard caused by airborne asbestos fibers and brake dust.

Do not grind, sand, brake, or chisel the brake pads/shoes as this will cause unnecessary dust possibly releasing asbestos fibers into the air.

Always wear protective clothing and a face shield when working on the brake pads.

Inhaled asbestos fibers have been found to cause cancer and respiratory diseases.

Do not drive the vehicle if any worn or broken part is detected in any part of the brake system. The cause of the damage must be repaired immediately.

Disc Brakes

The hydraulic disc brakes, available on these vehicles are not adjustable. However, they do need to be periodically inspected, for any possible leaks and to check the wear of the brake pads and, rotors. Follow the procedures below to service these brake systems.

NOTE THE BRAKE ROTORS ARE AN INTEGRAL PART OF EACH AXLE AND HUB. IF THE ROTORS ARE DAMAGED OR WORN, THE AXLE OR HUB MUST BE REPLACED. BE SURE TO ALWAYS USE DOT5 SILICONE BASE BRAKE FLUID TO MAINTAIN MAXIMUM CORRSION RESISTANCE.

Brake Pads

To remove and replace the brake pads:

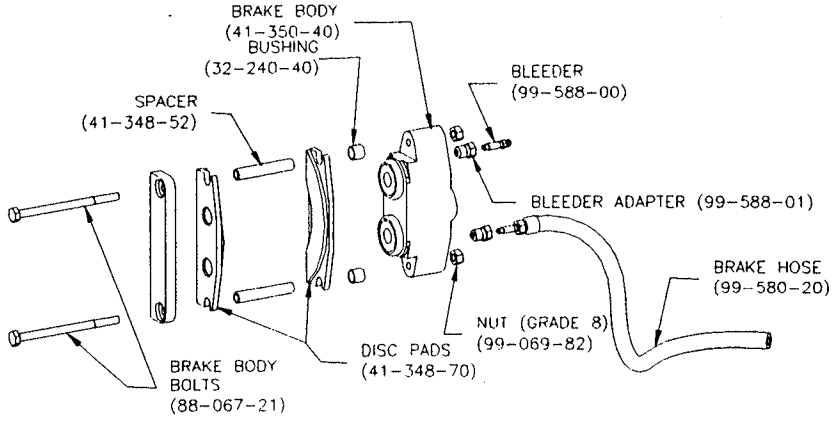
1. Place blocks under the wheels to prevent vehicle movement.
2. Disconnect the main positive and negative terminals from the batteries.
3. Raise either the front or rear of the vehicle, (depending on which set of brakes you are working on,) and support the vehicle with jack stands.

⚠WARNING ***Always use a lifting strap, hoist, and jack stands, of adequate capacity to lift and support the vehicle. Failure to use lifting and support devices of rated load capacity may result in serious injury.***

4. Remove the wheels.
5. Remove the two 1/4" brake body bolts (*See Brake Figure 1 Below*).

⚠WARNING ***Do not let the brake body hang by the brake hose. Support the brake body to prevent damage to the hose.***

6. Inspect the spacers for wear and replace as necessary.



Brake Figure 1: Exploded View of Disc Brake Assembly

7. Replace the spacer bushings in the axle retainer bracket.
8. Replace the brake pads and reassemble the brake to the retainer bracket (*See Brake Figure 1 on the previous page*).

⚠WARNING ***Always use new locknuts and bolts. Locknuts and bolts become less effective if used more than once. If the locknuts or bolts holding the brake to the drive come loose, serious injury may occur.***

9. Install new grade 8 locknuts and brake mounting bolts.
10. Tighten the bolts to 11 ft-lbs.
11. Test the brakes to ensure proper installation and braking.

Repairing the Brake Body

1. Remove the brake body. Refer to replacing the brake pads.
2. Carefully remove the two pistons, rubber boots and o-rings.

⚠WARNING ***The pistons are very brittle and break easily***

3. Clean and dry the brake body completely.
4. Make sure there are no contaminants left in the brake body.
5. Inspect the interior of the brake body. If any damage or wear is found it must be replaced.
6. Reassemble the brake body using clean DOT 5-brake fluid as a lubricant.
7. Use tool #41-350-13 to install the rubber boots
8. Install the brake body.

⚠WARNING ***The 1/4" gr. 8 locknuts for the brake body bolts must be replaced.***

9. Tighten the new retaining bolt lock nuts to 11-ft lbs.
10. Bleed the brakes. (*Refer to "Bleeding the Brakes," on page 3-10.)*
11. Lower and test-drive the vehicle.

You must bleed the entire hydraulic system to remove any air from the system, after removing brake lines, hoses or the master cylinder. The best way to bleed the brakes is to have one person at the brake pedal, and anther person opening and closing the bleeder valve at each wheel.

Before beginning this service or any service read the **"Maintenance Guidelines,"** on page **3-2** and follow each of the bulleted items before continuing.

Make provisions to catch and properly dispose of the brake fluid in the hydraulic brake system.

⚠CAUTION *BRAKE FLUID IS CORROSIVE AND WILL DAMAGE PAINTED AREAS. AVOID SPILLING FLUID ON ANY SURFACE.*

NOTE YOU SHOULD START THIS PROCEDURE AT THE WHEEL/BRAKE BODY FURTHEST FROM THE MASTER CYLINDER, AND THEN WORK YOUR WAY TO THE WHEEL/BRAKE BODY CLOSEST TO THE MASTER CYLINDER.

To bleed the brake system, follow these procedures:

1. Add DOT-5 brake fluid to the master cylinder. **(If needed.)**
2. Apply pressure to the brake pedal and pump it once or twice, for maximum pedal height.
3. Attach a clear hose to the bleeder valve.

HINT: The hose should be long enough to reach the bottom of the drip pan.

4. With a drip pan under the hydraulic brake body. Loosen the bleeder valve on the hydraulic brake body, about 3/4 of a turn.
5. Depress and hold the foot pedal to the floor, while tightening the bleeder valve.
6. Slowly release the foot pedal allowing it to return to its released position.
7. Repeat steps two-(2) through six- (6) until the air is expelled from the line.

HINT: The hose attached to the bleeder valve can be used to check if the air has been expelled from the brake line. Let the end of the hose, rest under the surface of the fluid in the drip pan. When air-bubbles no longer escape from the tube as the pedal is being depressed, then the line is void of air.

8. Check and add brake fluid to the master cylinder as needed

9. Then repeat this process with each of the other wheels.

⚠CAUTION *Do not allow the fluid level in the master cylinder too get to low, as air may enter the brake lines. Keep the level high by constantly adding fluid*

When finished, top off the master cylinder with fluid to 1/4 from the top of the chamber, replace the cover, and clip on the master cylinder.

Replacing the Master Cylinder

Before beginning this service or any service read the **"Maintenance Guidelines,"** on page **3-2** and follow each of the bulleted items before continuing.

Make provisions to catch and properly dispose of the brake fluid in the hydraulic brake system.

⚠WARNING

Avoid ingesting and/or contact with skin or eyes. Always wear protective clothing and a face shield when working with or around brake fluid.

SKIN CONTACT:

Flush area immediately with water for several minutes.

EYE CONTACT:

Immediately flush the eye with water for fifteen (15) minutes and call physician.

INGESTION:

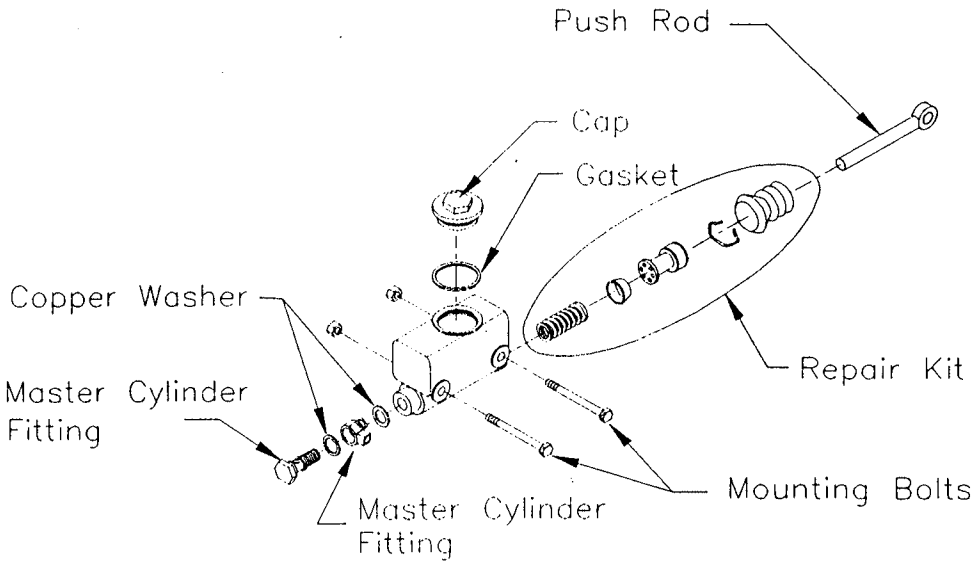
Induce vomiting immediately and call a physician.

KEEP OUT OF REACH OF CHILDREN.

BRAKE FLUID IS CORROSIVE AND WILL DAMAGE PAINTED AREAS. AVOID SPILLING FLUID ON ANY SURFACE.

1. Place blocks under the rear wheel to prevent vehicle movement.
2. Disconnect the batteries.
3. Remove the cap from the master cylinder and, pump all of the brake fluid from the master cylinder and dispose of it properly.
4. Remove the brake line(s) from the master cylinder fitting.
5. While supporting the master cylinder, remove the mounting bolts.
6. Install the new master cylinder in reverse order.
7. Fill the master cylinder with fresh DOT 5 brake fluid 1/4" from the top of the master cylinder.

8. Bleed the brakes and check for leaks.
9. Check the brake fluid level again and fill as needed.
10. Test drive.



Brake Figure 3: Master Cylinder

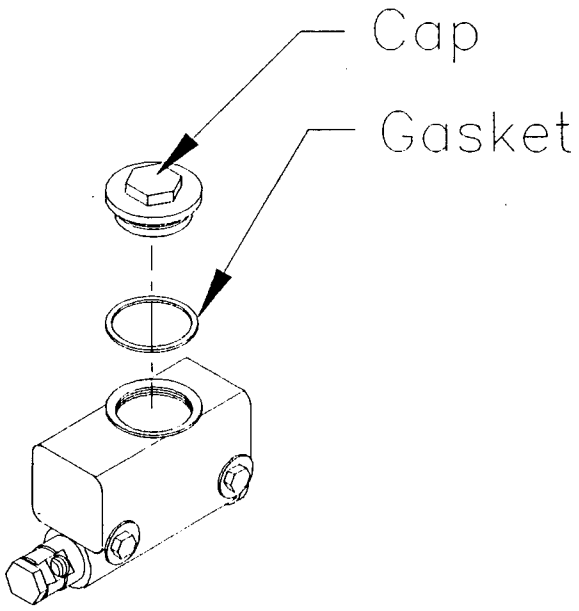
Filling and Checking the Fluid Level

To fill check the brake fluid-level follow these procedures:

1. Clean the cover and exterior of the master cylinder and the surrounding area.
2. Remove the cap from the top of the master cylinder and visually check the level of fluid in the master cylinder.

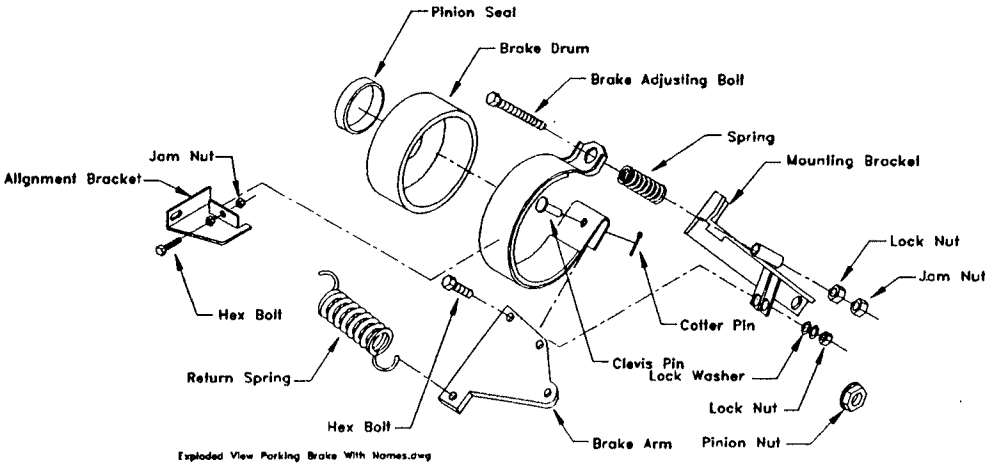
NOTE THE FLUID SHOULD BE 1/4" FROM THE TOP OF THE MASTER CYLINDER'S OPENING. DO NOT FILL THE MASTER CYLINDER PAST THIS POINT AS IT WILL RESULT IN LEAKS.

3. Add DOT 5 Brake Fluid as needed and replace the cap on the master cylinder.



Parking Brake

To adjust the parking brake follow these procedures.



Park Brake Figure2: Exploded View of Parking Brake

Adjustment

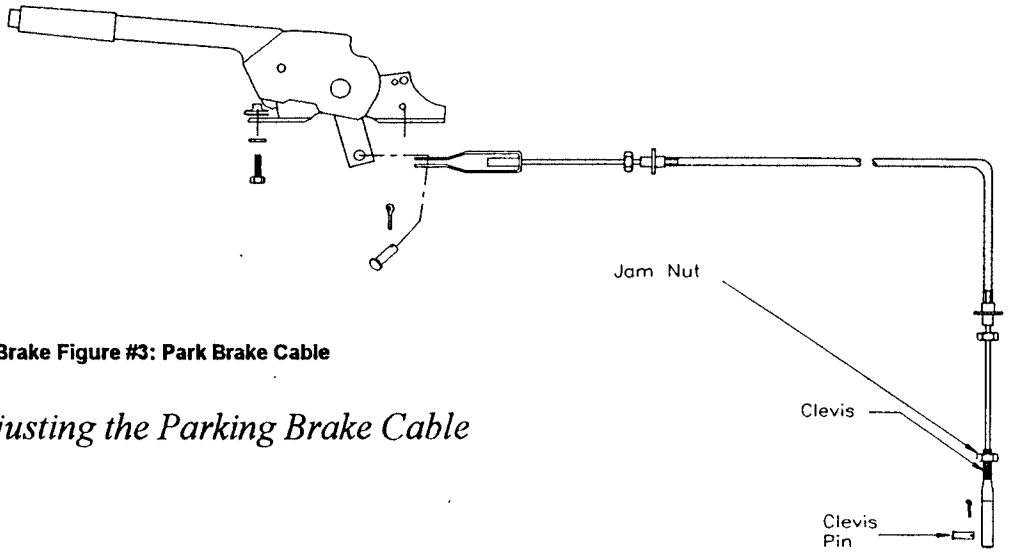
1. Block the wheels.
2. Release the parking brake handle.
3. Loosen the jam nut on the brake adjusting bolt.
4. Tighten the brake adjusting bolt lock nut.
5. Test drive the vehicle and check for dragging.
6. After the final adjustments are complete tighten the jam nut.

NOTE

IF THE BRAKE BAND DRAGS ON THE DRUM BACK OFF THE BRAKE ADJUSTING BOLT UNTIL THE DRAGGING IS ELIMINATED.

Wear Limit

The brake band should be replaced when the pad wears to a thickness of less than 1/16".



Brake Figure #3: Park Brake Cable

Adjusting the Parking Brake Cable

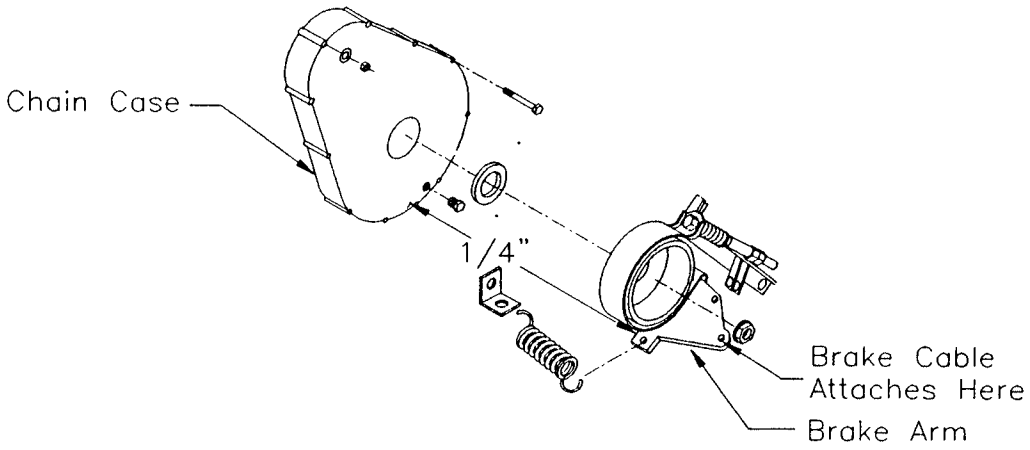
In order to adjust the park brake cable follow the procedure below:

NOTE

DO NOT USE THE PARK BRAKE CALBE TO ADJUST THE PARKING BRAKE. THE PARK BRAKE CABLE SHOULD BE ADJUSTED ONLY WHEN INSTALLED IN THE VEHICLE. IT SHOULD NOT REQUIRE ANY FURTHER ADJUSTMENTS.

1. Trun the key off and place blocks under the wheels to prevent movement.
2. Visually inspect the cable for signs of wear or damage.
3. Loosen the jam nut on the clevis.
4. Measure the distance between the brake arm and the chain case. It should be approximately 1/4" from the chain case. (See Figure #4 on the next page.)
5. Remove the clevis from the brake arm to adjust the distance between the chain case and the brake arm.

   Rotate the clevis clockwise to increase the distance or counterclockwise to decrease the distance between the brake arm and the chain case.
6. Reconnect the clevis to the brake arm and check the measurment again. If the distance is not correct, remove the clevis again and continue to adjust until the 1/4" gap is achieved.



Brake Figure #4:Gap Between Park Brake Arm and Chain Case

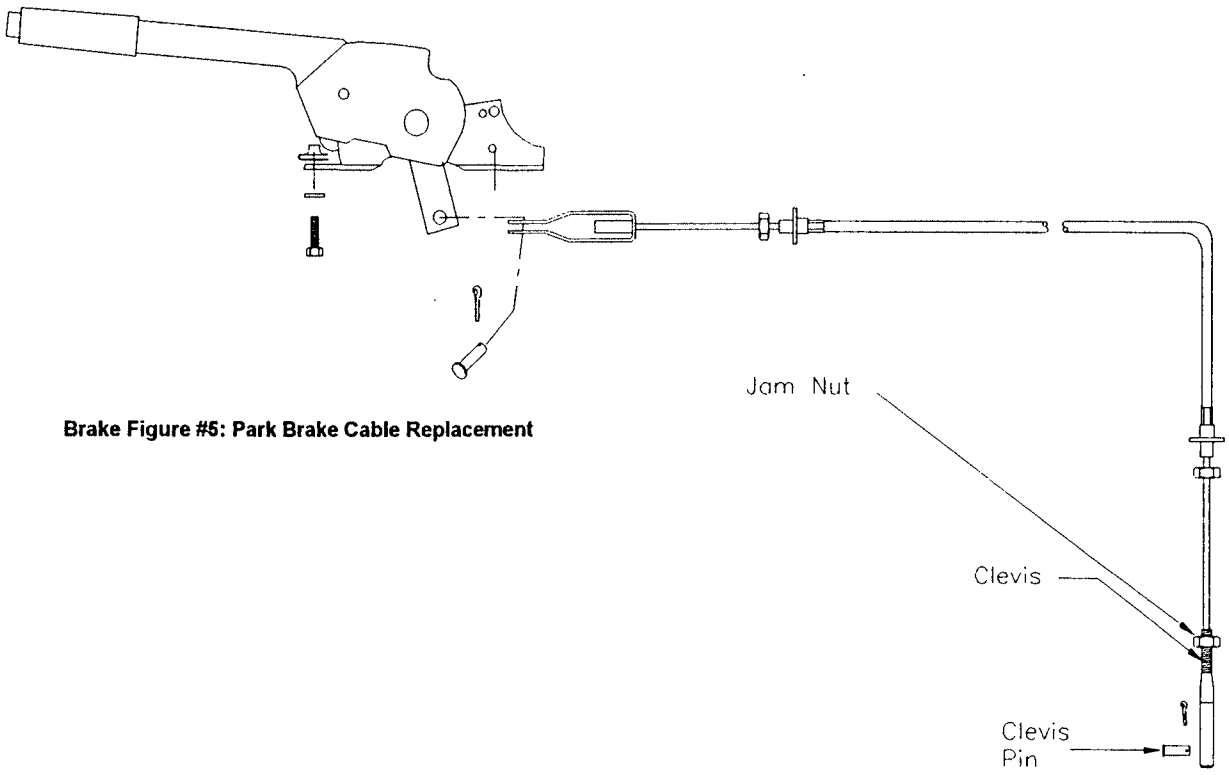
The figure above shows the distance that should be between the brake arm and the chain case, when the brake cable is properly adjusted. Obviously the figure above does not show this distance to scale nor is it meant to. We are simply showing you where the measurment should be taken and the distance in inches.

Replacing the Park Brake Cable

To install the park brake cable refer to the figure below and follow the proceedure below:

1. Park the vehicle on a flat surface and remove the key from the switch.
2. Place blocks under the wheels to prevent movement and disconnect the battery.
3. With the battery cover still raised. Locate the park brake cable.
4. Remove the pins from both ends of the cable. These pins secure the cable to the park brake lever and the brake arm.
5. Locate the nuts holding the cable to the two supports on the battery cover.
6. Loosen these nuts and remove the old cable from the vehicle.
7. Install the new cable in reverse order and adjust it as needed.

For instructions on how to adjust the park brake cable refer to,"Adjustng the Park Brake Cable", on page 3-16.



Brake Figure #5: Park Brake Cable Replacement

Front Axle and Steering

Axle Removal

1. Disconnect the batteries.
2. Lift the front end and support with jack stands.
3. Block the rear wheels to prevent the truck from rolling.
4. Remove both front wheels.
5. Disconnect the brake hoses from the brake lines mounted on the frame.

⚠CAUTION *Brake fluid will drip from the open brake lines.*

6. Remove the drag link from the steering yoke.
7. Remove the lower shock mounting bolts.

⚠CAUTION *The front axle is very heavy, be usre to support the axle with additional stands or tie it up to the frame to prevent it from falling.*

8. Remove the four-(4) bolts holding the upper and lower swing arms to the front of the frame.
9. Remove the axle from the vehicle.

Axle Installation

1. Install in reverse order.
2. Tighten the swing arm mounting bolts to 40-45 ft. lbs.
3. Tighten the drag link ball joint to 40-45 ft.lbs.
4. Bleed the front brakes and check for leaks.

Aligning the Front End

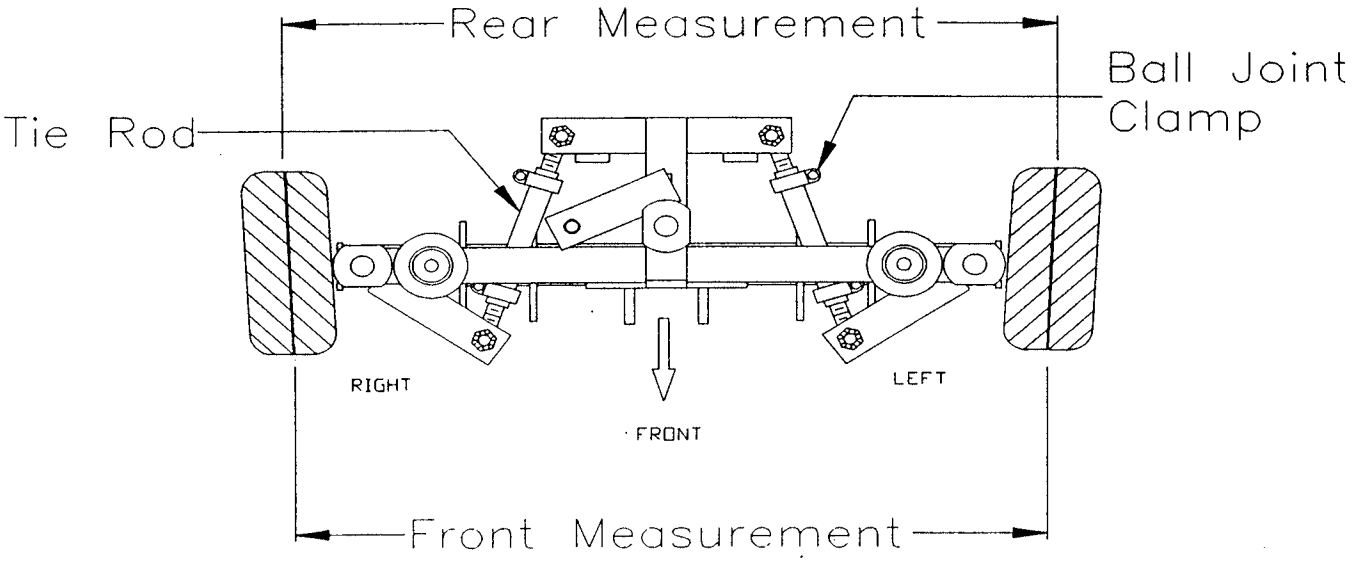
NOTE CASTER AND CAMBER ARE SET AT THE FACTORY AND DO NOT REQUIRE ADJUSTMENT.

1. Raise the front end of the vehicle and support with jack stands.
2. Center the steering gear and tie it off so that it can not turn.

NOTE THE PITMAN ARM SHOULD BE VERTICAL AND THE STEERING PIVOT SHOULD BE PARALLEL TO THE FRONT AXLE BEAM. IF NOT PERFORM THE PROCEDURES IN "CENTERING THE STEERING," ON PAGE 3-22.

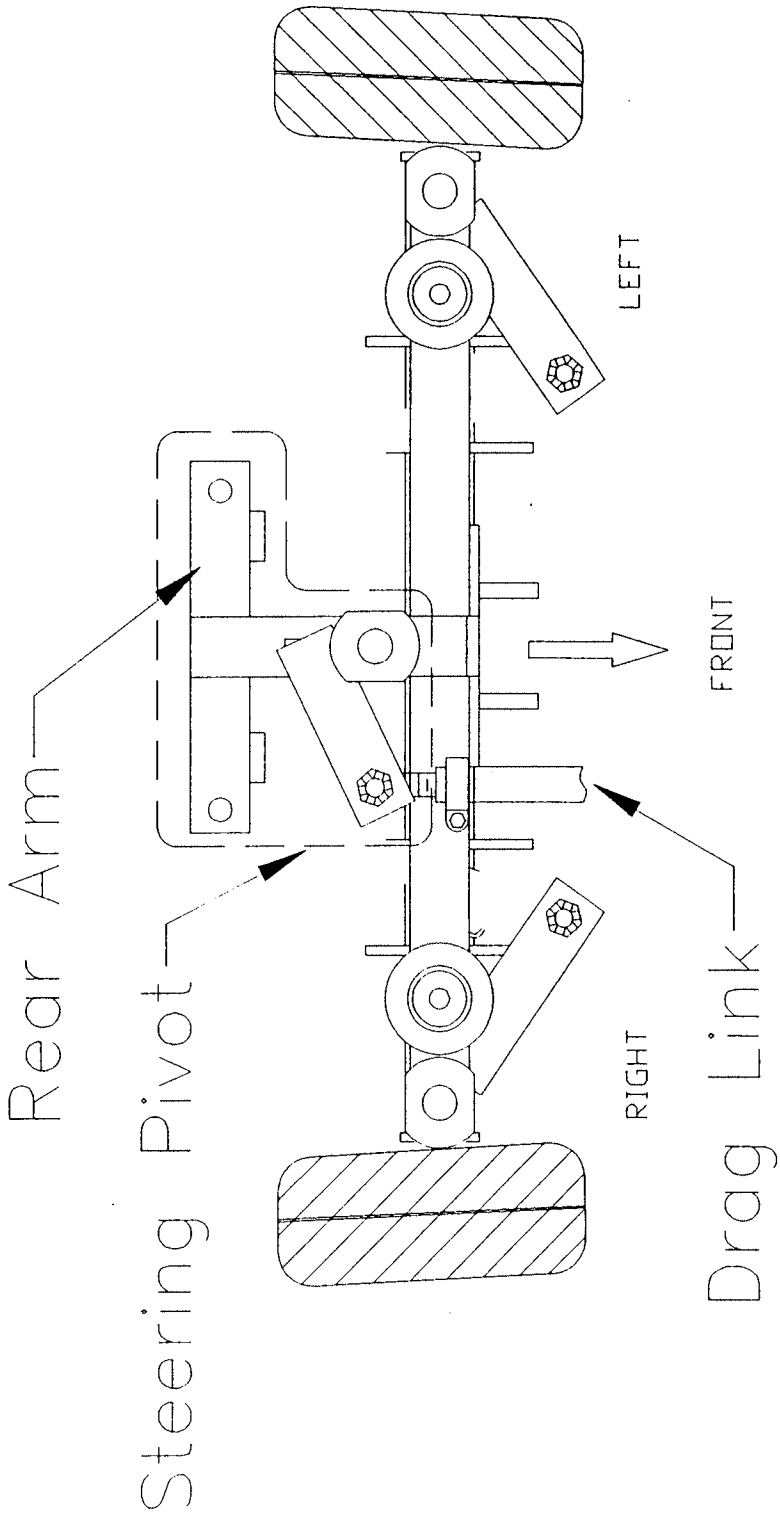
3. With a piece of chalk, mark a line around the center of both tires by holding the chalk against the tire while turning the wheel.
4. Loosen the ball joint clamps at each end of the tie rods so the adjusting sleeve can be turned.
5. Lower front end back on the ground.
6. With the wheels in the straight forward direction measure the distance between chalk lines at the front and the rear of the tires.
7. Adjust the tie rod sleeve until the distance from mark to mark across the front of the tires is the same as the distance from mark to mark across the rear.
8. Tighten the ball-joint clamp nuts securely.

Steering Figure 1: Front End Alignment



Centering the Steering

1. Remove the pitman arm from the steering gear.
2. Align the front wheels straight ahead and tie or clamp in position.
3. Center the steering gear.
   a.) Turn the gear all the way to the left.
   b.) Turn back three turns, and tie it off so it can not move.
4. Install the pitman arm straight up and down, while keeping the front wheels in the straight-ahead position. Tighten nut to 70-ft lbs.
5. Tighten the Ball Joint clamps securely.
6. Align the steering pivot so that it is parallel to the front axle. Use the drag link to adjust the steering pivots position.
7. Check the alignment of the front end again. Realign if needed. (Refer to "Aligning the Front End", on page 3-20.)


Rear Arm
Steering Pivot
LEFT
FRONT
RIGHT
Drag Link

Steering Yoke/Bushings

1. Remove the bearing cap, spindle nut and the wheel/hub assembly.

⚠CAUTION *Catch the outer bearing as it falls out.*

NOTE REMOVE THE DRAG LINK AND TIE ROD FROM THE YOKE (ONLY IF THE YOKE IS TO BE REPLACED).

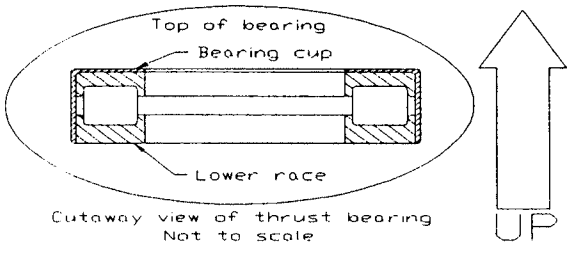
2. Remove the tie rod from the yoke.
3. Remove the brake assembly.
4. Remove the kingpin nut and kingpin. (Refer to Figure on page 25.)
5. Remove the yoke from the axle. (Refer to Figure on page 25.)
6. Clean and replace as necessary, bearings, and bushings, thrust bearing.

NOTE IF THE BUSHINGS ARE REPLACED, THEY MUST BROACHED OR REAMED TO 0.880 +0/-. 001 AFTER THEY ARE PRESSED INTO THE YOKE.

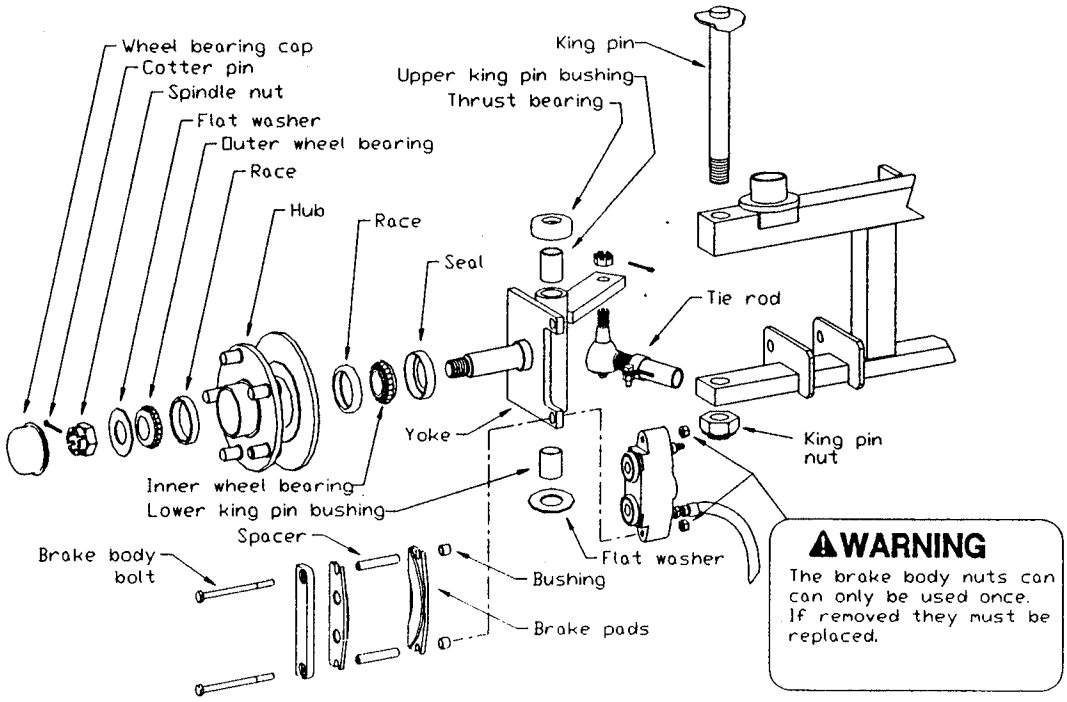
7. Install in reverse order.
8. Clean and pack the thrust bearing with grease.

⚠CAUTION *The thrust bearing must be orientated correctly. See figure below.*

9. Tighten the kingpin nut .
10. Tighten the drag link ball joint nut (if it was removed) to 40-45 ft. lbs. Use a NEW cotter pin.
11. Install the front wheel.
12. Tighten spindle nut to 30-ft. lbs. to seat bearings.
13. Back off spindle nut off to the first slot. Then install a NEW cotter pin.
14. Install the bearing cap.



Steering Figure 2: Thrust Bearing



Steering Figure 3: Exploded View Left Side Front Axle

Wheel Bearings

1. Remove the tire/wheel assembly
2. Remove the bearing cap and spindle nut.
3. Remove the hub from the spindle.

⚠CAUTION *Catch the outer bearing as it falls out*

4. Clean all grease from the inside of the hub and bearings.
5. Inspect and replace the races and bearings as a set.

⚠CAUTION *It is recommended to replace both the left and right side wheel bearings at the same time.*

6. Assemble in reverse order, using new grease seals.

   a.) Pack inner and outer bearings with grease.

   b.) Tighten the spindle nut to 30-ft. lbs. while rotating the hub to seat bearings.

   c.) Back off spindle nut to the first slot. Then install a new cotter pin.

7. Install the bearing cap.

Ball Joints

NOTE IT IS RECOMMENDED TO REPLACE ALL THE BALL JOINTS AS A SET.

1. Loosen the ball joint clamp. Note its position on the sleeve.
2. Remove the ball joint nut, and then remove the ball joint using a pickle fork.
3. Count the number of turns while removing the ball joint from the drag link or tie rod.
4. Lightly lubricate the threads on the new ball joint and install into the drag link or tie rod counting the same number of turns as when removed.
5. Install the ball joint into the steering arm and tighten nut to 40-45 ft lbs. Use a NEW cotter pin.
6. Lube the new ball joint.
7. Realign the front wheels.
8. Tighten the ball joint clamps securely.

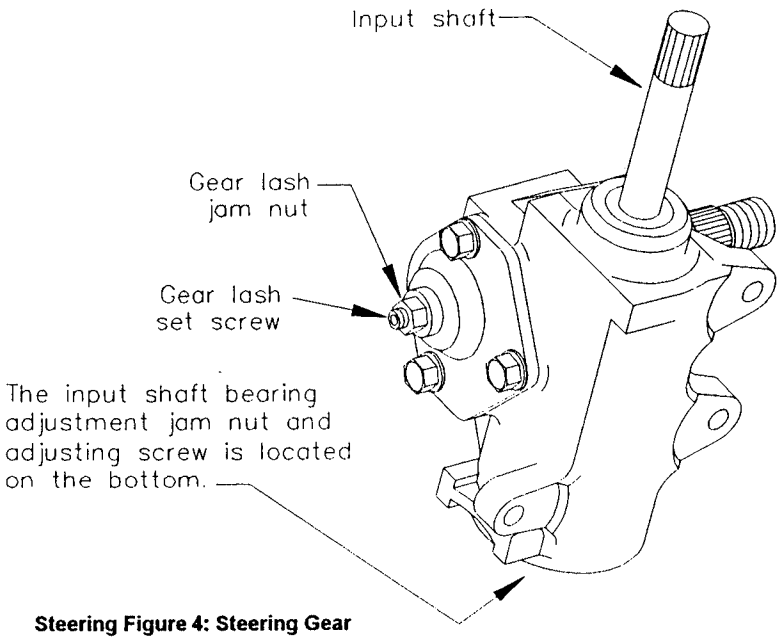
⚠CAUTION *Make sure the clamps are in their original position noted in step 1. Turn the steering all the way from left to right to make sure there is no interference.*

Endplay

1. Loosen the input shaft bearing adjustment jam nut.
2. Tighten the adjusting nut so that there is no endplay or wobble in the input shaft.
3. Tighten the jam nut.

Gear Lash

1. Remove the pitman arm. Note its position.
2. Loosen the jam nut for the gear lash set screw.
3. Tighten the set screw so that there is a slight drag when the steering gear passes through the center of its travel (about three- (3) turns from lock).



Steering Figure 4: Steering Gear

4. Tighten the jam nut. Do not allow the setscrew to turn while tightening.
5. Install the pitman arm in its original position. Tighten to 70-ft. lbs.

Steering Column

Removal

1. Remove the steering wheel.
2. Remove both the turn signal lever and tilt lever.
3. Disconnect the wiring harness.
4. Remove the bolt from the U-Joint.
5. Remove the U-bolt and steering column.

Installation

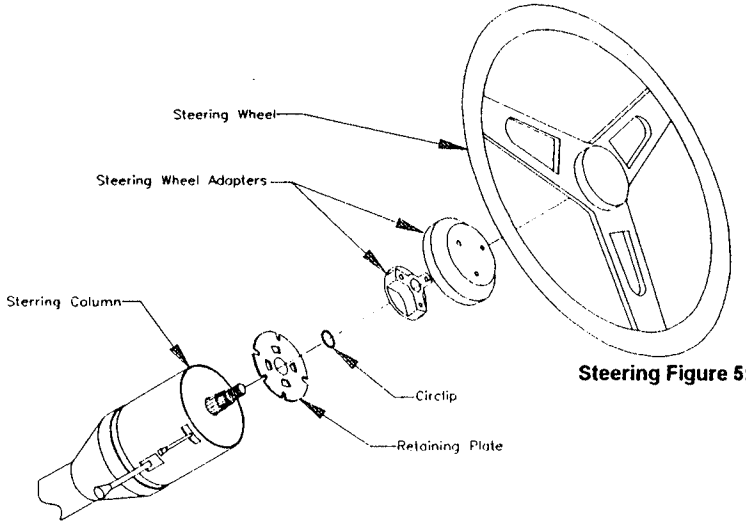
1. Refer to the procedure above and install the steering column in reverse order from how it was removed.

NOTE

OVER TIGHTENING THE U-BOLT CAN CRUSH THE COLUMN. TIGHTEN ONLY UNTIL THE COLUMN IS HELD IN PLACE.

Disassembly

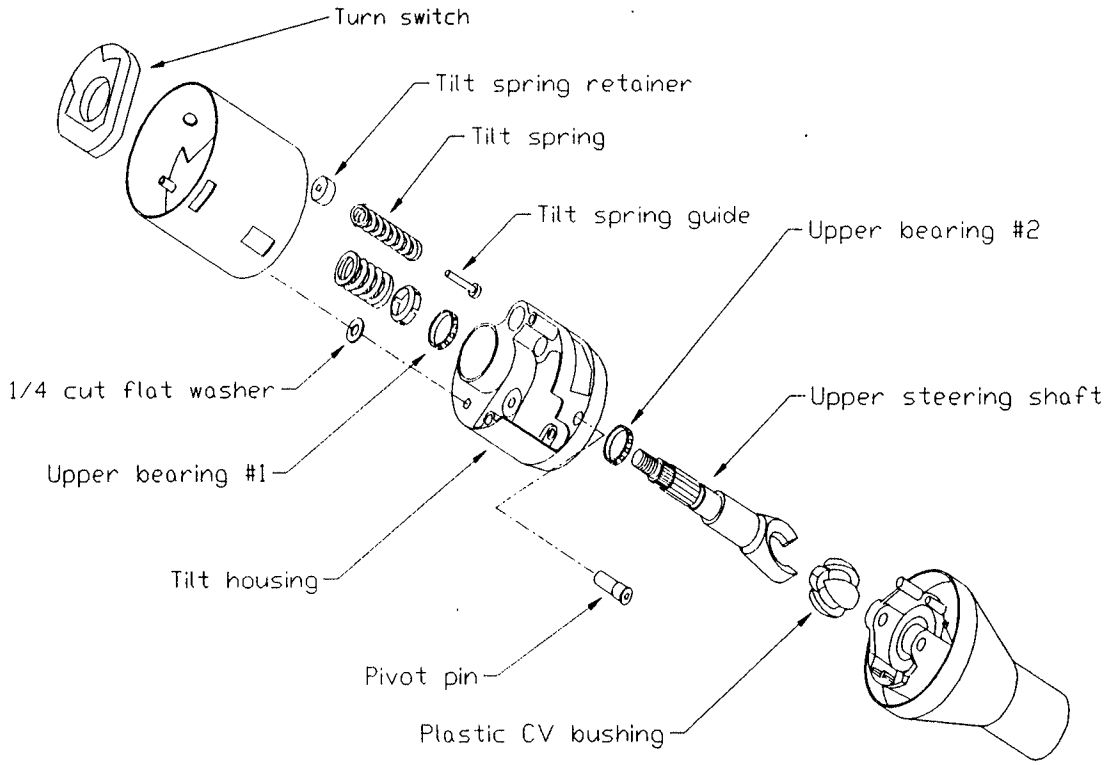
1. Remove the steering column. (See "Removal," above.)
2. Depress the retaining plate with tool 99-500-39 and remove the retaining plate circlip.
3. Remove the retaining plate and the horn button contact plate and spring.



Steering Figure 5: Steering Column

4. Remove he three-(3) button head screws holding the turn signal switch.
5. If replacing the turn switch, remove the pins from the harness connector and pull the switch out of the column.
6. Remove the upper shaft inner race and bearing #1.
7. Remove the two-(2) Torx head screws in the housing and remove the housing. Catch the flat washer as it falls out.
8. Depress and turn the tilt spring about 30° and remove the retainer, tilt spring and the spring guide.

Steering Figure 6: Exploded View of Steering Column



9. Thread an 8-32 machine screw into the pivot pins and pull them out. You may need a small slide hammer.
10. Install the tilt lever and pull up to release the tilt housing from the column.
11. Remove the upper shaft inner race and bearing #2.
12. Remove the steering shaft.
13. Rotate the upper shaft 90° and separate it from the upper shaft
14. Rotate the plastic CV bushing 30° and remove them from the steering shaft. It should tap off with a small punch.

15. If replacing the bearings, remove the inner race from the steering shaft and outer races from the tilt housing. The inner race should tap off the steering shaft with a small punch.

16. Remove the roll pin from the lower bushing and the lower bushing from the column.

Reassembly

1. Replace the worn or damaged parts as necessary.

2. Assemble in reverse order.

   a.) Pack the upper steering shaft bearings with grease.

   b.) Apply grease on the plastic CV bushings.

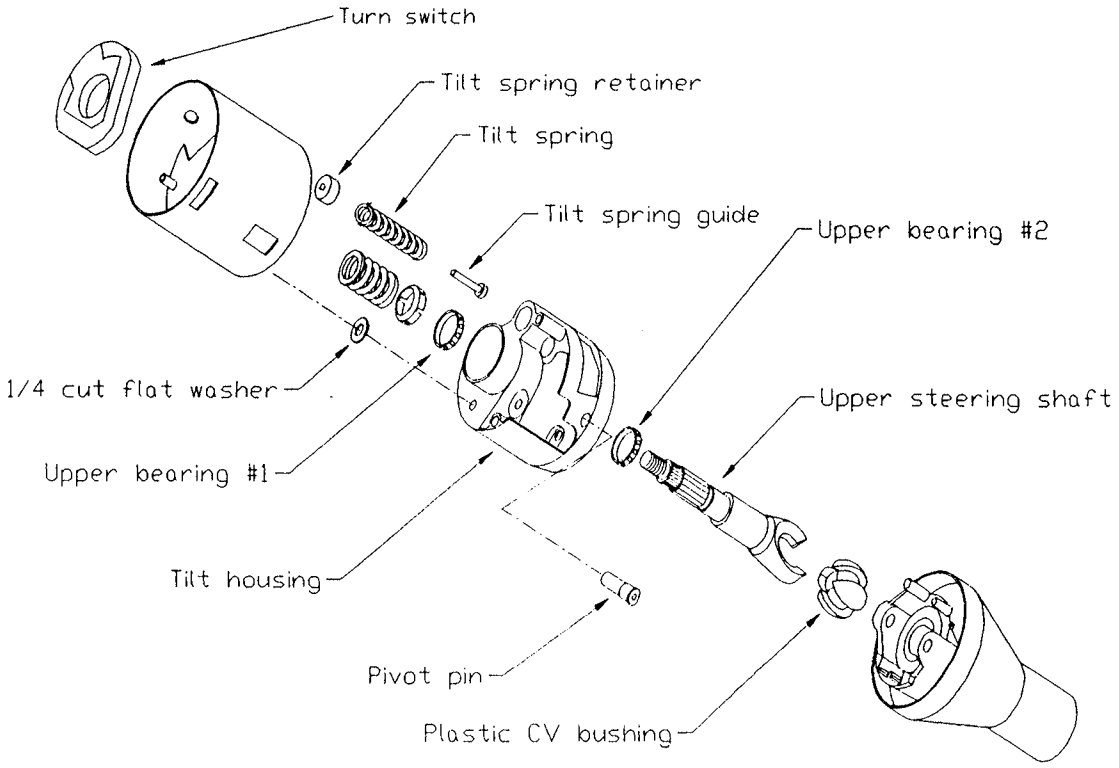
   c.) Lightly grease the pivot pins and pivot spring guide pivot point.

⚠CAUTION *Use a soft hammer to install the pivot pins. Do not use a steel hammer!*

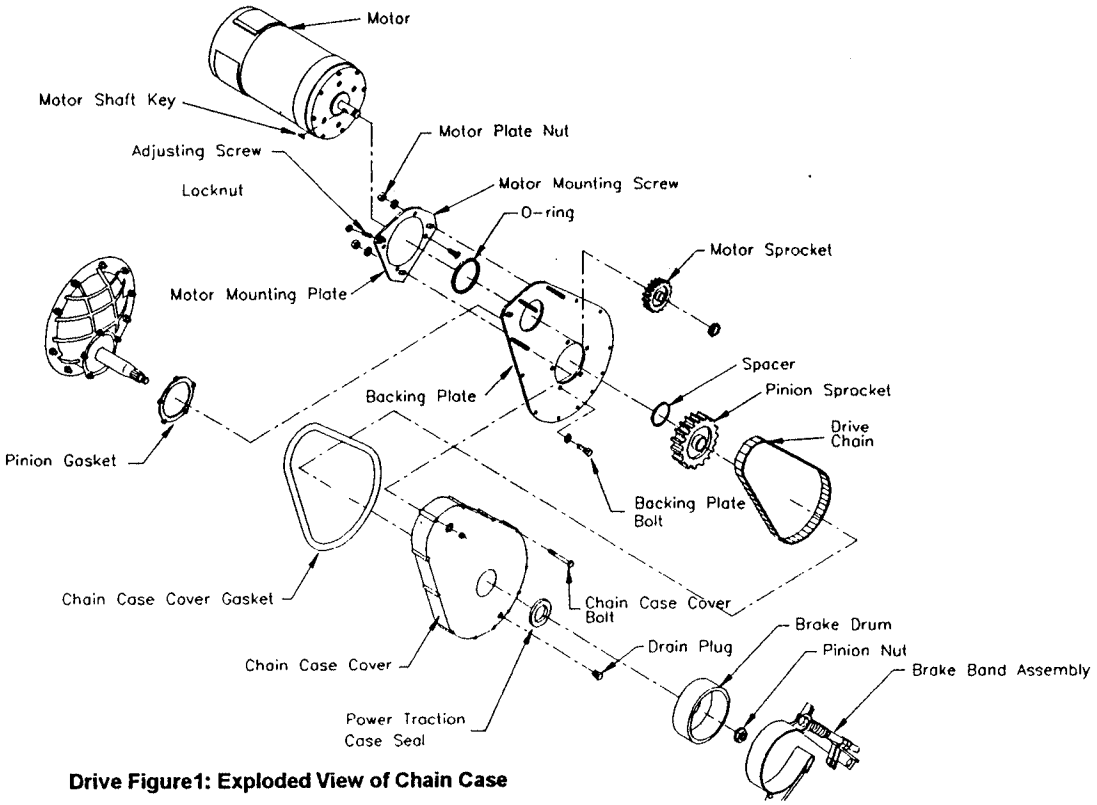
   d.) Lightly grease the turn signal switch contacts.

   e.) Use locktite on lower U-joint set screws.

Steering Figure 7: Exploded View of Steering Column



Drive Axle



Drive Figure1: Exploded View of Chain Case

Drive Chain Adjustments

1. Disconnect the main positive and negative battery cables, from the battery.
2. Set the park brake.
3. Place a drip pan under the chain case to catch any oil that may spill.
4. Loosen the three-(3) motor mounting plate nuts to let the motor mounting plate move freely.
5. Loosen the chain adjusting screw jam nut.
6. Turn the chain adjusting screw so the the ends of the motor fan blades have 1/8" to 1/4" of free play.
7. Tighten the three motor mounting plate nuts.
8. Tighten the adjusting screw jam nut while preventing the adjusting screw from turning.
9. Reconnect the main battery leads.

NOTE

IF THE DISTANCE BETWEEN THE END OF THE ADJUSTING SCREW AND THE TOP OF THE JAM NUT IS 1/16" OR LESS IT IS TIME TO ADJUST THE CHAIN. FOR THE CHAIN ADJUSTMENT SCHEDULE REFER TO THE TABLE ON PAGE 3-32.

Chain Adjustment Schedule	
Interval	Period
First	100 Hours
Second	200 Hours
Following	Every 400 Hours

Chain Adjustment Schedule Table

Motor Removal

1. Disconnect the batteries.
2. Disconnect all power leads to the motor.
3. Support the motor with a hoist and strap of sufficient capacity.
4. Remove the chain case adjusting screw.
5. Remove the three-(3) motor mounting nuts and washers.
6. Remove the motor by lifting the back end of the motor and rotating it counter-clockwise, which will move the adjusting tab off the flat on the chain case plate. The motor with the mounting plate attached should be able to slide out from under the chain.

⚠CAUTION *Do not move the vehicle at this time as this may cause the chain to become jammed inside the chain case cover.*

Motor Installation

1. Clean all mounting surfaces on the motor and mounting plates.
2. Apply grease to the o-ring and backing plate.
3. Make sure the o-ring is seated in the motor mounting plate correctly.
4. With a wire formed in to a hook, tie the chain up to the upper slot on the backing plate.
5. Install the motor on to the chain case backing plate and slip the sprocket under the chain.

NOTE THE CHAIN MUST BE PROPERLY SEATED ON THE LARGE SPROCKET FOR THE PROPER INSTALLATION OF THE MOTOR SPROCKET.

5. Install the mounting nut holding the motor mounting plate and motor to the chain case backing plate and leave loose.

6. With the chain loosely on the upper sprocket, remove any wire used to support the chain.

⚠CAUTION *Do not allow the wire to break. If the wire breaks, the chain case must be disassembled to retrieve it.*

7. Move the vehicle slightly. The motor armature should rotate. If the armature does not rotate, then the chain is not seated properly.

NOTE IF THIS OCCURS TRY REMOVING THE MOTOR AGAIN JUST AS STATED IN PREVIOUS PROCEDURE, "MOTOR REMOVAL,"AND THEN REPEAT STEPS ONE-(1) THROUGH SEVEN-(7) OF THIS PROCEDURE.

8. Install the remaining hardware onto the mounting studs, finger tight.

9. Adjust the chain tension and described in "Drive Chain Adjustment," on page

Power Traction

Removing the Power Traction Assembly

1. Disconnect the batteries.
2. Remove the drain plug and the drain the oil from the chain case.
3. Remove the brake band assembly and drum.
4. Remove the remaining bolts and nuts holding the cover to the backing plate, and remove the chain case cover.
5. Loosen the chain adjusting screw completely.
6. Remove the chain, pinion sprocket, and spacers from the pinion shaft.

BEFORE REMOVING THE SPACERS FROM THE PINION SHAFT TAKE CAREFUL NOTE OF THEIR LOCATIONS AND POSITION FOR REASSEMBLY.

8. Remove the chain from the motor sprocket and remove the motor.
9. Inspect and replace the chain and sprockets as needed.
10. Reassemble the power traction assembly in reverse order, installing new seals and gasket sealer. Use the centering tool (TAYLOR-DUNN Part Number 41-532-50,) to center the power traction case seal on the chain case cover.

IF THE POWER TRACTION CASE SEAL IS NOT CENTERED CORRECTLY, OIL WILL LEAK ON TO THE PARKING BRAKE.

While reassembling the power traction assembly be sure to torque the pinion nut to 175 ft-lbs. and all of the chain case cover mounting bolts to 20 ft-lbs.

After you have reassembled the power traction assembly adjust the drive chain as described in "Drive Chain Adjustment," on page 3-32.

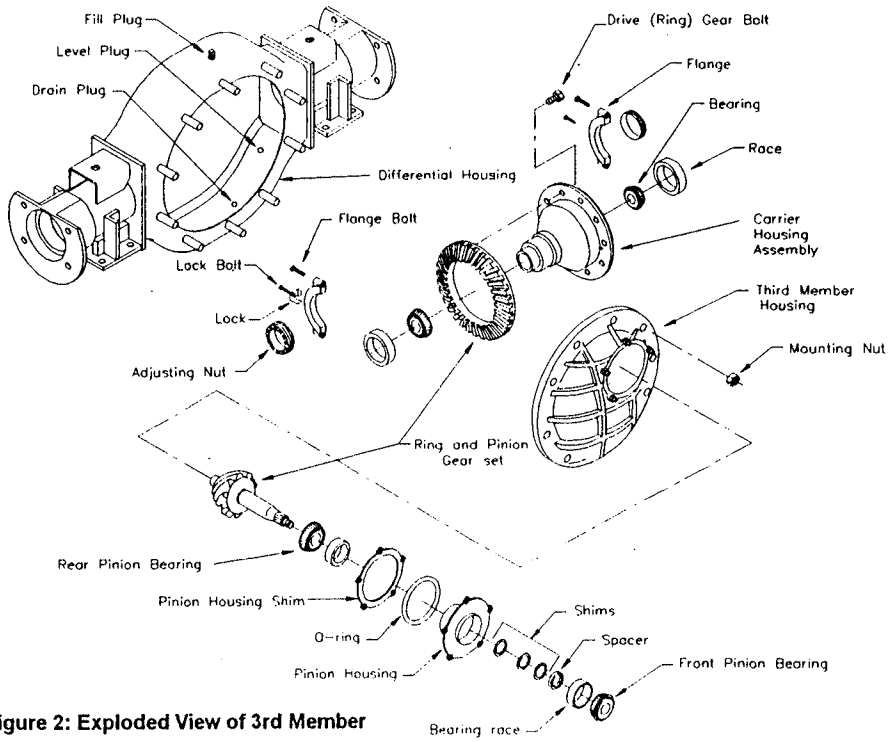
11. Fill the chain case with oil.
12. Test drive.

NOTE IT IS NOT NECESSARY TO REMOVE THE ENTIRE DRIVE ASSEMBLY TO PERFORM THIS PROCEDURE.

1. Raise the drive wheels and support the vehicle with jack stands.
2. Drain the oil from the power traction chain case and drive.
3. Remove the motor and power traction assemblies.
4. Remove the rear wheels and brakes.
5. Using a slide hammer, slide the axles out from the drive housing .
6. Remove the third member mounting nuts and third member from the housing.
7. Remove the carrier bearing flanges and the carrier assembly from the housing.
8. Remove the pinion housing assembly from the third member.

⚠CAUTION *Do not lose shims !*

9. Replace bearings, bearing races, and gears as needed.



Drive Figure 2: Exploded View of 3rd Member

10. Read the following list of things to remember while reassembling the differential and then reassemble it in reverse order.

    a.) Pre-lube all bearings and gears during reassembly.

    b.) Cross tighten ring gear bolts to 72 ft-lbs.

    c.) If pinion bearing or gears are replaced, the drive must be reshimmed.(See Re-Shiminng the Pinion Bearings, below.)

    d.) Use new seals.

Adjust the Backlash

1. Install the correctly shimmed pinion gear and pinion gear housing. (See page 3-35.)
2. Temporarily install the drive sprocket and brake drum. Torque the pinion nut to 100 ft-lbs.
3. Tighten the carrier bearing cap bolts to 15 ft-lbs.
4. Position the carrier assembly against the pinion gear and turn the adjusting nuts to contact the carrier bearings.
5. Loosen the adjusting nut on the toothed side of the ring gear slightly.
6. Tighten the other nut so that there is no gear backlash, but so tight to cause binding.
7. Tighten the adjusting nut on the toothed side of the ring gear so that there is .008 ot .012 backlash.
8. Tighten the carrier bearing cap bolts to 40-55 ft-lbs.

Re-Shimming the Pinion Bearings

1. Remove the pinion housing from the third member.
2. Install the drive gear and brake drum (or equivalent spacer,) on to the pinion shaft and tighten to 100 ft-lbs.
3. The pinion gear should turn freely with zero radial play.

NOTE DO NOT ROTATE BEARINGS WHEN DRY, THEY MUST HAVE A LUBRICANT, OR THEY WILL BE DAMAGED.

4. Add or remove shims as necessary.

Selecting Pinion Housing Shims

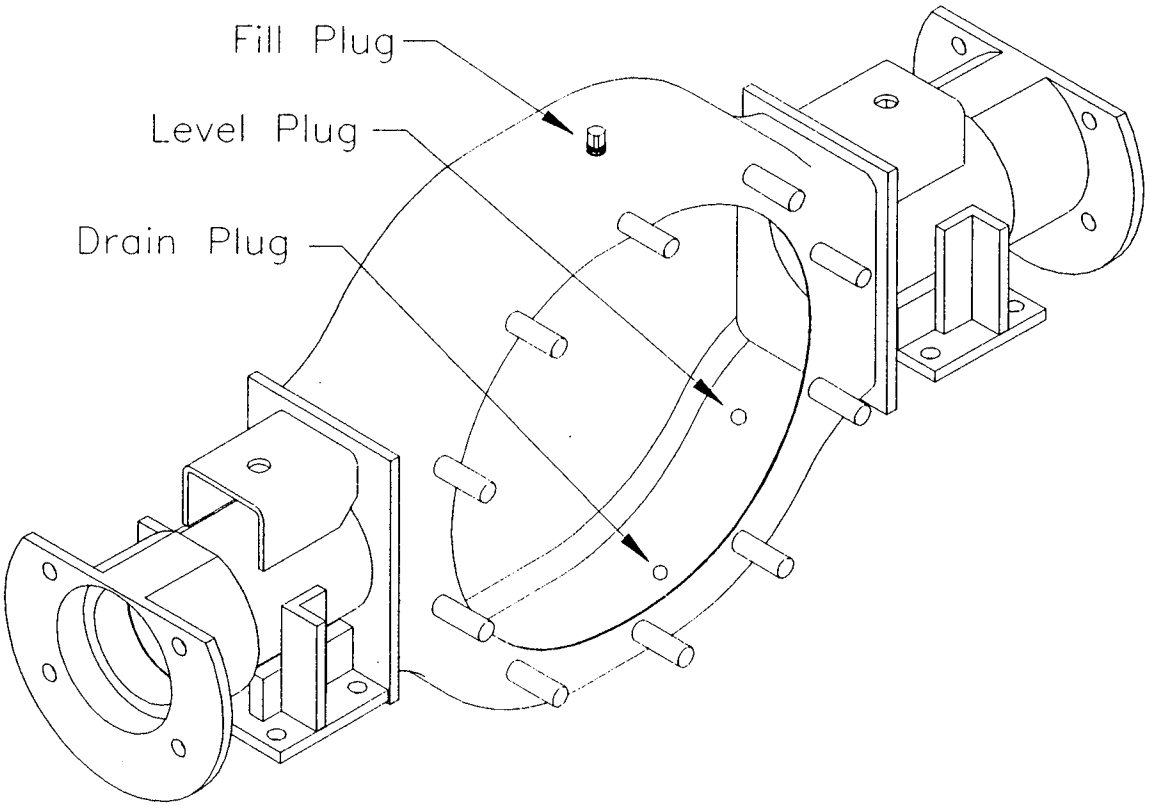
The pinion housing shims are available in thickness' from 0.005" to 0.021", in increments of 0.001", to correctly position the pinion gear. However, the standard shim thickness is 0.015" thick.

The following numbering system is used on pinions to indicate the amount you must add or subtract from the standard shim, in order to correctly position the pinion gear. Locate the number on the flat surface on the samll shaft at the end of the pinion gear. Match the number with the shim required. Refer to the table below:

Pinion Numbering System	
If the number is	Add Shim as Follows
+0	No Adjustment
+1	Add .001 Shim
+2	Add .002 Shim
+3	Add .003 Shim
+4	Add .004 Shim
+5	Add .005 Shim
-1	Subtract .001 Shim
-2	Subtract .002 Shim
-3	Subtract .003 Shim
-4	Subtract .004 Shim
-5	Subtract .005 Shim

Changing the Differential Oil

1. Place a three-(3) quart or larger draing a pan under the drive.
2. Remove the differential and chain case drain plugs.
3. Replace the drain plugs and remove the differntial fill and level plugs.
4. Install oil into the differntial through the filler hole until the oil starts ro come out of the level hole. (This usually about two-(2) quarts.)
5. Install the level plug.
6. Add an additional 1/2 quart into the differntial fill hole for the chain case. This oil will be pumped in from the differential.
7. Install the remaining plugs.



Drive Figure 3: Differential Housing With Plugs

Rear Axle and Bearing Replacement

1. Raise the drive wheels and support with jack stands
2. Remove the rear wheel.
3. Remove the brake assembly.

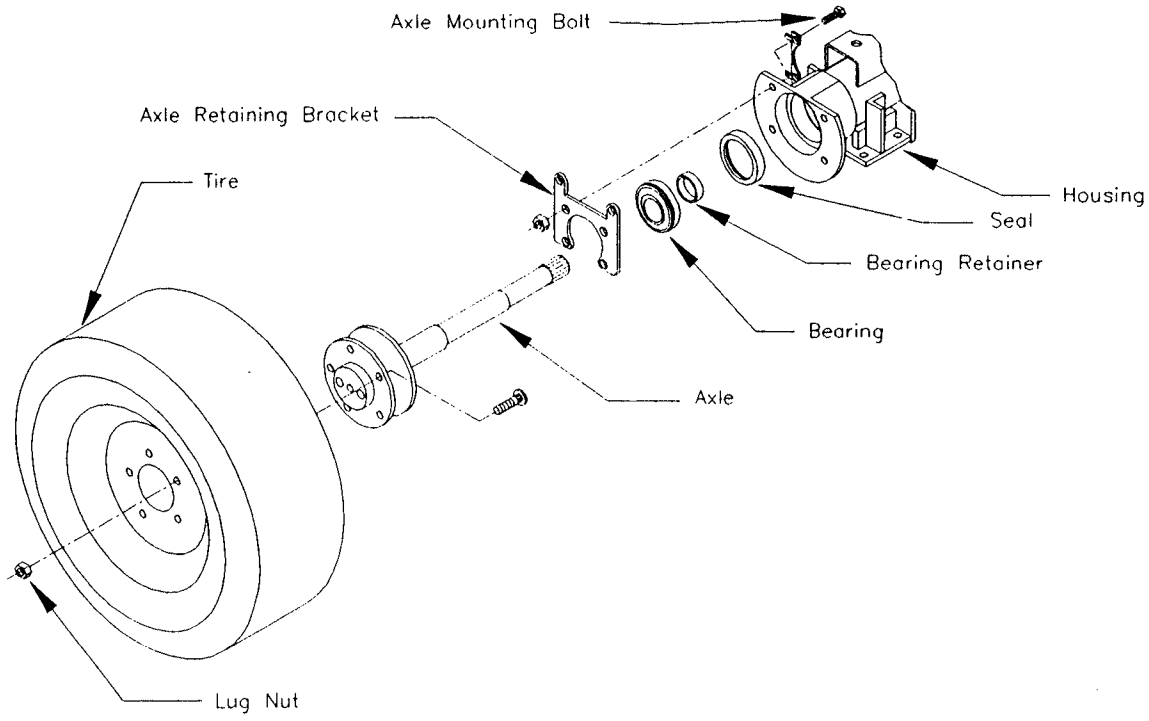
⚠CAUTION *Do not let the brake assembly hang by the brake hose.*

4. Using a slide hammer, remove the axle from the housing.
5. Press the retainer ring and bearing from the axle shaft, if needed.
6. Press a new bearing and retainer ring onto the axle.

⚠WARNING ***Do not reuse the old bearing retainer***

7. Remove and replace the oil seal and/or gaskets from the housing.
8. Install in reverse order.
9. Use new locking tabs on axle mounting bolts.
10. Tighten the axlw mounting bolts to 35-40 ft. lbs.

⚠WARNING ***Failure to properly bend up the locking tabs could cause the mounting bolts to loosen and result in brake failure.***



Drive Figure 4: Exploded View Rear Axle

Section 3

Drive Motor

Motor Disassembly

1. Remove the motor from the chain case.
2. Remove the key from the shaft.
3. Remove the front bell housing.
4. Pull the armature out from the motor housing.
5. Remove the rear bell housing.

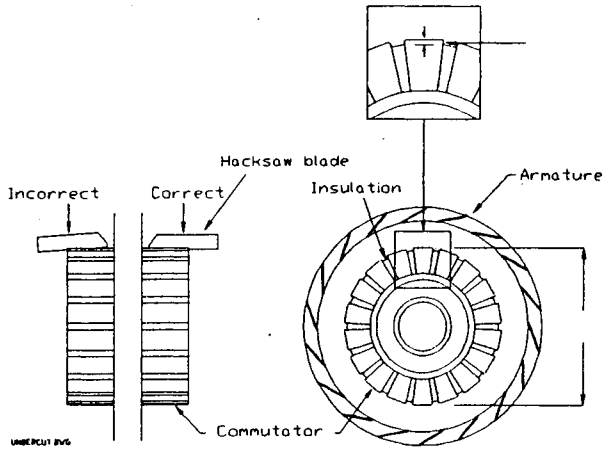
Replacing the Brushes

1. Remove the Brush covers.
2. Remove the brush wire from the brush holder.
3. Pull the brush straight out from the brush holder.

NOTE HOLD THE SPRING SO IT DOES NOT SNAP BACK DOWN INTO THE HOLDER.

4. Install in reverse order.

NOTE 70-057-20 MOTOR-MINIMUM BRUSH SERVICE LENGTH IS .75".



Drive Motor Figure 1

Inspecting the Armature

1. If any solder has been thrown from the armature the motor must be replaced.

NOTE CHECK THE INSIDE OF THE MOTOR HOUSING AROUND THE COMMUTATOR FOR BITS OF SOLDER.

2. If the commutator is grooved it must be cut on a lathe.
3. Measure the undercut on the commutator.
   a.) If less than .025" then the mica must be undercut. *See Drive Motor Figure 1 above.*
4. Measure the commutator diameter.
   a.) If less than 2.625" then the armature is worn out and the motor must be replaced.
5. Spin the bearings by hand.
   a.) If any vibration or roughness is felt, they must be replaced.

*HINT: **It will require a press to replace the bearings.***

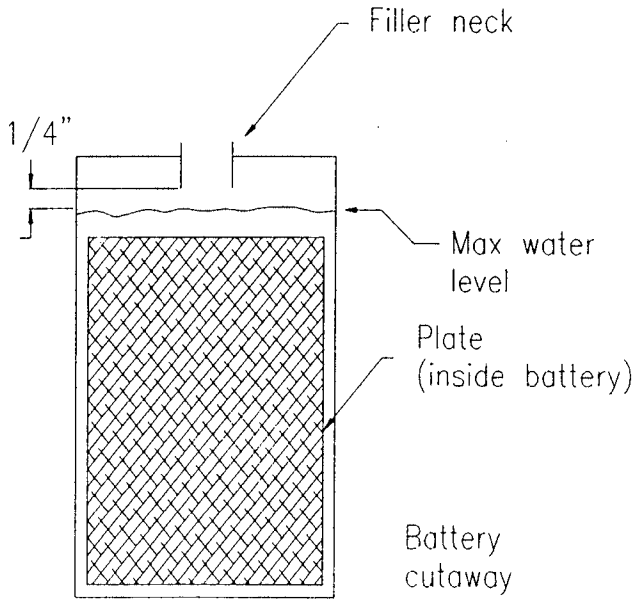
Section 3
Battery

⚠WARNING ***Battery electrolyte is poisonous and dangerous. It contains sulfuric acid. Avoid contact with skin eyes or clothing. Wear rubber gloves and safety glasses while servicing batteries. DO NOT INGEST!***

⚠WARNING ***Batteries produce an explosive gas when charging. DO NOT SMOKE, produce an open flame or spark while checking or servicing a battery.***

Cleaning

1. Dry dirt can be readily blown off with low-pressure air or brushed off.
2. Wetness or wet dirt on the covers indicates battery acid. Using a nonmetallic brush with flexible bristles wash it off with a strong solution of baking soda and hot water (1 lb. of soda to gallon of water). Continue until all fizzling stops, which indicates that the acid has been neutralized. Then rinse thoroughly with clear water. DO NOT get any of the solution into the battery cells.



Battery Figure 1: Electrolyte Level

1. Check the electrolyte level in all cells. If low fill with distilled water up to the correct level *(See Battery Figure 1: Electrolyte Level on the previous page)*.

⚠CAUTION *Do not overfill the battery. An overfilled battery may leak acid.*

2. Clean the battery *(See Battery Cleaning on the previous page.)*
3. Clean the cell posts connectors and battery box with water.

Charging

⚠WARNING **Explosive mixtures of Hydrogen gas are present within battery cells at all times. Do not work with or charge battery in an area where open flames (including gas furnace or water heater pilots), sparks, cigarettes, or any other sources of combustion are present. Always provide ample ventilation in rooms where batteries are being charged.**

To charge the batteries do the following:

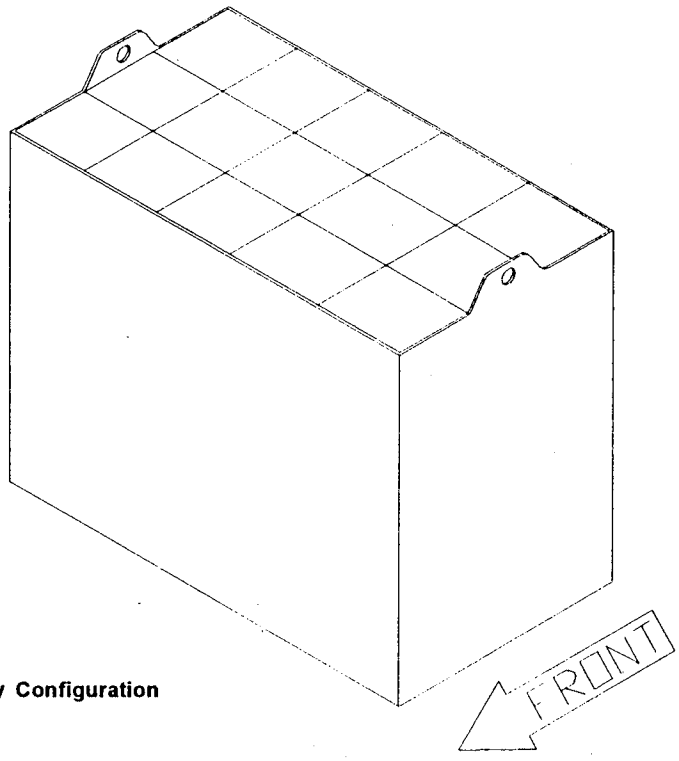
1. Check the electrolyte level. If low, fill with distilled water up to the correct level (see diagram).
2. Park the vehicle in an approved area for charging and plug the charger in.
3. Allow the charger to cycle completely before unplugging.

Section 3
Battery Storage

The following pointers will help extend the life of the battery when storing your vehicle for the winter season:

- Clean and check the electrolyte level and charge level of the battery. Do not store a battery low in electrolyte or in a low state of charge.
- Recharge a battery not in use every 1 to 2 months.
- If possible, store the vehicle in a cool dry place.

If the batteries are removed from the vehicle, do not place them directly on the ground, concrete or solid metal surface. It is recommended to store them on a wooden pallet or equivalent.



Battery Figure 2: Battery Configuration

Tires

Servicing the Tires

The C4-25 is equipped with 4.80 X 8 load range C tires (standard). The tires should be checked as follows:

1. Check the tires for nicks or grooves and replace if necessary.
2. Ensure that the tire is properly seated on the rim.
3. Check wheel nuts for tightness.
4. Check the air pressure in the tires. Inflate them as needed to the specified pressure.

REFER TO THE CHART BELOW TO DETERMINE CORRECT TIRE PRESSURE.

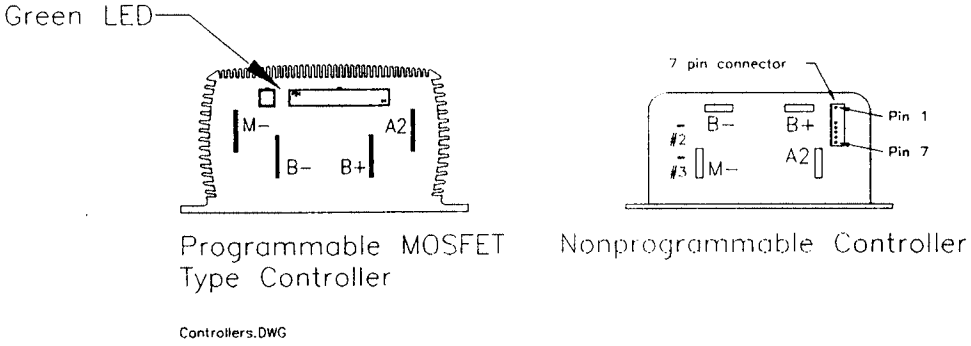
Tire Pressure Chart						
Tire Size	Type	Part Number	Load Range	Ply Rating	PSI (MAX)	MAX. Load/Tire (lbs.)
4.80 X 8	Highway Tread	13-739-10	C	4	90	745

Electrical System

Introducton

You Huskey is equipped with either a programmable MOSFET type speed control or a nonprogrammable speed control. The easiest way to tell which speed control is in your vehicle is by the serial number. If your vehicle has a serial number of 128260 or higher then you have the new nonprogrammable speed control. All vehicles with a serial number lower than 128260 should have the programmable MOSFET type speed control.

However it is possible that a nonprogrammable controller has been installed in an older vehicle. So you may also identify you controller by visual inspection of the terminal end of the controller. The programmable controller has a green LED located on the terminal end of the controller, which flashes when the controller is connected. If you are still not sure refer to the figure below to help locate the LED.



Electrical System Figure 1: Controllers

In this section we will describe how to troubleshoot and care for both of these controllers and how to use the optional hand held programmer. First we will cover the programable controller and the operation and use of the optional hand held programmer. Then we will discuss the nonprogrammable controller. So before you continue be sure to properly identify the controller that is installed in your vehicle. If for some reason you cannot identify your controller call our Technical Support at 714-956-4040 ext. #205, with as much information as possible. You will also notice that at the end of each sub-section for the programmable and nonprogrammable controllers there are a set of schematics. These schematics are unique to the vehicle depending on the controller installed in it. So, before using one of the schematics to help troubleshoot or repair your vehicle read the note at the bottom of the schematic to be sure you are using the correct one.

Programmable Controller

Diagnostic and test information for the programmable MOSFET type controller is available through an LED on the control or the optional hand held programmer.

Maintenance

⚠WARNING ***Maintenance or repairs should be performed by a trained and qualified mechanic only.***

The PMC control is sealed and there are no user serviceable parts inside. Opening the controller may damage the controller and will void the warranty.

The components of the control box should be cleaned perodically. The time interval between cleaning will vary depending on the operating enviroment. Refer to the Periodic Maintenance Check List in section 3, for the recommended interval.

Cleaning

In order to clean the control panel follow the procedures below.

1. Diconnect the battery and block the wheels to prevent movement.

⚠WARNING ***High current and voltage. Do not directly short or touch the terminals***

2. Connect a 48 volt light across the PMC B+ and B - terminals to discharge the capacitor.

⚠CAUTION *Wear safety goggles when using compressed air.*

3. Remove any foriegn objects form the control box and blow out all dust and dirt with compressed air.
4. Wipe all connections with a moist rag.
5. Check all wire connections for tightness.

Diagnostic History

This controller has a memory that stores what is called a "Diagnosic History File," (DHF). This file contains all of the faults that have occured since the last time the DHF was cleared. The only way to access the DHF is with the optional hand held programmer. See Special Diagnostics Function in this section for details.

Troubleshooting and LED Code

Read the following paragraph carefully about how the LED code is displayed then use the troubleshooting chart to identify the possible cause of the failure.

LED Code

During normal operation the LED flashes about once per second. If a fault occurs the LED will flash a code until the fault is corrected. The code consists of two numbers seperated by a pause in the flashing of the LED. This pause represents the comma shown in the troubleshooting table. For instance, if the LED flashed once, pauses, then flashes twice the code would be 1, 2.

The controller can only display one fault at a time. This means that if you have completed the repaires to the vehicle, you should test drive the vehicle and check the controller for any addtional faults that may be present. Do not assume that you have cleared all of the faults simply because you have made repairs based on the initial LED code. Operational faults such as SRO or HPD can be cleared by cycling the seat or key switch several times.

TOUBLESHOOTING TABLE			
LED Code	Programmer Display	Discription	Possible Cause
1, 2	HW FAILSAFE	Hardware fail-safe error	Controller Defective
1, 3	M-FAULT	M- output shorted	M- Output Shorted to Ground.
			Internal Motor Shorted to Ground
1, 4	SRO	SRO Fault	Improper Sequencing of KSI, Seat and Direction Inputs.
			Wrong SRO Type Selected.
			Brake or Direction Switch Circuit Open.
			Sequencing Delay too Short.
2, 1	THROTTLE FAULT 1	5K-Ohm or Wiper Fault	Throttle Input Wire Open.
			Throttle Input Wire Shorted to Ground.
			Throttle Pot Defective.
			Wrong Throttle Type Selected.
2, 2	BB WIRING CHECK	Emergency Reverse Wiring Fault	BB Wire Open.
			BB Check Wire Open.
2, 3	HPD	HPD Sequencing Fault	Improper Sequencing of KSI, Seat and Throttle Inputs.
			Wrong HPD Type Selected.
			Mis-Adjusted Throttle Pot.
			Sequencing Delay too Short.
2, 4	THROTTLE FAULT 1	Pot Low, Broken or Shorted	Pot Wire Open or Shorted.
			Wrong Throttle Type Selected.
3, 1	CONT DRVR OC	Driver Output Overcurrent	Direction Contactor Coil Shorted.
3, 2	DIR CONT WELDED	Welded Direction Contactor	Direction Contactor Contacts Welded.
3, 4	MISSING CONTACTOR		Direction Contactor Coil or Wire Open.
4, 1	LOW BATTERY VOLTAGE	Low Battery Voltage	Battery Voltage < 21 Volts.
			Corroded or Loose Battery Terminal.
			Loose Controller Terminal.
4, 2	OVERVOLTAGE	Overvoltage	Battery Voltage > 65 Volts.
4,3	THERMAL CUTBACK	Over/Under Temperature Cutback	Controller Temp. > 85° C or < -25° C.

Optional Hand Held Programmer

The optional hand held programmer allows you to program, test, and diagnose the speed control system. It is connected to the 4 pin connector next to the LED on the face (or terminal end,) of the controller.

NOTE

THE CONTROLLER IS FULLY PROGRAMMED AT THE FACTORY. THE PROGRAM IS STORED IN NONVOLATILE MEMORY SO THE CONTROLLER SHOULD NEVER REQUIRE REPROGRAMMING.

Test Function

Press the <TEST> button on the programmer. The display screen will show the current status of four-(4) items. Use the <SCROLL DISPLAY> buttons to display the other items listed in the table below.

Display Panel	**Description / Status**
FORWARD SWITCH	Forward Switch: on/off
REVERSE SWITCH	Reverse Switch: on/off
BRAKE SWITCH	Brake Switch: on/off
THROTTLE %	Throttle % of Full
SPEED SWITCH	Hihg/Low Switch: on/off
EMR REV SWITCH	Emergency Reverse Switch: on/off
FWD CONTACTOR	Forward Contactor: on/off
REV CONTACTOR	Reverse Contactor: on/off
BATT VOLTAGE	Current Battery Voltage
HEAT SINK	Current Heat Sink Temperature
MAX TEMP	Maximum Temperature since last cleared
MIN TEMP	Minimum Temperature since last cleared

Diagnostic Function

Press the <DIAGNOSTIC> button on the programmer. The display screen will show any currently active faults. Use the <SCROLL DISPLAY> buttons to display the other items. Use the <MORE INFO> button to display additional information on the selected item. See table below.

Possible Messages That Could Be Displayed	
BB WIRING CHECK	BB Wiring Check Failed
CONT DRVR OC	Contactor Driver Over Current
DIR CONT WELDED	Direction Contactor Welded
HPD	High Pedal Disable Activated
HW FAILSAFE	Hardware Fail-Safe Activated
LOW BATTERY VOLTAGE	Battery Voltage <21 Volts
M- FAULT	M- Output Fault
MISSING CONTACTOR	Missing Contactor
NO KNOWN FAULTS	No Known Faults
OVERVOLTAGE	Battery Voltage >65 Volts
SRO	Static Return to Active Off
THERMAL CUTBACK	Controller Overheated
THROTTLE FAULT 1	Throttle Input Fault
THROTTLE FAULT 2	Throttle Low Input Fault

These messages are listed in alphabetical order.

Special Diagnostic Functions

Hold down the <MORE INFO> button and press the <DIAGNOSTIC> button at the same time. This will display the history file of all the faults that occurred since the memory was cleared. Use the <SCROLL DISPLAY> button to view the entire file. Refer to the table above. Use the <MORE INFO> button to display additional information on the selected item.

To clear the Diagnostic History File, select "Clear Diagnostic History" on the screen and press the <MORE INFO> button for instructions.

Program Function

Press the <PROGRAM> button. The display will show (4 at a time) all of the programmable parameters and features of the controller along with their current settings. Use the <SCROLL DISPLAY> button to display the other items.

One of the 4 items displayed will have flashing arrow next to it. The setting of the item can be changed using the <CHANGE VALUE> button. When the LED on the <CHANGE VALUE> button is not on, then the upper or lower value has been reached for that item.

Press the <MORE INFO> button to display the bar graph of the item being displayed.

Refer to the program menu on pages 11 for a listing of the menu items and the factory settings.

⚠WARNING ***Deviation from the factory settings is not recommended. A misadjusted controller could cause drive train damage and/or unanticipated operation of the truck.***

Special Program Function

Hold down the <MORE INFO> button and press the <PROGRAM> button at the same time. The display will show the special program menu. Use the <SCROLL DISPLAY> button to display the other items.

To select an item to change use the <SCROLL DISPLAY> button to move the desired item to the top of the screen and press <MORE INFO> to find out how to make the adjustment.

Command Definitions

Reset All Settings

Use this item during a programming session to revert to the previous settings. In other words this will reset all the settings to their values prior to any changes that you may have done.

Cont Setting ⟶ Prog

This will upload the program settings from the controller into the programmer memory.

Clear Diag History

This will clear the diagnostic history file.

Contrast Adjustment

Adjusts the display screen contrast.

Language Selection

Changes the language used by the programmer.

Programmer Info

Displays programmer information.

Controller Info

Displays information on the controller that the programmer is connected to.

Programmer Self Test

Press the <MORE INFO> button while the programmer is powering up . Toggle between two test screens using the <SCROLL DISPLAY> button.

The first turns on the entire LCD display. The second screen shows all of the characters used.

Each button can be tested by pressing the button and checking to see if it's LED lights.

Unplug the programmer to reset it.

PROGRAM MENU			
DISPLAY	DESCRIPTION	RANGE	FACTORY SETTING
MAIN C/L	Main Current Limit	10-500	500
L/S MAIN C/L	Low Speed Main Current Limit	10-500	500
PLUG C/L	Plug Current Limit	8-500	8*
L/S PLUG C/L	Low Speed Plug Current Limit	8-500	8*
EMR REV C/L	SETTING NOT USED	N/A	N/A
L/S EMR REV C/L	SETTING NOT USED	N/A	N/A
RAMP C/L	Ramp Start Current Limit	10-500	350
L/S RAMP C/L	Low Speed Ramp Start Current Limit	10-500	350
ACCEL RATE	Acceleration Rate in Seconds	0-3.0	1.5
QUICK START	Quick Start Throttle Factor	0-6.0	0.2
THROTTLE TYPE	Throttle Type ⚠**WARNING** DO NOT CHANGE	1-3	3
ANTI TIEDOWN	SETTING NOT USED	N/A	N/A
CREEP SPEED	Creep Speed, as % PWM Duty Cycle	0-25	0
LOW SPEED	Low Speed, as % PWM Duty Cycle	40-100	60
HIGH SPEED	High Speed, as % PWM Duty Cycle	40-100	100
EMR REV SPEED	SETTING NOT USED	N/A	N/A
SEQUENCING DLY	Sequencing Delay in Seconds	0-3.0	0
VARIABLE PLUG	Throttle Variable Plug Braking	On/Off	Off*
HIGH PEDAL DIS	High Pedal Disable (HPD) DO NOT CHANGE	0-2	1
SRO	Static Return to Off DO NOT CHANGE	0-3	1
RAMP SHAPE	Throttle Map	20-70	20

⚠WARNING *Deviation from the factory settings is not recommended. A mis-adjusted controller could cause drive train damage and/or unanticipated operation of the truck.*

Programming Terms

The following is a list of terms used in the program menu and their meanings.

1. **Acceleration Rate:** The acceleration rate is the time in seconds it takes the controller to increase from 0% to 100% duty cycle.
2. **Creep:** Is the term used to indicate the speed the truck travels when the contactors first close.
3. **High Speed:** Setting to control the percent of power available when the accelerator pedal is depressed in the fast mode.
4. **HPD:** "High Pedal Disable," prevents the truck from being started while the accelerator pedal is depressed.
5. **Low Speed:** Setting to control the percent of power available when the accelerator pedal is depressed in the slow mode.
6. **Low Speed Current Limit:** Maximum current allowed while in the slow mode.
7. **Main Current Limit:** Maximum current allowed while in the fast mode.
8. **Plugging:** The term used when describing the use of the motor as a brake.
9. **PWM:** Pulse Width Modulation, The duty cycle the motor is being operated at. The duty cycle varies with the accelerator position. 100% PWM is full power, pedal fully depressed.
10. **Quick Start Factor:** Momentarily overrides setting of acceleration rate for ease of starting up inclines.
11. **Ramp Start Current Limit:** Overrides plug brake current for starting up ramps. Ramp start current limit is selected when the seat switch closes and a direction is selected. If the direction is changed, ramp start current limit is canceled. To re-select ramp start current limit, select a direction for 1 second, return to neutral then return to the original direction selected.

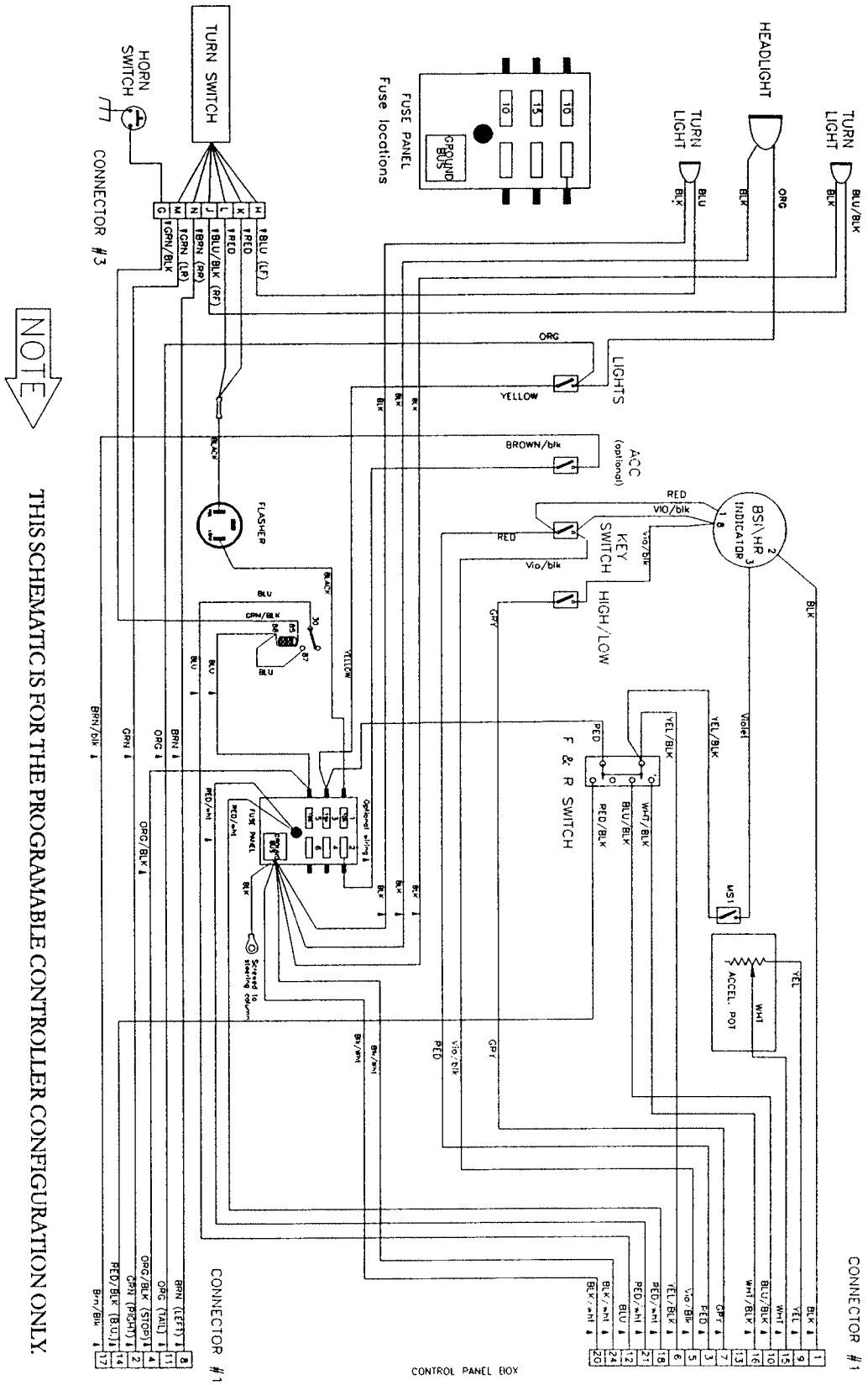
12. **Sequencing Delay:** It is a debounce timer for the seat switch. It prevents the control form going into SRO or HPD should the driver bounce on the seat momentarily opening the seat switch.

13 **SRO:** "Static Return to Off," prevents the truck from being started when in gear.

14. **Throttle Map:** Provides a nonlinear response to the accelerator pedal. A setting of 50 corresponds to a linear response. A higher setting means that 50% power would be supplied at 50% of accelerator pedal position.

15. **Throttle-Variable Plug Braking:** Provides for a fixed plug current or variable plug braking depending on accelerator pedal position.

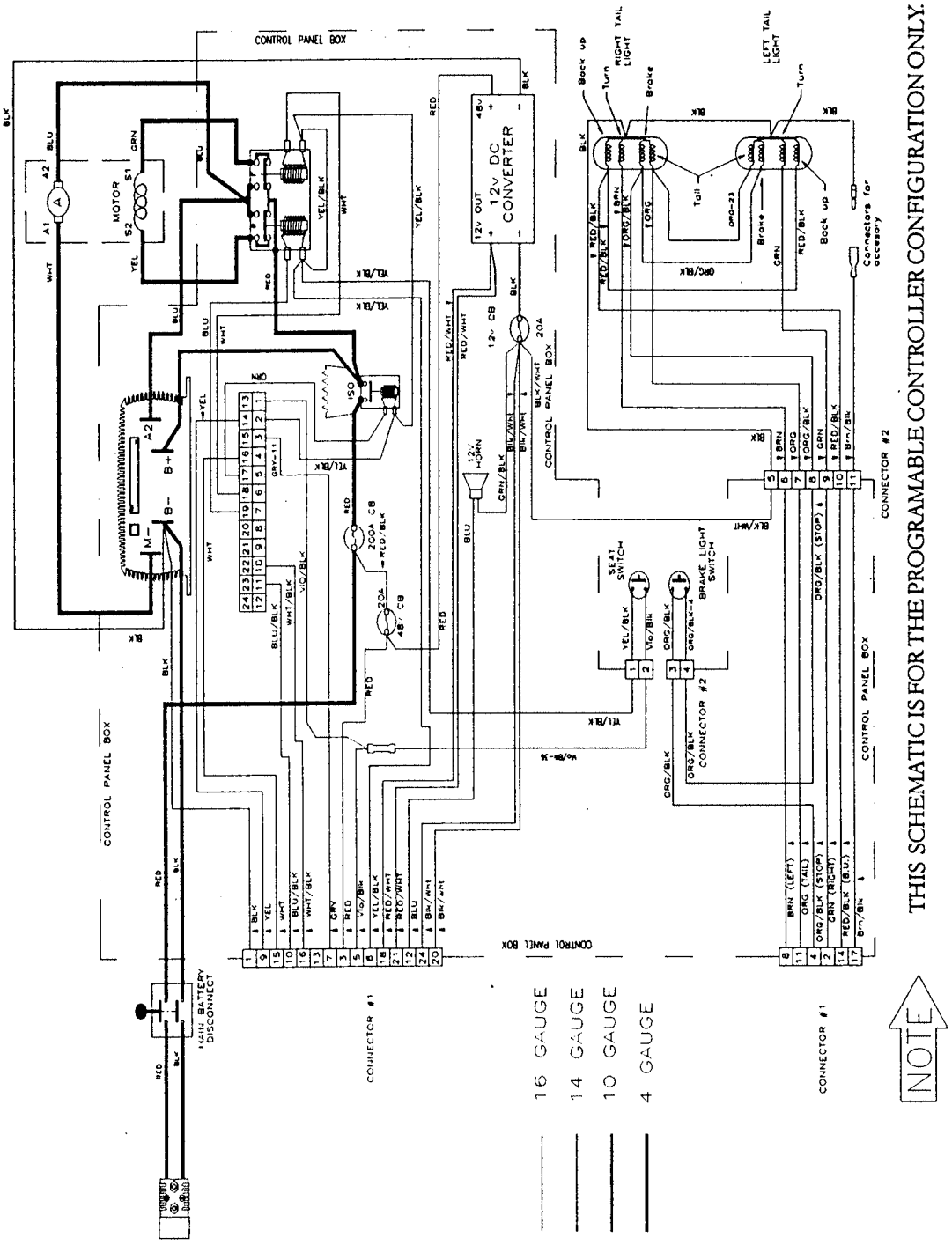
Dash Wiring Schematic



NOTE

THIS SCHEMATIC IS FOR THE PROGRAMABLE CONTROLLER CONFIGURATION ONLY.

Control Panel and Tail Light Schematic



Standard Nonprogrammable Controller

Please refer to Section 1, "SAFETY / GENERAL INFORMATION" before performing any repairs / maintenance on thisvehicle

⚠WARNING

Raise the rear wheels off the ground during all tests. After the repairs are complete, throughly test the vehicle before lowering it to the ground.

The following repairs should be performed only by a qualified electrical mechanic.

Test Equipment Needed:

Volt/Ohm meter.

62-027-00 Test light or equivalent (equal to rated battery voltage of truck).

Check each of the following items before preceeding:

All power wiring for loose connections.

Battery status and charge as necessary

All interlock switches (as equipped) for continuity.

ALL VOLTAGE TESTS ARE REFERENCE BATTERY NEGATIVE UNLESS OTHERWISE SPECIFIED. ALL TESTS WITH KEY SWITCH ON AND INTERLOCK SWITCHES CLOSED (ON).

⚠CAUTION

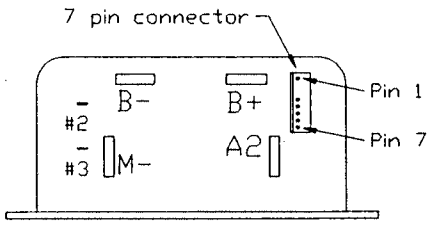
It is very important that you start your testing proceedures from the begining. When you are prepared to begin go to START on the next page to begin the testing proceedure. Do not start your testing in the middle of the proceedure or skip form section to section without being instructed to do so. If you do not follow these steps exactly as written you can get the wrong test results.

Start

If the truck runs in one direction only, go to CONTACTORS 1.
If the truck runs or accelerates slow or does not run at all **and** motor current is high then go to PMC.

Control/Power Wire Input at The Controller

1. Place the forward-reverse switch in forward.
2. Step on the accelerator pedal to engage MS1 **only** (creep speed).
3. Remove the wires from pins 2 and 3. Measure the resistance across these wires while depressing the accelerator pedal. The Ohm meter should go smothly from 0 to 5K ohms as the pedal is depressed.
   a.) If not check wiring and pot box.
4. Test volts at Pin 1 on the controller 7-pin connector.
   a.) If not battery volts, go to KEY SWITCH.
5. Test volts at Pin 6 (Blue/black) on the controller 7-pin connector.
   a.) If not battery volts, check wiring, forward-reverse switch, and key switch. >>END
6. Test volts across B- and B+ at the PMC.
   a.) If not BATTERY volts then go to CONTACTORS 1.



PMC.DWG

7. Place the forward-reverse switch in reverse.
8. Step on the accelerator pedal to engage MS1 only (creep speed).
9. Test volts at Pin 7 (White/black) on the controller 7-pin connector.
   a.) If not BATTERY volts, check wiring, forward-reverse switch, key switch. >>END
10. Referencing battery positive, test volts at Pin 3 (Black).
    a.) If not negative (-) battery volts, the controller is bad.
11. Depress the accelerator pedal **fully**.
12. Test volts at Pin 2 (Orange/Black) on the controller.
    a.) If not 11 - 11.5 volts, go to ACCELERATOR MODULE.
13. Release the accelerator and turn the key switch off.

Power Wiring

1. Disconnect the batteries.
2. Test the main circuit breaker for continuity.
   a.) If not 0 ohms, replace the circuit breaker. >>END.
3. Reconnect the batteries.
4. Turn the key switch on.
5. Place the forward-reverse switch in forward.
6. Connect the test light across the controller B+ and M- terminals.
   a.) Depress the accelerator fully
   b.) If the light **does not** turn on, the controller is bad. >>END
7. Connect test light across the motor S1 and S2 terminals.
   a.) Depress the accelerator fully
   b.) If the light **turns ON**, the motor field is open. >>END
8. Connect test light across the motor A1 and A2 terminals.
   a.) Depress the accelerator fully
   b.) If the light **turns ON**, the armature is open. >>END

   Go to **CONTACTORS 1.**

Key-Switch

1. Turn key switch on.
2. Test voltage on both terminals at the key switch.
   a.) If only one terminal is at BATTERY volts then the switch is bad. END.
   b.) If both terminals are not at BATTERY voltage then check the wiring to the main circuit breaker. END.
   c.) If the voltage is good at both terminals then check the wiring to the directional switch and the directional switch for opens. END.

IF YOU REACHED THIS POINT AND DID NOT LOCATE THE PROBLEM, YOU EITHER HAVE AN UNANTICIPATED FAILURE OR YOU MAY NOT HAVE PERFORMED THE TESTS CORRECTLY.

Contactors 1

If the truck runs in forward only, go to FORWARD ONLY

If the truck runs in reverse only, go to REVERSE ONLY

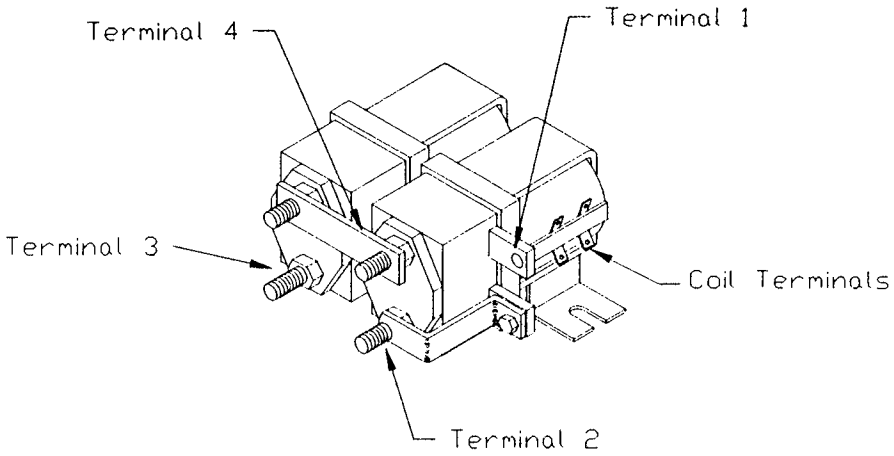
1. Turn the key switch on, depress accelerator pedal to engage MS1.
   a.) If the isolator contactor clicks, skip to step 5.
2. Check voltage on the isolator coil positive.
   a.) If not battery volts then go to KEY SWITCH. If this has been done, check the wiring to the directional switch. END.
3. Check voltage **across** the isolator coil.
   a.) If BATTERY volts, the isolator coil is bad. END
   b.) If not BATTERY volts check negative wiring, circuit breaker. END
4. Check the circuit breaker input and output terminals. Both should be battery voltage.
   a.) If the output terminals is low, the circuit breaker is bad.
5. Check voltage at the controller B+ terminal.
   a.) If not equal to BATTERY volts, the isolator contacts are bad. END

Forward Only

1. Place the forward-reverse switch in neutral.
2. Depress the accelerator pedal.
3. Place the forward-reverse switch in REVERSE.
   a.) If the reverse contactor clicks, go to REVERSE CONTACTS
4. If the reverse contactor does not click, check the voltage at the REVERSE contactor coil positive(+).
   a.) If not battery volts, check wiring, forward-reverse switch. END
5. Check the voltage **across** the reverse contactor coil.
   a.) If not BATTERY volts then check the wiring to Pin 3 on the controller 7-pin connector. END.

Reverse Contacts

1. Connect the test light across the forward-reverse contactor terminals 2 & 4 (Reverse Normally-open).
2. Depress the accelerator pedal fully.
   a.) If the light is 'ON', then the contactor is bad. END
3. Connect the test light across contactor terminals 1 and 2 (Forward Normally-closed).
4. Depress the accelerator pedal fully.
   a.) If the light is 'ON', the contactor is bad. END



Forward and Reverse Contactors.DWG

Reverse Only

1. Place the forward-reverse switch in neutral.
2. Depress the accelerator pedal.
3. Place the forward-reverse switch in FORWARD.
   a.) If the FORWARD contactor clicks, go to FORWARD CONTACTS
4. Check voltage at FORWARD contactor coil positive (+).
   a.) If not battery volts, check the wiring and forward-reverse switch. END
5. Check the voltage across the FORWARD contactor coil.
   a.) If not BATTERY volts, check wiring to Pin 3 on the controller 7-pin connector. END

Forward Contactors

1. Depress the accelerator pedal fully.

2. Connect the test light across the forward-reverse contactor terminals 3 and 4 (Forward Normally-open).

   a.) If light is 'ON', the contactor is bad. END

3. Connect test light across the forward-reverse contactor terminals 1 and 3.

   a.) If light is 'ON', the contactor is bad. END

IF YOU REACHED THIS POINT AND DID NOT LOCATE THE PROBLEM, YOU EITHER HAVE AN UNANTICIPATED FAILURE OR YOU MAY NOT HAVE PERFORMED THE TESTS CORRECTLY.

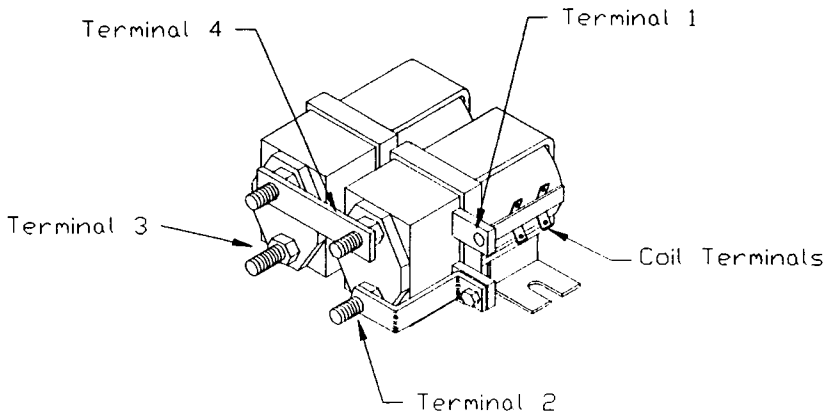
PMC

1. If the truck mis-operates in one direction only then go to CONTACTORS 2.
2. Disconnect batteries
3. Remove the wires from the PMC A2 terminal.
   a.) Test continuity between the PMC A2 and B+ terminals in both polarities.
   b.) These two terminals should test as a diode.
   c.) If it test shorted the PMC is bad.>>END.

Contactors 2

1. Disconnect the motor S1 and S2 wires and the PMC M- wires.

2. Tape off wires to prevent shorts.
3. Reconnect batteries.
4. Place directional switch in neutral.
5. Test continuity from terminal 4 to terminal 2.
   a.) If it is shorted then the contactor is bad. >>END
6. Test continuity from terminal 4 to terminal 1.
   a.) If it is shorted then the contactor is bad. >>END

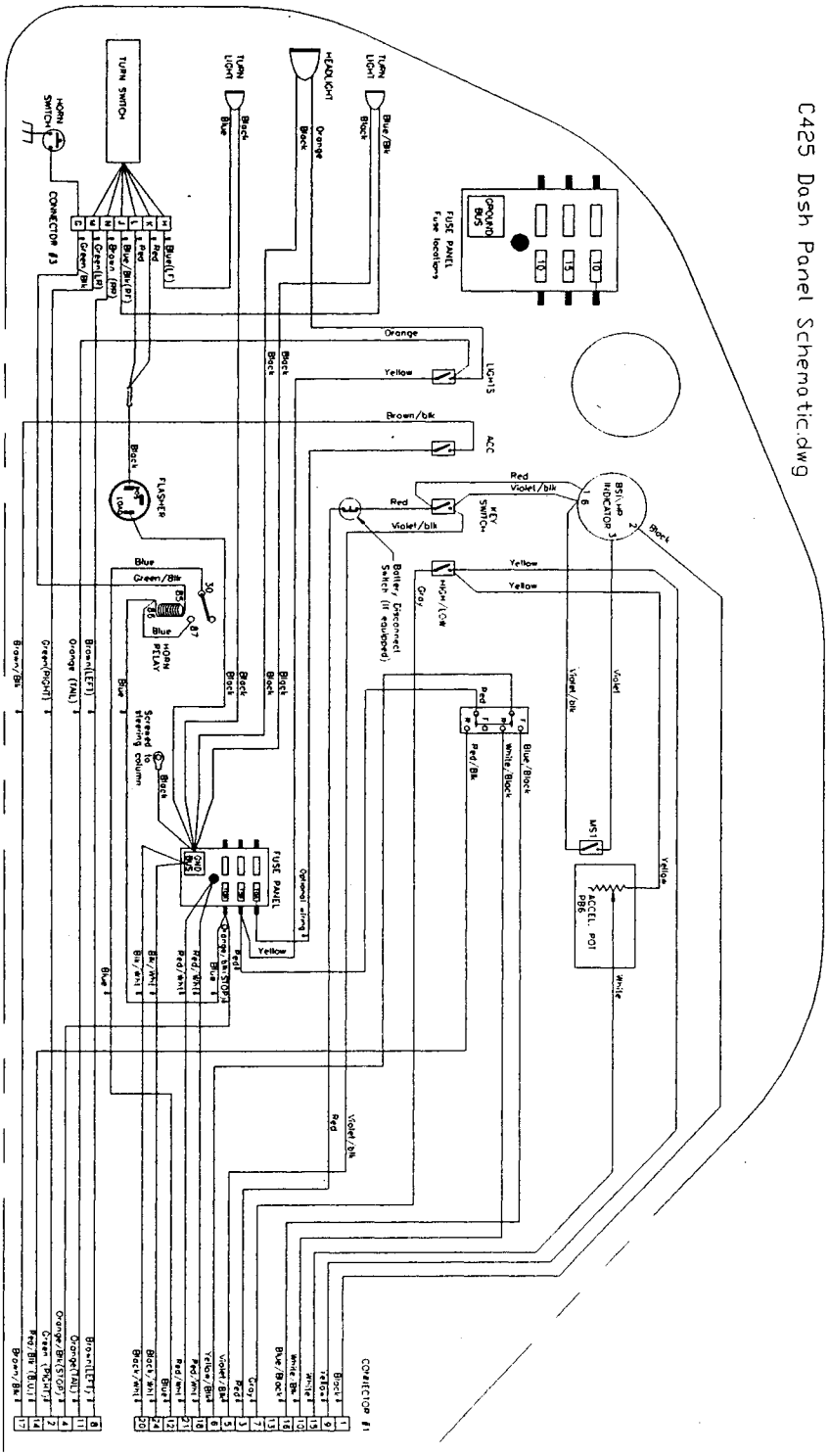


Forward and Reverse Contactors.DWG

7. Directional switch in FORWARD, depress accelerator pedal.
8. Test continuity from terminal 1 to terminal 3.
   a.) If it is shorted then the contactor is bad. >>END
9. Directional switch in REVERSE, depress accelerator pedal.
10. Test continuity from test terminal 1 to terminal 2.
    a.) If it is shorted then the contactor is bad. >>END
11. Reconnect motor and PMC wires.
12. Reconnect battery.

NOTES

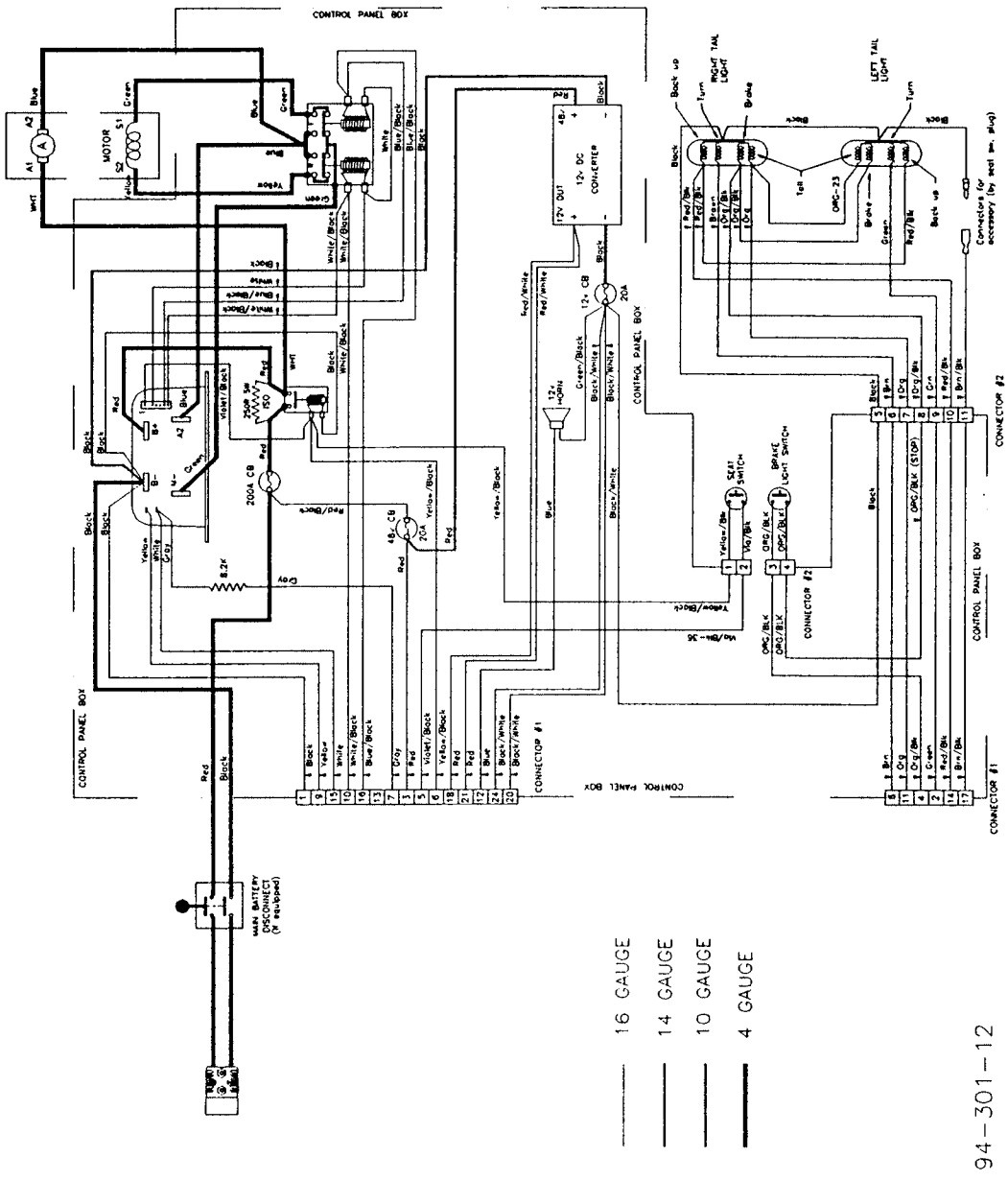
Dash Wiring Schematic



NOTE

THIS SCHEMATIC IS FOR THE NONPROGRAMABLE CONTROLLER CONFIGURATION ONLY.

Control Panel and Tail Light Schematic

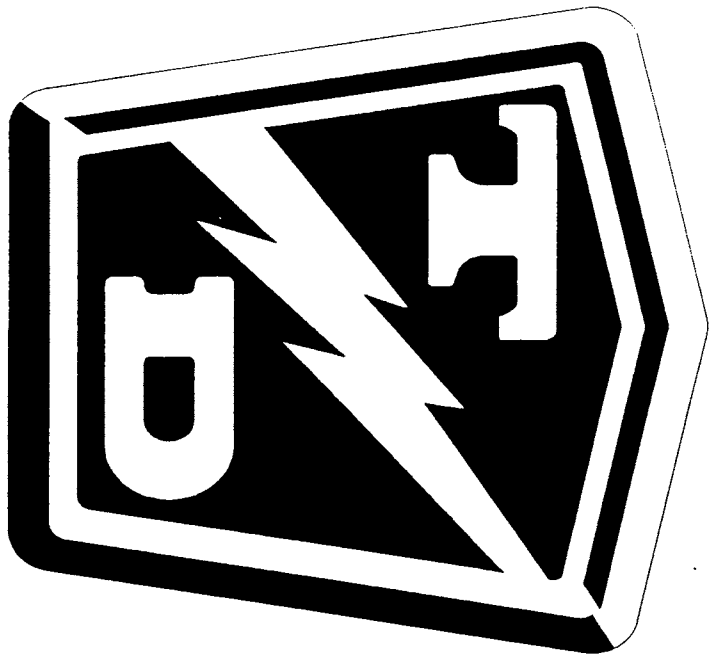


94-301-12

NOTE

THIS SCHEMATIC IS FOR THE NONPROGRAMABLE CONTROLLER CONFIGURATION ONLY.

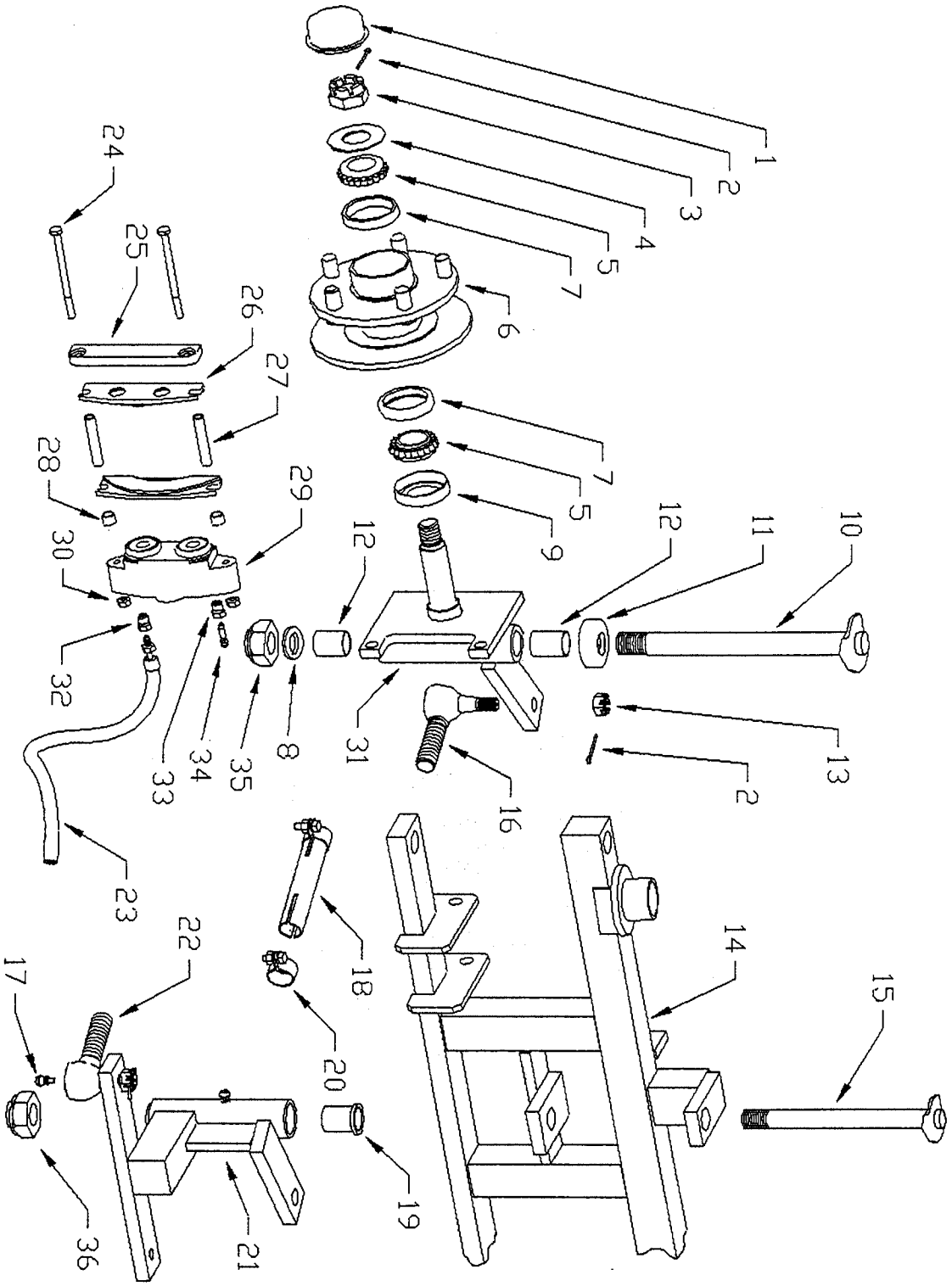
TAYLOR -DUNN



Illustrated Parts List

Section 4

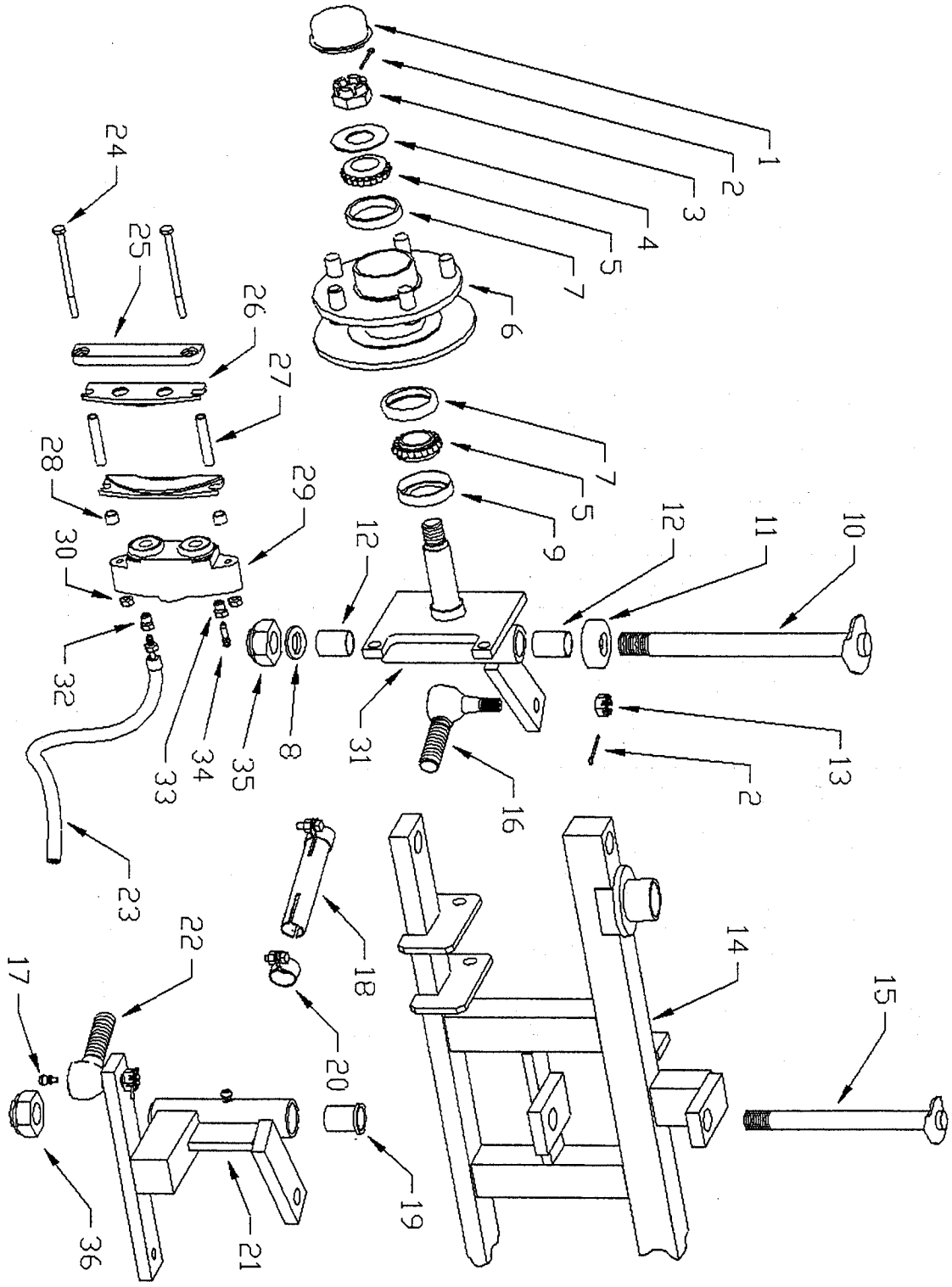
FRONT AXLE & BRAKES



FRONT AXLE			
ITEM #	PART #	DESCRIPTION	QTY
1	92-104-01	Bearing Cap	2
2	88-527-14	Cotter Pin	6
3	88-239-85	Spindle Nut	2
4	88-228-61	3/4" SAE Flat Washer	2
5	80-017-00	Wheel Bearing	4
6	12-158-10	Hub W/Rotor (Includes #'s 5, 7, & 9)	2
7	80-103-00	Wheel Bearing Race	4
8	88-268-61	7/8" Flat Washer	2
9	45-228-00	Grease Seal	2
10	21-015-15	King Pin	2
11	80-309-00	Thrust Bearing	2
12	32-204-10	Upper or Lower King Pin Bushing	4
13	88-159-85	Castle Nut	4
14	15-425-10	Front Axle Weldment	1
15	21-015-20	Pivot Pin	1
16	86-501-98	Ball Joint (Left)	2
17	87-074-00	Grease Fitting	4
18	18-020-30	Tie Rod	2
19	32-200-00	pivot Pin Bushing	2
20	86-510-00	Ball Joint Clamp	4

Section 4

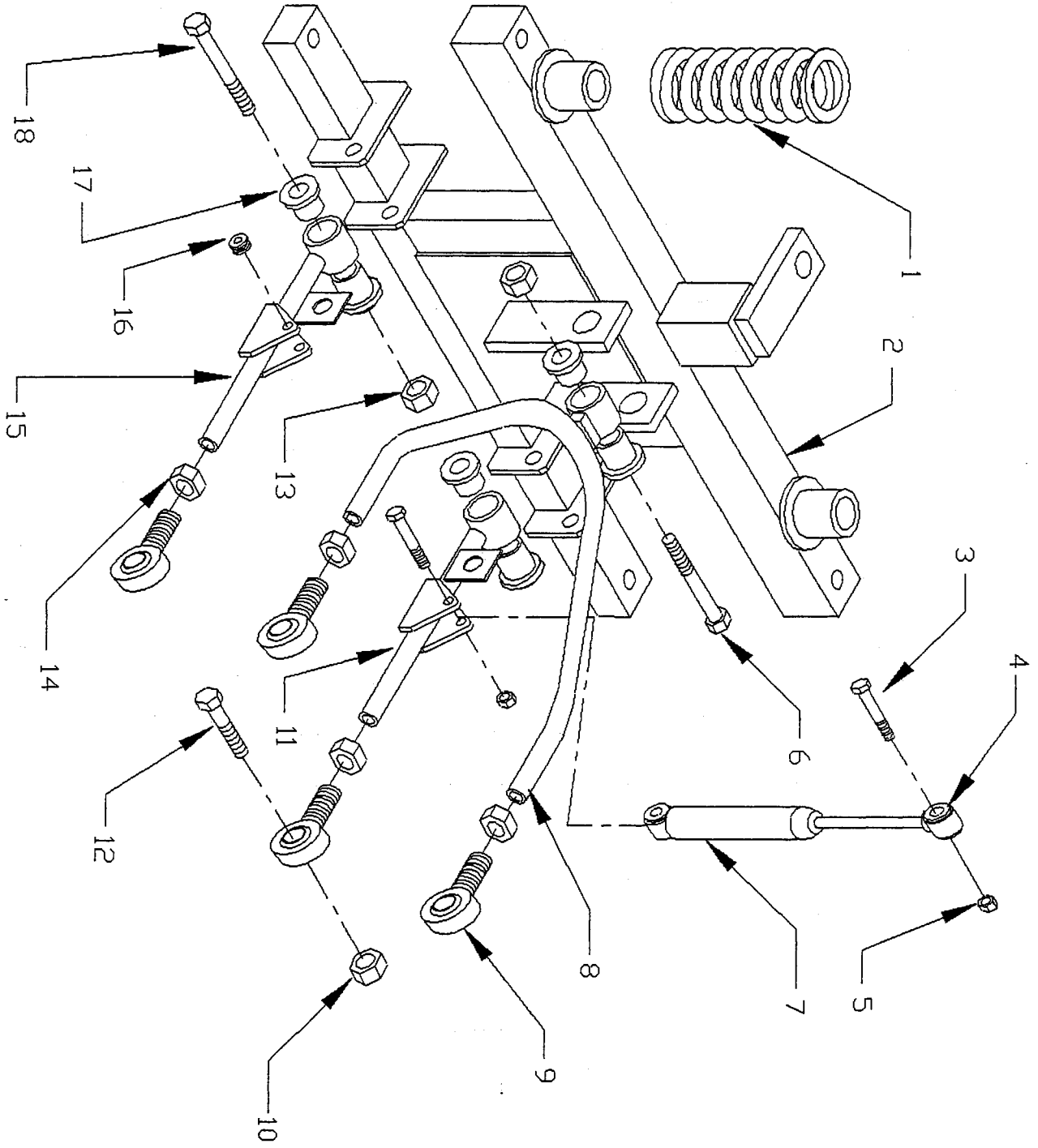
FRONT AXLE & BRAKES CONT'D



FRONT AXLE			
ITEM #	PART #	DESCRIPTION	QTY
21	14-425-07	Pivot Weldment with Bushings	1
22	86-501-99	Ball Joint (Right)	1
23	99-580-10	Brake Hose	2
24	88-067-21	1/4" X 3-3/4" Gr. 8 Bolt	4
25	41-350-51	Secondary Plate	4
26	41-348-70	Brake Pad	4
27	41-348-52	Brake Spacer	4
28	32-240-40	Brake Spacer Bushing	4
29	41-350-30	Brake Body	4
30	88-069-82	1/4"-20 Gr. 8 Lock Nut **(DO NOT REUSE)**	4
31	14-425-05	Left Steering Knuckle with Bushings	1
	14-425-06	Right Steering Knuckle with Bushings	1
32	99-575-10	Brake Hose Adapter	2
33	99-588-01	Brake Bleeder Adapter	2
34	99-588-00	Brake Bleeder	2
35	88-289-81	King Pin / Pivot Pin Nut	3

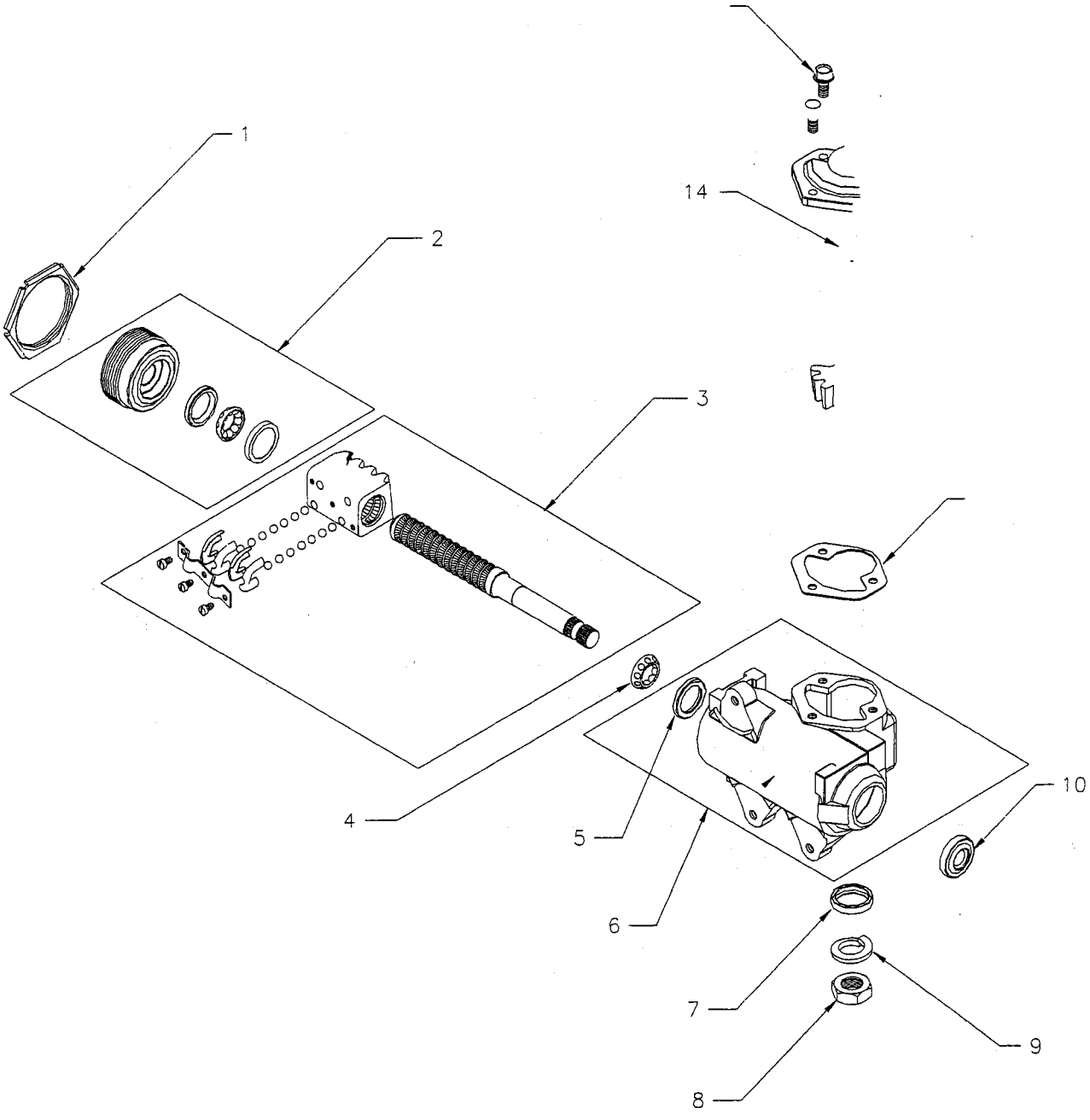
Section 4

FRONT SUSPENSION



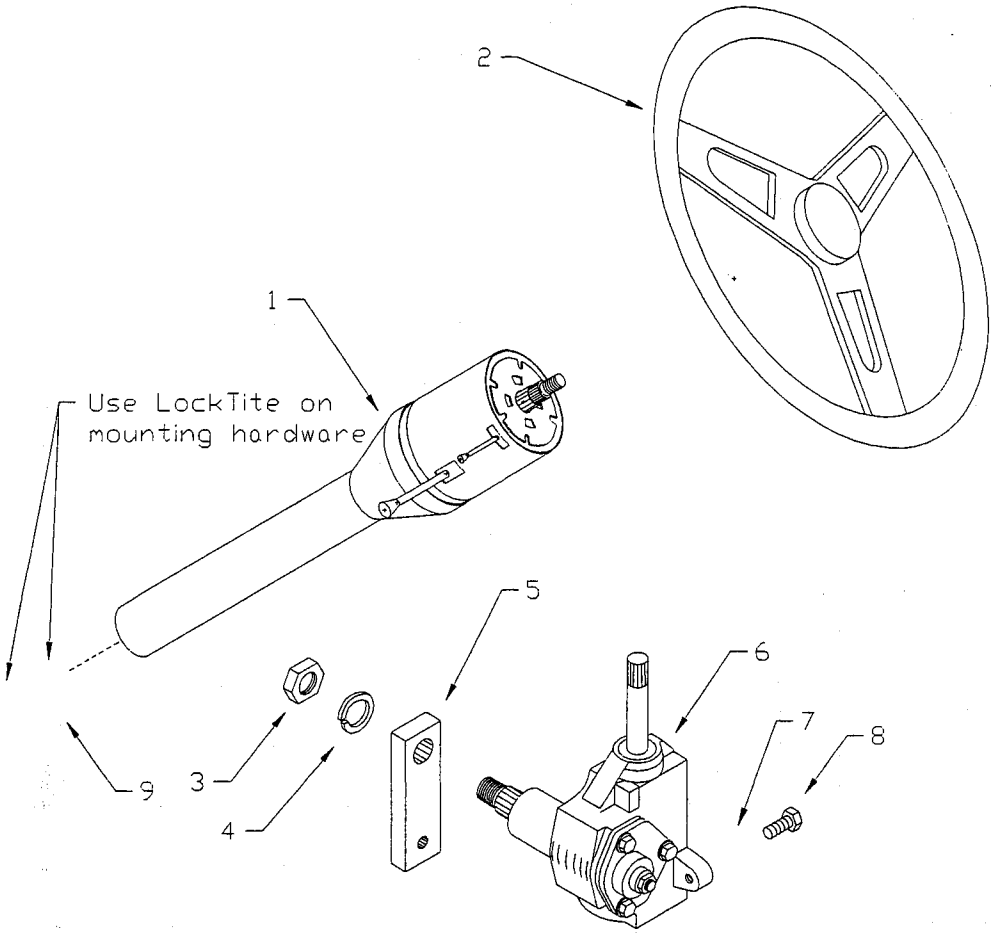
FRONT SUSPENSION			
ITEM#	PART #	DESCRIPTION	QTY
1	85-142-00	Coil Spring	2
2	15-425-10	Axle Beam Weldment	1
3	88-101-16	3/8"-NC X 2" Hex Bolt	4
4	32-207-10	Shco Bushing	4
5	88-109-81	3/8"-NC Locknut	4
6	96-240-00	1/2"-NC X 4" Hex Bolt	1
7	86-007-00	Front Shock	2
8	00-425-00	Upper Suspension Arm	1
9	86-521-99	Rod End	4
10	88-189-81	5/8"-NC Thin Pattern Locknut	4
11	00-425-01	Lower Suspension Arm (Left)	1
12	88-108-18	5/8"-NC X 2-1/2" Hex Bolt	4
13	88-149-81	1/2"-NC Locknut	3
14	88-199-82	5/8"-NF Hex Jam Nut	4
15	00-425-15	Lower Suspension Arm (Right)	1
16	98-607-10	Brake Hose Grommet	2
17	32-214-50	Bushing	6
18	88-140-22	1/2"-NC X 3-1/2" Hex Bolt	3

STEERING GEAR

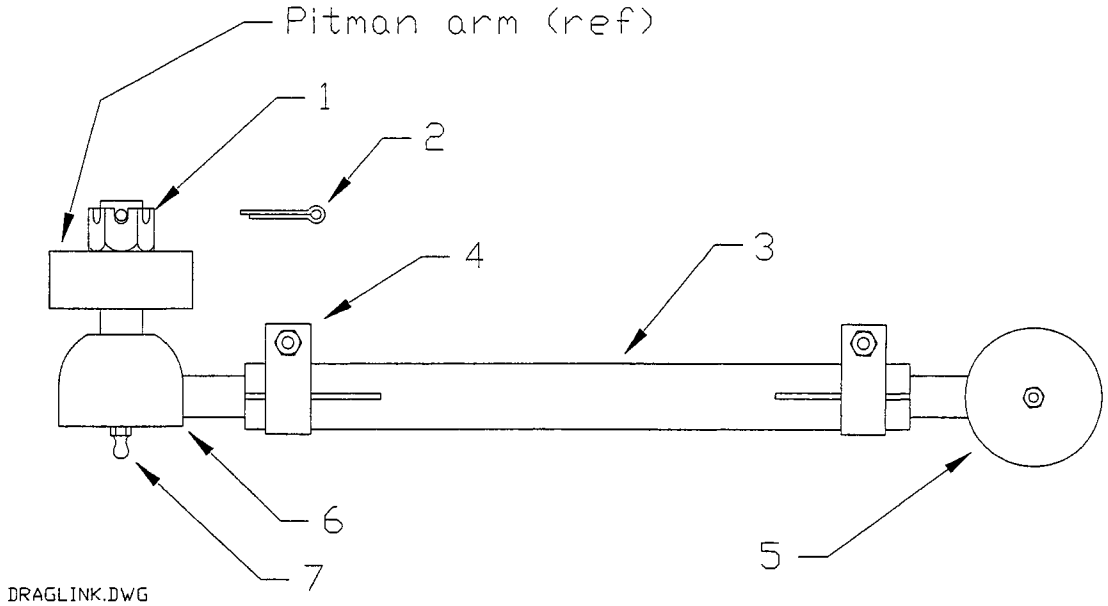


STEERING GEAR			
ITEM#	PART #	DESCRIPTION	QTY
1	18-308-70	locknut, Worm Bearing Adjuster	1
2	18-308-71	Adjuster Assembly	1
3	18-308-72	Worm Assembly	1
4	18-308-23	Upper Worm Bearing	1
5	18-308-22	Upper Worm Bearing Race	1
6	18-308-77	Housing, Steering Gear	1
7	18-308-78	Seal, Pitman Shaft	1
8	18-308-80	Nut, Pitman Shaft	1
9	18-308-81	Lock Wahser, Pitman Shaft	1
10	18-308-79	Seal, Worm Shaft	1
11	18-308-82	Gasket, Side Cover	1
12	18-308-76	Pitman Shaft	1
13	18-308-75	Lash Adjuster	1
14	18-308-85	Shim Kit	1
15	18-308-84	Side Cover	1
16	18-308-86	Nut, Lask Adjuster	1
17	18-308-83	Bolt, Side Cover	3

STEERING COLUMN ASSY



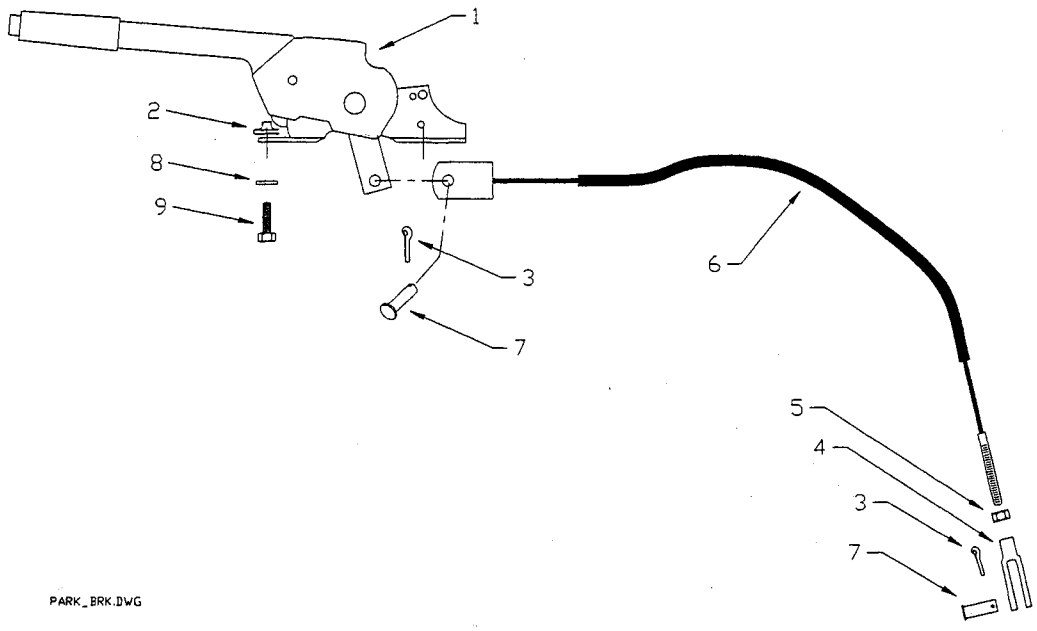
DRAG LINK



STEERING COLUMN ASSEMBLY			
ITEM #	PART #	DESCRIPTION	QTY
1	18-414-32	Steering Column Assembly	1
2	19-005-17	Steering Wheel	1
3	88-279-82	7/8" NF Jam Nut	1
4	88-262-62	Split Lock Washer	1
5	18-108-00	Pitman Arm	1
6	18-308-21	Steering Gear	1
7	88-128-62	7/16" Split Lock Washer	3
8	88-120-15	7/16" X 1-1/2" NC Hex Bolt	3
9	18-308-04	Universal Joint	1
10	19-005-00	Steering Wheel Adapter	1
11	18-414-60	Replacement Lever, Knob	1
Not Shown	96-123-45	Steering Column U-Bolt	1
DRAG LINK			
1	88-159-85	Castle Nut	2
2	88-257-11	Cotter Pin	2
3	18-057-11	Drag Link	1
4	86-510-00	Ball Joint Clamp	2
5	86-501-99	Ball Joint with Grease Fitting (RH)	1
6	86-501-98	Ball Joint with Grease Fitting (LH)	1
7	87-071-00	Grease Fitting	2
	18-035-10	Complete Drag Link Assembly (All Parts)	

Section 4

PARK BRAKE LINKAGE



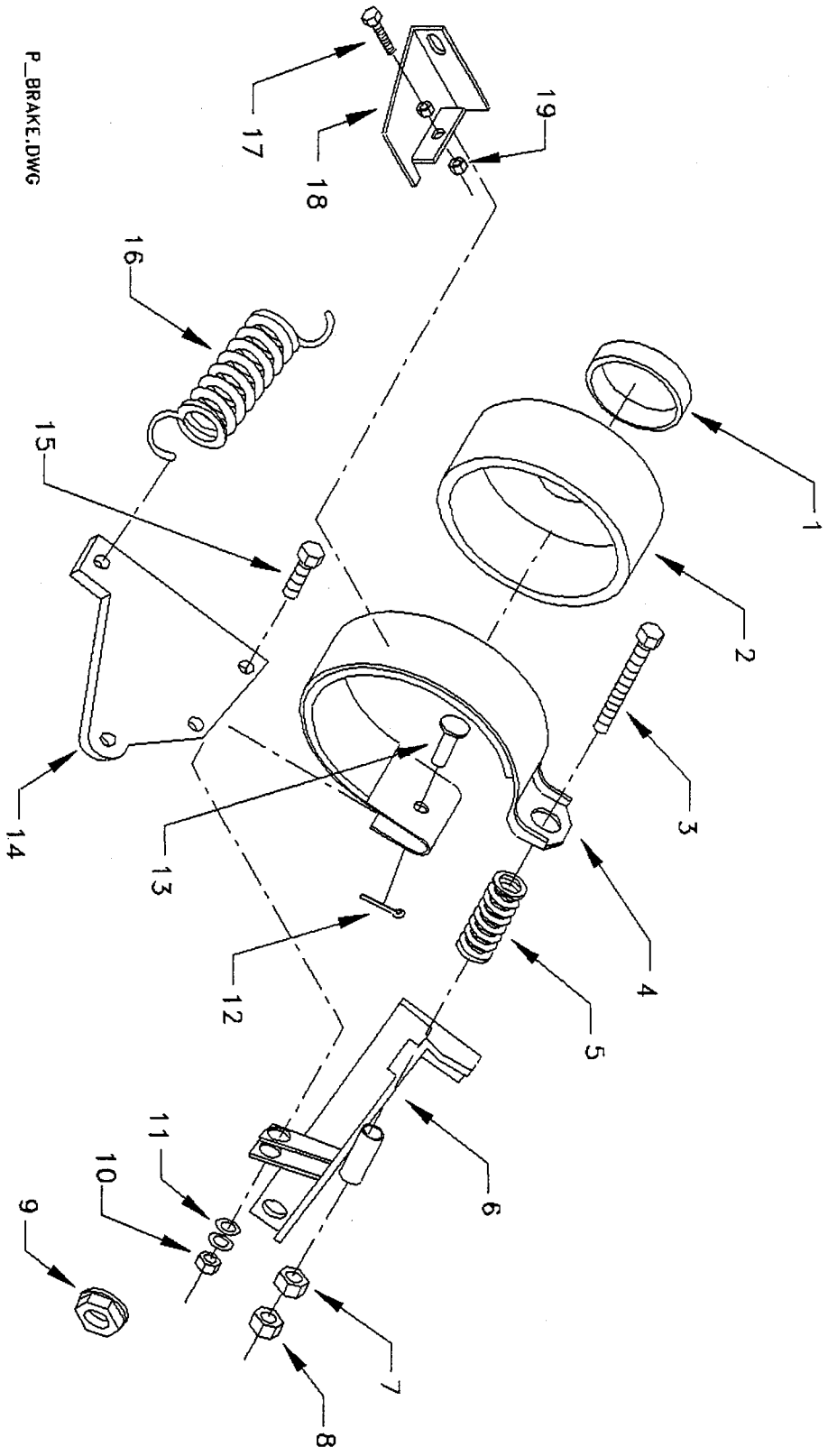
PARKING BRAKE LINKAGE			
ITEM #	PART #	DESCRIPTION	QTY
1	51-340-10	Park Brake Lever	1
2	97-211-25	5/16" NC U-Nut	2
3	88-517-11	Cotter Pin	2
4	96-763-00	5/16" X 1-1/8" Clevis Pin	1
5	88-099-80	5/16" NF Hex Nut	1
6	96-827-15*	Parking Brake Cable	1
7	96-773-00	5/16" Clevis Pin	2
8	88-099-61	5/16" SAE Flat Washer	2
9	88-080-09	5/16" X 3/4" NC Hex Bolt	2

NOTE

* THE ORIGINAL CALBE MAY BE LONGER AND HAVE 2 EXTENSION PLATES INSTALLED AT THE BRAKE HANDLE END OF THE CABLE. IF THE CALBE IS REPLACED THE EXTENSION PLATES WILL NO LONGER BE REQUIRED AND BE DISCARDED.

Section 4

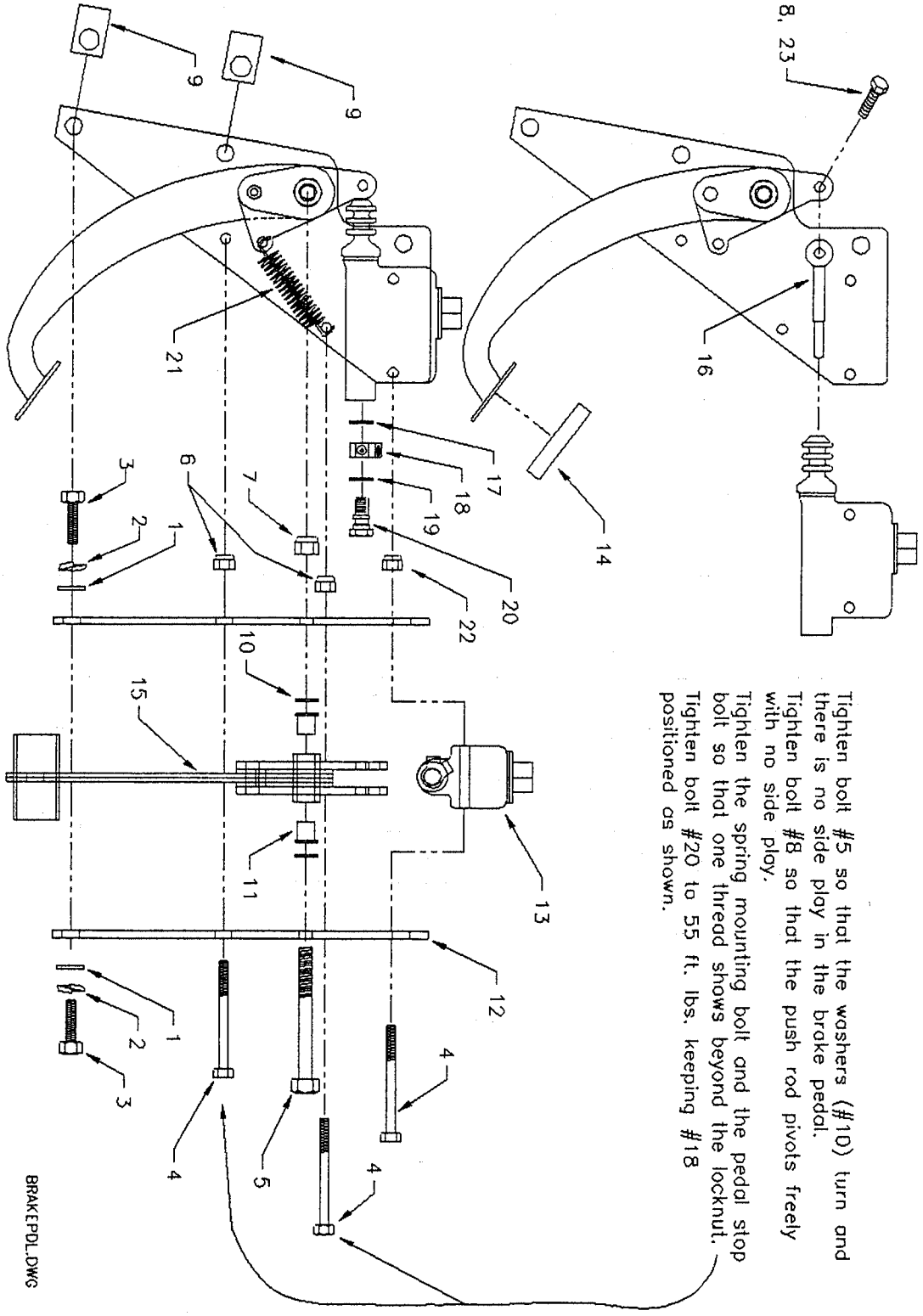
PARKING BRAKE



PARKING BRAKE			
ITEM #	PART #	DESCRIPTION	QTY
1	45-331-00	Pinion Seal	1
2	41-532-00	Brake Drum	1
3	96-245-10	Brake Adjusting Bolt	1
4	41-661-60	Brake Band Kit (Incl. #'s 3, 5, 7, 8, 9, 12, 13)	1
5	85-060-20	2-1/2" Long Spring	1
6	41-372-10	Mounting Bracket	1
7	88-159-84	1/2"-20 NF Lock Nut	1
8	88-159-82	1/2" NF Hex Jam Nut	1
9	97-250-00	Pinion Nut	1
10	88-109-81	3/8" Lock Nut	1
11	88-108-61	3/8" Lock Washer	2
12	88-517-11	3/32" X 1" Cotter Pin	1
13	96-771-00	Clevis Pin	1
14	50-656-04	Brake Arm	1
15	88-101-13	3/8" X 1-1/4" NC Grade 5 Hex Bolt	1
16	85-270-00	Return Spring 4-3/8" Long	1
17	88-080-13	5/16" X 1-1/4" Hex Bolt	2
18	41-371-10	Alignment Bracket	2
19	88-089-91	5/16" Hex Jam Nut	4

Section 4

FOOT BRAKE LINKAGE

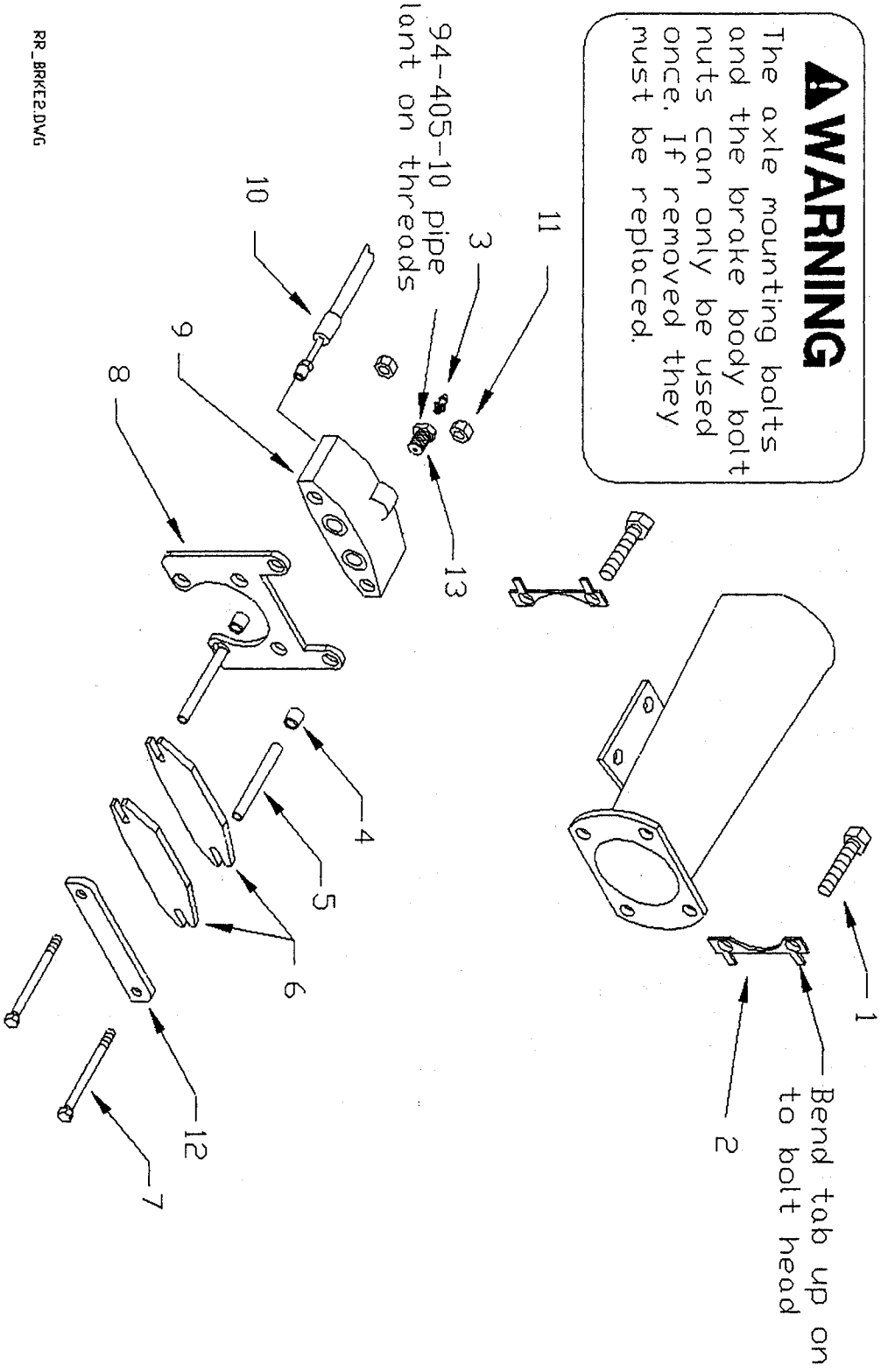


Tighten bolt #5 so that the washers (#10) turn and there is no side play in the brake pedal.
Tighten bolt #8 so that the push rod pivots freely with no side play.
Tighten the spring mounting bolt and the pedal stop bolt so that one thread shows beyond the locknut.
Tighten bolt #20 to 55 ft. lbs. keeping #18 positioned as shown.

FOOT BRAKE LINKAGE			
ITEM#	PART #	DESCRIPTION	QTY
1	88-108-61	3/8" SAE Flat Washer	6
2	88-108-62	3/8" Split Lock Washer	6
3	88-100-11	3/8" X 1" Hex Bolt	6
4	88-101-21	3/8" X 3" NC Hex Bolt	4
5	88-140-22	1/2" NC X 3-1/2" Hex Bolt	1
6	88-109-81	3/8: NC Locknut	2
7	88-149-81	1/2" NC Nylon Lock Nut	1
8	88-100-15	3/8" NC X 1-3/4" Hex Bolt	1
9	97-211-30	3/8" NC U-Nut	6
10	88-148-61	1/2" SAE Flat Washer	2
11	32-215-00	Bushing	2
12	00-425-06	Mounting Plate	2
13	99-510-02	Master Cylinder (Incl. #'s 8, 9, 12) (FOR B2-48/38)	1
14	98-200-00	Brake Pedal Pad	1
15	00-425-08	Brake Pedal Weldment	1
16	50-009-20	Master Cylinder Push Rod	1
17	99-572-00	Copper Gasket	1
18	99-565-00	Y-Fitting (For Vehicles with front and rear brakes)	1
19	99-571-00	Copper Gasket	1
20	99-579-00	HOllow Bolt	1
21	85-250-00	3-5/8" Long, Spring	1
22	88-109-87	3/8" NC KEPS Nut (W/ Losk Washer)	2
23	88-109-81	3/8" NC Lock Nut	1

Section 4

STANDARD REAR BRAKES

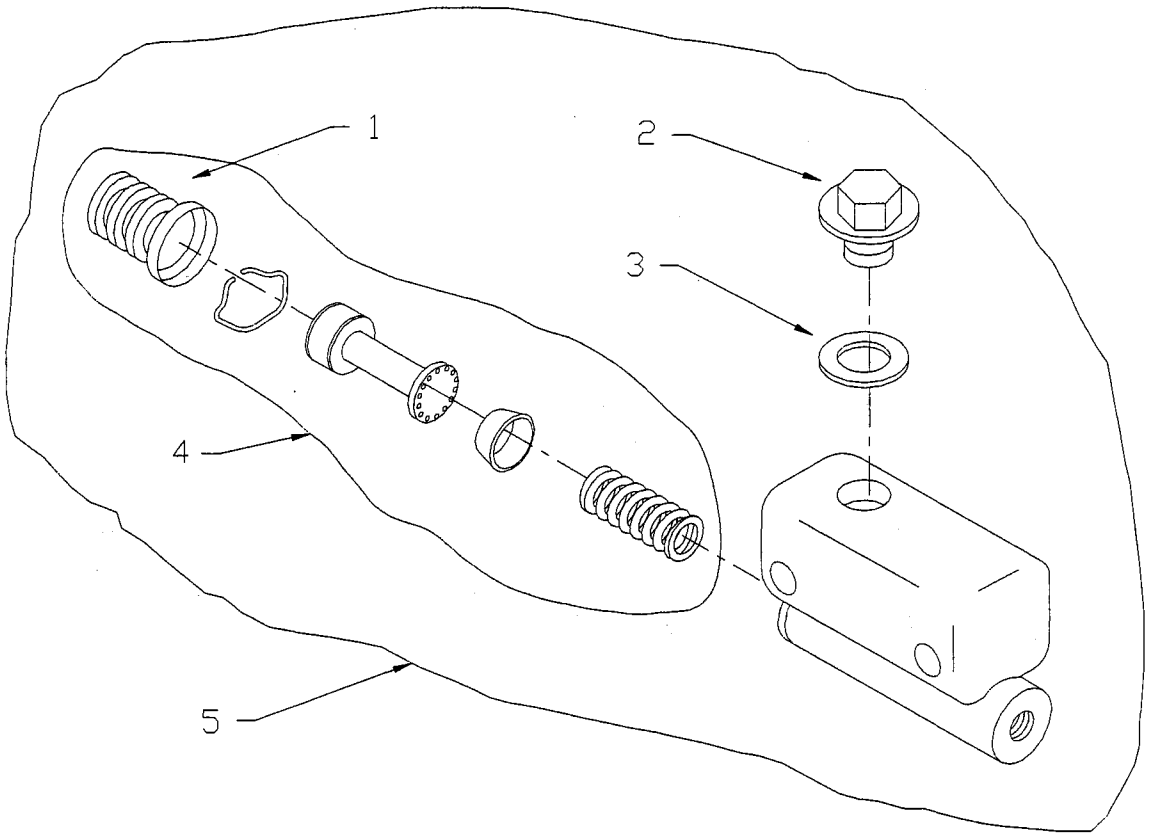


REAR BRAKES			
ITEM#	PART #	DESCRIPTION	QTY
1	96-327-00	Axle Mounting Bolt	8
2	41-350-05	Locking Tab	4
3	99-588-00	Bleeder Valve	2
4	32-240-40	Bushing	4
5	41-382-52	Spacer	4
6	41-348-70	Brake Pad	4
7	88-067-21	Brake Body Bolt	4
8	41-350-08	Axle Retaining Bracket	2
9	41-350-68	Brake Body (Left and Right)	2
10	99-580-20	Brake Hose	2
11	88-069-82	Brake Body Nut (Grade 8) Do Not Reuse	4
12	41-350-51	Brake Pad Backing Plate	2
13	99-588-01	Bleeder Fitting	2
*	41-350-66	Brake Body Rebuild Kit	2

* = Not Shown

Section 4

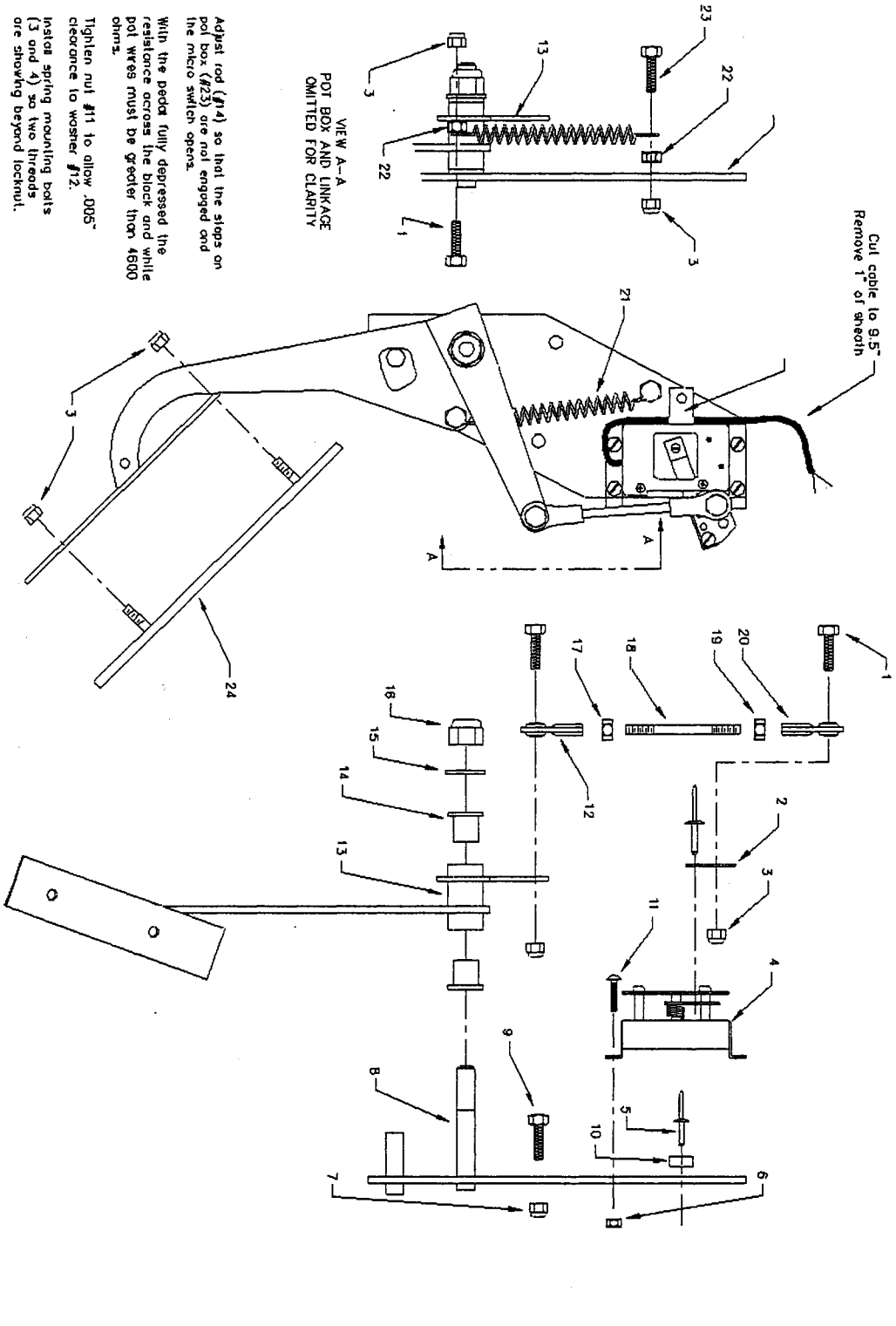
MASTER CYLINDER



MASTER CYLINDER			
ITEM#	PART #	DESCRIPTION	QTY
1	99-510-51	Boot	1
2	99-510-52	Cap	1
3	99-510-53	Gasket	1
4	99-510-61	Rebuild Kit	1
5	99-510-02	Master Cylinder Assembly	1

Section 4

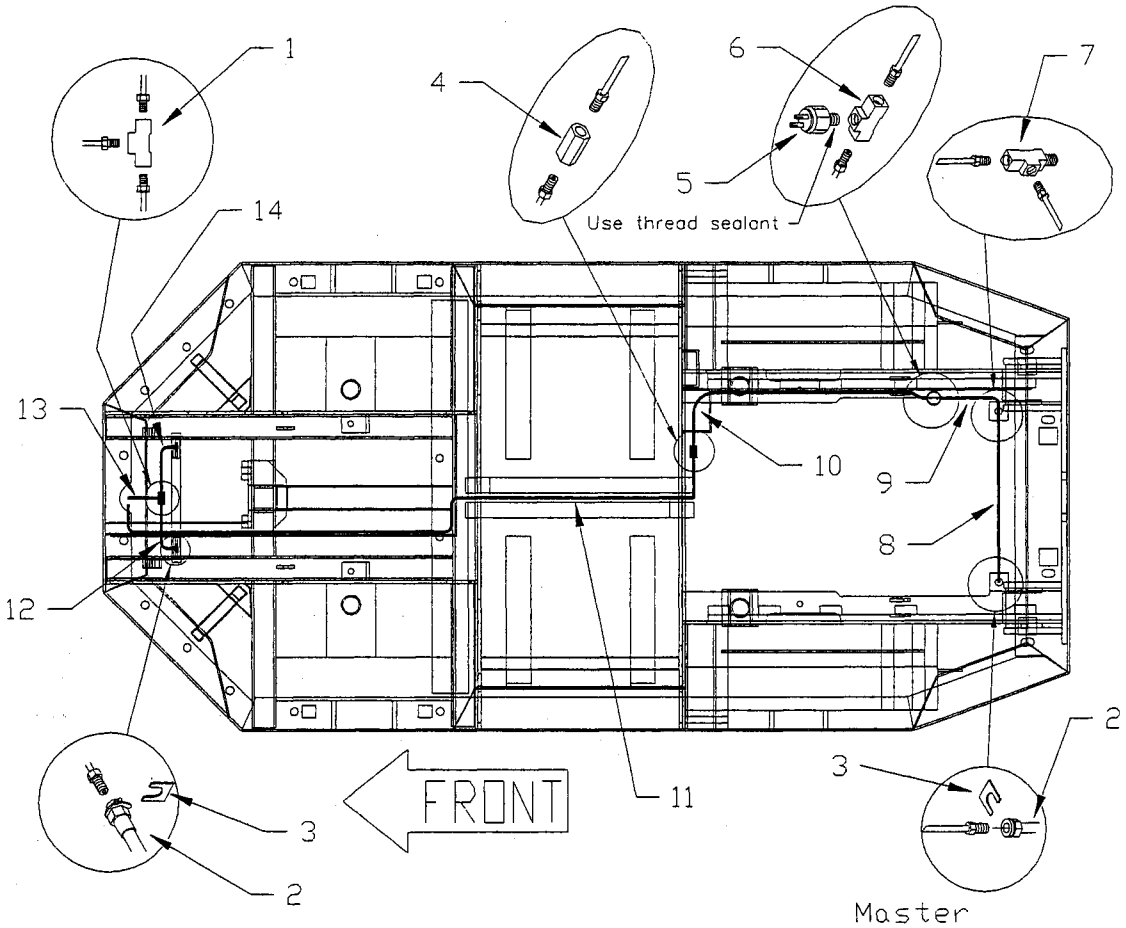
ACCELERATOR LINKAGE

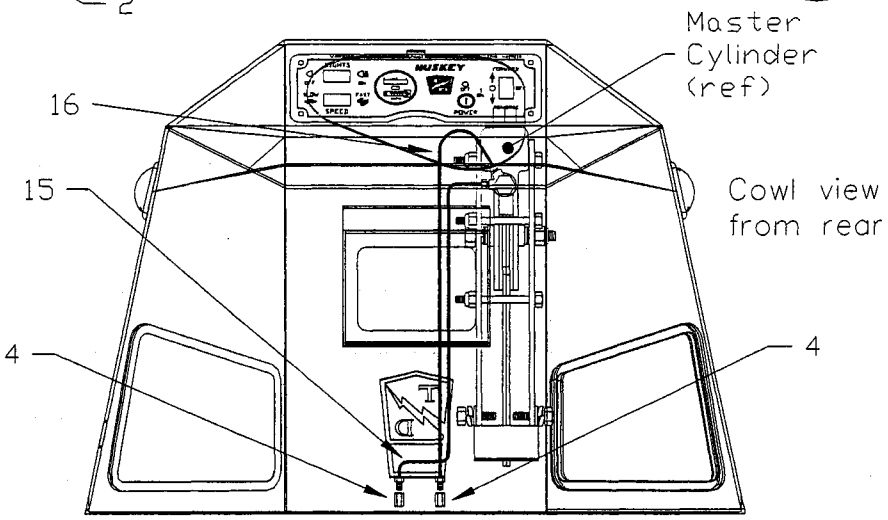


ACCLERATOR LINKAGE			
ITEM#	PART #	DESCRIPTION	QTY
1	88-060-11	1/4" NC X 1" Hex Bolt	3
2	00-425-12	Accelerator Linkage Mounting Tab	1
3	88-069-81	1/4" NC Nylon Lock Nut	4
4	62-030-19	Pot Box	1
5	88-737-09	3/16" X 1/2" Pop Rivet	3
6	88-049-86	10-32 Lock Nut	4
7	88-089-81	5/16" NC Lock Nut	2
8	00-425-07	Mounting Plate	1
9	88-080-10	5/16" NC X 7/8" Hex Bolt	2
10	96-624-00	Wire Clamp	1
11	88-047-09	10-32 X 3/4" Hex Screw	4
12	86-503-99	Rod End (Right)	1
13	00-425-09	Accelerator Pedal Weldment	1
14	32-215-00	Bushing	2
15	88-148-61	1/2" SAE Flat Washer	1
16	88-149-84	1/2" NF Hex Nut	1
17	88-079-80	1/4" NF Hex Nut	1
18	50-002-13	Accelerator Rod	1
19	97-211-00	1/4" NF(Left) Hex Nut	1
20	86-503-98	Rod End (Left)	1
21	85-295-00	Return Spring	1
22	88-069-80	1/4" NC Hex Nut	1
23	88-060-14	1/4" X 1-1/2" Hex Bolt	1
24	98-254-00	Accelerator Pedal	1

Section 4

BRAKE LINES AND HOSES

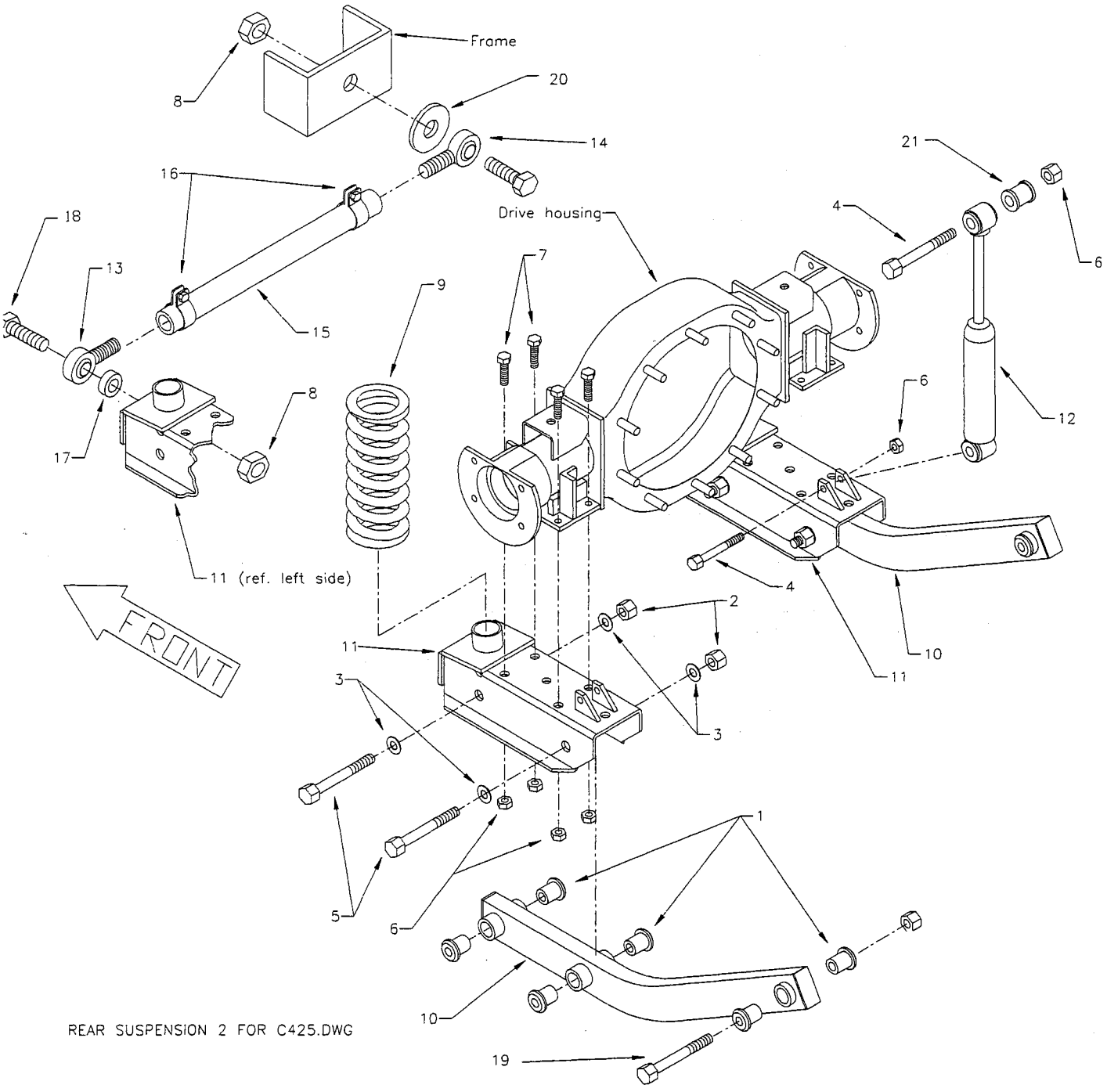




BRAKE LINES AND HOSES			
ITEM#	PART #	DESCRIPTION	QTY
1	99-564-00	T-Fitting	1
2	99-580-10	Brake Hose	4
3	99-576-00	Hose Retaining Clip	4
4	99-575-00	3/16" Union Connector	1
5	71-110-00	Brake Light Switch	1
6	99-591-00	T-Fitting (For Brake Light Switch)	1
7	99-559-00	3/16" Hydraulic T-Fitting	1
8	99-604-66	Rear Brake Line, Crossover	1
9	99-600-58	Rear Brake Line, Short	1
10	99-605-74	Rear Brake Line, Back	1
11	99-609-57	Rear Brake Line, Front	1
12	99-600-57	Left Front Brake Line	1
13	99-604-65	Lower Front Brake Line	1
14	99-600-56	Right Front Brake Line	1
15	99-605-73	Upper Rear Brake Line	1
16	99-605-75	Upper Front Brake Line	1

Section 4

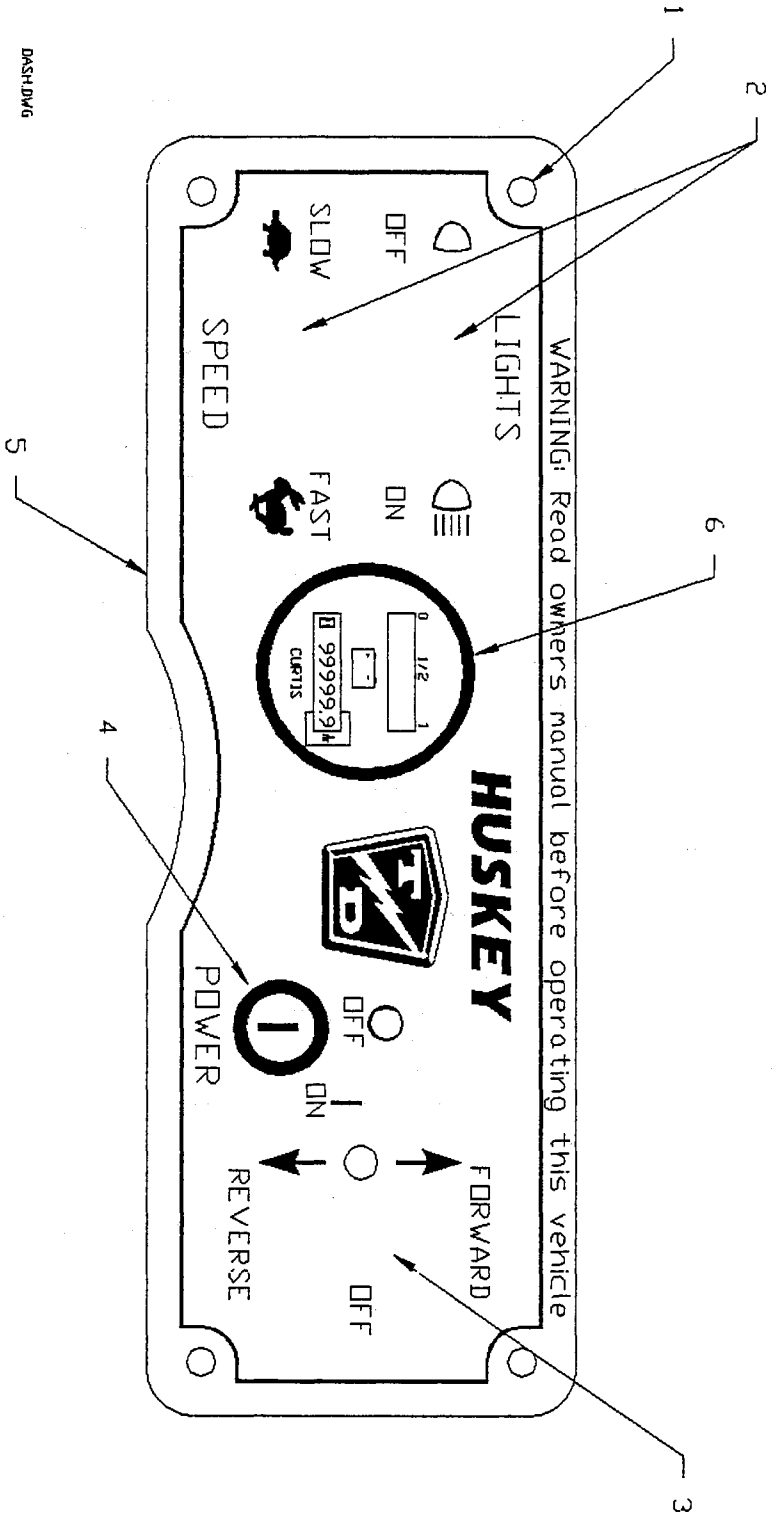
B2-48 REAR SUSPENSION



REAR SUSPENSION			
ITEM#	PART #	DESCRIPTION	QTY
1	32-214-50	Bushing	4
2	88-149-81	1/2" NC Locknut	6
3	88-148-61	1/2"AE Washer	8
4	88-100-15	3/8" NC X 1-3/4" Hex Bolt	4
5	88-140-25	1/2" NC X 4-1/2" Hex Bolt	4
6	88-109-81	3/8" NC Locknut	8
7	88-101-13	3/8" X 1-1/4" Bolt	8
8	88-189-82	5/8" NC Locknut	2
9	85-142-00	Coil Spring	2
10	16-857-50	Suspension Link	2
11	16-857-00	Spring and Suspension Link Mounting Plate	2
12	86-007-00	Shock	2
13	86-521-98	Rod End (Left)	1
14	86-521-99	Rod End (Right)	1
15	41-402-10	Pan Hard Bar	1
16	86-510-00	Rod End Clamp	2
17	17-108-00	Spacer	1
18	88-180-15	5/8" NC X 1-3/4" Hex Bolt	6
19	96-240-00	1/2" NC X 4" Hex Bolt	2
20	88-188-61	5/8" SAE Flat Washer	1
21	32-207-10	Sheock Bushing	4

Section 4

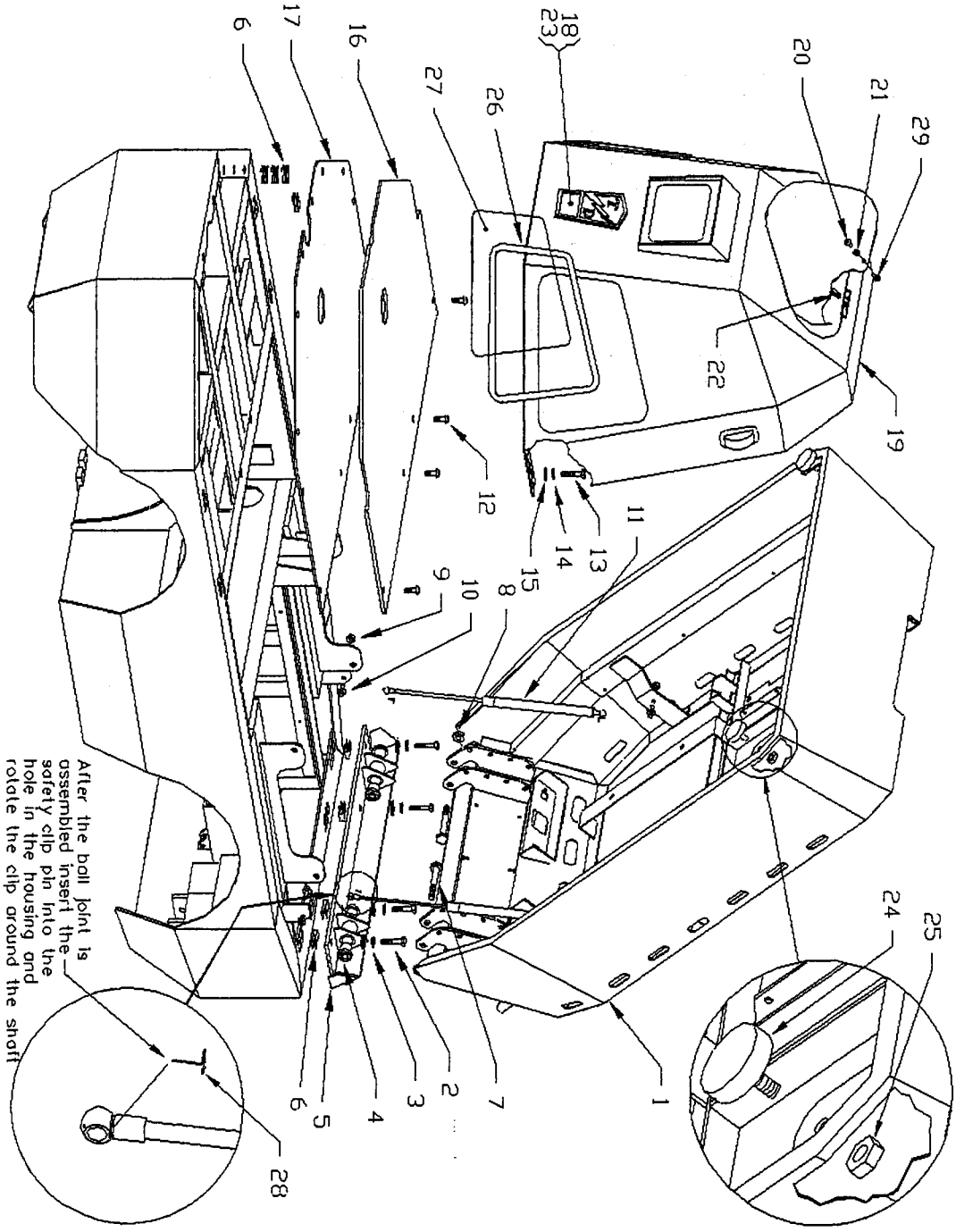
INSTRUMENT PANEL



INSTRUMENT PANEL			
ITEM#	PART #	DESCRIPTION	QTY
1	88-065-09	1/4" NC X 3/4" Truss Head Screw	4
2	71-039-11	Light or High/Low Switch	2
3	71-039-02	Foward/Reverse Switch	1
4	71-120-00	Key Switch	1
5	94-304-21	Dash Panel	1
6	74-009-49	hour/Battery Status Indicator	1
Not Shown	97-211-20	1/4" NC U-Nut (Dash Pannel Screws)	4
	75-148-48	Dash Harness (Used with Non Programable Controller)	1
	75-148-39	Dash Harness (Used with Programable Controller)	1

Section 4

FRAME



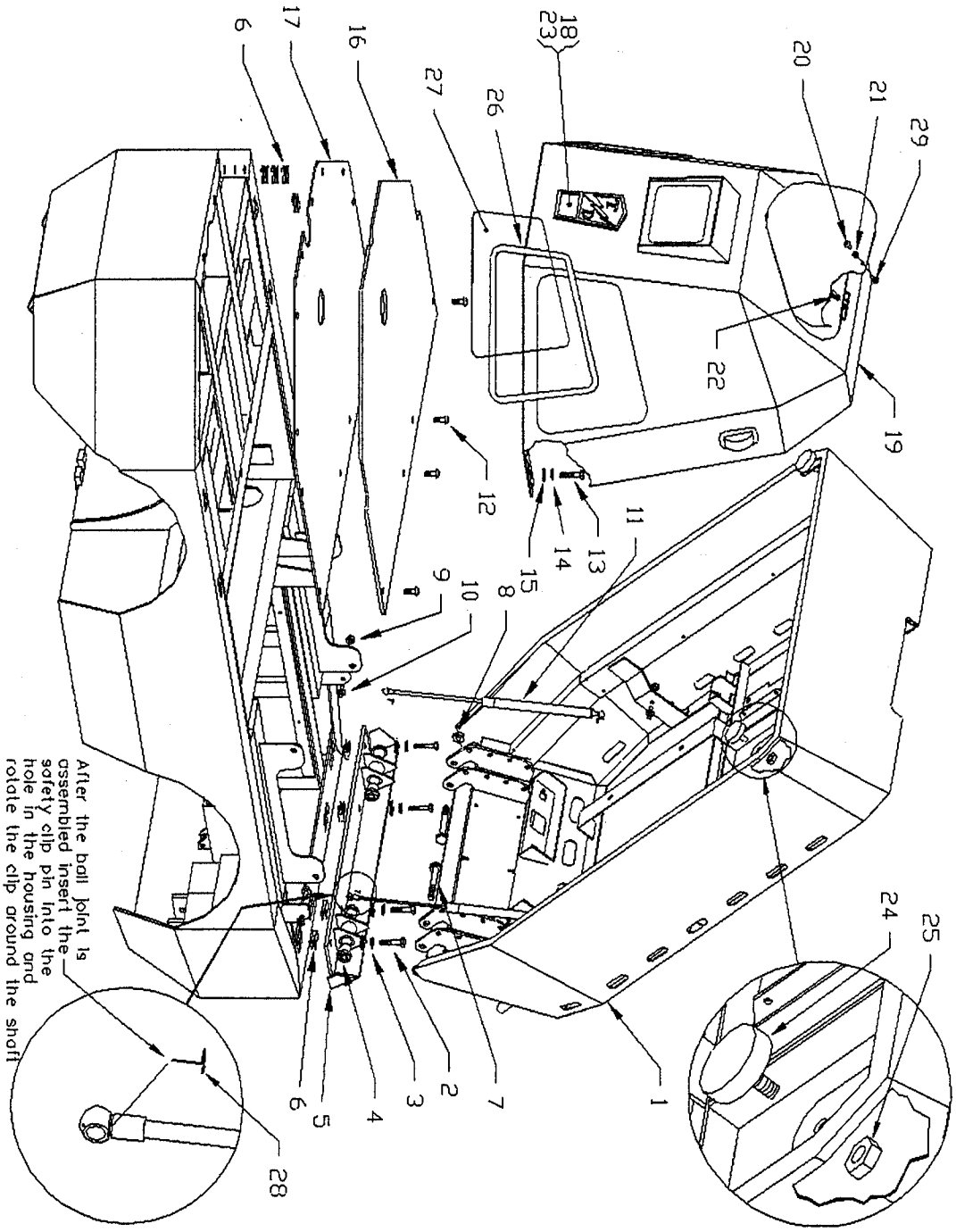
FRAME			
ITEM#	PART #	DESCRIPTION	QTY
1	00-425-14	Battery Cover (Unpainted)	1
2	88-100-14	3/8" X 1-1/2" Hex Bolt	4
3	88-108-62	3/8" Split Lock Washer	4
4	32-214-50	Bushing	4
5	00-425-16	Hinge Weldment (Unpainted)	1
6	97-211-30	3/8" NC U-Bolt	4
7	96-240-00	1/2" NC X 4" Hex Bolt	2
8	88-149-81	1/2" NC Lock Nut	2
9	88-089-81	5/16" NC lock Nut	4
10	85-195-01	Gas Spring Stud	4
11	85-195-00	Gas Spring	2
12	96-245-05	3/8" NC Button Head Socket Screw	4
13	88-100-14	3/8" NC X 1-1/2" Hex Bolt	10
14	88-106-62	3/8" Split Lock Washer	10
15	88-108-61	3/8" SAE Flat Washer	10

NOTE

THE FOAM TAPE WHICH GOES UNDER THE FLOORBOARD PLATE IS PART NUMBER 98-451-20. YOU WILL NEED 13 FEET OF THIS TAPE.

Section 4

FRAME

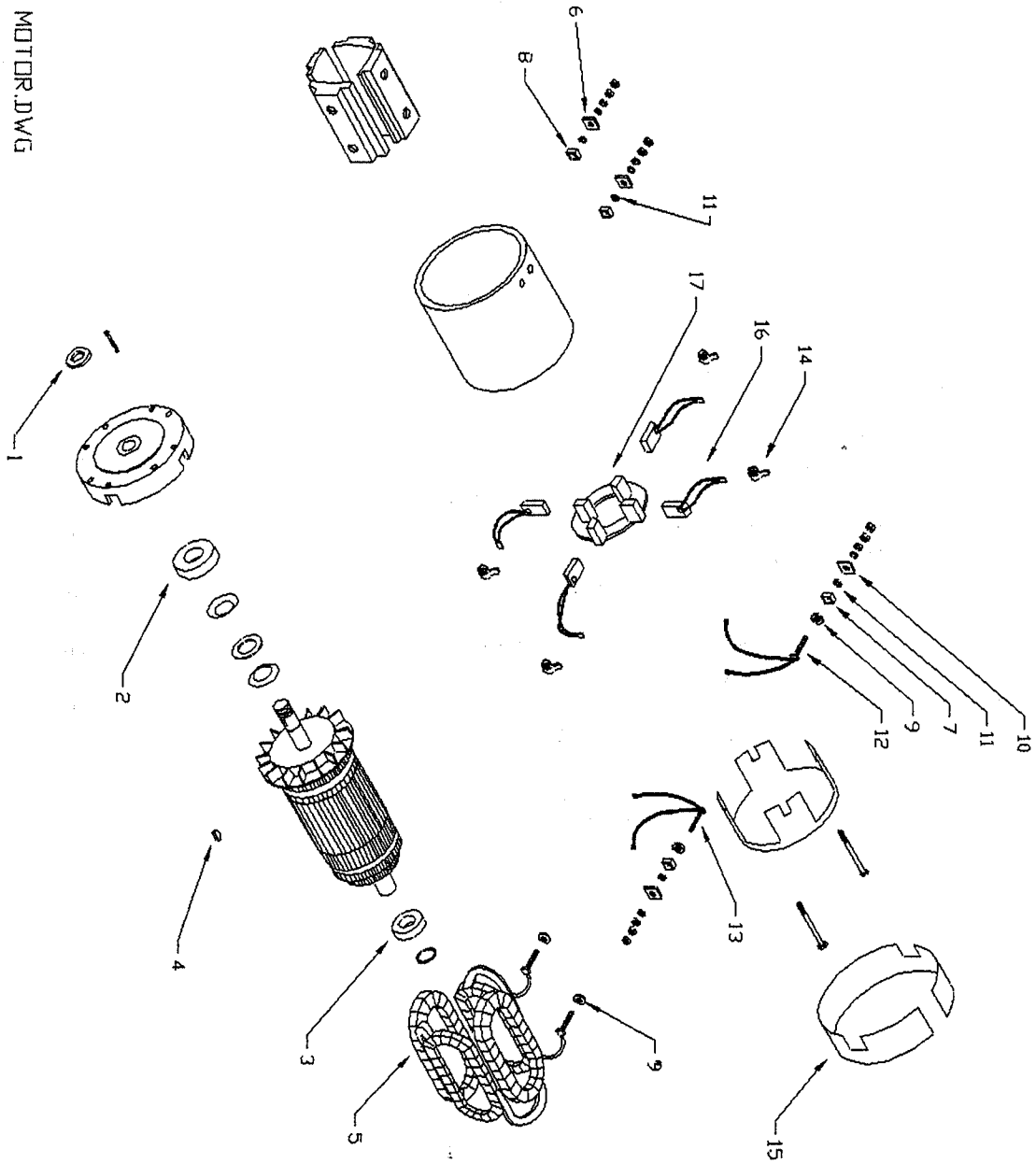


FRAME (CONTD)			
ITEM#	PART #	DESCRIPTION	QTY
16	98-017-95	Floor Mat	1
17	00-425-18	Floor Board Plate	1
18	94-201-00	Taylor-Dunn Emblem	1
19	00-425-02	Cowl (Unpainted)	1
20	88-065-12	1/4" NC X 1" Stainless Truss Head Screw	1
21	97-169-10	Nylon Washer	1
22	97-211-20	1/4" NC U-Nut	1
23	88-567-91	Emblem Retainer	3
24	98-753-20	Rubber Bumper (incl. #25)	2
25	88-109-81	3/8" NC Lock Nut	2
26	98-310-50	Widow Channel (3.5' is Required for Each Window)	2
27	90-825-30	Window	2
28	85-195-02	Retaining clip	4
29	96-245-20	Bolt Retainer	1
Not Shown	95-512-00	Handle, Black Plastic	1
	71-124-00	Emergency Disconnect Switch	1

THE FOAM TAPE WHICH GOES UNDER THE FLOORBOARD PLATE IS PART NUMBER 98-451-20. YOU WILL NEED 13 FEET OF THIS TAPE.

Section 4

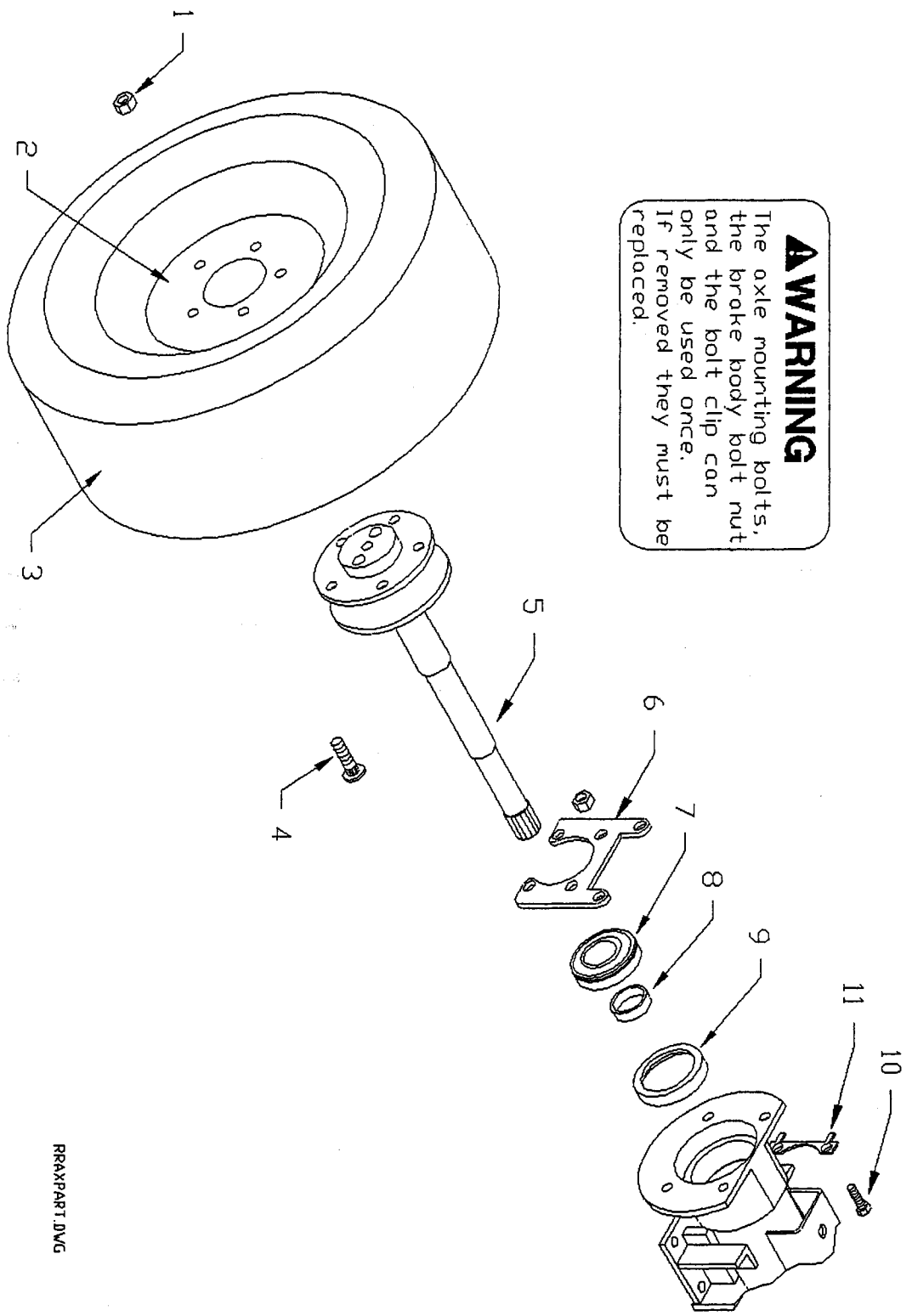
MOTORS



MOTOR (70-057-20)			
ITEM#	PART #	DESCRIPTION	QTY
1	45-508-00	Seal	1
2	80-215-00	Front Bearing	1
3	80-200-00	Rear Bearing	1
4	97-100-00	Woodruff Key	1
5	70-209-00	Field Coil Set	1
6	97-179-00	Insulator Washer	2
7	98-622-00	Insulator Bushing	2
8	98-623-00	Insulator Bushing	2
9	97-178-00	Insulator Washer	2
10	97-177-00	Insulator Washer	2
11	70-251-00	Gasket	4
12	70-198-00	Crossover With Terminal	1
13	70-198-01	Crossover With Terminal	1
14	85-413-00	Brush Spring	4
15	30-804-10	Brush Cover	1
16	70-108-00	Brush	4
17	70-177-00	Brush Holder (incl. #'s 12, 13, 14)	1

Section 4

REAR AXLE B2-48

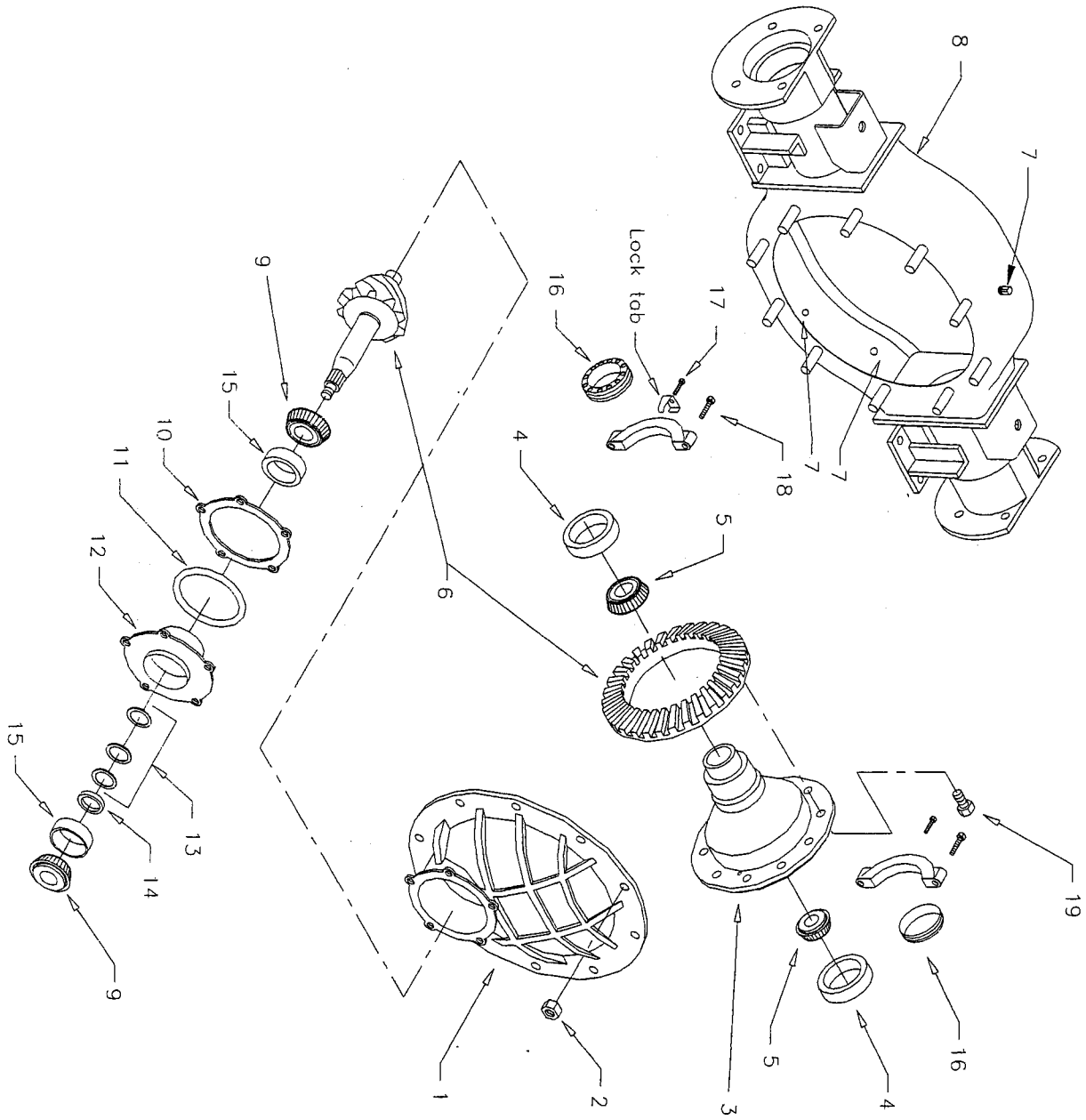


REAR AXLE			
ITEM#	PART #	DESCRIPTION	QTY
1	97-236-00	Wheel Nut	8
2	12-042-00	Wheel	2
3	10-076-00	Tire, 4.80 X 8 Load Range C	2
	13-739-10	Tire/Wheel Assembly, 4.80 X 8 Load Range C	2
4	96-340-60	Wheel Stud Kit (Replacement)	10
5	41-152-28	Rear Axle, Left (W/Rotor)	1
	41-152-38	Rear Axle, Right (W/Rotor)	1
6	41-350-08	Axle Retaining Bracket	2
7	80-503-00	Bearing	2
8	32-515-00	Bearing Retainer **DO NOT REUSE**	2
9	45-301-00	Seal	2
10	96-328-00	Axle Mounting Bolt **DO NOT REUSE**	8
11	41-350-05	Bolt Clip **DO NOT REUSE**	2
*	11-030-00	Tube	2

*Item not shown

Section 4

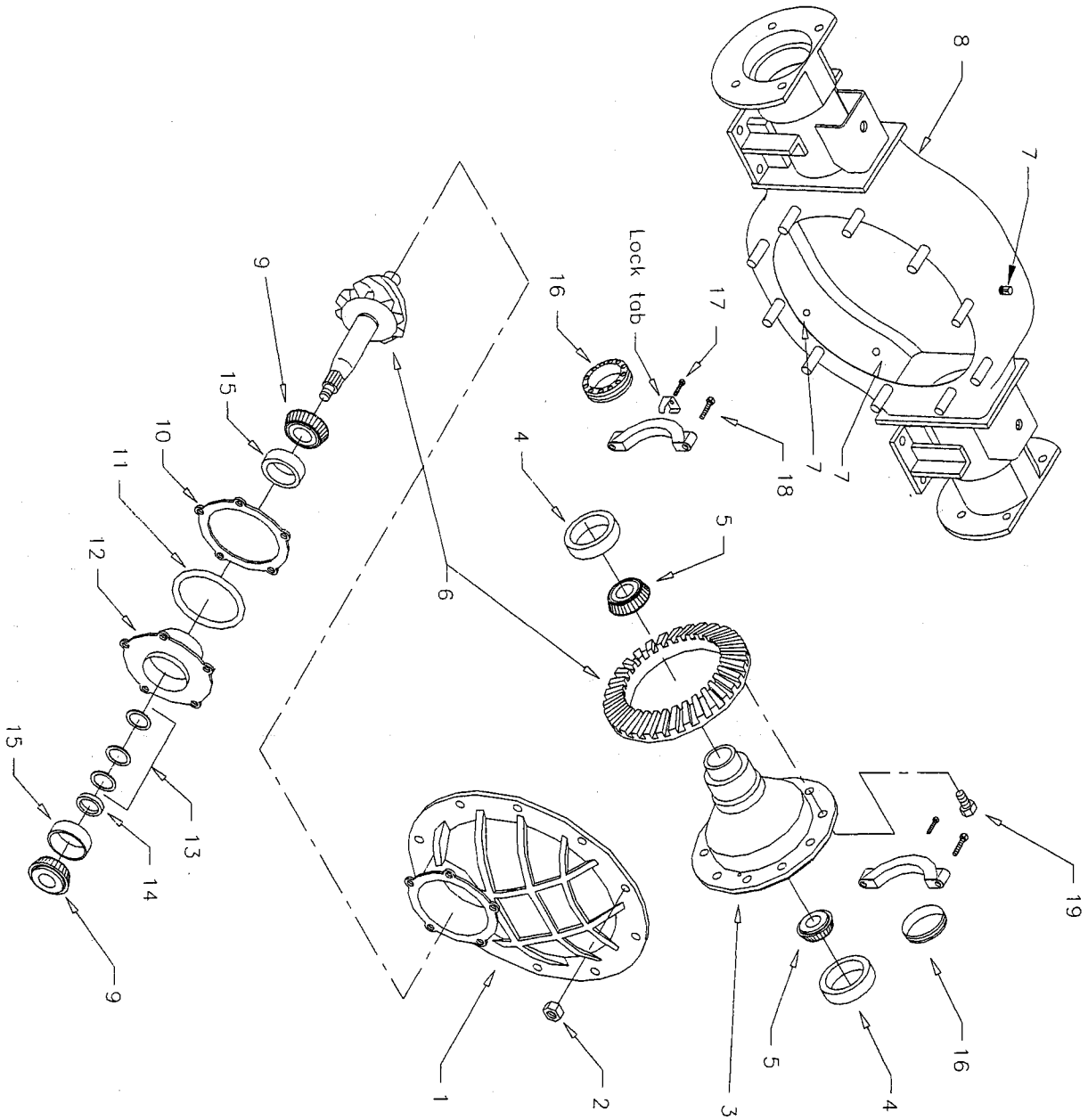
3RD MEMBER & AXLE ASEEMBLY



3RD MEMBER & AXLE ASSEMBLY			
ITEM#	PART #	DESCRIPTION	QTY
1	41-179-00	3rd member Housing (1.628 ID Carrier Bearing)	1
	41-710-00	3rd member Housing (1.784 ID Carrier Bearing)	1
2	88-119-80	3/8" NF Nut	14
3	41-712-00	Differential Assembly (1.628 ID Carrier Bearing)	1
	41-713-00	Differential Assembly (1.784 ID Carrier Bearing)	1
4	80-127-00	Carrier Bearing Race, (For 1.628 ID Carrier Bearing)	2
	80-128-00	Carrier Bearing Race, (For 1.784 ID Carrier Bearing)	2
	80-129-00	Carrier Bearing Race, (For P/N 80-513-00)	2
5	80-511-00	Carrier Bearing (1.628 ID Carrier Bearing)	2
	80-512-00	Carrier Bearing (1.784 ID Carrier Bearing)	2
	80-513-00	Carrier Bearing (LM102949 1.7812 ID Carrier Bearing)	2
6	31-239-00	Ring and Pinion Gear Set (5.43)	1
7	41-997-00	Oil Plug	3
8	41-291-32	Rear End Housing	1
	41-299-20	Rear End Housing	1
9	80-554-00	Front Pinion Bearing	2

Section 4

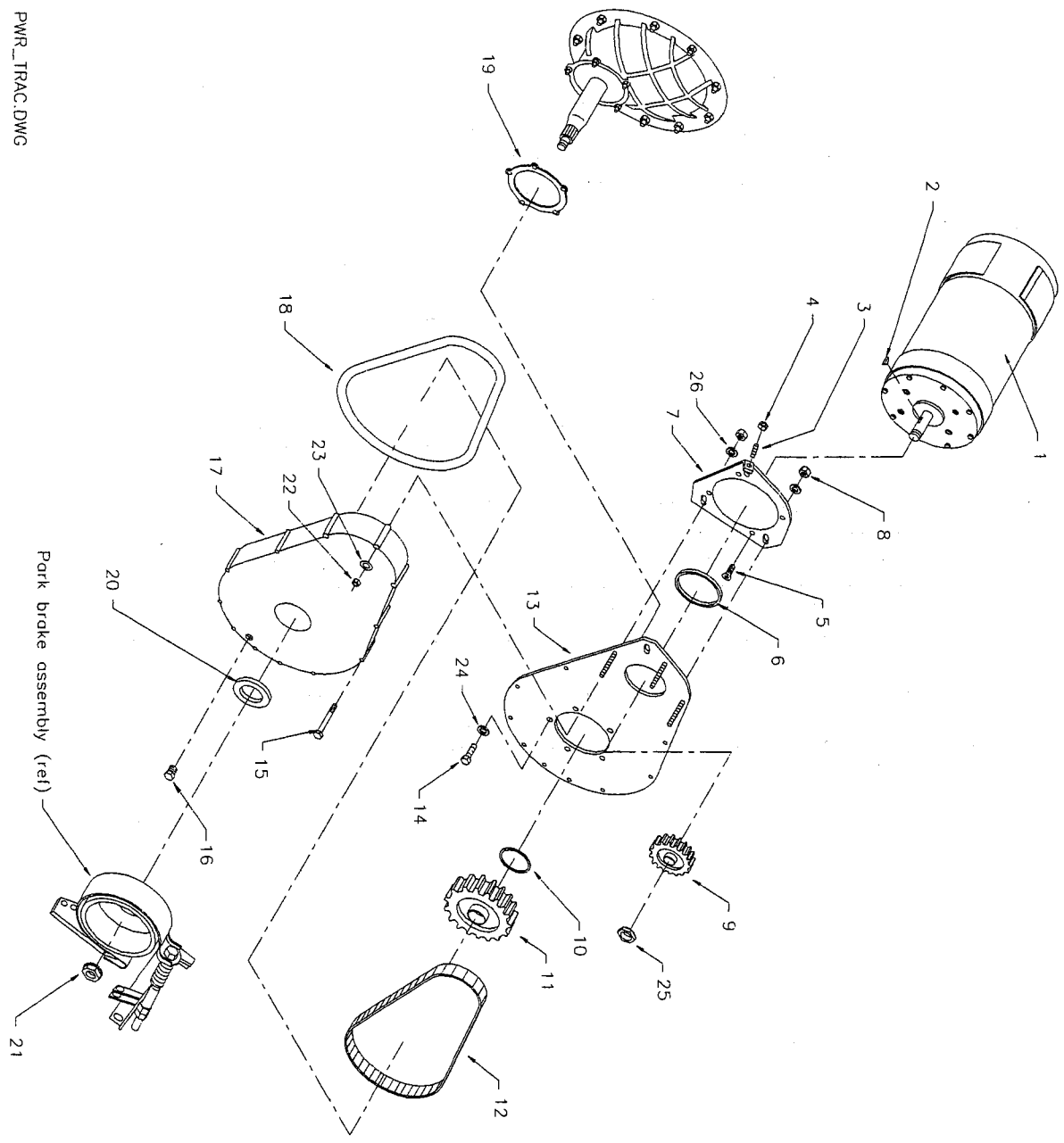
3RD MEMBER & AXLE ASEEMBLY (CONT'D)



3RD MEMBER & AXLE ASSEMBLY			
ITEM#	PART #	DESCRIPTION	QTY
10	41-711-00	Pinion Housing Shim	1
11	80-702-00	O-Ring	1
12	44-340-90	Pinion Housing Shim	1
13	16-419-00	.002 Shim (Add Shims As Needed)	*
	16-420-00	.010 Shim (Add Shims As Needed)	*
	16-411-00	.005 Shim (Add Shims As Needed)	*
14	16-415-00	Spacer	1
15	80-125-00	Pinion BEaring RAce	2
16	41-707-00	Differential Bearing Adjuster Nut (For 80-511-00)	2
	41-707-50	Differential Bearing Adjuster Nut (For 80-512-00)	2
	41-708-50	Differential Bearing Adjuster Nut (For 80-513-00)	2
17	88-080-04	5/16" X 3/8: NC Hex Bolt	2
18	88-140-16	1/2" X 2" Hex Bolt	2
19	96-243-00	7/16" X 7/8" Hex Bolt (Locking Head)	10

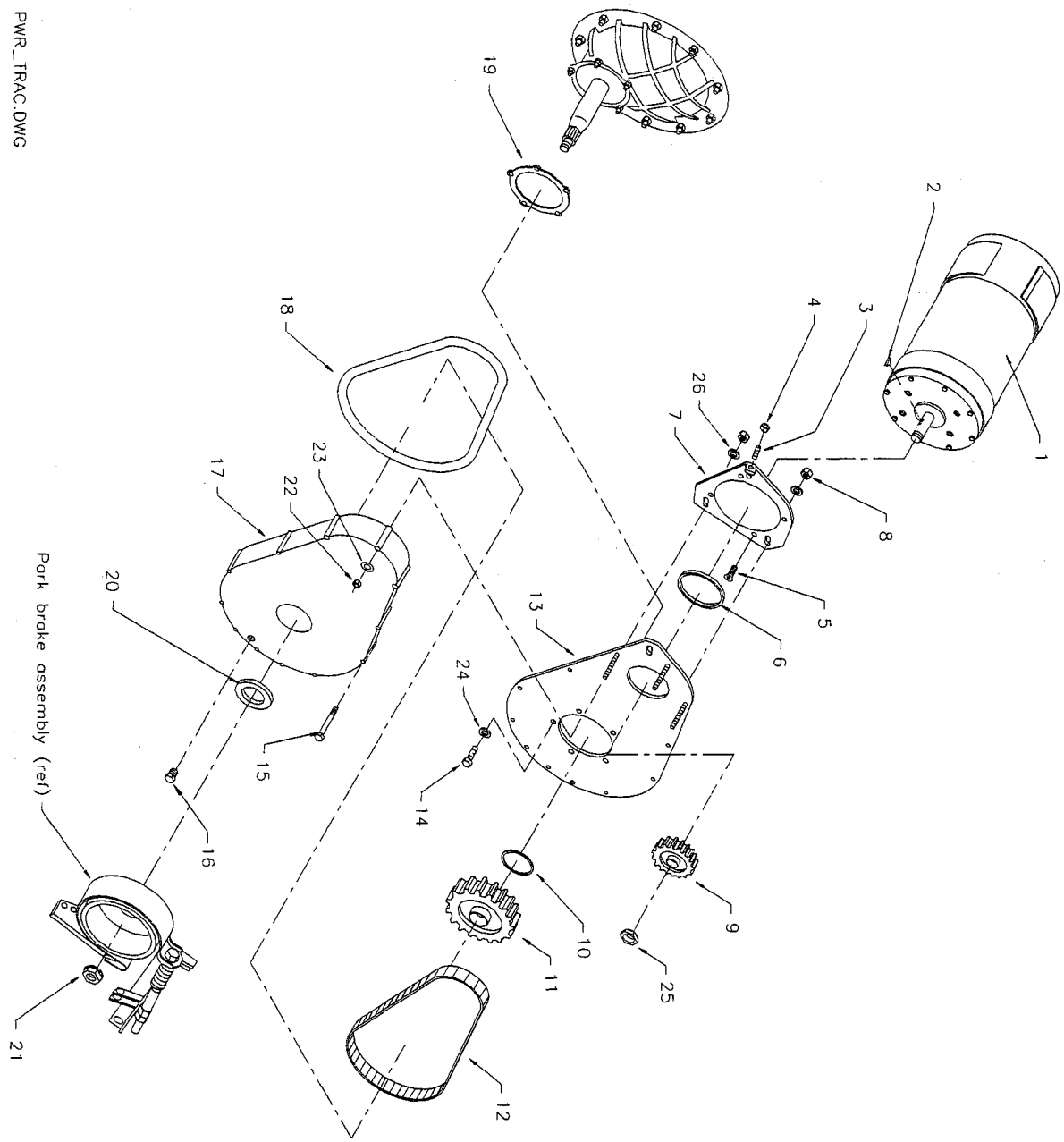
Section 4

POWER TRACTION



POWER TRACTION			
ITEM#	PART #	DESCRIPTION	QTY
1	70-057-20	Motor	1
2	97-100-00	Woodruff Key	1
3	88-087-11	Chain Adjusting Screw	1
4	88-069-80	5/16" NC Hex Nut	1
5	88-103-09	Motor Mounting Screw, 3/8" X 3/4" NC	4
6	80-703-00	O-Ring, 4-1/2" ID X 5" OD	1
7	70-454-00	Motor Mounting Plate	1
8	88-109-87	3/8" KEPS Nut (Interegral Lockwasher)	3
9	30-070-00	15 Tooth Double Motor Sprocket	1
10	16-415-00	Spacer Main Sprocket, F2 Axle, .440" Thick	1
11	30-070-10	81 Tooth Double Pinion Sprocket (Standard on B2-54)	1

POWER TRACTION CONT'D

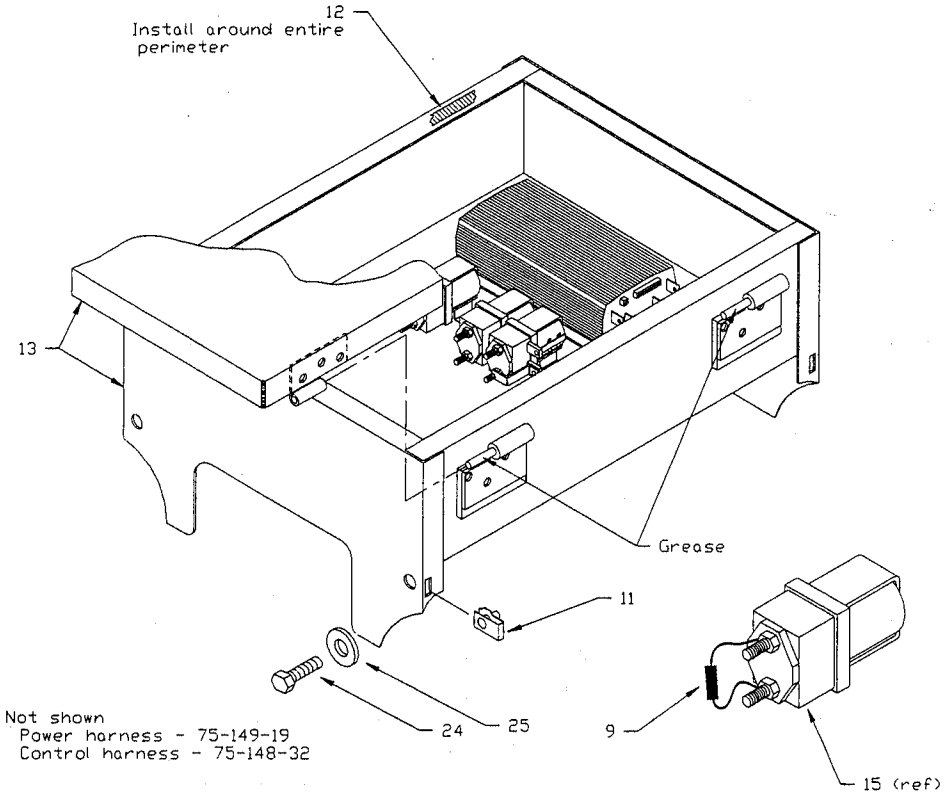


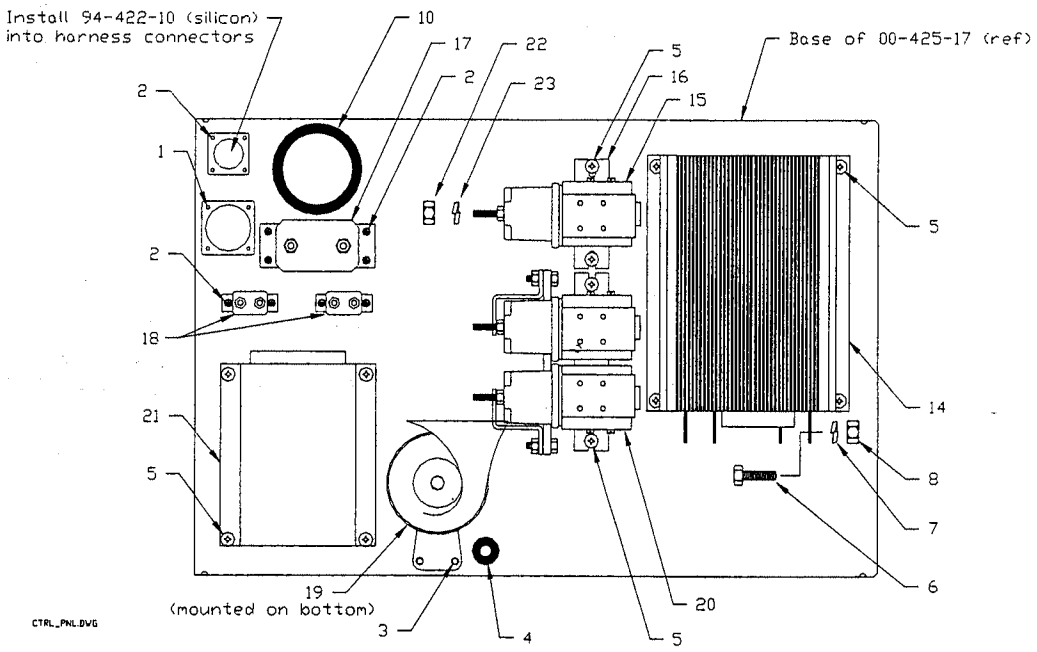
POWER TRACTION (CONT'D)			
ITEM#	PART #	DESCRIPTION	QTY
12	30-320-11	Drive Chain, 15-81 T Dble Sprockets (Standard B2-54)	1
13	44-352-53	Backing Plate, Gear Case	1
14	88-101-13	3/8" X 1-1/4" NC Hex Bolt	5
15	88-080-20	5/16" X 3" Hex Bolt	9
16	41-989-00	Drain and Fill Plug	2
17	43-201-11	Chain Cover	1
18	45-002-00	Chain Case Gasket	1
19	45-021-00	Backing Plate Gasket	1
20	45-331-00	Pinion Oil Seal, Gear Case	1
21	97-250-00	Pinion Nut	1
22	88-089-81	5/16" NC Locknut	12
23	88-088-61	5/16" SAE Flat Washer	3
24	88-108-63	Internal Tooth Lock Washer	5
25	88-239-82	Motor Nut, 3/4" NF Hex Jam Nut, Thin	1
26	88-109-61	3/8" SAE Flat Washer	3

ITEM NUMBERS 18 AND 19 ARE NO LONGER USED ON NEWER MODEL VEHICLES. THEY HAVE BEEN REPLACED WITH ULTRA-BLUE RTV SEALEANT PART NUMBER 94-430-03. IF YOU ARE REPAIRING A VEHICLE THAT HAS THESE TWO PARTS, REPLACE THEM WITH THE ULTRA-BLUE SEALANT.

Section 4

CONTROL PANEL

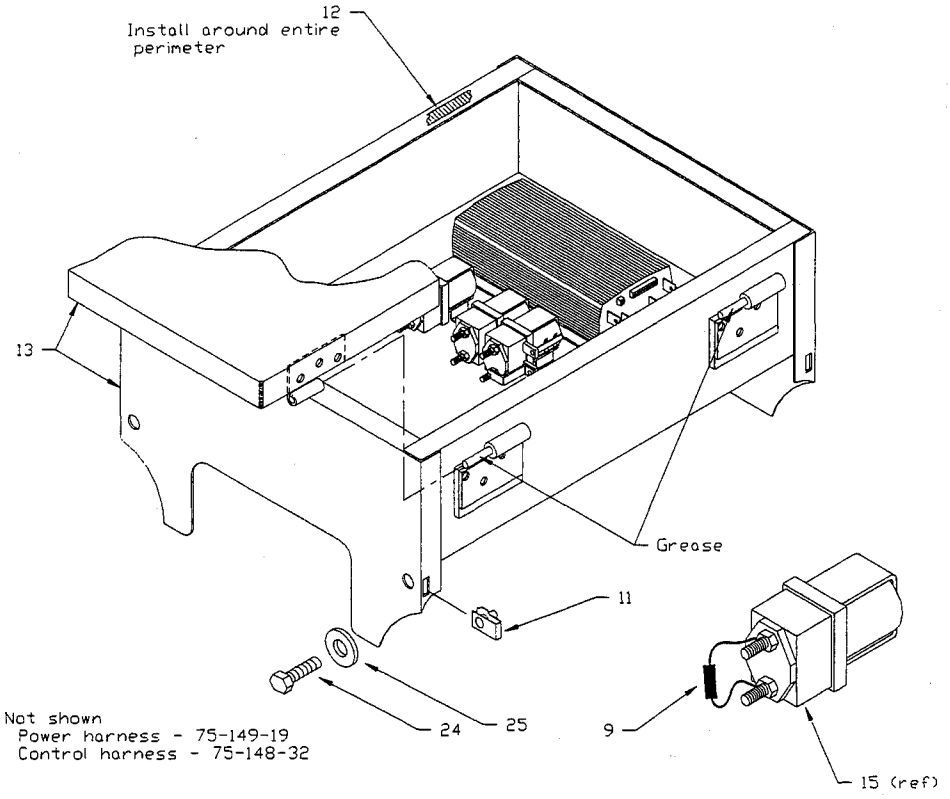


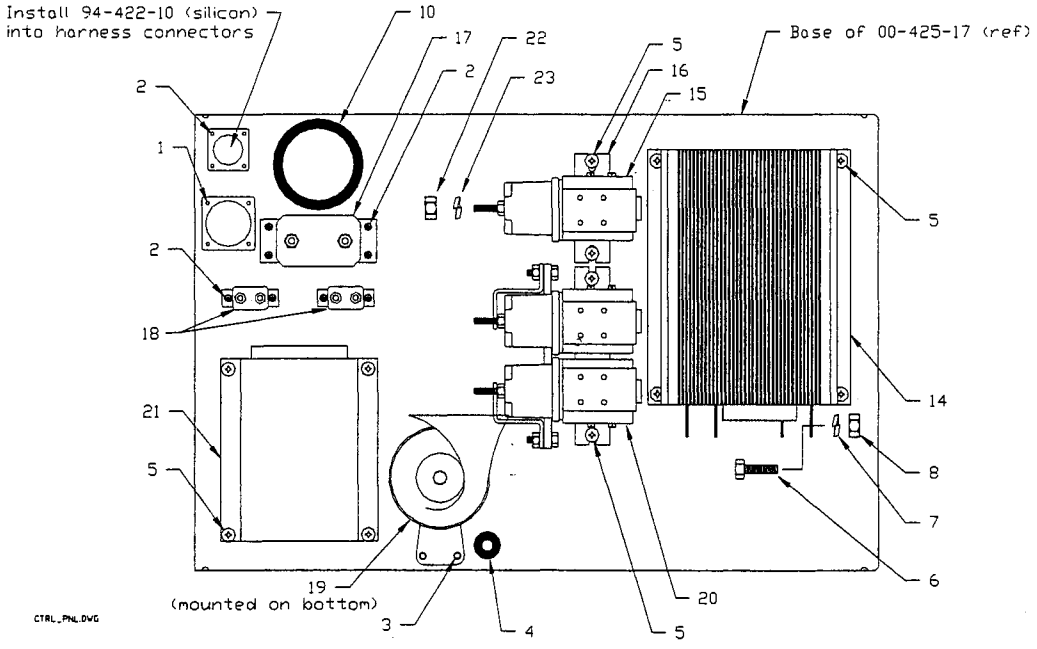


CONTROL PANEL			
ITEM#	PART #	DESCRIPTION	QTY
1	88-818-04	Screw	4
2	88-818-02	#8 Self Taping Sheet Metal Screw	10
3	88-838-06	#14 Self Taping Sheet Metal Screw	2
4	98-603-00	Rubber Grommet	1
5	88-838-06	#14 Self Taping Sheet Metal Screw	12
6	88-080-11	5/16" NC X 1" Hex Bolt	4
7	88-088-62	5/16" Split Lock Washer	4
8	88-089-80	5/16" NC Hex Nut	4
9	78-302-50	250 Ohm Resistor	1
10	98-599-20	Plastic Bushing	1
11	97-211-30	3/8" NC U-Nut	4
12	98-451-20	Gasket Material, 6.2'	6.2'
13	00-425-17	Control Box with Lid	1
14	62-215-00	PMC Speed Control (Programable)	1
	62-221-10	Speed Control (Non Programable)	1

Section 4

CONTROL PANEL (CONT'D)



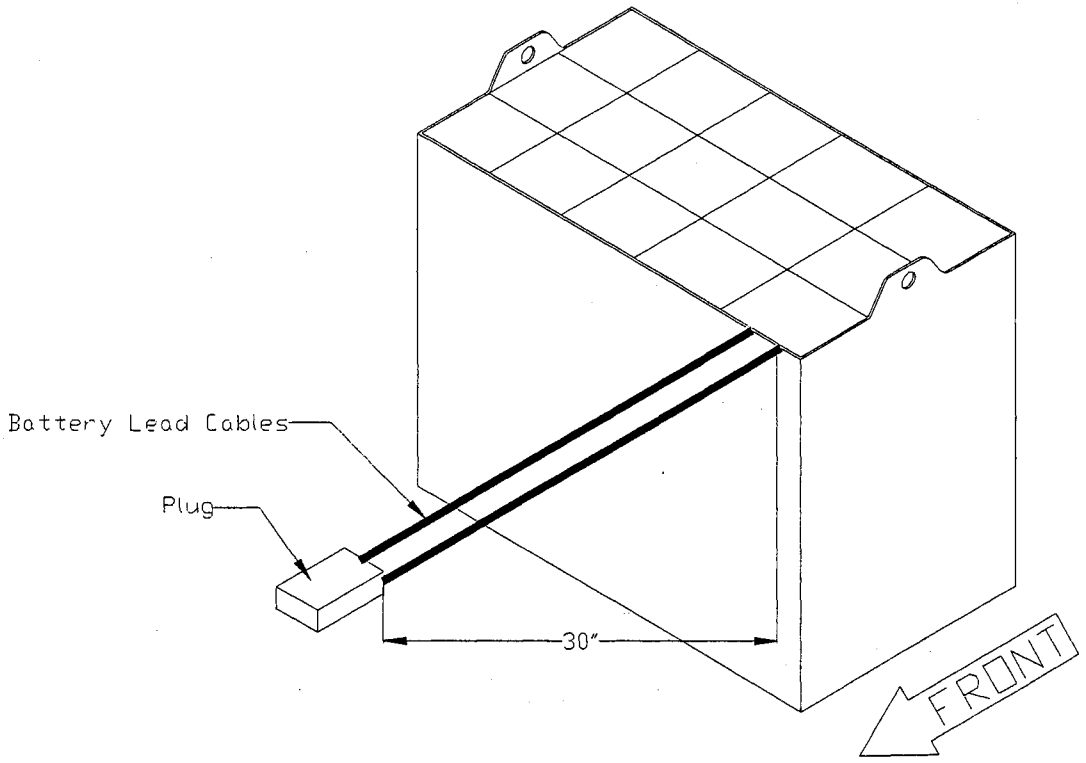


CONTROL PANEL			
ITEM#	PART #	DESCRIPTION	QTY
15	71-210-10	ISO Contactor	1
16	71-210-11	ISO Contactor Mount	1
17	79-844-20	200 Amp Circuit Breaker	1
18	79-840-20	20 Amp Circuit Breaker	2
19	73-004-20	Horn	1
20	71-210-00	Forward and Reverse Contactor with Mount	1
21	73-012-80	12 VDC Converter	1
22	*	10mm X 1.25mm Hex Nut (metric)	8
23	*	10mm Solit Lock Washer (metric)	8
24	88-101-13	3/8" NC X 1-1/4" Hex Bolt	4
25	88-108-62	3/8" Split Lock Washer	44
Not Shown	75-148-32	Control Panel Control Harness (Used w/Programable Controller)	1
	75-148-46	Control Panel Control Harness (Used w/Non Programable Controller)	1
	75-149-19	Control Panel Power Harness (Used w/Programable Controller)	1
	75-149-20	Control Panel Power Harness (Used w/Non Programable Controller)	1
	95-949-00	Hole Plug (On Lid)	1

*PARTS NOT AVAILABLE, PURCHASE LOCALLY.

Section 4

BATTERY CELL



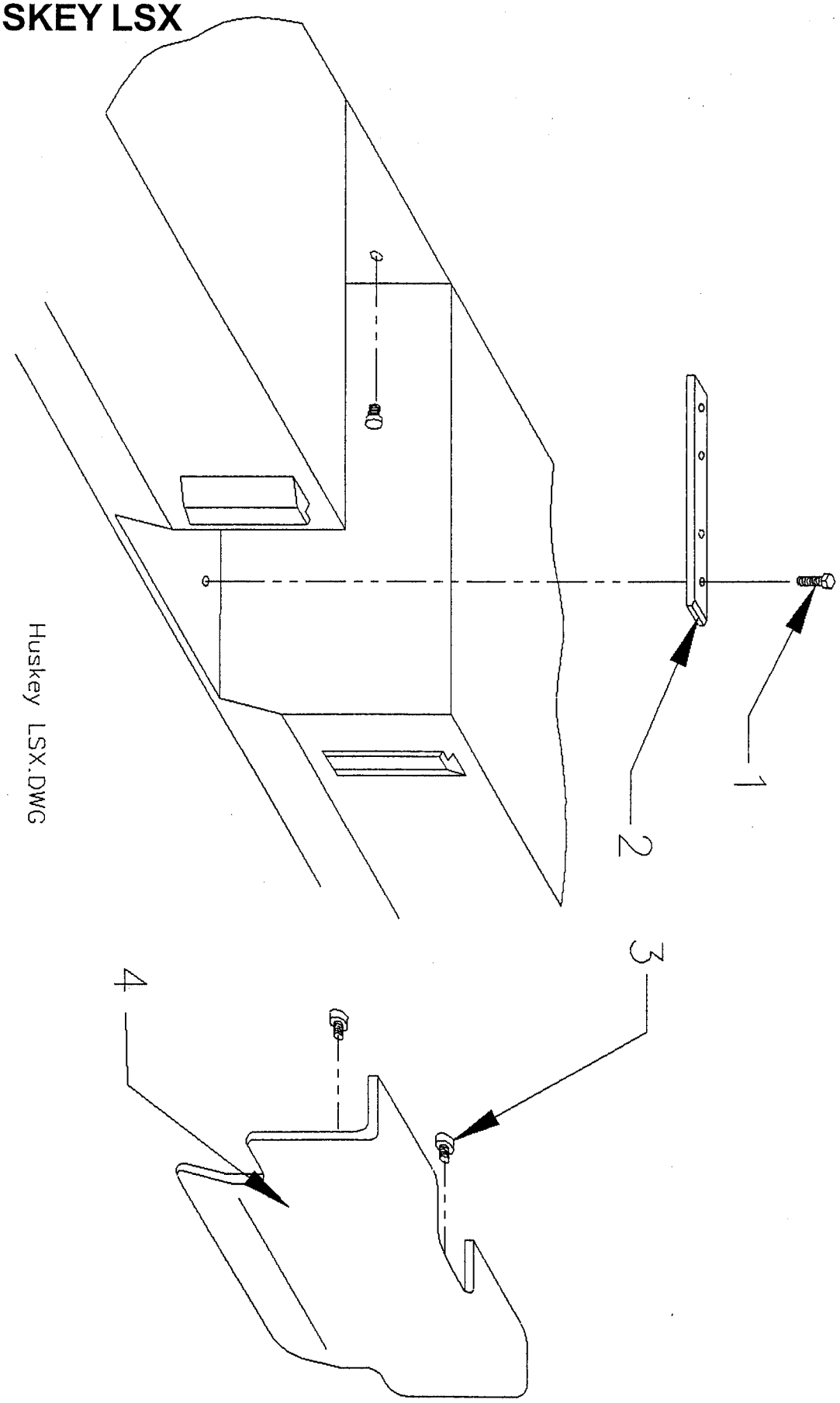
BATTERY CELL			
ITEM#	PART #	DESCRIPTION	QTY
	77-059-00	Battery, 330AH, 48-Volt	1

NOTE

THE BATTERY COMPARTMENT IS 32"W X 16.5"L X 24" H.
REFER TO THE DIAGRAM FOR THE LENGTH OF THE BATTERY CABLE.

Section 4

HUSKEY LSX

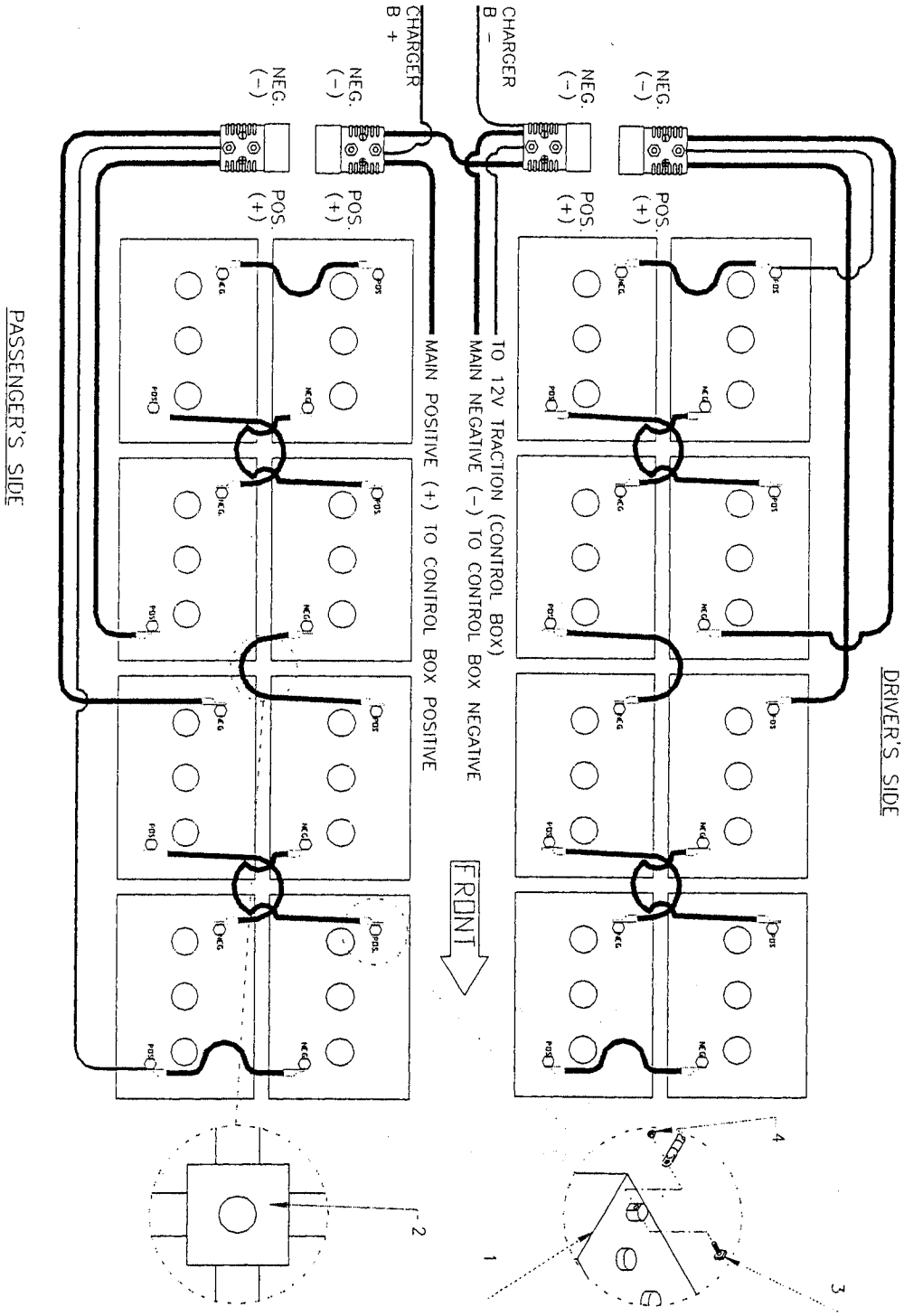


HUSKY LSX			
ITEM#	PART #	DESCRIPTION	QTY
1	K4-001-03	3/8"-16 X 1.25", Flat Head Socket Cap Screw	8
2	K2-425-29	Slide, Pad	2
3	98-753-05	Bump Stop, 1" Thick W/Stud	4
4	K2-425-37	Door, Unpainted	1

PARTS LIST

TAYLOR-DUNN®
Commercial and Industrial Vehicles Since 1949

BATTERIES



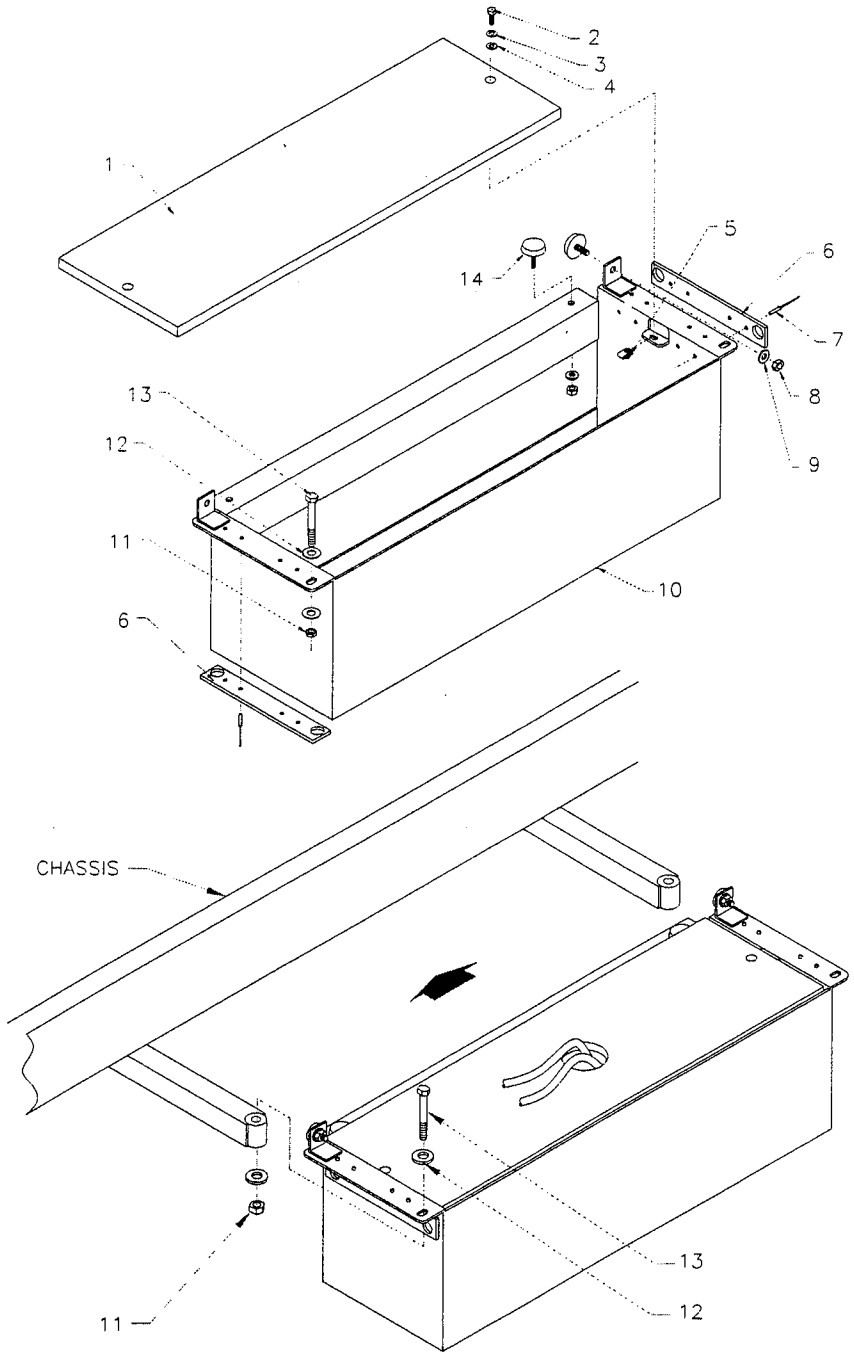
Illustrated Parts Figure 1: Batteries

BATTERIES			
Item #	Part Number	Description	Qty
1	77-047-00	6V 244AH,145M, TROJAN BATTERY	16
2	50-250-00	CLAMP, BATTERY BAT-LOK W/WASHER AND LOCKNUT	3
3	88-081-12	5/16 X 1 NC SQ HD,TIN-LEAD	32
4	88-089-80	5/16NC HEX NUT,TIN-LEAD	32

Illustrated Parts Table 1: Batteries

*NOT SHOWN

BATTERY BOX



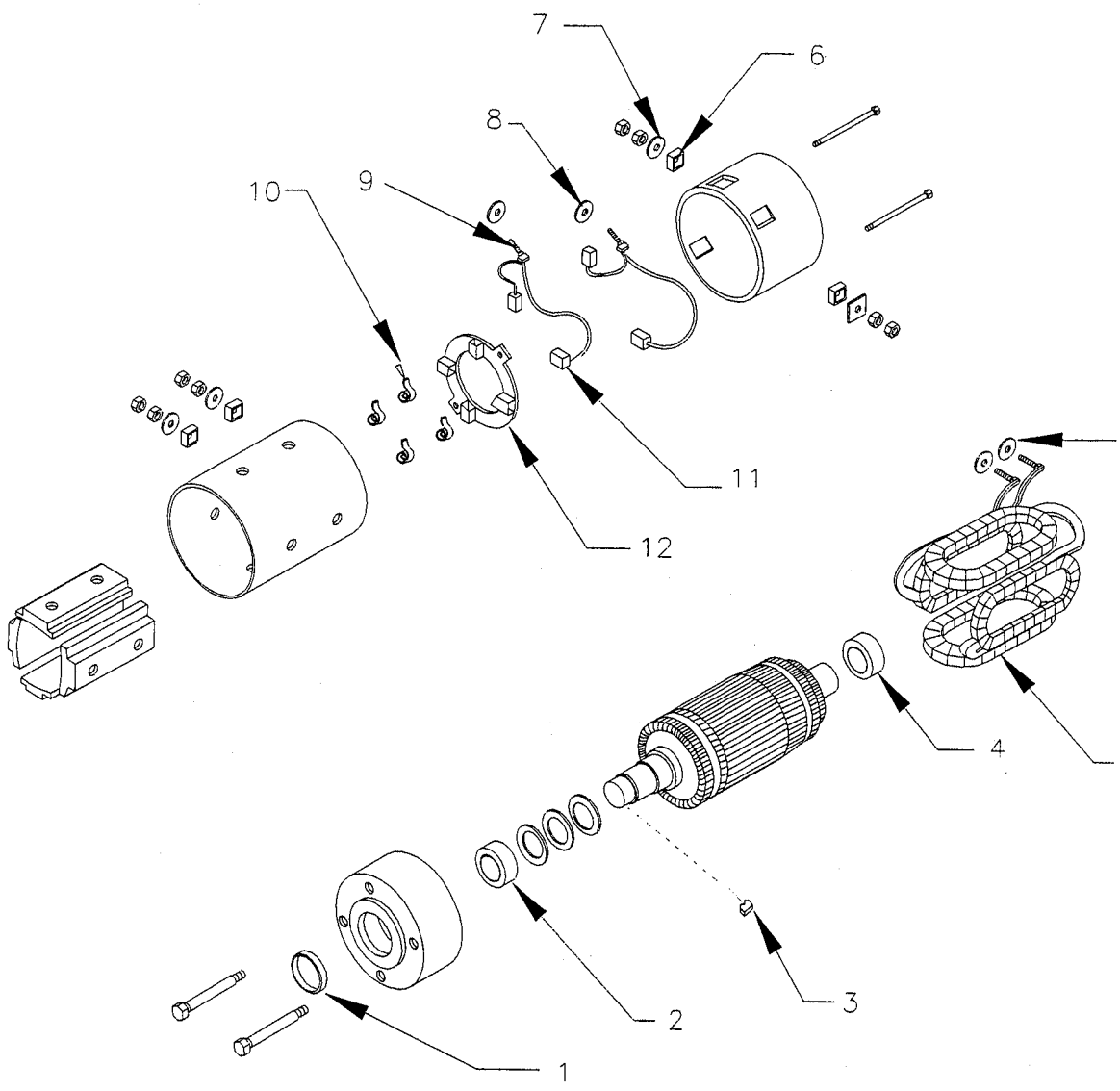
Illustrated Parts Figure 2: Battery Box's

BATTERY BOX ASSEMBLY 01-250-40			
Item #	Part Number	Description	Qty
1	01-250-39	BATTERY BOX COVER	1
2	88-060-13	1/4 x 1-1/4, HEX HEAD SCREW	2
3	88-068-62	1/4 LOCKWASHER	2
4	88-068-60	1/4 CUT WASHER	2
5	97-211-20	1/4 -20U-NUT	2
6	01-250-35	UHMW SLIDING PAD	4
7	88-737-08	POP RIVIT,3/16 X 5/8,.340 HD	16
8	88-109-81	3/8 NC LOCK NUT	4
9	88-108-60	3/8 CUT WASHER	4
10	00-243-43	WELDMENT,BATTERY BOX,ET2	1
11	88-149-81	1/2 NC LOCK NUT	2
12	88-148-61	1/2 SAE WASHER	4
13	88-140-20	1/2X3-1/2 NC,HEX HD SCREW	2
14	98-753-12	STUDDED BUMP STOPS, (SETS OF 2)	2
BATTERIES SECURED BY: (NOT SHOWN)			
	50-243-10	BATTERY HOLD DOWN ROD	3
	50-250-00	BAT-LOK CLAMP	3
	88-089-80	5/16 HEX NUT	3
	88-069-81	1 / 4 NYLON INSERT LOCKNUT	3

Illustrated Parts Table 2: Battery Box Assembly Part List

All quantities shown are for one battery box.

MOTOR EXPLODED



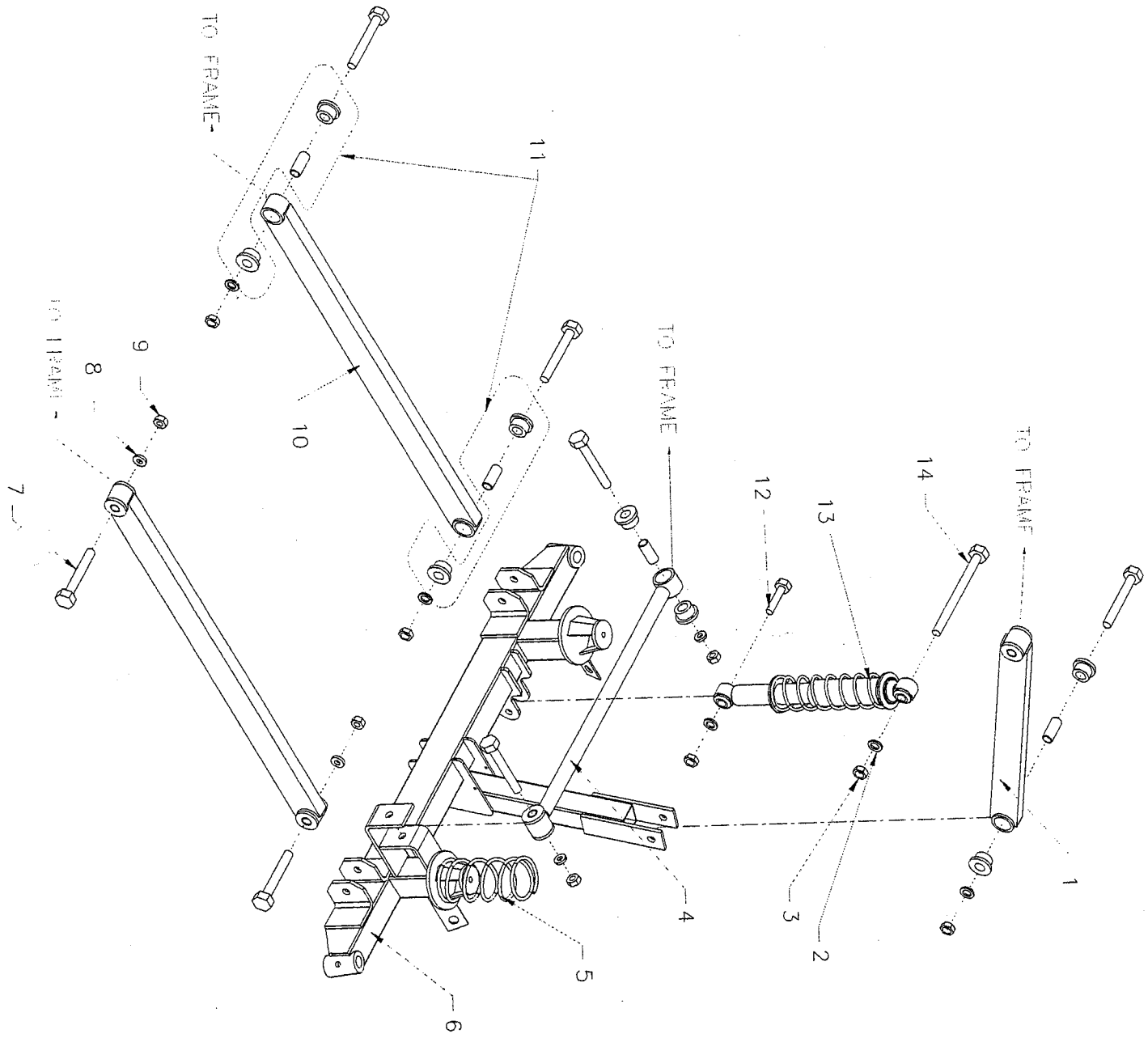
Illustrated Parts Figure 3: Exploded View of Motor

MOTOR (70-074-00) L94-4006			
Item #	Part Number	Description	Qty
1	45-509-00	Oil Seal	1
2	80-212-00	Front Bearing	1
3	97-100-00	Key, Woodruff	1
4	80-213-00	Rear Bearing	1
5	70-208-10	Field Coil	1
6	N/A	Field/Armature Insulator Bushing (Part of #9)	
7	70-210-71	External Insulator Washer, Field & Armature (2Plcs Field & 2Plcs Armature)	4
8	70-210-70	Internal Insulator Washer, Armature	2
9	70-197-00	Crossover	2
10	85-403-00	Brush Spring	4
11	70-107-00	Brush	4
12	70-173-00	Brush Holder	4

Illustrated Parts Table 3: Motor Exploded View Parts List

TAYLOR-DUNN®
Commercial and Industrial Vehicles Since 1949

Front Suspension

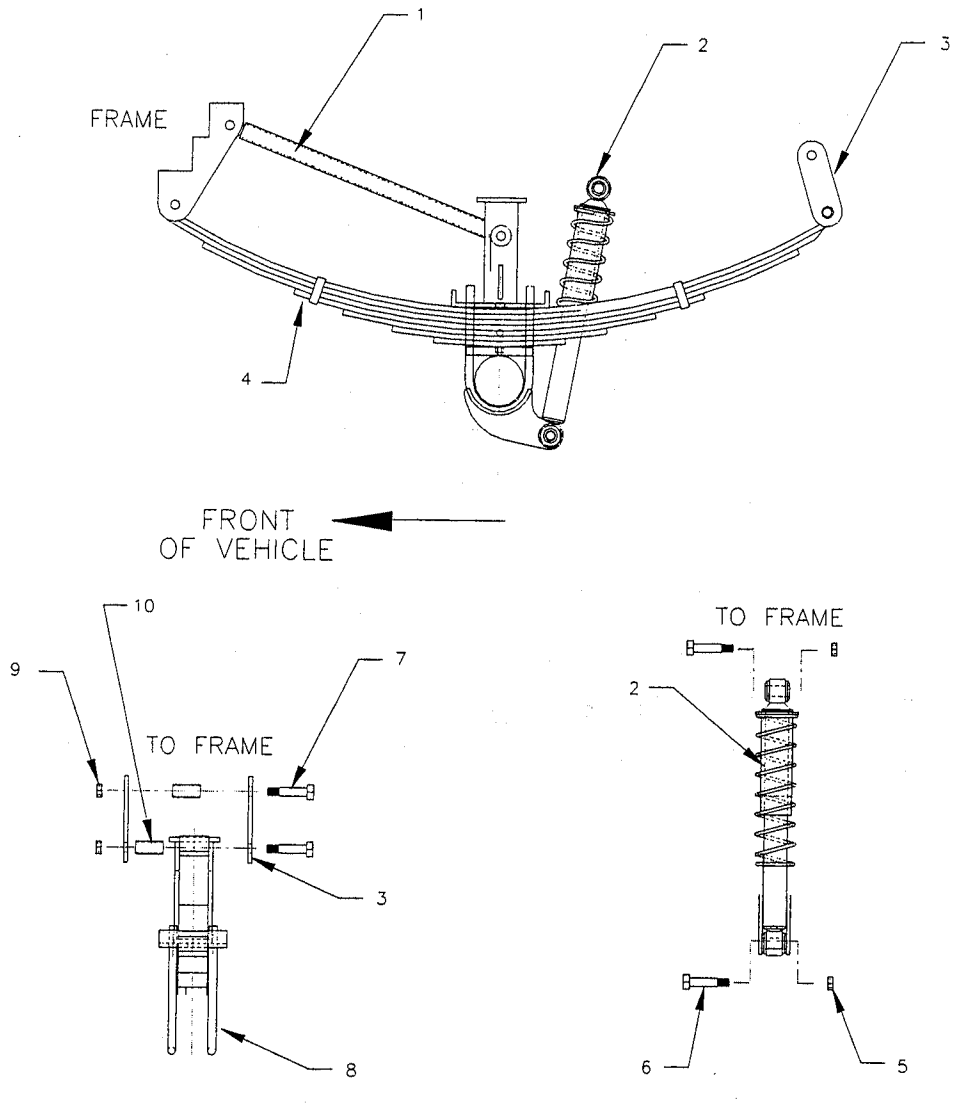


Illustrated Parts Figure 4

Front Suspension			
Item #	Part Number	Description	Qty
1	15-255-14	Top Link Front Axle Et-2	1
2	88-148-61	1/2 SAE Washer	4
3	88-149-81	1/2 NC Lock Nut	4
4	15-255-18	Rod, Pan Hard	1
5	85-180-15	Spring,Comprss,10.25l X 3.8od	2
6	15-255-00	Axle Assy, Et-2	1
7	96-248-00	Bolt,9/16 X 3 NF, Gr. 5	8
8	88-188-66	Washer, 5/8 SAE, Plain	8
9	88-169-82	Lock Nut, 9/16 NF Grade C	8
10	15-255-15	Bottom Link Front Axle Et-2	2
11	32-249-00	Bushing ,Rubber W/Sleeve,9/16id	4
12	88-140-17	1/2x2-1/2nc Hex Hd Scr Grd 5	2
13	86-008-00	Shock Absorber W/Spring,54527	2
14	88-140-31	1/2 X 6 NC Hex Hd Scr, Gr. 8	2

Illustrated Parts Table 4: Front Suspension Parts List

Rear Suspension

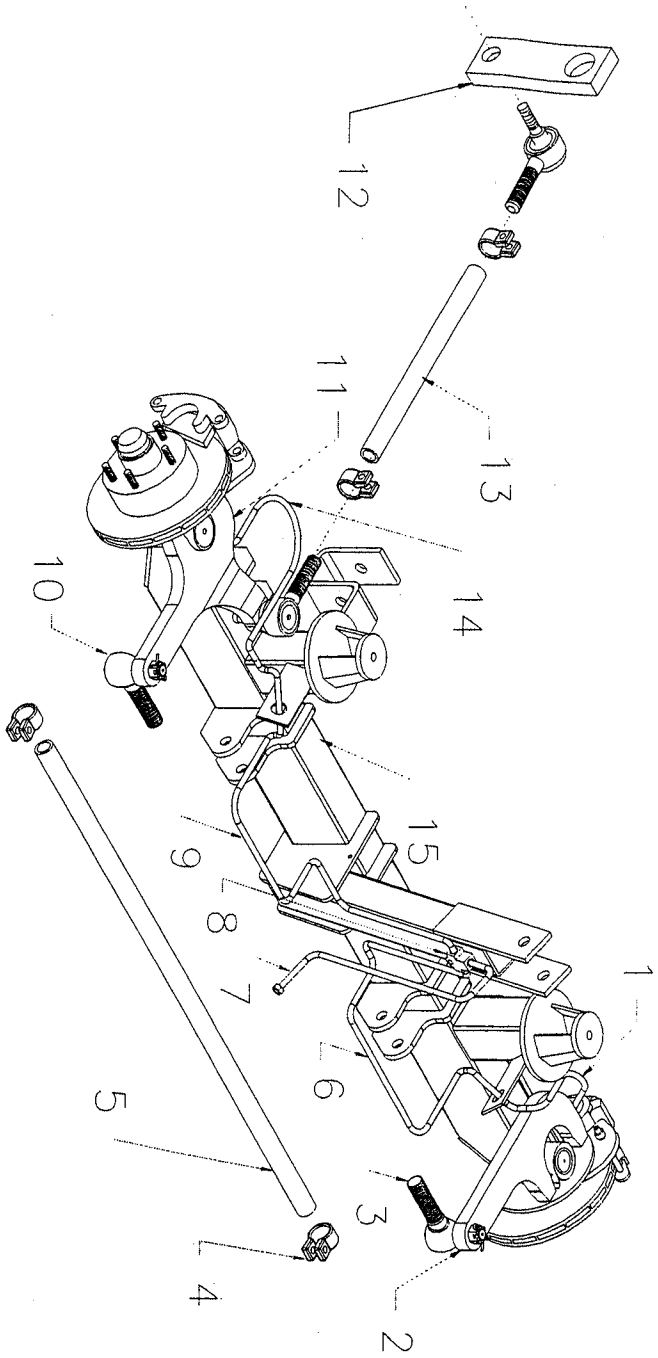


Illustrated Parts Figure 5p

Rear Suspension			
Item #	Part Number	Description	Qty
1	00-255-02	Trak Arm	2
2	86-008-00	Shock Absorber	2
3	16-871-02	Leaf Spring Shackle. 3.5 Centers	2
4	85-515-00	Leaf Spring	2
5	88-149-81	1 / 2 Locknut	4
6	88-140-17	1 / 2 X 2-1/2 HEX HD Screw	4
7	96-248-01	Bolt, Spring W/Grease Fitting	6
8	96-122-00	U-Bolt	4
9	88-169-82	9/16 NF Locknut	6
10	32-213-00	3 / 4 OD X .600 ID Bushing	2

Illustrated Parts Table 5: Rear Suspension Parts List

Front Axle

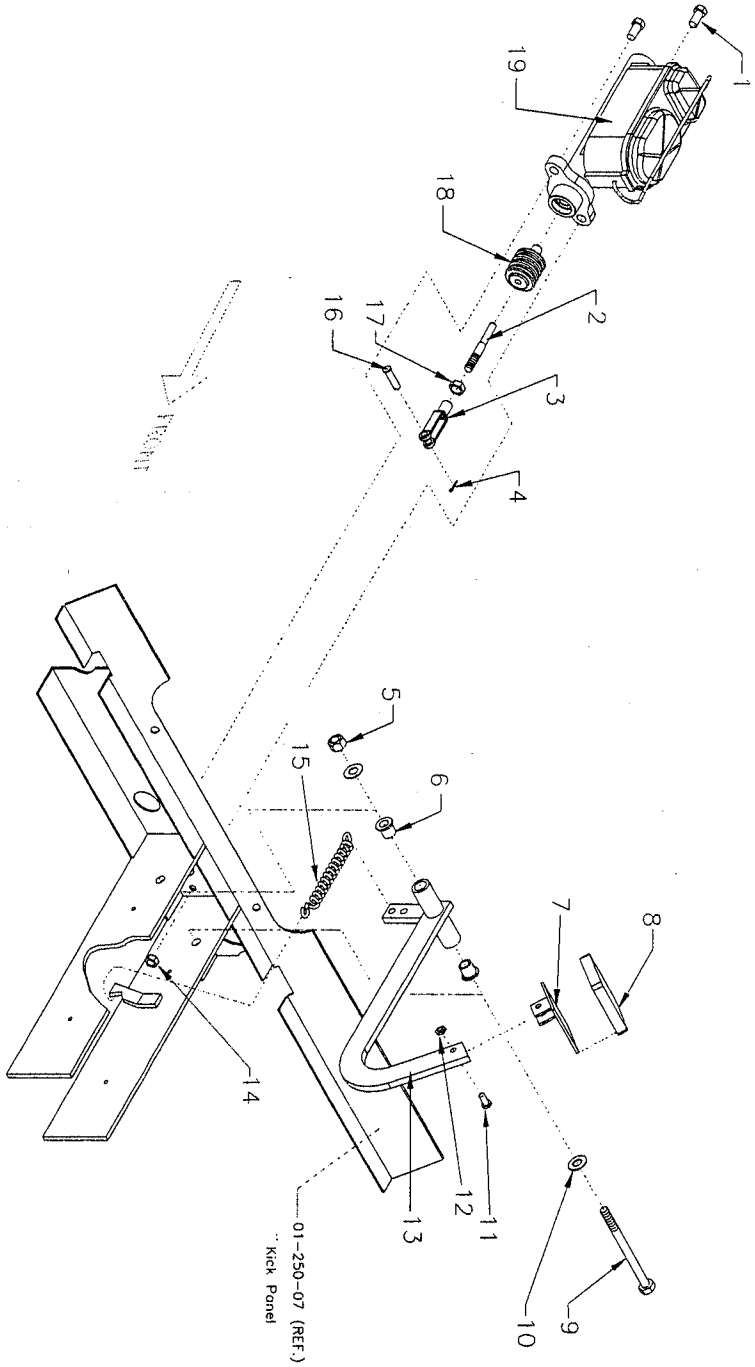


Illustrated Parts Figure 6: Front Axle

Front Axle			
Item #	Part Number	Description	Qty
1	99-580-30	Brake Hose (RT)	1
2	15-255-11	Steering Fork (RT)	1
3	86-501-99	Ball Joint, Right W/ Zerk Fitting	2
4	86-510-00	Ball Joint Clamp	4
5	15-255-19	Tie Rod 32"	1
6	99-603-66	Brake Line, Front Right	1
7	99-580-00	Brake Hose	1
8	99-563-00	T-Fitting W/ Hardware	1
9	99-603-65	Brake Line, Front Left	1
10	86-501-98	Ball Joint, Left W/Zerk Fitting	2
11	15-255-10	Steering Fork, Left	1
12	18-104-06	Pitman Arm	1
13	18-057-30	Drag Link	1
14	99-580-30	Brake Hose (LT)	1
15	15-255-01	Front Axle	1

Illustrated Parts Table 6: Front Axle Parts List

Hydraulic Brakes (Master Cylinder)

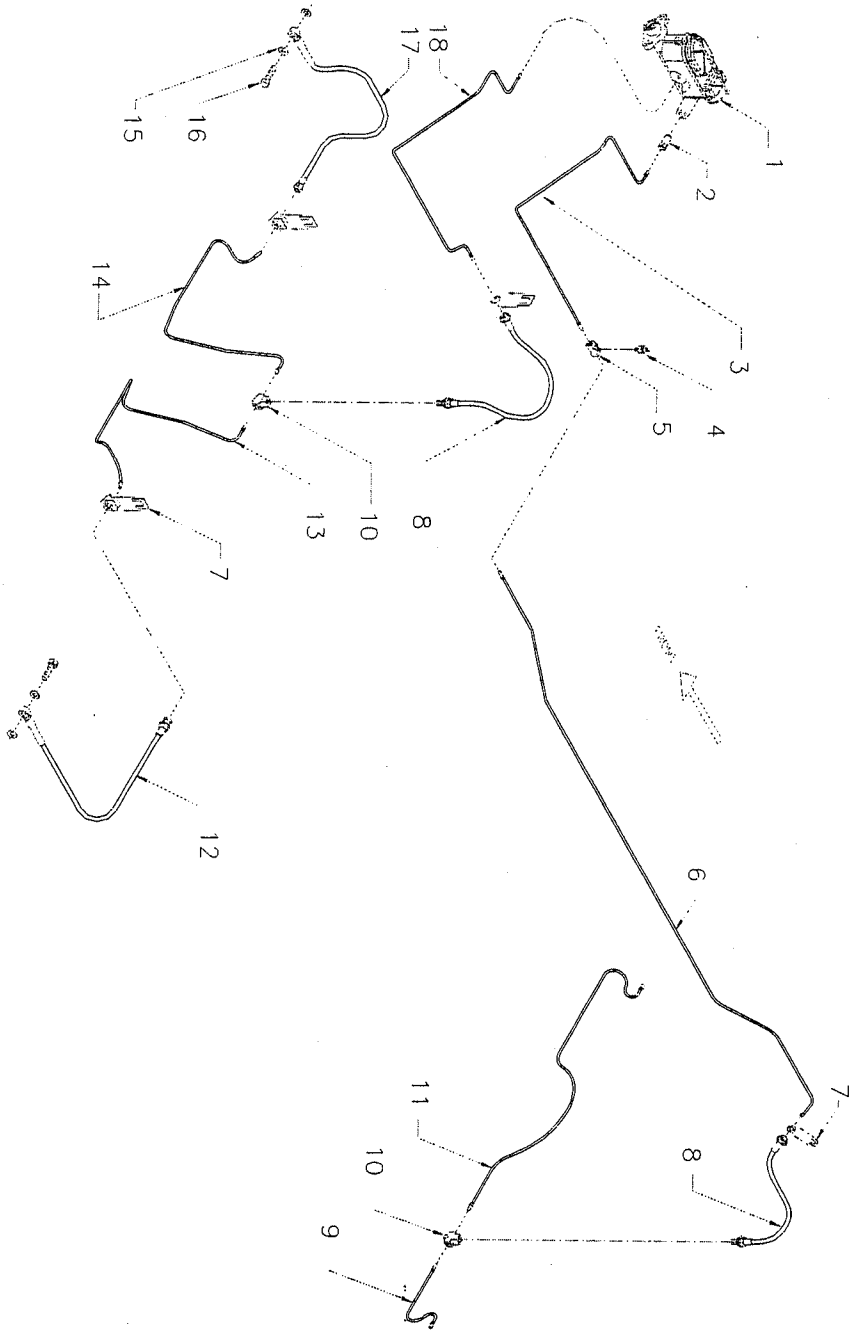


Illustrated Parts Figure 7: Hydraulic Brakes

Hydraulic Brakes			
Item #	Part Number	Description	Qty
1	88-101-13	3/8 X 1-1/4 HEX HD Screw	2
2	50-009-12	Push Rod 3.438" Long	1
3	96-763-00	5/16 Clevis	1
4	88-517-11	3/32 X 1 Cotter Pin	1
5	88-149-81	1/2NC Locknut	1
6	32-215-00	Bushing, Flanged	2
7	01-432-98	Brake Pedal	1
8	98-200-00	Rubber Brake Pedal Pad	1
9	88-140-31	1/2X6NC HEX HD Screw	1
10	88-148-61	1/2SAE Washer	2
11	88-080-11	5/16X1 NC HEX HD Cap Screw	1
12	88-089-81	5/16 NC Locknut	1
13	01-255-26	Brake Arm	1
14	88-108-62	3/8 Lock Washer	2
15	85-233-00	11/16 OD X 6-1/4, spring	1
16	96-772-00	Pin, Clevis	1
17	88-119-80	3/8 NF HEX HD Nut	1
18	99-510-51	Rubber Boot	1
19	99-511-50	Master Cylinder, Dual Res.	1

Illustrated Parts Table 7: Hydraulic Brakes Parts List

Hydraulic Brakes (Brake Lines)

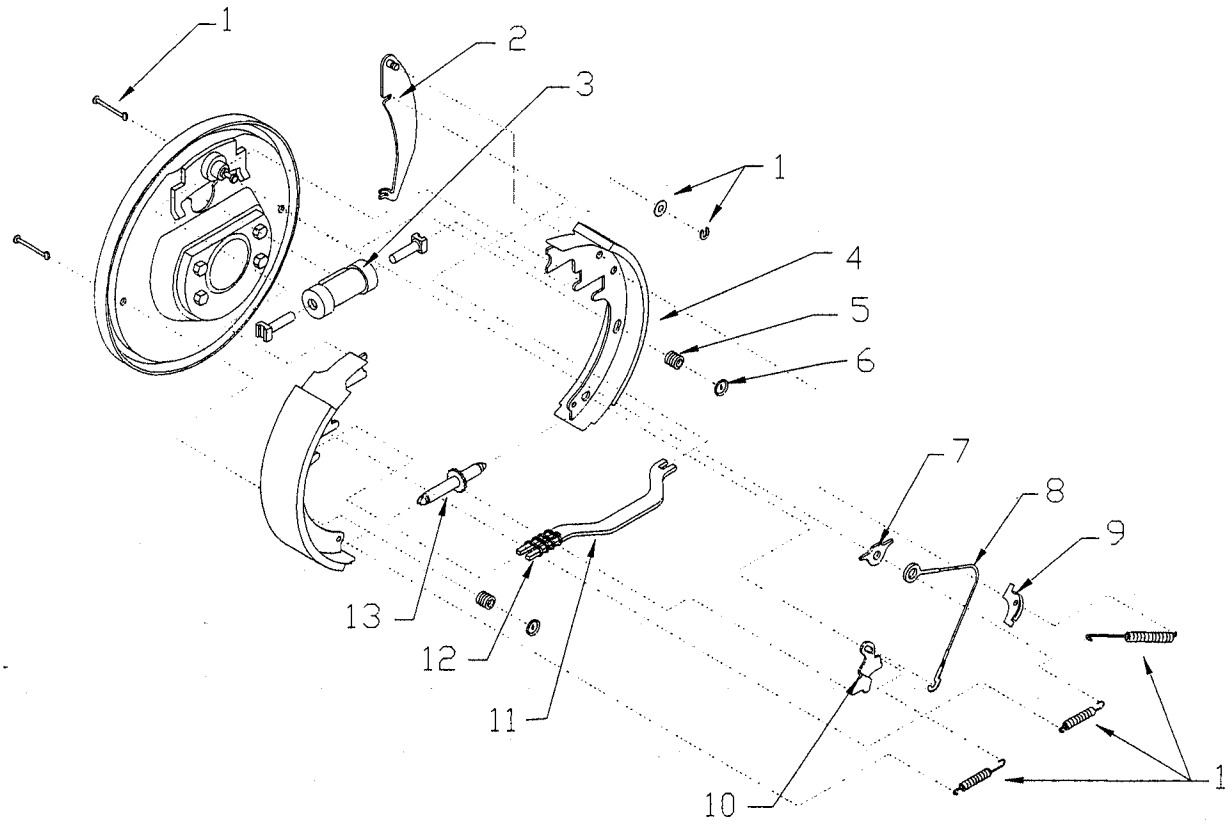


Illustrated Parts Figure 8

Hydraulic Brakes			
Item #	Part Number	Description	Qty
1	99-511-50	Master Cylinder, Dual Res.	1
2	99-575-20	Adapter Fitting, 1/2-20X3/16	1
3	99-603-64	Rear Brake Line	1
4	71-110-00	Hydraulic Brake Switch	1
5	99-591-00	3/16X1/8Pipe, T-Fitting	1
6	99-603-62	Rear Brake Line	1
7	99-576-00	Wagner Clip	4
8	99-580-00	Hose, Brake, w/ 3/8-24M & 3/16	2
9	99-603-63	Brake Line, Drive, Left	1
10	99-563-00	T-Fitting	2
11	99-603-61	Brake Line, Drive, Right	1
12	99-580-30	Brake Hose, Left and Right	2
13	99-603-65	Brake Line, Left Front Axle	1
14	99-603-66	Brake Line, Right Front Axle	1
15	99-573-00	10mm Copper Washer	4
16	99-580-31	10mm Brake Bolt	2
17	99-603-67	Front Brake Line	1

Illustrated Parts Table 8

Rear Brakes



Illustrated Parts Figure 9: Hydraulic Brakes

Rear Brakes (41-312-88 & 89)			
Item #	Part Number	Description	Qty
1	85-205-61	Spring Kit	1
2	*	Park Brake Lever	1
3	99-504-00	Cylinder, Wheel	1
4	41-362-00	Brake Shoes, 11" (Set of four- (4))	1
5	*	Spring	1
6	*	Cup	2
7	*	Anchor Pin Plate	1
8	*	Self Adjusting Cable	1
9	*	Cable Guide	1
10	*	Adjusting Lever	1
11	*	Park Brake Link	1
12	85-00-02	Park Brake Link Spring	1
13	*	Adjusting Screw	1

Illustrated Parts Table 9: Hydraulic Brakes Parts List

* Part Number Not Available at Time of Printing.

Quantities listed are for one- (1) Brake Assembly only. If you need parts for both rear brake assemblies double the number in the quantity column, except for ITEM #4 it is sold as a set of four- (4) shoes.

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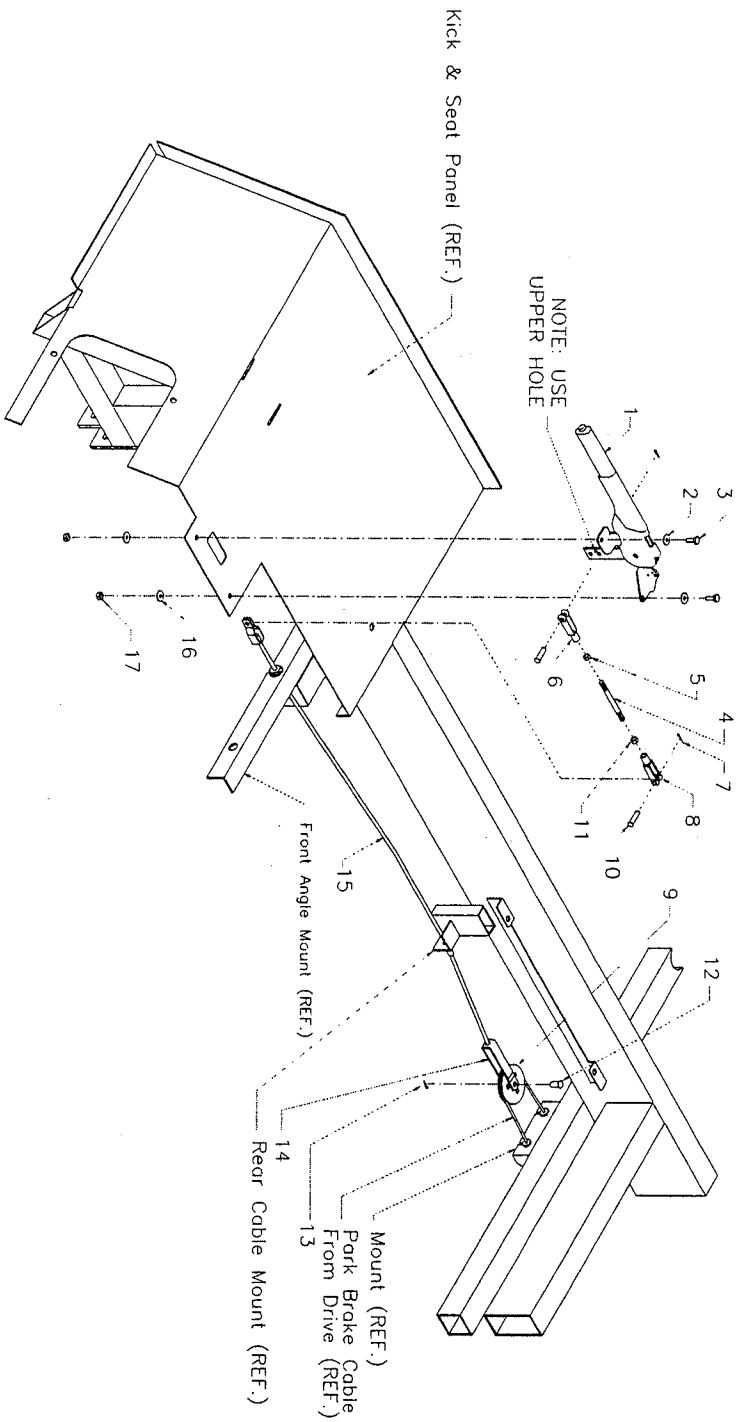
Park Brake

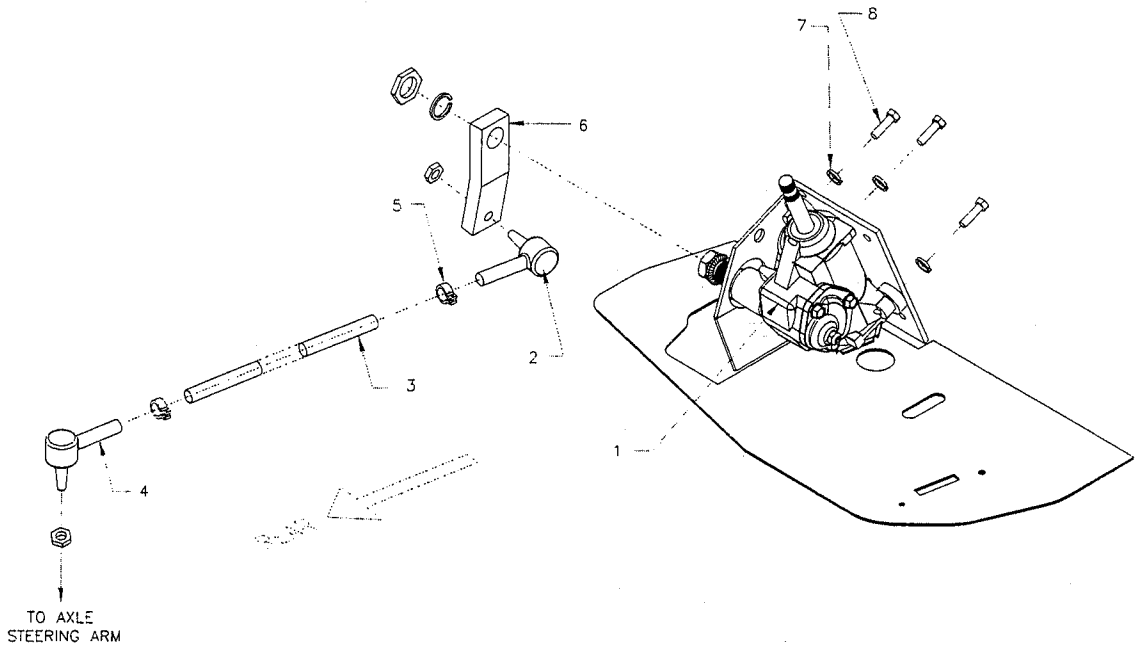


Illustrated Parts Figure 10: Park Brake

Park Brake			
Item #	Part Number	Description	Qty
1	51-344-40	Park Brake Lever	1
2	88-088-60	5/16 Washer	2
3	88-081-11	5/16 X1 HEX HD Screw	2
4	96-343-00	Adjusting Screw	1
5	88-099-81	5/16 Nut, Left Hand	1
6	96-765-00	Left Hand Threaded Clevis	1
7	88-517-09	Cotter Pin	2
8	96-763-00	Clevis	1
9	00-243-03	Equalizer Disk	1
10	96-773-00	Clevis Pin	2
11	88-099-80	5/16 Nut	1
12	96-771-00	Clevis Pin	1
13	88-517-11	Cotter Pin	1
14	96-760-00	Brake Cable Clevis	1
15	96-827-15	Adjustable Cable	1
16	88-088-60	5/16 Cut Washer	2
17	88-089-81	5/16 Locknut	2

Illustrated Parts Table 10: Park Brake Parts List

Steering

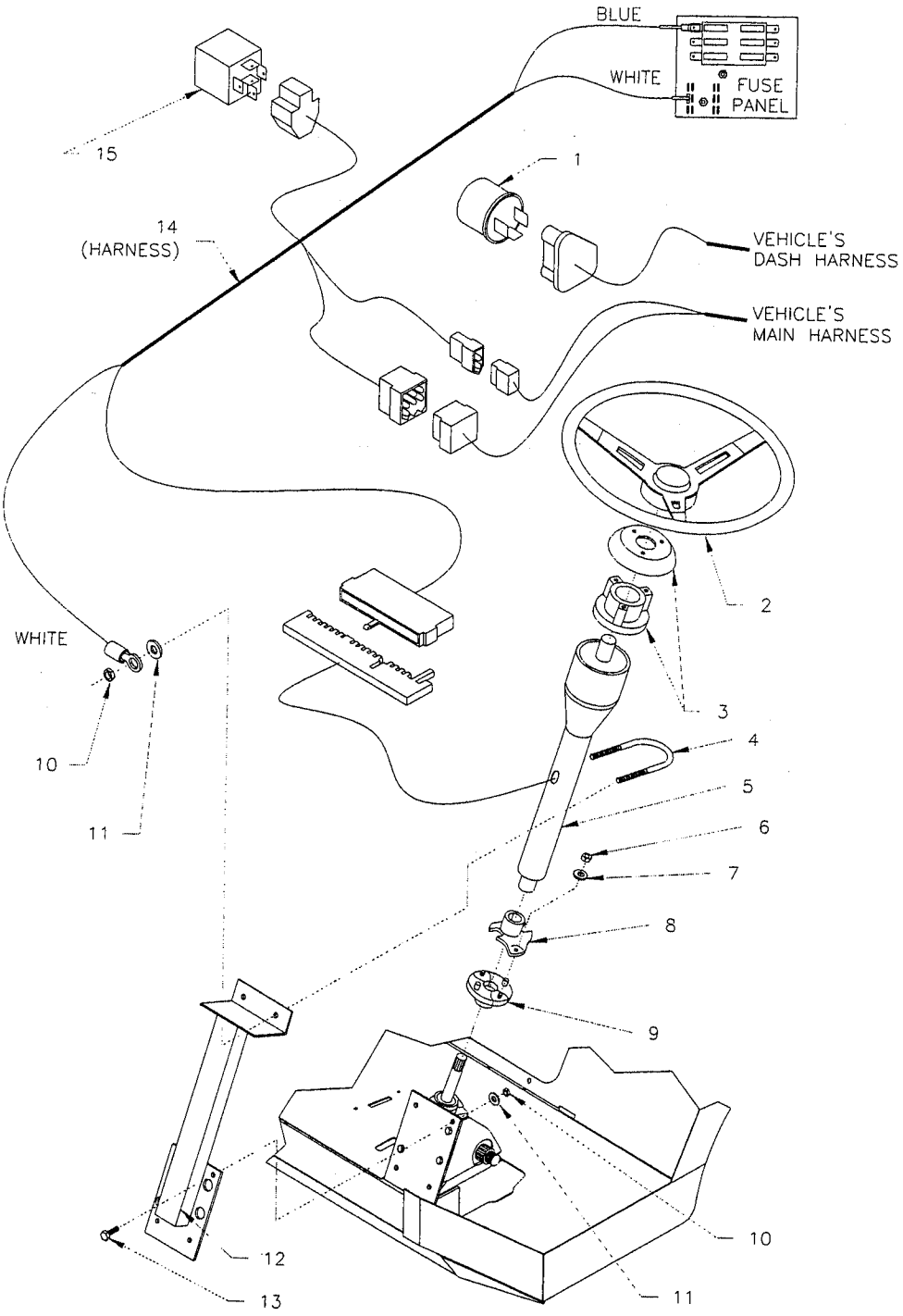


Illustrated Parts Figure 11: Steering

Steering			
Item #	Part Number	Description	Qty
1	18-305-15	Steering Gear	1
2	86-501-98	Left Ball Joint W/Zerk Fitting	1
3	18-057-30	Drag Link	1
4	86-501-99	Right Ball Joint W/Zerk Fitting	1
5	86-510-00	Ball Joint Clamp	2
6	18-104-06	Pitman Arm	1
7	88-128-62	7/16 Lock Washer	3
8	88-120-15	7/16 X 1-1/2 HEX HD	3

Illustrated Parts Table 11: Steering Parts List

Tilt Steering Column



Illustrated Parts Figure 12: Tilt Steering Column

Tilt Steering Column			
Item #	Part Number	Description	Qty
1	71-900-05	Base, Flasher	1
2	19-005-17	Steering Wheel, 17"	1
3	19-005-00	Adapter, Steering Wheel	1
4	96-123-45	U-Bolt, 3/8 X 2 X 2-5/8	1
5	18-414-18	Column, Steering W/Tilt, 18"	1
6	88-099-80	5/16 Nut	2
7	88-088-62	5/16 Lock Washer	2
8	18-308-06	Coupler, To Rag Joint	1
9	18-308-05	Rag Joint Mntg Plate, Stg Gear	1
10	88-109-81	3/8 NC Lock Nut	6
11	88-108-61	3/8 SAE Washer	6
12	00-255-05	Steering Column Support	1
13	88-081-14	5/16 NF X 1-1/2, Bolt, Gr. 8	2
14	75-148-54	Harness, Cntrol, Horn Stg Column	1
15	71-303-01	Relay, SPDT, 12V Coil, 20/30A	1

Illustrated Parts Table 12: Tilt Steering Column

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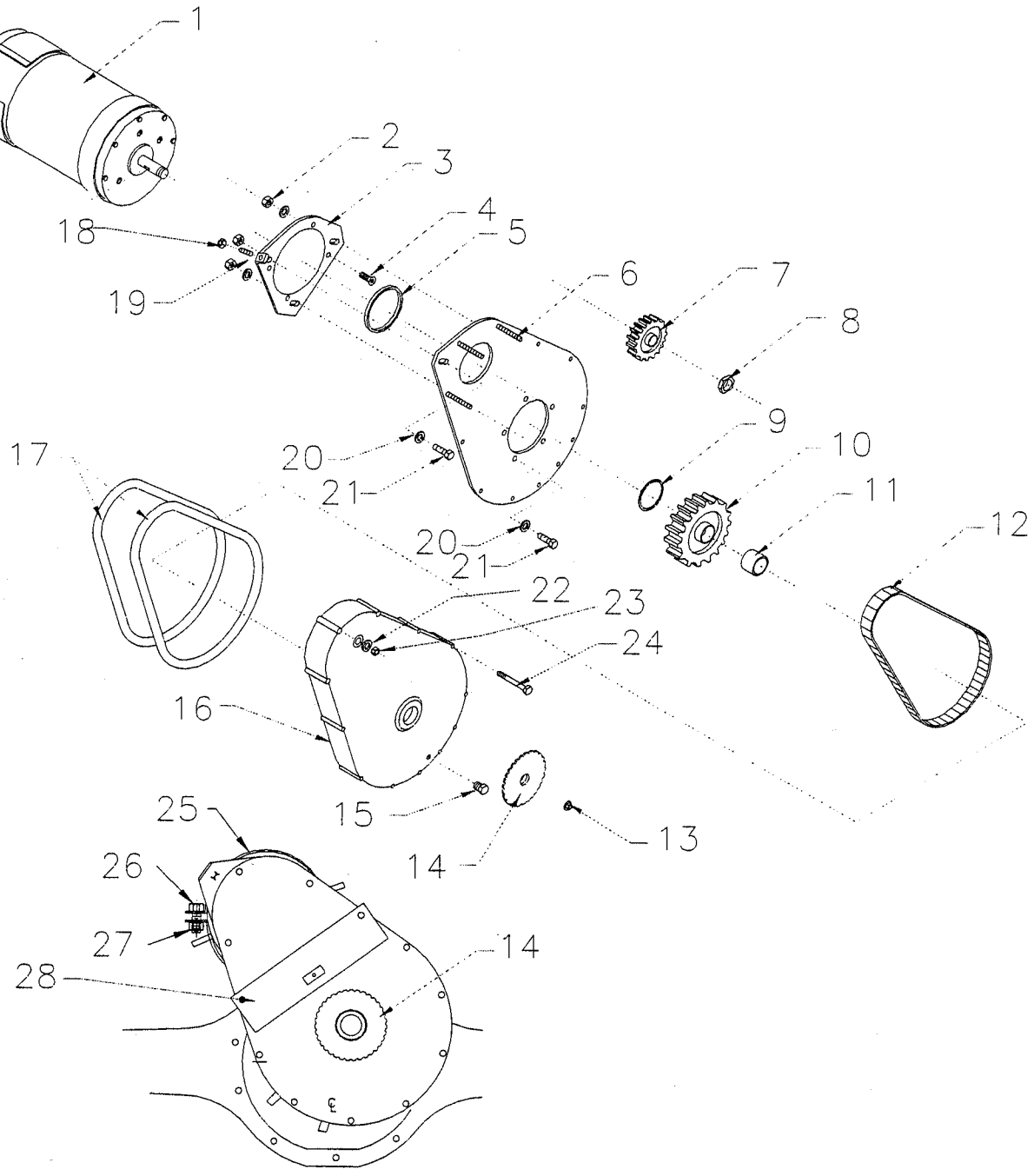
Power Traction Assembly



Illustrated Parts Figure 13: Power Traction Assembly

Power Traction			
Item #	Part Number	Description	Qty
1	70-074-00	Motor	1
2	88-109-87	Nut, Keps, 3/8 NC	3
3	70-454-00	Motor Mounting & Adjusting Plate	1
4	88-103-09	3/8 NC X 3/4 Socket Flat Screw	4
5	80-703-00	O-Ring	1
6	44-352-53	Chain Case Backing Plate	1
7	30-071-20	Sprocket, 20 Tooth, 3/4 ID, Triple#35	1
8	88-239-89	Nut, Hex, 3/4 - 16NF	1
9	16-415-00	Spacer	1
10	30-071-07	Sprocket, 52 Tooth, Triple#35,F2	1
11	16-423-00	Spacer	1
12	30-330-03	Chain, Endless triple #35	1
13	97-250-00	Pinion Nut	1
14	01-255-00	Gear, Speedo W/Collar	1
15	41-989-00	Drain Plug, 1/4 Pipe	1
16	43-201-20	Cover, Chain Case Die Cast	1
17	01-255-02	Spacer, Chain Case	2
18	88-089-80	Motor Adjusting Screw Jam Nut, HEX 5/16 NC	1
19	88-087-11	5/16X1 NC, Socket Setscrew	1
20	88-108-63	Lock Washer, 3/8, Internal Tooth	6
21	88-101-13	3/8NC X 1-1/4 Hex Bolt	6
22	88-088-61	Washer, 5/16 SAE	3
23	88-089-81	Lock Nut, 5/16NC	12
24	88-080-20	5/16NC X 3 Hex Bolt	9
25	00-155-59	Strap, Motor Mount, 7" Dia	1
26	88-120-17	7/16 X 2 1/4 Hex Hd Screw	2
27	88-129-80	7/16 NC Hex Hd Nut	2
28	00-243-22	Speedo Pickup, Mount	1

Illustrated Parts Table 13: Power Traction Assembly Parts List

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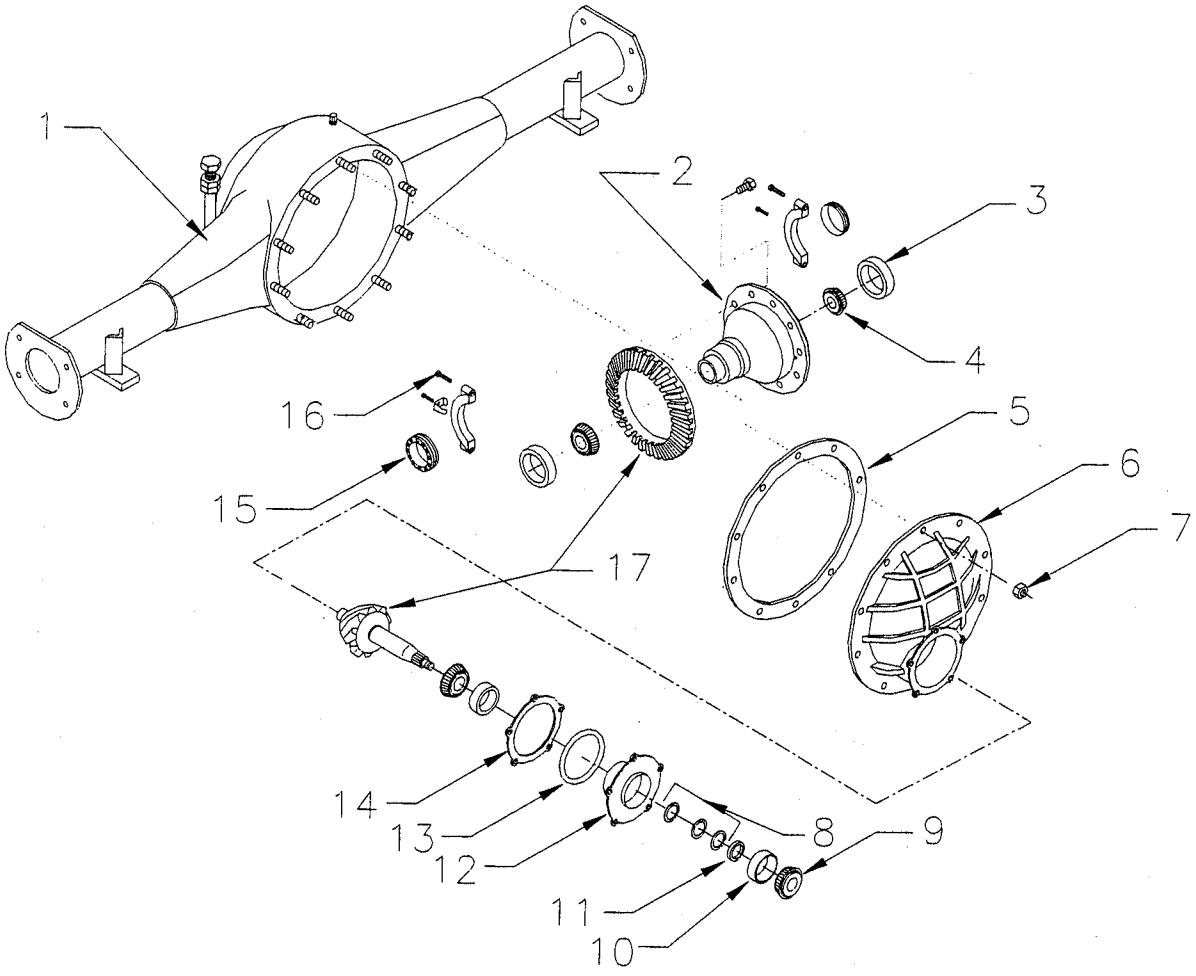
Differential



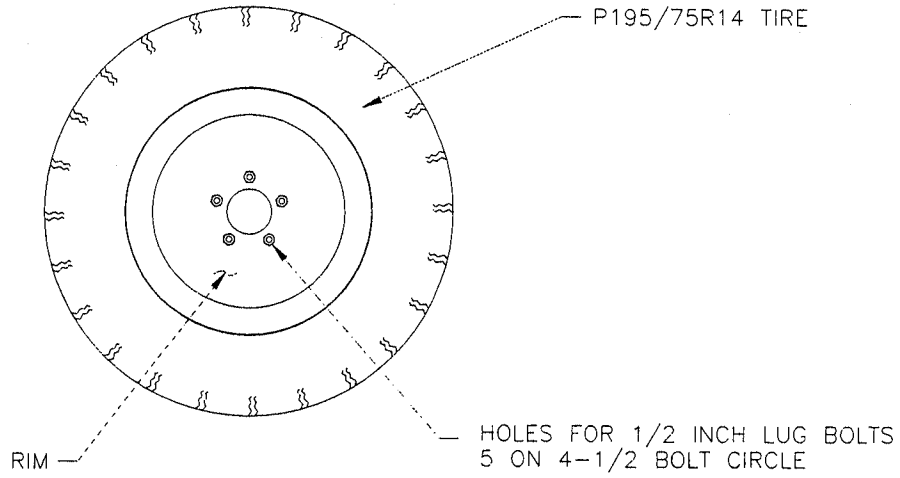
Illustrated Parts Figure 14: Differential

Differential			
Item #	Part Number	Description	Qty
1	41-291-49	Housing, Differential	1
2	41-713-00	Differential Gear Base Assembly	1
3	80-129-00	Bearing Race, Tapered	2
4	80-513-00	Bearing, Roller	2
5*	45-042-00	Gasket, Differential Housing	1
6	41-710-05	Cover, Differential Housing	1
7	88-119-80	3/8" NF Locknut	10
8	16-419-00	Shim, .002"	1-6
	16-411-00	Shim, .005"	1-6
	16-420-00	Shim, .010"	1-6
9	80-554-00	Pinion Bearing	2
10	80-125-00	Bearing Race, Tapered	2
11	16-415-00	Spacer. F2 Axle	1
12	44-340-91	Flange, Ring Gear, Pinion Bearing	1
13	80-702-00	O-Ring, Pinion	1
14	41-711-00	Shim, Pinion	1-3
15	41-707-00	Adjusting Nut, Differential Bearing	2
16	88-513-00	Screw, HEX Head Cap, NC, 1/2X2	4
17	31-239-00	Ring & Pinion Gear Set, 5.43 ratio	1

Illustrated Parts Table 14: Differential Parts List

* Liquid gasket material may be used in place of item #5.

Tire Assembly

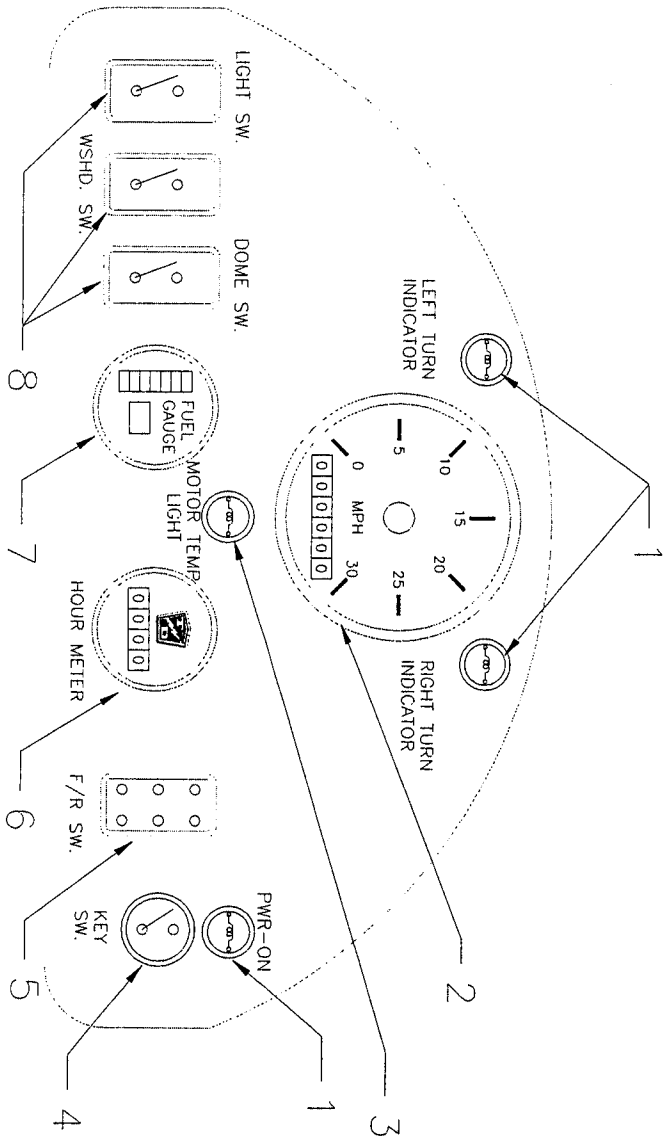


Illustrated Parts Figure 15: Tire Assembly

TIRE ASSEMBLY V2-017-80		
Part Number	Description	Qty
13-770-10	ASSY,TIRE&WHL,LT195/75R14,LR D	4
97-236-00	NUT, ½ IN LUG NUT	20

Illustrated Parts Table 15: Tire Assembly Parts List

DASH ASSEMBLY



Illustrated Parts Figure 16: Dash Panel Assembly

DASH ASSEMBLY KZ-D20-10			
Item #	Part Number	Description	Qty
1	72-028-25	Light, Rectangular, Green, 12V	3
2	74-020-00	Speedometer	1
3	72-025-10	Light, Rectangular, Red, 12V	1
4	71-120-00 71-121-00	Switch, Key, (Keyed Alike) Switch, Key, (Keyed Unalike, Optional)	1
5	71-039-12	Switch, Double Throw, (for FWD/OFF/REVS)	1
6	74-009-96	Hour Meter	1
7	74-009-96	Gauge, Fuel	1
8	71-039-11	Switch, Accessories & Light	3
9	*	Switch, High-Low	1

Illustrated Parts Table 16: Dash Panel Assembly Parts List

* Not Available at time of printing.

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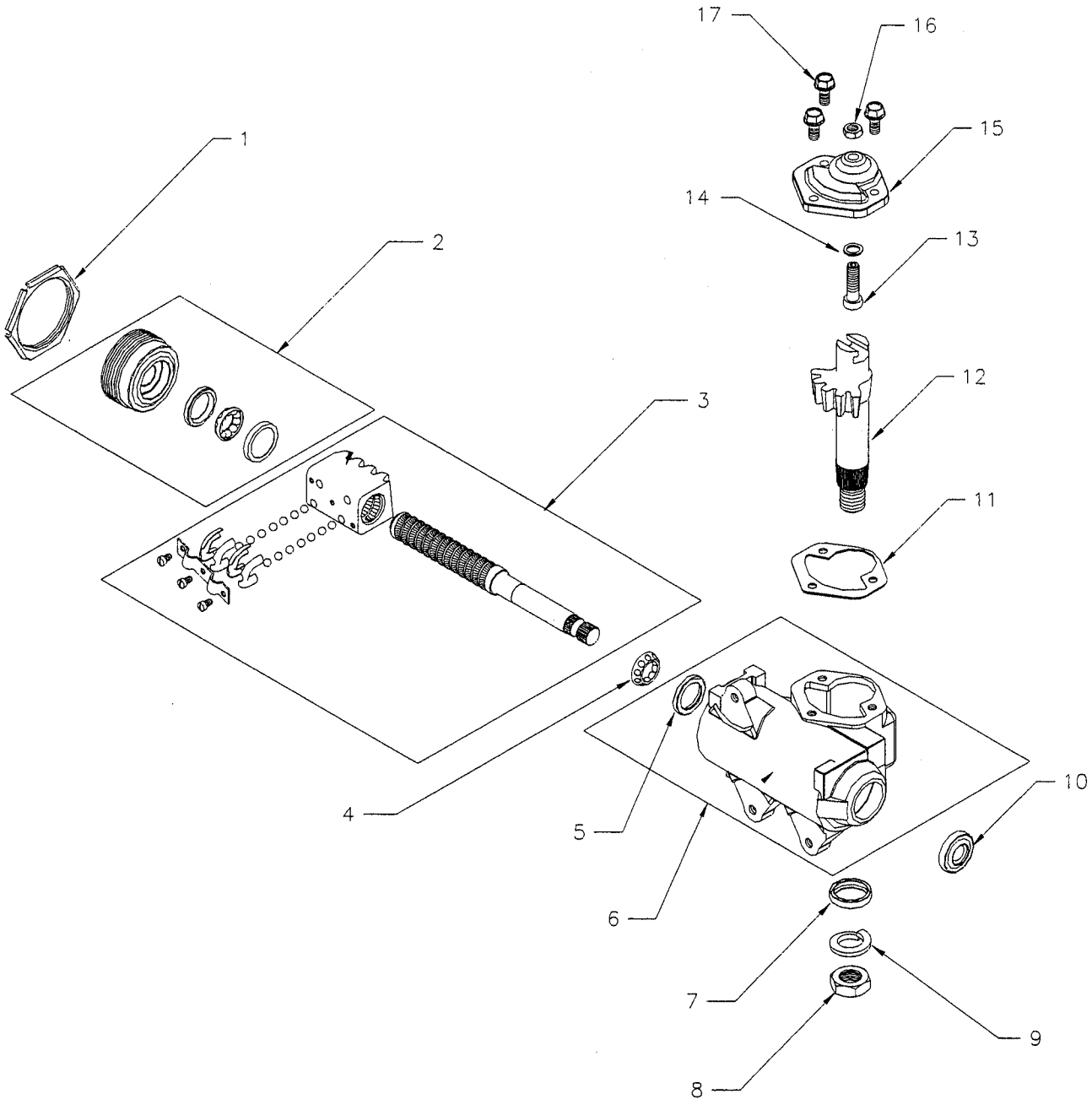
STEERING GEAR

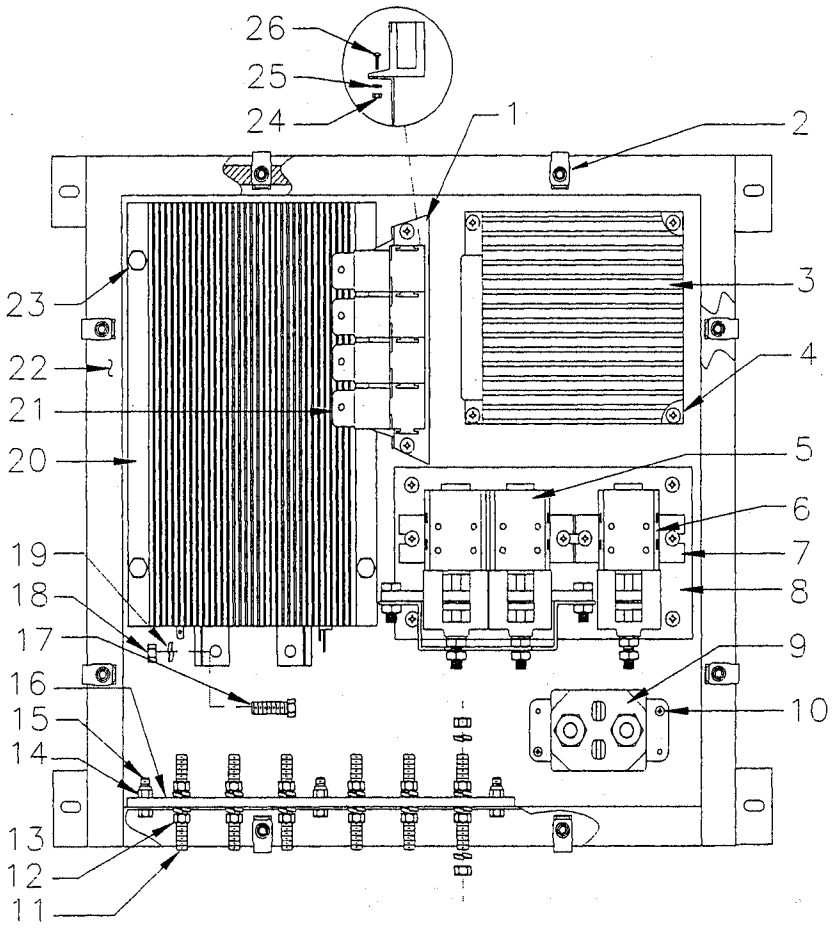


Illustrated Parts Figure 17: Steering Gear

STEERING GEAR (18-308-21)			
Item No.	Part No.	Description	Qty
1	18-308-70	Locknut, Worm Bearing Adjuster	1
2	18-308-71	Adjuster Assembly	1
3	18-308-73	Worm Assembly	1
4	18-308-23	Upper Worm Bearing	1
5	18-308-22	Upper Worm Bearing Race	1
6	18-308-77	Housing, Steering Gear	1
7	18-308-78	Seal, Pitman Shaft	1
8	18-308-80	Nut, Pitman Shaft	1
9	18-308-81	Lock Washer, Pitman Shaft	1
10	18-308-79	Seal, Worm Shaft	1
11	18-308-82	Gasket, Side Cover	1
12	18-308-76	Pitman Shaft	1
13	18-308-75	Lash Adjuster	1
14	18-308-85	Shim Kit	1
15	18-308-84	Side Cover	1
16	18-308-86	Nut, Lash Adjuster	1
17	18-308-83	Bolt, Side Cover	3

Illustrated Parts Table 17: Steering Gear Assembly

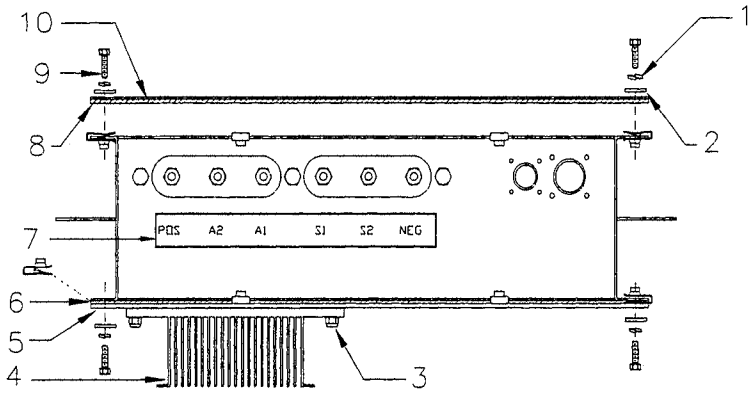
CONTROL PANEL



Illustrated Parts Figure 18: Control Panel

CONTROL PANEL			
Item #	Part Number	Description	Qty
1	00-255-04	Mount Relay	1
2	97-211-20	U-Nut, ¼-20	16
3	73-012-70	DC-DC Converter, 300W 72/96Vin	1
4	88-838-06	#14 X ½ Pan Head Screw	14
5	71-300-10	Contactor, FWR/REV	1
6	71-300-00	Contactor, ISO	1
7	71-300-01	Bracket, Mounting	1
8	00-255-12	Bracket, Mount, Contactors	1
9	79-844-20	Circuit Breaker, 200A, Auto Reset	1
10	88-818-06	#8 X1/2 Pan Head Screw	2
11	50-028-12	5/16 X2-1/2 NC Brass Thread Rod	6
12	88-089-82	5/16 NC Hex Machine Nut Brass	24
13	88-088-62	5/16 Lock Washer	24
14	88-069-81	1/4NC Nylon Insert Locknut	3
15	88-060-09	1/4X3/4NC Hex Head Cap Screw	3
16	01-255-57	Micarta Terminal Strip	1
17	88-080-09	5/16X3/4NC Hex Head Cap Screw	4
18	88-089-80	5/16 Hex Nut, Tin-Lead Plt.	4
19	88-088-62	5/16 Lock Washer	4
20	62-221-00	Control, 72-120V, 400A	1
21	71-303-01	Relay, SPDT, 12V Coil, 20/30A	4
22	00-255-10	Control Box	
23	88-060-11	1/4X1NC Hex Head Cap Screw	4
24	88-049-80	10-32 Hex Nut	2
25	88-048-62	#10 Lock Washer	2
26	88-045-06	10-32X1/2 Trus Head Machine Scr	2

CONTROL PANEL Cont'd

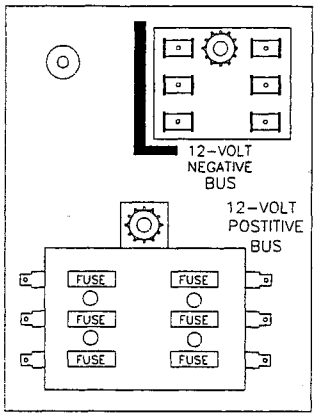


Illustrated Parts Figure 19: Control Panel

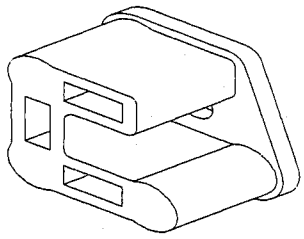
CONTROL PANEL BOX			
Item #	Part Number	Description	Qty
1	88-068-62	¼ Lock Washer	16
2	88-068-61	¼ SAE Washer	16
3	88-069-81	1/4NC Nylon Inert Locknut	4
4	62-209-71	Heat Sink, 1209 Type Control	1
5	01-255-50	Plate, Base Control Box	1
6	98-451-20	Tape, Foam, 1/2W X 1/8Thk	12
7	01-255-57	Micarta Terminal Strip	1
8	98-451-20	Tape, Foam, 1/2W X 1/8Thk	1
9	88-060-09	1/4X3/4NC Hex Head Cap Screw	16
10	01-255-52	Cover, Control Box	1
NOT SHOWN			
	69-030-25	Resistor, 3K Ohms, 25W	1
	75-148-55	Harness, Control, Control Box	1
	75-149-55	Harness, Power, Control Box	1
	78-302-50	Resistor Assy, 250Ohms, 5W	1
	79-730-05	Assy, Diode W/Terminals	3
	94-384-08	Decal, Danger, High Voltage	3

Illustrated Parts Table 18: Control Panel

FUSE PANEL, FLASHER BASE



FUSE PANEL



FLASHER BASE

Illustrated Parts Figure 20: Fuse Panel & Flasher Base

FUSE PANEL and FLASHER BASE		
Part Number	Description	Qty
71-900-05	Base, Flasher	1
79-820-04	Fuse, ATO, 10Amp (NOT SHOWN)	1
79-820-05	Fuse, ATO, 15Amp (NOT SHOWN)	1
79-820-06	Fuse, ATO, 20Amp (NOT SHOWN)	1
79-820-02	Fuse, ATO, 5Amp (NOT SHOWN)	1
78-010-30	Panel, Fuse	1

Illustrated Parts Table 19: Fuse Panel & Flasher Base Parts List

TAYLOR-DUNN®
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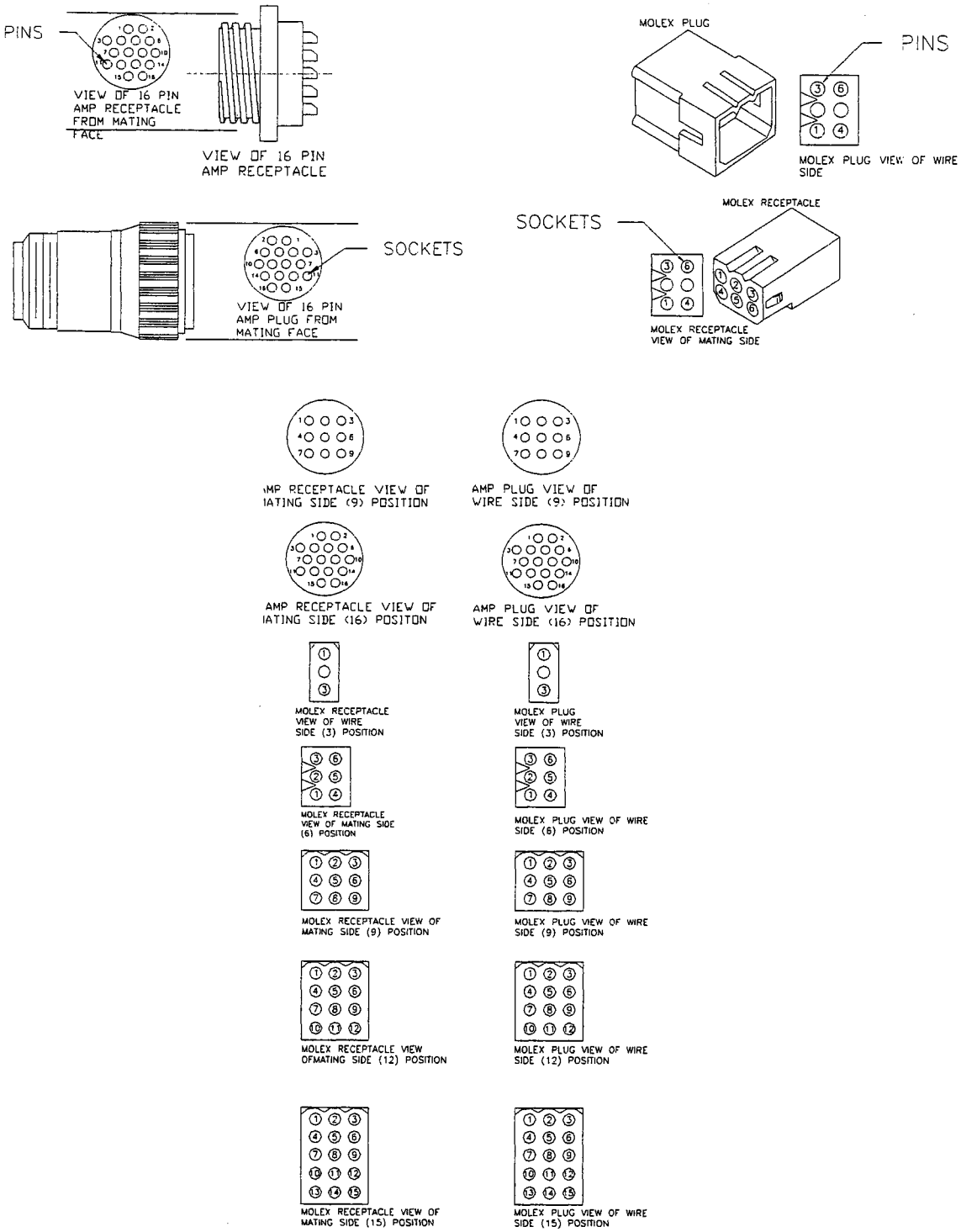
MOLEX and AMP CONNECTORS



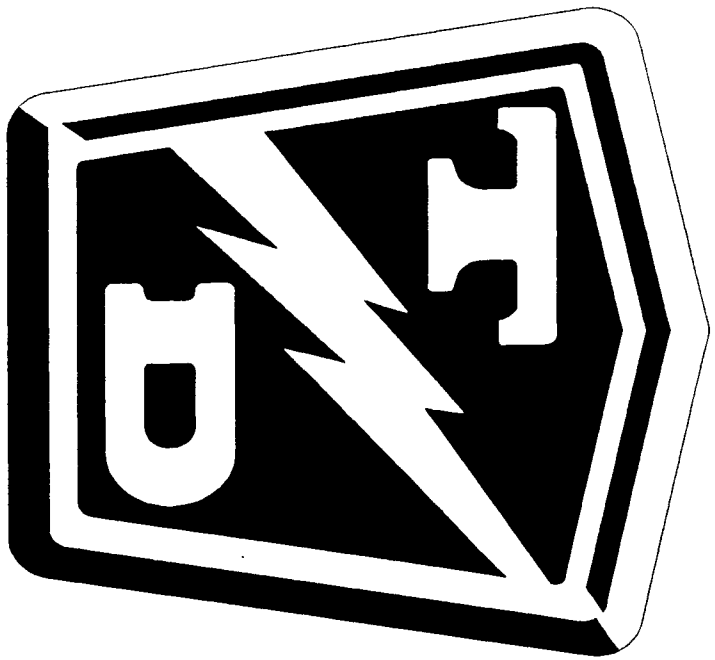
Illustrated Parts Figure 21: Molex & AMP Connectors

MOLEX and AMP CONNECTORS		
Part Number	Description	Qty
75-440-41	AMP, Plug, 16 Position	1
75-440-21	AMP, Plug, 9 Position	2
75-440-40	AMP, Receptacle, 16 Position	1
75-440-20	AMP, Receptacle, 9 Position	1
75-442-35	MOLEX, Plug, 12 Position	1
75-442-37	MOLEX, Plug, 15 Position	1
75-442-30	MOLEX, Plug, 2 Position	1
75-442-39	MOLEX, Plug, 3 Position	1
75-442-33	MOLEX, Plug, 9 Position	1
75-442-36	MOLEX, Receptacle, 12 Position	1
75-442-38	MOLEX, Receptacle, 15 Position	1
75-442-29	MOLEX, Receptacle, 2 Position	1
75-442-40	MOLEX, Receptacle, 3 Position	1
75-442-34	MOLEX, Receptacle, 9 Position	1
75-440-50	Pin, AMP #66359-6	Qty Depends on Connector
75-440-53	Pin, Molex	Qty Depends on Connector
75-440-55	Tool, Extraction, AMP (NOT SHOWN)	1
75-442-71	Tool, Extraction, Molex (NOT SHOWN)	1

Illustrated Parts Table 20: Molex & AMP Connectors Parts List

NOTES

TAYLOR -DUNN



NOTES

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