

FORWARD

Welcome. Thanks for owning and operating one of the finest agricultural sprayers on the market. We take great pride in producing a product that has been virtually designed by the farmers and custom applicators who use them. Our original concept, brought to reality, was to build a sprayer that the users really wanted. With that in mind, we conducted numerous studies, interviews, surveys, and focus groups with farmers around the country. The end result is the splendid machine you have today.

Please note: You are encouraged to read this manual and the related publications prior to using this machine. It is imperative that you have a clear understanding of this machine for both your safety and for the most efficient and effective operation. Keep in mind, this is not a detailed service repair manual. You will need to review the accompanying manuals and/or contact your local dealer or distributor for more detailed information.

Thanks again for purchasing the **APACHE**™. We are confident it will prove to be a valuable tool in your successful farming efforts.

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AUTHORIZED DEALER / DISTRIBUTOR CONTACTS

APACHE™ Dealer/ Distributor_____

Address_____

City/State/Zip_____

Telephone_____

CONTACTS_____

ENGINE DEALER_____

Address_____

City/State/ Zip_____

Telephone_____

CONTACTS_____

OTHER_____

Address_____

City/State/Zip_____

Telephone_____

CONTACTS_____

OTHER_____

Address_____

City/State/Zip_____

Telephone_____

CONTACTS_____

OTHER_____

Address_____

City/State/Zip_____

Telephone_____

CONTACTS_____

OTHER_____

Address_____

City/State/Zip_____

Telephone_____

CONTACTS_____

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NOTE: FOR PURPOSES OF CLARITY, ALL REFERENCES IN THIS MANUAL TO LOCATIONS ON THE MACHINE WILL BE AS FOLLOWS: FRONT REFERS TO THE DIRECTION OF THE MACHINE WHERE THE ENGINE IS LOCATED. REAR IS THE OPPOSING END . LEFT IS THE SIDE WHERE THE OPERATOR'S DOOR IS LOCATED. RIGHT IS THE OPPOSITE SIDE.

NOTE: SOME EQUIPMENT ON THIS MACHINE MAY HAVE BEEN INSTALLED BY YOUR LOCAL DEALER/DISTRIBUTOR. CONTACT THEM FOR INSTRUCTION MANUALS.

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SAFETY

SAFETY



THIS SAFETY SYMBOL IS INTENDED TO ALERT YOU TO POTENTIAL HAZARDS TO YOUR HEALTH AND SAFETY. IT IS USED THROUGHOUT THE MACHINE AND THIS MANUAL IN COMBINATION WITH WORD ALERTS AND INSTRUCTIONS.

PLEASE READ ALL SAFETY MESSAGES IN THIS MANUAL PRIOR TO OPERATING THIS MACHINE. BE AWARE OF THE LOCATION OF SAFETY SIGNS AND WARNINGS AS ILLUSTRATED. IN THE EVENT A SAFETY DECAL IS DAMAGED, PLEASE CONTACT YOUR LOCAL DEALER/DISTRIBUTOR OR EQUIPMENT TECHNOLOGIES INC. FOR A REPLACEMENT.



WARNING! DO NOT OPERATE THIS MACHINE WITHOUT READING AND UNDERSTANDING THE OWNER'S MANUAL AND WITHOUT A THOROUGH UNDERSTANDING OF HOW TO CONDUCT MACHINE OPERATIONS.



WARNING! DO NOT ALLOW ANYONE TO OPERATE THIS MACHINE WHO HAS NOT BEEN PROPERLY TRAINED IN ITS OPERATION.



DANGER! NEVER OPERATE THIS MACHINE WITH SAFETY SHIELDS/GUARDS REMOVED OR WITH ANY SAFETY DEVICES REMOVED OR DISCONNECTED.



CAUTION! KEEP YOUR MACHINE IN PROPER OPERATING CONDITION WITH MAINTENANCE AND SERVICE AS INDICATED. STAY ALERT AND AWARE DURING ANY MACHINERY OPERATIONS.



THIS SYMBOL AND IT'S WORDED ADVISORY HAS A VARIETY OF MEANINGS. THEY ARE AS FOLLOWS:



DANGER! THIS SYMBOL AND WORDING WARNS OF IMMEDIATE HAZARDS WHICH MAY RESULT IN SERIOUS INJURY OR DEATH.



WARNING! THIS SYMBOL AND WORDING WARNS OF HAZARDS OR UNSAFE PRACTICES WHICH MAY RESULT IN SERIOUS INJURY OR DEATH.

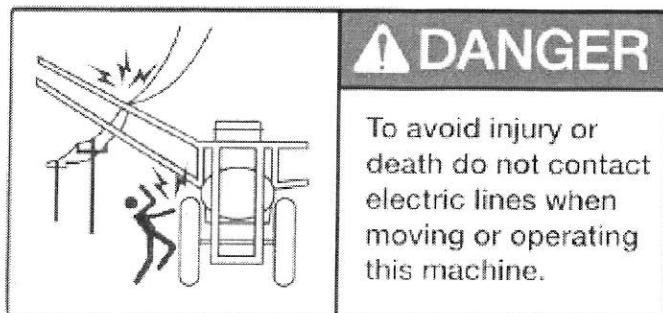


CAUTION! THIS SYMBOL AND WORDING WARNS OF HAZARDS OR UNSAFE PRACTICES WHICH MAY RESULT IN PERSONAL INJURY.

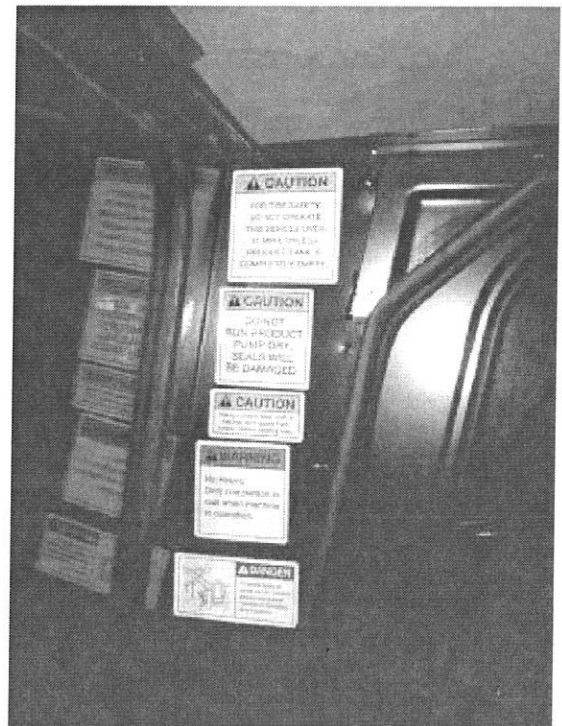
OTHER INFORMATION DECALS WILL INDICATE OPERATING INSTRUCTIONS WHICH MUST BE FOLLOWED FOR SATISFACTORY MACHINE OPERATION.

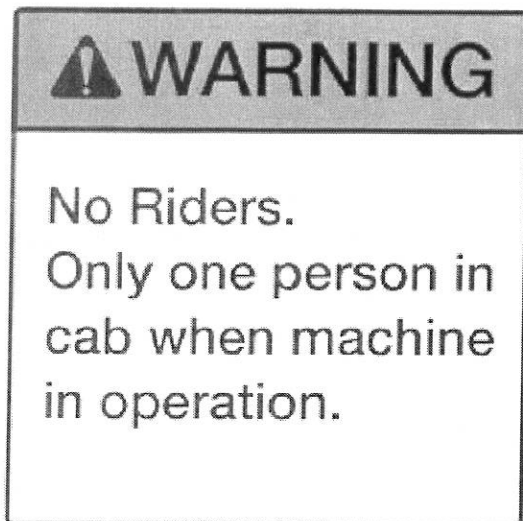
DECALS WHICH ARE ON THE **APACHE™ & APACHE PLUS™** ARE AS FOLLOWS:

THIS DECAL IS FOUND ON THE LEFT INSIDE COLUMN OF THE CAB AS SHOWN



PART NO. 420305650





PART NO. 420305660

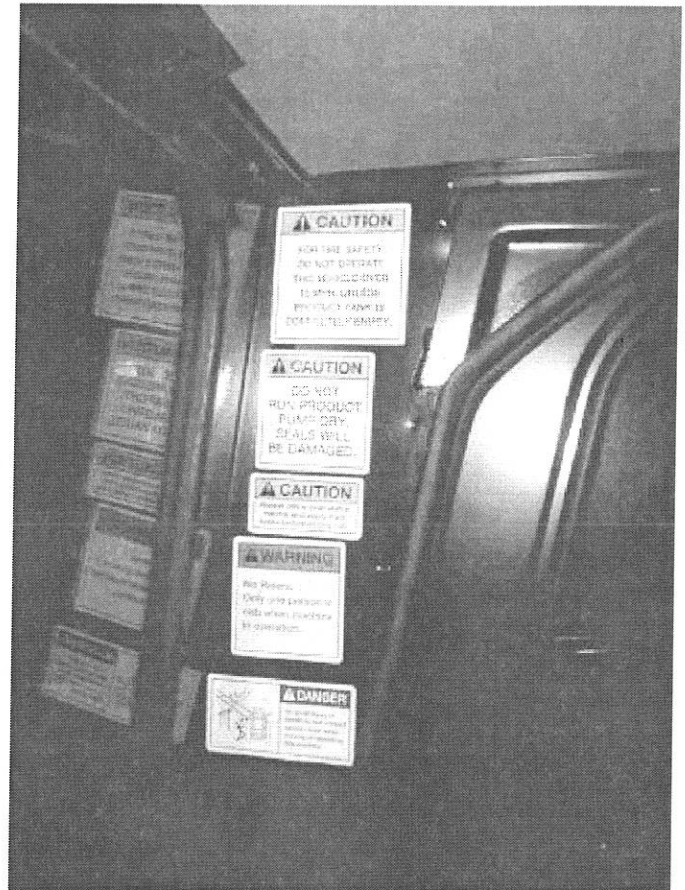


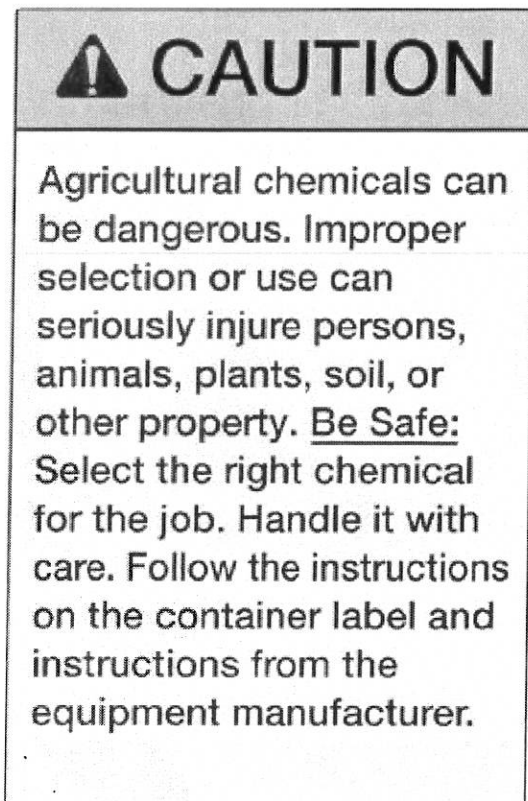
PART NO. 420305650



PART NO. 420305680

THESE DECALS ARE ALSO FOUND
INSIDE THE CAB ON THE LEFT POST
AS SHOWN IN THE PHOTOGRAPH





THIS DECAL IS FOUND ON THE LEFT FRONT OF THE PRODUCT TANK SKID.



PART NO. 420305540

THESE DECALS APPEAR ON THE LEFT SIDE FRONT AND REAR WHEELS. THEY INDICATE MAINTENANCE REQUIRED FOR THE WHEEL BOLTS.



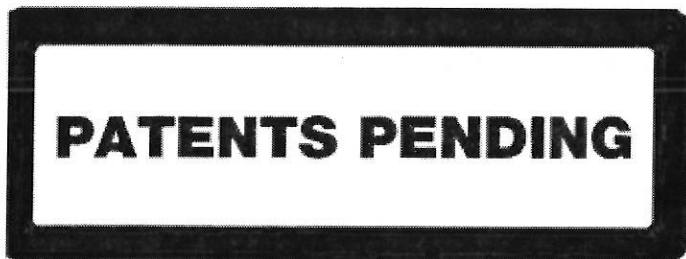
PART NO. 420305560

NOTE
TORQUE SPECIFICATIONS FOR FRONT WHEELS ON 800
& 1200 SERIES IS 400 FT. LBS.

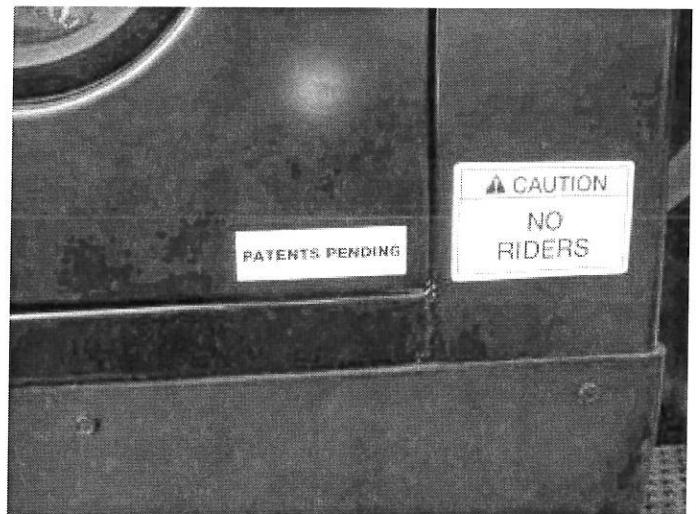


PART NO. 420305550

THIS DECAL APPEARS ON THE OUTSIDE
BOTTOM REAR CORNER OF THE DOOR



PART NO. 420305690



THIS DECAL IS LOCATED ON THE FIRE WALL AND INDICATES THE THE USE OF
HYDRAULC FLUID IN THE BRAKE SYSTEM

DO NOT USE BRAKE FLUID IN THE BRAKE SYSTEM

**USE MINERAL BASE
HYDRAULIC OIL ONLY**

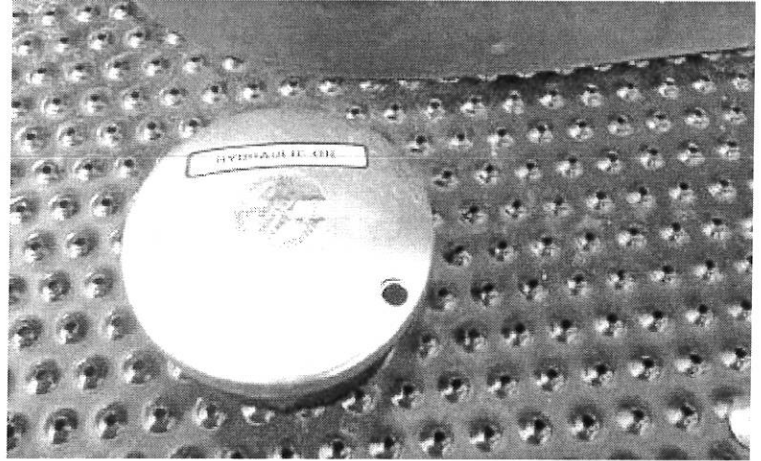
PART NO. 420305610



THIS DECAL IS LOCATED ON THE HYDRAULIC TANK CAP.
NOTE: USE DEXRON III OR ITS EQUIVELANT

HYDRAULIC OIL

PART NO. 420305620



THESE TWO DECALS , LOCATED ON THE RIGHT SIDE OF THE CAB, INDICATE THE USE OF DIESEL FUEL.

DIESEL FUEL ONLY

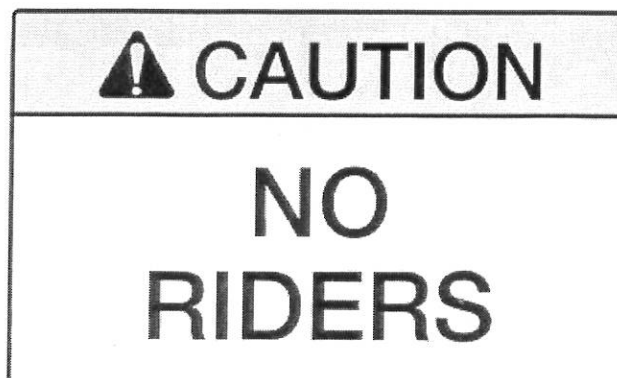
PART NO. 420305590



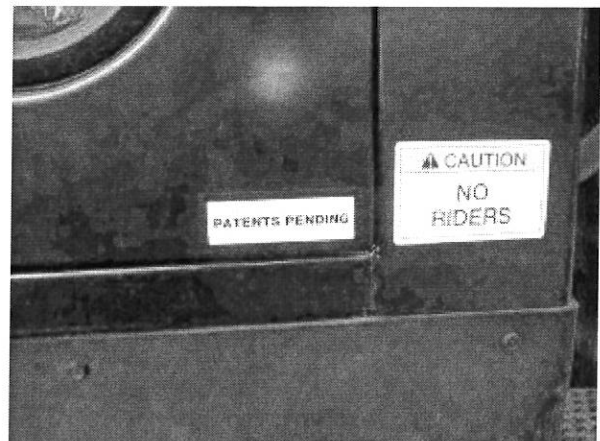
DIESEL FUEL

PART NO. 420305600

THIS DECAL IS AN ADDITIONAL NO RIDERS CAUTION, LOCATED ON THE LEFT OUTSIDE NEXT TO THE CAB DOOR.



PART NO. 420305530



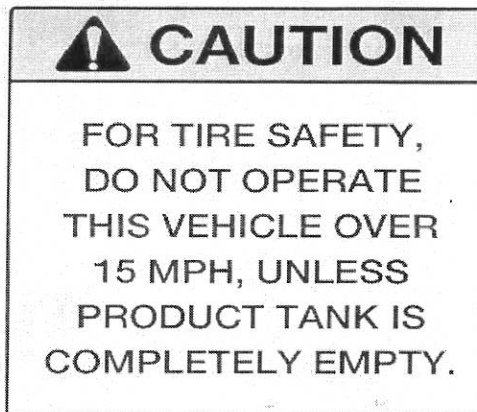
THIS DECAL IS LOCATED ON THE LEFT SIDE OF THE TANK SKID.



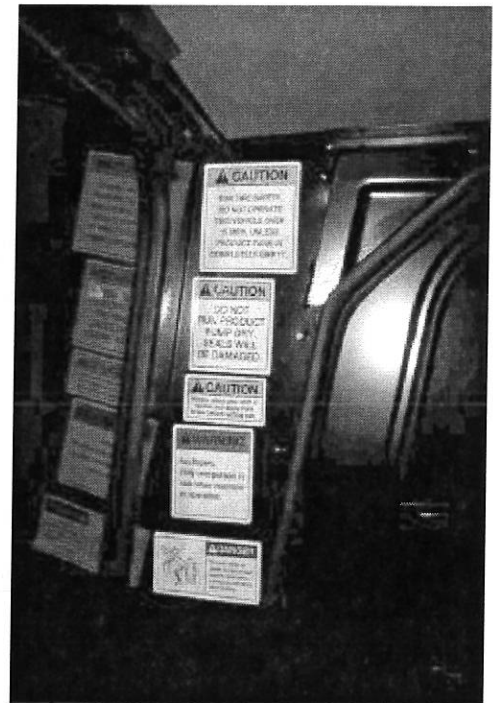
PART NO. 420305740



THIS DECAL IS LOCATED ON THE INSIDE LEFT CORNER OF THE CAB.



PART NO. 420305510



WARRANTY

WARRANTY



Equipment Technologies Inc.

2201 Hancel Parkway

Mooresville, IN 46158

Tel.: (317) 834-4500

Fax: (317) 834-4501

EQUIPMENT TECHNOLOGIES INC.

FOR 700, 800 SERIES

NEW MACHINE LIMITED WARRANTY

Equipment Technologies Inc. (hereinafter called ET) warrants to the original purchaser each new ET machine to be free from defects in material and workmanship for a period of two (2) years or one thousand (1000) hours, whichever occurs first, from the day of delivery to the original purchaser.

Under no circumstances does this Limited Warranty cover any merchandise or component parts, which, in the opinion of ET, have been subject to negligent, use, misuse, improper storage, alteration, accident, or if repairs have been made with parts other than those manufactured and/or supplied by ET. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on glass, rubber hoses, parking brake, brake linings, filters, belts, product pump seals and bearings, or pressure gauges.

Engines, batteries, tires or other components supplied to ET by other manufacturers are not covered by this Limited Warranty as the respective manufacturer warrants them.

ET's obligation under this Limited Warranty is limited to repairing or replacing free of charge to the original purchaser, at a location designated by ET, any part that in ET's sole judgment, shows evidence of defect or improper workmanship, provided that part is returned to ET within thirty (30) days of the alleged failure date. Parts must be returned through the authorized selling Dealer or Distributor, transportation charges prepaid. Returned parts must meet ET's standard return policy.

ET's obligation under this Limited Warranty is in lieu of all other warranties or representations, express or implied, and specifically excludes any obligations or liability, with respect to liability for loss of crops, losses caused by harvest delays or any expense or loss for labor, supplies, rental equipment and all incidental or consequential damages. The replacement of parts and/or repair is the exclusive remedy under this Limited Warranty.

No person is authorized to give any other warranties or to assume any other liability on ET's behalf.

This Limited Warranty is void if ET's Limited Warranty policy standards are violated.

ET MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

This warranty must be registered with ET within (10) days from the date of delivery to original purchaser.



Equipment Technologies Inc.

2201 Hancel Parkway

Moorestown, IN 46158

Tel.: (317) 834-4500

Fax: (317) 834-4501

NEW MACHINE LIMITED WARRANTY

FOR 1200 SERIES

Equipment Technologies Inc. (hereinafter called ET) warrants to the original purchaser each new ET machine to be free from defects in material and workmanship for a period of five (5) years or two thousand (2000) hours, whichever occurs first, from the day of delivery to the original purchaser or properly designated transferee. This limited warranty is subject to the conditions as set forth below.

TERMS OF THE WARRANTY:

The warranty period for each new ET machine is five (5) years or two thousand five hundred operating hours, with conditions as listed below, which ever occurs first, from the date of delivery to the original purchaser or from the date the unit is first put into service. For purposes of clarification, the "original purchaser" is deemed to be the first retail purchaser. No extension of this Limited Warranty is allowed. Any unit with 50 or more hours shall be deemed to be "in service" and the Limited Warranty term shall commence at 50 hours of usage regardless of delivery status.

TIME AND HOUR COVERAGE:

1st year parts and labor, to cover the entire machine subject to the exclusions as listed herein. If the machine reaches 1000 hours before the end of the first year, the warranty reverts to years 3-5 of warranty. No freight charges will be considered. All claims exceeding \$1000.00 US must have prior approval. Site charges will not be reimbursed for missed diagnosis. 2nd year or 1000 total accumulated hours, which ever comes first, to cover parts and labor, for the transmission and its internal components, the differential and its internal components, the final drives (drop box) and their internal components, the frame rails, cross members, bolster, and axle weldments to the extent of the original manufacturers warranty. If the machine has 1000 or more operating hours the warranty shifts to years 3-5.

3 to 5 years or 2000 total accumulated hours, whichever comes first, coverage is for parts only for the transmission and its internal components, the differential and its internal components, the final drives (drop box) and its internal components the frame rails, cross members, bolster, and axle weldments. This portion of the coverage is subject to all listed conditions but further excludes oil seals, gaskets and leakage.

CONDITIONS:

ET's obligation under this Limited Warranty is limited to repairing or replacing, free of charge, to the original purchaser, or qualified transferee at a location designated by ET, any part that, in ET's sole judgment, shows evidence of defects in workmanship or material. ET's obligation under this Limited Warranty is in lieu of all other warranties and representations, express or implied, and specifically excludes any obligation or liability of ET, with respect to liability for loss of crops, loss caused by harvest delays or any expense or loss for labor, supplies, rental equipment and all incidental or consequential damages. Parts must be returned through the selling distributor, if applicable, transportation charges UPS collect.

This warranty is transferable to a second owner, for a fee of \$250.00 US to ET, provided the machine is still within the new Machine coverage period and conditions as outlined herein. The transferred warranty does not extend the new machine warranty beyond the original new machine warranty. The Distributor/Dealer registers this Limited Warranty by the proper completion of the Pre-Delivery Inspection and the Retail Delivery Report/ Warranty Registration forms as set forth below.

Warranty coverage is not available on units that are not properly registered.

DISTRIBUTOR AND DEALER LIMITATIONS:

No Distributor or Dealer is authorized to give any other warranties or to assume any other liability on ET's behalf and Distributor/Dealer shall be solely responsible for and shall indemnify and hold harmless ET for such unauthorized representations or warranties.

Distributors will extend to their dealers the applicable written new machine Limited Warranty and policy in effect at the time of sale of the machine by Distributor to Dealer and shall require of Dealer that Dealer extend such Limited Warranty to Dealer's customers at the time of sale of such machine by Dealer to such customers.

PRE-DELIVERY:

The pre-delivery inspection must be completed by competent Distributor/ Dealer personnel immediately before delivery of the unit to the original purchaser or immediately before the unit being put "in service". This inspection is to insure the machine is in proper operating condition when delivered or placed in service.

The pre-delivery report must be completed and delivered to ET as soon as the inspection is completed but in any event, in no less than 10 working days after the inspection is completed.

RETAIL DELIVERY REPORT/WARRANTY REGISTRATION:

This report, completed in full and appropriately signed by the original purchaser, must be returned to ET within 10 working days of the date of sale to the original purchaser to be valid.

PARTS:

Replacement parts not obtained through or specifically approved by ET will not be covered by this warranty. A sublet invoice indicating the purchase price must support all approved parts over \$25.00 U.S. This invoice is to accompany the warranty claim.

Only parts specifically requested by ET need to be returned. The approved claim form, returned to the Distributor/Dealer, will contain an RGA (Return Goods Authorization) for parts to be returned. These parts must be returned within 30 days of the approval date on the claim. The approved claim will be returned to the Distributor/Dealer within ten working days of approval. All parts not to be returned are to be made unusable and discarded.

Parts not returned within the thirty-day (30) day period will cause that portion of the claim to be rejected and the warranty claim will be charged back to the distributor/dealer's account.

Returned parts must be clean, valve rinsed where applicable, water tight, dry, and free of all foreign residue and chemicals.

Returned parts must be shipped "Attention Warranty Department", tagged with the RGA number and shipped UPS collect to a site designated by ET.

Returns not meeting these criteria will be returned, "as is" to the sender.

All returned parts are subject to final inspection and warranty approval by ET personnel. Parts not approved will cause the warranty claim to be rejected and charged back to the distributor/ dealer.

Parts are to be shipped separately from warranty claim forms and documentation. Only parts tags and shipping forms should accompany the returned parts.

EXCLUSIONS:

Under no circumstances does this Limited Warranty cover any merchandise or component parts, which in the opinion of ET have been subject to negligent use, misuse, alteration or accident, improper maintenance, service, or storage.

Under no circumstances are component parts warranted against normal wear and tear.

There is no warranty on glass, rubber hoses, parking brake wear pads, filters, belts, product pump seals and bearings, oils, wear strips, lubricants and pressure gauges.

Adjustments are not covered under this warranty.

Warranty repairs do not extend the term of the warranty on any part, component or the entire tractor.

Service updates or Campaigns not promptly performed and recorded will void the warranty on that update or campaign and all parts adversely affected by the lack of the update or campaign.

Shop supplies such as but not limited to gasket material, anti-corrosive liquid, grinding discs, solvents and detergents are not covered.

Items that can be repaired instead of replaced should be repaired when possible.

Failure of the customer or dealer to provide timely notification of the repair need when such need is known in advance shall void the warranty on the affected items.

This Limited Warranty does not cover batteries and tires or other components supplied to ET by other manufacturers as the respective manufacturer warrants them.

No person is authorized to give any other warranties or to assume any other liability on ET's behalf.

This Limited Warranty is void if ET's Limited Warranty policy standards are violated.

MANUFACTURER'S WARRANTY
(SEE DETAILED WARRANTY STATEMENTS)

John Deere: Term is for 5 years/2000 hours; which ever comes first parts and labor. A \$250.00 USD deductible after the first year of warranty. See attached Deere warranty for complete details.

Cummins: Term is for 5 years/2000 hours; which ever comes first, parts and labor. A \$200.00 USD deductible after the first year of warranty. See attached warranty for complete details.

Tires: Covered under the tire manufactures warranty. Contact your local authorized dealer for warranties.

Batteries: 18 month free replacement. Pro-rated for the remainder of the 30 months. Contact your local Batteries Plus store or Equipment Technologies Inc. for warranty.

**ET MAKES NO WARRANTY OF MERCHANTABILITY OR
FITNESS FOR AN PARTICULAR PURPOSE**

This warranty must be registered within ten (10) days of delivery to the original purchaser

THESE WARRANTIES ARE VALID ONLY IF THE REQUIRED PRE-DELIVERY SERVICE IS PROPERLY AND COMPLETELY PERFORMED AND COPIES OF THE RECORDS INDICATING SUCH HAVE BEEN FILED WITH EQUIPMENT TECHNOLOGIES INC. WITHIN THE PRESCRIBED TIME LIMIT.

FURTHER , THE DELIVERY REPORT/ WARRANTY REGISTRATION MUST ALSO BE COMPLETED AND FILED WITH EQUIPMENT TECHNOLOGIES INC. WITHIN THE PRESCRIBED TIME. ALL OTHER CONDITIONS OF WARRANTY COVERAGE MUST BE COMPLIED WITH FOR THESE WARRANTIES TO BE EFFECTIVE. ANY DEVIATION FROM THESE CONDITIONS WILL VOID THE WARRANTY.

EQUIPMENT TECHNOLOGIES INC. DOES NOT WARRANTY PRODUCTS, SUPPLIED TO THEM BY OUTSIDE MANUFACTURERS, WHICH CARRY THEIR OWN AND SEPARATE WARRANTY. THIS WOULD INCLUDE SUCH ITEMS AS BATTERIES , TIRES, AND THE ENGINE. PLEASE CONTACT YOUR DEALER/ DISTRIBUTOR FOR DETAILS ON ANY OF THESE ITEMS.

NORMAL WEAR AND TEAR ITEMS AND MAINTENANCE ITEMS SUCH AS BELTS, ENGINE COOLANT, OILS, AIR CONDITIONING COOLANT AND HOSES ARE NOT COVERED BY THIS WARRANTY.

FOR ADDITIONAL DETAILS ON THE WARRANTY COVERAGE OR PROCEDURES, CONTACT YOUR DEALER/DISTRIBUTOR OR EQUIPMENT TECHNOLOGIES INC.

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SPECIFICATIONS

SPECIFICATIONS

APACHE™ 700, 800, 1200 SERIES

ENGINE:	JOHN DEERE	MODEL 6068	170 H.P. @ 2500 RPM
		BORE/STROKE	4.19/5.00 IN.
		DISPLACEMENT	6.8 LITER
		TURBO CHARGED	CLOCKWISE ROTATION
		WEIGHT WET	1254 LBS.
	CUMMINS	MODEL 6BTA5.9-C200	200H.P. @ 2500 RPM
		BORE/STROKE	4.02/4.72 IN.
		DISPLACEMENT	5.88 LITRE
		TURBO CHARGED & JWAC	CLOCKWISE ROTATION
		WEIGHT WET	997 LBS.
	CUMMINS	MODEL QSB5.9	275H.P. @ 2500 RPM
		BORE/STROKE	4.02/4.72 IN.
		DISPLACEMENT	5.88 LITRE
		TURBO CHARGED	CLOCKWISE ROTATION
		WEIGHT WET	1012 LBS.

TRANSMISSIONS

ITL MODEL PS750
FOUR SPEED POWER SHIFT
WITH TORQUE CONVERTER

FUNK MODEL 2163
6 SPEED POWERSHIFT
WITH TORQUE CONVERTER

FRONT AXLE:

MECHANICALLY EXPANDABLE
OPTIONAL HYDRAULIC EXPANDABLE
72"-90" , FIXED 120" OR 120"-144"

REAR AXLE:

ITL MODEL PD 70 CENTER CARRIER
HYDRAULICALLY ACTUATED INTERNAL WET DISC BRAKES
IN PLANETARY DRIVES AT WHEEL ENDS
DYNAMIC RATING 15,400 LBS.
72"-90" , FIXED 120" OR 120"-144"
STANDARD SHAFT DRIVE OR 12" DROP BOXES OR 18'
DROP BOXES

PARKING BRAKE:

MECHANICAL DISC ON TRANSMISSION SHAFT.

CAB:

JOHN DEERE DELUX PRESSURIZED CAB
3 POINT RUBBER MOUNT
SOUND DAMPENING INSULATION
AIR CONDITIONER
HEATER
AM-FM WEATHER BAND RADIO
GUAGE INSTRUMENTATION

WEIGHT:

760:
780:
790:

APPROXIMATELY 16,000 LBS. (WITH PRODUCT TANK EMPTY)
APPROXIMATELY 16,206 LBS. (WITH PRODUCT TANK EMPTY)
APPROXIMATELY 16,506 LBS. (WITH PRODUCT TANK EMPTY)

WEIGHT:(cont.)

860:	APPROXIMATELY 16,500 LBS. (WITH PRODUCT TANK EMPTY)
880:	APPROXIMATELY 16,706 LBS. (WITH PRODUCT TANK EMPTY)
890:	APPROXIMATELY 17,006 LBS. (WITH PRODUCT TANK EMPTY)
8100:	APPROXIMATELY 17,506 LBS. (WITH PRODUCT TANK EMPTY)
1200:	APPROXIMATELY 20032 LBS. (WITH PRODUCT TANK EMPTY)

HEIGHT:

700 series :	WITH ITL STANDARD AXLE 123.5" TO TOP OF CAB
---------------------	---

BOOM WIDTH:

ALL MODELS:	132.9"
--------------------	--------

LENGTH:

ALL MODELS:	27 FT. FRONT OF HOOD TO BACK OF BOOM RACK
--------------------	---

CROP CLEARANCE:

<u>STANDARD</u>	<u>12" DROP BOX</u>	<u>18" DROP BOX</u>
34"	42"	48"

FRAME:

5/16 IN. X 9 IN. X 3 IN.
50,000 LB TEST STEEL
BOLTED DESIGN
FRONT BOLSTER 1/2 IN. THICK

PRODUCT TANK: 700 SERIES:

750 GALLON ELIPTICAL

800 SERIES:

850 GALLON ELIPTICAL

1200 SERIES:

1000 OR 1200 GALLON ELIPTICAL

TIRES: 700 & 800 SERIES:

FRONT 12.4 X 28

REAR 14.9 X 46

1200 SERIES:

FRONT 14.9 X 38

REAR 14.9 X 46

ROW SPACING:

72 IN. AND 90 IN. FIXED AND ADJUSTABLE CENTER TO CENTER
OF REAR TIRES

120 IN. FIXED AND 120 IN. TO 144 IN. ADJUSTABLE OPTIONAL

SPEEDS: EACH GEAR:

	FUNK	ITL
1ST.	0 TO 5.5 M.P.H.	5.0 MPH
2ND.	0 TO 8.5 M.P.H.	8.0 MPH
3RD.	0 TO 10.0 M.P.H.	15.0 MPH
4TH.	0 TO 15.0 M.P.H.	28.0 MPH
5TH	0 TO 21.0 MPH	N/A
6TH	0 TO 35.0 MPH	N/A

TURNING RADIUS:

14 FT. 7 IN. (FROM CENTER LINE OF MACHINE) WITH
STANDARD AXLE

BOOM:

PRECISION 60 FT., VERTICAL FOLD, FULLY HYDRAULIC,
SELF LEVELIZING, INDEPENDENT TILT,
6 FT. 8 IN. BREAKAWAY TIPS
TEEJET NOZZLE BODIES
1 IN. POLYPROYLENE WET BOOM
MINIMUM SPRAY HEIGHT 28 IN

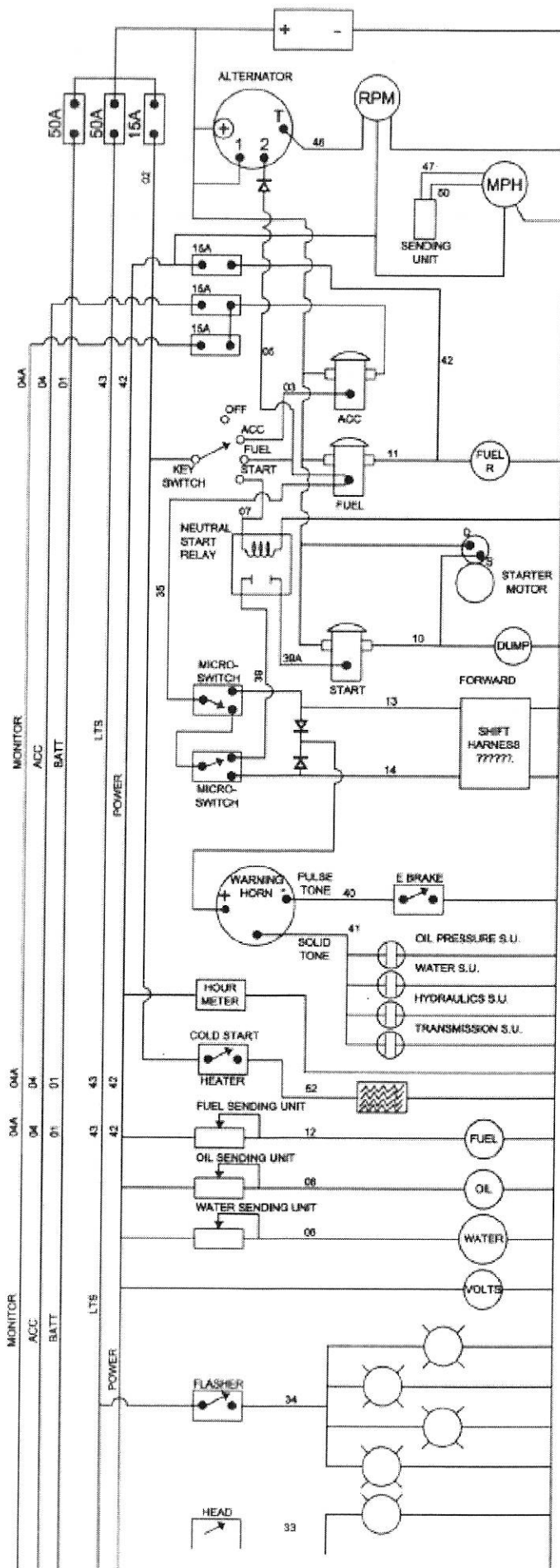
TEEJET NOZZLE BODIES
1 IN. POLYPROYLENE WET BOOM
MINIMUM SPRAY HEIGHT 28 IN.
MAXIMUM SPRAY HEIGHT 72 IN.

PRECISION 60/80 FT., VERTICAL FOLD WITH 10 FT. EXTENSIONS
FULLY HYDRAULIC, SELF LEVELIZING, INDEPENDENT TILT,
6 FT. 8 IN. BREAKAWAY TIP
TEEJET NOZZLE BODIES
1 IN. POLYPROYLENE WET
MINIMUM SPRAY HEIGHT 28 IN.
MAXIMUM SPRAY HEIGHT 72 IN.

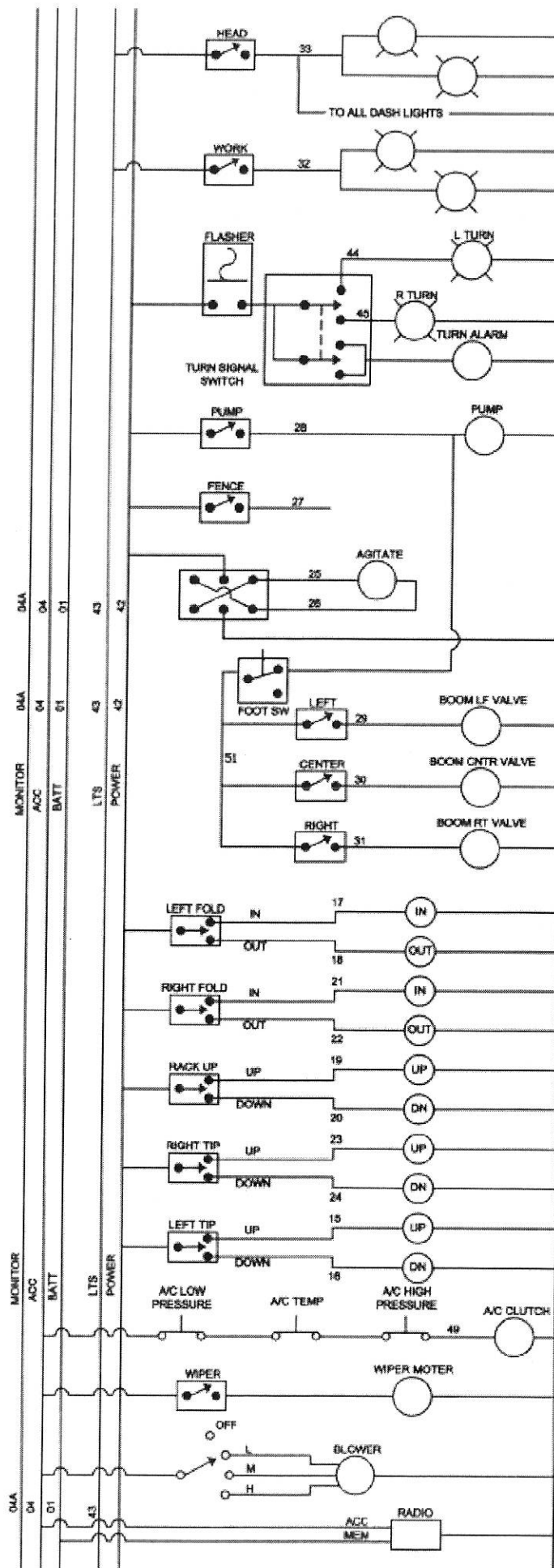
PRECISION 60/90 FT., VERTICAL FOLD WITH 15 FT. EXTENSIONS
FULLY HYDRAULIC, SELF LEVELIZING, INDEPENDENT TILT,
6 FT. 8 IN. BREAKAWAY TIP
TEEJET NOZZLE BODIES
1 IN. POLYPROYLENE WET BOOM
MINIMUM SPRAY HEIGHT 28 IN.
MAXIMUM SPRAY HEIGHT 72 IN.

PRECISION 100 FT., VERTICAL FOLD WITH 15 FT. EXTENSIONS,
FULLY HYDRAULIC, SELF LEVELIZING, INDEPENDENT TILT,
6 FT. 8 IN. BREAKAWAY TIP
TEEJET NOZZLE BODIES
1 IN. POLYPROYLENE WET BOOM
MINIMUM SPRAY HEIGHT 28 IN.
MAXIMUM SPRAY HEIGHT 72 IN.

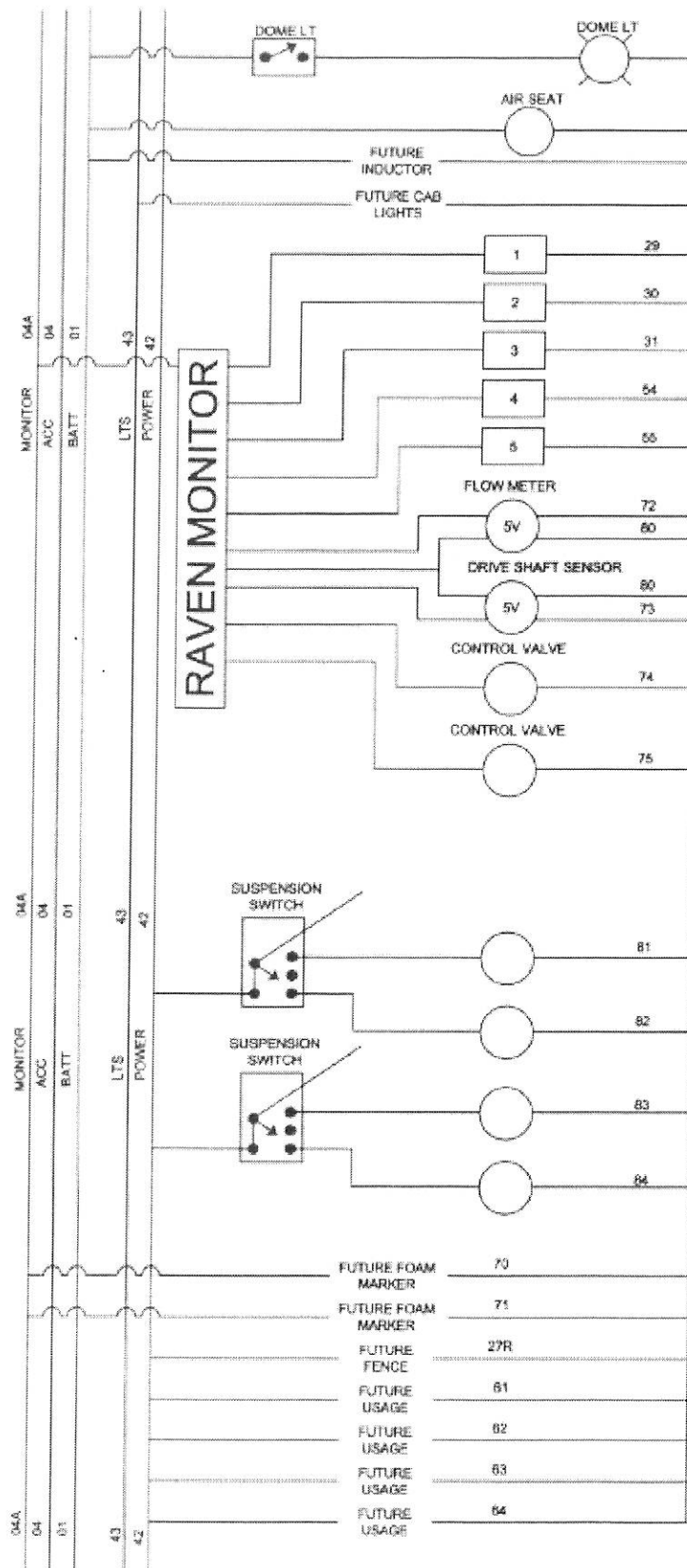
APACHE ELECTRICAL SCHEMATIC --- 1 OF 3



APACHE ELECTRICAL SCHEMATIC --- 2 OF 3



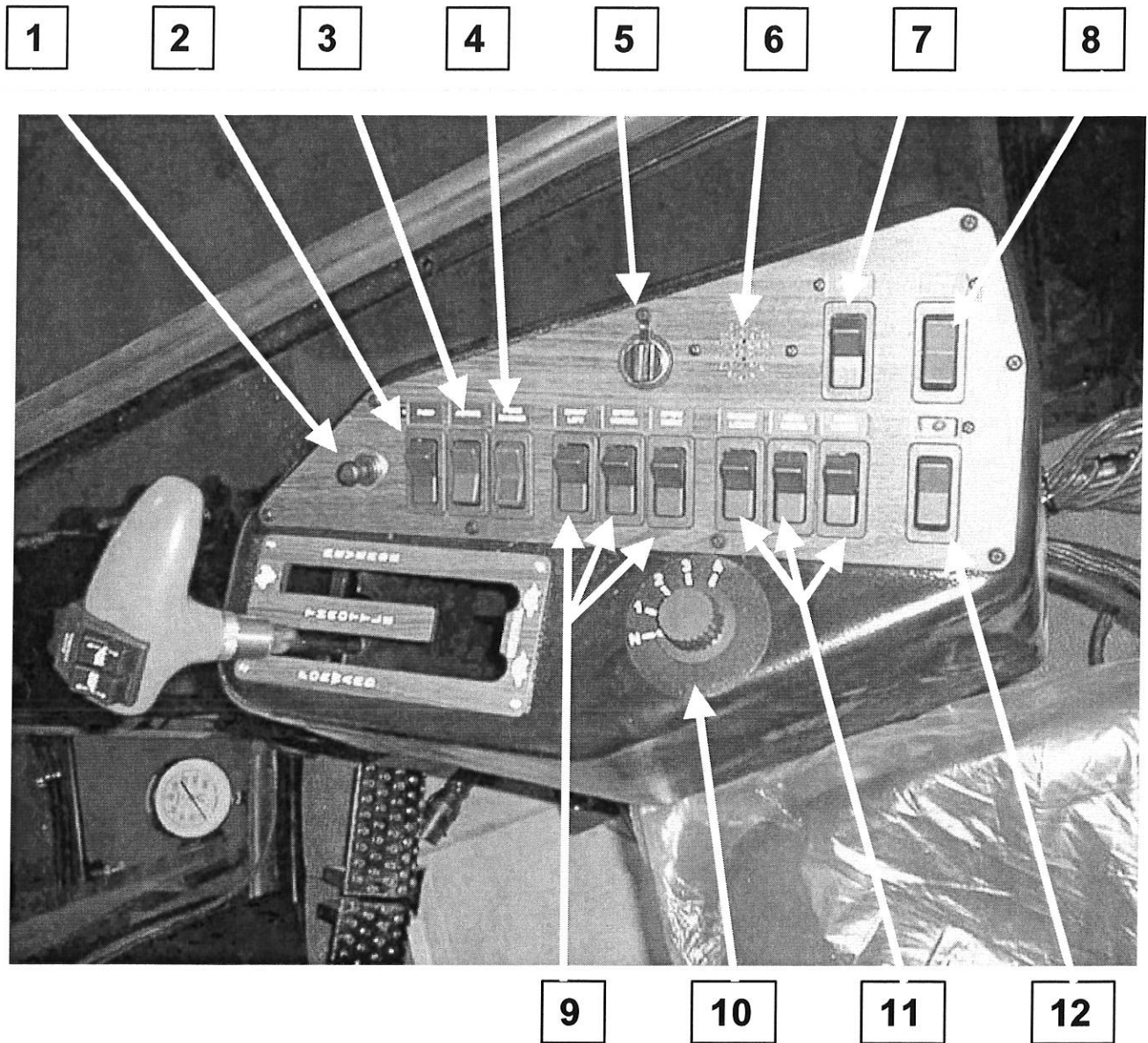
APACHE ELECTRICAL SCHEMATIC --- 3 OF 3



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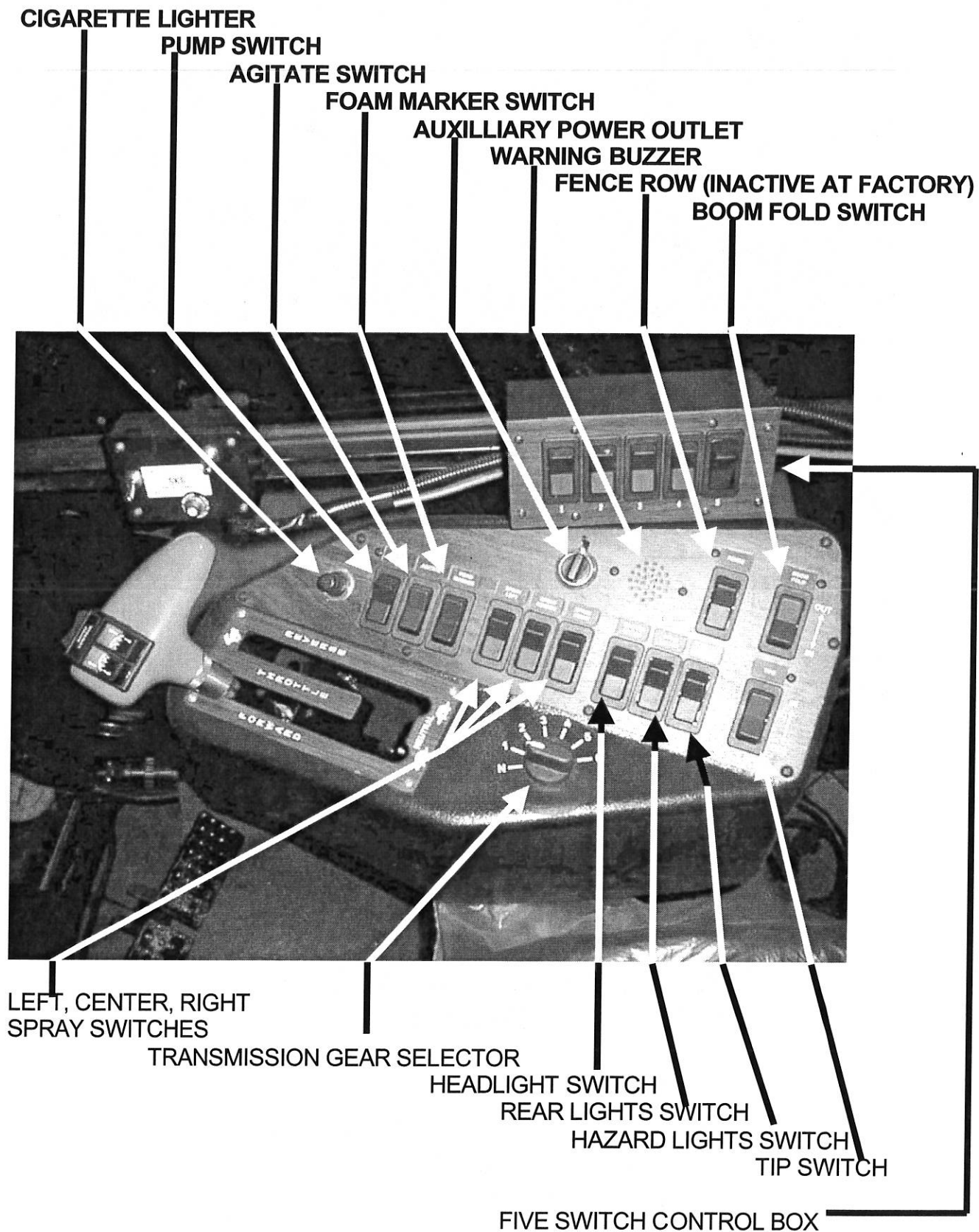
CONTROLS

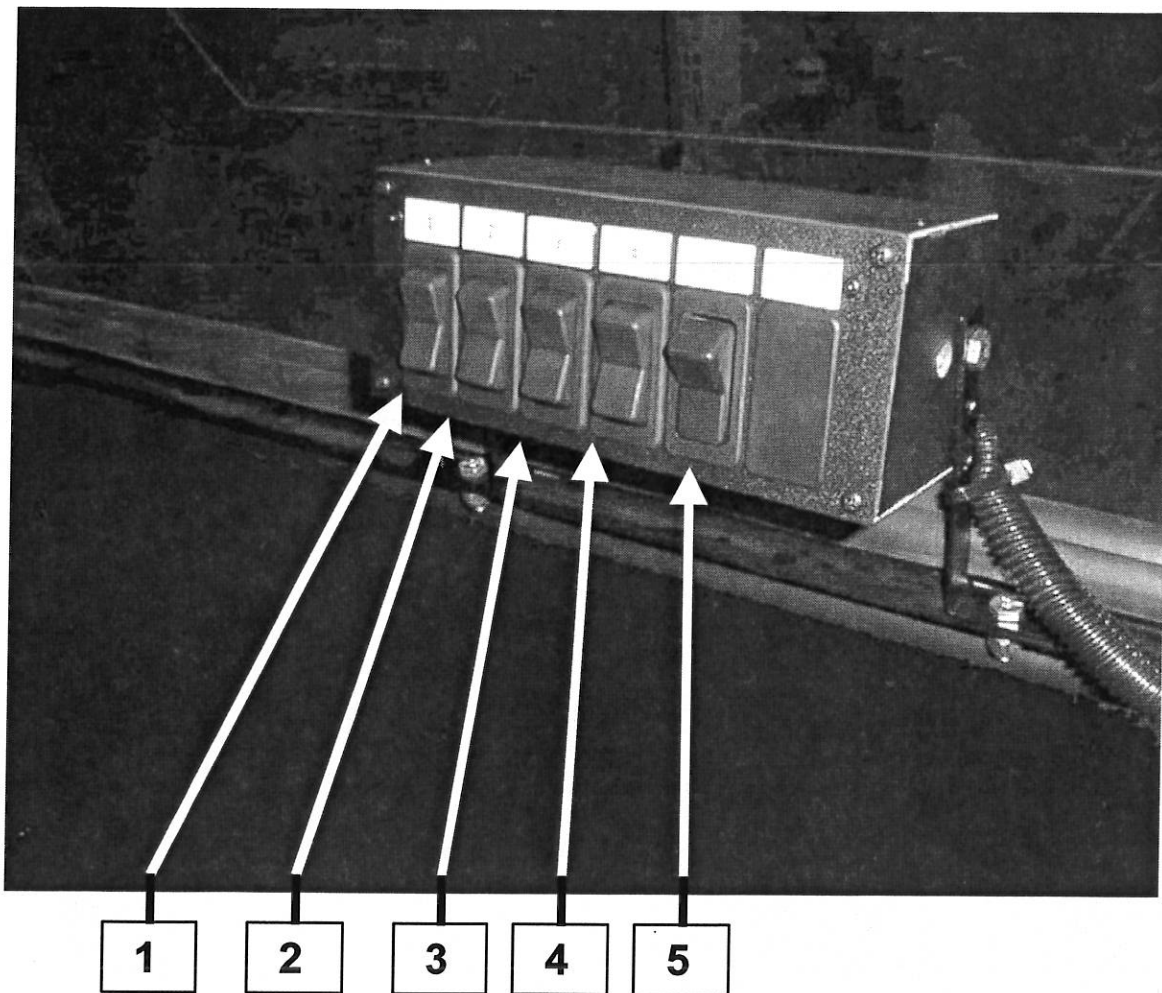
CONSOLE FOR 5 SECTION BOOM CONTROL 700 & 800 SERIES



- 1 CIGARETTE LIGHTER
- 2 PRODUCT PUMP ON-OFF SWITCH
- 3 AGITATE ON-OFF SWITCH
- 4 FOAMER ON-OFF SWITCH
- 5 AUXILLARY POWER OUTLET
- 6 ALERT SOUND OUTLET
- 7 FENCE ROW SWITCH (INACTIVE FROM FACTORY)
- 8 BOOM FOLD IN-OUT SWITCH
- 9 LEFT, CENTER, RIGHT SPRAY SWITCHES
- 10 TRANSMISSION GEAR SELECTOR
- 11 LIGHT SWITCHES
- 12 TIPS IN-OUT SWITCH

CONSOLE APACHE PLUS™





THE FIVE (5) SWITCH BOX IS USED FOR THE SLIDER AXLE CONTROL AND FOR THE BOOM SECTION CONTROL. IF YOUR UNIT HAS BOTH FEATURES, THERE WILL BE TWO BOXES.

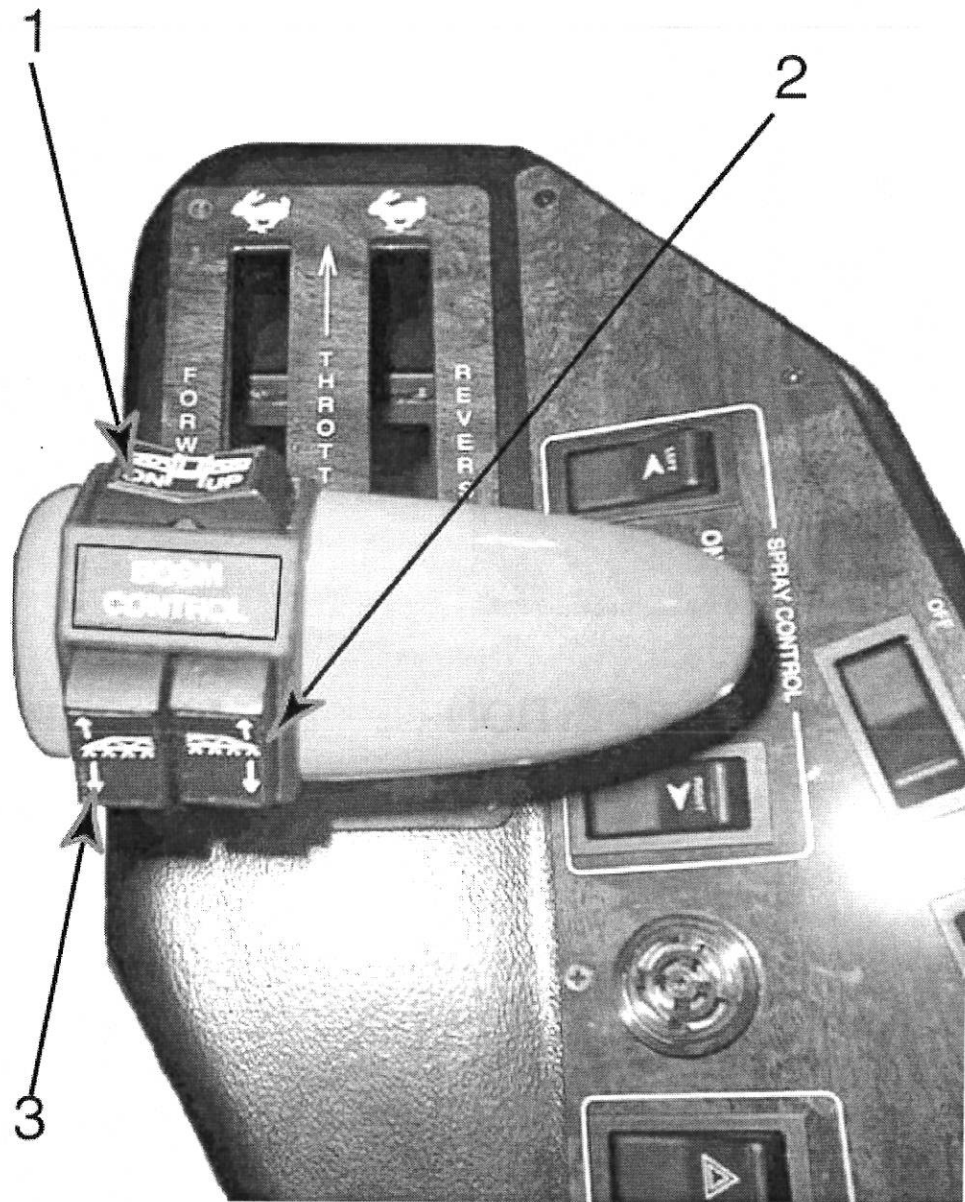
FOR SLIDER CONTROL

- 1 OPERATES LEFT FRONT SLIDER**
- 2 OPERATES RIGHT FRONT SLIDER**
- 3 OPERATES LEFT REAR SLIDER**
- 4 OPERATES RIGHT REAR SLIDER**
- 5 SLIDER ON/OFF SWITCH**

FOR BOOM VALVE CONTROL

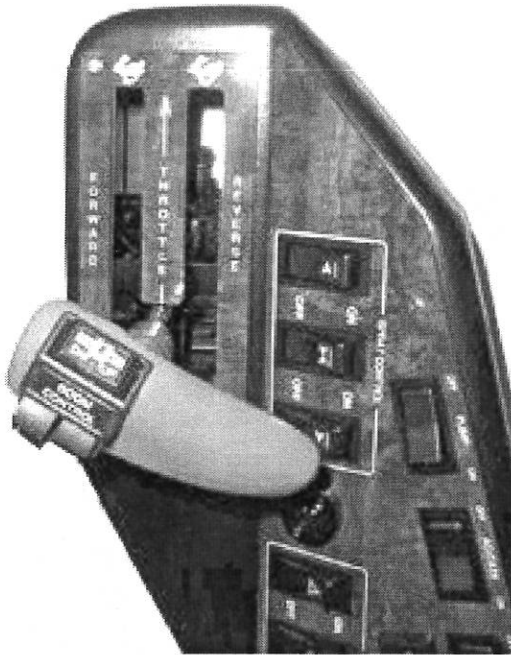
- 1 OPERATES LEFT OUTSIDE BOOM**
- 2 OPERATES LEFT INNER BOOM**
- 3 OPERATES CENTER BOOM**
- 4 OPERATES RIGHT INNER BOOM**
- 5 OPERATES RIGHT OUTER BOOM**

T-HANDLE

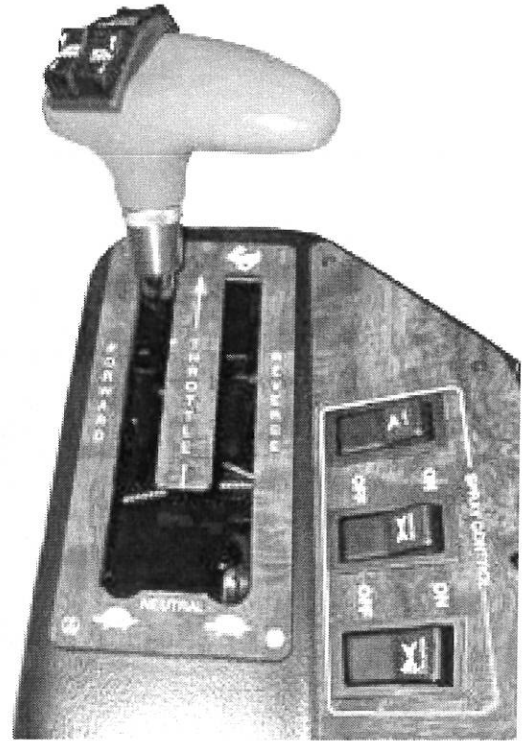


- 1 BOOM CENTER RACK RAISE & LOWER SWITCH
- 2 RIGHT BOOM TIP UP/DOWN SWITCH
- 3 LEFT BOOM TIP UP/DOWN SWITCH

SPEED/ DIRECTION CONTROL

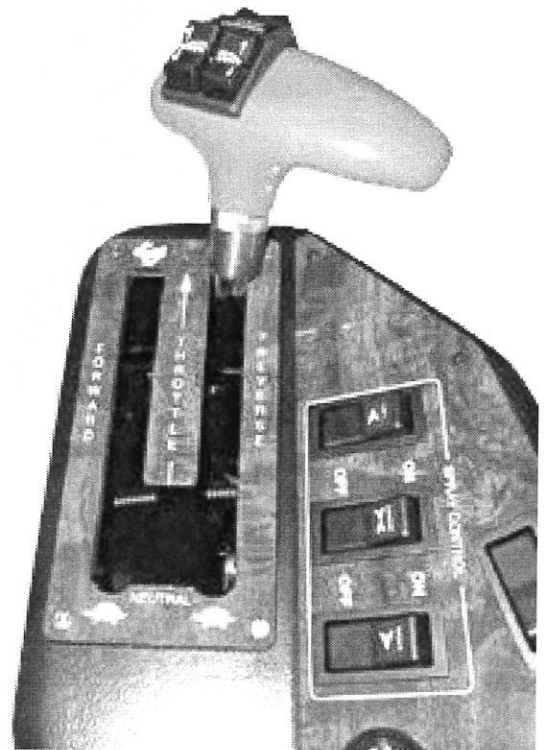


NEUTRAL POSITION



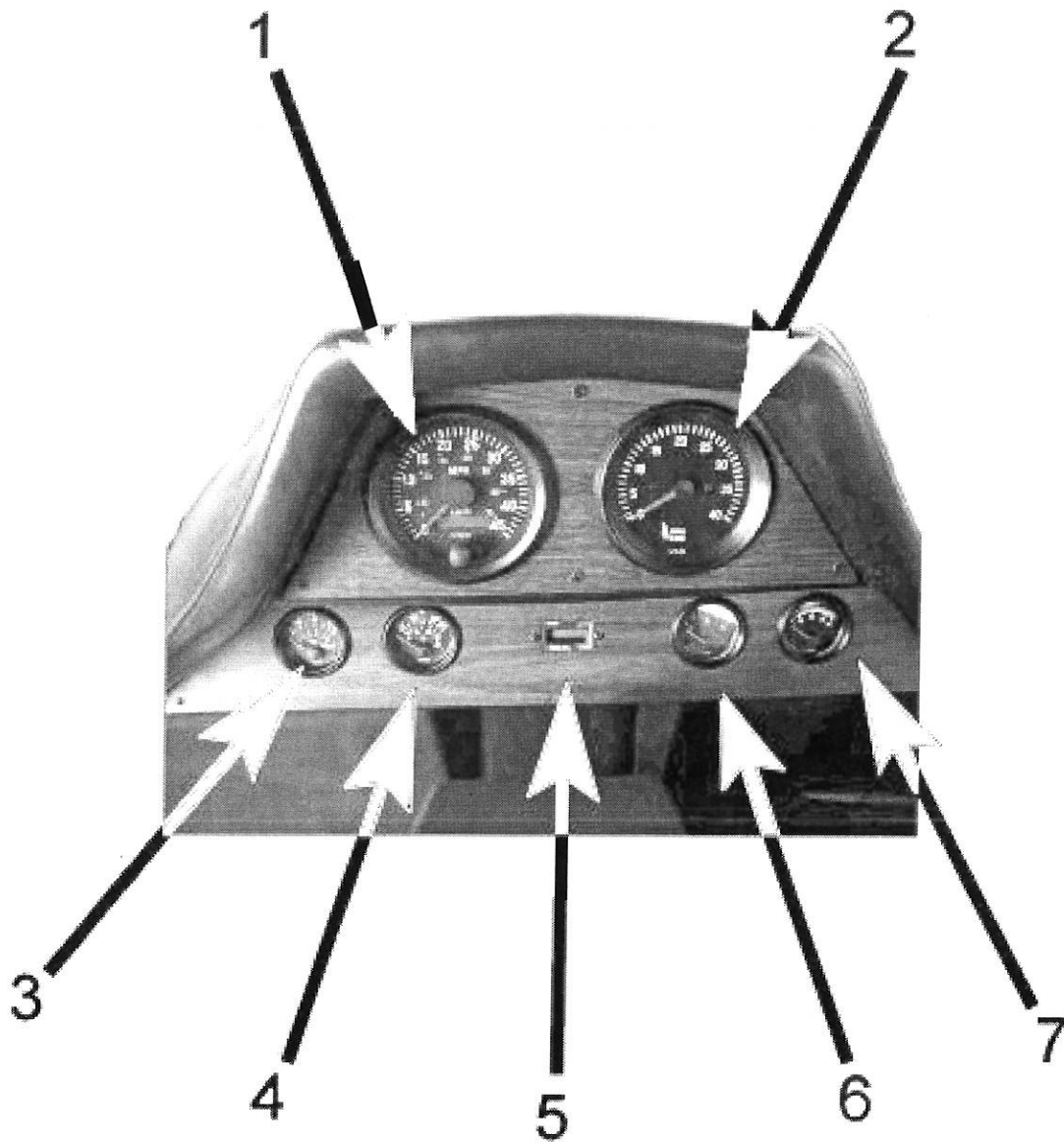
FULL SPEED FORWARD

TO OPERATE SPEED AND DIRECTION CONTROL FIRST SELECT A GEAR (USING THE GEAR SHIFT LEVER) WHILE THE T-HANDLE IS IN THE NEUTRAL POSITION. ONCE THE GEAR IS SELECTED, TO GO FORWARD, MOVE THE T-HANDLE TO THE LEFT AND FORWARD UNTIL THE DESIRED SPEED IS ACHIEVED. FOR REVERSE, FOLLOW THE SAME GEAR SELECTION, THEN MOVE THE T-HANDLE TO THE RIGHT AND FORWARD UNTIL THE DESIRED SPEED IS ACHIEVED.



FULL SPEED REVERSE

DASH INSTRUMENTATION



- 1 SPEEDOMETER AND ODOMETER
- 2 TACHOMETER
- 3 ENGINE OIL PRESSURE GUAGE
- 4 ENGINE COOLANT TEMPERATURE GUAGE
- 5 HOUR METER
- 6 FUEL GUAGE
- 7 VOLT METER

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OPERATION

THE FOLLOWING INFORMATION IS INTENDED TO GIVE THE OWNER GENERAL OPERATING PROCEDURES FOR THE **APACHE**™ SPRAYER TRACTOR. IT IS **NOT** INTENDED TO REPLACE AN IN DEPTH OPERATOR TRAINING PROGRAM AND SHOULD NOT BE CONSTRUED AS SUCH.

PLEASE NOTE THAT MORE THAN ONE TYPE OF MACHINE IS COVERED BY THIS MANUAL. PLEASE USE THAT INFORMATION THAT ONLY REFERS TO YOUR MACHINE.

DO **NOT** OPERATE THIS UNIT WITHOUT A THOROUGH UNDERSTANDING OF ALL IT'S OPERATIONS AND WITHOUT PROPER OPERATOR TRAINING.

THE OPERATING INSTRUCTIONS FOR COMPONENTS NOT INSTALLED BY EQUIPMENT TECHNOLOGIES INC. ARE NOT INCLUDED IN THIS MANUAL. THESE INSTRUCTIONS SHOULD BE OBTAINED FROM YOUR LOCAL DEALER OR DISTRIBUTOR.

MACHINE OPERATION

ENTERING THE MACHINE:

Grab the handrail with your right hand and place your foot on the stairs at a comfortable height. While lifting yourself onto the stairs, grab the silver door handle and pull down firmly, opening the door. Enter the cab and sit on the operator's seat.

CLOSING THE DOOR:

Grab the small handle above the silver door handle and pull the door closed. The door has a double latch system, and due to the sealed cab system, will close hard. Be sure the door is completely closed before operating the machine.

ADJUSTING THE SEAT:

(See the last page in this section for complete seat adjustments).



**CAUTION: FASTEN YOUR SEAT BELT BEFORE
OPERATING THE MACHINE.**

IGNITION KEY:

The key turns clockwise to engage. The first click of the key powers the radio and air conditioner/heater. The second click completes the "ignition" or running circuit. This powers the fuel circuit to the engine, the air conditioner, and all gauges. The third click engages the starter. Full counter-clockwise rotation is required to turn the machine off and prevent the battery from running down.

STEERING WHEEL/COLUMN:

The center part of the steering wheel rotates counter-clockwise to loosen the telescoping function of the steering wheel. After adjusting the wheel to the desired height, turn the center part clockwise to lock it in place.

Depressing the foot lever located at the lower left of the column can tilt the steering column. After adjusting the column to the desired position, release the foot lever to lock the column in place.

TURN SIGNAL:

The turn signal lever is located at the left side of the steering column just below the steering wheel. Pulling towards the operator engages the left signal. Pushing the lever away from the operator engages the right signal. These are not self-canceling.

SERVICE AND STEERING BRAKES:

The two pedals on the right side floor are the service and steering brakes. The left pedal operates the left side brake and the right pedal operates the right side brakes. Applying both pedals at once will engage both brakes. The brakes are internally mounted hydraulic wet disc brakes with a self-adjusting mechanism.

GEAR SELECTION:

Gear selection is made by placing the rotary switch on the console in the desired gear (1 for first, 2 for second, etc.). The tractor can be started from any gear. You may shift gears after the unit is moving. (See section 11 page 68 for **APACHE PLUS™**.)

CAUTION SHOULD BE USED WHEN DOWN-SHIFTING TO PREVENT SUDDEN DECELERATION.

CAUTION: TRANSMISSION SHOULD NEVER BE OPERATED IN NEUTRAL WHILE THE MACHINE IS MOVING. SPECIFICALLY, COASTING DOWNHILL WHILE THE TRANSMISSION IS IN NEUTRAL CAN DAMAGE THE TRANSMISSION.

THE TRANSMISSION WAS DESIGNED TO OPERATE UNDER HIGH LOAD, LOW RPM CONDITIONS AND OPERATING IT OTHERWISE CAN CAUSE CATASTROPHIC DAMAGE. DAMAGE CAUSED BY SUCH OPERATION IS NOT COVERED BY WARRANTY AS IT IS CONSIDERED ABUSE. FURTHER, OPERATING THE TRACTOR UNDER SUCH CONDITIONS IS RECKLESS AND DANGEROUS.

CONSOLE:

"T-handle:" This multi-function handle controls machine direction, machine speed, and boom controls. (See controls section for photographic illustration of these devices.)

Engine speed & direction: All the way back and in the center is the neutral position. Pulling the handle from neutral towards the operator engages the forward gears and moving the handle away from the operator will engage the reverse gears. Moving the handle forward in either forward or reverse position controls the speed. You may move the handle from forward to reverse or vice-versa without bringing the machine to a complete stop, although this should not be done at high speeds.

Boom control: The top switch marked up and down raises and lowers the main center section of the boom. The bottom left switch controls the up and down tilt of the left side boom. The bottom right switch controls the up and down tilt of the right side boom. (See next page).

PRECISION 80, 90, 60/80, 60/90, & 100 FT. BOOM OPERATION

UNFOLD 80, 90, 60/80, 60/90 OR 100 FT. BOOMS:

Using the boom fold switch (located in the upper right corner of the console), fold the booms in slightly to release them from the boom rest locks. Using the tip switches located on the t-handle raise the tips from the boom rest.

Unfold both booms again using the boom fold switch on the console.

NOTE: BOTH BOOMS OPERATE AT ONCE FROM THIS SINGLE SWITCH.

CAUTION: BE SURE YOU HAVE ADEQUATE CLEARANCE ON BOTH SIDES OF THE TRACTOR TO EXTEND THE BOOMS.

When booms are unfolded, use the tip switches (located on the t-handle) to level the boom. Use the boom rack switch to lower the boom to the proper spraying height.

Use the "tips" switch (located in the upper right hand corner of the console, second switch down) to extend the boom length from 45 or 60 ft. To 80 or 90 ft.

WARNING: BE SURE YOU HAVE ADEQUATE CLEARANCE OF ALL POWER LINES.

Use the 60/90 switch (located in the upper right hand corner of the console, second switch from the right to enable the product flow to the 80 ft. Or 90 ft. Sections of the boom. **Note:** floor dimmer switch starts and stops product flow to all valves that are enabled.

FOLD 80, 90, 60/80, 60/90, OR 100 BOOMS:

Turn off the flow of product to the boom.

If extended to 80 ft. Or 90 ft., fold 80 ft. Or 90 ft. Boom sections into 45 or 60 ft.

Raise center rack to its highest position.

Using the tip switches on the t-handle, raise the tips of the boom to a level equal to the front boom rests.

Fold the booms into their rest position and lower them into the boom rests. Fold the booms out slightly to place them into the locked position.

INACTIVE BUTTONS:

Two buttons on the steering column are inactive. They are the small yellow and small black buttons located on the front part of the column just below the steering wheel. However, the small yellow button on the Plus model and the Deere engine equipped model is a cold starting aid.

INSTRUMENT PANEL:

Engine oil pressure gauge: Located in the lower left of the dash, it indicates the engine oil pressure.

Engine temperature gauge: Located to the right of the fuel gauge, it indicates the engine coolant temperature in Fahrenheit degrees.

Hour meter: Located in the lower center of the dash

Fuel gauge: Located to the right of the hour meter, it indicates the fuel level in the fuel tank.

Voltmeter: It is located in the lower right corner of the panel. When the key is in the ignition position, this gauge indicates the battery voltage.

Tachometer: The larger gauge located in the top row, left side; it indicates the engine rpm's.

Speedometer: The larger gauge located top row, right side, it indicates the machine travel speed in miles per hour. In the bottom of the speedometer is the trip meter and odometer.

To calibrate the speedometer:

1. With the ignition key off, push and hold the black button on the face of the speedometer.
2. While holding the black button, turn the ignition key to the second position.
3. As soon as the digital readout registers "pulse", release the black button.
4. Numbers will flash in the digital read out. Set each digit by pushing the black button while the digit is flashing. The action here is similar to setting a digital watch.
5. The setting for the Deere 170HP is approximately 20,000, for the Plus model approximately 325,000 and the 1200 series is 275,000. This calibrates the size of the rear tires to the drive shaft speed.

NOTE: A DIFFERENT SIZE REAR TIRE AND VARIOUS TIRE PRESSURES WILL REQUIRE A DIFFERENT CALIBRATION SETTING.

We recommend the use of a radar gun to verify changes.

FLOOR DEVICES:

"Dimmer" switch: This button is located on the left side of the floor. It is used to start and stop the spray boom. To be operated with the operator's left foot; it controls the left, center, and right controls.

SERVICE AND STEERING BRAKES:

The two pedals on the right side floor are the service and steering brakes. The left pedal operates the left side brake and the right pedal operates the right side brakes. Applying both pedals at once will engage both brakes. The brakes are internally mounted hydraulic wet disc brakes with a self-adjusting mechanism.

SHIFT LEVER & SHIFT SELECTION:

The yellow knob at the top of the power-shift lever indicates the shift pattern and location of the gears. The "T-handle" (located on the console) must be in the neutral position to shift gears. You may shift gears while the machine is traveling as long as the "T-handle" is placed in the neutral position first. Normal procedure is to first select the desired gear range (1st, 2nd, 3rd, or 4th) and start the machine at "0" mph and increase to the desired speed by pushing the "T-handle" forward in either forward or reverse. (See section 11, Page 69 for **APACHE PLUS™**)

CAUTION: MACHINES SHOULD NEVER BE OPERATED IN NEUTRAL WHILE THE MACHINE IS MOVING. SPECIFICALLY, COASTING DOWNHILL WHILE THE TRANSMISSION IS IN NEUTRAL CAN DAMAGE THE TRANSMISSION.

THIS TRANSMISSION WAS DESIGNED TO OPERATE UNDER HIGH LOAD, LOW RPM CONDITIONS AND OPERATING IT OTHERWISE CAN CAUSE CATASTROPHIC DAMAGE. DAMAGE CAUSED BY SUCH OPERATION IS NOT COVERED BY WARRANTY AS IT IS CONSIDERED ABUSE. FURTHER, OPERATING THE TRACTOR UNDER SUCH CONDITIONS IS RECKLESS AND DANGEROUS.

CONSOLE:

"T-handle:" This multi-function handle controls machine direction, machine speed, and boom controls. (See controls section for photographic illustration of these devices.)

Engine speed & direction: All the way back and in the center is the neutral position. Pulling the handle from neutral towards the operator engages the forward gears and moving the handle away from the operator will engage the reverse gears. Moving the handle forward in either forward or reverse position controls the speed. You may move the handle from forward to reverse or vice-versa without bringing the machine to a complete stop, although this is not recommended at higher speeds.

Boom control: The top switch marked up and down raises and lowers the main center section of the boom. The bottom left switch controls the up and down tilt of the left side boom. The bottom right switch controls the up and down tilt of the right side boom.

CONSOLE SWITCHES & INSTRUMENTS:

Console switches & instruments: At the far left of the console is the cigarette lighter. This may also be used for auxiliary power.

The switch to the immediate right of the cigarette lighter is the pump switch. This switch controls the flow of hydraulic fluid to the product pump. The "on" position activates the flow while the "off" position stops the flow.

NOTE: KEEP THIS SWITCH "OFF" AT ALL TIMES WHEN THERE IS NO LIQUID IN THE PRODUCT TANK. OPERATING THIS SWITCH IN THE "ON" POSITION WITHOUT FLUID WILL DAMAGE THE PUMP.

The next switch to the right is the agitate switch. This controls the amount of fluid flowing to the sparge system to agitate the tank while spraying. Placing the switch in the "on" position and holding it for 8 seconds completely opens the valve. Placing it in the off position and holding it for 8 seconds will completely close the valve. The valve goes from full open to fully closed in 8 seconds.

The next switch to the right is not active when the machine comes from the factory. It is a three-way rocker type switch. It can be used for auxiliary components.

The three switches in the center of the panel are the "spray control" switches. The left, center, and right switches control the left, center, and right boom spray functions respectively. These switches are connected to the "dimmer" switch pedal on the floor. They do not control the product flow to the far ends of each side of the boom.

The three switches located in the lower right center of the console are the "lights" switches. The left switch is the hazard warning lights. The switch light will flash when the switch is on. The center switch operates the forward facing lights. The right switch operates the rear facing lights.

The switch on the far right bottom of the console controls the vertical fold/unfold of the tip extensions. Note: Both boom tip extensions will operate at the same time.

The switch second from the right top of the console is not active when the machine comes from the factory. It can be used for auxiliary components.

The center grille contains the warning buzzer. The warning buzzer will only sound when the "T-handle" is **not** in the neutral position. When alerting with a pulsing tone, it means the parking brake is engaged. If alerting with a steady tone, it means one or more of the following:

1. Low engine oil pressure.
2. High engine coolant temperature.
3. High hydraulic fluid temperature.
4. High transmission oil temperature.

If alerted with a steady tone, it indicates the parking brake is engaged.

The upper left position is the auxiliary power outlet. It is designed to accept most 12-volt power cords normally used in vehicles.

PARKING BRAKE:

The parking brake is located at the lower left side of the operator's seat. Pulling the lever up engages the brake. Lowering the handle disengages the brake. The parking brake can be adjusted by loosening the set screw on the side of the knob at the top of the handle, and twisting the knob clockwise to tighten and counter-clockwise to loosen the brake to the desired tightness.

UPPER CAB CONTROLS:

The upper cab controls consist of the air conditioner/heater, windshield wipers, radio, and interior lights.

Air conditioner/heater: These controls are at the top left of the cab. The farthest left knob controls the temperature. Clockwise turning lowers the cab temperature; counter-clockwise increases the cab temperature. The next switch to the right controls the air conditioner/heater blower. This switch must be on at least the first position for either system to work.

Windshield wipers: The third knob from the left is the on-off switch for the windshield wipers. Clockwise is on, counter-clockwise is off.

Radio: This radio is an Am-Fm-Weather band radio. Please refer to the radio manual included with this book for radio operation.

Interior light: Located at the top of the cab is a light panel with one switch. This is the dome light switch. It is a manually controlled light. It must be turned on and off by the operator when needed.

NOTE: IF THIS LIGHT IS LEFT ON WITHOUT THE ENGINE RUNNING, IT WILL DISCHARGE THE BATTERY.

Inside night-light: The light to the top left of the operator is the operator visibility light and will come on when the forwards outside lights are activated.

WINDOW OPERATION:

To open the right side cab window, rotate the black knobs on the window arms counter-clockwise to loosen them. Then pull the window arms down and slide the window open the desired amount. Then tighten the knobs by rotating them clockwise to maintain the opening. Reverse the procedure to close the window.

PRESSURE GAUGE:

The pressure gauge is located outside the cab facing in from the lower right side of the cab. This gauge indicates the boom pressure.

FUEL TANK:

The fuel tank is located on the right side of the machine. Open the cap slowly to ensure that fuel spray or spillage does not contaminate the machine or splash onto anyone. The tank capacity is 90 gal. US.

PRODUCT PUMP & SPARGER CONTROLS:

The product pump is located at the rear center of the tractor. Directly left of this pump is the motorized agitation control valve. There is an indicator located on the rear of this valve. When the indicator is perpendicular to the pipe under the valve, it is closed. When horizontal it is open. The valve above the pump is the sparger manual shut-off or safety shut-off. When the handle is perpendicular to the pipe, it is open. When horizontal, it is closed.

MAIN TANK SHUT-OFF VALVE:

Directly in front and below the product pump and sparger controls is the main tank shut-off valve. The handle points downward. When the handle is parallel with the pipe, product tank fluids will flow to the product pump or from the quick fill into the tank. When the handle is perpendicular to the pipe, the valve is closed.

FAST FILL HANDLE:

The handle to the right rear center of the machine is the fast fill handle. When perpendicular to the pipe the product is off. When parallel it is on. To operate the fast fill, couple the hose to the quick coupler section, open the main product tank valve, and open the fast fill valve. Then start the product tank flowing. This will fill the main product tank from the bottom through two sumps. Once the tank has approximately 100 gallons on board, the product pump may be started. This starts the agitation process.

MAIN TANK SHUT-OFF VALVE:

To the right of the product pump is the main tank shut-off valve. When the handle is parallel with the pipe, product tank fluids will flow to the product pump or from the quick fill into the tank. When the handle is perpendicular to the pipe, the valve is closed.

FAST FILL HANDLE:

The fast fill valve is located on the left side of the machine. When perpendicular to the pipe the product is off. When parallel it is on. To operate the fast fill, couple the hose to the quick coupler section, open the main product tank valve, and open the fast fill valve. Then start the product tank flowing. This will fill the main product tank from the bottom through two sumps. Once the tank has approximately 100 gallons on board, the product pump may be started. This starts the agitation process

CAUTION: BE SURE TO CLOSE THE FAST FILL VALVE BEFORE DISCONNECTING THE QUICK COUPLER.

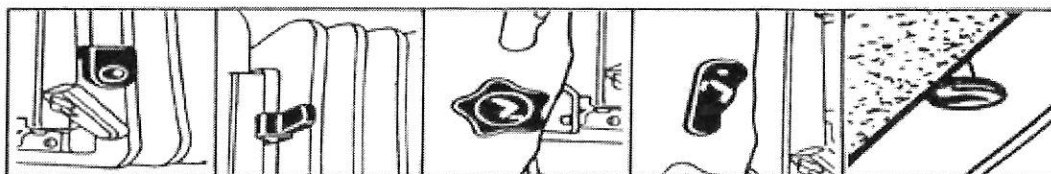
RINSE TANK:

The handle to the far right rear of the machine is the bottom valve for the rinse tank. To open this valve, move the handle until it is parallel to the pipe. This will allow the rinse tank to be bottom filled or to drain the rinse tank back into the product tank. Opening the main tank valve, closing the fast fill tank valve, opening the rinse tank valve and operating the product pump will allow rinse water into the bottom side of the product tank.

ON-THE-GO AXLE WIDTH ADJUSTMENT:

The on-the-go axle width adjustment is operated with the 5-switch box as shown on page 30. The switch on the right of the box is the system on-off switch. The other switches are spring loaded moment switches. They must be held in position to function. As indicated on page 30, once the system is turned on, press one or more of the 4 moment switches until the axles are at the desired width.

THIS ADJUSTMENT MUST BE MADE WHILE THE TRACTOR IS IN MOTION. UNDER NO CIRCUMSTANCES SHOULD THE AXLE WIDTH ADJUSTMENT BE MADE WHILE THE TRACTOR IS MOTIONLESS.



Step 1: Fore-Aft Adjustment. Pull lever out and move seat forward or rearward to desired position.

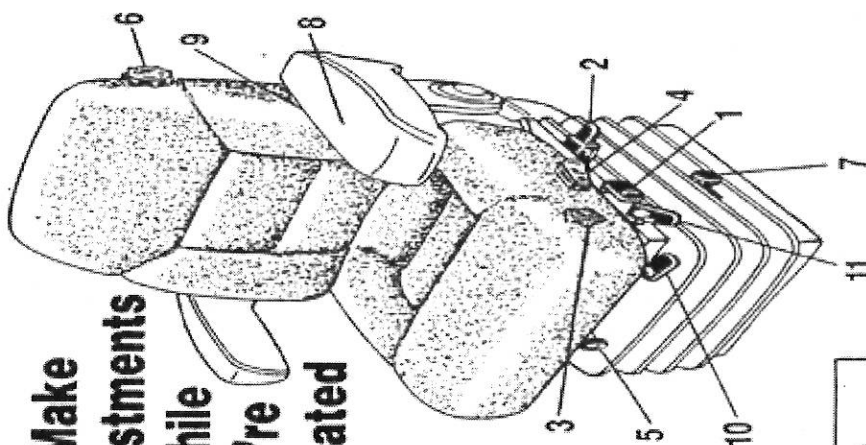
Step 2: Fore-Aft Isolator. (Optional) Lift lever to engage fore-aft isolator. Push lever down for lock-out.

Step 3: Seat Cushion Adjustment. Rotate knob to desired cushion position.

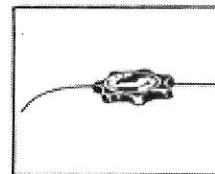
Step 4: Backrest Adjustment. Lift lever to stop and lean rearward or forward to adjust backrest position.

Step 5: Height Adjustment. Pull knob out to lower seat. Push knob in to raise seat.

Make adjustments while you're seated



Step 6: Lumbar Adjustment. Rotate knob clockwise to increase lumbar support --counterclockwise to decrease support.



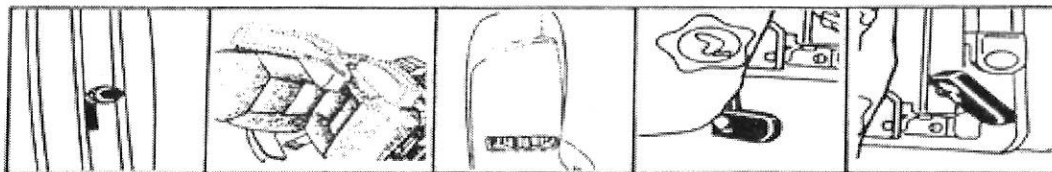
Step 7: Ride Firmness Adjustment. Rotate knob counterclockwise for firm ride, clockwise for soft ride. For average ride, rotate knob to mid-point of travel.

Step 8: Armrest Position Adjustment. Lift armrest into next position -- ratchet mechanism will click into place. To lower, lift armrest past top setting into slowed position to disengage ratchet mechanism, then lower arm until mechanism clicks into bottom position.

Step 9: Armrest Tilt Adjustment. Rotate thumb wheel up to tilt armrest up -- rotate down to tilt armrest down.

Step 10: Swivel Adjustment. Lift lever and rotate seat left or right to desired position.

Step 11: Lateral Isolator. (Optional) Lift lever to engage lateral isolator. Push lever down for lock-out.



FUEL, LUBRICANTS & TIRE & WHEEL SPECIFICATIONS

APACHE SPRAYERS WITH CUMMINS ENGINE 110HP – 130HP

- Cummins 4BT 3.9 Liter 110hp – 130hp oil SAE **15W-40API Class, 10 quarts** (9.5 Liters)
- Engine Cooling System, **premix compleat EG 22 quarts** (20.8 Liters)
- JCB 4 Speed Stick Shift Transmission oil, **Dextron III 12 quarts** (11.3 Liters)
- JCB Rear Differential, oil **John Deere J20C Hy-guard 10.6 quarts** (10 Liters)
- Hydraulic System **Dextron III** (113.6 Liters). When filling the Hydraulic tank the proper level is between 1 inch and 2 inches from the bottom of the fill tube on a level surface.
- Rear axle Drop Boxes (12 inch drop) oil **John Deere J20C Hy-guard 4.1quarts** (3.9 Liters)
- Straight fixed rear axle oil **John Deere J20C Hy-guard 26.4 quarts** (25 Liters) this includes the planetary.
- Planetary only oil **John Deere J20C Hy-guard 2.2 quarts** (2 Liters)
- **BRAKE SYSTEM: USE ONLY JOHN DEERE HYGARD OR ITS EQUIVELANT.**
- Tire pressure cold 30 PSI
- Torque on front lug bolts and nuts 130 ft lbs
- Torque on rear lug bolts and nuts 400 ft lbs
- Hydraulic pump at max engine rpm puts out 2650 PSI and 21 GPM.

APACHE 700 Series with John Deere Engine

- John Deere 6.8 Liter, 170hp Engine. Engine oil SAE 15W-40API Class, **19quarts** (17.9 Liters)
- JCB 4 Speed Power Shift Transmission w/ torque converter, oil **DextronIII 15.6quarts** (14.8 Liters)
- JCB Rear Differential, oil **John Deere J20C Hy-guard 10.6 quarts** (10 Liters)
- Engine Cooling System, **premix compleat EG 23 quarts** (21.8 Liters)
- Hydraulic System, **Dextron III** (113.6 Liters). When filling the Hydraulic tank the proper level is between 1 inch and 2 inches from the bottom of the fill tube on a level surface.
- Rear axle Drop Boxes (12 inch drop) oil **John Deere J20C Hy-guard 4.1quarts** (3.9 Liters)
- Rear axle drop boxes with ET logo (18 inch drop) oil **John Deere Hy-guard 21 quarts** (19.9 Liters)
- Straight fixed rear axle oil **John Deere J20C Hy-guard 26.4 quarts** (25 Liters) this includes the planetary.
- Planetary only oil **John Deere J20C Hy-guard 2.2 quarts** (2 Liters)
- **BRAKE SYSTEM: USE ONLY JOHN DEERE HYGARD OR ITS EQUIVELANT.**
- Tire pressure cold 30 PSI
- Torque on front lug bolts and nuts 130 ft lbs
- Torque on rear lug bolts and nuts 400 ft lbs

APACHE PLUS 800 SERIES with CUMMINS ENGINE

- Cummins 5.9 BT Liter 200hp engine, oil **SAE 15W-40API Class 16quarts** (15.1Liters)
- Funk 6 Speed Transmission with Power Shift, oil **Dextron III 16quarts** (15.1 Liters). Refill transmission with 10 quarts. Start the machine drive back and forth. Recheck the oil with the dipstick with the machine running and top off oil as necessary.
- Engine Cooling System, **premix compleat EG 23 quarts** (21.8 Liters)
- Hydraulic System, **Dextron III** (113.6 Liters). When filling the Hydraulic tank the proper level is between 1 inch and 2 inches from the bottom of the fill tube on a level surface.
- JCB Rear Differential, oil **John Deere J20C Hy-guard 10.6 quarts** (10 Liters)
- Rear axle Drop Boxes (12 inch drop) oil **John Deere J20C Hy-guard 4.1quarts** (3.9 Liters)
- Rear axle drop boxes with ET logo (18 inch drop) oil **John Deere Hy-guard 21 quarts** (19.9 Liters)
- **BRAKE SYSTEM: USE ONLY JOHN DEERE HYGARD OR ITS EQUIVELANT.**
- Front Tire pressure cold 25 PSI
- Rear Tire pressure cold 42 PSI
- Torque on front lug bolts and nuts 130 ft lbs. If 14.9x38's torque 400ft lbs
- Torque on rear lug bolts and nuts 400 ft lbs

APACHE 1200 SERIES WITH CUMMINS ENGINE

- Cummins 6B 5.9Liter 275hp, oil **SAE 15W-40API Class 17quarts** (16 Liters)
- Funk 6 Speed Transmission with Power Shift, oil **Dextron III 16quarts** (15.1 Liters). Refill transmission with 10 quarts. Start the machine drive back and forth. Recheck the oil with the dipstick with the machine running and top off oil as necessary.
- Engine Cooling System, **premix compleat EG 23 quarts** (21.8 Liters) * Coolant capacity may be increased.
- Hydraulic System, **Dextron III** (113.6 Liters). When filling the Hydraulic tank the proper level is between 1 inch and 2 inches from the bottom of the fill tube on a level surface.
- JCB Rear Differential, oil **John Deere J20C Hy-guard 10.6 quarts** (10 Liters)
- Rear axle Drop Boxes (12 inch drop) oil **John Deere J20C Hy-guard 4.1quarts** (3.9 Liters)
- Rear axle drop boxes with ET logo (18 inch drop) oil **John Deere Hy-guard 21 quarts (19.9 Liters)**
- **BRAKE SYSTEM: USE ONLY JOHN DEERE HYGARD OR ITS EQUIVELANT.**
- Front Tire pressure cold 25 PSI
- Rear Tire pressure cold 42 PSI
- Torque on front lug bolts and nuts 400 ft lbs
- Torque on rear lug bolts and nuts 400 ft lbs

SERIAL NUMBERS

NOTE: USE THIS AREA TO RECORD THE MODEL, SERIAL NUMBERS AND OTHER INFORMATION FROM YOUR APACHE™

MACHINE MODEL/SERIAL NUMBER: _____

ENGINE MODEL/SERIAL NUMBER _____

TRANSMISSION MODEL/ SERIAL NUMBER: _____

REAR AXLE MODEL/ SERIAL NUMBER: _____

AIR CONDITIONING MODEL/COMPRESSOR: _____

PRODUCT PUMP MODEL/SERIAL NUMBER: _____

CAB MODEL/SERIAL NUMBER: _____

OTHER: _____

MAINTENANCE

THIS SECTION EXPLAINS THE GENERAL MAINTENANCE OF THE APACHE™ SPRAYER TRACTOR. IT IS NOT INTENDED TO BE USED FOR MAJOR REPAIRS. CONTACT YOUR LOCAL AUTHORIZED APACHE™ DEALER OR DISTRIBUTOR FOR SERVICES OR CONSULTATION ON ITEMS NOT INCLUDED IN THIS SECTION

A reference guide for the routine maintenance of this machine is included at the end of this section.

HOOD OPENING:

To open the hood, locate the tie-down straps on each side of the hood near the cab. Pull them away from the hood to release the straps. Move to the front of the machine and locate the handhold hole in the top front of the hood and slowly pull away and down. Be cautious in lowering the hood onto its stops.

FLUIDS:

INSPECT ALL FLUID LEVELS EACH DAY BEFORE BEGINNING MACHINE OPERATIONS. BE SURE TO INSPECT THE MACHINE DAILY FOR LEAKS BEFORE OPERATING. ALWAYS CHECK FLUIDS WITH THE MACHINE PARKED ON LEVEL GROUND.

ENGINE OIL: The dipstick for the engine is located on the left side of the engine below the fuel filters. Inspect the oil level with the engine not running. The oil level must be between the full and low marks. If not, fill to the appropriate level. Do not overfill. It will be necessary to remove the dipstick, wipe it clean, re-insert and remove again to inspect the level. Change the engine oil and filter initially at 50 hours of service and every 100 hours or annually, whichever comes first, after the initial change.

BRAKE OIL: The brake reservoir is located on the firewall on the left side of the engine. Full and low indicators are marked on the reservoir and are readable visible. Maintain a level between full and low at all times. **DO NOT USE BRAKE FLUID IN THE BRAKE SYSTEM. USE ONLY JOHN DEERE HYGARD OR ITS EQUIVELANT.** Brake oil need not be changed unless it is contaminated.

TRANSMISSION FLUID: The transmission checkpoint is located below the brake reservoir. **CHECK THE FLUID LEVEL WITH THE ENGINE RUNNING ON THE CUMMINS ENGINE MODE AND NOT RUNNING ON THE DEERE ENGINE MODELS.** Pull the dipstick and inspect the level indicated. Maintain a level between the full and low marks on the dipstick. It will be necessary to remove the dipstick, wipe it clean, re-insert and remove again to inspect the level. Change the transmission fluid and filter initially at 50 hours of service. After the initial change, change the filter every 100 hours and the fluid with the filter every 500 hours or two years, whichever comes first.

ENGINE COOLANT: Inspect the engine coolant level and its anti-freeze status by removing the radiator cap located on top of the radiator at the front of the engine. Change the engine coolant every 100 hours or every two years, whichever comes first.



CAUTION: NEVER REMOVE THE RADIATOR CAP WHEN THE ENGINE IS HOT OR RUNNING. SEVERE BURNS MAY RESULT.

Always wait until the engine is completely cooled and remove the cap slowly to release the internal pressure. The level should be between 1 inch to 2 inches from the top. Coolant solution should be a 50/50 mixture of water and anti-freeze at all times.

HYDRAULIC FLUID: The hydraulic tank is located on the left side of the tractor immediately below the cab door. Inspect the hydraulic level by turning the tank cap counter-clockwise and removing it. The proper level is between 1 inch and 2 inches from the bottom of the fill neck. Never overfill the tank. 1 inch from the bottom of the fill neck is the maximum level. Change hydraulic fluid every 500 hours or two years, which ever comes first.

REAR AXLE FLUID: Inspect the rear axle fluid by removing the fill plug. The plug is located on the rear of the center section of the axle about half way up the case. The proper level should be even with the bottom of the fill hole. Be sure the machine is on a level surface and the machine has not been running for several minutes before checking this level.

NOTE: DUE TO THE BRAKES BEING LOCATED INTERNALLY IN THE AXLE CENTER CARRIER, **THE AXLE WILL RUN VERY HOT.** USE CAUTION WHEN CHANGING THE OIL.



CAUTION: DO NOT INSPECT THIS FLUID WHEN THE MACHINE IS RUNNING.

Change rear axle fluid every 500 hours or every two years, whichever comes first.

ENGINE AIR FILTER:

Canister type: loosen the three brass colored clips and remove the cover to remove the filter. It will pull free. Use caution that dirt or other contaminants do not enter the engine intake. Filters should be inspected as per the enclosed inspection sheet and replaced as required. Change the engine air filter every 250 hours or annually, whichever comes first. More severe applications will require changes more frequently.

FUEL FILTERS:

There are three (3) fuel filters on **APACHE**™ tractors with the Cummins engine. One in-line filter located in the fuel line on the left rear side of the engine and the primary and secondary engine fuel filters mounted on the left side on the engine towards the rear. The primary fuel filter has a water trap, which must be drained daily. Drain it by loosening the black knob on the bottom of the filter releasing any water contained inside. The Deere engine has two (2) filters. One on the right side of the engine and one in-line filter.

The initial change for both engines should be done at 50 hours of operation. After that replace the engine fuel filters every 100 hours or every year, whichever comes first. More severe applications will require changes more frequently.

HYDRAULIC FLUID FILTER:

This filter on all plus models is located on the left side of the rear cab support. The strainer is located on the hydraulic pump. On the Deere engine models, the filter is located on the left rear cab support and the strainer is on the right side. NOTE: it is not necessary to replace the strainer unless there is a catastrophic failure. **IMPORTANT: DO NOT REPLACE THE STRAINER WITH A FILTER. IT WILL RESULT IN INADEQUATE HYDRAULIC PERFORMANCE.**



CAUTION: DO NOT CHANGE THIS FILTER WHILE THE ENGINE IS RUNNING.

Remove this filter by turning the filter in a counter-clockwise direction. When installing a new filter, replace the seal. Lubricate the seal with a light coating of chassis lubricant before replacing. Tighten the new filter to snug and another $\frac{3}{4}$ turn. Change the hydraulic fluid filter every 250 hours or every year, whichever comes first.

CAB AIR FILTER:

(FACTORY STOCK IS A PAPER FILTER. A CHARCOAL FILTER MAY BE INSTALLED LOCALLY)

The cab air filter is located under the cab roof on the left side. This filter must be inspected as needed for your operating conditions but at least every 250 operating hours. Removing the two bolts on each side of the cab roof and raising the roof from the left side will access the filter. A support rod is used to hold the roof in position. Loosen the two snaps and open the filter cover to inspect or replace the filter. Change the cab air filter every 250 hours or annually, whichever comes first.

TRANSMISSION FILTER:

The transmission filter on the Deere engine is located on the left side of the transmission directly below the operator's door. On the Plus models it is located on the transmission. Remove the filter by turning it in a counter-clockwise direction. When changing the filter always replace the filter seal. Apply a light coating of chassis lubricant on the seal, insert it into the seal groove and install the new filter. Tighten the new filter to snug and another $\frac{3}{4}$ turn. Change the transmission oil filter initially at 50 hours along with the fluid. After the initial change, change the filter every 100 hours or annually, whichever comes first.

PRODUCT FILTER:

The product filter is located on the outlet side of the product pump.

CAUTION: CLOSE ALL VALVES TO THE PRODUCT TANK BEFORE PROCEEDING.

Open the filter by unscrewing it in a counter-clockwise direction. There will be liquid inside.



CAUTION: THE LIQUID INSIDE THE PRODUCT FILTER MAY CONTAIN HARMFUL CHEMICALS. FOLLOW PROPER INSTRUCTIONS FOR HANDLING ANY CHEMICALS. REFER TO THE CHEMICAL MANUFACTURER'S INSTRUCTIONS FOR SAFETY PROCEDURES AND CLOTHING.

Remove the filter screen. Wash it thoroughly with clean water and reinstall it. Reverse the procedure to reinstall the filter. Open all valves on the machine and inspect for leaks.

LUBRICATION:

Lubricate the chassis, drive shaft and the boom each day before operating. The chassis lubrication points are located as follows:

1. The front spindles (one on each side).
2. The tie rod ends (one on each side).
3. The steering cylinder (one on each end).
4. The center bolster pin (one fitting).
5. The drive shaft center carrier spline (one fitting).
6. The u-joints (one inside each joint).
7. The boom has several lubrication points. (See the boom section for all boom related service).
8. The parallel arms (three on each side).
9. The boom rack (three on each side).



CAUTION: NEVER LUBRICATE THE MACHINE WHILE IT IS RUNNING.

RADIATOR, FAN, DRIVE BELT AND COOLERS:

Inspect the radiator, coolers, fan and drive belt daily. Also inspect the grille located in the hood. Clean away any debris that may inhibit the air flow through the coolers. Inspect all coolers for leaks. Be sure the fan is secure and the belt is tight. If the belt indicates wear, replace it. If the radiator or coolers indicate leakage, contact your local dealer or distributor at once. Operating a machine without proper cooling can damage components and will not be considered for warranty.



CAUTION. NEVER INSPECT THE MACHINE WHILE IT IS RUNNING.

AXLE BOLTS:



CAUTION: INSPECT THE AXLE BOLTS, FRONT AND REAR BEFORE PLACING THE MACHINE INTO OPERATION.

The 1" bolts and jam nuts located on the mechanically adjusted axle should be torqued to 300 ft. lbs. front and rear. On the adjust on-the-go axles the torque is 15 ft. lbs. Recheck the axle bolts daily when operating the machine but no less than every 100 hours.

TIRES:

Inspect the tire pressure before each day's operation. Maintain tire pressure of 30 lbs. per square inch. Inspect tires daily for cracks, wear and damage. Replace as necessary.

WHEEL LUGS:

Inspect the wheel lugs every day before beginning operations. Re-torque the lug bolts and nuts to 130 ft. lbs front and 400 ft. lbs. rear on the standard models and 400 ft. lbs. front and rear on the Plus models.

PARKING BRAKE:

The parking brake is located under the center of the chassis and is operated by applying pressure to a disc mounted on the forward end of the drive shaft. Inspect the parking brake visually every day for damage. Inspect the tightness of the brake by applying it from the operator's seat (see operations).

FRONT WHEEL BEARINGS:

Remove, inspect, and repack the front wheel bearings every 250 hours and annually, whichever comes first. Replace damaged or worn bearings.

ENGINE:

(Refer to the engine book for engine related maintenance and services).

BOOM:

(See the following pages of this section for boom maintenance and adjustments.)

WINTERIZING YOUR APACHE SPRAYER

1. Rinse product tank and booms with clean rinse water and dispose of properly.
2. Open main tank fill valve and rinse tank valve to drain any remaining water in the product tank and or rinse tank.
3. Close valve to the suction of the product pump
4. Connect an airline to the main fill valve
5. Turn on monitor and open all boom sections
6. Close agitation valve completely
7. Turn air pressure on about 40 P.S.I. to blow in the product system and blow out through the booms.
8. With the air pressure on, turn the boom sections on and off several times making sure all water gets out from around the boom valves.
9. Turn off the air supply and disconnect the air line.
10. Close main fill valve
11. Remove all in line screens and empty the bowls, store screens in a dry location.
12. Open valves to the suction side of product pump
13. Put about 20 gallons (75.7 Liters) of RV Antifreeze in the product tank.
Additional gallons maybe required depending on boom length.
14. Put about 1 gallon (4 Liters) of RV Antifreeze in the rinse tank
15. Open and close rinse tank valve and suction valves to be sure to get antifreeze around the ball valves.
16. Turn all triple nozzle bodies one-quarter turn except the last nozzle on each section.
17. With the Apache running turn on the product pump and agitate the RV Antifreeze in the tank.
18. Turn off agitation
19. With the pump running turn on each boom section until RV Antifreeze comes out the last nozzle on each section. Then turn off each section and the product pump.
20. With the product pump off open all manual valves half way. Letting any trapped water out.
21. The product system is now winterized. You may leave any excess RV Antifreeze in the sprayer.

Winterizing your SKS Foam Marker

1. Drain the foam tank and disconnect the hoses from the foam chamber.
2. Replace the strainer bowl and add 2 quarts (2 Liters) of **windshield washer fluid**.
3. Run the foam marker until windshield washer fluid comes out of the hose at the foam chamber.
4. Leave the bottom air hose off of the foam tube, so any condensation will drain.
5. The SKS Foam Marker is now winterized.

Equipment Technologies Inc. assumes no responsibility for any damaged caused by components freezing, breaking, or cracking.

PRECISION BOOM

60', 75', 80', 90', 60/80', 60/90', & 100'

Note: The following recommendations are considered for "standard" operating conditions. Extreme conditions will require more frequent maintenance and adjustments. It is recommended you review your machine's condition daily to determine if more frequent service is required.

Maintenance and Adjustments:

After the initial 10 hours of use and no less than every 100 hours of use thereafter, check the alignment of the inner and outer boom wings. If adjustment is needed, use the two 3/4 inch bolts between the inner and outer wings. (Fig. A, Item 1)

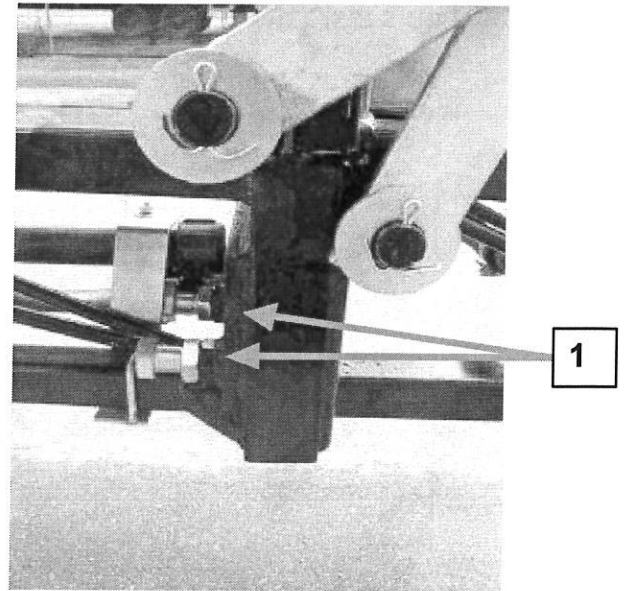


Fig. A

Inspect the boom fold for alignment with the boom rests and in relationship with the machine.

The folded position should be square with the boom rests when folded and the boom should just make light contact with the upright back stop on the boom rest. In the spraying position, the boom will be slightly forward of square with the machine.

If adjustment is required, adjust the cylinder at the bottom rear of the center boom section. (Fig. B, Item 1)
Inspect after the first 10 hours of operation and every 100 hours thereafter.

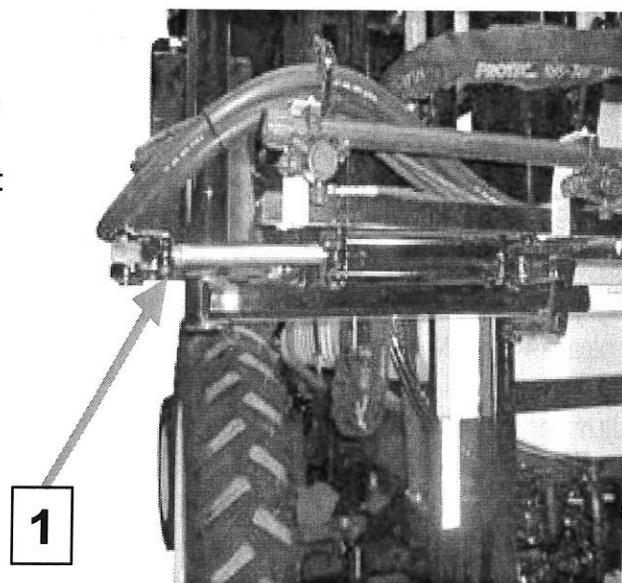


Fig. B

Inspect the boom self stabilizer for 1/32 inch clearance between the wear pad and the tube frame. (Fig.C, Item 1)

Adjust as necessary after the first 10 hours of operation and every 100 hours thereafter.

Fig.C

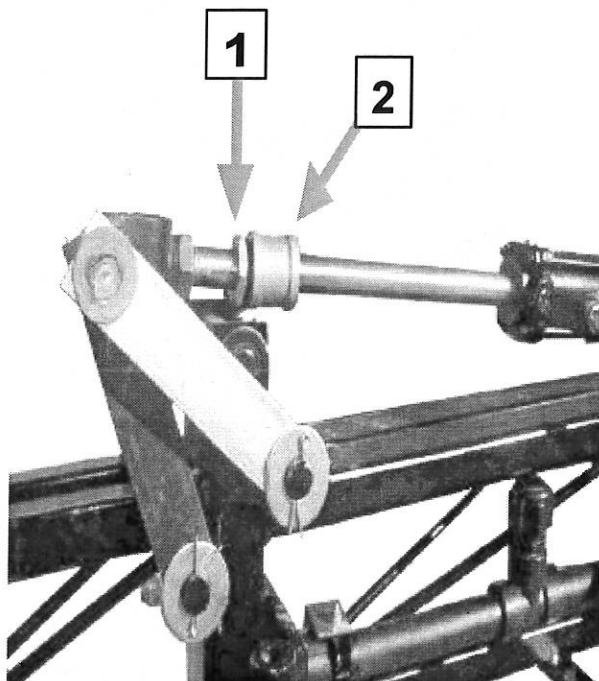
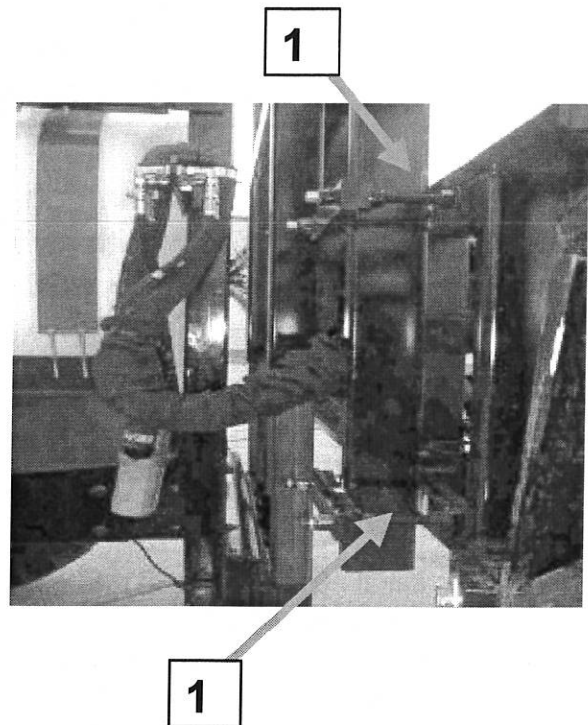


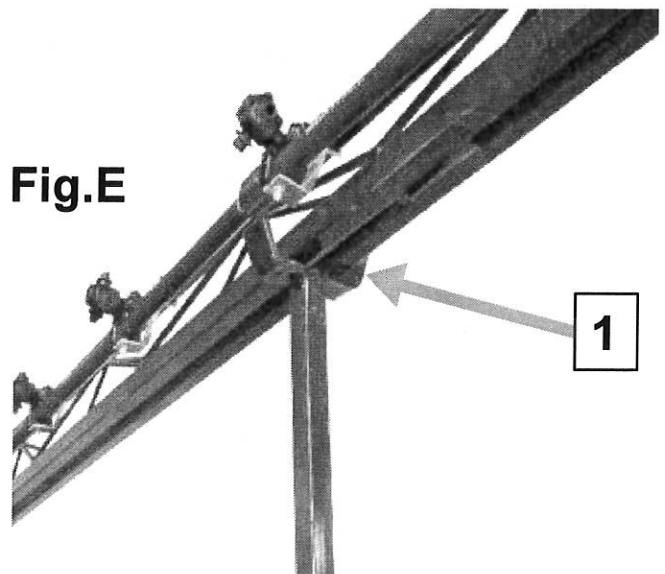
Fig.D

Inspect and adjust, if necessary, the choke on the boom extension cylinder (Fig. D, Items 1 & 2) so the intermediate boom is lightly contacting the boom cradle. (Fig. E, Item 1)

To adjust the choke, grip the choke barrel (Fig. D, Item 2) and turn the sleeve nut (Fig. D, Item 1) to expand or narrow the choke as needed.

Adjust as necessary after the first 10 hours of operation and every 100 hours thereafter.

Fig.E



Check and tighten all fasteners after the first ten hours of operation and every 100 hours thereafter.

Lubricate all fittings prior to beginning operations and no less than every 50 hours of operation.

Lubrication fittings are found at the following locations:

Breakaway hinge (6)

Extension hinge (2 on 80' & 90' booms, 6 on 60/80' & 60/90' booms)

Inner hinge (2)

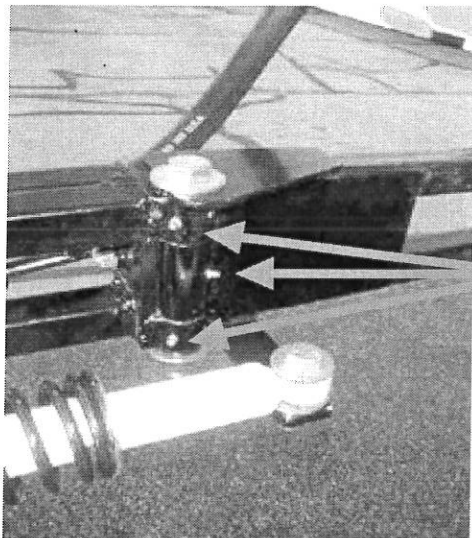
Fold hinge (2)

Suspension (4)

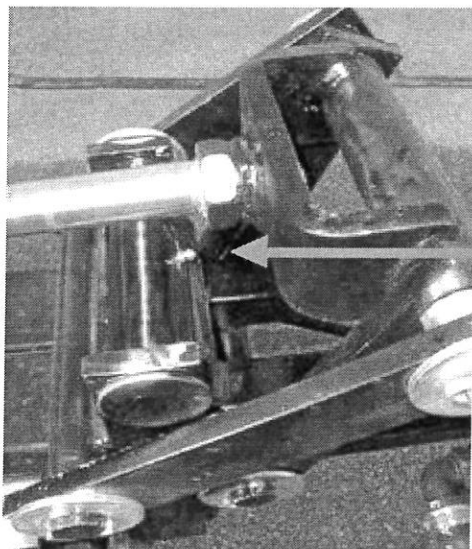
Uprights (4)

It is recommended applying lubricant directly to the inner rails in addition to the lubrication received through the lub fittings.

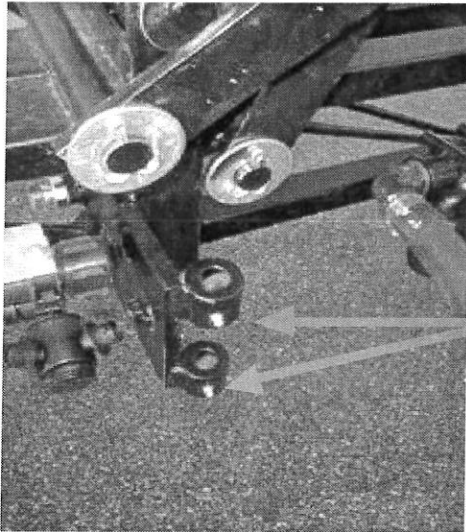
The lubrication fittings listed above are pictured as follows:



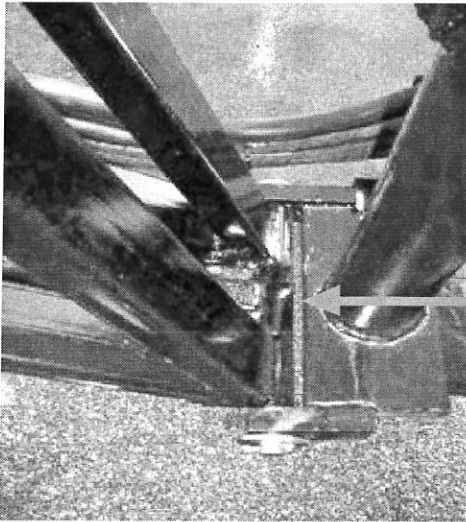
BREAKAWAY-3 ON EACH SIDE



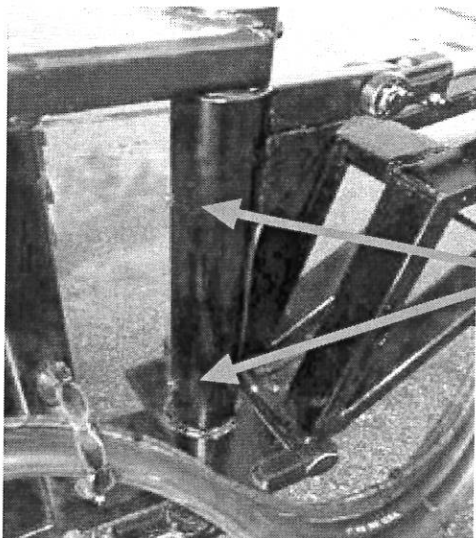
EXTENSION HINGE 80' & 90'-1 ON EACH SIDE



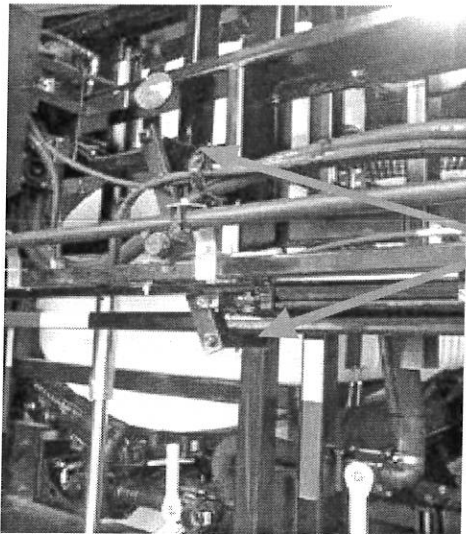
EXTENSION HINGE 60/80' & 60/90'-2 ON EACH SIDE
(IN ADDITION TO THE FITTING SHOWN IN THE
PREVIOUS PHOTO). NOTE: THE HINGE PIN AND
EXTENSION ARE NOT MOUNTED IN THIS PHOTO.



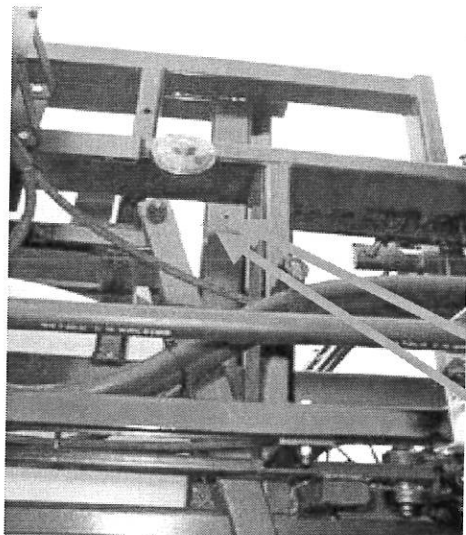
INNER HINGE- 1 ON EACH SIDE



FOLD HINGE-2 ON EACH SIDE



SUSPENSION- 2 ON EACH SIDE



UPRIGHTS-4 ON EACH SIDE.
NOTE; PHOTO TAKEN LOOKING
UP WHILE BOOM IS IN RAISED
POSITION. ONLY TWO OF THE 8
TOTAL ARE SHOWN. THERE IS
A FITTING ON EACH SIDE OF
THE TWO UPRIGHTS

SERVICE AND WARRANTY PROCEDURES

APACHE PLUS™ INFORMATION

APACHE PLUS™ INFORMATION

THE FOLLOWING INFORMATION APPLIES THE **APACHE PLUS™** OPTIONAL EQUIPMENT. ALL INFORMATION ON THE **APACHE PLUS™** IS THE SAME AS THE **APACHE™** EXCEPT THAT WHICH IS INCLUDED IN THIS SECTION. IT IS IMPORTANT TO FAMILIARIZE YOURSELF WITH THE DIFFERENCES IF YOU HAVE THE PLUS OPTION.

THE PRIMARY DIFFERENCES BETWEEN THE TWO UNITS ARE IN THE ENGINE AND TRANSMISSION AREAS.

OPERATION

TRANSMISSION:

SPECIFICATIONS:

FUNK MODEL 2000 SHORT DROP
ROTARY SELECTOR
6 SPEED FORWARD
1 SPEED REVERSE

SHIFT SWITCH: THE SELECTOR SWITCH IS LOCATED ON THE BOTTOM CENTER OF THE CONSOLE. SELECT THE SPEED RANGE IN WHICH YOU WISH TO OPERATE (1,2,3,4,5,6) AND START THE MACHINE AT 0 MPH AND INCREASE TO THE DESIRED SPEED BY PUSHING THE "T" HANDLE EITHER FORWARD OR REVERSE.

IN REVERSE, THE TRACTOR WILL ALWAYS OPERATE IN THE 3RD GEAR RATIO REGARDLESS OF THE SELECTION MADE, OTHER THAN NEUTRAL. THE SPEED RANGES IN FORWARD ARE AS FOLLOWS:

1ST	0 TO 5.5MPH
2ND	0 TO 8.5 MPH
3RD	0 TO 10.0 MPH
4TH	0 TO 15.0 MPH
5TH	0 TO 35.0 MPH

SHIFTER ROTARY SWITCH: THE SHIFTER ROTARY SWITCH IS USED TO SELECT SPEED RANGES. GEAR RANGES MAY BE CHANGED "ONE RANGE" AT EACH TIME. **JUMPING MORE THAN ONE RANGE MAY RESULT IN DRIVE LINE DAMAGE.** NORMAL POCEDURE IS TO SELECT THE GEAR, OR RANGE BELOW THE GEAR AND INCREASE SPEED BY USING THE "T" HANDLE. **ONE** RANGE RATIO CHANGES MAY BE MADE UNDER LOAD.

TRANSMISSION SERVICING:

1. IT IS IMPORTANT THAT THE TRANSMISSION OIL BE CHECKED REGULARLY AND KEPT CLEAN.
 - A. CHECK THE TRANSMISSION FLUID LEVEL DAILY.
 - B. OPERATE THE ENGINE AT IDLE SPEED.
 - C. PLACE THE SHIFT LEVER IN THE NEUTRAL POSITION.
 - D. MAKE SURE THE TRANSMISSION OIL TEMPERATURE IS AT LEAST 71 TO 93.5 DEGREES C. (160 TO 200 DEGREES F.).
 - E. MAKE SURE THE AREA AROUND THE DIPSTICK IS CLEAN BEFORE REMOVING THE DIP STICK.
2. THE TRANSMISSION SHOULD ALWAYS BE IN NEUTRAL BEFORE STARTING THE ENGINE, OR WHEN THE TRACTOR IS PARKED AND THE ENGINE IS RUNNING.
3. IF THE TRACTOR IS TO BE TOWED, IT WILL BE NECESSARY TO RUN THE ENGINE AT IDLE SPEED TO LUBRICATE THE CLUTCHES.
4. IF THE ENGINE CANNOT BE RUN, TOWING MUST BE LIMITED TO 5 KM/H (3 MPH) AND TOWED NO MORE THAN 2 KM (1 MILE). IF THIS IS NOT POSSIBLE, THE DRIVE SHAFT MUST BE DISCONNECTED.
5. IF THE TRANSMISSION OIL TEMPERATURE ALARM SOUNDS, STOP THE TRACTOR IMMEDIATELY , SHIFT TO NEUTRAL AND RUN THE ENGINE 900-1200 RPM. THE TEMPERATURE SHOULD DROP RAPIDLY. IF THE TEMPERATURE DOES NOT DROP, TROUBLE IS INDICATED. THE TROUBLE SHOULD BE DETERMINED BEFORE THE TRACTOR IS OPERATED AGAIN.

OVERHEATING GENERALLY OCCURS WHEN WORKING THE TRANSMISSION TOO HIGH A GEAR RATIO.

DO NOT SHUT THE ENGINE OFF FOR COOL DOWN IF THE COOLING SYSTEM IS KNOWN TO BE OPERATING PROPERLY.

6. WHEN REFILLING THE TRANSMISSION AFTER A REPAIR OR FLUID CHANGE, FILL THE TRANSMISSION AS FOLLOWS:
 - A. BEGIN FILLING, USING 15 LITRES (4 GAL.) OF THE RECOMMENDED FLUID.
 - B. START THE ENGINE AND RUN AT IDLE SPEED TO LET THE CONVERTOR CONVERTOR AND OIL LINES FILL.
 - C. WITH THE ENGINE RUNNING AT IDLE SPEED, FINISH FILLING THE UNIT TO THE FULL LEVEL.

NOTE: OIL EXPANDS WHEN HEATED. CHECK THE OIL LEVEL AT RECOMMENDED TEMPERATURE. DO NOT OVERFILL THE TRANSMISSION.

7. RECOMMENDED TRANSMISSION FLUID: DEXTRON III

8. RECOMMENDED TRANSMISSION FLUID CHANGE INTERVALS:

- A. INITIAL CHANGE ON A NEW TRANSMISSION SHOULD BE AT 20 HOURS.
- B. AFTER THE INITIAL CHANGE, THE FILTER SHOULD BE CHANGED EVERY 200 HOURS OR ONE YEAR, WHICHEVER COMES FIRST.
- C. THE FLUID SHOULD BE CHANGED EVERY 600 HOURS OR EVERY 2 YEARS, WHICHEVER COMES FIRST.

ENGINE:

SPECIFICATIONS:

CUMMINS MODEL	BTA5.9-C	200 H.P. @ 2500 RPM
BORE/STROKE	4.02/4.72	FIRING ORDER 1-5-3-6-2-4
DISPLACEMENT	359 CU. IN.	COMPRESSION RATIO 16.5:1
TURBO CHARGED		CLOCKWISE ROTATION
WEIGHT WET(LESS FLYWHEEL & ELECTRONICS)		997 Lbs.

CUMMINS MODEL	BTA5.9-C	275 H.P. @ 2500 RPM
BORE/STROKE	4.02/4.72	FIRING ORDER 1-5-3-6-2-4
DISPLACEMENT	359 CU. IN.	COMPRESSION RATIO 16.5:1
TURBO CHARGED		CLOCKWISE ROTATION
WEIGHT WET(LESS FLYWHEEL & ELECTRONICS)		997 Lbs.

SERVICING: SAME AS THE **APACHE™**

MACHINE WEIGHT:

860:	APPROXIMATELY 16,500 LBS. (WITH PRODUCT TANK EMPTY)
880:	APPROXIMATELY 16,706LBS. (WITH PRODUCT TANK EMPTY)
990:	APPROXIMATELY 17,006 LBS. (WITH PRODUCT TANK EMPTY)
8100:	APPROXIMATELY 17,506 LBS. (WITH PRODUCT TANK EMPTY)
1200:	APPROXIMATELY 20,032 LBS. (WITH PRODUCT TANK EMPTY)