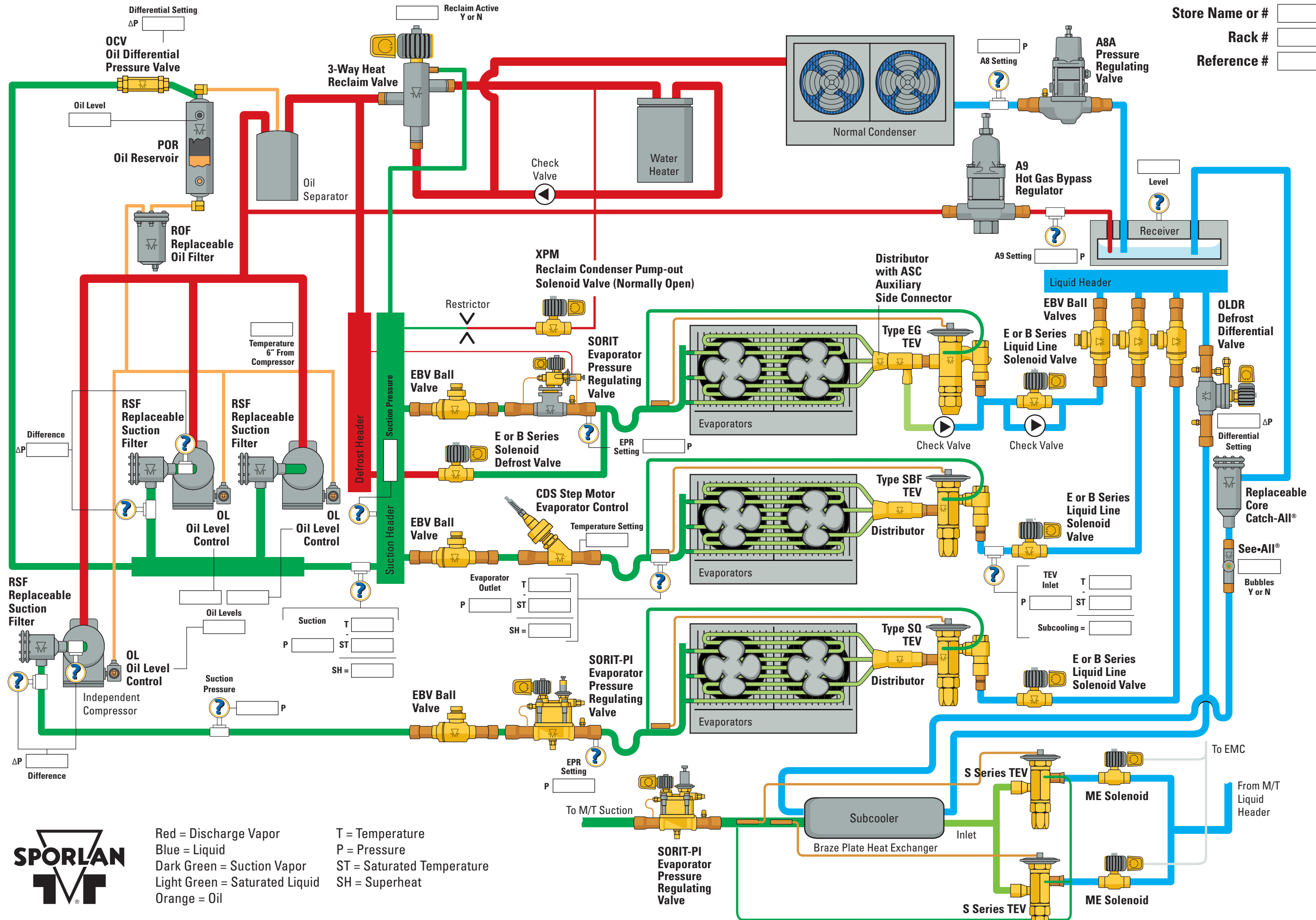


Store Name or #
 Rack #
 Reference #



Red = Discharge Vapor
 Blue = Liquid
 Dark Green = Suction Vapor
 Light Green = Saturated Liquid
 Orange = Oil

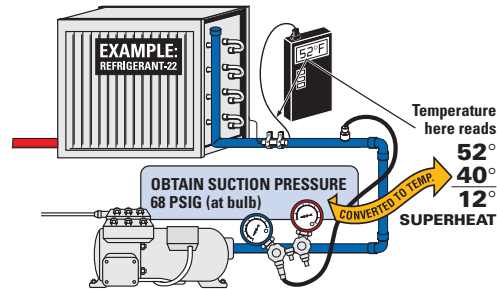
T = Temperature
 P = Pressure
 ST = Saturated Temperature
 SH = Superheat

Schematic is for component location only, not a typical piping recommendation.

External Equalizer

THERMOSTATIC EXPANSION VALVES

▼ WHAT'S YOUR SUPERHEAT?



▼ RECOMMENDED TEV SUPERHEAT SETTINGS

Air Conditioning:

R-22 8°F to 15°F
R-22 High Efficiency 6°F to 12°F
R-410A 6°F to 12°F

Refrigeration:

Ice Cream 4°F to 6°F
Frozen Foods 6°F to 8°F
Fresh Meats 8°F to 10°F
Dairy, Deli, Produce 10°F to 12°F

▼ TEV SUPERHEAT ADJUSTMENT

REFRIGERANT	VALVE FAMILY						
	F/Q	BQ	G/S	EBS	O*	BI	BBI
	TOTAL NUMBER TURNS						
	8	8	9	9	9	6	8
R-22	X	X	X	X	X	X	X
R-134a	X	X	X	X	X	X	X
R-404A	X	X	X	X	X	X	X
R-507	X	X	X	X	X	X	X

*O valve ≤ 30 ton R-22

Denotes OEM valves possibly adjustable

Turning adjustment stem clockwise increases superheat, counter clockwise decreases superheat.

▼ PRESSURE LIMITING CHARGES

REFRIGERANT	THERMOSTATIC CHARGE	MOP – psig	
		FACTORY AIR TEST	NOMINAL SYSTEM
12	FCP60	60	50
	FCP	40	30
	FZP	20	12
22	VCP100	100	90
	VGA	*	*
	VCP	65	55
134a	VZP40	40	30
	JCP60	60	50
	JCP	40	30
404A	SCP115	115	105
	SCP	75	65
	SZP	45	35
502	RCP115	115	105
	RCP	75	65
	RZP	45	35
507	PZP	45	35

*Above normal operating conditions

OIL PRODUCTS

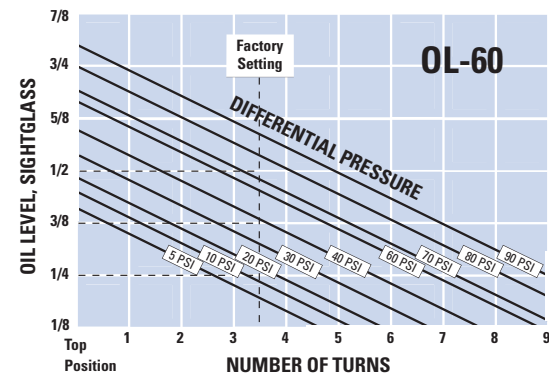
▼ OIL LEVEL CONTROLS

OL-1 and OL-2 have been replaced with OL-60 series

- Preset floats to compressor manufacturer's recommendation
- Count turns from top position: CW – lower, CCW – raise
- Never adjust past ten turns from top
- Equalizer connection may be capped



▼ OL SERIES OIL LEVEL CONTROL ADJUSTMENT PROCEDURE



For additional information see Bulletin 110-10 for charts on OL-1 & OL-2

▼ OIL CHECK VALVE (OCV-20)

Used in "low pressure" oil systems

- 20 psi differential setting standard
- Other settings available
- Check setting before adjusting float level



▼ Y1236-C UNIVERSAL PRESSURE DIFFERENTIAL VALVE

Used in "high pressure" oil systems

- Adjustable from 10-25 psi differential
- Turn: CW – higher differential; CCW – lower differential
- Check setting before adjusting float level



▼ OF SERIES OIL FILTERS (OF-303-T & ROF-413-T)

- 98% efficient on 2 micron sized particles
- Suitable for all oil types including POE
- Pressure tap for convenience during service



PRESSURE REGULATORS

VALVE TYPE	NORMAL RANGE (psig)	FACTORY SETTINGS (psig)	APPROX. CHANGE PER 360° TURN (psi)
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ADJUSTABLE HEAD PRESSURE & CRANKCASE REGULATORS			
ORI(T)-6	65/225	120	27
	100/290	235	34
ORI(T)-10	65/225	120	17
	100/290	235	18
A8	10" hg to 400 psig	120	70
A9	10" hg to 120 psig	40	16
	80/220	120	25
CRO-4	0/20	15	3.3
	0/50	30	6
CRO(T)-6	0/75	38	10
	0/60	30	6
CRO(T)-10	30/110	70	12
	0/60	30	2.5
CRO(T)-10	30/110	70	5

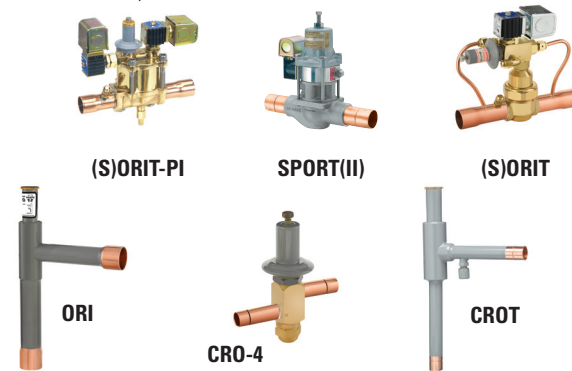
DEFROST DIFFERENTIAL VALVES			
OLDR	5/50	18	5
DDR	5/50	30	5
A8BL	0/120	40	20

ADJUSTABLE EVAPORATOR PRESSURE REGULATORS			
ORIT-6	0/50	30	6
ORIT-6	30/100	60	13
ORIT-10	0/50	30	2.5
ORIT-10	30/100	60	5.5
(S)ORIT	0/100	30	16
(S)ORIT-PI	0/100	70	16
(S)ORIT-PI	75/150	85	22
SPORT(II)	10" hg to 120 psig	40	20

ORI...Open on Rise Inlet

CRO...Close on Rise Outlet

T...Pressure Tap



For additional information see Bulletin 90-10, 90-20, and 90-30.

ELECTRONIC VALVE GUIDE

VALVE TYPE	MOTOR TYPE	MOTOR RES. Ω +/- 10%	MOTOR STEPS	MOTOR STROKE inches/seconds	MAXIMUM RATED PRESSURE psi/bar
CDS-9, 17	bipolar	75	6386	0.500/30	640/42
CDS-4, 7		100	2500	.297/12.5	700/48
SEI≤11		75	1596	0.125/7.5	620/42
SEI 30			3193	0.250/15	
SEI 50		100	6386	0.500/30	700/48
SER≤20			1596	0.189/7	
SER G, J, K	2500		0.297/12.5		
SEH	75	6386	0.500/30	620/42	
ESX	unipolar	46	500	0.104/<6	650/45

▼ WIRING GUIDELINES for ELECTRONIC VALVES

Wire voltage drop should not exceed 0.112V.

WIRE LENGTH Feet	STEP MOTOR VALVE CURRENT DRAW .215 amp/circuit			
	VOLTAGE DROP			
	18 Gauge	16 Gauge	14 Gauge	12 Gauge
40	0.112	0.070	0.044	0.027
60	—	0.105	0.066	0.042
80	—	—	0.088	0.055
100	—	—	0.110	0.069
120	—	—	—	0.083
140	—	—	—	0.098
160	—	—	—	0.111

Consult Sporlan for wire lengths greater than 160 ft.

▼ ELECTRONIC SENSOR VALUES

PSIG	PRESSURE TRANSDUCER		TEMPERATURE SENSOR		
	DC VOLTAGE (white and green leads)		TEMP °F	RESISTANCE (kohms)	
	PRESSURE TRANSDUCER RANGE			SENSOR TYPE	
	0-150 psig	0-300 psig		2K	3K
0	0.5	0.5	-40	32.3	100
25	1.2	0.8	-20	18.5	49.5
50	1.8	1.2	0	11.1	25.6
75	2.5	1.5	20	6.7	13.9
100	3.2	1.8	40	4.3	7.8
125	3.8	2.2	60	2.8	4.6
150	4.5	2.5	80	1.9	2.8
175	—	2.8	100	1.3	1.7
200	—	3.2	120	0.91	1.1
225	—	3.5	140	0.66	0.35
250	—	3.8	160	0.48	0.25
275	—	4.2			
300	—	4.5			