



Reference:  
P/N 190-0011

ISSUE:  
March/85

3/4" DOUBLE ACTING RELIEF, BYPASS and SHUTOFF (DARBS) VALVE  
(P/N 400-0024)

The DARBS valve is connected across the two steering lines (normally right at the cylinder ports) to protect the steering cylinder from a heavy shock load on the rudder. This pressure relief valve protection is required by most approval societies. Relieving action is provided for both port and starboard movements of the rudder. The DARBS "MODE SELECTOR SPOOL" is placed in the NORMAL position to engage the relief valves. Moving the spool to the SHUTOFF position permits the steering gear to function but isolates the relief valves from the steering system. The SHUTOFF position is required if the relief valves become contaminated and prevent the steering gear from operating.

Moving the "MODE SELECTOR SPOOL" to the BYPASS position allows the hydraulic oil to be pushed from one side of the cylinder to the other. The BYPASS position permits emergency mechanical operation of the rudder.

#### INSTALLATION

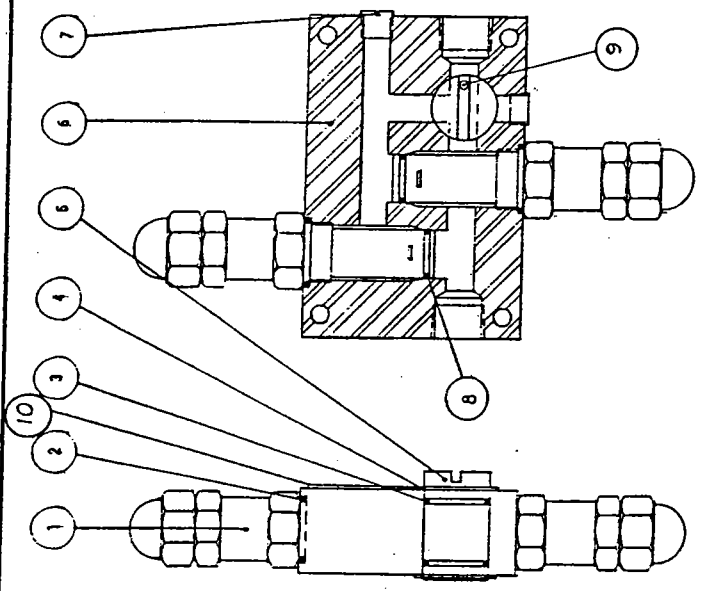
The DARBS valve should be mounted as close as possible to the steering cylinder. A 3/4" SAE straight thread pipe port is located on each side of the valve body. Each port is connected to one of the steering lines.

The relief valves are factory preset at 85 kg/cm (1200 psi). This setting is adequate for manual hydraulic steering systems. If the steering system is power operated, the relief valves should be adjusted to operate at a pressure 25 percent higher than the main system relief valve setting.  
NOTE: Ensure that all piping and fittings in the system are capable of withstanding this higher pressure setting.

The pressure setting is adjusted by removing the acorn nut on the top of the relief cartridge and turning the inner stud CLOCKWISE to increase the pressure setting or, COUNTERCLOCKWISE to decrease the pressure setting. Replace and secure the acorn nut after adjustments are made. Both relief valve cartridges must be adjusted to the same setting.

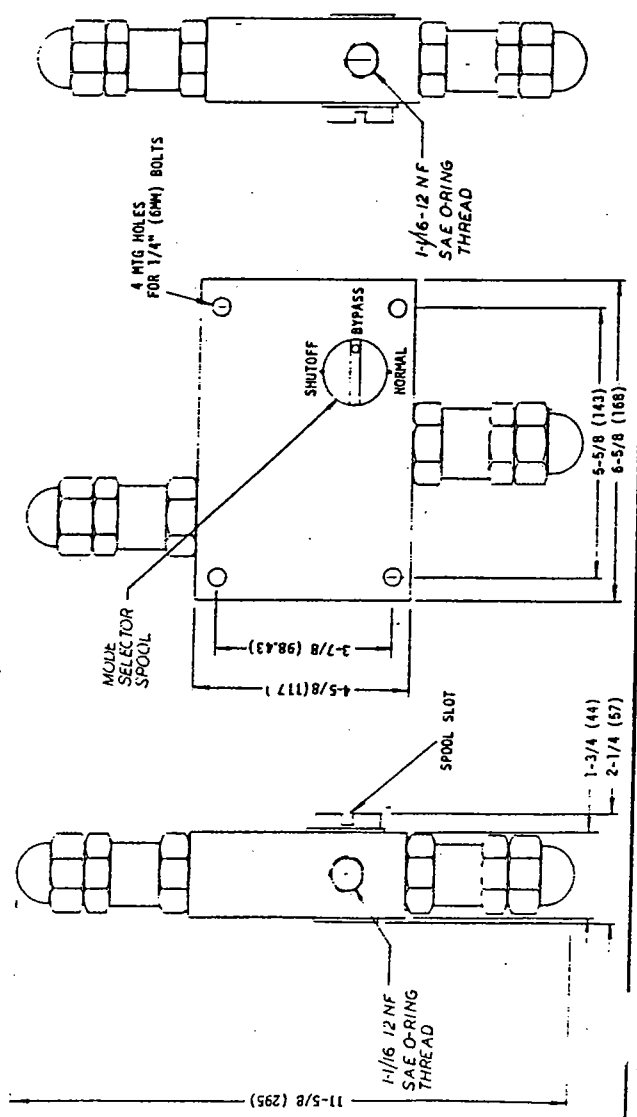
#### OPERATING THE VALVE

The DARBS "MODE SELECTOR SPOOL" has been designed to prevent accidental rotation. A screw driver or other flat tool placed along the 1/4" wide slot may be used to change its position.



ITEM	QTY	PART NO.	DESCRIPTION
1	2	80-200002	Relief Cartridge
2	2	11-106914	O-Ring
3	2	11-106123	O-Ring
4	2	51-300007	Snap Ring
5	1	420-0123	Spool
6	1	420-0124	Body
7	2	41-132002	Plug
8	2	11-106010	O-Ring
9	1	51-170002	Spring Pin
10	1	91-703017	Name Plate

NOTE:  
 Item 1, Relief Cartridge, includes items 2 and 3.  
 \* These items included in Spares Kit PN 115-0006



ALL DIMENSIONS IN IN.(MM)  
 WT. 3.7 Kg (8.24)

DETAIL	QUANTITY	DESCRIPTION	MATERIAL
<b>WAGNER</b>			
MANUFACTURERS OF MARINE HYDRAULIC STEERING GEARS AND AUTOMATIC PILOTS			
TITLE <b>PARTS LIST FOR DOUBLE ACTING RELIEF BYPASS AND SHUT-OFF VALVE (DARBS)</b>			
DRAWN	DATE	SCALE	QUOTE NO
REVISION	DATE	SCALE	RAWING NO
			REV. 04
			2-454