



## Hydraulic Steering

### TS-3 FULL FOLLOW-UP CONTROL LEVER

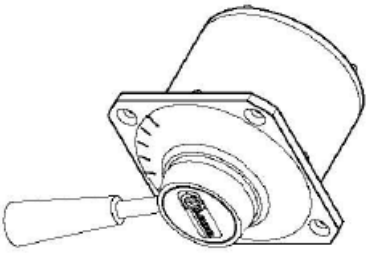
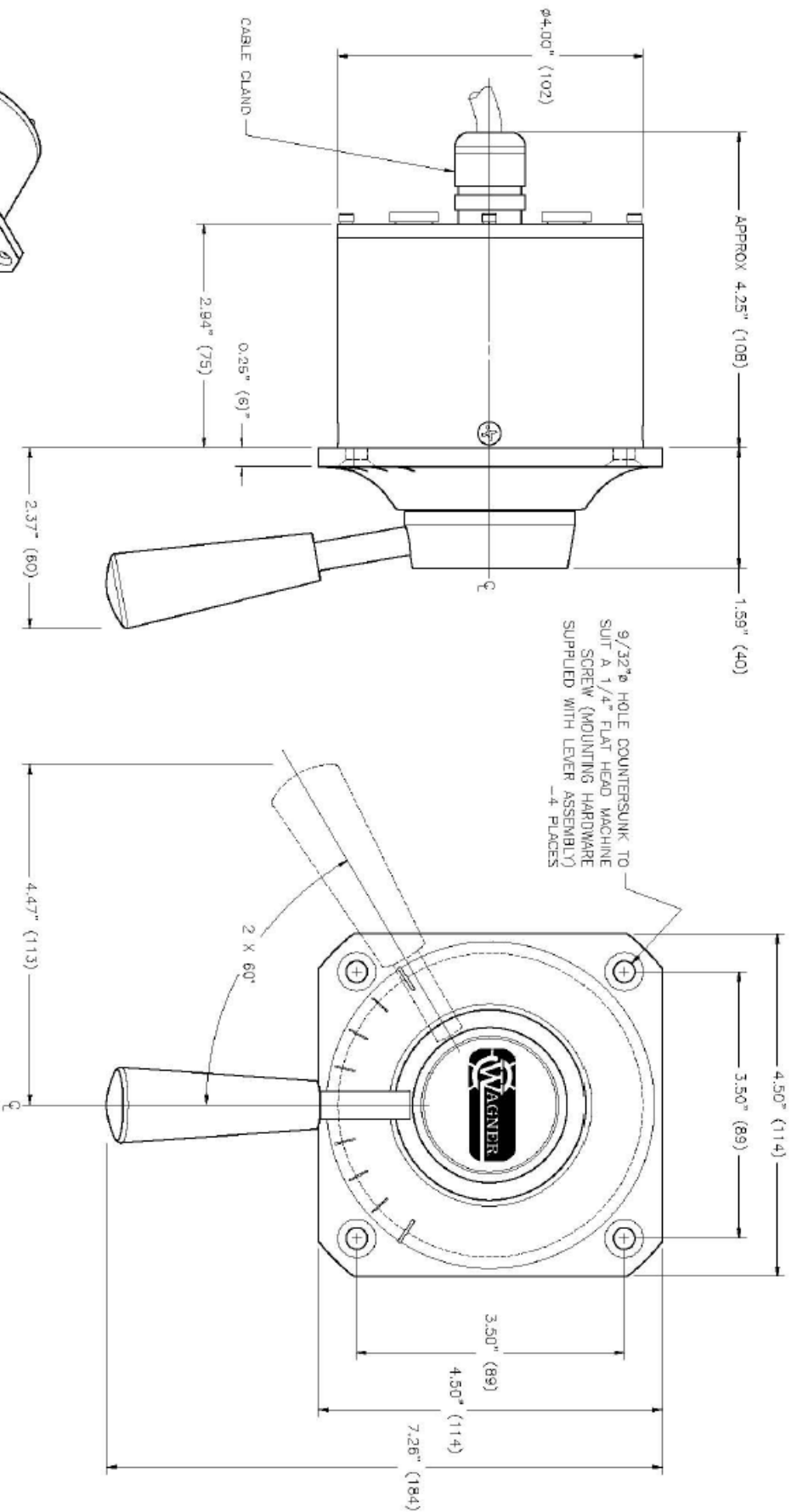


The Wagner TS-3 is a robust unit, manufactured of hard anodized aluminum and stainless steel. This unit is designed to meet the physical and climatic demands of the marine environment. Careful attention to the design and manufacturing process and the use of o-ring seals at all mechanical junctions ensures a water tight assembly.

The control lever is used in conjunction with an electronic amplifier and rudder feedback to provide full follow-up control of a vessels steering gear. A permanently mounted unit, the TS-3 will provide the operator with intuitive feel for the position of the rudders. The position of the rudders will exactly follow the position of the lever in direction and magnitude.

The TS-3 is available in various configurations with multiple potentiometers and with or with out trimming potentiometers. When they are installed the trimming potentiometers may be accessed via o-ring sealed trim ports on the bottom of the unit. There is no need to disassemble the TX-3 to make set-up adjustments..

**MANUFACTURED BY WAGNER ENGINEERING LTD.**



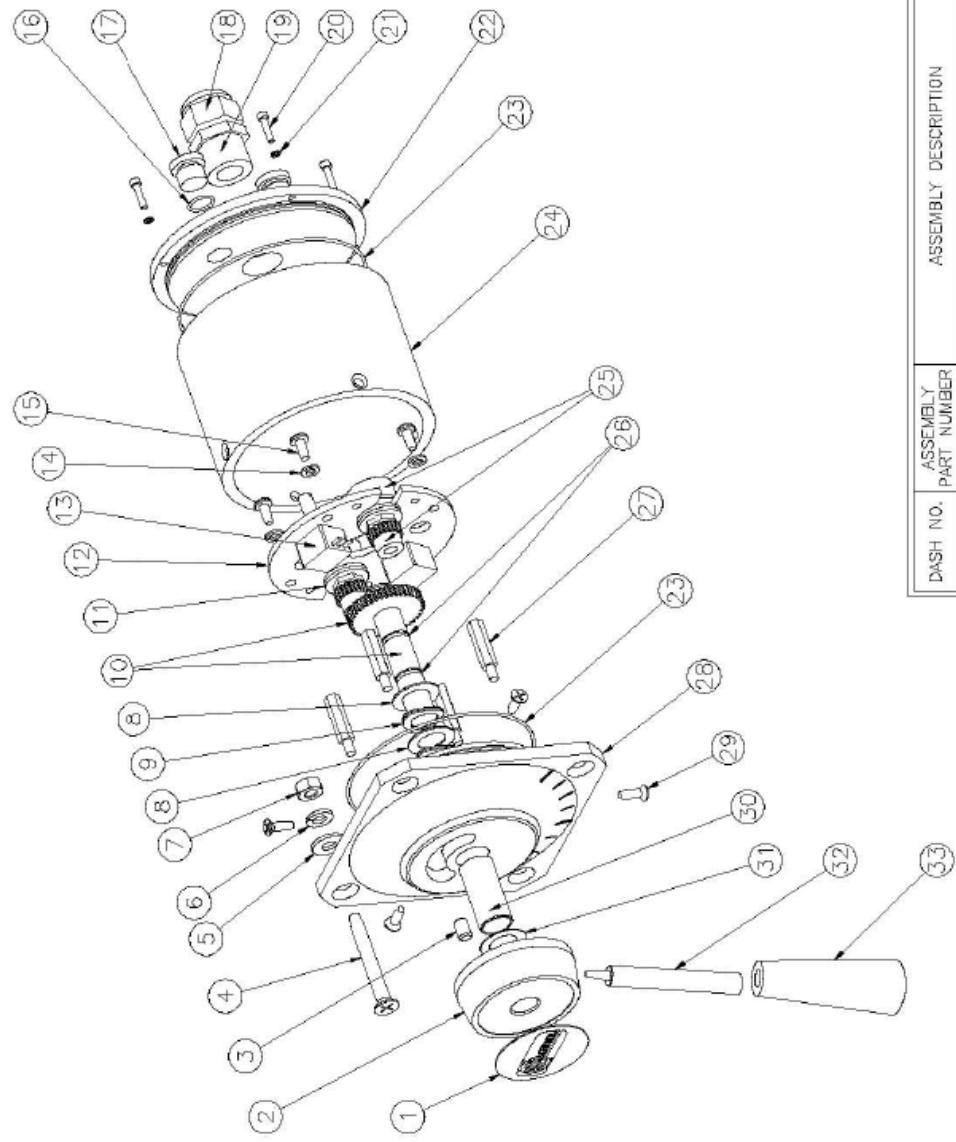
REFER TO DRAWING C-13-270 FOR THE TS-3 LEVER CONTROLLER ASSEMBLY DETAILS

**WAGNER TS-3 LEVER CONTROLLER  
OVERALL DIMENSIONS**

Wagner Engineering Ltd.  
136 Riverside Dr.  
North Vancouver, BC  
Canada V7H 1T8  
Tel. (604) 988-1111  
Fax (604) 986-0334  
www.wagnerengineering.ca

DRAWN BY: J.B.O.	CHECKED BY: M.L.G.
SCALE: FULL SIZE	DRAWING NO.: C-13-149
DATE: MAY, 2004	REV:
REF. NO.:	

DASH NO.	QTY				ITEM	PART NO.	DESCRIPTION
	-4	-3	-2	-1			
	1	1	1	1	1	660-017	HUB LABEL
	1	1	1	1	2	690-012	HUB
	1	1	1	1	3	690-014	HUB STOP PIN
	4	4	4	4	4	603-607	CAPSCREW S.S. (BLACK)
	4	4	4	4	5	604-017	FLAT WASHER S.S.
	4	4	4	4	6	604-102	LOCKWASHER S.S.
	4	4	4	4	7	602-017	NUT S.S.
	4	4	4	4	8	604-013	WASHER
	6	6	6	6	8	605-010	SPRING WASHER
	1	1	1	1	10	550-031	MAINSHAFT SUB-ASSEMBLY
	4	2	4	2	11	604-005	DISC-LOCK WASHER
	1	1	1	1	12	670-197	POT MOUNTING PLATE
	-	2	1	13	125-020	TRIMPOT	
	4	4	4	4	14	604-030	LOCKWASHER
	4	4	4	4	15	603-054	MACHINE SCREW S.S.
	2	2	2	2	16	11-106905	O-RING
	2	2	2	2	17	41-510071	TRIMPOT PLUG
	1	1	1	1	18	610-038	CABLE GLAND NUT
	1	1	1	1	19	610-019	CABLE GLAND
	4	4	4	4	20	603-205	SH CAPSCREW S.S.
	4	4	4	4	21	604-101	LOCKWASHER S.S.
	1	1	1	1	22	690-917	BACKPLATE
	2	2	2	2	23	11-106042	O-RING
	1	1	1	1	24	690-916	TUBE HOUSING
	2	2	2	2	25	550-013	POT SUB-ASSEMBLY
	2	2	2	2	26	11-106012	O-RING
	4	4	4	4	27	690-918	STAND-OFF
	1	1	1	1	28	690-915	FRONT PLATE
	4	4	4	4	29	603-057	MACHINE SCREW S.S.
	1	1	1	1	30	655-197	SHAFT BUSHING
	1	1	1	1	31	604-103	FRICTION WASHER
	1	1	1	1	32	690-914	SHAFT
	1	1	1	1	33	620-040	HANDLE



DASH NO.	ASSEMBLY PART NUMBER	ASSEMBLY DESCRIPTION
-1	510-542	TS-3 LEVER CONTROLLER (1-POT, 1-TRIMPOT)
-2	510-543	TS-3 LEVER CONTROLLER (2-POT, 2-TRIMPOT)
-3	510-546	TS-3 LEVER CONTROLLER (1-POT, NO TRIMPOT)
-4	510-547	TS-3 LEVER CONTROLLER (2-POT, NO TRIMPOT)

WAGNER TS-3 LEVER CONTROLLER  
ASSEMBLY DETAILS



Wagner Engineering Ltd.  
136 Riverside Dr.  
North Vancouver, BC  
Canada V7H 1T6  
Tel. (604) 988-1111  
Fax (604) 988-0334

DRAWN BY: B.B.D.  
SCALE: N.T.S.  
DATE: MAR. 2004  
REF. NO.:  
CHECKED BY: M.L.S.  
DRAWING NO.:  
REV.:  
C-15-270

REFER TO DRAWING C-13-149 FOR THE TS-3 LEVER CONTROLLER OVERALL DIMENSIONS



### Ordering Specifications

Assembly Part Number	Number of Potentiometers	Trimming Potentiometers
510-542	One	Yes (One of)
510-543	Two	Yes (Two of)
510-546	One	No
510-547	Two	No

Great care must be taken to ensure the electrical connections are properly secured and insulated. Loose or frayed (whiskers) wires may result in erratic and/or uncontrollable rudder movement. For connections to autopilots or other electric steering controls refer to the installation manuals for the equipment in question.



Wagner Engineering Ltd.  
135 Riverside Dr.  
North Vancouver, BC  
Canada V7H 1T6

Tel. (604) 988-1111  
Fax (604) 986-0334  
e-mail [sales@wagnerengineering.ca](mailto:sales@wagnerengineering.ca)  
web site [www.wagnerengineering.ca](http://www.wagnerengineering.ca)