



VEHICLE RECALL

G-03517-R1
September 2004



THIS IS AN *ISIS ONLY* NOTIFICATION.

No paper copies of the revised letter will be mailed to Dealers.

SUBJECT: SAFETY RECALL (U.S., EXPORT)

Goodrich Corporation's VELVET-RIDE suspension installed on 4700 Low Profile models built between 12/02/1993 and 4/18/2001

REVISION DESCRIPTION

- **REAR AXLE ALIGNMENT**
Section moved to Step 22.
- **TORQUE ROD INSTALLATION**
Added Step 17 in place of Rear Axle Alignment section.

DEFECT DESCRIPTION

The bolts that connect the rear suspension to the rear axle may break and possibly cause the axle to become separated from the vehicle. This may cause a vehicle crash without warning, possibly resulting in property damage, personal injury, or death.

MODELS INVOLVED

This Safety Recall involves **certain** 4700 Low Profile vehicles that were modified by installation of Goodrich Corporation's VELVET-RIDE rear suspension system, with a **stud/bolt and plate** clamp group.

*This recall **does not** affect 4700 Low Profile vehicles that have a **U-Bolt** clamp group.*

OWNER NOTIFICATION

International Truck and Engine Corporation will notify owners whose vehicles were modified by International. The owners whose vehicles were not modified by International will be notified by their vehicle's modifier. A copy of International's owner letter is attached. During the recall process, a listing of owner names and addresses of International modified vehicles will be furnished to the involved dealers to enable dealers to follow up with owners and have the vehicles corrected. You must limit the use of this listing to this campaign because the list may contain information obtained from state motor vehicle registration records and the use of such motor vehicle registration data for purposes other than this campaign is a violation of law in several states.

PARTS INFORMATION

There are several parts required for this recall. Please read closely to determine which parts are required for each vehicle.

All vehicles involved in this recall require the following Recall Service Kit:

Part Number	Part Description	Quantity
89000135R91	Base Recall Service Kit - 03517	1

And the following lengths of air tubing:

Part Number	Part Description	Quantity
417196C3	1/4" Service Tubing – BLACK	Minimum of 370" (9398mm) Total Length based on vehicle wheelbase
417199C3	3/8" Service Tubing – BLACK	Minimum of 450" (11430mm) Total Length based on vehicle wheelbase

Some vehicles may require the spring pins to be re-located. Please refer to the SERVICE PROCEDURE to determine if the following parts are required:

Part Number	Part Description	Quantity
1646938C1	Spring Locating Pin	2

Some vehicles may require welding to be performed on the axle housing. Please refer to the SERVICE PROCEDURE to determine if welding is required. Please use the following part to ensure any bare metal is properly coated:

Part Number	Part Description	Quantity
001 Canyon Black	Chassis Paint	As Required

Some of the vehicles may require a Gross Vehicle Weight Rating (GVWR) change. Please refer to the SERVICE PROCEDURE to determine if a particular vehicle requires re-rating. Please use the following part to ensure all applicable federal/state regulations concerning weight ratings are complied with.

Part Number	Part Description	Quantity
449893C4	Product Graphic, Altered Vehicles	1

Please review the Line-Set Ticket for all vehicles to determine which of the following additional parts may be required to complete this recall.

- For vehicles with **HYDRAULIC BRAKES AND REAR AXLE FEATURE CODE 14ADN**, please order the following additional parts:

Part Number	Part Description	Quantity
493722C3	SPACER, REAR AXLE, .81" THK	2
3522531C1	SEAT, REAR SPRING, 1.0 DEG	2
3522530C1	PLATE, U BOLT REAR SPG, 1.0 DEG	2
581742C1	BOLT, U SPRING ALSO U ASM SPRING*, U 3/4 UNRF X 345MM LG	4
2502028C1	NUT, HEX LOCK* GIVE SIZE, HEX FLGD LOCK 3/4X16UNF-2B	8

- For vehicles with **HYDRAULIC BRAKES AND ANY OTHER REAR AXLE FEATURE CODES [NOT 14ADM]**, please order the following additional parts:

Part Number	Part Description	Quantity
493722C3	SPACER, REAR AXLE, .81" THK	2
1514626C1	BOLT, U SPRING ALSO U ASM SPRING*, U 7/8 UNRF X 12.4 (315 MM) LG (STYLE 050)	4
144425H	NUT*, HEX LOCK NYLON 7/8-14UNF, CAD	8
25549R1	WASHER, FLAT, 7/8	8
1514720C2	PLATE, U BOLT REAR SPG, 3.4 DEG	2
2005308C1	SEAT, REAR SPRING, 3.4 DEG	2

- For vehicles with **AIR BRAKES**, please order the following additional parts:

Part Number	Part Description	Quantity
1514720C2	PLATE, U BOLT REAR SPG, 3.4 DEG	2
2005308C1	SEAT, REAR SPRING, 3.4 DEG	2
1610312C3	BOLT, U SPRING ALSO U ASM SPRING*, U 7/8 UNRF X 12.4 (355 MM) LG (STYLE 050	4
144425H	NUT*, HEX LOCK NYLON 7/8-14UNF, CAD	8
25549R1	WASHER, FLAT, 7/8	8

SERVICE PROCEDURE



WARNING:

TO PREVENT SERIOUS EYE INJURY, ALWAYS WEAR SAFE EYE PROTECTION WHEN YOU PERFORM VEHICLE MAINTENANCE OR SERVICE.



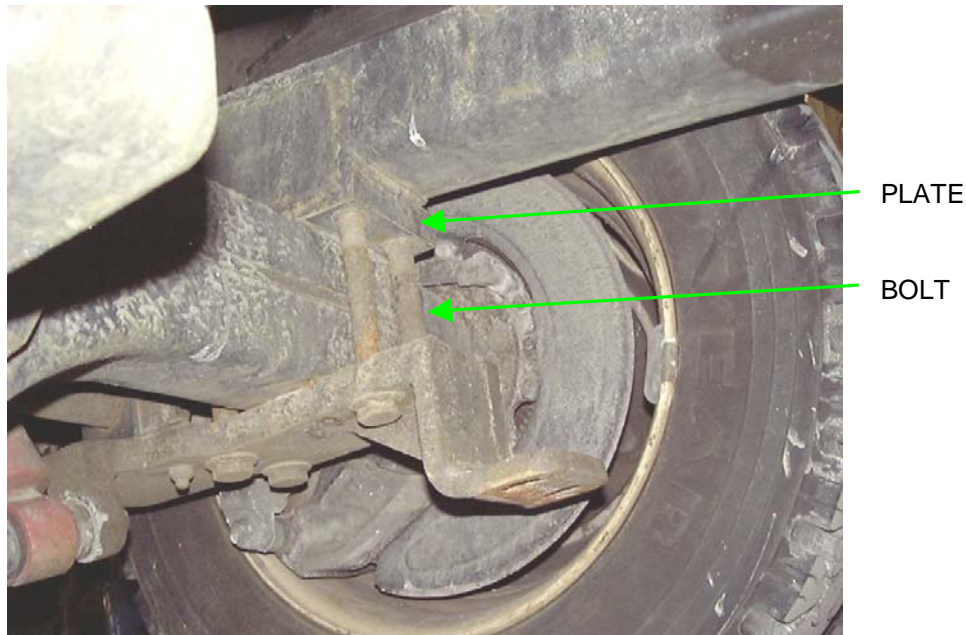
WARNING:

BLOCK THE FRONT WHEELS TO PREVENT THE VEHICLE FROM MOVING. SUPPORT THE VEHICLE WITH SAFETY STANDS. DO NOT WORK UNDER A VEHICLE SUPPORTED ONLY BY JACKS. JACKS CAN SLIP OR FALL OVER, RESULTING IN SERIOUS PERSONAL INJURY OR DEATH.



IMPORTANT NOTE:

THE FIGURES RELATING TO THE VELVET-RIDE SUSPENSION SYSTEM IN THIS PROCEDURE SHOW THE PRESENCE OF U-BOLTS. THE 4700LP VERSION OF THE SUSPENSION THAT IS THE SUBJECT OF THIS RECALL DOES NOT HAVE U-BOLTS. PLEASE SEE PHOTO BELOW:



STUD/BOLT and PLATE Clamp Group

RECOMMENDED GENERAL INSTALLATION PROCEDURE

NOTE: The following is a general recommended procedure for completing this recall service. Due to the complexity of this recall, assembly drawings and small detailed procedures will follow this general procedure.

1. Raise vehicle and secure on jack stands.
2. Remove any components that may interfere with safe removal of the VELVET-RIDE suspension, i.e. tail pipes, automatic chain systems, kneeling systems, etc.
3. Disconnect drive shaft.
4. Remove all VELVET-RIDE suspension components.
5. Remove rear axle.
6. Install new frame and suspension cross member assemblies.
7. Install inversion valve, height control valve, pressure protection valve, and all air tubing from the air tank to the rear suspension system.
8. Inspect rear axle and modify axle spring pins, if necessary.
9. Weld torque rod bracket to rear axle housing.
10. Install all NAV-AIR suspension components.
11. Re-install rear axle.

12. Re-install drive shaft.
13. Assemble and install dash suspension dump air harness.
14. Install dash suspension electrical harness.
15. Install air tubing from suspension dump air harness (bulkhead fittings) to air tank.
16. Charge air system, check for leaks, and proper operation of suspension dump feature.
17. Set vehicle ride height.
18. Measure, cut, weld, and install torque rod.
19. Re-install all components removed in step 2.
20. Align Rear Axle.

VELVET-RIDE SUSPENSION REMOVAL

1. Disconnect the battery ground terminal.
2. Raise the vehicle to a convenient working height and place jack stands under the frame.
3. Remove the rear tires/wheels.
4. Remove shocks, sway bar, and/or any other potentially interfering components (i.e. exhaust) that are not part of the Velvet Ride spring system.
5. Disconnect any electrical connections. Remove any electrical harnesses, hydraulic and/or air brake lines where they connect to the rear axle. Secure out of the way.
6. Disconnect the drive shaft from the rear axle.
7. With the rear suspension system hanging loose, adjust the height of two additional jack stands until they will just slide under the rear axle housing arms to support its weight during the suspension system's removal.



WARNING:

STEPS 8 & 9 THAT FOLLOW, DETACHES THE AXLE FROM THE SPRINGS – TO AVOID SERIOUS INJURY, ENSURE THE JACK STANDS REMAIN PROPERLY POSITIONED AND SUPPORTS THE AXLE.

8. Remove the bolts that attach the springs to the axle. On one side of the vehicle *only*, slowly loosen the four ¾" flange-head bolts that attach the spring to the axle.

NOTE: *Some of the original bolts may have been replaced with studs and nuts attaching other aftermarket components.*

Loosening the bolts could cause the spring to rotate.

If the spring rotates and the bolts bind against the axle, it may be necessary to raise the side of the axle with a jack to relieve the pressure and readjust the height of the jack stand.

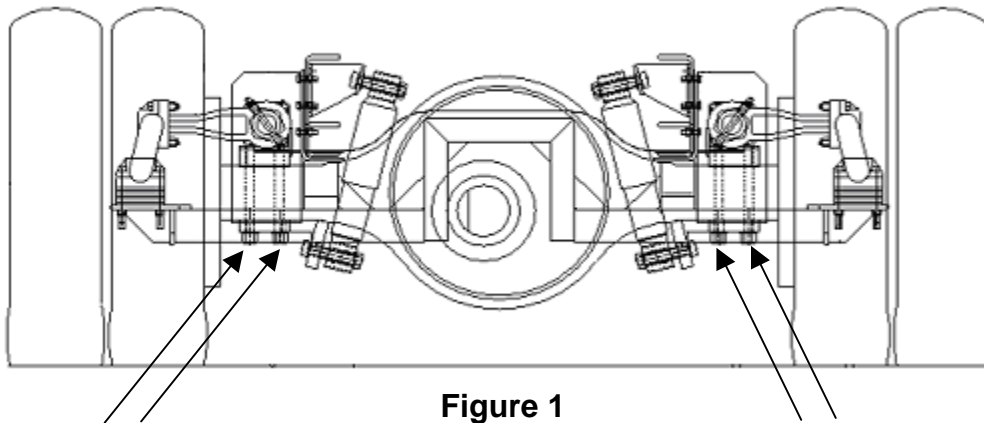


Figure 1

9. Repeat from step 7 on the other side of the vehicle.
10. With the axle removed, you may skip to step 13 and remove the entire suspension assembly in one piece. If this is not feasible due to space/equipment limitations, please continue with step 11.



WARNING:

STEP 11 DETACHES THE SPRING FROM THE SUBFRAME – LOOSENING THE NUTS DURING THIS STEP REMOVES RESIDUAL STRESS IN THE INSTALLED SPRINGS. TO AVOID SERIOUS INJURY, KEEP HANDS, FINGERS, ETC, CLEAR FROM AREAS WHERE THEY COULD BE PINCHED, I.E. BETWEEN SPRING AND BODY, SPRING AND AXLE, OR SPRING AND FRAME.

11. Slowly loosen the sixteen 9/16” nuts (eight on each side of the vehicle, four to the front and rear of the axle) holding the shackle assemblies down to the sub-frame ends.

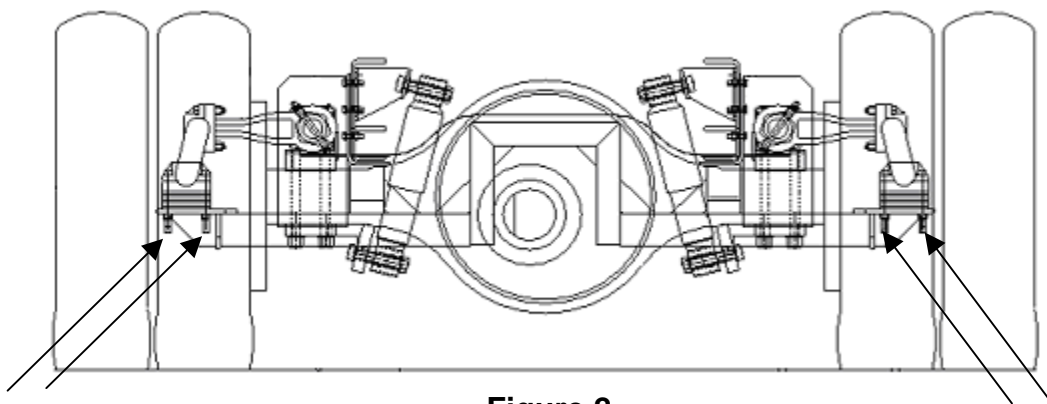


Figure 2

12. Next, the spring and arm assemblies must be removed from the vehicle. These assemblies are both heavy and awkward to handle.
- a. Lift the spring and arm assembly by raising it and guiding the bolts out of the attachment arm holes.
 - b. A cutting torch can be used to cut through the spring shaft to break the assembly into three pieces (2 arm assemblies & the center portion of the spring). This may make removal easier if the chassis has a body on it.
 - c. The 9/16” bolts going through the spring pad can also be shortened with a torch, if necessary.

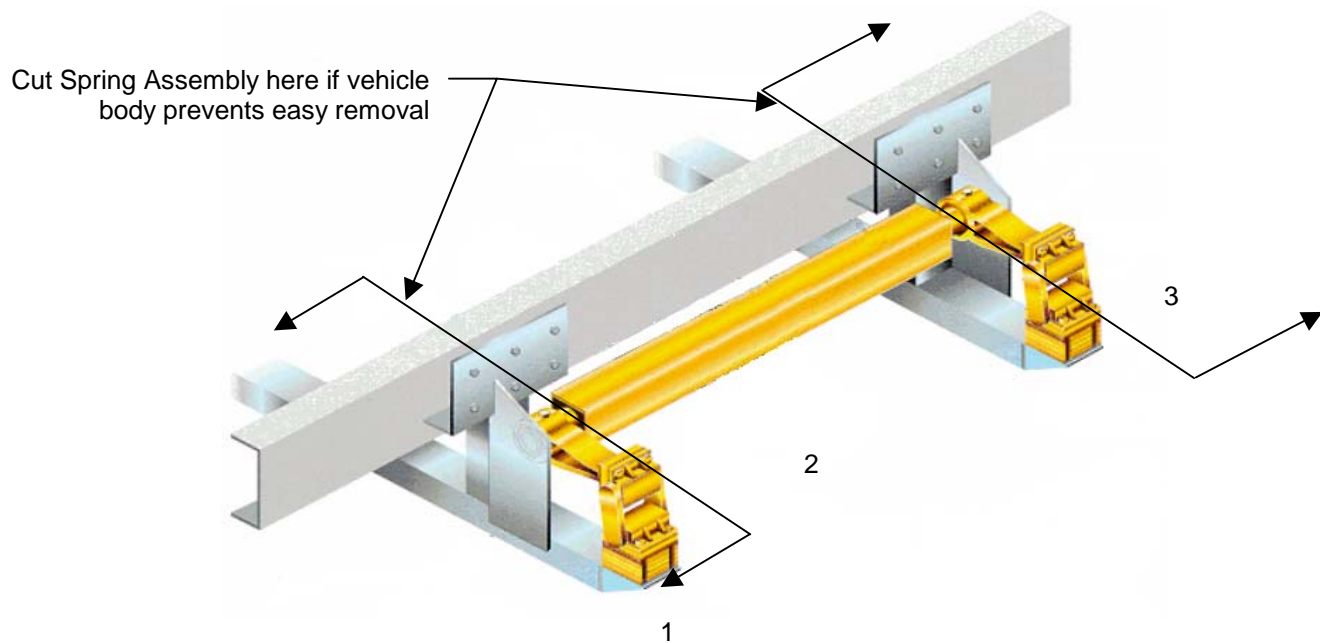


Figure 3

13. Remove the bolts holding the sub-frames to the vehicle's frame and lower the sub-frames to clear the vehicle's frame rails.

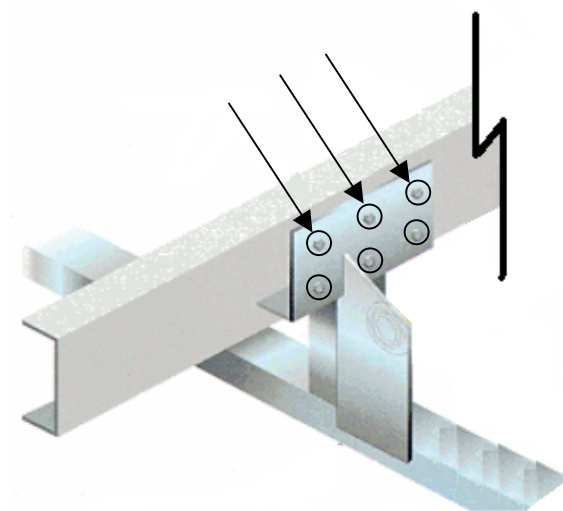


Figure 4

NAV-AIR SUSPENSION INSTALLATION



NOTE:

ALL VEHICLES INVOLVED IN THIS RECALL WILL BE MODIFIED WITH THE 12.5K VERSION OF THE NAV-AIR AIR SUSPENSION SYSTEM – REGARDLESS OF REAR AXLE CAPACITY.

THE GVWR AND REAR GAWR WILL REQUIRE A NEW RATING. A MODIFICATION STICKER WILL NEED TO BE PLACED ON THE DOOR SILL NOTING THE NEW RATINGS. PLEASE FOLLOW THE GVWR RATING PROCEDURE FOR FURTHER INSTRUCTIONS.

1. Please refer to the ***NAV-AIR SUSPENSION SYSTEM INSTALLATION DRAWINGS*** for reference in installing the suspension components.
2. There will be NO formal procedure presented here for installing the suspension system. Please reference the following drawings and procedures.

AXLE INSPECTION AND RE-WORK PROCEDURE

3. Some vehicles may have axles with locating pins in a position that is not compatible with a NAV-Air air suspension or locating pins that have been worn. Please inspect the axle housing while it is removed to determine if the pins need to be replaced or re-located.
4. If the pins are located near the FRONT of the axle, as in the figure below, they must be re-located. Note the position of the SLOT in the upper spring seat casting. It is located to the REAR of the vehicle.



Figure 5

5. Inspect to determine if the axle has a torque rod bracket installed. If not, a service bracket (contained in the Recall Service Base Kit) will need to be installed.
6. Locate pins and torque rod bracket according to the following diagrams:

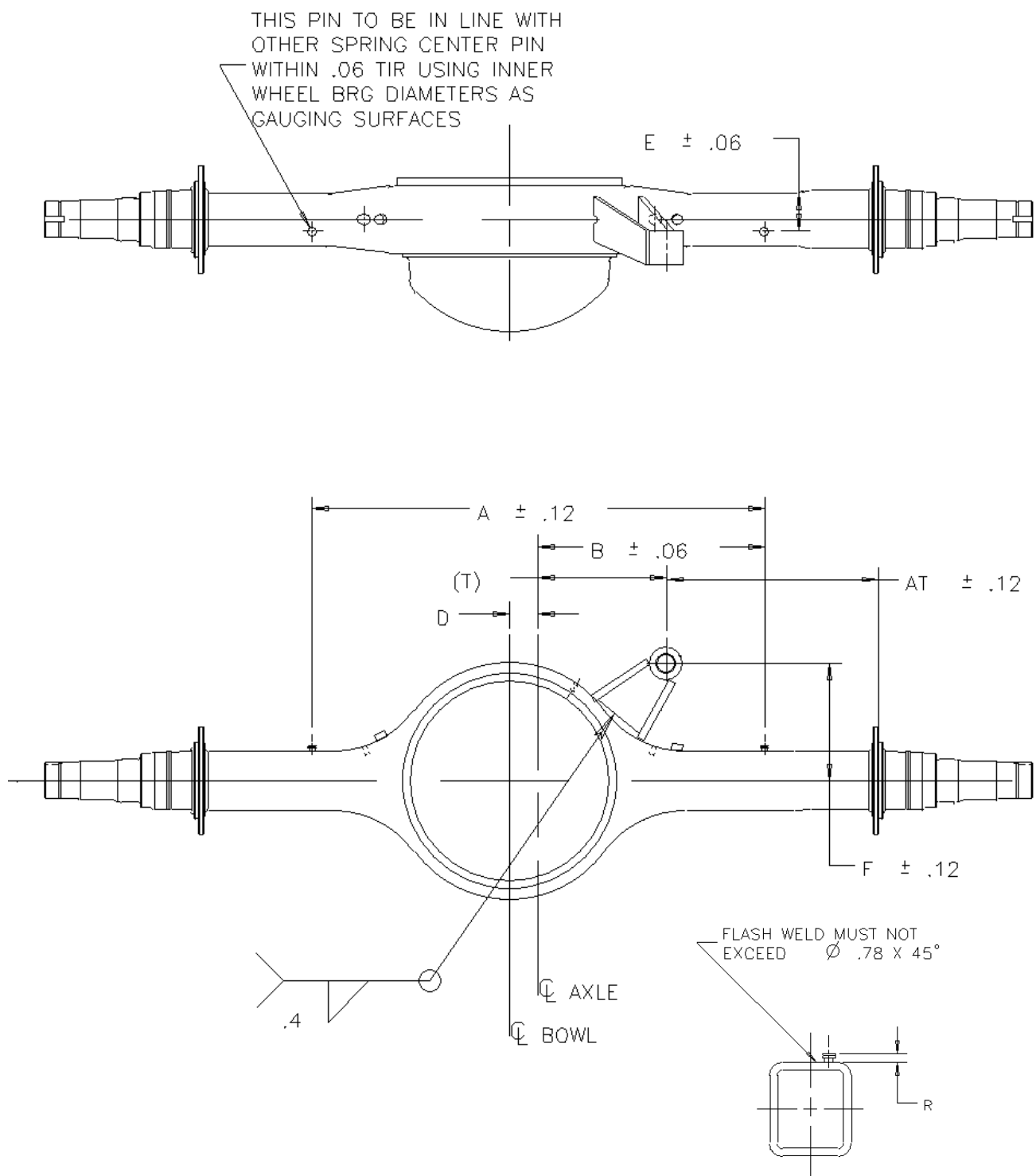


Figure 6

<i>DIMENSION NAME</i>	<i>VALUE</i>	<i>DESCRIPTION</i>
A	40.2" (1021.1mm)	Centerline spring pin to centerline spring pin
B	20.1" (510.5mm)	Vertical centerline axle to centerline spring pin
D	0.1870" (4.7mm)	Centerline axle to centerline bowl
E	3.15" (80mm)	Centerline spring pin to input shaft side of axle housing arm section
F	7.51" (191mm)	Centerline axle to center line torque rod bracket
T	10.370" (263.5mm)	Vertical centerline axle to centerline of torque rod bracket
AT	16.75" (425.5mm)	Vertical centerline torque bracket to outside brake flange
R	0.44" (11.2mm)	Spring Pin Height

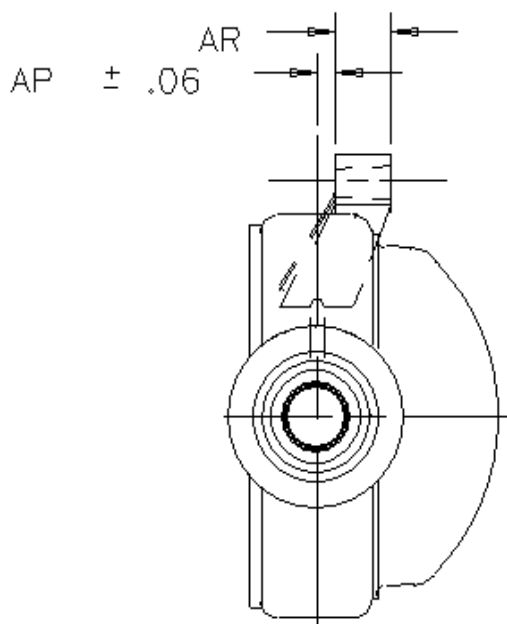


Figure 7 -- Left Side View, Rear Axle

<i>DIMENSION NAME</i>	<i>VALUE</i>	<i>DESCRIPTION</i>
AP	0.7" (18mm)	Vertical centerline axle to mounting face of torque rod bracket
AR	3.0" (76mm)	Torque rod bracket mounting hole length

SPRING PIN RE-LOCATION

7. If it has been determined that the spring pins require relocation, prepare axle housing surface by grinding old pins smooth.



Figure 8

8. Center punch new pin location as per the dimensions indicated in Figure 6.
9. Drill a 7/16" diameter hole for the new spring pin. ***You will not need to drill all the way through the axle housing. Please drill to a depth that will provide the dimension as indicated in Figure 6. Subtract the 'R' dimension from the overall height of the spring alignment pin.***
 - a. Use a thick grease as a lubricant for the drill bit as it will capture most of the metal shavings. Clean and re-grease drill bit as necessary to ensure no metal falls into the axle housing.
10. Using a hammer, tap the new spring pins into place and weld as required. See Figure 6.



Figure 9

TORQUE ROD BRACKET INSTALLATION

11. If it has been determined that a torque rod bracket is required, please prepare the surface by grinding a small channel around the perimeter of the bracket.



Figure 10

12. Grind torque rod bracket to fit axle housing as necessary. Refer to Figure 6 for proper location.



Figure 11

13. Weld bracket to axle housing as necessary, allow to cool.

14. Re-paint bare metal and weld areas.



Figure 12

RIDE HEIGHT ADJUSTMENT

15. Refer to TSI 04-03-01 for proper adjustment of spring ride height.
16. The NAV-AIR suspension equivalent feature code that is being installed on this recall is 14TAK. Please use all dimensions indicated for 14TAK for proper ride height adjustment.

TORQUE ROD INSTALLATION

NOTE: The ride height must be adjusted properly, and the full weight of the vehicle placed on the rear axle BEFORE cutting and welding the torque rod.

17. Center rear axle between the frame rails to ensure proper torque rod length is achieved.
18. Install both halves of the torque rod. Just snug the fasteners.
19. The longer half of the torque rod will only slide into the shorter half 3" (76mm). It may be necessary to cut the longer half to the correct length.
20. Tack weld the torque rod halves together. Remove the torque rod and finish welding the halves together.
21. Install the torque rod as per included drawing SA14-40471.

REAR AXLE ALIGNMENT

22. If your shop is not capable of providing a proper axle alignment, you are authorized to deliver the vehicle to and pick up from a truck alignment shop.

GVWR RATING PROCEDURE

23. Please fill out the product graphic, 449893C4 as follows:

THIS VEHICLE WAS ALTERED BY: (A)			
IN (B)		AND AS ALTERED	
IT CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE			
SAFETY STANDARDS AFFECTED BY THE ALTERATION AND IN			
EFFECT IN (C)		TYPE (D)	
GVWR (E)	FRONT (F)	FR-REAR-RR (G)	
lb. kg.	lb. kg.	lb. kg.	lb. kg.
A SUITABLE TIRE AND RIM CHOICE		Tires RIMS	
AT (H)	PSI COLD SINGLE	AT (J)	PSI COLD DUAL

Figure 13

- A) Enter the **official business name** of the dealership performing the recall service.
- B) Enter the **month and year** when the recall service was performed.
- C) Enter the **date of manufacture** of the vehicle receiving the recall service.
- D) Enter the word, "TRUCK."
- E) Enter the **total vehicle weight capacity** in pounds and kilograms, add letters 'F' and 'G.'
- F) Enter the **front axle weight rating** in pounds and kilograms. NO MODIFICATIONS TO THE FRONT AXLE WEIGHT RATING WAS MADE DURING THIS RECALL. Please enter the most current value found on either the International Truck and Engine Corporation Information or Body Builder Modification sticker in the driver's side door frame area.
- G) Enter, "12,500," for the pound rating and, "5,670," for the kilogram rating.
- H) & J) NO MODIFICATIONS TO THE TIRE AND RIM INFORMATION WERE MADE DURING THIS RECALL. Enter the most current front and rear tire information (including recommended tire pressure) found on either the International Truck and Engine Corporation Information or Body Builder Modification sticker in the driver's side door frame area.

***NAV-AIR SUSPENSION INSTALLATION DRAWINGS
BEGIN ON NEXT PAGE***

DRAWING	P/N	Qty	Part Description
2040468C93	RKN20031	1	VALVE, BRK CONTROL
2040468C93	2015712C1	1	MANIFOLD, FLEX TUBE
2040468C93	2017510C1	2	ELBOW, QUALITY CONNECT, 1/4" TUBE TO 1/4" QUALITY CONNECT
2040468C93	1697015C91	2	PLUG, PUSH TO CONNECT.
2040468C93	1697017C91	1	PLUG, PUSH TO CONNECT
2040468C93	2035008C1	1	SWITCH, PRESSURE SPECIAL
2040468C93	2040140C91	1	VALVE, SOLENOID
2040468C93	505217C1	1	CLAMP, PIPE
2040468C93	417196C3	132"	1/4" SERVICE TUBING
2040468C93	417199C3	18"	3/8" SERVICE TUBING

NOTE:

1. Make up assembly prior to installing into Truck.
2. All tubing to be BLACK service tubing.
3. See G04-46999 for diagram of assembly.

[illegible]

DRAWING	P/N	Qty	Part Description	Item
1664561C92	1660093C3	2	CROSSMEMBER, REINFORCED	1
1664561C92	414052C1	4	BOLT, HH FLG 1/2-20UNF X 1 1/2 PHC GRD 8	2
1664561C92	414087C1	4	NUT, HEX, LOCK FLG 1/2-20UNF PHC GRD 8	3

NOTE:

1. Vehicle may have originally been built with a double dog-bone cross member. Check vehicle to determine if assembly is required.
2. Torque 1/2" bolts to 100-150 LbF-Ft (135-200 Nm)

DRAWING	P/N	Qty	Part Description	Item	Seq
1665112C94	1660690C3	1	BRACKET, REAR SPRING, AIR SPRING LT	0	4
1665112C94	1660691C1	1	BRACKET, REAR SPRING, AIR SPRING, RT	0	5
1665112C94	1660692C4	1	CROSSMEMBER, SPG, AIR SPRING	0	3
1665112C94	414052C1	6	BOLT, HH FLG 1/2-20UNF X 1 1/2 PHC GRD 8	0	1
1665112C94	414087C1	6	NUT, HEX, LOCK FLG 1/2-20UNF PHC GRD 8	0	2

NOTE:

1. Vehicle may have originally been built with another style or cross member – or no cross member at all.
2. THIS CROSS MEMBER MUST BE INSTALLED AND ANY OTHER SUSPENSION CROSS MEMBER REMOVED.
3. Cross member may be easier to assemble and install when assembled in place between the frame rails.
4. Please see G14-33392 for installation and SA14-40471 for proper hole location.
5. Torque ½" bolts to 100-150 Lb-Ft (135-200 Nm)

DRAWING	P/N	Qty	Part Description	Item	Seq
G040035752	109429	1	ELBOW, FLARED TUBE	18	10
G040035752	443978	1	NIPPLE, AUTO PIPE	12	10
G040035752	444024	1	BUSHING, REDUCER PIPE	16	10
G040035752	444033	3	ADAPTER, AUTO PIPE RED	3	10
G040035752	444134	1	TEE, AUTO PIPE	11	10
G040035752	444632	1	PLUG, PIPE	1	10
G040035752	1677431C1	1	VALVE, AIR SUPPLY	17	10
G040035752	1823306C1	1	NIPPLE, PIPE	7	10
G040035752	30761VX	1	ELBOW	19	10
G040035752	30757VX	1	CONNECTOR, THD SLEEVE	2	10
G040035752	386398C91	1	VALVE, SAFETY AIR*	4	10
G040035752	56233R1	1	ELBOW,	14	10
G040035752	56233R1	1	ELBOW	14	20

NOTE:

1. Air tank plumbing AS-BUILT may be different than what is indicated on drawing. This print for reference only.

DRAWING	P/N	Qty	Part Description	Item	Seq
G040035755	120380	1	WASHER, LOCK, 1/4 REG	6	50
G040035755	120380	1	WASHER, LOCK, 1/4 REG	26	50
G040035755	120380	1	WASHER, LOCK, 1/4 REG	27	30
G040035755	120380	2	WASHER, LOCK, 1/4 REG	29	8
G040035755	120384	2	WASHER, LOCK, 1/2 REGULAR	29	9
G040035755	13956H	1	TEE, COMP TUBE 3/8 X 3/8 X 1/4 MPT	3	5
G040035755	1517112C1	1	PLUG, PIPE, 1/4 MPT HEX HD	15	0
G040035755	194665R1	1	EXTENSION, CLIP	26	10
G040035755	2017508C1	1	ELBOW, QUALITY CONNECT, 90 DEG 1/8 MPT X 1/4 TUBE	7	0
G040035755	24861R1	2	BOLT, HEX HD, 1/2-13UNC X 1 1/4 LG	29	2
G040035755	25222R1	1	BOLT, HEX HD, 1/4-20UNC X 3/4	6	30
G040035755	25222R1	1	BOLT, HEX HD, 1/4-20UNC X 3/4 LG	26	30
G040035755	25222R1	2	BOLT, HEX HD, 1/4-20UNC X 3/4 LG	29	6
G040035755	25483R1	1	BOLT, HEX HD, 1/4-20 UNC X 1.0 LG	27	10
G040035755	25519R1	1	NUT, HEX LOCK, 1/4-20UNC	6	40
G040035755	25519R1	1	NUT, HEX, 1/4-20UNC	26	40
G040035755	25519R1	1	NUT, HEX, 1/4-20UNC	27	20
G040035755	25519R1	2	NUT, HEX, 1/4-20UNC	29	7
G040035755	25526R1	2	NUT, HEX, 1/2-13UNC	29	3
G040035755	25707R1	4	WASHER, FLAT, HARDENED M6 OR 1/4"	10	4
G040035755	25881R1	2	BOLT, HEX HD 1/4-20UNC X 2 1/2 LG	10	2
G040035755	26110R1	2	NUT, HEX LOCK 1/4-20 UNC	10	3
G040035755	291207C1	4	STRAP, CABLE LOCK	8	0
G040035755	299399C1	2	CLAMP, CABLE, SGL CUSHIONED 1/2 ID X .281 MTG HOLE	29	5
G040035755	30757VX	2	CONNECTOR, THD SLEEVE, 1/4 MPT X 3/8 TUBE	11	10
G040035755	30761VX	4	ELBOW, COMP TUBE, 90 DEG 1/4 MPT X 3/8 TUBE	1	10
G040035755	30761VX	1	ELBOW, COMP TUBE, 90 DEG 1/4 MPT X 3/8 TUBE	3	6
G040035755	343539C1	1	CLIP, DBL-COATED 3/8 X 3/8 X .281 MTG HOLE	6	20
G040035755	343539C1	1	CLIP, DOUBLE COATED, 3/8 X.281 MTG HOLE	26	20
G040035755	3522121C1	1	NUT, HEX LOCK, 3/4-16	3	4
G040035755	352679C1	1	EXTENSION, CLIP	12	10
G040035755	355524C1	1	EXTENSION, CLIP	6	10
G040035755	BX280758	1	VALVE, PRESSURE METERING, INVERSION	10	1
G040035755	498533C1	2	EXTENSION, CLIP	29	1
G040035755	417199C3	43*	TUBE, 3/8 OD	4	4
G040035755	414509C2	1	NUT, COMP TUBE 3/8	4	3
G040035755	1686765C1	1	SLEEVE, COMP TUBE 3/8	4	2
G040035755	414505C1	1	INSERT, COMP TUBE 3/8	4	1

DRAWING	P/N	Qty	Part Description	Item	Seq
G040035755	417199C3	52"	TUBE, 3/8 OD	5	10
G040035755	414509C2	1	NUT, COMP TUBE 3/8	5	11
G040035755	1686765C1	1	SLEEVE, COMP TUBE 3/8	5	12
G040035755	414505C1	1	INSERT, COMP TUBE 3/8	5	13
G040035755	BX221204	1	COUPLING, FRAME FITTING OR ANCHOR	3	1
G040035755	BX280758	1	VALVE, PRESSURE METERING, INVERSION TR-3	10	1
G040035755	417199C3	30"	TUBE, 3/8 OD	2	10
G040035755	414509C2	1	NUT, COMP TUBE 3/8	2	11
G040035755	1686765C1	1	SLEEVE, COMP TUBE 3/8	2	12
G040035755	414505C1	1	INSERT, COMP TUBE 3/8	2	13
G040035755	417199C3	30"	TUBE, 3/8 OD	2	20
G040035755	414509C2	1	NUT, COMP TUBE 3/8	2	21
G040035755	1686765C1	1	SLEEVE, COMP TUBE 3/8	2	22
G040035755	414505C1	1	INSERT, COMP TUBE 3/8	2	23

NOTES FOR DRAWING G04-35755:

- N1 Install elbow pointing inboard.
- N2 Install elbow pointing outboard
- N3 For remainder of tubing, see G04-44680 and G04-46999.
- N5 For Height control valve installation see G14-33397.
- N7 Install elbow pointing rearward.
- N8 Use existing hose support bracket mounting bolt with vehicles with HYDRAULIC BRAKES.

1. THIS CROSS MEMBER MUST BE INSTALLED AND ANY OTHERS REMOVED.
2. Please see G14-33392 for installation and SA14-40471 for proper hole location.
3. Torque $\frac{1}{2}$ " bolts to 100-150 Lb-Ft (135-200 Nm)

* An asterisk next to a length of tubing means the tubing length is wheelbase dependent. The length of tubing that is indicated in the parts list is the length that would be required if the wheelbase was 162". If the vehicle wheelbase is different than 162", that difference must be added or subtracted to the tubing length. It is advised to cut any tubing length longer than necessary to account for route and clip variations.

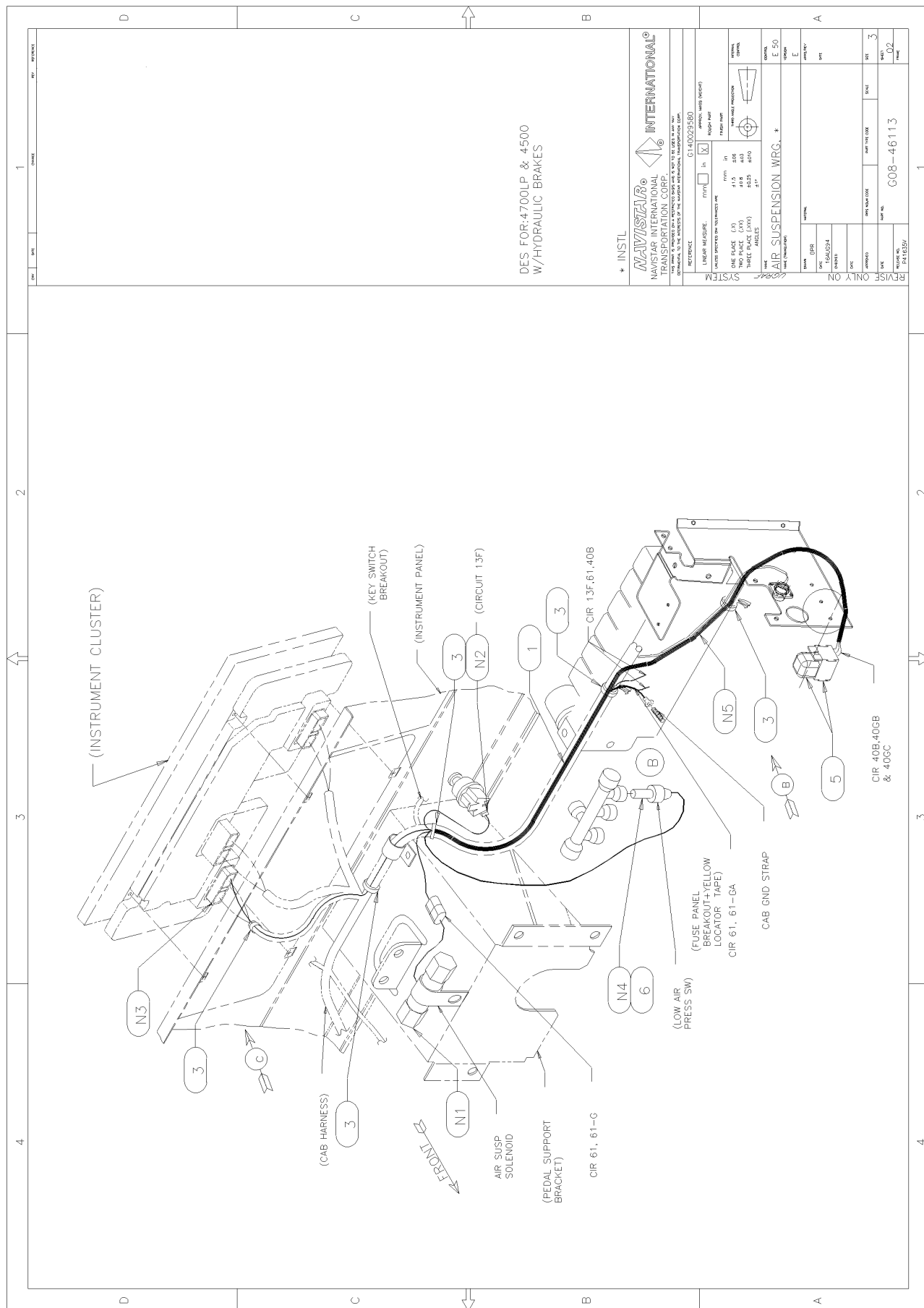
DRAWING	P/N	Qty	Part Description	Item	Seq
G040044680	120380	2	WASHER, LOCK	16	40
G040044680	120380	2	WASHER, LOCK	18	40
G040044680	25222R1	2	BOLT, HEX HD 1/4-20 UNC X3/4 LG	16	20
G040044680	25222R1	2	BOLT, HEX HD 1/4-20 UNC X3/4 LG	18	20
G040044680	25519R1	2	NUT, HEX, 1/4-20 UNC	16	30
G040044680	25519R1	2	NUT, HEX, 1/4-20 UNC	18	30
G040044680	406381C1	2	CLAMP, CABLE	16	10
G040044680	406381C1	2	CLAMP, CABLE SINGLE	18	10
G040044680	120380	1	WASHER, LOCK	17	160
G040044680	25222R1	1	BOLT, HEX HD 1/4-20 UNC X3/4 LG	17	60
G040044680	25519R1	1	NUT, HEX, 1/4-20 UNC	17	110
G040044680	406381C1	1	CLAMP, CABLE , SINGLE	17	10
G040044680	120380	1	WASHER, LOCK	17	170
G040044680	25222R1	1	BOLT, HEX HD 1/4-20 UNC X3/4 LG	17	70
G040044680	25519R1	1	NUT, HEX, 1/4-20 UNC	17	120
G040044680	406381C1	1	CLAMP, CABLE SINGLE	17	20

DRAWING	P/N	Qty	Part Description	Item	Seq
G040046999	2585470C91	1	VALVE,SHUTT OFF*, PRESSURE PROTECTION	6	80
G040046999	2040468C93	1	HARNES,NYLON TUBE,	19	10
G040046999	26328R1	2	SCREW, TAPPING, PAN HD CR	16	10
G040046999	2029563C1	1	ELBOW, QUALITY CONNECT LOCK FLG -- 45 DEG X 1/4	1	10
G040046999	417196C3	235*	1/4" SERVICE TUBING -- BLACK	2	20
G040046999	414510C2	1	NUT, COMP TUBE 1/4	2	21
G040046999	2007989C1	1	SLEEVE, COMP TUBE 1/4	2	22
G040046999	414504C1	1	INSERT, COMP TUBE 1/4	2	23
G040046999	417199C3	95"	3/8" SERVICE TUBING - BLACK	3	30
G040046999	414509C2	1	NUT, COMP TUBE 3/8	3	31
G040046999	1686765C1	1	SLEEVE, COMP TUBE 3/8	3	32
G040046999	414505C1	1	INSERT, COMP TUBE 3/8	3	33
G040046999	56233R1	1	ELBOW, 90 DEG 1/2 MPT X 3/8 TUBE	4	40
G040046999	444032	1	ADAPTER AUTO PIPE RED, 1/2 MPT X 1/4 FPT	5	50
G040046999	443978	1	NIPPLE, AUTO PIPE, 1/4 MPT X 1/4 MPT	5	60
G040046999	444040	1	ELBOW, AUTO PIPE 90 DEG 1/4 FPT X 1/4 MPT	5	70
G040046999	417199C3	205*	3/8 SERVICE TUBING - BLACK	7	90
G040046999	414509C2	1	NUT, COMP TUBE 3/8	7	91
G040046999	1686765C1	1	SLEEVE, COMP TUBE 3/8	7	92
G040046999	414505C1	1	INSERT, COMP TUBE 3/8	7	93
G040046999	2029564C1	1	ELBOW, QUALITY CONNECT, LOCK FLG -- 45 DEG X 3/8	11	260
G040046999	2038841C1	1	CONNECTOR, QUALITY CONNECT 3/8 TUBE 3 1/4 STEM	11	270
G040046999	2040901C1	1	EXTENSION, CLIP	13	295
G040046999	24861R1	1	BOLT, HH, HD 1/2-13 UNC X 1 1/4, PHC GRD 8	13	320
G040046999	25526R1	1	NUT, HEX, 1/2-13 UNC, PHC	13	330
G040046999	120384	1	WASHER, LOCK 1/2 REGULAR STL-ZN	13	340
G040046999	1688700C1	1	ANCHOR, CLAMP	14	350
G040046999	25222R1	2	BOLT, HH, 1/2-20 UNC X 3/4 PHC GRADE 8	14	360
G040046999	25519R1	2	NUT, HEX, 1/4-20UNC, PHC	14	370
G040046999	120380	2	WASHER, LOCK, 1/4 REGULAR STL-ZN	14	380
G040046999	2017556C1	1	STRAP, HOSE	15	390

NOTES FOR DRAWING G04-46999

- N4 Remove plug (if installed) and install elbow pointing upward.
- N5 For remainder of tubing, see G04-35755.
- N6 Route and Clip with existing tubing (if possible).
- N13 Route and Clip with existing electrical harness (if possible).

* An asterisk next to a length of tubing means the tubing length is wheelbase dependent. The length of tubing that is indicated in the parts list is the length that would be required if the wheelbase was 162". If the vehicle wheelbase is different than 162", that difference must be added or subtracted to the tubing length. It is advised to cut any tubing length longer than necessary to account for route and clip variations.



DRAWING	P/N	Qty	Part Description	Item	
G080046113	1688312C1	1	BUZZER, WARNING ALARM	5	10
G080046113	2035207C1	1	BREAKER, CIRCUIT	4	30
G080046113	2040110C92	1	HARNESS, AIR SUSP CONTROL, W/HYD BRAKES	1	20
G080046113	24200R1	1	SCREW, SELF TAPPING	5	20
G080046113	289862C1	5	STRAP, CABLE LOCK	3	10
G080046113	2035008C1	1	SWITCH, PRESSURE, N.C. OPEN 64-76 PSI	6	10

NOTE:

- N1 Air suspension solenoid – Connect circuit 61 & 61-G of item 1 to connector of air solenoid.
- N2 Connect circuit 13F of item 1 to key switch, ignition terminal.
- N3 Instrument cluster connector right (natural).
- N4 Connect circuit 40-GB & 61-GA of item 1 to low air pressure switch.
- N5 Fold excess back on itself & straplock.

DRAWING	P/N	Qty	Part Description	Item	Seq
G140033392	1664561C92	1	CROSSMEMBER, ASSY, REINFORCED	1	0
G140033392	1665112C94	1	CROSSMEMBER,SPG, CROSSMEMBER ASSY	3	10
G140033392	17233R1	2	PIN,COTTER*, 1/8 X 2 1/2	14	20
G140033392	206258R3	2	PIN,REBOUND,	14	10
G140033392	414052C1	4	BOLT *, HH FLG 1/2-20UNF X 1 1/2 PHC GRD 8	4	10
G140033392	414054C1	8	BOLT *, HEX FLG HD 1/2-20UNF X 2.0,PHC GRADE	8	40
G140033392	414056C1	4	BOLT *, HEX FLG HD 1/2-20 UNF X 2 1/2,PHC GRA	8	30
G140033392	414087C1	12	NUT,HEX, LOCK FLG 1/2-20UNF PHC GRD 8	8	50
G140033392	414087C1	4	NUT,HEX, LOCK FLG 1/2-20UNF PHC GRD 8	4	20
G140033392	558699R1	2	SPACER,PIPE, SPACER,PIPE .824 ID X 1.050 OD X 3.312 L	15	10
G140033392	2009942C91	2	BRACKET,REAR SPRING, ASSY SPRING	8	10

DRAWING	Selection Part	Qty	Part Description	Item	Seq
G140033397	9413977	2	NUT, HEX LOCK, 5/16-18UNC	2	40
G140033397	KZ270000	1	VALVE, AIR SPG LEVELING VLV*, AIR SPG LEVELING VLV*	2	10
G140033397	25235R1	2	BOLT, HH, BOLT, HEX HD 5/16-18UNC X 2 1/2, PHC GRADE	2	20
G140033397	25708R1	4	WASHER, FLAT, HARDENED M8 OR 5/16" ZND -PREFERRED PART	2	30

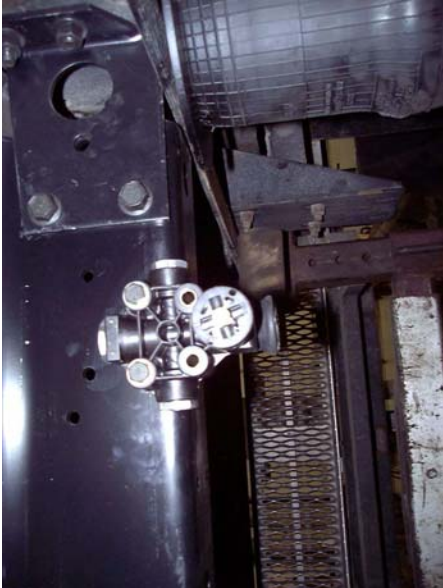


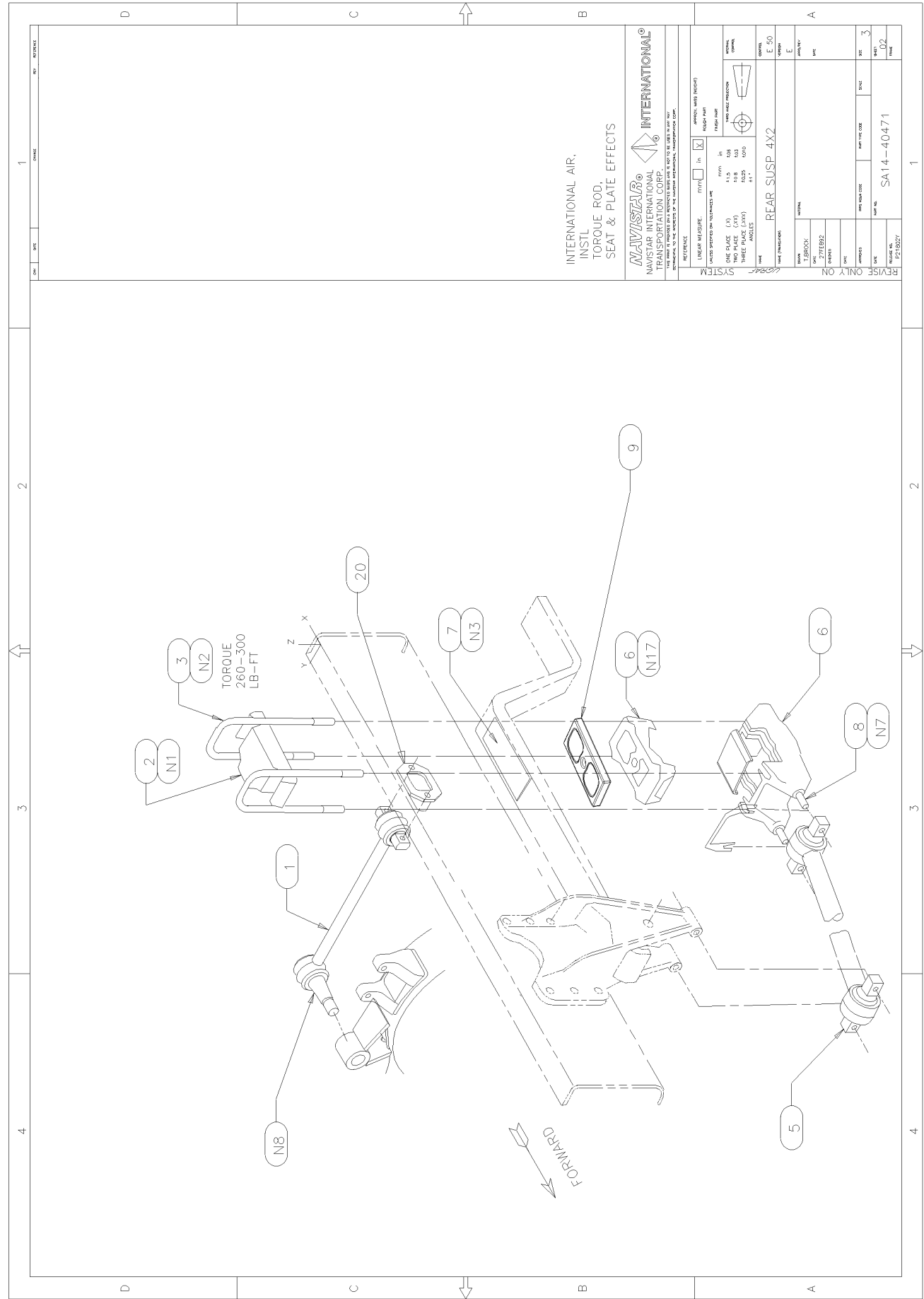
FIGURE 7

NOTE:

N1 Assemble Height Control Valve as per instructions included with parts.

1. Install Height Control Valve directly onto suspension cross member.
Drill out mounting holes as necessary to fit. See Figure 7.

DRAWING	P/N	Qty	Part Description	Item	Seq
SA14040470	414089C1	2	NUT *, HEX LOCK FLG 5/8-18UNF,PHC	6	1
SA14040470	414089C1	2	NUT *, HEX LOCK FLG 5/8-18UNF,PHC	7	2
SA14040470	466906C1	2	BOLT,FRAME*, FLANGED HD 5/8-18UNF X 5 1/2,PH	7	1
SA14040470	578075C1	6	WASHER,SHK/ABS MTG, FLAT 5/8 & M16	6	2
SA14040470	578075C1	4	WASHER,SHK/ABS MTG, FLAT 5/8 & M16	7	3
SA14040470	1660849C1	2	SPACER,SHK/ABS MTG, SHOCK MTG	5	2
SA14040470	2039565C1	2	ABSORBER,SHOCK COMMON TO *LT OR RT, LT OR RT	5	0
SA14040470	481795C1	2	BOLT,SPECIAL*, HEX FLANGED HD 5/8-18UNF X 6 1/2,PHC GRA	6	0



INTERNATIONAL AIR,
INSTL
TORQUE ROD,
SEAT & PLATE EFFECTS

NAVISTAR
NAVISTAR INTERNATIONAL
TRANSPORTATION CORP.

THIS DRAWING IS THE PROPERTY OF NAVISTAR INTERNATIONAL TRANSPORTATION CORP. IT IS TO BE USED FOR THE PURPOSES OF THE MANUFACTURE OF THE PRODUCT ONLY.

REFERENCE: LINEAR MEASURE: mm ☐ in ☒ ANGLES: WITH DIMENSION

UNLESS SPECIFIED OTHERWISE ARE: mm in

ONE PLACE (.1) 1.5 1/8

TWO PLACES (.01) 1.5 1/8

THREE PLACES (.001) 1.5 1/8

ANGLES: ±1°

NAME: REAR SUSP 4X2

DATE: 01/15/2014

REV: 1

APP: 1

DATE: 01/15/2014

REV: 1

APP: 1

DATE: 01/15/2014

REV: 1

APP: 1

DATE: 01/15/2014

REV: 1

APP: 1

DATE: 01/15/2014

REV: 1

DRAWING	P/N	Qty	Part Description	Item	Seq
SA14040471	1689669C1	2	INSULATOR, SPRING, SPRING INTERLEAF	7	0
SA14040471	2011933C2	1	CROSSMEMBER, SPG*, AIR MTG ASSY	18	10
SA14040471	21318R1	8	BOLT, HH, 3/8-16 UNC X 2 1/2 PHC	14	10
SA14040471	9413979	8	NUT, HEX LOCK 3/8-16 UNC	14	20
SA14040471	25553R1	16	WASHER, FLAT, HARDENED 3/8 ID X 1.12 OD	14	30
SA14040471	572112C2	2	SEAT, U BOLT REAR SPG, U-BOLT RR SPG	2	0
SA14040471	488906C6	4	STUD, TORQUE ROD BRKT, 5/8 UNRF, 5/8 UNC - SPECIAL	8	20
SA14040471	1660693C3	2	PLATE, SPACER-BRKT-MTG ETC*, AIR SPRING	17	10
SA14040471	1684288C91	2	SPRING, CHASSIS REAR, RR TAPER LEAF	15	10
SA14040471	GY1R9054	2	SPRING, AIR RIDE*, AIR RIDE*	11	10
SA14040471	414054C1	2	BOLT*, HEX FLG HD 1/2-20UNF X 2.0, PHC GRADE	19	10
SA14040471	414087C1	2	NUT, HEX, LOCK FLG 1/2-20UNF PHC GRD 8	19	20
SA14040471	414089C1	2	NUT*, HEX LOCK FLG 5/8-18UNF, PHC	1	2
SA14040471	438286C1	2	BOLT, HH, BOLT, HEX FLANGED HD 5/8-18UNF X 4 1/2, PH	1	1
SA14040471	1693531C1	1	ROD, TORQUE*, SADDLE	1	1
SA14040471	1693542C1	1	ROD, TORQUE, SOLID	1	2
SA14040471	2502936C1	1	WASHER, TORQ ROD	1	3
SA14040471	2502937C1	1	NUT, TORQ ROD	1	4
SA14040471	H22186000	1	BRACKET, TORQUE ROD *MTG OR RADIUS SEE 14, TORQUE ROD MTG	20	30
SA14040471	1516023C1	1	SHIM, TORQUE ROD SOCKET*, AXLE ALIGNMENT .010" (0.25 MM) THK	5	6
SA14040471	414089C1	8	NUT*, HEX LOCK FLG 5/8-18UNF, PHC	5	8
SA14040471	438286C1	4	BOLT, HH, BOLT, HEX FLANGED HD 5/8-18UNF X 4 1/2, PH	5	7
SA14040471	488916C1	2	SHIM, TORQUE ROD SOCKET, AXLE ALIGNMENT .056 (1.42 MM) THK	5	3
SA14040471	488917C1	1	SHIM, TORQUE ROD SOCKET*, AXLE ALIGNMENT .030 (0.76 MM) THK	5	4
SA14040471	590752C1	2	SHIM, TORQUE ROD SOCKET, AXLE ALIGNMENT .119 (3.02 MM) THK	5	5
SA14040471	3581271C1	2	ROD, TORQUE*, ROD TORQUE ASSY 18.12" LG	5	1
SA14040471	414087C1	2	NUT, NEX LOCK FLG 1/2-20UNF	12	30
SA14040471	1660847C1	1	BRACKET, SHK/ABS MTG*, SHOCK ABSORBER LT	13	10
SA14040471	166048C1	1	BRACKET, SHK/ABS MTG*, SHOCK ABSORBER RT	13	20

Use the following parts for vehicles with **HYDRAULIC BRAKES** and rear axle feature code **14ADN**:

DRAWING	P/N	Qty	Part Description	Item	Seq
SA14040471	3522531C1	2	SEAT, REAR SPRING, 1.0 DEG	6	10
SA14040471	3552530C1	2	PLATE, U BOLT REAR SPG, 1.0 DEG	6	20
SA14040471	581742C1	4	BOLT, U SPRING ¾ UNRF X 345MM LG	3	10
SA14040471	2502028C1	8	NUT, HEX FLGD LOCK ¾ X 16UNF-2B	3	20
SA14040471	493722C3	2	SPACER, REAR AXLE, .81" THK	9	10

Use the following parts for vehicles with **HYDRAULIC BRAKES** and **ANY OTHER** rear axle feature code **[NOT 14ADN]**:

DRAWING	P/N	Qty	Part Description	Item	Seq
SA14040471	2005308C1	2	SEAT, REAR SPRING, 3.4 DEG	6	10
SA14040471	1514720C2	2	PLATE, U BOLT REAR SPG, .34 DEG	6	20
SA14040471	1514626C1	4	BOLT, U SPRING 7/8 UNRF X 12.4 (315MM) LG	3	10
SA14040471	144425H	8	NUT, HEX LOCK NYLON 7/8-14UNF, CAD	3	20
SA14040471	25549R1	8	WASHER, FLAT, 7/8	3	30
SA14040471	493722C3	2	SPACER, REAR AXLE, .81" THK	9	10

Use the following parts for vehicles with **AIR BRAKES** and **ALL** rear axle feature codes:

DRAWING	P/N	Qty	Part Description	Item	Seq
SA14040471	2005308C1	2	SEAT, REAR SPRING, 3.4 DEG	6	10
SA14040471	1514720C2	2	PLATE, U BOLT REAR SPG, .34 DEG	6	20
SA14040471	1610312C3	4	BOLT, U SPRING 7/8 UNRF X 12.4 (355MM) LG	3	10
SA14040471	144425H	8	NUT, HEX LOCK NYLON 7/8-14UNF, CAD	3	20
SA14040471	25549R1	8	WASHER, FLAT, 7/8	3	30

NOTES FOR DRAWING SA14-40471:

- N1 Install U-Bolt seat as shown with tab pointing inboard toward frame rail.
- N2 Torque U-Bolts in a diagonal pattern to 260-300 Lbf-Ft (353-407 Nm)
- N3 Install DELRIN liner between spring assy & U-Bolt Seat.
- N7 Install studs until threads bottom out, then torque studs to 55-70 Lbf-Ft (75-95 Nm)
- N8 Remove all foreign material from threads. Torque to 225-275 Lbf-Ft (305-373 Nm)
- N11 For forward air spring mounting hole, use bottom cross member mounting bolt. See G14-3392 for reference.
- N13 Install bracket with eye to inboard and upward position.
- N14 Install air spring mounting bolt in OUTER hole on cross member.
- N16 Install cross member with opening to REAR.
- N17 Install seat with hole for axle pin to REAR for ALL Axles. Some axle reword may be required.

END OF SERVICE PROCEDURE

LABOR INFORMATION

<u>Operation No.</u>	<u>Description</u>	<u>Time</u>
A40-03517-1	<i>R & R Rear Suspension System</i>	20 hrs

The time above only applies to removal of the VELVET-RIDE suspension components and replacement of the parts listed in this letter (including drop off, alignment, and pick up from an alignment shop).

Due to the specialized nature of the vehicles involved in this recall, there may be special equipment installed when the vehicle comes into your shop (i.e. Onspots, Insta-chains, suspension kneeling systems, drive away exhaust systems, etc...).

The functionality of the special equipment must be re-installed. Any extra labor and materials required to re-install, modify, or re-purchase special equipment must be authorized by International Truck and Engine Corporation.

Please contact the **Service Performance Group** at (630) 753-5242 or at service.performance@nav-international.com with an itemized estimate of any additional work to be done over and above the scope of this letter. They will provide you an authorization to restore the original functionality of the vehicle.

CAMPAIGN IDENTIFICATION LABEL

*Each vehicle corrected in accordance with this campaign **must be** marked with a CTS-1075 Campaign Identification Label.*

Complete the label and attach on a clean surface next to the vehicle identification number (VIN) plate.

DO NOT REMOVE
INTERNATIONAL
Campaign No.
VIN
Eng.#
COMPLETED
Service Location Code #
DO NOT REMOVE

ADMINISTRATIVE/DEALER RESPONSIBILITIES (U.S. & POSSESSIONS)

Proceed immediately to make necessary correction to units in inventory. **All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery.** If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified **IMMEDIATELY** from your dealer location.

Dealers must correct all vehicles subject to this campaign at no charge to the owner, regardless of mileage, age of vehicle, or ownership, from this time forward.

The National Traffic and Motor Vehicle Safety Act, as amended, provides that each vehicle that is subject to a vehicle recall campaign must be adequately **repaired** within a reasonable time after the owner has tendered it for repair. A failure to adequately repair within **60 days** after a tender of a vehicle is prima facie evidence of failure to repair within a reasonable time. If the condition is not adequately repaired within 60 days, the owner may be entitled to **replacement** with an identical or reasonable equivalent vehicle at no charge, or to a **refund** of the purchase price less a reasonable allowance for depreciation.

However, consistent with the customer notification, dealers are expected to complete the repairs on the mutually agreed upon service date.

To avoid having to replace an owner vehicle or refund the purchase price, every effort must be made to promptly schedule an appointment with each owner to repair his or her vehicle as soon as possible.

POSSIBLE CUSTOMER REIMBURSEMENT

There may be an occasion when a customer was charged for repairs related to this recall prior to the recall being released. The customer letter contains a statement for the customer to contact the Dealer if they believe they are entitled to reimbursement costs. The Dealer should follow the Customer Reimbursement guidelines in Warranty Policy Letter 03-001G. The Warranty Procedures and Administrative Policies manual (CTS1100) is in the process of being updated to include the information in Policy Letter 03-001G.

WARRANTY CLAIMS

Refer to Dealer Warranty Manual for procedures to conduct Recall Campaigns.

It is important that the Recall Coding be completed properly to assist in processing the warranty claim. Complete instructions will be found in the Warranty Manual, Section 7-1. Special attention should be given to Items 39 through 44:

GROUP	NOUN	C	WARR.	TP	PAD

GROUP Enter number G—

NOUN Leave blank

C (CAUSE) Enter either 1, 2, 3. (see below)

- 1. Inspected (No repair required).
- 2. Inspected and repaired.
- 3. Defective part from parts stock.

WARRANTY (Warranty Code) Enter 40.

TYPE PART Enter P for type part causing failure.

PAD Enter 100

ADMINISTRATIVE/DISTRIBUTOR RESPONSIBILITY (EXPORT)

Proceed immediately to make necessary correction to units in inventory. All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery. If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified from your distributor location.

Export locations are to submit warranty claims in the usual manner making reference to this recall number.

We ask for your full cooperation and follow-up to this important subject matter. If you have any questions or need further assistance, please contact the Regional Service Manager at your regional office.

INTERNATIONAL TRUCK AND ENGINE CORPORATION