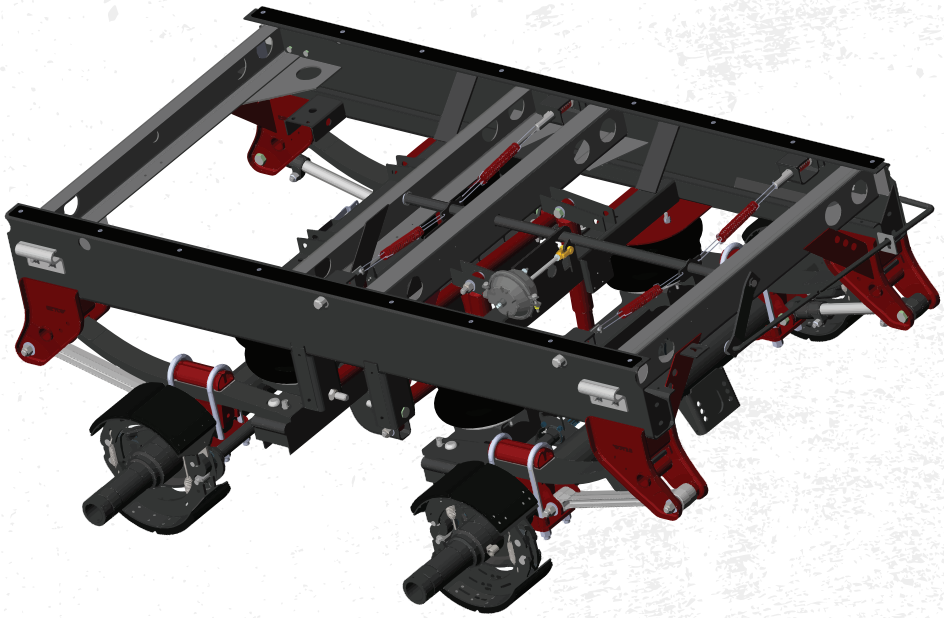
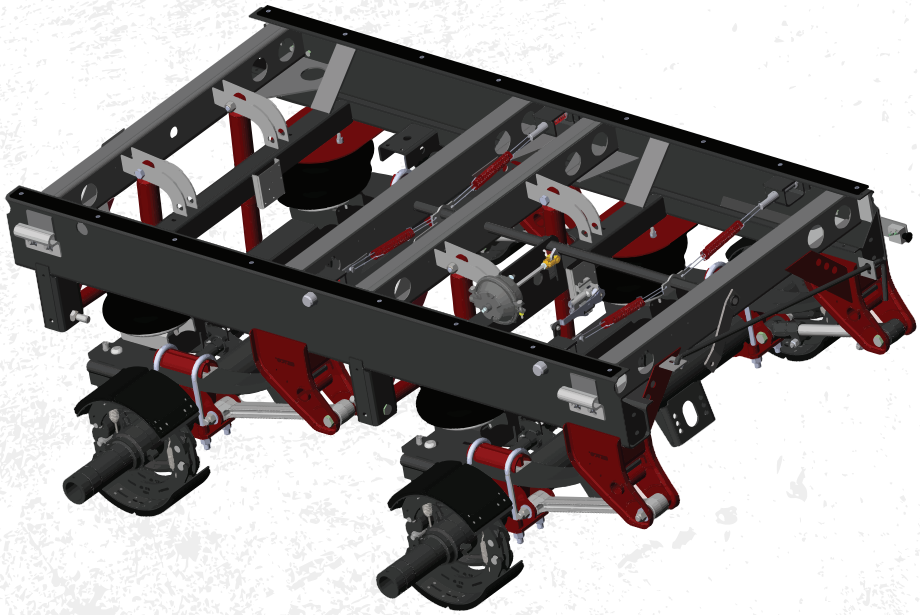
Reyco Granning SUSPENSIONS

Trailer Suspensions Owner's Manual

86AR Slider Series **(RS1015, RS1035, RS3015, RS3035)**

Installation Instructions
Maintenance Instructions
Service Parts





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COMPANY PROFILE

Reyco Granning Suspensions was formed by the merger and acquisition of two well-known names in the heavy-duty vehicle suspension industry: Reyco and Granning.

Reyco grew out of the Reynolds Mfg. Co. and was first known as a major supplier of brake drums for heavy-duty vehicles, and later developed a full line of air and steel spring suspensions for trucks, busses, trailers, and motorhomes.

Granning Air Suspensions was founded in 1949 in Detroit, Michigan as a manufacturer of auxiliary lift axle suspensions. Granning later became an innovator of independent front air suspensions for the motorhome industry.

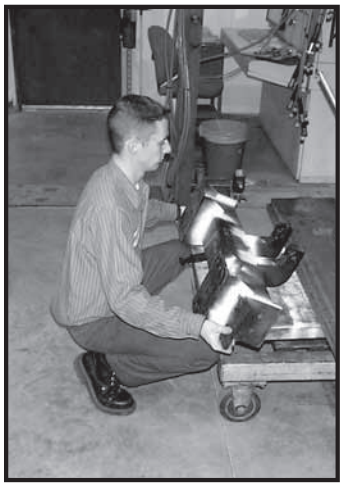
Reyco Granning LLC was formed in early 2011 through a partnering of senior managers and MAT Capital, a private investment group headquartered in Long Grove, Illinois.

SAFETY FIRST

Be sure to read and follow all installation and maintenance procedures.

LIFTING

Practice safe lifting procedures. Consider size shape and weight of assemblies. Obtain help or the assistance of a crane when lifting heavy assemblies. Make sure the path of travel is clear.



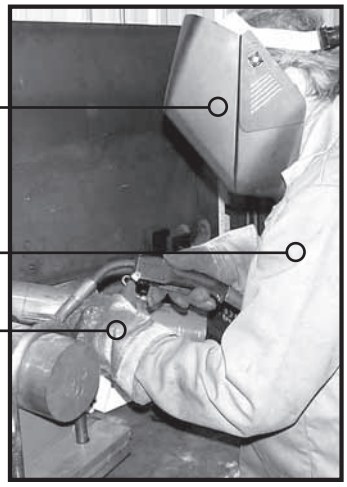
PARTS HANDLING

When handling parts, wear appropriate gloves eyeglasses and other safety equipment to prevent serious injury.

WELDING

When welding, be sure to wear all personal protective equipment for face and eyes; and be sure the work area is adequately ventilated. When welding, protect spring beams and air springs from weld spatter and grander sparks. Do not attach "ground" connection to springs.

Under normal use, steel presents few health hazards. Prolonged or repeated breathing of iron oxide fumes produced during welding may cause siderosis.



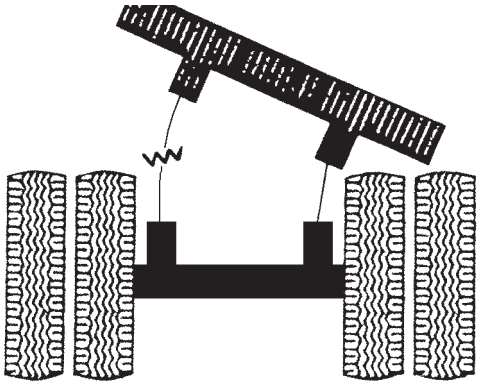
Bolts and hardware are U.S. standard. For identification purposes only, the following chart is a conversion of common hardware and dimesions to metric:

INCH	MM
7/32 (.22)	5.59
3/8 (.375)	9.53

INCH	MM
1/4 (.25)	6.35
1/2 (.5)	12.7

INCH	MM
5/8 (.625)	15.88
7/8 (.875)	22.23

INCH	MM
3/4 (.75)	19.05
1 (1.0)	25.40



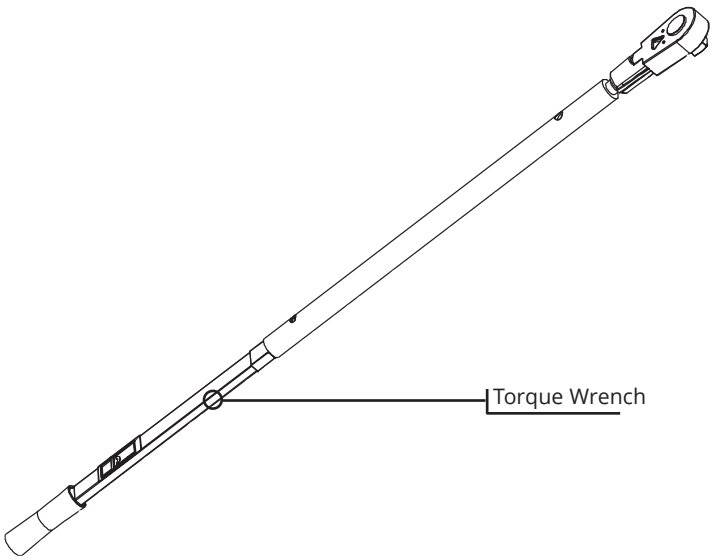
OVERLOADING

Overloading is the practive of transporting cargos that surpass the specified vehicle's ratings. Overloading can cause he component failure resulting in accidents and injuries.

This symbol indicates to the reader to use caution when seen and to follow specific requirements or warnings stated.

CAUTION: Specific torque requirements are recommended.

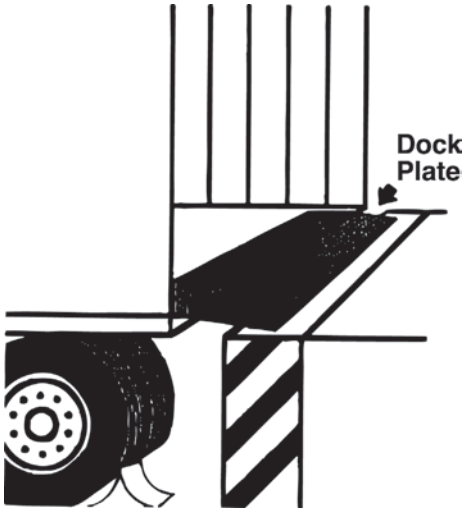
WARNING



TORQUE

Proper tightening of the U-bolt nuts and alignment bolts are high priority items. A fastener system is considered "loose" any time the torque is found below required values. Failure to maintain the specified torque and to replace worn parts can cause component failure resulting in accident with consequent in injury.

NOTE: It is extremely important after the first 1,000 to 3,000 loaded miles (1,600 - 4,800 kms) of operation, and with the each annual inspection thereafter that all of the bolt and nut tightening recommendations be followed. Any loose fasteners must be re-torqued to comply with warranty requirements and to ensure long, trouble-free performance.



DOCK OPERATIONS

Some air ride suspensions do have an operational characteristic called "Trailer Walk" because of their geometry. The trailer actually can walk away from the dock in very small steps as the cargo is loaded or unloaded.

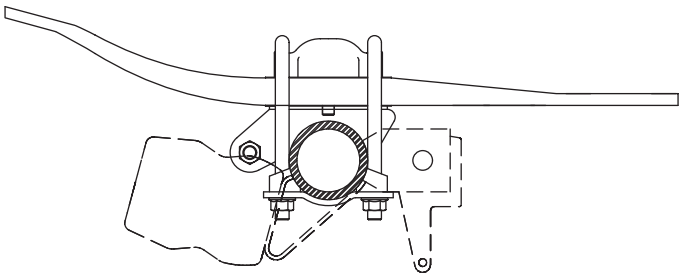
The 86AR Slider Series was designed to have a minimum of trailer walk; however, it can occur. If trailer walk is a problem, the addition of dump valves to exhaust the air should be considered on Models RS1015 and RS3015.

Model RS1035 and RS3035 were designed to eliminate trailer walk entirely and were also designed to eliminate the need for dumping of air to the air ride system. Dump valves are not allowed on Models RS1035 and RS3035.

NOTE: Proper use of dock plates, wheel chocks and rear most placement of the slider will minimize trailer walk.

BRAKE CAMSHAFT LOCATION

This section explains the procedures required to complete the steps of installing the axles. Installation steps may vary in sequence to fit the O.E.M.'s preference but the basic steps are presented herein.



Front and Rear Axles
Cam and Canister Location

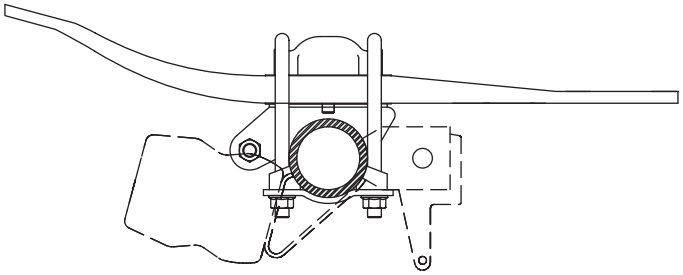
RS1051/RS3015

BOTH AXLES: Brake camshafts are to be to the rear of the axles and chambers underneath the axle. If camshafts are located differently, assembler must check for adequate clearances.

NOTE: The Model RS3015 is supplied with brake camshafts installed in proper position.

RS1035/RS3035

On suspension models RS1035 and RS3035 equipped with 2S1M ABS, the sensors must be installed on the front axle.



Front Axles Cam
and Canister Location

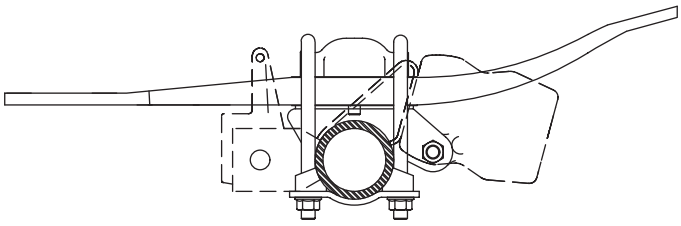
FRONT AXLE

Brake camshafts are to be to the rear of the axles and chambers underneath the axle. If camshafts are located differently, assembler must check of adequate clearances.

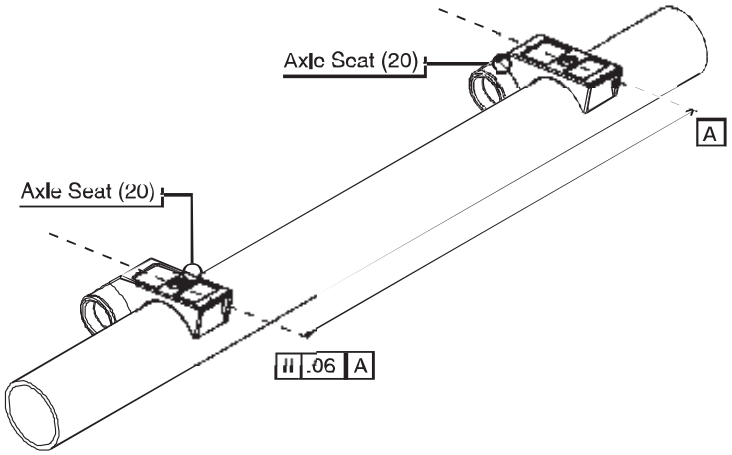
REAR AXLE

The brake camshaft must be to the front with the slack adjusters pointing up and the chambers on top of the axle. A long camshaft is required.

NOTE: The Model RS3035 is supplied with brake camshafts installed in proper position.



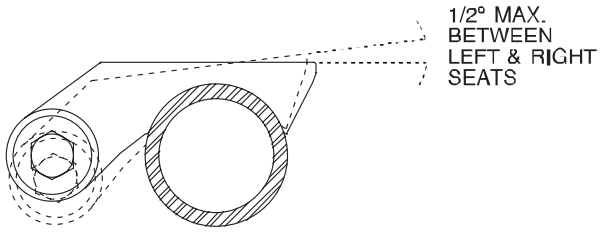
Rear Axles Cam
and Canister Location



AXLE SEAT INSTALLATION

Locate and mark the upper camber line (top center) of the axles. Position the spring seats on the axle so that the brake camshafts and chambers are as described in the “Brake Camshaft Location” section. The correct spring center spacing is the same as the transverse distance between hanger center lines as mounted to the sub-frame. The center line of the spring bolt hole must pass through the axle camber line. Clamp the seats in position and tack weld the front and rear (not on the axle camber line).

The spring contact surfaces of the axle seats must be parallel to each other within 1/2°.

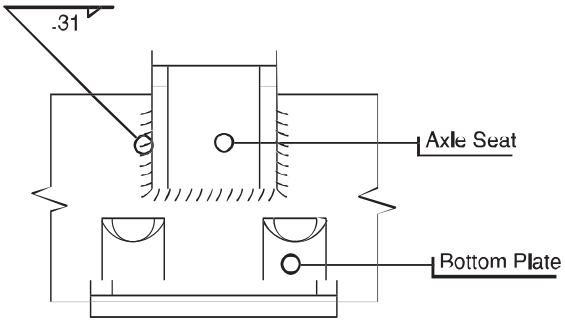


Weld the spring seats to the axle. Weld all around except for a 3" gap at top of axle.

NOTE: Do not weld 1 1/2" each side of the axle camber line.

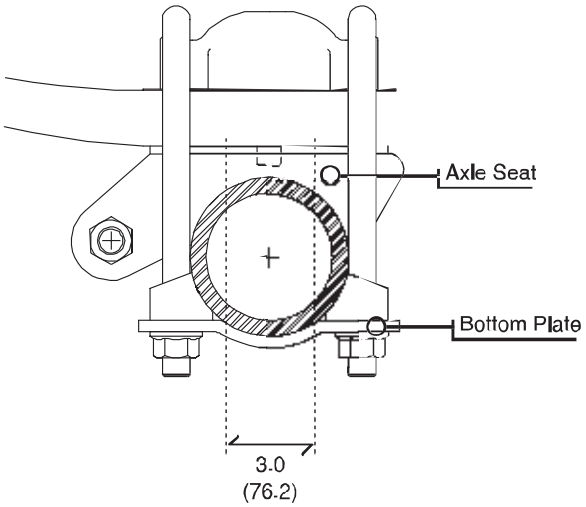
NOTE: Bottom plates need no welding.

Refer to axle manufacturer for additional welding procedures.



ELECTRODE SPECIFICATIONS

Four methods may be used to weld components per American Welding Society (AWS) specifications:



AWS ELECTRODE SPECIFICATION

1. Shielded Metal Arc (stick electrodes).....E7018
2. Gas Metal Arc (MIG, solid wire).....ER70S-X
3. Gas Tungsten Arc (TIG).....ER70S-X
4. Flux Cored Arc (tubular wire).....E70 T-X

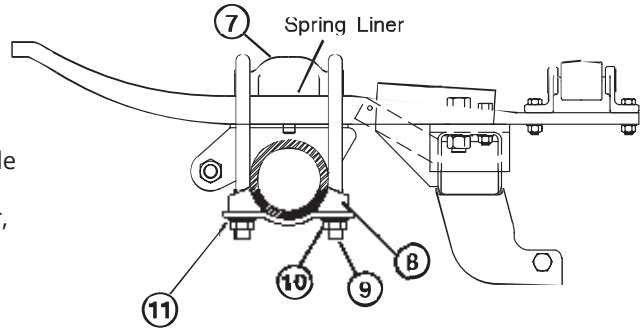
The weld strength must be at 70,000 psi. Higher or lower strengths are not acceptable. The best fusion and strengths will be obtained using the voltage, current and shielding medium recommeded by the electrode manufacturer. If stick method is used, electrodes must be clean, dry and stored per AWS section 4.5.2.

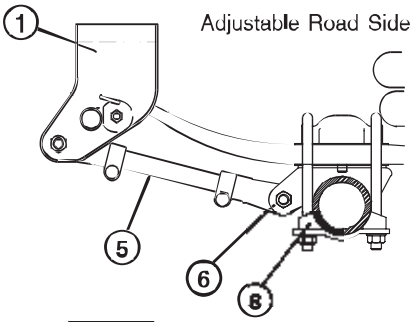
AXLE SEAT INSTALLATION

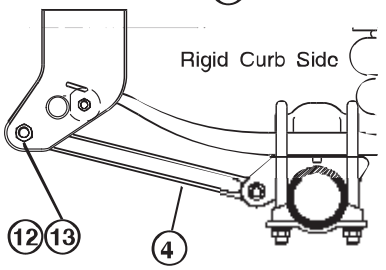
After installation of the axle seats, position the axle below the spring beams. Complete the axle installation by assembling the top plate (item 7), bottom plate (item 8), u-bolts (item 9), washers (item 11) and lock nuts (item 10). Install spring liner between top plate and spring beam while u0bolts are torqued to 300-325 ft lb (410 - 440 Nm). Istall the rigid torque arms (item 4) on the curb side of the slider, and adjustable torque arms (item 5) on the road side and torque 7/8" bolts to 400 - 425 ft bl (545 - 580 Nm).

Specific torque requirements are recommended.

Diagrams below refer to model RS1015

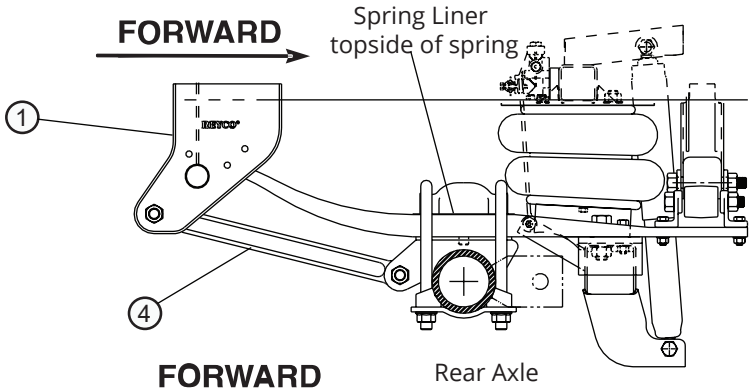




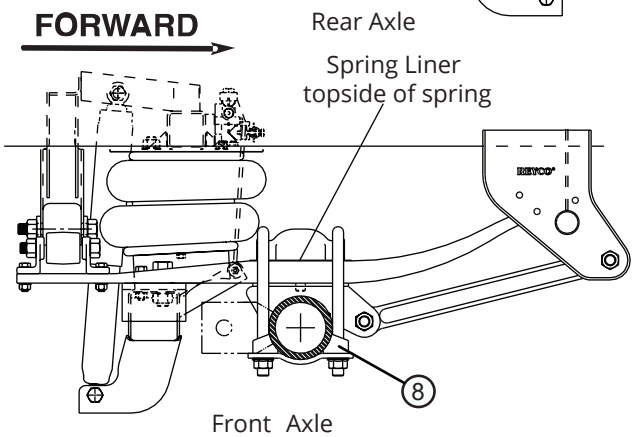


Diagrams below refer to model RS1035

Curb Side Rigid Torque Arm



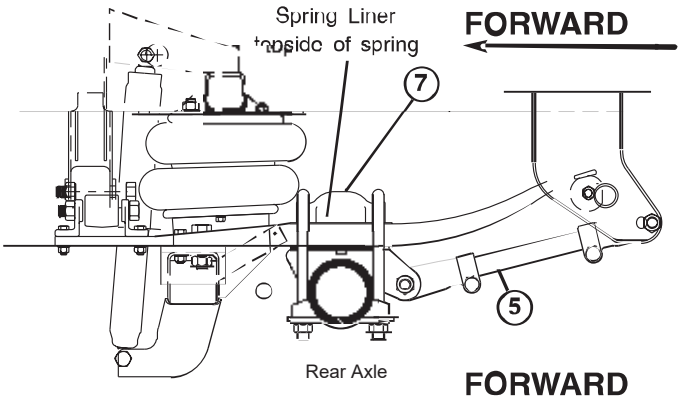
Rear Axle

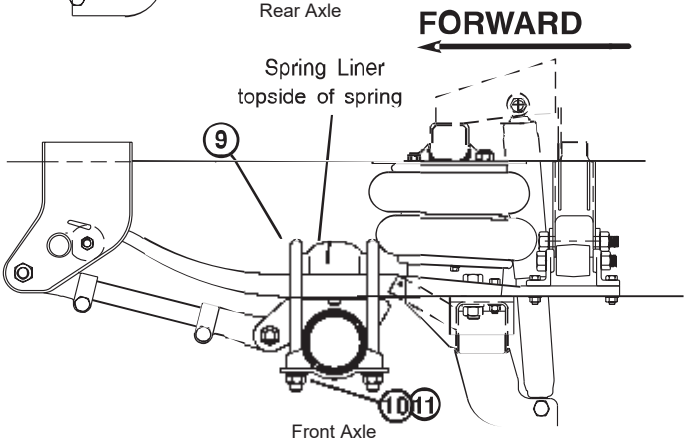


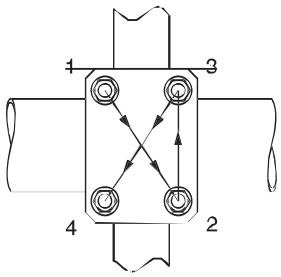
Front Axle

Diagrams below refer to Model RS1035
Road Side Adj. Torque Arms

AXLE SEAT INSTALLATION





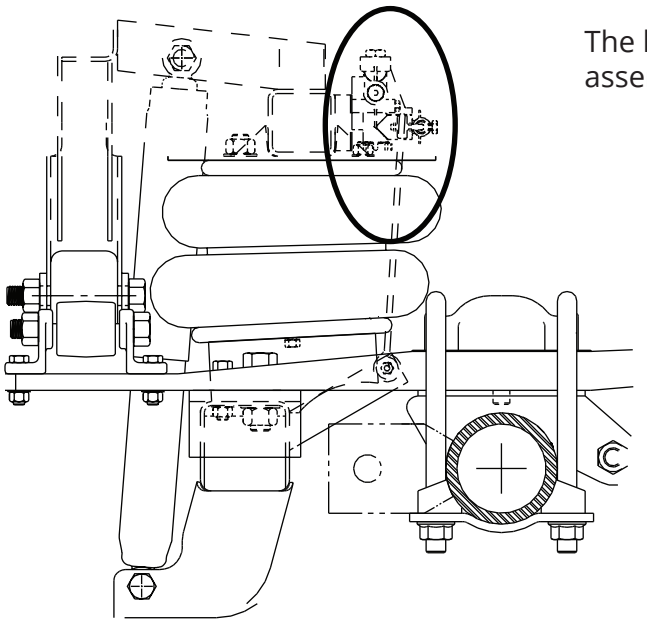


TORQUING SEQUENCE

NOTE: Bring torque up in 100 ft lb (135 NM) steps, in sequence shown, so that there is an even build-up on torque.

HEIGHT CONTROL VALVE

The height control vavle and linkage comes pre-assembled to the slider.

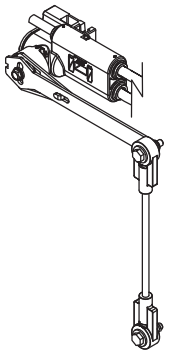


HADLEY HEIGHT CONTROL VALVE

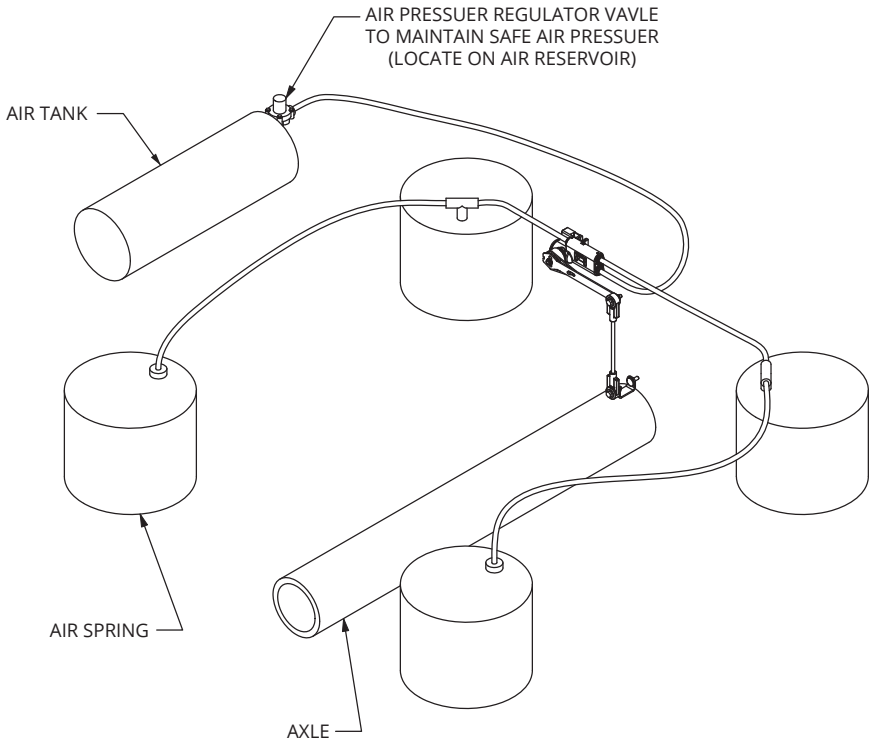
Hadley Height Control Valve 1500:
goes on the Rear Axle of 48" RS1015,
RS3015, RS1035, & RS3035 (standard)

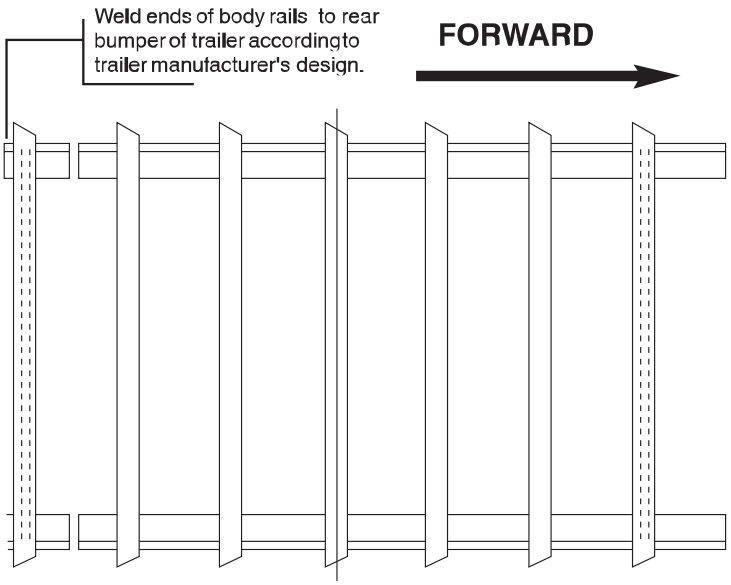
goes on the Front Axle of 42" RS1035 & RS3035
48" RS1035 & RS3035 (optional)

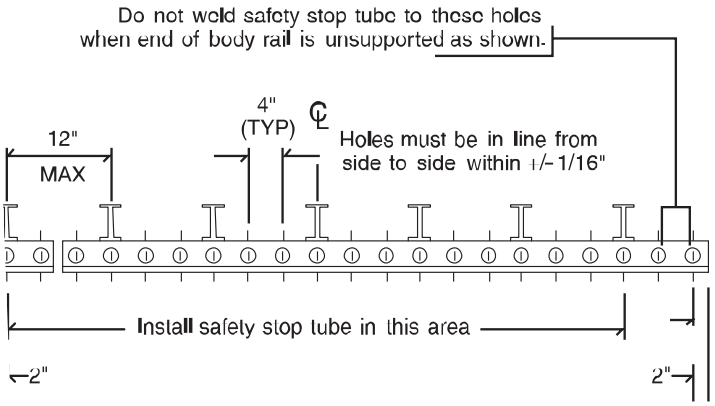
PLUMBING HEIGHT CONTROL VALVE
Install air tanks, brake valves, aire lines and other items as needed on the slider froma. Reyco Granning recommends 3/8" (9.5mm) OD tubing for all air spring lines plumbed as shown.

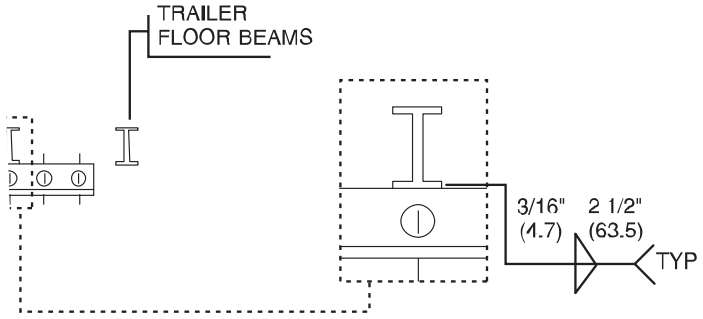


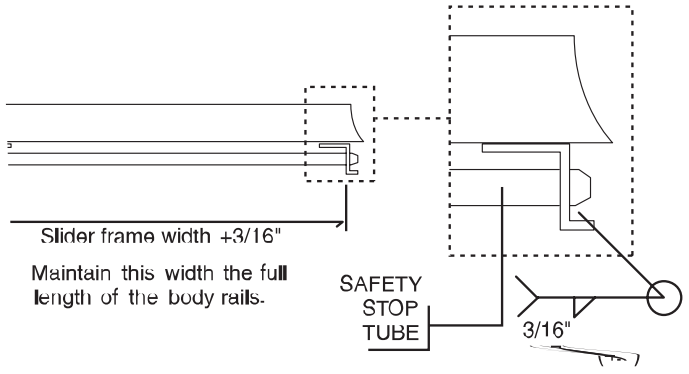
PLUMBING DIAGRAM
Air Supply with
Hadley 1500 Height Control Valve











Slider Body Rail Installation

Install slider body rails to trailer floor beams as shown above.

Install Safety stop tubes as shown.

Normally the railer manufacturer has a fixture to locate body rails on the traiker floor.

If fixture is not availavle, use slider assembly as temporary fixture.

If manual stop bar is used, locate behind slider through both rails.

CAUTION: Manual stop bar must be locked in place.

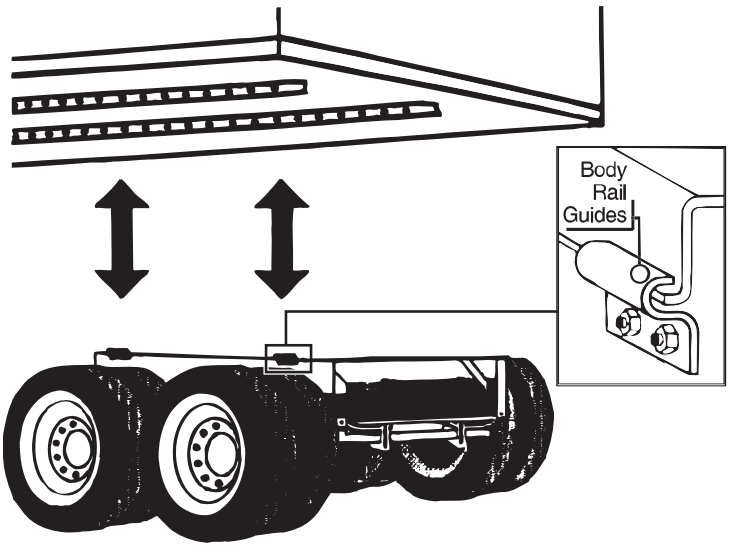
BODY RAILS:
Binkley compatible 6” centers - 1 5/8” hole - 1 3/8” pin

Hutch compatible - 4” centers - 1 13/16” hole - 1 5/8” pin

TTMA compaible - 4” centers - 1 5/8” hole - 1 3/8” pin

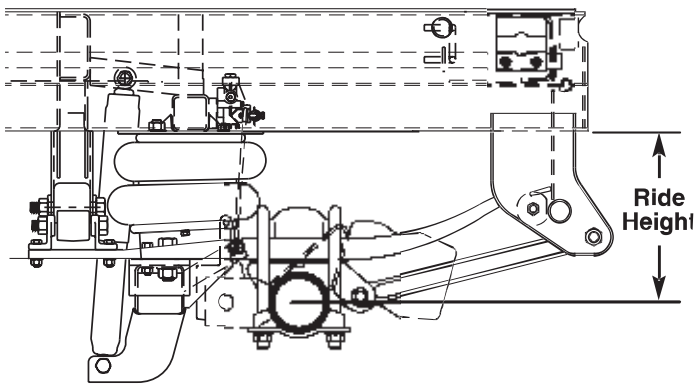
Slider Body Rail Installation

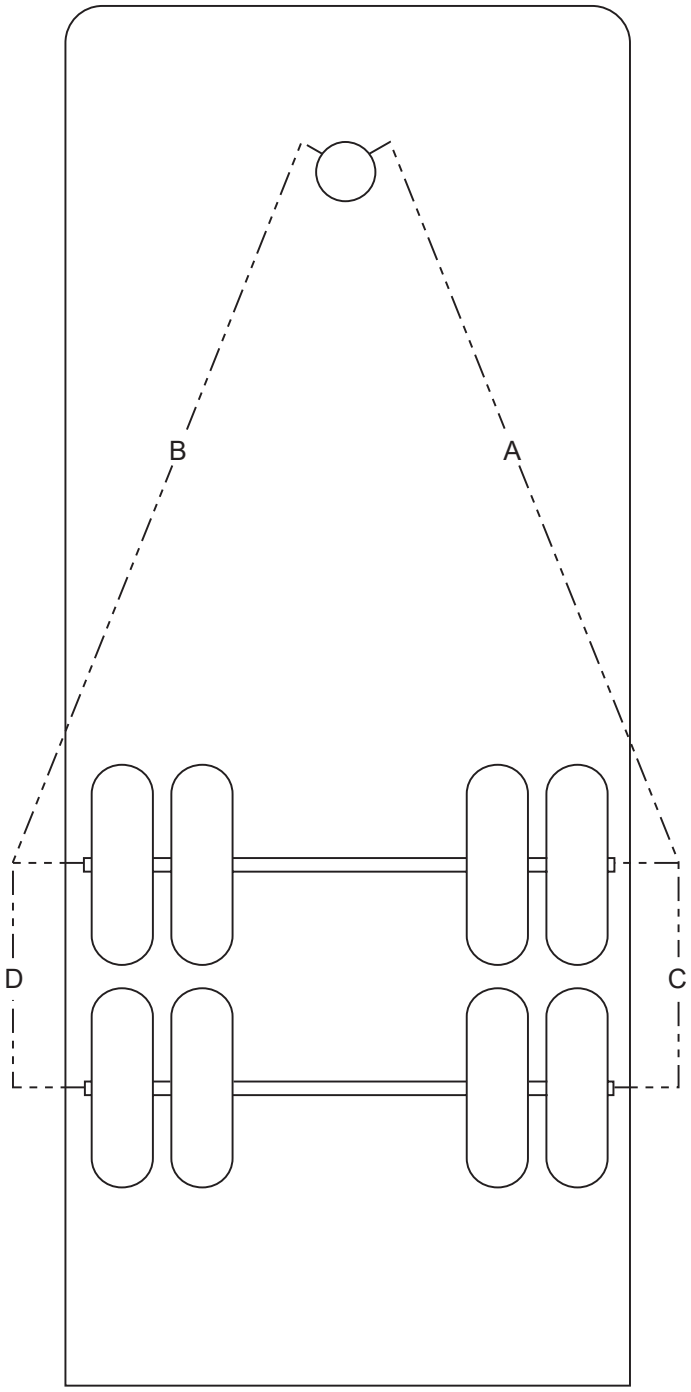
Retract the slider lock pins. Remove the body rail guides (A) temporarily from the slider and position the slider and axle assembly under the trailer. Lower the trailer into position on the slider aligning lock pins with body rail holes. Release the slider lock pins into the holes in the trailer body rails. Reinstall the body rail guides. Torque nuts to 50 ft lbs (70 Nm). Attach plumbing and electrical lines as needed.



Attach air supply to the trailer to release the spring brakes. The height control valve will then raise the suspension to the proper ride height.

Ride height, also referred to as mounting height, is defined as the dimension from the bottom frame of the slider to the centerline of the axle.





A = B +/- 1/8"
C = D +/- 1/16"

FINAL AND IN-SERVICE SUSPENSION ALIGNMENT INSTRUCTIONS

Align the front axle to the trailer king pin; and then, align the rear axle to the front axle by turning the adjustable torque arm screws. Be sure that all suspension parts are free to move during this procedure.

NOTE: Left side and right side axle measurements should be equal to within +/- 1/16". When the axles are aligned, tighten the adjustable torque arm clamp nuts to 125-150 ft lb

CAUTION: Specific torque requirements are recommended.

The following steps are recommended and necessary for proper suspension alignment.

1. Lock trailer brakes and pull trailer forward so that the slider lock pins touch against the rear part of the holes in the body rails.
2. Release the trailer brake system and pull the trailer forward an adequate distance while keeping the trailer in a straight line to free the suspension from binding The ground must be level and smooth.
3. Align the front axle with the king pin as shown in the sketch. For best results, the use of axle extensions and a "BAZOOKA" type king pin post, (or a suitable optical alignmert device) are recommended.

CAUTION: Specific torque requirements are recommended.

4. Align the rear axle with the front axle.
5. Tighten the adjustable torque arm clamp bolts to 125-150 ft lb

CAUTION: Specific torque requirements are recommended.

6. Move the slider forward and recheck the king pin alignment.
7. After an initial loaded run-in period of approximately 1,000-3,000 miles, the trailer alignment should be rechecked and corrected if necessary. Additionaly, all fasteners, especially u-bolts, should be retorqued.

TORQUE REQUIREMENTS

The model 86AR slider suspensions require, by design, a minimum of maintenance. However, suspensions in normal operation require perodic checks to assure continued trouble-free performance.

ft lb = Foot Pounds: Nm = Newton Meters

Torque Requirements (Verify with each Inspection)		
Tighten 3/4" u-bolt nuts	300-325 ft lb	(410-440 Nm)
Tighten 7/8" torque arm and track rod nuts	400-425 ft lb	(545-580 Nm)
Tighten 5/8" torque arm clamp nuts	125-150 ft lb	(170-205 Nm)
Tighten 1/2" grade 8, track rod bracket/air spring support bolts	100-120 ft lb	(135-165 Nm) if not Huck - bolted
Tighten 7/8" grade 8, air spring support bolts	300-325 ft lb	(410-440 Nm) if not Huck - bolted
Tighten 3/4" shock absorber nuts	175-200 ft lb	(240-275 Nm)
Tighten upper 1/2" air spring nuts	25-30 ft lb	(35-41 Nm)
Tighten lower 3/8" air spring nuts	15-20 ft lb	(20-28 Nm)
Tighten upper 3/4" air spring nuts	25-30 ft lb	(55-60 Nm)
Tighten 1/4" air valve and linkage nut	5 ft lb	(7 Nm)

All torque values are with clean dry fasteners and should only be verified with a quality wrench of known accuracy. Failure to follow these recommendations scoul void warranty. Failure to maintain the specified torque values and/or replace worn parts can cause component and/or system failure resultin in an accident with consequent injury or death.

Maintenance Instructions

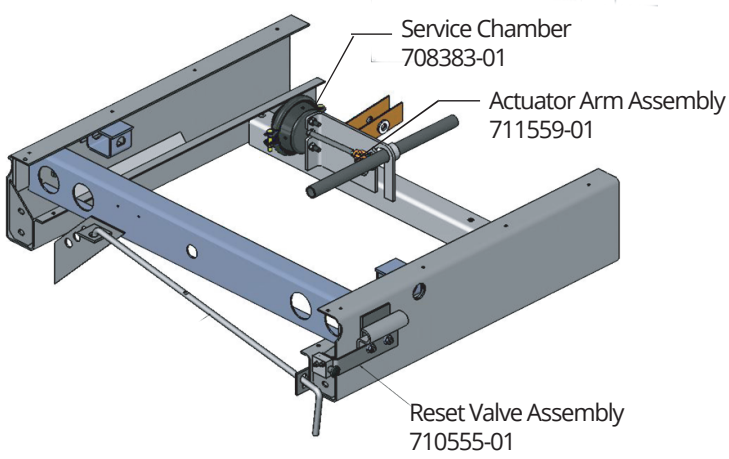
Maintenance Instructions 86AR Slider Series

The Model 86AR slider suspensions require, by design, a minimum of maintenance. However, suspensions in normal operation require periodic checks to assure continued trouble-free performance

RECOMMENDED MAINTENANCE SCHEDULE		
1. Pre-service inspection.		
2. First service inspection after 1000-3000 mailes (1600-4800 km).		
3. PM inspections concurrently with annual DOT “C” inspections.		
4. During replacement of any service parts.		
5. Upon discovery of any loose components.		
TORQUE REQUIREMENTS (Verify with each inspection.)		
1. Tighten 3/4” u-bolt nuts	300-325 ft lbs	(410-440 Nm)
2. Tighten 7/8” torque arm and track rod nuts	400-425 ft lbs	(545-580 Nm)
3. Tighten 5/8” torque arm clamp nuts	125-150 ft lbs	(170-205 Nm)
4. Tighten 1/2” grade 8 track rod bracket/air spring support bolts	100-125 ft lbs	(135-165 Nm) if not Huck®-bolted
5. Tighten 7/8” grade8 air spring support bolts	300-325 ft lbs	(410-440 Nm) if not Huck®-bolted
6. Tighten 3/4” shock absorber nuts	175-200 ft lbs	(240-275 Nm)
7. Tighten upper 1/2” air spring nuts	25-30 ft lbs	(35-41 Nm)
8. Tighten lower 3/8” air spring nuts	15-20 ft lbs	(20-28 Nm)
9. Tighten upper 3/4” air spring nuts	25-30 ft lbs	(55-60 Nm)
10. Tighten 1/4” air valve and linkage nut	5 ft lbs	(7 Nm)
VISUAL INSPECTION		
1. Loose or missing fasteners.		
2. Cracks in hangers or axle connection brackets		
3. Springs are centered in hangers and equalizers		
All torque values are with clean, dry fasteners and should only be verified with quality wrench of known accuracy. Failure to follow these recommendations could void warranty. Failure to maintain the specified torque values and/or to replace worn parts can cause component and/or system failure resulting in an accident with consequent injury or death.		

ft lbs = Foot - Pounds; Nm = Newton - Meters

AIR PIN RELEASE (APR)



MAINTENANCE KITS

The following item numbers will help when maintaining parts for the model 86AR suspensions.

TK21569 - Lassa Kit w/o shocks and springs - 48"

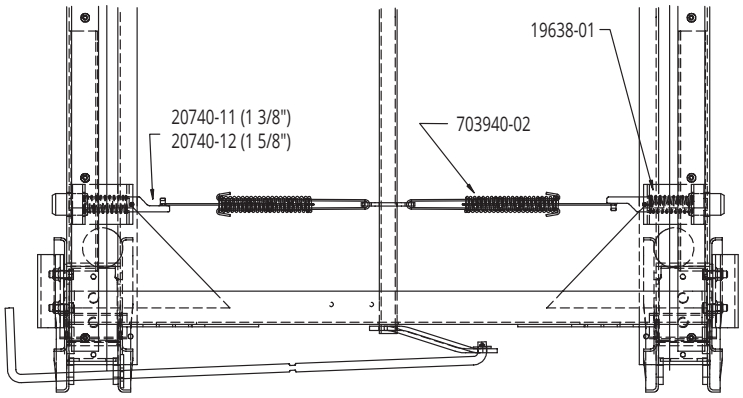
K702082 - Shocks Absorber Kit (one)

K702154 - Air Spring Kit (one)

K002201 - Torque Arm/ Track Rod Bushing Kit (one)

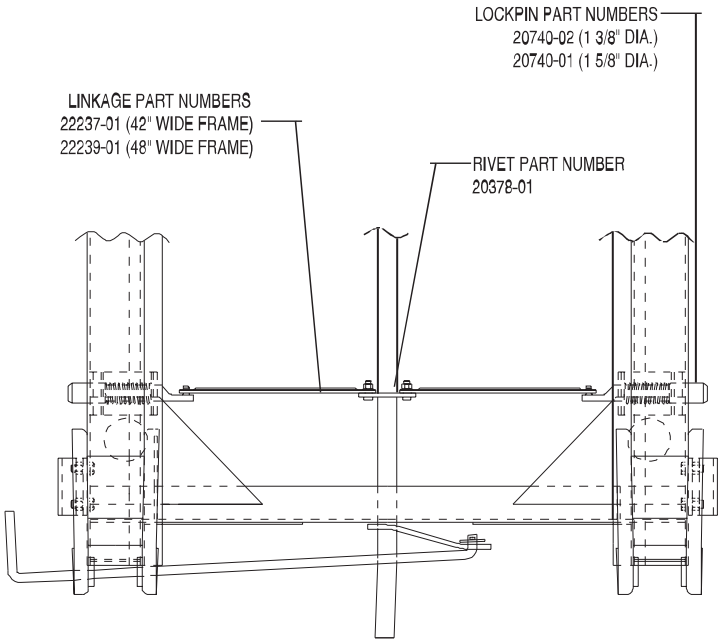
K002202 - Torque Arm / Track Rod Bushing Kit (for tandem)

K712123 - Lower Shock Mount Kit (one axle)



LOCKPINS WITH FLEXIPULL
Current Production

Used on sliders with production date after 2-1-03



LOCKPINS WITH "T" POST ATTACHMENT

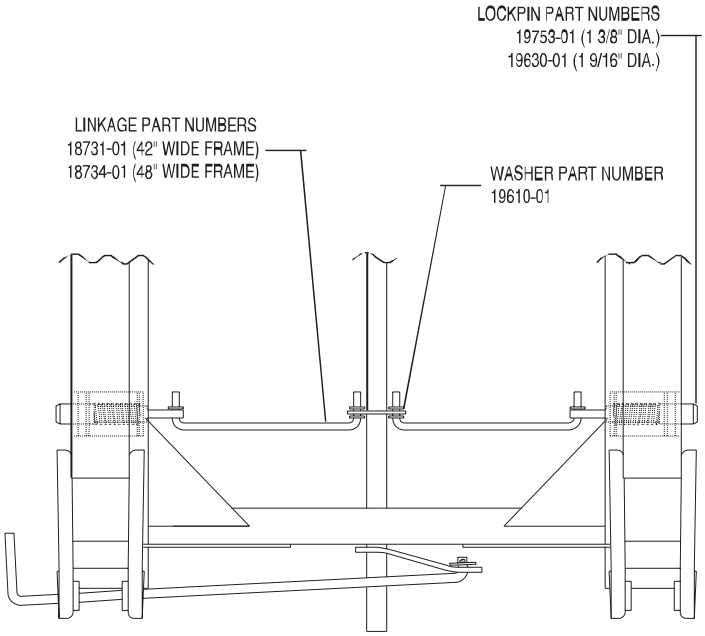
Used on sliders with production dates after 2-1-2000 but before 2-1-2003 production date

Flexi-Pull Retrofit- K704549

MAINTENANCE KITS

K702296 - (Binkley) 1 3/8" - 48" Spring/Pin/Linkage Kit

K702297 - (Hutch) 1 5/8" - 48" Spring/Pin/Linkage Kit



LOCKPINS WITH SLOT ATTACHMENT

Used on sliders with production date prior to 2-1-2000

Flexi-Pull Retrofit- K704550

MAINTENANCE KITS

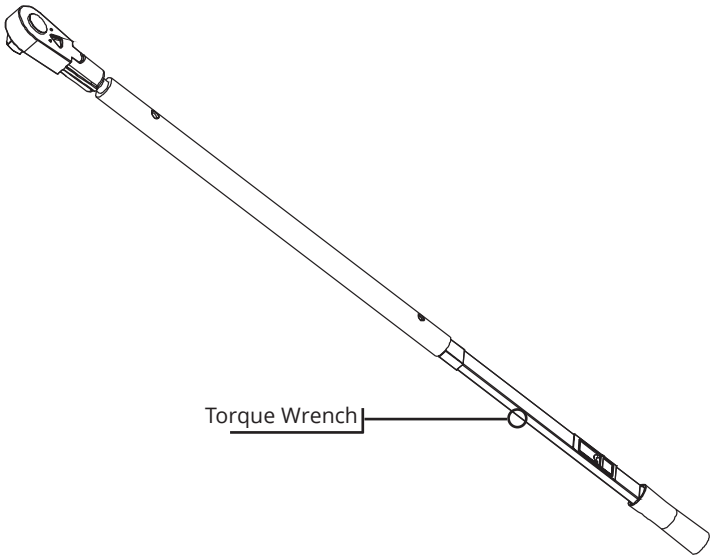
TK24113 - (Pin Insensitive) - 48" Spring/Linkage Kit

TK24115 - (Pin Insensitive) - 42" Spring/Linkage Kit

FASTENERS

Loose fasteners need immediate attention. Check components for wear and be sure holes are not worn or egg shaped. When replacing, be sure threads are clean, lubricated and not deformed. Consult the maintenance section for the correct torque specification and replace any fastener which is damaged or won't stay torqued. If bolts need to be replaced, be sure to use the same grade of fastener.

Specific torque requirements are recommended.



BUSHINGS

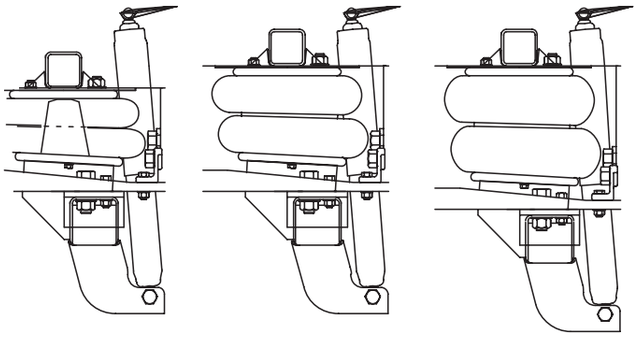
Inspect rubber bushings for large splits, tears and major wear. Rubber is attacked by sun, oils and greases. Replace any bushings which have the above damage.

Replace when split, worn or when tears are detected.

New Bushing

Trouble Shooting Guide

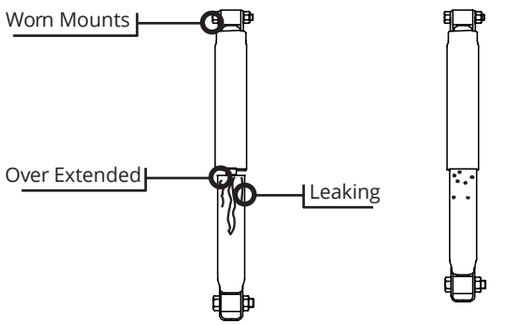
ROUGH RIDE
Check the air supply to the air springs. Visually check the air springs for the proper ride height. See picture at right.



Under Inflated Properly Inflated Over Inflated

AIR SPRINGS
The air springs are equipped with internal bump stops for safety. However, do not operate the loaded unit on the bump stops for any extended period of thime except to move the unit to a repair facility.

SHOCKS
Shocks normally fail due to over extension, check the mounting bolts to be sure no damage to the mounts has occurred. Shock replacememt must be done with shocks recommended by the suspension or shock manufacturer. Shocks which are leaking badly need to be replaced immediately. A small amount of seepage, however, is not necessarily a sign of a defective shock absorber.



Worn Shock Normal Shock

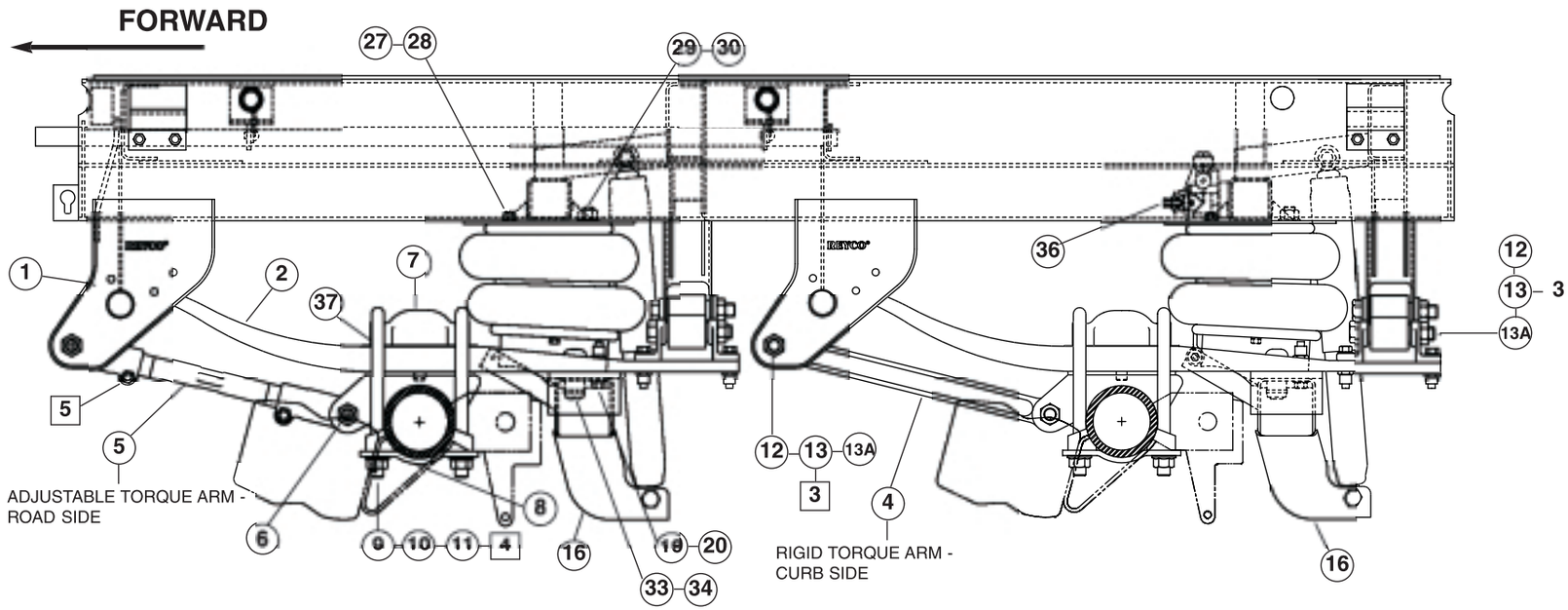
SUBJECT: Lower air spring support hindrance at slack adjuster grease zerks

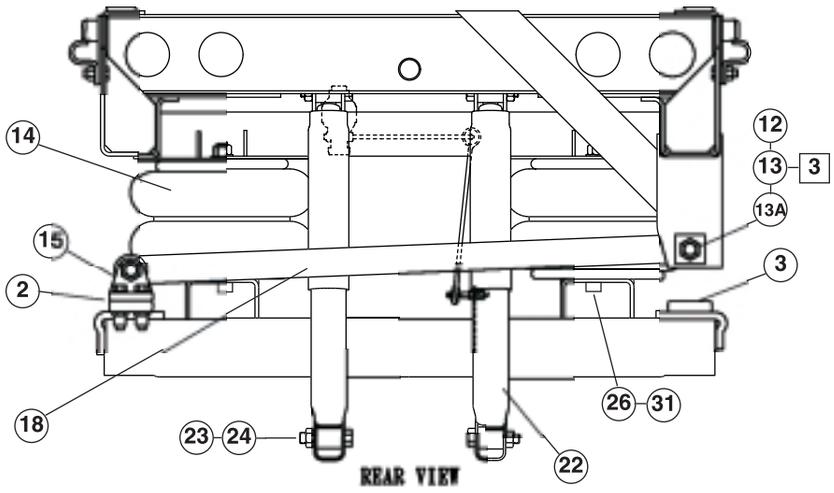
IMPORTANT NOTE: Because of continuous design changes within the transportation industry and the broad spectrum of slack adjuster suppliers, a hinderance (inability) to grease zerk fittings of certain slack adjusters can occur at the lower air spring support assembly (LASSA). While rare, this condition has occured randomly over the past few years; and, forecasting every possible combination that could result in hindrance to grease the slack adjuster is nearly impossible.

The probelm has been solved in all previous occurences by replacing the installed zerk fitting, with one of a different configuration (i.e. 45-degree or 90-degree bend). The outboard cam support bushing may also require a 90 degree fitting. Although this is a relitively minor problem when servicing a single trailer, it can be a nuisance to change the zerk fitting configurations to accomodate greasing four slack adjusters per trailer in a fleet of vehicles.

Reyco Granning advises client to be expecially aware of this condition when selecting brake components for installation with the 86AR suspension to prevent aggravation and save time, money and resources.

Model 86AR/RS1015 - Drawing 94134





1 Mounting height can be varied from 14” to 17” by changing axle seat.

2 Axle travel 3” (76.2 mm) up, 3.05” (77.5 mm) down.

[3] Tighten torque arm bolt nuts to 400-425 ft. lbs. (545-580 Nm).

[4] Tighten u-bolt nuts to 300-325 ft. lbs. (410-440 Nm).

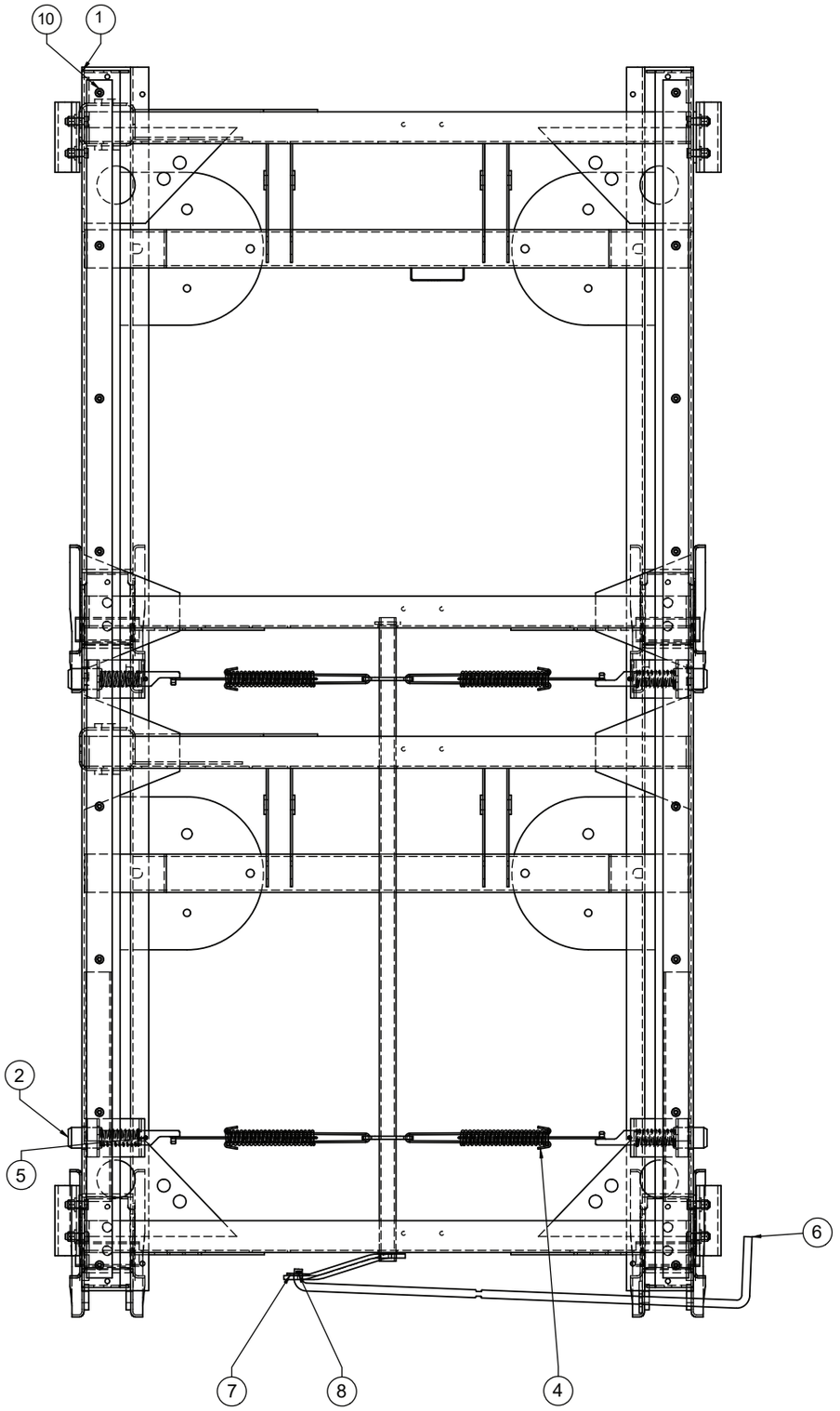
[5] Tighten torque arm clamp nuts to 125-150 ft. lbs. (170-205 Nm).

DRAWING NO. 94134 SLIDER SUSPENSION ASSEMBLY PARTS LIST
FOR NOMINAL 48" WIDE SLIDER

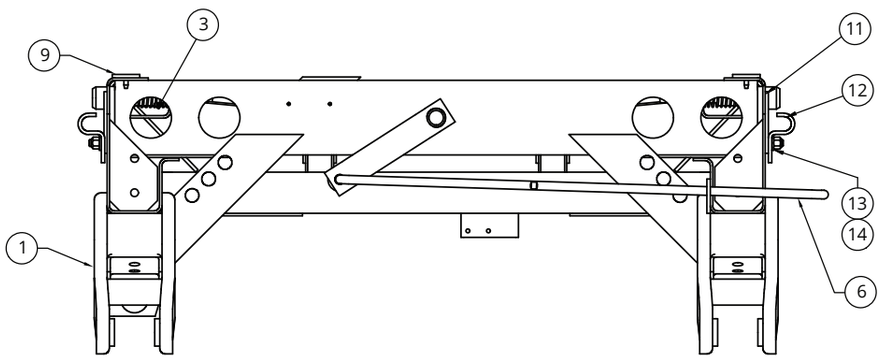
ITEM	PART NUMBER	DRAWING NO.	TANDEM	DESCRIPTION
1	*Variable			Slider/Hanger Assembly (See pg. M-9)
2	19913-01	92129	2	Left Beam
3	19914-01	92130	2	Right Beam
4	0075-20	0075-XX	2	Rigid TorqueArm
5	1035-20	1035-XX	2	AdjustableTorqueArm
6	*Variable	0636-XX	4	Axle Seat (See pg. M-9)
7	23334-01	97144	4	Top Plate
8	0538-00	0538-00	4	BottomPlate 5" round
9	*Variable	92047	8	U-bolt(See pg. M-9)
10	20687-02	93280	16	3/4" (19.0 mm)Nut
11	20852-01	701785	16	3/4"(19.0 mm)Washer
12	0001-08	0001-XX	12	7/8"(22.2 mm) Bolt, TorqueArm
13	14345-01	93281	12	7/8"(22.2 mm) Locknut
13A	T7292	701785	12	7/8" (22.2 mm)Washer
14	20018-01	79167 #2	4	Air Spring
15	21491-01	94230	4	Track Rod Bracket
16	19789-02	92052	2	Air Spring Support Assembly
18	10910-01	57179	2	Track Rod
19	20560-20	93177	12	1/2"(12.7 mm) Huck® Bolt (See pg. M-9)
20	20561-01	93177	12	1/2"(12.7 mm) Huck® Collar (See pg. M-9)
21	—	—	—	N/A Not Shown (See pg. M-9)
22	18165-01	79168 #1	4	Shock Absorbers
23	21496-01	62158 #4	8	Shock AbsorberBolt
24	14344-01	93281	8	Shock AbsorberNut
25	20029-01	93280	8	3/8"(9.5 mm) Nut
26	1292001	93280	4	1/2"(12.7 mm) Nut
27	T1705	62159	4	1/2"(12.7 mm) Lockwasher
28	0821101	93280	4	3/4"(19.0 mm) Nut
29	T3164	62159	4	3/4"(19.0 mm) Lockwasher
30	T-1859	62159	8	3/8"(9.5 mm) Lockwasher
31	21194-01	94082	4	7/8"(22.2 mm) HUCK® Bolt (See pg. M-9)
32	21195-01	94082	4	7/8"(22.2 mm) Huck® Collar (See pg. M-9)
33	—	—	—	N/A Not Shown (See pg. M-9)
34	706234-01	706234	1	Height Control Valve & Linkage (Hadley® 1500)
35	16810-00	94031	4	Spring Liners
REF	712222-01	712222	1	Pressure ProtectionValve & Filter

*NOTE: Variables are listed on the Table of Options on page M-9.

Model 86AR/RS1015 - Drawing 92166



ITEM	PART NO.	DWG NO.	DESCRIPTION	QTY.
1	19971-48	92165	SUBFRAME ASSEMBLY	1
2	20740-11/12	93328	PIN SLIDER - TEE LOCK	4
3	19638-01	91188	COMPRESSION SPRING-SLIDER	4
4	703940-02	703940	DRAWBAR SPRING ASSEMBLY	4
5	24453-01	98486	COILED SPRING PIN	4
6	21225-48	94096	PULL HANDLE	1
7	16457-01	701785	WASHER (5/8 ID)	1
8	16455-01	87185	0.1875 COTTER PIN	1
9	19620-01	91177	BEARING STRIP, SLIDER	2
10	1961901	91176	5/16-18 UNC SELF TAPPING SCREW	16
11	20957-02	93439	SPACER, BODY RAIL GUIDE	4
12	19766-01	92038	BODY RAIL GUIDE	4
13	10016-01	701785	WASHER (1/2 ID)	8
14	0002-05	93281	LOCK NUT (1/2-20 UNF-2B) CLASS C	8



Model 86AR/RS1015 - Bill of Material

86AR SLIDER TABLE - 49" AXLE SPACING (SEE PG. M-5, M-6)

FW	(1) SLIDER (WITH HANGERS)	(16) LASSA	(18) TRACK ROD-RIGID	SPRING BEAM/LASSA
48"	19786-48	19789-02	10910-01	22828-44
42"	19786-42	19788-02	20012-01	22828-38

86AR AXLE SEAT TABLE - 5" ROUND AXLE (SEE PG. M-5, M-6)

MOUNTING HEIGHT	(6) AXLE SEAT	(8) BOTTOM PLATE	(9) U-BOLT	U-BOLT LENGTH
14"	0636-01	0538-00	19780110	11"
14 1/2"	0636-015	0538-00	19780115	11 1/2"
15"	0636-02	0538-00	19780120	12"
15 1/2"	0636-025	0538-00	19780125	12 1/2"
16"	0636-03	0538-00	19780130	13"
16 1/2"	0636-035	0538-00	19780135	13 1/2"
17"	0636-04	0538-00	19780140	14"

86AR SLIDER TABLE (See PG. M-7, M-8)

ITEM 4 SLIDER ASS'Y	SUBFRAME W/ HANGERS	AXLE SPACING	FRAME WIDTH	BODY RAIL GUIDE SPACER	FOR BODY RAIL TYPE LOCK PIN DIA.
20989-48 (*42)	19786-48 (*42)	49"	48" (*42")	None	1 3/8"
21010-48 (*42)	20538-48 (*42)	49"	48 3/8" (*42 3/8")	20957-01	1 3/8"
21266-48 (*42)	19972-48 (*42)	49"	48 7/16" (*427/16")	20957-02	1 5/8"

* NOTE: replace 48 with 42 for 42" Frame
Body Rail Type - Lock Pin Diameter:
1 5/8" Hutch® – 1 3/8" Binkley®

REPLACEMENT MATERIAL AND HARDWARE - BOLTED DESIGN: (SEE PG. M-5, M-6)

ITEM	PART NO	QTY	DESCRIPTION
19	17353-01	12	1/2" (12.7 mm) Grade 8 Bolt
20	0002-05	12	1/2" (12.7 mm) Locknut
21	0003-07	12	1/2" (12.7 mm) Washer
33	18842-01	4	7/8" (22.2 mm) - 14 x 3" (76.2 mm) Bolt
34	14345-01	4	7/8" (22.2 mm) - 14 Locknut
35	T7292	8	7/8" (22.2 mm) Washer

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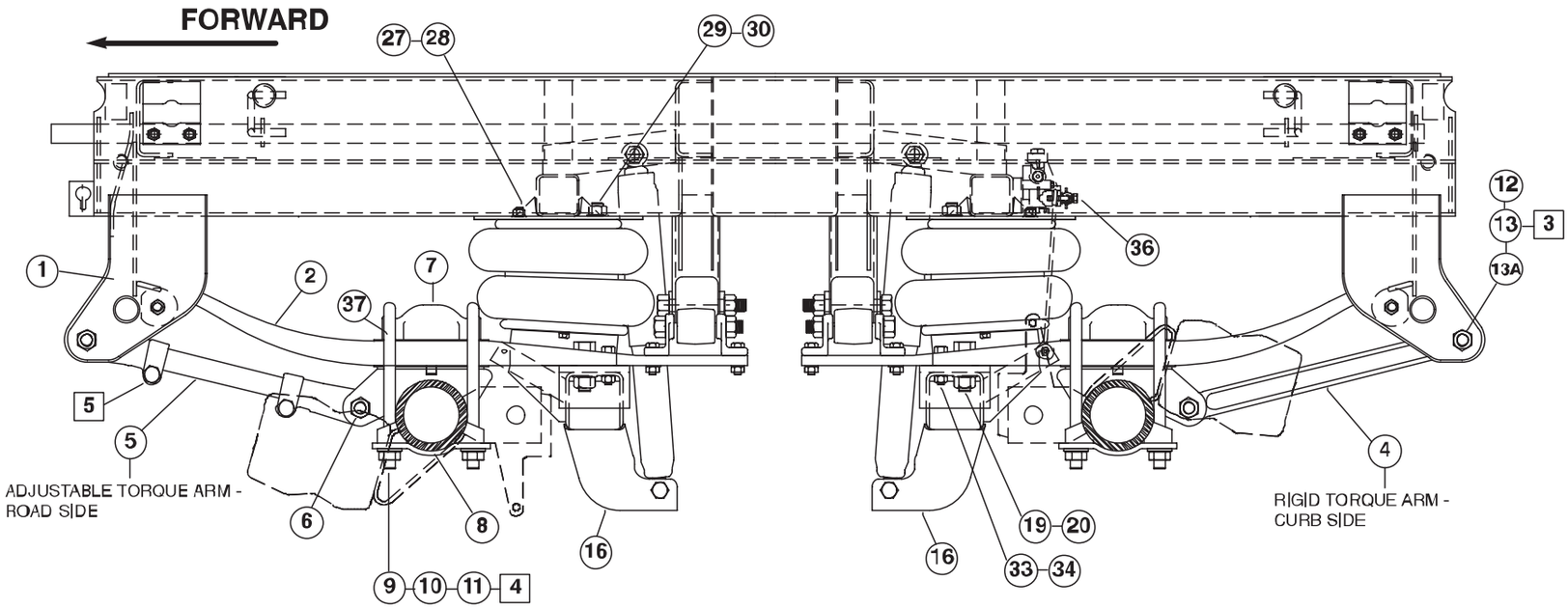
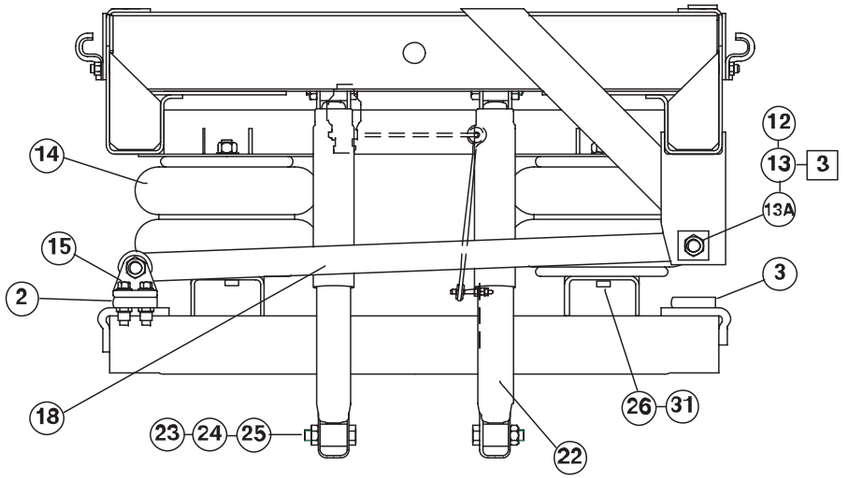
Model 86AR/RS1035 - Drawing 95026





1 **Mounting height can be varied from 14" to 17" by changing axle seat.**

2 **Axle travel 3" (76.2 mm) up, 3.05" (77.5 mm) down.**

[3] **Tighten torque arm bolt nuts to 400-425 ft. lbs. (545-580 Nm).**

[4] **Tighten u-bolt nuts to 300-325 ft. lbs. (410-440 Nm).**

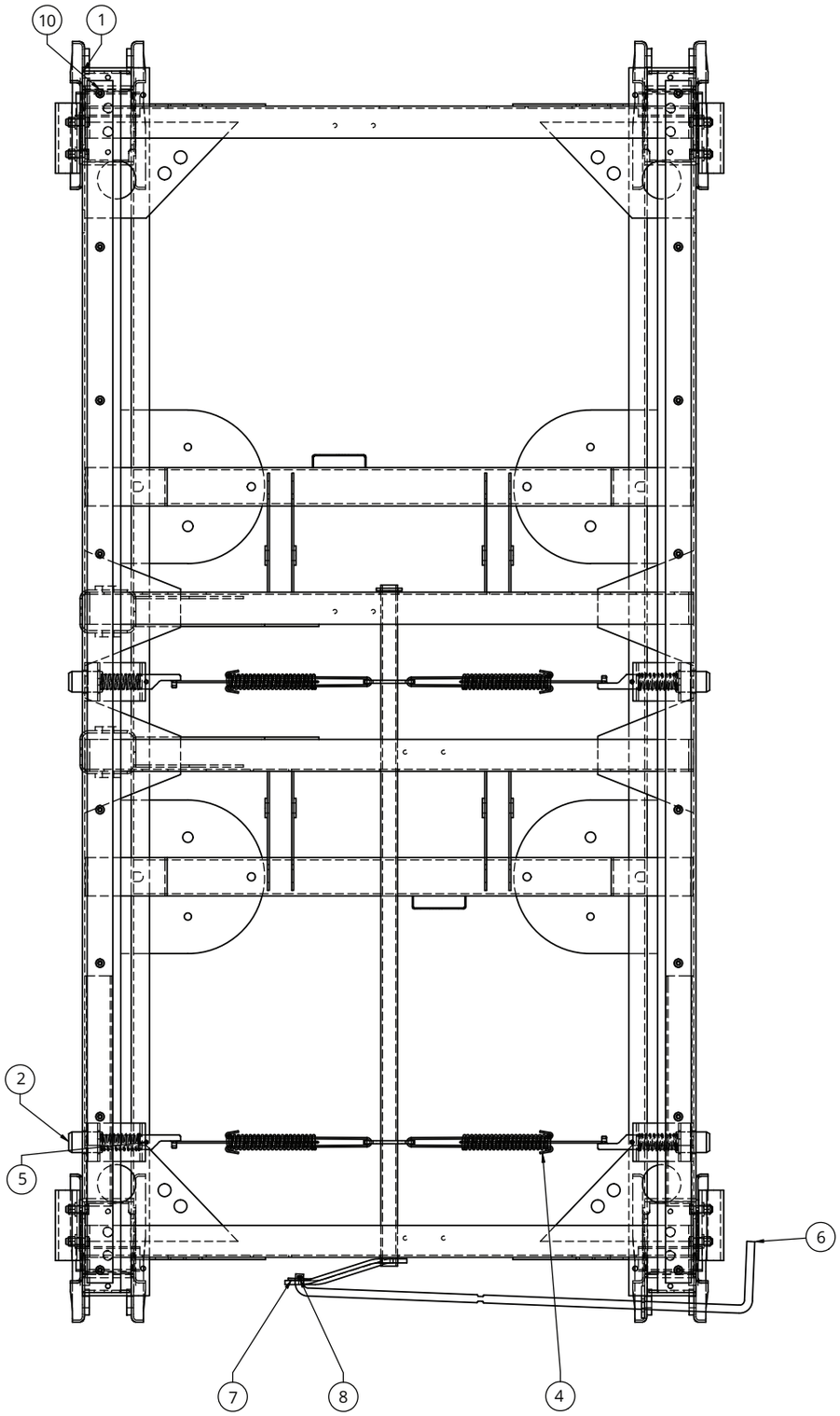
[5] **Tighten torque arm clamp nuts to 125-150 ft. lbs. (170-205 Nm).**

DRAWING NO. 95026 SLIDER SUSPENSION ASSEMBLY PARTS LIST FOR NOMINAL 48" WIDE SLIDER

ITEM	PART NUMBER	DRAWING NO.	TANDEM	DESCRIPTION
1	*Variable			Slider/Hanger Assembly (See pg. M-15)
2	19913-01	92129	2	Left Beam
3	19914-01	92130	2	Right Beam
4	0075-20	0075-XX	2	Rigid Torque Arm
5	1035-20	1035-XX	2	Adjustable Torque Arm
6	*Variable	0636-XX	4	Axle Seat (See pg. M-15)
7	23334-01	97144	4	Top Plate
8	0538-00	0538-00	4	Bottom Plate 5" round
9	*Variable	92047	8	U-bolt (See pg. M-15)
10	20687-02	93280	16	3/4" (19.0 mm) Nut
11	20852-01	701785	16	3/4" (19.0 mm) Washer
12	0001-08	0001-XX	12	7/8" (22.2 mm) Bolt, Torque Arm
13	14345-01	93281	12	7/8" (22.2 mm) Locknut
13A	T7292	701785	12	7/8" (22.2 mm) Washer
14	20018-01	79167 #2	4	Air Spring
15	21491-01	94230	4	Track Rod Bracket
16	19789-02	92052	2	Air Spring Support Assembly
18	10910-01	57179	2	Track Rod
19	20560-20	93177	12	1/2" (12.7 mm) Huck® Bolt (See pg. M-15)
20	20561-01	93177	12	1/2" (12.7 mm) Huck® Collar (See pg. M-15)
21	—	—	—	N/A Not Shown (See pg. M-15)
22	18165-01	79168 #1	4	Shock Absorbers
23	21496-01	62158 #4	8	Shock Absorber Bolt
24	14344-01	93281	8	Shock Absorber Nut
25	20029-01	93280	8	3/8" (9.5 mm) Nut
26	1292001	93280	4	1/2" (12.7 mm) Nut
27	T1705	62159	4	1/2" (12.7 mm) Lockwasher
28	0821101	93280	4	3/4" (19.0 mm) Nut
29	T3164	62159	4	3/4" (19.0 mm) Lockwasher
30	T-1859	62159	8	3/8" (9.5 mm) Lockwasher
31	21194-01	94082	4	7/8" (22.2 mm) HUCK® Bolt (See pg. M-15)
32	21195-01	94082	4	7/8" (22.2 mm) Huck® Collar (See pg. M-15)
33	—	—	—	N/A Not Shown (See pg. M-15)
34	706234-01	706234	1	Height Control Valve & Linkage (Hadley® 1500)
35	16810-00	94031	4	Spring Liners
REF	712222-01	712222	1	Pressure Protection Valve & Filter

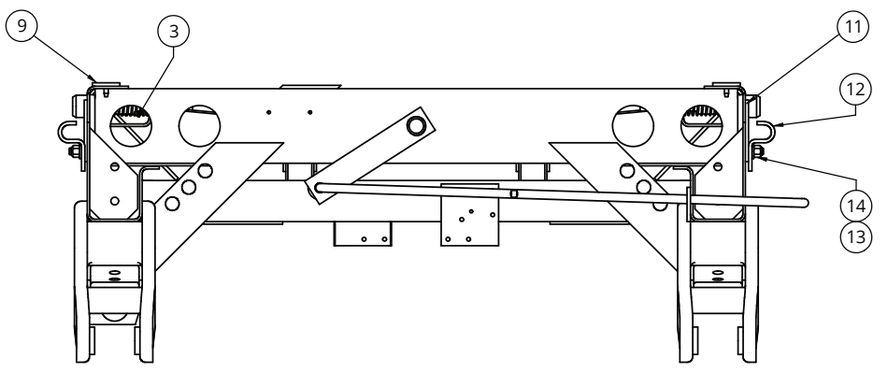
*NOTE: Variables are listed on the Table of Options on page M-15

Model 86AR/RS3015 - Drawing 94277



Model 86AR/RS1035 - Bill of Material

ITEM	PART NO.	DWG_NO	DESCRIPTION	QTY.
1	21644-48	94278	SUBFRAME ASSEMBLY	1
2	20740-11/12	93328	PIN SLIDER - TEE LOCK	4
3	19638-01	91188	COMPRESSION SPRING-SLIDER	4
4	703940-02	703940	DRAWBAR SPRING ASSEMBLY	4
5	24453-01	98486	COILED SPRING PIN	4
6	21225-48	94096	PULL HANDLE	1
7	16457-01	701785	WASHER (5/8 ID)	1
8	16455-01	87185	0.1875 COTTER PIN	1
9	19620-01	91177	BEARING STRIP, SLIDER	2
10	1961901	91176	5/16-18 UNC SELF TAPPING SCREW	16
11	20957-02	93439	SPACER, BODY RAIL GUIDE	4
1 2	19766-01	92038	BODY RAIL GUIDE	4
1 3	10016-01	701785	WASHER (1/2 ID)	8
14	0002-05	93281	LOCK NUT (1/2-20UNF-2B) CLASS C	8



Model 86AR/RS1035 Table of Options

86AR SLIDER TABLE - 48.4" AXLE SPACING (SEE PG. M-11, M-12)

FW	(1) SLIDER (WITH HANGERS)	(16) LASSA	(18) TRACK ROD-RIGID	SPG BEAM/LASSA-FR.	SPG BEAM/LASSA-RR.
48"	21580-48	19789-02	10910-01	22828-44	25185-44
42"	21580-42	19788-02	20012-01	22828-38	25185-38

86AR AXLE SEAT TABLE - 5" ROUND AXLE (SEE PG.M-11, M-12)

MOUNTING HEIGHT	(6) AXLE SEAT	(8) BOTTOM PLATE	(9) U-BOLT	U-BOLT LENGTH
14"	0636-01	0538-00	19780110	11"
14 1/2"	0636-015	0538-00	19780115	11 1/2"
15"	0636-02	0538-00	19780120	12"
15 1/2"	0636-025	0538-00	19780125	12 1/2"
16"	0636-03	0538-00	19780130	13"
16 1/2"	0636-035	0538-00	19780135	13 1/2"
17"	0636-04	0538-00	19780140	14"

86AR SLIDER TABLE (SEE PG. M-13, M-14)

ITEM 4 SLIDER ASS'Y	SUBFRAME W/ HANGERS	AXLE SPACING	FRAME WIDTH	BODY RAIL GUIDE SPACER	FOR BODY RAIL TYPE LOCK PIN DIA.
21581-48 (*42)	21580-48 (*42)	49"	48" (*42")	None	1 3/8"
21642-48 (*42)	21643-48 (*42)	49"	48 7/16" (*42 7/16")	20957-02	1 5/8"
21927-48 (*42)	21928-48 (*42)	49"	48 3/8" (*42 3/8")	20957-01	1 3/8"

* NOTE: replace 48 with 42 for 42" Frame
Body Rail Type - Lock Pin Diameter:
1 5/8" Hutch® – 1 3/8" Binkley®

REPLACEMENT MATERIAL AND HARDWARE - BOLTED DESIGN: (SEE PG. M-11, M-12)

ITEM	PART NO	QTY	DESCRIPTION
19	17353-01	12	1/2" (12.7 mm) Grade 8 Bolt
20	0002-05	12	1/2" (12.7 mm) Locknut
21	0003-07	12	1/2" (12.7 mm) Washer
33	18842-01	4	7/8" (22.2 mm) - 14 x 3" (76.2 mm) Bolt
34	14345-01	4	7/8" (22.2 mm) - 14 Locknut
35	T7292	8	7/8" (22.2 mm) Washer

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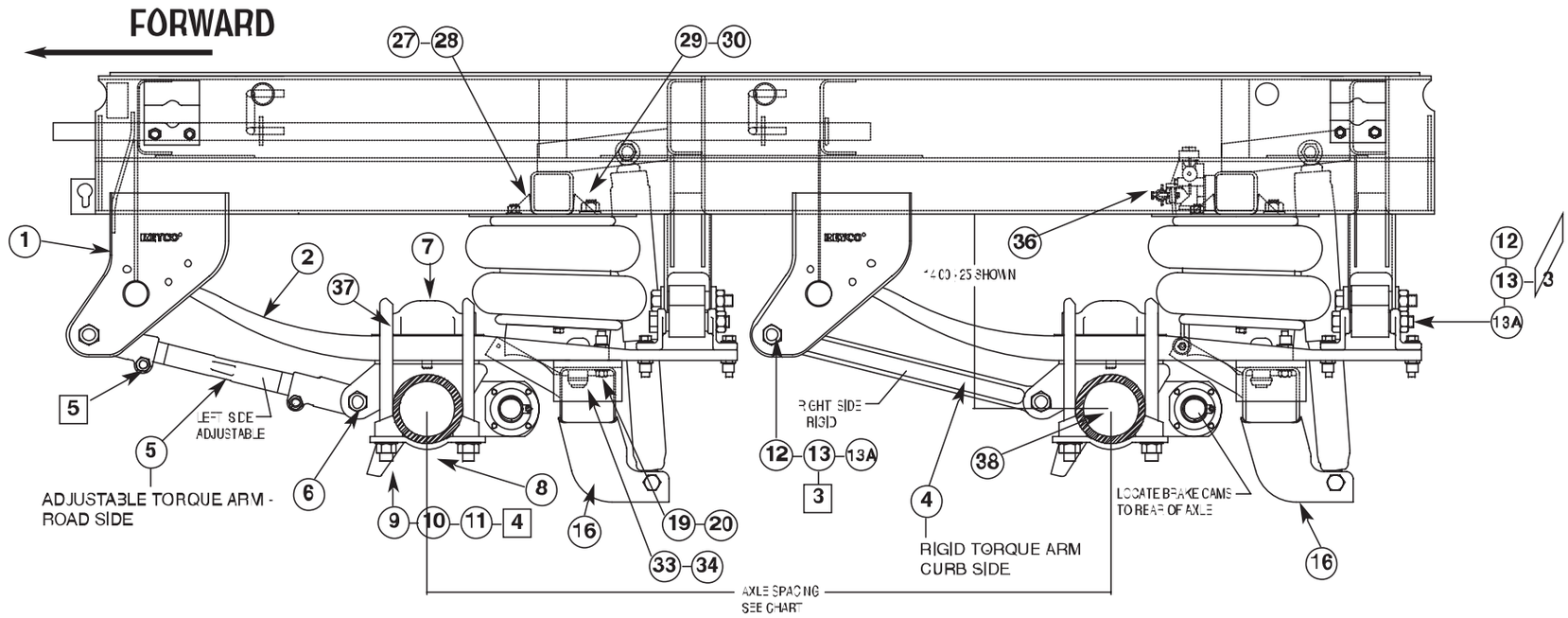
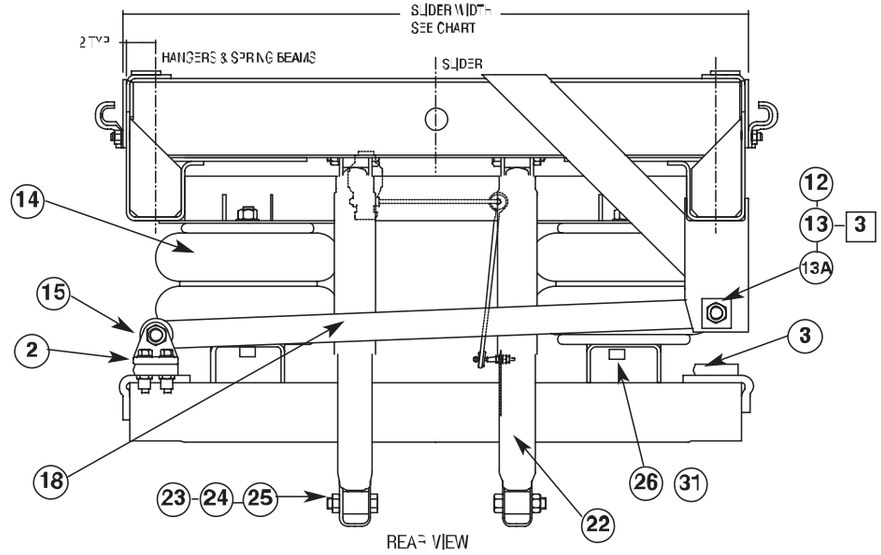
Model 86AR/RS3015 - Drawing 97039





1 **Mounting height can be varied from 14" to 17" by changing axle seat.**

2 **Axle travel 3" (76.2 mm) up, 3.05" (77.5 mm) down.**

[3] **Tighten torque arm bolt nuts to 400-425 ft. lbs. (545-610 Nm).**

[4] **Tighten u-bolt nuts to 300-325 ft. lbs. (410-440 Nm).**

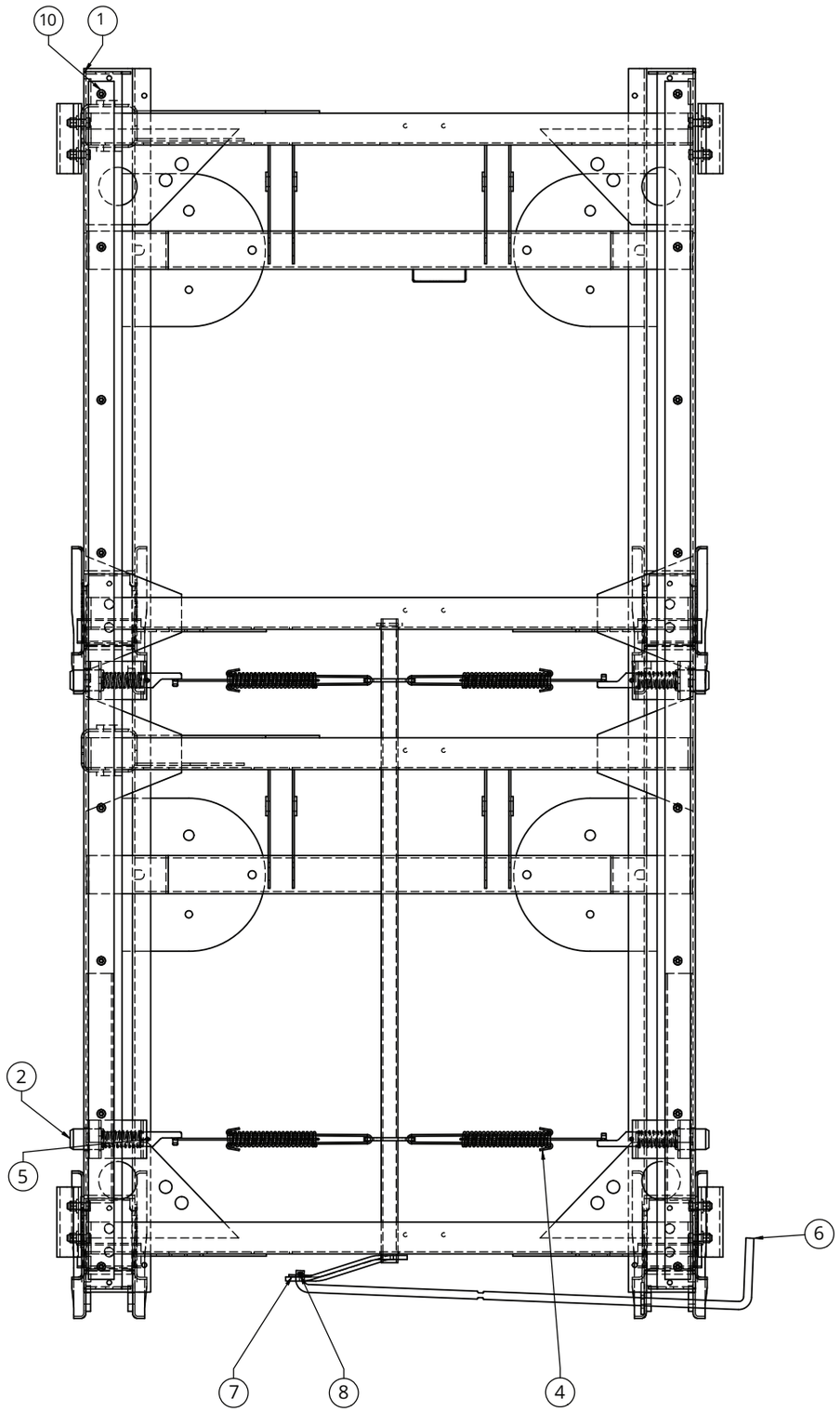
[5] **Tighten to 125-150 ft. lbs. (170-205 Nm) after aligning suspension.**

DRAWING NO. 97039 SLIDER SUSPENSION ASSEMBLY PARTS LIST FOR NOMINAL 48" WIDE SLIDER

ITEM	PART NUMBER	DRAWING NO.	TANDEM	DESCRIPTION
1	*Variable			Slider/Hanger Assembly (See pg. M-21)
2	19913-01	92129	2	Left Beam
3	19914-01	92130	2	Right Beam
4	0075-20	0075-XX	2	Rigid Torque Arm
5	1035-20	1035-XX	2	Adjustable Torque Arm
6	*Variable	0636-XX	4	Axle Seat (See pg. M-21)
7	23334-01	97144	4	Top Plate
8	0538-00	0538-00	4	Bottom Plate 5" round (See pg. M-21)
9	*Variable	92047	8	U-bolt (See pg. M-21)
10	20687-02	93280	16	3/4" (19.0 mm) Nut
11	20852-01	701785	16	3/4" (19.0 mm) Washer
12	0001-08	0001-XX	12	7/8" (22.2 mm) Bolt, Torque Arm
13	14345-01	93281	12	7/8" (22.2 mm) Locknut
13A	T7292	701785	12	7/8" (22.2 mm) Washer
14	20018-01	79167	4	Air Spring
15	21491-01	94230	4	Track Rod Bracket
16	19789-02	92052	2	Air Spring Support Assembly
18	10910-01	87109	2	Track Rod
19	20560-20	93177	12	1/2" (12.7 mm) Huck® Bolt (See pg. M-21)
20	20561-01	93177	12	1/2" (12.7 mm) Huck® Collar (See pg. M-21)
21	—	—	—	N/A (See pg. M-21)
22	18165-01	79168	4	Shock Absorbers
23	21496-01	62158 #4	8	Shock Absorber Bolt
24	14344-01	82082	8	Shock Absorber Nut
25	20029-01	62154	8	3/8" (9.5 mm) Nut
26	1292001	79191	4	1/2" (12.7 mm) Nut
27	T1705	62159	4	1/2" (12.7 mm) Lockwasher
28	0821101	62154	4	3/4" (19.0 mm) Nut
29	T3164	62159	4	3/4" (19.0 mm) Lockwasher
30	T-1859	62159	8	3/8" (9.5 mm) Lockwasher
31	21194-01	94082	4	7/8" (22.2 mm) HUCK® Bolt (See pg. M-21)
32	21195-01	94082	4	7/8" (22.2 mm) Huck® Collar (See pg. M-21)
33	—	—	—	N/A (See pg. M-21)
34	706234-01	706234	1	Height Control Valve & Linkage (Hadley® 1500)
35	16810-00	94031	4	Spring Liners
36	711163-XX	711163	2	Axle
REF	712222-01	712222	1	Pressure Protection Valve & Filter

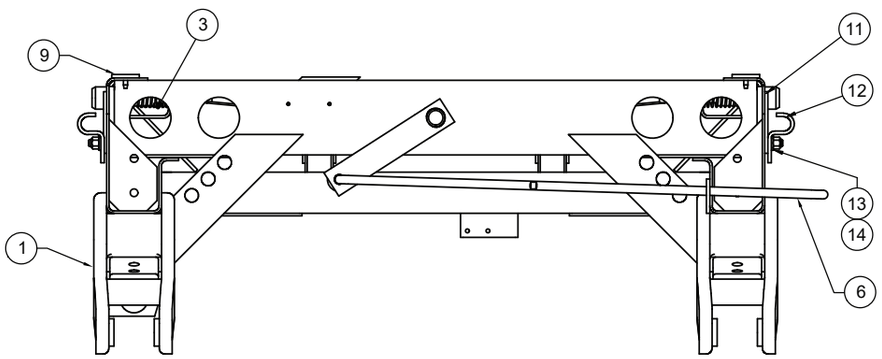
*NOTE: Variables are listed on the Table of Options on page m.21

Model 86AR/RS3015 - Drawing 92166



Model 86AR/RS3015 - Bill of Material

ITEM	PART NO.	DWG NO.	DESCRIPTION	QTY.
1	19971-48	92165	SUBFRAME ASSEMBLY	1
2	20740-11/12	93328	PIN SLIDER - TEE LOCK	4
3	19638-01	91188	COMPRESSION SPRING-SLIDER	4
4	703940-02	703940	DRAWBAR SPRING ASSEMBLY	4
5	24453-01	98486	COILED SPRING PIN	4
6	21225-48	94096	PULL HANDLE	1
7	16457-01	701785	WASHER (5/8 ID)	1
8	16455-01	87185	0.1875 COTTER PIN	1
9	19620-01	91177	BEARING STRIP, SLIDER	2
10	1961901	91176	5/16-18 UNC SELF TAPPING SCREW	16
11	20957-02	93439	SPACER, BODY RAIL GUIDE	4
12	19766-01	92038	BODY RAIL GUIDE	4
13	10016-01	701785	WASHER (1/2 ID)	8
14	0002-05	93281	LOCK NUT (1/2-20 UNF-2B) CLASS C	8



86AR SLIDER TABLE - 49" AXLE SPACING (SEE PG. M-17,M-18)

FW	(1) SLIDER (WITH HANGERS)	(16) LASSA	(18) TRACK ROD-RIGID	SPRING BEAM/LASSA
48"	19786-48	19789-02	10910-01	22828-44
42"	19786-42	19788-02	20012-01	22828-38

86AR AXLE SEAT TABLE - 5" ROUND AXLE (SEE PG. M-17, M-18)

MOUNTING HEIGHT	(6) AXLE SEAT	(8) BOTTOM PLATE	(9) U-BOLT	U-BOLT LENGTH
14"	0636-01	0538-00	19780110	11"
14 1/2"	0636-015	0538-00	19780115	11 1/2"
15"	0636-02	0538-00	19780120	12"
15 1/2"	0636-025	0538-00	19780125	12 1/2"
16"	0636-03	0538-00	19780130	13"
16 1/2"	0636-035	0538-00	19780135	13 1/2"
17"	0636-14	0538-00	19780140	14"

86AR SLIDER TABLE (SEE PG. M-19, M-20)

ITEM 4 SLIDER ASS'Y	SUBFRAME W/ HANGERS	AXLE SPACING	FRAME WIDTH	BODY RAIL GUIDE SPACER	FOR BODY RAIL TYPE LOCK PIN DIA.
20989-48 (*42)	19786-48 (*42)	49"	48" (*42")	None	1 3/8"
21010-48 (*42)	20538-48 (*42)	49"	48 3/8" (*42 3/8")	20957-01	1 3/8"
21266-48 (*42)	19972-48 (*42)	49"	48 7/16" (*42 7/16")	20957-02	1 5/8"

* NOTE: replace 48 with 42 for 42" Frame
Body Rail Type - Lock Pin Diameter:
1 5/8" Hutch® – 1 3/8" Binkley®

REPLACEMENT MATERIAL AND HARDWARE - BOLTED DESIGN: (SEE PG. M-17, M-18)

ITEM	PART NO	QTY	DESCRIPTION
19	17353-01	12	1/2" (12.7 mm) Grade 8 Bolt
20	0002-05	12	1/2" (12.7 mm) Locknut
21	0003-07	12	1/2" (12.7 mm) Washer
33	18842-01	4	7/8" (22.2 mm) - 14 x 3" (76.2 mm) Bolt
34	14345-01	4	7/8" (22.2 mm) - 14 Locknut
35	T7292	8	7/8" (22.2 mm) Washer

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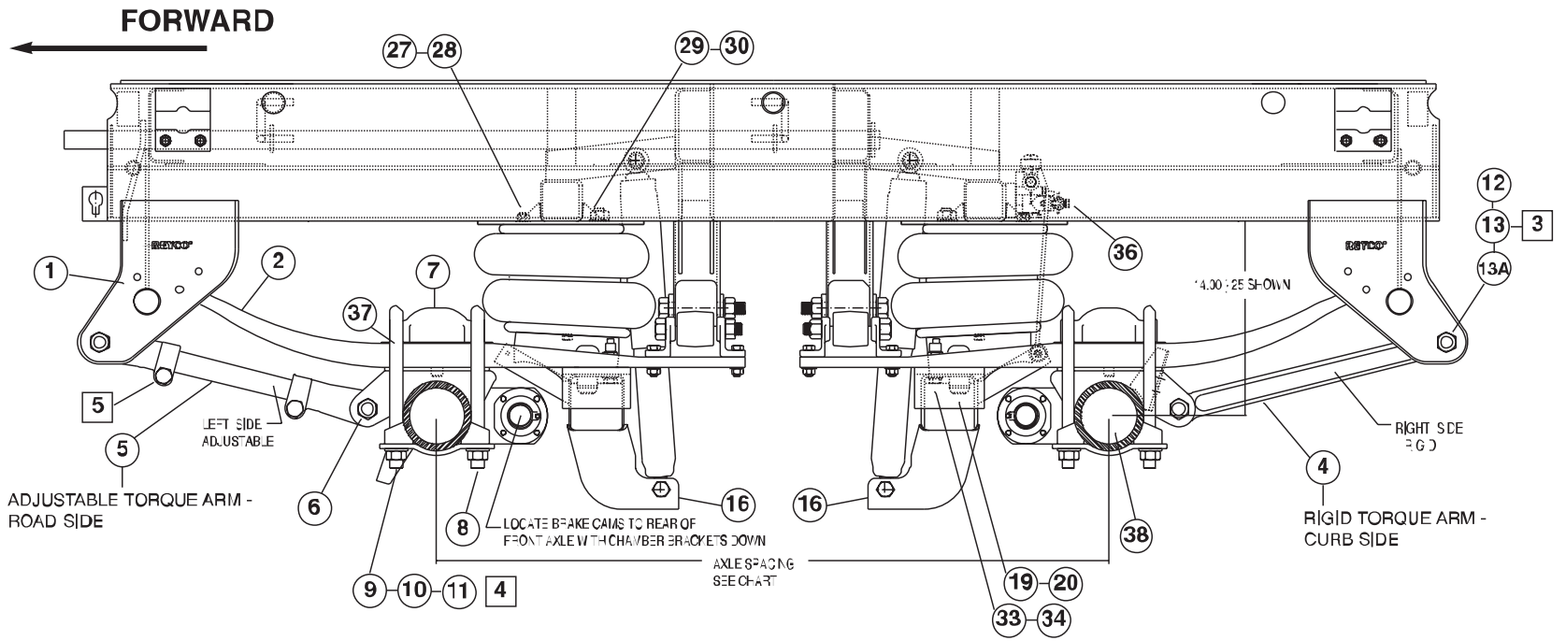
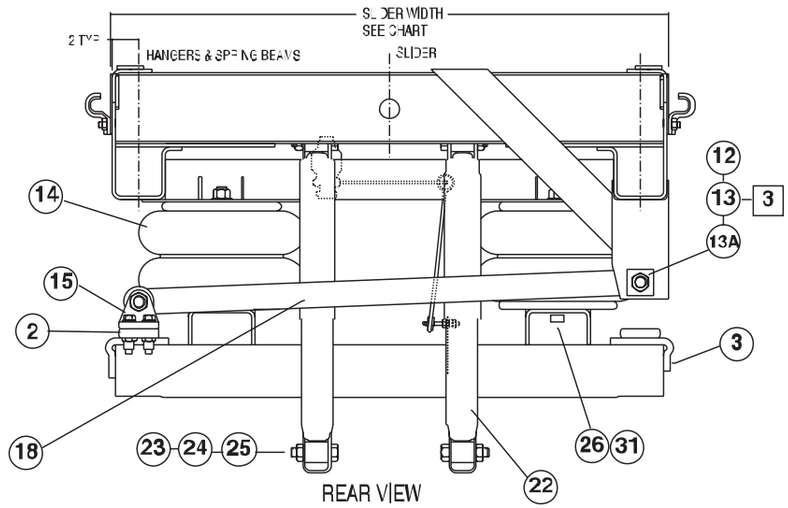
Model 86AR/RS3035 - Drawing 97040





1 **Mounting height can be varied from 14" to 17" by changing axle seat.**

2 **Axle travel 3" (76.2 mm) up, 3.05" (77.5 mm) down.**

3 **Tighten torque arm bolt nuts to 400-425 ft. lbs.** (545-610 Nm).

4 **Tighten u-bolt nuts to 300-325 ft. lbs. (410-440 Nm).**

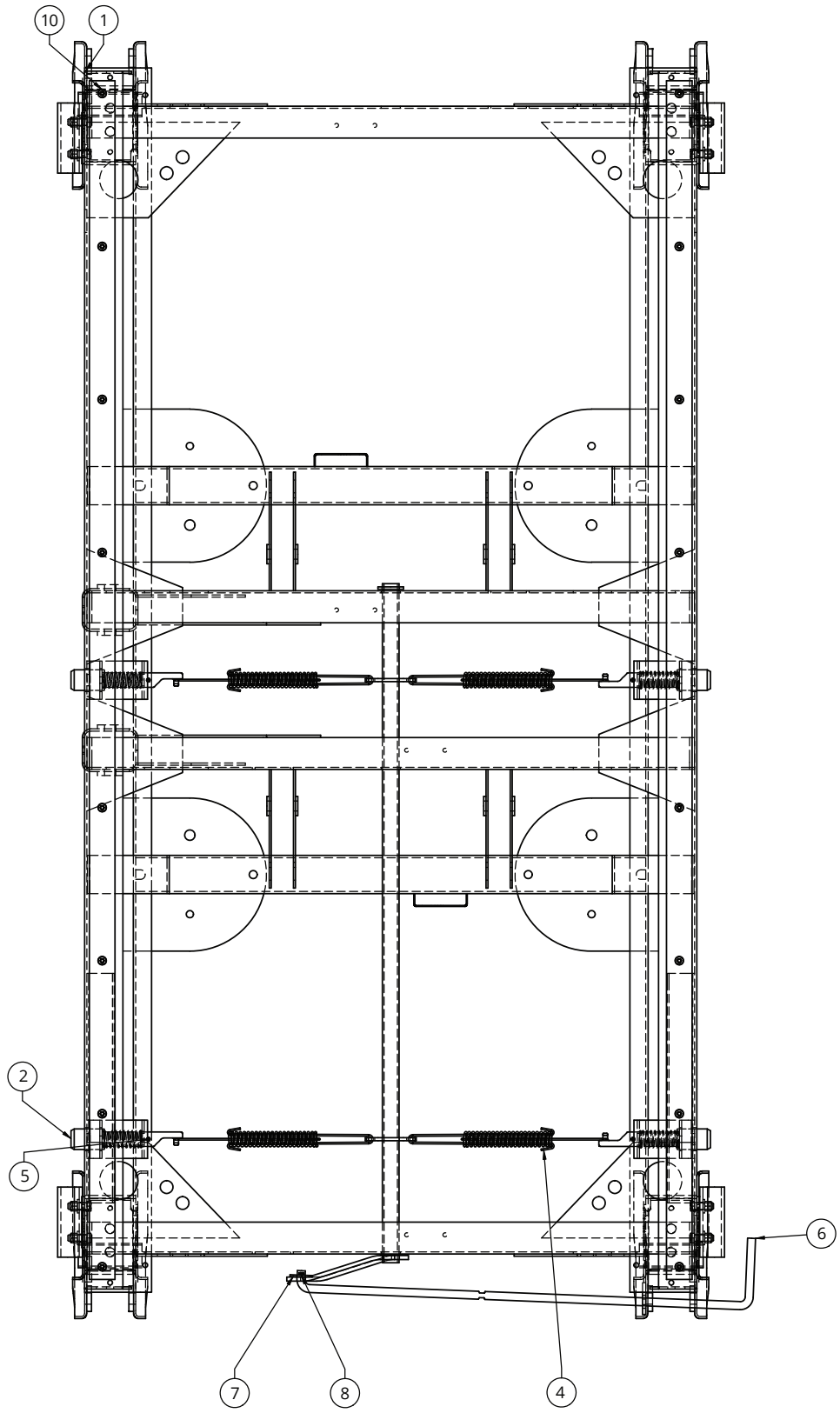
5 **Tighten to 125-150 ft. lbs. (170-205 Nm) after aligning suspension.**

DRAWING NO. 97040 SLIDER SUSPENSION ASSEMBLY PARTS LIST FOR NOMINAL 48" WIDE SLIDER

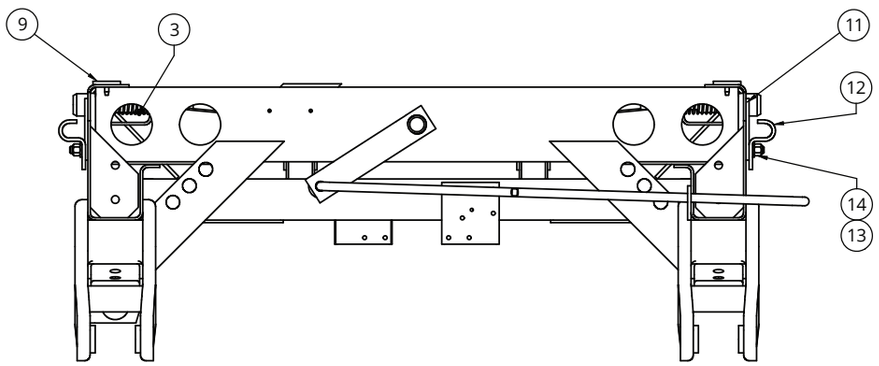
ITEM	PART NUMBER	DRAWING NO.	TANDEM	DESCRIPTION
1	*Variable			Slider/Hanger Assembly (See pg. M-27)
2	19913-01	92129	2	Left Beam
3	19914-01	92130	2	Right Beam
4	0075-20	0075-XX	2	Rigid TorqueArm
5	1035-20	1035-XX	2	Adjustable TorqueArm
6	*Variable	0636-XX	4	Axle Seat (See pg. M-27)
7	23334-01	97144	4	Top Plate
8	0538-00	0538-00	4	BottomPlate 5" round(See pg. M-27)
9	*Variable	92047	8	U-bolt(See pg. M-27)
10	20687-02	93280	16	3/4" (19.0 mm)Nut
11	20852-01	701785	16	3/4"(19.0 mm)Washer
12	0001-08	0001-XX	12	7/8"(22.2 mm) Bolt, TorqueArm
13	14345-01	93281	12	7/8"(22.2 mm) Locknut
13A	T7292	701785	12	7/8"(22.2 mm)Washer
14	20018-01	79167	4	Air Spring
15	21491-01	94230	4	Track Rod Bracket
16	19789-02	92052	2	Air Spring Support Assembly
18	10910-01	87109	2	Track Rod
19	20560-20	93177	12	1/2"(12.7 mm) Huck® Bolt(See pg. M-27)
20	20561-01	9317 7	12	1/2"(12.7 mm) Huck® Collar(See pg. M-27)
21	—	—	—	N/A (See pg. M-27)
22	18165-01	79168	4	Shock Absorbers
23	21496-01	62158 #4	8	Shock AbsorberBolt
24	14344-01	82082	8	Shock AbsorberNut
26	20029-01	62154	8	3/8"(9.5 mm) Nut
27	1292001	79191	4	1/2"(12.7 mm) Nut
28	T1705	62159	4	1/2"(12.7 mm) Lockwasher
29	0821101	62154	4	3/4"(19.0 mm) Nut
30	T3164	62159	4	3/4"(19.0 mm) Lockwasher
31	T-1859	62159	8	3/8"(9.5 mm) Lockwasher
33	21194-01	94082	4	7/8"(22.2 mm) HUCK® Bolt(See pg. M-27)
34	21195-01	94082	4	7/8"(22.2 mm) Huck® Collar(See pg. M-27)
35	—	—	—	N/A (See pg. M-27)
36	706234-01	706234	1	Height ControlValve & Linkage (Hadley® 1500)
37	16810-00	94031	4	Spring Liners
38	711163-XX	711163	2	Axle
REF	712222-01	712222	1	Pressure ProtectionValve & Filter

NOTE: Variables are listed on the Table of Options on page m.27

Model 86AR/RS3035 - Drawing 94277



ITEM	PART NO.	DWG_NO	DESCRIPTION	QTY.
1	21644-48	94278	SUBFRAME ASSEMBLY	1
2	20740-11/12	93328	PIN SLIDER - TEE LOCK	4
3	19638-01	91188	COMPRESSION SPRING-SLIDER	4
4	703940-02	703940	DRAWBAR SPRING ASSEMBLY	4
5	24453-01	98486	COILED SPRING PIN	4
6	21225-48	94096	PULL HANDLE	1
7	16457-01	701785	WASHER (5/8 ID)	1
8	16455-01	87185	0.1875 COTTER PIN	1
9	19620-01	91177	BEARING STRIP, SLIDER	2
10	1961901	91176	5/16-18 UNC SELF TAPPING SCREW	16
11	20957-02	93439	SPACER, BODY RAIL GUIDE	4
12	19766-01	92038	BODY RAIL GUIDE	4
13	10016-01	701785	WASHER (1/2 ID)	8
14	0002-05	93281	LOCK NUT (1/2-20UNF-2B) CLASS C	8



Model 86AR/RS3035 - Bill of Material

Maintenance Instructions Model 86AR Slider Series

86AR SLIDER TABLE - 48.4" AXLE SPACING (SEE PG. M-23, M-24)

FW	(1) SLIDER (WITH HANGERS)	(16) LASSA	(18) TRACK ROD-RIGID	SPG BEAM/LASSA-FR.	SPG BEAM/LASSA-RR.
48"	21580-48	19789-02	10910-01	22828-44	25185-44
42"	21580-42	19788-02	20012-01	22828-38	25185-38

86AR AXLE SEAT TABLE - 5" ROUND AXLE (SEE PG. M-23, M-24)

MOUNTING HEIGHT	(6) AXLE SEAT	(8) BOTTOM PLATE	(9) U-BOLT	U-BOLT LENGTH
14"	0636-01	0538-00	19780110	11"
14 1/2"	0636-015	0538-00	19780115	11 1/2"
15"	0636-02	0538-00	19780120	12"
15 1/2"	0636-025	0538-00	19780125	12 1/2"
16"	0636-03	0538-00	19780130	13"
16 1/2"	0636-035	0538-00	19780135	13 1/2"
17"	0636-04	0538-00	19780140	14"

86AR SLIDER TABLE (SEE PG. M-25, M-26)

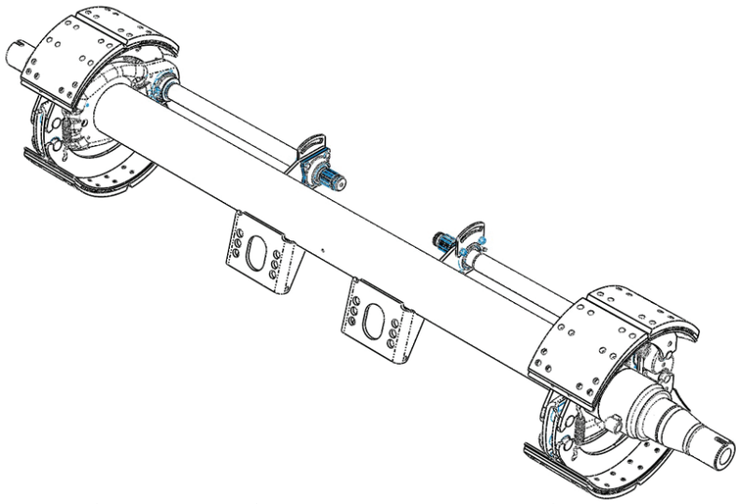
ITEM 4 SLIDER ASS'Y	SUBFRAME W/ HANGERS	AXLE SPACING	FRAME WIDTH	BODY RAIL GUIDE SPACER	FOR BODY RAIL TYPE LOCK PIN DIA.
21581-48 (*42)	21580-48 (*42)	49"	48" (*42")	None	1 3/8"
21642-48 (*42)	21643-48 (*42)	49"	48 7/16" (*42 7/16")	20957-02	1 5/8"
21927-48 (*42)	21928-48 (*42)	49"	48 3/8" (*42 3/8")	20957-01	1 3/8"

* NOTE: replace 48 with 42 for 42" Frame
Body Rail Type - Lock Pin Diameter:
1 5/8" Hutch® – 1 3/8" Binkley®

REPLACEMENT MATERIAL AND HARDWARE - BOLTED DESIGN: (SEE PG. M-23, M-24)

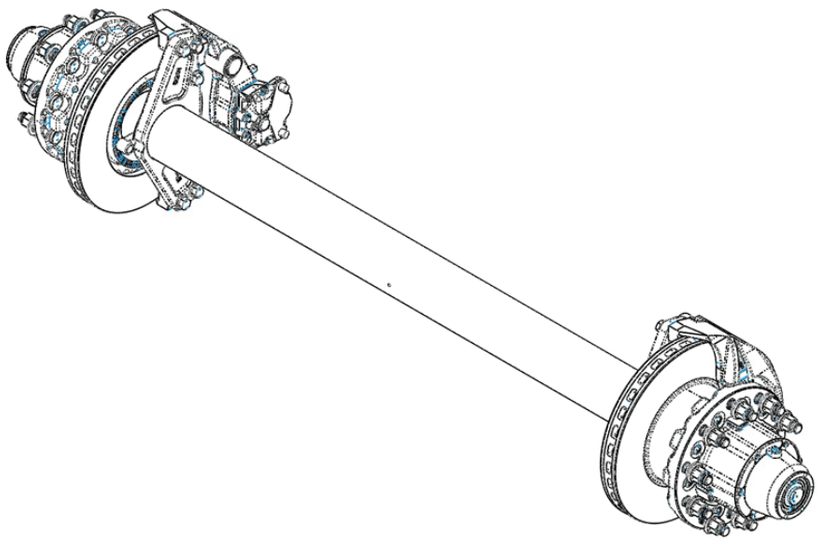
ITEM	PART NO	QTY	DESCRIPTION
19	17353-01	12	1/2" (12.7 mm) Grade 8 Bolt
20	0002-05	12	1/2" (12.7 mm) Locknut
21	0003-07	12	1/2" (12.7 mm) Washer
33	18842-01	4	7/8" (22.2 mm) - 14 x 3" (76.2 mm) Bolt
34	14345-01	4	7/8" (22.2 mm) - 14 Locknut
35	T7292	8	7/8" (22.2 mm) Washer

86AR AXLES WITH DRUM BRAKES TABLE



PART NO.	WALL THICKNESS	TRACK	SPINDLE	BRAKE LINING	BRAKE SIZE
711163-01	0.46	77.5	TAPERED (F22)	AXN R20	16.5x7
711163-04	0.58	77.5	TAPERED (F22)	AXN R20	16.5x7
711163-51	0.46	77.5	STRAIGHT (F24)	AXN R20	16.5x7
711163-53	0.58	77.5	STRAIGHT (F24)	AXN R20	16.5x7

86AR AXLES WITH DISC BRAKES TABLE



PART NO.	WALL THICKNESS	TRACK	SPINDLE	CALIPER
712499-51-401	0.46	77.5	STRAIGHT (F24)	WABCO
712499-53-401	0.58	77.5	STRAIGHT (F24)	WABCO

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SUSPENSIONS

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