IWAKI

MD-F
MD-V
series

Magnetic drive pumps

A world's best-seller, the high-end compact magnetic pumps



Magnetically-driven seal-less pumps are free from leak problems and the need of seal replacement.
Most chemicals can be handled including strong acid /alkaline.

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.

MD-F



MD-15F



MD-30F

MD-15F(X/Y)•30F(X/Y) CFRETFE

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



MD-55F



MD-100F

MD-55F(X/Y)•100F(X/Y) CFRETFE

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



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-V



MD-15RV



MD-20RZV



MD-30RV



MD-70RV

MD-15RV·20RZV·30(R/RZ)V

C F R PVDF

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

MD-70(R/RZ)V

C F R PVDF

- 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.

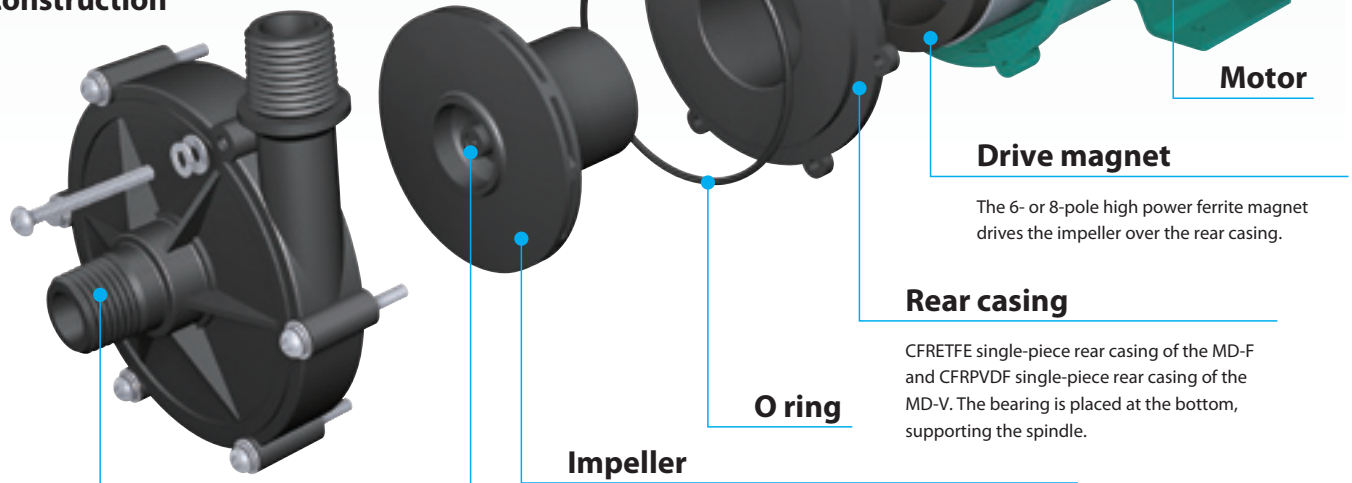


Outline of the series (50Hz)

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

CFRETFE 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 CFRETFE 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

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.

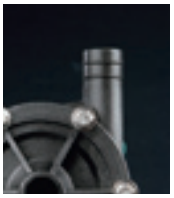
Spindle

Front casing

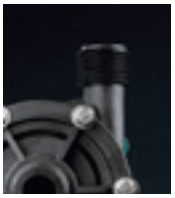
MD-F CFRETFE injection mold of the safety thread connection type

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.



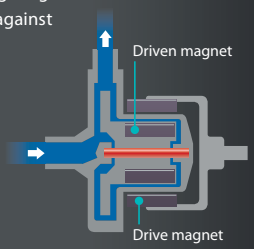
Hose connection type



Threaded connection type

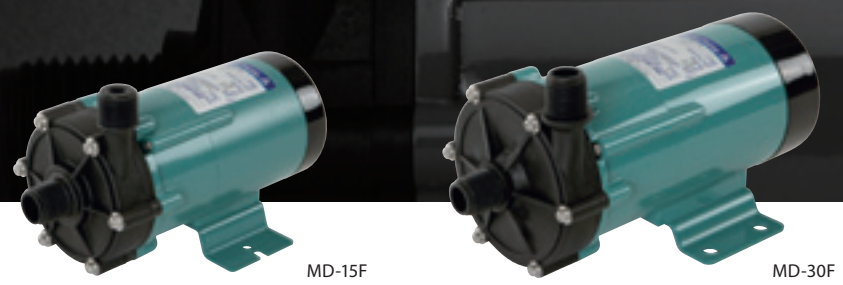
Operating Principle

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) CFRETFE

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



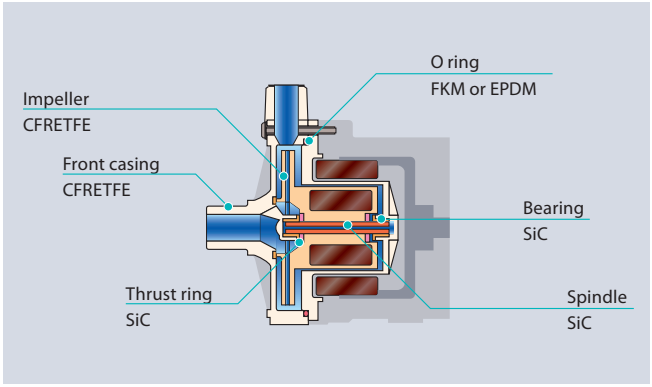
MD-15F MD-30F

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



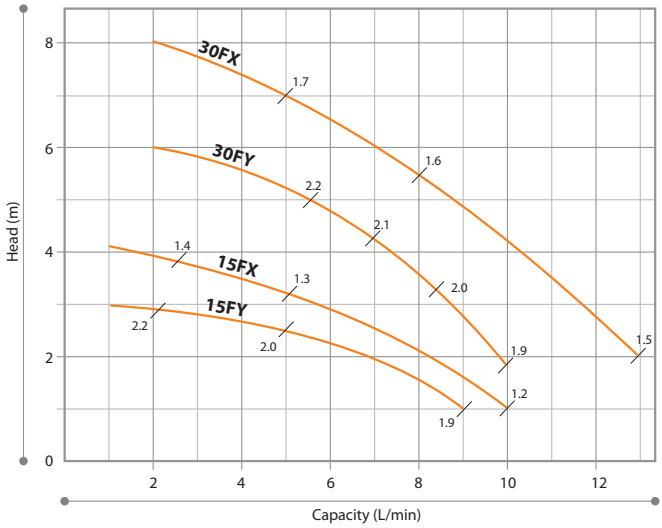
Illustlation shows model MD-30F

Pump identification

MD - 30F G Z - 220 E N

- Pump size **15F, 30F**
- Connection
- Impeller **X**: Low S.G. type **Y**: Middle S.G. type
- Motor **220/240**: 220/240 single
- Material of O ring No mark: FKM (Standard) **E**: EPDM (Special order)

Performance curves (50Hz)



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

MD-55F(X/Y)•100F(X/Y)

C F R
E T F E

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



MD-55F



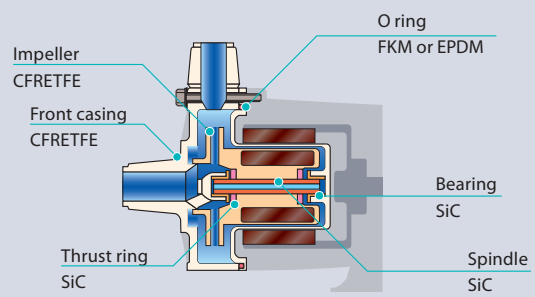
MD-100F

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)
								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			

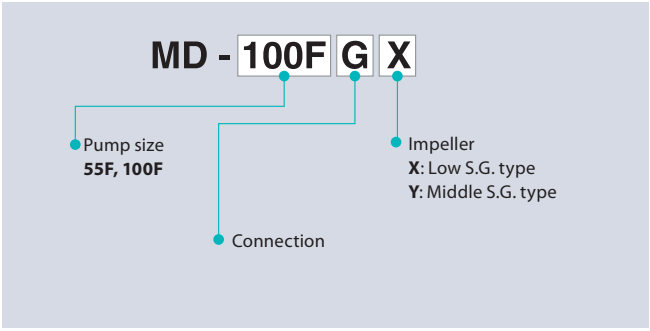
• Temperature range: 0 - 80˚C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40˚C

Construction and materials



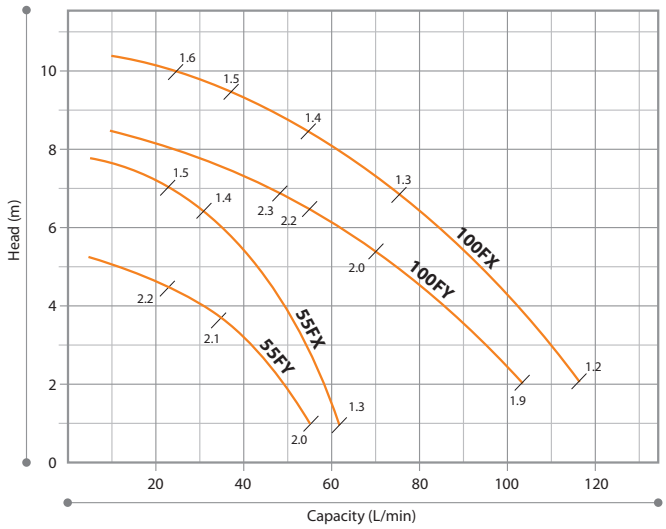
Illustlation shows model MD-100F

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.

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

CFRPVDF

- 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

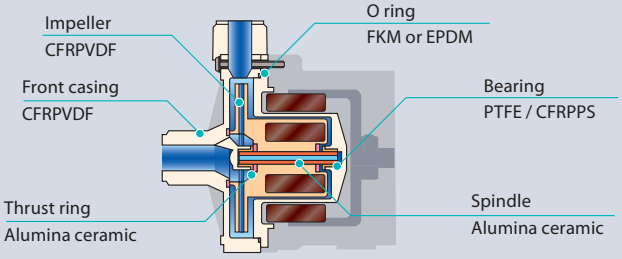
Specifications (50Hz)

Model	Hose connection RV · RZV		Threaded connection RVM · RZV-M		Max. capacity	Max. head	S.G.	Output	Input	Power source (Note2)	Mass
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) (Note1)	(L/min)	(m)		(W)	(W)		(kg)
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	70		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 union is 0 - 55˚C

Construction and materials



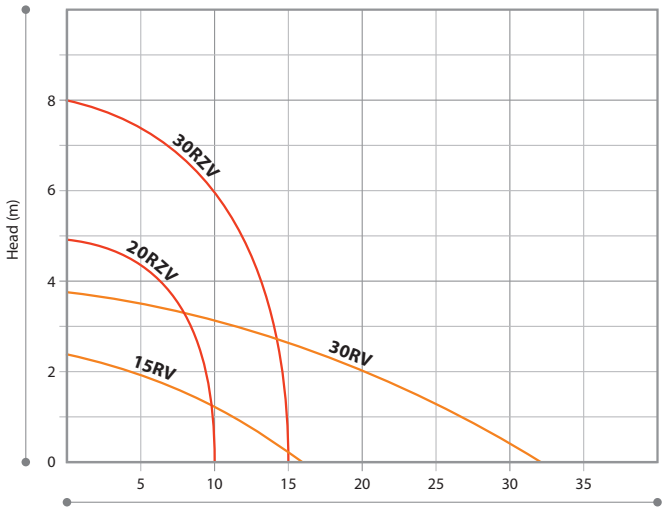
Illustlation shows model MD-30RZV
Note: Material of bearing for MD-15RV, 20RZV and 30RV are CFRPPS

Pump identification

MD - 30 RZ V M - 220 E N

- Pump size
  15, 20, 30
- Type
  R: Standard type
  RZ: High head type
- Material of casing
  V: CFRPVDF
- Connection
  No mark: Hose type
  M: G thread connection
- Motor
  220: 220V - 240V single phase
- Material of O ring
  No mark: FKM (Standard)
  E: EPDM (Special order)

Performance curves (50Hz)



MD-70(R/RZ)V

C F R P V D F

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



MD-70RV

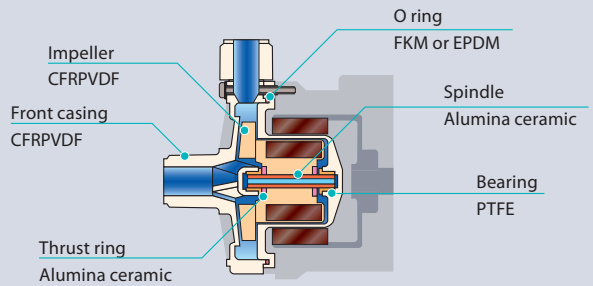
Specifications (50Hz)

Model	Hose connection RV · RZV		Threaded connection RVM · RZV-M		Max. capacity	Max. head	S.G.	Output	Input	Power source (Note2)	Mass
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) (Note1)	(L/min)	(m)		(W)	(W)		(kg)
MD-70RV	26	26	G1	20	86	6.7	1.0	150	235	220/240V : Single Phase 400/440V : Three phase	6.0
MD-70RZV	20	20	G3/4	16	40	14.3	1.0	180	275		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

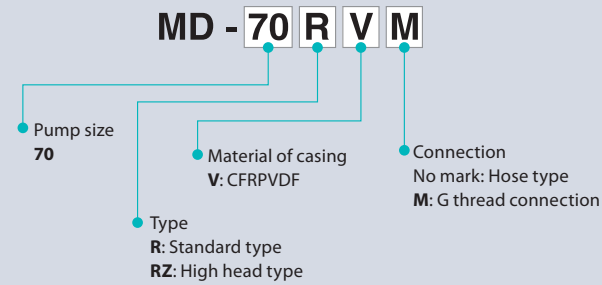
Note: The union field shows the nominal diameter of the applicable VP vinyl chloride hose. Heat resistance of the union is 0 - 55˚C

Construction and materials



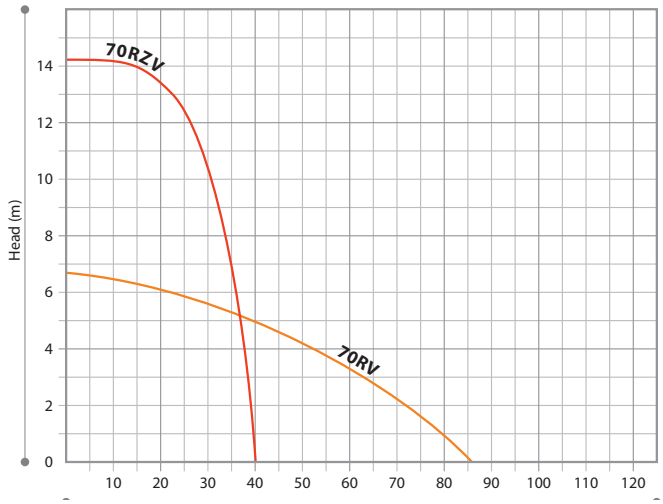
Illustlation shows model MD-70RV
Note: Material of bearing for MD-70RZV is CFRPPS

Pump identification



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

Performance curves (50Hz)



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	13A	16A	20A
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

MD-15F, 30F

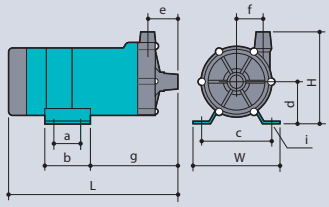


Illustration shows MD-30F

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

MD-55F, 100F

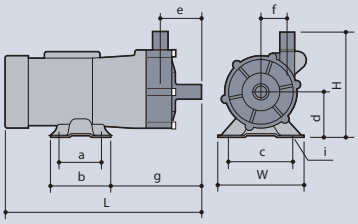


Illustration shows MD-100F

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 - 9×27

MD-V

MD-15RV, 30RV, 70RV

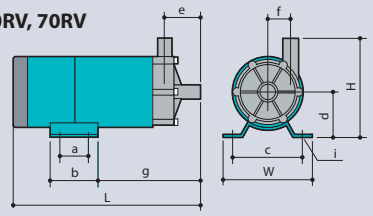


Illustration shows MD-30RV

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 - 7×11

MD-20RZV, 30RZV, 70RZV

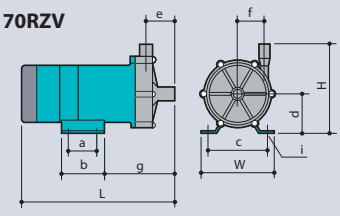


Illustration shows MD-20RZV

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 - 6×10
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 - 7×11

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ASIA / OCEANIA

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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.

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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.

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