



-LASER-TECH-Model 312

OPERATING MANUAL

OVERVIEW ❖❖❖❖

The 312 Machine Control System is a powerful addition to land leveling and earth moving machinery, yet is easy to use. Some of the unique features are listed below:

- ◆ AUTOMATED CONTROL OF “ON/OFF” AND “PROPORTIONAL” VALVES.
- ◆ ADJUSTMENTS FOR BLADE UP AND DOWN SPEED
- ◆ PRESSURE COMPENSATED PUMP ACTIVATION OUTPUT.
- ◆ SENSOR “CENTER SENSITIVITY” ADJUSTMENT.
- ◆ AUDIBLE INDICATION OF SETTING CHANGES INPUT OR LASER SIGNAL PRESENCE.
- ◆ 12 OR 24 VOLT OPERATION (SEE NOTE)
- ◆ COMPACT SIZE FOR EASY MOUNTING.

FRONT PANEL SWITCHES ❖❖❖❖

POWER:

TOGGLES POWER ON AND OFF

AUTO:

ACTIVATES THE AUTOMATIC MODE. THE BLADE ELEVATION IS CONTROLLED BY THE LASER/MACHINE CONTROL SYSTEM.

BLADE UP / DOWN:

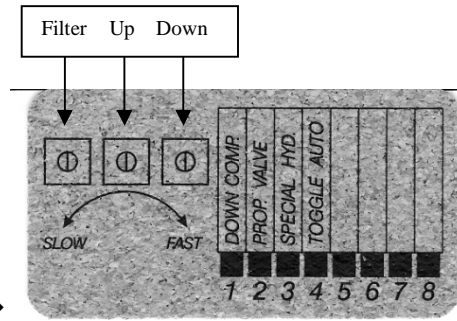
FOR MANUAL BLADE ELEVATION CONTROL. TOGGLING THE SWITCH DISENGAGES THE AUTOMATIC MODE.

HORN

THE HORN SOUNDS WHENEVER SWITCH SETTINGS ARE CHANGED. IF THE SWITCH IS “ON”, THE HORN WILL ALSO SOUND WHEN A LASER SIGNAL IS ON THE SENSOR. (DEFAULT=OFF)

MAST UP/DOWN

TOGGLE THE SWITCH TO CHANGE THE SENSOR ELEVATION IF THE OPTIONAL ELECTRIC MAST IS INCLUDED WITH THE SYSTEM.



ADJUSTABLE ITEMS ❖❖❖❖

SENSITIVITY

(LEGEND UNDERSIDE OF COVER)

THE FIRST POTENTIOMETER SETS THE SENSOR “CENTER” CHANNEL SENSITIVITY. CLOCKWISE ROTATION MAKES A FASTER RESPONDING NARROWER CENTER. (DEFAULT=MIDWAY)

VALVE SPEED, UP

THE SECOND POTENTIOMETER SETS THE “NEAR CENTER” BLADE UP SPEED. THE OVERALL SPEED IS SET WITH HYDRAULIC FLOW CONTROLS. (DEFAULT=MIDWAY)

VALVE SPEED, DOWN

THE THIRD POTENTIOMETER SETS THE “NEAR CENTER” BLADE DOWN SPEED. THE OVERALL SPEED IS SET WITH HYDRAULIC FLOW CONTROLS. (DEFAULT=MIDWAY)

DOWN COMP

SWITCH “ON” ACTIVATES THE HYDRAULIC PUMP DURING THE “BLADE DOWN” SIGNAL. BECAUSE OF THE SCRAPER BOWL WEIGHT, THIS SWITCH IS NORMALLY OFF. (DEFAULT=ON)

PROPORTIONAL VALVE

SWITCH ON IF A PROPORTIONAL VALVE, INSTEAD OF THE ON/OFF TYPE, IS USED. (DEFAULT=OFF)

OTHER FEATURES ❖❖❖❖❖

360° SENSOR DISPLAY:

THE 7 SENSOR CHANNELS ARE DISPLAYED WITH BRIGHT LED'S FOR DAY OR NIGHT OPERATION. THEY INDICATE "OFF SENSOR" AND SHOW THE DIRECTION THE SENSOR LAST RECEIVED THE LASER SIGNAL

MAST DRIVE:

THIS IS AN OPTION TO THE 312 SYSTEM. THE MAST "UP/DOWN" SWITCH INCORPORATES A "SMART ELECTRIC MAST DRIVE". IT "PULSE STARTS" THE MAST WITH SLOW POSITIVE MOVEMENTS FOR ACCURATE SETTINGS.

SOLENOID DRIVE OUTPUTS:

ALL POWER OUTPUTS HAVE RESETTING FUSE LINKS. IF A SHORT CIRCUIT OCCURS IN ONE OF THE FUNCTIONS, ONLY THAT FUNCTION WOULD BE DISABLED. WHEN THE PROBLEM IS CORRECTED, THE 312 PANEL WILL AUTOMATICALLY RESTORE POWER. OUTPUTS ARE NORMALLY LOW, DRIVEN TO 12 (OR 24)VDC ON ACTIVATION.

OUTPUT CABLE CONNECTIONS ❖❖❖❖❖

POWER INPUT

| | | |
|---|-------|-------------------------------|
| A | BLACK | CHASSIS GROUND |
| B | RED | 12 OR 24 VDC INPUT (SEE NOTE) |

OUTPUT (14 PIN CONNECTOR)

| | |
|---|-------------------------|
| C | SOLENOID, COMMON GROUND |
| D | SENSOR, POWER |
| E | SENSOR, GROUND |
| F | SENSOR, LOW |
| G | SENSOR, HIGH |
| H | BLADE, DOWN |
| K | COMPENSATOR OUTPUT |
| L | MAST, UP |
| M | MAST, DOWN |
| N | BLADE, UP |

SPECIFICATIONS ❖❖❖❖❖

INPUT POWER:

12 OR 24 VDC OPERATION. (SEE NOTE)
NEGATIVE GROUND.
NOMINAL 10 AMP MINIMUM CURRENT

REQUIREMENT.

15 AMP MAX WITH MAST DRIVE OUTPUTS.
*NOTE: 12VDC MAST MOTOR AND SOLENOID VALVE COILS ARE
STANDARD. SPECIFY 24VDC IF REQUIRED.*

OUTPUT POWER:

5 AMP MAXIMUM PER VALVE SOLENOID OR MAST DRIVE.
2.5 AMP MAXIMUM IF SIGNAL DURATION EXCEEDS TWO MINUTES.
1 AMP MAXIMUM OUTPUT DURING SHORT CIRCUIT CONDITION.

TEMPERATURE:

-20 TO 70 DEGREES C