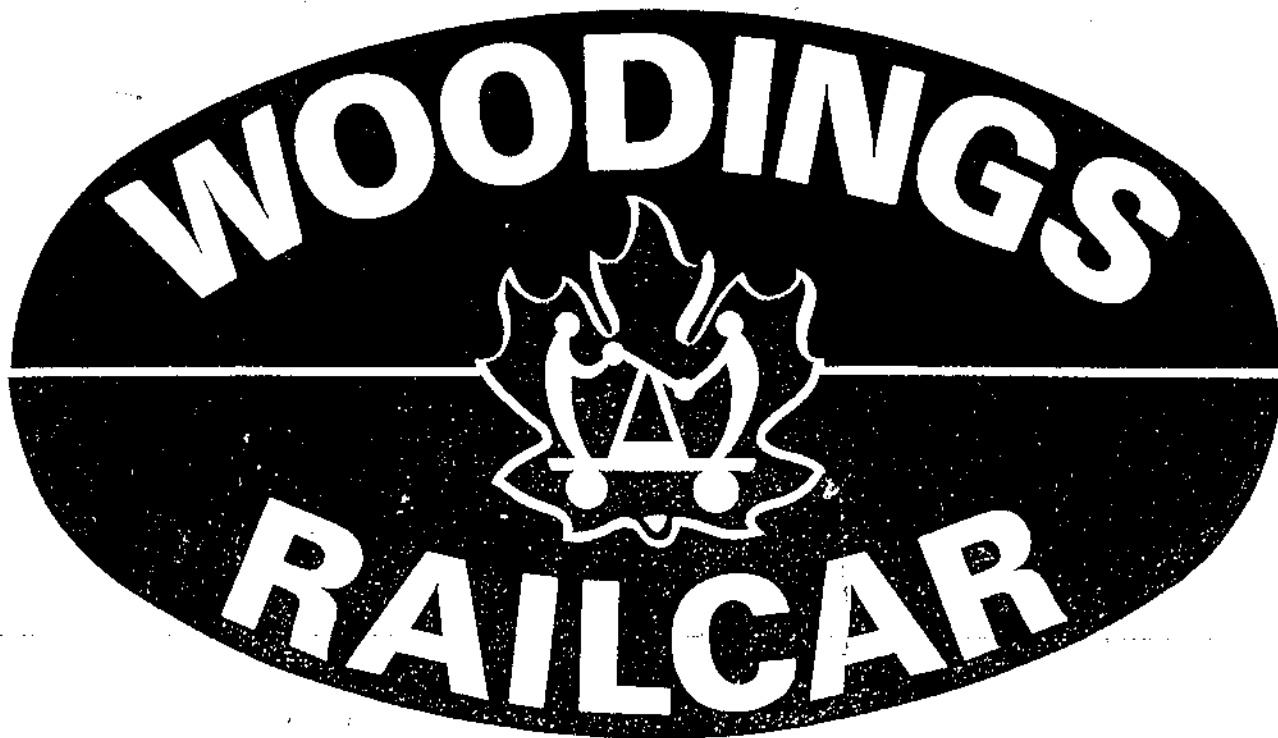


Bill



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## I M P O R T A N T

### SHIFTING GEARS

THIS TRANSMISSION DOES NOT HAVE SYNCHROMESH GEARS. TO CHANGE GEARS WITH ENGINE RUNNING ABOVE IDLING SPEED WILL RESULT IN TRANSMISSION FAILURE. FOR THE PURPOSE OF CHANGING GEARS, AN INDICATOR IS PROVIDED ON THE DASHBOARD, WHEN AND ONLY WHEN THIS INDICATOR IS STATIONARY SHOULD THE GEARS BE SHIFTED. ALSO, TO PREVENT GEARS FROM GRINDING AND TO EASE SHIFTING FROM THE NEUTRAL POSITION, A BRAKE IS PROVIDED ON THE SHIFTER. THIS IS APPLIED BY MOVING THE SHIFTER TO THE RIGHT SUFFICIENTLY TO STOP THE TRANSMISSION FROM TURNING BEFORE THE FORWARD OR REVERSE GEARS ARE SELECTED. SHIFTING WILL BE EASIER IF WHILE MOVING THE SHIFTER INTO FORWARD OR REVERSE THE TRANSMISSION BRAKE IS APPLIED AND RELEASED.

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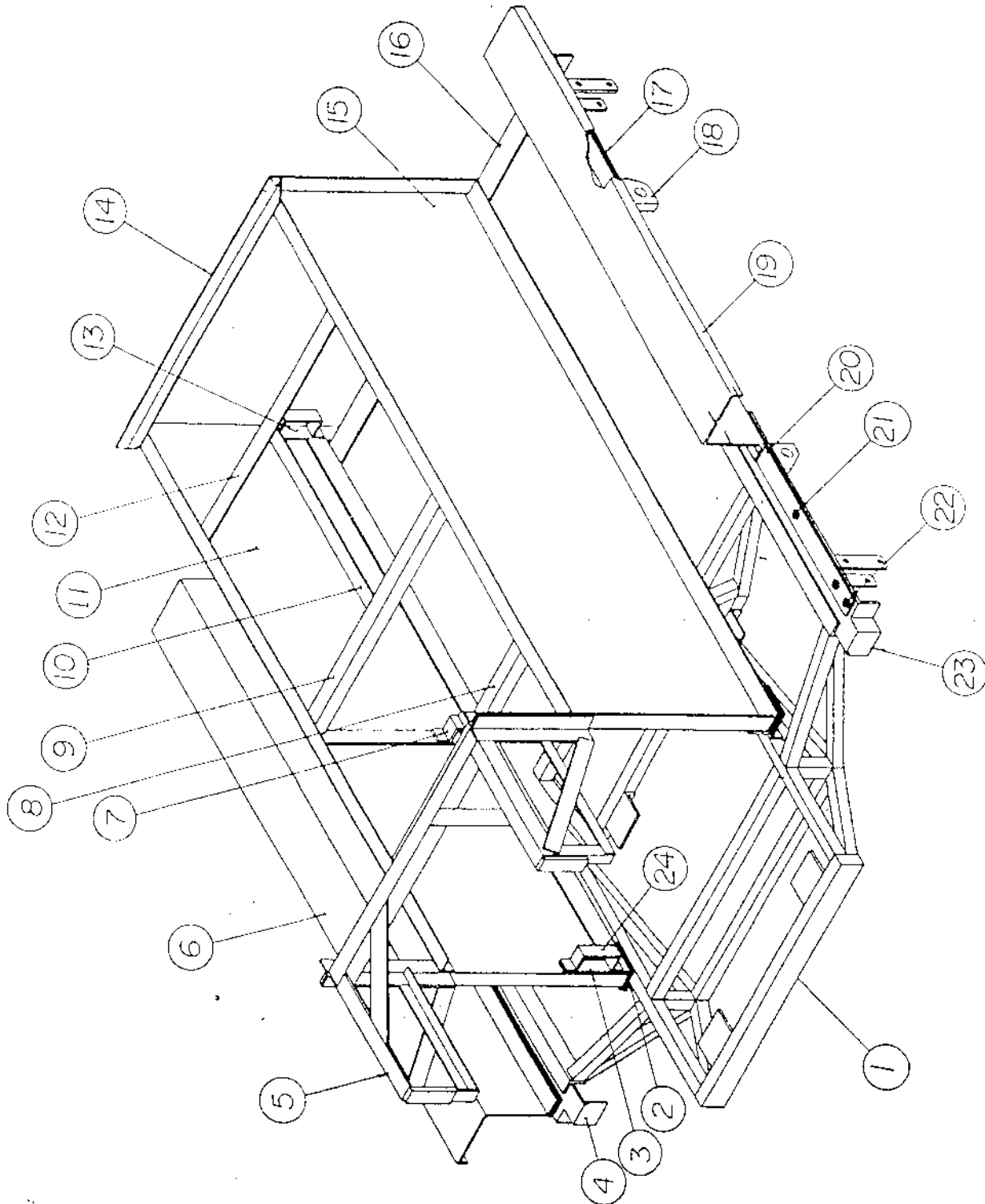
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## INSPECTION MOTOR CAR OPERATOR'S MANUAL

- ENGINE:** For operating instructions see Manufacturer's Manual supplied by Railcar.
- ENGINE OIL:** Use heavy duty detergent oil. Summer use SAE 30 Oil. Winter use SAE 10 or 5/30 oil. Do not overfill! Drain and replace with fresh oil every 25 hours of running time, see hour meter on control panel.
- DRIVE TRAIN:** Is made up of centrifugal clutch, continuous belt drive, gear box with forward and reverse gear, two universal joint drive shaft and axle drive box.
- MAINTENANCE:** Should be restricted to daily checks on oil levels of both gear and axle boxes; both these units have dipsticks or oil level plugs, to which oil levels should be kept. If oil is required use No. 80 gear lube; winter, use No. 75 gear lube. Every 200 hours oil in both these units should be changed.
- WHEELS & BEARINGS:** Each of the four wheel bearings should be greased weekly, and at the same time a check made on the tightness of bearing and wheel bolts.
- BRAKES:** Brakes should be checked on a monthly basis for operation and if necessary adjusted to hold the car stationary when the brake handle is in the first notch of the handle slide.  
It is also advisable to keep a check on the condition of brake shoe facings for wear, to determine when replacement is necessary.
- AIR FILTER:** Treated paper type, replaceable air filter element. This fine micron filter element should be inspected every ten hours or more often if engine is operated in extremely dusty conditions.  
For more detailed information, refer to engine Manufacturer's Manual.
- SPARK PLUGS:** Replace every 200 hours with Champion L7 or equivalent. Clean area around plug base before removing spark plug to avoid the possibility of dirt and grit entering engine.  
For more detailed information, refer to engine Manufacturer's Manual.
- CAPACITIES:**
- |           |                    |
|-----------|--------------------|
| Engine    | 1-1/2 quarts       |
| Gear box  | 12 ounces          |
| Axle box  | 14 ounces          |
| Fuel tank | 5 Imperial gallons |
- BELTS:**
- |            |                   |
|------------|-------------------|
| Alternator | 1390 (Gates)      |
| Drive      | 9831-6303 (Gates) |

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FRAME ASSEMBLY - KEY

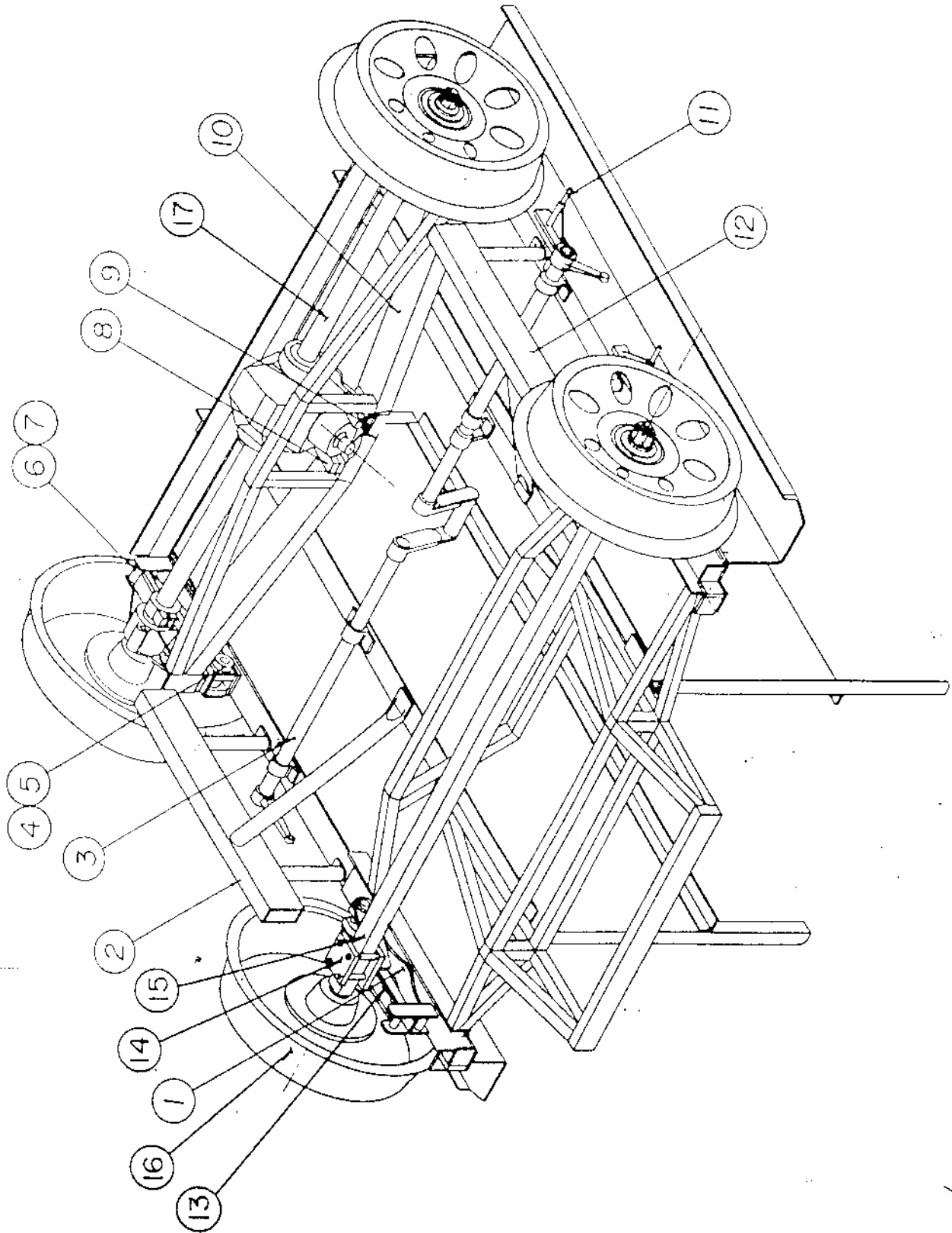
0104-A000

C.B.I./84

| ITEM NO. | PART NO.      | PART NAME                       | ITEM NO. | PART NO. | PART NAME |
|----------|---------------|---------------------------------|----------|----------|-----------|
| 1        | 0104-S001     | Engine Sub-Frame Assy           |          |          |           |
| 2        | 0017-P013     | Side Panel Rubber Pad           |          |          |           |
| 3        | 0017-P020     | Front Spacer                    |          |          |           |
| 4        | 0104-S005     | Front Suspension Assy -<br>R.H. |          |          |           |
| 5        | 0104-S002     | Cab Support Bracket             |          |          |           |
| 6        | 0104-PC09 CBI | Fender - R.H.                   |          |          |           |
|          | 0110-PC02 CBL | " "                             |          |          |           |
| 7        | 0017-P023     | Handle Bracket - Middle         |          |          |           |
| 8        | 0106-P040     | Front Housing Support<br>Angle  |          |          |           |
| 9        | 0019-P013     | Console Cross Angle -<br>Front  |          |          |           |
| 10       | 0019-P015     | Console Cross Angle -<br>Middle |          |          |           |
| 11       | 0104-S011 CBI | Side Panel Assy - R.H.          |          |          |           |
|          | 0110-S004 CBI | " " " "                         |          |          |           |
| 12       | 0019-P014     | Console Cross Angle -<br>Back   |          |          |           |
| 13       | 0017-P021     | Rear Spacer                     |          |          |           |
| 14       | 0104-P012     | Side Panel Rear Support         |          |          |           |
| 15       | 0104-S010 CBI | Side Panel Assy - L.H.          |          |          |           |
|          | 0110-S003 CBL | " " " "                         |          |          |           |
| 16       | 0104-PC14     | Rear Sub Cross Angle            |          |          |           |
| 17       | 0017-P004     | Rubber Pad - Back               |          |          |           |
| 18       | 0017-S002     | Rear Suspension Bracket         |          |          |           |
| 19       | 0104-PC08 CBI | Fender - L.H.                   |          |          |           |
|          | 0110-PC01 CBL | " "                             |          |          |           |
| 20       | 0104-P013     | Rubber Pad Front                |          |          |           |
| 21       | 0017-P025     | Sub-Frame Spacer<br>(tapped)    |          |          |           |
| 22       | 0017-P024     | Sub-Frame Spacer                |          |          |           |
| 23       | 0104-S004     | Front Suspension Assy -<br>L.H. |          |          |           |
| 24       | 0017-P022     | Handle Bracket Outside          |          |          |           |

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SUB-FRAME ASSEMBLY - KEY

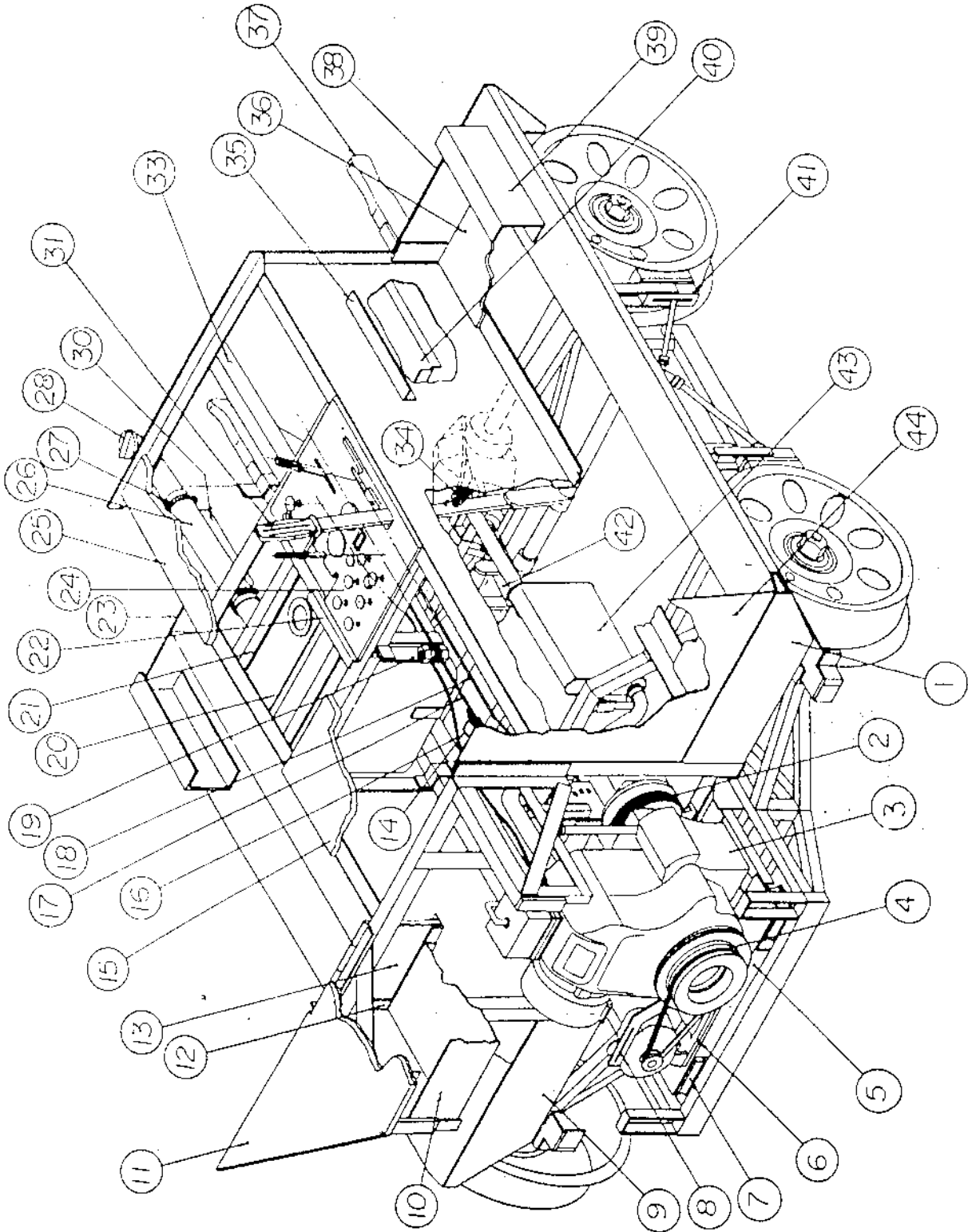
0105-A000

C.B.I./84

| ITEM NO. | PART NO.     | PART NAME   | ITEM NO. | PART NO. | PART NAME |
|----------|--------------|---|----------|----------|-----------|
| 1        | 0018-P003    | Spring  |          |          |           |
| 2        | 0105-S002    | Railskid - R.H.   |          |          |           |
| 3        | 0018-S008    | Brake Pipe Sub-Assy   |          |          |           |
| 4        | 0018-P006    | Suspension Shaft  |          |          |           |
| 5        | 0018-P004    | Suspension Bushing  |          |          |           |
| 6        | 0018-P005    | Suspension Arm Stop   |          |          |           |
| 7        | 0018-P011    | Suspension Arm Stop<br>Rubber   |          |          |           |
| 8        | 0105-S004    | Drive Box Clamp   |          |          |           |
| 9        | 0105-P005    | Washer Plate  |          |          |           |
| 10       | 0105-S003    | Drive Box Skid Bracket  |          |          |           |
| 11       | 0018-S007    | Brake Support Bracket   |          |          |           |
| 12       | 0105-S001    | Railskid - L.H.   |          |          |           |
| 13       | 0026-S011    | Swing Arm Assy - Right  |          |          |           |
|          | 0026-S012    | Swing Arm Assy - Left<br>(not shown)  |          |          |           |
| 14       | 0026-P011F   | Bolt Plate  |          |          |           |
| 15       | 0026-S001-01 | 1-1/2" Fixed Axle<br>Assy*  |          |          |           |
|          |              | *The Axle Assy consists<br>of the following parts<br>not shown on this<br>drawing |          |          |           |
|          | 0026-P001-02 | 1-1/2" Fixed Axle   |          |          |           |
|          | 0026-P002    | Hub   |          |          |           |
|          | 0026-P004    | Bearing Spacer Washer   |          |          |           |
|          | 0026-P005    | Insulating Washers  |          |          |           |
|          | 0026-P006    | Shim Washer   |          |          |           |
|          | 0026-P007    | Facing Washer   |          |          |           |
|          | 0026-P008    | Cones   |          |          |           |
|          | 0026-P009    | Cups  |          |          |           |
|          | 0026-P013    | .005 Shim   |          |          |           |
|          | 0026-P014    | .010 Shim   |          |          |           |
|          | 0026-P015    | .020 Shim   |          |          |           |
| 16       | 0008-P009    | Wheel   |          |          |           |
| 17       | 0010-S001    | Rear Axle Sub Assy  |          |          |           |

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INTERMEDIATE ASSEMBLY - KEY

0106-A000

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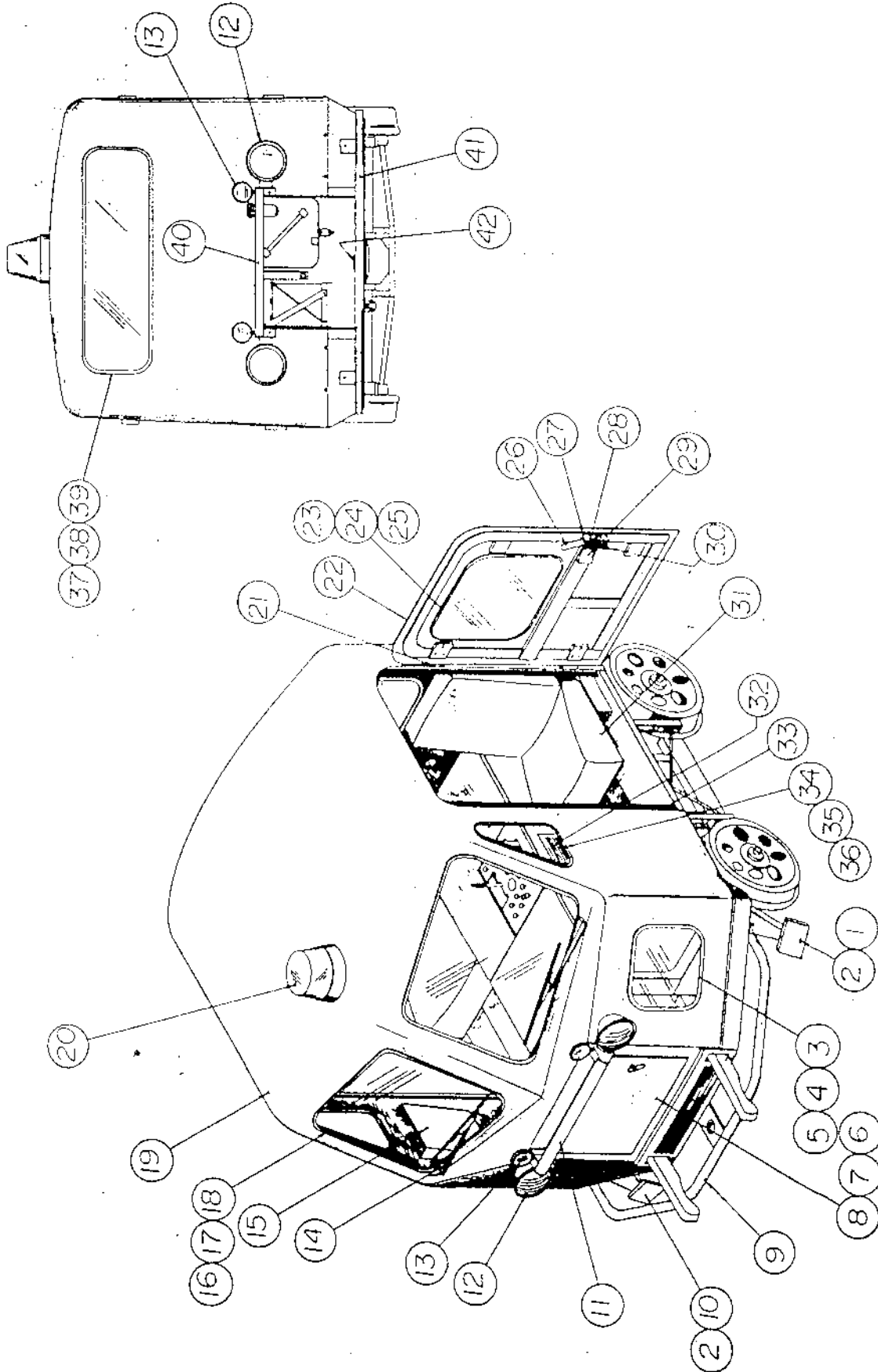
| ITEM NO. | PART NO.      | PART NAME                    | ITEM NO. | PART NO.      | PART NAME           |
|----------|---------------|------------------------------|----------|---------------|---------------------|
| 1        | 0106-S004     | Front Tool Tray - L.H.       | 41       | 0007-A000     | Wheel Brake         |
| 2        | 0019-P033     | Drive Belt                   | 42       | 0012-A000     | Drive Shaft         |
| 3        | 0019-P001     | 16 HP Engine                 | 43       | 0101-A000 CBI | Exhaust System Assy |
|          | 0019-P042     | 18 HP Engine (OPT.)          |          | 0108-A000 CBL | " " "               |
| 4        | 0019-P034     | Alternator Belt              | 44       | 0106-P022     | Lower Panel - Front |
| 5        | 0106-S001     | Engine Plate Assy.           |          |               |                     |
| 6        | 0106-PC13     | Alternator Bracket           |          |               |                     |
| 7        | 0019-P002     | Motor Mounts                 |          |               |                     |
| 8        | 0106-PC12     | Alternator Locking Arm       |          |               |                     |
| 9        | 0106-S005     | Front Tool Tray - R.H.       |          |               |                     |
| 10       | 0106-S015     | Glove Box Tray               |          |               |                     |
| 11       | 0106-S021     | Dash Broad Assy.             |          |               |                     |
| 12       | 0106-S016     | Glove Box Door Frame Assy    |          |               |                     |
| 13       | 0106-S017     | Glove Box Door Cover         |          |               |                     |
| 14       | 0019-P026     | Gear Shifter Brake Cable     |          |               |                     |
| 15       | 0019-S020     | Center Housing Cover Front   |          |               |                     |
| 16       | 0019-P019     | Choke Cable                  |          |               |                     |
| 17       | 0009-AG00     | Gear Shifter Assy            |          |               |                     |
| 18       | 0019-S030     | Throttle Linkage             |          |               |                     |
| 19       | 0019-S024     | Gear Shifter Bracket - Front |          |               |                     |
| 20       | 0106-S036     | Gas Tank Assy.               |          |               |                     |
| 21       | 0019-S036     | Gas Tank Cradle Assy.        |          |               |                     |
| 22       | 0019-P043     | Housing Cover Angle          |          |               |                     |
| 23       | 0106-SC07     | Rear Tool Tray - R.H.        |          |               |                     |
| 24       | 0019-S012     | Console Assy.                |          |               |                     |
| 25       | 0019-S021 CBI | Center Housing Cover - Back  |          |               |                     |
|          | 0025-S006 CBL | " " "                        |          |               |                     |
| 26       | 0106-P038     | Flexible Gas Pipe            |          |               |                     |
| 27       | 0106-P039     | Clamps                       |          |               |                     |
| 28       | 0106-S037     | Filler Spout Assy.           |          |               |                     |
| 30       | 0019-P016     | Stiffener Strip - Inner      |          |               |                     |
| 31       | 0019-S027     | Brake Handle Assy            |          |               |                     |
| 33       | 0019-S025 CBI | Gear Shifter Bracket - Rear  |          |               |                     |
|          | 0025-S007 CBL | " " "                        |          |               |                     |
| 34       | 0019-P028     | Brake Handle Spring          |          |               |                     |
| 35       | 0019-P016     | Seat Bracket - Inner         |          |               |                     |
| 36       | 0106-S035 CBI | Floor Board                  |          |               |                     |
|          | 0111-S001 CBL | " "                          |          |               |                     |
| 37       | 0019-S032     | Lifting Handle Assy          |          |               |                     |
| 38       | 0106-S006     | Rear Tool Tray - L.H.        |          |               |                     |
| 39       | 0019-P018     | Seat Bracket - Outer         |          |               |                     |
| 40       | 0019-S005     | Battery Holder               |          |               |                     |

The Following Parts are Not Shown On Drawing:

- 0006-A000 Transmission Assy
- 0019-P041 Gas Filter
- 0019-P003 Clutch
- 0019-S044 Engine Drain Plug Adaptor (opt.)
- 0019-P045 Hub Odometer Bracket (opt.)
- 0019-P047 Battery Cut-Off Switch Angle (opt.)

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613

FINAL ASSEMBLY - KEY

0107-A000

C.B.I./84

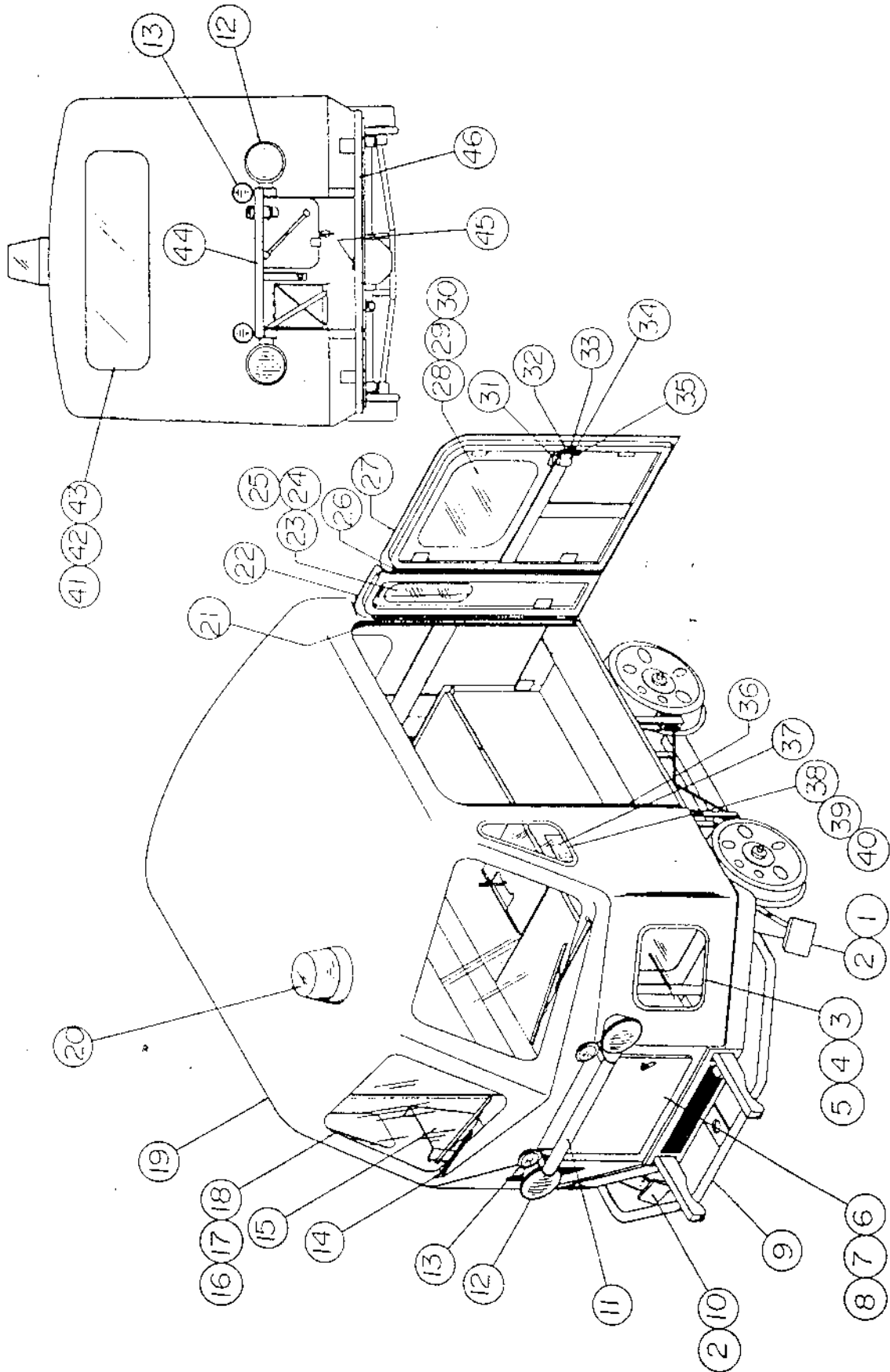
| ITEM NO. | PART NO.   | PART NAME                           | ITEM NO. | PART NO.  | PART NAME           |
|----------|------------|-------------------------------------|----------|-----------|---------------------|
| 1        | 0107-S002  | Railsweep Assy - L.H.               | 37       | 0103-P013 | Rear Window         |
| 2        | 0020-P004G | Pad                                 | 38       | 0103-P014 | Weather Strip       |
| 3        | 0103-P016  | Lower Viewing Window - Outer (opt.) | 39       | 0103-P015 | Locking Strip       |
| 4        | 0103-P017  | Weather Strip                       | 40       | 0107-S004 | Rear Grab Rail Assy |
| 5        | 0103-P018  | Locking Strip                       | 41       | 0020-S006 | Rear Bumper Assy    |
| 6        | 0103-P022A | Cowl Door - Orange                  | 42       | 0020-S007 | Rear Drawbar Assy   |
|          | 0103-P022D | Cowl Door - Yellow                  |          |           |                     |
| 7        | 0103-P022B | Hinge                               |          |           |                     |
| 8        | 0103-P022C | Latch                               |          |           |                     |
| 9        | 0107-S001  | Front Bumper                        |          |           |                     |
| 10       | 0107-S003  | Railsweep - R.H.                    |          |           |                     |
| 11       | 0107-S005  | Front Grab Rail Assy                |          |           |                     |
| 12       | 0015-S027  | Headlight Assy                      |          |           |                     |
|          | 0015-P027A | Sealed Beam                         |          |           |                     |
|          | 0015-P027B | Casing                              |          |           |                     |
|          | 0015-P027C | Bracket                             |          |           |                     |
| 13       | 0015-S028  | Tail-light Assy                     |          |           |                     |
|          | 0015-P028A | Bulb                                |          |           |                     |
|          | 0015-P028B | Casing                              |          |           |                     |
|          | 0015-P028C | Reflector                           |          |           |                     |
| 14       | 0015-S002  | Windshield Wiper Assy               |          |           |                     |
|          | 0015-P002A | Motor                               |          |           |                     |
|          | 0015-P002B | Arm                                 |          |           |                     |
|          | 0015-P002C | Blade                               |          |           |                     |
| 15       | 0103-P002  | Time Pocket                         |          |           |                     |
| 16       | 0103-P007  | Front Window                        |          |           |                     |
| 17       | 0103-P008  | Weather Strip                       |          |           |                     |
| 18       | 0103-P009  | Locking Strip                       |          |           |                     |
| 19       | 0103-P001  | CAB - C.B.I./84 - Orange            |          |           |                     |
|          | 0103-P027  | CAB - C.B.L./84 - Yellow            |          |           |                     |
| 20       | 0015-P004  | Strobe Light                        |          |           |                     |
| 21       | 0016-P004M | Hinge - L.H.                        |          |           |                     |
|          | 0016-P004L | Hinge - R.H.                        |          |           |                     |
| 22       | 0103-P003A | Door - Orange                       |          |           |                     |
|          | 0103-P003G | Door - Yellow                       |          |           |                     |
| 23       | 0103-P003B | Window                              |          |           |                     |
| 24       | 0103-P003C | Weather Strip                       |          |           |                     |
| 25       | 0103-P003D | Locking Strip                       |          |           |                     |
| 26       | 0016-P004T | Latch Handle - L.H.                 |          |           |                     |
|          | 0016-P004S | Latch Handle - R.H.                 |          |           |                     |
| 27       | 0016-P004Q | Inside Latch - L.H.                 |          |           |                     |
|          | 0016-P004P | Inside Latch - R.H.                 |          |           |                     |
| 28       | 0016-P004N | Paddle Handle                       |          |           |                     |
| 29       | 0103-P003E | Latch Cover                         |          |           |                     |
| 30       | 0103-P003F | Latch Chain                         |          |           |                     |
| 31       | 0016-P012  | Seat                                |          |           |                     |
| 32       | 0020-P010  | Specification Plate                 |          |           |                     |
| 33       | 0016-P004K | Door Weather Sealer                 |          |           |                     |
| 34       | 0103-P010  | Side Window                         |          |           |                     |
| 35       | 0103-P011  | Weather Strip                       |          |           |                     |
| 36       | 0103-P012  | Locking Strip                       |          |           |                     |

The following parts are not shown on drawing:

- 0016-P024 Air Vent
- 0015-P005 Dome Light
- 0107-P006 Rear View Mirror
- 0016-P016 Cab Insulation
- 0016-P017 Side Panel Insulation
- 0016-P018 Floor Insulation

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FINAL ASSEMBLY - KEY

C.B.L./84

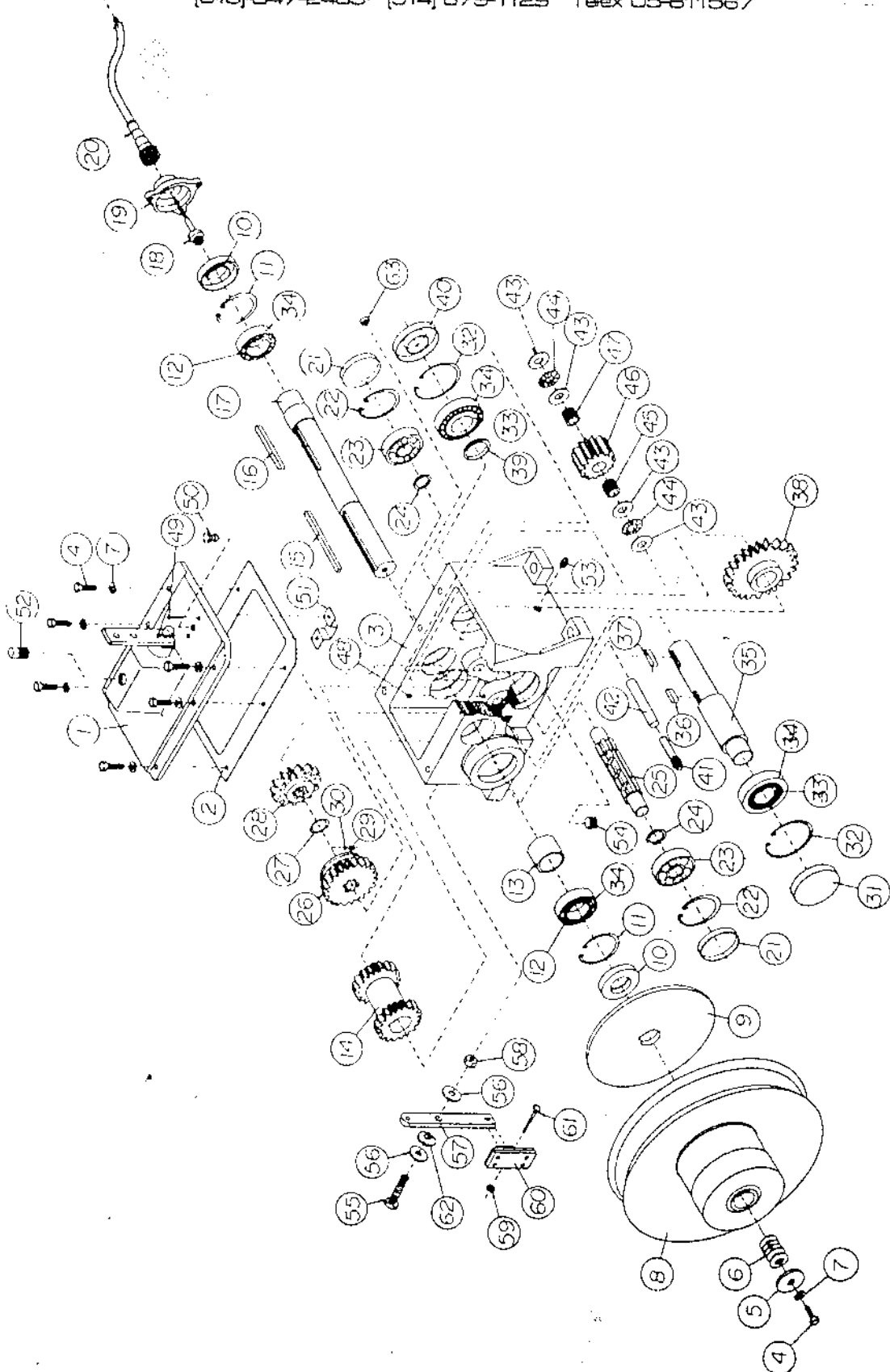
| ITEM NO. | PART NO.   | PART NAME                       | ITEM NO. | PART NO.   | PART NAME                      |
|----------|------------|---------------------------------|----------|------------|--------------------------------|
| 1        | 0107-S002  | Rail sweep Assy - LH            | 33       | 0016-P004N | Paddle Handle                  |
| 2        | 0020-P004G | Pad                             | 34       | 0103-P003E | Latch Cover                    |
| 3        | 0103-P016  | Lower Viewing Window -<br>Outer | 35       | 0103-P003F | Latch Chain                    |
| 4        | 0103-P017  | Weather Strip                   | 36       | 0016-P004K | Weather Sealer - Door<br>frame |
| 5        | 0103-P018  | Locking Strip                   | 37       | 0020-P010  | Specification Plate            |
| 6        | 0103-P022A | Cowl Door - Orange              | 38       | 0103-P010  | Side Window                    |
|          | 0103-P022D | Cowl Door - Yellow              | 39       | 0103-P011  | Weather Strip                  |
| 7        | 0103-P022B | Hinge                           | 40       | 0103-P012  | Locking Strip                  |
| 8        | 0103-P022C | Latch                           | 41       | 0103-P013  | Rear Window                    |
| 9        | 0107-S001  | Front Bumper                    | 42       | 0103-P014  | Weather Strip                  |
| 10       | 0107-S003  | Rail sweep - RH                 | 43       | 0103-P015  | Locking Strip                  |
| 11       | 0107-S005  | Front Grab Rail Assy            | 44       | 0107-S004  | Rear Grab rail Assy            |
| 12       | 0015-S027  | Headlight Assy                  | 45       | 0020-S006  | Rear Bumper Assy               |
|          | 0015-P027A | Sealed Beam                     | 46       | 0020-S007  | Rear Drawbar Assy              |
|          | 0015-P027B | Casing                          |          |            |                                |
|          | 0015-P027C | Bracket                         |          |            |                                |
| 13       | 0015-S028  | Tail - Light Assy               |          |            |                                |
|          | 0015-P028A | Bulb                            |          |            |                                |
|          | 0015-P028B | Casing                          |          |            |                                |
|          | 0015-P028C | Reflector                       |          |            |                                |
| 14       | 0015-S002  | Windshield Wiper Assy           |          |            |                                |
|          | 0015-P002A | Motor                           |          |            |                                |
|          | 0015-P002B | Arm                             |          |            |                                |
|          | 0015-P002C | Blade                           |          |            |                                |
| 15       | 0103-P002  | Time Pocket                     |          |            |                                |
| 16       | 0103-P007  | Front Window                    |          |            |                                |
| 17       | 0103-P008  | Weather Strip                   |          |            |                                |
| 18       | 0103-P009  | Locking Strip                   |          |            |                                |
| 19       | 0109-P001  | CAB - C.B.L./84 orange          |          |            |                                |
|          | 0109-P005  | CAB - C.B.L./84 yellow          |          |            |                                |
| 20       | 0015-P004  | Strobe Light                    |          |            |                                |
| 21       | 0016-P004M | Hinge - LH                      |          |            |                                |
|          | 0016-P004L | Hinge - RH                      |          |            |                                |
| 22       | 0109-P002A | Small Door - LH orange          |          |            |                                |
|          | 0109-P002E | Small Door - LH yellow          |          |            |                                |
|          | 0109-P003A | Small Door - RH orange          |          |            |                                |
|          | 0109-P003  | Small Door - RH yellow          |          |            |                                |
| 23       | 0109-P002B | Small Door Window               |          |            |                                |
| 24       | 0109-P002C | Weather Strip                   |          |            |                                |
| 25       | 0109-P002D | Locking Strip                   |          |            |                                |
| 26       | 0109-P004  | Weather Sealer - small<br>door  |          |            |                                |
| 27       | 0103-P003A | Door - orange                   |          |            |                                |
|          | 0103-P003G | Door - yellow                   |          |            |                                |
| 28       | 0103-P003B | Window                          |          |            |                                |
| 29       | 0103-P003C | Weather Strip                   |          |            |                                |
| 30       | 0103-P003D | Locking Strip                   |          |            |                                |
| 31       | 0016-P004T | Latch Handle - LH               |          |            |                                |
|          | 0016-P004S | Latch Handle - RH               |          |            |                                |
| 32       | 0016-P004Q | Inside Latch - LH               |          |            |                                |
|          | 0016-P004P | Inside Latch - RH               |          |            |                                |

The following parts are not shown on drawing:

- 0016-P024 Air vent
- 0015-P005 Dome Light
- 0107-P006 Rear View Mirror
- 0016-P016 Cab Insulation
- 0016-P017 Side Panel Insulation
- 0016-P018 Floor Insulation

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TRANSMISSION ASSEMBLY - KEY

0006-A000

C.B.I./C.B.L./84

| ITEM NO. | PART NO.   | PART NAME                           | ITEM NO. | PART NO.   | PART NAME                           |
|----------|------------|-------------------------------------|----------|------------|-------------------------------------|
| 1        | 0006-S001  | Transmission cover Sub-Assy         | 47       | 0006-P046  | Needle Bearing                      |
| 2        | 0006-P002  | Transmission Cover Gasket           | 48       | -----      | 1/4"-20x5/16" Socket Set Screw      |
| 3        | 0006-P067  | Transmission Box                    | 49       | -----      | 1/8" x 1/2" Brass Rivet             |
| 4        | -----      | 5/16 - 18 x 1" Hex Head Mach. Screw | 50       | 0006-P011  | Breather Valve                      |
| 5        | 0006-P066  | Torque Converter                    | 51       | 0010-P002C | Oil Shield                          |
| 6        | -----      | Securing Washer                     | 52       | 0006-P085  | 1/2"-14 Pipe Plug (Square)          |
| 7        | -----      | 7/16" Flat Washer                   | 53       | 0006-P075  | Level Plug                          |
| 8        | 0006-P067  | 5/16" Lock Washer                   | 54       | 0006-P076  | Drain Plug                          |
| 9        | 0006-P064  | Torque Converter                    | 55       | -----      | 3/8"-16x1 1/2" Hex Head Mach. Screw |
| 10       | 0006-P083  | Torque Converter Brake Disc         | 56       | -----      | 7/16" Flat Washer                   |
| 11       | 0006-P036  | Oil Seal                            | 57       | 0006-P006  | Torque Converter Brake Arm          |
| 12       | 0006-P084  | Internal Retaining Ring             | 58       | -----      | 3/8" - 16 Hex Nut                   |
| 13       | 0006-P079  | Roller Bearing Cone                 | 59       | -----      | 1/4" -20 Hex Nut                    |
| 14       | 0006-P082  | Tube Spacer                         | 60       | 0006-S065  | Torque Converter Brake              |
| 15       | 0006-P068  | Spur Gear                           | 61       | -----      | 1/2"-20x1 1/2" Hex Head Mach. Screw |
| 16       | 0006-P040  | Key                                 | 62       | 0006-P086  | Disc Spring (DS-130 Spae-Naur)      |
| 17       | 0006-P078A | Key                                 | 63       | 0006-P077  | Frost Plug                          |
| 18       | 0102-S004  | Input Shaft                         |          |            |                                     |
| 19       | 0102-P005  | Input Shaft Adaptor Assy            |          |            |                                     |
| 20       | 0102-P001  | Cable Adaptor - Transmission        |          |            |                                     |
| 21       | 0006-P053  | Cable                               |          |            |                                     |
| 22       | 0006-P054  | Frost Plug Seal                     |          |            |                                     |
| 23       | 0006-P052  | Internal Retaining Ring             |          |            |                                     |
| 24       | 0006-P050  | Ball Bearing                        |          |            |                                     |
| 25       | 0006-P051  | Spacer Ring                         |          |            |                                     |
| 26       | 0006-P047  | Splined Shaft                       |          |            |                                     |
| 27       | 0006-P048  | Sliding Gear (22 Teeth)             |          |            |                                     |
| 28       | 0006-P049  | External Retaining Ring             |          |            |                                     |
| 29       | 0006-P059  | Spur Gear (14 Teeth)                |          |            |                                     |
| 30       | 0006-P060  | Spline Gear Spring                  |          |            |                                     |
| 31       | 0006-P057  | 1/2" Dia. Ball                      |          |            |                                     |
| 32       | 0006-P055  | Seal Plug                           |          |            |                                     |
| 33       | 0006-P056  | Internal Retaining Ring             |          |            |                                     |
| 34       | 0006-P074  | Roller Bearing - Cone               |          |            |                                     |
| 35       | 0005-P058  | Roller Bearing - Cup                |          |            |                                     |
| 36       | 0006-P061  | Output Shaft                        |          |            |                                     |
| 37       | 0006-P013  | Key                                 |          |            |                                     |
| 38       | 0006-P062  | Key                                 |          |            |                                     |
| 39       | 0006-P063  | Spur Gear (23 Teeth)                |          |            |                                     |
| 40       | 0006-P057  | Spacer Ring                         |          |            |                                     |
| 41       | 0006-S041  | Oil Seal                            |          |            |                                     |
| 42       | 0006-P033  | Square Head Pipe Plug               |          |            |                                     |
| 43       | 0006-P001G | Idler Gear Shaft                    |          |            |                                     |
| 44       | 0006-P044  | Hardened Steel Race                 |          |            |                                     |
| 45       | 0006-P045  | Needle Thrust Bearing               |          |            |                                     |
| 46       | 0006-P032  | Needle Bearing                      |          |            |                                     |
|          |            | Idler Gear                          |          |            |                                     |

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## TRANSMISSION ASSEMBLY

### Assemble in this order:

#### 1. Input Shaft:

Take input shaft (17) and insert the key (16). Place gear (14) in the transmission box, with its wider, feathered gear to the rear. Insert input shaft from rear, through the transmission box and gear, taking care to align the key and slot in shaft and gear, then press gear up to the shoulder on shaft. Press on bearing cone (12) (taper out) up to the shoulder on the rear of input shaft (end without key slot). On to opposite end of shaft slide spacer (13) up to gear, then press on bearing cone (taper out) until it just grips the spacer. Press in both bearing cups (34) in turn, each just sufficient to expose the retaining ring slot, then place retaining rings (11) in position.

#### 2. Idler Shaft:

Place transmission in a vice speed indicator side down. Take idler shaft (42) with groove and place in shaft hole speed indicator side, groove end first. Knock the shaft through from bottom until it just surfaces other side. Press both needle bearings (45) and (47) in idler gear (46). Place thrust bearing (44) between two thrust bearings washers (43) and place on shaft. Place gear (bevel end towards torque converter) onto shaft, now tap shaft to slide through the bearings, washers and gear, but leave enough room to place the opposite set of bearing and washers on the opposite side of the gear on the shaft. Now tap the shaft through to the point where the groove in the shaft is visible through the set screw hole (48). Care should be taken to ensure that ground



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slot in shaft is horizontal to the locking screw, the end of the shaft has been ground to indicate the slot position. The shaft can easily be turned by first tapping the shaft a little further until this indicator end sticks out enough to take a wrench, the shaft can then be positioned and then tapped back in line with screw hole. Place the set screw (48) in and tighten with some locktight, now tap the shaft from both ends to ensure a good seat with the set screw. Do a final tightening on the set screw. Place plug (41) on torque converter side and press dust cap (63) in speed indicator side.

### 3. Output Shaft:

Place transmission box (3) on work bench with speed indicator side down. Gear (38) should be placed inside the box flat face to speed indicator side, slide output shaft (35) long small diameter first, through transmission box and gear. Place keystone (36) in shaft keyway and slide gear onto shoulder. Press bearing cone (33) taper out, onto shoulder on short, small diameter end of shaft. Next press bearing cup (34) taper in into transmission box until it just passes the snap ring slot. Place snap ring (32) in position. Turn transmission over to have speed indicator side up. Slide spacer (39) up to gear (38) on shaft (35). Press bearing cone (33) taper out up to gear. Press bearing cup (34) taper in, into transmission box until it is possible to place snap ring in its slot. Place snap ring (32) in position, some gentle taps with a brass hammer to the ends of the shaft will result in a smooth running shaft.

### 4. Gear Shift Shaft:

Slide shifting gear (26) onto gear shift shaft (25) it should slide freely. Now remove gear from shaft and place spring and ball bearing in the correct hole (closed end) the spring (29) and ball bearing (30) should line up with the center of the lateral slots in the shaft. The shifting gear should be placed shifting groove toward snap ring slot on the shaft. Place snap ring (27)

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on shaft, past the slot towards the center of the shaft. Now place the other gear (28) on the shaft flat surface towards the end of the shaft. Slide shifting gear (26) towards snap ring now place shaft and gears loosely in the housing. Shifting gear on same side as torque converter. Place transmission housing speed indicator side down and press ball bearing (23) onto shaft and just past snap ring slot. Place snap ring (22) in position. Turn housing torque converter side down and press ball bearing (23) on shaft and just past snap ring slot. Place snap ring (32) in position. Some gentle taps with a brass hammer to the ends of the shaft will result in a smooth running shaft.

## 5. Oil Seals:

Oil seals (10) on the input shaft and (40) on output shaft should be installed with a shim stock .002" placed over the shaft shoulders, helping to slide the seals into place. When they are in the final position the shim can be removed. Frost plugs (21) for the gear shifting shaft are flat side in and sides flush with the transmission side. Oil seal (31) for the output shaft is flat side out and flush with the transmission side. All seals use locktight to seal the seal to the aluminum.

## 6. Torque Converter:

Place the torque converter disc brake (32) on the shaft and then place the torque converter\* (33) on the shaft with the key (24) in place. Place five washers (61) to fill gap at end of shaft. Leave out one washer tickness for tightening. Place large washer (34) bolt (62) and lock washer (63) in position and tighten. Use locktight on bolt.

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## 7. Transmission Cover:

Place cork seal (2) on top of transmission. Align gear shifting finger in shifting gear groove (26) and lower cover on cork seal. Align holes on cover. The finger should be in groove and holes aligned. Adjustment can be made by removing cover and readjusting finger. When adjusted properly, place on cork seal again and tighten 5/16" bolts, care should be taken to avoid damaging cork seal.

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## DISASSEMBLE TRANSMISSION

Remove oil by removing plus (54) and drain. Remove all oil seals and frost plugs where necessary. Frost plugs are best removed by drilling a 1/4" hole and prying out with screw driver. Remove snap rings where necessary.

### 1. Gear Shifting Shaft:

Turn housing on side torque converter down, press center of shifting shaft (25) being careful to line gears inside to avoid binding. Press until bearing (23) on opposite side is outside of housing. Turn transmission housing over - speed indicator side down and attach bearing puller under bearing and remove bearing (pulling or pressing) take out shaft with shifting gear and bearing attached. Slide shifting gear off, watch out for ball bearing (30) and spring (29) in gear when removing. Remove snap ring (27) and press gear and remaining bearings from shaft.

### 2. Output Shaft:

Turn housing torque converter down and press shaft (35) directly through bearing, gear and spacer. Remove other bearing and key from shaft. Discard old key.

### 3. Idler Shaft:

Remove Allen set screw (48). Remove plug (41) from housing on torque converter side and tap shaft (42) through from that side, and remove gear (46) thrust bearings (44) and washers (43).

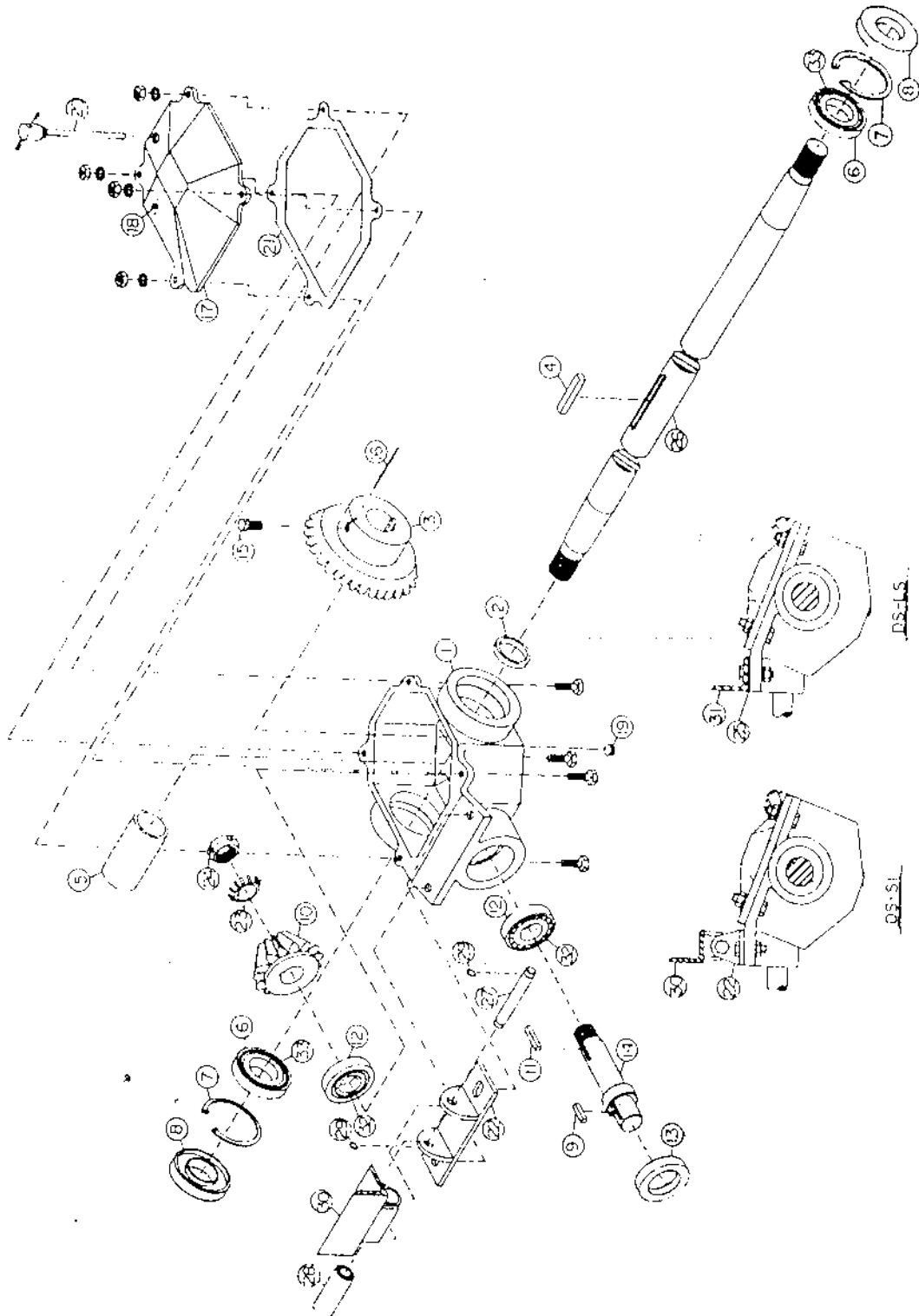
### 4. Input Shaft

After removing all frost plugs, oil seals and retaining rings, turn housing, speed indicator side down, press shaft (17) right through transmission.

Discard old keys.

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DRIVE BOX ASSEMBLY NO. 0010-A000; Items not included are 22,25,27,28,29,30,31

| REF. NO. | PART NO.   | PART NAME                                | REF. NO. | PART NO. | PART NAME |
|----------|------------|--|----------|----------|-----------|
| 1        | 0010-P001B | Axle drive box                           |          |          |           |
| 2        | 0010-P001J | Spacer                                   |          |          |           |
| 3        | 0010-P001L | Crown gear                               |          |          |           |
| 4        | 0010-P001P | Key                                      |          |          |           |
| 5        | 0010-P001K | Spacer                                   |          |          |           |
| 6        | 0010-P001G | Bearing cup                              |          |          |           |
| 7        | 0010-P001F | Internal retaining ring                  |          |          |           |
| 8        | 0010-P001E | Oil seal                                 |          |          |           |
| 9        | 0010-P001Y | Key                                      |          |          |           |
| 10       | 0010-P001Q | Pinion gear                              |          |          |           |
| 11       | 0010-P001V | Key                                      |          |          |           |
| 12       | 0010-P001S | Bearing cup                              |          |          |           |
| 13       | 0010-P001U | Oil seal                                 |          |          |           |
| 14       | 0010-P001R | Pinion shaft                             |          |          |           |
| 15       | 0010-P001M | Square head bolt                         |          |          |           |
| 16       | 0010-P001N | Wire tie                                 |          |          |           |
| 17       | 0010-S002  | Drive box cover                          |          |          |           |
| 18       | 0010-PC02B | Breather valve                           |          |          |           |
| 19       | 0010-P001D | Square socket plug                       |          |          |           |
| 20       | 0010-S003  | Oil dip stick                            |          |          |           |
| 21       | 0010-P001C | Gear box gasket                          |          |          |           |
| 22       | 0010-S010  | Gear box support bracket<br>(DS-SI only) |          |          |           |
| 23       | 0010-P001X | Special lock washer                      |          |          |           |
| 24       | 0010-P001W | Special lock nut                         |          |          |           |
| 25       | 0004-00-26 | Rubber pad (DS-LS only)                  |          |          |           |
| 26       | 0010-P001A | Rear axle shaft                          |          |          |           |
| 27       | 0018-P009E | Bracket support shaft<br>(DS-SI only)    |          |          |           |
| 28       | 0015-00-03 | Rubber grommet (DS-SI<br>only)           |          |          |           |
| 29       | 26         | External retaining ring<br>(DS-SI only)  |          |          |           |
| 30       | 0018-S009  | Differential angle (DS-<br>SI only)      |          |          |           |
| 31       | 0021-00-08 | Differential angle (DS-<br>LS only)      |          |          |           |
| 32       | 0010-P001T | Bearing cone                             |          |          |           |
| 33       | 0010-P001H | Bearing cone                             |          |          |           |

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## DRIVE BOX ASSEMBLY

Press two cups (12) in housing both inside and outside at pinion gear hole. Take pinion shaft (14) and press tapered roller (32) on shaft from threaded end to shoulder, tapered end facing thread when in position. Place shaft tapered roller through pinion shaft hole from outside of housing. Take other tapered roller (32), taper side facing shaft and press on shaft. Press pinion gear (10) onto shaft, taper facing in, with key (9) in place, key does not extend beyond gear. Place lock ring (23) on shaft and screw lock nut up to gear. Continue to tighten checking that bearing will turn freely until some resistance is felt in the bearing, at this point back of the nut by one tenth of a turn tap shaft at both ends to reseal bearing and check for resistance. If none is felt, then lock nut with tab washer. If resistance is still felt, repeat another tenth turn.

With pinion shaft facing away from you, press cup (6) taper side in into right side of housing. Place snap ring (7) in position. Place bevel gear (3), tapered roller (33) and install spacer (5) between bevel gear and tapered roller to keep everything loosely in position. Slide long end of axle shaft (26) first, through bevel gear spacer and tapered roller from bevel gear side. Guide key (4) into position. Note: long end of axle shaft is measured from taking the longest distance from keyway to end of shaft. Axle shaft should be pushed in as far as it can go. The key in the crown gear should not extend beyond either end of the gear. Now slide spacer (2)

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then tapered roller (33) taper out, then cone (6) taper in and press into position just past snap ring slot. Place snap ring (7) in position. Install oil seals (8) on axle shaft by sliding them down shaft. Use locktight and press into position. For oil seal (13) on pinion shaft, use shim stock (.002") to help seal over shoulder.

Note after installation of axle shaft and differential on frame and installation of drive shaft is complete, adjust drive box by aligning pinion shaft with the transmission output shaft. Once this is complete, tighten square head set screw (15) in drive box on bevel gear and install wire through bolt and gear. Install both plugs (19) and place cork seal (21) and cover (17) on housing and tighten, 3/8" N.F. x 1-1/2" bolts. Add oil and check level with oil dipstick (20) indicator.



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## DISASSEMBLE DRIVE BOX

Remove cover (17) and oil seals where necessary. With pinion axle shaft (14), facing away from you, remove snap ring (7) on bevel gear side. With a piece of plywood placed on the floor, to avoid axle end damage, gently raise and drop end of axle shaft on plywood. (Crown gear side up) until key is free of bevel gear. Slide axle shaft out (26) and remove parts. Undo lock ring and unscrew lock nut. Press pinion shaft out from inside housing and remove parts. Press remaining cones from housing.