

TROUBLE SHOOTING GUIDE



DIAPHRAGM PUMP

PROBLEM	SOLUTION
Loss of Operating Pressure	<ol style="list-style-type: none">1 Plugged suction filter2 Air leak on suction side<ol style="list-style-type: none">a. Defective o-ringb. Pin hole in hosec. Crack in plastic fitting3 Plugged or partially plugged suction tube (inside tank)4 Self-cleaning filter cone contains fluid5 Self-cleaning filter screen plugged6 Self-cleaning filter cone stuck7 Defective constant pressure seats8 Defective o-ring in Hardi-matic valve9 Excessive return fluid causing turbulence around suction tube10 Agitation nozzle (inside tank) fallen off11 Foreign material lodged in pop-off valve12 Defective gauge13 In-line filters plugged14 Low fluid level in tank15 Foreign material lodged in pop-off valve16 Defective pump valves
Pump is slow to prime	<ol style="list-style-type: none">1 Air leak on suction side2 Suction filter plugged3 Agitation bypass valve in wrong position4 Suction tube jammed into sump (Nav 1000)5 Suction tube plugged6 Defective o-ring in Hardi-matic valve7 Foreign material lodged in pop-off valve8 Foreign material lodged in pump valves9 Defective pump valves
Fluid leaking from bottom of pump	<ol style="list-style-type: none">1 Diaphragms defective2 Hairline crack in main pump housing or front cover
Fluid leaking around diaphragm covers	<ol style="list-style-type: none">1 Cover retaining bolts loose2 Valve o-rings defective3 Pinched diaphragm4 Diaphragm cover cracked
Excessive jumping of suction hose (spiral reinforced)	<ol style="list-style-type: none">1 Restricted or plugged suction filter2 Air leak on suction side<ol style="list-style-type: none">a. O-ring at suction filterb. Pin hole in suction hosec. O-ring at main / flush tank valved. O-ring at suction fitting on pumpe. O-ring at fittings on pressure regulator (NP 1100)f. O-ring at pop off valve (NP 1100)g. O-ring at S-93 tee, suction hose to pump (NP 1100)



	<ol style="list-style-type: none">3 Suction valve, main tank/flush tank valve, closed4 Suction tube (inside tank) plugged5 Suction tube (inside tank) touching bottom of sump (Navigator 1000 and 1000 M)
Excessive jumping of pressure hose (smooth hose)	<ol style="list-style-type: none">1 Self-cleaning filter cone contains fluid2 Self-cleaning filter screen plugged3 Self-cleaning filter cone stuck4 Agitation bypass valve in wrong position5 Foreign material logged in pump valves6 Defective pump valves
Sudden Pressure Fluctuation +/- 10 to 15 psi.	<ol style="list-style-type: none">1 Suction filter beginning to plug2 Self-cleaning filter cone sticking3 Restriction in bottom of self-cleaning filter4 Self-cleaning filter screen plugging5 Fluid in self-cleaning filter cone6 In-line or tip screen filters plugging7 O-ring in Hardi-matic valve blown8 Agitation nozzle (inside tank) loose9 Pump cavitation (low fluid level)
Loss of pressure while spraying	<ol style="list-style-type: none">1 Suction filter beginning to plug2 Pin hole in suction hose3 In-line or tip screen filters plugging4 Pin hole in suction tube5 Excessive return fluid around bottom of suction tube6 Foreign material lodging in pump valves
Excessive pressure variation between manifold and boom gauges	<ol style="list-style-type: none">1 Constant pressure seats worn2 Fluid in self-cleaning filter cone3 Self-cleaning filter screen plugging4 Cone sticking in bottom of housing5 Defective gauge6 Chemical buildup in boom tubes7 Restriction in bottom of self-cleaning filter
Ball valve turns hard	<ol style="list-style-type: none">1 Ball and ball seat dry due to chemical2 Ball or ball seat damaged3 Displaced o-ring restricting ball
Pressure fluxuation when boom valve turned off	<ol style="list-style-type: none">1 Constant pressure not properly set2 Constant pressure seats worn3 Constant pressure seats defective
Loss of pressure after refill	<ol style="list-style-type: none">1 Suction tube touching bottom of sump restricting pump flow (Navigator 1000)2 Suction filter plugging3 Agitation bypass valve set to pump (if so equipped)4 Suction valve closed5 Agitation nozzle (inside tank) fallen off6 Chemical filler valve open7 Foreign material lodged in pump valves
Hose blows or valve seperates from excess pressure	<ol style="list-style-type: none">1 Pop-off valve stuck or set too high2 Pressure side valve closed3 Fluid in self-cleaning filter cone4 Screen in self-cleaning filter plugged



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|---|--|
| | 5 Self-cleaning filter cone stuck |
| Poor agitation | 1 Agitation valve closed
2 Agitation line or nozzles restricted
3 Air leak on suction side
4 Low pump pressure |
| Can't get all the fluid out of the tank | 1 Sprayer not leveled
2 Suction tube cut too short
3 Excessive fluid return around sump
4 Pin hole or crack in lower part of suction tube |

NOTE; In some application where low gallons per acre is desired, unused fluids returning to the tank may cause a vortex to develop around sump causing cavitation of pump resulting in lost pressure and an inability to draw fluid from the tank when tank levels are low.

CENTRIFUGAL PUMPS

It is very important to remember that operating a Centrifugal Pump without fluid present will cause internal seal damage and necessitate seal replacement.

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|---------------------|---|
| Pump does not prime | 1 Pump is air locked
2 Shut off valve (under tank) closed
3 Flush tank? Main tank valve closed
4 PTO pump drive belt slipping
5 Damaged impeller
6 Outlet port in bottom of tank plugged or restricted
7 Hydraulic drive pump damaged
8 Drive gears defective (Hypro Pump) |
|---------------------|---|

BOOM PRESSURE AND SECTION CONTROL VALVES

Manual valves are used on smaller units and the most common model of valves used are the M-70 and BK-180

The majority of field sprayers use Electric control valves. While models of controls vary, some components are the same regardless of the model. boom control valves and pressure regulating valves are all the same.

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|---|--|
| Pressure motor only turn one way | 1 Switch in control box not making good contact
2 Defective pressure adjust switch in control box
3 Defective micro-switch in pressure motor housing
4 Poor connection between boom control box and main control cable
5 Poor connection inside boom control box
6 Poor connection at circuit board inside junction box (located below boom valves)
7 Defective circuit board in boom control box
8 Defective circuit board in junction box
9 Defective pressure motor |
| Fluid leaks between boom control valves | 1 Stainless steel nut on end of valve assembly loose
2 Defective o-rings between valve bodies
3 Cracked valve housing |



One boom valve not working	<ol style="list-style-type: none">1 Boom switch not making good contact2 Defective boom control box switch3 Poor connection in boom control box4 Poor connection between boom control box and main cable5 Poor connection on circuit board in junction box (located below boom valves)6 Defective circuit board in control box7 Defective circuit board in junction box8 Pinched wire in main cable9 Defective boom motor
Fuse in control box blows continuously	<ol style="list-style-type: none">1 Defective fuse holder2 Wrong AMP fuse3 Defective switch4 Defective roller in boom control valve5 Pinched wire in main cable6 Defective boom or pressure motor7 Defective circuit board in control box8 Defective circuit in junction box
Unable to balance boom	<ol style="list-style-type: none">1 Constant pressure seats worn
Boom sections not spraying equal amounts	<ol style="list-style-type: none">1 In-line filters or tip screens plugging2 Worn nozzles3 Worn rollers in boom valves4 Constant pressure seats worn5 Chemical buildup in nozzles tubes6 Kink or partial plug in boom feed hoses
Boom control box does not work	<ol style="list-style-type: none">1 Blown fuse2 Power supply cable damaged3 Loose or broken wire in male plug for boom control box4 Poor connection at battery 5 Blown fuse in 12 volt outlet box6 Loose or broken wire on circuit board inside boom control box7 Defective boom control box circuit board
Boom and pressure valves operate backwards	<ol style="list-style-type: none">1 Polarity reversed (check power source)

MANUAL CONTROLS

Manual pressure valve not adjusting pressure	<ol style="list-style-type: none">1 Pressure valve seat worn2 Fluid bypassing through main on/off control3 Hairline crack in housing
Manual on/off lever not shutting nozzles	<ol style="list-style-type: none">1 On/off valve ball seat worn2 Control lever loose on shaft
Low to No pressure	<ol style="list-style-type: none">1 Air leak on suction side2 Suction tube restricted

- 3 Suction filter plugging (some models)
- 4 On/off valve seat worn, bypassing fluid back into tank



NOZZLES

To achieve the optimum spray operation, no component is any more important than the nozzles. For this reason it is advisable to run a nozzle catch test at the start of each spray season. Another important component is boom suspension and boom adjustment. A properly adjusted suspended boom will maintain proper boom height at 20 to 24" and extend boom life. .

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|------------------------------------|---|
| Uneven spray pattern | <ol style="list-style-type: none"> 1 Constant pressure seats worn 2 Worn nozzles 3 In-line filters or tip screens partially plugged 4 Chemical buildup in nozzles tubes 5 Mismatched nozzles tubes |
| Nozzles not turning on | <ol style="list-style-type: none"> 1 Low pressure to boom 2 Plugged in-line filters 3 Blown fuse in control box 4 Pump air locked (centrifugal) 5 Pressure relief valve weak, bypassing fluid |
| Triplet nozzle bodies hard to turn | <ol style="list-style-type: none"> 1 Backside of triplet is dry or dirty 2 Snap locks on triplets too rigid 3 O-rings in triplet housings swollen |
| Outer nozzles spraying less | <ol style="list-style-type: none"> 1 Tip screens plugging 2 Chemical buildup in nozzle body 3 Chemical buildup in outer end of nozzle tube |

BOOMS

- | | |
|---|---|
| Boom fails to raise and lower | <ol style="list-style-type: none"> 1 Slide pads on H-frame dry or dirty 2 Slide pads out of adjustment 3 Hydraulic lift cylinder seals defective 4 Pinched hydraulic hose 5 Defective hydraulic coupler |
| One side of EAGLE boom will not unfold or fold Joystick Control | <ol style="list-style-type: none"> 1 No Power to the Joystick 2 Poor wire connection in solenoid 3 Loose wire in electric junction box next to hydraulic solenoid block 4 Wire loose in plug at junction of Joystick cable and sprayer cable 5 Poor wire connection in solenoid 6 Defective switch in Joystick 7 Defective boom solenoid 8 Foreign material blocking fold cylinder restrictor 9 Defective hydraulic coupler 10 Defective seals in fold cylinder 11 Pinched hose 12 Crack in aluminum solenoid block |

DH Hydraulic Control

- 1 Low voltage, check power connection
- 2 Loose wire in plug at junction of DH cable and sprayer cable
- 3 Poor connection in solenoid junction box
- 4 DH hydraulic switching valve locked up
- 5 Poor electric connection at solenoid
- 6 Dective boom solenoid
- 7 Piched hydraulic hose
- 8 Pinched cable
- 9 Defective hydraulic coupler
- 10 Defective seals in fold cylinder



EAGLE or FORCE Boom fails to unfold "Joystick Control"

- 1 Low voltage, check power cable connections
- 2 Joystick power cable not connected
- 3 Wire loose in Joystick
- 4 Loose wire in male plug adapter on Joystick power cable
- 5 Loose wire in plug at junction of Joystick cable and sprayer cable
- 6 Loose wire in electric solenoid junction box
- 7 Pinched hose
- 8 Pinched wire
- 9 Defective hydraulic coupler

DH Control

- 1 Low voltage, check power cable connections
- 2 DH power cable not connected
- 3 Hydraulic switching valve locked up
- 4 Loose wire in plug at junction of DH cable and sprayer hydraulic cable
- 5 Broken wire in cable
- 6 Pinched wire
- 7 Pinched hose
- 8 Defective hydraulic coupler

Connander 4400-6600 Boom will not Unfold

- 1 Steering Switch not in Lock Position
- 2 Control Cable not locked in control box securely
- 3 Steering lock pin not in locked position
- 4 15 amp fuse in JobCom blown or corroded
- 5 5500 Controller not getting signal from Lock Sensor
- 6 Lock Sensor not getting power
- 7 DH Valve not cycling
- 8 DH valve solenoid not getting electrical power
- 9 DH electrical solenoid defective

Twin boom (650 & 950)

- 1 Low voltage, check power cable
- 2 Pinched power cable
- 3 Pinched hose
- 4 Blown fuse in junction box (rear of sprayer)
- 5 Hydraulic hoses (P & T) reversed at tractor couplers, oil flowing in wrong direction
- 5 Loose or displaced wire in junction box
- 6 Hydraulic valves sticky, not moving, restricting oil flow
- 7 Defective hydraulic coupler
- 8 Defective hydraulic valve

Twin force (750, 875, & 1200)

- 1 Low voltage, check power cable
- 2 Low hydraulic pressure
- 3 Low oil level



	<ol style="list-style-type: none">4 Blown fuse in junction box (rear of sprayer)5 Pinched power cable6 Hydraulic hoses (P&T) crossed at tractor couplers, oil flowing in wrong direction7 Poor connection in electrical junction box. (mounted on rear of sprayer)8 Poor connection of jumper wire between junction boxes at rear of sprayer9 Foreign material holding HZ valve open10 Defective hydraulic valve
One side of boom folds and unfolds regardless of which switch is actuated	<ol style="list-style-type: none">1 Foreign material holding HZ valve open2 Defective hydraulic valve3 Defective fold cylinder seals
Boom unfolds when not in operation	<ol style="list-style-type: none">1 Electrical short keeping solenoid open2 Defective solenoid valve3 Crack in aluminum HZ solenoid block
Boom folds and unfolds too fast	<ol style="list-style-type: none">1 Air in hydraulic system2 Tractor hydraulic flow set too high
Boom suspension not operating properly Manual Fold	<ol style="list-style-type: none">1 Transport lock pin still in place2 Trapeze slide pads dry3 Trapeze bushings worn out4 Trapeze bolts too tight
Hydraulic Fold	<ol style="list-style-type: none">1 Slide pads dry2 Slide pads worn3 Slide pad adjustment bolts too tight4 Suspension shock absorber defective5 Suspension springs weak
Boom not running level	<ol style="list-style-type: none">1 Suspension slide pads dry2 Suspension slide pads worn out3 Suspension springs weak4 Suspension pad adjustment bolt too tight5 Suspension pivot arms binding6 Leveling rod (HY) out of adjustment7 Eyelet in tilt cylinder out of adjustment8 Trapeze bushings worn out9 Bushings in suspension pivot arms worn
Breakaway clutch not releasing	<ol style="list-style-type: none">1 Clutch claws dry2 Clutch pressure spring need adjusted3 Clutch claws worn out4 Axle shift in clutch bent
Outer boom section not folding in all the way SPB and SPC boom	<ol style="list-style-type: none">1 Fold cables loose2 Hinge area dry needs grease3 Bind in hinge area
FORCE boom	<ol style="list-style-type: none">1 Air in hydraulic system2 Broken or bent pivot pin or bolt3 Broken piston pin in outer fold cylinder4 End stop defective5 Ram in outer fold cylinder bent6 Defective seals in outer fold cylinder
Main fold works, outer fold does	<ol style="list-style-type: none">1 Loose wire in Joystick control

not "FORCE boom"

- 2 Defective switch in Joystick
- 3 Poor connection at plug between Joystick cable and sprayer cable
- 4 Loose wire in electrical junction box
- 5 End stop valve need adjustment
- 6 Loose wire in solenoid
- 7 Foreign material holding solenoid open
- 8 Defective solenoid
- 9 Broken or pinched wire in main cable



Boom will not unfold
"SPB and SPC EAGLE Boom"

- 1 Low voltage, check power connections
- 2 Dislodged wire in male adapter of power cable
- 3 Loose wire in Joystick control
Dislodged wire in solenoid valve
- 4 Dislodged wire in junction box located on center section of boom
Foreign material holding solenoid open
- 5 Defective solenoid
- 6 Hydraulic switching valve locked (DH control)
- 7 Defective hydraulic coupler
- 8 Pinched wire or broken wire in boom cable
- 9 Pinched hydraulic hose
- 10 Hairline crack in aluminum solenoid block

"Force Boom"

- 1 Low voltage, check power connections
- 2 Dislodged wire in Joystick
- 3 Dislodged wire in male adapter of power cable
- 4 Poor connection at plug between Joystick cable and boom cable
- 5 Poor connection in solenoid junction box
- 6 Loose wire in solenoid
- 7 Foreign material holding solenoid open
- 8 Defective switch in Joystick
- 9 Defective solenoid
- 10 Pinched or broken wire in main boom cable
- 11 Hydraulic switching valve locked (DH control)
- 12 Defective switch in DH control box
- 13 Poor connection at DH cable junction

Boom fails to fold into transport
"SPB and SPC Boom"

- 1 Fold cables out of adjustment
- 2 Hinge movement obstructed
- 3 Main hinge bent
- 4 Fold cylinder seals defective
- 5 Fold cylinder rod bent

"Force Boom"

- 1 Flow divider out of adjustment
- 2 End stop bypassing hydraulic fluid
- 3 Fold arm pivot pin bent or broken
- 4 Fold arm bent
- 5 Piston pin bent or broken in outer fold cylinder
- 6 Outer fold cylinder rod bent
- 7 Intermediate fold cylinder rod bent
- 8 Intermediate fold cylinder seals defective
- 9 Main fold cylinder seals defective
- 10 Outer boom hinge arm bent
- 11 Intermediate boom hinge arm bent

Outer fold cylinder rod bends
or piston pin snaps
"Force Boom"

- 1 Outer lock (turnbuckle) out of adjustment
- 2 Fold arm pivot pin bent or broken
- 3 Fold arm bent
- 4 Outer boom hinge arm bent



Force boom will not unfold or
fold in proper sequence

- 1 Air in hydraulic system
- 2 End stop adjustment incorrect
- 3 Outer cylinder limit switch out of adjustment
- 4 Flow divider adjustment incorrect
- 5 Pinched hose

TWIN AND TWIN FORCE

Not enough air flow

- 1 Defective switch in control box
- 2 Hydraulic oil supply low
- 3 Hydraulic oil filter plugged
- 4 Air bag damaged
- 5 Pump overheating
- 6 Relief valve in hydraulic pump weak
- 7 Fan speed adjustment arm loose on shaft
- 8 Defective drive coupler between fluid pump
and hydraulic pump
- 9 Defective hydraulic pump

Arm or shaft broken off
in top of hydraulic pump

- 1 Fan speed not returning to zero when unit
shut off

Air slots will not adjust
"Twin Force"

- 1 Blown fuse
- 2 Defective power connection
- 3 Dislodged or broken wire in rear junction box
- 4 Defective relay
- 5 Pinched or broken wire in main cable
- 6 Defective switch in control box

"Twin"

- 1 Defective power connection
- 2 Dislodged or broken wire in rear junction box
- 3 Pinched or broken wire in main cable
- 4 Poor electrical connection at Vickers valve
- 5 Vickers valve stuck
- 6 Foreign material in flow divider valve
- 7 Pinched hydraulic hose
- 8 Poor connection at junction of control box and
main cable
- 9 Defective switch in control box
- 10 Defective cylinder seals

Hydraulic pump noisy

- 1 Oil level in gear box low
- 2 Oil foaming (wrong type oil)
- 3 Oil level too low
- 4 Hydraulic oil filter plugged
- 5 Weak hydraulic relief valve in pump
- 6 Gears in gear box worn
- 7 Hydraulic pump defective

Hydraulic pump or gearbox
overheating

- 1 Oil level low
- 2 Oil foaming (wrong type oil)
- 3 Hydraulic oil filter plugged



STANDARD FOAM MARKER

The standard foam marker uses air from the compressor to pressurize the foam supply tank, push fluid through the solenoid valves, and out to the mix chambers. The compressor also supplies air to the mix chambers to create foam. It is imperative that the foam marker has 12 volts available to it at all times. Poor electrical connections cause many of the problems associated with foam markers

As of June, 2000, the standard foam marker was updated with different components that simplified the number of parts found within the compressor housing. A potted module replaced the circuit board, the metering valve, and the fuse and fuse holder. An automotive type fuse is now used and located near the positive lead on the power cable.

Compressor will not run

- 1 Low voltage, check power supply cables
- 2 Reverse polarity
- 3 Fuse on circuit board blown (pre 6/ 2003)
- 4 Dirty connections
- 5 Cycle switch in control box dirty
- 6 Slow blow fuse blown (pre 6/ 2003)
- 7 Main fuse connections dirty or corroded (pre 6/ 2003)
- 8 Main fuse holder defective (pre 6/ 2003)
- 9 Loose or corroded connection on circuit board (pre 6/ 2003)
- 10 Fuse holder, on circuit board, loose or corroded (pre 6/ 2003)
- 11 Defective circuit board (pre 6/ 2003)
- 12 Cycle switch in control box defective
- 13 Loose connection in wiring harness
- 14 Potted module in compressor housing defective (post 6/ 2003)
- 15 Defective wiring harness
- 16 Defective bearing in compressor
- 17 Defective compressor

Compressor runs but no foam out the droppers

- 1 Lid on fluid tank loose or seal defective
- 2 Filter in bottom of supply tank plugged
- 3 Solenoid valves dirty, not opening
- 4 Compressor relief valve leaking air
- 5 Metering valve plugged (pre 6/ 2003)
- 6 Pinched fluid lines
- 7 Red plastic lines, off compressor, cracked
- 8 Air distribution fitting, on compressor, cracked
- 9 Reed valve, in compressor, defective
- 10 Foam filter, in mix chamber, plugged (pre 94)
- 11 Mix chamber cracked, not up dated (pre 2003)
- 12 Loose or corroded connections on solenoid valves
- 13 Defective potted module (post 6/ 2003)

Runny foam

- 1 Hard water
- 2 Antifreeze not completely drained from system
- 3 Frozen foam concentrate
- 4 Poor quality foam concentrate
- 5 Amount of foam concentrate incorrect
- 6 Air solenoid valve sticky, not opening



	7 Cracked or pinched air lines to mix chambers
	8 Air line fittings at compressor or mix chambers leaking
	9 Compressor relief valve weak
	10 Loose or corroded connections on circuit board (pre 6/ 2003)
	11 Crack in mix chamber housing
	12 Defective o-ring on mix chamber fittings
Makes foam on only one side	1 Solenoid valve stuck
	2 Fluid line pinched
	3 Defective o-ring on mix chamber fittings
	4 Cracked mix chamber (not up dated)
Cannot increase amount of foam being dropped	1 Metering valve wide open (pre 6/ 2003)
	2 Metering valve stuck (pre 6/ 2003)
	3 Filter in bottom of supply tank, partially plugged
	4 Loose or corroded wires on metering valve motor (pre 6/ 2003)
	5 Defective metering valve motor (pre 6/ 2003)
	6 Potted module not increasing solenoid valve cycle (post 6/ 2003)
Foam dissipates too quickly	1 Foam concentrate mixture incorrect
	2 Frequency of drop too great
	3 Filter in bottom of solution tank partially plugged
	4 Fluid lines pinched
	5 Metering valve partially plugged (pre 6/ 2003)
	6 Potted module not cycling solenoid valves correctly
	7 Defective o-ring on mix chamber fittings
Circuit board fuse blows (pre 6/ 2003)	1 Polarity reversed, check electrical connections
	2 Incorrect fuse
	3 Fuse holder loose on circuit board
	4 Defective solenoid valve
	5 Defective circuit board
	6 Compressor bearing defective
Slo-blow fuse, front of compressor housing, blows (pre 6/ 2003)	1 Reverse polarity, check power connections
	2 Defective fuse holder
	3 Defective bearing in compressor
	4 Defective compressor

HIGH CAPACITY FOAM MARKER

The Hi Capacity foam marker uses a few of the same components as the standard version but the concept of fluid delivery and the function of the compressor is different. The major components are the compressor, the fluid delivery pump, the solution tank, the directional valve, and the mix chambers. Fluid is pumped from the supply tank, via the fluid pump, to the directional valve. Air is supplied by the compressor directly to the directional valve. The switch on the foamer control box turns on the compressor, the fluid pump and actuates the directional valve which directs the foam to either the right or left dropper. A solid 12 volts is necessary for the foam marker to operate properly, therefore, attach the power cable directly to the battery.

Compressor will not run	1 Low voltage, check power connections
	2 Polarity reversed
	3 Fuse blown



	<ol style="list-style-type: none">4 Loose or corroded connections in cable unions5 Cycle switch in foamer control dirty or defective6 Potted module wires loose or corroded7 Potted module defective8 Defective compressor
Main fuse keeps blowing	<ol style="list-style-type: none">1 Polarity reversed2 Incorrect fuse3 Short in electrical wiring4 Short in potted module5 Defective compressor
Compressor runs but no foam being produced	<ol style="list-style-type: none">1 Fluid pump air locked2 Fluid pump not running, check electrical connections3 Supply tank filter plugged4 Fluid line kinked or plugged5 Poor electrical connections at module6 Fluid pump defective7 Potted Module defective
Only makes foam on one side	<ol style="list-style-type: none">1 Directional valve not functioning, check electrical connections2 Directional valve stuck, clean valve3 Pinched or kinked foam line4 Power wire from compressor housing to directional valve defective5 Loose or corroded connections at potted module, in compressor housing6 Defective directional valve7 Cycle switch, in control box, dirty or corroded8 Defective potted module
Runny foam	<ol style="list-style-type: none">1 Hard water2 Anti-freeze not completely drained from tank3 Frozen concentrate4 Quantity of concentrate incorrect5 Compressor filter plugged6 Compressor not running7 Air leak between compressor and directional valve8 Air line kinked or cracked9 Reed valve in compressor defective10 Defective compressor
Cannot increase foam drop	<ol style="list-style-type: none">1 Supply tank filter partially plugged2 Potentiometer switch dirty or corroded3 Potentiometer switch defective4 Fluid pump defective
Foam disipates too quickly	<ol style="list-style-type: none">1 Quantity of concentrate incorrect2 Drop frequency too low3 Kink or restriction in fluid line4 Directional valve sticky5 Fluid pump weak

MONITORS AND CONTROLLERS



HM1500 Monitor and HC2500 Controller

The HM1500 monitor shows the operator his actual ground speed and application rate but will not make any adjustments to pressure for speed changes. A distance calibration and a flow calibration test must be done to ensure accuracy of the HM1500.

The HC2500 controls the application rate using electrical impulses generated by the flow and speed transducers. Ultimate accuracy of the HC2500 is determined by the accuracy achieved when running the nozzle catch test and distance calibration.

The HM1500 and the HC2500 use the same components, a flow meter, a speed sensor, a Scanbox, and a display. There are different flow meter housings, depending on the model of sprayer, and the amount of necessary flow. There are two speed sensors offered, one sensor requires magnets while the other has a built in magnet and does not require external ones. This sensor is, primarily, used with the HD 10 bolt hubs or in situations where mounting magnets wet would be difficult. A special electrical pigtail is necessary when using the proximity sensor with an HM1500 or HC2500.

There is a power port, in the bottom of the Scanbox, DO NOT USE THIS POWER PORT FOR ANYTHING OTHER THEN THE BOOM CONTROL BOX.

Mustang 3500 Controller

The Mustang 3500 controls the application rate using electrical impulses generated by the flow and speed transducers. It The M3500 controls boom functions and the foam marker as well as controlling the sprayer and supplying the operator with GPA and speed.

NOTE; When attaching the power cable to the battery, make sure not to cross polarize. Cross polarization can cause serious damage to the HM1500 and the HC 2500 Scanbox

Display will not power up	<ol style="list-style-type: none">1 Low voltage, check power connections2 Blown fuse3 Cross polarization, check power connections4 Loose Wire in Scanbox power cable.5 Defective power switch in Scanbox6 Defective Scanbox circuit board7 Defective cable between Scanbox and Display8 Defective display
Controller not adjusting pressure	<ol style="list-style-type: none">1 Controller in manual, touch up or down arrow2 PPU number incorrect3 On/off valve setting incorrect in Extended Menu4 No power to flow meter5 Flow meter magnets dirty or missing6 Foreign material, in flow meter housing, restricting the flow meter7 Scanbox not reading flow meter8 Loose wire in flow meter or flow meter plug9 Incorrect number of nozzles in main menu10 Boom size not set in main menu11 SS nut off pressure valve (inside housing)12 Pressure valve locked up.
Display shows proper GPA, but actual application rate too high of low	<ol style="list-style-type: none">1 PPU number incorrect2 PPU fine tune procedure not completed3 Constant pressure settings not done4 Boom size not entered correctly5 Number of nozzles not entered correctly.



	<ol style="list-style-type: none">6 Constant pressure seats leaking7 Overlapping8 Foreign material restricting flow meter9 Incorrect flow meter housing.
Display not reading flow	<ol style="list-style-type: none">1 Wires in flow meter plug loose or incorrect2 Broken wire in flow transducer cable3 Foreign material restricting flow meter4 Missing or dirty magnets on flow meter wheel5 Flow meter wheel worn6 Defective flow meter7 Defective Scanbox circuit board
Speed reading inaccurate	<ol style="list-style-type: none">1 UPP number incorrect2 One or more wheel magnets installed incorrectly3 Magnet mounting ring bent4 Magnets loose on ring5 Sensor too far away from magnets or wheel6 Wires in speed sensor plug loose or incorrect7 Broken wire in speed sensor cable8 Defective speed sensor
Fuse in Scanbox keeps blowing	<ol style="list-style-type: none">1 Reverse polarity, check power connections2 Improper use of Scanbox power port, only to be used to power boom control box3 Wrong fuse4 Short in main power cable5 Loose or bare wire in Scanbox6 Defective circuit board in Scanbox
Pressure slow to adjust after speed change	<ol style="list-style-type: none">1 Regulation constant, in extended menu, not set correctly, default setting -50, lower to -40 to increase response speed2 Minimum duty pressure, in extended menu, not set correctly, default setting -10, lowering to -20 increases power to motor3 Check pressure motor, green handle is slower than yellow handle. Default settings different for green handle
Controller fails to show application rate even when sprayer turn on	<ol style="list-style-type: none">1 Controller not reading flow meter2 Foreign material restricting flow meter3 Loose or broken wire in flow meter plug4 Controller not recognizing sprayer being turned on5 Controller not recognizing speed6 On/off valve, in extended menu, not set correctly7 Defective flow meter8 Defective circuit board in Scanbox
Boom pressure goes all the way up or down when in automatic mode	<ol style="list-style-type: none">1 On/off valve, in extended menu, not set correctly2 PPU number incorrect3 Speed constant incorrect4 Foreign material restricting flow meter5 Loose or broken wire in flow meter plug6 Flow meter magnets dirty or missing7 Defective flow meter8 Defective circuit board in Scanbox
Controller not reading correct	<ol style="list-style-type: none">1 Speed calibration incorrect

acres

- 2 Controller not recognizing when sprayer turned off
- 3 Boom size not entered correctly
- 4 Overlapping



CHEMICAL INDUCTOR

Tank back fills when valve open or drains slowly

- 1 Pump running too slowly
- 2 Pump sucking air, not giving full flow
- 3 Restrictor cone missing in tee under tank
- 4 Directional valves not set correctly

Fluid keeps running out of tank rinse tube

- 1 Tank rinse valve defective

FLUSH AND RINSE

Will not draw water from flush tank

- 1 Flush tank/main tank valve not set correctly
- 2 Air leak between flush tank and pump