

METRALOOP EXPANSION JOINTS

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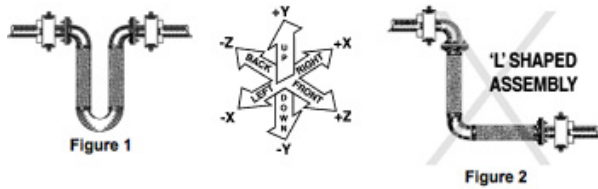
METRALOOP EXPANSION JOINTS

Metraloop expansion joints for seismic applications

A safe, cost-effective seismic expansion joint.

Piping used in applications and locations subject to seismic conditions have their own set of unexpected random movements and greater costs to overcome. There is a solution – the ultra-flexible Metraloop.

The random motion common to earthquakes requires that seismic expansion joints be capable of movement in any direction. Of the 6 possible directions, Metraloop sees axial movement of the hose in only two of them – compared to four in an "L" shaped assembly. Metraloop's orientation can be changed relative to the piping, further minimizing the likelihood of compressive movement.



Metraloop offers significant cost and safety benefits not found in comparable seismic expansion joints.

- It is an inexpensive alternative to dual-tied bellows expansion joints and especially ball joints.
- During an earthquake, it protects equipment by allowing boilers, chillers, fan-coil units and other systems to move independently of the building.
- Metraloops installed at the connection also prevent nozzles from cracking or shearing off.
- And the AGA-certified Metraloops, installed in gas lines as they cross the building's seismic joints or at the connection to gas-fired equipment, protect against fire and the devastation that results.

Typical installations of Metraloops for seismic service are shown in the figures above. For more detailed installation instructions for seismic applications, refer to the NUSIG (National Uniform, Seismic Installation Guidelines) book.

To assure operation in seismic applications, the Metraloop expansion loop has been accepted for use by the California Office of Statewide Health, Planning and Development and the City of Los Angeles; and certified by the American Gas Association.

There's no limit to the seismic applications that Metraloop can handle. It can even be designed with lined hose for high velocity, double-braid for high pressures, and all stainless steel construction for media compatibility.

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Find the Metraloop end fittings and sizes you need for your application?

Select your end fitting

- [Temperature Correction Factors](#)
- [Metraloop Options](#)
- [Pressure Drop \(Friction Loss\) Charts](#)

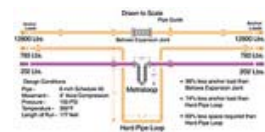


Show your pipes a little love during thermal expansion and contraction

Metraloop expansion joints exert a fraction of the anchor loads, requires fewer pipe guides, and takes less space.



Metraloop vs traditional methods to compensate for thermal and seismic expansion



Go configure!

See just a few of the crazy ways to configure the Metraloop expansion joint



SWEAT ENDS

Copper sweat ends with bronze hose & braid
(† See Temp Correction Factor)



PIPE SIZE	MODEL #	MOVEMENT	END TO END	LENGTH	PSI SINGLE BRAID	†PSI DOUBLE BRAID	*SPRING FORCE LBS.	WEIGHT LBS.	3D DRAWING
1/2" (15mm)	MLS30050	±1.5"	5"	11"	706	1130	45	2	Revit Other CAD Files
	MLS80050	±4"	8"	15"				2.5	Revit Other CAD Files
3/4" (20mm)	MLS30075	±1.5"	6"	15"	577	923	47	2	Revit Other CAD Files
	MLS80075	±4"	9-1/2"	19"				2.5	Revit Other CAD Files
1" (25mm)	MLS30100	±1.5"	6-1/2"	16"	470	752	53	2.5	Revit Other CAD Files
	MLS80100	±4"	10-1/4"	21"				3	Revit Other CAD Files
1-1/4" (30mm)	MLS30125	±1.5"	7-3/4"	17"	361	577	66	3.5	Revit Other CAD Files
	MLS80125	±4"	11-1/4"	22"				4	Revit Other CAD Files
1-1/2" (40mm)	MLS30150	±1.5"	9-1/4"	18"	329	526	70	4	Revit Other CAD Files
	MLS80150	±4"	11-3/4"	24"				4.5	Revit Other CAD Files
2" (50mm)	MLS30200	±1.5"	11-1/4"	21"	317	507	78	9	Revit Other CAD Files
	MLS80200	±4"	14"	26"				12	Revit Other CAD Files
2-1/2" (65mm)	MLS30250	±1.5"	13"	21"	272	435	83	12	Revit Other CAD Files
	MLS80250	±4"	15"	27"				18	Revit Other CAD Files
3" (80mm)	MLS30300	±1.5"	14"	23"	201	322	90	18	Revit Other CAD Files
	MLS80300	±4"	16-1/2"	29"				24	Revit Other CAD Files
4" (100mm)	MLS30400	±1.5"	18"	26"	142	227	120	26	Revit Other CAD Files
	MLS80400	±4"	22"	32"				31	Revit Other CAD Files

† When ordering a Metraloop with double-braid, please include the letter "D" at the end of the Model #. Example: MLW30200D

* Spring Force: These values reflect the total force required to move the Metraloop its full rated movement for 150 P.S.I. at 70 F.

For higher pressures please contact Metraflex.

** Loops are available in half sections for ease of handling and shipping. If this option is selected add half inch to the "end to end" dimension.

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THREAD ENDS

Fittings - Sched. 40 Carbon Steel Hose & Braid - Series 300 Stainless Steel

(† See Temp Correction Factor)

PIPE SIZE	MODEL #	MOVEMENT	END TO END	LENGTH	PSI SINGLE BRAID	†PSI DOUBLE BRAID	MAX SATURATED STEAM PRESS.	*SPRING FORCE LBS.	WEIGHT LBS.	3D DRAWING
1/2" (15mm)	MLT30050	±1.5"	12"	13"	1075	1720	300	45	3	Revit Other CAD Files
	MLT80050	±4"	15"	17"					5.5	Revit Other CAD Files
3/4" (20mm)	MLT30075	±1.5"	12-1/4"	13"	792	1267	300	47	3	Revit Other CAD Files
	MLT80075	±4"	15-1/4"	18"					5.5	Revit Other CAD Files
1" (25mm)	MLT30100	±1.5"	12"	15"	571	914	300	53	5	Revit Other CAD Files
	MLT80100	±4"	16"	20"					8	Revit Other CAD Files
1-1/4" (30mm)	MLT30125	±1.5"	13-1/2"	16"	531	850	300	66	7	Revit Other CAD Files
	MLT80125	±4"	16-3/4"	21"					10	Revit Other CAD Files
1-1/2" (40mm)	MLT30150	±1.5"	15"	17"	472	755	300	70	10.5	Revit Other CAD Files
	MLT80150	±4"	17-1/2"	23"					14.5	Revit Other CAD Files
2" (50mm)	MLT30200	±1.5"	18"	19"	500	750	300	78	15	Revit Other CAD Files
	MLT80200	±4"	20"	25"					18	Revit Other CAD Files
2-1/2" (65mm)	MLT30250	±1.5"	21"	21"	387	619	300	83	23	Revit Other CAD Files
	MLT80250	±4"	21-1/2"	28"					29	Revit Other CAD Files
	MLT30300	±1.5"	26"	23"					39	Revit Other CAD Files

	MLG80300	±4"	24"	30"				43	Revit Other CAD Files
4" (100mm)	MLG30400	±1.5"	30"	28"	232	371	120	54	Revit Other CAD Files
	MLG80400	±4"	30"	35"				60	Revit Other CAD Files
5" (125mm)	MLG30500	±1.5"	36"	32"	191	306	186	89	Revit Other CAD Files
	MLG80500	±4"	36"	40"				99	Revit Other CAD Files
6" (150mm)	MLG30600	±1.5"	42"	37"	165	264	202	135	Revit Other CAD Files
	MLG80600	±4"	42"	46"				150	Revit Other CAD Files
8" (200mm)	MLG30800	±1.5"	56"	48"	212	230	260	264	Revit Other CAD Files
	MLG80800	±4"	56"	58"				286	Revit Other CAD Files
10" (250mm)	MLG31000	±1.5"	68"	55"	175	200	283	430	Revit Other CAD Files
	MLG81000	±4"	68"	67"				461	Revit Other CAD Files
12" (300mm)	MLG31200	±1.5"	80"	63"	160	188	390	592	Revit Other CAD Files
	MLG81200	±4"	80"	74"				622	Revit Other CAD Files

† When ordering a Metraloop with double-braid, please include the letter "D" at the end of the Model #. Example: MLW30200D

* Spring Force: These values reflect the total force required to move the Metraloop its full rated movement for 150 P.S.I. at 70 F.

For higher pressures please contact Metraflex.

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TEMPERATURE CORRECTION FACTORS

For safe working pressures above 70°F multiply the pressures shown at 70°F by the correction factor for the required temperature.

TEMPERATURE °F	CORRECTION FACTOR	
	BRONZE	STAINLESS STEEL
70 °	1.0	1.0
200 °	.89	.92
300 °	.83	.86
400 °	.78	.82
500 °	-	.77
600 °	-	.73

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Metraloop Options

The sizes, pressures and movements shown reflect our standard Metraloops. Higher pressure, greater movements and special materials, such as all stainless steel construction are available. Please contact your local Metraflex representative or the factory for more information.

Metraflex reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligation.

Refer to the following pages for installation configurations and technical assistance.

- [Metraloop vs. bellows expansion joints and hard pipe loops](#)
- [Seismic applications](#)
Configurations for commercial building installation & CAD downloads
- [Thermal applications](#)
Solving fit and function problems -- Engineering Case Studies
- [Technical assist](#)

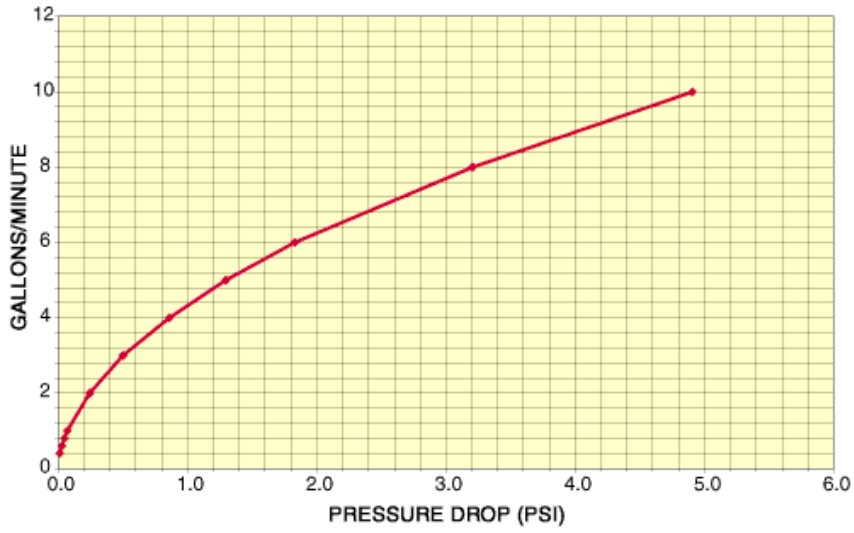
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Pressure Drop (Friction Loss) Charts

Use the charts below for all styles (except copper) of Metraloop expansion loops and Fireloops and all end fittings. Please contact factory for copper expansion loop (MLS) pressure loss information.

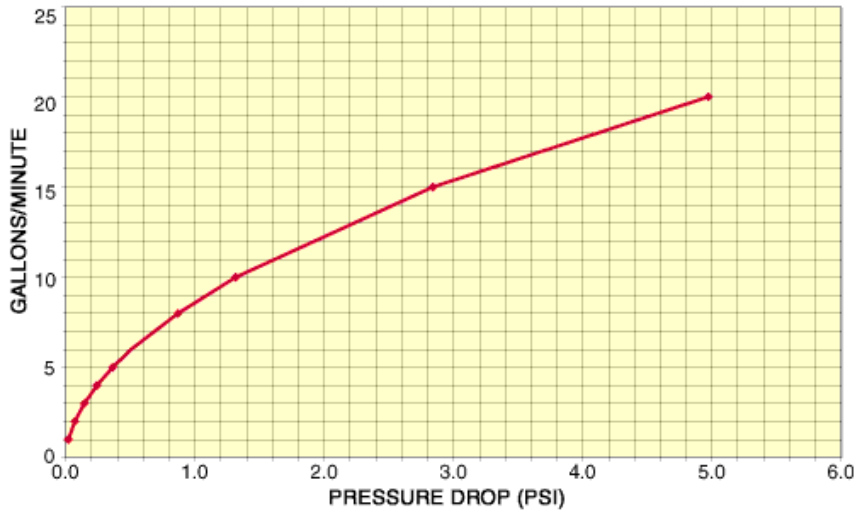
1/2" PIPE

(calculated for water at 60 deg. F.)



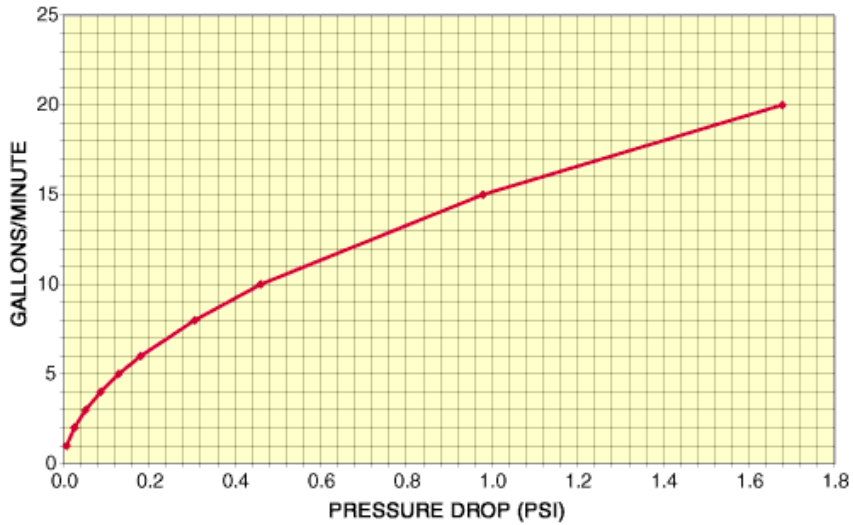
3/4" PIPE

(calculated for water at 60 deg. F.)



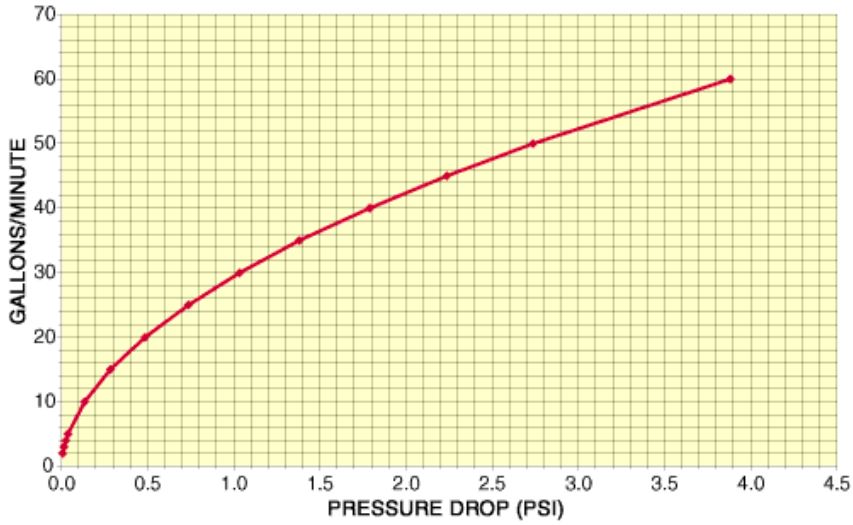
1" PIPE

(calculated for water at 60 deg. F.)



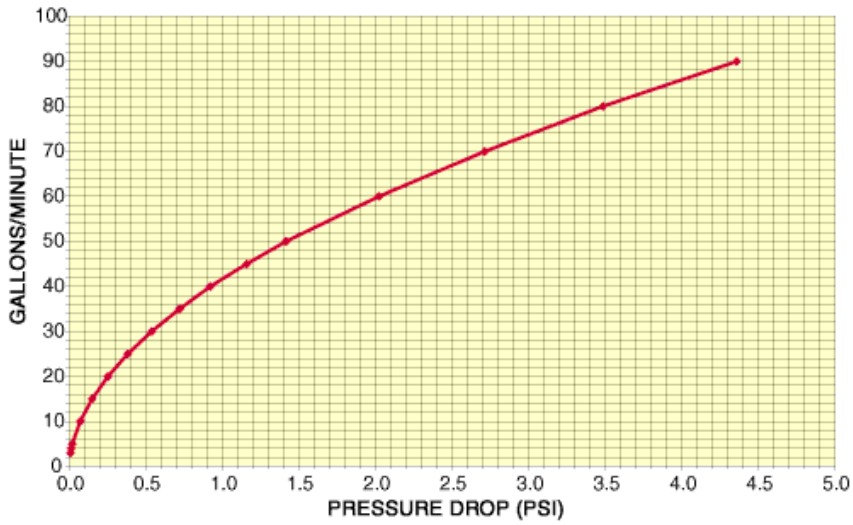
1-1/4" PIPE

(calculated for water at 60 deg. F.)



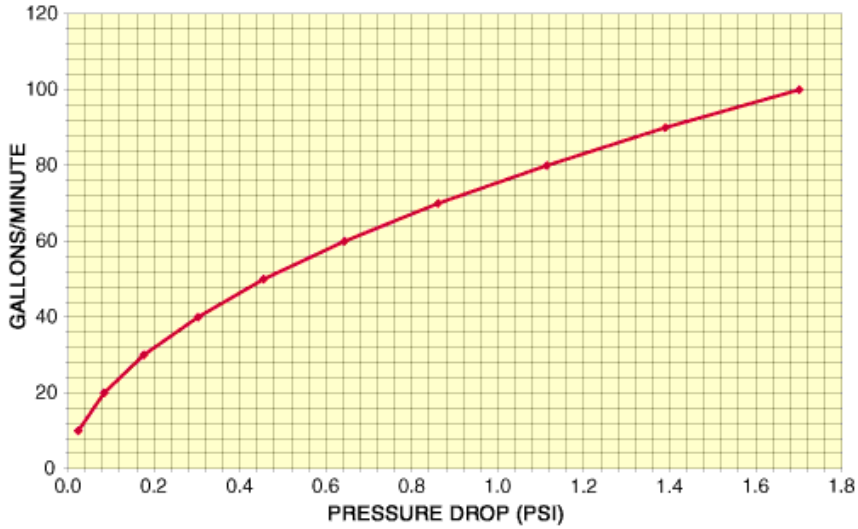
1-1/2" PIPE

(calculated for water at 60 deg. F.)



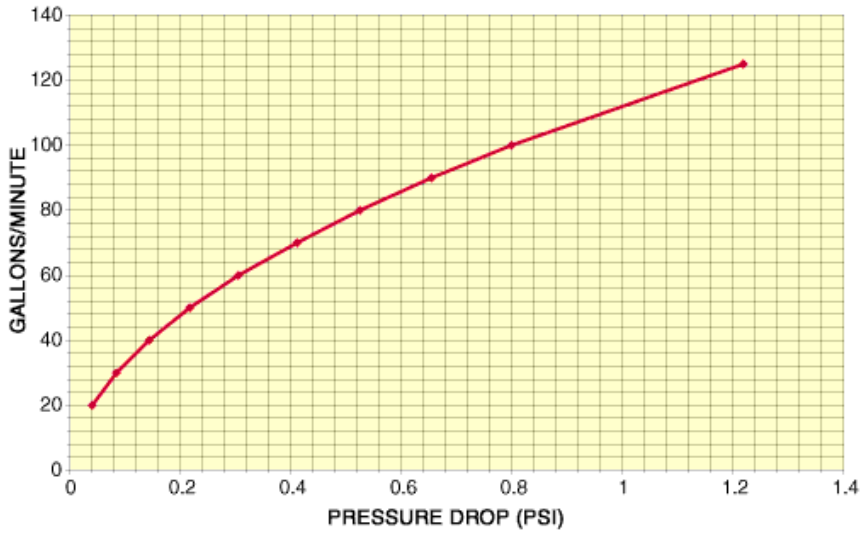
2" PIPE

(calculated for water at 60 deg. F.)



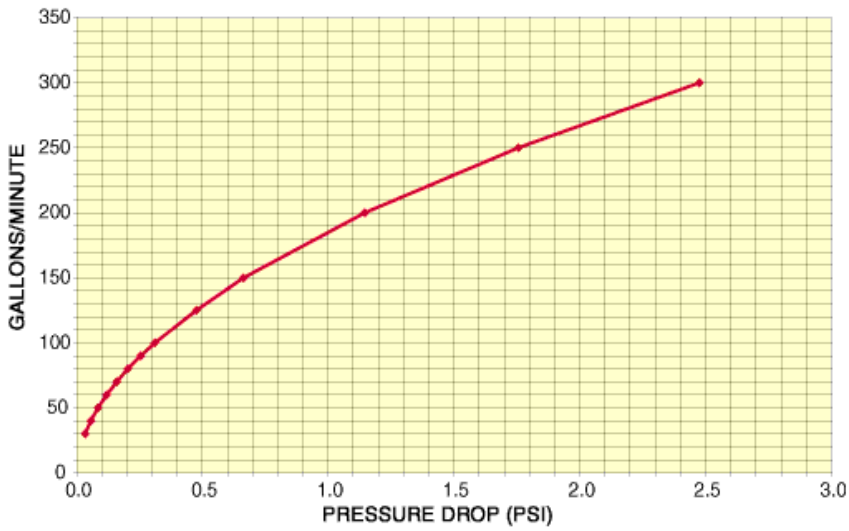
2-1/2" PIPE

(calculated for water at 60 deg. F.)



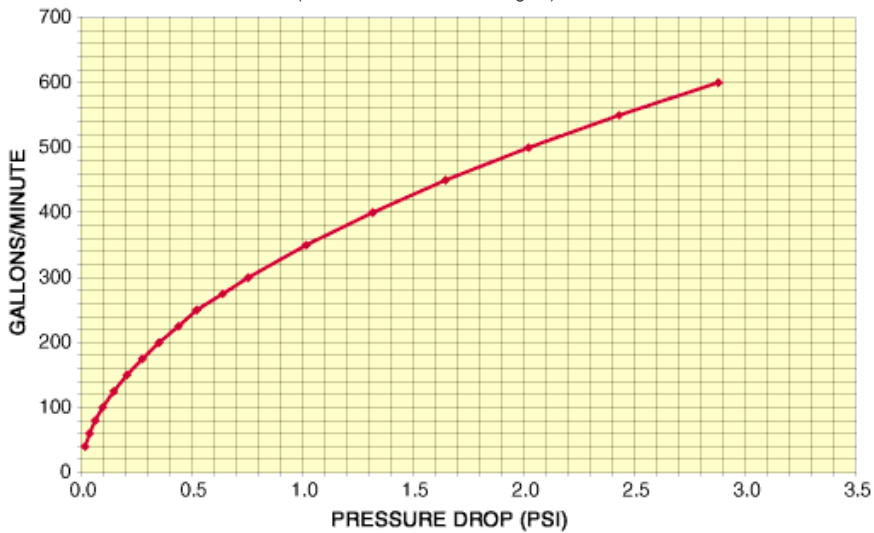
3" PIPE

(calculated for water at 60 deg. F.)



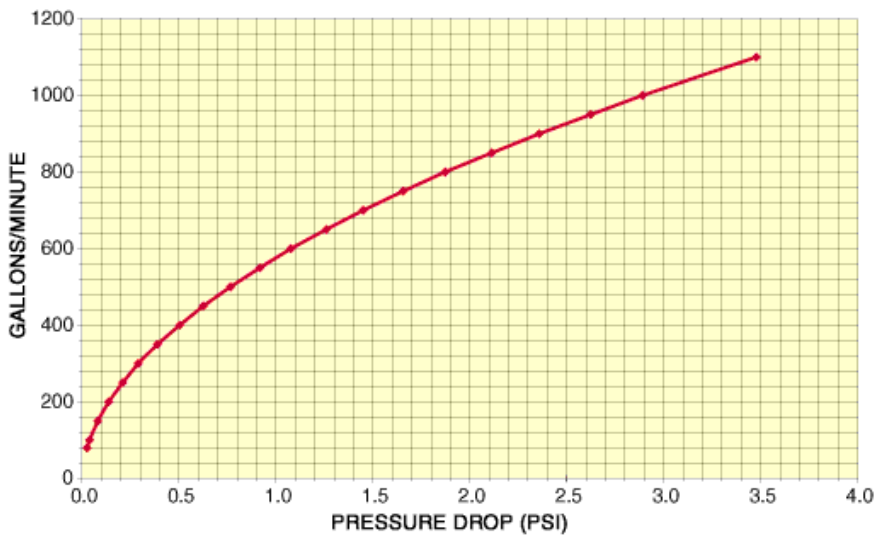
4" PIPE

(calculated for water at 60 deg. F.)



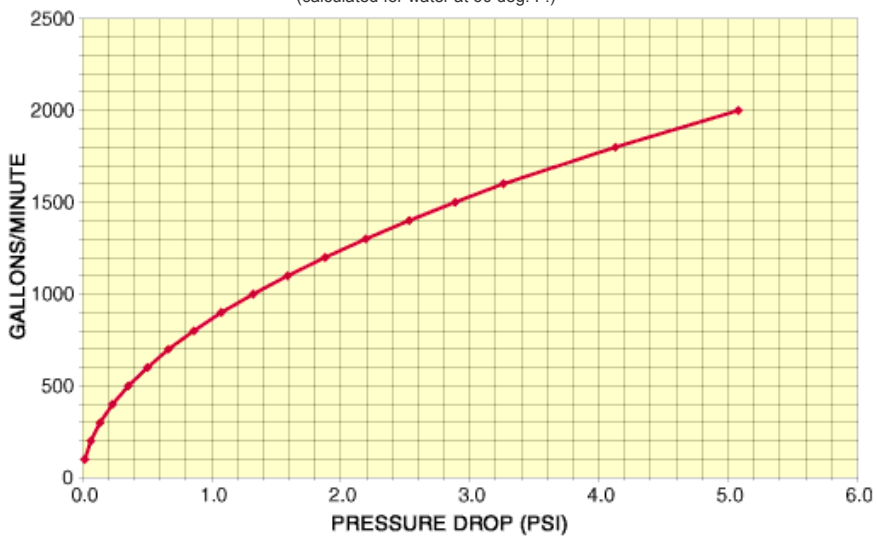
5" PIPE

(calculated for water at 60 deg. F.)



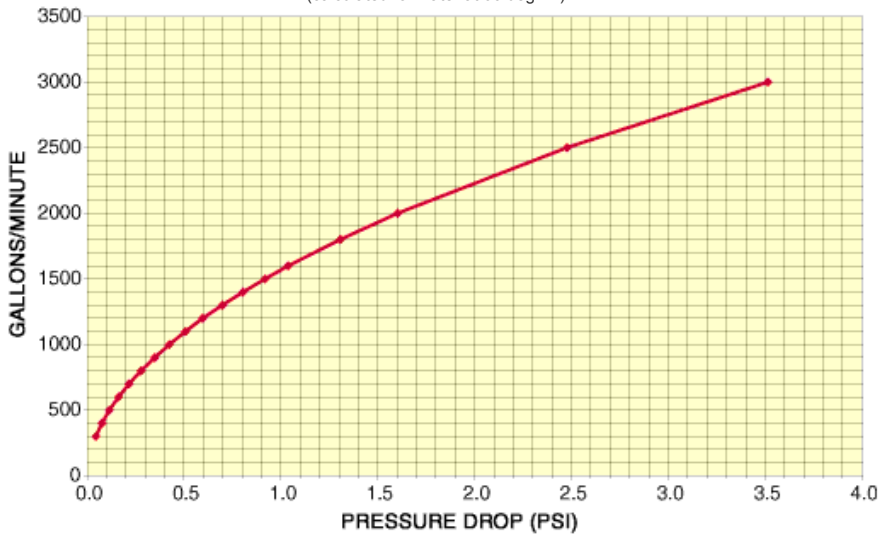
6" PIPE

(calculated for water at 60 deg. F.)



8" PIPE

(calculated for water at 60 deg. F.)



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