



HASEGAWA REFRIGERATION, LTD.

MODEL

VZM – VZL

VKS – VKM – VKL

VEM

HVU SERIES

COMPRESSOR UNIT

HASEGAWA'S refrigeration compressors have achieved world wide recognition for its Quality, Reliability and Efficiency.



HVU-VKM16BFM

- ◆ High Quality
- ◆ High Efficiency
- ◆ High Reliability
- ◆ High Durability



HVU-VZM28AVL

All HASEGAWA compressors are available for R717 (Ammonia) and R404A.
HASEGAWA is a worldwide leader in the industrial refrigeration.

HASEGAWA

HIGHLY EFFICIENT DESIGN

BEST BALANCE OF BORE x STROKE



REFRIGERANT AVAILABILITY:

HIGHEST PERFORMANCE WITH
AMMONIA(R717) and R404A

ENERGY SAVING:

HIGH SPEED, HIGH EFFICIENCY
HIGH PERFORMANCE FROM
SIMPLE, BUT WELL THOUGH DESIGN

EASY MAINTENANCE:

SIMPLE DESIGN, DURABLE SPARE PARTS
REDUCING TIME & COST OF MAINTENANCE

SPECIFICATION: VZM/VZL Model

● Flanged Motor Type

Unit Name		Single-Stage			Two -Stage		
	R717	HVU-VZM16AFL	HVU-VZM18AFL	HVU-VZL18AFL	HVU-VZM26AFL	HVU-VZM28AFL	HVU-VZL28AFL
	R404A(HFC)	HVU-VZM16BFL	HVU-VZM18BFL	HVU-VZL18BFL	HVU-VZM26BFL	HVU-VZM28BFL	HVU-VZL28BFL

● Direct Coupling Type

Unit Name		Single-Stage			Two -Stage		
	R717	HVU-VZM16ADL	HVU-VZM18ADL	HVU-VZL18ADL	HVU-VZM26ADL	HVU-VZM28ADL	HVU-VZL28ADL
	R404A(HFC)	HVU-VZM16BDL	HVU-VZM18BDL	HVU-VZL18BDL	HVU-VZM26BDL	HVU-VZM28BDL	HVU-VZL28BDL

● V-Belt type

Unit Name		Single-Stage			Two -Stage		
	R717	HVU-VZM16AVL	HVU-VZM18AVL	HVU-VZL18AVL	HVU-VZM26AVL	HVU-VZM28AVL	HVU-VZL28AVL
	R404A(HFC)	HVU-VZM16BVL	HVU-VZM18BVL	HVU-VZL18BVL	HVU-VZM26BVL	HVU-VZM28BVL	HVU-VZL28BVL

Compressor Model		VZM16	VZM18	VZL18	VZM26	VZM28	VZL28
No. of Cylinder		6	8	8	4+2	6+2	6+2
Capacity Step Control (cylinders) [Low pressure side]		6-4-2	8-6-4	8-6-4	4-2 (Low Stage Side)	6-4-2 (Low Stage Side)	6-4-2 (Low Stage Side)
Cylinder bore (mm)		132	132	132	132	132	132
Piston stroke (mm)		106	106	132	106	106	132
Speed (rpm) [Motor : 50Hz・6P/60Hz・6P]		980/1170	980/1170	980/1170	980/1170	980/1170	980/1170
Swept Volume (m3/hr.)		511.51/610.68	682.01/814.24	849.30/1013.95	197.78/236.13	211.42/252.41	263.28/314.33
		Formula : Volume(High) + 0.08 x Volume(Low)					
Cooling capacity* (kW)	R717	217.6/259.8	290.2/346.4	361.3/431.4	83.5/99.6	116.3/138.8	144.8/172.9
	R404A	147.9/176.5	197.2/235.4	245.5/293.1	75.3/89.9	99.2/118.5	123.6/147.5
Connections	Suction	100A(114.3mm)	100A(114.3mm)	100A(114.3mm)	80A(89.1mm)	100A(114.3mm)	100A(114.3mm)
	Middle	---	---	---	50A(60.5mm)	65A(76.3mm)	65A(76.3mm)
	Discharge	65A(76.3mm)	80A(89.1mm)	80A(89.1mm)	40A(48.6mm)	50A(60.5mm)	50A(60.5mm)
Initial charge of oil (lit.)		30	32	32	30	32	32

*Cooling capacity based on the condition below

【R717 single-stage】CT+40 deg. C/ ET-15 deg. C, Subcooling=5 deg. C, Subheating=0 deg. C

【R717 two stage】CT+40 deg. C/ET-35 deg. C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

【R404A single stage】CT+40 deg. C/ ET-20 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R404A two stage】CT+40 deg. C/ET-40 deg.C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

SPECIFICATION: VKM Model

Unit Name		Single-Stage			Two-Stage		
	R717	HVU-VKM14AFL	HVU-VKM16AFL	HVU-VKM18AFL	HVU-VKM24AFL	HVU-VKM26AFL	HVU-VKM28AFL
	R404A(HFC)	HVU-VKM14BFL	HVU-VKM16BFL	HVU-VKM18BFL	HVU-VKM24BFL	HVU-VKM26BFL	HVU-VKM28BFL
Compressor Model Name		VKM14	VKM16	VKM18	VKM24	VKM26	VKM28
Number of Cylinder		4	6	8	3+1	4+2	6+2
Capacity Step Control (cylinders) [Low pressure side]		4-2	6-4-2	8-6-4	3-1 (Low Stage Side)	4-2 (Low Stage Side)	6-4-2 (Low Stage Side)
Cylinder bore (mm)		85	85	85	85	85	85
Piston stroke (mm)		70	70	70	70	70	70
Speed (rpm) [Motor: 50Hz•4P/60Hz•4P]*		1450/1750	1450/1750	1450/1750	1450/1750	1450/1750	1450/1750
Swept Volume (m3/hr.)		138.16/166.75	207.24/250.12	276.32/333.49	42.83/51.69	80.13/96.71	85.66/103.38
					Formula : Volume(High) + 0.08 x Volume(Low)		
Cooling capacity** (kW)	R717	56.2/67.8	84.2/101.7	112.3/135.6	22.8/27.5	32.7/39.5	45.6/55.0
	R404A	33.2/40.1	49.8/60.1	66.4/80.1	19.5/23.5	29.6/35.7	39.0/47.1
Connections	Suction	65A(76.3mm)	65A(76.3mm)	80A(89.1mm)	65A(76.3mm)	65A(76.3mm)	80A(89.1mm)
	Middle	-	-	-	32A(42.7mm)	32A(42.7mm)	40A(48.6mm)
	Discharge	40A(48.6mm)	40A(48.6mm)	50A(60.5mm)	25A(34.0mm)	25A(34.0mm)	32A(42.7mm)
Initial charge of oil (lit.)		9.5	9.5	10	9.5	9.5	10

*6P motor is also available for VKM model

**Cooling capacity based on the condition below

【R717 single-stage】CT+40 deg. C/ ET-15 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R717 two stage】CT+40 deg. C/ET-35 deg. C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

【R404A single stage】CT+40 deg. C/ ET-20 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R404A two stage】CT+40 deg. C/ET-40 deg.C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

SPECIFICATION: VKL Model

Unit Name		Single-Stage				Two -Stage		
	R717	HVU-VKL12AFL	HVU-VKL14AFL	HVU-VKL16AFL	HVU-VKL18AFL	HVU-VKL24AFL	HVU-VKL26AFL	HVU-VKL28AFL
	R404A(HFC)	HVU-VKL12BFL	HVU-VKL14BFL	HVU-VKL16BFL	HVU-VKL18BFL	HVU-VKL24BFL	HVU-VKL26BFL	HVU-VKL28BFL
Compressor Model Name		VKL12	VKL14	VKL16	VKL18	VKL24	VKL26	VKL28
Number of Cylinder		2	4	6	8	3+1	4+2	6+2
Capacity Step Control(cylinders) [Low pressure side]		-	4-2	6-4-2	8-6-4	3-1 (Low Stage Side)	4-2 (Low Stage Side)	6-4-2 (Low Stage Side)
Cylinder bore (mm)		85	85	85	85	85	85	85
Piston stroke (mm)		85	85	85	85	85	85	85
Speed (rpm) [Motor Condition]		980/1170 [50Hz•6P/60Hz•6P]	1450/1750 [50Hz•4P/60Hz•4P]	1450/1750 [50Hz•4P/60Hz•4P]	1450/1750 [50Hz•4P/60Hz•4P]	1450/1750 [50Hz•4P/60Hz•4P]	1450/1750 [50Hz•4P/60Hz•4P]	1450/1750 [50Hz•4P/60Hz•4P]
Swept Volume (m3/hr.)		56.69/67.69	167.77/202.48	251.65/303.72	335.53/404.95	52.01/62.77	97.30/117.44	104.02/125.54
						Formula : Volume(High) + 0.08 x Volume(Low)		
Cooling capacity* (kW)	R717	23.0/27.5	68.2/82.3	102.3/123.5	136.4/164.6	27.7/33.4	39.7/47.9	55.3/66.8
	R404A	13.6/16.3	40.3/48.6	60.5/73.0	80.6/97.3	23.7/28.6	35.9/43.4	47.4/57.2
Connections	Suction	32A(42.7mm)	65A(76.3mm)	65A(76.3mm)	80A(89.1mm)	65A(76.3mm)	65A(76.3mm)	80A(89.1mm)
	Middle	-	-	-	-	32A(42.7mm)	32A(42.7mm)	40A(48.6mm)
	Discharge	25A(34mm)	40A(48.6mm)	40A(48.6mm)	50A(60.5mm)	25A(34.0mm)	25A(34.0mm)	32A(42.7mm)
Initial charge of oil (lit.)		6.5	9.5	9.5	10	9.5	9.5	10

* 6P motor is also available for VKL model(4-8cylinders). 4P motor is NOT available for VKL12.

**Cooling capacity based on the condition below

【R717 single-stage】CT+40 deg. C/ ET-15 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R717 two stage】CT+40 deg. C/ET-35 deg. C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

【R404A single stage】CT+40 deg. C/ ET-20 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R404A two stage】CT+40 deg. C/ET-40 deg.C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

SPECIFICATION: VKS Model

Unit Name		Single-Stage
	R717	HVU-VKS12AFL
	R404A(HFC)	HVU-VKS12BFL
Compressor Model Name		VKS12
Number of Cylinder		2
Capacity Step Control(cylinders)		-
Cylinder bore (mm)		85
Piston stroke (mm)		55
Speed (rpm) [Motor:50Hz・6P/60Hz・6P]*		980/1170
Swept Volume (m3/hr.)		36.68/43.80
Cooling capacity** (kW)	R717	14.9/17.8
	R404A	8.8/10.5
Connections	Suction	32A(42.7mm)
	Middle	-
	Discharge	25A(34.0mm)
Initial charge of oil (lit.)		6.5

*4P motor is NOT available for VKS12.

**Cooling capacity based on the condition below

【R717 single-stage】CT+40 deg. C/ ET-15 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R404A single stage】CT+40 deg. C/ ET-20 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

SPECIFICATION: VEM Model

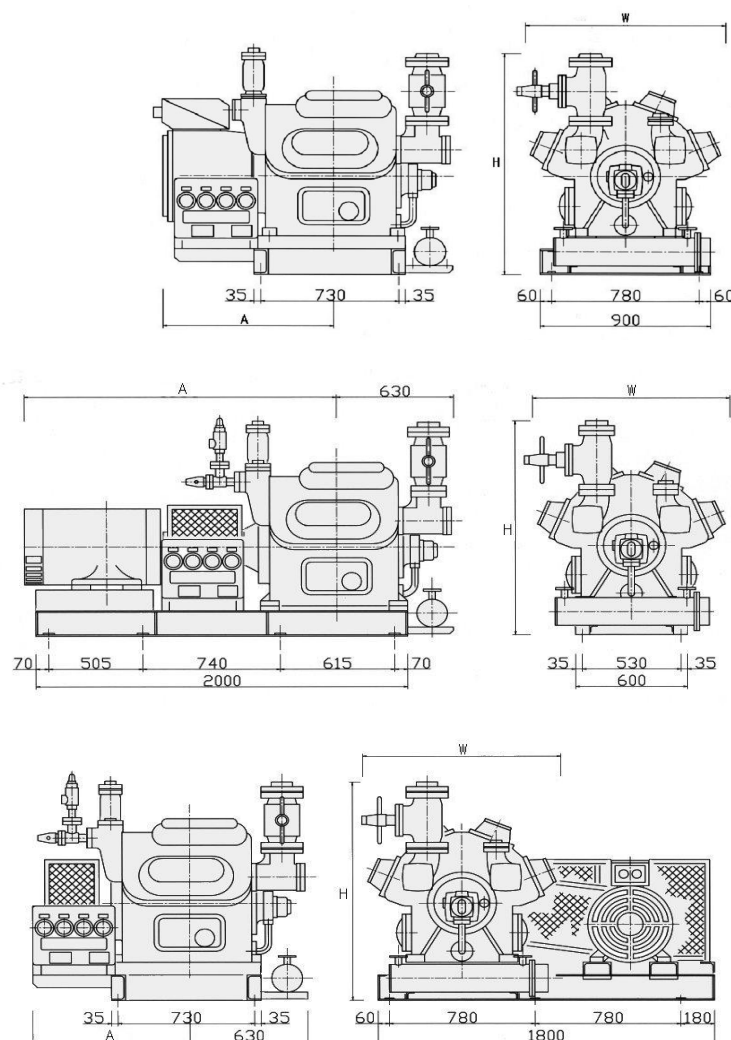
Unit Name		Single-Stage	Two -Stage
	R717	HVU-VEM18AFL	HVU-VEM28AFL
Compressor Model Name		VEM18	VEM28A
Number of Cylinder		8	6+2
Capacity Step Control(cylinders) [Low pressure side]		8-6-4	6-4-2
Cylinder bore (mm)		115	115
Piston stroke (mm)		90	90
Speed (rpm) [Motor:50Hz・6P/60Hz・6P]		980/1170	980/1180
Swept Volume (m3/hr.)		439.52/524.73	136.25/164.06
			Formula : Volume(High) + 0.08 x Volume(Low)
Cooling capacity* (kW)	R717	191.5/228.6	70.7/85.1
Connections	Suction	100A(114.3mm)	80A(89.1mm)
	Middle	---	50A(60.5mm)
	Discharge	65A(76.3mm)	40A(48.6mm)
Initial charge of oil (lit.)		29	29

*Cooling capacity based on the condition below

【R717 single-stage】CT+40 deg. C/ ET-15 deg. C, Subcooling= 5 deg. C, Subheating=0 deg. C

【R717 two stage】CT+40 deg. C/ET-35 deg. C, Subcooling=5 deg. C, Subheating=0 deg. C, Liquid Temp. before expansion valve=saturation temp.(equivalent to intermediate pressure) + 5deg. C

SIZE-VZM/VZL Series (Land Use)



Å Flange Motor Type (mm)

	A	W	H
VZM16	1000	1020	1600
VZM18	1020	1060	1700
VZL18	1020	1060	1700
VZM26	1000	1020	1450
VZM28	1000	1060	1500
VZL28	1020	1060	1500

Å Direct Coupling Type (mm)

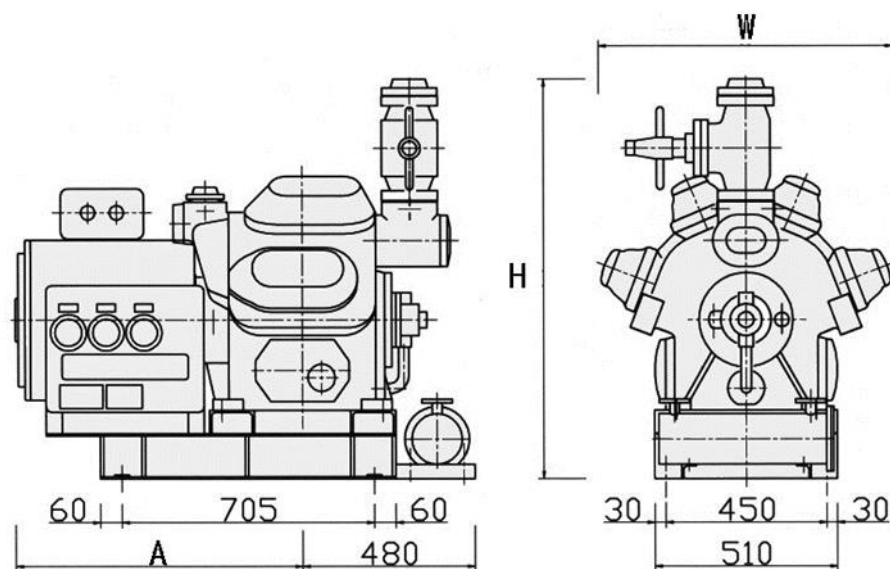
	A	W	H
VZM16	1655	1020	1550
VZM18	1655	1060	1650
VZL18	1655	1060	1650
VZM26	1655	1020	1400
VZM28	1655	1060	1450
VZL28	1655	1060	1450

Å V-Belt Type (mm)

	A	W	H
VZM16	840	1020	1600
VZM18	840	1060	1700
VZL18	840	1060	1700
VZM26	840	1020	1450
VZM28	840	1060	1500
VZL28	840	1060	1500

(Size A differs depending on the capacity of motors)

SIZE-VKM, VKL(4-8cylinders) Flange Motor Type (Land Use)

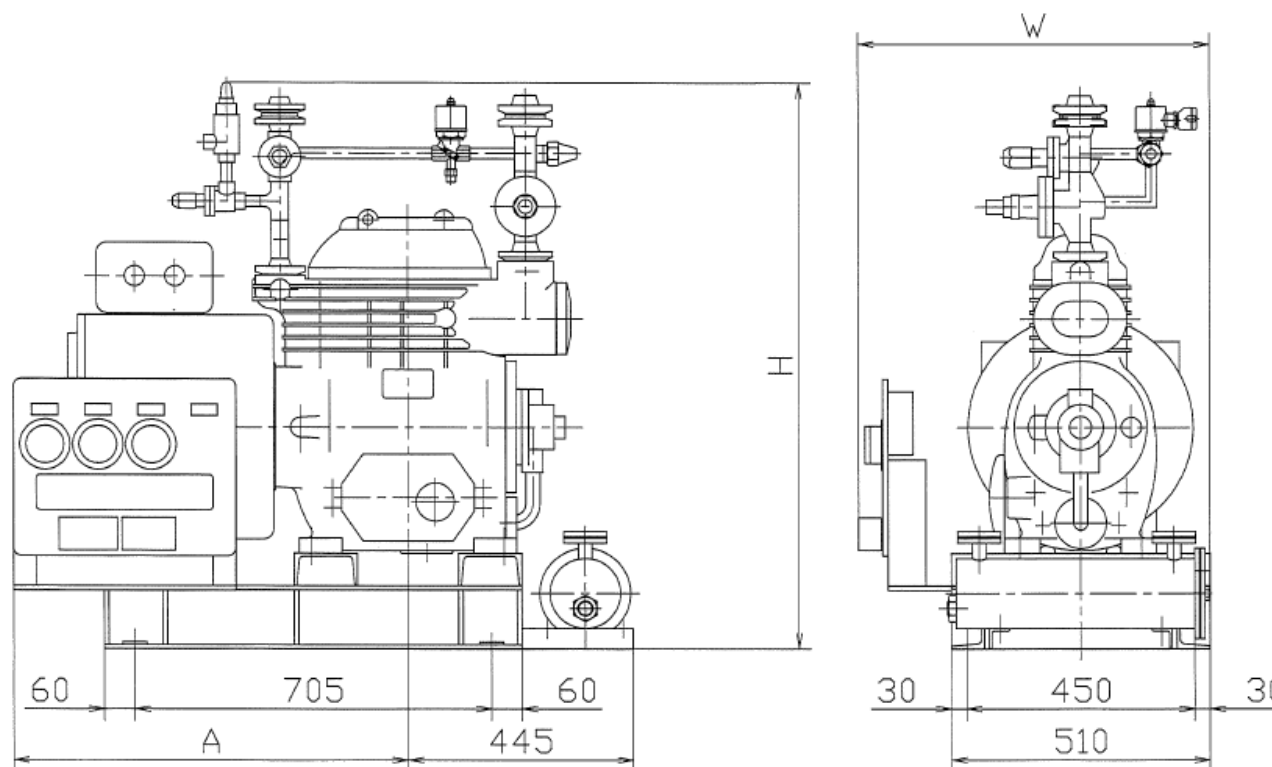


(mm)

	HVU-VKM14AFL	HVU-VKM16AFL	HVU-VKM18AFL	HVU-VKM24AFL	HVU-VKM26AFL	HVU-VKM28AFL
	HVU-VKM14BFL	HVU-VKM16BFL	HVU-VKM18BFL	HVU-VKM24BFL	HVU-VKM26BFL	HVU-VKM28BFL
	HVU-VKL14AFL	HVU-VKL16AFL	HVU-VKL18AFL	HVU-VKL24AFL	HVU-VKL26AFL	HVU-VKL28AFL
	HVU-VKL14BFL	HVU-VKL16BFL	HVU-VKL18BFL	HVU-VKL24BFL	HVU-VKL26BFL	HVU-VKL28BFL
A	750	800	850	750	800	850
W	825	825	850	825	825	850
H	1170	1170	1260	1170	1170	1260

(Size A differs depending on the capacity of motors)

SIZE-VKS, VKL(2cylinders) Flange Motor Type (Land Use)

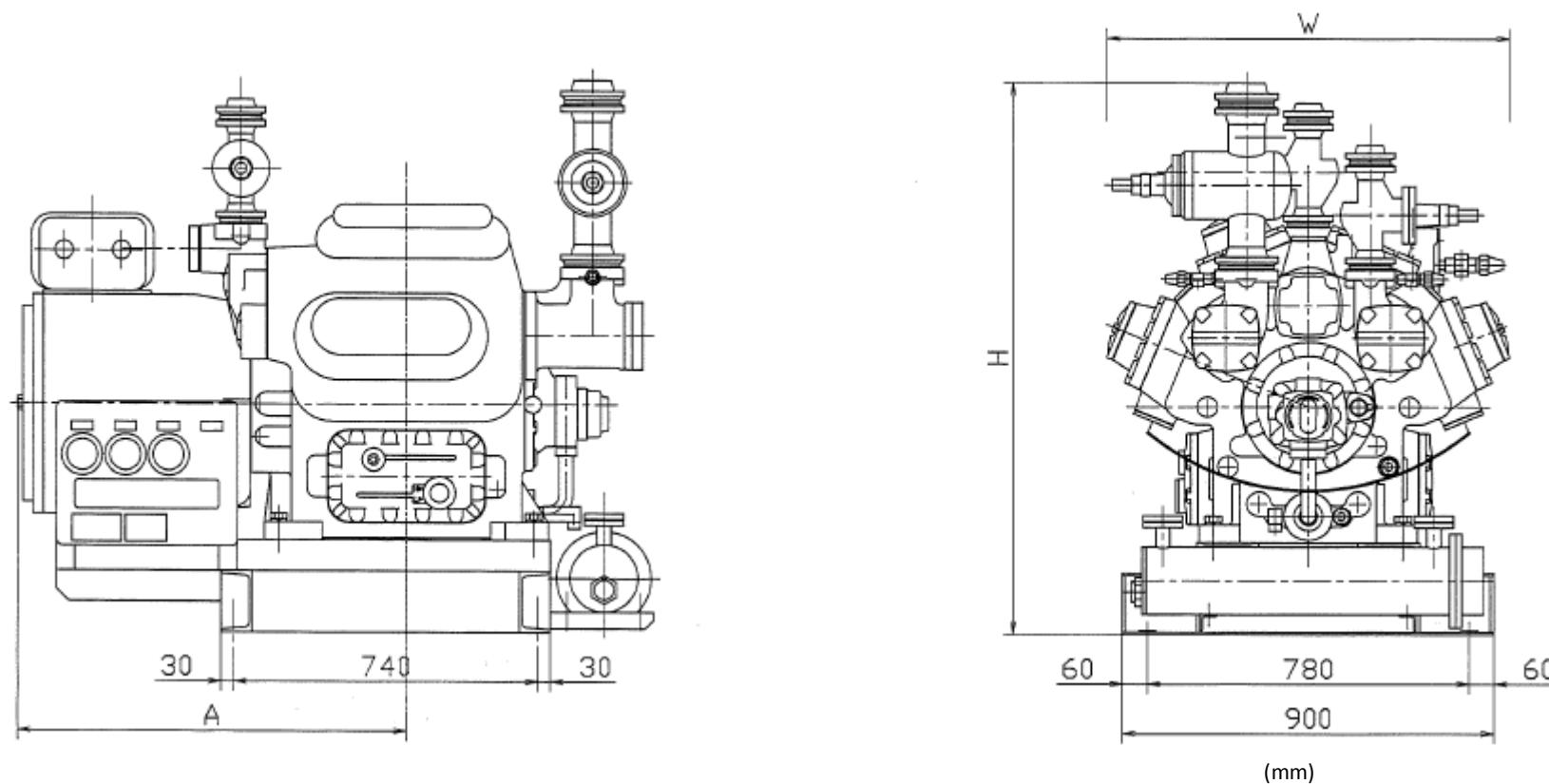


(mm)

	HVU-VKS12AFL	HVU-VKL12AFL
	HVU-VKS12BFL	HVU-VKL12BFL
A	780	780
W	700	700
H	1130	1130

(Size A differs depending on the capacity of motors)

SIZE-VEM Flange Motor Type (Land Use)



	HVU-VEM18AF	HVU-VEM28AF
A	950	950
W	980	980
H	1470	1350

(Size A differs depending on the capacity of motors)

SUPPLIMENT



■ MODEL NUMBER SYSTEM:

[FOR EXAMPLE] **HVU-VZM28AFL**

<u>HVU-</u>	<u>VZM</u>	<u>28</u>	<u>A</u>	<u>F</u>	<u>L</u>
↑	↑	↑	↑	↑	↑
Series	Model	Top Digit.: No. of Stage(1or2) 2 nd Digit: No. of Cylinder	Refrigerant	Drive	Usage
HVU-	VZM	16,26,18,28	A=R717 B=R404A	F=Flange Motor D=Direct Coupling V=V-Belt	L=Land M=Marine
	VZL	18,28			

[FOR EXAMPLE] **HVU-VKM28AFL**

<u>HVU-</u>	<u>VKM</u>	<u>28</u>	<u>A</u>	<u>F</u>	<u>L</u>
↑	↑	↑	↑	↑	↑
Series	Model	Top Digit.: No. of Stage(1or2) 2 nd Digit: No. of Cylinder	Refrigerant	Drive	Usage
HVU-	VKS	12	A=R717 B=R404A	F=Flange Motor D=Direct Coupling V=V-Belt	L=Land M=Marine
	VKM	14,16,18 24,26,28			
	VKL	12,14,16,18 24,26,28			

[FOR EXAMPLE] **HVU-DEM28AFL**

<u>HVU-</u>	<u>DEM</u>	<u>28</u>	<u>A</u>	<u>F</u>	<u>L</u>
↑	↑	↑	↑	↑	↑
Series	Model	Top Digit.: No. of Stage(1or2) 2 nd Digit: No. of Cylinder	Refrigerant	Drive	Usage
HVU-	DEM	18 28	A=R717	F=Flange Motor D=Direct Coupling V=V-Belt	L=Land M=Marine

■ STANDARD ACCESSORIES for Land Use Compressor:

Oil Cooler, Gauge Board, Solenoid Valve for Starting Up, Crankcase Heater (R404A),
Thermometers, Pressure Gauges, Pressure Protection Switch, Oil Filter (VZ/VE)
Safety Relief Valve, Base Frame, and Standard Tools.

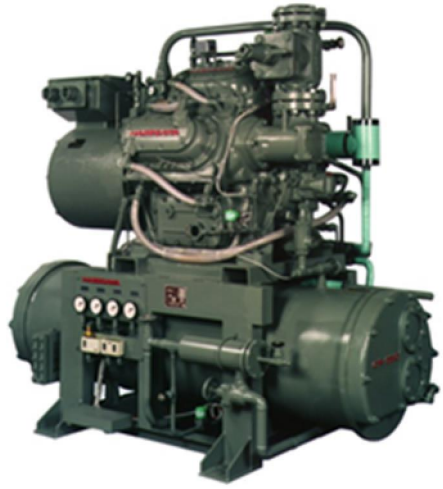
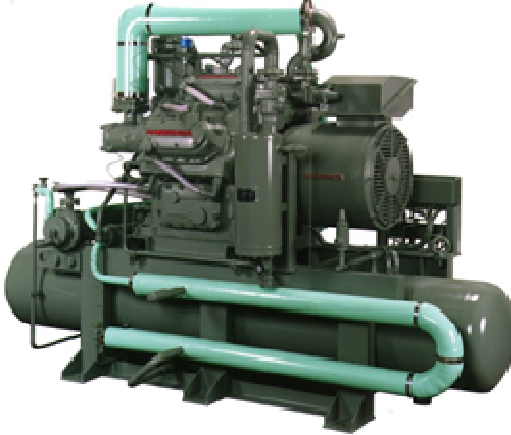
■ OPTION:

Vibration Proof Device (Pads & Flexible Tubes), Refrigerant, Lubrication Oil, Spare Parts
Oil By-Pass Filter

■ SPECIAL SPECIFICATION:

Special specification is negotiable.

Other Units-VZ Series

		
Condensing Unit		Receiver Unit

Other Units-VK Series



Condensing Unit



Receiver Unit



Brain Cooling Unit



Cascade Cooling Unit