



- 2.7kw thruster develops over 105lbf (48 kgf) forward thrust & over 65lbf (29.5kgf) reverse thrust.
- Powerful direct drive DC brushless motors for low noise in noise sensitive applications.
- Magnetically coupled propeller drive eliminates all rotating shaft seals for optimum reliability.
- Custom designed high efficiency propeller & Kort nozzle for maximum Bollard thrust.
- Investment cast Type 316 stainless steel propeller is available in both RH and LH rotation.
- Available with +/-5v analog or RS485 closed loop speed control.
- Rated to 2,800 ft (850m) or optional 5,000 ft (1,500m) depth with 1 atmosphere housings or full ocean depth with oil filled, pressure balanced housings.
- Available with hard anodized 6061-T6 aluminum, Type 316 stainless steel or 6Al4V titanium housings.
- Available with motors for 72vdc, 100vdc, 120vdc, 150vdc, 260vdc or 300vdc. Other voltages optional.

Bollard Output

105lbf (48kgf) forward, 65lbf (29.5kgf) reverse, w/ either RH or LH stainless steel propellers.

Input

2.7kw at 72vdc, 100vdc, 120vdc, 150vdc, 260vdc or 300vdc, +/-5v analog or RS485 speed control.

Weight

12-17.5lbs (5.5-8kg) in air, 9-13lbs (4-6kg) in water, depending on configuration.

Depth Rating

2,800ft (850m) & 5,000ft (1,500m) with 1 atm housings, full ocean depth when oil filled (PBOF).
(specifications subject to change without notice)

Introduction

The recently introduced Model 1060 is the first in a new line of high efficiency, low noise direct drive thruster motors being introduced by Tecnadyne. As a world leader in subsea propulsion, Tecnadyne is constantly developing and introducing new and innovative propulsion solutions. And with the Model 1060, the company is responding to the increasing demand for ultra-quiet propulsion for AUV's, ROV's and manned submersibles.

Magnetic Propeller Coupling

As with all Tecnadyne thrusters, the propeller of the Model 1060 is magnetically coupled. With this design, a magnet array is fitted inside the hub of the propeller; and this magnet array is driven by a matching magnet array attached to the motor inside the sealed pressure vessel. By eliminating the rotating drive shaft and shaft seals that always seem to leak over time, the Model 1060 achieves extremely high reliability. Additionally, the magnetic coupling will ratchet if overloaded, preventing damage caused by objects jammed in the propeller. And since the water lubricated propeller bearings are external to the pressure housing, they can be easily replaced in a matter of minutes.

Direct Drive DC Brushless Motor

Employing a direct drive DC brushless motor that has been optimized for high efficiency and low noise, the Model 1060 delivers exceptional reliability and high power in an extremely compact, lightweight and easy to maintain package. As with all Tecnadyne thrusters, the Model 1060 motors are manufactured in the U.S. to the ISO 9001:2008 quality standard.

Ultra Efficient Propeller & Nozzle

The newly designed, high efficiency stainless steel propeller is available in both right and left hand rotations and is precision investment cast in a U.S foundry. With a Kort nozzle optimized for Bollard thrust, it still delivers impressive amounts of thrust at open water speeds exceeding 4 knots.

Depth Rating Options

The standard configuration is rated to 850m depth and places the electronics controller within the 1-atmosphere motor housing. An extra cost option, using titanium pressure components, is rated to 1,500m using self-contained electronics in the motor's 1-atmosphere housing. For full ocean depth rating, the electronics module is installed in a remote, one atmosphere housing (either the customer's housing or one supplied by Tecnadyne) and the thruster is oil filled and pressure balanced using electrical cabling of flexible Tygon tubing.

Voltages Supported

The Model 1060 is available for operation at voltages of 72vdc, 100vdc, 120vdc, 150vdc, 260vdc and 300vdc. DC power must be supplied by a well filtered battery bank, rectified and filtered AC or a regulated DC power supply with less than 10% voltage ripple.

RS485 or Analog Speed Control

Two speed control options are available for the Model 1060. The controller is jumper selectable for either closed loop multi-mode RS485 speed control or for +/-5v analog speed and direction control. In addition, the thruster can be supplied with separate enable and water detect lines.

Other Options

Optional configurations include: blade or AUV mounting; the six available buss voltage choices previously mentioned; housings made from hard anodized aluminum (standard), Type 316 stainless steel or 6Al4V titanium; several bulkhead type or cable end subsea connectors; RH or LH rotation propellers; and a nozzle inlet screen.

Custom propellers and Kort nozzles can be developed to suit specific operating requirements.

Please note that the specifications are subject to change without notice. Additionally, Model 1060 thrusters for operation to depths greater than 1,000 meters are subject to U.S. Government export controls.

Go to www.tecnadyne.com

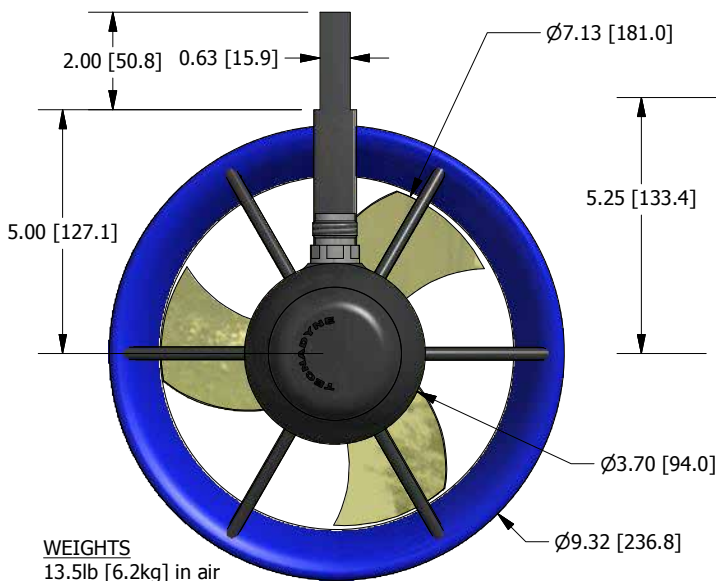


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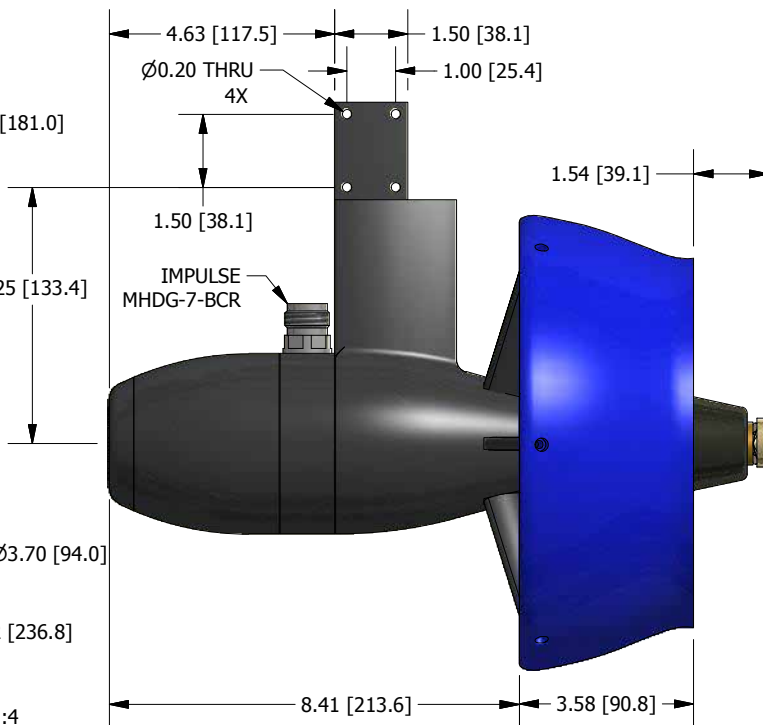
MODEL 1060

1060-AAA-MHDG7BCR-XX-0850-AL-SCLX-BL-G-RH-UK



WEIGHTS
 13.5lb [6.2kg] in air
 10.1lb [4.6kg] in water

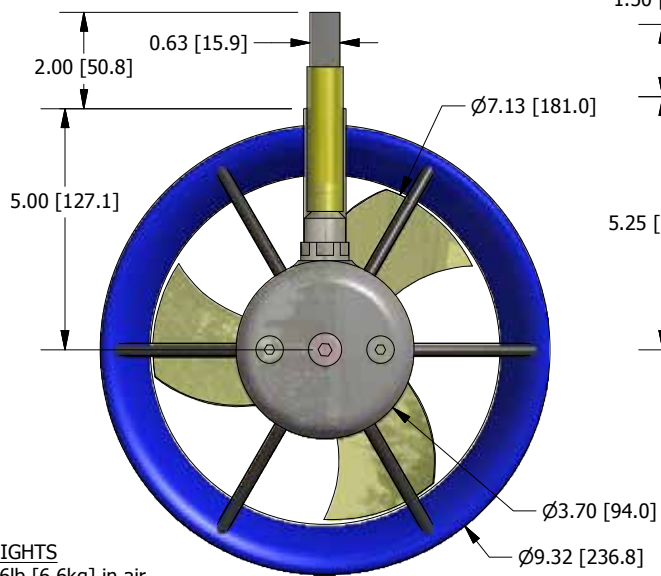
SCALE 1:4



Download STP solid model of this thruster here:
<http://www.tecnadyne.com/thrusters>

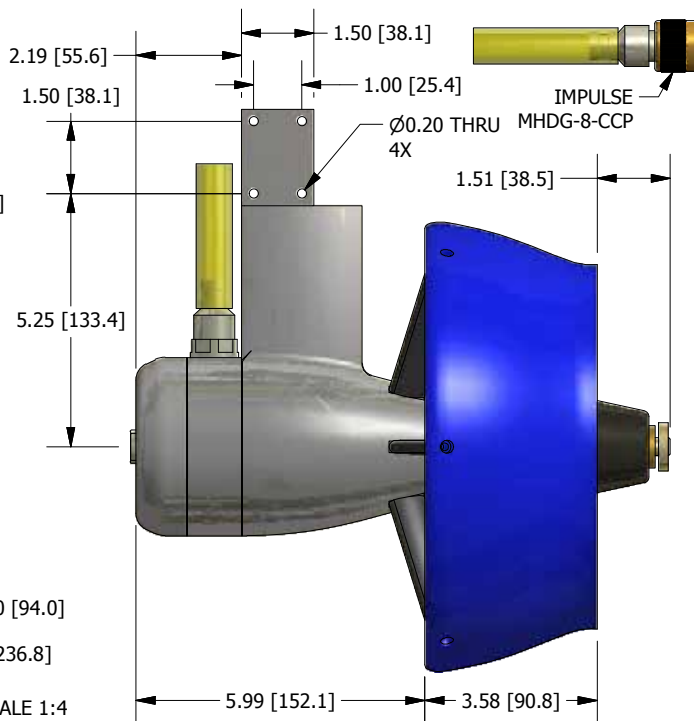
MODEL 1060

1060-AAA-MHDG8CCP-XX-FOD-SS-RR(S)OF-BL-G-RH-BK



WEIGHTS
 14.6lb [6.6kg] in air
 11.1lb [5kg] in water

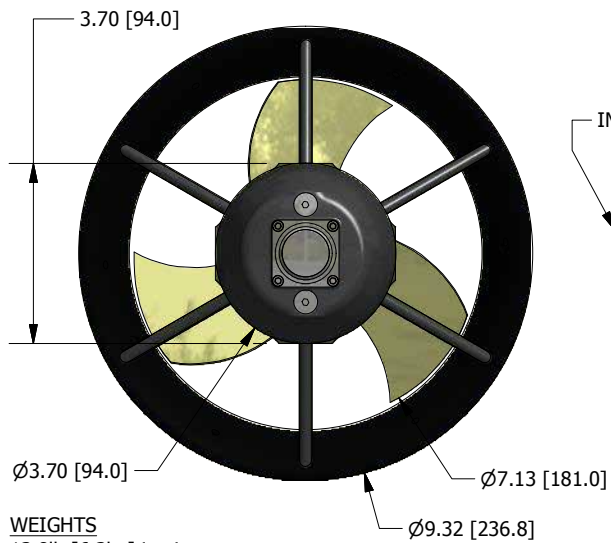
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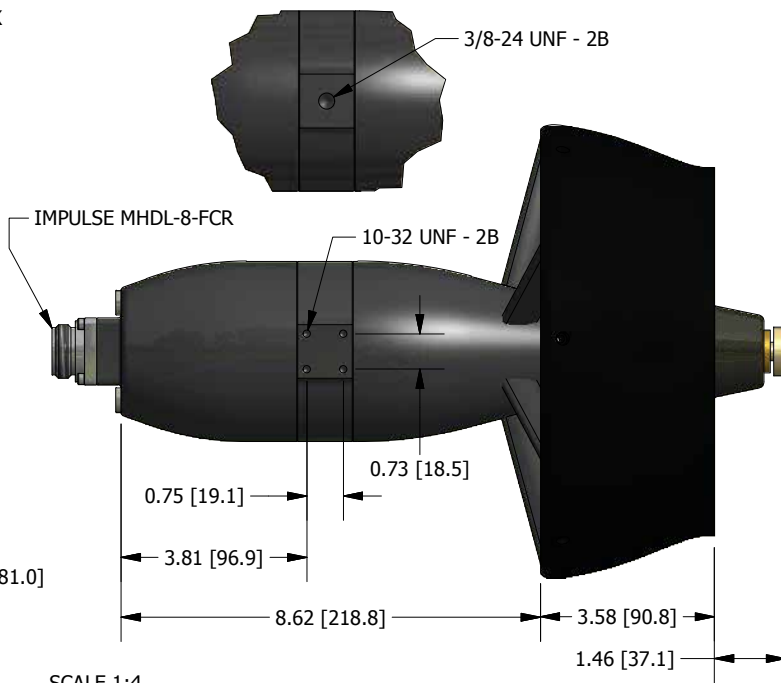
Download STP solid model of this thruster here:
<http://www.tecnadyne.com/thrusters>

MODEL 1060

1060-AAA-MHDL8FCR-XX-0850-AL-SCLX-AM-G-RH-BK



WEIGHTS
 13.8lb [6.3kg] in air
 9.7b [4.4kg] in water

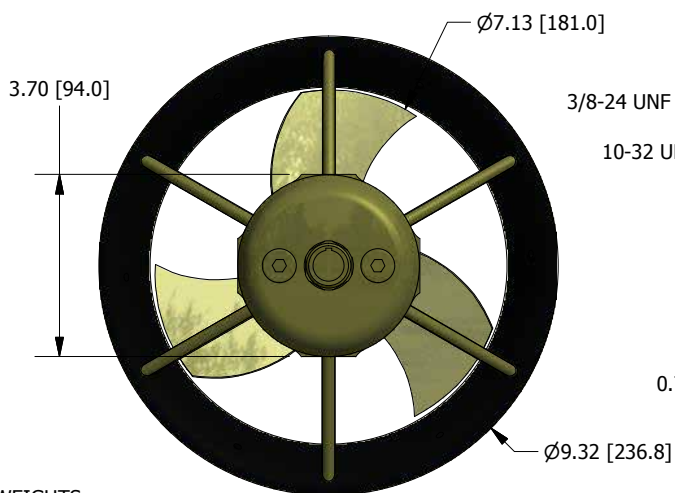


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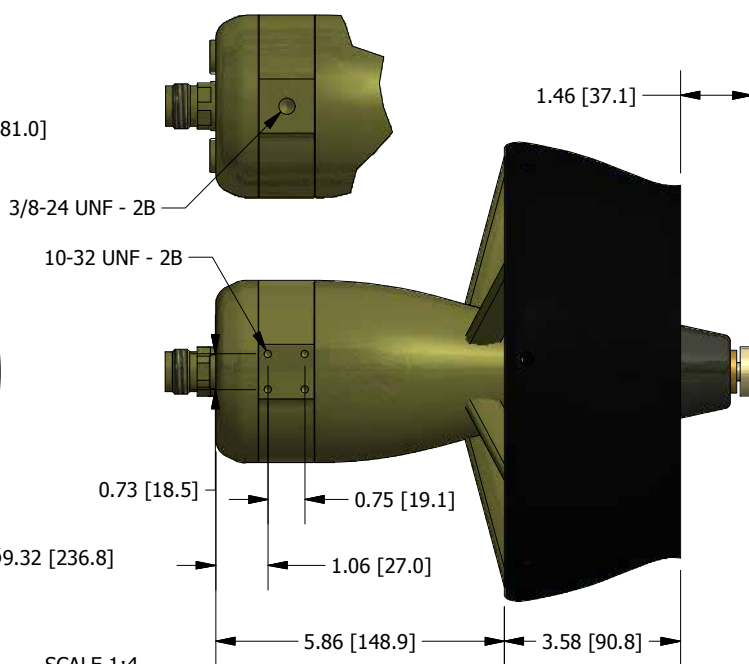
Download STP solid model of this thruster here:
<http://www.tecnadyne.com/thrusters>

MODEL 1060

1060-AAA-MHDG8BCR-XX-FOD-TI-RR(S)LX-AM-G-RH-BK



WEIGHTS
 12.4lb [5.6kg] in air
 9.9lb [4.5kg] in water



SCALE 1:4

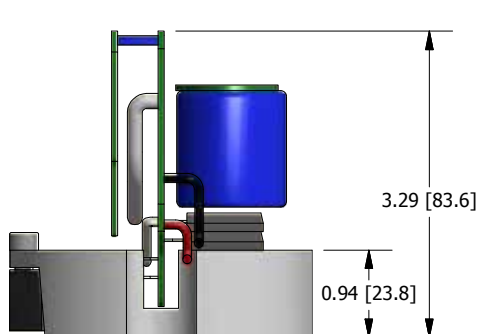
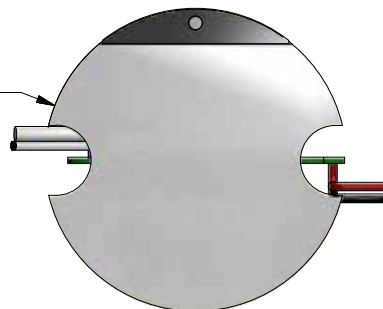
Download STP solid model of this thruster here:
<http://www.tecnadyne.com/thrusters>

REMOTE ELEC. MODULE, CYLINDER MOUNT

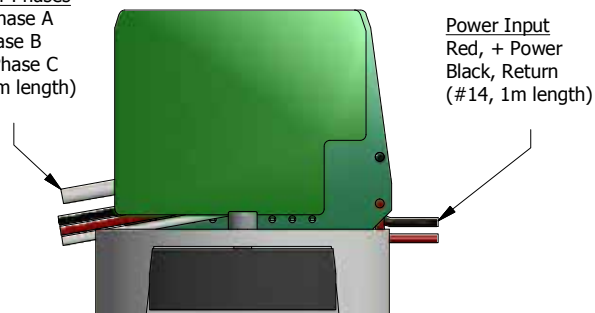
USED IN **RRLX** & **RROF** CONFIGURATIONS & INSTALLED IN CUSTOMER FURNISHED PRESSURE VESSEL.

SCALE 1:2

Ø3.245 [82.4]
 to fit cylinder with
 Ø3.250±0.001 ID
 --o--
 Ø3.540 [89.9]
 to fit cylinder with
 Ø3.545±0.001 ID



To Motor Phases
 Black, Phase A
 Red, Phase B
 White, Phase C
 (#14, 1m length)



Power Input
 Red, + Power
 Black, Return
 (#14, 1m length)

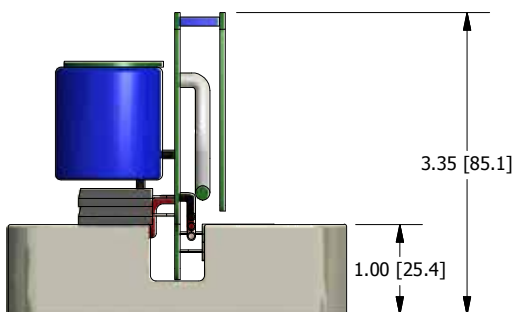
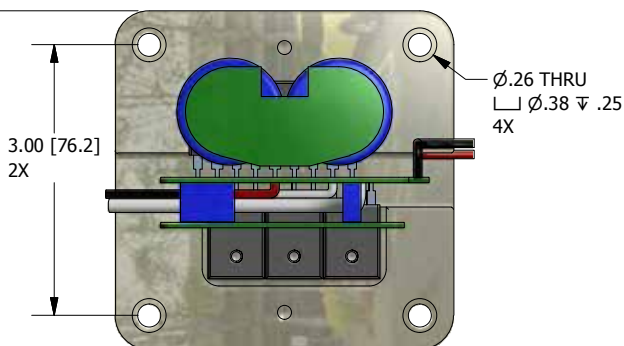
Download STP solid model of this electronics module here:
<http://www.tecnadyne.com/thrusters>

REMOTE ELECTRONICS MODULE, FLAT MOUNT

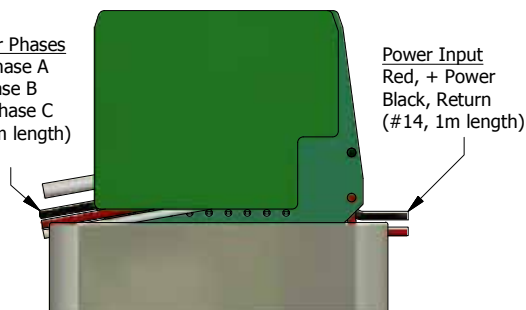
USED IN **RSLX** & **RSOF** CONFIGURATIONS & INSTALLED IN CUSTOMER FURNISHED PRESSURE VESSEL.

SCALE 1:2

3.75 [95.3]
 2X



To Motor Phases
 Black, Phase A
 Red, Phase B
 White, Phase C
 (#14, 1m length)



Power Input
 Red, + Power
 Black, Return
 (#14, 1m length)

Download STP solid model of this electronics module here:
<http://www.tecnadyne.com/thrusters>

1060 - AAA - BBBB - XX - CCCC - DD - EEEE - FF - G - HH - JJ

AAA - Buss Voltage Option (Consult factory for other voltages)

72 - 72vdc

100 - 100vdc

120 - 120vdc

150 - 150vdc

260 - 260vdc

300 - 300vdc

BBBBB - Subsea Connector Option (Consult factory for other connectors)

MHDG7BCR - Impulse MHDG-7-BCR, bulkhead mount, **SCLX** only, 260 & 300vdc only

MHDG8BCR - Impulse MHDG-8-BCR, bulkhead mount, for **RRLX** or **RSLX**, 260 & 300vdc only

MHDG8CCP - Impulse MHDG-8-BCR, oil filled tubing, for **RROF** or **RSOF**, 260 & 300vdc only

MSAJ5BCR - SeaCon MSAJ-5-BCR, bulkhead mount, for **SCLX** only, 260 & 300vdc only

XSL6ACCP - SeaCon XSL-6A-CCP, cable end, **SCLX** only, all voltages

MSA(S)L8CCPOF - Impulse MSA(S)L-8-CCPOF, oil filled tubing, for **RROF** or **RSOF**, all voltages

XSL12CCP - SeaCon XSL-12-CCP, cable or oil filled tubing, for all configurations, all voltages

MHDL8FCR - Impulse MHDL-8-FCR, flange mount, for all configurations, all voltages

for technical details on the referenced connectors please go to www.seaconworld.com & www.impulse-ent.com

XX - Cable Length Option (Does not apply to BCR or FCR style connectors)

XX - Cable Length in X.X meters - leave as XX if no cable installed

CCCC - Maximum Operating Depth Option

0850 - 850 meters (2800 ft)

1500 - 1,500 meters (5,000 ft), (extra cost option)

FOD - Full Ocean Depth (Requires Oil Filled Pressure Compensated option, above)

DD - Material of All Wetted Metallic Surfaces Option

AL - 6061-T6 Aluminum, Hard Anodized Black

SS - Type 316 Stainless Steel, Passivated

TI - 6Al4V Titanium

EEEE - Self Contained or Remote Electronics Option

SCLX - Self Contained Electronics (electronics in housing with motor)

RRLX - Remote Electronics, Round heat plate electronics, 1 Atmosphere Motor Housing

RSLX - Remote Electronics, Square heat plate electronics, 1 Atmosphere Motor Housing

RROF - Remote Electronics, Round heat plate elox, Oil Filled Pressure Compensated Motor Housing

RSOF - Remote Electronics, Square heat plate elox, Oil Filled Pressure Compensated Motor Housing

FF - Mounting Option

BM - Blade Mount

AM - AUV Mount

G - Control Signal Option

A - +/-5v Analog Control Signal

R - RS485 Control Signal

HH - Propeller Handing Option

RH - Right Hand

LH - Left Hand

JJ - Nozzle Options

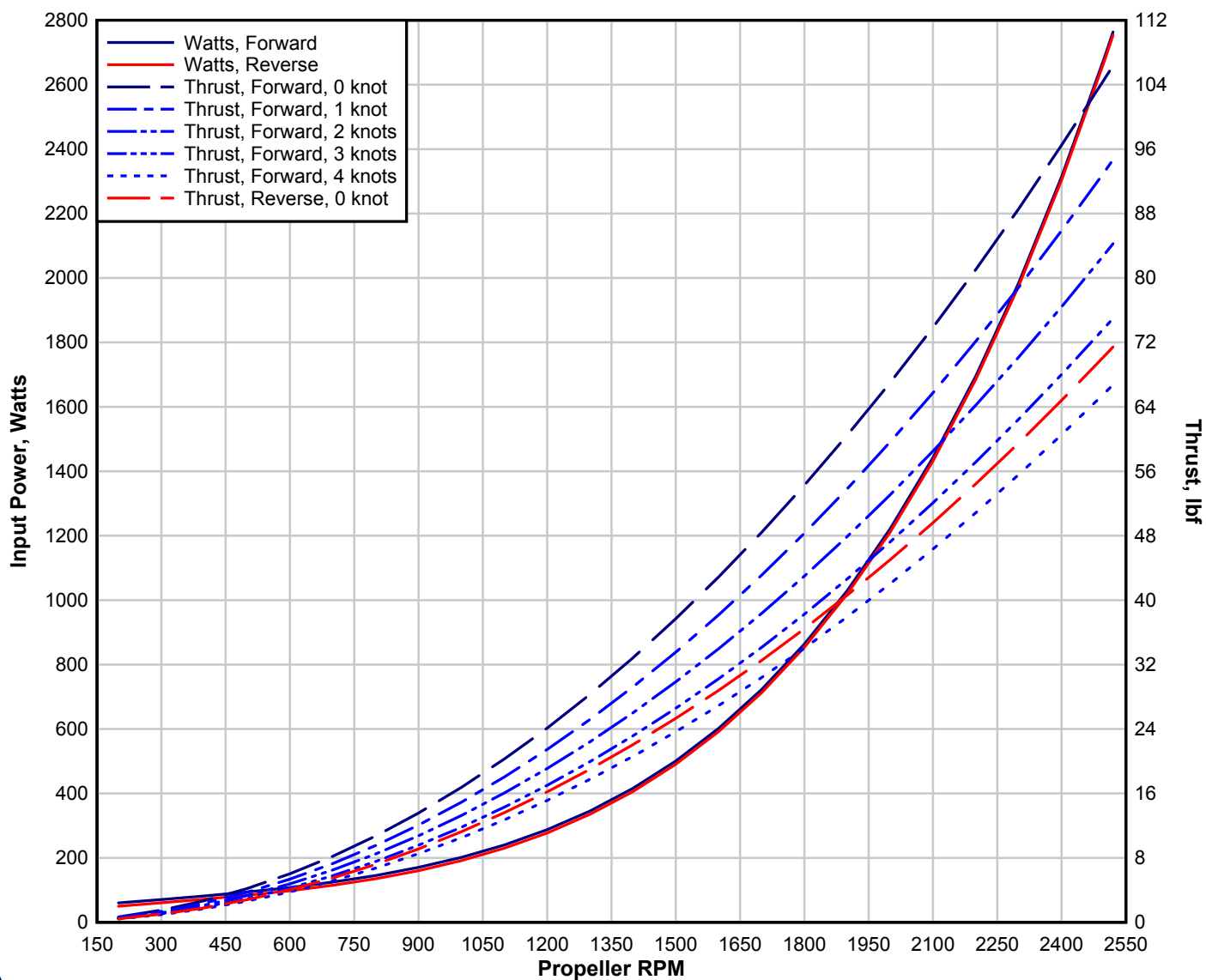
BK - Black

UK - Blue (extra cost option)

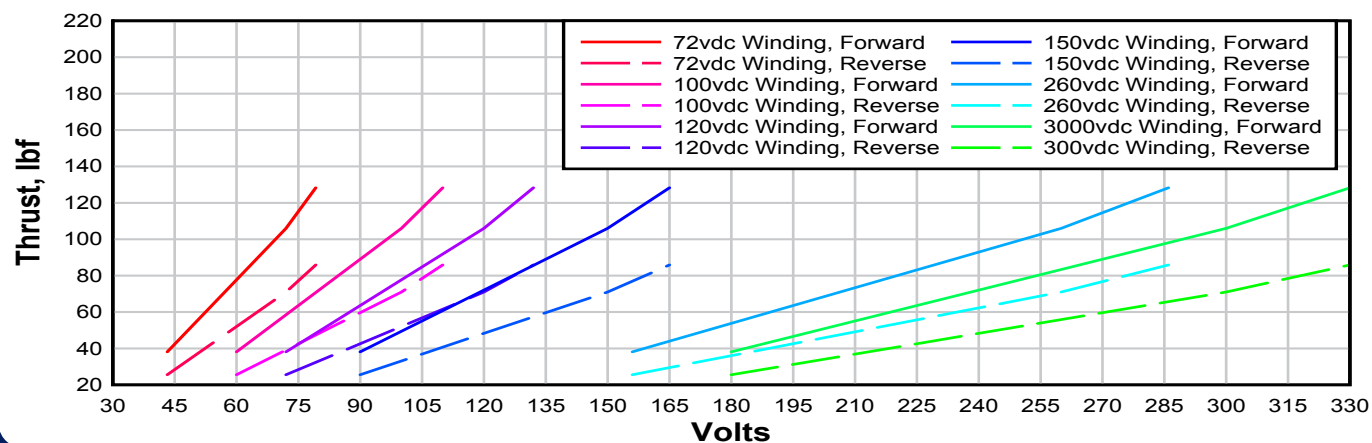
BS - Black with Inlet Screen (extra cost option)

US - Blue with Inlet Screen (extra cost option)

Model 1060 Thruster
Input Power & Thrust vs. Propeller RPM



Model 1060 Thruster
Thrust vs. Voltage Change



WHAT WERE YOU DOING 30 YEARS AGO?

In 1985 Tecnadyme delivered its first thrusters, six Model 1020's that were installed on the original RTV-500 built by Mitsui Engineering & Shipbuilding (MES) of Tokyo. Since that time, we have manufactured and delivered over 6,000 thrusters, including more than 600 of the Model 1020. And even though the Model 1020 that we build today incorporates over 32 design revisions to improve reliability, efficiency and maintainability – that thruster is still 100% compatible with the Model 1020 that was installed on that first RTV-500 system more than 30 years ago. This means that, after 30+ years, MES (or any of our customers) can still purchase or repair a Model 1020 thruster to keep its fleet of ROV's working. And in those 30 years, the Model 1020 thruster has powered vehicles to the Titanic, that discovered JFK's PT-109 in the Pacific, that participated in record depth wellhead completions off the coast of West Africa, that discovered lost cities in the Black Sea, that have scoured the world's oceans for mines, and that have successfully completed thousands of routine subsea missions. And the Model 1020 thruster is still being installed on new ROV and AUV systems worldwide.

And, like the Model 1020, Tecnadyme's twenty-one other thruster models have also served the offshore community with reliability, high performance and cost effectiveness – but none for quite as long as the Model 1020's 30 years. Tecnadyme is constantly developing and releasing new thruster models, with 4 new models released in 2010 and 4 models being released in 2013.

It is Tecnadyme's commitment to its customers and to the subsea community that no vehicle system, be it an ROV, an AUV, a manned submersible or any other subsea system, will ever be made obsolete because the Tecnadyme thrusters installed on that system are no longer available for a reasonable and competitive price.

So, for your next ROV, AUV or manned submersible build or purchase, be sure to specify only genuine Tecnadyme thrusters. You, your operators, your technicians and your customers will be glad you did – for the next 30 years.

QUALITY ASSURANCE

Tecnadyme operates under a Quality Plan that is fully ISO 9001:2008 compliant. All electrical soldering is performed by technicians certified to the IPC J-STD-009 & IPC-A-610 standards.

FINAL TEST & INSPECTION

All Tecnadyme products undergo a rigorous set of final test procedures. Each thruster is operated at reduced power and full power in both directions for extended time periods. Each thruster is pressure tested and then subjected to an insulation breakdown test to identify leaks or other problems. Prior to shipment to the customer, each thruster is certified to perform correctly and to factory specifications.

EXPRESS LIMITED WARRANTY

Subsea thruster motors manufactured by Tecnadyme are warranted to the original Purchaser for a period of one year from the date of shipment from the factory to conform to Tecnadyme's specifications at the time of purchase and to be free of mechanical, electrical and physical defects in material and workmanship if the products have been installed, electrically connected, operated and serviced in accordance with Tecnadyme's instructions as listed in the Operations & Maintenance Manual accompanying the thrusters.

Except for the express warranty set forth herein, Tecnadyme makes no other warranties or guarantees, express, oral, implied or statutory, regarding its subsea thruster products. All such warranties are expressly disclaimed to the extent allowable by law.

BUILT WITH PRIDE



IN THE U.S.A.



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