MOPAR

CHRYSLER

INSTRUCTION SHEET K6855778
Mopar Steering Gear Kit installation Instructions

NOTE: Read all instructions prior to beginning installation

Vehicles Applications

2003 – 2008 DH (DR) 2500 – 3500 4x4 trucks

Kit contains the following

a) Steering Gear
b) Pitman Arm, Pitman Arm Nut & Pitman Arm Washer
c) Haltenberger Inner Drag Link & nut (used on 2005-2008 Haltenberger Linkage ONLY)
d) I-sheet

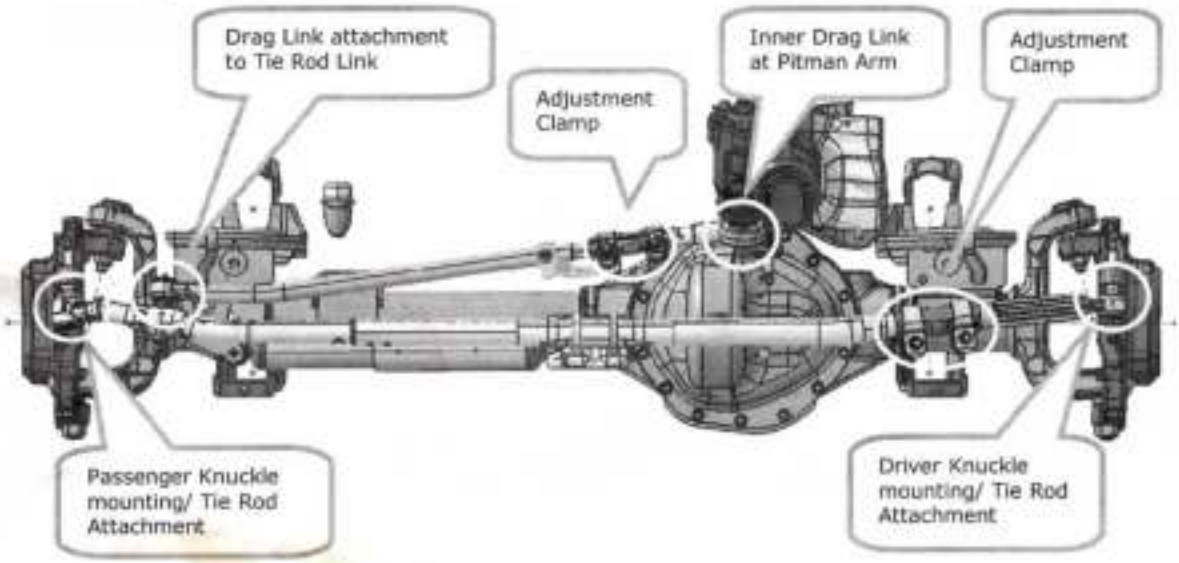
Step 1 – Identify your vehicle configuration

Four Vehicle configurations potentially exist:

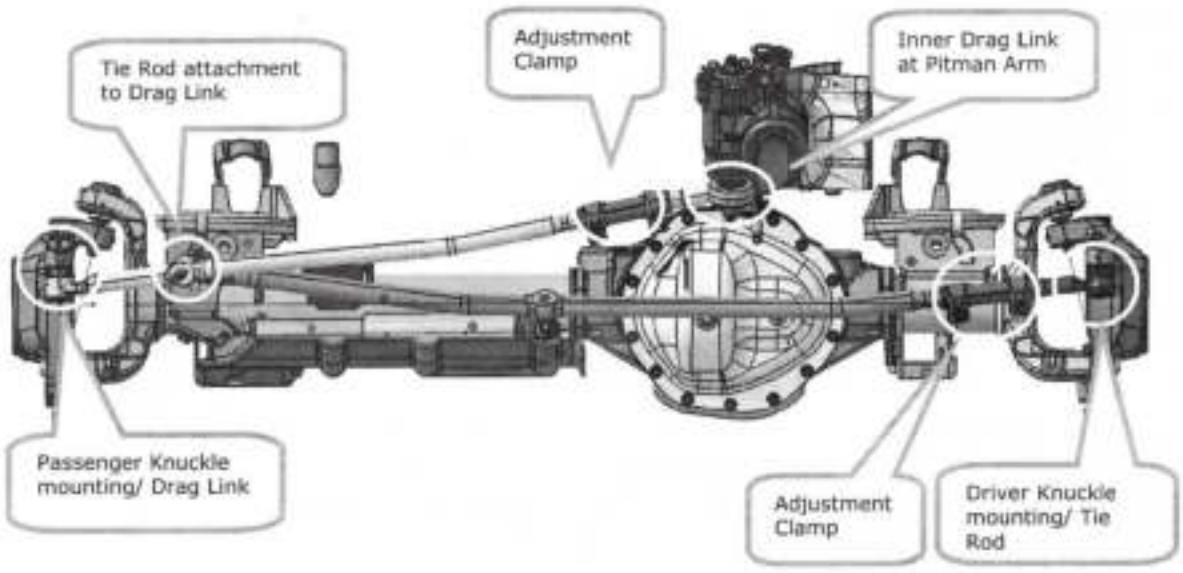
a) 2005 – 2008 vehicle with Haltenberger linkage
b) 2005 – 2008 vehicle with Cross-Car Linkage
c) 2003 – 2004 vehicle with Haltenberger linkage (requires new linkage – refer to page 3)
d) 2003 – 2004 vehicle with Cross-Car Linkage

********** **It is important to identify which vehicle you have as the parts required from the kit will vary with vehicle configuration. The Haltenberger Inner Drag Link End provided in kit will NOT be used if vehicle has a Cross-Car Linkage or was built in 2003 – 2004 Model Year – Refer to CHART** **********

Cross-Car Linkage **(Note: continuous link from knuckle to knuckle)**



Haltenberger Linkage **(Note: link from knuckle to knuckle is NOT continuous)**

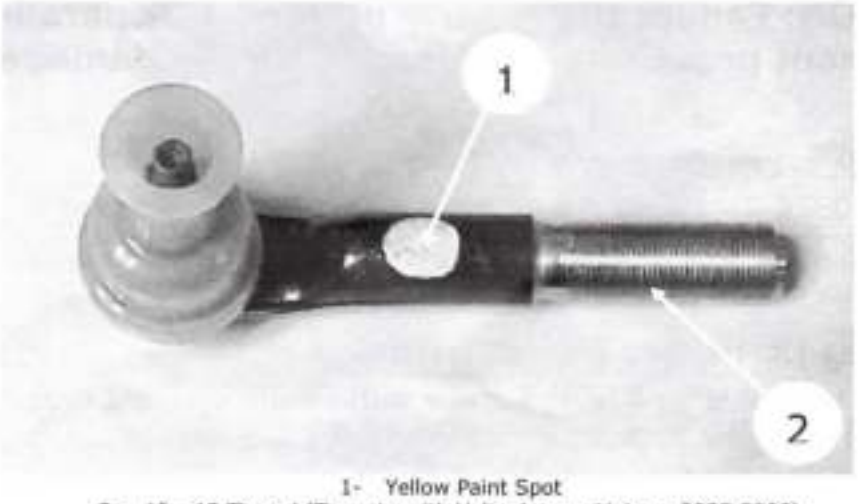


****2003 – 2004 MY vehicles will require Cross-Car Linkages in order to complete installation – FAILURE to install Cross-Car Linkage could lead to linkage damage - be sure to have all parts and required tools on hand before beginning installation****

Part Installation Chart

RAM	With Haltenberger linkage	With Cross-Car linkage
2005 thru 2008	-Big Steering Gear -Pitman Arm -Haltenberger Inner Drag Link	-Big Steering Gear -Pitman Arm -Do **NOT** use Haltenberger Inner Drag Link provided
2003 thru 2004	-Big Steering Gear -Pitman Arm **-New Cross-Car linkage 52122362AH (not included)** - Do **NOT** use Haltenberger Inner Drag Link provided	-Big Steering Gear -Pitman Arm - Do **NOT** use Haltenberger Inner Drag Link provided

New Haltenberger Inner Drag Link Identification



1- Yellow Paint Spot
2- 1" – 18 Thread (To mate with Haltenberger Linkage 2005-2008)

Step 2 – Remove and replace the steering gear. Refer to the detailed procedures available in: DealerCONNECT> TechCONNECT under: Service Info> 19-Steering> Gear> Removal/Installation> Power Steering Gear – Link/Coil.

NOTE: Observe hose routing before disassembly – With new gear installed verify hose clearance is adequate.

Step 3 – Install new pitman arm. Refer to the detailed procedures available in: DealerCONNECT> TechCONNECT under: Service Info> 19-Steering> Linkage> Removal/Installation> Pitman arm – Link/Coil.

Step 4 – Install CORRECT linkage as described in **Part installation chart** on page 3. Refer to the detailed procedures available in: DealerCONNECT> TechCONNECT under: Service Info> 19-Steering> Linkage, Link and Coil> Drag Link, Steering, Link and Coil> Installation.

Step 5 – Perform a wheel alignment

Step 6 – Perform Drag Link and Tie Rod End alignment using Inclinometer. **NOTE: There are separate procedures for Cross-Car and Haltenberger linkage alignment.**

Cross-Car Linkage Alignment Procedure

CAUTION: Failure to properly perform this parallel alignment procedure may lead to tie rod damage.

SPECIAL TOOLS/EQUIPMENT REQUIRED:

Miller Tool # 10326-1	Tie Rod Alignment Adapter
Miller Tool # 10326-2	Inclinometer

PARALLEL ALIGNMENT PROCEDURE:

1. Be sure the vehicle is on a level surface with weight on front tires. The wheels need to be in the straight ahead position.

2. Make sure the circular bottom plane of the left and right Tie Rod End Ball Studs are free of debris and remove any burrs completely. (Fig. 1)

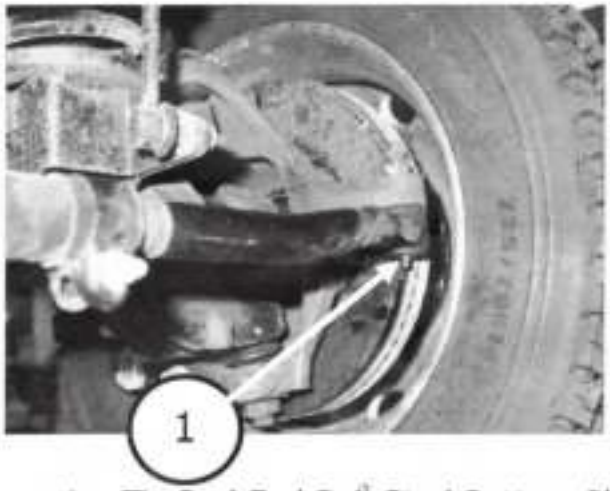


Figure 1 – Tie Rod End Ball Stud Bottom Plane
1-Tie Rod End Ball Stud

3. Measure the right (Passenger Side) and Left (Driver Side) Tie Rod End Ball Stud housing angles from underneath the truck. Hold Tie Rod End Alignment Adapter tool (Miller Tool #10326-1) securely under the circular bottom plane of the Ball Stud housing (Fig. 2).

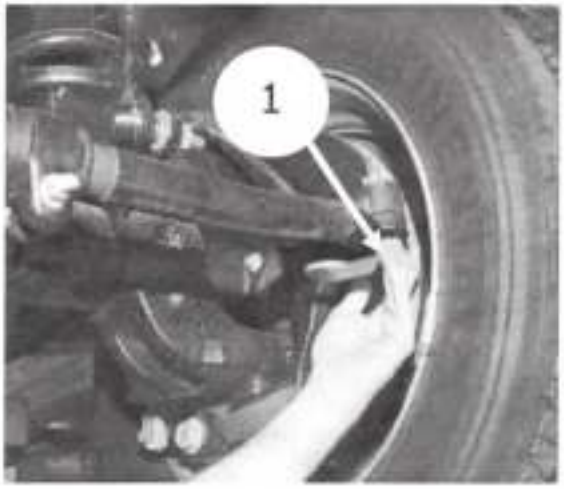


Figure 2 – Adapter Tool
1-Tie Rod End Ball Stud

NOTE: Be sure the tool makes contact with the entire perimeter of the ball stud housing and not resting on the domed cap or grease fitting.

4. Mount an Inclinometer with a Magnetic attachment (Miller Tool #10326-2) on the flat bottom surface of the adapter in the fore-aft orientation (Fig. 3).

Figure 3 - Inclinometer
1 - Inclinometer and Tie Rod Alignment Adapter Tool

5. Measure and record the Right Tie Rod End angle first to establish a baseline for the truck. Then measure and record the Left Tie Rod End angle using the same procedure used on the Right Tie Rod End. The angle on the inclinometer is positive when the needle is forward of the 0 degree mark (pointing toward the front of the truck on both the left or right sides) (Fig. 4) and negative when aft of zero (pointing toward the rear of the truck) (Fig. 5).

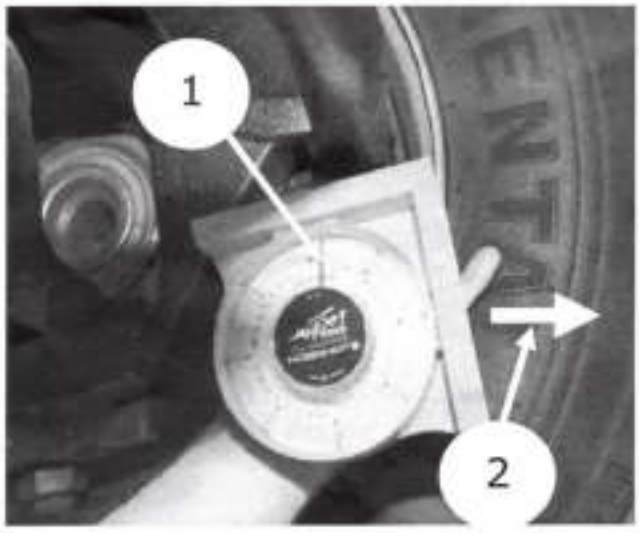


Figure 4 - Inclinometer
1 - Positive Reading 2- Front Of The Vehicle

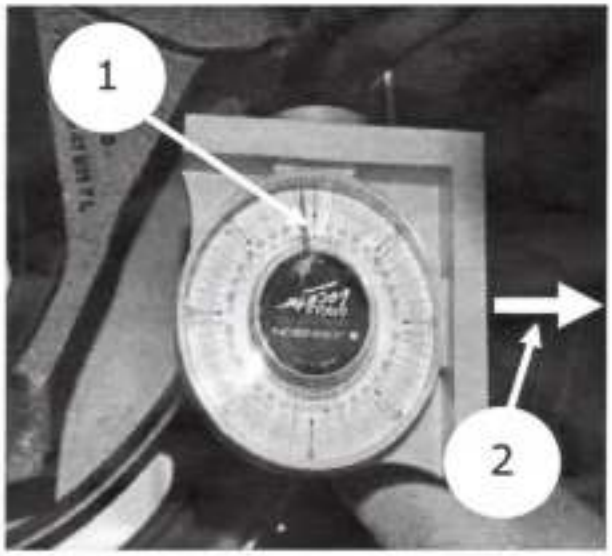


Figure 5 - Inclinometer
1 - Negative Reading 2- Front Of The Vehicle

6. Calculate the amount of misalignment between the Right and Left Tie Rod Ball Stud Housings by adding or subtracting the Left and Right measurement as follows:

1 - Subtract Tie Rod End angles, if both are positive (Fig. 6)
2 - Add Tie Rod End angles if one angle is positive and the other is negative (Fig. 6)

Examples:

1. Both Angles Positive

RH (passenger side)	+6°
LH (driver side)	+10°
Difference:	-4° (Not Acceptable)
Action:	Realign ball joint sockets

2. One Positive and One Negative Angle

RH (passenger side)	+5°
LH (driver side)	-4°
Difference:	+9° (Not Acceptable)
Action:	Realign ball joint sockets

Figure 6 – Calculation Examples

NOTE: The Right side is only positive.

7. If the misalignment value calculated in Step #6, is greater than +/- 3 degrees, proceed to Step #8. If the combined Ball Stud Housing misalignment value is +/- 3 degrees or less, proceed to Step #9.

8. Loosen the Left Tie Rod Adjuster Clamp Nut (Fig. 7) and realign the left ball stud housing by rotating the left outer tie rod until the ball stud housings are aligned. When complete, tie rod alignment measurement must be +/- 3° or less.

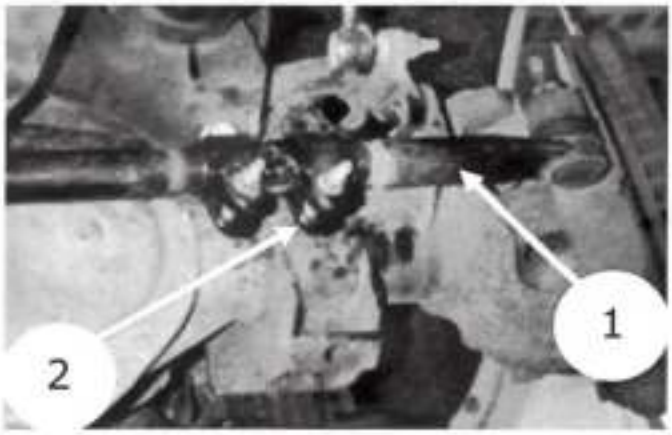


Figure 7 - Tie Rod End Adjust
1 - Left Tie Rod End Outer 2 – Left Tie Rod End Adjuster Clamp Nut

9. Tighten the adjuster clamp nut to 40 ft-lb (+/-10 ft-lb) re-confirm ball stud housing alignment is +/- 3 degrees or less. Verify toe-in is within tolerance.

10. Align Drag Link Ends – Follow steps 1-9 with the inner and outer Drag Link Ends. The angle between the Inner and Outer Drag Link Ends should be 21 (+/- 3) degrees. (Fig. 8)

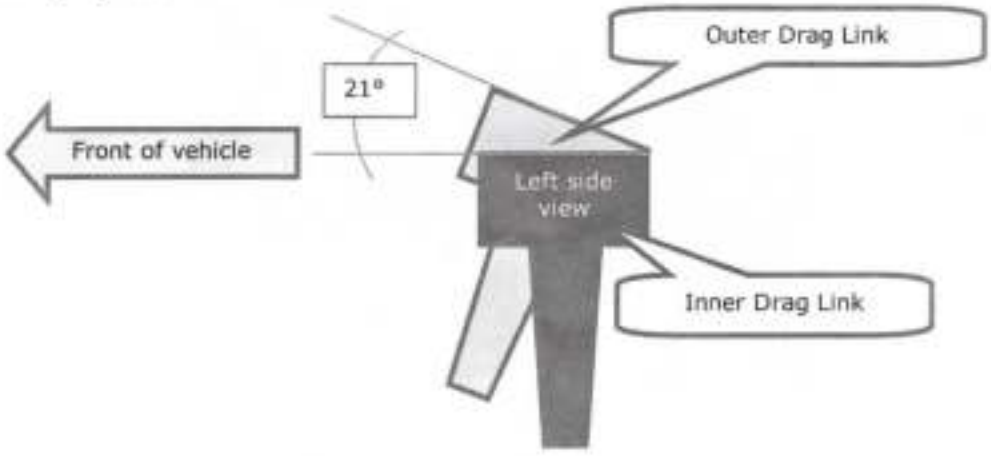


Figure 8 - Inner to Outer Drag Link Alignment for Cross Car Linkage

Haltenberger Linkage Alignment Procedure

CAUTION: Failure to properly perform this alignment procedure may lead to tie rod damage.

1. **Tie Rod End Alignment** - Repeat steps 1-9 above for Tie Rod End alignment. The Tie Rod End attachment at the Drag Link should be 110° to the Tie Rod End at the Driver Knuckle. (Fig. 9) If the end is not at 110°, loosen the adjuster clamp and rotate one end until 110° difference between the ends is achieved.

2. **Drag Link End Alignment** - Repeat steps 1-9 above for Inner Drag Link at Pitman Arm alignment to Passenger Knuckle mounting/ Drag Link. Alignment should be parallel or 0° +/-3°. (Refer to Haltenberger Linkage on Page 2 for Part Description) If the ends are not at 0° +/-3°, loosen the adjuster clamp and rotate one end until 0° difference between the ends is achieved.

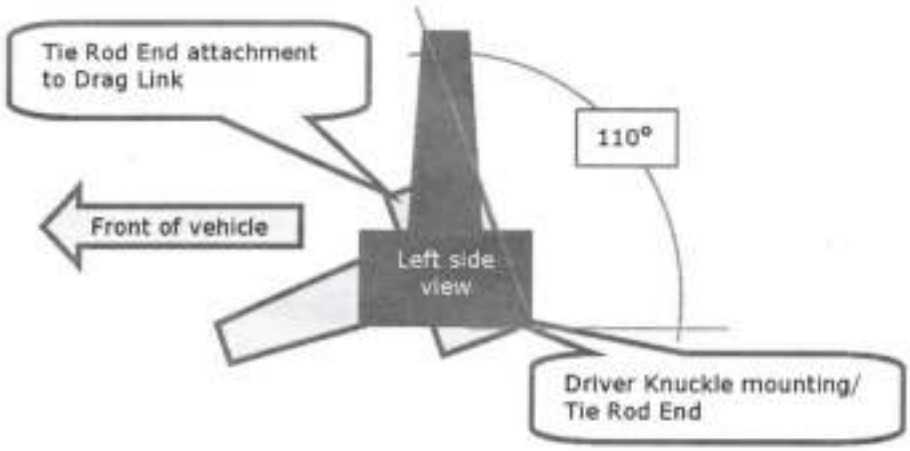


Figure 9 - Drag Link Alignment for Haltenberger Linkage

NOTE: ANY FUTURE ALIGNMENT PROCEDURES OR SUSPENSION COMPONENT REPLACEMENTS MUST USE THIS BALL SOCKET ALIGNMENT PROCEDURE WITH THE INCLINOMETER TO ASSURE BALL STUD SOCKET ALIGNMENT.