

OPERATION AND MAINTENANCE MANUAL WITH PARTS LIST

Model:	B 2-55
Serial No.:	54834 - 59050
Year:	1979 - 1980
Manual:	MB-255-00

- IMPORTANT -

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



TAYLOR-DUNN®
Commercial and Industrial Vehicles Since 1949

2114 West Ball Road, Anaheim, CA 92804 (714) 956-4040 FAX (714) 956-0504
Mailing Address: P.O. Box 4240, Anaheim, California 92803

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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 a thorough review of Section A, (Inspection, Safety & Introduction) and Section B, (Operating Instructions).

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 in their locality, 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 low ratio steering leverage.

These characteristics, so desirable for maneuverability 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 on an incline. Avoid sharp turns, even at slow speeds.

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. CAUTION: Do not exceed, under any circumstances, the maximum design speed of the vehicle.

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.

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. CAUTION: Intentional/unintentional misuse of controls could result in an accident.

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 maintenance characteristics most closely related to vehicle operating safety are indicated on Section E, Page 1, and Section D, Page 1 & 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 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 to be driven on smooth surfaces in and around industrial plants, nurseries, 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 10 M.P.H. on level surfaces or downhill. Speeds in excess of this may result in steering difficulty and possible loss of vehicle control. Vehicle is not designed to be towed in excess of 10 M.P.H.

MODEL NO.

The following Model numbers are covered by this manual - 1254B

Starting with Serial Number 54834.

SERIAL NO.

The Serial Number of your unit is stamped into the angle frame number, under the rear of the seat cushion, 4" from the left side. The model number and serial number are on a nameplate riveted to the dash panel steering support shelf forward of the steering column, or on 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 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 wheel and steering system is similar to automotive types. Turn the steering wheel to the right (clockwise) for a right turn and left (counterclockwise) for a left turn.

KEY LOCK

Your vehicle is equipped with a keyed lock located on the corner of 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.

PARK BRAKE (HAND)

The hand parking brake is located in the right center of floor board. To engage hand brake, grasp top lever and pull towards rear, all the way, til hand lever stops. To release brake, push hand lever all the way forward.

SERVICE BRAKE (FOOT)

The brake pedal is designed and located for right foot operation. It is the pedal located to the left of 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 to your vehicle.

FORWARD/REVERSE SWITCH

The forward/reverse switch is located to the right of the drivers seat. It is operated by the red handle. To place in forward position pull the red handle to the left towards the driver. To place in reverse position push the red handle to the right, away from the driver.

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, complete loss of power and could cause an accident.

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

The horn button is located at the center of the steering wheel. Depressing button sounds horn. Releasing button will immediately silence horn.

LIGHT SWITCH

The light switch that controls headlamps and taillamps is located in the control console between the seats. It is labelled for on/off positions.

BATTERY CHARGER

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

STANDARD OPTIONAL ACCESSORIES

WINDSHIELD WIPER

On vehicles equipped with electric windshield wipers the control switch is located in the control console between the seats. It is labelled for on/off position.

DIRECTION SIGNALS

On vehicles equipped with directional turn signals the control is located on the steering column. Move the control lever in the direction you will be turning your steering wheel to signal the direction you intend to turn your vehicle. Indicating lamps are located within the twin signal control for your convenience.

The directional turn signal also serves as an emergency flasher control by pulling the control lever outward away from steering column when in neutral position.

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 counterclockwise. 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 and fill batteries. If necessary fill with distilled water only.	J8	X	X	X	X
Clean off all dirt and grease on and between power bars and J hook. Lube speed control sliding bar contact area w/Taylor-Dunn Grease 94-421-00 or high quality, non-conductive hi-temp grease with 500 degree min. melt pt.	J6	X	X	X	X
CAUTION: USE <u>ELECTRICALLY NON-CONDUCTIVE</u> APPLICATOR TO APPLY GREASE OR TO CLEAN AWAY CONTAMINATES. OBSERVE CAUTION STATEMENT BOTTOM OF THIS PAGE.					
Check rheostat adjustment	J6	X	X	X	X
Check tire pressure	J1	X	X	X	X
Adjust Motor Mount & Chain (Refer to Chart Section J2)	J2		X	X	X
Lubricate all Zerk Fittings	E		X	X	X
Lubricate all moving parts without Zerk fittings. Use all purpose engine oil	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	J5, J6, J7		X	X	X
Check service and adjust parking and manually operated brake.	J2		X	X	X
Check hydraulic brake system for leaks also check brake fluid level in master cylinder.	J3		X	X	X
Check rear axle differential oil level (refer to lubrication diagram)	J2 & E		X	X	X
Check, clean, and adjust forward reverse switch.	J5		X	X	X
Check motor brushes. Blow out carbon dust (replace if necessary)	J2			X	X
Check and adjust front wheel bearings and fork spindle bearings	J1			X	X

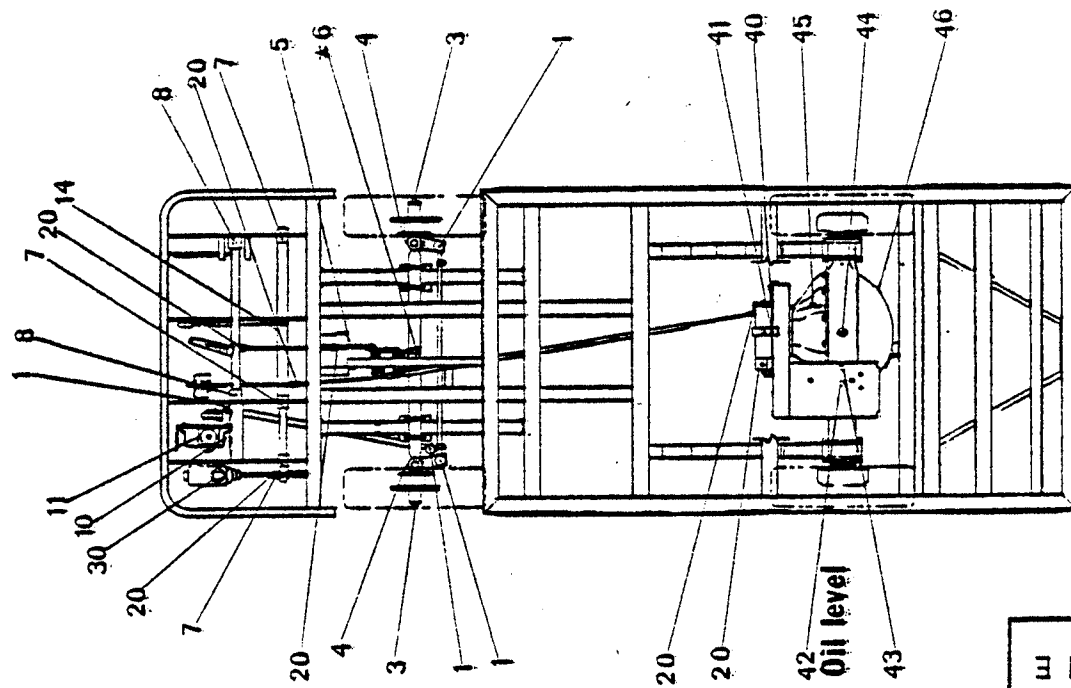
CAUTION: When working on any part of the vehicle electrical system, disconnect both main battery leads, place forward- reverse switch in neutral, turn key to off and remove from switch. Set parking brake.

MAINTENANCE GUIDE CHECKLIST

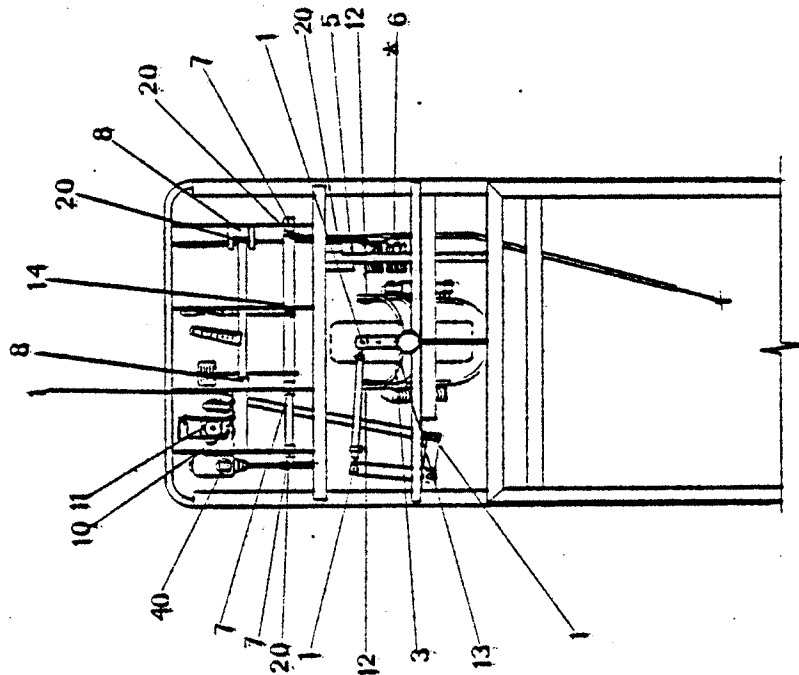
Maintenance Service	Refer Section	Every Week	Every Month	Every 3 Months	Every Year
* Check and adjust hand and foot operated brake system	J2		X	X	X
Check drive axle oil level. (Refer to lubrication diagram).	J2&E		X	X	X
* Lubricate front wheel bearings (2 zerk fittings)	E			X	X
* Clean surface between 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 30 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

CAUTION: Never bend the brake band anchor bolt. Any bending of the bolt may result in unexpected failure of the bolt and complete loss of Drive Line braking Action.

* Items related to safety recommendations

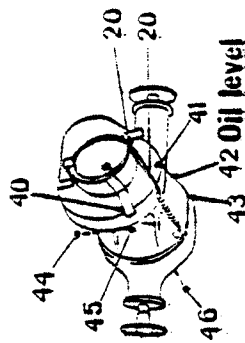


- 4 WHEEL MODEL -



- 3 WHEEL MODEL -
(rear assembly same as 4 wheel model)

*6, Lube WEEKLY by hand use T-D Grease 94-421-00 or high quality non-conductive hi-temp grease (500° min. melt. point).



PRESSURE GUN GREASE	
NO. OF GREASE POINTS	WHI.
1 Ball Joints	4
3 Front Wheel Hub	2
4 Front Wheel Spindle	2
5 Rocker Arm	1
6 Rheostat Bar (Lubricate by hand) (See Illus.)	1
7 Brake Linkage	3
8 Accelerator Linkage	2
10 Steering Worm	1
11 Grease Level Hole	1
12 Fork Pivot	0
13 Collar (Spindle)	0
14 Hyd. Brake Model only	1

20	Clevis Pins-Neck Linkage	6
30	Master Cylinder (Optional)	1
POWER TRACTION/SAE 30 OIL (2qt.)		
a.	Remove Drain Plugs 41 & 42	
b.	Remove Level Plugs 40 & 42	
	Fill Plug 44	
c.	Drain Oil & Replace 41 & 42	
d.	Add Oil By 44 To Level of 42	
e.	Add Oil By 40 To 1/2" BELOW PLUG	
f.	Replace Plugs	

LIGHT OIL

Clevis Pins-Neck Linkage

BRAKE FLUID-110 AUTOMOTIVE

Master Cylinder (Optional)

POWER TRACTION/SAE 30 OIL (2qt.)

- a. Remove Drain Plugs 41 & 42
- b. Remove Level Plugs 40 & 42
- Fill Plug 44
- c. Drain Oil & Replace 41 & 42
- d. Add Oil By 44 To Level of 42
- e. Add Oil By 40 To 1/2" BELOW PLUG
- f. Replace Plugs

NOTE: 43 & 46 Not Used
This Configuration

NO.	DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
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FIGURE 1
SECTION 3

TAYLOR DUNN MFG. CO.
2114 West 8th St.
Anaheim, Calif.

TOL. FRAC. ±	DEC. ±
SCALE	
DRAWN BY	J.M.
DATE	7-24-81

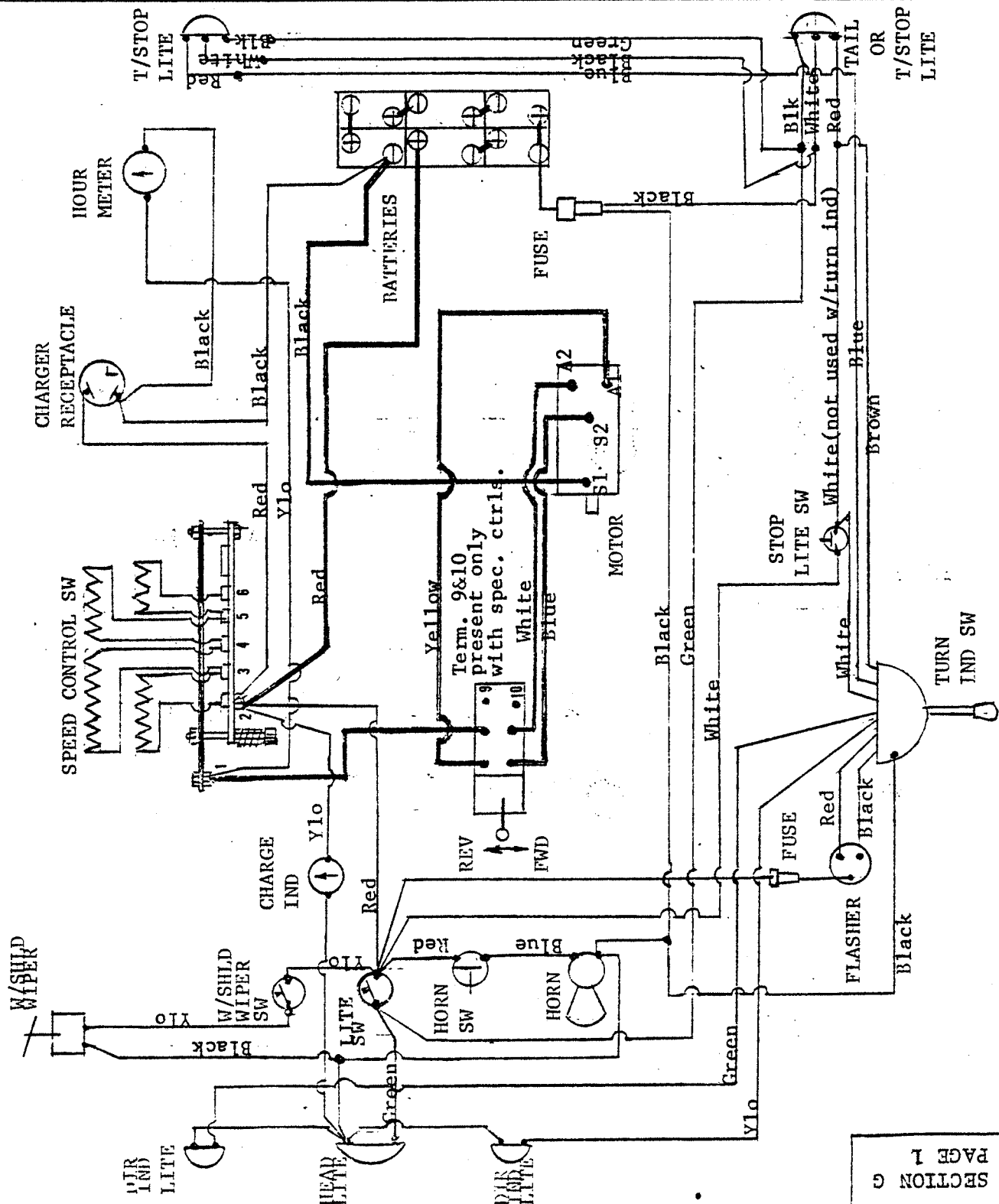
SECTION 1
PAGE 1

TROUBLE SHOOTING PROCEDURES

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>CORRECTIVE ACTION</u>
1. <u>Steering:</u>		
(a) Pull in one direction	1. Check for bent fork	Replace or straighten
(b) Hard Steering	1. Bad or frozen bearing in fork spindle collar	Replace
	2. Low tire pressure	Inflate to recommended pressure
(c) Sloppy or loose steering	1. Loose spindle bearing	Adjust
	2. Loose wheel bearing	Adjust
2. <u>Brakes:</u>		
(a) Soft brakes	1. Check for worn lining	Adjust or replace when 1/16 or less of lining left
	2. Alignment of brake shoes	Realign
	3. Oil on brake lining	Find oil source and correct, wash brake band
	4. Dirt on brake lining	Clean
	5. Bind in linkage	Loosen or realign
	6. Weak spring	Replace
	7. Air in hydraulic brake lines	Bleed brakes
	8. Bad seals in brake cylinders	Replace
(b) No Brakes	1. Broken shoe	Replace
	2. Broken connection in linkage	Replace
	3. Broken Axle	Replace
	4. Break in hydraulic line	Repair
	5. Seal failure in brake cylinder	Replace
3. <u>Drive Axle:</u>		
(a) No power	1. Discharged batteries	Recharge or replace
	2. Check rheostat for contact	Adjust or replace bars
	3. Check motor brushes for contact	Clean or replace
	4. Poor contact on forward-reverse switch	Repair or replace
	5. Check for loose wire	Tighten or replace
	6. Check continuity through motor	Repair or replace

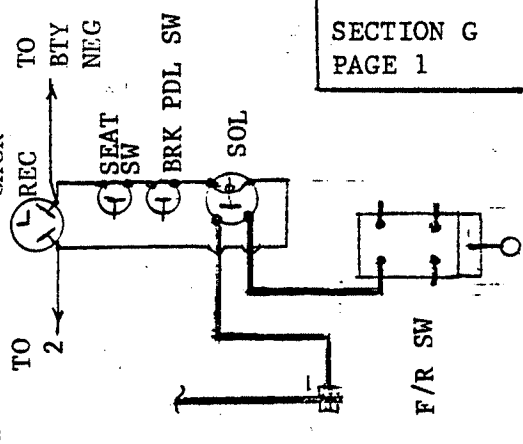
<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>CORRECTIVE ACTION</u>
(c) Jerky Starting	1. Resistor coil burned open 2. Resistor shorted together 3. Poorly adjusted rheostat 4. Badly worn J-Hook 5. Dirt between power bars causing shorts	Replace Spread apart Re-adjust Replace J-Hook & bars
(d) Takes off in forward or reverse without accelerator depressed	1. Dirt shorting out neutral bar 2. Check rheostat adjustment 3. Short in wiring circuit 4. Burned forward-reverse switch	Clean, re-adjust or replace bars Correct Replace
(e) Lack of Power or slow operation	1. Dragging brake 2. Tight front wheel bearing 3. Rheostat not making contact on high speed bar 4. Loose connection in wiring 5. Partially burned out motor or thrown lead 6. Weak batteries 7. Bind or drag on differential	Re-adjust Re-adjust Re-adjust or replace bars Tighten Replace or re-solder Replace Repair
(f) Thump or grinding noise in drive axle	1. Motor bearing 2. Loose motor on base 3. Worn Sprockets 4. Defective bearing in differential 5. Deffective gears in differential 6. Slack Drive Chain	Replace Tighten & adjust Replace sprocket and chain Replace Replace Adjust (Refer Section J2)


MODIFICATIONS FOR ANTI-REV SOLENOID INTERLOCK



SECTION G
PAGE 1

MODIFICATIONS FOR DEADMAN.
SEAT & BRAKE PEDAL, INTER-
LOCK CIGR



NO.		DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. $\frac{+}{-}$		DEC. $\frac{+}{-}$	<div>FIGURE 2 SECTION G</div> <div>WIRING DIAGRAM MODEL B, BN, & M 1971 & UP</div> <div></div> <div>TAYLOR DUNN MFG. CO. 2114 West Ball Rd. Anaheim, Calif.</div>			
SCALE		None				
DRAWN BY		CG				
DATE		8/8/74				

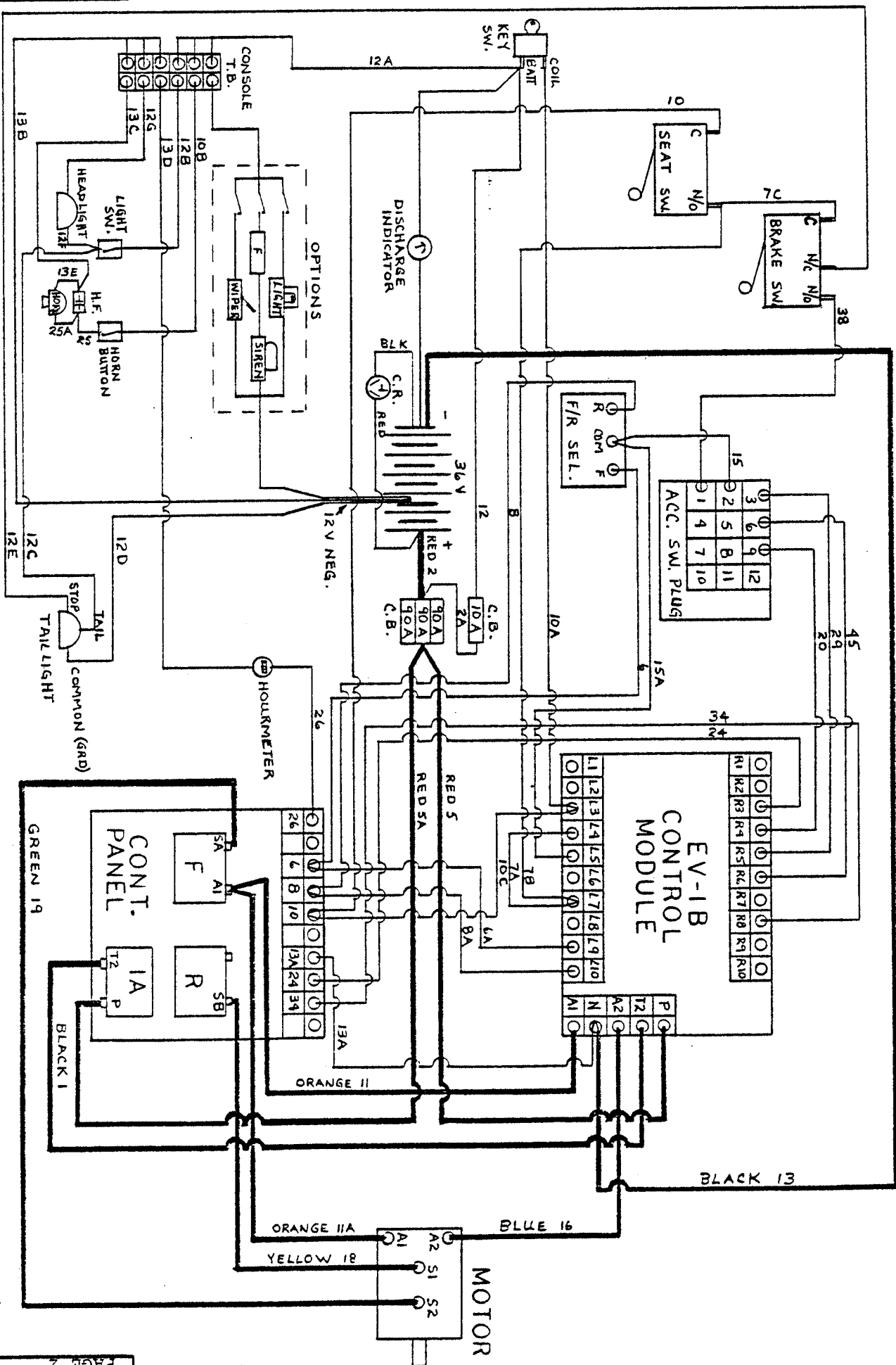
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FIGURE 3

SECTION 6

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

PARTS ORDERING PROCEDURE

Parts may be purchased from your local authorized Taylor-Dunn Dealer. When ordering parts, be sure to specify the complete model number and serial number of this 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 name plate. Be sure to give complete shipping and billing address on all orders. Example:

- 1 - Part Number - 86-501-98 - Ball Joint (Left Hand Thread)
- 1 - Set of 4 - Part Number - 70-124-00 - Motor brushes for Baldor Motor, 3-1/2 H.P., 36 Volt, Specification No. 28-1408-11704

Above parts for model 1245B Truck, Serial Number 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 number.

NOTE: On contracts with National Federal Government Agencies, Defence 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 West Ball Road
Anaheim, California 92804

Phone: 714-956-4040
Telex: 65-5393

SUGGESTED SPARE PARTS LISTS

PART NO.	DESCRIPTION	QUANTITY OF 1-20 UNITS
13-957-11	Tire Assembly, 18 x 5 x 14, 5 Hole	1
41-632-00	Brake Shoe, 11 x 2 x 1/2	1 Set
41-661-61	Brake band for drive shaft brake, with screw and locknut	1
45-507-00	Oil Seal for G.E. Motor	1
70-061-00	DC Electric Motor	1
70-112-00	Motor Brushes, Dual, One Terminal	4
80-703-00	O-Ring Motor Mount Plate Seal	2
71-100-00	Switch, light (Single Pole, Single throw)	1
71-501-00	Horn Button	1
72-022-00	Light, stop & tail 4" rubber mount (12 Volt)	1
72-072-00	Headlight, sealed beam bulb 4" (12 Volt)	1
72-008-00	Headlight, sealed beam bulb 5-1/4" (12 Volt) Optional	1
73-004-00	Horn (12 Volt)	1
75-231-00	Battery Jumper #6 Wire, 8" Long	5
76-012-00	Charging receptacle 30 Amp, 3 prong	3
77-200-00	Hydrometer	2
77-201-00	Battery filler	1
78-010-00	Secondary fuse and holder, inline type	2
79-819-00	Fuse, 30 Amp, Screw type	10
79-823-00	Fuse, buss type, 20 amp	3
85-060-00	Spring, compression 5/8" O.D. x 2-1/2" Long (Brake Band)	2
85-233-00	Spring extension, 11/16" O.D. x 6-1/4", accelerator return	4
85-270-00	Spring extension 1-1/4" O.D. x 4-3/8", brake return	4
85-250-00	Spring extension 1-1/16" O.D. x 3-5/8", brake pedal return	4
78-212-51	Resistor coil #9 wire, 10 turns (used between 1st and 3rd speed)	1
78-212-52	Resistor coil #6 wire, 9 turns (used between 2nd and 3rd speed, all rheostats and 3rd and 4th speed on 5 speed rheostat)	2
78-212-53	Resistor coil #5 wire, 6 turns, (used between last speeds on 4 and 5 bar rheostats)	1

SUGGESTED SPARE PARTS LIST
EV-1B SCR SYSTEM

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. 1-20 UNITS
<u>REFER TO FIGURE 1, FORWARD/REVERSE SWITCH</u>			
3-1	71-091-51	Cover	1
3-3	71-091-53	Handle and Hub Assembly	1
3-8	71-091-58	Spring, Cam Follower	1
3-11	71-091-60	Switch, Forward and Reverse	2
3-12	71-091-61	Capacitor Assembly	2
(NOT SHOWN)	71-091-71	Mounting Clamp, Steering Column	1
<u>REFER TO FIGURE 4, ACCELERATOR SWITCH</u>			
4-1	61-912-51	Switch Assembly	2
4-8	61-912-59	Cam Shaft Assembly	1
4-10	61-912-61	Spring, Return	2
4-13	61-912-64	Potentiometer 5K, W/Mounting Clamp	1
(NOT SHOWN)	61-912-66	Hose	4
"	61-912-67	Clamp, Hose	4
"	61-912-68	Cover	1
<u>REFER TO FIGURE 6 & 7, 150A-36/48V CONTACTOR PANEL</u>			
6-10	71-305-70	Contactor, Fwd, Single Pole, Double Throw	1
6-11	71-305-80	Contactor, Rev, Single Pole, Double Throw	1
6-12	71-305-90	Contactor, 1A, Single Pole, Double Throw	1
6-25	71-305-54	Contactor Driver	2
7-13	71-305-71	Coil, 36/48V., Forward/Reverse Contactors	1
7-13	71-305-91	Coil, 36/48V, 1A contactor	1
7-14	71-305-72	Coi. 24 Volt, Forward Reverse Contactors	1
7-14	71-305-73	Moving Tip Assembly, Forward/Revers Contactors	1
7-14	71-305-92	Coil, 24 Volt, 1A Contactor	1
7-14	71-305-95	Moving Tip Assy., 1A Contactor	1

SUGGESTED SPARE PARTS LIST (CONT'D)
EV-1B SCR SYSTEM

FIT. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. 1-20 UNITS
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REFER TO FIGURE 6 & 7, 150-36/48V CONTACTOR PANEL (CONT.)

7-15	71-305-81	Terminal, R.H. Top, Reverse Contactor	1
7-15	71-305-82	Terminal, L.H. Bottom, Rev. Contactor	1
7-15	71-305-83	Terminal, R.H. Bottom, Rev. Contactor	1
7-15	71-305-93	Terminal, L.H., 1A Contactor	1
7-15	71-305-94	Terminal, R.H., 1A Contactor	1

REFER TO FIGURE 8, MODEL "B" CONTROL MODULE

QTY.

8-3	62-011-51	Rectifier Assembly, (1 REC)	1
8-4	62-011-52	Rectifier Assembly, (2 REC)	1
8-5	62-002-54	Rectifier Assembly, (5 REC)	1
8-7	62-002-56	Rectifier Assembly, (3 REC)	1
8-8	62-011-54	Rectifier Assembly, (4 REC)	1
8-11	62-011-55	Shunt Assembly	1
8-12, 12A	62-002-60	Capacitor	1
8-13	62-011-56	Transformer	1
8-14	62-002-62	Capacitor, Commutating 200 Volt	1
8-15	62-002-63	Snubber Assembly	2
8-16	62-002-64	Thermal Protector	1
8-17	62-002-65	Control Terminal Block	1
8-18	62-002-66	Cover, Terminal Block	1
8-25	62-002-67	Support, Card Box (Left Hand)	1
8-26	62-002-68	Support, Card Box (Right Hand)	1
8-30	62-002-70	Resistor	1
8-32	62-002-52	Card Assembly w/o Field Weakening Serial IC36450SCC1D3	1
	94-422-00	Grease, Heat Sink	

Illustrated Parts List



MAINTENANCE PROCEDURES
FRONT AXLE, STEERING AND TIRES

REFER TO FIGURE 4

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.

If your vehicle is equipped with 4 wheel hydraulic brakes, refer to the service and adjustment Section of this manual under Hydraulic Brake Section J3 for their proper care and adjustments.

The steering worm gear box and steering linkage is similar to those used on autos. It requires very little attention. Refer to Section J1A for disassemble and reassemble Steering Worm Assembly.

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.

Tire Care:

An occasional inspection to check tire condition is all that is required for solid cushion tires.

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

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 bearing without disassembling hub. Refer to Lube Chart in Section E.

REMOVE AND INSTALL KING PINS AND 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.
- 2a. Disconnect drag link ball joint at Pitman Arm, remove cotter pin and nut, rap stud sharply with soft hammer, or soft block and regular hammer, to loosen tapered stud from Pitman Arm.
3. Remove 7/8 lock nut which retains spindle and steering arm assembly to kingpin.
4. Remove kingpin from axle. If it is necessary to force the pin from the axle, use a soft rod, such as bronze or aluminum.
5. Remove spindle and steering arm assembly, and thrust bearing, from axle yoke.
6. Press bushings from spindle.
7. Thoroughly clean bushing housing and kingpin before installing new bushings.
8. Press bushing 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.
9. Reassemble in reverse order. Lightly oil kingpin and tap into place in axle. Where it is necessary to use force to assemble components, use a soft hammer or punch.
10. After reassembly, tighten ball joints securely. Lubricate bushings and kingpin 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".

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

ALIGN FRONT END: ADJUST TOE IN

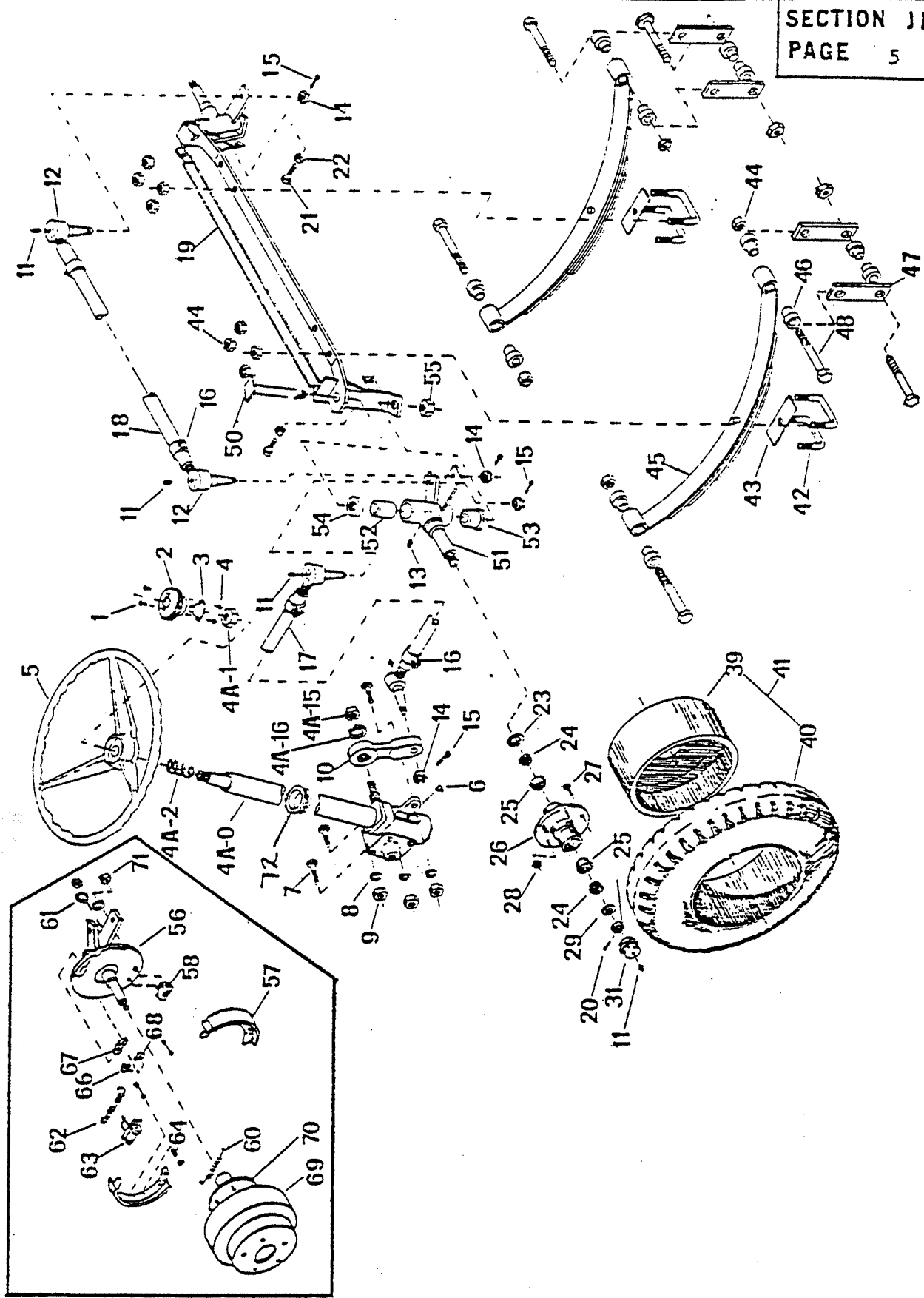
1. Caster and camber are set at the factory and do not require adjustment. To adjust toe-in, raise front end of vehicle off the ground.
2. With a pencil, make a mark around center of tread of tire by holding pencil point against tire while turning wheel. Mark both front tires.
3. Lower vehicle to ground. 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 as 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.

REMOVE AND 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 Pitman 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 subsection titled "Align Front End".
9. If ball joint replaced is part of the linkage from Pitman 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 fittings. Refer to Lube Chart in Section E.

REMOVE AND REPLACE STEERING WORM ASSEMBLY

1. Pry steering wheel cap up to expose locknuts holding horn button in place.
2. Remove 2 horn button screws.
3. Remove wiring from horn button and slide out of steering tube through bottom.
4. Remove lock nut and with suitable puller, remove steering wheel.
5. Align steering lever & drag link grease fitting up with the hole in support plate under floor board.
6. Remove Cotter Pin & Castle Nut on drag link. Remove drag link.
7. Remove 7/8 Nut & lock washer on steering lever & steering worm assy. remove steering lever.
8. Remove 10 #8 x 1/2 Hex Hd. sheet metal screws from steering gear support cover & remove cover from steering gear support.
9. Remove 3 7/16-20 UNF Hex Hd. cap screws & nuts from steering worm assy. and steering gear support.
10. Pulling to the right & turning steering worm assy. clockwise pull steering worm assy. down & out of car.
11. Install steering worm in reverse to manner outlined in steps 1 to 8.
12. When installing steering wheel, rotate the steering shaft until the front wheels are aimed straight ahead. Install steering wheel in centered position.
13. Adjust minor misalignment. Loosen steering link sleeve clamps and adjust steering link until front wheel and steering wheel are both in position.
14. Check that you will be able to turn the steering mechanism equally in both directions. If you cannot, it means the universal yoke was not properly installed and it will be necessary to separate universal, remove yoke and replace it in the proper position.
15. Lubricate steering worm through zerk fitting located on worm housing. Refer to Lubrication Diagram and Maintenance Guide Sections D & E.



SECTION 11
PAGE 5

LENGTH QUANTITY REVISED DATE REVISION

FRONT AXLE & STEERING
12548

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

NO. DESCRIPTION
TOL. FRAC. DEC.
SCALE
DRAWN BY J.M.
DATE 2-26-80

4 WHEEL FRONT AXLE AND STEERING
REFER TO FIGURE 4

FIG. I.D. NO.	T.D.PART NO.	DESCRIPTION	QTY. REQ.
4-1	88-025-08	Truss Head Machine Screw 8-32 x 5/8"	2
4-2	19-004-20	Cap with Horn Button Hole (Steering Wheel)	1
4-3	71-501-00	Horn Button (Standard)	1
4-4	88-029-80	Lock Nut 8-32 (Hex)	2
4-5	19-003-10	Steering Wheel	1
4A-0, 4A-1, 4A-2, 4A-15, 4A-16	NOTE: REFER TO SECTION J1A FOR DETAILED DIAGRAM OF STEERING WORM ASSEMBLY AND PARTS LIST		
4-6	87-073-00	Grease Fitting - 3/16" Drive Typer 45°	2
4-7	88-130-14	7/16 x 1-1/2 NF Hex Hd Screw	3
4-8	88-128-60	Washer 7/16" Flat	3
4-9	88-130-86	7/16" NF Fiber Insert Locknut	3
4-10	18-104-00	Steering Lever	1
4-11	87-074-00	Grease Fitting 1/4" - 28 THD (Straight)	6
4-12	86-501-98	Ball Joint (Left Hand Thread)	2
4-12	86-501-99	Ball Joint (Right Hand Thread)	2
4-13	87-071-00	Grease Fitting 3/16" Drive Type (Straight)	2
4-14	88-159-85	Castle Nut 1/2" NF (Hex)	4
4-15	88-527-11	Cotter Pin 1/8 x 1"	4
4-16	86-510-00	Ball Joint Clamp	4
4-17	18-055-11	Steering Adjustment Sleeve (27" Long)	1
4-17	18-055-10	Steering Adjustment Sleeve Assembly with Ball Joint & Clamps (13" Long)	1
4-18	18-041-00	Steering Adjustment Sleeve (22-1/2" Long)	1
4-18	18-041-10	Steering Adjustment Sleeve Assembly with Ball Joints & Clamps (22-1/2" Long)	1
4-19	15-049-10	Assembly Front Axle, Spindles, Hubs, Steering Stops & Tie Rod	1
4-19	15-049-12	Assembly, Front Axle for Hyd. Brakes with Spindles, Hubs, Steering Stops, Tie Rod and Brake Assemblies	1
4-20	88-527-14	Cotter Pin 1/8" x 1-1/2"	2
4-21	88-151-16	1/2 x 2 NF Hex Hd Screw, Grade 5	2
4-22	88-159-82	1/2 NF Jam Nut	2
4-23	45-338-00	Oil Seal	2
4-24	80-017-00	Tapered Roller Bearing	2
4-25	80-103-00	Tapered Bearing Race	4
4-26	12-124-00	Front Hub with Two Bearing Races, One Bearing and One Oil Seal - Five 1/2 NF Studs on 4-1/2" Bolt Circle (Not used with Front Brakes)	2

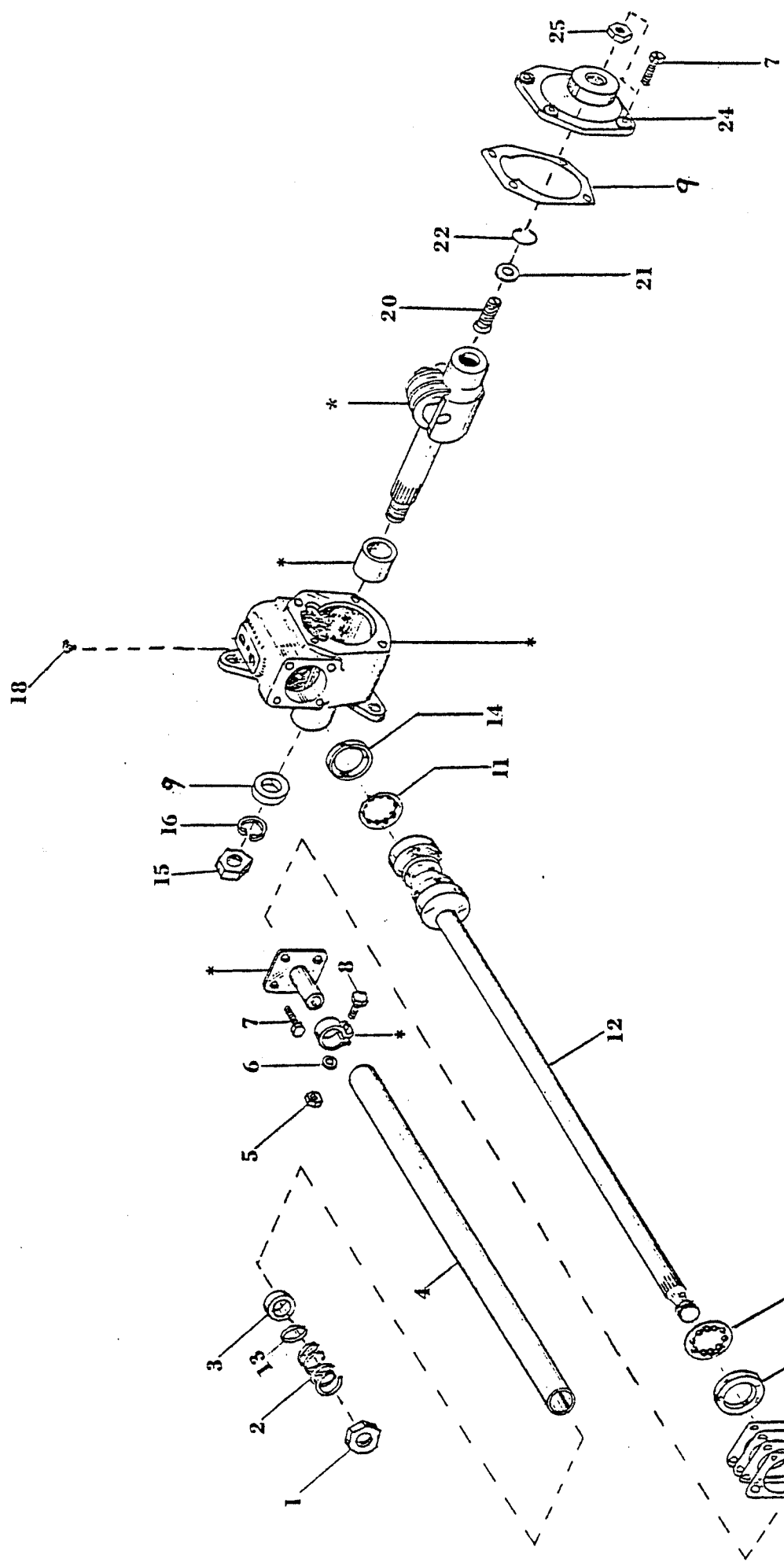
FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
4-27	96-329-00	Lug Bolt 1/2" NF	10
4-28	97-236-00	Lug Nut 1/2 NF	10
4-29	88-228-60	Washer, 3/4	2
4-30	88-239-85	Castle Nut 3/4" N.F. (Hex)	2
4-31	92-104-00	Dust Cap With Grease Fitting	2
4-39	12-050-00	Wheel for 18 x 5 x 12-1/8 Solid Cushion Tire (Five 1/2" holes on 4-1/2" Bolt Circle)	2
4-40	10-260-00	Tire-Solid Extra Cushion, All Service 18 x 5 x 12-1/8	2
4-41	13-955-10	Tire & Demountable Cast Iron Wheel, 18 x 5 x 12-1/8 Solid Extra Cushion. All Service Tire (Five 1/2" Holes on 4-1/2" Bolt Circle on Wheel)	2
4-42	96-103-00	"U" Bolt Front Axle with Five Leaf Spring	4
4-43	16-858-00	Spring Pad	2
4-44	88-149-81	Lock Nut 1/2" NC (Hex)	14
4-45	85-486-00	Leaf Spring Unit (26" Centers - Five Leaf)	2
4-46	98-601-00	Grommet, Rubber	12
4-47	16-872-00	Shackle Strap	4
4-48	96-240-00	1/2 x 4 NC Hex Cap Screw (Pointed)	6
4-50	21-009-00	King Pin	2
4-51	14-099-98	Spindle Assembly, Including Bronze Bushings and Grease Fitting - Left Side	1
4-51	14-099-99	Spindle Assembly, Including Bronze Bushings and Grease Fitting - Right Side	1
4-52	32-204-00	Bronze Bushing (Without Flange)	2
4-53	32-200-00	Bronze Bushing (With Flange)	2
4-54	80-309-00	Thrust Bearing	2
4-55	88-279-81	7/8 NF Hex Head Lock Nut	2
4-56	14-163-98	Front Spindle Assy. with Brake Mount - Left	1
4-56	14-163-99	Front Spindle Assy. with Brake Mount - Right	1
4-57	41-601-00	Brake Shop and Lining Set (2 Lined Brake Shoes)	2 Sets
4-58	42-051-00	Brake Adjustment Unit with 2 Studs	2
4-60	85-206-00	Extension Spring - 3/8 OD x 3-3/8 Long (Black)	2
4-61	88-068-62	1/4" Lock Washer	4
4-62	85-205-00	Extension Spring - 5/16 OD x 4-1/4 Long (red)	2
4-63	99-501-00	Wheel Cylinder	2
4-64	85-050-00	Compression Spring, 9/16 OD x 1/2 Long (Green)	4
4-66	42-049-00	Retainer Clip - Wheel Cylinder (Curved-Inner)	2
4-67	42-052-00	Wheel Cylinder Rubber Cover	2
4-68	42-048-00	Retainer Clip - Wheel Cylinder (Flat-Outer)	2
4-69	41-512-01	Drum	2
4-70	12-158-00	Wheel Hub (Used only with Front Wheel Brakes)	2
4-71	88-079-80	1/4 NF Hex Nut	4
4-72	98-602-00	Grommet, Rubber 1-1/2" I.D.	1

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
4-42	96-103-00	"U" Bolt Front Axle with Five Leaf Spring	4
4-43	16-858-00	Spring Pag	2
4-44	88-149-81	LOCK NUT 1/2" NC (Hex)	14
4-45	85-486-00	Leaf Spring Unit (26" Centers - Five Leaf)	2
4-46	98-601-00	Grommet, Rubber	12
4-47	16-872-00	Shackle Strap	4
4-48	96-240-00	1/2 x 4 NC Hex Cap Screw (Pointed)	6
4-50	21-009-00	King Pin	2
4-51	14-099-98	Spindle Assembly, Including Bronze Bushings and Grease Fitting - Left Side	1
4-51	14-099-99	Spindle Assembly, Including Bronze Bushings and Grease Fitting - Right Side	1
4-52	32-204-00	Bronze Bushing (Without Flange)	2
4-53	32-200-00	Bronze Bushing (With Flange)	2
4-54	80-309-00	Thrust Bearing	2
4-55	88-279-81	7/8 NF Hex Head Lock Nut	2
4-56	14-163-98	Front Spindle Assembly with Brake Mount - Left	1
4-56	14-163-99	Front Spindle Assembly with Brake Mount - Right	1
4-57	41-601-00	Brake Shop and Lining Set (2Lined Brake Shoes)	2 Sets
4-58	42-051-00	Brake Adjustment Unit with 2 Studs	2
4-60	85-206-00	Extension Spring - 3/8 OD x 3-3/8 Long (Black)	2
4-61	88-068-62	1/4" Lock Washer	4
4-62	85-205-00	Extension Spring - 5/16 OD x 4-1/4 Long (Red)	2
4-63	99-501-00	Wheel Cylinder	2
4-64	85-050-00	Compression Spring, 9/16 OD x 1/2 Long (Green)	4
4-66	42-049-00	Retainer Clip - Wheel Cylinder (Curved-Inner)	2
4-67	42-052-00	Wheel Cylinder Rubber Cover	2
4-68	42-048-00	Retainer Clip - Wheel Cylinder (Flat-Outer)	2
4-69	41-512-01	Drum	2
4-70	12-158-00	Wheel Hub (Used only with Front Wheel Braker)	2
4-71	88-079-80	1/4 NF Hex Nut	4
4-72	98-602-00	Grommet, Rubber 1-1/2" I.D.	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 not 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.



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

NO.		DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
TOL. FRAC. ±		DEC. ±				
SCALE		NONE				
DRAWN BY						
FIGURE 4A SECTION J1A			STEERING WORM ASSEMBLY			
			TAYLOR DUNN MFG. CO. 2114 1 Ball Rd. Anaheim, Calif.			

STEERING WORM ASSEMBLY
REFER TO FIGURE 4A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
4A-0	18-307-14	Steering Gear - this part number no longer valid - see BUL-98-09-011	
4A-1	88-259-82	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	88-099-80	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	18-307-56	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, Gear 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

MAINTENANCE PROCEDURES
"POWER TRACTION" REAR AXLE, MOTOR AND BRAKES
REFER TO FIGURE 5

Your "Power Traction" direct 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.

An adjustable motor mount has been provided to extend normal chain life. Refer to Section J2 Page 7 for proper adjustment procedures. It is important to adhere to the adjustment schedule included on Page 8. Failure to do so will seriously effect normal chain life.

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 they should be replaced. Approximately 3000 hours operating life may be expected from a new set of brushes. To determine when to replace worn brushes, proceed as follows:

1. For motors equipped with brushes having end pigtails and side hooks, replace brush when hook is within 1/16" from bottom of hook slot.
2. For motors equipped with brushes having side pigtails only, replace brush when pigtail is within 1/16" from bottom of pigtail slot.

NOTE: When one brush is replaced in a motor, it is considered good maintenance practice to replace all 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.

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.

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 2 years.

SERVICE AND ADJUSTMENTS
REFER TO FIGURE 5
"POWER TRACTION" REAR AXLE, MOTOR AND BRAKES

Adjustment of Brake (Minor) To Compensate For Normal Lining Wear. Important Note.

Observe position of Brake Lever Arm. It must be 1/16" to 1/4" from Gear Case Cover with brake pedal and hand brake fully released.

If brake lever arm is not in the correct position, due to improperly adjusted cables or brake rods, then it will be necessary to perform a complete major brake adjustment as itemized under next section "Adjustment of Brakes (Complete)".

Note: If brake lever arm is in the correct position as described above, it will not be necessary to touch cable or rod adjustments.

1. Adjust brake band anchor bolt and nut, tightening it until brake pedal travels approximately half way to floorboard engaging brake sufficiently to stop vehicle. Vehicles equipped with automatic (deadman) brake requires the treadle to operate the braking action within the last 1/4 of its stroke.
2. Adjust centering screws, centering band around drum to bring band as close to drum as possible without brake dragging. Lock centering screw. If band is too far from brake drum, brakes will grab in the forward direction.

CAUTION: Never bend the brake band anchor bolt. Any bending of the bolt may result in unexpected failure of the bolt and complete loss of Drive Line braking Action.

Adjustment of Brake (Complete Except for Automatic (Deadman) Brake Refer to Section J4

1. Loosen clevis and locknut on foot brake, cable (or rod) and adjust length to position brake lever arm 1/16" to 1/4" from gear case cover as described above. It may be necessary on vehicles equipped with other control cables such as handbrake cables to disconnect them so they will not interfere with this first important adjustment.
2. Adjust brake band as outlined in steps 1 and 2 and CAUTION note above.
3. Adjust hand parking brake lever knob on end of handle, turning counterclockwise until it stops. Place lever in locked position. Then loosen clevis locknut on cable or rod on underside of parking brake lever and adjust cable or rod (by shortening) until brake band engages drum properly. Lock clevis nut.
NOTE: Brake band and brake cable must be adjusted first as outlined above.

4. Try completely releasing hand lever to be certain brake band is completely released. Additional brake holding power can be applied by turning knob on end of handle in clockwise direction.

NOTE: Turning knob in clockwise direction increases travel of brake cable but decreases leverage of brake lever. Therefore, if it is adjusted too far clockwise the lever will be difficult to operate. You compensate for this condition by shortening hand brake rod as outlined above. Caution: If you shorten rod too far, you will not allow the brake band to completely release. Obviously the ideal condition is midway between the two extremes described above.

5. If vehicle is equipped with hydraulic wheel brakes, refer to Section J3 for service and adjustment.
6. If vehicle is equipped with brake-accelerator lock, refer to Section J4 for service and adjustment.
7. If vehicle is equipped with Automatic (Deadman) brake, refer to Section J4 for service and adjustment.

Removal of Brake Assembly and Drum

1. Remove cotter pin and clevis pin, disconnecting cable from brake lever arm, (note location of clevis). Remove lever arm return spring.
2. Remove 4 bolts holding brake mounting assembly and slide assembly off drum.
3. Band and drum may now be clean, inspected, and if necessary parts may be replaced as needed.
4. Brake band lining is bonded to the band for long dependable service. When it wears to approximately 1/16" thickness the band should be replaced.
5. If the brake drum is scored, it should be removed and turned. It is recommended that a brake drum that has been severely scored or damaged should be replaced with a new drum.
6. Inspect seal in gear case cover. If worn or damaged, replace with new one. It is recommended that new seal be pre-soaked in light oil for several hours before installation. Use small amount of oil resistant sealer on seal opening in cover when pressing seal into place.
7. Re-assemble drum and spacer on pinion shaft. Tighten to 100 lb. ft. torque.
8. Replace brake assembly in the reverse order to which it was removed.
9. Adjust brake band and cables as outlined on page 2.

Removal of "Power Traction" Rear Axle & Drive Assembly From Chassis.

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 pin and disconnect brake cable 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.)
NOTE: Steps 7 and 8 refer to vehicles with spring suspension.
7. Remove "U" Bolt clamp and nuts attaching spring to frame.
8. Remove spring eye anchor bolts.
9. Remove 4 bolts attaching power traction assembly to frame (Only on unsprung type vehicles).
10. Remove axle and drive assembly from chassis.
11. Install axle and drive assembly in the reverse order of removal, taking care that support pads and rubber bushings are in good condition. (Replace if worn or damaged.)
12. Check brake adjustments as previously outlined on page 2.
13. 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 "Power Traction" Rear Axle

1. Remove unit from chassis. (As previously outlined)
2. Remove wheels and drain oil from housing.
3. Lock drive shaft brake by pulling brake lever. Remove pinion nut and pull off brake drum.
4. Remove four bolts and spring and lift off brake assembly.
5. Remove remaining nuts and bolts, and remove drive case cover.
6. Remove 3 nuts and washers and remove motor and mount plate. (If motor requires further service, refer to appropriate Section J2 of this manual).
7. Remove chain and pinion sprocket. Observe location of spacers on shaft. Refer to Figure 5 for their correct location.
8. Remove five bolts holding back plate and remove from carrier housing.
9. On hydraulic brake models, remove brake drums, disconnect hydraulic line, remove brake shoe return springs (orange color) and remove wheel cylinders.
10. Remove four bolts on each end holding axle retainer (and brake backing plate on hydraulic brake models) and pull both axles.
11. Remove nuts around differential carrier housing and remove carrier from axle housing. (Note position of clip for proper reassembly of brake spring.).
12. Mark one differential bearing cap and bearing support to insure proper assembly. Remove adjusting nut locks, bearing caps, and adjusting nuts.
13. Remove drive gear from differential case.
14. Drive out differential pinion shaft retainer and separate the differential pinion shaft and remove gears and thrust washers.
15. Remove drive pinion retainer from carrier. Remove O-ring from retainer.
16. Remove pinion locating shim. Measure shim thickness with micrometer.
17. 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.
18. Press the pinion shaft out of front bearing cone and remove spacer.
19. Remove pinion bearing cone.
20. 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 gauge between cup and bottom of bore.

Re-Assembly of Power Traction Rear Axle

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 inside 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
2. If the differential bearings have been removed, use a suitable press to install them.
3. Pinion and Retainer: Install pinion rear bearing cone on the pinion shaft. Install spacer with shims on shaft. Place the bearing retainer on the pinion shaft, and install the front bearing cone.
4. Lubricate both bearings with differential oil. Place spacers, sprocket and brake drum on spline with nut and washer and tighten to 100 lb. ft. torque.

NOTE: The bearing should spin free but have no play. If tight or loose, adjust with .005" and .019" shims.

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, Fig. 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: The 5 bolts will have to be removed later to install back plate assembly.)
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 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 a new bearing and new bearing retainer ring be pressed onto the axle shaft, and a new gasket be installed between the bearing and bearing seat in the housing. Refer to Figure 5.
12. Remove pinion nut, spacers, brake drum, and sprocket. Remove 5 bolts from pinion bearing retainer.
13. Install gasket (use gasket sealer) and back plate assembly. Tighten 5 bolts to 50 lb. ft. torque.
14. Install spacers, sprockets and chain in the reverse order to which they were removed. Take care that 3/16" woodruff key is in proper position and all spacers are in original position. Tighten 3/4" motor shaft nut to 75 lb. ft. torque (if sprocket was removed from motor).
15. Install motor and motor mount plate with "O" ring. Do not tighten 3 nuts until final adjustment is made. Be sure motor terminals are located in the same position as when motor was removed.
16. If seal is worn or damaged in gear case cover, replace with new seal. It is recommended that new seal be pre-soaked in light oil for several hours before installation. When pressing new seal into cover use small amount of oil resistant sealer on seal opening in cover.

17. Install gear case cover to backplate and pinion shaft. Assemble, but do not tighten, retaining bolts and nuts.
18. 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 19 through 22.
19. Install pinion shaft washer and nut, and tighten to 100 ft. lb. torque.
20. Tighten gear case cover retaining bolts and nuts. ..
21. Remove pinion shaft nut and washer, and remove centering tool.
22. Install brake drum, washer, and pinion shaft nut. Tighten nut to 100 ft. lb. torque.
23. Install brake band, brake band anchor bracket, and brake band centering brackets to gear case cover, and tighten retaining bolts.
24. Replace wheels and fill chain and differential housing with approximately 2 qts. SAE 30 oil.
25. Replace unit in chassis following steps 11 to 13 outlined in Section titled Removal of "Power Traction" Rear Axle.
26. Adjust motor mount plate (as outlined in Motor Adjustment Section following) to proper chain tension.

Adjustment of Motor Mount to Tension Chain

1. Tighten three motor mount nuts.
2. 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 effect the life of the chain.
3. 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.
4. After developing the required torque, unscrew the adjusting screw exactly 2½ turns. It is also very important to be exact on this adjustment.
5. Tighten locknut, DO NOT allow adjusting screw to move while tightening locknut.
6. 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.
7. 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.

Scheduled Adjustment	Hours Running	Comments
1st Adjustment	0	New Unit or After Installing New Chain
2nd "	Next 100 Hrs.	Normal Running Conditions
3rd "	Next 150 Hrs.	" " "
4th "	Next 250 Hrs.	" " "
Thereafter	Every 400 Hrs.	" " "

Removal of Motor For Minor Repairs

1. CAUTION: Disconnect both main battery leads to prevent accidental engagement of power while servicing unit.
2. Drain oil from gear case by removing drain plug.
3. Unhook brake spring.
4. Remove all bolts & nuts around gear case cover.
5. Remove brake band assembly with brake cables attached. Place assembly on floor under chassis.
6. Remove pinion nut, washer & brake drum.
7. Remove gear case cover.
8. Clearly mark motor leads to insure their proper location when re-assembling. Remove motor leads.
9. Remove 3 nuts & washers and remove motor & mount plate.
10. If replacing motor, remove nut, washer, sprocket, and spacers. Also remove motor mount plate. Note: Observe location of motor terminals in relation to motor mount plate.

Install Motor in "Power Traction" Drive.

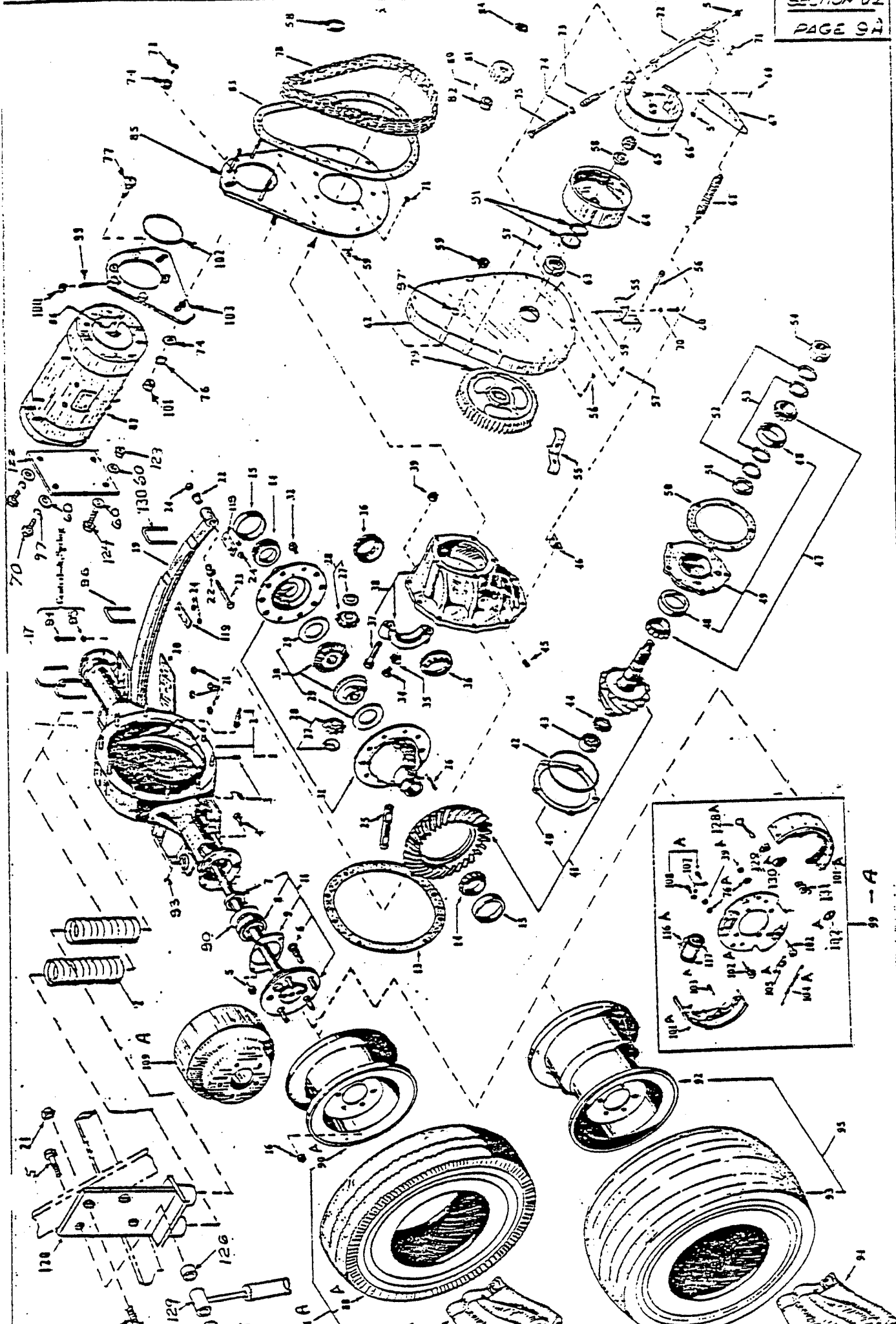
It is not necessary to remove motor mount plate when performing minor motor repairs. Therefore, follow step 1 only when replacing motor with new one.

1. Clean motor surface and install mounting plate with four flat head cap screws. Tighten to 30 lb. ft. torque. Stake head in place with centerpunch. Note: It is important to locate the motor mount plate in relation to the motor terminal so that the motor terminals will be in an accessible location when drive is completely assembled.
2. Place "O" ring into motor mount plate opening and attach motor and plate to back plate.
3. Re-assemble drive in the reverse order to that of removal.
4. Adjust motor mount to obtain proper chain tension.
5. Refill gear case with SAE 30 oil.

Motor Repairs.

Unless the maintenance man is properly qualified, it is advisable that repair work be done at a qualified service station. When ordering replacement parts, give complete name plate data.

Disassembly of Motor (Refer to Section J2M).



DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
FIGURE 5A				
"POWER TRACTION"				
DEAD END MOTOR & BRAKES				

TAYLOR DUNN MFG. CO
211 West Ball Rd.
A. John, Calif.

DATE DEC. 1
BY NONE
DRAWN BY J. J. JEN

POWER TRACTION DRIVE AXLE
REFER TO FIGURE NO. 5 A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
5-1 A	41-290-03	Housing, Rear Axle	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	38-080-09	5/16 x 3/4 N.C. Hex Head Cap Screw	14
5-5	38-109-31	3/8 N.C. Lock Nut	13
5-6	96-331-00	Bolt - 1/2 N.F. Rear Hub	10
5-7 A	32-509-00	Retainer Ring, F2, Large bearing	2
5-8 A	80-505-00	Ball Bearing, Rear Axle	2
5-9 A	32-511-00	Retainer Plate, F2, Large Bearing	2
5-11 A	K1-109-32	Axle, Rear, F2	1
5-11 A	K1-109-34	Axle, Rear, F2	1
5-13	45-042-00	Gasket, Axle Housing to Differential	1
5-14	80-511-00	Tapered Roller Bearing-Carrier (Small 1.628 ID)	2
5-14	80-512-00	Tapered Roller Bearing-Carrier (Large 1.784 ID)	2
5-14	80-513-00	Tapered Roller Bearing LM 102949, I.D. 1.7812 Use with 80-129-00 Bearing Race	2
5-15	80-127-00	Tapered Bearing Race-Carrier (Small)	2
5-15	80-128-00	Tapered Bearing Race-Carrier (Large)	2
5-15	80-129-00	Tapered Bearing Race LM 102910 OD 28910 Use with Bearing 80-513-00	2
5-16	97-236-00	Nut 1/2" N.F. (Lug)	18
5-17	96-122-00	U-Bolt, 1/2 N.C.	4
5-19	85-510-15	Five Leaf Cantilever Spring Assembly	2
5-20	16-861-00	Pad, Spring 3 x 5 x 1/4 Thick	2
5-21	88-109-87	3/8 N.C. Fastener Nut	20
5-22	98-601-00	Grommet, Rubber, 1/2 I.D.	4
5-23	96-240-00	Bolt with Pointed End, 1/2 x 4 Long	2
5-24	88-149-81	1/2 N.C. Lock Nut	6
5-25	41-700-00	Differential Pinion Shaft	1
5-26	41-701-00	Pin, FZ	1

POWER TRACTION DRIVE AXLE
REFER TO FIGURE NO. 5A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
5-27	41-702-00	Differential Pinion Shaft Thrust Washer	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
5-31	41-712-00	Differential Gear Case Assembly (Small Carrier Bearing 1.628 I.D.)	1
5-31	41-713-00	Differential gear Case Assembly (Large Carrier Bearing 1.784 I.D.)	1
5-32	88-131-10	Hex Head Cap Screw 7/16" x 7/8" N.F., H.T.	10
5-34	88-080-04	5/16 x 3/8 N.C. Hex Head Cap Screw	2
5-35	41-706-51	Nut Lock, Diff. brg. Adjustment with Right Angle Tab W/Last Bend 1/4" Long. Use W/41-708-50	2
5-35	41-706-00	Diff. B. Adj. Nut.	2
5-35	41-706-50	Differential Bearing Adjustment Nut Lock	2
5-35	41-706-50	Nut Lock, Diff. Brg. Adjustment with Right Angle Tab W/Last Bend 1/2" Long. Use W/41-707-50	2
5-35	41-706-50	Diff. B. Adj. Nut	2
5-36	41-707-00	Nut Differential Bearing Adjustment 3 1/8" - 16 Thread (For Small Carrier Bearing 1.628" I.D.)	2
5-36	41-708-00	Nut-Differential Bearing Adj. 3 5/16" - 16	2
5-36	41-708-50	Nut, Diff. Brg. Adjustment, 3 1/8" O.D., Round Locking Holes. Use with LM 603049 Bearing	2
5-37	88-140-16	Hex Head Cap Screw 1/2" x 2" N.C.	4
5-38	41-709-00	Differential Carrier Assembly (For Small Carrier Bearing 1.628" I.D.)	1
5-38	41-710-00	Differential Carrier Assembly (For Large Carrier Bearing 1.784" I.D.)	1
5-39	88-119-80	Nut - 3/8" N.F. (Hex)	14

POWER TRACTION DRIVE AXLE
REFER TO FIGURE NO. 5 A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
5-40	41-711-00	Drive Pinion Bearing Shim (.005 Thick)	2
5-41	31-239-00	Ring and Pinion Gear Set, 5.43 Ratio	1
5-42	80-702-00	O-Ring Differential Drive 4 3/4 I.D. x 5 O.D.	1
5-43	80-555-00	Roller Bearing, Pinion, Rear	1
5-44	41-714-00	Driving Pinion Pilot Bearing Retainer	1
5-45	41-996-00	Magnetic Drain Plug with Recessed Top	1
5-46	91-509-00	Spring Clip, Differential	1
5-47	80-554-00	Tapered Roller Bearing	2
5-48	80-125-00	Tapered Bearing Race for Front & Rear Pinion	2
5-49	44-340-90	Drive Pinion Bearing Housing with Bearing Races	1
5-50	45-021-00	Gasket, Gear Case to Pinion Bearing	1
5-51	16-420-00	Spacer, Pinion Shaft, .010 Thick	1
5-51	16-410-00	Spacer, Pinion Shaft, .020 Thick	1
5-52	16-419-00	Spacer, Pinion Shaft, .002 Thick	1
5-53	16-411-00	Spacer, Pinion Shaft, .005 Thick	1
5-54	16-415-00	Spacer, Pinion Shaft, .440 Thick	1
5-55	41-371-00	Brake Alignment Bracket	1
5-56	88-080-20	5/16 x 3 N.C. Hex Head Cap Screw	9
5-57	41-989-00	Level Drain Plug, 1/4 Inch Pipe	2
5-58	88-228-61	3/4 S.A.E. Washer	2
5-59	88-089-81	5/16 N.C. Lock Nut	14
5-60	88-108-60	Washer, 3/8	6
5-61	85-270-00	Spring, Extension 1 1/4 O.D. x 4 3/8 Long	1
5-62	43-201-11	Gear Case Cover	1
5-63	45-331-00	Oil Seal - Gear Case to Pinion	1
5-64	41-532-00	Brake Drum (Machined and Broached)	1
5-65	97-250-00	Nut, Pinion 3/4-20 Extra Fine Thread w/Washer	1
5-66	41-661-61	Full Brake Band And Adjustment Bolt	1
5-67	50-656-00	Brake Arm for Drive Shaft Brake	1
5-68	88-517-11	3/32 x 1 Steel Cotter Pin	1
5-69	96-771-00	Clevis Pin 3/8 x 3/4 Long Face to Hole	1
5-70	88-110-09	Screen, Hex Head Cap, 3/8 x 3/4 NF	2

POWER TRACTION DRIVE AXLE
REFER TO FIGURE NO. 5 A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
5-71	88-100-13	3/8 X 1-1/4 N.C. Hex Head Cap Screw	7
5-72	41-370-00	Brake Mounting Bracket	1
5-73	85-060-00	Compression Spring, 5/8 O.D. X 2-1/2 Long	1
5-74	88-108-60	3/8 Flat Washer	4
5-75	88-100-24	3/8 X N.C. Hex Head Cap Screw	1
5-76	88-108-62	3/8 Lock Washer	18
5-77	88-103-09	3/8 X 3/4 N.C. Socket Flat Head Screw	4
5-78	30-320-12	Chain, Double Strand #35 Roller, 84 Pitches 31-1/2" Long, One Piece, Used with 15-61 Ratio Double Tooth Sprocket	1
5-79	30-070-10	Sprocket, 81 Tooth for #35 Double Strand Roller Chain, F2 Splined Hub	1
5-79	30-070-11	Sprocket, 60 Tooth for #35 Double Strand Roller Chain, F2 Splined Hub	1
5-80	97-100-00	Woodruff Key - 3/16"	1
5-81	30-070-12	Sprocket - 15 Tooth for #35 Double Strand Roller Chain, 3/4" Bore, 3/16 Keyway	1
5-82	17-110-10	Shaft Collar - 3/4" with Keyway	1
5-83	45-002-00	Gasket - Gear Case Cover	1
5-84	88-239-82	3/4 N.F. Hex Head Jam Nut	1
5-85	44-352-51	Gear Case Back Plate-Adjustable	1
5-87	70-061-00	G. E. Motor - 3.5/5.0 H.P., 24/36 Volt	1
5-88 A	11-040-00	Tire, 570 X 8 8 Ply Steelguard	4
5-89	41-533-00	Brake Drum, 11 X 2-1/2	2
5-89 A	11-040-00	Tire Tube	4
5-90	45-045-00	Rear Axle Bearing Gasket	2
5-90 A	12-042-00	Wheel Split Rim	4
5-91	16-400-00	Spacer, .125 Thick	2
5-91 A	13-745-00	Tire, Tube & Wheel Assy 570 X 8 8 Ply Steelguard	4
5-92	85-140-00	Compression Spring 2-7/16 O.D. X 6-1/4 " Long	4
5-93	88-527-11	1/8 X 1 Steel Cotter Pin	1
5-94	96-097-14	5/16 N.F. X 1-1/2 (Heat Treated) Spring Center Bolt	2
5-95	88-099-80	5/16 N.F. Hex Head Nut	2
5-96	96-103-00	U-Bolt 1/2 Round X 1-7/8 ID X 3-1/2" Long	4
5-97	88-108-62	Washer, Lock, 3/8	2
5-99	88-067-11	1/4 N.C. X 1 Socket Head Set Screw	1
5-99 A	41-346-98	Brake Back Up Plate Assy w/Shoes Lt. Side	1
5-99 A	41-346-99	Brake Back Up Plate Assy w/Shoes Rt. Side	1
5-100	88-069-80	1/4 N.C. Hex Head Nut	1
5-101	88-109-80	3/8 N. C. Hex Head Nut	3
5-101A	41-640-00	Brake Shoes 7" Internal Expanding set for One Wheel	1 Set
5-102	80-703-00	O-Ring Motor Mount Plate Seal	1
5-102A	42-003-00	Brake Adjustment Cam	4
5-103	70-454-00	Motor Mounting Plate	1
5-103A	85-207-00	Spring	4

POWER TRACTION DRIVE AXLE
REFER TO FIGURE NO. 5A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
5-104	41-311-31	Brake Backing Plate, 11 Inches	2
5-104 A	85-208-00	Spring Extension	2
5-105	41-311-32	Brake Adjusting Screw	2
5-105 A	84-411-00	Spring Torsion	2
5-106	41-632-00	Brake Shoe, 11 X 2-1/2	2 Sets
5-107	41-683-00	Wheel Cylinder Push Rods	4
5-107 A	38-068-62	Washer	4
5-108	41-684-00	Brake Adjustment Hole Cover	2
5-108 A	88-060-06	Hex Head Cap Screw	4
5-109	41-311-56	Pin, 2-5/16 Long	4
5-109 A	41-514-00	Brake Drum 7"	4
5-110	41-677-00	Retainer Washer	8
5-111	85-000-00	Spring, Upper Return	4
5-112	85-001-00	Spring, Lower Return	2
5-113	85-070-00	Spring, Compression	4
5-115	88-088-62	5/16 Lock Washer	4
5-116	99-504-00	Wheel Cylinder	2
5-116 A	99-506-98	Wheel Cylinder, Left	1
5-116 A	99-506-99	Wheel Cylinder, Right	1
5-117	41-681-00	Top Shoe Plate	2
5-117 A	99-506-61	Wheel Cylinder Repair Kit	2
5-118	45-301-00	Oil Seal	2
5-119	50-460-00	Strap Axle Spacer	2
5-120	16-866-00	Spring Pad, Bolt-On	2
5-121	88-100-13	3/8 x 1-1/4 N.C. Hex Head Cap Screw	6
5-122	70-419-00	Plate, Motor Stabilizer	1
5-123	88-109-87	Nut, Fastite, 3/8 NC	2
5-124	88-100-13	Screw, Hex Head Cap, 3/8 X 1-1/4 NC	2
5-125	88-121-19	Screw, Hex Head Cap, Grade 5	2
5-126	17-106-00	Collar, Shaft, 1/2	2
5-127	88-128-60	Washer, 7/16	2
5-128	88-129-81	Nut, Lock, 7/16 NC	2
5-128 A	41-965-00	Pin	4
5-129	86-602-00	Absorber, Shock	2
5-129 A	41-697-00	Washer	4
5-130	96-120-00	U-Bolt, 1/2 NC, 1-7/8 ID Wide, 2 I.D. Long	2
5-130 A	88-068-11	Washer 1/4 SAE	2
5-131 A	85-050-00	Spring, Compression	4
5-132 A	41-696-00	Cup Brake Shoe Anchor	2

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 ORDER.

MOTOR MAINTENANCE - BRUSH INSPECTION AND REPLACEMENT

1. Remove cover, exposing brush assemblies. Lift brush from holder for inspection.
2. If brushes are worn, remove, install new brushes. Use fine sandpaper to "seat in" new brushes to commutator. To determine when to replace worn brushes, proceed as follows:
 - a. For motors equipped with brushes having end pigtails and side hooks, replace brush when hook is within 1/16" from bottom of hook slot.
 - b. For motors equipped with brushes having side pigtails only, replace brush when pigtail is within 1/16" from bottom of pigtail slot.

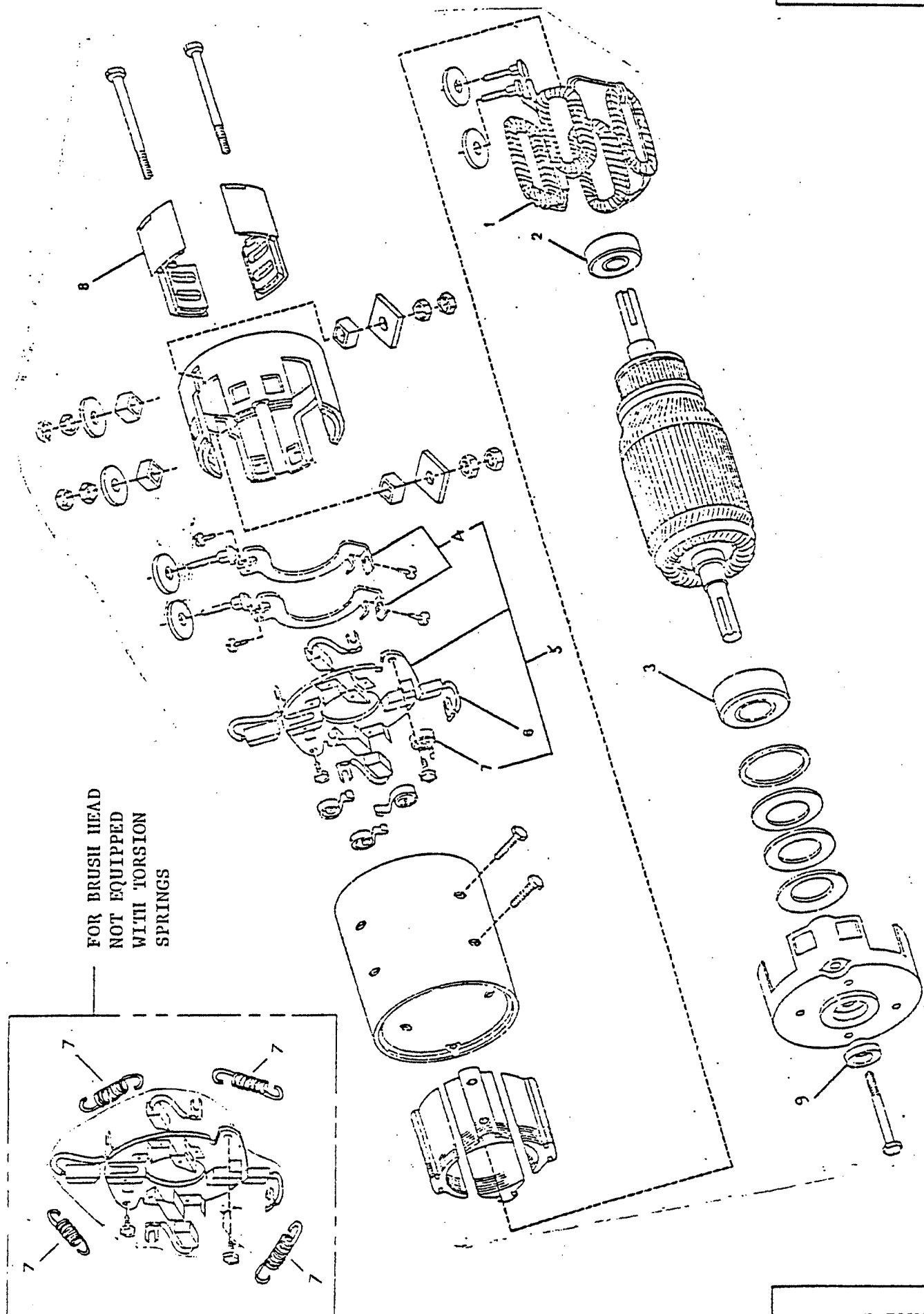
NOTE: When one brush is replaced in a motor, it is considered good maintenance practice to replace all brushes.

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 J2.
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.

NOTE: If motor terminal studs were removed for inspection, refer to section J2, Page 8, item 6, for correct procedure to avoid damaging studs.



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MOT PARTS - G.E. MOTORS

FIGURE 5M

NO. DESCRIPTION

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SCALE E

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.
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Replacement Parts for G.E. Motor 5BT1326A96

5M-2	80-504-00	Ball Bearing, Commutator End	1
5M-3	80-206-00	Ball Bearing, Shaft End	1
5M-5	70-170-00	Brush Holder Assembly	1
5M-6	70-112-00	Dual Motor Brush, One Terminal	4
5M-7	85-398-00	Brush Spring	8
5M-9	45-507-00	Oil Seal	1

Replacement Parts for G.E. Motor 5BT1326B96

5M-2	80-504-00	Ball Bearing Commutator End	1
5M-3	80-206-00	Ball Bearing, Shaft End	1
5M-5	70-171-00	Brush Holder Assembly	1
5M-6	70-112-00	Dual Motor Brush, One Terminal	4
5M-7	85-398-00	Brush Spring	8
5M-9	45-507-00	Oil Seal	1

MAINTENANCE PROCEDURES
HYDRAULIC BRAKE SYSTEM

Refer to Figure 6

Your hydraulic brake system consists of an automotive master cylinder operated by the brake foot pedal and control linkage.

Each rear wheel is fitted with a brake assembly and rugged brake drum. On 4 wheel brake models the front wheels are similarly equipped.

Refer to Maintenance Guide Section D and Lubrication Diagram Section E for proper lubrication and frequency of inspection.

Master cylinder fluid level should be checked monthly. Add fluid as needed to maintain level $3/8$ " to $1/2$ " from top of fill port. Use only approved hydraulic brake fluid.

A visual inspection of the hydraulic system is recommended on a monthly basis to detect any signs of leakage. Repairs should be made immediately if leakage is discovered.

A spongy action on brake pedal or a low engagement point on pedal usually indicates air entrapment or the need of shoe adjustment. Refer to Service and Adjustment Section J3 of this manual for proper procedures to follow.

SERVICE AND ADJUSTMENT
REFER TO FIGURE 6.
HYDRAULIC BRAKE SYSTEM

The loss of brake pedal action may be due to a defective master cylinder. It can usually be detected by signs of fluid leakage at master cylinder or by the action of the brake pedal. When foot pedal pressure is applied you will feel the brakes engage, yet, the pedal will continue to travel downward. A ruptured hydraulic line or a defective wheel cylinder will produce the same action. You can determine the cause by the location of brake fluid leakage.

MASTER CYLINDER REPAIR OR REPLACE

1. Remove cotter pin, clevis pin, and remove push rod. (It will slide out of master cylinder socket).
2. Disconnect hydraulic line at cylinder (There will be 2 lines of 4 wheel brake system).
3. Remove 2 holding bolts and lift master cylinder out of chassis.
4. Cylinder should be thoroughly cleaned.
5. Remove boot and locking ring.
NOTE: Piston parts are under spring pressure, take care that they do not pop out when you remove lock ring.
6. Remove piston and cup assembly.
7. Inspect cylinder wall. If scoring or roughness is present it must be removed with a fine hone.
8. Taking care that all parts are kept clean, install new piston and cup assembly kit. A diagram is furnished with each kit. It is also recommended that parts are coated with a small amount of brake fluid prior to assembly.
9. Replace lock ring and boot.
10. Install cylinder in chassis in reverse order to which it was removed.
11. ADJUST push rod by loosening locknut and shortening or lengthening the rod so that when brake pedal is fully raised the push rod should be within 1/16" of contacting piston socket. A good way to be certain is to remove clevis pin. While lightly holding rod against socket (DO NOT PUSH HARD ENOUGH TO MOVE PISTON) observe the alignment of clevis and hole. When correct you will have to pull rod approximately 1/16" out of socket to insert clevis pin.
12. Tighten locknut and install cotter pin.

BLEED AIR FROM BRAKE SYSTEM

NOTE: Anytime that any part of the hydraulic system is disconnected or replaced, it is necessary to bleed air from system.

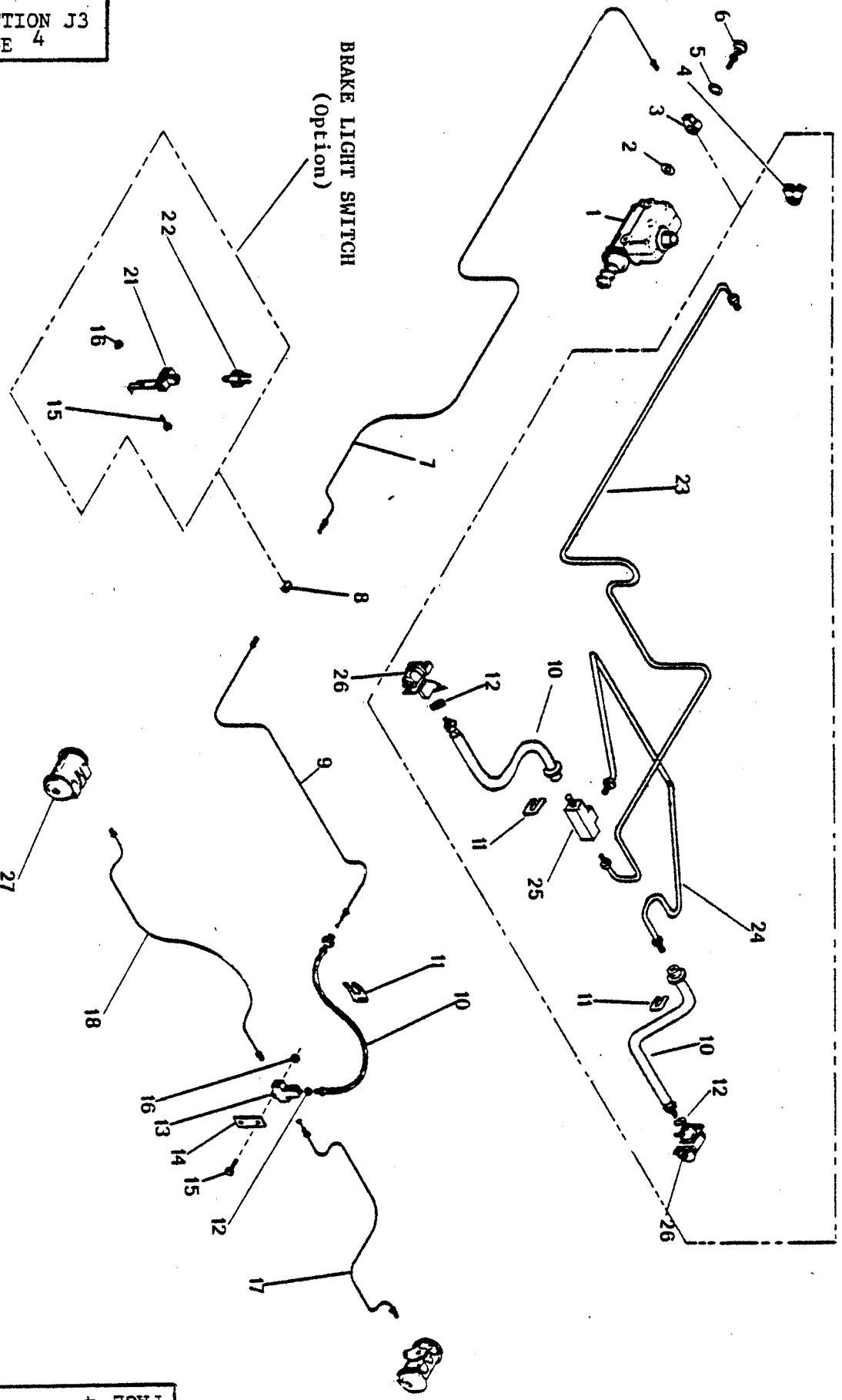
If fluid level is allowed to fall too low in master cylinder reservoir, air will be pumped into system. Consequently the system will have to be bled to remove air. To bleed air from system, follow procedure outlined next.

1. For best results brake shoes should be properly adjusted prior to bleeding system. (Refer to Adjustment Section J3 of this manual).
2. Fill master cylinder to top with approved brake fluid or, if available, attach brake bleeder tank to master cylinder.
3. When using bleeder tank, loosen air bleeder valve (located at each wheel cylinder), one at a time, allow fluid to flow until air pockets and bubbles stop and clear stream appears.
3. Alt. It is necessary to utilize 2 people to bleed brake system when bleeding tank is not available. One person will operate brake pedal and add fluid to master cylinder as needed. The other person will operate bleeder valves. While one person applies brake pedal pressure, loosen bleeder valve. Fluid and air will be forced out on the downward stroke of the pedal. Person operating pedal must hold it down at the end of its stroke while the other person closed bleeder valve. If pedal is raised while bleeder valve is open air will be drawn back into the system. By coordinating the movements of the 2 people, air will be bled out of each downward stroke of the pedal. It is wise to refill master cylinder after every 3 or 4 strokes to insure against any air being drawn in because of the reservoir level being too low. Usually 2 to 4 strokes per wheel cylinder is sufficient to remove air from system.
4. Remove brake bleeder tank if used. Fill master cylinder 3/8" to 1/2" of top and replace cover.

REPLACING WHEEL CYLINDERS OR BRAKE SHOES

1. Remove wheel lugs, wheel and brake drum.
2. Unhook springs and remove brake shoes (Refer to Diagram). Brake shoes should be replaced when lining is worn to rivet head.
3. To remove wheel cylinder, disconnect hydraulic line.
4. Remove 2 wheel cylinder bolts from backing plate and remove wheel cylinder.
5. If installing replacement kit, clean wheel cylinder thoroughly.
6. Remove dust caps and piston parts.
7. Examine cylinder walls. If scored or rough, remove with fine hone.
8. Install new kit assembly. Lubricate new parts with brake fluid.
9. Replace wheel cylinder and brake shoes in reverse order of removal.
10. Replace brake drum. (if brake drum is badly scored, replace with new one).
11. Replace wheel.
12. Bleed hydraulic System and Adjust Brake Shoes.

OPTIONAL FRONT WHEEL HYD. BRAKES



BRAKE LIGHT SWITCH
(Option)

SECTION J3
PAGE 4

SECTION J3
PAGE 4

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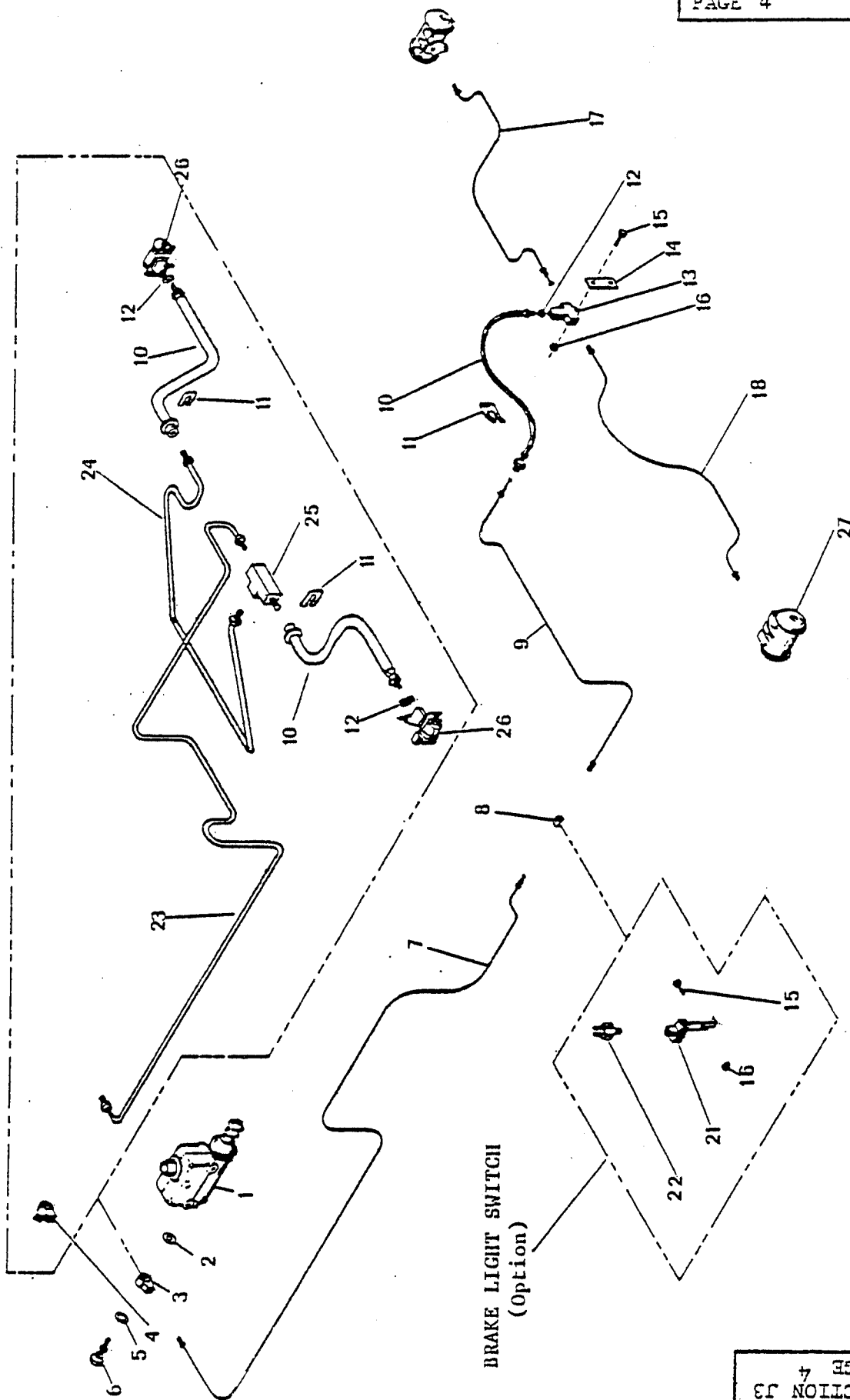
FIGURE 6
SECTION J3

HYDRAULIC BRAKE SYSTEM
1254B



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

OPTIONAL FRONT WHEEL HYD. BRAKES



BRAKE LIGHT SWITCH
(Option)

SECTION J3
PAGE 4

SECTION J3
PAGE 4

NO.	DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
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FIGURE 6
SECTION J3

HYDRAULIC BRAKE SYSTEM

1754B

TAYLOR DUNN MFG. CO
2114 W 9th Rd.
Anaheim, Calif.

HYDRAULIC BRAKE SYSTEM 1254B

REFER TO FIGURE NO. 6

FIG. I.D.

NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
6-1	99-510-00	Master Cylinder	1
6-1	99-510-61	Repair Kit - (Master Cylinder)	1
6-2	99-571-00	Washer (Copper Small Hole)	1
6-3	99-566-00	Fitting (3/16" Tube Single Outlet) 2 Wheel Brakes	1
6-4	99-565-00	Fitting (3/16" Tube Dual Outlet) 4 Wheel Brakes	1
6-5	99-572-00	Washer (Copper Large Hole)	1
6-6	99-570-00	Bolt (Master Cylinder Fitting Adaptor)	1
6-7	99-609-51	Formed Steel Brake Line (3/16" X 72")	1
6-8	99-575-00	Union (3/16" Tube)	1
6-9	99-608-51	Formed Steel Brake Line 3/16" X 60"	1
6-10	99-580-00	Hose	1 or 3
6-11	99-576-00	Clip (Hose)	1 or 3
6-12	99-570-00	Washer (Hose) Copper	1 or 3
6-13	99-563-00	Tee Fitting (3/16" Tube X 3/16" Tube X 3/8"-24)	1
6-14	99-557-00	Bracket (Fitting Mount)	1
6-15	88-060-11	Hex Head Cap Screw 1/2" NC X 1"	2
6-16	88-069-87	Nut 1/2" NC Fastite	2
6-17	99-603-51	Formed Steel Brake Line 3/16" X 12"	1
6-18	99-605-51	Formed Steel Brake Line 3/16" X 30"	1
6-21	99-591-00	Fitting, Side Tapped Tee, 3/16 Tube & 1/8 NPT	1
6-22	71-110-00	Switch, Brake Light (Hydraulic)	1
6-23	99-608-56	Formed Steel Brake Line 3/16" X 60"	1
6-24	99-606-51	Formed Steel Brake Line 3/16" X 40"	1
6-25	99-559-00	Tee Fitting 3/16" Tube X 3/8"-24 INU. X 3/16" Tube	1
6-26	99-501-00	Wheel Cylinder (Front Wheel)	2
6-27	99-504-00	Wheel Cylinder	2

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. (Note that on vehicles equipped with mechanical brakes only, this cable serves as the operating cable for the foot brake system as well).

The footbrake system consists of the foot pedal, pivot shaft, brake operating cable as mentioned above, 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.

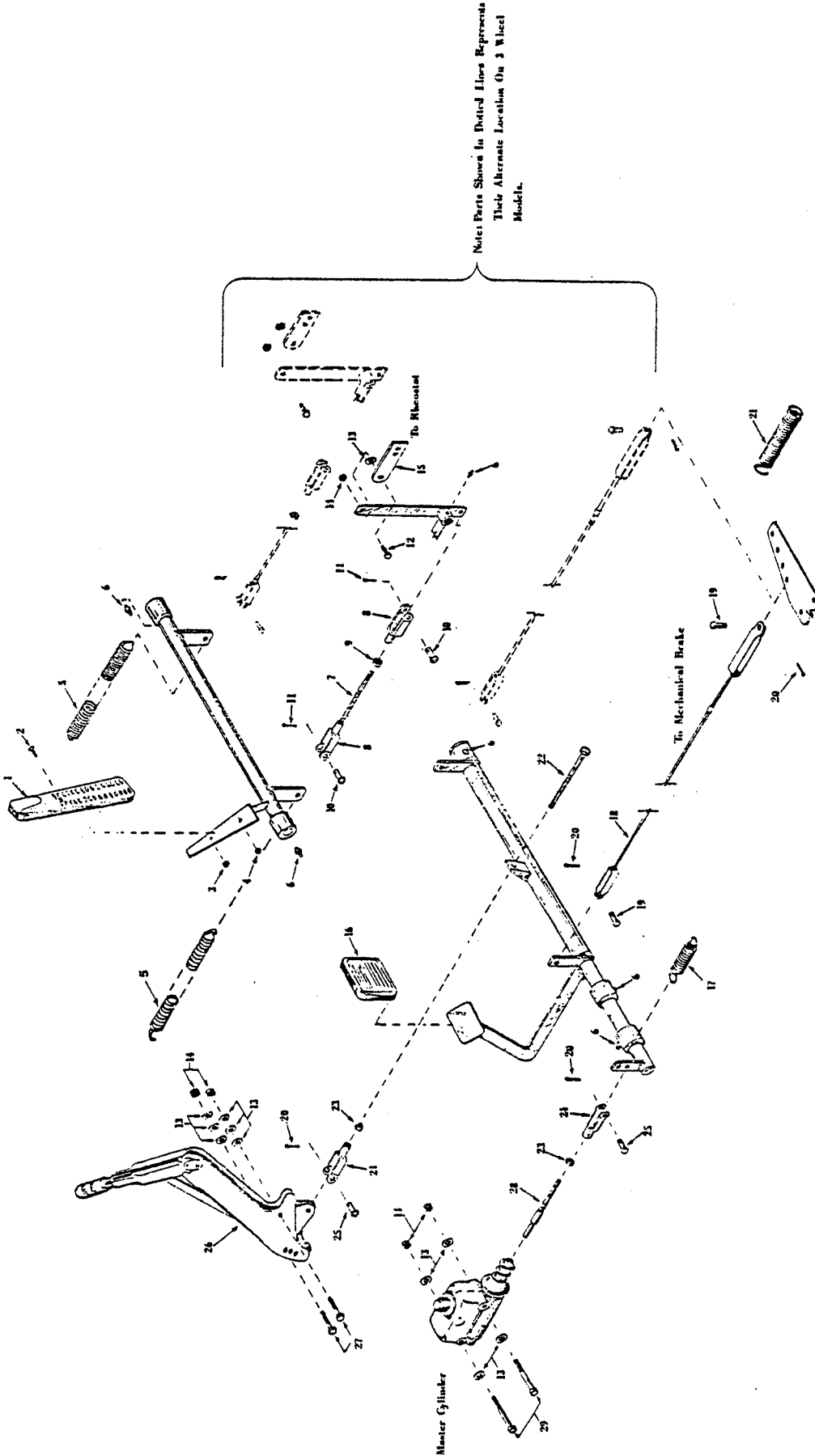
Section J3 - For Master cylinder and push rod adjustments and service.

Section J6 - For accelerator service and adjustments.



MECHANICAL CONTROL LINKAGE

FIGURE 7
SECTION 11



SECTION J4
PAGE 2

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FIGURE NO. 7
MECHANICAL CONTROL LINKAGE

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
7-1	98-254-00	Accelerator Pad (Aluminum)	1
7-2	88-025-08	Truss Head Machine Screw 8-32 x 5/8"	1
7-3	88-029-80	Nut 8-32 (Hex)	1
7-4	88-079-80	Nut 1/4" NF (Hex)	1
7-5	85-233-00	Spring - Extension 11/16" OD x 6 1/2" Free Length	2
7-6	87-071-00	Grease Fitting 3/16" Drive Type (Straight)	6
7-7	50-014-00	Accelerator Rod 5/16" x 11" Long	1
7-8	96-763-00	Cast Clevis 5/16"	2
7-9	88-099-80	Nut 5/16" NF (Hex)	2
7-10	96-773-00	Clevis Pin 5/16"	2
7-11	88-517-09	Cotter Pin 3/32" x 3/4"	2
7-12	88-100-11	Hex Head Cap Screw 3/8 x 1" NC	1
7-13	88-108-60	Washer 3/8" Flat	11
7-14	88-109-81	Lock Nut 3/8" NC (Hex)	5
7-15	61-834-00	J Hook Insulating Board	1
7-16	98-200-00	Rubber Brake Pedal Pad	1
7-17	85-250-00	Spring Extension 1-1/16" OD x 3-5/8" Free Length	1
7-18	96-821-00	Adjustable Cable Assembly (63 1/2" to 60 1/2")	1
7-19	96-771-00	Clevis Pin 3/8" x 3/4" (Face To Hole)	2
7-20	88-527-11	Cotter Pin 1/8" x 1"	4
7-21	85-270-00	Spring-Extension 1 1/2" OD x 4-3/8" Free Length	1
7-22	88-111-28	Hex Head Cap Screw 3/8" x 6" NF (H.T.)	1
7-23	88-119-80	3/8 NF Hex Head Nut	2
7-24	96-762-00	Cast Clevis 3/8"	2
7-25	96-772-00	Clevis Pin 3/8" x 1" (Face to Hole)	2
7-26	51-340-00	Hand Parking Brake Lever with Spacers	1
7-27	88-100-15	Hex Head Cap Screw 3/8" x 1-3/4" NC	2
7-28	50-009-00	Master Cylinder Push Rod 3/8" x 5-3/8"	1
7-29	88-101-20	Hex Head Cap Screw 3/8" x 3" NC	2
(Not Shown)	50-633-00	Strap, Accelerator - Connects Optional EV-1 Accelerator Control Pivot Bar To Accelerator Pedal Rod.	
7-30	17-104-00	Gollar, 3/8 " Shaft	1

MAINTENANCE PROCEDURES
FORWARD/REVERSE SWITCH

Refer to Figure 8

The forward/reverse switch on your vehicle serves the same purpose as does the transmission in your automobile. It should be treated with the same respect, for abusive treatment will not only shorten its life but will seriously effect the life of the motor, drive gears and differential.

DO NOT SHIFT POSITION OF SWITCH FROM FORWARD TO REVERSE OR VICE-VERSA WHILE VEHICLE IS IN MOTION. REFER TO CAUTION NOTE, SECTION B.

It will require very little maintenance if properly used. Every month check contact fingers and rotor contacts for cleanliness and to insure that they are making snug and even contact. If they show evidence of abnormal pitting or burning they should be replaced.

Refer to Service and Adjustment, Section J5, of this manual for replacement procedures.

It is recommended that an occasional small quantity of lubricant be placed on the cam and cam follower of the switch. Refer to Figure 8.

An occasional application of powdered graphite or similar key lock lubricant will keep your key and lock in good working order.

SERVICE AND ADJUSTMENT
FORWARD-REVERSE SWITCH
REFER TO FIGURE 8

Caution: Whenever service work is to be conducted on the switch or any part of your vehicle wiring system, disconnect the positive lead at your battery or unplug power leads on vehicles so equipped.

REMOVAL, DIS-ASSEMBLY AND RE-ASSEMBLY OF SWITCH

1. Remove handle screw in center of handle and then remove handle and spacer.
2. Remove 2 screws in center of face plate, this will release switch unit from frame. Then lift switch unit clear of frame noting that the end plate will be free to lift off of switch.
3. Remove cover.
4. If you wish to remove contact fingers or finger-boards at this time, then it will be necessary to follow steps 5-6-8 & 9. If you will only be servicing the rotor assembly it will not be necessary to remove wires.
5. Note position of wires and mark their respective locations to insure that they will be properly placed on re-assembly.
6. Remove 4 wires from switch terminals and slide out of switch housing.
7. Pull cam follower away from cam on rotor and lift rotor assembly from switch housing.
8. If you wish to replace finger-boards at this time, tap them out of their slots in the direction of the handle end of switch taking care to catch the wedges as they come free of the frame.
9. Install new finger board in the reverse manner outlined in step 8, noting that the long notch on end of board is located on handle end of switch. Tap wedges into place to lock finger boards to frame.
10. Inspect cam and spring. If necessary replace with new parts.
11. Remove nut on end of rotor shaft and dis-assemble spacers and rotor contacts. Note: it is very important to observe the position of each part as you remove it from rotor shaft to insure its proper re-assembly. The rotor contacts look similar but are actually a pair consisting of a left and a right contact.
12. Re-assemble rotor parts on rotor shaft in their proper order and lock into place by tightening $\frac{1}{2}$ " nut at end of shaft. Use care in tightening nut as undue strain could shear the locking ring on opposite end of shaft.
13. Install rotor assembly into frame moving cam follower enough to allow cam to set in position.
Note: It will ease the rotor installation if you will place it in neutral position. I.E., the contacts will be free from finger contacts and the low side of cam will engage cam follower.

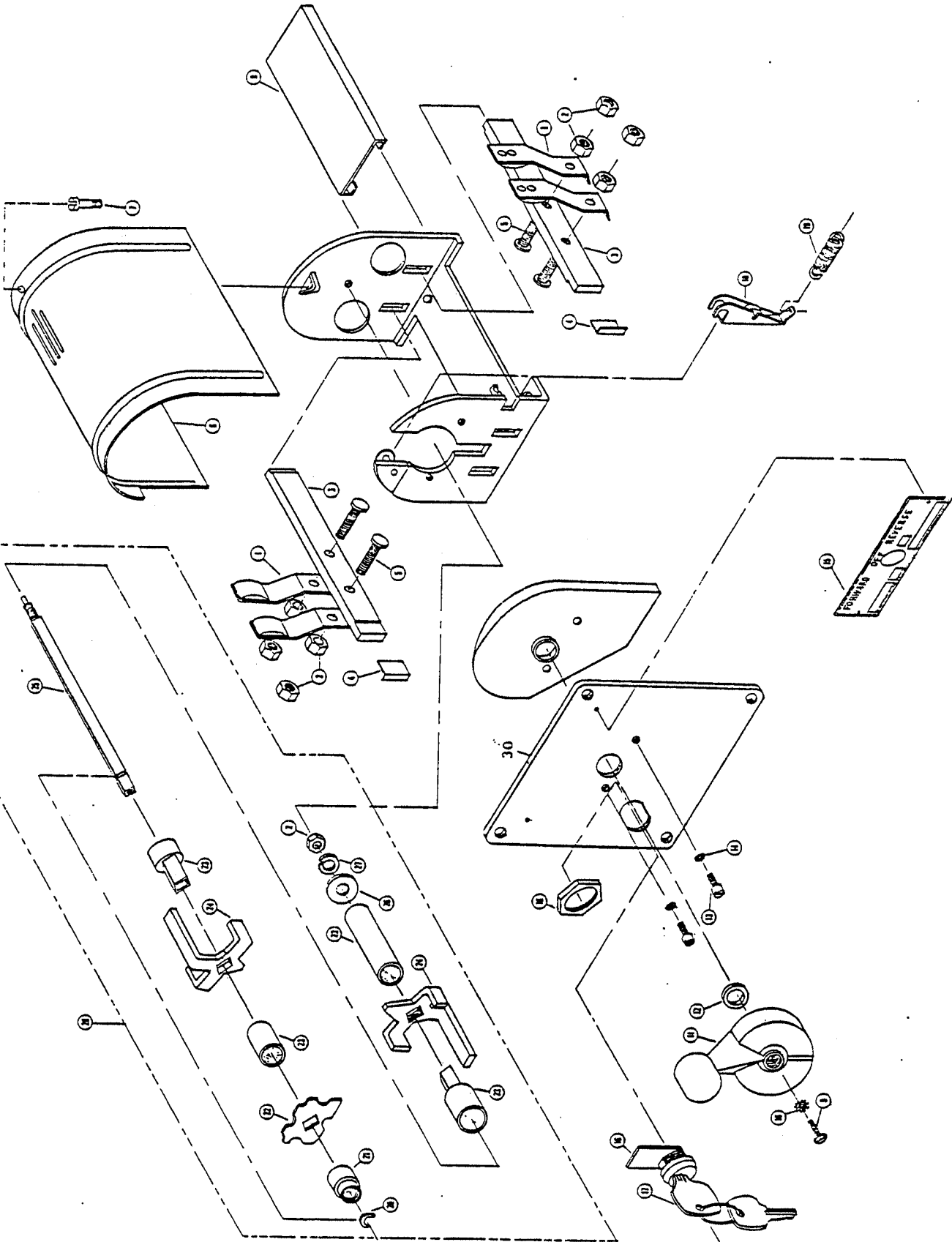
14. Install wires onto their respective terminals and tighten securely.
15. Replace cover.
16. Replace end plate and slide switch unit back into place against face plate.
17. Replace 2 screws. It may be necessary to exert sufficient pressure and joggle switch unit into alignment with screw holes as cam spring tends to hold the switch out of position. A simple method to align the face plate and switch frame together, is to slip a medium size nail or ice pick into one hole through both pieces. Align second hole, insert screw, and tighten. Remove nail or ice pick from first hole and install screw and tighten.
18. Replace spacer and handle and tighten into position with center screw.

REPLACEMENT OF CONTACT FINGERS ONLY

1. Remove cover. (Note: on some vehicles it will be necessary to remove switch from mounting plate to gain access to cover.)
2. If you will be removing more than one finger at a time, it is recommended that you note the position of the wires and mark their respective locations.
3. Remove terminal nut and wire.
4. Remove nut holding finger to finger-board and remove finger.
5. Install new finger and replace nuts and wires in the reverse order to which they were removed.

FORWARD - REVERSE SW
PAR. NO 71-040-00

FIGURE 8
SECTION J5



FORWARD AND REVERSE SWITCHREFER TO FIGURE NO. 8

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
8-0	71-040-00	Forward & Reverse Switch Complete (4 Fingers)	1
8-1	71-040-60	Switch Finger - Silver Plated w/1/4" Hole	4
8-2	88-079-80	Nut 1/2" NF (Hex)	9
8-3	71-040-61	Finger Board w/1/4" Holes	2
8-4	71-040-69	Finger Board Wedge	2
8-5	71-040-71	Bolt-Finger Mounting (1/4" NF x 7/8" Spec)	4
8-6	71-040-65	Switch Cover	1
8-7	71-040-73	Cover Screw (10-32 x 1/2" Filister Head)	1
8-8	71-040-70	Rubber Insulator Strip	1
8-9	88-025-06	Screw 8-32 x 1/2" Truss Head	1
8-10		Washer 8-32 (External Star Lock)	1
8-11	71-040-62	Switch Handle - Metal (Red Color)	1
8-12	71-040-59	Spacer Washer	1
8-13	71-040-72	Face Stop Bolt (10-32 x 3/8 Spec.)	2
8-14	88-048-62	Lock Washer 10-32	2
8-15	94-305-00	Forward-Reverse Switchplate	1
8-16	71-040-55	Lock Assembly with 2 Keys	1
8-16	71-040-81	Tubular Lock Assembly with 2 Keys	1
8-17	71-040-74	Key Only (Give No. of Lock or Vehicle Ser. No.)	2
8-18	71-040-53	Cam	1
8-19	71-040-54	Spring (Cam)	1
8-20	71-040-75	Snap Ring - 1/4"	1
8-21	71-040-68	Bushing	1
8-22	71-040-67	Cam Index	1
8-23	71-040-66	Plastic Spacer Set (Sold Only As set of 4 PCS)	1 Set
8-24	71-040-58	Rotor Contacts (Set of 2-1 Right & 1 Left)	1 Set
8-25	71-040-64	Rotor Shaft (Only)	1
8-26	88-068-61	Washer SAE	1
8-27	88-068-62	Lock Washer 1/4"	1
8-28	71-040-52	Rotor Assembly	1
8-30	71-040-82	Face Plate	1
	71-040-20	Kit-Conversion to Six Finger Switch	1

SWITCH EXTENSION HANDLE PARTS

8-9	71-040-80	Extension Rod - 8-32 x 6 1/2" Long	1
8-9	71-040-78	Extension Tube - 11/16 OD x 5 1/2" Long	1
8-11	71-040-77	Switch Position Indicator	1
	71-040-79	Bracket - Extension Support	1
	88-029-80	Nut 8-32 (Hex)	1

SERVICE AND ADJUSTMENT
EV-1 FORWARD/REVERSE SWITCH
REFER TO FIGURE 3A

CAUTION: Whenever service work is to be conducted on the switch or any part of the vehicle wiring system, disconnect the positive lead at the battery or unplug power leads on vehicles so equipped.

REPLACEMENT OF MICROSWITCHES

1. Remove (1) screw from center of handle and hub assembly. Remove handle and hub assembly from cover.
2. Remove (2) screws attaching cover to frame. Remove cover from frame.
3. Carefully note the position of wires and mark their respective locations.
4. Remove switch terminal screws and wires.
5. Remove (2) screws attaching switch to frame assembly.
6. Install new switch, replacing screws and wires in reverse order. Switch position retaining screws should be snug, not tight, for the moment.
7. With switch roller riding on top of cam lobe, insure that .010" clearance exist between roller arms and switch body, and tighten switch retaining screws.
8. Insure that replaced switch operates correctly in "NC and NO" positions.
9. Check adjoining switch for correct adjustment.
10. Replace cover and handle assembly in reverse order.
11. Check for proper operation.

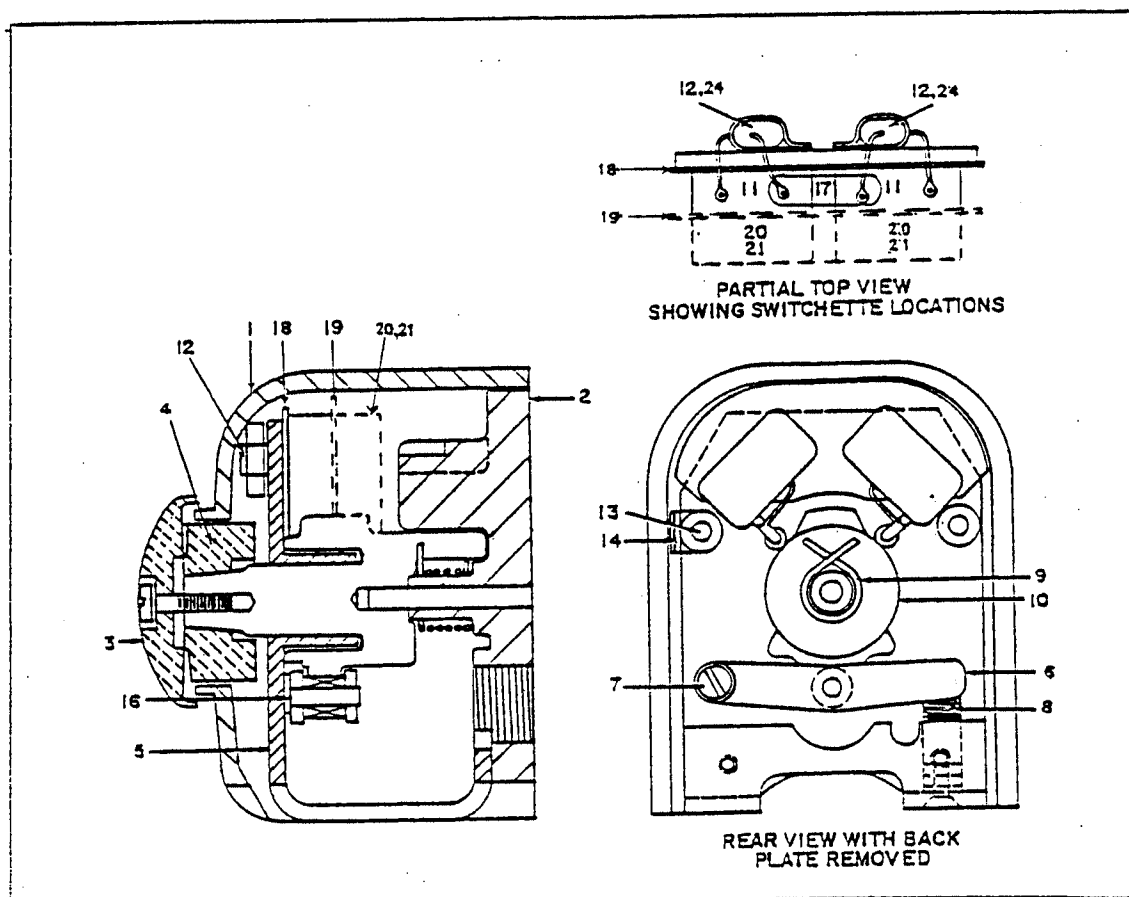


FIGURE 3A

FORWARD/REVERSE SWITCH

EV-1 SCR CONTROL

REFER TO FIGURE 3A

FIGURE I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
3-0	71-091-00	Forward/Reverse switch	1
3-1	71-091-51	Cover	1
3-2	71-091-52	Back plate	1
3-3	71-091-53	Handle & hub assembly	1
3-4	71-091-54	Stop	1
3-6	71-091-56	Cam follower	1
3-7	71-091-57	Spacer	1
3-8	71-091-58	Spring for cam follower	1
3-10	71-091-59	Star wheel cam	1
3-11	71-091-60	Switch, forward & reverse	2
3-12	71-091-61	Capacitor assembly	2
3-13	71-091-62	Spacer	2
3-14	71-091-63	Wire clip	1
3-16	71-091-65	Washer	1
3-17	71-091-66	Jumper	1
3-18	71-091-67	Insulation	1
3-19	71-091-68	Insulation (OPTIONAL)	1
3-20	71-091-60	Switch (OPTIONAL), for special order accessories	1
3-21	71-091-70	Switch (OPTIONAL), for special order accessories	1
(NOT SHOWN)	71-091-71	Steering column mounting clamp	1
3-24	71-091-72	Capacitor clamp	2

NOTE: Standard hardware items listed below are not normally stocked by Taylor-Dunn but can be purchased locally.

SCREWS

10-32, 5/8" flat head	4-40, 1/4" pan head
4-40, 3/4" pan head	4-40, 1 1/4" pan head
4-40, 1 3/4" pan head	6-32, 3/4" pan head
8-32, 3/4" pan head	8-32, 7/8" pan head
10-32, 1/2" pan head	10-32, 2 1/2" pan head

LOCK WASHERS

For #4 screw
For #8 screw
For #10 screw

PLAIN WASHERS

For #4 screw
For #8 Screw

NUTS

4-40 hex
10-32 hex

MAINTENANCE PROCEDURES
REFER TO FIGURE 9
RHEOSTAT SPEED CONTROL

The rheostat controls the speed of your vehicle through the use of coils of nichrome resistance wire. With this type of resistance control, you use approximately the same amount of power from batteries in low speed as you do in high speed. The flat copper bars and a movable J-Hook are the major parts in the rheostat. With proper adjustment and lubrication the rheostat will give many months of trouble free use. When J-Hook is worn to 1/8" thickness, replace J-Hook and power bars.

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 to the connection. Care should also be taken at each inspection to insure that proper contact is maintained between J-Hook and power bars.

J-Hook and accelerator linkage should work freely allowing return spring to always return J-Hook to neutral bar when accelerator is released.

The speed control and braking systems are both operated from a single treadle, and must be closely coordinated in their operating adjustments.

Refer to Section J2, Page 2, for adjustment of J-Hook travel and brake rod length. Other adjustments to the rheostat are outlined in this section of the manual.

Cleaning & Lubrication

CAUTION: Before servicing the Speed Control switch or any part of the electrical system, disconnect both main battery leads, place forward/reverse switch in Neutral, turn key off and remove from switch. Set parking brake.

Cleaning Procedure:

The following procedure should be done monthly or sooner depending upon the build-up of contaminants in the switch area.

Clean off all grease and contaminants from space in and around power bars and J-Hook assembly by steam cleaning, if available. (Take extreme caution not to let the metal steam cleaning nozzle contact the switch components.) If preferred, use an electrically non-conductive tool such as a wooden stick, piece of plastic, rag, ear swab, etc., to do the cleaning. It is very important to remove the contaminated grease that is lodged between the power bars as it can cause shorting between the bars and result in unpredictable vehicle operation.

CAUTION: Never use a flammable agent to clean switch components or any part of the electrical system.

SERVICE AND ADJUSTMENT
RHEOSTAT SPEED CONTROL
REFER TO FIGURE 9

CAUTION: Whenever service work is to be performed on the electrical system disconnect the battery by unplugging power leads.

ADJUSTMENT OF J-HOOK PRESSURE BAR

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

1. Adjust rheostat J-Hook travel by depressing accelerator pedal to floor and checking alignment of J-Hook with the 5th power bar. J-Hook and 5th power bar should be in exact alignment with full contact. If J-Hook does not line up properly adjust accelerator control rod length by loosening lock nut and removing cotter pin and clevis pin. If J-Hook does not travel far enough onto the 5th power bar, turn clevis to lengthen rod sufficiently for correct alignment. Adjust clevis in the opposite direction, shortening rod if J-Hook is traveling too far past the 5th power bar.

NOTE: Each 1/2 turn of clevis will move J-Hook position approximately 1/16".

REPLACEMENT OF J-HOOK

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 RHEOSTAT SWITCH

1. Note location of wires connected to switch and mark accordingly, to insure their return to original location on re-assembly.
2. Remove wires at respective terminals.
3. Remove bolts connecting J-Hook insulator to operating link.
4. Remove 3 bolts holding switch to bracket and remove switch.
5. Replace switch in the reverse manner to which it was removed.
6. Check and adjust rheostat switch as outlined above.

REPLACEMENT OF POWER BARS

1. With power disconnected, remove terminal bolt and holding bolts.
2. Slide bar out of rheostat.
3. Clean switch thoroughly and install new bar.

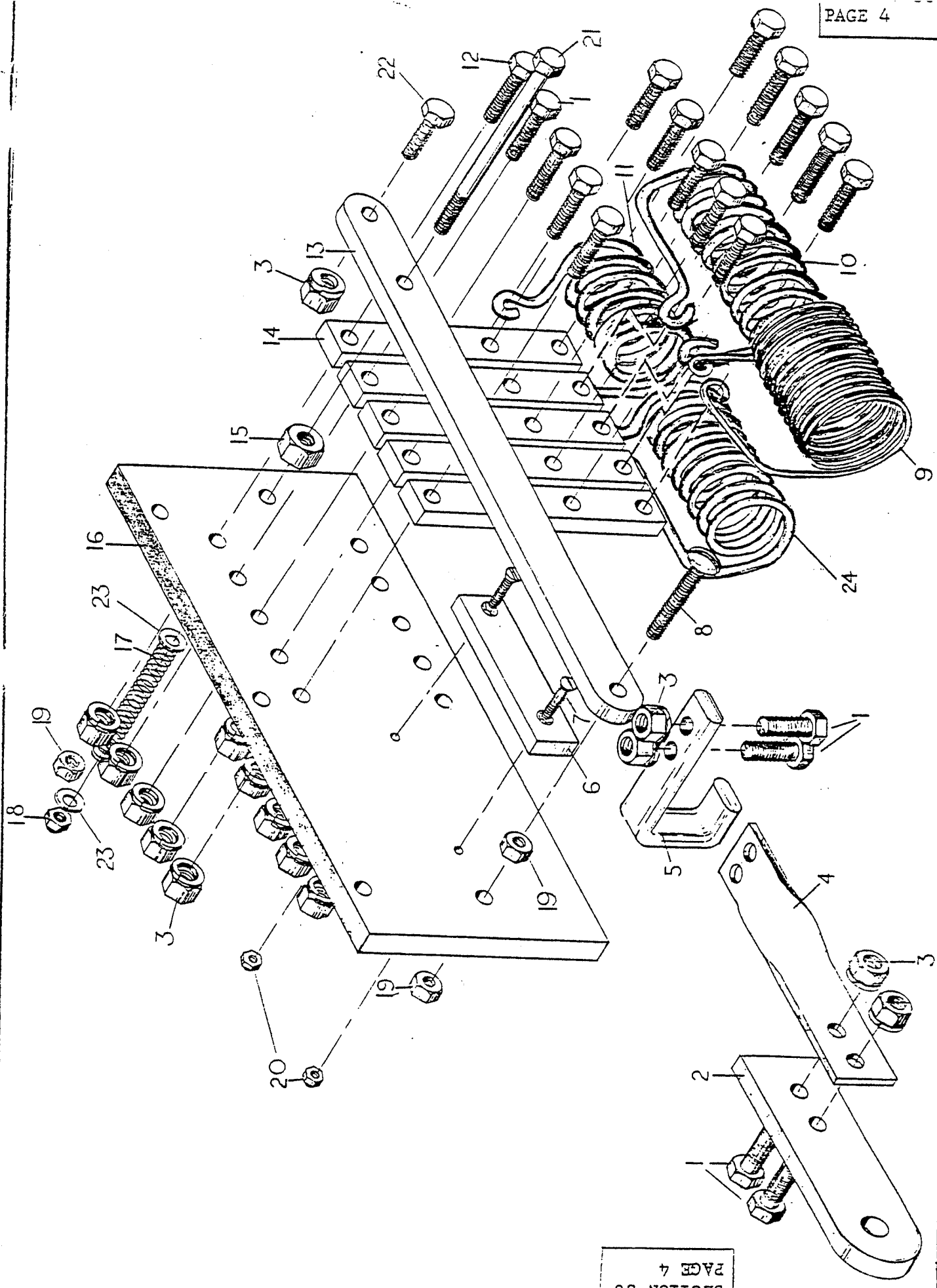
NOTE: Power bars tend to wear at the same rate, except when 1 bar may become excessively burned because of poor contact. When replacing with new power bars, it is important that all bars be of the same thickness. Binding and sticking will occur when bars are not of uniform thickness.

It is recommended that power bars be replaced as a set rather than individually to avoid the above condition.

Minor high points may be removed with a file to produce smooth switching action.

4. Follow adjustment procedures previously outlined.

ADDITIONAL INFORMATION



CONTROL RHEOSTAT

FIGURE 9

SECTION J6
PAGE 4

TOL. FRAC.	±	DEC.	±
SCALE	1/2"	NE	DEK
DRAWN BY			

RHEOSTAT 5 SPEED CONTROL
REFER TO FIGURE NO. 9

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
9-0	61-832-10	Sliding Bar J-Hook Assembly	1
	61-837-15	Sliding Bar Rheostat Assembly with coils, less J-Hook Assembly	1
9-1	88-060-09	Hex Head Cap Screw 1/4" NC x 3/4"	15
9-2	61-834-00	Insulating Board	1
9-3	88-069-87	Fastite Nut 1/4" NC	20
9-4	61-833-00	J-Hook Twisted Strap (4-1/2" Long)	1
9-5	61-832-00	Sliding J-Hook Bar	1
9-6	61-835-15	Neutral Bar (5 Speed)	1
9-7	88-026-10	Flat Head Machine Screw 8-32 x 7/8"	2
9-8	88-065-14	Truss Head Machine Screw 1/4" NC x 1-1/2"	1
9-9	78-212-51	Resistor Coil (#9 Wire 10 Turns)	1
9-10	78-212-52	Resistor Coil (#6 Wire 9 Turns)	1
9-11	78-212-53	Resistor Coil (#5 Wire 6 Turns)	1
9-12	88-060-13	Hex Head Cap Screw (1/4" NC x 1-1/2") (Terminal Bolt)	1
9-13	61-836-00	Pressure Bar	1
9-14	61-831-00	Power Bar	5
9-15	88-109-80	Nut 3/8" NC (Hex)	1
9-16	61-837-00	Mounting Board	1
9-17	85-034-00	Spring-Compression 7/16" OD x 2"	1
9-18	88-069-81	1/4" NC Lock Nut	1
9-19	88-069-80	Nut 1/4" NC(Hex)	3
9-20	88-029-86	Flexlock Nut 8-32	2
9-21	88-060-22	Hex Head Cap Screw 1/4" NC x 3-1/2"	1
9-22	88-060-11	Hex Head Cap Screw 1/4" NC x 1"	4
9-23	88-068-60	Washer 1/4" Flat	2
9-24	78-212-62	Resistor Coil (#8 Wire 8 Turns)	

ACCELERATOR SWITCH EV-1 SCR

REFER TO FIGURE 4A

FIG I.D. NO.	T-D PART NO.	DESCRIPTION	QTY. REQ.
4-0	61-912-00	Accelerator switch complete	1
4-1	61-912-51	Switch assembly	2
4-5	61-912-55	Screw, adjusting for switch	2
4-5A	88-049-80	Nut, hex 10-32	2
4-6	61-912-57	Stop	1
4-7	61-912-58	Cam	1
4-8	61-912-59	Cam shaft assembly	1
4-9	61-912-60	Potentiometer operating arm & shaft	1
4-10	61-912-61	Spring, return	1
4-11	61-912-62	Terminal board	1
4-12	61-912-63	Switch support base	1
4-13	61-912-64	Potentiometer 5K, with mounting bracket	1
(NOT SHOWN)	61-911-65	Wiring harness complete with 12 point plug	1
(NOT SHOWN)	61-912-66	Hose	1
(NOT SHOWN)	61-912-67	Clamps, hose	2
(NOT SHOWN)	61-912-68	Cover	1
(NOT SHOWN)	61-912-69	Plate, cover	1
(NOT SHOWN)	61-912-70	Plug, rubber (fits in cover plate)	1
4-19	61-912-71	Shaft assembly	1

NOTE: The standard hardware items listed below are not normally stocked by Taylor-Dunn but can be purchased locally.

Screw With Spring Lock Washer

6-32, 1/2" pan head
8-32, 3/8" " "
8-32, 1/2" " "

Screws

6-32, 3/8", flat head
10-32, 1/2", Flat head

Plain Washers

#6 Screw
#8 "
#10 "

Retaining Rings

External "E" ring for 1/4" dia. shaft
" " " " 3/8" " "

Flat Hd. Lock Washer

10-32 screw

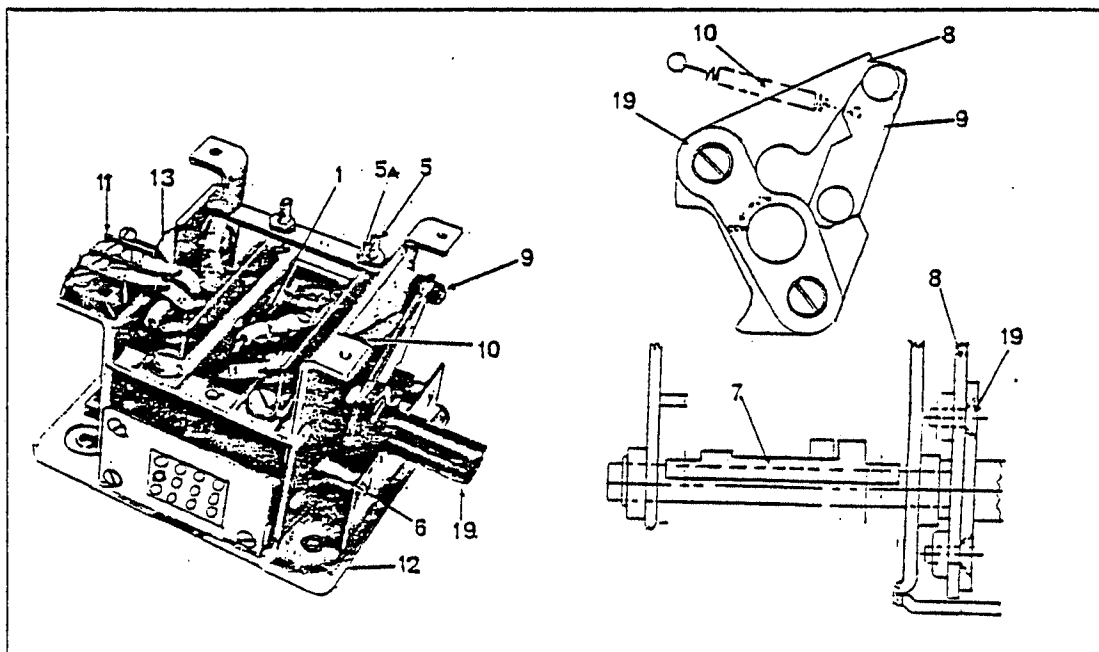
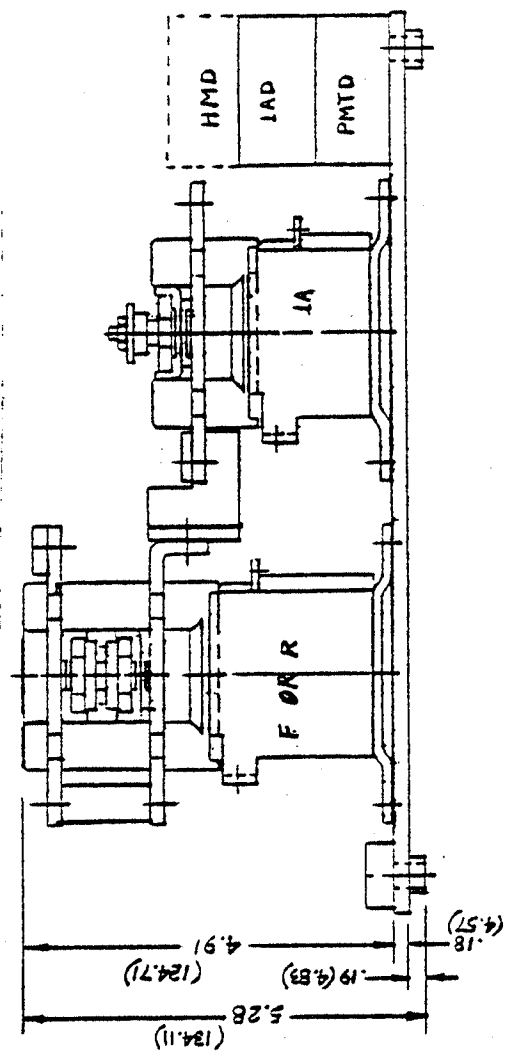
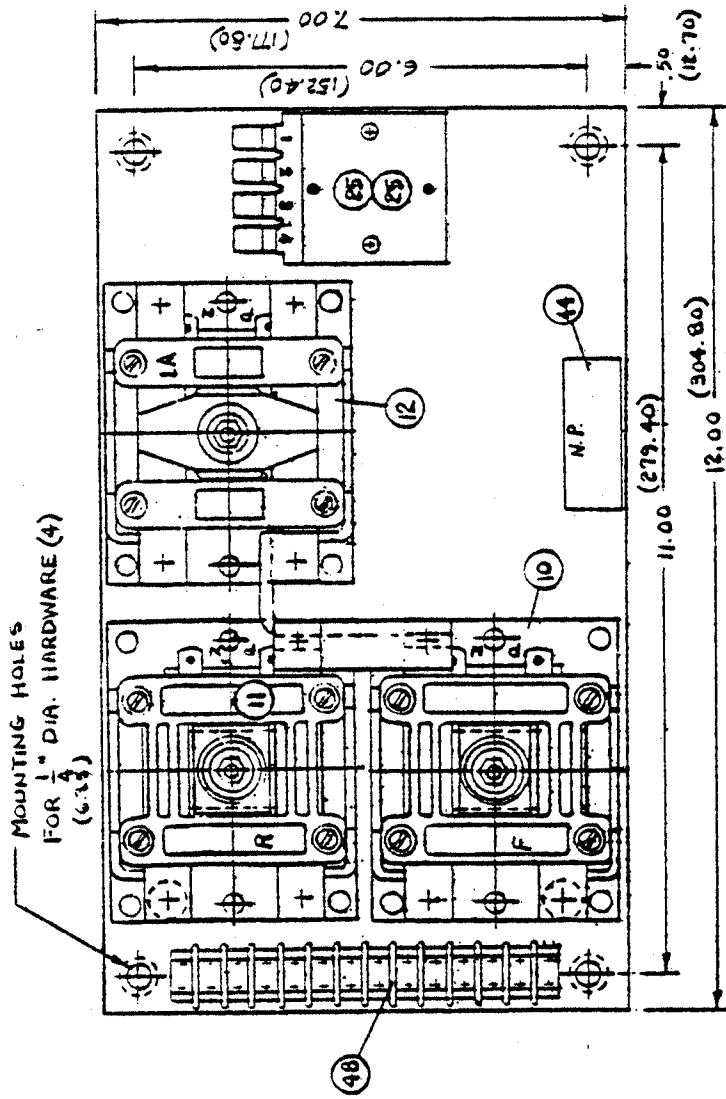


FIGURE 4 A



NOTE: MOUNTING HARDWARE
MUST NOT PROTRUDE
MORE THAN .19" (4.83
BEYOND BACK OF PANEL
DIMENSIONS IN ()
ARE MILLIMETERS.



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

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EV-1 SCR 150 AMP-24/36/48VOLT CONTACTOR PANEL

FIGURE 6

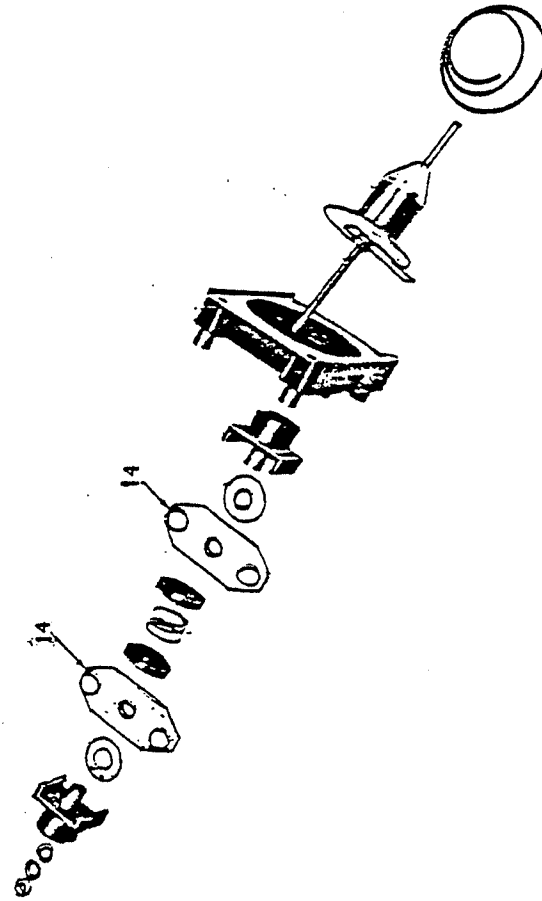
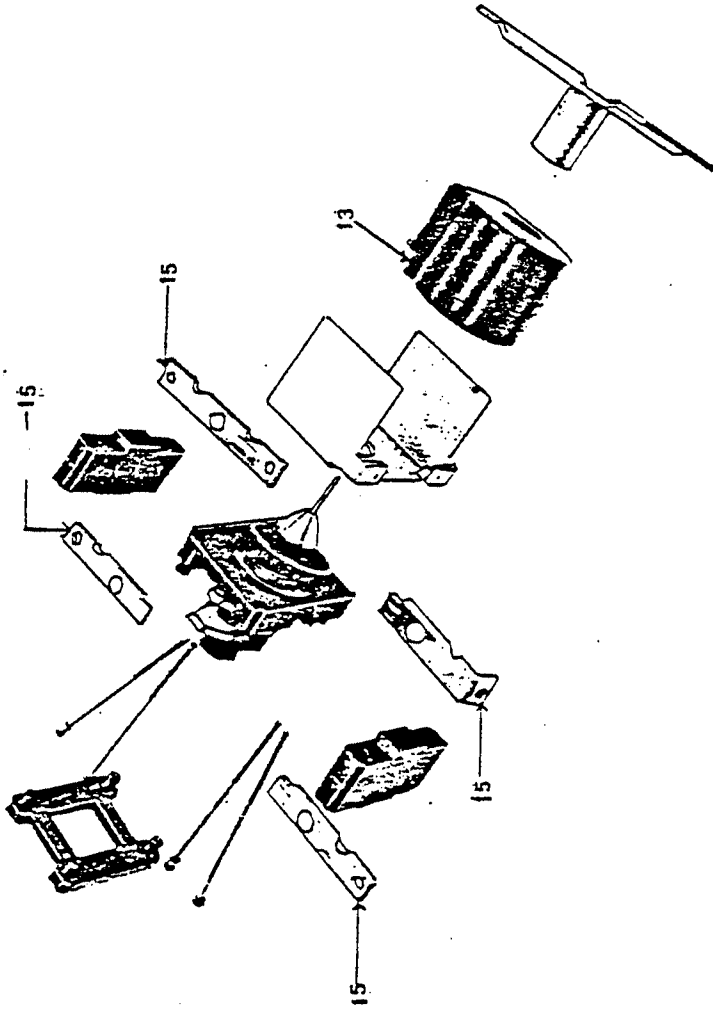
NO.	DESCRIPTION
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TOL. FRAC.	DEC. +
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SCALE	NONE
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DRAWN BY	J.B.
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DATE	9-6-79
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LENGTH QUAN REVISED DATE REVISION

EV-1 SCR 150AMP-24/36/48VOLT CONTACTOR PANEL

FIGURE 7

NO. DESCRIPTION

TOL. FRAC. ± DEC. ±

SCALE NONE

DRAWN BY J.B.

EV-1 SCR 150 CONTACTOR CONTROLREFER TO FIGURE 6

FIG I.D. NO.	T-D PART NO.	DESCRIPTION	QTY REQ
6-0	71-305-00	Contactor Panel Assembly	1
6-10	71-305-70	Contactor, Fwd., Single Pole, Double Throw	1
6-11	71-305-80	Contactor, Rev., Single Pole, Double Throw	1
6-12	71-305-90	Contactor, 1A., Single Pole, Single Throw	1
6-25	71-305-54	Contactor Driver	2
(NOT SHOWN)	79-731-00	Hour Meter Diode Block (Optional)	1
6-44	71-305-55	Nameplate (Special Order Item)	1
6-48	71-305-56	Terminal Board, 12 Position	1

REFER TO FIGURE 7 FOR CONTACTOR PARTSFWD/REV CONTACTOR COMMON PARTS (EXCEPT AS NOTED):

7-13	71-305-71	Coil, 36/48 Volt, Fwd/Rev Contactors	2
7-13	71-305-72	Coil, 24 Volt, Fwd/Rev Contactors (Optional)	2
7-14	71-305-73	Moving Tip Assembly, Fwd/Rev Contactors	2
(NOT SHOWN)	71-305-79	Spacer, Fwd/Rev Contactors	2
(NOT SHOWN)	71-305-78	Mounting Bolt, Spacer, Fwd/Rev Contactors	2

FORWARD CONTACTOR:

7-15	71-305-74	Terminal, L.H. Top, Fwd Contactor	1
7-15	71-305-75	Terminal, R.H. Top, " "	1
7-15	71-305-76	Terminal, L.H. Bottom, Fwd Contactor	1
7-15	71-305-77	Terminal, R.H. Bottom, " "	1

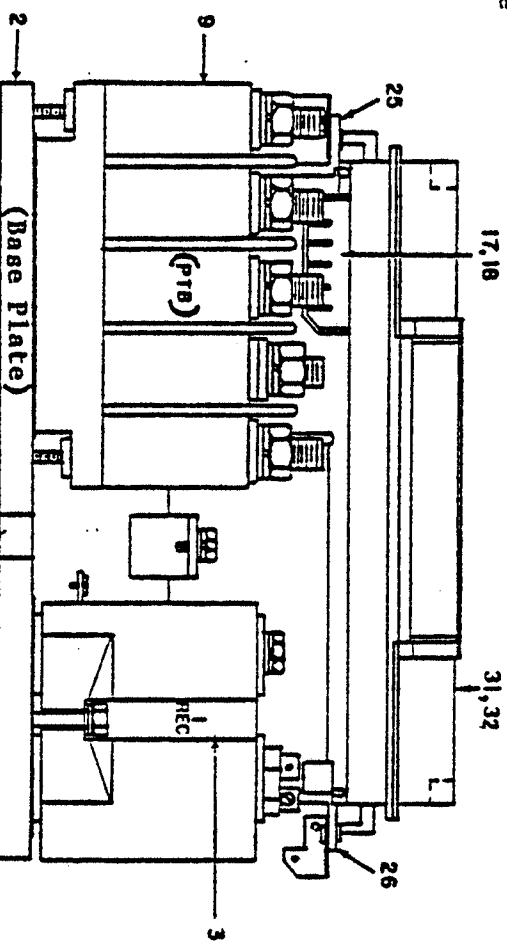
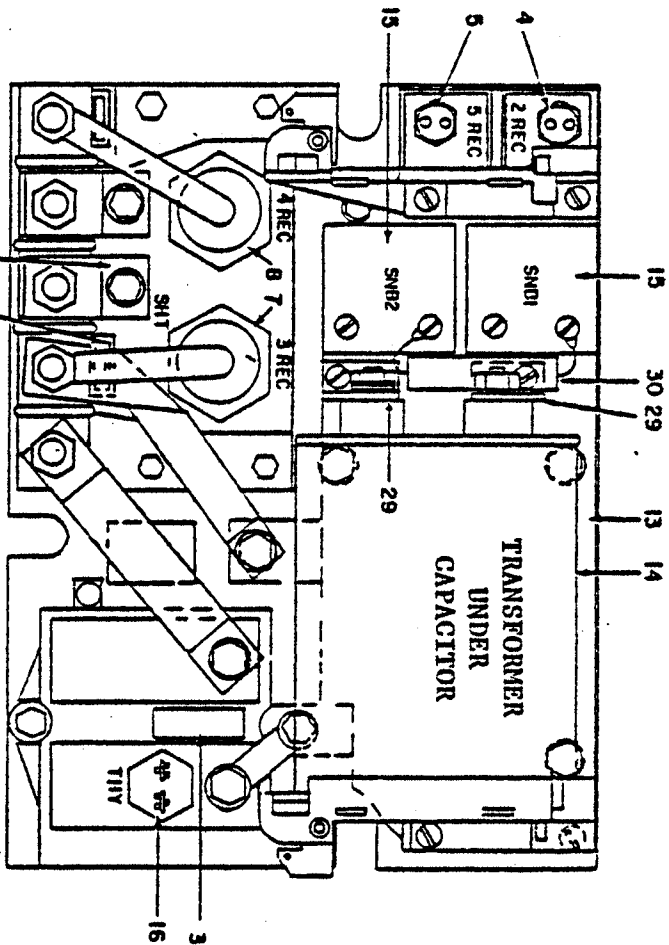
REVERSE CONTACTOR:

7-15	71-305-75	Terminal, L.H. Top, Rev Contactor	1
7-15	71-305-81	Terminal, R.H. Top, " "	1
7-15	71-305-82	Terminal, L.H. Bottom, Rev Contactor	1
7-15	71-305-83	Terminal, R.H. Bottom, " "	1

1A CONTACTOR:

7-13	71-305-91	Coil, 36/48Volt, 1A Contactor	1
7-13	71-305-92	Coil, 24Volt, 1A Contactor (Optional)	1
7-15	71-305-93	Terminal, L.H., 1A Contactor	1
8-15	71-305-94	Terminal, H.H., 1A Contactor	1
8-14	71-305-95	Moving Tip Ass'y., Fwd/Rev Contactor	1

NOTE: Use heat conductive grease, T-D Part #94-422-00, under all moulded assemblies that mount to the base except the power block (PTB).



SECTION J6
PAGE 10

NOTE: Apply a thin coating of heat conductive grease T-D Part #94-422-00 to the bottom of the Control Module (Base Plate) before mounting Module on vehicle.

NO.	DESCRIPTION	LENGTH	QUAN.	REVISED DATE	REVISION
101.	FRAC. 1 - DEC. 1				
SCALE	NONE				
DRAWN BY	J.B.				
DATE	9-6-79				
	FIGURE 8A				
	EV-1 SCR CONTROL MODULE				
	MODEL "B"				



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

EV-1 SCR CONTROL MODULE "B"
REFER TO FIGURE 8A

FIG. I.D. NO.	T-D PART NO.	DESCRIPTION	QTY.
	62-011-00	EV-1 SCR Control Module - "B"	1
8-3	62-011-51	Rectifier Assembly, (1 REC)	1
8-4	62-011-52	Rectifier Assembly, (2 REC)	1
8-5	62-002-54	Rectifier Assembly, (5 REC)	1
8-7	62-011-53	Rectifier Assembly, (3 REC)	1
8-8	62-011-54	Rectifier Assembly, (4 REC)	1
8-9	62-002-58	Terminal Block Assembly	1
8-11	62-011-55	Shunt Assembly	1
8-12, 12A	62-002-60	Capacitor	1
8-13	62-011-56	Transformer	1
8-14	62-002-62	Capacitor, Commutating 200 Volt	1
8-15	62-002-63	Snubber Assembly	2
8-16	62-002-64	Thermal Protector	1
8-17	62-002-65	Control Terminal Block	1
8-18	62-002-66	Cover, Terminal Block	1
8-25	62-002-67	Support, Card Box (Left Hand)	1
8-26	62-002-68	Support, Card Box (Right Hand)	1
8-29	62-002-69	Bus	2
8-30	62-002-70	Resistor	1
8-32	62-002-52	Card Assy. w/o Fld. Weakening, Serial #IC36450SCC1D3	1
	94-422-00	Grease, Heat Sink	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, flashers, 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.

GENERAL ELECTRICAL PARTS

T-D Part NO.	DESCRIPTION	QTY. REQ.
71-070-00	Heavy Duty Toggle Switch 3 Pole/2 Throw (Hi-Lo Switch)	1
71-100-00	Light Switch	1
71-110-00	Brake Light Switch (Hydraulic Operated)	1
71-141-00	Turn Indicator Switch, 7 Wire	1
71-501-00	Horn Button	1
71-607-00	Switch Console	1
71-900-00	Flasher (12 Volt)	1
72-008-00	Chrome Headlight Fixture (Optional), 12V, w/5½" Sealed Beam Bulb	2
72-022-00	Stop and Taillight Fixture, 4" Rubber Mount (12 Volt)	2
72-051-00	Turn Light Fixture, (12 Volt) Amber, 4" Rubber Mount	2
73-004-00	Horn (12 Volt)	1
74-000-00	Hour Meter	1
74-050-00	Windshield Wiper Motor	1
74-051-00	Windshield Wiper Arm	1
74-052-00	Windshield Wiper Blade	1
75-126-11	Wire Harness, Control Only for EV-1B SCR System	1
75-127-12	Wire Harness, Power Only, for EV-1B SCR System	1
75-129-00	Wiring Harness for Headlight, Taillight & Horn	1
75-204-00	Wire #4, Black (Per Foot)	
75-208-00	Wire #8, Black (Per Foot)	
75-218-00	Wire #16, Black (Per Foot)	
75-404-53	Terminal Lug #4 Wire ½" Hole	
75-404-54	Terminal Lug #4 Wire 5/16" Hole	
75-408-52	Terminal Lug #8 Wire 3/16" Hole	
75-408-53	Terminal Lug #8 Wire ½" Hole	
75-408-54	Terminal Lug #8 Wire 5/16" Hole	
75-418-51	Terminal Lug #16 Wire #6 Hole	
75-418-52	Terminal Lug #16 Wire 3/16" Hole	
75-418-53	Terminal Lug #16 Wire ½" Hole	
75-418-54	Terminal Lug #16 Wire 5/16" Hole	
75-420-00	Terminal, #16 Wire (For Hydraulic Stop Light Switch)	2
75-421-00	Terminal, #16 Wire (For Mechanical Stop Light Switch)	2
75-424-00	Terminal, #16 Wire (For Horn Connection)	2
76-352-00	Receptacle - Flasher - Cole Hearssee #3029	1
78-010-00	Secondary Circuit Fuse Holder (Incline) 20 to 30 Amp	1
74-009-00	Charge Indicator (36 V)	1

EV-1 SCR
GENERAL ELECTRIC PARTS

T-D PART NO.	DESCRIPTION	QTY.
<u>MODEL 1254B</u>		
71-610-00	Bracket, Circuit Breaker	4
71-610-10	Bracket For Mounting Circuit Breaker Bracket to Vehicle	1
78-107-00	Buss Bar, Terminal Connecting, 3 Pole, For Circuit Breakers	2
79-843-10	Circuit Breaker, 90 AMP, Single Pole	3

NOTE: The following parts apply to those vehicles equipped with EV-1 SCR and optional equipment such as horns, windshield wipers, heaters, etc.

78-500-00	Hash Filter
79-842-00	Circuit Breaker, 10 AMP, Single Pole
79-839-00	Circuit Breaker, 30 AMP, Single Pole
79-843-00	Circuit Breaker, 100 AMP, Double Pole

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 7½ years, or 1800 cycles, with appropriate use and care.

It cannot 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.

Overcharging 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 discharging is to prepare a rigid schedule for charging batteries which will insure against their being discharged beyond the limits of their capability.

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.

MAINTENANCE PROCEDURES
BATTERIES

4. CLEANING

Batteries pick up various kinds of dirt and dust, depending on their surroundings and the type 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 lb. 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			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	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												

1. CAUTION: Batteries emit explosive gasses. During normal operation the concentration of these gasses 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. 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.
2. 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.
3. Batteries which require unusually frequent watering may indicate overcharging. Review charging practices and/or adjustment of transformer taps in charger.
4. 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" in Charger Handbook.
5. Periodically check for loose terminal posts or loose connections to terminal posts, but not while batterie are being charged.
6. Keep tops of batteries clean, and free of moisture, grease, and acid films. Any of these can cause current leakage.
7. 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.

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 a battery hydrometer 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 of battery. Both overcharging and undercharging can cause a 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 the 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 to the proper level will result in a crumbling (abnormal sulfation) of the plates and cause failure of the battery. 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 tight.
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 expel 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 hydrometer, always return electrolyte solution to the same cell from which it was removed. **DO NOT MIX** electrolyte from one cell to another.

BATTERIES AND CHARGER

T-D PART NO.	DESCRIPTION	QTY. REQ.
74-006-00	Charger Indicator (12 Volt - Push to Test)	1
75-231-00	Battery Jumper #6 Wire (10-1/4" Long)	5
75-234-00	Battery Jumper #6 Wire (18-1/4" Long)	1
75-240-00	3 Prong Plug and Cord (For Lift Out and Roll Out Battery Boxes)	1
75-241-00	3 Prong Receptacle for Plug and Cord	1
76-002-00	Charging Plug, 30 Amp, 3 Prong	1
76-012-00	Charging Receptacle, 30 Amp, 3 Prong	1
76-020-00	Charging Receptacle and Plug, Anderson Type SB #175 175 AMP	1 or 3
77-048-00	6 Volt, 250 A.H. Battery	6
77-200-00	Hydrometer	1
77-201-00	Battery Filler	1
77-903-00	Battery Hold Down Stop (Roll-Out Battery Box) Model B	1 or 2
77-904-00	Battery Hold Down Channel (Roll-Out Battery Box) Model B	1 or 2
77-965-00	Battery Box Dolly (For Roll-Out Battery Box) Model B	1 or 2
77-969-00	Battery Box Only (Lift Out for 250 A.H. Batteries) Model B	1 or 2
77-970-00	Battery Box Only (Roll-Out Type, less batteries)	1 or 2
79-345-00	Charger, 36 Volt, 45 Amp (Portable) 115 Volt	1
79-568-00	Charging Adapter, Dual for Roll-Out Battery Box, Series Wiring	1
79-568-10	Charging Adapter, Dual, Hi-Low for Roll-out Battery Box Series/Parallel Wiring	1

MODELS 2445 AND 3645
OPERATING AND SERVICING DATA SHEET

INSPECTION AND INSTALLATION

Inspect the exterior of the shipping container for signs of rough handling during shipment.

Remove charger from the shipping container and inspect it for damage (cracked knob, etc.) CLAIMS FOR SHIPPING DAMAGE SHOULD IMMEDIATELY BE FILED WITH THE CARRIER.

The charger may be installed on any suitable working surface (bench or floor). Insure that there is clearance above and around the charger so as to allow free flow of air for cooling.

Remove the panel on back of cabinet to gain access to the terminal panel.

WARNING: Voltages hazardous to life exist at terminal panel when charger is turned on. Turn OFF the charger before making any of the following adjustments.

The adjustment for a charging voltage of 2.50 volts per cell should be made at this time. This is done by monitoring the DC output voltage with a voltmeter (0 to 50 volts) and setting the AC tap lead to the transformer terminal which gives the desired DC output voltage as indicated below. Move the tap connection to the right to increase the DC output voltage. Move the tap connection to the left to decrease the DC output voltage.

<u>DC OUTPUT VOLTAGE SETTING CHART</u>	
<u>MODEL</u>	<u>DC OUTPUT VOLTS</u>
2445	30.0
3645	45.0

If a DC output plug is not furnished with the charger, attach a suitable polarized plug of adequate current capacity to the DC output leads (See NOTE in Step 2 below).

OPERATING INSTRUCTIONS

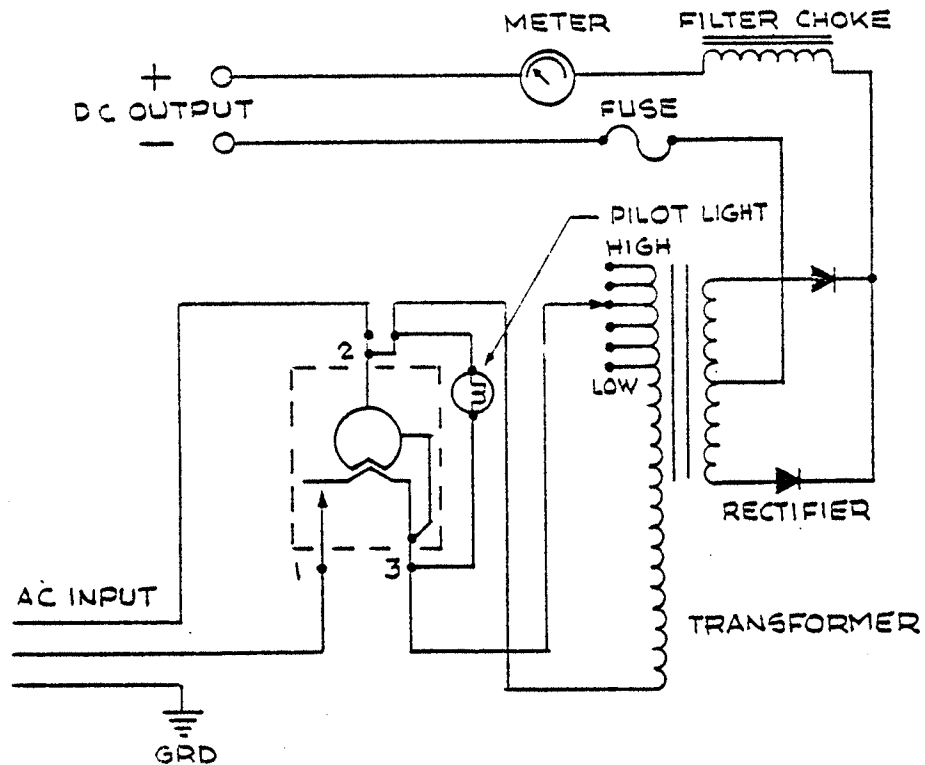
1. Connect the AC input to the proper power source.
2. Connect the DC output plug to the batteries to be charged.
NOTE: Check the output plug for the correct polarity.
3. Turn on the charger by setting the timer control knob to the desired charging time.
4. Verify that the pilot light illuminates and that the output ammeter indicates a charging current.
5. The timer control will turn off the charger at the completion of the charge cycle
6. Disconnect the charger DC plug from the batteries after the charger is turned off.
7. Using a hydrometer, verify that the batteries are properly charged.

PARTS LIST

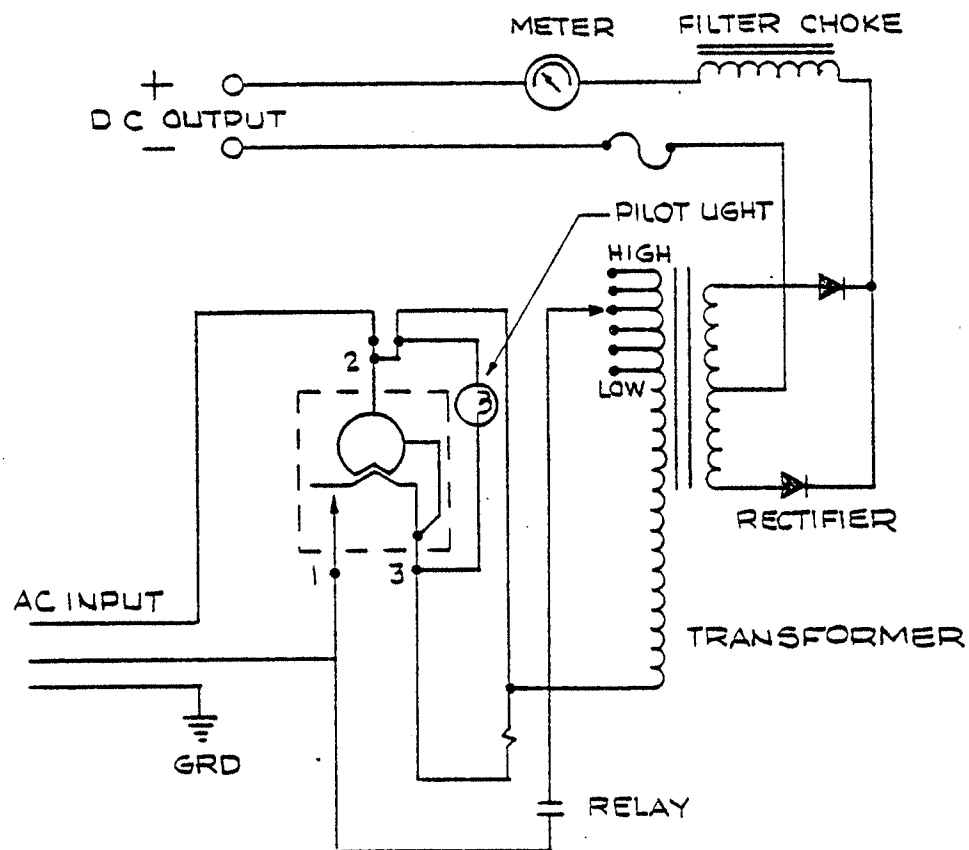
79-531-00 Bushing, Ac	94-326-00 Timer Dial	79-714-00 Choke, 36V
79-530-00 Bushing, DC	72-095-00 Pilot Light	79-641-00 Transformer 24V
79-567-00 Cord, DC	79-720-00 Diode	79-642-00 Transformer 36V
79-573-00 Cord, AC	79-852-00 Ammeter	79-862-00 Terminal Panel
79-801-00 Timer	97-170-00 Insulator Washer (3/4")	79-826-00 Fuse (Link)
79-803-00 Control Knob	97-171-00 Insulator Washer (3/8")	71-304-00 Relay, 115V
	79-713-00 Choke, 24V	(3645 Only)

When ordering replacement parts, give model and serial number of charger. Specify wire size number of wires required when ordering cords.

CIRCUIT DIAGRAM
MODELS 2445 & 3645 CHARGERS



MODEL 2445



MODEL 3645

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.

T-D PART NO.	DESCRIPTION	QTY. REQ.
50-226-00	1/4" Battery Rod 15-1/4" Plus Bend	3
71-650-00	3" Red Reflector	1 to 4
72-405-00	Guard, Turn Signal Light Fixture (Inside, Front)	1
90-107-00	Seat Back With Arm-Rest Weldment, 3rd Seat	1
90-108-00	Bolt-On Rear Step Weldment	1
90-114-00	Cover, Right Front Wheel Well Top, Single Seat	1
90-118-00	Removeable Right Seat Frame Only, Single Seat	1
XX 90-134-00	Seat Cushion (19" x 39"), Foldaway Seat and Bolt On 3rd Seat, Solid Black	1
XX 90-136-00	Seat Cushion (22-1/4" x 20"), Half Cab, Solid Black	1
90-137-00	Seat Backrest (12" x 27-5/8"), Half Cab, Solid Black	1
90-140-00	Seat Backrest, Full, (Specify Black or White)	1
90-142-00	Seat Backrest, (12" x 22-1/2") Single Seat (Black)	1
90-143-00	Seat Backrest, (12" x 18") Removable Right Seat (Black)	1
XX 90-148-00	Seat Cushion, (18-1/2" x 20"), Solid Black	2
XX 90-149-00	Seat Cushion, (20" x 41-1/2"), Fixed Second Seat, Solid Black	1 or 2
XX 90-167-00	Seat Cushion, Deadman Seat w/Electrical Interlock Solid Black	1
XX 90-168-00	Seat Cushion, (15-1/2" x 17-1/2") Deadman Seat Without Electrical Interlock, Solid Black	1
90-300-00	Arm Rest (Black)	
90-444-00	Deck Board, 5/8" Plywood, Black, Hi-Density Cover, 41 x 75-1/4	1
90-539-00	3/4" Round Steel Stake	3
90-540-00	Stake Side, Side Gate Hook	6
90-542-10	Stake Sides and End Assembly (14" High Stakes)	1
90-543-00	1-1/2" x 3/4" Channel Stake 17" Long	6
90-544-00	2" x 1" Stake Pocket	6
90-546-00	1-1/2" x 3/4" Channel Stake 27" Long	6

XX For colors other than solid black, substitute "99" for the last 2 numerals in the Taylor-Dunn Part Number and specify color.

T-D PART NO.	DESCRIPTION	QTY. REQ.
90-548-00	1-1/2" x 3/4" Channel Stake 39" Long	6
90-800-00	Windshield, Safety Glass (19-1/2" x 35-1/2")	1
90-811-00	Windshield & Side Window Safety Glass (19-1/2" x 21-1/2") Half Cab	1
90-850-00	Rear Window, Safety Glass (12" x 32")	1
90-851-00	Rear Window, Safety Glass (12" x 18"), Half Cab	1
90-908-00	Side Curtains Less Steel Frame for Cab	1 Pair
90-908-10	Side Curtain Kit, Complete for One Cab	1 Kit
90-908-98	Side Curtain Less Steel Frame, Left Side	1
90-908-99	Side Curtain Less Steel Frame, Right Side	1
90-921-98	Side Curtain Frame, (Less Hinges) Left Side	1
90-921-98	Side Curtain Frame, (Less Hinges) Right Side	1
91-000-00	Fiberglass Cab Without Window Glass (White)	1
91-005-00	Fiberglass Cab Without Window Glass (White) Half Cab	1
91-006-00	Fiberglass Windshield Only, Frame (White)	1
91-023-98	Support Post for Top Frame, Front Left Side	1
91-023-99	Support Post for Top Frame, Front Right Side	1
91-028-00	Tubular Top Frame, Less Top Supports	1
91-028-51	Support Post for Top Frame, Rear	2
91-029-00	Windshield Support Bracket	2
91-101-00	Surrey Top Cover With Fringe	1
91-802-98	Hinge Side Curtain Door Frame, Left Side	2
91-802-99	Hinge Side Curtain Door Frame, Right Side	2
92-000-00	Chrome Wheel Cover 8", Medium Dome for Dimpled Wheel	2 or 4
92-002-00	Chrome Wheel Cover 8", for Split Rim Wheel	2 or 4
92-201-00	4-1/2 x 8-1/2 Mirror	1
92-202-00	Mirror Bracket Assembly	1
94-001-00	Aluminum Molding Angle (Per Foot)	
94-011-00	Aluminum Trim Drip Rail Formed 57-11/16" Long	2
94-034-00	Plastic Trim Strip (Per Foot) for 91-006-00 Windshield Frame	

T-D PART NO.	DESCRIPTION	QTY. REQ.
94-201-00	Taylor-Dunn Emblem	1
94-301-00	Taylor-Dunn Decal	1
94-304-00	Switch Console Name Plate	1
94-305-00	Forward/Reverse Switch Plate	1
95-510-00	Deck Handle	1
95-530-10	Recessed Handle, Foldaway Seat	1
95-952-00	Paint - 1 Qt. Can (Specify Color)	1
97-315-50	Shaft - 5/16 Square N.C. Thread for Curtain Door Latch	2
97-315-51	Plate - Door Latch (Inner and Outer)	4
97-315-53	Handle - Door Latch (Inner and Outer)	4
97-804-00	Hitch - Pintle	1
97-808-00	Hitch - Automatic	1
98-200-00	Rubber Brake Pedal Pad	1
98-254-00	Aluminum Accelerator Pedal Pad	1
98-311-00	Window Channel for Front Window (107" Long)	1
98-312-00	Window Channel for Front Window-Half Cab (79" Long)	1
98-313-00	Window Channel for Rear Cab Window (85" Long)	1
98-315-00	Window Channel for Rear Window-Half Cab (57" Long)	1