

HYDRO-THROTTLE CONTROL INSTALLATION INSTRUCTIONS

DESCRIPTION

Muncie's STA-9020 Hydro-Throttle Control, used in conjunction with hydraulic powered equipment, will automatically advance engine speed to a pre-selected R.P.M.

The STA-9020 Hydro-Throttle Control is connected into the hydraulic pressure line between the pump and control valve. Activation of any spool of the control valve will cause a pressure build-up in the pressure sensing part of the STA-9020. The internal piston, moving against the leaf springs, causes the springs to pull the throttle linkage to advance the engine speed.

When the control valve is de-activated, pressure drops and allows the STA-9020 to release its pull against the throttle linkage, returning the engine speed to idle. Note: For use on tandem pumps, incorporate Muncie's HSV-250 shuttle valve to isolate two circuits.

Note: For use on tandem pumps, incorporate Muncie's HSV-250 shuttle valve to isolate two circuits.



FULLY ADJUSTABLE

The Muncie STA-9020 Hydro-Throttle is fully adjustable to meet a wide variance of operating conditions and system requirements.

The **spring rate** is adjustable by moving the fulcrum screw (5) and changing the number of leaf springs (three are furnished).

Spring tension is adjustable by changing the adjusting screw (4) at the base of the casting.

The **amount of travel** of the accelerator rod is adjustable by changing the activating rod (9) from spring hold 4 through 1 and by changing the amount of cable slack at engine idle.

The Hydro-Throttle was shipped to you assembled in a medium configuration. The table below indicates five variations of settings. Your unit is set up for variation 2. Try this variation first unless prior installations have indicated another set up is best for your application.

ADJUSTMENT TABLE

Variation Number	No. of Springs	Fulcrum Hole	———Spring Tension ———			Actuating Rod
			* Turns	* Pressure	Rate	Hole Location
1	3	А	3	1100	11X	4
2	3	В	3	780	3X	4
3	3	С	2-1/2	640	Normal	4
4	2	С	2	370	3/4X	4
5	2	D	5⁄8	300	1/4X	4

*Note: Apply turns from when the screw (4) just begins to deflect the spring at zero load. Pressure is approximate when piston will begin to move.

INSTALLATION INSTRUCTIONS

- 1. Attach the "L" shaped mounting bracket to the control (1).
- 2. Mount the bracket to the engine so that the cable will be in line with the accelerator rod. Modify or bend the mounting bracket if necessary.
- **3.** Attach the cable (10) and actuating rod assembly (9) to hole 4 of the leaf spring.
- **4.** Mount the clamp (11) to the throttle rod and attach cable eyelet to one of the clamp studs.
- 5. Install a tee in the hydraulic line between the pump and control valve. This tee should be as close as possible to the valve.
- 6. Connect a ¼" (minimum) high pressure hose between the tee and the pressure sensing port of the Hydro-Throttle control. Use a small amount of sealer on male threads only. DO NOT USE TEFLON TAPE. Do not allow any sealer to enter the piston area of the throttle control.

YOU ARE NOW READY TO ADJUST THE HYDRO-THROTTLE.

ADJUSTMENT PROCEDURE

- 1. Start engine and engage PTO and pump, but do not energize any control valves yet. Allow system to warm up and run at idle without choke (slow idle).
- 2. Air bleed the pressure line by cracking the fitting at the Hydro-Throttle control.

- **3.** Turn speed adjusting screw (7) in until it touches spring. Then turn out one turn temporarily to limit stroke and prevent engine overspeeding.
- Activate a highly loaded valve circuit. (Bottom out a cylinder to trip the pressure relief valve.) The Hydro-Throttle will attempt to pull accelerator rod.
- 5. Turn speed adjusting screw (7) outward until the desired engine speed (under load) is reached. Tighten lock nut (3).
- 6. Return valve to neutral position. The Hydro-Throttle will allow the engine to return to idle. If not, see Trouble Shooting Guide for probable causes.
- 7. Determine which hydraulic circuit produces the lowest pressure. (Lowering outriggers, boom swing, etc.) Operate this circuit and see if Hydro-Throttle will pull accelerator rod. If not, see Trouble Shooting Guide for probable cause.



STA-9020 PARTS LIST

ITEM	QTY	PART NO.	DESCRIPTION
1	1	28T35118	Bracket
2	1	47TA3790	Piston Assembly
3	1	22T35145	Nut, Jam %-16
4	1	19T35127	Screw 3/8-16 x 2.00 Spring Tension Adjusting
5	1	19T35133	Screw, Fulcrum
6	1	01T35641	Housing (for Screw-In Liner)
7	1	19T35141	Screw %-16 x 1.00 Speed Adjusting
8	3	27T35130	Spring, Leaf
9	1	47TA3796	Rod, Actuating, with Nuts and Set Screws
10	1	47TA3794	Cable Assembly
11	1	47TA3795	Clamp
12	1	47TA3792	Rod/Cable/Clamp Assembly
13	2	21T35143	Lockwasher
14	2	19T35144	Capscrew ⁵ /16-24 x .75 Grade 5
NS*	1	28T35648	Screw-In Liner

TROUBLE SHOOTING HINTS

A. Problem: Engine Does Not Idle But Speeds Up When PTO Is Engaged

Probable Cause

- 1. Control lever stuck open.
- 2. Low leaf spring tension.
- 3. Cold oil.

B. Problem: Engine Does Not Speed Up When Light Load Is Applied

Probable Cause

- 1. PTO not engaged.
- 2. Air in sensing line.
- 3. Connecting cable.
- 4. Stops on speed screw.
- 5. Hot oil.
- 6. Your engine throttle linkage.
- 7. Circuit pressure is too low.
- 8. Excessive leaf spring tension.
- 9. Excessive leaf spring rate.

Remedy

Remedy

1. Return all valves to neutral.

2. Repeat calibration.

1. Engage PTO.

3. Warm oil.

- 2. Bleed line. Crack fitting at control.
- 3. Reduce slack to minimum.
- 4. Adjust screw.
- 5. Allow oil to cool.
- 6. Oil & repair. Check manufacturer for lighter spring if it's excessive.
- 7. Revise plumbing to increase spread between your circuit and by-passing pressures.
- 9. Reduce spring rate. See adjustment table.

C. Problem: Engine Does Not Return To Idle After A Load Is Applied

Probable Cause

- 1. Engine speed excessive.
- 2. Your engine.
- 3. Connecting cable.
- 4. Low leaf spring rate.
- 5. Low leaf spring rate.
- 6. Excessive by-passing pressure.

Remedy

- 1. Reset speed screw adjustment.
- 2. Make sure it can idle.
- 3. Check for slack.
- 4. Increase spring rate. See adjustment table.
- 5. Repeat calibration.
- 6. Remove "bottlenecks" or increase line size downstream of the control connection.

WARNING: The Muncie Hydro-Throttle is only to be operated when the vehicle is stationary and the parking brake is set. The installer is responsible for providing a lockout system which makes the Hydro-Throttle inoperable if the parking brake is not set and the transmission is not in neutral.



Member of the Interpump Group IN81-10 (Rev. 06-16)

8. Repeat calibration.