# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Form Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFETY</td>
<td>Safety Suggestions</td>
<td>M00103</td>
</tr>
<tr>
<td>SPECIFICATIONS</td>
<td>General Specifications (CP/KP)</td>
<td>37-137</td>
</tr>
<tr>
<td>AXLE</td>
<td>S-34 and S-40</td>
<td>37-109</td>
</tr>
<tr>
<td></td>
<td>K594.05/15</td>
<td>37-100</td>
</tr>
<tr>
<td></td>
<td>K598.60/70 and K598.64/74</td>
<td>37-163</td>
</tr>
<tr>
<td></td>
<td>Controlled Traction Electric Shift Unit</td>
<td>M0100</td>
</tr>
<tr>
<td>BRAKE</td>
<td>Caliper Disc Brake</td>
<td>37-179</td>
</tr>
<tr>
<td>CHASSIS</td>
<td>Metric Conversion</td>
<td>M00104</td>
</tr>
<tr>
<td></td>
<td>Torque Values</td>
<td>M0100</td>
</tr>
<tr>
<td></td>
<td>Steering Column (Multi Function)</td>
<td>37-093</td>
</tr>
<tr>
<td>CLIMATE CONTROL</td>
<td>Panther 1000 HVAC</td>
<td>37-136</td>
</tr>
<tr>
<td></td>
<td>HVAC with Cougar 1000 Style Cab</td>
<td>37-177</td>
</tr>
<tr>
<td>ELECTRICAL</td>
<td>Main Wiring Schematics (CR/KR)</td>
<td>37-140</td>
</tr>
<tr>
<td></td>
<td>Electronic Dash Calibration (Supplement)</td>
<td>37-14051</td>
</tr>
<tr>
<td></td>
<td>SECC Electronics</td>
<td>37-133</td>
</tr>
<tr>
<td></td>
<td>Oil Cooled Delcotron Integral Charging System</td>
<td>37-126</td>
</tr>
<tr>
<td></td>
<td>Niehoff Model N1056 Alternator</td>
<td>37-155</td>
</tr>
<tr>
<td>HYDRAULICS</td>
<td>Closed Center Hydraulic System</td>
<td>37-118</td>
</tr>
<tr>
<td>TRANSMISSION</td>
<td>Range Powershift</td>
<td>37-159</td>
</tr>
<tr>
<td></td>
<td>PowerPulse</td>
<td>37-119</td>
</tr>
</tbody>
</table>
Wheel Hub Disassembly ........................................ 1-7
Differential Disassembly ....................................... 8-10
Inspection and Failure Analysis .............................. 10
Differential Reassembly ........................................ 11-18
Controlled Traction Differential ............................ 19-23
Controlled Traction Electric Shift ......................... 24-28
Wheel Hub Reassembly ........................................ 29-38
Disassembly of Controlled Traction Differential

1. Prior to removal of the differential carrier from the axle housing, remove the electric shifter unit from the carrier assembly and manually move the shift fork to place the sliding clutch in the "engaged" position (Fig. 1).

   NOTE: The sliding clutch must be engaged to allow removal of the carrier from the housing.

2. Remove the differential from the housing as described in Disassembly of Differential Carrier Assembly, steps 1-4, page 8.

3. Remove seal and spring from shift fork. Remove expansion plugs and drive out shift fork (Fig. 3).
# CONTENTS

## Page

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREWORD</td>
<td>2</td>
</tr>
<tr>
<td>SPECIFICATIONS</td>
<td>3</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>4</td>
</tr>
<tr>
<td>CUTAWAY ILLUSTRATION (HUB)</td>
<td>5</td>
</tr>
<tr>
<td>CUTAWAY ILLUSTRATION (DIFFERENTIAL SECTION)</td>
<td>6</td>
</tr>
<tr>
<td>DIFFERENTIAL ILLUSTRATION-K594-05/15</td>
<td>7,8</td>
</tr>
<tr>
<td>ILLUSTRATIONS-K594-05/15 (HUB)</td>
<td>9</td>
</tr>
<tr>
<td>SAFETY</td>
<td>10</td>
</tr>
<tr>
<td>DISASSEMBLY</td>
<td>11-32</td>
</tr>
<tr>
<td>Outer planetary disassembly</td>
<td>11-17</td>
</tr>
<tr>
<td>Inner planetary disassembly</td>
<td>13-27</td>
</tr>
<tr>
<td>Differential section disassembly</td>
<td>28-32</td>
</tr>
<tr>
<td>ASSEMBLY</td>
<td>33-48</td>
</tr>
<tr>
<td>Differential section assembly</td>
<td>33-43</td>
</tr>
<tr>
<td>Hub assembly</td>
<td>44-48</td>
</tr>
<tr>
<td>NoSPIN GENERAL INFORMATION</td>
<td>49</td>
</tr>
<tr>
<td>NoSPIN INSTALLATION</td>
<td>50-62</td>
</tr>
</tbody>
</table>

 Issued August, 1981

Steiger K594 05/15 Axle
Contents

Section I: Foreword
  General Information ................................................. 1-1, 1-2
  Component Identification ........................................... 1-3, 1-4
  Axle Assemblies ................................................ 1-5 thru 1-15
  Axle Maintenance ................................................ 1-16

Section II: Specifications .................................................. 2-1 thru 2-3

Section III: Failure Diagnostics & Reusable Parts Guidelines .......... 3-1 thru 3-3

Section IV: Axle Repair Procedures
  Tooling Requirements ............................................... 4-1, 4-2
  Wheel Hub Repair Procedures .................................... 4-3 thru 4-36
  Axle Removal Guidelines ......................................... 4-37, 4-38
  Differential Repair Procedures .................................. 4-38 thru 4-49
Contents: Section I - Foreword

General Information ........................................................... 1-1
Differential Power Flow ..................................................... 1-1
Wheel Hub Power Flows .................................................... 1-2
Wheel Hub Component Identification ..................................... 1-3
Differential Component Identification ................................. 1-4
Axle Assembly K598-S0/70 .................................................. 1-5, 1-6
Differential & Carrier Assembly K598-60/70 ....................... 1-7, 1-8
Axle Assembly K598-64/74 ................................................. 1-9, 1-10
Differential & Carrier Assembly K598-64/74 ....................... 1-11, 1-12
Differences Between K598-S0/70 & K598-64/74 ................. 1-13
No-Spin General Information ............................................... 1-14, 1-15
Axle Maintenance ............................................................... 1-16
Contents: Section II - Specifications

General Specifications .......................................................... 2-1
Differential Sectional View with torques & clearances .................... 2-2
Wheel Hub Sectional View with torques & clearances ................... 2-3
Contents: Section IV - Axle Repair Procedures

Tooling Requirements .................................................... 4-1, 4-2
General Repair Instructions ............................................. 4-3
Wheel Hub Disassembly Procedures .................................. 4-3 thru 4-12
Outer Planetary Disassembly ......................................... 4-13, 4-14
Outer Planetary Reassembly .......................................... 4-15, 4-16
Inner Planetary Disassembly .......................................... 4-17, 4-18
Inner Planetary Reassembly .......................................... 4-18 thru 4-20
Spindle Disassembly ..................................................... 4-21
Spindle Installation ...................................................... 4-21, 4-22
Wheel Hub Assembly Procedures .................................... 4-23 thru 4-36
Axle Removal Guidelines .............................................. 4-37, 4-38
Differential Disassembly ............................................... 4-38 thru 4-42
No-Spin Removal .......................................................... 4-41, 4-42
Differential Reassembly ................................................ 4-42 thru 4-49
No-Spin Installation ..................................................... 4-43, 4-44
## Contents

**General** ................................................................. 1
**Routine Maintenance** .................................................. 1
**Replacing Friction Pads** ............................................ 2
**Park Brake Adjustment** ................................................ 2
**Caliper w/out Integral Park Brake** ............................. 3, 4
**Caliper w/Integral Park Brake** ................................. 5, 7
**Dual Stage Master Cylinder** ........................................ 8, 9

**Manual Preview**

**JENSALES.COM**

**or Call 800-443-0625**
Contents

Section I: Foreword

System Failures ........................................................................................................... 1-1 thru 1-5
Basic System Design & Operation .............................................................................. 1-6 thru 1-16

Section II: Specifications ............................................................................................ 2-1 thru 2-2

Section III: Troubleshooting & Testing

HVAC Pressure Checks .................................................................................................. 3-1 thru 3-2
System Purging, Evacuating, Charging & Leak Testing ............................................ 3-2 thru 3-7
Switch-General Information ......................................................................................... 3-8 thru 3-11

Section IV: System Repair

Heat/Cool Module Repair ............................................................................................. 4-1 thru 4-19
Compressor Information & Repair .............................................................................. 4-20 thru 4-34
Foreword

The air distribution system inside the cab consists of the following: a molded plastic plenum chamber which houses the air deflection doors and actuators and has openings for the defrost, dash and footwell air delivery points.

A defrost louver system at the entrance to the plenum chamber directs air on all three windshield sections.

A defrost door and an electric actuator for controlling the air flow throughout the defrost outlets. The door has three operating positions; closed, bleed and open, where all air flow is directed through the defrost openings.

Two footwell openings located symmetrically on each side of the steering column at the bottom of the plenum for directing heated air at the operators feet.

Two dash doors each with an electric actuator for controlling air flow through the dash and footwell openings. The doors have two operating positions; up for directing air to the footwell and down for directing air through the dash louvers. There are two adjustable dash louvers, one on each side of the steering column, for directing cool air on the operators upper body (Ref. Fig. 3).

Air movement is accomplished through a patented split-blower design which allows independent control of both fresh and recirculated air. This allows the addition of an aspirated precleaner ahead of the cab filter to attain the filter life and cab pressurization design goals.

Both the pressurization blower and recirculation blower are located upstream of the evaporator and heater coil chamber. Air is combined ahead of the evaporator coil and forced through the coils and air distribution plenum into the cab compartment. Louver outlet temperature is regulated by controlling the percentage of air heated by the heater coil. A pair of blend doors (under computer control) ahead of the heater coil direct air either through or around the coil (Ref. Fig. 4).
Contents: Specifications Section

HVAC System Specifications ........................................ 2-1
Temperature/Pressure Relationships .................................. 2-2
Contents: Troubleshooting & Testing Section

HVAC System Performance/Pressure Checks ........................................ 3-1, 3-2
Purging the A/C System ....................................................................... 3-2, 3-3
Evacuating the A/C System ................................................................. 3-3, 3-4
Charging the A/C System .................................................................... 3-5, 3-6
Leak Testing the A/C System ............................................................... 3-6, 3-7
HVAC Mode Switch - General Information ........................................... 3-8
HVAC Fan Speed Switch - General Information ................................... 3-9
Blend Door Actuator - General Information ........................................... 3-10
Blend Door Actuator Test Procedure .................................................. 3-11
Contents: System Repair Section

Heat/Cool Module Repair - General ........................................ 4-1
Heat/Cool Module Access Procedure .................................. 4-2, 4-3
Heat/Cool Module Inspection & Reassembly ...................... 4-3, 4-4
Pressurizer Blower Removal ............................................. 4-5, 4-6
Pressurizer Blower Disassembly ......................................... 4-6
Pressurizer Blower Reassembly ......................................... 4-6, 4-7
Pressurizer Blower Installation ......................................... 4-8
Blower Control Module Identification/Installation ............ 4-9
Recirculation Blower Removal ........................................... 4-10, 4-11
Recirculation Blower Disassembly .................................... 4-11
Recirculation Blower Reassembly ..................................... 4-11, 4-12
Recirculation Blower Installation .................................... 4-12, 4-13
Blend Door Actuator Motor Removal ................................. 4-14
Blend Door & Linkage Inspection ..................................... 4-15
Blend Door Actuator Motor Installation ............................ 4-16
Blend Door Linkage Adjustment ....................................... 4-17, 4-18
Ambient Temp. Switch Removal ....................................... 4-18
Ambient Temp. Switch Replacement ................................. 4-18, 4-19
Compressor Oil Charge/Check Procedures ......................... 4-20, 4-21
Compressor Leak Check Criteria ...................................... 4-22
Compressor Clutch Service ............................................. 4-22 thru 4-27
Compressor Shaft Seal Service ....................................... 4-27 thru 4-31
Compressor Cyl. Head & Valve Plate Service .................... 4-31 thru 4-33

JENSALES.COM
or Call 800-443-0625

CLICK ANYWHERE FOR MORE DETAILS
Contents: Troubleshooting & Testing Section

HVAC System Performance Pressure Checks ........................................ 3-2
Purging the A/C System ....................................................................... 3-3
Evacuating the A/C System .................................................................. 3-4
Charging the A/C System ...................................................................... 3-6
Leak Testing the A/C System ............................................................... 3-7
Contents: System Repair Section

HVAC Module Removal ............................................ 4-1 thru 4-4
HVAC Blower Motor Removal & Installation .................... 4-5 thru 4-9
Compressor Oil Charge & Oil Level Check .......................... 4-10, 4-11
Compressor Leak Check Criteria ..................................... 4-12
Compressor Repair Procedures ..................................... 4-12 thru 4-23
Clutch Service ...................................................... 4-12 thru 4-17
Shaft Seal Service ................................................... 4-17 thru 4-21
Cylinder Head & Valve Plate Service .................................. 4-21 thru 4-23
**Contents**

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward</td>
<td>1-1</td>
</tr>
<tr>
<td>Service &amp; Maintenance</td>
<td>1-2 to 1-4</td>
</tr>
<tr>
<td>System Principles &amp; Operation</td>
<td>2-1 to 2-13</td>
</tr>
<tr>
<td>Specifications</td>
<td>3-1</td>
</tr>
<tr>
<td>Charge Pump Repair</td>
<td>4-1 to 4-4</td>
</tr>
<tr>
<td>Piston Pump Repair</td>
<td>5-1 to 5-4</td>
</tr>
<tr>
<td>Remote Hydraulic Valves</td>
<td>6-1 to 6-3</td>
</tr>
<tr>
<td>Closed Center Control Valves</td>
<td>6-4 to 6-18</td>
</tr>
<tr>
<td>Closed Center Hydraulic System (TPH Valve)</td>
<td>7-1 to 7-10</td>
</tr>
<tr>
<td>Steering Control Valve</td>
<td>8-1 to 8-11</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>9-1 to 9-4</td>
</tr>
</tbody>
</table>

**Manual Preview**

Purchase full manual at [JENSALES.COM](http://www.JENSALES.COM) or Call 800-443-0625
Operating Tips for Shifting the Range Transmission ........................................... 2
Description of Operation .................................................................................. 3-14
Transmission & PTO System Lubrication & Pressure Specifications ...................... 14
Tractor Does Not Move When Clutch is Engaged
  Engine Does Not Pull Down ........................................................................... 15
Tractor Does Not Move When Clutch is Engaged
  Engine Pulls Down ......................................................................................... 16
Tractor Will Not Stop When Clutch is Disengaged ............................................. 16
Transmission Brake Ineffective or Cannot Get into Gear Without Clash .............. 17
  Jerky Clutch Engagement ............................................................................... 17
  Clutch Slips Under Load ................................................................................. 18
  Hesitates On Lo to Hi Shift Under Load .......................................................... 18
  Jerky Upshift or Downshift ............................................................................ 19
Will Not Shift from Lo to Hi Range .................................................................. 19
Will Not Shift From Hi to Lo with Key Switch On and Clutch Pedal Up (Engine Running) .............................................................. 20
  Clutch Jumps Into Hi-Range When Clutch is Engaged .................................... 20
Transmission Lube Pressure Light Comes On at High Engine RPM ..................... 20, 21
Transmission Oil Temperature Warning Light Comes On .................................. 21, 22
Testing the Range Powershift Transmission Circuit ........................................... 22-24
  Clutch Relay Circuit Operation .................................................................... 25-29
Transmission Pressure Lubrication Chart ......................................................... 30
Transmission & PTO Hydraulic Schematic ....................................................... 31
Transmission Circuit ......................................................................................... 32