MODEL ACW ANCHOR WINDLASS

INSTALLATION, OPERATING, MAINTENANCE & TROUBLE SHOOTING

INSTALLATION

To install the Model ACW please read these instructions CAREFULLY!

1. Refer to the enclosed spare parts drawing and remove the following parts: PC #'s 2,3,4,5,6,28,29,8 & 9. PC #27 does not need to be removed.

2. Remount the chain stripper, pc #28 to the deck plate, pc #11.

3. Refer to drawing #D-721. Place the deck plate with chain stripper on the deck in the desired location. Make sure there is enough room below for the gear case and motor.

4. Now check the lead of your anchor chain over the bow roller and around the windlass in a clockwise direction. The chain stripper should be located between the two lengths of chain. Or looking at the deck plate as a clock with noon being over the bow, the stripper should fall between 10 and noon. The total wrap of the chain should be between 150 and 180 degrees. The more wrap, the safer and more efficient it will be.

5. Placement of the Chain Locker Pipe. The chain locker pipe should be placed as close to the windlass as possible. Always be sure that the vertical drop of chain into the chain locker below deck is longer than the distance the chain has to travel from the windlass to the chain locker pipe. It is the weight of the vertical chain that will drag the chain leaving the windlass below deck. A chain locker pipe installed too far from the windlass or an insufficient vertical drop into the chain locker will cause the chain to pile up on deck.

6. With the location of these two items established, install the chain locker pipe. A deck pad may be needed to raise the height of the chain locker pipe to the height of the wildcat, pc #8. Refer to drawing D-721. Be sure to use bedding compound when installing the chain locker pipe.

7. If there is deck camber, shear or if the height of the wildcat needs to be raised, you will want to prepare a deck pad approximately 12" in diameter to corect these problems. A bolster plate for below deck should be installed to distribute the strain. NOTE: THE TOTAL THICKNESS FROM THE BOTTOM OF THE DECK PLATE TO THE TOP OF THE BOTTOM DECK PLATE (PLATE WELDED TO THE GEAR CASE) MUST BE KEPT AT EXACTLY 4"! It is this distance which locates the position of the chain stripper, pc #28. If this distance of 4" is not held exactly, the above deck parts

will not fit together properly!

8. Using the deck plate as a template and keeping the chain stripper in the proper position, lay out and drill the four holes for the 1/2" mounting bolts. In the center of the deck plate drill a 2" hole for the main shaft housing.

9. After rechecking the 4" figure for deck thickness, apply bedding compound between the pad, deck and deck plate. Also around each hole drilled for the mounting bolts. From below deck push the shaft through the 2" hole, placing the gear case and motor up into place. Secure in place with the four mounting bolts.

10. Remove the chain stripper from the deck plate. Reassemble the above deck parts. Be sure that the lower friction plate pc #9 slips all the way onto pc #27. It may not fit on in either direction so it may be necessary to turn it around. It is also a good idea to coat pc #27 with grease or a stop rust product as this pc #27 is made of steel. When reassembling these parts, lubricate the hub of pc #9 and #5 and the threads of the main shaft with a small amount of grease. Be sure to keep grease off of the friction disc, pc #7.

11. IF PC #28 DOES NOT FIT PROPERLY INTO THE TROUGH OF THE WILDCAT, PC #8, THEN THE SPACE LEFT FOR THE DECK THICKNESS WAS NOT KEPT AT EXACTLY 4". If the stipper location is too high, then some blocking will have to be removed. If the location is too low, blocking will have to be added.

12. Select a location on the deck for the foot switch and install as per the instructions on bulletin 9240. Again, be sure to use bedding compound.

13. Wire in accordance with the wiring diagram provided. Use the table below for the proper wire size. This is also covered on the wiring diagram provided. REMEMBER, USING WIRE SIZE LESS THAN RECOMMENDED WILL DAMAGE THE MOTOR AND MAY CAUSE A FIRE!!

RECOMMENDED WIRE AND FUSE SIZES

DISTANCE OF BATTERIES ON GENERATOR FROM MOTOR	WIRE SIZE			
	12 Volt	32 Volt	110 Volt D.C.	110 Volt A.C.
up to 10 feet	No. 4	No. 10	No. 12	No. 12
10 to 20 feet	No. 2	No. 8	No. 12	No. 12
20 to 30 feet	No. 0	No. 6	No. 12	No. 12
30 to 40 feet	No. 00	No. 6	No. 12	No. 12
Fuses (amp. rating)	200	45	15	45
Full Load Current in amps.	150	30	9	16.8

14. Check all electrical connections and test the windlass by stepping on the foot switch. Proper rotation of all our windlasses is clockwise when looking down from the top. WE DO NOT RECOMMEND USING OUR WINDLASS TO PULL IN A COUNTER-CLOCKWISE DIRECTION AS THIS WILL CAUSE DAMAGE.

OPERATION

1. Capstan: The capstan is directly keyed to the main shaft and will always turn when the windlass is activated. Wrap three to four turns around the capstan in a clockwise direction and keeping a small amount of pressure on the line, step on the foot switch. If the line slips apply more pressure or another wrap. The capstan may be used independently of the wildcat by loosening the capstan cap, pc #4 with the capstan wrench, pc #1.

2. Wildcat: The wildcat is not directly keyed to the main shaft. It is driven by a friction system. To loosen the wildcat insert the capstan wrench, pc #1 into the top of the capstan, pc #4 and turn in a counter-clockwise direction. This will enable the chain to pay out freely. The speed of the outgoing chain may be controlled by the amount of pressure put on the wildcat with the capstan wrench. To tighten the wildcat insert the capstan wrench into the top of the capstan and turn in a clockwise direction. If the wildcat continues to slip apply more pressure.

3. The fit of the chain to the wildcat is critical! Without the proper wildcat for your size and type of chain your windlass will never function correctly. The chain should not jump, skip or jam. If this is the case, please contact your dealer or the Ideal Windlass Company. We will request you send us an eleven link sample of the chain along with your wildcat so that we may correct the problem. Chains vary greatly and most times an actual sample is needed.

4. CAUTION - DO NOT ALLOW THE WINDLASS TO OPERATE WITHOUT A LOAD FOR ANY LENGTH OF TIME AS THE MOTOR IS SERIES WOUND AND SEVERE DAMAGE WILL RESULT!

5. The Model ACW windlass has a pull power of 500 pounds. It is recommended for boats in the 37 to 50 foot range and is not designed to pull the Queen Mary off sand bars. It will give you years of service if treated properly.

MAINTENANCE

1. Once a season check the oil level in the gear case to see that it is up to the oil plug on the side of the gear case, pc #25. If needed, add a good grade of EP-90 gear oil. This oil is sold in small tubes for the drive units of outboard motors and can be

purchased anywhere supplies for outboards are sold.

2. At least once a season disassemble the above deck parts. Remove pc #'s 2,3,4,5,29,28,8 & 9. Add a few drops of machine oil to the top of the upper bushing, pc #20. Lubricate the hub of pc #'s 9 & 5, pc #6 and the threaded portion of the main shaft with a small amount of grease. Be careful not to get any grease on the friction disc, pc #7. If the wildcat is particularly sticky, clean out the bore with emery cloth or sand paper.

TROUBLE SHOOTING

1. Windlass will not operate when the switch is engaged.

   a. Check to see that the power is turned on.

   b. Check to see if the windlass Protector Panel switch is turned to the on position if a Protector Panel is used.

   c. Check any fuses or circuit breakers in the line. The circuit breaker in the Protector Panel is reset by pushing in the red button. If the windlass is powered by A/C voltage the reset button is mounted on the front cover of the magnetic starter and can be reset by pushing same.

   d. Using a volt meter, check the voltage at the motor while someone steps on the switch. If there is power to the motor it can be assumed that the switch, solenoid and power supply are operational. If you find this is the case, refer to the section on motor removal.

   e. If there is no power at the windlass work your way back through the system isolating the switch, solenoid and the power supply to find out which is the problem. Usually the switch and solenoid are the weakest points of the electrical system.

2. Windlass operates at less than capacity.

   a. Using a volt meter, check the voltage and amperage at the windlass motor. The voltage should exceed 11.5 volts if 12 volt, 31.5 if 32 volt and 105 volts if 115 a/c volts. The amperage under full load should be approximately 100 amps of 12 volt, 30 amps if 32 volt and 16.8 amps if 115 a/c volts. Under a no load condition a 12 volt system should draw between 40 and 60 amps.

   b. If you find that the windlass motor has sufficient power then you have one of three problems. A tired motor, jammed gears or a bent shaft. Refer to the section on motor removal for all three.

3. Wildcat slips when pulling in chain.

   a. Tighten the clutch by inserting the capstan wrench into the capstan cap and turning in a clockwise direction.

   b. Check to see if the friction disc is worn. If so replace it. The friction disc is located between the capstan and the wildcat.

   c. Check to see if grease or any other substance is causing the slippage. If so clean it off.

   d. Check to see if the drive pin, pc #27 has broken. If so, replace it.

4. Wildcat will not release when the clutch is released.

   a. Refer to the section on maintenance and follow the lubrication instructions in the second part.

5. Chain skips, jumps or jams.

   a. Refer to the section on operation, step 3.

6. Removing the windlass motor.

   a. Shut off the power to the windlass and remove the electrical connections.

   b. Slightly loosen the four bolts holding the motor in place. Be sure to have a bucket positioned under the motor end bell to catch the gear case oil which will drain out.

   c. With the bucket in position, break the seal between the motor and the gear case and let the oil drain out. This should take a few minutes.

   d. Remove the four bolts and pull the motor straight out. Have something ready to set the motor on as the oil left on the gear will drip.

   e. Once the motor is removed examine the main gear, pc #22. If the teeth are worn, broken or missing replace the gear. Also examine the motor worm gear on the end of the motor shaft.

   f. With the motor removed, turn the windlass shaft by hand from up on deck. The shaft should be able to move with a little effort. If the shaft will not move at all, either the shaft is bent or the windlass is frozen. If the shaft is bent it must be replaced. If the windlass is frozen a liberal amount of penetrating fluid and force may do the

trick. If not, the windlass must be disassembled. Instructions for removing the main shaft are covered in part 9 of this section.

7. Replacing the motor.

a. Coat both sides of the gasket with Permatex 2c. Stick the gasket onto the bronze motor end bell, lining the 4 bolt holes up with those on the gasket. Slide the motor into place. The gears should mesh easily. Coat the 4 bolts with a small amount of Permatex 2c and tighten them down equally.

8. Removing the windlass from the boat.

a. Remove pc #'s 2,3,4,5,6,29,8,9 & 27.

b. Have someone hold the windlass in place from up on deck while your loosen the four nuts, pc #12 and then remove the four deck bolts, pc #10.

c. The windlass should drop down through the deck. If not it is probably a combination of corrosion and caulking that is holding it in place. Twisting the entire assembly from side to side sometimes breaks it loose. Pounding on the top of the main shaft may be used as a last resort. Many of today's caulkings simply absorb the shock and the only result is damage to the gear case. Be sure to protect the top of the shaft with a block of wood if it becomes necessary to pound on it.

9. Removing the main shaft.

a. Place the windlass assembly in a vise and remove the motor. Refer to section 6 of trouble shooting.

b. Remove the inspection plate, pc #14 by removing the eight screws, pc #13.

c. Loosen the two set screws on the main gear, pc #21. Then loosen the set screw, pc #18 that retains the bottom bushing.

d. Using a block of wood to protect the top of the shaft, drive the shaft down through the gear case until the worm gear key, pc #17 is visible. This will push the expansion plug, pc #19 and the bottom bushing, pc #20 out of the bottom of the gear case.

e. Once the key is visible remove it. File down any marks left on the shaft by the set screws and slide the shaft up through the top of the gear case. Now the gear and thrust bearing can be removed.

9. Replacing the main shaft.

a. Slide the main shaft down through the top of the gear case while holding the thrust bearing, pc #24 in place. Then put the main gear, pc #22 in place and slide the shaft down until the keyway for pc #17 is visible. Insert the key and slide the shaft back up into the gear case. Be careful to line up the keyway on both the gear case and main shaft.

b. Insert the bottom bushing, pc #20. Be sure to insert this bushing exactly as it was removed. The mark left by the set screw will help to locate the proper position.

c. Adjust the main shaft so that the bottom of the hole for the drive pin, pc #27 is exactly 3/16" from the top of the riser (the steel tube that the top bushing rides in). NOW tighten the two set screws, pc #21.

d. Attempt to turn the main shaft by hand. It should turn with a good deal of force. If it will not turn hit the bottom of the gear case on the flat surface with a hammer. This should loosen things up. Now that the shaft will turn, lock down the set screw, pc #18.

e. Coat the expansion plug sides with Permatex 2c and insert into place. This plug must be inserted evenly. After the plug in in place hit it softly in the middle to flatten it out.

Should you have any other question regarding the installation, operation or maintenance of your windlass call the Ideal Windlass Company at 401-884-2550.