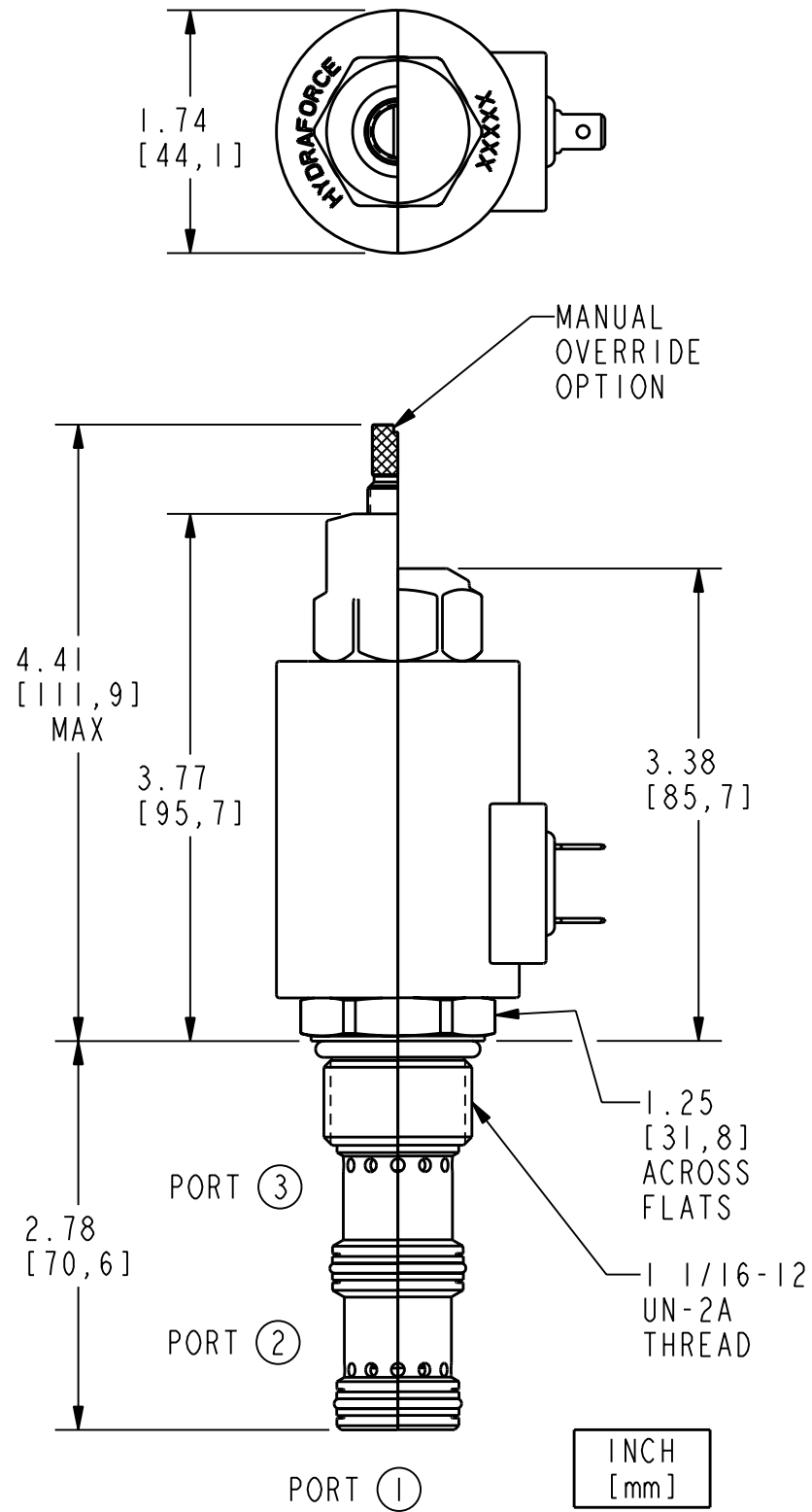


# OUTLINE



CARTRIDGE WEIGHT: 0.79 lb [0,36 kg]

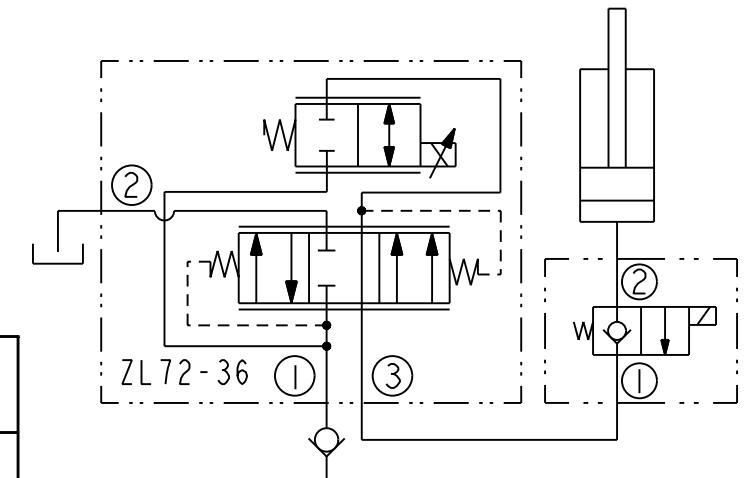
# DESCRIPTION AND SPECIFICATIONS

A SOLENOID OPERATED, PRESSURE COMPENSATED, SPOOL TYPE, NORMALLY CLOSED PROPORTIONAL BI-DIRECTIONAL PRIORITY TYPE FLOW CONTROL VALVE PROVIDES PRIORITY REGULATED FLOW TO PORT ③ WITH INPUT AT PORT ① AND BYPASS AT PORT ②, OR REGULATED FLOW FROM PORT ③ TO PORT ② WITH INPUT TO PORT ① BLOCKED. REGULATED FLOW IS PROPORTIONAL TO ELECTRIC CURRENT APPLIED TO SOLENOID. THE VALVE IS INTENDED FOR USE IN MINERAL BASED OR SYNTHETIC HYDRAULIC FLUIDS WITH LUBRICATING PROPERTIES.

- MAX. OPERATING PRESSURE: 3500 psi [240 bar]
- REGULATED FLOW RATE: 12 gpm [0 - 45 lpm]
- INPUT FLOW RATE: 15 gpm [57 lpm]
- LEAKAGE: 0.10 gpm [0.38 lpm] MAX AT 0 CURRENT
- CAVITY: VC12-3

### ELECTRICAL:

COIL VOLTAGE RATING, VDC	RESISTANCE AT 20°C, [Ω]	THRESHOLD CURRENT, [mA]	MAX. CONTROL CURRENT, [mA]
12	4.7	300±100	1600±100
24	19.0	150±50	800±50



**PERFORMANCE, APPLICATION GUIDE AND INSTALLATION**

FOR VALVE TYPICAL PERFORMANCE CURVES, APPLICATION GUIDE, CAVITY INFORMATION AND INSTALLATION TORQUE:  
SEE SHEET 2 OF 2

### ORDERING INFORMATION:

BASE MODEL NUMBER: **ZL72-36 X - 0 - X - XX XX**

OPTION (S): NONE BLANK  
MANUAL OVERRIDE M  
CARTRIDGE ONLY 0

SEALS: BUNA N, VITON V, POLYURETHANE P

TERMINATIONS: DS DUAL SPADES, DG DIN 43650, DL LEADWIRES (2), DW LEADS WITH WEATHERPAK CONNECTORS

VOLTAGE: 0 - LESS COIL, 12 - 12V DC (5.0 Ohm COIL), 24 - 24V DC (20.0 Ohm COIL)

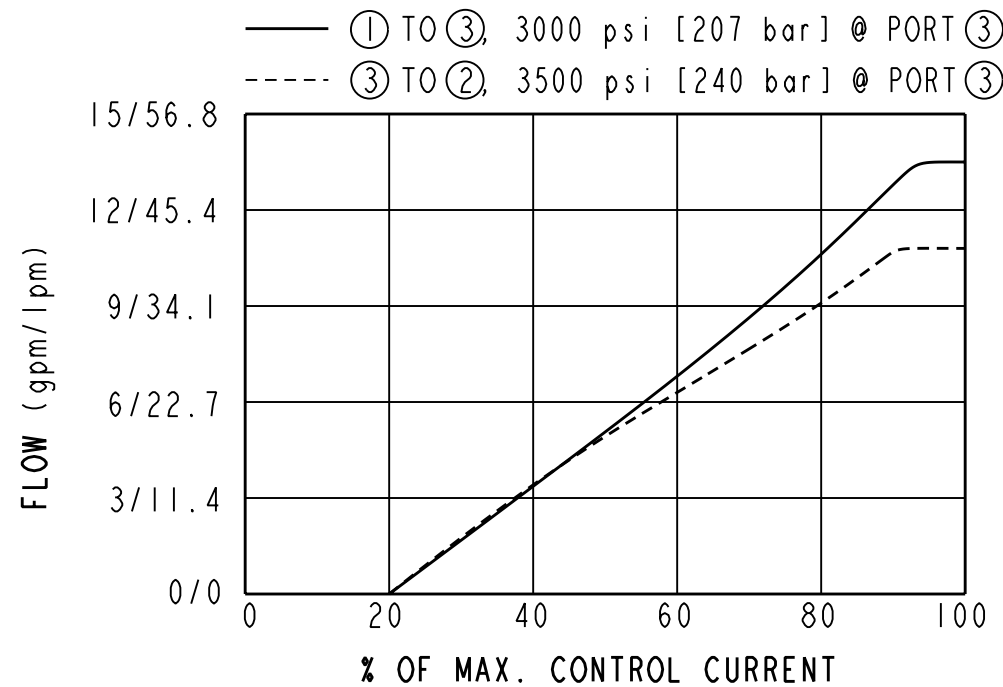
SCALE 3:4 DO NOT SCALE DRAWING	THIRD ANGLE PROJECTION	
THIS DRAWING IS THE PROPERTY OF HYDRAFORCE, INC., 500 BARCLAY BOULEVARD, LINCOLNSHIRE, IL 60069, AND IS LOANED SUBJECT TO RETURN UPON DEMAND. IT IS NOT TO BE REPRODUCED OR USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF HYDRAFORCE. HYDRAFORCE HYDRAULICS, LTD. IS A WHOLLY OWNED SUBSIDIARY OF HYDRAFORCE, INC.	DESCRIPTION <b>N.C. BI-DIRECTIONAL PRIORITY FLOW REGULATOR</b> U.S. PATENT No. 6,116,263	
DRAWING NUMBER <b>ZL72-36X-0-X-XXXX</b>		REV ECN 030790 BY AG/ZL DATE 21JUL2003

SEAL KIT  
SK12-3X-MM

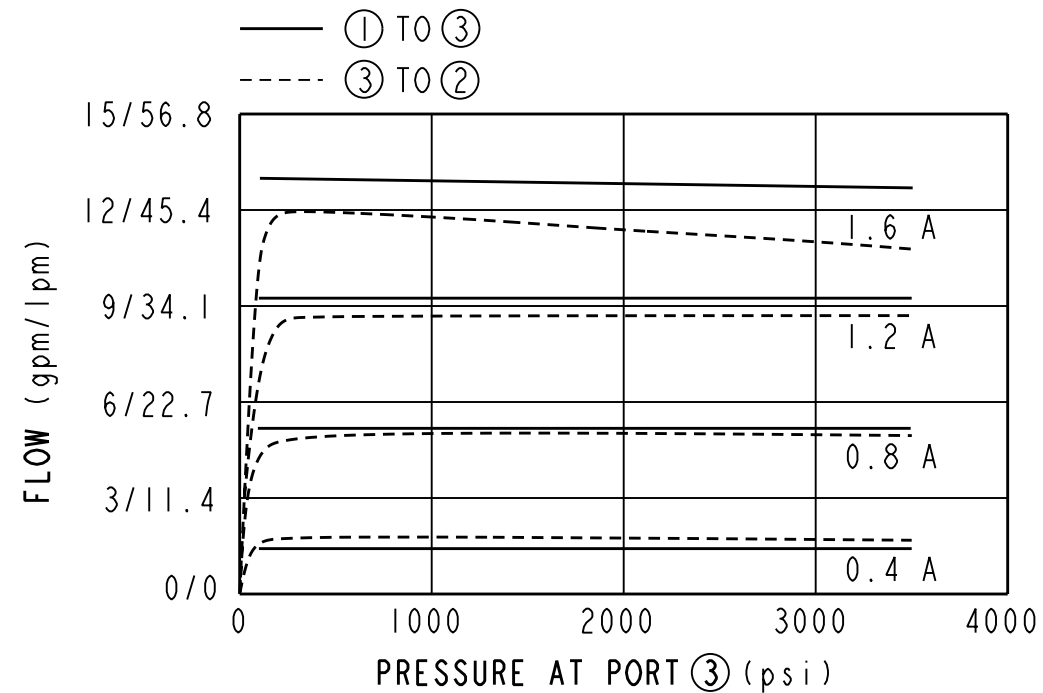
## TYPICAL PERFORMANCE

INLET FLOW 15 gpm [57 lpm], PORT ② CONNECTED TO TANK, 12V COIL, 110 Hz PWM CONTROLLER

### REGULATED FLOW VS CURRENT



### REGULATED FLOW VS PRESSURE



## APPLICATION GUIDE

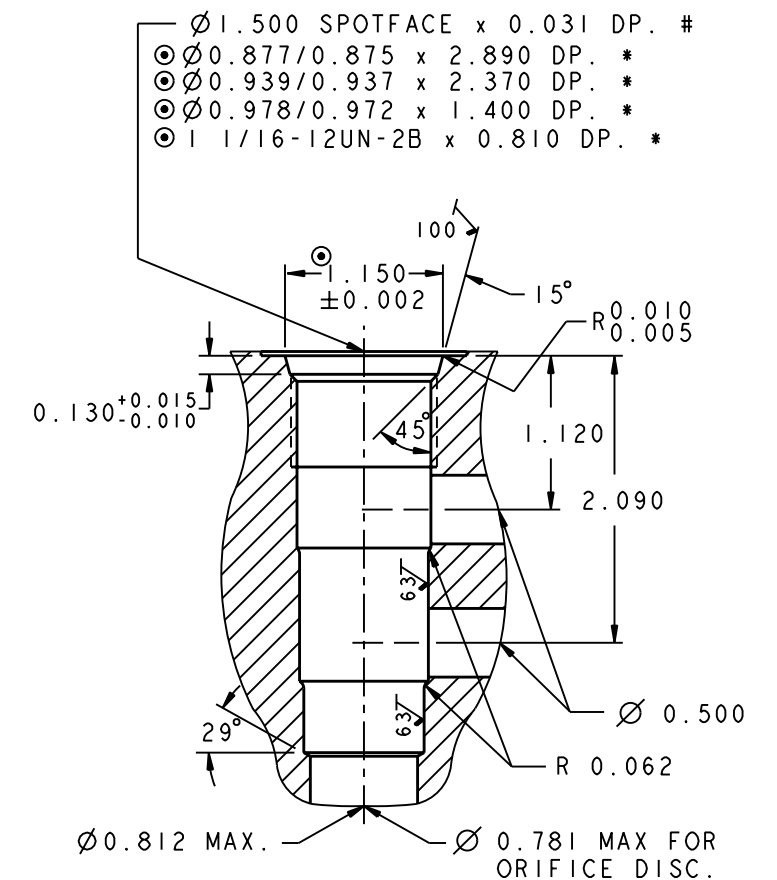
THE VALVE IS INTENDED FOR SINGLE-ACTING CYLINDER APPLICATIONS WHERE LOWERING IS PROVIDED BY GRAVITY FORCE. **ZL72-36 VALVE DOES NOT HAVE ANY MINIMUM LOAD RESTRICTIONS**, PROVIDED THE LOAD IS ENOUGH TO OVERCOME CYLINDER AND OTHER FRICTIONS IN THE SYSTEM. AT LOW LOAD THE LOWERING SPEED CAN BE LOWER THEN AT HEAVIER LOAD IF PRESSURE DROP IS LESS THEN COMPENSATION VALUE OF THE VALVE. IT IS ESSENTIAL FOR HYDRAULIC SYSTEM TO INCLUDE A CHECK VALVE AND A POPPET (SV10-20 TYPE) SOLENOID VALVE CONNECTED AS SHOWN ON THE HYDRAULIC CIRCUIT SYMBOL AND PLACED CLOSE TO ZL VALVE, IF POSSIBLE IN ONE MANIFOLD.

### RECOMMENDED SWITCHING SEQUENCE FOR MOST EFFECTIVE LIFT-LOWER CONTROL:

- **TO LIFT** A LOAD TURN ON THE PUMP FIRST, THEN, AFTER THE RATED PUMP FLOW IS ESTABLISHED, TURN ON ZL VALVE AT REQUIRED CURRENT LEVEL.
- **TO STOP LIFTING** TURN OFF ZL VALVE FIRST, THEN TURN OFF THE PUMP. IF A LIFT COMMAND IS FOLLOWED BY ANOTHER LIFT COMMAND THE PUMP MAY STAY ON. SV VALVE REMAINS IN OFF POSITION ALL THE TIME DURING LIFT MODE.
- **TO LOWER** A LOAD TURN OFF THE PUMP FIRST. THEN, AFTER PUMP FLOW WILL CEASE, TURN ON SV VALVE AND AFTER THAT TURN ON ZL VALVE.
- **TO STOP LOWERING** TURN OFF ZL AND SV VALVES.

## INSTALLATION

### CAVITY VC12-3



- THE ABOVE FEATURES (EXCEPT FOR PILOT DRILL & CROSS DRILL) CAN BE MACHINED SIMULTANEOUSLY WITH A FORM TOOL.
- ⊙ - THESE DIAMETERS TO BE CONCENTRIC WITHIN 0.002 T.I.R. AND PERPENDICULAR TO SPOTFACE WITHIN 0.001 T.I.R.
- \* - DEPTHS ARE FROM SPOTFACE.
- # - UNLESS OTHERWISE SPECIFIED ON MACHINING DRAWING.
- UNSPECIFIED TOLERANCES ARE ±0.005.

### INSTALLATION TORQUE:

CARTRIDGE - 35 ft-lb (47 N-m)  
 COIL NUT - 10-12 ft-lb (14-16 N-m)

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