

Scroll Compressors

for Commercial Air Conditioning
R410A | DC INVERTER

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.
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[Certificate No. 15918Q20011R6M]



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Johnson Controls-Hitachi Wanbao Compressor (Guangzhou) Co., Ltd.
Initial Issue Date: April 30, 2006
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AC-R410A-INN-AA/DC-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.

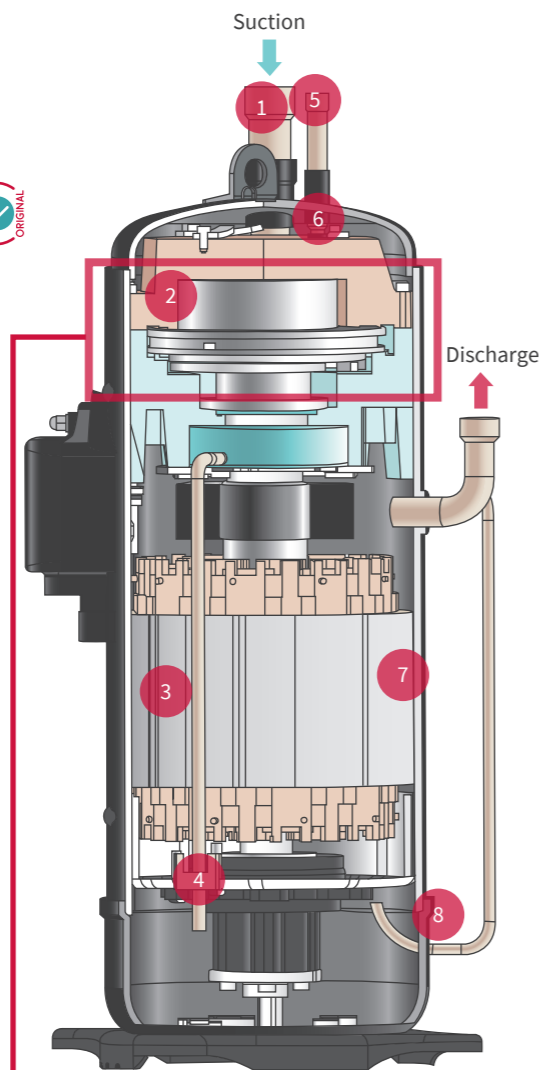
3. High Efficiency Motor

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

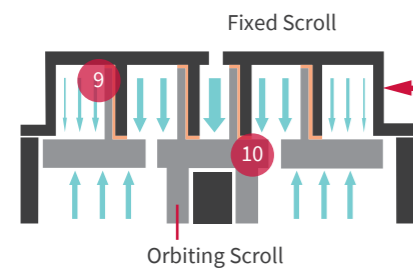
Improved partial load efficiency with self-adapting variable pressure ratios for upgraded performance - low ambient heating and high ambient cooling.

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.

Original Hitachi scroll design innovation

LINE UP & NOMENCLATURE

CAPACITY RANGE

Refrigerant	Motor Type	Capacity(kw)																			
		2	4	6	8	10	12	14	30	32	34	36	38	40	42	44	46	48	50	52	54
R410A	DC INV					AA50				AA55				DC65				DC80			

PRODUCT LINE

Series	UL	CE	Displacement		Speed	Rated Performance			
			cm ³ /rev.	m ³ /h		Cooling Capacity		Power Input	COP
					kW	BTU/h	kW	W/W	
AA50	✓	✓	50	8.70	15 - 140	16.48	56250	5.07	3.25
AA55	✓	✓	55	9.57	15 - 140	17.75	60580	5.46	3.25
DC65	✓	✓	65	11.31	10 - 130	21.40	73000	6.58	3.25
DC80	✓	✓	80	13.92	10 - 130	26.40	90100	8.13	3.25

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

NOMENCLATURE

For example:

D C 80 P H D G - D1 Y 2

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

Series	Displacement		Speed	Rated Performance			Weight (include oil)		Oil balance piping	Oil Charge	Power supply 3 phase	Gas Injection	Model Name	
				Cooling Capacity		Power Input								COP
	cm ³ /rev.	m ³ /h	rps	kW	BTU/h	kW	W/W	kg	lb	Liter	V/Hz	Yes/No		
AA50	50	8.70	15-140	16.48	56250	5.07	3.25	33.00	72.77	No	1.6	380-415V/50Hz	Yes	AA50PHDG-D1K2
												440V/60Hz	No	AA50PHDG-D1S2
												380-415V/50Hz	Yes	AA50PHDG-D1Y2
												440V/60Hz	No	AA50PHDG-D1J2
AA55	55	9.57	15-140	17.75	60580	5.46	3.25	33.00	72.77	No	1.6	380-415V/50Hz	Yes	AA55PHDG-D1K2
												440V/60Hz	No	AA55PHDG-D1S2
												380-415V/50Hz	Yes	AA55PHDG-D1Y2
												440V/60Hz	No	AA55PHDG-D1J2
AA55	55	9.57	15-140	17.75	60580	5.46	3.25	33.00	72.77	Yes	1.1	200V/50Hz	Yes	AA55PHDG-A1Y2
												200-220V/60Hz	Yes	AA55PHDG-A1Y2

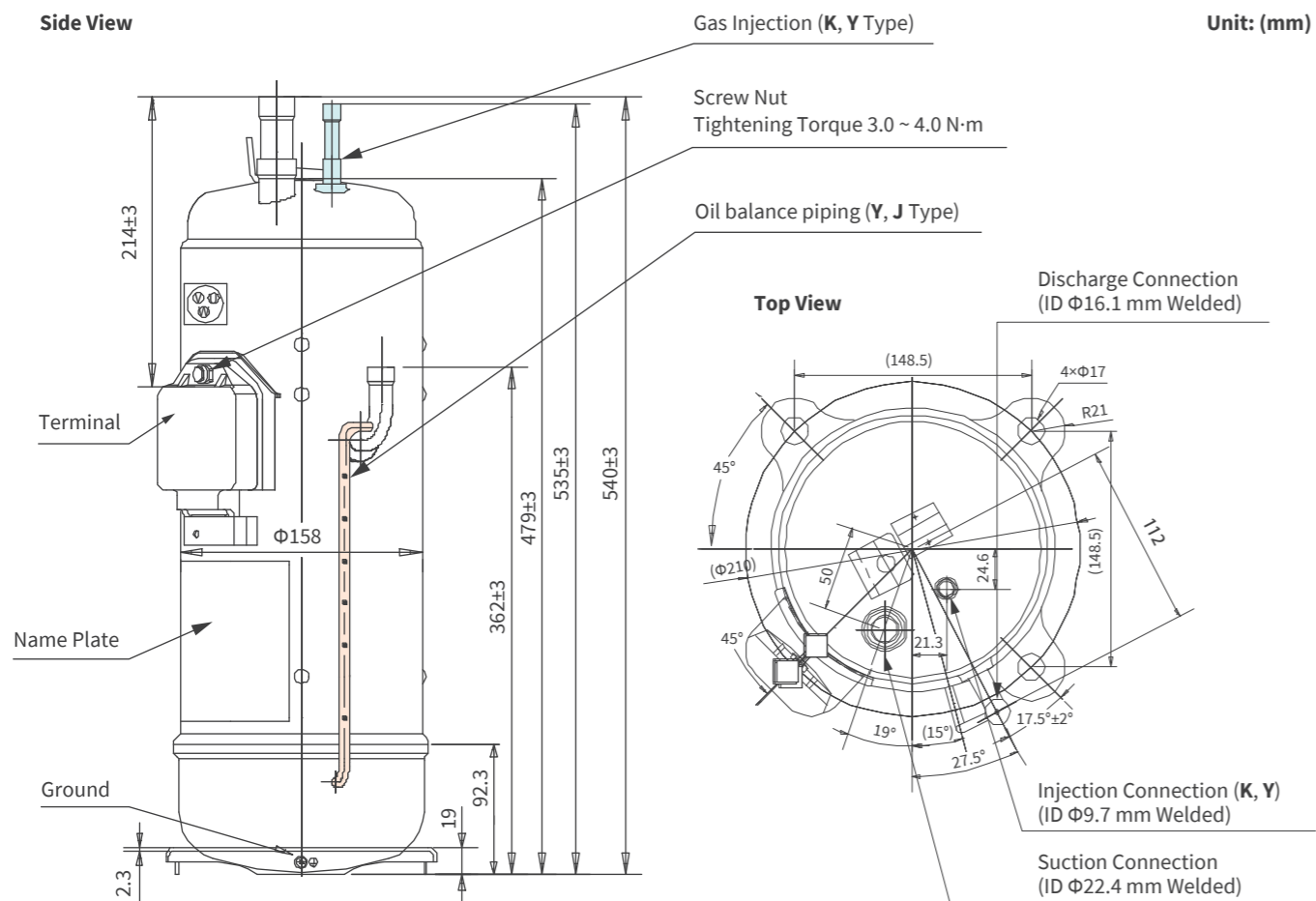
*Cooling capacity is based on AHRI Standard 540 condition (Dew point) and rotation speed at 60Hz.

PRODUCT SPECIFICATION

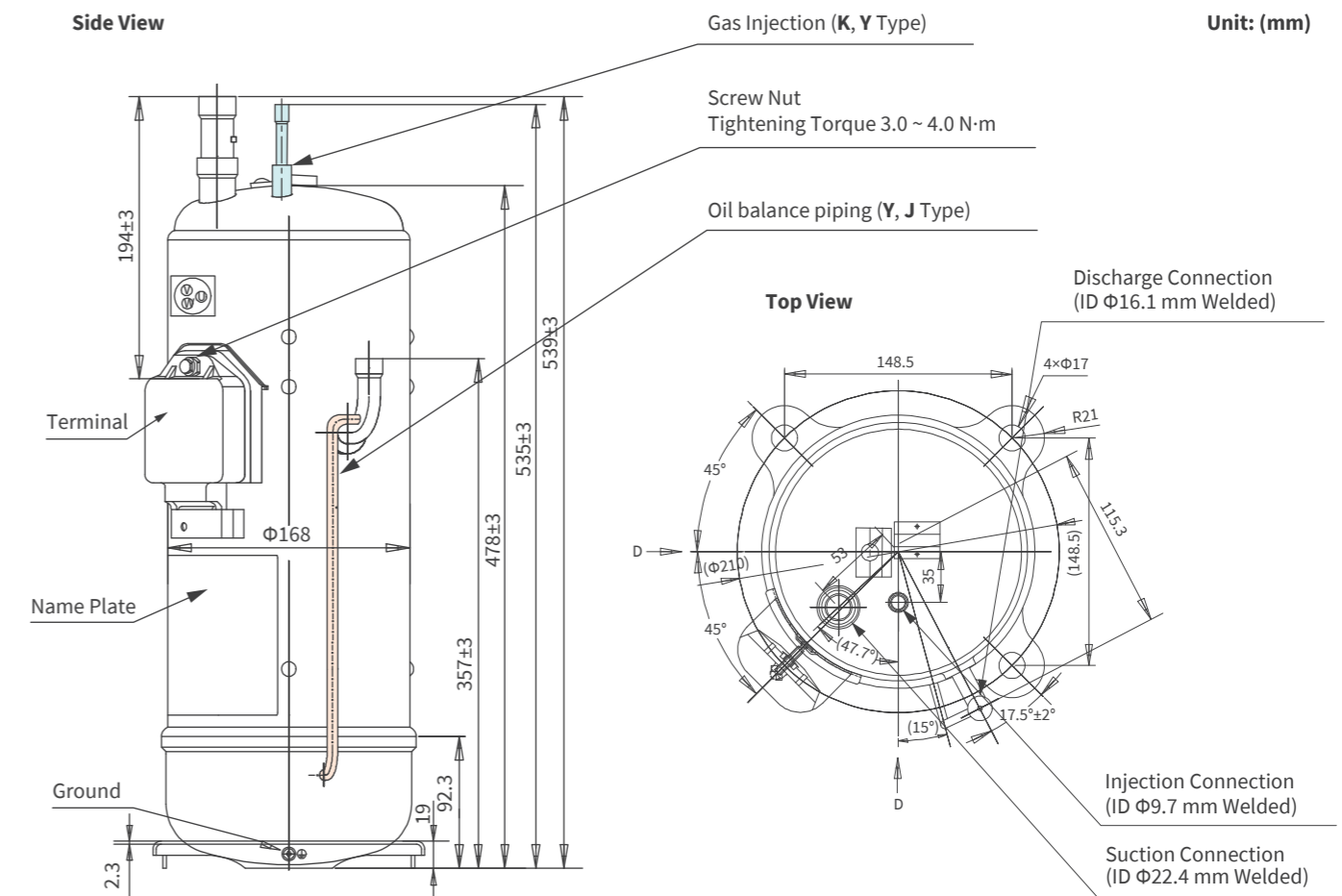
Series	Displacement		Speed	Rated Performance			Weight (include oil)		Oil balance piping	Oil Charge	Power supply 3 phase	Gas Injection	Model Name	
				Cooling Capacity		Power Input								COP
	cm ³ /rev.	m ³ /h	rps	kW	BTU/h	kW	W/W	kg	lb	Liter	V/Hz	Yes/No		
DC65	65	11.31	10-130	21.40	73000	6.58	3.25	38.00	83.79	No	1.6	380-415V/50Hz	Yes	DC65PHDG-D1K2
												440V/60Hz	No	DC65PHDG-D1S2
												380-415V/50Hz	Yes	DC65PHDG-D1Y2
												440V/60Hz	No	DC65PHDG-D1J2
DC65	65	11.31	10-130	21.40	73000	6.58	3.25	38.00	83.79	Yes	1.1	200V/50Hz	Yes	DC65PHDG-A1Y2
												200-220V/60Hz	Yes	DC65PHDG-A1Y2

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

PRODUCT DIMENSION (AA50/AA55)



PRODUCT DIMENSION (DC65)



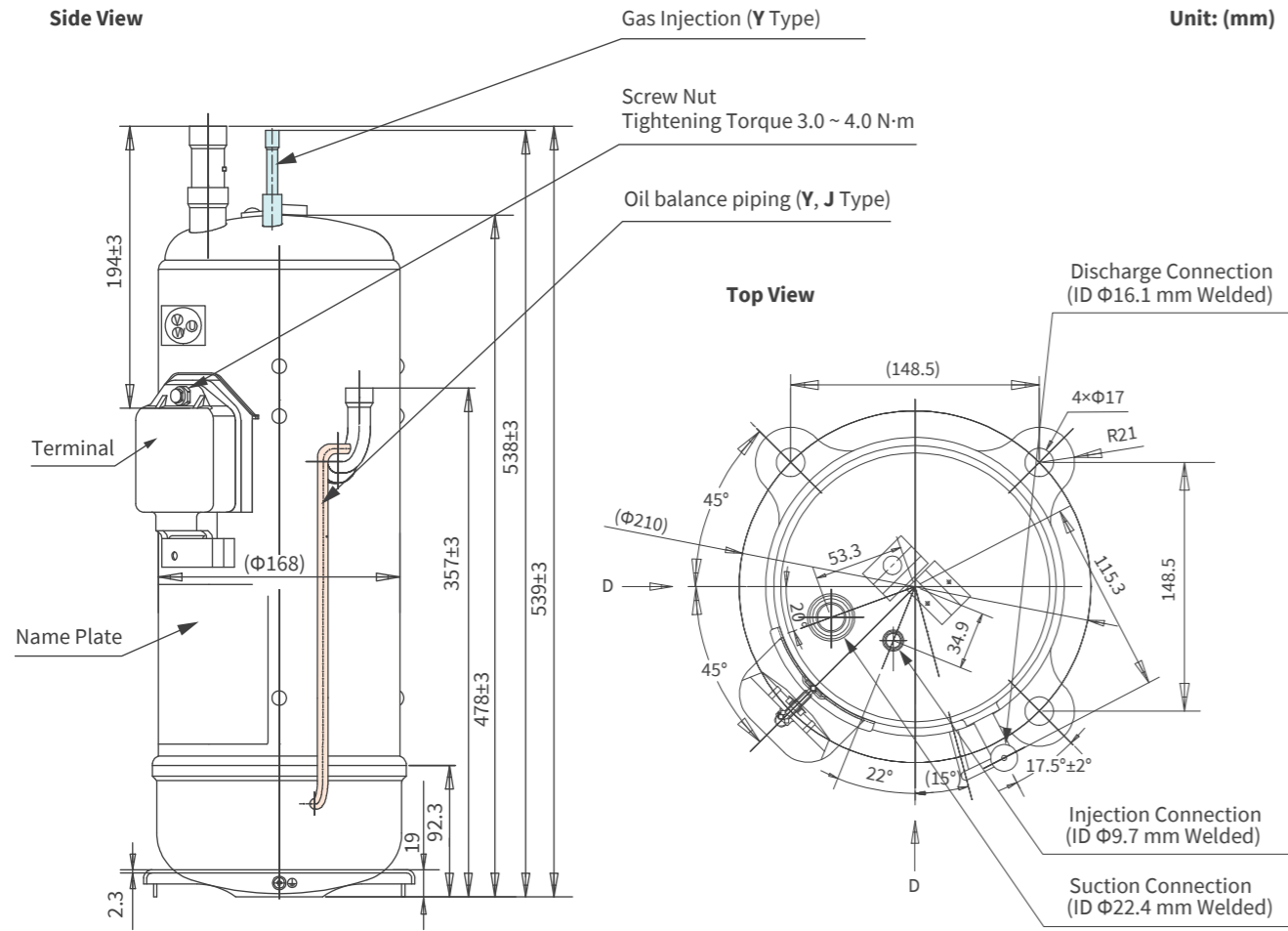
SPECIFICATION & DIMENSION

PRODUCT SPECIFICATION

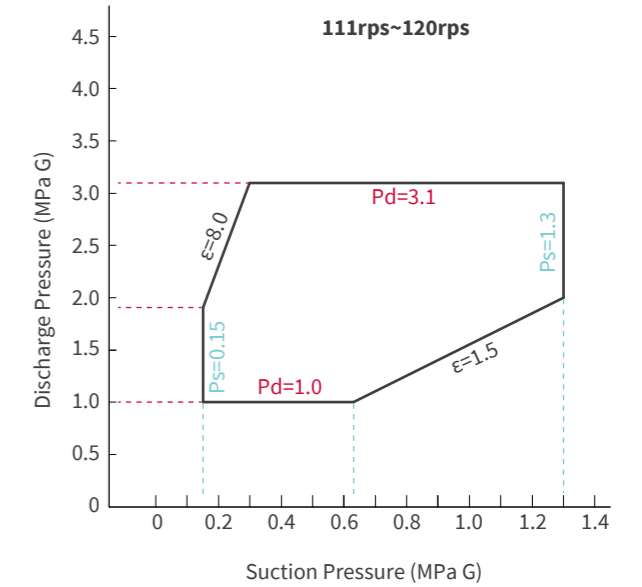
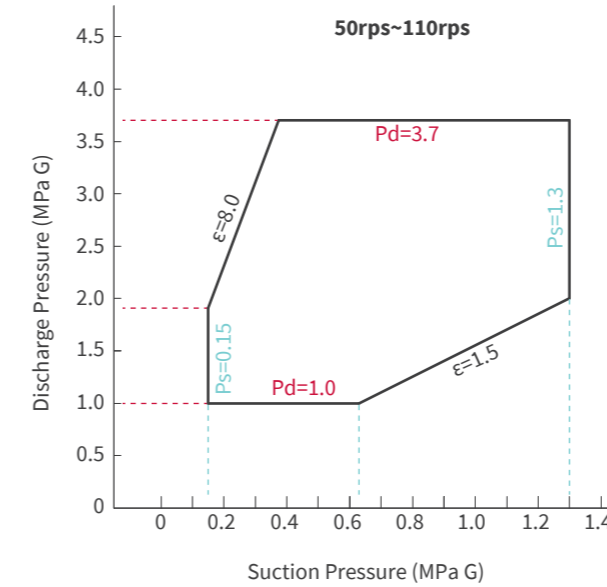
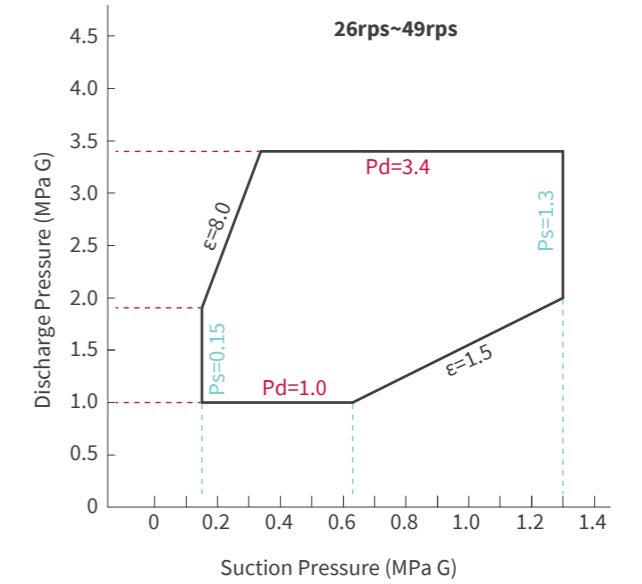
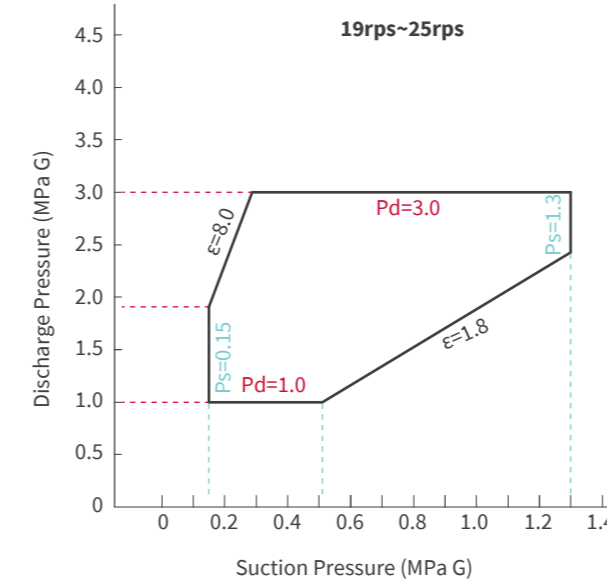
Series	Displacement		Speed	Rated Performance			Weight (include oil)		Oil balance piping	Oil Charge	Power supply 3 phase	Gas Injection	Model Name	
	cm ³ /rev.	m ³ /h		Cooling Capacity	Power Input	COP	kg	lb						
			kW	BTU/h	W/W									
DC80	80	13.92	10-130	26.40	90100	8.13	3.25	39.00	86.00	Yes	1.1	380-415V/50Hz 440V/60Hz	Yes	DC80PHDG-D1Y2
													No	DC80PHDG-D1J2

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PRODUCT DIMENSION (DC80)



WORKING RANGE



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

