



**MODELS: MHC6, 15HP/20HP**

**OPERATING INSTRUCTIONS, INSTALLATION & MAINTENANCE  
MANUAL INCLUDING SPARE PARTS LIST**



**Mody Pumps Inc.**

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**ISO 9001 Certified**



## LIFE IS PRECIOUS - THINK SAFETY

1. Most accidents can be avoided by using COMMON SENSE.
2. Please read the operation and maintenance instruction manual supplied with the pump. If you did not receive one, please call your local distributor before pump installation.
3. Do not wear loose apparel that may become entangled in the impeller or other moving parts.
4. Always use appropriate safety equipment, such as safety glasses, when working on the pump or piping.
5. Pumps build up heat and pressure during operation-allow time for pumps to cool before handling or servicing.
6. Only qualified service personnel should install, operate and repair pump.
7. Keep clear of suction and discharge openings. DO NOT insert fingers in pump with power connected.
8. Do not pump flammable or hazardous materials (gasoline, acids, alkalis, etc.)
9. Do not block or restrict discharge hose, as it may whip or burst catastrophically under pressure.
10. Make sure lifting handles/hooks are securely fastened each time before lifting.
11. Do not lift pump by the power cord under any circumstances.
12. Do not exceed manufacturer's recommendation for optimum performance, as this could cause the motor/pump to overheat and lead to premature wear or failure.
13. Secure the pump in its operating position so it does not tip over, fall or slide.
14. Keep away from impeller when power is connected.
15. Submersible Pumps are not approved for use in swimming pools, recreational water installations, decorative fountains or any installation where human contact with the pumped fluid is common.
16. Do not operate pump without adequate protection and safety devices in place.
17. Always replace safety devices that have been removed during service or repair.
18. To reduce risk of electrical shock, pump must be properly grounded in accordance with the National Electric Code and all applicable state and local codes and ordinances.
19. To reduce risk of electrical shock, always disconnect the pump from the power source before handling or servicing.
20. Any wiring of pumps should be performed by a qualified electrician.
21. Never operate a pump with a power cord that has frayed or brittle insulation.
22. Cable should be protected at all times to avoid punctures, cuts, and abrasions - inspect frequently.
23. Never handle connected - "hot" power cords with wet hands.
24. Never operate a pump with a plug-in type power cord without a ground fault circuit interrupter, adequate overload and short circuit protection.

**IMPORTANT !!!** MODY Pumps Inc. is not responsible for losses, injury, or death resulting from a failure to observe these safety precautions, misuse or abuse of pumps or equipment.

## **PURPOSE:**

THE PUMP HAS BASICALLY BEEN DESIGNED AS A HIGH CHROME UNIT WITH AN OPTIONAL AGITATOR TO PUMP OUT FLOODED INSTALLATIONS OR ANY CONDITIONS THAT NEED DEWATERING OF UNWANTED FLUIDS. THE PUMP HAS BEEN DESIGNED TO HANDLE WATER CONTAMINATED WITH OIL AS WELL AS ABRASIVE PARTICLES NORMALLY ASSOCIATED WITH RAW WATER. THE MAXIMUM SIZE OF PARTICLES THAT CAN BE HANDLED IS APPROX. 0.4". THE MAXIMUM SPECIFIC GRAVITY OF THE PUMPED FLUID SHOULD NOT EXCEED 1.1.

## **MAINS VOLTAGE AT SITE**

220 VOLTS / 3 PHASE  
380 VOLTS / 3 PHASE  
460 VOLTS / 3 PHASE

## **HRC FUSE RECOMMENDED**

80 AMPERES  
50 AMPERES  
40 AMPERES

## **FAULT FINDING IN THE UNIT.**

<b>TROUBLE GUIDE</b>	<b>CAUSE</b>	<b>REMEDY</b>
<b><u>PUMP DOES NOT START.</u></b>	1.FUSES BLOWN. 2.CABLE DAMAGED 3.NO POWER. 4.BLOCKED IMPELLER. 6.STATOR WINDING BURNT.	1.REPLACE FUSES 2.SHORTEN/REPLACE CABLE 3.CHECK POWER SUPPLY. 4.CLEAN BOTTOM PARTS. 6.REPLACE STATOR/REWIND
<b><u>PUMP STARTS BUT STOPS.</u></b>	1.BLOCKED IMPELLER. 2.IMPELLER ROT.WRONG 3.CONNECTED FOR WRONG VOLTAGE. 4.VOLTAGE LOW/HIGH 5.CLOGGED STRAINER 6.PUMP RUNNING DRY 7.WATER TOO WARM (ABOVE 60 DEGREES C)	1.CLEAN BOTTOM PARTS. 2.SHIFT TWO PHASE CONN. 3.CHECK & RECONNECT. 4.CONTACT POWER CO. 5.CLEAN STRAINER 6.SWITCH OFF POWER 7.SWITCH OFF POWER
<b><u>PUMP GIVES TOO LITTLE OUTPUT</u></b>	1.IMPELLER ROT.BACKWARD. 2.PUMP WORN DOWN. 3.LONG HOSE AND DIAMETER TOO SMALL. 4.PRESSURE HEAD TOO HIGH 5.DISCHARGE HOSE TORN 6.LEAKING/CRACKED OUTLET	1.SHIFT TWO PHASE CONN. 2.REPLACE WEAR PARTS 3.CHECK PRESSURE LOSSES 4.USE PUMPS IN TANDEM. 5.USE NEW HOSE 6.REPL.OUTLET/GASKET.

## **TECHNICAL DESCRIPTION:**

THE MODY SUBMERSIBLE PUMP IS IN ITSELF A COMPLETE PUMPING STATION. BESIDES A POWER SUPPLY AND A DISCHARGE HOSE NO EXTRA EQUIPMENT IS REQUIRED. THE COMPLETE PUMPSET IS IN A MODULAR CONSTRUCTION ENSURING GOOD AND SIMPLE SERVICEABILITY. THE MAJOR DESIGN FEATURES ARE AS UNDER:

## **THE MOTOR**

A RUGGED ALUMINUM DIE CAST/COPPER ROTOR DYNAMICALLY BALANCED TO GRADE 2.5 ACCURACY OF ISO 942.A STAINLESS STEEL SHAFT RUNNING IN TWO BALL BEARINGS. INSULATION CLASS "H" (180 DEGREES CELSIUS). END WINDINGS DULY EPOXY COATED TO PREVENT DETERIORATION OF INSULATION EVEN IN EXTREMELY HUMID CONDITIONS. WINDING WIRE IS DUAL COATED SUITABLE FOR "H" CLASS INSULATION.

## **THE SEAL CHAMBER**

THE HEART OF THE MODY PUMP. DOUBLE MECHANICAL SILICON CARBIDE V/S SILICON CARBIDE SEAL FACES - SECONDARY SEALS OF HNBR RUBBER AND METAL PARTS IN STAINLESS STEEL, RUNNING IN AN OIL BATH, ENCLOSED IN A PRESSURE COMPENSATING RUBBER OIL CHAMBER - CREATES THE ULTIMATE SEAL SOLUTION. THE DESIGN OPTIMIZES SEAL LIFE AND ALLOWS FOR SIX MONTHLY (2500 HOURS) SERVICE INTERVALS.

## **BEARINGS:**

SINGLE ROW DEEP GROOVE UPPER BALL BEARINGS SEALED FOR LIFE WITH SPECIAL HIGH TEMPERATURE BEARING GREASE REQUIRING NO PERIODIC MAINTENANCE WHATSOEVER. ANGULAR CONTACT LOWER BEARINGS.

## **THE HYDRAULIC ELEMENTS:**

28% HI-CHROME IMPELLER, SUCTION COVER, VOLUTE AND WEAR PLATE PROVIDE THE HIGHEST LEVEL OF ABRASION RESISTANCE FOR SLURRY PUMPING.

## **CABLE GLAND ASSEMBLY. (REFER DRG.)**

THE PUMP IS SUPPLIED WITH 25 FEET CABLE AS STANDARD. THE CABLE IS A 4 CORE EPR SHEATHED AND INSULATED CABLE CONFORMING TO INTERNATIONAL STANDARDS. THE CABLE IS WATERPROOF AND CAN BE COMPLETELY SUBMERGED IN WATER. THE CABLE IS TERMINATED IN THE PUMP AT THE CABLE GLAND. THE GLAND ASSEMBLY SEALS THE CABLE ON THE OUTSIDE SHEATH AS WELL AS A WATER DAM ARRANGEMENT IS PROVIDED WHICH SEALS THE INDIVIDUAL CORES OF THE CABLE. THIS FEATURE IS UNIQUE AND IS ESSENTIAL TO PREVENT WATER SEEPING THROUGH THE CORES OF THE CABLE INTO THE CONTACTOR CHAMBER IN THE EVENT OF A CUT CABLE. THE CABLE IS ALSO ANCHORED TO THE PUMP TOP COVER BY MEANS OF A CABLE CLAMP MADE OF STAINLESS STEEL. THIS IS ESSENTIAL TO ENSURE THAT THERE IS NO UNDUE STRAIN ON THE CABLE IF THE PUMP IS PULLED OR LOWERED INADVERTENTLY BY MEANS OF THE CABLE. COMPLETE DETAILS OF THE CABLE GLAND ASSEMBLY ARE SHOWN IN THE DRAWING.

## **NON REPAIRABLE ITEMS**

1. ALL "O" RINGS TO BE REPLACED WHENEVER PARTS ARE DISMANTLED.
2. SEAL ELASTOMER PARTS SHOULD NEVER BE RE-USED AFTER DIS-ASSEMBLY.
3. DO NOT REFILL BEARING GREASE. ALWAYS REPLACE COMPLETE NEW BEARING WITH SPECIAL HIGH TEMPERATURE GREASE.

## **OIL SPECIFICATIONS**

**USE NON-CONDUCTING, NON-FOAMING OIL ONLY**

- A) H.P. ENKLO OIL 46/48
- B) SHELL TELLUS 29.
- C) CHEVRON SUPERLA WHITE # 9

**ELECTRICAL INFORMATION:**

MOTORS ARE DESIGNED TO OPERATE ON SINGLE VOLTAGE AND FREQUENCY. MAX. DEVIATION IN VOLTAGE ALLOWED IS + - 6 % AND FREQUENCY +- 3%. CHECK NAMEPLATE FOR OPERATING VOLTAGE AND FREQUENCY.

**MHC6/15**

PUMP			MOTOR			
Discharge Size	inch	6	Rated Output	HP	15	
	—	—	No. of Phase	3		
Rated Head	ft	49.2	No. of Pole	4		
	—	—	Rated Voltage	V	460	
/	/	/	Rated Current	50Hz	A	—
				60Hz	A	18.6
Rated Flow	USgpm	660.4	Starting Current	50Hz	A	—
	—	—		60Hz	A	115
	—	—	Starting Method	<input type="checkbox"/> Direct-on-Line <input checked="" type="checkbox"/> Δ-Δ		
/	/	/	Syn. Speed	50Hz	min <sup>-1</sup>	—
				60Hz	min <sup>-1</sup>	1800
			Insulation Class	H		

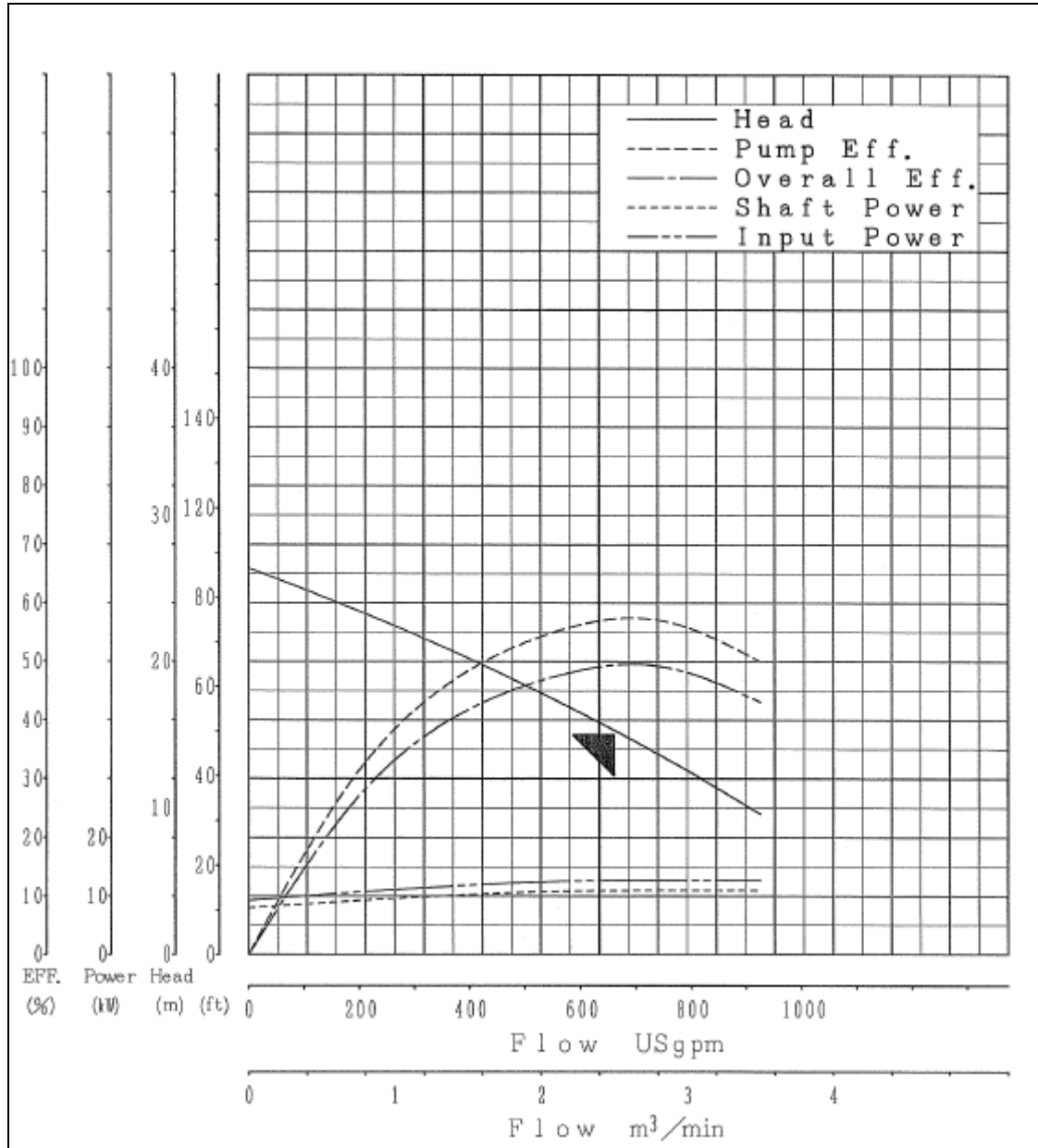
  

Height	Outer Dia.	Weight	Cable	Motor Protector
38.4 inch	38.6 inch	463.0 lb	5.5mm <sup>2</sup> × 25ft	<input checked="" type="checkbox"/> With
—	—	—	3·4 core	<input type="checkbox"/> Without

NOTE: Currents described above the estimated values.  
 Service Factor;1.15  
 Built-in motor protector.  
 1) Thermal detector in stator winding.  
 2) Water penetration detector in motor housing.  
 Control cable for motor protector.  
 2PNCT × 4core × 2mm<sup>2</sup> × 25ft

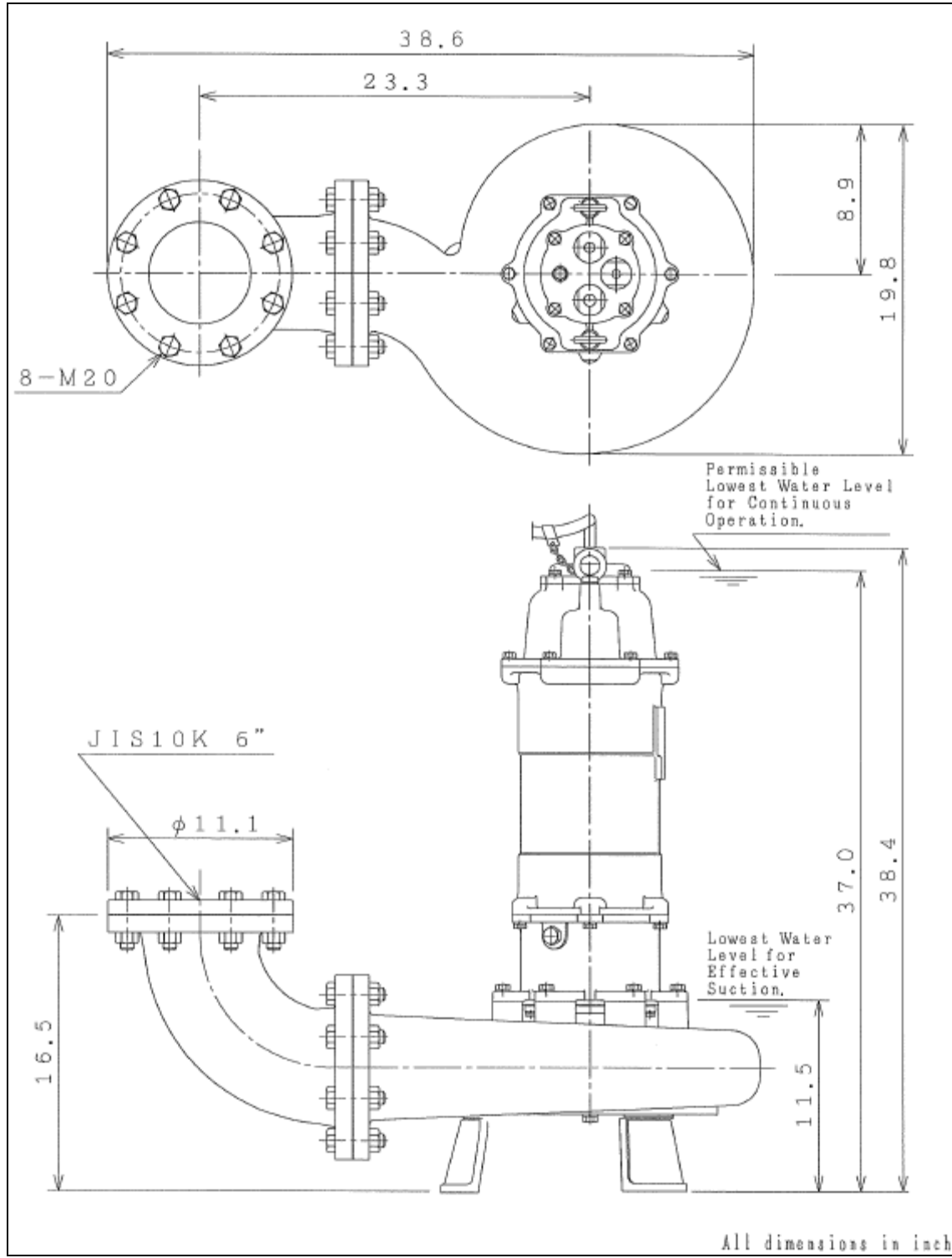
# PERFORMANCE CURVE

## MHC6/15



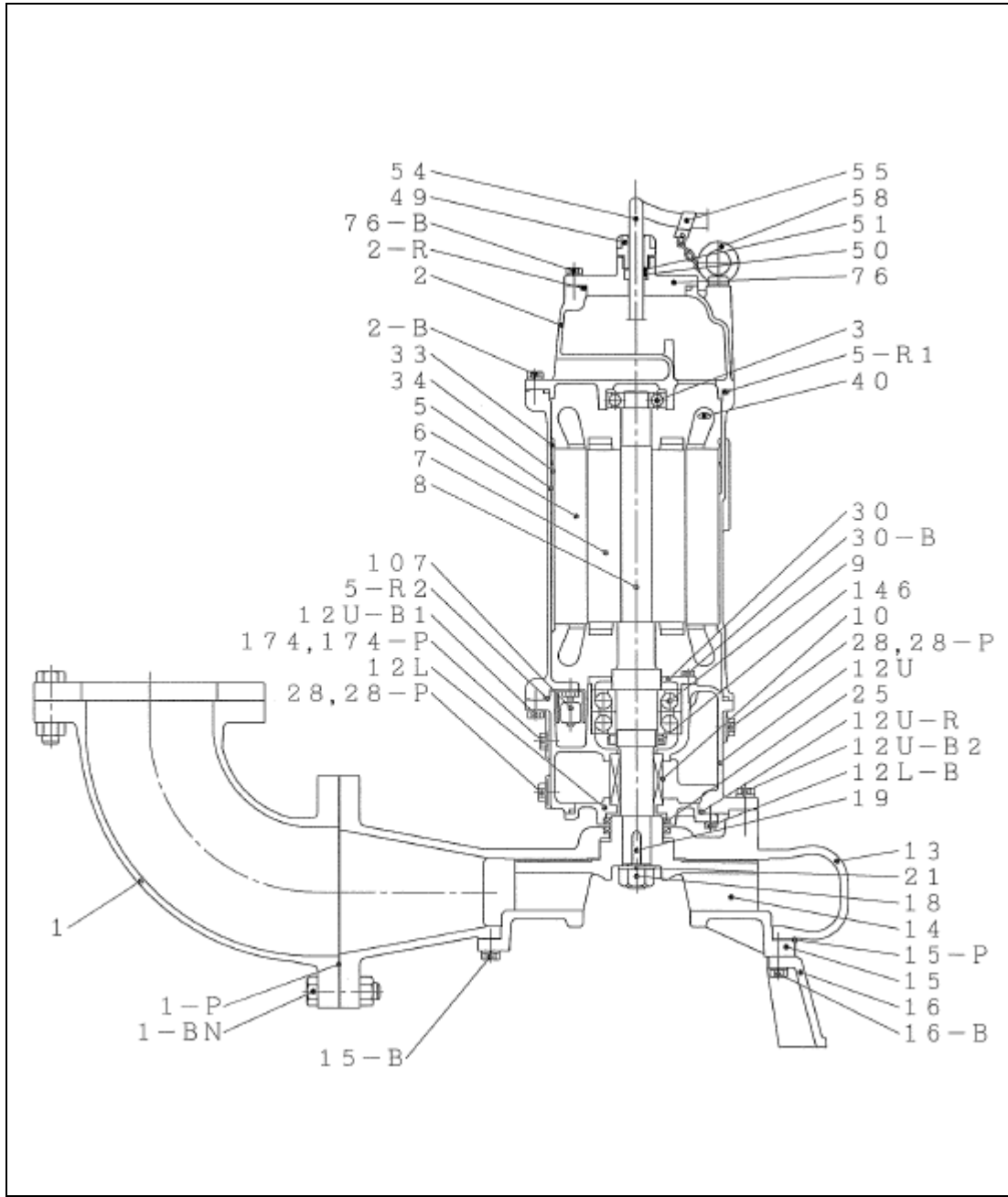
# DIMENSIONAL

## MHC6/15



# EXPLODED VIEW

## MHC6/15



## PARTS LIST

### MHC6/15

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ITEM No.	PART No.	DESCRIPTION	MATERIAL (ASTM)
1		Discharge Connection	A48-No.35
2		Upper Casing	A48-No.35
3		Upper Ball Bearing	6306ZZC3
5		Motor Housing	A48-No.35
6		Stator	15HPx4P
7		Rotor	15HPx4P
8		Shaft	S40300
9		Lower Ball Bearing	7310BDB
10		Shaft Seal	Mechanical Seal
12U		Upper Oil Box	A48-No.35
12L		Lower Oil Box	A48-No.35
13		Pump Casing	28% Chrome Iron
14		Impeller	28% Chrome Iron
15		Suction Cover	28% Chrome Iron
16		Stand	A48-No.35
18		Impeller Nut	S30400
19		Impeller Key	S40300
21		Impeller Washer	S30400
25		Dust Seal	N.B.R.
28		Oil Plug	S30400
30		Bearing Cover	A48-No.30
33		Stator Set Snapping	1078
34		Stator Set Key	A668
40		Motor Protector	-
49		Bell Mouth	A48-No.35
50		Cable Packing	N.B.R.
51		Cable Washer	Mild Steel
54		Cabletyre Cable	2P.N.C.T.
55		Cable Clamp	S30400
58		Eyebolt	S30400
76		Terminal Cover	A48-No.35
107		Submersion Detector	-
146		Bearing Nut	-
174		Drain Plug	S30400

ITEM No.	PART No.	DESCRIPTION	MATERIAL (ASTM)
15-P		Packing	F.R.R.
28-P		Packing	N.B.R./S30400
174-P		Packing	N.B.R./S30400
2-R		O Ring	N.B.R.
5-R1		O Ring	N.B.R.
5-R2		O Ring	N.B.R.
12U-R		O Ring	N.B.R.
2-B		Bolt	S30400
12U-B1		Bolt	S30400
12U-B2		Bolt	S30400
12L-B		Bolt	S30400
15-B		Bolt	S30400
16-B		Bolt	S30400
30-B		Bolt	Mild Steel
76-B		Bolt	S30400

**MHC6/20**

PUMP			MOTOR			
Discharge Size	inch	6	Rated Output	HP	20	
	—	—	No. of Phase	3		
Rated Head	ft	49.2	No. of Pole	4		
	—	—	Rated Voltage	V	460	
/	/	/	Rated	50Hz	A	—
			Current	60Hz	A	25
Rated Flow	USgpm	792.5	Starting	50Hz	A	—
	—	—	Current	60Hz	A	195
	—	—	Starting Method	<input type="checkbox"/> Direct-on-Line <input checked="" type="checkbox"/> $\Delta$ - $\Delta$		
/	/	/	Syn.	50Hz	min <sup>-1</sup>	—
			Speed	60Hz	min <sup>-1</sup>	1800
/			Insulation Class	H		

Height	Outer Dia.	Weight	Cable	Motor Protector
48.3 inch	38.6 inch	617.3 lb	14 mm <sup>2</sup> × 25ft	<input checked="" type="checkbox"/> With
—	—	—	3•4 core	<input type="checkbox"/> Without

NOTE: Currents described above the estimated values.

Service Factor;1.15

Built-in motor protector.

1) Thermal detector in stator winding.

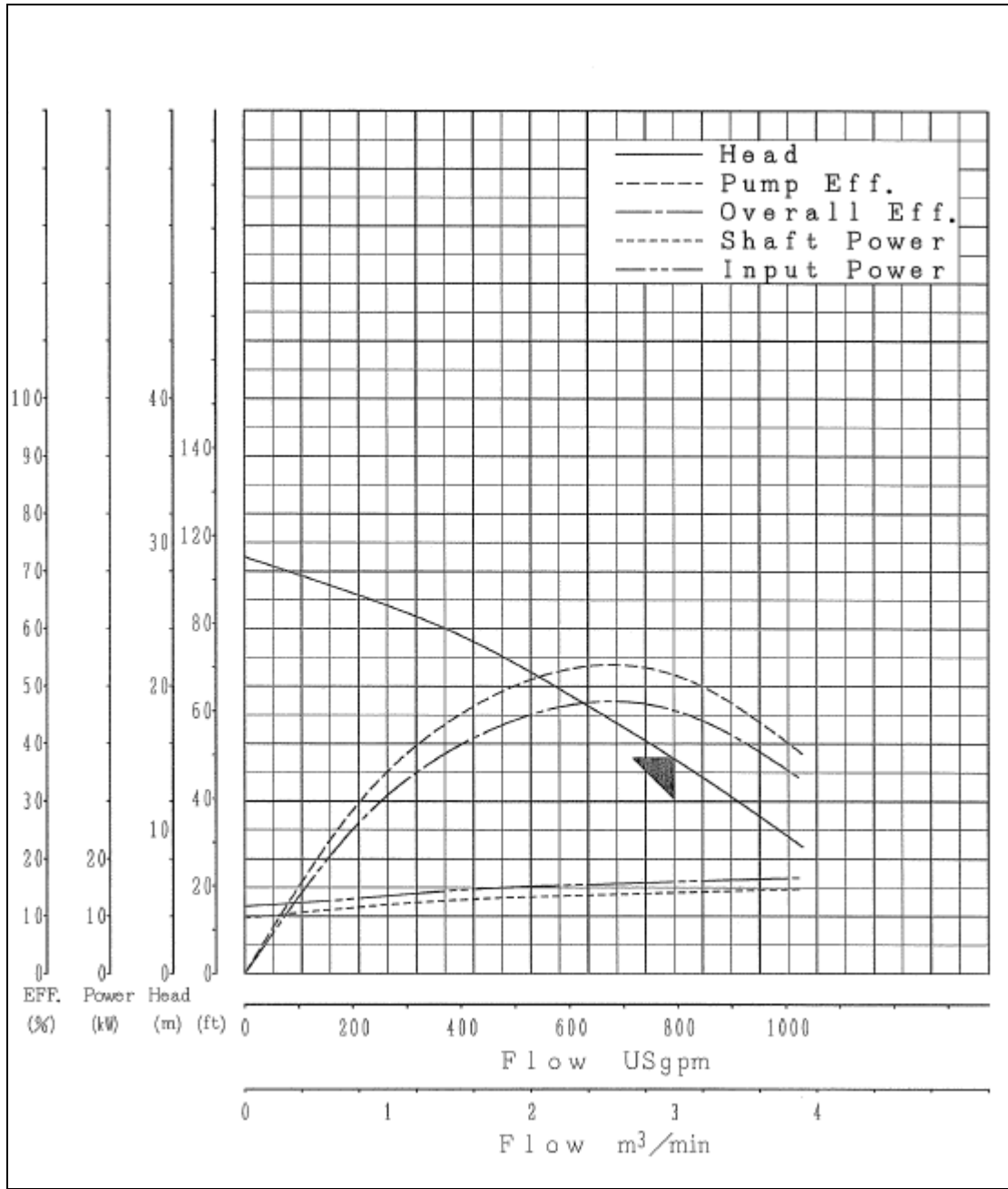
2) Water penetration detector in motor housing.

Control cable for motor protector.

2PNCT × 4core × 2mm<sup>2</sup> × 25ft

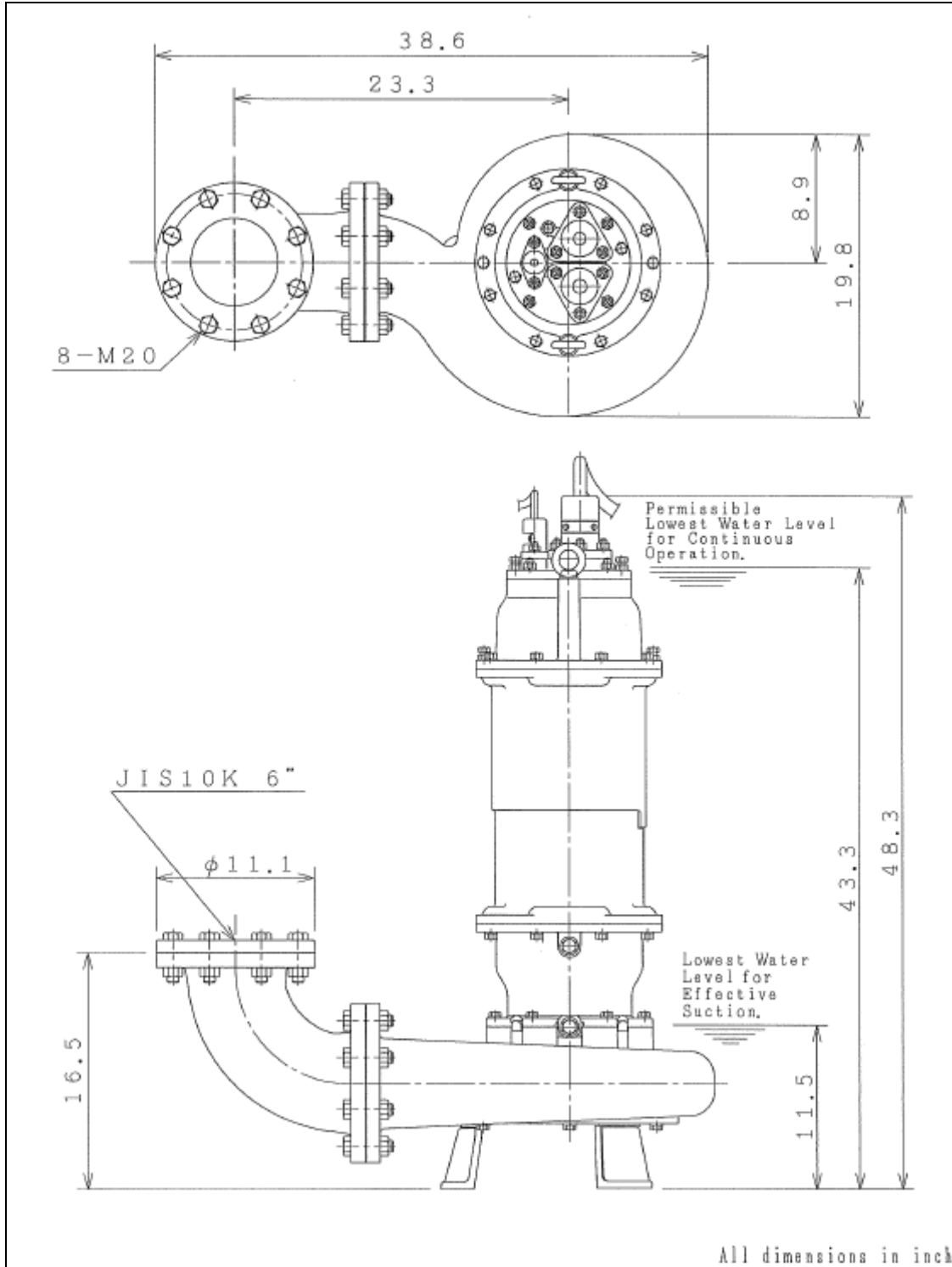
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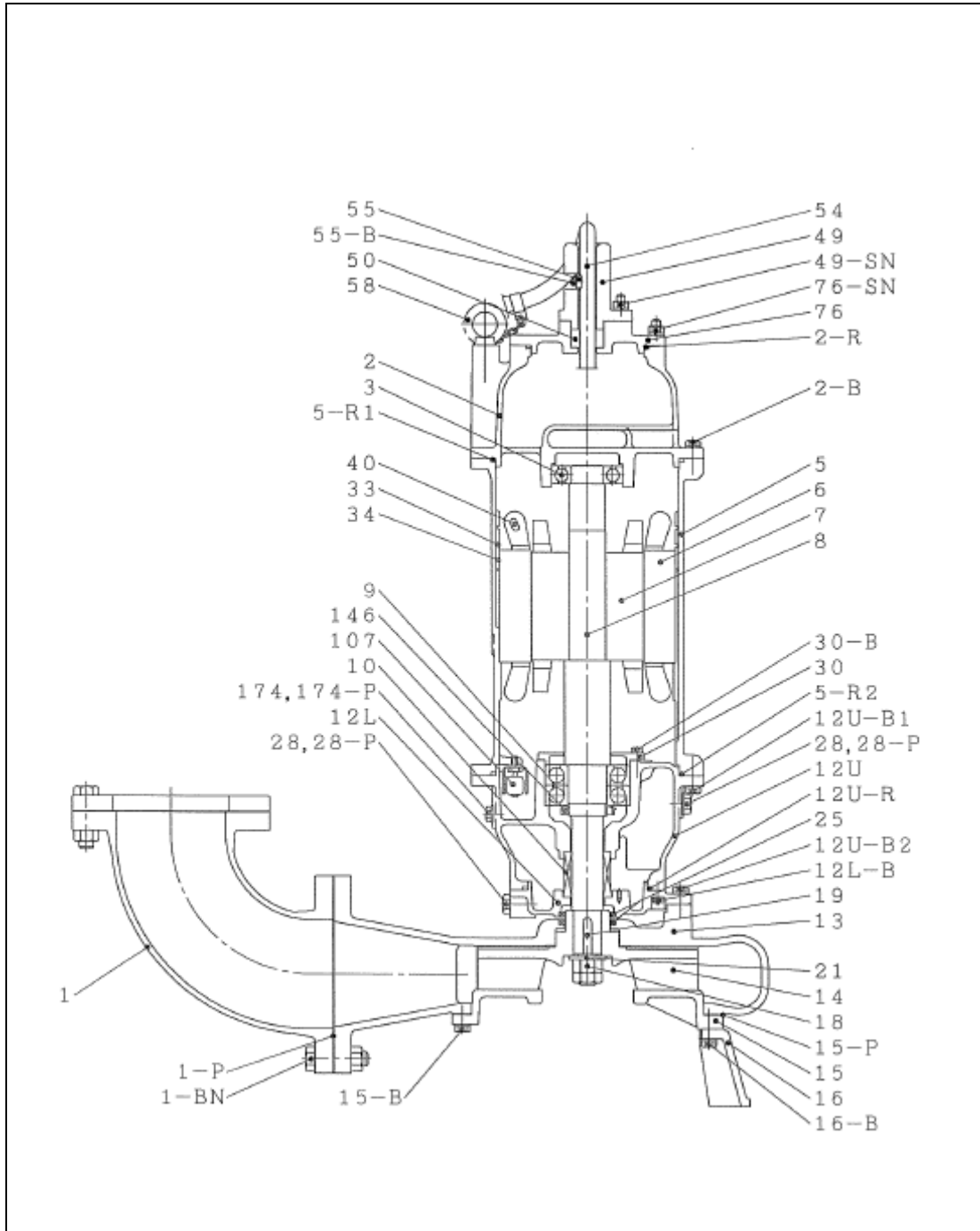
# DIMENSIONAL

## MHC6/20



# EXPLODED VIEW

## MHC6/20



# PARTS LIST

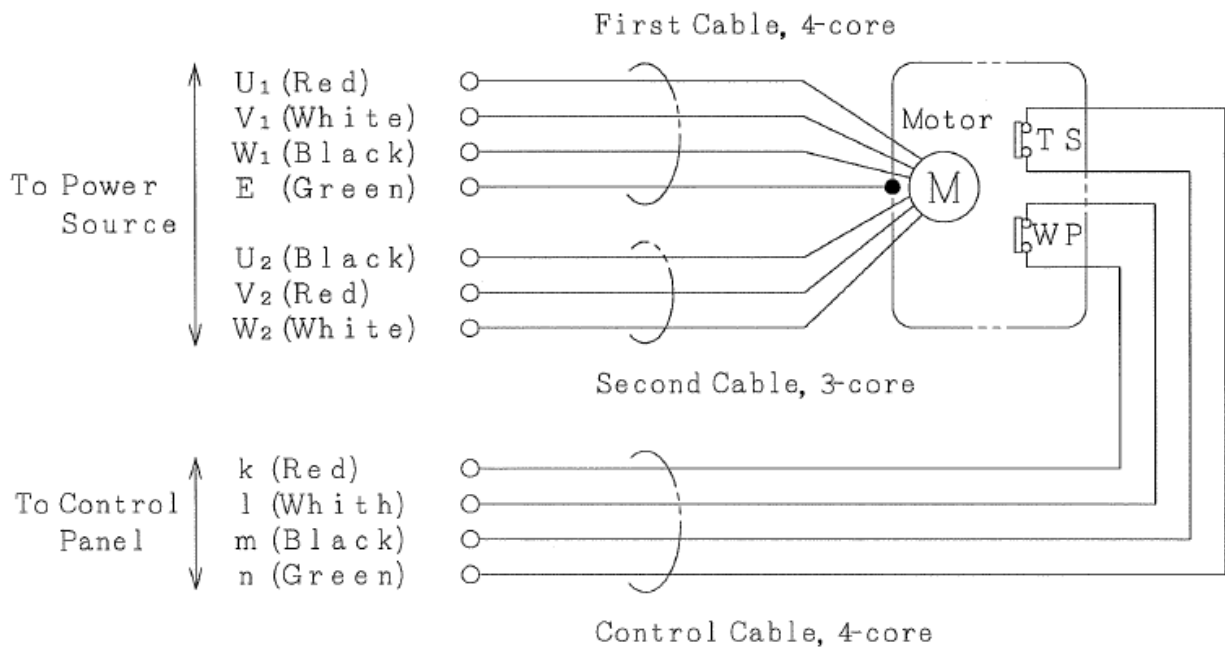
## MHC6/20

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5-R1		O Ring	N.B.R.
5-R2		O Ring	N.B.R.
12U-R		O Ring	N.B.R.
49-SN		Stud & Nut	S30400
76-SN		Stud & Nut	S30400
2-B		Bolt	S30400
12U-B1		Bolt	S30400
12U-B2		Bolt	S30400
12L-B		Bolt	S30400
15-B		Bolt	S30400
16-B		Bolt	S30400
30-B		Bolt	Mild Steel
55-B		Bolt	S30400

### 1. Cable marking and colour code



### 2. Thermal Detector (Automatic Reset Type) :TS

Located in the windings, bimetallic thermal switch with normally-closed contact actuates when the motor winding temperature exceeds the allowable point, its contact opens so as to de-energize the magnetic contactor in the control panel and interrupts the power supply to the motor.

Current Rating :AC 250V, 2.5A

### 3. Water Penetration Detector :WP

Located in middle casing, the float device consists of reed switch with normally-closed contact and permanent magnet. In case if water penetrates into the motor chamber, the contact of the float device opens so as to de-energize the magnetic contactor in the control panel and interrupts the power supply to the motor.

Current Rating :AC 300v, 0.5A



# *LIMITED WARRANTY*

We warrant to our immediate customer and to the ultimate consumer that products of our manufacture will be free of defects in material and workmanship under normal use and service for the following time periods, when installed and maintained in accordance with our instructions.

PUMPS: One (1) year from date of installation or (18) months from date of shipment, whichever occurs first. As used herein, "the ultimate consumer" is defined as the purchaser who first uses the product after its initial installation or, in the case for product designed for non-permanent installation, the first owner who uses the product. It is the purchaser's or any sub-vendor's obligation to make known to the ultimate consumer the terms and conditions of this warranty. This warranty gives you specific legal rights, and there may also be other rights which vary from state to state. In the event the product is covered by the Federal Consumer Product Warranties Law (1) the duration of any implied warranties associated with the product by virtue of said law is limited to the same duration as stated herein, (2) this warranty is a LIMITED WARRANTY, and (3) no claims of any nature whatsoever shall be made against us, until the ultimate consumer, his successor, or assigns, notifies us in writing of the defect, and delivers the product and/or defective part(s) freight prepaid to our facility or nearest authorized service station. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY AND ALL WARRANTIES WITH RESPECT TO ANY PRODUCT SHALL BE TO REPLACE OR REPAIR AT OUR ELECTION, FOB POINT OF MANUFACTURE OR AUTHORIZED REPAIR STATION, SUCH PRODUCTS AND/OR PARTS AS PROVEN DEFECTIVE. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE.**

Unless expressly stated otherwise, guarantees in the nature of performance specifications furnished in addition to the foregoing material and workmanship warranties on a product manufactured by *Mody*, if any, are subject to laboratory tests corrected for field performance. Any additional guarantees, in the nature of performance specifications must be in writing and such writing must be signed by our authorized representative. Due to inaccuracies in field testing if a conflict arises between the results of field testing conducted by or for user, and laboratory tests corrected for field performance, the latter shall control. Components or accessories supplied by us but manufactured by others are warranted only to the extent of and by the terms and conditions of the original manufacturer's warranty.

**RECOMMENDATIONS FOR SPECIAL APPLICATIONS OR THOSE RESULTING FROM SYSTEMS ANALYSES AND EVALUATIONS WE CONDUCT, WILL BE BASED ON OUR BEST AVAILABLE EXPERIENCE AND PUBLISHED INDUSTRY INFORMATION. SUCH RECOMMENDATIONS DO NOT CONSTITUTE A WARRANTY OF SATISFACTORY PERFORMANCE AND NO SUCH WARRANTY IS GIVEN.**

This warranty shall not apply when damage is caused by (a) improper installation, (b) improper voltage, (c) lightning, (d) sand or other abrasive materials, (e) scale or corrosion build-up due to excessive chemical content. Any modification of the equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective parts. Neither will we accept charges incurred by others without our prior written approval. This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and/or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product. **UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL, AND/OR WORKMANSHIP AND/OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

No rights extended under this warranty shall be assigned to any person, whether by operation or otherwise, without our prior written approval.