

# MODEL 1020 DC BRUSHLESS THRUSTERS

*In continuous production since 1986, the Model 1020 was Tecnadyne's first thruster and established the company as the world leader in DC powered subsea propulsion. Since that time, over 550 Model 1020's have been delivered to customers worldwide. Though it has been superseded by the Model 1060 thruster, which is 40% more powerful and 25% more efficient, the Model 1020 will remain in production for many years to support Tecnadyne's existing customer base.*



*The Nylon propeller of the Model 1020 is magnetically coupled using a design perfected by Tecnadyne. With this design, a magnet array in the hub of the propeller is driven by a matching magnet array attached to the drive motor. By eliminating the rotating drive shaft and shaft seals that always seem to leak over time, the Model 1020 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 several minutes.*

*Employing a high RPM, low inertia DC brushless motor, coupled to a 6/1 ratio planetary gearset, the Model 1020 delivers maximum reliability, high efficiency and high power in an extremely compact, lightweight and easy to maintain package. A Nylon propeller and Kort nozzle combine to give the Model 1020 extremely high Bollard thrust and open water efficiency. Optional stainless steel propellers are available when RH and LH rotation are required.*

*For depths to 1,500 meters, the power and control electronics are housed within the hard anodized aluminum motor casing, greatly simplifying the installation and electrical interface. For full ocean depth rating, the electronics are installed in a remote, one atmosphere housing (either the customer's housing or one supplied by Tecnadyne) and the thruster is oil filled for pressure tolerance.*

*The Model 1020 is available for operation at voltages from 48vdc to 330vdc (150vdc standard) supplied by a well filtered battery bank, rectified and filtered AC or a DC power supply. In addition to the main power, the thruster requires an isolated +/-5v analog speed and direction control signal. Alternately, a full servo RS232 or RS485 input controller is available but this must be installed in a remote, one atmosphere housing. Please refer to the Tecnadyne website for detailed installation and interface instructions.*

*The standard depth rating of the Model 1020 is 850 meters. 1,500 meters and full ocean depth with remote one atmosphere electronics are optional. Remote electronics options include the extremely compact Tecnadyne controller module or larger, full servo brushless or sensorless units. Customer specified subsea connectors and cables, stainless steel or titanium housings and custom mountings are also available.*

## MODEL 1020 SPECIFICATIONS

### **Bollard Output**

50lbf (22.7kg) forward  
32lbf (14.5kg) reverse

### **Input**

150vdc, 6.1A power  
(955 watts at alternate  
voltages)  
+/-5v analog speed  
command

### **Weight**

6.0lb (2.7kg) in air  
4.5lb (2.0kg) in water

### **Depth Rating**

2,800ft (850m) standard,  
5,000ft (1,500m) &  
full ocean depth (oil  
filled) optional

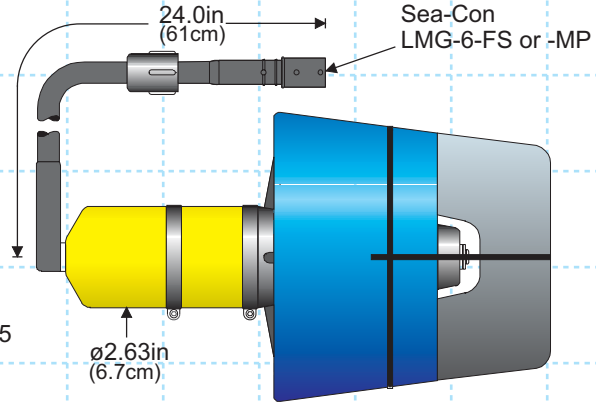
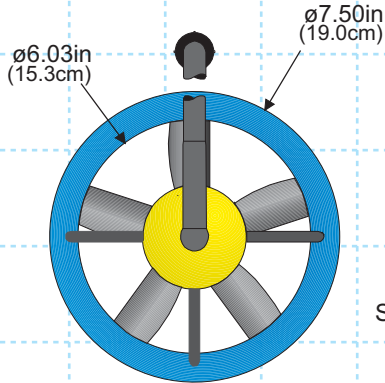
(1,000m & greater depth subject to  
US Govt. export approval)

# MODEL 1020 DC BRUSHLESS THRUSTERS

Part Number: 1020 -

- (48-55vdc) 048
- (55-65vdc) 060
- (90-100vdc) 095
- (115-125vdc) 120
- (145-160vdc) 150
- (170-180vdc) 175
- (190-210vdc) 200
- (250-270vdc) 260
- (300-330vdc) 330

- 0850 (850m depth)
- 1500 (1500m depth)
- OFRE (oil filled remote electronics)
- Ln (SeaCon LMG-6FS w/ cable length of n meters)
- Mn (SeaCon LMG-6MP w/ cable length of n meters)
- X (Customer specified connector)



SCALE 1:5

Note: Due to motor tolerances, voltage required to achieve rated Bollard thrust can vary +/-5%

Specifications subject to change without notice

