

Scroll Compressors

for Residential & Commercial A/C
R32 | DC INVERTER & FIXED SPEED

Johnson Controls - Hitachi Air Conditioning

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CERTIFICATION



GB/T28001-2011 / OHSAS18001:2007
Johnson Controls-Hitachi Wanbao Compressor (Guangzhou) Co., Ltd.
Initial Issue Date: April 30, 2006
[Certificate No. 15918S20003R4M]



GB/T19001-2016 / ISO9001:2015
Johnson Controls-Hitachi Wanbao Compressor (Guangzhou) Co., Ltd.
Initial Issue Date: July 8, 2004
[Certificate No. 15918Q20011R6M]



GB/T24001-2016 / ISO14001:2015
Johnson Controls-Hitachi Wanbao Compressor (Guangzhou) Co., Ltd.
Initial Issue Date: April 30, 2006
[Certificate No. 15918E20005R4M]

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AC-R32-INV/FIXED-AA/DA-C-1809



Cooling & Heating

FEATURES

PRODUCT FEATURES

1. Direct Suction

Reduces superheat, improved volumetric efficiency.

2. Improved Asymmetric Wrap

Additional displacement and superheat reduction for greater compressor efficiency.

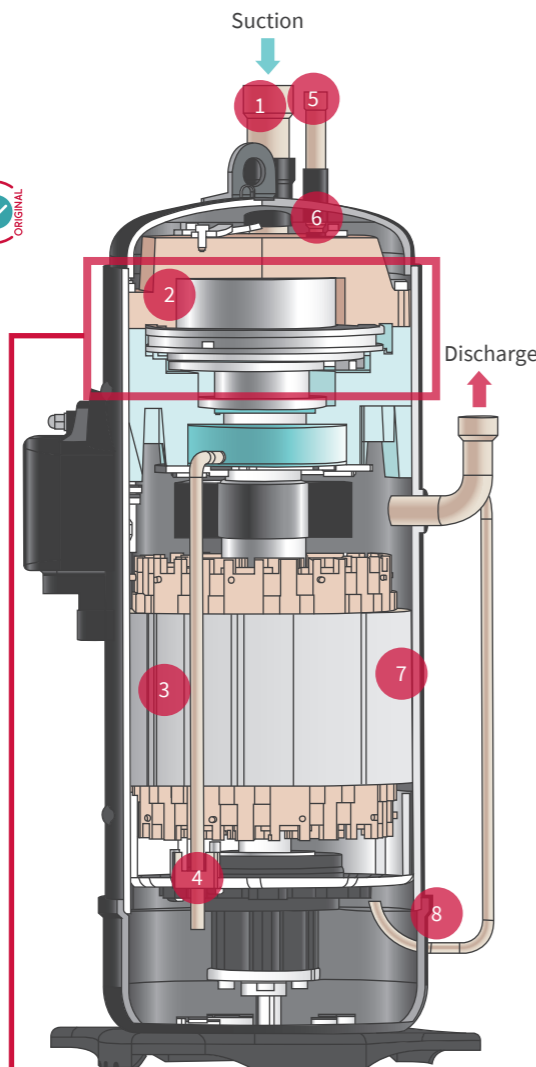
3. High Efficiency Motor

Maintains high efficiency levels across wide speed range of 10-140 rps.

4. Internal Oil Circulation Structure

Low oil circulation rates (<2%) keeping oil in the compressor for superior reliability.

Hitachi High Efficiency Gas Injection DC Inverter Scroll Compressor



5. Gas Injection Technology

Lower discharge temperatures, increasing capacity and expanded operating envelop for enhanced performance.

6. Bypass Valves

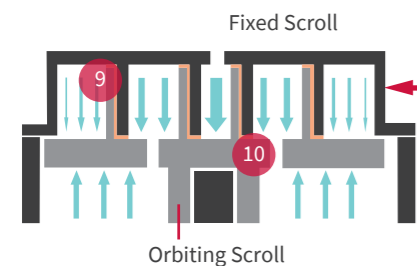
Improved partial load efficiency with self-adapting variable pressure ratios for upgraded performance - low ambient heating and high ambient cooling.

7. High-Side Pressure Design

Higher volumetric efficiency and improved oil management.

8. Dynamic Oil Balance Structure

Patented technology for unsurpassed oil balance in parallel piped system operation.



9. Non-contact Oil Membrane

Oil film seals involute section of scroll set, reducing compression leakage for improved performance and lower sound.

10. Intermediate Gas Pressure

Axial force is continually adapting, blending discharge pressure and compressed suction pressure for optimized performance throughout the operating envelop.

HITACHI ORIGINAL Original Hitachi scroll design innovation

LINE UP & NOMENCLATURE

CAPACITY RANGE

Refrigerant	Motor Type	Capacity(kW)											
		0	2	4	6	8	10	14	18	22	26	30	40
R32	DC INV	AA55 DC65 DC80											
R32	Fixed Speed	● ● ● ● ●											

PRODUCT LINE

Type	Series	UL*	CE*	Displacement		Speed	Rated Performance			
				cm ³ /rev.	m ³ /h		Cooling Capacity		Power Input	
						rps	kW	BTU/h	kW	W/W
DC INV	AA55	-	-	55	9.6	15 - 130	19.83	67670	5.87	3.37
	DA65	-	-	65	11.3	15 - 120	23.90	81540	7.08	3.37
	DA80	-	-	80	13.9	15 - 120	29.49	100640	8.75	3.37
Fixed Speed	DA38	-	-	38	6.6	50	11.02	37610	3.52	3.13
	DA49	-	-	49	8.5	50	14.41	49160	4.59	3.13
	DA59	-	-	59	10.3	50	17.19	58640	5.52	3.11
	DA65	-	-	65	11.3	50	19.10	65160	6.13	3.11
	DA80	-	-	80	13.9	50	23.35	79640	7.62	3.06

* Available by request
Cooling capacity is based on AHRI Standard 540 condition (Dew point) and rotation speed at 60Hz.

NOMENCLATURE

For example:



Compressor code

A-Φ150 High efficiency series
D-Φ160 High efficiency series

Design Revision

Arrange in order of A,B,C,D...

Nominal displacement

Discharge volume (cm³/rev)

Application

P - For A/C

Orientation

H - For vertical type

Compressor type

A - Fixed speed
D - DC INV

Origin marking

G - Guangzhou

Power source

A1 3Φ,200V,50Hz
3Φ,200 - 220V,60Hz
B1 3Φ,220V,50/60Hz
C1 3Φ,380V,50Hz
3Φ,380 - 400V,60Hz
D1 3Φ,380 - 415V,50Hz
3Φ,440V,60Hz
D2 3Φ,380 - 415V,50Hz
3Φ,480V,60Hz

Model Type

Y - Welded oil balanced pipe with gas injection
J - Welded oil balanced pipe without gas injection
K - Without oil balanced pipe with gas injection
S - Without oil balanced pipe & without gas injection

Refrigerant type
2 - R410A
6 - R32

SPECIFICATION & DIMENSION

PRODUCT SPECIFICATION (AA55/DA65/DA80)

DC INV

Series	Displacement		Speed	Rated Performance			Weight (include oil)		Oil balance piping	Oil Charge(L) Liter	Power supply 3 phase Voltage V/Hz	Gas Injection	Model Name	
	cm ³ /rev.	m ³ /h		Cooling Capacity	Power Input	COP	kg	lb						
			kW	BTU/h	kW	W/W								
AA55	55	9.6	15-130	19.83	67670	5.87	3.37	33.00	72.77	No	1.6	380-415V/50Hz 440V/60Hz	Yes	AA55PHDG-D1K6
				Yes	1.1	AA55PHDG-D1Y6								
DA65	65	11.3	15-120	23.90	81540	7.08	3.37	38.00	83.79	No	1.6	380-415V/50Hz 440V/60Hz	Yes	DA65PHDG-D1K6
				Yes	1.1	DA65PHDG-D1Y6								
DA80	80	13.9	15-120	29.49	100640	8.75	3.37	39.00	86.00	No	1.6	380-415V/50Hz 440V/60Hz	Yes	DA80PHDG-D1K6
				Yes	1.1	DA80PHDG-D1Y6								

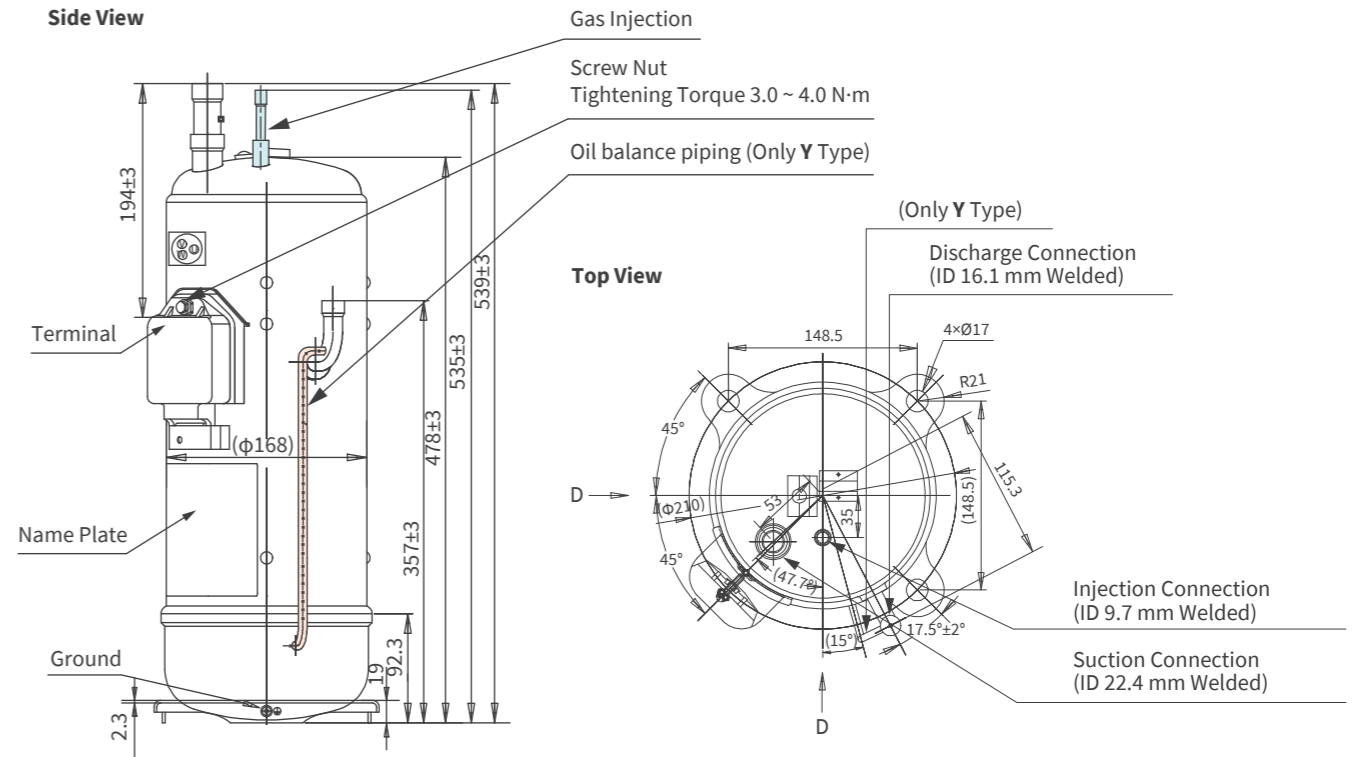
Cooling capacity is based on AHRI Standard 540 condition (Dew point) and rotation speed at 60Hz.

PRODUCT DIMENSION

Unit: (mm)

DA65PHDG

Side View

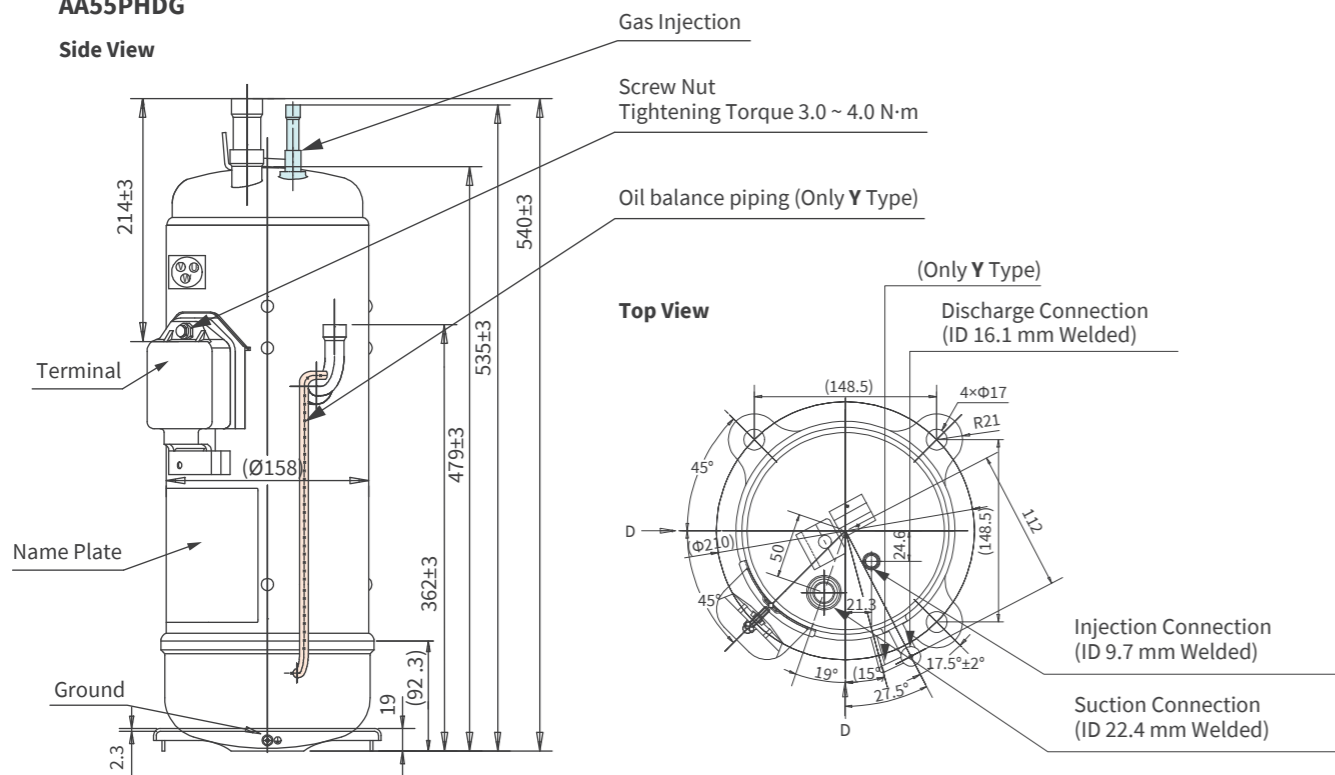


PRODUCT DIMENSION

Unit: (mm)

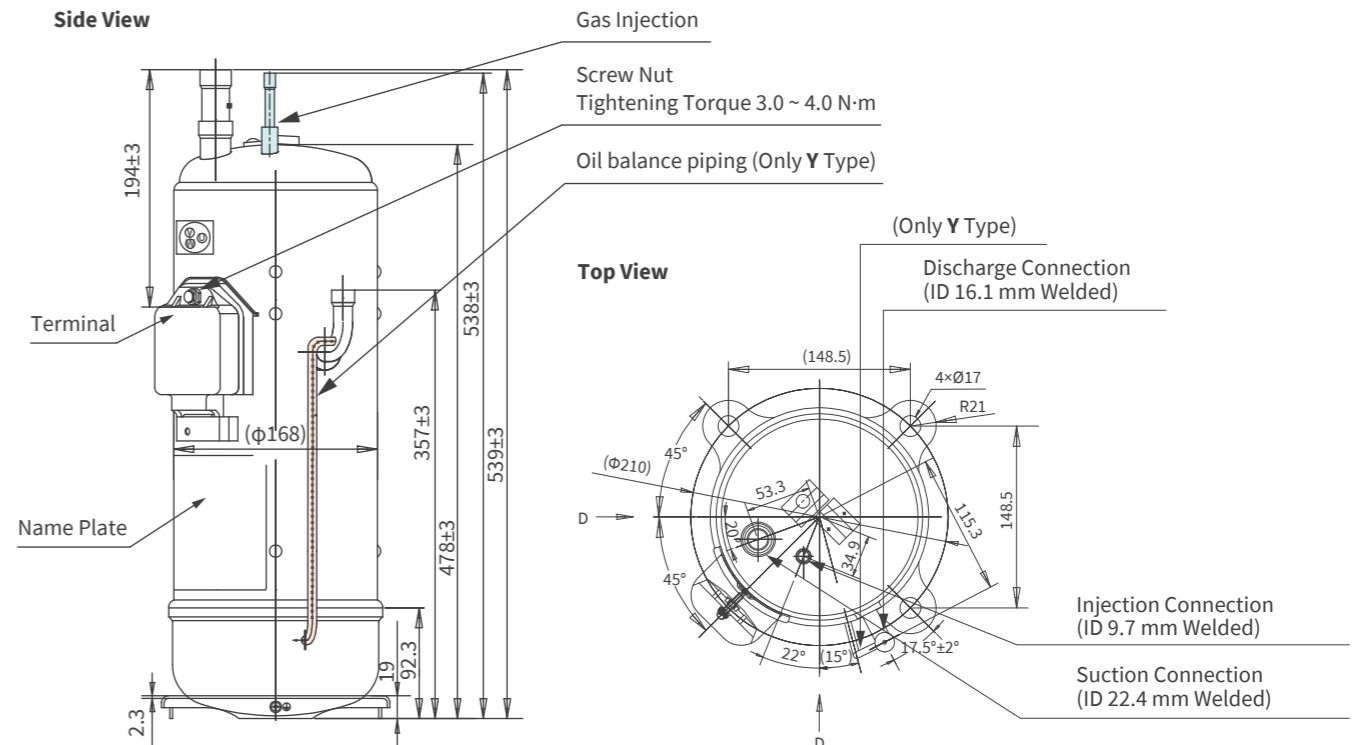
AA55PHDG

Side View



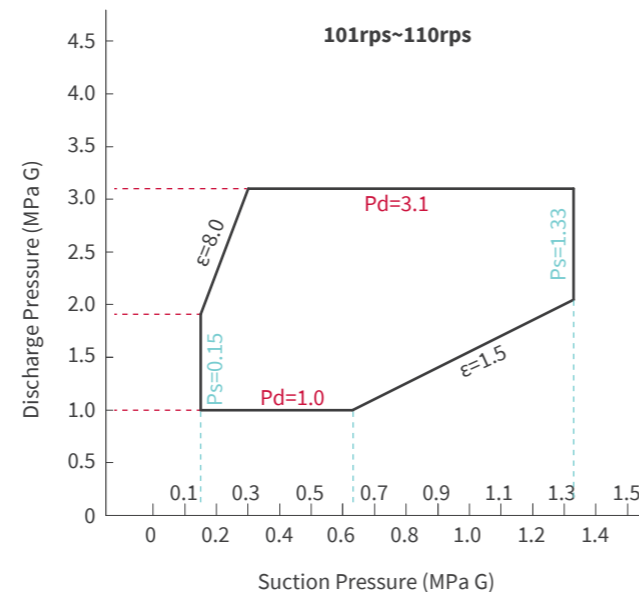
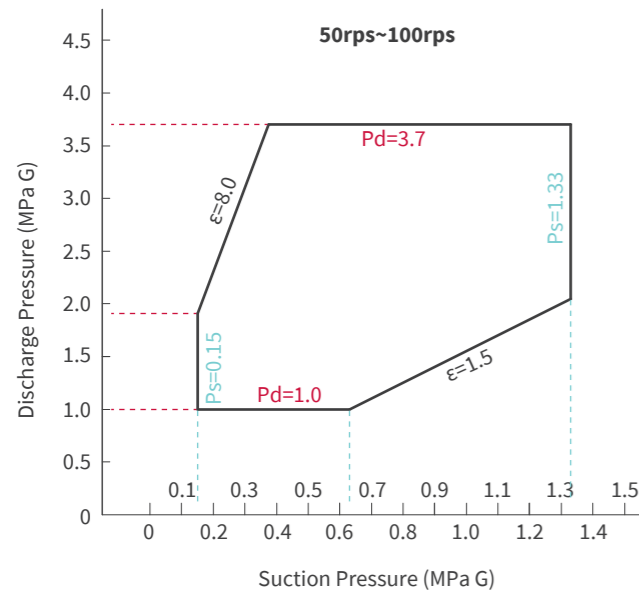
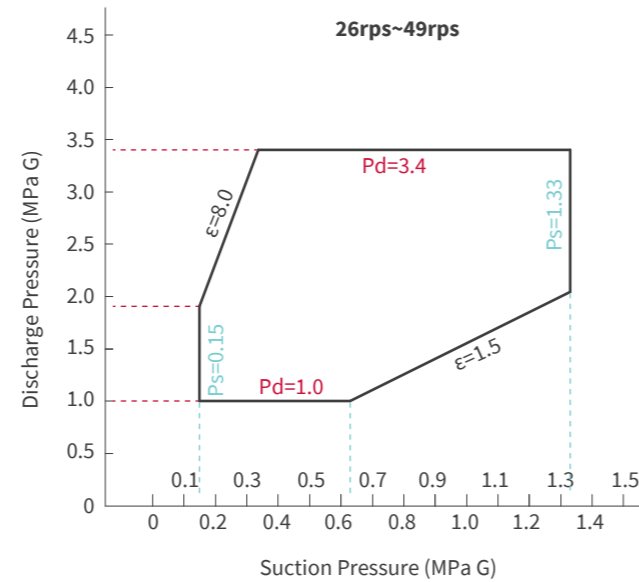
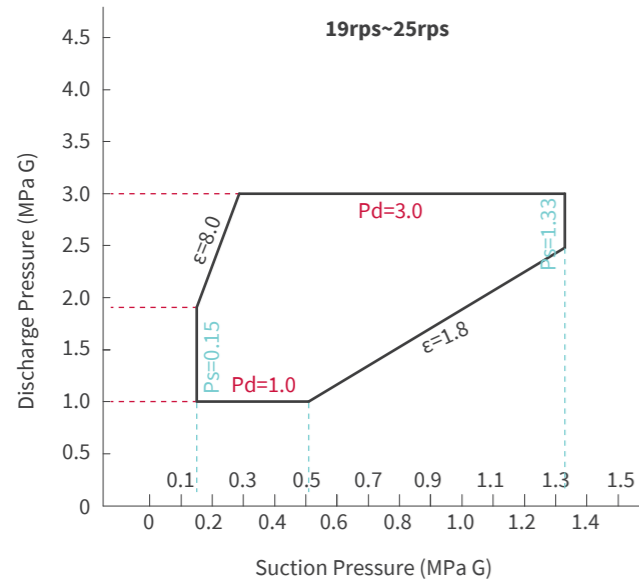
DA80PHDG

Side View



WORKING RANGE

WORKING RANGE (AA55/DA65/DA80)



*Pressure on the graphic is relative(gauge) pressure.
 *Pressure Ratio ε (The absolute Pressure basis)
 $\epsilon = (\text{Discharge Port Pressure}) / (\text{Suction Port Pressure})$

SPECIFICATION & DIMENSION

PRODUCT SPECIFICATION

Fixed Speed

Series	Displacement		Speed rps	Rated Performance			Weight (include oil)		Oil balance piping	Oil Charge(L) Liter	Power supply 3 phase Voltage V/Hz	Gas Injection	Model Name	
	cm ³ /rev.	m ³ /h		Cooling Capacity kW	Power Input kW	COP	kg	lb						
DA38	38	6.6	50	11.02	37610	3.52	3.13	37.00	81.59	No	1.2	380-415/440	Yes	DA38PHAG-D1K6
										Yes	1.1			DA38PHAG-D1Y6
DA49	49	8.5	50	14.41	49160	4.59	3.13	37.00	81.59	No	1.3	380-415/440	Yes	DA49PHAG-D1K6
										Yes	1.1			DA49PHAG-D1Y6
DA59	59	10.3	50	17.19	58640	5.52	3.11	38.00	83.79	No	1.3	380-415/440	Yes	DA59PHAG-D1K6
										Yes	1.1			DA59PHAG-D1Y6
DA65	65	11.3	50	19.10	65160	6.13	3.11	38.00	83.79	No	1.3	380-415/440	Yes	DA65PHAG-D1K6
										Yes	1.1			DA65PHAG-D1Y6
DA80	80	13.9	50	23.35	79640	7.62	3.06	43.00	94.82	No	1.9	380-415/440	Yes	DA80PHAG-D1K6
										Yes	1.1			DA80PHAG-D1Y6

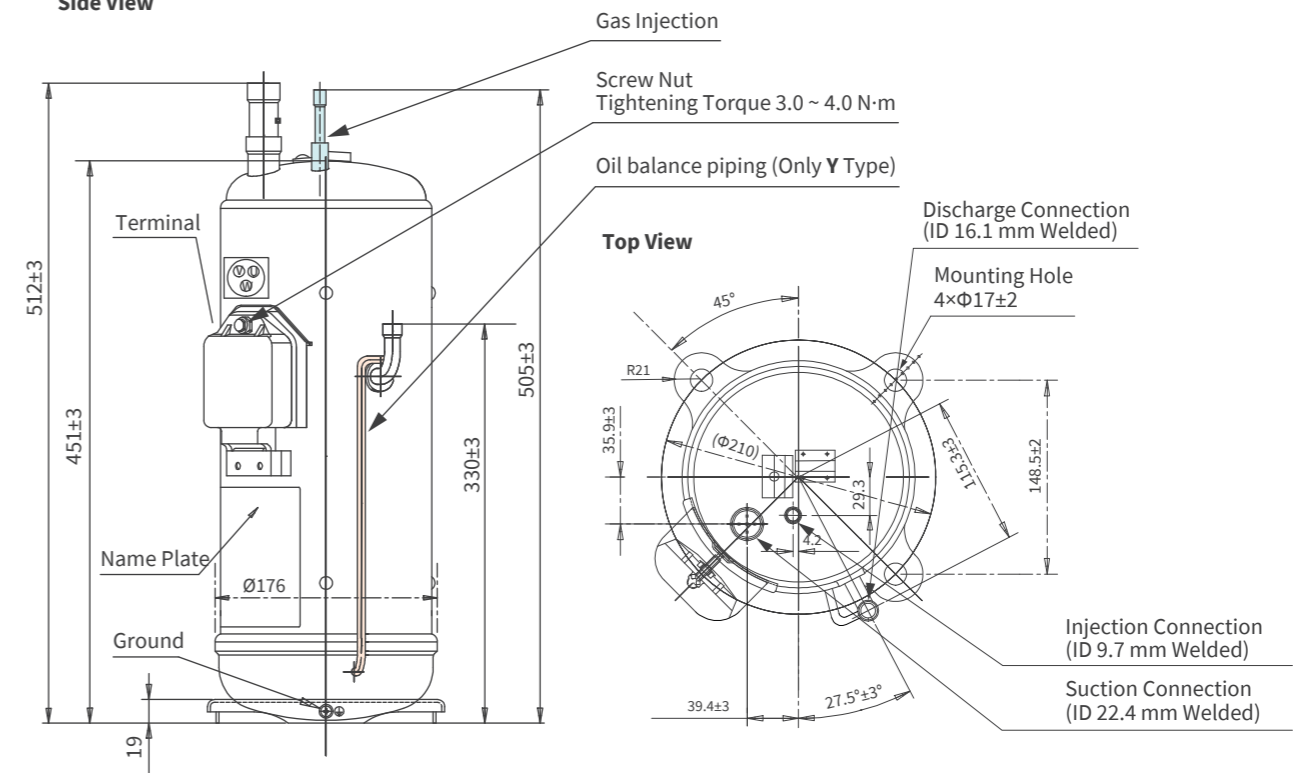
Cooling capacity is based on AHRI Standard 540 condition (Dew point) and rotation speed at 60Hz.

PRODUCT DIMENSION

Unit: (mm)

DA38PHDG

Side View



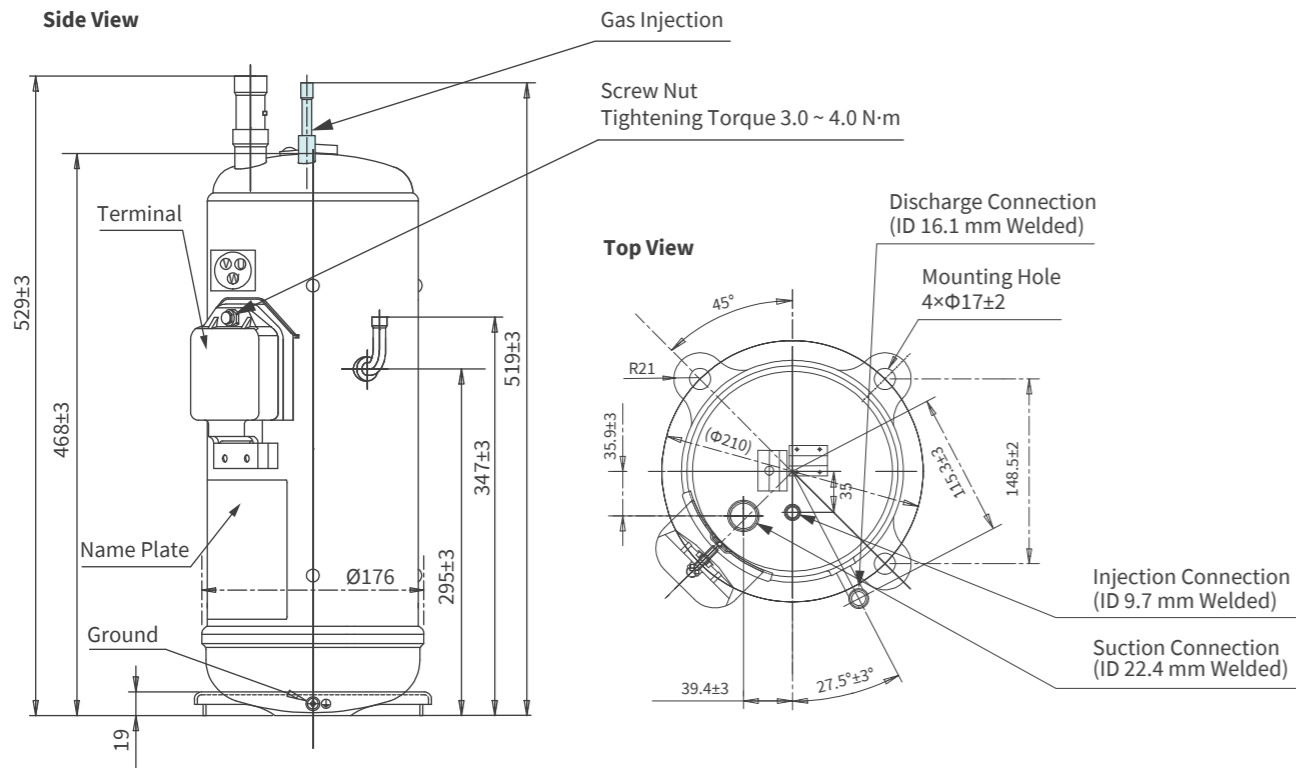
DIMENSION

PRODUCT DIMENSION

Unit: (mm)

DA49PHAG-D1K6

Side View

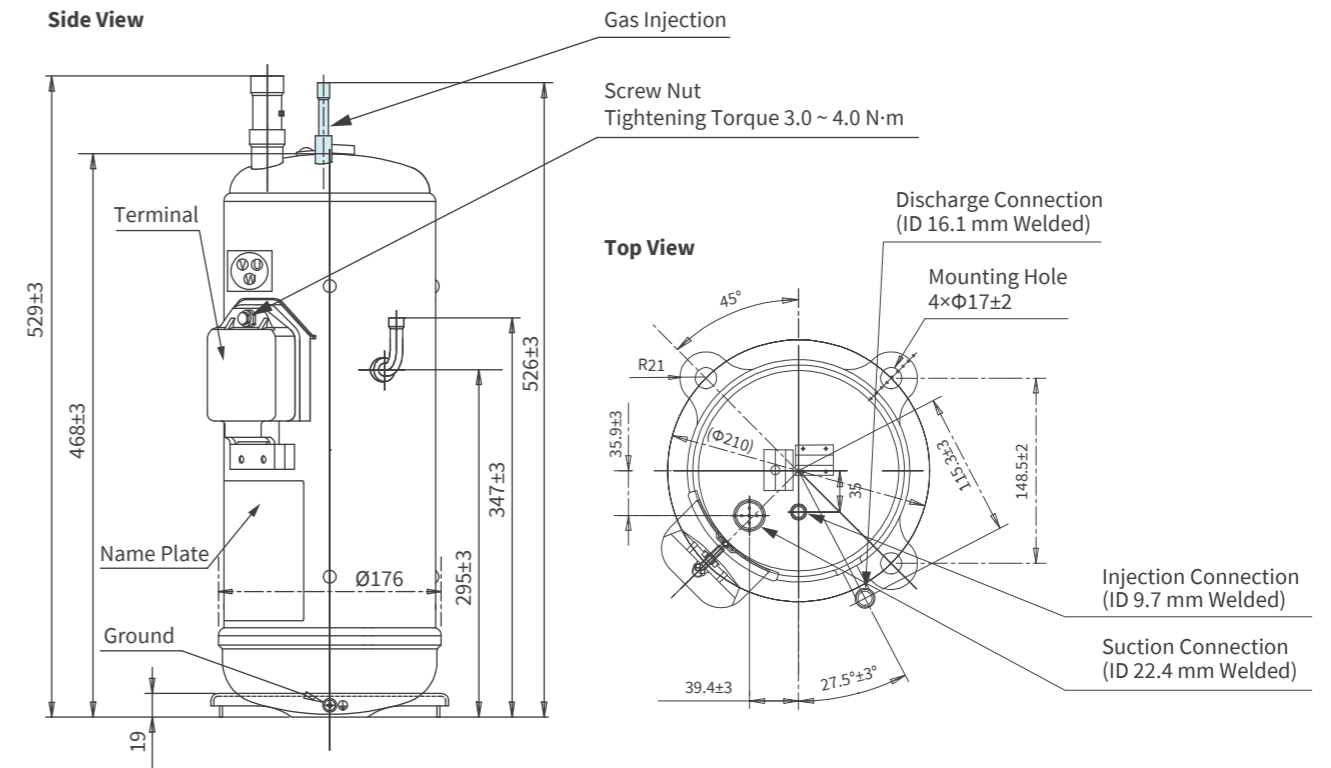


PRODUCT DIMENSION

Unit: (mm)

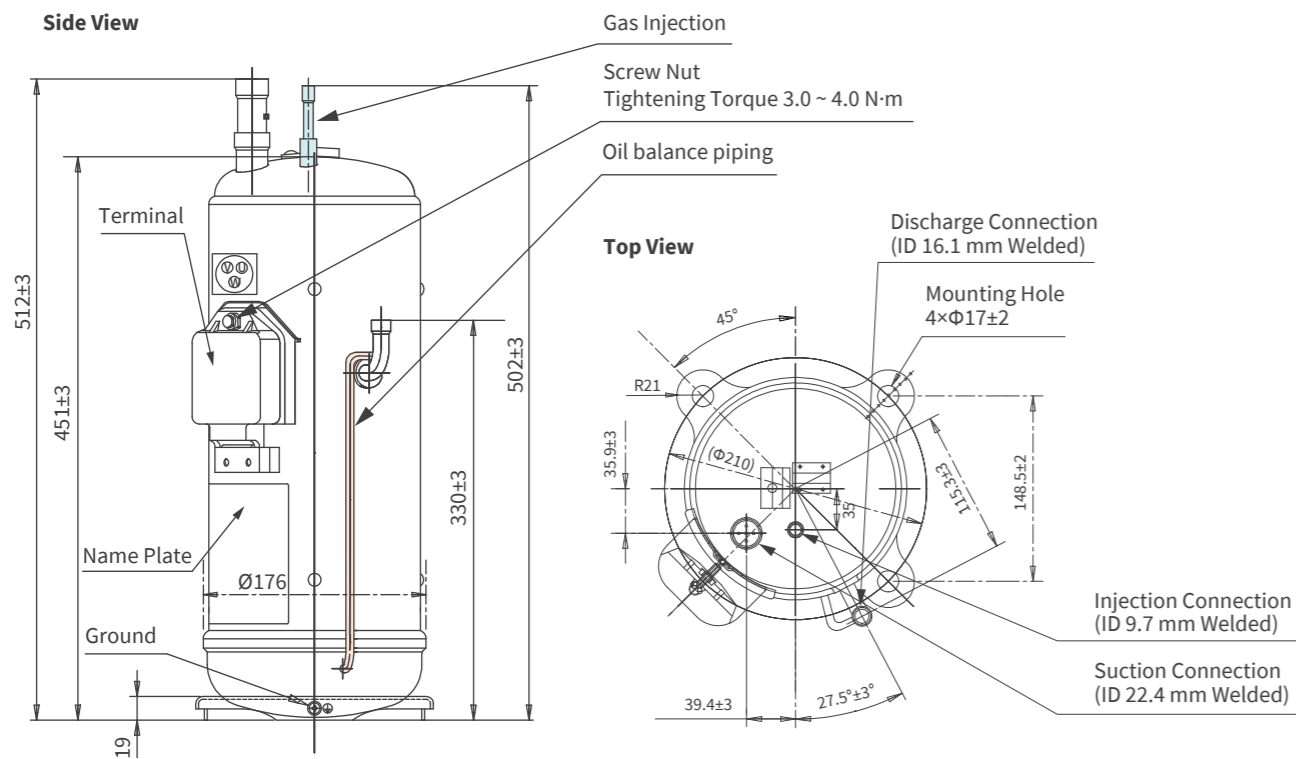
DA59PHAG-D1K6

Side View



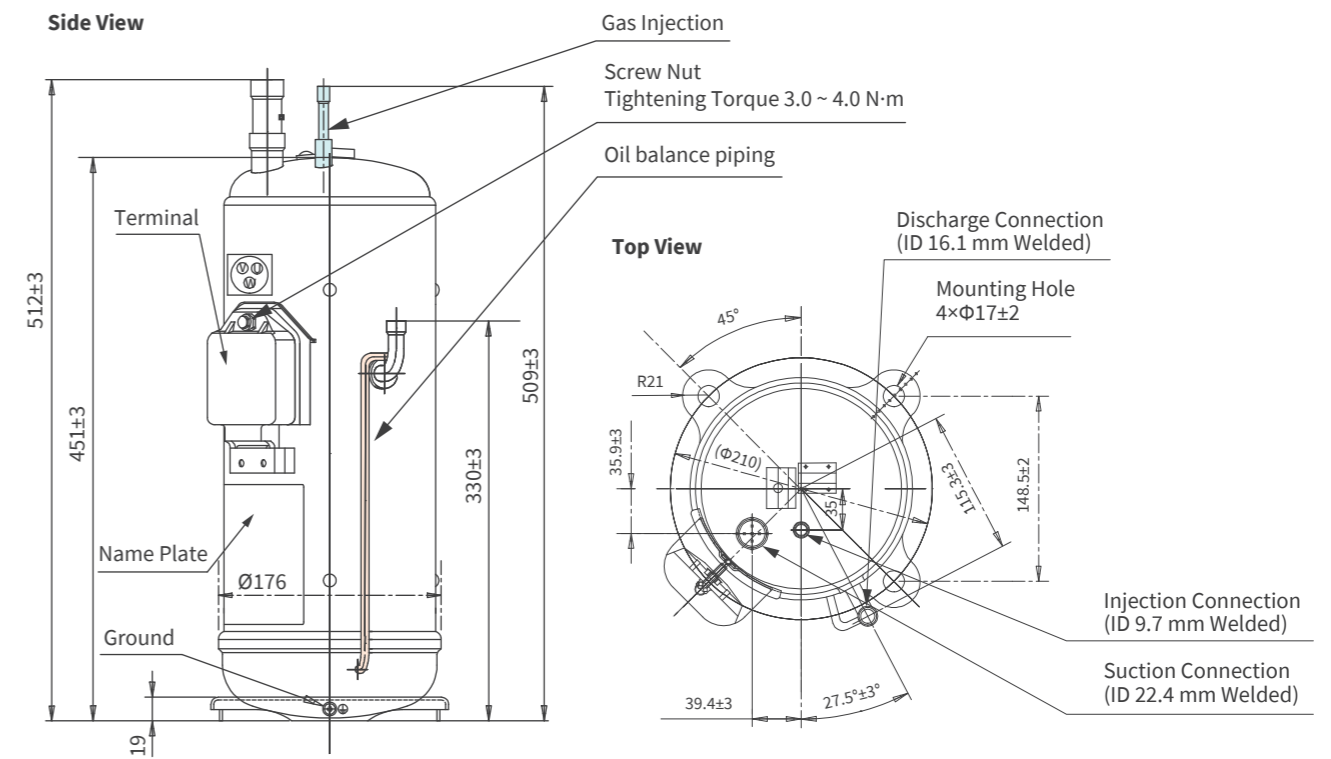
DA49PHAG-D1Y6

Side View



DA59PHAG-D1Y6

Side View



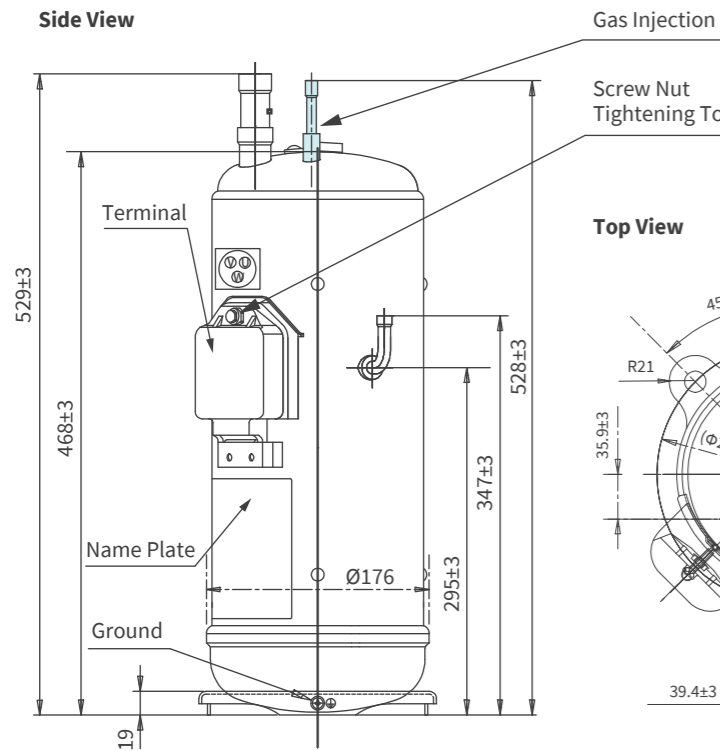
DIMENSION

PRODUCT DIMENSION

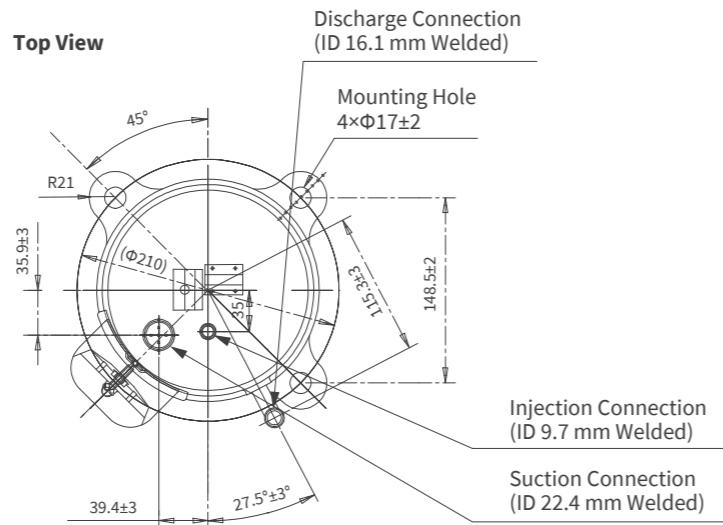
Unit: (mm)

DA65PHAG-D1K6

Side View



Top View



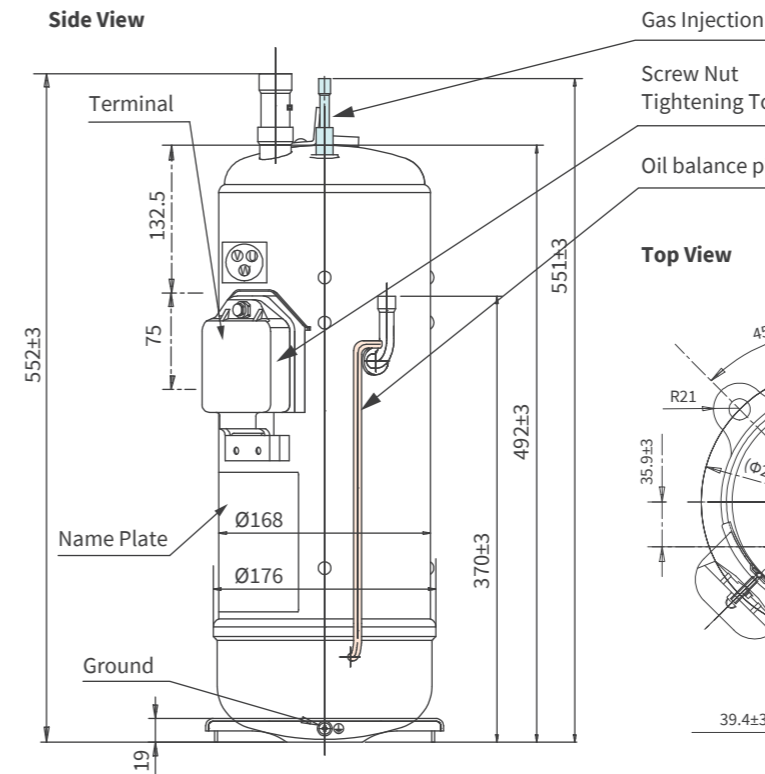
DIMENSION & WORKING RANGE

PRODUCT DIMENSION

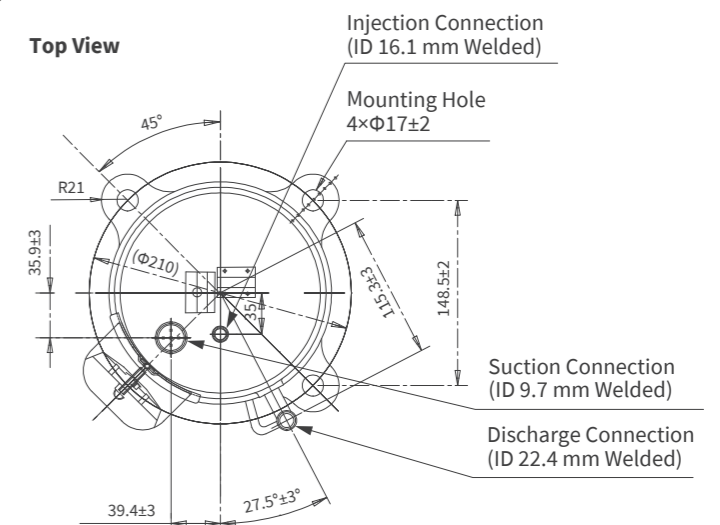
Unit: (mm)

DA80PHAG

Side View

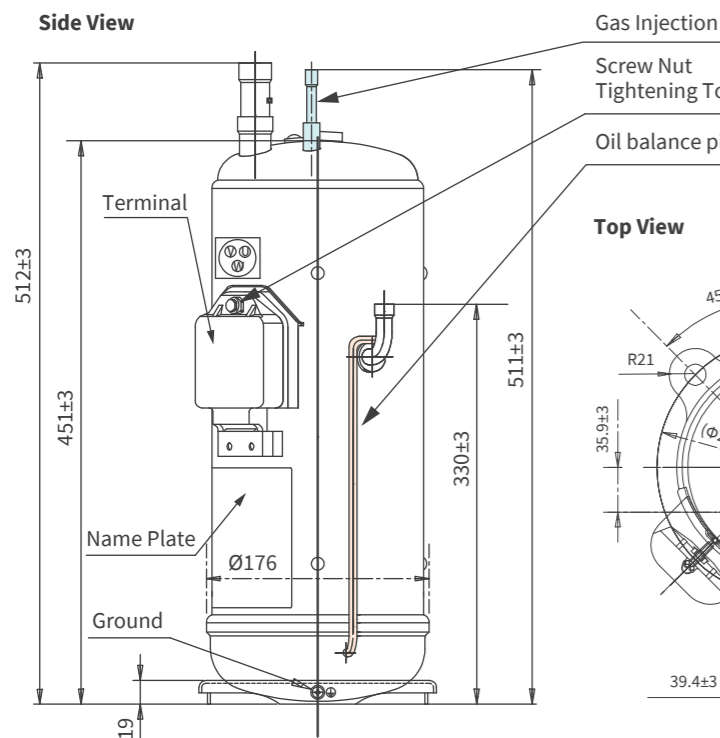


Top View

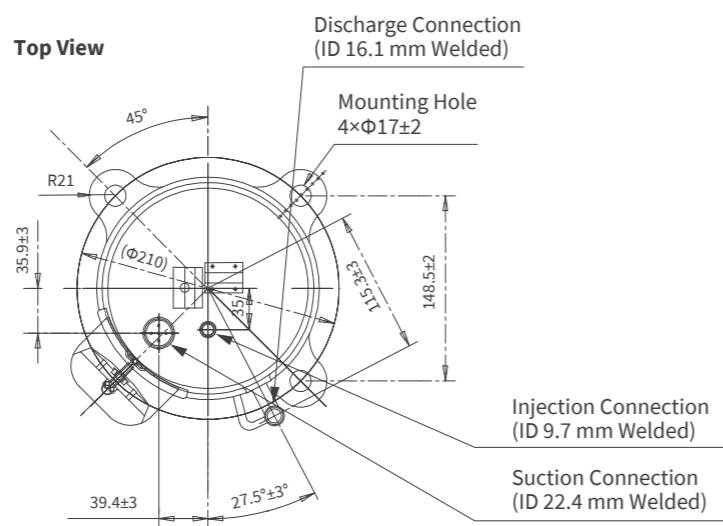


DA65PHAG-D1Y6

Side View



Top View



WORKING RANGE (DA38/DA49/DA59/DA65/DA80)

Note:

The graphic pressure for relative pressure.

*Pressure on the graphic is relative(gauge) pressure.

*Pressure Ratio ϵ (The absolute Pressure basis)

$\epsilon = (\text{Discharge Port Pressure}) / (\text{Suction Port Pressure})$

