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Parts & Service Manual

65-100 TON GSL
LOWBOYS



ORDER GENUINE



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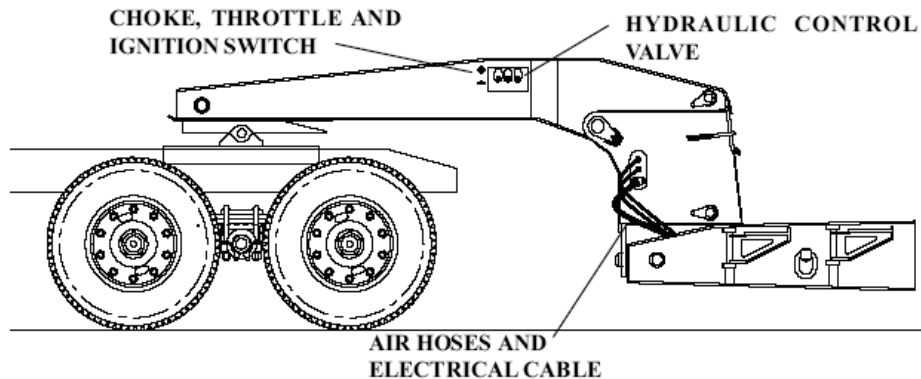
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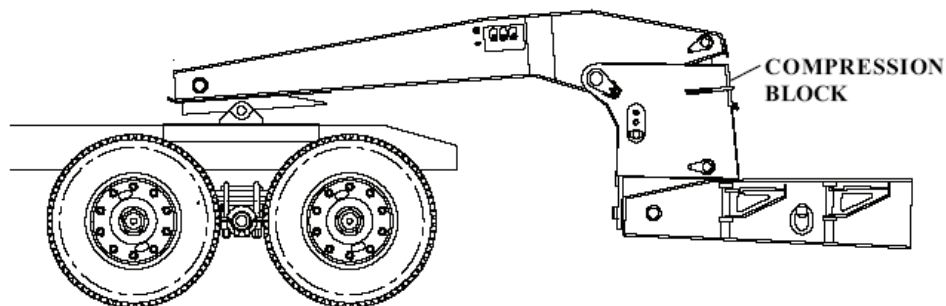
GOOSENECK OPERATING INSTRUCTION

35-100 GSL's



Gooseneck Disconnection

1. Disconnect the air lines and electrical cable which run from the bed to the gooseneck. Store the air hoses and electrical cable down into the storage area in the deck.
2. Start the engine to the power pack in the gooseneck or attach the tractor PTO system hydraulic lines and engage the PTO.

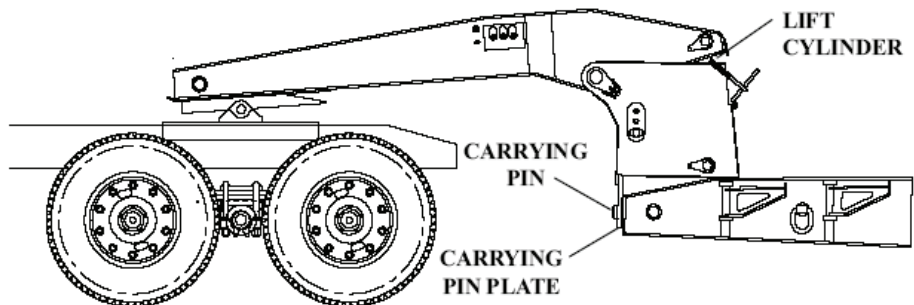


Note: The engine speed may have to be increased to provide proper power to raise the gooseneck.

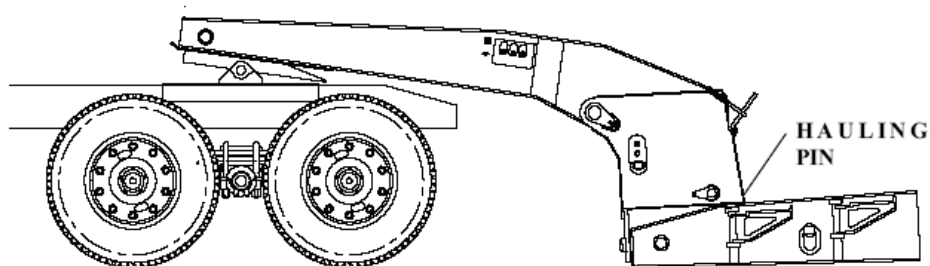
3. Raise the lift cylinder by moving the middle valve handle marked "B" up and raise the gooseneck enough so the hinged compression blocks can be flopped back to the unlocked position.

GOOSENECK OPERATING INSTRUCTION

35-100 GSL's



4. Lower the lift cylinders down by moving the middle valve handle marked "B" down until the bed rests on the ground. Hold the valve lever "B" in the down position until the gooseneck carrying pins on the front of the bed are approximately centered in the triangular shaped holes in the carrying plates on the lower gooseneck.

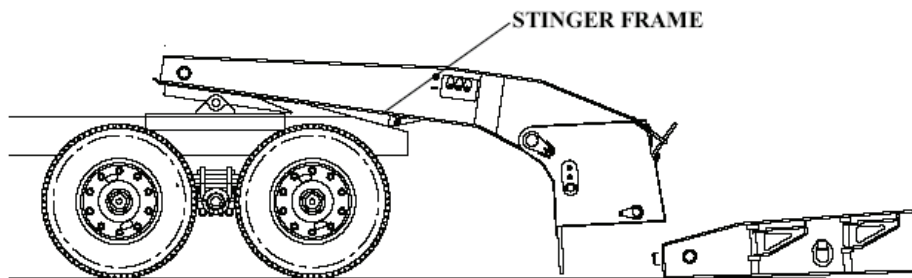


5. Unlock the hauling pin by moving the rear valve handle marked "C" up.

Note: check to make sure the hauling cylinder is completely retracted.

GOOSENECK OPERATING INSTRUCTION

35-100 GSL's



6. Using the forward valve handle "A", lower the stinger frame down onto the truck frame and force it down until gooseneck starts to lift. Adjust the height so that the gooseneck is just lifted off the trailer bed. Pull gooseneck away from trailer.

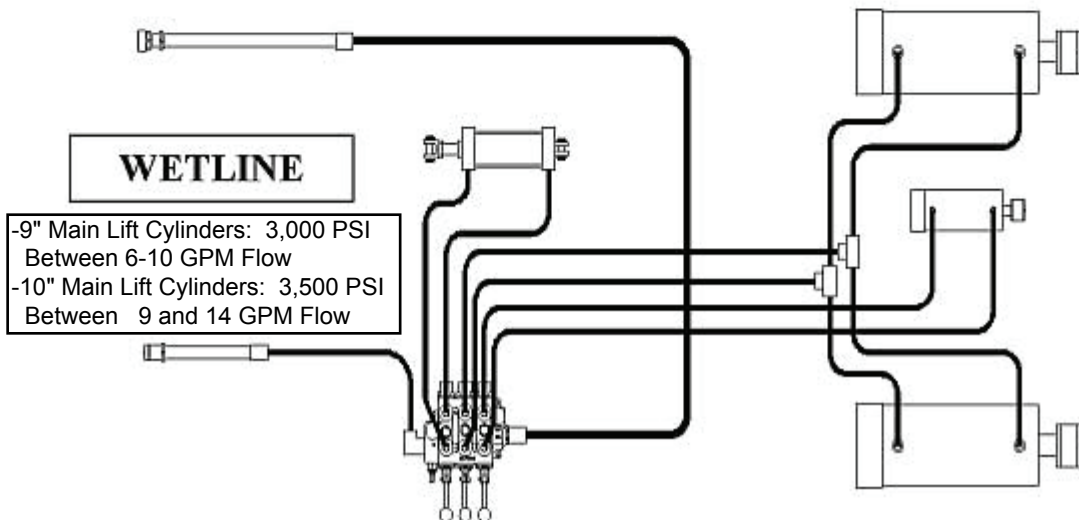
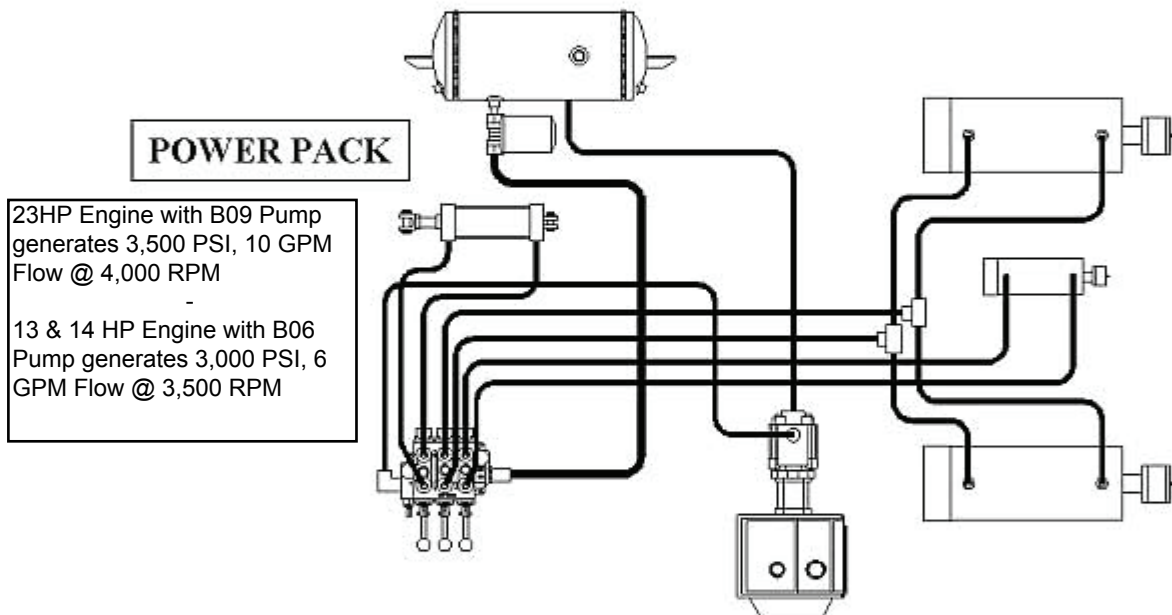
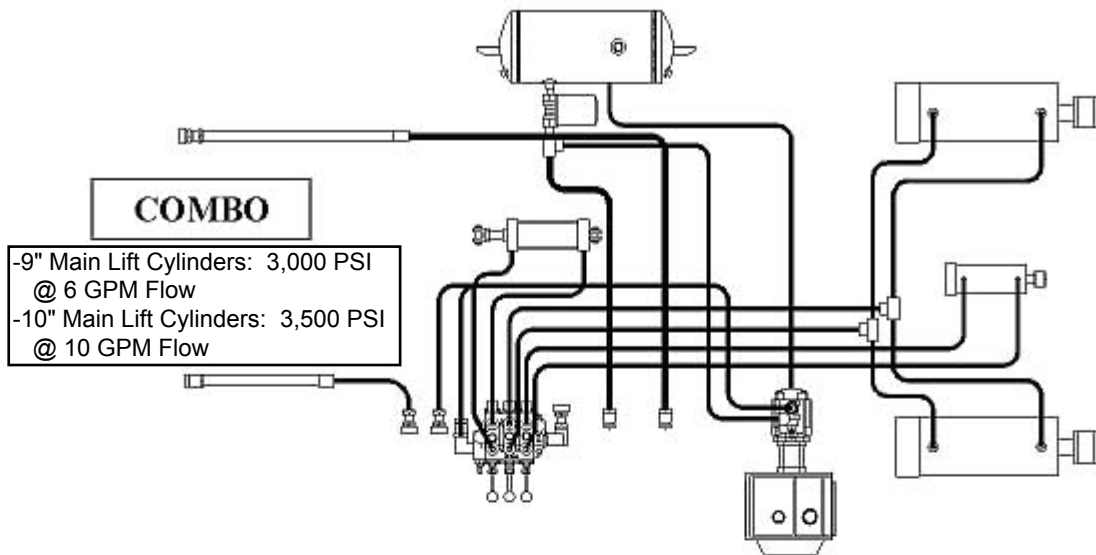
Gooseneck Connection

1. Reverse the steps for gooseneck disconnection

⚠ CAUTION!

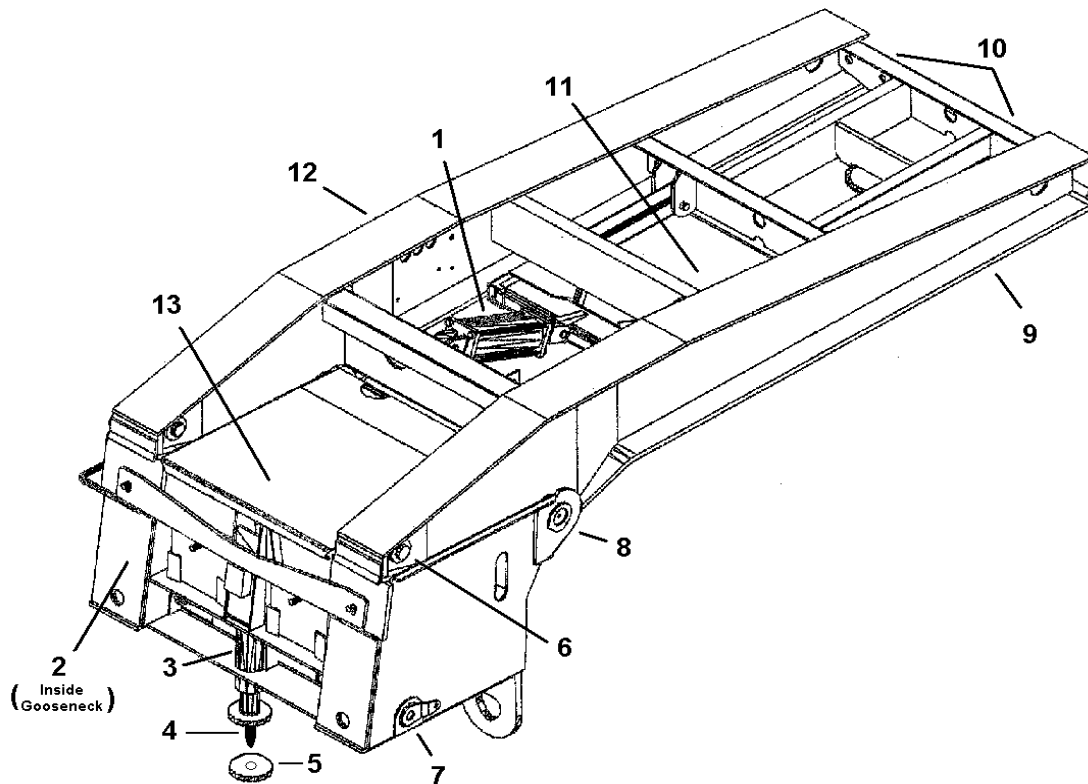
Be sure to check that the hauling pin is fully engaged or the possibility exists that the gooseneck can become disconnected in use.

Gooseneck Hydraulic Systems



Eager Beaver Trailers 65-100GSL Hydraulic Components & Cylinder Pins

Item #	Description	Part #	Packing Kit PN	Notes
1	Stinger Cylinder - All GSL	2060898	2060804	Includes Clevis End
1	Pin Set - Stinger Cylinder	2060965	N/A	Cylinder Rod Clevis End, PN 2062296
2	65-75GSL <118 GN Swing	371209	Sp. Order	9" bore x 9" stroke - verify BOM before ordering
2	65-75 GSL Lift Cyl with 118+ Swing	371210	Sp. Order	10" bore x 9" stroke - verify BOM before ordering
2	80-100 GSL Lift Cyl	371210	Sp. Order	10" bore x 9" stroke - verify BOM before ordering
3	Hauling Pin Cylinder - All GSL	2060922	2060961	Cylinder has internal safety relief valve on retract.
3	Lower Pin (3.25" Cylinder-to-Hauling Pin)	2060923	N/A	Top Pin (5.75" long Cylinder-to-Frame) PN 185511
4	Hauling Pin - 65GSL	2062188	N/A	
4	Hauling Pin - 70-100GSL	146607	N/A	
5	Hauling Pin Collar ("Doughnut")	2063097	N/A	Weld On - Underside of Alignment Tray
6	65-100 GSL Lift Cyl - 2.5" Dia Top	2062341	N/A	10" L x 2.5" Dia, Headless with Snap Rings (SR 413103)
7	65-100 GSL Lift Cyl - 2.5" Dia Bottom	2062342	N/A	15" L x 2.5" Dia, Headless with Snap Rings (SR 413103)
8	65-100 GSL Main Pivot Headless Pin	185282	N/A	4" Dia x 15.5" L, 1 Pin per side; Snap Ring PN 413102
9	King Pin (Weld on Replacement)	2060054	N/A	SAE 2" - Fixed GN Swing Clearance (not removable)
9	King Pin (Drop in) - Optional After 1995	2057111	N/A	SAE 2" - Multi-Position GN Swing Clearance (drop in from top)
10	Hydraulic Quick Disconnect - Male	2059941	N/A	3/4" Female NPT Thread
10	Hydraulic Quick Disconnect - Female	2059942	N/A	3/4" Female NPT Thread
11	Hydraulic Oil Filter	2056554	N/A	25 Micron (Filter Base PN 2056555)
11a	Hydraulic Oil Tank, 6 Gallon Capacity	2059365	N/A	Breather Plug PN 2059381 (Chevron AW ISO 68 Hyd Oil)
12	3-Spool 4-Way Control Valve	2060823	2060992	2060992 is O-ring Kit Only (Centering Springs Not Included)
13	Hyd Pump (6 GPM, 3000 PSI) 9" lift Cyl	2059919	2062339	3,500 PSI pump for 10" main lift cylinders only; Seal Kit includes
13	Hyd Pump (9.5GPM, 3500 PSI) 10" lift Cyl	371403	2062339	Shaft Seal (shaft seal only, PN 2062289)



Power Pack Keys, Switches, Controls, Hydraulics, & Filters

Keys - Switch - Ignition Harness	PN	Notes
Kohler Ignition Key Only	2059876	One Key - 14HP CH440 - Begin Oct 3, 2012 & 23HP CH680 *
Kohler Ignition Switch & 2 Keys	2058207	Delphi style, 14HP CH440 - Begin Oct 3, 2012 & 23HP CH680 *
Kohler Ignition Harness - 6'	2059202	Delphi ends, 14HP CH440 - Begin Oct 3, 2012 & 23HP CH680 *
Kohler Ignition Key Only	2062001	1 Key - 14HP CH440 OHV Engine (May-Sep 2012)
Kohler Ignition Switch (non-Delphi)	17099 07-S	14HP CH440 (May-Sep 2012) - replace w 2058207 & 2059202
Honda Ignition Key Only	2062001	One Key (fits both GCANK and GCBCT engines) (Also Kohler)
Honda Ignition Switch (GCANK)	2062147	GX390UI until Mid Feb 2011 - Includes 2 Keys
Honda Ignition Harness (GCANK)	2062150	72" Switch Extension Harness (between Switch and Engine)
Honda Ignition Switch (GCBCT)	2062124	GX390UT2 with CDI Ignition begin Mid Feb 2011 - present
Robins Ignition Key Only	2060892	Replacement Key Only
Robins Ignition Switch	2060848	Includes Keys (Robins EY40, EH34 & EH41 Engines)
Robins Ignition Switch Harness	2060897	

* Also Kohler Magnum M16 Flathead Engines (mid 1980's thru mid 1990's, GFG and GHG Model Trailers)

* Also applies to Kohler 18HP CH620 which was replaced by 23HP CH680 in October 2013

Choke & Throttle Cables	PN	Notes
Choke Cable 96"	2059149	All Lowboys with Powerpack (Except Hatz Diesel)
Throttle Cable 84" Long	2059148	All Lowboys with Powerpack
Choke Linkage Kit	2062149	Honda GX390 and Kohler CH440 Only

Filters & Starter Motors	PN	Notes
Air Filter - KOHLER 14HP CH440	2060957	Quad "Cyclone" Filter and pre-Filter
Air Filter - KOHLER 18HP CH620	47083 03-S	Pre-Filter PN 24083 02-S
Air Filter - HONDA	2062145	Honda GX390UI and UT2 (both GCANK & GCBCT prefix)
Air Filter - ROBINS EY40	2061022	Robins EY 40 Only (Round, Cone Shaped)
Air Filter - ROBINS EH41	2062270	Robins EH 41 Only (5 Sided, not Cone Shaped)
Starter Motor - HONDA	2062146	Honda GX390 up to SN GCANK 1414795 (2005 - 2007 only)
Hydraulic Oil Filter (25 Micron)	2056554	All Lowboys with Powerpack

Hydraulic Control Valve and Pump

Component	PN	Notes
3-Spool 4-Way Control Valve	2060823	Packing Kit Only PN 2060992
Replacement Handle	2061080	Handle only, no knob
Black Ball Knob for Handle End	2062189	Knob only, no handle
Handle, Knob & Linkage Kit	2062266	

Hydraulic Pump (12-18HP engines)	2059919	Prince SP-20B06, 3000 PSI, shaft necked down to 9/16"
Hydraulic Pump (23HP Kohler)	371403	Prince SP-20B09, 3500 PSI, 3/4" Shaft
Seal Kit	2062339	Seal Kit includes Shaft Seal (Fits all SP-20B series pumps)
Shaft Seal ONLY	2062289	Fits all SP-20B series pumps
Lovejoy half 9/16" shaft	2062324	Hydraulic Pump shaft (SP-20B06 Pump 12-18 HP engines)
Lovejoy half 3/4" shaft	372354	Hydraulic Pump shaft (SP-20B09 Pump only w 23HP Kohler)
Lovejoy half 1" shaft	2060478	Engine shaft - Kohler 14HP-CH440, Honda, Robins, Hatz Diesel
Lovejoy half 1 1/8" shaft	2060477	Engine shaft - Kohler 18HP-CH620 & Kohler M16
Lovejoy half 1 7/16" shaft	372358	Engine shaft - Kohler 23HP-CH680
Lovejoy Spider	2062325	Rubber Spider
Pump-to-Engine Mounting Housing	2060267	Kohler CH440, Honda, Robins Subaru, & Hatz Diesel only
Pump-to-Engine Mounting Housing	372011	Kohler 18HP-CH620 & Kohler M16
Pump-to-Engine Mounting Housing	372014	Kohler 23HP-CH680 #BF-4A-EX-3-7.0
Pressure Relief Valve (Hyd Pump)	2060930	Combo WL/PP Units ONLY - Mounts on Hyd Pump

Eager Beaver Trailers Lowboy Trailer Decals

PART #	QTY	DESCRIPTION
2059016	2	CHECK WHEEL LUGS DECAL
2060618	2	ROTO-RING™ DECAL
2062005	2	CAUTION CENTERLINE DECAL
2060608	75	RED/WHITE CONSPICUITY STRIPING ("DOT STRIPING")
2059181	2	"DO NOT SIDE LOAD" DECAL
2062007	1	WEBB WHEEL TORQUE DECAL, 10 STUD, HUB PILOTED
2059162	2	RECOMMENDED TIRE PRESS DECAL
2062332	2	EAGER BEAVER TRAILERS DECAL - MEDIUM * (6" High x 37" Long)
2062208	1	USA HARNESS DECAL
2062173	1	REPLACE DAMAGED WOOD DECAL
2062129	6	OBLONG AMBER REFLECTIVE DECAL
2062130	2	OBLONG RED REFLECTIVE DECAL
<i>With Detachable Hydraulic Gooseneck, Add the Following:</i>		
2059329	1	"HAULING PIN" DECAL
2059348	1	"HAULING PIN LEVER" DECAL
2059585	1	WARNING HAULING PIN" DECAL
2062009	9	"GREASE" FITTING DECAL
2062010	1	CENTRAL LUBE "LUBRICATION GUIDE" (Pre Central Lube no longer avail)
2062011	1	HAULING PIN "INTERLOCK WARNING" DECAL
2062012	1	COMPRESSION BLOCK NUT TIGHTEN DECAL
<i>With ABS, Add the Following:</i>		
2062003	1	CAUTION TRAILER EQUIPPED W/ABS BRAKES
2061051	2	ABS DECAL(ALL WHEEL)
2062004	1	ABS INDICATOR LAMP INSTRUCTIONS
2062179	1	DANGER SPRING BRAKES
2063521	KIT	GSL WITH ABS DECAL KIT (Includes All Decals Listed Above)
<i>Add Trailer Model Decal (specify if "PT" or "BR" Model)</i>		
Specify	2	DECAL "65 GSL" WHITE
Specify	2	DECAL "70 GSL" WHITE
440305	2	DECAL "75GSL" WHITE
Specify	2	DECAL "80 GSL" WHITE
Specify	2	DECAL "100 GSL" WHITE
<i>With Cush Air Ride Suspension, Add the Following:</i>		
2062245	1	CUSH SUSPENSION TORQUE
2062143	1	AIRBAG EXHAUST OPERATION (use with toggle valves only)
445863	1	AIRBAG EXHAUST OPERATION (Push-Pull valves only) (knob face decal)
445888	1	RIDE HEIGHT CONTROL VALVE OPERATION
<i>With Pony Motor, Add the Following:</i>		
2062249	1	NOTICE - FUEL SHUT OFF VALVE
2062008	1	"HOT MUFFLER" DECAL
<i>With a Lift Axle (All 50-80 Ton Trailers), Add the Following:</i>		
2062142	1	LIFT AXLE OPERATION (use with toggle valves only)
445864	1	LIFT AXLE OPERATION (Push-Pull valves only) (knob face decal)
445862	1	REDUCED CAPACITY WHEN 3RD AXLE IN LIFT POSITION
<i>Options: Flasher Kit; Manual Raise & Lower Air Ride Suspension</i>		
445870	1	FLASHER KIT OPERATION
2059458	1	MANUAL RAISE & LOWER OPERATION INSTRUCTIONS
445865	1	MANUAL RAISE & LOWER PUSH-PULL VALVE (knob face decal)

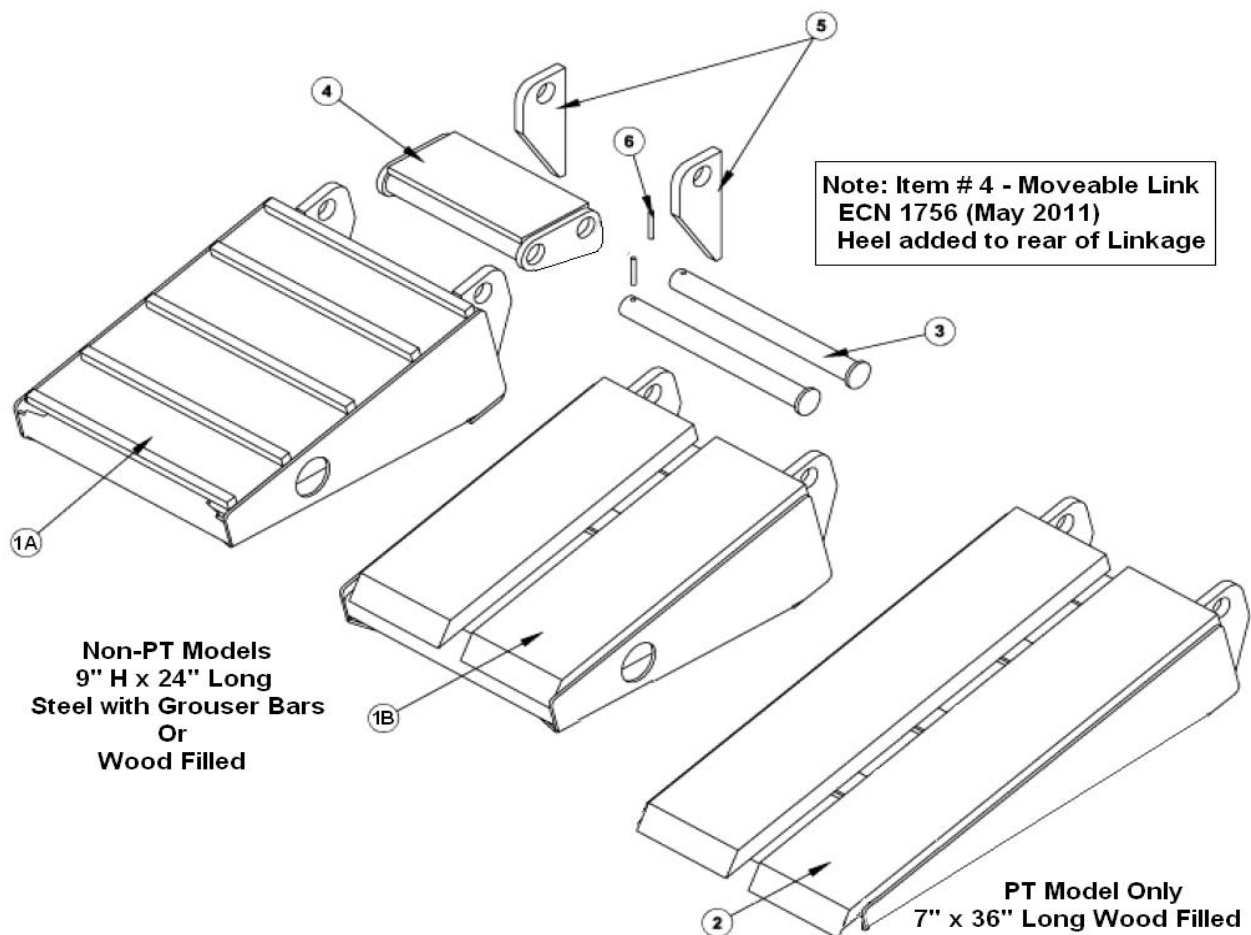
* ECN 016 (3/15/2010): Large (2059370) & Small (2062020) EB Decals on Lowboys replaced with Medium, PN 2062332

--For Goosenecks with Fenders use Small Decal PN 2062020--

2062020	2	EAGER BEAVER TRAILERS DECAL - SMALL (4" High x 25" Long)
2059370	2	EAGER BEAVER TRAILERS DECAL - LARGE (8" High x 58" Long)

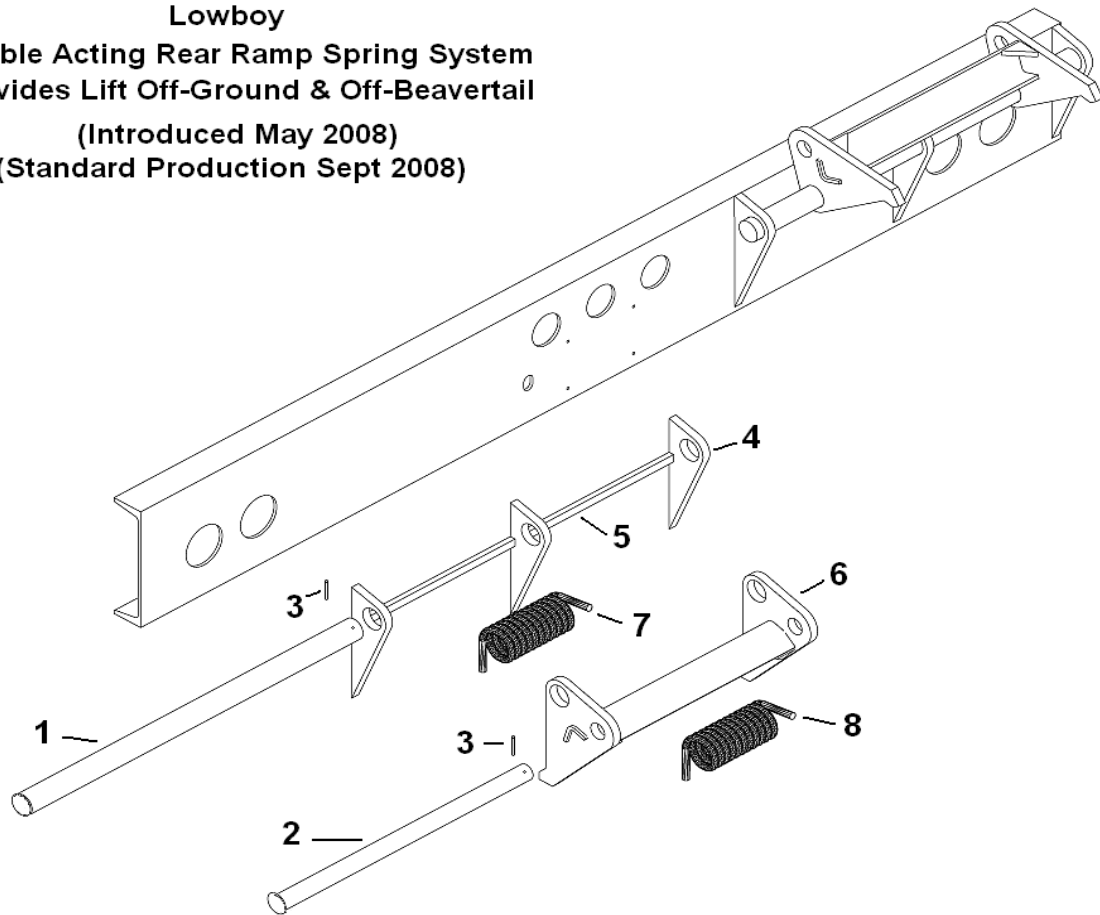
GSL LOWBOY FRONT FLIP RAMPS (NO SPRING ASSIST)

Item	Description	Part #
1A	Front Flip Ramp - Steel with Grouser Bars (Non-PT)	2060550
1B	Front Flip Ramp - Wood Filled (Non-PT)	2059196
2	Front Flip Ramp - Wood Filled (PT Model Only)	2059198
Not Shown	Front Flip Ramp - Steel w Grouser Bars PT (7" H x 24" Long) (PT)	2059199
Not Shown	Front Flip Ramp - Steel w Grouser Bars PT (7" H x 36" Long) (PT)	994299
3	Ramp Bar - 16" Long (2 per Ramp) - Standard Move Ramps	2063071
3	Ramp Bar - 22" Long (1 per Ramp) - Max Move Ramps only	2054640
4	Movable Linkage - 13" Long	2060500
5	Flip Ramp Mounting Linkage - 9" High - Non PT Models Only	2061071
	Flip Ramp Mounting Linkage - 7" High - PT Models Only	2059201
6	Split Pin	2059020



Lowboy
Double Acting Rear Ramp Spring System
Provides Lift Off-Ground & Off-Beavertail

(Introduced May 2008)
(Standard Production Sept 2008)



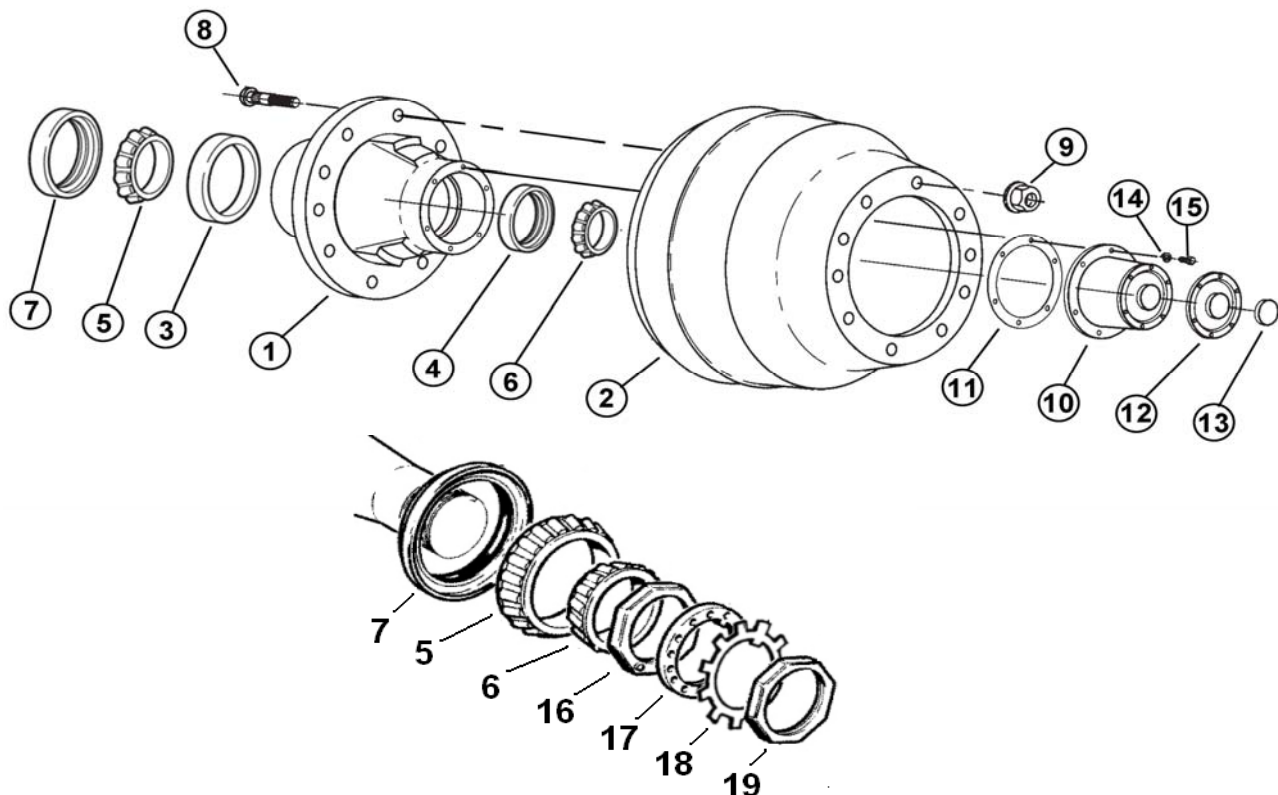
Item #	Part No	Alt Part No	Description
1	991877		2" Dia x 36.5" Ramp Bar
2	991876	2063220	1.5" Dia x 25" Ramp Bar
3	411601	2059020	5/16" Dia x 2.5" Roll Pin
4	143642		Tailboard Fixed Linkage
5	178509		1/2" x 3/4" x 17.5" Long Spring Stop
6	991863		Rotating Linkage
7	402021	2062327	Off-Ground Lift Spring (1 per Ramp)
8	402007	2062134	Off-Beavertail Lift Spring (3 per Ramp)
	2063297	2063297	Complete Trailer set - Two Linkages (includes all springs, fixed links, stops, etc)

10 Stud Hub (11.25" BC) Uni-Mount (Hub Piloted)

16 1/2" x 7" Outboard Drum with Webb 2023 Series Hub

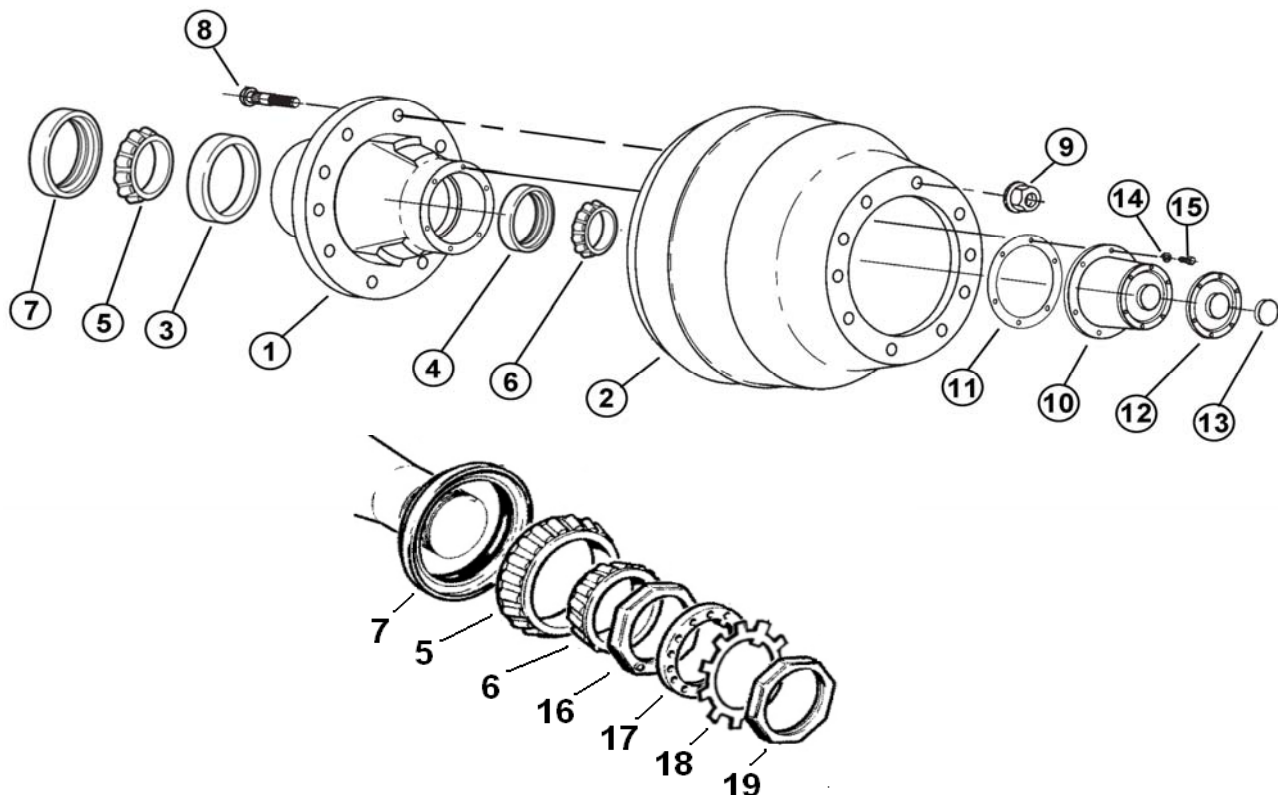
(Standard Equipment 35-75 Ton Lowboys since 2000)

Item	Nomenclature	P/N	Remarks
1	Hub	2062290	Webb 2023 (Includes cups & studs)
2	Drum	2062291	Webb 66864F (for 16.5 x 7" brakes)
3	Inner Bearing Cup	2058307	
4	Outer Bearing Cup	2058306	
5	Inner Bearing	2058309	
6	Outer Bearing	2058308	
7	Oil Seal	2055828	
8	Studs, 5" OAL	2060993	Std since 2010; steel or aluminum wheels
	Studs, 4" OAL	2061085	use with steel wheels only
9	Flange Nuts	2061086	
10	Oil Cap w/ plug	2055089	Cap, includes window & plug (5.5" dia bolt circle)
11	Gasket - oil cap	2055090	
12	Oil cap window kit	2058056	Window, gasket & plug
13	Vent Plug (red)	2055749	
14	Lock Washer		Procure locally
15	Machine screw		5/16 - 18 thread x 3/4" long
16	Inner Spindle Nut	2055836	
17	Spindle Lock Nut	2058268	
18	Star Washer	2058267	
19	Outer Spindle Nut	2059229	
	Wheel, Steel	2060825	8.25 X 22.5, 10 Stud Hub piloted
	Axle Beam, 77" Trk	2060566	For Air Ride, incl. brakes, cams, slacks
	Axle Beam, 77" Trk	332101	For Spring Susp, incl. brakes, cams, slacks



10 Stud Hub (11.25" BC) Uni-Mount (Hub Piloted)
16 1/2" x 8.625" Outboard Drum with Webb 2401 Series Hub
 (Standard Equipment 80-100 Ton Lowboys since 2013)

Item	Nomenclature	P/N	Remarks
1	Hub	Sp. Order	KIC 006-02134 (inc studs)
2	Drum	Sp. Order	Webb 66855B (for 16.5 x 8.625" brakes)
3	Inner Bearing Cup	Sp. Order	Timken 752
4	Outer Bearing Cup	Sp. Order	Timken 742
5	Inner Bearing	Sp. Order	Timken 759
6	Outer Bearing	Sp. Order	Timken 740
7	Oil Seal Kit	Sp. Order	Stemco 372-7015 Seal & Wear Ring
	Seal Only		Stemco 320-2041
	Wear Ring Only		Stemco 310-1043
8	Studs, 5" OAL	2060993	Std since 2010; steel or aluminum wheels use with steel wheels only
	Studs, 4" OAL	2061085	
9	Flange Nuts	2061086	
10	Oil Cap w/ plug	Sp. Order	Stemco 343-4064 (6.75" dia bolt circle)
11	Gasket - oil cap	Sp. Order	Stemco 330-3078
12	Oil cap window kit	2058056	Window, gasket & plug
13	Vent plug (red)	2055749	
14	Lock Washer		Procure locally
15	Machine screw		5/16 - 18 thread x 3/4" long
16	Inner Spindle Nut	2055836	
17	Spindle Lock Nut	2058268	
18	Star Washer	2058267	
19	Outer Spindle Nut	2059229	
	Wheel, Steel	2060825	8.25 X 22.5, 10 Stud Hub piloted



Eager Beaver Trailers - Lowboy Air Brake Shoes

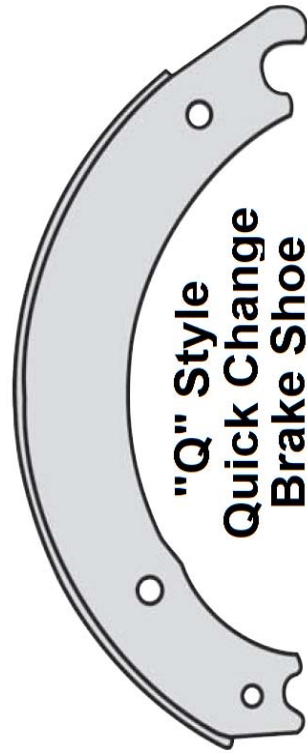
25K Axle - Type D22 with Quick Change Brakes
 30K Axle - Type K30 with Quick Change Brakes

All 65-75 Ton Lowboys (16 1/2" x 7" Drums) (D22 - 25K Axle)

Description	Eager Beaver PN
Shoe (each, need 2 per wheel)	2060915
Brake Repair Kit (per wheel)	2059157
Seal - Unitized (per wheel)	2055828

All 75-100 Ton Lowboys (16 1/2" x 8.625" Drums) (K30 - 30K Axle) (Note: 30K Suspension with 16.5 x 8.625 brakes is optional on 65-75 Ton)

Description	Eager Beaver PN	OEM PN
Shoe (each, need 2 per wheel)	Sp Order	011743-9
Brake Repair Kit (per wheel)	Sp Order	S-23752
Seal & Wear Ring Kit (per wheel)	Sp Order	320-2041



Eager Beaver Trailers

Slack Adjuster Determination & Ordering Worksheet

When ordering Slack Adjusters, please provide the following information:

1. Whether Automatic or Manual
2. Whether adjuster arm (which attaches to air brake chamber) is Straight or Curved
3. Whether it has 10 or 28 Splines
4. Manufacturer name and any part numbers from old slack adjuster

Circle Applicable Feature on Below Matrix

		Slack Adjuster	
		EB Part #	Application
Automatic Begin Oct 1994	Straight	10 Spline	2060873 C.B. 10-12 Ton **
		28 Spline	2062263 Spicer, Haldex 20-25 Ton (pre-'97) *
	Curved	10 Spline	2060934 C.B. 10-12 Ton **
		28 Spline	2060971 Spicer, Haldex 35-60 Ton *
	Curved	10 Spline	451154 C.B., Lowboys Only Begin 7/2009
		28 Spline	
Manual Before Oct 1994	Straight	10 Spline	2060755 Spicer, Haldex 20-25 Ton (older) *
	Curved	10 Spline	2061083 Spicer, Haldex 20-25 Ton *

* Spicer Automatic Slack Adjuster Bracket 2061084 Not included with Slack

** 10K axles - attach Brake Chamber Clevis to 5" Hole in Slack; 12K uses 6" Hole in Slack

Original Slack Manufacturer:

OEM Part Number on Original Slack

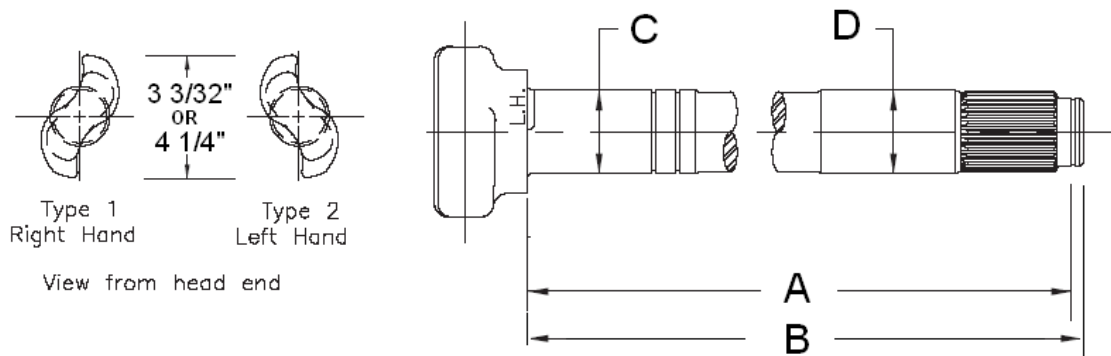
Fax your order to Eager Beaver Trailer Parts: 856-423-0999

Your Name:

Your Voice Telephone:

Eager Beaver Trailers - 548 Swedesboro Ave, Mickleton, NJ 08056
Telephone 800-338-7088; FAX 856-423-0999

Cam Shaft Determination & Ordering Worksheet



- Step 1 Decide whether the cam is a LEFT or a RIGHT hand and whether it is a SMALL (3 3/32") or LARGE (4 1/4") head.
- Step 2 Measure the length of the cam. It is best to provide both the dimensions "A", the distance from head to snap ring groove, and dimension "B", the distance from the head to the end of the cam.
- Step 3 Measure the diameter of the cam at both "C", just behind the head, and "D" just inside the spline.
- Step 4 Finally, determine whether the cam is a 10 spline or 28 tooth spline.

Please fill in the chart below when ordering a cam shaft

HEAD STYLE

LEFT HAND SMALL
RIGHT HAND SMALL
LEFT HAND LARGE
RIGHT HAND LARGE

DIMENSION

"A"
"B"
"C"
"D"

SPLINE

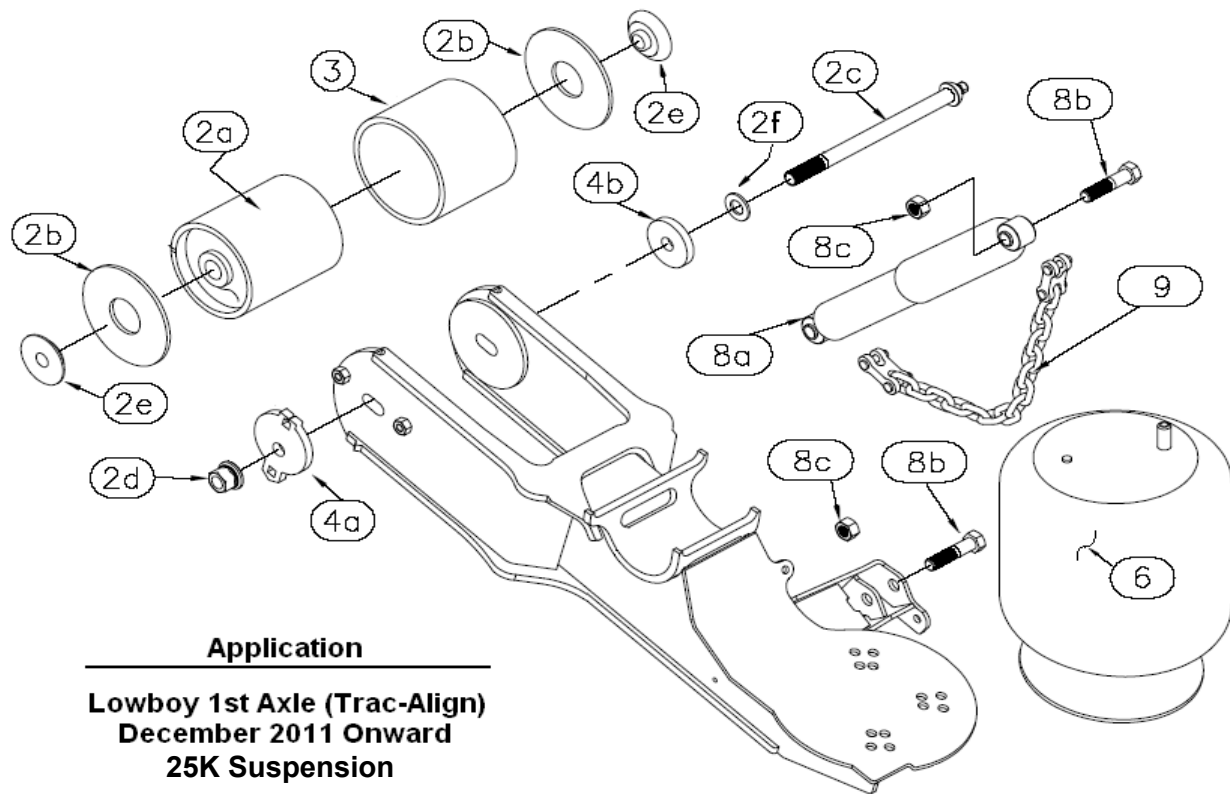
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28

Fax the completed worksheet to Eager Beaver Trailers @ 856-423-0999.

Your Name: _____.

Your Voice Tel #: _____.

CUSH CYR-25C-H09



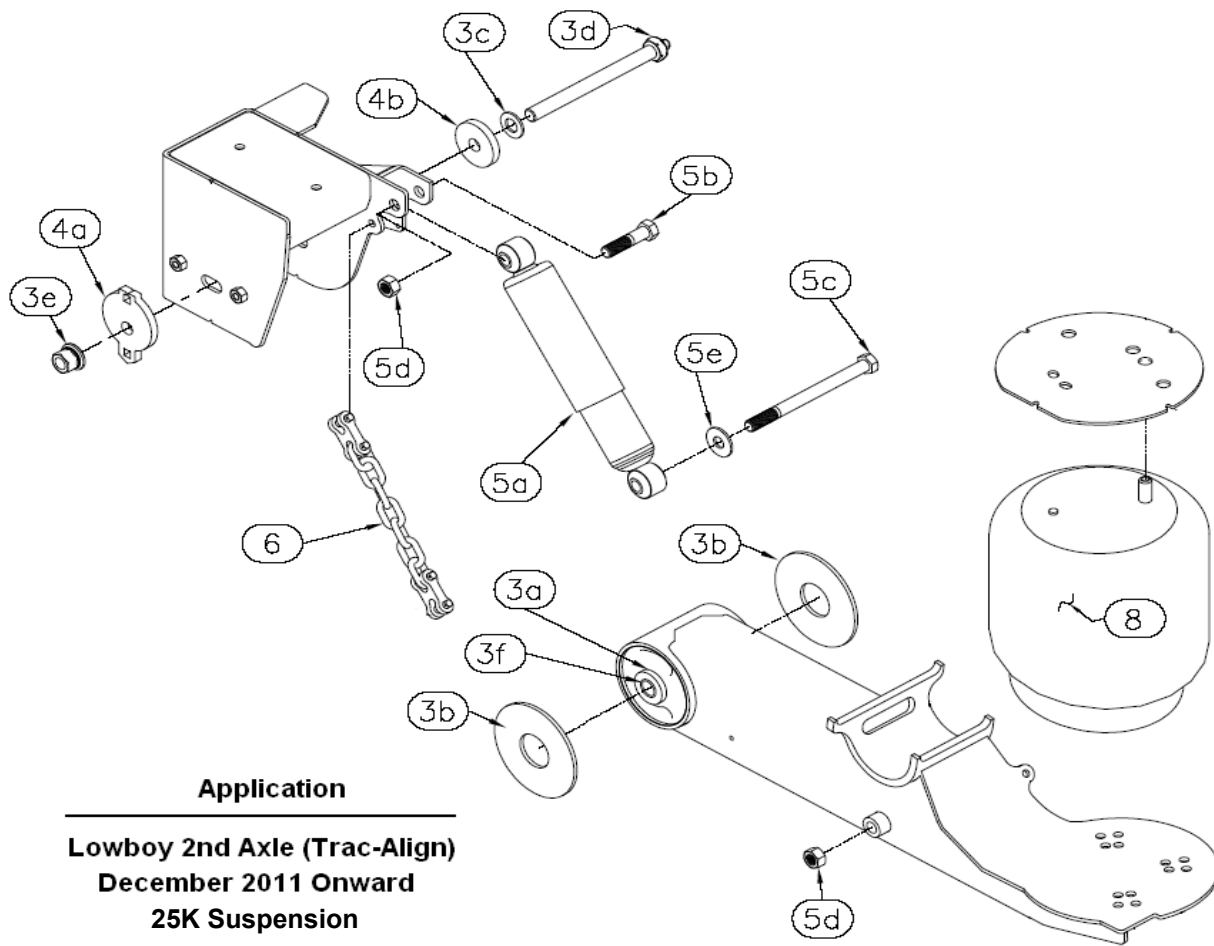
Application

Lowboy 1st Axle (Trac-Align)
December 2011 Onward
25K Suspension

ITEM	DESCRIPTION	PART #
2a	Steel Sleeve (6.2" OD) & Bushing	2062280
2b	Wear Washer	2062282
2c	E-20 Torx Bolt 0.875"- 9 UNC x 12"	2062286
2d	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
2e	Spacer Collar - Double Step	2062284
2f	Washer 0.875" SAE ID	2062030
3	Frame Sleeve, 7"OD x 6.25" ID (Weld In)	T0032 *
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
6	Susp. Air Spring (1 per swing arm)	2061077
8a	Shock Absorber	2060490
8b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
8c	Nut, lock, 0.75" - 10UNC	2062037
9	Chain Kit, 14 Link with Clevis Ends	2062034

* Special Order

CUSH CU-25C-H09

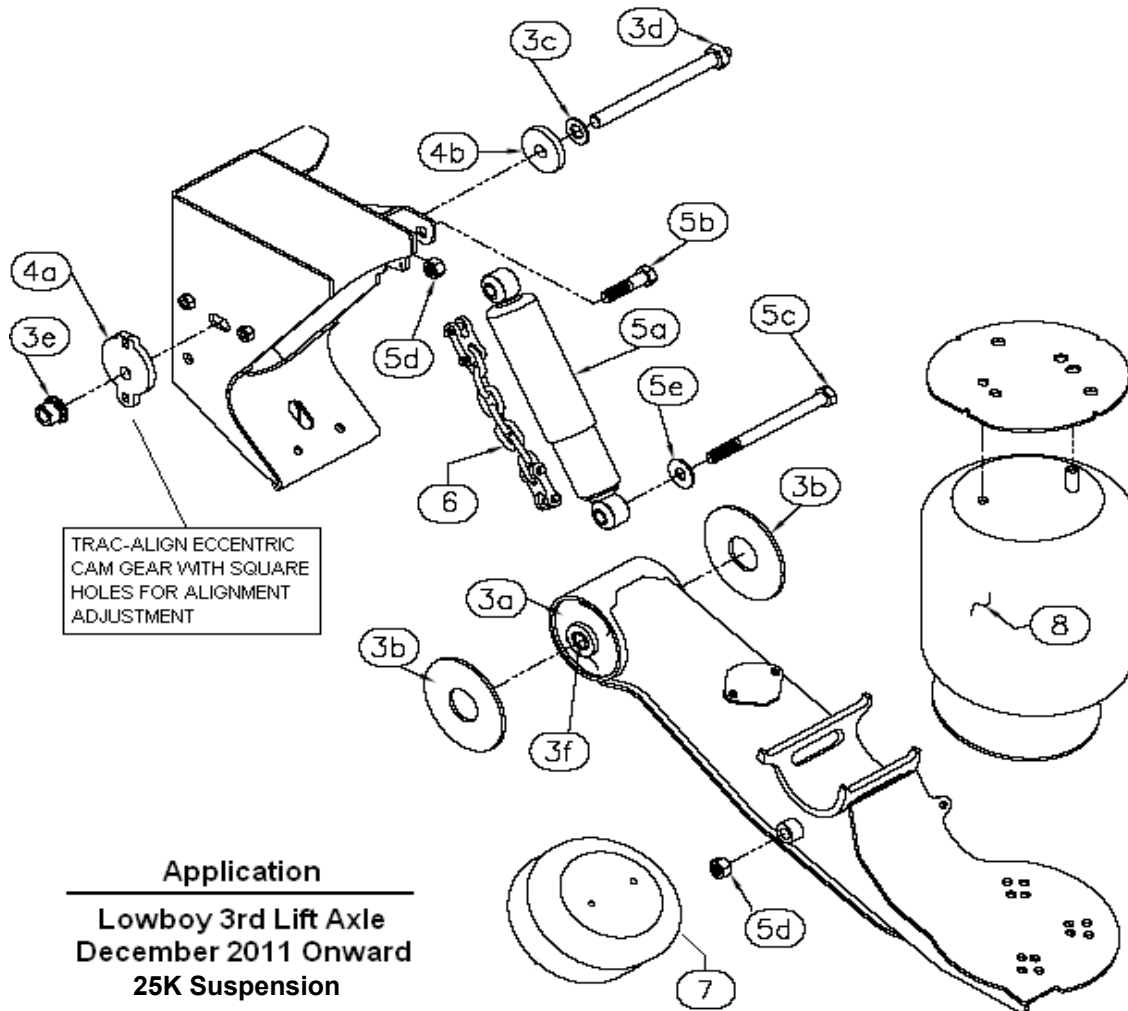


Application

Lowboy 2nd Axle (Trac-Align)
December 2011 Onward
25K Suspension

ITEM	DESCRIPTION	PART #
3a	Bushing Only	2062281
3b	Wear Washer	2062282
3c	Washer 0.875" SAE ID	2062030
3d	E-20 Torx Bolt 0.875"- 9 UNC x 10"	2062285
3e	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
3f	Reducer, 1.25" OD to 0.9" ID	2062029
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
5a	Shock Absorber	2062170
5b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
5c	Bolt 0.75" - 10UNC x 9.5" GR 5	2062036
5d	Nut, lock, 0.75" - 10UNC	2062037
5e	Washer 3/4" ID	2062038
6	Chain Kit, 7 Link with Clevis Ends	2062033
8	Susp. Air Spring (1 per swing arm)	2061077

CUSH CUU-25C-J09L (Hi Lift)



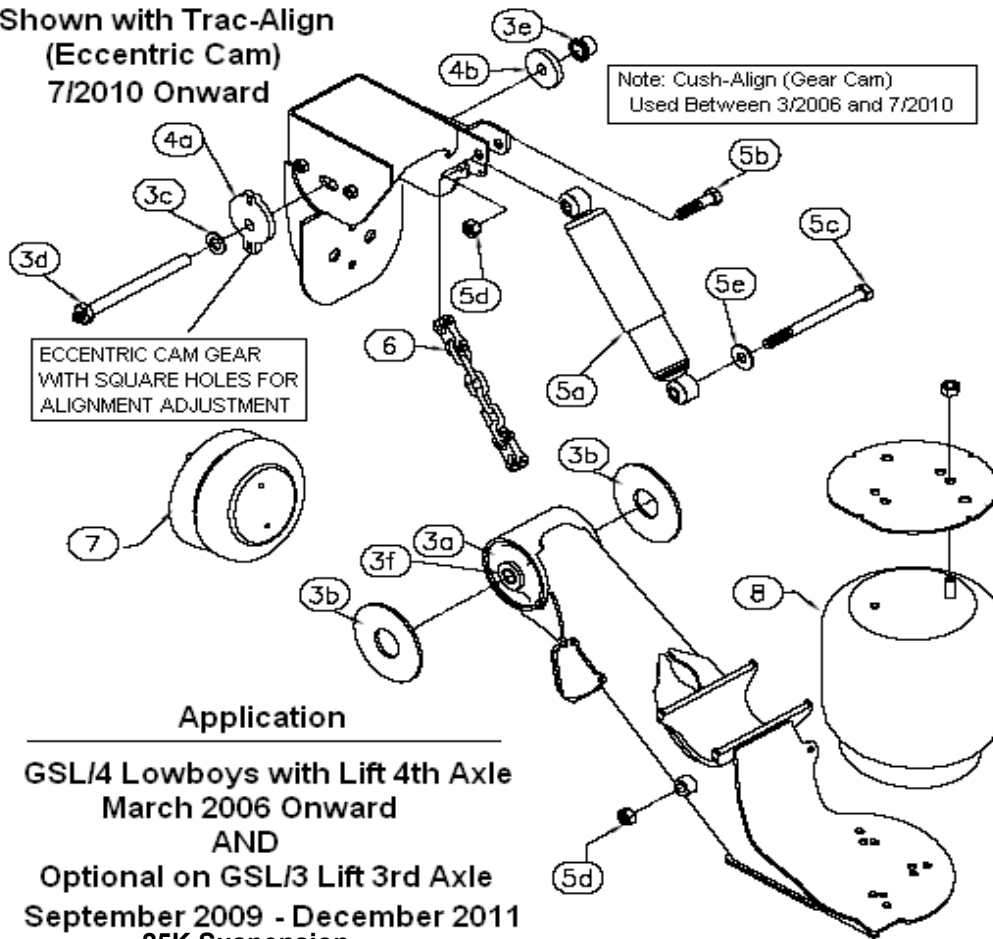
Application

Lowboy 3rd Lift Axle
December 2011 Onward
25K Suspension

ITEM	DESCRIPTION	PART #
3a	Bushing Only	2062281
3b	Wear Washer	2062282
3c	Washer 0.875" SAE ID	2062030
3d	E-20 Torx Bolt 0.875"- 9 UNC x 10"	2062285
3e	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
3f	Reducer, 1.25" OD to 0.9" ID	2062029
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
5a	Shock Absorber	2062170
5b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
5c	Bolt 0.75" - 10UNC x 9.5" GR 5	2062036
5d	Nut, lock, 0.75" - 10UNC	2062037
5e	Washer 3/4" ID	2062038
6	Chain, 7 Link with Clevis Ends	2062033
7	Lift Air Spring (1 per swing arm)	2062186
8	Susp. Air Spring (1 per swing arm)	2061077

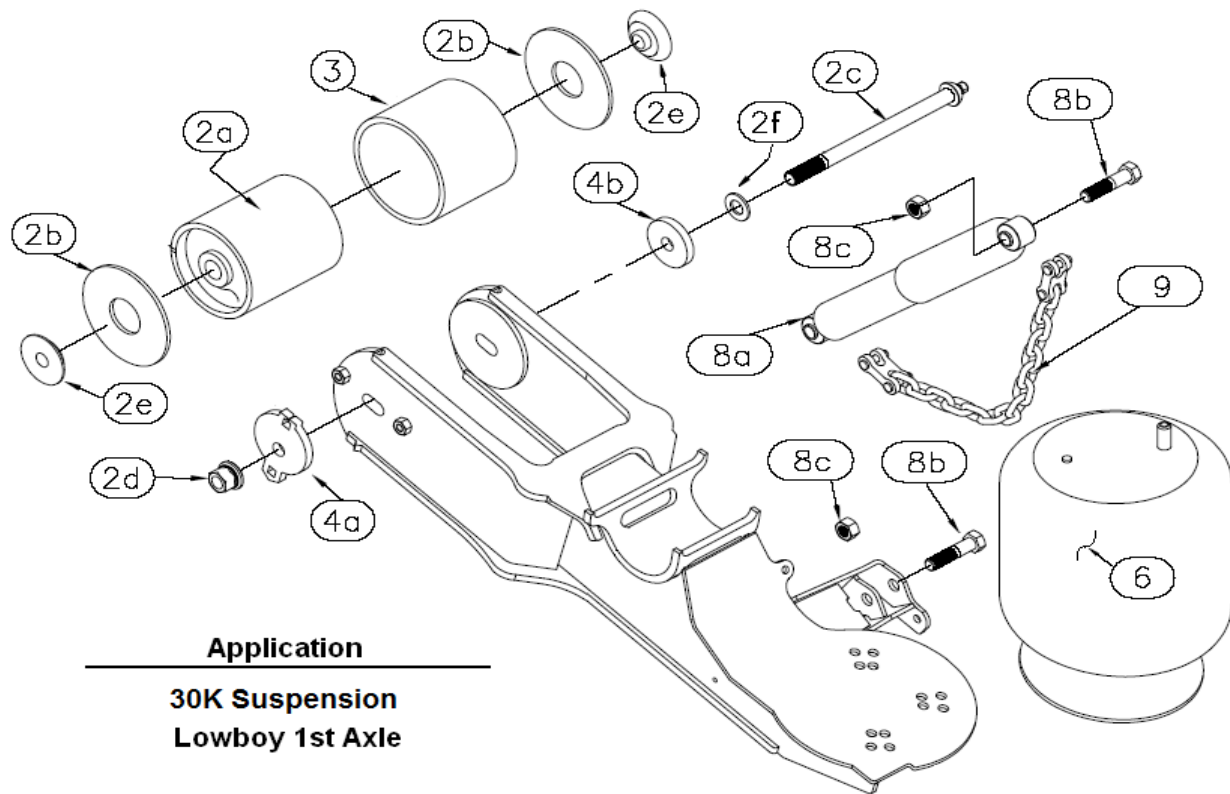
CUSH CUU-25C-B09L (Hi Lift)

Shown with Trac-Align
(Eccentric Cam)
7/2010 Onward



ITEM	DESCRIPTION	PART #
3a	Bushing Only	2062281
3b	Wear Washer	2062282
3c	Washer 0.875" SAE ID	2062030
3d	E-20 Torx Bolt 0.875"- 9 UNC x 10"	2062285
3e	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
3f	Reducer, 1.25" OD to 0.9" ID	2062029
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
5a	Shock Absorber	2062170
5b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
5c	Bolt 0.75" - 10UNC x 9.5" GR 5	2062036
5d	Nut, lock, 0.75" - 10UNC	2062037
5e	Washer 3/4" ID	2062038
6	Chain Kit, 7 Link with Clevis Ends	2062033
7	Lift Air Spring (1 per swing arm)	2062186
8	Susp. Air Spring (1 per swing arm)	2061077

CUSH CYRCM-30HDC-H09



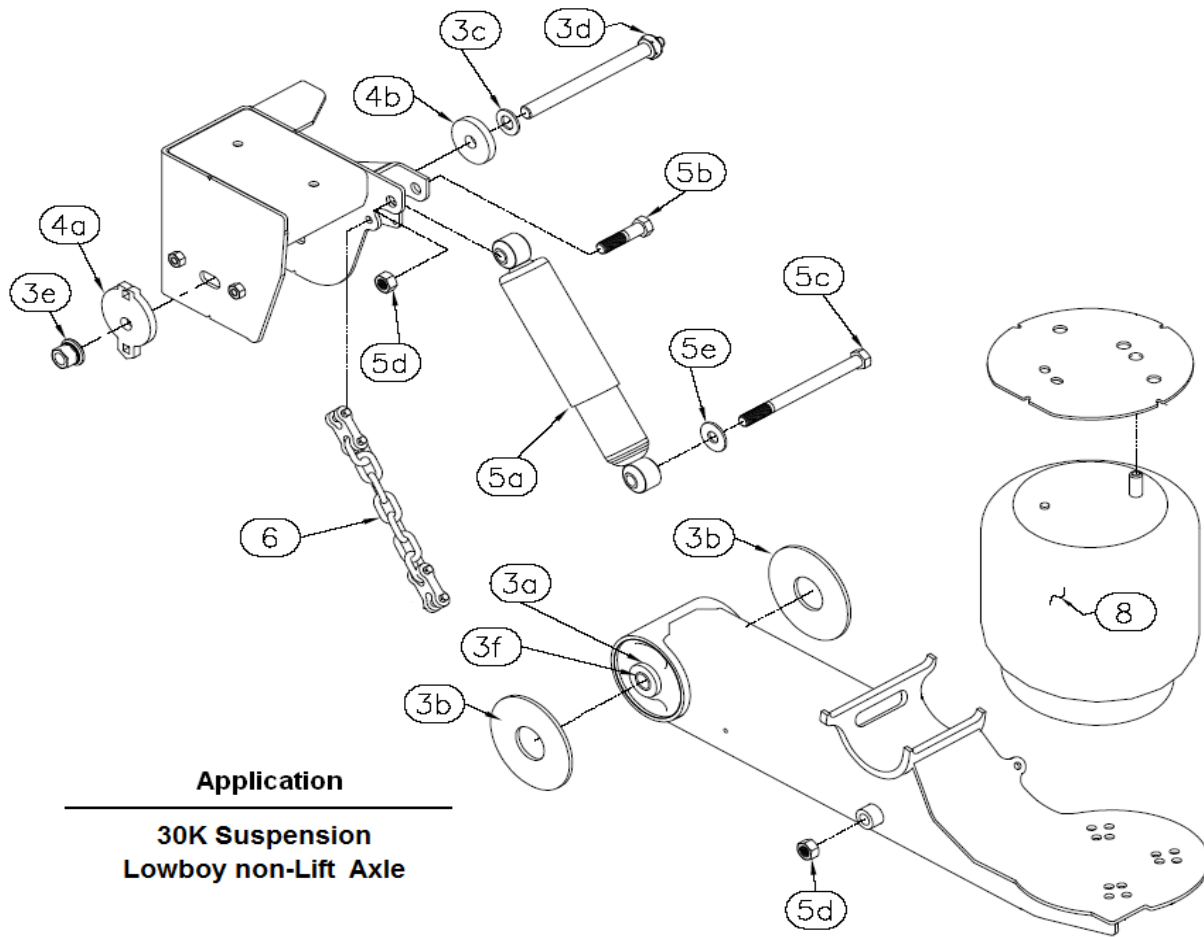
Application

**30K Suspension
Lowboy 1st Axle**

ITEM	DESCRIPTION	PART #
2a	Steel Sleeve (6.2" OD) & Bushing	2062280
2b	Wear Washer	2062282
2c	E-20 Torx Bolt 0.875"- 9 UNC x 12"	2062286
2d	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
2e	Spacer Collar - Double Step	2062284
2f	Washer 0.875" SAE ID	2062030
3	Frame Sleeve, 7"OD x 6.25" ID (Weld In)	T0081 *
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
6	Susp. Air Spring (1 per swing arm)	C0060-F
8a	Shock Absorber	2060490
8b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
8c	Nut, lock, 0.75" - 10UNC	2062037
9	Chain, 14 Link with Clevis Ends	2062034

* Special Order

CUSH CUCM-30HDC-H09

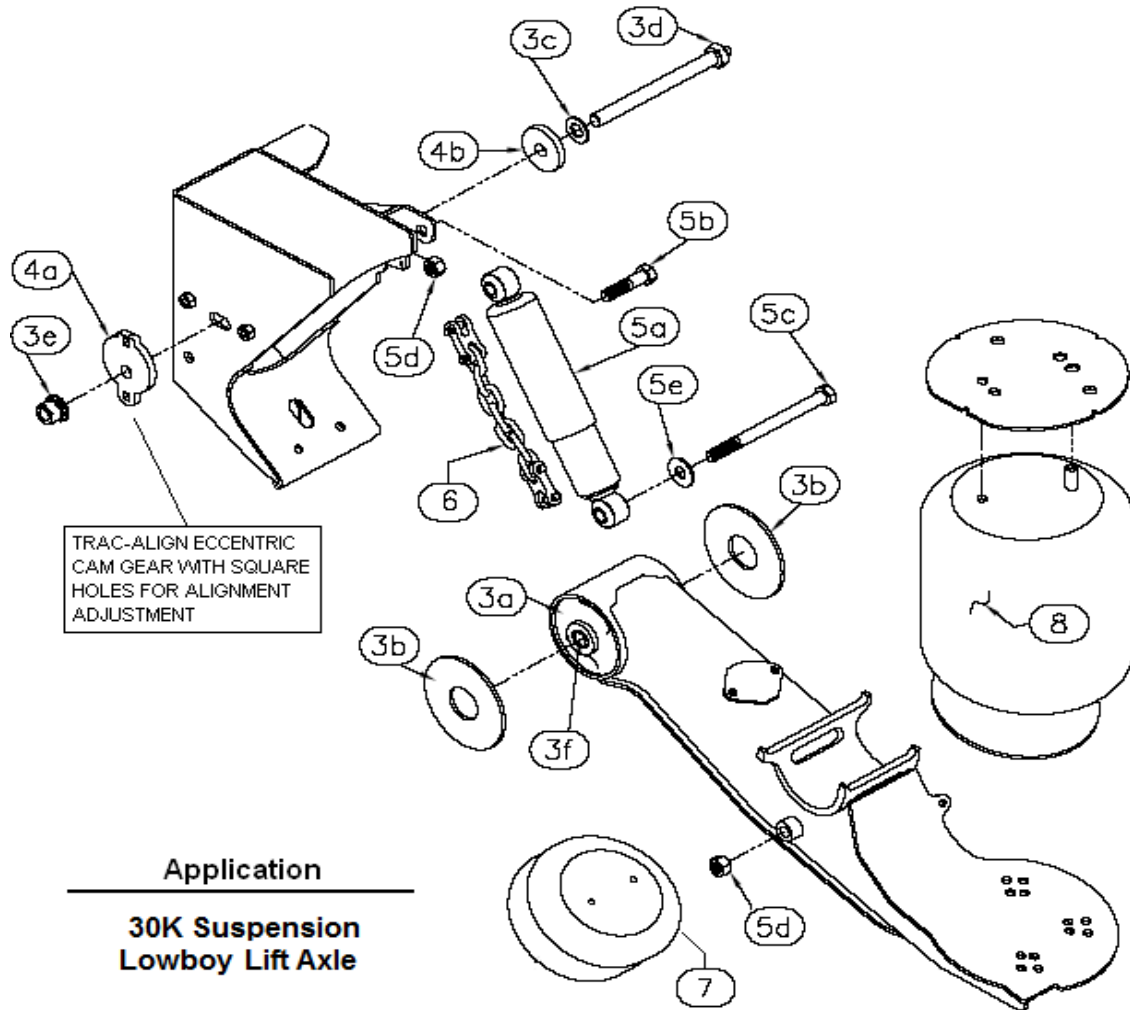


Application

30K Suspension
Lowboy non-Lift Axle

ITEM	DESCRIPTION	PART #
3a	Bushing Only	2062281
3b	Wear Washer	2062282
3c	Washer 0.875" SAE ID	2062030
3d	E-20 Torx Bolt 0.875"- 9 UNC x 10"	2062285
3e	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
3f	Reducer, 1.25" OD to 0.9" ID	2062029
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
5a	Shock Absorber	2061057
5b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
5c	Bolt 0.75" - 10UNC x 9.5" GR 5	2062036
5d	Nut, lock, 0.75" - 10UNC	2062037
5e	Washer 3/4" ID	2062038
6	Chain, 7 Link with Clevis Ends	2062033
8	Susp. Air Spring (1 per swing arm)	C0060-F

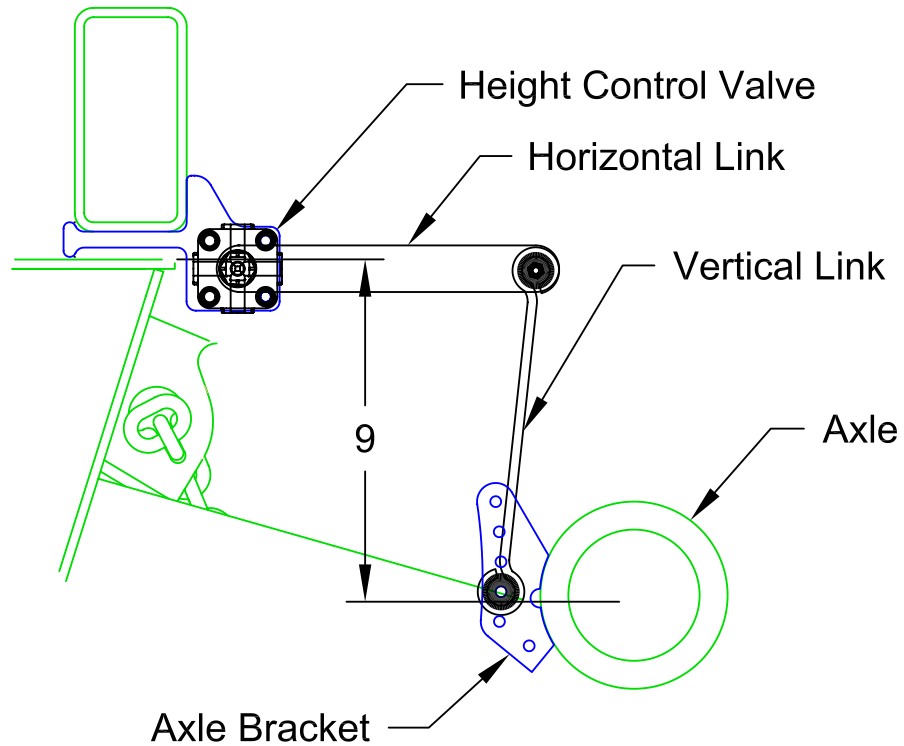
CUSH CUUCM-30HDC-J09L (Hi Lift)



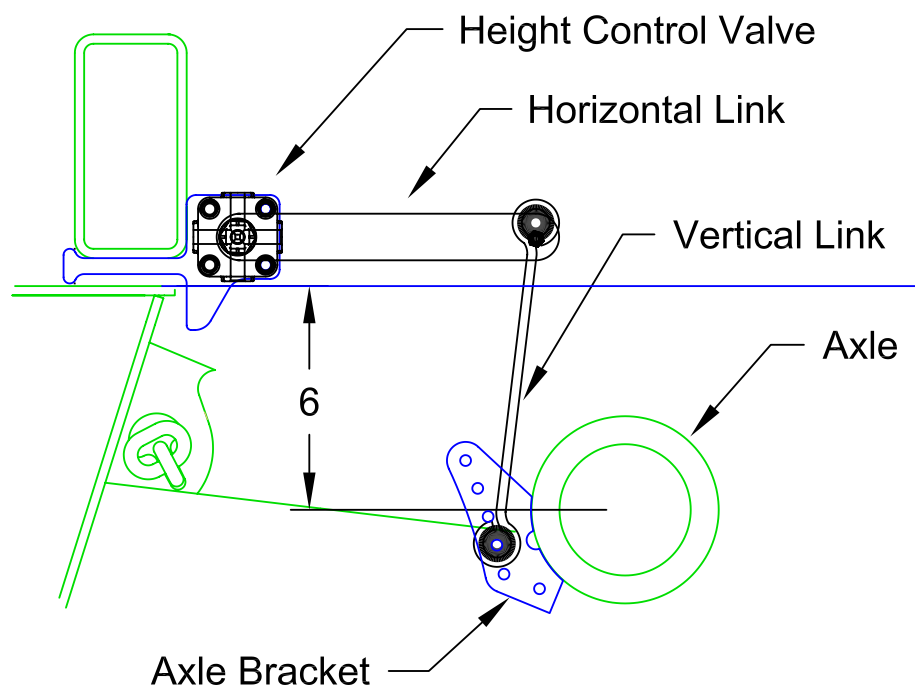
ITEM	DESCRIPTION	PART #
3a	Bushing Only	2062281
3b	Wear Washer	2062282
3c	Washer 0.875" SAE ID	2062030
3d	E-20 Torx Bolt 0.875"- 9 UNC x 10"	2062285
3e	SecureLoc Nut 0.875"- 9 UNC	incl. with Bolt
3f	Reducer, 1.25" OD to 0.9" ID	2062029
4a	Alignment Gear, eccentric, outer	2062031
4b	Alignment washer, inner	2062032
5a	Shock Absorber	2061057
5b	Bolt 0.75" - 10UNC x 3.25" GR 5	2062035
5c	Bolt 0.75" - 10UNC x 9.5" GR 5	2062036
5d	Nut, lock, 0.75" - 10UNC	2062037
5e	Washer 3/4" ID	2062038
6	Chain, 7 Link with Clevis Ends	2062033
7	Lift Air Spring (1 per swing arm)	2062186
8	Susp. Air Spring (1 per swing arm)	C0060-F

Ride Height Setting

Lowboy



25XPL



BARKSDALE RIDE HEIGHT CONTROL VALVE

INSTALLATION and ADJUSTMENT PROCEDURES

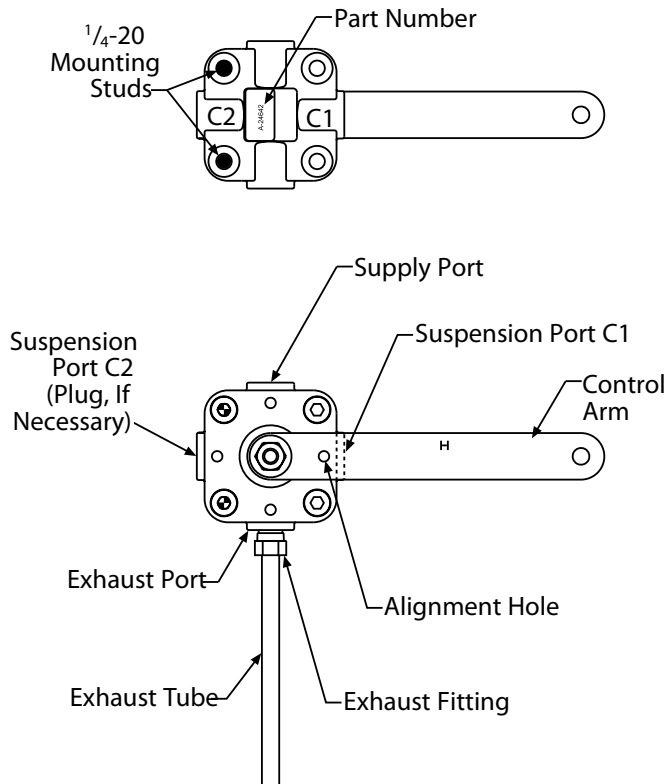


Figure 1. The Barksdale non-delay height control valve

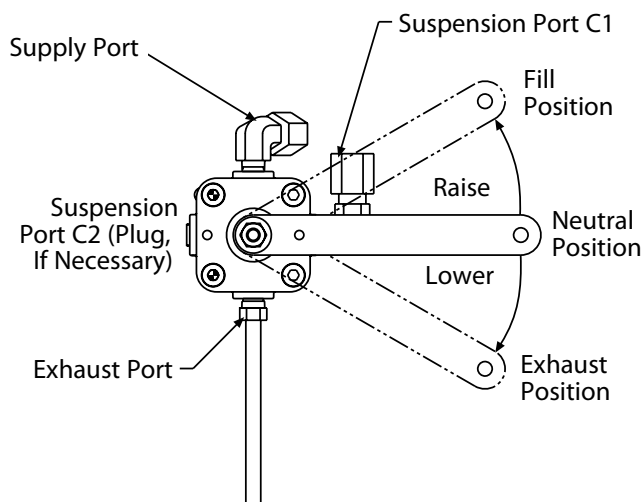


Figure 2. Ride height adjustment

FITTING INSTALLATION

1. Apply thread sealant onto the fitting threads, unless it is already pre-applied.

IMPORTANT: DO NOT APPLY TAPE to the fitting threads; the tape may cause contamination of the air system.

2. Install the supply and suspension fittings on the height control valve.

IMPORTANT: DO NOT OVERTIGHTEN fittings onto the height control valve. Overtightening the fittings may damage the valve body.

VALVE MOUNTING/AIR LINE ATTACHMENT

IMPORTANT: Before installing the height control valve, please review the drawings in the height control valve kit in order to determine the proper mounting and assembly.

1. When tightening the lock nuts on the height control valve mounting studs, DO NOT BACK OUT the studs from the height control valve body.

IMPORTANT: Loosening the studs may cause the height control valve to leak.

2. Ports C1 and C2 on the forward and rear face of the height control valve are the suspension ports. Attach the air line(s) from the air springs to the C1 and/or C2 port(s) (Figure 1).
3. When using only one suspension port, plug the unused port with the 1/4-inch NPT pipe plug provided in the height control valve kit.
4. Attach air supply line from the pressure protection valve to the supply port on the top of the height control valve (Figure 1).
5. Install the exhaust fitting into the exhaust port (Figure 1).
6. Tighten all the lines.

RIDE HEIGHT ADJUSTMENT

1. Determine recommended ride height by locating and reading the information on the identification tag; it is on the suspension trailing arm.
2. If necessary, rotate the control arm for the height control valve up to raise or down to lower the axle until the distance between the suspension mounting surface and the axle center matches the recommended suspension ride height (Figure 2).

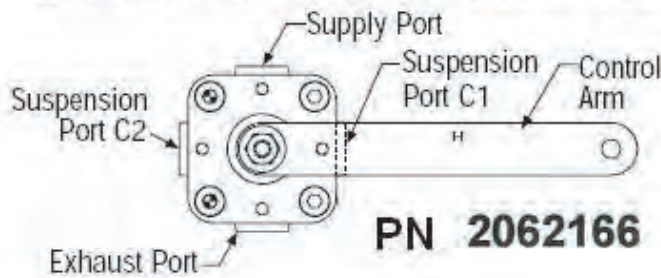
IMPORTANT: After setting the ride height, the control arm must remain in the neutral position.

3. Insert the wooden centering dowel into the control arm alignment hole and engage into the housing (Figure 1).

Cush Air Ride Valves

August 2003 Onward

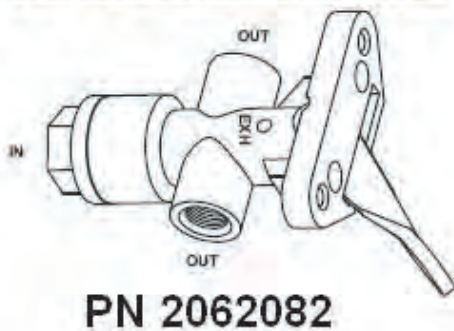
Automatic Height Control Valve



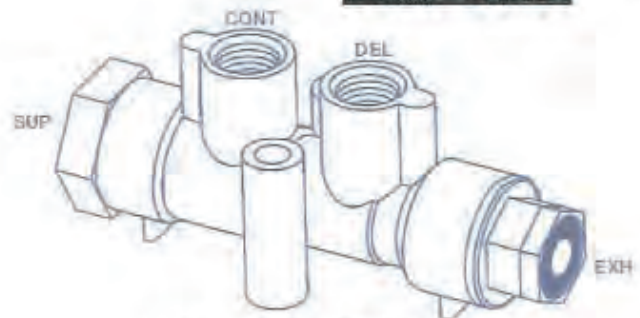
Brake Protection Valve



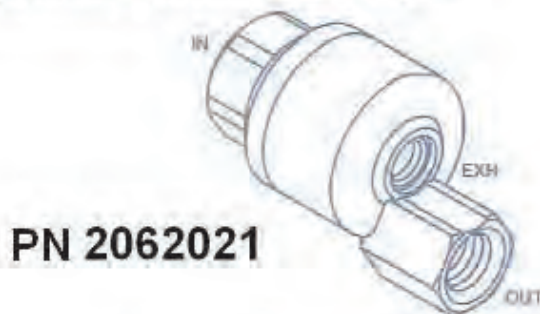
Toggle Switch Valve *



Pilot Valve *



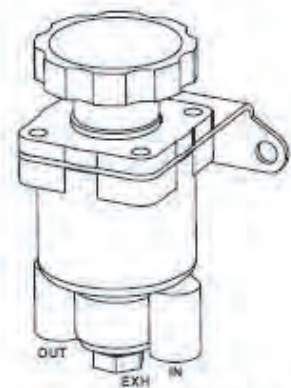
Quick Release Valve *



Pressure Regulator Valve

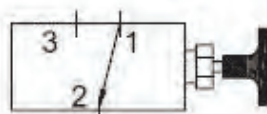


Set at 70 PSI
PN 2062140

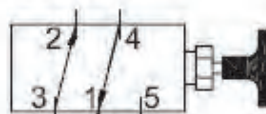


Adj. 5 - 85 PSI
PN 2060560

Push-Pull Valves **



3-Port
PN 2062265



5-Port
PN 2062264

**Not Shown: Air Pressure Gauge
PN 2059361**

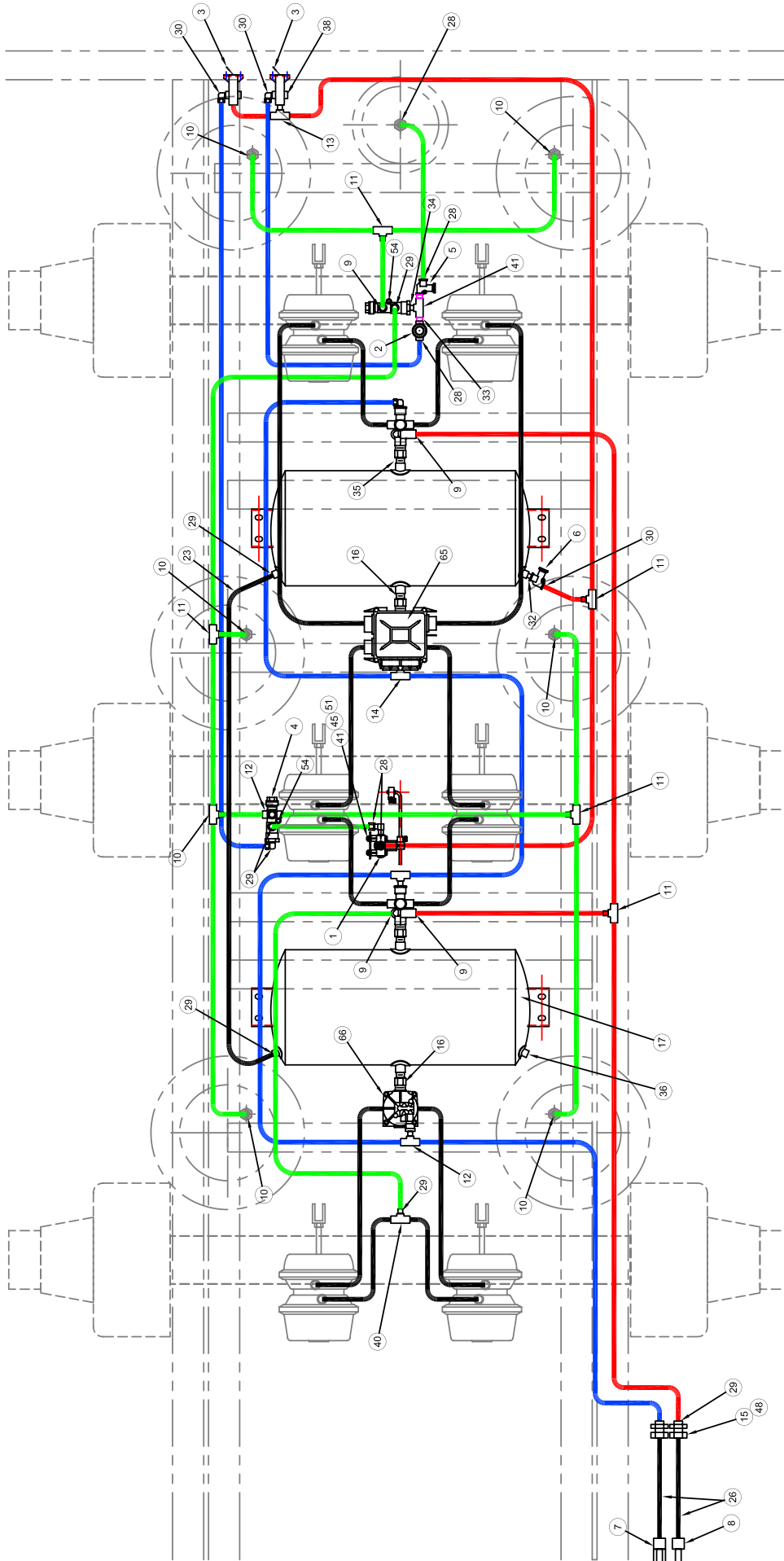
* Used until Sept 2006

** Begin Oct 2006 (replaced toggle, quick release and pilot valve)

Lowboy Tri-Axle Air System with ABS, Dump Valve and Lift Axle

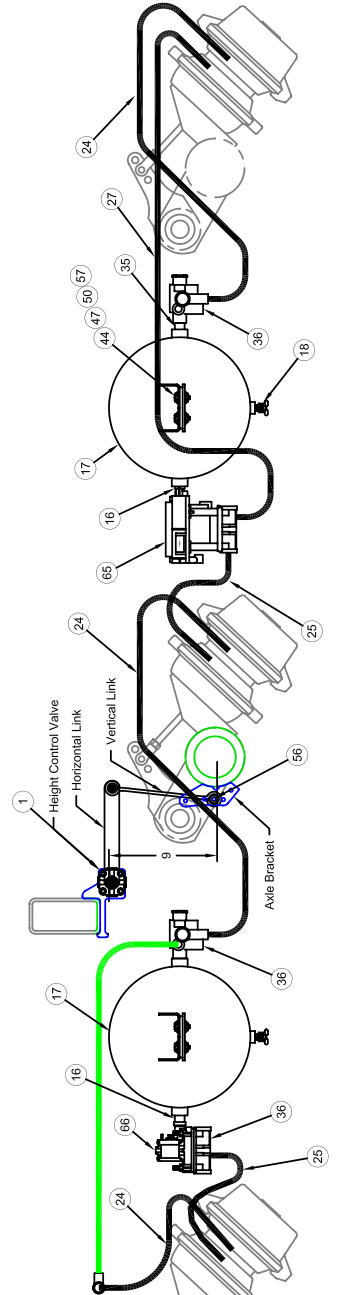
YE1

YE2



BU1

BU2



Eager Beaver

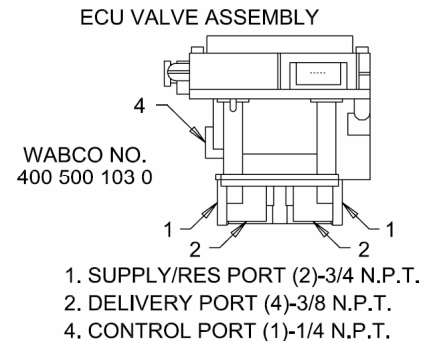
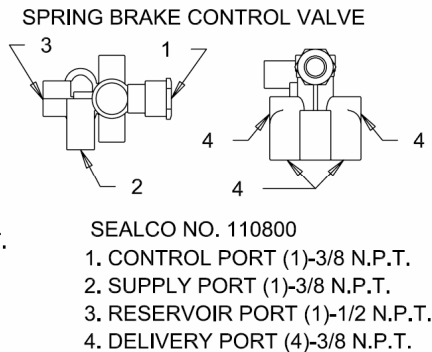
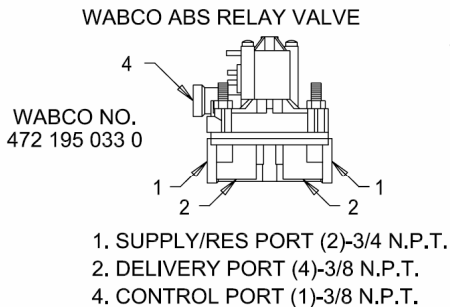
General Engine Co., Inc. - 1403 Highway 27, Lake Wales, Florida, USA, 33859 - 1-800-257-5163
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Lowboy Tri-Axle Air System with ABS, Dump Valve and Lift Axle

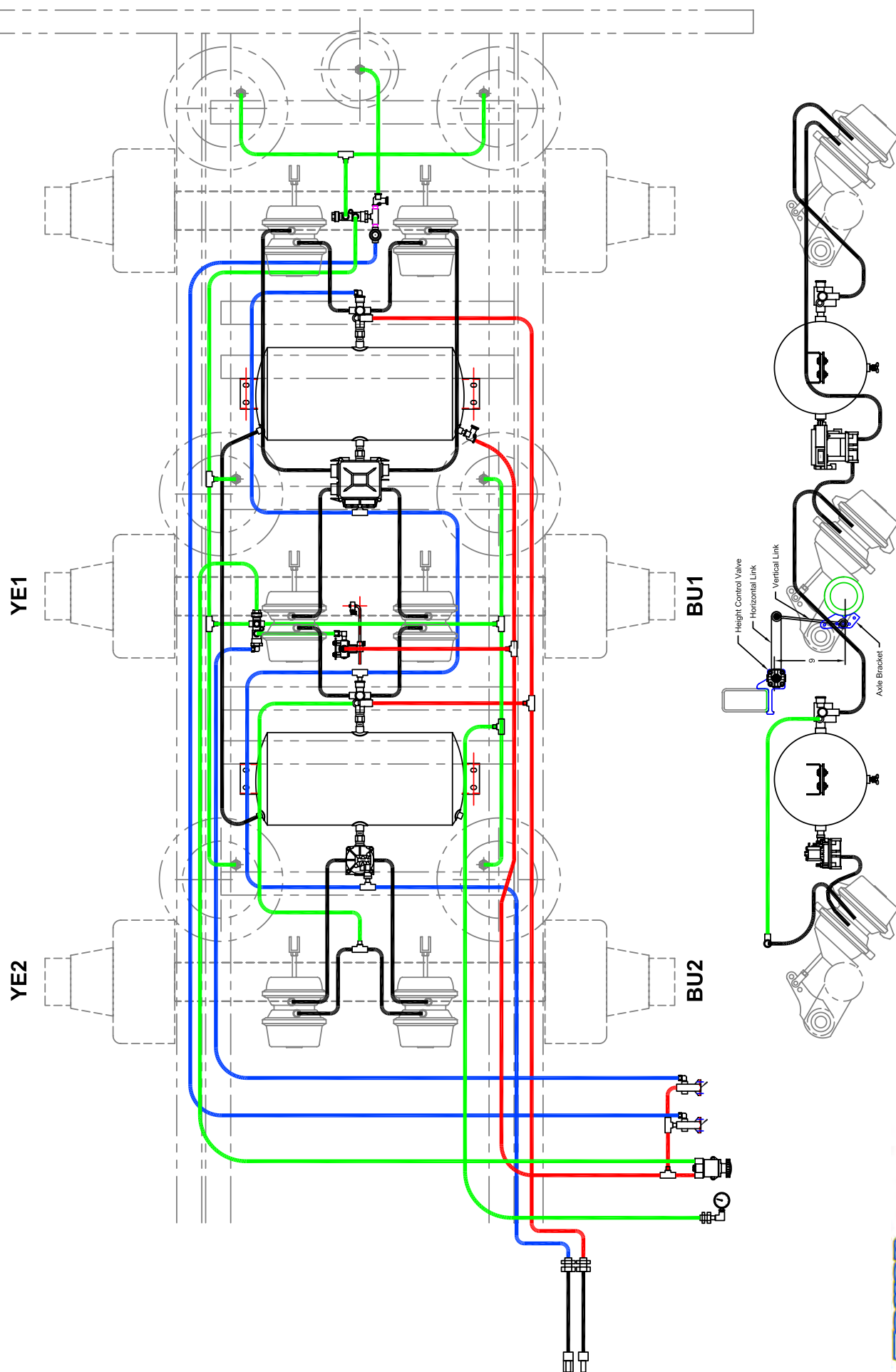
<u>Item</u>	<u>Part</u>	<u>Qty</u>	<u>Description</u>	<u>Comment</u>
1	322071	1	CUSH LWBY HT CONTROL VALVE KIT	
2	322129	1	PRESS REG VALVE, FIXED @ 70 PSI	
3	322132	2	TOGGLE CTRL VLV SEALCO#21600-2	
4	322133	2	AIR PILOT VLV - SEALCO #110591	
5	322135	1	QUICK REL VLV P/N 3800	
6	322139	1	BRAKE PROTECT VALVE #140270	
7	371503	1	3/8FNPT AIR/QD COUPLER	
8	371504	1	3/8FNPT AIR/QD NIPPLE	
9	381031	4	3/8T-3/8M STRAIGHT CONN (QCAB)	
10	381032	6	3/8T-1/4M STRAIGHT CONN (QCAB)	
11	381041	6	3/8TUBE UNION TEE (QCAB)	
12	381051	3	3/8T-3/8M SWVL BRNCH TEE(QCAB)	
13	381052	1	3/8T-1/8M SWVL BRNCH TEE(QCAB)	
14	381053	1	3/8T-1/4M SWVL BRNCH TEE(QCAB)	
15	381101	2	3/8FPT3/8FPT BLKHD CUP (STEEL)	
16	381153	2	3/4"HD NIPPLE, SEALCO #6006	
17	381203	2	AIR TANK (2850)-CUSH, 2PORT	
18	381211	2	REMOTE DRAIN VLV (350002-048)	
19	381302	2	SPRING BRAKE VLV, SEALCO 110800	
20	381878	60	3/8OD NYLON BRAKE TUBING- RED	
21	381879	45	3/8OD NYLON BRAKE TUBING-BLUE	
22	381880	30	3/8OD NYLON BRAKE TUBING-GREEN	
23	381881	10	3/8OD NYLON TUBING (BLACK)	
24	381901	6	24" 3/8 AIR BRAKE HOSE ASSY	
25	381902	4	30" 3/8 AIR BRAKE HOSE ASSY	
26	381904	2	48" 3/8 AIR BRAKE HOSE ASSY	
27	381910	2	54" 3/8 AIR BRAKE HOSE ASSY	
28	382001	5	3/8T-1/4M SWVL 90 ELBOW (QCAB)	
29	382002	10	3/8T-3/8M SWVL 90 ELBOW (QCAB)	
30	382003	3	3/8T-1/8M SWVL 90 ELBOW (QCAB)	
31	382106	10	3/8 90°STRT ELBOW, BRASS, 3400X6	
32	382150	1	3/8"HEX NIPPLE (BRASS)	
33	382151	2	1/4"HEX NIPPLE (BRASS)	
34	382154	2	3/8"X 1/4"HEX NIPPLE (BRASS)	
35	382156	2	1/2"X 3/4"HEX NIPPLE	
36	382162	8	3/8 SQHD PLUG (BRASS)	
37	382163	2	3/4 HEXHD PLUG (BRASS)	
38	382165	2	1/8 HEX SOCKET PLUG (BRASS)	
39	382171	1	1/4 HEX SOCKET PLUG (BRASS)	
40	382224	1	MOUNTED TEE'S (SEALCO)	
41	383121	1	1/4 NPT BRASS TEE, W/H 3700X4	
42	391311	1	ABS 2.5" AMBR MARKERLITE	(Not Shown)
43	411101	2	1/4-20X2 ZN HXHD CPSCRW GR5	
44	411121	8	3/8-16X1.25 HEXHD CPSCRW GR5	
45	411301	2	1/4-20 NYLOCK	

Lowboy Tri-Axle Air System with ABS, Dump Valve and Lift Axle

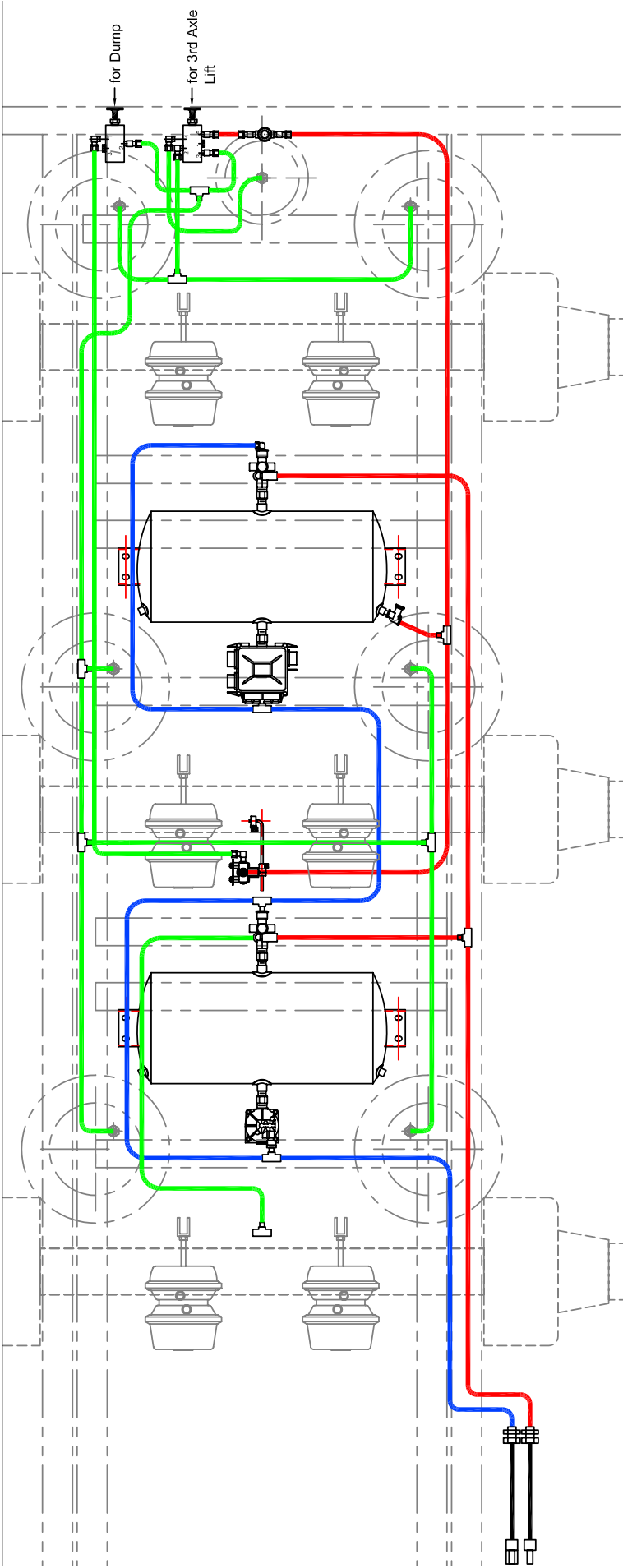
<u>Item</u>	<u>Part</u>	<u>Qty</u>	<u>Description</u>	<u>Comment</u>
46	411309	2	5/16-18 HEXNUT ZN GR.2	
47	411321	8	3/8-16 NYLOC LOCKNUT	
48	411402	2	3/8 RBC CLAMP	(Not Shown)
49	411471	2	1"SAE FLAT WASHER PLATED	
50	411501	16	3/8 STD FLAT WASHER,ZN	
51	411503	4	1/4"U.S.STD.FLAT WASHER,ZN	
52	411553	10	24" TIE WRAP #CT24HD	(Not Shown)
53	411626	10	10-32X3/4 PANHD SCR W TYPE F ST	
54	411821	18	1/2ID HOSE SEPARATOR	(Not Shown)
55	413002	2	5/16-20X2 1/2 TORXHD DECKSCREW	
56	413041	1	1/4X1.375" SAFETY SNAP PIN	
57	420001	2	AIRTANK MOUNTING PAD #1068	
58	423002	1	2.5"GROMMET PET#B142-18	(Not Shown)
59	440041	1	"CAUTION TRLR EQPT W/ABS BRKS"	(Not Shown)
60	440042	2	"ALL-WHEEL ABS"6.125X12.125	(Not Shown)
61	440043	1	"ABS INDICATOR LAMP INSTRUCTN"	(Not Shown)
62	445844	1	DECAL (LIFT AXLE)	(Not Shown)
63	445845	1	DECAL (AIRBAG EXHAUST)	(Not Shown)
64	445850	1	DECAL -DANGER,SPRING BRAKES	(Not Shown)
65	451007	1	4005001030 (2&3 AXLE ECU),ESII	
66	451010	1	472-195-033-0 RELAY VALVE	
67	451022	6	4497130180 6' SENSOR EXT CBLE	(Not Shown)
68	451056	1	4494410300 10' RELAY CABLE,ESII	(Not Shown)
69	451020	4	4410328080 SENSOR W 1' CABLE	(Not Shown)
70	451015	4	8997598154 SENSOR RETAINER CLIP	(Not Shown)



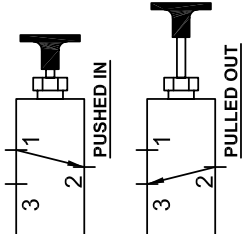
Lowboy Tri-Axle Air System with ABS, Manual Raise & Lower and Lift Axle



Tri-Axle Lowboy Air System with Push/Pull Valves (NO Toggle or Pilot Valves)



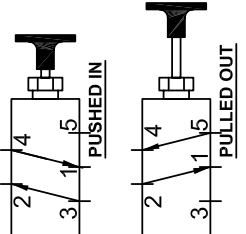
1st & 2nd Axle Dump Valve (p/n 322130)



DUMP VALVE(3) Port x (2) Position - Knob IN		
PORT No	Description	
1	HCV	Connected
2	Air Bags	Blocked
3	Exhaust	Blocked

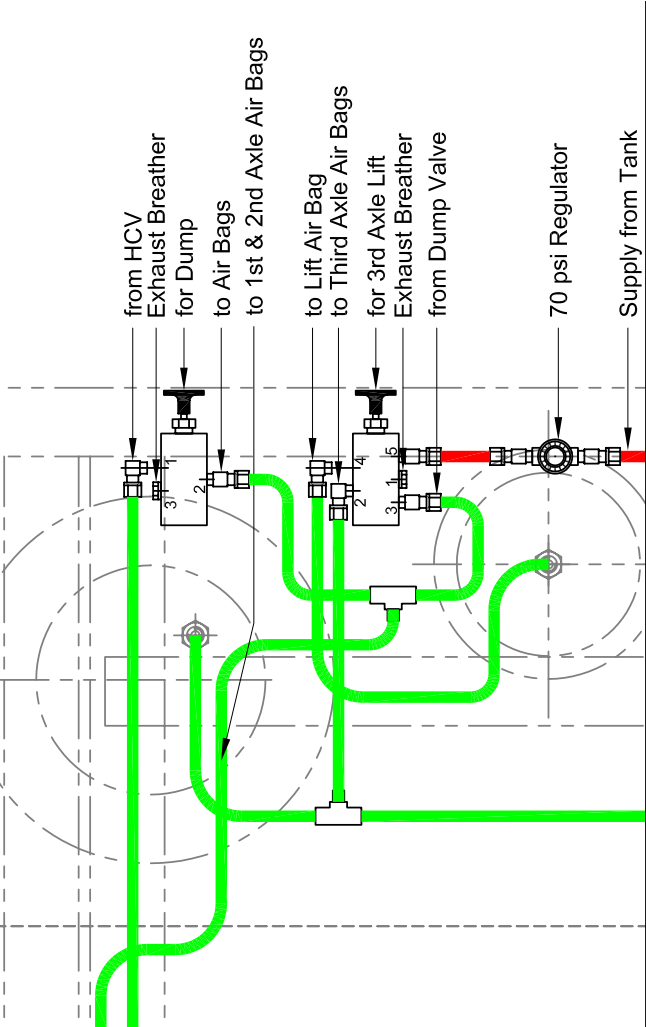
DUMP VALVE(3) Port x (2) Position - Knob OUT		
PORT No	Description	
1	HCV	Blocked
2	Air Bags	Connected
3	Exhaust	Connected

3rd Axle Lift/Dump Valve (p/n 322128)

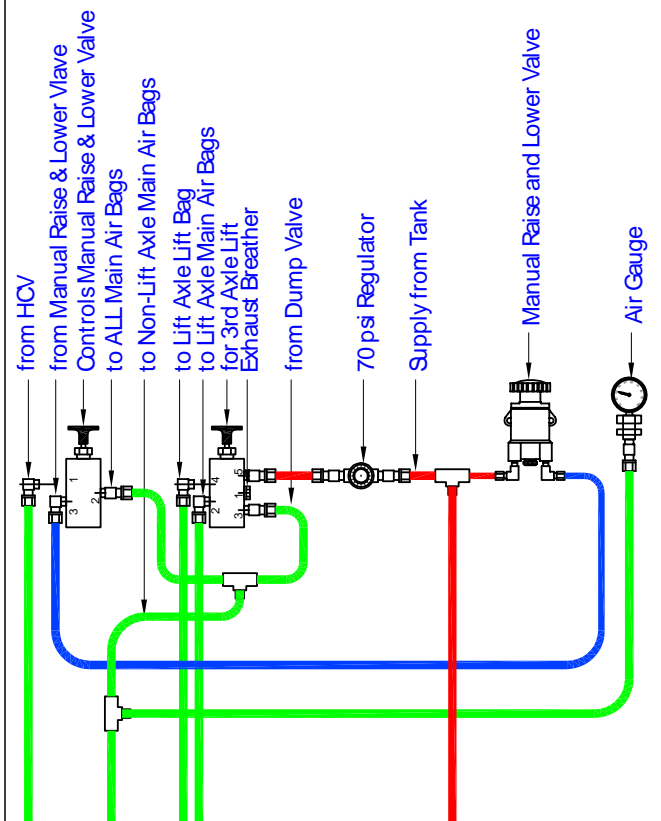
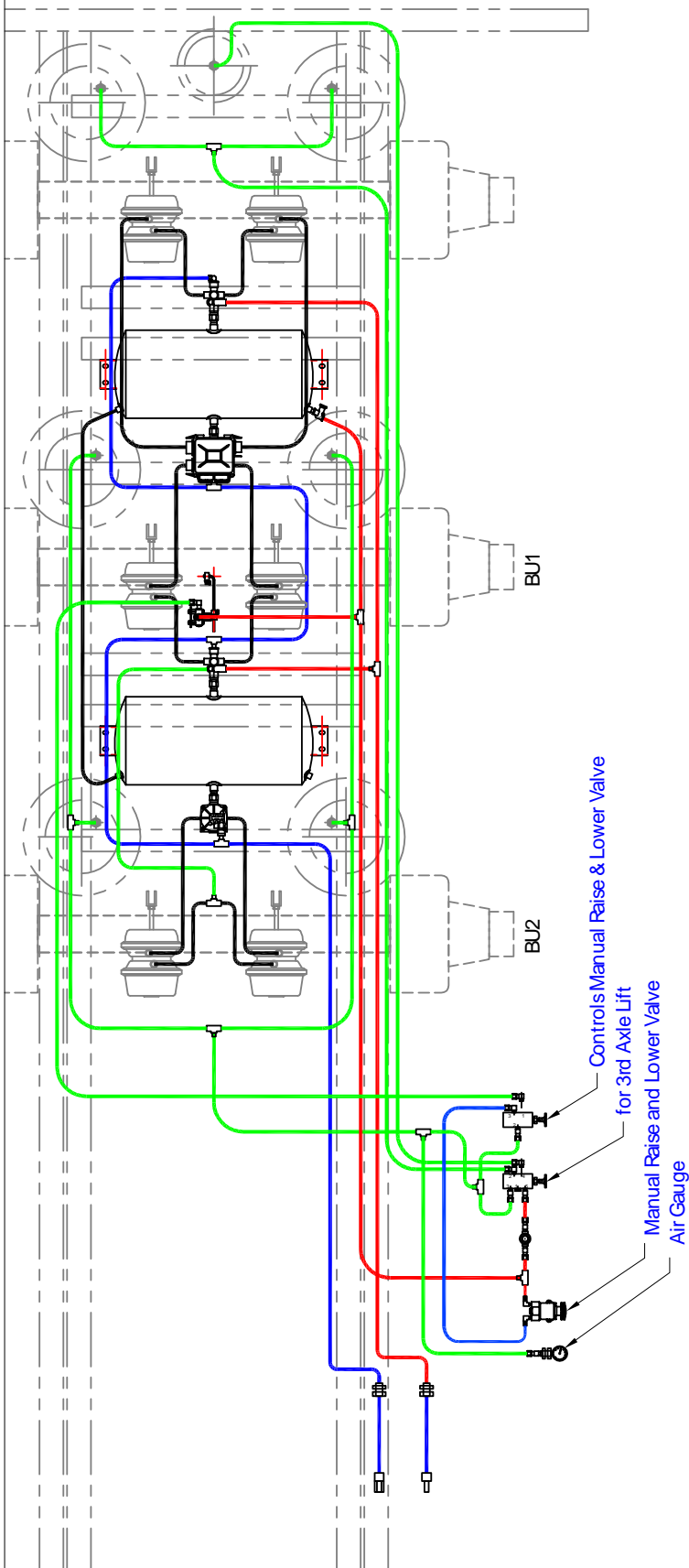


LIFT VALVE(5) Port x (2) Position - Knob IN		
PORT No	Description	
3	Dump Valve	Connected
2	Air Bags	Connected
1	Exhaust	Connected
4	Lift Bag	Blocked
5	Supply	Blocked

LIFT VALVE(5) Port x (2) Position - Knob OUT		
PORT No	Description	
3	Dump Valve	Blocked
2	Air Bags	Connected
1	Exhaust	Connected
4	Lift Bag	Connected
5	Supply	Connected



Tri-Axle Lowboy Air System with Push/Pull Valves (NO Pilot Valves) and Manual Raise & Lower



1st & 2nd Axle Dump Valve (p/n 322130)

PORT No	Description	DUMP VALVE (3) Port x (2) Position	- Knob IN
1	HCV	Connected	Air Flows from HCV to Air Bags
2	Air Bags	Blocked	
3	Exhaust		

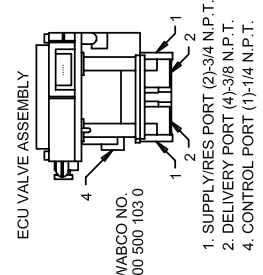
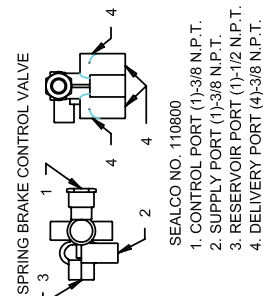
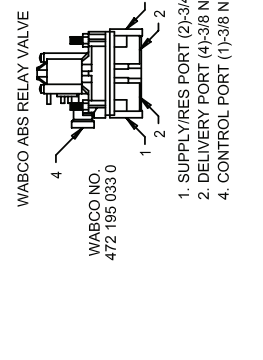
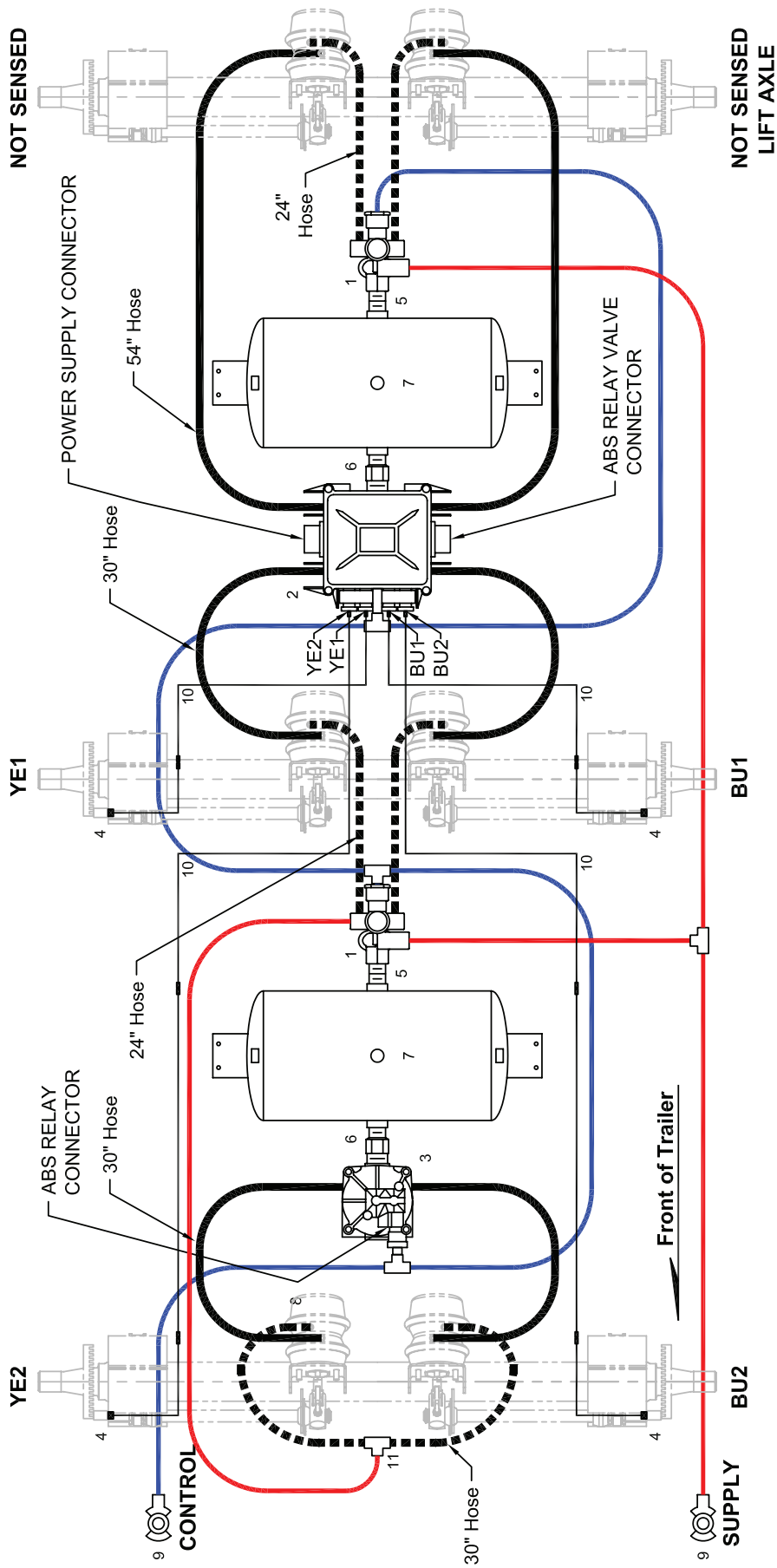
PORT No	Description	DUMP VALVE (3) Port x (2) Position	- Knob OUT
1	HCV	Blocked	Air Flows from Air Bags out of Exhaust
2	Air Bags	Connected	
3	Exhaust		

3rd Axle Lift/Dump Valve (p/n 322128)

PORT No	Description	LIFT VALVE (5) Port x (2) Position	- Knob IN
3	Dump Valve	Connected	Air Flows from Dump Valve to 3rd Axle Air Bags
2	Air Bags	Connected	
1	Exhaust	Connected	Lift Air Bags is Exhausted
4	Lift Bag	Blocked	
5	Supply		

PORT No	Description	LIFT VALVE (5) Port x (2) Position	- Knob OUT
3	Dump Valve	Blocked	3rd Axle Air Bags are Exhausted
2	Air Bags	Connected	
1	Exhaust	Connected	Air Flows from Supply to Lift Air Bag
4	Lift Bag	Connected	
5	Supply		

4S-3M Air System Schematic for Tri-Axle Lowboy with Lift Third



Item	Description
1	Spring Brake Valve
2	ECU ABS Valve
3	ABS Relay Valve
4	Wheel Sensors
5	3/4" x 3/4" Nipple
6	3/4" x 1/2" Nipple
7	2850 Culin Air Tank
8	Air Brake Chambers
9	Glad-hands
10	Sensor Extension Cable
11	Mounting Tee

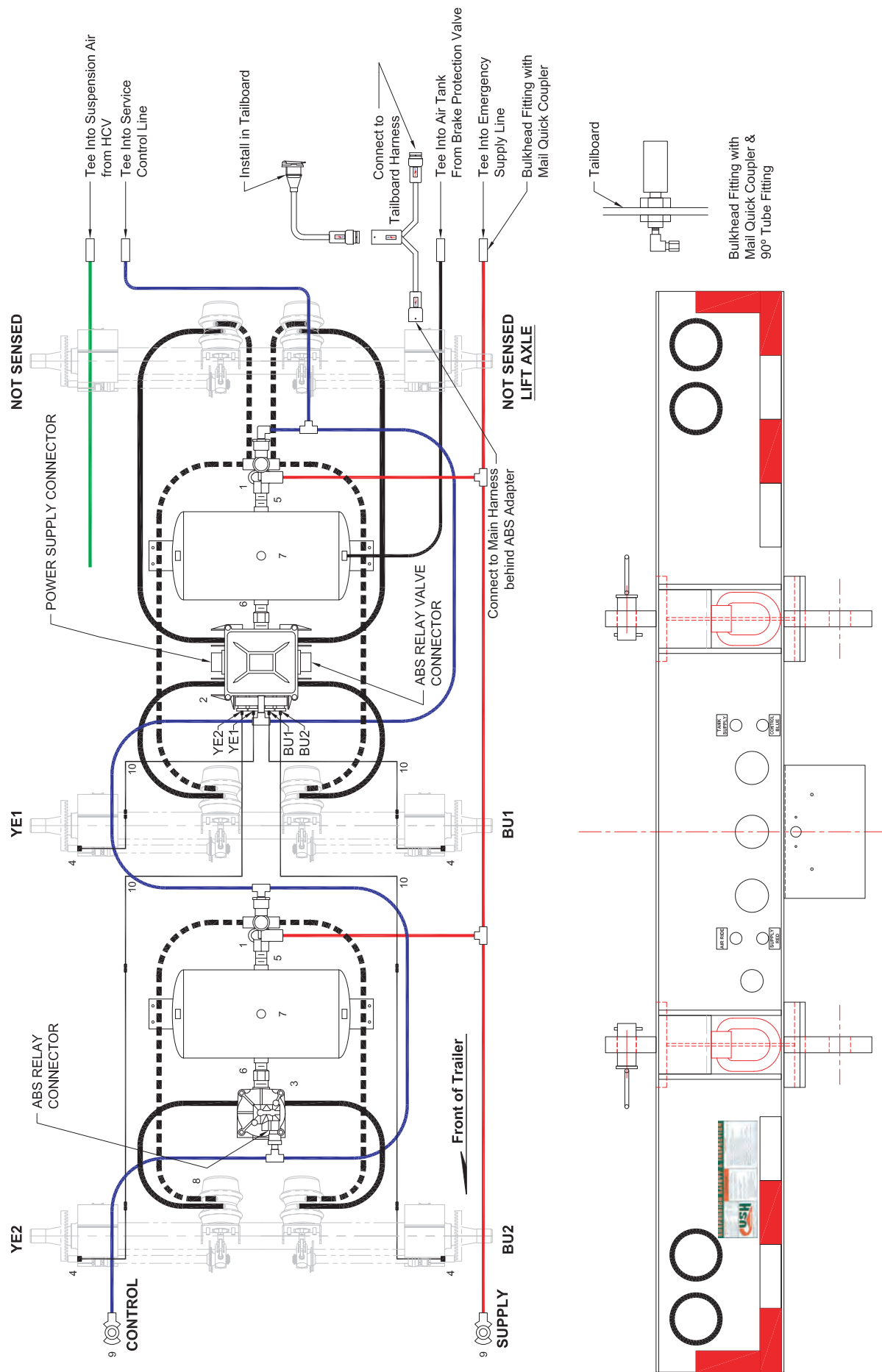
- CONTROL LINE (BLUE)
- SUPPLY LINE
- SERVICE BRAKE
- PLUG ALL UNUSED PORTS
- A/C ANTI-COMPOUNDING

Note: ALL air lines and hoses must be properly routed and secured, so to prevent contact with any surfaces or each other.



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Booster or Universal Flip Air & Electrical Install shown on Tri-Axle Lowboy



Note: ALL electrical cables, air lines and hoses must be properly routed and secured, so to prevent contact with any surfaces or each other.



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REMOVABLE AXLE OPERATING INSTRUCTIONS

Removable Axle ONLY Install

When the Removable Axle is close coupled to the trailer, simply connect the bottom and top pins, bottom pins first. If equipped, use the Manual override controls on the Removable Axle to raise or lower the Removable Axle until the upper pins can be inserted.

Attach **ALL** air and electrical connections. See the final Check List at the end of this document for removable axle operational notes.

⚠ WARNING! Make sure that the manual override control are turned OFF before moving trailer. To turn off the manual override control, push in the knob labeled PULL TO TURN ON MANUAL OVERRIDE. See label to right.



Removable Axle and Nitro-Booster Install

When the Removable Axle is used with a Nitro-Spreader Bar, simply connect the bottom and top pins of both the spreader bar and the Removable Axle, bottom pins first. Using the manual raise and lower controls for both the trailer and Removable Axle, as well the jack on the Nitro-Spreader bar can facilitate this connecting procedure. See the operational instruction decal on the Nitro-Spreader Bar for detail instructions of its use.

⚠ WARNING! The Nitro-Spreader bar is for use with **ONE** Removable Axle **ONLY**. Using more than one Removable Axle can damage the Nitro-Spreader bar.


⚠ WARNING! Make sure that the manual override controls on the trailer and Removable Axle are turned OFF before moving trailer.


Removable Axle and East Coast Spreader Install

When the Removable Axle is used with an East Coast Spreader Bar, a shimming process is required to transfer the proper weight to the Removable Axle.

Install the bottom pins only of both the spreader bar and the Removable Axle. DO NOT install the top pins. Connect **SUPPLY RED** air line. This will allow the use of the Removable Axle's manual override controls to raise and lower the Removable Axle. Install equal amounts of Shims at the spreader to trailer connection as are used at the Removable Axle to spreader connection. Make sure that the shims on each side of the trailer are always the same. Use the Manual Override controls on both the trailer and Removable Axle to raise or lower the trailer rear and the Removable Axle until the proper amount of shims can be inserted. This is usually achieved by raising the trailer rear and lowering the Removable Axle.

Changing the shim thickness may need to be done several times until ALL the axle loads are equal. Checking axle loads requires a certified scale.

 **CAUTION!** Confirmation of axle loads should only be checked at Certified Scales. Unequal axle loads can damage the trailer frame or suspensions.

 **WARNING!** Make sure that the any manual over ride control are turned OFF before moving trailer.

Removable Axle Operation Check List

- Make sure that the electrical plugs are firmly inserted and locked into the electrical socket at the rear of the trailer and spreader bar, if installed. Check ALL Lights for proper operation (Stop/Tail/Turn, Marker, Clearance and Strobe or Back-Up Lights (if equipped)).
- Make sure that all Air Lines are connected at both the rear of the trailer and spreader bar, if installed. Check that the Air Brake will apply and release. Removable Axles do NOT have the ABS function. The brake application is independent of the trailer brakes and receives it supply (Emergency Line) and control (Service Line) directly from the tractor. See chart below for air connection labeling.

Decal Image

SUPPLY
RED

RED SUPPLY (Emergency) air line from tractor.

CONTROL
BLUE

BLUE Control (Service) air line from tractor.


TANK
SUPPLY

Supply line from trailer tank brake protection valve.

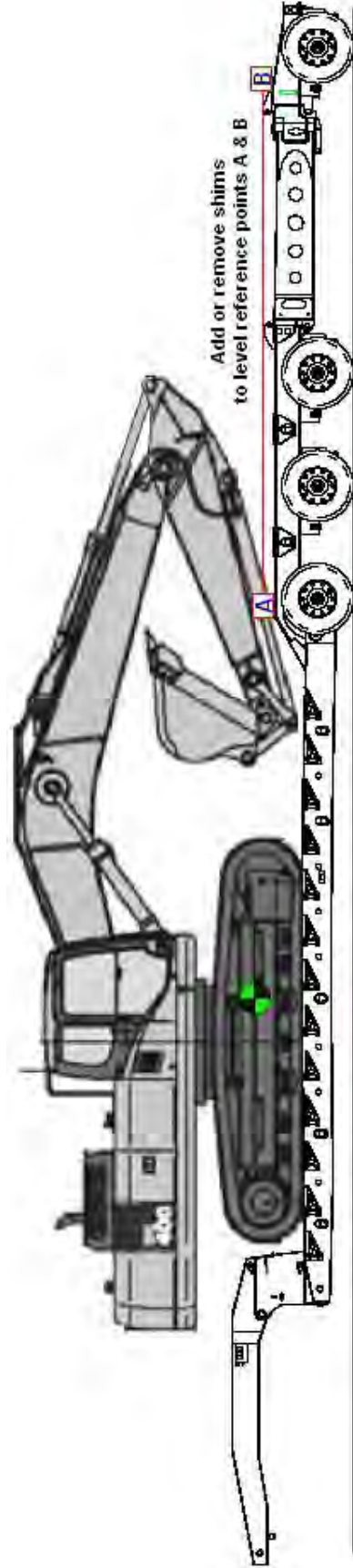
AIR RIDE

Air Ride Supply air from trailer Automatic Height Control Valve.

- The air suspensions air supply comes from the trailers Automatic Height Control Valve (HCV), so the ride height should be the same as the trailers axles when loaded. The Removable Axle should NOT be used when traveling empty or minimal load. The Removable Axle can be complete removed or flipped over onto the trailer for storage.

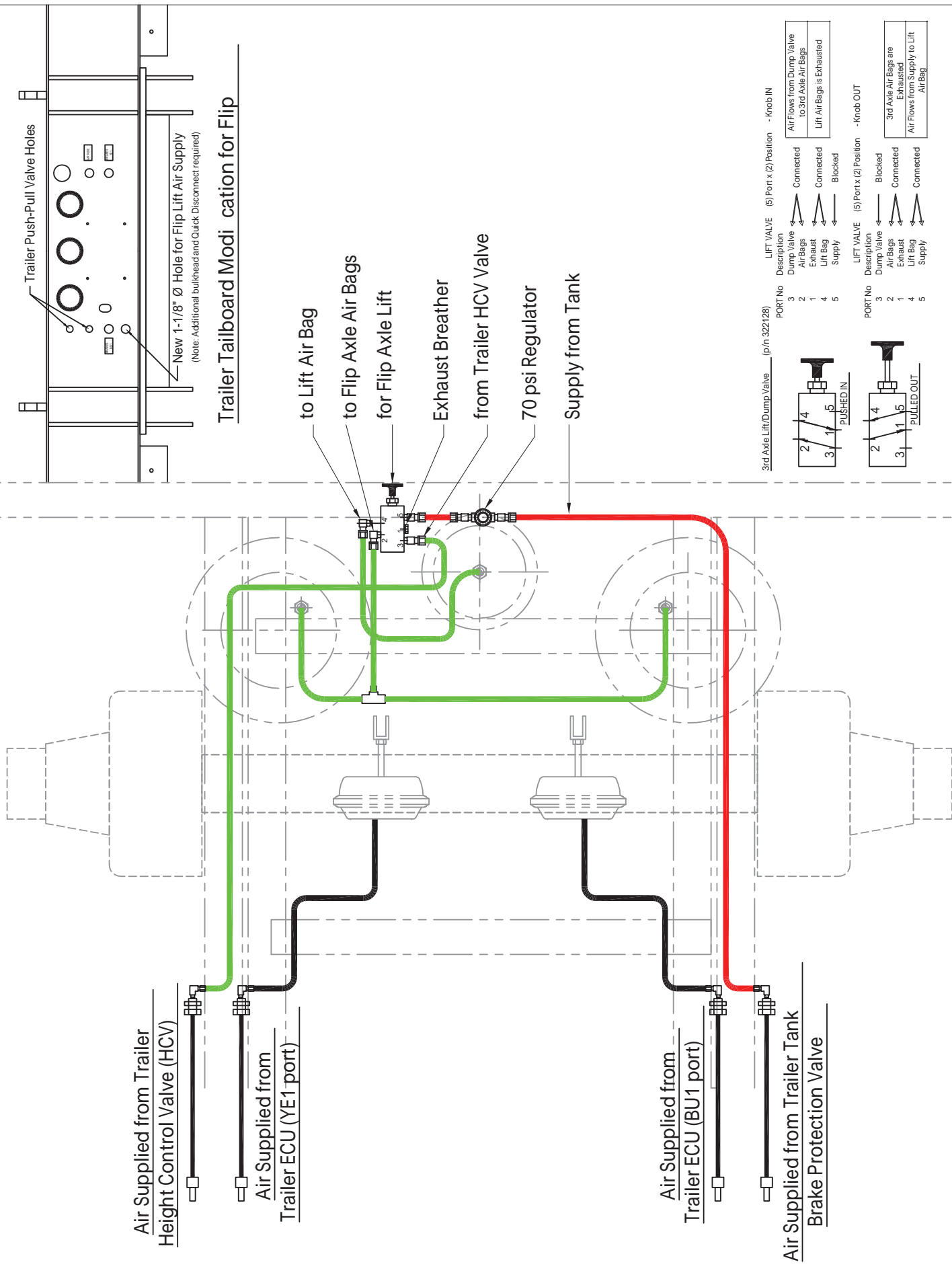
 **WARNING!** Make sure that the manual over ride control are turned OFF and back to automatic before moving the trailer. Failure to do so may damage either the trailer frame or suspensions.

Universal Spread Axle Shimming and Trailer Scaling Recommendations



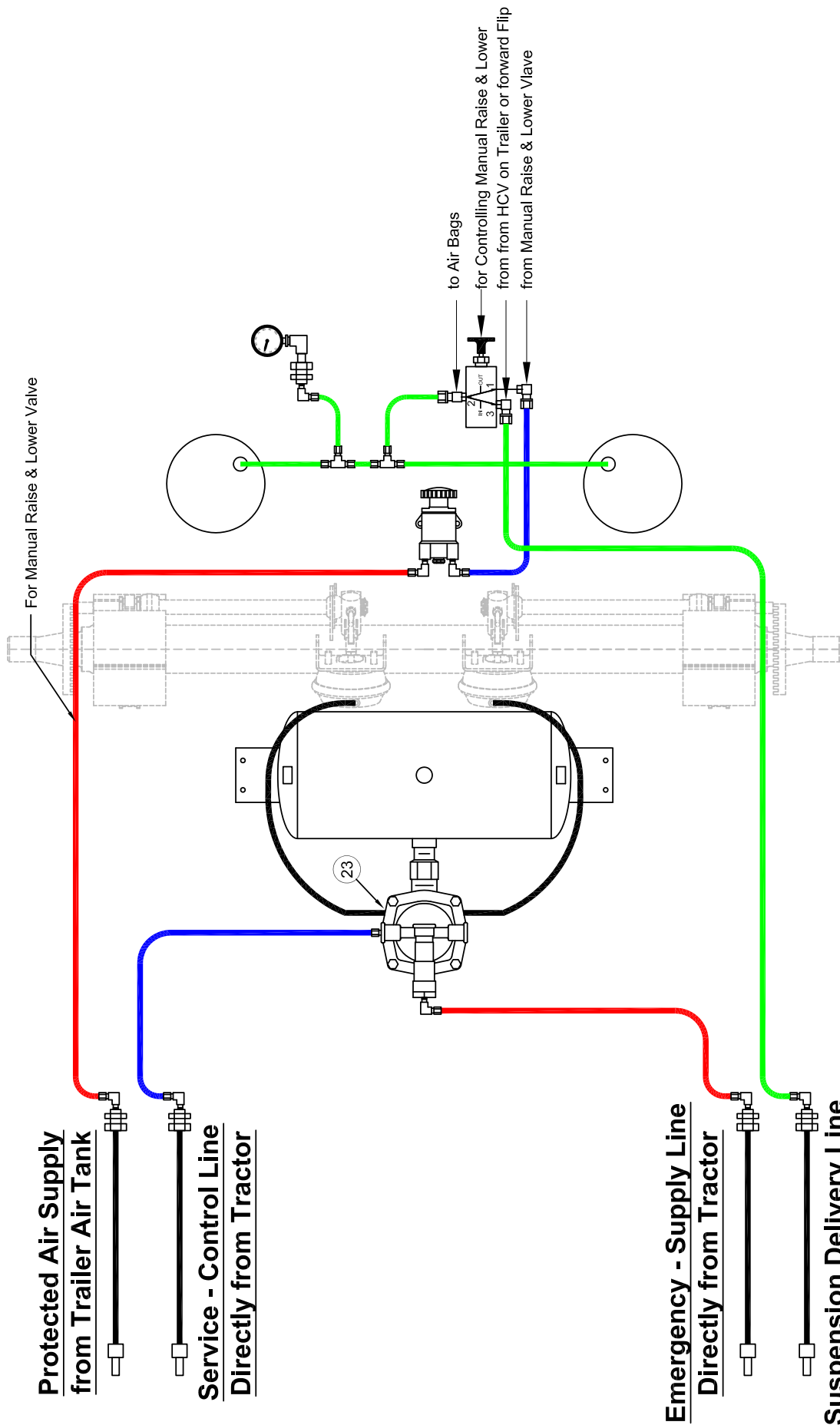
1. With a load on the trailer, scale 3 trailer axles. To do this, either remove the spreader or remove all shims and dump spread axle air to ensure negligible weight distributed to spread axle. Record the scale weight of the three trailer axles. Goal will be to distribute 25% of this weight to spread axle. For example, if 3 axles scale at 78,000 lbs, goal will be to distribute 19,500 lbs to the spread axle, thereby reducing the weight on the 3 trailer axles from 78,000 to 58,500.
2. With a load on the trailer, add or remove shims as necessary between trailer & spreader and between spreader & the +1 spread axle to make top of trunnion beam over trailer axle almost level with top of beam on spread axle (see Reference Point A & B, respectively, in above diagram). Use the manual raise - lower valve on both trailer (if installed) and spread axle as a tool to raise & lower rear of trailer and spread axle to assist with adding shims. In order to achieve separation between the spreader and +1 axle, blocking may need to be placed under the rear of the spreader in conjunction with dumping the air from the +1 axle suspension.
3. Push in the Push-Push air control valve on the +1 axle to engage automatic ride height control. Scale load with 3+1 axle configuration. Make final shim adjustments to achieve 25% load distribution goal. In essence, add shims to increase weight distribution to the +1 axle; remove shims to decrease the weight distribution to the +1 axle.

Flip with Lift Air System with Push/Pull Valves



Universal Flip Air System (NO Pilot)

NOT SENSED



NOT SENSED
Flip Axle
NO Spring Brakes

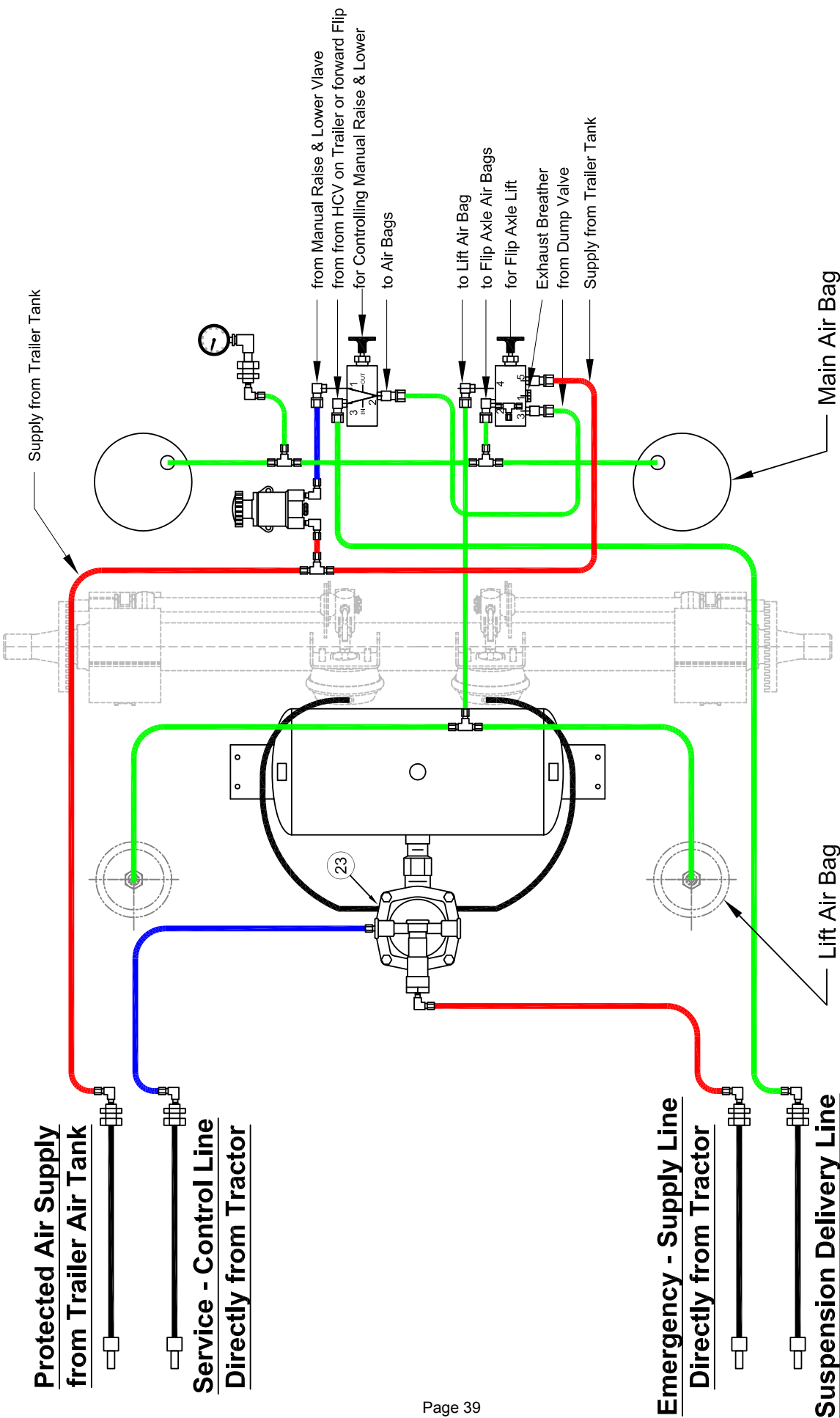


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Note: ALL air lines and hoses must be properly routed and secured, so to prevent contact with any surfaces or each other.

Universal Flip Air System with Lift

NOT SENSED



NOT SENSED

Flip Axle
NO Spring Brakes

Note: ALL air lines and hoses must be properly routed and secured, so to prevent contact with any surfaces or each other.



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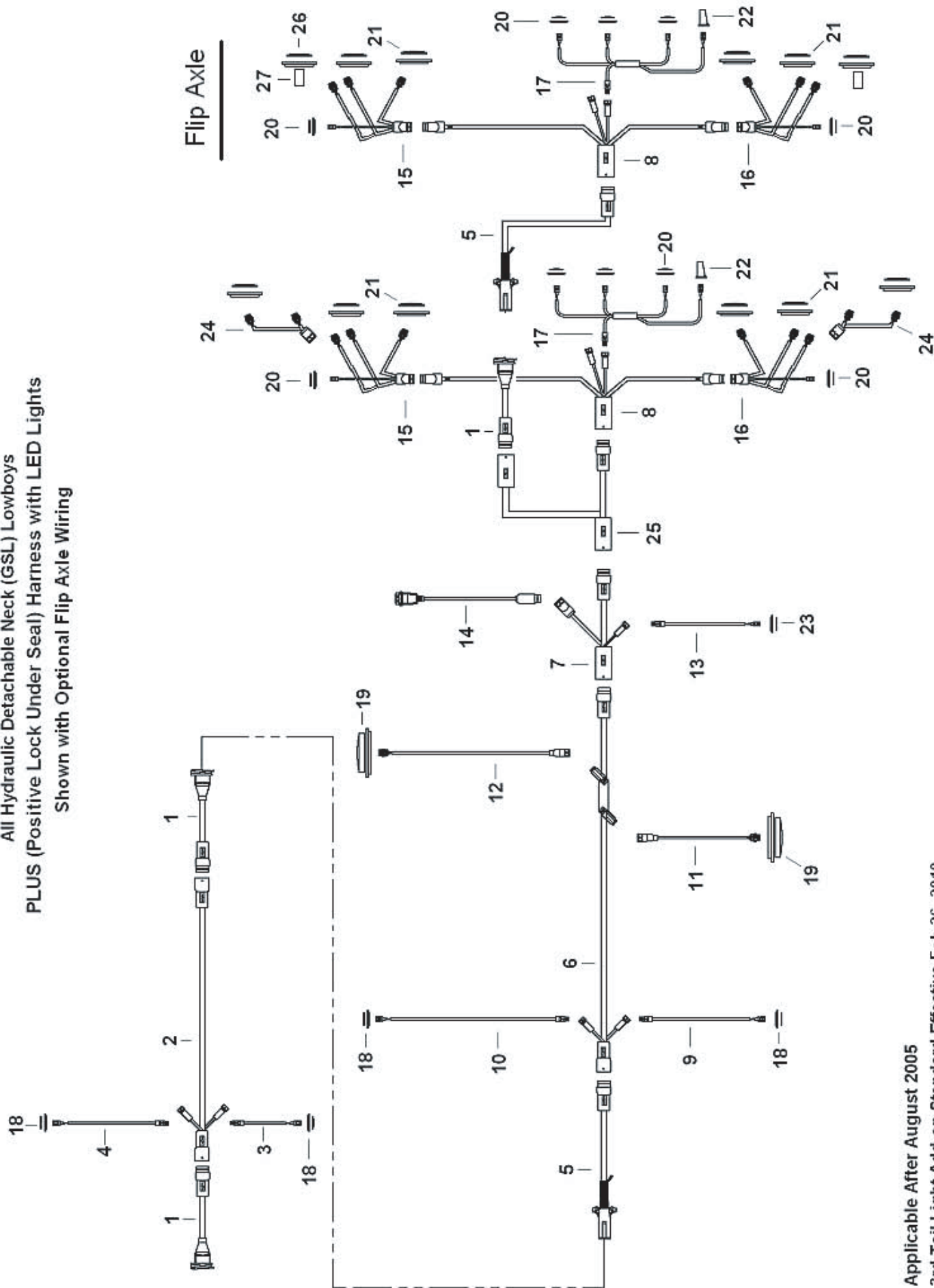
Booster 4th Axle & Flip 4th Axle Pins

	Bolt Style "No Shim" Until	No Bolt Style with Shims Begin	Universal with Shims Begin
	Nov 2005	Dec 2005	Dec 2007
Booster and Universal Flip Axle Pins & Shims			
Upper Pin - 1.5" Dia x 4" Long	2063091	2063091	NA
Lower Pin - 2.5" Dia x 10" Long	2063093	2063093	NA
Universal Flip Upper Pin - 1.75" Dia x 9" Long (includes snap pins)	NA	NA	2063095
Universal Flip & 1 Axle Spreader Lower Pin - 2" Dia x 9" Long (incl. snap pins)	NA	NA	2063094
Universal Flip & 2 Axle Spreader Lower Pin - 2.5" Dia x 10" Long (incl. snap pins)	NA	NA	2063093
Shim Kit	NA	987135	987175
Snap Pin to secure Upper Pin (2 of PN 413043 or 1 of PN 413042 per pin)	413042	413042	413043
Snap Pin to secure Lower Pin (2 per pin required)	413043	413043	413043

Standard Flip 4th Axle ONLY (Pre Universal) Beginning in December 2007 Universal Booster Flip used on All Lowboys

	All Models Before Dec 2007
Standard Flip 4th Axle Pins (Not for use with Universal)	
Upper Flip Pin - 1.5" Dia x 4" Long	2063091
Lower Flip Pin - 2" Dia x 7" Long	2063092
Snap Pin to secure upper & lower pins (1 per pin)	413042

Eager Beaver Trailers
All Hydraulic Detachable Neck (GSL) Lowboys
PLUS (Positive Lock Under Seal) Harness with LED Lights
Shown with Optional Flip Axle Wiring



Applicable After August 2005
 3rd Tail Light Add-on Standard Effective Feb 26, 2010

All Model GSL Lowboys - PLUS Harness with LED Lights

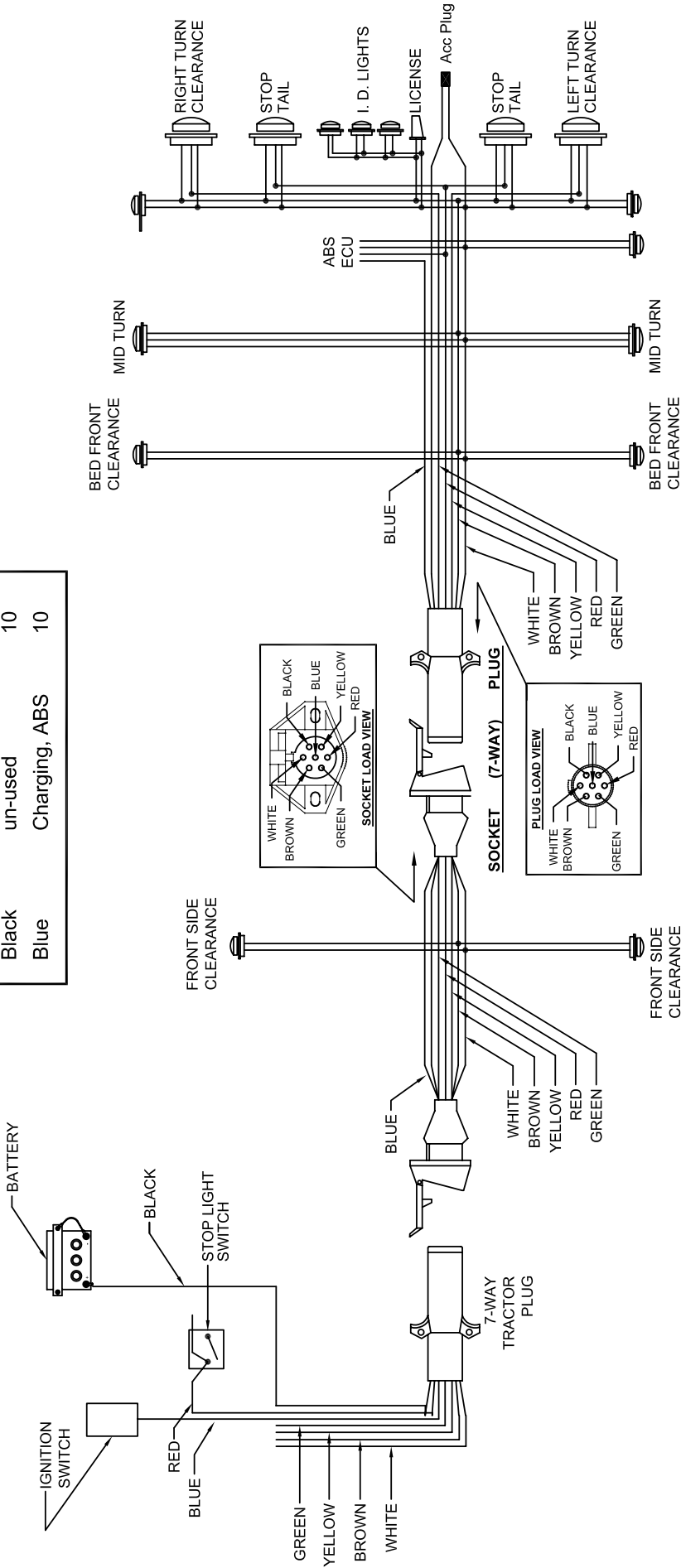
Item	Part No.	Qty	Description
1	2062045	2	LOWBOY SOCKET,12"
2	2062046	1	LOWBOY GSL G/N MAIN,11'
3	2062251	1	MARKER,2-POLE,19" "LED"
4	2062252	1	MARKER,2-POLE,51" "LED"
5	2062057	1	LOWBOY GSL BED JUMPER,6'
6	2062058	1	LOWBOY BED MAIN HARNESS
7	2062068	1	LOWBOY ABS ADAPTER,84"
8	2062061	1	TAILBOARD CENTER, UNIVERSAL W STROBE **
9	2062252	1	MARKER,2-POLE,51" "LED"
10	2062256	1	MARKER,2-POLE,117" "LED"
11	2062253	1	MID TURN,"LED",4-POLE,47"
12	2062254	1	MID TURN,"LED",4-POLE,80"
13	2052063	1	MARKER,2-POLE,117", ABS WARNING
14	2062067	1	ABS POWER,41"
15	2062198	1	C/S "LED"PGTL,10" (With Strobe Lead *)
16	2062199	1	S/S "LED"PGTL,10" (With Strobe Lead *)
17	2062193	1	TAILBOARD I.D., "LED"
18	2062095	4	2.5" AMBER LED MARKER LIGHT
18A	2057069	4	GROMMET, MARKER 2.5"
19	2062096	2	MID TURN AMBER LED MARKER LIGHT
19A	2062242	2	MID TURN MARKER BRACKET (WELD ON)
19B	2062243	2	GROMMET, OBLONG MID TURN
20	2062093	5	2.5" RED LED MARKER LIGHT
20A	2057069	5	GROMMET, MARKER 2.5"
21	2062094	4	S/T/T "LED" LIGHT
21A	2057067	4	GROMMET, BLACK S/T/T 4"
22	2057075	1	LICENSE PLATE LIGHT (Non LED, One-Piece)
22A	2057072	1	LICENSE PLATE LIGHT HOUSING (2-piece only)
22B	2057073	1	LICENSE PLATE LT GASKET (2-piece only)
22C	2057074	1	LICENSE PLATE LIGHT (Non LED, 2-piece only)
23	2061097	1	ABS 2.5" MARKER LIGHT - NON LED
23A	2057069	1	GROMMET, MARKER 2.5"
24	2062335	2	SPLITTER HARNESS - 3rd TAIL LIGHT *
25	2062337	1	Y ADAPTER FOR OPTIONAL FLIP AXLE
26	2062338	2	AMBER LED LIGHT (OPTIONAL)
27	2062336	2	ELECTRONIC STROBE FLASHER (OPTIONAL)
	2062130	2	OBLONG RED REFLECTOR
	2062129	6	OBLONG AMBER REFLECTOR
KIT	2062255	1	GOOSENECK NECK HARNESS KIT (ITEMS 1 - 4)
KIT	2062257	1	TRAILER BED HARNESS KIT (ITEMS 5 - 17)
KIT	999539	1	FLIP AXLE HARNESS KIT (Items 5, 8, 15-17)

* ECN 1604 2/26/10 - Add Strobe Lead to STT Pigtail; 3rd Tail Light Std

** Universal TB Center Harness w/ Strobe Toggle Switch Lead std Feb 2010

Electrical Wiring Schematic for Lowboy Trailers

Color	Function	Gauge
White	Ground	8
Green	Right Turn	14
Yellow	Left Turn	14
Brown	Tail Lights	14
Red	Stop, ABS	10
Black	un-used	10
Blue	Charging, ABS	10



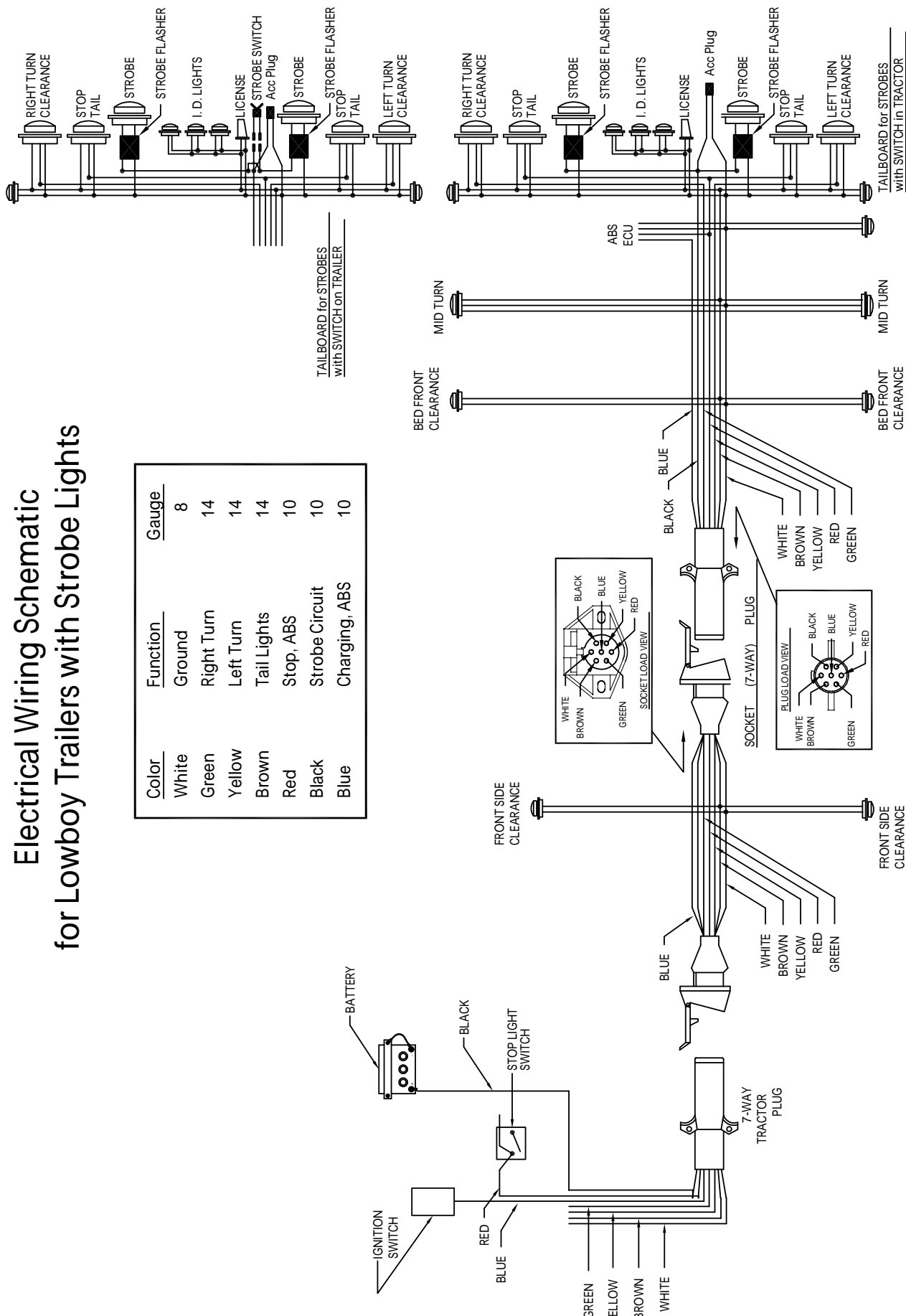
Notes: The **Black** wire is **NOT** used on trailers with ABS air brakes.

The **White** ground wire on the truck should be a good solid ground.

The **Blue** ABS wire on the truck **should** be keyed to the ignition and fused, 20-amp.

The **Red** stop light wire on the truck should be connected to the stop light switch.

Electrical Wiring Schematic for Lowboy Trailers with Strobe Lights



Notes: The Black wire is NOT normally used on trailers with ABS air brakes, but can be used for Trailers with Back-Up Lights, Strobe Lights or for Auxiliary Power.

The White ground wire on the truck should be a good solid ground.

The Blue ABS wire on the truck should be keyed to the ignition and fused, 20-amp.

The Red stop light wire on the truck should be connected to the stop light switch.

AUXILIARY FLASHER KIT (PLUS)

Note: Power feed to charge Flasher is through the Blue Harness Wire
All trailer lights connected to the Brown wire (ie, side markers & tail lights) will Flash when flasher key switch (or optional toggle switch) are in the ON position

PN	Qty	Description
999406	1	USA-Lowboy Flasher Kit, PLUS with DT06 (Deutsch) Connector
391921	1	Key Switch, CH 95060 (waterproof with booted key)
445870	1	Decal, Flasher Kit Key Switch Activation
411552	15	7" Tie Wraps
411675	4	1/4-20 x 1" Self Tapping screws

Note: Complete Kit PN 2063153 includes the above components

2059588	1	700 Series Key Blank (no boot) for CH 95060 key switch
2059587	1	600 Series Key Blank (no boot) for CH 95060 key switch

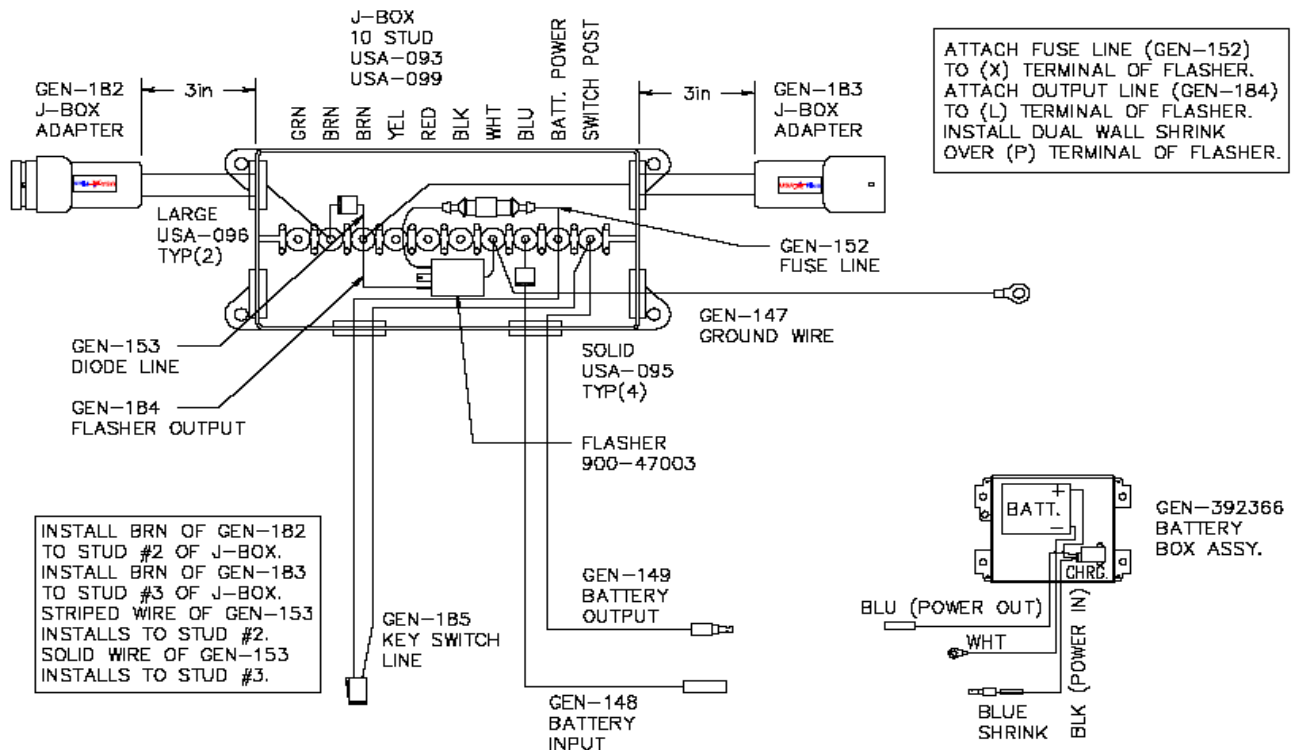
999405	1	USA-Lowboy Flasher Kit, PLUS w 2 Wire Switch Feed
391905	1	Key Switch, CH M489 (non-waterproof)
445870	1	Decal, Flasher Kit Key Switch Activation

999405	1	USA-Lowboy Flasher Kit, PLUS w 2 Wire Switch Feed
391915	1	Toggle Switch, CH #5582-10 (On-Off)
391931	1	Toggle Switch Mounting Plate, CH #5543-15

PN 999406 became standard production in October 2008 and supports waterproof key switch

PN 999405 has a non-waterproof switch harness and connects to either non-waterproof switch or on/off toggle

PN 999406 Shown Below (Note waterproof DT06 Connector at end of harness GEN-185)
PN 999405 identical except key switch line has 2-wires with ring terminals instead of DT06 connector



AMBER "LED" STROBE LITE ON TAILBOARD ADD-ON KIT

Kit Part # 2063158 for Trailers MFG after January 2010

Component PN	Qty	Description
2062338	2	"LED" AMBER LIGHT, TL #44871Y
2062336	2	"LED" ELECTRONIC STROBE FLASHER, # 97253
2057537	1	TOGGLE SWITCH, CH #5582-10 ON-OFF *
2057538	1	TOGGLE SWITCH MOUNTING PLATE, CH #5543-1 *
2057539	1	T/BOARD HARNESS-TO-TOGGLE SWITCH, 2 Pole, 24" *

For Trailers MFG between 2002 and Feb 2010 with PLUS, additional below items are be required

2062198 **	1	C/S "LED" STT PIGTAIL, WITH STROBE LEAD
2062199 **	1	S/S "LED" STT PIGTAIL, WITH STROBE LEAD
2062061 **	1	TAILBOARD CENTER HARNESS, UNIVERSAL *
2057067	2	4"GROMMET B426-18
2057540	1	JUMPER, BLACK CIRCUIT, T/BRD CENTER HARNESS, UNIV ***
2060645	1	ROUND-TO-PLUS ADAPTER (Converts 1995-2002 Harness to PLUS)

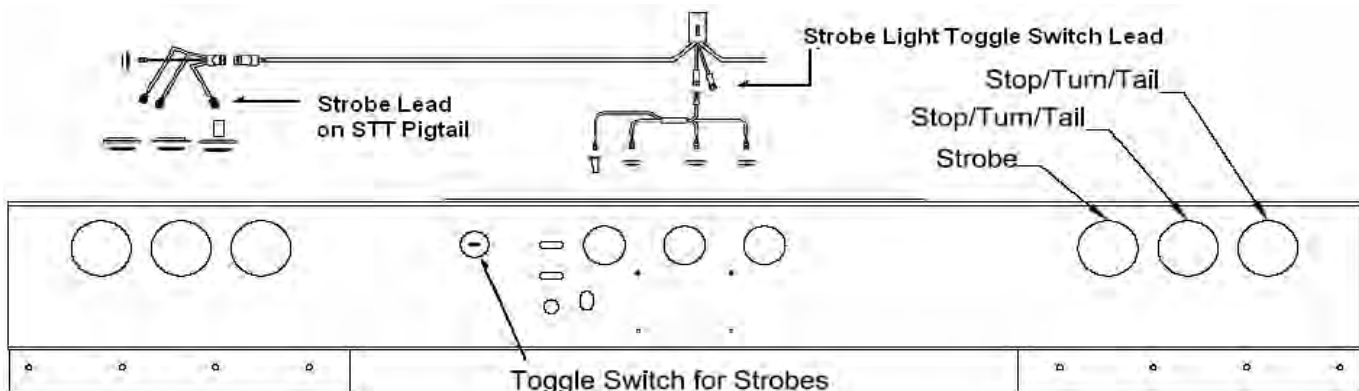
* May be omitted from Kit if Strobe On/Off to be controlled ONLY via switchd power in the tow vehicle (via Black Wire). Asterik items are required in order to have a remote (i.e., on the trailer) tailboard mounted On/Off toggle control.

** Trailers manufactured after January 2010, may have Universal Tailboard Harness (PN 2062061) with Strobe Lead and black circuit jumper (PN 2057540) on the Strobe lead. Between Feb - April 2010 C/S & S/S STT Pigtailes phased out and replaced with Pigtailes that include Strobe lead. Therefore, new Tailboard Harness and Pigtailes may not be required for Strobe Lite Add-on Kit for trailers mfg between Feb - April 2010. (Subtract \$160 if not required)

*** Not Included in Kit. Comes installed on Universal Center Harness. Jumper must be installed to close circuit if there is no On/Off toggle switch being used to close circuit.

Note: Kit contains replacement tailboard wiring with the additional leads and switch necessary to power the strobe lights. Power to the Strobe lights is supplied via the black wire in the nose harness. This lead should be connected to a power source on the tow vehicle.

If tailboard does not already have 3rd light holes, customer will either need to cut two 4.5" Diameter holes in the Tailboard to mount the rubber grommets and amber strobe lights or, manufacture a weld-on surface bracket with a 4.5" Dia. Hole in which to mount the strobe light. A small hole through the tailboard for the strobe wires is required. For trailers Mfg after Feb 2010 with a 3rd Tail light, replace the 3rd Red STT light & "Y" Splitter with an amber LED Light & Electronic Flasher and connect to the Strobe Lead on STT Pigtail. Order Toggle Switch and Switch Harness (items marked with asterik) for optional remote On/Off.



Eager Beaver Trailers 35 - 100 Ton Lowboy Miscellaneous Parts List

PART NO.	DESCRIPTION
2054869	Deck Washer
2059133	Hex Head Bolt, Deck Washer, 3/8 x 2 1/2
2059134	Nut, Deck Washer, 3/8-16
2060659	Truck Wiring Harness
2058065	Air Tank Remote Drain Valve
2061023	Air Fitting, Nipple, 3/8 Male NPT
2061024	Air Fitting, Coupler, 3/8 Male NPT
2061025	Air Fitting, Coupler, 3/8 Female NPT
2061026	Air Fitting, Nipple, 3/8 Female NPT
2060721	48" Bed-to-Neck Air Line (3/8MPT Swivel)
2059175	Glad Hand replacement rubber seal
2055360	Glad Hand - Brake Control Service (Blue)
2055361	Glad Hand - Tank Supply (Red)
2062129	Oblong Reflector - Amber
2062130	Oblong Reflector - Red
2060735	Eager Beaver Trailers Mud Flap - White 24" x 18"
2063020	Roto-Ring® Assembly
2054792	Weld-on HD Fixed D-Ring & Clip
2062206	Gooseneck Lube System Access Hole Cover

Eager Beaver Standard Colors	Manufactured After 8/6/10 Dupont Imron	MFG between 9/22/06 and 8/6/10 PPG Color Code
Yellow	H7947	FP827
Red	77968	FP703
Black	1640	FP901
Blue	3759	*
White	1632	FP951

* Custom Mixed Color, No Code Assigned

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KOHLER® ENGINES

The Kohler Command Pro 14HP CH440 engine has a 36 month commercial/industrial warranty. Accordingly, all service and warranty related issues associated with the Kohler engine are handled through an authorized Kohler Dealer.

The dealer lookup can be found on Kohler's web site at:
<http://www.KohlerEngines.com> or by calling 1-800-544-2444.

When contacting a Kohler dealer for warranty service or parts, the following information may be required:

Series:	Command PRO
Model #:	CH440
Model Specification:	3031
Air Cleaner:	Quad-Clean™
Charging System:	10 Amp
Ignition Type:	Inductive Discharge
Start Circuit Fuse:	25 Amp
Low Oil Protection:	Float-type
Oil Capacity:	1.4 Quarts

Engine Serial #: _____

Purchase date: _____

Please refer to your Kohler Owner's Manual for questions regarding fuel and fuel storage. Most engine problems can be traced to deteriorated fuel, especially fuel with ethanol. Ethanol begins to deteriorate within 30 days and the older ethanol gets the more it deteriorates and the more likely it will cause hard starting and other performance issues that result from sticky deposits that clog the tiny passages in the fuel system.

In addition, ethanol in the gasoline attracts water. Initially water mixes with the ethanol, but at higher concentrations it separates and settles to the lowest point, which leads to corrosion and starting and running problems.

Kohler's Warranty covers defects in material or factory workmanship. It does not cover fuel system damage or engine performance problems resulting from deteriorated fuel.

Kohler 14HP Model CH440-3031 with Electric Start
Beginning May 2012

Quick reference parts list

Description	Kohler PN	EBT PN	Note
Kohler 14HP CH440	CH440-3031	372002	Includes Choke Kit PN 372009
Key (one), Kohler	48 340 01-S	2059876	For 25 099 32-S Switch (Delphi) Only
Switch (Delphi) & 2 Keys *	25 099 32-S	2058207	Delphi Connectors; Begin Oct 3, 2012
Switch Harness Ext - 6'	25 176 02-S	2059202	Delphi Connectors; use with 25 099 32-S switch only
* Replaces Kohler PN 25 099 04-S. When stock depleted, replace with Kohler PN 25 099 32-S			
Switch (non-Delphi, soldered wires) & 2 Keys	17 099 07-S	not stocked	Early May 2012 - Oct 2, 2012; replaced with Switch (Delphi) and Delphi Harness Extension
Key (one), Kohler	17 340 11-S	2062001	For 17 099 07-S Switch (non-Delphi) Only
Air & Pre-Filter (Quad-Clean)	17 883 03-S1	2060957	Air Filter & Pre-Filter Kit
Air Filter (Quad-Clean)	17 083 03-S	not stocked	Order Filter & pre-filter Kit PN 2060957
Air Pre-Filter	17 083 15-S	not stocked	Order Filter & pre-filter Kit PN 2060957
Electric Starter	17 098 11-S	not stocked	
Oil Level Sensor Switch	17 099 05-S	not stocked	
Ignition Module	17 584 03-S	not stocked	
Spark Plug	25 132 14-S	not stocked	Champion XC12YC (RFI Compliant)
Fuel Tank Fill Hole Filter	17 050 20-S	not stocked	
25 Amp Fuse (start circuit)	17 305 07-S	not stocked	
Remote Choke Kit	17 755 16-S	2062149	Use Honda's Choke Kit (Production PN 372009)
High Altitude Kit	17 755 09-S	not stocked	4,000-8,000 FT
High Altitude Kit	17 755 23-S	not stocked	Above 8,000 FT



Notice

The Honda GX390 engine has a 36 month commercial/industrial warranty. Accordingly, all parts, service, and warranty related issues associated with the Honda GX390 engine are handled through a Honda dealer or regional Honda distributor.

The dealer lookup can be found on Honda's web site at:
<http://engines.honda.com/dealer-locator>

When contacting a Honda dealer for parts or warranty service, please provide the following information:

	Trailers Manufactured Beginning Feb 2011	Trailers Manufactured Before Feb 2011
Model #:	GX-390UT2	GX-390UI
Model Code:	GCBCT	GCANK
Type:	QAE2	QAE2
Ignition Type:	Capacitor Discharge	Transistorized

Engine Serial # (begins with Model Code): _____

Please refer to your Honda Owner's Manual for questions regarding fuel and fuel storage. Most engine problems can be traced to deteriorated fuel, especially fuel with ethanol. Ethanol begins to deteriorate within 30 days and the older ethanol gets the more it deteriorates and the more likely it will cause hard starting and other performance issues that result from sticky deposits that clog the tiny passages in the fuel system.

In addition, ethanol in the gasoline attracts water. Initially water mixes with the ethanol, but at higher concentrations it separates and settles to the lowest point, which leads to corrosion and starting and running problems.

Honda's Warranty covers defects in material or factory workmanship. It does not cover fuel system damage or engine performance problems resulting from deteriorated fuel.

Honda Engine Wiring Comparison
GX390UI (SN Prefix GCANK) used until Mid Feb 2011
GX390UT2 (SN Prefix GCBCT) used beginning Mid Feb 2011

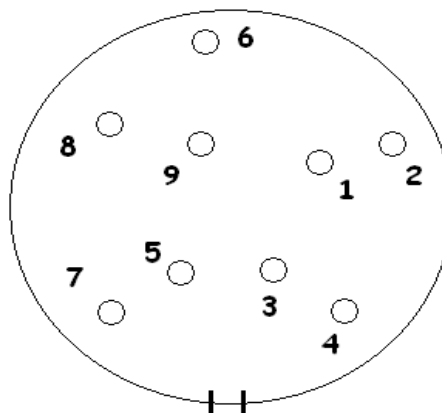
Engine with Transistorized Ignition Unit
Eager Beaver Trailers Switch PN 2062147
Honda Switch PN 35100-ZE2-842

GX390UI GCANK	5 Black/Red Ignition	7 Black Ground	8 Black/White Start	9 White Battery
Off	O-----O			
Run				
Start			O-----O	

Engine with Capacitor Discharge Ignition (CDI)
Eager Beaver Trailers Switch PN 2062124
Honda Switch PN 35100-Z5T-821

GX390UT2 GCBCT	3 Red IG Coil	4 Black IG Coil	8 Black/White Start	9 White Battery
Off				
Run	O-----O			
Start	O-----O		O-----O	

Switch Post	GX390UI GCANK	GX390UT2 GCBCT
1		no post*
2		no post*
3		Red
4		Black
5	Black/Red	
6		
7	Black	
8	Black/White	Black/White
9	White	White



* Post #1 & # 2 not on CGBCT Switch

Fuel Shut-Off Valve



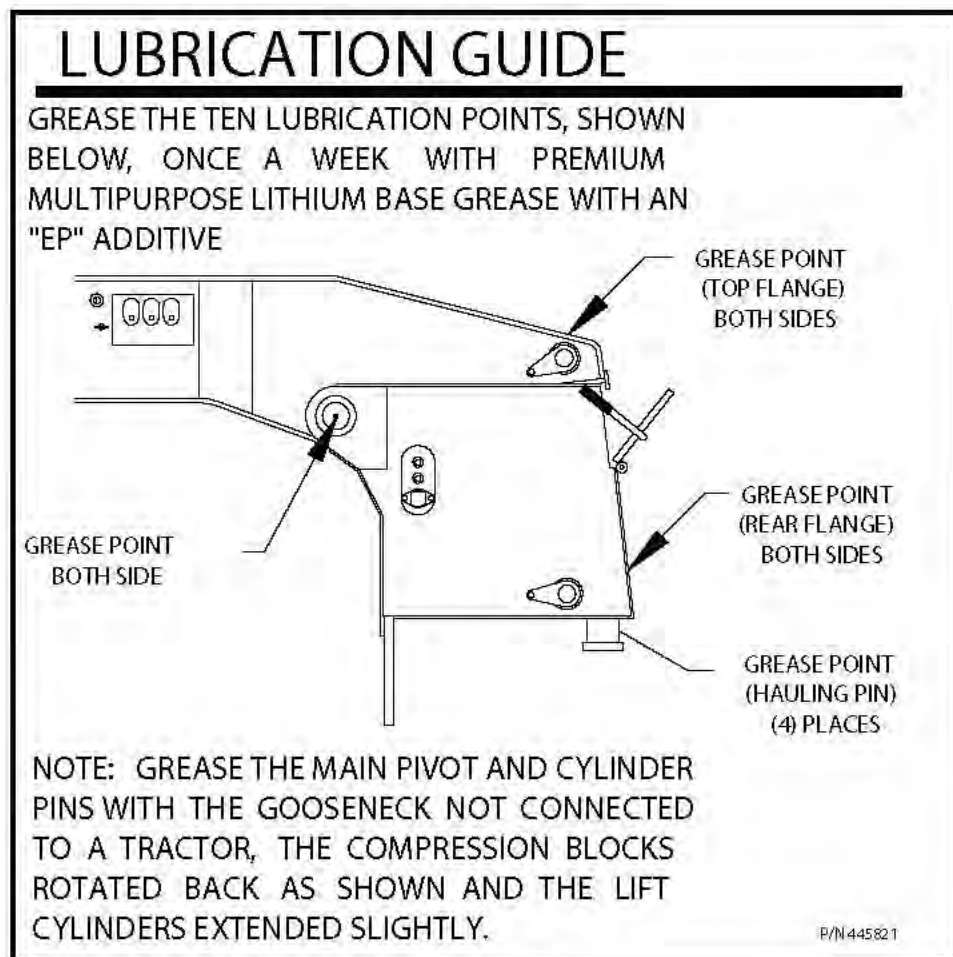
All engines will have a fuel shut-off valve that comes installed by the engine manufacturer and generally is located beneath the carburetor. A warning decal has been placed on all goosenecks that have an engine with specific instructions to shut off valve when engine is not in use. Failure to do so will result in probable failure. Engine manufacturers nor Eager Beaver Trailers will not warranty engine if it has a failure as a result of not heeding this warning. There is also a decal that will show the general location of this fuel shut-off valve.

NOTE: These are not automatic electrical shut-off valves, they will need to be turned manually to shut off.

Gooseneck Lubrication

Every gooseneck has a lubrication decal that shows the location of essential lubrication points. Please locate these points and lubricate weekly using the specified grease that is recommended.

Note: Pivot pins should be lubricated daily for optimum performance. Failure to do so will cause probable damage and will not be covered by warranty.



New Headless Main Pivot Pin System with Central Lube Main Pivot Tube

Assembly PN 2062292 includes:

One Pin - PN 185281

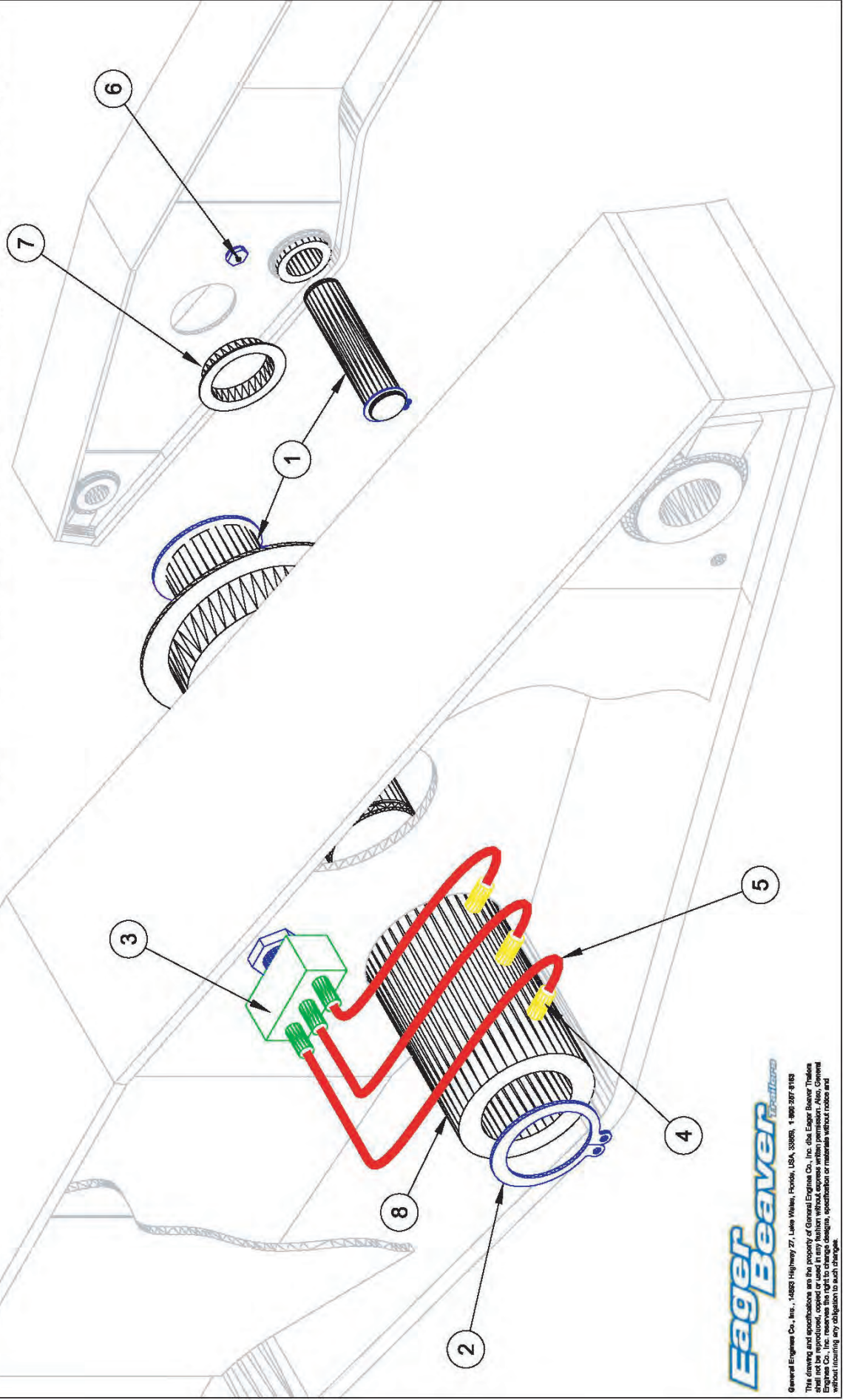
Two Snap Rings - PN 2062293

Note: PN 2062292 is for use with Central Lube System ONLY.

Use PN 2063089 to retro fit older trailers with headless pins.
"Retro Fit" pins have grease fittings in both ends of the pin.

Item No. Part No. Qty. Description

1	185281	2	3ØX12.5 HEADLESS MAIN PVT PIN
2	413101	4	3" SNAP RING M/C 97633A480
3	381320	2	LUBE MANIFOLD, ALKON # S3050
4	381030	6	1/4T-1/8M STRT CONN, AQ68-P-4X2
5	381874	4	1/4"OD NYLON TUBING, NY44, BLACK
6	401501	2	1/8"NPT GREASE FITTING
7	2062206	4	LUBE SYS ACCESS CAP (Prod PN 425001)
8	225211	2	3"IDX4.5ODX8 PVT/TUBE W/GREASE (reference ONLY - NOT Replaceable)



Eager Beaver
Trailers

General Engine Co., Inc., 14825 Highway 27, Lake Wales, Florida, USA, 33855, 1-800-367-6183

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Inspection Schedule

The following inspection schedule is a guide to help with the preventative maintenance of your suspension system. Your air suspension will provide many trouble free miles of service by using the information in this publication.

Original Inspection

When reviewing the suspensions on your trailer for the first time, check the following:

- The axles have been aligned properly.
- The suspension frame bracketry and air spring plate mountings have been properly supported.
- The suspension ride height is set properly.
- Trailer is level
- All welds are of good and acceptable quality
- All fasteners are in place and securely torqued
- No component interferences are visible
- No air spring, air-lines, or shock absorber leaks are visible
- There should be 0.75" minimum clearance must be maintained around air spring when it is at maximum diameter.
- There should be 1" minimum clearance between top of tire and bottom of trailer structure when axle is at full jounce.
- There should be 2" minimum clearance between inside of tire and trailer frame structure for lateral movement.
- There should be ample fore and aft clearances.

Daily Inspection

A quick visual inspection before operating the trailer will often detect obvious problems such as broken or loose parts.

30-day Inspection

Check clearances around all moving suspension parts such as air springs, tires, and shock absorbers for any signs of wear or component interferences.

Check each of the following:

- Fasteners – Not loose, broken or missing
- Pivot Bushing – Not protruding, off-center, torn or worn
- Pivot Washer – Not worn through or torn
- Chain Restraint – Not elongated or broke
- Shock Absorber - Not leaking or damaged
- Air Spring - Not leaking, worn, or damaged
- Air Control – Trailer maintains ride height; no leaking or damaged valves, fittings, or piping
- Frame Hanger – Not worn, cracked, bent, or damaged
- Suspension Beam – Not worn, cracked, bent, or broken
- Beam/Axle – Not cracked, bent, or broken
- Tires – No tire wear that might indicate an alignment problem.
- Axle Alignment – No pivot gear movement or inappropriate wear, axles tracking properly



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- Trailer – Trailer not leaning, trailer frame suspension attachment structurally sound, no cracked or missing welds at suspension frame attachment.

90-day Inspection and at every brake lining change

Thoroughly check all items checked at the 30-day inspection. Also check:

- All welded connections for signs of deterioration
- All frame attachment joints and pivoting or clamping joints for problems

Axle Alignment Inspection

Check the “Cush-Align” connection for change of position at 30-day, 90-day, and every brake lining change. Re-align if necessary.

Axle Inspection (general notes, see axle manufacturer's service manual for details)

Visually inspect the seal and hub cap for leaks and oil level every 7,500 miles (if oil bath type). Repair if necessary.

At 100,000 miles or 12 months, visually inspect seal and hub cap for contaminants, oil level, or leaks. Check the wheel bearing adjustment. Repair if necessary.

Post Inspection Notes

If issues arise from any inspection, review troubleshooting guide (Appendix A of this service manual). If the issue can't be resolved from the troubleshooting guide or for warranty information, contact your trailer manufacture. If the problem is not related to installation, the trailer manufacturer or suspension installer should contact Cush to resolve the issue or file the warranty claim.

Suspension Maintenance Items

The Cush trailer air suspension system is designed to minimize service issues. With proper maintenance the life of your suspension system can be extended.

Caution Notes

- Trailer walk can occur due to loading, unloading, or loss of air spring pressure.
- For safe loading and unloading, dump air spring pressure to lower vehicle.
- Do not tow or pull on vehicle by suspension components.
- Fasteners should never be reused, over-torqued, or lubricated.

Do not operate vehicle suspension with:

- Broken welds or metal parts
- Loose, broken, or missing fasteners or suspension components
- Loss of air pressure in air springs or brake system

Trailer “Lean” or “Dog Tracking”

If your trailer is having problems with “Lean” or “Dog Tracking” please refer to the Troubleshooting guide in Appendix A of this manual.



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Torque Specifications

It is the customer's responsibility to check and tighten fasteners to specified torque at installation, after the suspension has been in operation for 3000 miles, and at suspension inspection cycles. Failure to do so can result in loss of warranty.

- Torque values given are specified for the fasteners in the condition supplied by Cush Corporation.
- DO NOT APPLY ANY ADDITIONAL LUBRICANTS.
- **!CAUTION:** Fasteners should never be reused if removed or loss of clamp load occurs. For proper joint clamping contact Cush for replacement fasteners or use fasteners of equal strength.
- **!CAUTION:** Over-torquing fasteners could result in material failure.

Common Torque Specifications (See Cush Safety and Inspection Sticker on your trailer)

AIR SPRING PROVIDED MOUNTINGS		MAX. (ft*lbs.)
SIZE	Threaded Studs	
3/8"	24-UNF STUD	20
3/8"	16-UNC BLIND NUT	25
1/2"	13-UNC STUD	25
1/2"	13-UNC BLIND NUT	50
3/4"	16-UNF COMBO STUD	50
Air Ports		
1/4"	18-NPTF AIR FITTING	11
1/2"	14-NPTF AIR FITTING	23

General Fastener Torque Specs	Size	Thread	Grade	(Ft*Lbs)		(Nm)	
				Min.	Max.	Min	Max.
Spring Keeper Bolt & Nut	1/2	13-UNC	5/B	65	75	88	102
TRAC-ALIGN Rack Lock Bolt	1/2	13-UNC	5/B	25	35	34	47
(10K) U-Bolt Nut	5/8	11-UNC	8/C	180	210	244	285
Brake Chamber Mounting Nut	5/8	11-UNC	5/B	100	110	136	149
Nyloc Jam Nut	3/4	10-UNC	A/B	80	100	108	136
Shock Mount Nut/Bolt	3/4	10-UNC	5/B	210	235	285	319
CAP Spring Pivot Bolt & Nut	3/4	10-UNC	8/C	330	380	447	515
(15K) U-Bolt Nut	3/4	10-UNC	8/C	330	380	447	515
(25K) U-Bolt Nut	7/8	14-UNF	8/C	475	525	644	712
Pivot Nut (SecureLok/Securex)	7/8	14-UNF	8/C	550	600	746	813



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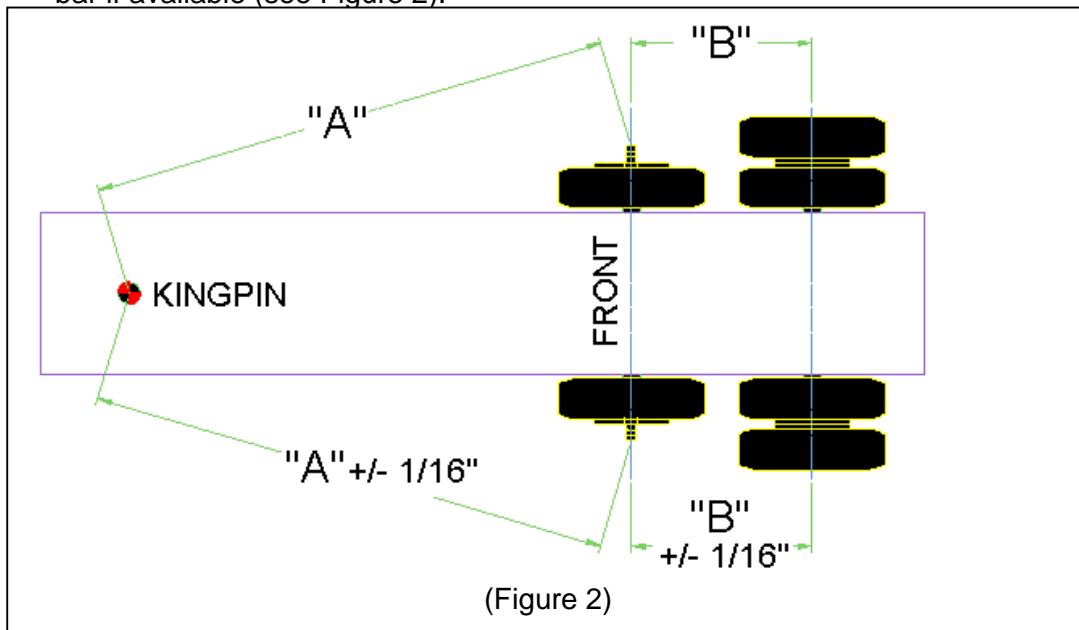
Suspension Service Items

Axle Alignment

Cush has several different alignment means available for different applications. Listed here are some general alignment guidelines and alignment procedures for the styles of Cush Alignment.

CAUTION: DO NOT APPLY undercoating to the "Cush-Align" area until after alignment and torque of the suspension pivot bolts.

- Check that the tire inflation pressure is correct on all tires.
- Alignment should be performed with the vehicle empty and the brakes released.
- On a level floor move the vehicle forward and back to straighten, make sure last movement is forward.
- Remove the outer tires and any other parts from under the chassis that obstruct the measuring distances between the kingpin and the axle ends. If you use a commercially available kingpin and axle spindle extenders or the edge of the wheel rim, you will not need to remove this equipment.
- Measuring from the trailer's kingpin, determine the alignment of the forward axle.
- After achieving proper alignment of the forward axle, torque the Cush Pivot fasteners per Cush torque specifications on the Cush installation drawing.
- Align, to within 0.063" tolerance, any additional axles to the forward axle per the "Cush-Align" method. Use a commercially available alignment gauge or trammel bar if available (see Figure 2).



Std Warranty Labor Allowance__0.5 (hours/axle)

NOTE: Failure to follow the procedure for your axle alignment application and/or properly torque the pivot fasteners can result in a failed pivot connection and a loss of warranty coverage!



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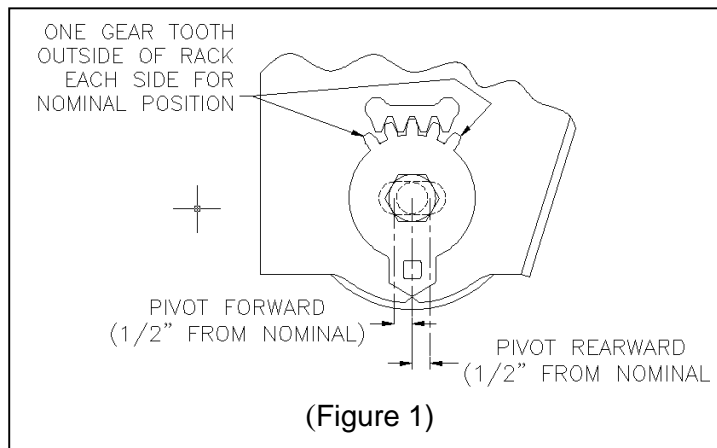
Pub: P1203-01 Rev: 6
October 10, 2007

Cush Alignment Style 1

"Cush-Align" Original (1" alignment / inner flanged collars / 1/4" thk gears)

The "Cush-Align" pivot joint features outside gear tooth washers that cover the alignment slot and mate with a grounded rack plate. At the inside of the hanger, collars guide the bushing and cover the alignment slot.

- If realigning, and the gear washer is welded to the side of the hanger, grind the welds loose without gouging the side of the hanger. Remove the gear washers and clean away weld material.
- Snug the bolts of the "Cush-Align" to be tight enough to hold the joint together but loose enough to permit use of the alignment gear.
- Set the alignment gear indicator tab at 6 o'clock, the neutral position. This gives you pivot movement fore and aft. Be sure that there is one tooth of the gear washer outside of the hanger rack, both sides, to be at the middle of the hanger slot (see Figure 1).



- To align the axle, rotate the alignment gear of one side of the suspension to get the axle aligned. If needed, go to the other side of the suspension and rotate the alignment gear in the opposite direction to fully align the axle. As standard, there are two alignment gears per hanger. Use the gear on the outside of the hanger to set the alignment and the inside gear for fine-tuning of the alignment.

NOTE: Before tightening the pivot connection fasteners, be sure that the spacer collars are against the bushing inner metal and hanger side. Failure to follow these procedures and/or properly torque the pivot fasteners at this time can result in a failed pivot connection and a loss of warranty coverage!

WARNING: After alignment, clamp the joint per Cush bolt/nut torque specifications. After alignment, the suspension installer can weld the gear washer to the hanger side with 1/2" welds both sides of washer to prevent tampering & for off-road applications, we recommend for abusive applications.



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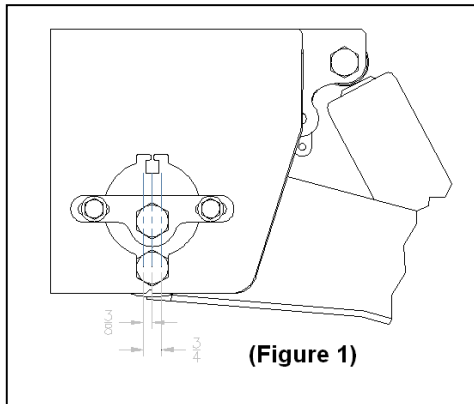
Cush Alignment Style 3

“Trac-Align” (3/4” alignment / 1/2” thk eccentric / optional locking rack)

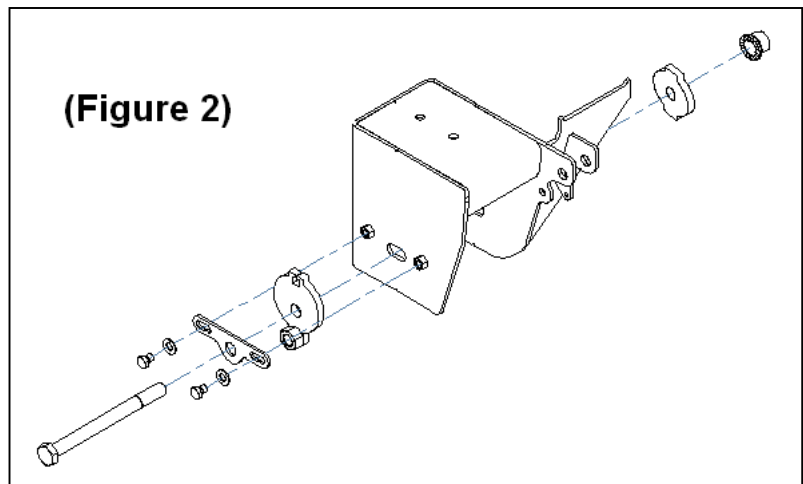
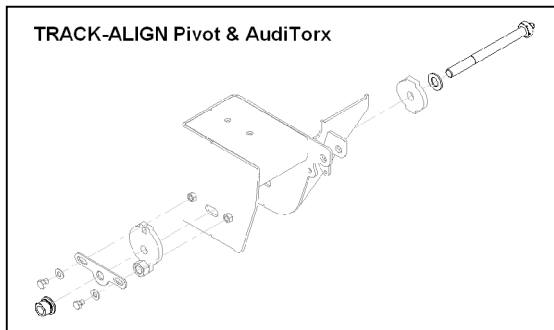
The “Trac-Align” was designed to give our customers extra pivot integrity with the addition of the **optional** locking rack and a more familiar alignment means with the use of an eccentric cam adjustment. The “Trac-Align” also has bearing washer with tabs for use with a Cush axle-welding stand to have a more precise fixturing of the suspension and axle at factory or customer integration.

*Please note that the tabs on the inner bearing washer can be in any position after installation, as they do not indicate pivot alignment.

After alignment, clamp the joint per Cush torque specifications. After alignment, the suspension installer can weld the outside washer to the hanger side with 1/2" welds to prevent tampering & for off-road applications.



- If realigning, loosen the rack lock bolts to allow eccentric cam movement.
- The eccentric cam gear should always have the 1/2" square hole to the top.
- Set the alignment gear indicator tab at 6 o'clock, the neutral position. Snug the rack lock bolts and pivot bolts of the "Trac-Align" to be tight enough to hold the joint together but loose enough to permit use of the eccentric cam adjustment. Be sure that the eccentric cam plate is clamped down flush against the hanger side and is not riding up the grounding nuts/bars.
- For adjustment use a breaker bar in the 1/2" square hole or use a box wrench on the lower eccentric cam gear nut.
- The “Trac-Align” gives you 3/8" pivot movement fore and aft per hanger side. (see Figure 1)
- To align the axle, rotate the alignment gear of one side of the suspension to get the axle aligned. If needed, go to the other side of the suspension and rotate the alignment gear in the opposite direction to fully align the axle.

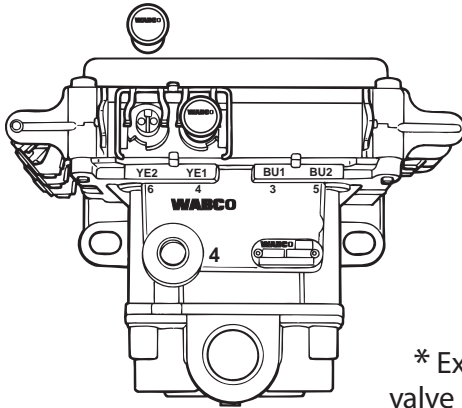


WARNING: After alignment, clamp the pivot bolt per Cush torque specifications. Torque the 1/2" rack lock bolts to 25 ft*lbs, loosen the rack lock bolts to realign pivot.

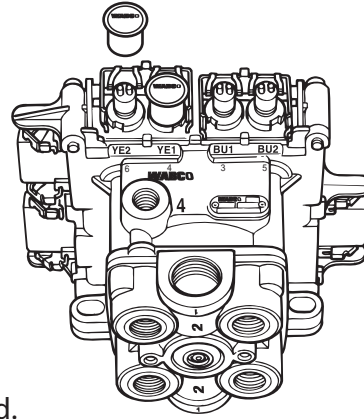
MERITOR WABCO

Easy-Stop™ and Enhanced Easy-Stop with PLC Trailer ABS Blink Code Diagnostic Guide

Easy-Stop™
2S/1M Basic
ECU/Modulator Valve Assembly



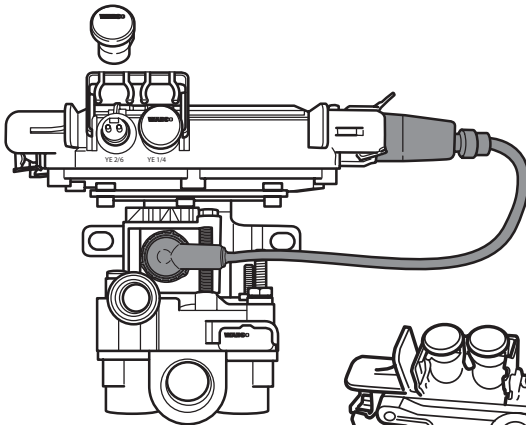
Easy-Stop™ 2S/1M,
2S/2M*, 4S/2M*, 4S/3M*
ECU/Modulator Valve Assembly



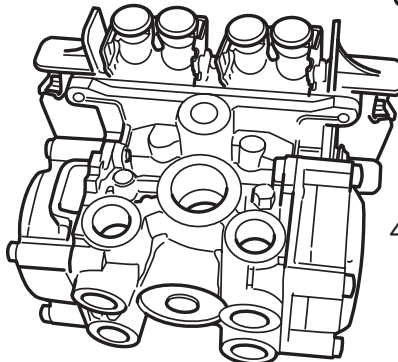
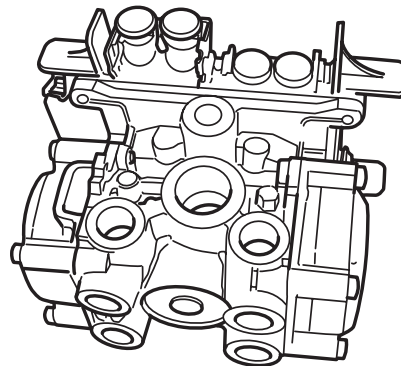
* External modulator valve and cable required.

Enhanced Easy-Stop™ with PLC

2S/1M Basic ECU/Single
Modulator Valve Assembly



2S/2M Standard ECU/Dual
Modulator Valve Assembly



2S/2M, 4S/2M,
4S/3M * Premium ECU/Dual
Modulator Valve Assembly

* External modulator valve and cable required.

This publication covers all Enhanced Easy-Stop™ ECU/Valve Assemblies and Easy-Stop™ ECU/Valve Assemblies with serial numbers 3080002746 and higher. For Easy-Stop™ ECU/Valve Assemblies with serial numbers 3080002745 or lower, please call 1-800-535-5560 for assistance. Serial numbers are located on the bar-coded label on the side of the ECU/Valve Assembly.

Troubleshooting and Repair

Enhanced Easy-Stop™ blink codes may be accessed by ignition circuit and counting flashes on the trailer ABS indicator lamp on the side of the trailer.

To access blink codes:

- Turn ignition ON for one second,
- Turn ignition OFF for one second,
- Turn ignition ON and count the flashes on the ABS lamp.

With Enhanced Easy-Stop™, the Blink Code tool and the ABS Lamp on the trailer do not function simultaneously.

BLINK CODE	CAUSE OF FAULT	ACTION REQUIRED
0	No faults.	System O.K. No action needed.
3	Sensor BU1: Cable break, short circuit or out of adjustment.	Check sensor, sensor cable and cable connection; adjust sensor; or check for excessive hub runout, a sensor gap that is too wide or damage to the tooth wheels.
4	Sensor YE1: Cable break, short circuit or out of adjustment.	Check sensor, sensor cable and cable connection; adjust sensor; or check for excessive hub runout, a sensor gap that is too wide or damage to the tooth wheels.
5	Sensor BU2: Cable break, short circuit or out of adjustment.	Check sensor, sensor cable and cable connection; adjust sensor; or check for excessive hub runout, a sensor gap that is too wide or damage to the tooth wheels.
6	Sensor YE2: Cable break, short circuit or out of adjustment.	Check sensor, sensor cable and cable connection; adjust sensor; or check for excessive hub runout, a sensor gap that is too wide or damage to the tooth wheels.
7	Ext. Modulator (RD): Short to power, cable break or open, short to ground or cable damaged, or ECU/Valve Assembly Failure.	Check ABS valve and cable. Replace as required.
9	Easy-Stop™: External Modulator (BU) Enhanced Easy-Stop™: Internal Modulator Failure, Inlet Valve #2: Short to power, cable break or open, short to ground or cable damaged, or ECU/Valve Assembly Failure.	Easy-Stop™: Check ABS valve and cable. Replace as required. Enhanced Easy-Stop™: Verify correct installation. If code continues, contact MeritorWABCO for assistance.
10	Easy-Stop™: ECU/Valve Assembly Modulator (YE) Enhanced Easy-Stop™: Internal Modulator Failure, Inlet Valve #1: Short to power, cable break or open, short to ground or cable damaged, or ECU/Valve Assembly Failure.	Easy-Stop™: Check ABS valve and cable. Replace as required. Enhanced Easy-Stop™: Verify correct installation. If code continues, contact MeritorWABCO for assistance.
11	Internal Modulator Failure, Outlet Valve. Enhanced Easy-Stop™ Only.	Verify correct installation. If code continues, contact MeritorWABCO for assistance.
14	Power Supply: Over or under voltage, current low, or internal failure.	Repair vehicle power supply, check vehicle voltage output and connector; check ECU's configuration.
15	ECU — Internal Failure Internal failure.	Internal failure, contact MeritorWABCO.
16	SAE J1708 Failure	Internal failure, contact MeritorWABCO.
17	Generic SAE J2497 (PLC) Failure	Internal failure, contact MeritorWABCO.
18	Generic I/O Failure	Verify correct electrical installation. Check power supply. Make necessary corrections.

Note:(Easy-Stop™ only) If the blink code indicates there are no faults, but the trailer ABS indicator lamp continues to come on and stay on when you apply the brakes to the moving vehicle, there is an intermittent fault that must be repaired. Refer to Maintenance Manual No. 33, Expert Mode Diagnostics.

For further information on blink code diagnostics, refer to Maintenance Manual No. 33 (Easy-Stop™), Maintenance Manual MM-0180 (Enhanced Easy-Stop™) or call: **800-535-5560**

These manuals are posted on our website at meritorwabco.com

MERITOR WABCO

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