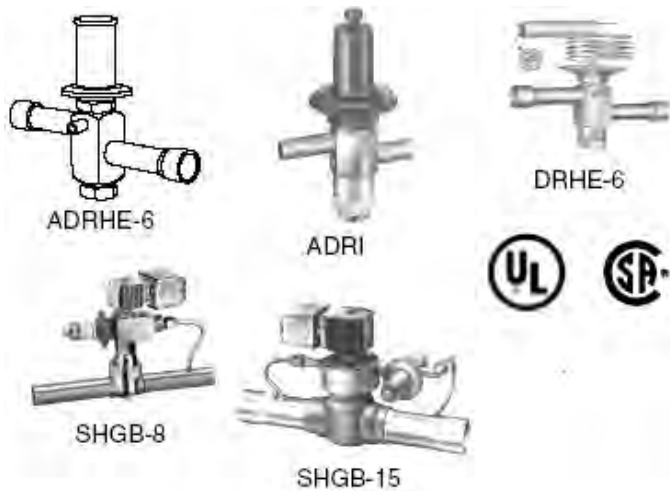


## SPORLAN - DISCHARGE BYPASS VALVES



The Sporlan line of discharge bypass valves are designed to provide an economical method of compressor capacity control in place of cylinder Unloader or to handle unloading requirements below the last step of cylinder unloading. These modulating control valves automatically bypass the required amount of discharge gas to the low side to maintain the desired minimum evaporator pressure. The valves are applicable on any refrigeration or air conditioning system that operates during periods of low load, which can result in coil icing or short cycling. These valves respond to downstream pressure changes and open when the evaporator pressure falls below the valve setting. At normal loads and evaporator conditions, the valve remains closed and the system operates in a conventional manner.

The DR line of valves consists of three basic types of valves: the adjustable models, the adjustable remote bulb models, and the non-adjustable models.

The SHGB valves are adjustable and pilot operated with a solenoid stop feature that eliminates the need for a hot gas solenoid valve. They were developed for use on larger capacity systems.

**APPLICATION** — The discharge bypass valve is normally applied in a branch line off the discharge line. To allow system pump down control, a solenoid valve or hand valve must be installed upstream of the discharge DR type bypass valves. The bypassed hot gas can enter the low side at several locations; however, two of the possible locations are preferred because of superior operating performance: into the side connection of a Sporlan side connection distributor or directly into the suction line. By using the side connection distributor method, the system TEV will act as a desuperheating valve to keep the compressor suction temperature below the recommended maximum temperature published by the compressor manufacturer. When the hot gas is bypassed directly into the suction line, an auxiliary desuperheating TEV may be required.

**SELECTION and CAPACITY RATINGS** — The capacities given in the table below are **valve** hot gas capacities and not the capacities of the system on which the valve is to be applied. To select a valve, first determine the compressor capacity at the minimum allowable evaporating temperature.

Then the discharge bypass valve must supply the difference between this compressor capacity and the minimum evaporator load at which the system is to be operated. The valve pressure setting will be that pressure at which the bypass valve must start to open.

Connections - (Standard Connections in **BOLD** type).

**ADRS(E)-2** – 3/8 in., **1/2 in.**, 5/8 in. ODF Solder or  
3/8 in., 1/2 in., 5/8 in. SAE Flare

**ADRP(E)-3** – 1/2 in., **5/8 in.** ODF Solder or  
1/2 in., 5/8 in. SAE Flare

**ADRHE-6 & DRHE-6** – 5/8 in., **7/8 in.**, 1-1/8 in. ODF

## SPORLAN - DISCHARGE BYPASS VALVES

### DISCHARGE BYPASS VALVE CAPACITIES — Tons

Capacities based on 6°F evaporator temperature change from closed to rated opening (does not apply to pilot operated models), discharge temperature 30°F above isentropic compression, 100°F condensing temperature, 0°F subcooling, 25°F superheat at the compressor and includes both the hot gas bypassed and liquid refrigerant for desuperheating, regardless of whether the liquid is fed through the system thermostatic expansion valve or auxiliary desuperheating thermostatic expansion valve.

REFRIGERANT	MINIMUM ALLOWABLE EVAPORATOR TEMPERATURE	VALVE TYPE & ADJUSTMENT RANGE (psig)														
		ADRI-1-1/4 ADRIE-1-1/4			ADRS-2 ADRSE-2		ADRP-3 ADRPE-3		ADRHE-6		DRHE-6 (Adjustable "Remote Bulb" Model)*				SHGB-8 SHGBE-8	SHGB-15 SHGBE-15
		0/55	0/75	0/100	0/30	0/80	0/30	0/80	0/30	0/80	25/35	32/44	55/70	65/80	0/100	0/75
22	40	—	0.58	0.53	—	3.51	—	5.99	—	9.16	—	—	1 9.8	—	15.7	58
	26	0.44	0.64	0.54	—	3.57	—	6.26	—	9.90	—	—	1 6.9	—	15.9	62
	0	0.63	0.60	0.49	3.90	3.66	7.38	6.61	13.9	10.9	—	—	—	—	16.2	66
	-20	0.59	0.50	0.44	3.75	3.65	7.45	6.64	14.1	11.0	—	—	—	—	16.2	69
134a	40	0.40	0.43	0.34	—	2.67	—	4.94	—	9.34	9.64	—	—	—	10.9	41
	26	0.41	0.39	0.32	2.60	2.44	4.95	4.42	9.36	7.26	8.31	—	—	—	10.9	43
	0	0.38	0.31	0.28	2.46	—	4.89	—	9.41	—	—	—	—	—	11.0	46
401A	40	0.45	0.48	0.39	—	2.76	—	4.95	—	7.99	—	11.0	—	—	12.3	52
	26	0.47	0.45	0.37	2.97	2.79	5.66	5.04	10.7	8.26	—	9.49	—	—	1.4	52
	0	0.44	0.36	0.32	2.83	2.74	5.62	5.01	10.8	8.32	—	—	—	—	12.5	56
402A	40	—	—	0.54	—	—	—	—	—	—	—	—	—	—	17.3	—
	26	—	0.65	0.60	—	3.91	—	6.66	—	10.3	—	—	—	—	17.7	63
	0	0.66	0.72	0.57	—	4.00	—	7.16	—	11.7	—	—	—	—	17.9	63
	-20	0.69	0.63	0.52	4.22	4.04	8.11	7.33	15.3	12.2	—	—	—	—	18.0	64
404A	40	—	—	0.55	—	—	—	—	—	—	—	—	—	—	17.5	—
	26	—	0.67	0.60	—	3.91	—	6.70	—	10.4	—	—	—	21.4	17.7	64
	0	0.67	0.71	0.56	—	4.00	—	7.16	—	11.7	—	—	—	—	17.9	65
	-20	0.68	0.61	0.51	4.17	4.02	8.08	7.28	15.3	12.1	—	—	—	—	17.9	65
407C	40	—	0.78	0.65	—	4.25	—	7.50	—	12.1	—	—	22.9	—	18.6	74
	26	0.61	0.78	0.63	—	4.25	—	7.50	—	12.1	—	19.3	—	—	18.7	75
	0	0.74	0.68	0.56	4.51	4.31	8.63	7.81	16.3	13.0	—	—	—	—	18.9	76
	-20	0.68	0.56	0.50	4.33	4.23	8.64	7.71	16.5	12.9	—	—	—	—	19.1	77
502	40	—	—	0.46	—	3.14	—	5.28	—	7.85	—	—	—	19.2	14.3	—
	26	—	0.56	0.49	—	3.19	—	5.51	—	8.55	—	—	—	16.6	14.5	55
	0	0.55	0.57	0.46	3.58	3.28	6.64	5.90	12.5	9.62	—	—	—	—	14.7	59
	-20	0.55	0.59	0.41	3.43	3.30	6.68	6.00	12.6	9.91	—	—	—	—	14.8	61
507	40	—	—	0.53	—	—	—	—	—	—	—	—	—	—	17.4	—
	26	—	0.65	0.59	—	3.87	—	6.60	—	10.2	—	—	—	—	17.7	64
	0	—	0.71	0.57	—	3.96	—	7.09	—	11.5	—	—	—	—	17.8	64
	-20	0.69	0.62	0.52	4.17	4.00	8.02	7.25	15.2	12.0	—	—	—	—	17.9	65

PART NO	DESCRIPTION
ADRS-20/30ODF	ADRS-2 0/30 4 ODF
ADRS-20/305ODF	ADRS-2 0/30 5 ODF
ADRSE-20/304ODF	ADRSE-20/304ODF
ADRSE-20/305ODF	ADRSE-20/305ODF
ADRS-20/804ODF	ADRS-2 0/80 4 ODF
ADRS-20/805ODF	ADRS-2 0/80 5 ODF
ADRSE-20/803ODF	ADRSE-20/803ODF
ADRSE-20/804ODF	ADRSE-20/804ODF
ADRSE-20/805ODF	ADRSE-20/805ODF
ADRP-30/304ODF	ADRP-3 0/30 4 ODF
ADRP-30/305ODF	ADRP-3 0/30 5 ODF
ADRPE-30/304ODF	ADRPE-30/304ODF
ADRPE-30/305ODF	ADRPE-30/305ODF
ADRP-30/804ODF	ADRP-3 0/80 4 ODF
ADRP-30/805ODF	ADRP-3 0/80 5 ODF
ADRPE-30/804ODF	ADRPE-30/804ODF
ADRPE-30/805ODF	ADRPE-30/805ODF
ADRHE-60/305ODF	ADRHE-60/305ODF

PART NO	DESCRIPTION
ADRHE-60/805ODF	ADRHE-6 0/80 5 ODF
ADRHE-60/807ODF	ADRHE-6 0/80 7 ODF
ADRHE-60/809ODF	ADRHE-6 0/80 9 ODF
DRHE-6-55/70AR7X7	DRHE-6-55/70AR 7 ODF
DRHE-6-55/70AR9X9	DRHE-6-55/70AR 9 ODF
SHGBE-8-0/1009ODF	SHGBE-8-0/100 9 ODF LESS COIL
SHGBE-8-0/1007ODF	SHGBE-8-0/100 7 ODF LESS COIL
SHGB-8-0/107ODF	SHGB-8-0/100 7 ODF LESS COIL
SHGB-8-0/1009ODF	SHGB-8-0/100 9 ODF LESS COIL
SHGB-15-0/759ODF	SHGB-15-0/75 9 ODF LESS COIL
SHGB-15-0/7511ODF	SHGB-15-0/75 11 ODF LESS COIL
SHGBE-15-0/759ODF	SHGBE-15-0/75 9 ODF LESS COIL
SHGBE-15-0/7511 ODF	SHGBE-15-0/75 11 ODF LESS COIL