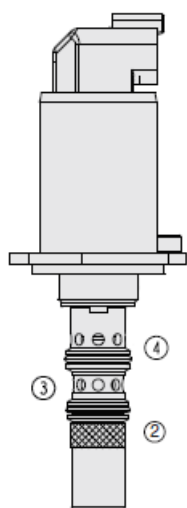




Overview



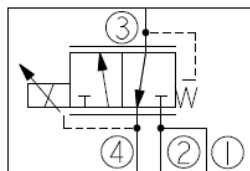
Description

The ts90-g34xx is a pilot operated, spool-type, proportional, pressure reducing relieving valve. It is a 3rd generation HydraForce drop-in, flange mounted cartridge type valve for use with mineral based or synthetic (with lubricating properties) hydraulic fluids. The coil is an integral part of the valve and is not serviceable the regulated pressure is proportional to the input electrical current in the pressure ranges shown.

Features

- Economical drop-in style.
- Optional 233 micron mesh screen.
- Optional lock-down flange.
- Choice of several regulated pressure ratings.
- Several push-on termination options.
- Integral waterproof coil standard, IP69K, 960 hour salt spray per ASTM B117.

Symbol



Ratings

Pressure Ratings

Pressure rating	34.5 bar (500 psi)	
Proof pressure	241 bar (3500 psi)	- Note: Ports 2 and 3
	54 bar (780 psi)	- Note: Port 4
Burst pressure	310 bar (4500 psi)	- Note: Ports 2 and 3 pressurized
	269 bar (3900 psi)	- Note: Port 4 pressurized
Control pressure at maximum control current	14 bar (203 psi)	- Note: TS90-G34A
	20 bar (290 psi)	- Note: TS90-G34B
	30 bar (435 psi)	- Note: TS90-G34C

Flow Ratings

Flow rating	38 lpm (10 gpm)	
Maximum internal leakage	0.40 lpm (0.11 gpm)	- Note: TS90-G34A (de-energized) at: inlet 15 bar (210 psi)
	0.55 lpm (0.15 gpm)	- Note: TS90-G34B (de-energized) at: inlet 21 bar (305 psi)
	0.60 lpm (0.16 gpm)	- Note: TS90-G34C (de-energized) at: inlet 31 bar (450 psi)
Hysteresis per cent	4 %	

Other Ratings

Cycle life	10 million cycles
Environmental rating	Ip69k
Corrosion protection	960 hour salt spray per ASTM b117

Temperature Ratings

Operating fluid temperature	-40 to 149 °C (-40 to 300 °F)	- Note: With HNBR seals
	-26 to 204 °C (-15 to 400 °F)	- Note: With fluorocarbon seals
Storage temperature	-40 to 70 °C (-40 to 158 °F)	
Ambient temperature	-40 to 120 °C (-40 to 248 °F)	



Operating Parameters

Fluids	Mineral based or synthetic hydraulic fluid with lubricating properties
Fluid viscosity range	7.4 to 420 cSt
Maximum operating contamination level	TBD per ISO 4406

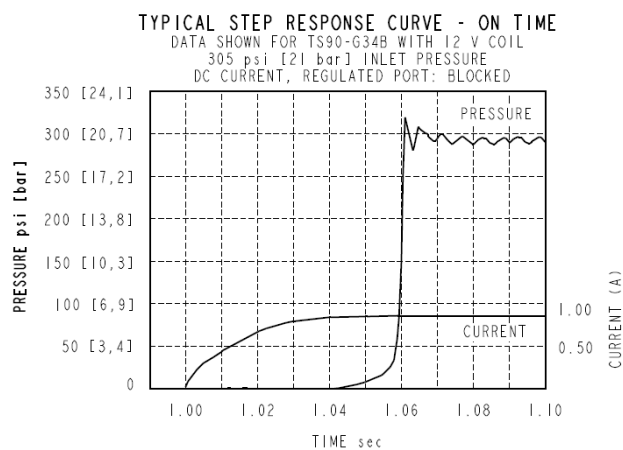
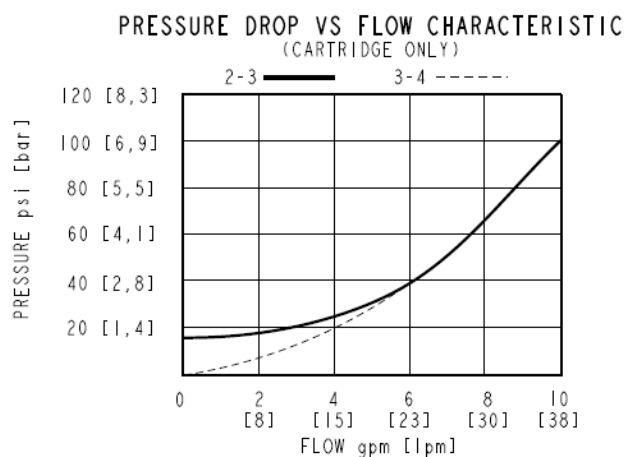
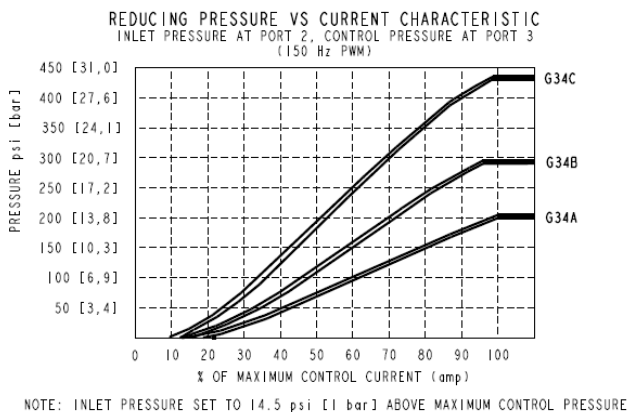
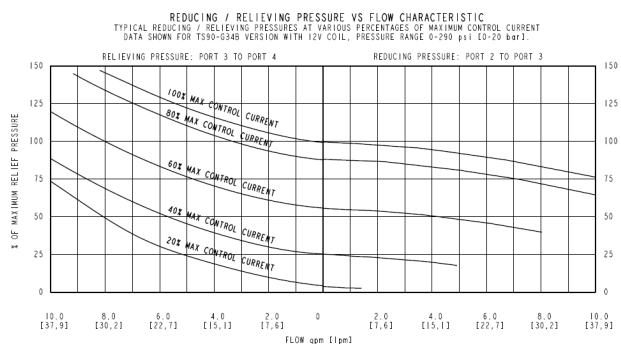
Properties

Unit weight	0.33 kg (0.72 lb)
Internal wetted surface area	226 cm ² (35 in ²)

Electrical Parameters

Maximum control current	1.08 A 0.88 A 0.74 A 0.54 A 0.44 A 0.37 A	- Note: Coil 10 V - Note: Coil 12 V - Note: Coil 14 V - Note: Coil 20 V - Note: Coil 24 V - Note: Coil 28 V
Dither PWM frequency	150 Hz	
Coil resistance	4.83 ohm 7.28 ohm 10.05 ohm 18.35 ohm 29.54 ohm 40.36 ohm	- Note: 10 V coil - Note: 12 V coil - Note: 14 V coil - Note: 20 V coil - Note: 24 V coil - Note: 28 V coil
Valve inductance	58 mH 88 mH 127 mH 235 mH 357 mH 537 mH	- Note: Coil 10 V - Note: Coil 12 V - Note: Coil 14 V - Note: Coil 20 V - Note: Coil 24 V - Note: Coil 28 V

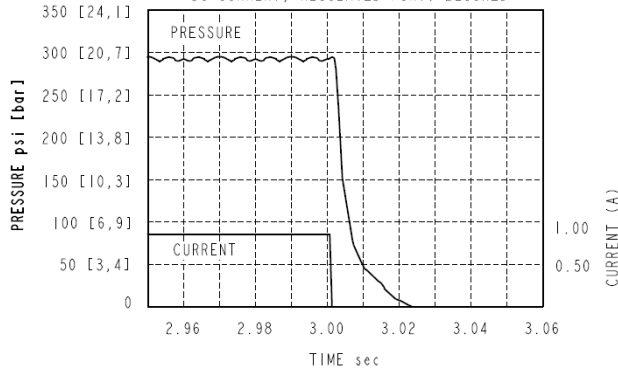
Performance





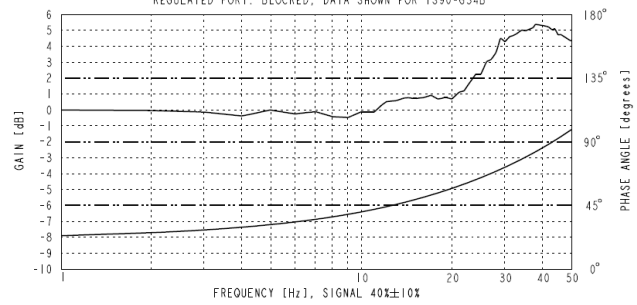
TYPICAL STEP RESPONSE CURVE - OFF TIME

DATA SHOWN FOR TS90-G34B WITH 12 V COIL
305 psi [21 bar] INLET PRESSURE
DC CURRENT, REGULATED PORT: BLOCKED

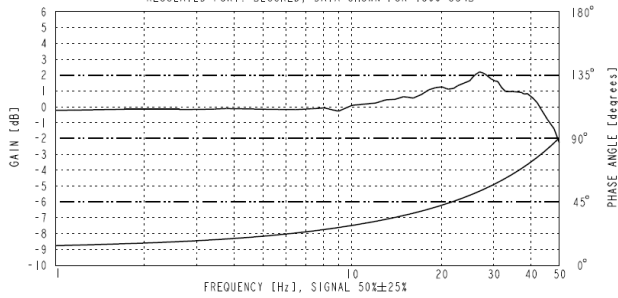


TYPICAL FREQUENCY RESPONSE CURVE

305 psi [21 bar] INLET PRESSURE, DC CURRENT
REGULATED PORT: BLOCKED, DATA SHOWN FOR TS90-G34B

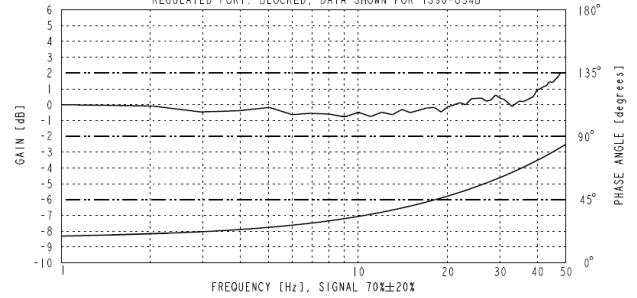


TYPICAL FREQUENCY RESPONSE CURVE
305 psi [21 bar] INLET PRESSURE, DC CURRENT
REGULATED PORT: BLOCKED, DATA SHOWN FOR TS90-G34B

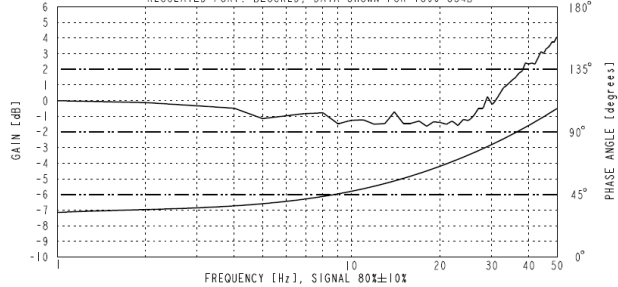


TYPICAL FREQUENCY RESPONSE CURVE

305 psi [21 bar] INLET PRESSURE, DC CURRENT
REGULATED PORT: BLOCKED, DATA SHOWN FOR TS90-G34B

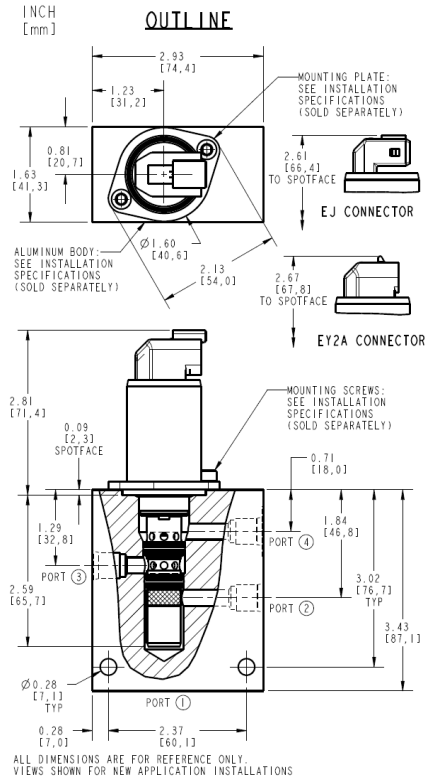


TYPICAL FREQUENCY RESPONSE CURVE
305 psi [21 bar] INLET PRESSURE, DC CURRENT
REGULATED PORT: BLOCKED, DATA SHOWN FOR TS90-G34B





Dimensions



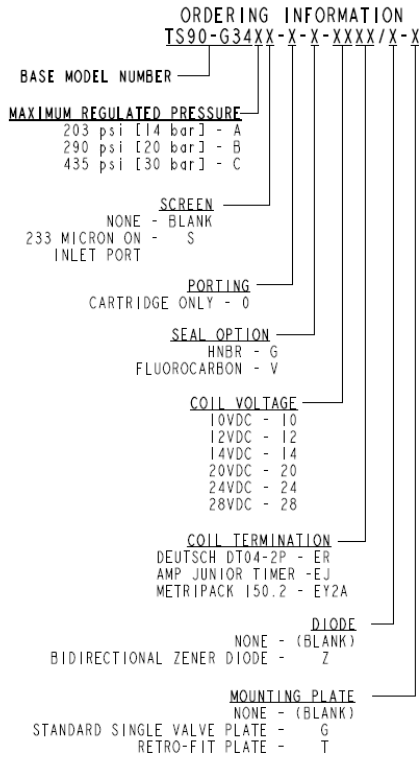
Installation Specifications

Cavity	VC-G025	- Note: Standard configuration
Installation type	Flange mounted	
Orientation restriction	None	
Mounting screw torque	3 to 4 N-m (2.2 to 3.0 ft-lb)	
Note	For retro-fitting into older drop-in cavities and other mounting options, see "Mounting-options-for-G3-valves" technical reference	

Accessories

Mounting plate	HF P/N 4595096	- Note: Use with standard VC-G025 cavity
	HF P/N 4210236	- Note: Use with retrofit VC-T003 cavity
Mounting screw	M5 x 0,8 x 12 mm long, HF P/N: 4002609 (sold separately)	- Note: Use with standard VC-G025 cavity
Seal kit	SK-G025-X	- Note: X=seal option
Ported test body	HF P/N: 71609X0	

Order Code



Model Options

TS90-G34DG-H-J-KL-U

D Max Regulated Pressure

CODE	DESCRIPTION
A	14 bar (203 psi)
B	20 bar (290 psi)
C	30 bar (435 psi)

G Screen

CODE	DESCRIPTION
BLANK	NONE
S	60 Mesh Screen

H Line Body

CODE	DESCRIPTION
0	No Body
6T	Aluminum SAE 6

J Seal

CODE	DESCRIPTION
G	HNBR (Hydrogenated Nitrile Butadiene Rubber)
V	Fluorocarbon
P	Polyurethane

K Coil Voltage

CODE	DESCRIPTION
10	10 VDC



CODE	DESCRIPTION
12	12 VDC
14	14 VDC
20	20 VDC
24	24 VDC
28	28 VDC

L Coil Termination

CODE	DESCRIPTION
EJ	E-Coil, AMP Jr.
ER	E-Coil, Deutsch
EY2A	E-Coil, Metri-Pack 150.2

U Mounting Plate

CODE	DESCRIPTION
BLANK	None
G	Standard Single Valve Plate
T	Retro-Fit Plate