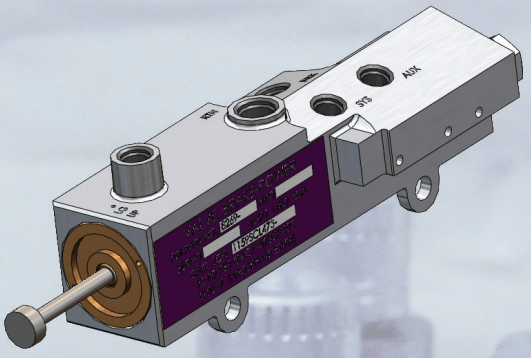
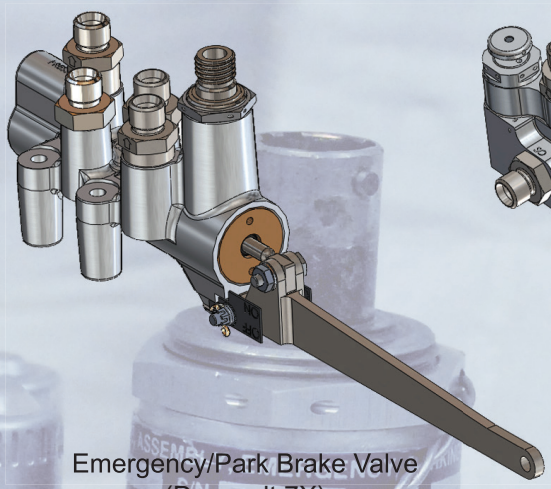
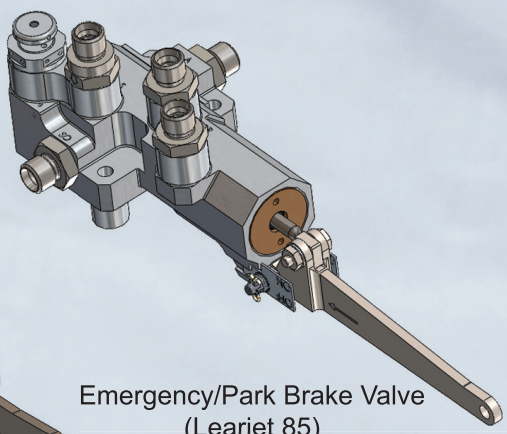
PneuDraulics, Inc. - Brake Metering Valves



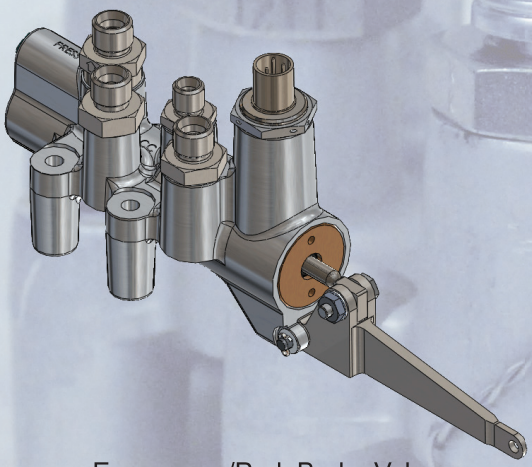
Brake Metering Valve
(Gulfstream G450/G550)



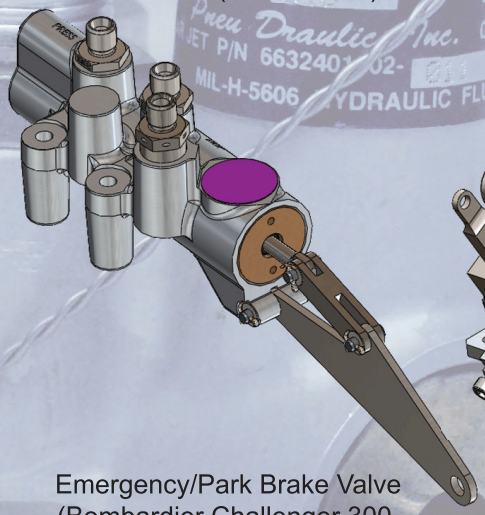
Emergency/Park Brake Valve
(Dassault 7X)



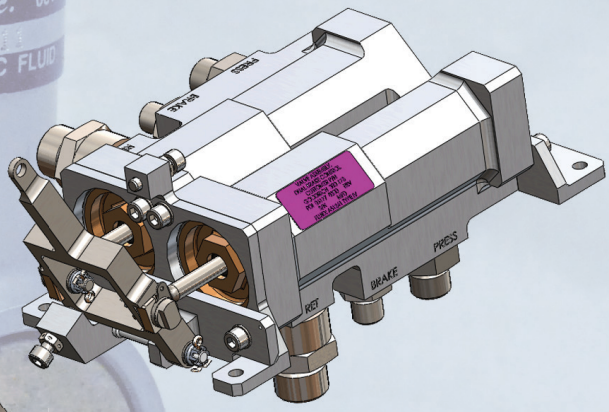
Emergency/Park Brake Valve
(Learjet 85)



Emergency/Park Brake Valve
(Learjet 45)



Emergency/Park Brake Valve
(Bombardier Challenger 300,
Bombardier Global Express)



Dual Brake Metering Valve
(Mitsubishi MRJ)

PneuDraulics, Inc.
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Brake Metering Component needs? PneuDraulics has the solution.

PneuDraulics is a recognized leader in the brake metering field, with many brake metering and emergency/park brake valve applications currently in use on regional and business jet platforms. Our innovative approach to these designs minimizes hysteresis and are available with low leakage for parking brake applications.

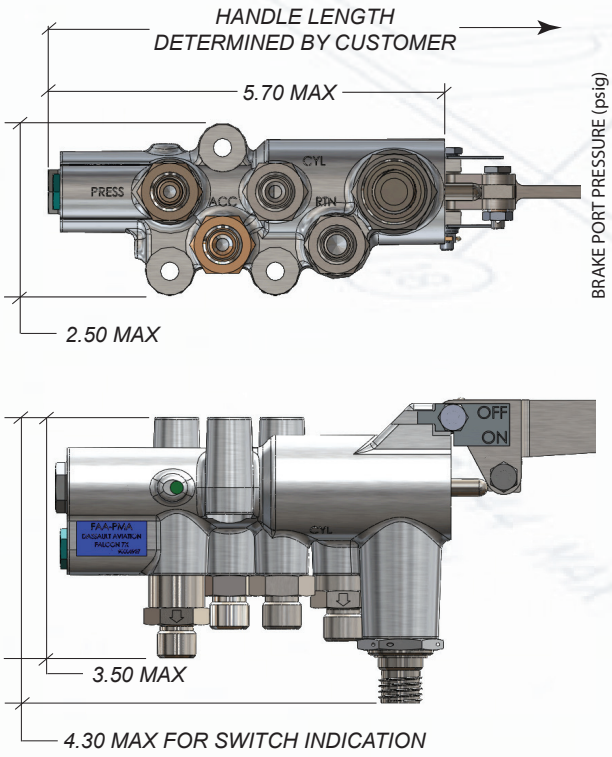
Available in single or dual versions with split manifolds for rip stop, these brake metering valves can be supplemented with other integral devices, such as thermal relief, position indication, pressure switch or transducers and wheel de-spin functionality.

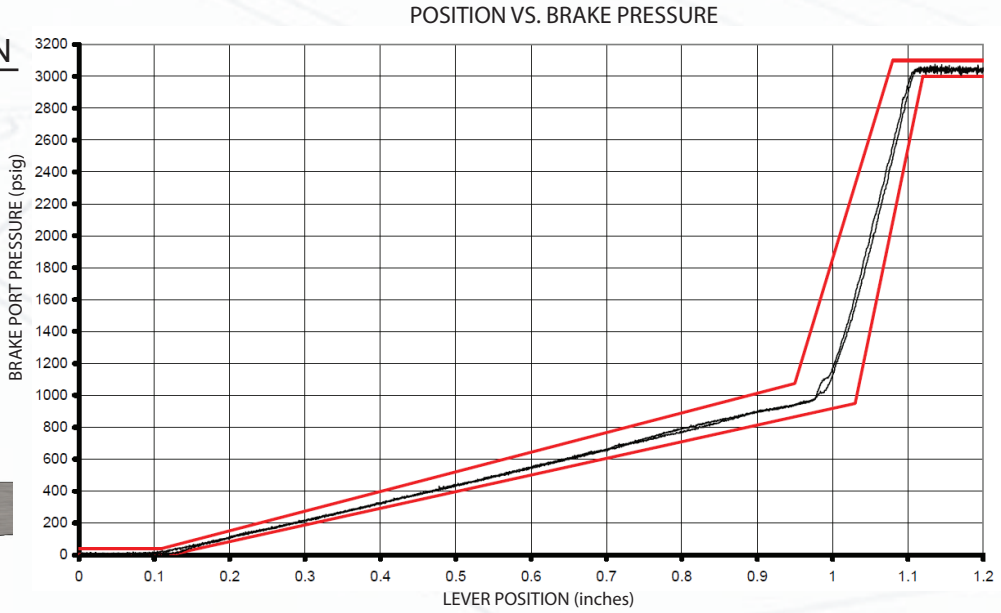
Automated, computerized acceptance testing is used on all brake metering applications to assure high quality and consistency of each delivered component.

For over 55 years PneuDraulics has been providing cost-effective solutions to the aerospace industry and our products are used today on aircraft on every continent around the world, in all classes of aircraft: military, commercial, cargo, general aviation, regional, helicopters, business jets, and spacecraft.

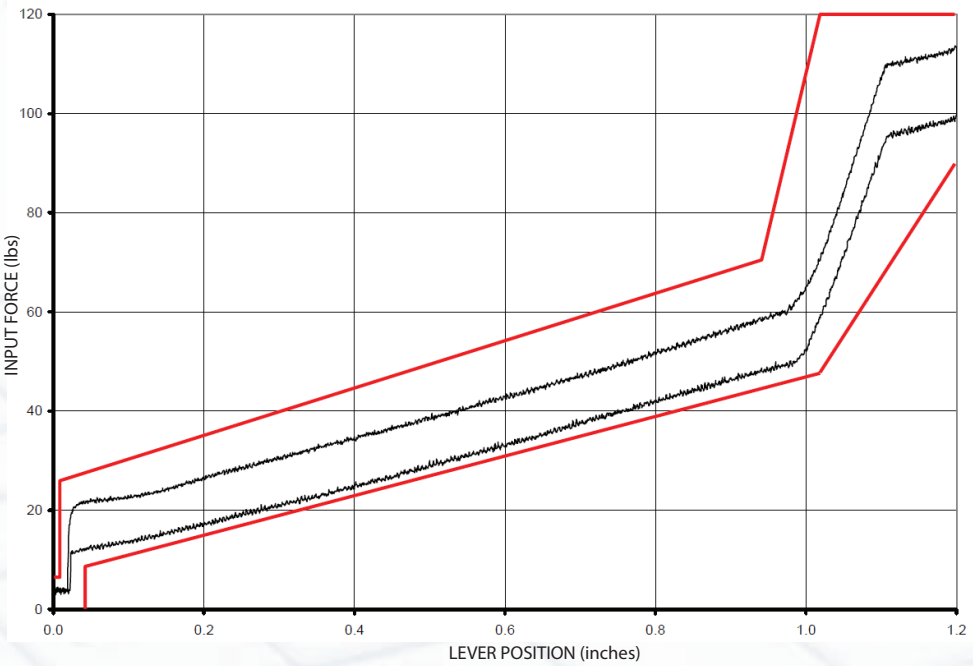
PneuDraulics, Inc. - Brake Metering Valves

TYPICAL ENVELOPE CONFIGURATION





Actual Data of Stroke vs. Brake Pressure and Hysteresis
Source: Gulfstream G450/G550 Brake Metering Valve



Actual Data of Stroke vs. Lever Force and Hysteresis
Source: Gulfstream G450/G550 Brake Metering Valve

Emergency/Park Brake Applications Max Leakages in Park Mode

Aircraft	Fluid	Park Brake Mode Leakage
Learjet 45	MIL-H-5606	4.0 cc/hr
Learjet 85	MIL-PRF-87257	0.7 cc/min
Dassault 7X	MIL-H-5606	6.0 cc/hr
Bombardier Challenger 300	Phosphate Ester	4.0 cc/hr
Bombardier Global Express	Phosphate Ester	4.0 cc/hr

TYPICAL QUALIFICATION REQUIREMENTS

Operating Pressure:	3000 psig
Proof Pressure	4500 psig
Burst Pressure:	7500 psig
Endurance:	200,000 cycles
Impulse:	100,000 cycles, 0-4500-0 psig
Altitude:	RTCA/DO-160F, Sec. 4, Cat. F2
High Temperature:	RTCA/DO-160F, Sec. 4, Cat. F2 +275°F Fluid & Ambient
Low Temperature:	RTCA/DO-160F, Sec. 4, Cat. F2 -67° Fluid & Ambient
Temperature Variation:	RTCA/DO-160F, Sec. 5, Cat. A
Humidity:	RTCA/DO-160F, Sec. 6, Cat. B
Shock:	RTCA/DO-160F, Sec. 7, Cat. B
Vibration:	RTCA/DO-160F, Sec. 8, Cat. S & H
Explosive Atmosphere:	RTCA/DO-160F, Sec. 9, Cat. E
Waterproofness:	RTCA/DO-160F, Sec. 10, Cat. S
Fluid Susceptibility:	RTCA/DO-160F, Sec. 11, Cat. F
Sand and Dust:	RTCA/DO-160F, Sec. 12, Cat. S
Fungus Resistance:	RTCA/DO-160F, Sec. 13, Cat. F
Salt Fog:	RTCA/DO-160F, Sec. 14, Cat. S
Icing	RTCA/DO-160F, Sec. 24, Cat. A