



QS 9000 Registered

800 SERIES HEAVY DUTY SERVICE MANUAL

65,000 – 100,000 LB

PART# EDOC002

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1.0 GENERAL INFORMATION

This manual is to be used for the service of a Chalmers 800 Series Tandem Suspension 65,000 to 100,000 lbs capacity and is intended to give guidance and recommendation for the care, maintenance, inspection and safe operation of the above suspension. It is not a replacement for existing or future specific Pre-Delivery Inspection (P.D.I.) & Preventative Maintenance Programs.

Before proceeding with any work on or with the suspension, please read this manual completely to familiarize yourself with the maintenance and operation of the Chalmers Suspension.

TAKE SPECIAL NOTICE of procedures 1.1 through 1.6 that must be followed without exception when working on any procedures described in this manual.

- 1.1 ALL CHALMERS FASTENERS must be torqued to the specific values shown in Table 2 and to the specific period shown on the Service Inspection Requirements Section 3.0.

****IMPORTANT – Failure to check torque, may lead to fastener failure and consequent loss of vehicle control and void warranty.**

- 1.2 DO NOT USE ANY mineral based oils, greases, jellies, or solvent soaps as a lubricant to aid in the assembly of the rubber bushed torque rods. Use only quality rubber lubricants. Failure to do so will void warranty.
- 1.3 DO NOT AT ANY TIME WORK AROUND OR UNDER A VEHICLE SUPPORTED ONLY ON LIFTING DEVICES. THE VEHICLE MUST BE SECURELY CHOCKED AND SUPPORTED ON RIGID STANDS BEFORE WORK MAY COMMENCE.
- 1.4 ALL RELEVANT, MACHINERY, TOOL AND WORK PLACE SAFETY procedures and instructions must be followed without exception when working on any procedures described in this manual.

FAILURE TO ADHERE TO ANY SAFETY PROCEDURES OR INSTRUCTIONS, MAY LEAD TO PERSONAL INJURY.

- 1.5 USE ONLY CHALMERS APPROVED REPLACEMENT PARTS. Tests have shown alternate parts, particularly torque rod bushings, do not meet the performance expectations or engineering criteria established for the original products. This has created extreme hard part wear or hardware failures with consequent loss of warranty and more important loss of vehicle control.
- 1.6 DO NOT operate the vehicle with the suspension in an over loaded condition. Operating at a gross rear axle weight (GRAW), which exceeds the rated suspension capacity will lead to a suspension failure with consequent loss of vehicle control and void warranty.

2.0 INTRODUCTION TO THE SUSPENSION

The Chalmers 800 Series Rear Suspension is a walking beam-type tandem axle suspension that uses hollow rubber springs instead of leaf springs or air bags. Each hollow rubber spring is mounted between a frame-rail plate and the centre (front-to-rear) of the steel walking beam. A hanger bracket assembly is attached to the frame and provides mounting points for the lower torque rods that tie the axles to the frame. The upper torque rods are fastened to brackets that bolt to the frame side rails and to tower assemblies that are welded to the top of the differential housings. See Fig.1.

The 800 Series Rear Suspension allows a high degree of both parallel and diagonal articulation, while maintaining wheel load equalization to within 3%.

The Chalmers suspension design separates the rear suspension's responsibility for supporting/cushioning the load from that of locating/guiding the axles. The suspension is very light, relative to its load carrying capacity and requires very little maintenance. In fact, there are no lubrication fittings since grease and oil are never needed.

The 800 Series is available in 60" and 65" axle spacing for the 65,000 lbs capacity and in 65" axle spacing for the 80-100,000 lbs capacity. The axle spacing and capacity is included as part of the suspension name, e.g. "Chalmers 860-65 Suspension" or Chalmers 865-100 Suspension.

The rear suspension may be precision-aligned by adjusting the length of the lower torque rods. These rods have both left and right hand threads cut on the same tube so rotating the tube changes the effective length of the tube.

2.1 SUSPENSION PART NAMES

Fig.1A shows an exploded view of a typical 800 Series Suspension 65,000lbs capacity.

Fig.1B shows an exploded view of a typical 800 Series Suspension 80-100,000 lbs capacity.

Throughout this manual, parts will be referred to by the names shown on this figure.

