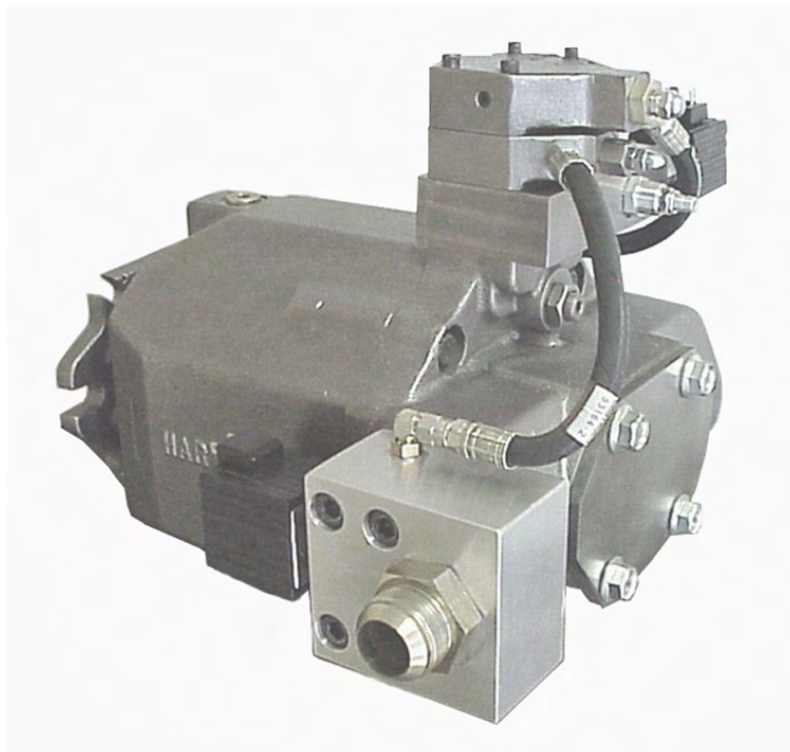
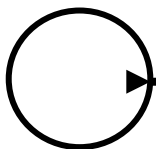




PL-PH, Adjustable Bias, Load Sensor & Pressure Compensator Control for PVX Series Pumps



*Hydraulic pumps & motors with a **hart of gold**™*



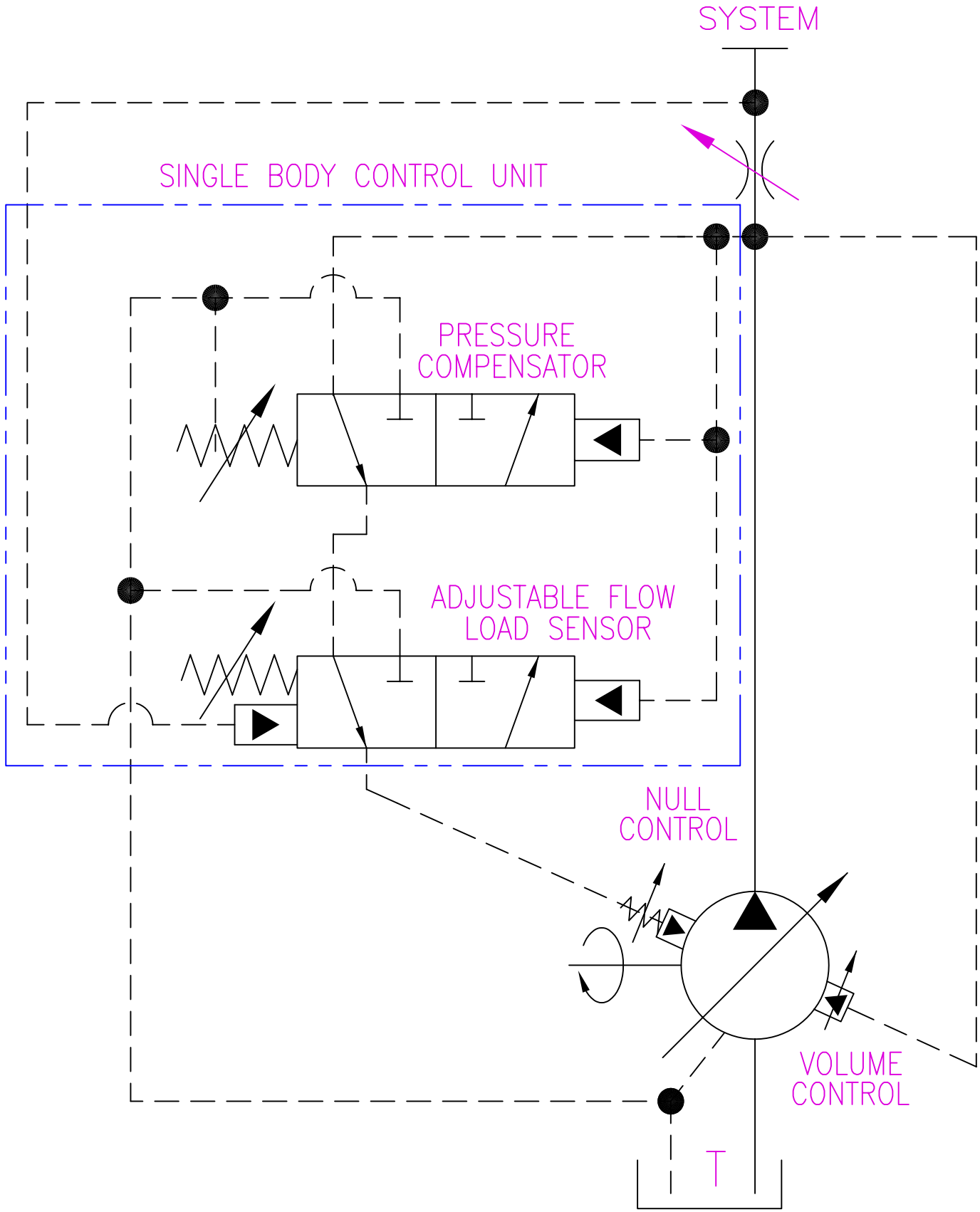
**604 PROGRESS DRIVE, HARTLAND, WI 53029
USA**

Phone: (262) 367-4299

FAX: (262) 367-5645

URL: www.hartmanncontrols.com

E-mail: sales@hartmanncontrols.com



NOT TO SCALE

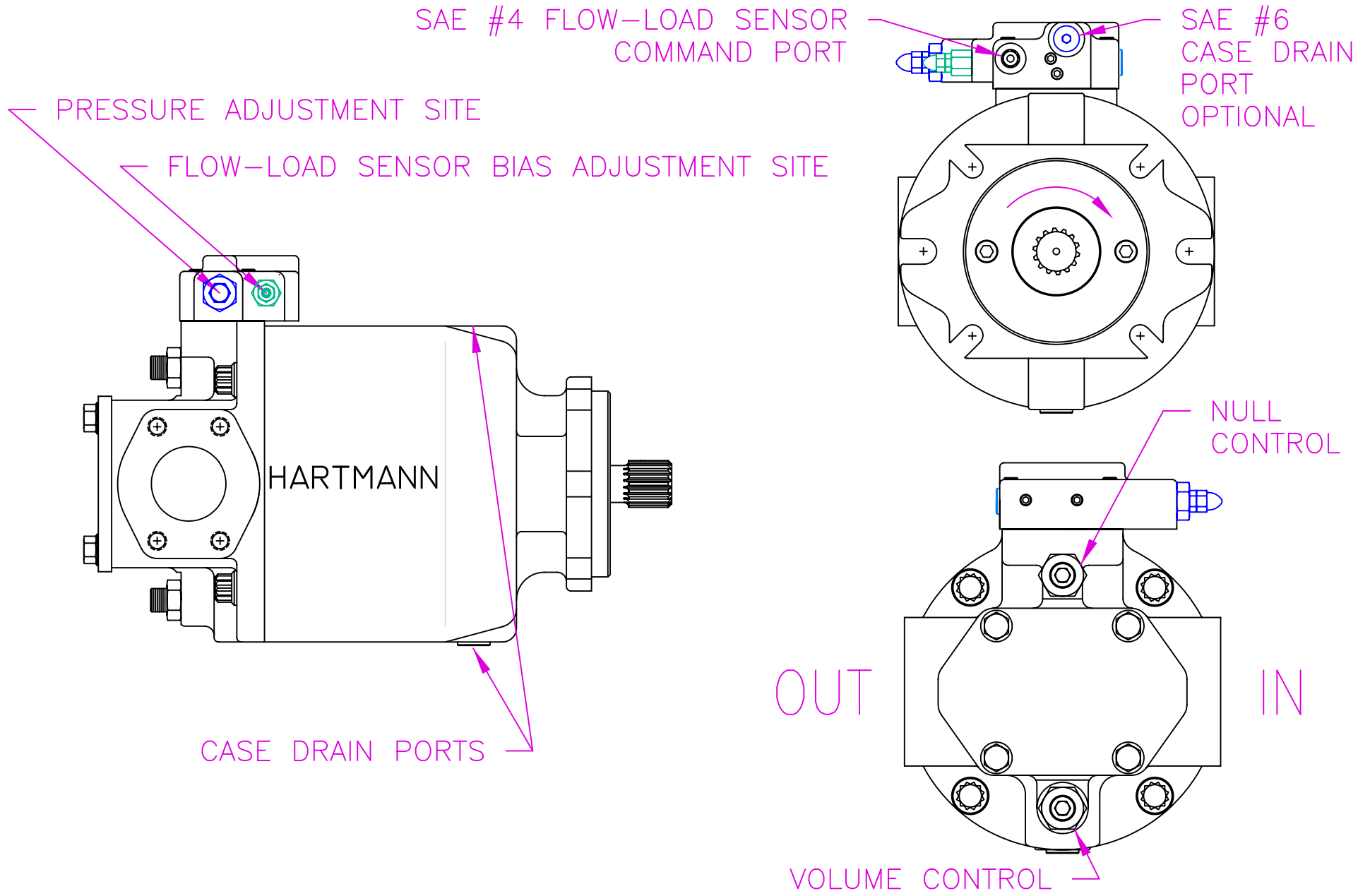
THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF HARTMANN CONTROLS INC., AND IS NOT TO BE USED IN A MANNER DETRIMENTAL TO HARTMANN CONTROLS INC.

DWG: SCMPLPH

TITLE: ADJUSTABLE BIAS, LOAD SENSOR AND PRESSURE COMPENSATOR UNIT

604 PROGRESS DRIVE
HARTLAND, WI 53029

CONTROLS INC.



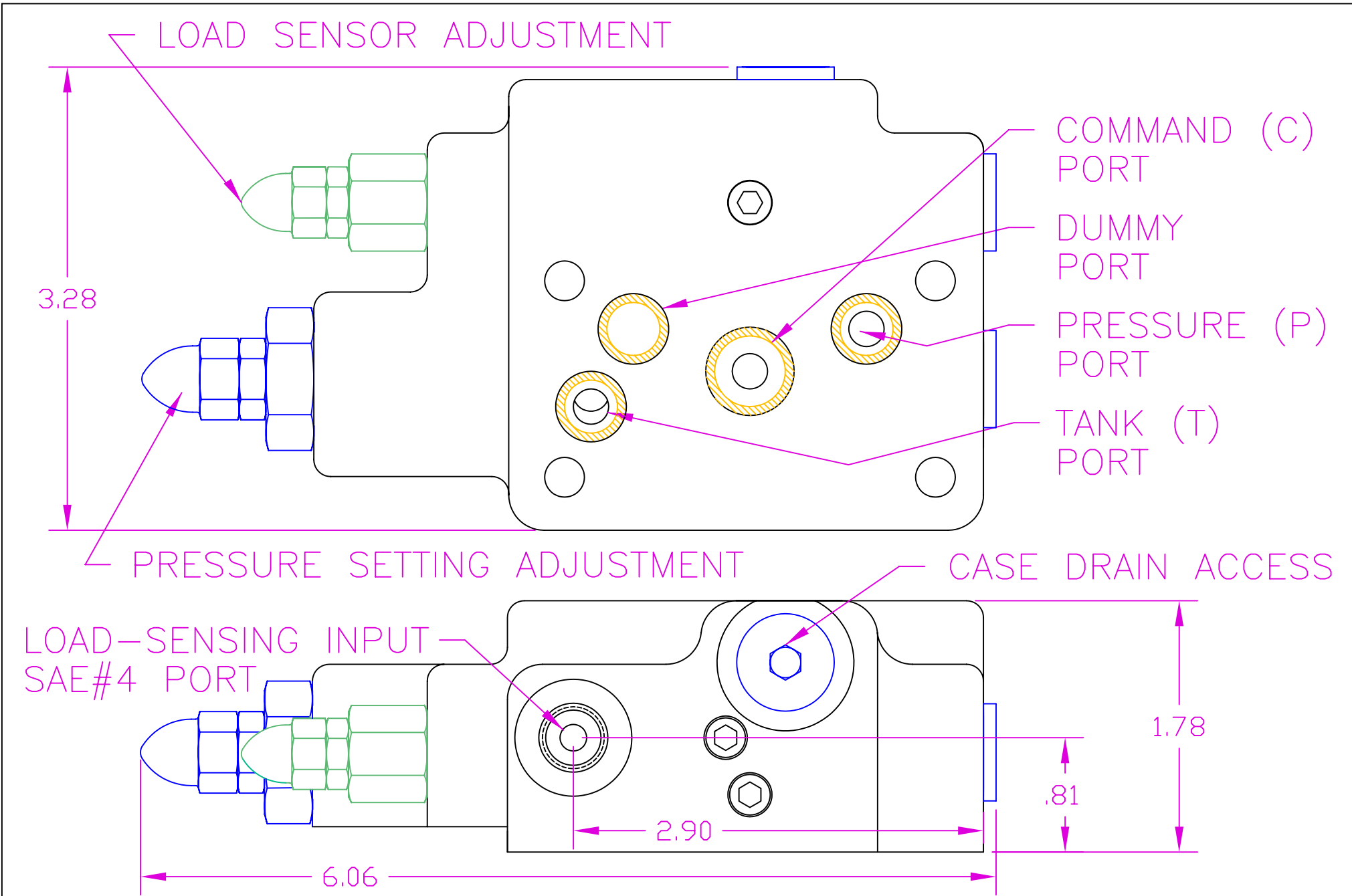
NOT TO SCALE

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF
HARTMANN CONTROLS INC., AND IS NOT TO BE USED IN A
MANNER DETRIMENTAL TO HARTMANN CONTROLS INC.

DWG NO: PLPHPUMP

TITLE: PVX PUMP WITH AN
ADJUSTABLE LOAD SENSOR
& COMPENSATOR CONTROL





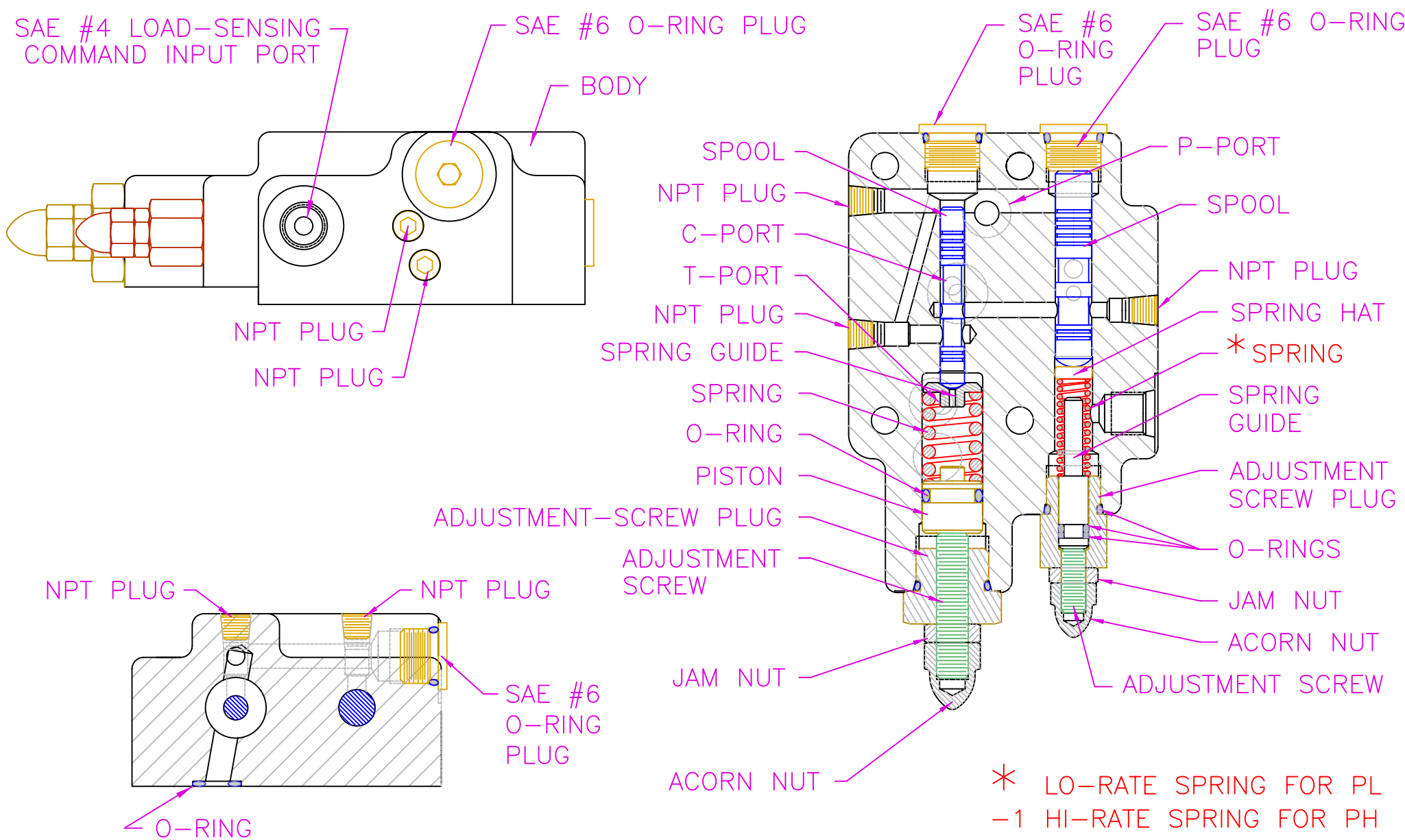
NOT TO SCALE

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF HARTMANN CONTROLS INC., AND IS NOT TO BE USED IN A MANNER DETRIMENTAL TO HARTMANN CONTROLS INC.

DWG NO: 53079DIM

TITLE: OUTLINE OF A JOINT PRESSURE COMPENSATOR & LOAD SENSOR CONTROL





NOT TO SCALE

TITLE:

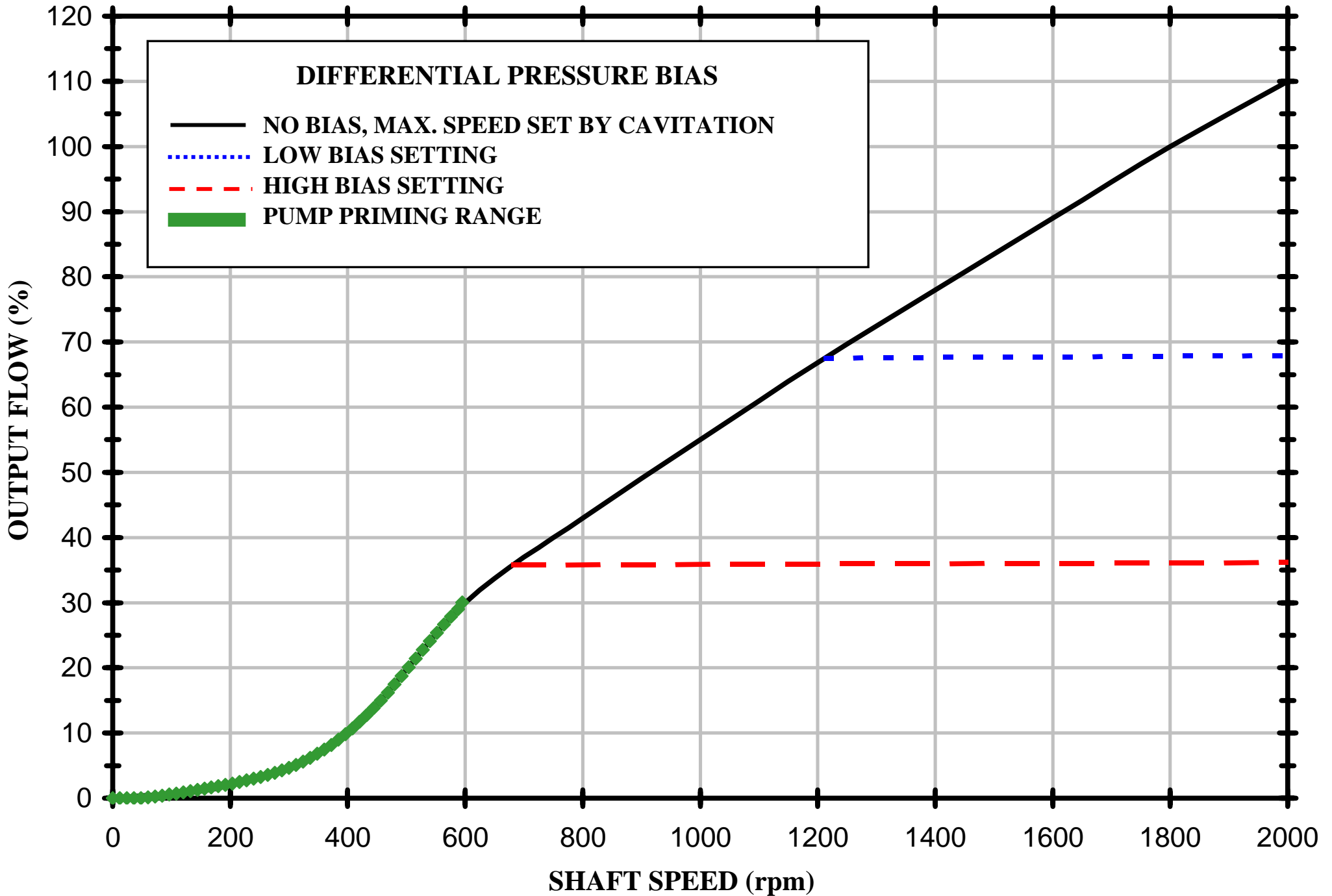
LAYOUT OF A JOINT
PRESSURE COMPENSATOR AND
ADJUSTABLE FLOW-LOAD SENSOR CONTROL

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF
HARTMANN CONTROLS INC., AND IS NOT TO BE USED IN A
MANNER DETRIMENTAL TO HARTMANN CONTROLS INC.

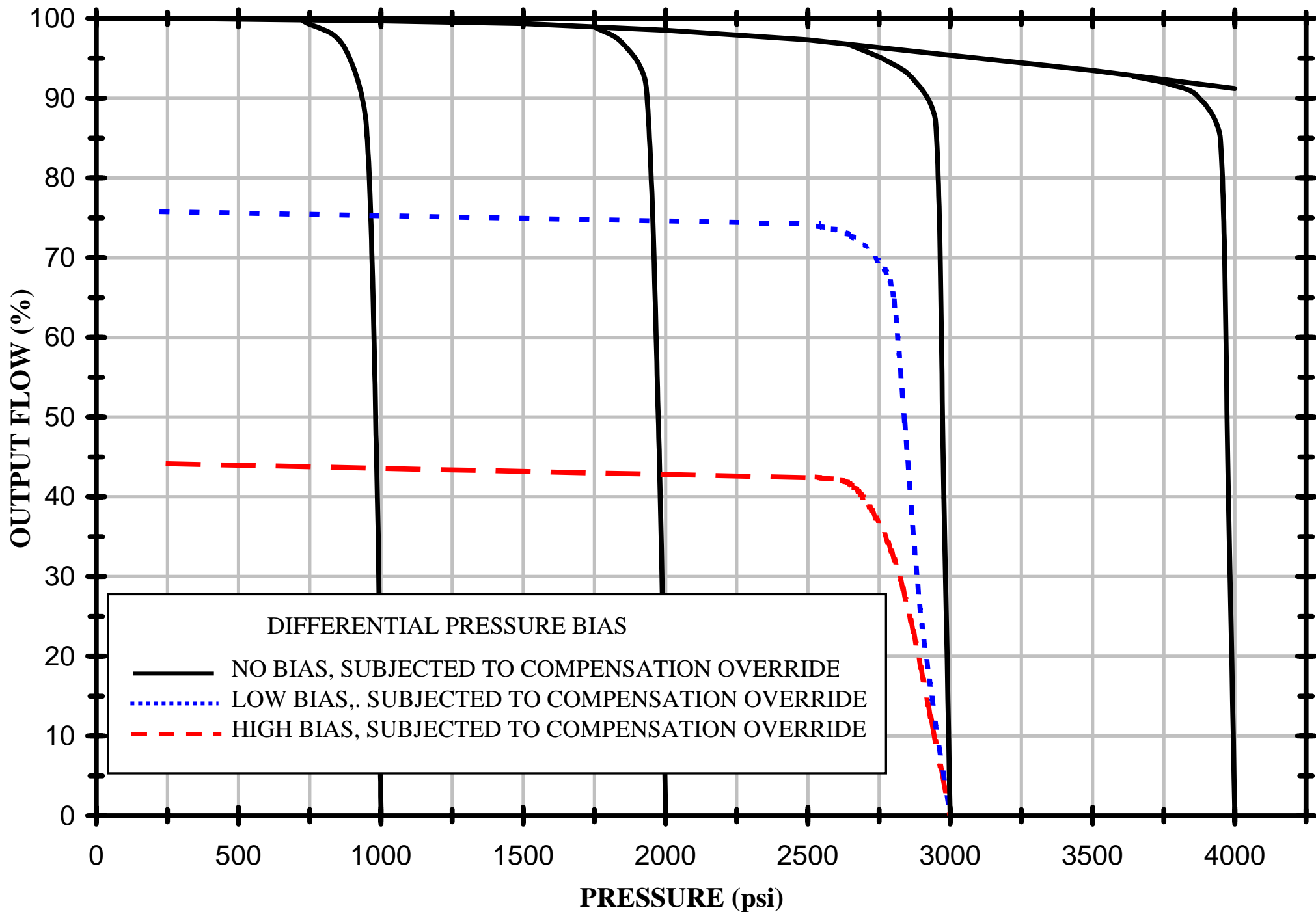
DWG NO: 53079LAY

HARTMANN
CONTROLS INC.
604 PROGRESS DRIVE
HARTLAND, WI 53029

**SPEED LOADING RESPONSE OF A LOAD-SENSOR GOVERNED
VARIABLE DISPLACEMENT PUMP; ISO 32 OIL @ 115° F**



PRESSURE LOADING RESPONSE OF A LOAD-SENSOR GOVERNED VARIABLE DISPLACEMENT PUMP; ISO 32 OIL @ 115° F

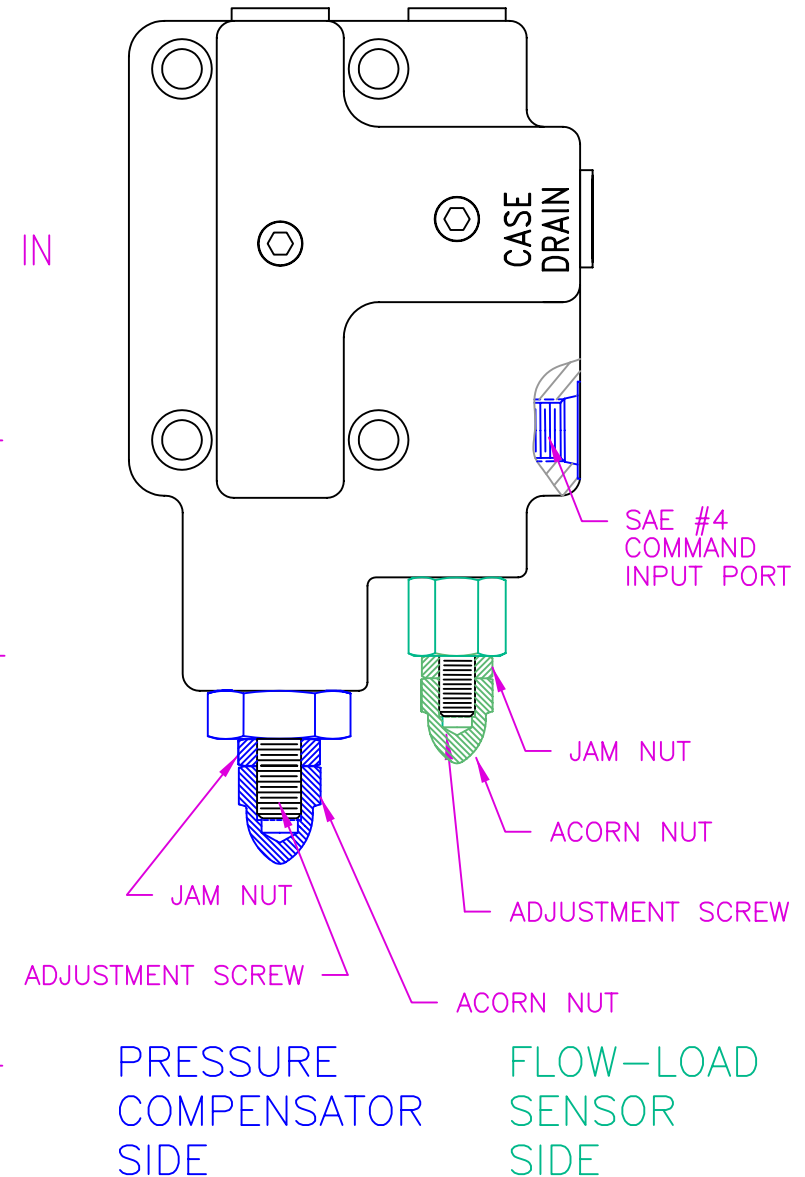


PRESSURE SETTING ADJUSTMENT

1. UNJAM AND REMOVE ACORN NUT
2. INSERT ALLEN WRENCH INTO SCREW HEAD
3. HOLDING TIGHT THE ALLEN WRENCH, UNLOCK JAM NUT
4. WATCHING THE PRESSURE GAUGE, TURN ALLEN WRENCH GENTLY IN INCREMENTS OF LESS THAN 45°:
 - A. CLOCKWISE TURN INCREASES PRESSURE SETTING
 - B. COUNTER-CLOCKWISE TURN DECREASES PRESSURE SETTING
5. WHEN DONE, HOLD ALLEN WRENCH TIGHTLY AND LOCK JAM NUT
6. COVER THE SCREW WITH ACORN NUT AND JAM IT

FLOW LOAD-SENSING BIAS ADJUSTMENT

1. CONNECT/SECURE LOAD SENSING COMMAND LINE TO THE PORT
2. UNJAM AND REMOVE ACORN NUT
3. INSERT ALLEN WRENCH INTO SCREW HEAD
4. HOLDING TIGHT THE ALLEN WRENCH, UNLOCK JAM NUT
5. WATCHING THE FLOW METER, TURN ALLEN WRENCH GENTLY IN INCREMENTS OF LESS THAN 15°:
 - A. CLOCKWISE TURN INCREASES FLOW SETTING
 - B. COUNTER-CLOCKWISE TURN DECREASES FLOW SETTING
6. WHEN DONE, HOLD ALLEN WRENCH TIGHTLY AND LOCK JAM NUT
7. COVER THE SCREW WITH ACORN NUT AND JAM IT



NOT TO SCALE

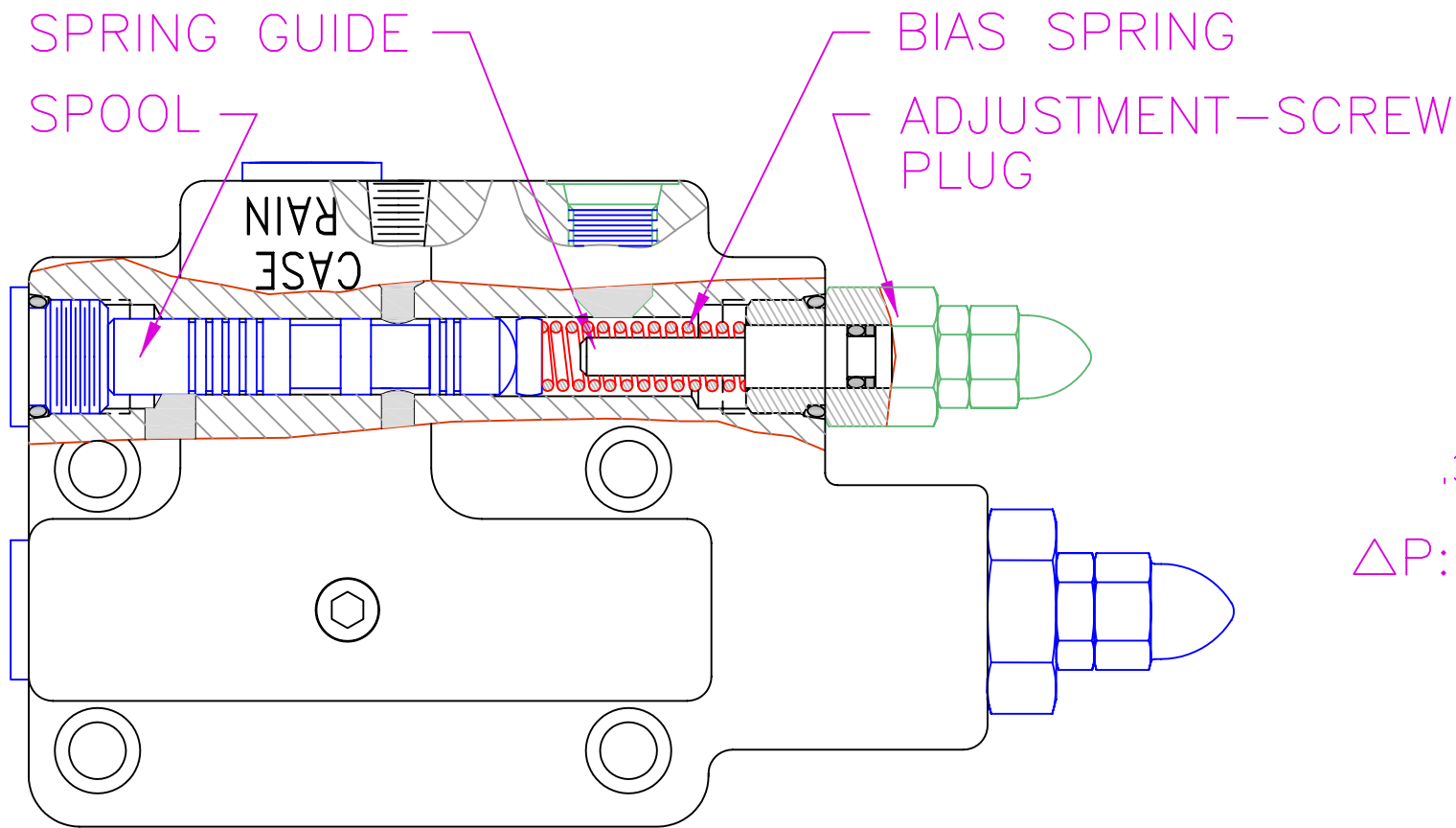
TITLE:

ADJUSTMENT INSTRUCTIONS
FOR PRESSURE AND FLOW-LOAD
BIAS SETTINGS IN A PL/PH CONTROL

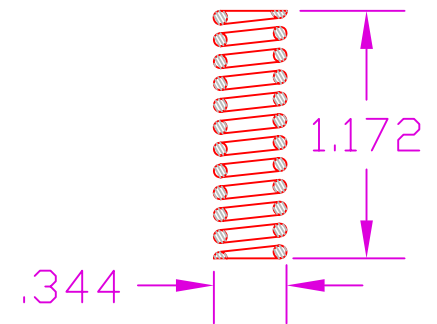
THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF
HARTMANN CONTROLS INC., AND IS NOT TO BE USED IN A
MANNER DETRIMENTAL TO HARTMANN CONTROLS INC.

DWG NO: 53079ADJUSTMENT

HARTMANN
CONTROLS INC.
604 PROGRESS DRIVE
HARTLAND, WI 53029

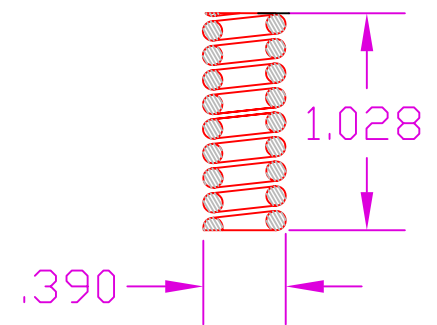


LOW-RATE
SPRING



$\Delta P: 170-400$ PSI

HIGH-RATE
SPRING



$\Delta P: 400-700$ PSI

1. UNJAM ADJUSTMENT-SCREW PLUG AND UNSCREW IT
2. PULL OUT THE GUIDE AND REMOVE CURRENT SPRING
3. ENGAGE THE DESIRED SPRING ON THE GUIDE
4. INSERT PLUG ASSEMBLY BACK INTO THE BODY
5. SLOWLY SREW IN THE ASSEMBLY AND JAM THE PLUG
6. IF NECESSARY, ADJUST BIAS-SPRING TENSION

NOT TO SCALE

TITLE: BIAS-SPRING CHANGE
IN AN ADJUSTABLE
PL/PH CONTROL

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF
HARTMANN CONTROLS INC., AND IS NOT TO BE USED IN A
MANNER DETRIMENTAL TO HARTMANN CONTROLS INC.

DWG NO: 53079SERVICE

HARTMANN
CONTROLS INC.
604 PROGRESS DRIVE
HARTLAND, WI 53029