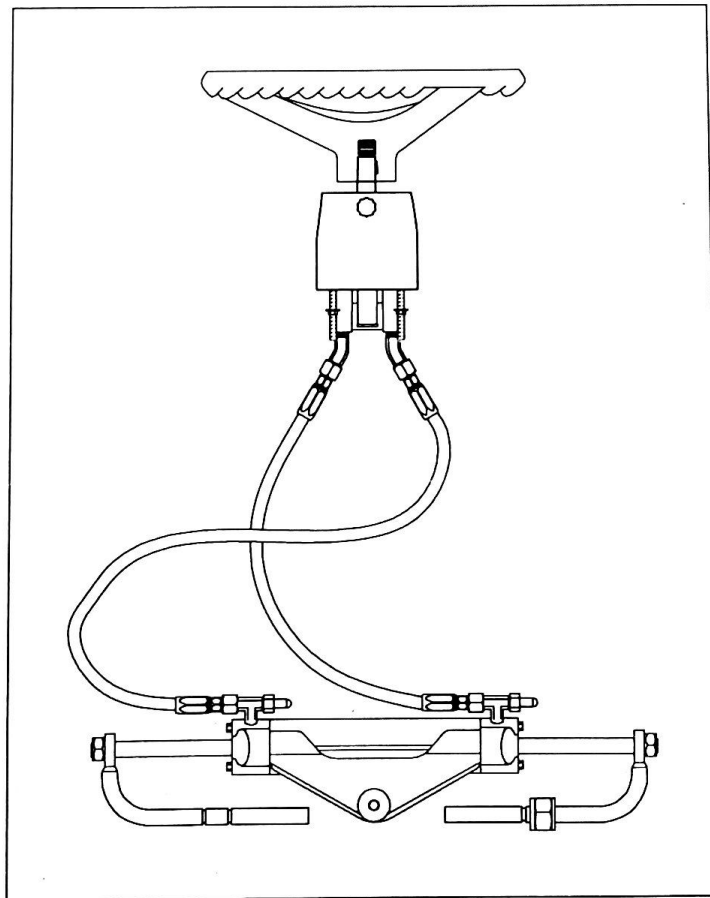


# INSTALLATION MANUAL FOR OUTBOARD CYLINDERS

- WINIBO-PILOT-1
- WINIBO-ZAO300
- WINIBO-ZAO350



# Index

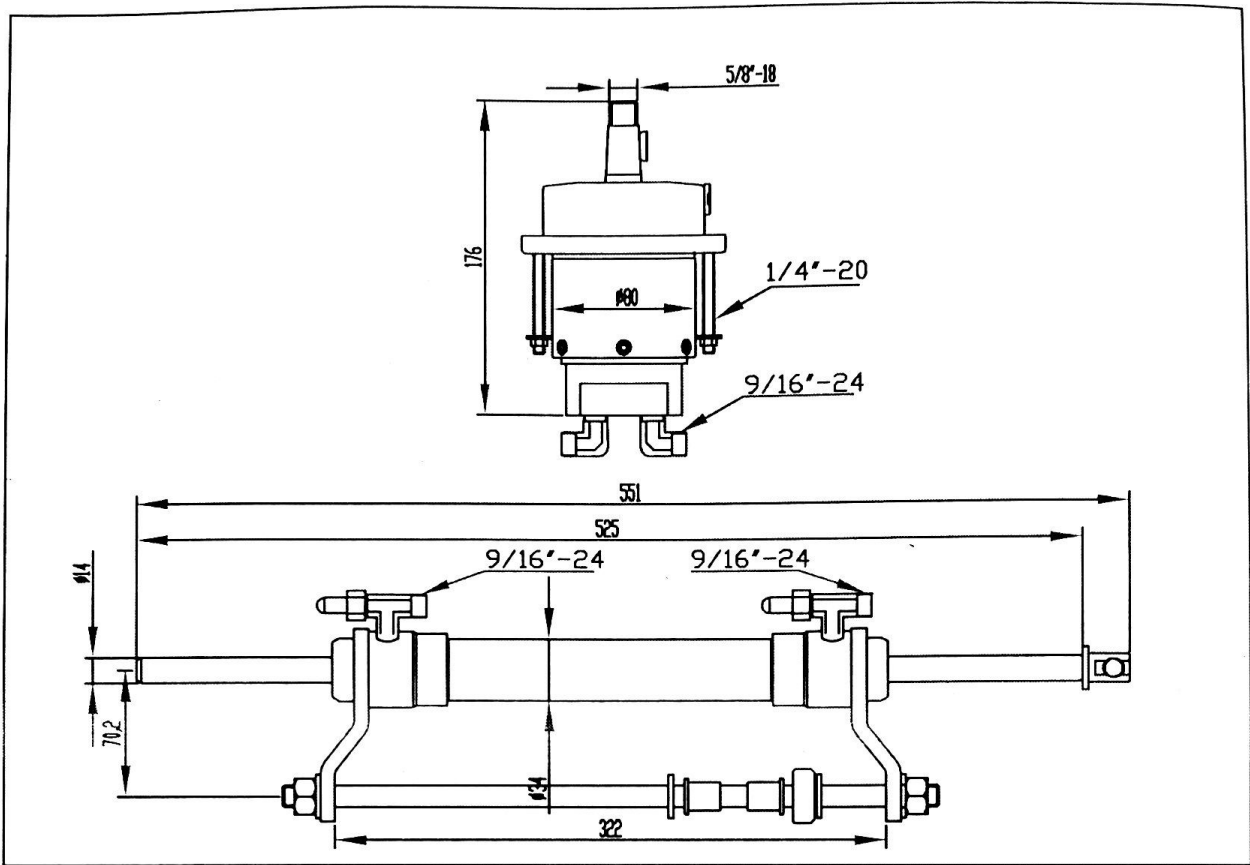
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## 1.Suitable for Different Types of Outboards

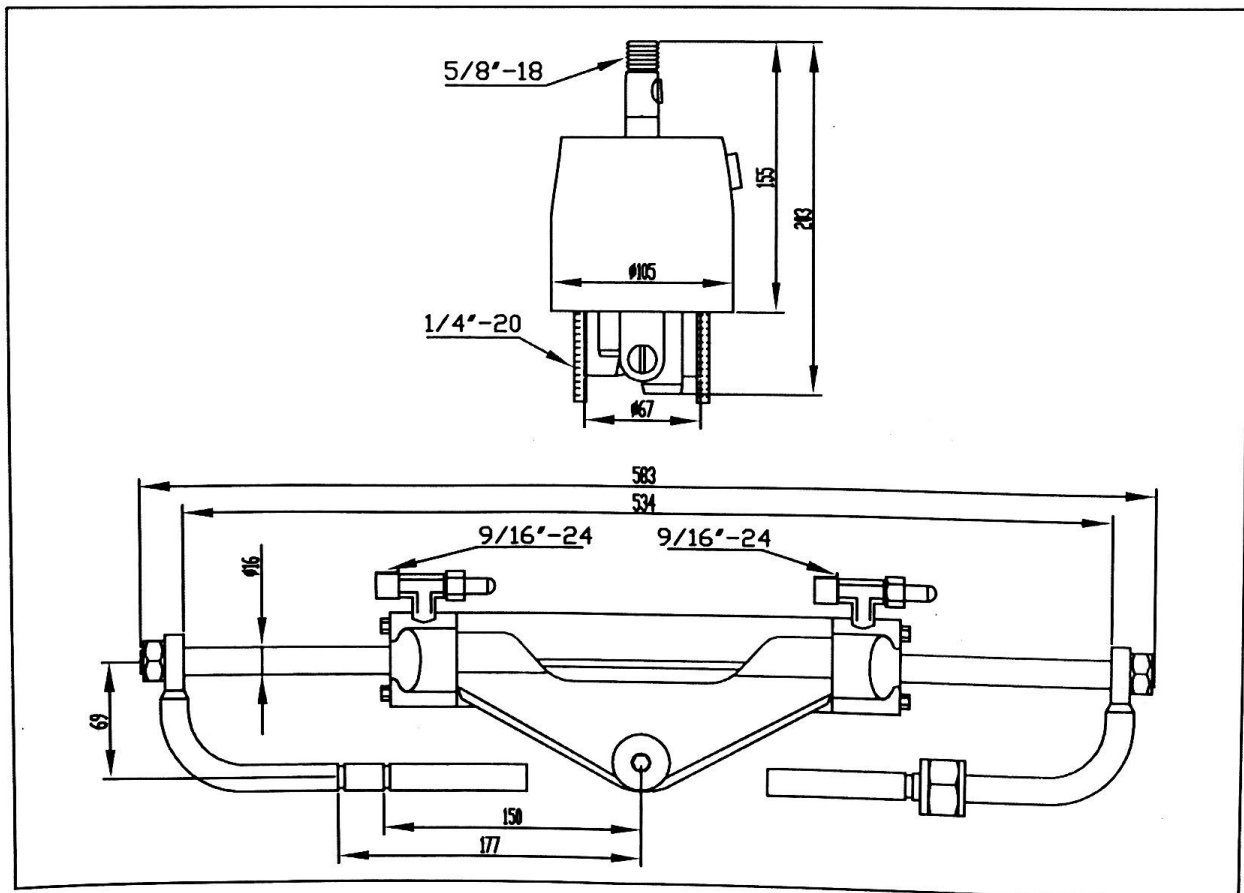
PILOT-1		Single Station Steering for boats rated to a maximum of 90HP(Total)
ZAO300	YAMAHA	40~50.60HP(1998~)(2 STROKE). 70~90HP(1986~)(2 STROKE).80~150HP(1997~)(4STROKE). 40.60HP(2000~)(4STROKE). 27~36HP(1990~)(2 STROKE)
	SUZUKI	150HP(1996~)(2 STROKE).115~140HP(1996)(2 STROKE). 115~140HP(1987~2002)(2 STROKE). 90~100HP(1990~200)(2 STROKE). 40~70HP(1998~)(4 STROKE). 115~140HP(2001~)(2 STROKE).
	HONDA	30~90HP(1992~)(2 STROKE). 115~130HP(1998~)(2 STROKE).
	TOHATSU	140HP(1990~)(2 STROKE)
	MERCURY /MARINER	30~90HP(1992~)(2 STROKE)
	NISSAN	75~150HP(1992~)(2 STROKE)
Single Station Steering for boats rated to a maximum of 150HP(Total)		
ZAO350	YAMAHA	F75. F90.F100.F115A/FL115A.F200A/FL200A.115~200HP(2 STROKE) 115d,150/A/G/J/L,D150H.N/P/Q.175A/F/G.Z175H.200A/G/H/J.Z200N/P F250/FL250A.225F/G.Z240A/B.250A/B/C.Z250D
	SUZUKI	DF40(2010/7~).DF50(2010/7~).DF60(2009/12~).DF60(~2009/11).DF70(2008/8~). DF80.DF90(2008~).DF90(~2008/7),.DF100.DF115.DF140.DF150.DF175.DF200.DF225.DF250
	HONDA	DF75.BF90.BF115.BF130.BF135.BF150.BF175.DF200.DF225.DF250
	TOHATSU	MD70B.MD908.MD115A
	Single Station Steering for boats rated to a maximum of 300HP(Total)	

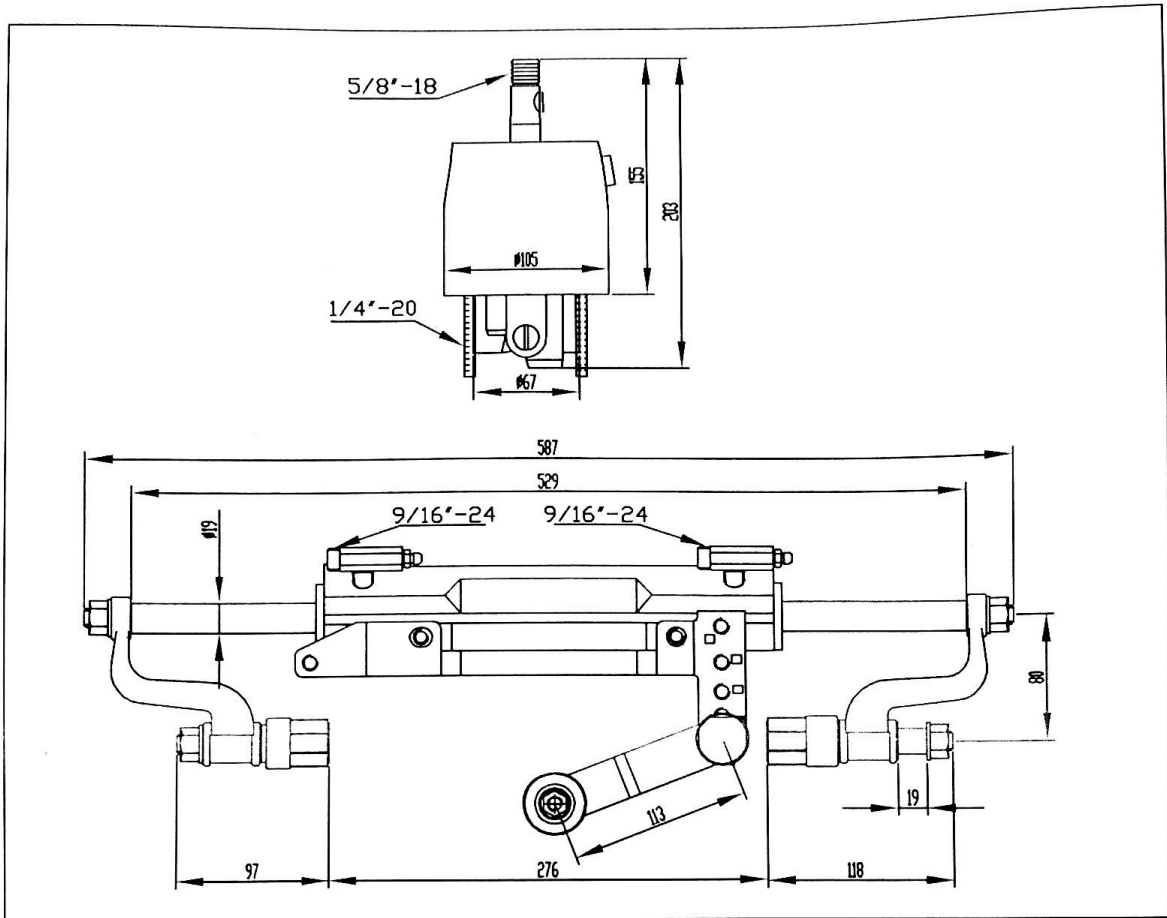
## 2. Dimensional Drawing

2-1. PILOT-1



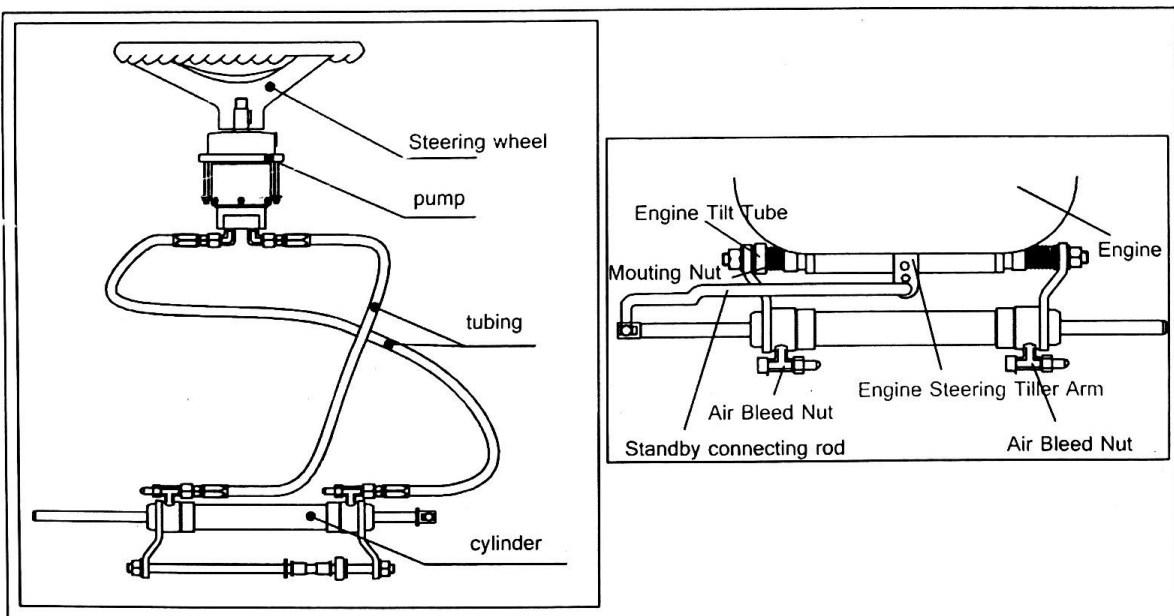
2-2. ZAO300



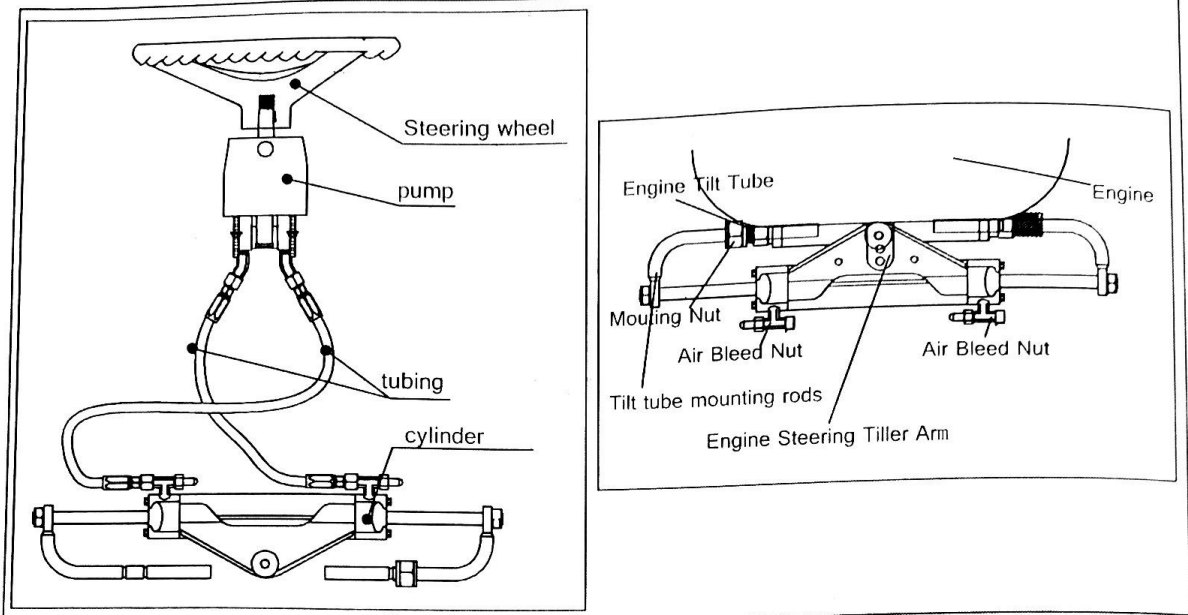


### 3.Assembly Drawing

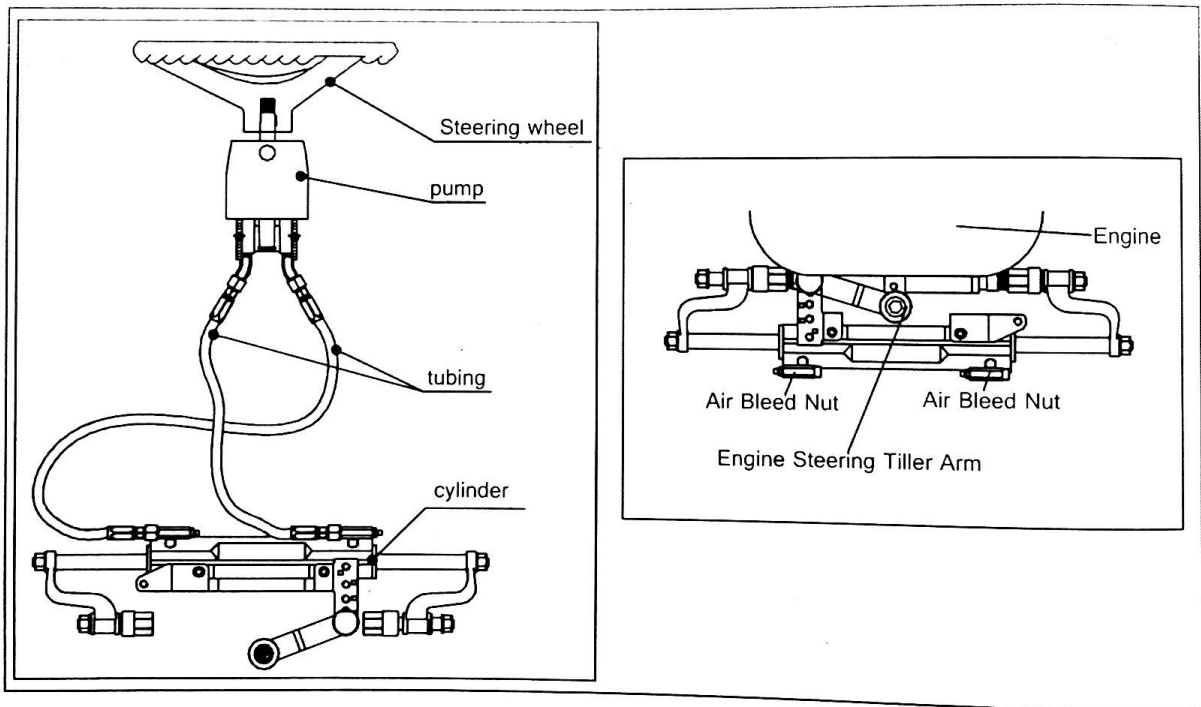
#### 3-1. PILOT-1



### 3-2. ZAO300



### 3-3. ZAO350



## WARNING

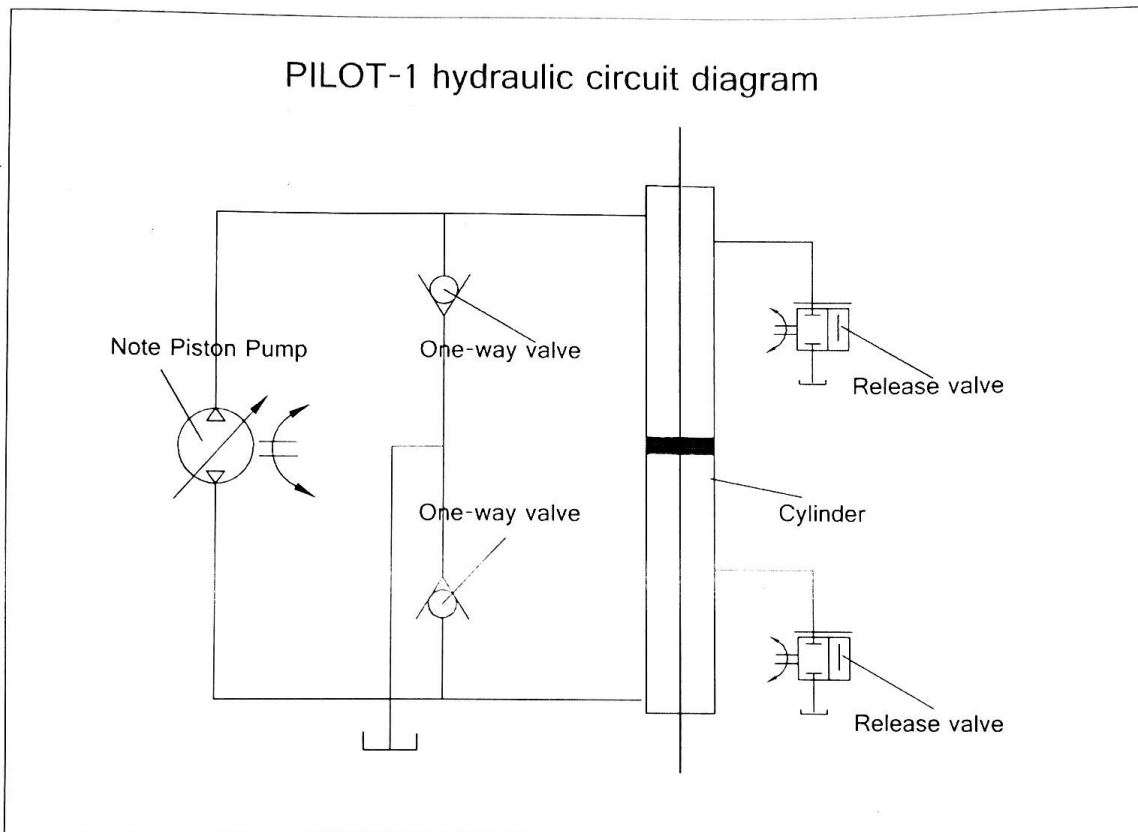
Cleaning fluids containing ammonia, acids or any other corrosive ingredients **MUST NOT** be used for cleaning any part of this Hydraulic Steering System.

Failure to comply will cause serious damage to the steering system, resulting in possible loss of steering, causing property damage, personal injury and/or death.

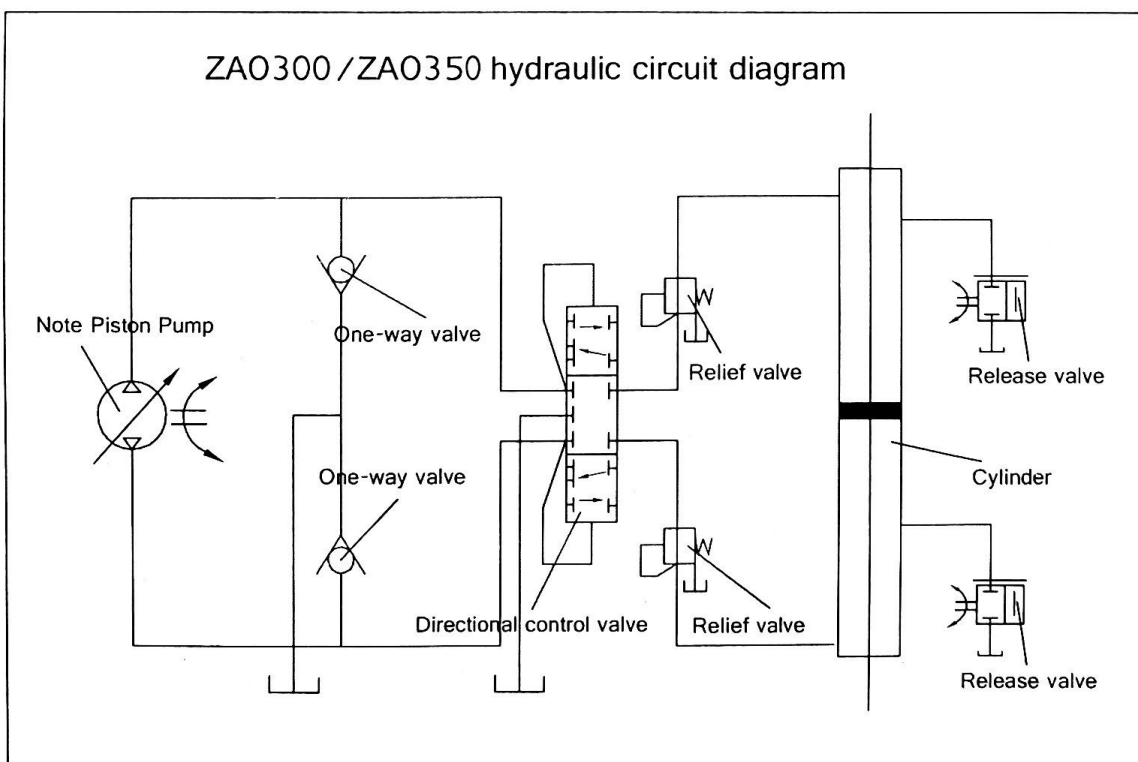
Lubricate support rod and all moving parts with a quality marine grease such as /OMC Triple Guard, Quicksilver Anti-corrosion, Yamaha Marine Grease or Equivalent.

## 4. Hydraulic Drawing

### 4-1. PILOT-1



### 4-2. ZO300/ZO350



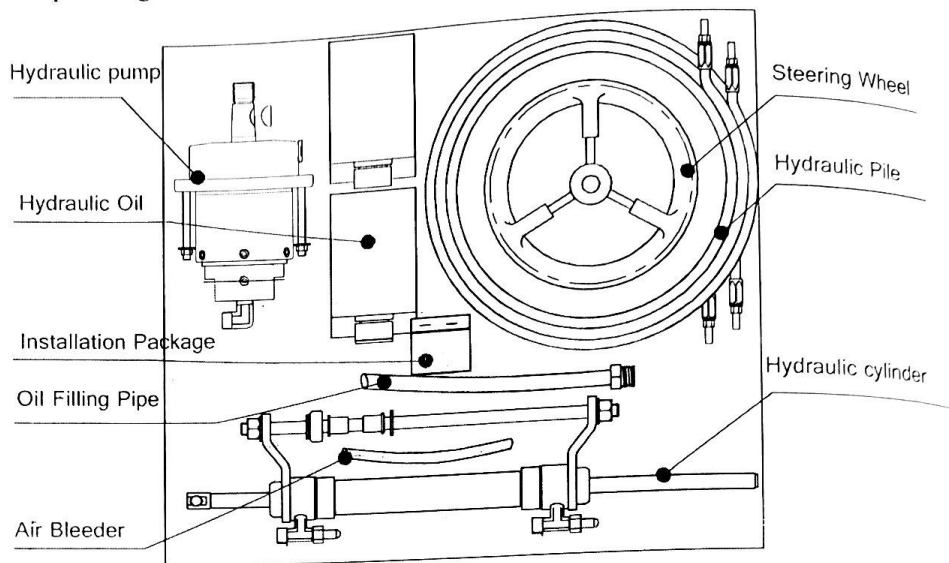
## 5. Packing Instruction and the Drawing

The outer packing and the inner packing is carton which all contain eco-friendly materials.

### Notice

Don't compromise performance Use genuine Winibo parts ONLY!

- Winibo Helms
- Winibo Cylinders
- Winibo Hoses/Tubing



### The Hydraulic Steering Wheel Systems comprise of eight parts:

- Steering Wheel
- Hydraulic Pump
- Hydraulic Pipe
- Hydraulic Cylinder
- Installation Package
- Air Bleeder
- Oil filling Pipe
- Hydraulic oil

## 6. Installation Instructions

### BEFORE OPERATING YOUR BOAT

Ensure that the following list is carried out:

- 1 Perform system pressure test by turning helm to hard over and then an additional 1/4 to 1/2 of a turn. This will pressurize this side of the system. Check all fitting and seals for leaks and repeat the process in the opposite direction. Repair or replace any leaking component prior to operating vessel.
- 2 Test the steering steering system. Complete two full cycles with the engine being taken from hard over to hard over in both the fully tilted Down and fully tilted UP positions . During this operation inspect ALL moving components to ensure that no interference or restriction of mechanical components is present through the full range of travel including:
  - No interference between cylinder, drag link, fasteners, engine cowling, tie-bar, transom, adjustable engine lift plates, splashwell or other surfaces;
  - No stretching, crushing, or restriction of movement of hydraulic lines, kinking or chafing or lines against bulkhead/splashwell entry points or any other contact points.

- Confirm that there is no interference between the steering cylinder and the transom, splashwell or jackplate or any positional combination of these parts by performing these simple steps:
- Fully trim and tilt engine and turn steering from hard over to hard over while checking for interference at all positions .(If interference occurs it must be eliminated prior to operating vessel.
- Confirm that the steering cylinder can be stroked fully in both directions as well as full trim and trim without stretching and/or kinking the hydraulic tube.
- Confirm that the hydraulic tubing is not subject to chaffing, kinking, pinching or stretching.
- Stretched,kinked or chafed tubing will fail over a period of time.

## 6-1. PILOT-1 Installation

**Horse Power Limitations:** Limited to boats rated to a MAXIMUM of 90HP (Total).Twin engine application not available at this time.

**WARNING:** Warranty void if total maximum 90HP (Total)is exceeded.

### Tools:

You will need the following tools to complete your installation.

- 3-3/16" (81mm) diameter hole saw or key hole saw.
- 3/8" (9.5mm)drill bit

### Wrenches for helm installation

- 17/16" (11mm) for mounting the helm.
- 5/8" (16mm) for tube nuts connecting tube to helm pump

### Wrenches for cylinder installation

- 9/16" (15mm) for tiller bolt(2 required)
- 11/16" (19mm) for shaft nuts and bleed fittings(2 required)
- 11/16" (19mm). 1/2" (13mm). 10/16" (17mm) for tubing on the cylinder

**Caution:Lightly lubricate threaded fasteners before installing.This will prevent them from seizing.**

Lubricate support rod and all moving parts with a quality marine grease such as Johnson/Evinrude Triple Guard,Quicksilver Anti-corrosion,Yamaha Marine Grease or Equivalent.

## 6-1-1 PILOT-1

### MOUNTTIN THE HELM

The helm may be mounted with the helm shaft horizontal, or any angle up to 70° from the horizontal. The filler plug must always be in the uppermost position.

Use a pipe sealant such as Located **P.S.T.** or equivalent on all pipe threads. DO NOT use “tape” sealers.

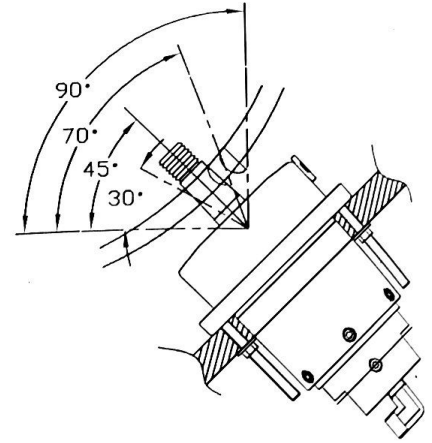


Figure . 1

#### Step 1:

Determine desired mounting position. Ensure that the steering wheel will not interfere with other functional equipment. Check for adequate space behind dash for fitting and line connections.

#### Step 2:

Tape the Mounting Template to the dash and use a centre punch to mark the locations of the holes.

#### Step 3:

Drill the 3-3/16" diameter centre hole and the four 3/8" diameter mounting holes as show as shown on the template.

#### Step 4:

Place the Back Plate onto the rear of the helm.

#### Step 5:

Place the helm in through the front of the dash ensuring that it is pushed all the way in.

#### Step 6:

Using the mounting hardware provided, tighten the three nuts to a maximum of 15 ft./lbs.

#### Step 7:

Lightly **grease taper of helm shaft** and mount steering wheel to helm.

## 6-1-2 PILOT-1

### HYDRAULIC CYLINDERS INSTALLATION

**NOTICE:** Before beginning installation make sure that all mounting hardware is included and that the tiller arm and the tiller arm the tilt tube bolt holes are clean and free from rust or burrs.

**CAUTION:** Engines with rigid engine mounts have been shown to cause premature wear to the pivot cylinder-therefore, please perform a complete Inspection of your steering system as outlined in the Maintenance Section at the back of this manual.

**Step1.**Use recommended grease to lubricate all threads and tilt tube (Figure2#7) .Put the engine on the middle position and remove stud on the fixed board of cylinder.

**Step2.**Two head of bolts and shouldered sleeve is inserted into the hole of the installation thread,tighten the fitting nut.

**Step3.**Use nylon spacer to adjust shouldered sleeve.Put the stud to connect the gap of the Fitting nut and dead plate gap.

**Step4.**Choose the corresponding hole on Engine trim tab, the connecting rod connect the hole and connector on the cylinder piston, ensure the piston rod in the middle of cylinder, engine in the middle.

**Step5.**Pad two head of stainless steel gasket on the stud,lock two head of nylon nuts on the head bolts.

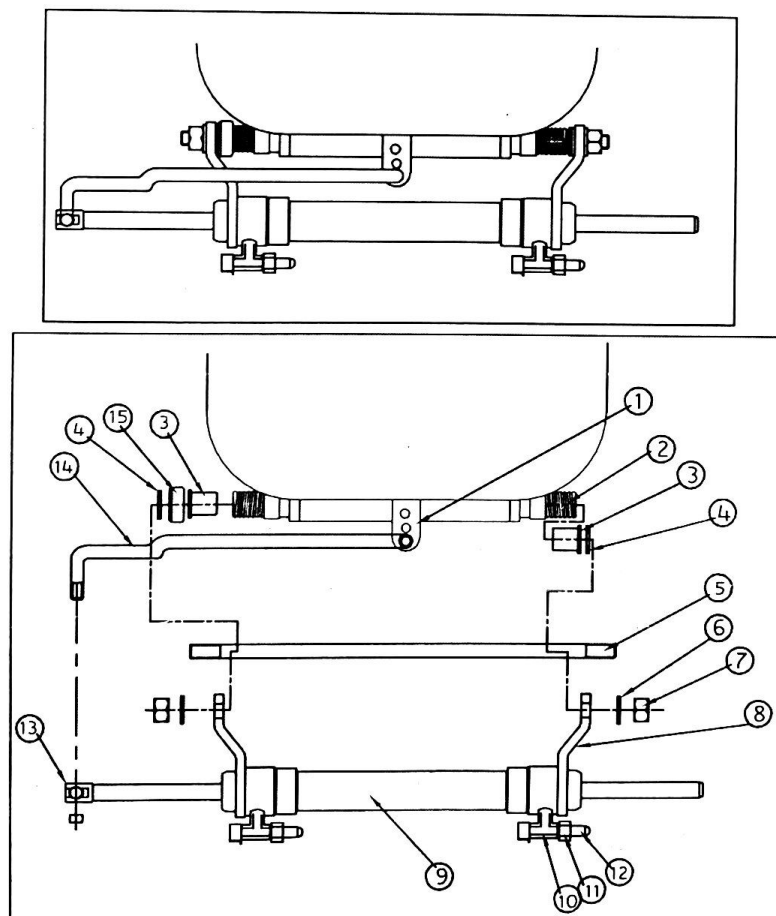


Figure 2

1	Engine Trim Tab	2	Mounting Thread	3	Shouldered Sleeve	4	Nylon Spacer	5	Stud
6	Stainless Steel Gasket	7	Nylon Nut	8	Dead Plate	9	Cylinder	10	Three-way Connection
11	Bleeder Cap	12	Put Gas Copper Mouth	13	Connector	14	Fabrics Connecting Rod	15	Fitting Nut

### 6-1-3. PILOT-1

## HYDRAULIC TUBING INSTALLATION

### WARNING:

Tube MUST be protected from chancing and any possible contact or interference with assembly screws or sharp edges of any type. The tube should be secured wherever possible recommends the use of a rigging tube. PVC piping or conduit for the safe secure installation of the Tube.

DO NOT allow the tubing to hang free in an area where they could become a safety hazard.

DO NOT install tubing in such a way that they will become exposed to high heat areas.

such as engine manifolds or highly corrosive areas, such as battery fumes or electrical connections.

Ensure that no stretching, crushing, kinking or restriction of movement, of the tubing occurs or chaffing or abrading of tube against bulkheads, Splashwell or gunwale entry points.

Continuos kinking, chafing, rubbing, scoring or twisting may eventually weaken the tube to a point where it could rupture from normal steering pressure causing loss of steering resulting in property damage, personal injury or death.

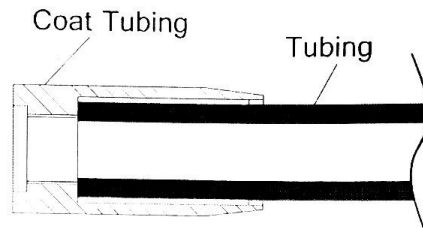
Periodically inspect tubing and fittings for wear and/or damage.

**CAUTION:** Provide sufficient tube length to allow full, uninterrupted steering motion including trim and tilt.

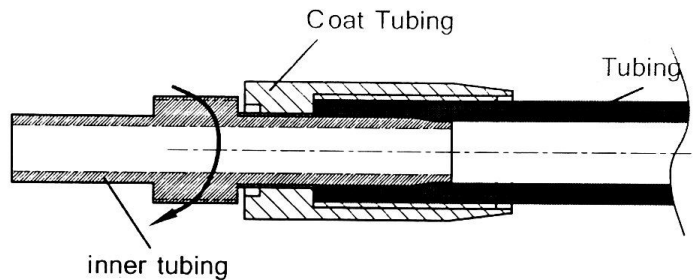
1. DO NOT adjust angle of fittings without first consulting manufacturer
2. Tubing should be secured to the control cable harness as they enter the Splashwell through a boot.
3. Minimum bend radius 4" (102mm)

**WARNING:** Ensure both elbow fitting installed in rear of helm pump, and tube nuts attaching the hydraulic tubing are install as per the above listed instructions and are free from leaks prior to operation. Failure to comply will cause serious damage to the steering system, resulting in possible loss of steering, causing property damage, personal injury and/or death.

**Step 1:** Two-bar tubing to do signs, fixed layout of the board.Tubing to connect pump and cylinder, such as 3-1.PILOT-1 assembly drawing.

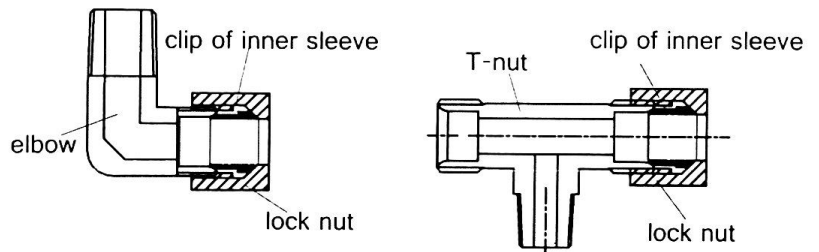


**Step 2:** Coat Tubing twist clockwise tubing shown in the figure bellow.

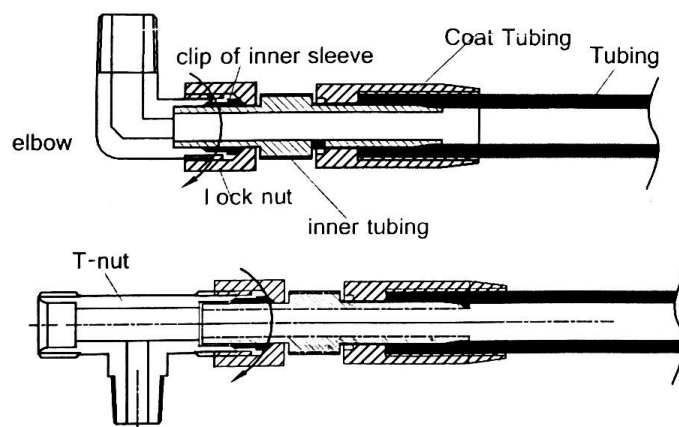


**Step 3:** Inner tubing twist coat tubing and tubing clockwise as shown in the figure bellow.

**Step 4:** Bring the lock nut and clip of inner sleeve to lock on elbow or T-nut as shown in the figure bellow



**Step 5:** Putting inner tubing into lock Nut and clip of inner sleeve,twisting tight lock nut as shown in the figure bellow.



## 6-1-4. PILOT-1

### FILLING AND PURGING THE SYSTEM.

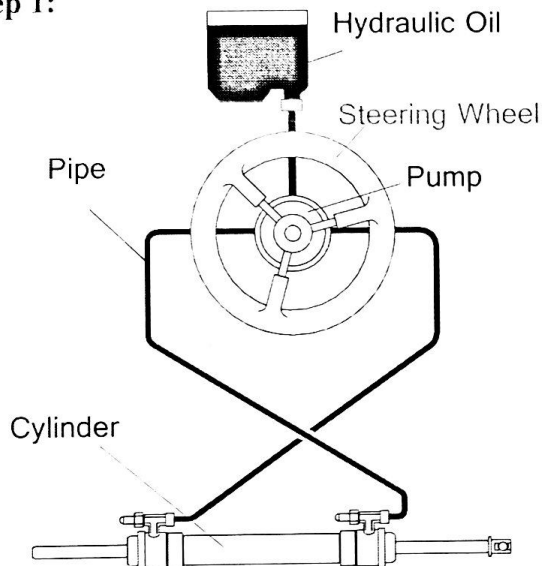
**NOTICE:** This procedure requires two people. One person may not be able to remove all the air from the system which will result in spongy, unresponsive steering.

During the entire filling procedure, oil must be visible in the filler tube.

Do not allow the oil level to disappear into the helm pump. As this may introduce air into the system and increase your filling time.

**WARNING:** NEVER use brake fluid, Any non-approved fluid may cause irreparable damage, loss of steering, and cancellation of warranty.

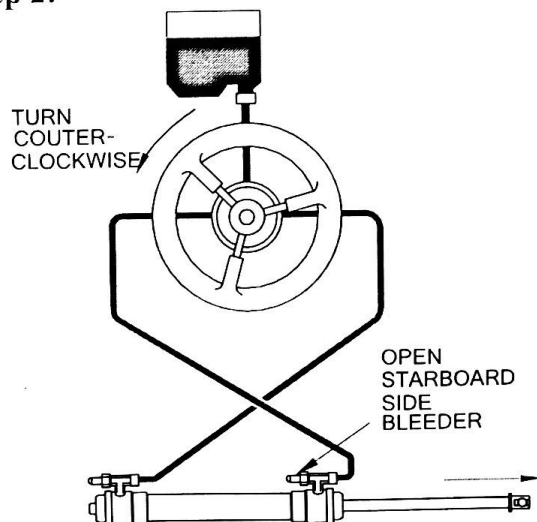
#### Step 1:



- Screw the threader end of the filler tube into the helm filler port
- Fill the helm pump with hydraulic oil so that it is visible in the filler tube. Oil should always be visible in the filler tube. Use the next bottle of fluid at any time during the procedure in order to maintain the oil level.

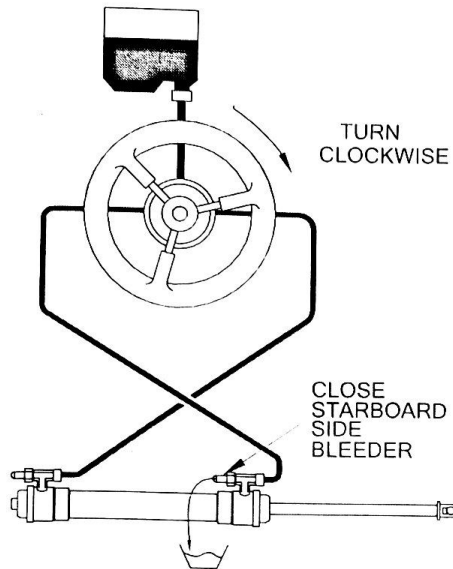
Do not proceed with step 2 until helm is full.

#### Step 2:



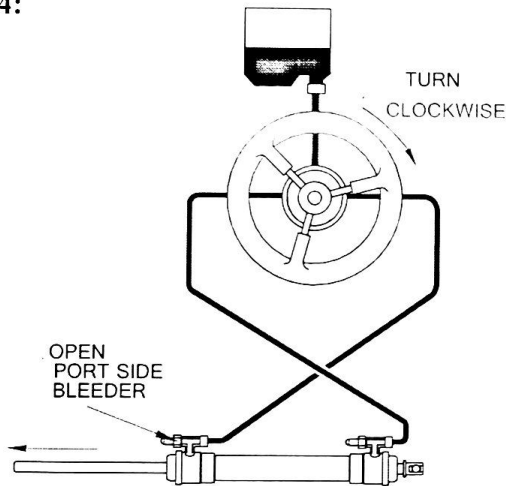
- Turn the steering wheel counter clockwise until the cylinder rod is full extended.
- Open starboard side fitting

**Step 3:**



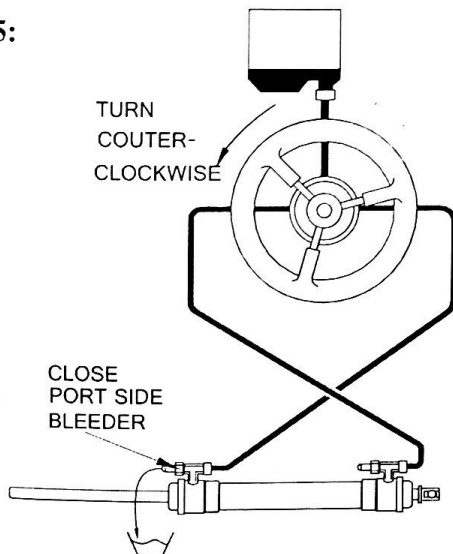
- Hold the cylinder body to prevent the rod from moving and turn the wheel clockwise until a steady steady stream of air free oil flows from the bleeder nipple.
- While continuing to turn the wheel, close the bleeder fitting.

**Step 4:**



- Continue to turn the steering wheel clockwise until the cylinder rod is fully extended. (Steering wheel will come to a stop)
- Open port side bleeder

**Step 5:**



- Hold the cylinder body to prevent the rod from moving a turn the wheel counter clockwise until a steady of air free oil flows from the bleeder nipple.
- While continuing to turn the wheel, close the port side bleeder fitting.

When winbio PILOT-1 steering system has been properly purged/bled the steering wheel will turn approximately 5 times stop to stop.

## 6-2 ZAO300 Installation

**Horse Power Limitations:** Limited to boats rated to a MAXIMUM of 150HP (Total).Twin engine application not available at this time.

**WARNING:** Warranty void if total maximum 150HP (Total) is exceeded.

### Tools:

You will need the following tools to complete your installation.

- 3" (77mm) diameter hole saw or key hole saw.
- 3/8" (9.5mm)drill bit

### Wrenches for helm installation

- 7/16" (11mm) for mounting the helm.
- 5/8" (16mm) for tube nuts connecting tube to helm pump

### Wrenches for cylinder installation

- 9/16" (15mm) for tiller bolt(2 required)
- 5/8" (16mm) for shaft nuts and bleed fittings(2 required)
- 11/16" (19mm) for tubing on the cylinder
- 1-1/8" (29mm) for mounting nut.

**Caution:**Lightly lubricate threaded fasteners before installing.This will prevent them from seizing.

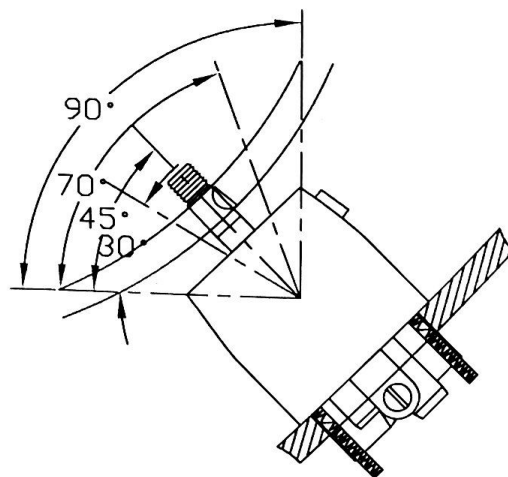
Lubricate support rod and all moving parts with a quality marine grease such as Johnson/Evinrude Triple Guard,Quicksilver Anti-corrosion,Yamaha Marine Grease or Equivalent.

### 6-2-1 ZAO300

#### MOUNTTIN THE HELM

The helm may be mounted with the helm shaft horizontal,or any angle up to 70°from the horizontal. The filler plug must always be in the uppermost position.

Use a pipe sealant such as Located **P.S.T.**or equivalent on all pipe threads. DO NOT use "tape" sealers.



**Step 1:**

Determine desired mounting position. Ensure that the steering wheel will not interference with other functional equipment. Check for adequate space behind dash for fitting and line connections.

**Step 2:**

Tape the Mounting Template to the dash and use a centre punch to mark the locations of the holes.

**Step 3:**

Drill the 3" diameter centre hole and the three 3/8" diameter mounting holes as shown on the template

**Step 4:**

Place the Back Mount Plate onto the rear of the helm. Place the helm in through the front of the dash ensuring that it is pushed all the way in.

**Step 5:**

Using the mounting hardware provided, tighten the three nuts to a maximum of 15ft./lbs.

**Step 6:**

Lightly grease taper of helm shaft and mount steering wheel to helm.

**6-2-2 ZAO300****HYDRAULIC CYLINDERS INSTALLATION**

**NOTICE:** Before beginning installation make sure that all mounting hardware is included and that the tiller arm and the tiller arm the tilt tube bolt holes are clean and free from rust or burrs.

**CAUTION:** Engines with rigid engine mounts have been shown to cause premature wear to the pivot cylinder-therefore, please perform a complete Inspection of your steering system as outlined in the Maintenance Section at the back of this manual.

**Step 1:**

Using an approved quality marine grease (such as Johnson/Evirude triple guard, Quicksilver anti-corrosion, Yamaha marine marine grease or equivalent), liberally lubricate the tilt tube and support rod and (Item 2) and slide the support rods into the engine tube.

**Step 2:**

Lightly grease the tiller bolt & partially screw into the appropriate hold in the tiller arm to assure a proper fit. Remove and go to Step 3.

**Step 3:**

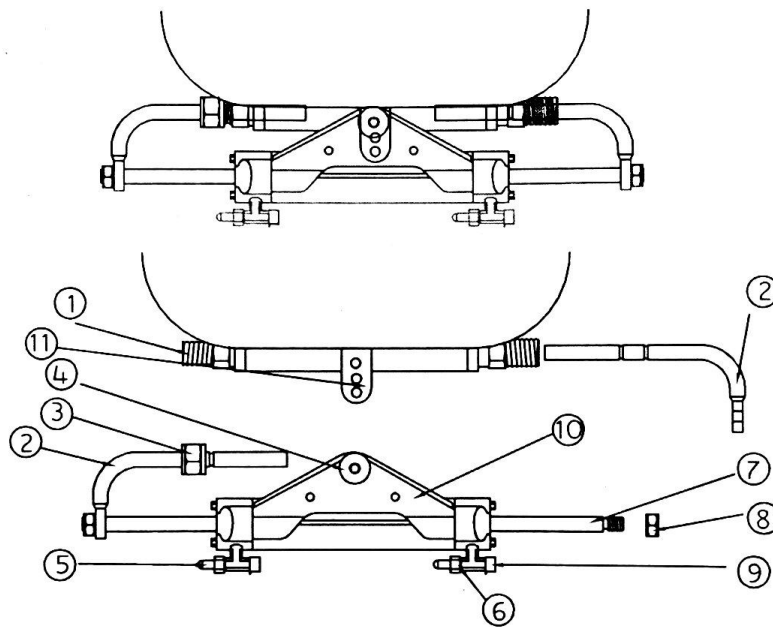
Select insert appropriate the hole of the Engine steering tiller arm to determine proper orientation of the cylinder assembly, the tiller bolt and the self-locking nut. Grease and install as indicated.

**Step 4:**

Screw the mounting nut (Item 3) onto tilt tube of outboard engine.

**Step 5:**

Lightly grease the ends of the cylinder shaft and holes of the support rods (Item 5). Attach and secure support rods (Item 2) to the cylinder shaft. Tighten using the nuts (Items 8) as illustrated in figure.



1	Engine Tilt Tube	2	Secure Support Rod	3	Mounting Nut
4	Stainless steel Rotating Bearing	5	Air Bleed Nut	6	Air Bleed Nut
7	Piston Rod	8	Self-locking Nuts	9	Tubing Connection & Bleed Nipple
10	Triangle Bracket	11	Engine Steering Tiller Arm		

## 6-2-3.ZAO300 Tube

### HYDRAULIC TUBING INSTALLATION

#### WARNING:

- DO NOT adjust angle of fittings without first consulting supplier.
- Tubing should be secured to the control cable harness as they enter the splashwell through the boot.
- Minimum bend radius 30cm.
- DO NOT allow the tubing to hang free in an area where they could become a safety hazard.
- DO NOT install tubing in such a way that they will become exposed to high heat areas such as battery fumes or electrical connections.
- Ensure that no stretching, crushing, kinking or restriction of movement.

#### Step 1:

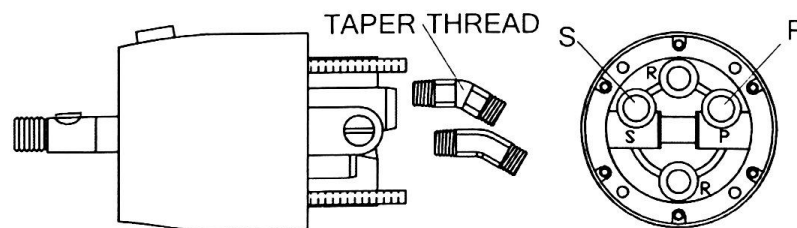
Install the 120°elbows with tapered threads into the pump body. Do not use more than 20 n·m. when installing.

#### Step 2:

Two-bar tubing to do signs, fixed layout of the board.

#### Step 3:

- Connect tubing to each of the Tubing Connection & Bleed Nipple. on steering Ram.
- Connect tube from 120°elbow from Pump marked P to Starboard Side and S to Port side of Ram.



Continuos kinking, chafing, rubbing, scoring or twisting may eventually weaken the tube to a point where it could rupture from normal steering pressure causing loss of steering resulting in property damage, personal injury or death.

Periodically inspect tubing and fittings for wear and/or damage.

## 6-2-4. ZAO300

### FILLING AND PURGING THE SYSTEM.

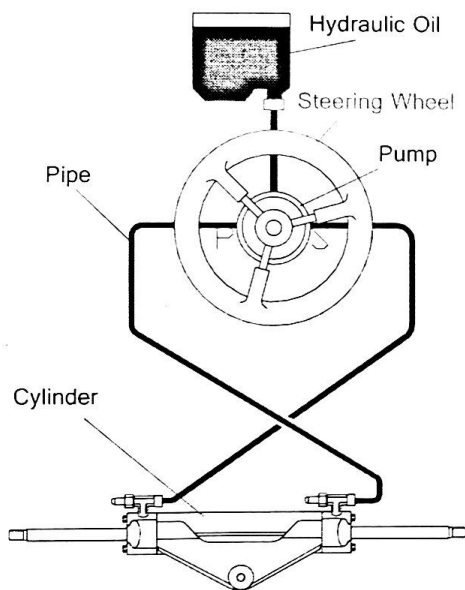
**NOTICE:** This procedure requires two people. One person may not be able to remove all the air from the system which will result in spongy, unresponsive steering.

During the entire filling procedure, oil must be visible in the filler tube.

Do not allow the oil level to disappear into the helm pump. As this may introduce air into the system and increase your filling time.

**WARNING:** NEVER use brake fluid, Any non-approved fluid may cause irreparable damage, loss of steering, and cancellation of warranty.

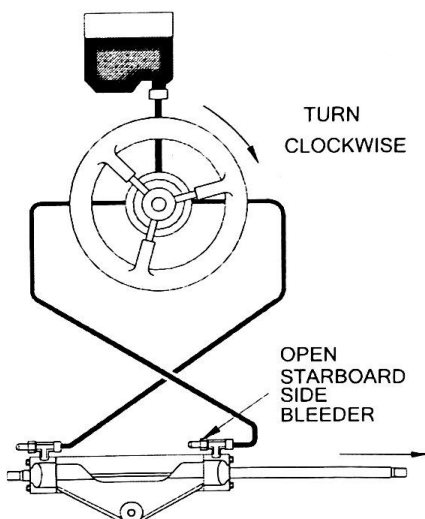
#### Step 1:



- Screw the threader end of the filler tube into the helm filler port
- Fill the helm pump with hydraulic oil so that it is visible in the filler tube. Oil should always be visible in the filler tube. Use the next bottle of fluid at any time during the procedure in order to maintain the oil level.

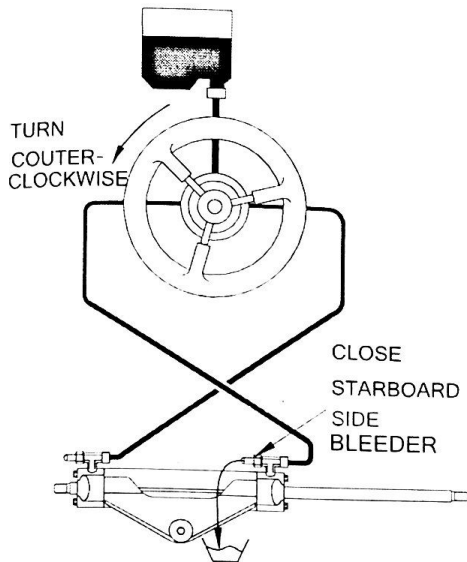
Do not proceed with step 2 until helm is full.

#### Step 2:



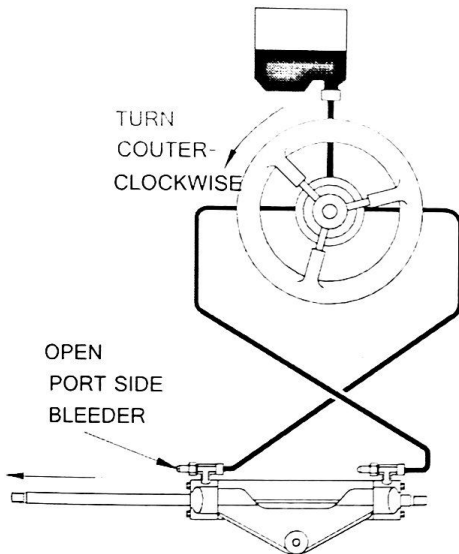
- Turn the steering wheel clockwise until the cylinder rod is full extended.
- Open starboard side fitting

### Step 3:



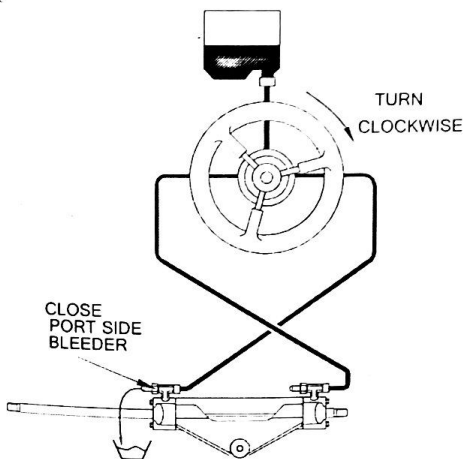
- Hold the cylinder body to prevent the rod from moving and turn the wheel counter clockwise until a steady steady stream of air free oil flows from the bleeder nipple.
- While continuing to turn the wheel, close the bleeder fitting.

### Step 4:



- Continue to turn the steering wheel counter clockwise until the cylinder rod is fully extended. (Steering wheel will come to a stop)
- Open port side bleeder

### Step 5:



- Hold the cylinder body to prevent the rod from moving a turn the wheel clockwise until a steady of air free oil flows from the bleeder nipple.
- While continuing to turn the wheel, close the port side bleeder fitting.

When winbio ZA0300 steering system has been properly purged/bled the steering wheel will turn approximately 6.8 times stop to stop.

## 6-3 ZAO350 Installation

**Horse Power Limitations:** Limited to boats rated to a MAXIMUM of 300HP (Total).Twin engine application not available at this time.

**WARNING:** Warranty void if total maximum 300 (Total) is exceeded.

### Tools:

You will need the following tools to complete your installation.

·3" (77mm) diameter hole saw or key hole saw.

·3/8" (9.5mm)drill bit

### Wrenches for helm installation

·7/16" (11mm) for mounting the helm.

·5/8" (16mm) for tube nuts connecting tube to helm pump

### Wrenches for cylinder installation

·9/16" (15mm) for tiller bolt(2 required)

·11/16" (19mm) for shaft nuts and bleed fittings(2 required)

·5/8" (16mm). 11/16" (19mm) for tubing on the cylinder

·1-1/8" (29mm) for mounting nut.

**Caution:Lightly lubricate threaded fasteners before installing.This will prevent them from seizing.**

Lubricate support rod and all moving parts with a quality marine greese such as Johnson/Evinrude Triple Guard,Quicksilver Anti-corrosion,Yamaha Marine Grease or Equivalent.

### 6-3-1 ZAO350

#### MOUNTTIN THE HELM

**Reference** to the the ZA0300 hydraulic pump installation instructions (Refer to page 14).

### 6-3-2 ZAO350

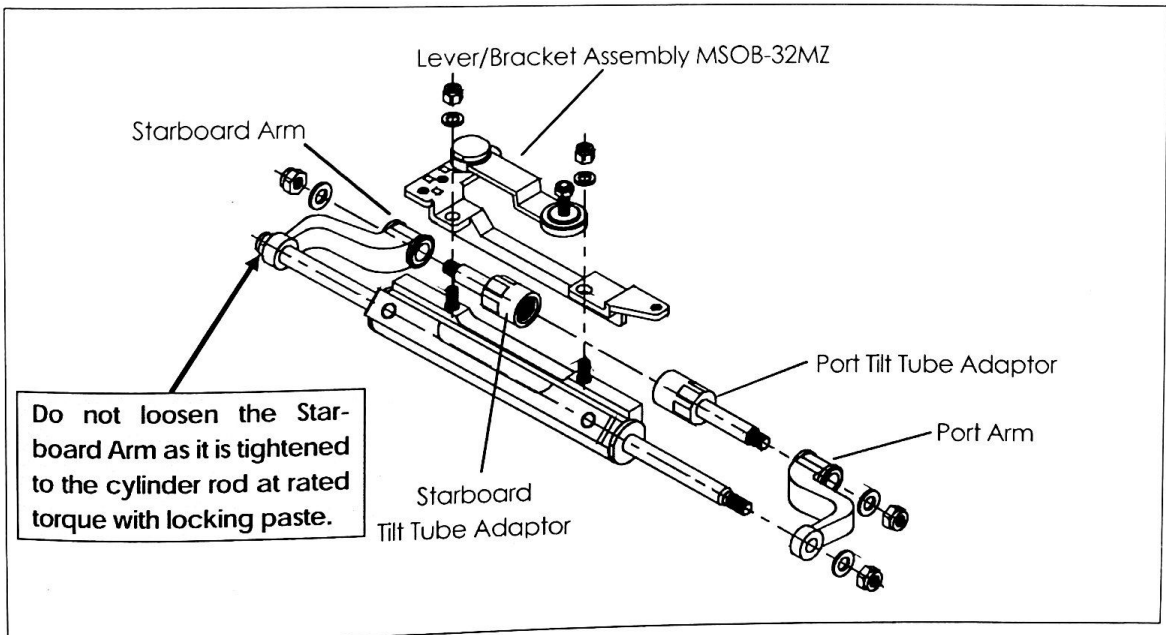
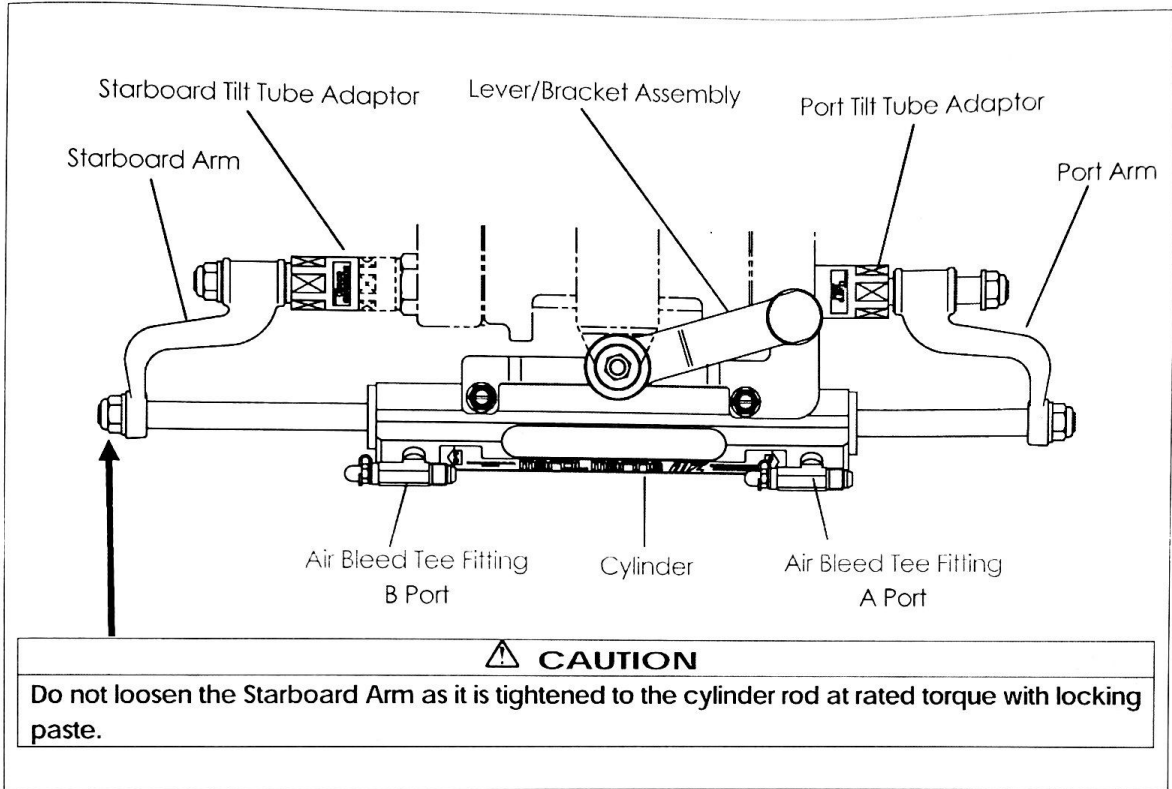
#### HYDRAULIC CYLINDERS INSTALLATION

**CAUTION:** Do not loosen the starboard Arm as it is tightened to the cylinder rod at rated torque with locking paste .

**Step 1:**

Disassemble the parts of the cylinder as shown in the figures below.

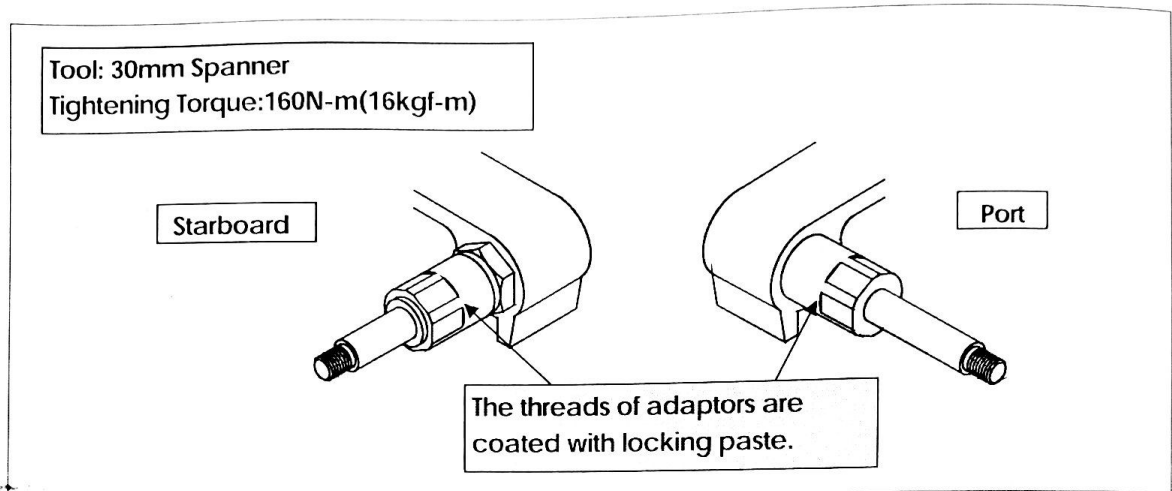
Remove the port and starboard Tilt Tube Adaptors, the port Arm and Lever/Bracket Assembly.



## Step 2:

Install the Tilt Tube Adaptors to the Tilt Tube.

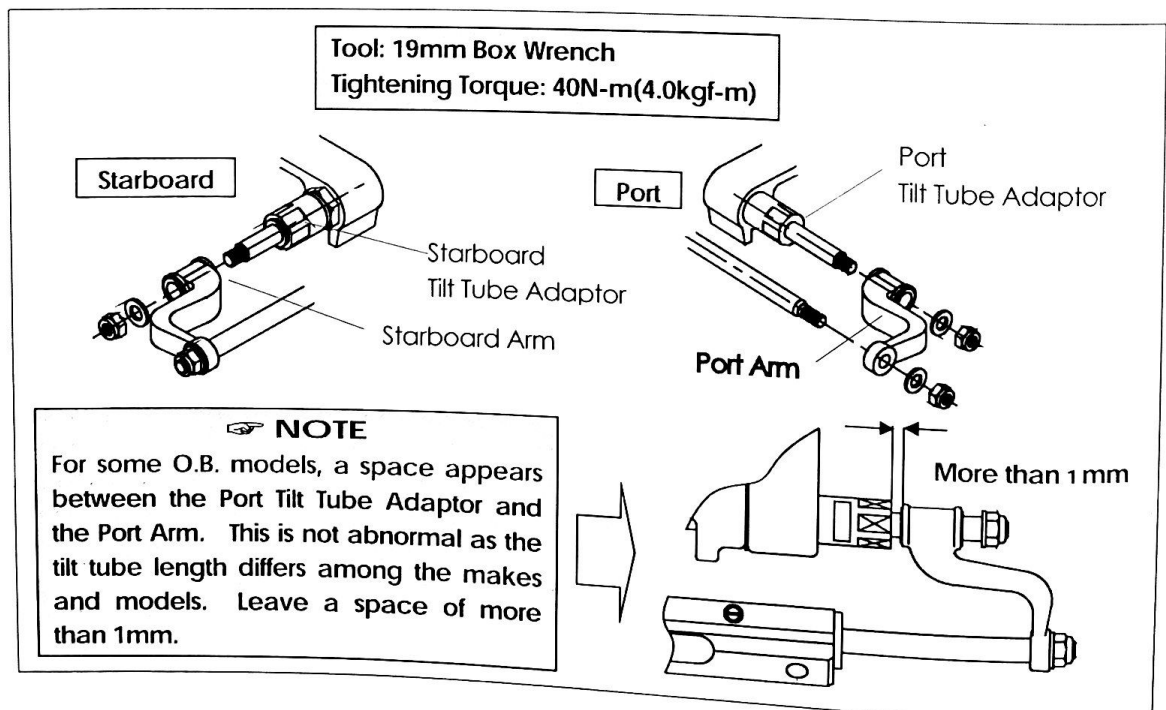
Mount the Starboard and port Tilt Tube Adaptors as shown in the figure bellow.



## Step 3:

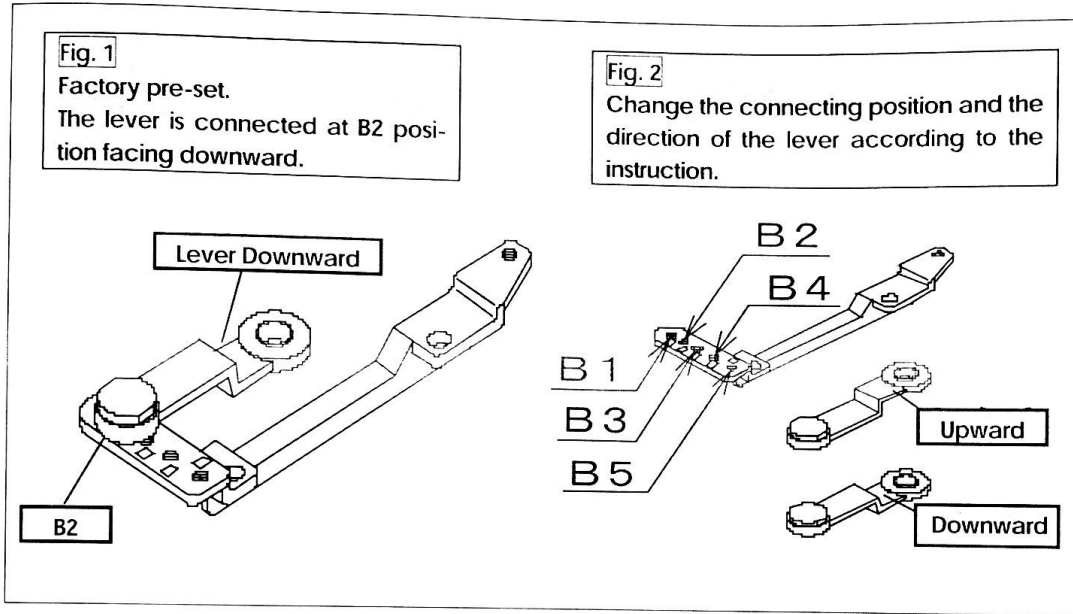
Install the Cylinder to the Tilt Tube.

- 1) Bring the Cylinder up and mount the starboard Tilt Tube Adaptor. Then mount the Port Arm to the Cylinder rod and to the Port Tilt Tube Adaptor.
- 2) Put the washers and the Nylon Nuts.
- 3) Tighten the Starboard Arm to the Starboard Tilt Tube Adaptor.
- 4) Tighten the Port Arm to the cylinder rod using two box wrenches, one holding the starboard nut.
- 5) Tighten the Port Arm to the port Tilt Tube Adaptor.



**Step 4 :**

- 1) Install the Lever/Bracket assembly to the steering hook
- 2) The lever/Bracket assembly is tentatively assembled at the bracket position B2 and lever downward as shown in Fig.1 below.
- 3) Selected according to different situations the bracket position B1 or B2 or B3 or B4 or B5 and lever downward or upward for your specific outboard mode.

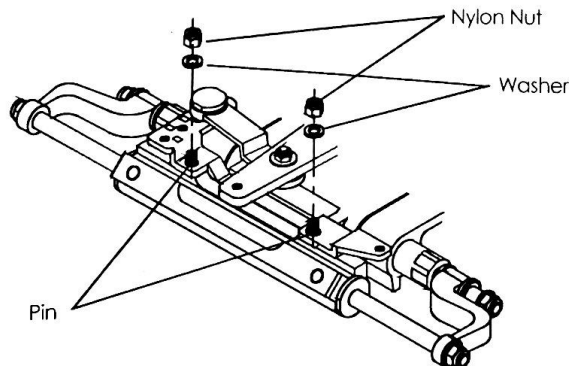


**CAUTION:** Depending upon the makes/modes and which tapped hole is lever is connected. the lever position to the bracket and the lever facing direction to the steering hook differ. If installed incorrectly, the cylinder and the parts may be damaged by mechanical interference.

**Step 5:**

Install the lever/Bracket Assembly to the cylinder

Set the Lever/Bracket Assembly to the pins of the cylinder. Put the washers and tighten with the Nylon nuts as shown in the figure on the following page.



### 6-3-3. ZAO350 Tube

#### HYDRAULIC TUBING INSTALLATION

Reference to the the ZA0300 hydraulic tubing installation instruction. (Refer to page 17).

Such as hoses Couplings refer to 600-1-3 POLIT-1 Tubing installation instruction. (Refer to page 10).

### 6-3-4. ZAO350

#### FILLING AND PURGING THE SYSTEM.

Reference to the the ZA0300 Filling and Purging (Refer to page 18).

When winbio ZA0350 steering system has been properly purged/bled the steering wheel will turn approximately 5.5 times stop to stop.

## 7. Trouble Shooting / Technical Information

FAULT	CAUSE	SOLUTION
1. During filling the helm becomes completely jammed .	Blockage in the line between the helm and cylinder.	<p>Check all fittings for incomplete holes, replace faulty fitting. Fitting without complete holes, however, are not common. Make certain that the tube has not collapsed during installation. If so :</p> <p>In a system using tubing, the collapsed section will need to be removed and re-fitted with a new piece with the aid of tube connectors.</p> <p>In a system using Hose, the entire hose will need to be replaced, Do not cut Hose.</p>
2. System is very difficult to full. Air keeps burping out top of helm even after system appears full.	<p>Cylinder has been mounted upside down. This causes air to be trapped in the cylinder.</p> <p>Air in system</p> <p>Bleed fitting leaking</p> <p>Coiled the tube.</p>	<p>Mount cylinder correctly, according to cylinder installation instructions.</p> <p>Ports should always be kept in uppermost position.</p> <p>Review position.</p> <p>Tighten filling instructions.</p> <p>Uncoil or straighten the tube.</p>
3. Steering is stiff and hard to turn, even when the vessel is not moving	<p>Restrictions in tub.</p> <p>Air in oil</p> <p>Wrong Oil, like ATF has been used to fill the system</p>	<p>Find restriction and correct</p> <p><b>WARNING:</b> Kinked the tube MUST be replaced. Failure to do so may result in a loss of steering causing personal injury property damage or death.</p> <p>See filling and purging instructions.</p> <p>Drain system and fill with the fluid.</p>

4.Helm unit in system is very bumpy and requires too many turns from hard over to hard over.	Dirt in inlet check of helm pump	Dismantle check valves and remove contaminant.
5.Steering is easy to turn at the dock, but becomes hard to hard to turn when vessel is underway.	Steering wheel is too small  Incorrect setting of trim tab(s)engine Air pocket in system  Total horsepower exceeds the rated horsepower	Fit larger steering wheel of possible, see installation instructions. Of this does not correct the problem with next cause and solution or consult factory. Max.wheel dia.22"(56). Adjust tab(s).  Check oil level,perform air test, fill and purge system. Replace the steering system with Winibo steering system.
6.Engine drifts to port or starboard while vessel is Underway, even when is not being turned.	Dirt in check valves.	Remove check valve plugs. These are the large SLOTTED plugs on either side on rear of helm. Clean ball seats and balls and re-assemble Note: Be prepared to lose a certain amount of oil during this procedure. Have a small can available. Refill and purge system when chick valves have been re-assembled
7.Turning wheel to starboard causes the boat to turn to port	Incorrect tube connections	Switch the port side tubing to the starboard cylinder fitting and the starboard tubing to the port side cylinder fitting. Refill and purge system.
8.My application requires me to flip or change the pivot plate on my cylinder	Different engine applications	Please refer to the complete instructions

**WARNING:**

Whenever in the following text a solution calls for removal from the vessel and/or dismantling of steering system components, the work must be carried out by a qualified mechanic only. Winibo offers the following as a guide only and will not problems resulting from incorrect repairs.