

**MODEL 4601 HYDRAULIC
TIME DELAY (Patented)**

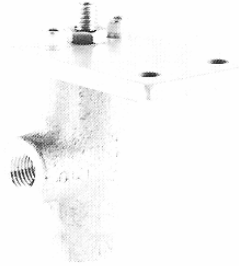
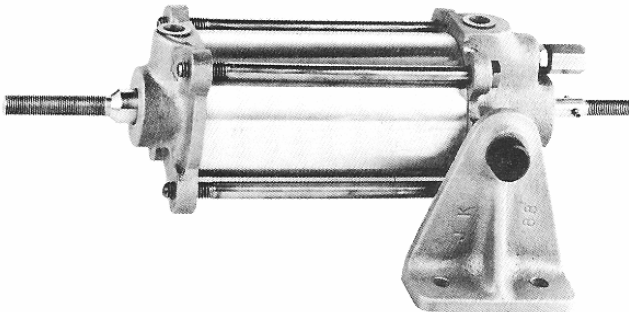
A non-hunting, Hydraulic Servo Unit with *infinite positioning*, which can be used as a power booster or a delay device.

It is frequently installed on Marine Propulsion Units to operate the governor lever. The gear oil pressure (a minimum gear oil pressure differential of 80 psi is required) is used to operate the Servo Unit. A pressure hold-back valve is installed in the pressure line between the gear and the Servo Unit. The pres-

sure is held back until after the gear is engaged; but before reaching a maximum operating pressure, the pressure hold-back valve (adjustable) opens, permitting oil to flow to the Servo Unit. At this point the Servo Unit is operative.

When using the Model 2312 Single Lever Control, an independent throttle control valve is fitted on to the single lever control to provide oil flow in the neutral position only.

**PRESSURE HOLD-BACK VALVE
No. 1525**

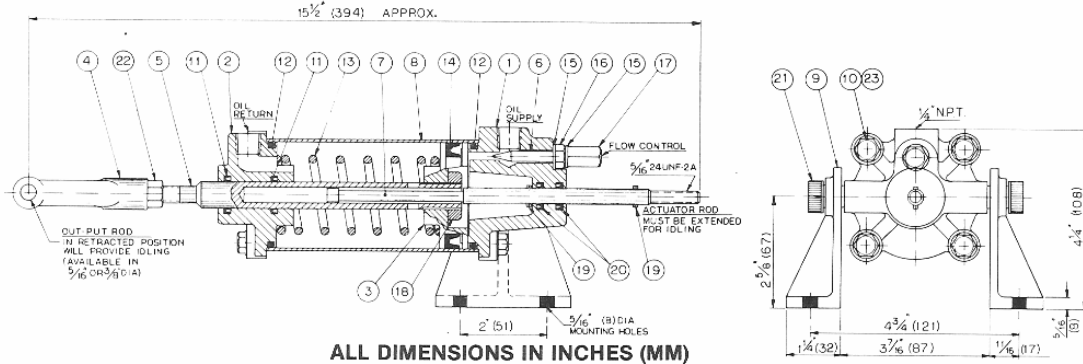


**ALL BRASS AND STAINLESS
STEEL CONSTRUCTION**

Bore	Stroke	Overall Length
2-1/2" (63mm)	1-3/4" (44mm)	16-1/2" (419mm)

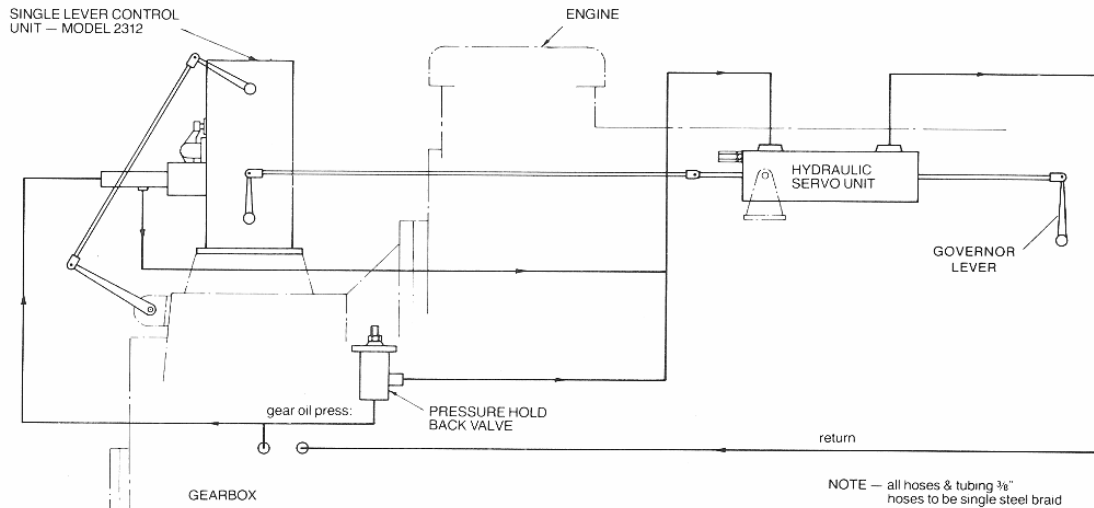
This Hydraulic Time Delay System has proved itself many times over in saving the repeated cost of gear repairs, clutch replacements and down time — and is of special use in such applications as boom-boats and small tugs that are maneuvering constantly.

DIMENSIONS & PARTS 4601



DIMENSIONS ARE FOR REFERENCE AND SUBJECT TO CHANGE WITHOUT NOTICE UNLESS CERTIFIED

TYPICAL SINGLE LEVER CONTROL SYSTEM WITH KOBELT HYDRAULIC DELAY



OPERATING DESCRIPTION

The actuator rod movement is always proportional to the output rod movement.

Oil pressure must enter the oil supply port. The return line must be 5/16" I.D. min. and without restrictions (back pressure).

The flow control needle valve must be adjusted to provide sufficient flow of oil. This valve can be adjusted to obtain any response required (speed of movement). Excessive opening of the flow control needle valve will prevent the output rod from returning to the retracted position.

Max. Operating Pressure: 250 PSI (17.24 BAR)

Max. Operating Temperature: 200°F (93.3°C)

The connecting link attached to the actuator rod must have clevis rod ends (not balljoints).

Canadian Patent: 787168; U.S. Patent: 3496833

Max. Oil Flow: 3.2 litres per min.

0.84 U.S. gallons per min.

Flow can be reduced by half, depending on acceleration time.

4601

ITEM	QUANTITY	PART NUMBER	DESCRIPTION
1	1	4601-0001	Supply Cap
2	1	4601-0002	Rod Cap
3	1	4601-0003	Piston
4	1	4601-0004	Clevis
5	1	4601-0005	Piston Rod
6	1	4601-0006	Needle
7	1	4601-0007	Actuator Rod
8	1	4601-0008	Cylinder
9	2	4601-0010	Bracket
10	4	1001-1196	Hex Bolt
11	2	1102-1006	U-Cup
12	2	1101-0228	"O" Ring
13	1	1201-0073	Spring
14	1	1102-0032	U-Cup
15	2	1023-0230	Washer
16	1	1022-0261	Jam Nut
17	1	3328-0001	Cap Nut
18	1	1022-0266	Lock Nut
19	2	1024-0510	Spring Pin
20	2	1102-1003	U-Cup
21	2	1019-1208	Socket Head Shoulder Bolt
22	1	1022-0162	Nut
23	4	1023-0311	Lock Washer

KOBELT

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