

EVAPORATOR PRESSURE REGULATING VALVES

The Sporlan line of evaporator pressure regulating (EPR) valves are designed to provide an accurate and economical means of balancing system capacity and load requirements during “low” loads and/or while maintaining different evaporator conditions on multi-temperature evaporator systems. These valves control evaporator temperature by maintaining evaporator pressure. As the evaporator load increases the **ORI** valves will **Open on Rise** of Inlet pressure above the valve’s setting to provide more flow capacity to meet the evaporator load. When the evaporator load decreases the valves will modulate closed to maintain the pressure setting of the valve.

Sporlan offers a number of EPR valve types in various sizes, and with optional features to accommodate almost any industry requirement. For more complete information on any of the EPR valve types see your nearest Sporlan Wholesaler or email europcold@parker.com

Applications

- **Maintain minimum evaporator temperature to avoid frost on air coils and provide improved humidity control**
- **Evaporator temperature control for food merchandisers (single and multiple evaporator systems)**
- **Evaporator temperature control on water chilling units**

Required Sizing Information

- **Refrigerant type**
- **Evaporator design capacity**
- **Design evaporator temperature or minimum evaporator pressure**
- **Available pressure drop**
- **Allowable evaporator pressure change (only applies to direct acting models)**

Capacities – kW

Capacities based on 38°C condensing temperature, 0°C subcooling, 6°K superheat, 0.55 bar evaporator pressure change for 0/3.45 bar adjustment range, and a 0.83 bar evaporator pressure change for 2.07/6.90 bar adjustment range.

VALVE TYPE	EVAPORATOR TEMPERATURE °C	SATURATED PRESSURE – bar (Reference)		REFRIGERANT																	
		REFRIGERANT		22		134a				404A				407C				507			
		22	134a	404A	407C	507	0.1	0.4	0.7	0.1	0.4	0.7	0.1	0.4	0.7	0.1	0.4	0.7	0.1	0.4	0.7
ORIT-6	5	4.83	2.48	6.03	4.35	6.32	3.85	7.16	8.75	2.89	5.01	5.60	3.36	6.30	7.78	3.57	6.54	7.87	3.31	6.22	7.70
	-5	3.21	1.42	4.12	2.77	4.34	3.19	5.73	6.73	2.29	3.67	3.77	2.71	4.94	5.90	2.87	5.04	5.75	2.68	4.90	5.90
	-15	1.95	0.63	2.62	1.57	2.79	2.58	4.39	4.79	1.76	2.45	2.45	2.14	3.72	4.19	2.24	3.67	3.82	2.12	3.74	4.28
	-25	1.00	0.05	1.49	0.70	1.61	2.04	3.16	3.19	1.29	1.53	1.53	1.65	2.66	2.74	1.71	2.44	2.44	1.64	2.68	2.80
ORIT-10	5	4.83	2.48	6.03	4.35	6.32	9.45	18.7	24.4	7.25	14.2	18.3	8.23	16.3	21.3	8.79	17.3	22.6	8.08	16.0	21.0
	-5	3.21	1.42	4.12	2.77	4.34	7.88	15.5	20.2	5.83	11.3	14.4	6.69	13.2	17.2	7.13	14.0	18.1	6.59	13.0	16.9
	-15	1.95	0.63	2.62	1.57	2.79	6.48	12.6	16.3	4.60	8.77	11.0	5.35	10.5	13.6	5.70	11.1	14.2	5.28	10.4	13.4
	-25	1.00	0.05	1.49	0.70	1.61	5.23	10.1	12.8	3.55	6.58	8.01	4.19	8.12	10.4	4.46	8.52	10.7	4.15	8.07	10.4

ORIT – Valve Nomenclature/Ordering Instructions

ORI	T	6	0/50	7/8" ODF
Valve Type: Open on Rise of Inlet Pressure	Pressure Tap on Inlet Connection	Port Size in Eighths of an Inch	Adjustment Range – psig*	Connection ODF Solder or SAE Flare

* Other pressure ranges are available.

ORIT-6 and -10 Features

- **Direct acting (most economical)**
- **Adjustable**
- **Hermetic construction (no gaskets or seals)**
- **Corrosion resistant construction**
- **Inlet pressure tap (standard)**
- **Inlet strainer (standard on ODF models)**



These direct acting EPRs are offered in two sizes. The direct acting design although economical requires an evaporator pressure change above the minimum evaporator pressure setting to provide the rated flow capacity. The nominal ratings are based on an 0.55 bar evaporator pressure change for the 0/3.45 bar adjustment range, and a 0.83 bar change for the 2.07/6.90 bar adjustment range. Valves should be selected for the desired maximum variation in evaporator pressure using the capacity multipliers below.

ALLOWABLE EVAPORATOR PRESSURE CHANGE – bar		0.14	0.28	0.41	0.55	0.69	0.83	0.97
CAPACITY	ORIT-6, 10-0/50	.3	.6	.8	1.0	1.2	1.3	1.4
MULTIPLIER	ORIT-6, 10-30/100	—	.2	.6	.7	.9	1.0	1.1

Specifications

VALVE TYPE	PORT SIZE mm	ADJUSTMENT RANGE	STANDARD CONNECTIONS In BOLD
ORIT-6	19	0/3.45 or 2.07/6.90 bar	1/2 & 5/8 SAE Flare* 1/2, 5/8, 7/8 & 1-1/8 ODF Solder
ORIT-10	31		7/8, 1-1/8 & 1-3/8 ODF Solder

Standard features in bold.
*Not available with inlet strainer.