



# **ALUMINUM END DUMP OPERATION – MAINTENANCE & PARTS MANUAL INDEX**

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**IF YOUR TRAILER HAS ANY OF THE FOLLOWING SPECIAL OPTIONS THE  
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### **TARP**

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## **CONSUMER INFORMATION**

### **REPORTING SAFETY DEFECTS**

IF YOU BELIEVE THAT YOUR VEHICLE HAS A DEFECT, WHICH COULD CAUSE A CRASH OR COULD CAUSE INJURY OR DEATH, YOU SHOULD IMMEDIATELY INFORM THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA) IN ADDITION TO NOTIFYING RANCO TRAILERS.

IF NHTSA RECEIVES SUFFICIENT SIMILAR COMPLAINTS, IT MAY OPEN AN INVESTIGATION AND IF IT FINDS THAT A SAFETY DEFECT EXISTS IN A GROUP OF VEHICLES, IT MAY ORDER A RECALL AND REMEDY CAMPAIGN. HOWEVER, NHTSA CANNOT BECOME INVOLVED IN INDIVIDUAL PROBLEMS BETWEEN YOU, YOUR DEALER OR RANCO TRAILERS.

TO CONTACT NHTSA, YOU MAY EITHER CALL THE AUTO SAFETY HOT LINE TOLL FREE AT 1-800-424-9393 (OR 366-0123 IN WASHINGTON DC AREA) OR WRITE TO NHTSA, U.S. DEPARTMENT OF TRANSPORTATION, WASHINGTON, D.C. 20590. YOU CAN ALSO OBTAIN OTHER INFORMATION ABOUT MOTOR VEHICLE SAFETY FROM THE HOT LINE.

## **GENERAL INFORMATION**

MAINTENANCE SHOULD BE PERFORMED BY A RANCO DEALER OR OTHER QUALIFIED SERVICE FACILITY THAT REGULARLY PROVIDE SUCH SERVICE. ALTERATIONS TO A RANCO TRAILER SHOULD NOT BE MADE WITHOUT FIRST CONSULTING RANCO.

ALTERATIONS COULD AFFECT THE STRUCTURAL INTEGRITY OF THE TRAILER AND VOID THE WARRANTY. WELDING OR OTHER ALTERATIONS SHOULD NEVER BE MADE TO ANY AIR RESERVOIR, WHEEL, RIM, AIR CHAMBER OR SPRING.

THE GROSS AXLE WEIGHT RATING (GAWR) THAT IS STAMPED ON THE CERTIFICATE PLATE IS THE STRUCTURAL CAPACITY OF THE LOWEST RATED COMPONENT OF THE SUSPENSION, SPRINGS, HUBS, DRUMS, WHEELS, RIMS, BEARINGS, AXLES OR TIRES.

IF COMPONENTS ARE SUBSTITUTED THAT AFFECT GAWR AND ARE OF LESS CAPACITY THAN THOSE ORIGINALLY INSTALLED, THE GAWR ON THE CERTIFICATE PLATE MUST BE LOWERED TO THE CORRESPONDING LOWER CAPACITY BY ADDING AN **“ALTERED VEHICLE”** LABEL. IF COMPONENTS ARE SUBSTITUTED THAT ARE OF EQUAL OR GREATER CAPACITY THAN THOSE ORIGINALLY INSTALLED, THEN THE GAWR LABEL NEED NOT BE CHANGED.

PROTECTIVE FILMS SUCH AS PAINTS AND OTHER COATINGS, ARE NECESSARY TO PREVENT CORROSION AND TO PROTECT THE METAL SURFACES. TRAILERS THAT OPERATE IN ENVIRONMENTS THAT ARE CONDUCTIVE TO SEVERE CORROSIONS MAY REQUIRE MORE OR DIFFERENT PROTECTIVE COATING THAN THOSE USUALLY APPLIED AS STANDARD. CHECK WITH YOUR RANCO DEALER OR THE FACTORY FOR RECOMMENDATIONS ON COATINGS FOR CORROSIVE MATERIALS.

THERE ARE **“WARNING”** AND **“CAUTION”** DECALS PROMINENTLY DISPLAYED ON ALL RANCO TRAILERS. THESE SHOULD BE FOLLOWED TO THE LETTER BY ALL PERSONNEL OPERATING OR WORKING ON THE VEHICLE.

## **OPERATION INSTRUCTIONS**

### **1. OPERATOR PRE-START CHECKS**

- A. BEFORE BACKING UNDER THE TRAILER, BE SURE THAT THE TRUCK 5<sup>TH</sup> WHEEL IS PROPERLY GREASED AND THAT THE 5<sup>TH</sup> WHEEL HEIGHT IS COMPATIBLE WITH THE 5<sup>TH</sup> WHEEL PIN HEIGHT
- B. CHECK SPRING BRAKES TO INSURE THAT THEY ARE PROPERLY SET SO THAT THE TRAILER WILL NOT SLIDE BACK WHEN THE TRACTOR IS BACKED UNDER THE 5<sup>TH</sup> WHEEL. THIS TRAILER IS EQUIPPED WITH SPRING BRAKES THAT WILL LOCK THE BRAKES WHEN ALL AIR LINES ARE DISCONNECTED FROM THE TRACTOR AND WILL ONLY RELEASE AFTER THE AIR PRESSURE IN THE AIR TANKS EXCEEDS 50 POUNDS.

### **2. STARTING PROCEDURE AND CONTROLS**

- A. AFTER BACKING THE TRACTOR UNDER THE TRAILER AND INSURING THAT THE 5<sup>TH</sup> WHEEL IS LOCKED BY ATTEMPTING TO PULL AHEAD, THE AIR LINES AND ELECTRICAL CONNECTORS SHOULD BE CONNECTED PROPERLY, ENSURING THAT THE SERVICE AND EMERGENCY GLAD HANDS ARE CONNECTED TO THE SERVICE AND EMERGENCY GLAD HANDS ON THE TRAILER. ALL GLAD HANDS SHOULD BE COLOR CODED, SERVICE (BLUE) AND EMERGENCY (RED). AFTER PROPER CONNECTION IS MADE, THE VALVE IN THE TRACTOR THAT ALLOWS AIR TO FLOW TO THE TRAILER SHOULD BE OPENED.
- B. WHILE AIR PRESSURE IS BEING BUILT IN THE TRAILER TANKS, THE OPERATOR SHOULD PERFORM THE FOLLOWING INSPECTIONS AND PROCEDURES TO INSURE THAT THE TRAILER IS IN OPERATIONAL CONDITION WHEN THE AIR PRESSURE IS BUILT UP SUFFICIENTLY TO RELEASE THE BRAKES.
  - 1. RAISE THE PARKING LEGS OF THE TRAILER TO THE TRAVEL POSITION. THIS CAN BE MANUAL OR CRANK.
  - 2. CHECK THE TIRES FOR PROPER INFLATION AND TO INSURE THAT THERE ARE NO CUTS OR BRUISES THAT WILL LEAD TO TIRE FAILURE ON THE ROAD. WHILE CHECKING THE TIRES, THE OPERATOR SHOULD ALSO OBSERVE THE LEVEL OF OIL IN THE STEMCO OIL SEALS (REFER TO LUBRICATION SECTION).
  - 3. TURN ON TRACTOR LIGHTS AND CHECK ALL TRAILER LIGHTS FOR PROPER OPERATION. REPLACE LIGHTS OR BULBS IN ANY THAT IS NOT OPERATING PROPERLY.
  - 4. AT THIS TIME THE AIR PRESSURE SHOULD HAVE BUILT UP SUFFICIENTLY TO HAVE RELEASED THE BRAKES ON THE TRAILER. CHECK TO SEE THAT ALL FOUR BRAKES HAVE IN FACT RELEASED. IF THEY HAVE NOT RELEASED, CHECK TO SEE WHY AIR IS NOT GETTING TO THEM.
  - 5. AFTER BRAKES HAVE RELEASED, CHECK FOR AIR LEAKS. LISTEN FOR ANY AIR LEAKS IN THE AIR OPERATING SYSTEM AS WELL AS IN THE AIR BRAKE SYSTEM. ANY LEAK SHOULD BE FIXED PRIOR TO ATTEMPTING TO OPERATE THE TRAILER.

# END DUMP OPERATION

**CAUTION! END DUMP OPERATION CAN BE DANGEROUS!**

OPERATOR SHOULD BE ALERT AT ALL TIMES WHEN RAISING TRAILER AND WARN PERSONS TO STAND CLEAR. YOU MUST NOT OPERATE THIS EQUIPMENT UNLESS YOU HAVE BEEN TRAINED IN ITS OPERATION. REMEMBER! AN UNTRAINED OR CARELESS OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY. OPERATOR SHOULD FOLLOW THE SAFETY PRECAUTIONS IN THIS MANUAL AND THE PRECAUTIONS SET FORTH BY YOUR COMPANY.

BEFORE DUMPING, OPERATOR SHOULD CHECK DUMP SITE FOR A FIRM LEVEL SURFACE. CHECK FOR OVERHEAD POWER LINES OR OTHER STRUCTURES THAT COULD BE A DANGER.

CYLINDERS CAN NOT WITHSTAND SIDE PRESSURE FROM A DUMP UNIT LEANING. MAKE SURE THE TRACTOR TRAILER UNIT IS LINED UP STRAIGHT WITH EACH OTHER (NOT JACK KNIFED) WHEN DUMPING. AVOID DUMPING IN A HEAVY CROSS WIND, DUMP WITH UNIT FACING INTO THE WIND.

DO NOT OVERLOAD DUMP UNIT. THE LOAD MUST BE EVENLY DISTRIBUTED DURING LOADING AND UNLOADING.

THE OPERATOR SHOULD REMAIN AT THE CONTROLS DURING THE ENTIRE DUMPING OPERATION. IF THE UNIT STARTS TO LEAN TO ONE SIDE, THE OPERATOR SHOULD IMMEDIATELY LOWER THE BODY. IT IS IMPORTANT TO FEATHER THE CONTROL VALVE INTO THE HOLD POSITION TO AVOID A PRESSURE SPIKE IN THE CYLINDER.

DO NOT JERK OR SLINGSHOT DUMP UNIT IN AN ATTEMPT TO FREE A STICKING OR FROZEN LOAD. PULLING FORWARD (OR BACKING UP) AND HITTING THE BRAKES OR LOWERING THE BODY PART WAY AND THEN QUICKLY ENGAGING THE VALVE IN THE "HOLD" OR "RAISE" POSITION WILL CAUSE A TREMENDOUS PRESSURE SPIKE. THIS PRESSURE SPIKE MAY BULGE OR SPLIT ONE OF THE LARGER STAGES OF THE CYLINDER.

WHEN LOWERING A LOAD THAT IS STICKING, THE DUMP UNIT MUST BE FEATHERED DOWN SLOWLY TO AVOID A HIGH PRESSURE BUILD UP IN THE CYLINDER. DO NOT OPERATE CYLINDER AT PRESSURES ABOVE 2,000 P.S.I.

THE UNIT MUST BE LOWERED COMPLETELY BEFORE MOVING. DO NOT DRIVE WITH P.T.O. OR HYDRAULIC PUMP ENGAGED.

HYDRAULIC HOSES SHOULD BE INSPECTED REGULARLY AND REPLACE IF WORN OR DAMAGED. HYDRAULIC OIL SHOULD BE CHANGED REGULARLY.

A LIGHT FILM OF OIL ON EACH PLUNGER OR STAGE OF A TELESCOPIC CYLINDER INDICATED GOOD CYLINDER OPERATION. AFTER MANY CYCLES OF THE CYLINDER, A SMALL ACCUMULATION OF OIL MAY BE NOTICED ON THE PLUNGERS OR SLEEVES AT THE HEAD NUTS. THIS SHOULD NOT BE MISTAKEN FOR PACKING LEAKAGE

CYLINDER SHOULD BE FREE OF ENTRAPPED AIR. IT IS ADVISABLE TO BLEED AIR FROM CYLINDER WEEKLY FOR A SMOOTH OPERATION.

**\*\*NOTE: IF OSCILLATING 5<sup>TH</sup> WHEEL IS USED IT MUST BE BLOCKED SO IT WILL NOT OSCILLATE.**

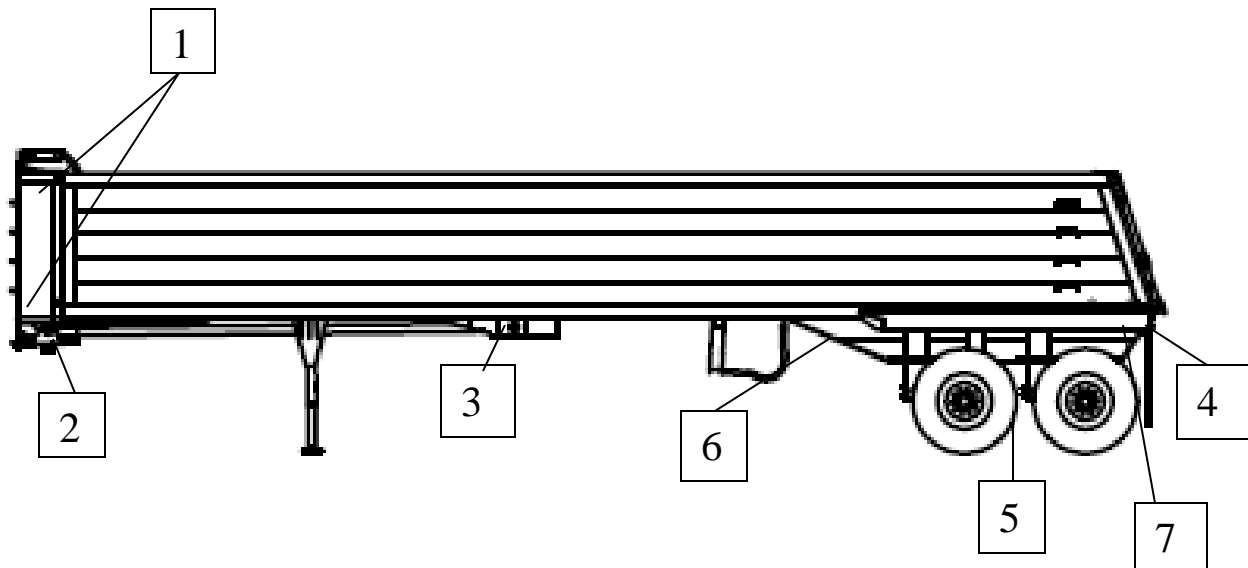
# **SECTION ONE**

**LUBRICATION**

**PREVENTION  
MAINTENANCE**

**AND**

**SCHEDULED  
MAINTENANCE**



1. HYDRAULIC CYLINDER PIN GREASE, TWO PLACES
2. 5<sup>TH</sup> PLATE – DRAFT ARM CONNECTION GREASE, TWO PLACES
3. DRAFT ARM – CENTER MOUNT CONNECTION, TWO PLACES
4. GATE LATCH MECHANISM GREASE, FOUR PLACES
5. AXLE BRAKE CAM GREASE, FOUR PLACES

IF THE UNIT IS A QUARTER FRAME

6. QUARTER FRAME DRAFT ARM, GREASE FOUR PLACES
7. HINGE ASSEMBLY GREASE, FOUR PLACES

## END DUMP LUBRICATION CHART



# **END DUMP TRAILER SCHEDULED MAINTENANCE**

The following is a list of Scheduled Maintenance measures that if followed will help keep your RANCO TRAILER in good working order and will result in a minimum of down time. These Scheduled Maintenance procedures are best performed at your DEALERS shop unless you have a qualified shop of your own capable of handling these procedures.

## **AFTER 1st MONTH OF USE**

**TARP ADJUSTMENT** - The cables and the tarp material tends to stretch once you start using the trailer. It is very important that the slack be taken out of the cables properly during this first check. -Refer to Tarp Adjustment Section on BACK of this page for adjustment recommendations.

**CHECK TORQUE ON ALL SUSPENSION FASTENERS** - Once the trailer is placed in service; the fasteners stretch slightly and may loose the torque values that were applied at the factory. It is important that these torque values be maintained in order for the suspension to operate properly. The proper torque values for your suspension are listed in the Suspension Fasteners Section on BACK of this page and on a Decal attached to the sub-frame of your trailer.

**CHECK TORQUE ON ALL WHEEL END FASTENERS** - The wheel end fasteners stretch just like the suspension fasteners, and the torque should be checked after the ~ month of service. Refer to Wheel End Fasteners Section on BACK of this page for proper torque values for different styles of wheels.

**GREASE GATE LATCH MECHANISM, AXLE CAM BUSHINGS & SLACK ADJUSTERS** - Proper Lubrication is most important in the operation of any type of dump trailer and a regular schedule should be set up and maintained. -Refer to Grease Section on BACK of this page, Page 1-4 & 1-5 of this Manual & Yellow Decal on Trailer.

**CHECK FOR PROPER ADJUSTMENT AND OPERATION OF BRAKES** - The air brake system is always set and checked at the factory, but after being in use for a short period of time problems may show up, so brakes should be checked after 1 month and every 6 months after that. - Refer to Air Brake Section on BACK of this page for the proper method of checking brake wear & settings.

**CHECK FOR PROPER OPERATION OF GATE SYSTEM** - Refer to Operation of Gate System Section on BACK of this page.

**CHECK TIRES FOR PROPER INFLATION AND WEAR** - Refer to Tire Section on BACK of this page for proper inflation and tread depth information.

**AFTER 6 MONTHS OF USE - REPEAT ALL CHECKS FROM 1st MONTH**

**AT 1 YEAR OF SERVICE - REPEAT ALL CHECKS FROM 6 MONTHS OF SERVICE**

## SCHEDULED MAINTENANCE WORK SHEET

<u>TARP ADJUSTMENT</u>	<u>RECOMMENDED</u>	<u>CHECKED BY</u>	<u>DATE</u>
Cable Tension	Not touching 18" ahead of rear pulley	_____	_____
V-Belt or Chain	Firm Tension	_____	_____
Tarp Length	Stretched tight	_____	_____
Bow Alignment	All aligned	_____	_____

### CHECK TORQUE ON ALL SUSPENSION FASTENERS:

#### AIRRIIDE MOUNT TO FRAME      RECOMMENDED TORQUE

½" Mounting bolts to alum frame	78 ft. lbs.	_____	_____
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### CHECK TORQUE ON ALL WHEEL END FASTENERS:

Inner Lug Nuts	<b>500 ft. lbs.</b>	_____	_____
Outer Lug Nuts	500 ft. lbs.	_____	_____
Hub Piloted Nuts	500 ft. lbs.	_____	_____

### GREASE GATE LATCH MECH~ AXLE CAM BUSHINGS & SLACK ADJUSTERS:

	<u>GREASED</u>	<u>DATE</u>
Latch Bushings	_____	_____
Cam Bushings & Slack Adjusters	_____	_____

### CHECK FOR PROPER ADJUSTMENT AND OPERATION OF BRAKES:

Check Brake Wear	Amount of shoe remaining (New is 24/32-Min 8/32 required)	<u>LF</u> _____/32 <u>LR</u> _____/32 <u>RF</u> _____/32 <u>RR</u> _____/32
	<b>RECOMMENDED</b>	<b>CHECKED BY</b> <b>DATE</b>
Check Push Rod Adjustment	Not more than 1-7/8" stroke	_____
Check Brake Drums	No cracks - excessive <b>wear</b>	_____
Check Brake Operation	No air leaks - All brakes operating	_____
Check ABS System	See Book on System	_____

### CHECK FOR PROPER OPERATION OF GATE SYSTEM:

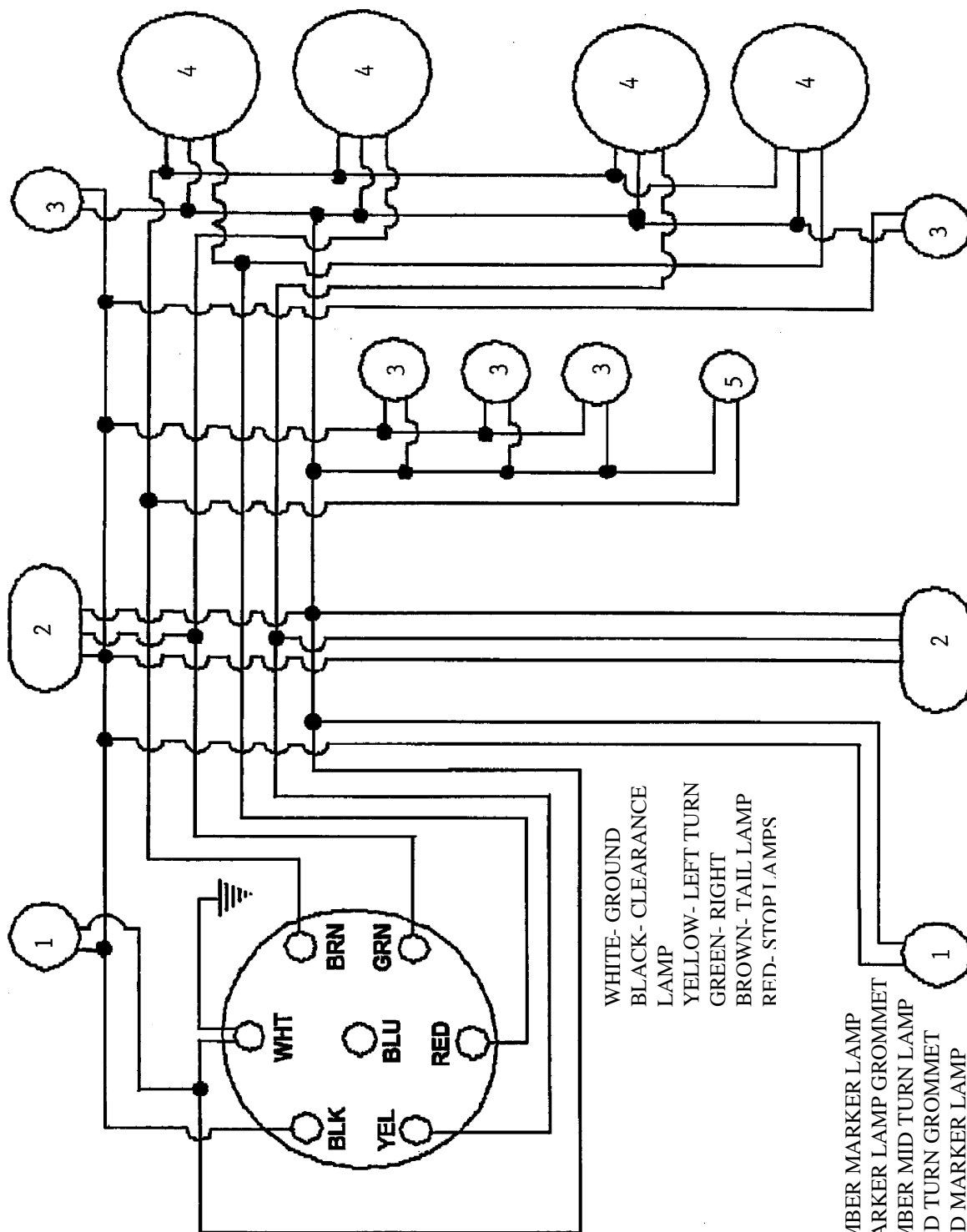
Check for air leaks	No leaks in hoses & fittings	_____
Check for smooth gate operation	No hesitation or sticking	_____

### CHECK ALL TIRES FOR PROPER INFLATION AND EVEN WEAR PATTERN:

Check Inflation	See instructions on tire for proper inflation	<u>LF</u> _____/32 <u>LFI</u> _____/32
Check Tread Depth	(Min. 4/32 Required)	<u>LR</u> _____/32 <u>LRI</u> _____/32
		<u>RF</u> _____/32 <u>RFI</u> _____/32
		<u>RR</u> _____/32 <u>RRI</u> _____/32

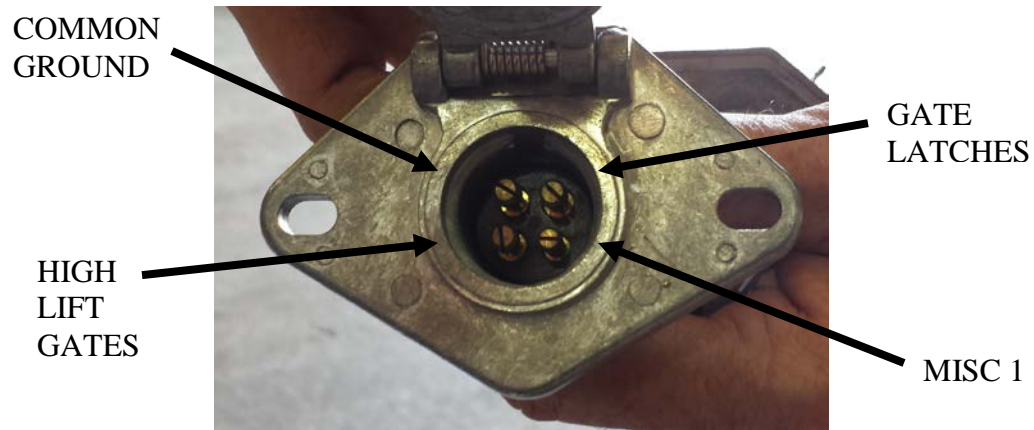
# **SECTION TWO**

## **ELECTRICAL SYSTEM**

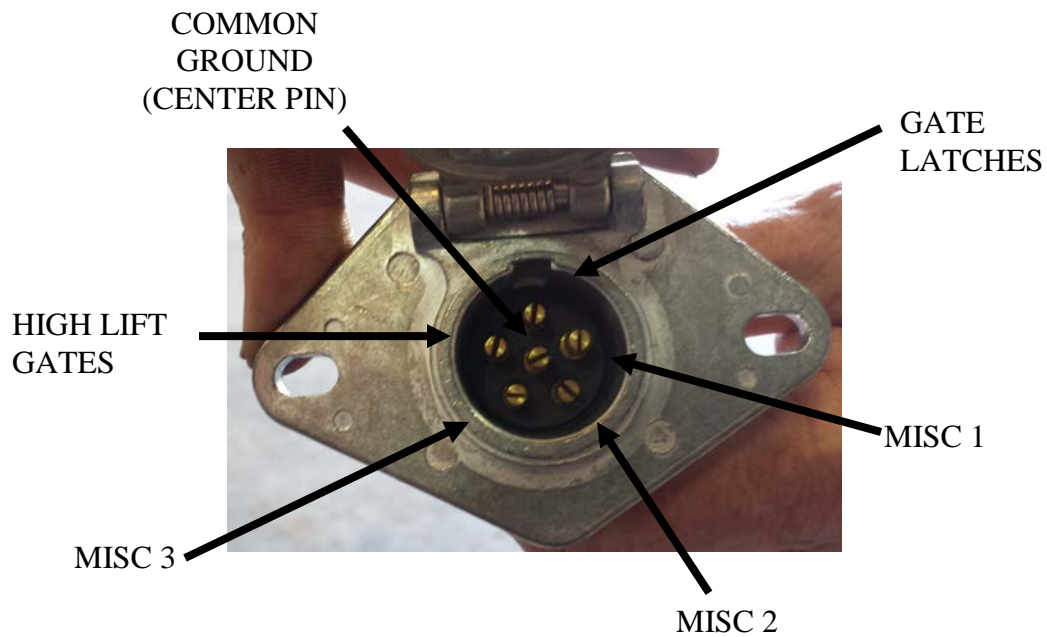


- |    |        |                                |
|----|--------|--------------------------------|
| 1. | 10205Y | AMBER MARKER LAMP              |
|    | 10700  | MARKER LAMP GROMMET            |
| 2. | 60215Y | AMBER MID TURN LAMP            |
|    | 60700  | MID TURN GROMMET               |
| 3. | 10205R | RED MARKER LAMP                |
|    | 10700  | MARKER LAMP GROMMET            |
| 4. | 40248R | STOP, TURN & TAIL LAMP         |
|    | 40700  | STOP, TURN & TAIL LAMP GROMMET |
| 5. | 15009  | LICENSE LAMP ASSEMBLY          |

## WIRING SCHEMATIC- END DUMP



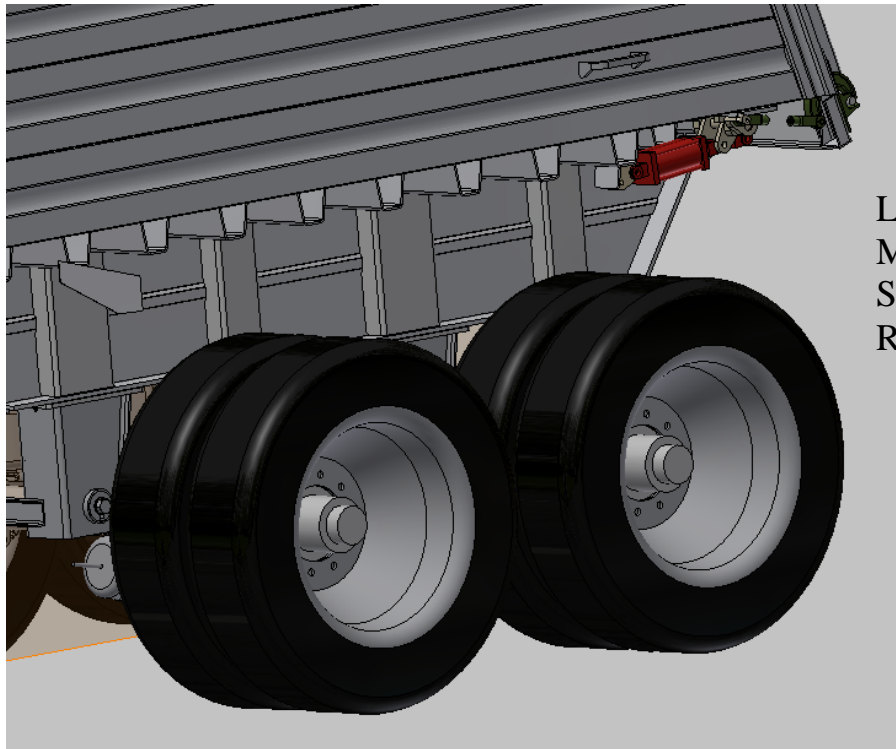
### STANDARD 4-WAY CONNECTIONS



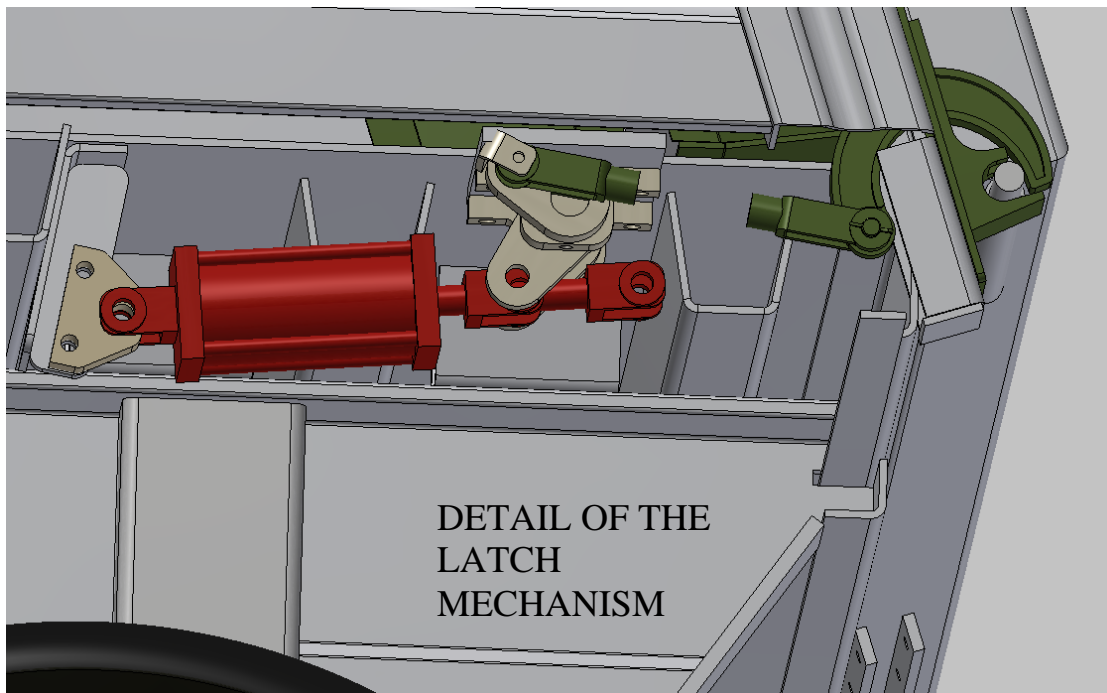
### WHEN A 6-WAY IS REQUIRED FOR ADDITIONAL OPTIONAL EQUIPMENT

# **SECTION THREE**

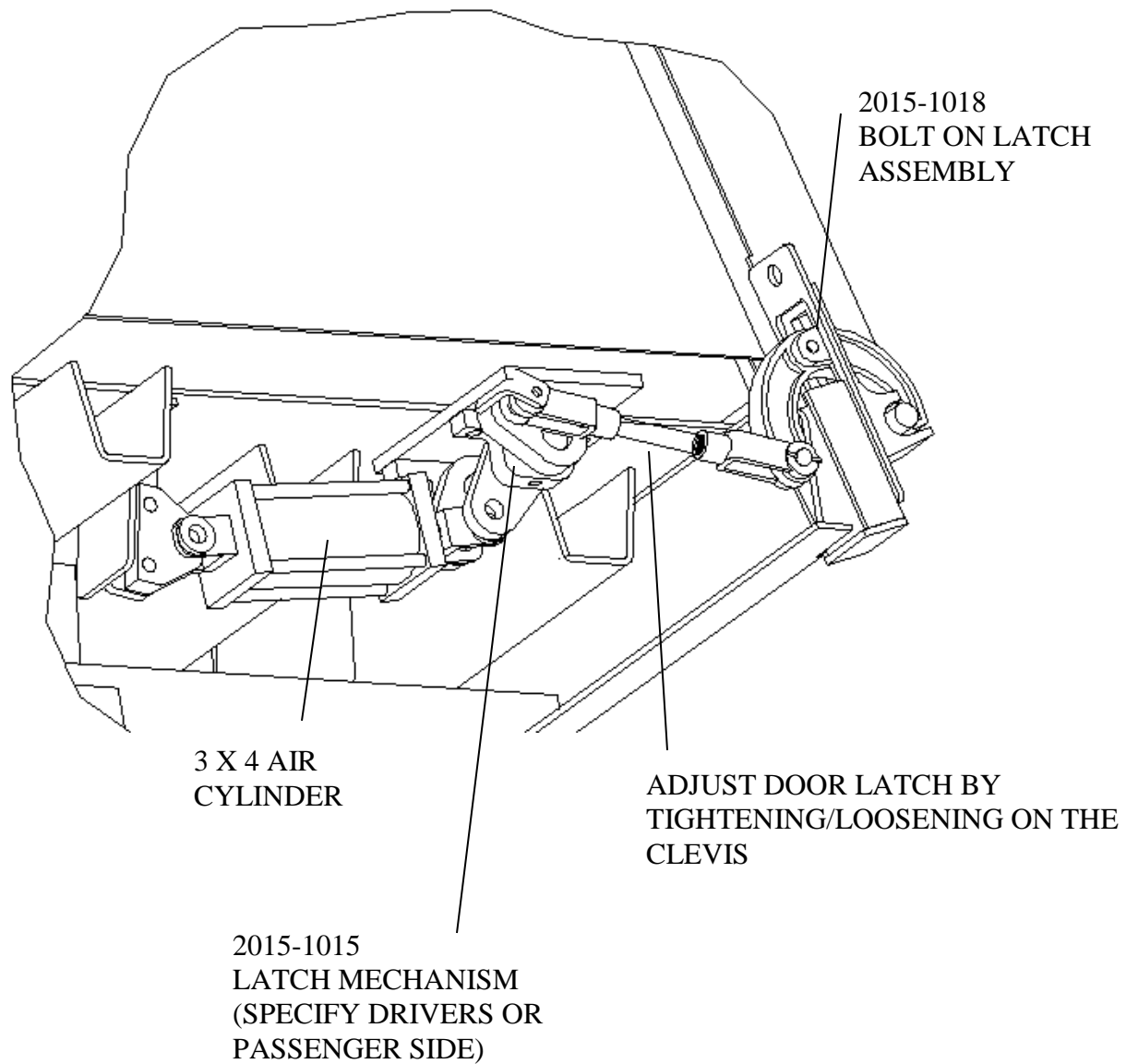
## **GATE SYSTEM**



LATCH  
MECHANISM  
SHOWN WITH  
RAIL REMOVED



DETAIL OF THE  
LATCH  
MECHANISM

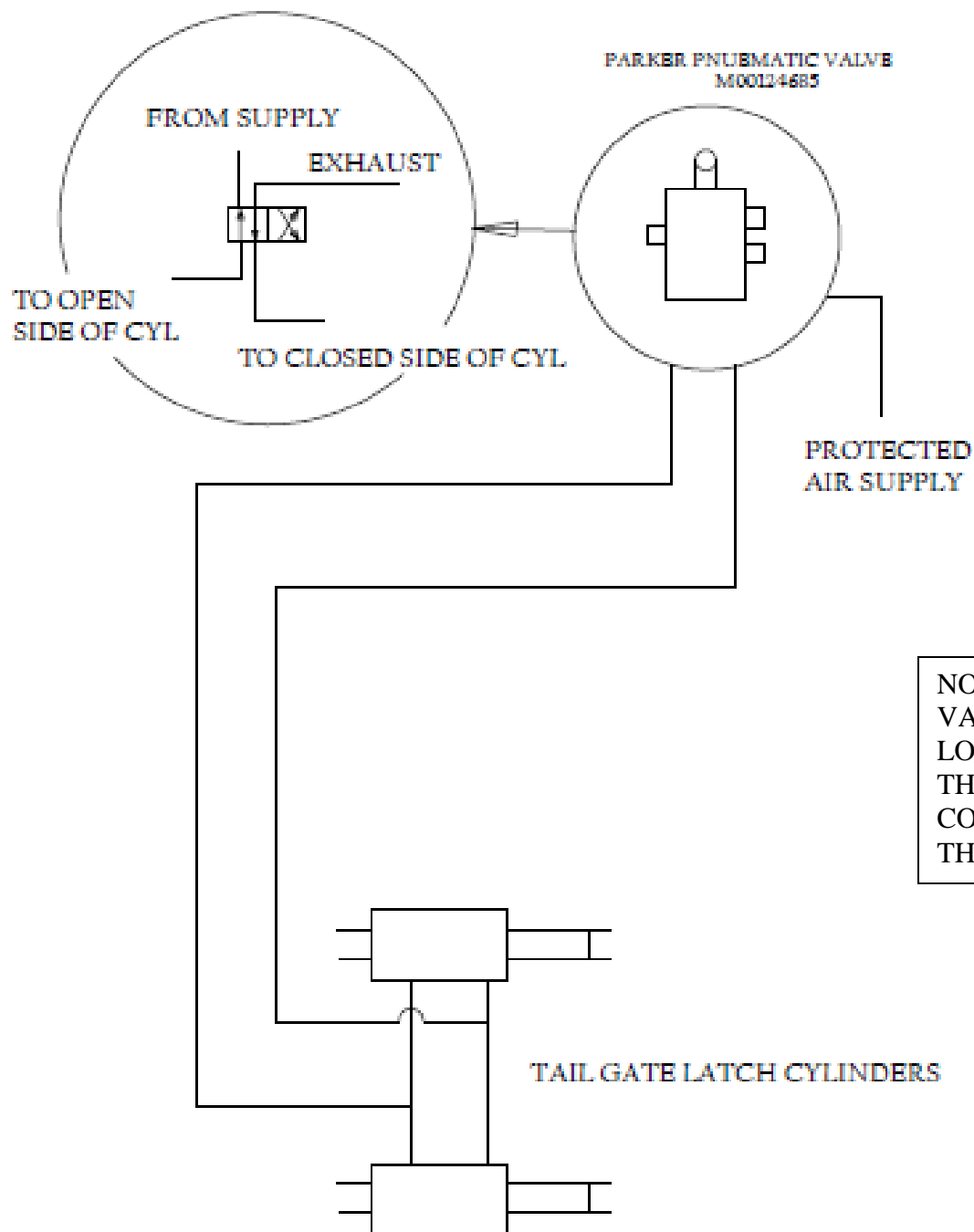


DETAIL OF LATCH MECHANISM



# DOOR LATCH CIRCUIT

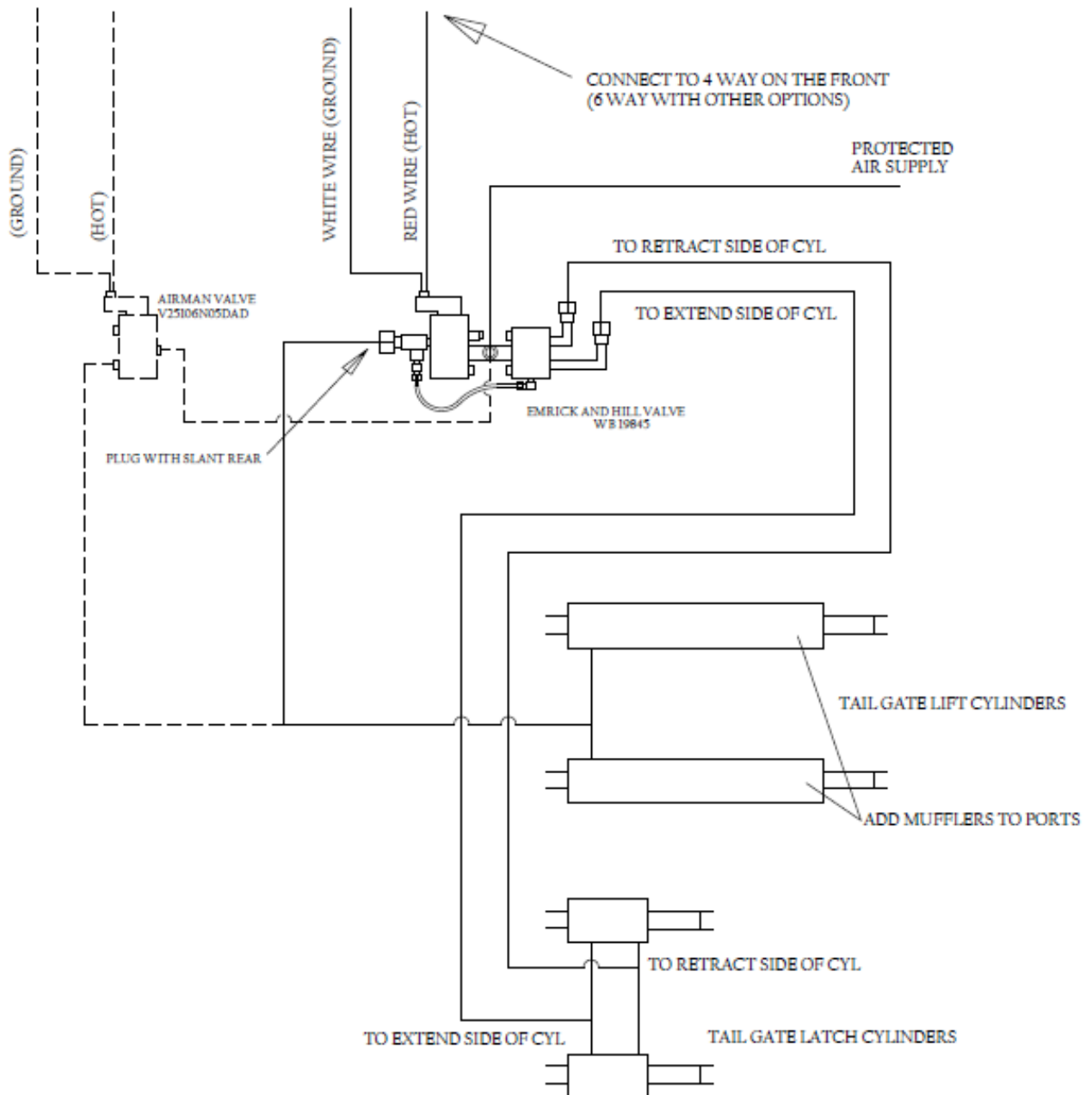
MOUNT TO BRACKET IN DRAFT ARM AREA



## DOOR LATCH CIRCUIT

MOUNT VALVING IN THE SUSPENSION FRAME AREA

SCHEMATIC WHEN HIGH LIFT  
HAS REAR SLANT FRAME



# **SECTION FOUR**

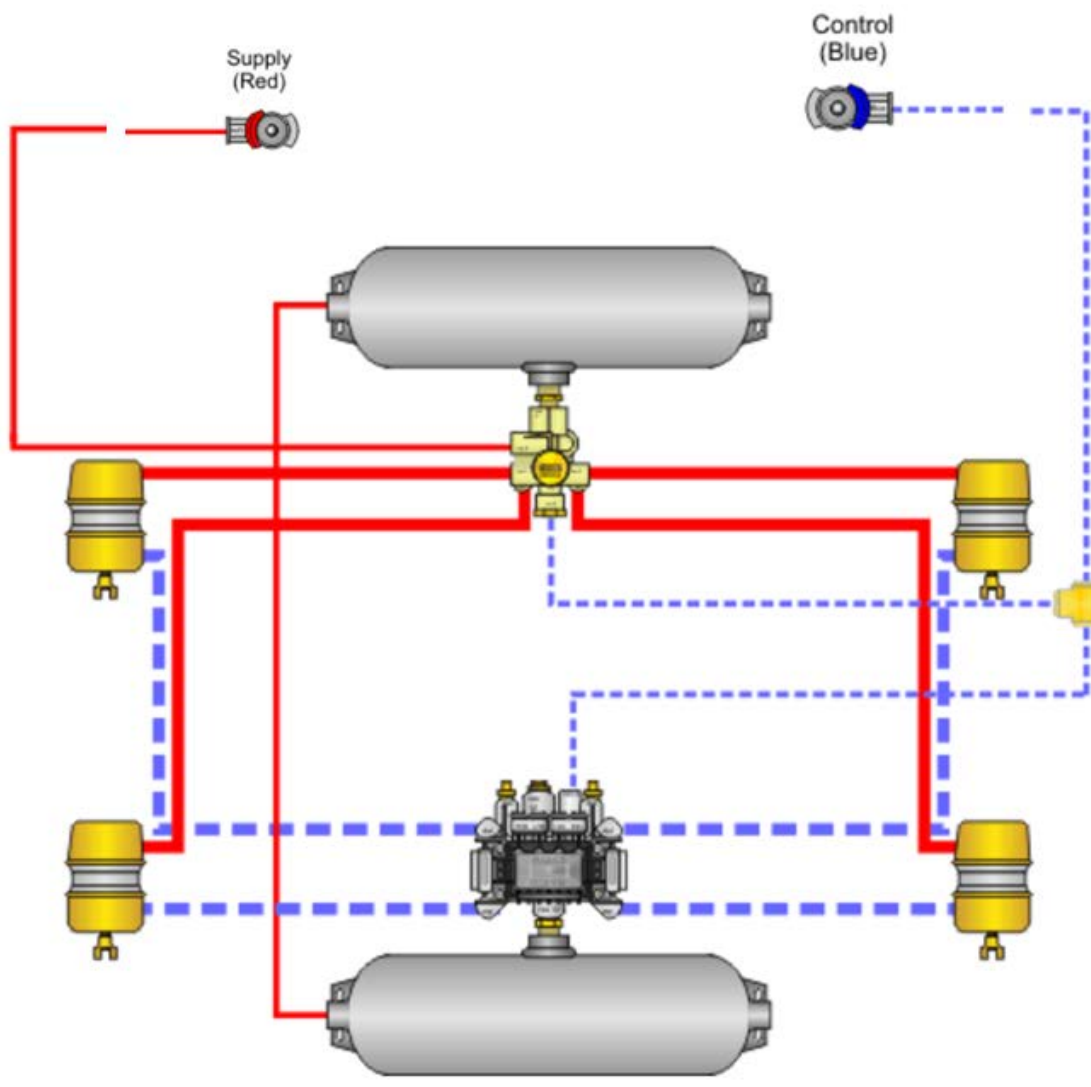
## **AIR BRAKE SYSTEM**

## RANCO ABS BRAKE SYSTEM INFORMATION

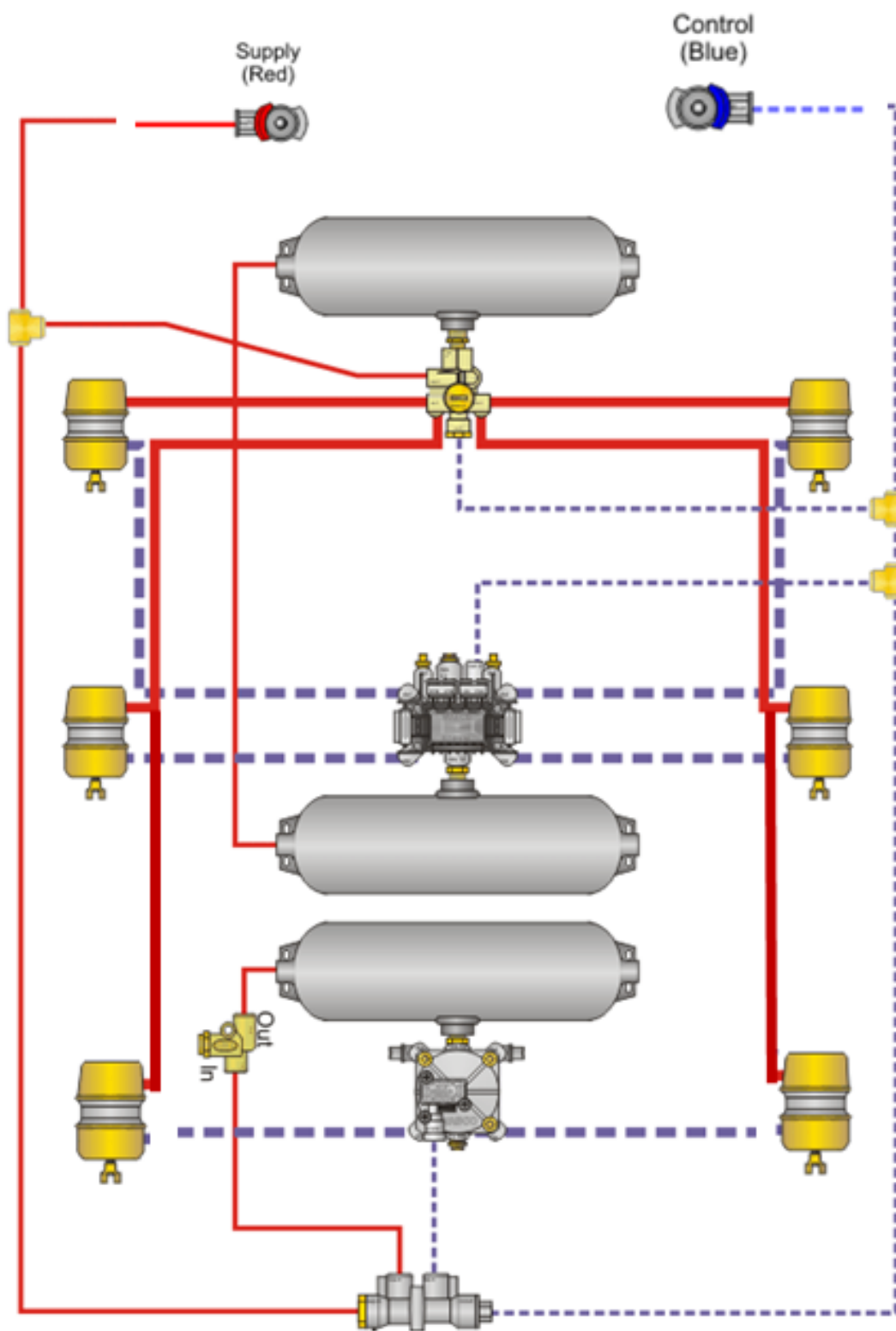
PLEASE REFER TO THE DRAWINGS OF THE STANDARD SETUP FOR TANDEM AND TRI-AXLE SYSTEMS ON THE FOLLOWING PAGES.

ABS BRAKE SYSTEMS UNDERGO A NUMBER OF CHANGES, THEREFORE, PLEASE HAVE YOUR TRAILER VIN NUMBER AVAILABLE WHEN YOU CALL INTO THE PARTS DEPARTMENT.

THAT IS THE ONLY WAY WE CAN INSURE THAT YOU RECEIVE THE PROPER PARTS FOR THE BRAKE SYSTEM INSTALLED ON YOUR TRAILER.



TANDEM AXLE AIR BRAKE KIT WITH TWO RESERVOIRS



TRIDEM AIR BRAKE KIT WITH THREE TANKS

# **SECTION FIVE**

## **AXLE SYSTEM**

## RANCO AXLE SYSTEM INFORMATION

**RANCO USES WATSON CHALIN INTEGRATED SUSPENSIONS AND AXLES MANUFACTURED BY DIFFERENT COMPANIES ON OUR STANDARD TRAILERS.**

ALTHOUGH MOST OF THE AXLES ARE ALIKE IN SOME MANNER, THE PARTS ARE OFTEN DIFFERENT.

RANCO KEEPS A RECORD OF EXACTLY WHAT BRAND OF AXLE IS PUT UNDER EACH TRAILER.

IN ORDER TO ORDER THE CORRECT PARTS FOR YOUR AXLE, REFER TO THE DRAWING ON THE FOLLOWING PAGE TO IDENTIFY THE AXLE PART YOU NEED.

USING THE PART DESCRIPTION AND YOUR TRAILER VIN NUMBER, RANCO WILL BE ABLE TO IDENTIFY THE CORRECT PART FOR YOUR TRAILER AXLE.

BE SURE TO HAVE YOUR VEHICLE IDENTIFICATION NUMBER (VIN #) WHEN TRYING TO ORDER PARTS.

TYPICAL 16.5" X 7" Q SERIES BRAKE INSTALLATION

<b>16.5x7 BRAKE</b>	<b>16.5X7 BRAKE EXPLODED VIEW INTEGRA-IMT (TI250-302T SERIES 2 PIECE SPIDER)</b>	<b>TI SERIES IMT</b>
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GREY ITEMS NOT LABELED ARE SHOWN FOR REFERENCE ONLY

★ BBAK09 INCLUDES ITEM 13, 14, 15, 16, 17, 20, 21 IN KIT AND 12, (WHICH HAS 2 ITEMS 18 INSTALLED IN IT)  
 ○ BBAK09-LC INCLUDES ITEMS 13, 14, 15, 16, 17, 18, 20, 21 ( NO ITEM 12 ) IN KIT  
 BRSK09 INCLUDES ITEM #'s 1, 3, 5, 6, 7 IN KIT  
 REF: WATSON & CHALIN AXLE & BRAKE ASSEMBLY DRAWING 18078-EX

PARTS LIST							
NO	QTY PER BRAKE	PART #	DESCRIPTION	NO	QTY PER BRAKE	PART #	DESCRIPTION
1	2	203501	ANCHOR PIN	13	1	403121	CAMSHAFT SPACER WASHER
2	1	202127-090-LH	CAMSHAFT LH 9" UH	14	1	214108	CAM RETAINING RING
	1	202127-090-RH	CAMSHAFT RH 9" UH	15	1	403107	CAMSHAFT SPACER WASHER
3	1	208104	BRAKE SHOE RETURN SPRING	16	1	408101	SPIDER SEAL
4**	2	Not Sold By W&C	601501** SHOE ASSY FMSI 4515	17	1	407102	GREASE FITTING
5	2	207100	BRAKE SHOE SPRING RETAINER	18*	2	405134	CAM ENCLOSURE BUSHING
6	2	204101-001	CAM ROLLER	19	1	209999-089	CAMSHAFT ENCLOSURE BRACKET
7	2	208502	SPRING RETAINER	20	4	10027	.25 UNC LOCKNUT
12*	1	18078-022K	CAMSHAFT ENCLOSURE BRKT	21	4	10040	CAPSCREW .25 X 1.00 UNC
* ITEMS 18 SOLD SEPARATLY OR INCLUDED IN ITEM 12				** 601501-(CM18) & (IMT23) BOTH USED. VERIFY SHOE USED			



# **SECTION SIX**

## **SUSPENSION SYSTEM**

## RANCO SUSPENSION SYSTEM INFORMATION

### ***RANCO USES WATSON CHALIN TI300 SERIES AIRRIDE BOLT ON SUSPENSION ON OUR STANDARD TRAILERS.***

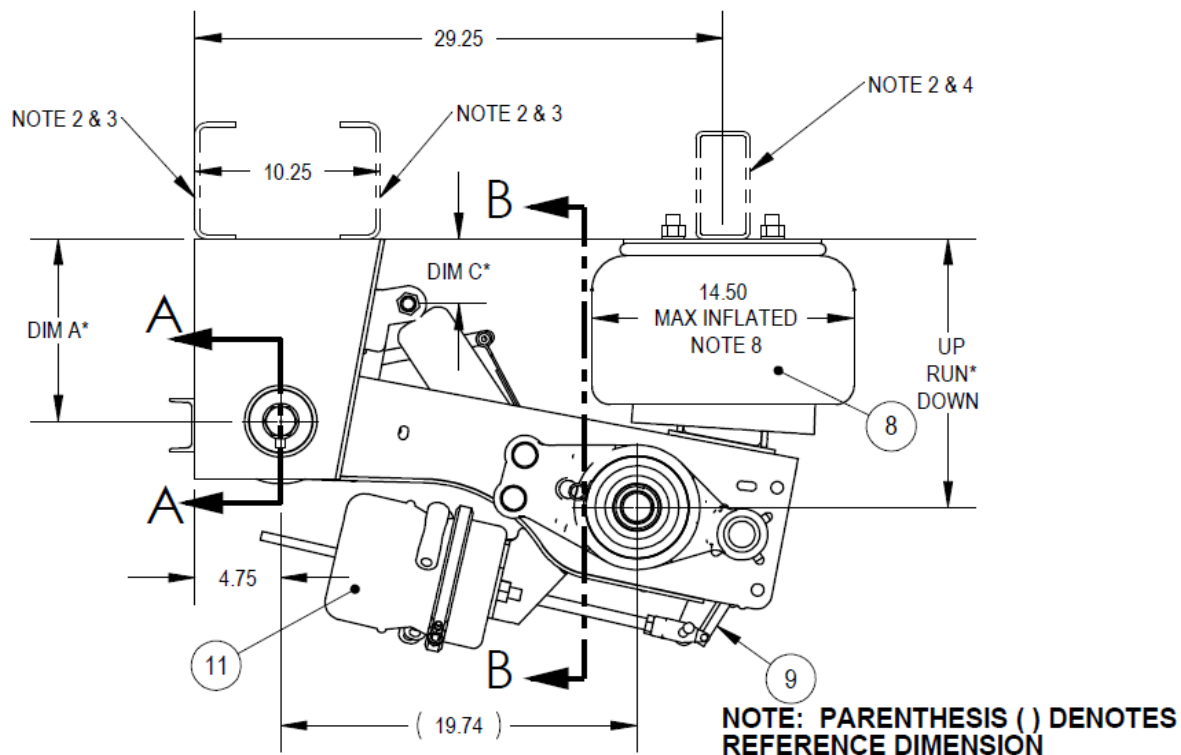
**RANCO KEEPS A RECORD OF EXACTLY WHAT BRAND AND TYPE OF SUSPENSION IS PUT UNDER EACH TRAILER.**

**IN ORDER TO ORDER THE CORRECT PARTS FOR YOUR SUSPENSION, REFER TO THE DRAWING ON THE FOLLOWING PAGES TO IDENTIFY THE SUSPENSION PART YOU NEED.**

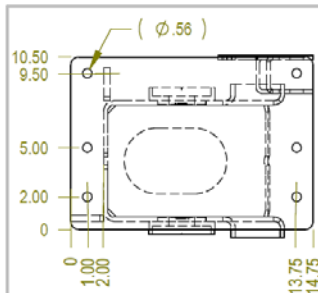
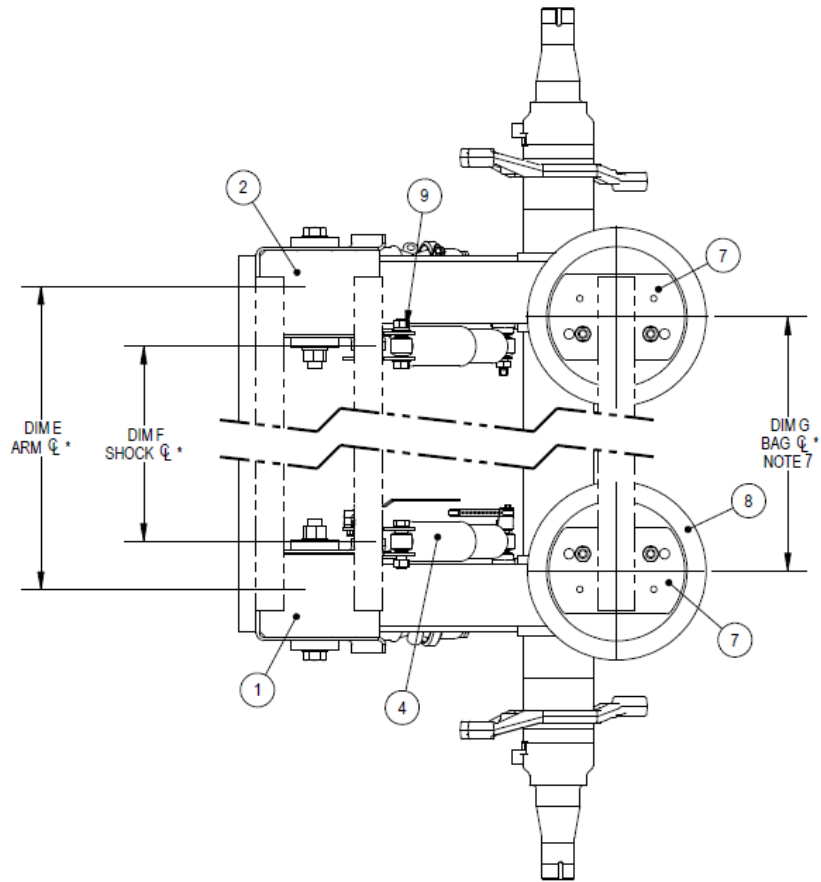
**USING THE PART DESCRIPTION AND YOUR TRAILER VIN NUMBER, RANCO WILL BE ABLE TO IDENTIFY THE CORRECT PART FOR YOUR TRAILER SUSPENSION.**

**BE SURE TO HAVE YOUR VEHICLE IDENTIFICATION NUMBER (VIN #) WHEN TRYING TO ORDER PARTS.**

### **WATSON CHALIN TI300 AIRRIDE SUSPENSION**



MODEL NO.	OPTION	COLLAR	RIDE HEIGHT	UP	DOWN	DIM A	DIM B	DIM C	ITEM # 1	ITEM # 2	ITEM # 3	ITEM # 7 (REF.)
I30XT20W17X.XXX	W17X	W	17.00	14.36	22.69	12.00	3.00	6.00	H0T1MXSF0XXXXX	H0T2MXSF0XXXXX	16103-01	950189-03
I30XT20E17X.XXX	E17X	E							H0T1MXEF0XXXXX	H0T2MXEF0XXXXX	16103-02	



**BOLT-ON OPTION HOLE PATTERN**

# SUSPENSION CIRCUIT

MOUNT TO BRACKET IN DRAFT ARM AREA

WHEN TUB IS DOWN, THE BAGS MUST INFLATE

PARKER PNEUMATIC VALVE  
M00021885

ADD MUFFLER  
TO EXHAUST

FROM LEVELING VALVE

TO BAGS

EXHAUST

IF SINGLE WHEELS ARE USED  
INSTALL AIR REGULATOR/  
VALVE COMBINATION

LIFT AXLE (IF APPLICABLE)

MANUAL  
DUMP VALVE  
AIRMAN VALVE 11861-03

MANUAL  
DUMP VALVE  
AIRMAN VALVE 11861-03

PROTECTED  
AIR SUPPLY

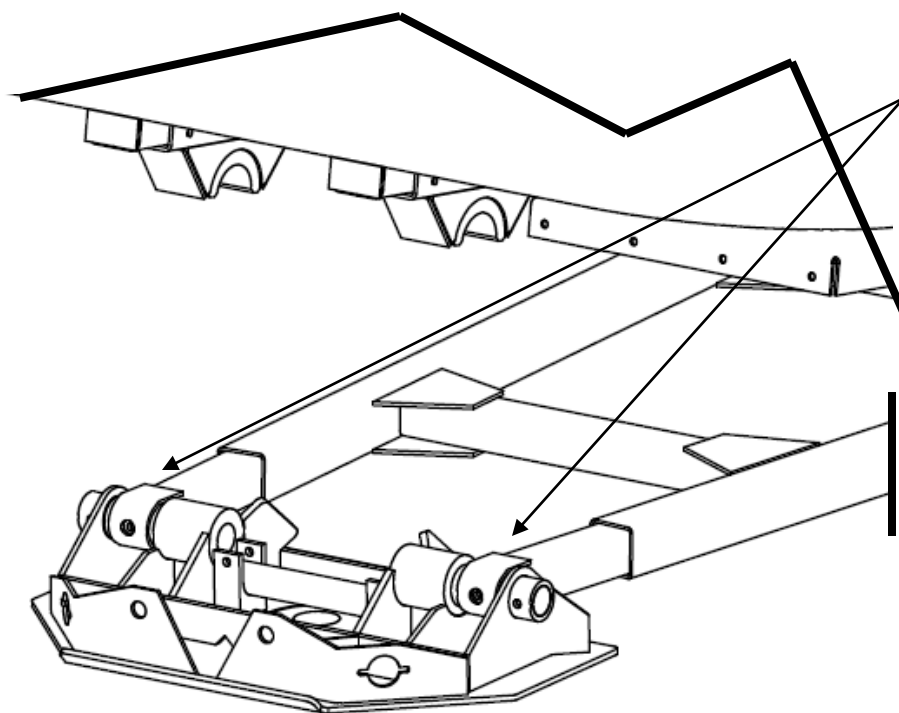
RIDE HEIGHT VALVE

TRAILER AIR SUSPENSION

## AIR RIDE CONTROL SCHEMATIC

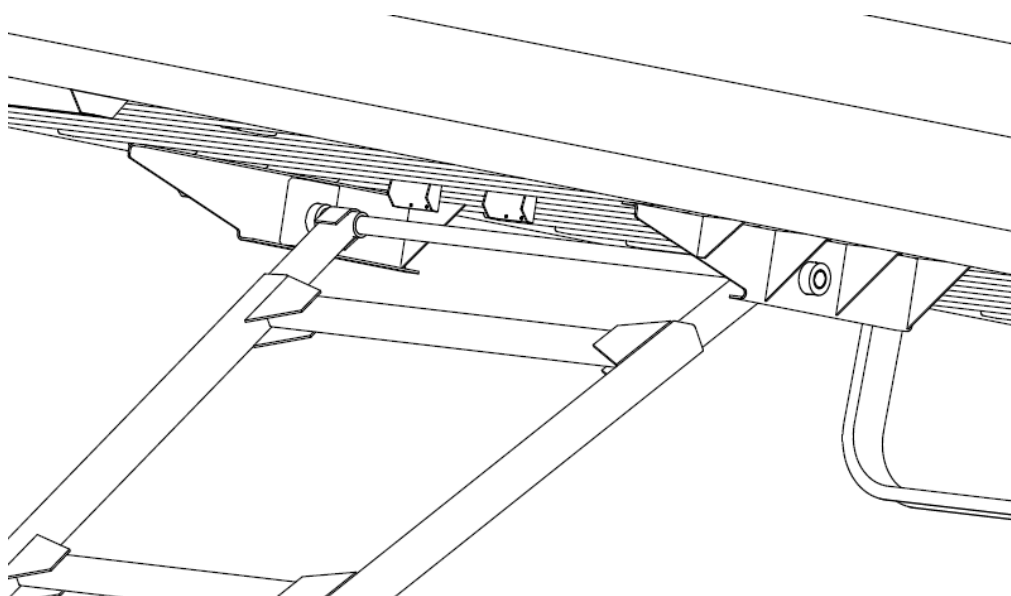
# **SECTION SEVEN**

## **DRAFT ARMS HINGE POINTS**



NOTE: AFTER  
COUPLING TO TRUCK,  
REMOVE COUPLER  
SUPPORT CHAINS.  
WHEN NOT COUPLED,  
INSERT CHAINS INTO  
CHAIN SLOT TO  
SUPPORT THE DRAFT  
ARMS.

### DRAFT ARM TO COUPLER CONNECTION

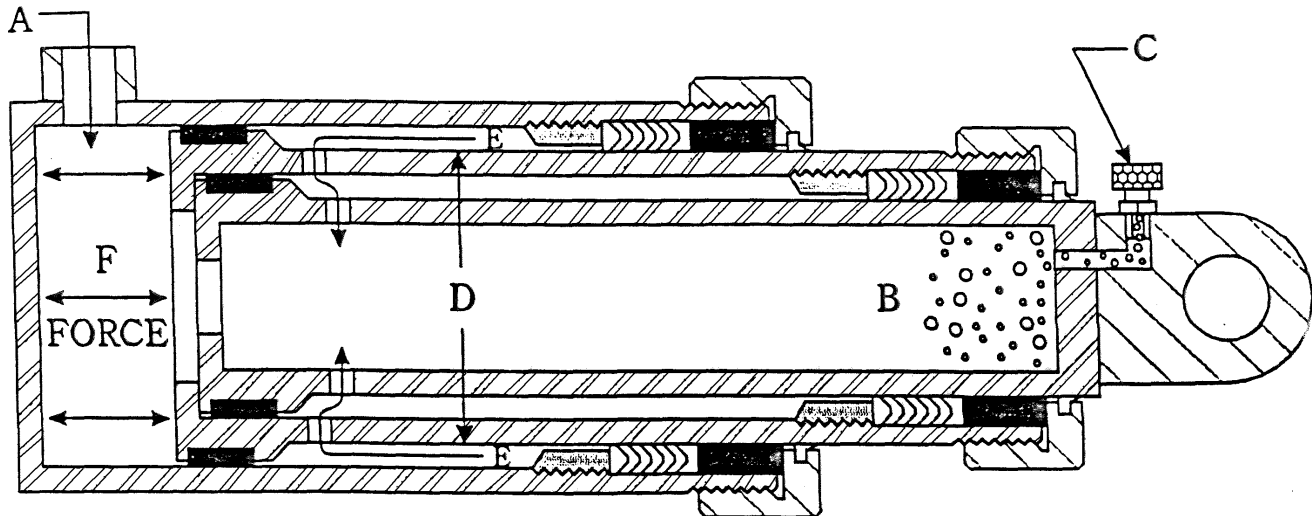


### DRAFT ARM TO FLOOR CONNECTION

# **SECTION EIGHT**

## **MISCELLANEOUS PARTS**

# SINGLE ACTING TELESCOPIC CYLINDER OPERATION



## TO EXTEND:

HIGH PRESSURE OIL FROM THE PUMP IS DIRECTED BY THE CONTROL VALVE THROUGH THE PORT (A) TO FILL THE CYLINDER. ANY AIR IN THE SYSTEM IS TRAPPED IN THE END OF THE CYLINDER (B) AND MAY BE BLED OFF THROUGH THE BLEEDER VALVE (C). GENERALLY, BLEEDING IS ONLY NECESSARY ON INITIAL START UP OR IF AIR HAS BEEN ALLOWED TO ENTER THE SYSTEM

OIL PUSHES ON THE BOTTOM OF THE SLEEVE OR PLUNGER FORCING (F) IT TO MOVE OUT. THE OUTSIDE DIAMETER OR SEALING AREA OF THE SLEEVE OR PLUNGER (D) DETERMINES THE EFFECTIVE AREA.

AS THE SLEEVE OR PLUNGER MOVES OUT, THE OIL IS TRAPPED BETWEEN (E) THE SLEEVE OR PLUNGER WALL IS RELEASED THROUGH HOLES IN THE SLEEVE OR PLUNGER.

## TO RETRACT:

A SINGLE ACTING CYLINDER MUST BE RETRACTED BY GRAVITY OR MECHANICAL MEANS.

**NOTE: THIS IS A SELF BLEEDING DESIGN, AND MAY NOT NEED TO BE BLED**



# **SECTION NINE**

## **SPECIAL OPTIONS**

## **MAINTENANCE AND OPERATION FOR CRAMARO SLIDE 'N GO TARP SYSTEM**

**Your Cramaro Slide 'N Go tarp system has been designed to provide you with years of reliable service as long as it is properly used and maintained. Improper usage or lack of maintenance can severely impair its operation and will cause premature wear of the tarp. It is important that you follow all maintenance and operating instructions. They are for your benefit.**

### **MAINTENANCE SCHEDULE**

**Every 2 – 4 weeks the following procedures should be performed**

Check tension of cables	Check length of tarp
Clean and lubricate cables	Check security of cable clamps
Inspect the tarp for any tears, cuts or worn areas	Check alignment of rear bow
Check condition of cables (frayed wire, cuts, rust)	Check tension of V belt or chain
Inspect hardware to be sure fasteners haven't become loose	Auto clips installed on all vinyl systems

Every 6 months remove the cable clamps and inspect that area of the cable for corrosion or broken wires. If necessary, replace the cable.

Every 12 months replace the cable and replace any corroded or damaged fasteners.

### **\*\* IMPORTANT NOTE\*\***

**The cables will stretch considerably for the first few weeks after initial installation, it is extremely important that they be kept tight at all times.**

### **CABLE TENSION**

The cable tension is correct when you cannot easily touch the cable together when squeezing with one hand 18" from the rear pulley.

### **CABLE ADJUSTMENT**

The cable is adjusted by first loosening the main nut on the rear pulley using a 1 1/8" wrench and then tightening the cable by using a 3/4" wrench on the rear spanner nut. Be sure to retighten the pulley nut. Do not over tighten the cable, as this will cause the front shaft to bend or break which can cause the cable to derail.

### **CABLE LUBRICATION**

To clean and lubricate the cable run a clean rag covered with light oil or WD 40 over the entire cable on both sides of the system. In addition, spray WD 40 or a similar product into the slots on the bow ends. Do not use any heavy oil products, as this will cause the dirt to stick to the cables and pulleys.

### **ADJUSTMENT OF THE V BELT OR CHAIN**

If the rubber belt slips or if the chain loosens while operating the system, an adjustment will be necessary. Simply loosen the three bolts on the handle bracket and slide the handle downward until desired tension is achieved. Retighten the bolts.

### **ADJUSTING THE TARP LENGTH**

The tarp should be stretched tight when in the covered position. If the tarp is loose or if the last bow touches the rear cable pulley, the tarp must be shortened or premature wear will result. To shorten the tarp, undo the bolts on the front pipe, and rotate the front pipe until desired length is achieved. Retighten bolts. Do not shorten more than 12" from the original length.

### **BOW ALIGNMENT**

To check for proper bow alignment, crank the system all the way to the front of the vehicle. The ends of all the bows should be touching each other and should be tight against the front pipe. If an adjustment is necessary, loosen the cable on the opposite side from the one that is out of alignment. Crank the handle forward until all the bows are touching then retighten the cable.

## **OPERATING THE TARPAULIN SYSTEM**

**All of the Slide 'N Go systems will have a longer life expectancy if the systems are cranked to the back of the trailer at all times except when dumping the load. The handle must be locked and tension applied to the tarp.**

### **\*\* SPECIAL WARNING FOR ALL SYSTEMS\*\***

- DO NOT DUMP WITH THE LOAD COVERED
- ALWAYS CRANK THE TARP ALL THE WAY TO THE FRONT BEFORE DUMPING
- FAILURE TO DO SO MAY CAUSE THE BOWS TO BE SUCKED DOWNWARD
- THIS CAN CAUSE EXTENSIVE DAMAGE TO THE BOWS AND TARP

**Check the tension of the nylon cables (if a drop side system) when you check your steel drive cables. The nylon cables should not sag when the system is cranked to the front of the trailer.**

**You must use auto clips, ropes or straps to secure the tarp when the vehicle is in motion.**

## **TROUBLE SHOOTING GUIDE**

**If the system will not move when cranked, check to see if:**

The V belt or chain is too loose  
The cables are too loose  
The set screw in the shaft chain or V belt pulley is loose  
Check side boards to see if obstructed

If cables are breaking:

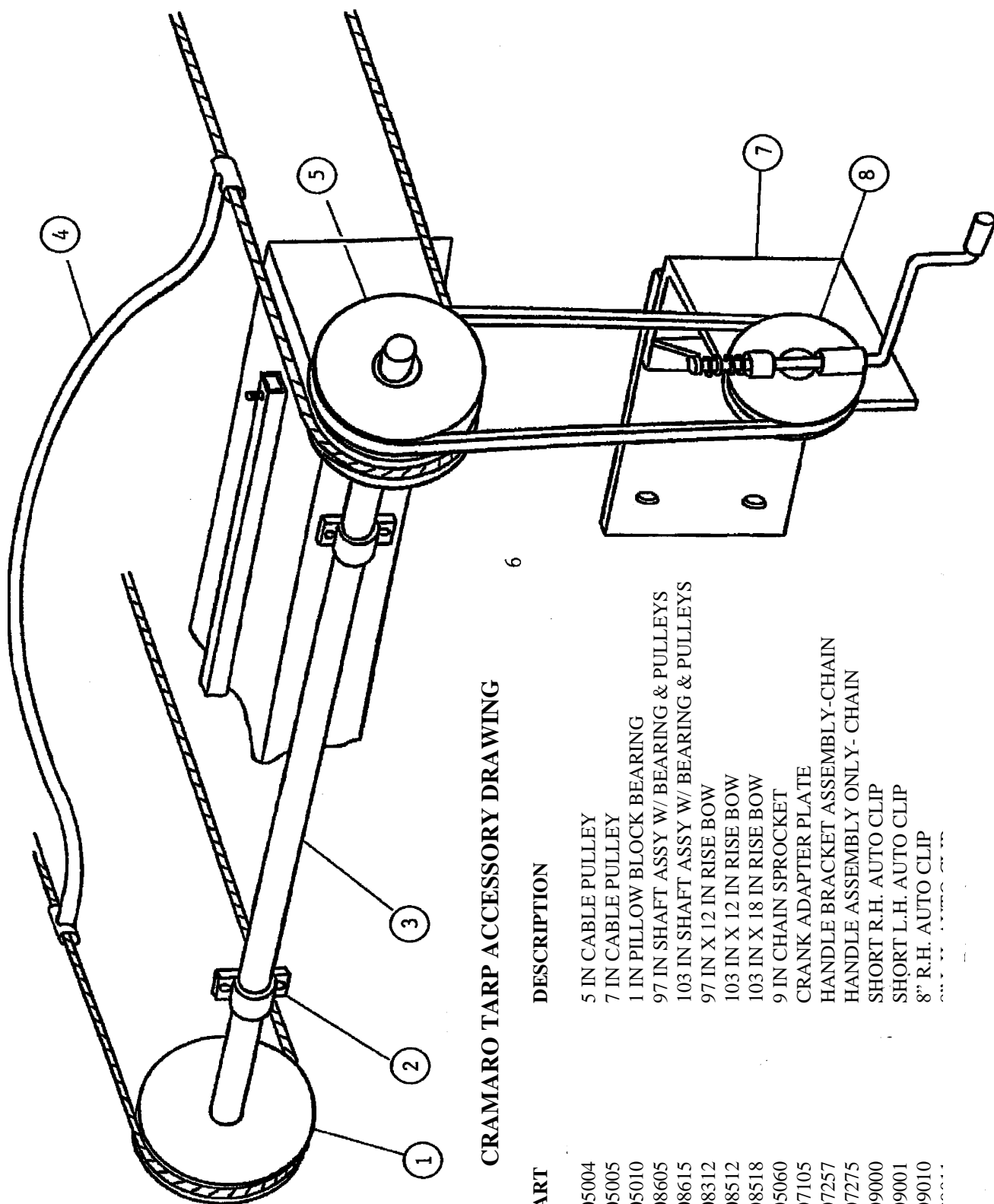
**Check the height of your drive cables. The bottom of the cables should be approximately 1/2" above the running surface of the body. Heights greater than 1" can cause the cable to wear prematurely or even snap.**

Make sure the cables are not loose  
Tarp is too long, creating a lot of wind whipping which can break cables and cause premature wear on system

**If the system is hard to crank see if:**

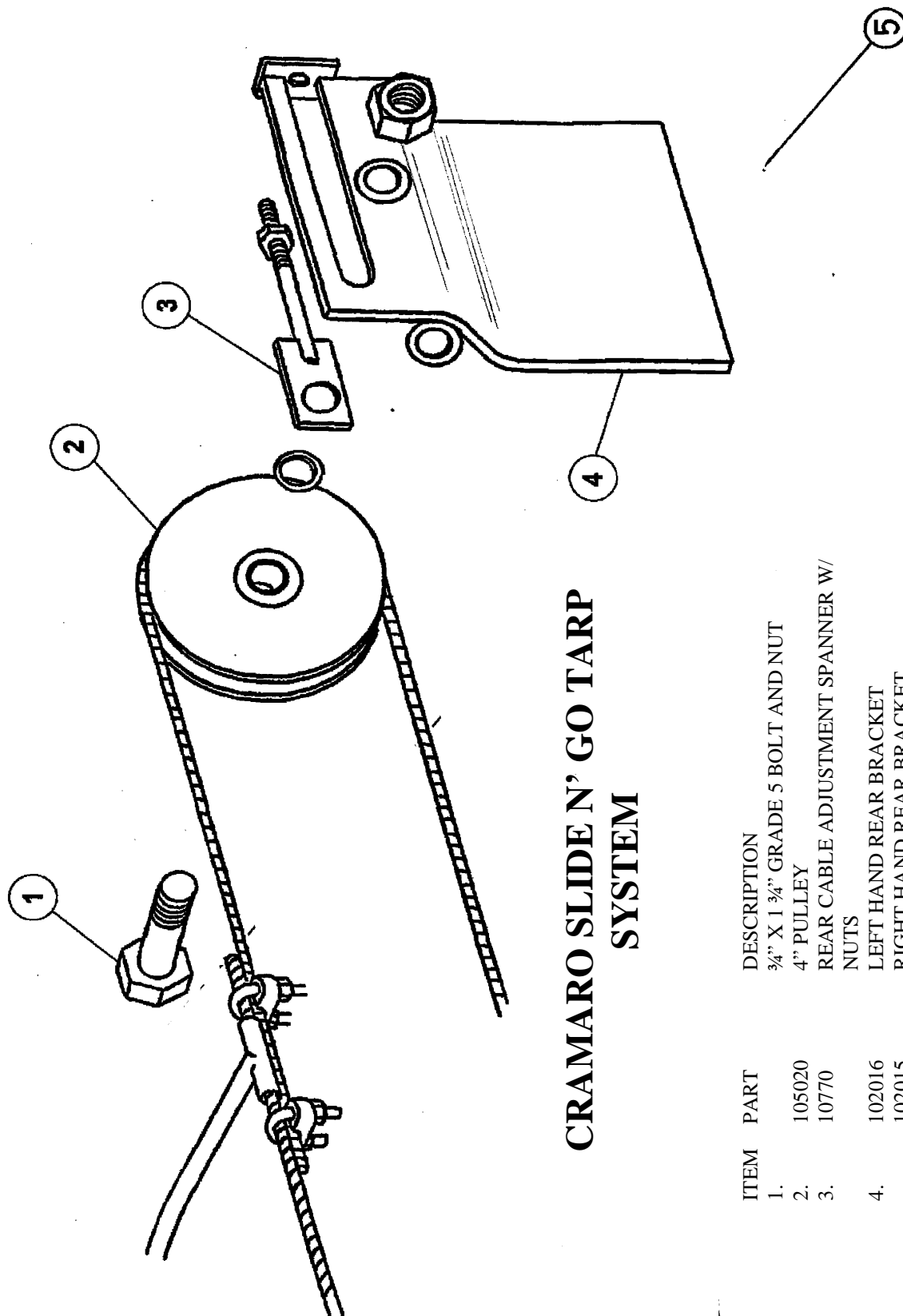
The cables are too tight  
The cables are dirty or not lubricated  
The rear bow is not in alignment  
The bows are not at the same cable centers (You can reshape the bows by pushing upwards or downwards to bend them back into shape. The distance between the ends of each bow must be the same as the center distance of the cable pulleys.  
For systems with nylon cables, the nylon cables may be too loose  
The sideboards are damaged

**IF YOU REQUIRE FURTHER INFORMATION OR ASSISTANCE YOU CAN CONTACT CRAMARO AT (800) 272-6276.**



CRAMARO TARP ACCESSORY DRAWING

ITEM	PART	DESCRIPTION
1	105004	5 IN CABLE PULLEY
	105005	7 IN CABLE PULLEY
2	105010	1 IN PILLOW BLOCK BEARING
3	108605	97 IN SHAFT ASSY W/ BEARING & PULLEYS
	108615	103 IN SHAFT ASSY W/ BEARING & PULLEYS
4	108312	97 IN X 12 IN RISE BOW
	108512	103 IN X 12 IN RISE BOW
	108518	103 IN X 18 IN RISE BOW
5	105060	9 IN CHAIN SPROCKET
6	107105	CRANK ADAPTER PLATE
7	107257	HANDLE BRACKET ASSEMBLY-CHAIN
8	107275	HANDLE ASSEMBLY ONLY- CHAIN
9	109000	SHORT R.H. AUTO CLIP
	109001	SHORT L.H. AUTO CLIP
	109010	8" R.H. AUTO CLIP



## CRAMARO SLIDE N' GO TARP SYSTEM

ITEM	PART	DESCRIPTION
1.		3/4" X 1 3/4" GRADE 5 BOLT AND NUT
2.	105020	4" PULLEY
3.	10770	REAR CABLE ADJUSTMENT SPANNER W/ NUTS
4.	102016	LEFT HAND REAR BRACKET
	102015	RIGHT HAND REAR BRACKET
5.	10775	LEFT HAND REAR BRACKET ASSEMBLY
	10770	RIGHT HAND REAR BRACKET ASSEMBLY