

Express

Express Welding, Inc.

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www.Express-Welding.com

27T 20-40 Trailer

Operators Manual





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INTRODUCTION

This manual details the operational and maintenance procedures for the Express 27T 20-40 Trailer. This trailer houses a set of 27 Tonne Swing Thru cranes. The operational and maintenance procedures for these cranes are detailed in a separate manual.

OPERATION

5th Wheel Height

The 5th wheel height of a tractor used to transport this trailer shall be 48" above the ground.

Air and Electric Hookups

This trailer is equipped with two gladhand type fittings (one is colored red and the other is colored blue) for air connection and a 7-pin round plug for the electric connection.

The trailer air supply shall be attached to the red gladhand. The service brake signal line shall be attached to the blue gladhand. For more details, see APPENDIX A: Air and Electric Schematics.

Trailer Extension (Retraction)

1. Pull Lock Valve into Unlocked position.
2. Set trailer brakes. *****WARNING***** *****DO NOT SET PARKING BRAKES*****
3. Pull (Push) trailer to stops.
4. Push Lock Valve into Locked position.
5. Push (Pull) trailer until the four (one) locking pins engage.
6. Verify that all locking pins have been engaged.

See following photos for location of instructions and Lock Valve.

Express



Suspension Air Dump

To drain the suspension air bags of air, turn the Suspension dump valve to the 'Dump' position.

To re-inflate the suspension air bags, turn the Suspension dump valve to the 'Fill' position.

It is located below the engine control box at the rear of the trailer. See the following photo for location of the Suspension dump valve.





Engine Controls

For information on the engine and engine controls, see the engine manual (supplied separately).

Securing a Container

Before loading a container, be sure that all the twist locks are in the unlocked position (see following photo).



If the container has a gooseneck tunnel, and the tunnel is located towards the front of the trailer, the container is ready to load.

If the container does not have a gooseneck tunnel, or if the tunnel is towards the rear of the trailer, the twist locks must be extended. To accomplish this, the twist lock extensions must be secured to all 4 twist locks. Now the container is ready to load.

To load the container, refer to the operating instructions for the cranes, which are in a separate manual. Once the container is loaded on the trailer, secure the trailer by turning the twist locks a quarter turn into the locked position.

MAINTENANCE

Axles & Suspension

See http://www.hendrickson-intl.com/pdfs/trailer_PDFs/L578.pdf for more specific details on axle and suspension maintenance.



Axles

Daily

- Check for damage

Every 3,000 Miles:

- Check alignment of axles

Every 7,500 Miles:

- The wheel bearings are lubricated with SAE 80W /90W gear oil. Check the oil level every 7,500 miles
- Check hub seals for wear and leaks
- Check hub cap for leaks and damage

Every 100,000 Miles:

- Replace wheel bearing lubricant.
- Check wheel bearing adjustment

Suspension

Daily

- Check for damage

Every 3,000 Miles:

- Check Clearances around:
 - Wheels & Tires
 - Shock Absorbers
 - Air Bags
 - Any other moving parts
- Check brakes for proper adjustment and for excessive wear
- Check torque on U-bolts securing axle to suspension (425-525 ft-lb)
- Check torque on Shock absorber bolts (210-235 ft-lb)
- Check for any noticeable wear

Every 7,500 Miles:

- Check all welded connections for cracks

Ride Height

The ride height of the trailer should be checked every 2,500 miles. This is done with the trailer attached to a tractor with a 48" 5th wheel height and parked on a hard, flat surface. To check the



ride height, measure from the ground to the top flat surface of the rear twist locks (in the low position) with the suspension air bags filled. This measurement should be between 47.75" and 48".

If the measurement is too large, loosen the clamp around the axle that secures the height control valve anchor and rotate the anchor so that the arm on the height control valve is rotated downward. Retighten the clamp. After adjusting, dump the air bags and re-inflate. Check the ride height again.

If the measurement is too small, loosen the clamp around the axle that secures the height control valve anchor and rotate the anchor so that the arm on the height control valve is rotated upward. Retighten the clamp. After adjusting, dump the air bags and re-inflate. Check the ride height again.

Wheels and tires

Daily

- Check for unusual wear
- Check tire inflation pressure (110-115 psi)

Every 3,000 Miles

- Check tread depth on tires
- Check torque on all wheel nuts (450 ft-lb)

Air & Electrical

Air System

Daily

- Drain water from air tank using draincock on end of tank
- With air system fully charged and suspension air bags filled, listen for any noticeable leaks
- Check for Damage

Every 3 Months

- Check air lines for wear
- Check all valves for leaks and wear
- Check welds on air tank and air tank mounting for cracks



Electrical System

Daily

- Check for proper operation of all lights
- Check for damage
- Check charge on battery

Every 3 Months

- Check electrical lines for damage
- Check battery for damage

Hydraulics

Daily

- Check for damage
- Check for leaks
- Check oil level in reservoir (Mobil DTE-11M)

Every 25 Hours of operation

- Check all threaded connections for tightness
- Check pump for signs of leaks or wear

Every 100 hours of operation

- Change hydraulic oil (Mobil DTE-11M)
- Change hydraulic filter (35 GPM, 15 Micron) – NAPA 1758

Landing Gear

Daily

- Check for damage
- Check for smooth operation

Every 3 Months

- Lubricate landing gears

Trailer

Daily

- Check for damage



Every 3 Months

- Check all welds for cracks
- Check tightness of all fasteners
- Visually check E-Chain for damage (using flashlight and looking into passenger side tube from rear)

Every 25 telescoping cycles

- Check telescoping tubes for damage
- Check tube stops for damage

Every 250 telescoping cycles

- Check telescoping tube wear pads for wear and damage (See APPENDIX B: Checking Telescoping Tube Wear Pads for details)

COMPONENT INFORMATION

For warranty information and other documentation, see APPENDIX C: Component Manufacturer Warranties, Documentation.

Kingpin

This trailer uses a single standard weld-in kingpin (P/N: 2084195) set at a fixed swing clearance of 84". This was supplied by Wallace Force.

Landing Gear

This trailer has a 2-speed, dual-leg landing gear set (P/N: A400.T1.17) which was supplied by Jost. The crank for the landing gear is on the driver's side of the trailer. When the crank shaft is in the extended position, it is in low gear. When it is in the retracted position, it is in high gear.

Axle & Suspension

This trailer uses a Hendrickson Intraax.36433 suspension with integrated axle. This is a 25,000 pound capacity system with a 9" ride height, 71.5" track and limited jounce. The axle has an HN type spindle, Ø16.5"x7" standard service brakes, 28-spline x 5.5" automatic slack adjusters and 30/30 brake chambers. The axle spacing is 109" (9'-1").



Air Tank

This trailer has a custom built air tank that provides sufficient air volume for the air ride suspension and for the brake system.

Brake Valves

Service Brakes

This trailer uses a Sealco spring brake relay valve (P/N: 110200).

Parking Brakes

This trailer used a Sealco parking brake relay valve (P/N: 110171).

ABS Valves

This trailer is equipped with an air modulated ABS brake system. This system requires no electronics or electricity. It was manufactured by ABS, Inc.

Lighting & Electrical

All of the lighting products and most of the electrical harnesses are manufactured by Truck-Lite.

There are Ø2" yellow LEDs (P/N: 30270Y) on each side of the trailer at the front of the gooseneck. These LEDs are illuminated with the tractor's running lights.

There are oval yellow LEDs (P/N: 60275Y) under the driver side toolbox and the passenger side basket. These LEDs are illuminated with the tractor's running lights. In addition, they also flash with the corresponding turn signal.

There are Ø2" red LEDs (P/N: 30270R) on the ends of the rear bumper. These LEDs are illuminated with the tractor's running lights.

There are three (3) Ø4" LEDs (P/N: 44302R) on each side of the rear bumper. The farthest outboard LEDs are red and are illuminated with the tractor's running lights. They also flash with the corresponding turn signal. The next most outboard LEDs are red and are illuminated with



the tractor's running lights. They also brighten with the application of the brakes. The most inboard LEDs are yellow strobe lights. They are powered by the tractor's running lights and a switch located at the middle of the rear bumper on the top side.

There are three (3) Ø2" red LEDs (P/N: 30270R) at the center of the rear bumper. These are illuminated by the tractor's running lights.

There is an adjustable spot/work light (P/N: 80486) on each end of the rear bumper on the top side. These are powered by the tractor's running lights and a switch on the back of each light assembly.

The electrical harness (P/N: 88701-0780) that goes from the front electrical receptacle (where the tractor plugs in) to the rear bumper harness is manufactured by Truck-Lite. It is a 7 conductor cable.

The rear bumper harness (P/N: 88931) is manufactured by Truck-Lite. It has LED compatible plugs and dropouts in the center for ABS power, Brake Signal and Ground.

All the harnesses that plug into the LED's are manufactured by Truck-Lite.

The front electrical receptacle (P/N: 593084) was supplied by Velvac.

The Strobe Light Switch (P/N: CH-5582-10) and weather-proof boot (P/N: CH-81264-01) were supplied by Terminal Supply Co.

The battery is a size 24, deep cycle marine, 12VDC battery.

The control box for the engine was supplied by Total Energy Systems.

Other terminals, wire and cable were supplied by Terminal Supply Company.

Pneumatic Components

All push-to-connect fittings were supplied by Velvac.

All Nylon Air Tubing was supplied by Velvac.

The gladhands at the front of the trailer were supplied by Velvac.

The Locking Pin Valve (P/N: 320121) at the front, driver side corner of the trailer was supplied by Velvac. It is a ¼" NPT ported, 5 port, 4 way valve with a push/pull handle for actuation.



The draincock (P/N: 036003) on the air tank was supplied by Velvac.

The suspension air bag dump valve was supplied by McMaster-Carr (P/N: 4093T22).

The Tandem Brake Chambers that are used for locking the trailer in the 20' and 40' positions are size 24/24. They were supplied by SCI and were modified by Express Welding, Inc. These air chambers are covered by Express Welding's Exclusive Limited Warranty (see APPENDIX C: Component Manufacturer Warranties, Documentation & Contact Information).

Hydraulic Components

The Hydraulic Pump is a tandem gear pump with a minimum 35 L/min flow rate from each section at 3600psi and 2500 rpm. It was supplied by Casappa (P/N: CRP00131).

The hydraulic hose (351TC and 811 Series) and hydraulic hose fittings (43 Series) were manufactured by Parker.

The threaded hydraulic fittings were supplied by Pressure Connections Corporation.

The hydraulic fluid is equivalent to a Mobil DTE-11M.

The oil filter was supplied by Great Plains (P/N: 4022). It is a 35 GPM, 15 micron filter. It is replaceable with a NAPA 1758.

E-Chain

The E-chain was manufactured by igus, Inc.

Engine

The engine is a DIESEL fueled Isuzu (Model #: 4LE2PW-10-415). It is a 52hp, liquid cooled engine. It was supplied by Total Energy Systems. The manual for this engine is supplied separately.

Reservoirs

The 25 gal hydraulic fluid reservoir was supplied by Buyers (P/N: SMR25S).



The 6.5 gal fuel reservoir was supplied by Great Plains (P/N: 405210).

Twist Locks

The twist locks (P/N: 3541 & 1690) and twist lock extensions (P/N: 2959) were supplied by Buffers USA.

Miscellaneous

The driver side toolbox was supplied by Buyers (P/N: 1705105).

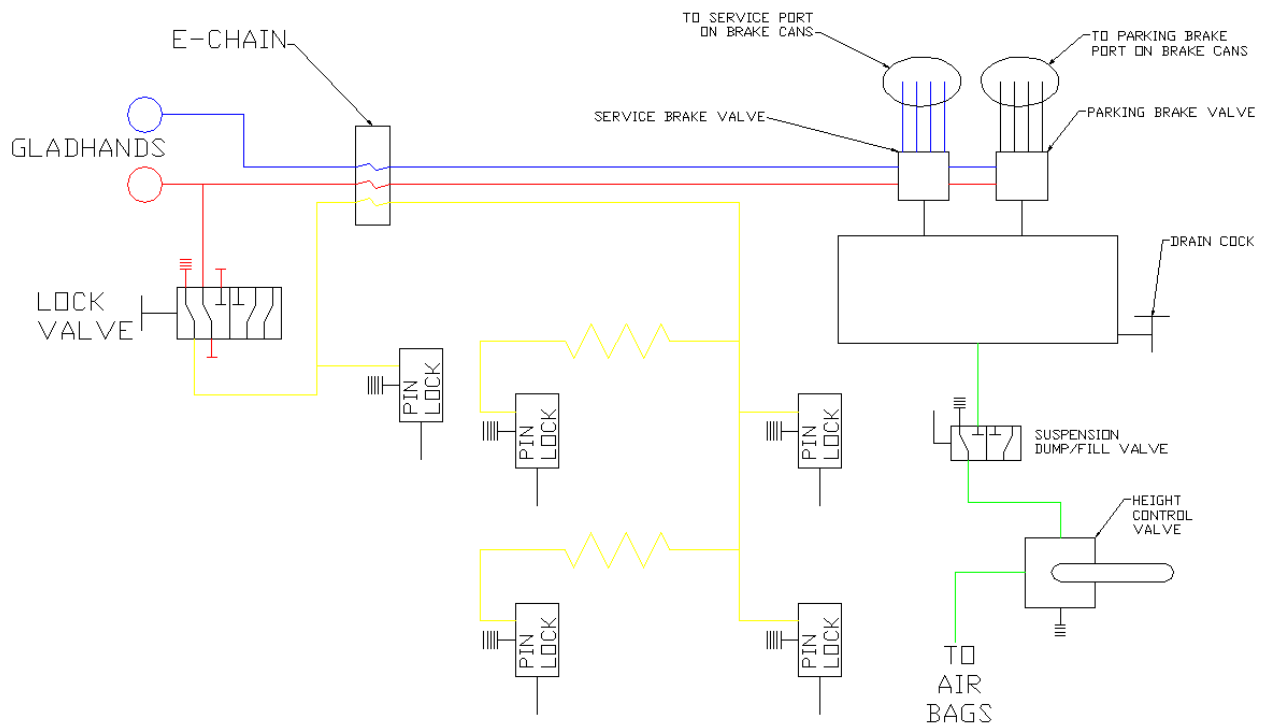
The wheels are steel Ø22.5 x 8.25 wheels supplied by AWS.

The tires are Goodyear 275/70R22.5 G104-RST (P/N: 756-919-030).



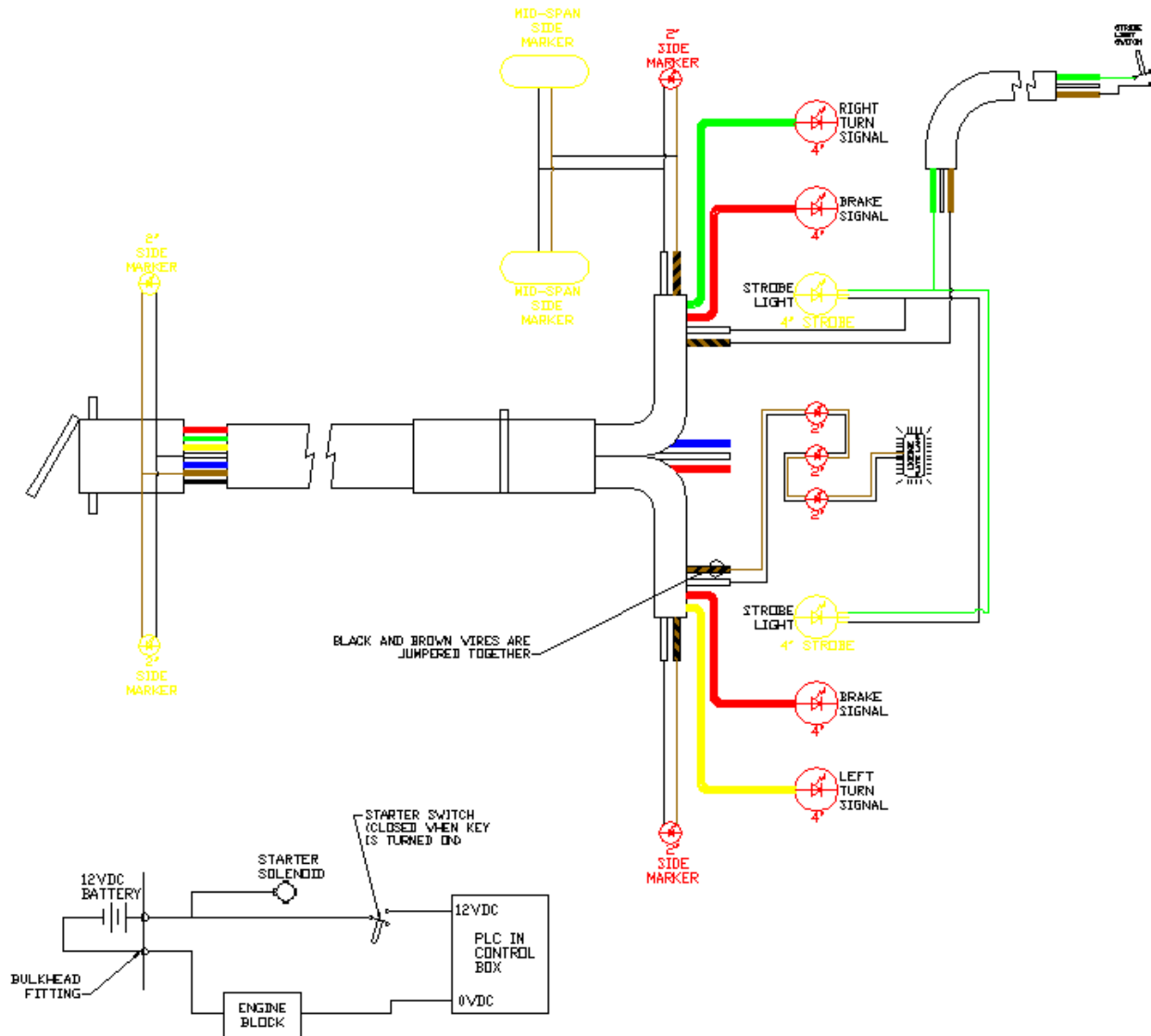
APPENDIX A: Air and Electric Schematics

Air System Schematic



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Electrical System Schematic



Wire Color Code:

Blue = ABS Power (Not Used)

White = Ground

Black = Running Lights ← Jumpered Together

Brown = Running Lights ← Jumpered Together

Red = Brake Lights

Yellow = Left Turn

Green = Right Turn



APPENDIX B: Checking Telescoping Tube Wear Pads

This is the recommended procedure for checking the telescoping tube wear pads on this trailer.

1. Park the trailer in the 20' position and set the trailer brakes (not the parking brakes)
2. To check the pads between the front and middle tubes, chain or strap one of the middle tubes to the rear tube. To check the pads between the middle and rear tubes, chain or strap one of the middle tubes to the front tube.
3. Once one of the middle tubes is secure, remove the bolts holding the wear pad retainers to the middle or rear tube on the side that is secured.
4. Slowly extend the trailer until all the wear pads and retainers are pushed out. Take note of how the pads and retainers came out.
5. Continue to slowly extend the trailer until about 5 inches of the second set of wear pads are exposed.
6. Check the wear pads for excessive wear. They should be at least 1/16" thicker than the retainers holding them in place.
7. If any wear pads need to be replaced, they can be replaced with 3/4" x 4 x 25 7/8" UHMW.
8. Carefully retract the trailer until the second set of wear pads have been inserted by about 5 feet.
9. Reassemble the retainers and wear pads. Use a thread-locking compound on the bolts to keep them from vibrating loose.
10. Fully retract the trailer and repeat for the other 3 set of wear pads.

*****CAUTION*****

IF THE TRAILER IS EXTENDED SO FAR THAT THE INSIDE TUBE IS FULLY REMOVED FROM THE OUTER TUBE, THE FOLLOWING CAN OCCUR

- 1. THE FRAME MAY TWIST**
- 2. THE TUBES MAY DAMAGE THE E-CHAIN**
- 3. SEVERE BODILY INJURY OR DEATH MAY RESULT**

To protect the trailer and personnel from the above injuries, the following precautions should be taken:

1. Prior to extending the trailer, support the rear tubes with blocking, an overhead crane, a forklift, or some other appropriate means.
2. Once the first set of wear pads and retainers have been removed, place blocking under the front tube to support the tube if it should be fully removed.
 - a. An overhead crane with a looped chain or a forklift may also be used.
 - b. Do not put this blocking tight to the bottom of the tube, as the tube still needs to move. Instead, leave about 1-2" gap between the blocking and the bottom of the tube.



APPENDIX C: Component Manufacturer Warranties, Documentation & Contact Information

Air Brake Sysytems, Inc.

4356 E. Valley Road
Mt. Pleasant, MI 48858
(877) 271-8880 (P)
(989) 775-6390 (F)

MSQR-5000[®] (OEM) LIMITED WARRANTY

1. NATURE OF THE POLICY

This original equipment manufacturer (OEM) warranty covers new tractors, trailers and buses originally equipped with the MSQR-5000[®] anti-lock brake systems (“MSQR-5000[®]” or “unit”) manufactured by Air Brake Systems Inc. (ABS Inc.) 4356 E. Valley Road, Mt. Pleasant, MI 48858. ABS Inc. makes no promise that the MSQR-5000[®] will not fail or become unserviceable, but if the unit does fail because of a defect in materials or workmanship, ABS Inc. will replace the unit as outlined below.

2. POLICY ELIGIBILITY AND DURATION OF THE WARRANTY

This policy is effective for one (1) year. This warranty is non-transferable.

3. WHAT IS COVERED

MSQR-5000[®] unit replacement/rebuild policy: ABS Inc. will replace or rebuild the unit if it fails during the warranty period.

4. VALUE OF REPLACEMENT

The value of this warranty is limited to the replacement/rebuild of the MSQR-5000[®].

5. WHAT IS NOT COVERED BY THE WARRANTY

Labor, taxes, other incidental and consequential damages are not covered. Note: Some states do not allow exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

6. ABS INC. OBLIGATIONS

Claims under this policy will be recognized by the ABS Inc. at its main office, 4356 E. Valley Road, Mt. Pleasant, MI 48858, 1-877-271-8880.

ABS Inc. reserves the right to amend this warranty without notice.

7. OWNER OBLIGATIONS

The owner must present a copy of the vehicle proof of purchase, the OEM warranty and ABS Inc. warranty registration form: NO EXCEPTIONS. Owner is responsible for payment of all taxes and labor to replace any of the above components.

8. SUMMARY OF POLICY REQUIREMENTS AND PROVISIONS

- a. Any tampering with the MSQR-5000[®] will void this warranty.
- b. Vehicle brakes must be maintained per the manufacturer’s recommended schedule.

9. OTHER RIGHTS

This warranty gives you specific legal rights and you may also have other rights, which vary from state-to-state or province-to-province.

10. The vehicle’s braking performance is greatly improved when all axles of the tractor and trailer are equipped with the MSQR-5000[®].



AWS, Inc.

1675 Westbelt Drive
Columbus, OH 43228
(800) 330-0877 (P)
(614) 527-4448 (F)

Buffers USA

10180 New Berlin Road
Jacksonville, FL 32226
(904) 696-0010 (P)
(904) 696-0019 (F)

Buyers Products Company

9049 Tyler Blvd.
Mentor, Ohio 44060
(440) 974-8888 (P)
(800) 841-8003 (F)

Casappa Corp.

1390 Pierson Drive
BATAVIA, IL 60510
(630)-761-0041 (P)
(630)-761-0048 (F)

Express Welding, Inc.

2525 14th Avenue North
Escanaba, MI 49829
(906) 786-8808 (P)
(906) 786-6165 (F)



Exclusive Limited Warranty

Express Welding, Inc. (“Express”) and the authorized Dealer which sells the Express Product(s) warrant each new Express Product (except for those parts, components, or accessories which are warranted separately by their respective manufacturer) to be free from defects in material and workmanship under normal use and service according to the following schedule:

all structural components – 1 year from the date of delivery to the original purchaser/user
all hydraulic, pneumatic, electrical, and other control systems – 90 days from the date of delivery to the original purchaser/user

The sole obligation of Express under this warranty shall be limited to replacing or repairing, at its option and expense, any Product(s) which, upon examination, has been found by Express to have been defective as a result of materials or workmanship. Repair to or replacement of Product(s) found by Express to be defective shall be made by Express, the authorized selling dealer, or any other authorized dealer designated by Express, at the expense of Express during normal working hours. **REPAIRS MADE BY PERSONS, FIRMS, OR ENTITIES NOT SPECIFICALLY APPROVED IN ADVANCE BY EXPRESS SHALL VOID THIS EXCLUSIVE LIMITED WARRANTY.**

This warranty, in its entirety, does not cover maintenance items, including, but not limited to, lubrication, grease, oil filters, belts, lamps, glass, nor any items which show evidence of neglect, overloading, normal wear and tear, abuse, accident, fire, inadequate maintenance, or unauthorized alteration.

This warranty does not apply (nor is any warranty implied by Express) on any components or accessories not manufactured by Express, whether or not separate warranties are provided by other manufacturers. This exception from express and implied warranties shall include, but not be limited to: axles, suspensions, accumulators, cylinders, pumps, motors, engines, lights/LED’s, and electrical harnesses. Express will pass on to the original purchaser of the Product(s) all warranties, if any, offered by the manufacturers of such components.

THIS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO EXPRESS WELDING PRODUCTS AND IS EXPRESSLY IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR USE, PURPOSE, OR OTHER WARRANTY OF QUALITY. THE PURCHASER’S SOLE REMEDY FOR LIABILITY OF ANY KIND WITH RESPECT TO THE PRODUCT(S) SHALL BE LIMITED TO THE REMEDIES PROVIDED IN THIS EXCLUSIVE LIMITED WARRANTY, AND SHALL IN NO EVENT INCLUDE INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES, OR DAMAGES FOR LOSS OF USE, REVENUE, OR PROFIT, EVEN IF EXPRESS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL LIABILITY UNDER THIS WARRANTY WITH RESPECT TO ANY OF THE PRODUCT(S) OR SERVICE(S) FURNISHED EXCEED THE CHARGES PREVIOUSLY PAID BY THE PURCHASER TO EXPRESS OR ITS AUTHORIZED DEALER FOR SUCH PRODUCT(S) OR SERVICE(S).

Any alterations or modifications of Express Product(s), not specifically approved in advance in writing by an authorized representative of Express, will void this Exclusive Limited Warranty. This warranty may not be changed, altered, or modified in any way, except in writing, signed by an authorized officer of Express.

Any action by a purchaser of a Product, whether for breach of contract, breach of warranty, negligence, or otherwise, arising out of the sale of Express Product(s), shall be commenced within one (1) year after the cause of action has accrued. Any such cause of action shall be conclusively deemed to have accrued at the earlier of (i) the discovery of the defect or breach; or (ii) six (6) months after the buyer has put the Product into service. If an action has not been commenced within this one (1) year statute of limitations, the action shall be deemed to have been waived.



Goodyear Tire Company

See http://www.goodyear.com/rv/pdf/rv_warranty_0306.pdf for full details on the Goodyear Limited Warranty.

Great Plains

P.O. Box 1587
Burnsville, MN 55337-0587
(800) 525-9716 (P)
(800) 839-9632 (F)

Hendrickson

2070 Industrial Place, S.E.
Canton, OH 44707-2600
(800) 958-4962 (P)
(800) 696-4416 (F)

See http://www.hendrickson-intl.com/pdfs/trailer_PDFs/1583.pdf for full details of the suspension warranty.

See http://www.hendrickson-intl.com/pdfs/trailer_PDFs/AAL_from_catalog.pdf for full suspension and axle replacement part list.

See http://www.hendrickson-intl.com/literature/pdfs_trailer_suspension.asp for other documentation.

igus, Inc.

P.O. Box 14349
East Providence, RI 02914
(800) 521-2747 (P)
(401) 438-7270 (F)



Jost

1770 Hayes Street
Grand Haven, MI 49417
(616) 846-7700 (P)
(616) 846-0310 (F)

JOST International Landing Gear Warranty

JOST International Corporation. P.O. Box 327, Grand Haven, MI 49417 (hereafter called "JOST") warrants its Landing Gear to be free of defects in material and workmanship under normal use and service, exclusive of normal wear for a period of Five years from the date of sale or date of manufacture of the vehicle.

EXCLUSIONS: This warranty is valid for the first purchaser only. It shall not apply to any Landing Gear (1) which are improperly installed, (2) which are not installed by JOST or by a JOST-Authorized facility, (3) which shall have been subject to misuse, negligence, alteration or accident, or (4) which shall have been repaired or altered by any one other than JOST in such a way as to adversely affect their performance. This warranty is not valid if alterations or repairs are not approved by JOST in advance or if they are done by anyone other than a JOST-authorized facility.

PURCHASER'S REMEDY: JOST's sole obligation under this warranty will be to repair or replace, at its option, any unit or part which shall be returned to JOST or a JOST-authorized facility and which examination shall disclose to JOST's satisfaction to have been defective. Freight or other transportation cost to and from JOST or a JOST-authorized facility must be paid by the purchaser. JOST will not assume any charges for repairs made by anyone other than JOST or a JOST-authorized facility.

EXCLUSION OF OTHER WARRANTIES: No other expressed or implied warranty is made by JOST, and in particular JOST makes NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LIMITATION OF ACTIONS: Without extending the period of warranty stated above, any action for breach of warranty must be commenced within one year of the breach claimed or be forever barred.

LIMITATION OF DAMAGES: The purchaser's remedy stated above shall be exclusive for any and all claims against JOST whether based on contract, negligence, tort or any other theory. In no event shall JOST be liable for any consequential damages, including without limitation vehicle downtime and cargo loss, which may result from any defect or failure of the Landing Gear.

September 1, 1992



McMaster-Carr

600 N County Line Rd.
Elmhurst, IL 60126-2081
(630) 600-3600 (P)
(630) 834-9427 (F)

Parker – Hose Products Division

Supplied by:
Value Added Distributors
1298 Jaycee Court
Shawno, WI 54166
(906) 776-0390 (P)
(906) 776-0391 (F)

Pressure Connections Corporation

610 Claycraft Road
Columbus, OH 43230
(614) 863-6930 (P)
(614) 864-1327 (F)

See <http://www.pressureconnections.com/images/Literature/PCC-Catalag-2006.pdf> for warranty information.

SCi Industries, Inc.

1433 Adelia Avenue
South El Monte, CA 91733
(626) 443-9441 (P)
(626) 443-4524 (F)

Sealco Commercial Vehicle Products

215 East Watkins Street
Phoenix, AZ 85004
(602) 253-1007 (P)



(800) 222-2334 (F)

Sealco Commercial Vehicle Products, Inc. (Sealco) warrants to the Purchaser that Sealco air valve products will be free from defects in workmanship and material under normal use and service for twenty-four (24) months from the manufacture date of the product. Sealco will, at its option, either repair, replace or credit the net purchase price of any Sealco air valve product that they find defective upon inspection. All air valve products involved in warranty requests must be returned for inspection with a Return Goods Authorization (RGA) Form, shipped prepaid and separate from any other items including cores, to Sealco Commercial Vehicle Products, 215 East Watkins Street, Phoenix, Arizona 85004, Attention: Warranty Department. All decisions made by Sealco concerning warranty issues are final.

This warranty shall not apply to any Sealco air valve product which: 1) has been employed in other than normal use or service, 2) has not been properly maintained, 3) has been altered, repaired or replaced in a harmful or unauthorized manner, 4) has been rebuilt by someone other than Sealco, 5) has been subjected to misuse, negligence, accident or mechanical damage including, but not limited to, the use of additives in the air brake system or 6) has suffered impact or shock greater than that ordinarily encountered in the service for which the valve was designed or intended. The alteration, repair or replacement by Sealco of an air valve product for any reason will not extend this warranty. Genuine Sealco factory remanufactured air valve products will carry the same warranty as new Sealco air valve products.

There is no other warranty or liability, expressed or implied, applicable to Sealco air valve products and in no event shall Sealco be liable for any consequential or special damages resulting from the use of Sealco air valve products.

Terminal Supply Company

1800 Thunderbird
Troy, MI 48084
(800) 989-9632 (P)
(800) 989-0824 (F)

Truck-Lite

310 East Elmwood Avenue
Falconer, NY 14733
(800) 562-5012 (P)
(716) 665-6214 (F)

See http://www.truck-lite.com/wcsstore/tl/resources/images/en_US/PDF/13TEC.pdf for full details of the lighting warranty.



Velvac

2405 South Calhoun Road
New Berlin, WI 53151-2709
(800) 783-8871 (P)
(262) 786-4101 (P)

The standard warranty coverage is for 12 months from the date of original installation (there are some exceptions). This warranty covers all defects in material or workmanship for new Velvac products which, under normal use or service, are proven defective following a factory evaluation. If proven defective, Velvac will replace, ground freight prepaid, with a new part or issue full credit for the part, plus incoming freight charges. If Velvac finds that a product is not covered under warranty guidelines or is found to function normally, the product may be returned to the customer freight collect, or Velvac can dispose of the part(s) at our factory, based on the customer's request.

If a Velvac product is claimed defective, a request for Returned Goods Authorization (see guidelines above) can be made.

This warranty does not extend to any products which have been subject to misuse, accident, improper application, improper installation or improper maintenance, nor does it extend to products which have been repaired or altered. Damages caused by inadequate packaging or mishandling of return shipments are not covered under warranty. This warranty does not cover charges for installation, labor, travel, consequential damage, loss of time or other incidental charges.

Credit or replacement of the part is the exclusive remedy for products found to be defective under this warranty. This warranty is in lieu of all other warranties, including any implied warranty of merchantability or fitness for a particular purpose. All decisions made by Velvac regarding product warranty are final.

Wallace Forge

3700 Georgetown Street, N.E.
Canton, OH 44704
(330) 488-1203 (P)
(330) 488-1217 (F)