

# **OPERATION AND MAINTENANCE MANUAL WITH PARTS LIST**

<b>Model:</b>	<b>TEE BIRD GT-360 &amp; GT-361</b>
<b>Serial No.:</b>	<b>23000 &amp; UP</b>
<b>Year:</b>	<b>1972 &amp; UP</b>
<b>Manual:</b>	<b>MG-360-02</b>

**- IMPORTANT -**

READ AND FOLLOW INSTRUCTIONS GIVEN IN THE SAFETY & OPERATIONS SECTIONS, AND THOSE RELATED TO YOUR SERVICE AND REPAIR RESPONSIBILITIES.



**TAYLOR-DUNN<sup>®</sup>**  
*Commercial and Industrial Vehicles Since 1949*

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INSPECTION, SAFETY AND INTRODUCTION  
ARRIVAL INSPECTION CHECKLIST

Visual inspection should be made to determine that the truck has remained in good condition during transit. If any damage is found, the details should be noted on the delivery receipt immediately. After delivery the truck should be most carefully checked for HIDDEN DAMAGE. Any concealed damage not noted on the delivery receipt should be reported, in writing, to the delivering carrier within 48 hours.

The following checklist has been prepared to aid you during arrival and inspection of your vehicle.

- A. Open all packages and examine any accessories which may be shipped detached from vehicle.
- B. Examine wiring for visible evidence of damage. Check all connections to insure that none have loosened during transit.
- C. Check all battery connections and electrolyte level in each cell.
- D. Inspect battery charger in accordance with manufacturers installation instructions.
- E. Check tires for damage and proper inflation. Check wheel lugs to insure their being tight.
- F. If vehicle is equipped with hydraulic brakes, check hydraulic lines for evidence of damage.
- G. Check brake fluid level in master cylinder.
- H. Examine entire vehicle for damage such as dents or cracks.
- I. Check operation of controls to see that they are working freely.

Upon completion of the Visual Inspection, an operational test should be made after reading the remainder of Section A and Operating Instructions contained in Section B.

SAFETY

The safe and satisfactory use of any vehicle is a responsibility shared by many persons. As the manufacturer, we feel that it is our responsibility to emphasize vehicle characteristics and make safety recommendations regarding those characteristics. That is the primary purpose of this portion of the manual.

Persons who operate this vehicle need to be aware of, and to observe, the safe driving rules established by the golf course management, and need also to be aware of the vehicle operating characteristics and safety recommendations of the manufacturer, to assist them in exercising the judgment necessary to prevent injury to themselves or to others.

Persons who service and maintain the vehicle need to be aware of how their activities relate to safe vehicle operation, and of potential hazards involved in the service and maintenance processes, to assist them in applying sensible judgment to those processes.

STEERING This vehicle has a very small minimum turning radius and high ratio steering gear. These are essential for low effort steering at slow speeds with the large low-pressure tires necessary for golf terrain.

These characteristics, so desirable at slow speeds, require that great care be exercised at high speeds to avoid turning so sharply that one or more wheels lose contact with the ground, or that the vehicle is caused to overturn. Be especially careful while travelling down-hill, and avoid travelling across the face of a hill unless there is a cart path. Avoid sharp turns, even at slow speeds, while on a hill.

SPEED This vehicle is designed to attain its maximum safe operating speed on level ground. That speed can easily be exceeded when travelling down-hill. If this is allowed to occur, vehicle stability and braking performance become unpredictable. Do not exceed, under any conditions, the maximum speed the vehicle can obtain on level ground.

CONTROLS Bring the vehicle to a complete standstill before operating the forward/reverse switch to change direction of travel. Operation of this control while the vehicle is in motion can result in complete loss of power and brakes.

Do not use the accelerator to hold the vehicle at a standstill on an incline. This can cause complete power loss. Use only the brakes to hold the vehicle at rest while on a hill.

BRAKES The brake system relies on contact of rear tires with the ground for effectiveness. As tire to ground contact is reduced, braking effect is reduced. While driving, the operator must consider terrain, speed, and steering maneuvers to prevent tires from losing contact with the ground, with consequent reduction of braking action.

MAINTENANCE Many operating characteristics relate to maintenance in ways which are not readily obvious. For example, should the accelerator linkage bushing not be adequately lubricated, it is possible that depressing the brake pedal may cause the accelerator linkage to operate. Those maintenance characteristics most closely related to vehicle operating safety are indicated on SECTION E, PAGE 1, AND SECTION D, PAGE 1 and PAGE 2.

Also to be considered is the safety of personnel who perform service and maintenance duties. Two characteristics need special emphasis.

1. This electric vehicle does not "idle" noisily, is never "out of gear", and is set into motion whenever the battery to motor circuit is closed, intentionally or otherwise. Whenever practical, disconnect one or both battery leads to avoid unintentional starting of the motor during servicing or maintenance.

2. Batteries emit gases which can be explosive, especially while they are being charged. Personnel who are involved with servicing vehicles, or maintaining vehicles, need to be made familiar with this hazard. A detailed explanation is contained on Pages 1 and 3 of SECTION J8.

INSPECTION, SAFETY, AND INTRODUCTION

INTRODUCTION

This vehicle is designed as a golf cart for carrying two people and two golf bags. It is designed to be driven in and around the golf course, both on grass and paved surfaces. It is not designed to travel in excess of 15 m.p.h. under any conditions. Speeds in excess of this can cause motor damage and unstable steering.

MODEL NO.

The following Model Numbers are covered by this manual--  
GT 360, and GT 361, starting with Serial No. 23000.

SERIAL NO.

This Serial No. of your unit is stamped into the top of the left main frame tubing member, just below the deck board on the left side of the cart. The model number and serial number are on a name plate riveted to the kick panel below the passenger seat. In ordering parts or referring to your unit, please use these numbers. Replacement parts can be purchased directly from the factory in Anaheim, California, or from distributors located across the United States.

## OPERATING INSTRUCTIONS

The controls on your Taylor-Dunn vehicle have been designed and located for convenience of operation and efficient performance. Before driving your vehicle for the first time, familiarize yourself with each of the controls. Read the following instructions and with power OFF, operate each control.

### STEERING

The steering system is of the automotive type. Turn the steering wheel to the right (or clockwise) for a right turn and left (or counterclockwise) for a left turn.

### KEY LOCK

Your vehicle is equipped with a keyed lock located on the corner of the forward/reverse switch. It is designed to lock the switch in the neutral position only. The key will remove from the lock in the locked position (neutral) only.

### PARKING BRAKE

The hand operated parking brake is located near the center of the floor board. It is much easier to apply or release when the service brake foot pedal is depressed firmly. To engage parking brake, grasp the handle and pull rearward as far as possible. To release, push handle all the way forward. Avoid putting the vehicle in motion while the parking brake is applied.

### SERVICE BRAKE

The brake pedal is designed and located for right foot operation. It is the pedal located to the left of the accelerator pedal. It functions the same as the brake pedal in your automobile. Depressing the pedal applies the braking action. The greater the effort applied to the pedal with your foot, the greater the braking action to your vehicle. Removing your foot from the pedal allows immediate release of the braking action.

### FORWARD-REVERSE SWITCH

The forward-reverse switch is located to the right of, and below, the drivers seat, and can be operated only when the key is in the unlocked position. To place the handle in the Forward position, move it downward. To place the handle in the Reverse position, move it upward.

**CAUTION:** The forward-reverse switch serves the same purpose as the transmission in your automobile. Treat it with the same respect and care. DO NOT SHIFT from forward to reverse or vice-versa while the vehicle is in motion. Shifting while in motion, especially near top speed, causes great strain to your entire vehicle and will eventually cause severe damage.

### Accelerator Pedal

The accelerator pedal is located to the right of the brake pedal. It is designed for right foot operation similar to your automobile. Depressing the pedal turns the power on to the motor. It also controls the amount of power delivered to the motor in 5 steps. When driving your vehicle you will be able to feel the 5 steps of power, with full power when accelerator is fully depressed and minimum power when only partially depressed. You will have the same control of power in both directions of travel. Your forward-reverse switch determines the direction of travel and your accelerator pedal controls the speed.

### Horn Button (Optional)

The horn button is located on the switch panel to the left of the steering column. Depressing the button sounds horn. Releasing button will immediately silence horn.

### Light Switch (Optional)

The switch for operating headlights and taillights is located on the switch panel to the left of the steering column. The On-Off positions are labeled.

### Battery Charger

Refer to Section J-8 for proper instructions to operate your battery charger.

### Special Accessories

Refer to the appropriate section of this manual for separate operating instructions pertaining to any special feature or accessory your vehicle may have.

OPERATING YOUR VEHICLE

CAUTION: Before operating vehicle, apply service brake, as necessary, to preclude movement of vehicle.

To put your vehicle into operation, release park brake by pushing hand lever all the way forward. Unlock forward/reverse switch by turning keyed lock counter-clockwise. Select direction you wish to travel by moving red handle of forward-reverse switch into position. Slowly depress accelerator pedal until vehicle is moving at the desired speed. Steer vehicle as required utilizing the foot brake and accelerator to control your speed. For greatest efficiency it is recommended that you travel at the fastest speed that you can safely maintain. You will find that your vehicle will consume almost as much current at low speed as it does at higher speeds. Therefore, without taking any unnecessary risk traveling at the higher speed will deliver more miles per battery charge than continual use in the lower speed range.

CAUTION: DO NOT "hold" vehicle at a standstill on a hill or incline using your accelerator only. Continued "stalled" condition, as described, will damage motor and electrical controls. Use either service or park brake to hold vehicle on a hill safely.

When you leave your vehicle, it is best to always place the forward/reverse switch in neutral position. Set park brake to prevent vehicle from rolling free, and lock and remove key.

Drive safely and enjoy your Taylor-Dunn vehicle.



MAINTENANCE GUIDE CHECKLIST

This checklist is provided for your convenience as a guide for servicing your vehicle. If followed you will enjoy a good running and trouble free unit. It has been set up for average normal use. More frequent service is recommended for extreme or heavy usage. If desired your Taylor-Dunn dealer will gladly perform these services for you as he has expert service men in the field for this purpose. Do not hesitate to call your Service Manager if any questions arise.

MAINTENANCE SERVICE	REFER SECTION	EVERY WEEK	EVERY MONTH	EVERY 3 MONTHS	EVERY YEAR
Check & record Sp. gravity & water level of each cell. Fill, as necessary, using distilled water (See chart in Section J8)	J8	X	X	X	X
* Examine battery terminal connections Clean and tighten as necessary, but not while batteries are being charged.	J8	X	X	X	X
* Lube speed control sliding contact area w/ T-D grease #94-421-00 <u>or</u> equivalent (400d. min.melt point)	J6 & E	( bi-monthly )		X	X
* Check pressure bar and Forward/Reverse rotor adjustment	J6	X	X	X	X
* Check tire pressure	J1	X	X	X	X
Adjust belt tension	J2	X	X	X	X
Adjust motor mount & chain (See chart, Section J2)	J2		X	X	X
* Lubricate steering linkage with grease (8 zerk fittings)	E		X	X	X
* Lubricate brake & accelerator linkage with grease (3 zerk fittings & 3 exposed areas)	E		X	X	X
* Lubricate linkage pivot points and suspension points with all purpose engine oil (14 places)	E		X	X	X
Wash off batteries with water, (Use soda if necessary).	J8		X	X	X
Check all wire connections. Be sure they are all clean and tight.			X	X	X

\* Items related to safety recommendations

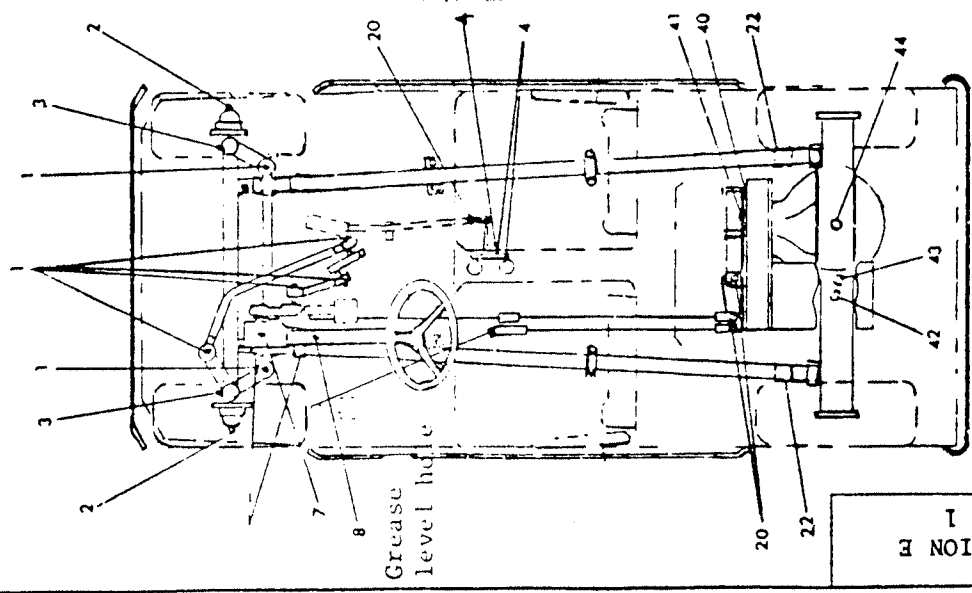
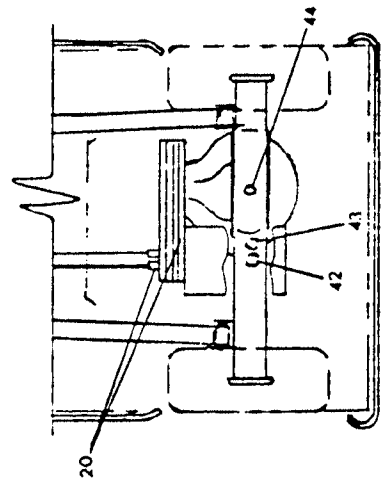
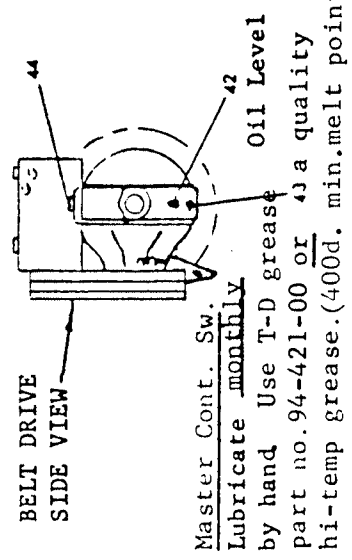
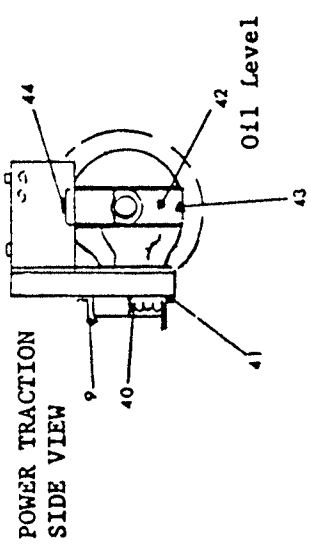
MAINTENANCE GUIDE CHECKLIST

	Maintenance Service	Refer Section	Every Week	Every Month	Every 3 Months	Every Year
*	Check and adjust hand and foot operated brake system	J2		X	X	X
	Check drive axle oil level. (Refer to lubrication diagram).	J2&E		X	X	X
*	Lubricate front wheel bearings (2 zerk fittings)	E			X	X
*	Clean surface between power bars of the speed control switch	J6&E			X	X
	Check motor brushes. Blow out carbon dust. (Replace if necessary).	J2			X	X
*	Check brake lining for wear.	J2			X	X
	Drain differential and refill with SAE 20 oil (refer to lubrication diagram)	J2&E				X
	Repack front wheel bearings. (Use wheel bearing grease).	J1&E				X
	Lubricate steering gear box with grease.	E				X
*	Check and adjust front wheel bearings	J1			X	X

\* Items related to safety recommendations

NO. OF PLACES		FREQUENCY
<b>A. PRESSURE GUN GREASE</b>		
* 1.	Ball Joints	6 3 Month
* 2.	Front Wheel Hub	2 3 Months
* 3.	Front Wheel Spindle	2 3 Month
* 4.	Master Control Switch (See Illustration)	
5.	Brake Linkage . . . . .	Lifetime
6.	Accelerator Linkage . . . . .	Lubrication
7.	Steering Worm - Fill to	
8.	Grease Level Hole	1 1 Year
<b>B. ALL PURPOSE ENGINE OIL</b>		
* 20.	Linkage Pivot Points	6 1 Month
<b>C. POWDERED GRAPHITE</b>		
	Key Lock	1 1 Year
<b>D. SAE 20 OIL-Axle &amp; Differential</b>		
** 42.	Level Check	1 (See Below)
<b>*** Change Oil - Power Traction 3 Year</b>		
a.	Remove Drain Plugs 41 & 43, Level Plugs 40 and 42, Fill Plug 44.	
b.	Drain Oil, Replace 41 & 43.	
c.	Add Oil by 44 to level of 42	
d.	Add oil by 40 to $\frac{1}{2}$ " below 40	
e.	Replace 40, 42, 44	
<b>*** Change Oil - Belt Drive 3 Year</b>		
a.	Remove Drain Plug 43, Level Plug 42 and Fill Plug 44	
b.	Drain oil, replace 43	
c.	Add oil by 44 to level of 42	
d.	Replace 44	
**	Check level whenever oil leakage is evident.	
***	Or after service work performed	
*	Items related to safety recommendations	

SECTION E  
PAGE 1



SECTION E  
PAGE 1

NO. DESCRIPTION		LENGTH	QUAN	REVISED DATE	REVISION
TOL. FRAC. + DEC. +					
SCALE NONE					
DRAWN BY REA					
DATE 3-23-77					
FIGURE 1					
SECTION E					
LUBRICATION DIAGRAM					
MODEL TEE-BIRD					
TAYLOR DUNN MFG. CO.					
2114 West Ball Rd.					
Anaheim, Calif.					



TROUBLE SHOOTING PROCEDURES

SYMPTON	PROBABLE CAUSE	CORRECTIVE ACTION
<b>1. <u>STEERING</u> (SECTIONS E &amp; J1)</b>		
a. Pull in one direction	1. Unbalanced front tire pressure 2. Bent or maladjusted tie rod 3. Bent axle or spindle	1. Check and adjust inflation pressures 2. Repair, replace, or adjust tie rod 3. Repair or replace
b. Hard Steering	1. Low tire pressure 2. Dry pivot points in steering linkage 3. Bent or maladjusted king pin	1. Inflate to 16-20 lbs. 2. Lubricate - See Section E 3. Repair, Replace, or adjust king pin
e. Sloppy or Loose	1. Loose wheel bearing 2. Loose or worn ball joints 3. Worn king pin bushings or king pins 4. Excess backlash in steering gear box 5. Worn idler arm bushings	1. Adjust 2. Tighten or replace ball joints - Section J1 3. Replace bushings or pins and bushings 4. Adjust backlash 5. Replace arm and bushings
<b>2. <u>BRAKES</u> (SECTION J2)</b>		
a. Poor Brakes: Pedal Pressure Normal or excessive	1. Worn brake lining 2. Brake Shoe misaligned 3. Brake lining wet or oily 4. Bind in brake linkage 5. (Belt drive only) Brake cable attached to wrong place on brake idler arm 6. Incorrect linkage adjustment 7. Accelerator pedal bushing dry, sticking to brake shaft.	1. Adjust for lining wear or replace if less than 1/16 thick 2. Align brake shoe 3. Clean or dry lining 4. Loosen, adjust, or lubricate brake linkage 5. Change cable attachment to correct place on brake idler arm. 6. Adjust linkage 7. Lubricate accelerator pedal bushing.
b. No Brakes: Pedal reaches floor board	1. Incorrect linkage adjustment. 2. Incorrect shoe adjustment 3. Broken linkage 4. Broken brake band 5. Broken axle	1. Adjust linkage 2. Adjust shoe 3. Repair or replace broken part 4. Replace brake band 5. Replace broken axle
c. Excessive or grabbing brake	1. Small amount of oil on lining 2. Incorrect shoe adjustment 3. (Power Traction only) Brake cable attached to wrong place on brake idler arm. 4. Scored or rough brake drum.	1. Clean lining 2. Adjust shoe 3. Change cable attachment to correct location on brake idler arm. 4. Refinish or replace brake drum.

SYMPTON	PROBABLE CAUSE	CORRECTIVE ACTION
3. <u>DRIVE AXLE</u> (SECTION J2)		
a. Erratic operation	1. Faulty Power System 2. Badly worn drive sprockets or belts.	1. See "Power System" 2. Replace sprockets or belts
b. Lack of Power: Slow Operating	1. Faulty Power System 2. (Belt Drive only) Belt slipping or missing 3. Hand Parking Brake not completely released 4. Incorrect brake adjustment, brake dragging 5. Defective or maladjusted wheel bearing. 6. Bind or drag in primary drive or differential.	1. See "Power System" 2. Adjust belt tension or replace belts. 3. Release Parking Brake 4. Adjust brake system 5. Adjust or replace wheel bearing. 6. Check and repair primary drive or differential.
c. Abnormal Noise in drive train	1. Defective motor bearing 2. Loose motor mount 3. Worn or broken sprockets or pulleys. 4. Worn gears or bearings in differential. 5. Defective Axle Bearing 6. Worn or bent axle 7. Loose wheel lug nuts 8. Defective spring eye bushings	1. Replace motor bearing 2. Tighten motor mount 3. Replace sprockets or pulleys. 4. Check and replace gears or bearings. 5. Replace Bearing. 6. Replace Axle 7. Tighten lug nuts. 8. Replace bushings
d. Oil Leaks in wheel bearing area.	1. Wheel bearing seal defective. 2. Wheel bearing gasket defective. 3. Axle retainer plate not tightened 4. Drive axle filled above proper oil level	1. Replace seal 2. Replace gasket 3. Tighten axle retainer plate 4. Drain oil to proper level
e. Oil leaks in pinion shaft and brake drum area	1. Pinion shaft seal defective 2. Brake drum hub scored or worn in seal area 3. Gear case cover not aligned with pinion shaft. 4. Pinion shaft bearing adjusted too loosely 5. Drive axle filled above proper oil level 6. Oil return orifice in gear case back plate blocked	1. Replace seal 2. Refinish drum hub or replace drum. 3. Reposition cover to align with shaft. 4. Readjust bearing to proper tension 5. Drain oil to proper level 6. Clear block in back plate
f. Oil Leaks in gear case or motor area	1. Defective gear case cover gasket 2. Motor mount 'O' ring seal defective or missing 3. Defective motor bearing oil seal.	1. Replace gasket 2. Install 'O' ring seal 3. Replace oil seal

SYMPTON	PROBABLE CAUSE	CORRECTIVE ACTION
4. <u>POWER SYSTEM</u> (SECTIONS J6, J8, G)		
a. No Power to motor in forward or reverse	<ol style="list-style-type: none"> <li>1. Batteries discharged or defective</li> <li>2. J-Hook pressure bar maladjusted or worn</li> <li>3. Forward-Reverse Switch maladjusted or worn.</li> <li>4. Motor brushes not contacting armature</li> <li>5. Loose or broken wire</li> <li>6. Motor defective</li> </ol>	<ol style="list-style-type: none"> <li>1. Recharge or replace batteries</li> <li>2. Adjust or repair J-Hook and pressure bar.</li> <li>3. Adjust or repair Forward-Reverse contacts.</li> <li>4. Adjust or replace brushes</li> <li>5. Tighten or replace wire.</li> <li>6. Repair or replace motor</li> </ol>
b. Erratic Operation	<ol style="list-style-type: none"> <li>1. Batteries discharged</li> <li>2. J-Hook pressure bar maladjusted</li> <li>3. Forward-Reverse switch maladjusted or worn</li> <li>4. Loose wire or wires</li> <li>5. Motor brushes worn</li> </ol>	<ol style="list-style-type: none"> <li>1. Recharge batteries</li> <li>2. Adjust pressure bar</li> <li>3. Adjust or repair Forward-Reverse contacts</li> <li>4. Tighten</li> <li>5. Replace brushes</li> </ol>
c. Vehicle range below normal	<ol style="list-style-type: none"> <li>1. Batteries not fully charged</li> <li>2. Batteries nearing end of normal life</li> <li>3. Charger output not sufficient</li> <li>4. Charger defective</li> </ol>	<ol style="list-style-type: none"> <li>1. Recharge batteries. Review charging practices.</li> <li>2. Replace batteries</li> <li>3. Adjust transformer taps</li> <li>4. Repair or replace charger</li> </ol>
d. No Power In one Direction and Full Power in Other Direction Without Depressing Accelerator	<ol style="list-style-type: none"> <li>1. Switching and motor circuit not properly connected</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct power circuit wiring to diagram in Section G</li> </ol>



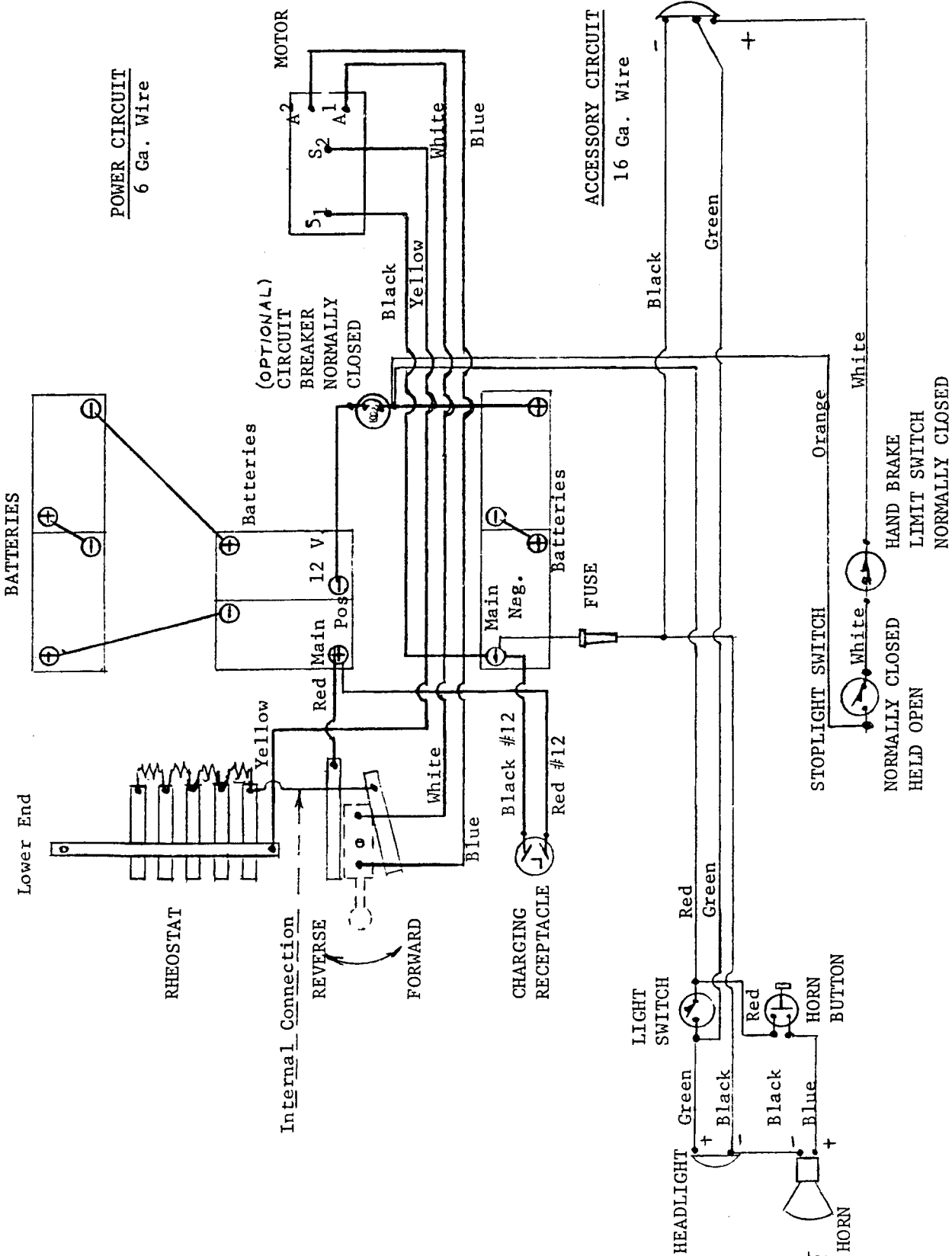
TAYLOR DUNN MFG. CO.  
2114 West Ball Rd.  
Anaheim, Calif.

WIRING DIAGRAM - MODEL TEE BIRD  
1972 & UP  
UP TO SERIAL NO. 23700

FIGURE 2  
SECTION G

NO.	DESCRIPTION
TOL. FRAC. $\pm$	DEC. $\pm$
SCALE	
DRAWN BY	C.G.
DATE	5-16-72

LENGTH | QUAN. | REVISED DATE | REVISION



SECTION G  
PAGE 1

PARTS ORDERING PROCEDURE

Parts may be purchased from your local authorized Taylor-Dunn Dealer.

When ordering parts, be sure to specify the complete model No. and serial No. of the unit. Also specify the full Taylor-Dunn part number, description of part, and quantity of parts required. You will find a complete listing of part numbers and descriptions in the following pages of this manual. When ordering parts for the drive motor, also include the specifications found on the motor nameplate. Be sure to give complete shipping and billing address on all orders. Example:

- 1 - Part No. 86-501-98 Ball Joint (Left Hand Thread)
- 1 Set of 4 - Part No. 70-124-00 Motor Brushes for Baldor Motor,  
3½ H.P., 36 Volt, Specification No. 28-1408-11704

Above parts for Model 1248B Truck, Serial No. 15039.

Parts ordered under warranty must be placed with your authorized Taylor-Dunn Dealer. Be sure to include original invoice number, date of shipment of vehicle, and vehicle serial No.

NOTE: On Contracts with National Federal Government Agencies, Defense General Supply Agency, and United States Post Office Department, orders for all warranty parts must be placed directly with the Taylor-Dunn factory in Anaheim, California.

TAYLOR-DUNN MANUFACTURING COMPANY  
2114 W. BALL ROAD  
ANAHEIM, CALIFORNIA 92804

PHONE: 714-956-4040  
TELEX: 65-5393



SUGGESTED SPARE PARTS LIST

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	NO. OF CARTS		
			1-20	21-50	50-UP
REFER TO FIGURE 4 - FRONT AXLE, WHEELS, AND STEERING					
4-68	45-338-00	Oil Seal for 1" Bearing	1	2	4
4-72	97-236-00	Lug Nut - 1/2" NF	0	10	10
4-78	13-746-00	Tire and Demountable Wheel, 850 x 8, 4 Ply	1	2	4
4-84	11-041-00	Tube for 850 x 8 or 950 x 8 Tubeless Tire	1	2	4
REFER TO FIGURE 5 - REAR AXLE, MOTOR, AND BRAKES FOR VEHICLES WITH EITHER POWER TRACTION OR BELT DRIVE					
5-3	41-997-00	Drain and Level Plug (1/8" Pipe)	2	2	2
5-6	96-331-00	Bolt - 1/2" NF (Spec.) Rear Hub	5	10	10
5-11	41-160-10	Axle Assy., with Axle, Retainer Ring, Retainer Plate and Bearing, Left Side (22-1/8" Long) Small Axle Bearing	0	1	1
5-11-A	41-164-10	Axle Assy., with Axle, Retainer Ring, Retainer Plate and Bearing, Left Side (22 1/8" Long) Large Axle Bearing	0	1	1
5-11	41-161-10	Axle Assy., with Axle, Retainer Ring, Retainer Plate, and Bearing, Right Side (13 1/8" Long) Small Axle Bearing	0	1	1
5-11-A	41-165-10	Axle Assy., with Axle, Retainer Ring, Retainer Plate, and Bearing, Right Side (13 1/8" Long) Large Axle Bearing	0	1	1
5-16	97-236-00	Lug Nut, 1/2" N.F.	5	10	10
5-57	41-989-00	Plug (Filler Level and Drain) 1/2" N.P.T.	2	2	2
5-73	85-060-00	Compression Spring 5/8 O.D. x 2½ Long	2	4	6
5-86	45-506-00	Oil Seal	0	1	2
5-87	70-049-00	Motor 1.5/2 HP - 4 terminals	0	0	1
5-87	70-054-00	Motor 2.25/3.5 HP - 4 terminals	0	0	1
5-87	70-049-70	Motor 1.5/2 HP - 5 terminals	0	0	1
	70-100-00	Brushes for G.E. Motor Models 5BC48JB265 and 5BC49JB122 - 4 per motor	4	8	16
	70-101-00	Brushes for G.E. Motor Models 5BC48JB503, 5BC48JB550, 5BC49JB305 - 4 per motor	4	8	16
	70-102-00	Brushes for Taylor-Dunn Motor-4 per motor	4	8	16

SUGGESTED SPARE PARTS LIST (Cont'd.)

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	NO. OF CARTS		
			1-20	21-50	50-UP
	80-504-00	Ball Bearing, G.E. Motor, Front	0	1	1
	80-200-00	Ball Bearing, G.E. Motor, Rear	0	1	1
	80-205-00	Ball Bearing, Front, Taylor-Dunn Motor	0	1	1
	80-204-00	Ball Bearing, Rear, Taylor-Dunn Motor	0	1	1
5-106	45-044-00	Gasket, Rear Wheel Bearing (Small)	0	2	2
5-106A	45-045-00	Gasket, Rear Wheel Bearing (Large)	0	2	2

REFER TO FIGURE 5 - REAR AXLE, MOTOR, AND BRAKES  
FOR VEHICLES WITH POWER TRACTION ONLY

5-61	85-270-00	Extension Spring 1-1/4" O.D. X 4-3/8 Free Length	2	4	6
5-63	45-331-00	Oil Seal, Gear Case to Pinion	1	2	4
5-64	41-532-00	Brake Drum (Splined)	0	1	1
5-66	41-661-00	Full Brake Band for 6" Drum	0	2	4
5-81	30-080-00	Sprocket - 15 Tooth X 3/4" Bore	0	1	1
5-83	45-002-00	Gasket - Gear Case Cover	0	1	1

REFER TO FIGURE 5A - REAR AXLE, MOTOR, AND BRAKES  
FOR VEHICLES WITH BELT DRIVE ONLY

5A-5	30-625-00	Belt, 3V470 (4 Per Cart)	0	4	8
5A-141A	45-339-00	Oil Seal, Drive Pinion Shaft, 3" O.D.	1	2	4
5A-141B	45-340-00	Oil Seal, Drive Pinion Shaft, 4-1/8 O.D.	1	2	4
5A-139	41-660-00	Brake Band - Used Only on Vehicles with Half Band Brake	1	2	4
5A-138	85-233-00	Brake Return Spring for Half Band Brake Only	2	4	6
-----	41-661-61	Brake Band Kit - Used Only on Vehicles with Full Band Brake	1	2	4
-----	85-270-00	Brake Return Spring for Full Band Brake Only	2	4	6

REFER TO FIGURE 7 - MECHANICAL CONTROL LINKAGE

7-1	98-200-00	Brake Pedal Pad	0	1	2
7-5	85-250-00	Spring, Extension, 1-1/16 O.D. X 3-7/8 Long	2	4	6
7-8	96-771-00	Clevis Pin, 3/8 X 3/4 Face to Hole	1	3	6
7-9	96-772-00	Clevis Pin, 3/8 X 1 Face to Hole (Belt Drive Only)	1	1	1
7-10	96-773-00	Clevis Pin, 5/16 X 3/4 Face to Hole	1	1	1

SUGGESTED SPARE PARTS LIST (Cont'd)

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	NO. OF CARTS		
			1-20	21-50	50-UP
REFER TO FIGURE 9 - MASTER CONTROL SWITCH - SLIDING BAR TYPE					
9-0	61-839-15	Master Control Switch Assembly	0	1	2
9-1	61-831-00	Power Bar (5 per cart)	5	10	25
9-2	61-831-10	Power Bar With Countersunk Hole	1	2	2
9-7	61-839-52	Rotor Board - Forward/Reverse	1	2	4
9-8	61-840-00	Power Bar, Forward/Reverse Switch	1	2	4
9-9	61-841-00	Handle, Forward/Reverse Switch	1	2	4
9-10	71-030-58	Contact Button (2 per cart)	2	4	4
9-11	78-223-51	Resistor Coil (#9 Wire, 10 Turns)	1	1	2
9-12	78-223-52	Resistor Coil (#6 Wire, 9 Turns)	2	2	4
9-13	78-223-53	Resistor Coil (#5 Wire, 6 Turns)	1	1	2
9-18	61-832-00	Sliding J-Hook Bar	1	2	3
9-26	95-907-00	Plastic Knob	1	2	4
REFER TO FIGURE 9 - MASTER CONTROL SWITCH - EM TYPE					
9-0	61-845-30	Master Control Switch Assembly Complete	0	1	2
9-2	61-831-10	Power Bar With Countersunk Hole	1	2	2
9-3	61-831-12	Power Bar With Notch	1	2	5
9-4	61-831-13	Power Bar	3	6	15
9-5	61-831-14	Power Bar	1	2	5
9-6	61-831-15	Speed Contact Bar	1	2	2
9-7	61-840-00	Forward Reverse Power Bar	1	2	4
9-9	61-846-50	Rotor Board	1	2	4
9-11	61-841-00	Handle	1	2	4
9-12	71-030-58	Contact Button	2	4	4
9-13	61-849-50	Contact Button	2	4	6
9-14	61-849-00	Speed Switch Rotor	0	1	2
9-15	88-102-11	Neutral Button (3/8 x 1 Carriage Bolt)	1	2	4
9-18	78-212-53	Resistor Coil #5 Wire - 6 Turns	1	1	2
9-19	78-212-52	Resistor Coil #6 Wire - 9 Turns	2	2	4
9-20	78-212-51	Resistor Coil #9 Wire - 10 Turns	1	1	2
9-23	97-170-00	Washer, Insulated	2	4	8

SUGGESTED SPARE PARTS LIST (Cont'd)

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	NO. OF CARTS		
			1-20	21-50	50-UP
REFER TO FIGURE 9A - MASTER CONTROL SWITCH - EM TYPE (Cont'd)					
9A-24	32-212-50	Plastic Bushing, 1/4 I.D. x 1/4 Long	2	4	8
9A-25	96-300-09	Bronze Bolt	1	2	4
9A-52	95-907-00	Plastic Knob	1	2	4
9A-54	96-302-01	Screw, Bronze 5/16 N.C. x 1, Hex Hd.	1	2	4
REFER TO FIGURE 11 - BODY AND TRIM PARTS					
11-14	91-402-00	Accessory Tray	1	2	4
11-15	91-405-00	Ash Tray	2	4	8
11-32	92-001-00	Wheel Cover, Chrome, 6"	2	2	2
11-45	94-034-00	Cowl Trim, Plastic, 78" Long	1	1	2
PARTS NOT ILLUSTRATED					
	94-400-00	Mirror Glaze (For Cleaning Plastic Windows - 8 Oz.)	1	1	1
	41-532-50	Tool for Centering Pinion Shaft Seal to Brake Drum Hub (Power Traction Only.)	1	1	1
	76-002-00	Charging Plug, 30 Amp, 3 Prong	3	6	8
	76-012-00	Charging Receptacle, 3 Prong, 30 Amp	3	6	8
	77-200-00	Hydrometer (To Check Battery Charge)	2	2	4
	77-201-00	Battery Filler	1	1	1
	79-320-00	Charger, 36V, 20 Amp, Automatic, With Clock (Portable)	0	1	1
	79-333-00	Charger, 36V, 30 Amp, Transistorized, (Portable)	0	1	1
	79-819-00	Fuse, 30 Amp, Screw Type	10	20	20
	75-231-00	Battery Jumper, #6 Wire, 10-1/4" Long (3 per cart)			
	77-202-00	Battery Breakdown Meter	1	1	1
	75-234-00	Battery Jumper, #6 Wire, 18-1/4" Long (2 per cart)			

MAINTENANCE PROCEDURES  
REFER TO FIGURE 4  
FRONT AXLE, STEERING AND TIRES

Axle

Your front axle and wheel assembly consists of an axle mounted on 2 leaf springs with automotive spindles, steering worm, and steering linkage. It has been designed for rugged dependable service with little maintenance requirements, other than lubrication and an occasional check of all nuts and bolts for tightness. Your wheels revolve on Timken Roller Bearings and the spindles are mounted with heavy kingpins.

Zerk type grease fittings have been provided to insure proper amounts of lubricant reaching wear points.

It is recommended that you follow the maintenance guide and lubrication diagrams for normal maintenance of the assembly. They are located in Sections D and E of this manual.

The maintenance guide is set up for average use. If the vehicle is subject to long hours of running and heavy work loads the frequency of lubrication and service should be increased accordingly.

Refer to the service and adjustment Section J1 of this manual for guidance when performing major repairs and adjustments.

Steering and Suspension

The steering worm gear box and steering linkage are similar to that used on autos. They require very little attention.

Refer to maintenance guide and lubrication diagrams (Sections D & E ) for normal care.

If service and adjustments are required, refer to appropriate section of this manual.

When performing underbody front end maintenance, check spring shackle bolts and U-bolts, and tighten if necessary. This will assure good steering control and minimum wear.

Tire Care

Tire pressure is governed by how you want your vehicle to ride and the terrain upon which it is most commonly used. Slightly lower pressure will assist traction on soft terrain without undue wear.

TIRE INFLATION CHART					
TIRE SIZE	TYPE	TIRE LOAD RATING		MAXIMUM (COLD) INFLATION P.S.I.	MAXIMUM LOAD POUNDS
		LOAD RANGE	EQUIVALENT PLY RATING		
4.80-8/400-8	HIGHWAY TREAD	A	2	35	665
4.80-8/400-8	HIGHWAY TREAD	B	4	70	1000
4.80-8/400-8	STEELGUARD	C	6	100	1230
5.70-8/500-8	HIGHWAY TREAD	B	4	55	1170
5.70-8/500-8	HIGHWAY TREAD	C	6	85	1505
5.70-8/500-8	STEELGUARD	D	8	100	1655
16 x 6.50 x 8	TERRA TIRE	B	4	45	810
18 x 8.50 x 8	TERRA TIRE	B	4	40	1080
18 x 9.50 x 8	TERRA TIRE	B	4	36	1315
18 x 9.50 x 8	TERRA TIRE	C	6	42	1660

THE INFLATION AND LOAD RATINGS MOLDED ON HIGHWAY TREAD TIRES, PER FEDERAL STANDARD FMVSS-119, ARE FOR MAXIMUM HIGHWAY SPEEDS AND **DO NOT APPLY** TO THIS LOW SPEED VEHICLE.

-TAYLOR-DUNN MANUFACTURING CO.-

**CAUTION:** Do not over inflate tires. This will promote increased wear. Under inflated tires on hard surfaces also promotes wear and should be avoided. Over inflation can be detected by observing the tread wear depth over a period of time and will show up as greater reduction of tread depth in center portion of tread when compared with tread depth near tire edge.

SERVICE AND ADJUSTMENT  
REFER TO FIGURE 4  
FRONT AXLE, STEERING AND TIRES

Remove and Install Wheel Hub: Adjust Bearings

1. Remove wheel cover
2. Remove dust cap
3. Remove cotter pin and unscrew spindle nut.
4. Remove outer washer and bearing.
5. Remove wheel, tire, and hub assembly.
6. Before re-assembly, thoroughly clean the bearings, spindle, and hub assembly. Inspect bearings for wear or damage. Examine inner seal. Replace damaged or worn parts.
7. Generously pack bearings with wheel bearing grease.
8. Reassemble in reverse order. Adjust wheel bearings before installing cotter pin.
9. Adjust wheel bearings by tightening spindle nut until bearing drag barely occurs, then back off spindle nut approximately 1/4 turn. Wheel should turn freely without noticeable bearing end play.
10. Install cotter pin, dust cap and wheel cover.
11. Wheel hub has one zerk fitting for periodic lubrication of bearings without disassembling hub. Refer to Lube Chart in Section E.

Remove and Install King Pin Bushings

1. Remove wheel and hub from spindle. See preceding subsection.
2. Remove ball joints from steering arms. Remove cotter pin and nut, rap stud sharply with soft hammer, or soft block and regular hammer, to loosen tapered stud from steering arm.
3. Remove 7/8 lock nut which retains spindle and steering arm assembly to kingpin.
4. Remove spindle and steering arm assembly from king pin.
5. Press bushings from spindle and steering arm assembly.
6. Thoroughly clean bushing housing and king pin before installing new bushings.
7. Press bushings into sleeve. It may be necessary to ream the bushings after they are installed in the sleeve, because of slight distortion which may occur during the process of pressing them into place. If proper press and reamer are not available, most automotive supply houses and repair shops have capacity to perform this service.
8. Reassemble in reverse order. Tighten ball joint clamps securely. Lubricate bushings and king pin through grease fitting. Adjust wheel bearings as described in preceding subsection. Align front end as described in subsection titled "Align Front End: Adjust Toe In".

Align Front End: Adjust Toe In

1. Caster and camber are set at the factory, and do not require adjustment. To adjust toe-in, raise front end of vehicle off the ground.
2. With a pencil, make a mark around center of tread of tire by holding pencil point against tire while turning wheel. Mark both front tires.
3. Lower vehicle to ground. Loosen tie-rod sleeve clamps at each end of tie-rod, so that adjusting sleeve can be turned.
4. With wheels in straight forward direction, measure the distance between pencil lines at the front of the tires, and at the rear of the tires.
5. 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 of the tires.
6. Tighten the adjusting sleeve clamp nuts securely, taking care to avoid changing the position of the adjusting sleeve.

Replace Ball Joint:

1. Remove cotter pin and nut.
2. Loosen sleeve clamp.
3. Rap ball joint stud sharply with soft hammer or soft block and regular hammer to loosen tapered stud from steering arm.
4. Either measure position of ball joint or count number of threads exposed from sleeve. Remove ball joint by unscrewing from sleeve. Note that one end will be left hand thread and the opposite ball joint will be right hand thread.
5. Install new ball joint and position same as the one removed.
6. Install tapered stud in steering arm or gear lever arm.
7. Replace nut, tighten securely and replace cotter pin.
8. If ball joint replaced is part of the tie rod, check toe-in, and adjust, if necessary, as described in sub-section titled "Align Front End."
9. If ball joint replaced is part of the linkage from gear lever arm to steering arm, check relative positions of steering wheel and road wheels. Steering wheel spoke should be in the six o'clock position when the road wheels are in the straight forward position. Adjust by rotating the adjusting sleeve until the desired relationship is obtained.
10. Tighten both sleeve clamps securely.
11. Lubricate ball joint through zerk fitting. Refer to Lube Chart in Section E.

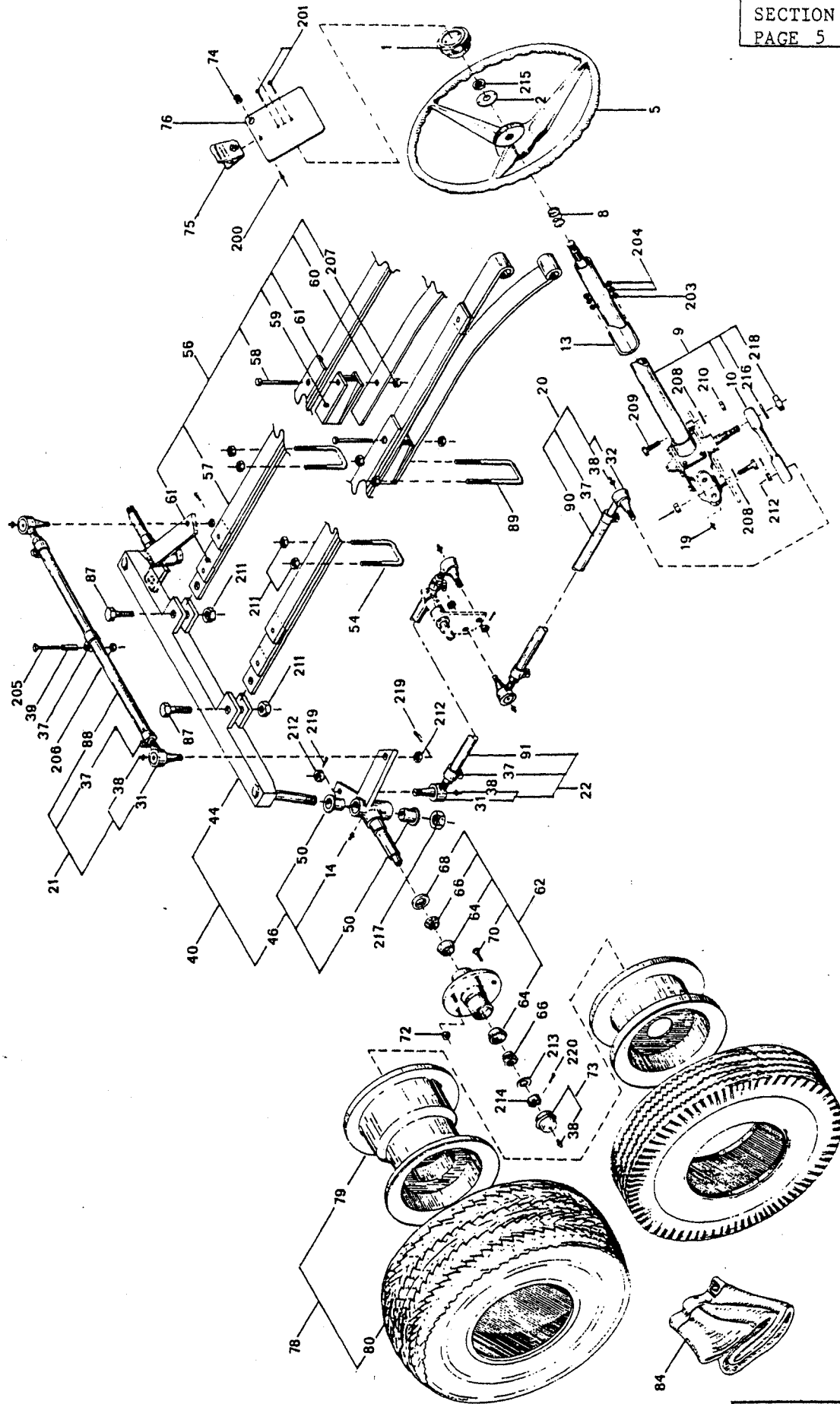
Remove and Replace Steering Worm Assembly

1. Remove two screws which retain score card pad, and remove score card pad. Pry cap from steering wheel hub, exposing locknut.
2. Remove steering wheel lock nut, and, with suitable puller, remove steering wheel from shaft.
3. Disconnect ball joint and sleeve assembly from steering gear lever arm. Remove cotter pin and nut, rap ball joint stud sharply with soft hammer, or soft block and regular hammer, to loosen tapered stud.
4. Remove steering column clamp.
5. Remove two bolts which retain steering worm housing to frame, and remove steering worm gear and steering column assembly from bottom of vehicle.
6. Should it be necessary to remove the gear lever arm from the shaft, note the position of the gear lever arm with respect to the indicating mark on the end of the shaft for proper positioning at assembly.
7. Install in reverse order. When assembling steering wheel to shaft, first position the front wheels in a straight forward direction, then install steering wheel with one of the spokes as close to the six o'clock position as the splines will allow. Final adjustment can be made by lengthening or shortening the ball joint and adjusting sleeve assembly. Tighten steering wheel lock nut, and tighten adjusting sleeve clamps if they were loosened in order to make adjustment.
8. Check steering to determine if wheels will turn an equal amount in either direction. If this is not the case, it will be necessary to re-position the gear lever arm on the steering worm output shaft. This may in turn require re-positioning the steering wheel to obtain the desired six o'clock spoke condition.
9. Lubricate steering worm through the zerk fitting located on the steering worm housing. Refer to the Lube Chart in Section E.

DISASSEMBLE AND REASSEMBLE STEERING WORM

1. Remove four bolts from cover, and slide steering arm shaft assembly and cover from housing.
2. Mark position of steering column jacket tube clamp for proper reassembly.
3. Loosen steering column jacket tube clamp, and slide jacket tube off of housing and steering column shaft.
4. Remove four bolts from housing worm bearing cap, and remove steering column worm and shaft assembly.
5. Clean all parts and flush out housing with suitable degreasing solvent. Lightly oil all parts for reassembly.  
NOTE: If installing new steering column shaft and worm assembly, worm bearings, or worm cups, it will be necessary to check the worm bearing preload.
6. To check worm bearing preload, install the steering column worm and shaft assembly, bearings, bearing cups, bearing cap and original shims.
7. Tighten four bolts to 18 - 22 ft. lbs. torque.
8. Shaft and worm must not have any bearing looseness or "play" and should not rotate with less than  $1\frac{1}{4}$  inch lbs. torque nor require more than  $4\frac{1}{2}$  inch lbs. of torque.
9. Add or take away shims as needed to produce the desired bearing preload.
10. Inspect steering arm shaft seal and cover gasket. Replace if worn or damaged.
11. Install steering arm shaft and cover assembly. Tighten four cover bolts to 18 - 22 ft. lbs. torque. NOTE: With steering arm shaft positioned at the center of its travel, there must be no backlash with mating worm and roller. Total preload for assembled unit must be no less than  $5\frac{3}{4}$  lbs. torque measured at steering worm shaft nor more than  $11\frac{1}{4}$  lbs.
12. Adjust total preload to proper limits by loosening locknut on backlash adjusting screw located in cover, and turning adjusting screw clockwise to increase preload and counterclockwise to decrease preload. Retighten lock nut securely.
13. Replace steering column jacket tube and clamp in original position.





LENGTH QUAN. REVISED DATE REVISION

FRONT AXLE, WHEELS, AND STEERING

MODEL G, SERIAL 23800 AND UP

FIGURE 4

SECTION J1

NO. DESCRIPTION

TOL. FRAC. + DEC. +

SCALE NONE

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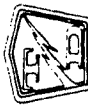


FIGURE NO. 4  
FRONT AXLE, WHEELS, AND STEERING

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
4-1	19-004-11	Cap - Score Card Spacer	1
4-2	91-506-00	Retaining Plate - Score Card Pad	1
4-5	19-003-00	Steering Wheel Deluxe - Splined Hub, White	1
	19-003-10	Steering Wheel Deluxe - Splined Hub, Black	1
4-8	85-122-00	Spring - Compression 1-1/8" O.D x 1" Long	1
4-9	<del>18-307-14</del>	Steering Gear - this part number no longer valid - see BUL-98-09-011	
4-9	18-307-42	Kit Containing 1 Ea. of 18-307-58 thru 18-307-63	1 Kit
4-9	18-307-51	Steering Column Shaft and Worm Assembly (Requires 18-307-42)	1
4-9	18-307-52	Steering Column Jacket Tube Assembly	1
4-9	18-307-53	Worm Bearing Assembly (Requires 18-307-42)	2
4-9	18-307-54	Jacket Bearing Assembly	1
4-9	18-307-55	Jacket Bearing Spacer	1
4-9	18-307-56	Worm Bearing Cup - Outer (Requires 18-307-42)	1
4-9	18-307-57	Worm Adjustment Bearing Cup - Inner (Requires 18-307-42)	1
4-9	18-307-42	Gasket, Seal & Shim Kit for Steering Worm	1
4-9	88-268-62	Lockwasher - Steering Shaft - 7/8	1
4-10	18-107-00	Steering Lever	1
4-13	96-099-00	U-Bolt, 5/16 N.F. Thread	1
4-14	87-071-00	Grease Fitting - 3/16 Drive Type	2
4-19	87-073-00	Grease Fitting, 45°, 3/16 Drive	1
4-20	18-029-10	Steering Adjustment Sleeve Assembly, with Ball Joints and Clamps - 13" Long	1
4-21	18-047-10	Steering Adjustment Sleeve Assembly with Ball Joints and Clamps - 18" Long	1
4-22	18-045-11	Steering Adjustment Sleeve Assembly with Ball Joints and Clamps - 15-3/4" Long with 35° Bend	1
4-31	86-501-98	Ball Joint - 1/2" - Left Hand Thread	3
4-32	86-501-99	Ball Joint - 1/2" - Right Hand Thread	3

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
4-37	86-510-00	Ball Joint Clamp	7
4-38	87-074-00	Grease Fitting - $\frac{1}{4}$ -28 NF - Straight	8
4-39	16-801-00	Towing Spacer - $\frac{1}{2}$ x $1\frac{1}{2}$ Long	1
4-40	15-066-10	Front Axle Assy., Complete, with King Pins, Spindles, Hubs and Tie Rod	1
4-44	15-066-00	Front Axle with King Pins; Less Spindles, Hubs, and Tie Rod	1
4-46	14-157-98	Wheel Spindle Assy., Left Side	1
4-46	14-157-99	Wheel Spindle Assy., Right Side	1
4-50	32-200-00	Bushing - Bronze, Oil Impregnated, with Flange $7/8$ " I.D. x 1" O.D.	4
4-54	96-117-00	U'Bolt, $\frac{1}{2}$ N.C., $1-7/8$ I.D. x $4-1/4$ Long	2
4-56	85-504-10	Leaf Spring Assy., $61-7/8$ Ctr. of Eye to Hole, with Torque Leaf and Spacer	2
4-57		Upper Leaf Assembly	2
4-58	96-098-00	Spring Center Bolt - $3/8$ N.F. x $3-3/4$	2
4-59	85-504-52	Spacer - Leaf Spring	2
4-60		Torque Leaf	2
4-61	85-504-54	Spring Tip Pad	6
4-62	12-124-00	Wheel Hub - $2-3/4$ " Long, Five $1/2$ " Studs on $4-1/2$ " Bolt Circle with Two 1" Bearing Races, One Bearing, One Oil Seal	2
4-64	80-103-00	Tapered Bearing Race for 1" Bearing	4
4-66	80-017-00	Tapered Roller Bearing - 1" I.D.	4
4-68	45-338-00	Oil Seal for 1" Bearing	2
4-70	96-329-00	Lug Bolt - $\frac{1}{2}$ " NF	10
4-72	97-236-00	Lug Nut - $\frac{1}{2}$ " NF	10
4-73	92-104-00	Dust Cap with Grease Fitting	2
4-74	98-603-00	Rubber Grommet	1
4-75		Score Card Clip	1
4-76	91-507-00	Score Card Pad	1
4-78	13-746-00	Tire and Demountable Wheel - 850 x 8, 4 Ply Terra Tire, Power Rib, Tubeless	2
4-78	13-751-00	Tire and Demountable Wheel - 950 x 8, 4 Ply Terra Tire, Traction, Tubeless	2
4-79	12-020-00	Wheel, Demountable for 850 x 8 or 950 x 8 Tire	2
4-80	10-093-00	Tire - 850 x 8, 4 Ply, Terra Power Rib, Tubeless	2

SECTION J1  
PAGE 8

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
4-80	10-091-00	Tire - 950 x 8, 4 Ply, Terra Traction, Tubeless	2
4-84	11-041-00	Tube (Optional) for 850 x 8 or 950 x 8 Tire	2
4-87	96-316-00	Bolt, $\frac{1}{2}$ NC x 3, All Thread	2
4-88	18-047-00	Steering Adjustment Sleeve, 18" Long	1
4-89	96-118-00	U'Bolt - $\frac{1}{2}$ NC x 1-7/8 I.D. x 6 $\frac{1}{2}$ Long	2
4-90	18-029-00	Steering Adjustment Sleeve, 13" Long	1
4-91	18-045-12	Steering Adjustment Sleeve, 15-3/4" Long with 35° Bend	1
4-200	88-737-08	Pop Rivet - 3/16 D x 5/8 Long	1
4-201	88-026-10	Screw, 8-32 x 7/8 Flat Head Slotted Machine	2
4-203	88-088-62	Lock Washer, 5/16	2
4-204	88-099-80	Hex Head Nut, 5/16 NF	4
4-205	88-080-18	Screw, 5/16 x 2-1/2 NC Hex Head Cap	1
4-206	88-089-81	Nut, 5/16 Hex Lock	1
4-207	88-119-80	Nut, 3/8 NF Hex Head	2
4-208	88-128-60	Washer, 7/16	3
4-209	88-130-14	Screw, 7/16 x 1-1/2 NF Hex Head Cap	2
4-210	88-139-81	Nut, 7/16 NF Hex Lock	2
4-211	88-149-81	Nut, $\frac{1}{2}$ NC Lock	10
4-212	88-159-85	Nut, $\frac{1}{2}$ - 20 NF Slotted Hex	6
4-213	88-228-60	Washer, 3/4	2
4-214	88-239-85	Nut, 3/4 NF Slotted Hex	2
4-215	88-259-82	Nut, 13/16 NF Hex Jam	1
4-216	88-268-62	Lock Washer, 7/8	1
4-217	88-279-81	Nut, 7/8 NF Lock	2
4-218	88-279-82	Nut, 7/8 NF Hex Head Jam	1
4-219	88-527-11	Cotter Pin, 1/8 x 1	6
4-220	88-527-14	Cotter Pin, 1/8 x 1-1/2	2

MAINTENANCE PROCEDURES

REFER TO FIGURE 5 - "POWER TRACTION" REAR AXLE, MOTOR, AND BRAKES  
REFER TO FIGURE 5A - BELT DRIVE REAR AXLE, MOTOR, AND BRAKES

Drive Axle

Your drive assembly is a highly efficient unit. Great care was taken in its design to promote long life with a minimum of maintenance. It employs an automotive type differential unit which operates within an enclosed housing. The gears, bearings, etc., are lubricated from within by oil which when maintained at its proper level insures complete coverage of all moving parts. This oil level should be checked on a regular basis as outlined in the Maintenance Guide (Section D) and Lubrication Diagrams (Section E) of this manual. If the oil level is allowed to drop below normal limits serious damage to the differential and drive unit will result.

Motor

The electric motor will provide many hours of trouble free service. It is provided with sealed ball bearings which are pre-lubricated for their lifetime.

Periodically, the motor brushes should be inspected and cleaned. The carbon dust and dirt should be blown out of motor. When brushes are worn down to 3/4" long or less they should be replaced. Approximately 3000 hours operating life may be expected from a new set of brushes.

Inspect commutator for roughness or undue wear as arcing and shortened brush life will result from this condition.

Check wiring terminals for cleanliness and tightness. A loose connection will cause burning of the respective terminal and can induce motor failure.

Refer to Maintenance Guide (Section D) and Service and Adjustment (Section J2) for further recommendations on motor care.

Brakes

The mechanical brake assembly located on the differential pinion shaft will require a periodic inspection for lining wear and consequently periodic adjustment. Refer to Service and Adjustment Section J2 of this manual for proper procedures.

A few drops of oil on the clevis pin and pivot pins of the mechanical linkage is recommended on a monthly basis. Great care must be taken that no oil is allowed to contact the brake band or drum as it will seriously impair the braking ability. If the braking surfaces become oily or contaminated for any reason it will be necessary to remove the brake band and clean all parts thoroughly. Refer to the appropriate section of this manual for the correct procedure to follow. If your vehicle is equipped with hydraulic brakes refer to Section J3 for their care and adjustment.

Suspension

A periodic tightening of all bolts and nuts, especially the spring mounting "U" bolts, should be made. The normal life of the shock absorber unit is approximately two years.

Primary Drive

A procedure and schedule for maintaining proper chain tension are provided in Section J2. Failure to adhere to the adjustment schedule will seriously reduce chain life. Belt tension and alignment procedures are detailed in Section J2. Special attention to frequency of tension adjustment is recommended when a vehicle is first placed in service, or when new belts are installed.

SERVICE AND ADJUSTMENTS

REFER TO FIGURE 5 - POWER TRACTION REAR AXLE, MOTOR, AND BRAKES

FIGURE 5A - BELT DRIVE REAR AXLE, MOTOR, AND BRAKES

FIGURE 7 - MECHANICAL CONTROL LINKAGE

Minor Brake Adjustment for Normal Lining Wear - All Vehicles

NOTE: ALL VEHICLES

With brake pedal and handbrake fully released, observe position of brake lever arm connected to brake band.

- A. Power Traction Drive Only - The brake lever arm must be 1/16 in. to 1/4 in. from gear case.
- B. Belt Drive Only - The brake lever arm must be 3/4 in. to 1-1/2 in. from belt pulley.

If brake lever arm is not in the correct position, the cable or rods which connect the brake lever arm to the foot pedal and handbrake lever must be adjusted. This requires that a complete brake adjustment, as described in the following sub-section be performed.

If brake lever arm is in the correct position, it will not be necessary to adjust the cable or rods.

1. All Vehicles - Adjust brake band anchor bolt, tightening it until brake pressure adequate to stop vehicle is achieved with foot pedal halfway to the floor.
2. Power Traction Only - An additional centering adjustment is necessary. Loosen centering screw lock nuts, center band around drum. Bring band as close to drum as possible without causing brake drag. Lock centering screws. Note: If band is too far from drum, brakes will grab in the forward direction.
3. All Vehicles - Check operation of handbrake. If handbrake has insufficient holding power, or if excessive effort is required to operate the handbrake lever, refer to handbrake adjustment procedures described in the following section.

Complete Brake Adjustment - All Vehicles

1. With footbrake and handbrake fully released, loosen lock nut on foot brake cable clevis. Adjust cable length to position brake lever arm as described in preceding Section. Tighten lock nut.  
NOTE: Any other cables or rods attached to brake lever arm must be in a slack condition during this adjustment. It may be necessary to disconnect them to assure that the brake lever arm position described is governed by the foot pedal cable adjustment.
2. Perform band adjustment as described in Step 1, or Steps 1 and 2 in preceding subsection.

Complete Brake Adjustment - All Vehicles (Cont'd.)

3. Adjust handbrake after footbrake adjustment is satisfactory. Remove plastic handgrip from lever to expose adjusting knob. Operate handbrake. If excess effort is required to operate hand lever, turn knob counter-clockwise. If handbrake has insufficient holding power, turn knob clockwise. When satisfactory adjustment is obtained, replace hand grip.
4. If vehicle is equipped with other braking systems or features, refer to Sections J3 and J4 of this manual.

Removal of Brake Assembly and Drum - All Vehicles

1. Disconnect one battery lead to prevent accidental engagement of power while servicing unit.
2. Disconnect cables (or rods) from brake lever arm, noting their positions for proper reassembly. Remove lever arm return spring.
3. Power Traction: Remove four bolts holding brake mounting assembly, and slide assembly from drum.  
Belt Drive: Remove brake band anchor bolt and brake band pivot pin. Remove band from drum.
4. Band and drum may now be cleaned and inspected to determine if replacement or repair are necessary. The brake band lining is bonded to the band for long, dependable service. When it has worn to approximately 1/16 inch thickness, a new band should be installed.
5. If the brake drum is scored, it should be removed and turned. It is recommended that a severely scored or damaged drum be discarded and a new drum installed.  
Power Traction: To remove drum, remove pinion shaft nut and washer. Slide drum from pinion shaft.  
Belt Drive: To remove drum, relieve belt tension by first loosening motor mount clamp nuts slightly. Loosen lock nut on motor adjusting bolt, and turn adjusting bolt in until belts can be lifted from grooves. Avoid forcing or prying belts when removing from or installing to pulleys. Remove pinion shaft nut and washer, slide pulley, which includes brake drum, from shaft.
6. Before reassembling drum to pinion shaft, inspect pinion shaft seal. If worn or damaged, install a new seal. It is recommended that the new seal be pre-soaked in light oil for several hours before installation. It is also recommended that a small amount of oil resistant sealer be applied to the opening in the gear case cover.
7. Reassemble drum, washer, and nut on pinion shaft, and tighten shaft nut to 100 ft. lb. torque.
8. Belt Drive: Install belts. Refer to Subsection titled "Belt Tension Adjustment and Alignment - Belt Drive" for proper adjustment.

Removal of Brake Assembly and Drum - All Vehicles (Cont'd.)

9. Install balance of brake assembly parts in reverse order of disassembly.
10. Connect battery lead.
11. Adjust brake band and cables as described in subsection titled "Complete Brake Adjustment - All Vehicles".

Adjustment of Drive Chain Tension - Power Traction

1. Disconnect one battery lead to prevent accidental engagement of power while servicing vehicle.
2. Tighten three motor mount nuts.
3. Loosen and unscrew each nut exactly one full turn.  
Note: This procedure is very important for if the nuts are too loose or too tight an error will result in the final adjustment which will seriously reduce the life of the chain.
4. Loosen adjusting set screw lock nut. Using standard socket set screw wrench turn set screw clockwise until tight. (If a torque wrench is available tighten to 80 inch lbs. torque.) Without a torque wrench bear in mind that a standard socket set screw wrench is approximately 4" long. An average person will only be able to develop the required torque necessary if he tightens it as far as possible with his hands and does not use any extended handle on the wrench.
5. After developing the required torque, unscrew the adjusting screw exactly 2½ turns. It is also very important to be exact on this adjustment.
6. Tighten locknut. DO NOT allow adjusting screw to move while tightening locknut.
7. Be certain that motor has moved all the way back and adjusting screw is in contact with back plate. If necessary tap motor lightly to assure this condition.
8. Tighten three motor mount nuts securely.

Perform this adjustment procedure regularly as listed below to assure long and trouble free life from your "Power Traction" Drive. One Round Equals 18 Holes of Play.

Scheduled Adjustment	After	Comments
1st Adjustment	100 Rounds	New unit or after installing new chain
2nd Adjustment	Next 300 Rounds	Normal running conditions
3rd Adjustment	Next 500 Rounds	Normal running conditions
Thereafter	Every 600 Rounds	Normal running conditions

Remove Motor - Power Traction

1. Disconnect one battery lead to prevent accidental engagement of power while servicing unit.
2. Drain oil from gear case by removing drain plug.
3. Identify motor leads for proper connection when reassembling. Remove motor leads.
4. Remove brake lever arm return spring.
5. Operate brake lever arm to lock pinion shaft while loosening pinion shaft nut.



Remove Motor - Power Traction (Cont'd)

6. Remove brake band centering brackets, brake band anchor bracket, and brake band from gear case cover, with brake cables still attached. Place brackets, band, and cables on floor under chassis.
7. Remove pinion shaft nut and washer, and slide brake drum from pinion shaft.
8. Remove remaining bolts and nuts from front of gear case cover. Remove gear case cover.
9. Remove the three nuts and washers which fasten motor to backplate. Disengage chain from motor sprocket. Remove motor, motor mounting plate, and sprocket assembly. Remove 'O' ring.
10. For information on maintenance of motor, refer to Subsections titled "Motor Maintenance" and "Motor Disassembly and Reassembly".
11. If a new motor is to be installed in place of the old motor, remove motor mounting plate from old motor. Also remove shaft nut, washer, sprocket, key, and spacers. Note location of motor terminals relative to mounting plate to assure proper positioning of mounting plate when assembling it to new motor.

Install Motor - Power Traction

1. If installing new motor, clean motor surface and install motor mounting plate to motor with four flat-head cap screws. Tighten screws to 30 ft. lb. torque, and stake head in place with center punch.
2. If installing new motor, or if motor sprocket has been removed in order to repair motor, assemble spacers, key, sprocket, washer, and shaft nut to motor shaft. Tighten shaft nut to 75 ft. lb. torque.
3. Place "O" ring in motor mounting plate opening, and attach motor and mounting plate assembly to back plate with three nuts and washers. Engage chain with sprocket and tighten nuts.  
NOTE: Chain tension adjustment is covered in a later step.
4. If seal in gear case cover is worn or damaged, install a new seal. It is recommended that the new seal be pre-soaked in light oil for several hours before installation. When pressing new seal into cover, use a small amount of oil resistant sealer on seal opening in cover.
5. Install gear case cover to backplate and pinion shaft. Assemble, but do not tighten, retaining bolts and nuts.
6. Place centering tool 41-532-50, (for centering pinion shaft seal to brake drum hub) on pinion shaft and into seal retainer.

NOTE: If centering tool is not available, slide brake drum onto pinion shaft and into seal. Install pinion shaft washer and nut and tighten to 100 ft. lb. Position gear case cover so that seal pressure is uniform around hub of brake drum. Tighten gear case cover retaining bolts and nuts. Omit Steps 7 through 10.

7. Install pinion shaft washer and nut, and tighten to 100 ft. lb. torque.
8. Tighten gear case cover retaining bolts and nuts.
9. Remove pinion shaft nut and washer, and remove centering tool.
10. Install brake drum, washer, and pinion shaft nut. Tighten nut to 100 ft. lb. torque.
11. Install brake band, brake band anchor bracket, and brake band centering brackets to gear case cover, and tighten retaining bolts.

Install Motor - Power Traction (Cont'd.)

12. Install brake lever arm return spring.
13. Adjust chain tension as described in subsection titled "Adjustment of Drive-Chain Tension - Power Traction".
14. Center brake band as described in subsection titled "Minor Brake Adjustment to Compensate for Normal Wear - All Vehicles".
15. Fill gear case with oil. Refer to lube chart in Section E.
16. Connect motor leads.
17. Connect battery lead.

Motor Maintenance - General - All Vehicles

Maintenance of electric motors should be referred to personnel with appropriate experience and equipment. Procedures covering maintenance of brushes, bearings, and commutator are covered in the following sections. Should it be necessary to order replacement parts, include complete motor name plate data with order.

Motor Maintenance - Brush Inspection and Replacement - All Vehicles

1. Remove cover, exposing brush assemblies. Lift brush from holder for inspection.
2. If brushes are worn to less than 3/4" length, remove, and install new brushes. Use fine sand paper to "seat in" new brushes to commutator.
3. Check operation of each brush to assure that brush slides freely and does not bind in holder.
4. Replace cover.

Motor Disassembly and Reassembly - All Vehicles

1. Remove motor from vehicle as described in appropriate subsection.
2. Determine if witness marks on end bell and stator housing are present. If not, mark end bell and housing to assure proper relation of brushes and commutator when reassembling.
3. Remove cover exposing brush assemblies. Lift brushes from brush holders.
4. Remove bolts holding end bells and remove end bell and rotor. (Pull from shaft extension end). Take care not to damage any coils or armature wires when handling motor parts.
5. Press or pull old bearings off by using bearing press or bearing puller. Do not damage shaft while removing bearings.
6. Install new bearings onto shaft by gentle pressure or tapping with proper tool on inner race only. Bearing will be damaged if pressed or driven by outer race or seals.
7. On "Power Traction" Model, replace motor seal in shaft extension end bell housing.
8. If the commutator is worn or "burned" it should be turned, the mica undercut, and the commutator polished.
9. Oil bearing housing lightly to aid in re-assembly.
10. Re-assemble motor taking care that all parts are kept clean.
11. Install brushes and seat in with fine sand paper.
12. Check operation of each brush to assure that brush slides freely in holder.
13. Replace cover.

Disassemble and Reassemble Primary Drive - Power Traction

1. Perform Steps 1 through 9 in Subsection titled "Remove Motor - Power Traction".
2. Remove chain, pinion sprocket, and spacers from pinion shaft. Note spacer locations for proper reassembly.
3. If axle or differential maintenance requiring further disassembly is required, remove back plate and gasket by removing the five bolts which retain back plate to differential carrier. Refer to subsection which covers axle and differential disassembly and reassembly.
4. To reassemble, install back plate and gasket to differential carrier with five bolts. Use gasket sealer. Tighten bolts to 50 ft. lb. torque.
5. Perform Steps 3 through 15 in Subsection titled "Install Motor - Power Traction".

Remove and Install Rear Wheel Bearings - All Vehicles

1. Disconnect one battery lead to prevent accidental engagement of power while servicing vehicle.
2. Remove wheel and tire assembly.
3. On vehicles with hydraulic brakes, remove brake drum and brake shoe return spring. To ease removal of drum, increase clearance between drum and shoes by turning adjusting studs. Refer to adjustment diagram and instructions in Section J3.
4. Remove four bolts which attach axle retainer plate and spacer (or brake backing plate on vehicles with hydraulic brakes.) Pull axle from housing.
5. Remove bearing gasket. Pull bearing retainer ring and bearing from axle shaft. Leave axle retainer plate and spacer on axle shaft.
6. Press new bearing to shoulder on axle shaft. Press bearing retainer ring into position on axle shaft.
7. Install new gasket over bearing retainer ring.
8. Install axle into axle housing and differential assembly.
9. Install axle retainer plate and spacer (or brake backing plate on vehicles with hydraulic brakes) to axle housing with four bolts. Tighten locknuts.
10. On vehicles with hydraulic brakes, install brake shoe return spring and brake drum. Adjust brakes as described in Section J3.
11. Install wheel and tire assembly.
12. Reconnect battery lead.

Remove Rear Axle and Drive Assembly from Chassis - All Vehicles

1. Disconnect one battery lead to prevent accidental engagement of power while servicing unit.
2. Clearly mark motor leads to insure their proper location when re-assembling.
3. Remove motor leads.
4. Pull clevis pins and disconnect brake cables or rods from brake arm.
5. Remove lower bolt from shock absorber. (Only vehicles equipped with shock absorbers).
6. Disconnect hydraulic brake line at hose end. (Only vehicles equipped with hydraulic brakes.)
7. Remove 4 bolts and nuts which attach axle housing to main leaf spring.
8. Remove axle and drive assembly from chassis.
9. Before re-installing axle and drive assembly, examine rubber bushings in leaf springs and replace if worn or damaged.
10. Install axle and drive assembly in reverse order of removal.

Remove Rear Axle and Drive Assembly from Chassis - All Vehicles (Cont'd.)

11. Make brake adjustments as previously outlined in subsection titled "Adjustment of Brake (Complete)".
12. On models equipped with hydraulic brakes, it will be necessary to bleed the air from brake system. Follow procedure outlined in Hydraulic Brake Section J3 of this manual.

Disassembly of Rear Axle and Differential Assembly - All Vehicles

1. Remove rear axle and drive assembly from chassis, and remove primary drive and brake components, as described in appropriate subsections.
2. On vehicles with hydraulic brakes, remove brake drum and brake shoe return spring. To ease removal of drum, increase clearance between drum and shoes by turning adjusting studs. Refer to adjustment diagram and instructions in Section J3.
3. Remove four bolts on each end holding axle retainer (and brake backing plate on hydraulic brake models) and pull both axles.
4. Remove nuts around differential carrier housing and remove carrier from axle housing. (Note position of clip for proper reassembly of brake spring.)
5. Mark one differential bearing cap and bearing support to insure proper assembly. Remove adjusting nut locks, bearing caps, and adjusting nuts. Lift differential out of carrier.
6. Remove drive gear from differential case.
7. Drive out differential pinion shaft retainer and separate the differential pinion shaft and remove gears and thrust washers.
8. Remove drive pinion retainer from carrier. Remove O-Ring from retainer.
9. Remove pinion locating shim. Measure shim thickness with micrometer.
10. If the drive pinion pilot bearing is to be replaced, drive the pilot end and bearing retainer out at the same time. When installing, drive the bearing in until it bottoms. Install a new retainer with the concave side up.
11. Press the pinion shaft out of front bearing cone and remove spacer.
12. Remove pinion bearing cone.
13. Do not remove pinion bearing cups from retainer unless they are worn or damaged. The flange and pilot are machined by locating on these cups after they are installed in the bores. If new cups are to be installed, make sure they are seated in the retainer by trying to insert a .0015" feeler guage between cup and bottom of bore.

Reassembly of Rear Axle and Differential Assembly - All Vehicles

1. Differential Case: Place a side gear and thrust washer in the differential case bore. LUBRICATE ALL PARTS LIBERALLY WITH AXLE LUBRICANT DURING ASSEMBLY. With a soft faced hammer, drive pinion shaft into case only far enough to retain a pinion thrust washer and pinion gear. Place the second pinion and thrust washer in position. Drive the pinion shaft into place. Be careful to line up pinion shaft retainer holes. Place second side gear and thrust washer in position and install differential case cover. Install retainer. A pinion or axle shaft spline can be inserted in side gear spline to check for free rotation of differential gears. Insert two 7/16" x 2" bolts through differential flange and thread them three or four turns into the drive gear as a guide in aligning the drive gear bolt holes. Press or tap the drive gear into position. Install and tighten the drive gear bolts evenly and alternately across the gear to 60-65 lb. ft. torque.

Reassembly of Rear Axle and Differential Assembly - All Vehicles (Cont'd)

2. If the differential bearings have been removed, use a suitable press to install them.
3. Install pinion rear bearing cone on the pinion shaft. Install spacer with shims on the shaft. Place the bearing retainer on the pinion shaft, and install the front bearing cone. Lubricate both bearings with differential oil.
4. Power Traction: Place spacers, sprocket, and brake drum on pinion shaft spline. Assemble washer and shaft nut, and tighten to 100 ft. lb. torque.  
Belt Drive: Place spacers and pulley on pinion shaft spline. Assemble washer and shaft nut and tighten to 100 ft. lb. torque.  
Note: The bearing should spin freely without end play. If it is too tight or too loose, adjust by removing or adding spacers. Refer to Figure 5, I.D. Nos. 52 and 53.
5. Shim Selection: Manufacturing tolerances in the pinion bore dimensions and in the best operating position of the gears make an adjustment shim necessary. This shim is placed between the pinion retainer and the carrier, Figure 5. An increase in the thickness of the shim moves the pinion away from the drive gear. Manufacturing objectives are to make axles requiring a .0015" shim and if a new assembly is being built, a .0015" shim should be used for a tentative build-up. Shims are available in .010" to .021" thicknesses in steps of .001". Pinions and drive gears are marked, when matched, with the same number. Following the number on the pinion is a minus (-) or (+) followed by a number. If the pinion is marked "-1" it indicates that a shim .001" thinner than a standard shim for this carrier is required. A minus number means the pinion should be moved closer to the drive gear and a thinner shim is required. A plus number means the pinion should be moved farther from the drive gear and a thicker shim is required. A pinion marked zero (0) is a standard pinion. To select a shim, measure the original shim with a micrometer. Note the dimensional mark on the original pinion. Compare the mark on the original pinion with the mark on the new pinion to determine how the original shim should be modified. For example, if the original shim is .015" and the original pinion is marked "-1", the new pinion requires a +1 shim. Therefore, the new pinion requires a .002" thicker shim, and a .017" shim should be used. If the new pinion is marked the same as the old pinion, no shim change is required.
6. After the proper selection of shims, insert "O" ring seal and pinion retainer assembly into differential carrier. Tighten 5 retainer bolts to 50 lb. ft. torque.  
Note: Four or five of the retainer bolts will have to be removed later for installation of primary drive and brake components.
7. Install differential case, bearing cups, adjusting nuts, and bearing caps being sure that each cap is located in the same position from which it was removed (Use marks as guide).
8. ADJUST bearing nuts so that differential case will be free to revolve. It is very important that there will be no bearing play or looseness, as this will inevitably lead to gear noise and wear. Gear backlash must be set at the same time to a tolerance of .005" to .009". Note: It will be necessary to release some of the cap bolt tension in order to allow the bearing to move while making the adjustments. If the caps

Reassembly of Rear Axle and Differential Assembly - All Vehicles (Cont'd)

- are too loose an error will result when trying to set backlash and bearing clearance. Therefore double check your setting after the cap bolts have been tightened. If necessary make corrections in your settings until the specified tolerances are maintained after the cap bolts have been tightened.
9. Install nut locks.
  10. Install differential carrier assembly in axle housing using new gasket and gasket sealer.
  11. Install axles, brake assemblies (on models with hydraulic brakes), bearing retainers, and gaskets. Note: Axles are equipped with special sealed bearings. Should there be evidence of seal leakage, it is recommended that the bearing be replaced. It is also recommended that gasket located between bearing and bearing seat in axle housing be replaced at the same time. Refer to Figure 5, or Figure 5A.
  12. Power Traction: Remove pinion shaft nut, washer, spacers, brake drums, and sprocket. Remove five bolts from pinion bearing retainer. Install primary drive components as described in subsection titled "Disassemble and Reassemble Primary Drive - Power Traction".  
Belt Drive: Remove pinion shaft nut, washer, and pulley. Remove four bolts from pinion bearing retainer which retain brake brackets. Install brake brackets and primary drive components as described in subsection titled "Disassemble and Reassemble Primary Drive - Belt Drive Vehicles".
  13. Fill housing with oil to level described in Section E, Figure 1 (Power Traction), or Figure 1A (Belt Drive)

Belt Tension Adjustment and Alignment - Belt Drive Vehicles

NOTE:

New belts will "seat-in" rapidly, therefore, readjust belt tension after only a few hours of running to prevent undue slippage and wear. It may be necessary to repeat the adjustment procedure two or three times within the first week or two of running until the new belts become thoroughly "seated-in".

1. Disconnect one battery lead to prevent accidental engagement of power while servicing unit.
2. Loosen motor mount clamp nuts slightly.
3. Loosen motor adjusting bolt lock nut and turn adjusting bolt in or out as needed to tension belts properly.  
NOTE: Belt tension is correct when belts will deflect between  $\frac{1}{4}$ " and  $\frac{3}{8}$ " at the mid point between pulleys. Press each belt firmly at the mid point with your thumb or finger and measure the deflection at the same point.
4. Rotate drive pulley sufficiently so belts will travel at least one full turn and check belt tension again. This will allow belts to seat properly in grooves. Repeat tension adjustment as necessary until satisfactory results are obtained.
5. Tighten lock nut on tension adjustment bolt, holding bolt in position with one wrench while tightening lock nut with second wrench.
6. Check pulley alignment with straight edge. If misaligned, move motor forward or rearward on it's mounting bracket to bring pulleys into alignment. If necessary tap motor mount bracket into position with soft hammer.
7. Retighten motor mount clamp nuts securely.

Replacement of Belts - Belt Drive Vehicles

1. Disconnect one battery lead to prevent accidental engagement of power while servicing unit.
2. Loosen motor mount clamp nuts slightly.
3. Loosen motor adjusting bolt lock nut and turn adjusting bolt in until belts can be easily lifted from pulley grooves without prying or forcing. Remove old belts.
4. Install a full set of new belts of equal length. Replacement of only a part of the set will prevent obtaining proper tension of all belts. This will cause unequal division of load among the belts with abnormal wear as a result.
5. Adjust tension and alignment as described in preceding section.

Remove and Install Motor - Belt Drive Vehicles

1. Disconnect one battery lead to prevent accidental engagement of power while servicing unit.
2. Loosen motor mount clamp nuts slightly.
3. Loosen motor adjusting bolt lock nut and turn adjusting bolt in until belts can be easily lifted from pulley grooves without prying or forcing. Remove belts.
4. Clearly mark motor leads to assure proper location when reassembling. Remove motor leads.
5. Remove motor mount clamp nuts and clamp. Remove motor and mounting brackets from axle housing.
6. If installing new motor, remove motor shaft nut, pulley, and key from old motor. Also remove motor mounting brackets and screws. For information on maintenance of motor, refer to subsections titled "Motor Maintenance" and "Motor Disassembly and Reassembly".
7. If installing new motor, assemble pulley, key, and shaft nut. Tighten shaft nut to 75 ft. - lb. torque.
8. Reassemble to drive assembly in reverse order. Adjust and align belts as described in subsection titled "Belt Tension Adjustment and Alignment - Belt Drive Vehicles".

Disassemble and Reassemble Primary Drive - Belt Drive Vehicles

1. Perform Steps 1 through 5 in subsection titled "Remove and Install Motor - Belt Drive".
2. Remove pinion shaft nut, washer, pulley, and spacers from pinion shaft.
3. If axle or differential maintenance requiring further disassembly is required, disengage brake lever arm return spring, and remove brake anchor and pivot brackets from differential carrier. Leave brake components attached to brake cables and place on floor under chassis.
4. Reassemble in reverse order. Tighten brake bracket bolts to 50 ft. -lb.
5. Before reconnecting battery lead, adjust belt tension and alignment as described in subsection titled "Belt Tension Adjustment and Alignment -Belt Drive Vehicles".
6. Reconnect battery lead.





FIGURE NO. 5  
POWER TRACTION REAR AXLE, MOTOR, AND BRAKES

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANT.
5-1	41-293-00	Housing, Rear Axle with Bolts, for 1-9/32 I.D. Wheel Bearing (27-11/16 Wide, Flange to Flange)	1
5-1A	41-297-00	Housing, Rear Axle with Bolts, for 1-9/16 I.D. Wheel Bearing (30-3/16 Wide, Flange to Flange)	1
5-2	96-330-00	Bolt-Differential Carrier to Housing	10
5-3	41-997-00	Drain and Level Plug (1/8" Pipe)	2
5-4	88-100-11	Hex Head Cap Screw 3/8" x 1" N.C.	8
5-5	88-109-81	Lock Nut 3/8" N.C. (Hex)	18
5-6	96-331-00	Bolt - 1/2" N.F. (Spec.) Rear Hub	10
5-7	32-509-00	Retainer Ring Rear Axle Bearing for 1-9/32 I.D. Wheel Bearing (1-5/8 O.D.)	0 or 2
5-7A	32-515-00	Retainer Ring, Rear Axle Bearing for 1-9/16 I.D. Wheel Bearing (2" O.D.)	0 or 2
5-8	80-505-00	Ball Bearing, Rear Axle, 1-9/32 I.D.	0 or 2
5-8A	80-503-00	Ball Bearing, Rear Axle, 1-9/16 I.D.	0 or 2
5-9	32-511-00	Retainer Plate, Rear Axle, for 1-9/32 I.D. Wheel Bearing (4 1/2" Length)	0 or 2
5-9A	32-514-00	Retainer Plate, Rear Axle, for 1-9/16 I.D. Wheel Bearing (5 1/2" Length)	0 or 2
5-11	41-160-11	Axle Assy., Rear, Left Side, 22-1/8 Long, with 1-9/32 I.D. Wheel Bearing for 27-11/16 Wide Axle Housing, Including Bearing, Bearing Retainer Ring, Axle Retaining Plate, and Gasket	0 or 1
5-11A	41-164-11	Axle Assy., Rear, Left Side, Same as 41-160-10, Except with 1-9/16 Wheel Bearing for 30-3/16 Wide Housing & 45-301-00 Inner Oil Seal	0 or 1
5-11	41-161-11	Axle Assy., Rear, Right Side, 13-1/8 Long, With 1-9/32 I.D. Wheel Bearing, for 27-11/16 Wide Axle Housing, Including Bearing Retainer Ring, Axle Retaining Plate, and Gasket	0 or 1
5-11A	41-165-11	Axle Assy., Rear, Right Side, Same as 41-161-10, Except with 1-9/16 Wheel Bearing for 30-3/16 Wide Housing & 45-301-00 Inner Oil Seal	0 or 1
5-12	32-512-00	Spacer, Rear Axle Retainer Plate Used With 1-9/32 I.D. Wheel Bearing (4 1/2 O.D.)	0 or 2
5-12A	32-513-00	Spacer, Rear Axle Retainer Plate Used With 1-9/16 I.D. Wheel Bearing (5 1/2 O.D.)	0 or 2

## SECTION J2

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FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
5-13	45-042-00	Gasket (Housing to Differential Carrier)	1
5-14A	80-511-00	Tapered Roller Bearing - Carrier (Small 1.628 I.D.)	2
5-14B	80-512-00	Tapered Roller Bearing - Carrier (Large 1.784 I.D.)	2
5-15A	80-127-00	Tapered Bearing Race - Carrier (Small)	2
5-15B	80-128-00	Tapered Bearing Race - Carrier (Large)	2
5-16	97-236-00	Nut 1/2" N.F. (Lug)	10
5-22	98-601-00	Rubber Grommet 1/2" I.D. for Leaf Spring Eye	8
5-23	96-240-00	Hex Head Cap Screws 1/2" x 4" N.C. (Pointed)	4
5-25	41-700-00	Differential Pinion Shaft	1
5-26	41-701-00	Pin	1
5-27	41-702-00	Thrust Washer - Differential Pinion Shaft	2
5-28	41-703-00	Differential Shaft Pinion Kit (Two Differential Gears and Two Thrust Washers)	1 Kit
5-29	41-704-00	Thrust Washer - Differential Side Gear	2
5-30	41-705-00	Differential Side Gear Kit (Two Differential Side Gears and Two Thrust Washers)	1 Kit
5-31A	41-712-00	Differential Gear Case Assemble (Small Carrier Bearings 1.628" I.D.)	1
5-31B	41-713-00	Differential Gear Case Assembly (Large Carrier Bearings 1.784" I.D.)	1
5-33	97-163-00	Washer 7/16" I.D. x 3/4" O.D. x 1/32"	10
5-35	41-706-00	Differential Bearing Adjustment Nut Lock	2
5-36A	41-707-00	Nut - Differential Bearing Adjustment 3-1/8" - 16 Thread (For Small Carrier Bearing 1.628" I.D.)	2
5-36B	41-708-00	Nut - Differential Bearing Adjustment 3-5/16" - 16 Thread (For Large Carrier Bearing 1.784" I.D.)	2
5-38A	41-709-00	Third Member Case (For Small Carrier Bearing 1.628" I.D.)	1
5-38B	41-710-00	Third Member Case (For Large Carrier Bearing 1.784" I.D.)	1
5-40	41-711-00	Shim - Drive Pinion Bearing	1 to 3
5-41	31-234-00	Ring and Pinion Gear Set 3.00 Ratio	1
5-41	31-236-00	Ring and Pinion Gear Set 2.91 Ratio	1
5-41	31-238-00	Ring and Pinion Gear Set 3.56 Ratio	1
5-41	31-239-00	Ring and Pinion Gear Set 5.43 Ratio	1
5-42	80-702-00	"O" Ring - Drive Pinion Bearing Retainer	1
5-43	80-555-00	Ball Bearing - Rear, Pinion Pilot	1
5-44	41-714-00	Driving Pinion Pilot Bearing Retainer	1

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANT
5-47	80-554-00	Tapered Roller Bearing - Pinion Shaft	2
5-48	80-125-00	Tapered Bearing Race - Pinion Shaft	2
5-49	44-340-90	Pinion Bearing Case Assembly & Bearing Races	1
5-50	45-021-00	Gasket Gear Case to Pinion Bearing Assembly	1
5-51	16-415-00	Spacer Pinion Shaft (.440" Thick)	1
5-52	16-410-00	Spacer Pinion Shaft (.020" Thick)	2 to 6
5-52	16-419-00	Spacer Pinion Shaft (.002" Thick)	2 to 6
5-53	16-411-00	Spacer Pinion Shaft (.005" Thick)	2 to 6
5-54	16-415-00	Spacer Pinion Shaft	0 to 1
5-55	41-371-00	Brake Alignment Bracket	2
5-57	41-989-00	Plug (Filler Level and Drain) 1/4" N.P.T.	2
5-61	85-270-00	Extension Spring 1 1/4" O.D. x 4-3/8" Free Length	1
5-62	43-201-00	Gear Case Cover	1
5-63	45-331-00	Oil Seal - Gear Case to Pinion	1
5-64	41-532-00	Brake Drum (Splined)	1
5-65	97-250-00	Nut - Pinion 3/4" - 20 Extra Fine Thread	1
5-66	41-661-61	Full Brake Band Kit for 6" Drum	1
5-67	50-657-00	Brake Lever Arm	1
5-69	96-771-00	Clevis Pin 3/8" x 3/4" Face to Hole	1
5-72	41-368-00	Brake Mounting Bracket	1
5-73	85-060-00	Compression Spring 5/8" O.D. x 2-1/2" Long	1
5-78A	30-508- 20	Chain - 48 Links (For 81 Tooth Sprocket)	1
5-78B	30-506- 20	Chain - 36 Links (For 42 Tooth Sprocket)	1
5-78C	30-507- 20	Chain - 41 Links (For 59 Tooth Sprocket)	1
5-79A	30-093-00	Sprocket - 81 Tooth With Splined Hub	1
5-79B	30-091-00	Sprocket - 42 Tooth With Splined Hub	1
5-79C	30-092-00	Sprocket - 59 Tooth With Splined Hub	1
5-80	97-100-00	Woodruff Key - 3/16"	1
5-81	30-080-00	Sprocket - 15 Tooth x 3/4" Bore	1
5-83	45-002-00	Gasket - Gear Case Cover	1
5-85A	44-352-51	Gear Case Back Plate (Side Motor Mount) Adjustable	1
5-86	(See Section J2M)		

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
5-87 A	70-049-00	Motor, 1.5/2 H.P.- 24/36 volt, 1800/2800 R.P.M. G.E. or Taylor-Dunn - 4 terminals, 5BC48JB550	1
5-87 B	70-054-00	Motor, 2.25/3.5 H.P., 24/36 volt, 1800/2800 R.P.M. G.E. - 4 terminals, 5BC49JB305	1
5-87 C	70-049-70	Motor, 1.5/2 H.P.- 24/36 volt, 1800/2800 R.P.M. G.E. - 5 terminals, 5BC48JB582	1

See Section J2M for Motor Replacement Parts

5-92	12-020-00	Wheel, Demountable, for 850 x 8 or 950 x 8 Tire	2
5-93 A	10-093-00	Tire, 850 x 8, 4 Ply, Terra Power Rib, Tubeless	2
5-93 B	10-091-00	Tire, 950 x 8, 4 Ply, Terra Traction, Tubeless	2
5-94	11-041-00	Tube (Optional) for 850 x 8 or 950 x 8 Tire	2
5-95 A	13-746-00	Tire & Demountable Wheel - 850 x 8, 4 Ply, Terra Power Rib, Tubeless	2
5-95 B	13-751-00	Tire & Demountable Wheel - 950 x 8, 4 Ply Terra Traction Tubeless	2

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
5-106	45-044-00	Gasket, Rear Axle Bearing (For 1 9/32 I.D. Bearing)	2
5-106 A	45-045-00	Gasket, Rear Axle Bearing (For 1 9/16 I.D. Bearing)	2
5-110	86-602-00	Shock Absorber	2
5-122	80-703-00	"O" Ring Motor Mount Seal	1
5-123	70-454-00	Motor Mount Plate	1
5-127	16-400-00	Spacer 1 1/4" I.D. x .125" Thick	0, 1 or 2
5-142 A	41-997-00	1/8 Pipe Plug	0 or 1
5-142 B	41-988-00	3/8 Pipe Plug with Recessed Top	1 or 0
5-501 A	88-100-11	Hex Head Cap Screw 3/8" x 1" N.C. (Small Bearing)	8
5-501 B	88-120-11	Hex Head Cap Screw 7/16" x 1" N.C. (Large Bearing)	8
5-502	88-109-81	Lock Nut 3/8" N.C. (Hex)	10
5-503	88-149-81	Lock Nut 1/2" N.C. (Hex)	4
5-504	88-130-10	Hex Head Cap Screw 7/16" x 7/8" N.F.	10
5-505	88-080-04	Hex Head Cap Screw 5/16" x 3/8" N.C.	2
5-506	88-140-16	Hex Head Cap Screw 1/2" x 2" N.C.	4
5-507	88-119-80	Nut - 3/8" N.F. (Hex)	14
5-508	88-080-20	Hex Head Cap Screw 5/16" x 3" N.C.	9
5-509	88-228-61	Washer 3/4" S.A.E.	1
5-510	88-089-81	Lock Nut 5/16" N.C. (Hex)	12
5-511	88-080-11	Hex Head Cap Screw 5/16" x 1" N.C.	2
5-512	88-517-11	Cotter Pin 3/32" x 1"	1
5-513	88-089-80	Nut - 5/16" N.C. (Hex)	12
5-514	88-100-13	Hex Head Cap Screw 3/8" x 1-1/4" N.C.	6
5-515	88-108-60	Washer 3/8" Flat Cut	4
5-516	96-245-00	BOLT, RT BRAKE ANCHOR & ADJUST	1
5-517	88-108-62	Lockwasher 3/8"	3
5-518	88-103-09	Flat Head Socket Cap Screw 3/8" x 3/4" N.C.	4
5-519	88-239-82	Jam Nut - 3/4" N.F. (Hex)	1
5-520	88-129-81	Lock Nut - 7/16 Hex	4
5-521	88-120-17	Hex Head Cap Screw 7/16 N.C. x 2 1/2	4
5-522	88-527-11	Cotter Pin 1/8" x 1" (Axle Vent)	1
5-523	88-088-61	Washer 5/16" S.A.E.	11
5-524	88-087-11	Socket Set Screw 5/16 NC x 1"	1
5-525	88-100-15	Hex Head Cap Screw, 3/8 NC x 1-3/4	1
5-526	88-109-80	Nut 3/8" NC (Hex)	3

SECTION J2  
PAGE 1C

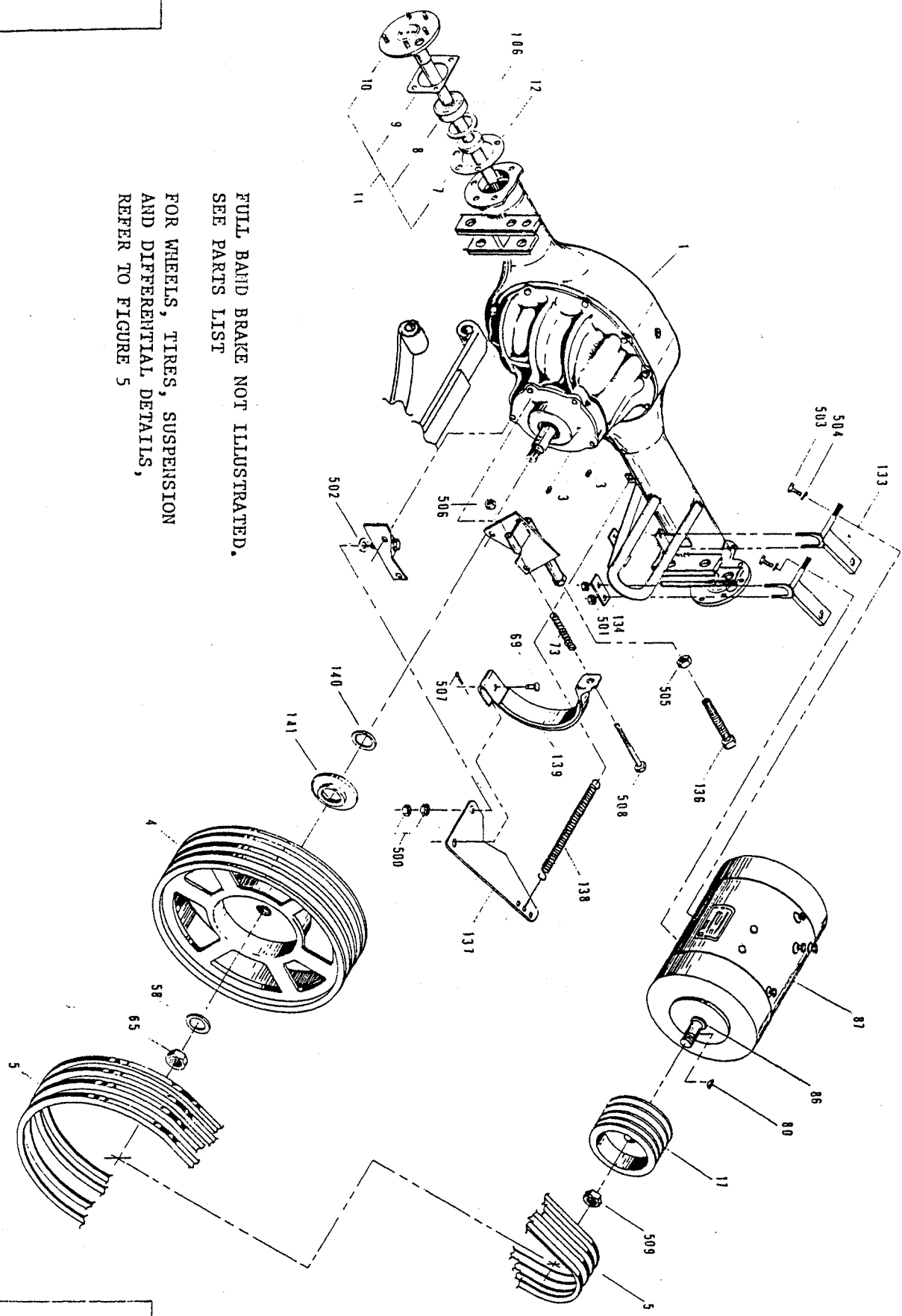
NO.	DESCRIPTION
TOL. FRAC. ±	DEC. ±
SCALE	1/2" = 1'
DRAWN	JY K-1

FIGURE 5A  
SECTION J2

BELT DRIVE  
REAR AXLE  
MODEL C

LENGTH	QUAN.	REVISED DATE	REVISION
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FULL BAND BRAKE NOT ILLUSTRATED.  
SEE PARTS LIST  
FOR WHEELS, TIRES, SUSPENSION  
AND DIFFERENTIAL DETAILS,  
REFER TO FIGURE 5



SECTION J2  
PAGE 1C

FIGURE NO. 5A

BELT DRIVE REAR AXLE, MOTOR AND BRAKES

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
5A-1	41-295-00	Housing, Rear Axle with Bolts, for 1-9/32 I.D. Wheel Bearing (27-11/16 Wide, Flange to Flange)	1
5A-1A	41-298-00	Housing, Rear Axle with Bolts, for 1-9/16 I.D. Wheel Bearing (30-3/16 Wide, Flange to Flange)	1
5A-3	41-997-00	Drain and Level Plug (1/8 Pipe)	2
5A-4	30-113-00	Pulley, 4 Belt, 3 V Section, 13" O.D., with Brake Drum and Hub	1
5A-5	30-625-00	Belt, (3V 470)	4
5A-7	32-509-00	Retainer Ring Rear Axle Bearing for 1-9/32 I.D. Wheel Bearing (1-5/8 O.D.)	0 or 2
5A-7A	32-515-00	Retainer Ring, Rear Axle Bearing for 1-9/16 I.D. Wheel Bearing (2" O.D.)	0 or 2
5A-8	80-505-00	Ball Bearing, Rear Axle, 1-9/32 I.D.	0 or 2
5A-8A	80-503-00	Ball Bearing, Rear Axle, 1-9/16 I.D.	0 or 2
5A-9	32-511-00	Retainer Plate, Rear Axle, for 1-9/32 I.D. Wheel Bearing (4½" Length)	0 or 2
5A-9A	32-514-00	Retainer Plate, Rear Axle, for 1-9/16 I.D. Wheel Bearing (5½" Length)	0 or 2
5A-11	41-160-11	Axle Assy., Rear, Left Side, 22-1/8 Long, with 1-9/32 I.D. Wheel Bearing for 27-11/16 Wide Axle Housing, Including Bearing, Bearing Retainer Ring, Axle Retaining Plate, and Gasket	0 or 1
5A-11A	41-164-11	Axle Assy., Rear, Left Side, Same as 41-160-10, Except with 1-9/16 Wheel Bearing for 30-3/16 Wide Housing & 45-301-00 Inner Oil Seal	0 or 1
5A-11	41-161-11	Axle Assy., Rear, Right Side, 13-1/8 Long, With 1-9/32 I.D. Wheel Bearing, for 27-11/16 Wide Axle Housing, Including Bearing Retainer Ring, Axle Retaining Plate, and Gasket	0 or 1
5A-11A	41-165-11	Axle Assy., Rear, Right Side, Same as 41-161-10, Except with 1-9/16 Wheel Bearing for 30-3/16 Wide Housing & 45-301-00 Inner Oil Seal	0 or 1
5A-12	32-512-00	Spacer, Rear Axle Retainer Plate Used With 1-9/32 I.D. Wheel Bearing (4½ O.D.)	0 or 2
5A-12A	32-513-00	Spacer, Rear Axle Retainer Plate Used with 1-9/16 I.D. Wheel Bearing (5¼ O.D.)	0 or 2

SECTION J2  
PAGE 20

I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
5A-17	30-164-00	Pulley, 4 Belt, 3V Section, 3.65 O.D., 3/4 Bore	1
5A-21	41-376-00	Bracket, Brake Pivot	1
5A-58	88-228-61	Washer, 3/4 S.A.E.	1
5A-65	97-250-00	Nut, Pinion, 3/4-20 Extra Fine Thread	1
5A-69	96-771-00	Clevis Pin, 3/8 x 3/4 Face to Hole	1
5A-73	85-060-00	Spring, Compression, 5/8 O.D. x 2 1/2 Long	1
5A-80	97-100-00	Woodruff Key, 3/16	1
5A-86	45-506-00	Oil Seal (G.E. or Taylor-Dunn Motor)	1
5A-87 A	70-049-00	Motor, 1.5/2 H.P.- 24/36 Volt, 1800/2800 R.P.M., G.E. or Taylor-Dunn - 4 terminals, 5BC48JB550	1
5A-87 B	70-054-00	Motor, 2.25/3.5 H.P. - 24/36 volt, 1800/2800 R.P.M. G.E. - 4 terminals, 5BC49JB305	1
5A-87 C	70-049-70	Motor, 1.5/2 H.P. - 24/36 Volt, 1800/2800 R.P.M. G.E. - 5 terminals, 5BC48JB582	1



FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTIT
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5A-106	45-044-00	Gasket, Rear Axle Bearing (For 1-9/32 I.D. Bearing)	2
5A-106A	45-045-00	Gasket, Rear Axle Bearing (For 1-9/16 I.D. Bearing)	2
5A-133	70-432-00	Motor Mount, Swivel	2
5A-134	70-422-00	Strap, Motor Mount, 1-7/8 Long, 2 Holes	2

PARTS AVAILABLE FOR HALF BAND BRAKE VEHICLES

5A-136	96-316-00	Bolt, 1/2-13 X 3, Hex Head	1
5A-137	50-658-00	Brake Lever Arm	1
5A-138	85-233-00	Extension Spring, 11/16 O.D.	1
5A-139	41-660-00	Brake Band	1

PARTS AVAILABLE FOR FULL BAND BRAKE VEHICLES

	41-661-61	Brake Band, Anchor Bolt, and Lock Nut	1
	85-270-00	Spring, Brake Return	1
	50-663-00	Brake Lever Arm	1
	41-383-00	Brake Mounting and Motor Adjusting Bracket	1
5A-140	16-418-00	Spacer, 1-5/16 I.D. X 1-5/8 O.D. X .140 Thick (Omitted in Later Models)	0 or 1
5A-141A	45-339-00	Oil Seal, Drive Pinion Shaft, 3" O.D.	0 or 1
5A-141B	45-340-00	Oil Seal, Drive Pinion Shaft, 4-1/8" O.D.	0 or 1
5A-500	88-129-80	Nut, 7/16 N.C. Hex	2
5A-501	88-109-87	Nut, 3/8 N.C. Fastite	4
5A-502	88-108-60	Washer, 3/8 Plain	1
5A-503	88-110-10	Screw, 3/8 N.F. X 7/8 Hex Head Cap	4
5A-504	88-108-62	Washer, 3/8 Lock	4
5A-505	88-149-80	Nut, 1/2 N.C. Hex Head	1
5A-506	88-109-81	Nut, 3/8 N.C. Lock	1
5A-507	88-517-11	Cotter Pin, 3/32 X 1	1
5A-508	88-100-24	Screw, 3/8 N.C. X 4, Hex Head Cap	1
5A-509	88-239-82	Nut, 3/4 N.F., Hex Jam	1

MOTOR MAINTENANCE, SERVICE AND ADJUSTMENT

ELECTRIC MOTORS

REFER TO FIGURE 5H

Detailed service procedures covering maintenance of bearing brushes and commutator are covered in this section. DO NOT PERFORM THIS PROCEDURE WHILE BATTERIES ARE BEING CHARGED.

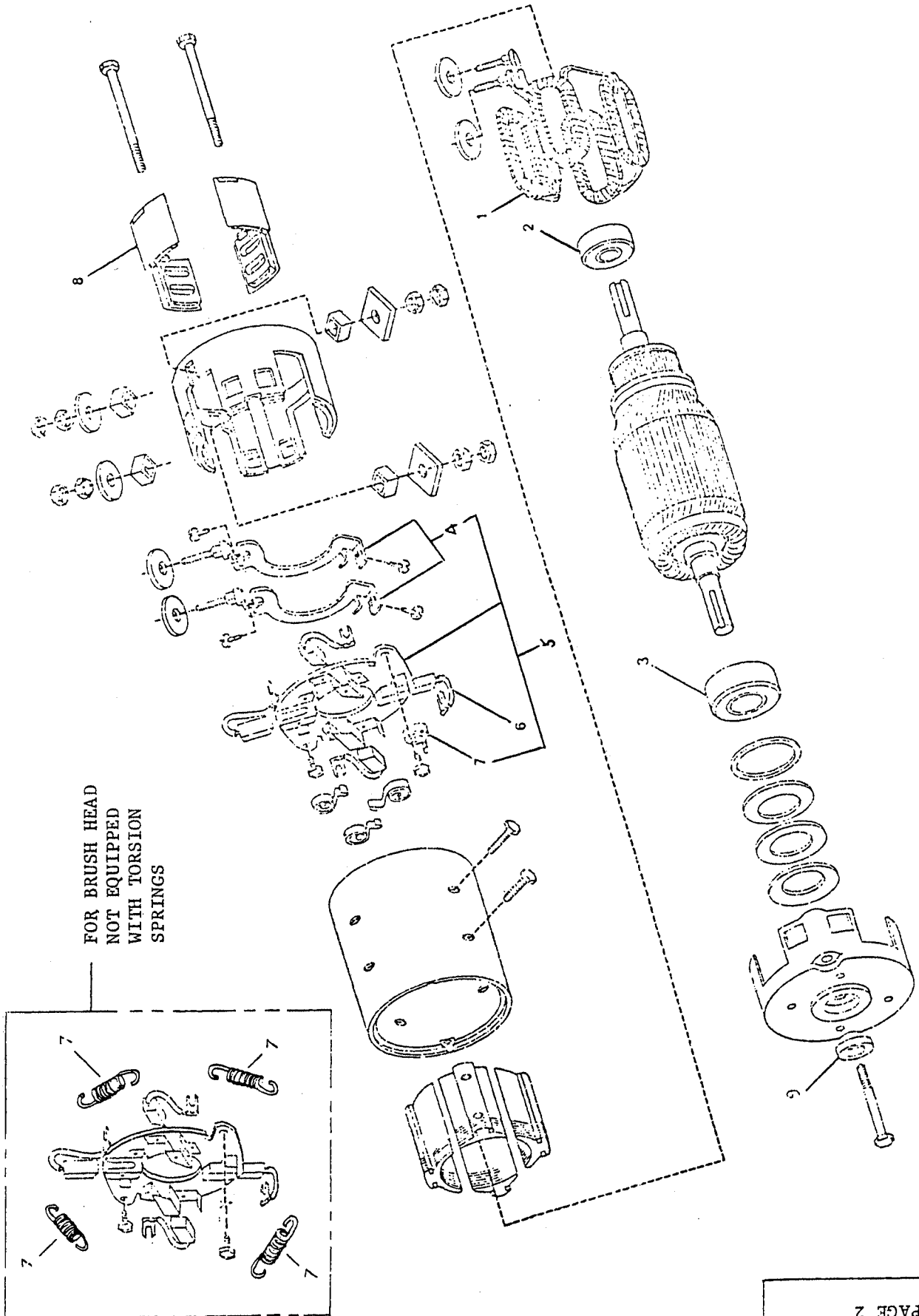
Maintenance of electric motors should be referred to personnel with experience and equipment. Should it be necessary for you to order replacement parts for your motor, IT IS NECESSARY TO INCLUDE COMPLETE NAMEPLATE DATA WITH THE ORDER.

MOTOR MAINTENANCE - BRUSH INSPECTION AND REPLACEMENT

1. Remove cover, exposing brush assemblies. Lift brush from holder for inspection.
2. If brushes are worn less than 1/2" length, remove, install new brushes. Use fine sandpaper to "seat in" new brushes to commutator.
3. Check operation of each brush to assure that brush slides freely and does not bind in holder.
4. Replace cover.

MOTOR DISASSEMBLY AND REASSEMBLY

1. Remove motor from vehicle as described in section J2D.
2. Determine if witness marks on end bell and stator housing are present. If not, mark end bell and housing to assure proper relation of brushes and commutator when reassembling.
3. Remove cover, exposing brush assemblies. Lift brushes from brush holder.
4. Remove bolts holding end bells and remove end bell and rotor. (Pull from shaft extension end). Take care not to damage any coils or armature wires when handling motor parts.
5. Press or pull old bearings off by using bearing press or bearing puller. Do not damage shaft while removing bearings.
6. Install new bearings onto shaft by gentle pressure or tapping with proper tool on inner race only. Bearing will be damaged if pressed or driven by outer race or seals.
7. If the commutator is worn or "burned" it should be turned, the mica undercut, and the commutator polished.
8. Oil bearing housing lightly to aid in reassembly.
9. Reassemble motor taking care that all parts are kept clean.
10. Install brushes and "seat in" with fine sandpaper.
11. Check operation of each brush to assure that brush slides freely in holder.
12. Replace cover.
13. Reassemble to vehicle as described in preceding subsection.



NO.		DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC.	+	DEC.	+			
SCALE		NOTED				
DRAWN BY		ED. ES.				

FIGURE 5M

SECTION J2M

MOTOR PARTS - G.E. MOTORS



TAYLOR DUNN MFG. CO.  
2114 West Ball Rd.  
AUSTIN, TEXAS

ELECTRIC MOTORS  
REFER TO FIGURE 5M

For D.C. Motor replacement parts, IT IS NECESSARY TO INCLUDE COMPLETE MOTOR NAME PLATE DATA WITH THE ORDER

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
Replacement parts for G.E. Motor 5BC48JB503, 5BC48JB531, 5BC48JB550 and 5BC48JB582			
5M-1	70-201-00	Field Coil Set (not used on G.E. Motor 5BC48JB582)	1
5M-1	70-202-00	Field Coil Set (for G.E. Motor 5BC48JB582)	1
5M-2	80-200-00	Ball Bearing - Commutator End	1
5M-3	80-504-00	Ball Bearing - Shaft End	1
5M-4	70-195-00	Set of two armature terminal & brush pair connectors, <u>not used</u> on motor 5BC48JB550 with suffix letter "C". Two required per motor. (included in 70-188-00)	2
5M-4	70-196-00	Armature terminal & brush pair connector, <u>used only</u> with motor 5BC48JB550 with suffix letter "C". Two required per motor. (included in 70-184-00)	2
5M-5	70-184-00	Brush holder, without brushes, including brush springs, armature terminal & brush pair connectors. <u>Used only</u> on motor 5BC48JB550 with suffix letter "C".	1
5M-5	70-188-00	Brush holder, without brushes, including brush springs, armature terminal & brush pair connectors. <u>Not used</u> on motor 5BC48JB550 with suffix letter "C".	1
5M-6	70-101-00	Motor Brush	4
5M-7	85-412-00	Brush Spring, Torsion	4
5M-8	30-801-00	Brush Inspection Cover	1
5M-9	45-506-00	Oil Seal	1
Replacement Parts for G.E. Motors 5BC48JB251 & 5BC48JB265			
5M-2	80-200-00	Ball Bearing, Commutator End	1
5M-3	80-504-00	Ball Bearing, Shaft End	1
5M-5	70-185-00	Brush Holder Assy	1
5M-6	70-100-00	Motor Brush	4
5M-7	85-401-00	Brush Spring, Extension	4
5M-9	45-506-00	Oil Seal	1

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY
Replacement Parts for G.E. Motor 5BC48JB67B & 5BC48JB114			
5M-2	80-205-00	Ball Bearing, Commutator End	1
5M-3	80-204-00	Ball Bearing, Shaft End	1
5M-6	70-100-00	Motor Brush Assy	4
5M7	80-401-00	Brush Spring, Extension	4
Replacement Parts for Taylor-Dunn Motor 388P381G			
5M-2	80-200-00	Ball Bearing, Commutator End	1
5M-3	80-504-00	Ball Bearing, Shaft End	1
5M-5	70-187-00	Brush Head Assy, Complete with Brushes	1
5M-6	70-101-00	Motor Brush	4
5M-9	45-506-00	Oil Seal	1
Replacement Parts for G.E. Motor 5BCG56EA17			
5M-2	80-201-00	Ball Bearing, Commutator End	1
5M-3	80-504-00	Ball Bearing, Shaft End	1
5M-5	70-189-00	Brush Holder Assy	1
5M-6	70-101-00	Motor Brush Assy	4
5M-7	85-412-00	Brush Torsion Spring	4
Replacement Parts for G.E. Motor 5BC49JB122			
5M-2	80-200-00	Ball Bearing, Commutator End	1
5M-3	80-504-00	Ball Bearing, Pulley End	1
5M-4	70-185-00	Brush Holder	1
5M-6	70-100-00	Motor Brush	4
5M-7	85-401-00	Brush Extension Spring	4
5M-9	45-506-00	Oil Seal	1
Replacement Parts for G.E. Motor 5BC49JB305			
5M-1	70-203-00	Field Coil Set	1
5M-2	80-200-00	Ball Bearing, Commutator End	1
5M-3	80-504-00	Ball Bearing, Pulley End	1
5M-4	70-195-00	Armature Terminal to Brush	2
5M-5	70-188-00	Brush Holder Assy	1
5M-6	70-101-00	Motor Brush	4
5M-7	85-412-00	Brush Extension Spring	4
5M-9	45-506-00	Oil Seal	1

FIG I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
Replacement Parts for Taylor-Dunn Motor 388P381A			
5M-2	80-204-00	Ball Bearing, Commutator End	1
5M-3	80-205-00	Ball Bearing, Shaft End	1
5M-5	*70-187-00	Brush Head Assy Complete with Brushes *Not supplied as original equipment on <u>A</u> series motor but must be used as replacement part.	1
5M-6	*70-102-00	Motor Brush with Wire Hook *Replacement part for original <u>A</u> series motor <u>Not</u> converted to new brush head assy 70-187-00.	4
5M-6	70-101-00	Motor Brush for <u>A</u> series motor converted to new brush head 70-187-00.	4
5M-7	*85-413-00	Brush Torsion Spring *Replacement part for original <u>A</u> series motor <u>Not</u> converted to new brush head assy 70-187-00.	4
5M-9	45-506-00	Oil Seal	1

MAINTENANCE PROCEDURES

REFER TO FIGURE 7

MECHANICAL CONTROL LINKAGE

The mechanical control linkage operates the various controls and mechanisms located throughout your vehicle.

The accelerator system consists of the operating pedal and pivot shaft assembly, the connecting rods and adjusters and the return spring. All wear points should be lubricated monthly for normal service. Refer to Maintenance Guide Section D and Lubrication Diagram Section E for proper application of lubricants.

The handbrake system consists of the hand operating lever, pivot shaft, connecting rod, and adjuster and the mechanical brake operating cable.

The footbrake system consists of the foot pedal, pivot shaft, brake operating cable, the return spring, and the master cylinder and push rod assembly on vehicles equipped with hydraulic brakes.

The automatic deadman brake system consists of the pivoted seat assembly, the operating cable or rods, the brake apply spring, adjustable tension device, and its connecting linkage.

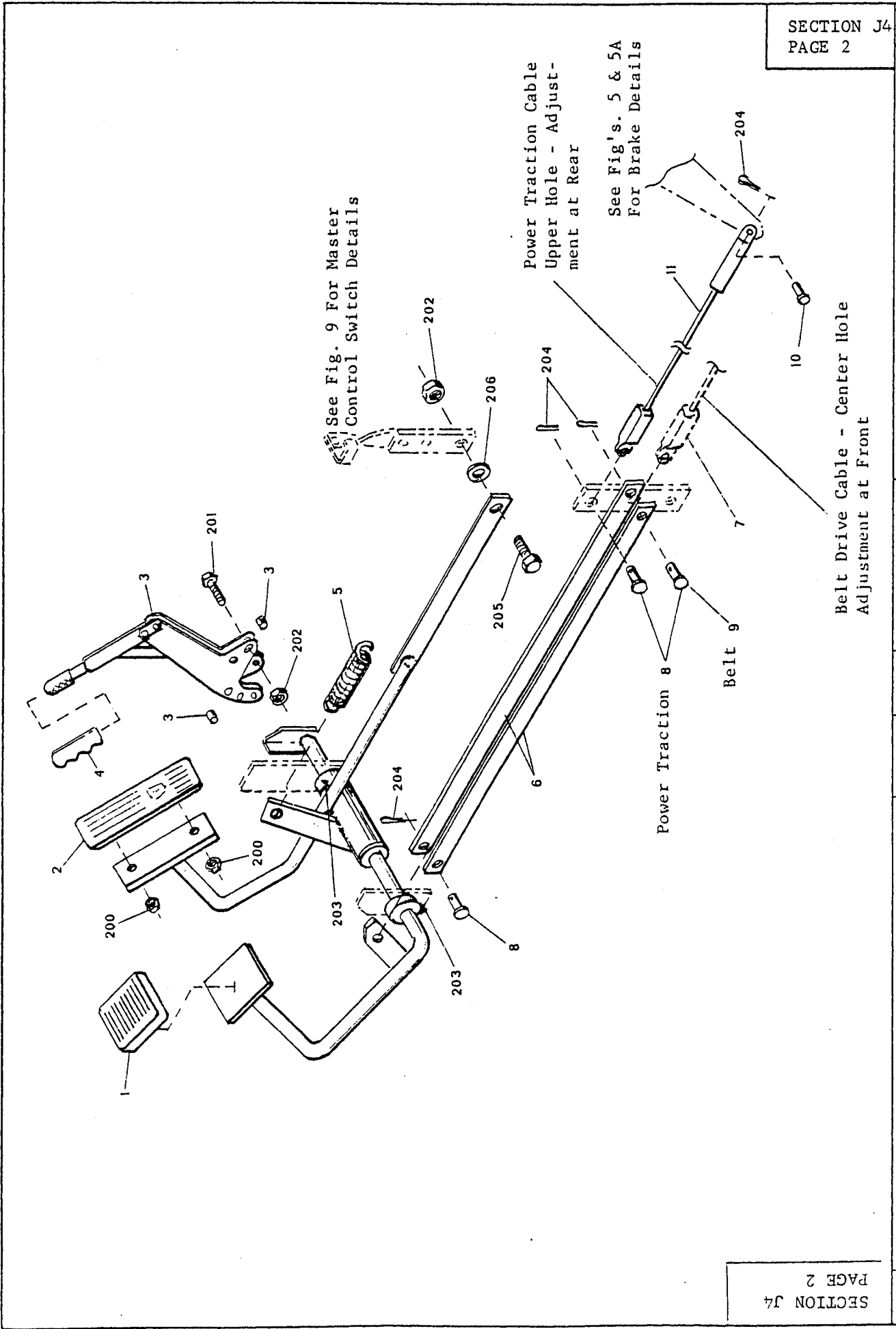
All wear points should be lubricated monthly. Refer to Maintenance Guide Section D and Lubrication Diagram Section E for proper application of lubricants.

For service and adjustments refer to the following sections:

Section J2 - For hand brake and mechanical brake or "Deadman" brake service and adjustments.

Section J3 - For Master Cylinder and push rod adjustments and service.

Section J6 - For accelerator service and adjustments.



SECTION J4  
PAGE 2

SECTION J4  
PAGE 2

NO.	DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. ±	DEC. ±				
SCALE	INCHES				
FIGURE 7 MECHANICAL CONTROL LINKAGE					
TAYLOR DUNN MFG. CO.					



REFER TO FIGURE 7 - MECHANICAL CONTROL LINKAGE

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY
7-1	98-200-00	Brake Pedal Pad	1
7-2	98-254-00	Accelerator Pad (Aluminum)	1
7-3	51-340-00	Hand Parking Brake Lever with Spacers (5/8 O.D. x 12/32 I.D. x 1/2 Long and 5/8 O.D. x 12/32 I.D. x 15/32 Long)	1
7-4	98-351-00	Hand Grip - 7/8 I.D. x 4½ Long	1
7-5	85-250-00	Spring, Extension, 1-1/16 O.D. x 3-7/8 Long, (Accelerator Return)	1
7-6	50-430-00	Strap, Brake Pedal to Cable Linkage	2
7-7	96-818-00	Adjustable Cable Assy. (16 to 20-3/4) Belt Drive	1
7-8	96-771-00	Clevis Pin, 3/8 x 3/4 Face to Hole	1 or
7-9	96-772-00	Clevis Pin, 3/8 x 1, Face to Hole (Belt Drive Only)	0 or
7-10	96-773-00	Clevis Pin, 5/16 x 3/4, Face to Hole	1
7-11	96-818-10	Adjustable Cable Assy., (16 to 18½) Power Traction	1
7-200	88-069-87	Nut, ½ NC, Fastite	2
7-201	88-100-14	Screw, 3/8 NC x 1½ Hex Head Cap	2
7-202	88-109-81	Nut, 3/8 NC, Lock	3
7-203	87-071-00	Grease Fitting, 3/16 Drive	2
7-204	88-517-09	Cotter Pin, 3/32 x 3/4 Long	4
7-205	88-100-13	Screw, 3/8 NC x 1½, Hex Head Cap	1
7-206	88-108-60	Washer, 3/8	1

### MAINTENANCE PROCEDURES

REFER TO FIG. 9 - MASTER CONTROL SWITCH - SLIDING BAR TYPE  
FIG. 9 - MASTER CONTROL SWITCH - EM TYPE

#### GENERAL

The master control switch is located below the seat, and is readily accessible when the seat is raised. The left side, operated by the hand lever which projects into the passenger compartment, controls direction of travel. The right side, operated by the accelerator pedal, controls the vehicle speed by regulating the voltage applied to the motor, using coils of nichrome resistance wire. Two types of speed control mechanisms have been used. At approximately Serial No. 26450, the sliding bar type (Fig. 9) was replaced by the EM type (Fig. 9A). Maintenance characteristics peculiar to those types are discussed below, under the heading "Pressure Adjustment".

It is recommended that all terminal connections be checked and tightened at least once a month. If a terminal bolt or wire becomes loose, sufficient heat will be generated to cause permanent damage at the connection.

CAUTION: The nuts which secure the wire terminals to the contact buttons on the forward/reverse rotor must NOT be used to tighten the contact buttons to the rotor board. The contact buttons must be free to rotate in order to avoid wire breakage.

A coating of grease, T-D part #94-421-00 or equivalent (minimum 400d. melt pt.) must be maintained on all switch components where sliding contact occurs. Apply a heavy coating of grease to the 1st power bar area. The spaces between power bars should be cleaned approximately every 2 to 3 months using a piece of wood or plastic or by steam cleaning. See Sect. E for complete lube instructions.

Refer to Sections D & E for recommended scheduling of routine maintenance and lubrication, and to detailed instructions in this section for adjustments and replacement of parts

#### PRESSURE ADJUSTMENT

For the sliding bar type switch, J-Hook to power bar pressure must be maintained within close limits. Excessive pressure causes binding, which prevents smooth operation, while too little pressure causes excessive arcing, which results in rapid eroding of contact surfaces. This pressure bar adjustment should be performed weekly in accordance with instructions outlined in the following pages under the heading "Adjustment of J-Hook Pressure Bar". When the J-Hook has worn to a thickness of 1/8 inch, the J-Hook and power bars should be replaced.

Contact pressure on the EM switch will remain within proper limits, without need for adjustment, during the life of the contact buttons and power bars.

Should it become necessary to replace the master control switch in a vehicle equipped with the sliding bar type switch, the EM type switch may be installed in its place.

SERVICE AND ADJUSTMENT

REFER TO FIGURE 9 - MASTER CONTROL SWITCH - SLIDING BAR TYPE

REFER TO FIGURE 9 - MASTER CONTROL SWITCH - EM TYPE

CAUTION: Whenever service work is to be performed on the electrical system disconnect all leads from the main positive battery terminal.

Adjustment of J-Hook Pressure Bar - Sliding Bar Switch

1. Adjust J- Hook Pressure Bar by disconnecting J-Hook from accelerator link and sliding J-Hook near the anchor bolt at neutral bar end. Anchor bolt is held in position by 2 nuts. Loosen 1 nut and adjust the other until J-Hook may be moved with a minimum of effort but not allowed to "jiggle" freely. At the opposite end of the pressure bar, adjust the spring pressure to maintain snug contact between J-Hook and power bars. Too much spring pressure will tend to make the J-Hook bind and stick. Too little pressure will promote poor contact, causing burning and pitting to occur. Re-connect operating arm to accelerator link and check operation of switch. J-Hook should slide smoothly with very little noise. If noticeable clicking noises occur as J-Hook passes over power bars, it is usually indicative of poor J-Hook alignment. If necessary, bend or twist connecting strap until J-Hook contacts power bars in a flat and smooth manner.

CAUTION: Every time adjustments are made to rheostat switch, always check the operation of the accelerator pedal. The J-Hook MUST return completely to neutral bar when pedal is released from any position. Lubricate as outlined in Section E.

Adjustment of J-Hook Travel - Sliding Bar Switch

Note: J-Hook travel is set at the factory and will require adjustment only if the vehicle is subjected to severe damage, or if a new switch assembly is installed.

1. Check travel. With accelerator pedal fully depressed, full width of J-Hook must be in contact with high-speed power bar. With accelerator pedal fully released, full width of J-Hook must be in contact with neutral bar. If adjustment is required, disconnect insulating board from accelerator pedal extension.
2. Bend pedal extension to achieve correct travel as outlined in Step 1. Reconnect extension to insulating board and recheck. Readjust, if necessary until proper travel is obtained.

Replacement of J-Hook - Sliding Bar Switch

1. With power disconnected, remove 2 bolts attaching J-Hook to connecting strap.
2. Slide J-Hook to full ON position and open pressure bar by pulling against spring pressure.
3. Roll J-Hook out from between pressure bar and power bars.
4. Replace J-Hook following reverse procedure.

### Replacement of Power Bars

NOTE: Power bars tend to wear at the same rate, except when one bar may become excessively burned because of poor contact. When replacing with new power bars, it is important that all bars be of the same thickness. Binding and sticking will occur when bars are not of uniform thickness. For this reason, it is recommended that power bars be replaced as a full set.

1. Note connections of resistor coils to power bars for correct positioning at reassembly.
2. With power disconnected, remove resistor coils from power bars.
3. Remove holding screws from power bars and slide power bars from switch.
4. Clean switch thoroughly and install new bars.
5. Install resistor coils.
6. Adjust Rotor travel (EM type switch), or J-Hook travel & pressure (Sliding Bar type switch).
7. Reconnect power supply.

### Adjustment of Forward-Reverse Rotor

NOTE: The rate of wear of the moving contacts of the forward-reverse portion of the switch will be very small in normal use, and frequent adjustment will not be necessary. The pressure is properly set when the two inch long spring is compressed to a length within the 1-1/8 to 1-1/4 inch range.

### Replacement of Master Control Switch - Sliding Bar Type

NOTE: If desired, the Sliding Bar type switch may be replaced by the EM type switch. No additional parts other than the Switch Assembly are required. See "Replacement of Master Control Switch - EM Type".

1. Disconnect power supply at battery main positive terminal.
2. Note location of wires connected to switch and mark accordingly, to insure their return to correct locations on re-assembly.
3. Remove wires at respective terminals.
4. Remove bolts connecting J-Hook insulator to operating link.
5. Remove three bolts holding switch to bracket and remove switch.
6. Replace switch in the reverse manner to which it was removed.
7. Check and adjust rheostat switch as outlined in Subsections titled "Adjustment of J-Hook Pressure Bar", and "Adjustment of J-Hook Travel".
8. Reconnect power supply.

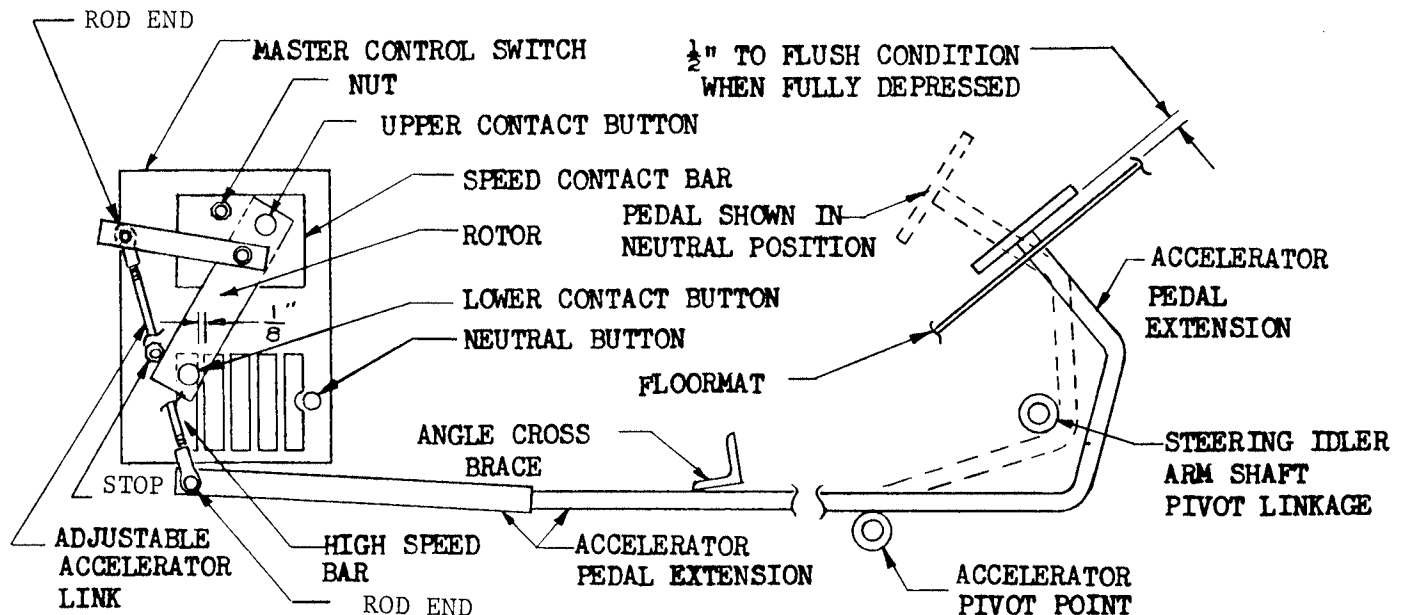
### Adjustment of Speed Rotor Travel - EM Switch (Refer to Diagram A)

NOTE: Rotor travel adjustment is set at the factory, and will require adjustment only if the vehicle is subjected to severe damage, or if a new switch assembly is installed.

1. Check Accelerator pedal travel. With Rod End disconnected from accelerator pedal extension, depress pedal to bottom of travel. If pedal contacts floor-mat before pedal extension contacts angle cross brace, bend pedal extension upward (or angle cross brace lip downward) sufficiently far to assure that pedal travel is stopped before pedal contacts floormat.

Adjustment of Rotor Travel - EM Switch (cont'd.)

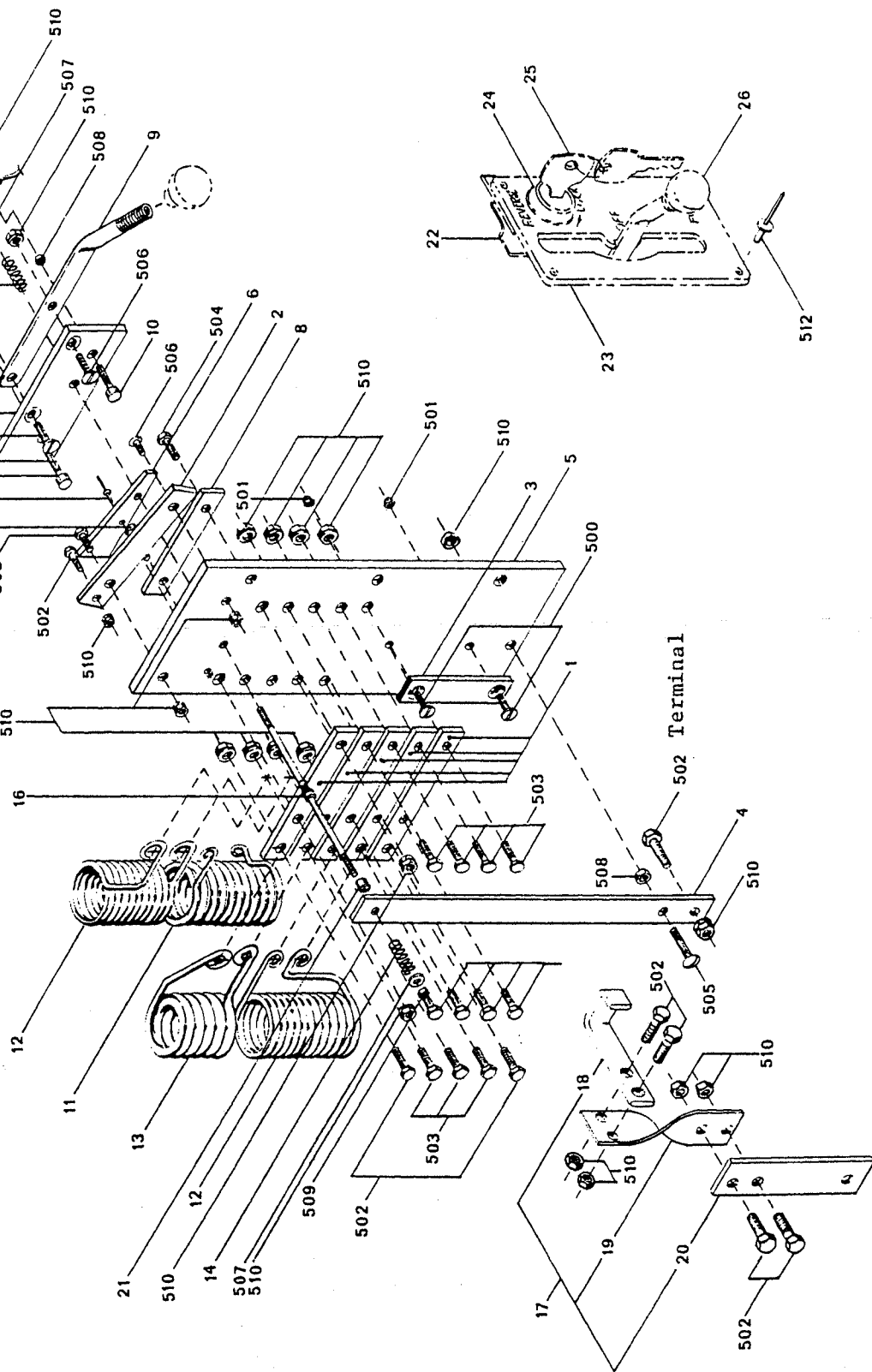
2. Depress pedal, and clamp pedal extension tightly to angle cross brace.
3. Position rotor so that lower contact button clears the 4th speed bar by 1/8 inch (See Diagram). This will cause approximately 95% of the contact button to be in contact with the high speed bar.
4. With the lower contact button held as described in Step 3, adjust the position of the Rod End on the adjustable accelerator link so that it mates with the hole in the end of the pedal extension, and fasten in position.
5. Remove clamp and operate the accelerator pedal several times, using normal force, and re-check the position of the lower contact button when the pedal is fully depressed. If it fails to clear the 4th speed bar by 1/8 inch, readjust the Rod End position accordingly, and check the clearance again after operating the pedal, readjusting as necessary until the desired condition is obtained and remains constant. Note: The lower contact button should not travel to the stop when the accelerator is fully depressed and properly adjusted.
6. With the pedal in neutral position, the lower contact button must clear the 1st speed bar by a minimum of 1/8 inch, and rest on the neutral button. This condition should automatically occur when the high speed adjustment is properly set.




Replacement of Master Control Switch - EM Type

1. Disconnect power supply at battery main positive terminal.
2. Note location of wires connected to switch and mark accordingly, to insure their return to correct locations on re-assembly.
3. Remove wires at respective terminals.
4. Disconnect rod end from accelerator pedal extension (See Diagram A).
5. Remove three bolts holding switch to bracket and remove switch.
6. Replace switch in the reverse manner to which it was removed.
7. Adjust Speed Rotor Travel as outlined in preceding subsection.
8. Reconnect power supply.

Note: Vehicles up to Serial No. 23800  
 Pressure Bar (4) inverted, Spacer (21) omitted,  
 and (502) Terminal Screw positioned at upper end.  
 See Figure 9A for EM Type Switch



SECTION J6  
 PAGE 6

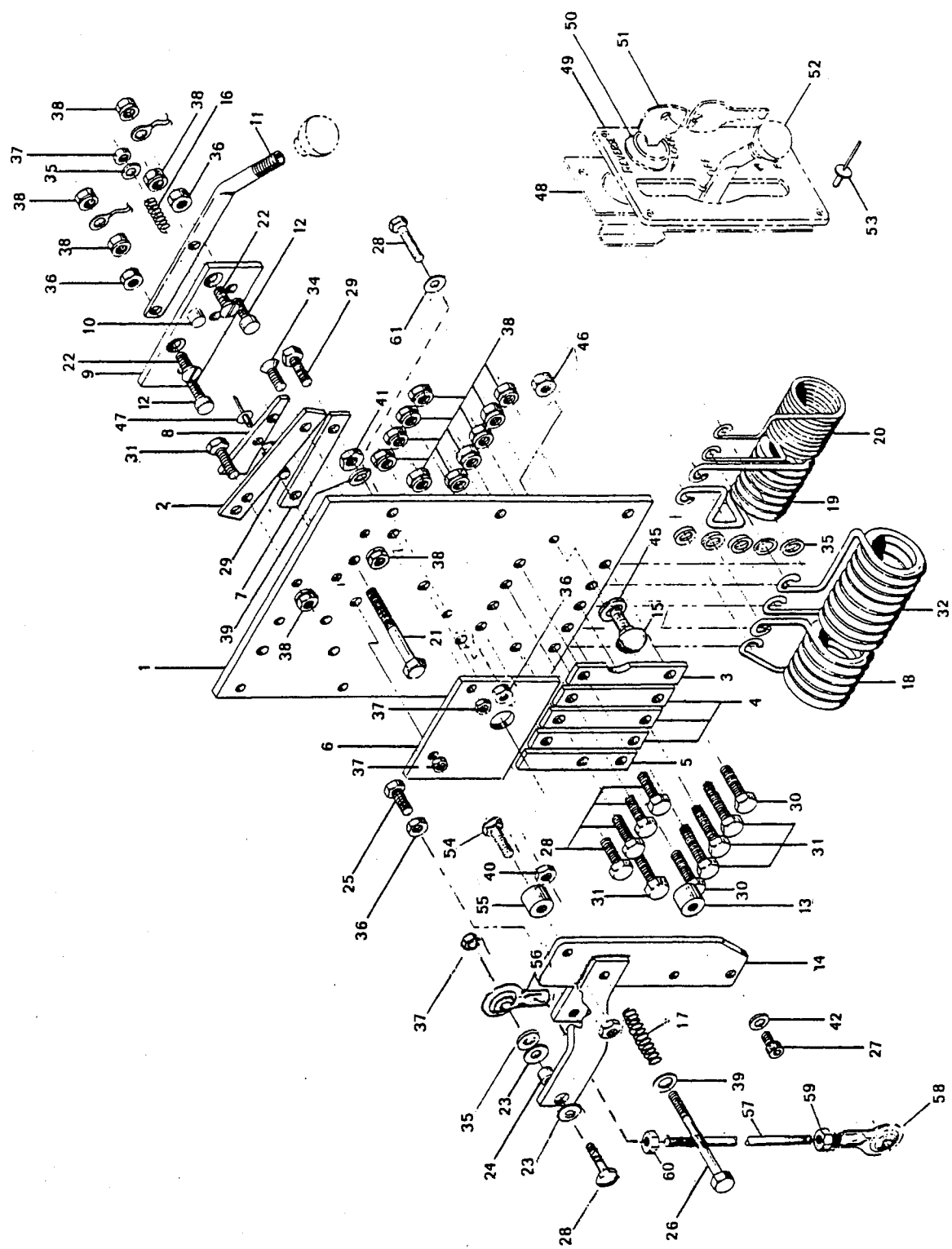
NO.		DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. ±		DEC. ±	<div></div> <p>MASTER CONTROL SWITCH AND J-HOOK</p> <p>SLIDING BAR TYPE</p> <p>FIGURE 9</p> <p>SECTION 16</p> <p>TAYLOR DUNN MFG. CO</p> <p>2114 West Ball Rd.</p>			
SCALE						
DRAWN BY R.E.A.						

SECTION J6  
PAGE 7

FIGURE 9 - MASTER CONTROL SWITCH - SLIDING BAR TYPE

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
9-0	<del>61-839-15</del>	Master Control Switch Assembly. (Does not include J-Hook assembly 61-832-12)	1
9-1	61-831-00	Power Bar <del>61-839-61</del>	5
9-2	61-831-10	Power Bar With Counter Sunk Hole	1
9-3	61-835-15	Neutral Bar	1
9-4	61-836-00	Pressure Bar	1
9-5	61-839-00	Master Control Switch Board	1
9-6	61-839-51	Neutral Board, Forward-Reverse Switch	1
9-7	61-839-52	Rotor Board, Forward-Reverse Switch	1
9-8	61-840-00	Power Bar, Forward-Reverse Switch	1
9-9	61-841-00	Handle, Forward-Reverse Switch	1
9-10	71-030-58	Contact Button	2
9-11	78-223-51	Resistor Coil (#9 Wire, 10 Turns, 45° Legs)	1
9-12	78-223-52	Resistor Coil (#6 Wire, 9 Turns, 45° Legs)	2
9-13	78-223-53	Resistor Coil (#5 Wire, 6 Turns, 45° Legs)	1
9-14	85-033-00	Spring, Compression (7/16 O.D. x 1-1/2 Long)	1
9-15	85-034-00	Spring, Compression (7/16 O.D. x 2 Long)	1
9-16	96-340-00	Stud, Double Shank, 1/2 N.F. Thd. Both Ends, 5 1/2 Lg. (1/2 NC Thread on Earlier Models)	1
9-17	61-832-12	Sliding J-Hook Assy. (Includes 61-832-00, 61-833-00, and 61-834-00)	1
9-18	61-832-00	Sliding J-Hook Bar	1
9-19	61-833-00	J-Hook Twisted Strap	1
9-20	61-834-00	J-Hook Insulating Board	1
9-21	16-510-00	Spacer 1/2 I.D. x 3/8 O.D. x 5/16 Long (Aluminum) (Not Used When Pressure Bar Wire Terminal is at Top of Switch)	1
9-22	97-314-10	Lock Plate Assembly	1
9-23	94-307-00	Forward-Reverse Switch Plate	1
9-24	71-040-55	Lock Assembly with Two Keys	1
9-25	71-040-74	Key Only (Give Lock No. or Vehicle Serial No.)	1
9-26	95-907-00	Plastic Knob	1
9-500	88-026-10	Screw, 8-32 x 7/8 Flat Head Machine	2
9-501	88-029-86	Nut, 8-32 Flex Lock	2
9-502	88-060-09	Screw, 1/4 NC x 3/4 Hex Head Cap	8
9-503	88-060-11	Screw, 1/4 NC x 1 Hex Head Cap	12
9-504	88-060-13	Screw, 1/4 NC x 1 1/2 Hex Head Cap	2
9-505	88-065-14	Screw, 1/4 NC x 1 1/2 Truss Head	1
9-506	88-066-11	Screw, 1/4 NC x 1 Flat Head	3
9-507	88-068-60	Washer, 1/4	2
9-508	88-069-80	Nut, 1/4 NC Hex Head	3
9-509	88-079-86	Lock Nut, 1/4 NF (88-069-86, 1/4 NC Locknut Used on Earlier Models)	2
9-510	88-069-87	Nut, 1/4 NC Fastite	28
9-511	88-737-09	Aluminum Pop Rivet 3/16 D. x 3/4	1
9-512	88-727-06	Aluminum Pop Rivet 5/32 D. x 1/2	4






NO.		DESCRIPTION		LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. ±		DEC. ±					
SCALE		NONE					
DRAWN BY		REA					
DATE		3-15-76					
FIGURE 9							
SECTION J6							
				MASTER CONTROL SWITCH -EM TYPE			
							
				TAYLOR DUNN MFG. CO.			
				2114 West Ball Rd.			
				Anaheim, Calif.			
				6			

FIGURE 9 MASTER CONTROL SWITCH - H TYPE

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
9-0	61-845-30	Master Control Switch Assembly Complete	1
9-1	61-845-00	Mounting Board	1
9-2	61-831-10	Power Bar With Countersunk Hole	1
9-3	61-831-12	Power Bar With Notch	1
9-4	61-831-13	Power Bar	3
9-5	61-831-14	Power Bar	1
9-6	61-831-15	Speed Contact Bar	1
9-7	61-840-00	Forward Reverse Power Bar	1
9-8	61-839-51	Neutral Board	1
9-9	61-846-50	Rotor Board	1
9-10	61-846-51	Stabilizer Button	1
9-11	61-841-00	Handle	1
9-12	71-030-58	Contact Button	2
9-13	61-849-50	Contact Button	1
9-14	61-849-00	Speed Switch Rotor	1
9-15	88-102-11	Neutral Button (3/8 x 1 Carriage Bolt)	1
9-16	85-034-00	Spring 7/16 x 2	1
9-17	85-060-00	Spring 5/8 x 2 1/2	1
9-18	78-212-53	Resistor Coil #5 Wire - 6 Turns	1
9-19	78-212-52	Resistor Coil #6 Wire - 9 Turns	1
9-20	78-212-51	Resistor Coil #9 Wire - 10 Turns	1
9-21	88-060-20	1/4 N.C. x 3 Hex Head Cap Screw	1
9-22	88-066-09	1/4 N.C. x 3/4 Flat Head Machine Screw	2
9-23	97-170-00	Washer, Insulated	2
9-24	32-212-50	Plastic Bushing, 1/4 I.D. x 1/4 Long	1
9-25	96-300-09	Bronze Bolt	1
9-26	88-081-22	5/16 N.C. x 3 1/2 H.H. Cap Screw	1
9-27	88-047-06	10-32 x 1/2 Socket Head Cap Screw	1
9-28	88-060-11	1/4 N.C. x 1 Hex Head Cap Screw	6
9-29	88-060-12	1/4 N.C. x 1 1/8 Hex Head Cap Screw	2
9-30	88-060-13	1/4 N.C. x 1 1/4 Hex Head Cap Screw	2
9-31	88-060-14	1/4 N.C. x 1 1/2 Hex Head Cap Screw	5
9-32	78-212-62	Resistor Coil # 8 - 8 Turns	1

FIGURE 9 MASTER CONTROL SWITCH - EM TYPE (Cont'd)

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
9-34	88-066-11	1/4 N.C. x 1 F.H. Machine Screw	1
9-35	88-068-61	1/4 S.A.E. Washer	1
9-36	88-069-80	1/4 N.C. Hex Nut	4
9-37	88-069-81	1/4 N.C. Hex Lock Nut	3
9-38	88-069-87	1/4 N.C. Fastite Nut	16
9-39	88-088-60	5/16 Flat Washer	2
9-40	88-089-89 9/	5/16 Hex Nut <del>Nut</del> JAM NUT 9-23-12	1
9-41	88-089-81	5/16 Hex Lock Nut	2
9-42	88-048-61	#10 Washer, S.A.E.	1
9-45	97-173-00	Special Washer	1
9-46	88-109-87	3/8 N.C. Fastite Nut	1
9-47	88-737-11	Aluminum Rivet, 3/16 Dia. x 1" Long	1
9-48	97-314-10	Lock Plate and Lock Cylinder Assembly	1
9-49	94-307-00	Forward/Reverse Switch Plate	1
9-50	71-040-55	Lock Assembly with Two Keys	1
9-51	71-040-74	Key Only (Give Lock No. or Vehicle Serial No.)	1
9-52	95-907-00	Plastic Knob	1
9-53	88-727-06	Aluminum Rivet 5/32 Dia. x 1/2 Long	4
9-54	96-302-01	Screw, Bronze 5/16 N.C. x 1, Hex Hd.	1
9-55	61-849-51	Spacer, Rotor Contactor	1
9-56	86-503-99	Rod End, Spherical Bearing - Right Hand Thread	1
9-57	50-002-00	Rod, Accelerator Adjusting, 4 1/8 Long	1
9-58	86-503-98	Rod End, Spherical Bearing - Left Hand Thread	1
9-59	97-211-00	Nut, 1/4 N.F.-Left Hand Thread	1
9-60	88-079-80	1/4-28 N.F. Hex Nut	1
9-61	88-068-62	1/4 Lock Washer	1

MAINTENANCE PROCEDURES  
GENERAL ELECTRICAL SYSTEM

Your electrical system has been installed with care, utilizing quality materials for safe trouble free service. Proper fuses have been located where necessary to prevent unsafe overloads and protect the wiring from being damaged from short circuits.

Little care will be required, except for an occasional visual inspection for loose connections or some unusual condition causing the insulation to be rubbed off on a wire.

Normal replacement parts such as light bulbs, fuses, flasher, etc., have been arranged for simple changing by plug in devices or conveniently located terminals.

CAUTION: A blown fuse is usually indicative of a short circuit or faulty device. Care should be exercised to remove the faulty condition before replacing fuse. DO NOT place larger capacity fuses or "jumpers" to overcome the condition as serious wiring damage can occur.

Refer to the following sections for more detailed information on the main power and electrical components:

- Section G - Wiring Diagram
- Section J2 - Motor
- Section J6 - Speed Control and Main Power Switching
- Section J8 - Batteries and Charger

Refer to the following page for a listing of electrical parts.

ELECTRICAL PARTS

T-D PART NO.	DESCRIPTION	QTY.
71-100-00	Light Switch	1
71-111-00	Brake Light Switch (Mechanical Operation)	1
71-130-00	Micro Switch	1
71-502-00	Horn Button	1
72-005-00	Chrome Headlight Fixture with 4" Sealed Beam Bulb	1
72-407-00	Headlight Mounting Bracket	1
72-072-00	4" Sealed Beam Headlight Bulb	1
73-000-00	Horn, 12 Volt	1
72-022-00	Taillight or Tail/Stop Light Fixture, 4" Rubber Mount	1
75-082-00	Accessory Wiring Harness (Horn & Lights)	1
75-081-00	Power Wiring Harness	1
74-015-00	Plug In Charge Indicator - 36 Volt	1
77-200-00	Hydrometer	1
77-201-00	Battery Filler	1
78-010-00	Secondary Fuse and Holder - Inline Type	1
79-823-00	20 Amp Fuse to Fit Fuse Holder	1
75-231-00	Battery Jumper - #6 Wire - 8" Long with Terminals	5
75-234-00	Battery Jumper - #6 Wire - 16½" Long with Terminals (one Used to Connect Battery Positive to F/R Switch)	2
79-844-00	Circuit Breaker	1
76-012-00	Charging Receptacle	1
76-002-00	Charging Plug	1
74-007-00	Cigarette Lighter	1
50-225-00	Wiring Harness Support Rod - ½" Dia.	1
88-577-90	½" Dia. Push On Cap for Wiring Harness Support	1

MAINTENANCE PROCEDURES  
BATTERIES

WARNING: Lead acid batteries continuously emit highly explosive gases. Flame or sparks must be kept away from the batteries at all times.

This emission is greatly increased during the charging process. Any area in which charging batteries are confined must be well ventilated, and flame or sparks must be kept out of the charging area and away from ventilator openings. DO NOT disturb battery connections while batteries are being charged.

The lead acid battery (or batteries) will furnish all power required by your vehicle. Two types are generally employed. The electric vehicle type battery pack, commonly used, can be expected to have a life of approximately 2 years, or 350 to 400 cycles. One cycle is the discharging and charging of the battery within proper limits. The heavy duty industrial type of battery has a life of approximately 7-1/2 years, or 1800 cycles, in appropriate use and with proper care.

It can not be over emphasized how important good maintenance procedures and careful care of your batteries will affect their useful life. It is therefore recommended that a comprehensive maintenance program be established and adhered to throughout the life of your vehicle. A 5 point program is outlined below to assist you in understanding and establishing good battery care.

1. CORRECT CHARGING

Poor charging practices are responsible for more short battery life than any one other item. The charging equipment must be properly maintained and adjusted to give a charge which the battery will accept with maximum efficiency. Two things are involved in correct charging. These are the charging rate in amperes and the termination of the charge at the correct time. No amount of overcharging will increase the battery capacity or raise the specific gravity above its full charged condition.

Over charging will reduce battery life. Undercharging will cause poor vehicle performance, and shorten the life of all electrical components, including the batteries. Refer to Service and Adjustment, Section J8, for proper methods to determine charge condition.

2. DISCHARGING - CAPACITY

Batteries are commonly rated in ampere hours at the six hour discharge rate to a final voltage of 1.75 per cell. They will deliver additional capacity in an emergency, but should not be required to do so regularly. The best way to avoid over discharging is to prepare a rigid schedule for charging batteries which will insure against their being discharged beyond the limits of their capacity.

3. WATERING

Water must be replaced from time to time. The frequency and quantity depends upon the watering space above the plates and the amount of gassing which the battery does on charge. Only approved or distilled water should be added to the battery. Water should be added after hydrometer or voltmeter readings have been taken. The liquid level within the battery raises as the gassing occurs. Thus filling after charging minimizes over-filling. However, the water level should cover the plates prior to charging.

#### 4. CLEANING

Batteries pick up various kinds of dirt and dust, depending on their surroundings and the types of service they are subject to. This is usually dry dirt, which can readily be blown off with low pressure air or brushed off. However, if cells are overfilled and electrolyte collects on the covers, the top of the battery becomes wet and stays wet, since the acid in the electrolyte does not evaporate. This moist surface in combination with certain kinds of dirt becomes electrically conductive and permits stray currents to flow externally over the top of the battery. These currents cause corrosion of cell posts, nuts, connectors, and steel trays, which eventually become troublesome and expensive to repair.

When wet dirt accumulates on top of the battery, remove it by washing the battery with a strong solution of baking soda and hot water (1 pound of soda to 1/2 gallon of water).

A convenient brush to use is one having flexible bristles like an old paint brush. Continue the application of the soda solution until all fizzing stops, which indicates that the acid has been neutralized. Then rinse thoroughly with clear water.

Wet covers can be an indication of overfilling, leaky seals at posts and covers or of excessive gassing during charge. When observed the cause should be determined and the abusive conditions corrected.

#### 5. RECORDS

A battery record system is recommended for all vehicles. It is considered essential for large operations, and where minimum battery operating cost is desired. A properly supervised record system can be made to detect and call attention to such operating irregularities as:

- A. Overcharging
- B. Undercharging
- C. Overdischarging
- D. Excessive Water Consumption
- E. Cleanliness
- F. Worn Out Batteries
- G. Excessive Current Consumption On Trucks

It is not advisable to allow a battery to stand for a long period of time in a low state of charge. Doing so subjects the battery to excessive plate erosion and in cold climate conditions the electrolyte will freeze at a much higher temperature. For example, a fully charged battery will not freeze at temperatures near 60° below zero. Yet a battery in a very low state of charge may freeze at temperatures around 10° to 15° above zero.

A battery not in use maintains small amounts of chemical action which slowly tends to dissipate the charged condition. It is wise to re-charge a battery not in use every 1 to 2 months. If possible store the battery in a cool place, as the self discharge rate is increased with warmer temperatures.

BATTERY MAINTENANCE RECORD										VEHICLE NO.	
Battery No.	Cell No.	Date			Date			Date			
		Water OK or Low	Gravity Before Charge	Gravity After Charge	Water OK or Low	Gravity Before Charge	Gravity After Charge	Water OK or Low	Gravity Before Charge	Gravity After Charge	
1	1										
	2										
	3										
2	1										
	2										
	3										
3	1										
	2										
	3										
4	1										
	2										
	3										
5	1										
	2										
	3										
6	1										
	2										
	3										

- CAUTION: Batteries emit explosive gases. During normal operation the concentration of these gases is rarely sufficient to be considered dangerous unless flame or sparks occur in the battery compartment close to the vent holes in the battery caps. It is important that this not be allowed to occur at any time. Lighted cigarettes must not be brought close to the battery compartment.  
During the charging process, emissions are greatly increased. Any area in which charging batteries are confined must be well ventilated, and flame, sparks, or lighted cigarettes must be kept out of the charging area and away from ventilator openings associated with the charging area. Battery connections must not be disturbed while batteries are being charged.
- Do not fill an uncharged battery. Bring water level up to just cover the plates, and complete filling after battery is fully charged. Use distilled water. Fill only to level indicated on battery.
- Batteries which require unusually frequent watering may indicate overcharging. Review charging practices and/or adjustment of transformer taps in charger.
- Gravity should be kept between 1175 (30% charged) and 1260 (100% charged), and gravity readings of all cells should be within a 10 point range. When they are not, an equalizing charge should be applied. Refer to information under "Charging Time Chart".
- Periodically check for loose terminal posts or loose connections to terminal posts, but not while batteries are being charged.
- Keep tops of batteries clean, and free of moisture, grease, and acid films. Any of these can cause current leakage.
- Keep weekly (or oftener) record as shown in above sample chart, for a new vehicle or when charging results seem unsatisfactory, until satisfactory charging continues for a four week period, then keep record on a monthly basis.



BATTERIES AND CHARGER

T-D PART NO.	DESCRIPTION	QTY. REQ.
	SEE PARTS LIST IN CHARGER MANUALS	
75-231-00	Battery Jumper #6 Wire, 10-1/4 Inches Long	3
75-234-00	Battery Jumper #6 Wire, 18-1/4 Inches Long	3
76-012-00	Charging Receptacle, 30 Amp, 3 Prong	1
77-010-00	6 Volt, 170 A.H. Battery	6
77-031-00	6 Volt, 190 A.H. Battery	6
77-042-00	6 Volt, 217 A.H. Battery	6
77-047-00	6 Volt, 244 A.H. Battery	6
77-200-00	Hydrometer	1
77-201-00	Battery Filler	1
77-202-00	Battery Breakdown Meter	1
<del>79-332-30</del> 9/23/77	<del>79-332-25</del> — MASTER CHANGED	
	Portable Charger, 36 Volt, 25 Amp, Line Compensated	1
79-320-00	Portable Charger, 36 Volt, 20 Amp, Automatic	1
79-322-00	Portable Charger, 36 Volt, 20 Amp, Transistorized	1
79-333-00	Portable Charger, 36 Volt, 30 Amp, Transistorized	1
79-337-00	Built-In Charger, 36 Volt, 30 Amp, Transistorized	1
74-005-00	Charge Indicator, 12 Volt	1

FOR CHARGER COMPONENT PARTS, SEE OTHER PAGES IN THIS SECTION.

SERVICE AND ADJUSTMENTS  
BATTERY CHARGER

INTRODUCTION

This section describes the operation, trouble-shooting and repair of the CHRISTIE Series A and Series T Battery Chargers. They are designed for safe and efficient, daily recharging of batteries. Chargers may be furnished in a portable cabinet or of a type built-in to the vehicle.

SPECIFICATIONS

A SERIES

MODEL		A-C	A-C	Battery	D-C	D-C
Portable	Built-in	Volts	Amp	Amp Hours*	Volts	Amp
2420A	2420A-C/2420A-SS/2420AB	115	5	130/170	24	20
3620A	3620A-C/3620AB	115	9	130/170	36	20
	2410A	115	2.5	90	24	10

T SERIES

2420T	2420T-C	115	5	130/220	24	20
2430T	2430T-C/2430TB	115	7	170/250	24	30
3620T/T3620T	T3620TG/T3620T-C/T3620TB	115	9	130/220	36	20
3630T/T3630T	T3630TG/T3630T-C/T3630TB	115	10	170/250	36	30
4820T		115	10	130/220	48	20

\*Higher capacity batteries may be charged if longer than 12 hours recharge time is available.

CHARGING CHARACTERISTICS

Series A - This charger uses a constant potential method of recharging. This means that the charger output voltage is held relatively constant through the charge cycle. Since the rate of charge is a function of the difference between charger output voltage and battery voltage the charger output current is reduced by the increased voltage of the battery as it recharges. On a discharged battery the charger should start charging at near it's rated output and as the battery recharges the charge rate will be reduced until it reaches a final charge rate of approximately 2 to 3 amperes on a fully charged battery. The charging time is controlled by a timer which terminates the charge at the end of a preset time. Recommended minimum charging times are shown on the CHARGING TIME CHART.

Series T - This charger also uses a constant potential method for recharging, however, it is equipped with a voltage sensing device that activates the timer when the battery reaches 80% of full charge. The timer then times out the balance of the charge, normally 4 hours. The time required for the battery to reach the 80% level will vary with the capacity and state of charge of the battery. On a discharged battery, the charger will start charging at near it's rated output and it will reduce it's charging rate as the battery is recharged. The final charge rate on a charged battery will be approximately 6 to 10 amperes depending on the rating of the charger. A shorter recharge time is achieved by using this method. Protection from overcharging is provided by the voltage sensing device.

### INSTALLATION

Portable models may be set on any suitable working surface so that there is access to the control panel. There should be at least six inches of clearance on each side and two inches on the top to allow free flow of air for cooling. Do not expose the charger to rain or other adverse weather conditions. There must be a separately fused, three-wire, single phase, 115 volt, 15 ampere power receptacle within reach of the A-C input cord of the charger. If the A-C input voltage at your location varies from the nominal 115 volts, it will be necessary to adjust the charger for proper operation. A Low-Med-High switch on the charger is designed to make the necessary adjustment convenient. This switch is located on the front panel of all portable models and on the charger portion of the built-in models with separate control console.

The "Med" setting is designed for those locations where the voltage is between 113 and 120 volts. If your input voltage is between 121 and 128 volts, set the switch in the "Low" position. This will reduce the output voltage to compensate for the high input voltage. If the input voltage at your location is between 105 and 112 volts, set the switch in the "High" position. This will raise the output voltage to compensate for low input voltage. For greater accuracy, the input voltage should be measured during the time of day when the battery chargers are normally in use.

If the output current as shown on the meter exceeds the rated output of the charger, set the switch to the next lowest position to avoid damage. Once set, it should not be necessary to change the switch position as long as the charger is used at the same location.

### OPERATING INSTRUCTIONS

1. Verify that the output fuses are fully tightened.
2. Connect the D-C plug to the battery receptacle. Portable chargers are furnished with a polarized D-C plug that mates with a corresponding polarized receptacle in the vehicle to prevent improper connections to the battery. Built-in models are permanently connected to the batteries.
3. Connect the A-C plug to a suitable, grounded receptacle.  
A Series - Determine the minimum charging time (see CHARGING TIME CHART). Turn the charger on by setting the timer knob to the desired charging time.  
T Series - Turn the charger on by setting the timer knob to "START" position (4 hours). The voltage sensing unit will automatically start the timer when the battery reaches 80% of full charge.
5. Verify that the output meter indicates a charging current. If there is no charging current, see TROUBLE SHOOTING section. Never let the charger charge higher than it's rated output. If the charger is charging too high, check the batteries to be sure there are no defective cells or short circuits. See the instructions concerning tap switch setting under INSTALLATION section.

6. The timer control will turn off the charger (positive turn off feature) at the completion of the charge.
7. Disconnect the battery from the charger. On built-in models, disconnect the A-C cord.
8. Using a hydrometer, verify that the battery is properly charged.

#### CHARGING TIME CHART (A Series)

The following chart provides useful information for determining the minimum charging time needed to restore a battery to a full charge condition. In addition to normal charging, the cells of the batteries should be equalized twice each month. This is done by charging the batteries an additional seven (7) hours after a normal charge cycle. The current indications of the ammeter must be low during cell equalization.

<u>Specific Gravity Reading</u>	<u>Condition of Battery</u>	<u>Hours Needed to Charge</u>
1100	fully discharged	12
1125	10% charged	10
1150	20% charged	8
1175	30% charged	7
1200	60% charged	4
1225	75% charged	2
1250	95% charged	$\frac{1}{2}$
1260	fully charged	0

#### TROUBLE SHOOTING & REPAIR INSTRUCTIONS

##### LOW OR NO CHARGING CURRENT

1. Using a voltmeter, verify that the battery being charged has no open or dead cells. Check jumper cables between batteries for tight and clean connections, and also verify that the battery is not already fully charged.
2. Check the output fuses of the charger to make sure they are not loose or "blown."
3. Verify that the A-C receptacle has power by plugging in an electrical appliance. Using a voltmeter, check A-C input voltage at the receptacle. Taps are provided inside back panel of charger to adjust for input voltages from 105 to 125. Verify that charger is connected for correct voltage.
4. Turn the charger ON and verify that the transformer hums. If no hum is heard, proceed with step 4.1. If a hum exists, go to step 5.
  - 4.1 Remove A-C plug from power source.
  - 4.2 Remove the cabinet cover (1) to gain access to the interior of the charger.
  - 4.3 With the timer switch OFF, check for continuity between the two primary input leads of the transformer. If no continuity is found, replace the transformer. If continuity is found, proceed as follows:
  - 4.4 With the timer switch ON, check for continuity across the switch. On "T" Series chargers there are two switches - check both. If switch is open with the timer ON, replace the timer assembly.
  - 4.5 If all of the above checks indicate continuity, but the transformer does not hum, check for loose or broken leads between the A-C plug, the timer assembly and the tap switch or terminal board.

5. If the transformer hums, proceed as follows:
  - 5.1 Remove AC plug from power source.
  - 5.2 Check the two output fuses to insure they are good. Inspect the fuse holders for damage or a blackened appearance. (If the fuse holder is blackened, it indicates oxidation and should be replaced).
  - 5.3 Remove both output fuses. Check for continuity from the output side of both fuse holders to the positive side of the DC plug, connecting continuity indicator first in one direction and then the other of each. The indicator should show an open in one direction and continuity in the other. Continuity in both directions or no continuity in either direction indicates a bad diode. Replace the diode connected to that fuse holder.
  - 5.4 Check for continuity between the input side of one fuse holder and the input side of the other. If no continuity exists, the transformer secondary is open. Replace the transformer.
  - 5.5 Check for continuity across the two terminals of the meter. If no continuity exists, the meter is open. Replace the meter.
  - 5.6 If all indications to this point are normal, test the entire DC output circuitry for continuity by progressing from the DC output prong to the negative DC output prong in incremental test sections, checking each connection for open circuits and poor connections.

#### AC-LINE FUSES BLOW

6. With unit unplugged and timer turned on, check for continuity between each input prong of the AC plug and the ground prong. If continuity is found between either input prong and ground, a short circuit exists and must be found and removed. If all indications are open and the AC fuses are of sufficient rating for the charger, a shorted transformer is the most probable cause of this problem. Replace transformer.

#### OUTPUT FUSES BLOW

7. Verify that the circuit under charge is not shorted by disconnecting the charger and operating it disconnected.
8. If output fuses continue to blow, test the charger as per steps 5.1 through 5.6.

#### TIMER DOES NOT TURN UNIT OFF

9. Unplug charger. Check continuity of timer motor. If open, replace timer. If not, check timer switch contacts. If timer assembly is not defective, adjust Voltage Sensing Unit as per instructions in next paragraph ("T Series only).

#### VOLTAGE SENSING UNIT ADJUSTMENT PROCEDURE ("T SERIES)

NOTE: A DC voltmeter with the appropriate voltage range is required to perform the following adjustment.

10. The unit is assembled on a small panel inside the charger cabinet (see item 23, exploded diagram). Each unit has been carefully adjusted at the factory to actuate at the proper voltage; however, if it is desired to change the actuation voltage point, the following procedure should be followed:
  - 10.1 Connect the charger to a battery which is known to be fully charged.
  - 10.2 Observing polarity, connect the voltmeter across the battery terms.
  - 10.3 Turn the charger on. The voltage across the battery, as indicated by the voltmeter, will rise slowly. When the proper voltage (dependent upon the number of cells) is reached, the small relay in the voltage sensing unit will actuate. This can be detected since it generates an audible click.

- NOTE: The Voltage Sensing Unit should be set for 2.37 volts per cell. On a 24 volt system, the Voltage Sensing Unit should actuate at 28.4 volts. On a 36 volt system, the unit should actuate at 42.7 volts.
- 10.4 Turn the adjustment shaft on the Voltage Sensing Unit clockwise to raise the actuating voltage and counter-clockwise to lower voltage.
- 10.5 Turn the ON and OFF, as necessary, to raise and lower battery voltage, while repeating steps 10.3 and 10.4 until the desired actuation point is achieved.

#### IMPORTANT FACTS ON BATTERIES AND CHARGERS

To determine whether or not a battery is properly charged, a measuring device known as a hydrometer is used. A hydrometer measures the specific gravity of a liquid and is graduated to measure the specific gravity of battery electrolyte. The electrolyte in your battery becomes heavier as it is charged, therefore, a higher specific gravity reading indicates a higher charge condition of your battery. The specific gravity reading will range from 1100 for a completely discharged battery to 1260 for a fully charged battery. No amount of overcharging will raise the specific gravity above 1260 on the electric vehicle type battery. Overcharging and undercharging can cause premature failure of a battery. Overcharging destroys the positive plates. Consistent undercharging causes a buckling of the plates.

Do not discard a good battery as being defective because its specific gravity does not show an increase immediately upon applying a charge. Many good batteries require a charging period as long as three hours before they show any increase in specific gravity. Do not charge a battery if the electrolyte temperature could rise above 120 degrees F. This could damage both battery and charger. As a rule of thumb, the electrolyte temperature during normal charging will rise about 25 degrees above the temperature in the charging area.

Failure to keep the battery electrolyte up to the proper level will result in a crumbling (abnormal sulfation) of the plates and cause failure of the batt. Distilled water must be added to the battery regularly to make up for the loss due to evaporation. Prior to charging, the electrolyte level should cover the battery plates. Fill the battery to the proper level only after it has been fully charged.

#### WARNING - HAZARD OF EXPLOSIVE GAS MIXTURE

Batteries being charged or discharged will give off hydrogen gas. If this gas is concentrated, it can cause an explosion. Concentrations of gas may remain for several hours if ventilation is not provided. Do not have any fire in the vicinity and do not tamper with circuits that might cause sparking while charging or discharging batteries.

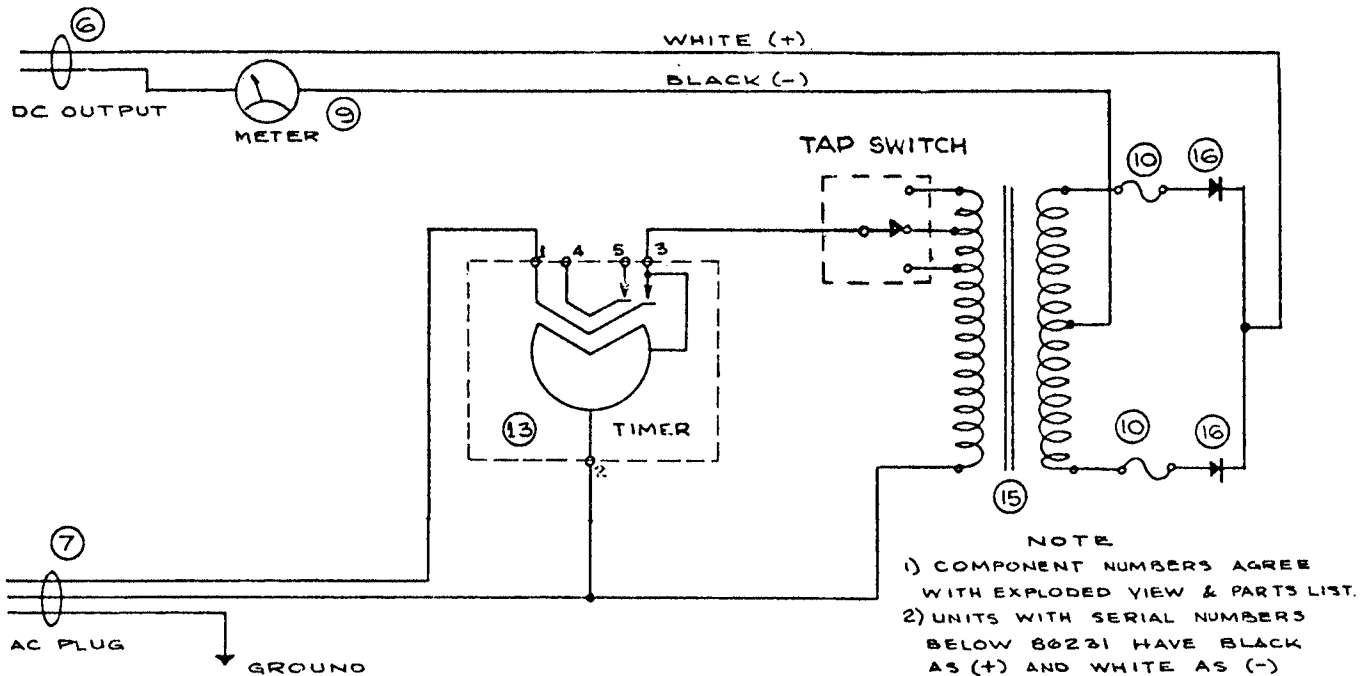
INSPECTION OF BATTERIES AND ASSOCIATED CIRCUITS

An inspection of batteries and associated circuits is required to assure that the batteries are being properly charged. For this inspection we recommend the use of a hydrometer and a continuity tester.

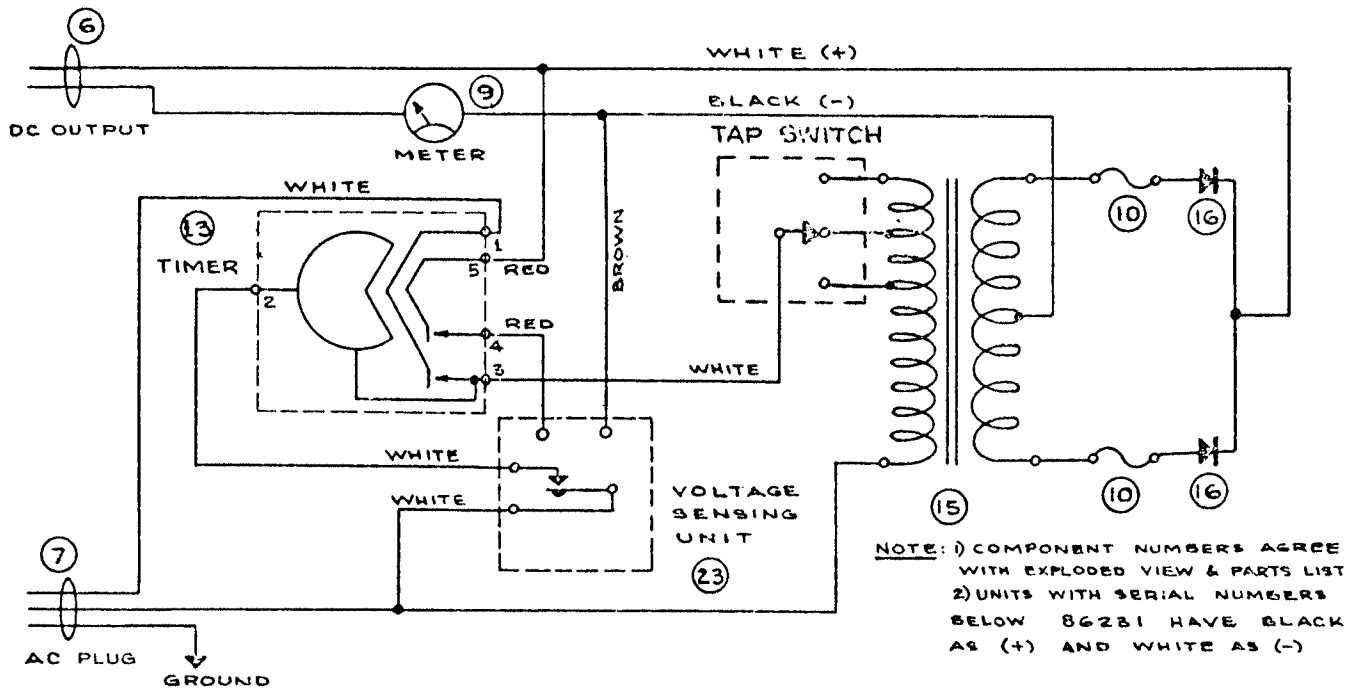
1. Verify that all connections within the unit to be charged are clean and right.
2. Check each battery for loose terminal posts.
3. Test for continuity between all battery terminals and the charging receptacle.
4. Verify that the top of each battery is free of moisture, grease and acid film, which may cause terminal corrosion and current leakage.
5. After the battery has been recharged, test each individual cell in each battery with the hydrometer to verify that all specific gravity readings are within 10 points of each other.
6. Using the hydrometer, pull out acid from a cell and then vigorously expell the acid back into the cell to cause a violent stirring action. Immediately draw out another sample of acid and visually inspect it to see if it contains a brownish sediment (indicates positive plates are deteriorated).
7. When testing battery condition with a hydrometer, always return electorlyte solution to the same cell from which it was removed. DO NOT MIX electrolyte from one cell to another.

CIRCUIT DIAGRAMS

SERIES "A" & "T" CHARGERS



CHRISTIE SERIES "A" BATTERY CHARGERS

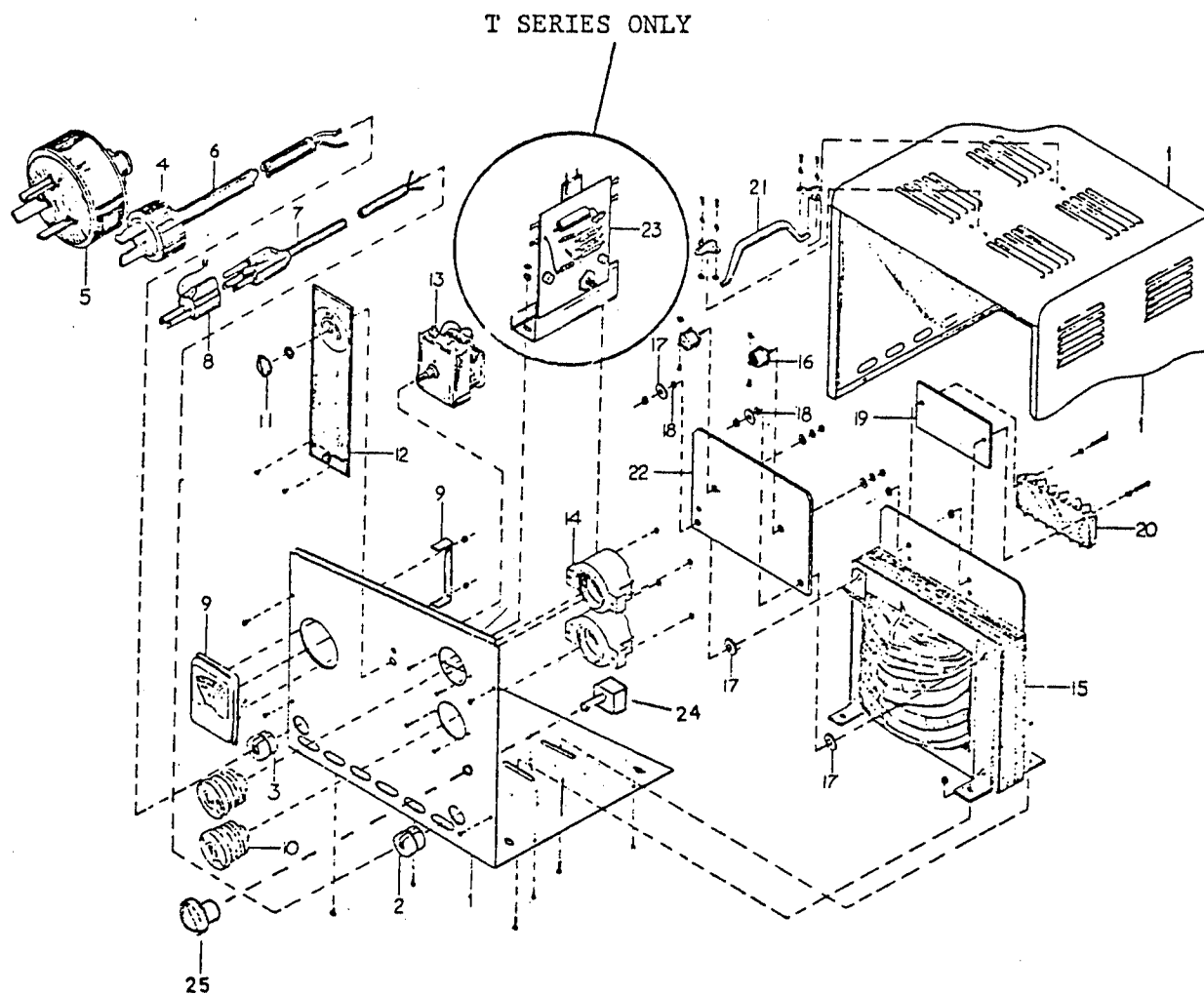


CHRISTIE SERIES "T" BATTERY CHARGERS



PART IDENTIFICATION  
SERIES "A" & "T" CHARGERS

EXPLODED DIAGRAM



Portable Cabinet Shown.

I.D. Numbers of Internal Components are Identical for Portable and Built In Charger.

PARTS LIST

<u>Item</u>	<u>Taylor-Dunn Part No.</u>	<u>Item</u>	<u>Taylor-Dunn Part No.</u>
1 Cabinet		15 Transformer, 24V/20A ("T" Series)	79-630-00
2 Bushing (A-C)	79-530-00	Transformer, 24V/20A ("A" Series)	79-606-00
3 Bushing (D-C)	79-531-00	Transformer, 24V/30A ("T" Series)	79-607-00
4 D-C Plug (2 prongs)	76-001-00	Transformer, 36V/20A ("T" Series)	79-613-00
5 D-C Plug (3 prongs)	76-002-00	Transformer, 36V/20A ("A" Series)	79-612-00
6 Output Cord (no plug)	79-560-00	Transformer, 36V/30A ("T" Series)	79-614-00
Output Cord w/molded plug	79-566-00	Transformer, 48V/20A ("T" Series)	79-620-00
7 A-C Cord and Plug (portable model)	79-570-00		
Molded A-C Assembly (built-in model)	79-575-00	16 Diode, 24/36V	79-720-00
Recessed Male Plug (built-in model)	76-251-00	Diode, 48V	79-724-00
8 Adapter	79-580-00	17 Washer Assembly, 3/4"	97-170-00
9 Ammeter (0-30 amp)	79-851-00	18 Washer Assembly, 3/8"	97-171-00
10 Fuse (30 amp)	79-819-00	19 Mounting Plate	94-325-00
11 Control Knob	79-803-00	20 Terminal Board	79-860-00
12 Instruction Plate	94-321-00	21 Handle Assembly	79-509-00
13 Timer Assembly, 12 hr. ("T" Series)	79-800-00	22 Heat Sink	79-742-00
Timer Assembly, 24 hr. ("A" Series)	79-801-00	23 Voltage Sensing Unit, 24V ("T" Series)	79-810-00
		Voltage Sensing Unit, 36V ("T" Series)	79-811-00
		Voltage Sensing Unit, 48V ("T" Series)	79-812-00
14 Fuse Holder	79-830-00	24 Tap Switch (Low-Med-High)	79-895-00
		25 Knob, (Low-Med-High)	79-896-00

When ordering parts, please specify both serial number and model of charger.

MAINTENANCE PROCEDURES

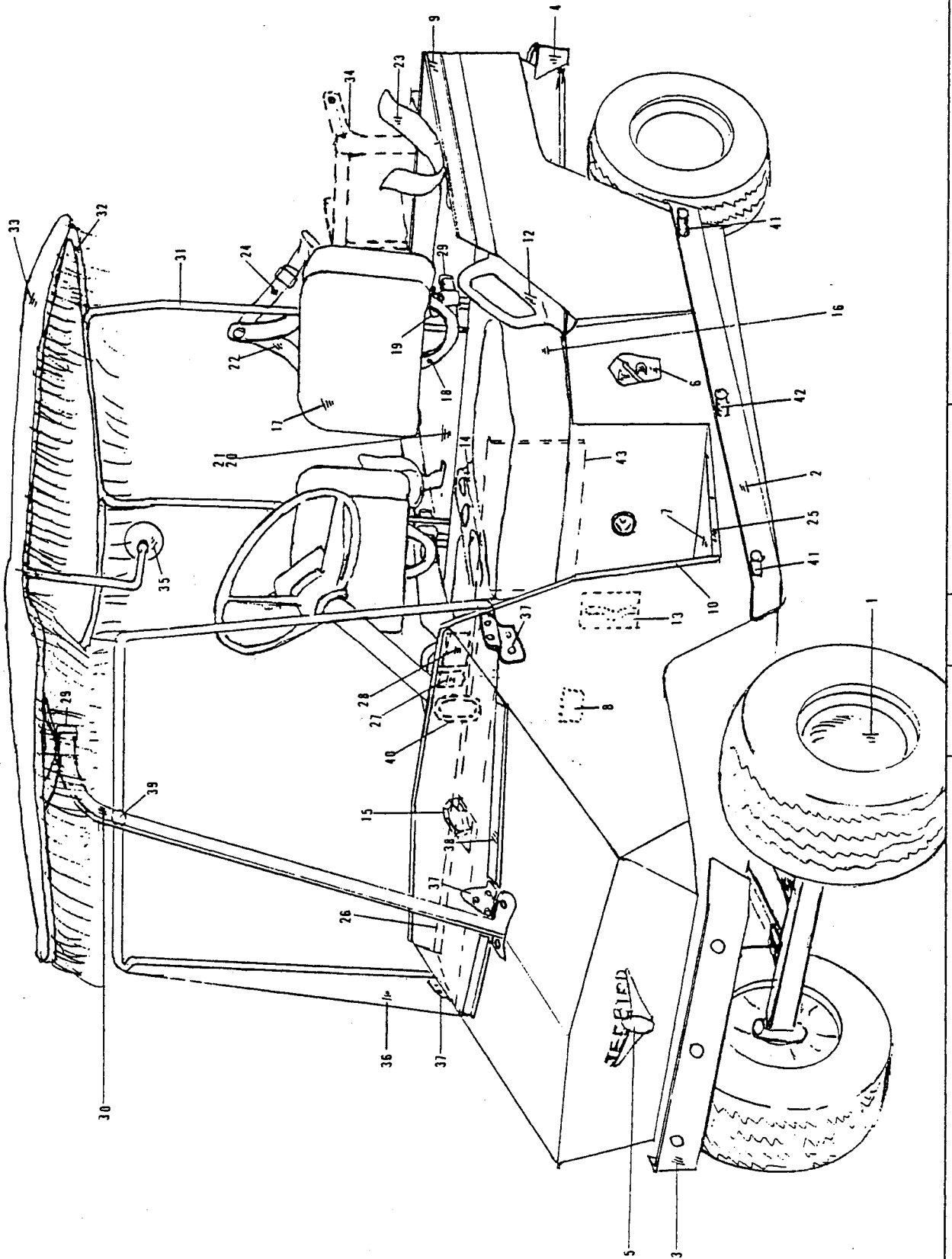
BODY AND TRIM

Your vehicle has been finished with several coats of durable baked on enamel.

It will require the same care as you would give your automobile. The chrome trim is also resistant to corrosion and will require an occasional cleaning.

It is recommended that your vehicle be washed with a mild soap and warm water. For long life a good automotive type of wax will extend the life of the finish and maintain lasting beauty.

For identification of Body and Trim parts available for repair and replacement, refer to the following pages in this section.



SECTION J9  
PAGE 2

LENGTH | QUAN | REVISED DATE | REVISION

BODY & TRIM PARTS - MODEL TEE BIRD

350 SERIES

FIGURE 11

SECTION J9

TAYLOR DUNN MFG. CO.  
2114 V Ball Rd.  
Arlington, Va.



NO. DESCRIPTION

TOL. FRAC. ± DEC. ±

SCALE

DRAWN

BODY & TRIM PARTS  
REFER TO FIGURE 11 - BODY & TRIM PARTS

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
11-1	92-001-00	Wheel Cover - Chrome	4
11-2A	91-920-98	Left Side Bumper - Zinc Plated	1
11-2B	91-920-99	Right Side Bumper - Zinc Plated	1
11-2C	91-916-98	Left Side Bumper - Chrome Plated	1
11-2D	91-916-99	Right Side Bumper - Chrome Plated	1
11-3A	91-920-51	Front Bumper - Zinc Plated	1
11-3B	91-916-51	Front Bumper - Chrome Plated	1
11-4A	91-920-52	Rear Bumper - Cross Bag Rack Only, Zinc Plated	1
			1
11-4B	91-916-52	Rear Bumper - Cross Bag Rack Only, Chrome Plated	1
			1
11-7	98-017-60	Floormat - Foot Parking Brake	1
11-4F	91-918-52	Rear Bumper - Center - Stand Up Bag Rack Chrome Plated	1
11-4G	91-918-98	Rear Bumper - Left Side - Stand Up Bag Rack Chrome Plated	1
11-4H	91-918-99	Rear Bumper - Right Side - Stand Up Bag Rack Chrome Plated	1
11-5	94-203-00	Tee Bird Emblem	1
11-6	94-201-00	Taylor-Dunn Emblem	2
11-7	98-017-50	Floor Mat, Hand Parking Brake	1
11-8	94-371-00	Serial No. Plate - (Please Advise Serial No.)	1
11-9A	94-025-00	Aluminum Trim - Rear Deck - Cross Bag Rack	1
11-9B	94-036-00	Aluminum Trim - Rear Deck - Stand Up Rack	1
11-10	94-034-00	Plastic Trim Strip - 78 Inches Long	1
11-12	90-312-00	Arm Rest - Left Side	1
11-12	90-313-00	Arm Rest - Right Side	1
11-13	94-307-00	Forward-Reverse Switch Plate	1
11-14A	91-400-00	Plastic Accessory Tray - Not Tapered - Used With Tapered Seat Cushions - Up to Ser. No. 23866	1
11-14B	91-402-00	Plastic Accessory Tray - Tapered Sides Used With Reversible Seat Cushions - After Ser. No. 23866	1
11-15	91-508-00	Ash Tray Bracket	1
11-15	91-405-00	Ash Tray	1
11-16A	90-127-XX	Complete Seat Cushion Set (Specify Color) Including 2 Seat Cushions and 2 Back Rest Cushions - Used with 91-400-00 Accessory Tray	1

SECTION J9  
PAGE 4

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
11-16A	90-128-XX	Seat Cushion - Left Side - Tapered (Specify Color) Used with 91-400-00 Accessory Tray. Included In 90-127-XX	1
11-16A	90-129-XX	Seat Cushion - Right Side - Tapered (Specify Color) Used with 91-400-00 Accessory Tray. Included in 90-127-XX	1
11-16B	90-139-XX	Complete Seat Cushion Set (Specify Color) Including 2 Reversible Seat Cushions and 2 Back Rest Cushions. Used with 91-402-00 Accessory Tray	1
11-16B	90-154-XX	Seat Cushion - Left or Right Side (Specify Color) Used with 91-402-00 Accessory Tray. Included in 90-139-XX	2
11-17	90-138-XX	Back Rest Cushion (Specify Color). Included in 90-139-XX	2
11-18C	90-103-97	Back Rest Cushion Support, Non-Adjustable, Right Side	1
11-18A	90-103-98	Back Rest - Adjustable Cushion Support - Left Side	1
11-18B	90-103-99	Back Rest - Adjustable Cushion Support - Right Side	1
11-19	95-901-00	Knob, Seat Lock	2
11-20	90-453-10	Deck Board with Cradle Bag Rack, Belts, & Clips	1
11-21	90-453-00	Deck Board Only for Cradle Bag Rack	1
11-21	90-455-10	Deck Board For Stand Up Bag Rack (With Clips)	1
11-22	91-522-00	Cradle Bag Rack	1
11-23	91-525-00	Bag Shoe	2
11-24	91-540-10	Belt Set (Cradle or Stand Up Bag Rack)	1
11-25	94-027-00	Aluminum Trim Strip - Floor Mat	2
11-26	94-026-00	Aluminum Trim Strip - Cowl Shelf	1
11-27	94-308-00	Directional Control Decal	1
11-28	94-302-00	Warning Decal	1
11-29	95-911-00	Plastic Cap - 1 In. Square	3
11-30	91-034-10	Front Top Support	1
11-31	91-036-00	Rear Top Support	1
11-31	96-119-00	"L" Bolt for Rear Top Support	4
11-32	91-031-00	Top Frame	1
11-33A	91-120-00	Surrey Top with Fringe	1
11-33B	91-150-00	Fiberglass Top	1
11-33B	98-451-00	Weatherstrip for Fiberglass Top	4 Ft.
11-34	91-524-00	Stand Up Bag Holder Dipped White	1
11-34	98-019-00	Bag Rack Mat for Stand Up Bag Rack	1
11-34	94-037-00	Aluminum Trim Strip - Stand Up Bag Rack Mat	1
11-35	92-203-00	Rear View Mirror	1
11-36A	90-825-00	Rigid Plastic Windshield	1
11-36B	90-824-00	Flexible Plastic Windshield with Fasteners	1
11-36B	85-221-00	Extension Spring for Flexible Windshield 11/16 O.D. x 3	2
11-37	90-826-00	Rigid Windshield Mounting Bracket Set	1

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
11-38	98-314-00	Rubber Lip Seal Channel for Rigid Windshield	2
11-39	98-616-00	Rubber Windshield Bumper	1
11-40	98-613-00	Rubber Grommet - Steering Column	1
11-41	16-205-00	Spacer - Side Bumper - Front and Rear - Plated	4
11-42	16-206-00	Spacer - Side Bumper - Center - Plated	2
11-43	30-717-00	Battery Heat Shield	1

PARTS NOT ILLUSTRATED

50-226-00	Battery Rod - 15 1/4 In.	2
50-235-00	Battery Rod - 21 3/4 In.	4
97-907-00	Tow Bar	1
50-112-00	Seat Support Rod	1
96-625-00	Clamp for Seat Support Rod	1
50-225-00	Wiring Harness Support Rod	1
91-534-10	Detachable Vertical Bag Rack	1
91-262-00	Cowl Assembly - Diamond Plate, Including Shelf & Switch Panel	1
91-263-00	Cowl Assembly - Smooth Skin, Including Shelf and Switch Panel	1
91-266-00	Left Side Panel - Smooth Skin	1
91-267-00	Right Side Panel - Smooth Skin	1
91-268-00	Rear Panel - Diamond Plate - Cross Bag Rack	1
91-269-00	Rear Panel - Smooth - Cross Bag Rack	1
91-270-00	Rear Panel - Diamond Plate - Stand Up Bag Rack	1
91-271-00	Rear Panel - Smooth - Stand Up Bag Rack	1
91-272-00	Rear Section Assembly - Diamond Plate Cross Bag Rack, Including Kick Panel, Side Panels, Rear Panel	1
91-273-00	Rear Section Assembly - Smooth Skin - Cross Bag Rack, Including Kick Panel, Side Panels, Rear Panel	1
91-274-00	Rear Section Assembly - Diamond Plate - Stand Up Bag Rack, Including Kick Panel, Side Panels, Rear Panel	1
91-275-00	Rear Section Assembly - Smooth Skin - Stan Up Bag Rack, Including Kick Panel, Side Panels, Rear Panel	1
91-043-00	Top Frame (Northwest and Surrey Top (4) Psgr.)	1
91-036-50	Rear Top Support (Northwest and Surrey Top(4) Psgr.),	1
91-103-00	Surrey Top Cover With Fringe (4) Psgr.)	1
91-104-00	Northwest Top Cover and Sides (Incl. Hardware)	1 Set
98-617-00	Gasket - Front Support to Cowl (Used With Front Top Support)	1
90-105-00	Seat Back and Armrest Frame	1
90-106-00	Rear Seat Step	1
90-156-99	Seat Cushion - Rear Seat	1
90-157-99	Seat Back - Rear Seat	1
90-453-00	Deck Board - Rear Seat	1
98-614-00	Grommet, Rubber Bumper	4

FASTENERS

USED WITH I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
11-2,4	88-102-17	3/8 NC x 2½ Carriage Bolt	3,3
11-3,4	88-102-11	3/8 NC x 1 Carriage Bolt	3,3
11-2,3,4	88-109-87	3/8 NC Fastite Nut	3,6,3
11-5,6	88-557-91	1/8 Push - On Nut	3,6
11-8	88-807-01	#4 x 3/16 Drive Screw	2
11-9A, 9B, 15, 25,26,34	88-737-08	3/16 D. x 5/8 Alum. Pop Rivet	7,12,2, 7,6,4
11-12	88-082-11	5/16 NC x 1 Carriage Bolt	4
11-12	88-088-62	5/16 Lock Washer	4
11-12	88-089-80	5/16 Hex Head Nut	4
11-13	88-727-06	5/32 D. x ½ Alum. Pop Rivet	4
11-16	88-837-13	#14 x 1½ Pan Head Sheet Metal Screw	8
11-16,17,43	88-837-11	#14 x 1 Pan Head Sheet Metal Screw	13
11-22,23,34	88-068-60	½" Cut Washer	4,4,14
11-22,23	88-069-88	½ NC x 5/16 Prong Tee Nut - Plain	8
11-22,23,36A	88-065-09	Truss Head Machine Screw, 1/4 NC x 3/4	4,4,6
11-30	88-100-13	3/8 NC x 1-1/4 Hex Head Screw	2
11-30	88-108-62	3/8 Lock Washer	2
11-31	88-109-87	3/8 NC Fastite Nut	8
11-31	88-108-61	3/8 Sae Washer	8
11-32	88-080-14	5/16 NC x 1-1/2 Hex Head Bolt (Front)	2
11-32	88-089-81	5/16 NC Lock Nut (Front)	2
11-33B	88-065-08	1/4 NC x 5/8 Truss Head Screw	4
11-33B,36A	88-069-87	1/4 NC Fastite Nut	4,6
11-34	88-065-13	1/4 NC x 1-1/4 Truss Head Screw	7
11-34	88-069-80	1/4 NC Hex Nut	7
11-4F,34,36A	88-069-83	1/4 NC Acorn Nut	2,7,6
11-36A	88-065-06	1/4 NC x 1/2 Truss Head Screw	6
11-36A	88-068-61	1/4 SAE Washer	6
11-36A	88-068-62	1/4 Lock Washer	6
11-32	88-101-16	3/8 N.C. x 2 Hex Head Bolt, Heat Treated (Rear)	2
11-32	88-109-81	3/8 N.C. Hex Lock Nut (Rear)	2



CURRENT - REPLACE WITH UPDATED  
COPY & LIST OF CHANGES  
IN FRONT

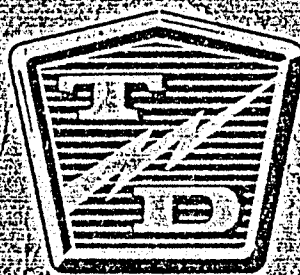
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# SAMPLE

TEE-BIRD ONLY

MAINTENANCE INSTRUCTIONS  
And PARTS LIST MANUAL SUPPLEMENT  
For Models TEE BIRD GT-370 & GT-371  
Models 2372R & 2373R - Serial No. 35708 Up

Use with manual for TEE BIRD 1972 Up  
or with manual for Models 2362R & 2363R Up



## Taylor-Dunn

2114 West Ball Rd., Anaheim, Calif. 92804

(714) 956-4040 - Telex 65-5393

Mailing Address: P.O. Box 4240, Anaheim, Calif. 92803

QUALITY ELECTRIC VEHICLES SINCE 1949

# OBSCLETE

DATE

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## MAINTENANCE PROCEDURES, SERVICE AND ADJUSTMENTS, PARTS ILLUSTRATIONS AND LISTINGS

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STEERING WORM ASS'Y DISSAMBLE/ASSEMBLE	J1A	FIGURE 4A

\* REFER TO MAINTENANCE INSTRUCTIONS AND PARTS LIST MANUAL FOR TEE BIRD,  
1972 & UP, SERIAL NO. 23000 & UP OR TO MANUAL FOR MODELS 2362R & 2363R,  
SERIAL NO. 26001 & UP FOR SECTIONS MARKED \*.

INSPECTION, SAFETY AND INTRODUCTION  
ARRIVAL INSPECTION CHECKLIST

Visual Inspection should be made to determine that the truck has remained in good condition during transit. If any damage is found, the details should be noted on the delivery receipt immediately. After delivery the truck should be most carefully checked for HIDDEN DAMAGE. Any concealed damage not noted on the delivery receipt should be reported, in writing, to the delivering carrier within 48 hours.

The following checklist has been prepared to aid you during arrival and inspection of your vehicle.

- A. Open all packages and examine any accessories which may be shipped detached from vehicle.
- B. Examine wiring for visible evidence of damage. Check all connections to insure that none have loosened during transit.
- C. Check all battery connections and electrolyte level in each cell.
- D. Inspect battery charger in accordance with manufacturers installation instructions.
- E. Check tires for damage and proper inflation. Check wheel lugs to insure their being tight.
- F. If vehicle is equipped with hydraulic brakes, check hydraulic lines for evidence of damage.
- G. Check brake fluid level in master cylinder.
- H. Examine entire vehicle for damage such as dents or cracks.
- I. Check operation of controls to see that they are working freely.

Upon completion of the Visual Inspection, an operational test should be made after reading the remainder of Section A and operating instructions contained in Section B.

INSPECTION, SAFETY, AND INTRODUCTION

SAFETY

The safe and satisfactory use of any vehicle is a responsibility shared by many persons. As the manufacturer, we feel that it is our responsibility to emphasize vehicle characteristics and make safety recommendations regarding those characteristics. That is the primary purpose of this portion of the manual.

Persons who operate this vehicle need to be aware of, and to observe, the safe driving rules established by local authorities, and need also to be aware of the vehicle operating characteristics and safety recommendations of the manufacturer, to assist them in exercising the judgment necessary to prevent injury to themselves or to others.

Persons who service and maintain the vehicle need to be aware of how their activities relate to safe vehicle operation, and of potential hazards involved in the service and maintenance processes, to assist them in applying sensible judgment to those processes.

STEERING This vehicle has a very small minimum turning radius and high ratio steering gear. These are essential for low effort steering at slow speeds.

These characteristics, so desirable at slow speeds, require that great care be exercised at high speeds to avoid turning so sharply that one or more wheels lose contact with the ground, or that the vehicle is caused to overturn. Be especially careful while traveling down-hill, and avoid traveling across the face of a hill unless there is a cart path. Avoid sharp turns, even at slow speeds, while on a hill.

SPEED This vehicle is designed to attain its maximum safe operating speed on level ground. That speed can easily be exceeded when traveling down-hill. If this is allowed to occur, vehicle stability and braking performance become unpredictable. Do not exceed, under any conditions, the maximum speed the vehicle can obtain on level ground.

CONTROLS Bring the vehicle to a complete standstill before operating the forward/reverse switch to change direction of travel. Operation of this control while the vehicle is in motion can result in complete loss of power and brakes. Do not use the accelerator to hold the vehicle at a standstill on an incline. This can cause complete power loss. Use only the brakes to hold the vehicle at rest while on a hill.

BRAKES The brake system relies on contact of rear tires with the ground for effectiveness. As tire to ground contact is reduced, braking effect is reduced. While driving, the operator must consider terrain, speed, and steering maneuvers to prevent tires from losing contact with the ground, with consequent reduction of braking action.

MAINTENANCE Many operating characteristics relate to maintenance in ways which are not readily obvious. Those characteristics most closely related to vehicle operating safety are indicated in Sections D and E.

Also to be considered is the safety of personnel who perform service and maintenance duties. Two characteristics need special emphasis.

1. This electric vehicle does not "idle" noisily, is never "out of gear", and is set into motion whenever the battery to motor circuit is closed, intentionally or otherwise. Whenever practical, disconnect one or both battery leads to avoid unintentional starting of the motor during servicing and maintenance.

2. Batteries emit gases which can be explosive, especially while they are being charged. Personnel who are involved with servicing vehicles, or maintaining vehicles, need to be made familiar with this hazard. A detailed explanation is contained on Pages 1 and 3 of Section J8.

INSPECTION, SAFETY, AND INTRODUCTION  
INTRODUCTION

MODEL NUMBER

The following Model Numbers are covered by this manual supplement in combination with earlier manuals as indicated in Table of Contents and on cover.

Models GT-370 and GT-371 - Golf Car, Models 2372R, 2373R - Pickup Truck.

VEHICLE APPLICATION

The Model GT-370 or Model GT-371 is designed as a golf cart for carrying two people and two golf bags. It is designed to be driven in and around the golf course, both on grass and paved surfaces. It is not designed to travel in excess of 15 M.P.H. under any conditions. Speeds in excess of this can cause motor damage and unstable steering.

The Model R Pickup is designed to be driven on smooth surfaces in and around industrial plants, institutions, motels, mobile home parks and resorts. It is not designed to be driven on the public highways. It is not designed to go in excess of 14 M.P.H. on level surfaces or downhill. Speeds in excess of this may result in difficulty in steering. It is not designed to be towed in excess of 14 M.P.H..

SERIAL NUMBER

The Serial Number of your unit is stamped into the top of the left main frame tubing member, just below the deck board on the left side of the cart. The Model Number and Serial Number are on a nameplate riveted to the kick panel below the passenger seat. In ordering parts or referring to your unit, please use these numbers. Replacement parts can be purchased directly from your local authorized Taylor - Dunn dealer.

## OPERATING INSTRUCTIONS

The controls on your Taylor-Dunn vehicle have been designed and located for convenience of operation and efficient performance. Before driving your vehicle for the first time, familiarize yourself with each of the controls. Read the following instructions and with power OFF, operate each control.

### STEERING

The steering system is of the automotive type. Turn the steering wheel to the right (or clockwise) for a right turn and left (or counterclockwise) for a left turn.

### KEY LOCK

Your vehicle is equipped with a keyed lock located on the corner of the forward/reverse switch. It is designed to lock the switch in the neutral position only. The key will remove from the lock in the locked position (neutral) only.

### PARKING BRAKE

The hand operated parking brake, on models so equipped, is located near the center of the floor board. It is much easier to apply or release when the service brake foot pedal is depressed firmly. To engage parking brake, grasp handle and pull rearward as far as possible. To release, push handle all the way forward. Avoid putting the vehicle in motion while the parking brake is applied.

The foot operated parking brake, on models so equipped, operates the same brake band as does the hand operated parking brake. To engage park brake, step firmly on park brake pedal. To release park brake pedal, pull brake pedal release knob and the park brake pedal will return to the full release or off position.

The seat operated park brake, on models so equipped, is designed to automatically apply the park brake anytime the operators seat is unoccupied. When the seat is depressed, the park brake is automatically released; provided the hand or foot operated park brake is released.

CAUTION: Never leave the vehicle on a hill or incline without applying the foot or hand operated park brake since depressing the drivers seat will automatically release the park brake and could result in an accident.

### SERVICE BRAKE

The brake pedal is designed and located for right foot operation. It is the pedal located to the left of the accelerator pedal. It functions the same as the brake pedal in your automobile. Depressing the pedal applies the braking action. The greater the effort applied to the pedal with your foot, the greater the braking action to your vehicle. Removing your foot from the pedal allows immediate release of the braking action.

### FORWARD-REVERSE SWITCH

The forward-reverse switch is located to the right of, and below the drivers seat and can be operated only when the key is in the unlocked position. To place the handle in the FORWARD position, move it downward. To place the handle in the REVERSE position, move it upward.

CAUTION: The forward-reverse switch serves the same purpose as the transmission in your automobile. Treat it with the same respect and care. DO NOT SHIFT from forward to reverse or vice-versa while the vehicle is in motion. Shifting while in motion, especially near top speed, causes great strain to your entire vehicle and will eventually cause severe damage.

#### ACCELERATOR PEDAL

The accelerator pedal is located to the right of the brake pedal. It is designed for right foot operation similar to your automobile. Depressing the pedal turns the power on to the motor. It also controls the amount of power delivered to the motor in 5 steps. When driving your vehicle you will be able to feel the 5 steps of power, with full power when accelerator is fully depressed and minimum power when only partially depressed. You will have the same control of power in both directions of travel. Your forward-reverse switch determines the direction of travel and your accelerator pedal controls the speed.

#### HORN BUTTON (Optional)

The horn button is located on the switch panel to the left of the steering column. Depressing the button sounds horn. Releasing button will immediately silence horn.

#### LIGHT SWITCH (Optional)

The switch for operating headlights and taillights is located on the switch panel to the left of the steering column. The On-Off positions are labeled.

#### BATTERY CHARGER

Refer to Section J8 for proper instructions to operate your battery charger.

#### SPECIAL ACCESSORIES

Refer to the appropriate section of this manual for separate operating instructions pertaining to any special feature or accessory your vehicle may have.

### OPERATING YOUR VEHICLE

**CAUTION:** Before operating vehicle, apply service brake as necessary to preclude unexpected movement of vehicle.

On vehicles equipped with foot operated park brake, pull park brake release knob and observe that the park brake pedal returns to the full release or off position.

On vehicles equipped with the hand operated park brake, release park brake by pushing hand lever all the way forward.

To put your vehicle into operation, unlock forward-reverse switch by turning keyed lock counterclockwise. Select direction you wish to travel by moving the handle of forward-reverse switch into position. Slowly depress accelerator pedal until vehicle is moving at the desired speed. Steer vehicle as required utilizing the foot brake and accelerator to control your speed as desired. For greatest efficiency, it is recommended that you travel at the fastest speed that you can safely maintain. You will find that your vehicle will consume almost as much current at low speed as it does at higher speeds. Therefore, without taking any unnecessary risk traveling at the faster speed will deliver more miles per battery charge than continual use in the lower speed range.

**CAUTION:** Do not "hold" vehicle at a standstill on a hill or incline using your accelerator only. Continued "stalled" condition as described will damage motor and electrical controls. Use either your service brake or park brake to hold the vehicle on a hill safely.

When you leave your vehicle, it is best to always place forward-reverse switch in neutral position. Set park brake to prevent vehicle from rolling free, and lock and remove key.

Drive safely and enjoy your Taylor- Dunn vehicle.



## TAYLOR-DUNN LIMITED 1 YEAR WARRANTY (GOLF VEHICLES)

TAYLOR-DUNN MANUFACTURING COMPANY (TDMC), warrants each new Tee-Bird golf vehicle for one (1) year according to the following terms:

This warranty is limited to the original retail purchaser only and commences on the date of original retail purchase.

Any part of the Tee-Bird golf vehicle manufactured or supplied by TDMC and found in the reasonable judgment of TDMC to be defective in material or workmanship will be repaired or replaced at the business location of an authorized Tee-Bird golf distributor without charge for parts and labor. The Tee-Bird golf vehicle (including any defective part) must be delivered to an authorized Tee-Bird distributor within the warranty period.

All costs of a service call regarding warranty-related repairs and/or replacements on the Tee-Bird golf vehicle at the owners location, the labor performed by the distributor at the owner's location, all costs of delivering the Tee-Bird golf vehicle to the distributor for warranty work and all costs of returning the Tee-Bird golf vehicle back to the owner after repair or replacement will be paid for by the owner. Proof of purchase will be required by the authorized Tee-Bird golf distributor to verify any warranty claim.

All warranty work must be performed by an authorized Tee-Bird distributor.

TDMC does not provide a warranty related to tires, batteries, chargers, or other parts not of their manufacture as such parts are usually warranted separately by their respective manufacturers.

This warranty does not apply to service items subject to normal wear such as brake linings, seals, belts, light bulbs and fuses.

This warranty does not cover any Tee-Bird golf vehicle that has been subject to misuse, neglect, negligence, accident, or operated in any way contrary to the operating or maintenance instructions as specified in the TDMC operator's manual. The warranty does not apply to any Tee-Bird golf vehicle that has been altered or modified so as to adversely affect the vehicle's operation, performance or durability or that has been altered or modified so as to change its intended use. In addition, the warranty does not apply to repairs made necessary by normal wear, or by the use of parts or accessories which in the reasonable judgment of TDMC are either incompatible with the Tee-Bird vehicle or adversely affect its operation, performance or durability.

Repairs or replacements qualifying under this warranty will be provided by an authorized Tee-Bird distributor subsequent to delivery of the golf vehicle to the distributor's place of business. TDMC's responsibility in respect to claims is limited to making the necessary repairs and/or replacements. No claim of breach of warranty shall be cause for cancellation of the contract of sale of any Tee-Bird golf vehicle.

TDMC assumes no liability or responsibility for loss of use of the Tee-Bird golf vehicle, loss of time, inconvenience, or other damage, consequential or otherwise, including, but not limited to, all costs of delivering the Tee-Bird golf vehicle to the distributor and all costs of returning the vehicle back to the owner, mechanic's travel time, telephone or telegram charges, trailering or towing charges, rental of a like vehicle during the time warranty repairs are being performed, travel, lodging, loss or damage to personal property, or loss of revenue.

TDMC also reserves the right to change or improve the design of any vehicle without assuming any obligation to modify any TDMC vehicle previously manufactured.

All implied warranties are limited in duration to the (1) one year warranty period. Accordingly, any such implied warranties

including merchantability, fitness for a particular purpose, or otherwise, are disclaimed in their entirety after the expiration of the one (1) year warranty period. TDMC's obligation under this warranty is absolutely and exclusively limited to the repair and/or replacement of defective parts, and TDMC does not assume, or does not authorize anyone to assume for them, any other obligation.

This warranty applies to all TDMC golf vehicles sold in the United States.

### WARRANTY SERVICE

To make a claim under this warranty, immediately contact an authorized Tee-Bird distributor after realizing a problem exists. We recommend having the warranty work performed by the distributor who originally sold you the vehicle; however, warranty work can be obtained from any authorized Tee-Bird distributor. Remember, your Tee-Bird must be delivered to an authorized distributor within the warranty period, and all warranty work must be performed only by an authorized Tee-Bird distributor. Your proof of purchase will be required by the dealer to verify any warranty claim.

### Examples of Items Not Covered by Warranty

Provisions of the Warranty will not apply to:

Normal service requirements occurring during the warranty period, such as adjustment and cleaning or wear of a drive belt, drive chain, brake or rheostat.

Normal service work over and above the repair and replacement of defective parts. Vehicles subject to misuse, neglect, negligence, or accident.

Vehicles that have been altered or modified so as to adversely affect their operation, performance or durability or to change their intended use.

Repairs made necessary by the use of parts or accessories which are either incompatible with the vehicle or adversely affect its operation, performance or durability.

Vehicles not operated or maintained in accordance with the instructions in the Tee-Bird Operator's Manual.

Periodic checking, lubricating the vehicle or service check-up.

All costs of delivering the vehicle to the distributor and all costs of returning the vehicle back to the owner, mechanic's travel time, trailering or towing charges, or rental of a like vehicle during the time warranty repairs are being performed.

The warranty applies only to the original retail purchaser. Second-owner or subsequently owned vehicles are not covered under warranty.

### Owner's Obligation and Responsibility

Normal maintenance service and replacement of service items are the responsibility of the owner and as such are not considered defects in material or workmanship within the terms of the warranty. Individual operating habits and usage contribute to the need for maintenance service.

Consult with your authorized Tee-Bird distributor for advice on proper maintenance and care of your golf vehicle. Proper maintenance and care will assist in keeping your overall operating cost at a minimum.

To assure warranty coverage, it is the owner's responsibility to maintain all components in proper adjustment and to service the vehicle as specified in the Tee-Bird Operator's Manual. It is the owner's responsibility to provide proper lubrication for all components and provide correct recommended battery maintenance, to maintain the battery liquid level and charge as specified, as well as maintain the correct pressure in the tires of the vehicle.

A. PRESSURE GUN GREASE		NO. OF PLACES	FREQUENCY
*	1. Ball Joints	6	3 Month
*	2. Front Wheel Hub	2	3 Months
*	3. Front Wheel Spindle	2	3 Month
*	4. Master Control Switch (See Illustration)		
	5. Brake Linkage . . . . .		Lifetime
	6. Accelerator Linkage . . . . .		Lubrication
	7. Steering Worm - Fill to		
	8. Grease Level Hole	1	1 Year

B. ALL PURPOSE ENGINE OIL			
*	20- Linkage Pivot Points	6	1 Month

C. POWDERED GRAPHITE			
	Key Lock	1	1 Year

D. SAE 20 OIL-Axle & Differential			
**	42. Level Check	1	(See Below)

\*\*\* Change Oil - Power Traction 3 Year

a. Remove Drain Plugs 41 & 43, Level Plugs 40 and 42, Fill Plug 44.

b. Drain Oil, Replace 41 & 43.

c. Add Oil by 44 to level of 42

d. Add oil by 40 to  $\frac{1}{2}$ " below 40

e. Replace 40, 42, 44

\*\*\* Change Oil - Belt Drive 3 Year

a. Remove Drain Plug 43, Level Plug 42 and Fill Plug 44

b. Drain oil, replace 43

c. Add oil by 44 to level of 42

d. Replace 44

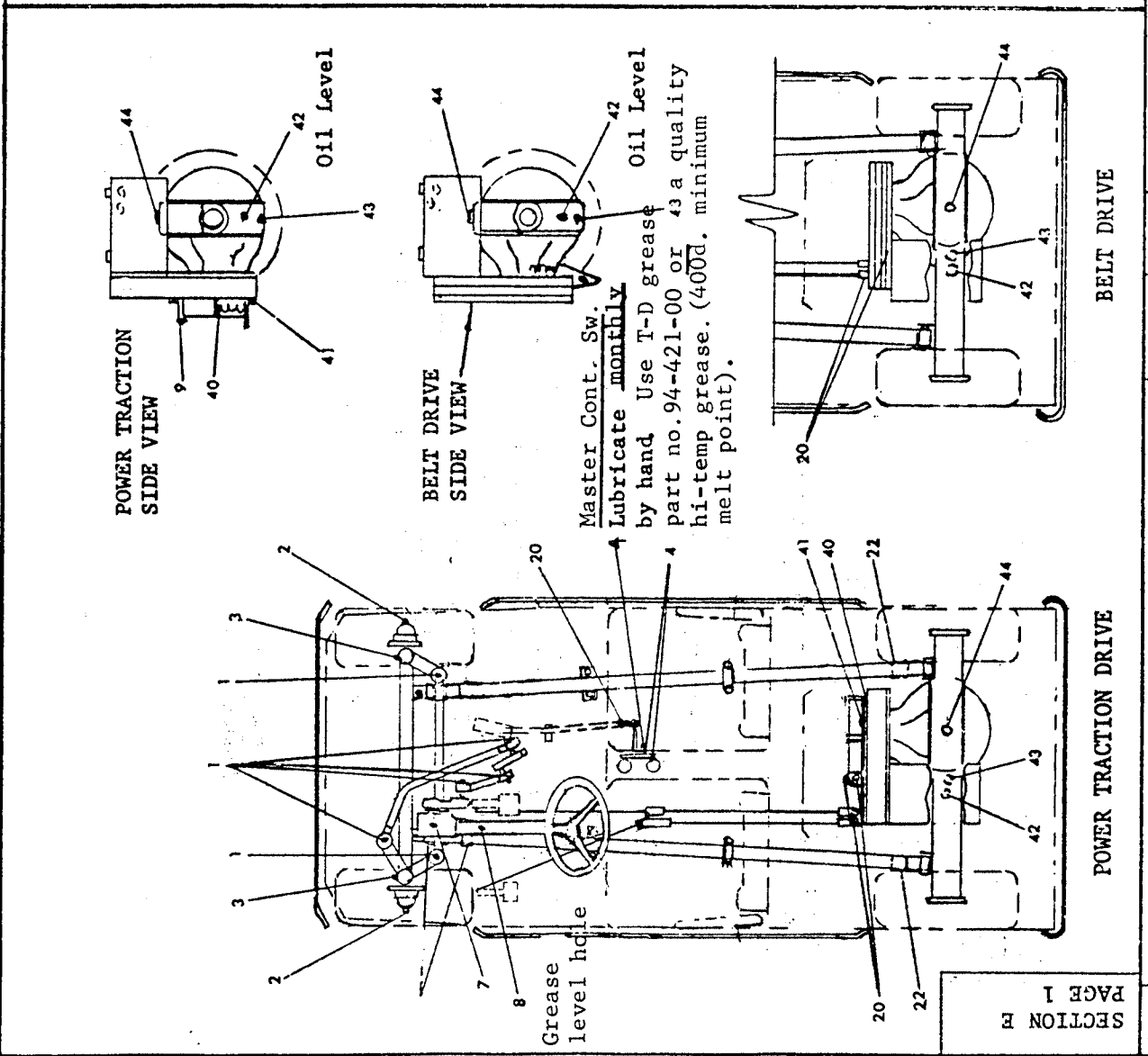
  

\*\* Check level whenever oil leakage is evident.

\*\*\* Or after service work performed

\* Items related to safety recommendations

SECTION E  
PAGE 1

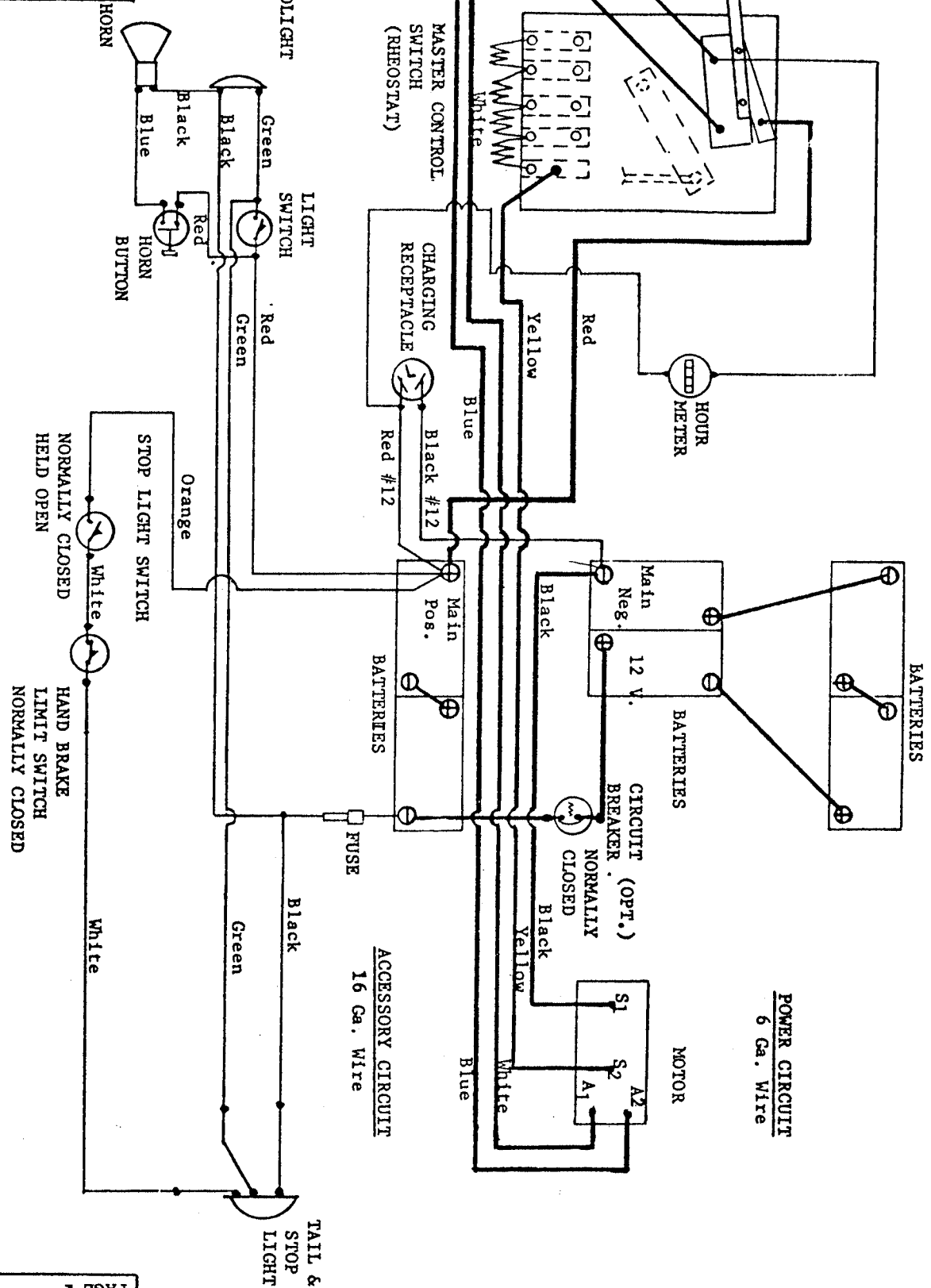


NO. DESCRIPTION		LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. + DEC. -					
SCALE NONE					
DRAWN BY REA					
DATE 3-23-77					

FIGURE 1		LUBRICATION DIAGRAM		TAYLOR DUNN MFG. CO. 2114 West Ball Rd. Anaheim, Calif.
SECTION E		MODEL TEE-BIRD		

SECTION G  
PAGE 1



POWER CIRCUIT  
6 Ga. Wire

NO.	DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
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TOL. FRAC. ±	DEC. ±				
SCALE	none				
DRAWN BY	C.G.	FIGURE 2			
DATE	10-22-75	SECTION G			
		WIRING DIAGRAM GT-370 AND GT-371 2372R AND 2373R			



TAYLOR DUNN MFG. CO.  
2114 West Ball Rd.  
Anaheim, Calif.

SUGGESTED SPARE PARTS LIST

The suggested spare parts list contained in the Model Tee Bird, 1972 & Up is valid for Models 370 GT and 371 GT, except as follows:

PARTS'NOT USED'IN GT-370 & GT-371, 2372R & 2373R

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION
5A-138	85-233-00	Spring-Belt Drive Brake Return
7-9	96-772-00	Clevis Pin
9-A11	All Parts	Sliding Bar Switch

PARTS'USED'IN GT-370 & GT-371, 2372R & 2373R, NOT LISTED IN SUGGESTED SPARE PARTS

LIST OF 1972 & UP SERVICE MANUAL, OR IN MANUAL FOR MODELS 2362R & 2363R.

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	1-20 CARTS SUGGESTED QUANTITY
7-5	85-233-00	Spring - Accelerator Return (2 Req.)	4
7-26	85-270-00	Spring - Brake Return	2
11-10	94-035-00	Plastic Cowl Trim - Black (Specify Length Desired)	1
4-221	86-003-00	Front Shock Absorber	2
4-229	98-753-00	Rubber Cushion, Frame to Spring	4
4-230	91-511-00	Score Card Holder, Black Plastic	2
7A-1	85-280-00	Spring, extension-seat brake lever ass'y.	1

MAINTENANCE, SERVICE, AND PARTS LIST  
FRONT AXLE, STEERING, TIRES, AND SUSPENSION  
REFER TO FIGURE NO. 4

MAINTENANCE PROCEDURES

Refer to Manual for Tee Bird, 1972 & Up or to Manual for Models 2362R & 2363R for notes on Maintenance of Axle, Steering and Suspension, and Tire Care.

The steering idler in the Models GT-370, GT-371, 2372R & 2373R rotates on self lubricating bearings mounted on a corrosion resistant shaft. No lubrication is necessary. Should the bearings become worn, they are easily replaced.

SERVICE AND ADJUSTMENT

Procedures shown in the Tee Bird, 1972 & Up Manual, or the Model 2362R & 2363R Manual apply also to the GT-370 and GT-371.

Procedures related to the servicing of those components of the GT-370, GT-371, 2372R and 2373R which are not contained in the earlier Manual are as follows:

Replacement of Steering Idler Bushings

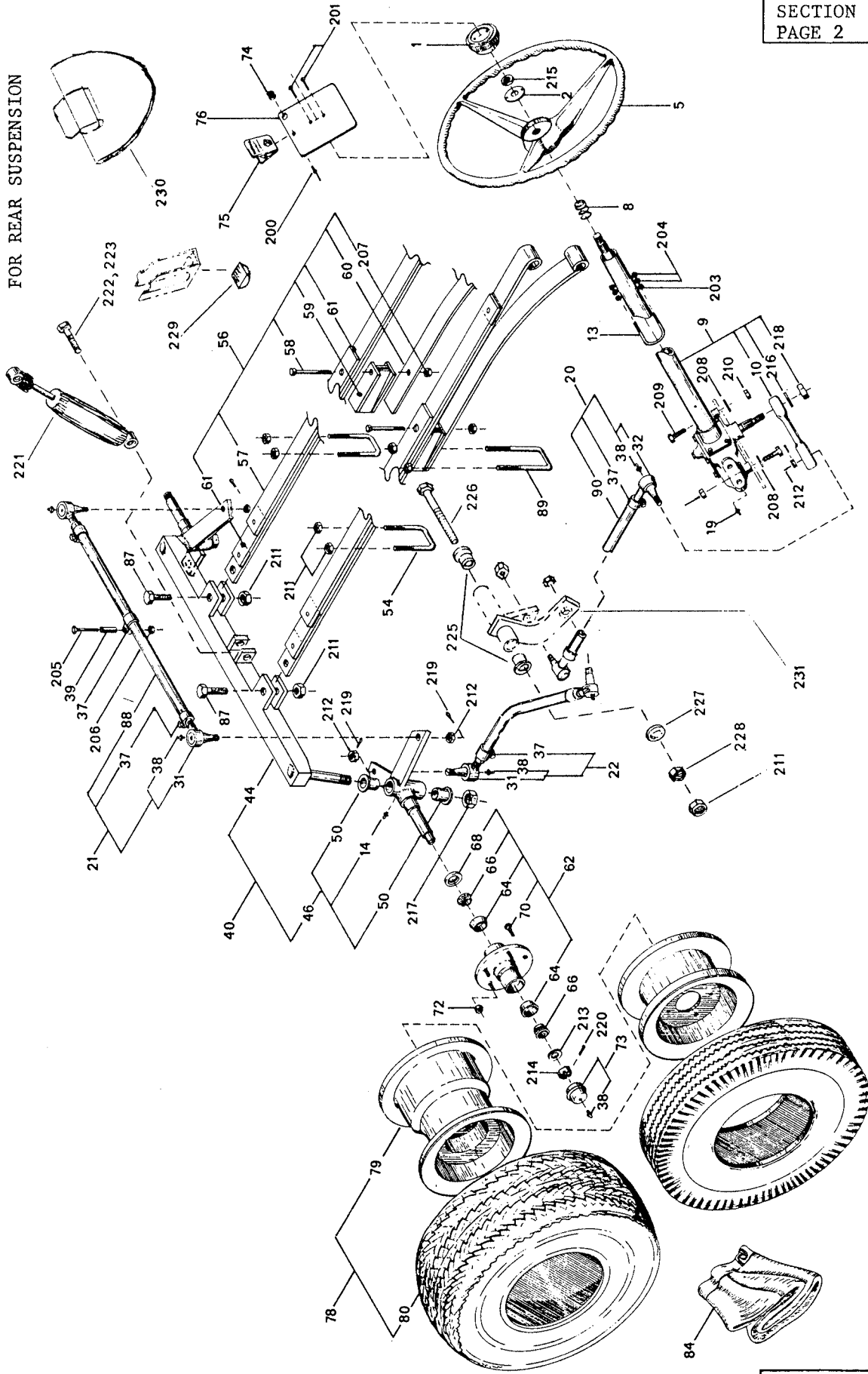
1. Remove steering idler shaft lock nut.
2. Unscrew shaft from inner nut, and remove shaft bushings, washer, and inner nut.
3. Reassemble in reverse order, with the shaft head and lock nut on the out-board sides of the chassis members which retain the assembly, and with the washer between the inboard nut and the bushing.

PARTS LIST

For Model GT-370/GT-371, refer to the following pages in this Section for all items except Drive Axle, Wheels and Tires. Those items are covered in the basic Manual for Model GT-360/GT-361.

For Model 2372R/2373R, refer to the following pages in this Section for all items except Drive Axle, Wheels and Tires. Those items are covered in the basic Manual for Model 2362R/2363R.

SEE SECTION J2  
FOR REAR SUSPENSION



SECTION J1  
PAGE 2

LENGTH QUAN. REVISED DATE REVISION

FRONT AXLE, TIRES, STEERING, AND SUSPENSION  
MODELS GT-370 AND GT-371, 2372R AND 2373R

TAYLOR DUNN MFG. CO.  
2114 West Ball Rd.  
Anaheim, Calif.

FIGURE 4  
SECTION J1

NO. DESCRIPTION

TOL. FRAC. DEC. 1

SCALE NONE

DRAWN BY REA

DATE 1-23-72

FIGURE NO. 4  
FRONT AXLE, WHEELS, AND STEERING

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
## 4-1	19-004-11	Cap - Score Card Spacer (not used with plastic score	1
4-2	91-506-00	Retaining Plate - Score Card Pad (same as above)	1
4-5	19-003-00	Steering Wheel Deluxe - Splined Hub (white)	1
4-5	19-003-10	Steering Wheel Delux - Splined Hub (black)	
4-8			
4-9			
4-9	<u>NOTE:</u> REFER TO SECTION J1A FOR STEERING WORM ASSEMBLY INFORMATION AND PARTS LISTINGS		
4-9			
4-9			
4-9			
4-9			
4-9			
4-9			
4-9			
4-9			
4-9			
4-9			
4-9			1
4-10	18-107-00	Steering Lever	1
4-13	96-099-00	U-Bolt, 5/16 N.F. Thread	1
## 4-1	19-004-00	Cap, black with horn button hole	1
4-14	87-071-00	Grease Fitting - 3/16 Drive Type	2
4-19	87-073-00	Grease Fitting, 45°, 3/16 Drive	1
4-20	18-035-10	Steering Adjustment Sleeve Assembly, with Ball Joints and Clamps - 11" Sleeve	1
4-21	18-047-10	Steering Adjustment Sleeve Assembly with Ball Joints and Clamps - 18" Sleeve	1
4-22	18-029-11	Steering Adjustment Sleeve Assembly with Ball Joints and Clamps - 13" Bent Sleeve	1
4-31	86-501-98	Ball Joint - 1/2" - Left Hand Thread	3
4-32	86-501-99	Ball Joint - 1/2" - Right Hand Thread	3

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
4-37	86-510-00	Ball Joint Clamp	7
4-38	87-074-00	Grease Fitting - $\frac{1}{4}$ -28 NF - Straight	8
4-39	16-801-00	Towing Spacer - $\frac{1}{4}$ x $1\frac{1}{4}$ Long	1
4-40	15-066-10	Front Axle Assy., Complete, with King Pins, Spindles, Hubs and Tie Rod	1
4-44	15-066-00	Front Axle with King Pins; Less Spindles, Hubs, and Tie Rod	1
4-46	14-157-98	Wheel Spindle Assy., Left Side	1
4-46	14-157-99	Wheel Spindle Assy., Right Side	1
4-50	32-200-00	Bushing - Bronze, Oil Impregnated, with Flange $7/8$ " I.D. x 1" O.D.	4
4-54	96-120-00	U'Bolt, $\frac{1}{2}$ N.C., $1-7/8$ I.D. x 2 In. Long	2
4-56	85-504-10	Leaf Spring Assy., $61-7/8$ Ctr. of Eye to Hole, with Torque Leaf and Spacer	2
4-57	85-504-53	Upper Leaf Assembly	2
4-58	96-098-00	Spring Center Bolt - $3/8$ N.F. x $3-3/4$	2
4-59	85-504-52	Spacer - Leaf Spring	2
4-60	85-504-51	Torque Leaf	2
4-61	85-504-54	Spring Tip Pad	6
4-62	12-124-00	Wheel Hub - $2-3/4$ " Long, Five $1/2$ " Studs on $4-1/2$ " Bolt Circle with Two 1" Bearing Races, One Bearing, One Oil Seal	2
4-64	80-103-00	Tapered Bearing Race for 1" Bearing	4
4-66	80-017-00	Tapered Roller Bearing - 1" I.D.	4
4-68	45-338-00	Oil Seal for 1" Bearing	2
4-70	96-329-00	Lug Bolt - $\frac{1}{2}$ " NF	10
4-72	97-236-00	Lug Nut - $\frac{1}{2}$ " NF	10
4-73	92-104-00	Dust Cap with Grease Fitting	2
4-74	98-603-00	Rubber Grommet	1
xx 4-75	91-504-00	Score Card Clip	1
xx 4-76	91-507-00	Score Card Pad	1
4-78	13-746-00	Tire and Demountable Wheel - 850 x 8, 4 Ply Terra Tire, Power Rib, Tubeless	2
4-79	12-020-00	Wheel, Demountable for 850 x 8 or 950 x 8 Tire	2
4-80	10-093-00	Tire - 850 x 8, 4 Ply, Terra Power Rib, Tubeless	2

xx NOTE: These two(2) items are no longer available. Please substitute T-D Part #91-511-00, Black Plastic Score Card Holder, Steering Wheel (See Fig. I.D. 4-230)



SECTION J1  
PAGE 5

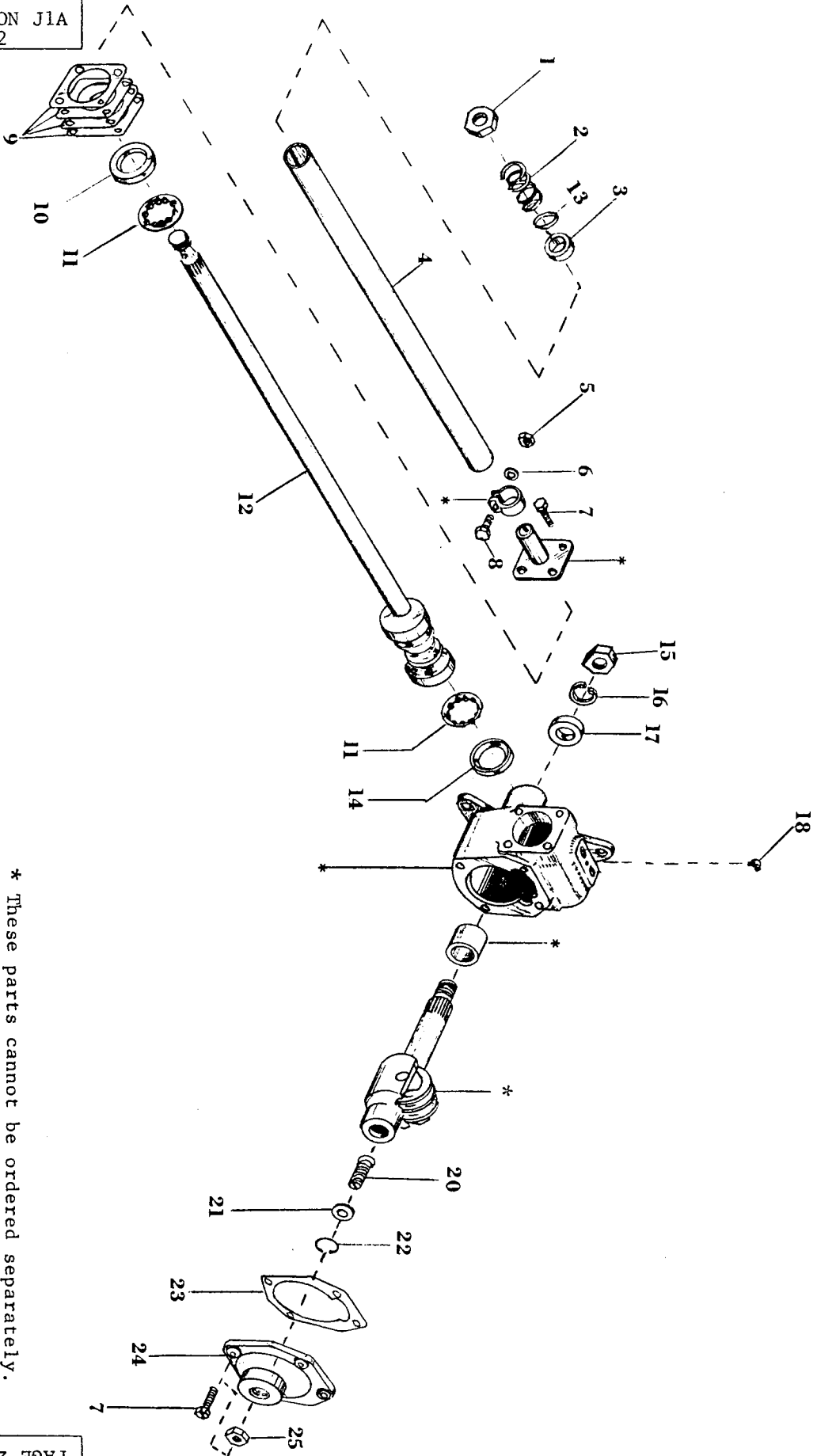
FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
4-84	11-041-00	Tube (Optional) for 850 x 8 or 950 x 8 Tire	2
4-87	96-316-00	Bolt, $\frac{1}{2}$ NC x 3, All Thread	2
4-88	18-047-00	Steering Adjustment Sleeve, 18" Long	1
4-89	96-118-00	U'Bolt - $\frac{1}{2}$ NC x 1-7/8 I.D. x 6 $\frac{1}{2}$ Long	2
4-90	18-035-00	Steering Adjustment Sleeve, 11" Long	1
4-200	88-737-08	Pop Rivet - 3/16 D x 5/8 Long	1
4-201	88-026-11	Screw, 8-32 x 1" Flat Head Slotted Machine	2
4-203	88-088-62	Lock Washer, 5/16	2
4-204	88-099-80	Hex Head Nut, 5/16 NF	4
4-205	88-080-18	Screw, 5/16 x 2-1/2 NC Hex Head Cap	1
4-206	88-089-81	Nut, 5/16 Hex Lock	1
4-207	88-119-80	Nut, 3/8 NF Hex Head	2
4-208	88-128-60	Washer, 7/16	3
4-209	88-130-14	Screw, 7/16 x 1-1/2 NF Hex Head Cap	2
4-210	88-139-81	Nut, 7/16 NF Hex Lock	2
4-211	88-149-81	Nut, $\frac{1}{2}$ NC Lock	10
4-212	88-159-85	Nut, $\frac{1}{2}$ - 20 NF Slotted Hex	6
4-213	88-228-60	Washer, 3/4	2
4-214	88-239-85	Nut, 3/4 NF Slotted Hex	2
4-215	88-259-82	Nut, 13/16 NF Hex Jam	1
4-216	88-268-62	Lock Washer, 7/8	1
4-217	88-279-81	Nut, 7/8 NF Lock	2
4-218	88-279-82	Nut, 7/8 NF Hex Head Jam	1
4-219	88-527-11	Cotter Pin, 1/8 x 1	6
4-220	88-527-14	Cotter Pin, 1/8 x 1-1/2	2
4-221	86-003-00	Shock Absorber with rubber cushion stop	1
4-222	88-120-17	7/16 N.C. x 2-1/4 Long Hex Head Cap Screw	1
4-223	88-129-81	7/16 Lock Nut	1
4-224	88-149-81	1/2 N.C. Lock Nut	1
4-225	32-215-00	Plastic Flanged Bearing	2
4-226	50-004-00	1/2 x 8 Stainless Steel Threaded Shaft	1
4-227	88-148-61	1/2 Inch SAE Washer	1
4-228	88-149-80	1/2 N.C. Hex Head Nut	1
4-229	98-753-00	Rubber Cushion, Frame to Spring	2
4-230	91-511-00	Black Plastic Score Card Holder, Steering Wheel	1
4-231	00-370-14	Idler Arm, Steering Wheel	1

SERVICE AND ADJUSTMENT  
REFER TO FIGURE 4A  
STEERING WORM ASSEMBLY

DISASSEMBLE AND REASSEMBLE STEERING WORM

1. Remove 4 bolts from cover and slide steering arm shaft assembly and cover from housing.
2. Mark position of steering column jacket tube clamp for proper reassembly.
3. Loosen steering column jacket tube clamp, and slide jacket tube off of housing and steering column shaft.
4. Remove 4 bolts from housing worm bearing cap and remove steering column worm and shaft assembly.
5. Clean all parts and flush out housing with suitable degreasing solvent. Lightly oil all parts for reassembly.  
NOTE: If installing new steering column shaft and worm assembly, worm bearings, or worm bearing cups, it will be necessary to check the worm bearing preload.
6. To check worm bearing preload, install the steering column worm and shaft assembly, bearings, bearing cups, bearing cap and original shims.
7. Tighten 4 bolts to 18-22 ft. lbs. torque.
8. Shaft and worm must not have any bearing looseness or "play" and should not rotate with less than 1-1/4" lbs. torque nor require more than 4 1/2" lbs. of torque.
9. Add or take away shims as needed to produce the desired bearing preload.
10. Inspect steering arm shaft seal and cover gasket. Replace if worn or damaged.
11. Install steering arm shaft and cover assembly. Tighten four cover bolts to 18 - 22 ft. lbs. torque. NOTE: With steering arm shaft positioned at the center of its travel, there must be no backlash with mating worm and roller. Total preload for assembled unit must be no less than 5-3/4" lbs. torque measured at steering worm shaft nor more than 11-1/4" lbs.
12. Adjust total preload to proper limits by loosening locknut on backlash adjusting screw located in cover and turning adjusting screw clockwise to increase preload and counterclockwise to decrease preload. Retighten lock nut securely.
13. Replace steering column jacket tube and clamp in original position.

SECTION J1A  
PAGE 2



\* These parts cannot be ordered separately.  
Order as part of the entire steering unit  
assembly, part # 18-307-14

SECTION J1A  
PAGE 2

NO.	DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. ±	DEC. ±				
SCALE	NONE				
DRAWN BY	J.B.				
DATE	2-4-77				
FIGURE 4A SECTION J1A STEERING WORM ASSEMBLY					
TAYLOR DUNN MFG. CO. 2114 West Ball Rd. Anaheim, Calif.					

STEERING WORM ASSEMBLY

REFER TO FIGURE 4A

FIG. ID. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
4A-0	18-307-14	Steering worm assembly complete	1
4A-1	18-259-82	Nut, jam 13/16 hex head, NF	1
4A-2	85-122-00	Spring, compression 1-1/8 OD X 1	1
4A-3	18-307-54	Spacer, jacket bearing	1
4A-4	18-307-52	Jacket, steering column	1
4A-5	88-099-88	Nut, 5/16 NF	1
4A-6	88-088-62	Washer, lock	1
4A-7	88-080-09	5/16 X 3/4 NC hex hd cap screw	8
4A-8 (not available)		5/16 X 2 NF hex hd cap screw	1
4A-9	18-307-42	Gasket, Seal & Shim Kit for Steering Worm	1
4A-10	18-307-57	Worm adjustment bearing cup, inner (requires 18-307-42)	1
4A-11	18-307-53	Worm bearing assembly (requires 18-307-42)	2
4A-12	18-307-51	Steering column shaft & worm assembly (requires 18-307-42)	1
4A-13	18-307-55	Spacer, jacket bearing	1
4A-14	18-307056	Worm bearing cup, outer (requires 18-307-42)	1
4A-15	88-279-82	Nut, jam 7/8 NF hex	1
4A-16	88-268-62	Lockwasher, 7/8	1
4A-17	18-307-59	Seal, steering arm shaft	1
4A-18	87-073-00	Fitting, grease 45 degree, 3/16 drive	1
4A-20	18-307-64	Screw, adjusting	1
4A-21	18-307-65	Washer, thrust	1
4A-22	18-307-66	Snap ring	1
4A-24	18-307-67	Shaft cover	1
4A-25	88-159-82	Nut, jam 1/2" NF	1

SERVICE AND ADJUSTMENTS

REFER TO FIGURE 7

BRAKE SYSTEMS - MODELS GT-370/371 & 2372R/2373R

GENERAL

The mechanical brake assembly located on the differential pinion shaft will require a periodic inspection for lining wear and consequently periodic adjustment.

NOTE: Normal procedure for adjusting brakes for lining wear is to adjust the brake band by means of the brake band anchor bolt and NOT by adjusting brake cable length.

A few drops of oil on the clevis pin and pivot pins of the mechanical linkage is recommended on a monthly basis. Great care must be taken that no oil is allowed to contact the brake band or drum as it will seriously impair the braking ability. If the braking surfaces become oily or contaminated for any reason, it will be necessary to remove the brake band and clean all parts thoroughly. Refer to the appropriate section of this manual for the correct procedure to follow. If your vehicle is equipped with hydraulic brakes refer to Section J3 for their care and adjustment.

PROCEDURE FOR MINOR BRAKE ADJUSTMENT (due to lining wear)

ALL VEHICLES - Brake Lever Arm Position Inspection

With service brake and park brake fully released, observe position of brake lever arm connected to brake band.

- A. Power Traction Drive: The brake lever arm must be 1/4" to 3/8" from gear case.
- B. Belt Drive: The brake lever arm must be 1/4" to 3/8" from brake lever arm return stop bar.

If brake lever arm is NOT in the correct position, the cable or rods which connect the brake lever arm to the service brake foot pedal and the foot operated park brake pedal or hand operated park brake lever, must be adjusted. This requires that a complete brake adjustment, as described in the following sub-section, "Complete Brake Adjustment - All Vehicles".

If brake lever arm IS in the correct position, it will not be necessary to adjust the cables or rods. The only adjustment necessary will be to the brake band, as follows:

- A. Service Brakes: Adjust brake band anchor bolt, tightening it until brake pressure adequate to stop the vehicle is achieved with foot pedal halfway to the floor.  
An additional centering adjustment is necessary. Loosen centering screw lock nuts, center band around drum. Bring band as close to drum as possible without causing brake drag. Lock centering screws.  
Note: If band is too far from drum, brakes will grab in the forward direction.

- B. PARK BRAKES:

Foot Operated - Check operation of Park Brake. If holding power is insufficient, refer to following sub-section, "Complete Brake Adjustment - All Vehicles".

B. PARK BRAKES (Con't)

Hand Operated - Check operation of handbrake. If handbrake has insufficient holding power, or if excessive effort is required to operate the handbrake lever, refer to handbrake adjustment procedures described in the following section.

PROCEDURE FOR COMPLETE BRAKE ADJUSTMENT - ALL VEHICLES

A. Units With Foot Operated Park Brake:

1. Cable Adjustment (Service Brake) - With service brake pedal and park brake pedal fully released, loosen lock nut on service brake cable clevis. Adjust cable length to position brake lever arm according to specifications described in preceding Section titled, "Minor Brake Adjustment for Normal Lining Wear". Tighten lock nut.

NOTE: Prior to performing cable adjustment, all other cables or rods attached to brake lever arm must be in a slack condition during this adjustment. It may be necessary to disconnect them to assure that the brake lever arm position described is governed by the service brake pedal cable adjustment.

2. Band Adjustment- Perform brake band adjustment as described in preceding sub-section titled "Service Brakes".
3. Cable Adjustment (Park Brake) - Park brake is always adjusted after the service brake as described in steps 1 and 2 above. With park brake pedal and service brake pedal fully released, loosen lock nut on park brake cable clevis. Adjust (shorten) cable length until brake lever arm starts to move away from gear case. At that point, stop and reverse adjustment (lengthen) two full turns. Tighten lock nut. Park brake cable is now adjusted and must have a slight bit of slack while the service brake cable is taut.

B. Units With Hand Operated Park Brake:

1. Cable Adjustment (Service Brake) - Adjustment procedure is the same as described in preceding sub-section titled "Cable adjustment (Service Brake)".
2. Band Adjustment - Adjustment procedure is the same as described in preceding sub-section titled "Band Adjustment".
3. Cable Adjustment (Park Brake) - Park brake is always adjusted after the service brake as in steps 1 and 2 above. With service brake pedal and park brake pedal fully released, loosen lock nut on park brake cable clevis. Adjust cable length (shorten) until brake lever starts to move away from gear case. At that point, stop and reverse adjustment (lengthen) two (2) full turns only. Tighten lock nut. Park cable is now adjusted and must have just a slight bit of slack while the service brake cable will be taut.

B. Units with Hand Operated Park Brakes: (Con't)

4. Knob Adjustment (Park Brake) - After all cable and band adjustments have been performed, operate park brake lever. If excess effort is required to operate lever, turn adjustment knob which is located at top of park brake lever counterwise. If lever operates too easily and insufficient holding power is the result, turn knob clockwise.

SEAT OPERATED PARK BRAKE (DEADMAN'S BRAKE)

GENERAL: The seat operated park brake is designed to automatically apply the park brake anytime the operators seat is unoccupied. Whenever the operators seat is depressed for any reason, the park brake is automatically released provided the hand or foot operated park brake is released. The foot or hand operated park brake should be applied anytime the vehicle is unoccupied to prevent unexpected vehicle movement.

CAUTION: Never leave the vehicle on a hill or incline without applying the foot or hand operated park brake since depressing the operators seat automatically releases the park brake and could result in an accident.

TOWING: To allow the vehicle to be towed, the system incorporates a manually operated (not automatic) lock-out device attached to the bottom of the operators seat. When engaged, the seat is locked in the fully depressed position which disables the seat operated park brake ONLY. This action in no way affects the operation of the foot or hand operated park brake systems.

BRAKE ADJUSTMENT PROCEDURE: Follow the brake adjustment procedures as described in preceeding sub-sections as applies to your vehicle brake system configuration, i.e., hand or foot park brake. Now proceed as follows:

1. Insure service brake pedal and foot or hand park brake is fully released.
2. Loosen lock nut on seat park brake cable clevis. Adjust (shorten) cable length until brake lever arm starts to move away from gear case. At that point, stop and reverse adjustment (lengthen) two full turns. Tighten lock nut. Seat park brake cable is now adjusted and must have a slight bit of slack while the service brake cable is taut. The other park brake cable will also be slightly slack.

MAINTENANCE, SERVICE AND PARTS LIST

MECHANICAL CONTROL LINKAGE

REFER TO FIGURE 7

GENERAL

The mechanical control linkage operates the various controls and mechanisms located throughout your vehicle.

The accelerator system consist of the operating pedal and shaft extension, connecting rods & adjusters, and return spring (s).

The foot park brake consist of the operating pedal, associated connecting cable cable and return spring (s).

The hand park brake system consist of the hand lever and adjuster mechanism, and the mechanical brake operating cable.

The service brake system consists of the foot pedal and pivot shaft assembly, and a separate brake operating cable and return spring.

\*\*\* Seat Operated Park Brake (see below)

MAINTENANCE AND SERVICE

Both the accelerator and brake systems pivot on self lubricated bearings on corrosion resistant shafts. Should the bearings become worn, they are easily replaced.

For routine maintenance instructions, refer to Section D of the Manual for Tee Bird, 1972 and up, or to the Manual for Models 2362R and 2363R.

For lubrication instructions, refer to Section E of this manual.

For brake adjustment instructions on Model Tee Bird 1972 and up, refer to Section J2 of the basic manual and to the appropriate manual for 2362R and 2363R.

For brake adjustment instructions on model Tee Bird GT-370/371, and models 2372R and 2373R, refer to figure 7/7A and Sect. J2 of this Supplement.

For accelerator asjustments, refer to Section J6 of the Supplement and Basic Manual.

For vehicles equipped with optional hydraulic brakes, refer to Section J3 of the Basic Manual.

PARTS

For an illustration and parts list of parts used in the GT-370/371 and 2372R/2373R, refer to the following pages in this section of the Supplement.

\*\*\* The automatic seat park brake system consist of the pivoted seat assembly, the operating cable or rods, the brake apply spring, adjustable tension device, and its connecting linkage.





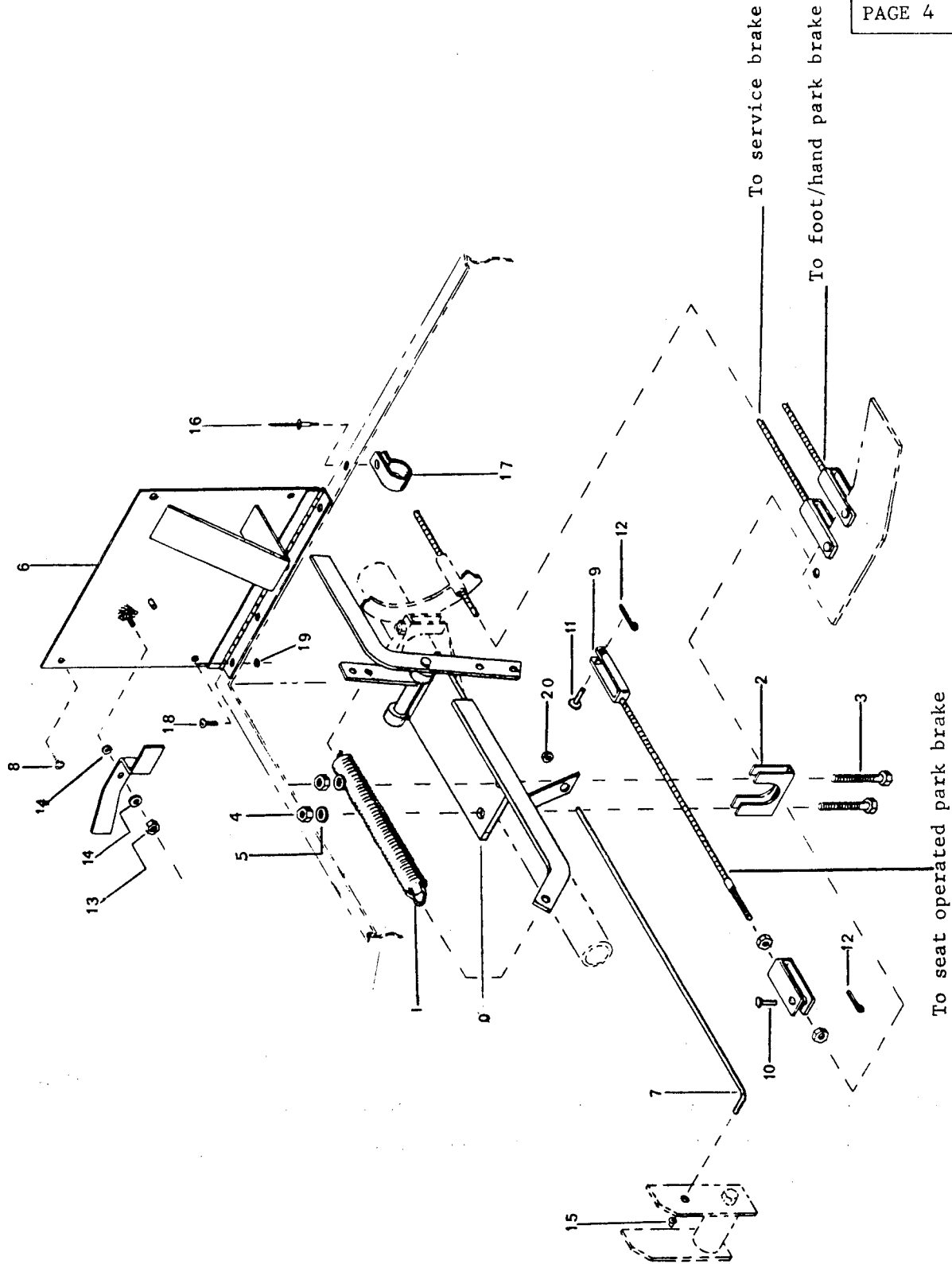
FIGURE NO. 7  
MECHANICAL CONTROL LINKAGE

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
7-1	98-200-00	Brake Pedal Pad	1
7-2	98-254-00	Accelerator Pad (Aluminum)	1
7-3	51-340-00	Hand Parking Brake Lever with Spacers (5/8 O.D. X 12/32 I.D. X 1/2 Long & 5/8 O.D. X 12/32 I.D. X 15/32 Long)	1
7-4	98-351-00	Hand Grip - 7/8 I.D. X 4-1/2 Long	1
7-5	85-250-00	Spring Extension, 1-1/16 O.D. X 3-7/8 Long (Accelerator Return)	1
7-6	96-823-00	Adjustable Cable Assembly - Service Brake	1
7-7	50-002-00	Rod, 1/4 - 28 X 5-1/8 Long	1
7-8	96-771-00	Clevis Pin, 3/8 X 3/4 Face to Hole	2
7-9	88-147-24	1/2 X 4 Stainless Steel Screw	2
7-11	96-822-00	Adjustable Cable Assembly - Hand Brake	1
7-12	88-069-87	1/4 N.C. Fastite Nut	2
7-13	88-100-14	3/8 X 1-1/2 N.C. Hex Head Cap Screw	2
7-14	88-109-81	3/8 N.C. Locknut	6
7-15	32-215-00	Plastic Flanged Bearing	4
7-16	88-517-09	3/32 X 3/4 Long, Cotter Pin	4
7-17	86-503-98	Rod End - 1/4 - 28 Left Hand Thread	1
7-18	88-108-60	3/8 Washer	1
7-19	88-060-13	1/4 X 1-1/4 Hex Head Cap Screw	1
7-20	88-068-62	1/4 Lock Washer	1
7-21	88-069-81	1/4 N.C. Lock Nut	1
7-22	88-149-80	1/2 N.C. Hex Head Nut	2
7-23	88-149-81	1/2 N.C. Lock Nut	2
7-24	97-211-00	1/4 - 28 N.F. Nut, Left Hand Thread	1
7-25	96-773-00	Clevis Pin, 5/16	2
7-26	85-270-00	Extension Spring 1-1/4 O.D. X 4-3/8	1
7-27	00-370-12	Accelerator Pedal with Extension Arm and Plastic Bearings. <u>NOTE</u> - Accelerator Pedal with (2) Return Springs Effective with Serial No. 41160 & Up.	1

MECHANICAL CONTROL LINKAGE (Con't.)

REFER TO FIGURE 7


FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
7-28	00-370-11	Service Brake Pedal w/ Plastic Bearings	1
7-29	98-201-00	Park Brake Pedal Pad	1
7-30	K7-117-00	Foot Park Brake Assembly <u>with</u> Cable Guide Tube, Unpainted. Used on <u>Earlier</u> Models Only	1
	51-342-00	Foot Park Brake Assembly <u>without</u> Cable Guide Assembly. Used on <u>Later</u> Models Only.	1
	85-201-00	Release Lever Spring Extension, 7/16 O.D. X 3/4	1
	85-012-00	Pall Spring Extension, 13/32 O.D. X 1-1/8	1
	85-402-00	Pedal Return Spring, 1/2 O.D. X 1-1/4	1
	98-755-00	Brake Pedal Bumper, 3/4" Square	1
	88-837-06	Screw, Metal # 14 X 1/2	1
	97-312-00	Speed Nut, Tinnerman	1
7-31	96-824-10	Foot Park Brake Actuating Cable, Pwr. Tract.	1
	96-824-11	Foot Park Brake Actuating Cable, Blt. Drve.	1
7-33	85-233-00	Spring Extension, Accelerator Return	2
7-34	88-082-13	Bolt, Carriage 5/16 X 1	1
7-35	88-089-80	Nut, Hex Head 5/16	2



NO.		DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. ±		DEC. ±				
SCALE		NONE				
DRAWN BY		J.M.				
DATE		2-24-77				

FIGURE 7A  
SECTION J4

SEAT OPERATED PARKING BRAKE  
MODEL GT-370/GT-371



TAYLOR DUNN MFG. CO.  
2114 West Ball Rd.  
Anaheim, Calif.

SEAT OPERATED PARK BRAKE

REFER TO FIGURE 7A

FIG. ID. NO.	T-D PART NO.	DESCRIPTION	QUANTITY
7A-0	50-659-00	Seat brake lever assembly	1
7A-1	85-280-00	Spring, extension	1
7A-2	85-487-50	Bracket, spring mounting	1
7A-3	88-140-22	Screw, hex head cap 1/2 X 3-1/2 NC	2
7A-4	88-149-80	Nut, hex head 1/2 NC	2
7A-5	88-148-62	Washer, lock 1/2	2
7A-6	50-659-50	Plate, seat mounting	1
7A-7	50-225-50	Rod, wiring harness support	1
7A-8	88-837-11	Screw, phillips metal #14 X 1-1/4	6
7A-9	96-818-10	Cable assembly, adjustable	1
7A-10	96-771-00	Pin, clevis 3/8 X 3/4	1
7A-11	96-773-00	Pin, clevis 5/16 X 1	1
7A-12	88-517-11	Pin, cotter 3/32 X 1	2
7A-13	88-109-81	Nut, lock 3/8 NC	1
7A-14	88-108-60	Washer, 3/8	2
7A-15	88-577-90	Cap nut, 1/4 press-on	1
7A-16	88-737-08	Rivet, aluminum 3/16 X 5/8	1
7A-17	96-630-00	Clamp, rubber lined 5/8 ID	1
7A-18	88-060-09	Screw, hex head cap 1/4 X 3/4 NC	4
7A-19	88-069-87	Nut, fastite NC	4
7A-20	98-603-00	Grommet, rubber 3/8 ID	1
	90-158-99	Seat cushion, left side, seat operated park brake, (specify color)	1
	90-154-99	Seat cushion, individual, (specify color)	1
	91-403-10	Support, accessory tray with clip	1

MAINTENANCE, SERVICE AND PARTS

MASTER CONTROL SWITCH

GENERAL

The Master Control Switch is located below the seat, and is readily accessible when the seat is raised. The left side, operated by the hand lever which projects into the passenger compartment, controls direction of travel. The right side, operated by the accelerator pedal, controls the vehicle speed by regulating the voltage applied to the motor, using coils of nichrome resistance wire.

It is recommended that all terminal connections be checked and tightened at least once a month. If a terminal bolt or wire becomes loose, sufficient heat will be generated to cause permanent damage at the connection.

The nuts which secure the wire terminals to the contact buttons on the forward/reverse rotor must NOT be used to tighten the contact buttons to the rotor board. The contact buttons must be free to rotate in order to avoid wire breakage.

Lubrication and Maintenance

A coating of grease, T-D part no. 94-421-00 or equivalent (minimum 400d. melt pt.) must be maintained on all switch components where sliding contact occurs. Apply a heavy coating of grease to the 1st power bar area. The spaces between power bars should be cleaned approximately every 2 to 3 months using a piece of wood or plastic or by steam cleaning. See Sect. E for complete lube instructions.

For scheduling of routine maintenance, refer to Section D of the manual for Model Tee Bird, 1972 and Up, or to the manual for Models 2362R and 2363R.

MAINTENANCE

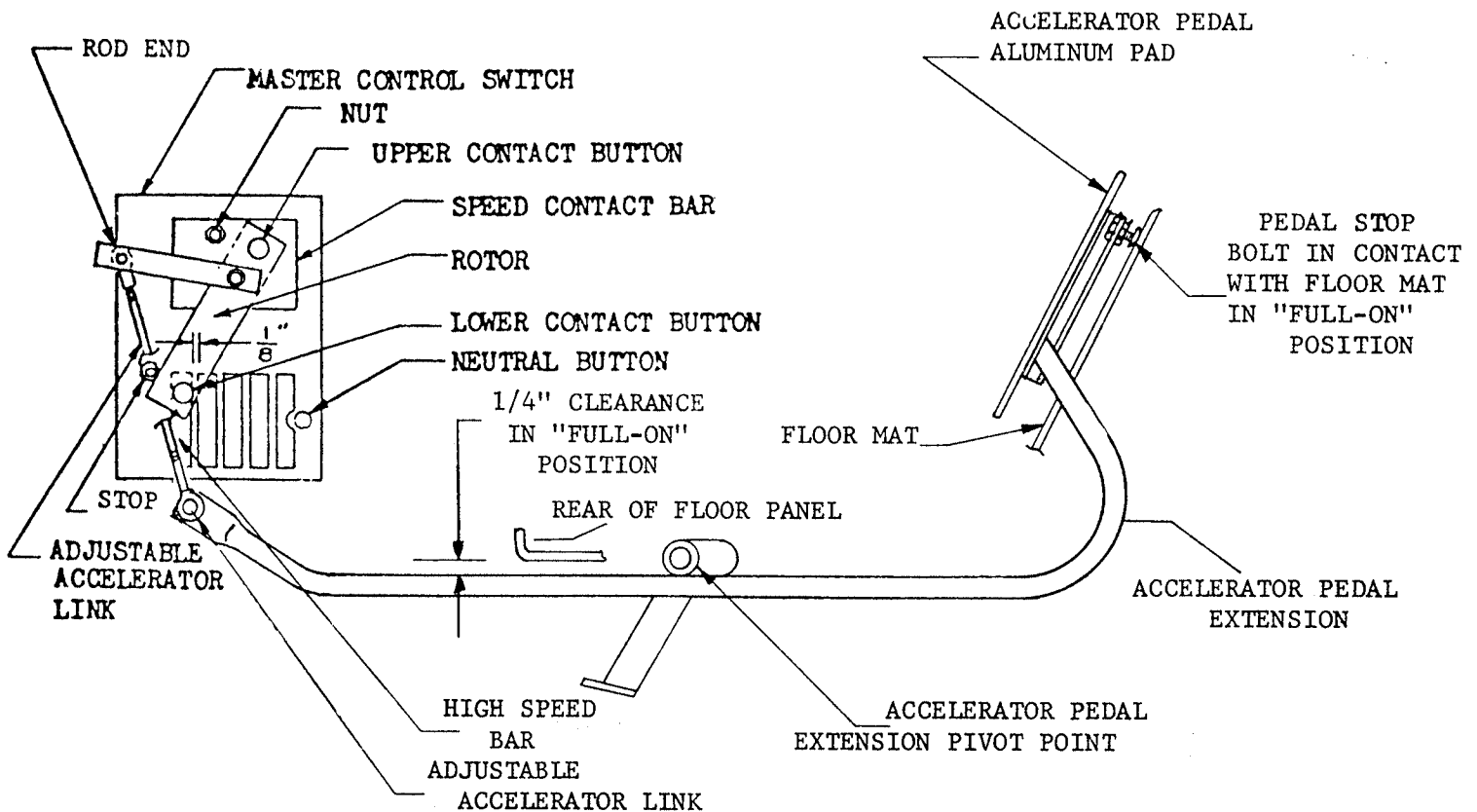
Adjustment of Speed Rotor Travel - EM Switch (Refer to Diagram B)

NOTE: Rotor travel adjustment is set at the factory and will require adjustment only if the vehicle is subjected to severe damage or if a new switch assembly is installed.

1. Adjust pedal stop bolt so that when the bolt head contacts the floor mat there is 1/4" clearance between the accelerator pedal extension and the rear of the floor panel. (See Diagram B)
2. Block accelerator pedal in full ON position with pedal stop bolt in contact with floor mat.
3. Adjust the "rod end" of the Adjustable Accelerator Link so that the lower contact button clears the 4th speed bar by 1/8". This will insure approximately 95% of the contact button is touching the high speed bar.

Adjustment of Speed Rotor Travel - EM Switch (Con't)

4. Remove blocking and operate accelerator pedal several times, using normal force. Re-check position of the lower contact button with pedal fully depressed. If it fails to clear the 4th speed bar by  $\frac{1}{8}$ ", re-adjust the rod end position accordingly and re-check the clearance again after operating the pedal. Continue re-adjusting as necessary until the desired condition is obtained and remains constant. NOTE: The lower contact button should not travel beyond the 5th speed power bar.
5. With the pedal in neutral position, the lower contact button must clear the 1st speed bar by a minimum of  $\frac{1}{8}$ " and rest on the neutral button. This condition should automatically occur when the high speed adjustment is properly set.



MAINTENANCE AND PARTS LIST

BODY AND TRIM

Your vehicle has been finished with several coats of durable baked on enamel.

It will require the same care as you would give your automobile. The chrome trim is also resistant to corrosion and will require an occasional cleaning.

It is recommended that your vehicle be washed with a mild soap and warm water. For long life a good automotive type of wax will extend the life of the finish and maintain lasting beauty,

For identification of Body and Trim parts available for repair and replacement, refer to the Manual for Model Tee Bird, 1972 & Up, or to the Manual for Models 2362R and 2363R, with the following exceptions:

Side Bumpers and Bumper Spacers for Models GT-370, GT-371, 2372R, 2373R

91-920-10	Side Bumper, Left or Right - Zinc Plated
91-920-20	Side Bumper, Left or Right - Chrome Plated

16-207-00	Side Bumper, Front Spacer - 1/2 Inch Long
16-206-00	Side Bumper, Center Spacer - 1 Inch Long
16-205-00	Side Bumper, Rear Spacer - 7/8 Inch Long

Front and Rear Bumpers - GT-370 and GT-371

Front and Rear Bumpers and Spacers listed in the 1972 & Up Manual fit the GT-370 and GT-371. Zinc plated bumpers not listed in the 1972 & Up Manual are as follows:

91-920-51	Front Bumper - Zinc Plated
91-920-52	Rear Bumper - Cross Bag Type Body - Zinc Plated
91-921-52	Rear Center Bumper - Stand Up - Zinc Plated
91-921-53	Rear Left/Right Bumper- Stand Up- Zinc Plated

Front and Rear Bumpers - 2372R and 2373R

Front and Rear Bumpers and Spacers listed in the 2362R and 2363R Manual fit the 2372R and 2373R. Zinc plated bumpers not listed in the older Manual are as follows:

91-920-51	Front Bumper - Zinc Plated
91-920-52	Rear Bumper - Zinc Plated

Floor Mat - GT-370 and GT-371

98-017-50	Floor Mat, Rubber
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Plastic Cowl Trim

94-035-00	Black Plastic Trim - 80 Inches Long (Specify Length)
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Arm Rests for GT-370 and GT-371

90-312-10	Arm Rest, Left Side, Black
90-313-10	Arm Rest, Right Side, Black



Seat Cushions for GT-370 and GT-371

Specify color when ordering.

90-139-99	Complete Car Set of Front Seat Cushions and Front Seat Back Rest Cushions
90-154-99	Seat Cushion Only for Front Seat - Left or Right
90-138-99	Back Rest Cushion Only for Front Seat - Left or Right
90-156-99	Seat Cushion for Rear Seat Option
90-157-99	Back Rest Cushion for Rear Seat Option

Front Seat Back Cushion Supports for GT-370 and GT-371

90-103-98	Back Rest Cushion Support, Adjustable, Driver Side
90-103-97	Back Rest Cushion Support, Non Adjustable, Passenger Side

Deck Boards, Bag Rack, Belts, and Deck Board Hardware for GT-370 and GT-371

Deck Boards, Bag Racks, Belts for Stand Up Rack and for three piece type Cradle Set, and attaching hardware for those items, as well as board clips and rubber bumpers for deck boards are listed in the 1972 & Up Manual. Replacement Parts for the two piece type Cradle Rack Set are as follows:

90-456-10	Complete Deck Board Assembly - Two Piece Type Cradle Rack
90-456-00	Deck Board Only - Two Piece Type Cradle Rack
91-521-00	Single Rack Only, Two Piece Type, Not Including Belts or Buckle
91-542-00	Belt with Tip and Eyelet
91-536-00	Buckle
96-602-00	Clamp for attachment of Buckle to Rack
88-067-13	Oval Head Screw for Attaching Rack to Board - 1/4 N.C.

Top Supports and Frames for GT-370 and GT-371

91-034-10	Front Top Support - Zinc Plated
91-034-20	Front Top Support - Chrome Plated
91-036-10	Rear Top Support - Zinc Plated
91-036-20	Rear Top Support - Chrome Plated
91-031-10	Tubular Top Frame - Zinc Plated
00-370-17	Rear Section Welded, Diamond Plate Standup Bag, Includes Kick Panel, Side Panels & Rear Panel, GT-370 Series, Unpainted
00-370-19	Rear Section Welded, Diamond Plate Cross Bag, Includes Kick Panel, Side Panels & Rear Panel, GT-370 Series, Unpainted
00-370-18	Rear Section Welded, Smooth Skin, Standup Bag, Includes Kick Panel, Side Panels & Rear Panel, GT-371 Series, Unpainted
00-370-20	Rear Section Welded, Smooth Skin, Cross Bag, Includes Kick Panel, Side Panels & Rear Panel, GT-371 Series, Unpainted

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