SASFORKS

engineered tough

7’ SAS™ “CAR BODY”

SAS™ FORKS

==========

OPERATOR MANUAL

FOR SAFELY LIFTING & MOVING SALVAGE CARS & LIGHT TRUCKS FROM THE SIDE.

S.A.S. of Luxemburg, LLC 133 Center Drive Hwy 54, PO Box 260, Luxemburg, WI 54217 USA
Phone: 920-845-2198 • 1-877-SAS-FORK • Fax: 920-845-2309 • Web: www.sasforks.com

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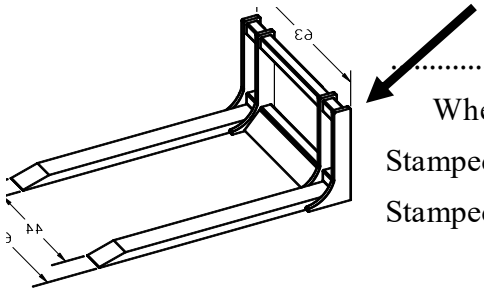
SAS™ FORKS



..... Serial Number:

When contacting SAS FORKS please have the Serial Number available.

Stamped in the steel of the left side of the carriage about 3” below the top.

Stamped in aluminum ID plate on the left side of the carriage.

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INTRODUCTION LETTER (Page 3)
SAS™ FORKS

TO OWNERS, MANAGERS, AND OPERATORS OF LOADERS EQUIPPED WITH SAS™ FORKS

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. A key element to safe operation of this equipment is that all personnel are properly trained. Personnel recommended to receive training: Operators and all others working in area where equipment will be utilized

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.

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

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

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

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

The following information laid out in this Operator Manual for SAS FORKS™ 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 business operation.

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

Thank you for your business,

SAS LLC.
S.A.S. OF LUXEMBURG, LLC.
133 Center Dr Hwy 54 · PO Box 260
LUXEMBURG, WI 54217 USA

Phone:
920-845-2198

Email:
buyit@sasforks.com

Operation of equipment should 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 you must:

- Understand the written instructions supplied by the manufacturer of this device, the manufacturer of the wheel loader, all company rules and any applicable OSHA regulations
- Completed training including actual operation of the device.
- Know and follow the safety rules and regulations of the jobsite.
- Know and follow all guidelines outlined in this manual.

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.

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.

Inspect the device and perform all preventative maintenance before operation at the start of every shift. Failure to perform inspections or proper maintenance can result in equipment failure resulting in serious injury or property damage.

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 or death.

This equipment has numerous moving components. Do not wear loose fitting clothing, rings, jewelry or other items that may become entangled in the device. Be aware of resulting pinch points and keep clear during operation, inspection and maintenance. Pinch points exist between the coupler and forks, coupler and wheel loader, failure to keep clear while in operation can result in serious injury or death.

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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INSTALLATION GUIDELINES (Page 5)
SAS™ FORKS

⚠CAUTION Installation of SAS FORKS™ should be completed by a professional knowledgeable on your machine. The SAS FORKS™ were made specifically to fit the attachment of your machine. Contact your wheel loader or forklift manufacturer, as you deem necessary, depending on applicable rules or regulations, to obtain guidance or approval as may be required prior to installation of this attachment. Avoid pinch points during installation as you may be injured. Improper installation may cause damage to the loader.

WHEEL LOADER RECOMMENDATIONS:

REMOVE YOUR "AUTOMATIC DUMP" FEATURE ON YOUR BUCKET LEVER.

The automatic dump feature was originally intended for loaders moving gravel in buckets and subsequently dumping it into trucks. This is not a desired feature when moving vehicles with SAS FORKS™. Have this automatic dump mechanism removed if your machine has one.

REMOVE YOUR "LOCK POSITION" AND "DETENT' CONTROLS

Remove the lock position and detent controls on the up and down levers. These controls, if left operable on your machine, could cause accidents by raising or lowering the load without the operator being aware that the lever is engaged.

DIRECT **PIN MOUNT** TYPE SAS FORKS:

- Park wheel loader on firm level ground, • Set parking brake • Set attachment flat on ground
- Turn off wheel loader engine • Depressurize the wheel loader's hydraulic system to release any residual pressure and resulting tension on the wheel loader arms.

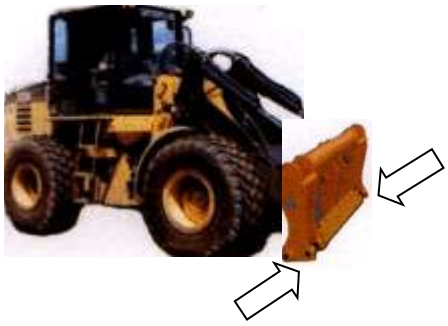
⚠WARNING **Failure to properly release residual hydraulic system pressure may result in stored energy** and undesired or unexpected movement of wheel loader arms when pins are removed.

- Grease holes using a brush. Do not insert finger into pin hole opening, as there is a risk of a pinch point and finger being severed.• Align holes on SAS Fork carriage with wheel loader arm holes. • Grease pins • Insert pins & secure properly.• Start wheel loader and slowly move attachment, while carefully watching for interference points. If any are found, "stops" may need to be installed. Contact SAS Forks to discuss.

QUICK COUPLER MOUNT TYPE SAS FORKS:

- Align SAS Forks squarely to coupler & engage locking pins. Locking pins must be fully engaged and secure prior to use.

⚠WARNING **Failure to properly secure coupler locking pins will result in damage** to the forks and the coupler and **forks may fall off the coupler & drop load**, risking damage to the load and injury or death to anyone in the area.



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PRE-OPERATION INSPECTION (Page 6)
SAS™ 6' & 7' FORKS

Daily, pre-operation inspection is recommended to help the operator safely use SAS FORKS™. The list below is a general summary. A sample checklist can be found later in this manual. Please note: This list is not meant to be an exhaustive list of items to inspect. Refer to the machine manufacturer's operator manual for specifications and additional items that may need to be inspected prior to machine operation.

⚠WARNING It is the responsibility of the Owners and Operators to ensure safe operation of equipment in the field. Any unsafe items should be professionally repaired prior to operation of machine. Failure to follow these safety guidelines or wheel loader operation instructions can result in serious injury or death.

⚠WARNING Prior to completing this inspection, wheel loader should be parked on a solid level surface, with the parking brake set and the engine off. Failure to secure vehicle while inspecting can result in serious injury or death.

1) INSPECT WHEEL LOADER PER MANUFACTURERS RECOMMENDATIONS

Inspect items such as, but not limited to; tire pressure, wheel bolts, lift arm pins, cylinders, hoses.

2) GREASE AND INSPECT ALL THE LINKAGE PINS.

Inspect each linkage pin to ensure properly fastened and the condition.
Grease each linkage pin and joint to ensure smooth operation and to reduce wear.
Do not operate machine if linkage pin or retaining plate of bolt is worn, loose or missing.

3) FORKS SECURED PROPERLY

Quick coupler mounted units must be aligned uniformly and fastened securely with both locking pins fully engaged. Direct pin mounted forks with all pins properly in place & secured with proper fasteners.

4) INSPECT SAS FORKS

Inspect Rubber Bumpers attached to the carriage to prevent damage to cars. Order new bumpers from SAS FORKS

Inspect fork carriage & frame for cracking or damage. Do not use forks if damage is found.

Inspect welds retaining the blades into the carriage. Welds should be smooth, with no cracks. Do not operate forks if a weld is showing any signs of cracking. See "Blade Weld Inspection".

Inspect fork blade tips for upward bending. Blade tips should be level to each other +/ - ½" Blade tips that are not level with each other will make it difficult to slide under vehicles, and cause premature wear on the lower blade.

⚠WARNING Failure to inspect welds, blades or mounting pins on a daily basis can result in catastrophic failure resulting in property damage, serious injury or death. Be certain to inspect your equipment on a daily basis.

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BLADE & CARRIAGE WELD INSPECTION

CHECK THE WELDS ATTACHING THE BLADES TO THE CARRIAGE.

There are a series of welds attaching each blade to the carriage. Each weld should be smooth with no cracks.

⚠WARNING

Do not operate machine if a weld is showing any signs of cracking. Operation of machine with cracked welds can result in serious injury or death.
Never operate equipment exhibiting cracks, always notify your immediate supervisor of any unsafe conditions.

·**Cause of cracks:** The operator is repeatedly forcing the tips of the fork blades onto the ground. This is referred to as *down pressure*. Extreme *down pressure* may lift the front tires of the loader off the ground. Repeated or extreme *down pressure* will eventually bend the tips of the blades up, crack the blade welds, crack the blades from the bottom up, and/or crack the tip of the carriage.

·**To prevent a crack from occurring:** When lowering the SAS FORKS™ to the ground, just touch the blades on the ground, do not force the tips of the fork blades onto the ground.

DO NOT MAKE UNAUTHORIZED WELDS TO SAS FORKS™ Welding on forks can result in reduced lifting capacity & potential failure resulting serious injury or death. Contact SAS before performing any welding on this equipment.

⚠WARNING

Do not weld anywhere on fork blades. Never weld across fork blades. Welding not authorized by SAS Forks may result in future stress cracking and failure of component, dropping of load, causing damage to load and injury to persons.

If you have a question about welding anything on or to the SAS FORKS™, please call S.A.S. of Luxemburg, LLC. at 920-845-2198. Obtain written authorization for any welding repair or modification in writing from SAS prior to conducting any repair and only allow a qualified professional welder to conduct such repairs.

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ELECTRIC – HIGH VOLTAGE BATTERY EQUIPPED VEHICLES POSE SPECIAL HAZARDS

⚠WARNING

Any damage to high voltage batteries, either from accident or mishandling could cause a risk of fire, electrocution, property damage and serious injury. Practice safe moving & storage of electric vehicles.

Per U.S. Dept. of Transportation National Highway Traffic Safety Administration;
"There is potential for delayed fire with damaged lithium-ion batteries."
Source: Interim Guidance for Electric and Hybrid-Electric Vehicles Equipped With High Voltage Batteries.
https://www.nhtsa.gov/sites/nhtsa.gov/files/interimguide_electrichybridvehicles_012012_v3.pdf

DEVELOP SAFE VEHICLE LIFTING AND MOVING PLAN FOR ELECTRIC VEHICLES:

a. Review all materials within this SAS Forks operator manual & actually follow safest practices.
b. A knowledgeable person should assess vehicle and determine if safety precautions such as having a qualified person disconnect 12 volt battery and remove high voltage disconnect is prudent safety precaution for your facility.
c. Read and be up to date on notices, warnings and procedures that may be issued or updated from time to time from electric vehicle and battery manufacturers, and regulating authorities.

Sample resources (not all inclusive):www.nhtsa.gov ; www.safercar.gov ; www.ems.gov ; www.evsafetytraining.org
https://www.nhtsa.gov/sites/nhtsa.gov/files/interimguide_electrichybridvehicles_012012_v3.pdf

VARIABLES IMPACTING SAFE LIFTING & MOVING ELECTRIC VEHICLES (not all inclusive)

d. Introduction by new manufacturers and new models, with structural design differences.
e. Existing vehicle condition, type of vehicle damage.
f. Consider variables lifting operations to identify and use best method to reduce risks.
g. Sharp tipped forks could easily penetrate battery enclosures posing great fire or explosion risk.

VEHICLE DESIGN CONSIDERATIONS: Historical Internal Combustion Engine (ICE) and ELECTRIC vehicle design would lead to the opportunity to complete safe lifting with SAS Forks, specifically;

h. Vehicle manufacturers engineer undersides of vehicles components to withstand random impacts of potential debris on roadways at highway speeds, without damage or impact to components such as fuel tanks and high voltage battery enclosures.

Per a National Fire Protection Association video for tow operators;
"The high voltage battery is protected by the vehicle's structure or often enclosed in a metal case."
Source: Electric & Hybrid Vehicles: Prepare to Respond - Tow Operator Edition - Section 1 – Introduction – video: (@ 3:54)
https://www.nfpa.org/Training-and-Events/By-topic/Alternative-Fuel-Vehicle-Safety-Training/Tow-operator-training

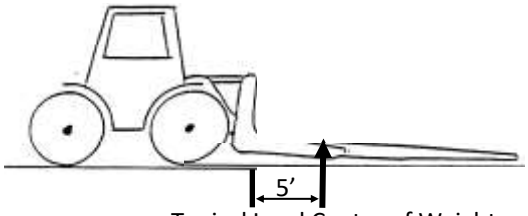
i. Vehicle manufacturers engineer front and rear suspension crossmembers which are somewhat lower to ground than fuel tanks, high voltage batteries & associated high voltage wires.
j. Vehicle manufacturers engineer side rocker panel structure which are somewhat lower to ground than fuel tanks, high voltage batteries, and associated high voltage wires.

If electing to lift & move ELECTRIC vehicles with SAS Forks take into consideration foregoing, also:

k. Ensure forks do not contact battery, will not lift on battery or battery enclosure.
l. Lower forks near ground to ensure forks do not contact vehicle structure or battery enclosure.
n. After forks are fully extended under vehicle; then slowly lift vehicle.
Side lifting ensure 6' & 7' forks only contact heavy rocker panel frame structure.
Front lifting ensure 15' forks only contact heavy suspension cross member structure.
n. Slowly transport vehicle to avoid vehicle moving or shifting on forks.
o. Slowly lower vehicle. Be sure forks are on ground, and not in contact with battery enclosure or lower structure when setting and backing out of vehicle.
p. After electric vehicle is placed, perform visual inspect to ensure no battery damage has occurred.

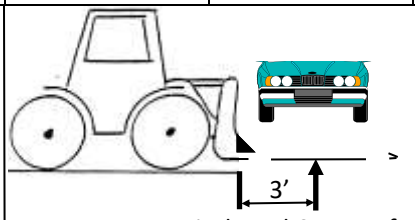
1) LIFT CAPACITY: See lift capacity specified on identification plate attached to SAS FORKS™.

GENERAL LIFTING CAPACITY OF MACHINES WITH SAS FORKS™					
Vehicle Lifting Position		**Front to Rear**		**Broadside**	
Machine Specifications		**Lift Capacity With 15' SAS FORKS™**		**Lift Capacity With 6' & 7' SAS FORKS™**	
Machine Rating	Curb Weight of Machine	Lifting Capacity	Load Center # feet from carriage	Lifting Capacity	Load Center # feet from carriage
2 yard	< 15,000 lbs	2,000 lbs	@ 5 feet	4000 lbs.	@ 3 feet
2 ½ yard	> 20,000 lbs	3,000 lbs	@ 5 feet	5500 lbs.	@ 3 feet
2 ¾ yard	> 25,000 lbs	4,000 lbs	@ 5 feet	6500 lbs.	@ 3 feet
3 yard	> 30,000 lbs	5,000 lbs	@ 5 feet	7500 lbs.	@ 3 feet
3 ½ yard	> 33,000 lbs	6,000 lbs	@ 5 feet	8500 lbs.	@ 3 feet



Typical Load Center of Weight

15' SAS FORKS:
Lift with engine close to wheel loader and fork carriage.



Typical Load Center of Weight

6' & 7' SAS FORKS:
Position **one fork close to and just behind front wheels** and second fork forward of rear wheel.

NOTICE:

ELECTRIC VEHICLES

(EV) will have different load centers than traditional Internal Combustion Engine (ICE) vehicles. Thus heavier machines with appropriate load capacities may be required.

Sample Vehicle Weights		
2,500 lbs	ICE	2000 Toyota Corolla
3,000 lbs	ICE	1998 Chev Lumina
3,854 lbs	EV	2022 Kia Niro EV 4 door SUV
4,000 lbs	ICE	1998 Chev Truck C1500 2wd Std Cab
4,250 lbs	EV	2022 Tesla Model 3 EV 4 door sedan
4,888 lbs	EV	2022 VW ID4 EV 4 door SUV
5,000 lbs	ICE	1998 Chev Truck K1500 4wd Ext. Cab
6,000 lbs	ICE	1998 Chev Truck K3500 4wd Crew Cab

⚠WARNING Dismantled vehicles, which have the engine and transmission removed have Different load centers than vehicles that are complete *with* engines and transmissions. Verify load is evenly balanced and does not exceed load rating before lifting. Failure to maintain a balanced load can result in the load falling from forks resulting in serious injury or death. Check that load is solid and stable on forks before lifting or moving load and monitor during transport.

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2) ENTRY UNDER A VEHICLE:

Correct: Position tapered portion of fork blade parallel to ground and slide the fork blade under vehicle, keep close to front wheel for best balance of vehicle. Pick up slowly to verify stability.

⚠WARNING

Be careful to lift load slowly to be sure it is balanced properly before moving. Unbalanced load can shift and fall off forks resulting damage to the load, wheel loader, forklift, and injury or death to anyone nearby.

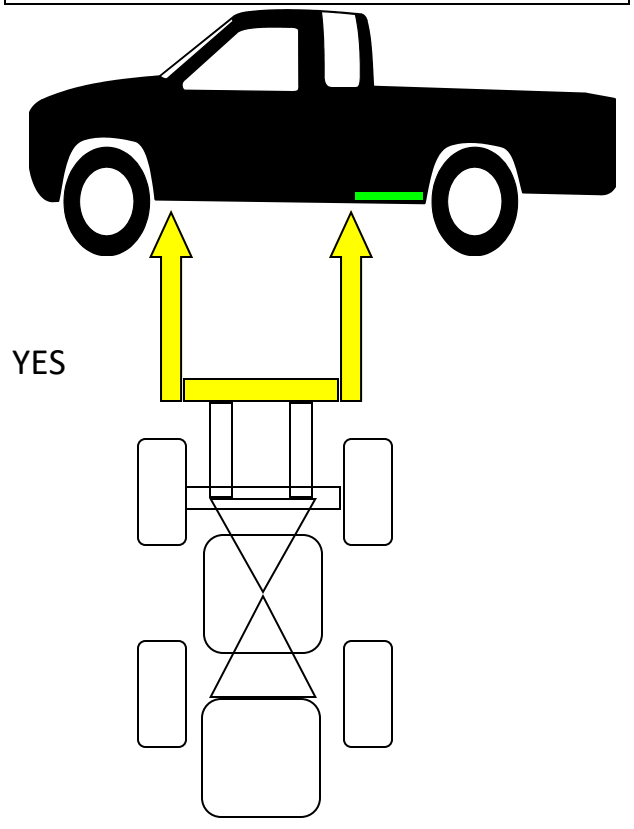
Be certain load is balanced before lifting load.

NOTICE

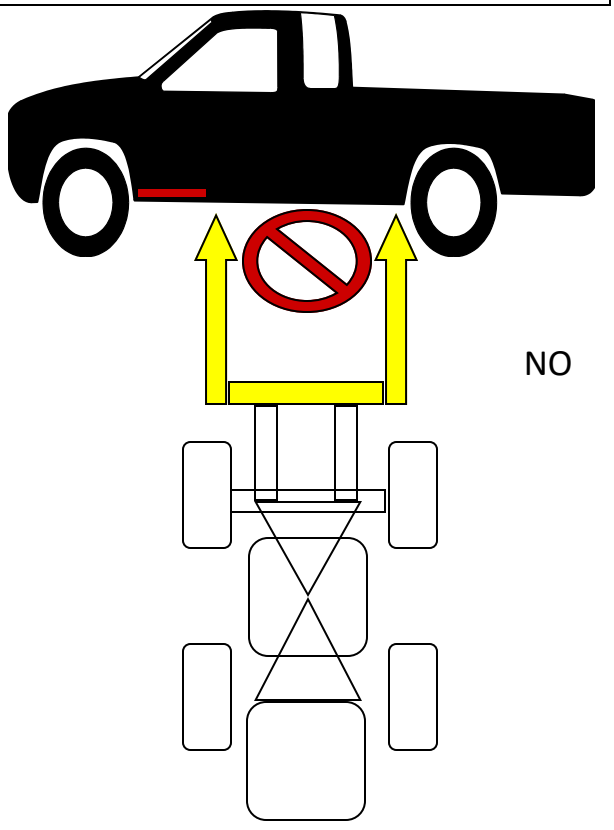
Side handling vehicles have some risks to causing damage. Be aware of & avoid:

- Rear drive shafts extending below frame rails pose a risk to being damaged.
- Beware as truck if lifted by the frame, rear axle will drop, pulling the drive shaft down, nearer to coming into contact with the forks and causing damage.
- Transfer cases may be exposed to contact with fork or undue tension from displaced driveshaft.
- Avoid contact with lower truck box sides, due to they are not stiff and strong like car rocker panels, and rocker panel bumpers will damage box sides.
- Side door & rocker panel damage may result in case of impact into bumpers.

CORRECT SAS™ FORK position:
Slide under a vehicle close behind front wheel.



INCORRECT SAS FORK position: Lifting to far back, may cause the car to tip forward off forks.



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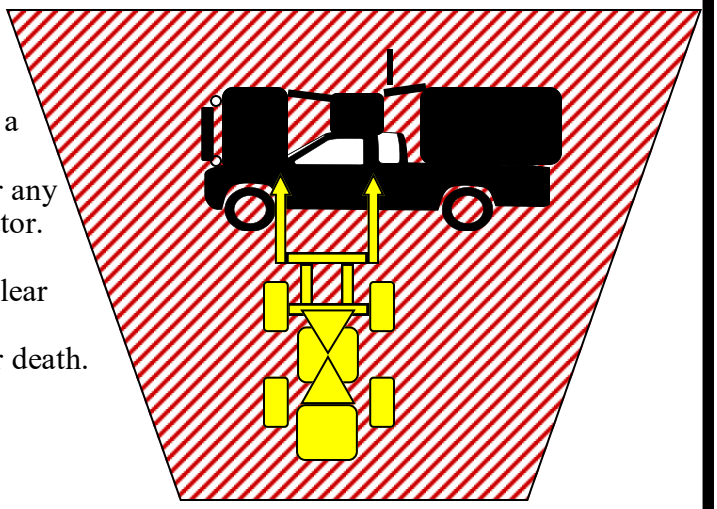
3) SPOTTERS MUST STAY CLEAR

Using a spotter is often helpful when positioning forks under car.



WARNING

Do not allow anyone to enter a potential pinch point or area where car may fall toward, or any blind spot of the loader operator. Always stand clear and a safe distance from the forks, loader and load. Example of area to stay clear is illustrated in cross hatched diagram to right. Failure to observe this may result in serious injury or death.

4) MAXIMUM LIFT HEIGHTS

Some machines (loaders / fork lifts / fork trucks / etc.) have height lifting limitations. The identification plate on the SAS FORKS specifies the maximum height a load may be lifted safely with SAS FORKS. (Typical maximum lift height is 8') Load Height limitations can usually be found:

- On the SAS FORKS™ identification plate
- In your machine manufacturer's operator manual

5) ROCKER PANEL BUMPERS

Your SAS CAR BODY FORKS may optionally be fitted with SAS Rocker Panel Bumpers. The purpose is to prevent side door damage. Best practice is to slide forks under car, stopping short of impacting the car's rocker panel to the rubber pad. Slowly lift and tilt forks back about 5 degrees. As you transport the car, the car may freely slide to the rubber pad. The goal is to provide a resting place for the car, and avoid contact with the doors. Contact SAS for replacement *Rocker Panel Bumper pads*.

6) WINTERTIME OPERATION

If the vehicles are frozen to the ground–approach the vehicle straight on, allowing your SAS FORKS™ to slide under vehicle. With the forks positioned as previously described in (*Entry under a vehicle)*. Allowing the wedge shape design to "pop" the vehicle out of the ground. This will allow the forward motion of the loader to loosen a frozen vehicle from the ground. Do not articulate or attempt to lift the unit until the vehicle is loose from ground. Articulating or lifting prior to freeing the vehicle out could bend your fork blades.

7) BLOW HORN TO WARN OTHERS

WARNING

Sound horn when approaching blind areas, around corners of buildings or garage. This is necessary to alert other people who may not be able to see you, that you are approaching. Failure to sound horn at blind intersections can result in serious injury or death. Always slow down and sound horn at blind corner intersections.

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8) TURNING WHILE CARRYING A LOAD

While carrying a load on forks, keep it low to ground. It is not safe to turn (*articulate)* if load is more than 2 feet above ground. When there is a need to raise a load in excess of 2 feet (60 cm), be sure turn is not in excess of 5° to right or left. The best way to lift loads at heights above 2 feet is to "line up" with truck/trailer/semi/etc. before raising load. When your machine is lined up straight on with truck/trailer/semi/etc. then lift load and place it without turning machine.

Do not turn *(articulate)* with a load in excess of 2 feet (60 cm) above ground. Turning sharp with load elevated can result in vehicle falling from forks resulting in serious injury or death.

9) MOVING FORKS FROM SIDE TO SIDE WHILE FORKS ARE UNDER A VEHICLE

Moving forks from side to side (*articulate)* when under a vehicle could damage the vehicle.

10. PEOPLE AND PEDESTRIANS: At all times maintain a safe operating distance from people. A minimum recommended distance to keep people clear from wheel loader, (forklift), forks, and load is 30 feet (9 Meters). Failure keep pedestrians clear of work area can result in serious injury or death. Verify area is clear be-

11. BACKING SAFETY WARNING:

When backing up (reverse) with the loader/fork lift, a safety beep shall sound to warn all people that you are backing up. If this safety beep is found inoperable at any time, it must be immediately fixed prior to further use of the loader. Failure to maintain warning device can result in serious injury or death. Always check operation of warning device at start of each shift.

12. DRIVING SPEED AND BOUNCE:

Always drive the wheel loader (forklift) at slow speed. Speeds that are too fast may cause machine to start bouncing. Bouncing is dangerous condition & could result in cargo shifting & falling off forks.

Failure to maintain safe speed can cause loss of control &/or load falling off forks resulting in serious injury or death. Operate slow safe speed based on conditions.

13. GREASE & MAINTENANCE PRECAUTIONS:

Maintenance should be performed by properly training individuals. Never attempt to grease the fork pins when the machine is running or when forks are raised above ground. Performing maintenance or repairs with equipment running or while forks are elevated can result in serious injury or death. Only perform work on equipment with machine off & forks are on ground.

14. KEEP PEOPLE CLEAR OF LIFTED LOADS:

SAS FORKS are not intended to lift people. It is never safe to lift any object on the SAS FORKS and walk under or work under the forks or load.

Never lift a load and let someone walk or work under the forks.

Failure to stay out from under raised load or to prevent others from going under load can result in serious injury or death. Always make sure load is securely on the ground before allowing anyone near load or forks. Always lower forks completely to the ground before performing any inspections, greasing, maintenance or other work.

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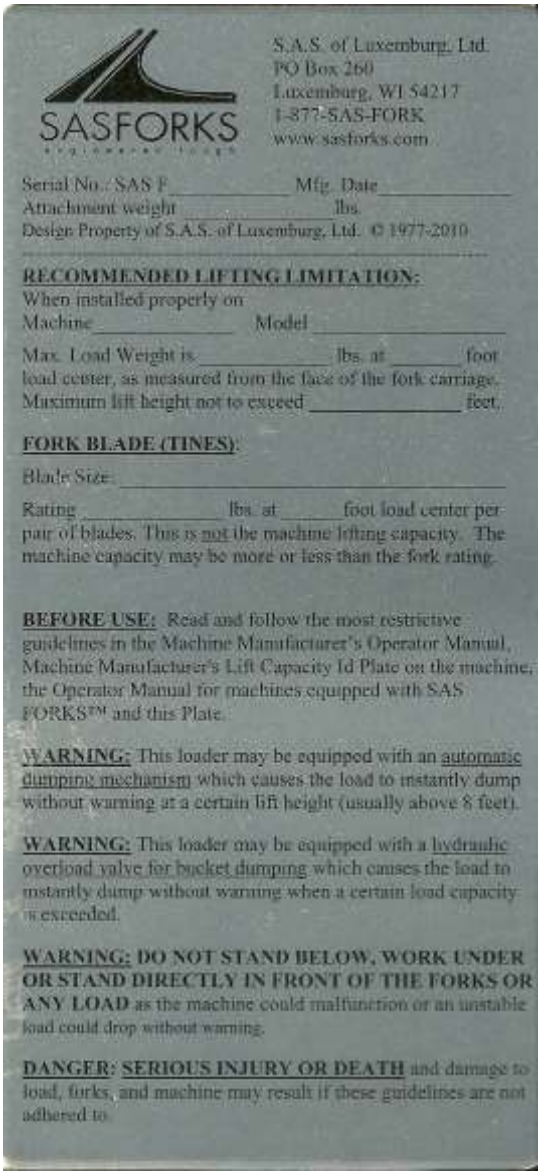
REPLACEMENT PARTS	QUANTITY	PART NUMBER	FASTEN
ALUMINUM ID PLATE (shown below)	1	ID PLATE	GLUE ON
STEEL PROTECTIVE PLATE FOR ID	1	LOGO PLATE LARGE	WELD ON
BUMPER PADS (14")	2	BUMPER ROCKER PAD	BOLT ON
BUMPER RETAINER (16" X 3/8")	2	114-BUMPER	BOLT ON
BUMPER PAD BOLTS	2	WBOLT 0.500X2.50 GR8	BOLT ON
BUMPER PAD NUTS	2	WNUT 0.500-13-GR8-NY	BOLT ON

Please provide serial number when placing order.
Serial number format: SAS F1234
Email: parts@sasforks.com
Phone: 1-920-845-2198
Or Phone: 1-877-727-3675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Serial No.: SAS F_____ Mfg. Date _____
Attachment weight _____ lbs.
Design Property of S.A.S. of Luxemburg, Ltd. © 1977-2010

RECOMMENDED LIFTING LIMITATION:
When installed properly on
Machine _____ Model _____
Max. Load Weight is _____ lbs. at _____ foot load center, as measured from the face of the fork carriage. Maximum lift height not to exceed _____ feet.

FORK BLADE (TINES):
Blade Size: _____
Rating _____ lbs. at _____ foot load center per pair of blades. This is not the machine lifting capacity. The machine capacity may be more or less than the fork rating.

BEFORE USE: Read and follow the most restrictive guidelines in the Machine Manufacturer's Operator Manual, Machine Manufacturer's Lift Capacity Id Plate on the machine, the Operator Manual for machines equipped with SAS FORKS™ and this Plate.

WARNING: This loader may be equipped with an automatic dumping mechanism which causes the load to instantly dump without warning at a certain lift height (usually above 8 feet).

WARNING: This loader may be equipped with a hydraulic overload valve for bucket dumping which causes the load to instantly dump without warning when a certain load capacity is exceeded.

WARNING: DO NOT STAND BELOW, WORK UNDER OR STAND DIRECTLY IN FRONT OF THE FORKS OR ANY LOAD as the machine could malfunction or an unstable load could drop without warning.

DANGER: SERIOUS INJURY OR DEATH and damage to load, forks, and machine may result if these guidelines are not adhered to.

SAFETY Buyer accepts responsibility to;
(1) Ensure that all personnel that will use and/or work in area of purchased product will read safety ID plate and Operators Manual For SAS (product) FORKS and Machine Manufacturer's Operators Manual, prior to use; and
(2) Ensure that all personnel follow the safety guidelines outlined on these materials.
(3) To determine and compare the weight of the original machine's attachment, to the new SAS FORKS™ or other attachment purchased herein, and reduce the lift capacity as needed to accommodate the increase in the attachment weight if any.
(4) Observe the most restrictive weight capacity specified on any machine and/or attachment.
(5) Buyer has duty to inspect equipment & attachment regularly.

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 1-877-SAS-FORK (1-877-727-3675)

Please call SAS before attempting any repair, modification, or questionable job applications.

LIMITED WARRANTY FOR SAS FORKS™

For products that Seller manufactures, Seller warrants that such products conform to all specifications per the quote and build sheets for materials and workmanship for the period of time indicated below, after date of shipment, when used in compliance with the SAS FORKS™ Operator Manual. Refer to the SAS FORKS™ Operator Manual Limited Warranty Pages for details.

□ 1 year Limited Warranty for (5" x 3" x 192") 15' Standard Heavy Duty solid steel fork assembly. See blade limited warranty in Operators Manual.
□ 1 year Limited Warranty against defects in workmanship on carriages of (Adjustable, Crushing, Car Body, Scorpion), Quick Coupler & Extreme weldments
□ 1 year Limited Warranty against defects in Extreme grapple cylinder, rotate motor, swivel & Scorpion cylinders, hydraulic valve, relays.
□ No warranty on other products not listed above, unless specified on the face of original invoice. (No warranty on used equipment of any type).
Seller does not warrant the products that it does not manufacture. Rather, all warranties, if any, for these products are supplied by the manufacturer.

SELLER EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

No warranty against abrasion wear, claw chip wear, fork tip damage, blade bending, fusible link separation, bent fork mounting shafts, hoses, cables, joystick or wires.
Installation of purchased attachment may void machine manufacturer warranty, if any.

FORK BLADES SPECIAL NOTE:
·BENT FORK BLADES are a condition of operation error and are NOT a warranted condition.
·DAMAGES TIPS & Cracked Blade welds are a condition of blunt impact by operator and NOT warranted condition.
Refer to additional details in this limited warranty document and related 'SAS FORKS Sales Terms'
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 serial number off the forks and call SAS at 1-877-SAS-FORK. Clearly describe the problem and the operation that was taking place when it occurred. Contact SAS: SAS Local: 920-845-2198 SAS Fax: 920-845-2309 SAS Email: sales@sasforks.com
· 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 it's 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.

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CARRIAGE UNIT LIMITED WARRANTY
·UPPER CARRIAGE UNIT FIT AND CONSTRUCTION: We guarantee our SAS FORKS™ to fit your machine as designed. This is warranted against cracks in material, weldments, and factory machined areas.
·WEAR OF BASE PLATE LOWER CARRIAGE, which is structural material, voids the warranty. This is caused from not maintaining skid plates under the carriage. See manual for details of miss-use and proper use.
·BROKEN/CRACKED LOWER CARRIAGE:
Cracking or breaking of the carriage unit from the bottom voids the warranty. This is caused from improper operation. Usually caused by repeated down pressure and wheelies. This is not a warrantable condition. See manual for details of miss-use and proper use.

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. (other than specifically allowed 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 Seller 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, the correction of the service, or the providing of a replacement part FOB Seller's office. Seller will not be responsible for costs of travel, mileage, shipping, hauling, dismantling or reassembling the product. Further, Seller will not be liable for any other direct, indirect, consequential, incidental, or special damages, arising out of a breach of warranty, or, use of the purchased product(s). THESE REMEDIES ARE EXCLUSIVE, AND ALL OTHER WARRANTY REMEDIES ARE EXCLUDED. Prior to any repairs be performed, **written Pre-Authorization is Required.** For any repairs that the Buyer or a 3rd party desires to have covered under the terms of this limited warranty, Buyer must receive written authorization in advance from the Seller in the form of a written Limited Warranty Authorization Purchase Order. Such will itemize the work to be done and the agreed cost of such, without any allowance for travel or mileage expenses. No other expenses will be reimbursed.

Taxes: Buyer agrees to pay all sales, use, export, import, local, state, or other taxes levied related to this sale. Such taxes are not included in the sale price of the product. If invoice does not clearly itemize sales tax, and show payment of such, customer agrees to pay at any future date time if such is levied by any government body. Buyer agrees to hold Seller harmless.

Venue: Kewaunee County, WI, USA, is the agreed venue for any legal action related to this agreement or any products of the Seller. Parties further agree that this agreement shall be enforced and governed by the laws and UCC [Uniform Commercial Code] of the state of Wisconsin, U.S.A.. Expressly **not governed by CISG**. [United Nations Convention on Contracts for the International Sale of Goods]

Proprietary Rights: All designs and other proprietary rights provided by Seller to Buyer are to remain the property of Seller, and Buyer shall honor all proprietary legends. Buyer agrees not to copy, or hire a 3rd party to copy the design, style, or likeness, in part or whole of any SAS product. Buyer, buyer's agents or employees may provide feedback to Seller with respect to Sellers products or services and Seller may use feedback for any purpose without obligation of any kind. To the extent a license is required under Buyer's intellectual property rights to make use of feedback, Buyer hereby grant Seller an irrevocable, non-exclusive, perpetual, royalty free license to use the feedback in connection with Seller's business, including enhancement of the products and services. If Buyer requests Seller to make a custom product, Buyer will hold Seller harmless from and against any claims of potential patent infringement.

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, OUT OF A DELAY IN OR FAILURE OF DELIVERY, 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.

Sever ability: Any legally unenforceable provision may be severed from this agreement, & remaining terms & conditions will be enforced as a whole.

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SAMPLE TEST
SAS™ 6' & 7' FORKS

NAME: _____ DATE: _____

1) What steps must be completed during the **Pre-Operation Inspection,** prior to starting the loader?

_____

_____

_____

_____

2) Before engaging the transmission in gear, what are three important things you must do?

_____

_____

_____

3) What is a safe distance to maintain between an operating loader and nearby pedestrians and Why?

_____

_____

4) What type of safety device is engaged when gear shift is placed in reverse & why is it important?

_____

_____

5) What speed is safe to drive the loader in the yard and Why?

_____

_____

6) Moving electric vehicles (EV) pose special hazards related to fire, electrocution and heavier weight. What are preparations that can be done to prepare and perform a safe move of an EV?

_____

_____

_____

●Note: This page can be photocopied for use with your machine operator training for SAS FORKS™.

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7) How can you prevent a vehicle from tipping or falling off the forks?

_____

_____

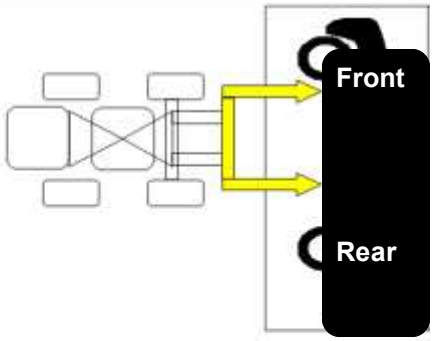
_____

8) Side handling vehicles have some risks to causing damage. What are items that are at risk which you must be careful to avoid?

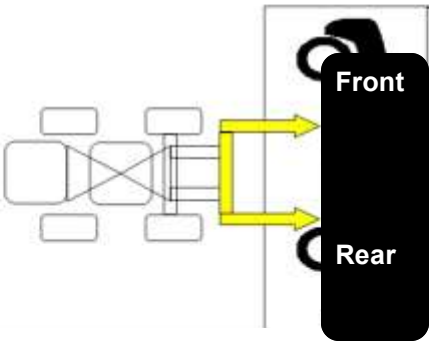
- _____
- _____
- _____
- _____
- _____

9) Which picture below correctly shows the position the forks should be placed in when sliding the forks under a vehicle to load it on the forks? ☐ A, ☐ B

A.



B.



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ANSWER PAGE 1
SAS™ 6' & 7' FORKS

NAME: _____ANSWER SHEET_____ DATE: _____

1) What steps must be completed during the **Pre-Operation Inspection,** prior to starting the loader?

Check oil level ; Check engine coolant level ; Check machine tires

Check hydraulic fittings and hoses (fluid level)

Grease and inspect all the linkage pins

Check the welds attaching the blades to the carriage

Check the tips of the forks for upward bending

2) Before engaging the transmission in gear, what are three important things you must do?

Visually check all around the loader to be sure all people are clear

Disengage the parking brake

Lift the forks off the ground

3) What is a safe distance to maintain between an operating loader and nearby pedestrians and Why?

Maintain 30 feet all the way around loader and vehicle load. This is very important for every-one's safety because the forks are 7 feet long and the vehicle swings when the loader is turned; 30 feet provides a safe clearance in case a vehicle would fall off forks, that it doesn't hit them.

4) What type of safety device is engaged when the gear shift is placed in reverse and why is it important?

A backup warning beeper. This should sound automatically when backing up to warn people that the loader is backing up so they can get out of the way.

5) What speed is safe to drive the loader in the yard and Why?

A safe speed is reasonable for the conditions;
Bumps in the road: slow enough that the vehicle is not bouncing or jarring on the forks
Weather: Also consideration for the weather; rain, ice and snow make the road surface slippery for the loader and the blades slippery for the vehicle being hauled on the forks.

6) Moving electric vehicles (EV) pose special hazards related to fire, electrocution and heavier weight. What are preparations that can be done to prepare and perform a safe move of an EV?

First, have a knowledgeable, authorized person inspect for battery or high voltage wire damage.
Determine if EV needs to be quarantined away from buildings and vehicle if fire hazard exists.
Determine if EV needs 12 volt and high voltage battery disconnected.
If approaching with forks, be sure forks are touching ground and will not impact battery housing.
Lift only with forks contacting suspension and frame structure, not battery or battery housing.
Lifting gently and more slowly to be sure EV does not shift while moving with forks. Set slowly, with forks on ground and not touching car, slowly back out of EV. After move, inspect EV to be sure no battery damage has occurred.

●Note: This page can be photocopied for use with your machine operator training for SAS FORKS™. Page 1

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ANSWER PAGE 2
SAS™ 6' & 7' FORKS

7) How can you prevent a vehicle from tipping or falling off the forks?

Pick up the vehicle on the forks evenly, centering the load from right to left.
Tip the blades back about 5°. This will prevent the vehicle from falling off the end of the forks.
Drive the loader at a reasonable (slow) speed to prevent bouncing or jarring of the vehicle on the forks, from bumps in the road.

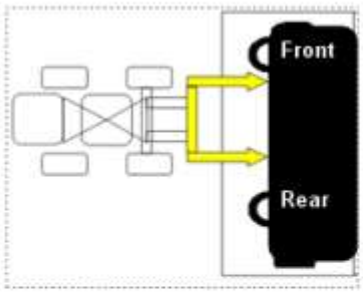
8) Side handling vehicles have some risks to causing damage. What are items that are at risk which you must be careful to avoid?

- Rear drive shafts
- Transfer cases
- Truck box sides
- Side door
- Rocker panel

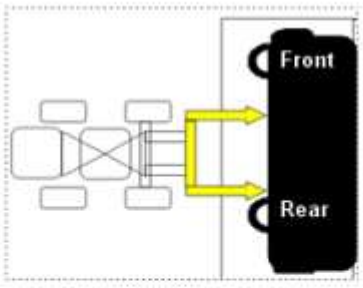
9) Which picture below correctly shows the position the forks should be placed in when sliding the forks under a vehicle to load it on the forks? [X] A, [ ] B,

. "A" is correct answer. Side loading requires fork to be close to and just behind front wheel.

A.



B.



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OPERATOR TRAINING DOCUMENTAION FORM
SAS™ FORKS

THE SAFE WAY IS THE BEST WAY

(Please print name of employee / operator below)

I, _____, have read, understand, and will carefully follow the guidelines set forth in the following literature:

Machine Manufacturer's Operator Manual
Operator Manual For Machines Equipped With SAS FORKS™
Identification Plate on the SAS FORKS™

· I further understand that this machine can cause serious injury or death if improperly operated.
· I agree to safely operate this machine and SAS FORKS™.
· If I have any questions regarding the safe operation or maintenance of the equipment, I shall ask Management prior to operating the equipment.
· I understand that I may be terminated for misconduct if I fail to follow this and other established safety and working procedures.

	Date Completed
1.Read: Machine Manufacturer's Operator Manual	_____/_____/_____
2.Read: SAS FORKS Operator Manual	_____/_____/_____
3.Read: Identification Plate on the SAS FORKS™	_____/_____/_____
4.Review above procedures with Manager/Trainer	_____/_____/_____
5.Complete a written test on operation of loader and precautions	_____/_____/_____
6.Test shall be reviewed by Manager/Trainer with Employee	_____/_____/_____
7.Watch demonstration from an experienced operator	_____/_____/_____
8.Complete a practice loader operation under supervision	_____/_____/_____

Training Completion Certification: The Employee / Operator, listed below, now has the knowledge of these procedures for the machine and SAS FORKS™, and is responsible to see that the policies outlined here are followed on a daily basis. This employee, as evidenced by the signatures below, is now qualified to operate the loader as necessary to safely complete work assignments.

EMPLOYEE / OPERATOR:

_____
(PRINT NAME OF TRAINEE)

_____ ____/____/____
(SIGNATURE)

MANAGER / TRAINER REVIEW:

_____
(PRINT NAME OF TRAINER)

_____ _____ ____/____/____
(SIGNATURE)

·Please file this completed and signed form, along with a completed written test in the employee's personnel file.
·Note: This page can be photocopied for use with your machine operator training.

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SAMPLE DAILY INSPECTION LOG
SAS™ FORKS

Think Safety First
Unit #.....
X=item OK .....
S=needs Service .....
.....
Inspection —Date By Who

Hour Meter	Engine Off & Keys Out	Parking Brake Set	Engine Oil Level	Hydraulic Fluid Level	Antifreeze Level	Fan / Alternator Belts	Fuel System Leaks	Tire Condition	Tire Pressure	Tire Lug Bolts Tight	Hydraulic Hoses	Lift Arms / Chains	Grease Lifting Pins	Forks Secure	Forks Free of cracks	Fork tip & carriage skid pla	Seat Belt Operation	Fire Ext. Charged	Parking Brake	Dash Warning Lights	Fuel Level	Engine - No Noises	Horn	Lift operation	Steering System	Brake System	Reverse Warning

> Inspection Required at start of each shift.

> Responsible Person: First employee to use this piece of equipment on each shift, each day.
> If you find any safety problems fix them immediately or tag and lock out this unit so no one uses it.
> Notify your supervisor about any problems and arrange for immdiate service.
> Any repairs made, corrective action, or problems fixed should be attached to this sheet for proof of safe operating condition
> When done using loader/forklift, do NOT obstruct exit. set parking brake, lower forks with tips on ground, shut off lights.
> When this page is full, turn page into office for filing request a blank form.

> Office / Supervisor: Keep this completed sheet and associated records of repairs on file.

www.SASFORKS.com 1-877-727-3675

Network/Procedures/Forks/WHEEL LOADER DAILY INSPECTION NEW 5-2-06.xls PS 5/24/20107:17 AM

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