

PROPELLER SHAFT - REVERSING MECHANISM (Combi Unit)

On the underside of the reversing mechanism, port side, there is a Swedish (metric) grease fitting which an American grease gun will not grab. I unscrew halfway the tip of the grease gun fitting, put it on the metric fitting, and then tighten it by hand until the tip holds onto the metric fitting for greasing. It is usually necessary to finally tighten down the grease gun tip with a clean rag free of grease to get it to hold.

- Art Levin

Never could get grease gun to stay on the fitting for the reversing mechanism which is underneath the gear box and out of sight. I had a rubber grease tube installed, about 18" long, screwed in the old zerk fitting hole and put a zerk fitting on the end. Now you can see what you are doing and hold the thing together with no trouble.

-Herb Edwards

I have the MD6A diesel engine and the Combi transmission unit. It is the Combi unit which has given me many problems. I've taken it completely apart 6 times. Most of the time, water was leaking through the double shaft. The O rings were breaking down. If the engine is not in perfect alignment, this happens. One time, the oil seal on the inner transmission unit broke down and oil started pouring out. To make a long story short, I've talked to many people and this is the story: Vega (Volvo) does not produce the Combi anymore because of a bad design. Everyone who knows anything has said "get rid of it". The Volvo dealer in Connecticut wants \$1,500 for a regular reverse gear. He has a rebuilt unit and wants \$1,000 for that. I'll be damned if I'm going to pay that much. I'm now looking into the possibility of installing a rebuilt grey transmission from an Atomic 4 engine - using a mechanical adapter plate. The cost will be about \$100 for the transmission, \$75 for the adapter plate, plus installation charges.

- Jim Ranti

The real problem was the late launching of SUZY-Q due to work I had to do on the engine drive mechanism. I lost the seals in the shaft log last summer and improvised a grease seal which kept SUZY-Q afloat during the season. Last winter I removed the variable pitch drive from the engine, intending to replace the operating sleeve and the seals. It was a difficult job which I would be glad to detail if anybody else in the group plans to do it. I ended up unable to break the coupling from the drive shaft, so I had to take the engine from its mounts, move it forward in the boat, and then pull the drive shaft inside.

Had a real mix-up with Volvo Penta on part numbers. Thought I had ordered an operating sleeve in March only to find, in fact, I had ordered a new drive shaft which came in mid-April. Unable to find an operating sleeve anywhere in the U.S. I modified the dimension on the shaft log so that the new seals would bear on a different part of the old operating sleeve.

Finally gathered all parts by late April; took a complete weekend to reassemble variable pitch drive mechanism and the engine. The real problem was the fact that the engine as mounted at the factory was badly misaligned with the drive shaft coupling. As nearly as I could determine the misalignment at the drive shaft coupling was at least .030". I was able to realign by shimming on the back engine supports.

SUZY-Q went into the water second weekend in May. Pleased to say that the engine performs well. I don't have any of the vibration that should have told me during the previous 5 years that I had a bad misalignment problem. I would suspect the way Vegas are mass produced that misalignment is probably a common problem among most of the boats. Aligning the drive shaft on the older MD6A engines like SUZY-Q is not an easy job and requires disassembling the variable pitch mechanism at the back of the engine to provide access to the operating coupling. As difficult a job as it is, I would certainly suggest to anyone that has excess vibration when under power to consider checking alignment of drive shaft. The type of misalignment I had was certainly evident in bearing wear, seal wear, and wearing of the stern bearing.

If anyone needs any help on the variable pitch seal mechanism, please have them contact me. Would be more than glad to consult or even help if I had the time.

- Peter Richmond

Whenever the cockpit sole is removed, but at least annually, liberally grease all the movable control linkages below decks. Don't forget to check the stuffing box for grease.

Caught fellow yachtsman's 1/2" anchor rode around prop and shaft. Engine stopped at once. Started again after rode removed but ran rough and stuffing box began to leak when engine was running.

Trouble diagnosed by VOLVO national service manager and local VOLVO distributor's mechanic as bent shaft. (Note: Volvo engine plant nearby). This turned out to be the wrong problem as will be noted later. Took these people two days to try to get the shaft out of the boat. They ended up by cutting the shaft in two pieces. Not enough room in the engine compartment even though part of the bulkhead was removed. No instructions in the factory's engine manual pertaining to this remove. When the shaft was finally removed it turned out to be straight but the key in the forward end had been bent and the key way ruptured. New shaft and prop installed. Don't know why the new prop but I'm no mechanic. Installation required special tools as set forth in manual but mechanic did not have same or Volvo. Motor ran smoothly for nine months then suddenly lost all forward power. Examination by different mechanic revealed that nut that holds shaft in engine had not been properly installed allowing shaft to gradually back out of engine. Had the special tool been available this might not have happened. The Volvo plant has manuals on this Combi engine but knows very little about it since it is made overseas. Synchronization of the shaft and prop gives trouble each time any work is done.

Cost of repair: \$1,256.00 for first time and \$305.00 for second time = \$1,561.00. I had the old shaft rebuilt and now have a spare which will probably never be needed, I hope. Insurance covered the repair. (1978)

- Herb Edwards

I have just completed replacing the prop system with a standard transmission and prop. I have only a few hours on the boat at this time, but I am delighted with the modification.

The most important part of the conversion is finding enough room fore and aft for the transmission and coupling. I was able to cut off the stern tube (glassed into the boat) about 2" and install a conventional shaft packing gland for a 1" shaft. When installing the gland, push it aft as far as you can without having metal to metal contact, and double clamp each end of the hose. After the shaft is installed and coupling fitted, you will need about 15" between coupling and rear of engine to enable the transmission to be installed and removed if required. I had a stainless steel shaft 37" long, 1" dia., machined locally. On the outboard end of the

stern tube I found that a standard 1-1/4" x 1" cutlass bearing can be installed in the fitting that held the plastic bearing. I had this machined and fitted locally. The cutlass bearings are 4" long, so push it into the fitting so the excess is inside the tube glassed into the boat. Before installing the shaft, bore two or three holes about 3/8" dia. into the tube on the port side just ahead of the cutlass bearing. This will allow water flow through the bearing. My boat has the MD6 diesel so I used the MS series Volvo transmission with 1.9 to 1 reduction. Before installing the transmission, obviously the "variable mess" must be removed from the engine. After the housing is removed, there is a gear that must be removed from the engine crank so the transmission drive can be installed in its place. Removing this gear is tough but it can be done without removing the engine from the boat. I found to achieve shaft alignment I had to only raise the engine about 7/16" upward and 3/8" aft. Getting the engine mounting bolts out was really tough because of lack of room and rusted bolts. I replaced the Allen cap screws with hex heads and found them easier to work. After alignment, the engine cover insulation on the step had to be grooved slightly because of raising the engine.

I replaced the engine control with a Morse MV single lever control with minor modification to the mounting hole in the cockpit. Morse 33c cables, one 5' and one 6', worked out nicely for transmission and throttle. I manufactured the terminations for the shield ends of the cables. Finally, a 14 x 11 LH Mich. Sailor seems to be about the right prop.

This at best is a very expensive operation, with the transmission running about \$1100.00 new. This with hauling, machine work, prop, controls, etc., etc., just keeps piling it on, but I understand replacing the variable is expensive too. I cannot offer much on what labor might run on a job like this as I did all the work myself. If anyone wishes to discuss this in more detail, please give me a call any evening between 8 and 10, (804) 481-1881.

- Gene Hancock

I would like to add a few words about the prop shaft leaking problem, which I had since I purchased the boat, and which resulted in water getting into the gear box in the engine. Removing the prop shaft assemble and repairing it did not stop the leak. However, with my assistance, the yard finally found the cause of the leak. Water had been coming in between the aft end of the keel and the flange of the shaft log (part #15, p. 51~~28~~ of this manual). It seems the factory had filled a small gap with a caulking compound and it had become brittle and partially fallen out. We bevelled the area of the keel mating up to the flange of the shaft log, applied liberal amounts of 3M 5200 Marine Sealant, and the leak has stopped. The leak had

been intermittent, but sometimes would fill the bilge over a period of two to three days.

- Bob Sutton

Albin Marine has a stock of replacement brass plugs for the Combi propeller hub (\$3.05 each). The Albin parts manager recommended covering the outside of the plug with epoxy (after installation). This will keep the plug from deteriorating due to galvanic action/electrolysis. However, once applied, the epoxy must be chipped out of the screwdriver slot on the plug to remove for maintenance of the prop. The plug (as originally installed) is a 1/8" pipe plug with standard thread. Maybe we can find a plastic replacement plug?

- Art Levin

Deciding there must be a way to set the prop on neutral by some rough means other than hauling the boat out to see the little index marks on the prop hub, I set it up in proper position while the boat was out for engine overhaul. Installed the "sleeve" (part No. 27 in the illustration of the Combi Reversing Mechanism, p. ~~41~~⁴²), and measured from the flange of part No. 2, "interm. piece," to the forward end of the sleeve when installed over the operating sleeve. Mine measured exactly 2 inches, which I guess will be close enough for a make-do setting next time it slips. Installing the housing, the key on the pinion shaft, No. 28, should be rotated so it points roughly straight up when the housing is bolted down (trial and error), while the throttle cam, No. 35, points aft with the index mark against the roller on the lever, No. 44. The cam, incidently, is mounted on a taper shaft and held by a nut and washer, and unless you have a gear puller which works better than mine it's tough to move around for adjustment. Theoretically, you can simply adjust the operating shaft, No. 28, to the proper position with the prop in zero thrust position (index mark on the blade root aligned with the index mark or joint line on the hub) and then rotate the cam on its shaft to whatever is needed -- that's if you can get the damn thing loose to do it. The control cable, No. 65, has a left-handed adjustment by turning the fork one way or the other to make the cable length to put the shift lever-throttle where you want it. A rough test of adjustment is if you can put the throttle lever all the way aft for feathering.

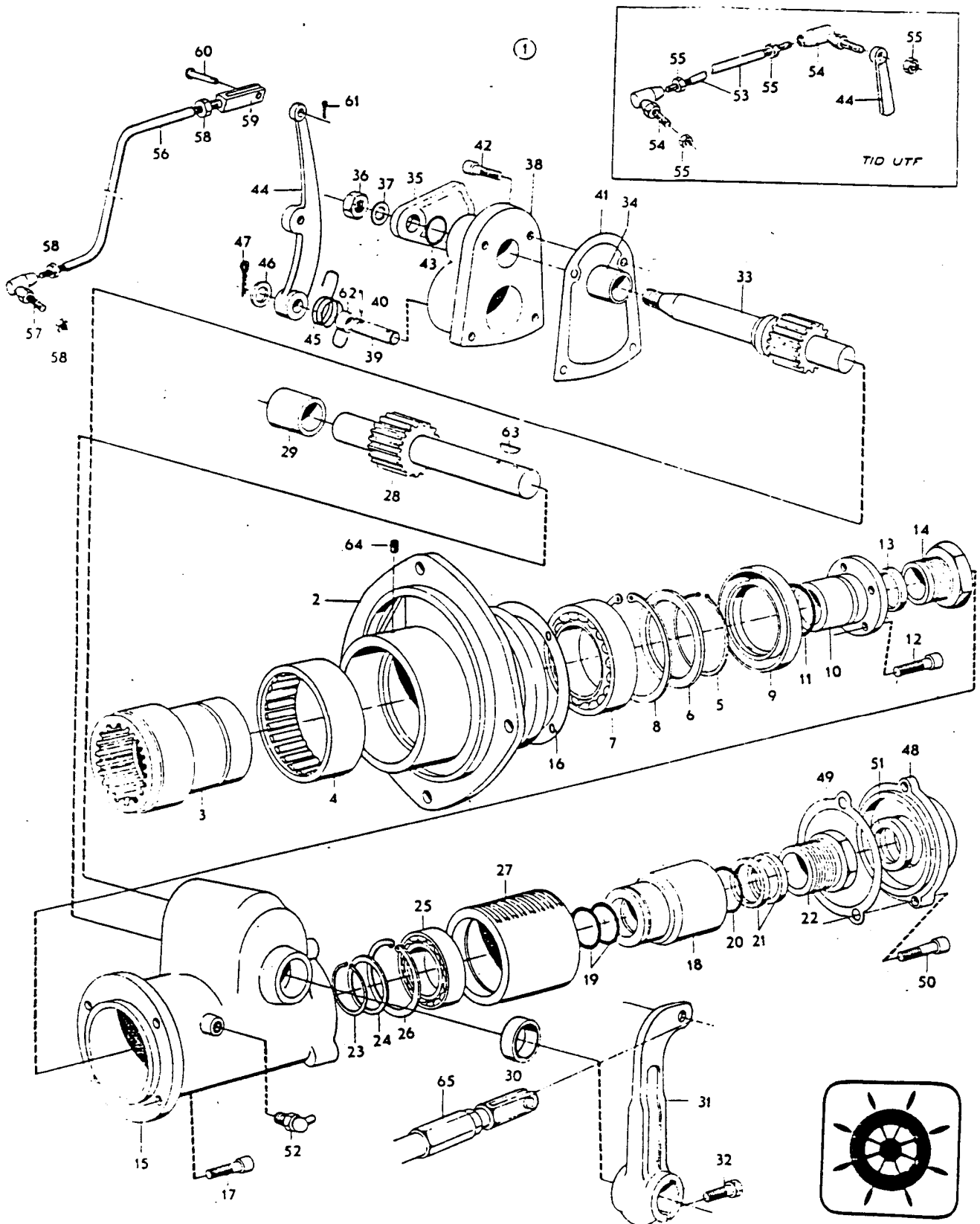
- Jesse Adams

COMBI REVERSING MECHANISM
"EXPLODED" VIEW

<u>Fig.</u>	<u>Part No.</u>	<u>Description</u>	<u>Notes</u>
1	3876394	Reversing mechanism	
2	3876297	Interm. piece	
3	3876374	Ring gear	
4	183586	Needle bearing	
5	914478	Lock ring	
6	3876410	Support ring	
7	19283	Ball bearing	
8	914548	Lock ring	
9	958897	Seal ring	
10	3876379	Sleeve	
11	925064	O-ring	
12	959219	Allen screw (4)	
13	3876421	Tensioner ring (2)	
14	3876380	Nut	
15	3876333	Housing	
16	3876418	Gasket	
17	959220	Allen screw (4)	
18	3876382	Sleeve	
19	925059	O-ring (2)	
20	925061	O-ring	
21	3849218	Tensioner ring (2)	
22	3849217	Nut	
23	914462	Circlip	
24	3876408	Support ring	
25	181549	Ball bearing	
26	914533	Lock ring	
27	3876381	Sleeve	
28	3876383	Operating shaft	
29	3876388	Spacer sleeve	
30	840222	Seal ring	
31	3877060	Lever	
32	955320	Bolt	
33	3876385	Shaft	
34	3876389	Spacer sleeve	
35	3876565	Cam	
36	955783	Nut	
37	941908	Resilient washer	
38	3876390	Bearing cover	
39	3876564	Shaft	
40	951946	Lock pin	
41	3876419	Gasket	
42	959220	Allen screw (4)	
43	955976	O-ring	
44	3876560	Lever	
45	840253	Spring	

<u>Fig.</u>	<u>Part No.</u>	<u>Description</u>	<u>Notes</u>
46	960148	Washer	
47	17276	Cotter pin	
48	3876334	Cover	
49	3876420	Gasket	
50	959219	Allen screw (3)	
51	840223	Seal ring	
52	3824387	Grease cup	
53		Control rod	MO-5159
54		Ball joint (2)	MO-5159
55	840221	Nut (4)	MO-5159
56	840024	Control rod	MO-5160
57	959079	Ball joint	MO-5160
58	955781	Nut (3)	MO-5160
59	961786	Yoke	MO-5160
60	913110	Clevis pin	MO-5160
61	907824	Cotter pin	MO-5160
62	3876993	Spacer sleeve	
63	910126	Key	
64	963050	Set screw	
65		Control cable	SE GRUPP 2D

COMBI REVERSING MECHANISM

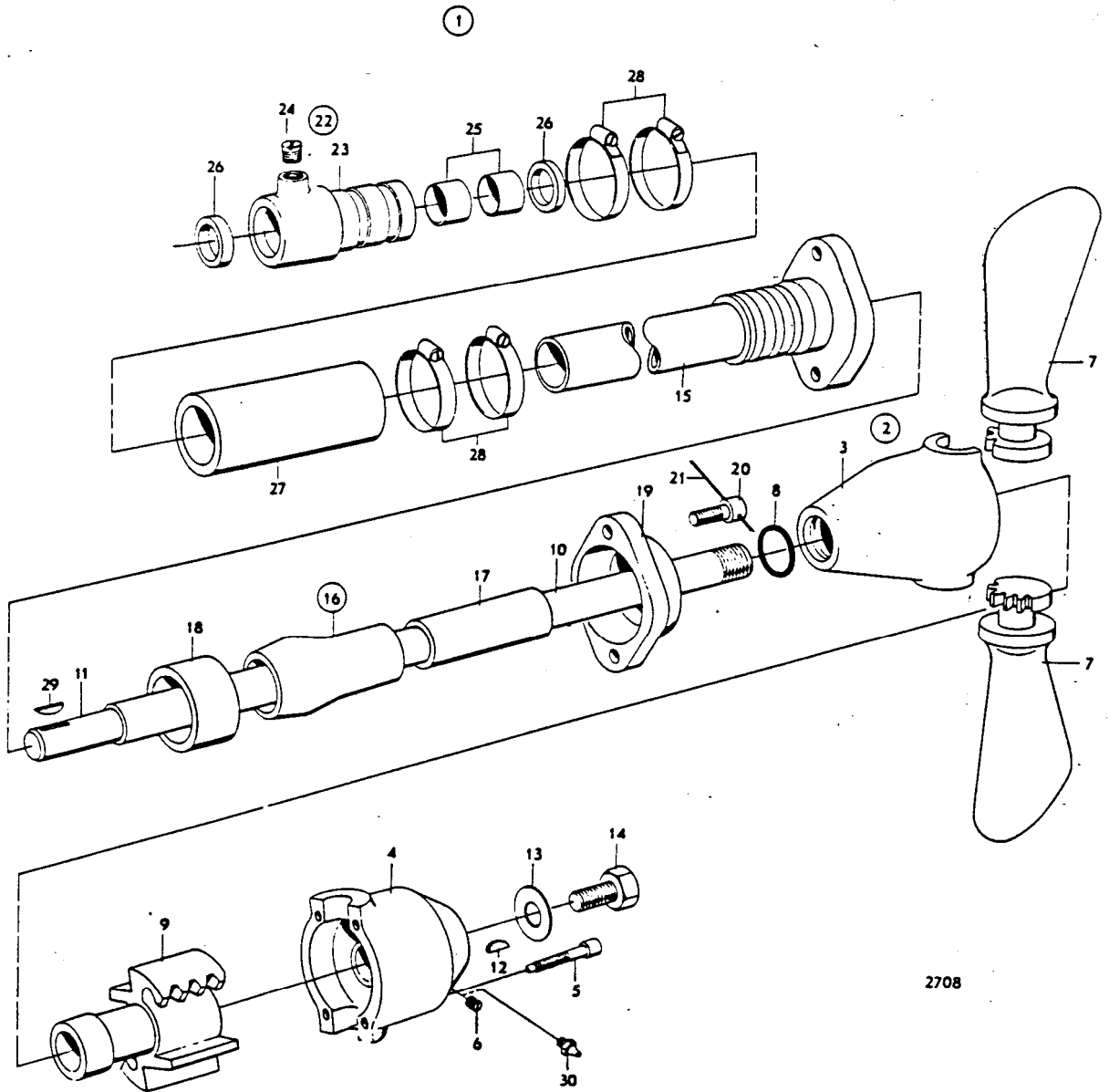


COMBI VARIABLE PITCH PROPELLER ASSEMBLY
"EXPLODED" VIEW

<u>Fig.</u>	<u>Part No.</u>	<u>Description</u>	<u>Notes</u>
1		Propeller Assembly	
2	3847604	Propeller head	
3		Hub half	Lagerföres EJ
4		Hub half	"
5	959421	Screw (4)	
6	3849121	Plug	
7	3847433	Propeller blade	D=340mm STD
8	925061	O-ring	
9	3847355	Operating rack	
10	3877004	Operating sleeve	
11	3877005	Shaft	L=1643mm *
12	840250	Key	
13	840251	Washer	
14	3847627	Bolt	
15	3876057	Retainer and sleeve	
16	3875574	Stern bearing	
17	3847357	Bushing	
18	3875576	Rubber sleeve	
19	3875578	Flange	
20	3876250	Bolt (2)	
21		Lock wire	Lagerföres EJ
22	3875908	Stern bearing unit	
23		Stern bearing	Lagerföres EJ
24	3849532	Plug	
25	3875925	Bushing (2)	
26	840252	Seal ring (2)	
27	3875909	Hose	
28	3834808	Hose clamp (4)	
29	910116	Key	
30	3824381	Grease fitting	

* Other length of shaft
can be delivered on
request.

COMBI VARIABLE PITCH PROPELLER ASSEMBLY



HOW TO DISASSEMBLE & ASSEMBLE YOUR COMBI PROP SYSTEM

by Don Angell

REMOVING COMBI UNIT

Loosen stuffing box clamps.

Disconnect throttle and shifting levers from shifting mechanism at rear of engine.

Remove 3 screws holding plate on rear of shifting mechanism housing. Slide plate to rear, exposing drum with teeth.

Move shifting lever on housing 180 degrees so drum moves to rear and exposes gland nut holding bronze tube to prop shaft.

Rotate drum 180 degrees to expose hole. Put pin in hole and remove gland nut on tube--twist tube at prop end to break tube loose (prop gear "rack" on end of tube is left hand thread). Note position of 2 lock rings under gland nut. These will later be reinstalled in same position.

Rotate drum back 180 degrees to original position.

Move shifting lever 180 degrees back to neutral while pressing on drum to engage teeth on drum.

Remove 4 bolts on engine end of shifting mechanism housing.

Slide housing to rear to expose gland nut on prop shaft.

Put pin in hole in cranking shaft (on front of engine) and remove gland nut.

Note position of 2 lock rings under gland nut.

Pull out tube and prop shaft from rear of boat while someone holds shifting mechanism housing (so it won't drop).

Remove stuffing box

Remove drum and shifting mechanism housing.

Remove gland nuts and lock rings (2 sets).



REPLACING COMBI UNIT

Replace 3 "O" ring seals in drum.

Replace 2 seals in stuffing box (put both seals facing to rear of boat).

Replace 1 "O" ring seal on front half of prop hub (remove hub from tube, install seal, and replace hub on tube).

Try putting prop shaft into bronze tube. If it fits hard, remove prop gear (rack) from end of tube (left hand thread) and de-bur end of tube where it screws into rack. Reinstall rack after de-buring

Replace all gaskets if torn. If not torn, may reuse with anti-sieze compound on one side of gasket.

Assemble shifting mechanism housing temporarily by inserting gland nut and 2 lock rings (previously removed from tube) and screwing on back plate--leave loose. Note--install rings in same position as when removed with flanges out and concave sides facing together (in).

(continued)

Put stuffing box and shifting mechanism in their places in boat and push in tube and shaft while someone feeds them thru the stuffing box and thru the shifting mechanism. Be sure front half of prop hub is on end of tube. Grease shaft before assembly.

Put gland nut and 2 lock rings over prop shaft and install half round key on shaft.

Line up slot with key and slide shaft into engine.

Tap end of shaft until you feel it "bottom out" in engine (Insert steel bolt in end of shaft and top on bolt).

Put pin in hole in cranking shaft and tighten gland nut.

Bolt housing to engine.

Remove back cover of housing (which was installed temporarily) and move shifting lever 180 degrees to move drum to rear and expose teeth.

Rotate drum 180 degrees to expose hole in drum.

Screw gland nut on collar until collar turns--continue turning collar until hole in collar aligns with hole in drum. Put a pin thru both holes (pin should be snug fit). Loosen (unscrew) gland nut and move it and lock rings down tube.

From outside boat, push tube into housing until you feel it pass "O" ring and bottom out.

Tighten gland nut--remove pin holding drum.



Rotate drum back 180 degrees to expose teeth.

Move shifting lever 180 degrees to move drum back into housing into neutral position.

Replace back cover plate.

Tighten clamps on staffing box.

Install props. The blade with a small notch on base goes on side of hub with notch on hub. These notches must line up when prop is in neutral. Insert prop blade into hub by having one tooth exposed and rotate into position. If marks don't line up, blade is not installed properly--re-install until marks are aligned.

Install rear prop hub and tighten the 4 allen screws

Put washer on end of shaft and tighten bolt (this is the soft bolt that was originally removed). Note that washer has notch which must fit correctly. After tightening bolt, crimp washer. Don't tighten bolt too much as it is soft.

Grease prop with water resistant grease in grease gun, using grease fitting screwed into prop hub. Move throttle lever back and forth while greasing--until lever moves hard and grease comes out around prop blades. Remove grease fitting and replace it with plug.

Grease stuffing box with water pump grease. Remove plug and force in grease with finger until full. Do Not Use Grease Gun--It will Blow Out Seals.

Grease shifting mechanism thru grease fitting installed--about 20 pump strokes of grease gun.

COMBI WITHOUT TEARS

by John Thorp

Despite the scorn poured on it from many quarters, the Combi box as fitted to the Vega Diesel engine deserves much more respect.

The principle is first rate, and the design simple and robust. The main problems, and harsh words, come when the thing needs servicing. The legendary difficulty and expense of the work then cause most owners to throw up their hands and cast the whole box onto the scrap heap. Perhaps a few soothing words on our experiences recently will be of interest.

Firstly, it is not necessary to haul the boat to remove the box, nor is it necessary to dismantle the prop. In fact, it is serious mistake. Secondly, parts need not cost an arm and a leg; all the bearings, seals, O-rings and circlips are standard parts obtainable from any local dealers for a few dollars. The operating sleeve and internal sleeve are very low-stressed parts and hopefully will be OK. The total parts cost for all other replacable parts is around \$25.

If by now your credibility is stretched slightly, read on MacDuff - it gets better:

(PLEASE NOTE THAT PARENTHETICAL NUMBERS FOLLOWING REFER TO VOLVO PARTS NUMBERS IN THEIR CATALOGUE - SEE VOCCA MANUAL p. 47.)

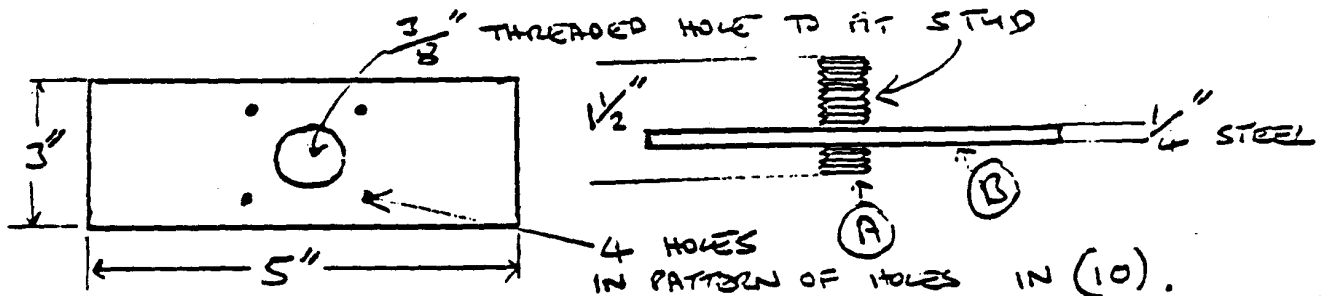
A) REMOVAL:

1. With the engine in neutral, put a piece of tape around the shaft sleeve just aft of the glass bulkhead to mark its position. Reason will become clear later in the REFIT section. If position is not known (Broken box, etc), omit this, it isn't essential.
2. Disconnect the control rod coupling and remove the lever (31).
3. Disconnect the throttle linkage by removing the split pin (47), releasing the spring, and sliding the whole unit off. Don't lose the washer (46).
4. Unbolt the bearing cover to starboard and remove along with the cam and shaft assembly.
5. Unbolt the rear cover of the box (48) and slide to rear.
6. Using vise grips, turn the shaft (28) to expose the gland nut at the rear of the box.
7. Lock the flywheel and undo the gland nut.
8. Undo 4 Allen bolts holding the housing to engine, and slide housing to rear.
9. Undo the gland nut (14).
10. Unbolt sleeve (10) and slide entire shaft, unit, and all to rear.
11. Take a tea break and say a silent prayer for this is the moment of truth.



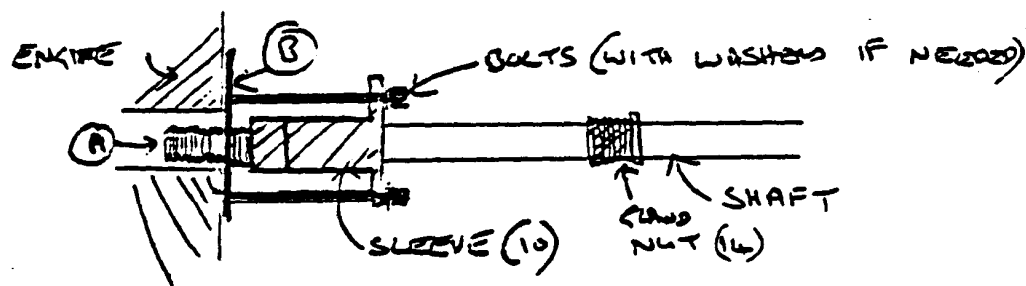
12. Getting the shaft out of the sleeve is the hardest part of it all. This is what you do:

- a) If you are very lucky, a gentle tap with a hammer will slide the sleeve forward gradually and off the shaft.
- b) By far the most likely, it won't. Make up the following special tool, or get your local hardware store to do it. Cost should be minimal.



The shaft at the forward end should protrude slightly from the forward end of the sleeve. Remember that as you refit it. Placing a solid piece of iron, or your plate of the special tool across the end of the shaft and pressed against the engine, tap the sleeve with a hammer forward, moving it along the shaft. It should move, if only very slowly. Have patience. If, after a reasonable effort, there is absolutely no movement, proceed to the next step as if successful (with all finger crossed)!

c) While at the hardware store, get 4 extra long (2") bolts to fit the same thread as the 4 Allen bolts (12), and a handful of washers. With about 1/2" of the bolt (A following) pointing aft, put the plate so that the bolt is in line with the shaft - in between it and the engine. Insert the long bolts and washers to fit, and tighten each bolt in turn to push the sleeve down the shaft.



As the sleeve bottoms on the plate, start again with more bolt exposed and more washers as needed. This will work unless you have a very serious problem in the form of a bent or broken key (29) or a totally seized shaft. Again, try a hammer, if necessary as hard as possible, because at this stage the only other alternative is cutting the shaft.

d) As the shaft comes free, don't lose any of the compression rings.

13. Right, back to business. Replace the sleeve for safe keeping, replacing the O-ring (11) if you're really feeling keen.

14. Slide shaft to rear, not too far, and remove first the housing, then the sleeve (27) and all the internals. There is just room if you remove the housing first.

B) REBUILD:

Rebuild the box as needed. We replaced the bearings (25) which had fallen to bits, all circlips, support rings and lock rings (23, 24, & 25), the O-rings (19, 20) and seal ring (51). Gaskets can be made from stout paper (49, 16, 41) - old charts, especially British Admiralty (!!) are superb. The following are the parts numbers supplied by the shop, with Volvo numbers for comparison. Total bill for everything was under \$25. (US).

<u>PART</u>	<u>VOLVO</u>	<u>US</u>
O-rings	925064	216
	925059	116
	925061	213
Bearing	181549	9U07K
Seal	840223	47697

Clean all parts thoroughly before and during rebuild. Lightly grease all parts on assembly with Molyb grease; on refitting the box, the engine is going to be run briefly without full grease packing, so every little bit helps.

C) REFIT:

1. With 360 wet and dry, clean and smooth the ends of the shaft and the operating sleeve thoroughly.
2. From the front, slide onto the shaft the cover (48) with seal, followed by the gland nut (22) and compression rings, and then the sleeve (27) and the internals. Holding the shaft firmly, push the sleeve as far aft as it will go. The operating sleeve must bottom out in the unit, so check carefully as the new O-rings will be tight.
3. Slide housing over shaft, and with teeth in (27) upright over the sleeve. Don't worry about alignment of teeth and cog yet.
4. Slide gland nut (14) and compression rings down the shaft, fit key and slide shaft into (10). Make sure it bottoms out. If this proves difficult (it should be a very tight fit), unbolt (10) from engine, hold shaft, and tap lightly with a hammer and a drift. In this direction there is almost no room. Again, have patience. It helps to heat gently with a blowtorch (as a last resort). Be very careful, and remove O-ring (11) first. Rebolt (10) to the engine.
5. Lock flywheel and tighten nut (14) hard.
6. Tighten nut (22) hard.
7. Check position of neutral mark (See REMOVAL 1.). Slide cover (15) to rear, turn the shaft (28), and refit (15) so that key in shaft is in correct position for neutral position of lever (31). This is fun (?), so its probably time for another break about now.
8. If there is no tape mark, guess & proceed (Guess not critical). Bolt (15) to block, and fasten rear cover (48). Don't kill yourself doing this, you may have to undo them all in a moment.

9. Start engine and run very briefly to check neutral. Turn shaft (28) with vice grips until neutral is found. Check position of throttle control before starting, use only tickover. Neutral should be very close to the estimated position based on the tape mark. If the tape mark is now some distance away, it is likely that the shaft is not fully bottomed out or else that the operating sleeve is not fully home in the box. Check both.

10. If needed, repeat procedure in 7 for alignment of lever (31).

11. Tighten housing bolts (17) and end cover bolts (50).

12. With cam in correct position for neutral (i.e. horizontal) refit slide cover (38) with shaft. The cam is on a tapered shaft and probably impossible to remove, so if adjustment is needed, it is easier to remove the cover (38), turn the shaft, and refit it. Correct alignment of neutral and minimum revs should be easy as the shaft and prop have not been touched.

13. Reconnect throttle linkage and arm (31) and control linkage. Adjust position of cockpit lever if necessary by using fork on engine end of control linkage.

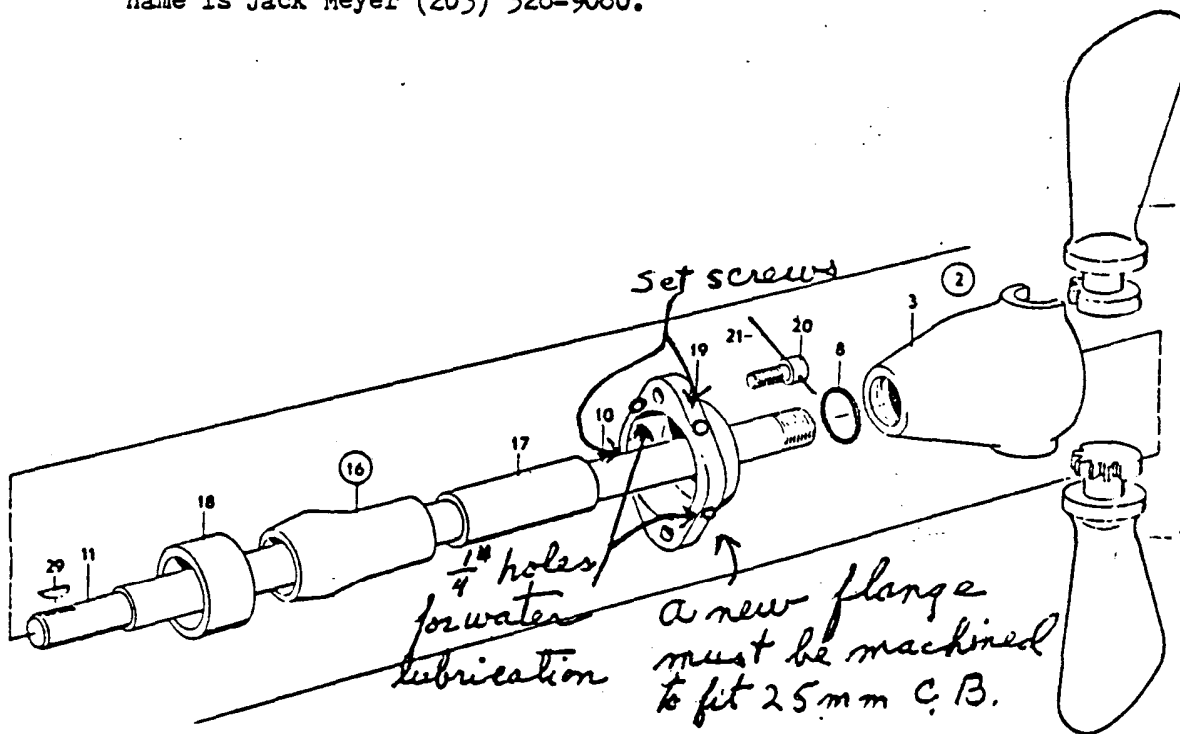
14. Grease the control linkages, and pump about 25 pumps of Molyb grease into the box with a grease gun.

15. Have a beer, you're finished.

our
VODCA Newsletter
brings people together



I put in a standard 7/8" cutlass bearing (machined out to 25 mm inside diameter), 1 1/2" outside diameter X 4" long. The bearing is pressed into place in the stern tube (retainer and sleeve) and should be snug. The 4" length must be trimmed to approximately 2 1/2" so there is 1/2" to 1" clearance between the prop and the bearing. The catch is that a new brass flange that bolts onto the outside of the stern tube must be machined to fit the new cutlass bearing. It will look similar to the standard Vega flange, but it should also have holes drilled for two set screws to hold the cutlass bearing from turning, and two 1/4" holes for water lubrication (see drawing). My mechanic in this area (Chester, CT) knows the Vega and all its idiosyncrasies inside and out - his name is Jack Meyer (203) 526-9060.



- Jim Panti

I removed the variable pitch prop and shaft and installed the Volvo gear box and fixed two-blade prop, and another stuffing box. After two years I have had no problems whatsoever.

- E. W. Hancock

Parts for the propeller assembly can be obtained from DePietro Kay Corp., 914 Cromwell Ave., Rocky Hill, CT 06067, (203) 563-2167.

Chuck Welchko was having stuffing box leak problems, as I guess we all do. I was referred as the resident expert and when I got there, his mechanic (a very capable gentleman but quite inexperienced with Combis) had been guided by an old VODCA Newsletter describing the shaft/shift surgery routine. Unfortunately, the description starts off to the effect that one should disassemble the propeller, and this he had. Mistake! Don't do it, unless you have to go into the prop for other reasons. It's hell to get back together in phase and the VODCA sailing directions are silent on that procedure. As all of us know, a change in anything about the whole Mickey Mouse, hemaphroditic abortion changes everything else.

- Jesse Adams

A member of the Swedish VEGA Association, Henry Gustafsson, P.O. Box 2284, S-310 58 Vessigebro, Sweden, has developed a stainless steel operating sleeve (part #48924) that controls the feathering prop. He also has spare parts for the Vega at very competitive prices.

* * *

To protect my propeller and shaft from barnacles and marine growth, I have tried various bottom paints, teflon grease, and bare polished metal, all without success. My research led me to the Interlux system for underwater metal (Interlux does not recommend this for steel), with very good results.

The procedure at first sounds complicated, but after the first application you will find it easy. The thinners and paint are relatively expensive, but the quantities used are so small that your initial purchase will last for five years or more. The following are required;

Interlux #216 Special Thinner; Interlux #355 Viny-Lux Solvent;
Interlux #353/354 Viny-Lux Primewash (2-part);
Interlux #267 (black) or Interlux #268 (white) Inboard/Outboard Aerosol Spray Paint.

All are available at marine supply stores (including Boat/U.S.).

Carefully follow these steps:

1. Remove all old paint, barnacles, and corrosion (I use paint remover and a wire brush).
2. Bring bare metal to a uniform bright finish (I use a fine wire brush in my electric drill plus Emery cloth).
3. Wipe clean with a generous amount of #216 Special Thinner.
4. Apply one thin coat of the #353/354 Primewash thinned 20% with #355 Solvent.
5. Dry one hour minimum (24 hours maximum).
6. Apply two coats #267 or #268 spray with overnight dry between.

This goes very quickly as part of annual maintenance. I hope you have as much success as I and others have enjoyed with this procedure.

- Don Angell