

Vacuum Regulator

Series *IRV1000/2000/3000*



Allows adjustment of vacuum line pressure

Series IRV1000/2000/3000

3 sizes

offered in the series

Variations have been expanded to three sizes from only one in the previous series T203. Selection is possible to accommodate the applicable flow rate.

Note) Flow rate corresponds to VAC pressure of -101kPa, SET pressure of -80kPa, and initial flow rate setting of 0ℓ/min(ANR).

Compact

Light weight

IRV1000

60
ℓ/min (ANR) ^{Note)}



□ 35mm

120g

IRV2000

100
ℓ/min (ANR) ^{Note)}

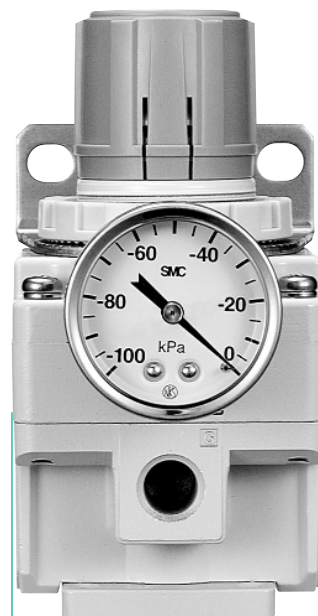


□ 50mm

270g

IRV3000

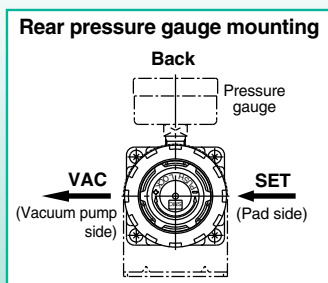
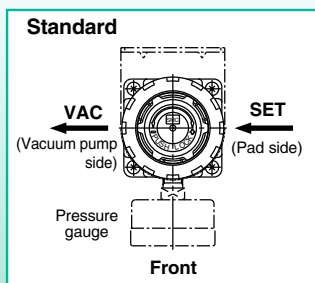
150
ℓ/min (ANR) ^{Note)}



□ 66mm

700g

■ Pressure gauge can be mounted from the front or rear

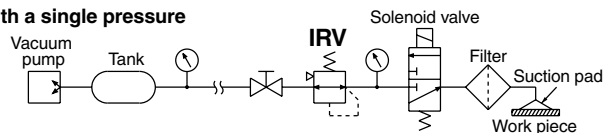


■ Panel mounting capability is standard

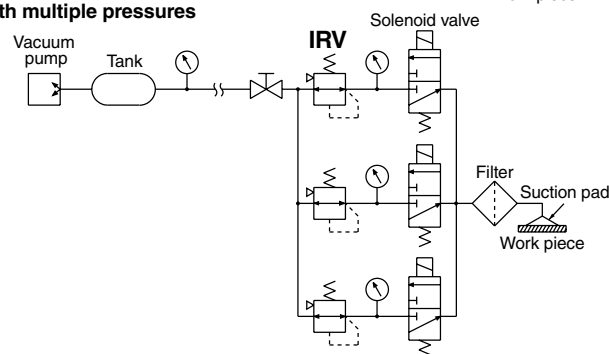
Applications

Lifting of work pieces

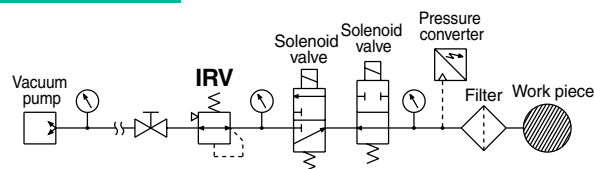
With a single pressure



With multiple pressures



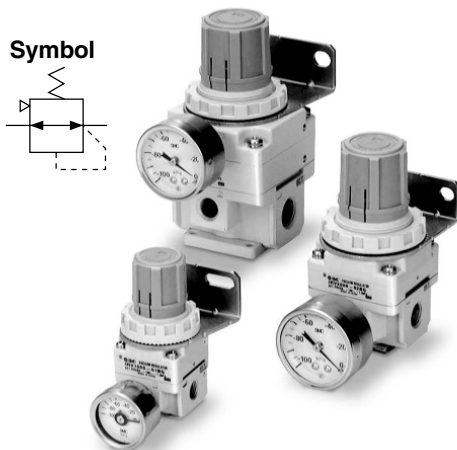
Leak tester



Vacuum Regulator

Series *IRV1000/2000/3000*

Symbol



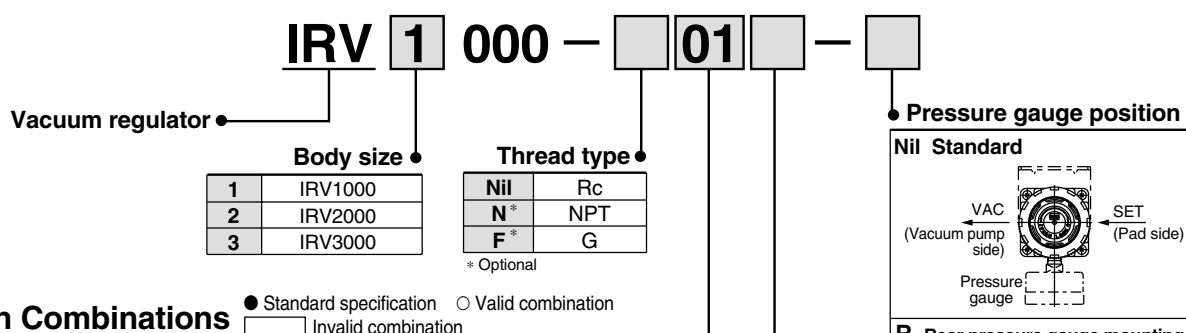
Standard Specifications

Model	IRV1000	IRV2000	IRV3000
Fluid	Air		
Regulating pressure range ^{Note 1)}	−100 to −1.3kPa		
Atmospheric intake consumption ^{Note 2)}	0.6ℓ/min (ANR) or less		1.1ℓ/min (ANR) or less
Knob resolution	0.13kPa or less		
Ambient and fluid temperature	5 to 60°C		
Port size	Rc 1/8	Rc 1/4	Rc 1/4, 3/8, 1/2
Pressure gauge port size	Rc 1/8 (2 locations)		
Weight (kg) [without accessory]	0.12	0.27	0.7

Note 1) Note that the pressure range fluctuates depending on the vacuum pump pressure.

Note 2) Air is always supplied from the atmosphere.

How to Order



Specification Combinations

● Standard specification ○ Valid combination
 Invalid combination

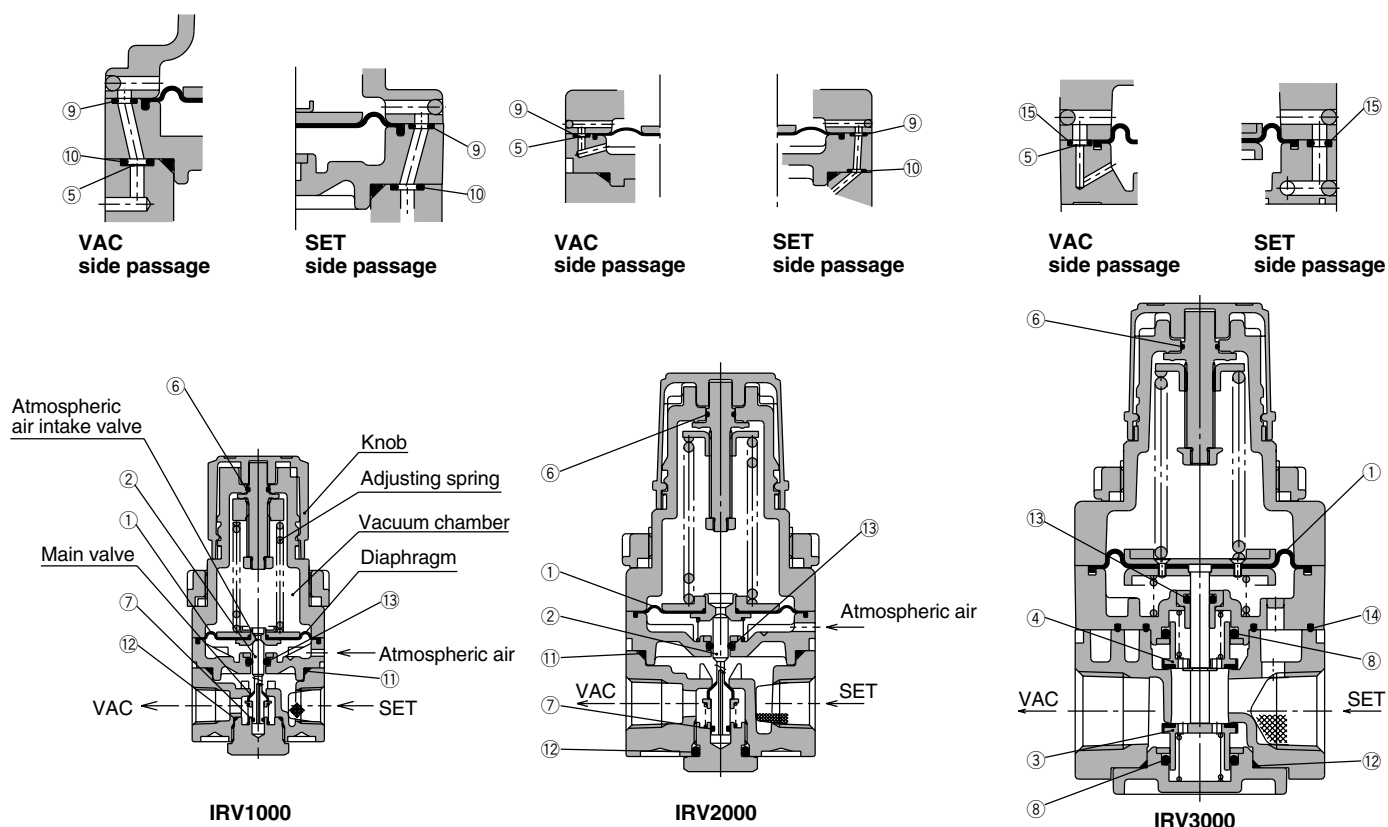
Specification		Symbol	Applicable model		
			IRV1000	IRV2000	IRV3000
Standard specifications	Connection Rc 1/8	01	●		
	Connection Rc 1/4	02		●	●
	Connection Rc 3/8	03			●
	Connection Rc 1/2	04			●
Accessories	Bracket	B	○	○	○
	Pressure gauge	G	○	○	○
Options	Rear pressure gauge mounting	R	○	○	○
	Connection NPT 1/8	N01	○		
	Connection NPT 1/4	N02		○	○
	Connection NPT 3/8	N03			○
	Connection NPT 1/2	N04			○
	Connection G 1/8	F01	○		
	Connection G 1/4	F02		○	○
	Connection G 3/8	F03			○
	Connection G 1/2	F04			○

Accessory (Optional) Part Nos.

Description	Part no.		
	IRV1000	IRV2000	IRV3000
Bracket	P53801018	P53802016	P53803013
Pressure gauge *	GZ33-K-01	GZ43-K-01	GZ43-K-01

* Pressure gauge accuracy: ±3% (full span)

Construction



Working principle (for IRV1000)

When the knob is turned to the right, the adjusting spring's generated force pushes down the diaphragm and the main valve. This connects the VAC side and SET side, and the degree of vacuum on the SET side increases (becomes closer to an absolute vacuum). Furthermore, the SET side vacuum pressure moves through the air passage into the vacuum chamber, where it is applied to the top side of the diaphragm and counters the adjusting spring's compression force; and this adjusts the SET side pressure. When the degree of vacuum on the SET side is higher than the designated setting value (becomes closer to an absolute vacuum), the balance between the adjusting spring and the SET side pressure in the vacuum chamber is lost, and the diaphragm is pushed up. This causes

the main valve to close and the atmospheric intake valve to open, which lets atmospheric air into the SET side. When the adjusting spring's compression force and the SET side pressure are balanced, the SET side pressure is set. Also, when the degree of vacuum of the SET side pressure is lower than the designated setting value (becomes closer to the atmosphere), the balance between the adjusting spring and the SET side pressure of the vacuum chamber is lost, and the diaphragm is pushed down. This causes the atmospheric intake valve to close and the main valve to open, which lets air into the VAC side. When the adjusting spring's compression force and the SET side pressure are balanced, the SET side pressure is set.

Replacement parts

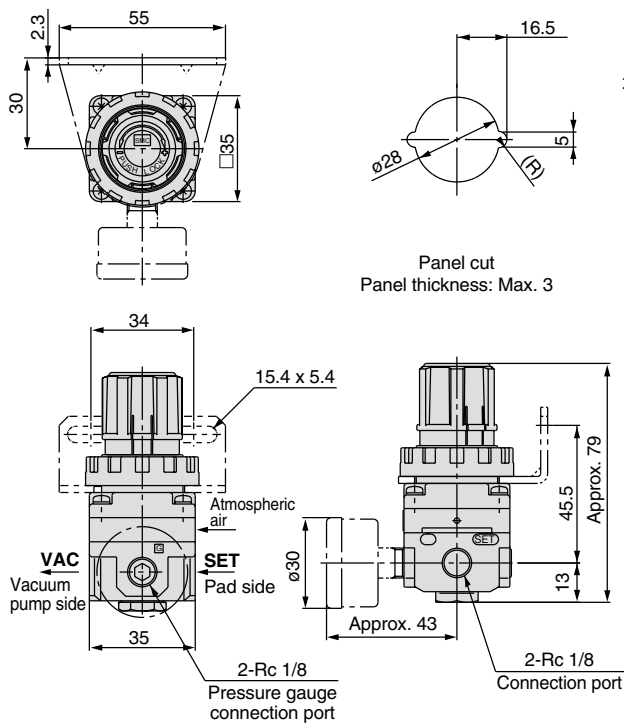
No.	Description	Material	Part no.		
			IRV1000	IRV2000	IRV3000
1	Diaphragm assembly	H-NBR, etc.	P538010-6	P538020-3	P538030-5
2	Valve	Stainless steel, H-NBR	P53801005	P53802005	—
3	Valve	Brass, H-NBR	—	—	P53803015
4	Valve	Brass, H-NBR	—	—	P53803016
5	Fixed orifice	SUS304	P36202018	P36202018	P36203017
6	O-ring	H-NBR	ø4.35 x 1	ø6 x 1	ø8.31 x 1
7	O-ring	H-NBR	ø2 x 0.6	ø3.2 x 1	—
8	O-ring	NBR	—	—	JISB2401 P16 ^{Note 1)}
9	O-ring	NBR	ø1.7 x 0.85	ø2.5 x 1	—
10	O-ring	NBR	ø2.5 x 1	ø3 x 1	—
11	O-ring	NBR	ø24 x 1.5	ø39.5 x 2	—
12	O-ring	NBR	ø10 x 1.3	JISB2401 P11	ø27.8 x 1.5
13	O-ring	NBR	JISB2401 P3 ^{Note 1)}	JISB2401 P4 ^{Note 1)}	JISB2401 P5 ^{Note 1)}
14	Seal (A)	NBR	—	—	P36203015
15	Seal (B)	NBR	—	—	P36203016
Repair kit no. (A set of above nos. ① to ⑮.)			KT-IRV1000	KT-IRV2000	KT-IRV3000

Note 1) For O-ring numbers 8 and 13, use mini-flicking type.

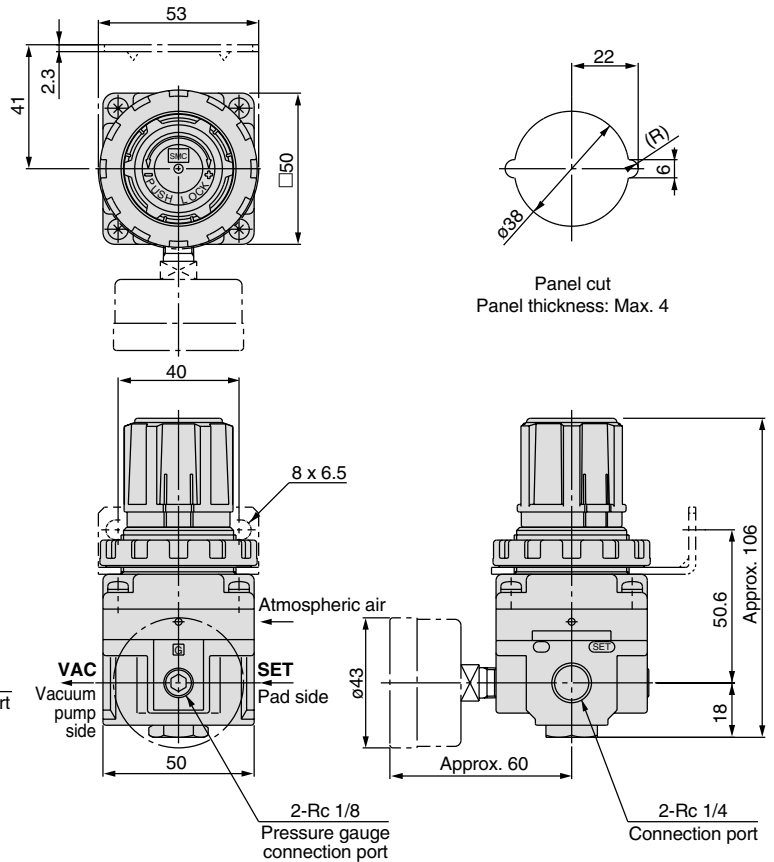
Note 2) Replacement part numbers correspond to the item numbers in the figures.

Dimensions

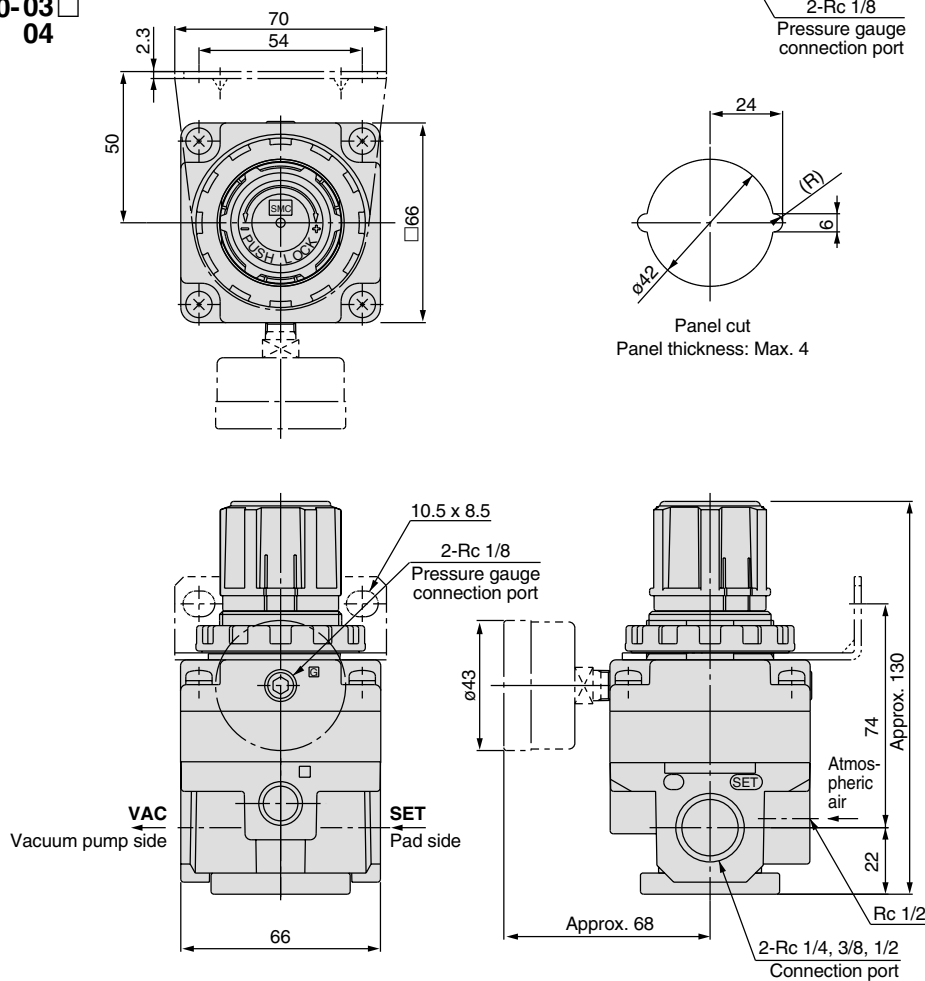
IRV1000-01□



IRV2000-02□



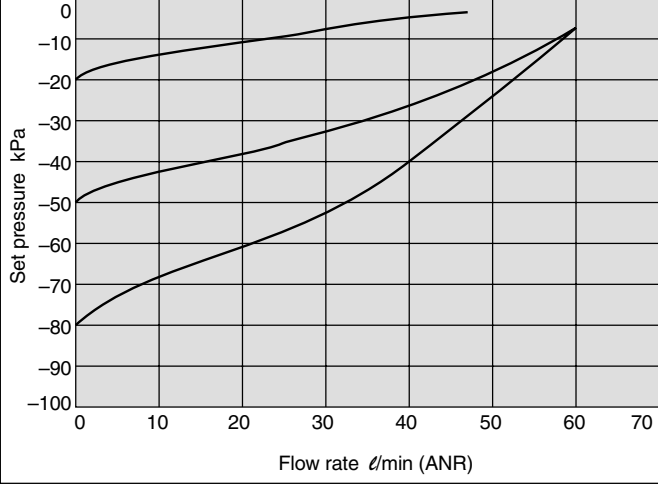
IRV3000-03□
04



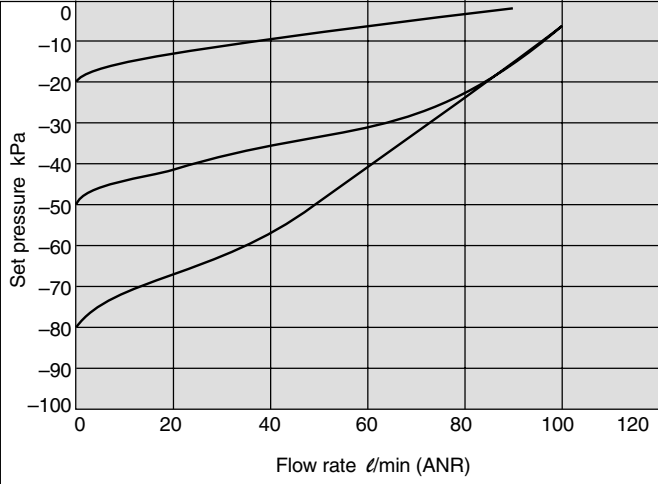
Series *IRV1000/2000/3000*

Flow Characteristics Conditions: Vacuum pump exhaust speed 500ℓ/min
VAC side pressure -101kPa at initial setting

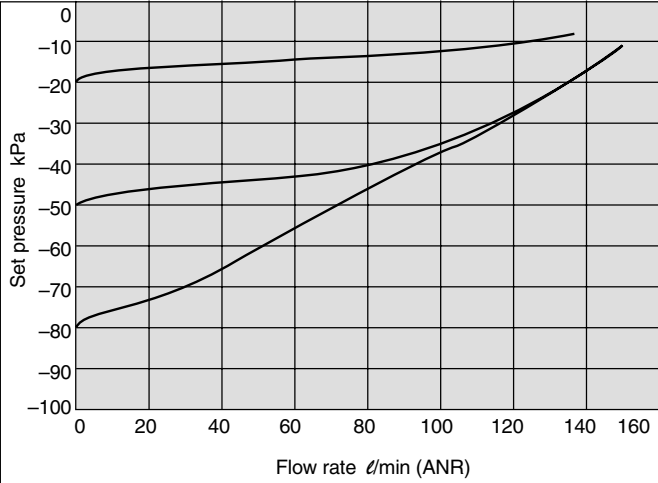
IRV1000



IRV2000

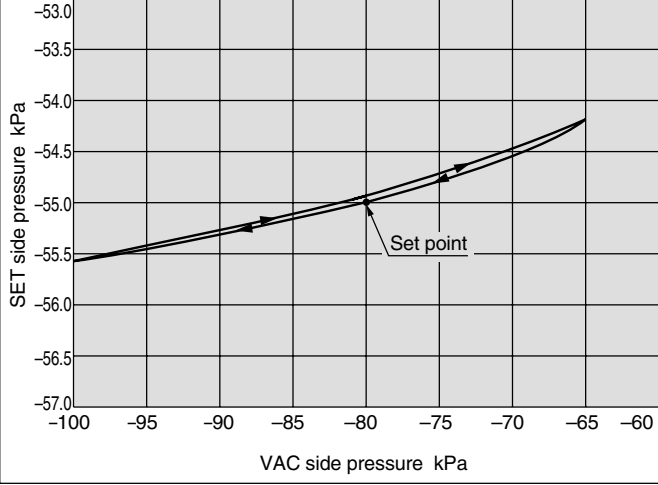


IRV3000

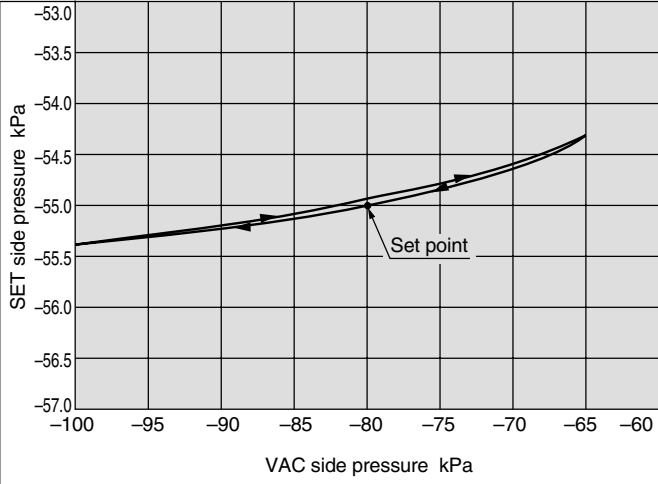


Pressure Characteristics Conditions: Vacuum pump exhaust speed 500ℓ/min

IRV1000



IRV2000



IRV3000

