

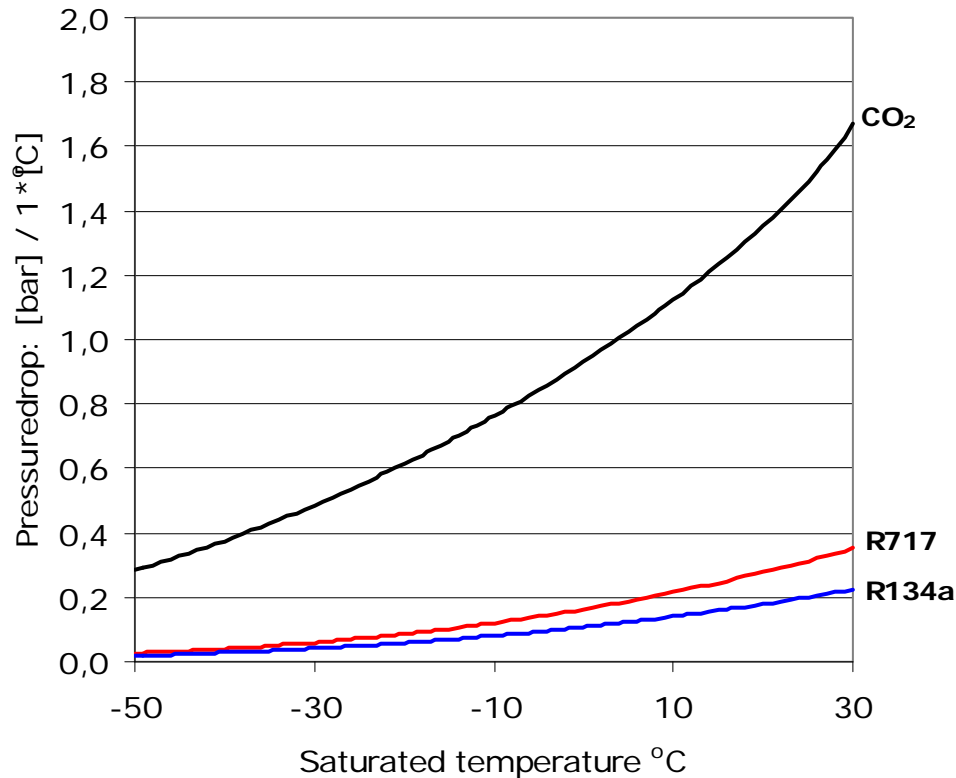
# Pipe sizing for CO<sub>2</sub> systems

## Industrial Refrigeration

# Pipe sizing for CO2 systems



Pressure drop corresponding to 1 °C



DN		B Wet-return Circulating rate = 3		C Dry suction Circulating rate = 1	
		[m/s]	[ft/s]	[m/s]	[ft/s]
25	1"	3,8	12	8,7	29
32	1¼"	4,6	15	10,5	35
40	1½"	5,1	17	11,5	38
50	2"	6,4	21	14,0	46
65	2½"	7,2	24	15,7	51
80	3"	8,4	28	18,0	59
100	4"	10,1	33	21,3	70
125	5"	11,8	39	24,6	81
150	6"	13,4	44	27,6	91

Recommended Velocities of CO2 in Suction Lines based on 712 pa/m @ -30 °C

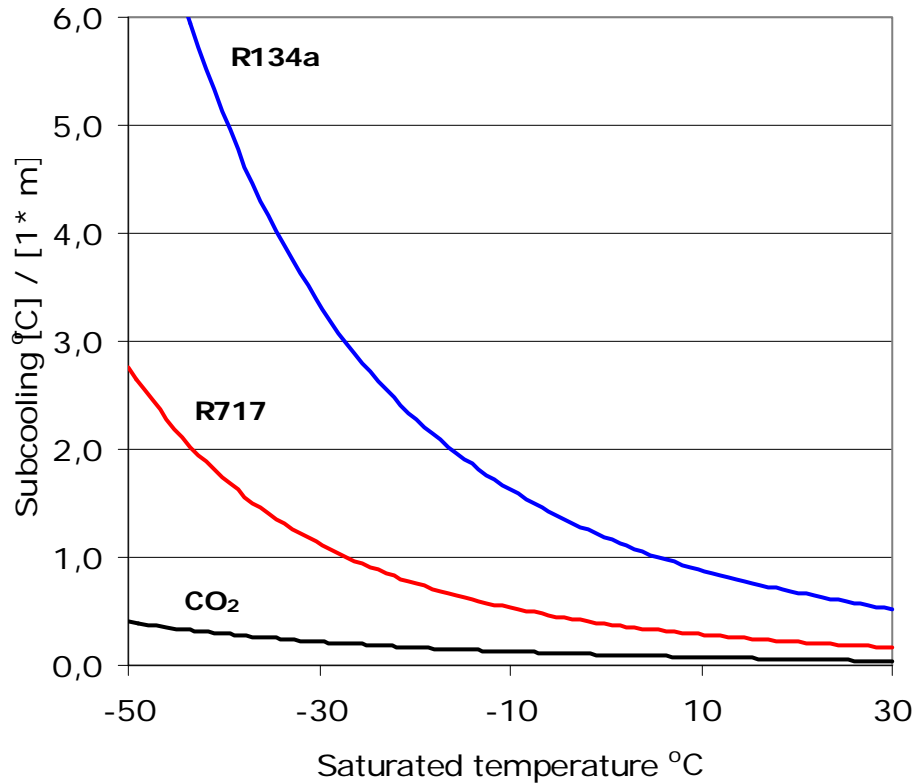
**Liquid CO2 lines: 0,8 [m/s]**

Pressure drop in bar corresponding to 1 °C

Saturated temperature [°C]	-50	-40	-30	-20	-10	0	10
Pressure drop [bar] / [°C]	0,283	0,375	0,485	0,614	0,761	0,930	1,124

# Pipe sizing for CO<sub>2</sub> systems (liquid sub cooling) *Danfoss*

Subcooling created by 1 m liquid



Sub-cooling created by i 1 meter liquid CO<sub>2</sub>

Saturated temperature [°C]	-50	-40	-30	-20	-10	0	10
Sub-cooling [°C] / [m]	0,401	0,293	0,218	0,165	0,127	0,098	0,075