



Stem Seal and Soft Seat Selection Guide

Standard Axis manifold part number:

AX6M5SFLFLSSXX where the last two digits determine (1) stem seal and (2) seat type.

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(1) Stem seal selection:

The stem seal is responsible for preventing fugitive emissions during operation of the valve. All of our elastomer stem seals are rated to 6000 psig at 100°F. Stem seal selection is largely driven by chemical compatibility and temperature.

FKM (V) has excellent resistance to aliphatic, aromatic and chlorinated hydrocarbons, oils, greases and fuels as well as a low minimum temperature rating of -15°F (-26°C).

FEPM (A) offers superior resistance to amines and higher concentrations of hydrogen sulfide services, but has a slightly higher minimum temperature rating of -4°F (-20°C).

Compound	FEPM (A)	FKM (V)	Rating 1 = Exceptional 2 = Acceptable 3 = Not recommended 4 = Incompatible
Amines	2	4	
Carbon Dioxide (Dry / Wet)	1	1	
Glycols	1	1	
High H ₂ S (20,000 ppm and above)	1	3	
Ethyl Mercaptan	1	2	
Minimum Temperature	-4°F (-20°C)	-15°F (-26°C)	

(2) Soft seat selection:

The soft seat is responsible for sealing the fluid inside of a valve and is vital to guarantee the performance of a soft seated valve. With varying characteristics, each of the soft seat material types offered by RJ Machine should be selected under specific operating conditions.

ETFE (Z) is best suited for pressure applications 2,000 psi and below or in systems with flange class ratings of 150, 300 and 600.

POM (D) is best suited for pressure applications between 2,000 and 6,000 psi or in systems with flange class ratings of 900 and 1500.

PEEK (P) should only be used for applications operating at or above 200°F(93°C) in systems with flange class ratings of up 1500.

Operating Temperature	Pressure Rating				
	Class 150 0 - 285 psi	Class 300 0 - 740 psi	Class 600 0 - 1480 psi	Class 900 0 - 2220 psi	Class 1500 0 - 3705 psi
0°F(-18°C) - 199°F(93°C)	ETFE			POM	
200°F(93°C) - 400°F(204°C)	PEEK				

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RJ MACHINE CO.

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