

Vulture

Wire Extractor

Compact Excavator Attachment

Manual v03



SERIAL NUMBER LOCATIONS (PAGE 2)

SAS™ Vulture Wire Extractor

Local Distributor or Supplier Name _____ Phone _____

Locate serial numbers and model numbers on SAS Vulture Wire Extractor Attachment.

Serial number of Vulture located on left hand side of stick mount between pins.

Rotator information located on the circular edge of the rotator or a id plate stamped to it.

Note below for easy reference. Providing this information when contacting your local Distributor, Service Representative, or SAS will improve accuracy and level of service.

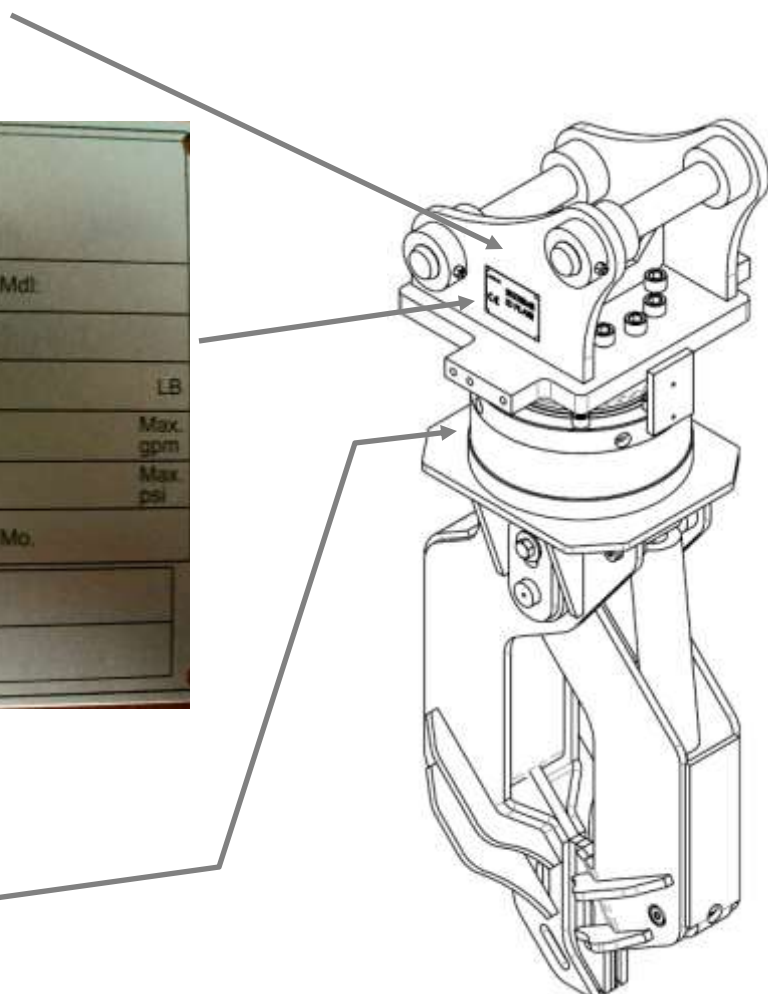
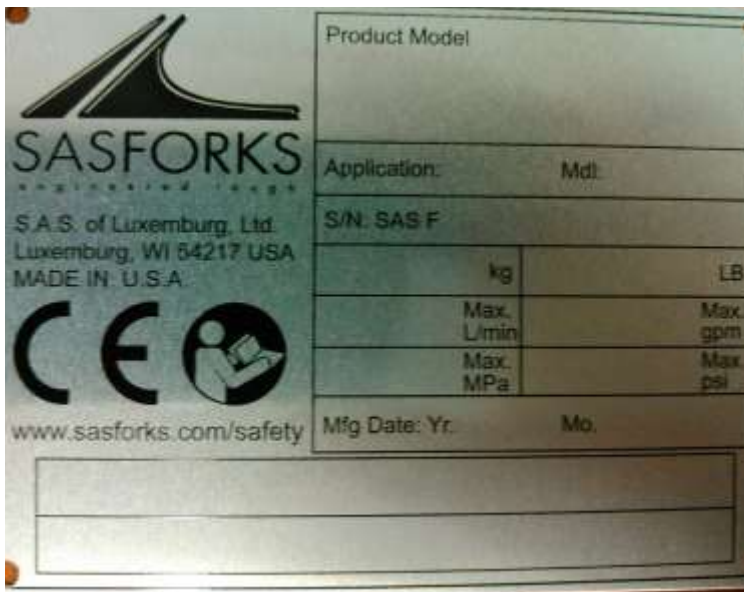
SAS Vulture serial number is stamped on the stick mount directly in the steel & on Id plate.

Vulture detail:

Make: SAS FORKS _____.

Model: Vulture v _____.

Vulture Serial # SAS F _____.



Rotator detail:

Make _____.

Model _____.

Rotator Serial # _____.

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LIMITED PURPOSE OF THIS EQUIPMENT:

The Vulture Wire Extractor is designed to remove wire, wire harness and recyclable scrap materials from end of life cars and trucks. The materials removed from cars and trucks will be damaged. Some excavators may require modification to pressures, valves, cylinders, or other modifications to operate in a desirable manner. This attachment is considered a non-OEM attachment and has not been approved by any specific excavator manufacturer. Customer is responsible to read the excavator’s manual and warranty documents, if any, and identify any impact the installation and use of this attachment may have on the excavator’s warranty. Read this manual completely.

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INTRODUCTION LETTER (PAGE 4)

SAS™ Vulture Wire Extractor

TO THE OWNERS, MANAGERS, AND OPERATORS OF EXCAVATORS EQUIPPED WITH SAS™ Vulture Wire Extractor

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 Symbol is intended to draw your attention to important safety information, 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 presented 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 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.

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GENERAL SAFETY GUIDELINES (PAGE 5)

SAS™ Vulture Wire Extractor

Installation & 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. A copy of this manual should be kept with the equipment. A qualified operator will operate the machine safely in accordance with, and:

- Understand the written instructions supplied by the manufacturer of the device, the manufacturer of the excavator, all company rules and any applicable OSHA or regulatory governing body regulations.
- Completed training including actual operation of the device and excavator to which it is attached.
- Know and follow the safety rules and regulations of the jobsite.



Operation of equipment by un-qualified or un-trained individuals can result in serious injury or death. All operators must be properly trained prior to operation.



Not designed to be operated in an explosive environment. Only use this equipment in well ventilated areas, a sufficient distance away from flammable or explosive gases, liquids or substances to avoid risk of ignition. Operating in an explosive environment may cause an explosion and fire, resulting in injury, death, property damage.



Serious bodily injury, death and property damage can be caused by an operator that is under the influence of drugs or alcohol (of any type, illegal, prescribed or over the counter) due to impaired operator judgment. Do not operate when impaired. 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 work shift. Failure to perform inspections or proper maintenance can result in equipment failure resulting in serious injury or property damage.



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 and cause injection into skin. Wear safety glasses and appropriate gloves while inspecting, operating and maintaining this equipment.



This equipment has numerous moving components. Operate only from the cab equipped with safety glass windshield and adequate protective steel guard while seated and wearing a safety belt. Be aware of potential pinch points and keep clear during operation, inspection and maintenance. Pinch points exist between grapple attachment jaws, cab swing, hold down arms and others, failure to keep clear while in operation can result in serious injury or death.



Do not exceed posted weight limits on equipment. Exceeding rated load limits will result in equipment damage, loss of steering control, machine tip over, serious injury or death.

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GENERAL SAFETY GUIDELINES (PAGE 6)

SAS™ Vulture Wire Extractor



PROTECTIVE EQUIPMENT



- Safety glasses with side shields
- Work boots with heavy sole and safety toes
- Fire extinguishing equipment
- Other such safety equipment to protect personnel from injury.
- Leather gloves
- Hard hat
- Adequate spill kit, oil dry etc.



Puncture or cut injuries may occur if contact made with sharp objects. Sharp objects are present from breaking materials out of scrap cars. Avoid contact.



Do not work under grapple claws, hold down, or any object lifted by this equipment. An unexpected movement, shift in the object, or hydraulic failure may cause claw, hold down, or object drop. Serious injury or death may occur.



PERSONNEL TRAINING



Prior to installation or use of this equipment all personnel must review this operator manual, excavator manufacturer's manual and other pertinent safety manuals and be trained by qualified personnel. All hazards must be identified to ensure personnel avoid these hazards. Signed documentation certifying individual training has been completed is a must. Periodic retraining is recommended. Failure to follow Manufacturers recommendations can result in serious injury and property damage.



SITE PREPARATION & CLEAR OPERATING SPACE RECOMMENDED



- The Vulture Wire Extractor should only be used in areas that are equipped with proper fluid containment measures, to ensure capture and containment of residual fluids in accordance with any and all environmental regulating body.
- Operation area must be sufficiently clear of buildings and overhead power lines.
- No Smoking, Safety Glasses & Hard Hat Required signage is recommended.
- Provide adequate space around this equipment to ensure all persons are kept at least 15 Meters (50 feet) away from the equipment and cars being moving by it.



VEHICLE PREPARATION PRIOR TO USING THE VULTURE WIRE EXTRACTOR



- Prior to use of this attachment, remove all batteries, gasoline, diesel fuel, all types of fuels, mercury switches, air conditioning Freon, engine oil, transmission fluid, antifreeze and other fluids.
- Engines, transmissions, and other components will be damaged, and only be suitable for metals recycling, not as cores or resalable operable parts.



Vehicles contain several hazardous elements that pose explosion and fire hazards, such as gasoline and electric batteries containing battery acid. Be sure these are safely removed prior to using the EXTREME™ Auto Processor. Failure to remove may result in explosion, fire hazard & injuries. Keep adequate fire suppression equipment accessible and persons trained on operation.



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CE SPECIFIC NOTICES (PAGE 7)

SAS™ Vulture Wire Extractor



EMERGENCY STOP FUNCTION

To immediately stop the motion of this equipment:

1. Operator is to release all joystick button(s).

Additional secondary alternative measures to immediately stop the motion include:

2. Moving excavator's auxiliary hydraulic 3rd spool lever to neutral position
3. Turn off ignition key of excavator to shut off engine

All three emergency stop options stop flow of hydraulic fluid. See excavator manufacturer's operator manual to identify proper controls & functions prior to use.



Even after emergency stop function is followed, there is residual stored hydraulic pressure in the system. See following:



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 and cause injection into skin. Wear safety glasses and appropriate gloves while inspecting, operating and maintaining equipment.



STAY CLEAR

- Do not lift persons with this equipment. Not intended to lift people
- Always maintain a safe distance away from this equipment.
- Do not go near or under this equipment or any object lifted by this equipment. Failure to stay clear will result in injury or death.
- Refer to and follow all additional safety information in excavator manufacturer's operator, safety and service manuals.



POWER FAILURE

In the event of electrical or hydraulic supply failure from the excavator occurs, the equipment will stop further motion. Under normal circumstances the equipment is not expected to drop a load. *The symbol at the left indicates the hydraulic controls on this equipment are normally closed.* Thus without electrical power the gate valves are closed, in essence halting further movement. **See excavator manufacturer's operator manual to identify actual operation during power failure mode prior to use.**



SOUND

This equipment does not emit more than 70dba.



VIBRATIONS

This equipment does not transfer vibrations in excess of 2.5m/s2.



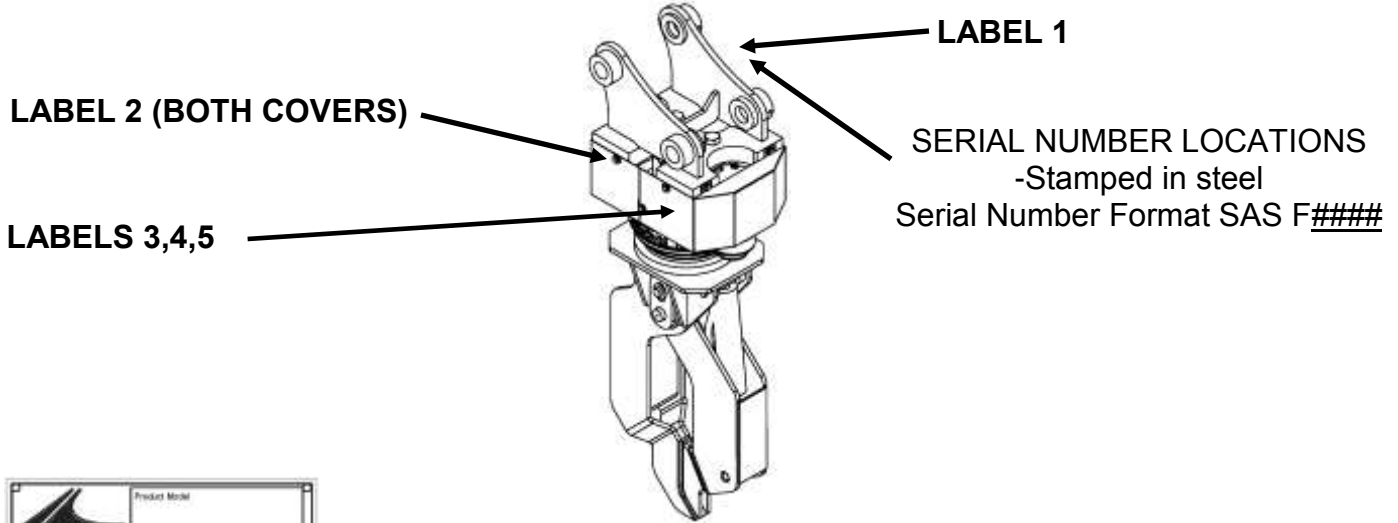
OPERATING TEMPERATURE

Equipment is best suited to operate in temperatures 0°C to 32°C (32°F to 90°F) with minimum temperature -30°C (-23°F) and maximum temperature 65°C (150°F)



SAFETY LABELING (PAGE 8)

SAS™ VULTURE Wire Extractor



Label Description	Quantity	Label reorder #
LABEL 1: <u>PRODUCT ID PLATE</u>	1	ID PLATE CE-EX



LABEL 2: <u>KEEP BACK 15 METERS (50 FT)</u>	2	W-LAB-STAYBACK50FT
--	---	--------------------



LABEL 3: <u>KEEP AWAY MOVING PARTS</u>	1	W-LAB-WARNING-PINCH
---	---	---------------------



LABEL 4: <u>READ EQUIPMENT MANUALS</u>	1	W-LAB-READ-504060
---	---	-------------------



LABEL 5: <u>HIGH PRESSURE HYDRAULICS</u>	1	W-LAB-PRES-503600
---	---	-------------------



LABEL 6: <u>STABILITY LABEL FOR CAB</u>	1	W-LAB-EX-STABLE-1
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INSTALLATION: PREPARATION (PAGE 9)

SAS™ Vulture Wire Extractor

ADVANCE PREPARATION BEFORE ARRIVAL & INSTALLATION OF VULTURE WIRE EXTRACTOR

- Review this operator manual. Review operator, safety & service manuals of excavator manufacturer.

Items you need to obtain before arrival of Vulture Wire Extractor:

- Excavator must have bi-directional auxiliary hydraulics at the end of the stick with cab controls.
- Hydraulic fluid (specific for your machine). Identify fluid check and fill points.
- Identify and obtain needed hydraulic hose quick connections on your machine and fitting required.
- Locate supplier to make hydraulic hoses (Minimum recommend 19 mm (3/4") diameter, 21 Mpa (4,000 PSI) hoses and fittings once proper length is determined during installation.

Tools your mechanic may need for installation:

- Sockets, wrenches, large adjustable wrench, large rubber hammer, hydraulic bottle jack, grease gun

Service to do on your excavator in advance:

- Have maintenance personnel replace hydraulic system filters & fluids (as needed)
- Pressure and flow test. Have pressure results available. Set pressure below **21 Mpa, 207 Bar (3,000 PSI)**.
- SAS has no responsibility as to performance of excavator's hydraulic system with this attachment.

Available for training:

- Designate an area (i.e. where it is safe to run equipment) and an employee to operate unit
- Designate operator who can read and speak English, if SAS staff onsite to assist your mechanic.

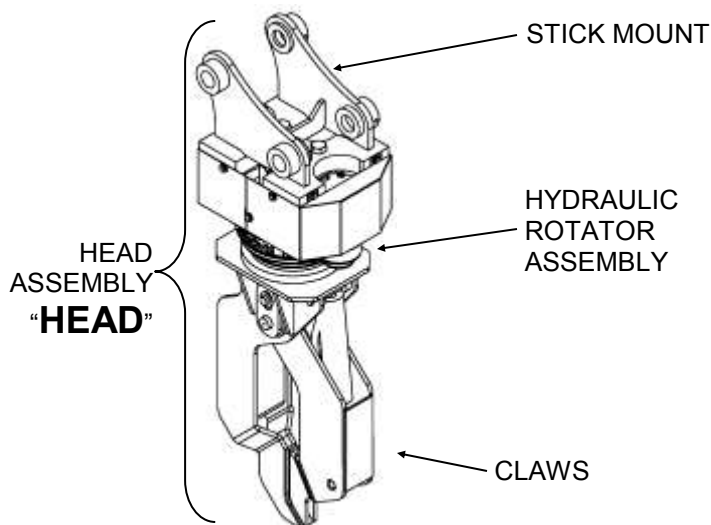
Installation Hazards (Additional details covered elsewhere in this manual):

- Pinch & crush points, High pressure hydraulics, Stored pressure, Skin injection risk
- **Installing this Vulture Wire Extractor will change lifting dynamics & likely reduce lift capacity and reduce stability of the excavator.**



- Installer and operator must use caution in establishing reasonable lift capacities. Consider Head attachment weight and excavator manufacturer's manual guidance. These hazards may cause equipment damage, injury or death. Only qualified persons should complete installation.

COMPONENT IDENTIFICATION

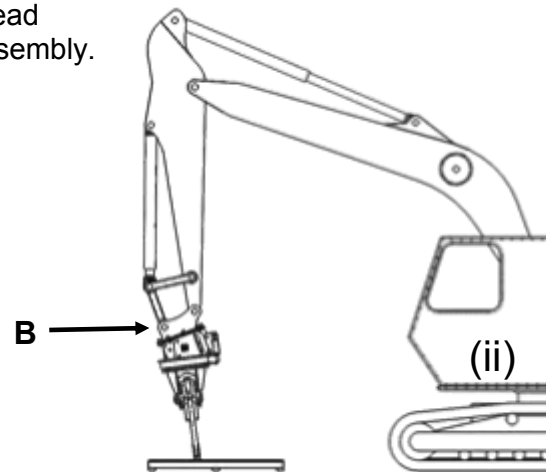
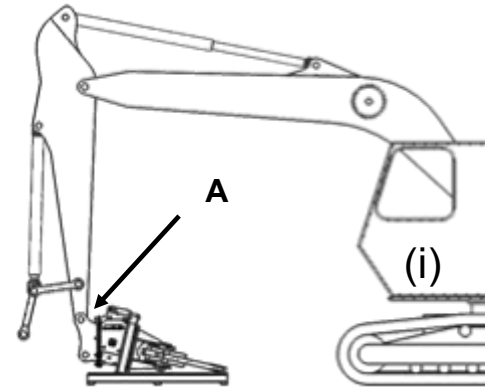


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INSTALLATION OF SAS™ VULTURE WIRE EXTRACTOR:

INSTALLATION SHOULD BE COMPLETED BY AN EXPERIENCED HEAVY EQUIPMENT MECHANIC

1. Remove existing bucket and inspect pins and bushings. Replace as needed.
2. Line up palletized head assembly with machine as shown in image (i).
3. Lower stick of excavator down to line up with hole at top of assembly and insert and secure pin “A” into head assembly.
4. With pin “A” secure in head assembly, lift assembly so that only the tips of the head assembly are resting on pallet as shown in image (ii). Align curl linkage to other hole in head Assembly mount. Insert and secure pin “B” into head assembly.
5. Connect hydraulic hoses.



SAS has no responsibility as to performance of excavator’s hydraulic system with this attachment.

	Jaw	Rotator
Maximum Pressure	21 MPa, 207 Bar (3000 psi)	21 MPa, 207 Bar (3000 psi)
Maximum Flow	75 L/min (20gpm)	28 L/min (7.4gpm)

Hose connections:

- If mini-excavator has two auxiliary functions and four hoses on stick, then connect four hoses directly to four ports on rotator
- If mini-excavator has one auxiliary function and two hoses on stick, then connect two hoses to the optional hydraulic selector valve on the Vulture.
- If using one auxiliary hydraulic function, also a drain line is required for the hydraulic selector valve (specifically for p/n: HV-BLK-X26-40-006). (This is smaller fitting). Drain line must be connected to drain line filter before draining back into the hydraulic tank on the excavator.



AFTER INSTALLATION PRIOR TO OPERATION

1. Grease all pivot points with Head resting on ground and machine engine off.
2. Read excavator manufacturer’s manual to identify control levers operation, method to stop motions, safety parameters related to operation of the excavator with any specialized attachment.
3. Stay clear of pinch points. Slowly engaging controls, test all motions of Head Assembly. Watch for interference points and stop further motion if interference occurs.



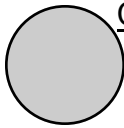
PREVENTIVE MAINTENANCE (PAGE 11)

SAS™ Vulture Wire Extractor



Set attachments on ground, turn off excavator, depressurize hydraulic supply to attachments, stay clear of pinch points during greasing. Safe & proper daily maintenance will help ensure long term performance and prevent failures. Failure to follow preventive maintenance guidelines can result in equipment failure resulting in injury or property damage.

A. Daily: Grease all (13) points; with particular attention to pivot points & cylinders.



Cylinder Grease Points

HY - Claw Cylinder



Pivot Point Grease Points

BR - Rotation Bearing Assembly

PN - Assembly Pins

- B. Daily: Inspect all pivot point pins and retaining bolts to be sure properly secured.
- C. Daily: Inspect Head and Hold Down framework for damage or cracks.
- D. Daily: Check hydraulic fluid level. Add fluid as required to maintain proper level.
- E. Weekly: Inspect hose fittings to be sure they are tight and not leaking.
- F. Weekly: Inspect hoses for pinching or rubbing. Correct or replace as needed.

Pins and Cylinder 1/8" NPT Grease Zerks

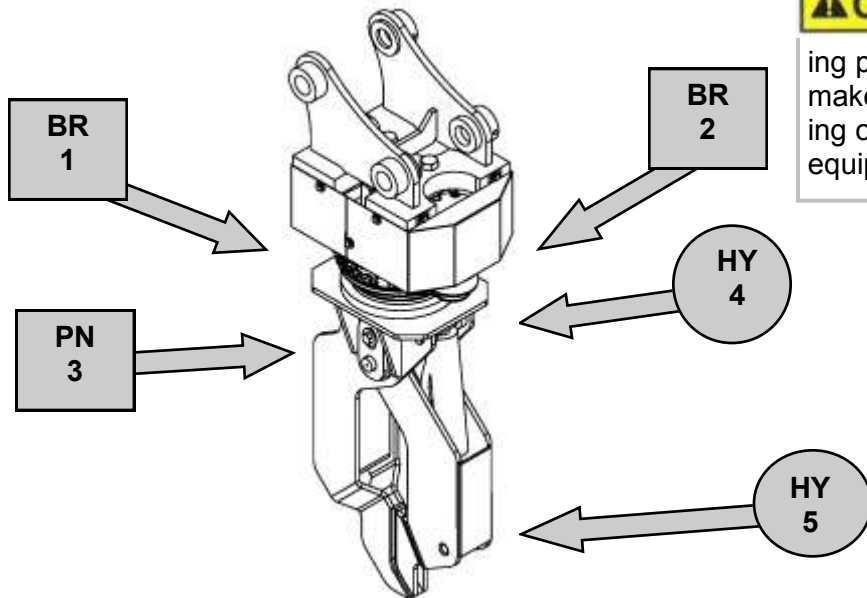
Recommended Grease:

Mobilgrease® CM-P OR EQUIVALENT

Rotation Bearing (BR) 1/8" NPT Grease Zerks

Recommended Grease:

Multipurpose high-melting-point lithium based grease.



Do not remove shields. This will expose moving parts which are pinch points. Do not make modifications. Unauthorized welding or modifications may cause failure or equipment resulting in injury or damage.

! READ & FOLLOW SAFETY INFORMATION IN ORIGINAL EXCAVATOR MANUFACTURER'S OPERATOR, SAFETY AND SERVICE MANUALS.

This checklist is limited to pre-operations inspection focused on Vulture.
Additional inspection points will be recommended in the excavator manufacturer manuals.

! WARNING Failure to follow instructions and precautions noted in excavator manufacturer's manuals and this manual can result in serious damage to equipment and/or result in injury or death.

Use caution while inspecting. Be aware of:

- Pinch points (and additional risks covered throughout this manual)
- High pressure hydraulic fluids or stored energy
- Location of other individuals in the work area

Prior to conducting inspection;

- Stick and Head assembly must be resting on the ground.
- Excavator must be parked on flat level ground
- Excavator engine must be turned 'off'

VULTURE WIRE EXTRACTOR ATTACHMENT INSPECTION POINTS:

Head to stick fastening pins

- Check both pins for proper securement.
- Check stick mount for cracks

Rotator

- Check bolts that fasten the rotator to the stick mounts
- Check for leaks or damage on hoses.

Clamp body

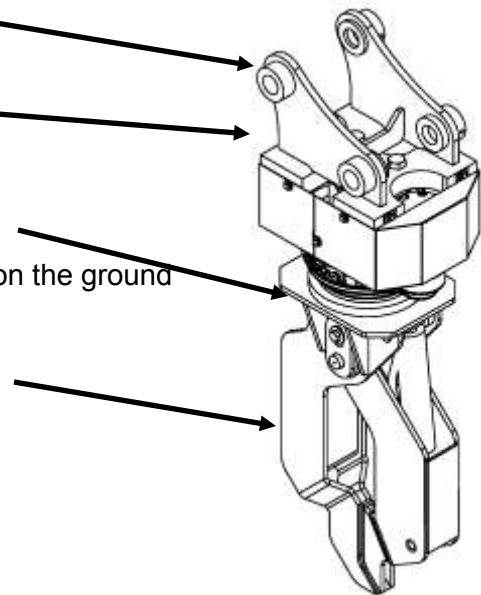
- Check clamp body for cracks
- Check for damaged pins or pins that are out of place
- Excavator must be parked on flat level ground
- Excavator Stick and Head assembly must be resting on the ground

Claws & tips

- Check claws for cracks
- Check claw tip

Operator cab

- Cab should have Roll Over Protection System
- Verify safety glass windshield in place
- Verify exterior steel guard is in place over front windshield to protect operator.



! Repair all problems before operation.
Lock out / tag out excavator if defects present.

! Repairs must only be completed by authorized mechanic.



DETERMINING LIFT CAPACITY (PAGE 13)

SAS™ Vulture Wire Extractor



READ & FOLLOW SAFETY INFORMATION IN ORIGINAL EXCAVATOR MANUFACTURER'S OPERATOR, SAFETY AND SERVICE MANUALS.

Excavator will handle loads differently than with the original bucket.

The purpose of this document is to describe the **method of** load rating and operating limitation **parameters** of the Vulture Wire Extractor as indicated on the operating data plate of the device.

On this product, SAS Forks installs a data plate on the product which specifies ;

- Product model
- Product serial number
- Product weight
- Product production date

■ Notice to refer to Excavator OEM positional lift chart and make appropriate reductions in permissible lift capacities to offset any differential in the original rated attachment, if any, and the weight of the Product, the Vulture Wire Extractor.

It is important to note that the actual load (lift) ratings of the product are impacted by multiple factors in which the operator is responsible to take into account and to reduce the weight of any potential item to lift, to ensure machine remains stable, and does not tip. The below items are not a comprehensive list, but these complex work variables must be taken into account by the operator to ensure safe operation;

■ **Ground or working surface stability**

■ *(More unsafe: soft, unpredictable or variable surface compaction /vs/ More safe: solid surface)*

■ **Positioning of excavator on such working surface**

■ *(More unsafe: angled and tilted /vs/ More safe: flat & level)*

■ **Proximity in which excavator is to work and materials to be lifted.**

■ *(More unsafe: Extending lift arms and lifting /vs/ More safe: working close with minimum reach*

■ **Lowering and engagement of outriggers to working surface**

■ *(More unsafe: Outriggers removed and/or not engaged to ground /vs/ More safe; Outriggers lowered fully and engaged with solid working surface.*

■ **Amount of hydraulic pressure operator allocates to the grapple of the Extreme product**

■ *(More unsafe: Operator not providing sufficient hydraulic pressure to engage object lifted /vs/ More safe: Operator engages excavator's hydraulic system to ensure secure grappling.*

■ **Lift capacity limitation of excavator, based on excavator's OEM lift capacity chart**

■ *(More unsafe: Not understanding parameters and assumes within the excavator's OEM chart vs/ More safe: Clearly understand excavator's OEM load chart, product weight, & parameters.*

■ **Strength and durability of the item being lifted. (This product is meant only to lift scrap metal, never lift any good resalable product. Never lift any persons or any device holding any persons.**

■ *(Prohibited & dangerous: Attempting to lift persons in any manner will result in injury or death.*

■ *(More unsafe: Lifting items in such a manner that may rip or separate /vs/*

■ *More safe: Grapple items on heavy surface that provides a secure grip with Extreme grapple.*



DETERMINING LIFT CAPACITY (PAGE 14)

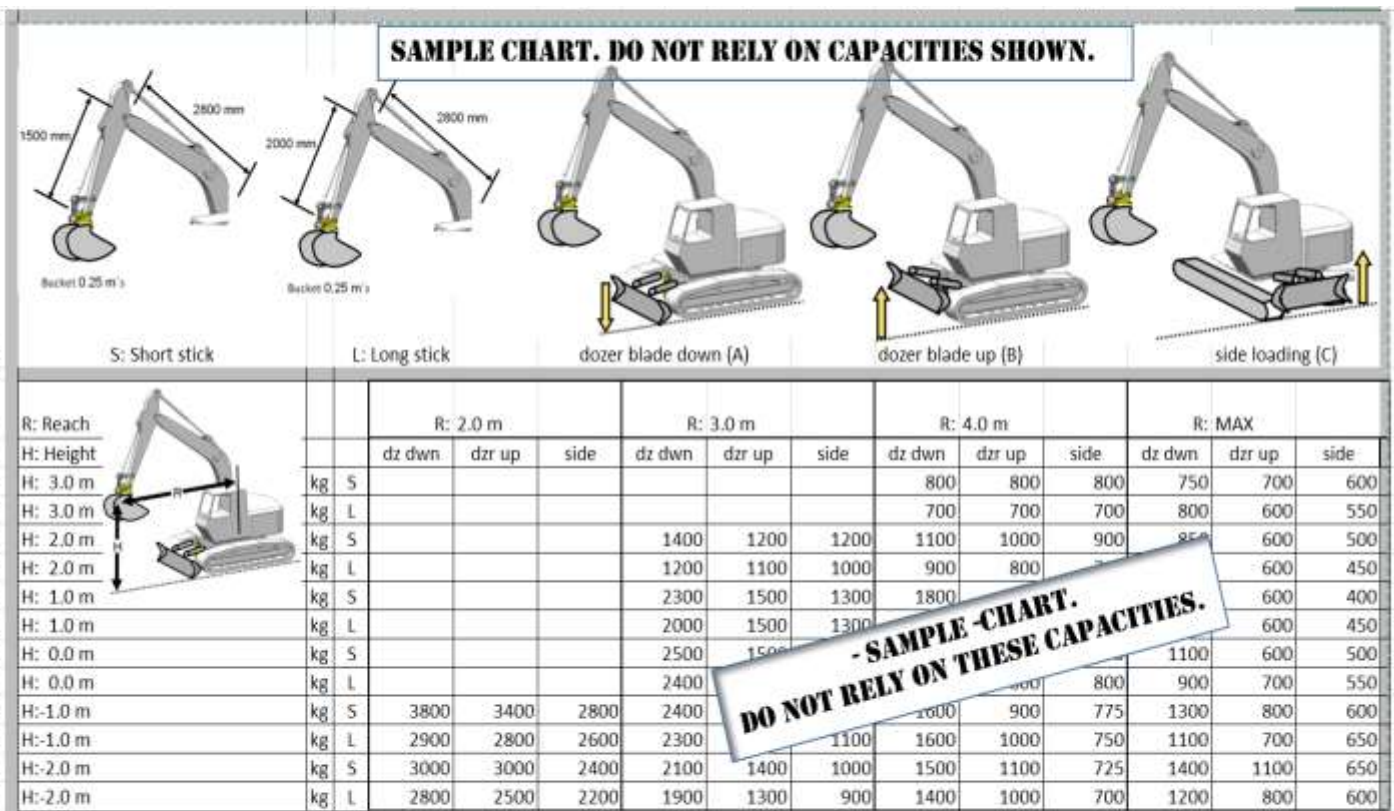
SAS™ Vulture Wire Extractor

Establishing Load Ratings

The structure of the Vulture Wire Extractor grapple head attachment is designed to lift a load that meets or exceeds the excavator's boom lift capacity, when hydraulic pressure of between 80% and 100% of maximum pressure per the label on Vulture grapple head attachment is supplied by the excavator, the Vulture grapple mechanism to adequately engage the item lifted.

The lift limitations set forth by the excavator OEM (Original Equipment Manufacturer) must be reviewed and understood by the operator. The excavator OEM operator manual or in cab label is expected to provide a chart with lifting capacities at a variety of lift positions, **in accordance with ISO 10567:2007**. The operator must apply the weight of the Vulture grapple head assembly and interpret the excavator OEM chart whereas the position of the dozer blade or stabilizers are considered to be off the ground to determine the permissible load.

Sample chart. This chart does not contain any valid lift capacities for any excavator equipped with an Vulture Wire Extractor attachment.



In accordance with typical excavator OEM lifting charts, with general reference to sample chart above, positions that effectively reduce the load threshold at which tipping occurs, include:

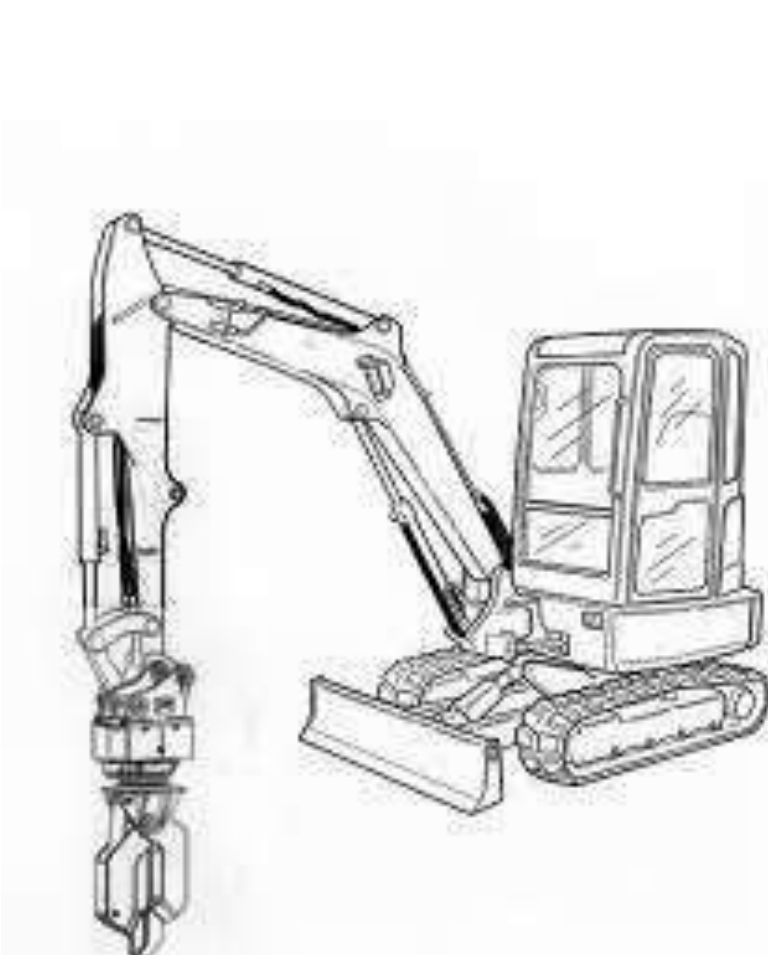
- Lifting dozer blade or downriggers as shown in sample illustration (B) or (C).
- Turning of excavator's cab across tracks or wheels with the dozer up, shown in sample illustration (C).
- Extending the reach of the boom and stick.





Operator must identify load chart for specific excavator, not included herein, and use limits per the chart which specifies 'dozer up and side lift' or 'outriggers up and side lift', and subtract weight of Extreme grapple head assembly, to identify the net lift capacity permissible.

 READ & FOLLOW SAFETY INFORMATION IN ORIGINAL EXCAVATOR MANUFACTURER'S OPERATOR, SAFETY AND SERVICE MANUALS. 


Excavator will handle loads differently than with the original dozer blade & bucket.



 **WARNING** Tip over & crush risk. Extreme Head Assembly may weigh more than the original bucket which the excavator manufacturer installed, thus reducing the potential lift capacity. Lifting excess weight may cause tip over, damage & injury or death. Wear seat belt. 

 **NOTICE** Move controls slowly, not jerking machine. Rough or jerking motions may cause damage to machine or Extreme attachment.

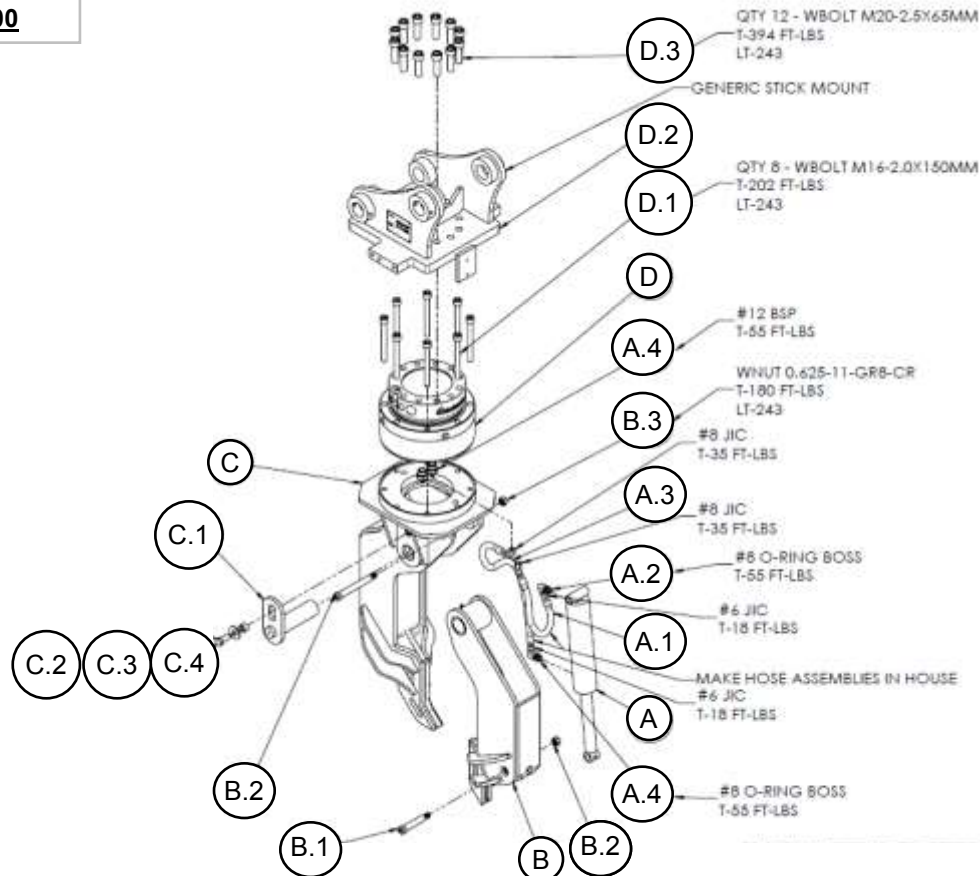
 **WARNING** Electrocutation and crush risk if contact made with electric power lines or building structure.

 **WARNING** Tip over risk. Rotating machine with hold down arm or any out-riggers not in firm contact with ground or attempting to travel with an elevated load, may **cause the machine to tip over**. To provide best stability prior to rotating the cab, place hold down arm firmly against ground or on car. Wear seat belt.

 **WARNING** Risk of claw contact with cab & damage and or injury to operator if operator curls boom, stick, and jaws in. Do not fully curl boom, stick, jaws in.

 **NOTICE** Avoid Head contact with wire stripper when rotating cab. Damage may occur.

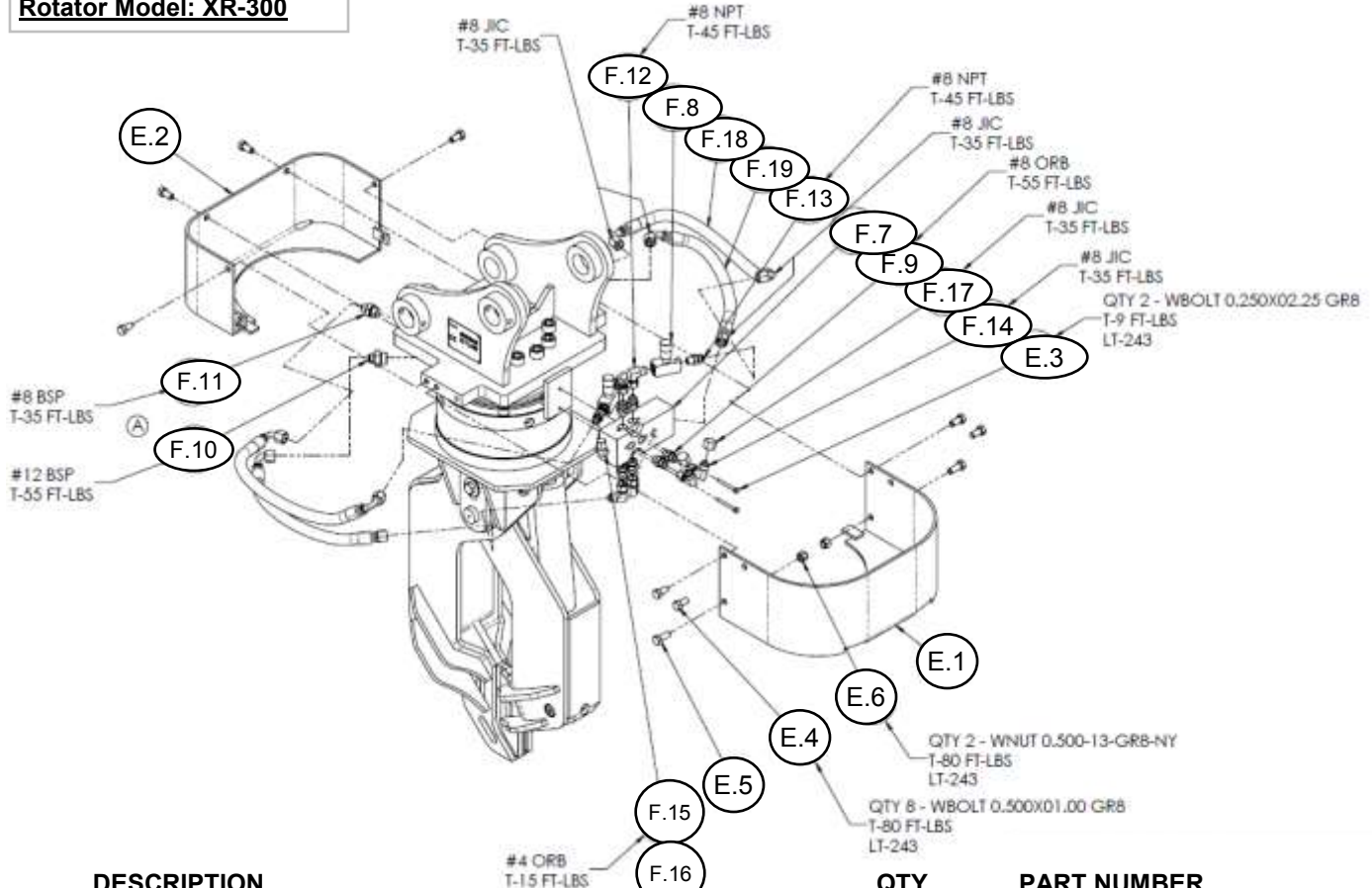
Rotator Model: XR-300



DESCRIPTION	QTY	PART NUMBER
[A] CLAW CYLINDER	1	HY-CYL-2.5X08-207 400
A.1 HOSE - EXTEND	1	HY-HOSE-ASY-VLTR4-1
A.2 90° HYDRAULIC FITTING MALE ORB TO MALE JIC	1	HY-849-FSO-06X08
A.3 HOSE - RETRACT	1	HY-HOSE-ASY-VLTR4-2
A.4 STRAIGHT HYDRAULIC FITTING MALE BSP TO MALE JIC	2	HY-12MBSP-8JIC
A.5 CYLINDER SEAL KIT (ONLY FOR 2.5" CYL ID# 207-400)	1	HK-2.50-207-100
[B] CLAW ASSEMBLY (MOVEABLE)	1	WE-CLAW-MOVEABLE-V3
B.1 BOLT 3/4" X 3 1/2" GR8 FOR CYLINDER ROD END (LOWER)	1	WBOLT 0.750X3.50 SLD
B.2 BOLT 3/4" X 5 1/2" GR8 FOR CYLINDER BASE (UPPER)	1	WBOLT 0.750X5.50 SLD
B.3 NUT CRIMP LOCK 5/8-11 GR8	2	WNUT 0.625-11-GR8-CONE
B.4 GREASE ZERK - SMALL - 1/4-28 UNF	1	WGREASE ZERK 1/8 NPT
[C] CLAMP BODY WITH FIXED CLAW	1	WE-CLAW-FIXED-V4
C.1 MAIN CLAW PIVOT PIN	1	2010-01
C.2 PINLOCK SPACER	1	SPACER-0625-0000
C.3 FLAT WASHER	1	WASHER-F 0.625 GR8
C.4 BOLT TO RETAIN PIN 5/8"	1	WBOLT 0.625X1.50 GR8
[D] HYDRAULIC ROTATOR (F5752 & UP) Indexator Model: XR300	1	HR-ROTAR-N-XR300
D.1 SOCKET HEAD CAP SCREW (ROTATOR TO CLAMP BODY)	8	WBOLT M16-2.0X150MM
D.2 STICK MOUNT (VARIES PER MACHINE MAKE/MODEL)	1	WE-STK-....
D.3 SOCKET HEAD CAP SCREW (ROTATOR TO STICK MOUNT)	12	WBOLT M20-2.5X65MM
D.4 SEAL KIT (FOR INDEXATOR XR-300 ROTATOR)	1	HR-N-6005-370
D.5 SEAL FOR BEARING (FOR INDEXATOR XR-300 ROTATOR)	1	HR-N-6005-425

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Rotator Model: XR-300



	DESCRIPTION	QTY	PART NUMBER
[E]	COVER BREAKOUT (FRONT-BLOCK SIDE)		
	E.1 COVER (FRONT-BLOCK SIDE)	1	2020-06
	E.2 COVER (BACK-PORT SIDE)	1	2020-07
	E.3 BOLTS (FOR OPTIONAL HYDRAULIC SELECTOR VALVE)	2	WBOLT 0.250X2.25 GR8
	E.4 BOLTS (FOR COVERS)	8	WBOLT 0.500X1.00 GR8
	E.5 BOLTS (FOR COVERS)	2	WBOLT 0.500X1.25 GR8
	E.6 NUTS (FOR COVERS)	2	WNUT 0.500-13-GR8-NY
[F]	OPTIONAL HYDRAULIC SELECTOR VALVE		
	F.7 6 WAY SELECTOR VALVE (ALSO ORDER 12V OR 24V COIL) **Drain line is required for above 6 way selector valve**	1	HV-BLK-X26-40-006
	F.7(a) 12 VOLT COIL (STANDARD)	1	HR-N-413171211
	F.7(b) 24 VOLT COIL (OPTIONAL)	1-opt	HR-N-413172410
	F.8 FLOW CONTROL VALVE	2	HV-FLW-D-EF30S
	F.9 HYDRAULIC FITTING	6	HY-848-FSO-08X08
	F.10 HYDRAULIC FITTING	2	HY-12MBSP-8JIC
	F.11 HYDRAULIC FITTING	2	HY-8MBSP-8MJ
	F.12 HYDRAULIC FITTING	2	HY-6501-08X08
	F.13 HYDRAULIC FITTING	2	HY-848-FS-08X08
	F.14 HYDRAULIC FITTING	4	HY-879-FS-08
	F.15 HYDRAULIC FITTING	1	HY-849-FS-06X04
	F.16 CAP	1	HY-830-FS-06
	F.17 CAP	2	HY-830-FS-08
	F.18 ROTATE HOSE	2	HY-HOSE-ASY-VLTR4-3
	F.19 CLAW HOSE	2	HY-HOSE-ASY-VLTR4-4

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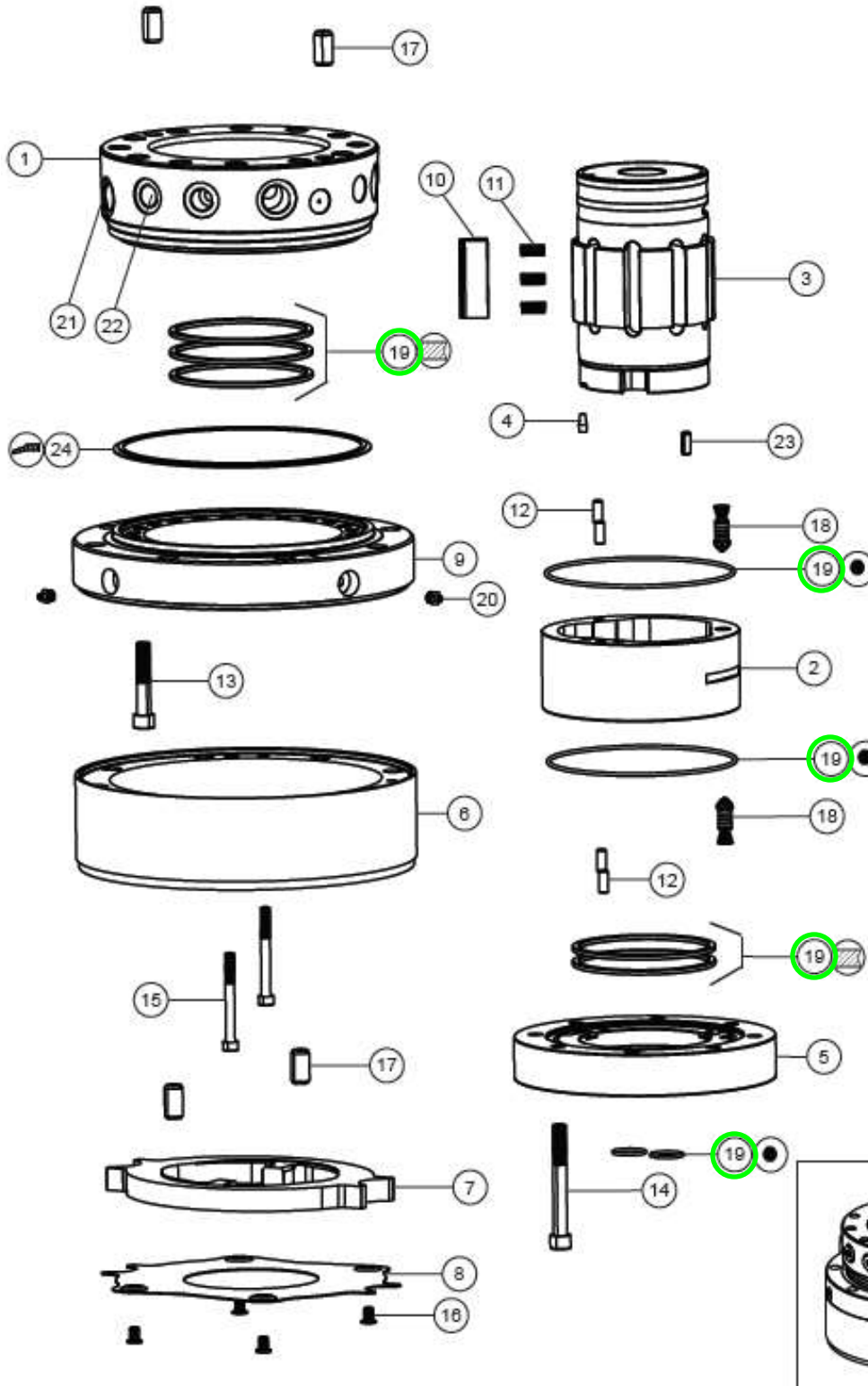


VULTURE ROTATOR PARTS DIAGRAM (PAGE 18)

SAS™ Vulture Wire Extractor v4

Serial Numbers: F5752, F5824 & Higher

Rotator Model: XR-300



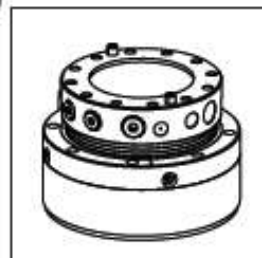
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#	Part No.	Qty	Description
1	6003-184R	1	Upper Stator
2	6003-418R	1	Stator frame
3	6005-293R	1	Rot. Shaft
4	1300-247	1	Plug
5	6003-716R	1	Lower Stator
6	6003-202R	1	Lower Link
7	6003-906	1	Transmission
8	6004-745	1	Bottom Plate
9	6003-635R	1	Slew Bearg
10	5011-160	9	Vane
11	5016-202	27	Spring
12	1019-900	4	Pin
13	1300-212	16	Screw
14	1079-094	8	Screw
15	1300-235	2	Screw
16	1070-556	4	Screw
17	1300-165	4	Tubular Pin
18	8000-066R	2	Relief Valve
19	HR-N-6005-370	1	Seal Kit 19
20	1018-258	4	Grease Nip.
21	5001-385	2	Plug
22	5001-384	2	Plug
23	1070-408	1	Pin
24	HR-N-6005-425	1	Bearing Seal

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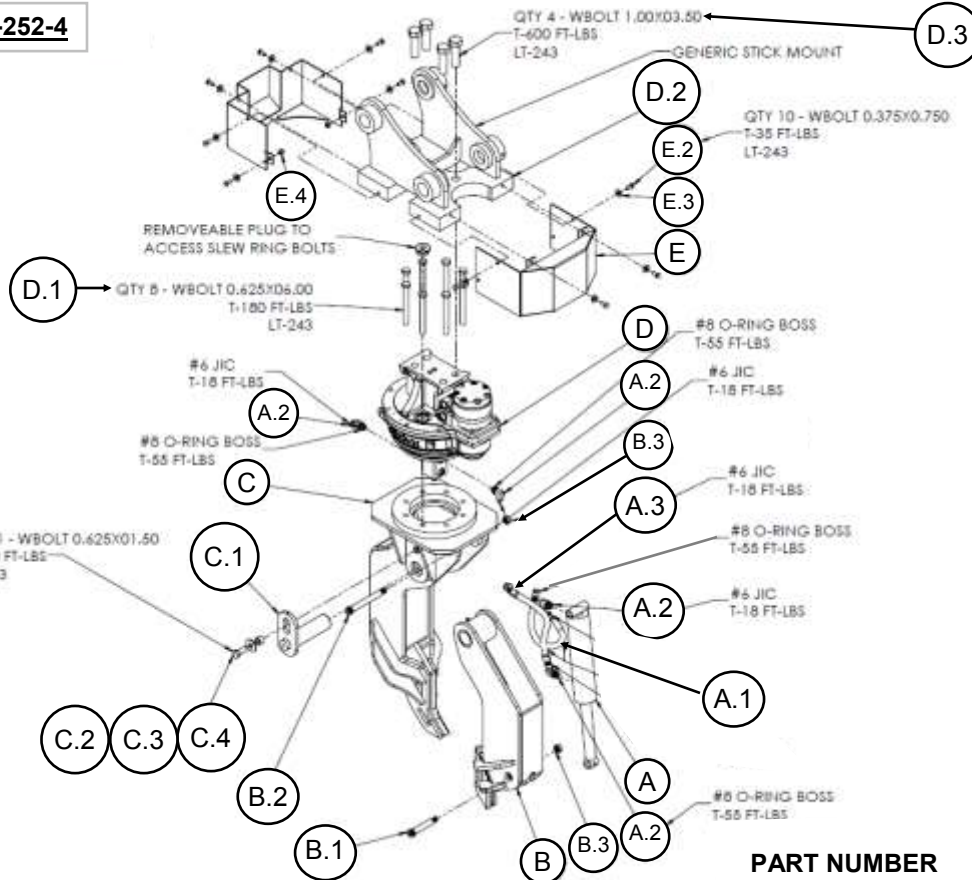
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SPARE PARTS DIAGRAM (PAGE 19)

SAS™ Vulture Wire Extractor v2 & v3

Only Serial Numbers: F5356, F5390, F5570, F5622, F5731

Rotator Model: RGP-252-4



	DESCRIPTION	QTY	PART NUMBER
[A]	CLAW CYLINDER	1	HY-CYL-2.5X08-207 400
	A.1 HOSE—EXTEND	1	HY-HOSE-ASY-VLTR-SRT
	A.2 90° HYDRAULIC FITTING MALE ORB TO MALE JIC	4	HY-8MB-6MJ90
	A.2 S/N: F5356 & F5390 USE: MALE O-RING TO MAIL JIC	2	HY-848-FSO-08X08
	A.3 HOSE - RETRACT	1	HY-HOSE-ASYVLTR-LNG
	A.5 CYLINDER SEAL KIT (ONLY FOR 2.5" CYL ID# 207-400)	1	HK-2.50-207-100
[B]	CLAW ASSEMBLY (MOVEABLE)	1	WE-CLAW-MOVEABLE-V2
	B.1 BOLT 3/4" X 3 1/2" GR8 FOR CYLINDER ROD END (LOWER)	1	WBOLT 0.750X3.50 SLD
	B.1 S/N: F5356 & F5390 WAS 3/4" X 4" CLEVIS PIN (ok to use above)	1	
	B.2 BOLT 3/4" X 5 1/2" GR8 FOR CYLINDER BASE (UPPER)	1	WBOLT 0.750X5.50 SLD
	B.2 S/N: F5356 & F5390 WAS 3/4" X 6" CLEVIS PIN (ok to use above)	1	
	B.3 NUT CRIMP LOCK 5/8-11 GR8	2	WNUT 0.625-11-GR8-CONE
	B.3 upper S/N: F5356 & F5390 WAS 1/8" COTTER HAIRPIN (ok to use above)	1	
	B.3 lower S/N: F5356 & F5390 WAS C-CLIP RETAINER RING (ok use above)	1	
	B.4 GREASE ZERK - SMALL - 1/4-28 UNF	1	WGREASE ZERK 1/8 NPT
[C]	CLAMP BODY WITH FIXED CLAW	1	WE-CLAW-FIXED-V2
	C.1 MAIN CLAW PIVOT PIN	1	2010-01
	C.2 PINLOCK SPACER	1	SPACER-0625-0000
	C.3 FLAT WASHER	1	WASHER-F 0.625 GR8
	C.4 BOLT TO RETAIN PIN 5/8"	1	WBOLT 0.625X1.50 GR8
[D]	HYDRAULIC ROTATOR Rotator Model: RGP-252-4	1	HR-ROTAR-7000-5886
	Case drain line required for above hydraulic rotator motor		
	D.1 BOLTS (ROTATOR TO CLAMP BODY)	8	WBOLT 0.625X06.00
	D.2 STICK MOUNT (VARIES PER MACHINE MAKE/MODEL)	1	WE-STK-....
	D.3 BOLTS (ROTATOR TO STICK MOUNT)	4	WBOLT 1.00X03.50
[E]	COVER (FRONT: MOTOR SIDE)	1	2010-02
	E.1 COVER (BACK: OPTIONAL DIVERTER VALVE SIDE)	1	2010-05
	E.2 COVER BOLTS	10	WBOLT 0.375X0.75 GR8
	E.3 COVER WASHERS	10	WASHER-F 0.375-GR8
	E.4 COVER NUTS	2	WNUT 0.375-16-GR8-NY

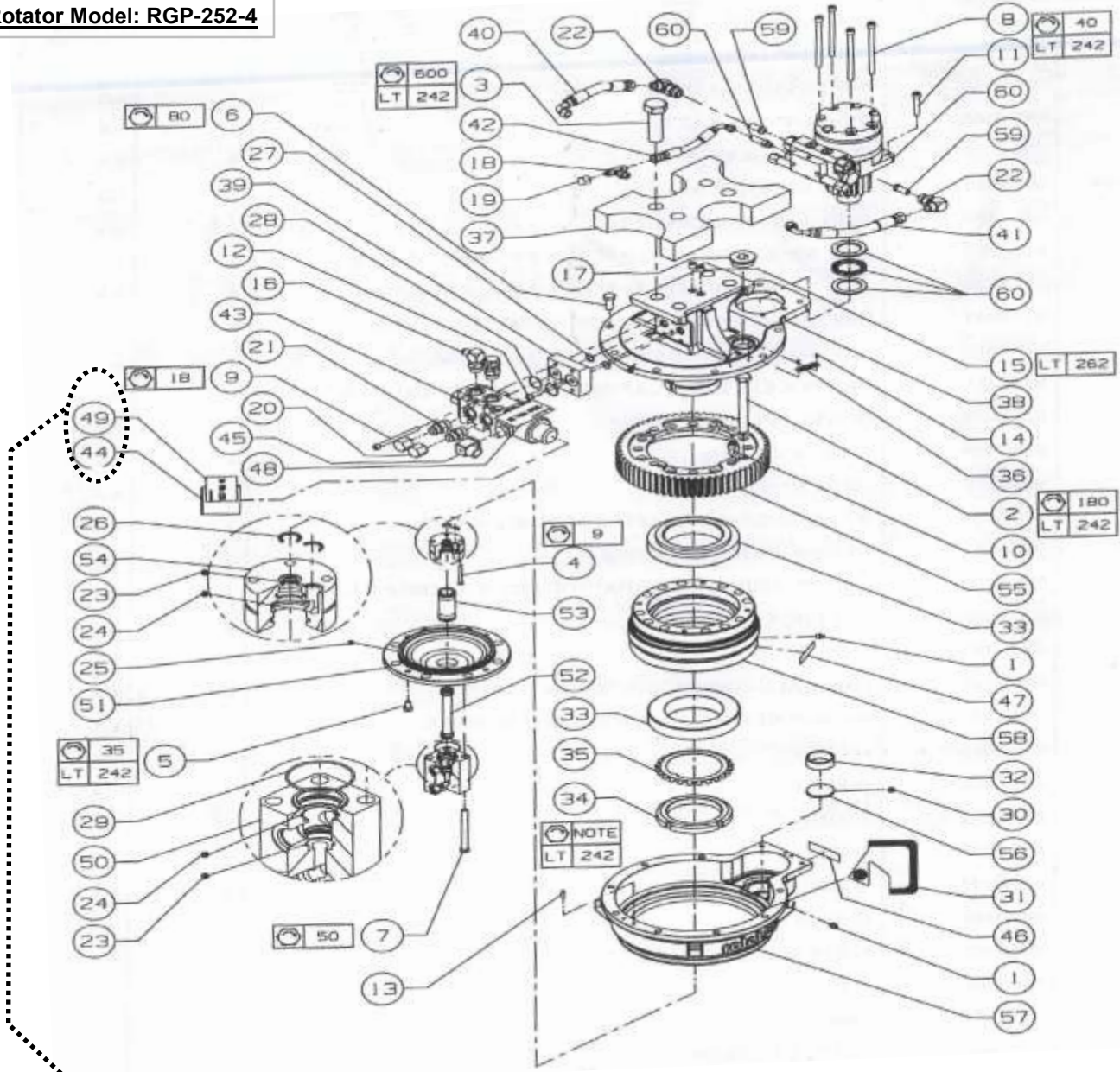


VULTURE ROTATOR PARTS DIAGRAM (PAGE 20)

SAS™ Vulture Wire Extractor v2 & v3

Only Serial Numbers: F5356, F5390, F5570, F5622, F5731

Rotator Model: RGP-252-4



Selector Valve Detail:

- (45) Connector
- (44) Coil ~ Note option 12 volt or 24 volt
- (xx) Nut—plastic nut to retain the coil
- (43) Selector valve assembly ~ Note: default 12 volt coil

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VULTRUE ROTATOR PARTS DIAGRAM (PAGE 21)

SAS™ Vulture Wire Extractor v2 & v3

Only Serial Numbers: F5356, F5390, F5570, F5622, F5731

Rotator Model: RGP-252-4

Item	SAS Part#	Description	Qty
1	HR-R-001-0001	GREASE FITTING 1/8" NPT	WGREASE ZERK 2
2	HR-R-008-0156	BOLT 5/8"-18UNFx6"lg	Special Order 8
3	HR-R-008-0191	BOLT 1-14UN3x3 1/2"lg	Special Order 4
4	HR-R-008-0202	BOLT 1/4-20UNCx2"lg	Special Order 4
5	HR-R-008-0216	BOLT 3/8"-16UNC X 3/4"lg	Special Order 4
6	HR-R-008-0240	BOLT 1/2"-13UNCx1 1/4"lg	Special Order 8
7	HR-R-008-4806	BOLT 7/16"-14UNCx4 1/2"lg	Special Order 4
8	HR-R-017-0153	HEX SOCKET HEAD CAP SCREW 3/8"-16UNCx5 1/4"lg	Special Order 4
9	HR-R-017-0189	HEX SOCKET HEAD CAP SCREW 5/16-18UNCx4"lg	Special Order 4
10	HR-R-017-0657	HEX SOCKET HEAD CAP SCREW 3/8"-16UNCx3/4"lg	Special Order 4
11	HR-R-017-0662	HEX SOCKET HEAD CAP SCREW 3/8"-16UNC X 2"lg	Special Order 2
12	HR-R-017-6151	HEX SOCKET HEAD CAP SCREW 5/16-18UNCx1 1/4"lg	Special Order 1
13	HR-R-019-0038	DOWEL PIN 1/4dia X 3/4"lg	Special Order 2
14	HR-R-020-7759	RIVET 4 X 1 1/4 lg	Special Order 2
15	HR-R-026-1017	PLUG 4 X 1 1/4NPT	Special Order 2
16	HR-R-030-0058	90° ADJUSTABLE ADAPTOR MJIC 06 x 10 ORD	Special Order 2
17	HR-R-030-0173	HEX SOCKET PLUG 20 ORB	Special Order 2
18	HR-R-030-0209	RUN "T" ADJUST ORBADAPTOR MJIC 6 X MJIC 6 X 6 ORB	Special Order 1
19	HR-R-030-1385	CAP FJIC 6	Special Order 1
20	HR-R-030-1387	CAP FJIC 10	2
21	HR-R-030-1413	ORB MALE CONNECTOR MJIC X 10 ORB	2
22	HR-R-030-1427	90° ADJUSTABLE ADAPTOR MJIC 10 X 10 ORB	2
23	HR-R-040-0011	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	2
24	HR-R-040-0012	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	2
25	HR-R-041-0071	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	1
26	HR-R-041-0104	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	2
27	HR-R-041-0107	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	2
28	HR-R-041-1660	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	2
29	HR-R-041-1667	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	1
30	HR-R-041-1668	O-RING (INCLUDED IN ITEM 61, SEAL KIT)	1
31	HR-R-045-0009	SEAL	Special Order 1
32	HR-R-048-0052	NEEDLE BEARING	Special Order 1
33	HR-R-048-0055	TAPERED ROLLER BEARING	Special Order 2
34	HR-R-048-0058	NUT	Special Order 1
35	HR-R-048-0061	WASHER	Special Order 2
36	HR-R-052-1209	NAME PLATE	Special Order 1
37	HR-R-07000-1109	LUGGING BASE PLATE RGP-252-1-125	Special Order 1

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VULTURE ROTATOR PARTS DIAGRAM (PAGE 22)

SAS™ Vulture Wire Extractor v2 & v3

Only Serial Numbers: F5356, F5390, F5570, F5622, F5731

Rotator Model: RGP-252-4

Item	SAS Part#	Description	Qty
38	HR-R-07000-5875	ROTATOR SHAFT	Special Order 1
39	HR-R-07000-5879	SPACER	Special Order 1
40	HR-R-099-1235	HOSE#6 2 WIRES 5000 PSI ST 8FJIC X 6FJIC90 6"lg	Special Order 1
41	HR-R-099-1236	HOSE#6 2 WIRES 5000 PSI ST 8FJIC X 6FJIC90 7 1/2"lg	Special Order 1
42	HR-R-099-1237	HOSE#4 2 WIRES 5000 PSI 6FJIC X 4FJIC90 5"lg	Special Order 1
43	HR-R-108-0152	SELECTOR VALVE (assembly standard with 12 V coil)	1
44: option	HR-R-108-0141	COIL 12 VDC	1
44: option	HR-R-108-0165	COIL 24 VDC	1
45	HR-R-108-6872	PLUG -IN ELECTRICAL CONNECTOR	1
46	HR-R-146-0738	DECAL LEFT GREASE	Special Order 1
47	HR-R-146-0739	DECAL RIGHT GREASE	Special Order 1
48	HR-R-146-1090	DECAL BOBINE 12VDC	Special Order 1
49	HR-R-146-1091	DECAL BOBINE 24VDC	Special Order 1
50	HR-R-454-0007	HYDRAULIC MANIFOLD	Special Order 1
51	HR-R-454-0008	COVER	Special Order 1
52	HR-R-454-0010	COLLECTOR TUBE	Special Order 1
53	HR-R-454-0011	COLLECTOR TUBE	Special Order 1
54	HR-R-454-0012	COLLECTOR BLOCK	Special Order 1
55	HR-R-638-0002	RING GEAR	Special Order 1
56	HR-R-638-0007	BACK PLATE	Special Order 1
57	HR-R-638-0008	HOUSING	Special Order 1
58	HR-R-638-0009	BEARINGS HOUSING	Special Order 1
59	HR-R-638-0010	RESTRICTOR	1
60	HR-R-954-0001	ROTATION MOTOR	Special Order 1
61	HR-R-097-0019	SEAL KIT (Only for Rotobec Rotator: RGP-252-4)	1

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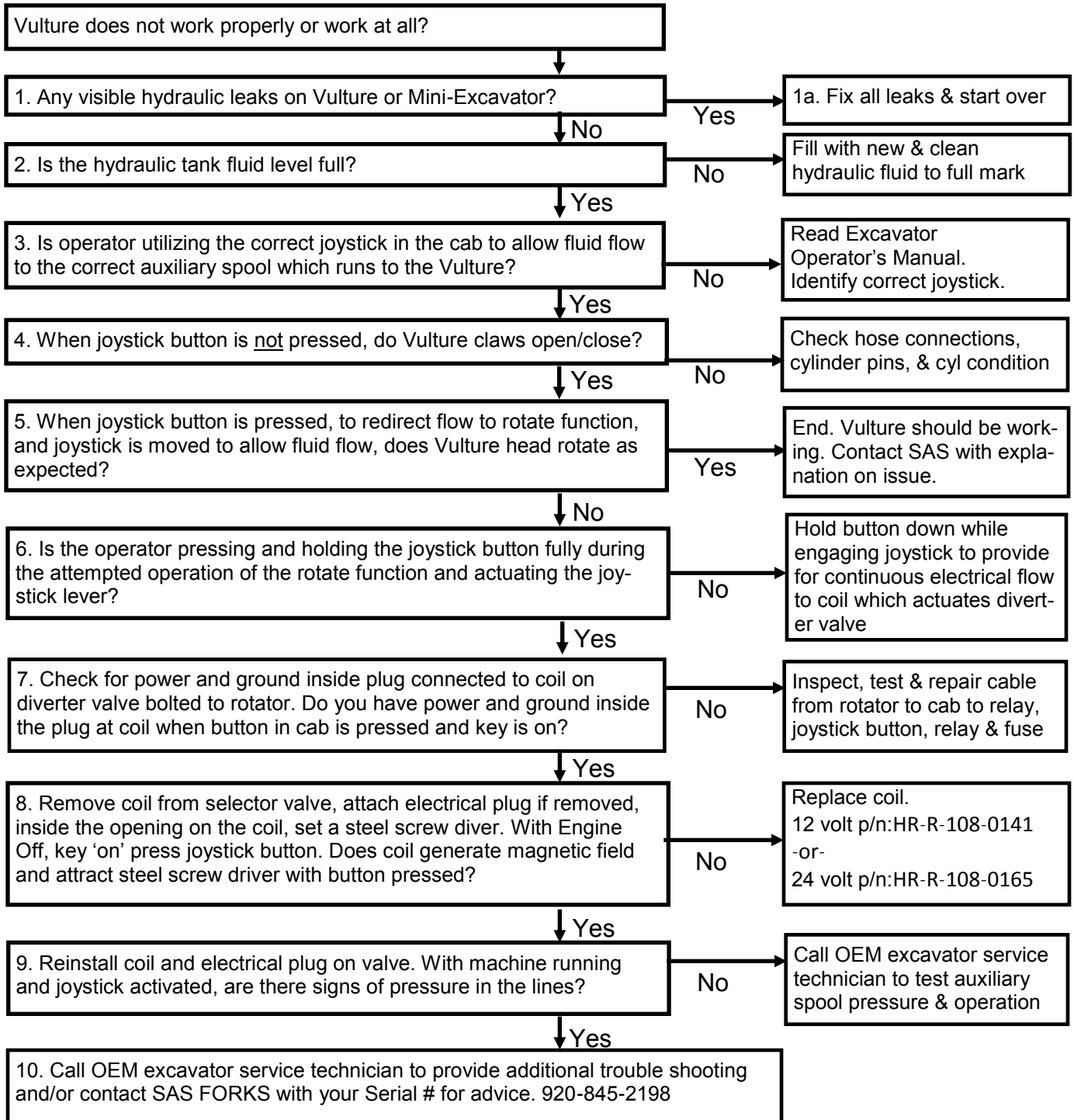


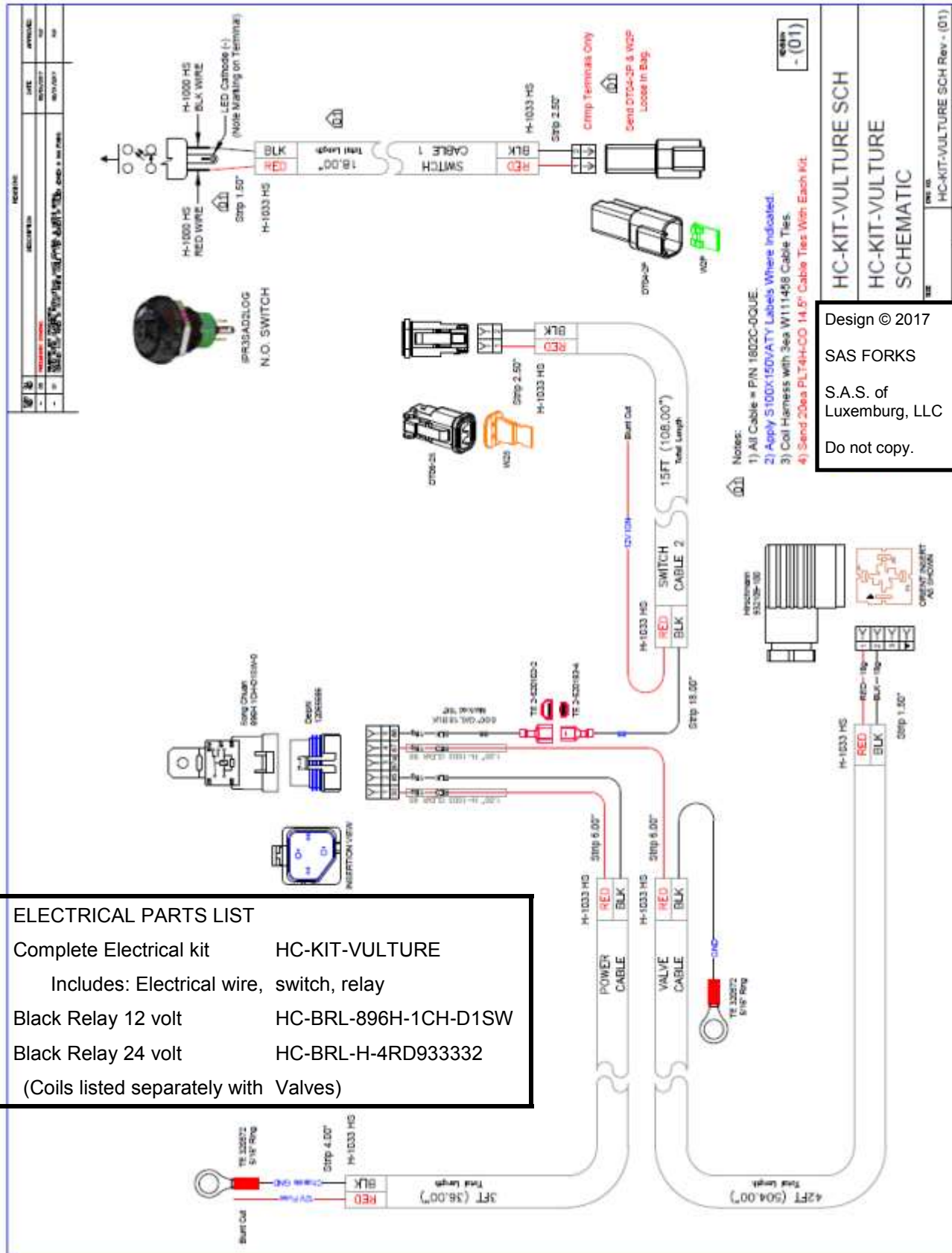
REPAIR FLOW CHART (PAGE 23)

SAS™ Vulture Wire Extractor



Hydraulic system may have stored energy. Electrical system is hazardous. Be certain to follow all safety procedures and guidelines while trouble shooting. Only qualified heavy equipment technicians should service this equipment. Malfunctions of equipment can result in un-expected movements resulting from stored energy releases. Failure to follow safe procedures or practices can result





ELECTRICAL PARTS LIST

Complete Electrical kit	HC-KIT-VULTURE
Includes: Electrical wire, switch, relay	
Black Relay 12 volt	HC-BRL-896H-1CH-D1SW
Black Relay 24 volt	HC-BRL-H-4RD933332
(Coils listed separately with Valves)	



LIMITED WARRANTY (PAGE 25)

SAS™ Vulture Wire Extractor

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 S.A.S. of Luxemburg, Ltd. (SAS™) before attempting any repair, modification, or questionable job applications.

LIMITED WARRANTY FOR SAS FORK PRODUCTS™

For products that 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.

<u>PRODUCT</u>	<u>LIMITED WARRANTY PERIOD</u>	<u>ITEM</u>	<u>COVERED</u>
VULTURE™	1 year from original ship date	Jaw & Jaw Body Frame Head Weldment	Defects in materials & workmanship
VULTURE™	1 year from original ship date	Hydraulic cylinder, Rotator Motor	Defects in materials

No warranty on other products not listed above, unless otherwise specified on the face of the original invoice.

No warranty against abrasion wear, claw chip wear, fork tip damage, blade bending, fusible link, separation, bent fork mounting shafts, hoses, cables, or wires.

No warranty against used equipment. All used excavators, loaders, and other equipment sold "AS IS".

SAS™ does not warranty 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, Freight On Board (FOB) to 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. (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 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 FOB to seller's office. **Seller will not be responsible for costs of shipping, travel time, travel expense, 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 SAS FORKS™, SAS™ EXTREME™ Auto Processor attachment, or any other SAS™ products 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



**Declaration of Conformity for CE Marking
EU Directive 2006/42/EC (Machinery Directive)**

We declare that the products listed below conform to the listed provisions of the following Council Directives

Model	Description
Extreme Auto Processor	Hydraulically actuated attachment for excavator used to extract vehicle engines for salvage operations

Conforms to the following directives:

2006/42/EC	Machinery Directive
ISO 10567_2007	Earth Moving Machinery Hydraulic Excavators

Date of CE Marking: October 20, 2014

Technical Construction File is maintained at: SAS Headquarters
133 Center Drive Hwy 54
Luxemburg, WI 54217 USA

Signed

Paul Secker, President
S.A.S. of Luxemburg, Ltd.
DBA: SAS FORKS
133 Center Drive Hwy 54
Luxemburg WI 54217-0260 U.S.A.