EBARA

Submersible Motor ZBH Series

Submersible Canned Motor, water filled

EBARA Corporation

EBARA Corporation

Founded in 1912, Ebara Corporation has grown to become one of the world's principal manufacturers of industrial machinery, based especially on its Fluid Machinery and Systems business, with particularly strong positions in pumps and compressors as well as other related products. With its origins in the fluid machinery and systems business, Ebara expanded into the Environmental Engineering business centered on water treatment, incinerator, and gasification technology as well as into the Precision Machinery business, which produces semiconductor manufacturing equipment and other equipment.

In 1920, Ebara Corporation was established after the original name of Inokuchi Type Machinery Office was changed.
A plant was constructed near Shinagawa, Tokyo, which assumed the responsibilities of Inokuchi Type Machinery Office and began manufacturing centrifugal pumps. After close to 100 years of existence, EBARA globally now has over 79 subsidiaries (49 of those are consolidated subsidiaries) and 11 affiliate companies, with close to 16,000 employees worldwide.

EBARA Corporation is one of the world's principal manufacturers of fluid transfer machinery, with particularly strong positions in pumps, compressors, fans, and chillers.

Considered one of the top industrial manufacturing companies worldwide, EBARA is also considered as one of the world's largest pump manufacturers, with average annual revenue of USD 5 billion dollars.

Ebara Corporation's vast global network enables quick delivery time along with fast and efficient services to serve their customers worldwide. EBARA's first post-WWII overseas sales office was established in Bangkok, Thailand in 1964.
Later in 1975, EBARA established their first overseas production facility in Brazil as EBARA Industrias

Mecanicas e Comercio Ltda. In 1981, Ebara International Corporation was established in the United States to manage their pump business in North America. Finally, in 1988, EBARA expanded their business to Europe with the establishment of Ebara Pumps Europe (to manufacture stainless steel standard pumps).

Futsu Factory Plant

Sodegaura Plant

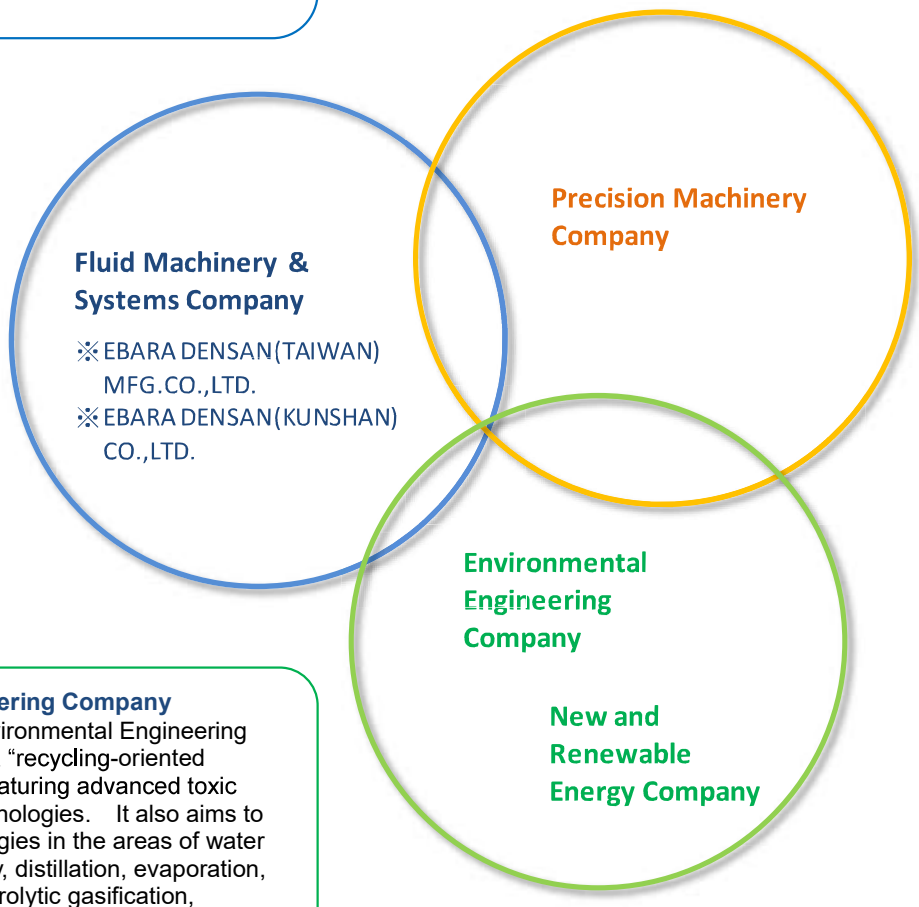
Fujisawa Plant

Core Business

The EBARA Group is constantly thinking of what will be required in the future and is seeking to accurately grasp the current and future needs of its customers, while it continues it pursue the development of superior technologies and products in all its businesses. Therefore, EBARA is divided into 3 main divisions in order to achieve further development and contribution to society.

Fluid Machinery & Systems Company
The objective of the Fluid Machinery & Systems business is to supply pumps and other equipment that form the basis for the activities of society and industry. Pumps along with blowers, compressors, and freezers have been delivered for use in wind and water power applications. These systems are absolutely indispensable in the promotion of environmental engineering.

Precision Machinery Company
The objective of the Precision Machinery business is to provide highly reliable products for the high-tech industry. These solutions range from processing systems and equipment – including those crucial to the fabrication of semiconductors in an ultra-clean environment, such as wafer polishing, soldering and electroplating systems – to a broad array of vacuum pumps and waste gas treatment systems.



Environmental Engineering Company
The objective of the Environmental Engineering Business is to achieve a “recycling-oriented (sustainable) society” featuring advanced toxic waste containment technologies. It also aims to augment basic technologies in the areas of water treatment, heat recovery, distillation, evaporation, waste gas treatment, pyrolytic gasification, incineration, fusion and analysis.

New and Renewable Energy Company
EBARA is active in the clean energy field, which encompasses solar and wind power generation, as well as fuel cell cogeneration. Many of EBARA’s solar and wind power generation systems are already in use worldwide. They are also one of the world leaders in fuel cell system development.

CORPORATE PHILOSOPHY

Sincerity Reliability Advancement

We are determined to contribute for the further development of the human society, holding top quality in the world along with other members of the society group in order to achieve high productivity and appropriate profitability by implementing the most advanced technology in commerce. Based on a global vision and respect for mankind, the company strives to maintain an earnest management deserving of transcending, trust, and confidence.

COMPANY SUMMARY

- Company Name EBARA-DENSAN (TAIWAN) MANUFACTURING.CO.,LTD.
- Establishment April 1991.
- Investment Ratio EBARA GROUP (JAPAN) 51%
  YEH HSING GROUP (TAIWAN) 49%
- Employees 90
- Production Area 8150 m2
- Main Business Deep Well Canned Motor production and sale
  Motor for submersible pump production and sale
  Submersible pump production and sale

MAIN PRODUCTS

- Deep Well Canned Motor.
- Motor for submersible pump.
- Submersible pump.
- Quick Discharge Connector for the submersible pump.
- Parts of submersible pump and motor.
- 管中泵加壓機組

QUALITY POLICY

- Provide reliable and satisfying products for our customers.

QUALITY PURPOSE

- Administrative documentation and quality standardization.

QC HISTORY

- Apr. 1991 Company began production under the QC guidance of EBARA Corp. and EBARA DENSAN Corp. (Japan).
- Nov. 1996 Factory was approved by FM (U.S.A).
- Jan. 1997 Submersible motor and pump section certified ISO-9002.
- Jun. 1997 Submersible motors approved for CE mark certification.
- Sep. 1997 Company began QC committee and 5S action.
- Jan. 1998 Vacuum pump section certified ISO-9002.
- Jun. 2007 Electronics department CE approved.
- Sep. 2011 CCC certification approved for three phases deep well canned motor.
- Sep. 2013 Deep well canned motor BHS M4, BHS M6 obtained CE certification.

中国国家强制性产品认证证书

证书编号：2011010401498397

委托人名称、地址

台湾荏原电产股份有限公司
台湾桃园市中坜区忠福里南园二路7-2号

生产者(制造商)名称、地址

台湾荏原电产股份有限公司
台湾桃园市中坜区忠福里南园二路7-2号

生产企业名称、地址

台湾荏原电产股份有限公司
台湾桃园市中坜区忠福里南园二路7-2号

产品名称和系列、规格、型号

三相交流屏蔽深井电机

见附件

产品标准和技术要求

GB12350-2009

上述产品符合强制性产品认证实施规则
CNCA-C04-01:2014的要求，特发此证。

发证日期：2015年09月17日　　有效期至：2020年09月17日

证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

本证书为变更证书，证书首次颁发日期：2011年09月21日

本证书的相关信息可通过国家认监委网站www.cnca.gov.cn查询

主　任：

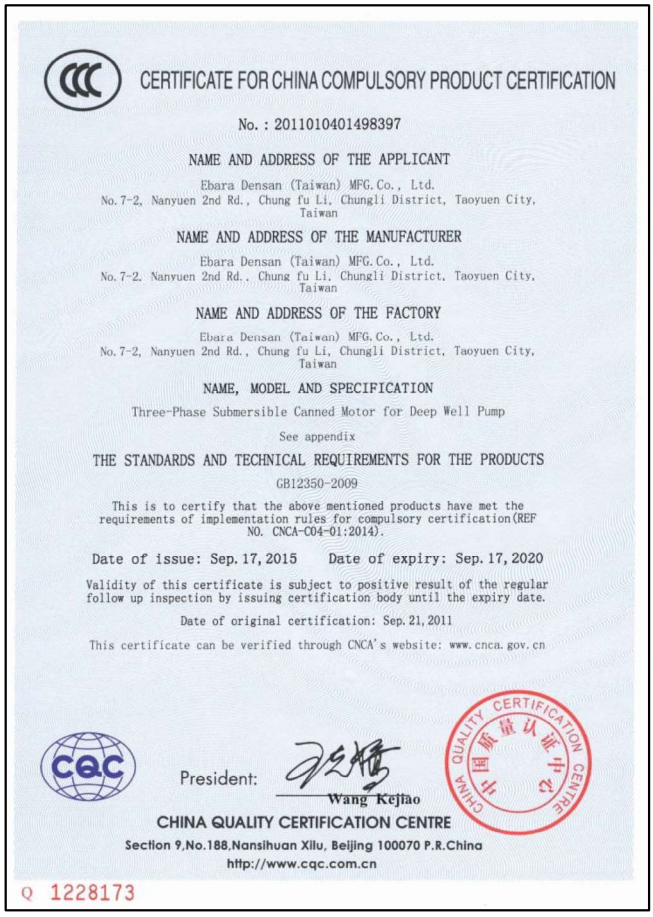
中国质量认证中心

中国・北京・南四环西路188号9区 100070

http://www.cqc.com.cn

Q 1228173

CCC Certificate



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.：2011010401498397

NAME AND ADDRESS OF THE APPLICANT

Ebara Densan (Taiwan) MFG.Co., Ltd.
No.7-2, Nanyuen 2nd Rd., Chung fu Li, Chungli District, Taoyuen City, Taiwan

NAME AND ADDRESS OF THE MANUFACTURER

Ebara Densan (Taiwan) MFG.Co., Ltd.
No.7-2, Nanyuen 2nd Rd., Chung fu Li, Chungli District, Taoyuen City, Taiwan

NAME AND ADDRESS OF THE FACTORY

Ebara Densan (Taiwan) MFG.Co., Ltd.
No.7-2, Nanyuen 2nd Rd., Chung fu Li, Chungli District, Taoyuen City, Taiwan

NAME, MODEL AND SPECIFICATION

Three-Phase Submersible Canned Motor for Deep Well Pump

See appendix

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

GB12350-2009

This is to certify that the above mentioned products have met the requirements of implementation rules for compulsory certification (REF NO. CNCA-C04-01:2014).

Date of issue: Sep.17, 2015　　Date of expiry: Sep.17, 2020

Validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.

Date of original certification: Sep.21, 2011

This certificate can be verified through CNCA's website: www.cnca.gov.cn

President: Wang Kejiao

CHINA QUALITY CERTIFICATION CENTRE

Section 9,No.188,Nansihuan Xilu, Beijing 100070 P.R.China

http://www.cqc.com.cn

Q 1228173

CCC Certificate

中国国家强制性产品认证证书

附录: 共 1 页，第 1 页

证书编号：2011010401498397 纸号：1228173

序号	型号	额定电压	额定频率	额定功率	极数	工作制	绝缘等级
1	DAH4NT-BA11	220/230V	50Hz	0.37kW	2 极	S1	F 级
2	DAH4NT-DA11	220/230V	50Hz	0.55kW	2 极	S1	F 级
3	DAH4NT-GB11	220/230V	50Hz	0.75kW	2 极	S1	F 级
4	DAH4NT-JB11	220/230V	50Hz	1.1kW	2 极	S1	F 级
5	DAH4NT-LB11	220/230V	50Hz	1.5kW	2 极	S1	F 级
6	DAH4NT-NC11	220/230V	50Hz	2.2kW	2 极	S1	F 级

注：此附录与证书同时使用时有效。

主 任：

中国质量认证中心

中国 · 北京 · 南四环西路 188 号 9 区 100070

http://www.cqc.com.cn

CCC Certificate

TÜV NORD

CERTIFICATE

Management system as per
ISO 9001: 2015

In accordance with TÜV NORD CERT and TUV AP Taiwan procedures, it is hereby certified that

EBARA DENSAN (TAIWAN) MFG. CO., LTD.
No. 7-2, Nan-Yuen 2nd Road, Chung Fu Li, Chung Li District,
Taoyuan City, Taiwan, Republic of China

applies a management system in line with the above standard for the following scope

Manufacturing of Submersible Motors & Pumps

Certificate Registration No. 44 100 072350
Audit Report No. TW-0118/2016

Valid from 2016-05-30
Valid until 2019-05-29
Issue Date 2018-06-29
Initial Certification 2007-05-30

Certification Body
at TUV ASIA PACIFIC LIMITED Taiwan Branch

TUV ASIA PACIFIC LIMITED
Taiwan Branch
Room A1, 9F, No.333, Sec.2,
Tun Hua S. Rd.,
Taipei 10669 Taiwan, R.O.C.

This certification was conducted in accordance with the TUV ASIA PACIFIC LIMITED Taiwan Branch auditing and certification procedures based on TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

www.tuvnord.com.tw

IAF TAF

RWTUV ISO-9001：2008 Certified

TÜV NORD

Certificate
of conformity with the following
European Directive

Registered No.:
NL1105180014

Low-Voltage Directive 2014/35/EU

Reference of applicant	Date of application	File reference	Test report No.	Date of issue	Expiry date
-	17.04.2018	TWR1804014	TWR1804014.001	24.04.2018	23.04.2023

This is to certify that the following product complies to all the provisions of the above mentioned European Directive and the following standards:

Product: Electric Motors (for Deep-Well submersible pump)

Type designation: BHS M4 (4")

Serial No.: Engineering Sample of ZBH4 series (0.37kW~5.5kW)

Applicant: EBARA Densan (Taiwan) MFG. CO., LTD.
No. 7-2, Nan-Yuen 2nd Road, Chung-Fu Li, Chung Li District,
Taoyuan City, Taiwan, R.O.C.

Standard(s): EN 60034-1: 2010

This Certificate of conformity is based on the evaluation of sample(s) of the above mentioned product. It does not imply an assessment of the production and it does not permit the use of a mark of conformity or of a safety mark of the TÜV NORD Group. This is to certify that the tested sample is in compliance with the essential requirements referred to Low-Voltage Directive 2014/35/EU. This certificate can be used by holder in connection with the EC declaration of conformity indicating conformity according to Low Voltage Directive.

Certification Department

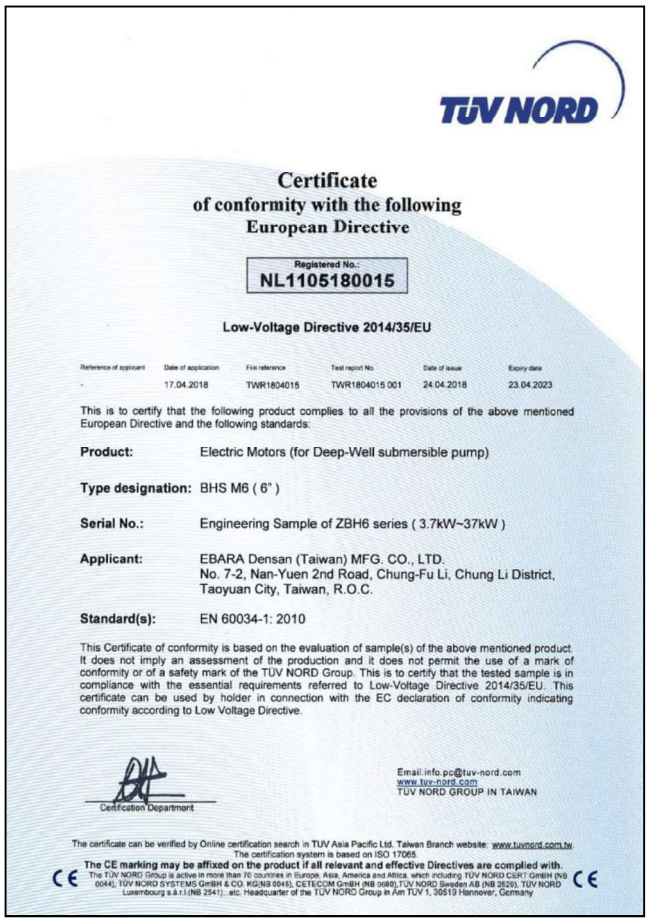
Email:info.pc@tuv-nord.com
www.tuv-nord.com
TÜV NORD GROUP IN TAIWAN

The certificate can be verified by Online certification search in TUV Asia Pacific Ltd. Taiwan Branch website: www.tuvnord.com.tw.
The certification system is based on ISO 17065.

The CE marking may be affixed on the product if all relevant and effective Directives are complied with.

The TÜV NORD Group is active in more than 70 countries in Europe, Asia, America and Africa, which including TÜV NORD CERT GmbH (NB 0044), TÜV NORD SYSTEMS GmbH & CO. KG(NB 0045), CETECOM GmbH (NB 0680),TÜV NORD Sweden AB (NB 2520), TÜV NORD Luxembourg s.à.r.l.(NB 2541)...etc. Headquarter of the TÜV NORD Group in Am TÜV 1, 30519 Hannover, Germany

BHS M4 CE Certified



TÜV NORD

Certificate
of conformity with the following
European Directive

Registered No.:
NL1105180015

Low-Voltage Directive 2014/35/EU

Reference of applicant	Date of application	File reference	Test report No.	Date of issue	Expiry date
-	17.04.2018	TWR1804015	TWR1804015.001	24.04.2018	23.04.2023

This is to certify that the following product complies to all the provisions of the above mentioned European Directive and the following standards:

Product: Electric Motors (for Deep-Well submersible pump)

Type designation: BHS M6 (6")

Serial No.: Engineering Sample of ZBH6 series (3.7kW~37kW)

Applicant: EBARA Densan (Taiwan) MFG. CO., LTD.
No. 7-2, Nan-Yuen 2nd Road, Chung-Fu Li, Chung Li District,
Taoyuan City, Taiwan, R.O.C.

Standard(s): EN 60034-1: 2010

This Certificate of conformity is based on the evaluation of sample(s) of the above mentioned product. It does not imply an assessment of the production and it does not permit the use of a mark of conformity or of a safety mark of the TÜV NORD Group. This is to certify that the tested sample is in compliance with the essential requirements referred to Low-Voltage Directive 2014/35/EU. This certificate can be used by holder in connection with the EC declaration of conformity indicating conformity according to Low Voltage Directive.

Certification Department

Email:info.pc@tuv-nord.com
www.tuv-nord.com
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The certificate can be verified by Online certification search in TUV Asia Pacific Ltd. Taiwan Branch website: www.tuvnord.com.tw.
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BHS M6 CE Certified

4” Motors

6” Motors

8” Motors

4” Inverter constant pressure water supply– Single Type

Inverter constant pressure water supply - Duplex Type

Solar panel actuator

Control Box

Cable

ZBH4N／NH(Spring Water) 4” Motors

ZBH4N

For Clean Water

ZBH4NH

For Spring Water

ZBH4N Type：Submersible Canned Motor for Deep Well

This motor is intended to be used with a directly connected submersible pump for deep well. Considering its usage environments, our own technology backed up with long term experience in designing and manufacturing of the submersible motor has been fully reflected in the areas of configuration and parts structure.

●Welding encapsulated structure

Stator room where stator coil exists is in welding encapsulated structure (canned state) so that the stator coil can be completely isolated from the exterior.

●Enclosure liquid

The motor is filled up with propylene glycol water solution.
Lubrication for radial bearing and thrust bearing.
Protection of parts within the motor from the rust.
Distribution of heat inside the motor and prevention of local heat generation.
Propylene glycol is also used as a food additive which proves it to be safe liquid.

●Shaft seal

The oil seal is used at shaft seal section in order to avoid replacing enclosure liquid with outside water. Also, the sand slinger is used to avoid entry of sand into the motor.

●Connector Lead Wire

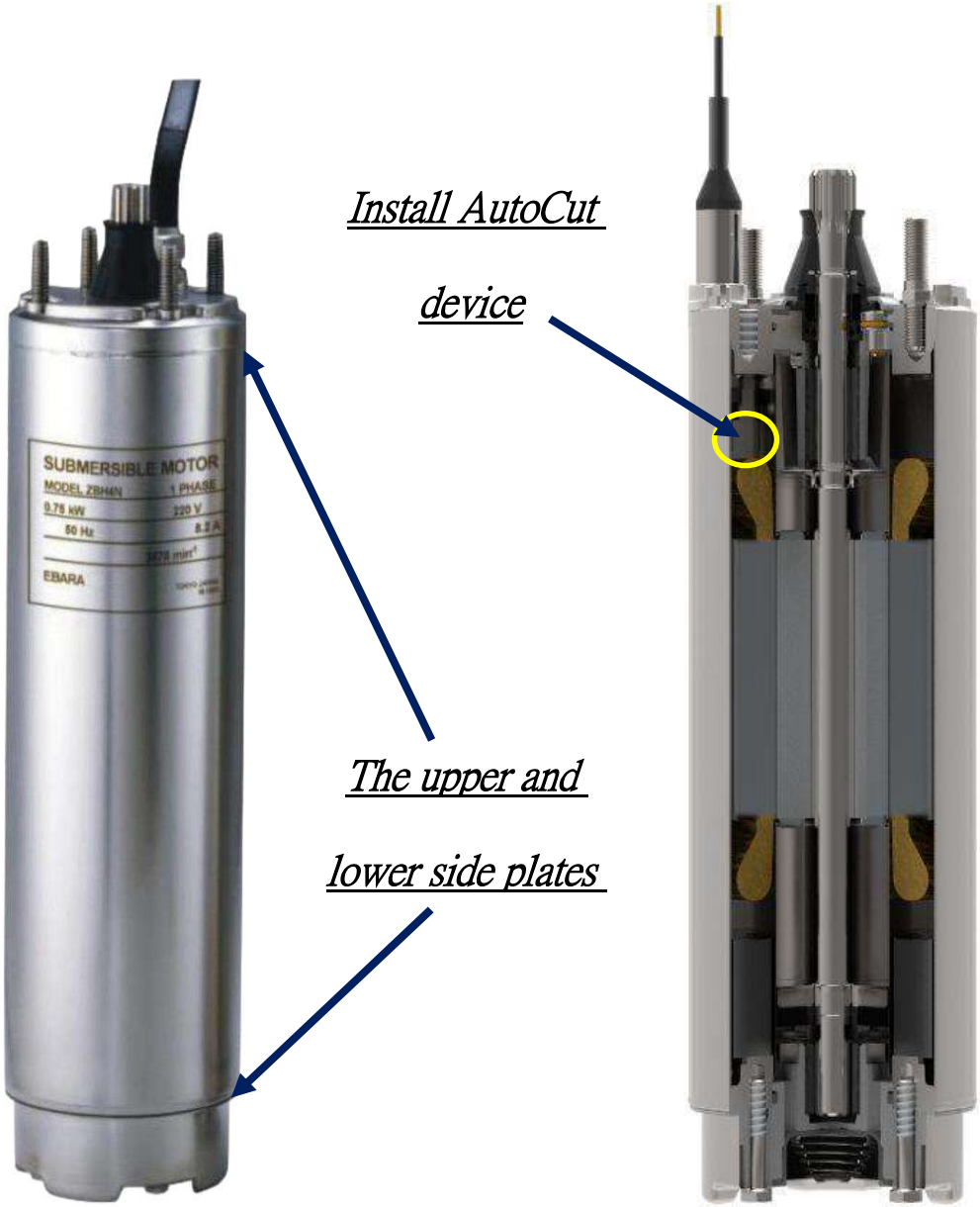
Power supply Lead Wire and connector section are combined together with rubber mold for high durability water resistance.

●Stainless steel for liquid surface

Stainless steel is used as liquid surface material for high corrosion resistance.

【ZBH4N Operating Parameters 】
Maximum water depth：100m
Minimum allowable velocity
of cooling water：0.063m/s
Liquid characteristics：Clean water (PH 5.8 to 8.6)
Temperature：0 to 40℃

【ZBH4NH Operating Parameters】
Maximum water depth：100m
Minimum allowable velocity
of cooling water： 0.063m/s
Liquid characteristics：Spring Water
Temperature：0 to 90℃



1. EBARA single-phase deep well motor with built-in auto-cut protection device is the pioneer of global industrial innovation. The automatic shutdown/reset functions solve all the problems that may occur in deep well motors.

2. SUS304 material side plate can effectively prevent rust and resist abnormal water quality

ZBH4N 4” DATA 50Hz (Single phase) [EBARA Control Box required]

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	220/230	3	2	4.2/4.2	2860/2870	262	9.05	1500	Clean Water	0~40	100	NEMA
0.55	0.75	220/230	3	2	6.4/6.5	2870/2890	292	10.35	1500	Clean Water	0~40	100	NEMA
0.75	1	220/230	3	2	7.8/7.7	2840/2860	319	11.3	3000	Clean Water	0~40	100	NEMA
1.1	1.5	220/230	3	2	9.5/9.3	2840/2860	379	14.05	3000	Clean Water	0~40	100	NEMA
1.5	2	220/230	3	2	12.0/12.0	2850/2870	409	15.3	3000	Clean Water	0~40	100	NEMA
2.2	3	220/230	3	2	16.8/16.8	2860/2880	484	18.6	3000	Clean Water	0~40	100	NEMA
3.7	5	220/230	3	2	17.1/17.1	2820/2840	680	29	6500	Clean Water	0~40	100	NEMA

ZBH4N 4” DATA 50Hz (Three phase)

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	220/230	3	2	2.3/2.4	2850/2860	237	7.6	1500	Clean Water	0~40	100	NEMA
		380/400/415	3	2	1.3/1.4/1.5	2850/2860/2870	237	7.6	1500	Clean Water	0~40	100	NEMA
0.55	0.75	220/230	3	2	3.0/3.1	2850/2860	252	8.3	1500	Clean Water	0~40	100	NEMA
		380/400/415	3	2	1.8/1.8/1.9	2850/2860/2870	252	8.3	1500	Clean Water	0~40	100	NEMA
0.75	1	220/230	3	2	3.8/3.7	2830/2850	289	9.65	3000	Clean Water	0~40	100	NEMA
		380/400/415	3	2	2.2/2.2/2.2	2830/2850/2860	289	9.65	3000	Clean Water	0~40	100	NEMA
1.1	1.5	220/230	3	2	5.3/5.2	2820/2840	319	10.85	3000	Clean Water	0~40	100	NEMA
		380/400/415	3	2	3.1/3.0/3.1	2820/2840/2850	319	10.85	3000	Clean Water	0~40	100	NEMA
1.5	2	220/230	3	2	6.8/6.8	2830/2840	354	12.45	3000	Clean Water	0~40	100	NEMA
		380/400/415	3	2	3.9/3.9/4.0	2830/2840/2850	354	12.45	3000	Clean Water	0~40	100	NEMA
2.2	3	220/230	3	2	9.8/9.6	2780/2810	408	14.65	4000	Clean Water	0~40	100	NEMA
		380/400/415	3	2	5.7/5.6/5.6	2780/2810/2820	408	14.65	4000	Clean Water	0~40	100	NEMA
2.2	3	380/400	3	2	5.7/5.6	2780/2810	448.5	14.65	6500	Clean Water	0~40	100	NEMA
3.7	5	220/230	3	2	16.3/16.2	2820/2840	555.5	22.75	6500	Clean Water	0~40	100	NEMA
		380/400/415	3	2	9.4/9.4/9.5	2820/2840/2850	555.5	22.75	6500	Clean Water	0~40	100	NEMA
5.5	7.5	220/230	3	2	24/-	2810/-	680.5	29	6500	Clean Water	0~40	100	NEMA
		380/400/415	3	2	13.9/13.7/-	2810/2830/-	680.5	29	6500	Clean Water	0~40	100	NEMA

ZBH4N 4" DATA 60Hz (Single phase) [EBARA Control Box required]

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	220/230	3	2	4.9/4.9	3470/3480	262	9.05	1500	Clean Water	0~40	100	NEMA
0.55	0.75	220/230	3	2	6.9/7	3480/3480	292	10.35	1500	Clean Water	0~40	100	NEMA
0.75	1	220/230	3	2	8.5/8.7	3470/3480	319	11.3	3000	Clean Water	0~40	100	NEMA
1.1	1.5	220/230	3	2	9.2/9	3460/3480	379	14.05	3000	Clean Water	0~40	100	NEMA
1.5	2	220/230	3	2	11.8/11.6	3480/3490	409	15.3	3000	Clean Water	0~40	100	NEMA
2.2	3	220/230	3	2	15.4/15	3490/3490	484	18.6	3000	Clean Water	0~40	100	NEMA
3.7	5	220/230	3	2	17/17	3450/3450	680	29	6500	Clean Water	0~40	100	NEMA

ZBH4N 4" DATA 60Hz (Three phase)

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	220	3	2	2.9	3470	237	7.6	1500	Clean Water	0~40	100	NEMA
		380	3	2	1.7	3470	237	7.6	1500	Clean Water	0~40	100	NEMA
0.55	0.75	220	3	2	3.6	3470	252	8.3	1500	Clean Water	0~40	100	NEMA
		380	3	2	2.1	3470	252	8.3	1500	Clean Water	0~40	100	NEMA
0.75	1	220	3	2	4.2	3460	289	9.65	3000	Clean Water	0~40	100	NEMA
		380	3	2	2.4	3460	289	9.65	3000	Clean Water	0~40	100	NEMA
1.1	1.5	220	3	2	5.4	3440	319	10.85	3000	Clean Water	0~40	100	NEMA
		380	3	2	3.1	3440	319	10.85	3000	Clean Water	0~40	100	NEMA
1.5	2	220	3	2	7.2	3440	354	12.45	3000	Clean Water	0~40	100	NEMA
		380	3	2	4.2	3440	354	12.45	3000	Clean Water	0~40	100	NEMA
2.2	3	220	3	2	10.6	3450	408	14.65	4000	Clean Water	0~40	100	NEMA
		380	3	2	6.1	3450	408	14.65	4000	Clean Water	0~40	100	NEMA
2.2	3	380	3	2	6.1	3450	448.5	14.65	6500	Clean Water	0~40	100	NEMA
3.7	5	220	3	2	17	3440	555.5	22.75	6500	Clean Water	0~40	100	NEMA
		380	3	2	9.8	3440	555.5	22.75	6500	Clean Water	0~40	100	NEMA
5.5	7.5	220	3	2	24.9	3450	680.5	29	6500	Clean Water	0~40	100	NEMA
		380	3	2	16	3450	680.5	29	6500	Clean Water	0~40	100	NEMA

ZBH4N PSC 4" 50Hz 3Wire (Single phase) [EBARA Control Box required]

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	220/230	3	2	3.1/3.1	2870/2880	262	8.4	1500	Clean Water	0~40	100	NEMA
0.55	0.75	220/230	3	2	4.3/4.3	2860/2875	292	9.5	1500				
0.75	1	220/230	3	2	5.5/5.5	2860/2870	319	10.5	3000				
1.1	1.5	220/230	3	2	7.6/7.4	2860/2870	379	13.1	3000				
1.5	2	220/230	3	2	10.3/10.2	2850/2870	409	14.5	3000				
2.2	3	220/230	3	2	14.9/14.7	2855/2870	484	17.6	3000				

ZBH4N PSC 4" 60Hz 3Wire (Single phase) [EBARA Control Box required]

kW	HP	Volts	Wire	Poles	A	RPM	S.F.	S.F MAX	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	110/115	3	2	6.5/6.7	3465/3475	1.6	8.5	262	8.2	1500	Clean Water	0~40	100	NEMA
		220/230	3	2	3.4/3.4	3483/3490	1.6	4.2	262	8.4	1500				
0.55	0.75	220/230	3	2	4.5/4.6	3490/3500	1.5	5.6	292	9.5	1500				
0.75	1	220/230	3	2	6.0/6.0	3480/3490	1.4/1.4	7.4/7.5	319	10.5	3000				
1.1	1.5	220/230	3	2	8.3/8.4	3500/3500	1.3	9.6/9.5	379	13.1	3000				
1.5	2	220/230	3	2	10.5/10.3	3465/3485	1.25	12/11.7	409	14.5	3000				
2.2	3	220/230	3	2	15.1/14.8	3470/3485	1.15	16.3/15.7	484	17.6	3000				

ZBH4N PSCI 4" 50Hz (Single phase) [EBARA Control Box is NOT required]

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	220/230	3	2	3.1/3.1	2870/2880	298	8.5	1500	Clean Water	0~40	100	NEMA
0.55	0.75	220/230	3	2	4.3/4.3	2860/2875	328	9.8	1500				
0.75	1	220/230	3	2	5.5/5.5	2860/2870	348	10.85	3000				
1.1	1.5	220/230	3	2	7.6/7.4	2860/2870	421	13.5	3000				
1.5	2	220/230	3	2	10.3/10.2	2850/2870	451	14.8	3000				

ZBH4N PSCI 4" 60Hz (Single phase) [EBARA Control Box is NOT required]

kW	HP	Volts	Wire	Poles	A	RPM	S.F.	S.F MAX	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
0.37	0.5	110/115	3	2	6.5/6.7	3465/3475	1.6	8.5	321	8.7	1500	Clean Water	0~40	100	NEMA
0.37	0.5	220/230	3	2	3.4/3.4	3483/3490	1.6	4.2	298	8.5	1500				
0.55	0.75	220/230	3	2	4.5/4.6	3490/3500	1.5	5.6	328	9.8	1500				
0.75	1	220/230	3	2	6.0/6.0	3480/3490	1.4/1.4	7.4/7.5	348	10.85	3000				
1.1	1.5	220/230	3	2	8.3/8.4	3500/3500	1.3	9.6/9.5	421	13.5	3000				
1.5	2	220/230	3	2	10.5/10.3	3465/3485	1.25	12/11.7	451	14.8	3000				

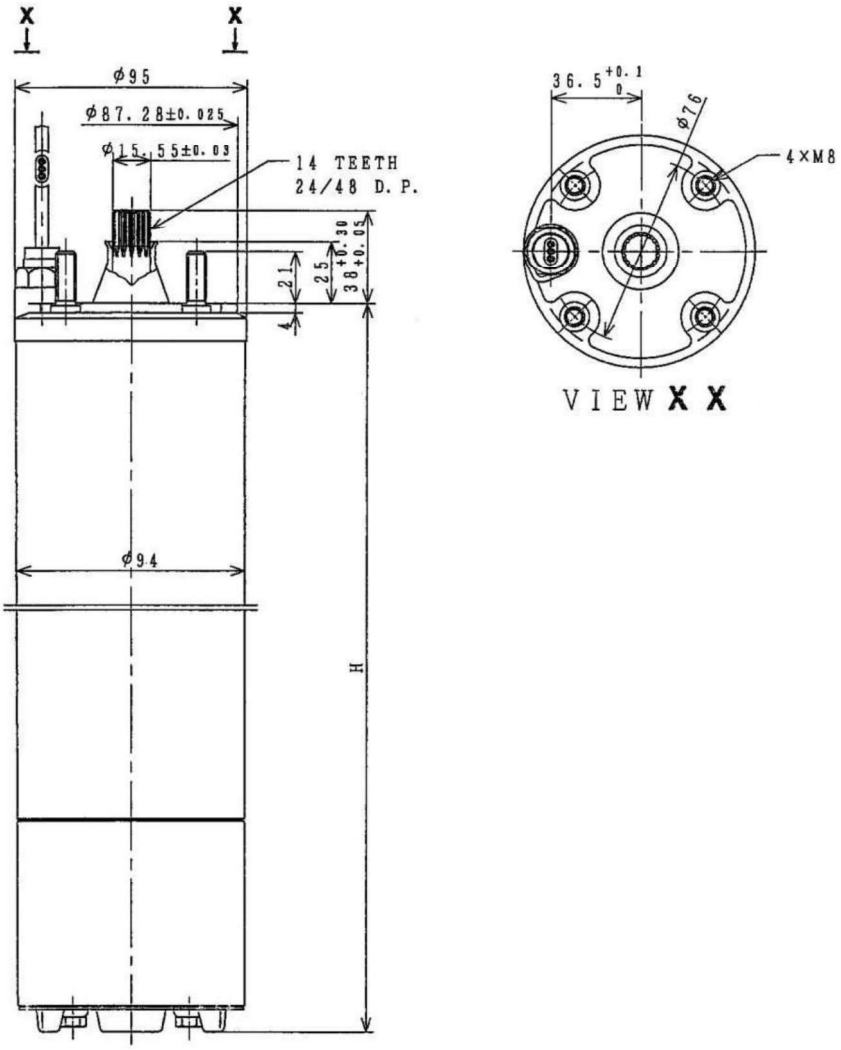
ZBH4NH(Spring Water) 4” DATA 50Hz (Three phase)

kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
1.5	2	380	3	2	4.1	2794	411.5	14.75	3000	Spring Water	0~90	100	NEMA
		400	3	2	4.0	2818	411.5	14.75	3000				
2.2	3	380	3	2	5.9	2784	461.5	18	4000				
		400	3	2	5.7	2806	461.5	18	4000				
3.7	5	380	3	2	9.9	2800	563.5	22.9	6500				
		400	3	2	9.6	2832	563.5	22.9	6500				
5.5	7.5	380	3	2	14.1	2794	688.5	29.3	6500				
		400	3	2	13.7	2822	688.5	29.3	6500				

ZBH4NH(Spring Water) 4” DATA 60Hz (Three phase)

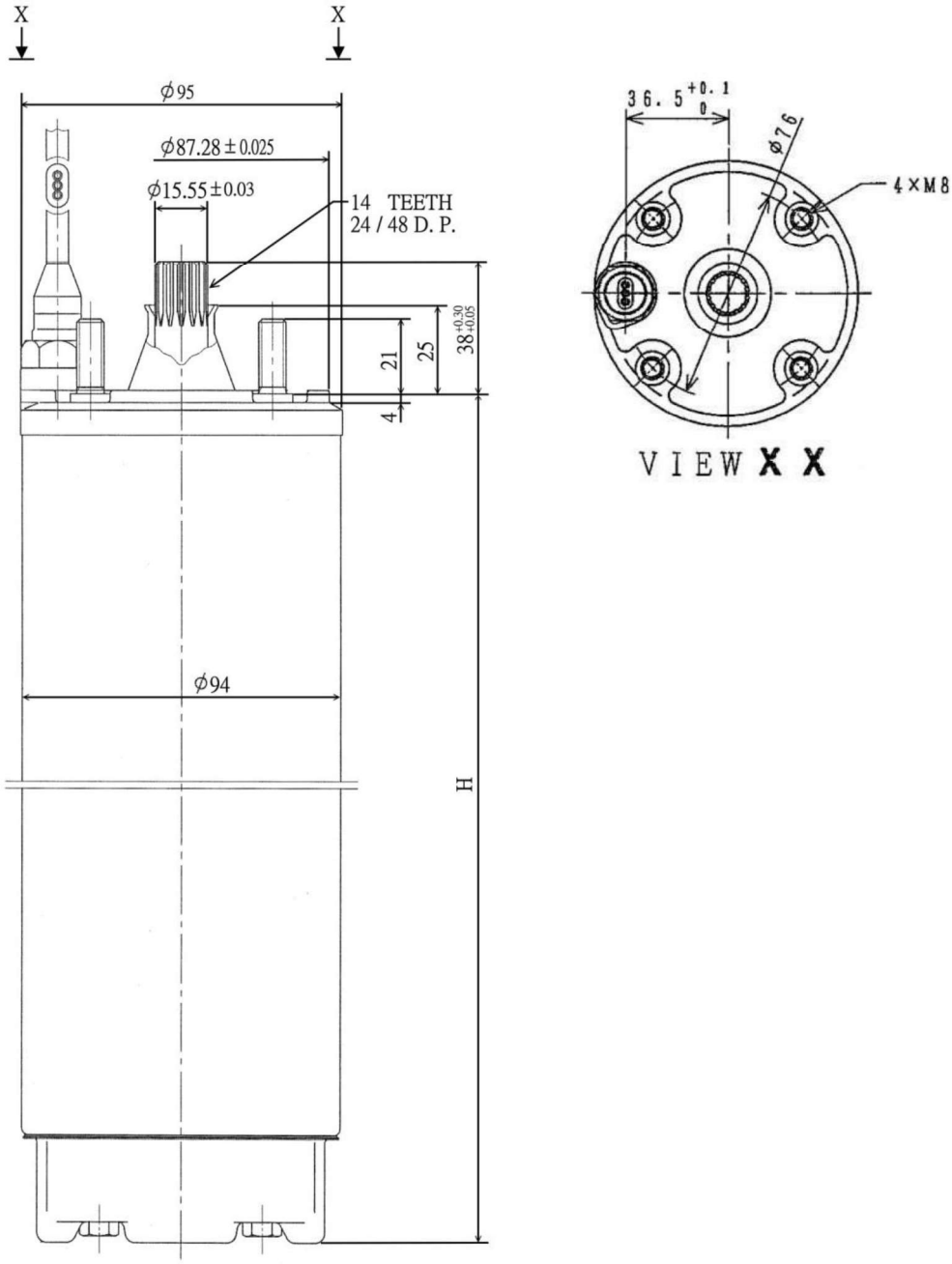
kW	HP	Volts	Wire	Poles	A	RPM	H (mm)	Kg	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
1.5	2	380	3	2	4.3	3420	411.5	14.75	3000	Spring Water	0~90	100	NEMA
		400	3	2	4.0	3369	411.5	14.75	3000				
2.2	3	380	3	2	6.0	3401	461.5	18	4000				
		400	3	2	5.6	3340	461.5	18	4000				
3.7	5	380	3	2	10.0	3432	563.5	22.9	6500				
		400	3	2	9.2	3387	563.5	22.9	6500				
5.5	7.5	380	3	2	14.3	3421	688.5	29.3	6500				
		400	3	2	13.1	3376	688.5	29.3	6500				

ZBH4N 4” Dimensions



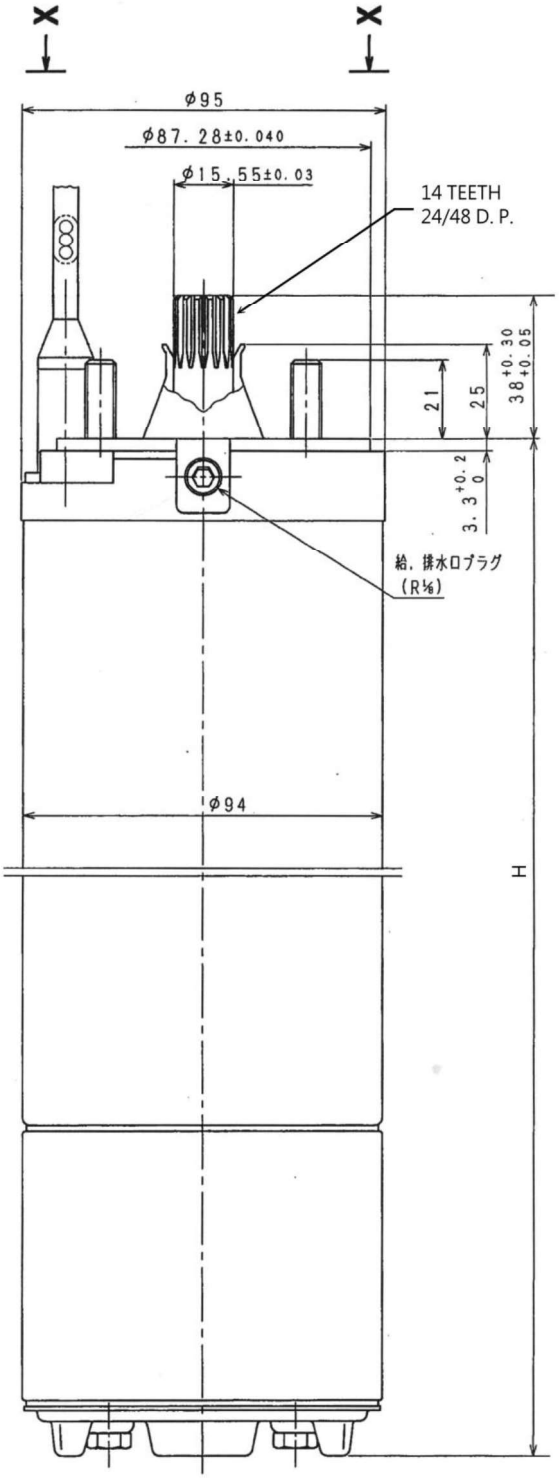
Frame Size	Phase		Power kW	Power HP	H (mm)	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Remarks
M4	1 (3wire)	CSIR	0.37	1/2	262	1500	Clean Water	0~40	100	NEMA
			0.55	3/4	292					
			0.75	1	319	3000				
		CSCR	1.1	1.5	379					
			1.5	2	409					
			2.2	3	484					
	3		0.37	1/2	237	1500				
			0.55	3/4	252					
			0.75	1	289	3000				
			1.1	1.5	319					
			1.5	2	354					
			2.2	3	408	4000				
					448.5	6500				
			3.7	5	555.5					
			5.5	7.5	680.5					
	1 (2Wire)		0.37	1/2	270	1500				
			0.55	3/4	300					
			0.75	1	327	3000				
			1.1	1 1/2	392					

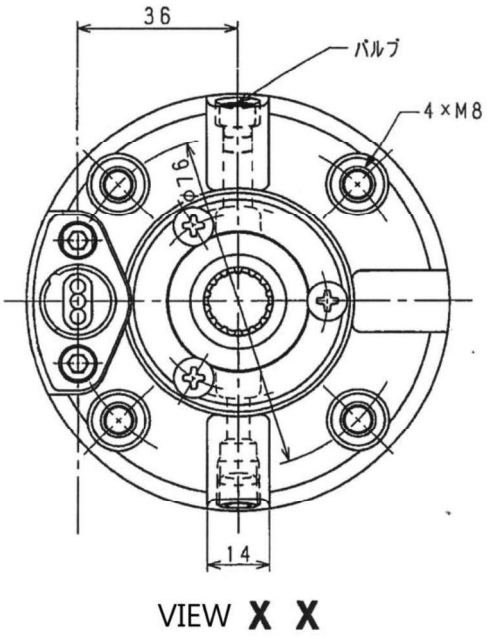
4N PSC、PSCI 4” Dimensions



Frame Size	Phase	Power		H	Thrust	Liquid	℃	Max	Remarks
		kW	HP	(mm)	Load (N)	Type		Depth (m)	
ZBH4N PSC	1 (3wire)	0.37	0.5	262	1500	Clean Water	0~40	100	NEMA
		0.55	0.75	292					
		0.75	1	319	3000				
		1.1	1.5	379					
		1.5	2	409					
		2.2	3	484					
ZBH4N PSCI	1	0.37	0.5	321	1500				
		0.37	0.5	298					
		0.55	0.75	328					
		0.75	1	348	3000				
		1.1	1.5	421					
		1.5	2	451					

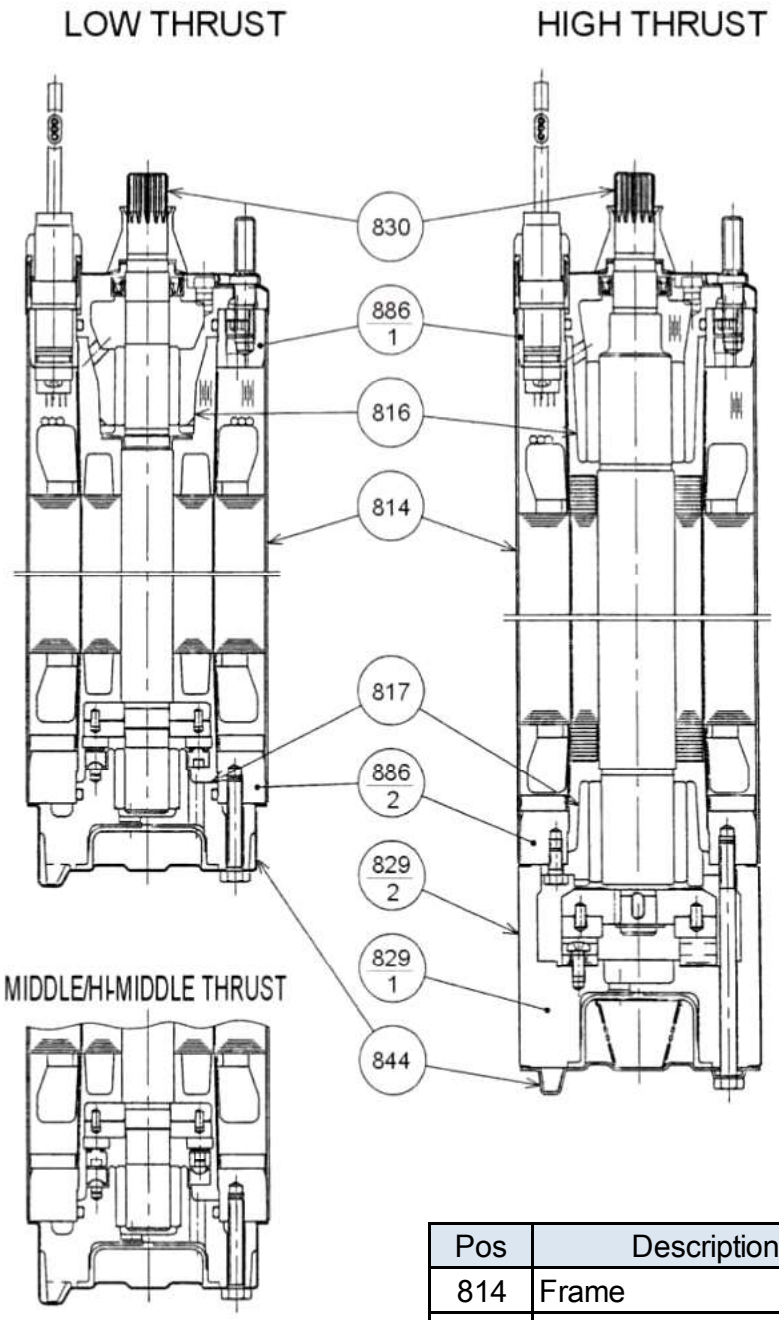
ZBH4NH(Spring Water) 4” Dimensions





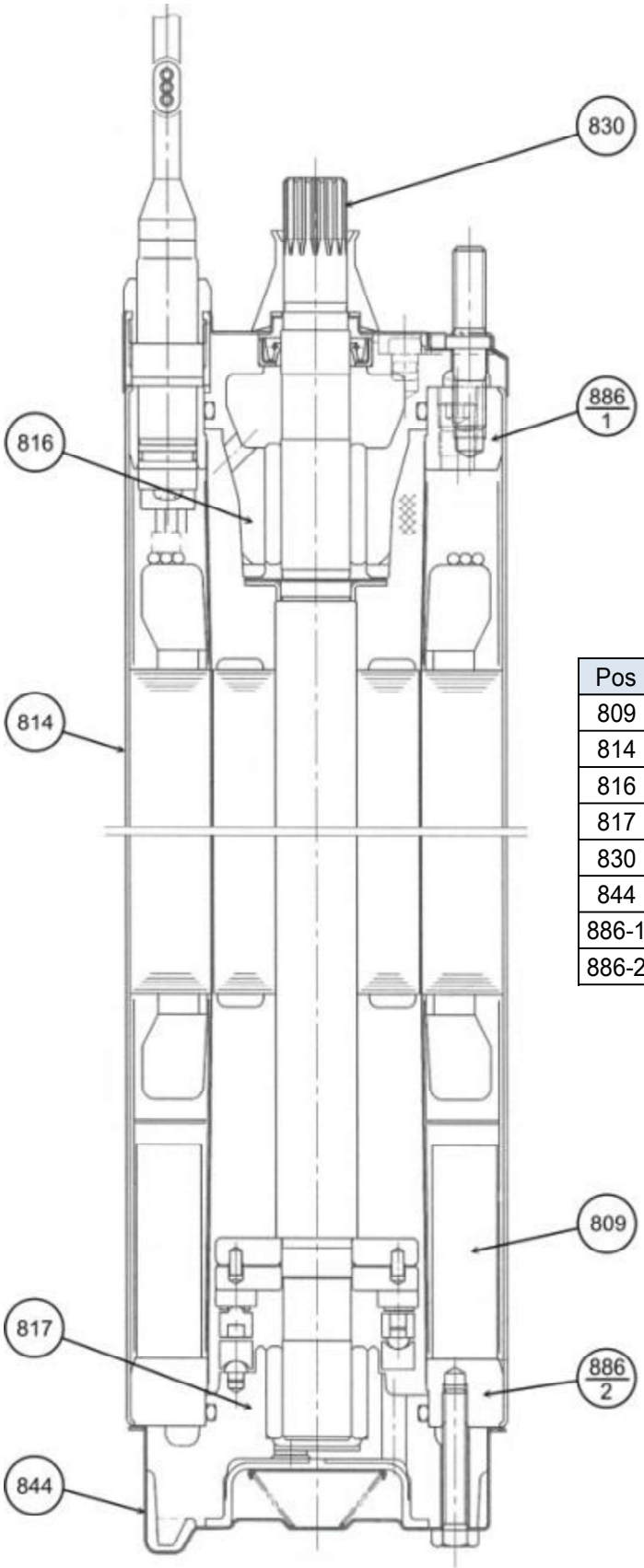
Frame Size	Phase	Power		H	Thrust	Liquid	℃	Max	Remarks
		kW	HP	(mm)	Load (N)	Type		Depth (m)	
ZBH4NH	3	1.5	2	411.5	3000	Spring Water	0~90	100	NEMA
		2.2	3	461.5	4000				
		3.7	5	563.5	6500				
		5.5	7.5	688.5					

ZBH4N 4” Sectional View

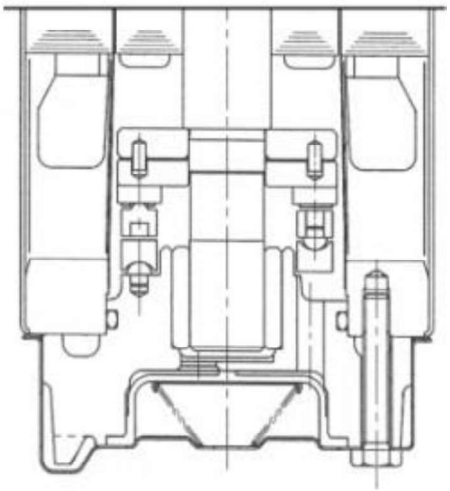


Pos	Description	Material
814	Frame	SUS304
816	Power Side Bracket	FC200
817	Opposite Side Bracket	FC200
829-1	Thrust Case	FC200
829-2	Thrust Case Cover	SUS304
830	Shaft	SUS431Q
844	End Cover	SUS304
886-1	Power Side Plate	SUS304
886-2	Opposite Side Plate	SUS304

ZBH4N PSC、PSCI 4" Sectional View



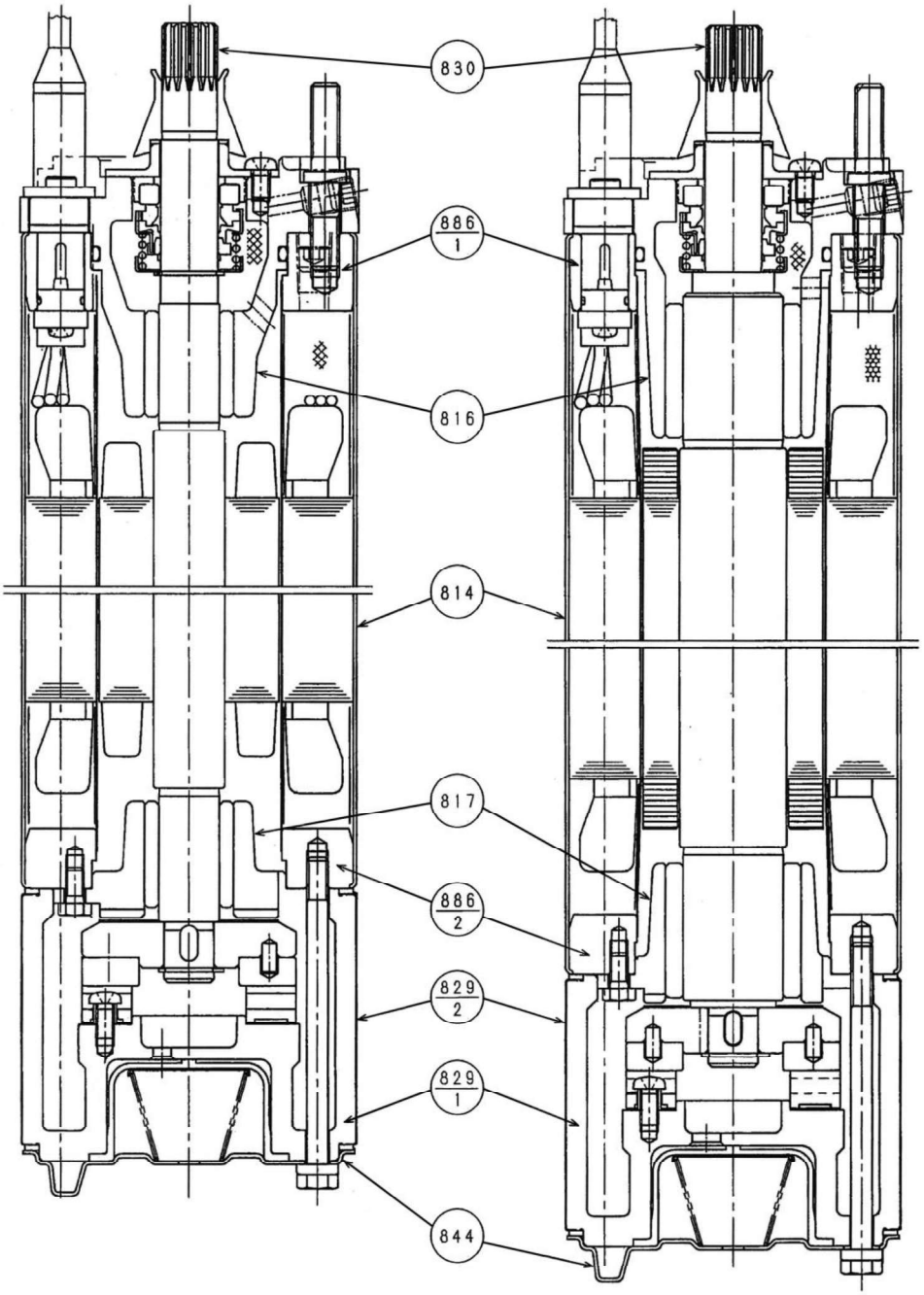
Pos	Description	Material
809	Capacitor	—
814	Frame	SUS304
816	Power Side Bracket	FC200
817	Opposite Side Bracket	FC200
830	Shaft	SUS431Q
844	End Cover	SUS304
886-1	Power Side Plate	SUS304
886-2	Opposite Side Bracket	SUS304



PSCI with capacitor

PSC w/o capacitor

ZBH4NH(Spring Water) 4” Sectional View



HIGH THRUST

Pos	Description	Material
814	Frame	SUS304
816	Power Side Bracket	FC200
817	Opposite Side Bracket	FC200
829-1	Thrust Case	FC200
829-2	Thrust Case Cover	SUS304
830	Shaft	SUS431Q
844	End Cover	SUS304
886-1	Power Side Plate	SUS304
886-2	Opposite Side Plate	SUS304

ZBH4N 4” 50Hz Technical Data

Technical Data - 4" 50Hz													
Type	Volts	Freq.	Thrust Load	Output	Output	Full Load	Locked Rotor	Efficiency	Power Factor	Speed	Run Capacitor	Start Capacitor	Starting Method
	V	HZ	N	HP	KW	Amps	Amps	%	%	min-1	μF	μF	
Three Phase 3-Lead	220	50	1500	0.5	0.37	2.3	8.5	64	73	2850	-	-	-
			1500	0.75	0.55	3.0	10.6	67	76	2850	-	-	-
			3000	1	0.75	3.8	15.2	68	80	2830	-	-	-
			3000	1.5	1.1	5.3	24.1	72	80	2820	-	-	-
			3000	2	1.5	6.8	19.1	72	82	2830	-	-	-
			4000	3	2.2	9.8	45	71	85	2780	-	-	-
			6500	3	2.2	9.8	45	71	85	2780	-	-	-
			6500	5	3.7	16.3	95.6	71	81	2820	-	-	-
			6500	7.5	5.5	24	108	77	81	2810	-	-	-
	380	50	1500	0.5	0.37	1.3	4.9	64	73	2850	-	-	-
			1500	0.75	0.55	1.8	6.1	67	76	2850	-	-	-
			3000	1	0.75	2.2	8.8	68	80	2830	-	-	-
			3000	1.5	1.1	3.1	13.9	72	80	2820	-	-	-
			3000	2	1.5	3.9	16.8	72	82	2830	-	-	-
			4000	3	2.2	5.7	26	71	85	2780	-	-	-
			6500	3	2.2	5.7	26	71	85	2780	-	-	-
			6500	5	3.7	9.4	55.2	71	81	2820	-	-	-
			6500	7.5	5.5	13.9	62.2	77	81	2810	-	-	-
	400	50	1500	0.5	0.37	1.4	5	62	69	2860	-	-	-
			1500	0.75	0.55	1.8	6.6	66	71	2860	-	-	-
			3000	1	0.75	2.2	9.1	67	74	2850	-	-	-
			3000	1.5	1.1	3.0	14.3	72	75	2840	-	-	-
			3000	2	1.5	3.9	17.1	73	79	2840	-	-	-
			4000	3	2.2	5.6	26.4	71	82	2810	-	-	-
			6500	3	2.2	5.6	26.4	71	82	2810	-	-	-
			6500	5	3.7	9.4	58.8	71	79	2840	-	-	-
			6500	7.5	5.5	13.7	63.8	76	79	2830	-	-	-
Single Phase 3-Lead	220	50	1500	0.5	0.37	4.2	16.8	56	76	2860	0	43-53	CSIR
			1500	0.75	0.55	6.4	25.3	56	77	2870	0	59-71	CSIR
			3000	1	0.75	7.8	32.5	58	77	2840	0	86-103	CSIR
			3000	1.5	1.1	9.5	39.3	65	82	2840	10	105-126	CSCR
			3000	2	1.5	12.0	52.9	65	84	2850	20	189-227	CSCR
			3000	3	2.2	16.8	67.4	68	88	2860	35	270-324	CSCR
	230	50	1500	0.5	0.37	4.2	17.8	57	72	2870	0	43-53	CSIR
			1500	0.75	0.55	6.5	26.6	57	72	2890	0	59-71	CSIR
			3000	1	0.75	7.7	34.3	59	72	2860	0	86-103	CSIR
			3000	1.5	1.1	9.3	42.7	65	79	2860	10	105-126	CSCR
			3000	2	1.5	12.0	56.5	66	78	2870	20	189-227	CSCR
			3000	3	2.2	16.8	73.2	69	83	2880	35	270-324	CSCR

ZBH4N 4” 60Hz Technical Data

Technical Data - 4" 60Hz															
Type	Volts	Freq.	Thrust Load	Output	Output	S.F.	Full Load	Locked Rotor	Maximum (S.F.Load)	Efficiency	Power Factor	Speed	Run Capacitor	Start Capacitor	Starting Method
	V	HZ	N	HP	KW	-	Amps	Amps	Amps	%	%	min-1	μF	μF	-
Three Phase 3-Wire	220	60	1500	0.5	0.37	1.6	2.9	14.6	3.4	55	68	3470	-	-	-
			1500	0.75	0.55	1.5	3.6	19.5	4.2	61	72	3470	-	-	-
			3000	1	0.75	1.4	4.2	25.5	4.9	66	78	3460	-	-	-
			3000	1.5	1.1	1.3	5.4	34.2	6.2	70	81	3440	-	-	-
			3000	2	1.5	1.25	7.2	47.8	8.1	72	81	3440	-	-	-
			4000	3	2.2	1.15	10.6	68.6	11.1	74	77	3450	-	-	-
			6500	3	2.2	1.15	10.6	68.6	11.2	74	77	3440	-	-	-
			6500	5	3.7	1.15	17	106.1	17.9	78	77	3440	-	-	-
			6500	7.5	5.5	1.15	24.9	164.5	27.7	78	77	3450	-	-	-
	380	60	1500	0.5	0.37	1.6	1.7	8.4	2	55	68	3470	-	-	-
			1500	0.75	0.55	1.5	2.1	11.3	2.5	61	72	3470	-	-	-
			3000	1	0.75	1.4	2.4	14.7	2.9	66	78	3460	-	-	-
			3000	1.5	1.1	1.3	3.1	19.7	3.6	70	81	3440	-	-	-
			3000	2	1.5	1.25	4.2	27.6	4.7	72	81	3440	-	-	-
			4000	3	2.2	1.15	6.1	39.6	6.4	74	77	3450	-	-	-
			6500	3	2.2	1.15	6.1	39.6	6.5	74	77	3440	-	-	-
			6500	5	3.7	1.15	9.8	61.3	10.4	78	77	3440	-	-	-
			6500	7.5	5.5	1.15	14.4	95	16	78	77	3450	-	-	-
Single Phase 3-Wire	220	60	1500	0.5	0.37	1.6	4.9	20.8	6.3	55	71	3470	0	59-71	CSIR
			1500	0.75	0.55	1.5	6.9	28	8.6	55	73	3480	0	86-103	CSIR
			3000	1	0.75	1.4	8.5	34	10.2	59	74	3470	0	105-126	CSIR
			3000	1.5	1.1	1.3	9.2	37.6	11.2	65	86	3460	10	105-126	CSCR
			3000	2	1.5	1.25	11.8	48	13.7	68	89	3480	20	105-126	CSCR
			3000	3	2.2	1.15	15.4	64.8	16.3	70	93	3490	35	208-250	CSCR

ZBH4N PSC 4” Technical Date

Technical Data - 4" 50Hz													
Type	Volts	Freq.	Thrust Load	Output	Output	Full Load	Locked Rotor	Efficiency	Power Factor	Speed	Run Capacitor	Start Capacitor	Starting Method
	V	HZ	N	HP	KW	Amps	Amps	%	%	min-1	μF	μF	
Single Phase 3-Lead	220	50	1500	0.5	0.37	3.1	9.3	58.3	80	2870	20	-	PSC
			1500	0.75	0.55	4.3	13.9	63	66	2860	25	-	PSC
			3000	1	0.75	5.5	17.1	66.5	56	2860	30	-	PSC
			3000	1.5	1.1	7.6	21.5	70.4	46	2860	40	-	PSC
			3000	2	1.5	10.3	32.8	71.1	41	2850	50	-	PSC
			4000	3	2.2	14.9	48.3	72.3	41	2855	70	-	PSC

Technical Data - 4" 60Hz														
Type	Volts	Freq.	Thrust Load	Output	Output	S.F.	Full Load	Locked Rotor	Maximum (S.F.Load)	Efficiency	Power Factor	Speed	Run Capacitor	Start Capacitor	Starting Method
	V	HZ	N	HP	KW	-	Amps	Amps	Amps	%	%	min-1	μF	μF	-
Single Phase 3-Lead	110	60	1500	0.5	0.37	1.6	6.5	24.3	8.5	58.5	71	3465	60	-	PSC
	220		1500	0.5	0.37	1.6	3.4	12.3	4.2	53.7	84	3485	20		PSC
			1500	0.75	0.55	1.5	4.5	18	5.6	60	72	3490	25	-	PSC
			3000	1	0.75	1.4	6	23.2	7.4	61.7	66	3480	30	-	PSC
			3000	1.5	1.1	1.3	8.3	35.1	9.6	67	57	3500	40	-	PSC
			3000	2	1.5	1.25	10.5	39.9	12	69.6	60	3465	50	-	PSC
			4000	3	2.2	1.15	15.1	53	16.3	70.4	47	3470	70	-	PSC

Remarks：

PSC＆PSCI models can be easily started under a low voltage environment (50% from rated voltage)

ZBH4N PSCI 4" Technical Date

Technical Data - 4" 50Hz													
Type	Volts	Freq.	Thrust Load	Output	Output	Full Load	Locked Rotor	Efficiency	Power Factor	Speed	Run Capacitor	Start Capacitor	Starting Method
	V	HZ	N	HP	KW	Amps	Amps	%	%	min-1	μF	μF	
Single Phase 3-Lead *(Ground wire included)	220	50	1500	0.5	0.37	3.1	9.3	58.3	80	2870	20	-	PSCI
			1500	0.75	0.55	4.3	13.9	63	66	2860	25	-	PSCI
			3000	1	0.75	5.5	17.1	66.5	56	2860	30	-	PSCI
			3000	1.5	1.1	7.6	21.5	70.4	46	2860	40	-	PSCI
			3000	2	1.5	10.3	32.8	71.1	41	2850	50	-	PSCI

Technical Data - 4" 60Hz														
Type	Volts	Freq.	Thrust Load	Output	Output	S.F.	Full Load	Locked Rotor	Maximum (S.F.Load)	Efficiency	Power Factor	Speed	Run Capacitor	Start Capacitor	Starting Method
	V	HZ	N	HP	KW	-	Amps	Amps	Amps	%	%	min-1	μF	μF	-
Single Phase 3-Lead *(Ground wire included)	110	60	1500	0.5	0.37	1.6	6.5	24.3	8.5	58.5	71	3465	60	-	PSCI
	220		1500	0.5	0.37	1.6	3.4	12.3	4.2	53.7	84	3485	20		PSCI
			1500	0.75	0.55	1.5	4.5	18	5.6	60	72	3490	25	-	PSCI
			3000	1	0.75	1.4	6	23.2	7.4	61.7	66	3480	30	-	PSCI
			3000	1.5	1.1	1.3	8.3	35.1	9.6	67	57	3500	40	-	PSCI
			3000	2	1.5	1.25	10.5	39.9	12	69.6	60	3465	50	-	PSCI

Remarks：

PSC＆PSCI models can be easily started under a low voltage environment (50% from rated voltage)

ZBH4NH(Spring Water) 4” Technical Date

Technical Data - 4" 50Hz										
Type	Volts	Freq.	Thrust Load	Output	Output	Full Load	Efficiency	Power Factor	Speed	Starting Method
	V	HZ	N	HP	KW	Amps	%	%	min-1	-
Three Phase 3-Lead	380	50	3000	2	1.5	4.1	65.66	84.27	2794	-
			4000	3	2.2	5.9	66.39	85.49	2784	-
			6500	5	3.7	9.9	68.21	82.94	2800	-
			6500	7.5	5.5	14.1	70.85	83.65	2794	-
	400		3000	2	1.5	4.0	65.37	81.88	2818	-
			4000	3	2.2	5.7	66.85	82.84	2806	-
			6500	5	3.7	9.6	70.13	79.62	2832	-
			6500	7.5	5.5	13.7	71.56	80.79	2822	-

Technical Data - 4" 60Hz										
Type	Volts	Freq.	Thrust Load	Output	Output	Full Load	Efficiency	Power Factor	Speed	Starting Method
	V	HZ	N	HP	KW	Amps	%	%	min-1	-
Three Phase 3-Lead	380	60	3000	2	1.5	4.3	64.77	82.57	3420	-
			4000	3	2.2	6.0	66.75	83.90	3401	-
			6500	5	3.7	10.0	69.85	80.21	3432	-
			6500	7.5	5.5	14.3	72.31	81.03	3421	-
	400		3000	2	1.5	4.0	63.67	86.19	3369	-
			4000	3	2.2	5.6	64.88	87.01	3340	-
			6500	5	3.7	9.2	69.11	83.81	3387	-
			6500	7.5	5.5	13.1	71.94	84.50	3376	-

ZBH6U／UH(Spring Water)　6”　Motors

●ZBH6U Submersible Canned Motor for Deep Well

Water cooled motors with encapsulated resin filled stator.
Coupling dimensions and flange according to NEMA standard.

●ZBH6U MOTOR TECHNICAL FEATURES

Motor casing and shaft made of stainless steel
High resistance coated cast iron upper and lower bracket.
Water lubricated Kingsbury type thrust bearings
Standard mechanical seal SiC-SiC type
Sand slinger protection
Pressure equalizing diaphragm
Insulation class F; Protection Class IP68
Removable cable connector 4M long
Starting methods for motors are available in D.O.L. and star-delta.

●OPERATING LIMITS

Maximum voltage fluctuation admissible vs Normal rated voltage : +10%／-10%
Maximum water temperature：
ZBH6U (For Clean Water)： Lower than 35°C
ZBH6UH(For Spring Water)： Lower than 90°C
0.15m/s of water flow speed
Maximum motor starting per hour：
20 times for D.O.L. type.
Maximum immersion depth：300m
Standard mounting position：Vertical

●VERSIONS

Power range from 3.7 kW to 45 kW
Nominal voltage：380~415V @50 Hz, 220／460V @60 Hz
Maximum axial thrust：
7,840 N (3.7 kW to 11 kW),
15,550 N (3.7 kW to 22 kW)
22,250 N (30 kW to 45 kW)

ZBH6U 6” 50Hz (Three Phase)

kW	HP	Volts	Wire	Poles	A	RPM (r/min)	H (mm)	Kg	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
3.7	5	380	4	2	9.1	2800	462	32.5	7840 (S Type)	Clean Water	0~35	300	NEMA
		400	4	2	9	2820	462	32.5					
		415	4	2	9	2840	462	32.5					
5.5	7.5	380	4	2	12.8	2810	504	36.5					
		400	4	2	12.6	2820	504	36.5					
		415	4	2	12.6	2840	504	36.5					
7.5	10	380	4	2	17.8	2800	559	42					
		400	4	2	17.6	2820	559	42					
		415	4	2	17.4	2840	559	42					
11	15	380	4	2	25.6	2810	625	48.5					
		400	4	2	24.6	2830	625	48.5					
		415	4	2	24.2	2850	625	48.5					
3.7	5	380	4	2	9.1	2800	571.5	44.5	15550 (M Type)				
		400	4	2	9	2820	571.5	44.5					
		415	4	2	9	2840	571.5	44.5					
5.5	7.5	380	4	2	12.8	2810	613.5	47.5					
		400	4	2	12.6	2820	613.5	47.5					
		415	4	2	12.6	2840	613.5	47.5					
7.5	10	380	4	2	17.8	2800	668.5	51					
		400	4	2	17.6	2820	668.5	51					
		415	4	2	17.4	2840	668.5	51					
11	15	380	4	2	25.6	2810	734.5	56					
		400	4	2	24.6	2830	734.5	56					
		415	4	2	24.2	2850	734.5	56					
15	20	380	4	2	34	2810	819.5	64.5					
		400	4	2	32.8	2830	819.5	64.5					
		415	4	2	32.3	2850	819.5	64.5					
18.5	25	380	4	2	41	2820	891.5	71					
		400	4	2	39.5	2830	891.5	71					
		415	4	2	39	2840	891.5	71					
22	30	380	4	2	46	2880	971.5	83.5					
		400	4	2	44	2890	971.5	83.5					
		415	4	2	43	2900	971.5	83.5					
30	40	380	4	2	62.5	2860	1061.5	91.5	22250 (L Type)				
		400	4	2	60.4	2880	1061.5	91.5					
		415	4	2	59.2	2900	1061.5	91.5					
37	50	380	4	2	77.6	2840	1131.5	99.5					
		400	4	2	74.8	2860	1131.5	99.5					
		415	4	2	73	2870	1131.5	99.5					

ZBH6U 6” 60Hz (Three Phase)

kW	HP	Volts	Wire	Poles	A	RPM (r/min)	S.F.	S.F.(A)	H (mm)	Kg	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
3.7	5	200	4	2	16.8	3390	1.15	19.0	462	32.5	7840 (S Type)	Clean Water	0~35	300	NEMA
		230	4	2	15.8	3445		17.4	462	32.5					
		460	4	2	7.9	3445		8.7	462	32.5					
5.5	7.5	200	4	2	23.8	3390		27.0	504	36.5					
		230	4	2	22.0	3450		24.4	504	36.5					
		460	4	2	11.0	3450		14.2	504	36.5					
7.5	10	200	4	2	33.0	3390		37.0	559	42					
		230	4	2	30.8	3440		33.0	559	42					
		460	4	2	15.4	3440		16.5	559	42					
11	15	200	4	2	47.0	3405		52.0	625	48.5					
		230	4	2	43.2	3450		47.0	625	48.5					
		460	4	2	21.6	3450		23.5	625	48.5					
3.7	5	200	4	2	16.8	3390		19.0	571.5	44.5	15550 (M Type)				
		230	4	2	15.8	3445		17.4	571.5	44.5					
		460	4	2	7.9	3445		8.7	571.5	44.5					
5.5	7.5	200	4	2	23.8	3390		27.0	613.5	47.5					
		230	4	2	22.0	3450		24.4	613.5	47.5					
		460	4	2	11.0	3450		14.2	613.5	47.5					
7.5	10	200	4	2	33.0	3390		37.0	668.5	51					
		230	4	2	30.8	3440		33.0	668.5	51					
		460	4	2	15.4	3440		16.5	668.5	51					
11	15	200	4	2	47.0	3405		52.0	734.5	56					
		230	4	2	43.2	3450		47.0	734.5	56					
		460	4	2	21.6	3450		23.5	734.5	56					
15	20	200	4	2	63.0	3395		70.0	819.5	64.5					
		230	4	2	57.4	3450		63.0	819.5	64.5					
		460	4	2	28.7	3450		31.5	819.5	64.5					
18.5	25	200	4	2	75.5	3405		84.0	891.5	71					
		230	4	2	69.0	3450		76.0	891.5	71					
		460	4	2	34.5	3450		38.0	891.5	71					
22	30	200	4	2	87.0	3450		96.0	971.5	83.5					
		230	4	2	76.6	3500		85.0	971.5	83.5					
		460	4	2	38.0	3500		42.5	971.5	83.5					
30	40	460	4	2	52.7	3490		58.0	1061.5	91.5	22250 (L Type)				
37	50	460	4	2	64.3	3480		70.8	1131.5	99.5					
45	60	460	4	2	83.6	3480		93.0	1131.5	99.5					

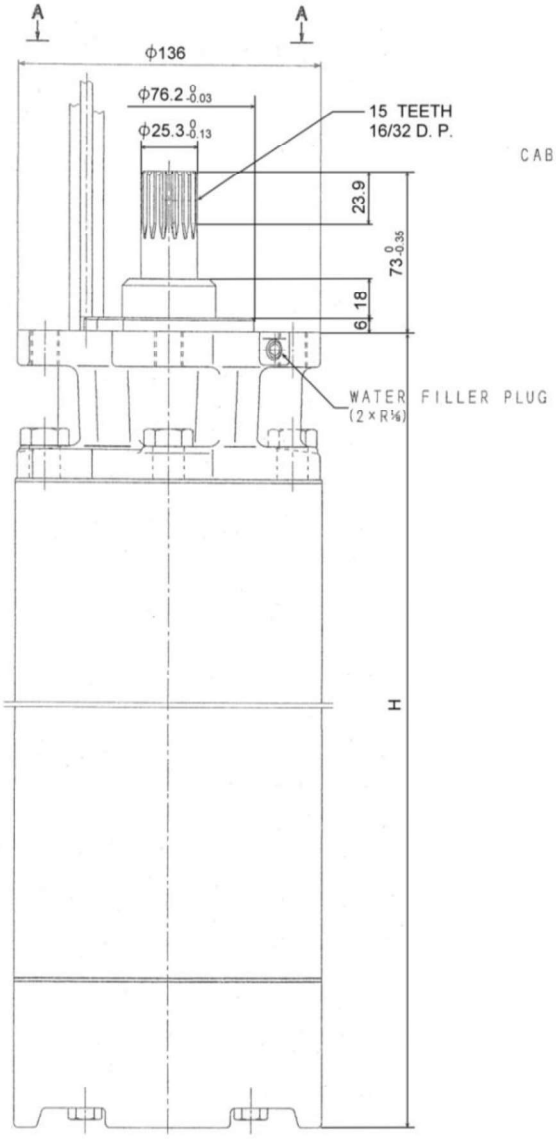
ZBH6U 6” 60Hz (Single phase)

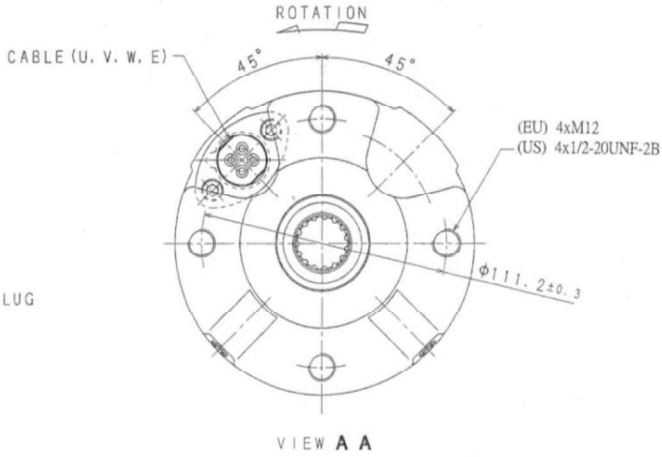
kW	HP	Volts	Wire	Poles	A	RPM (r/min)	S.F.	S.F.(A)	H (mm)	Kg	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
3.7	5	230	4	2	24.4	3480	1.15	27.7	559	42	7840 (S Type)	Clean Water	0~35	300	NEMA
5.5	7.5	230	4	2	35.9	3480		41	625	48					
7.5	10	230	4	2	47.9	3485		55	710	56					
11	15	230	4	2	66.3	3520		76	862	75					
3.7	5	230	4	2	24.4	3480		27.7	668.5	50	15550 (M Type)	Clean Water	0~35	300	NEMA
5.5	7.5	230	4	2	35.9	3480		41	734.5	61					
7.5	10	230	4	2	47.9	3485		55	819.5	67.5					
11	15	230	4	2	66.3	3520		76	971.5	79					

ZBH6UH(Spring Water) 6” 50／60Hz (Three Phase)

kW	HP	Volts	Freq. (Hz)	Wire	Poles	A	RPM (r/min)	H (mm)	Kg	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
7.5	10	380	50	4	2	17.5	2813	668.5	51	15550 (M Type)	Spring Water	0~90	300	NEMA
		400	50	4	2	17.2	2829	668.5	51					
		380	60	4	2	17.7	3432	668.5	51					
		400	60	4	2	16.5	3392	668.5	51					
11	15	380	50	4	2	25.0	2804	734.5	56					
		400	50	4	2	24.4	2836	734.5	56					
		380	60	4	2	25.0	3437	734.5	56					
		400	60	4	2	23.3	3381	734.5	56					
15	5	380	50	4	2	33.2	2807	819.5	64.5					
		400	50	4	2	32.3	2838	819.5	64.5					
		380	60	4	2	33.3	3459	819.5	64.5					
		400	60	4	2	31.1	3393	819.5	64.5					
18.5	7.5	380	50	4	2	40.1	2751	891.5	71					
		400	50	4	2	39.1	2771	891.5	71					
		380	60	4	2	39.9	3398	891.5	71					
		400	60	4	2	37.5	3315	891.5	71					
22	10	380	50	4	2	46.0	2829	971.5	83.5					
		400	50	4	2	44.1	2847	971.5	83.5					
		380	60	4	2	45.8	3449	971.5	83.5					
		400	60	4	2	43.6	3411	971.5	83.5					

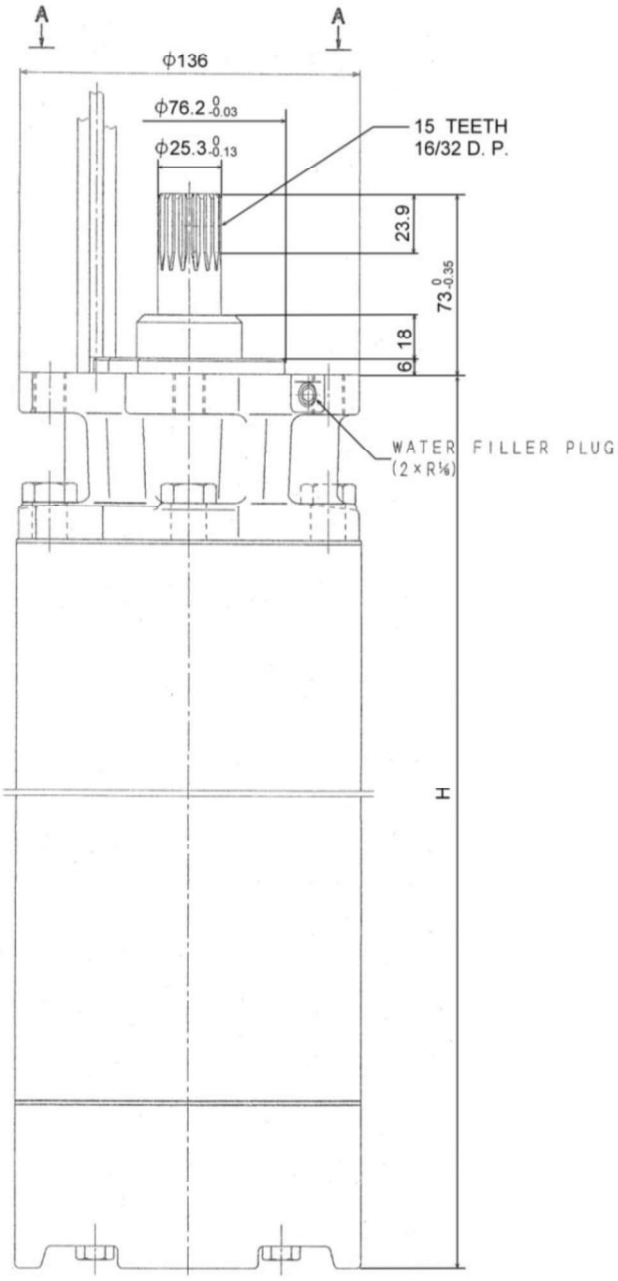
ZBH6U 6” Dimensions

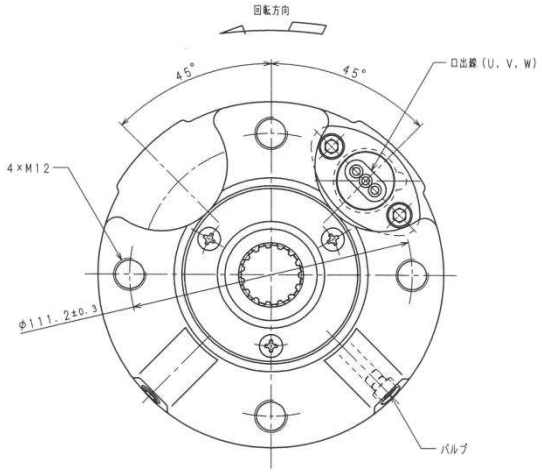




Frame Size	Phase	Power		H (mm)	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Remarks
		kW	HP						
ZBH6U	1	3.7	5	559	7840 (S-Type)	Clean Water	0~35	300	NEMA
		5.5	7.5	625					
		7.5	10	710					
		11	15	862					
		3.7	5	668.5	15550 (M-Type)				
		5.5	7.5	734.5					
		7.5	10	819.5					
		11	15	971.5					
	3	3.7	5	462	7840 (S-Type)				
		5.5	7.5	504					
		7.5	10	559					
		11	15	625					
		3.7	5	571.5	15550 (M-Type)				
		5.5	7.5	613.5					
		7.5	10	668.5					
		11	15	734.5					
		15	20	819.5					
		18.5	25	891.5					
		22	30	971.5					
		30	40	1061.5	22250 (L-Type)				
		37	50	1131.5					
		45	60	1131.5					

ZBH6UH(Spring Water) 6” Dimensions





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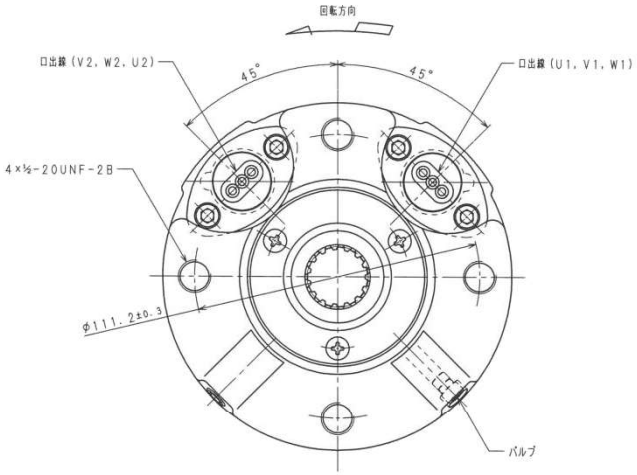

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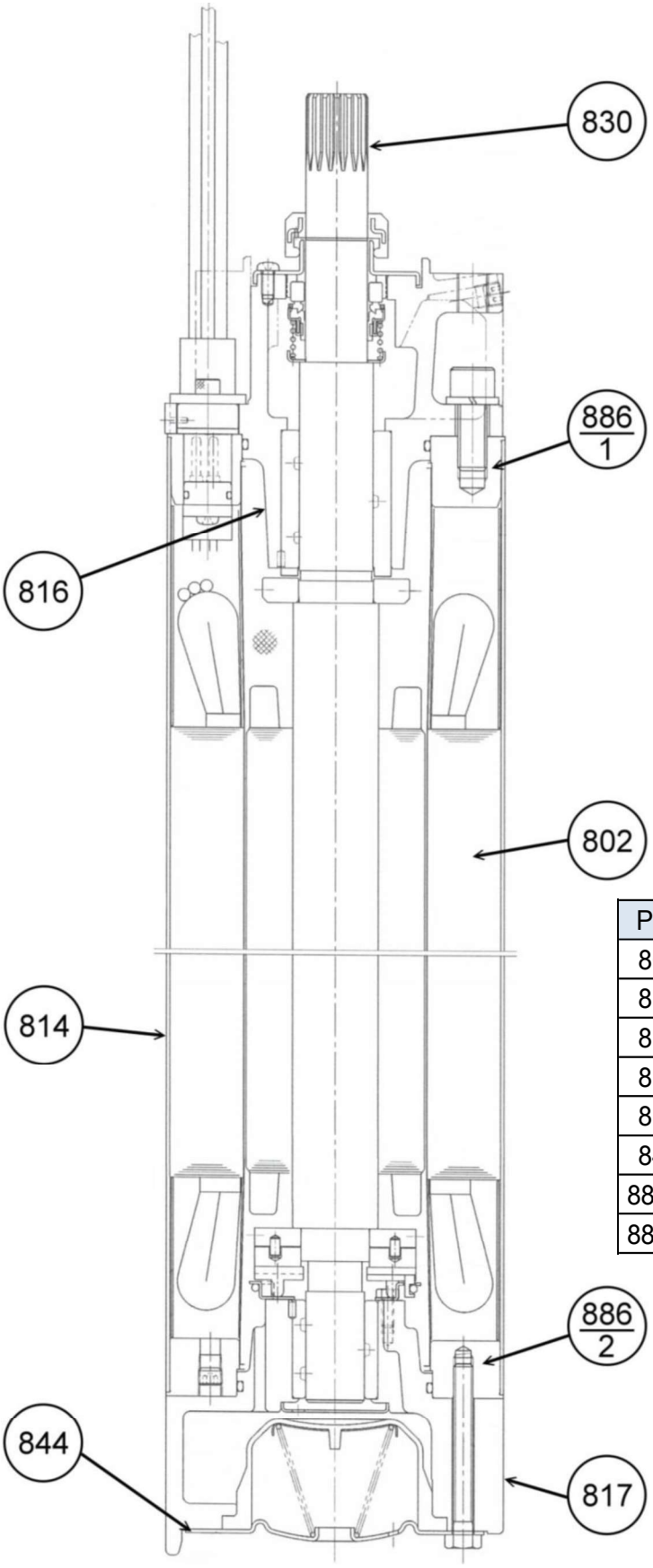
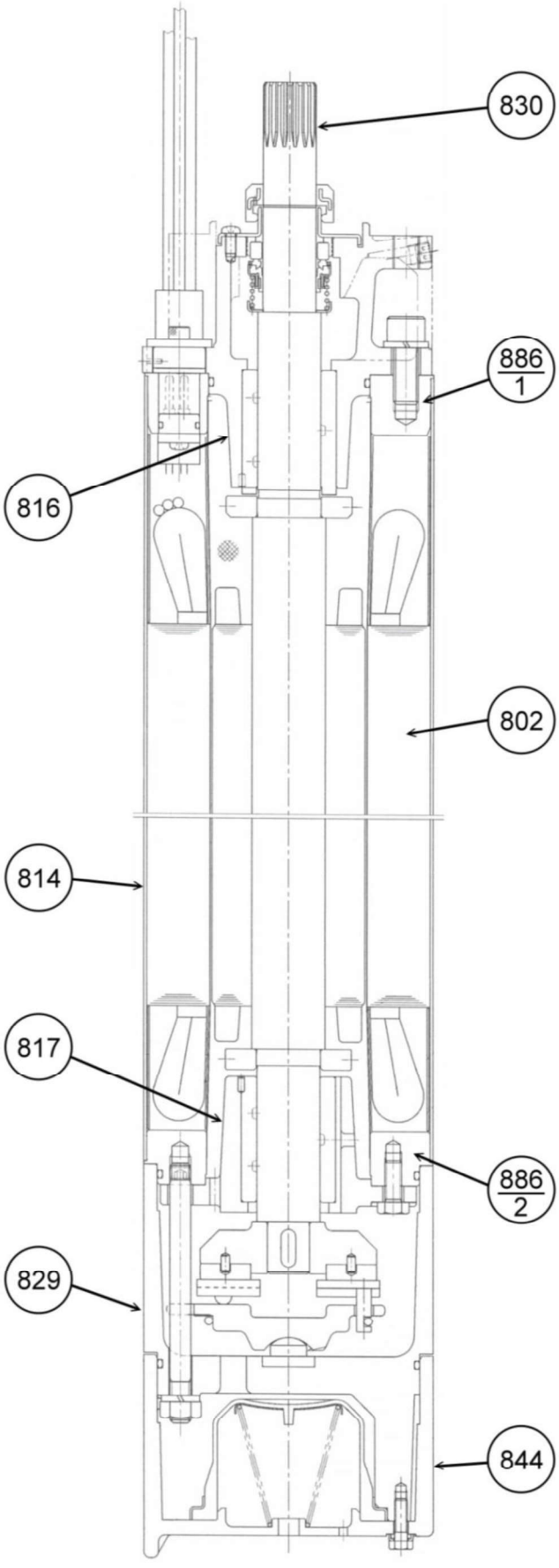
Frame Size	Phase	Power		H (mm)	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Remarks
		kW	HP						
ZBH6UH	3	7.5	10	668.5	15550 (M Type)	Spring Water	0~90	300	NEMA
		11	15	734.5					
		15	20	819.5					
		18.5	25	891.5					
		22	30	971.5					

ZBH6U－S 6” Sectional View



Pos	Description	Material
802	Stator	50A1300
814	Frame	SUS304
816	Power Side Bracket	FC200
817	Opposite Side Bracket	FC200
830	Shaft	SUS431
844	End COVER	SUS304
886-1	Power Side Plate	SS400
886-2	Opposite Side Plate	SS400

ZBH6U／UH(Spring Water)－M／L 6” Sectional View



Pos	Description	Material
802	Stator	50A1300
814	Frame	SUS304
816	Power Side Bracket	FC200
817	Opposite Side Bracket	FC200
829	Thrust Case	FC200
830	Shaft	SUS431
844	End COVER	FC200
886-1	Power Side Plate	SS400
886-2	Opposite Side Plate	SS400

ZBH8N 8”

●ZBH8N Submersible Motors Series

Water cooled motors with encapsulated resin filled stator.
Coupling dimensions and flange according to NEMA standard.

●ZBH8N MOTORS TECHNICAL FEATURES

Motors stainless type
Water lubricated Kingsbury type thrust bearings
Standard oil seal type
Sand slinger protection
Pressure equalizing diaphragm
Insulation class F; Protection class IP68
Removable cable connector 5M long
Starting method for motors：D.O.L.

●OPERATION LIMITS

Maximum voltage fluctuation admissible vs. nominal rated voltage：+10%／-10%
Maximum water temperature：30℃
With at least 0.15m/s of water flow speed
Maximum motor starting per hour：20 times for D.O.L. type.
Maximum immersion depth：300m
Standard mounting position：Vertical

●VERSIONS

Power range from 30 kW to 55 kW
Nominal voltage：380~415V @50 Hz, 380~460V @60 Hz
Maximum axial thrust：45,000 N (from 30 kW to 55 kW)

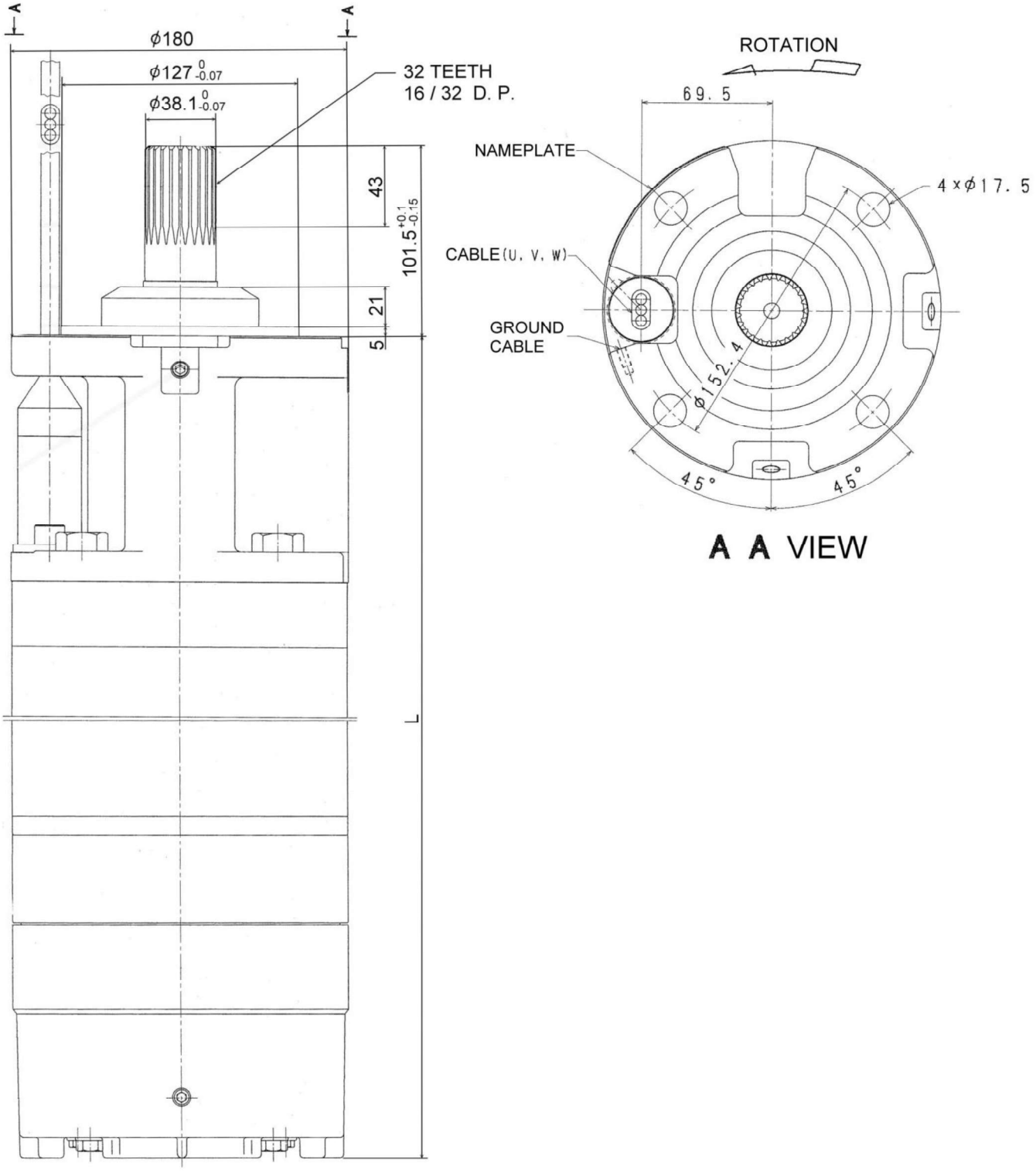
ZBH8N 8” 50Hz

kW	HP	Volts	Wire	Poles	A	RPM (r/min)	H (mm)	Kg	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
30	40	380	3	2	63	2890	1050	155	45000	Clean Water	0~30	300	NEMA
		400	3	2	62	2900	1050	155					
		415	3	2	62	2905	1050	155					
37	50	380	3	2	78	2895	1115	173					
		400	3	2	77	2900	1115	173					
		415	3	2	77	2905	1115	173					
45	60	380	3	2	88	2915	1180	183					
		400	3	2	84	2925	1180	183					
		415	3	2	82	2930	1180	183					
55	75	380	3	2	108	2920	1270	195					
		400	3	2	104	2925	1270	195					
		415	3	2	102	2930	1270	195					

ZBH8N 8” 60Hz

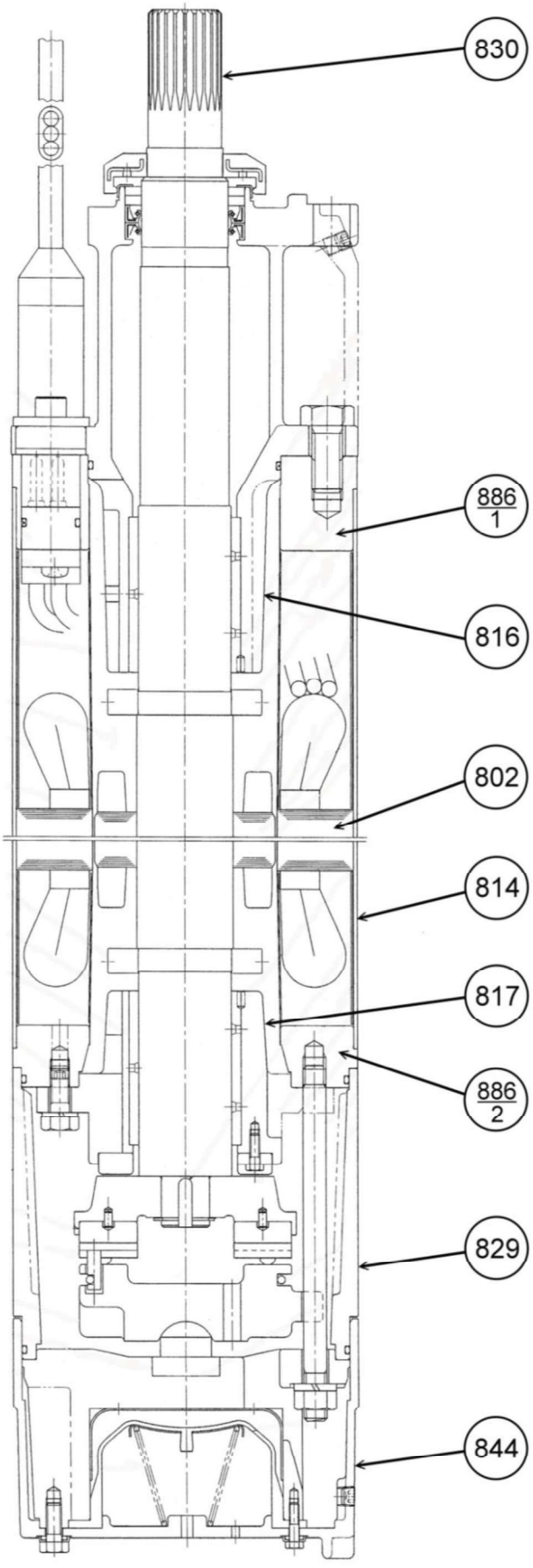
kW	HP	Volts	Wire	Poles	A	RPM (r/min)	S.F.	S.F MAX	H (mm)	Kg	Thrust Load (N)	Liquid Type	℃	Max Depth (m)	Key Shaft Spline Shaft
30	40	380	3	2	62	3470	1.15	70	1050	155	45000	Clean Water	0~30	300	NEMA
		400	3	2	59	3480		67	1050	155					
		460	3	2	55	3505		61	1050	155					
37	50	380	3	2	76	3470		86	1115	173					
		400	3	2	73	3480		82	1115	173					
		460	3	2	68	3495		75	1115	173					
45	60	380	3	2	89	3500		101	1180	183					
		400	3	2	84	3505		95	1180	183					
		460	3	2	74	3530		83	1180	183					
55	75	380	3	2	108	3500		122	1270	195					
		400	3	2	103	3510		115	1270	195					
		460	3	2	92	3525		102	1270	195					

ZBH8N 8” Dimensions



Frame Size	Phase	Power		H (mm)	Thrust Load(N)	Liquid Type	℃	Max Depth (m)	Remarks
		kW	HP						
M8	3	30	40	1050	45000	Clean Water	0~30	300	NEMA
		37	50	1115					
		45	60	1180					
		55	75	1270					

ZBH8N 8” Sectional View



Pos	Description	Material
802	Stator	Silicon steel
814	Frame	SUS304
816	Power Side Bracket	SCS13
817	Opposite Side Bracket	FC200
829	Thrust Case	SCS13
830	Shaft	SUS431
844	End COVER	SCS13
886-1	Power Side Plate	SUS304
886-2	Opposite Side Plate	SUS304

BIT-25 Inverter constant pressure water supply—Single Type

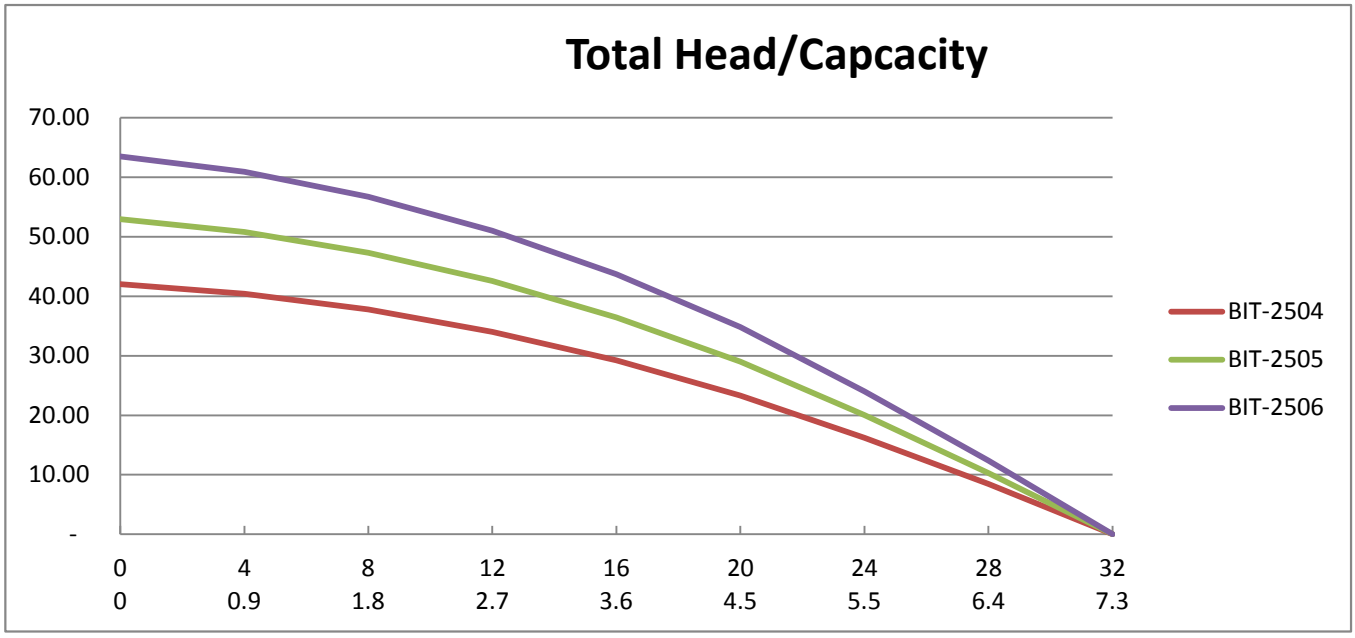
	mm
H	1000
L	450
W	300

Pos	Description	Material
1	Base	SS400
2	Control Box	SS400
3	Motor	SUS304
4	Pressure tank	SUS304

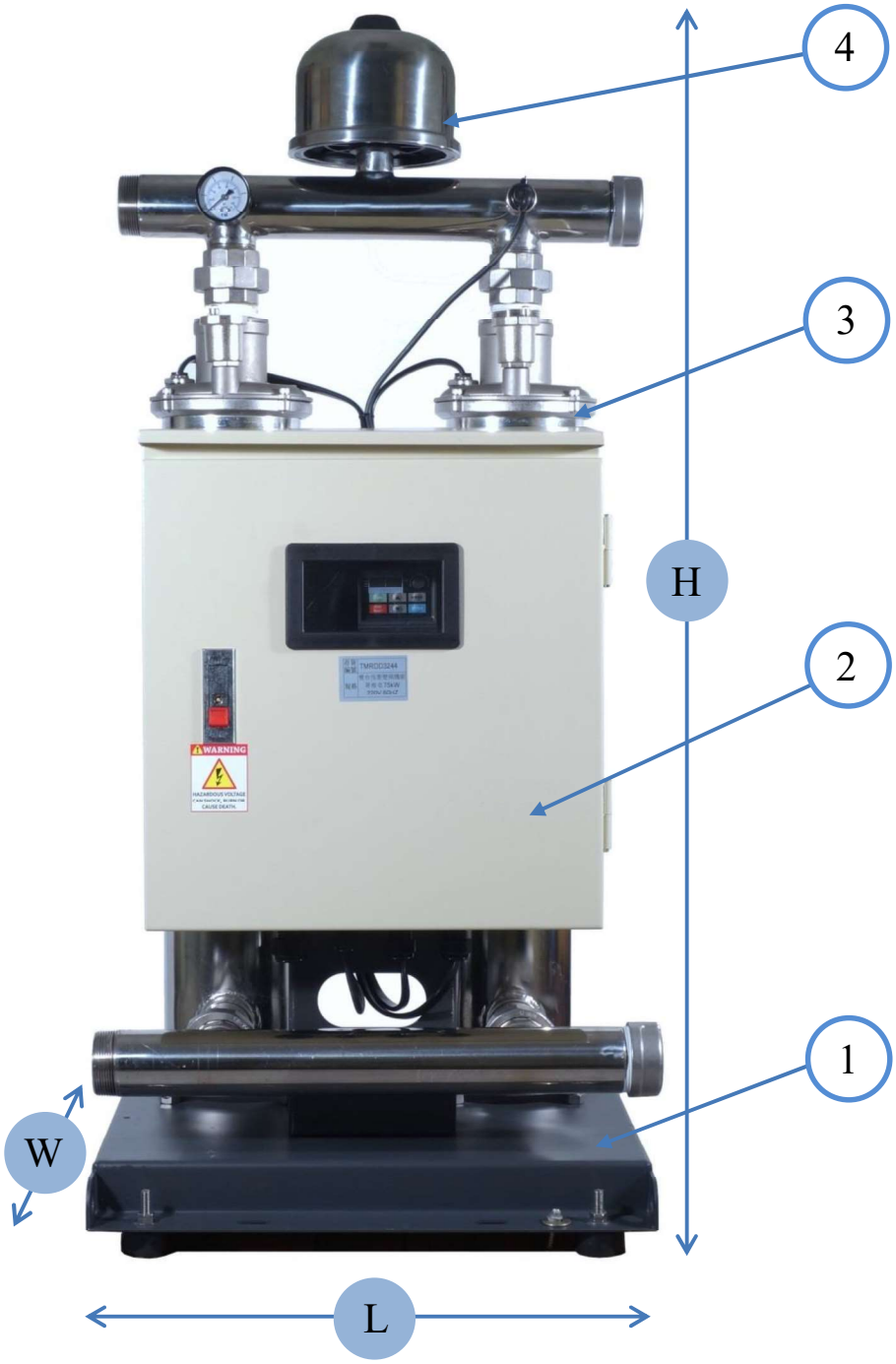
BIT-25 Inverter constant pressure water supply—Single Type

Single Type

Type	Motor		Q=DELIVERY								
			m^3/h	0	0.9	1.8	2.7	3.6	4.5	5.5	6.4	7.3
	kW	HP	GPM	0	4	8	12	16	20	24	28	32
			V	H=TOTAL IN METERS								
BIT-2504	0.37	1/2	220/380	42	40	38	34	29	23	16	8	0
BIT-2505	0.55	3/4		53	51	47	43	36	29	20	10	0
BIT-2506	0.75	1		64	61	57	51	44	35	24	12	0



BIT-25 Inverter constant pressure water supply—Duplex Type



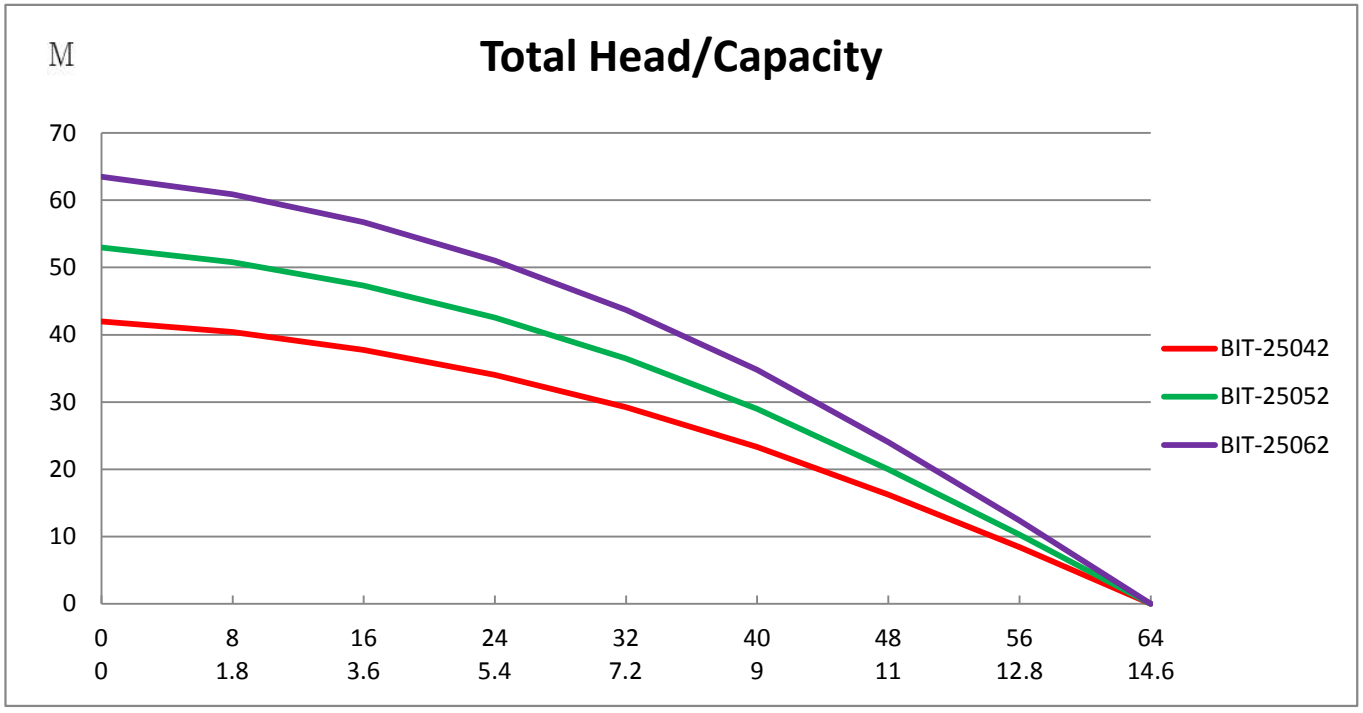
	mm
H	1150
L	500
W	480

Pos	Description	Material
1	Base	SS400
2	Control Box	SS400
3	Motor	SUS304
4	Pressure tank	SUS304

BIT-25 Inverter constant pressure water supply—Duplex Type

Duplex Alternation Parallel Type

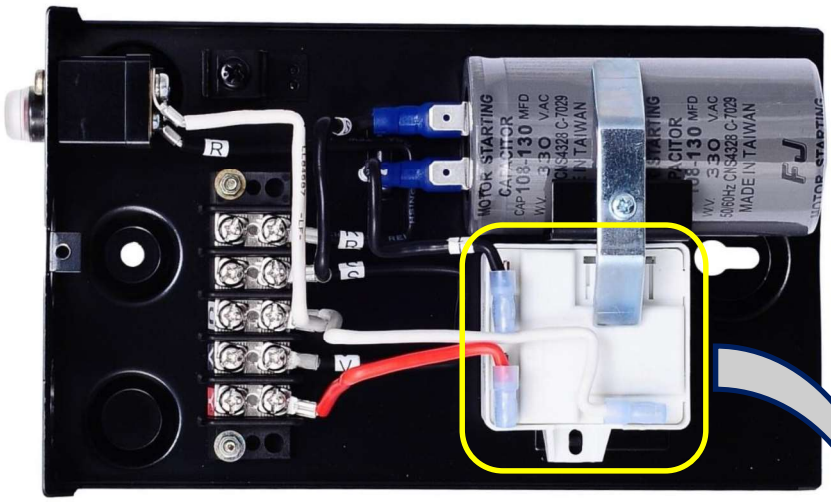
Type	Motor		Q=DELIVERY								
			m^3/h	0	1.8	3.6	5.4	7.2	9	11	12.8	15
	kW	HP	GPM	0	8	16	24	32	40	48	56	64
			V	H=TOTAL IN METERS								
BIT-25042	0.37	1/2	220/380	42	40	38	34	29	23	16	8	0
BIT-25052	0.55	3/4		53	51	47	43	36	29	20	10	0
BIT-25062	0.75	1		64	61	57	51	44	35	24	12	0

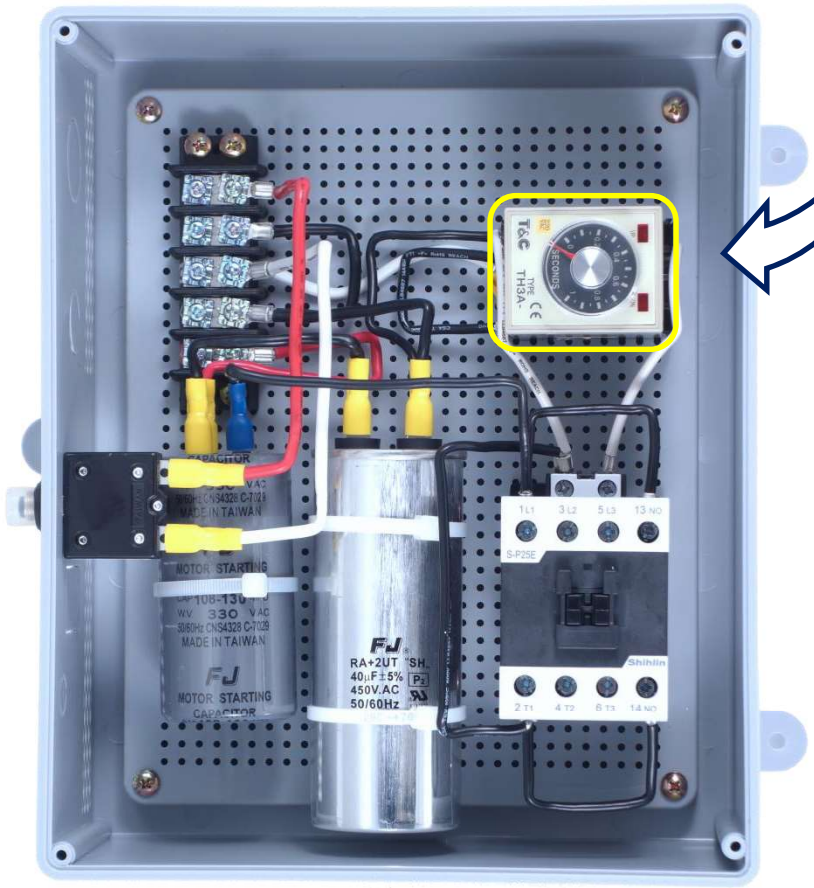


Solar panel actuator

Type	ADSP3201	ADSP3202	ADSP3323	ADSP3305
(kW)/(HP)	0.75kW/1HP	1.5kW/2HP	2.2kW/3HP	3.7kW/5HP
Phase(P)	3P	3P	3P	3P
Voltage(V)	220/380V	220/380V	220/380V	220/380V
Frequency(Hz)	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Speed Governing Function	YES	YES	YES	YES
Numbers of Solar Module	260W*10pcs	260W*10pcs	260W*12pcs	260W*18pcs
Required Installation Area (㎡)	5*3.5㎡	5*3.5㎡	6*3.5㎡	9*3.5㎡
Switch Box	Optional installation			

Control Box 4” 1100W ↑ Using





In order to operate normally under low voltage conditions, we changed the relay to a timer.

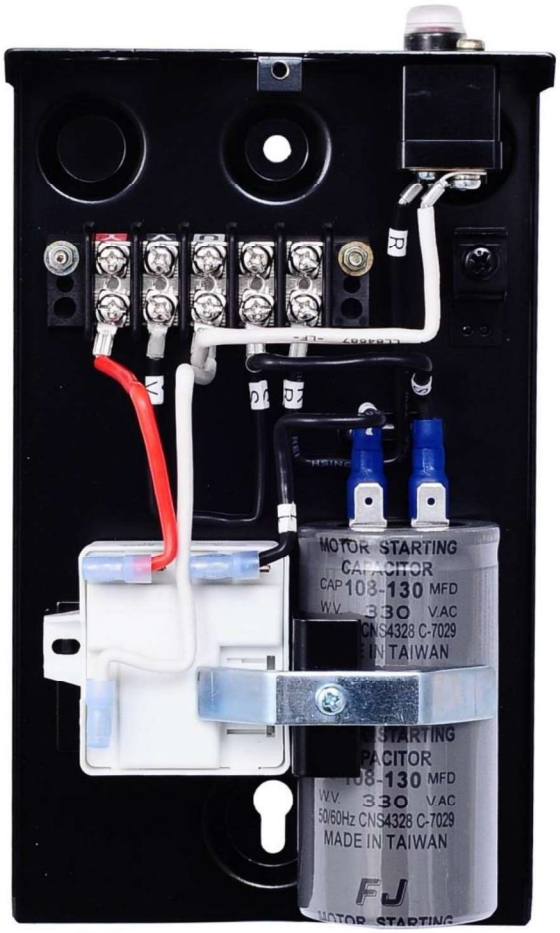
●Control Box 1100W~3700W, Using timer.

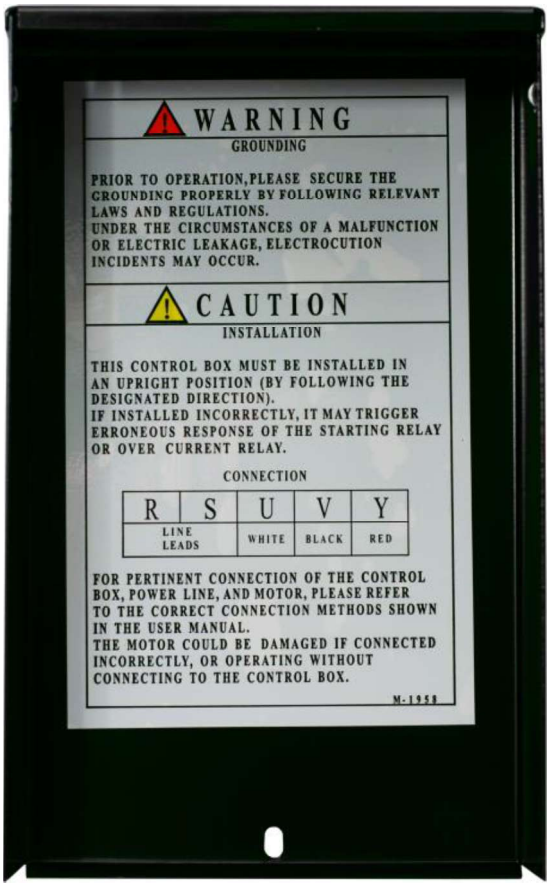
If we use a relay, there will be an abnormal phenomenon when the voltage is lower than 170V, which will cause the motor starting coil to burn out.
If we use a timer, it will run properly lower than 150V.

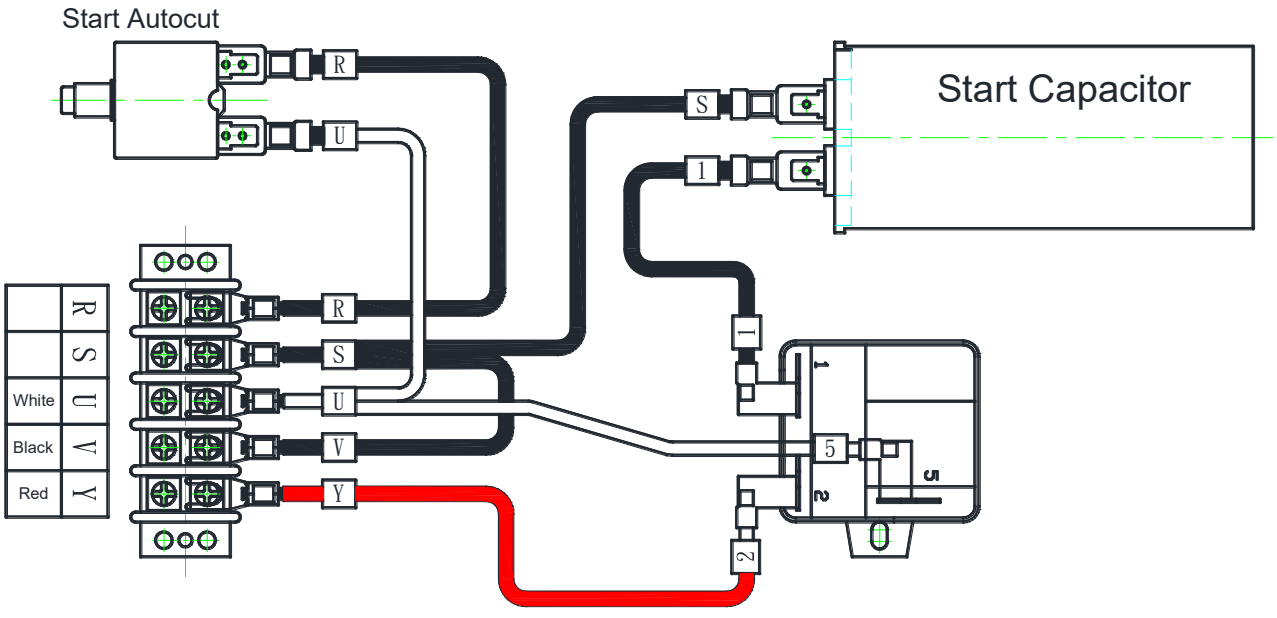
Control Box for 4” Motor

Hertz [Hz]	Voltage [V]	Output [W]	Current [A]	Starting Method
50	220	370	4.2	CSIR
		550	6.3	CSIR
		750	8.1	CSIR
60	220	370	4.9/6.3	CSIR
		550	7.0/8.6	CSIR
		750	8.5/10.5	CSIR
60	230	370	4.9/6.2	CSIR
		550	7.0/8.4	CSIR
		750	8.7/10.2	CSIR
50	220/230	370	3.1	PSC
		550	4.3	PSC
		750	5.5	PSC
60	110	370	6.5/8.5	PSC
60	220/230	370	3.4/4.2	PSC
		550	4.5/5.6	PSC
		750	6.0/7.5	PSC

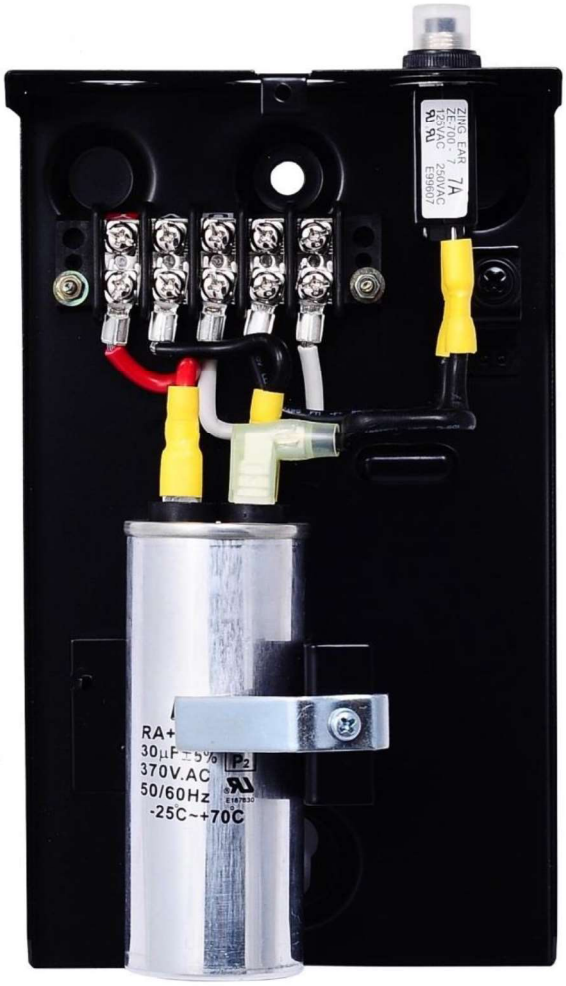
Control Box for 4” Motor

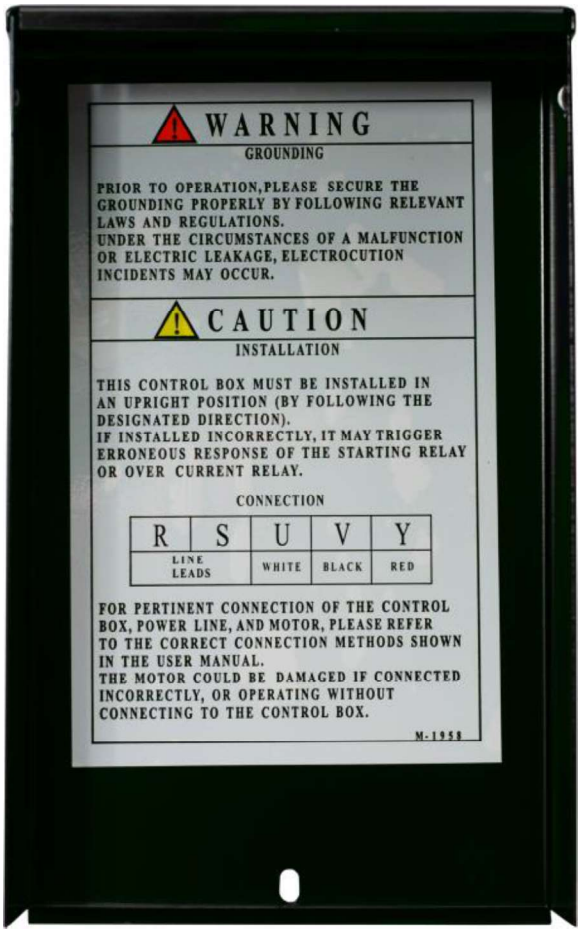


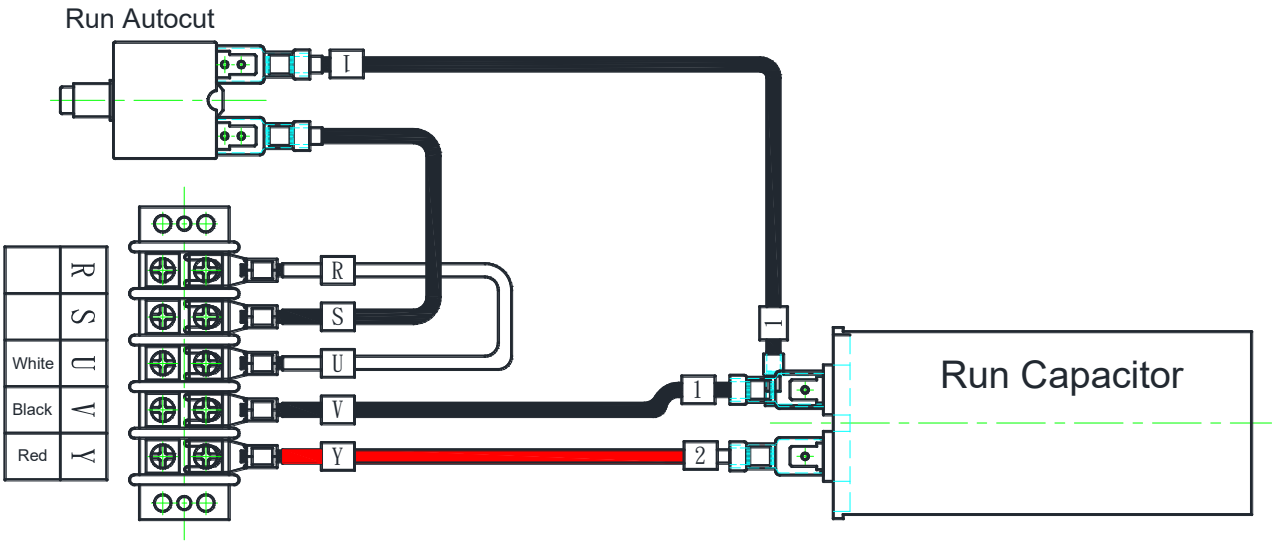




Control Box for 4” PSC Motor



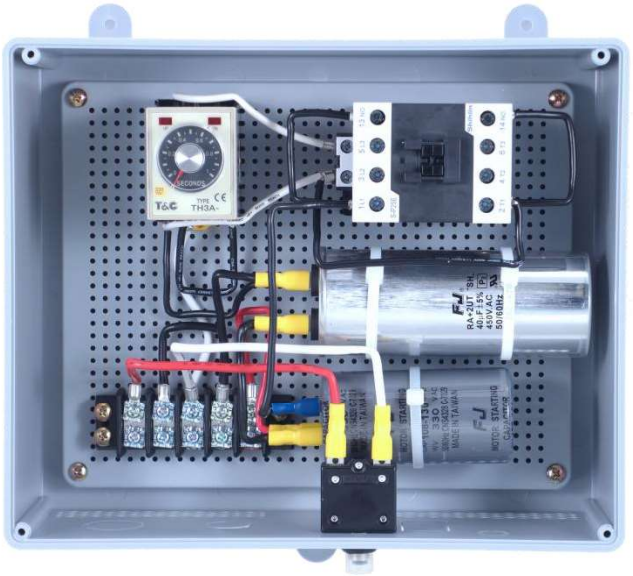


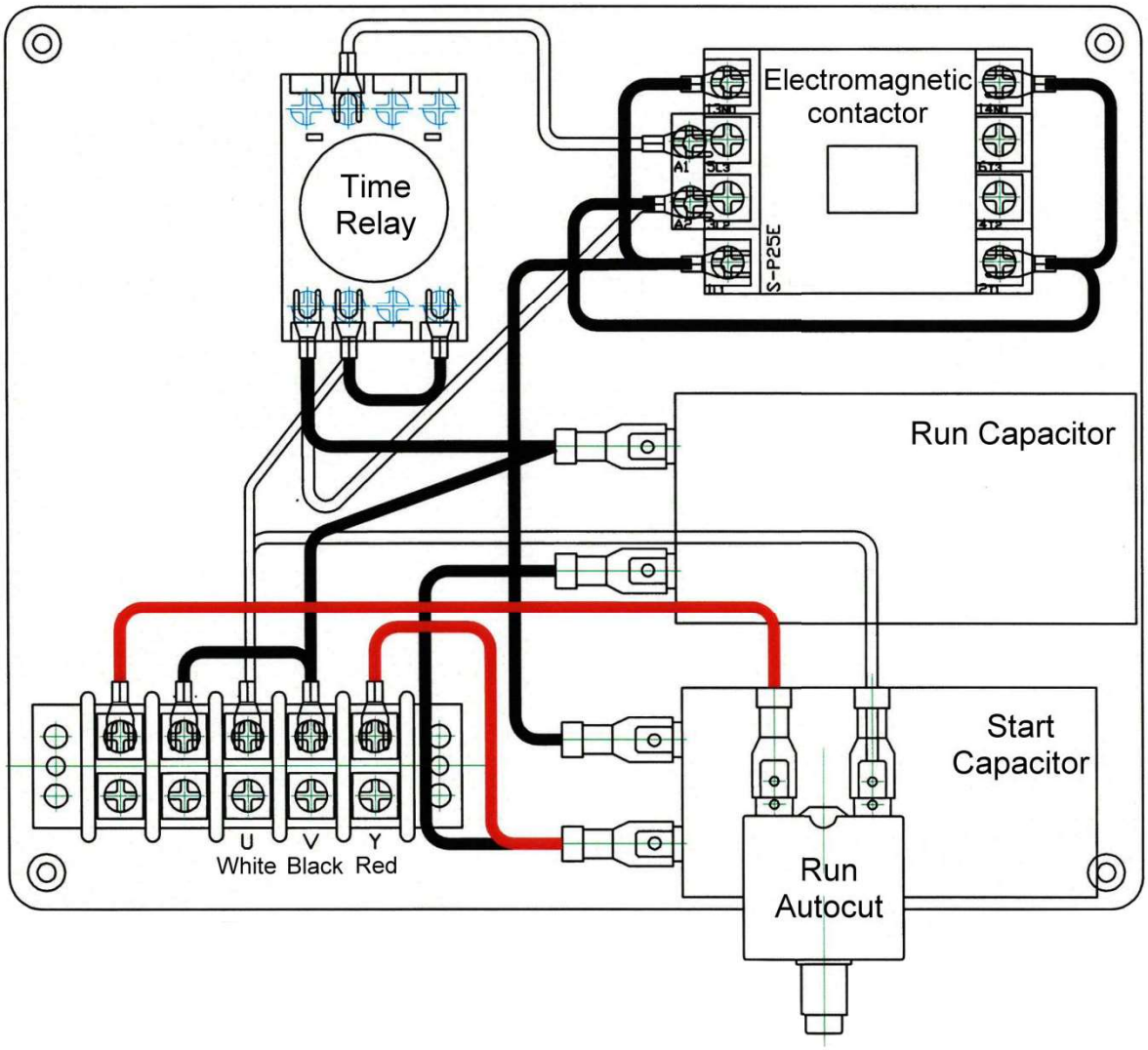


Control Box for 4” Motor

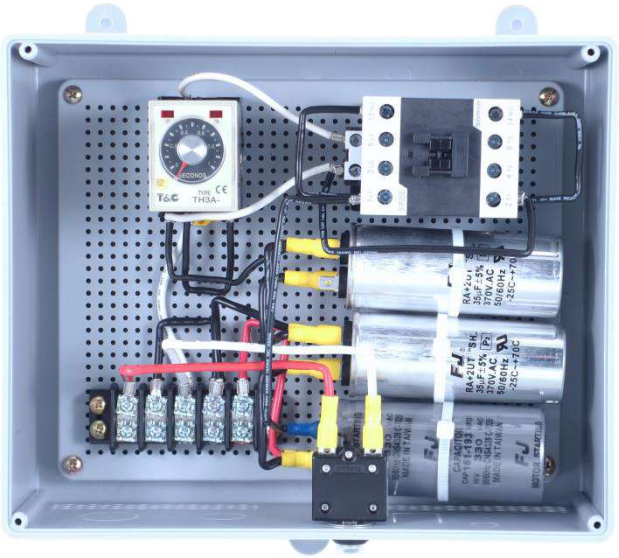
Hertz [Hz]	Voltage [V]	Output [W]	Current [A]	Starting Method
50	220	1100	9.8	CSCR
		1500	13.2	CSCR
		2200	16.8	CSCR
	220/230	3700	17.1	CSCR
60	220	1100	9.4/12.4	CSCR
		1500	12.0/14.6	CSCR
		2200	16.2/18.4	CSCR
	220/230	3700	17	CSCR
60	230	1100	9.2/11.6	CSCR
		1500	12.0/14.1	CSCR
		2200	15.8/18.0	CSCR
50	220	1100	7.4	PSC
		1500	10.2	PSC
		2200	14.7	PSC
60	220	1100	8.3/9.6	PSC
		1500	10.5/12	PSC
		2200	15.1/16.3	PSC

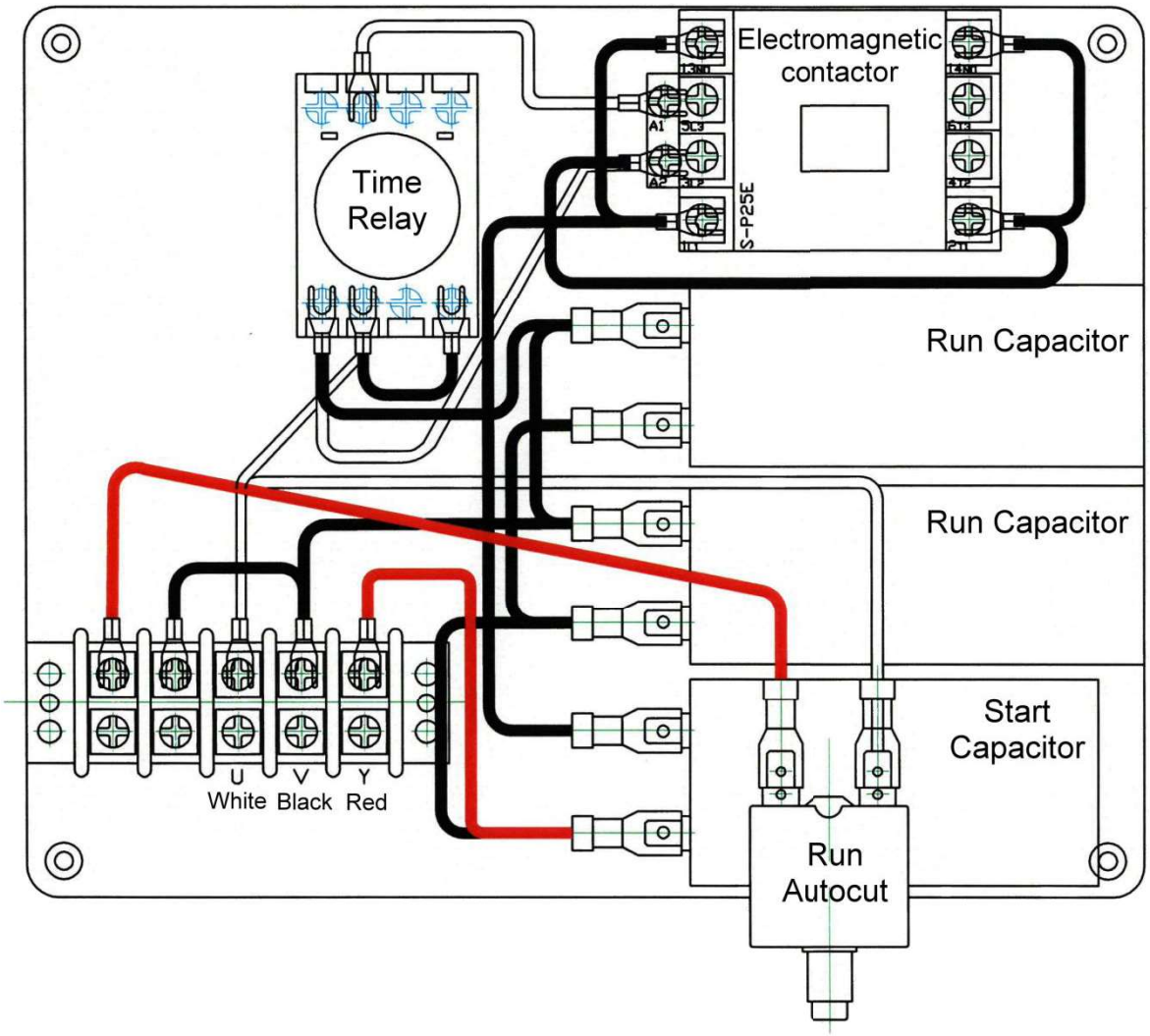
Control Box for 4” 1100~2200W Motor／ 4” PSC 1100~1500W Motor



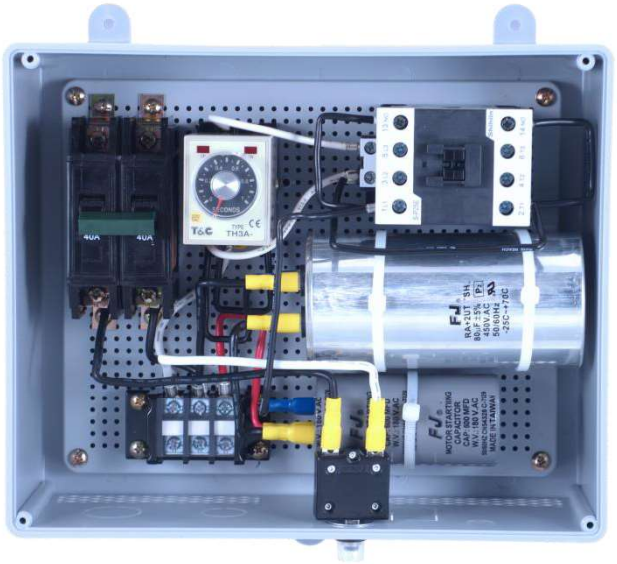


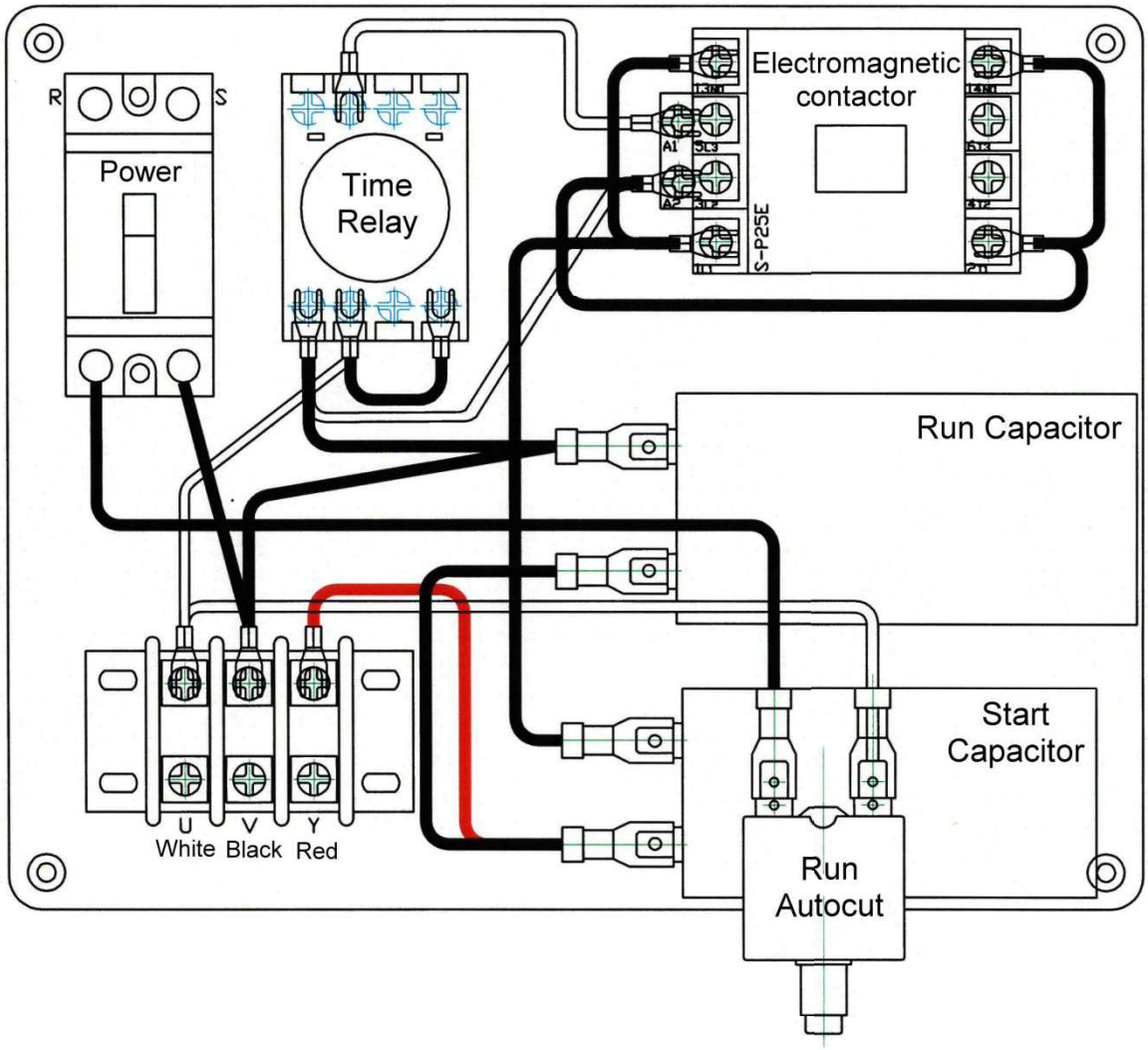
Control Box for 4” PSC 2200W Motor



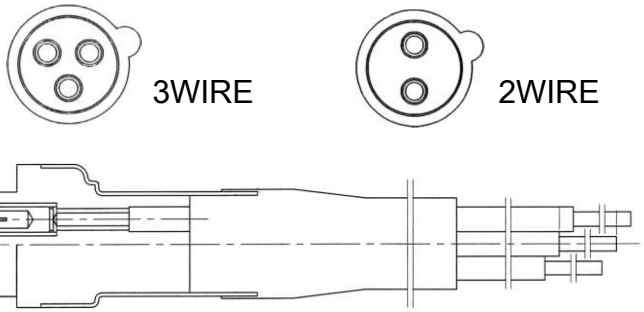


Control Box for 4” 3700W Motor

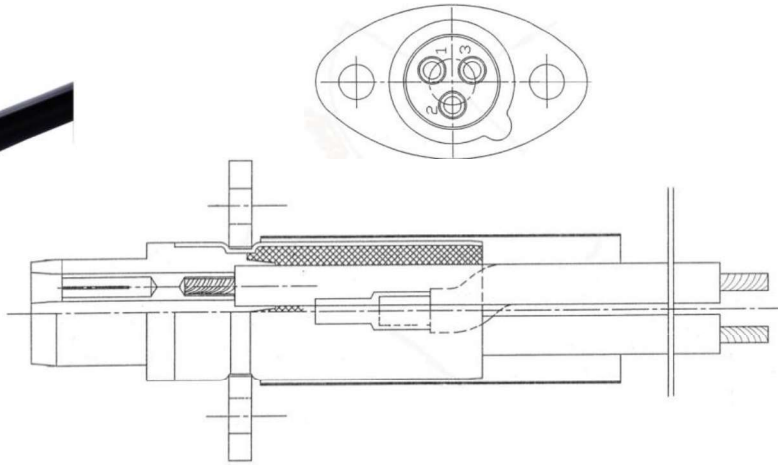




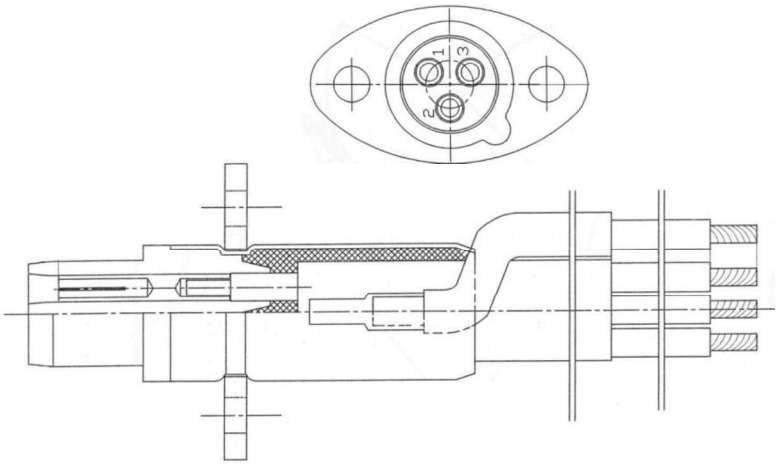
Cable



(1). 4” Cable



(2). 6” Cable



(3). 6” Cable(散線)

1．(1)、(2) 接頭為一體成型之電源線，(3) 接頭為樹脂充填式之電源線。

2．100% airtight guaranteed。

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