The Heart of Industry
IWAKI

AC
MOTOR

Gas and Liquid Transfer
Pumps & Air Pumps Catalog

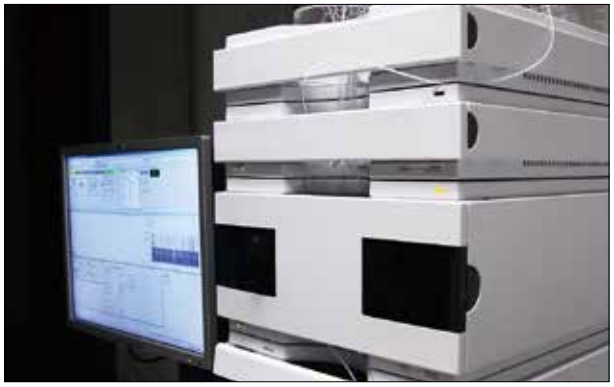
IWAKI
AIR
PUMPS

APN

www.iwakipumps.jp

Wide range, wide variety
We respond to all needs.

Iwaki gas-liquid transfer pumps and air pumps are most appropriate for built-in applications.
They are widely used in analyzers and medical equipment for which high quality is required, as well as in laboratory instruments, industrial machines, and other devices.



Analyzers

Air analyzers (deaerators, air analyzers, flue-gas analyzers), medical analyzers (biochemical analyzers [for medical waste liquor/washings collection]), environmental analyzers (spectral photometers [for material adsorption], leak testers, dust counters), immunology analyzers

Medical equipment

Aspirators, nebulizers, low-frequency therapy equipment, blood-pressure gauges, endoscopes, X-ray film adsorption/transfer equipment, gas sterilizers, tappers, artificial respirators, bedsore preventive mats, interferential current therapy equipment, oxygen generators, normal saline solution sprays, massagers, pressurization/vacuum sources for various devices

Physics and chemistry instruments

Vacuum furnaces, aspirators, vacuum filters, liquid chromatography, particle counters, leak testers, sprays, culture apparatus, aseptic baths, micro air dusters

Industrial machine

Forming machines (for vacuum defoaming), solder adsorption devices, washers, vacuum tweezers, automatic packaging machines, automobile oil chargers, ozonizers, vacuum chucks, glass engravers, solvent recovery apparatus, lifters, air tools, air brushes, air dusters, air driven valves, sprays, air sensors

Lineup

APN-W Gas and liquid transfer pumps


Single head


Dual-head

Model	085
Pump head	Single/Dual
Page	7, 8

APN Diaphragm type air pumps


051


052


085L


085H


110
Single head


110
Dual-head

Model	051 052	085	110
Connection	Horizontal/Vertical	Horizontal/Vertical	Parallel/In-line
Pump head	Single/Dual	Single/Dual	Single/Dual
Page	9, 10	11, 12	13, 14


215


240


450
Dual-head


450
Single head

Model	215	240	450
Pump head	Single/Dual	Single/Dual	Single/Dual
Page	15, 16	17, 18	19, 20

Specifications 1

APN-W (Gas and liquid transfer pumps)

Parallel duplex	Model	Materials	Gas-liquid Max. capacity / Gas Max. flow 50Hz / Gas Max. flow 60Hz (L/min)	Max. Vacuum (kPa)	Max. Discharge pressure (MPa)
	085	EX	0.5 / 3.0 / 4.0	34.66	0.05
	085	VX	0.5 / 3.0 / 4.0	37.33	0.05
P	085	EX	1.0 / 5.0 / 6.0	34.66	0.05
P	085	VX	1.0 / 5.0 / 6.0	37.33	0.05

APN (Diaphragm type air pumps)

Parallel duplex	Model	Materials	Gas Max. flow 50Hz / Gas Max. flow 60Hz (L/min)	Max. Vacuum (kPa)	Max. Discharge pressure (MPa)
	051	L/H	0.6 / 0.7	61.32	0.05
S	051	L	1.5 / 1.8	13.33	
P	051	L/H	1.2 / 1.4	61.32	0.05
	052	L/H	1.8 / 2.1	61.32	0.05
S	052	L	3.0 / 3.6	13.33	
P	052	L/H	3.6 / 4.2	61.32	0.05
	085		5.0 / 6.0	61.32	0.08
	085	L/H	5.0 / 6.0	34.66	0.08
S	085	L	5.0 / 6.0	7.99	
P	085	L/H	10.0 / 12.0	34.66	0.08
	110	K	12.0 / 14.0	23.99	0.10
	110	L	12.0 / 14.0	23.99	0.10
S	110	L	12.0 / 14.0	7.99	
P	110	L	24.0 / 28.0	23.99	0.10
	215	N	15.0 / 18.0	39.99	0.10
	215	C	15.0 / 18.0		0.20
	215	M	15.0 / 18.0	26.66	
S	215	M	15.0 / 18.0	7.99	
P	215	N	28.0 / 32.0	39.99	0.10
P	215	C	30.0 / 36.0		0.20
P	215	M	30.0 / 36.0	26.66	

50/60Hz

Parallel duplex	Model	Materials	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)	Connection size IN/OUT (mm)	Mass (kg)	Handling gas temp. (°C)	Handling liquid temp. (°C)	Limit cold start temperature (°C)
	085	EX	20	47/44	0.60/0.50	AC100	Thread Rc1/8	2.5	0 to 40	5 to 40	FKM: 10 EPDM: 5
	085	VX									
P	085	EX		50/48				2.8			
P	085	VX									

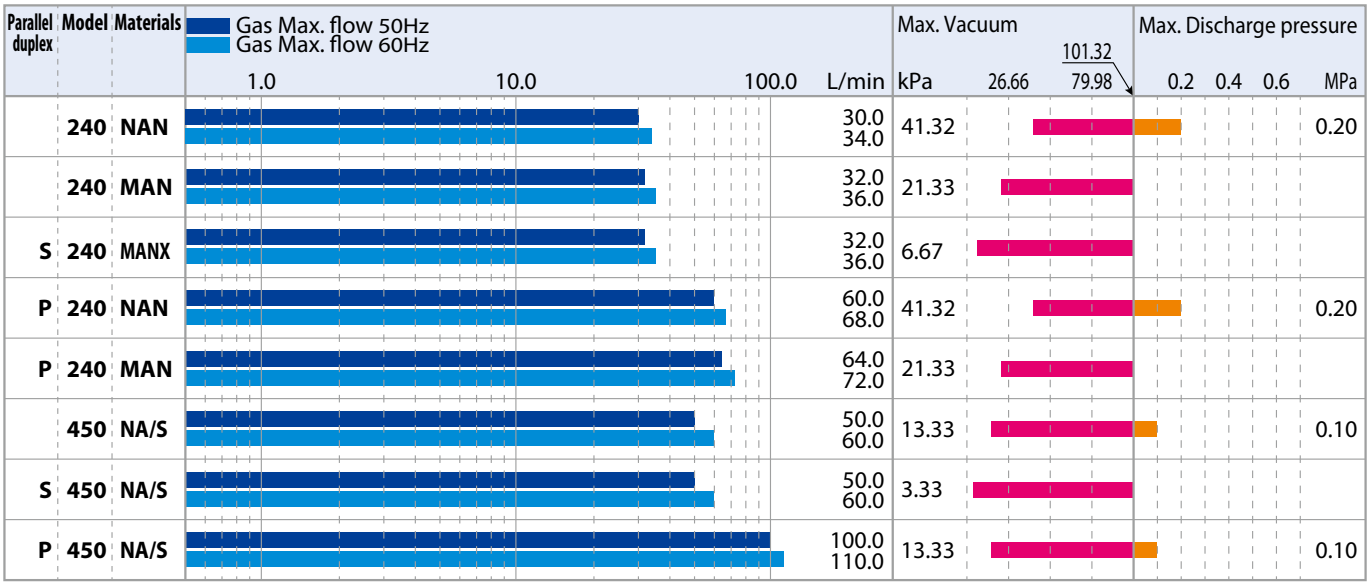
50/60Hz

Parallel duplex	Model	Materials	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)	Connection size IN/OUT (mm)	Mass (kg)	Handling gas temp. (°C)	Ambient temp. (°C)	Limit cold start temperature (°C)
	051	L/H	1	14/15	0.14/0.15	AC100	Hose Ø8, Ø5[Note], Thread Rc1/8	0.5	5 to 40	5 to 40	5
P	051	L/H	3	18/20	0.18/0.20			0.85			
S	051	L					Hose Ø8				
	052	L/H	2.5	15/15	0.15/0.15		Hose Ø8, Ø5[Note], Thread Rc1/8	0.5			
S	052	L/H	5	30/36	0.30/0.36		Hose Ø8	0.85			
P	052	L/H					Hose Ø8, Ø5[Note], Thread Rc1/8				
	085		10	20/20	0.25/0.25		Hose Ø8, Thread Rc1/4, G1/4	1.9	0 to 40	0 to 40	10
	085	L/H									FKM: 5, EPDM/NBR: 0
S	085	L	15	35/38	0.40/0.40			2.6			5
P	085	L/H									FKM: 5, EPDM/NBR: 0
	110	K	10	42/42	0.50/0.44			2.5	0 to 40	5 to 40	5
	110	L									
S	110	L	25	60/66	0.76/0.70			3.8			
P	110	L									
	215	N	30	64/64	0.75/0.68		Hose Ø9, Thread G1/8	3.5	0 to 40	0 to 40	0
	215	C									
	215	M									
S	215	M	45	95/95	1.00/1.00			5.2			100/200V: 0, 115/220V: 5
P	215	N									
P	215	C									
P	215	M									

Note: H type only

Specifications 2

APN (Diaphragm type air pumps)



Features of air pumps

The APN series, diaphragm air pumps, are compact and have motor-driven diaphragms.
A highly-efficient motor and a special diaphragm, an enlarged bearing and an enhanced connecting rod have greatly improved vacuum performance, a starting characteristic and durability.

Clean air transfer

The motor-driven diaphragm pumps are oil-/carbon-free and are highly air-tight.
Most suitable in medical or sampling equipment where air cleanness is required.

Highly-efficient design

A use of molded parts enhances the pump performance and efficiency. The high-power motor also improves the starting characteristic.

Easy maintenance

The pump head consists of only a few parts and can easily be dismantled and assembled.

• Except for some products.

50/60Hz

Parallel duplex	Model	Materials	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)	Connection size IN/OUT (mm)	Mass (kg)	Handling gas temp. (°C)	Ambient temp. (°C)	Limit cold start temperature (°C)
	240	NAN	60	94/107	1.2/1.2	AC100	Hose Ø14, Thread G1/4	7.0	0 to 40	0 to 40	0
	240	MAN									
S	240	MANX	90	170/200	1.8/2.0		Thread RC1/4	10.0	5 to 40	5 to 40	5
P	240	NAN					Hose Ø14, Thread G1/4		0 to 40	0 to 40	0
P	240	MAN									5
	450	NA/S	200	295/345	3.2/3.5		Hose Ø12, Thread Rc1/4	12.0/14.2	0 to 40	0 to 40	0
S	450	NA/S						13.0/17.4			
P	450	NA/S						12.8/17.1			

Long life design

Fiber reinforced diaphragms, enlarged bearings and enhanced con rods have further improved reliability and durability in order for the pump to run over an extended time period in a continuous operation.


Eccentric cams


Connecting rods


Bearings

Wide variations

Either single- or twin-head type is selectable. Also, EPDM, FKM, NBR or PTFE diaphragm and hose/thread connections are available. A number of combinations (more than 60) varies the APN according to an intended use.

Note: A diaphragm material and a suction bore shape differs with models.


Single head type


Dual head type

Suction bore shape


Vertical


Parallel


Straight

Diaphragm shape


Retainer integral type


Flat type


Grooved type

APN-085-W

Gas and liquid transfer pumps

50/60Hz

Max. capacity (Gas-liquid) 0.5 to 1.0 L/min

Max.flow (Gas) 3/4 to 5/6 L/min

Max. vacuum 34.66 to 37.33 kPa

Max. discharge pressure 0.05 MPa

Adjustment valve of fluid, please to be installed on the suction side of the pump.

APN-085-W

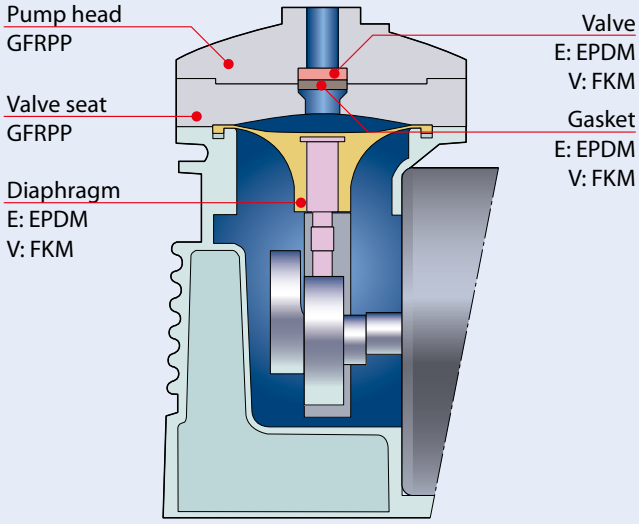
APN-P085-W

Specifications (50/60Hz)

Model		Gas-liquid Max. capacity (L/min)	Gas Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-085-W	EX type	0.5	3/4	34.66	0.05	20	47/44	0.60/0.50	AC100
	VX type			37.33					
APN-P085-W	EX type	1.0	5/6	34.66			50/48		
	VX type			37.33					

Connection size IN/OUT ..... Thread Rc1/8
Mass 085: 2.5kg, P085: 2.8kg
Handling gas temp. ..... 0 to 40°C
Handling liquid temp. ..... 5 to 40°C
Ambient temp. ..... 0 to 40°C

Construction and materials

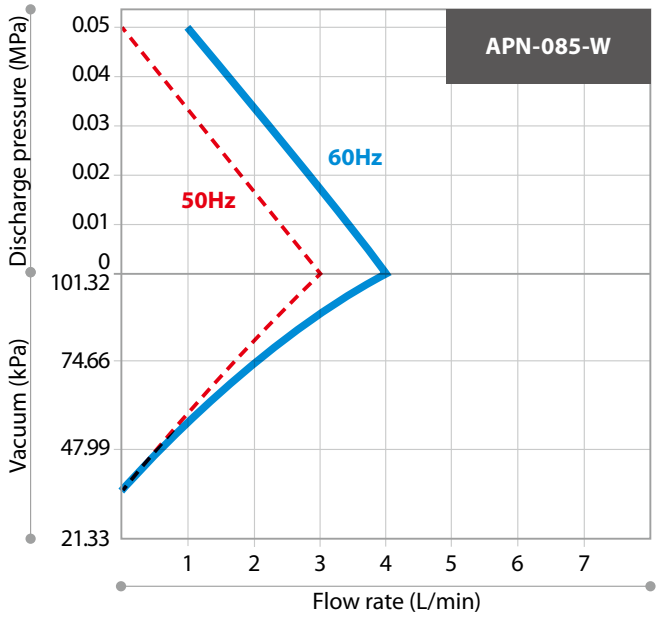


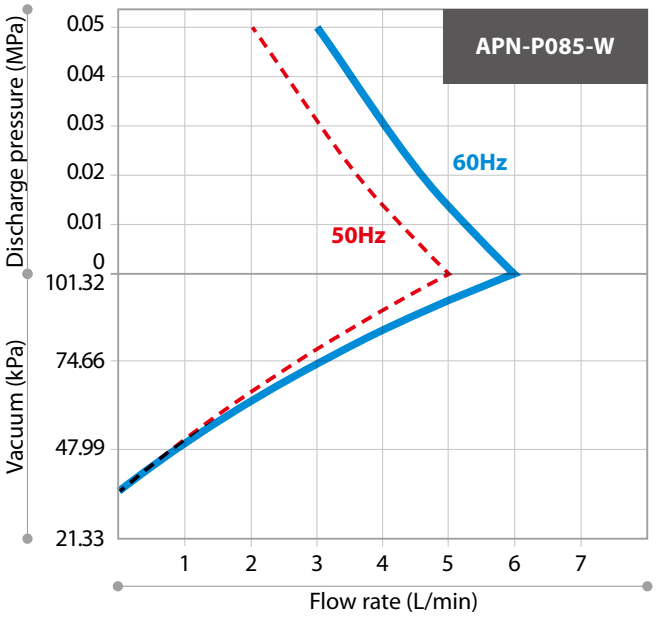
Pump identification

APN - P 085 E X - 1 - W 02

- **P** — Pump head
  No symbol: single head
  P: Dual-head with parallel tubing
- **085** — Model
- **E** — Diaphragm/Valve materials
  E: EPDM/EPDM
  V: FKM/FKM
- **X** — Pump connection
  X: Thread (Rc1/8)
- **1** — Motor
  1: AC100V
- **W** — Type
  W: Gas-liquid transfer
- **02** — Special version

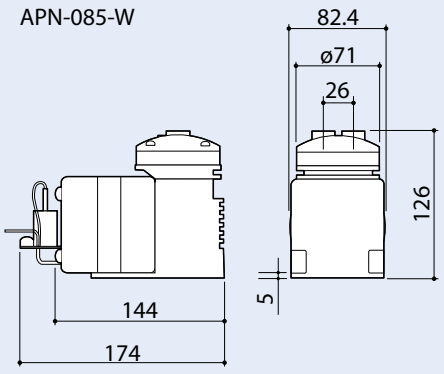
Performance curves

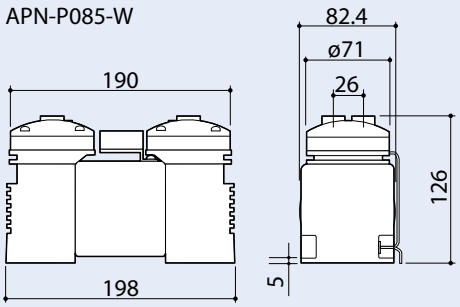




Performance curve of the above is a thing of when it is dealing with air.
Please contact us for performance at the time of liquid and gas-liquid mixing handling.

Dimensions in mm





APN-051/052

Diaphragm type air pumps

50/60Hz

Max.flow 0.6/0.7 to 3.6/4.2 L/min

Max. vacuum 13.33 to 61.32 kPa

Max. discharge pressure 0.05 MPa

051

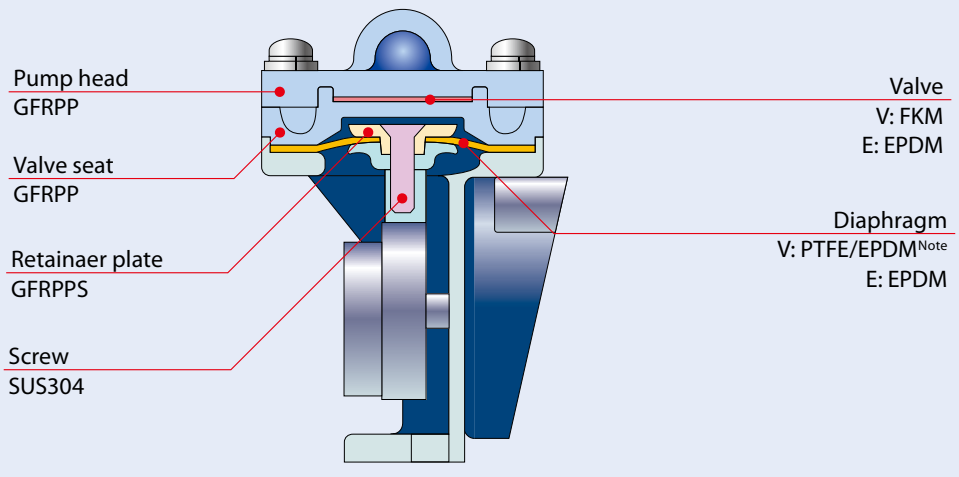
052

Specifications (50/60Hz)

Model	Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-051L/H	0.6/0.7	61.32	0.05	1	14/15	0.14/0.15	AC100
APN-P051L/H	1.2/1.4			3	18/20	0.18/0.20	
APN-S051L	1.5/1.8	13.33	—				
APN-052L/H	1.8/2.1	61.32	0.05	2.5	15/15	0.15/0.15	
APN-S052L/H	3.0/3.6	13.33	—	5	30/36	0.30/0.36	
APN-P052L/H	3.6/4.2	61.32	0.05				

Connection size IN/OUT ..... 051/P051/052/P052: Hose Ø5mm[Note], Ø8mm, Thread Rc1/8, S051/S052: Hose Ø8mm
Mass 051/052: 0.5kg, P051/P052/S051/S052: 0.85kg
Handling gas temp. ..... 5 to 40°C
Ambient temp. ..... 5 to 40°C
Limit cold start temperature... 5°C
Note: H type only

Construction and materials



APN-051L / 052L

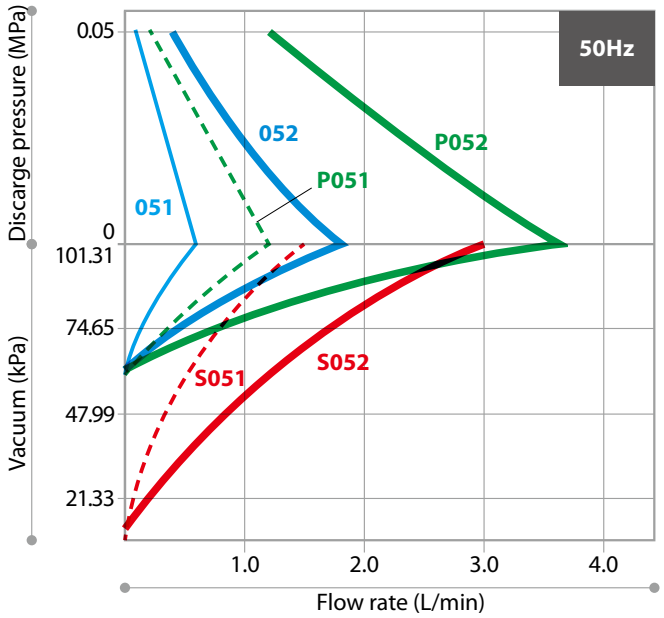
Note: EPDM is not contact gas

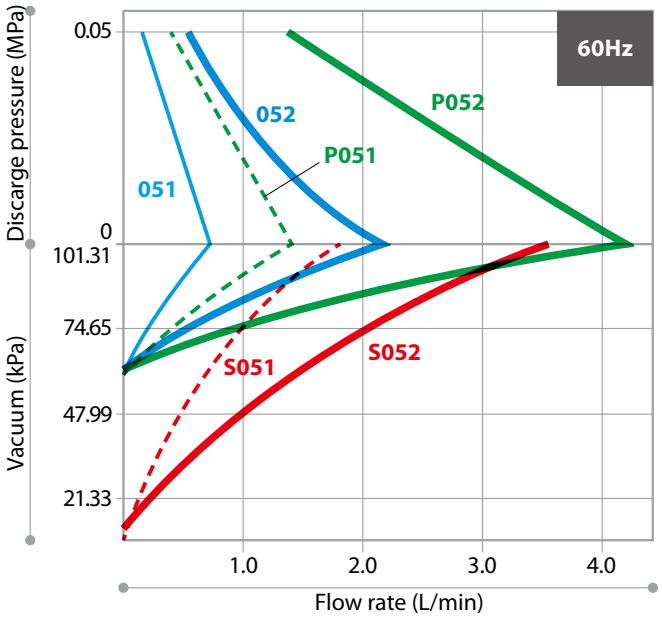
Pump identification

APN - S 051 L E X - 1 - 01

- **S**: Pump head
  No symbol: Single head
  P: Dual-head with parallel tubing
  S: Dual-head with series tubing
- **051 • 052**: Model
- **L**: Pump head
  L: Horizontally oriented
  H: Vertically oriented
- **E**: Diaphragm/Valve materials
  V: PTFE/EPDM • FKM
  E: EPDM • EPDM
- **X**: Pump connection
  No symbol: Tube (ø8)
  5: Tube (ø5)
  X: Thread (Rc1/8)
- **1**: Power voltage
  1: AC100V 50/60Hz
- **01**: Special version

Performance curves

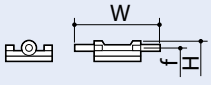




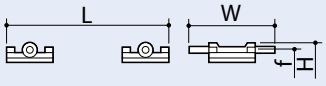
Dimensions in mm

This is the dimension of the hose connection type.

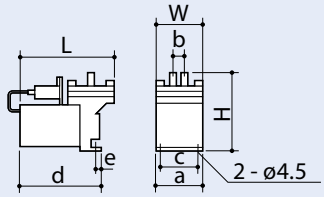
APN-051L/052L



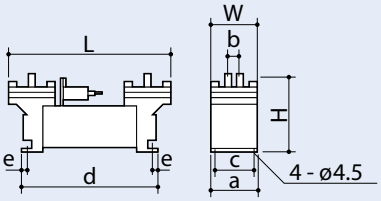
APN-P051L/P052L



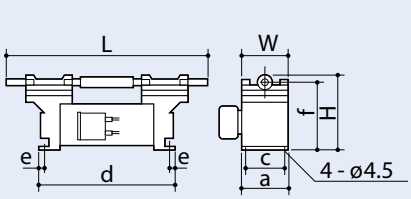
APN-051H/052H



APN-P051H/P052H



APN-S051L/S052L



Model	W	H	L	a	b	c	d	e	f
APN-051L/052L	86	(75)	(94)	46	—	32	(80)	6.5	67
APN-051H/052H	46	(78)			13				—

Model	W	H	L	a	b	c	d	e	f
APN-P051H/P052H	46	(78)	(162)	46	13	32	(135)	6.5	—
APN-P051L/P052L	86	(75)			—				67
APN-S051L/S052L	46		(202)		—				

APN-085

Diaphragm type air pumps

50/60Hz

Max.flow 5/6 to 10/12 L/min

Max. vacuum 7.99 to 61.32 kPa

Max. discharge pressure 0.08 MPa

085HV-1

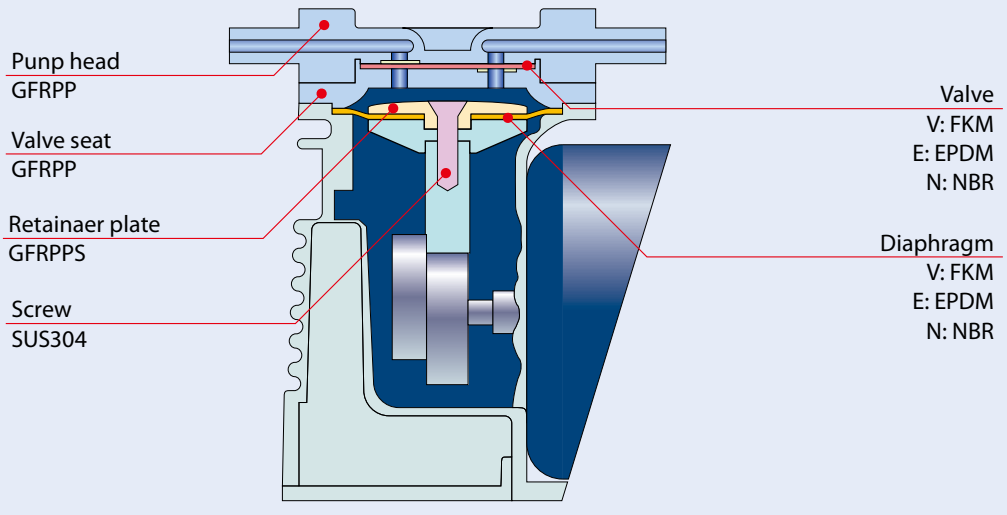
085LV-1

Specifications (50/60Hz)

Model	Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-085	5/6	61.32	0.08	10	20/20	0.25/0.25	AC100
APN-085L/H		34.66					
APN-S085L/H		7.99	—	15	35/38	0.40/0.40	
APN-P085L/H	10/12	34.66	0.08				

Connection size IN/OUT ..... Hose Ø8mm, Thread Rc1/4, G1/4
Mass 085: 1.9kg, S085/P085: 2.6kg
Handling gas temp. ..... 0 to 40°C
Ambient temp. ..... 0 to 40°C
Limit cold start temperature... 085: 10°C, 085L/H: 5°C (FKM) 0°C (EPDM/NBR), S085L/H: 5°C, P085L/H: 5°C (FKM) 0°C (EPDM/NBR)

Construction and materials



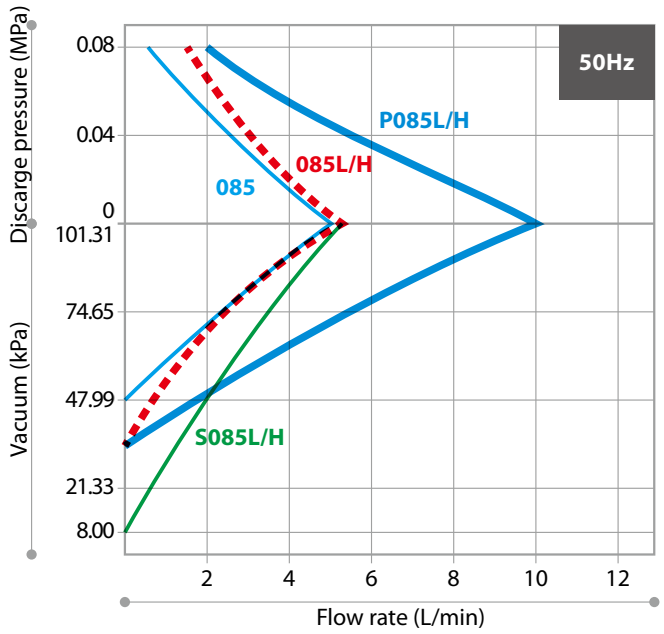
APN-085L

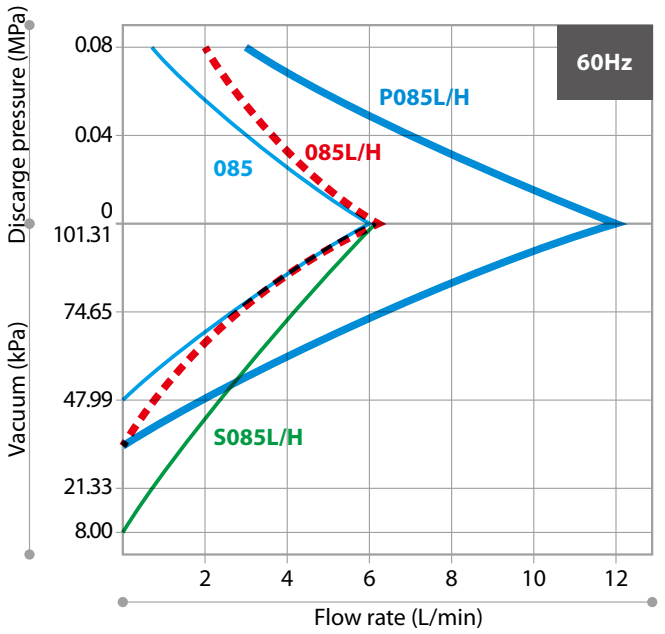
Pump identification

APN - S 085 L E X - 1 - 01

- **Pump head**
  No symbol: Single head
  P: Dual-head with parallel tubing
  S: Dual-head with series tubing
- **Model**
  085
- **Intended use**
  No symbol: Corrosion resistant
  L: Horizontally-oriented
  H: Vertically-oriented
- **Diaphragm/Valve materials**
  V: FKM • FKM
  E: EPDM • EPDM
  N: NBR • NBR
- **Pump connection**
  No symbol: Tube (ø8)
  X: Thread (Rc1/4)
  X1: Thread (G1/4)
- **Power voltage**
  1: AC100V 50/60Hz
  2: AC200V 50/60Hz
  3: AC115V 60Hz
  4: AC220/240V 50Hz
  E4: AC220/240V 50Hz
  (Cabtyre cord/3-core)
- **Special version**

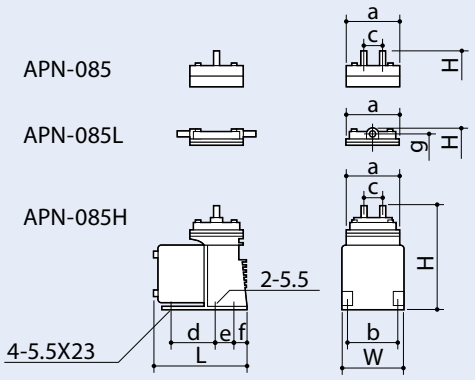
Performance curves

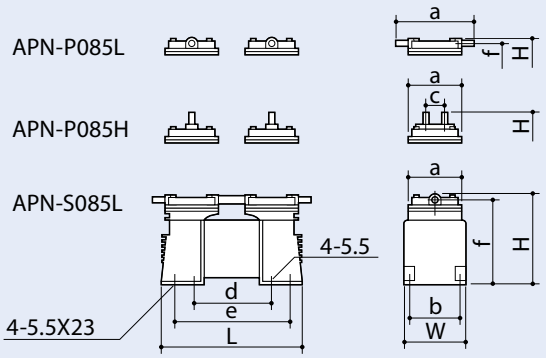




Dimensions in mm

This is the dimension of the hose connection type.





Model	W	H	L	a	b	c	d	e	f	g
APN-085	82.4	(136)	(124)	71	66	24	56.5	21.5	19	—
APN-085L		(121)		72		—				111
APN-085H		(140)				24				—

Model	W	H	L	a	b	c	d	e	f
APN-P085L	82.4	(121)	(188)	106	66	—	108	151	111
APN-P085H		(140)		72		24			—
APN-S085L		(121)				—			111

APN-110

Diaphragm type air pumps

110KV-1

P110LVX-1

50/60Hz

Max.flow 12/14 to 24/28 L/min

Max. vacuum 7.99 to 23.99 kPa

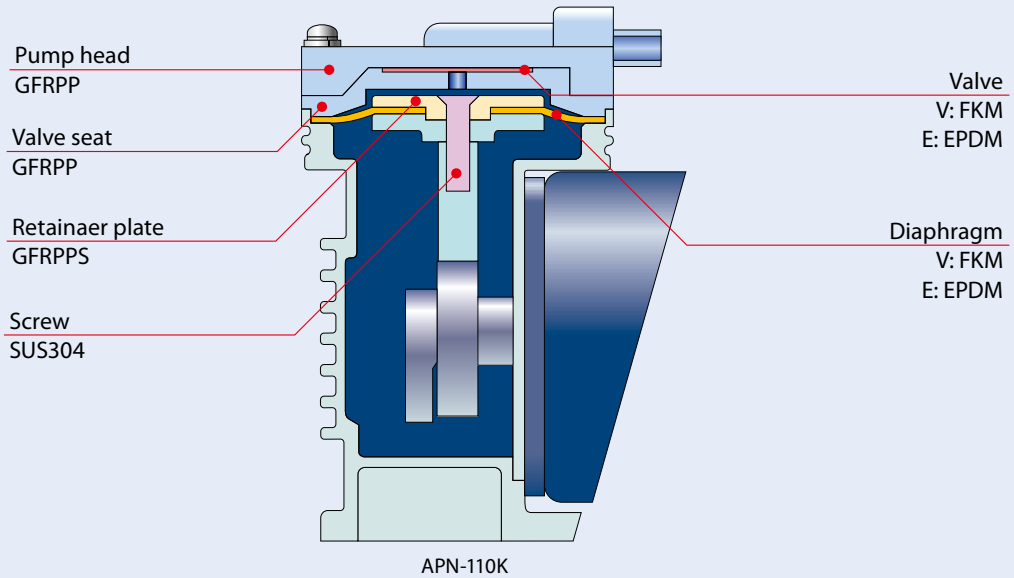
Max. discharge pressure 0.1 MPa

Specifications (50/60Hz)

Model	Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-110K	12/14	23.99	0.1	10	42/42	0.50/0.44	AC100
APN-110L							
APN-S110L		7.99	—	25	60/66	0.76/0.70	
APN-P110L	24/28	23.99	0.1				

Connection size IN/OUT ..... Hose Ø8mm, Thread Rc1/4, G1/4
Mass 110: 2.5kg, S110/P110: 3.8kg
Handling gas temp. ..... 0 to 40°C
Ambient temp. ..... 5 to 40°C
Limit cold start temperature... 5°C

Construction and materials



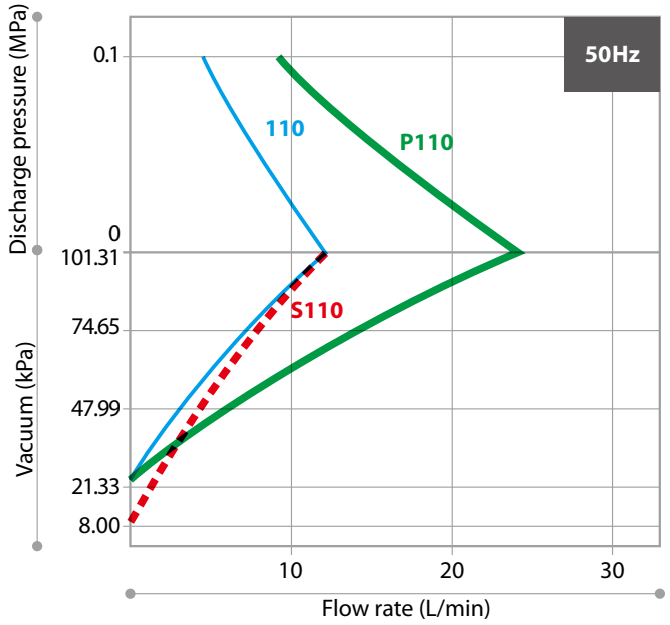
APN-110K

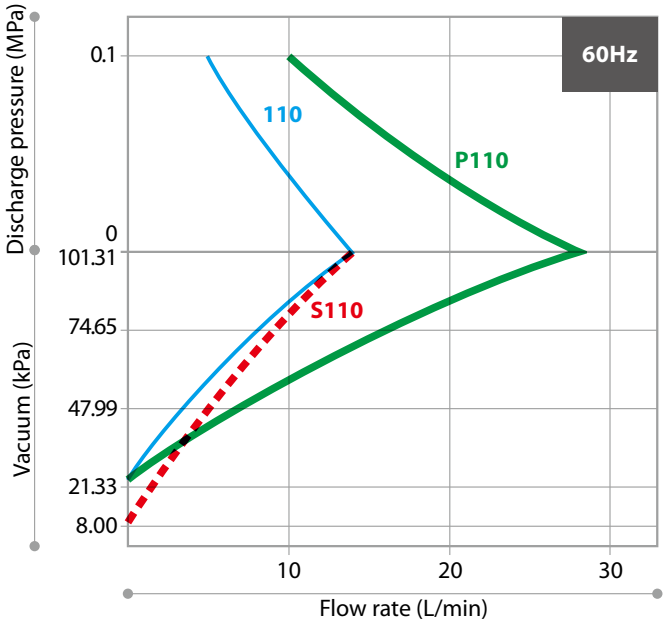
Pump identification

APN - S 110 L E X - 1 - 01

- **S** — Pump head
  No symbol: single head
  P: Dual-head with parallel tubing
  S: Dual-head with series tubing
- **110** — Model
  110
- **L** — Inlet/outlet
  K: Parallel type
  L: In-line type
- **E** — Diaphragm/Valve materials
  V: FKM • FKM
  E: EPDM • EPDM
- **X** — Pump connection
  No symbol: Tube (ø8)
  X: Thread (Rc1/4)
  X1: Thread (G1/4)
- **1** — Power voltage
  1: AC100V 50/60Hz
  2: AC200V 50/60Hz
  3: AC115V 60Hz
  4: AC220/240V 50Hz
  E4[Note]: AC220/240V 50Hz (Cabtyre cord/3-core)
  Note: Single head type only
- **01** — Special version

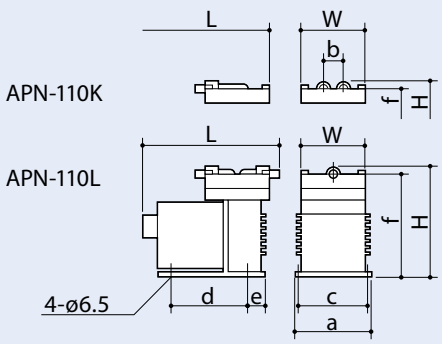
Performance curves



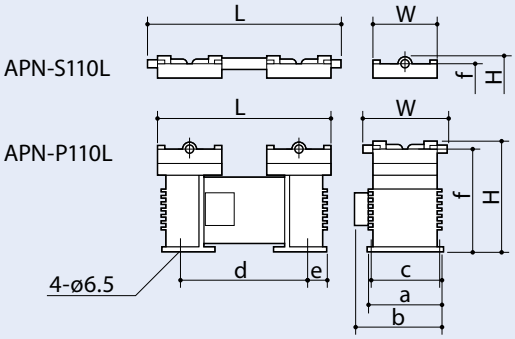


Dimensions in mm

This is the dimension of the hose connection type.



Model	W	H	L	a	b	c	d	e	f
APN-110K	78	(134)	(152)	86	24	74	91	24	124
APN-110L			(164)		—				



Model	W	H	L	a	b	c	d	e	f
APN-S110L	78	(134)	(236)	86	(104)	74	(154)	24	(124)
APN-P110L	102		(212)						

APN-215

Diaphragm type air pumps

50/60Hz

Max.flow 15/18 to 30/36 L/min

Max. vacuum 7.99 to 39.99 kPa

Max. discharge pressure 0.2 MPa

215NV-1

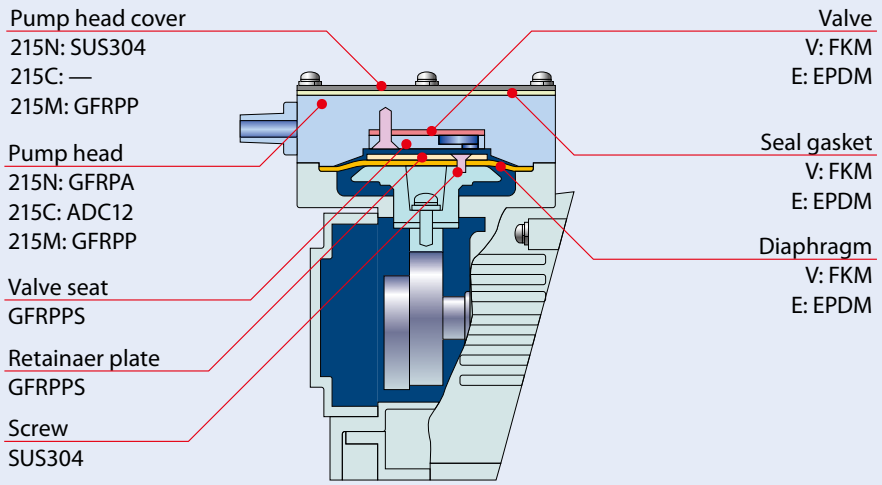
215MV-1

Specifications (50/60Hz)

Model	Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-215N	15/18	39.99	0.1	30	64/64	0.75/0.68	AC100
APN-215C		—	0.2				
APN-215M		26.66	—				
APN-S215M		7.99	—	45	95/95	1.00/1.00	
APN-P215N	28/32	39.99	0.1				
APN-P215C	30/36	—	0.2				
APN-P215M	24/28	23.99	0.1				

Connection size IN/OUT ..... Hose Ø9mm, Thread G1/8
Mass 215: 3.5kg, S215/P215: 5.2kg
Handling gas temp. ..... 0 to 40°C
Ambient temp. ..... 0 to 40°C
Limit cold start temperature... 0°C (S215M/P215N/P215C/P215M [115/220V]: 5°C)

Construction and materials

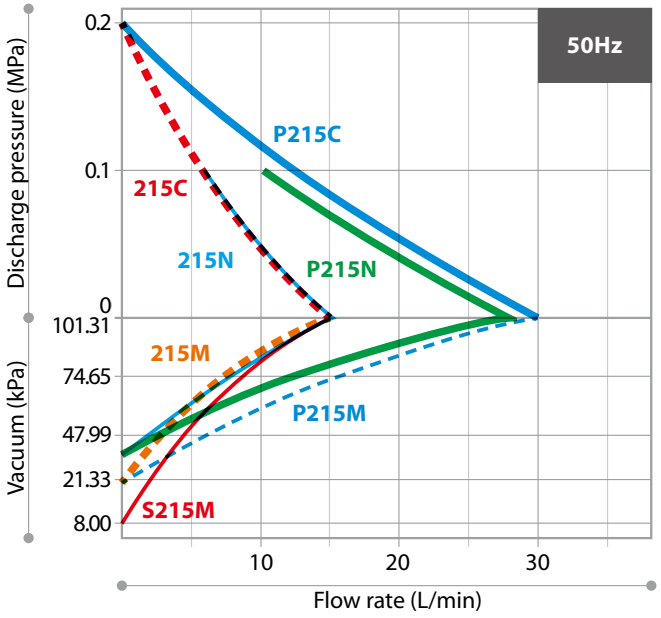


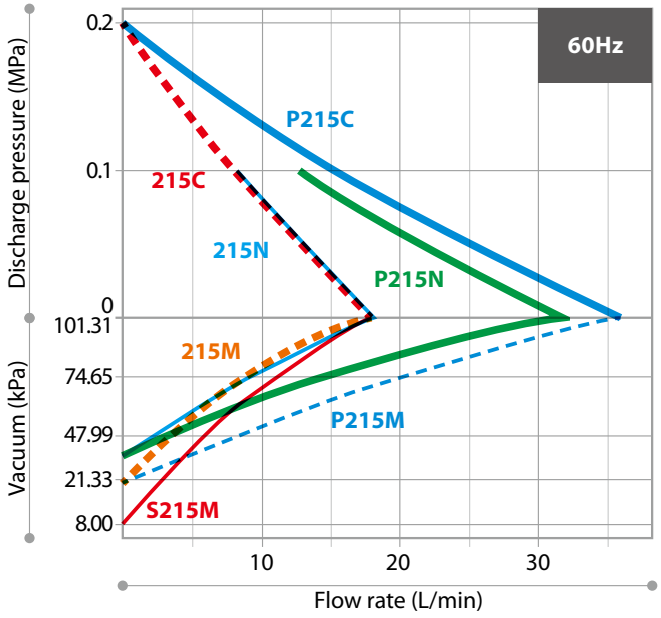
Pump identification

APN - S 215 M E X - 1 - 01

- **Pump head**
  No symbol: Single head
  P: Dual-head with parallel tubing
  S: Dual-head with series tubing
- **Model**
  215
- **Intended use**
  N: Vacuum/Compression
  C: Compression
  M: Vacuum
- **Diaphragm/Valve materials**
  V: FKM • FKM
  E: EPDM • EPDM
- **Pump connection**
  No symbol: Tube (ø9)
  X: Thread (G1/8)
- **Power voltage**
  1: AC100V 50/60Hz
  2: AC200V 50/60Hz
  3: AC115V 60Hz
  4: AC220/240V 50Hz
  E4: AC220/240V 50Hz
  (Cabtyre cord/3-core)
- **Special version**

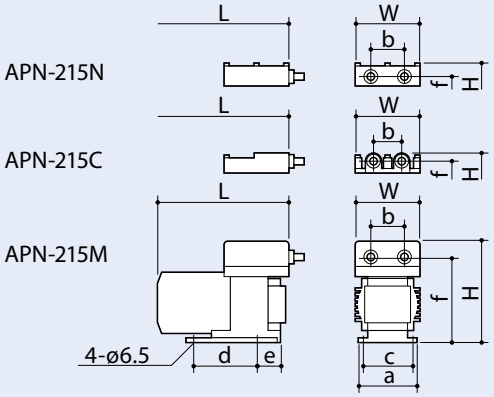
Performance curves



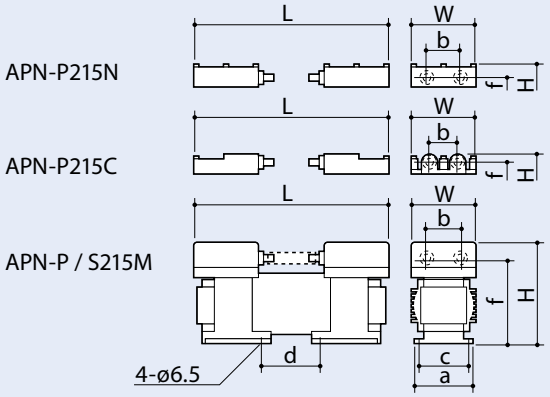


Dimensions in mm

This is the dimension of the hose connection type.



Model	W	H	L	a	b	c	d	e	f
APN-215N	φ96	(147)	(195)	90	50	74	91	36	(125)
APN-215C		(140)			39				(130)
APN-215M		(151)			50				(125)



Model	W	H	L	a	b	c	d	e	f
APN-P215N	φ96	(147)	(282)	110	50	78	(90)	—	(125)
APN-P215C		(140)			39				(130)
APN-P / S215M		(151)			50				(125)

APN-240

Diaphragm type air pumps

50/60Hz

Max.flow 30/34 to 64/72 L/min

Max. vacuum 6.67 to 41.32 kPa

Max. discharge pressure 0.2 MPa

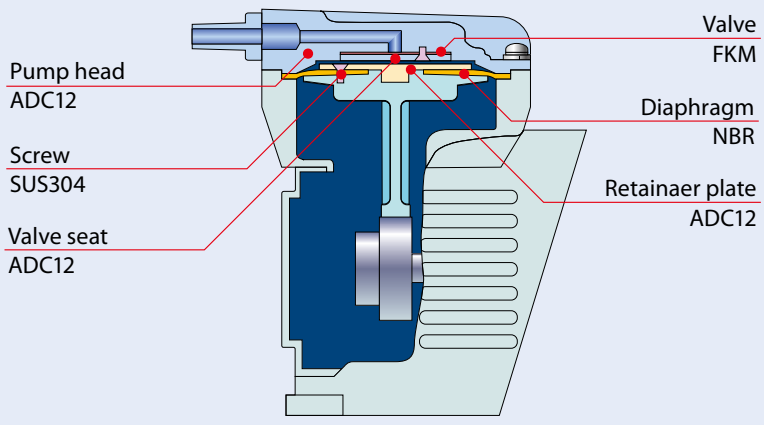
240MAN-1

Specifications (50/60Hz)

Model	Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-240NAN	30/34	41.32	0.2	60	94/107	1.2/1.2	AC100
APN-240MAN	32/36	21.33	—				
APN-S240MANX		6.67	—	90	170/200	1.8/2.0	
APN-P240NAN	60/68	41.32	0.2				
APN-P240MAN	64/72	21.33	—				

Connection size IN/OUT ..... 240: Hose Ø14mm, Thread G1/4, S240/P240: Thread Rc1/4
Mass 240: 7.0kg, S240/P240: 10.0kg
Handling gas temp. ..... 0 to 40°C (S240MANX-1: 5 to 40°C)
Ambient temp. ..... 0 to 40°C (S240MANX-1: 5 to 40°C)
Limit cold start temperature... 240/P240NAN: 0°C, S240MANX/P240MAN: 5°C

Construction and materials

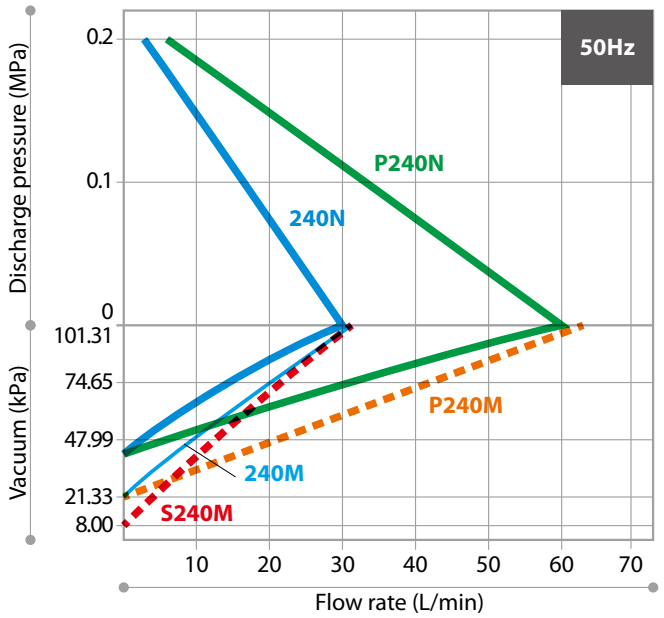


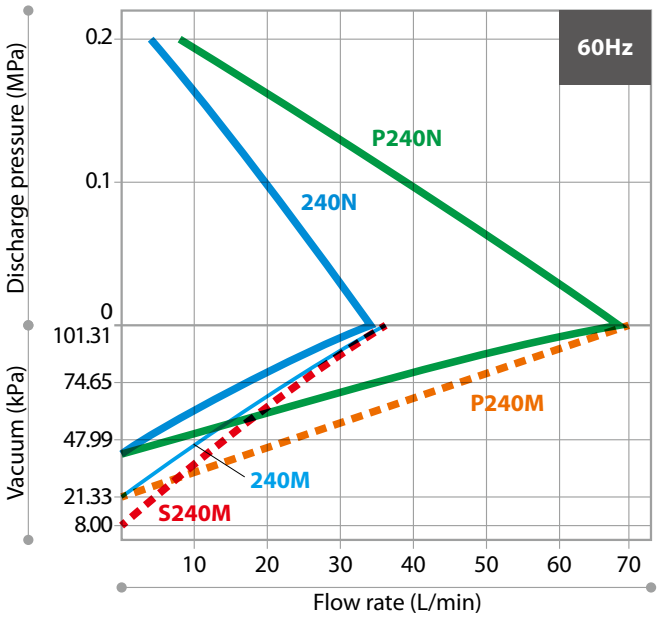
Pump identification

APN - S 240 N A N X - 1 - 01

- **S** — Pump head
  No symbol: Single head
  P: Dual-head with parallel tubing
  S: Dual-head with series tubing
- **240** — Model
  240
- **A** — Pump head material
  A: ADC12
- **N** — Intended use
  N: Vacuum/Compression
  M: Vacuum
- **N** — Diaphragm/Valve materials
  N: NBR/FKM
- **X** — Pump connection
  No symbol: Tube (Ø14) Standard
  X: Thread (G1/4)Note
  Note: S screw size of type (two consecutive series type) is Rc1 / 4.
- **1** — Power voltage
  1: AC100V 50/60Hz
  2: AC200V 50/60Hz
  3: AC115V 60Hz
  4: AC220/240V 50Hz
  E4: AC220/240V 50Hz (Cabtyre cord/3-core)
- **01** — Special version

Performance curves

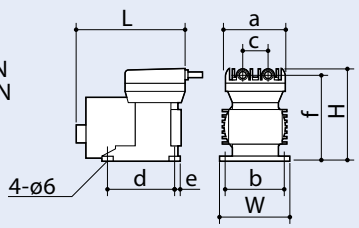




Dimensions in mm

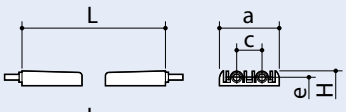
This is the dimension of the hose connection type.

APN-240NAN
APN-240MAN

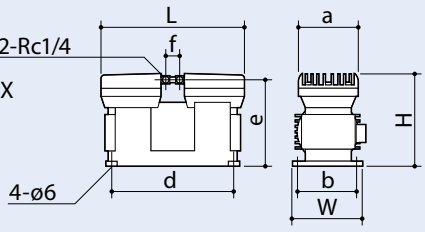


Model	W	H	L	a	b	c	d	e	f
APN-240NAN	140	(186)	(219)	122	125	48	135	(26)	(173)
APN-240MAN									

APN-P240NAN
APN-P240MAN



2-Rc1/4
APN-S240MANX



Model	W	H	L	a	b	c	d	e	f
APN-P240NAN	140	(186)	(297)	122	125	48	(245)	(173)	—
APN-P240MAN									
APN-S240MANX						—			(30)

APN-450

Diaphragm type air pumps

50/60Hz

Max.flow 50/60 to 100/110 L/min

Max. vacuum 3.33 to 13.33 kPa

Max. discharge pressure 0.1 MPa

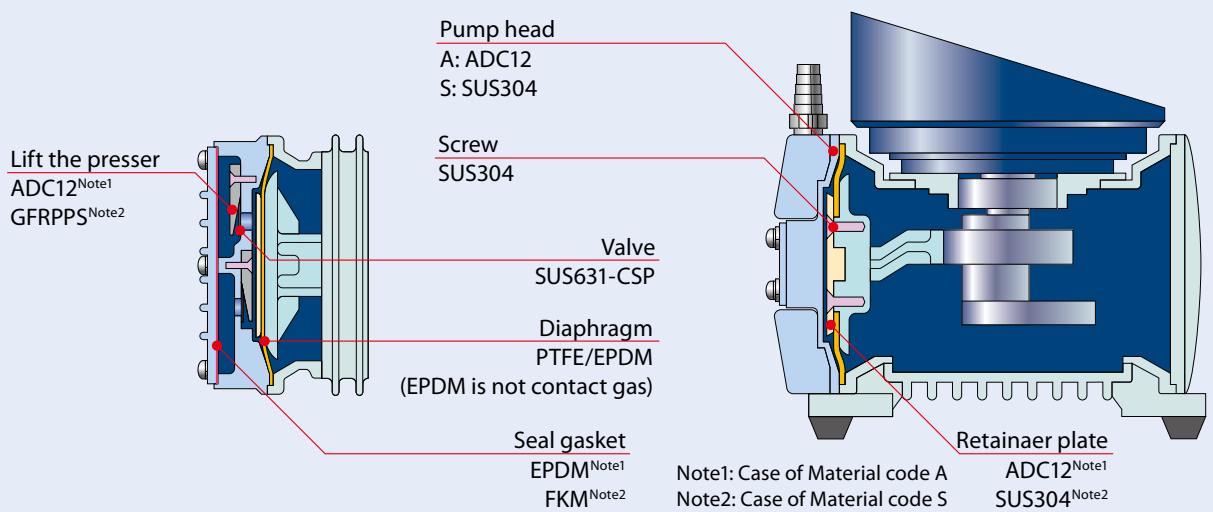
S450NSTX-1 450NATX-1

Specifications (50/60Hz)

Model	Max. flow (L/min)	Max. vacuum (kPa)	Max. discharge pressure (MPa)	Output (W)	Power consumption (W)	Rated current (A)	Rated voltage (V)
APN-450NA/S	50/60	13.33	0.1	200	295/345	3.2/3.5	AC100
APN-S450NA/S		3.33	—				
APN-P450NA/S	100/110	13.33	0.1				

Connection size IN/OUT ..... Hose Ø12mm, Thread Rc1/4
Mass 450NA: 12.0kg, 450NS: 14.2kg, S450NA: 13.0kg, S450NS: 17.4kg, P450NA: 12.8kg, S450NS: 17.1kg
Handling gas temp. ..... 0 to 40°C
Ambient temp. ..... 0 to 40°C
Limit cold start temperature... 0°C

Construction and materials

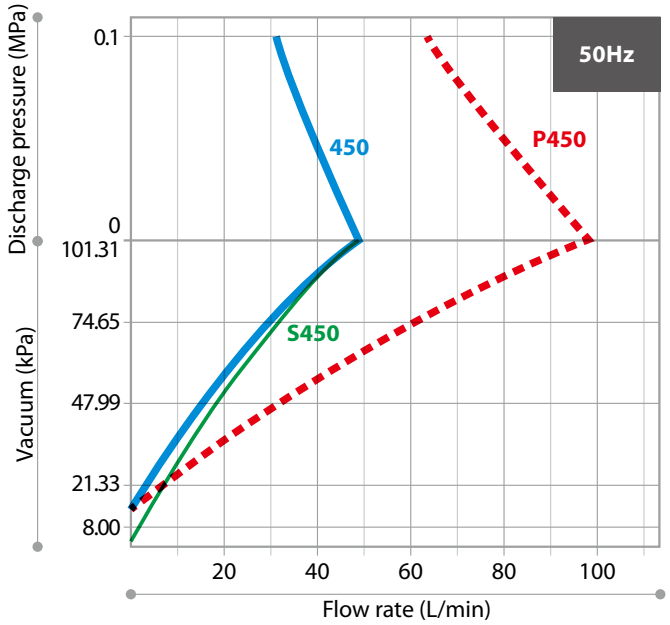


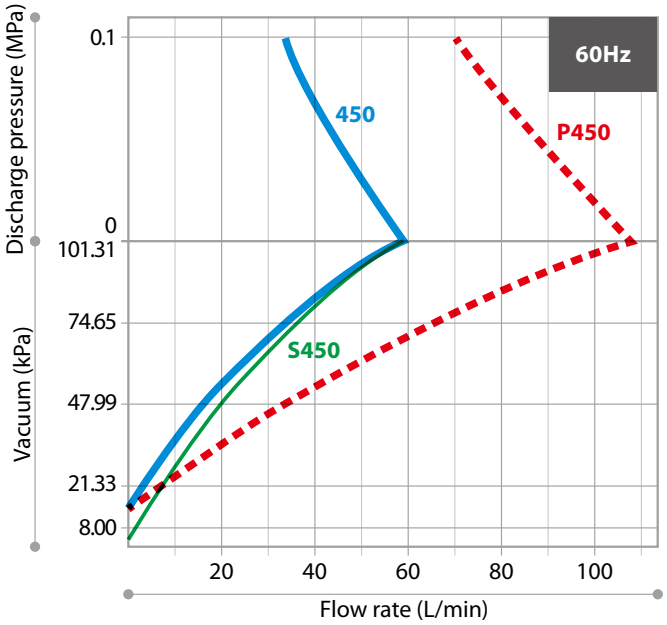
Pump identification

APN - S 450 N A T X - 1 - 01

- **S**: Pump head
  No symbol: Single head
  P: Dual-head with parallel tubing
  S: Dual-head with series tubing
- **450**: Model
- **N**: Intended use
  N: Vacuum/Compression
- **A**: Pump head materials
  A: ADC12, **S**: SUS304
- **T**: Diaphragm/Valve materials
  T: PTFE/EPDM, SUS631-CSP
- **X**: Pump connection
  No symbol: Tube (Ø12)
  X: Thread (Rc1/4)
- **1**: Power voltage
  1: AC100V 50/60Hz
  2: AC200V 50/60Hz
  E4: AC220/240V 50Hz
  (Cabtyre cord/3-core)
- **01**: Special version

Performance curves

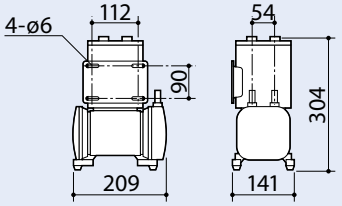




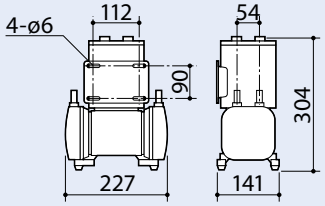
Dimensions in mm

This is the dimension of the hose connection type.

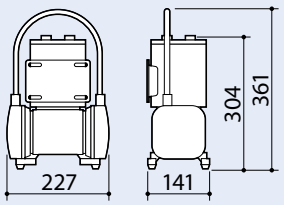
APN-450NA



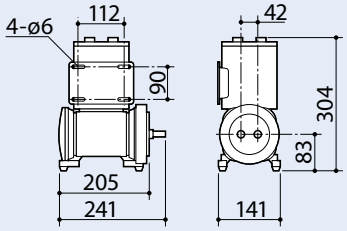
APN-P450NA



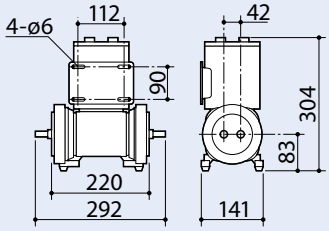
APN-S450NA



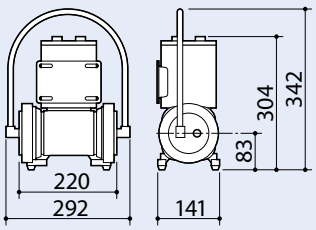
APN-450NS



APN-P450NS



APN-S450NS



Optional accessory

Filter and Muffler (APN series)

To be used as muffler when installed at discharge side and also as filter when installed at suction side. (Check valve incorporated filter is available as option)

AF - 2 V - 1 C

- Materials
  - **V**: FKM
  - **E**: EPDM
  - **N**: CR / NBR (gasket/O-ring, check valve)
- Connection diameter
  - **1**: G1/8 (APN-215)
  - **2**: G1/4 (APN-085)
- Options
  - **C**: with check valve incorporated

Main body material: PC alloy
Filter material: Melamine for V and E, urethane for N

This may not be usable for some pump types and pump head shapes.
When installed, performance will be affected.

List of Available Materials

Symbol of Material	Name
GFRPP	Glass-fiber-reinforced polypropylene
GFRPPS	Glass-fiber-reinforced polyphenylene sulfide resin
GFRPA	Glass-fiber-reinforced polyamide resin
GFRPPE	Glass-fiber-reinforced polyphenyl ether resin
PTFE	Tetra-fluoroethylene resin
PCTFE	Polychlorotrifluoroethylene
FKM	Fluorocarbon rubber
EPDM	Ethylene propylene rubber
NBR	Nitrile butadiene rubber
CR	Chloroprene rubber
ADC12	Aluminum diecast
SUS304	Stainless steel 304
SUS316	Stainless steel 316
SUS631-CSP	Stainless steel (strip steel for spring)
AM350	Precipitation-hardening stainless steel (steel plates for springs)
AC2A	aluminum casting alloy

Unit of vacuum pressure

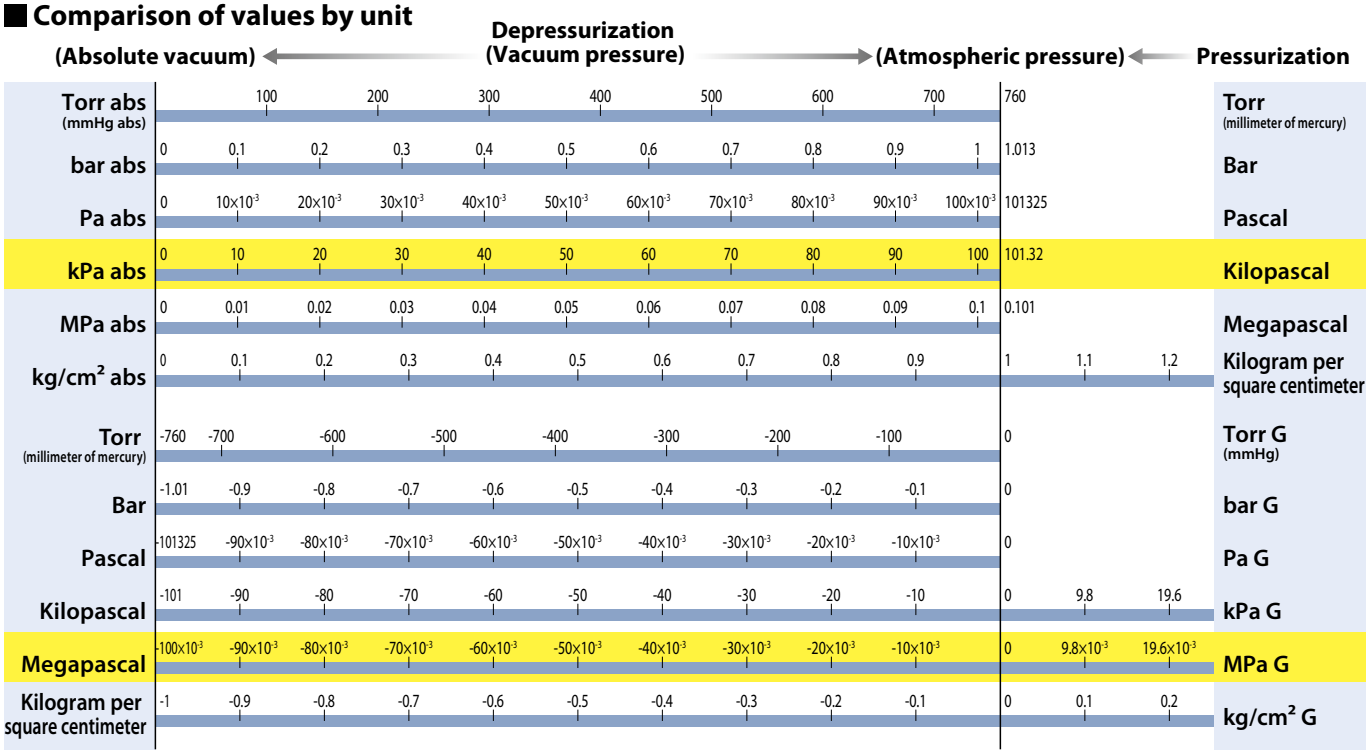
In the new Measurement Act, the following are used as the SI unit: “Pa (pascal),” “N/m2 (newton per square meter),” and “bar (bar).” As well, the non-SI unit, “Torr” (Torr), is admitted for the pressure within an organism, and “mmHg” (millimeter of mercury) is admitted for blood pressure.
There are two methods of vacuum pressure notation, as below.
In the vacuum industry, absolute pressure is used. In other industries, however, gauge pressure is used in many cases. Thus, when viewing materials or catalogues, you need to check which method is used for the notation of pressure.

1. **Absolute pressure by setting the absolute vacuum equal to 0 (zero)**
   “a” or “abs” is notated after the unit notation (often omitted).
2. **Gauge pressure by setting the atmospheric pressure equal to 0 (zero)**
   “G” or “Gauge” is notated after the unit notation (often omitted).

■ Values of atmospheric pressure by each unit of pressure

Unit	Pronunciation	Values by absolute pressure notation			Values by gauge pressure notation		
		Atmospheric pressure	Range of vacuum pressure	Absolute vacuum	Atmospheric pressure	Range of vacuum pressure	Absolute vacuum
Pa (N/m^2)	Pascal (newton per square meter)	101325	⟷	0	0	⟷	-101325
kPa	Kilopascal	101.3	⟷	0	0	⟷	-101.3
MPa	Megapascal	0.101	⟷	0	0	⟷	-0.101
bar	Bar	1.013	⟷	0	0	⟷	-1.013
mbar	Millibar	1013	⟷	0	0	⟷	-1013
Torr	Torr	760	⟷	0	0	⟷	-760
mmHg	Millimeter of mercury	760	⟷	0	0	⟷	-760
mmH_2O (Aq)	Millimeter of water (Aqua)	10342	⟷	0	0	⟷	-10342
atm	Atmosphere	1	⟷	0	0	⟷	-1
psi (lbf/in^2)	Pound-force per square inch	14.696	⟷	0	0	⟷	-14.696
kgf/cm^2	Kilogram-force per square centimeter	1.0332	⟷	0	0	⟷	-1.0332

■ Comparison of values by unit



■ Unit conversion table

	Pa (N/m^2)	Torr (mmHg)	atm	mbar	psi (bf/in^2)	kgf/cm^2	mH_2O
1 Pa (N/m^2)	1	7.50×10^{-3}	9.87×10^{-6}	10^{-2}	1.45×10^{-4}	1.02×10^{-5}	1.02×10^{-4}
1 Torr (mmHg)	133.32	1	1.316×10^{-3}	1.33	1.93×10^{-2}	1.359×10^{-3}	1.36×10^{-2}
1 atm	1.013×10^{5}	760	1	1.013×10^{3}	14.696	1.033	10.34
1 mbar	100	0.750	9.87×10^{-4}	1	1.45×10^{-2}	1.02×10^{-3}	10.206×10^{-3}
1 psi (bf/in^2)	6.89×10^{3}	51.71	6.8×10^{-2}	6.89	1	7.031×10^{-2}	0.703
1 kgf/cm^2	9.8×10^{4}	735.56	0.968	9.81×10^{2}	14.223	1	10
1 mH_2O	9.8×10^{3}	73.49	9.68×10^{-2}	98.0	1.421	0.1	1

IWAKI World Wide Network

Our subsidiary in Germany and other joint companies throughout the world provide high-level support for our customers.
We feel that "real service" means not only to merely provide products but to also organically combine the information collected via our worldwide network and our special knowledge based on our long years of experience, all to deliver value to customers.

IWAKI feels that "production systems" are "quality assurance systems."

IWAKI "positions all production processes as processes of quality control," and for the entire processes of development/design, procurement, and production, through to shipment, we strictly check each process based on quality assurance standards by observing ISO9001 and by using state-of-the-art test devices. We aim to attain a "zero failure rate."
We have also obtained ISO14001 environmental management system certification. We have been promoting activities taking into consideration impact on the environment.

Saitama Plant

Miharu Plant

ISO 14001 JQA-EM4848

ISO 9001 JQA-1173

Regarding compliance with RoHS Directive/CE Marking

The RoHS Directive is a restriction related to chemicals contained in electric/electronic devices issued by the EU (European Union). Currently, it has been replaced with the RoHS Recast Directive, and the RoHS Recast Directive is now being applied.
CE Marking applied to a product is a manufacturer's or importer's declaration of product conformity to the EC Directive issued by the EU (European Union) and ensures free distribution within the EU area.
IWAKI has been promoting the switching of parts to those compliant with RoHS, and has been taking measures for the EC Directive one after another. Contact us for details on products compliant with RoHS and the EC Directive.