

# Railcar Coupler Safety Manual

**Manual v7**

SAS Server/Operations/Procedures/forks/operators manuals/RR coupler/Rail Road Coupler V7 3-30-2023.pub



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#### **LIMITED INTENDED USE OF THIS EQUIPMENT:**

SAS RR Coupler attachment is designed to use a standard cast style railcar coupler to allow connection between a mobile machine, such as a wheel loader and a railcar, only when appropriate precautions are taken as expressed in this manual. The information, comments and guidelines within this manual are to be for general reference only. Any rules, regulations, statutes, or other guidelines issued by OSHA, any rail road authority, track, track right of way owner, property owner, employer, rail car owner must be followed and adhered to along with the guidelines herein. If there is discrepancy between the information within this manual and another source or authority, always default to following the guidance that will first will conform with any railway regulating authority and the most safe practice.

Serial Number Location: (Provide the serial number anytime contacting SAS FORKS)



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## INTRODUCTION LETTER

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### TO THE OWNERS, MANAGERS, AND OPERATORS OF SAS™ ATTACHMENTS

Safety is the most important issue in the workplace. Observing safety guidelines, equipment capacities and using common sense will provide a work environment that is safe and efficient for employees, management and customers. It is important that you and your operators read and understand the information included in this manual prior to use of this equipment.

Safety warnings are highlighted through out this manual. Understanding the significance of these symbols is important. The following is a definition of each symbol you will encounter in this manual



The Caution symbol is intended to draw your attention to important safety information, a hazard or precaution.



The Danger Symbol indicates a hazardous situation that if not avoided will result in serious injury or death



The Warning Symbol indicates a hazardous situation that if not avoided could result in serious injury or death



The Caution Symbol indicates a hazardous situation that if not avoided could result in minor injury or potential property damage



The Notice Symbol indicates worst credible severity of harm is property damage.

The following information laid out in this Operator Manual is intended to be a guide only, and is not meant to encompass all issues that may need to be addressed for your particular type of operation.

If you encounter any additional information that would be helpful to us, or others, please contact us.

Thank you for your business,  
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## GENERAL SAFETY GUIDELINES

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Operation of equipment must only be performed by qualified and trained individuals. All persons operating or working in the area of operation should read this manual and a copy of this manual should be kept with the equipment. To be considered qualified individuals must have documentation signed by the individual along with management indicating training and that competence has been demonstrated in the proper and safe use of this equipment, and hazard avoidance, including:

- Understand written instructions supplied by manufacturer of device, the manufacturer of wheel loader, all company rules and any applicable OSHA regulations or other regulating body rules.
- Completed training including actual operation of the device
- Know and follow the safety rules and regulations of the jobsite

**⚠ WARNING** Operation of equipment by un-qualified or un-trained individuals can result in serious injury or death. Verify all operators have received proper training on operation of this equipment.

**⚠ WARNING** Operation of equipment under the influence of illegal, prescribed or over the counter drugs can result in potential injury or property damage. Consult your physician before operation of this equipment while on medication.

**⚠ WARNING** Inspect the device and perform all preventative maintenance before operation at the start of every shift. Tag out and lock out any defective equipment. Failure to perform inspections or proper maintenance can result in equipment failure resulting in serious injury or property damage.

**⚠ WARNING** Read operators manual and follow all safety procedures for the equipment this device is attached to. Failure to follow Manufacturers recommendations can result in serious injury and property damage.

**⚠ WARNING** This equipment is operated by high pressure hydraulics. Hydraulics are a stored power source and as such must be treated as energized at all times. Be certain pressure has been relieved prior to handling, inspecting or performing maintenance on this unit. Follow lockout tag out procedures and release all stored energy before servicing equipment. Failure to release energy or disable hydraulic energy can result in serious injury or death. High pressure fluids can also discharge at great velocity. Be certain to wear safety glasses while inspecting, operating and maintaining equipment.

**⚠ WARNING** This equipment has or may be in conjunction with numerous moving components, resulting in potential pinch point hazards. Do not wear loose fitting clothing, rings, jewelry or other items that may become entangled in the device. Be aware of moving parts and pinch points and keep clear during inspection, operation and maintenance. Failure to keep clear while in operation can result in serious injury or death.

**⚠ WARNING** Do not exceed posted weight limits on equipment or loader. Exceeding rated load limits will result in equipment damage, serious injury or death.

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## SAFETY CONSIDERATIONS PRIOR TO INSTALLATION SAS™ RAILCAR COUPLER

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### **WARNING**

#### **Rail Road Safety Regulating Authority:**

Owner and operator of this RR Attachment is responsible to identify and use this attachment properly within the allowable scope of applicable OHSA or other authoritative rules which may apply to use of this attachment in their region and at your particular facility. Obtain permission from track regulating authority prior to use or entering onto any rail track. Failure to follow all applicable rules can result in serious injury, death, property damage or citations from appropriate regulating

### **WARNING**

#### **Braking & Traction may be insufficient to stop railcar:**

Failure to conduct careful risk assessment and implementing safe braking practice may result in serious injury, death and equipment damage.

*Braking:* Mobile machinery, such as a wheel loader or any other machinery not originally manufactured to solely move railcars will have limited brake systems originally made to stop the mobile machine itself and normally carried loads, such as within a bucket or on forks. Mobile machinery such as this may have inadequate brake system for safe stopping of railcar which is in motion. Special factors to consider:

- Brake system mass—larger machines have more robust brake systems vs small machinery, less capable
- Age & maintenance—new machines likely to have better brakes vs old machines brakes may be worn.
- Surface slope—flat, non-grade track surface vs any gradient, will cause increased braking needs.
- Installing an auxiliary air brake control system to actuate the railcar wheel brakes would be advisable for best stopping ability.

*Traction:* Any mobile machinery, such as wheel loader, to which SAS RR Coupler is attached, may have inadequate wheel to ground surface traction to provide for safe stopping of railcar which is in motion. Factors that can impact traction may include some of the following, and others:

- Surface type—concrete vs gravel
- Weather—dry weather vs rain, snow or ice
- Installing an auxiliary air brake control system to actuate the railcar wheel brakes would be advisable for best stopping ability.

### **WARNING**

#### **Mechanical Ability Assessment:**

The total weight of the RR car may cause damage to the transmission, hydraulic pump, or brakes of the wheel loader. Be certain the load does not exceed the capacity of the wheel loader before moving the RR car or releasing brakes on RR car. Failure to verify load rating can result in damage to equipment and potential runaway RR car resulting in serious injury, death or property damage

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## SAFETY CONSIDERATIONS PRIOR TO OPERATION SAS™ RAILCAR COUPLER

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### **WARNING**

#### **Clear tracks of obstacles:**

Be sure RR tracks are clear of debris and the foundation of such tracks is stable to avoid tipping or derailment incidents. Failure to remove debris or moving a RR car over unstable track can result in tipping or derailment resulting serious injury, death or serious property damage.

### **WARNING**

#### **Avoid rail track traffic:**

Use this RR attachment with your wheel loader only after you have obtained permission from the RR track controller and RR traffic manager in your area.  
Do not use this attachment on main line RR tracks.  
Use only on side line spur tracks to avoid other rail traffic.  
Avoid and be aware of any train traffic on adjacent tracks.  
Do not park the wheel loader or RR coupler attachment on the RR tracks. This presents a risk of a RR car hitting these items and causing damage, derailment and bodily injury.  
Failure to avoid other RR traffic can result in serious personal injury, possibly death and substantial property damage to equipment, rail cars, and cargo.

### **WARNING**

#### **Be aware of pedestrians:**

Be cautious of pedestrians in the area when operating or moving heavy machinery such as wheel loaders or rail cars. If a spotter is present, be aware of their location – be sure they are in a safe area. Failure to verify pedestrians or other workers are clear of the work area can result in serious injury or death.



#### **Emergency response:**

Be familiar with emergency response guidelines and resources in case of a derailment or other incident.

- Spill response procedures
- Emergency response contact information
- First aid practices
- Transportation department contact information
- Any other applicable governmental body or regulation pertaining to operation being performed

### **NOTICE**

S.A.S. of Luxemburg, LLC. DBA: SAS FORKS is not responsible for improper use or maintenance of this RR coupler attachment, or any consequential damages related to the use thereof. See SAS FORKS 'sales terms' and limited warranty terms for details.

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## INSTALLATION GUIDELINES SAS™ RAILCAR COUPLER

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### **WARNING**

**Follow all safe guards.**

Improper use of the SAS RR Coupler may result in death and/or extreme property damage.

Prior to using SAS FORKS™, ensure that all personnel that will use and/or work in the area of the SAS FORKS™ or ATTACHMENT read and adhere to the following:

- Machine Manufacturer's Operator Manual
- Operator Manual for Machines Equipped with SAS FORKS™ / ATTACHMENT (*This Manual*)
- Identification Plate on the SAS FORKS™ / ATTACHMENT
  - All worksite safety regulations, for example, but not limited to:
    - OSHA
    - Railcar association or regulating safety organization or government agency
    - Rail owner or rail traffic regulator
    - Railcar owner or lessor regulations

We recommend Management complete the following items prior to using any SAS ATTACHMENT:

- Conduct a meeting with all personnel and an Experienced Machine Operator to review and discuss safety, capacities, limitations, and proper operational procedures.
  - Identify and determine appropriate actions to address additional safety considerations, such as:
    - Wheel loader braking and traction may be insufficient for stopping rail car(s) in motion.
    - A separate device, not included with SAS RR Coupler, which controls air brakes of rail car may be required to be installed to comply with any OSHA or other railway regulations
    - Recommend implementing practice that would allow for applying railcar brakes, rail blocks, car stops or other safety measures to prevent runaway cars.
  - Obtain signature from each person acknowledging such training & file in their personnel file
- Daily workplace and operational safety is the responsibility of the Owners, Managers, and Operators.
- Verify supervisory staff are ensuring safe operating practices are being followed.
  - Verify regular maintenance and daily inspection of equipment, including documentation.
  - Conduct periodic meetings, review operating guidelines, signatures by attending personnel.

Failure to properly train or to follow the guidelines outlined in the manual can result in serious injury or death. Verify all operators and workers have been properly trained and have read this manual (and all applicable regulations that pertain the operation being conducted) before installing or using this device.



**WORK SAFE**

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## OPERATION GUIDELINES SAS™ RAILCAR COUPLER

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### **⚠️ WARNING**

#### **Pre-Operation Inspection:**

Prior to start of each work shift conduct a pre-operation inspection of equipment & SAS attachment. Inspection should be documented. Cracks, damage, or excessive wear of attachment, missing or damaged fasteners or pins will require attachment be immediately taken out of service, until unit is repaired by qualified Technician. Failure to conduct inspections and repairs prior to operation can result in failure resulting in serious injury or death.

### **⚠️ WARNING**

#### **Pre-Operation Safety:**

Prior to use of this equipment, operators should procure and use appropriate safety equipment including (but not limited to) safety glasses, hard hat, gloves, steel toe shoes, high visibility vest. Failure to use appropriate safety equipment can result in serious injury or death.

**Step 1** - With wheel loader off RR tracks, on firm level ground, set parking brake, shut off engine. Visually check lower locking pins of wheel loader's quick coupler to be sure both are fully engaged & secured to SAS RR Coupler attachment. Set front *engagement bracket* on the face of SAS RR Coupler attachment to open position. Typically this can be done by hand. If it is locked in closed position, simply lift release lever, then pull *engagement bracket* open.

**Step 2**—Drive loader up to RR car, aligning RR Coupler to RR car hitch. Firmly engage RR Coupler to RR car hitch. When properly engaged *engagement bracket* will lock in place.

### **⚠️ WARNING**

#### **Test Engagement Locking:**

Failure to properly secure Coupler to railcar can result in disconnection while moving the car. Test to be sure the *engagement bracket* actually is secure by trying to move the wheel loader forward or back prior to disengaging the brakes of the railcar. Failure to verify bracket is secure before moving car can result in uncontrolled movement of railcar resulting in serious injury, death or serious property damage.

**Step 3** - Disengage railcar brakes (only if authorized, railcar is secure to RR coupler & loader)

**Step 4** - Shift the wheel loader gear shift into the lowest gear prior to moving RR car.

**Step 5** - Move the railcar slowly to destination.

**Step 6** - Once railcar has come to the desired location secure the brakes of the railcar.

**Step 7** - Install any authorized or required wheel chocks and/or signage indicating parked railcar.

### **⚠️ WARNING**

#### **Verify railcar brakes are engaged, properly securing & preventing movement.**

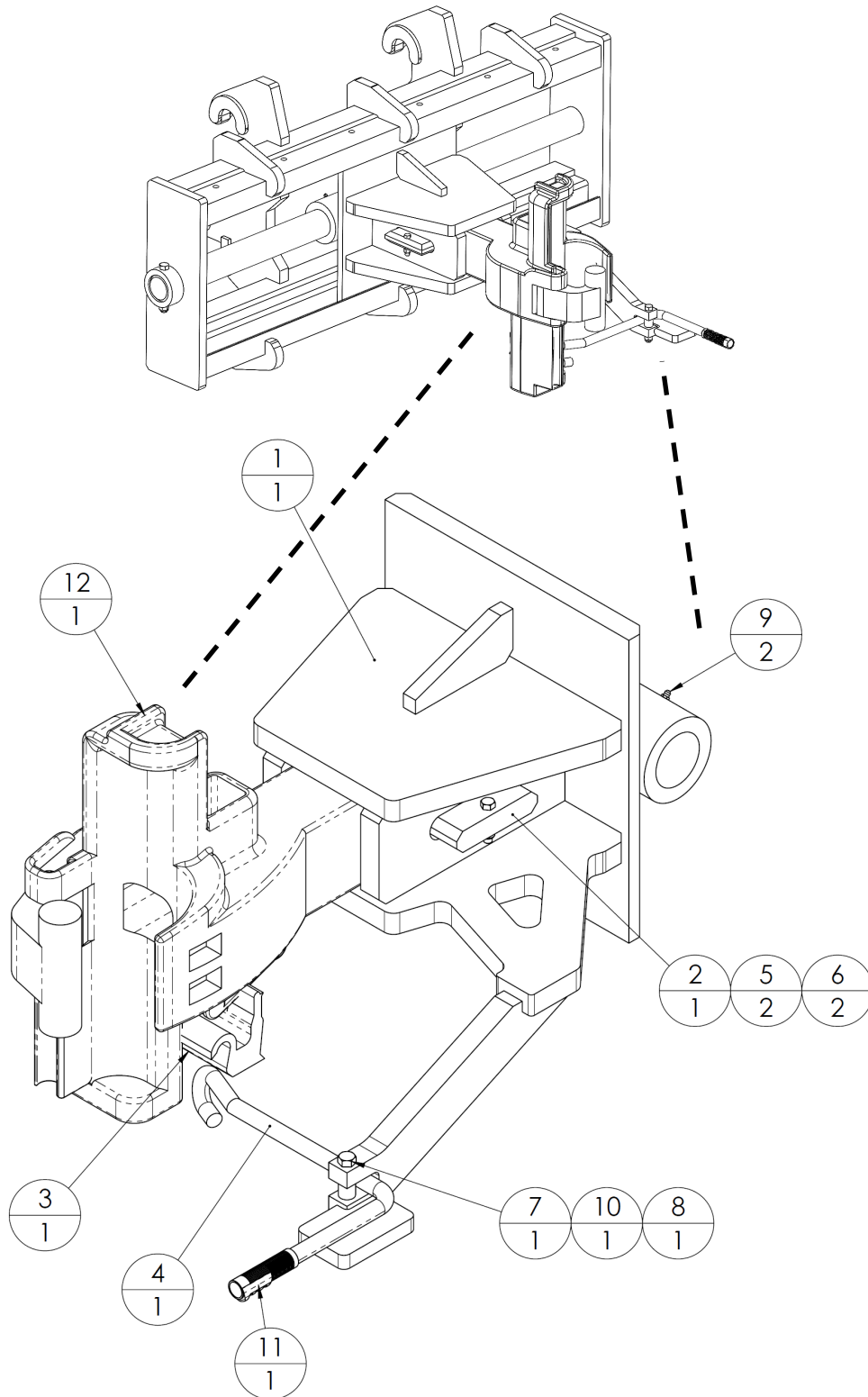
Failure to secure brakes on RR car or use of proper wheel chocks can result in uncontrolled RR car movement. Uncontrolled movement can result in serious injury, death or property damage.

**Step 8** - To disconnect RR coupler from railcar, once no longer in motion, set the parking brake on the wheel loader, shut off the engine, verify the wheel loader and rail car are not moving and are stable in parked position. Verify railcar brakes are properly applied and secured. Then being sure to avoid any pinch points, stand in a safe place, and simply lift the lever on the top of the RR coupler attachment. This will release the *engagement bracket* and free the RR car. Drive wheel loader off tracks, being cautious not to cross onto any live traffic railways.

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# **PARTS LIST** **SAS™ RAILCAR COUPLER** **'HAND RELEASE'**

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## PARTS LIST

### SAS™ RAILCAR COUPLER 'HAND RELEASE'

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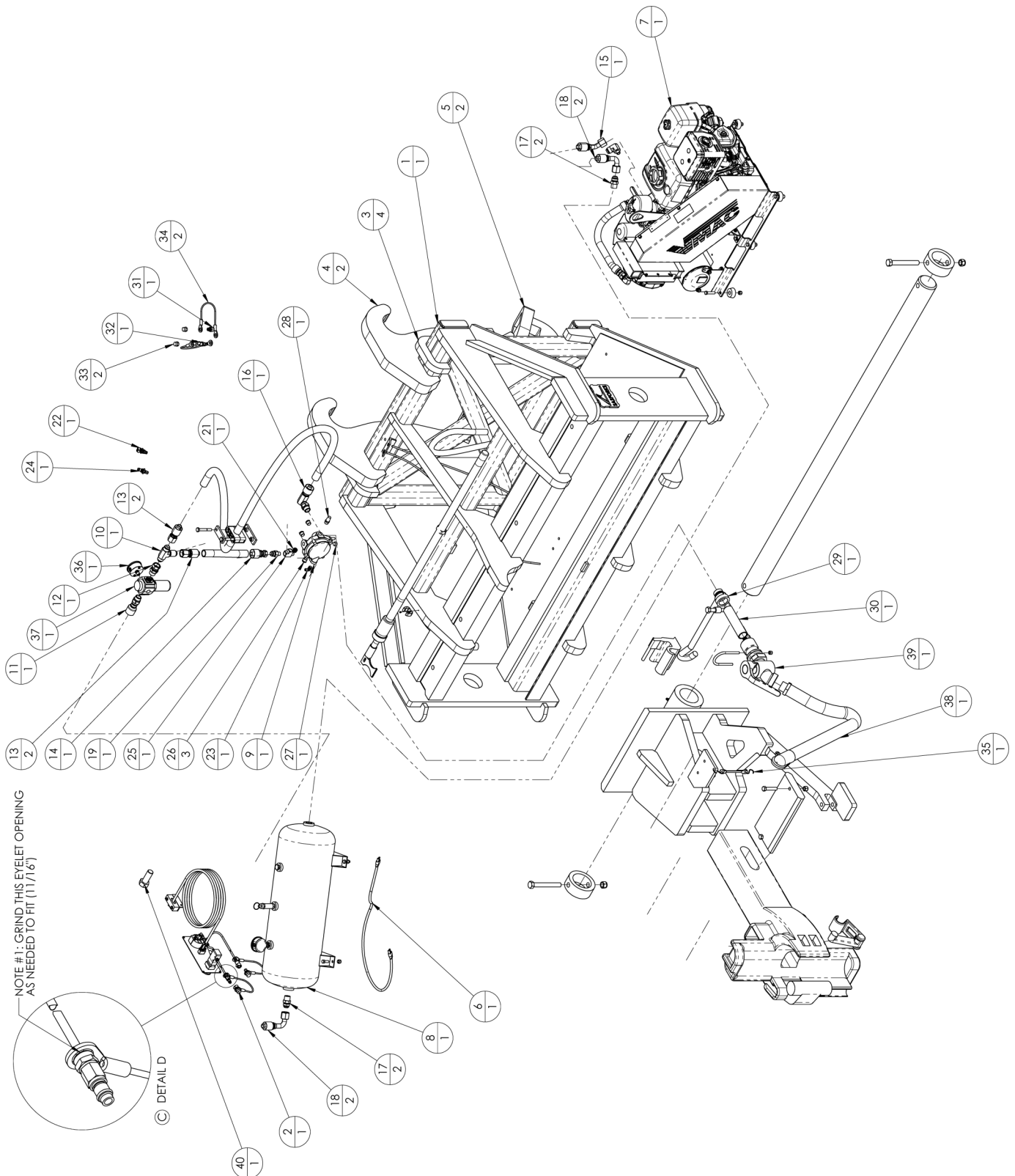
RAILCAR COUPLER WITH HAND RELEASE PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	FLOATING HEAD WELDMENT	1	0812-001 FLOATING HEAD WELDMENT
2	CROSS BAR LINK	1	0802-006 CROSS BAR LINK
3	LOCK LIFTER-E25B	1	W-RAIL-LOCKLIFTER-E25B
4	LEVER ARM	1	W-RAIL-LEVERARM-R-1430
5	1/2" HEX BOLT	2	WBOLT 0.500X2.50 GR8
6	1/2" NYLOC NUT	2	WNUT 0.500-13-NY
7	5/8" HEX BOLT	1	WBOLT 0.625X4.50 GR8
8	5/8" NYLOC NUT	1	WNUT 0.625-11-GR8-NY
9	1/8 NPT GREASE FITTING	2	GREASE FITTING
10	PINLOCK SPACER	1	PINLOCK SPACER
11	RUBBER ROUND GRIP	1	MCC-97045K551 ROUND GRIP
12	RAILCAR COIUPLER	1	W-RAILCOUPLER SCANNED

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# PARTS LIST

## SAS™ RAILCAR COUPLER WITH EMERGENCY AIR BREAK ASSIST

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# PARTS LIST

## SAS™ RAILCAR COUPLER WITH EMERGENCY AIR BREAK ASSIST

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RAILCAR COUPLER WITH EMERGENCY AIR BREAK ASSIST PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	RAIL ROAD CARRIAGE ASM STD WELDMENT	1	RR-SLD-CARRIAGE-AIR
2	GAUGE CLUSTER ASSEMBLY	1	0830-025
3	TUBE WRAP	4	0830-009
4	COUPLER FUSION RR GR50	2	COUPLER 312-50
5	WEDGE PLATE	2	0601FUSION
6	SC 7FT JUMPER CABLE	1	HC-CAB-S-50274 ©
7	AIR COMPRESSOR	1	PC-CMP-V-G30
8	COMPRESSOR TANK	1	PC-TNK-V-10GAL
9	AIR BRAKE RELAY VALVE	1	PC-BLK-P-GN283940
10	#12 MALE JIC BULKHEAD	1	HY-870-FS-12
11	3/4" NPT MALE - #12 CRIMP	1	HY-12G-12MPX
12	#12 FEMALE JIC - #12" NPT MALE	1	HY-6505-12X12
13	#12 FEMALE JIC-#12 CRIMP	2	HY-12G-12FJX
14	#10 JIC FEMALE - #12 CRIMP	1	HY-12G-10FJX
15	#12 FEMALE JIC-45 DEGREE-#12 CRIMP	1	HY-12G-12FJX45
16	MALE NPT SWIVEL	1	HY-12G-12MPX90
17	MALE JIC - MALE PIPE	2	HY-848-FS-12X12
18	#12 FEMALE JIC- 90 DEGREE-#12 CRIMP	2	HY-12G-12FJX90S
19	MALE JIC - MALE PIPE	1	HY-848-FS-10X06
20	90 DEGREE MALE JIC-MALE PIPE	1	12MJ-8MP90



# PARTS LIST

## SAS™ RAILCAR COUPLER WITH EMERGENCY AIR BREAK ASSIST

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RAILCAR COUPLER WITH EMERGENCY AIR BREAK ASSIST PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
21	1/4" TUBE PTC - 3/8" NPT	1	PC-FIT-M-5779K111
22	1/4" TUBE DISCONNECT FEMALE	1	PC-FIT-M-5478K713
23	1/4" TUBE PTC - 3/8" NPT - 90° ELBOW	1	PC-FIT-M-5779K152
24	1/4" TUBE DISCONNECT MALE	1	PC-FIT-M-5478K143
25	STREET TEE, 3/8" NPT	1	PC-FIT-M-50785K223
26	3/8" NPT PLUG	3	PC-PLG-M-4464K253
27	3/8" NPT PLUG WITH HEX DRIVE	1	PC-FIT-M-4464K563
28	3/8" NPT MUFFLER	1	PC-MUF-M-4450K3
29	PIPE REDUCER	1	PC-RED-P-1.25-0.75
30	PIPE NIPPLE	1	W-PIPE 1-1/4X6-1/2
31	1/4" NPT DISCONNECT FEMALE	1	PC-FIT-M-5478K511
32	1/4" NPT DISCONNECT MALE	1	PC-FIT-M-5478K911
33	PNEUMATIC FITTING, NPT FEMALE CAP	2	PC-FIR-M-9151K97
34	LANYARD, EYE-TO-EYE	2	MCC-30745T315
35	TIE DOWN STRAP	1	WBUNGEE-3891T62
36	PRESSURE GAUGE	1	PC-GAU-M-3795K145
37	AIR REGULATOR	1	PC-REG-S-0.75NPT
38	GLADHAND	1	PC-HOS-N-1.25
39	ANGLE COCK VALVE	1	PC-VLV-N-1.25
40	RAILROAD W/AIR FASTENER KIT	1	W-RR-AIR FASTENR KIT



# SAS™ RAILCAR COUPLER WITH EMERGENCY AIR BREAK ASSIST SUPPLEMENTAL INSTALLATION OVERVIEW

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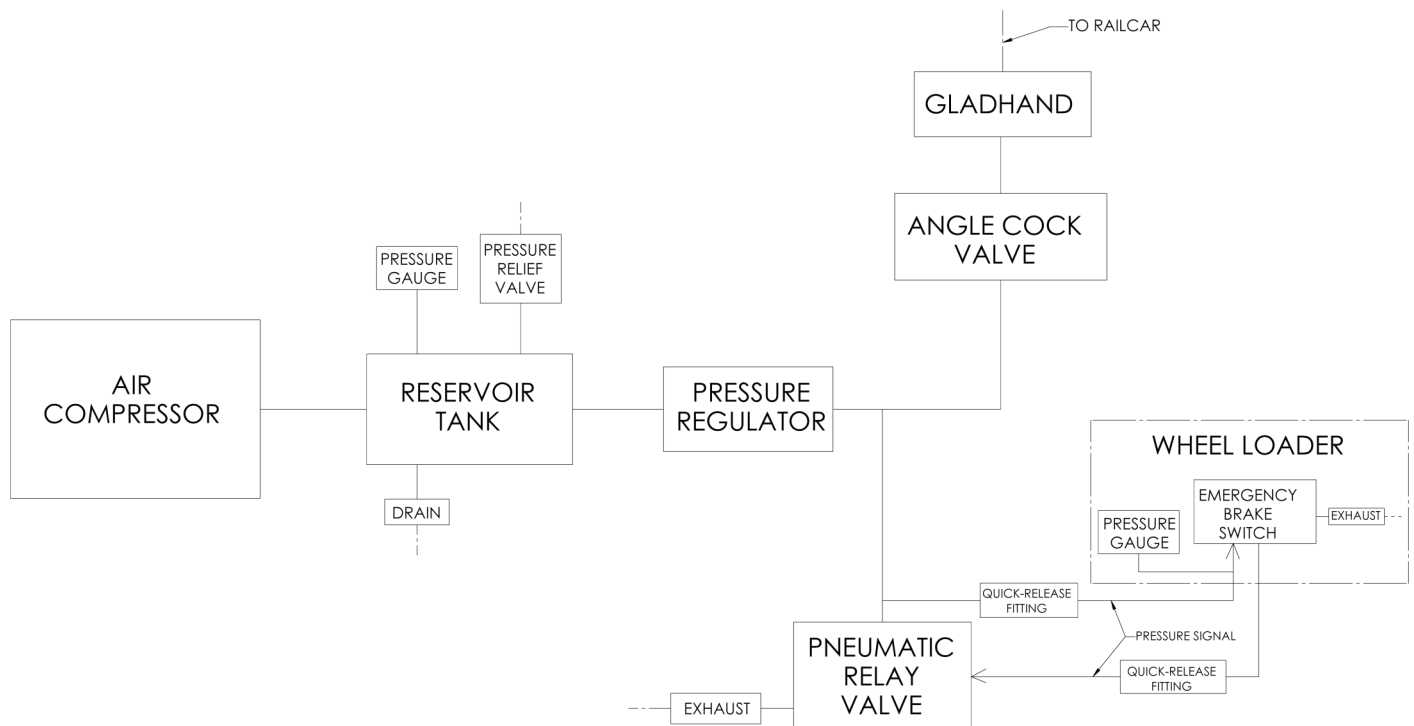
Parts included with shipment of SAS Railcar Coupler with Emergency Air Break Assist option:

Qty. 1 | Attachment assembly<sup>6</sup> with integrated air compressor and engine.

Qty. 1 | Cab control panel with pressure gauge and emergency stop button.

Qty. 2 | Nylon air hoses, 35 feet each with quick connect fittings on each end.

## PNEUMATIC CONTROL DIAGRAM



Follow all safety, preparation, inspection and guidelines in this entire manual.

This section includes additional guidelines for safe use of SAS RAILCAR COUPLER with Optional Integrated Air Compressor for disengaging railcar brakes and actuation of railcar brakes for Emergency Stop purposes. Improper use of SAS RAILCAR COUPLER and/or Air Compressor may result in serious injury, death and/or extensive property damage.

Advisement: ●Wear hi-vis brightly colored safety vest, safety glasses and leather gloves.  
●Fire extinguisher must be kept in or on machine using this attachment.

## Pre-operation Inspection:

Step 1—**Engage** wheel loader to the SAS RAILCAR COUPLER attachment and actuate wheel loader's coupler locking pins (or wedge locks).

1.a. **Park** wheel loader off & clear of rail tracks & other traffic, on firm level surface, which is well ventilated and safely clear away from any flammable or explosive substance. Lower SAS RAILCAR COUPLER gently to ground, set wheel loader parking brake, shut off engine.

1.b. **Verify** proper engagement of coupler upper connection and lower locking pins (or wedge locks) on both right and left sides, to secured SAS RAILCAR COUPLER. Example red arrows:



1.c. **Remove debris**, dust, trash, or any flammable materials from in and around the air compressor and compressor engine. FAILURE to thoroughly clean compressor engine area may result in combustion and resulting fire, and subsequent equipment and property damage and personal injury. Inspect fire extinguisher on machine to be sure accessible and properly charged.

1.d. **Connect hoses/cable** routed to cab for remote operator control of emergency stop system.

1.e. **Check & fill fluid** levels, including oil and fuel on compressor engine. Also refer to air compressor OEM VMAC G30 manual for additional details and safety information.

1.f. **Close** glad-hand valve to prevent flow of compressed air into rubber hose.

1.g. **Set choke** on compressor engine to allow cold start.

1.h. **Start** compressor engine. Immediately shut off & do not use if any indications of problems. While engine is warming up, complete additional pre-operation inspection;

1.i. **Inspect** entire SAS RAILCAR COUPLER for structural cracks, fluid leaks, air leaks, damage or missing hardware. Do not use if any deficiencies are present. Turn off, Lock out/Tag out as per your company established practices and follow up on completion of any repairs needed.

1.j. **Drain condensate** from air tank via valve on lower portion of tank. (Before & after use)

1.k. **Open engagement bracket** on face of SAS RAILCAR COUPLER attachment by hand, in preparation to engage with railcar. If locked, lift release lever. Reference blue arrow above.

1.l. **Reset** or turn off choke as appropriate with warmed up engine.

1.m **Test in cab control**, by pressing 'E-Stop' button. In response, air pressure gauge should promptly show reduction in pressure toward zero, and notice sound of air releasing from air valve on SAS RAILCAR attachment. Compressor engine is expected to rev-up as attempting to refill air tank with lost pressure. Engine rev-up will continue until e-stop button is disengaged.

1.n. **Follow additional steps** on 'OPERATION GUIDELINES' (PAGE 8)



## LIMITED WARRANTY SAS™ RAILCAR COUPLER

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**SAFETY:** Buyer accepts the responsibility to (1) Ensure that all personnel that will use and/or work in the area of the purchased product will read the safety ID plate and the Operator Manual For Machines Equipped With SAS FORKS™ and the Machine Manufacturer's Operators Manual, prior to use; and (2) Ensure that all personnel follow the safety guidelines outlined on these materials.

### **S.A.S. OF LUXEMBURG, LLC. IS NOT RESPONSIBLE FOR SAFETY IN THE FIELD.**

#### **GOALS OF THE S.A.S. OF LUXEMBURG, LLC. LIMITED WARRANTY PROCEDURE**

- ASSURE MINIMUM CUSTOMER DOWNTIME by resolving the problem correctly on a timely basis.
- ASSURE END-USER CONFIDENCE while maintaining an equitable Warranty expense for both your company and SAS.
- PRODUCT IMPROVEMENT. We have an engineering staff ready to assist you. Call us at 1-877-SAS-FORK (1-877-727-3675)  
Please call SAS before attempting any repair, modification, or questionable job applications.

#### **LIMITED WARRANTY**

For products that S.A.S. of Luxemburg, LLC. (SAS) manufactures, SAS warrants that such products conform to all specifications for materials and workmanship for the period of time indicated below, after delivery, when used in compliance with the SAS FORKS™ Operator Manual.

PRODUCT	LIMITED WARRANTY PERIOD	ITEM COVERED
CARRIAGE FRAME OF RR COUPLER	1 YEAR FROM ORIGINAL SHIP DATE	DEFECTS IN MATERIALS & WORKMANSHIP

SAS does not warrant the products that it does not manufacture. Rather, all warranties, if any, for these products are supplied by the manufacture. SELLER EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**CALL FOR WARRANTY CONSIDERATION:** To be considered for warranty repairs or replacement buyer must notify SAS of any warranty claim within 10 days after such claim arises, and prior to expiration of the warranty period and prior to the performance of any repairs being done, otherwise buyer waives all rights to such claim.

- Obtain the SAS Fork serial number & call SAS at 920-845-2198. Clearly describe the problem and the operation that was taking place when it occurred.
- Buyer is to return defective assembly, freight prepaid, or photographic evidence clearly showing the problem area and details of failure to SAS for review. When necessary, a factory representative may evaluate the problem in the field.

**WHAT SAS WILL DO:** SAS will examine the defective product, and the details of the failure. If SAS determines that the failure of materials or workmanship was proven to be within the terms of this limited warranty, SAS will, at its option, repair or replace, FOB the factory, in Luxemburg, WI, USA, the defective product. If the product cannot be returned to the factory, SAS may approve field repair of defective product. SAS will approve an appropriate amount of hours and cost for the repair before authorizing repairs to begin. No provisions will be made for incidental damages, mileage, travel time, overtime, downtime, or special freight charges.

**CONDITIONS THAT WILL VOID YOUR WARRANTY:** Failures, which in our determination were the result of:

- Improper installation.
- Misapplication - See SAS FORKS™ Operator Manual.
- Misuse or Improper operation - See SAS FORKS™ Operator Manual.
- Exceeding the weight and/or lift limitation posted on the Identification Plate attached the SAS FORKS™.
- Negligence or Failure to perform routine inspection and/or maintenance as outlined in the SAS FORKS™ Operator Manual.
- Unauthorized modification, welding, burning, grinding, installation of non-factory skid plates, etc.  
in the SAS FORKS™ Operator Manual or as provided in a written authorization directly from SAS factory Engineers.).
- Continued use after a malfunction of the hydraulic system in the forklift or loader.
- Accidental damage.

**LIMITED WARRANTY REMEDIES:** Buyer must notify SAS of any warranty claim within 10 days after such claim arises; otherwise buyer waves all rights to such claim. Unless agreed otherwise in writing. Buyer's sole remedy for breach of warranty is, at seller's option, the repair of the defect, or the providing of a replacement part F.O.B. seller's office. Seller will not be responsible for costs of dismantling or reassembling the product. Further, seller will not be liable for any direct, indirect, consequential, incidental, or special damages arising out of a breach of warranty. These remedies are exclusive, and all other warranty remedies are excluded.

**PROPRIETARY RIGHTS:** All designs and other proprietary rights provided by SAS to Buyer are to remain the property of SAS, and Buyer shall honor all proprietary legends. Buyer agrees not to copy the design of S.A.S.™ Forks or hire a third party to copy.

**LIMITATION OF LIABILITY:** The seller's price is based on the enforceability of this limitation of liability, and the buyer understands that the price would be substantially higher without this limitation. Seller shall have no liability to buyer for lost profits or for special, consequential, exemplary, or incidental damages of any kind, whether arising in contract, tort, product-liability, or otherwise, even if advised of the potential damages in advance.

- In no event shall seller be liable to buyer for any damages whatsoever in excess of the contract price.
- In the event that any warranty or warranty remedy fails of its essential purpose, or is held to be invalid or unenforceable for any reason, in consideration of the other provisions of this agreement, the parties understand and agree that all limitations of liability under this provision will nevertheless remain in effect.

**SEVERABILITY:** Any legally unenforceable provision may be severed from this agreement, and the remaining terms and conditions will be enforced as a whole.

**SALES TERMS:** SAS FORKS SALES TERMS document is included as part of this document. See [www.sasforks.com/SalesTerms.pdf](http://www.sasforks.com/SalesTerms.pdf)

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