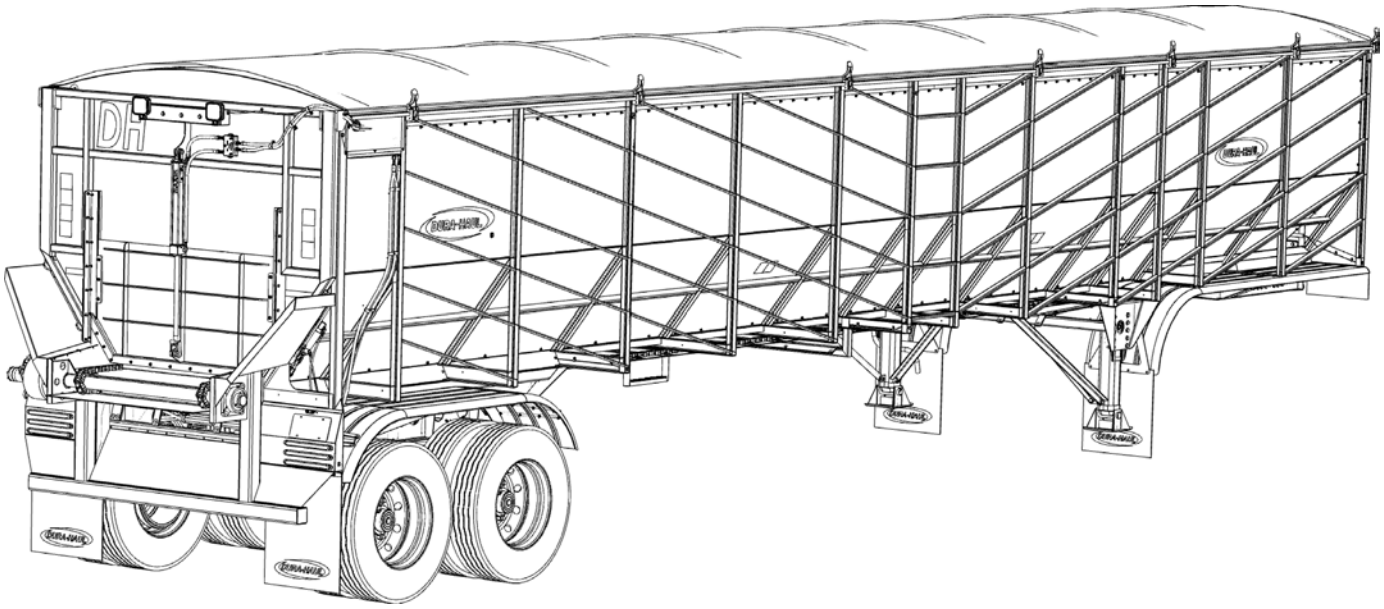
DURA-HAUL®

2019 BELT TRAILER

OWNER'S MANUAL



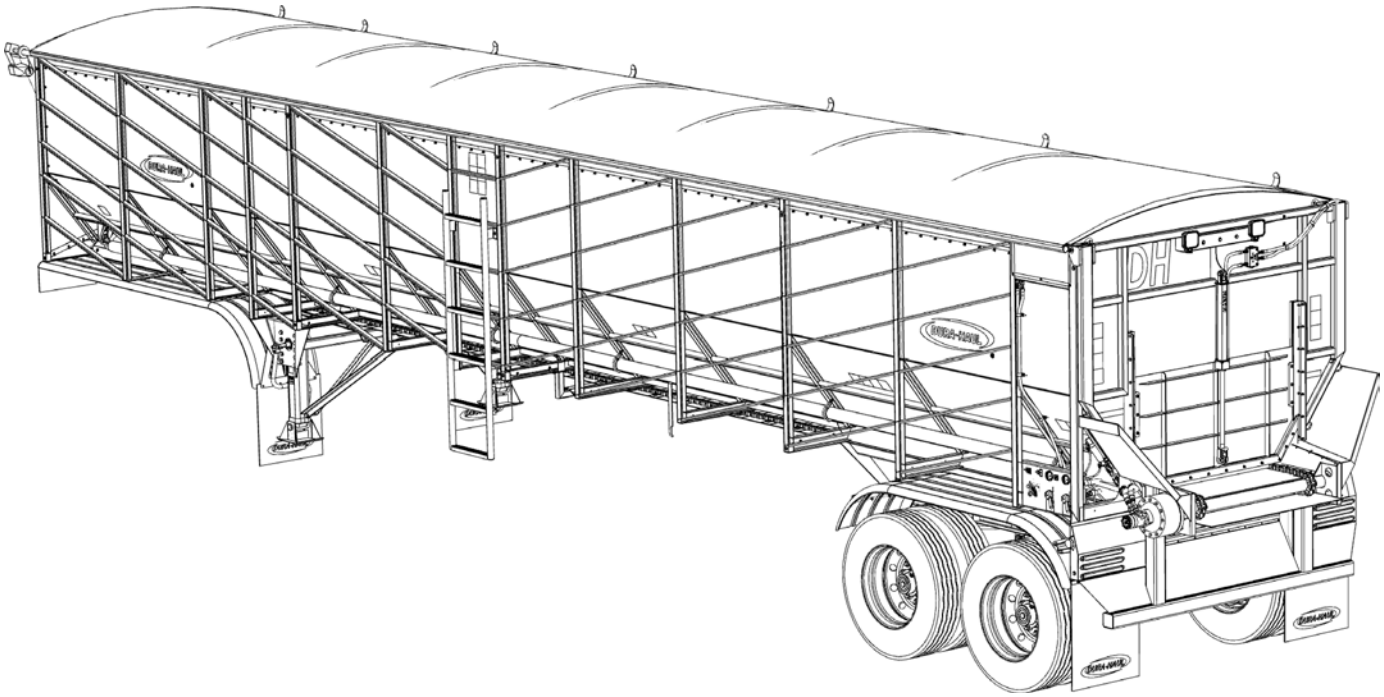


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TABLE OF CONTENTS

BRAND ELEMENTS

Name 6
Slogan 7

VISUAL LANGUAGE

Logotype 10
Primary logotype 10
Secondary logotype 14
HD belly dump logotype 18
XLT belly dump logotype 22
XLS belly dump logotype 26
Authorized dealer logotype 30
Placement 32
Color palette 34
Primary colors 34
Color tints 35
Typography 36
Official typeface 36
Hierarchy 37
Edge 38
Variations 38
Placement 39
Photography 40
Product views 40
Background variations 42

PRINT MEDIA APPLICATIONS

Grid system 46
8.5x11 modular grid 46
8.5x11 graphic placement 47
Stationery 48
Basic letterhead 48
Product insert sheet 49
Business card 50
Product decals 52
Danger/Caution 52
Warning 53

DIGITAL MEDIA APPLICATIONS

Email signature 56
Website 57
Header & footer 57

IMPORTANT SAFETY INFORMATION

Before attempting to operate, load, unload, or do anything with or to the trailer, YOU MUST READ THIS MANUAL and become completely familiar with all of its operation instructions and safety precautions. To avoid serious injury or death, ALWAYS FOLLOW THESE PRECAUTIONS:

1. Do not allow unqualified, untrained, or careless personnel to operate the trailer. Do not use the trailer for a purpose for which it was not intended.

2. Each person at the user's facility who may be involved with installing, operating, servicing, inspecting, maintaining, or repairing the trailer must read the complete operating instructions and carefully study and understand the safety instructions. All actual and potential operators should confirm their having done so in writing.

3. The trailer must be serviced and maintained only by authorized and properly trained personnel. Such personnel must have undergone training by a factory-trained representative concerning the proper and safe operation of the trailer. Only the manufacturer or factory-trained technicians should carry out more than minor repairs.

4. Do not allow anyone who is not physically fit or mentally alert near the trailer or its operating area. Be constantly alert to possible hazards on or around the trailer.

5. Keep a safe distance at all times from any moving parts, including the conveyor.

6. When unloading the trailer:
   a. Long hair must be protected by headgear.
   b. Do not wear loose apparel such as ties, scarves, etc.
   c. Remove all wristwatches and jewelry.
   d. Wear only approved industrial grade eye protection or a face guard to protect against flying debris.

7. Do not allow tools or other loose objects to be placed on top of or around the trailer.

8. At the very first sign of any problem and before attempting any troubleshooting or maintenance, the conveyor must be stopped.

9. Safety features must not be removed, dismantled, altered, put out of operation or relocated. All guards and safety devices are to be re-fitted and in place after changeovers, servicing, or making repairs and before the trailer is used. All safety devices must be checked at regular intervals for correct operation.

10. Do not remove safety signs or warning decals from the trailer. Product safety signs should be periodically inspected and cleaned as necessary. Product safety signs should be replaced when they are no longer legible at a normal viewing distance. Replacements are available from Dura-Haul, LLC.

11. Follow all workplace safety and accident prevention regulations applicable to the operation of the trailer. Comply with local, state, and/or federal environment regulations, including those governing airborne dust particles.

12. Designate a person to be responsible at any given time for installation, commissioning, operating and repair of the trailer so the responsibility for safety will not be lost.

13. The trailer has been designed and built with original Dura-Haul parts only. Only original Dura-Haul parts must be used for maintenance or repair. Use of other parts will void your warranty.

14. Do not perform modifications to or reconstruction of the trailer without first getting written approval from Dura-Haul.

15. The cleanliness and tidiness of the trailer and its surrounding area must be ensured through appropriate instructions, routine inspections, and cleaning.

INSPECTION, SERVICE AND MAINTENANCE

DAILY INSPECTION

It is important that your trailer be inspected and serviced on a regular basis to keep it in safe and functional condition. Regular maintenance will also save you money in costly repairs over time.

- **Trailer**
  - Hopper
  - Kingpin area
  - Fifth wheel plate
  - Framework
  - Bolts and fasteners
  - Ladder
  - Mud flaps
- **Suspension & axles**
  - Axle alignment
  - Hub oil level
  - Brake adjustments
  - Brake pad thickness
  - Wheels
  - Tires
- **Conveyor system**
  - Hydraulic hoses
  - Hydraulic motor
  - Chain sprockets
  - Chain tension
  - Rubber flaps
  - Gear box
- **Rear door(s)**
  - Hinge door
  - Slide door (if applicable)
- **Floor**
  - Stainless steel floor
  - Plastic liner
- **Tarps**
  - Tarp hardware
  - Tarps

PREVENTATIVE MAINTENANCE

We recommend that you follow the general preventative maintenance schedule below. The intervals given are for nominal operating conditions; service more frequently if the trailer is used in an overly humid or dusty condition.

- **After the first 50 to 100 miles**
  - Check torque of cap nuts or flange nuts on each wheel
- **After the first 1,000 miles**
  - Check torque of suspension hardware
  - Check alignment of suspension
- **Every 5,000 miles or once a month** *(whichever comes first)*
  - Wash trailer thoroughly with a mild detergent and water
  - Check general structural condition for corrosion or cracks
  - Inspect kingpin area
  - Check clearances and torque of air ride suspension system
  - Visually check alignment of suspension
  - Check condition of lights
  - Check wiring harness for cracking or chafing
  - Check hydraulic and pneumatic lines for signs of leakage or wear
  - Check hinges on rear door(s) for signs of damage
  - Lubricate hinges, latches, and bearings (if applicable) on rear door(s)
  - Inspect brake components for proper adjustment and for any sign of damage
  - Check tires for excessive wear and proper inflation
  - Check wheel nuts for proper torque
  - Check wheel seals for leaks
  - Check level of oil in axles
  - Check conveyor system for excessive wear or damage
  - Check condition of tarp system, if installed
  - Check condition and security of mud flaps
- **Fifth wheel area inspection**

  The fifth wheel area must be kept clean and free of dirt and foreign materials. This includes the area between the kingpin plate and the body of the trailer where the conveyor chains travel. Buildup materials can cause binding or other serious damage if allowed to remain in this area. Any binding can place excess stress on the front shaft, which can result in any of the following:
  - The shaft to bend or break
  - The bearings or adjustment mechanisms to be damaged
  - The chain to stretch excessively, resulting in premature failure

  Daily inspect the kingpin and the plate for the following:
  - Wear, cracks, or other damage
  - Damaged or missing parts

ADJUSTING AND LUBRICATING

CONVEYOR CHAIN

The conveyor chain must be inspected regularly and lubricated using a high quality oil. Do not use grease. Check chain tension to make sure its not to loose.

WARNING
Attempting to lubricate the chains while they are in motion can result in serious bodily injury or death. Stay clear of the chains while they are in motion. Position the chains and completely disable the hydraulic system before doing any maintenance.

CONVEYOR CHAIN

Door hinges and bearings must be lubricated regularly, especially if the trailer has beenoperating or stored for an extended period of time in a humid or wet environment. Corrosion can lead to the failure of door hinges if they are not maintained properly. As a general rule with the rear doors, as with the entire trailer, “if it moves, lubricate it.” Use a NLGI Grade 2 general purpose grease on all shafts and grease zerks.

BEARINGS AND SPROCKETS

The bearings on the front and rear conveyor shafts must be inspected and lubricated at regular intervals using an NLGI Grade 2 general-purpose grease. As with chain lubrication, the amount of lubrication is dependent upon the amount of use.

- Under daily use, daily inspection is required. Lubricate as needed.
- Under all other uses, weekly inspection should be sufficient. Lubricate as needed.
- Inspect sprockets for excessive wear or damage.

WARNING
Attempting to lubricate the chains while they are in motion can result in serious bodily injury or death. Stay clear of the chains while they are in motion. Position the chains and completely disable the hydraulic system before doing any maintenance.

CARE OF PLASTIC FLOOR

HIGH MOLECULAR WEIGHT (HWM) AND ULTRA-HIGH MOLECULAR WEIGHT (UHMW) LINER

The plastic liner under the chain must be inspected for damage and wear. Replace the liner if it is worn through at any spot. If any foreign material should become lodged between the liner and the body of the trailer, remove it by blowing or vacuuming it out.

HYDRAULIC SYSTEM REQUIREMENTS

TRACTOR HYDRAULIC SYSTEM REQUIREMENTS

Gear pump requirements (volume)
25-50 GPM (gallons per minute)

Reservoir capacity
Minimum 10-25 gallons

Hyd. pressure requirements/bypass settings
2700/3400 PSI

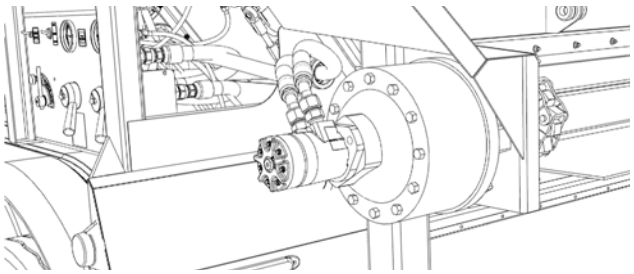
Tractor hydraulic oil must be maintained at all times. Neglect of the trailer oil will result in premature hydraulic component failure premature hydraulic component failure. Pressure line filters are optional.

PLANETARY GEAR BOX

GEAR BOX

When using the planetary gearbox under normal temperature ranges between 0-120 °F, the gearbox is to be half full of SAE 80/90 oil. Use the lower of the two plugs to check the level of the oil. Oil is to be changed after the first 50 hours of operation with subsequent changes every 1000 hours or yearly, whichever comes first.

WARNING
Do not open the gear box while they are in motion it can result in serious bodily injury or death. Stay clear of the sprockets while they are in motion. Completely disable the hydraulic system before doing any maintenance.



CHANGING PLANETARY OIL

The following are basic instructions for changing the oil in the planetary. For more detailed instructions see the Planetary Disassembly procedure.

1. Label and remove the hydraulic lines from the hydraulic motor.
2. Mark position of the planetary cover and ring gear for reassembly.
3. Remove the cover with motor attached.
4. Remove all gear sets.
5. Remove the ring gear.
6. Clean and inspect all gears for chipped, cracked, pitted, or rusty teeth.
7. Apply a small bead of silicone to all sealing surfaces.
8. Install ring gear.
9. Install all gear sets.
10. Install cover and torque all bolts to 45 lb-ft.
11. Remove the fill and full plugs from the cover.
12. Add SAE 80/90 gear oil through the fill hole until oil comes out of full hole.
13. Reinstall plugs into cover.
14. Reconnect the hydraulic lines to the hydraulic motor.

CONVEYOR CHAINS & FLAPS

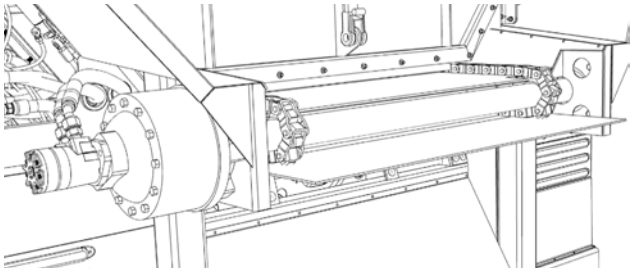
CHAIN

Your trailer comes with a 88C pintle chain for the chain system. 2" x 1" $^{3}/_{16}$" C channel for the cross members of each chain assembly.

WARNING
Do not operate if one of the channels is bent or damaged in any way. Doing so may cause serious damage to the trailer and/or hydraulic components.

FLAPS

Comes with $^{1}/_{8}$" thick 2 ply heavy duty rubber flaps. Check flaps regularly for any wear and tear.



SIDE CONTROL BOX

1 SAFETY LATCH

Your trailer is equipped with a safety latch for the rear door. Before opening the door make sure that the switch is in its open position.

2 FLOW CONTROL VALVE

Flow control valve used to control conveyor speed with tractor driven PTO systems

3 SLIDE DOOR

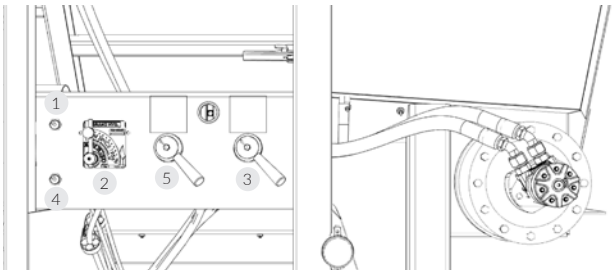
If your trailer is equipped with a slide door the valve will be located by the control box as shown in the picture below.

4 LED LIGHT SWITCH

If your trailer is equipped with LED working lights there will be a switch located by the control box as shown in the picture below.

5 TOP HINGE DOOR VALVE

Valve for opening top hinge door



OPERATING REAR DOOR(S)

TOP HINGE DOOR

1. Move the toggle valve up to release the pneumatic latches
2. If equipped open the lower door enough to relieve seal from conveyor using the appropriate procedure below.
3. If lower door is a slide-up door release the clamp latches on each side of the lower door.
4. Pull the handle on the door valve to raise the door completely.

WARNING
Door(s) can open under the weight of the load causing a loss of property, serious bodily injury, or death. Make sure door(s) are securely closed and latched before getting behind the trailer or before loading or towing the trailer.

WARNING
Do not operate the conveyor with the door(s) closed. The conveyor system could be damaged or break along with the door(s). Serious injury or death could occur.

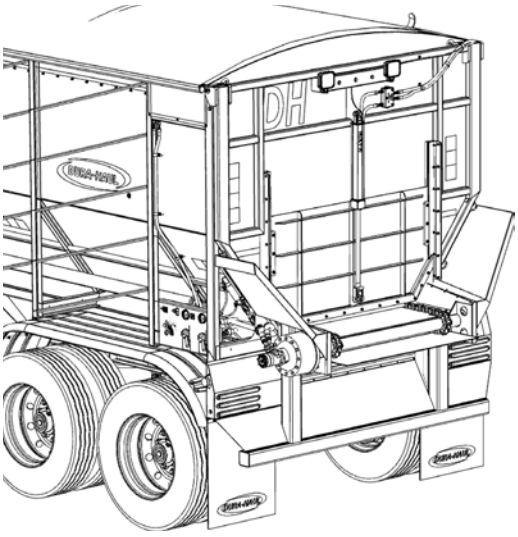
LOWER SLIDE DOOR

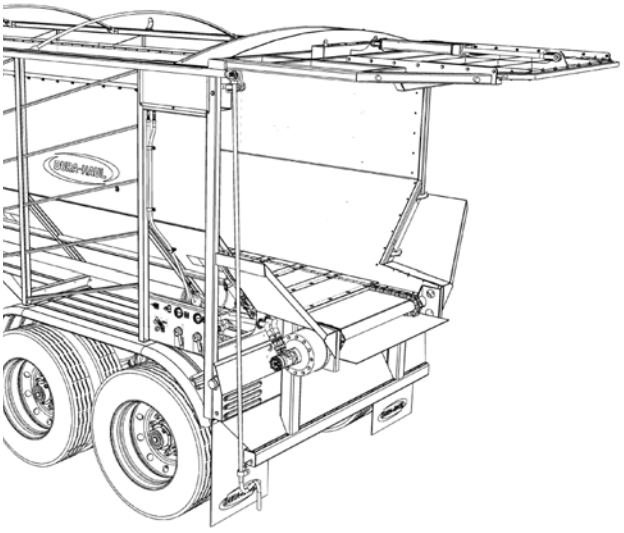
1. Pull the handle on the door valve to open the door to the desired height.
2. If the upper door needs to be opened, open the slide door first.

CAUTION
Open slide door before opening large door to prevent damage to the trailer.

WARNING
Do not stand in front of hydraulic valves while operating. Leaks can occur and cause high pressure, high heat hydraulic fluid to contact you causing serious bodily injury or death. Always wear eye protection while using hydraulic valves.

WARNING
Do not get behind a loaded trailer with door(s) open. The trailer's contents could spill on you causing serious injury.

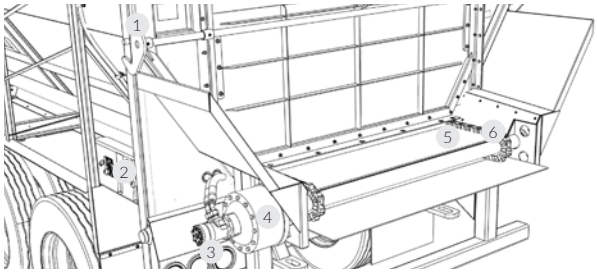




OPERATING CONVEYOR SYSTEM

TRACTOR-DRIVEN PTO HYDRAULIC SYSTEM OPERATION

1. Make sure the flow control valve is shut off (handle vertical).
2. Check the connections between the tractor and the trailer to ensure the pressure and return lines are connected properly and securely.
3. Engage the PTO on the tractor.
4. Open the rear door.
5. Slowly open the flow control until the load starts to move.
6. Adjust the flow control valve to obtain the desired conveyor speed. If the desired speed cannot be reached with the flow control valve completely open, increase the engine RPM on the tractor.
7. Reduce the engine rpm on the tractor to idle before trying to control the conveyor speed with the flow control valve.
8. Stop the conveyor by closing the flow control valve.
9. Close the rear door.
10. Shut off the PTO.



1 Safety latch 2 Control box 3 Hydraulic motor 4 Gear box 23:1 ratio 5 $^{1}/_{8}$"10-ply rubber flaps 6 88C pintle chain

LADDER & WALKWAY SAFETY

You may have one or more ladders, walkways or catwalks on your trailer. If you do, review the following information thoroughly. We have made every effort to reduce or eliminate the risk involved with using these devices.

Although there is always a risk in working on elevated areas, it is a fact that the vast majority of accidents involving ladders result from the failure to exercise care. Proper training, as well as routine inspections and maintenance can substantially reduce the number or ladder related injuries.

Never stand on the top two steps of any ladder or the top cap of a ladder. This could cause you to become off-balance resulting in a fall. Always maintain at least three points of contact with the ladder (2 feet and 1 hand or 2 hands and 1 foot should be in contact with the ladder at all times). Do not over-extend sideways. Use the belt buckle rule: Keep your belt buckle positioned between the side rails at all times, this will maintain your center of gravity in the proper position.

In the next pages are cautions and warnings about ladders, walkways and catwalks that may be on your trailer. Review each of these thoroughly before using the trailer.

SAFETY LABELS

WARNING

KEEP OFF OF AND OUT OF THE TRAILER WHILE IT IS IN MOTION. YOU COULD FALL AND BE SERIOUSLY INJURED.

WARNING

IT IS THE OWNER'S AND/OR OPERATOR'S RESPONSIBILITY TO BE AWARE OF PROPER LADDER USAGE AND CURRENT SAFETY REGULATIONS.

WARNING

DO NOT GET BEHIND A LOADED TRAILER WITH DOOR(S) OPEN. THE TRAILER'S CONTENTS COULD SPILL ON YOU CAUSING SERIOUS INJURY OR DEATH.

WARNING

MOVING CONVEYOR PARTS CAN CRUSH, CUT AND CAUSE SERIOUS INJURY OR DEATH. KEEP AWAY FROM ALL MOVING PARTS WHILE THEY ARE IN MOTION.

WARNING

BRAKE SYSTEM COMPONENTS ARE SPRING LOADED. SERVICING BY AN UNTRAINED PERSON CAN RESULT IN SERIOUS INJURY OR DEATH. HAVE BRAKES SERVICED BY A TRAINED TECHNICIAN ONLY. CAGE OR DEACTIVATE BRAKES BEFORE SERVICING.

WARNING

SLIPPING ON, OR FALLING FROM LADDERS CAN LEAD TO SERIOUS INJURY OR DEATH. USE CAUTION WHEN CLIMBING ON TO THE TRAILER TO REDUCE THE RISK OF FALLING.

WARNING

GETTING INSIDE THE TRAILER WITH DOOR(S) CLOSED OR THE HYDRAULIC SYSTEM ENABLED CAN RESULT IN INJURY OR DEATH. OPEN DOOR(S) AND DISABLE ALL HYDRAULIC SYSTEMS BEFORE ENTERING THE TRAILER.

WARNING

DOOR(S) CAN OPEN UNDER THE WEIGHT OF THE LOAD CAUSING LOSS OF PROPERTY, SERIOUS INJURY OR DEATH. MAKE SURE DOOR(S) ARE SECURELY CLOSED AND LATCHED BEFORE GETTING BEHIND THE TRAILER OR BEFORE LOADING OR TOWING THE TRAILER.

WARNING

DO NOT STAND IN FRONT OF HYDRAULIC VALVES WHILE OPERATING. LEAKS CAN OCCUR AND CAUSE HIGH PRESSURE, HIGH HEAT HYDRAULIC FLUID TO CONTACT YOU, CAUSING SERIOUS INJURY OR DEATH. ALWAYS WEAR EYE PROTECTION WHILE USING HYDRAULIC VALVES.

WARNING

- **PRIOR TO COUPLING TRAILER TO TRACTOR:**
  - INSPECT FIFTH WHEEL AND KING PIN FOR DAMAGE. DO NOT OPERATE TRAILER IF ANY DAMAGE IS FOUND.
  - VERIFY THAT THE FIFTH WHEEL IS CLEAN AND LUBRICATED (CONSULT THE DURA-HAUL OWNER'S MANUAL FOR INSPECTION AND LUBRICATION.
- **PRIOR TO TOWING THE TRAILER, ENSURE THE KING PIN IS SECURELY ENGAGED IN THE FIFTH WHEEL.**
- **FAILURE TO FOLLOW THESE STEPS CAN RESULT IN THE TRAILER DISCONNECTING FROM THE TRACTOR WHILE TOWING, WHICH COULD RESULT IN LOSS OF PROPERTY, INJURY OR DEATH.**

WARNING

TO PREVENT POSSIBLE INJURY OR DEATH

- DO NOT GO UNDER THE TRAILER OR NEAR THE CONVEYOR SYSTEM WHILE THE CONVEYER SYSTEM IS IN OPERATION.
- DO NOT STAND IN OR MOVE THROUGH THE AREA WHERE THE TRAILER OPERATES. ALWAYS BE AWARE OF YOUR POSITION RELATIVE TO THE TRAILER.
- REMAIN AT CONVEYOR CONTROLS DURING UNLOADING OPERATIONS. DO NOT LEAVE UNATTENDED.
- ALWAYS DISENGAGE POWER TAKE-OFF AND POWER SOURCE WHEN TRAILER IS NOT IN USE OR WHEN MOVING TRAILER.

WARNING

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- ALWAYS DISENGAGE POWER TAKE-OFF AND POWER SOURCE WHEN TRAILER IS NOT IN USE OR WHEN MOVING TRAILER.

WARNING

CONSIDER BEFORE EACH USE

- USE LADDER ONLY AS DEFINED IN THE OWNER'S MANUAL.
- DO NOT USE IN POOR HEALTH, UNDER THE INFLUENCE OF DRUGS OR ALCOHOL, OR PHYSICALLY IMPAIRED IN ANY WAY.
- SHOES OR BOOTS MUST BE WORN WHILE USING LADDER. MUST BE CLEAN AND IN GOOD CONDITION.
- LEATHER SOLES SHOULD NOT BE WORN, AS THEY CAN CAUSE YOU TO SLIP.
- USE LADDER AT YOUR OWN RISK.

WARNING

PROPER SETUP AND USE

- LADDER IS DESIGNED FOR PERSONS OVER 5 FEET TALL AND WEIGHING 250 LBS OR LESS.
- ALWAYS FACE LADDER DURING USE, MAINTAINING A FIRM GRIP. USE BOTH HANDS WHEN CLIMBING OR DESCENDING.
- ALWAYS ATTACH FALL PROTECTION.
- ALWAYS MAINTAIN THREE POINTS OF CONTACT WITH THE LADDER.
- KEEP BODY CENTRED BETWEEN SIDE RAILS. DO NOT OVERREACH.

WARNING

USE OF IMPROPERLY SIZED OR MISMATCHED TIRES, STUDS, LUG NUTS, OR OTHER WHEEL HARDWARE COULD RESULT IN THE WHEEL HARDWARE OR COMPLETE WHEELS COMING OFF OF THE TRAILER WHILE TOWING. THIS COULD CAUSE DAMAGE TO OR LOSS OF PROPERTY, SERIOUS INJURY OR DEATH. CONSULT A QUALIFIED TIRE TECHNICIAN BEFORE CHANGING HARDWARE.

WARNING

THE ALIGNMENT OF THE SUSPENSION MUST BE INSPECTED AND ADJUSTED BY A QUALIFIED TECHNICIAN IN ACCORDANCE WITH DURA-HAUL'S OWNER'S MANUAL. ADJUSTMENTS MADE BY AN UNTRAINED PERSON COULD RESULT IN LOSS OF PROPERTY, SERIOUS INJURY OR DEATH.

WARNING

DO NOT OPERATE THE CONVEYOR WITH THE DOOR(S) CLOSED. THE CONVEYOR SYSTEM COULD BE DAMAGED OR BREAK ALONG WITH THE DOOR(S). SERIOUS INJURY OR DEATH COULD OCCUR.

WARNING

THE ANTI-LOCK BRAKE SYSTEM ON THIS TRAILER MUST BE SERVICED BY A QUALIFIED TECHNICIAN ONLY. WORK PERFORMED BY UNTRAINED A PERSON CAN RESULT IN LOSS OF PROPERTY, SERIOUS INJURY OR DEATH.

CAUTION

OPEN SMALL DOOR BEFORE OPENING LARGE DOOR TO PREVENT DAMAGE TO THE TRAILER.

CAUTION

INSPECT BEFORE EACH USE

- INSPECT THOROUGHLY FOR MISSING OR DAMAGED COMPONENTS.
- INSPECT THOROUGHLY FOR LOOSE FASTENERS AND ENSURE THAT ALL LADDER HARDWARE IS IN WORKING ORDER.
- ENSURE LADDER IS FREE OF FOREIGN DEBRIS.
- REPLACE LADDER AND/OR HARDWARE IF DAMAGED OR WORN.

NOTICE

CHECK YOUR TRACTOR:

- FMVSS-121 REGULATIONS MANDATE HIGHER AIR PRESSURE IN THE SUPPLY LINE. BRAKE PERFORMANCE ON THIS TRAILER WILL BE IMPAIRED IF THE TRAILER COMPRESSIONS ADJUSTMENT IS TOO LOW.
- COMPRESSOR CUT-IN PRESSURE: ADJUST TO 105 PSI ON THE GOVERNOR.
- COMPRESSOR CUT-OUT PRESSURE: ADJUST TO A MINIMUM OF 120 PSI ON THE THE COVERNOR.

NOTE: The use of additives in the air brake system is NOT recommended.

NOTICE

IF THE ABS INDICATOR LAMP COMES ON AND STAYS ON WHEN YOU APPLY BRAKES TO A *MOVING* VEHICLE, THE TRAILER ABS IS NOT WORKING PROPERLY. THE ABS MUST BE SERVICED AS SOON AS POSSIBLE UPON COMPLETION OF YOUR TRIP TO ENSURE FULL ANTI-LOCK BREAKING CAPABILITY.

NOTICE

ATTACHMENT POINT FOR USER-PROVIDED FALL PROTECTION DEVICE.

UPPER DOOR

OPEN ⟷ CLOSE

LOWER DOOR

OPEN ⟷ CLOSE

PRESSURE

RETURN

LARGE DIAMETER AXLE (LDA) AIR-RIDE SUSPENSION

SUSPENSION IDENTIFICATION

Introduction
It's important that the proper suspension model be chosen for the application in which it is to be used. The Ridewell Air Ride (RAR) 266 Trailer Suspension is a fully integrated Large Diameter Axle (LDA) suspension system that can be used in a range of applications. The suspension can also be configured with a standard five-inch axle.

Refer to the engineering drawing for detailed information on the suspension system components and operating parameters.

Read through the entire manual before performing any installation or maintenance procedures.

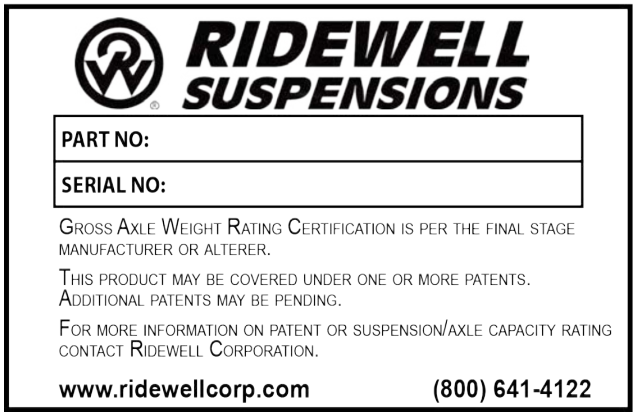
Identification tag
Ridewell suspension systems and axles can be identified by the part and serial number listed on the serial identification tags.

Suspension serial tag
The suspension serial tag provides information on the suspension model. The part number (266xxxxxx) refers to the individual model of the suspension system. The nine-digit serial number (1xxxxxxxx) refers to the date and order of manufacture of the suspension. Please refer to both the part number and serial number when contacting for customer service, replacement parts and warranty information.

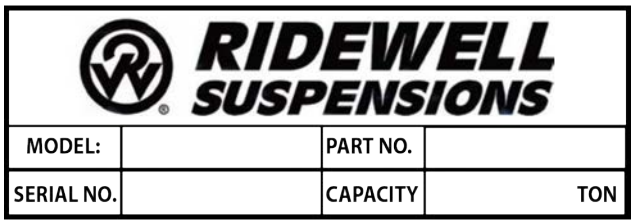
Axle body serial tag
Ridewell-branded axles will have a tag attached to the axle tube listing the part number (165xxxx) and serial number of the axle body.

CAUTION
All work should be performed by a properly trained technician using the proper/special tools and safe work procedures.

RAR-266
Part No.: 9710103



The suspension serial tag is located on the left-hand (driver's side) suspension hanger.



Ridewell axles have a serial identification tag listing the part number (165xxxx) and serial number of the axle body.

INSTALLATION

Prior to installation
Refer to the engineering drawing to confirm dimensional requirements and the range of ride heights available. Installations can vary and procedures should be adapted for different vehicles, as needed.

- The Gross Axle Weight Rating (GAWR) is determined by the system component with the lowest load rating. Please consult with tire, wheel, axle and brake manufacturers before installation to determine the GAWR.
- If vehicle chassis modifications are required, consult with Dura-Haul to ensure that such changes are permitted.
- Welding or altering suspension components is not permitted without the express written permission of Ridewell Suspensions.

Installer responsibilities
The installer of the suspension has the sole responsibility for proper attachment of the suspension system to the vehicle chassis:

- The installer is responsible for locating the suspension system on the vehicle to provide the proper load distribution.
- The installer must verify that vehicle crossmembers are positioned to support the suspension at the installing location.
- It is the installer's responsibility to determine that axle spacing conforms to any applicable federal and local bridge laws.
- The installer must verify that air reservoir volume requirements are met after suspension installation.
- Consult the vehicle manufacturer or Federal Motor Vehicle Safety Standards (FMVSS) 121 for more information.
- The installer must verify there is sufficient clearance for proper functioning of the suspension, air springs, brake chambers, axle and tires.

Mounting suspension to frame
Refer to the engineering drawing for the range of ride heights available, torque values, spacing and clearance requirements of the suspension.

Recommended locations of customer-furnished filler plates and supporting crossmembers for the suspension hangers and air spring mounting plates are shown on the engineering drawing.

The suspension installer has the final responsibility of attaching the suspension to the vehicle frame:

Weld-on installation procedure
1. Mark the desired location of the hangers and filler plates on the vehicle frame. Hangers must be installed parallel to each other for proper axle alignment.
2. Mark the desired location of the air spring mounting plates and filler plates on the frame.
3. Install filler plates for the hangers and air spring mounting plates on the frame. Weld filler plates to crossmembers with ¼" fillet welds down the length of the crossmember.
4. Weld the hangers to the frame/filler plates with $^{1}/_{4}$" fillet welds completely around the hangers. Stop the welds $^{1}/_{2}$" from the corners and edges. When unloading the trailer:
    a. For hangers with wing gussets, the wing gussets must be welded to a crossmember or other supporting structure.
    b. A length of $1^{1}/_{2}$"-diameter pipe can be placed through the holes in the two hangers
5. Weld the air spring mounting plates to the frame/ filler plates with $^{3}/_{16}$" fillet welds.
6. Attach a crossmember or diagonal brace to the front of the hangers with $^{1}/_{4}$" fillet welds.

Bolt-on installation
Before installation, check to make sure that wires, hoses or other components will not be affected by drilling into the frame rail.

- Bolts/nuts for attaching the suspension to the vehicle are supplied by the installer. Grade 8 bolts and flanged lock nuts or lock nuts with hardened washers are recommended.
- Bolt holes are not provided in the air spring mounting plates. Clamp mounting plates and filler plates (if necessary) in place before drilling.

Final assembly and inspection
- Verify the welds of the hanger and air spring mounting plates.
- Check the location for sufficient clearances of suspension components.
- Attach beam and axle assemblies to hangers. Do not fully torque pivot hardware until axle alignment is completed.
- Complete assembly and installation of air springs as shown on the engineering drawing. Torque to specifications.
- Install shock absorbers. If the suspension is painted after shocks are installed, make sure paint overspray does not get under the shock absorber dust covers.
- Install/connect the height control valve (HCV), if applicable. Check the air system tubing and fittings after installation for leaks.
- Verify the suspension ride height is adjusted within the range shown on the engineering drawing and complete axle alignment procedure.

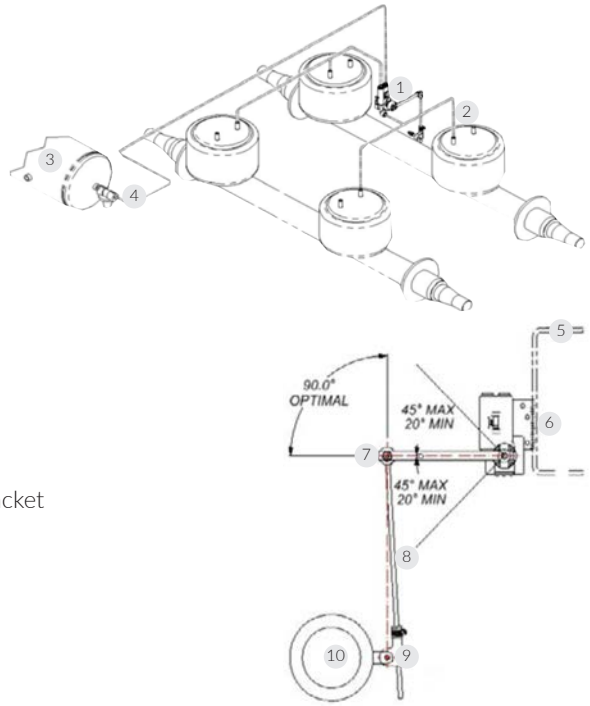
CAUTION
Welding method must use a minimum weld tensile strength of 70,000 psi, per AWS specifications.

Failure to torque bolts/nuts of suspension components to specifications can result in failure of the suspension and void the warranty.

Install the height control valve

The Ridewell Extreme Air® Height Control Kit (HCK) automatically adds and exhausts air from the air suspension to maintain the vehicle ride height as loads increase and decrease. The (HCK) assembly consists of a lever arm connected to the height control valve (HCV) and a vertical rod arm (vertical linkage) connected to the suspension/axle.

Refer to the Extreme Air® installation guide for installation procedures. Be sure to check the air system after installation for leakage.



CAUTION
The installer is responsible for making sure that air system requirements comply with the appropriate Federal Motor Vehicle Safety Standards.

1. Height control valve (HCV)
2. Lever arm & vertical link
3. Air tank
4. Pressure protection valve (PPV) *(required with air brakes)*
5. Crossmember
6. Universal mounting bracket
7. Lever arm
8. Vertical link
9. Tab customer finished
10. Axle

Troubleshooting – height control valve installation

Problem	Possible cause	Corrective action
HCV is not receiving air/ HCV is not delivering air to the air springs.	• Blocked air supply line.	• Verify air lines are pressurized by removing supply line at HCV. Check for pinched lines.
	• Air tank is not filling/reaching set pressure.	• Verify air tank pressure with manual/in-line pressure gauge.
	• Pressure protection. Valve (PPV) not working correctly.	• Check PPV operation by making sure that valve opens when system reaches the desired pressure setpoint (usually greater than 70 psi).
	• Pilot port is not plumbed or is plumbed incorrectly.	• Check configuration – Non-Dump; Pressure-Dump (Normally Open); Zero-Pressure Dump (Normally Closed). Reinstall, if necessary.
Air springs fill but do not exhaust.	• Obstructed air line.	• Disconnect linkage and rotate actuating lever to down position (exhaust). If springs remain inflated, check for pinched/blocked lines.
	• HCV installed backwards.	• Check installation. Reinstall, if necessary.
	• Supply line installed in suspension port	• Move air supply line to HCV supply port.
Air system leaks down in a short period of time.	• HCV installed backwards.	• Disconnect HCV linkage and rotate actuating lever to the up position (fill). If air springs do not inflate, reinstall HCV.
	• Leak in air system beyond accepted standards.	• To find leak in the HCV area, pressurize system and spray soapy water solution onto the valve and lines. Check for bubbles (leaks): No leak found – Do not remove valve, check the rest of the system for leaks Check that tubing cuts are straight and smooth. Re-cut and reassemble if necessary.

MAINTENANCE

A visual inspection of the suspension structure should be performed during each pre-trip/safety inspection. Ridewell Suspensions recommends the following minimum service intervals for standard duty, on-highway usage applications. More frequent intervals are recommended for heavier duty applications.

Daily/pre-trip inspections

- Check tires for proper inflation, damage or excessive wear.
- Check wheel-ends for obvious signs of lubricant leakage. Check for missing components.
- Check axle assemblies for damage or loose components.
- Visually inspect suspension structure for signs of damage or excessive wear.
- Check for loose or missing bolts/nuts. Check for irregular movement in suspension components.
- Make sure air controls are operating properly.
- Drain all moisture from air reservoirs.

First 6,000 miles of use

- Torque all suspension component bolts/nuts to specifications (see Torque Specifications chart or refer to engineering drawing).
- Verify that the suspension is operating at the installed ride height.

Every 12,000 miles of use

- Inspect air springs for any damage or excessive wear. Torque air spring bolts/nuts to specifications (see Torque Specifications chart or refer to engineering drawing).
- Check air lines and connections for leaks.

Every 50,000 miles of use

- Torque all suspension component bolts/nuts to specifications (see Torque Specifications chart or refer to engineering drawing).

Annually/100,000 miles of use

- Inspect pivot connection for worn pivot bushing and wear washers. Replace components, if necessary. Torque all suspension component bolts/nuts to specifications (see Torque Specifications chart or engineering drawing).
- Check arm beam-to-axle connection welds.
- Check air lines and connections for leaks.
- Test air control system pressure protection valve (PPV), if equipped.
- Check height control valve (HCV) adjustment.
- Verify that the suspension is operating

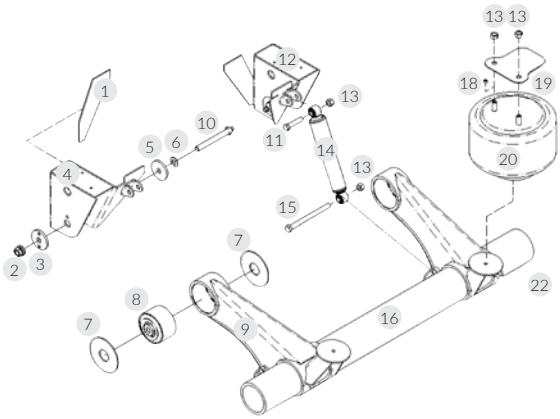
Failure to torque the bolts/nuts of suspension components to specifications can result in failure of the suspension and voiding of the warranty.

Ridewell suggests the following Technology & Maintenance Council (TMC) publications for additional maintenance information.

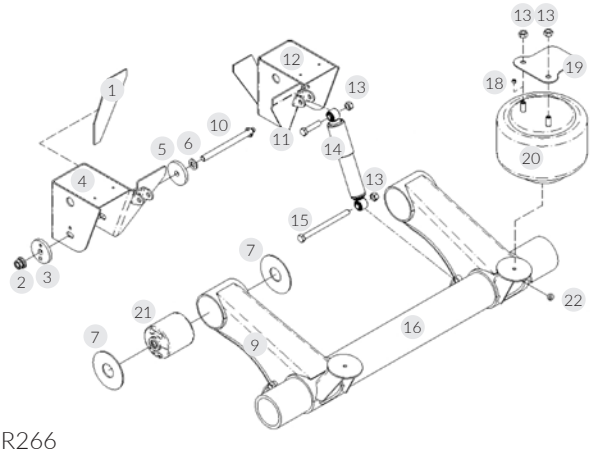
TMC RP 609C	Self-Adjusting and Manual Brake Adjuster Removal, Installation and Maintenance
TMC RP 619B	Air System Inspection Procedure TMC RP 631B
TMC RP 631B	Recommendations for Wheel End Lubrication
TMC RP 634A	Ride Height Concerns and Adjustment Procedures for Truck/Tractor Air Ride Suspensions
TMC RP 643	Air Ride Suspension Maintenance Guidelines
TMC RP 728A	Trailer Axle Maintenance

Pivot bushing inspection procedure
Park the unloaded trailer on a level surface. Set the brakes and chock the tires so vehicle cannot move during inspection. Insert the flat end of a pry-bar between one side of the hanger sidewall and the wear washers. Move the pry-bar back-and-forth and look for excessive movement of the beam (A small amount of beam movement because of the rubber flexing is normal). Inspect the wear washers for excessive wear/damage. Repeat the pry-bar process and wear washer inspection on the other side of the hanger. If any large/easy movement or damaged wear washers is observed, drop the beams for further inspection. Replace components as necessary.

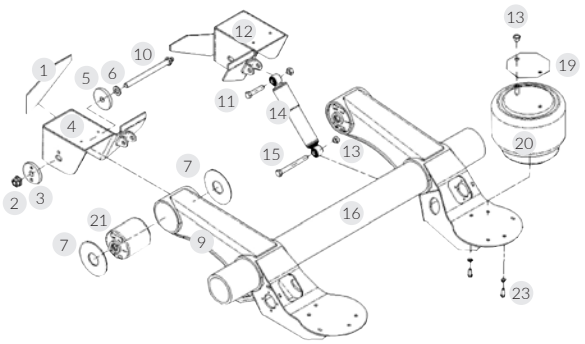
1. Diagonal hanger brace (*when supplied*)
2. Pivot nut (lock nut)
3. Adjuster plate
4. Hanger (left-hand)
5. Alignment washer
6. Flat washer
7. Wear washer
8. Pivot bushing (*narrow*)
9. Trailing arm beam assembly (*LH*)
10. Pivot bolt (*shear-type*)
11. Upper bolt (*shock absorber*)
12. Hanger (left-hand)
13. Lock nut
14. Shock absorber
15. Lower bolt (*shock absorber*)
16. Large diameter axle (LDA)*
17. Trailing arm beam assembly (*RH*)
18. Pipe plug (*hex socket*)
19. Mountain plate (*air spring*)
20. Air spring
21. Pivot bushing (*wide*)
22. Flanged lock nut
23. Lock washer bolt (*air spring*)



R266
Narrow bushing and integrated large diameter axle (LDA)



R266
Wide bushing and integrated large diameter axle (LDA)



Low mount
Wide bushing and integrated large diameter axle (LDA)

RAR-266 trailer suspension – bushing replacement kit

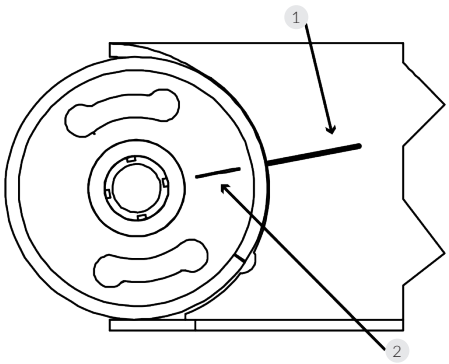
Suspension type	Replacement kit part no.	Replacement tool part no.	Pivot hardware	Torque specifications
23K/25K capacity; wide bushing	6040098	6100051	6100051	*Use a 1" drive impact wrench to tighten pivot bolt until Torx head is sheared off.*
20K/23K capacity; narrow bushing	6040128	6100044	6100044	

CAUTION
Failure to install and maintain pivot hardware at torque specification could result in suspension failure and void the warranty. Refer to the engineering drawing for torque values.

Bushing Replacement Procedure
Park the vehicle on a level surface. Chock wheels to keep vehicle from moving. Raise vehicle to height that removes load from suspension and support with jack stands. Disconnect the linkage from the height control valve(s), if necessary, and exhaust all air from the air springs.

CAUTION
Failure to properly chock wheels, exhaust the air system and raise and safely support the vehicle could allow vehicle/suspension movement that could result in serious injury.

Disassemble suspension
Remove wheels and tires, if necessary. Remove the shock absorbers. Disassemble the pivot connections. Remove and inspect adjuster plates and alignment washers. Replace, if necessary. Discard pivot hardware (new pivot hardware and wear washers included in bushing replacement kit). Rotate trailing arm beams down and out of hangers. Inspect pivot bolt holes and hanger surfaces for wear or damage. Repair or replace components, as needed.



WIDE BUSHING REPLACEMENT TOOL 6100051 (266 - 25K LOW-MOUNT AND 266 - 23K/25K O/S)

Bushing removal
1. Using locator mark on old bushing as a reference, draw a line on the beam. The line will be used to orient the new bushing during installation.
2. Lubricate threads of threaded rod assembly, inside the plunger, and the end cap bearing with grease.
3. Assemble the bushing replacement tool and place on the eye of the beam. Cone is tapered inside to smaller opening on one end.
    a. Place the end cap on the hex nut-threaded rod assembly. The end cap should be seated on the flange of the hex nut. Place the larger opening of the cone against the end cap.
    b. Insert threaded rod through bushing sleeve and center tapered end on the beam eye.
    c. Thread the plunger onto the threaded rod. Rotate the plunger until the plate is seated snugly against the bushing.
4. Use a $^{3}/_{4}$" drive impact wrench on the hex nut to rotate the assembly and press the bushing out of the beam eye into the cone. A small amount of heat may be needed to break the bond between bushing and beam eye. Do not overheat. Allow beam to cool before installing new bushing.
5. Disassemble the bushing replacement tool. Remove old bushing from the cone and discard.bolt holes and hanger surfaces for wear or damage. Repair or replace components, as needed.

(Wide) bushing orientation
The locator mark on the bushing provides the correct bushing orientation during installation.

1. Draw reference line on beam before removing bushing
2. Locator mark on bushing

New bushing installation

1. Use a wire brush to clean any foreign debris and any corrosion out of the beam eye.
2. Coat the inside of the beam eye, the outside of the bushing and the inside of the cone with S.G. Type "M" Rubber Assembly Oil. Do not substitute (S.G. Type "M" Rubber Assembly Oil included in bushing replacement kit).
3. The cone is tapered inside to a smaller opening on one end. Insert the new bushing into the larger end of the cone with the locator mark of the new bushing on the outside.
4. Assemble the bushing replacement tool and place on the eye of the beam.

- **a.** Place the end cap on the hex nut-threaded rod assembly. The end cap should rest on the flange of the hex nut.
- **b.** Insert the threaded rod/end cap assembly through the beam eye. Place the tapered end of the cone onto the threaded rod and center the cone on the beam eye. Line up locator mark on new bushing with line drawn on beam during bushing removal.
- **c.** Thread the plunger onto the threaded rod. Rotate the plunger until the plate is seated snugly against the bushing.

5. Use a $^{3}/_{4}$" drive impact wrench on the hex nut to rotate the threaded rod and press the bushing into the beam eye. Hold plunger with an open end wrench to prevent the cone from rotating.
6. Disassemble and remove the bushing replacement tool. Check the placement of the bushing to make sure it is centered in the beam eye.

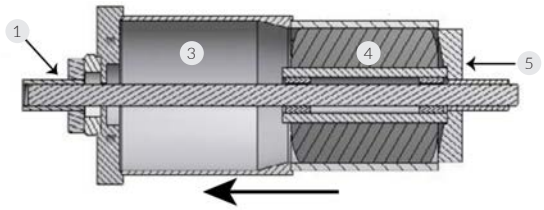
Reassemble suspension

Rotate trailing arm beams into hangers. Install adjuster plate and alignment washer(s). Install new wear washers and pivot hardware (do not reuse shear-type pivot bolt). Do not apply final torque.

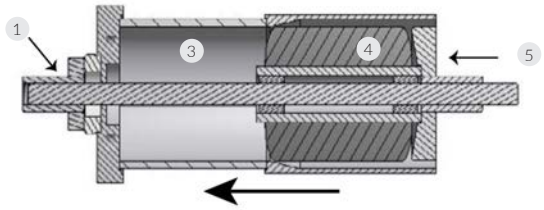
Install shock absorbers. Connect height control valve linkage (if disconnected) and inflate air springs. Install wheels and tires (if removed). Raise vehicle and remove support stands. Lower vehicle to ground.

Check axle alignment and realign, if necessary. Tighten pivot bolt with a 1" drive impact wrench and E-20 Torx® socket (Ridewell tool 6100054) until the Torx® head is sheared off.

CAUTION
Failure to torque pivot hardware to specifications can result in failure of the suspension and void the warranty.



Bushing removal



Bushing installation

1. Hex nut threaded rod assembly
2. End cap
3. Cone
4. Beam eye
5. Plunger

NARROW BUSHING REPLACEMENT TOOL 6100041 (266 - 20K LOW-MOUNT AND 266 - 23K O/S)

Disassemble suspension

Remove wheels and tires, if necessary. Remove the shock absorbers. Disassemble the pivot connections. Remove and inspect adjuster plates and alignment washers. Replace, if necessary. Discard pivot hardware (new pivot hardware and wear washers included in bushing replacement kit). Rotate trailing arm beams down and out of hangers. Inspect pivot bolt holes and hanger surfaces for wear or damage. Repair or replace components, as needed.

Bushing removal

1. Lubricate the threads of the hex nut-threaded rod assembly, the inside threads of the plunger, and the end cap bearing with grease.
2. Assemble the bushing replacement tool and place on the eye of the beam. Cone is tapered inside to a smaller opening on one end.

- **a.** Place the end cap on the hex nut-threaded rod assembly. The end cap should be seated on the flange of the hex nut. Place the larger opening of the cone against the end cap.
- **b.** Insert the threaded rod through the bushing sleeve and center the tapered end of the cone on the beam eye.
- **c.** Thread the plunger onto the threaded rod. Rotate the plunger until the plate is seated snugly against the bushing.

3. Use a $^{3}/_{4}$" drive impact wrench on the hex nut to rotate the threaded rod and press the bushing out of the beam eye. A small amount of heat may be required to break the bond between the bushing and the beam eye. Do not overheat. Allow beam to cool before installing the new bushing.
4. Disassemble the bushing replacement tool. Remove old bushing from the cone and discard.

New bushing installation

1. Use a wire brush to clean any foreign debris and any corrosion out of the beam eye.
2. Liberally apply P80® lubricant or soap solution to the inside of the beam eye, the outside of the bushing and the inside of the cone.
3. The cone is tapered inside to a smaller opening on one end. Insert the new bushing into the larger opening of the cone.
4. Assemble the bushing replacement tool and place on the eye of the beam.

- **a.** Place the end cap on the hex nut-threaded rod assembly. The end cap should rest on the flange of the hex nut.
- **b.** Insert the threaded rod/end cap assembly through the beam eye. Place the tapered end of the cone onto the threaded rod and center the cone on the beam eye.
- **c.** Thread the plunger onto the threaded rod. Rotate the plunger until the plate is seated snugly against the bushing.

5. Use a $^{3}/_{4}$" drive impact wrench to rotate the threaded rod and press the bushing into the beam eye. Hold the plunger with an open end wrench to prevent the cone from rotating.
6. Disassemble and remove the bushing replacement tool. Check the placement of the bushing to make sure it is centered in the beam eye.

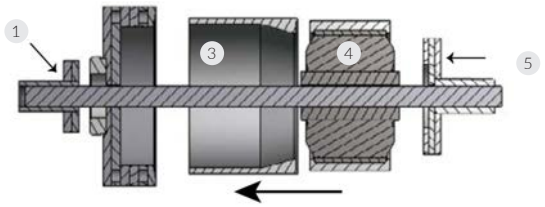
Reassemble suspension

Rotate trailing arm beams into hangers. Install adjuster plates and alignment washers. Install new wear washers and pivot hardware (do not reuse shear-type pivot bolt). Do not apply final torque.

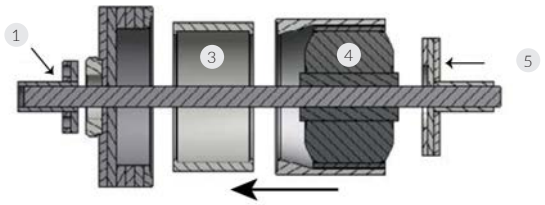
Install shock absorbers. Connect height control valve linkage (if disconnected) and inflate air springs. Install wheels and tires (if removed). Raise vehicle and remove support stands. Lower vehicle to ground.

Check axle alignment and realign per axle alignment procedure (Appendix). Tighten pivot bolt with a 1" drive impact wrench and E-20 Torx® socket (Ridewell tool #6100054) until the Torx® head is sheared off.

CAUTION
Failure to torque pivot hardware to specifications can result in failure of the suspension and void the warranty.



Bushing removal



Bushing installation

1. Hex nut threaded rod assembly
2. End cap
3. Cone
4. Beam eye
5. Plunger

TORQUE SPECIFICATIONS

RAR-266 23K/25K - Overslung Trailer Suspension

Fastener type	Size	Torque values foot-pound	Newton-meter
Pivot Bolt - (Shear-Type) Pivot Nut - (Lock Nut) *Requires E-20 Torx® socket (RW #6100054)*	7/8" - 9NC	*Use a 1" drive impact wrench to tighten the pivot bolt until the Torx® head is sheared off.*	
Pivot Bolt - (Eccentric Bolt) Pivot Nut - (Lock Nut)	1 1/4"-7NC	1000 ft-lb	1356 N-m
Lock Nut - (Shock Absorber)	3/4"-10NC	200-230 ft-lb	271-312 N-m
Lock Nut - (Air Spring)	3/4"-16NF	45-50 ft-lb	61-68 N-m
Lock Nut - (Air Spring)	1/2"-13NC	45-50 ft-lb	61-68 N-m

Torque values reflect a lubricated thread condition (Nuts are pre-lubed). Do not overtorque.

CAUTION
Suspension is shipped with minimal torque applied to fasteners. It is the installer's responsibility to apply the proper torque values. All fasteners, except shear-type pivot bolt, must be re-torqued after the first 6,000 miles of operation. Failure to install and maintain suspension component fasteners at torque specifications could result in suspension failure and void the warranty.

RAR-266 20K/25K - Low Mount Trailer Suspension

Fastener type	Size	Torque values foot-pound	Newton-meter
Pivot Bolt - (Shear-Type) Pivot Nut - (Lock Nut) *Requires E-20 Torx® socket (RW #6100054)*	7/8" - 9NC	*Use a 1" drive impact wrench to tighten the pivot bolt until the Torx® head is sheared off.*	
Lock Nut - (Shock Absorber)	3/4"-10NC	200-230 ft-lb	271-312 N-m
Lock Nut - (Air Spring)	3/4"-16NF	45-50 ft-lb	61-68 N-m
Bolt - (Air Spring)	1/2"-13NC	45-50 ft-lb	61-68 N-m

Torque values reflect a lubricated thread condition (Nuts are pre-lubed). Do not overtorque.

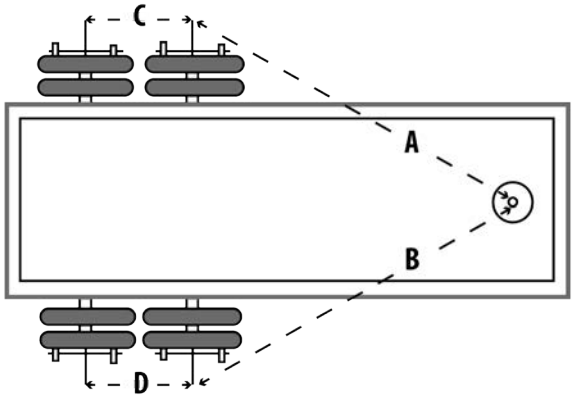
CAUTION
Suspension is shipped with minimal torque applied to fasteners. It is the installer's responsibility to apply the proper torque values. All fasteners, except shear-type pivot bolt, must be re-torqued after the first 6,000 miles of operation. Failure to install and maintain suspension component fasteners at torque specifications could result in suspension failure and void the warranty.

AXLE ALIGNMENT

Axle measurement
Alignment should be performed on a level surface with the suspension at the desired ride height. Refer to the engineering drawing for the designed ride heights of the suspension model.

Align the suspension per TMC or SAE recommended standards. On a multiple-axle vehicle, the forward axle is moved into the proper alignment, then the remaining axles are positioned so that they are parallel to the forward axle. A maximum tolerance of $^{1}/_{8}$-inch difference from side-to-side of the forward axle and $^{1}/_{16}$-inch difference from side-to-side for the aft axles is acceptable.

Check the forward axle alignment by measuring from the kingpin to both ends of the axle centers. If the difference between the "A" measurement and the "B" measurement is greater than 1/8-inch, the forward axle needs to be aligned. If the difference between the "C" measurement and the "D" measurement is greater than $^{1}/_{16}$- inch, the aft axle needs adjustment.



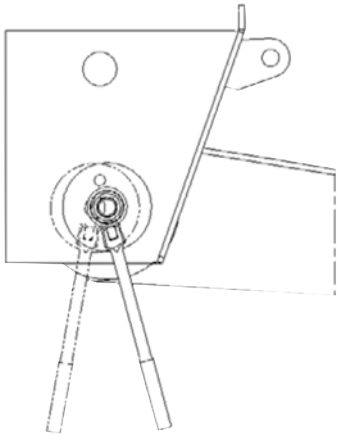
Kingpin measurement for axle alignment

SPEED SET® ALIGNMENT

The RAR-266 Trailer Suspension is equipped with the Ridewell Speed Set® alignment feature for simple, manual alignment of the axle.

Axle alignment procedure
1. Loosen the pivot nut enough for beam to move.
2. Locate the adjuster plate at the pivot connection. Insert a $^{1}/_{2}$"-shank breaker bar into the square hole of the adjuster plate. Move the arm beam forward or backward until the axle reaches alignment. Check to make sure that the pivot bushing is not wedged sideways during beam movement. The adjuster plate and alignment washer on the two sides of the hanger should move in unison with the beam.
3. Tighten the pivot nut so that beam can no longer move. Re-check alignment measurements and adjust, if necessary. Check to make sure that both the adjuster plate and alignment washer are flat against the hanger before final torque is applied.
4. Use a 1" drive impact wrench with an E-20 Torx® socket to tighten the pivot bolt until the Torx head is sheared off.

CAUTION
Failure to properly torque pivot hardware could result in catastrophic suspension failure and void the warranty



Move beam back-and-forth using adjuster plate until axle reaches desired position.

WARRANTY

Terms and coverage in this warranty apply only to the United States and Canada.

Ridewell Suspensions warrants the suspension systems manufactured by it to be free of defects in material and workmanship. Warranty coverage applies only to suspensions that have been properly installed, maintained and operated within the rated capacity and recommended application of the suspension. The responsibility for warranty coverage is limited to the repair/replacement of suspension parts. The liability for coverage of purchased components is limited to the original warranty coverage extended by the manufacturer of the purchased part. All work under warranty must have prior written approval from the Ridewell warranty department. Ridewell has the sole discretion and authority to approve or deny a claim and authorize the repair or replacement of suspension parts. All parts must be held until the warranty claim is closed. Parts that need to be returned for warranty evaluation will be issued a Returned Materials Authorization (RMA). Parts must be returned to Ridewell with the transportation charges pre paid. The transportation charges will be reimbursed if the warranty claim is approved. This non-transferable warranty is in lieu of all other expressed or implied warranties or representations, including any implied warranties of merchantability or fitness or any obligations on the part of Ridewell. Ridewell will not be liable for any business interruptions, loss of profits, personal injury, any costs of travel delays or for any other special, indirect, incidental or consequential losses, costs or damages caused by Ridewell.

Contact the Ridewell Warranty Dept. at 417.833.4565 - Ext. 135, for complete warranty information.

9700 TRAILER SUSPENSION SERIES

APPLICATION

The 9700 Series suspension is an indirect result of Hutchens' Rocker Bushing Improvement Program. It can be utilized anywhere a 7700 Series suspension can, and almost all of the suspension components are interchangeable. However, the 9700 Series suspension offers several options that were previously unavailable with the 7700 Series, as well as numerous improvements.

CAPACITY

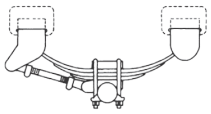
Like our 7700 Series, the 9700 Series suspension has a Gross Axle Weight Rating (G.A.W.R.) of 22,400 lbs. when equipped with single leaf, two leaf, standard three leaf and seven leaf springs. Heavy-duty three leaf and eight leaf springs raise the G.A.W.R. to 25,000 lbs.

FEATURES

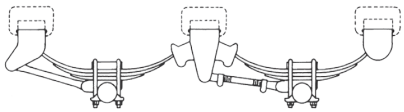
- A Huck "lockbolt" fastening system for the rocker/rocker hanger assembly that is virtually maintenance free.
- Lightweight, fabricated hangers and equalizers with $^{1}/_{2}$" wear pads to reduce wear at all spring contact points.
- Cast steel hangers and equalizers with increased wall thickness at spring contact points... eliminating the need for additional wear pads.
- The industry's finest rocker bushing... combining a new rubber compound and improved bushing installation techniques, coupled with dimensional changes in the bushing and fasteners.
- An improved spring seat design that more efficiently transfers forces from the axle to the springs.
- A redesigned top plate that is lighter and offers greater stability under U-bolt clamp loads.
- Wrapped fabricated torque arm eye ends that utilize a single $^{5}/_{8}$" bolt and a higher clamp load to prevent separation under extreme conditions.
- Torque arm screws that are coated with "NEVER-SEEZ"®, and then painted to resist corrosion while allowing easy adjustment for suspension alignment.
- Except for the rockers and rocker hangers, the component parts of all 7700 and 9700 Series suspensions are completely interchangeable.

OPTIONS

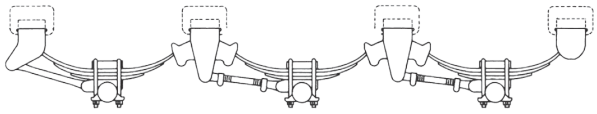
The 9700 Series suspensions are available in single, tandem and multi-axle configurations.



Single Axle (S)

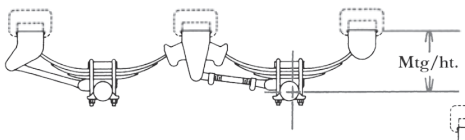


Tandem Axle (T)

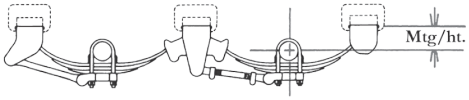


Tri-Axle (Tri)

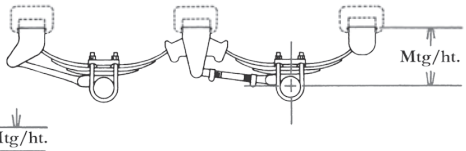
In addition to the standard overslung configuration, an underslung configuration is available for reduced mounting heights. Mounting height (Mtg/ht) is the distance from the center line of the axle to the top of the spring hangers.



Overslung (OS)
w/ Standard U-Bolt Configuration



Underslung (US)

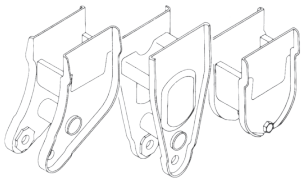


Inverted U-Bolt Configurtion

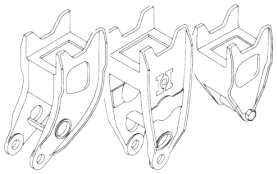
The standard 9700 Series suspensions have U-bolts that point downward (threads and nuts below the axle). However, a model is available with inverted U-bolts (threads and nuts above the axle).

All 9700 Series suspensions are available with either fabricated or cast steel hangers and rockers. These hangers come in

Fabricated (H)

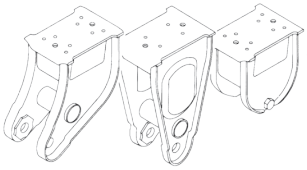


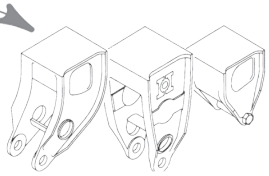
Straddle Mount (Str/mt)
Straddle Mount Hangers are for use with box type frames Each hanger straddles the frame and is welded to both sides of the frame. This is our strongest hanger mounting.



Cast (CH)

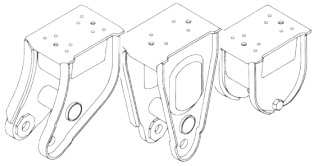
Under Mount (Un/mt)
Under Mount hangers are welded flush to the bottom of the frame. For an added weight savings in I-beam applications special fabricated front and rear hangers without top plates are available.





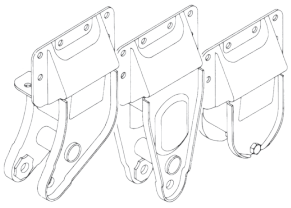
Under Mount Weld-on (Un/mt/wo) and Side Mount Weld-on (Si/mt/wo)
These versatile Weld-on hangers can be used for either under mount or side mount applications.

Side Mount (Si/mt)
Side Mount Hangers are welded to the side of the frame. They are useful on flatbed sliders and “maximum cube” vans.

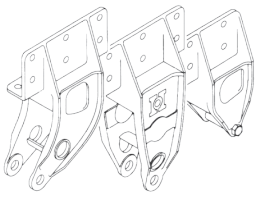


Cast (CH)

Fabricated (H)

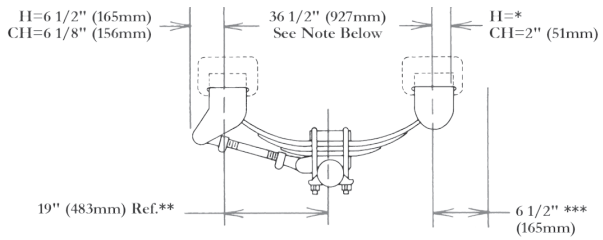


Flange Mount (Fl/mt)
Flange Mount hangers are available with or without bolt holes. Hangers may be bolted (Fl/mt/bo) or welded (Fl/mt/wo) to the frame, or a combination of bolting and welding may be used.

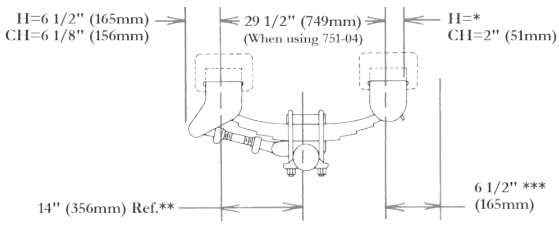


Cast (CH)

Axle spacings of 42 1/2", 44" and 49" will be covered in this publication. Axle spacings greater than 49" will be covered in the widespread section. Unless otherwise specified, axle centers are assumed to be 49". Hanger spacings for single axle units (H and CH



Standard 9700 single axle



Reduced hanger spacing when utilizing 751-04 or 7051-42 springs

HOW TO ORDER YOUR 9700 SERIES SUSPENSION SYSTEM

With so many options available on the 9700 Series suspensions, the basis of any order must begin with a complete description of the unit. The following procedure will provide the descriptive information required:

1. Determine the number of axles required and the spacing of these axles. Unless otherwise specified, tandem axles with 49" axle centers are assumed.
2. Select the style of hangers required to mount the suspension on your particular frame or subframe. Specify whether these hangers are to be fabricated (H) or cast (CH) steel.
3. Determine the mounting height (Mtg/ht) your application requires. For your convenience, a Mounting Height Chart may be found in this booklet. From this chart please note that mounting height is dependent upon:

a) Suspension configuration – Overslung or Underslung. Unless otherwise specified, suspension configuration is assumed to be overslung.
b) Axle size – 5" Round or other. (Hutchens does not manufacture or sell axles.)
c) Spring seat height – $^{3}/_{4}$" to $4^{3}/_{4}$" in $^{1}/_{2}$" increments.
d) Spring type – Standard or Heavy-Duty, number of leaves and spring arch. Hutchens is not a spring manufacturer. As a service to our customers we will supply springs upon request. Whether or not we provide you with springs, we will need to know what springs you intend to use to assure we furnish the appropriate U-bolt for the spring and spring seat combination you've ordered.

4. Choose which U-bolt size you would like (either the standard $^{7}/_{8}$" or the optional $^{3}/_{4}$" size).

In many instances more than one combination will result in the same mounting height. Therefore, all of the aforementioned factors should be taken into consideration when ordering.

Example: A tandem axle (T) 9700 Series suspension requiring a mounting height of 16" and fabricated (H) undermount hangers (Un/mt) for use with 3/4" U-bolts and 5" round axles with 354-00 springs would be ordered as follows:

Quantity	Fabricated steel	Series No.	Tandem axle	Undermount hangers	For use with $^{3}/_{4}$ U-bolts	5" round axles	See mtg/hr chart	W/ 354-00 spings
1 ea.	H	9700	T	Un/mt	$^{3}/_{4}$" U-bolts	5" rd.	$^{3}/_{4}$" seat	w/354-00 sprgs.

Quantity	Fabricated steel	Series No.	Tandem axle	Undermount hangers	For use with 3/4 U-bolts	5" round axles	See mtg/hr chart	W/ 354-00 spings
1 ea.	H	9700	T	Un/mt	3/4" U-bolts	5" rd.	3/4" seat	w/354-00 sprgs.