



IWAKI  
MAGNETIC  
DRIVE  
PUMPS

**MD-F**

**MD-V**

Main material  
MD-F: **CFRETFE**  
MD-V: **CFRPVDF**



# Compliant with highly corrosive / viscous liquids High-end compact magnetic drive pumps

Most chemicals can be handled including strong acid/alkaline.



## High corrosion-resistance

The combination of the MD-F series with CFRETFE wet ends and the MD-V series with CFRPVDF wet ends covers most chemicals including strong acid/alkaline.

## Viscosity responsiveness

The MD-F series is designed to pump highly viscous liquids such as strong acid. Three types of impellers are selectable according to liquid viscosity.

## Leak free

Magnetically-driven seal-less pumps are free from leak problems and the need of seal replacement. This feature and its compact nature offer the best fit in built-in applications.

## Easy maintenance

The pump unit is comprised of a small number of subunits, so that maintenance is significantly eased.

### MD-F



MD-15F MD-30F



MD-55F MD-100F

### MD-15F(X/Y)·30F(X/Y) CFRETFE

- Max Discharge capacity **9 - 13** l/min
- Max Discharge head **3 - 8** m

### MD-55F(X/Y)·100F(X/Y) CFRETFE

- Max Discharge capacity **60 - 125** l/min
- Max Discharge head **5.4 - 10.5** m

### MD-V



MD-15RV MD-20RZV MD-30RV



MD-70RV

### MD-15RV·20RZV·30(R/RZ)V CFRPVDF

- Max Discharge capacity **10 - 32** l/min
- Max Discharge head **2.4 - 8.0** m

### MD-70(R/RZ)V CFRPVDF

- Max Discharge capacity **40 - 86** l/min
- Max Discharge head **6.7 - 14.3** m

# A wide selection range according to chemical liquids

Hyperbaric/High-compression types are available.



## Outline of the series (50Hz)

Main Material	Models	Max. discharge capacity (l/min)					Max. discharge head (m)			Limit of specific gravity
		20	40	60	80	100	120	140	5	
CFR <sub>F</sub> TFE	<b>MD-15FX</b> Low S. G. type	10					4.1			1.2
	<b>MD-15FY</b> Middle S. G. type	9					3			1.9
	<b>MD-30FX</b> Low S. G. type	13					8			1.5
	<b>MD-30FY</b> Middle S. G. type	10					6			1.9
	<b>MD-55FX</b> Low S. G. type	65					7.8			1.3
	<b>MD-55FY</b> Middle S. G. type	60					5.4			2.0
	<b>MD-100FX</b> Low S. G. type	125					10.5			1.2
	<b>MD-100FY</b> Middle S. G. type	115					8.5			2.0
CFRPVDF	<b>MD-15RV</b> Standard type	16					2.4			1.3
	<b>MD-20RZV</b> High head type	10					4.9			1.1
	<b>MD-30RV</b> Standard type	32					3.8			1.3
	<b>MD-30RZV</b> High head type	15					8.0			1.1
	<b>MD-70RV</b> Standard type	86					6.7			1.0
	<b>MD-70RZV</b> High head type	40					14.3			1.0

## Construction



**Motor**

**Drive magnet**

The 6- or 8-pole high power ferrite magnet drives the impeller over the rear casing.

**Rear casing**

CFR<sub>F</sub>TFE single-piece rear casing of the MD-F and CFRPVDF single-piece rear casing of the MD-V. The bearing is placed at the bottom, supporting the spindle.

**O ring**

**Impeller**

**MD-F** CFR<sub>F</sub>TFE single-piece closed impeller. Three impeller types (X/Y) are available according to specific gravity.



X: Low S.G. impeller Y: Middle S.G. impeller

**Front casing**

**MD-F** CFR<sub>F</sub>TFE injection mold of the safety thread connection type

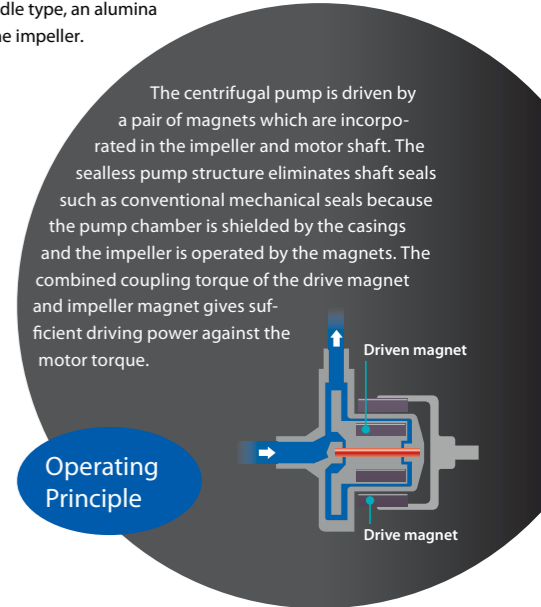
**MD-V** CFRPVDF hose connection is available as well as thread connection. Also union joints can be installed for the thread connection types.

Note: For the 15RV, the thread connection type is not available.



Hose connection type Threaded connection type

**MD-V** For the MD-V, the ferrite magnet is encapsulated into the CFRPVDF impeller. For the rotating spindle type, an alumina ceramic spindle is integrally molded with the impeller.



**Operating Principle**

The centrifugal pump is driven by a pair of magnets which are incorporated in the impeller and motor shaft. The sealless pump structure eliminates shaft seals such as conventional mechanical seals because the pump chamber is shielded by the casings and the impeller is operated by the magnets. The combined coupling torque of the drive magnet and impeller magnet gives sufficient driving power against the motor torque.

# MD-15F(X/Y)•30F(X/Y) CFR ETFE

- Range of Max. discharge capacity: 9 - 13 L/min
- Range of Max. discharge head: 3 - 8 m



MD-15F

MD-30F

# MD-55F(X/Y)•100F(X/Y) CFR ETFE

- Range of Max. discharge capacity: 60 - 125 L/min
- Range of Max. discharge head: 5.4 - 10.5 m



MD-55F

MD-100F

## Specifications (50Hz)

Model	Type of Impeller	Threaded connection Inlet/Outlet	Max. capacity (L/min)	Max. head (m)	S.G.	Output (W)	Input (W)	Power source	Mass (kg)
MD-15F	X	NPT1/2	10	4.1	1.2	10	30	220V - 240V Single phase	1.8
	Y		9	3	1.9	10	30		
MD-30F	X	NPT1/2	13	8	1.5	45	70		3.5
	Y		10	6	1.9	45	70		

• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C  
• Motor type: Capacitor-run induction motor

## Construction and materials

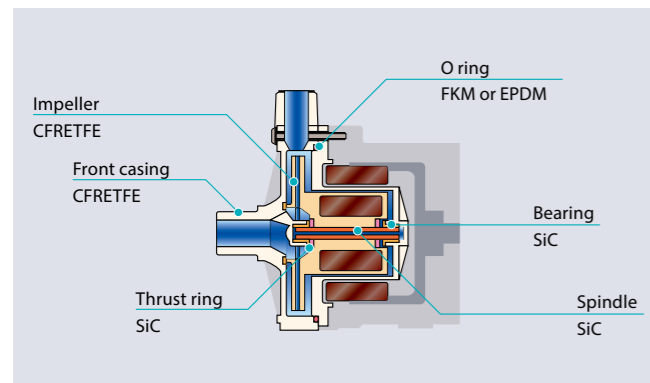
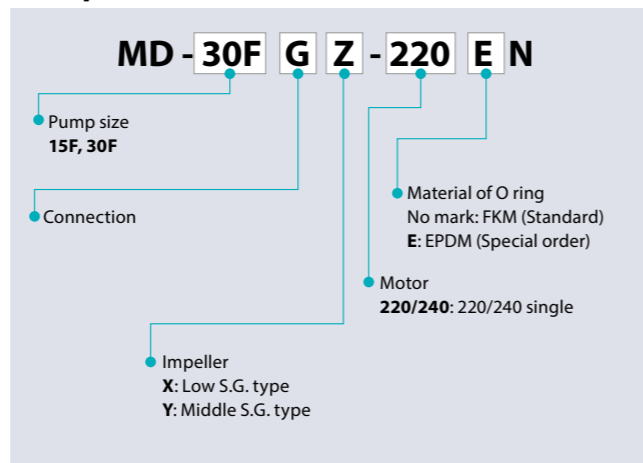


Illustration shows model MD-30F

## Pump identification



## Specifications (50Hz)

Model	Type of Impeller	Threaded connection Inlet/Outlet	Max. capacity (L/min)	Max. head (m)	S.G.	Output (W)	Input (W)	Power source		Mass (kg)
								Single phase	Three phase	
MD-55F	X	R1	65	7.8	1.3	90	170	220V - 240V	-	5.4
	Y		60	5.4	2.0	90	130			
MD-100F	X	R1	125	10.5	1.2	260	375		400V/440V	8.5
	Y		115	8.5	2.0	260	260			

• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C

## Construction and materials

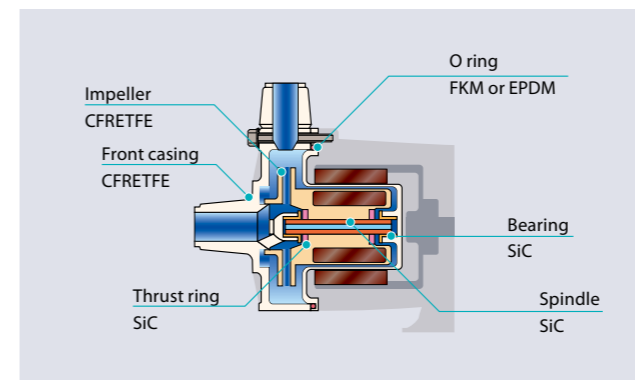
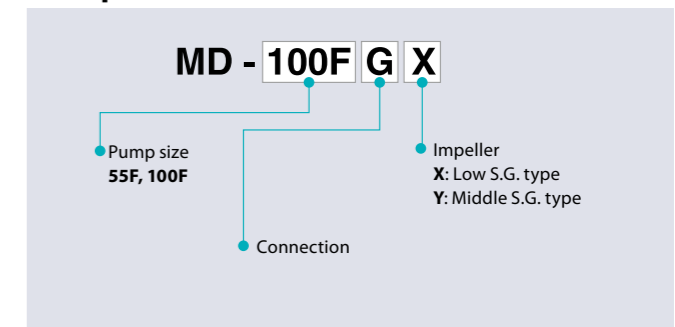


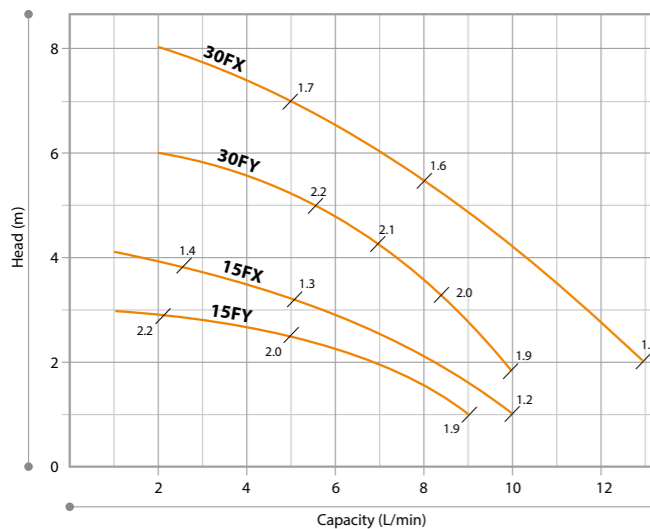
Illustration shows model MD-100F

## Pump identification



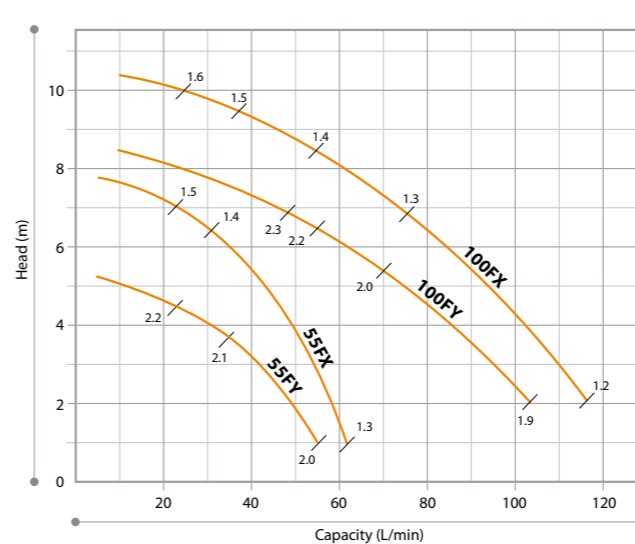
Note: Specify the pump model and power specification at an inquiry phase.

## Performance curves (50Hz)



Note: Figures on the performance curves shows the specific gravity limit at viscosity of 1mPa·s.

## Performance curves (50Hz)



Note: Figures on the performance curves shows the specific gravity limit at viscosity of 1mPa·s.

Available with IEC frame motors  
This type of unit allows  
the pumps to be supplied with numerous motor options.



# MD-15RV·20RZV·30(R/RZ)V

CFR  
PVDF

- Range of Max. discharge capacity: 10 - 32 L/min
- Range of Max. discharge head: 2.4 - 8.0 m



MD-15RV

MD-20RZV

MD-30RV

## Specifications (50Hz)

Model	Hose connection		Screwed connection		Max. capacity (L/min)	Max. head (m)	S.G.	Output (W)	Input (W)	Power source	Mass (kg)
	RV - RZV		RVM - RZV-M								
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) <sup>(Note)</sup>							
MD-15RV	14	14	—	—	16	2.4	1.3	10	26	220V - 240V Single phase	1.6
MD-20RZV	17.5	17	G3/4	13	10	4.9	1.1	20	40		2.0
MD-30RV	20	20	G3/4	16	32	3.8	1.3	45	60		3.5
MD-30RZV	17.5	17	G3/4	13	15	8.0	1.0	45	80		3.5

• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C  
• Motor type: Capacitor-run induction motor

Note: The union field shows the nominal diameter of the applicable VP vinyl chloride hose. Heat resistance of the standard union is 0 - 55°C

## Construction and materials

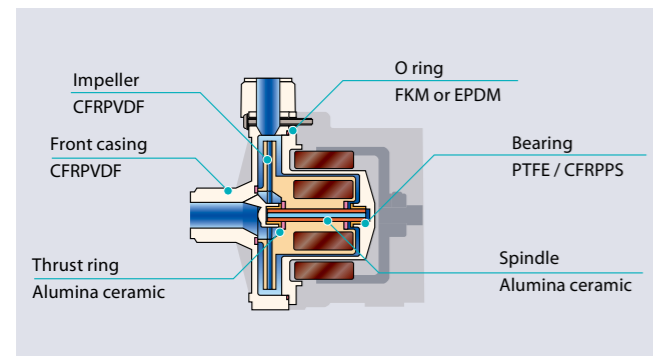
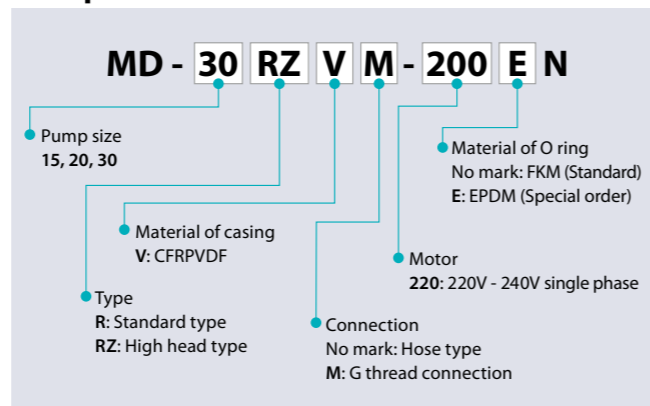


Illustration shows model MD-30RZV

Note: Material of bearing for MD-20RZV and 30RZV are CFRPPS

## Pump identification



# MD-70(R/RZ)V

CFR  
PVDF

- Range of Max. discharge capacity: 40 - 86 L/min
- Range of Max. discharge head: 6.7 - 14.3 m



MD-70RV

## Specifications (50Hz)

Model	Hose connection		Threaded connection		Max. capacity (L/min)	Max. head (m)	S.G.	Output (W)	Input (W)	Power source	Mass (kg)
	RV - RZV		RVM - RZV-M								
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) <sup>(Note1)</sup>							
MD-70RV	26	26	G1	20	86	6.7	1.0	150	235	220/240V : Single Phase	6.0
MD-70RZV	20	20	G3/4	16	40	14.3	1.0	180	275	400/440V : Three phase	6.0

• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C

Note: The union field shows the nominal diameter of the applicable VP vinyl chloride hose. Heat resistance of the union is 0 - 55°C

## Construction and materials

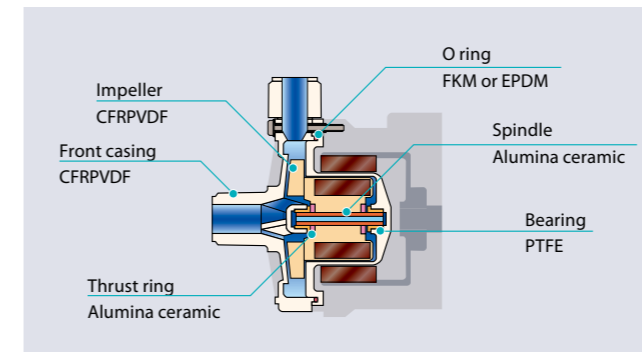
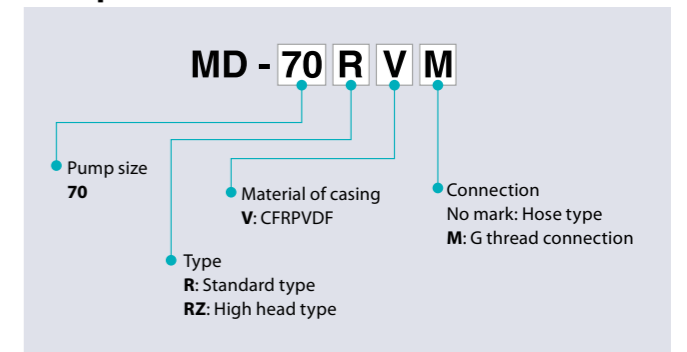


Illustration shows model MD-70RV

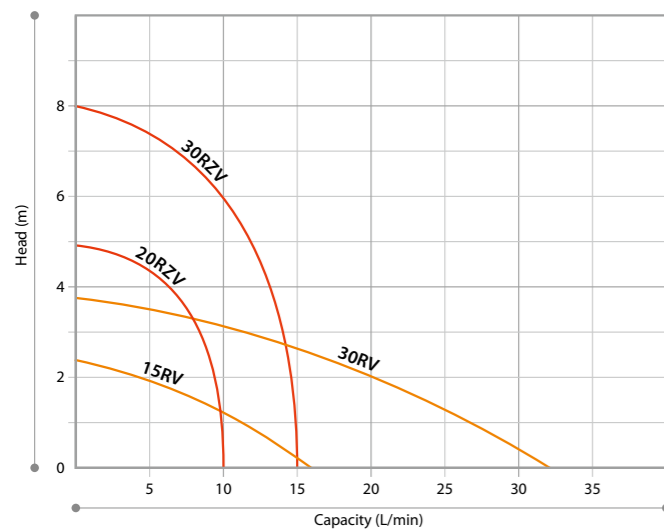
Note: Material of bearing for MD-70RZV is CFRPPS

## Pump identification

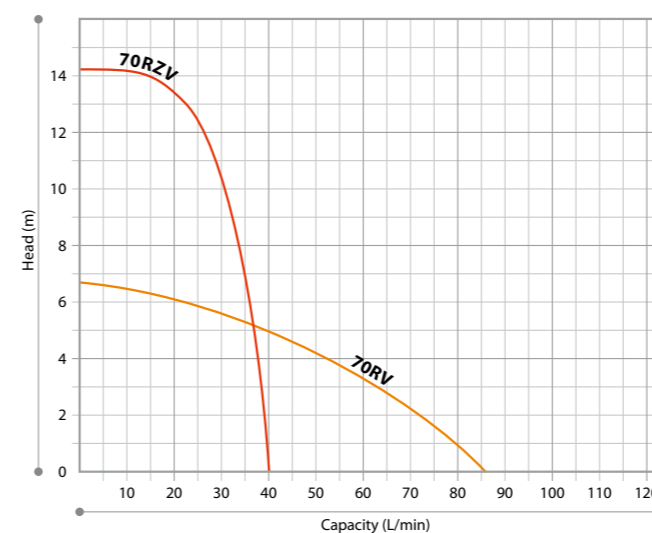


Note: Specify the pump model and power specification at an inquiry phase.

## Performance curves (50Hz)



## Performance curves (50Hz)



### Special accessories

• Union joint

Special-purpose union joints are available to cope with three types (13mm, 16mm and 20mm dia.) of piping. Tight sealing O-rings are used to prevent thread damage caused by over-tightening.



### Specifications

Model	<b>13A</b>	<b>16A</b>	<b>20A</b>
Material	PVC	PVC	PVC
Range of temp.	0 - 55°C	0 - 55°C	0 - 55°C
Material of O ring	FKM or EPDM		

### Dimensions (mm)

**MD-F**

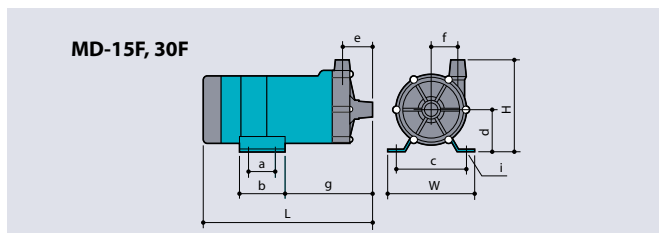


Illustration shows MD-30F

Model	W	H	L	a	b	c	d	e	f	g	i
MD-15F	95	120	186	-	50	68	55	34	29	99	2 - ø5.6
MD-30F	120	130	231	40	64	100	60	39	39	120	4 - ø9

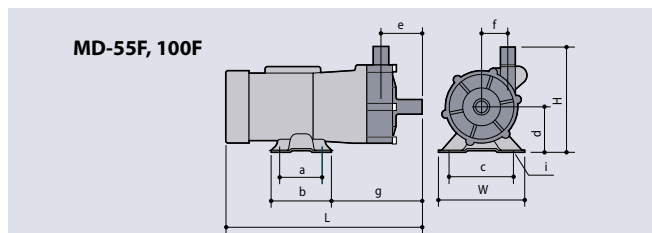


Illustration shows MD-100F

Model	W	H	L	a	b	c	d	e	f	g	i
MD-55F	120	155	270	40	64	100	65	59	40	167	4 - ø9
MD-100F	156	175	320	70	100	110	75	63	43	145	4 - 9x27

**MD-V**

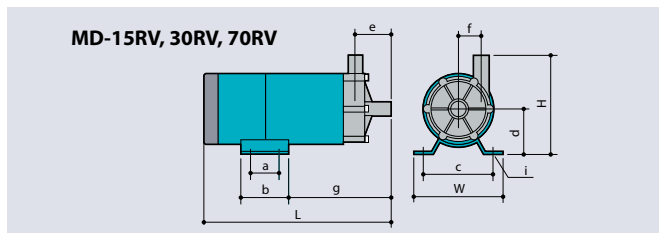


Illustration shows MD-30RV

Model	W	H	L	a	b	c	d	e	f	g	i
MD-15RV	95	109	180	-	50	68	55	39	22	92	2 - ø5.6
MD-30RV	120	130	248	40	64	100	60	48	31	137	4 - ø9
MD-70RV	130	155	258	40	60	110	65	53	43	149	4 - 7x11

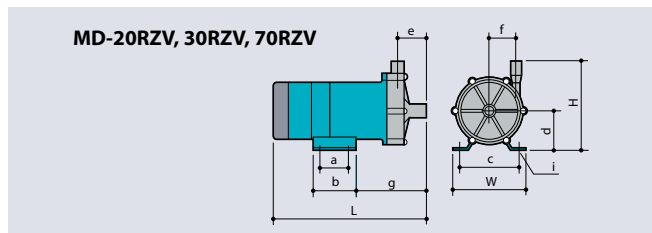


Illustration shows MD-20RZV

Model	W	H	L	a	b	c	d	e	f	g	i
MD-20RZV	106	125	211	44	60	90	55	40	39	98	4 - 6x10
MD-30RZV	120	130	230	40	64	100	60			120	4 - ø9
MD-70RZV	130	165	247	40	60	110	65	42	48	138	4 - 7x11



<https://www.iwaki.de>

IWAKI Europe GmbH, Siemensring 115, 47877 Willich, Germany  
 TEL: +49 2154 9254 10 FAX: +49 2154 9254 48 E-Mail: sales@iwaki.de

**⚠ Caution for safety use:**  
 Before use of pump, read instruction manual carefully to use the product correctly.

Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.

**⚠ Legal attention related to export.**

Our products and/or parts of products fall in the category of goods contained in control list of international regime for export control. Please be reminded that export license could be required when products are exported due to export control regulations of countries.

The posting and copying from this catalogue without permission is not accepted firmly.