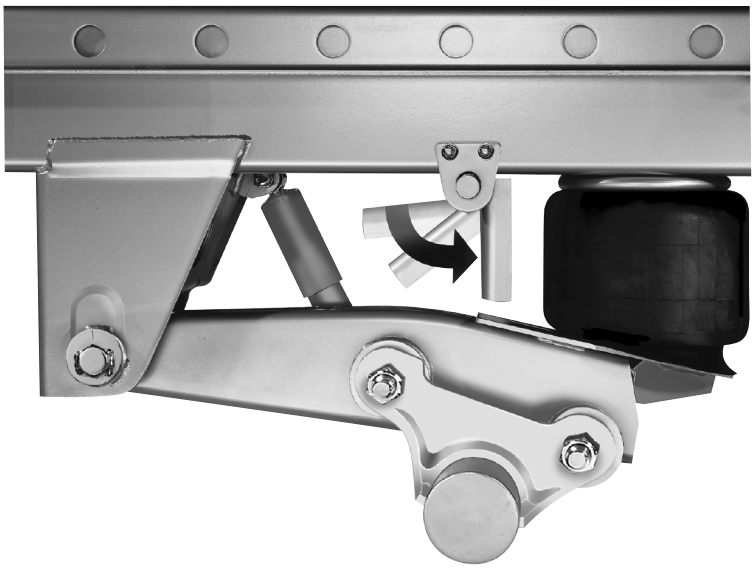
EDL/ARF OPERATION INFORMATION

EDL/ARF Feature

External Dock Lock (EDL)
Automatic Reset Feature (ARF)
for Trailer Air-Ride Suspensions



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INTRODUCTION

This manual provides you information necessary for the installation, adjustment, inspection, and safe operation of SAF-HOLLAND External Dock Lock (EDL) Automatic Reset Feature (ARF) for Trailer Air-Ride Suspensions.

The SAF-HOLLAND EDL is designed and engineered to provide trouble-free service. In the event of an inoperative EDL, such as a bent rod assembly or a damaged cam bracket, the vehicle should be driven CAUTIOUSLY at slow speed, to the nearest service facility for repair or replacement.

This EDL/ARF uses air drawn from the truck/tractor air system to operate the EDL actuator. The height control valve regulates the air pressure required for varying loads. The ARF feature ensures the flipper plate(s) will not be trapped down (engaged position) while the trailer is in motion.

WARRANTY

Refer to the complete warranty for the country in which the product will be used. A copy of the written warranty is included with the product as well as in the suspension catalogs and the SAF-HOLLAND Web Site (www.safholland.us). It may also be ordered by calling 1-888-396-6501.

NOTES, CAUTIONS, AND WARNINGS

You must read and understand all of the safety procedures presented in this manual before starting any work on the suspension.

Proper tools must be used to perform the maintenance and repair procedures described in this manual. Many of these procedures require special tools.

Failure to use the proper equipment could result in personal injury and/or damage to the suspension.

Safety glasses must be worn at all times when performing the procedures covered in this manual.

Throughout this manual, you will notice the terms "NOTE," "IMPORTANT," "CAUTION" and "WARNING" followed by important product information. So that you may better understand the manual, those terms are as follows:

NOTE: Includes additional information to enable accurate and easy performance of procedures.

IMPORTANT: Includes additional information that if not followed could lead to hindered product performance.

CAUTION — Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, may result in property damage.

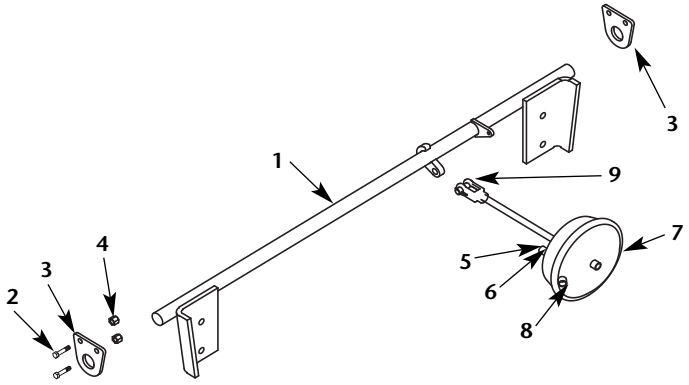
⚠CAUTION — Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠WARNING — Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

EXTERNAL DOCK LOCK (EDL) INSTALLATION

FIGURE 1

EDL Components



ITEM NO.	DESCRIPTION	NS-xxx-16.0*	NS-xxx-16.5*	NS-xxx-17.0*	NS-xxx-18.0*	QTY.
1	EDL Rod Assembly	42″ - 90546178 48″ - 90546177	42″ - 90546270 48″ - 90546269	42″ - 90546136 48″ - 90546132	42″ - 90546138 48″ - 90546134	1
2	Hex Bolt 38 -16 x 1″	93002571	93400471	93400471	93400471	4
3	EDL Rod Support Plate	90034494	90034494	90034494	90034494	2
4	Hex Lock Nut 3/8″ - 16	93400472	93400472	93400472	93400472	4
5	Hex Nut .50-13	93400136	93400136	93400136	93400136	2
6	Washer .53	93600072	93600072	93600072	93600072	2
7	EDL Actuator Chamber	90546122	90546122	90546122	90546122	1
8	Choke Valve	90054811	90054811	90054811	90054811	1
9	1/2″ Clevis Assembly w/1/2″ Pin	11M018-8	11M018-8	11M018-8	11M018-8	1

* "xxx" denotes models 400 or 450.

IMPORTANT: Be certain the correct EDL assembly for the suspension ride height is being installed. Various suspension ride heights require different assemblies with different flip plate heights. If unsure of ride height, see ***FIGURE 3*** and Table 1 or call SAF-HOLLAND Customer Service at 1-888-396-6501.

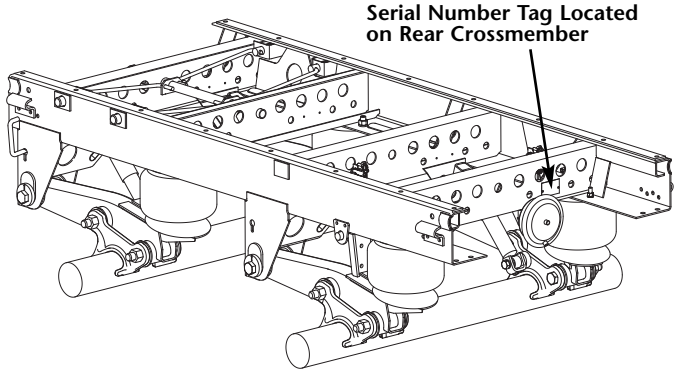
Suspension Ride Height Verification

1. Verify ride height by checking serial number tag located on the rear crossmember (***FIGURE 2***).

If the serial number tag is not legible or unavailable, verify ride height by measuring from the center of the axle to the bottom of the frame or slider (***FIGURE 3***).

FIGURE 2

Serial Tag Location



NOTE: Example: NS-400/450-4818, last two digits represent 18″ (457mm) ride height.

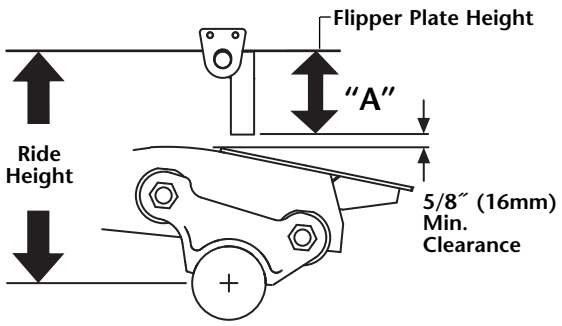
2. Compare ride height to corresponding Flipper Plate Height from Table 1 below (***FIGURE 3***).

TABLE 1.

Model No.	Ride Height	"A" Flipper Plate Height
NS-400/450-16	16″ (406mm)	6.5″ (165mm)
NS-400/450-16.5	16.5″ (419mm)	7.0″ (178mm)
NS-400/450-17	17″ (432mm)	7.5″ (191mm)
NS-400/450-18	18″ (457mm)	8.5″ (216mm)

FIGURE 3

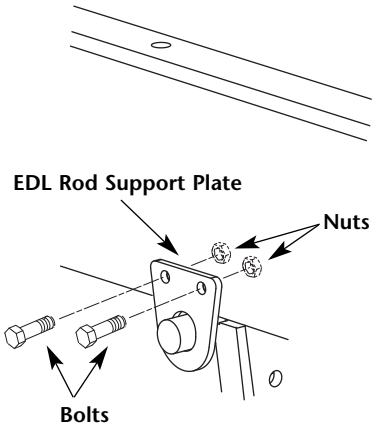
Flipper Plate



EDL Rod Flipper Plate Installation

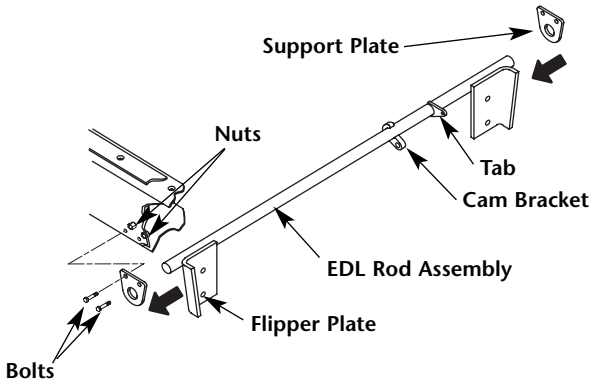
1. Attach one support plate to frame rail above rear axle, and secure with two bolts and nuts. **DO NOT** tighten (***FIGURE 4***).

FIGURE 4
EDL Rod Support Plate



2. Slide one end of EDL Rod Assembly into the hole of the attached support plate. Then slide the other support plate onto the opposite end of EDL Rod Assembly and secure with two bolts and nuts. Tighten and torque all four bolts and nuts to 25 ft. lbs. (34 Nm) (***FIGURE 5***).

FIGURE 5
EDL Installation

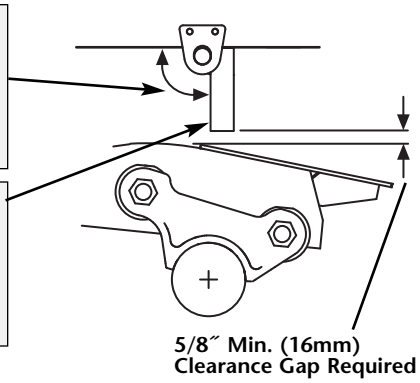


IMPORTANT: EDL Rod/Flipper Plate Assembly should rotate freely without binding (***FIGURE 6***).

FIGURE 6
Flipper Plate Installation

IMPORTANT: EDL Flipper Plate Assembly should rotate fully without binding

IMPORTANT: Flipper Plate must be completely down when attaching actuator push rod

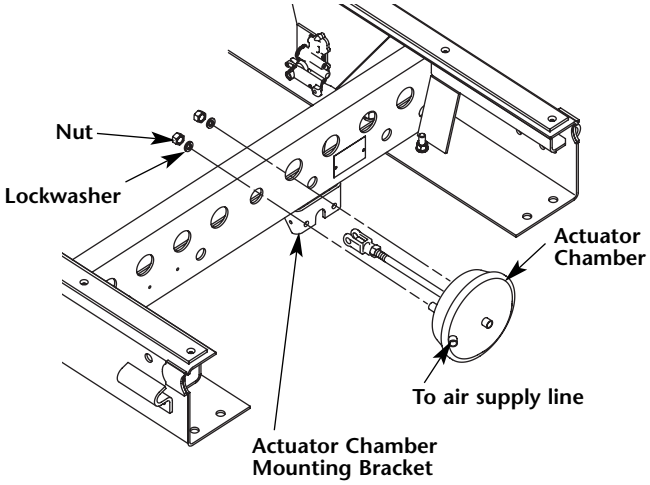


IMPORTANT: Both flipper plates must rest on equalizing beam when trailer is loaded.

EDL Actuator Chamber Installation

1. Attach actuator chamber to mounting bracket on slider box crossmember (***FIGURE 7***). Fasten with two lock washers and nuts. Torque nuts to 50-60 ft. lbs. (68-81 Nm).

FIGURE 7
Actuator Chamber Installation



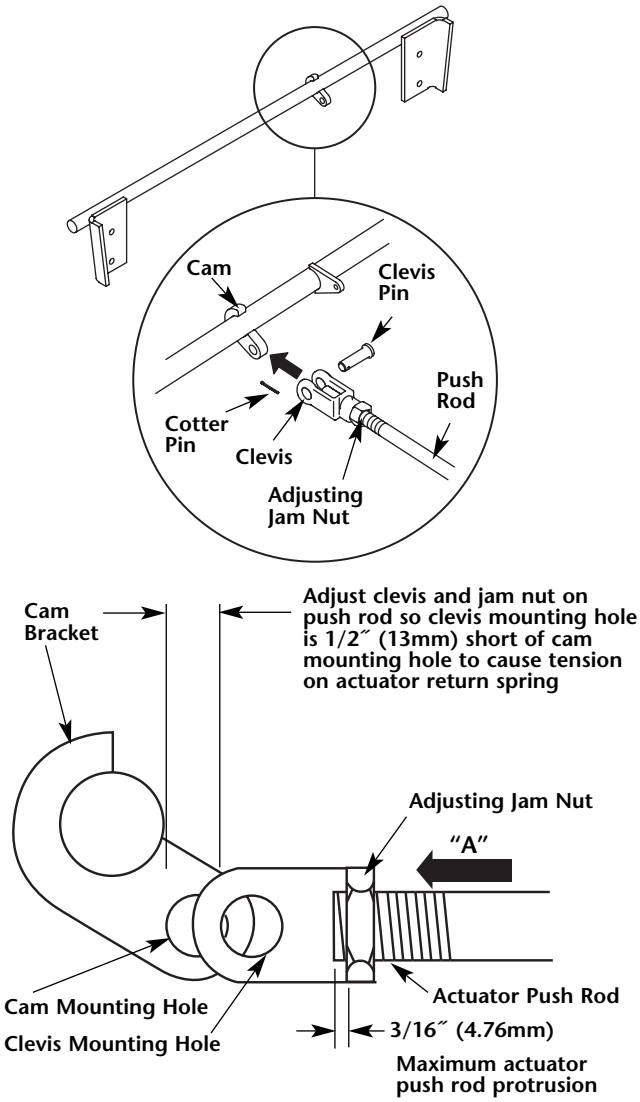
2. Install the adjusting nut and clevis to the actuator push rod and thread adjusting nut and clevis down the push rod. Be sure to leave clevis 1/2˝ (13mm) short of cam mounting hole (***FIGURE 8***).

continued

3. Pull actuator push rod out (arrow A) so the hole in the cam aligns with the clevis hole (this creates tension on the actuator spring to help keep the flipper plate completely down). Install clevis pin and secure with cotter pin (***FIGURE 8***).

FIGURE 8
Clevis Installation

IMPORTANT: Flipper Plate must be completely down when attaching actuator push rod.



IMPORTANT: Adjust the push rod length to assure flipper plate is completely down (***FIGURE 6***).

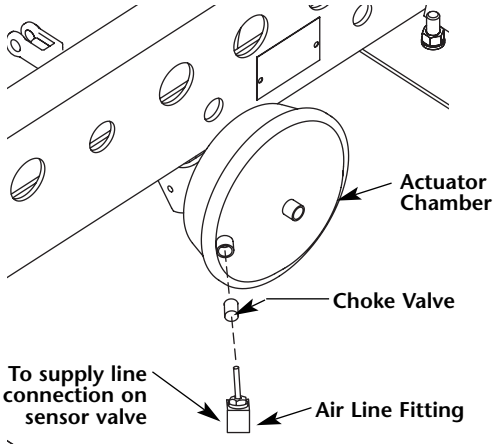
IMPORTANT: EDL Rod/Flipper Plate Assembly should rotate freely without binding after attaching actuator push rod (***FIGURE 6***).

Air System Connection

1. The control for releasing the EDL is the same for releasing the emergency brakes on the trailer. Locate a trailer supply line (usually red) at the point it enters the spring brake valve (supply port).

2. Replace straight connector fitting with a tee and reconnect the supply line and add a length of plastic line for connection to the actuator chamber (***FIGURE 9***) and the line that you will install which connects the cylinder port of the pilot valve to the bottom port of the sensor valve (***FIGURE 10***).

FIGURE 9
Connect Air System



3. At the threaded end of the 1/4 N.P.T. tube fitting insert the choke valve (supplied) and install fitting to actuator. Attach the supply line from the brake valve to a 1/4 N.P.T. tube fitting (***FIGURE 9***).

NOTE: It may be necessary to use a vise to press choke valve into tube fitting or use a hammer and gently tap choke valve into tube fitting.

4. Insert the 1/4 N.P.T. tube fitting into the brake actuator inlet port (***FIGURE 9***).

NOTE: Choke valve should be flush with bottom of the fitting.

5. From the pressure protection valve, run a line to the bottom port of the primary height control valve (***FIGURE 12***).

6. Connect the top port of the primary height control valve to the center port of the sensor valve (***FIGURE 11***).

7. The center ports of the primary height control valve and sensor valve are connected to the air springs (***FIGURE 11***).

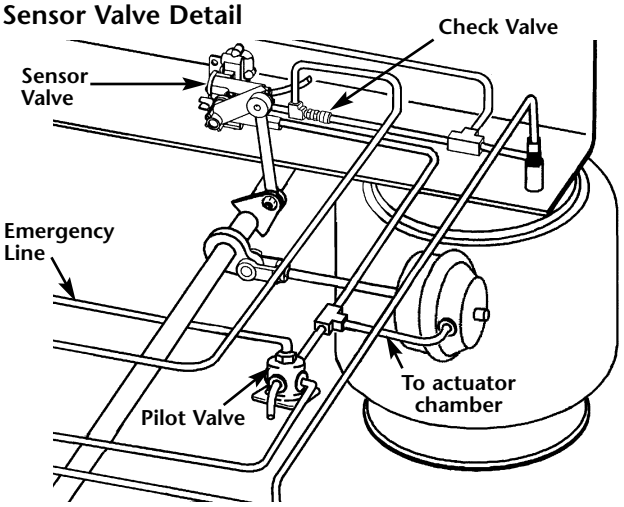
8. The pilot port of the pilot valve is connected to the emergency line (***FIGURE 12***). Secure all supply lines and check for air leaks.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair as required. Failure to eliminate the air leaks may compromise the suspension performance.

Automatic Reset Feature (ARF)

The Automatic Reset Feature (ARF) is designed to ensure that the External Dock Lock (EDL) flipper plates are not trapped down while the trailer is being operated. This is accomplished by the use of two valves. A pilot valve is used to monitor emergency brake pressure to determine if the trailer is parked or in motion. A sensor valve is used to monitor the position of the EDL flipper plates (either up or down) (***FIGURE 10***).

FIGURE 10
Sensor Valve Detail



The primary height control valve has full function under two conditions: (1) parking brakes are engaged or disengaged with flipper plates up or (2) parking brakes are engaged with flipper plates down. *If however, parking brakes are disengaged with flipper plates down, the sensor valve will add air directly to the air springs.*

After the air springs have sufficient air pressure to raise the flipper plates up off the load pads, the flipper plates rotate up and out of the way. This disengages the sensor valve and allows the primary height control valve to resume full function (***FIGURE 12***).

NOTE: For further ARF information contact SAF-HOLLAND Customer Service at 1-888-396-6501.

FIGURE 11
Primary Height Control Valve Detail

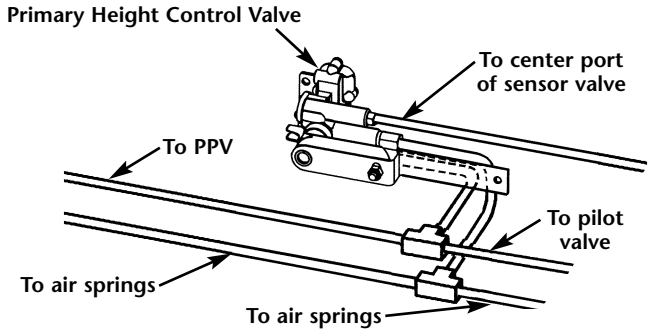
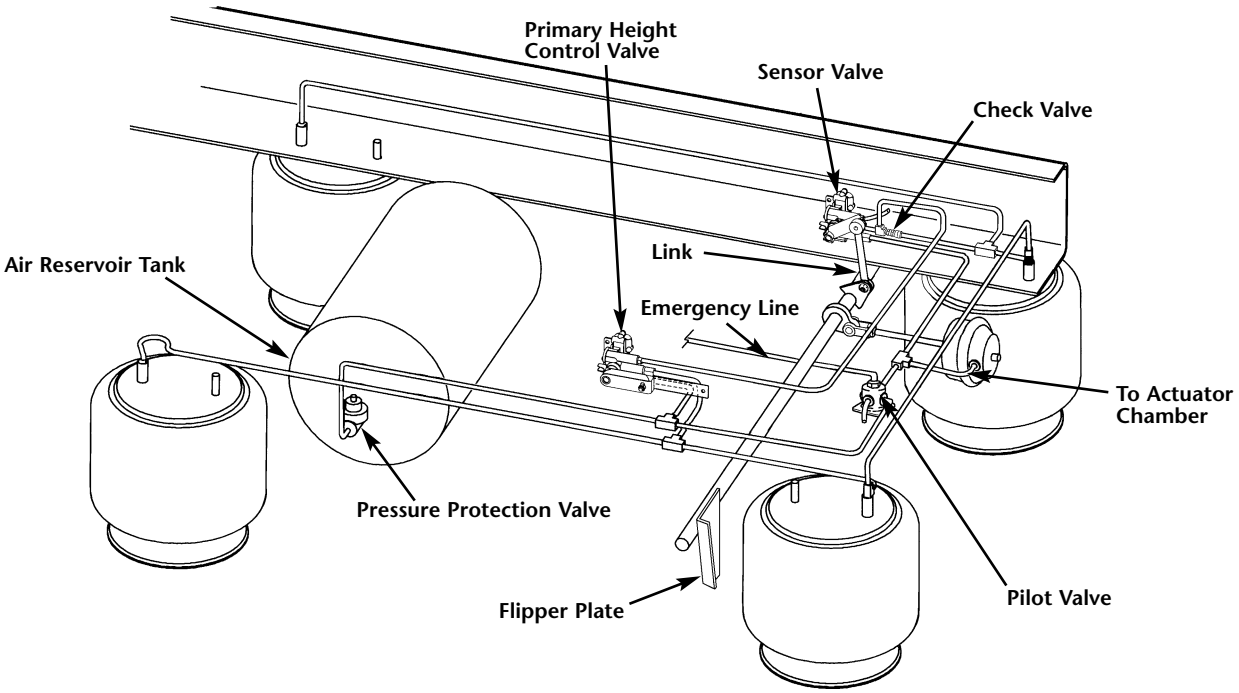


FIGURE 12
Automatic Reset Feature



Purpose:

The ARF (Automatic Reset Feature) is designed to ensure that the External Dock Lock (EDL) flipper plates will not be trapped down (engaged position) while the trailer is in motion. This is accomplished by the use of two additional system valves.

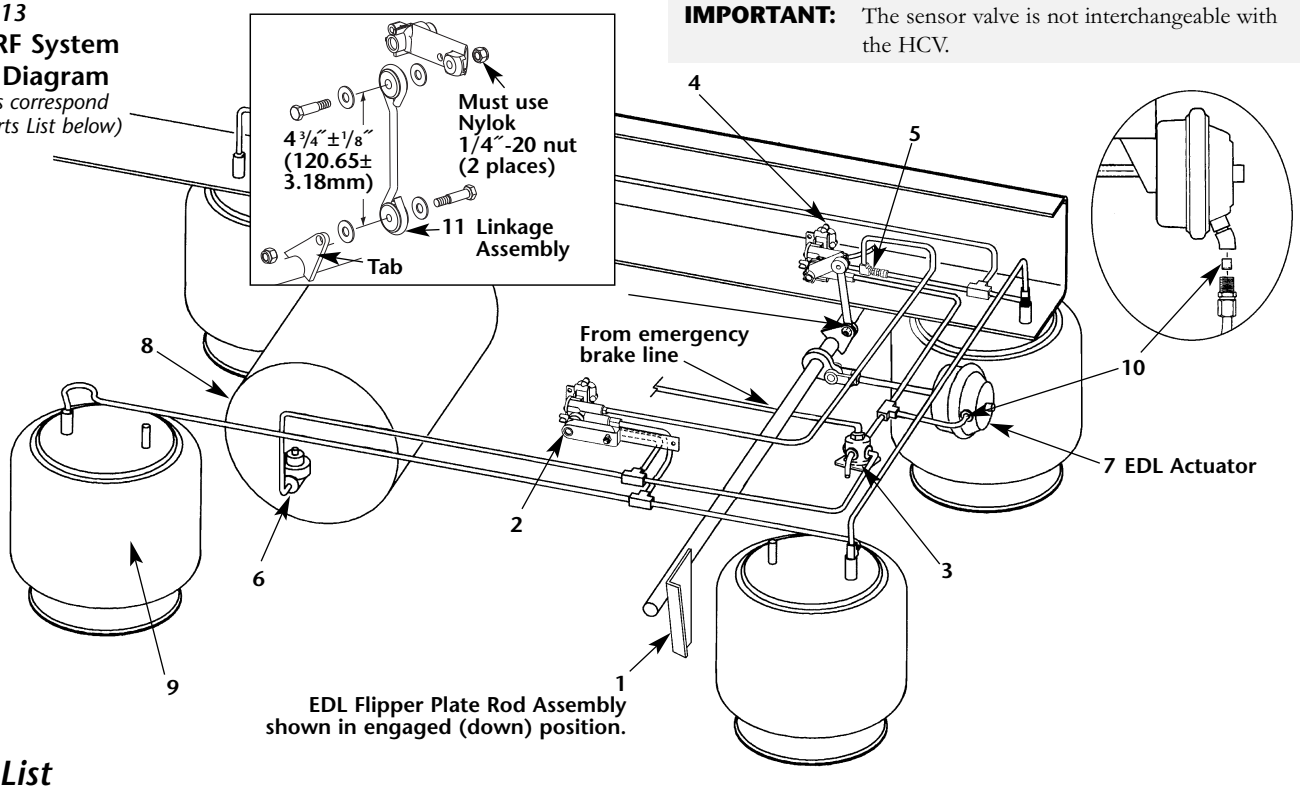
NOTE: Refer to (***FIGURE 13***) for component locations in the EDL/ARF system.

Function:

Because both vehicle motion and position of the flipper plates must be monitored, two additional system valves are used along with the height control valve. A pilot valve monitors emergency brake pressure to determine if the vehicle is parked or in motion. An auto reset (sensor) valve monitors the position of the flipper plates (up or down) on the External Dock Lock (EDL).

FIGURE 13
EDL/ARF System Piping Diagram
(Numbers correspond to the Parts List below)

IMPORTANT: The sensor valve is not interchangeable with the HCV.



Parts List

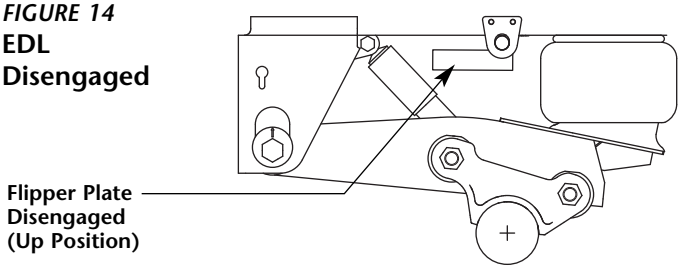
1. **EDL Flipper Plate (Shown in the Engaged Position):** The flipper plates are activated by the vehicle's emergency parking brakes. When the parking brakes are engaged, the flipper plates rotate down to the engaged position. When the parking brakes are released, the flipper plates rotate up to the disengaged position.
2. **Primary Height Control Valve (1/4˝ and 3/8˝ air lines):** The Primary Height Control Valve must always be properly adjusted to suspension design ride height to assure proper air suspension and EDL function. When the flipper plates are up, the primary height control valve has full function.
3. **Pilot Valve:** A pilot valve is used to monitor emergency brake pressure to determine if the trailer is parked or in motion.
4. **Auto Reset (Sensor) Valve:** An auto reset (sensor) valve is used to monitor the position of the EDL flipper plates (either up or down). (To distinguish between a sensor valve and an HCV, a sticker is placed on the sensor valve.) When the flipper plates are in the up position, the standard height control valve maintains the predetermined ride height. The auto reset (sensor) valve arm should only be in the "up" position when the flipper plate is down, or "down" when the flipper plate is in the up position. Anytime this valve is in the neutral position it will cause the air system to malfunction.
5. **One-Way Check Valve (1/4˝ and 3/8˝ air lines):** Installed to the middle port of the sensor valve.
6. **Pressure Protection Valve:** Air pressure protection valve ensures that safe air brake pressure is always maintained (70 psig—4.8 bars) in the air reservoir.
7. **EDL Actuator:** Push rod retracts (with emergency brakes on) to pull flipper plates down (engaged).
8. **Air Reservoir:** Main vehicle air supply.
9. **Air Spring:** When the emergency brakes are released, air is supplied to the air springs, raising the trailer above ride height. This frees the trapped flipper plates on the trailing arm load pads. The flipper plates will then rotate up and out of the way. The rotation upward of the flipper plates, rotates the arm of the sensor valve downward. This disengages the sensor valve and allows the primary height control valve to control all air flow for ride height.
10. **Choke Valve:** Can be installed in either side of the air supply line to the actuator. Purpose of choke valve is to slow down flipper plate rotation.
11. **Auto Reset (Sensor) Valve Linkage Assembly:** Predetermine length of 4 3/4˝±1/8˝ (120.65±3.18mm) ensures proper function of system. Linkage fasteners must be assembled as shown above.

Disengaged Application

EDL Flipper plates up (disengaged) and vehicle is in motion *(FIGURE 14)*.

When the parking brakes are disengaged, the flipper plates will be up and the primary height control valve (HCV) has full function. The primary HCV fills the air springs through its center port and exhausts the air springs through the top port of the auto reset (sensor) valve (***FIGURE 15***).

FIGURE 14
EDL Disengaged

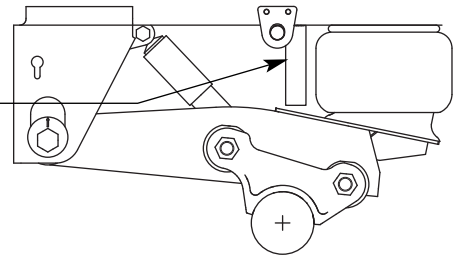


Engaged Application

EDL Flipper plates down (engaged) and vehicle is parked

1. Releasing air pressure from the trailer brake system or disconnecting the glad hand engages the parking brakes.

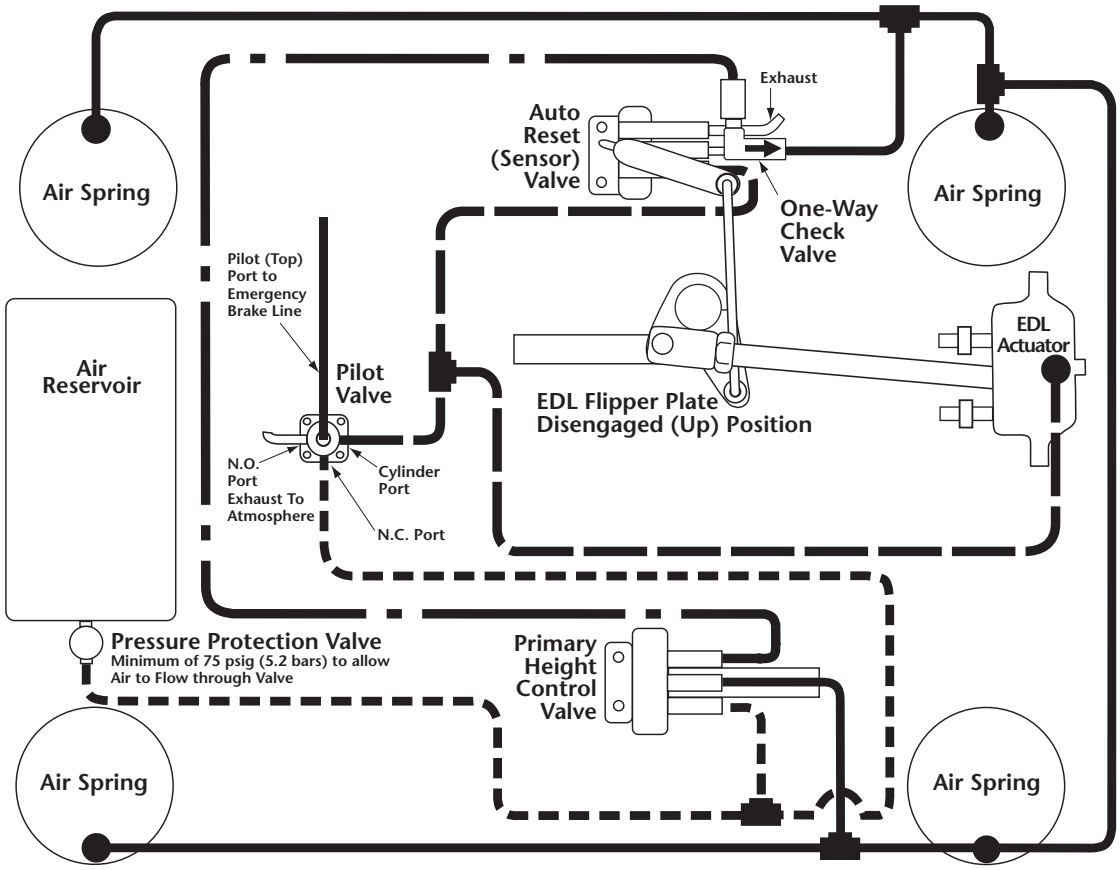
FIGURE 16
EDL Engaged



2. System pressure to the "pilot port" of the pilot valve is cut off.
3. The normally closed (N.C.) port of the pilot valve closes, cutting off system pressure.
4. The normally open (N.O.) port of the pilot valve opens, providing an exhaust port for the air between the pilot valve and the EDL actuator and sensor valve to escape.
5. The HCV maintains the ride height.
6. The EDL actuator push rod retracts, rotating the EDL rod assembly so the flipper plates are down—in the engaged position.
7. If the suspension is at the correct ride height, the bottom edge of the flipper plates **must** be 5/8˝ above the beam load pads.

CAUTION **Do not operate vehicle (put in motion) if flipper plates are trapped in the down position and the ARF does not function. Trailer and suspension component damage could result. Refer to EDL/ARF System Troubleshooting on page 14.**

FIGURE 15
EDL/ARF Piping Diagram with Flipper Plates Disengaged (up position)



ARF Description when Releasing Trapped Flipper Plates

Trapped flipper plates in the down (engaged) position (*FIGURE 17*)

1. With parking brakes disengaged, the air reservoir begins to fill with air. When air reservoir pressure reaches 85 psig (5.9 bars), the pressure protection valve opens, supplying air to the suspension system.
2. System pressure is supplied directly to the height control valve (HCV) and to the normally closed (N.C.) port of the pilot valve.
3. As brake system pressure increases, pressure increases to the top port or "pilot port" of the pilot valve.
4. Increased pressure to the "pilot port" opens the N.C. port of the pilot valve, applying system pressure through the cylinder port to the sensor valve and the EDL actuator chamber.
5. System pressure to the EDL actuator chamber in turn pushes the actuator push rod—which is fastened to the EDL rod assembly by a clevis and pin—attempting to rotate the flipper plates up (out of the way).
6. At the same time system pressure is applied to the EDL actuator chamber, air also flows through the sensor valve and one-way check valve. Air flowing through the check valve into the air springs temporarily raises the slider box. With the slider box raised—freeing the "trapped" flipper plates—the actuator push rod rotates the flipper plates up.
7. After quickly releasing the flipper plates, the HCV returns the suspension to its normal ride height. To return to the normal ride height, increased air pressure from the air springs exhausts through the HCV and out through the sensor valve top port.

FIGURE 17
Trapped Flipper Plate

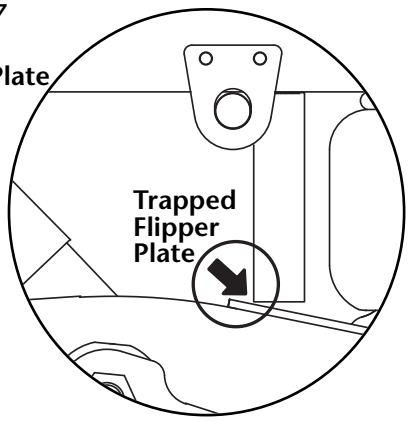
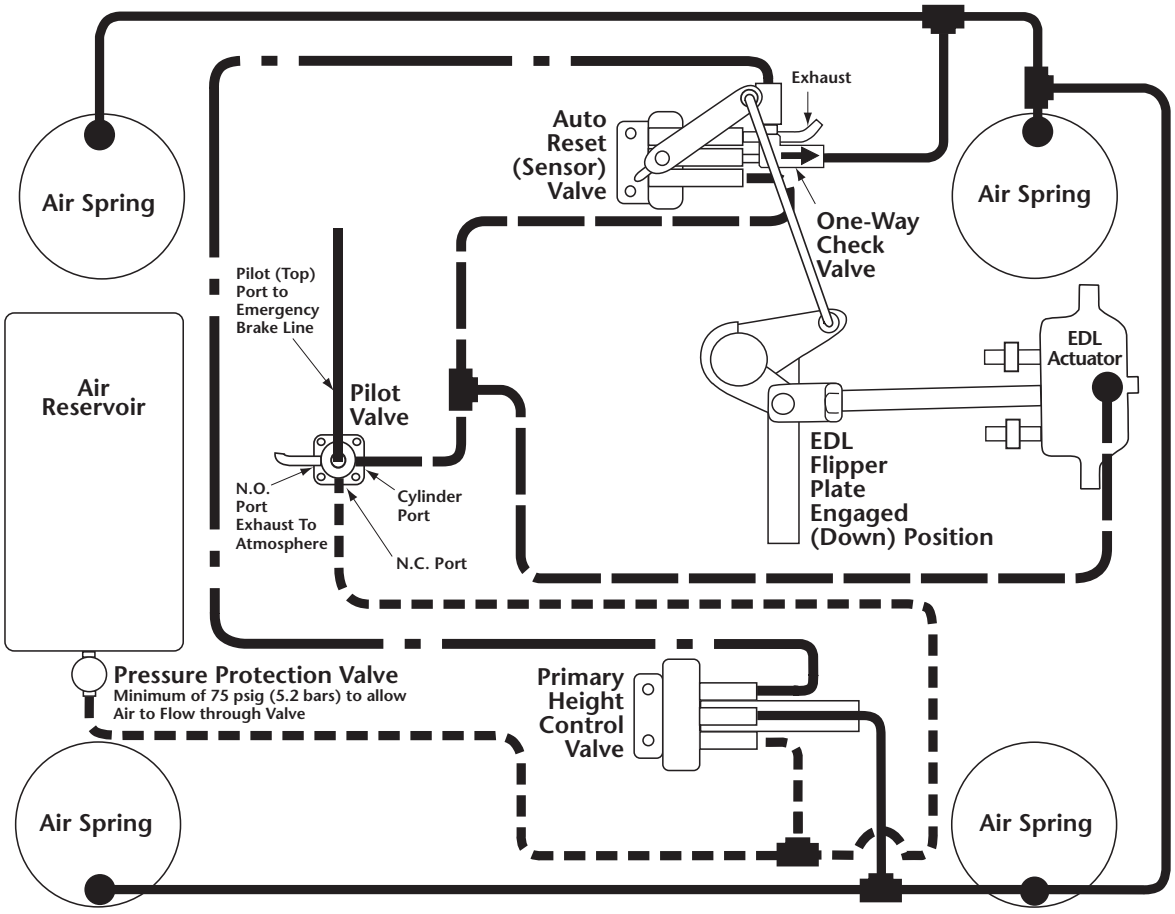


FIGURE 18
EDL/ARF Piping Diagram with Flipper Plates Engaged (down position)



Auto Reset (Sensor) Valve Performance Check

To check the Sensor Valve for proper adjustment and operation, perform the following procedures.

⚠WARNING Failure to chock tires prior to beginning maintenance could allow vehicle rollaway which, if not avoided, could result in death or serious injury.

NOTE: Apply air system pressure in excess of 85 psig (5.9 bars) before doing performance check.

1. Disconnect the auto reset (sensor) valve lower linkage connection to the EDL rod assembly. Rotate valve arm up approximately 20° and hold (***FIGURE 19***). Air should flow through one-way check valve ports to air springs (***FIG. 19***).
2. Move valve arm down 20° (***FIGURE 20***) and hold. Disconnect the primary height control valve upper linkage connection. Rotate primary height control valve arm down approximately 45° and hold for 5-10 seconds. Air should flow (exhaust) out top port of auto reset (sensor) valve (***FIGURE 20***).
3. Reconnect sensor valve and primary height control valve linkages.

CAUTION In the event replacement of the sensor valve is necessary, replace with sensor valve ONLY. Use of primary height control valve (1/4″ [6.35mm] or 3/8″ [9.53mm] air lines) in place of sensor valve will result in malfunction of the auto reset feature and possible damage to suspension and/or trailer.

NOTE: To prevent side loading on sensor valve linkage connection—fastening hardware **MUST** be assembled as shown in (***FIGURE 21***) for proper function. If not assembled as shown, disconnect linkage assembly and refasten as shown.

FIGURE 21
Auto Reset Sensor Valve Linkage Assembly

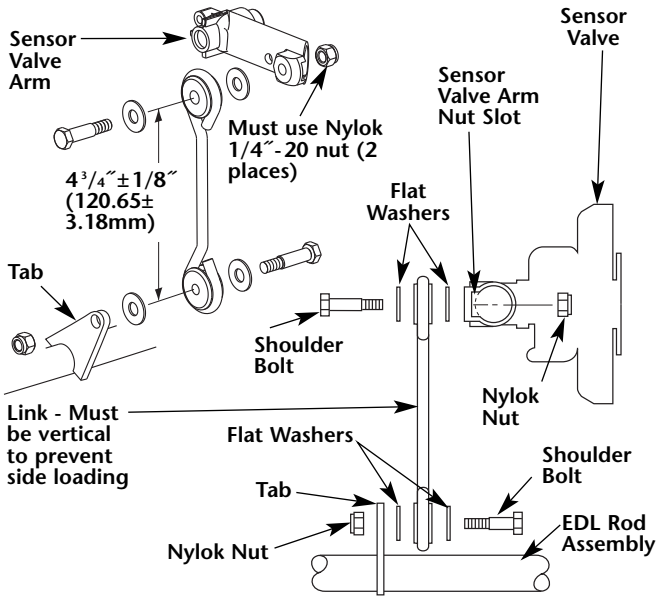


FIGURE 19
Auto Reset (Sensor) Valve (EDL Engaged) Air Flow Check

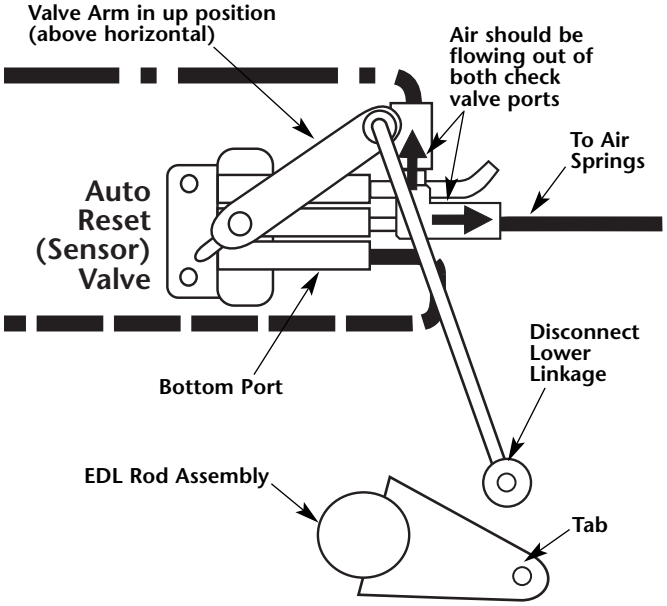
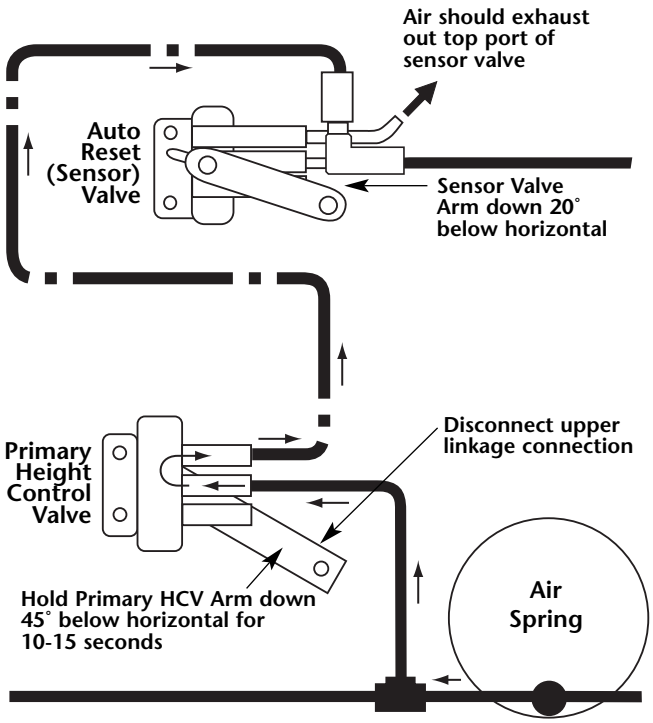


FIGURE 20
Auto Reset (Sensor) Valve Air Flow Check



EDL Flipper Plate Adjustment

Proper EDL Flipper Plate/Auto Reset (Sensor) Valve Arm Adjustment

⚠WARNING Failure to chock tires prior to beginning maintenance could allow vehicle rollaway which, if not avoided, could result in death or serious injury.

1. With the emergency brakes applied visually check the EDL Flipper Plates and valve arm for correct positioning (***FIGURE 22***). If correct positioning is found move ahead to Step 4.

   CORRECT Flipper Plates Engaged (Down) Position Emergency Brakes APPLIED:

   When the EDL is engaged and properly installed/adjusted the valve arm will be approximately 20˚ above the horizontal position, and the flipper plates will be in the completely down position (***FIGURE 22***).

CAUTION EDL/ARF System could malfunction if the flipper plates and sensor valve arm are not in the correct alignment to each other. If operated under incorrect alignment—trailer and/or property damage could result.

2. If upon inspection the flipper plates do not rotate to the complete down position and the sensor valve arm is not approximately 20˚ above horizontal position, the actuator push rod must be adjusted. Remove clevis pin, loosen jam nut, and thread the clevis in until the push rod will pull the EDL flipper plates to the straight down position and push the valve arm approximately 20˚ above horizontal position.

IMPORTANT: When adjusting flipper plates to the straight down position, clevis must be threaded in 1/2˝ (13mm) short of cam mounting hole (***FIGURE 24***). This creates tension on the actuator return spring to pull the flipper plates completely down during the engaged application.

3. Pull actuator push rod out so the hole in the cam aligns with the clevis hole. Install clevis pin and secure with cotter pin (***FIGURE 24***). Tighten jam nut against clevis.

NOTE: Maximum push rod protrusion is 3/16˝ (4.76mm) (***FIGURE 24***).

4. With the emergency brakes OFF visually check the EDL flipper plates and sensor valve arm for correct positioning (***FIGURE 23***).

   CORRECT Flipper Plates Disengaged (UP) Position Emergency Brakes OFF:

   When the EDL is disengaged and properly installed/adjusted the sensor valve arm will be down approximately 20˚ below horizontal position and the flipper plates will be in the up position (***FIGURE 23***).

IMPORTANT: If you are unable to obtain either the correct Engaged or Disengaged positioning, by adjusting the actuator push rod (***FIGURE 22***), contact SAF-HOLLAND Customer Service.

FIGURE 22
CORRECT Flipper Plate Engaged Position

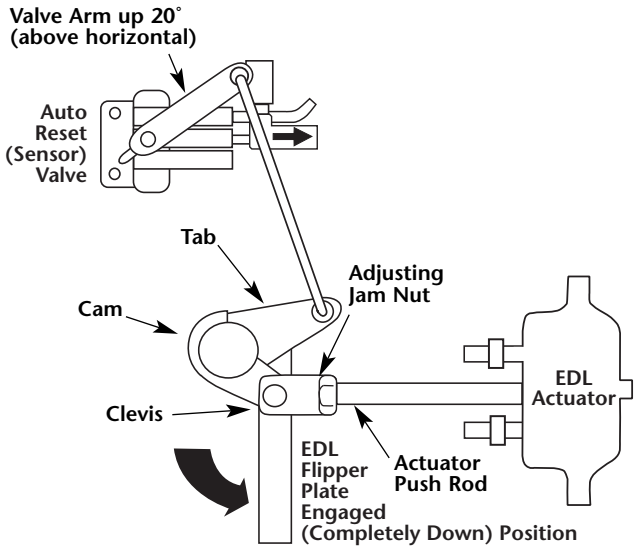


FIGURE 23
CORRECT Flipper Plate Disengaged Position

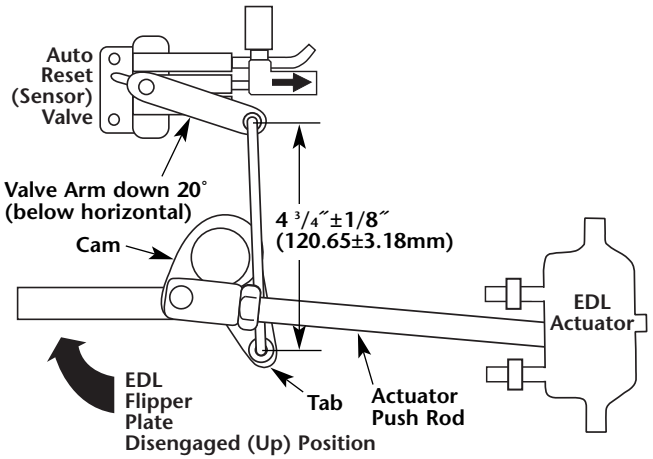
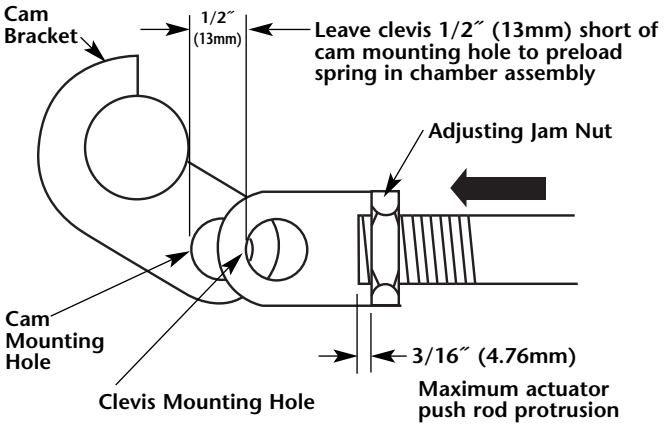


FIGURE 24
EDL Cam to Actuator Push Rod Adjustment



IMPORTANT: Flipper plate must be completely down (engaged position).

Primary Height Control Valve Information

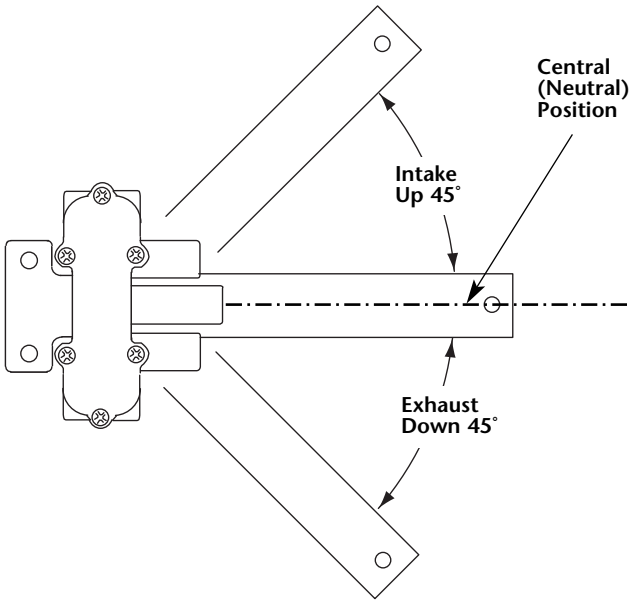
Height Control Valve Performance Check

IMPORTANT: Proper inspection can eliminate unnecessary replacement of height control valve.

NOTE: Apply air system pressure in excess of 85 psig (5.9 bars) before doing performance check.

1. Disconnect the link assembly from height control valve arm.
2. Move control arm up 45˚ for 10-15 seconds – air should flow to air springs (***FIGURE 25***).
3. Move control arm to center (neutral) position – valve should shut off air flow to air springs.
4. Move control arm down 45˚ for 10-15 seconds (***FIGURE 25***) - air should flow from air springs into center port of height control valve and exhaust out the top port of the auto reset (sensor) valve.
5. Move control arm to center (neutral) position – valve should shut off air flow.
6. Valve is good if performance is as noted.
7. Reconnect upper link assembly to control arm.

FIGURE 25
Height Control Valve Performance Check



NOTE: If valve does not perform correctly, refer to the adjustment procedures on page 13.

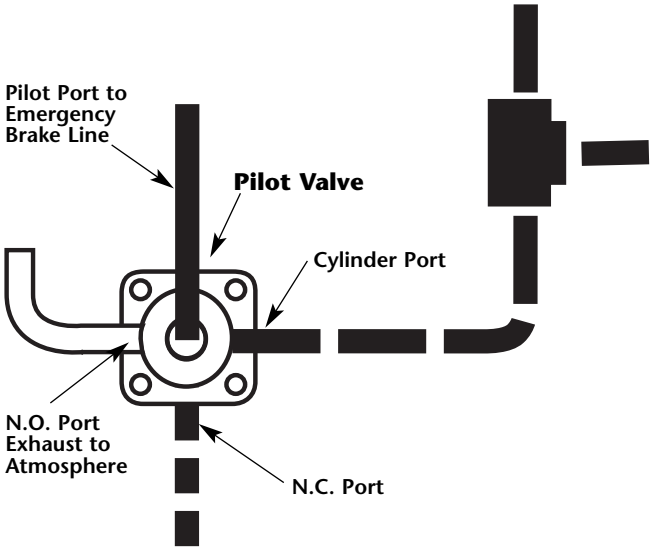
Pilot Valve Check for EDL/ARF System

Pilot Valve Performance Check

NOTE: Apply air system pressure in excess of 85 psig (5.9 bars) before doing performance check.

1. When air from emergency brakes is present on top port of pilot valve air should flow from N.C. port to cylinder port (***FIGURE 26***).
2. When emergency spring brakes are released (no air to top port of pilot valve, air should exhaust (quickly) from EDL actuator out of N.O. port (***FIGURE 26***).

FIGURE 26
Pilot Valve Check



Primary Height Control Valve Adjustment

Height Control Valve Adjustment Procedures

IMPORTANT: This adjustment procedure is for **ONE** Height Control Valve system with an External Dock Lock Device

1. Prior to adjustment, the vehicle must be in an unladen condition on a level floor and supported on a king pin stand or coupled to a tractor (***FIGURE 27***).

⚠WARNING Failure to properly support suspension during maintenance may allow suspension to fall which, if not avoided, could result in death or serious injury.

IMPORTANT: **DO NOT** use flipper plate height plus 5/8˝ (16mm) clearance spacing to determine ride height setting.

2. Verify ride height by checking serial number tag located on the frame bracket or crossmember (***FIGURE 28***).

   Example: NS400/450-4816, last two digits represent 16˝ (406mm) ride height.

3. Confirm proper EDL flipper plate rod assembly by comparing predetermined ride height to corresponding EDL flipper plate height (***FIGURE 29***, see chart).

4. Disconnect primary height control valve linkage to lower mounting bracket, and move control arm up 45˚ and hold for 10-15 seconds to raise vehicle. Return control arm to center (neutral) position.

5. Move control arm down 45˚ and hold until system air exhausts completely, lowering flipper plates. Return control arm to center (neutral) position, and check for proper ride height (determined in step 2—***FIGURE 29***).

6. Insert the locating pin into the adjusting block and bracket on the height control valve (***FIGURE 30***). Loosen the 1/4˝ adjusting lock nut located on the adjusting block (***FIGURE 30***), allowing the control arm to move up and down approximately 1˝ (25mm). Replace lower link bolt back into lower link and mounting bracket. **DO NOT** fasten.

7. Tighten adjusting lock nut at the adjusting block to 30-40 in. lbs. (3.75-5 Nm), and remove locating pin inserted in Step 6.

8. Remove lower link bolt, and raise control arm 45˚ and hold for 10-15 seconds (***FIGURE 30***). This will raise the vehicle. Bring the control arm back to center (neutral) position.

9. Reconnect linkage to lower mounting bracket and fasten connection.

NOTE: If the suspension returns to a dimension less than design ride height, loosen the 1/4˝ adjusting nut and adjust (up) so suspension will always return to its correct ride height. **NEVER LESS THAN DESIGN HEIGHT**.

FIGURE 27
Trailer Supported at Fifth Wheel Height

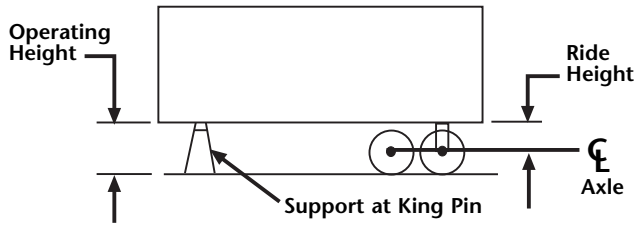


FIGURE 28
Serial Tag

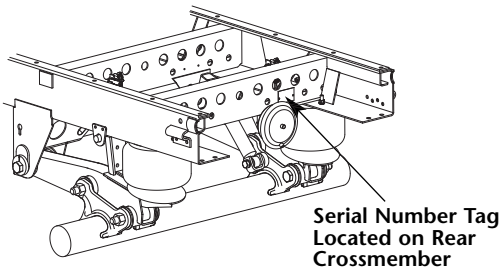
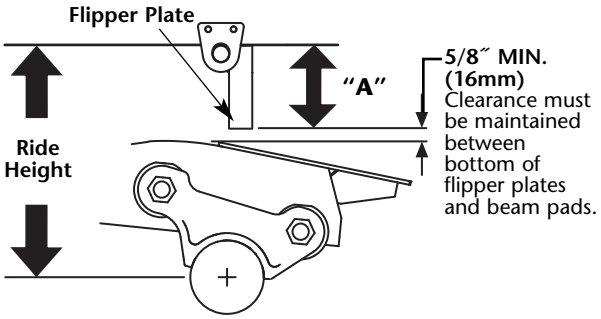
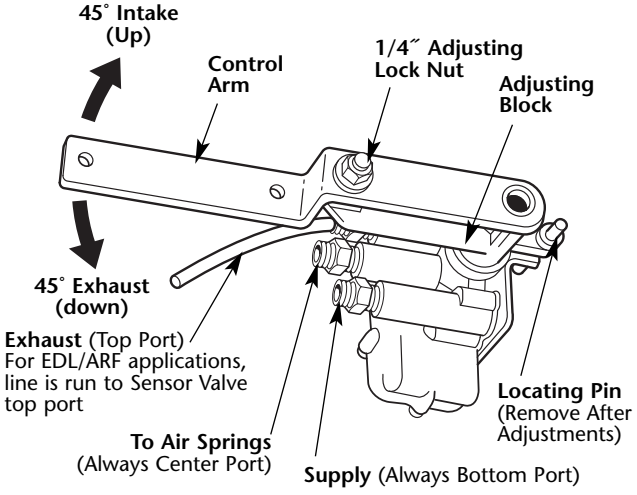


FIGURE 29
Obtaining Proper Ride Height



RIDE HEIGHT	"A" FLIPPER PLATE HEIGHT
16.0˝ (406mm)	6.5˝ (165mm)
16.5˝ (419mm)	7.0˝ (178mm)
17.0˝ (432mm)	7.5˝ (191mm)
18.0˝ (457mm)	8.5˝ (216mm)

FIGURE 30
Primary Height Control Valve



EDL/ARF SYSTEM TROUBLESHOOTING

⚠WARNING Failure to chock tires prior to beginning maintenance could allow vehicle rollaway which, if not avoided, could result in death or serious injury.

IMPORTANT: Apply air system pressure in excess of 85 psig (5.9 bars) before doing any performance checks.

PROBLEM	POSSIBLE CAUSE and	REMEDY
Air is continually leaking out the exhaust port of the sensor valve.	Incorrect plumbing of the sensor valve.	Check and repair as required. (See pages 7 and 10.)
	One-way check valve malfunction.	Check and repair or replace as required. (See page 8.)
	EDL actuator or sensor valve malfunctioning.	Check and repair or replace as required. (See pages 7 to 11.)
	Primary HCV mis-adjusted or malfunctioning.	Check and repair or replace as required. (See pages 12 and 13.)
	Pilot valve malfunctioning.	Check and repair or replace as required. (See page 12.)
	Diaphragm on EDL actuator ruptured.	Replace as required. (See pages 4 and 5.)
	Sensor valve linkage is the wrong length. (See ***FIGURE 21***, page 10.)	Replace linkage with Linkage Ass'y. (See pages 7 and 10.)
Trailer is at full extension and suspension is pulling on shock absorber.	No air flow out of pressure protection valve from the air reservoir.	Check specified air pressure. Minimum 70 psig (4.8 bars) required in air reservoir.
	EDL actuator or sensor valve mis-adjusted or malfunctioning.	Check and adjust or replace as required. (See pages 7 to 11.)
	Pilot valve malfunctioning.	Check and repair or replace as required. (See pages 8 and 12.)
	Push rod of EDL actuator is bent.	Replace as required. (See pages 4 and 5.)
	Cam bracket that connects to EDL actuator is damaged or weld is broken.	Repair or replace as required.
	Diaphragm on EDL actuator ruptured.	Replace as required. (See pages 4 and 5.)
	Sensor valve linkage is the wrong length. (See ***FIGURE 21***, page 10.)	Replace linkage with Linkage Ass'y. (See pages 7 and 10.)
Flipper plates are trapped in the down position.	No air flow out of pressure protection valve from the air reservoir.	Check specified air pressure. Minimum70 psig (4.8 bars) required in air reservoir.
	No air flow to ARF system pilot valve.	Check for breech in air supply line and repair/replace as required. (Pgs 6, 7, & 12.)
	Vehicle overloaded or unevenly loaded.	Check wheel loads and correct as needed.
	Primary HCV mis-adjusted or malfunctioning.	Check and repair or replace as required. (See pages 12 and 13.)
	Trailer not at proper ride height.	Check and adjust if needed. (See pages 12 and 13.)
Flipper plates will not swing down completely.	Cam bracket that connects to EDL actuator is damaged or weld is broken.	Repair or replace as required.
	Ride height set improperly (too low).	See pages 12 and 13.
	Actuator push rod needs adjustment.	Need 5/8˝ (25mm) gap.

NOTES

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