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RANCO ANVIL END DUMP



OPERATING, MAINTENANCE & PARTS MANUAL

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END DUMP

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Dragon Products, LLC

PO BOX 790, BEAUMONT, TEXAS 77704-0790

FAX: 801-466-9276

EMAIL: WARRANTY@RANCO.COM

RANCO
by WESTERN

ONE YEAR LIMITED WARRANTY

Dragon Products, LLC and related companies (seller) warrants its new products to be free from defects in material or workmanship under normal legal use and service for a period of one year from the date of purchase (delivery). Seller's sole obligation, at its option, will be to repair or replace any products returned to the factory, which upon inspection by seller are determined to be defective in material and/or workmanship.

Warranties shall not apply to normal wear and tear, maintenance, service, adjustments, any equipment which has been altered or repaired in any way, or any items subject to misuse, negligence, or accident.

Warranties shall not apply to components manufactured by persons other than Dragon Products, LLC including, but not limited to; cylinders, tires, suspension, axles, bearings, etc.

Any claim under this warranty must be submitted in written notification detailing the defect to Dragon Products, LLC, Beaumont, TX. Product must be returned to the factory, transportation charges prepaid.

Seller makes no warranties, either express or implied, except as provided herein, including without limitation thereof, warranties as to the marketability, merchantability, or suitability for a particular purpose or use. In no event shall Seller be liable for any direct, incidental or consequential damages of any nature, or losses or expenses resulting from any defective product or the use of any such product, including any damages for the loss of time, inconvenience, or loss of use of any such product.

-----Detatch and Mail, Email, or Fax to Dragon Products-----

DATE OF PURCHASE: ____/____/____

MODEL: _____ LENGTH: _____ COLOR: _____

VIN:																			
VIN:																			

COMPANY NAME: _____

CONTACT: _____

ADDRESS: _____

CITY, ST, ZIP: _____

DEALER: _____

LOCATION: _____

SALESMAN: _____

*PRODUCT MUST BE REGISTERED WITHIN 30 DAYS OF PURCHASE TO ACTIVATE
WARRANTY, FOR MORE INFORMATION PLEASE CONTACT YOUR DEALER*

I HAVE READ AND UNDERSTAND THE ABOVE WARRANTY AND VERIFY THAT THE
INFORMATION PROVIDED IS CORRECT TO THE BEST OF MY KNOWLEDGE:

CUSTOMER SIGNATURE: _____ DATE: ____/____/____

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.

i.



OPERATION INSTRUCTIONS

1. OPERATOR PRE-START CHECKS
 - A. BEFORE BACKING UNDER THE TRAILER, BE SURE THAT THE TRUCK 5TH WHEEL IS PROPERLY GREASED AND THAT THE 5TH WHEEL HEIGHT IS COMPATIBLE WITH THE 5TH 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 5TH 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 5TH 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 RELEASE, 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!

ii.

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.

IF OSCILLATING 5TH WHEEL IS USED IT MUST BE BLOCKED SO IT WILL NOT OSCILLATE.

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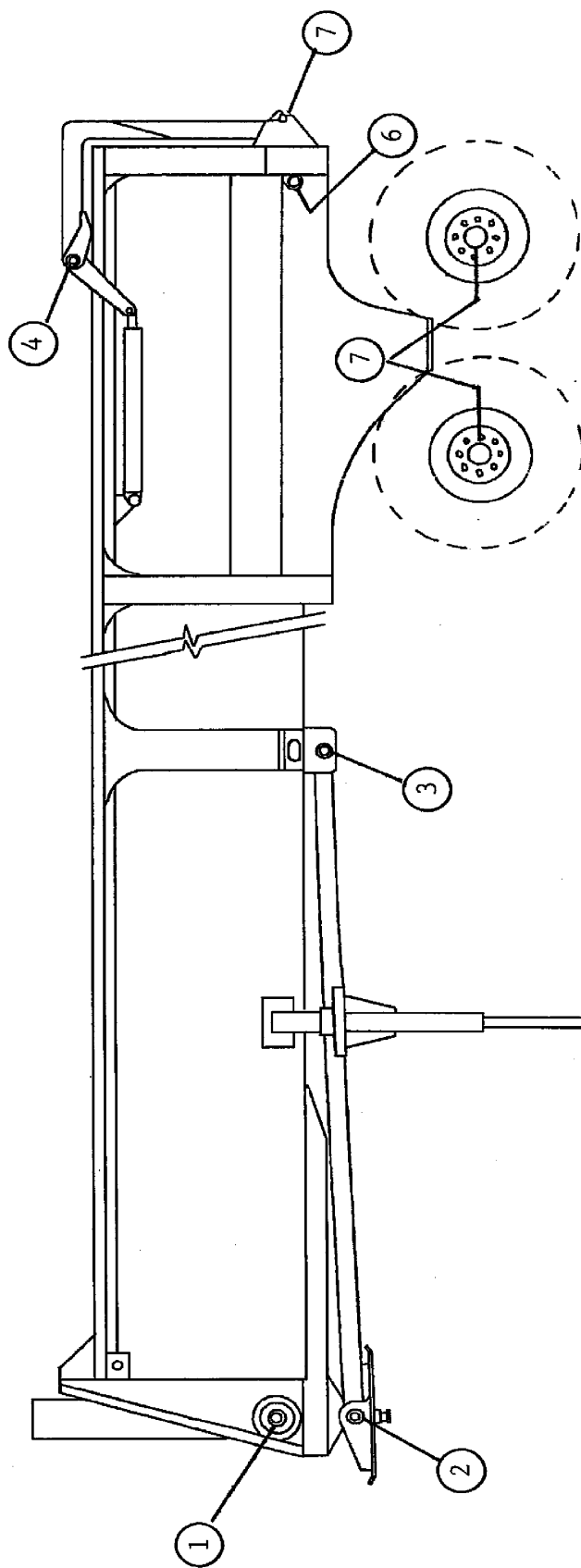
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SECTION ONE

LUBRICATION, PREVENTATIVE & SCHEDULED MAINTENANCE

1-4	<u>LUBRICATION CHART AND INSTRUCTIONS</u>
1-5	<u>SCHEDULED MAINTENANCE RECOMMENDATIONS</u>
1-6	<u>SCHEDULED MAINTENANCE RECORDS</u>

- | | |
|--|---------------------------|
| 1. HYDRAULIC CYLINDER PIVOT PIN | 5. GATE LATCH HOOK |
| GREASE TWO PLACES | GREASE TWO PLACES |
| 2. 5 TH PLATE- DRAFT ARM CONNECTION | 6. GATE LATCH CROSS SHAFT |
| GREASE TWO PLACES | GREASE THREE PLACES |
| 3. DRAFT ARM- BOLSTER CONNECTION | 7. AXLE BRAKE CAM |
| GREASE TWO PLACES | GREASE FOUR PLACES |
| 4. HIGH LIFT GATE HINGE | |
| GREASE FOUR PLACES | |



END DUMP LUBRICATION CHART

BOTTOM 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 HINGES, 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:

<u>H-900 SINGLE POINT SUSPENSION</u>	<u>RECOMMENDED TORQUE</u>		
11/8" Trunion "U" Bolts	880 ft. lbs.	_____	_____
1" Trunion Hanger Bolts	730 ft. lbs.	_____	_____
³ A" axle "U" Bolts	300 ft. lbs.	_____	_____
5/8" End Cap Bolts	180 ft. lbs.	_____	_____

H-970 (4 SPRING OR REYCO 886 SPRING SUSPENSION):

7/8" Axle "U" Bolts	300 ft. lbs.	_____	_____
5/8" Radius Rod Arm Clamp Bolts	155 ft. lbs.	_____	_____
5/8" Spring Retainer Bolts	50 ft. lbs.	_____	_____
¹ A" Radius Rod Arm Bolts	50 ft. lbs.	_____	_____

CHECK TORQUE ON ALL WHEEL END FASTENERS:

Inner Lug Nuts	500 ft. lbs.	_____	_____
Outer Lug Nuts	500 ft. lbs.	_____	_____
Hub Piloted Nuts	500 ft. lbs.	_____	_____

GREASE GATE HINGES~ AXLE CAM BUSHINGS & SLACK ADJUSTERS:

	<u>GREASED</u>	<u>DATE</u>
Gate 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>RF</u> _____/32	<u>LR</u> _____/32 <u>RR</u> _____/32
	RECOMMENDED	CHECKED BY	DATE
Check Push Rod Adjustment	Not more than 1-7/8" stroke	_____	_____
Check Brake Drums	No cracks - excessive wear	_____	_____
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		
Check Tread Depth	(Min. 4/32 Required)		
		<u>LF</u> _____/32	<u>LFI</u> _____/32
		<u>LR</u> _____/32	<u>LRI</u> _____/32
		<u>RF</u> _____/32	<u>RFI</u> _____/32
		<u>RR</u> _____/32	<u>RRI</u> _____/32



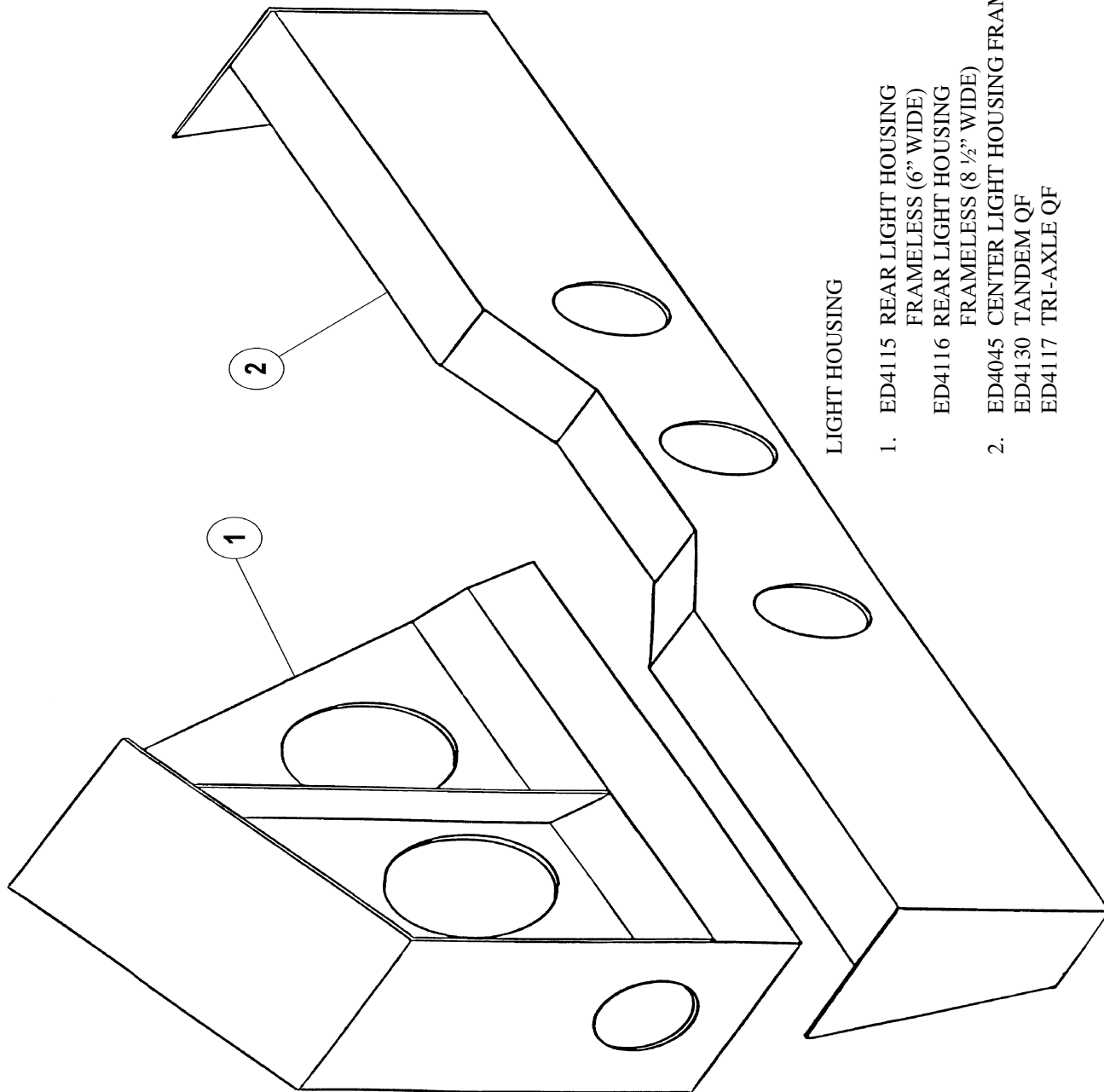


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SECTION TWO

ELECTRICAL SYSTEM

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2-8	<u>WIRING SCHEMATIC FOR A FOUR-WAY VALVE</u>
2-9	<u>WIRING SCHEMATIC AND PARTS LIST</u>
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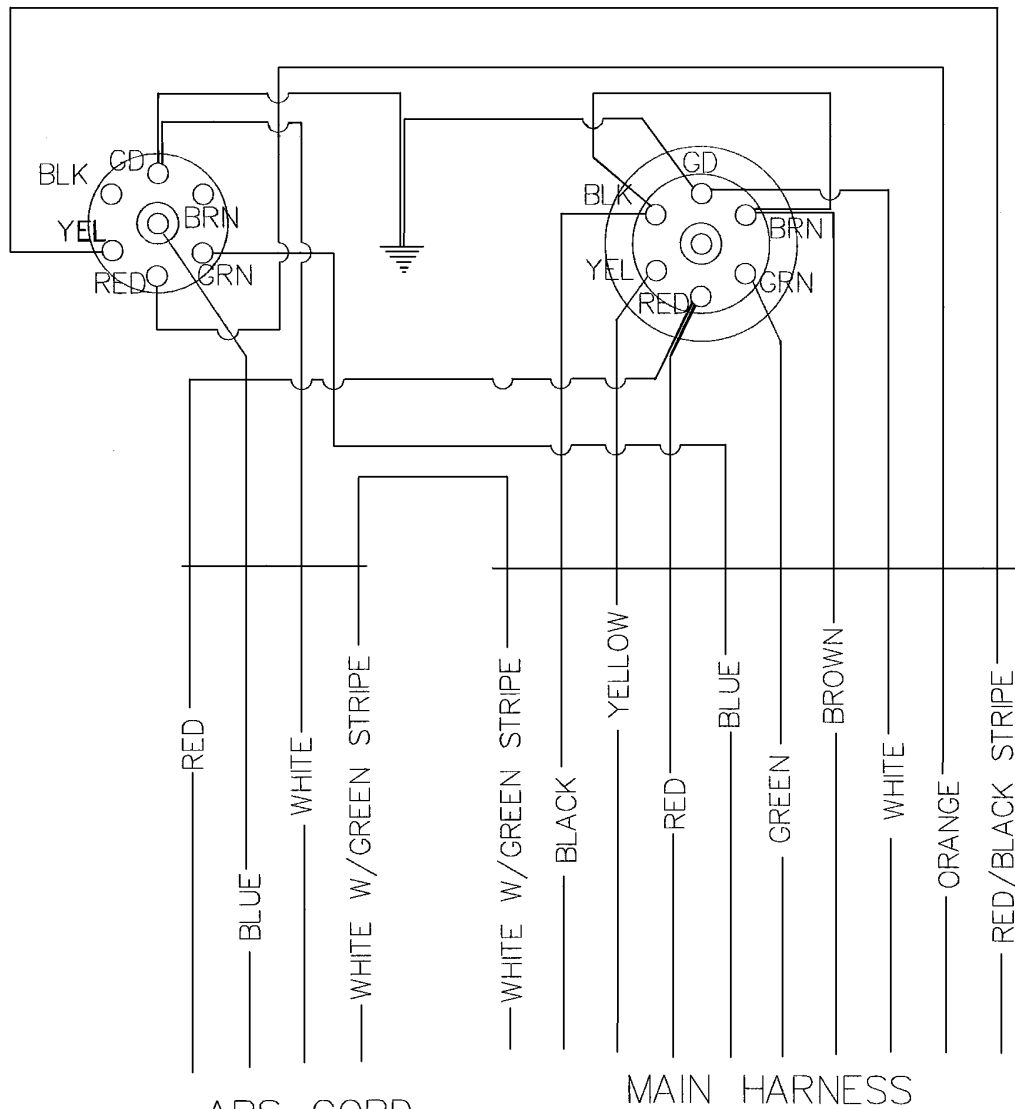


LIGHT HOUSING

1. ED4115 REAR LIGHT HOUSING
FRAMELESS (6" WIDE)
ED4116 REAR LIGHT HOUSING
FRAMELESS (8 1/2" WIDE)
2. ED4045 CENTER LIGHT HOUSING FRAMELESS
ED4130 TANDEM QF
ED4117 TRI-AXLE QF

ISO PLUG

7 WAY PLUG



ABS CORD

MAIN HARNESS

RED/BLACK STRIPE- BACK UP ALARM

BLUE- GATE CONTROL VALVE

ORANGE- GATE CONTROL VALVE ON TWO VALVE SYSTEM

WHITE- GROUND

BROWN- RIGHT TURN

YELLOW- LEFT TURN

RED- STOP LAMPS

BLACK- CLEARANCE LAMPS

WHITE/GREEN STRIPE- ABS LAMP

END DUMP PLUG SCHEMATIC

WITH ISO PLUG

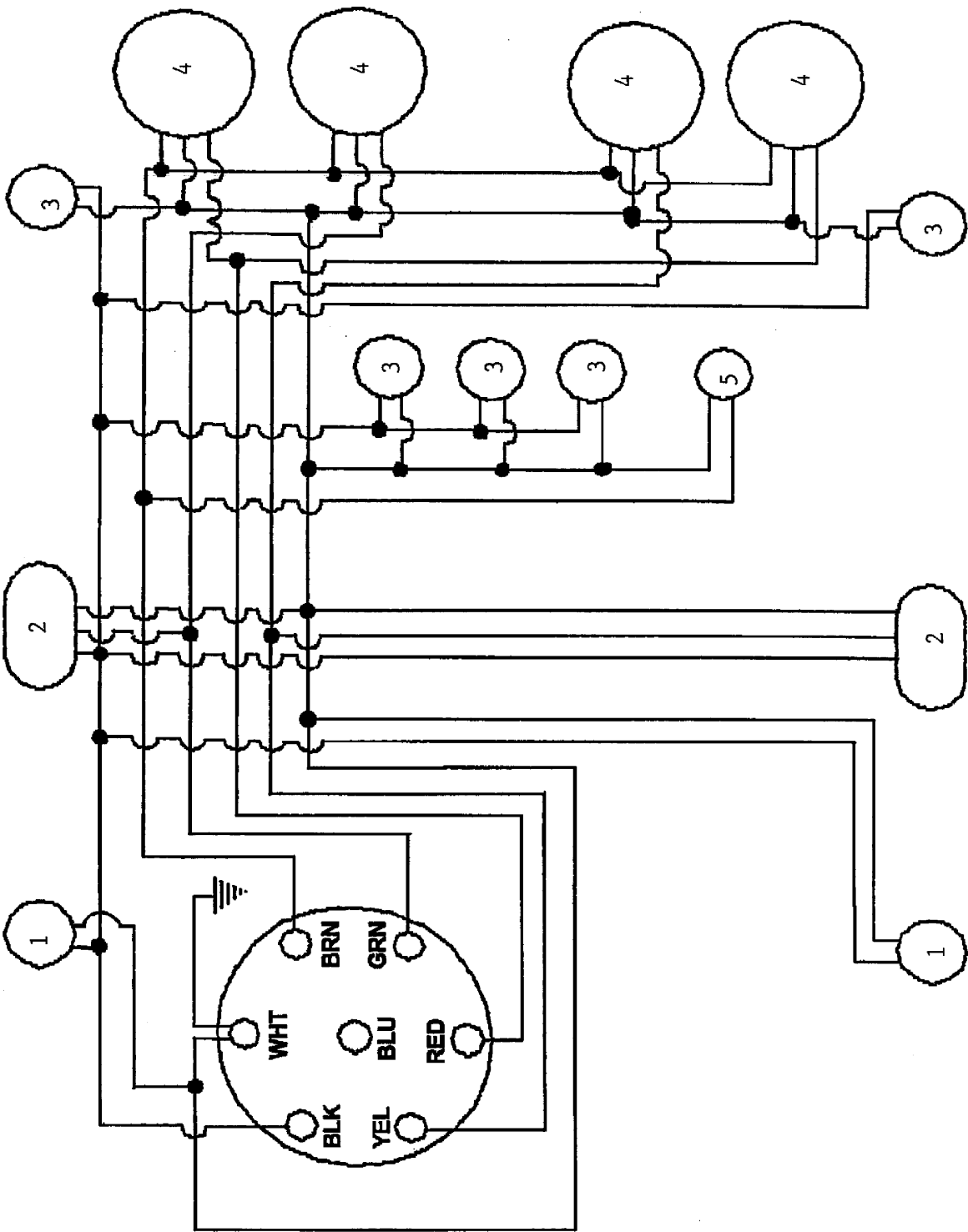
TO GATE LOCK WHEN TO VALVES ARE USED

TO GATE LIFT AND GATE LOCK WHEN A SINGLE VALVE
IS USED—TO LIFT GATE ONLY WHEN TWO VALVES ARE
USED

TO BACK UP ALARM

END DUMP- SINGLE AND DOUBLE VALVE
WIRING SCHEMATIC FOR FOUR WAY PLUG

TO GROUND



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3-31	

CONVERSION PROCEDURE FOR COMBINATION BARN/TOP HINGE GATE

!WARNING!

THE GATE ASSEMBLY WEIGHS OVER 400 POUNDS SO SHOULD IT BECOME DISCONNECTED FROM THE TRAILER AND FALL OFF IT COULD RESULT IN SERIOUS INJURY OR DEATH.

TO INSURE SAFETY DURING THE CONVERSION, THE PROCEDURE INCLUDES TWO SEPARATE AND SIMULTANEOUS METHODS TO INSURE THAT THE GATE IS ALWAYS SECURED TO THE TRAILER, DO NOT DEVIATE FROM THE CONVERSION PROCEDURE OUTLINED BELOW. SINCE SEVERAL $\frac{3}{4}$ " BOLTS ARE REQUIRED TO BE TORQUED TO 200 FT LBS, IT IS STRONGLY RECOMMENDED THAT A 1-1/8" HEAVY DUTY BOX WRENCH WITH A HANDLE LENGTH OF ABOUT 18" OR A $\frac{3}{4}$ " DRIVE RATCHET WRENCH WITH 1-1/8" HEX SOCKET BE USED FOR THE CONVERSION PROCESS.

GATES MUST BE FULLY CLOSED AND SECURED PRIOR TO BEGINNING THE CONVERSION PROCEDURE. THIS REQUIRES THAT BOTH GATE LATCHES ARE LOCKED CLOSED OVER THE GATE LOCK PINS AND THE FOUR SPOKE CLAMP IS IN POSITION ON THE FORKED GATE CLAMP PLATE AND FULLY TIGHTENED SO THAT THE GATE IS CLAMPED AGAINST THE HALF ROUND BODY.

FULLY CLOSING AND SECURING THE GATE SERVES TWO IMPORTANT FUNCTIONS:

1. FULLY CLOSING THE GATE SHOULD ALIGN THE ALTERNATIVE HINGES CLOSE ENOUGH THAT THE SELF ALIGNING PINS OR BUSHINGS CAN BE INSERTED FAR ENOUGH TO ENGAGE THE TAPERED SELF ALIGNING PROVISION AND ENGAGE ENOUGH THREADS ON THE $\frac{3}{4}$ " BOLT FASTENER TO SECURE THE GATE.
2. SECURING THE GATE WITH THE AIR POWERED GATE LATCHES AND THE FOUR SPOKE CLAMP PREVENTS THE GATE FROM COMING LOOSE FROM THE TRAILER REGARDLESS OF THE CONDITION OF THE SELF ALIGNING PINS AND BUSHINGS.

BOTH HINGE SYSTEMS ARE EITHER A TAPERED PIN OR A STRAIGHT BUSHING FITTING INTO A TAPERED COLLAR AS THE PRIMARY CONNECTING DEVICE.

THESE TAPERED FASTENERS WILL PULL THE GATE INTO ALIGNMENT FROM A MISALIGNED CONDITION OF UP TO 1/8" WHICH SHOULD NOT BE EXCEEDED UNDER NORMAL OPERATING CONDITIONS OR MANY YEARS OF WEAR.

THE TAPERED FASTENER SYSTEM IS ALSO DESIGNED SO THAT THE ALTERNATIVE TAPERED FASTENER CAN BE ENGAGED AND TIGHTENED BEFORE THE ORIGINAL TAPERED FASTENER IS FULLY REMOVED.

THIS INSURES THAT THE GATE IS ALWAYS SECURELY ATTACHED TO THE TRAILER DURING THE CONVERSION PROCESS.

CONVERTING FROM TOP HINGE GATE TO SIDE HINGE BARN DOOR GATE

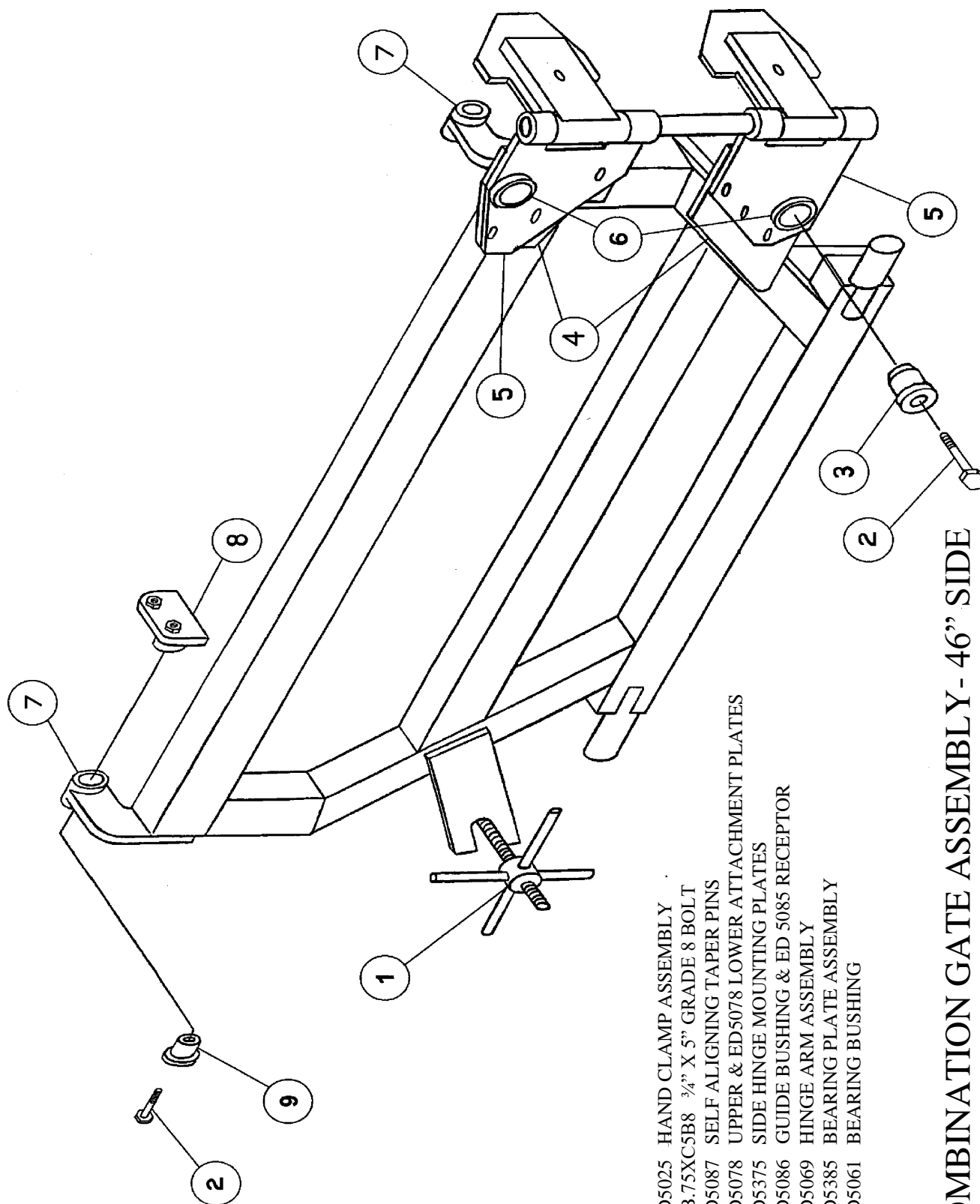
PROCEDURE:

1. FULLY CLOSE THE GATE AGAINST THE HALF ROUND BODY.
2. SWING THE FOUR SPOKE SIDE CLAMP OVER THE FORKED CLAMP PLATE ON THE GATE AND TIGHTEN THE CLAMP SECURELY.
3. ACTIVATE AND CLOSE THE AIR POWERED GATE LATCHES OVER THE GATE LATCH PINS TO SECURE THE BOTTOM OF THE GATE TO THE TRAILER
4. REMOVE THE TWO $\frac{3}{4}$ " BOLTS AND THE TWO SELF ALIGNING TAPERED PINS FROM THE GATE ATTACHMENT PLATES
5. REMOVE THE TWO $\frac{3}{4}$ " BOLTS SECURING THE SIDE HINGE MOUNTING PLATES TO THE SIDE OF THE TRAILER
6. ROTATE THE SIDE HINGE MOUNTING PLATES 270 DEGREES FROM THE SIDE OF THE TRAILER UNTIL THEY STOP AGAINST THE GATE MOUNTING PLATES.
7. VISUALLY CHECK FOR ALIGNMENT WITHIN $\frac{1}{8}$ " BETWEEN THE HINGE GUIDE BUSHING AND THE GATE RECEPTOR
8. CLEAN THE TAPERED PIN SURFACE AND IF NECESSARY THE GUIDE BUSHING AND RECEPTOR.
9. LUBRICATE THE TAPERED PIN AND ATTACHED THREADED FASTENER.
10. INSTALL BOTH TAPERED PINS THROUGH THE GUIDE BUSHING AND INTO THE RECEPTOR AND ENGAGE THE THREADED FASTENERS INTO THE RECEPTOR
11. BE SURE THAT THE TAPERED PIN FASTENER ENGAGES AT LEAST 4 THREADS (4 COMPLETE 360 DEGREE ROTATIONS OF THE BOLT HEAD) BEFORE GETTING TIGHT. DO NOT FORCE IF STRONG RESISTANCE IS FELT.
12. IF STRONG RESISTANCE IS FELT OR IF THREADS CANNOT BE STARTED BECAUSE MISALIGNMENT IS GREATER THAN $\frac{1}{8}$ " THEN LOOSEN 4 SPOKE HAND WHEEL ONE TURN AND LOOSEN TOP HINGE BUSHING RETAINER BOLT 4 TURNS WHICH WILL ALLOW THE GATE TO BE PRIED TO WITHIN $\frac{1}{8}$ " ALIGNMENT.
13. RETURN TO THE SELF ALIGNING TAPERED PINS AND FULLY TIGHTEN UNTIL THE PIN FLANGE SEATS AGAINST THE GUIDE COLLAR.
14. TORQUE THE SELF ALIGNING TAPERED PINS TO 200 FT LBS.
15. INSTALL FOUR AUXILIARY $\frac{3}{4}$ " CLAMP BOLTS THROUGH THE SIDE HINGE MOUNTING PLATE INTO THE CAPTIVE NUTS IN THE GATE MOUNTING PLATE AND TORQUE TO 200 FT LBS.
16. REMOVE THE TOP HINGE BUSHING COMPLETELY AND REINSTALL INTO THE FORWARD STORAGE LOCATION IN THE BEARING PLATE AND TIGHTEN TO 100 FT LBS.
17. TIGHTEN THE FOUR SPOKE CLAMP AGAINST THE FORKED GATE CLAMP PLATE.
18. GATE IS NOW READY TO BE USED IN THE SIDE HINGE BARN DOOR CONFIGURATION

CONVERTING FROM SIDE HINGE BARN DOOR TO TOP HINGE GATE

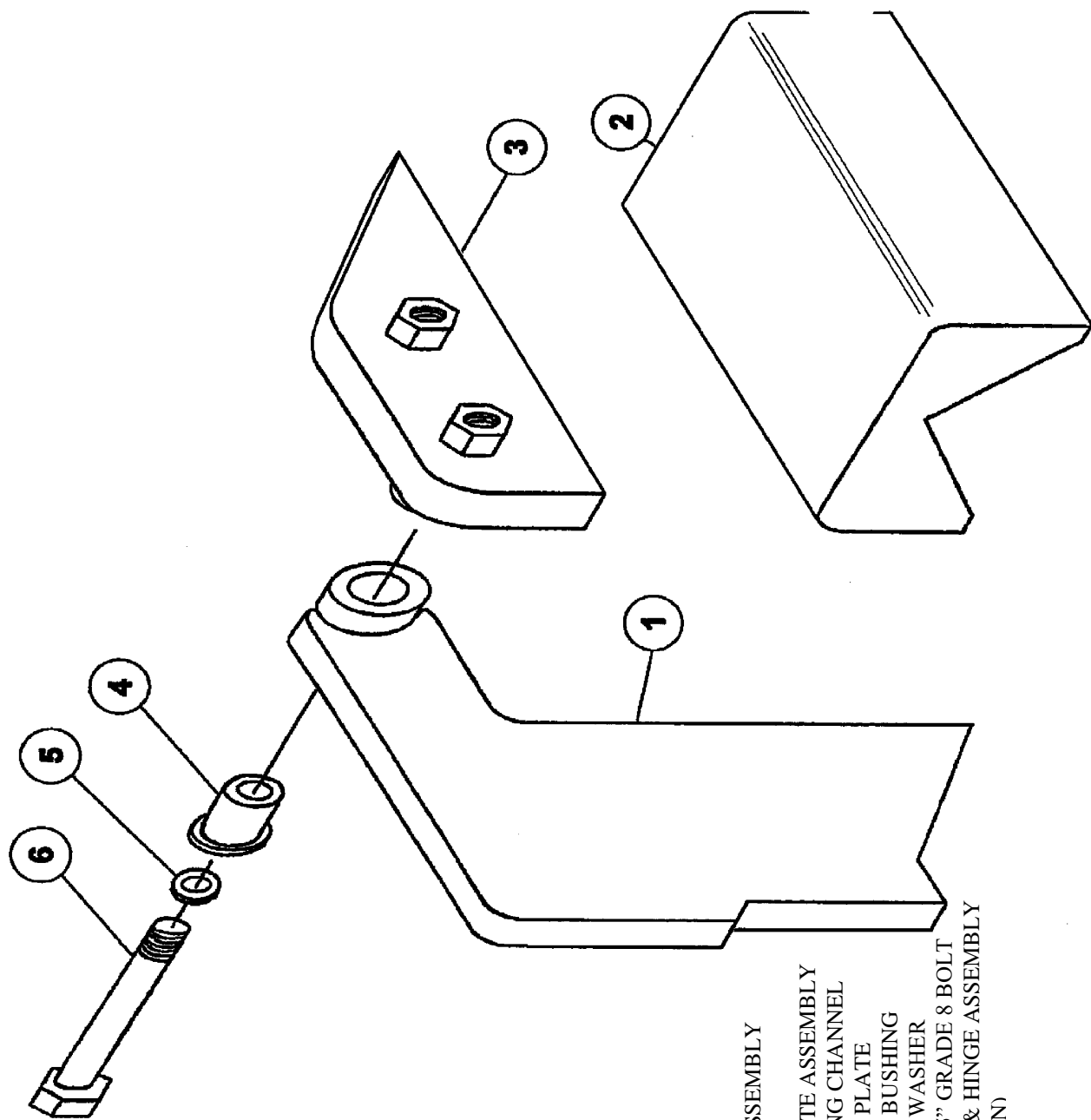
PROCEDURE:

1. FULLY CLOSE THE GATE AGAINST THE HALF ROUND BODY.
2. SWING THE 4 SPOKE SIDE CLAMP OVER THE FORKED CLAMP PLATE ON THE GATE AND TIGHTEN THE CLAMP SECURELY.
3. ACTIVATE AND CLOSE THE AIR POWERED GATE LATCHES OVER THE GATE LATCH PINS TO SECURE THE BOTTOM OF THE GATE TO THE TRAILER
4. REMOVE THE FOUR $\frac{3}{4}$ " CLAMP BOLTS FROM THE HINGE TO GATE ATTACHMENT PLATES.
5. REMOVE THE TOP HINGE BEARING BUSHING FROM THEIR STORAGE POSITION IN THE BEARING PLATE.
6. CLEAN THE BUSHING SURFACE AND IF NECESSARY THE GATE BEARING AND TAPERED COLLAR AND BEARING PLATE INSIDE THE TAPERED COLLAR
7. CHECK THAT THE ALIGNMENT OF THE GATE BEARING AND TAPERED COLLAR ARE WITHIN $\frac{1}{8}$ ".
8. LUBRICATE THE BEARING BUSHING AND $\frac{3}{4}$ " BOLT FASTENER THREADS.
9. INSTALL BOTH HINGE BEARING BUSHING AND TIGHTEN $\frac{3}{4}$ " BOLT FASTENER UNTIL BUSHINGS OVERLAP THE TAPERED COLLAR OR GREAT RESISTANCE OCCURS. DO NOT FORCE IF GREAT RESISTANCE IS FELT.
10. IF GREAT RESISTANCE IS FELT, MISALIGNMENT IS PROBABLY TOO GREAT, (OVER $\frac{1}{8}$ ") AND GATE MUST BE ALIGNED MORE CLOSELY USING MANUAL METHOD.
11. TO MANUALLY ALIGN GATE, LOOSEN THE 4 SPOKE ONE COMPLETE TURN ONLY AND LOOSEN THE TWO SELF ALIGNING PINS ATTACHING THE SIDE HINGE MOUNTING PLATE TO THE GATE MOUNTING PLATES FOUR COMPLETE TURNS.
12. THE GATE CAN NOW BE PRIED INTO CLOSE ENOUGH ALIGNMENT TO ENGAGE THE TOP BEARING BUSHING.
13. TIGHTEN THE TWO TOP BEARING BUSHINGS UNTIL THEY SEAT AGAINST THE BEARING PLATE.
14. TORQUE THE TWO TOP BEARING BUSHING FASTENERS TO 200 FT LBS.
15. REMOVE THE TWO SELF ALIGNING PINS FROM THE SIDE HINGE TO GATE MOUNTING PLATES.
16. ROTATE THE SIDE HINGE MOUNTING PLATES 270 DEGREE TO THE STORAGE POSITION AGAINST THE SIDE OF THE TRAILER.
17. INSTALL TWO $\frac{3}{4}$ " BOLTS INTO HINGE MOUNTING PLATE SLOTTED HOLES AND INTO CAPTIVE NUTS TO SECURE PLATES TO SIDE OF TRAILER.
18. INSTALL TWO REMAINING $\frac{3}{4}$ " BOLTS INTO GATE MOUNTING PLATE CAPTIVE NUTS.
19. INSTALL TWO SELF ALIGNING PINS INTO GATE MOUNTING PLATE RECEPTORS AND TORQUE T 100 FT LBS.
20. LOOSEN THE 4 SPOKE CLAMP AND SWING OVER TO THE SIDE FORKED STORAGE PLATE.
21. TIGHTEN THE 4 SPOKE CLAMP AGAINST THE SIDE FORKED STORAGE PLATE.
22. GATE IS NOW READY TO BE USED IN THE TOP HINGE LIFT GATE CONFIGURATION.



1. ED5025 HAND CLAMP ASSEMBLY
2. HB.75XC5B8 3/4" X 5" GRADE 8 BOLT
3. ED5087 SELF ALIGNING TAPER PINS
4. ED5078 UPPER & ED5078 LOWER ATTACHMENT PLATES
5. ED5375 SIDE HINGE MOUNTING PLATES
6. ED5086 GUIDE BUSHING & ED 5085 RECEPTOR
7. ED5069 HINGE ARM ASSEMBLY
8. ED5385 BEARING PLATE ASSEMBLY
9. ED5061 BEARING BUSHING

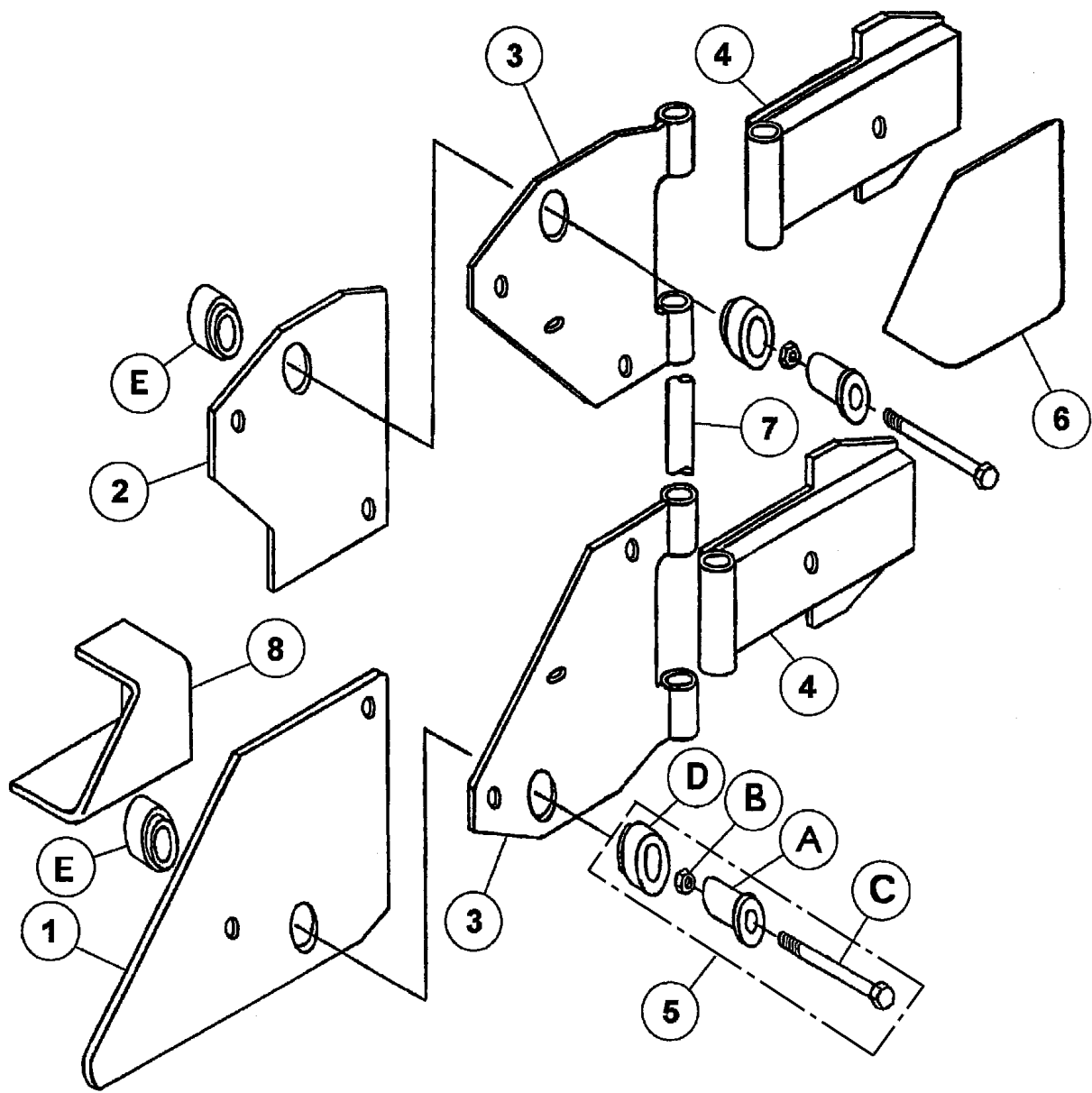
COMBINATION GATE ASSEMBLY - 46" SIDE

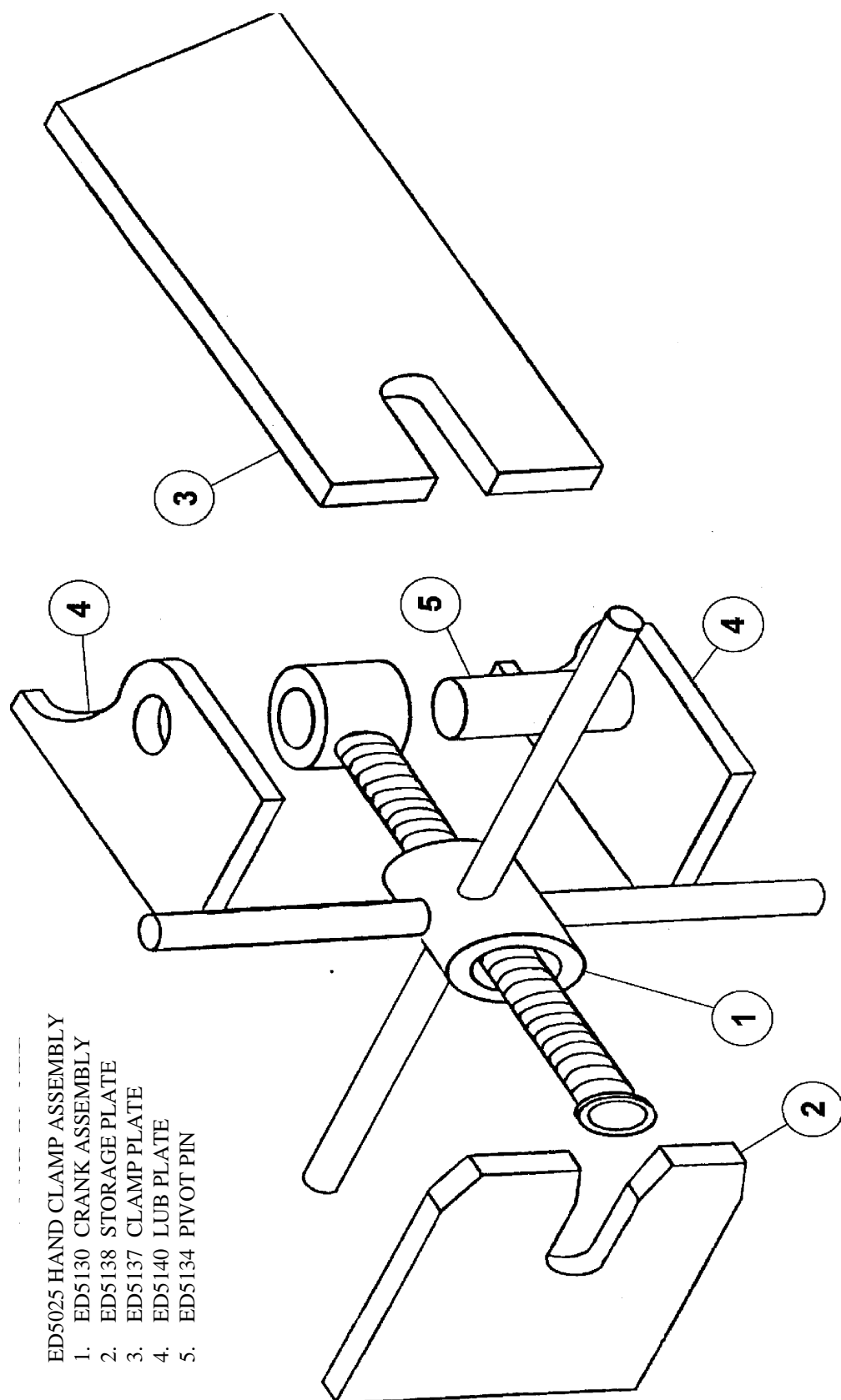


ED5365 HINGE ASSEMBLY

1. ED5069 ARM PLATE ASSEMBLY
 2. ED5357 MOUNTING CHANNEL
 3. ED5358 BEARING PLATE
 4. ED5061 BEARING BUSHING
 5. LW.75B 3/4" LOCK WASHER
 6. HB.75C5B8 3/4" X 5" GRADE 8 BOLT
- ED5110 LW GATE & HINGE ASSEMBLY
(GATE NOT SHOWN)

COMBINATION & GRAVITY GATE UPPER HINGE ASSY

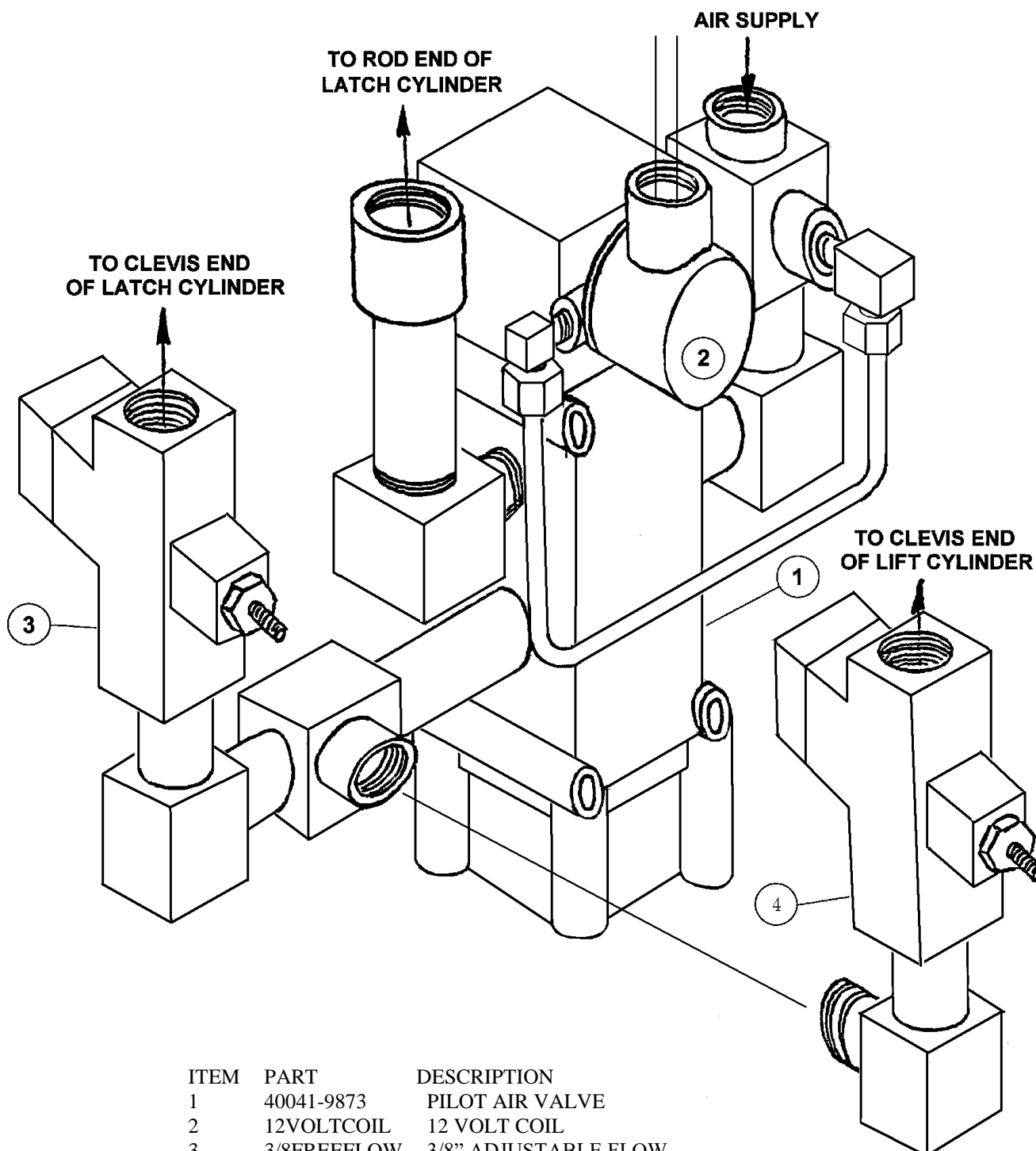




ED5025 HAND CLAMP ASSEMBLY

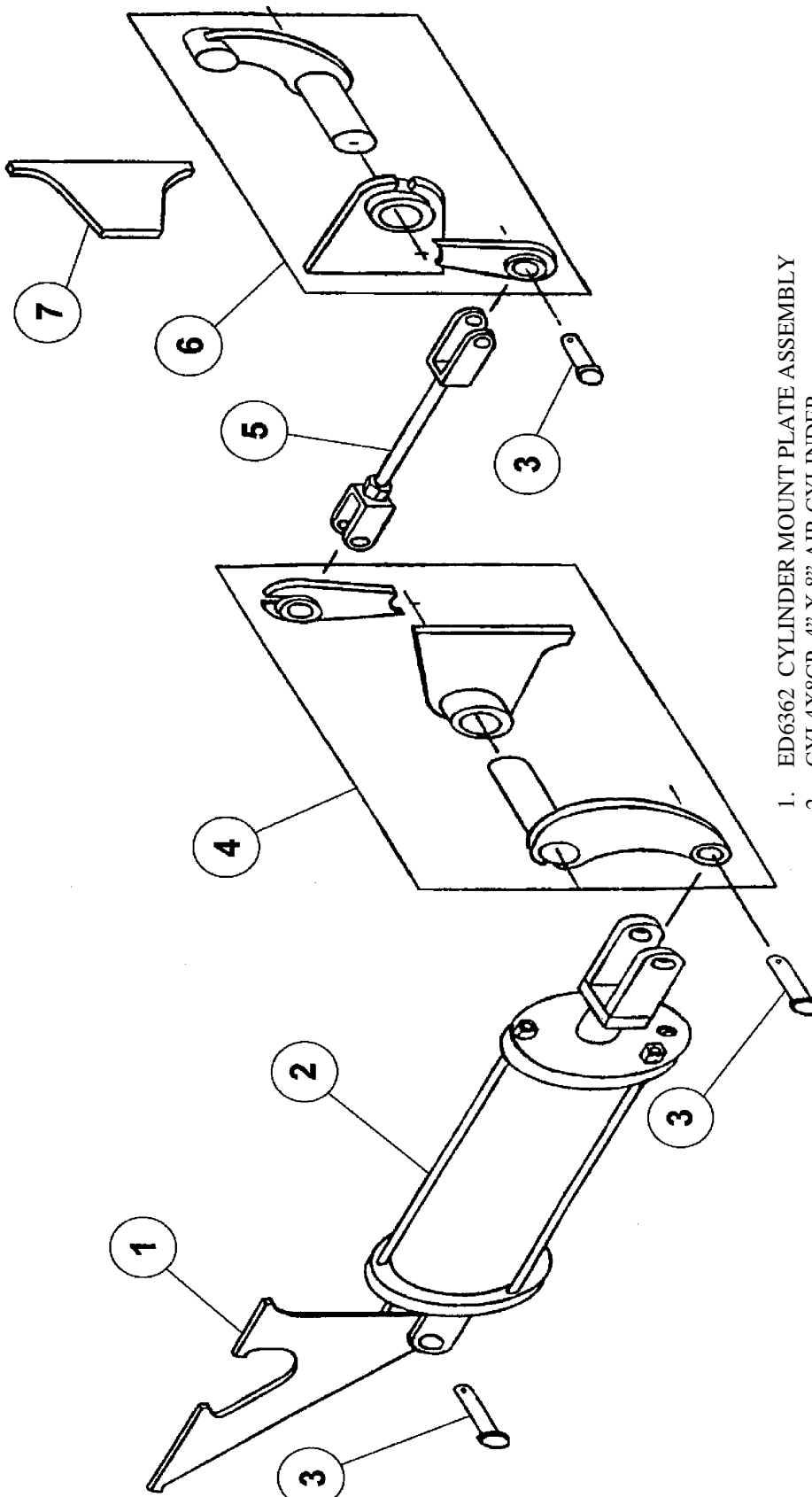
1. ED5130 CRANK ASSEMBLY
2. ED5138 STORAGE PLATE
3. ED5137 CLAMP PLATE
4. ED5140 LUB PLATE
5. ED5134 PIVOT PIN

GATE CLAMP ASSEMBLY - COMBO GATE



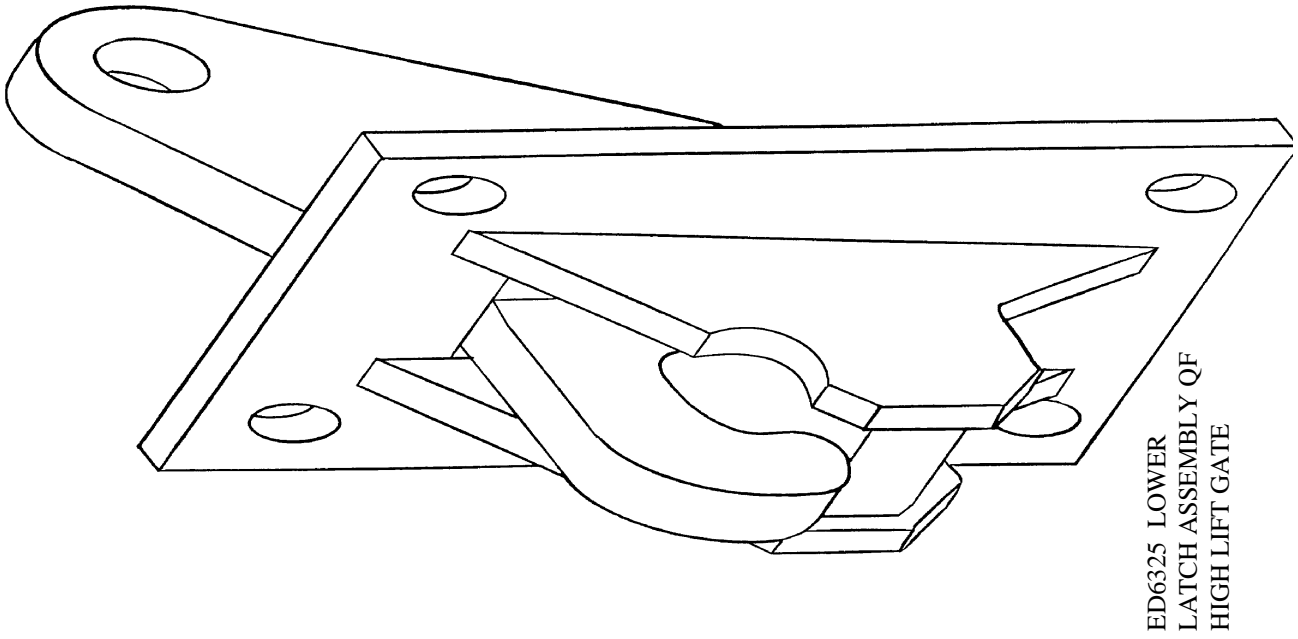
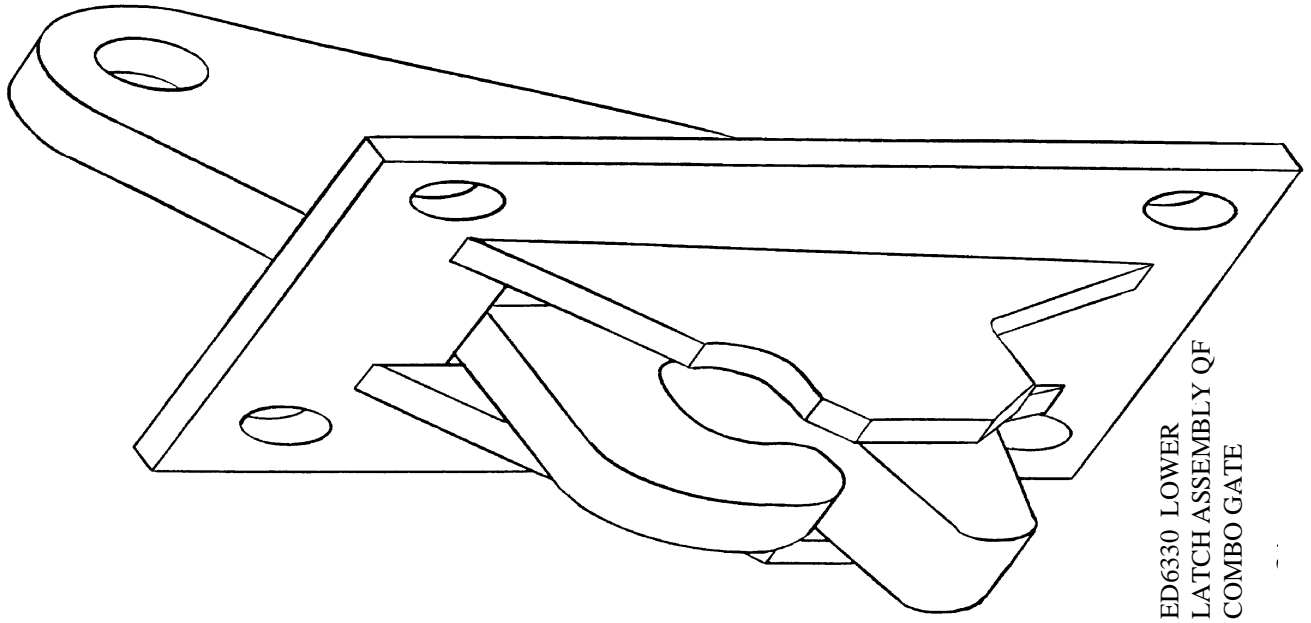
ITEM	PART	DESCRIPTION
1	40041-9873	PILOT AIR VALVE
2	12VOLT COIL	12 VOLT COIL
3	3/8FREEFLOW	3/8" ADJUSTABLE FLOW CONTROL VALVE
4	1/2FREEFLOW	1/2" FLOW CONTROL

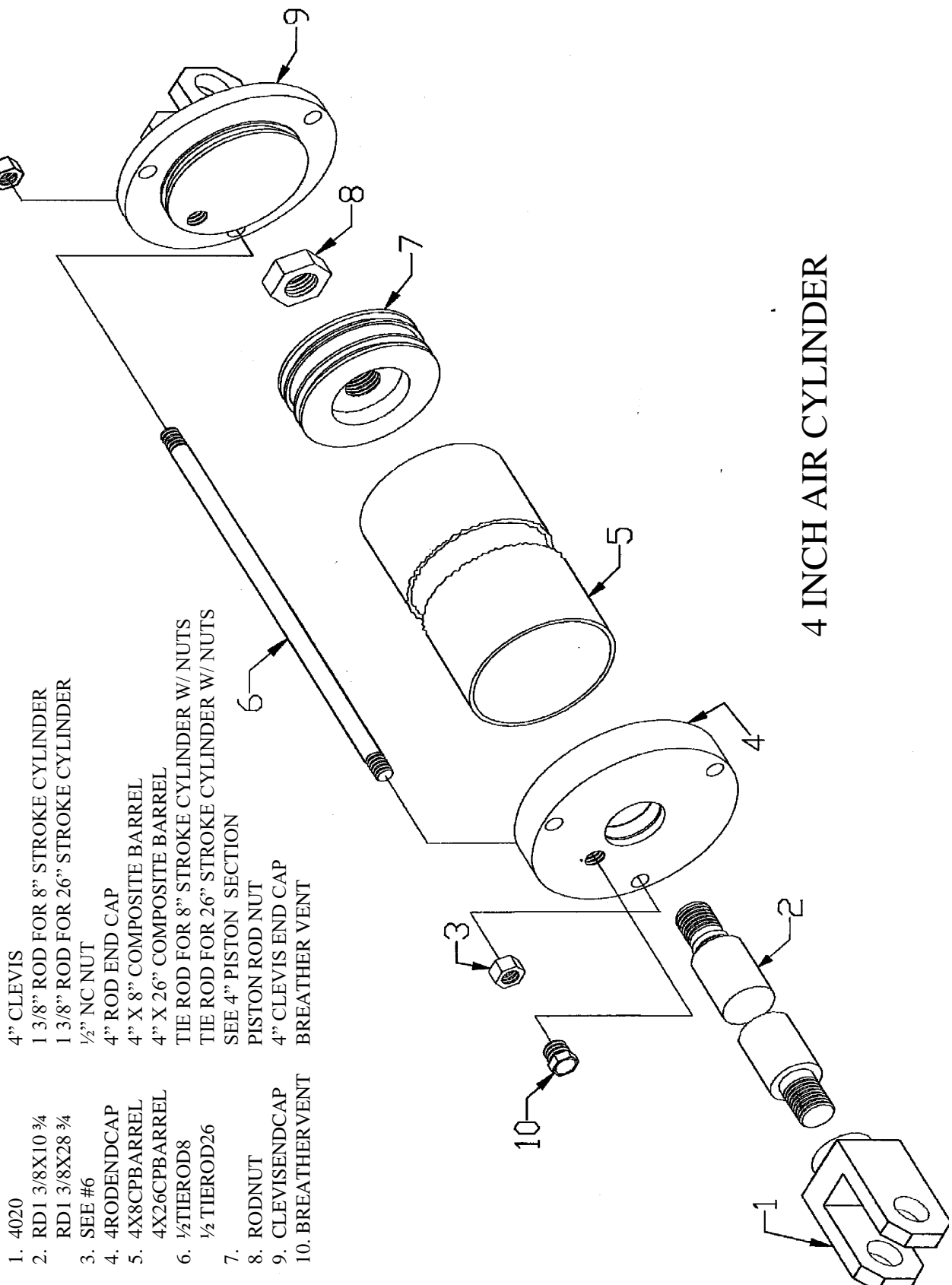
HIGH LIFT VALVE ASSEMBLY

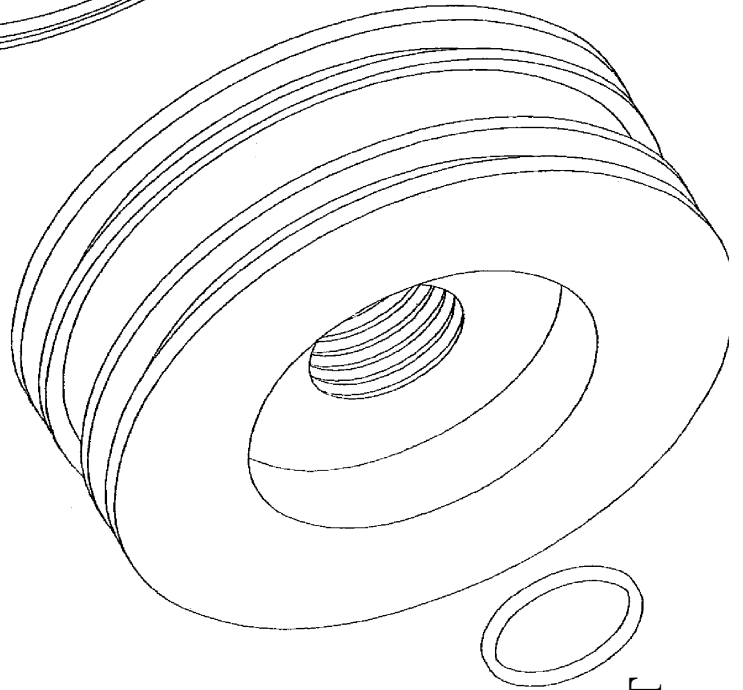
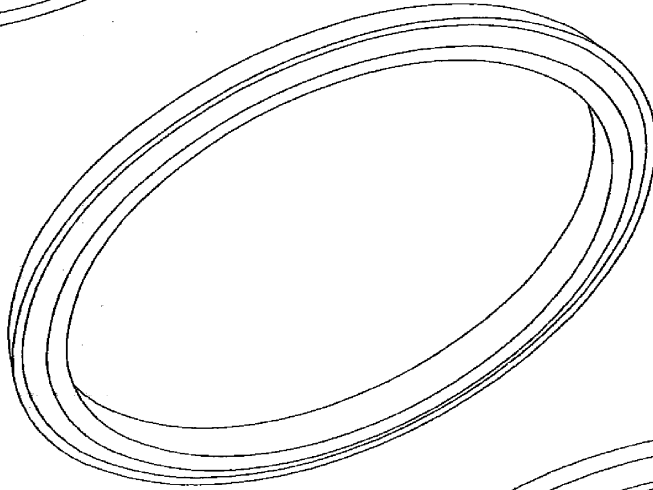
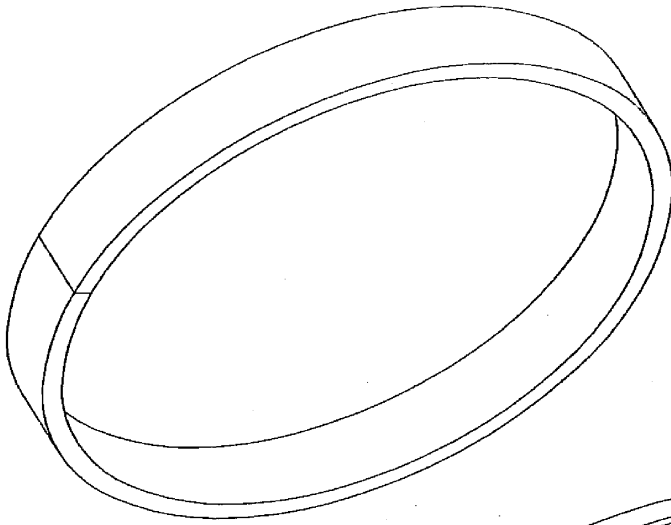


1. ED6362 CYLINDER MOUNT PLATE ASSEMBLY
2. CYL4X8CP 4" X 8" AIR CYLINDER
3. 1X2PIN 1" X 2" CLEVIS PIN
4. ED6050 CRANK ASSEMBLY- AIR CLAMP
5. ED6130 TURNBUCKLE ASSEMBLY
6. ED6365 CLAMP ASSEMBLY- AIR CLAMP
7. ED6359 PRESSURE PLATE

GATE AIR LOCK ASSEMBLY- COMBO GATE



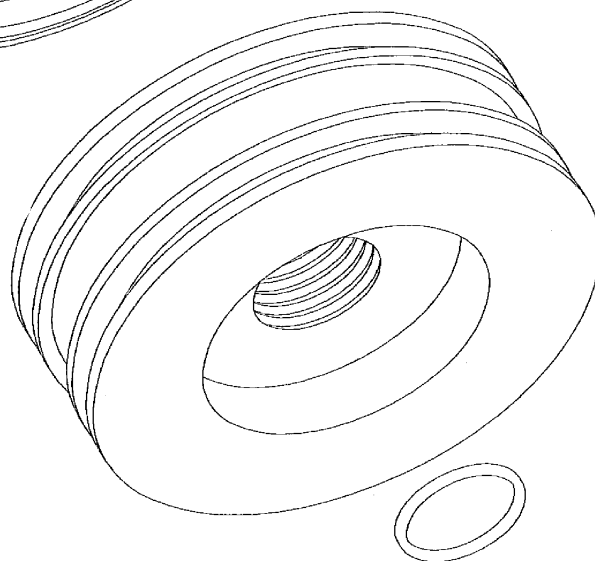
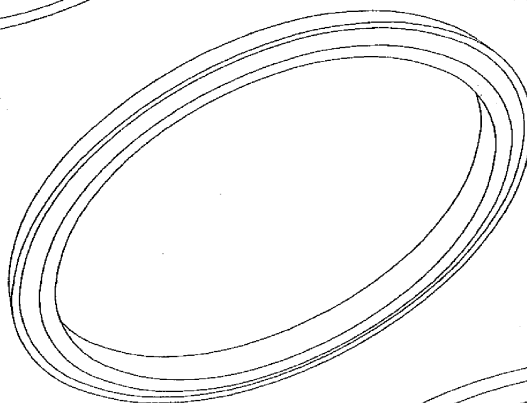
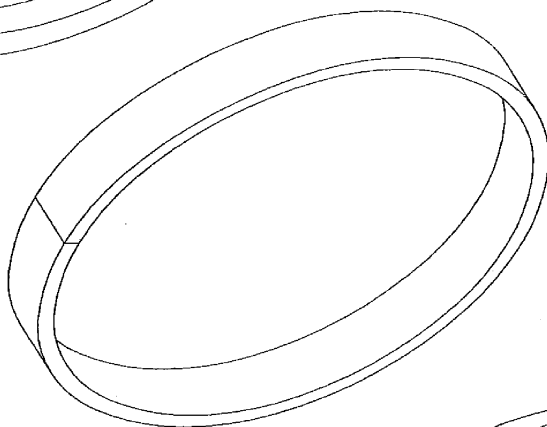
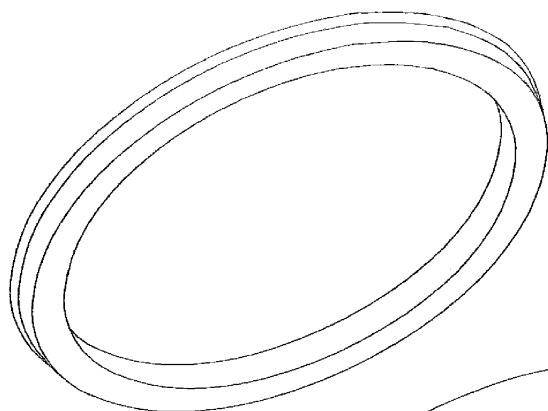




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E ACTION

ON SEAL KIT
DER

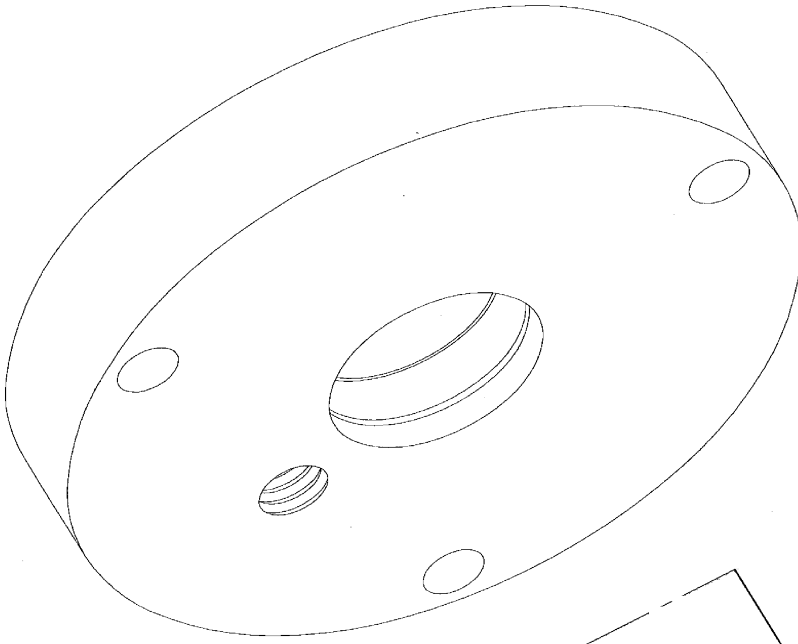


4" PISTON SEAL KIT- DOUBLE ACTION
4" ALUMINUM PISTON

1. 4PSKDA
2. 4PISTON

4 INCH DOUBLE ACTION PISTON SEAL KIT

USE ON 4" X 8" CYLINDER



1 3/8" ROD SEAL KIT
4" ROD END CAP

1. F1002
2. 4RODENDCAP

4 INCH ROD SEAL KIT FOR END DUMP AIR CYLINDERS



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SECTION FOUR

AIR BRAKE SYSTEM

4-7	ABS INFORMATION PAGE
4-8	FRAMELESS AIR BRAKE SYSTEM
4-9	SINGLE POINT FRAMELESS AIR BRAKE SYSTEM WITH 3RD AXLE AIR RIDE
4-10	QUARTER FRAME AIR BRAKE SYSTEM
4-11	BLANK

RANCO ABS BRAKE SYSTEM INFORMATION

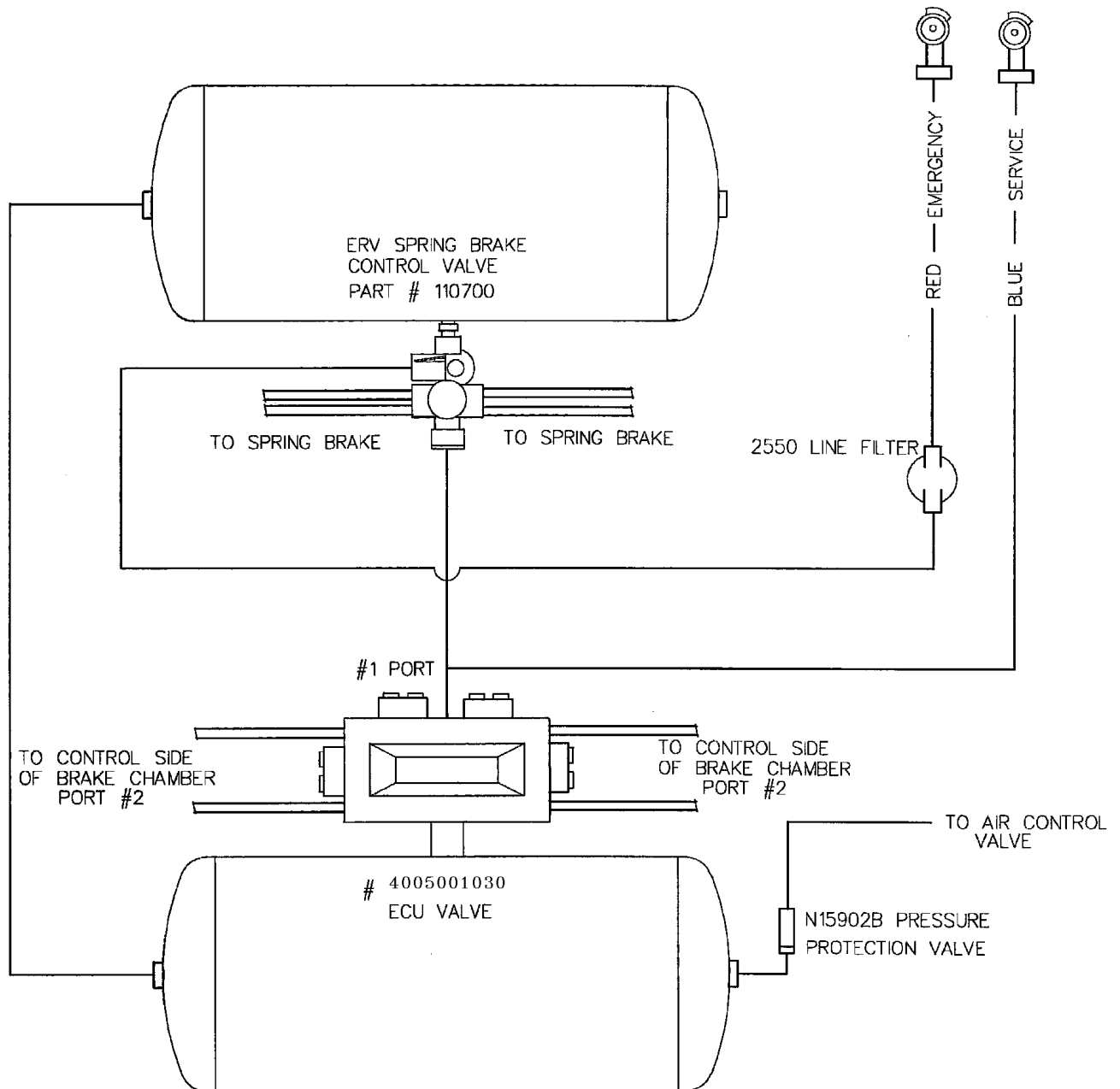
***RANCO USES MERITOR WABCO EASY-STOP TRAILER ABS
SYSTEMS ON ALL OF ITS STANDARD TRAILERS.***

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

**DRAWINGS FOR OTHER TYPES OF TRAILERS WILL BE FOUND IN
THE SPECIAL OPTIONS SECTION.**

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

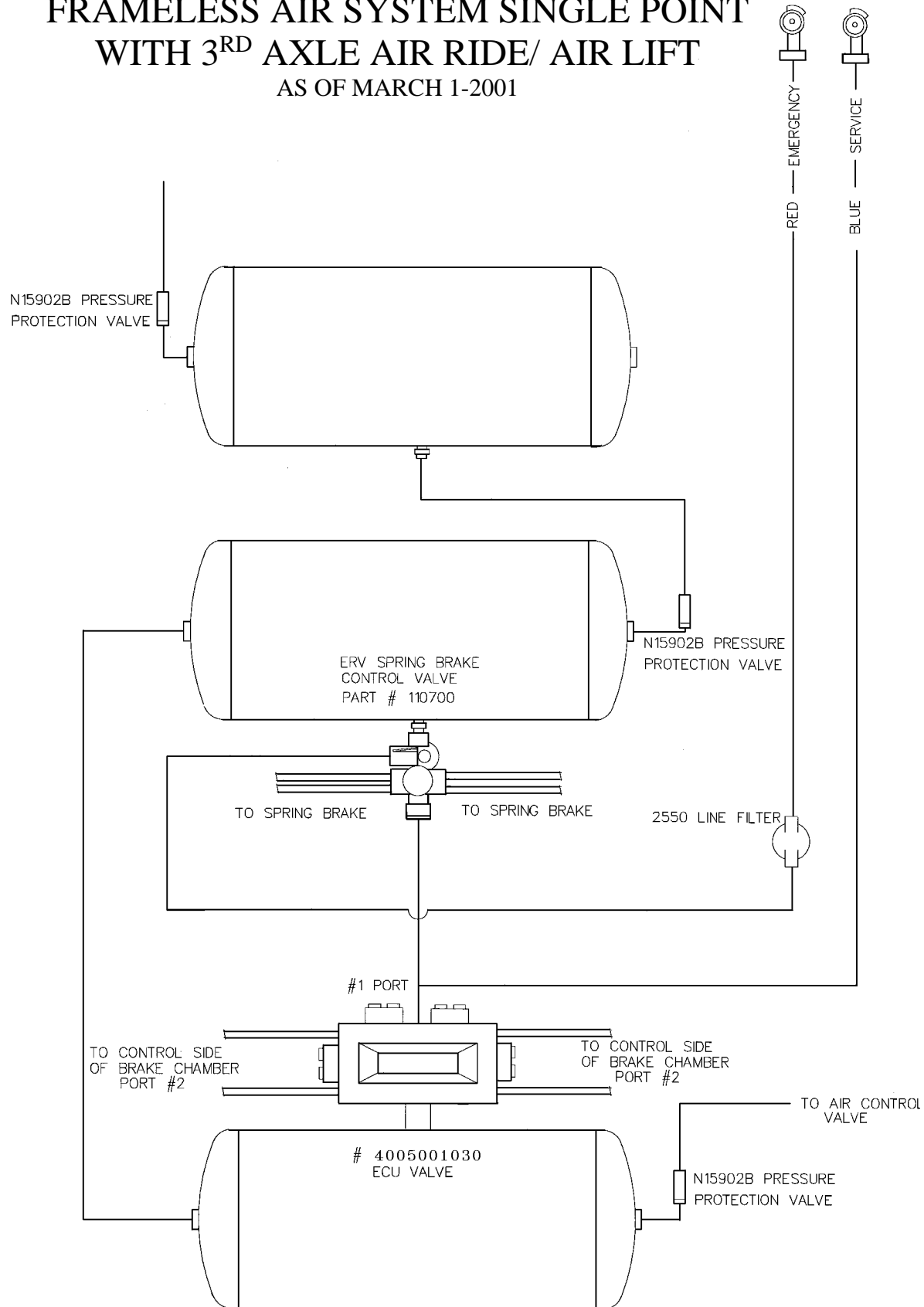
THAT IS THE ONLY WAY WE CAN INSURE THAT YOU RECEIVE THE PROPER PARTS FOR THE BRAKE SYSTEM INSTALLED ON YOUR TRAILER.



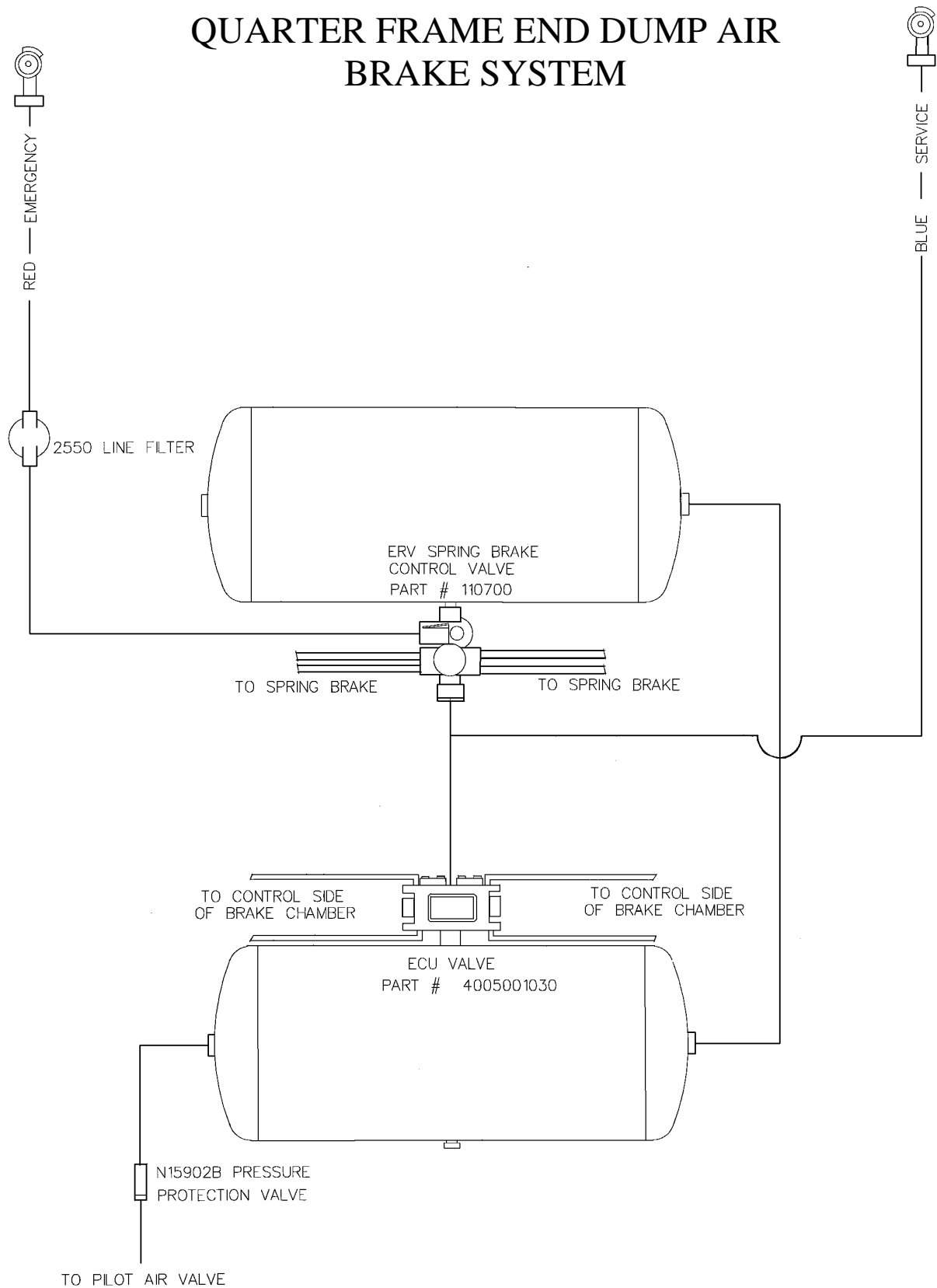
FRAMELESS AIR SYSTEM

AS OF MARCH 1, 2001

FRAMELESS AIR SYSTEM SINGLE POINT WITH 3RD AXLE AIR RIDE/ AIR LIFT AS OF MARCH 1-2001



QUARTER FRAME END DUMP AIR BRAKE SYSTEM



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SECTION FIVE

AXLE SYSTEM

5-5	<u>AXLE SYSTEM INFORMATION PAGE</u>
5-6	<u>TYPICAL AXLE DRAWING</u>
5-7	<u>TYPICAL AXLE PARTS IDENTIFICATION</u>
5-8	<u>BLANK</u>

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RANCO AXLE SYSTEM INFORMATION

RANCO USES AXLES MANUFACTURED BY SEVERAL 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.



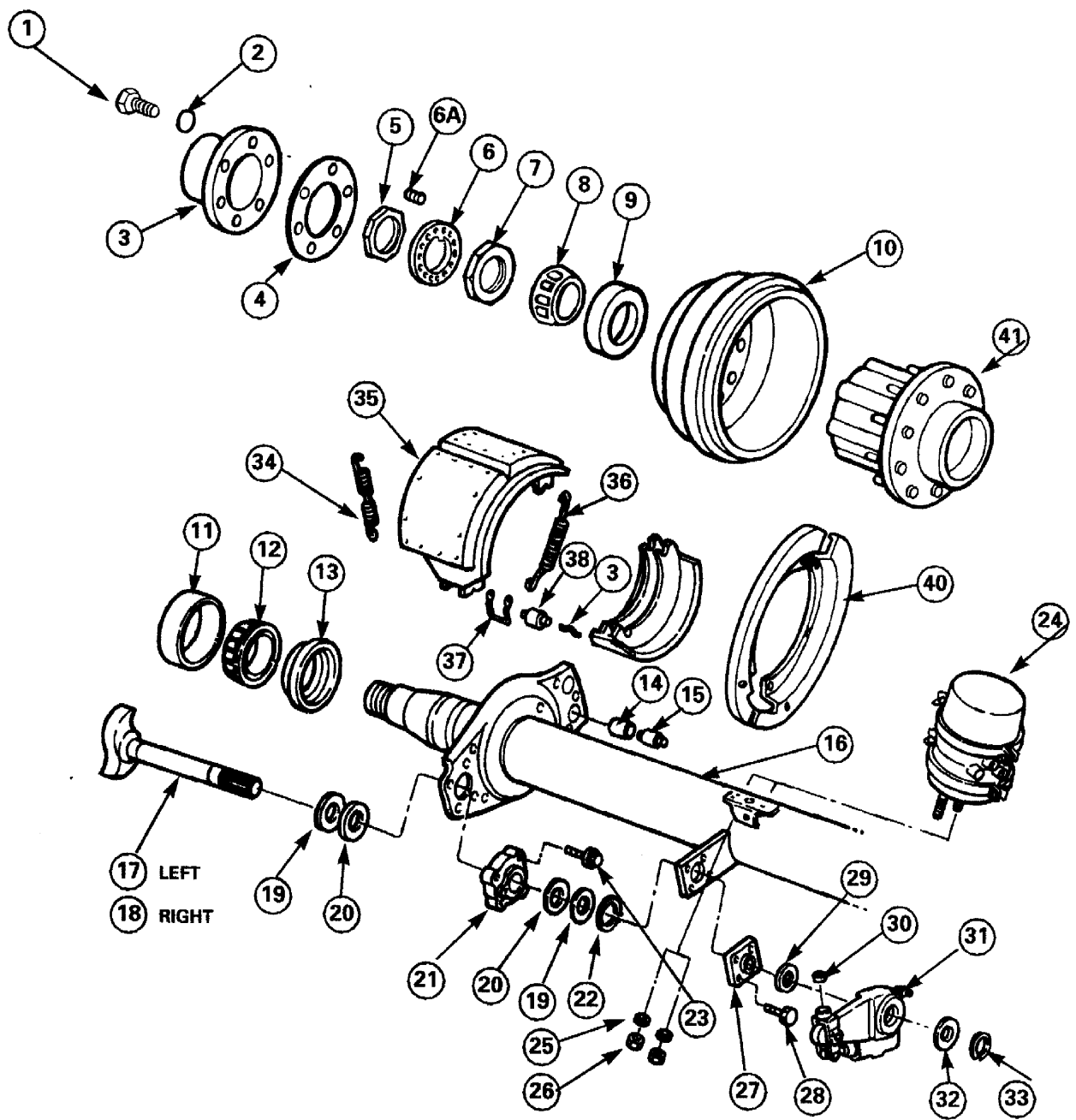


TABLE FOR FIGURE 5-2

TYPICAL 16.5" X 7" Q SERIES BRAKE INSTALLATION

Item	Description	Item	Description	Item	Description
1	Capscrew	14	Bushing Anchor Pin	28	Capscrew
2	Lockwasher	15	Pin Anchor	29	Slack Adjuster Washer
3	Hubcap	16	Beam Axle	30	Slack Adjuster Locknut
4	Gasket	17	Camshaft (left)	31	Automatic Slack Adjuster
5	Wheel Bearing Jam Nut	18	Camshaft (right)	32	Slack Adjuster Washer
6	Lockwasher	19	Washer	33	Slack Adjuster Snap Ring
6A	Setscrew	20	Seal	34	Brake Shoe Return Spring
7	Wheel Bearing Adjusting Nut	21	Bushing	35	Brake Shoe and Lining Assy.
8	Outer Wheel Bearing Cone	22	Snap Ring	36	Brake Shoe Retaining Spring
9	Outer Bearing Cup	23	Capscrew	37	Brake Shoe Roller Retainer
10	Brake Drum	24	Air Chamber	38	Brake Shoe Roller
11	Inner Bearing Cup	25	Lockwasher	39	Shoe Return Spring Pin
12	Inner Bearing Cone	26	Locknut	40	Dust Shield
13	Wheel Bearing Nut	27	Camshaft Bushing Assembly	41	Hub

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SECTION SIX

SUSPENSION SYSTEM

6-5	SUSPENSION INFORMATION PAGE
6-6	SINGLE POINT H900 SUSPENSION DRAWING
6-7	SINGLE POINT H900 SUSPENSION PARTS LISTING
6-8	BLANK

RANCO SUSPENSION SYSTEM INFORMATION

RANCO USES SUSPENSIONS MANUFACTURED BY SEVERAL DIFFERENT COMPANIES ON OUR STANDARD TRAILERS.

ON MOST TANDEM AXLE TRAILERS WE USE A SINGLE POINT SUSPENSION, MODEL H-900.

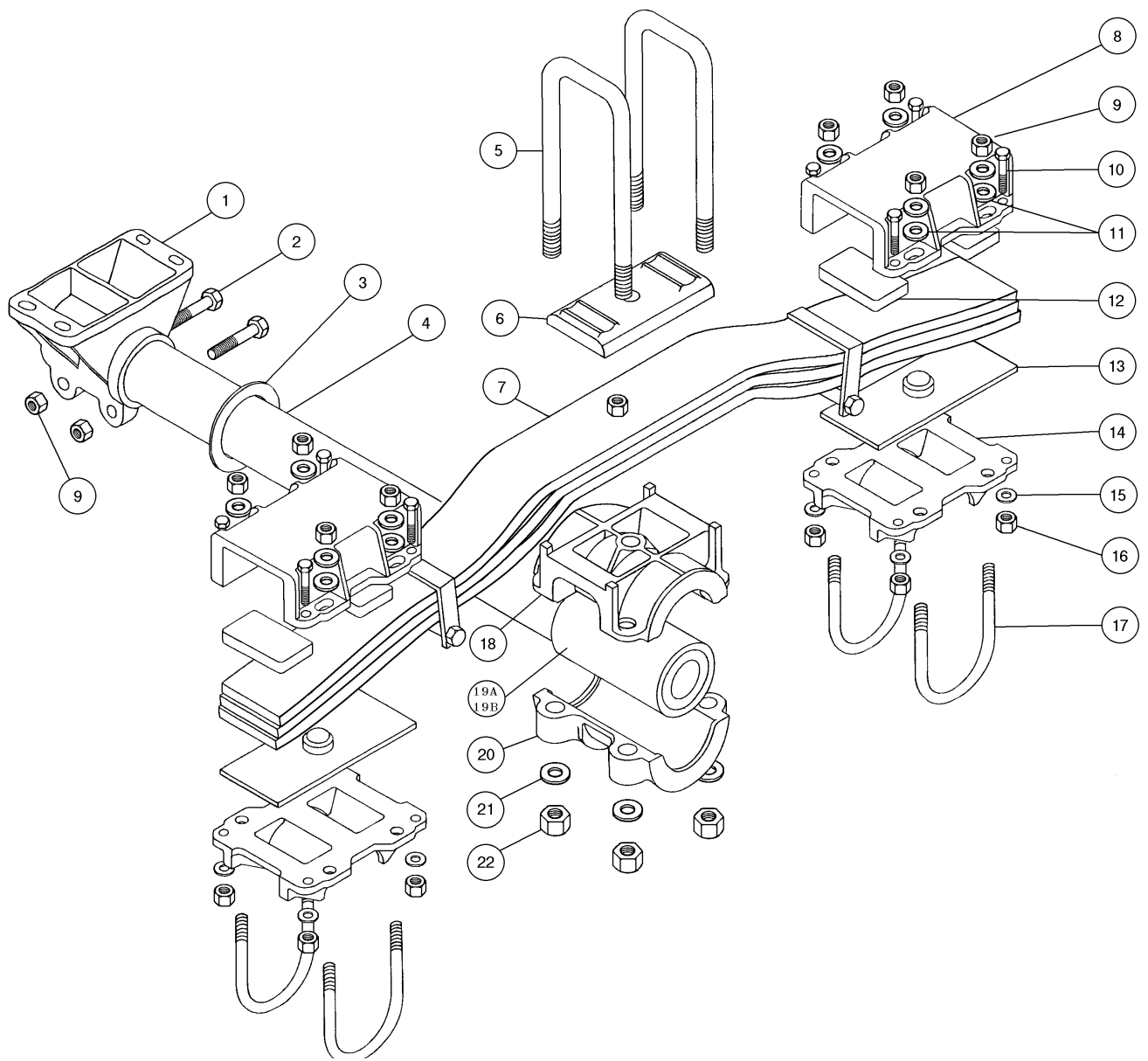
RANCO KEEPS A RECORD OF EXACTLY WHAT BRAND AND TYPE OF SUSPENSION IS PUT UNDER EACH TRAILER.

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.





SINGLE POINT H-900 SUSPENSION DRAWING

SUSPENSION PARTS FOR H-900 SUSPENSION

1	897-01	TRUNION HANGER
2	10376-00	4 1/2" X 3/4-16" HEX BOLT
3	895-00	4 1/2 X 5 3/4" WASHER
4	893-01-54	44,000# TRUNION TUBE
	893-02-54	50,000 TRUNION TUBE
5	9639-01	U-BOLT, TRUNION
6	9640-00	TRUNION, TOP PLATE
7	12258-01	SPRING, THREE LEAF
8	9937-00	SPRING END CAP
9	841-00	3/4-16" HEX NUT
10	9293-00	2" X 5/8-18" HEX BOLT
11	817-00	13-16" X 1 1/2" WASHER
12	814-00	RUBBER PAD
13	10608-00	ADJUSTMENT PLATE
14	9934-02	SPRING SEAT ADJUSTMENT
15	10273-00	5/8" WASHER
16	11513-03	5/8-18" HEX NUT
17	10060-01	U-BOLT, AXLE
18	891-00	TRUNION HUB-UPPER
19A	890-00	RUBBER BUSHING, TRUNION
19B	20248-01	FRESS OSCILLATING TRUNION BUSHING
20	898-00	TRUNION HUB-LOWER
21	837-00	1 1/4" X 2 1/4" WASHER
22	836-00	1 1/8-12" HEX BOLT

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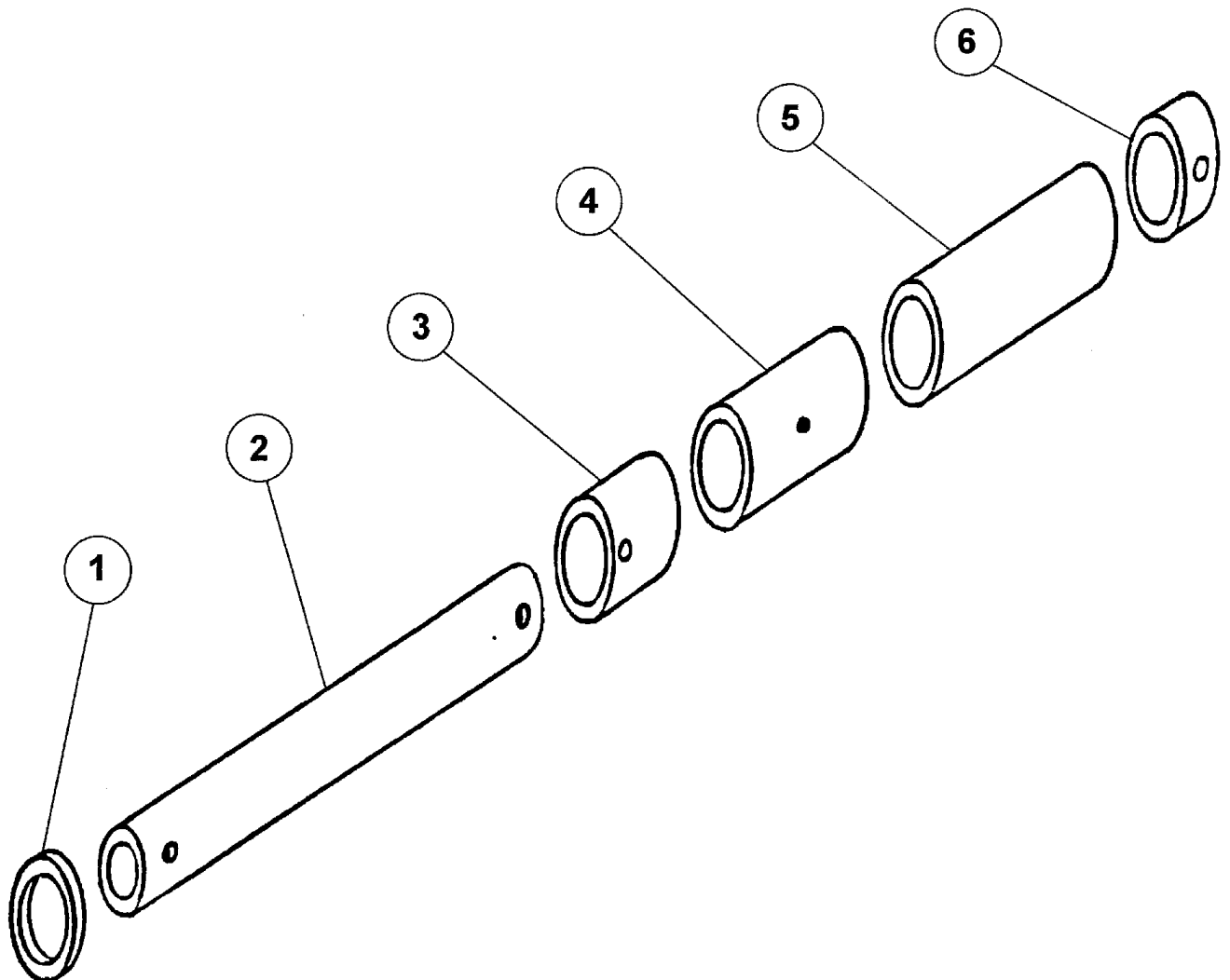


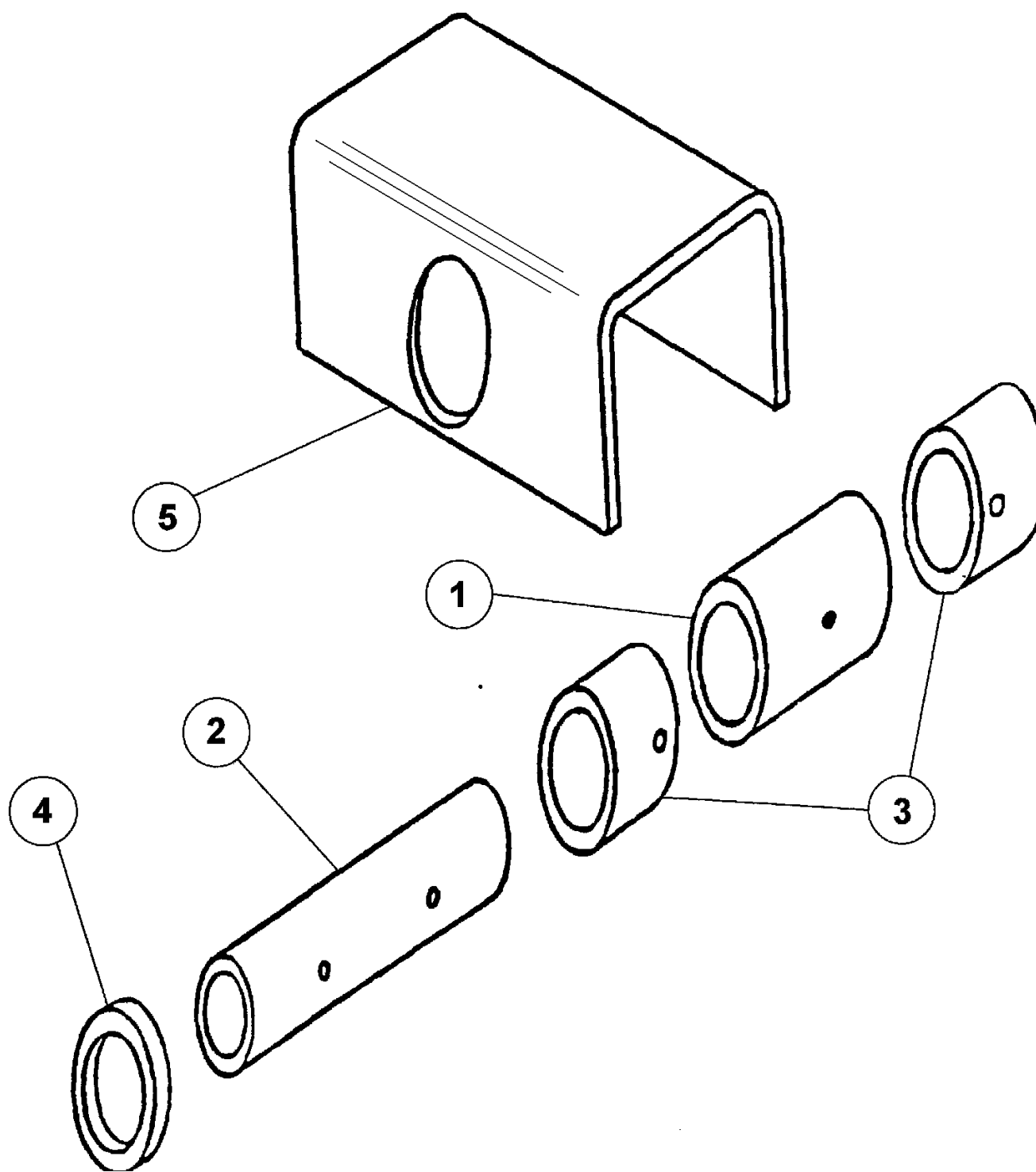
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SECTION SEVEN

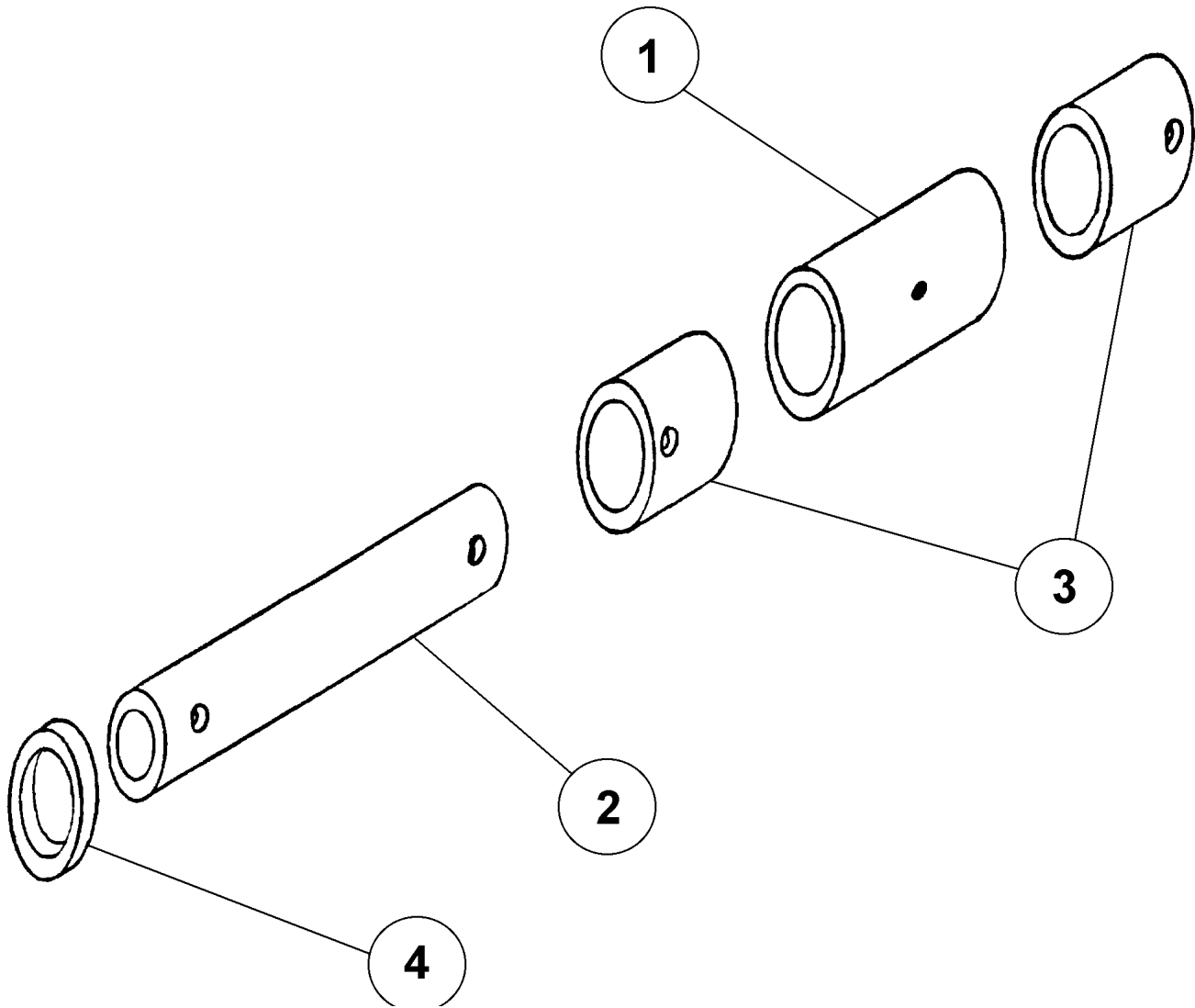
DRAFT ARMS HINGE POINTS

7-4	<u>5TH PLATE TO DRAFT ARM CONNECTION</u>
7-5	<u>DRAFT ARM TO CENTER BOLSTER PLATE</u>
7-6	<u>DRAFT ARM TO LEVELING ARM CONNECTION</u>





DRAFT ARM TO LEVELING ARM CONNECTION



PART #	DESCRIPTION
ED3400	DRAFT ARM-MODEL 20-26 QUARTER FRAME
ED3350	DRAFT ARM-MODEL 28-36 QUARTER FRAME
ED2370	DRAFT ARM-MODEL 24-30-3 QUARTER FRAME
ED3240	DRAFT ARM-MODEL 24-30 QUARTER FRAME

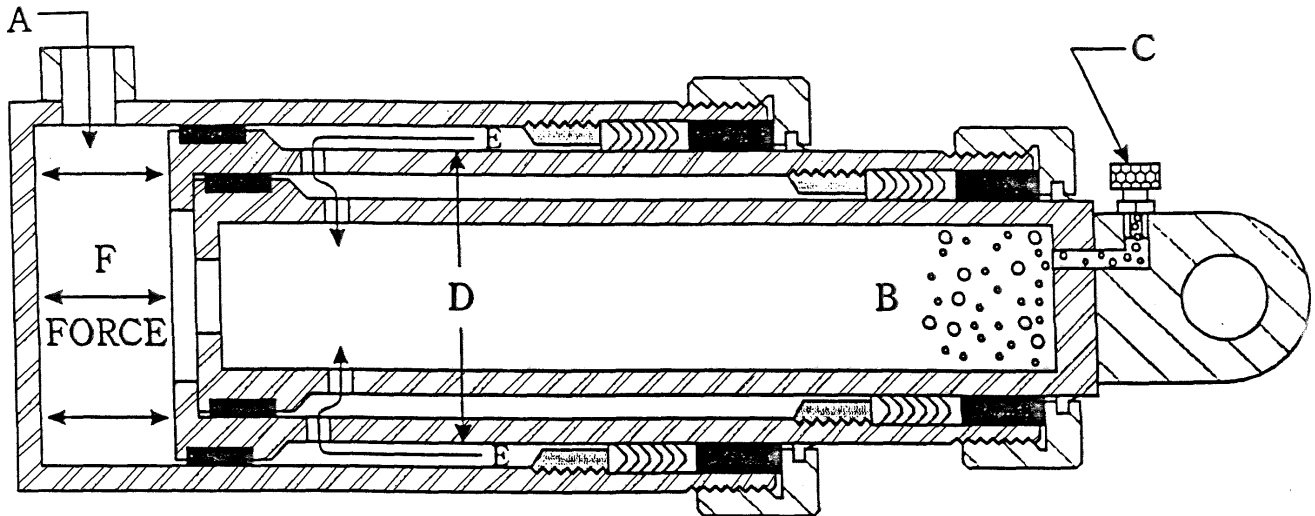
ITEM	PART #	DESCRIPTION
1.	ED1013	DRAFT ARM BEARING
2.	ED3341	BEARING PIN
3.	ED1008	BEARING
4.	ED1012	RETAINER

SECTION EIGHT

MISCELLANEOUS PARTS

8-8	<u>SINGLE ACTING TELESCOPIC CYLINDER OPERATION</u>
8-9	<u>ASPHALT APRON DRAWING AND PARTS IDENTIFICATION</u>
8-10	<u>FRONT FENDER ASSEMBLY DRAWING AND PARTS LIST</u>
8-11	<u>REAR FENDER ASSEMBLY DRAWING AND PARTS LIST</u>
8-12	<u>MUD FLAP BRACKET ASSEMBLY</u>
8-13	<u>HIGH LIFT MUD FLAP BRACKET ASSEMBLY</u>
8-14	<u>BLANK</u>

SINGLE ACTING TELESCOPIC CYLINDER OPERATION



TO EXTEND:

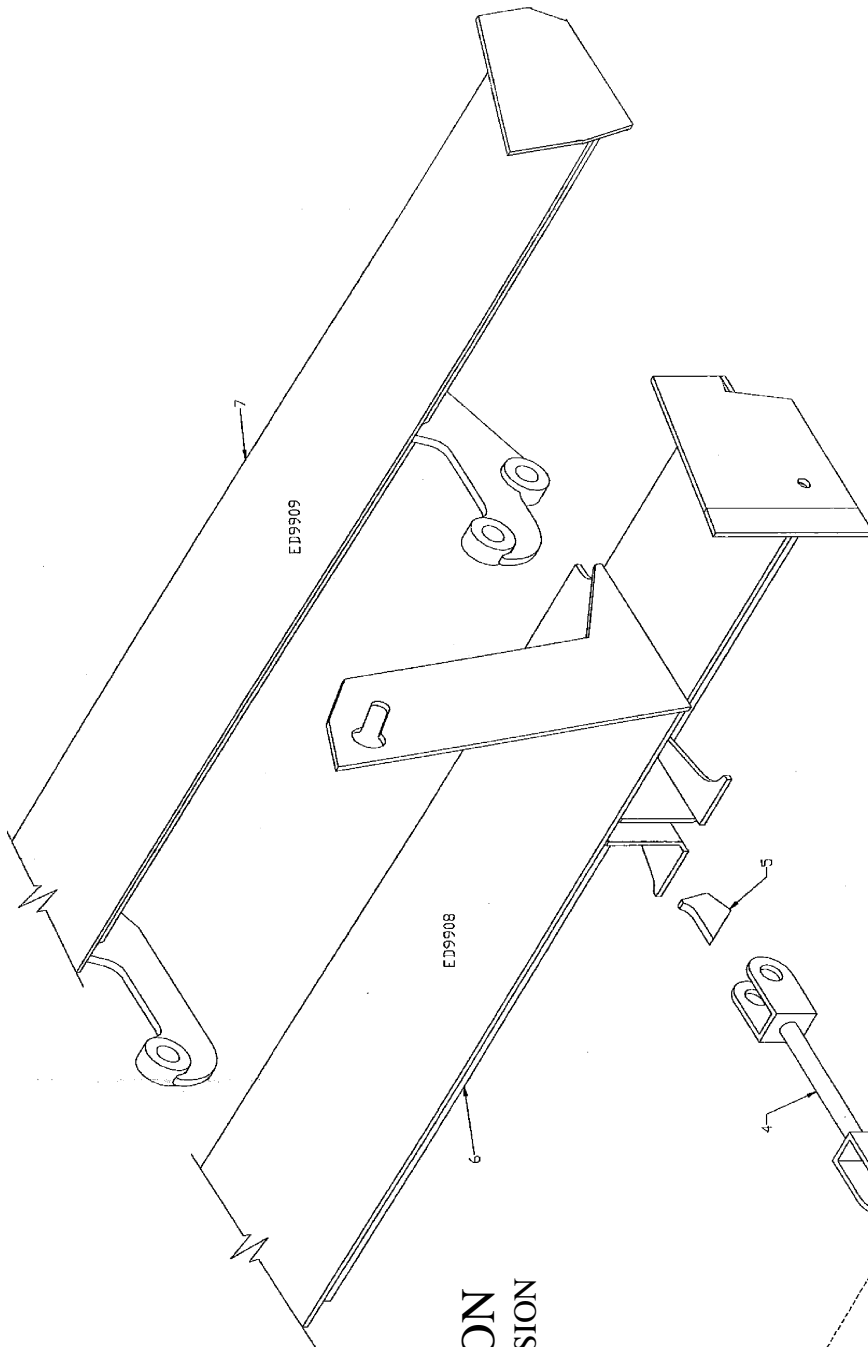
HIGH PRESSURE OIL FROM THE PUMP IS DIRECTED BY THE CONTROL VALVE THROUGH THE PORT (A) TO FILL THE CYLINDER. ANY AIR IN THE SYSTEM IS TRAPPED IN THE END OF THE CYLINDER (B) AND MAY BE BLED OFF THROUGH THE BLEEDER VALVE (C). GENERALLY, BLEEDING IS ONLY NECESSARY ON INITIAL START UP OR IF AIR HAS BEEN ALLOWED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

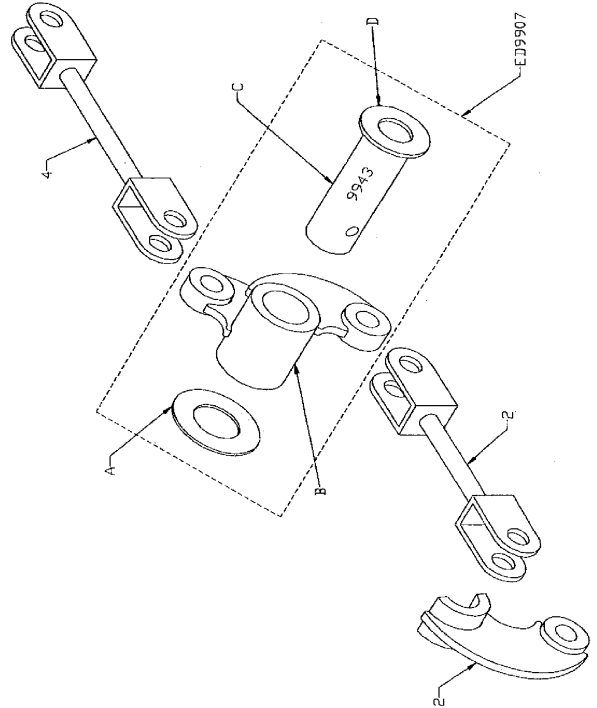
TO RETRACT:

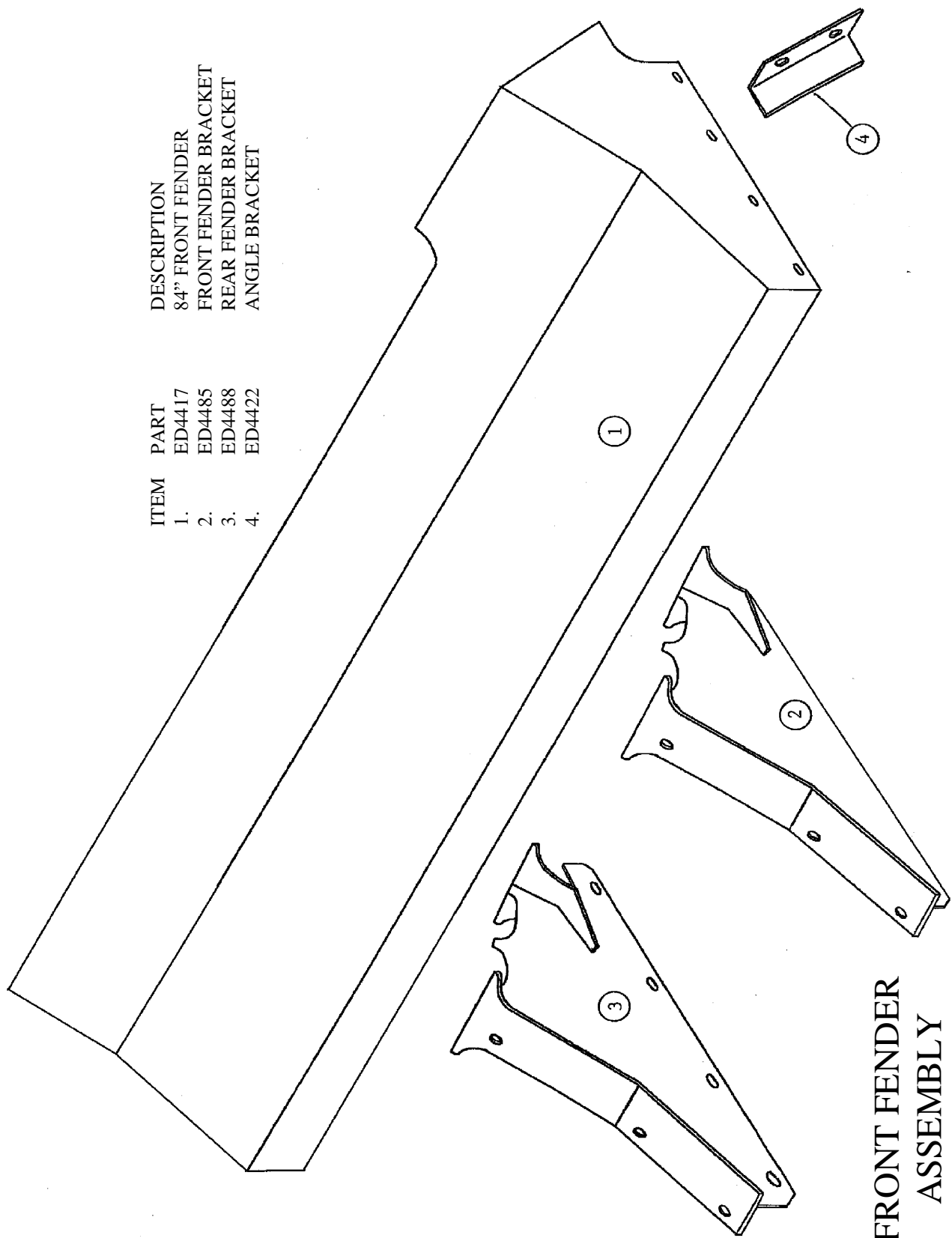
A SINGLE ACTING CYLINDER MUST BE RETRACTED BY GRAVITY OR MECHANICAL MEANS.



ASPHALT APRON WITH HINGED EXTENSION

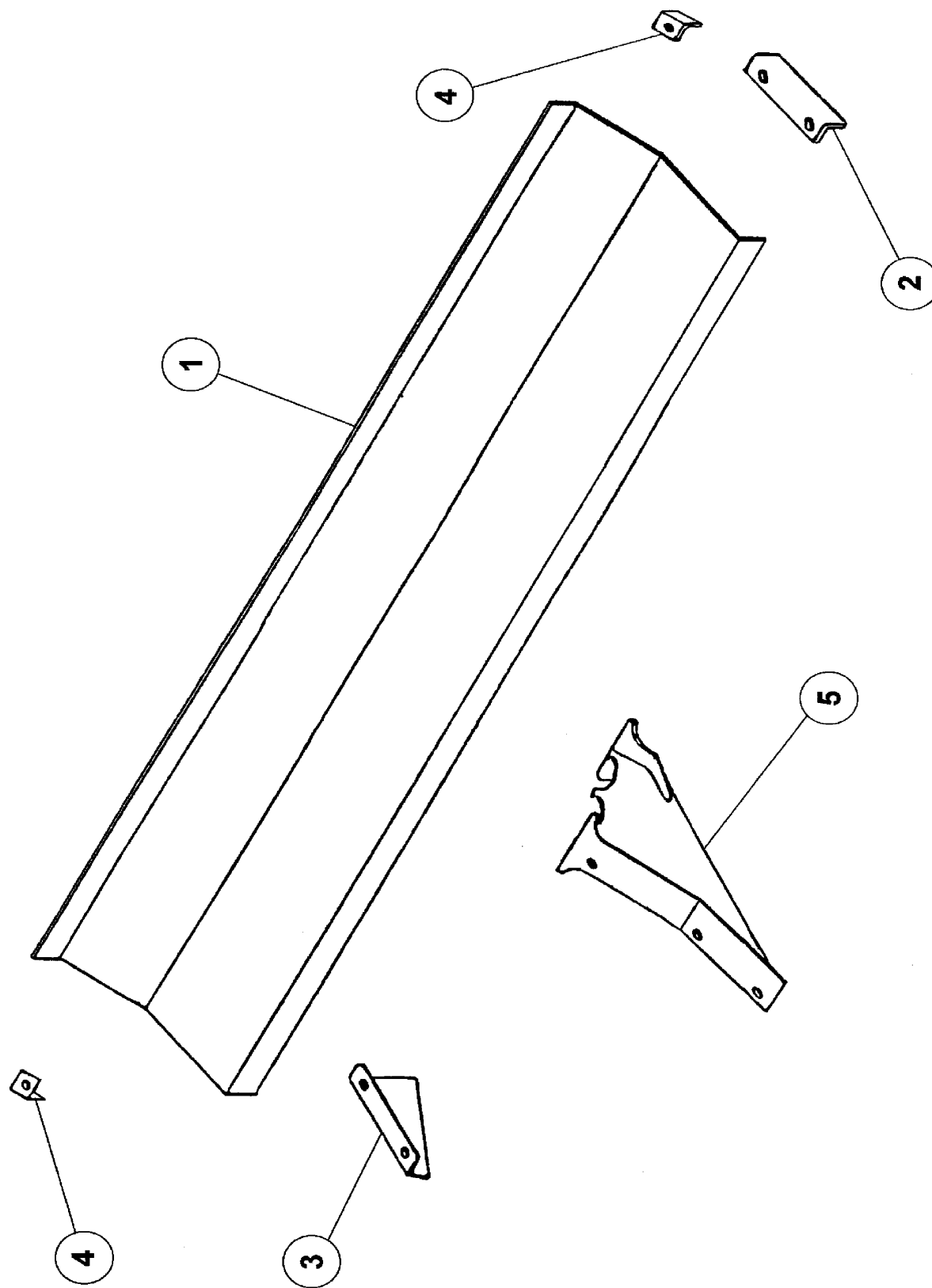
1. ED9905 LINK ARM ASSEMBLY
2. ED9902 TURNBUCKLE ASSEMBLY
3. ED9907 LINK ARM TRANSFER ASSEMBLY
 - A ED9937 WASHER
 - C ED9906 LINK M ASSEMBLY
 - C ED9943 LINK ARM SHAFT
 - D ED9938 RETAINER
4. ED9901 TURNBUCKLE ASSEMBLY
5. ED9945 STOP
6. ED9908 FIXED ASPHALT PAN
7. ED9909 HINGED ASPHALT PAN

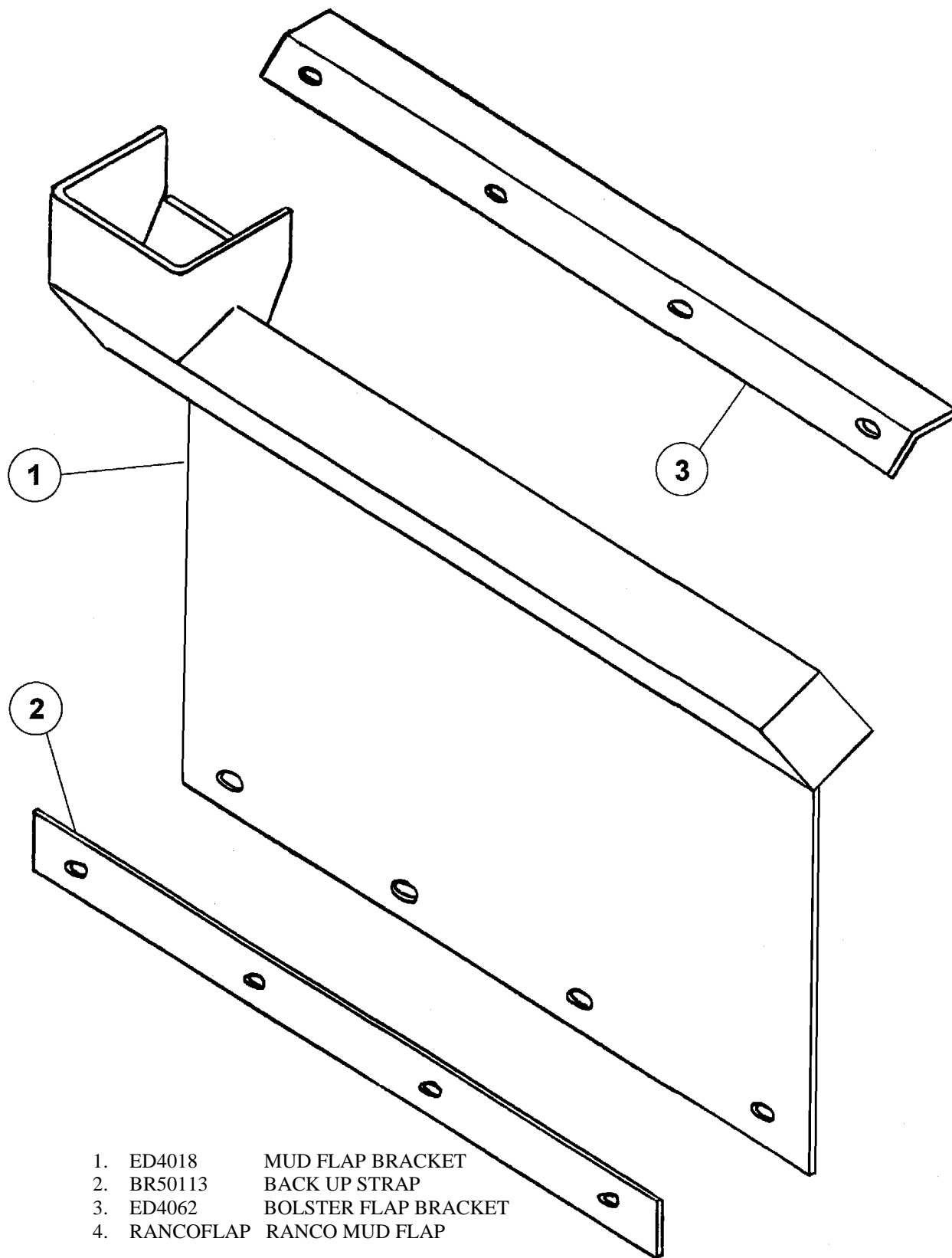




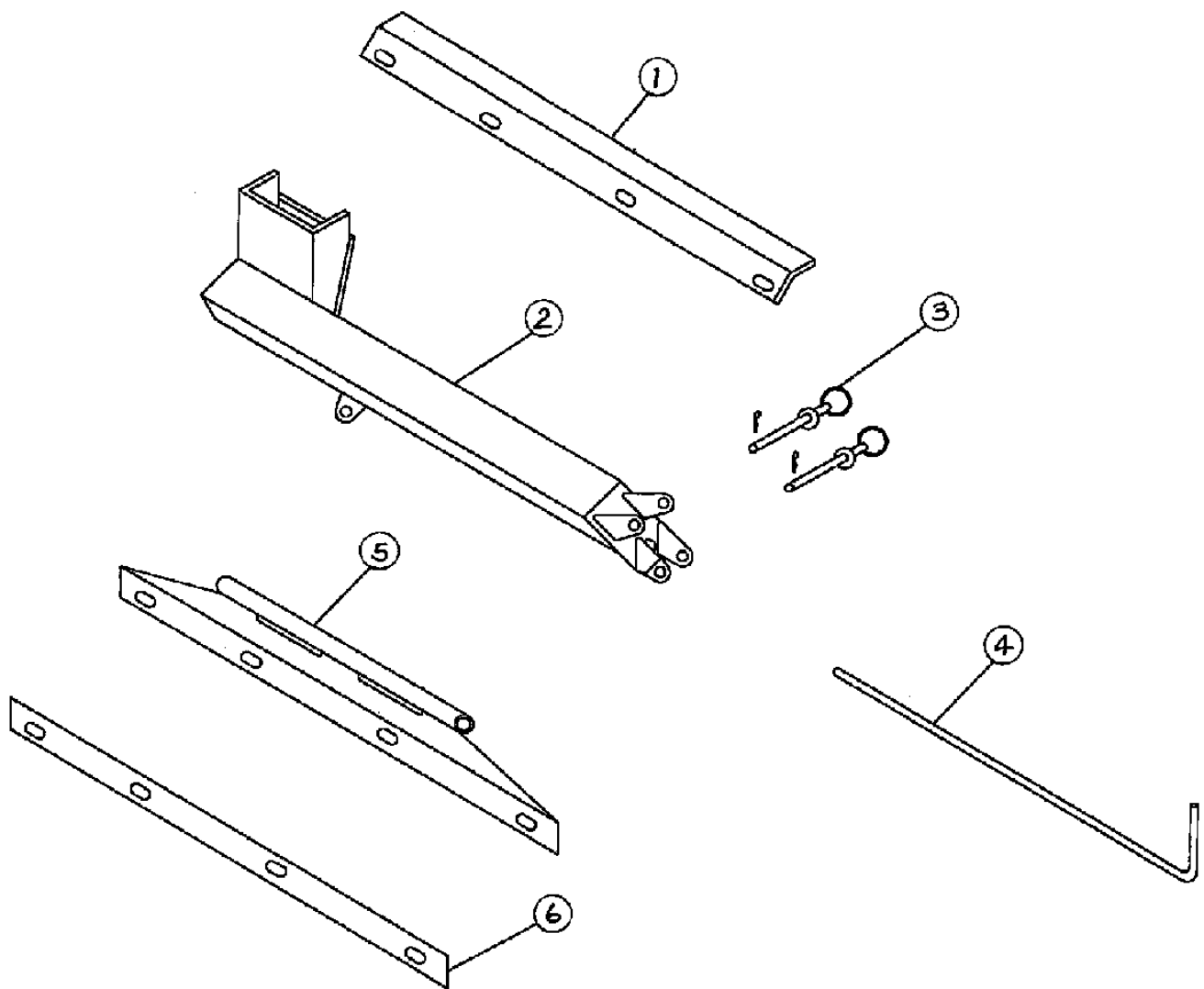
ITEM	PART	DESCRIPTION
1.	ED4417	84" FRONT FENDER
2.	ED4485	FRONT FENDER BRACKET
3.	ED4488	REAR FENDER BRACKET
4.	ED4422	ANGLE BRACKET

FRONT FENDER
ASSEMBLY





- | | | |
|----|-----------|----------------------|
| 1. | ED4018 | MUD FLAP BRACKET |
| 2. | BR50113 | BACK UP STRAP |
| 3. | ED4062 | BOLSTER FLAP BRACKET |
| 4. | RANCOFLAP | RANCO MUD FLAP |



HIGH LIFT MUD FLAP BRACKET ASSEMBLY

- | | |
|------------------|----------------------------|
| 1. ED4062 | FLAP BRACKET- BOLSTER |
| 2. ED4049 | HIGH LIFT BRACKET ASSEMBLY |
| 3. MUDFLAPHCHPIN | MUD FLAP HITCH PIN |
| 4. ED4061 | ATTACHMENT PIN |
| 5. ED4075-2 | MUD FLAP BRACKET ASSEMBLY |
| 6. BR50113 | BACK UP STRAP |

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888-424-4004 | sales@ranco.com

SECTION NINE

SPECIAL OPTIONS

- 9-5 [CRAMARO TARPAULIN PAGE 1](#)
- 9-6 [CRAMARO TARPAULIN PAGE 2](#)
- 9-7 [CRAMARO TARPAULIN PAGE 3](#)
- 9-8 [CRAMARO TARPAULIN PAGE 4](#)

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.

CRAMARO TARP PAGE 1

**** 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 ½" 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

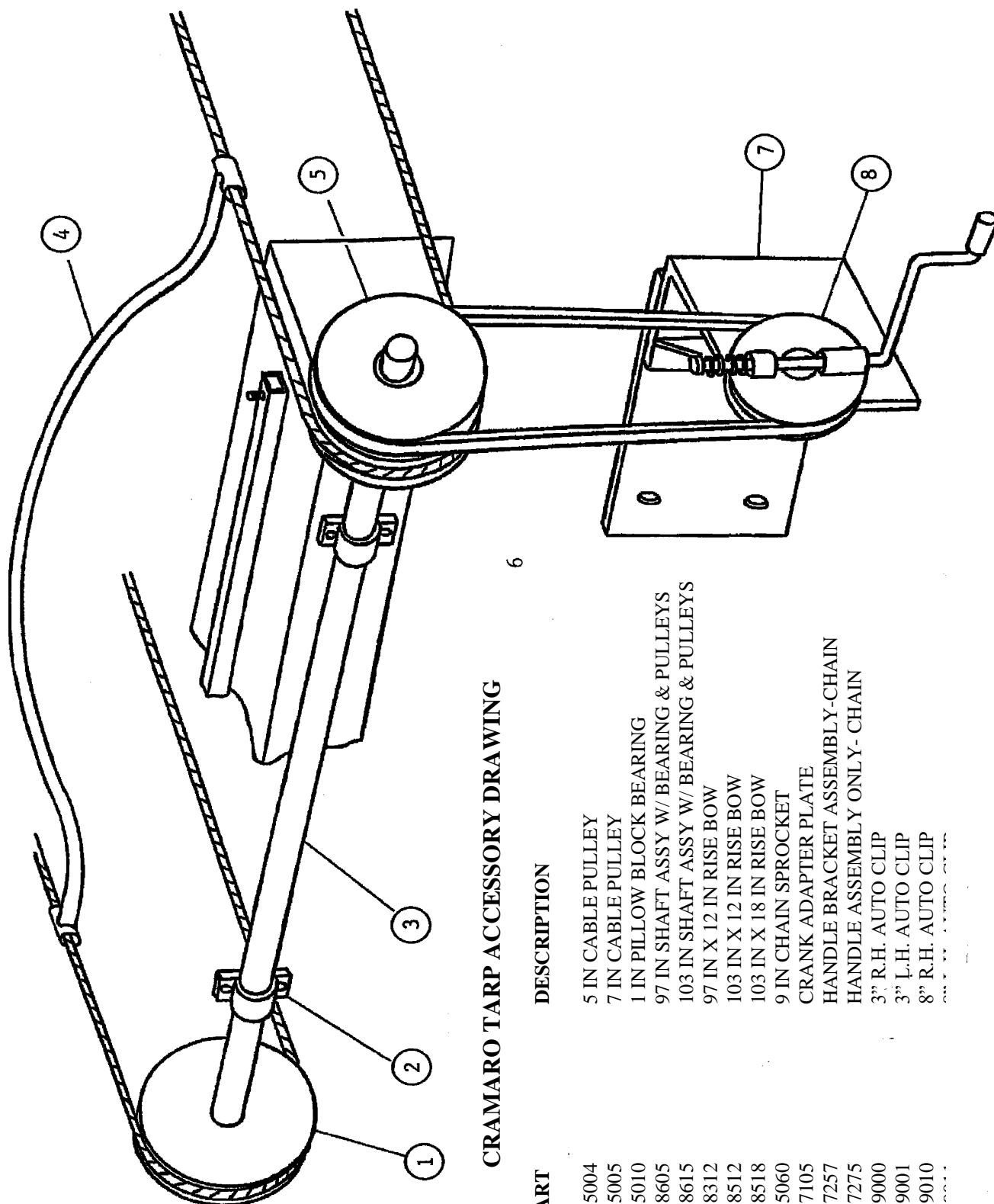
The sideboards are damaged

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

CRAMARO TARP PAGE 2

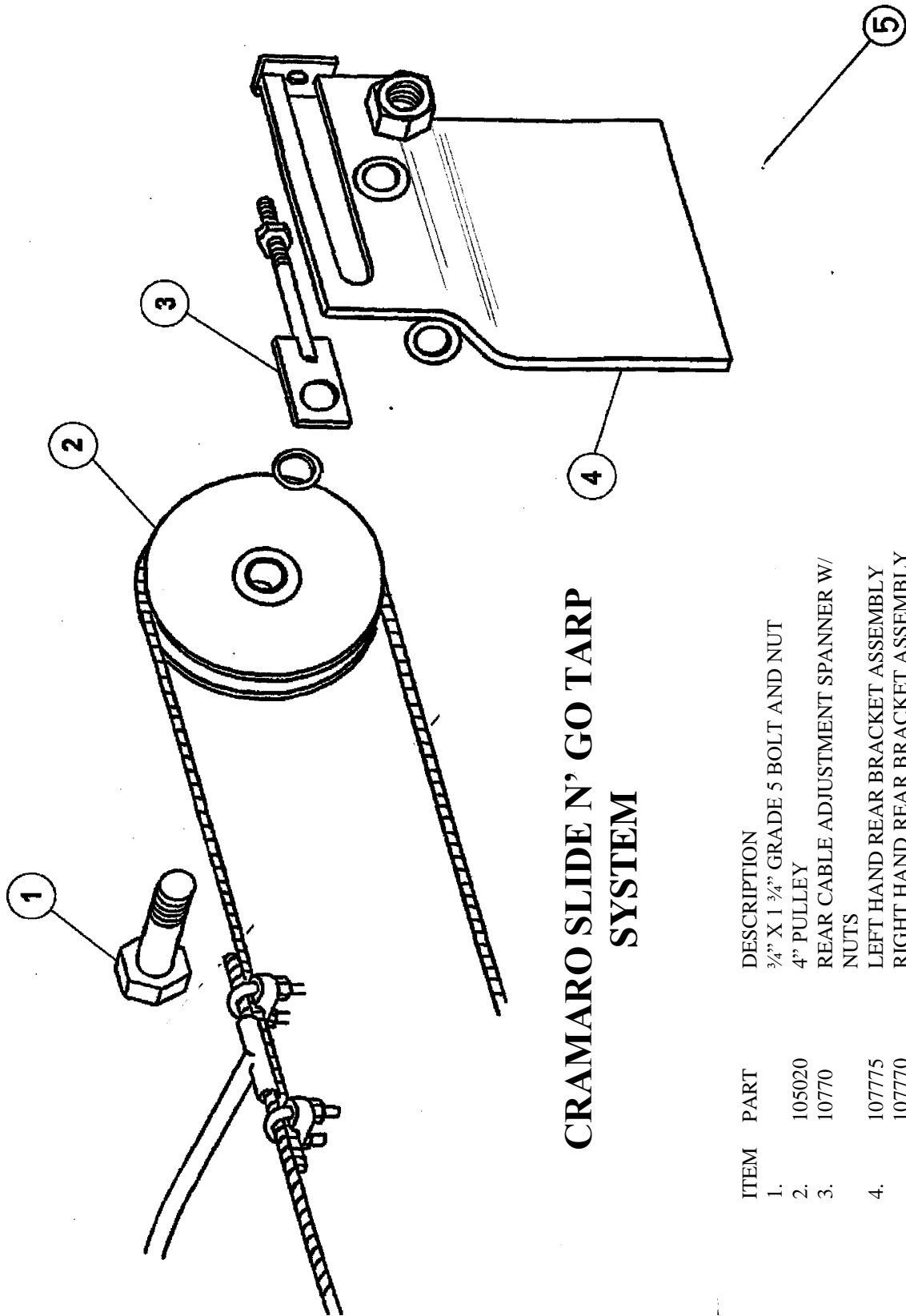


(888) 424-4004



CRAMARO TARP ACCESSORY DRAWING

ITEM	PART	DESCRIPTION
1	105004	5 IN CABLE PULLEY
2	105005	7 IN CABLE PULLEY
3	105010	1 IN PILLOW BLOCK BEARING
4	108605	97 IN SHAFT ASSY W/ BEARING & PULLEYS
5	108615	103 IN SHAFT ASSY W/ BEARING & PULLEYS
6	108312	97 IN X 12 IN RISE BOW
7	108512	103 IN X 12 IN RISE BOW
8	108518	103 IN X 18 IN RISE BOW
9	105060	9 IN CHAIN SPROCKET
10	107105	CRANK ADAPTER PLATE
11	107257	HANDLE BRACKET ASSEMBLY-CHAIN
12	107275	HANDLE ASSEMBLY ONLY- CHAIN
13	109000	3" R.H. AUTO CLIP
14	109001	3" L.H. AUTO CLIP
15	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.	10775	LEFT HAND REAR BRACKET ASSEMBLY
	10770	RIGHT HAND REAR BRACKET ASSEMBLY

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