

APR Control FAST SELECTION TABLE 1 through 20 ton
APR Control Model # Application Recommendations

Circuit 1st/(lead) Stage Tonnage	Package or Split System	Maximum Suction Riser	Capacity Modulation Percentage	Recommended APR Control Model Number	APR Max. Modulation in tons
1.0 tons	package split	N/A	70%	APR-0.7	0.7 tons
		5/8" OD	70%	APR-0.7	0.7 tons
1.5 tons	package split	N/A	60%	APR-0.9	0.9 tons
		5/8" OD	60%	APR-0.9	0.9 tons
2.0 tons	package split	N/A	72%	APR-1R	1.45 tons
		3/4" OD	72%	APR-1R	1.45 tons
2.5 tons	package split	N/A	58%	APR-1R	1.45 tons
		7/8" OD	58%	APR-1R	1.45 tons
3.0 tons	package split	N/A	48%	APR-1R	1.45 tons
		7/8" OD	48%	APR-1R	1.45 tons
3.5 tons	package split split	N/A	41%	APR-1R	1.45 tons
		7/8" OD	41%	APR-1R	1.45 tons
		1-1/8" OD	41%	APR-1R	1.45 tons
4.0 tons	package split	N/A	36%	APR-1R	1.45 tons
		1-1/8" OD	36%	APR-1R	1.45 tons

Capacity Control / Fast Selection Chart continued on rear of this page.

APR Control recommendation is based on best performance, as well as, suction line size in split systems.

Staging – For Installation Consideration only - Compressors that are manifold/tandem are treated as one single large compressor, with APR Control installed where the lines come together to create the single circuit. The APR Control will act as capacity modulator when either of the compressors start, changing capacities as each stage comes on-line, responding to changing load requirements.

Using the above chart for APR Control model Selection (Split system concerns): APR Control selection will be based on the *lead stage (compressor) tonnage*. The last column – *APR tons capacity control* – is the maximum amount of reduction that APR Control model can reduce the stage/circuit capacity at low load conditions. The amount remaining in the circuit, after subtracting the maximum amount the APR Control model can reduce from the lead stage/circuit tonnage, must be sufficient to maintain minimum gas velocity up any suction risers to continuously entrain/carry oil back to the compressor. This is why for each combination of stage/circuit tonnage we recommend an APR Control model and a maximum suction riser size (in the above chart).

Example: 10 ton Condensing Unit with two compressors tandem together to a single circuit. An installed APR-1 (3.4 tons capacity control) will act to modulate capacity on the lead stage from 5 tons down to 1.75-2 tons. Because this circuit can run at 5 tons (even though the suction line has been sized for 10 ton), suction line sizing (risers in particular) must be selected to assure oil entrainment up the riser when the APR-1 is providing its maximum modulation. The limit on using an APR-1 (3.4 tons capacity control) on this circuit is that the suction line, and riser in particular, must be sized at 1-1/8" OD maximum, but this might prove to be a significant limitation on the suction line run between the evaporator and the condensing unit. Call RDI to discuss how this can be addressed.

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APR Control Model # Application Recommendations

<u>Circuit or 1st(lead) Stag² Tonnage</u>	<u>Package or Split System</u>	<u>Maximum Suction Riser</u>	<u>Capacity Modulation Percentage</u>	<u>Recommended APR Control Model Number</u>	<u>APR Max. Modulation in tons</u>
5.0 tons	package	N/A	68%	APR-1	3.4 tons
	split	1-1/8" OD	68%	APR-1	3.4 tons
	split	1-3/8" OD	29%	APR-1R	1.45 tons
6.25 tons	package	N/A	75%	APR-2	4.5-5 tons
	split	1-1/8" OD	75%	APR-2	4.5-5 tons
	split	1-3/8" OD	57%	APR-1	3.4 tons
7.5 tons	package	N/A	67%	APR-2	4.5-5 tons
	split	1-3/8" OD	67%	APR-2	4.5-5 tons
	split	1-5/8" OD	45%	APR-1	3.4 tons
8.5 tons	package	N/A	59%	APR-2	4.5-5 tons
	split	1-3/8" OD	59%	APR-2	4.5-5 tons
	split	1-5/8" OD	40%	APR-1	3.4 tons
10 tons	package	N/A	70%	APR-2.5	7.0 tons
	split	1-3/8" OD	70%	APR-2.5	7.0 tons
	split	1-5/8" OD	50%	APR-2	4.5-5 tons
12.5 tons	package	N/A	80%	APR-3	10.0 tons
	split	1-1/8" OD	80%	APR-3	10.0 tons
	split	1-5/8" OD	56%	APR-2.5	6.5-7 tons
15 tons	package	N/A	67%	APR-3	10.0 tons
	split	1-5/8" OD	67%	APR-3	10.0 tons
	split	2-1/8" OD	47%	APR-2	4.5-5 tons
20 tons	package	N/A	80%	APR-3.5*	16.0 tons
	split	2-1/8" OD	50%	APR-3	10.0 tons

* APR-3.5 is Factory set for 58 lbs – this valve is non-adjustable.

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