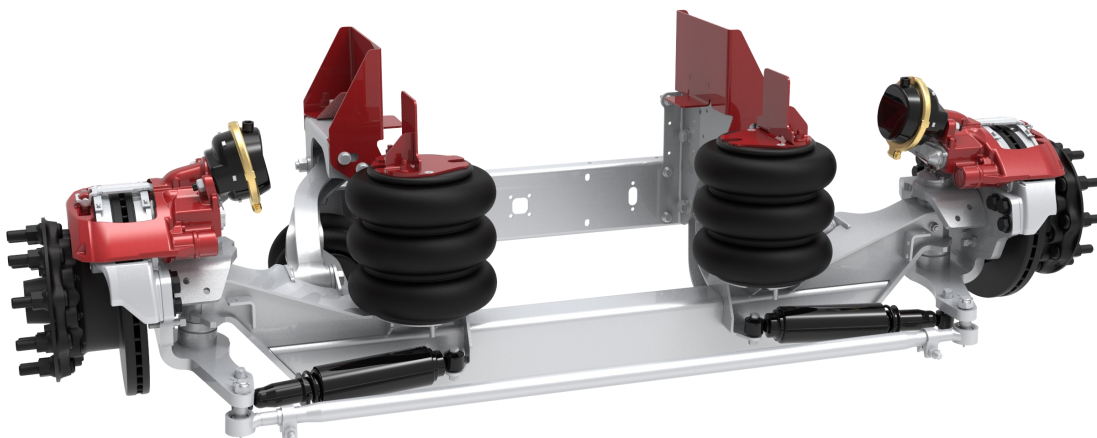




OWNER'S GUIDE

13.5K Auxiliary Suspension Air Disc Brake



DEALER / INSTALLER: Complete this section and give to vehicle owner.

Serial No: _____

Part No: _____

Capacity: _____ **13,500 lbs.**

Date Installed: _____

Link Mfg. Ltd.
223 15th St. N.E.
Sioux Center, IA USA
51250-2120
www.linkmfg.com

**QUESTIONS?
CALL CUSTOMER
SERVICE
1-800-222-6283**

Refer to separate Installation Instructions for installation details.

80003641
MAR 27, 2019

Table of Contents

1. Introduction
2. Axle Identification
3. Safety Warnings
4. Operation
5. Periodic Maintenance
6. Lubrication Points
7. Troubleshooting
8. Warranty
9. Service Parts and Service Kits
10. References

IMPORTANT: PLEASE READ THIS ENTIRE MANUAL BEFORE OPERATING YOUR NEW LINK 13.5K AUXILIARY SUSPENSION AIR DISC BRAKE AND KEEP IT FOR FUTURE REFERENCE.

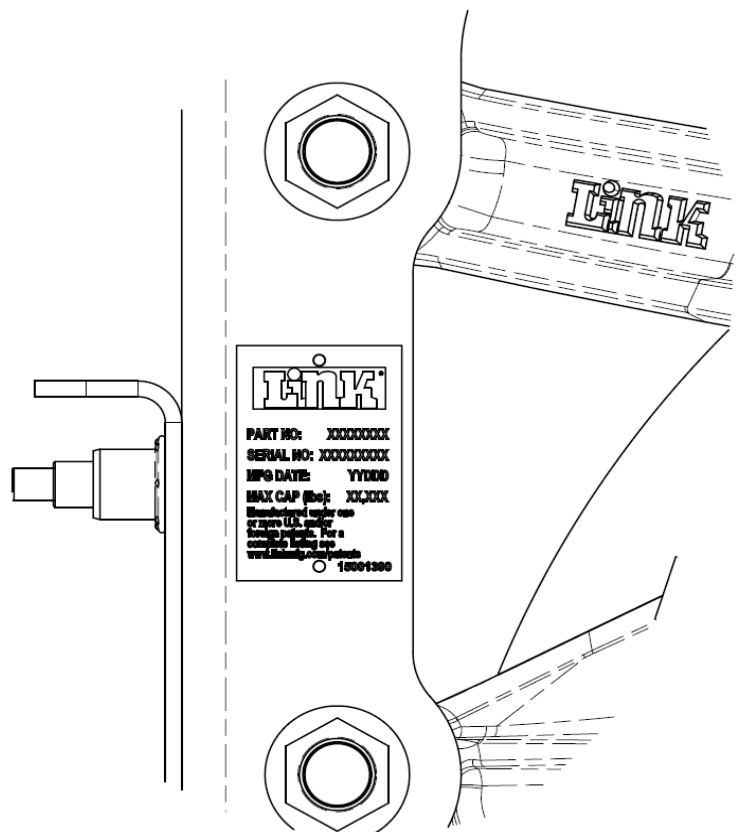
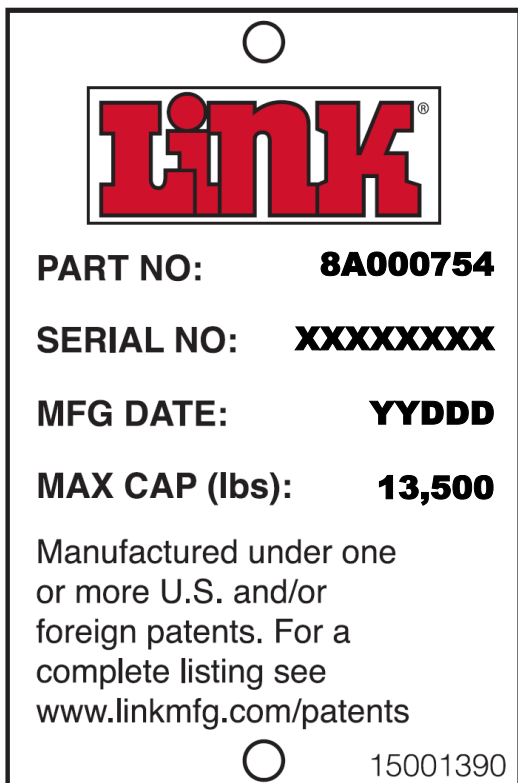
1. INTRODUCTION:

Thank you for choosing a Link Auxiliary Suspension. We want to help you to get the best results from the suspension and to operate it safely. This manual contains information to introduce you to the Link 13.5K Auxiliary Suspension Air Disc Brake and to assist you with its operation and maintenance. This manual is intended solely for use with this product.

All information in this manual is based on the latest information available at the time of printing. Link Manufacturing reserves the right to change its products or manuals at any time without notice. Contact Link at (800) 222-6283 or visit www.linkmfg.com for information on recent changes to products.

2. AXLE IDENTIFICATION

The axle identification label is located on the **driver's side** of the suspension as shown below. The label contains the suspension part number and a unique serial number.



3. SAFETY WARNINGS

CAUTION

Do not lower your auxiliary axle when traveling at speeds greater than 15 mph as component damage could result.

CAUTION

Do not exceed 20 psi in the auxiliary axle's ride springs when the vehicle is unloaded. Failure to heed this warning can result in improper weight distribution or component damage.

CAUTION

Do not exceed **13,500 lbs** on the auxiliary axle suspension. Failure to heed this warning can result in improper weight distribution or component damage.

4. OPERATION

4.1 Raising Your Lift Axle

4.1.1 To raise the axle, move the toggle switch to the "Raise" position.

4.2 Lowering Your Lift Axle

4.2.1 To lower the axle, move the toggle switch to the "Lower" position.

CAUTION

Do not lower your auxiliary axle when traveling at speeds greater than 15 mph as component damage could result.

4.2.2 Use the regulator to adjust the air pressure on the gauge to the appropriate air pressure for the vehicle load conditions. Refer to chart below for recommended pressures.

13.5K AIR PRESSURE AXLE LOAD CHART

(For reference only. Use scale to determine actual loads.)

LOAD IN LBS AT GROUND	PSI		LOAD IN LBS AT GROUND	PSI
4000	28		9000	73
5000	37		9000	79
6000	46		11000	87
7000	55		12000	93
8000	64		13000	98
			13500	102

CAUTION

Do not exceed 20 psi in the auxiliary axle's ride springs when the vehicle is unloaded. Failure to heed this warning can result in improper weight distribution or component damage.

CAUTION

Do not exceed **13,500 LBS** on the auxiliary axle suspension. Failure to heed this warning can result in improper weight distribution or component damage.

5. PERIODIC MAINTENANCE

Daily	<input type="checkbox"/> Check controls and ensure proper operation. <input type="checkbox"/> Check for tire inflation, damage, or excessive wear. <input type="checkbox"/> Check brakes for damage and ensure proper operation. <input type="checkbox"/> Check axle assemblies for damaged or loose components. <input type="checkbox"/> Check lift springs and load springs for damage or leaks. <input type="checkbox"/> Check for bent, cracked, or broken main structural components. <input type="checkbox"/> Inspect bushings for missing, torn, cracked or excessive gapping. <input type="checkbox"/> Inspect wheel ends for leaking seals or other damage. <input type="checkbox"/> Check for signs of irregular movement in suspension components. <input type="checkbox"/> Check for loose, missing, or damaged fasteners.
After first month or 1,000 miles	<input type="checkbox"/> Retorque all fasteners listed in Torque Table 1. <input type="checkbox"/> Check for loose suspension fasteners (Tighten to values given in Torque Table 2 if required). <input type="checkbox"/> Verify all grease points are properly lubricated (Multipurpose NLGI 2).
Every month or 1,000 miles of use	<input type="checkbox"/> Check wheel bearing oil level and inspect wheels for leaks (SAE 80W-90 Mineral Based Gear Lube). <input type="checkbox"/> Check suspension for debris rubbing air springs. <input type="checkbox"/> Check for worn steering stabilizer shocks.
Every three months or 2,500 miles of use	<input type="checkbox"/> Grease upper and lower kingpins. <input type="checkbox"/> Grease the tie rod ends. <input type="checkbox"/> Check for worn suspension bushings. <input type="checkbox"/> Check for loose suspension fasteners (Tighten to values given in Torque Table 1 and 2 if required). <input type="checkbox"/> Inspect pad thickness, running clearances, and visible part of rotors. Refer to Bendix ADB22X "SERVICE DATA" manual for details. <input type="checkbox"/> Inspect wheel ends for excessive play.
Every twelve months or 10,000 miles of use	<input type="checkbox"/> Replace wheel bearings lubricating oil (SAE 80W-90 Mineral Based Gear Lube). <input type="checkbox"/> Inspect suspension air controls for proper function and leaks. <input type="checkbox"/> Thoroughly inspect pads, rotors, running clearances, adjuster operation, caliper travel, tappet and boot assemblies, etc. Refer to Bendix ADB22X "SERVICE DATA" manual for details.

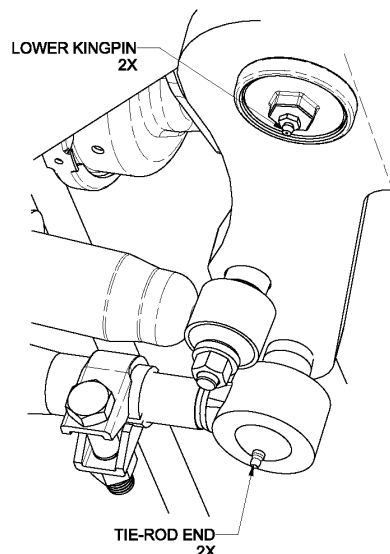
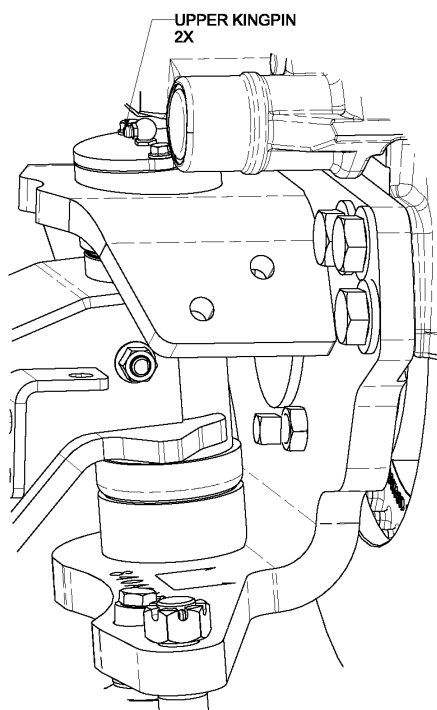
TORQUE TABLE 1

SUSPENSION TO FRAME BRACKET FASTENERS (12X).....	M16 X 2.0.....200-235 FT-LBS
SUSPENSION PIVOT FASTENERS (8X).....M20 X 2.5.....	360-400 FT-LBS

TORQUE TABLE 2

BRAKE CHAMBER MOUNT STUDS.....M16.....	126-140 FT-LBS
KINGPIN DRAW KEY NUT.....7/16 UNC.....	25-45 FT-LBS
TIE ROD CLAMP FASTENERS.....5/8 UNC.....	45-60 FT-LBS
TIE ROD CASTLE NUT.....7/8 UNF.....	120-160 FT-LBS
THEN TIGHTEN FURTHER UNTIL COTTER PIN HOLE ALIGNS	
STEERING STABILIZER BOLTS.....M12 X 1.75.....	75-95 FT-LBS
LIFT SPRING COMBO STUD.....M20 X 1.5.....	40-50 FT-LBS
LIFT SPRING STUD.....M12 X 1.75.....	20-30 FT-LBS
LOAD SPRING LOWER STUDS.....M12 X 1.75.....	20-30 FT-LBS
LOAD SPRING UPPER BOLT.....M10 X 1.50.....	20-30 FT-LBS
HUB CAP FASTENERS.....5/16 UNC.....	12-16 FT-LBS
BRAKE CALIPER MOUNT BOLTS (12X).....M20 X 2.5.....	REFER TO BENDIX ADB22X "SERVICE DATA" MANUAL FOR DETAILS OF SEQUENCE, PRE-TORQUE, AND FINAL TORQUE REQUIREMENTS.

6. LUBRICATION POINTS



7. TROUBLESHOOTING GUIDE

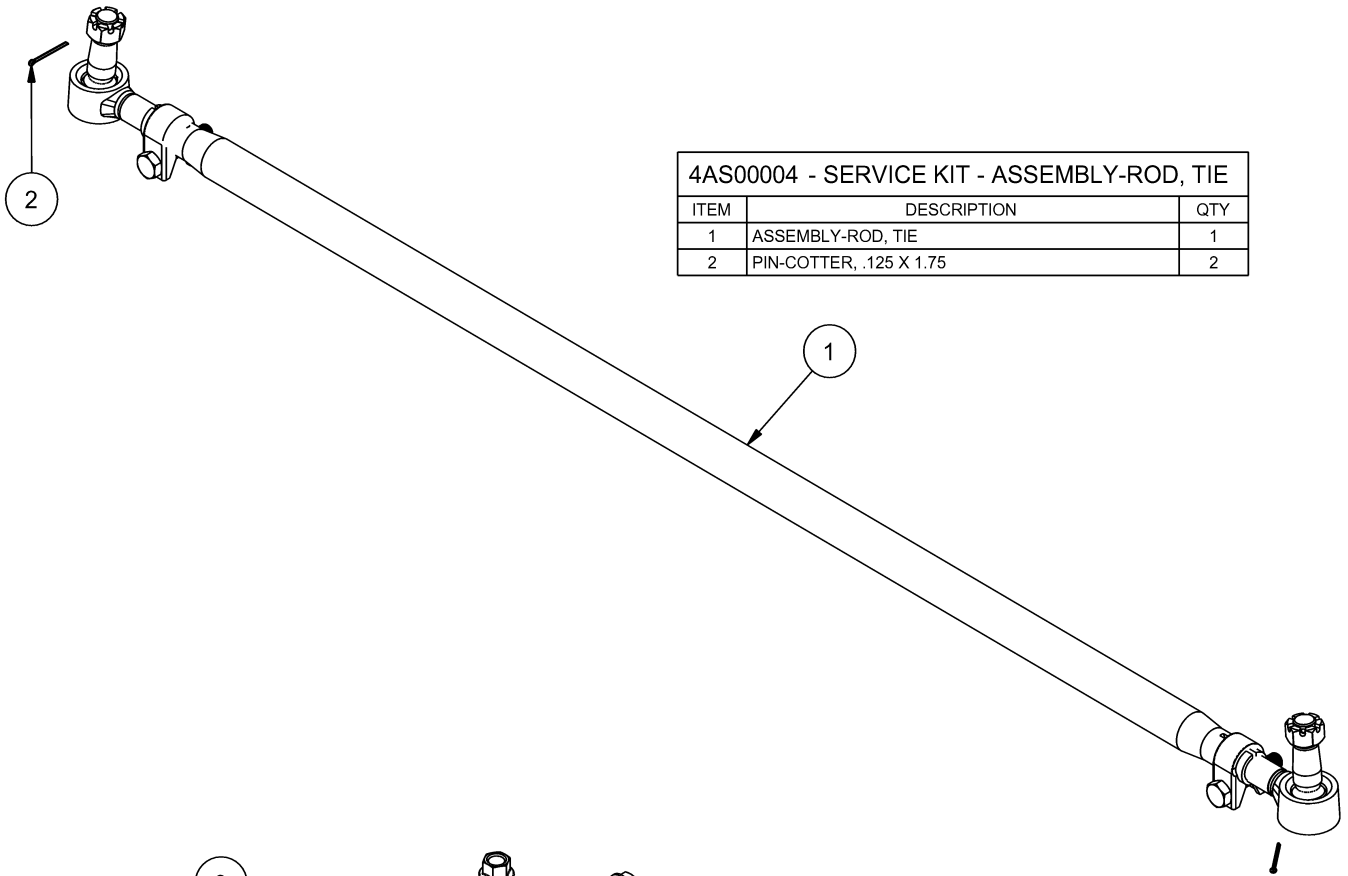
TROUBLE	PROBABLE CAUSE	REMEDY
Axle will not stay up	Loose Air Fittings	Check and retighten.
	Damaged Air Lines	Check for excessive wear. Replace if worn or damaged.
	Damaged or Worn Air Springs	
Punctured Load Air Springs	Other Components too close to Air Spring	Check for clearance all around air spring under full load and deflated. Move anything coming in contact with air springs.
Loose Convolution Ribs	Under Extended Air Springs—Improper ride height	Check for proper ride height. A) Use smaller tires.
Air Spring Separation at End Plates	Over Extended Air Springs—Improper ride height	Check for proper ride height. A) Use bigger tires. B) Lower suspension.
Lift Air Spring Wear or Broken Bumper	Over Extended Load Springs—Crushes lift bag	Check for proper ride height. A) Use bigger tires B) Lower suspension.

8. **WARRANTY** - Refer to our warranty for Link Auxiliary Suspensions by going to our website at www.linkmfg.com

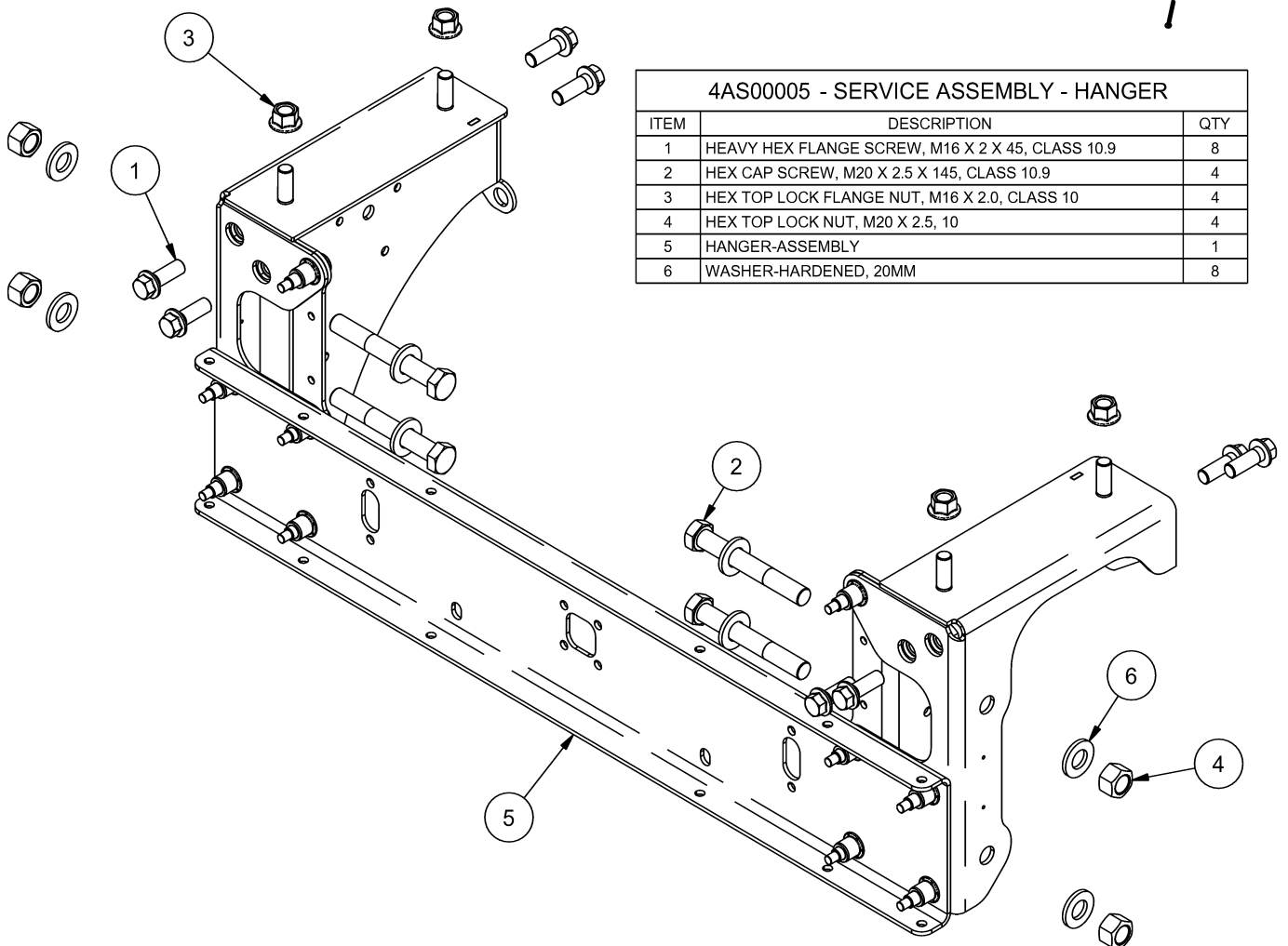
9. SERVICE PARTS AND SERVICE KITS

SERVICE ITEMS FOR 13.5K AUXILIARY SUSPENSION ADB	
ITEM NUMBER	DESCRIPTION
4AS00004	SERVICE KIT - ASSEMBLY-ROD, TIE
4AS00005	SERVICE ASSEMBLY - HANGER
4AS00009	SERVICE KIT - TIE ROD END (LH THREAD)
4AS00010	SERVICE KIT - TIE ROD END (RH THREAD)
4AS00011	SERVICE KIT - ASSEMBLY TUBE-TIE ROD
4AS00012	SERVICE KIT - COMPLETE BUSHING
4AS00013	SERVICE KIT - UPPER ARM-LH
4AS00014	SERVICE KIT - UPPER ARM-RH
4AS00015	SERVICE KIT - LOWER ARM-LH
4AS00016	SERVICE KIT - LOWER ARM-RH
4AS00022	SERVICE KIT - STEERING STOP BOLT
4AS00023	SERVICE KIT - COMPLETE STEERING STABILIZER
4AS00024	SERVICE KIT - HANGER-LH
4AS00025	SERVICE KIT - HANGER-RH
4AS00026	SERVICE KIT - PLATE-HANGER
4AS00029	SERVICE KIT - HUB CAP ASSEMBLY
4AS00032	SERVICE KIT - LIFT SPRING
4AS00033	SERVICE KIT - LOAD SPRING
4AS00038	SERVICE ASSEMBLY - AXLE-FABRICATED
4AS00049	SERVICE KIT - WHEEL NUT
4AS00084	SERVICE KIT - COMPLETE RIDE SHOCK
4AS00085	SERVICE ASSEMBLY - KNUCKLE-MACHINED-LH
4AS00086	SERVICE ASSEMBLY - KNUCKLE-MACHINED-RH
4AS00087	SERVICE KIT - COMPLETE KINGPIN
4AS00088	SERVICE KIT - COMPLETE BRAKE BOLT

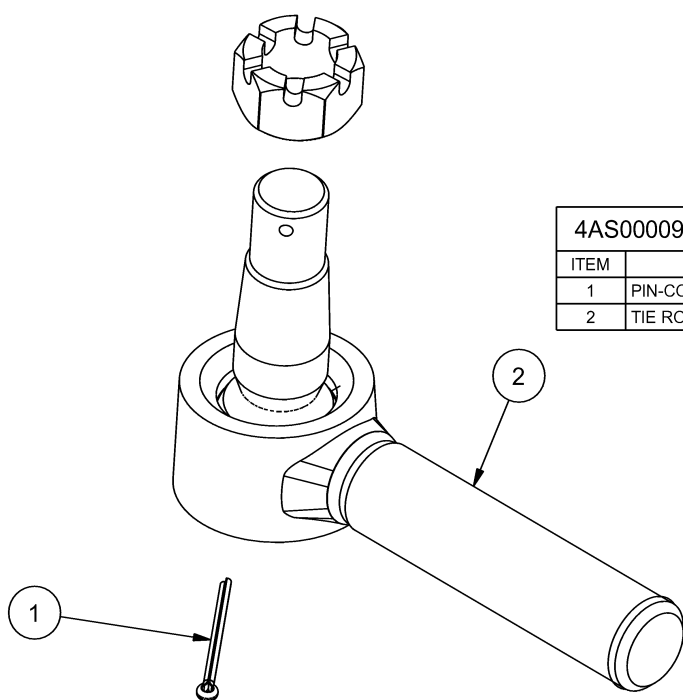
Kits and Parts listed above are shown on the following pages.



4AS00004 - SERVICE KIT - ASSEMBLY-ROD, TIE		
ITEM	DESCRIPTION	QTY
1	ASSEMBLY-ROD, TIE	1
2	PIN-COTTER, .125 X 1.75	2

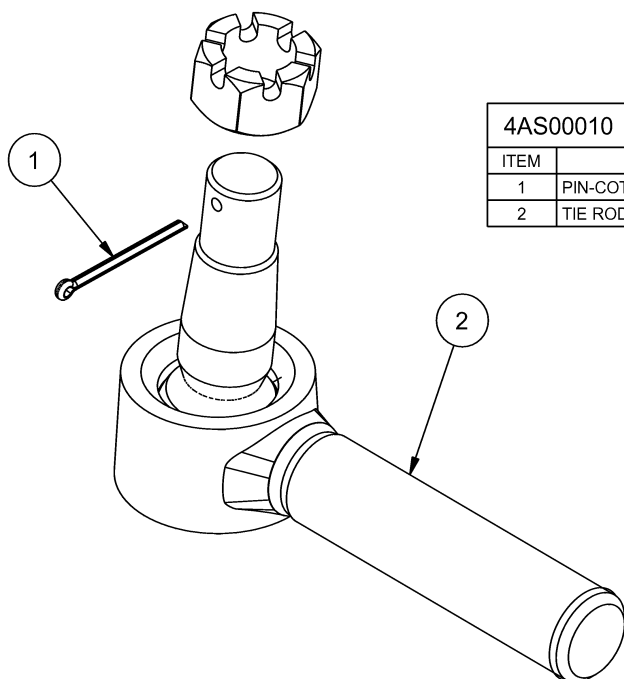


4AS00005 - SERVICE ASSEMBLY - HANGER		
ITEM	DESCRIPTION	QTY
1	HEAVY HEX FLANGE SCREW, M16 X 2 X 45, CLASS 10.9	8
2	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	4
3	HEX TOP LOCK FLANGE NUT, M16 X 2.0, CLASS 10	4
4	HEX TOP LOCK NUT, M20 X 2.5, 10	4
5	HANGER-ASSEMBLY	1
6	WASHER-HARDENED, 20MM	8



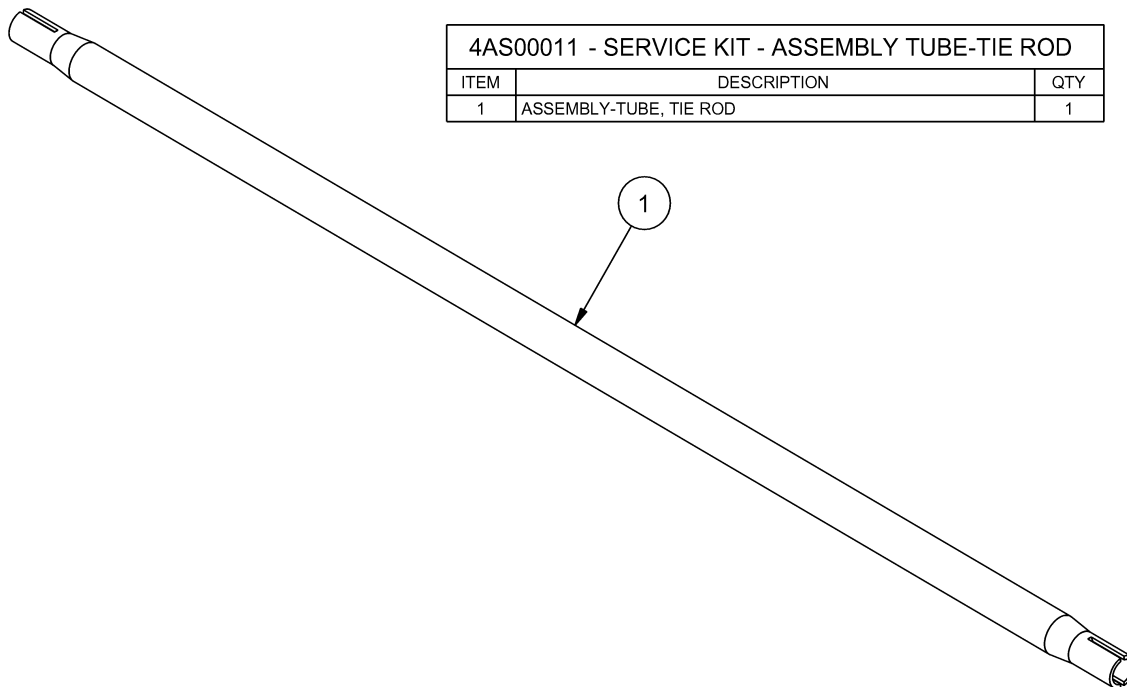
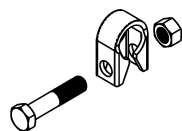
4AS00009 - SERVICE KIT - TIE ROD END (LH THREAD)

ITEM	DESCRIPTION	QTY
1	PIN-COTTER, .125 X 1.75	1
2	TIE ROD END ASSM. (LH)	1

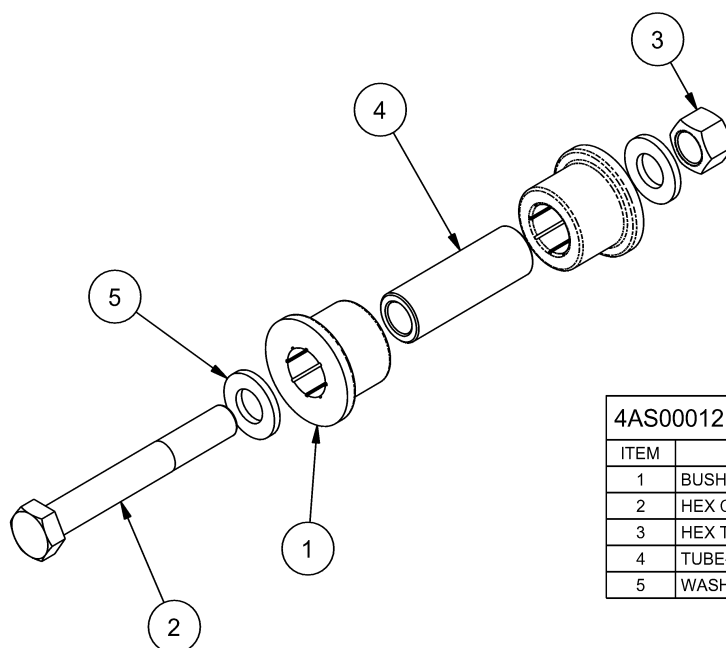
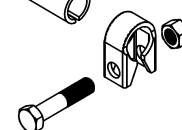


4AS00010 - SERVICE KIT - TIE ROD END (RH THREAD)

ITEM	DESCRIPTION	QTY
1	PIN-COTTER, .125 X 1.75	1
2	TIE ROD END ASSM. (RH)	1



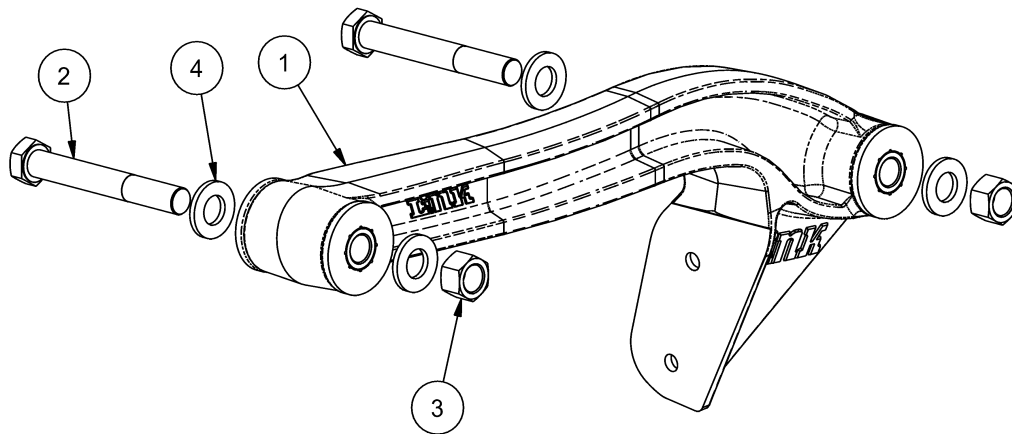
4AS00011 - SERVICE KIT - ASSEMBLY TUBE-TIE ROD		
ITEM	DESCRIPTION	QTY
1	ASSEMBLY-TUBE, TIE ROD	1



4AS00012 - SERVICE KIT - COMPLETE BUSHING		
ITEM	DESCRIPTION	QTY
1	BUSHING	16
2	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	8
3	HEX TOP LOCK NUT, M20 X 2.5, 10	8
4	TUBE-BUSHING	8
5	WASHER-HARDENED, 20MM	16

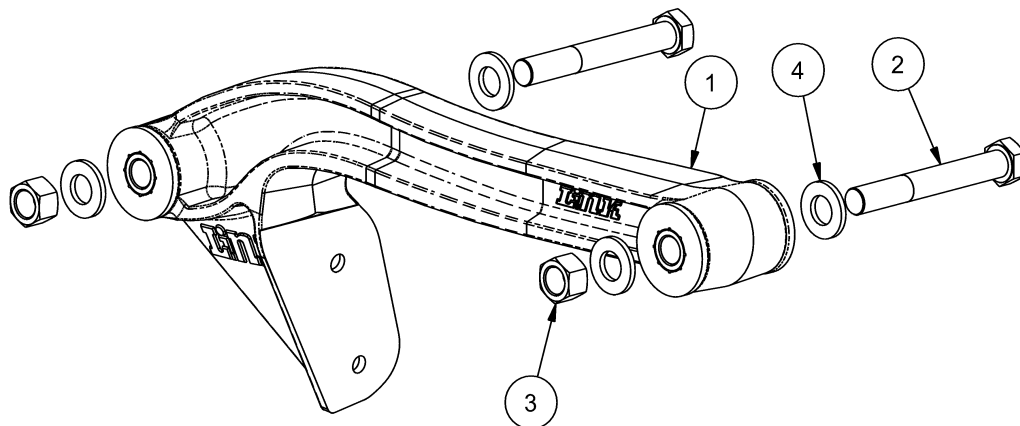
4AS00013 - SERVICE KIT - UPPER ARM-LH

ITEM	DESCRIPTION	QTY
1	ARM ASSEMBLY-TRAILING, UPPER LH	1
2	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	2
3	HEX TOP LOCK NUT, M20 X 2.5, 10	2
4	WASHER-HARDENED, 20MM	4



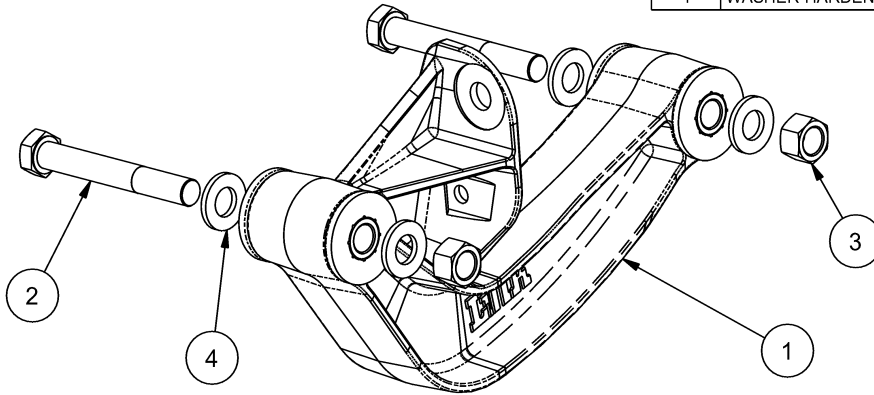
4AS00014 - SERVICE KIT - UPPER ARM-RH

ITEM	DESCRIPTION	QTY
1	ARM ASSEMBLY-TRAILING, UPPER RH	1
2	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	2
3	HEX TOP LOCK NUT, M20 X 2.5, 10	2
4	WASHER-HARDENED, 20MM	4



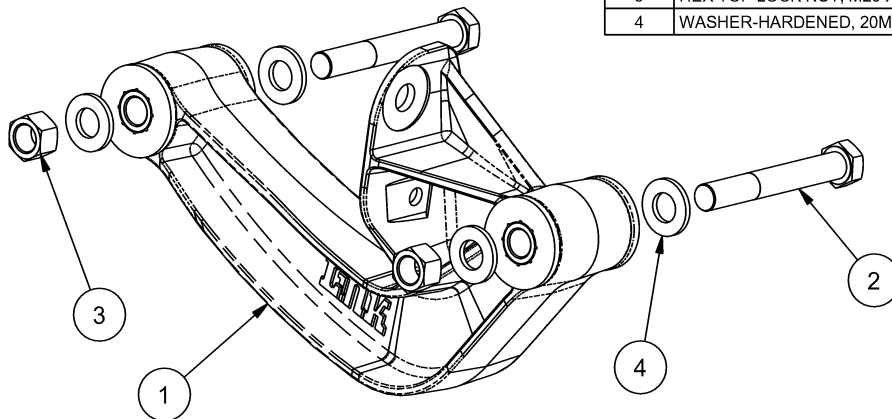
4AS00015 - SERVICE KIT - LOWER ARM-LH

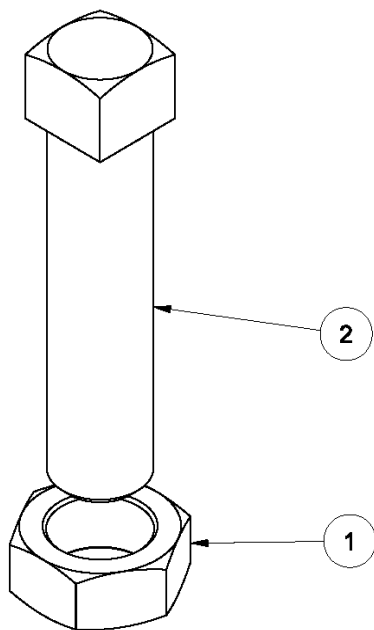
ITEM	DESCRIPTION	QTY
1	ARM ASSEMBLY-TRAILING, LOWER LH	1
2	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	2
3	HEX TOP LOCK NUT, M20 X 2.5, 10	2
4	WASHER-HARDENED, 20MM	4



4AS00016 - SERVICE KIT - LOWER ARM-RH

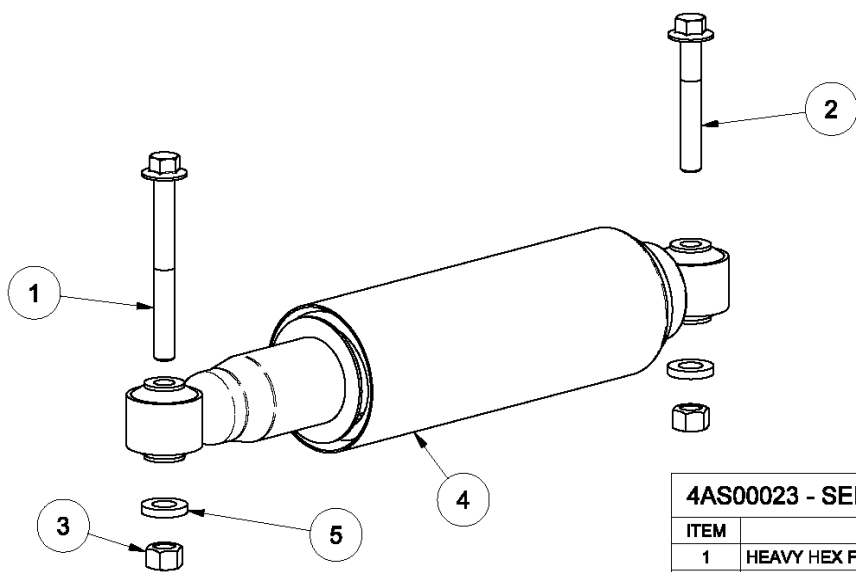
ITEM	DESCRIPTION	QTY
1	ARM ASSEMBLY-TRAILING, LOWER RH	1
2	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	2
3	HEX TOP LOCK NUT, M20 X 2.5, 10	2
4	WASHER-HARDENED, 20MM	4





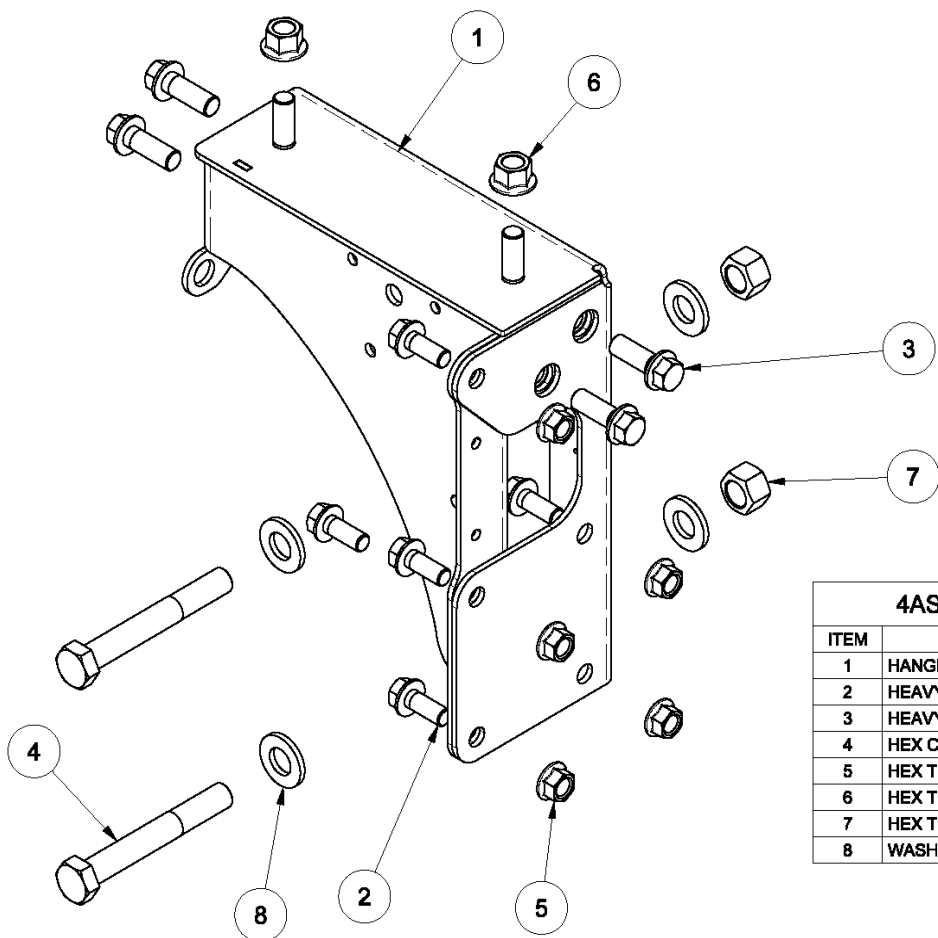
4AS00022 - SERVICE KIT - STEERING STOP BOLT

ITEM	DESCRIPTION	QTY
1	5/8 UNC HEX JAM NUT, GR 5	1
2	BOLT-STOP, STEERING, GEOMET	1



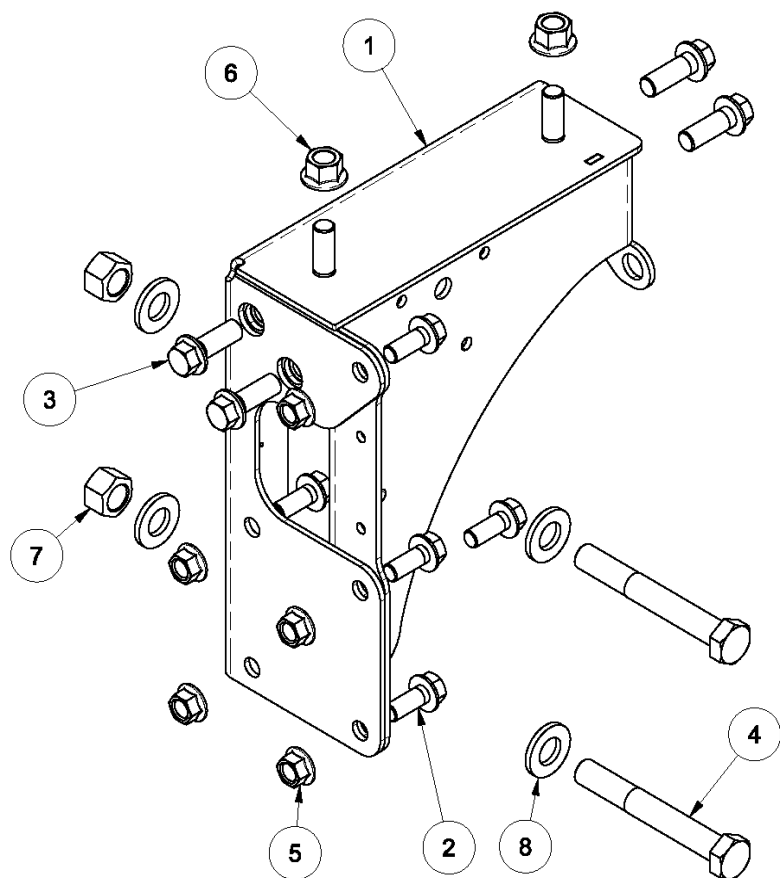
4AS00023 - SERVICE KIT - COMPLETE STEERING STABILIZER

ITEM	DESCRIPTION	QTY
1	HEAVY HEX FLANGE SCREW, M12 X 1.75 X 110, CLASS 10.9	2
2	HEAVY HEX FLANGE SCREW, M12 X 1.75 X 80, CLASS 10.9	2
3	HEX TOP LOCK NUT, M12 X 1.75, 10	4
4	SHOCK ABSORBER, WIDE BODY	2
5	WASHER-HARDENED, 12MM	4



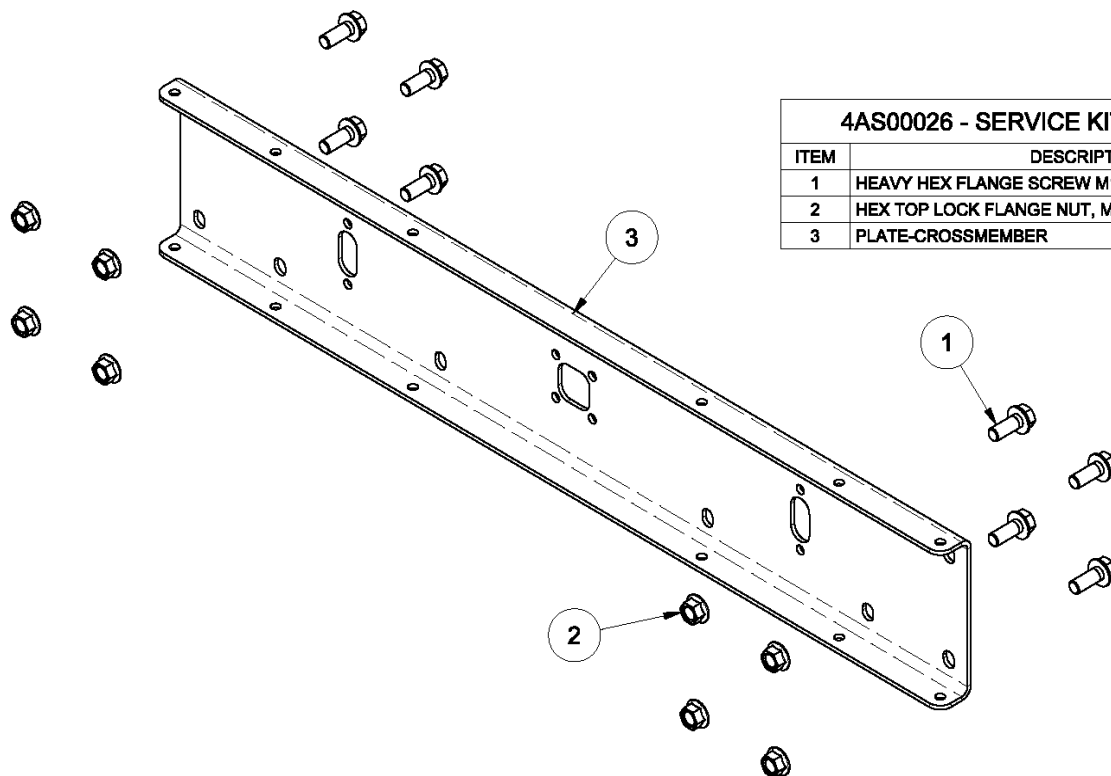
4AS00024 - SERVICE KIT - HANGER-LH

ITEM	DESCRIPTION	QTY
1	HANGER-WELDMENT, LH	1
2	HEAVY HEX FLANGE SCREW M14X2X35 CLASS 10.9	5
3	HEAVY HEX FLANGE SCREW, M16 X 2 X 45, CLASS 10.9	4
4	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	2
5	HEX TOP LOCK FLANGE NUT, M14 X 2.00, CLASS 10	5
6	HEX TOP LOCK FLANGE NUT, M16 X 2.0, CLASS 10	2
7	HEX TOP LOCK NUT, M20 X 2.5, 10	2
8	WASHER-HARDENED, 20MM	4



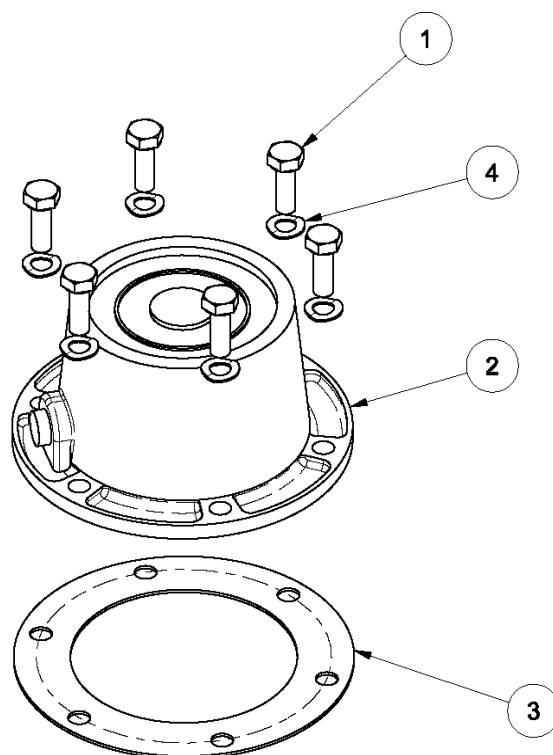
4AS00025 - SERVICE KIT - HANGER-RH

ITEM	DESCRIPTION	QTY
1	HANGER-WELDMENT, RH	1
2	HEAVY HEX FLANGE SCREW M14X2X35 CLASS 10.9	5
3	HEAVY HEX FLANGE SCREW, M16 X 2 X 45, CLASS 10.9	4
4	HEX CAP SCREW, M20 X 2.5 X 145, CLASS 10.9	2
5	HEX TOP LOCK FLANGE NUT, M14 X 2.00, CLASS 10	5
6	HEX TOP LOCK FLANGE NUT, M16 X 2.0, CLASS 10	2
7	HEX TOP LOCK NUT, M20 X 2.5, 10	2
8	WASHER-HARDENED, 20MM	4



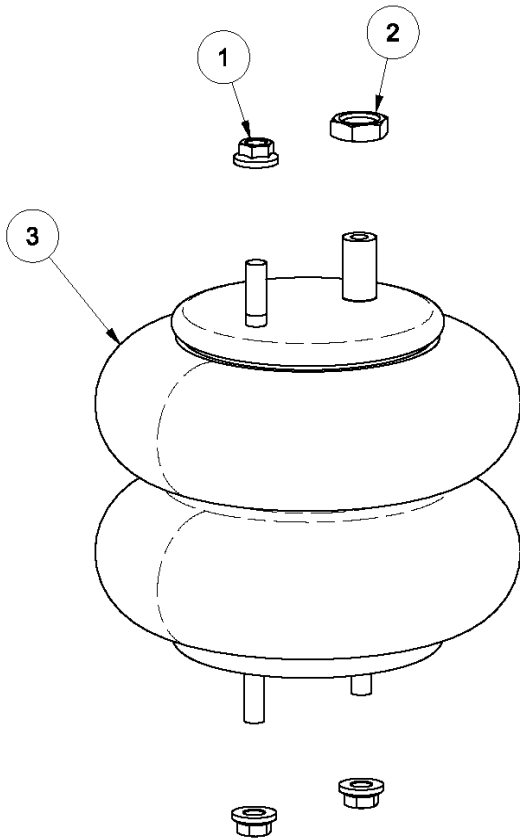
4AS00026 - SERVICE KIT - PLATE-HANGER

ITEM	DESCRIPTION	QTY
1	HEAVY HEX FLANGE SCREW M14X2X35 CLASS 10.9	8
2	HEX TOP LOCK FLANGE NUT, M14 X 2.00, CLASS 10	8
3	PLATE-CROSSMEMBER	1



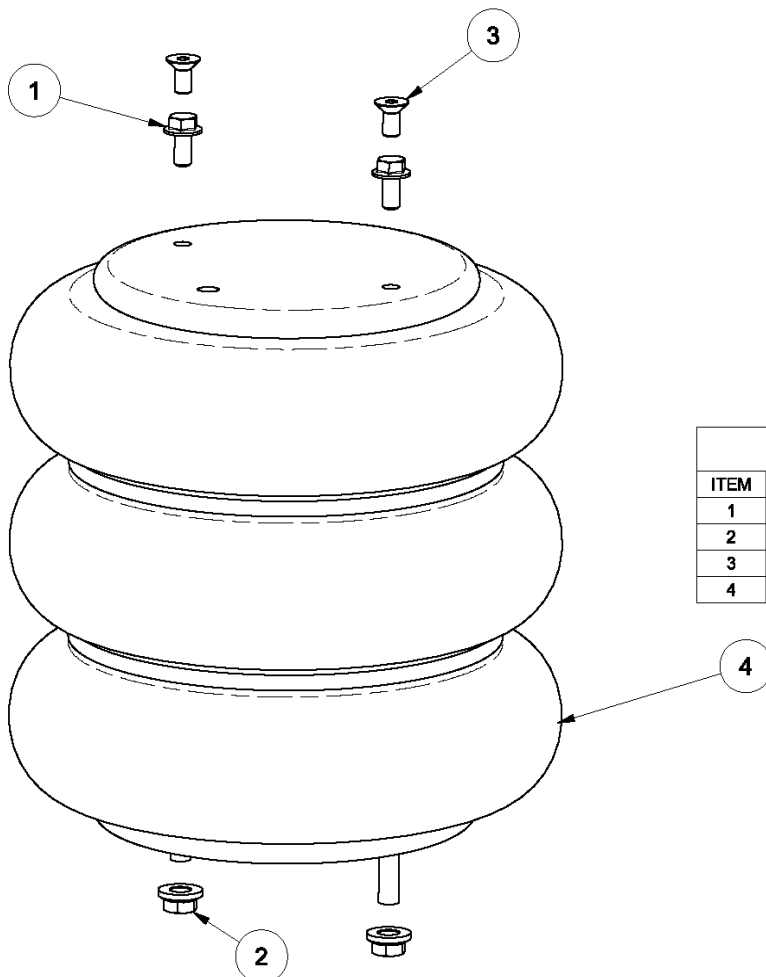
4AS00029 - SERVICE KIT - HUB CAP ASSEMBLY

ITEM	DESCRIPTION	QTY
1	5/16 X 7/8 UNC HEX CAP SCREW, GR 5	6
2	CAP-HUB, 6 HOLE, 4.5" B.C.	1
3	GASKET	1
4	WASHER-SPRING	6



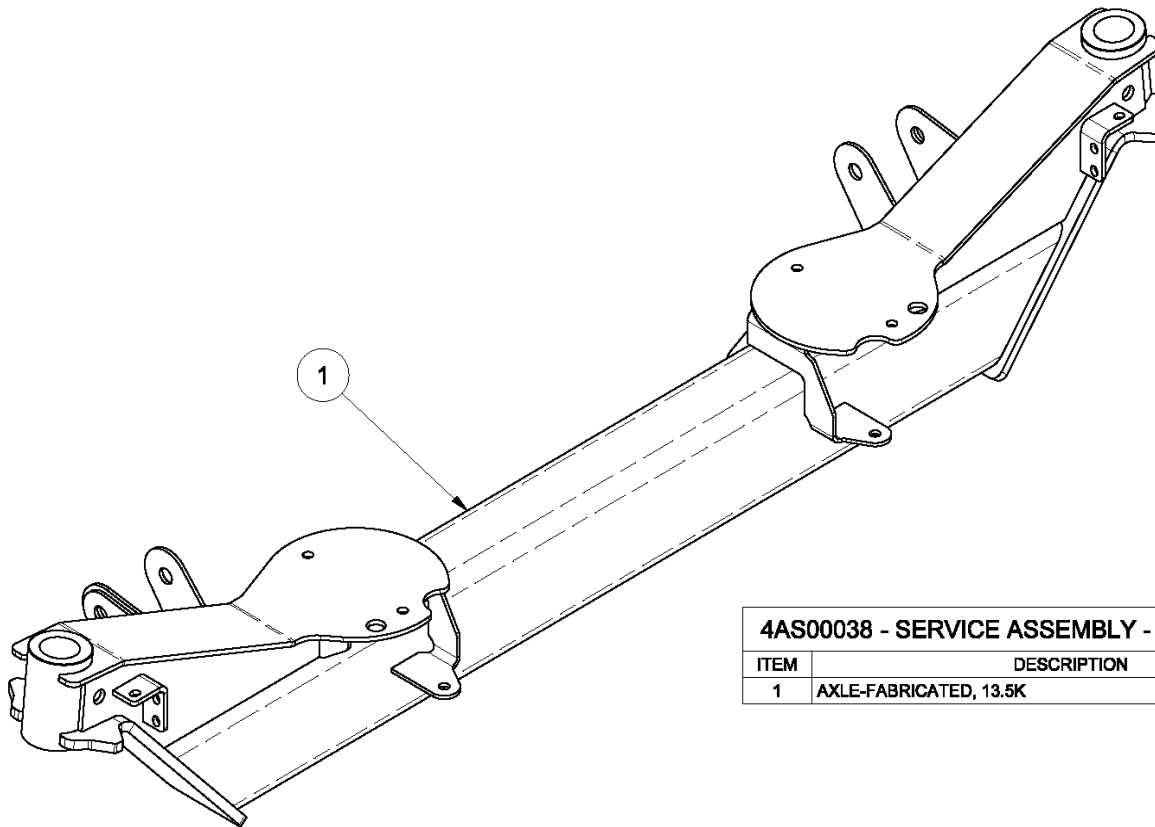
4AS00032 - SERVICE KIT - LIFT SPRING

ITEM	DESCRIPTION	QTY
1	M12 X 1.75 SERRATED FLANGE NUT	3
2	M20 X 1.5 JAM NUT	1
3	SPRING-AIR	1



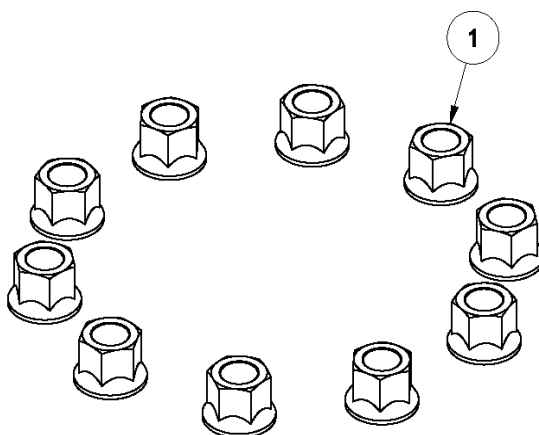
4AS00033 - SERVICE KIT - LOAD SPRING

ITEM	DESCRIPTION	QTY
1	HEAVY HEX FLANGE SCREW, M10 X 1.50, CLASS 10.9	2
2	M12 X 1.75 SERRATED FLANGE NUT	2
3	METRIC FLAT HEAD CAP SCREW, M10 X 1.50, CLASS 10.9	2
4	SPRING-AIR	1



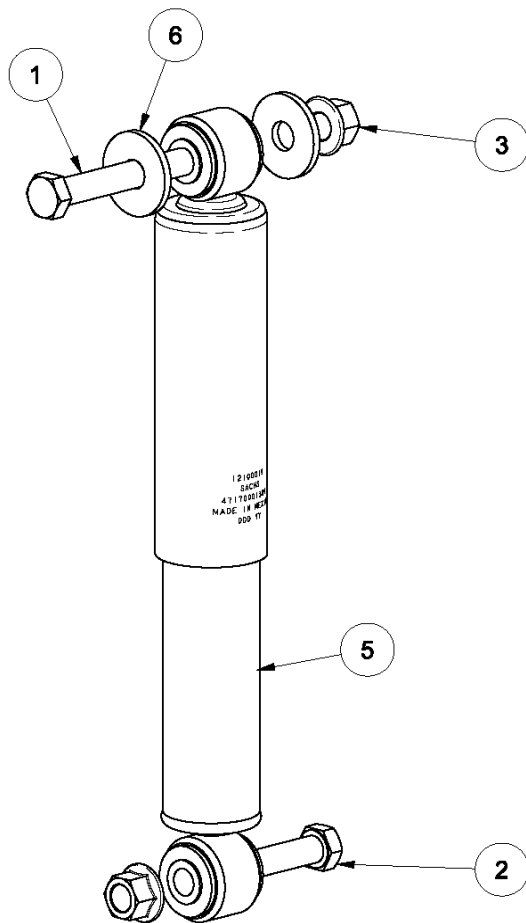
4AS00038 - SERVICE ASSEMBLY - AXLE-FABRICATED

ITEM	DESCRIPTION	QTY
1	AXLE-FABRICATED, 13.5K	1



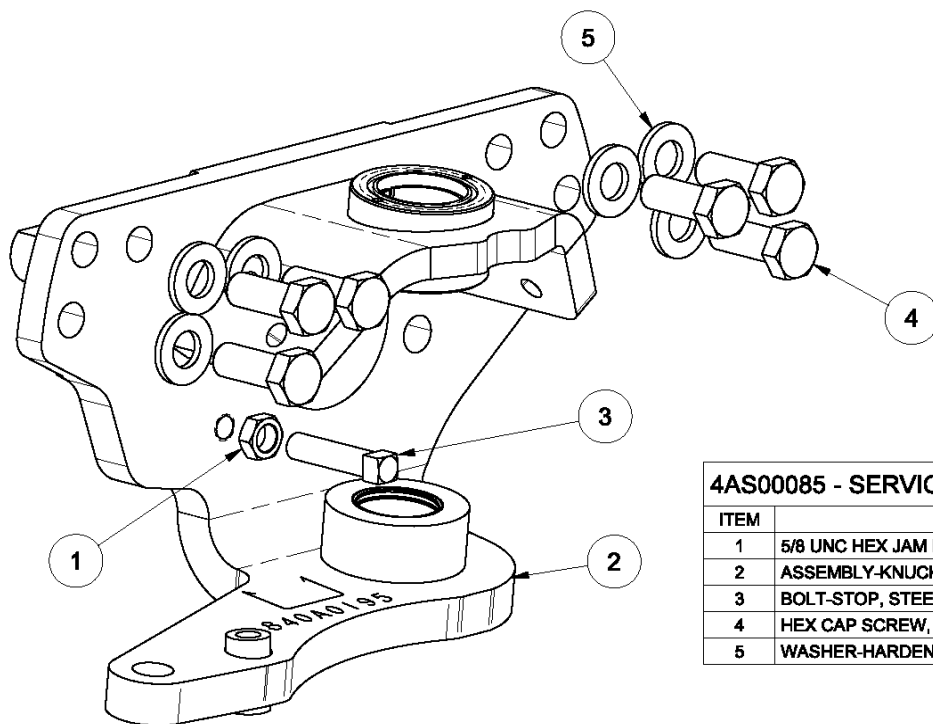
4AS00049 - SERVICE KIT - WHEEL NUT

ITEM	DESCRIPTION	QTY
1	NUT-FLANGE, M22 X 1.5	10



4AS00084 - SERVICE KIT - COMPLETE RIDE SHOCK

ITEM	DESCRIPTION	QTY
1	HEX CAP SCREW, M16 X 2.0 X 110, 10.9	2
2	HEX CAP SCREW, M16 X 2.0 X 90, 10.9	2
3	HEX TOP LOCK FLANGE NUT, M16 X 2.0, CLASS 10	4
4	INSTRUCTIONS-INSTALLATION-4AS00084	1
5	SHOCK ABSORBER	2
6	WASHER-OVERSIZED, 16MM	4

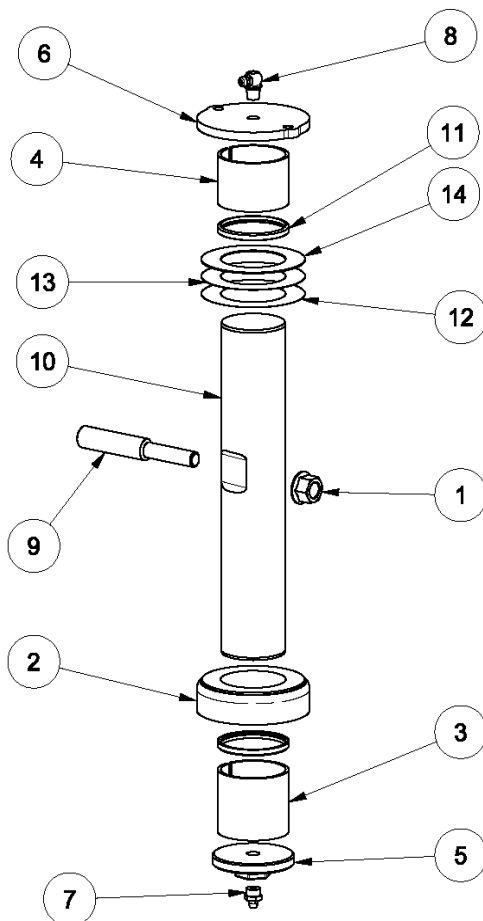
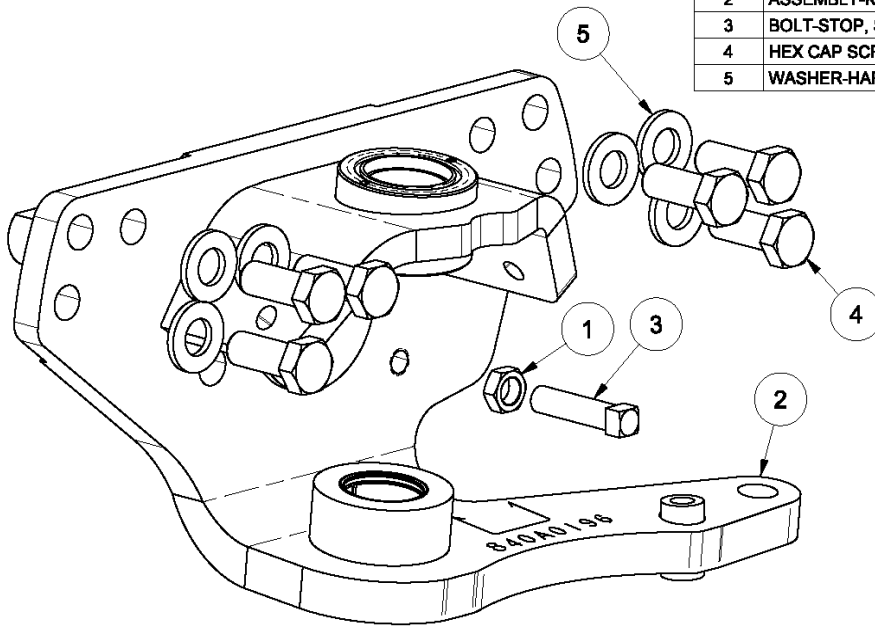


4AS00085 - SERVICE ASSEMBLY - KNUCKLE-MACHINED-LH

ITEM	DESCRIPTION	QTY
1	5/8 UNC HEX JAM NUT, GR 5	1
2	ASSEMBLY-KNUCKLE, LH, ADB	1
3	BOLT-STOP, STEERING, GEOMET	1
4	HEX CAP SCREW, M20 X 2.5 X 50 CLASS 10.9 W/THREADLOCK	6
5	WASHER-HARDENED, 20MM	6

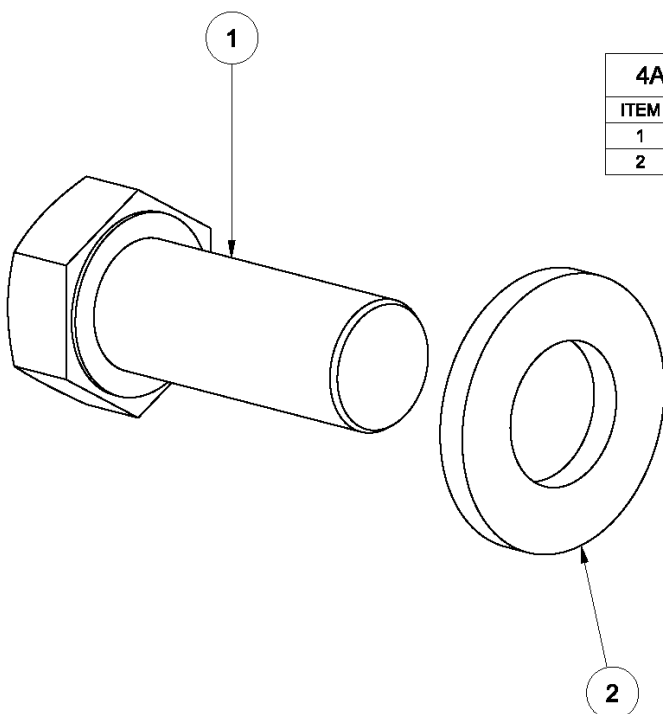
4AS00086 - SERVICE ASSEMBLY - KNUCKLE-MACHINED-RH

ITEM	DESCRIPTION	QTY
1	5/8 UNC HEX JAM NUT, GR 5	1
2	ASSEMBLY-KNUCKLE, RH, ADB	1
3	BOLT-STOP, STEERING, GEOMET	1
4	HEX CAP SCREW, M20 X 2.5 X 50 CLASS 10.9 W/THREADLOCK	6
5	WASHER-HARDENED, 20MM	6



4AS00087 - SERVICE KIT -COMPLETED KINGPIN

ITEM	DESCRIPTION	QTY
1	7/16 UNC HEX TOP LOCK FLANGE NUT, GRADE G	2
2	BEARING-THRUST	2
3	BUSHING-KNUCKLE	2
4	BUSHING-KNUCKLE, UPPER	2
5	CAP-KING PIN	2
6	CAP-KNUCKLE, BOLT	2
7	FITTING-GREASE, 1/8-27STR THD FORM	2
8	FITTING-GREASE, 90°	2
9	PIN-DRAW, LOCKING	2
10	PIN-KING, 13.5K (1.88)	2
11	SEAL-KNUCKLE	4
12	SHIM (.005)	2
13	SHIM (.010)	2
14	SHIM (.030)	2



4AS00088 - SERVICE KIT - COMPLETE BRAKE BOLT		
ITEM	DESCRIPTION	QTY
1	HEX CAP SCREW, M20 X 2.5 X 50 CLASS 10.9 W/THREADLOCK	12
2	WASHER-HARDENED, 20MM	12

REFERENCE LIST OF INDUSTRY AVAILABLE SERVICE PARTS

AFTERMARKET PARTS FOR CONMET HUB/ROTOR ASSEMBLY		
ITEM	CONMET PART NUMBER	DESCRIPTION
1	10083194	AFTERMARKET HUB/ROTOR ASSEMBLY
2	10081727	REBUILD KIT (INCLUDES BEARING CUPS AND CONES, SEAL AND SPACER)
3	10081518	SEAL AND SPACER KIT
4	10045883	CONMET SEAL KIT
5	10041905	BEARING KIT - INNER
6	10041906	BEARING KIT - OUTER
7	10009780	ABS RING ONLY
8	10036548	PRESET PLUS NUT KIT
9	10001399	WHEEL STUD (MUST BE ORDERED IN MULTIPLES OF 10)
10	10082074	ROTOR KIT

AFTERMARKET PARTS FOR BENDIX ADB 22X BRAKE CALIPER ASSEMBLY		
ITEM	BENDIX PART NUMBER	DESCRIPTION
1	802078	PAD KIT (DOES 1 COMPLETE AXLE)
2	802455	SHEAR ADAPTER (BOX OF 10)
3	K028226	SERVICE ACTUATOR, TYPE 16 UNIVERSAL
REFER TO BENDIX SERVICE DATA DOCUMENT SD-23-7541 FOR COMPLETE DETAILS.		

10. REFERENCES

Wherever possible, Link Manufacturing, LTD encourages the use of best practices in the industry in service and support of the products it manufactures. Many of these recommended practices that Link Manufacturing, LTD supports can be found in documentation compiled by The Technology & Maintenance Council (TMC). To obtain copies of the following Recommend Practice (RP's), contact TMC at

TMC/ATA	Phone: 703-838-1763
2200 Mill Road	Website: tmc.truckline.com
Alexandria, VA 22314	Online ordering: www.truckline.com/store

TMC RP 222	User's Guide to Wheels and Rims
TMC RP 608	Brake Drums and Rotors
TMC RP 622	Wheel Seal and Bearing Removal, Installation, and Maintenance
TMC RP 631	Recommendations For Wheel End Lubrication
TMC RP 640	Alternate Wheel Bearing Adjustment Systems
TMC RP 644	Wheel End Conditions Analysis Guide
TMC RP 645	Tie Rod End Inspection and Maintenance Procedure
TMC RP 648	Troubleshooting Ride Complaints
TMC RP 651	Steer Axle Maintenance Guidelines
TMC RP 652	Service and Inspection of Air Disc Brakes
TMC RP 1503	Brake Maintenance Guidelines for Severe Vocational Applications
TMC RP 1515	Auxiliary Axle Maintenance Guidelines For Vocational Vehicles



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