

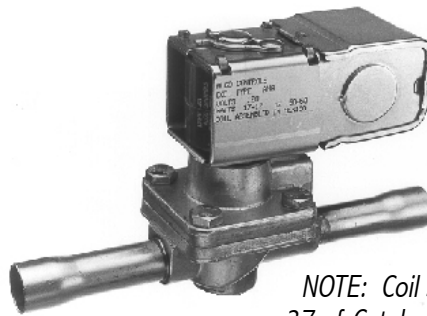
540RA SOLENOID VALVES

APPLICATION

- ☆ 2-way, normally open diaphragm valves
- ☆ Ideal for liquid, suction and hot gas service

FEATURES AND SPECIFICATIONS

- ☆ One coil fits all valve sizes
- ☆ Can be brazed into the line without disassembly
- ☆ Reinforced PTFE diaphragm with woven fiberglass for superior control
- ☆ Durable, stainless enclosing tube
- ☆ Extended ends for easy installation
- ☆ Connection sizes to fit your system
- ☆ Low pressure differential required for full opening
- ☆ Maximum fluid temp: 250°F
- ☆ Maximum working pressure: 500 psig
- ☆ MOPD: 250 psig
- ☆ UL file number: MP604
- ☆ CSA file number: LR44912
- ☆ CRN file number: OC0824.9 (see page A)



NOTE: Coil sold separately - see page 37 of Catalogue. See Nomenclature for ordering information.

NOTE: Mounting enclosing tube more than 90° off vertical up position is not recommended.

NOMENCLATURE

example: 540RA 8T5 VLC

FOR EXTENDED CAPACITY TABLES OF 540RA VALVES REFER TO 240RA CAPACITIES BEGINNING ON PAGE 2

540R	A	8	T	5	VLC
Valve	Design	Port Size	Connection Type	Connection Size	Coil*
Series	Series	(in 1/16")	T = copper extended ends	(in 1/8")	

SOLENOID SUCTION GAS CAPACITIES

TONS					
SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP					
VALVE SERIES	Evaporator Temperature - F				
	40	20	0	-20	-40
R-12					
240/540RA8	1.0	0.8	0.6	0.5	0.4
240/540RA9T5	1.3	1.1	0.9	0.7	0.5
240/540RA9	1.6	1.3	1.0	0.8	0.6
240/540RA12	2.0	1.6	1.2	1.0	0.7
240/540RA16	3.9	3.2	2.5	1.9	1.5
240/540RA20	5.5	4.5	3.5	2.7	2.1
R-22/R-407C					
240/540RA8	1.5	1.2	1.0	0.8	0.6
240/540RA9T5	2.0	1.6	1.3	1.0	0.8
240/540RA9	2.4	2.0	1.6	1.2	1.0
240/540RA12	2.9	2.4	1.9	1.5	1.2
240/540RA16	5.8	4.7	3.8	3.0	2.3
240/540RA20	8.2	6.7	5.4	4.2	3.3

TONS					
SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP					
VALVE SERIES	Evaporator Temperature - F				
	40	20	0	-20	-40
R-134a					
240/540RA8	0.8	0.6	0.5	0.4	0.3
240/540RA9T5	1.4	1.1	0.8	0.6	0.4
240/540RA9	1.7	1.4	1.1	0.8	0.5
240/540RA12	1.9	1.5	1.2	0.9	0.6
240/540RA16	3.2	2.5	1.9	1.4	1.0
240/540RA20	4.4	3.5	2.7	2.0	1.6
R-404A/R-507					
240/540RA8	0.9	0.7	0.5	0.4	0.3
240/540RA9T5	1.5	1.2	0.9	0.7	0.5
240/540RA9	1.9	1.5	1.2	0.9	0.6
240/540RA12	2.2	1.8	1.4	1.0	0.8
240/540RA16	3.4	2.7	2.1	1.6	1.2
240/540RA20	4.8	3.8	2.9	2.2	1.6

LIQUID CORRECTION FACTORS FOR SOLENOIDS

EVAPORATOR TEMPERATURE CORRECTION FACTORS FOR LIQUID, DISCHARGE AND SUCTION SERVICE REFRIGERATION ONLY

LIQUID SERVICE										
EVAPORATOR TEMPERATURE °F	40	30	20	10	0	-10	-20	-30	-40	
MULTIPLIER		1.00	.96	.92	.88	.84	.80	.77	.74	.71

SOLENOID LIQUID CAPACITIES

TONS				
LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	1	2	3	4
R-12				
710RA/713RA12	13.1	19.7	25.3	33.2
710RA/713RA16	19.9	24.9	34.9	44.8
710RA/713RA20	27.7	43.2	53.1	68.9
710RA24	44.0	62.3	76.4	99.6
R-22				
710RA/713RA12	17.2	25.8	32.9	43.6
710RA/713RA16	25.7	36.8	45.4	58.3
710RA/713RA20	36.3	56.7	69.6	89.8
710RA24	56.7	80.8	100.0	133.3
R-134a				
710RA/713RA12	15.8	23.8	3.4	40.0
710RA/713RA16	24.0	30.0	42.0	54.0
710RA/713RA20	33.4	52.0	64.0	83.0
710RA24	53.0	75.0	92.0	120.0
R-404A/R-507				
710RA/713RA12	11.5	17.2	21.9	29.1
710RA/713RA16	17.2	24.6	30.3	38.9
710RA/713RA20	24.3	37.9	46.5	60.0
710RA24	38.3	54.2	66.7	87.5
R-407C				
710RA/713RA12	16.4	24.5	31.3	41.5
710RA/713RA16	24.4	35.0	43.2	55.5
710RA/713RA20	34.5	54.0	66.3	84.4
710RA24	54.0	76.9	95.2	126.9

TONS				
LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-22				
50RB	0.44	0.54	0.62	0.69
100RB	1.04	1.27	1.47	1.64
200RB2	2.5	3.1	3.6	4.0
200RB3	3.9	4.8	5.5	6.2
200/500RB4	4.6	5.6	6.5	7.2
200/500RB5	6.7	8.2	9.5	10.6
200/500RB6	8.2	10.0	11.5	12.9
200/500RB7	12.7	15.6	18.0	20.1
200RB9 (5/8)	19.0	23.3	26.9	30.1
200RB9 (7/8, 1 1/2)	24.9	30.5	35.2	39.4
200RB12	28.5	34.9	40.3	45.1
240/540RA8	12.7	15.6	18.0	20.1
240/540RA9T (5/8)	19.0	23.3	26.9	30.1
240/540RA9T (7/8, 1 1/2)	24.9	30.5	35.2	39.4
240/540RA12	28.5	34.9	40.3	45.1
240/540RA16	47.4	58.0	67.0	74.9
240/540RA20	77.9	95.4	110.2	123.2

All liquid capacities are based on a 40°F Evaporator Temperature and 100°F Liquid Temperature.

SOLENOID LIQUID CAPACITIES CONTINUED

TONS

LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-134a				
50RB	0.41	0.5	0.6	0.6
100RB	0.96	1.2	1.4	1.5
200RB2	2.4	2.9	3.4	3.8
200RB3	3.6	4.4	5.1	5.7
200/500RB4	4.3	5.3	6.1	6.8
200/500RB5	6.4	7.8	9.1	10.1
200/500RB6	7.7	9.4	10.9	12.2
200/500RB7	12.1	14.8	17.1	19.1
200RB9 (5/8)	18.0	22.0	25.5	28.5
200RB9 (7/8, 1 1/2)	23.6	28.9	33.4	37.3
200RB12	27.1	33.2	38.3	42.8
240/540RA8	12.1	14.8	17.1	19.1
240/540RA9T (5/8)	18.0	22.0	25.5	28.5
240/540RA9T (7/8, 1 1/2)	23.6	28.9	33.4	37.3
240/540RA12	27.1	33.2	38.3	42.8
240/540RA16	45.0	55.1	63.6	71.2
240/540RA20	70.9	86.8	100.3	112.1

TONS

LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-404A/R-507				
50RB	0.3	0.34	0.4	0.4
100RB	0.7	0.85	1.0	1.1
200RB2	1.7	2.1	2.4	2.7
200RB3	2.6	3.2	3.7	4.1
200/500RB4	3.0	3.7	4.3	4.8
200/500RB5	4.4	5.4	6.2	7.0
200/500RB6	5.3	6.5	7.5	8.4
200/500RB7	8.4	10.3	11.9	13.3
200RB9 (5/8)	12.5	15.3	17.7	19.8
200RB9 (7/8, 1 1/2)	16.4	20.1	23.2	25.9
200RB12	18.8	23.0	26.6	29.7
240/540RA8	8.4	10.3	11.9	13.3
240/540RA9T (5/8)	12.5	15.3	17.7	19.8
240/540RA9T (7/8, 1 1/2)	16.4	20.1	23.2	25.9
240/540RA12	18.8	23.0	26.6	29.7
240/540RA16	31.3	38.3	44.2	49.4
240/540RA20	53.6	65.7	75.9	84.8

TONS

LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-407C				
50RB	0.4	0.51	0.6	0.7
100RB	1.0	1.21	1.4	1.6
200RB2	2.4	2.9	3.3	3.7
200RB3	3.7	4.5	5.2	5.8
200/500RB4	4.3	5.3	6.1	6.8
200/500RB5	6.4	7.8	9.0	10.1
200/500RB6	7.8	9.5	11.0	12.3
200/500RB7	12.1	14.8	17.1	19.1
200RB9 (5/8)	18.1	22.2	25.6	28.7
200RB9 (7/8, 1 1/2)	23.7	29.0	33.5	37.4
200RB12	27.1	33.2	38.3	42.9
240/540RA8	12.1	14.8	17.1	19.1
240/540RA9T (5/8)	18.0	22.1	25.5	28.5
240/540RA9T (7/8, 1 1/2)	23.7	29.0	33.5	37.4
240/540RA12	27.1	33.2	38.3	42.9
240/540RA16	45.1	55.2	63.7	71.3
240/540RA20	74.1	90.8	104.8	117.2

TONS

LIQUID CAPACITIES				
Pressure Drop Across Valve - psi				
VALVE SERIES	2	3	4	5
R-12				
50RB	0.34	0.42	0.48	0.54
100RB	0.8	1	1.16	1.2
200RB2	2.0	2.4	2.8	3.2
200RB3	3.0	3.7	4.2	4.7
200/500RB4	3.6	4.4	5.1	5.7
200/500RB5	5.3	6.5	7.5	8.4
200/500RB6	6.4	7.8	9.1	10.1
200/500RB7	10.0	12.2	14.1	15.8
200RB9 (5/8)	14.9	18.2	21.1	23.6
200RB9 (7/8, 1 1/2)	19.6	24.0	27.7	31.0
200RB12	22.5	27.6	31.8	35.6
240/540RA8	10.0	12.2	14.1	15.8
240/540RA9T (5/8)	14.9	18.2	21.1	23.6
240/540RA9T (7/8, 1 1/2)	19.6	24.0	27.7	31.0
240/540RA12	22.5	27.6	31.8	35.6
240/540RA16	37.4	45.7	52.8	59.1
240/540RA20	58.8	72.0	83.3	93.0

SOLENOID DISCHARGE CAPACITIES

50RB DISCHARGE GAS CAPACITIES

	PRESSURE DROP ACROSS VALVE (PSI)									
	1	2	3	4	5	6	7	8	9	10
R134a	0.05	0.07	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16
R22	0.06	0.09	0.10	0.12	0.14	0.15	0.16	0.17	0.18	0.19
R404A/R507	0.05	0.07	0.09	0.10	0.12	0.13	0.14	0.15	0.15	0.16

All capacities and factors shown are based on normal condensing temperatures (100°F), isentropic compression plus 50°, 40°F evaporator, 65°F suction gas and saturated liquid entering an expansion device per ARI Standard 760-80. For capacities at other operating conditions, use the appropriate correction factor given in above table.

SOLENOID DISCHARGE CAPACITIES CONTINUED

TONS						
DISCHARGE GAS CAPACITIES						
Pressure Drop Across Valve - psi						
VALVE SERIES	2	5	10	25	50	100
R-12						
100RB	0.1	0.2	0.3	0.5	0.5	0.5
200/500RB2	0.4	0.6	0.8	1.3	1.5	1.3
200/500RB3	0.5	0.8	1.2	1.7	2.0	1.6
200/500RB4	0.7	1.1	1.5	2.2	2.9	3.3
200/500RB5	1.0	1.6	2.2	3.2	4.1	4.3
200/500RB6	1.1	1.7	2.4	3.5	4.6	5.4
200/500RB7	1.5	2.4	3.3	5.2	6.6	7.2
200RB9 (5/8)	2.5	4.0	5.6	8.3	10.4	11.2
200RB9 (7/8, 1 1/2)	3.2	5.0	7.1	10.1	12.1	11.1
200RB12	3.5	5.5	7.8	11.7	14.0	12.4
240/540RA8	1.5	2.4	3.3	5.2	6.6	7.2
240/540RA9T5	2.5	4.0	5.6	8.3	10.4	11.2
240/540RA9	3.2	5.0	7.1	10.1	12.1	11.1
240/540RA12	3.5	5.5	7.8	11.7	14.0	12.4
240/540RA16	5.8	9.1	12.9	18.9	23.6	24.3
240/540RA20	8.1	12.8	18.1	28.2	34.4	33.1
R-22						
100RB	0.2	0.3	0.4	0.6	0.8	1.0
200/500RB2	0.5	0.9	1.2	1.9	2.5	2.8
200/500RB3	0.8	1.2	1.7	2.6	3.4	3.4
200/500RB4	1.0	1.6	2.2	3.4	4.5	5.7
200/500RB5	1.4	2.3	3.2	4.9	6.5	7.9
200/500RB6	1.6	2.5	3.5	5.3	7.1	9.1
200/500RB7	2.1	3.4	4.8	7.8	10.4	12.8
200RB9 (5/8)	3.6	5.7	8.1	12.5	16.6	20.4
200RB9 (7/8, 1 1/2)	4.6	7.2	10.2	15.4	20.0	23.1
200RB12	5.1	8.0	11.3	18.1	23.4	26.6
240/540RA8	2.1	3.4	4.8	7.8	10.4	12.8
240/540RA9T5	3.6	5.7	8.1	12.5	16.6	20.4
240/540RA9	4.6	7.2	10.2	15.4	20.0	23.1
240/540RA12	5.1	8.0	11.3	18.1	23.4	26.6
240/540RA16	8.3	13.2	18.7	28.6	37.8	45.6
240/540RA20	11.7	18.4	26.1	43.0	56.1	66.0
R-407C						
100RB	0.2	0.3	0.4	0.6	0.8	1.0
200/500RB2	0.5	0.9	1.2	1.9	2.5	2.9
200/500RB3	0.8	1.2	1.7	2.6	3.4	3.8
200/500RB4	1.0	1.6	2.2	3.3	4.5	5.7
200/500RB5	1.4	2.2	3.2	4.9	6.5	8.0
200/500RB6	1.5	2.4	3.5	5.2	7.1	9.1
200/500RB7	2.1	3.3	4.7	7.7	10.3	13.0
200RB9 (5/8)	3.6	5.6	8.0	12.4	16.5	20.6
200RB9 (7/8, 1 1/2)	4.5	7.1	10.1	15.3	20.0	22.5
200RB12	6.0	9.5	13.4	21.2	29.6	37.1
240/540RA8	2.1	3.3	4.7	7.7	10.3	13.0
240/540RA9T5	3.6	5.6	8.0	12.4	16.5	20.6
240/540RA9	4.5	7.1	10.1	15.3	20.0	22.5
240/540RA12	6.0	9.5	13.4	21.2	29.6	37.1
240/540RA16	8.2	13.0	18.4	28.4	37.7	46.2
240/540RA20	11.5	18.2	25.7	42.7	56.1	67.2

TONS						
DISCHARGE GAS CAPACITIES						
Pressure Drop Across Valve - psi						
VALVE SERIES	2	5	10	25	50	100
R-134a						
100RB	0.2	0.2	0.3	0.5	0.6	0.6
200/500RB2	0.5	0.7	1.0	1.5	1.8	1.7
200/500RB3	0.6	1.0	1.4	2.1	2.4	2.1
200/500RB4	0.8	1.3	1.8	2.7	3.5	4.1
200/500RB5	1.2	1.9	2.6	3.9	4.9	5.3
200/500RB6	1.3	2.1	2.9	4.3	5.6	6.6
200/500RB7	1.8	2.8	4.0	6.2	8.0	8.9
200RB9 (5/8)	3.0	4.7	6.7	10.0	12.7	13.9
200RB9 (7/8, 1 1/2)	3.8	6.0	8.5	12.2	14.8	14.2
200RB12	4.2	6.6	9.4	14.2	17.1	15.9
240/540RA8	1.8	2.8	4.0	6.2	8.0	8.9
240/540RA9T5	3.0	4.7	6.7	10.0	12.7	13.9
240/540RA9	3.8	6.0	8.5	12.2	14.8	14.2
240/540RA12	4.2	6.6	9.4	14.2	17.1	15.9
240/540RA16	6.9	10.9	15.4	22.8	28.6	30.4
240/540RA20	9.7	15.3	21.6	34.0	41.9	41.9
R-404A/R-507						
100RB	0.2	0.3	0.4	0.6	0.7	0.9
200/500RB2	0.5	0.7	1.0	1.7	2.2	2.5
200/500RB3	0.7	1.0	1.5	2.3	2.9	3.4
200/500RB4	0.9	1.3	1.9	2.9	3.9	5.0
200/500RB5	1.2	1.9	2.7	4.2	5.6	7.0
200/500RB6	1.3	2.1	3.0	4.5	6.1	7.9
200/500RB7	1.8	2.9	4.1	5.7	8.9	11.3
200RB9 (5/8)	3.1	4.9	6.9	10.7	14.3	17.9
200RB9 (7/8, 1 1/2)	3.9	6.2	8.7	13.3	17.4	20.2
200RB12	4.3	6.8	9.6	15.5	20.3	23.9
240/540RA8	1.8	2.9	4.1	6.7	8.9	11.3
240/540RA9T5	3.1	4.9	6.9	10.7	14.3	17.9
240/540RA9	3.9	6.2	8.7	13.3	17.4	20.2
240/540RA12	4.3	6.8	9.6	15.5	20.3	23.9
240/540RA16	7.1	11.3	16.0	23.6	30.8	36.2
240/540RA20	9.9	15.7	22.2	36.9	48.7	58.9

DISCHARGE CORRECTION FACTORS FOR SOLENOIDS

DISCHARGE GAS SERVICE									
EVAPORATOR TEMPERATURE °F									
REFRIGERANT	40	30	20	10	0	-10	-20	-30	-40
R-12	1.00	0.98	0.96	0.93	0.91	0.88	0.86	0.83	0.81
R-22	1.00	0.98	0.96	0.94	0.92	0.9	0.88	0.87	0.83
R-134a	1.00	0.98	0.95	0.93	0.90	0.88	0.85	0.82	0.80
R-404A	1.00	0.97	0.94	0.91	0.88	0.85	0.81	0.78	0.75
R-407C	1.00	0.98	0.95	0.93	0.90	0.88	0.85	0.82	0.80
R-410A	1.00	0.98	0.97	0.95	0.93	0.91	0.89	0.85	0.84

All capacities and factors shown are based on normal condensing temperatures (100°F), isentropic compression plus 50°, 40°F evaporator, 65°F suction gas and saturated liquid entering an expansion device per ARI Standard 760-80. For capacities at other operating conditions, use the appropriate correction factor given in above table.