

TMI MAGNETIC DRIVE SEALLESS PUMPS

(Industrial-process thermoplastic resin centrifugal pumps)
Exceptional mechanical strength provided by the
ductile cast iron (FCD 450) pump casing
and non metallic back casing cover



Technology & *i*nnovation
TI TOWN CHEMICAL PUMPS

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ISO 2858 Magnetic drive with FCD 450 casing shell thermoplastic resin pump(5HP~25HP)

TMI — 32 B 150 E S S V 15 6 3 xxxx
 (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

(1) Motor Mounted type :

- None= IEC B5 motor
- B = IEC B5 motor with base
- P = bare shaft pump
(coupling drive type)
- C = Coupling drive with IEC B3
foot mounted motor

(4) Impeller size : (mm)

(5) Wet-end material :

E = cfr-Etfe

(6) Impeller shaft :

- S = Sic
- C = Ceramic

※(9) Drive motor :

- 5 = 5HP (3.7KW)
- 7 = 7.5HP (5.5KW)
- 10 = 10HP (7.5KW)
- 15 = 15HP (11KW)
- 20 = 20HP (15KW)
- 25 = 25HP (18.5KW)

(2) Outlet dimension :

- standard size ISO PN16
(JIS 10kg/cm² upon request)
- 32 = 50A×32A (JIS = 50A*40A)
- 40 = 65A×40A (JIS = 65A*40A)
- 65 = 80A×65A (JIS = 80A*65A)

(7) Impeller bearing :

- S = Sic
- G = carbon Graphite

(10) Pump frequency :

- 5 = 50HZ
- 6 = 60HZ

(3) Impeller range :

- A = 3.7KW~7.5KW
- B = 11KW~18.5KW

(8) Casing O-RING :

- V = FKM (Viton)
- E = Epdm
- F = FFKM

(11) Motor voltages specific :

- 3 = 3Ø 220/380V
- 4 = 3Ø 220/440V
- T = special SPEC.

(12) Reserve for customization

※ Recommend drive motor = specific gravity * Max. shaft power

■ Features :

The TMI pump is a single-stage, magnetic driven back pull out system, centrifugal pump. TMIP series is full compliance with ISO 2858, means that this type pump is suitable for quick and simple system revamping. All wet-end parts are made by injection mold with various engineering plastic to provide superior corrosion resistance. TMI series exceptional mechanical provided by the ductile cast iron (FCD 450) pump casing cover and non metallic back casing cover, Maximum allowable pressure rating is 16 bar.

The magnets are in permanent magnets, ensuring coupling efficiency even when processing liquids with heavy specific gravity. Silicon carbide bearings allow the use of these pumps even with "difficult" and abrasive liquids. On the other hand, the low friction "Carbon graphite" version, together with our special design for magnetic unit balancing to provide superior cooling system, enables the pump to withstand short periods of dry running. 3.7kw~7.5kw pump shaft is supported between front casing and rear casing, 11kw~18.5kw pump shaft is supported by thermoplastic resin encapsulate FCD 450 bearing frame enables the pump to increased stability and withstand abnormal operation situation.

The transmission is delivered through a magnetic coupling without any mechanical connection between impeller and drive shaft.

This system ensures zero leakage, operator safety and elimination of dangerous odors or liquids to the atmosphere.

■ Application fields :

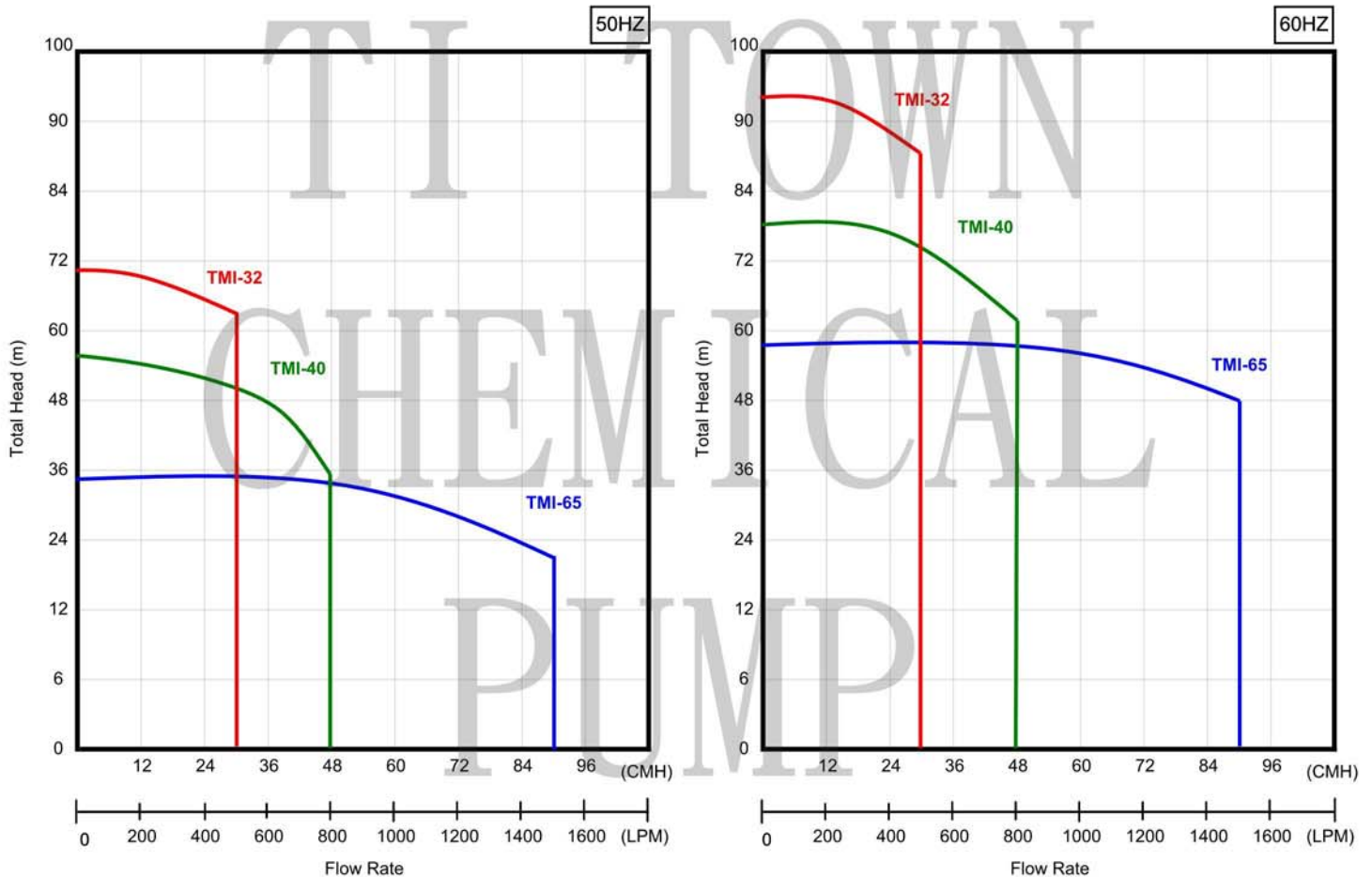
1. Biochemistry
2. Chemical and pharmaceutical industry
3. Chemical storage
4. Food industry
5. Galvanizing
6. Petrochemical industry
7. Paper industry
8. Textiles
9. Tanning industry
10. Water and air treatment and purification

Industrial-Process magnetic drive centrifugal pumps technical specifications



Technical specifications	50/60HZ
Wet-end Materials	CFR-ETFE
Flow rate	max 90 m ³ /h
Head	max 66 / 95 M
Electric motors	from 5.5 kw to 18.5kw
Temperature range	from 0°C to 90°C
Allowable pressure rating	max 16 bar
Viscosity	max 200 cps
SIC Allowable solids	Max. concentration 5% by weight,max. hardness 80(HS), particle size 50 μm

Performance range chart



Impeller range 3.7KW~7.5KW

■ Front casing

A moulding made of thermoplastic resins (CFRETFE) with shaft supporter. Exceptional mechanical strength provided by the ductile cast iron outer pump casing



■ Impeller unit

The high efficiency closed type impellers fixing with totally encapsulated inner magnetic core which are obtain by professional hydraulic design programmed.



■ Rear casing & rear casing cover

The rear casing is made of thermoplastic resins (CFRETFE) with shaft supporter.

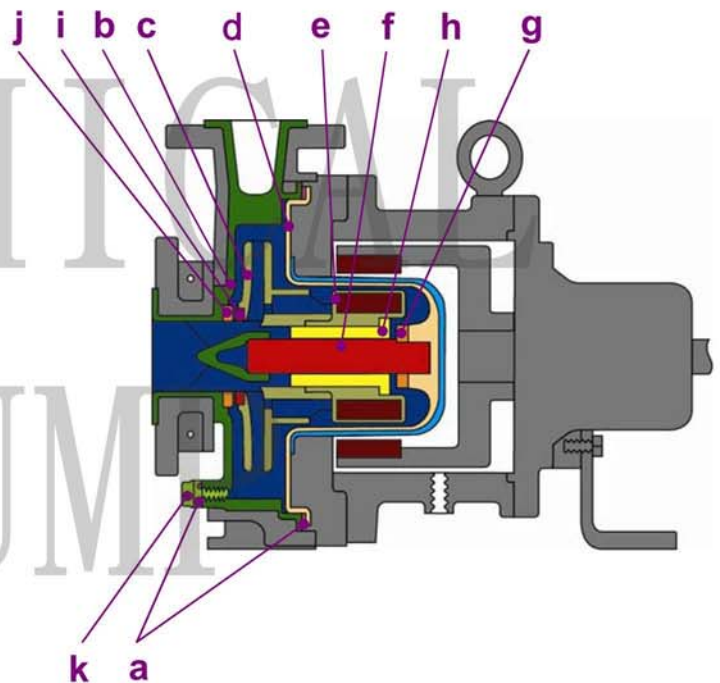
The outer rear casing cover is molded in carbon fiber reinforced composite resin which can bear 20 bar in 120°C.

This non metallic rigid cover not only eliminates any eddy current losses but also prevents sparks from the rear casing come into contact with the outer magnetic core.



Wet-end materials

	Materials	ECG	ESS
a	O-ring	FKM / EPDM	
b	Front casing	cfr-ETFE	
c	Impeller		
d	Back casing		
e	Magnet capsule	ETFE	
f	Shaft	Ceramic	
g	Rear trust		
h	Impeller Bearing	carbon Graphite	SIC
i	Mouth ring		
j	Trust ring	Ceramic	
k	Drain	cfr-ETFE	



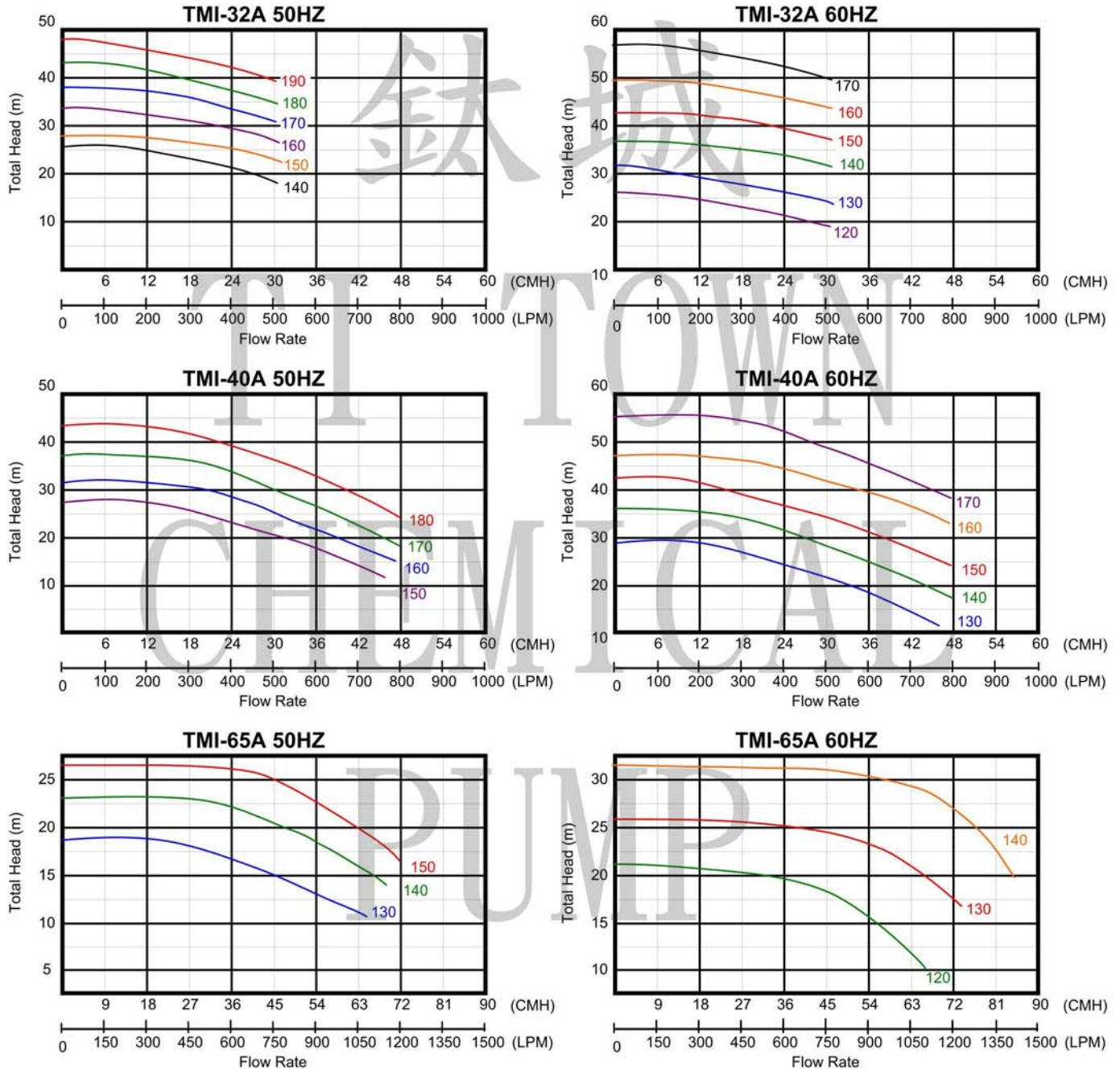
Specifications for 3.7KW~7.5KW

Model	In/Outlet	Flow rate M ³ /H	impeller size(mm)	50HZ		60HZ	
				Total head(M)	Max.Sp(kw)	Total head(M)	Max.Sp(kw)
TMI-32A	50A×32A	18	Ø120	—	—	23.1	3.4
			Ø130	—	—	28.6	4.4
			Ø140	22.9	3.4	34.7	5.3
			Ø150	26.8	4.1	41.1	6.4
			Ø160	31.0	4.7	48.2	7.7
			Ø170	35.4	5.4	54.2	8.3
			Ø180	39.9	6.1	—	—
TMI-40A	65A×40A	30	Ø130	—	—	22.1	3.7
			Ø140	—	—	28.5	4.8
			Ø150	21.6	3.4	34.4	6.0
			Ø160	26.0	4.5	42	7.8
			Ø170	30.5	5.4	48.5	9.4
TMI-65A	80A×65A	60	Ø180	35.6	6.3	—	—
			Ø120	—	—	14.1	4.2
			Ø130	—	—	21.0	5.9
			Ø140	17.0	4.6	29	8.1
			Ø150	21.6	5.9	—	—

Test accordance with ISO 9906-2000 (clear water at room temperature)

Total Head = Suction Head + Delievery Head + Velocity Head

Max. Sp = Maximum drive Shaft Power at this impeller size



Impeller range 11KW~18.5KW

■ Front casing

A moulding made of thermoplastic resins (CFRETFE).

Exceptional mechanical strength provided by the ductile cast iron outer pump casing



■ Impeller

The high efficiency closed type impellers with a molded-in metal insert are obtain by professional hydraulic design programmed which are driven by SUS shaft



■ Bearing frame/Bush

This is made of thermoplastic resins (CFRETFE) with a molded-in FCD 450 insert which support the bearing bush.

The rigid structure hold the rotary parts stably & smoothly



■ Inner magnet core with drive shaft

The inner magnet core are totally encapsulated with thermoplastic resins (ETFE). The high torque is transmitted to impeller via a rigid SUS shaft with SIC/ceramic sleeve



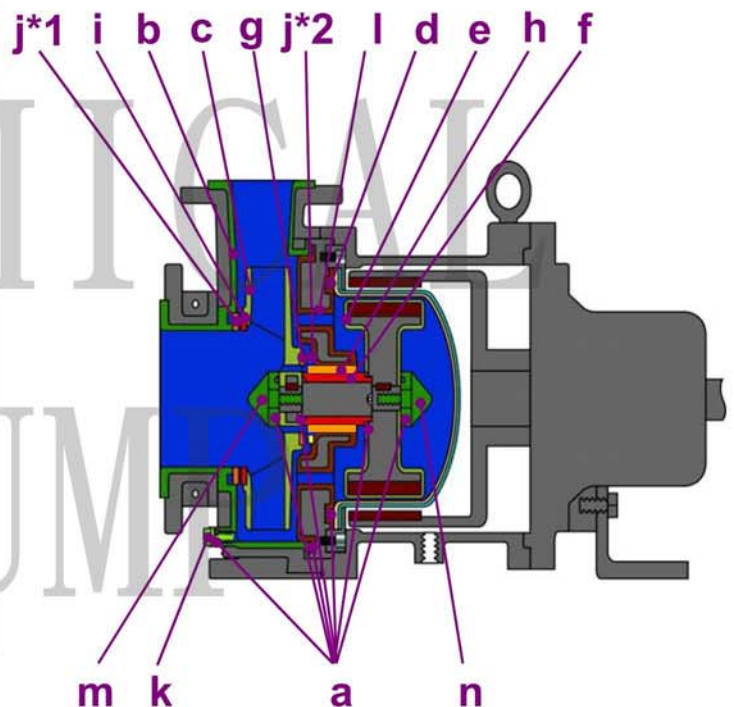
■ Rear casing & rear casing cover

The rear casing is made of thermoplastic resins (CFRETFE). The outer rear casing cover is molded in carbon fiber reinforced composite resin which can bear 20 bar in 120°C. This non metallic rigid cover not only eliminates any eddy current losses but also prevents sparks from the rear casing come into contact with the outer magnetic core.



Wet-end materials

	Materials	ECG	ESS
a	O-ring	FKM / EPDM	
b	Front casing	cfr-ETFE	
c	Impeller		
d	Back casing	ETFE	
e	Magnet capsule		
f	Shaft sleeve	Ceramic	SIC
g	Rear trust		
h	Impeller Bearing	carbon Graphite	
i	Mouth ring		
j	Trust ring	Ceramic	
k	Drain	cfr-ETFE	
l	Bearing frame		
m	Impeller nut	ETFE	
n	Magent nut		



*1 : Front casing trust ring

*2 : Bearing frame trust ring

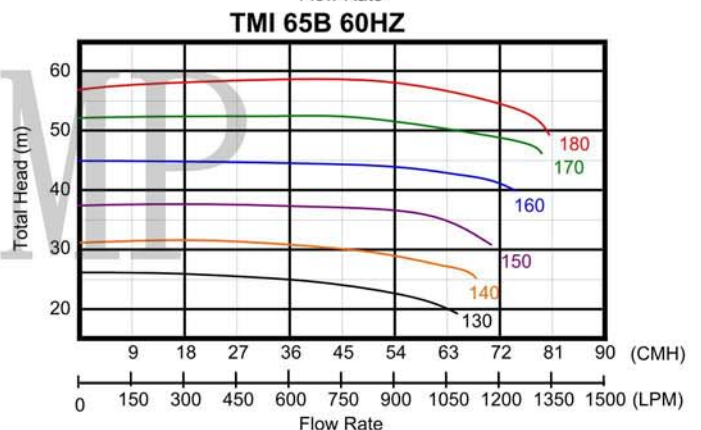
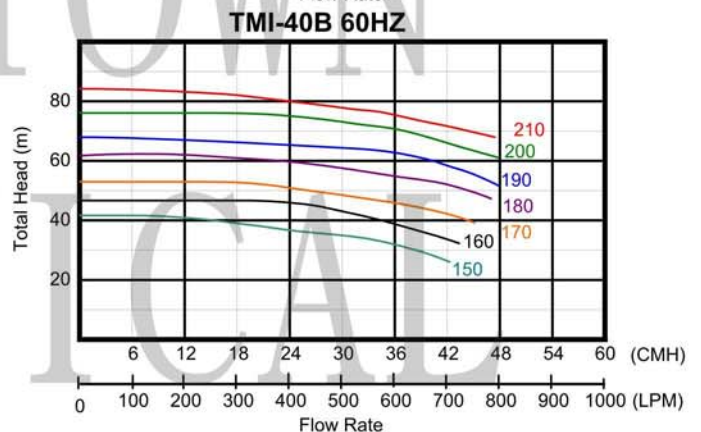
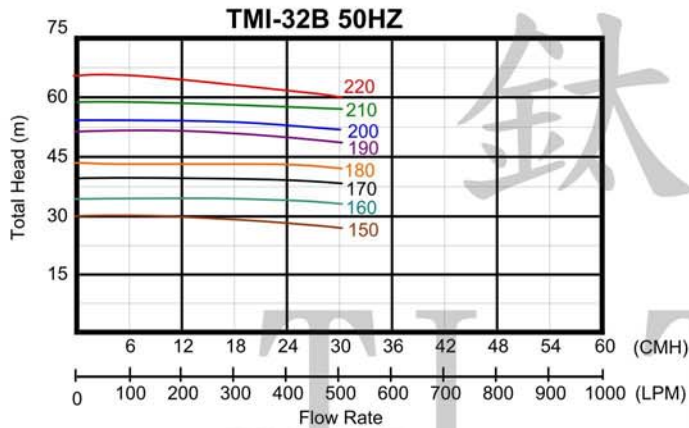
Specifications for 11KW~18.5KW

Model	In/Outlet	Flow rate M³/H	impeller size(mm)	50HZ		60HZ	
				Total head(M)	Max.Sp(kw)	Total head(M)	Max.Sp(kw)
TMI-32B	50A×32A	18	Ø150	29.3	5.2	42.6	7.9
			Ø160	33.9	5.5	49.2	9.6
			Ø170	38.1	6.7	56.1	10.6
			Ø180	43.4	7.9	61.2	11.7
			Ø190	48.0	8.7	68.4	13.2
			Ø200	53.2	9.7	75.1	14.9
			Ø210	58.1	10.8	82.9	16.4
TMI-40B	65A×40A	30	Ø150	22.3	5.0	35.3	7.7
			Ø160	26.7	5.8	41.5	9.2
			Ø170	32.0	6.7	43.5	10.5
			Ø180	37.1	8.0	56.3	12.7
			Ø190	42.3	9.1	64.2	14.2
			Ø200	48.6	10.4	73.5	16.3
			Ø210	52.3	11.1	78.9	18.0
TMI-65B	80A×65A	60	Ø130	12.6	4.7	20.8	7.6
			Ø140	17.7	5.9	28.0	9.6
			Ø150	23.1	7.4	35.4	11.7
			Ø160	28.2	8.9	42.6	13.8
			Ø170	33.7	10.5	51.8	16.8
			Ø180	37.1	11.3	56.9	18.0

Test accordance with ISO 9906-2000 (clear water at room temperature)

Total Head = Suction Head + Delivery Head + Velocity Head

Max. Sp = Maximum drive Shaft Power at this impeller size

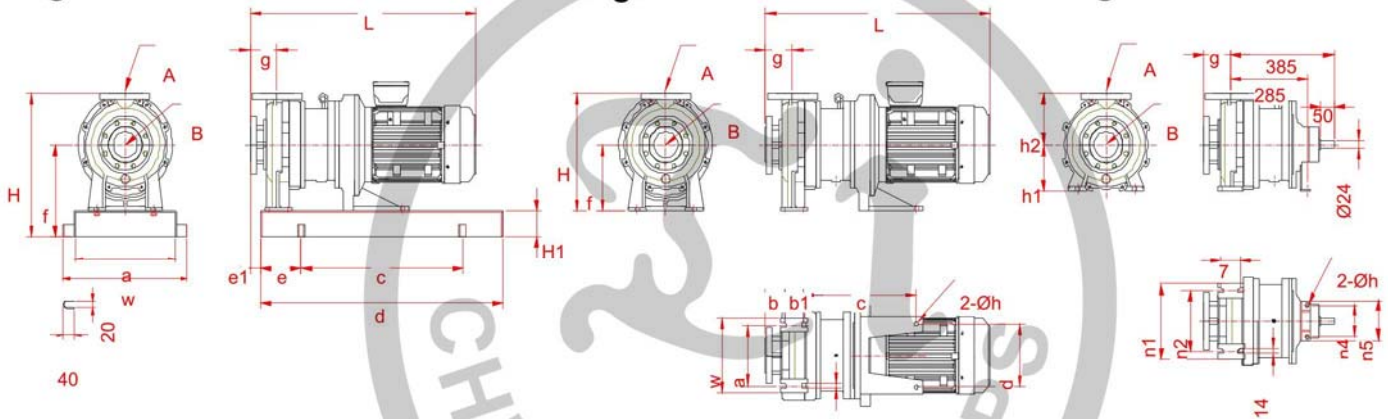


■ Dimensions

Fig.A TMIB Series

Fig.B TMI Series

Fig.C TMIP Series



() = JIS 10kg/cm² flange

Model	Motor	A	B	W	H	H1	* L	a	b	b1	c	d	e	e1	f	g	h	h1	h2	n1	n2	n4	n5	
FIG.A with base	TMIB32	3.7KW	32 (40)	50 (50)	400	430	70	670	350		540	800	130	250	20	80								
		5.5~7.5KW			740																			
		11~15KW			865																			
		18.5KW			907																			
	TMIB40	3.7KW	40 (40)	65 (65)	400	430	70	690	350		540	800	130	250	40	100								
		5.5~7.5KW			760																			
		11~15KW			885																			
		18.5KW			927																			
	TMIB65	5.5~7.5KW	65 (65)	80 (80)	400	430	70	760	350		540	800	130	250	40	100								
		11~15KW			885																			
		18.5KW			927																			
	Fig.B without base	TMI32	3.7KW	32 (40)	50 (50)	270			360	190	45	70	260	220		180	80	2-Ø14						
5.5~7.5KW			740						340															
11~15KW			865						425															
18.5KW			907						425															
TMI40		3.7KW	40 (40)	65 (65)	270			360	212	65	70	260	220		180	100	2-Ø14							
		5.5~7.5KW						760				340												
		11~15KW						885				425												
		18.5KW						927				425												
TMI65		5.5~7.5KW	65 (65)	80 (80)	270	360		760	212	65	70	340	220		180	100	2-Ø14							
		11~15KW			885	425																		
		18.5KW			927	425																		
Fig.C bare shaft pump		TMIP32	32 (40)	50 (50)												80	2-Ø14	160	180	240	190	110	140	
	TMIP40	40 (40)	65 (65)												100	2-Ø14	160	180	262	212	110	140		
	TMIP65	65 (65)	80 (80)												100	2-Ø14	160	180	262	212	110	140		

* L will differ depending on the difference brand of the motor



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