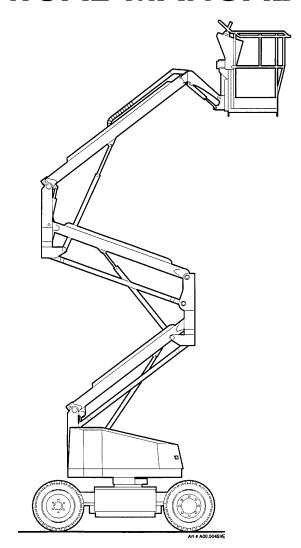
EAGLE 41/24E EAGLE 41/24N

TECHNICAL MANUAL



(U.S.) Part No. 89-412778 • Rev. A.01, Dec., 1996 •

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INTRODUCTION

This Technical Manual has been designed to provide you with the instructions needed to properly and safely maintain your Simon 41/24E.



THIS TECHNICAL MANUAL MUST BE READ AND UNDERSTOOD PRIOR TO SERVICING YOUR SIMON 41/24E.

OPERATORS MUST BE AWARE OF AND COMPLY WITH ALL MANUFACTURER'S INSTRUCTIONS AND APPLICABLE OSHA/ANSI (OR APPROPRIATE GOVERNMENT) SAFETY GUIDELINES.

FAILURE TO COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND OSHA/ANSI (OR APPROPRIATE GOVERNMENT) SAFETY GUIDELINES WILL RESULT IN SERIOUS INJURY OR DEATH.

Your Simon 41/24E has been designed, built, and tested to provide many years of safe, dependable service. To obtain the full benefit of your machine, always follow the proper operating and maintenance procedures as outlined in this manual. Only trained, authorized personnel should be allowed to operate or service this machine. Service personnel should read and study this manual and the Operator's Manual in order to gain a thorough understanding of the functions of the machine prior to making any repairs.



MODIFICATIONS TO THIS MACHINE FROM THE ORIGINAL DESIGN AND SPECIFICATION WITHOUT WRITTEN PERMISSION FROM SIMON ARE STRICTLY FORBIDDEN. A MODIFICATION MAY COMPROMISE THE SAFETY OF THE MACHINE, SUBJECTING USERS TO SERIOUS INJURY OR DEATH. ANY SUCH MODIFICATION WILL VOID ANY REMAINING WARRANTY.

Simon reserves the right to change, improve, modify or expand features of its equipment at any time. Specifications, models or equipment are subject to change without notice, and without incurring any obligations to change, improve, modify or expand features of previously delivered equipment. All Simon manuals are periodically updated to reflect changes that occur in the equipment. Please contact the factory with any questions you may have regarding your machine, or the availability of more recent manuals.

MACHINE SPECIFICATIONS 4!/24E

| Working Height | 47 Ft 10 In./ 14.60 M |
|-----------------------------------------------|--------------------------------------------------|
| Platform Height | 41 Ft 4 In./ 12.60 M |
| Horizontal Reach (Working Reach) | 23 Ft 10 In./ 7.60 M |
| Stowed Height | 6 Ft 7 In./ 2.00 M |
| Stowed Length | 16 Ft/ 4.865 M |
| Platform Capacity (Unrestricted) | 500 LBs./ 225 kg |
| Platform Dimensions (Standard) | 49 In. X 24 In./ |
| , | 1.25 M X 0.60 M |
| Platform Dimensions (Optional) | 59 In. X 24 In./ |
| | 1.5 M X 0.60 M |
| Width | 5 Ft 11 In./ 1.80 M |
| Wheelbase | 74.8 ln./ 1.9 M |
| Inside Turning Radius | 7 Ft 4.5 In./ 2.25 M |
| Ground Clearance | 8.6 In./ 22 cm |
| Gross Vehicle Weight (Approx.) | 14,580 LBs./ 6,613 kg |
| Superstructure Rotation | 360 ° Non-Continuous |
| Travel Speed-Platform Stowed | 3.0 MPH/ 5.0 KPH |
| Travel Speed-Platform Elevated | 0.5 MPH/ 0.8 KPH |
| Gradeability (on hard surface) (ref. page vi) | 12°/ 21% |
| Tires | 250 - 15 (Solid) |
| Hydraulic Fluid Capacity | 6.9 GAL./ 26.0 Liters |
| Hydraulic Operating Pressure | 2755 PSI/ 190 Bar/ 194 kg-cm ² |
| Hydraulic Pump Output | 2.6 GPM/ 10 LPM |
| Power System (Electric) | Eight 6-Volt Batteries (48VDC) |
| | @ 217 Amp/ Hr |
| Battery Charger | 40 Amp, Automatic |
| Electric Pump Motor | 5.0 HP/ 3.7 kw |
| Steer Wheel Nut Torque | 147.5 Ft-LBs/ 200 Nm/ 20.4 kg-m |
| Drive Wheel Nut Torque | 147.5 Ft-LBs/ 200 Nm/ 20.4 kg-m |
| Swing Bearing Bolt Torque | 98.8 Ft-LBs/ 134 Nm/ 13.6 kg-m |

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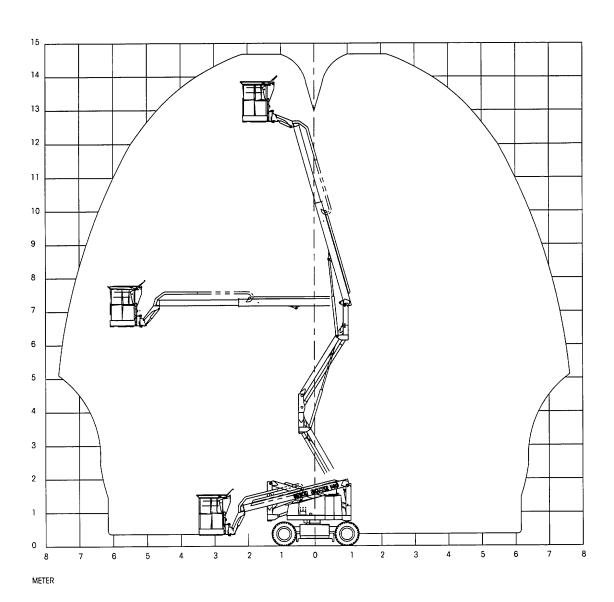
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| Platform Capacity (Unrestricted) | 500 LBs./ 225 kg |
| Platform Dimensions (Standard) | 49 in. X 24 in./ |
| | 1.25 M X 0.60 M |
| Width | 4 Ft 11 In./ 1.50 M |
| Wheelbase | 74.8 ln./ 1.9 M |
| Inside Turning Radius | 7 Ft 4.5 In./ 2.25 M |
| Ground Clearance | 8.2 In./ 21 cm |
| Gross Vehicle Weight (Approx.) | 16,755 LBs./ 7600 kg |
| Superstructure Rotation | 360 ° Non-Continuous |
| Travel Speed-Platform Stowed | 3.0 MPH/ 5.0 KPH |
| Travel Speed-Platform Elevated | 0.5 MPH/ 0.8 KPH |
| Gradeability (on hard surface) (ref. page vi) | 12°/ 21% |
| Tires | 250 - 15 (Solid) |
| Hydraulic Fluid Capacity | 6.9 GAL./ 26.0 Liters |
| Hydraulic Operating Pressure | 2755 PSI/ 190 Bar/ 194 kg-cm ² |
| Hydraulic Pump Output | 2.6 GPM/ 10 LPM |
| Power System (Electric) | Eight 6-Volt Batteries (48VDC) |
| | @ 217 Amp/ Hr |
| Battery Charger | 40 Amp, Automatic |
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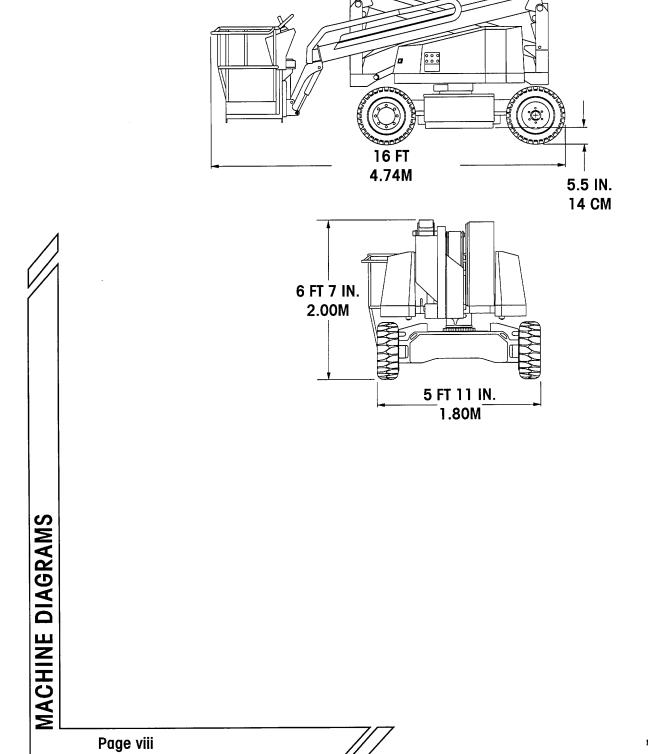
MACHINE DIAGRAMS

RANGE DIAGRAM



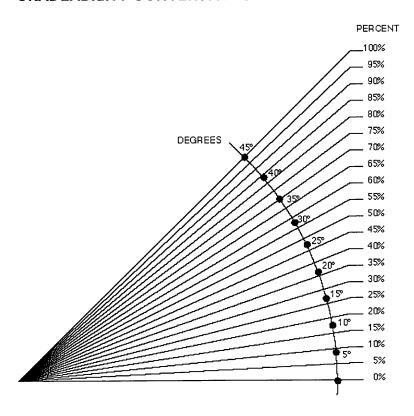
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GENERAL ARRANGEMENT DIAGRAM



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GRADEABILITY CONVERSION CHART



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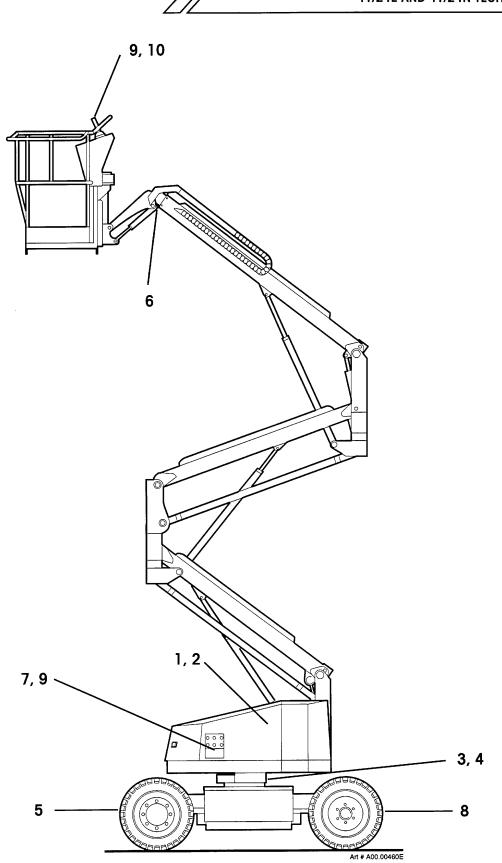
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LUBRICATION CHART

| NO. | ITEM | SPECIFICATION AND QUANTITY | FREQUENCY OF LUBRICATION |
|-----|-----------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1. | Hydraulic reservoir | Shell TELLUS 32 to "Full" mark with all cylinders retracted. | Check each shift. Analyze every six (6) months or 500 hours*†. Change yearly or every 1,000 hours.*† |
| 2. | Hydraulic filters | Filter elements. | Change every six (6) months or 500 hours.* |
| 3. | Swing bearing (grease outside of swing gear at 180°) | Lithium N.L.G.I. #2 EP. Purge old grease. | Monthly or every 100 hours.*† |
| 4. | Swing bearing gear teeth | "Keystone-Moly 29 Open Gear Compound" Coat gear faces. | Monthly or every 100 hours.*† Clean every six (6) months or 500 hours.* |
| 5. | Axle, drive gearbox, disconnect, and planetary ends | SAE 80/ 90 APIGL5. | Check monthly or every 100 hours.*† Change yearly or 1,000 hours.* |
| 6. | Boom wear pads | Silicone spray. | Monthly or every 100 hours.** |
| 7. | Hydraulic control handle pivot pins | WD 40 Spray or equivalent penetrating oil. | Monthly or every 100 hours.* |
| 8. | Steering spindles (king pin bearings) | Lithium N.L.G.I. #2 EP. Disassemble and pack. | Monthly or every 100 hours.*† |
| 9. | Valve spool linkage | WD 40 Spray or equivalent penetrating oil. | Monthly or every 100 hours.* |
| 10. | Electrical switches | Electrical Contact Cleaner | Clean and Lubricate every six (6) months or 500 hours*. |

^{*} Whichever occurs first.

[†] Different requirements for severe duty applications. See check lists.



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TRANSPORTING THE UNIT

TRANSPORTING THE MACHINE

TRUCK OR TRAILER TRANSPORT



ALWAYS ATTACH THE MACHINE TO A WINCH WHEN LOADING OR UNLOADING FROM A TRUCK OR TRAILER. UNASSISTED LOADING OR UNLOADING OF ANY MOBILE PLATFORM IS NOT RECOMMENDED.

THE WINCH OPERATOR AND MACHINE OPERATOR MUST COORDINATE MOVEMENT WHILE LOADING THE MACHINE. AVOID THE POSSIBILITY OF THE WINCH TRYING TO PULL A STATIONARY MACHINE.

- 1. Enter the platform.
- 2. Raise the boom so that the platform will clear any obstacles as the machine is driven up the loading ramp. It may be necessary to raise the boom to allow greater ground clearance.
- 3. Carefully maneuver the unit onto the truck or trailer with the aid of a winch.
- 4. Confirm that the boom sections are fully retracted, and that the platform will not contact any other item, including the bed of the truck or trailer.

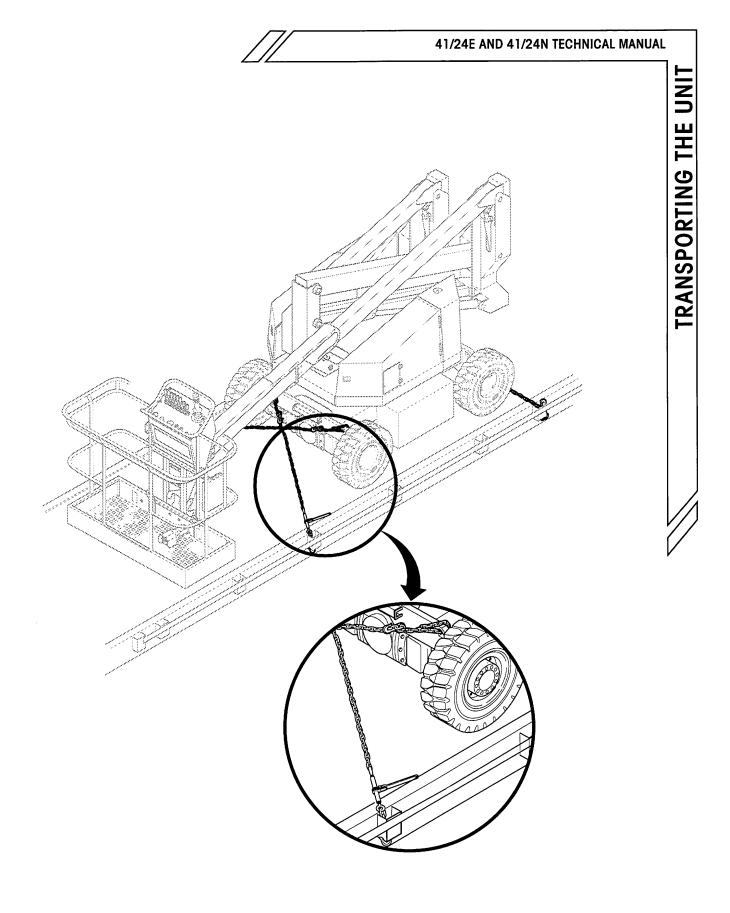


The platform or boom must not be tied down to the truck or trailer bed in any way.

- 5. The negative battery cables should be disconnected for long distance transport.
- 6. Tie down locations are located on all four corners of the undercarriage. Use four (4) 1/2 inch, "Grade 7" chains from each of the tie down lugs, and run the chains as shown in the diagram. (Refer to illustration on facing page.)

Ratchet type load binders are recommended. If using lever type load binders, wire or strap them shut, or wrap chains around them to prevent opening.

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Tie Down of Unit (Recommended Method).

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JNLOADING PROCEDURES

UNLOADING PROCEDURES



TO AVOID SERIOUS PERSONAL INJURY OR DEATH, ENSURE THAT THE MACHINE IS IN "CREEP" DRIVE SPEED WHILE UNLOADING FROM A TRUCK OR TRAILER.

- Inspect the outside of the machine for damage (including the underside). Inspect all
 hoses, boom sections and cables for chafing or road damage. Confirm that all
 swing bearing bolts are tight (refer to Machine Specifications).
- Unlock and open rear compartment. Inspect all electrical and hydraulic connections for damage and security.
- Connect battery cables to batteries if required. Check electrolyte level.
- Check fluid level of the hydraulic tank, and add fluid as required (see Lubrication Chart).
- Close rear compartment cover.
- Attach the machine to a winch for the unloading procedure.



ALWAYS ATTACH THE MACHINE TO A WINCH WHEN LOADING OR UNLOADING FROM A TRUCK OR TRAILER. CONNECT WINCH CABLE TO THE TIE DOWN LUGS ON THE UNDERCARRIAGE. UNASSISTED LOADING OR UNLOADING OF ANY MOBILE PLATFORM IS NOT RECOMMENDED.

READ AND UNDERSTAND ALL SAFETY, CONTROL AND OPERATING INFORMATION FOUND ON THE MACHINE AND IN THIS MANUAL BEFORE OPERATING THE MACHINE.

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UNLOADING PROCEDURES (CONTINUED)

- Remove all machine tie downs. Remove wheel chocks, if used. Switch the Ground/ Platform keyswitch to "PLATFORM CONTROLS".
- Enter the platform. Test all platform functions.
- Raise the boom so that the platform will clear any obstacles as the machine is driven down the loading ramp.
- Carefully drive the unit off the truck or trailer with the assistance of a winch.

NOTE: The brakes are automatically released for driving, and will automatically apply when the unit stops.

• Before placing the unit into service, all operators must read and understand the contents of the Operator's Manual.

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EMERGENCY SYSTEM AND PROCEDURES



IF THE MACHINE FAILS WHILE THE OPERATOR'S PLATFORM IS RAISED OR EXTENDED, DO NOT ATTEMPT TO CLIMB DOWN THE BOOM ASSEMBLY. SERIOUS INJURY MAY RESULT.

EMERGENCY PUMP

This machine has an emergency pump which can be operated from the ground control station to briefly operate the machine when the unit has lost power.

Ground Operation:

- Screw in (turn clockwise) appropriate knob on manifold to shift valve.
- Operate emergency hand pump located on top of the hydraulic tank to perform the desired function.

EMERGENCY ROTATION

The emergency rotation system is performed by a mechanical override or the emergency pump.

For the mechanical override procedure, use a 30 mm socket, extension and ratchet handle attached to the hexagon extension shaft of the rotate drive gearbox.

For the emergency pump procedure, activate the emergency pump and engage the valve closest to the platform on the superstructure valve control bank.



Care should be taken not to override the electrical rotation stop to avoid damaging the hoses which pass through the rotation ring. Always rotate the machine to the normal stowed position by the shortest route. After using emergency rotation, check hoses for damage.

UNPOWERED EMERGENCY VEHICLE MOVEMENT

 Every attempt should be made to restore primary power to the unit before using this procedure.



THIS PROCEDURE REQUIRES RELEASING THE MACHINE BRAKES, WHICH RESULTS IN NO MEANS TO STOP THE UNIT'S TRAVEL. SIMON RECOMMENDS USING THIS PROCEDURE ONLY IN CASES OF EMERGENCY, AND ONLY FOR A SHORT DISTANCE.

BE AWARE OF UNIT RUNAWAY ON SLOPING SURFACES. MOVEMENT SPEED SHALL NOT EXCEED 3 M.P.H. (5 K.P.H.).

1. Secure the unit to the tow vehicle with chains or ropes.

This machine is equipped with tie down lugs (front and rear) that can be used for towing the unit. The chains or ropes must be of sufficient capacity to move the unit.



ALWAYS CHOCK THE WHEELS BEFORE YOU RELEASE THE BRAKES TO PREVENT UNEXPECTED MACHINE MOVEMENT ON SLOPES.

- 2. Block/chock wheels.
- 3. Release brakes and disconnect transmission by fully screwing in (turning clockwise) the disengage plug located in the center of both rear wheel hubs. Use a 6 mm hexagon key.

After unblocking the wheels, the machine will be ready to be moved: however, there is no provision for steering the vehicle.

- After primary power has been restored to the vehicle, fully unscrew (turning counterclockwise) the disengage plug with a 6 mm hexagon key.
- The machine is now ready for normal operation.

EMERGENCY PROCEDURES

It is not possible for us to foresee every emergency situation that could arise during operation of this machine. Information on the following pages describes three typical emergency situations, and lists appropriate actions that can be taken.

When faced with an emergency, above all please remember:

- Stay calm.
- Think through the situation before operating the machine.
- Get help if necessary.

SITUATION: Platform elevated, operator not incapacitated, but machine will not operate properly using the platform controls.

POSSIBLE CONDITION:

- One or more functions not operating correctly.
- Unit movement from unselected control lever or switch.
- Unit function will not stop unless power is switched off.

CORRECTIVE ACTION

- 1. Remove foot from foot switch.
- 2. Press the red emergency stop button.
- 3. Evaluate the nature of the failure.
- 4. If unable to return to the ground using the platform controls, contact an experienced operator to lower the machine using the emergency pump and lowering procedure (see "Emergency Pump" earlier in this section).



DO NOT TRY TO CLIMB DOWN THE BOOM.

HAVE AN EXPERIENCED OPERATOR USE THE EMERGENCY PUMP TO SAFELY LOWER THE PLATFORM.

5. Report the incident to your supervisor immediately.

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SITUATION: Unit elevated, with operator incapacitated at platform controls.



TRY TO DETERMINE THE CAUSE OF THE PROBLEM BEFORE YOU TOUCH THE MACHINE.

CORRECTIVE ACTION

- 1. Have someone summon first aid or rescue squad.
- 2. Attempt to talk to operator before taking any rescue measures.
- 3. Before attempting emergency lowering procedure, check to see if the operator is:
 - in a pinned position, or
 - would be endangered if platform is moved.
- 4. After establishing that the machine is not in contact with live power lines, lower the platform or move the unit as necessary, using emergency procedures (see "Emergency Pump", earlier in this section).
- 5. Render first aid to the operator.
- 6. Report the incident to your supervisor immediately.

IMPORTANT: Any incident involving personal injury must be immediately reported to the local Simon Aerials Distributorship as well as to Simon Aerials Inc.

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SITUATION: Platform in contact with live power lines and operator incapacitated.



CORRECTIVE ACTION

- 1. Have someone summon first aid or rescue squad.
- 2. Contact authorized personnel to disconnect power supply touching machine.
- 3. Before attempting emergency lowering, check to see if the operator is:
 - in a pinned position, or
 - would be endangered if platform is moved.
- 4. AFTER POWER IS CUT, lower the platform or move the unit as necessary, using emergency procedures (see "Emergency Pump", earlier in this section).
- 5. Report the incident to your supervisor immediately.

IMPORTANT: Any incident involving personal injury must be immediately reported to the local Simon Aerials Distributorship as well as to Simon Aerials Inc.

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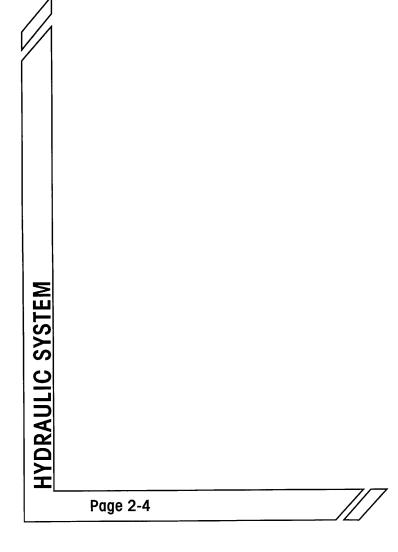
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HYDRAULIC SYSTEM
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HYDRAULIC FLUID

HANDLING PRECAUTIONS



PERSONS IN REGULAR CONTACT WITH MINERAL-BASED HYDRAULIC FLUID NEED TO BE AWARE OF THE IMPORTANCE OF THOROUGH HYGIENE, AND THE PROPER METHODS FOR HANDLING MINERAL OILS IN ORDER TO AVOID POTENTIAL HAZARDS TO HEALTH.

If mineral-based hydraulic fluid is SPLASHED INTO THE EYES, it must be WASHED OUT THOROUGHLY using abundant quantities of water. If irritation persists, medical advice should be sought.

Mineral oils act as solvents on the natural oils in the skin. FREQUENT AND PROLONGED SKIN CONTACT CAN CAUSE DERMATITIS OR SEVERE IRRITATION. Mineral-based hydraulic fluids normally present no health hazard when used properly. Protective clothing and proper washing facilities should be provided or be accessible.

AWARNING

HYDRAULIC FLUID UNDER PRESSURE CAN PENETRATE AND BURN THE SKIN, DAMAGE EYES, AND MAY CAUSE SERIOUS INJURY, BLINDNESS, AND EVEN DEATH.

FLUID LEAKS UNDER PRESSURE MAY NOT ALWAYS BE VISIBLE.

IF MINERAL-BASED HYDRAULIC FLUID HAS PENETRATED THE SKIN, IT MUST BE MEDICALLY TREATED, BY A DOCTOR FAMILIAR WITH THIS TYPE OF INJURY, WITHIN A FEW HOURS.

FLUID RECOMMENDATIONS

We strongly recommend the use of SHELL TELLUS T22 HYDRAULIC FLUID. An EQUIVALENT substitute can be used if absolutely necessary. Mineral-based hydraulic fluids produced by different companies will USUALLY mix with each other satisfactorily, but this IS NOT RECOMMENDED. When in doubt, consult your supplier.

FLUID CONTAMINATION CHECKS

Use the following as a guide to determine when analysis of the hydraulic fluid is necessary.

- Any time the hydraulic pump is replaced.
- If fluid discoloration is noticed in the hydraulic reservoir sight tube.
- If, after the first 50 hours of operation, the h y draulic filter elements are plugged.
- Any time the hydraulic filter elements show signs of metal content.
- Once every six months, under normal operating conditions.
- Every 3 months, in extremely dusty or dirty operating conditions.

The hydraulic fluid analysis must be done by a qualified laboratory. To insure that you receive accurate recommendations about the fluid being analyzed, always provide the following information with the test sample.

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- Type of hydraulic fluid. (See Lubrication Chart)
- Model and serial number of unit from which sample was taken.
- Purpose of analysis: i.e. pump failure, discoloration, etc.
- Type of analysis: i.e. complete to show additive breakdown, acid buildup, viscosity, type and percent of contaminants. Comparison to new fluid and recommendations.

Comply with contamination analysis and recommendations to achieve a clean, contamination free hydraulic system.

Following the above guide will prevent premature failure of pumps, cylinder seals and drive motors, and unnecessary down time.

If system flushing and replacement of fluid is recommended, refer to the flushing procedure.

SYSTEM FLUSHING PROCEDURE



BLOCK THE WHEELS TO PREVENT UN-EXPECTED MOVEMENT OF THE MA-CHINE.

- With BOOMS DOWN AND FULLY RETRACTED (in stowed position), drain hydraulic fluid from hydraulic tank into a clean, empty container. Use an oil filter cart so the fluid may be reused if analysis is good.
- When the hydraulic tank is empty, remove suction hose to pump, emergency pump hose, telescope retract return hose, vent (return) hose for telescope cylinder, manifold return hose, drive hose from pump with the tee for motor drain.

- 3. Remove all hoses between pump and high pressure filter.
- 4. Flush the hoses.
- 5. Remove hydraulic fluid filter, and flush the filter body and attaching hoses. Discard old filter element and replace.
- 6. With hoses removed from the hydraulic tank, flush out the tank.
- 7. Reinstall all the hoses removed in the previous steps EXCEPT the return lines to tank. Temporarily tie hoses together and position these hoses so that they will drain into a clean container.
- If the hydraulic fluid removed from the reservoir is good, pump it (through a filter cart) back into the tank. If fluid is not usable, dispose of it properly and fill the hydraulic tank with filtered, fresh hydraulic fluid (refer to Lubrication Chart).
- 9. Open the suction line valve to allow fluid to flow to the hydraulic pump.
- 10. Loosen hose fittings at pump to allow pump to flood with hydraulic fluid. Tighten pump fittings.
- 11. Turn main power key switch to "ON" and the selector switch to the "GROUND" position.



Use care when operating functions as return hydraulic fluid is now being returned to container provided.

12. Cycle all cylinder functions to flush the hydraulic components of the hydraulic fluid. This will remove old fluid from the hydraulic system as the cylinder is cycled to its maximum limits.



Monitor the hydraulic reservoir fluid level when cycling the unit functions. Add fluid as necessary to replace that being discharged to container through system return line. This fluid may be returned to the reservoir through a filter cart, if the fluid analysis shows that it is good.

Three cycles of ALL hydraulic cylinder functions should remove old hydraulic fluid.

13. Disconnect the return hoses for the drive motors. Tie the hoses together and let them drain into a clean container.



ALWAYS BLOCK THE WHEELS before you raise the machine.

- 14. Jack the front end of the unit so the front drive wheels are off the ground.
- 15. Turn the selector switch to "CAGE" and enter platform.
- 16. Activate the drive joystick to flush the drive circuit hydraulic components of the hydraulic fluid.
- 17. Activate the steer toggle switch to flush the steer cylinder of the hydraulic fluid.
- 18. When the above procedures have been completed, re-connect system return hose to tank.
- 19. Fill hydraulic tank to full mark on sight gauge.
- 20. Operate all functions to their full extreme positions to ensure proper operation.
- 21. Check for leaks and correct as necessary. Unit is now ready to be placed back in operation.

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HYDRAULIC SYSTEM COMPONENTS

Following is a description of the major components of the hydraulic system.

HYDRAULIC PUMP

There are two pumps on the machine; the main hydraulic pump and the emergency pump.

MAIN HYDRAULIC PUMP

The main hydraulic pump is powered by a 48 VDC, 5 HP (3.7 kW) motor. The pump is rated at 2.6 gallons/ minute (10 liters/ minute) with a pressure of 2,611 PSI (180 bar).

EMERGENCY PUMP

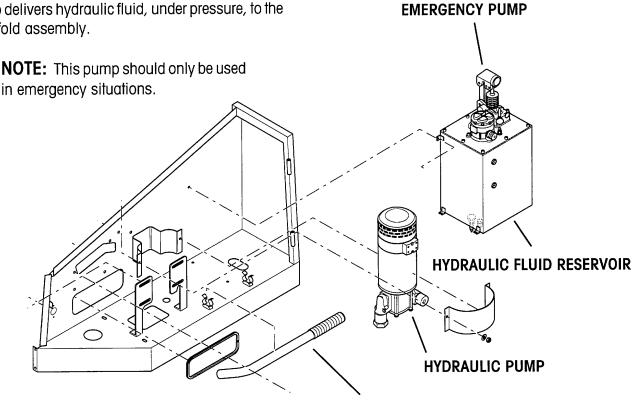
The emergency pump is located on top of the hydraulic reservoir and is operated by hand. This pump delivers hydraulic fluid, under pressure, to the manifold assembly.

HYDRAULIC FLUID RESERVOIR

The hydraulic fluid reservoir is comprised of a filler cap with built-in strainer, a return line diffuser, a suction filter and an emergency hand pump. The hand pump is permanently connected into the hydraulic circuit for emergency use.

HYDRAULIC RESERVOIR MAINTENANCE

Check tank for signs of leakage. Clean cap filter by flushing with clean solvent and drying. Condensation should be drained from the tank monthly through the drain cock.



EMERGENCY PUMP HANDLE

Hydraulic Components Location.

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BOOM LIFT SYSTEM

The boom lift system consists of three hydraulic valve segments on the ground valve bank and at the platform controls with three levers (one for each boom segment), three lift cylinders with counterbalance (holding) valves.

PLATFORM DIRECTIONAL CONTROL VALVE

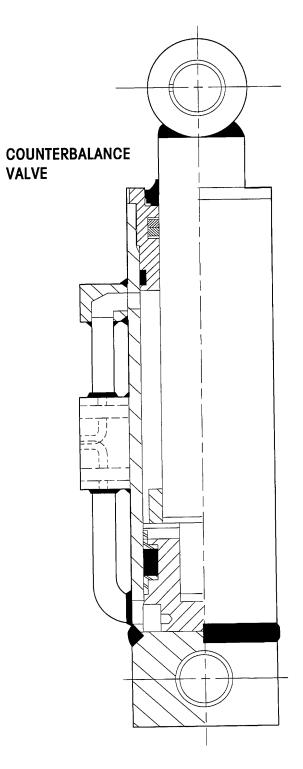
The platform directional control valves direct fluid to flow to the boom lift cylinders (for stage one, stage two, or stage three) to provide hydraulic power for raising or lowering the booms. These valves are 3 position, 4 way manually operated valves. They can be cleaned with a solvent and blown dry with air. There is a seal kit available, but the valves cannot be adjusted.

GROUND DIRECTIONAL CONTROL VALVE

The ground directional control valves direct fluid to flow to the boom lift cylinders (for stage one, stage two or stage three)) to provide hydraulic power for raising or lowering the booms. These valves are 3 position, 4 way manually operated valves. They can be cleaned with a solvent and blown dry with air. There is a seal kit available, but the valves cannot be adjusted.

LIFT CYLINDER

The three boom lift functions are controlled by double acting cylinders. Each cylinder contains a counterbalance (holding) valve, which will prevent unintended movement of the cylinder should a hose or fitting develop a leak. When a boom is lowered, fluid flows to the rod end cylinder port and to the counterbalance valve, opening this valve and allowing fluid in the base end of the cylinder to flow back to the hydraulic reservoir. When the boom section is raised, fluid flows to the base end cylinder port through a check valve.



Lift Cylinder.

BOOM TELESCOPE (EXTEND) SYSTEM

The boom telescope system consists of a hydraulic valve segment on the ground valve bank and platform controls, and a telescope cylinder with double-piloted check valves.

PLATFORM DIRECTIONAL CONTROL VALVE

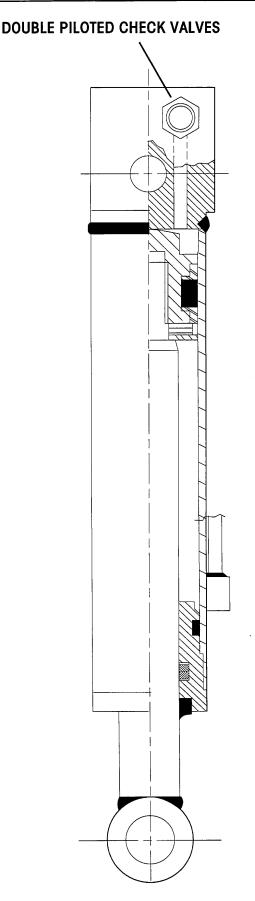
The platform directional control valve directs fluid to flow to the telescope cylinder to provide hydraulic power for extending or retracting the upper boom. This valve is a 3 position, 4 way manually operated valve. It can be cleaned with a solvent and blown dry with air. There is a seal kit available, but the valve cannot be adjusted.

GROUND DIRECTIONAL CONTROL VALVE

The ground directional control valve directs fluid to flow to the boom lift cylinders (for stage one or stage two) to provide hydraulic power for raising or lowering the booms. This valve is a 3 position, 4 way manually operated valve. It can be cleaned with a solvent and blown dry with air. There is a seal kit available, but the valve cannot be adjusted.

TELESCOPE (EXTEND) CYLINDER

A double acting telescope cylinder performs the extension and retraction of the boom. This cylinder contains double-piloted check valves, which prevent unintended movement of the cylinder should a hose or fitting develop a leak. When the boom is extended, fluid flows to the base end cylinder port and to the double-piloted check valves, piloting open one side of the valves and allowing fluid from the rod end of the cylinder to flow back to the reservoir.



Telescope (Extend) Cylinder.

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SUPERSTRUCTURE SWING SYSTEM

The superstructure swing system consists of a hydraulic directional control valve in the platform valve bank assembly, a main control valve in the ground valve bank assembly, two directional flow control valves, and swing motor/reducer and bearing.

PLATFORM DIRECTIONAL CONTROL VALVE

The platform directional control valve directs fluid to flow to the swing motor/reducer to provide hydraulic power for rotating the superstructure. This valve is a 3 position, 4 way manually operated valve. It can be cleaned with a solvent and blown dry with air. There is a seal kit available, but the valve cannot be adjusted.

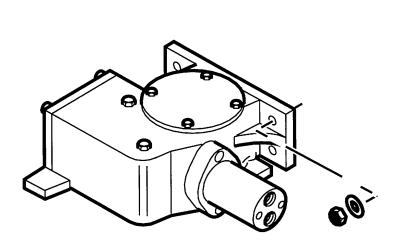
GROUND DIRECTIONAL CONTROL VALVE

The ground directional control valve directs fluid to flow to the swing motor/reducer to provide hydraulic power for rotating the superstructure. This valve is a 3 position, 4 way manually operated valve. It can be cleaned with a solvent and blown dry with air. There is a seal kit available, but the valve cannot be adjusted.

SWING DRIVE MOTOR/ REDUCER ASSEMBLY

The worm gear swing reducer used allows the motor output to be reduced to a fractional speed and greatly reduces swing drive torque. This allows the superstructure to rotate at a slow controlled speed when fluid power is applied to the swing drive motor.

The swing reducer has an automatic built in lock to prevent superstructure rotation when the swing function is not desired.



Swing Drive Motor/ Reducer Assembly.

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HYDRAULIC SYSTEM COMPONENTS

PLATFORM LEVELLING SYSTEM

The platform levelling system consists of a level control valve, slave cylinder with a counterbalance (holding) valve, master cylinder.

The platform leveling system automatically keeps the platform level, using a master/ slave cylinder arrangement. As the boom is raised or lowered, fluid is forced from one cylinder to the other in a closed loop, which keeps the platform parallel to the ground in any boom position. Due to slight internal leakage, fluid may at times need to be added to the leveling circuit through the platform level control valve.

The platform level system is only controlled from the platform.

LEVEL CONTROL VALVE

This valve is a 3 position, 4 way valve which is manually operated. This control valve directs fluid flow to the level functions.

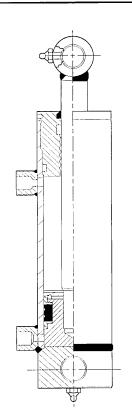
MASTER CYLINDER

The master cylinder is a double acting cylinder located between the upper frame of the superstructure and the boom. Whenever the boom is raised or lowered, the master cylinder is forced to extend or retract. The fluid displacement from the master cylinder is in turn sent up the boom to the slave cylinder. This forces the slave cylinder to move the same distance as the master cylinder.

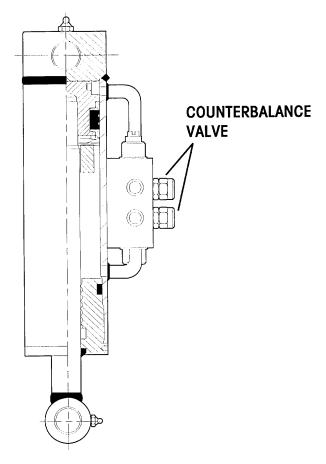
SLAVE CYLINDER

The slave cylinder is a double acting cylinder located between the tip boom and the platform. This cylinder controls the position of the platform relative to the tip boom.

The slave cylinder contains two holding valves. The holding valves prevent platform movement in the event of hose failure.



Master Cylinder.



Slave Cylinder.

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STEER SYSTEM

The steering system consists of a steer valve segment, a steer cylinder and a steer rocker switch on the drive lever at the platform control console.

STEER VALVE SEGMENT

When the steer control rocker switch on the platform control is activated an electrical signal is transmitted to the valve cartridge in the steer segment. This allows hydraulic fluid to be sent to the steer cylinder.

STEER CYLINDER

The cylinder is double acting and is directly connected to the steering linkage assembly. cylinder powers all steering movements.

STEER SYSTEM MAINTENANCE

Check all pins on steering linkage and steer cylinder for excessive play, and ensure that all clips are in place and secure.

Lubricate linkage as required (see Lubrication Chart).

Check cylinder and hoses for hydraulic fluid leakage and security.

PLATFORM ROTATION SYSTEM (OPTION)

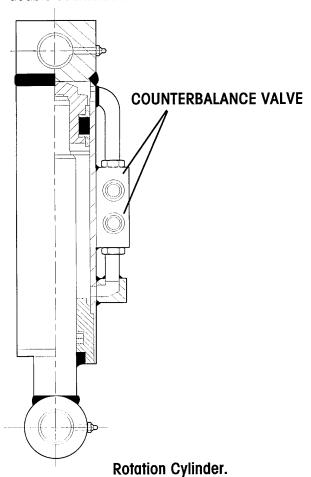
The platform rotation system consists of a platform rotation valve segment at the platform controls, a rotation cylinder, and associated hardware.

PLATFORM ROTATION VALVE SEGMENT

is activated hydraulic fluid is sent to one or the other side of the rotation cylinder for left or right platform rotation.

ROTATION CYLINDER

The cylinder is double acting and is directly connected to the platform assembly. This cylinder powers all platform rotation movements through a double counterbalance valve.



When the rotation valve lever at the platform controls

SECTION 3: ELECTRICAL SYSTEM



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ELECTRICAL SYSTEM

The following section is a description of maintenance for the major components of the electrical system.

BATTERY

Eight 6 volt batteries supply the electrical current required to operate the electrical circuits. They are composed of two sets of four batteries each hooked up in series to supply 48 VDC.

BATTERY MAINTENANCE (IN STORAGE)

Follow these procedures for maintenance of batteries on a machine not in use:

Keep batteries clean. Electrolyte of "wet" batteries should be checked regularly, and kept at proper levels.

Never stack one battery directly on top of another, because post or container damage can result. If batteries are stored individually, place supporting boards between layers. Do not stack more than three high, and rotate stock so that the oldest batteries are used first.

"Wet" batteries should be kept fully charged. A "wet" battery, while in storage, should be recharged to full charge at the following intervals:

| If stored at: | Recharge: | |
|----------------------------|----------------|--|
| Below 40° F (4° C) | None required | |
| 40° to 60° F (4° to 15° C) | Every 2 months | |
| Above 60° F (15° C) | Every month | |

BATTERY MAINTENANCE (IN USE)

Check battery and surrounding area for signs of damage or corrosion.

Check battery terminals for:

- Corrosion. Regularly clean connections and apply a non-metallic grease or protective spray to retard corrosion.
- Loose connections. Be sure all cable connections are tight, and that good contact is made to terminals.
- Broken or frayed cables. Be sure all cable connections are good, and that no loose or broken wires are exposed. Replace as needed.

Check battery electrolyte level. Replenish the electrolyte, if necessary. Remove vent caps before filling, and USE ONLY DISTILLED WATER. Fill all cells to the proper level. Do not overfill. Fill to level indicator (or 1/2 inch over the top of the separators if there is no level indicator). Fill after charging to prevent overflow of acid due to expansion. Do not use a hose to add water to batteries.

Allowing the electrolyte level to drop below the top of the separators will lead to shortened battery life. Excessive water usage can indicate that a battery has been overcharged, has been subjected to excessively high temperatures, or is nearing the end of its service life.

Keep battery clean. Wash the top of the battery, making sure all vent caps are in place. Do not allow cleaning water or other foreign matter to enter the cells. Use a solution of bicarbonate of soda and water to wash the battery if there is an accumulation of acid.

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LECTRICAL SYSTEM

BATTERY PREVENTIVE MAINTENANCE

Once a month, after battery has been charged, spot check the specific gravity of two or more cells. A fully charged battery should indicate 1.28 specific gravity. If low readings are noted, check the following:

- Check terminals for corrosion, loose connections and broken or frayed cables.
- Check all cells with a hydrometer for variation in specific gravity. A variation of 0.03 points or more between cells is cause for concern. Mark the low cells.

Recheck specific gravity of all cells after recharging.

BATTERY REPLACEMENT

To remove the batteries, follow these procedures:



BEFORE REMOVING BATTERIES FROM THE UNIT, TURN OFF THE IGNITION SWITCH. THERE SHOULD BE NO POWER TO THE MACHINE.

Always disconnect the negative battery cables first.

Remove bolts holding battery to undercarriage.

Lift the batteries from the undercarriage. Put the batteries to the side and dispose of properly.



Always connect the positive battery cable first.

To install batteries lift and position them on undercarriage. Secure batteries in position with battery hold downs. Connect battery cables.

BATTERY CHARGER

The battery charger supplied with the 41/24E is designed to recharge deep-cycle, lead-acid batteries. It is a highly reliable unit with a minimum of moving parts.

To operate, connect the power supply cord to a 115 volt, 60 hertz outlet. The charger DC output cord should remain connected to the batteries. Required charge time varies with depth of discharge.



CONNECT ONLY TO A PROPERLY GROUNDED THREE-PRONG, SINGLE PHASE OUTLET.

TO AVOID ELECTRIC SHOCK, DO NOT TOUCH UNINSULATED PARTS OF THE CHARGER DC OUT-PUT CONNECTOR, BATTERY CONNECTOR OR TERMINALS.

BE SURE CHARGER IS IN GOOD CONDITION, AND THAT BATTERY CONNECTORS MAKE ADEQUATE ELECTRICAL CONTACT AND ARE NOT CRACKED OR CORRODED. OVERHEATING AND PROPERTY DAMAGE MAY RESULT.

LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES. NO SMOKING! KEEP SPARKS AND FLAME AWAY FROM BATTERIES.

NEVER DISCONNECT THE DC OUTPUT CONNECTOR FROM THE BATTERIES WHILE THE CHARGER IS OPERATING.

IF THE CHARGE CYCLE MUST BE INTERRUPTED, DISCONNECT THE POWER SUPPLY CORD FROM ITS OUTLET; DO NOT DISCONNECT THE DC OUTPUT CONNECTOR FROM THE BATTERY CONNECTOR.

BATTERY CHARGER TROUBLESHOOTING



HIGH VOLTAGE! WITH THE CHARGER ON, THE INTERNAL CHARGER CA-PACITOR VOLTAGE IS APPROXIMATELY 650 VOLTS.

Always unplug the electrical cords from the AC outlet and the batteries before attempting any repairs to the charger.

NOTE: Modifying the charger for use other than that for which it was specifically intended, repairs by unqualified persons or use of other than original equipment replacement parts will void the warranty.

Due to the way these chargers are constructed, only basic troubleshooting is practical. Perform the following checks:

- 1. Make sure battery connections are electrically and mechanically sound.
- 2. Check AC source for power.
- 3. Check all fuses and replace, if required, with those having the same rating.
- 4. Check battery condition. A highly sulfated battery may take some additional time before current begins to flow through it.
- For further information on troubleshooting the charger, contact the battery charger manufacturer, as indicated on the charger nameplate.

MOVEMENT ALARM

The movement alarm is activated as soon as the platform console drive lever is moved off the center "Neutral" position.



THE MOVEMENT ALARM IS PROVIDED FOR YOUR PROTECTION, AND PROTECTION OF PERSONS WORKING IN IMMEDIATE AREA. DISABLING THIS IMPORTANT SAFETY DEVICE MAY RESULT IN DEATH OR SERIOUS INJURY.

TILT ALARM

The tilt alarm gives an audible warning when the machine is five degrees or more out of level. To replace the tilt alarm, remove it from its support and disconnect the wires.

TILT ALARM TEST

The alarm can be tested by raising the platform above the high speed limit switch, and manually tipping the alarm sensor. This "Push-to-Test" feature enables tilt alarm to be tested without losing its adjustment.

Individually push down on each of the three fastened corners of the tilt alarm. There should be enough travel to cause the alarm to sound as each corner is pressed (there is approximately a three second delay).

If the alarm does not sound, the flange nuts have been tightened too far. Loosen the nut on the 90° corner and repeat this test procedure.

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TILT ALARM ADJUSTMENT

The tilt alarm can be adjusted. Before attempting to adjust the alarm, park the machine on a flat, level surface.

Level the base of the alarm by tightening each of the three flange nuts on top of the spring loaded assembly until the level bubble is centered on the tilt alarm.

Check to be sure the electrical connections are correct.

DESCENT ALARM (OPTIONAL)

The descent alarm gives an audible warning when the platform is being lowered. To replace the descent alarm, remove it from the ground electrical box and disconnect the wires.

RELAYS

There are relays located in the electrical module. (Refer to the schematic at the end of this manual for relay functions and interconnect.)

ELECTRIC MOTOR

There are two electric motors: pump motor and drive motor. The pump motor is 48 VDC fixed speed motor, rated at 5 HP (3.7 kW) at 1200 rpm, and the drive motor is 48 VDC series-wound reversible motor controlled by a transistor circuit, and rated at 6.7 HP (5kW). The pump motor is started by a heavy duty contactor. They are not field repairable, and power should be traced to the motor for troubleshooting. If there is power to one of the motors and it still does not run, replace it.

DRIVE MOTOR CONTROLLER

The drive motor controller is located in the electric module to the right of the battery charger. It is a sealed transistorized unit which contains no user serviceable parts.

EMERGENCY STOP BUTTONS

There are two emergency stop buttons: one on the platform control and the other at ground controls.

When the emergency stop button is pressed, all functions stop immediately and the wheel brake is automatically applied. Turn the button clockwise to reset.

To replace the emergency stop button, remove the control console cover screws to gain access for button removal. Remove the appropriate button mounting screws and wires.

BATTERY MONITOR AND HOUR METER

The battery condition or level of charge is indicated by an LED display in the form of 2 red, 3 yellow and 5 green illuminated bands. At full charge all the LED's are illuminated. As the batteries discharge, green LED's are progressively extinguished from right to left. When the first red LED begins to flash, this is a warning to the operator that the batteries are heavily discharged. Both red LED's flashing alternately indicates that the batteries require charging and that the machine's lift functions are about to be interrupted. This feature offers protection by discouraging the damaging practice of using the batteries until completely discharged. The cut-out occurs at a discharge of 80%. The digital hour meter indicates the total usage of the machine. It is counting whenever the footswitch is depressed.

PCB BOX

The PCB box contains the functional check LED's, a set of fuses, 12 VDC, 24VDC and 48VDC relays. It also acts as a terminal strip for the electrical system. Refer to electrical schematic at the end of this manual when servicing the unit.

SECTION 4: MECHANICAL COMPONENTS



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MECHANICAL COMPONENTS

Following is a description of the major mechanical components of this machine.

CHASSIS



When steam cleaning the undercarriage, cover electrical components, to prevent water damage.

Steam clean the chassis once a year, and inspect all welds and brackets. Check for cylinder pins that turn in their mountings, which will indicate sheared retaining pins.

TIRES

Inspect the tires for cuts, chunking, sidewall damage or abnormal wear. Any tire faults MUST BE CORRECTED before further machine operation. Refer to Illustrated Parts Catalog for replacement tires.



FAILURE TO USE APPROVED PARTS MAY CAUSE DEATH OR SERIOUS PERSONAL INJURY.

NOTE: Replace tires with the correct tires to maintain the rating of this equipment.

CHANGING TIRES

- 1. Chock tires on one end of unit and raise the other end of unit.
- 2. Loosen and remove lug nuts, and pull wheel off.
- 3. Install the replacement wheel.

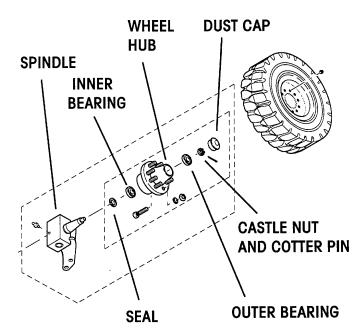
- 4. Fasten lug nuts, and tighten to proper torque (see Machine Specifications).
- 5. Lower the machine and remove the chocks.

WHEELS AND LUG NUTS

Check the torque of the wheel lug nuts (see Machine Specification) and examine the wheel rims for tightness and damage.

REPACKING FRONT WHEEL BEARINGS

- Block the rear tires and raise the front end of undercarriage.
- 2. Remove front wheels.
- 3. Remove dust cap.
- 4. Remove cotter pin, castle nut and pull the front hub assembly from the spindle assembly.
- Remove flat washer, outer bearing from each wheel hub.



Front Wheel Bearings.

- 6. Remove the inner bearing.
- 7. Inspect the inner and outer bearings for wear. If they are excessively worn or damaged, replace the appropriate front hub assembly.
- 8. Pack the inner and outer bearings with grease. (Refer to lubrication chart, earlier in this manual.)
- Assemble the front hub and install it on the spindle assembly. Install dust cap.
- 11. Replace the wheels and tighten lug nuts to proper torque. (Refer to "Machine Specifications".)

STEER CYLINDER SEAL REPLACEMENT

The steer cylinder is of the double acting type. During operation, the cylinder should not leak, but a slight dampness at the rod seal is acceptable. The pins should be checked for wear.



Take care not to damage rod surface and guard against dirt entering system.

- 1. Disconnect and plug the two hydraulic hoses to cylinder and cylinder ports.
- 2. Take the steer cylinder from the chassis by removing the two pins that hold it in place.
- 3. Remove rod gland.
- 4. Remove cylinder rod and piston.
- 5. Replace seals.
- 6. Carefully, slide the cylinder rod and piston into the cylinder body assembly.
- 7. Secure the rod gland in place.
- 8. Secure the steer cylinder in place with the pins.
- 9. Unplug and reconnect the two hydraulic hoses.

DRIVE MOTOR

The drive motor is not field repairable. If it is determined that the drive motor is damaged, replace it

To replace drive motor, remove the 4 socket head cap screws that secure it to the gearbox and detach wires. Install the new drive motor with the 4 socket head cap screws and attach wires with same polarity as the one that was removed.

HOSES AND CABLE

Inspect all hoses and electrical cable for security and damage. Hoses and cable should be examined for rubbing and chafing. Check for leaks at fittings. REPLACE ANY DAMAGED HOSES OR CABLE.

SUPERSTRUCTURE

Steam clean the superstructure and inspect all welds and brackets. Check all the hydraulic and electrical components.

COUNTERWEIGHT REMOVAL

- 1. Secure #24 eye bolt to top of counterweight.
- Attach crane to eyebolt.
- Remove counterweight retaining cap screw and retainer from underside of counterweight.
- 4. Lift off counterweight with crane.

COUNTERWEIGHT INSTALLATION

- With crane, place counterweight in position so that counterweight mounting peg is inserted through corresponding hole in undercarriage.
- 2. Secure counterweight retainer in place with counterweight retaining cap screw.
- 3. Remove eye bolt from top of counterweight.

PLATFORM

Steam clean the platform and inspect all welds and brackets. Check all the hydraulic and electrical components.

BOOM

Clean the boom once a year and inspect along the boom structure, especially all welds and brackets.

BOOM PIVOT PIN AND BUSHING REPLACEMENT

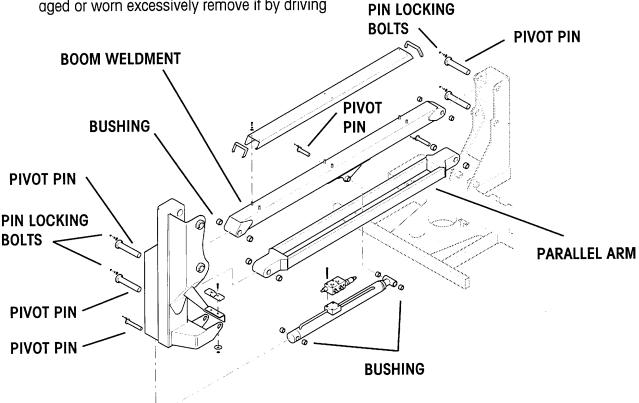
- Support the boom and platform securely on a fork lift, or similar rigid device.
- 2. Remove the two pin locking bolts.
- 3. Carefully drive out the boom pin. Take care not to damage the inside bore during this step.
- Inspect bushing for wear. If bushing is damaged or worn excessively remove it by driving

- it out with a bushing driver. Install replacement bushing also with a bushing driver.
- Apply grease to pins (see Lubrication Diagram).
- 6. Fit replacement pin in place.
- 7. Lightly lubricate the two pin locking bolts and secure pin in place with them.

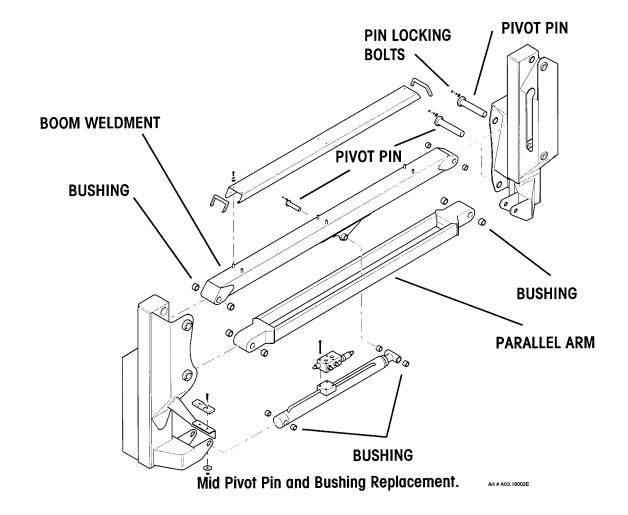
PARALLEL ARM PIVOT PIN AND BUSHING REPLACEMENT

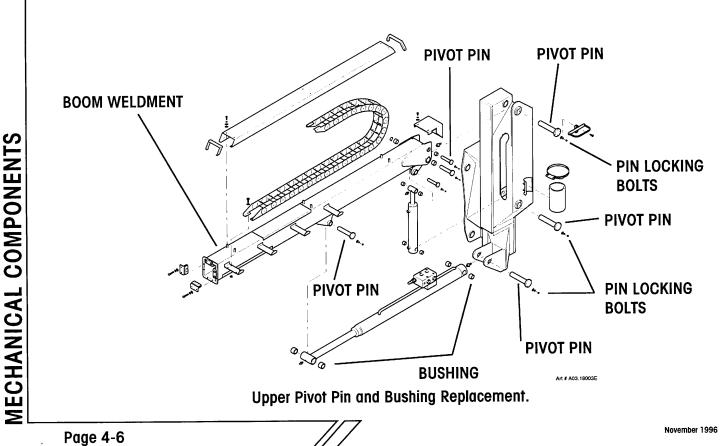
NOTE: For lower parallel arm pivot pin and bushing removal, counterweight must be removed. Refer to Counterweight Removal in this section.

 Support the boom and platform securely on a fork lift, or similar rigid device.



Lower Pivot Pin and Bushing Replacement.





- 2. Remove the two pin locking bolts.
- 3. Carefully drive out the boom pin. Take care not to damage the inside bore during this step.

NOTE: When the pin is removed, the parallel arm will fall from position if not held. Since it is a relatively light component, it can be held in position manually while the replacement pin is fitted.

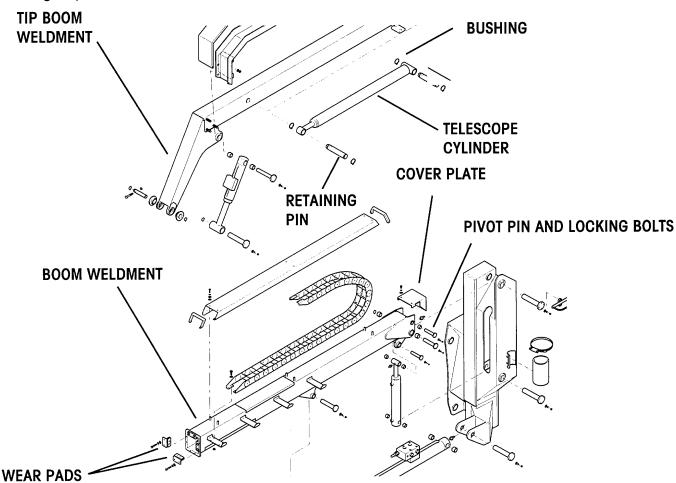
- Inspect bushing for wear. If bushing is damaged or worn excessively remove it by driving it out with a bushing driver. Install replacement bushing also with a bushing driver.
- 5. Apply grease to pins (see Lubrication Diagram).

- 6. Fit replacement pin in place.
- 7. Lightly lubricate the two pin locking bolts and secure pin in place with them.

NOTE: For lower parallel arm pivot pin and bushing installation, counterweight must be installed. Refer to Counterweight Installation in this section.

TELESCOPE CYLINDER PIVOT PIN AND BUSHING REPLACEMENT

- 1. Support the boom and platform securely on a fork lift, or similar rigid device.
- 2. Remove the two pin locking bolts from either the rod end or base end of the cylinder.



Telescope Cylinder Maintenance Components.

- Carefully drive out the boom pin. Take care not **TELESCOPE CYLINDER INSTALLATION** to damage the inside bore during this step.
- Inspect bushing for wear. 4.

If bushing is damaged or worn excessively remove the other pivot pin and slide out the extend cylinder. Remove the damaged bushing with a bushing driver. Install replacement bushing also with a bushing driver. Slide the extend cylinder into the boom.

- Apply grease to pins (see Lubrication Diagram).
- Fit replacement pin(s) in place.
- Lightly lubricate the two pin locking bolts and secure pin(s) in place with them.

TELESCOPE CYLINDER REMOVAL

- Support the boom and platform securely on a fork lift, or similar rigid device.
- Remove the two pin locking bolts and the cylinder pins from both the rod end and base end of the cylinder.
- 3. Remove the cover plate from the telescope cylinder.
- Remove cylinder hoses.
- Slide out the telescope cylinder from the opened 5. end.

- Slide in the telescope cylinder from the opened end.
- Install cylinder hoses. 2.
- Install the two cylinder pins and locking bolts to 3. both the rod end and base end of the cylinder.
- Install the cover plate to the telescope cylinder. 4.

WEAR PAD INSPECTION

- Fully retract the boom and check the gap at the top of the telescope boom, between the inner and outer, at the rear of the telescope boom.
- Fully extend the boom and check the same gap 2. at the top of the telescope boom, at the front of the outer telescope boom.
- Replace the pads if the gap between the pad and the outer telescope boom is 3/16 " (5 mm) or more.

REAR WEAR PAD REPLACEMENT

- Support the inner telescope boom. Unbolt the top, front wear pad cassettes, and remove pads as necessary.
- Unbolt the bottom and side wear pad cassettes 2. and remove pads as necessary.
- Replace the wear pads by tapping them into 3. place with a hammer.
- Tap the bottom and side wear pad cassettes in place and secure them with bolts.
- Tap the top wear pad cassette in place and secure it with bolts.

FRONT WEAR PAD REPLACEMENT

- 1. Unbolt and remove the telescope cylinder pins.
- 2. Unbolt and remove the base end slave cylinder pin.
- 3. Unbolt and remove the platform cylinder pin, and set the platform on the ground.
- 4. Unbolt the moving anchor.
- Move the platform, slave cylinder and moving anchor to the side.
- 6. Pull out the telescope boom until the wear pads are accessible.
- 7. Unbolt and remove the wear pads.
- 8. Secure the replacement wear pads to the inner telescope boom.
- 9. Fully slide in the telescope inner boom.
- 10. Secure the moving anchor to the telescope boom.
- 11. Position the platform in place and secure it with platform cylinder pin and bolts.
- 12. Secure base end of slave cylinder in place with slave cylinder pin and bolts.
- Secure the telescope cylinder (rod and base ends) with telescope cylinder pins and bolts.

LIFT CYLINDER

The lift cylinders are the double-acting type. During operation, the cylinders should not leak, although a slight dampness from out of the rod seal is acceptable. The pivot pins should be checked for wear and the pivot pin bolts checked for security. The cylinder and counterbalance valve should be checked and inspected for oil leakage, damage and security.

LIFT CYLINDER SEAL REPLACEMENT (CYLINDER IN-PLACE)

NOTE: For lower lift cylinder, counterweight must be removed. Refer to Counterweight Removal in this section.

NOTE: Replacement of the bearing ring at the base of the piston rod is recommended when seals are replaced. Examine the rod for scoremarks and damage. This is most easily achieved by extending the cylinder and examining the protruding rod.

- Support the boom and release the cylinder pressure.
- 2. Clean the cylinder end and loosen the cylinder end cap. Loosen the end cap several turns.
- Remove the rod end pin and support the cylinder barrel.
- 4. Remove the end cap and withdraw it carefully over the piston rod. Ensure that no dirt enters the system.
- 5. Replace the seals in the end cap and replace the end cap. Ensure not to damage the rod surface.
- 6. Bleed the cylinder by allowing air to escape around the end cap threads.
- 7. Clean the counterbalance valves and examine for signs of leakage.
- 8. Raise and lower the boom and check the cylinder operation.

NOTE: For lower lift cylinder, counterweight must be installed. Refer to Counterweight Installation in this section.

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LIFT CYLINDER SEAL REPLACEMENT (CYLINDER REMOVED)

NOTE: For lower lift cylinder, counterweight must be removed. Refer to Counterweight Removal in this section.

NOTE: Replacement of the bearing ring at the base of the piston rod is recommended when seals are replaced. Examine the rod for scoremarks and damage. This is most easily achieved by extending the cylinder and examining the protruding rod.

- 1. Support the boom and release the cylinder pressure.
- 2. Remove the lift cylinder pins, disconnect the hoses and remove lift cylinder.
- Clean the cylinder end and loosen the cylinder end cap. Loosen the end cap several turns.
- 4. Remove the end cap and withdraw it carefully over the piston rod. Ensure that no dirt enters the system.
- 5. Replace the seals in the end cap and replace the end cap. Ensure not to damage the rod surface.
- 6. Bleed the cylinder by allowing air to escape around the end cap threads.
- 7. Clean the counterbalance valves and examine for signs of leakage.
- 8. Install the lift cylinder pins, connect the hoses and install lift cylinder.
- Raise and lower the boom and check the cylinder operation.

NOTE: For lower lift cylinder, counterweight must be installed. Refer to Counterweight Installation in this section.

LIFT CYLINDER COUNTERBALANCE VALVE CHECK

- 1. Fully raise one of the booms.
- Press the emergency stop button, and activate the respective boom control lever a few times to dissipate residual pressure.

If the boom begins to move, the valve is faulty and the cartridge should be replaced.

- 3. Fully raise the other boom.
- Press the emergency stop button, and activate the respective boom control lever a few times to dissipate residual pressure.

If the boom begins to move, the valve is faulty and the cartridge should be replaced.

IMPORTANT: When replacing the counterbalance valve cartridge, support the boom with a forklift or similar device.

LIFT CYLINDER COUNTERBALANCE VALVE REPLACEMENT

- 1. Support appropriate boom cylinder with boom cylinder brace.
- Release pressure from appropriate cylinder from ground control valve bank.
- 3. Disconnect and remove counterbalance valve block.
- 4. Replace valve seals.
- 5. Install counterbalance valve block and connect hoses.
- 6. Raise appropriate boom and remove boom cylinder brace.

LEVELLING CYLINDERS

The levelling cylinders are of the double-acting type with seals at both ends. It is recommended that the seals are replaced whenever the cylinder is serviced.

LEVELLING CYLINDER SEAL REPLACEMENT

- 1. Lower the booms and support the platform.
- 2. Disconnect hoses to the levelling cylinder (master or slave).
- Remove retaining bolts and pins from rod and base ends of the levelling cylinder.
- Remove the end cap from the cylinder. Pull the cap and rod straight out of the cylinder barrel.
- 5. Remove the split-pin and nut from the end of the rod. Slip off the collar.
- 6. Examine the seals and the rod for signs of damage or wear.
- 7. Remove the seals and install new set.
- 8. Slip on collar and install the split-pin and nut on the end of the rod.
- Slide the cylinder cap and rod straight into the cylinder barrel. Install the end cap to the cylinder.
- 10. Install levelling pins and secure them in place with retaining bolts.
- 11. Connect hoses to levelling cylinder.
- 12. Bleed the levelling system.

BLEEDING THE LEVELLING SYSTEM



Release the bleed nipple slowly. Oil will be ejected at force from the bleed nipple while bleeding the system.

NOTE: One person is required to operage the platform levelling control and one to bleed the system.

- Check the hydraulic oil level with the booms fully lowered. Add oil, if required.
- 2. Loosen the bleed nipple at the base of the levelling cylinder with a 4mm hex head wrench.
- With power on, operate the platform levelling lever so that the platform moves fully backwards and fully forwards to expel air from the system. Repeat until all air is expelled from the system.
- 4. Tighten the bleed nipple and add hydraulic oil as needed.

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SECTION: 5 TROUBLESHOOTING



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| General Troubleshooting Tips | 5 | -3 | 3 |
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| Troubleshooting Chart | 5 | -4 | 1 |

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GENERAL TROUBLESHOOTING TIPS

ing items:

- Check that battery connections are secure and battery is fully charged.
- Check that the Emergency Stop Button is released (pulled up).
- Check that hydraulic fluid is at the correct level.
- Check that the Emergency Lowering Valve is in normal operation position.
- Check that the Motor Release Valve is closed.

Before investigating a malfunction, check the follow- Common Causes of Hydraulic System Malfunctions:

- Incompatible hydraulic fluids mixed, destroying the additives and causing varnish build up resulting in the valves to stick.
- Water in the hydraulic fluid due to a damp climate.
- Improper hydraulic fluid used; viscosity too high cold climates, viscosity too low warm climates.

NOTE: Shell TELLUS 22 is a multiple viscosity oil that is light enough for cold climates and resists thinning in warm climates.

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TROUBLESHOOTING CHART

TROUBLESHOOTING CHART (CONTINUED)

| Problem | Probable Cause | Solution | | |
|---------------------------|------------------------------|------------------------------------------------------------------------------------------------|--|--|
| No pump output. | 1. Broken pump drive shaft. | Replace pump. Refer to Illustrated Parts Section. | | |
| | 2. Fluid leaks. | 2. Tighten hose clamps at pump inlet. | | |
| | 3. Motor relay not engaging. | Check continuity to/ from relay. Check for proper motor relay operation and replace if broken. | | |
| | 4. Motor not turning. | 4. Check battery voltage. | | |
| | 5. Improper pressure. | 5. Adjust pressure relief valve for proper pressure. See Machine Specifications. | | |
| | 6. Faulty steer valve. | 6. Check steer valve for proper operation. Replace if required. | | |
| Hydraulic functions slow. | 1. Low pressure. | Check for low system pressure and adjust to correct pressure. See Machine Specifications. | | |
| | 2. Pump component failure. | Replace pump. Refer to Illustrated Parts Section. | | |
| | 3. Slow motor speed. | 3. Check battery voltage. | | |
| | | | | |
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TROUBLESHOOTING CHART (CONTINUED)

| Problem | Probable Cause | Solution | |
|-----------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Pump noise or squeal. | 1. Low pressure. | Check for low system pressure and adjust, if required. See Machine Specifications. | |
| | 2. Pump cavitation. | Check hydraulic reservoir oil level. | |
| No steer function. | 1. Steer valve not shifting. | Check steer valve for proper operation and repair or replace, as necessary. | |
| | 2. Faulty relief valve. | Check for low system pressure and adjust, if required. See Machine Specifications. | |
| | 3. Mechanical malfunction. | 3. Steer cylinder may not be mechanically connected to steering linkage. Check for disconnected or damaged steering linkage; connect steering linkage and/ or replace. | |
| | | | |

JBLESHOOTING CHART

TROUBLESHOOTING CHART (CONTINUED)

| | Problem | Probable Cause | Solution | |
|---|---------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| • | Unit will not go into high speed drive with platform lowered. | Check brakes are releasing properly. | Check pressure supply to brake cylinder. Install gauge in line at brake cylinder. If no pressure, consult factory. | |
| | | 2. Faulty limit switch on boom. | Check limit switch for proper operation and replace, if necessary. | |
| • | No drive function. | 1. Low battery charge. | Check battery charge and recharge if necessary. | |
| | | Motor contactor faulty or faulty continuity. | Check contactor for opera- tion and associated wiring for continuity. | |
| | | 3. Brake cylinder does not release. | Check pressure supply to brake cylinder. Install gauge in line at brake cyl- inder. If no pressure, con- sult factory. | |
| | | 4. Motor shaft key is sheared. | Inspect, repair or replace. Refer to Illustrated Parts Section. | |
| | | 5. Faulty motor. | 5. Replace drive motor. | |
| | | 6. Faulty motor controller. | 6. Replace motor controller. | |
| • | No rotate function. | Relief pressure setting too low. | Adjust system pressure. See Machine Specifications. | |
| | | Slew ring damaged or obstructed. | Check for damaged or obstructed slew ring. Repair or replace, as necessary. | |
| : | | Faulty hydraulic rotation motor or gearbox. | Check hydraulic rotation motor/ gearbox operation. | |

TROUBLESHOOTING CHART (CONTINUED)

| Problem | Probable Cause | Solution | |
|----------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--|
| No lift function. | Possibly plugged lines, cyl- inder ports or damaged cylinder packings. | Inspect, repair or replace cylinder. Refer to Illustrated Parts Section. | |
| | Relief pressure setting too low. | Adjust system pressure. See Machine Specifications. | |
| | Lift valve stuck in closed position or not getting voltage to open. | Check lift valve for proper operation. | |
| | 4. 10W volt cutout activated. | 4. Check battery charge. | |
| No lower function. | 1. Faulty lift valve. | Check lift valve for proper operation. | |
| | 2. Faulty lift holding valve | Replace lift holding valve. Refer to Illustrated Parts Section. | |
| Lift cylinders drift down. | 1. Holding valve faulty. | Replace holding valve. Refer to Illustrated Parts Section. | |
| | 2. Cylinder packing is damaged. | Replace cylinder packing. Refer to Illustrated Parts Section. | |
| | 3. Faulty emergency lowering valve. | 3. Replace emergency lower- ing valve. | |
| | | | |
| | | | |
| | | | |
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TROUBLESHOOTING CHART (CONTINUED)

| Problem | Problem Probable Cause | |
|------------------------|------------------------------------------|----------------------------------------------------------------------------------|
| No telescope function. | Relief pressure setting too low. | Adjust system pressure. See Machine Specifica- tions. |
| | Telescope boom damaged or obstructed. | Check for damaged or obstructed telescope boom. Repair or replace, as necessary. |
| | 3. No lubrication on telescope boom. | Lubricate telescope boom with penetrating oil, if necessary (WD40). |
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TROUBLESHOOTING CHART

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SECTION 6: MAINTENANCE



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Maintenance

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| Machine Function Indicators | |
| Shift Operational Checklist | |
| Monthly Operational Checklist | 6-9 |
| Semi-Annual Operational Checklist | 6-11 |

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GENERAL MAINTENANCE TIPS

- Never leave hydraulic components or hoses open. They must be protected from contamination (including rain) at all times.
- Never open a hydraulic system when there are contaminants in the air.
- ALWAYS clean the surrounding area before opening hydraulic system.
- Use only recommended lubricants. Improper lubricants or incompatible lubricants may be as harmful as no lubrication.
- Report any makeshift "fixes" which can jeopardize safety as well as lead to more costly repairs.
- Any work platform found not to be in safe operating condition should be removed from service until repaired. All repairs should be made by authorized personnel in conformance with the manufacturer's operating, maintenance, and repair manuals.

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MACHINE FUNCTION INDICATORS

Inside the electrical module on the PCB Box are a number of LED's that indicate the state of different functions on the machine. These LED's must be inspected each day before operating the machine.

Have the machine serviced before operation, if an LED does not indicate the appropriate state.

| LED | FUNCTION DESCRIPTION |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SAFE WORKING LOAD (RED) | (French Option) During precheck, this LED should be off. It it is on, it indicates an overload in the platform (cage). The indicator at the platform controls should also be lit if an overload is present. Only the safe working load should be in the platform (cage). |
| TILT (GREEN) | During precheck, the machine must be on level ground and this LED must be on. It indicates the tilt function circuit is operating correctly. Press one corner of the tilt sensor beyond its tilt angle range to sound tilt alarm: the LED must then turn off. |
| JOYSTICK MOVEMENT (RED) | During precheck, this LED must be off. When lit, it indicates that a direction has been selected by the joystick. |
| HORN (RED) | During precheck, this LED should be off. When lit, it indicates the horn has been pressed. |
| BRAKE PRESSURE (RED) | During precheck, this LED must be off. When the brakes are released, this LED will be lit. |
| LOCK-OUT OVERRIDE (RED) | During precheck, this LED should be off. When drive is selected from the platform and the footswitch is pressed, this LED is lit. It indicates the battery 80% discharge cutout is being overridden for steer and brake functions. |
| PUMP (RED) | During precheck, this LED should be off. When a hydraulic function is selected and the pump operates, this LED will be lit. |

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|-----|------|-----|------|-----|------------------|--------|
|-----|------|-----|------|-----|------------------|--------|

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SHIFT OPERATIONAL CHECKLIST

All checks must be completed before operation of the unit.

These checklists can be copied as needed to aid in performing these inspections.

| DATE: _ | | INSPECTED BY: | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| MODEL | NUMBER: | SERIAL NUMBER: | | | |
| | | GENERAL INFORMATION | | | |
| Keep inspection records up-to-date. Record and report all discrepancies to your supervisor. A dirty machine cannot be properly inspected. Keep your Simon machine clean!! | | | | | |
| | 6 TO 8 HOURS OF COULD ENDANGE | MUST BE USED AT DAILY INTERVALS OR AFTER EVERY USE, WHICHEVER IS SOONER. FAILURE TO DO SO R THE LIFE OF THE OPERATOR. ALWAYS REMEMBER, TIVE MAINTENANCE CAN SAVE MUCH MORE THAN IT | | | |
| INIT | IAL DESC | RIPTION | | | |
| | 1. | Perform a visual inspection of all machine components, i.e. structural damage, missing parts, torn or loose hoses, hydraulic fluid leaks, torn or disconnected wires, or damaged tires, etc. Open rear compartment cover to inspect components inside. | | | |
| | 2. | Check battery electrolyte level and connections. | | | |
| | 3. | Check that the lug nuts are tight. | | | |
| | 4. | Check hydraulic fluid level. The level should be at the second baffle or the cap dipstick, with the unit in stowed position. | | | |

5. Check all drive motor nuts are tight.

Continued on following page . . .

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SHIFT OPERATIONAL CHECKLIST (CONTINUED)

| INITIAL | DESCRIPTION | | |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------|--|
| | 6. | Check hoses for worn areas or chaffing. | |
| | 7. | Check hose carrier to verify that it is not bent or sagging. | |
| | 8. | Inspect safety belt connections, and check for worn areas on the belts. | |
| | 9. | Check platform rails and gate latch for damage. | |
| | 10. | Check pivot pins for security. | |
| | 11. | Check that all warning and instructional decals are legible and secure. | |
| | 12. | Check that the tilt alarm is working properly. | |
| | 13. | Check that the electrical control switches are not damaged. | |
| | 14. | When all pre-inspection checks have been completed, the operator is ready to test the ground controls for proper operation. | |
| | 15. | Check platform controls for proper operation. | |
| | 16. | With the platform raised, check for the smooth operation of low speed drive. | |

Continued on following page . . .

SHIFT OPERATIONAL CHECKLIST (CONTINUED)

ADDITIONAL MAINTENANCE REQUIREMENTS FOR SEVERE USAGE APPLICATIONS

NOTE: Do not lubricate wear pads in dusty or sandblast environments. There are boots and guards available to extend unit life in these applications. Consult Simon Aerials Service Department.

| INITIAL | DESCRIPTION | | |
|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--|
| | 17. | Inspect cylinder boots, valve spool boots, etc., for cuts or other damage after every eight (8) hours of service. Repair or replace if necessary. | |
| | 18. | Check hydraulic system for leakage after every eight (8) hours of service. | |
| WEEKLY | | | |
| INITIAL | DESCRIPTION | | |
| | 19. | Lubricate swing bearing and swing bearing gear teeth. | |
| | 20. | Check oil in reduction drive unit. | |
| | 21. | Lubricate valve spool linkage. | |

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MONTHLY OPERATIONAL CHECKLIST

All checks must be completed before operation of the unit.

| DATE: | | INSPECTED BY: |
|------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MODEL NUMBER: | | SERIAL NUMBER: |
| These checkli | sts can be c | opied as needed to aid in performing these inspections. |
| | | GENERAL INFORMATION |
| 3. A dirty mach | report all disc | crepancies to your supervisor. e properly inspected. |
| | | AWARNING |
| HOURS, ENDANG | WHICHEVE SER THE LIFE TIVE MAINTE | ST BE USED AT MONTHLY INTERVALS OR EVERY 100 R OCCURS FIRST. FAILURE TO DO SO COULD OF THE OPERATOR. ALWAYS REMEMBER, A LITTLE ENANCE CAN SAVE MUCH MORE THAN IT COSTS. |
| INITIAL | DESCRII | PTION |
| | 1. Pe | erform all checks listed on Shift Operational Checklist. |
| | | oply lubricant to swing bearing gear teeth and drive pinion gear teeth see Lubrication Chart). |
| | | spect condition of hydraulic fluid in the reservoir. Fluid should have a ear amber color. |
| | W | neck hydraulic system for leaks, examine hoses for signs of excessive ear, chafing or twisting. Adjust the hoses and/ or replace them if ecessary. |
| | br | spect the work platform and boom structure for signs of damage and roken welds. Check all bolts (including platform rotator bolts) for ghtness. |
| | | heck for structural damage, broken welds, loose bolts, improper or nakeshift repairs. |

7. Check torque of wheel lug nuts (see Specifications).

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Continued on following page . . .

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| INITIAL | DESC | CRIPTION |
|-----------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 8. | Check torque of swing bearing bolts (see Specifications). |
| | 9. | Check adjustment and security of swing drive. Check torque of swing drive mounting bolts (see Specifications). There should be only slight backlash between the turntable and undercarriage when properly adjusted. |
| | 10. | Check oil level in reduction drive unit (see Lubrication Chart). |
| | 11. | Check front wheel motors mounting bolt torque (see Specifications). |
| | 12. | Check that the boom does not drift with a full load, no hydraulic pressure (motor off) and the control valve in the "BOOM DOWN" position. |
| | 13. | Check to make sure boom sections are not dented or bent. |
| | 14. | Check that all adjustable flow valves are locked. |
| | 15. | Lubricate boom wear pads (see Lubrication Chart). |
| | 16. | Lubricate hydraulic control handle pivot pins (see Lubrication Chart). |
| | 17. | Check emergency pump operation (see Emergency Pump). |
| ADDITIONAL MAIN | ITENAN | ICE REQUIREMENTS FOR SEVERE USAGE APPLICATIONS |
| INITIAL | DESC | CRIPTION |
| | 18. | Replace hydraulic filter element. |
| | 19. | Analyze hydraulic fluid. |
| | 20. | Disassemble and pack steering spindles. |

INTENANCE

SEMI-ANNUAL OPERATIONAL CHECKLIST

All checks must be completed before operation of the unit.

| DATE: | INSPECTED BY: |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MODEL NUMBER: | SERIAL NUMBER: |
| These checklists can b | e copied as needed to aid in performing these inspections. |
| | GENERAL INFORMATION |
| Keep inspection record Record and report all A dirty machine canne Keep your Simon ma | discrepancies to your supervisor. ot be properly inspected. |
| | AWARNING |
| 500 HOURS, WI ENDANGER THE L | MUST BE USED AT SIX MONTH INTERVALS OR EVERY HICHEVER IS SOONER. FAILURE TO DO SO COULD IFE OF THE OPERATOR. ALWAYS REMEMBER, A LITTLE NTENANCE CAN SAVE MUCH MORE THAN IT COSTS. |
| INITIAL DES | CRIPTION |
| 1. | Perform all checks listed on Shift and Monthly Operational Checklists. |
| 2. | Have hydraulic fluid sample analyzed at a test laboratory. Comply with test results and recommendations to ensure long, trouble free operation. |
| | NOTE: If hydraulic fluid has been regularly maintained, it should only require changing once every year, depending on maintenance, temperature, application, duty cycle, and atmospheric conditions. |
| 3. | Clean and lubricate all electrical switches with an electrical contact cleaner and ensure that the switches operate freely in all positions. |
| 4. | Check the electrical mounting and hardware connections for security. |

5. Replace hydraulic filter element.

Continued on following page . . .

SEMI-ANNUAL OPERATIONAL CHECKLIST (CONTINUED)

| INITIAL | DESC | CRIPTION |
|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------|
| | 6. | Lubricate all valve spool linkages. |
| | 7. | Clean and lubricate the swing bearing gear teeth with Keystone Moly #29. |
| | 8. | Check that hydraulic pressure is as stated in the machine specifications. (Refer to Hydraulic Pressure Check, earlier in this section.) |
| | 9. | Lubricate steering spindles (see Lubrication Chart). |
| ADDITIONAL MAINT | ENAN | ICE REQUIREMENTS FOR SEVERE USAGE APPLICATIONS |
| | 10. | Change hydraulic fluid. |

MAINTENANCE

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SECTION 7: ILLUSTRATED PARTS



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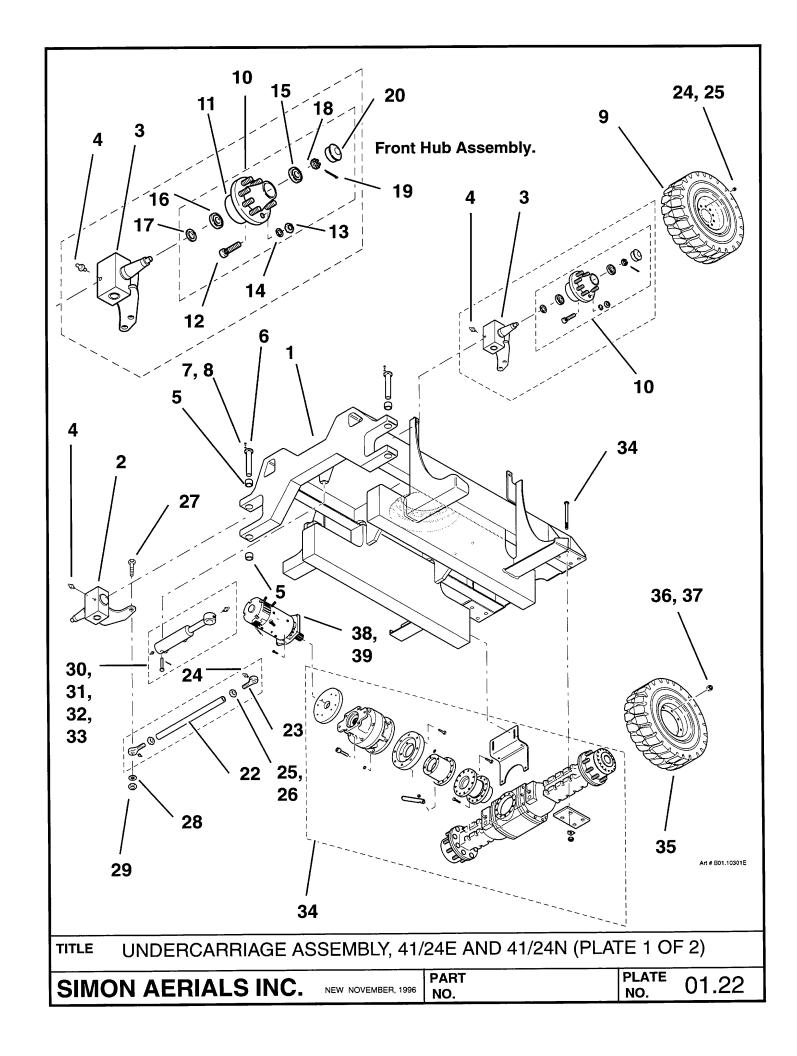
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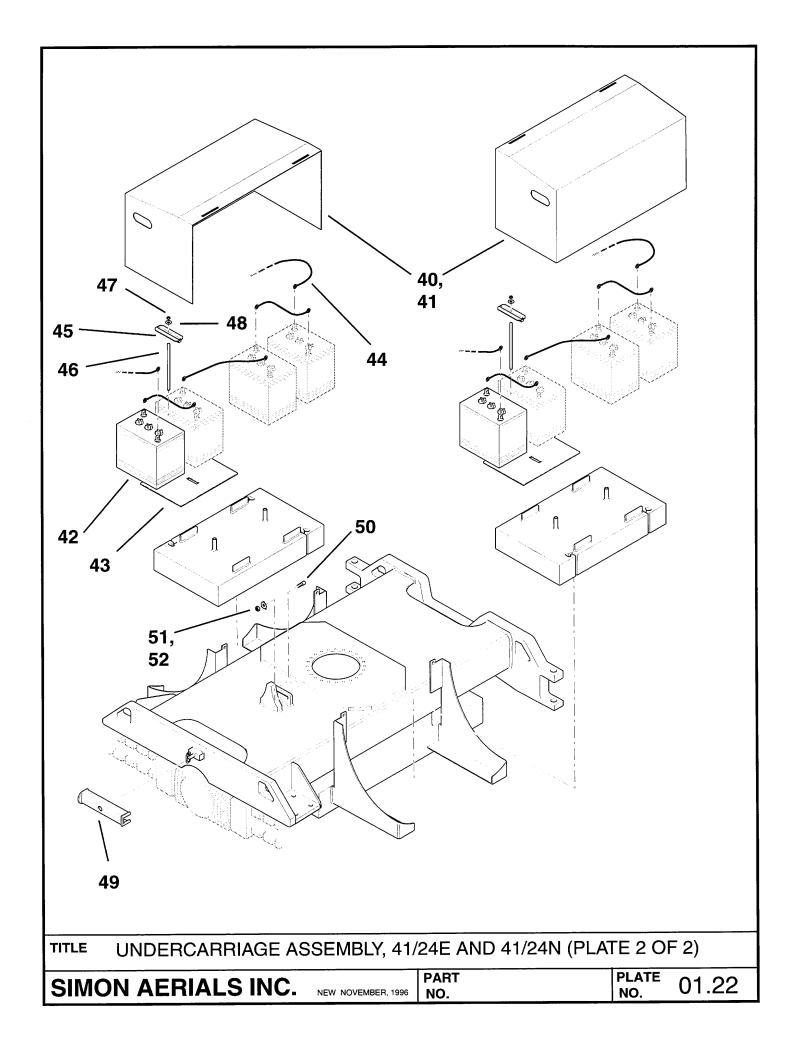
Illustrated Parts Section

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|---------------------------------------|-------|
| Superstructure Assembly | 02.31 |
| Lower Boom Assembly | 03.23 |
| Mid Boom Assembly | 03.24 |
| Upper Boom Assembly | 03.25 |
| Platform Assembly (Mechanical Rotate) | 04.75 |
| Platform Assembly (Hydraulic Rotate) | 04.76 |
| Ground Control Assembly | 07.14 |
| Manifold Block | |
| Hydraulic Tank | 07.26 |
| PCB Box | 07.27 |
| Platform Control Console | |
| Steering Cylinder | |
| Master Cylinder | |
| Slave Cylinder | 11.92 |
| Extend Cylinder | 11.93 |
| Boom Liff Cylinder | 11.94 |
| Rotation Cylinder | |

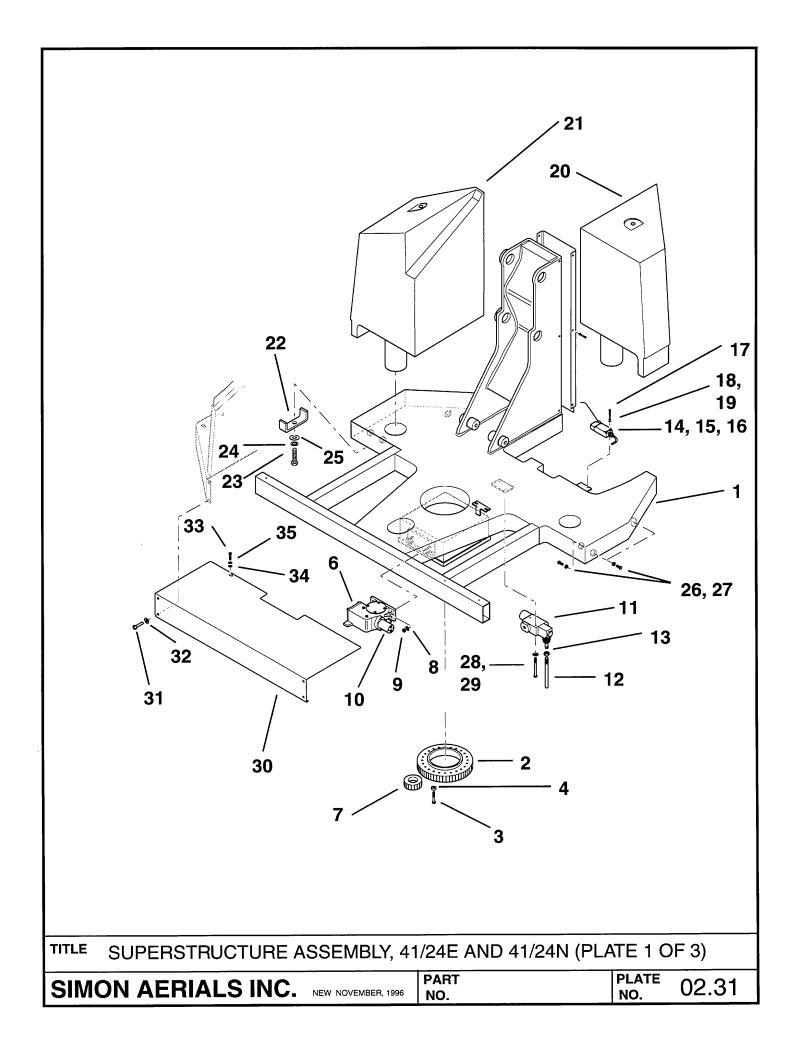
| | PARTS LIST | | | |
|-------------|--------------------------|--------------|-----------------------------------------------|--------|
| ITEM | PART NO | SEE PLATE | DESCRIPTION | QTY. |
| 1 | | | UNDERCARRIAGE WELDMENT (Chassis) | 1 |
| | 23002-0021 | | 41/24E (Standard) | |
| | GS616 | | 41/24 EN (Narrow) | |
| 2 | GS643 | | STEERING ARM, FRONT (Right) | 1 |
| 3 | GS644 | | STEERING ARM, FRONT (Left) | 1 |
| 4 | | | GREASE FITTING | 2 |
| 5 | 10288 | | BEARING, SPINDLE | 4 |
| 6 | GH550 | | PIN, STEERING | 2 2 |
| 7 | 10989 | | CAP SCREW, HEX HEAD (M20-2.5 x 50 mm) | 2 |
| 8 | 44003-0020 | | WASHER, SPRING (M20) | 2 |
| 9 | 14352 | | WHEEL AND TIRE ASSEMBLY (Steer) | 1 |
| 10 | 44022-0374 | | HUB, FRONT HUB WELDMENT | 1 |
| 11 | 11001 | | | 5 |
| 12 | 11824 | | STUD, WHEEL (M16) NUT, WHEEL (M16) | 5 |
| 13 | 44029-0077 | | WASHERS, WHEEL (M16) | 5 |
| 14 | 44000 0071 | | BEARING, HUB (Outer) | 1 |
| 15 | 44022-0371 44022-0377 | | BEARING, HOB (Outer) BEARING, HUB (Inner) | li |
| 16 17 | 44022-0377 | | OIL SEAL | 1 |
| 18 | 44022-0372 | | NUT, CASTLE | i |
| 19 | 44022-0379 | | COTTER PIN | 1 |
| 20 | 44022-0379 | | CAP | 1 |
| 21 | 44022-0376 | | TIRE | 2 |
| 22 | MS206 | | TIE ROD (Track rod) | - 1 |
| 23 | 13170 | | END, TIE ROD | 2 |
| 24 | 10170 | | GREASE FITTING | 2 |
| 25 | 44013-0070 | | NUT, TIE ROD END (M20-1.5) | 2 |
| 26 | 10288 | | WASHER, GLACIER THRUST (WC 40 DX) | 4 |
| 27 | 44002-0036 | | CAP SCREW, HEX HEAD (M8 x 20 mm) | 1 |
| 28 | 44013-0007 | l | WASHER, SPRING (M8) | 1 |
| 29 | | | NUT, HEX HEAD | 1 |
| 30 | 21002-0074 | | CYLINDER, STEER | 1 |
| 31 | 44031-0020 | 1 | BUSHING (Rod and base end) | 2 |
| 32 | | | GREASE FITTING | 2 |
| 33 | GS505 | | PIN, STEER CYLINDER | 1 |
| 34 | | | DRIVE ASSEMBLY | 1 |
| | 77022-0370 | | 41/24 E (Standard) | |
| | 18288 | | 41/24E (Narrow) | |
| 35 | 44022-0369 | | WHEEL AND TIRE ASSEMBLY (Drive) | 2 |
| 36 | 44029-0076 | | NUT, HEX HEAD (M18-1.5) | 12 |
| 37 | 44029-0079 | | WASHER, SPHERICAL (M18) | 12 |
| 38 | 18499 | | MOTOR, DRIVE | 1 1 |
| 39 | 15032 | | CAP SCREWS, SOCKET HEAD (M 8 x 50 x 10.9) | 4 |
| TITLE | UNDERC | CARRIA | GE ASSEMBLY, 41/24E AND 41/24N (PLATE 1 OF 2) | |
| PLAT NO. | E 01.22 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 PART NO. | |



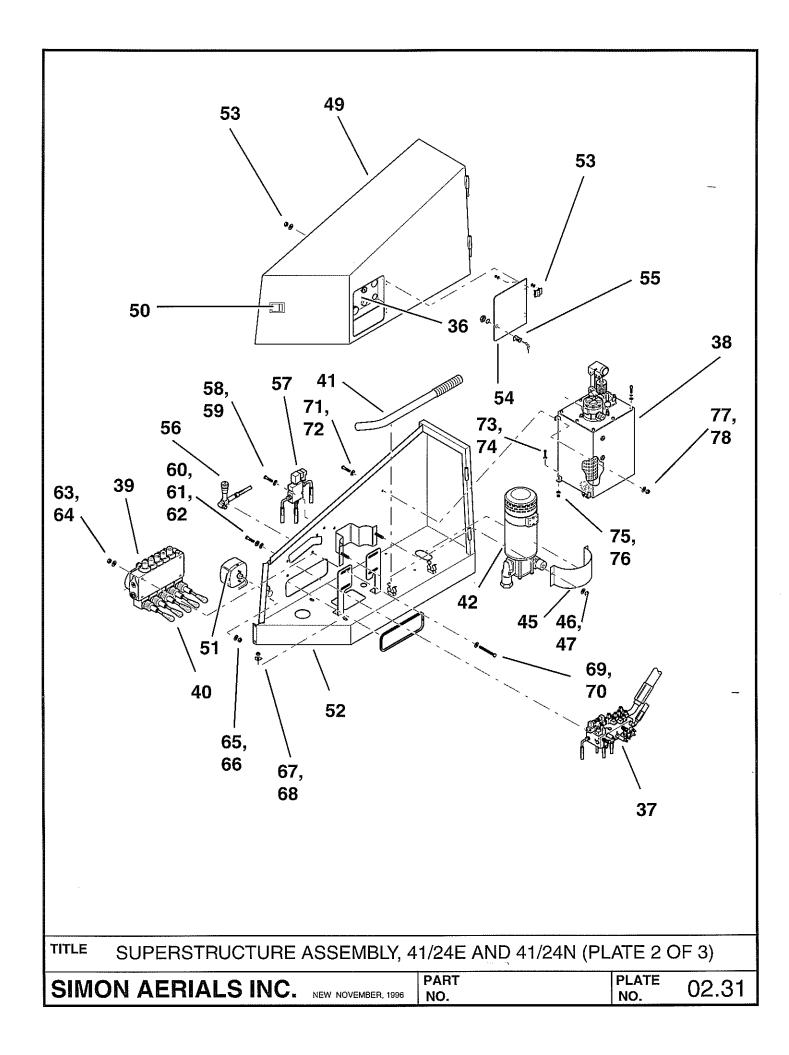
| | PARTS LIST | | | | |
|-------------|--------------------------|--------------|------------------------------------------------------------------------|---------------|--------|
| ITEM | PART NO | SEE PLATE | DESCRIPTION | | QTY. |
| 40 | | | COVER, BATTERY | | 2 |
| | GS415 | | 41/24 E (Standard) | | |
| | GS347 | | 41/24 E (Narrow) | | |
| 41 | 44019-0073 | | CLIP, HAIRPIN | | 4 8 |
| 42 43 | 03-505800 10-065800 | | BATTERY (6 Volt DC, 217 Amp/Hr) PROTECTOR, BATTERY (Neoprene, 10" x 28 | -1/2" v 1/8") | 2 |
| 43 | 10-065600 | | CABLE, BATTERY | 1-1/2 × 1/0) | |
| ++ | 03-731700 | | 14-1/2" (368 mm) long | | 2 |
| | 03-406400 | | 8" (203 mm) long | | 6 |
| | 03-731800 | | 18" (457 mm) long (Negative to Connector) | | 1 |
| | 03-731900 | | 22" (559 mm) long (Positive to Connector) | | 1 |
| 45 | 2309420 | | HOLD DOWN, BATTERY | | 4 |
| 46 | 2310420 | | ROD, BATTERY TIE DOWN | | 4 |
| 47 | 07-056016 | | NUT, WING (3/8"-16) | | 4 |
| 48 | 10-005600 | | WASHER, FLAT (3/8") | | 4 |
| 49 | FSD001 | | BRACE, SAFETY CYLINDER | | 1 |
| 50 | MS440 | | SCREW, HEX HEAD | | 2 2 |
| 51 52 | 44007-0016 44013-0009 | | NUT, HEX HEAD WASHER, SPRING | | 2 |
| 52 | 44013-0009 | | WASHER, SENING | | _ |
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| TITLE | UNDERC | CARRIAG | GE ASSEMBLY, 41/24E AND 41/24N (PLA | ATE 2 OF 2) | |
| PLAT NO. | E 01.22 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 NO. | T . | |



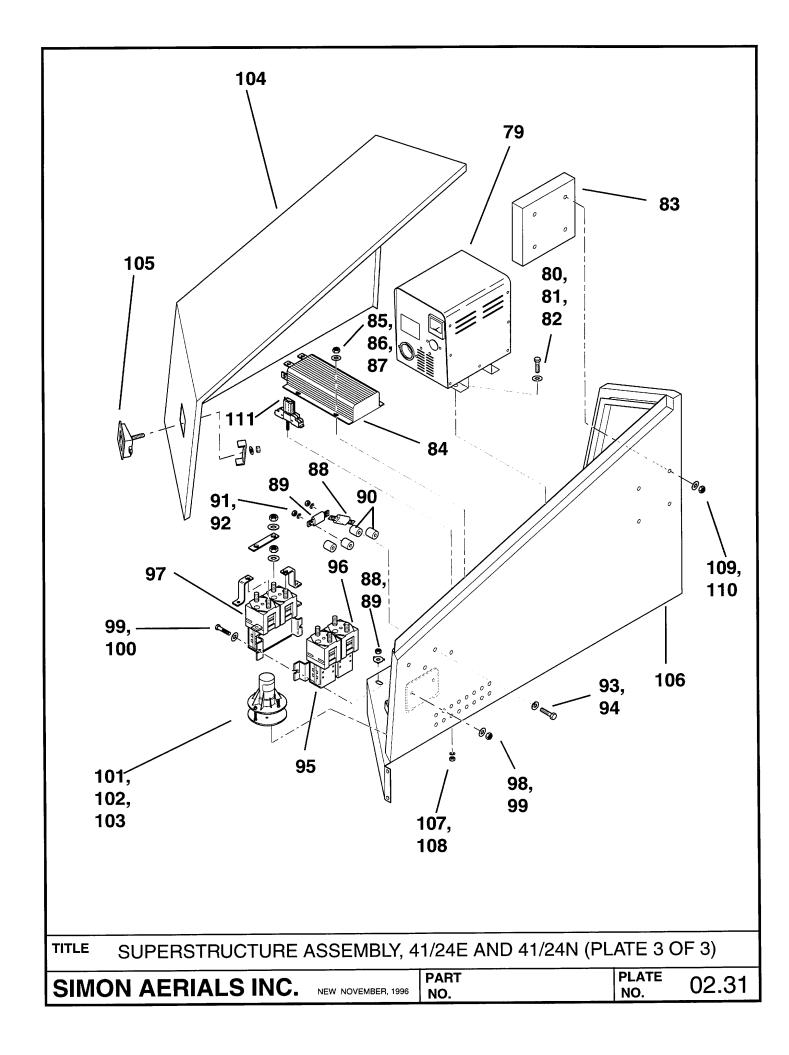
| | PARTS LIST | | | | |
|-------------|----------------------|----------------|-----------------------------------------------------|----------------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | | | SUPERSTRUCTURE WELDMENT (Plinth) | 1 | |
| - | GS139 | | 41/24E (Standard) | | |
| | GS375 | | 41/24EN (Narrow) | | |
| 2 | 18247 | | SWING BEARING (Slew ring) | 1 | |
| 3 | 11369 | | SCREW, HEX HEAD (M12 x 75 mm, Grade 10.9) | 38 | |
| 4 | 44013-0057 | | WASHER, FLAT (M12, Hardened) (Earlier models, only) | 27 | |
| 5 | 14315 | | SPACER (Earlier models, only) | 15 | |
| 6 | 14374 | | SWING REDUCER (Slew gearbox) | 1 | |
| 7 | 44023-0367 | | PINION GEAR | _ | |
| 8 | 44013-0075 | | WASHER, FLAT (M12, hardened) | 2 | |
| 9 | 11564 | | NUT, NYLOC (M12) | 2 | |
| 10 | 10854 | | MOTOR, HYDRAULIC (Slew motor) | 1 | |
| 11 | 16474 | | VALVE, DIVERTER | 1 1 | |
| 12 | 14613 | | HANDLE, DIVERTER VALVE | 1 | |
| 13 | 44007-0003 | | NUT, HEX HEAD (M8) | 6 | |
| 14 | 11110 | | BODY, LIMIT SWITCH (Boom position) | 1 | |
| 15 | 10308 | | HEAD,LIMIT SWITCH (Boom position) | 1 | |
| 16 | DS1009 | | LEVER, LIMIT SWITCH (Boom position) | | |
| 17 | 44004-0024 | | CAP SCREW, SOCKET (M6x 35) | | |
| 18 | 44013-0025 | | WASHER, LOCK (M6) | 4 | |
| 19 | 44013-0006 | | WASHER, FLAT (M6) | 1 1 | |
| 20 | | | BLOCK, BALLAST, (Left Hand) | 1 | |
| | 14029-0003 | | 41/24E (Standard) | | |
| ļ | PS358/ | | A4/O4ENI (Niowycy) | | |
| | 360/362 | | 41/24EN (Narrow) | 1 | |
| 21 | 1 4000 0004 | | BLOCK, BALLAST, (Right Hand) 41/24E (Standard) | ' | |
| | 14029-0004 PS358/ | | 41/24E (Standard) | | |
| | | | 41/24EN (Narrow) | | |
| 22 | 360/362 GS419 | | RETAINING ASSEMBLY BALLAST | 2 | |
| 23 | 44002-0097 | | SCREW, HEX HEAD (M12 x 60 mm) | 6 | |
| 24 | 44002-0097 | | NUT, HEX HEAD LOCK (M12) | 6 | |
| 25 | 44013-0009 | L | WASHER, FLAT (M12) | 6 | |
| 26 | 44002-0039 | | SCREW, HEX HEAD (M8-1.25 x 35 mm) | 2 | |
| 27 | 44013-0007 | 1 | WASHER, FLAT (M8) | 2 | |
| 28 | 44004-0109 | 1 | SCREW, HEX HEAD (M8) | 2 | |
| 29 | 1.001.0100 | | WASHER, FLAT (M8) | 2 | |
| 30 | S5189 | | COVER, PLINTH | | |
| 31 | 44002-0014 | | SCREW, HEX HEAD (M6) | | |
| 32 | 44013-0006 | | WASHER, FLAT (M6) | | |
| 33 | 440020097 | | SCREW, HEX HEAD (M12) | | |
| 34 | 44013-0009 | | WASHER, FLAT (M12) | | |
| 35 | 44013-0057 | | WASHER, LOCK (M12) | | |
| TITLE | | - | IRE ASSEMBLY, 41/24E AND 41/24N (PLATE 1 OF 3) |) | |
| PLAT NO. | E 02.31 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 PART NO. | | |



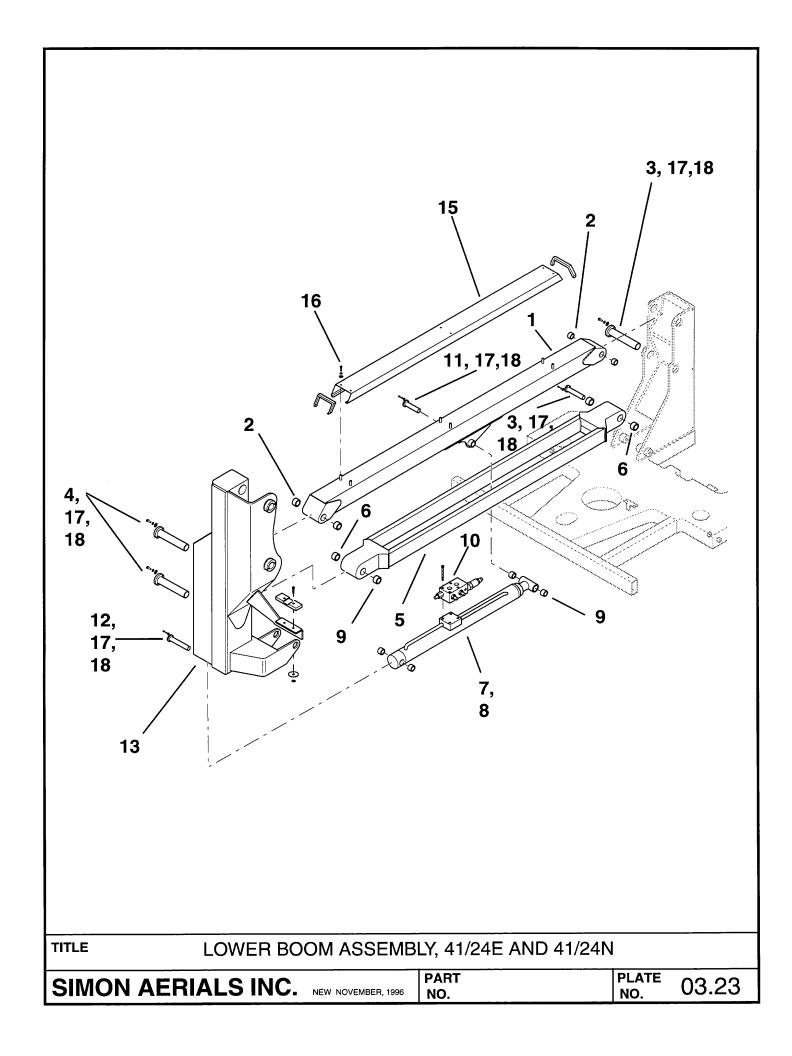
| PARTS LIST | | | | |
|------------|------------|----------------|-----------------------------------------------|------|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. |
| 36 | See Plate | 07.14 | GROUND CONTROL ASSEMBLY | 1 |
| 37 | See Plate | 07.25 | BLOCK, MANIFOLD | 1 |
| 38 | See Plate | 07.26 | TANK, HYDRAULIC | 11 |
| 39 | 14377 | | VALVE BANK ASSEMBLY, GROUND | 1 |
| 40 | 14606 | | HANDLEVER (With knob) | 1 |
| 41 | 41037-0008 | | HANDLE, EMERGENCY PUMP | 1 |
| 42 | 10319 | | POWER UNIT | 1 |
| 43 | | | MOTOR, ELECTRIC (48 Volt DC) | 1 |
| 44 | | | PUMP, HYDRAULIC | 1 |
| 45 | M041 | | CLAMP, POWER UNIT | 1 |
| 46 | 44007-0015 | | NUT, HEX HEAD LOCK (M10) | 2 |
| 47 | 44013-0016 | | WASHER, FLAT (M10) | |
| 48 | 44002-0061 | | SCREW, HEX HEAD (M10 x 110 mm long) | 2 |
| 49 | 13030-0041 | | COVER (Right hand) | 1 |
| 50 | 44039-0013 | | LATCH ASSEMBLY, DOOR | 1 |
| 51 | 12423 | | HORN, TILT ALARM |] |
| 52 | GS399 | | BASE, HYDRAULIC MODULE |] |
| 53 | 49003-0087 | | DOOR, RIGHT HAND COMPARTMENT | 1 |
| 54 | 44039-0013 | ļ | HINGE, COVER | 2 |
| 55 | 16003 | | LATCH ASSEMBLY, RIGHT HAND COMPARTMENT DOOR | |
| 56 | 41007-0004 | | VALVE, BRAKE ADJUST | 1 |
| 57 | 41028-0022 | | VALVE, 3-WAY SOLENOID (Isolator) | 1 |
| 58 | 44013-0025 | | WASHER, FLAT (M6) | 2 |
| 59 | 44002-0007 | | SCREW, HEX HEAD (M6 x 50 mm long) | 2 |
| 60 | | | SCREW, HEX HEAD | |
| 61 | | | WASHER, FLAT | |
| 62 | | | WASHER, LOCK | |
| 63 | | | WASHER, FLAT | |
| 64 | | | NUT, LOCK | |
| 65 | | | WASHER, FLAT | |
| 66 | | | NUT, LOCK | |
| 67 | | | WASHER, FLAT | |
| 68 | | | NUT, LOCK SCREW, HEX HEAD | |
| 69 70 | | [| SCREW, HEX HEAD WASHER, FLAT | |
| 70 | | | SCREW, HEX HEAD | |
| 72 | | | WASHER, FLAT | |
| 73 | | | SCREW, HEX HEAD | |
| 74 | | | WASHER, FLAT | |
| 75 | | | WASHER, FLAT | |
| 76 | | | NUT, LOCK | |
| 77 | | | WASHER, FLAT | |
| 78 | | | NUT, LOCK | |
| TITLE | SUPERS | TRUCT | JRE ASSEMBLY, 41/24E AND 41/24N (PLATE 2 OF 3 |) |
| PLAT | | | N AEDIAL CINC PART | |
| NO. | UZ.U I | CIIVIO | NACRIALS INC. NEW NOVEMBER, 1996 NO. | |



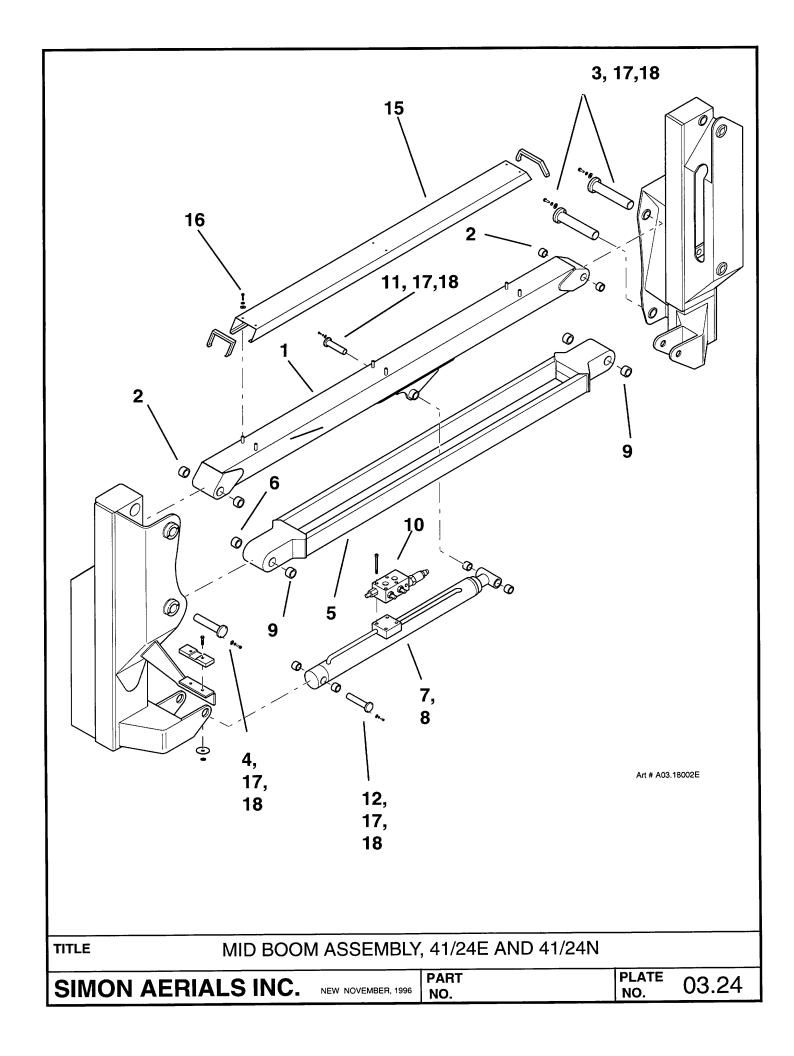
| | PARTS LIST | | | |
|-------------|-----------------------------------------------------------------|----------------|------------------------------------------------|------|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. |
| 79 | 03-408200 | | CHARGER, BATTERY (110 VAC input, 48VDC output) | 1 |
| 80 | 07-065014 | | WASHER, LOCK (1/4) | 2 |
| 81 | 07-003003 | | SCREW, HEX HEAD (1/4-20 x 3/4 long) | 2 |
| 82 | 07-062014 | | WASHER, FLAT (1/4) | 2 |
| 83 | See Plate | 07.27 | BOX, PCB | 1 |
| 84 | 16443 | | CONTROLLER, DRIVE MOTOR | 1 |
| 85 | 44007-0001 | | NUT, HEX HEAD (M5) | 4 |
| 86 | 44013-0011 | | WASHER, FLAT (M5) | 4 |
| 87 | 44013-0026 | | WASHER, SPRING (M5) | 4 |
| 88 | 18186 | | FUSE (100 Amp, marked "F2") (Pump) | 1 |
| 89 | 10862 | | FUSE (325 Amp, marked "F1") (Drive) | 1 |
| 91 | 10823 | | STAND-OFF (M8) | 4 |
| 92 | 44007-0014 | | NUT, HEX HEAD (M8) | 4 |
| 93 | 44013-0007 | | WASHER, FLAT (M8) | 8 |
| 94 | 44002-0035 | | SCREW, HEX HEAD (M8 x 16 mm long) | 4 |
| 95 | 11044 | | CONTACTOR ASSEMBLY, MOTOR (Pump) | 1 |
| 96 | 10150 | | CONTACTOR ASSEMBLY, MOTOR (Drive) | 1 |
| 97 | 12426 | | CONTACTOR ASSEMBLY, MOTOR (Forward/ Reverse) | 11_ |
| 98 | 44007-0013 | | NUT, HEX HEAD (M6) | 4 |
| 99 | 44013-0007 | | WASHER, FLAT (M8) | 8 |
| 100 | | | SCREW, HEX HEAD | 4 |
| 101 | 42013-0345 | | SENSOR, LEVEL (5°) | 1 |
| 102 | 15019 | | SCREW, HEX HEAD (M6 x 20 mm) | 4 |
| 103 | 15096 | | NUT, NYLOC (M6) | 4 |
| 104 | GS299 | | COVER, (Left hand) | 1 |
| 105 | 44039-0013 | | LATCH ASSEMBLY, COVER | 1 |
| 106 | GS298 | | BASE, LEFT HAND | 1 |
| 107 | 15098 | | NUT, NYLOC (M10) | 3 |
| 108 | 15127 | | WASHER, DISHED (M10) | 3 |
| 109 | 44007-0013 | | NUT, NYLOC (M6) | 4 |
| 110 | 44013-0001 | | WASHER, FLAT (M6) | 4 |
| 111 | 42015-0100 | | RELAY (48 Volt) | 1 |
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| TITLE | TITLE SUPERSTRUCTURE ASSEMBLY, 41/24E AND 41/24N (PLATE 3 OF 3) | | | |
| PLAT NO. | E 02.31 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 PART NO. | |



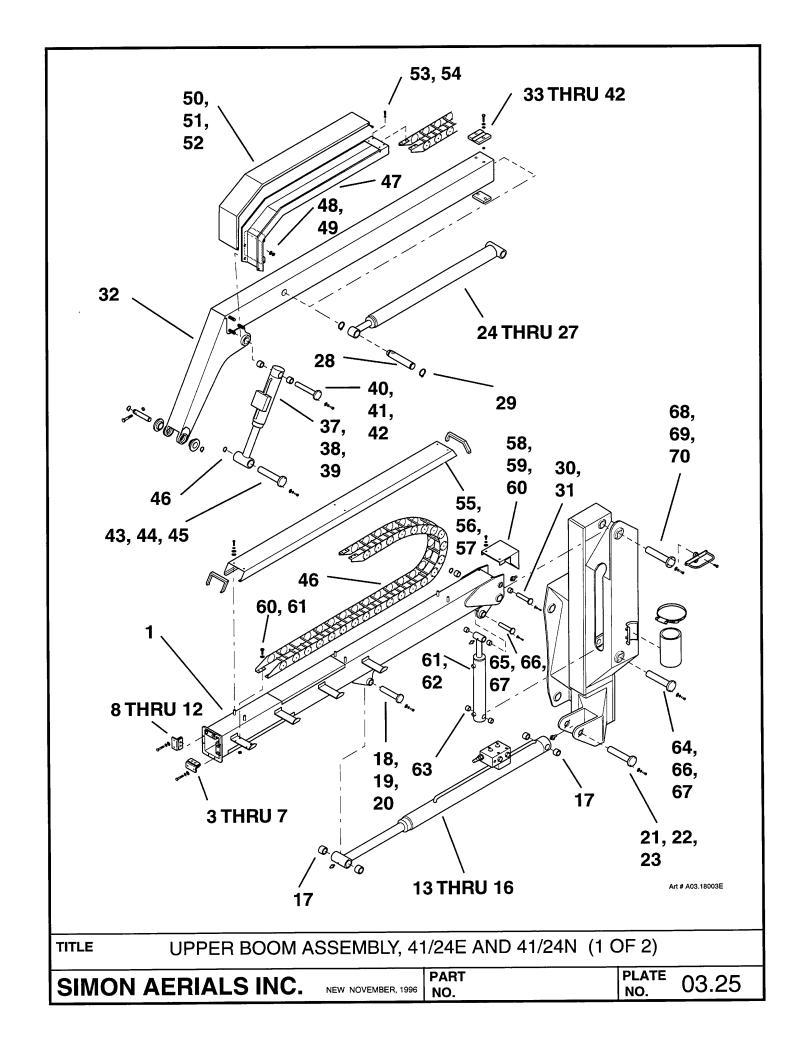
| | PARTS LIST | | | | |
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| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | GS185 | | LOWER BOOM WELDMENT (First stage) | 1 | |
| 2 | 10288 | | BUSHING (40 mm x 40 mm) | 4 | |
| 3 4 | GS472 GS315 | | PIN, BOOM PIVOT (Mid post) PIN, BOOM PIVOT (Lower post) | 2 | |
| 5 | GS178 | | ARM, PARALLEL | 1 | |
| 6 | 10288 | | BUSHING (40 mm x 40 mm) | 4 | |
| 7 | 21002-0075 | | CYLINDER, LIFT | 2 | |
| 8 9 | 41034-0088 11844 | | SEAL KIT, LIFT CYLINDER BUSHING (25 mm x 25 mm) | 1 8 | |
| 10 | 41031-0004 | | VALVE, COUNTERBALANCE (Holding / Overcenter valve) | 1 | |
| 11 | GS474 | | PIN (Lower lift cylinder, rod end) | 1 | |
| 12 | GS473 | | PIN (Upper lift cylinder, block end) | 1 | |
| 13 | GS541 | | MID POST WELDMENT (Offset post) PIN, BOOM PIVOT (Mid post) | 1 2 | |
| 14 15 | GS472 SS101 | | COVER, CABLE | 1 1 | |
| 16 | MS128 | | STUD, CABLE COVER | 4 | |
| 17 | 11085 | | SCREW, HEX HEAD(M8 x 25 mm, Grade 8.8) | 12 | |
| 18 | 14541 | | WASHER, LOCK (M8) | 24 | |
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| TITLE | = | LOWER | R BOOM ASSEMBLY, 41/24E AND 41/24N | | |
| PLAT | E 03.23 | SIMA | N AERIALS INC. NEW NOVEMBER, 1996 PART NO. | | |
| NO. | 00.20 | SIIVIO | NACRIALS IIVC. NEW NOVEMBER, 1996 NO. | | |



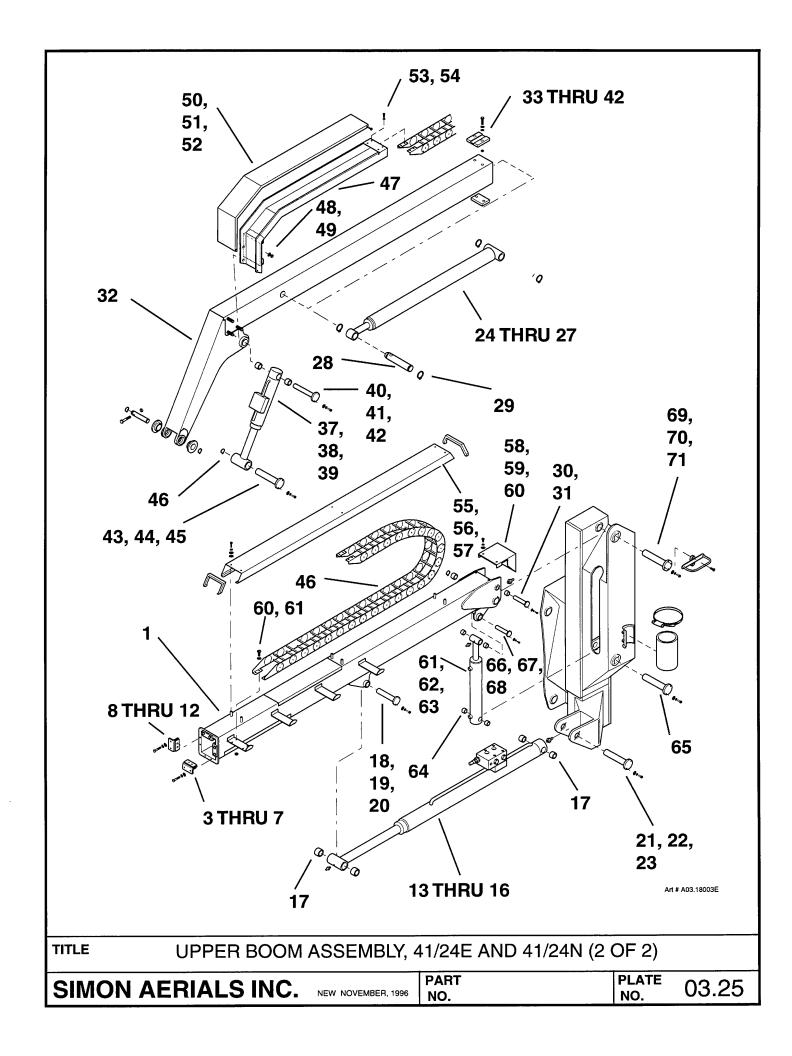
| | PARTS LIST | | | | |
|----------|--------------------------|----------------|-------------------------------------------------------------------------|--------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | GS620 | | MID BOOM WELDMENT (First stage) | 1 1 | |
| 2 3 | 10288 GS472 | | BUSHING (40 mm x 40 mm) PIN, BOOM PIVOT (Mid post) | 4 2 | |
| 4 | GS472 | | PIN, BOOM PIVOT (Lower post) | 2 | |
| 5 | GS179 | | ARM, PARALLEL | 1 | |
| 6 | 10288 | | BUSHING (40 mm x 40 mm) CYLINDER, LIFT | 4 2 | |
| 7 8 | 21002-0075 41034-0088 | | SEAL KIT, LIFT CYLINDER | 1 | |
| 9 | 11844 | | BUSHING (25 mm x 25 mm) | 8 | |
| 10 | 41031-0004 | | VALVE, COUNTERBALANCE (Holding / Overcenter valve) | 1 | |
| 11 12 | GS474 GS475 | | PIN (Lower lift cylinder, rod end) PIN (Upper lift cylinder, block end) | 1 | |
| 13 | GS602 | | UPPER-MID POST WELDMENT (Offset post) | 1 | |
| 14 | GS472 | | PIN, BOOM PIVOT (Mid post) | 2 | |
| 15 | SS102 | | COVER, CABLE STUD, CABLE COVER | 1 4 | |
| 16 17 | MS128 11085 | | SCREW, HEX HEAD(M8 x 25 mm, Grade 8.8) | 12 | |
| 18 | 14541 | | WASHER, LOCK (M8) | 24 | |
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| TITLE | | MID | BOOM ASSEMBLY, 41/24E AND 41/24N | | |
| PLAT | E 02 04 | | N A EDIAL CINC | · | |
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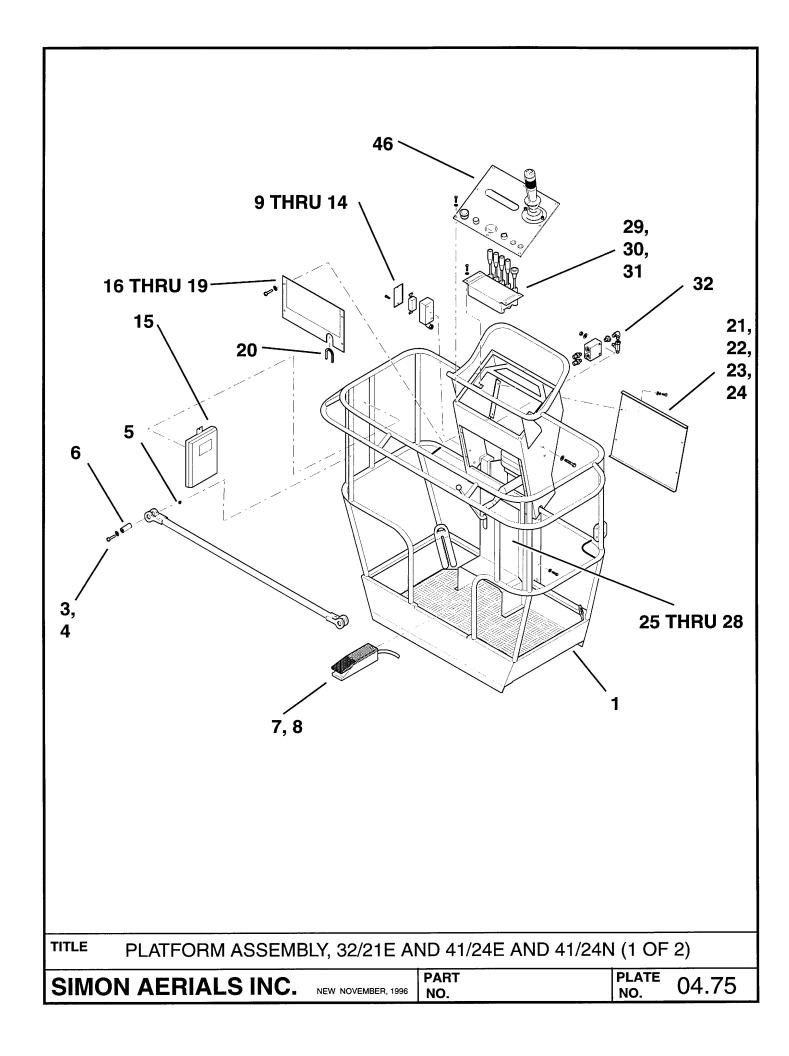
| | PARTS LIST | | | | |
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| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | GS 207 | | BOOM WELDMENT, UPPER BASE | | |
| | | | (Outer boom, second stage) | 1 | |
| 2 | 10288 | | BUSHING (40 mm x 40 mm long) | 2 | |
| 3 | PS201 | | CASSETTE, WEAR PAD (Base boom, upper & lower) | 2 | |
| 4 | 44002-0066 | | CAP SCREW, HEX HEAD | | |
| 5 6 | 44013-0008 44007-0015 | | WASHER, FLAT NUT, NYLOC | | |
| 7 | MS178 | | WEAR PAD, (Base boom, upper & lower) | 2 | |
| '8 | PS202 | | CASSETTE, WEAR PAD (Base boom, side) | 2 | |
| 9 | 44002-0016 | | CAP SCREW, HEX HEAD | | |
| 10 | 44013-0008 | | WASHER, FLAT | | |
| 11 | 44009-0015 | | NUT, NYLOC | | |
| 12 | MS179 | | WEAR PAD (Base boom, side) | 2 | |
| 13 | 21002-0075 | | CYLINDER, UPPER LIFT | 1 | |
| 14 | 41034-0088 | | SEAL KIT, LIFT CYLINDER | 1 | |
| 15 | 41031-0004 | | VALVE, COUNTERBALANCE (Holding / Overcenter valve) CAP SCREW, HEX HEAD | | |
| 16 17 | 44002-0036 44031-0028 | | BUSHING (25 mm x 25 mm long) | 4 | |
| 18 | GS474 | | PIN, UPPER LIFT CYLINDER (Rod end) | 1 | |
| 19 | 44002-0036 | | CAP SCREW, HEX HEAD | | |
| 20 | 44013-0022 | | WASHER, FLAT | | |
| 21 | GS475 | | PIN, UPPER LIFT CYLINDER (Base end) | 1 | |
| 22 | 44002-0036 | | CAP SCREW, HEX HEAD | | |
| 23 | 44013-0022 | | WASHER, FLAT | | |
| 24 | 21002-0080 | | TELESCOPE CYLINDER (Extend) | 1 1 | |
| 25 | 41034-0089 | | SEAL KIT, TELESCOPE CYLINDER VALVE. | | |
| 26 27 | 44002-0036 | | CAP SCREW, HEX HEAD | ' | |
| 28 | LS103 | | PIN, TELESCOPE CYLINDER (Rod end) | 1 | |
| 29 | 44019-0045 | | RING, RETAINING | | |
| 30 | GS476 | | PIN, TELESCOPE CYLINDER (Base end) | 1 | |
| 31 | 44002-0036 | | CAP SCREW, HEX HEAD | | |
| 32 | GS205 | | BOOM WELDMENT, TIP (Telescope boom) | 1 | |
| 33 | MS178 | | WEAR PAD (Tip boom) | 4 | |
| 34 | 44002-0036 | | CAP SCREW, HEX HEAD | | |
| 35 | 44013-0022 | | WASHER, FLAT | | |
| 36 | 44007-0015 | | NUT, NYLOC | | |
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| TITLE | UP | PER BO | OM ASSEMBLY, 41/24E AND 41/24N (1 OF 2) | | |
| PLAT | E 02.25 | CINAC | NAERIALS INC. NEW NOVEMBER, 1996 NO. | | |
| NO. | 03.23 | SIIVIO | N AERIALS INC. NEW NOVEMBER, 1996 NO. | | |



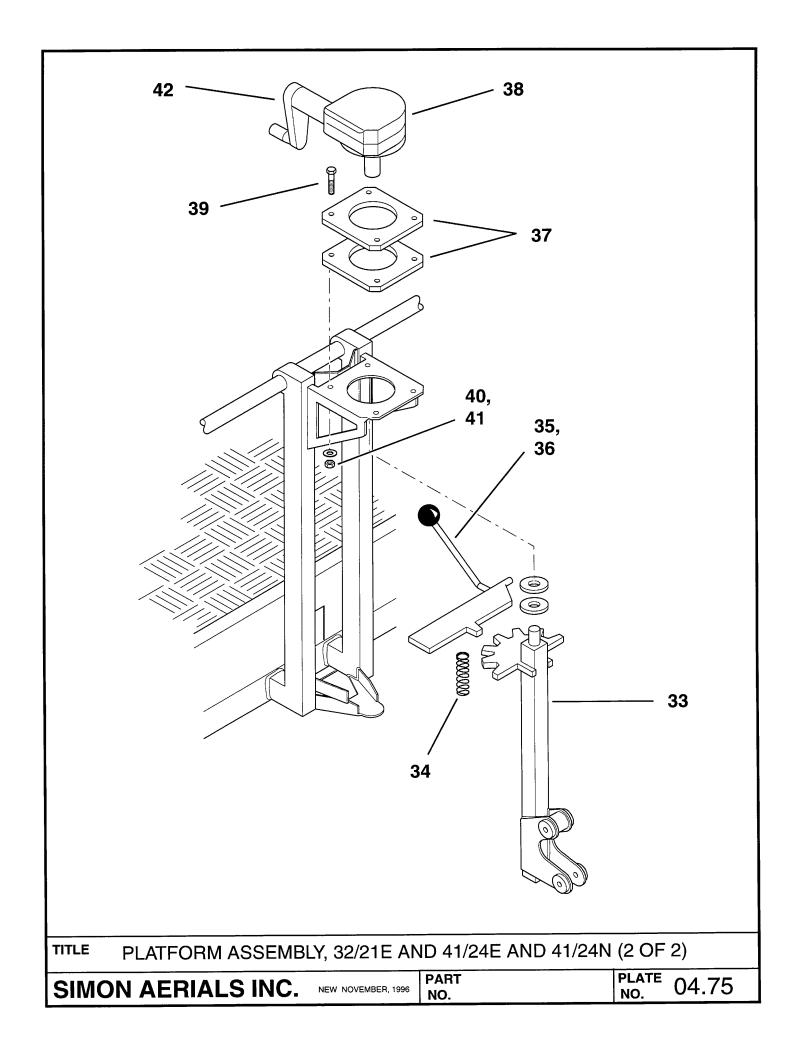
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| 37 | ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 39 | | | | SLAVE LEVEL CYLINDER | 1 | | |
| 40 GS477 41 44002-0036 42 44013-0022 WASHER, FLAT 43 GS505 PIN, SLAVE LEVEL CYLINDER (Base end) 44 44002-0065 45 44013-0022 WASHER, FLAT 46 44029-0129 CARRIER, HOSE (Flexi-track) 47 GS285 CARRIER, HOSE 48 44013-0009 WASHER, FLAT 49 44013-0009 WASHER, FLAT 51 44002-0013 CAP SCREW, HEX HEAD 52 44013-0006 WASHER, FLAT 53 44013-0006 WASHER, FLAT 55 SS100 COVER, CABLE 56 44002-0037 CAP SCREW, HEX HEAD 57 44013-0006 WASHER, FLAT 58 SS271 COVER, HOSE 59 44002-0013 CAP SCREW, HEX HEAD 50 44013-0006 WASHER, FLAT 51 GOVER, CABLE 52 CAP SCREW, HEX HEAD 53 CAP SCREW, HEX HEAD 54 CAP SCREW, HEX HEAD 55 SS100 COVER, CABLE 56 COVER, CABLE 57 COVER, END 58 SS271 COVER, END 59 44002-0013 CAP SCREW, HEX HEAD 59 44002-0013 CAP SCREW, HEX HEAD 59 44002-0013 CAP SCREW, HEX HEAD 50 COVER, CABLE 51 COVER, END 52 CAP SCREW, HEX HEAD 53 CAP SCREW, HEX HEAD 54 COVER, CABLE 55 COVER, CABLE 56 COVER, CABLE 57 COVER, CABLE 58 COVER, CABLE 69 CAP SCREW, HEX HEAD 60 CAP SCREW, HEX HEAD 61 21002-0086 MASTER LEVEL CYLINDER 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 66 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 67 CAP SCREW, HEX HEAD 68 WASHER, FLAT 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT 72 PIN, UPPER BOOM (Base end) 73 CAP SCREW, HEX HEAD 74 WASHER, FLAT 75 WASHER, FLAT 76 WASHER, FLAT 77 WASHER, FLAT 78 WASHER, FLAT 79 PIN, UPPER BOOM (Base end) 71 44013-0022 WASHER, FLAT 70 WASHER, FLAT 71 WASHER, FLAT 71 WASHER, FLAT 72 WASHER, FLAT 73 WASHER, FLAT 74 WASHER, FLAT 75 WASHER, FLAT 76 WASHER, FLAT 77 WASHER, FLAT 78 WASHER, FLAT 79 WASHER, FLAT 79 WASHER, FLAT 70 WASHER, FLAT 70 WASHER, FLAT 70 WASHER, FLAT 71 WASHER, FLAT 71 WASHER, FLAT 72 WASHER, FLAT 73 WASHER, FLAT 74 WASHER, FLAT 75 WASHER, FLAT 75 WASHER, FLAT 75 WASHER, FLAT 76 WASHER, FLAT 77 WASHER, FLAT 78 WASHER, FLAT 79 WASHER, FLAT 79 WASHER, FLAT 70 WASHER, FLAT 70 WASHER, FLAT 70 WASHER, FLAT 71 WASHER, FLAT 71 WASHER, FLAT 72 WASHER, FLAT 73 | 38 | 41034-0090 | | · · · · · · · · · · · · · · · · · · · | 1 | | |
| 44002-0036 | 39 | | | | 4 | | |
| 42 | | | | | 1 | | |
| 43 | | | | | | | |
| 44 | 220,000,000,000,000 | | | | 4 | | |
| 45 | | | | | 1 | | |
| 46 | | | | • | | | |
| Complete assembly (26 links) CARRIER, HOSE | 000000000000000000000000000000000000000 | | | | | | |
| 47 GS235 CARRIER, HOSE 48 44007-0016 NUT, LOCK (M12) 50 PS214 COVER, HOSE CARRIER 51 44002-0013 CAP SCREW, HEX HEAD 52 44013-0006 WASHER, FLAT 53 44002-0036 CAP SCREW, HEX HEAD 54 44013-0007 WASHER, FLAT 55 SS100 COVER, CABLE 56 44002-0037 CAP SCREW, HEX HEAD 57 44013-0006 WASHER, FLAT 58 SS271 COVER, END 59 44002-0013 CAP SCREW, HEX HEAD 60 44013-0006 WASHER, FLAT 61 21002-0086 CAP SCREW, HEX HEAD 62 41034-0090 WASHER, FLAT 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 66 GS476 67 44002-0036 CAP SCREW, HEX HEAD 68 44013-0022 WASHER, FLAT 69 GS472 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT 71 44013-0022 WASHER, FLAT 72 WASHER, FLAT 73 WASTER LEVEL CYLINDER (Rod end) 74 CAP SCREW, HEX HEAD 75 WASTER LEVEL CYLINDER (Rod end) 76 CAP SCREW, HEX HEAD 77 WASTER LEVEL CYLINDER (Rod end) 78 CAP SCREW, HEX HEAD 79 WASHER, FLAT 70 WASHER, FLAT 70 WASHER, FLAT 71 WASTER LEVEL CYLINDER (Rod end) 71 WASHER, FLAT 72 WASHER, FLAT 73 WASHER, FLAT 74 WASHER, FLAT 75 WASHER, FLAT 76 WASHER, FLAT 77 WASHER, FLAT 78 WASHER, FLAT 79 WASHER, FLAT 70 WASHER, FLAT 70 WASHER, FLAT 71 WASHER, FLAT 72 WASHER, FLAT 73 WASHER, FLAT 74 WASHER, FLAT 75 WASHER, FLAT 76 WASHER, FLAT 77 WASHER, FLAT 78 WASHER, FLAT 79 WASHER, FLAT 70 WASHER, FLAT 71 WASHER, FLAT | 40 | 44029-0129 | | | 1 | | |
| 48 | 47 | GS935 | | | 1 | | |
| 49 | **************** | | | | 3 | | |
| 50 | | · · | | | 3 | | |
| 51 | | | | | 1 | | |
| S3 | | | | | | | |
| 54 44013-0007 WASHER, FLAT 55 SS100 COVER, CABLE 56 44002-0037 WASHER, FLAT 57 44013-0006 WASHER, FLAT 58 SS271 COVER, END 60 44013-0006 WASHER, FLAT 61 21002-0086 WASHER, FLAT 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 67 44002-0036 CAP SCREW, HEX HEAD 68 44013-0022 WASHER, FLAT 69 GS472 PIN, UPPER BOOM (Base end) 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT | 52 | 44013-0006 | | WASHER, FLAT | | | |
| SS SS SS SS SS COVER, CABLE | 53 | 44002-0036 | | CAP SCREW, HEX HEAD | | | |
| 56 44002-0037 CAP SCREW, HEX HEAD 57 44013-0006 WASHER, FLAT 58 SS271 COVER, END 59 44002-0013 CAP SCREW, HEX HEAD 60 44013-0006 WASHER, FLAT 61 21002-0086 MASTER LEVEL CYLINDER 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 67 44002-0036 PIN, MASTER LEVEL CYLINDER (Rod end) 68 44013-0022 WASHER, FLAT 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT WASHER, FLAT PIN, UPPER BOOM (Base end) CAP SCREW, HEX HEAD WASHER, FLAT WASHER, FLAT | 54 | 44013-0007 | | • | | | |
| 57 44013-0006 WASHER, FLAT 58 SS271 COVER, END 59 44002-0013 CAP SCREW, HEX HEAD 60 44013-0006 WASHER, FLAT 61 21002-0086 WASHER, FLAT 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 66 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 67 44002-0036 CAP SCREW, HEX HEAD 68 44013-0022 WASHER, FLAT 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT WASHER, FLAT WASHER, FLAT | l i | | | , | | | |
| 58 SS271 COVER, END 59 44002-0013 CAP SCREW, HEX HEAD 60 44013-0006 WASHER, FLAT 61 21002-0086 MASTER LEVEL CYLINDER 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 66 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 67 44002-0036 CAP SCREW, HEX HEAD 68 44013-0022 WASHER, FLAT 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT WASHER, FLAT WASHER, FLAT | ********************* | | | | 4 | | |
| 59 44002-0013 CAP SCREW, HEX HEAD 60 44013-0006 WASHER, FLAT 61 21002-0086 MASTER LEVEL CYLINDER 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 67 44002-0036 CAP SCREW, HEX HEAD 68 44013-0022 WASHER, FLAT 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT WASHER, FLAT | | | | | 1 1 | | |
| 60 | | | | | | | |
| 61 21002-0086 62 41034-0090 SEAL KIT, MASTER LEVEL CYLINDER 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 66 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 67 44002-0036 CAP SCREW, HEX HEAD WASHER, FLAT 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT | | | | | | | |
| 62 41034-0090 63 18247 64 14285 65 GS476 66 GS476 67 44002-0036 68 44013-0022 69 GS472 70 44002-0036 71 44013-0022 SEAL KIT, MASTER LEVEL CYLINDER VALVE, DUAL RELIEF BUSHING (20 mm x 20 mm long) PIN, MASTER LEVEL CYLINDER (Base end) PIN, MASTER LEVEL CYLINDER (Rod end) CAP SCREW, HEX HEAD WASHER, FLAT PIN, UPPER BOOM (Base end) CAP SCREW, HEX HEAD WASHER, FLAT VALVE, DUAL RELIEF BUSHING (20 mm x 20 mm long) PIN, MASTER LEVEL CYLINDER (Base end) CAP SCREW, HEX HEAD WASHER, FLAT VALVE, DUAL RELIEF BUSHING (20 mm x 20 mm long) PIN, MASTER LEVEL CYLINDER (Base end) CAP SCREW, HEX HEAD WASHER, FLAT | | | | · · · · · · · · · · · · · · · · · · · | | | |
| 63 18247 VALVE, DUAL RELIEF 64 14285 BUSHING (20 mm x 20 mm long) 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 66 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 67 44002-0036 CAP SCREW, HEX HEAD 68 44013-0022 PIN, UPPER BOOM (Base end) 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT | | | | 100 19 19 19 19 19 19 19 19 19 19 19 19 19 | 1 | | |
| BUSHING (20 mm x 20 mm long) PIN, MASTER LEVEL CYLINDER (Base end) PIN, MASTER LEVEL CYLINDER (Rod end) CAP SCREW, HEX HEAD WASHER, FLAT PIN, UPPER BOOM (Base end) CAP SCREW, HEX HEAD WASHER, FLAT W | | | | | 1 | | |
| 65 GS476 PIN, MASTER LEVEL CYLINDER (Base end) 66 GS476 PIN, MASTER LEVEL CYLINDER (Rod end) 67 44002-0036 CAP SCREW, HEX HEAD 68 GS472 PIN, UPPER BOOM (Base end) 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT | | | | | 4 | | |
| 67 | | | | | 1 | | |
| 68 | | GS476 | | PIN, MASTER LEVEL CYLINDER (Rod end) | 1 | | |
| 69 GS472 PIN, UPPER BOOM (Base end) 70 44002-0036 CAP SCREW, HEX HEAD 71 44013-0022 WASHER, FLAT | | | | CAP SCREW, HEX HEAD | | | |
| 70 44002-0036 71 44013-0022 CAP SCREW, HEX HEAD WASHER, FLAT | 68 | 44013-0022 | | ł | | | |
| 71 44013-0022 WASHER, FLAT | 69 | | | | 1 | | |
| | | | | | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | 71 | 44013-0022 | | WASHEH, FLAT | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | | | |
| TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | | | |
| | TITLE | TITLE UPPER BOOM ASSEMBLY, 41/24E AND 41/24N (2 OF 2) | | | | | |
| PLATE OF OF OUR ON A FINAL OUR OF PART | | | | | | | |
| PLATE NO. 03.25 SIMON AERIALS INC. NEW NOVEMBER, 1996 NO. | | ^L 03.25 | SIMO | | | | |



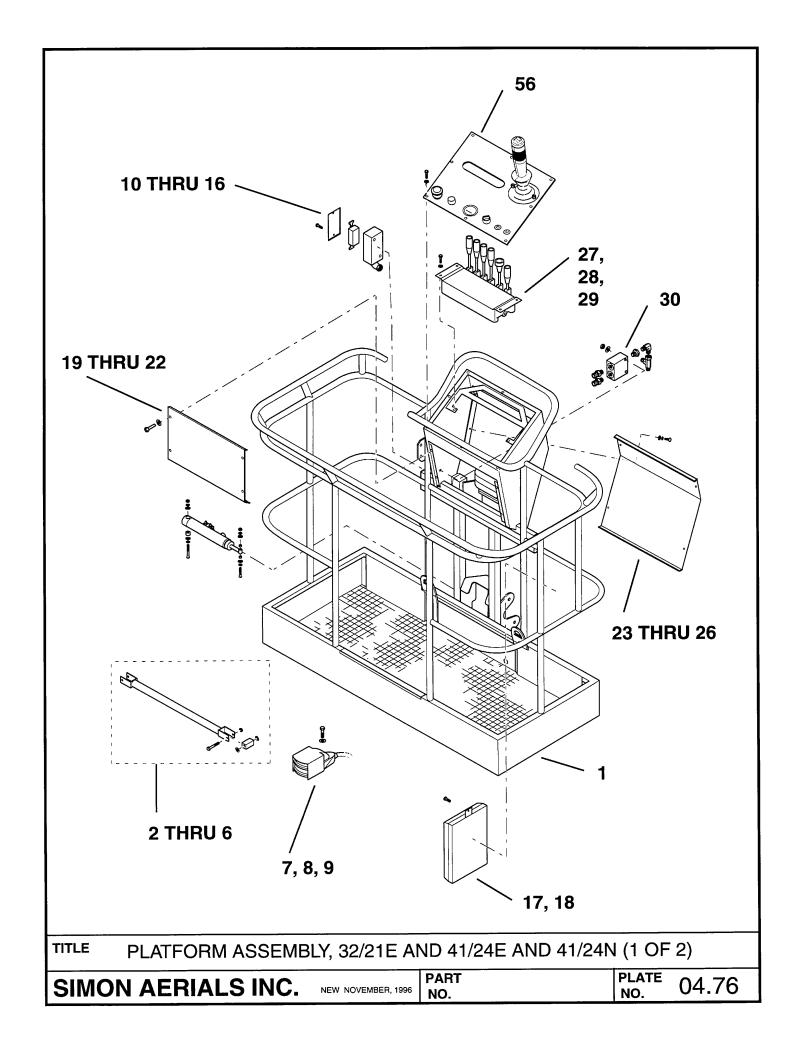
| | PARTS LIST | | | | | |
|-------------|------------|----------------|----------------------------------------------------|------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 1 | 13016-0061 | | PLATFORM WELDMENT | 1 | | |
| 2 | PS631 | - | BAR, GATE | 1 | | |
| 3 | 44002-0075 | | CAP SCREW, HEX HEAD (M6 x 65mm) | 1 | | |
| 4 | 44013-0006 | | WASHER, FLAT(M6) | 1 | | |
| 5 | 44007-0013 | | NUT, HEX LOCK (M6) | 1 | | |
| 6 | 44016-0061 | | SPACER (Nylon roller) | 1 | | |
| 7 | 14269 | | SWITCH ASSEMBLY, FOOT (Single pole, double throw) | 1 | | |
| 8 | 42012-0061 | | CABLE, ELECTRICAL | | | |
| | | | (Bulk item, 6 Ft [1.8M] required this application) | A.R. | | |
| 9 | 03-062100 | | BOX, DUPLEX OUTLET (Weatherproof) | 1 1 | | |
| 10 | 03-067000 | | OUTLET, DUPLEX (125 Volt AC, 20 Amp) | 1 | | |
| 11 | 03-062200 | | COVER, DUPLEX OUTLET (Weatherproof) | 1 | | |
| 12 | 07-090156 | | CAP SCREW, BUTTON HEAD (1/4"-20 x 5/8", Stn Stl.) | 1 | | |
| 13 | 07-050014 | | NUT, STOP, (1/4"-20, Grade 5) | 2 | | |
| 14 | 03-041000 | | GRIP, CORD (1/2", with 3/8" to 7/16" seal) | 1 | | |
| 15 | 44029-0064 | | BOX, TECHNICAL MANUAL STORAGE | 1 | | |
| 16 | PS261 | | COVER, FRONT (Upper) | 1 | | |
| 17 | 44002-0335 | | CAP SCREW, HEX HEAD (M5 x 16mm) | 1 1 | | |
| 18 | 44013-0006 | | WASHER, FLAT (M6) | 1 | | |
| 19 | 44002-0007 | | NUT, HEX LOCK (M5) | 1 1 | | |
| 20 | 44029-0014 | | EDGE GUARD | | | |
| 21 | PS262 | | COVER, REAR | 1 | | |
| 22 | 44002-0335 | | CAP SCREW, HEX HEAD (M5 x 16mm) | 1 1 | | |
| 23 | 44013-0006 | | WASHER, FLAT (M6) | 1 | | |
| 24 | 44002-0009 | | NUT, HEX LOCK (M5) | 1 | | |
| 25 | PS473 | | COVER, FRONT (Lower) | 1 | | |
| 26 | 44002-0335 | | CAP SCREW, HEX HEAD (M5 x 16mm) | 1 | | |
| 27 | 44013-0006 | | WASHER, FLAT(M6) | 1 | | |
| 28 | 44002-0009 | | NUT, HEX LOCK (M5) | 1 1 | | |
| 29 | | | VALVE ASSEMBLY | 1 | | |
| | 14378 | | 32/21E | | | |
| | 14379 | | 41/24E | | | |
| 30 | 44002-0029 | | CAP SCREW, HEX SOCKET (M8 x 65mm) | | | |
| 31 | 44013-0007 | | WASHER, FLAT (M8) | | | |
| 32 | 41009-0028 | | VALVE ASSEMBLY, DRIVE | 1 | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| TITLE | PLATFO | RM AS | SEMBLY, 32/21E AND 41/24E AND 41/24N (1 OF 2) | | | |
| PLAT NO. | | | NAERIALS INC. NEW NOVEMBER, 1996 PART NO. | | | |



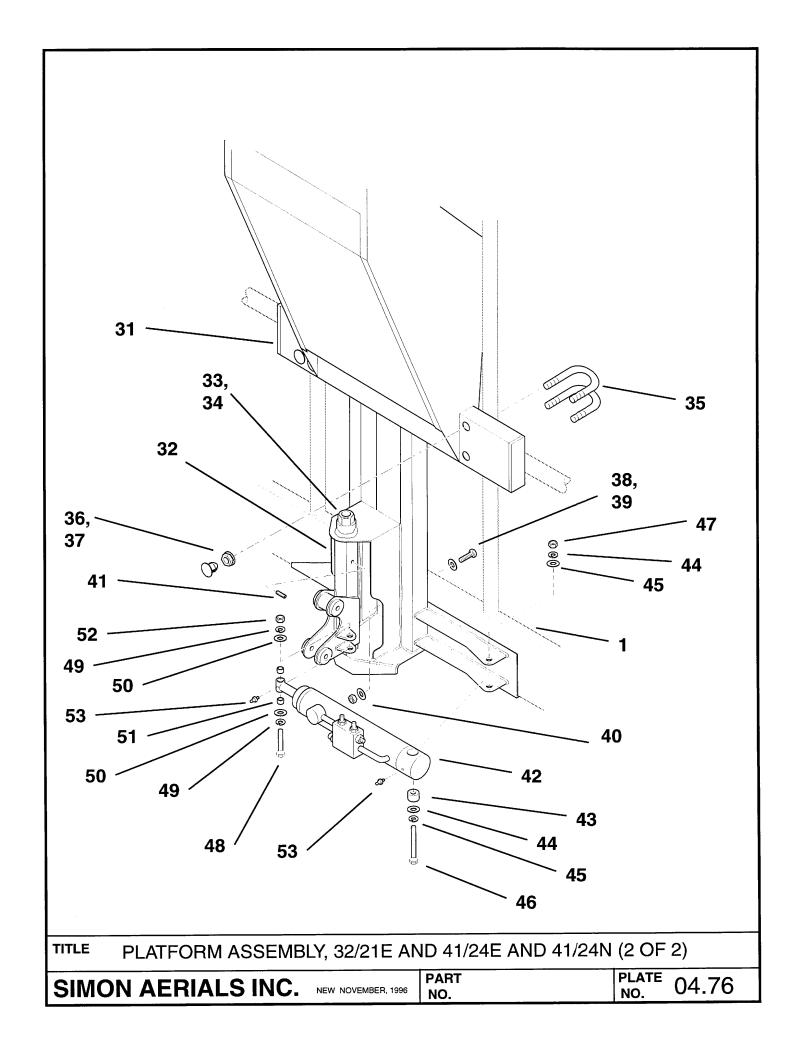
| | PARTS LIST | | | | | |
|-------------|----------------------------------------------------------------|----------------|--------------------------------------------------------------------------------|------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 43 | DS336 | | POST, SWIVEL | 1 | | |
| 34 | 10564 | | SPRING, TENSION | 2 | | |
| 35 | MS253 | | ARM, ROTATION LEVER | 1 1 | | |
| 36 | GS267 | | PLATE, TONGUE ASSEMBLY PLATE, MOUNTING | | | |
| 37 38 | P89/M88 41023-0118 | | GEARBOX, ROTATION | | | |
| 39 | 44002-0068 | | SCREW, HEX HEAD (M10 x 50mm) | 4 | | |
| 40 | 44007-0015 | l | NUT, NYLOC (M10) | 4 | | |
| 41 | 44013-0008 | | WASHER, FLAT (M10) | 8 | | |
| 42 | 18622 | | HANDLE, ROTATION | 1 | | |
| 43 | 17716 | | ALARM, TILT | 1 | | |
| 44 | 44031-0028 | | BUSHING, (25 x 25) (for level pin) | 3 | | |
| 45 | 10288 | | BUSHING, (40 x 50) (for platform/cage mount pin) | • | | |
| | | | The following items are not included as part of the Platform Assembly:: | | | |
| 46 | | 09.25 | CONSOLE ASSEMBLY, PLATFORM CONTROL | 1 | | |
| | | | | | | |
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| | | | | | | |
| TITLE | TITLE PLATFORM ASSEMBLY, 32/21E AND 41/24E AND 41/24N (2 OF 2) | | | | | |
| PLAT NO. | ^E 04.75 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 NO. | | | |



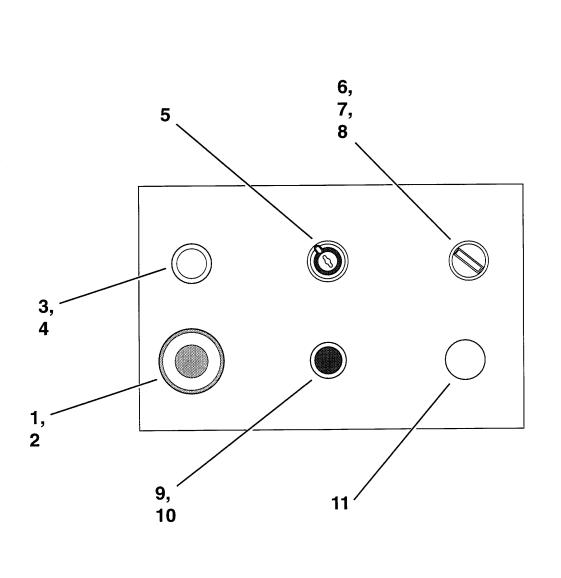
| PARTS LIST | | | | | |
|-------------|------------|----------------|----------------------------------------------------|------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | 13016-0073 | | PLATFORM WELDMENT | 1 | |
| 2 | 33014-0075 | | BAR, GATE | 1 | |
| 3 | 44002-0009 | | CAP SCREW, HEX HEAD (M6 x 65) | 1 | |
| 4 | 44013-0006 | | WASHER, FLAT (M6) | 1 | |
| 5 | 44007-0013 | | NUT, HEX LOCK (M6) | 1 | |
| 6 | 44016-0061 | | SPACER (Nylon roller) | 1 | |
| 7 | 42002-0311 | | SWITCH ASSEMBLY, FOOT (Single pole, double throw) | 1 | |
| 8 | 44002-0315 | | COVER, SWITCH (Guard type) | 1 1 | |
| 9 | 42012-0041 | | CABLE, ELECTRICAL | | |
| | | | (Bulk item, 6 Ft [1.8M] required this application) | A.R. | |
| 10 | 03-062100 | | BOX, DUPLEX OUTLET (Weatherproof) | 1 | |
| 11 | 03-067000 | | OUTLET, DUPLEX (125 Volt AC, 20 Amp) | 1 | |
| 12 | 03-062200 | | COVER, DUPLEX OUTLET (Weatherproof) | 1 | |
| 13 | 07-090156 | | CAP SCREW, BUTTON HEAD (1/4"-20 x 5/8", Stn Stl.) | 1 1 | |
| 14 | 07-050014 | | NUT, STOP, (1/4"-20, Grade 5) | 2 | |
| 15 | 03-041000 | | GRIP, CORD (1/2", with 3/8" to 7/16" seal) | 1 | |
| 16 | 03-055500 | | NUT, CONDUIT LOCK | 1 | |
| 17 | 44029-0064 | | BOX, TECHNICAL MANUAL STORAGE | 1 | |
| 18 | | | RIVET, POP | 4 | |
| 19 | 49003-0234 | | COVER, FRONT | 1 | |
| 20 | 44002-0335 | | CAP SCREW, HEX HEAD (M5 x 16)) | 1 | |
| 21 | 44013-0011 | | WASHER, FLAT (M5) | 1 | |
| 22 | 44007-0001 | | NUT, HEX LOCK (M5) | 1 | |
| 23 | 49003-0236 | | COVER, REAR | 11_ | |
| 24 | 44002-0335 | | CAP SCREW, HEX HEAD (M5 x 16) | 1 | |
| 25 | 44013-0011 | | WASHER, FLAT (M5) | 1 1 | |
| 26 | 44007-0001 | | NUT, HEX LOCK (M5) | 1 | |
| 27 | | | VALVE ASSEMBLY | 1 | |
| | 31003-0095 | | 32/21E | | |
| | 31003-0095 | | 41/24E | | |
| 28 | 44002-0029 | | CAP SCREW, HEX SOCKET (M8 x 65) | | |
| 29 | 44013-0007 | | WASHER, FLAT (M8) | | |
| | | | | | |
| | | | | | |
| | | | | | |
| TITLE | PLATF(| ORM AS | SEMBLY, 32/21E AND 41/24E AND 41/24N (1 OF 2) | | |
| PLAT NO. | E 04.76 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 NO. | | |



| | PARTS LIST | | | | | |
|----------|------------------------------------------------------|----------------|-------------------------------------------------------------------|------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 30 | 41009-0028 | OLOTION | VALVE ASSEMBLY, DRIVE | 1 | | |
| | | | | | | |
| 31 | 13017-0065 | | CRADLE ASSEMBLY | 1 | | |
| 32 | GS628 | | POST, ROTATION | | | |
| 33 | MS558 | | PIVOT PIN, ROTATION NUT, HEX HEAD (M20) | | | |
| 34 35 | 44007-0007 44019-0088 | | U-BOLT | 4 | | |
| 36 | 44007-0015 | | NUT, HEX HEAD (M10) | 8 | | |
| 37 | 44007-0013 | | CAP, PLASTIC | 4 | | |
| 38 | 44004-0122 | | CAP SCREW, HEX HEAD (M12 x 70mm) | 2 | | |
| 39 | 44013-0009 | | WASHER, FLAT | 4 | | |
| 40 | 44008-0002 | | NUT, HEX HEAD | 2 | | |
| 41 | 44019-0093 | | SETSCREW | 1 | | |
| 42 | 21002-0085 | | CYLINDER, PLATFORM (CAGE) ROTATION | 1 | | |
| 43 | CA01015 | | BUSHING, ROTATION CYLINDER (Base end) | ?? | | |
| 44 | 44013-0007 | | WASHER, FLAT | 2 | | |
| 45 | 44013-0022 | | WASHER, LOCK | 2 | | |
| 46 | 44021-0717 | | PIN, PIVOT (Base end rotation cylinder) | 1 | | |
| 47 | 44007-0014 | | NUT, HEX HEAD | 1 | | |
| 48 | 44011-0618 | | PIN, PIVOT (Rod end rotation cylinder) | 1 | | |
| 49 | 44013-0022 | | WASHER, LOCK | 2 | | |
| 50 | 44013-0007 | | WASHER, FLAT | 2 | | |
| 51 | CA01015 | | BUSHING, ROTATION CYLINDER (Rod end) | 2 | | |
| 52 | 44007-0014 | | NUT, HEX HEAD | 1 | | |
| 53 | 16490 | | FITTING, GREASE | 2 | | |
| 54 | 44031-0028 | | BUSHING, (25 x 25) (for level pin) | 3 | | |
| 55 | 10288 | | BUSHING, (40 x 50) (for platform/ cage mount pin) | - | | |
| | | | The fellowing item is not included as part of the Platform | | | |
| | | | The following item is not included as part of the Platform | | | |
| | | | Assembly: | | | |
| 56 | See Plate | | CONSOLE ASSEMBLY, PLATFORM CONTROL | 1 | | |
| 30 | See Flate | 09.26 | 32/21 | | | |
| | | 09.27 | 41/24 (E AND EN) | | | |
| | | 00.27 | 17/21 (27/10) 210) | | | |
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| TITLE | E PLATFO | DRM ASS | SEMBLY, 32/21E AND 41/24E AND 41/24N (2 OF 2) | | | |
| PLAT | - pa | | DADT | | | |
| NO. | TAIL ON 76 ISIMONI AFRIAIS INC. NEW NOVEMBER 1996 L. | | | | | |



| | , | - | PARTS LIST | |
|----------|--------------------------|----------------|--------------------------------------------------------|------|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. |
| 1 | 42002-0074 | | BUTTON, EMERGENCY STOP | 1 |
| 2 | 42002-0217 | | CONTACT, NORMALLY CLOSED | 1 |
| 3 4 | 11037 42002-0217 | | PUSHBUTTON, GREEN (Pump on/off) CONTACT, NORMALLY OPEN | 1 |
| 5 | 42010-0045 | | KEYSWITCH, POWER ON/OFF | 1 |
| 6 | 10954 | | SWITCH, SELECTOR (Cage/ ground) CONTACT, NORMALLY OPEN | 1 |
| 7 8 | 42002-0215 42002-0217 | | CONTACT, NORMALLY CLOSED | 1 |
| 9 | 42010-0041 | | LENS ASSEMBLY (Power on) | 1 |
| 10 11 | 42010-0053 42002-0006 | | BULB, 24 V, 3 W BLANK | 1 |
| 11 | 72002-0000 | | | · |
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| TITLI | E GROUN | D CONT | ROL ASSEMBLY, 32/21E AND 41/24E AND 41/24N | |
| PLA1 | ^{TE} 07.14 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 PART NO. | |
| NO. | <u> </u> | CIIVIO | NACRIALS INC. NEW NOVEMBER, 1996 NO. | |



TITLE GROUND CONTROL ASSEMBLY, 32/21E AND 41/24E AND 41/24N

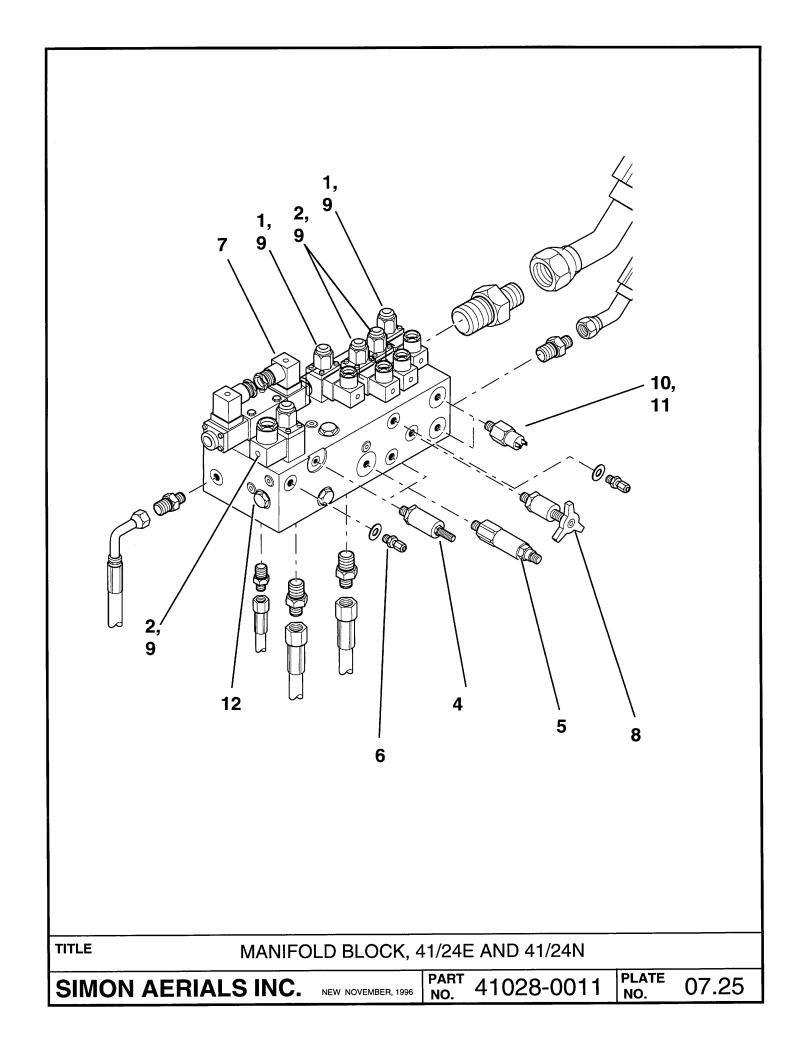
SIMON AERIALS INC.

NEW NOVEMBER, 1996

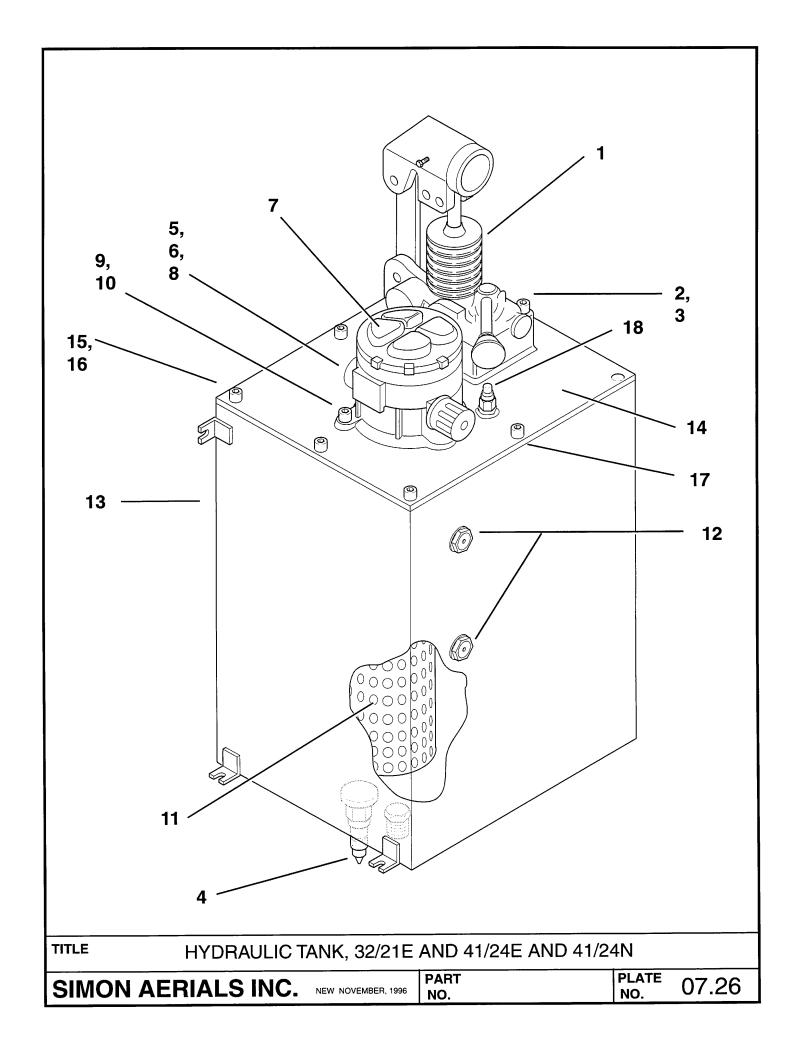
PART NO. PLATE NO.

07.14

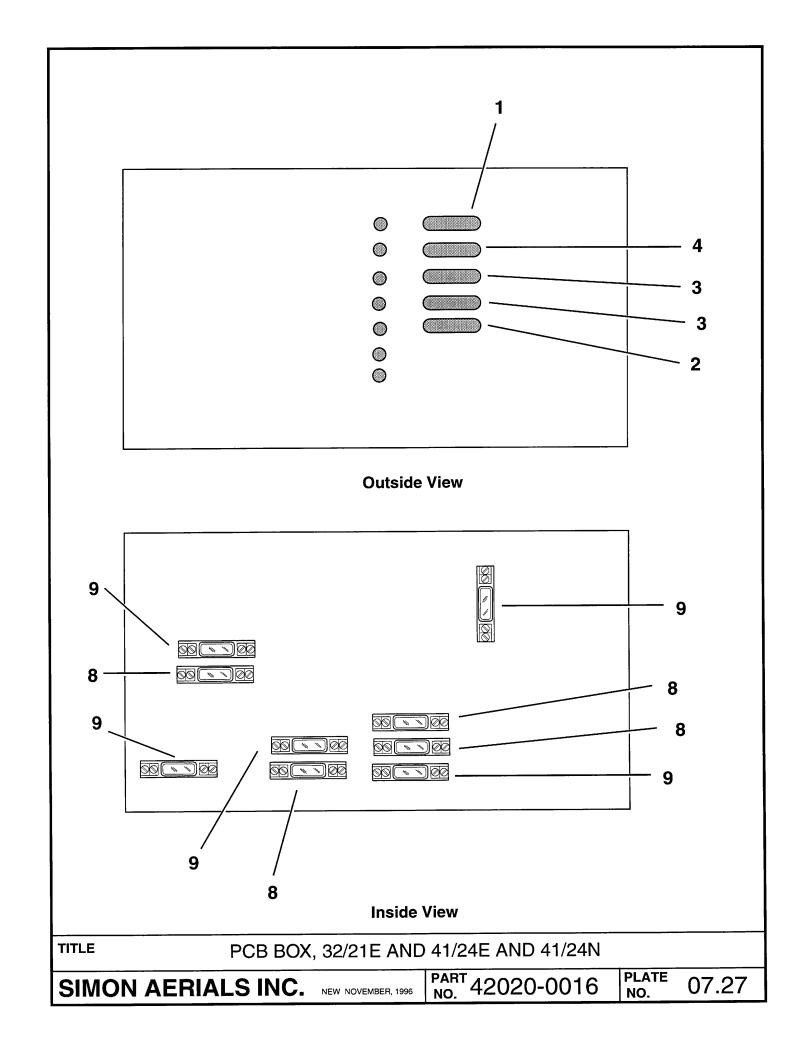
| PARTS LIST | | | | | | |
|------------------------------------------------|--------------------------|----------------|---------------------------------------------------------------------------------------------------|--------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 1 2 | 41003-0079 41003-0080 | | VALVE, SOLENOID OPERATED POPPET (normally closed) VALVE, SOLENOID OPERATED POPPET (normally open) | 2 3 | | |
| 3 | 41000-0031 | | VALVE, CHECK | 4 | | |
| 4 | 41006-0033 | | VALVE, PRESSURE REDUCING | 1 | | |
| 5 6 | 41006-0034 41006-0035 | | VALVE, RELIEF VALVE, RELIEF | 1 | | |
| 7 | 41003-0077 | | VALVE, 2-WAY (closed center) | 1 | | |
| 8 9 | 41020-0322 42015-0099 | | VALVE, NEEDLE COIL, 48 VDC | 1 5 | | |
| 10 | 17541 | | SWITCH, PRESSURE, (PSL) | 1 | | |
| 11 12 | 17542 41020-0339 | | SWITCH, PRESSURE, (PSH) CARTRIDGE, VALVE (option) | 1 | | |
| 14 | 41020-0303 | | OARTHRIBOL, VALVE (opaioti) | | | |
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| TITLE MANIFOLD BLOCK, 41/24E AND 41/24N | | | | | | |
| PLATE OF CINACNI A EDIAL CINIC PART 41029 0011 | | | | | | |
| NO. | ^e 07.25 | PINIO | N AERIALS INC. NEW NOVEMBER, 1996 NO. 41020-0 | UII | | |



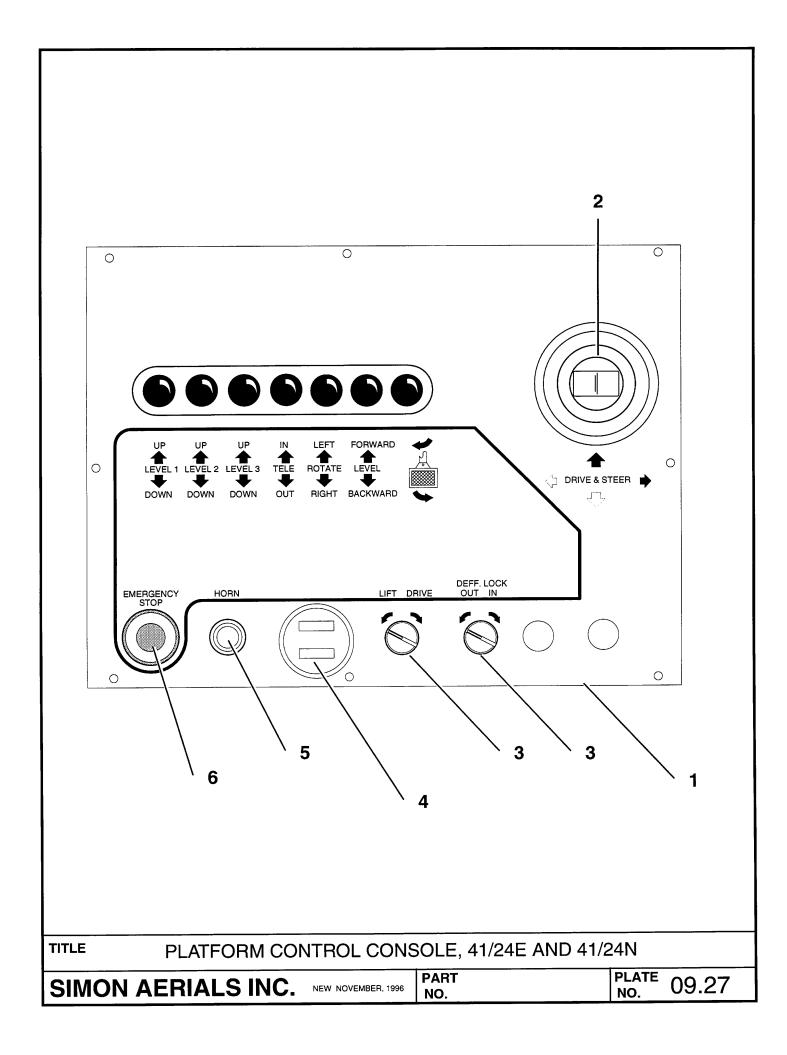
| TEM | _ Ү И |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 2 44004-0087 44004-0082 CAPSCREW, SOCKET HEAD (I CAPSCREW, SOCKET HEAD (I WASHER, FLAT (M8) VALVE, BALL (3/4") 5 41030-0041 FILTER ASSEMBLY, RETURN 6 41030-0039 7 CAP, HYDRAULIC TANK FILLE SPRING, FILTER RETAINING | И∥ |
| 44004-0082 CAPSCREW, SOCKET HEAD (I 3 44013-0022 WASHER, FLAT (M8) 4 11141 VALVE, BALL (3/4") 5 41030-0041 FILTER ASSEMBLY, RETURN 6 41030-0039 ELEMENT, RETURN FILTER 7 CAP, HYDRAULIC TANK FILLE 8 SPRING, FILTER RETAINING | |
| 4 11141 VALVE, BALL (3/4") 5 41030-0041 FILTER ASSEMBLY, RETURN 6 41030-0039 ELEMENT, RETURN FILTER 7 CAP, HYDRAULIC TANK FILLE 8 SPRING, FILTER RETAINING | |
| 5 41030-0041 FILTER ASSEMBLY, RETURN 6 41030-0039 ELEMENT, RETURN FILTER 7 CAP, HYDRAULIC TANK FILLE 8 SPRING, FILTER RETAINING | |
| 6 41030-0039 ELEMENT, RETURN FILTER 7 CAP, HYDRAULIC TANK FILLE 8 SPRING, FILTER RETAINING | |
| 8 SPRING, FILTER RETAINING | |
| | R |
| 3 44004-0002 OALOUREW, OCCIDEND (| V |
| 10 44013-0022 WASHER, LOCK (M8) | |
| 11 |) |
| 13 21027-0030 TANK WELDMENT | |
| 14 49006-1523 COVER, TANK TOP 15 44002-0354 CAPSCREW, SOCKET HEAD (| M |
| 16 44013-0022 WASHER, FLAT (M8) | |
| 17 44032-0050 GASKET, COVER 18 41032-0011 VALVE, PRESSURE RELIEF | |
| VALVE, I TIESSOTIE TIELLE | |
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| TITLE HYDRAULIC TANK, 32/21E AND 41/24 | |
| PLATE NO. 07.26 SIMON AERIALS INC. NEW NOVEM | _ |



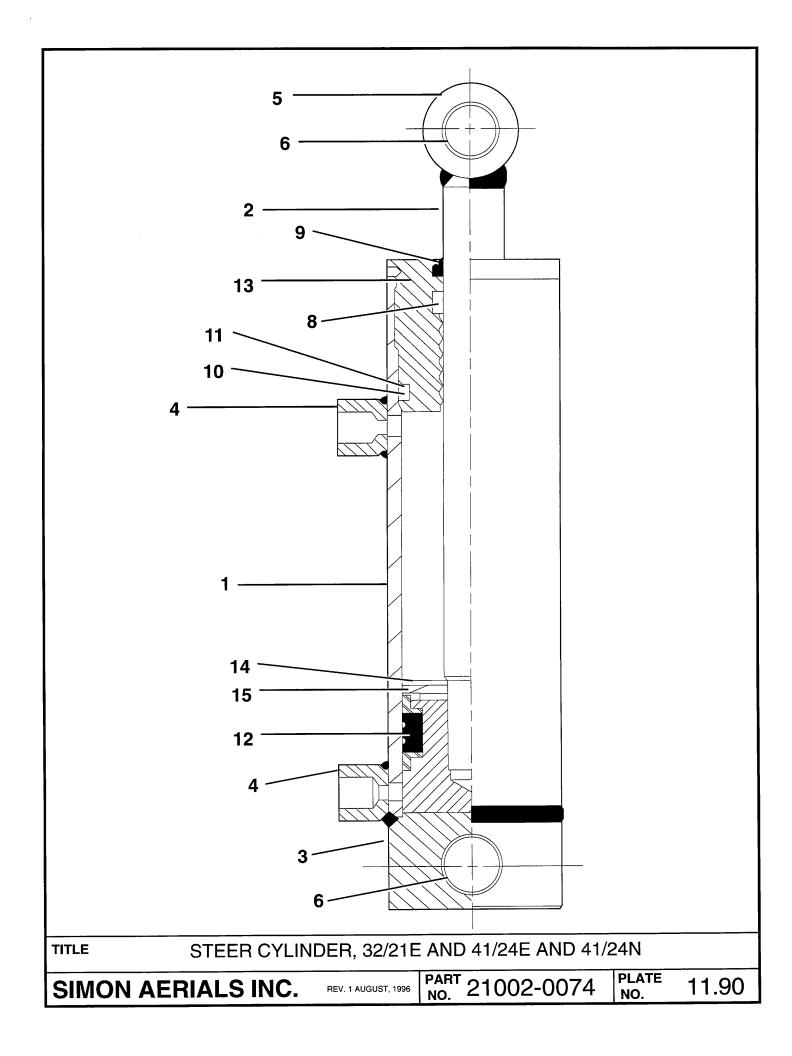
| 1 | | CEE I | | |
|----------------|--------------------------|----------------|------------------------------------------------|---------------|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. |
| 1 | 42015-0101 | | FUSE, SPADE (2 Amp) | 1 |
| 2 3 | 10026 11563 | | FUSE, SPADE (10 Amp) FUSE, SPADE (5 Amp) | 1 2 |
| 4 | 14615 | | FUSE, SPADE (3 Amp) | 1 |
| 5 | 44002-0013 | | NUT, NYLOC (M6) | 4 4 |
| 6 7 | 44002-0014 44013-0007 | | SCREW, HEX HEAD (M6 x 20 mm) WASHER, FLAT | 8 |
| 8 | 42015-0015 | | RELAY (24 Volt DC) | 4 |
| 9 10 | 42015-0100 | | RELAY (48 Volt DC) NUT, NYLOC (M6) | 5 2 |
| 11 | 44007-0013 44002-0015 | | SCREW, HEX HEAD (M6 x 20 mm) | 2 |
| 12 | 44013-0006 | | WASHER, FLAT (M6) | 4 |
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| TITLE | | PCB | BOX, 32/21E AND 41/24E AND 41/24N | |
| PLATE NO. | 07.27 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 NO. 42020-00 |)16 |



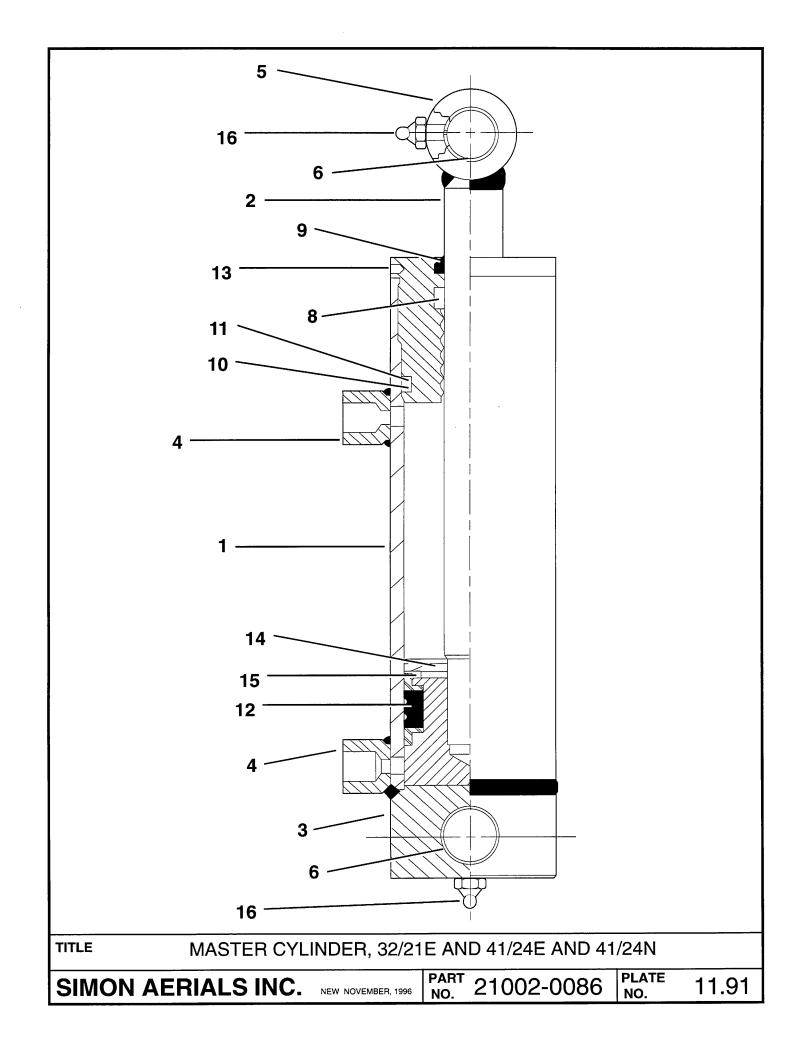
| | PARTS LIST | | | | | |
|--------|---------------------|----------------|----------------------------------------|------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 1 | 44029-0152 | | PLATE, CONSOLE | 1 | | |
| 2 | 11745 | | CONTROLLER, DRIVE/ STEER (Joystick) | 1 | | |
| 3 | 42002-0112 | F | SWITCH | 1 1 | | |
| 4 | 42014-0076 17716 | | METER, HOUR/ BATTERY CHARGE PUSHBUTTON | | | |
| 5 6 | 42002-0079 | | BUTTON, EMERGENCY STOP | | | |
| 0 | 42002-0013 | | | | | |
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| TITLE | L ≣ Pl | _ATFORI | M CONTROL CONSOLE, 41/24E AND 41/24N | | | |
| PLAT | p par | | - I DADT | | | |
| NO. | 09.27 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 NO. | | | |



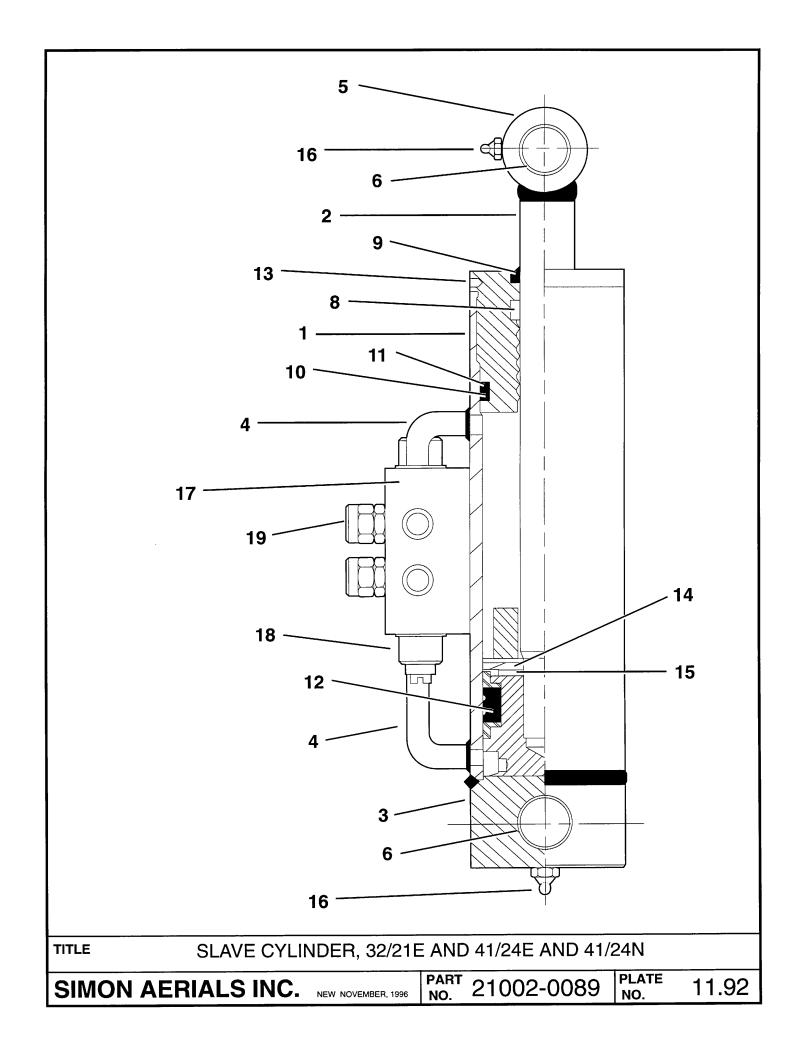
| | PARTS LIST | | | | | |
|-------------|----------------------------------------------------|--------------|------------------------------------------------------|------|--|--|
| ITEM | PART NO | SEE PLATE | DESCRIPTION | QTY. | | |
| 1 | | | TUBE, CYLINDER (60mm) | 1 | | |
| 2 | | | ROD, CYLINDER (25mm) | 1 1 | | |
| 3 4 | | | CYLINDER END FITTING (1/4" DSP FEM STD) | 1 2 | | |
| 5 | | | ROD END | 1 1 | | |
| 6 | 44031-0020 | | BUSHING (20mm x 20mm) | 2 | | |
| 7 | 41034-0035 | | SEAL KIT | 1 1 | | |
| 8 | | | SEAL, GLAND SEAL, WIPER | | | |
| 9 | | | "O"-RING | 1 1 | | |
| 11 | | | RING, BACKUP | 1 1 | | |
| 12 | | | SEAL | 1 | | |
| 13 | | | END GLAND | 1 | | |
| 14 15 | | | HEAD, PISTON SCREW, HEX HEAD SOCKET (M8 x 10mm long) | 1 1 | | |
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| | TITLE STEER CYLINDER, 32/21E AND 41/24E AND 41/24N | | | | | |
| PLAT NO. | ^{TE} 11.90 | SIMO | NAERIALS INC. REV 1 AUGUST, 1996 NO. 21002-0 | 074 | | |



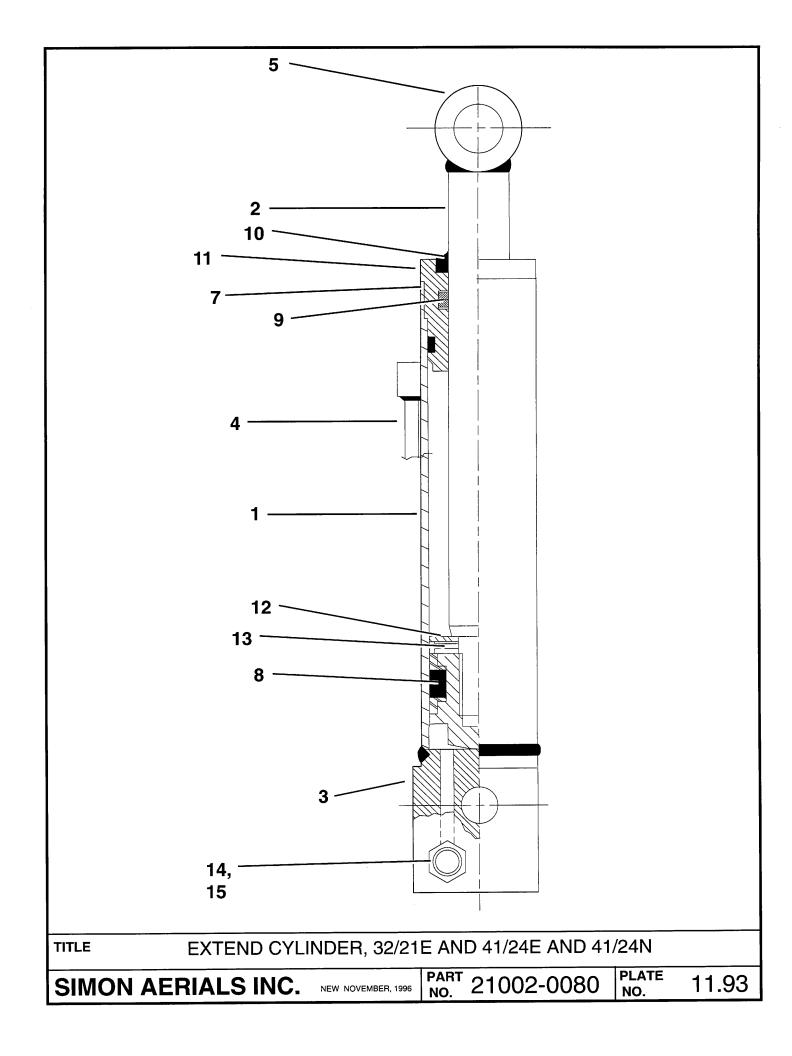
| | PARTS LIST | | | | | |
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| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 1 | | | TUBE, CYLINDER (60mm) | 1 | | |
| 2 3 | | | ROD, CYLINDER (25mm) CYLINDER END | 1 | | |
| 4 | | | FITTING (1/4" DSP FEM STD) | 2 | | |
| 5 | | | ROD END | 1 | | |
| 6 | 44031-0020 | | BUSHING (20mm x 20mm) | 2 | | |
| 7 8 | 41034-0090 | | SEAL KIT SEAL, GLAND | ¦ | | |
| 9 | | | SEAL, WIPER | 1 | | |
| 10 | | | "O"-RING | 1 | | |
| 11 12 | | | RING, BACKUP SEAL | 1 | | |
| 13 | | | END GLAND | 1 | | |
| 14 | | | HEAD, PISTON | 1 | | |
| 15 16 | EO18 | | SCREW, HEX HEAD SOCKET (M8 x 10mm long) FITTING, GREASE (1/8") | 2 | | |
| 10 | 1 | | | | | |
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| | | 440=== | OVERNOON AND ALICAS AND ALICAN | I | | |
| TITLI | | VIASTER | CYLINDER, 32/21E AND 41/24E AND 41/24N | | | |
| PLAT NO. | ^{TE} 11.91 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 NO. 21002-00 | 086 | | |
| | | <u> </u> | | | | |



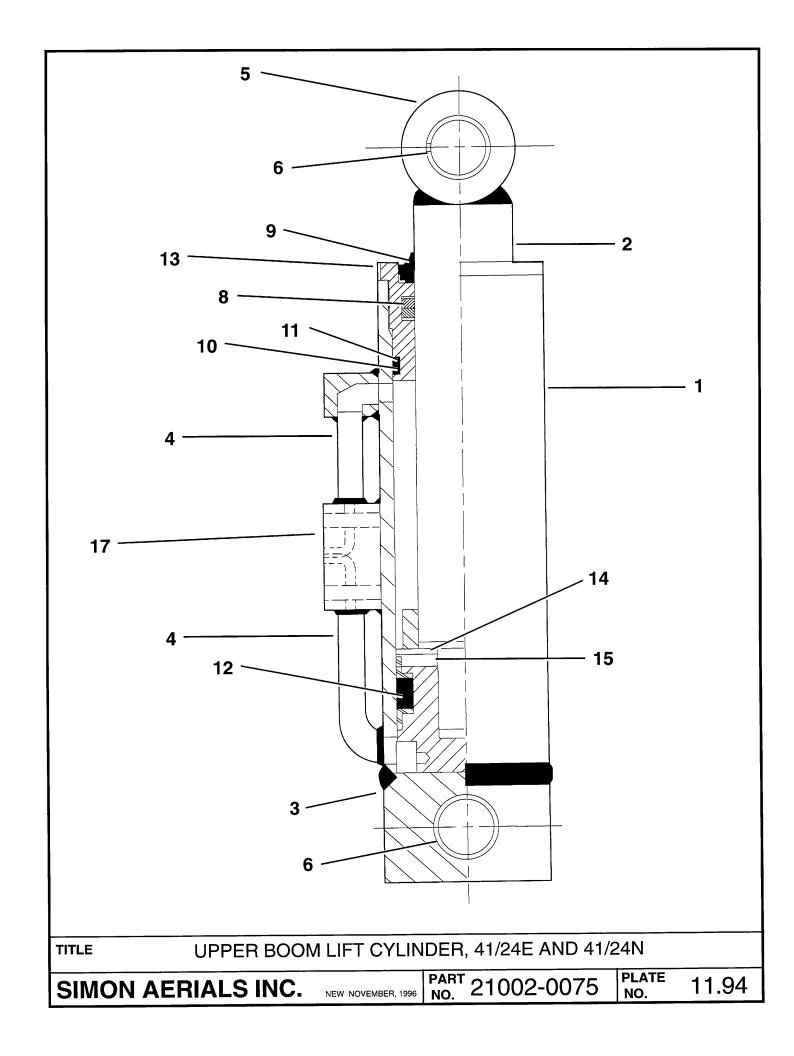
| | PARTS LIST | | | | |
|----------------|---------------------|----------------|--------------------------------------------------------|------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | | | TUBE, CYLINDER (60mm) | 1 1 | |
| 2 | | | ROD, CYLINDER (25mm) CYLINDER END | | |
| 4 | | | TUBE, CONNECTING | 2 | |
| 5 | 44031-0020 | | ROD END BUSHING (20mm x 20mm) | 1 2 | |
| 7 | 41034-0090 | | SEAL KIT | 1 | |
| 8 | | | SEAL, GLAND | 1 | |
| 9 10 | | | SEAL, WIPER "O"-RING | 1 1 | |
| 11 | | | RING, BACKUP | 1 | |
| 12 | | | SEAL | 1 | |
| 13 14 | | | END GLAND HEAD, PISTON | ¦ | |
| 15 | | | SCREW, HEX HEAD SOCKET (M8 x 10mm long) | 1 | |
| 16 17 | EO18 EP02500J | | FITTING, GREASE (1/8") VALVE, DOUBLE COUNTERBALANCE | 2 | |
| 17 | L1 023000 | | (Holding or overcenter valve) | 1 | |
| 18 | 41031-0009 | l . | CARTRIDGE, VALVE | 2 2 | |
| 19 | 41006-0036 | | VALVE, RELIEF | | |
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| | _ | | 0.41 NIDED 00/045 AND 44/045 AND 44/04N | | |
| TITLI | | SLAVE | CYLINDER, 32/21E AND 41/24E AND 41/24N | | |
| PLAT NO. | ^{TE} 11.92 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 PART NO. 21002-0 | 089 | |



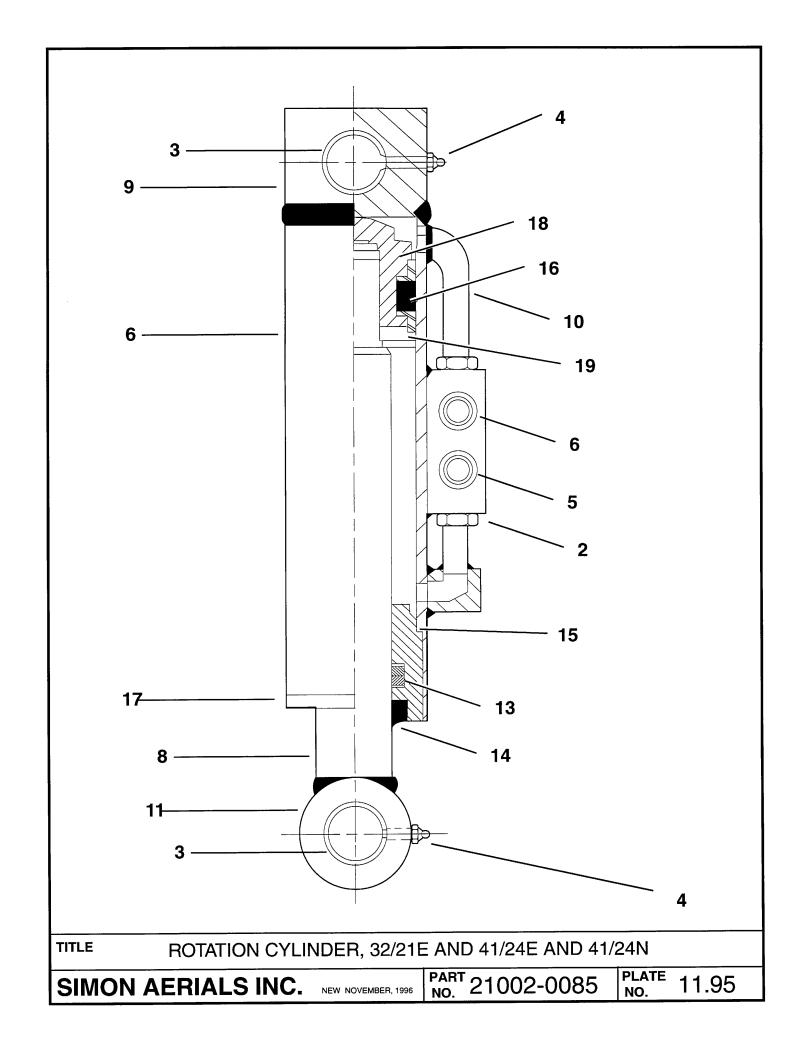
| | PARTS LIST | | | | | | |
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| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | | |
| 1 2 | | | TUBE, CYLINDER (60mm) ROD, CYLINDER (25mm) | 1 1 | | | |
| 3 | | | VALVE BLOCK / CYLINDER END | 1 | | | |
| 4 5 | | | TUBE, CONNECTING ROD END | 2 1 | | | |
| 6 | 41034-0089 | | SEAL KIT | 1 | | | |
| 7 8 | | | SEAL, GLAND SEAL, WIPER | | | | |
| 9 | | | SEAL | 1 | | | |
| 10 11 | | | "O"-RING END GLAND | 1 | | | |
| 12 | | | HEAD, PISTON | 1 | | | |
| 13 14 | CH06A | | SCREW, HEX HEAD SOCKET (M8 x 10mm long) VALVE, CHECK | 1 2 | | | |
| 15 | EN061G | | VALVE, SHUTTLE (For check valve) | 1 | | | |
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| TITL | E E | XTEND (| CYLINDER, 32/21E AND 41/24E AND 41/24N | | | | |
| PLA ⁻ | | | NAERIALS INC. NEW NOVEMBER, 1996 NO. PART NO. 21002-00 | 080 | | | |
| NO. | 11.00 | | NO | | | | |



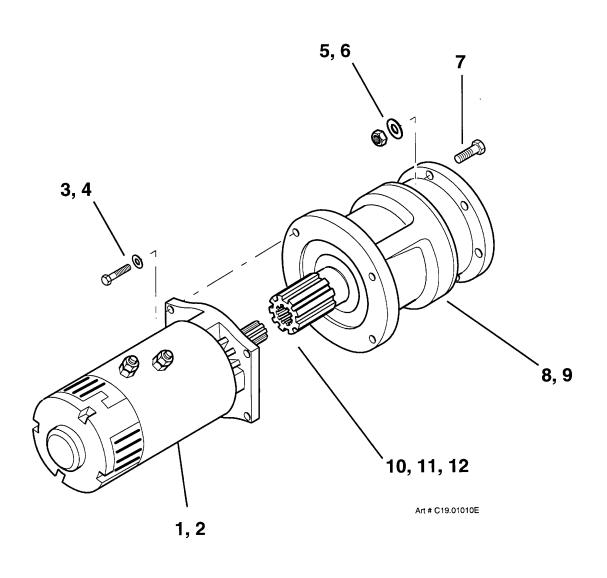
| | PARTS LIST | | | | |
|------------------|---------------------|----------------|----------------------------------------------------------------|------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 2 | | | TUBE, CYLINDER (60mm) ROD, CYLINDER (45mm) | 1 1 | |
| 3 | | | CYLINDER END | 1 | |
| 4 | | | TUBE, CONNECTING | 2 | |
| 5 6 | 44031-0028 | | ROD END BUSHING (25mm x 25mm) | 2 | |
| 7 | 41034-0088 | | SEAL KIT | 1 | |
| 8 9 | | | SEAL, GLAND SEAL, WIPER | 1 1 | |
| 10 | | | "O"-RING | 1 | |
| 11 | | | RING, BACKUP SEAL | 1 | |
| 12 | | | END GLAND | 1 | |
| 14 | | | HEAD, PISTON | 1 1 | |
| 15 1 6 | EO18 | | SCREW, HEX HEAD SOCKET (M8 x 10mm long) FITTING, GREASE (1/8") | 1 2 | |
| 17 | 41031-0004 | | VALVE, COUNTERBALANCE (Holding or overcenter valve) | 1 | |
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| TITLI | | UPPER I | BOOM LIFT CYLINDER, 41/24E AND 41/24N | | |
| PLA1 | ^{TE} 11.94 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 NO. 21002-00 | 075 | |
| NO. | 11.07 | <u> </u> | NU. 21002 0 | | |



| | PARTS LIST | | | | |
|----------|-------------------------------------------------|----------------|--------------------------------------------------------|------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 1 | 21002-0085 | | CYLINDER, ROTATION | 1 | |
| 2 | 41031-0009 | | VALVE, COUNTERBALANCE | 2 | |
| 3 | CA01015 | | BUSHING (Base end) (10 x 12 x 15 mm) | 4 | |
| 4 | 16940 | | FITTING, GREASE | 2 | |
| 5 | 31013-0180 | | FITTING, ORIFICE | 1 | |
| 6 7 | 31013-0181 | | FITTING, ORIFICE TUBE, CYLINDER (40mm) | 1 | |
| 8 | | | ROD, CYLINDER (18mm) | 1 | |
| 9 | | | CYLINDER END | 1 | |
| 10 | | | TUBE, CONNECTING | 2 | |
| 11 | | | ROD END | 1 | |
| 12 | 41034-0099 | | SEAL KIT | 1 | |
| 13 | | | SEAL, GLAND | 1 | |
| 14 | | | SEAL, WIPER | 1 | |
| _15_ | | | "O"-RING | | |
| 16 | | | SEAL | 1 | |
| 17 18 | | | END GLAND HEAD, PISTON | 1 | |
| 19 | | | SCREW, HEX HEAD SOCKET (M8 x 8mm long) | 1 | |
| 19 | | | OCTIENT, TIEX TIEX COCKET (Max anim leng) | • | |
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| TITLE | ROTATION CYLINDER, 32/21E AND 41/24E AND 41/24N | | | | |
| PLAT | ^E 11.95 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 NO. PART NO. 21002-00 | 85 | |
| NO. | | | ino. | | |



| | PARTS LIST | | | | | |
|---------|-----------------|----------------|-----------------------------------------------------------------|--------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| | 77022-0370 | | AXLE ASSEMBLY, REAR | 1 | | |
| | | | | | | |
| 1 | 18449 | | MOTOR, ELECTRIC (5kW) | 1 | | |
| 2 | 10935 12283 | | CONTROLLER, SPEED CAP SCREW, SOCKET HEAD (M10 x 50, Grade 10.9) | 1 4 | | |
| 4 | 11589 | | WASHER, SPRING | 4 | | |
| 5 6 | 15097 | | NUT, NYLOC (M8) WASHER, FLAT | 4 8 | | |
| 7 | 15124 15032 | | CAP SCREW, SOCKET HEAD (M8 x 50, Grade 10.9) | 16 | | |
| 8 | 18062 | | GEARBOX | 1 | | |
| 9 10 | DS1085 MS423 | | MOUNTING, MOTOR INSTALLATION PLATE, ADAPTER | 1 | | |
| 11 | M706 | | SPLINE | 1 | | |
| 12 | 10171 | | SEAL, OIL (M85 O.D., 65 I.D., 10 wide) | 1 | | |
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| TITLI | E | REAR A | AXLE ASSEMBLY, 41/24E (PLATE 1 OF 6) | | | |
| PLAT | TE 10 12 | | N AERIALS INC. NEW NOVEMBER, 1996 PART NO. 77022-0 | 370 | | |
| NO. | 19.13 | PINIO | IN ALDIALS IIVC. NEW NOVEMBER, 1996 NO. //UZZ-U | J/ U | | |



TITLE

REAR AXLE ASSEMBLY, 41/24E (PLATE 1 OF 6)

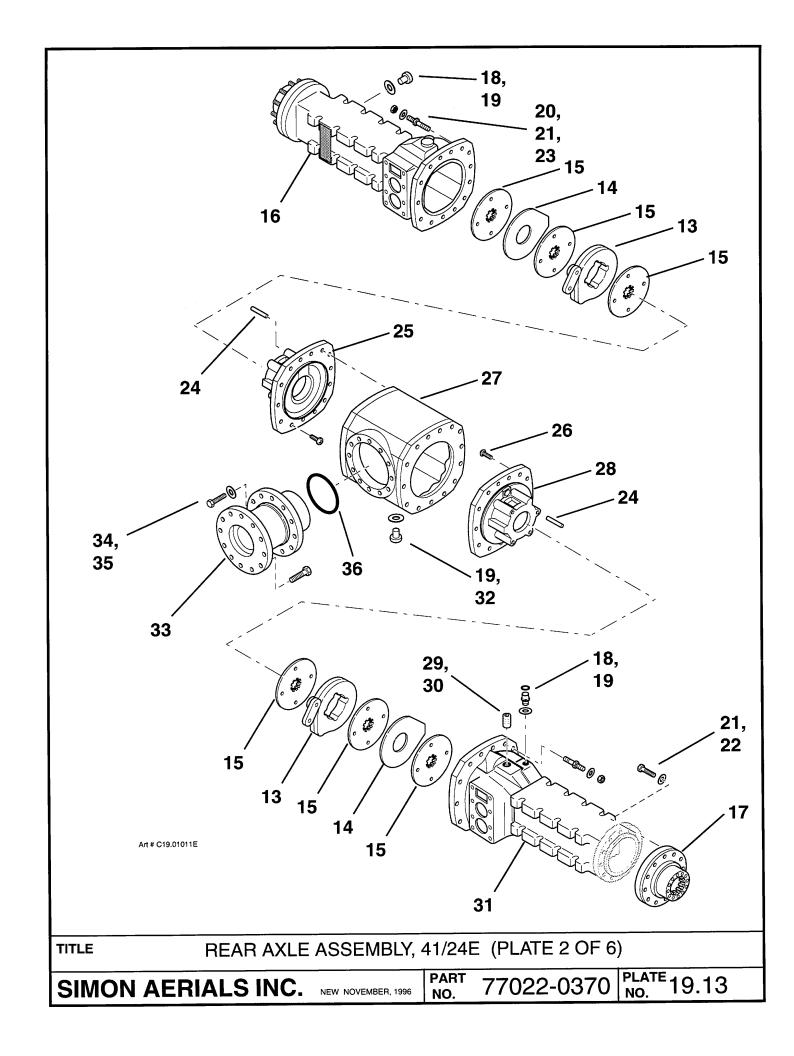
SIMON AERIALS INC. NEW NOVEMBER, 1996

PART NO.

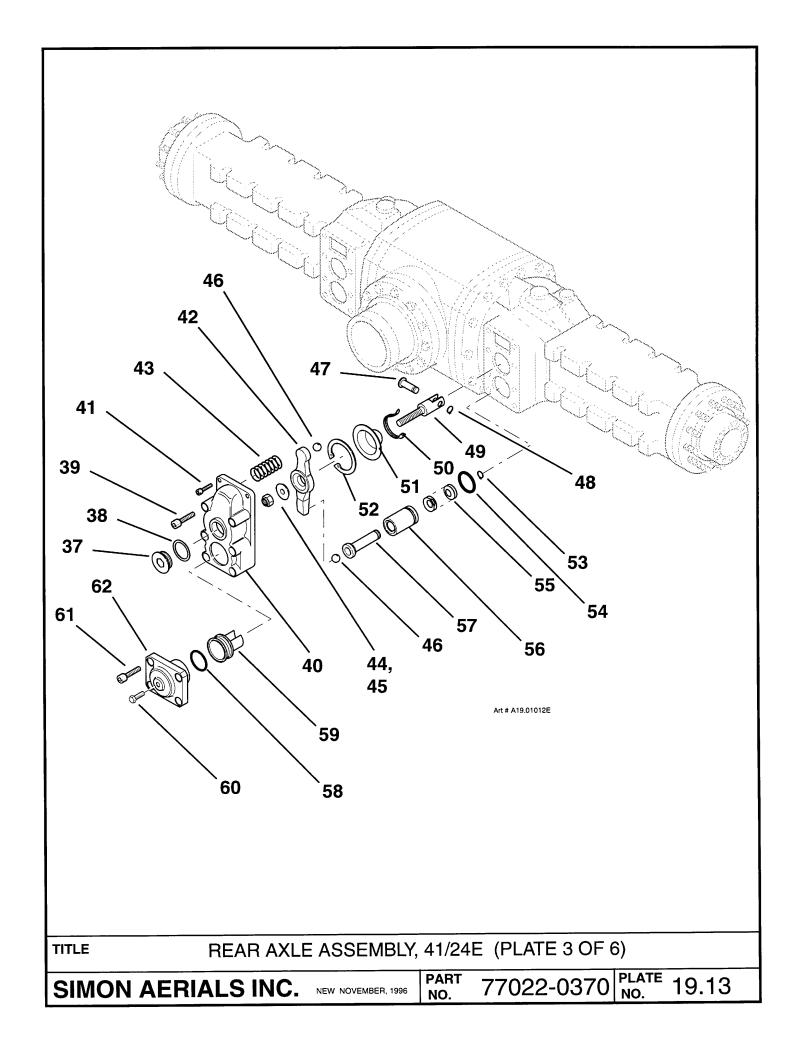
77022-0370

PLATE 19.13

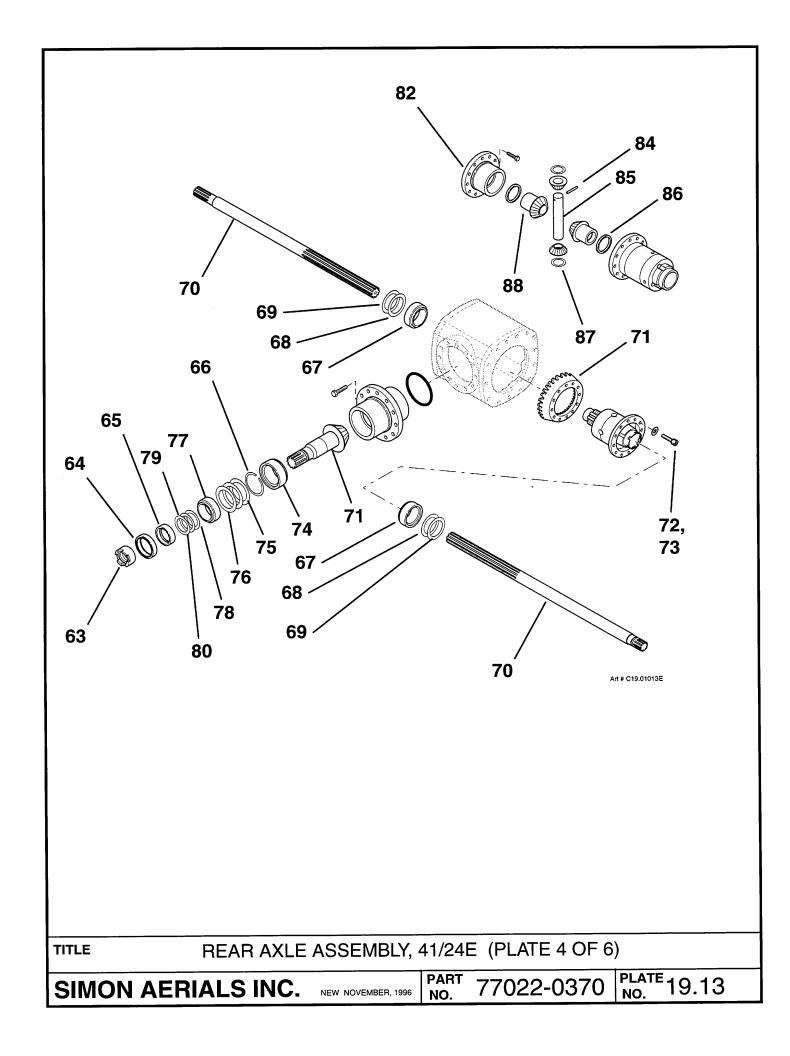
| | PARTS LIST | | | | |
|--------------------------------|-------------------------|----------------|--------------------------------------------------|---------|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | |
| 13 | 17863 | | ACTUATOR | 2 | |
| 14 | 17865 | | BRAKE, COUNTER DISK, BRAKE | 2 6 | |
| 15 16 | 17864 17880 | | HOUSING, AXLE (left side) | 1 | |
| 17 | 18556 | | SUPPORT, WHEEL HUB | 2 | |
| 18 | 17858 | | PLUG, OIL | 2 | |
| 19 20 | 17856 17882 | | WASHER, OIL PLUG NUT, STUD BOLT | 2 24 | |
| 21 | 17883 | ! | WASHER, SPRING | 24 | |
| 22 | 18557 | | CAP SCREW | 24 | |
| 23 | 17881 | | STUD BOLT, AXLE HOUSING | 24 6 | |
| 24 25 | 17878 17853 | | PIN LOCK, COUNTER PLATES FLANGE, HUB (left side) | 1 | |
| 26 | 17884 | | CAP SCREW, BRAKE | 4 | |
| 27 | 17851 | | BOX, CENTRAL | 1 | |
| 28 | 17852 17854 | | FLANGE, HUB (right side) CAP SCREW | 1 3 | |
| 29 30 | 17854 17855 | | PLUG, BRAKE HOLE | 3 | |
| 31 | 17879 | | HOUSING, AXLE (right side) | 1 | |
| 32 | 17857 | | PLUG, OIL | 1 1 | |
| 33 34 | 17952 17951 | | BOX, PLANETARY WASHER, PLANETARY BOX | 10 | |
| 35 | 17950 | | CAP SCREW, PLANETARY BOX | 10 | |
| 36 | 17953 | | "O"-RING, PLANETARY BOX | 1 | |
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| TITLE | <u> </u> = | | AVIE ACCEMBIV 41/24E (DI ATE 2 OE 6) | | |
| | | 1 | AXLE ASSEMBLY, 41/24E (PLATE 2 OF 6) | | |
| PLAT NO. | ^{re} 19.13 | SIMO | N AERIALS INC. NEW NOVEMBER, 1996 NO. 77022-0 | 370 | |



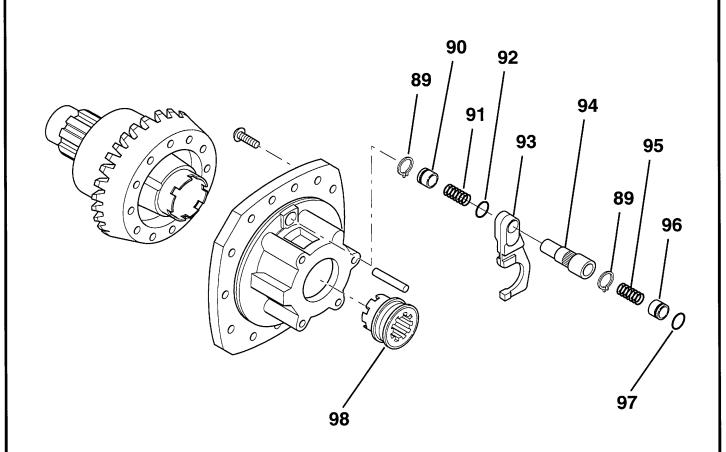
| | PARTS LIST | | | | | |
|-----------------|-------------------------|----------------|-----------------------------------------------------|--------------|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | |
| 37 | 17875 | | PLUG, BRAKE INSPECTION | 2 | | |
| 38 | 17876 | | WASHER | 2 | | |
| 39 40 | 17877 1 7867 | | CAP SCREW (for brake cover) COVER, BRAKE | 4 2 | | |
| 41 | 17871 | | CAP SCREW | 4 | | |
| 42 | 17889 | | LEVER | 2 | | |
| 43 | 17859 | | PISTON, BACK SPRING BRAKE | 2 | | |
| 44 | 17872 | | WASHER, SPHERICAL | 2 2 | | |
| 45 46 | 17873 1 78 60 | | NUT, SET-UP BRAKE BALL | 4 | | |
| 47 | 17869 | | PIN, BRAKE PULL | 2 | | |
| 48 | 17868 | | SNAP RING (for pull pin) | 2 | | |
| 49 | 17870 | | BRAKE FORK | 2 | | |
| 50 | 17866 | | CLAMP (for brake rubber piece) | 2 2 | | |
| 51 52 | 17861 1 7 862 | | SEAL SPRING (for brake) SNAP RING (for seal spring) | 2 | | |
| 53 | 17874 | | SNAP RING (for bell springs) | 2 | | |
| 54 | 17886 | | "O"-RING | 2 | | |
| 55 | 17893 | | BELL SPRINGS | 36 | | |
| 56 | 17892 | | BUSHING PIN | 2 2 | | |
| 57 58 | 17891 1 7887 | | "O"-RING | 2 | | |
| 59 | 17894 | | PISTON | 2 | | |
| 60 | 17885 | | CAP SCREW (for crown brake) | 2 | | |
| 61 | 17888 | | CAP SCREW | 8 2 | | |
| 62 | 17890 | | FLANGE, FAIL-SAFE SPRINGS BRAKE | 4 | | |
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| TITLE | • E | REAR | AXLE ASSEMBLY, 41/24E (PLATE 3 OF 6) | | | |
| PLAT | E 10.10 | CINAC | N AEDIAL CINC PART 77022 (| 1270 | | |
| NO. | 19.13 | PINIO | N AERIALS INC. NEW NOVEMBER, 1996 NO. 77022-0 | <i>1</i> 370 | | |



| PARTS LIST | | | | | | | |
|------------------------------------------------------------------|----------------------------------------------------------|----------------|-----------------------------------------------|------|--|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | | |
| 63 | 17956 | | RING NUT | 1 | | | |
| 64 | 17949 | | SEAL, OIL | 1 | | | |
| 65 | 17955 | | SPACER | 1 | | | |
| 66 67 | 17954 17927 | | RING, RETAINING BEARING, DIFFERENTIAL CASE | 2 | | | |
| 68 | 17928 | | SHIM, DIFFERENTIAL BEARING | 4 | | | |
| 69 | 17929 | | SHIM, DIFFERENTIAL BEARING | 4 | | | |
| 70 | 18558 | | SHAFT, HALF | 2 | | | |
| 71 | 18559 | | BEVEL, DRIVE | 1 | | | |
| 72 | 17925 | | WASHER | 12 | | | |
| 73 | 17926 | | CAP SCREW | 12 | | | |
| 74 75 | 1 7957 17947 | | BEARING, PINION SHIM, PINION BEARING | 3 | | | |
| 76 | 17947 | | SHIM, PINION BEARING | 3 | | | |
| 77 | 17946 | | BEARING, PINION | 1 | | | |
| 78 | 17958 | | SHIM, PINION BEARING (0.15) | 2 | | | |
| 79 | 17959 | | SHIM, PINION BEARING (0.20) | 2 | | | |
| 80 | 17960 | | SHIM, PINION BEARING (0.50) | 2 | | | |
| 81 | 17933 | | DIFFERENTIAL | 1 1 | | | |
| 82 | 17934 | | CASE, DIFFERENTIAL GEAR, DIFFERENTIAL | | | | |
| 83 84 | 17935 17961 | | PIN, DIFFERENTIAL | | | | |
| 85 | 17940 | | PIN, DIFFERENTIAL PINION GEAR | 1 | | | |
| 86 | 17938 | | WASHER, THRUST | 2 | | | |
| 87 | 17939 | | WASHER, THRUST | 2 | | | |
| 88 | 17937 | | GEAR, DIFFERENTIAL | 1 1 | | | |
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| TITLE REAR AXLE ASSEMBLY, 41/24E (PLATE 4 OF 6) | | | | | | | |
| PLATE 19.13 SIMON AERIALS INC. NEW NOVEMBER, 1996 NO. 77022-0370 | | | | | | | |
| NO. | NO. SIMON AERIALS INC. NEW NOVEMBER, 1996 NO. 77022-0370 | | | | | | |



| | PARTS LIST | | | | | | | |
|-------------------------------------------------|---------------------|----------------|-----------------------------------------------------|---------|--|--|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | | | |
| 89 90 | 17966 17965 | | RING, SNAP WASHER, SPRING | 2 1 | | | | |
| 91 | 17963 | | SPRING, DIFFERENTIAL LOCK | 1 | | | | |
| 92 93 | 17962 17967 | | RING, SNAP DIFFERENTIAL LOCK FORK | 1 1 | | | | |
| 94 | 17964 | | PIN, FORK | 1 | | | | |
| 95 96 | 17968 17969 | | SPRING, DIFFERENTIAL LOCK PISTON, DIFFERENTIAL LOCK | 1 1 | | | | |
| 97 | 17970 | | "O"-RING, DIFFERENTIAL LOCK PISTON | 1 | | | | |
| 98 | 17971 | | SLEEVE, DIFFERENTIAL LOCK | | | | | |
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| TITLE REAR AXLE ASSEMBLY, 41/24E (PLATE 5 OF 6) | | | | | | | | |
| PLAT NO. | ^{re} 19.13 | SIMO | NAERIALS INC. NEW NOVEMBER, 1996 NO. 770 | 22-0370 | | | | |



Art # C19.01014E

TITLE

REAR AXLE ASSEMBLY, 41/24E (PLATE 5 OF 6)

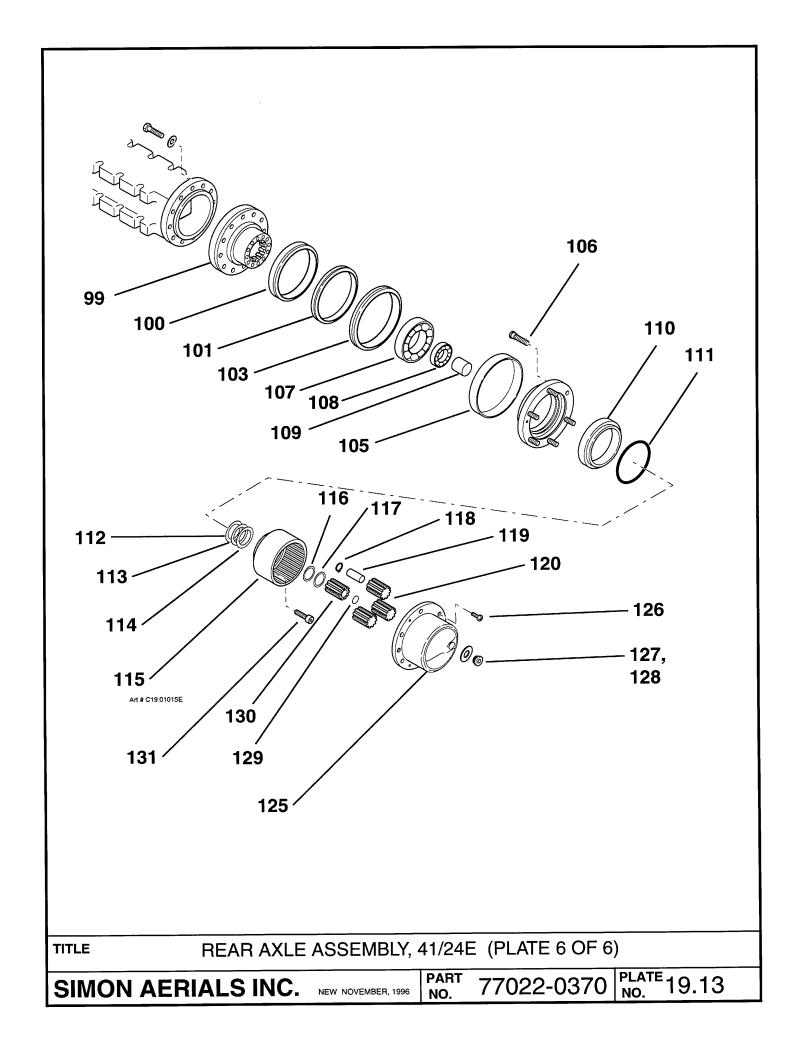
SIMON AERIALS INC. NEW NOVEMBER, 1996

PART NO.

77022-0370

PLATE 19.13

| PARTS LIST | | | | | | | |
|-------------------------------------------------|----------------------------------------------------------------------|----------------|-------------------------------------|------|--|--|--|
| ITEM | PART NO | SEE SECTION | DESCRIPTION | QTY. | | | |
| 99 | 18556 | | HUB SUPPORT, WHEEL | 2 | | | |
| 100 | 18560 | | OIL SEAL, HUB | 2 | | | |
| 101 | 18561 | | RING, DUST COVER | 2 | | | |
| 102 | 18562 | | HUB, WHEEL (COMPLETE) | 2 | | | |
| 103 104 | 18563 18564 | | HUB, WHEEL RING, FLANGED | 2 | | | |
| 104 | 18565 | | RING, HUB WEAR | 1 | | | |
| 106 | 18566 | | BOLT, WHEEL | 12 | | | |
| 107 | 18567 | | BEARING | 2 | | | |
| 108 | 18568 | | RACE, BALL | 2 | | | |
| 109 | 18569 | | SPACER | 2 | | | |
| 110 | 17896 | | BEARING | 2 | | | |
| 111 | 18570 | | "O"-RING | 2 2 | | | |
| 112 | 18571 | | SHIM, (0.15) | 6 | | | |
| 113 114 | 18572 18573 | | SHIM, (0.20) SHIM, (0.50) | 6 | | | |
| 115 | 18574 | | CROWN, REDUCTION | 2 | | | |
| 116 | 18575 | | SHIM, (0.20) | 4 | | | |
| 117 | 18576 | | SHIM, (0.50) | 4 | | | |
| 118 | 18577 | | RING, RETAINING | 6 | | | |
| 119 | 18578 | | PIN, PLANETARY GEAR CARRIER | 6 | | | |
| 120 | 18579 | | PLANETARY GEAR KIT | 1 | | | |
| 121 | 18580 | | PLANETARY GEAR SET | 3 | | | |
| 1 22 123 | 18581 18582 | | BEARING, NEEDLE BEARING, NEEDLE | 3 | | | |
| 123 | 18583 | | RING, RETAINING | 3 | | | |
| 125 | 18586 | | FLANGE, OUTER HUB | 2 | | | |
| 126 | 18587 | | CAP SCREW, WHEEL HUB | 6 | | | |
| 127 | 18589 | | PLUG, OIL | 2 | | | |
| 128 | 18588 | | WASHER, OIL PLUG | 2 | | | |
| 129 | 18585 | | RING, RETAINING | 2 | | | |
| 130 | 18584 | | GEAR, PLANETARY REDUCTION | 16 | | | |
| 131 | 17871 | | CAP SCREW | 10 | | | |
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| TITL | <u> </u> | DEAD | AVIE ASSEMBLY 41/24E (DLATE 6 OF 6) | | | | |
| TITLE REAR AXLE ASSEMBLY, 41/24E (PLATE 6 OF 6) | | | | | | | |
| PLA1 | PLATE NO. 19.13 SIMON AERIALS INC. NEW NOVEMBER, 1996 NO. 77022-0370 | | | | | | |
| NO. | | | ino. | | | | |



APPENDIX



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