

Pin Mount
Style

OK to make this
valve hand tight.

Integral lies 4-5 Degrees above
Horizontal.
If you store your Hunter "bow down"
you will get air-lock in the Integral.

Slot Mount
Style

Pump Body
"Down"

Upper Jaw
"Up"



SAILTEC, INC. 2930 CONGER COURT, OSHKOSH, WI 54904 USA

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AIR LOCK

PROBLEM: Integral will not pump – Rod will not retract – No pressure obtained

The problem may be “air lock”: Too much air in the oil, preventing the check balls from seating or closing system. Air lock is most likely to occur after shipping or if the integral is not stored in an upright position in off-season. Possibly, if not used for a while. Try this procedure:

STEP ONE

Open the valve and pump the handle quickly for 30 – 60 seconds. Close valve. Pump the handle. Sometimes, if you’re lucky, this will release the trapped air. If it doesn’t pump, go to Step Two.

STEP TWO

Take integral off the boat.

Hold in an upright position.

In order to gain purchase, slide a dowel or the like, through the lower jaw, clevis (stand on it), and another through the upper jaw (grasp it).

“Plunge” the system: open valve and pull the piston rod out of cylinder. Then close valve and push the piston rod in. You may turn integral upside down and push rod into cylinder. Repeat the plunging three to four times. This action lubricates the parts and moves the check balls so they will set. The last time the rod is out/extended, close the valve and pump the rod in.

Store the integral upright for a few hours, more or less.

Quite often, after this procedure is performed, the integral will pump and hold pressure immediately. This procedure should return the integral to working condition.

If the problem is air lock, this procedure may need to be done more than once. If it does not work, call or e-mail SAILTEC.

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Integral Test & Trouble-Shoot Check List & Periodic Review

AIR LOCK: If integral, does not pump rod down initially, open valve (knob) and pump several times for 1-2 minutes, clearing air out of pump. Close valve and try again. If necessary, review the more thorough “air lock” procedure.

Periodic Review of System Checklist:

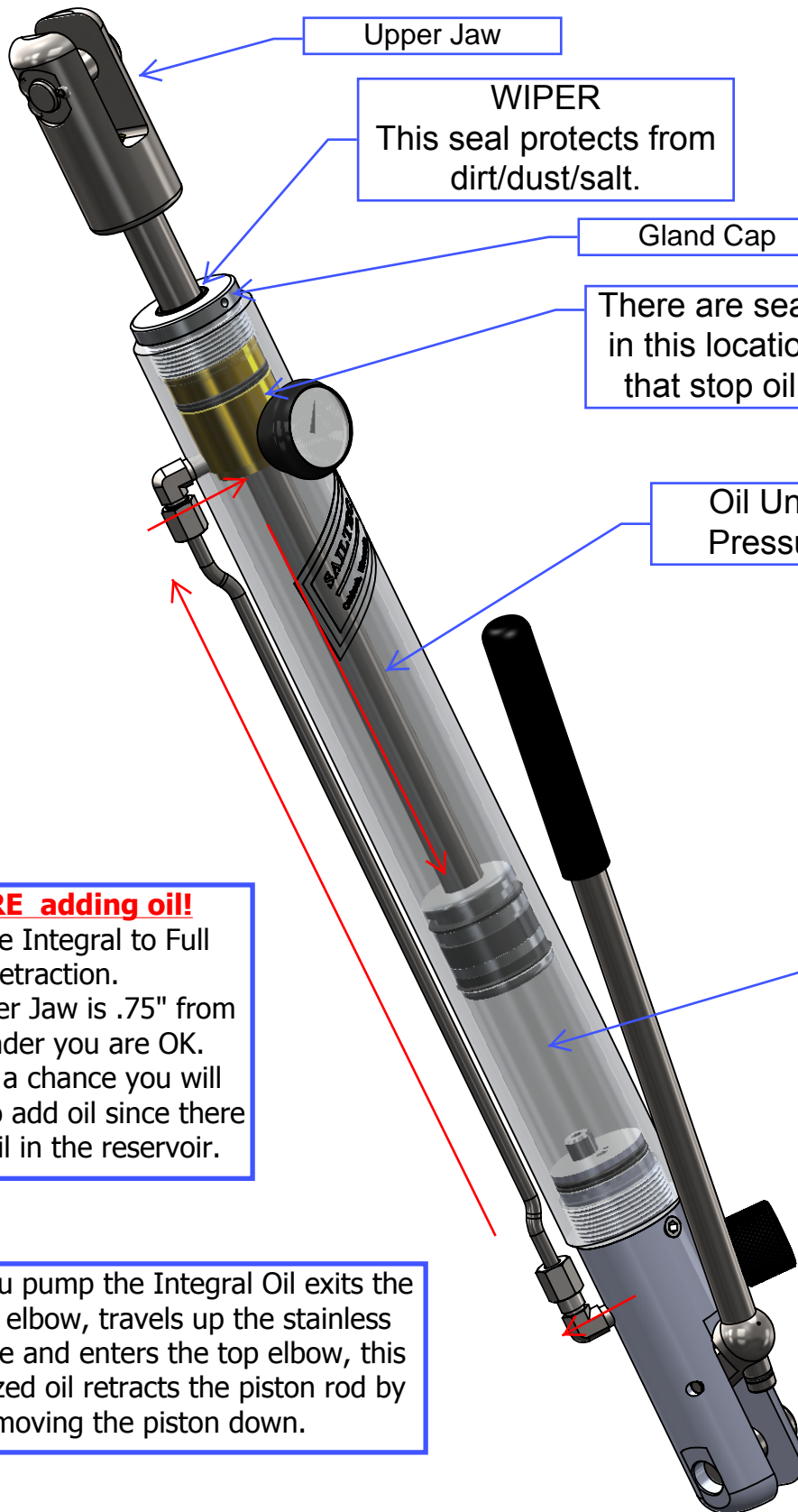
- ✓ Check for visual evidence of external oil.
- ✓ Check for visual evidence of cracked seals at rod or nicks on piston rod.
- ✓ Pump to pressure. Leave handle out. To pass, the pressure will hold and the handle will remain out.
- ✓ Check lever pin for full engagement.

General Care:

Periodic inspection is recommended for your safety. Have a qualified rigger check rod or wire terminations for fatigue.

Procedure for testing an integral:

- Clean integral making note of any locations where external oil appears.
- Open release valve.
- Pull out piston.
 - Inspect rod. To be free of nicks and scratches, polish out with 150 to 220-emery cloth.
 - Inspect wiper seal for cracks. Replace as needed. UV rays and time will cause failure.
- Close release valve.
- Pump in upright position until ram is retracted. If more than an inch or so of ram is exposed, system is low of oil.
- Place spacer on each side of piston rod between upper jaw and gland cap to act as dead stop. Pump to pressure – pump action should be smooth. Leave pump at pressure with handle out away from cylinder.
- Inspect system visually for evidence of external oil (leaks) including elbows, fittings, gauge port, between jaws, and upper end of cylinder.
- Clean system and leave pressure on one day. If gauge drifts to lower pressure more than a few hundred pounds, inspect for evidence of oil. Pressure is temperature sensitive when using a dead stop so higher or lower pressure reading will result from higher or lower ambient room temperature.
- Handle should remain out when under pressure. If it drifts back to upright, you will have a pressure loss and service is required.
- Service system if pressure loss occurs. Pressure loss is caused by a worn cartridge release valve, external oil leaks, a check ball, or seal leaks.



BEFORE adding oil!
 Pump the Integral to Full Retraction.
 If the Upper Jaw is .75" from the cylinder you are OK.
 THERE is a chance you will not need to add oil since there is extra oil in the reservoir.

When you pump the Integral Oil exits the bottom elbow, travels up the stainless steel pipe and enters the top elbow, this pressurized oil retracts the piston rod by moving the piston down.

SailTec Inc - Marine Hydraulic Sytems 2930 Conger Court, Oshkosh WI 54904 Ph: 920-233-4242 Fax: 920-233-8767 Website: www.sailtec.com Email: info@sailtec.com			TOLERANCES: ANGULAR: + 1 DEGREE TWO PLACE DEC. + .01 THREE PLACE DEC. + .005 FOUR PLACE DEC. + .0005 DIMENSIONS ARE AFTER PLATING	NAME CAB	DATE 03/29/11	-17 Integral Line Dwg SAILTEC [®] INC.
			MATERIAL CHAMFER TAPPED HOLES 90°X THREADED DIAMETER SURFACE FINISH 64 RMS BREAK ALL SHARP EDGES THREAD LENGTH = FULL THREADS SEAL AREA TO BE FREE OF TOOL MARKS	DRAWN CHECKED ENG APPR. MFG APPR.	SIZE A	
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY, AND IS CONFIDENTIAL AND TRADE SECRET OF SAILTEC INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SAILTEC INC. IS PROHIBITED.	NEXT ASSY	USED ON	FINISH DO NOT SCALE DRAWING	SCALE: 1:8	WEIGHT:	REV. SHEET 2 OF 3

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info@sailtec.com**TO ADD OIL TO AN INTEGRAL ADJUSTER**

- Sailtec recommends using a premium hydraulic oil, ISO 32 or lighter.
- Oil, fittings & tube must be clean.
- Fully extend piston rod.
- Disconnect outside oil line from the upper fitting/elbow.
- Fill a 3/8" piece of flexible hose (CLEAR is best) with ISO Grade 32 premium oil. Attach the clear flexible hose to upper elbow (the 3/8" hose should push on to the 7/16" elbow threads). Place the other end of hose in a reservoir of hydraulic oil. This line will act as a siphon so it needs to be primed and free of most air.
- Connect a section of hose to the other (pump) elbow or stainless line and run it to a pan or bottle to collect the overflow oil.
- Slowly retract/push the piston rod into cylinder. [Hint: This works best with the integral upside down.]
- When oil stops being drawn from reservoir, the cylinder is filled, if the siphon line is free of most air bubbles. Reconnect the stainless line and pump system.
- If air bubbles are in the system it won't hold pressure. If that happens, pull piston rod in and out a few times. You may have to allow gravity to work air out.

CARTRIDGE VALVE ASSEMBLY INSTALLATION INSTRUCTIONS

- Line up hex nuts (one under knob, one on stem).
- Install knob on stem.
- Lubricate 'O' ring on tip.
- Turn the valve into the valve port: turn in very slowly, wiggle the body a little so 'O' rings find port, slide into place.
- Tighten down securely with wrench.

Pressure (PSI) Reading and (#) Tension	Cyl. Diameter	Cyl. Bore
-08 size matches .6:1.00 psi	1.50"	1.002
-10 size matches 1:1.00 psi	1.75"	1.250
-12 size matches 1:1.30 psi	2.00"	1.500
-17 size matches 1:1.76 psi	2.25"	1.750
-22 size matches 1:2.20 psi	2.75"	2.000

LOCKING INTEGRALS

TO LOCK: Pump adjuster to desired position. ALIGN split jaws, Squeeze Split Jaws Together & Open Valve at same time-UNIT IS NOW LOCKED.

TO UNLOCK: Close valve, Pump down 1/2" to release (jaws should spring open), Always have 2-3 Inches of Rod Exposed.



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HUNTER 216

SPECIAL MAINTENANCE

The -10LI-H is an integral, customized to lift the keel of a Hunter 216, a boat with trailer.

As the integral is more susceptible to corrosion due to its position on the boat, a little extra care will help it to last longer.

Keep the upper and lower parts of the cylinder clean; wash off regularly. Maybe use a lubricant in these areas.

In addition, hydraulic seals last longer if they are under pressure and if bathed in oil regularly by pumping the unit.

The more the pump is used, the better it will perform.

Once per month, clean the unit and pump it.

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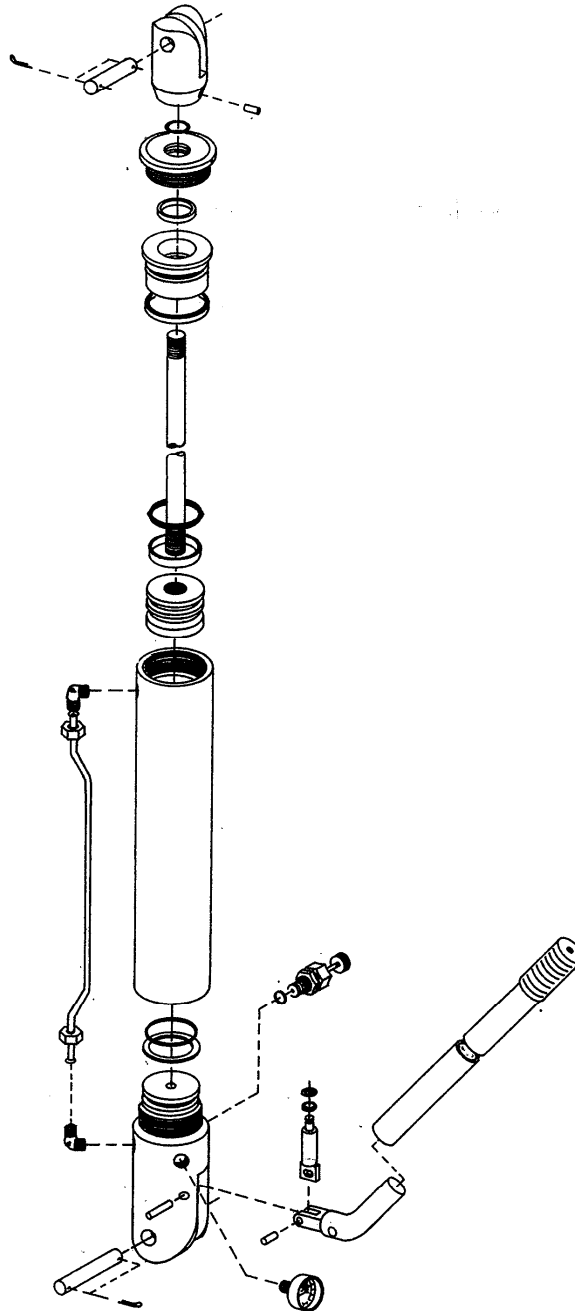
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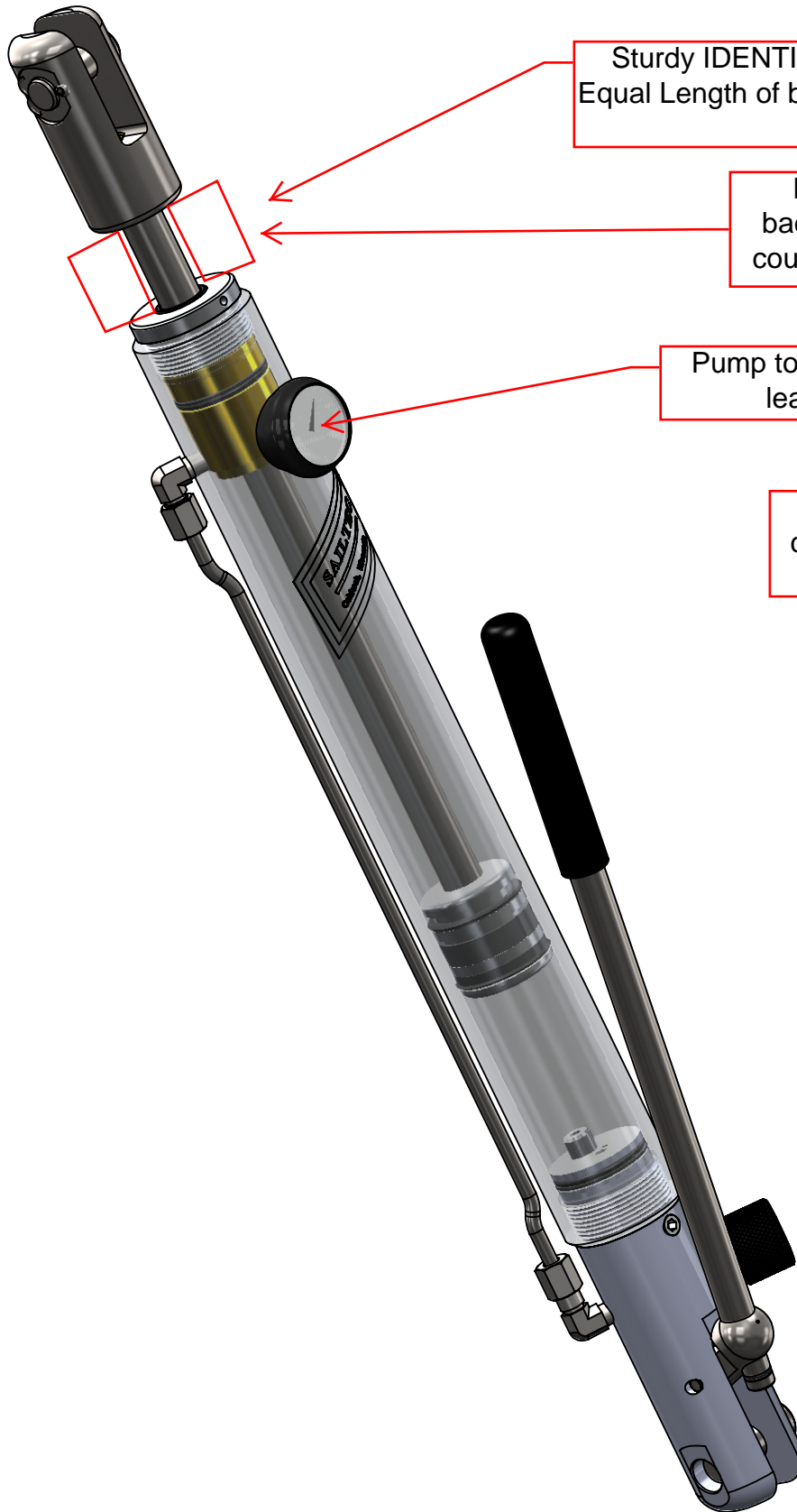
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SAILTEC INTEGRAL SERVICE MANUAL

This Would Be
Considered An
UP-RIGHT
Position





Sturdy IDENTICAL Spacers of Equal Length of brass or aluminum.

If you want to leave backstay connected you could use longer spacers.

Pump to 4000 - 4500 PSI and leave for 24 hours.

See if pressure changed after 24 hours.

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CHECKED		
ENG APPR.		
MFG APPR.		

-17 Integral Line Dwg



SIZE	DWG. NO.	REV.
A	-17_Integral_LineDwg	
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