

## Correction Elements That Influence the Capacity

### Pressure Drop in the High-Pressure Side Liquid Pipe

Pressure drop on the high-pressure side results in a reduction in refrigerating capacity. The pressure drop occurring between the condenser and the expansion valve can lead to the generation of flash gas, which reduces the capacity of the expansion valve. Therefore, it is usually necessary to consider subcooling of approx. 1 to 3°C.

### Correction Factor for Pressure Drop in the Low-Pressure Side Pipe

Pressure drops in the distributor and the evaporator can cause temperature imbalances and reduced capacity. The correction factors shown here are for changes in pressure drop within the distributor and evaporator.

#### R134a

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.987	0.973	0.960	0.946	0.932	0.917	0.903	0.888	0.873	0.858
-50	1.000	0.987	0.973	0.959	0.945	0.931	0.916	0.901	0.886	0.871	0.856
-40	1.000	0.986	0.972	0.958	0.944	0.929	0.914	0.899	0.884	0.868	0.852
-30	1.000	0.986	0.971	0.956	0.941	0.926	0.911	0.895	0.879	0.863	0.846
-20	1.000	0.985	0.969	0.954	0.938	0.922	0.905	0.888	0.871	0.854	0.836
-10	1.000	0.983	0.967	0.950	0.932	0.914	0.896	0.878	0.859	0.840	0.820
-5	1.000	0.982	0.965	0.946	0.928	0.909	0.890	0.870	0.850	0.829	0.808
0	1.000	0.981	0.962	0.942	0.922	0.902	0.881	0.860	0.838	0.815	0.792
5	1.000	0.979	0.958	0.937	0.915	0.892	0.869	0.845	0.821	0.796	0.770
10	1.000	0.977	0.953	0.929	0.904	0.879	0.852	0.825	0.797	0.768	0.738

#### R404A

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.985	0.978	0.970	0.962	0.955	0.947	0.939	0.931	0.923
-50	1.000	0.992	0.985	0.977	0.969	0.962	0.954	0.946	0.938	0.930	0.922
-40	1.000	0.992	0.984	0.976	0.968	0.960	0.952	0.944	0.936	0.928	0.919
-30	1.000	0.992	0.984	0.975	0.967	0.959	0.950	0.942	0.933	0.924	0.915
-20	1.000	0.991	0.983	0.974	0.965	0.956	0.947	0.937	0.928	0.919	0.909
-10	1.000	0.990	0.981	0.971	0.961	0.951	0.941	0.931	0.921	0.910	0.900
-5	1.000	0.990	0.980	0.969	0.959	0.948	0.937	0.926	0.915	0.904	0.893
0	1.000	0.989	0.978	0.967	0.955	0.944	0.932	0.920	0.908	0.896	0.884
5	1.000	0.988	0.976	0.963	0.951	0.938	0.925	0.912	0.899	0.885	0.872
10	1.000	0.986	0.973	0.959	0.945	0.930	0.916	0.901	0.886	0.870	0.855

#### R407C

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.929	0.921
-50	1.000	0.992	0.984	0.977	0.969	0.961	0.952	0.944	0.936	0.928	0.919
-40	1.000	0.992	0.984	0.976	0.968	0.960	0.951	0.943	0.935	0.926	0.917
-30	1.000	0.992	0.983	0.975	0.967	0.958	0.950	0.941	0.932	0.923	0.914
-20	1.000	0.991	0.983	0.974	0.965	0.956	0.947	0.938	0.929	0.919	0.910
-10	1.000	0.991	0.981	0.972	0.962	0.952	0.943	0.933	0.923	0.913	0.902
-5	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.929	0.919	0.908	0.897
0	1.000	0.990	0.979	0.968	0.958	0.947	0.936	0.925	0.913	0.902	0.890
5	1.000	0.989	0.977	0.966	0.954	0.942	0.931	0.918	0.906	0.894	0.881
10	1.000	0.988	0.975	0.963	0.950	0.937	0.924	0.910	0.897	0.883	0.869

**R410A**

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.994	0.989	0.983	0.977	0.972	0.966	0.960	0.954	0.949	0.943
-50	1.000	0.994	0.989	0.983	0.977	0.971	0.965	0.959	0.953	0.948	0.942
-40	1.000	0.994	0.988	0.982	0.976	0.970	0.964	0.958	0.952	0.946	0.940
-30	1.000	0.994	0.988	0.981	0.975	0.969	0.963	0.956	0.950	0.943	0.937
-20	1.000	0.993	0.987	0.980	0.973	0.967	0.960	0.953	0.946	0.939	0.932
-10	1.000	0.993	0.986	0.978	0.971	0.963	0.956	0.948	0.941	0.933	0.925
-5	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.929	0.920
0	1.000	0.992	0.983	0.975	0.966	0.958	0.949	0.940	0.932	0.923	0.914
5	1.000	0.991	0.982	0.972	0.963	0.954	0.944	0.934	0.925	0.915	0.905
10	1.000	0.990	0.979	0.969	0.958	0.948	0.937	0.926	0.915	0.904	0.892

**R407H**

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.985	0.978	0.970	0.963	0.955	0.947	0.939	0.932	0.924
-50	1.000	0.993	0.985	0.977	0.970	0.962	0.954	0.946	0.939	0.931	0.923
-40	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.929	0.921
-30	1.000	0.992	0.984	0.976	0.968	0.960	0.952	0.943	0.935	0.926	0.918
-20	1.000	0.992	0.983	0.975	0.966	0.958	0.949	0.940	0.931	0.922	0.913
-10	1.000	0.991	0.982	0.973	0.964	0.954	0.945	0.935	0.926	0.916	0.906
-5	1.000	0.991	0.981	0.971	0.962	0.952	0.942	0.932	0.922	0.912	0.901
0	1.000	0.990	0.980	0.970	0.959	0.949	0.938	0.928	0.917	0.906	0.895
5	1.000	0.989	0.978	0.967	0.956	0.945	0.933	0.922	0.910	0.898	0.886
10	1.000	0.988	0.976	0.964	0.952	0.939	0.927	0.914	0.901	0.888	0.874

**R448A**

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.986	0.978	0.971	0.964	0.956	0.949	0.941	0.934	0.926
-50	1.000	0.993	0.985	0.978	0.971	0.963	0.956	0.948	0.941	0.933	0.925
-40	1.000	0.993	0.985	0.978	0.970	0.962	0.955	0.947	0.939	0.931	0.923
-30	1.000	0.992	0.985	0.977	0.969	0.961	0.953	0.945	0.937	0.928	0.920
-20	1.000	0.992	0.984	0.975	0.967	0.959	0.950	0.942	0.933	0.924	0.916
-10	1.000	0.991	0.982	0.973	0.964	0.955	0.946	0.937	0.927	0.918	0.908
-5	1.000	0.991	0.981	0.972	0.962	0.953	0.943	0.933	0.923	0.913	0.903
0	1.000	0.990	0.980	0.970	0.960	0.950	0.939	0.929	0.918	0.908	0.897
5	1.000	0.989	0.979	0.968	0.957	0.946	0.934	0.923	0.911	0.900	0.888
10	1.000	0.988	0.976	0.965	0.952	0.940	0.928	0.915	0.902	0.889	0.876

**R463A-J**

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.995	0.990	0.984	0.979	0.974	0.969	0.963	0.958	0.953	0.947
-50	1.000	0.995	0.990	0.984	0.979	0.974	0.968	0.963	0.957	0.952	0.946
-40	1.000	0.995	0.989	0.984	0.978	0.973	0.967	0.962	0.956	0.951	0.945
-30	1.000	0.994	0.989	0.983	0.978	0.972	0.966	0.960	0.955	0.949	0.943
-20	1.000	0.994	0.988	0.982	0.976	0.970	0.964	0.958	0.952	0.946	0.940
-10	1.000	0.994	0.987	0.981	0.975	0.968	0.962	0.955	0.948	0.942	0.935
-5	1.000	0.993	0.987	0.980	0.973	0.966	0.960	0.953	0.946	0.939	0.932
0	1.000	0.993	0.986	0.979	0.972	0.964	0.957	0.950	0.942	0.935	0.927
5	1.000	0.992	0.985	0.977	0.970	0.962	0.954	0.946	0.938	0.930	0.922
10	1.000	0.992	0.984	0.975	0.967	0.958	0.950	0.941	0.932	0.923	0.915

**R449A**

Evaporating Temp. (°C)	Pressure Drop (MPa)										
	0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25
-60	1.000	0.993	0.986	0.978	0.971	0.963	0.956	0.948	0.941	0.933	0.925
-50	1.000	0.993	0.985	0.978	0.970	0.963	0.955	0.948	0.940	0.932	0.924
-40	1.000	0.992	0.985	0.977	0.970	0.962	0.954	0.946	0.938	0.930	0.922
-30	1.000	0.992	0.984	0.976	0.969	0.960	0.952	0.944	0.936	0.928	0.919
-20	1.000	0.992	0.984	0.975	0.967	0.958	0.950	0.941	0.932	0.923	0.915
-10	1.000	0.991	0.982	0.973	0.964	0.955	0.945	0.936	0.927	0.917	0.907
-5	1.000	0.991	0.981	0.972	0.962	0.952	0.942	0.933	0.922	0.912	0.902
0	1.000	0.990	0.980	0.970	0.960	0.949	0.939	0.928	0.917	0.906	0.895
5	1.000	0.989	0.978	0.967	0.956	0.945	0.934	0.922	0.910	0.899	0.887
10	1.000	0.988	0.976	0.964	0.952	0.939	0.927	0.914	0.901	0.888	0.875

## Selection Example for PKV and GKV

Select the most suitable electronic expansion valve for the operating conditions shown on page 7.

### (1) Calculate the max. required refrigerating capacity of the equipment

(Usually the capacity right after starting operation)

Use the correction factor table for R404A to find the correction factor (1.55) from the evaporating temp. (-30°C), condensing temp. (40°C) (A), and subcooling (30°C) (B). Then, divide the required refrigerating capacity (37.0 kW) by the correction factor to get the max. required refrigerating capacity (23.9kW).

### (2) Calculate the min. required refrigeration capacity of the equipment

(Usually the capacity right after operation ends)

Find the correction factor (1.66) from the evaporating temp. (-50°C), condensing temp. (40°C) (C), and subcooling (40°C) (D). Then, divide the required refrigerating capacity (17.5kW) by the correction factor to get the min. required refrigerating capacity (10.5kW).

### (3) Select an electronic expansion valve

At 480 pulses, GKV-34BS and GKV-60BS have larger refrigerating capacity than the equipment requires. Comparing the valve operating range between max. and min. loads, GKV-60BS has 80 pulses (E), while GKV-34BS has 185 pulses (F). Therefore, select the GKV-34BS, which has a wider valve operating range (higher resolution).

Correction Factor for R404A

ET (°C)	CT (°C)	Subcooling (°C)						
		0	10	20	30	40	50	60
-70	50	0.61	0.85	1.08	1.30	1.52	1.74	1.95
	45	0.69	0.91	1.12	1.33	1.54	1.74	1.94
	40	0.75	0.96	1.16	1.35	1.54	1.73	1.92
	35	0.80	0.99	1.18	1.36	1.54	1.72	1.90
	30	0.84	1.02	1.19	1.36	1.53	1.70	1.86
-60	50	0.68	0.92	1.15	1.37	1.59	1.81	2.03
	45	0.76	0.98	1.19	1.40	1.61	1.81	2.01
	40	0.82	1.02	1.22	1.41	1.61	1.80	1.99
	35	0.86	1.05	1.24	1.42	1.60	1.78	1.96
	30	0.90	1.07	1.24	1.41	1.58	1.75	1.91
-50	50	0.75	0.99	1.22	1.44	1.66	1.88	2.09
	45	0.82	1.04	1.25	1.46	1.67	1.87	2.07
	40	0.87	1.08	1.28	1.47	1.66	1.85	2.04
	35	0.92	1.10	1.29	1.47	1.65	1.83	2.00
	30	0.95	1.12	1.29	1.46	1.63	1.79	1.96
-40	50	0.81	1.05	1.28	1.50	1.72	1.93	2.15
	45	0.87	1.09	1.31	1.51	1.72	1.92	2.12
	40	0.92	1.13	1.32	1.52	1.71	1.90	2.08
	35	0.96	1.15	1.33	1.51	1.69	1.86	2.04
	30	0.98	1.16	1.33	1.49	1.66	1.82	1.98
-30	50	0.86	1.10	1.33	1.55	1.76	1.98	2.19
	45	0.92	1.14	1.35	1.55	1.76	1.96	2.15
	40	0.96	1.16	1.36	1.55	1.74	1.92	2.11
	35	0.99	1.18	1.36	1.53	1.71	1.88	2.05
	30	1.01	1.18	1.35	1.51	1.67	1.83	—
-25	50	0.88	1.12	1.35	1.57	1.78	1.99	2.20
	45	0.94	1.16	1.36	1.57	1.77	1.97	2.16
	40	0.98	1.18	1.37	1.56	1.75	1.93	2.11
	35	1.01	1.19	1.36	1.54	1.71	1.88	—
	30	1.02	1.18	1.35	1.51	1.67	1.82	—
-20	50	0.90	1.14	1.36	1.58	1.79	2.00	2.21
	45	0.96	1.17	1.38	1.58	1.78	1.97	2.16
	40	0.99	1.19	1.38	1.56	1.75	1.93	—
	35	1.01	1.19	1.37	1.54	1.71	1.87	—
	30	1.02	1.18	1.34	1.50	1.66	—	—
-15	50	0.92	1.15	1.37	1.59	1.80	2.01	2.21
	45	0.97	1.18	1.38	1.58	1.78	1.97	—
	40	1.00	1.19	1.38	1.56	1.74	1.92	—
	35	1.01	1.19	1.36	1.53	1.69	—	—
	30	1.02	1.17	1.33	1.48	1.64	—	—
-10	50	0.93	1.16	1.38	1.59	1.80	2.00	—
	45	0.97	1.18	1.38	1.58	1.77	1.96	—
	40	1.00	1.19	1.37	1.55	1.73	—	—
	35	1.01	1.18	1.35	1.51	1.67	—	—
	30	1.00	1.16	1.31	1.46	—	—	—
-5	50	0.94	1.16	1.38	1.58	1.79	1.99	—
	45	0.98	1.18	1.37	1.57	1.75	—	—
	40	0.99	1.18	1.36	1.53	1.70	—	—
	35	1.00	1.16	1.32	1.48	—	—	—
	30	0.98	1.13	1.28	1.42	—	—	—
0	50	0.94	1.16	1.37	1.57	1.77	—	—
	45	0.97	1.17	1.36	1.54	1.73	—	—
	40	0.98	1.16	1.33	1.50	—	—	—
	35	0.98	1.14	1.29	1.44	—	—	—
	30	0.95	1.09	1.23	—	—	—	—

## Operating Conditions

Equipment : Rapid Freezer (using a two-stage compression refrigeration unit)

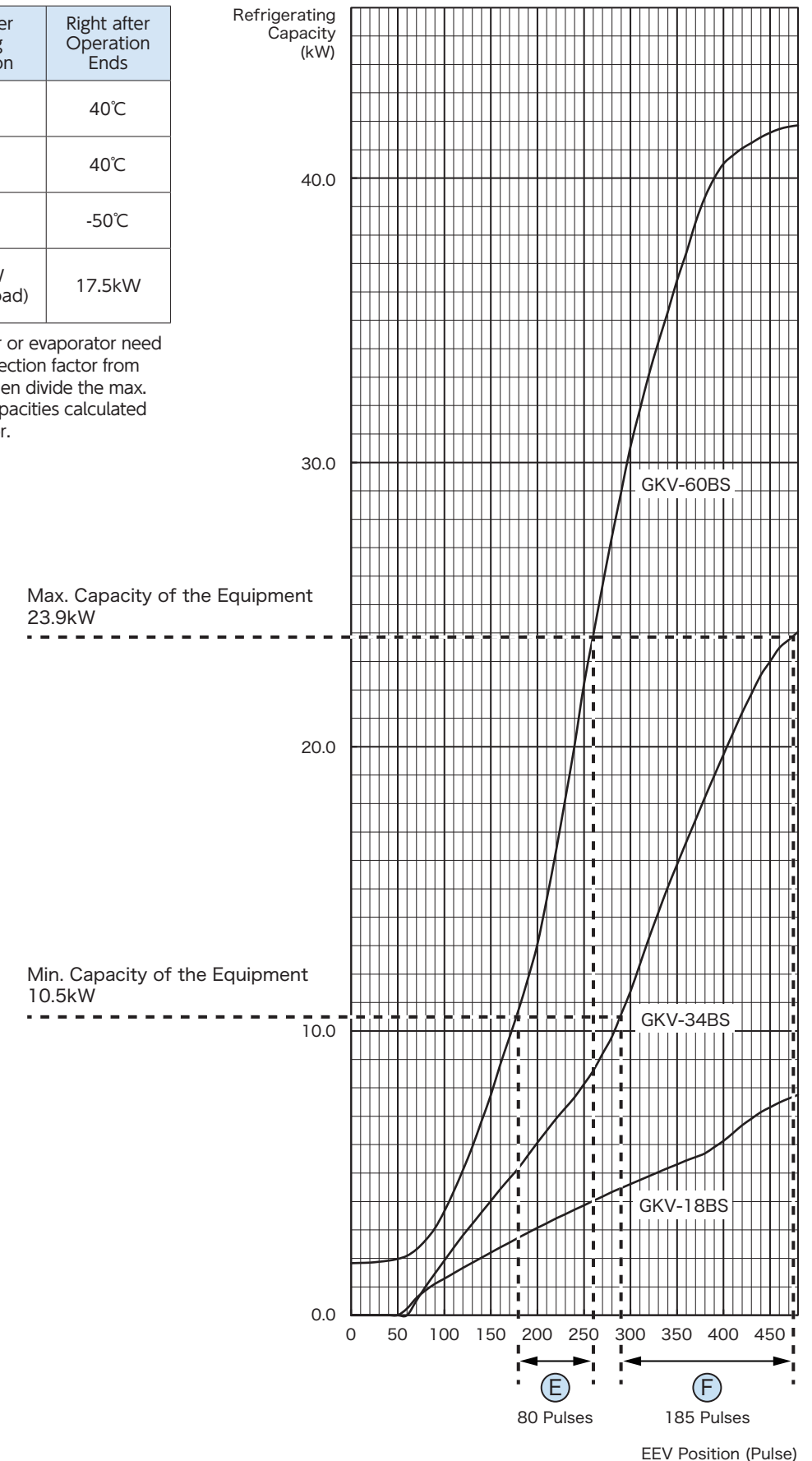
Target Freezing Temperature : -40°C

Refrigerant : R404A

Operating Conditions	Right after Starting Operation	Right after Operation Ends
Condensing Temp. (CT)	40°C	40°C
Subcooling (SC)	30°C	40°C
Evaporating Temp. (ET)	-30°C	-50°C
Required Refrigerating Capacity	37.0kW (at max. load)	17.5kW

\* If pressure drops in the distributor or evaporator need to be considered, obtain the correction factor from the tables on pages 1 to 3 and then divide the max. and min. required refrigerating capacities calculated previously by the correction factor.

Conditions  
Refrigerant : R404A  
Evaporating Temp. (ET) : -10°C  
Condensing Temp. (CT) : 40°C  
Subcooling : 0°C  
Superheat : 5°C



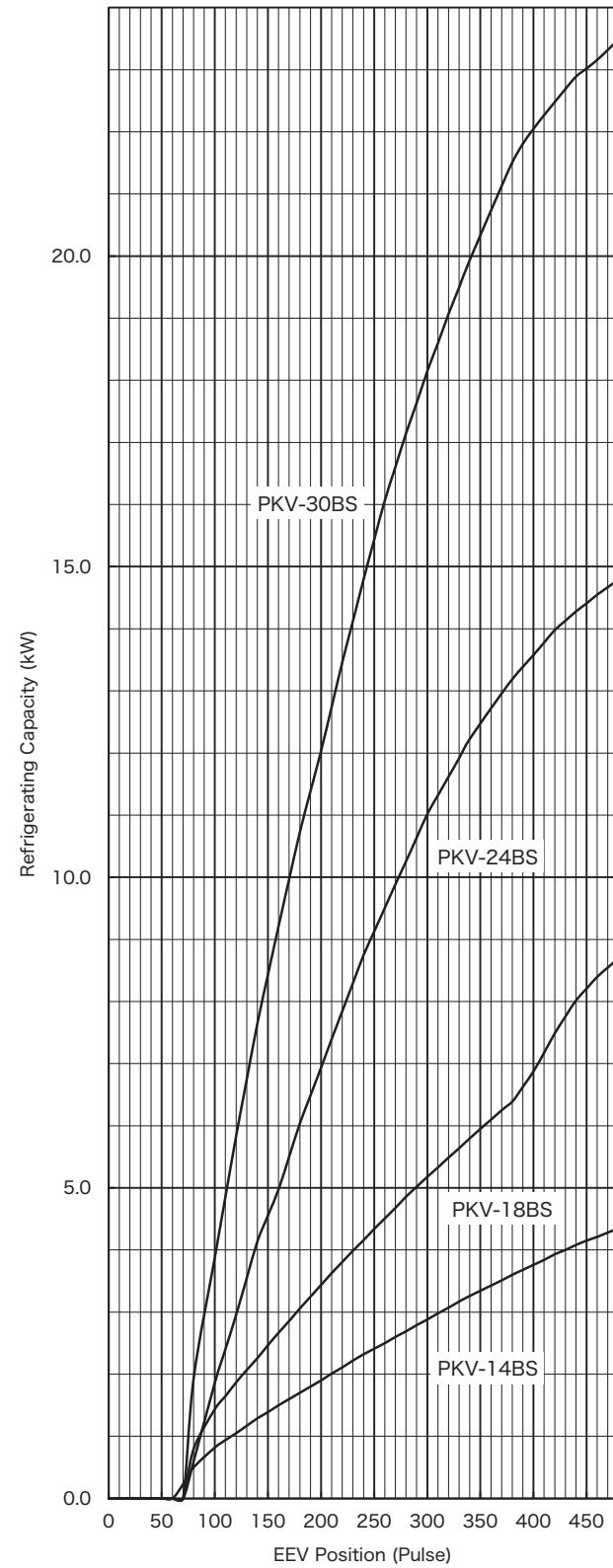
# Capacity Chart for PKV

## R134a < Type PKV >

Refrigerant : R134a  
 Evaporating Temp. (ET) : -10°C  
 Condensing Temp. (CT) : 40°C  
 Subcooling : 0°C  
 Superheat : 5°C

MOPD :  
 PKV-14BS 3.5 MPa  
 PKV-18BS 3.5 MPa  
 PKV-24BS 3.5 MPa  
 PKV-30BS 2.5 MPa

Capacity Chart for R134a



Correction Factor for R134a

Superheat : 5°C

ET (°C)	CT (°C)	Subcooling (°C)						
		0	10	20	30	40	50	60
-50	50	0.88	1.03	1.19	1.34	1.49	1.64	1.79
	45	0.90	1.04	1.18	1.32	1.46	1.60	1.74
	40	0.90	1.04	1.17	1.30	1.43	1.56	1.70
	35	0.91	1.03	1.15	1.28	1.40	1.52	1.64
	30	0.90	1.01	1.13	1.24	1.36	1.47	1.58
-40	50	0.93	1.08	1.23	1.38	1.53	1.68	1.83
	45	0.94	1.08	1.22	1.37	1.51	1.65	1.79
	40	0.94	1.08	1.21	1.34	1.47	1.60	1.73
	35	0.94	1.06	1.19	1.31	1.43	1.55	1.67
	30	0.93	1.04	1.16	1.27	1.38	1.49	1.61
-30	50	0.97	1.12	1.27	1.42	1.57	1.72	1.87
	45	0.98	1.12	1.26	1.40	1.54	1.68	1.81
	40	0.98	1.11	1.24	1.37	1.50	1.62	1.75
	35	0.97	1.09	1.21	1.33	1.45	1.57	1.69
	30	0.95	1.06	1.17	1.28	1.39	1.50	—
-25	50	0.99	1.14	1.29	1.44	1.59	1.73	1.88
	45	0.99	1.13	1.27	1.41	1.55	1.69	1.82
	40	0.99	1.12	1.25	1.38	1.50	1.63	1.76
	35	0.98	1.10	1.21	1.33	1.45	1.57	—
	30	0.95	1.07	1.17	1.28	1.39	1.50	—
-20	50	1.00	1.15	1.30	1.45	1.60	1.74	1.89
	45	1.00	1.14	1.28	1.42	1.56	1.69	1.83
	40	1.00	1.12	1.25	1.38	1.51	1.63	—
	35	0.98	1.10	1.22	1.33	1.45	1.57	—
	30	0.96	1.06	1.17	1.28	1.39	—	—
-15	50	1.01	1.16	1.31	1.46	1.60	1.75	1.89
	45	1.01	1.15	1.29	1.42	1.56	1.69	—
	40	1.00	1.13	1.25	1.38	1.50	1.63	—
	35	0.98	1.10	1.21	1.33	1.44	—	—
	30	0.95	1.06	1.16	1.27	1.37	—	—
-10	50	1.02	1.17	1.32	1.46	1.60	1.75	—
	45	1.02	1.15	1.29	1.42	1.55	1.69	—
	40	1.00	1.12	1.25	1.37	1.49	—	—
	35	0.97	1.09	1.20	1.31	1.43	—	—
	30	0.94	1.04	1.15	1.25	—	—	—
-5	50	1.03	1.17	1.32	1.46	1.60	1.74	—
	45	1.02	1.15	1.28	1.41	1.54	—	—
	40	0.99	1.12	1.24	1.36	1.48	—	—
	35	0.96	1.07	1.18	1.29	—	—	—
	30	0.92	1.02	1.12	1.22	—	—	—
0	50	1.02	1.17	1.31	1.45	1.59	—	—
	45	1.01	1.14	1.27	1.40	1.52	—	—
	40	0.98	1.10	1.22	1.33	—	—	—
	35	0.94	1.05	1.16	1.26	—	—	—
	30	0.89	0.99	1.08	—	—	—	—
5	50	1.02	1.16	1.29	1.43	1.56	—	—
	45	1.00	1.12	1.25	1.37	—	—	—
	40	0.96	1.07	1.19	1.30	—	—	—
	35	0.91	1.02	1.12	—	—	—	—
	30	0.85	0.94	1.03	—	—	—	—
10	50	1.00	1.14	1.27	1.40	—	—	—
	45	0.97	1.09	1.21	1.33	—	—	—
	40	0.93	1.04	1.15	—	—	—	—
	35	0.87	0.97	1.06	—	—	—	—
	30	0.80	0.88	—	—	—	—	—

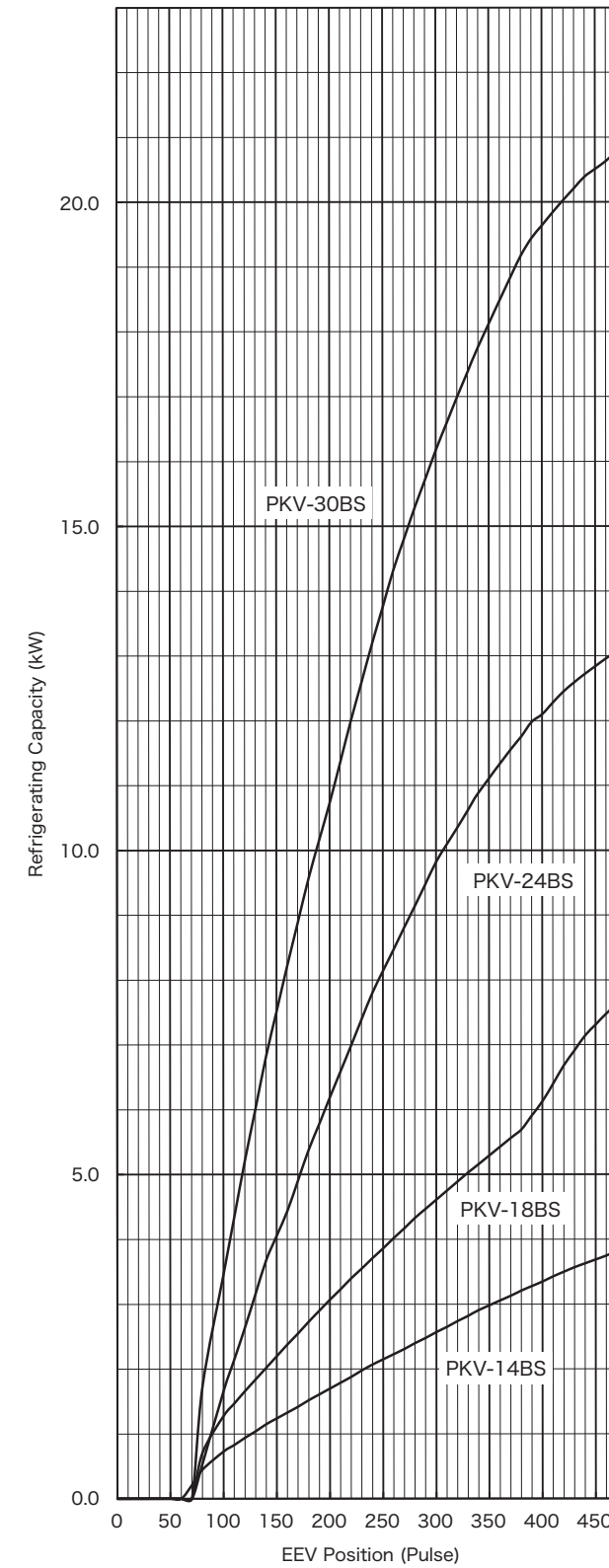
# Capacity Chart for PKV

## R404A < Type PKV >

Refrigerant : R404A  
 Evaporating Temp. (ET) : -10°C  
 Condensing Temp. (CT) : 40°C  
 Subcooling : 0°C  
 Superheat : 5°C

MOPD :  
 PKV-14BS 3.5 MPa  
 PKV-18BS 3.5 MPa  
 PKV-24BS 3.5 MPa  
 PKV-30BS 2.5 MPa

Capacity Chart for R404A



Correction Factor for R404A

Superheat : 5°C

ET (°C)	CT (°C)	Subcooling (°C)						
		0	10	20	30	40	50	60
-50	50	0.75	0.99	1.22	1.44	1.66	1.88	2.09
	45	0.82	1.04	1.25	1.46	1.67	1.87	2.07
	40	0.87	1.08	1.28	1.47	1.66	1.85	2.04
	35	0.92	1.10	1.29	1.47	1.65	1.83	2.00
	30	0.95	1.12	1.29	1.46	1.63	1.79	1.96
-40	50	0.81	1.05	1.28	1.50	1.72	1.93	2.15
	45	0.87	1.09	1.31	1.51	1.72	1.92	2.12
	40	0.92	1.13	1.32	1.52	1.71	1.90	2.08
	35	0.96	1.15	1.33	1.51	1.69	1.86	2.04
	30	0.98	1.16	1.33	1.49	1.66	1.82	1.98
-30	50	0.86	1.10	1.33	1.55	1.76	1.98	2.19
	45	0.92	1.14	1.35	1.55	1.76	1.96	2.15
	40	0.96	1.16	1.36	1.55	1.74	1.92	2.11
	35	0.99	1.18	1.36	1.53	1.71	1.88	2.05
	30	1.01	1.18	1.35	1.51	1.67	1.83	—
-25	50	0.88	1.12	1.35	1.57	1.78	1.99	2.20
	45	0.94	1.16	1.36	1.57	1.77	1.97	2.16
	40	0.98	1.18	1.37	1.56	1.75	1.93	2.11
	35	1.01	1.19	1.36	1.54	1.71	1.88	—
	30	1.02	1.18	1.35	1.51	1.67	1.82	—
-20	50	0.90	1.14	1.36	1.58	1.79	2.00	2.21
	45	0.96	1.17	1.38	1.58	1.78	1.97	2.16
	40	0.99	1.19	1.38	1.56	1.75	1.93	—
	35	1.01	1.19	1.37	1.54	1.71	1.87	—
	30	1.02	1.18	1.34	1.50	1.66	—	—
-15	50	0.92	1.15	1.37	1.59	1.80	2.01	2.21
	45	0.97	1.18	1.38	1.58	1.78	1.97	—
	40	1.00	1.19	1.38	1.56	1.74	1.92	—
	35	1.01	1.19	1.36	1.53	1.69	—	—
	30	1.02	1.17	1.33	1.48	1.64	—	—
-10	50	0.93	1.16	1.38	1.59	1.80	2.00	—
	45	0.97	1.18	1.38	1.58	1.77	1.96	—
	40	1.00	1.19	1.37	1.55	1.73	—	—
	35	1.01	1.18	1.35	1.51	1.67	—	—
	30	1.00	1.16	1.31	1.46	—	—	—
-5	50	0.94	1.16	1.38	1.58	1.79	1.99	—
	45	0.98	1.18	1.37	1.57	1.75	—	—
	40	0.99	1.18	1.36	1.53	1.70	—	—
	35	1.00	1.16	1.32	1.48	—	—	—
	30	0.98	1.13	1.28	1.42	—	—	—
0	50	0.94	1.16	1.37	1.57	1.77	—	—
	45	0.97	1.17	1.36	1.54	1.73	—	—
	40	0.98	1.16	1.33	1.50	—	—	—
	35	0.98	1.14	1.29	1.44	—	—	—
	30	0.95	1.09	1.23	—	—	—	—
5	50	0.93	1.15	1.35	1.55	1.74	—	—
	45	0.96	1.15	1.33	1.51	—	—	—
	40	0.96	1.13	1.30	1.46	—	—	—
	35	0.94	1.10	1.24	—	—	—	—
	30	0.91	1.04	1.17	—	—	—	—
10	50	0.92	1.13	1.33	1.52	—	—	—
	45	0.94	1.12	1.30	1.47	—	—	—
	40	0.93	1.09	1.25	—	—	—	—
	35	0.90	1.04	1.18	—	—	—	—
	30	0.85	0.97	—	—	—	—	—







# Capacity Chart for PKV

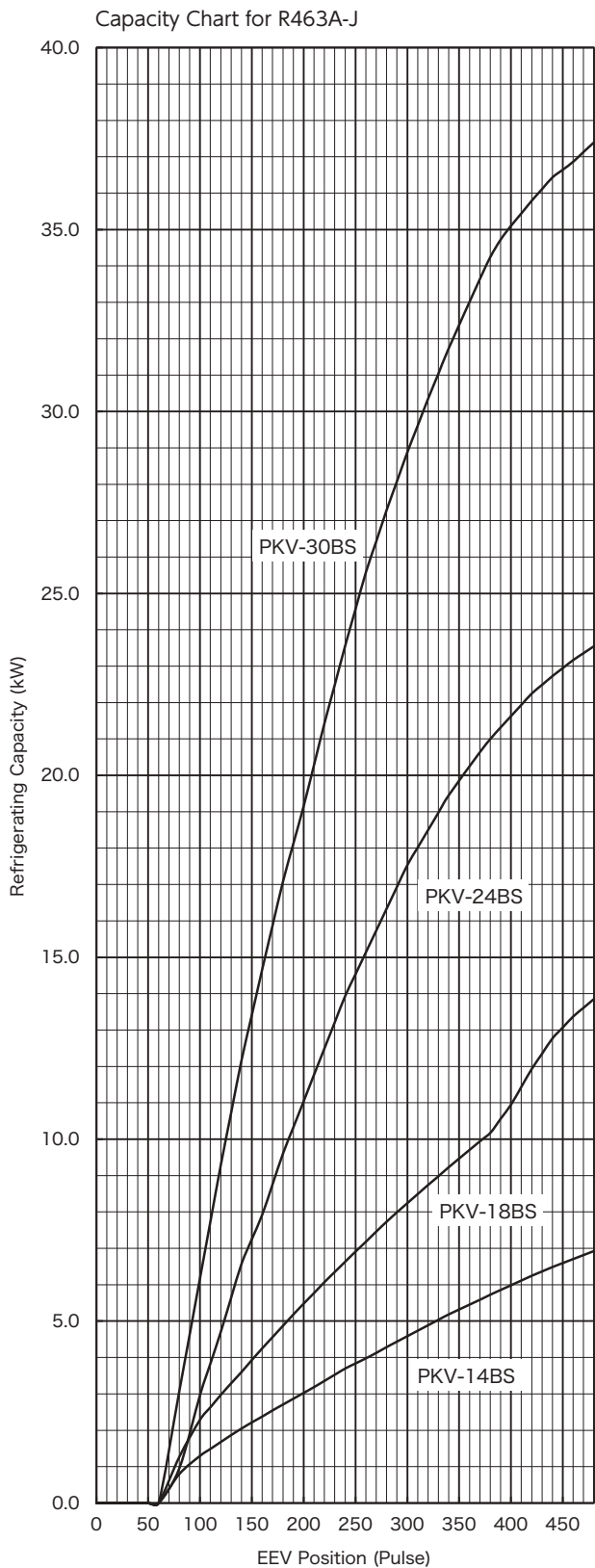
## R463A-J < Type PKV >

Refrigerant : R463A-J  
 Evaporating Temp. (ET) : -20°C  
 Condensing Temp. (CT) : 30°C  
 Subcooling : 0°C  
 Superheat : 5°C

MOPD :  
 PKV-14BS 3.5 MPa  
 PKV-18BS 3.5 MPa  
 PKV-24BS 3.5 MPa  
 PKV-30BS 2.5 MPa

Correction Factor for R463A-J

Superheat : 5°C



ET (°C)	CT (°C)	Subcooling (°C)						
		0	10	20	30	40	50	60
-50	50	0.85	1.04	1.21	1.38	1.55	1.72	1.88
	45	0.90	1.07	1.23	1.39	1.55	1.70	1.85
	40	0.93	1.09	1.24	1.39	1.54	1.68	1.82
	35	0.95	1.10	1.24	1.38	1.52	1.65	1.79
	30	0.96	1.10	1.23	1.36	1.49	1.62	1.75
-40	50	0.89	1.07	1.25	1.42	1.58	1.75	1.91
	45	0.93	1.10	1.26	1.42	1.58	1.73	1.88
	40	0.96	1.11	1.27	1.42	1.56	1.71	1.85
	35	0.98	1.12	1.26	1.40	1.54	1.67	1.81
	30	0.99	1.12	1.25	1.38	1.51	1.64	1.76
-30	50	0.92	1.10	1.27	1.44	1.61	1.77	1.93
	45	0.95	1.12	1.28	1.44	1.60	1.75	1.90
	40	0.98	1.13	1.28	1.43	1.58	1.72	1.86
	35	0.99	1.14	1.28	1.41	1.55	1.68	1.81
	30	1.00	1.13	1.26	1.39	1.51	1.64	—
-25	50	0.93	1.11	1.28	1.45	1.62	1.78	1.94
	45	0.96	1.13	1.29	1.45	1.60	1.75	1.90
	40	0.99	1.14	1.29	1.44	1.58	1.72	1.86
	35	1.00	1.14	1.28	1.42	1.55	1.68	—
	30	1.00	1.13	1.26	1.39	1.51	1.63	—
-20	50	0.94	1.12	1.29	1.46	1.62	1.78	1.94
	45	0.97	1.14	1.30	1.45	1.60	1.75	1.90
	40	0.99	1.14	1.29	1.43	1.58	1.72	—
	35	1.00	1.14	1.28	1.41	1.54	1.67	—
	30	1.00	1.13	1.26	1.38	1.50	—	—
-15	50	0.94	1.12	1.29	1.46	1.62	1.78	1.93
	45	0.97	1.14	1.30	1.45	1.60	1.75	—
	40	0.99	1.14	1.29	1.43	1.57	1.71	—
	35	1.00	1.14	1.27	1.40	1.53	—	—
	30	0.99	1.12	1.24	1.37	1.49	—	—
-10	50	0.95	1.12	1.29	1.46	1.61	1.77	—
	45	0.97	1.14	1.29	1.44	1.59	1.74	—
	40	0.99	1.14	1.28	1.42	1.56	—	—
	35	0.99	1.13	1.26	1.39	1.51	—	—
	30	0.98	1.11	1.23	1.35	—	—	—
-5	50	0.95	1.12	1.29	1.45	1.60	1.76	—
	45	0.97	1.13	1.28	1.43	1.57	—	—
	40	0.98	1.12	1.26	1.40	1.54	—	—
	35	0.98	1.11	1.24	1.37	—	—	—
	30	0.97	1.09	1.20	1.32	—	—	—
0	50	0.94	1.11	1.27	1.43	1.59	—	—
	45	0.96	1.11	1.26	1.41	1.55	—	—
	40	0.97	1.11	1.24	1.38	—	—	—
	35	0.96	1.09	1.21	1.34	—	—	—
	30	0.94	1.06	1.17	—	—	—	—
5	50	0.93	1.10	1.26	1.41	1.56	—	—
	45	0.94	1.10	1.24	1.38	—	—	—
	40	0.95	1.08	1.22	1.34	—	—	—
	35	0.93	1.06	1.18	—	—	—	—
	30	0.91	1.02	1.13	—	—	—	—
10	50	0.91	1.08	1.23	1.38	—	—	—
	45	0.92	1.07	1.21	1.35	—	—	—
	40	0.92	1.05	1.18	—	—	—	—
	35	0.90	1.02	1.13	—	—	—	—
	30	0.87	0.97	—	—	—	—	—

\* PKV-30BS cannot be used under the conditions listed on the right because it is outside the differential pressure specification.

- ET -50 to -20°C / CT 45°C or more
- ET -15 to 0°C / CT 50°C