

SECTION 1
GENERAL INFORMATION
IMPORTANT SAFETY NOTICE

Should an axle assembly require component parts replacement, it is recommended that "Original Equipment" replacement parts be used. They may be obtained through your local service dealer or other original equipment manufacturer parts supplier. **CAUTION: THE USE OF NON-ORIGINAL EQUIPMENT REPLACEMENT PARTS IS NOT RECOMMENDED AS THEIR USE MAY CAUSE UNIT FAILURE AND/ OR AFFECT VEHICLE SAFETY.**

Proper service and repair is important to the safe, reliable operation of all motor vehicles or driving axles whether they be front or rear. The service procedures recommended and described in this service manual are effective methods for performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tool should be used when and as recommended.

CAUTION: EXTREME CARE SHOULD BE EXERCISED WHEN WORKING ON COMPONENTS UTILIZING SNAP RINGS OR SPRING LOADED RETENTION DEVICES. FOR PERSONAL SAFETY, IT IS RECOMMENDED THAT INDUSTRIAL STRENGTH SAFETY GOGGLES OR GLASSES BE WORN WHENEVER REPAIR WORK IS BEING DONE ON ANY VEHICLE OR VEHICLE COMPONENTS.

It is impossible to know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way.

Accordingly, anyone who uses a service procedure or tool which is not recommended must first satisfy himself thoroughly that neither his safety or vehicle safety will be jeopardized by the service methods he selects.

WARNING

Some vehicle manufacturers may require the assembly of brake components on Dana axles that utilize materials containing asbestos fibers.

BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH AND MAY CAUSE SERIOUS RESPIRATORY OR OTHER BODILY HARM.

Follow O.S.H.A. standards for proper protective devices to be used when working with asbestos materials.

SILICONE RUBBER SEALANT (RTV) AND LUBRICATING GREASE AND OILS

Silicone rubber sealant is used as a gasket material on Dana axles, as well as various lubricants for lubricating purposes. Before using any of these materials, one should become familiar with and follow all safety precautions as recommended by the product manufacturer/supplier. All personnel involved with these materials should follow good industrial hygiene practices (e.g. before eating, hands and face should be thoroughly washed. Eating, drinking and smoking should be prohibited in areas where there is potential for significant exposure to these materials).

When discarding any of the materials, observe all local, state, and federal laws and regulations for proper disposal procedures.

Safety Precautions



This symbol warns of possible personal injury.



A serious or fatal injury can occur...

- if you lack proper training
- if you fail to follow proper procedures
- if you do not use proper tools and safety equipment
- if you assemble components improperly
- if you use incompatible components
- if you use worn-out or damaged components
- if you use components in a non-approved application



SAFETY GLASSES SHOULD BE WORN AT ALL TIMES WHEN WORKING ON VEHICLES OR VEHICLE COMPONENTS.

AXLE IDENTIFICATION

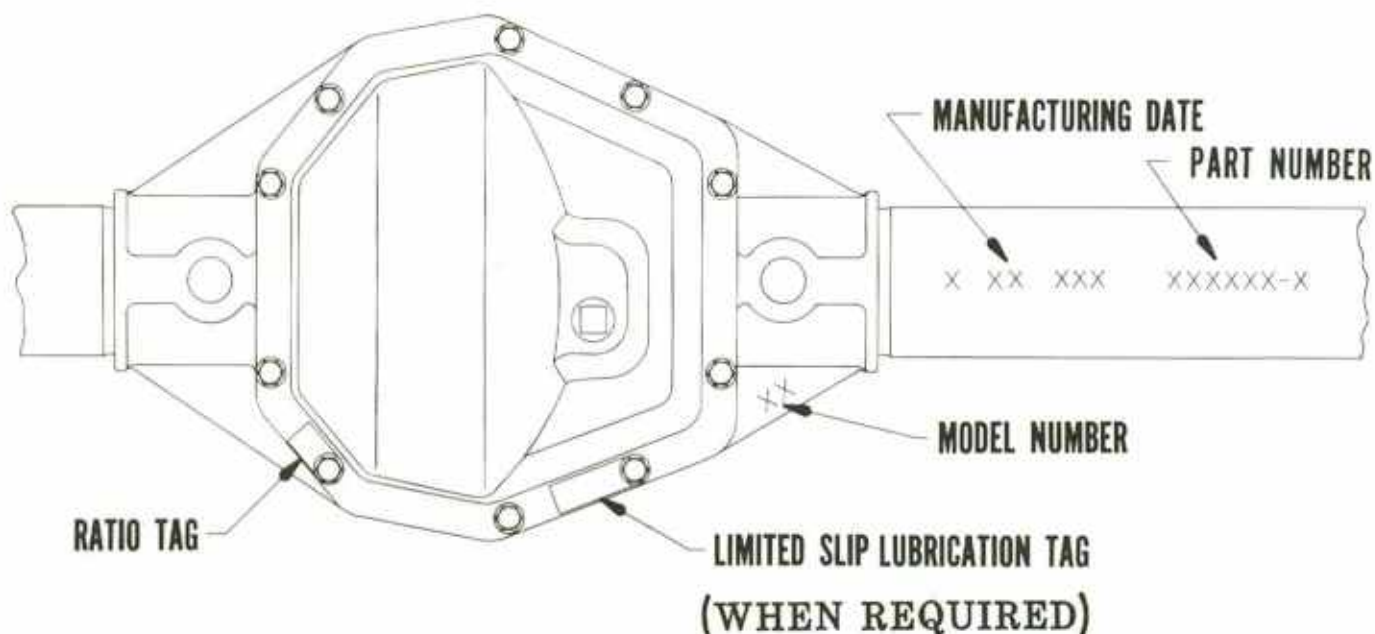


Figure 1-1

Spicer axles are identified with a manufacturing date and complete part numbers stamped on the right-hand tube. The part number may also appear on a metal tag attached to the cover plate by the cover screws, depending upon the requirements of the vehicle manufacturer.

The part number, consisting of six digits reading from left to right, is the basic number for identifying the particular axle assembly. The seventh digit following the dash will identify ratio, differential, and end yoke options used in the assembly. The next group of numbers is the manufacturing date of the axle and is interpreted as follows. The first number is the month, the second number is the day of the month, the third number is the year, the fourth is the line that built the axle, and the letter is the shift.

NOTE

It is recommended that when referring to the axle, the complete part number and build date be obtained. To do this, it may be necessary to wipe or scrape off dirt, etc., from the axle housing.

If the axle is unique on design such that the unit cannot be identified in the standard manner as described above, refer to the vehicle manufacturer's service and/or parts manual for proper identification.

SERVICING COMPONENTS NOT COVERED IN THIS MANUAL

Service procedures for some components may not be covered in this manual because they are unique to the vehicle application. Refer to the vehicle manufacturer's service manual for servicing those components. (e.g. brakes, hubs, rotors, and wheel end components).

VEHICLE STORAGE OR PROLONGED INOPERATION

If the vehicle has not been operated on a regular daily basis, it is recommended that the vehicle be operated at least once every two weeks. The vehicle should be moved far enough to cause the drivetrain components to make several complete revolutions. This procedure will help assure that all internal components receive adequate amount of lubrication to help reduce component deterioration caused by an undesirable environment (e.g. high humidity).

EXPLODED VIEW OF AXLE ASSEMBLY

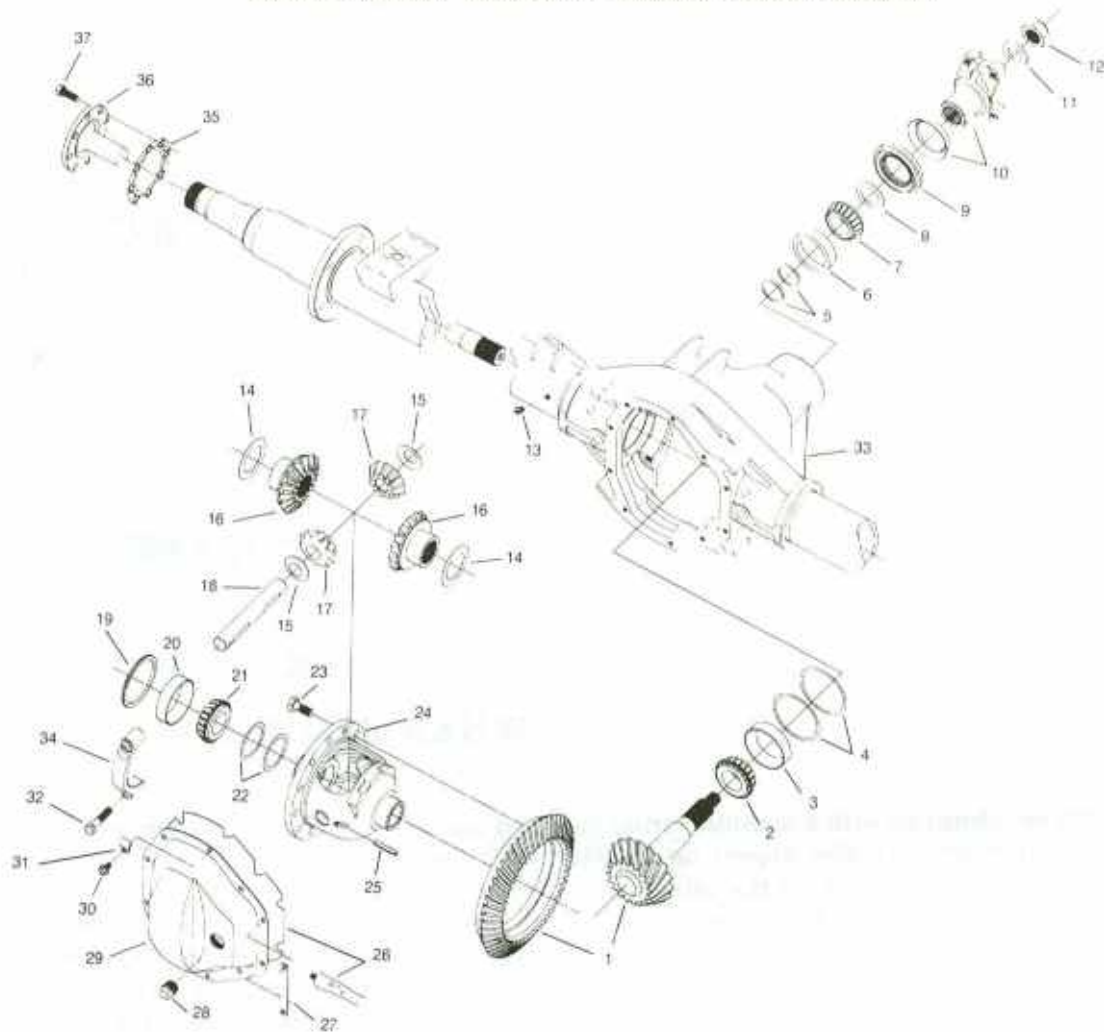


Figure 1-2

The model 80 single-speed axle assembly is an integral-type housing. Shown in figure 1-2 is a Model 80 full-float design.

Item	Part Description	Item	Part Description
1	Ring Gear and Drive Pinion Assembly	21	Differential Bearing Cone
2	Inner Pinion Bearing Cone	22	Differential Bearing Preload and Backlash Shims
3	Inner Pinion Bearing Cup	23	Ring Gear Screw
4	Pinion Position Shims	24	Differential Case
5	Pinion Bearing Preload Shims	25	Roll Pin (Pinion Mate Shaft)
6	Outer Pinion Bearing Cup	26	RTV Sealant
7	Outer Pinion Bearing Cone	*27	Identification Tag
8	Thrust Washer	28	Fill Plug
9	Pinion Seal	29	Cover Plate
10	End Yoke and Flinger Assembly	30	Cover Screw
11	Washer	31	Brake Line Clip
12	Nut	32	Differential Bearing Cap Screw
13	Shipping Plug (Shipping purposes only - Removed by vehicle manufacturer)	33	Housing
14	Side Gear Thrust Washer	**34	Differential Bearing Cap
15	Pinion Mate Gear Thrust Washer	35	Gasket-Axle Shaft Flange
16	Differential Side Gear	36	Axle Shaft
17	Differential Pinion Mate Gear	*37	Screw - Axle Shaft Flange
18	Differential Pinion Mate Shaft		
19	Differential Outboard Spacer		
20	Differential Bearing Cup		
			*Specified by vehicle manufacturer.
			**Differential bearing caps are part of the housing and cannot be serviced separately.

SECTION 2

SERVICE TOOLS

PROCUREMENT

Throughout the manual reference is made to certain tool numbers whenever special tools are required. These tool numbers are numbers of Miller Special Tools, 32615 Park Lane, Garden City, MI 48135. They are used herein for customer convenience only. Dana makes no warranty or representation to these tools.

Miller Tool Number	Description	Miller Tool Number	Description
D-167	Spreader	C-4307	Cup Remover (Outer pinion bearing)
D-128	Dial Indicator Set	C-4308	Cup Installer (Outer pinion bearing)
DD-914	Press	C-4204	Cup Installer (Inner pinion bearing)
DD-914-8	Adapter Ring	D-389	Bearing Cone Installer (Inner pinion bearing)
DD-914-99	Adapters (Differential bearing cone removal)	*D-116-2	Master Discs (2 each set)
DD-914-95	Adapters (Inner pinion bearing cone removal)	*D-115-3	Arbor
DD-914-7	Extension	*D-116-1	Pinion Height Block
DD-914-42	Button	*D136/D346	Master Differential Bearings (2 each set)
D-189	Holding Wrench (End yoke)	*D-391	Master Pinion Bearing
L-4534	End Yoke Remover	**D-115	Scooter Gage
D-131	Slide Hammer		
D-191	End Yoke Installer		
D-187-A	Pinion Seal Installer		
C-4190	Installer (Differential bearing cones)		
C-4171	Universal Handle		
D-159	Cup Remover (Inner pinion bearing)		

*Gage set for setting differential bearing preload, gear backlash, and pinion position.

**Consist of D-106-5 dial indicator and D-115-2 scooter block.

MISCELLANEOUS TOOLS

Miller Tool Number	Description
C-193	Torque Wrench (0-50 in. Lbs.)
C-524-A	Torque Wrench (0-100 Ft. Lbs.)
C-4053	Torque Wrench (0-300 Ft. Lbs.)
DD-994	Torque Wrench (0-1000 Ft. Lbs.)
#TM-1000-F	Torque Multiplier (4 x 1)

The TM-1000-F multiplier increases torque (4 to 1) by means of gear ratio, 1/2" drive (female), 3/4" drive (male).