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ZF MARINE KRIMPEN is a company with more than 35 years experience in building azimuth propulsion units. Over the years, the company has designed, produced and commissioned various models of thrusters, for a multitude of applications around the world. This brought ZF Marine Krimpen the reputation of a reliable and renowned thruster supplier. All ZF marine thruster systems are developed, designed, and produced in-house, built under the umbrella of constant quality control which guarantees the reliability of the product.
### WELL MOUNTED AZIMUTH THRUSTERS

#### Z-DRIVE Horizontal inputshaft

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power* kW</th>
<th>Typical prop. dia. open mm</th>
<th>Typical prop. dia. nozzle mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF AT 2000 WM-FP</td>
<td>180</td>
<td>750</td>
<td>700</td>
</tr>
<tr>
<td>ZF AT 3000 WM-FP</td>
<td>300</td>
<td>1050</td>
<td>1000</td>
</tr>
<tr>
<td>ZF AT 400 WM-FP</td>
<td>440</td>
<td>1150</td>
<td>1100</td>
</tr>
<tr>
<td>ZF AT 4000 WM-FP</td>
<td>525</td>
<td>1350</td>
<td>1300</td>
</tr>
<tr>
<td>ZF AT 5000 WM-FP</td>
<td>625</td>
<td>1700</td>
<td>1650</td>
</tr>
<tr>
<td>ZF AT 6000 WM-FP</td>
<td>1200</td>
<td>1950</td>
<td>1900</td>
</tr>
<tr>
<td>ZF AT 7000 WM-FP</td>
<td>1650</td>
<td>2300</td>
<td>2200</td>
</tr>
<tr>
<td>ZF AT 8000 WM-FP</td>
<td>2000</td>
<td>2680</td>
<td>2400</td>
</tr>
</tbody>
</table>

* Rating subject to classification and application.  
Mentioned data for indication purposes only.  
Consult ZF Marine Krimpen’s technical staff to determine applicable power for each specific use.

### WELL MOUNTED AZIMUTH THRUSTERS

#### L-DRIVE Vertical inputshaft

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power* kW</th>
<th>Typical prop. dia. open mm</th>
<th>Typical prop. dia. nozzle mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF AT 2000 WM-FP</td>
<td>200</td>
<td>750</td>
<td>700</td>
</tr>
<tr>
<td>ZF AT 3000 WM-FP</td>
<td>300</td>
<td>1050</td>
<td>1000</td>
</tr>
<tr>
<td>ZF AT 400 WM-FP</td>
<td>440</td>
<td>1200</td>
<td>1150</td>
</tr>
<tr>
<td>ZF AT 4000 WM-FP</td>
<td>525</td>
<td>1350</td>
<td>1300</td>
</tr>
<tr>
<td>ZF AT 5000 WM-FP</td>
<td>625</td>
<td>1700</td>
<td>1650</td>
</tr>
<tr>
<td>ZF AT 6000 WM-FP</td>
<td>1200</td>
<td>1950</td>
<td>1900</td>
</tr>
<tr>
<td>ZF AT 7000 WM-FP</td>
<td>1650</td>
<td>2300</td>
<td>2200</td>
</tr>
<tr>
<td>ZF AT 8000 WM-FP</td>
<td>2000</td>
<td>2680</td>
<td>2400</td>
</tr>
</tbody>
</table>

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### Advantages compared to thrusters with single propeller:
- Higher efficiency with same propeller diameter.
- Same efficiency with reduced propeller diameter beneficial for shallow-draught applications.
- Reduced noise due to lower blade load.

### Typical applications are river going passenger vessels where noise is a critical issue, guaranteeing the comfort on board.

#### Deck Mounted Thrusters

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. Power*</th>
<th>Typical open prop. dia.</th>
<th>Typical nozzle dia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF aT 2000 WM-CR</td>
<td>150 kW</td>
<td>700 mm</td>
<td>28 inch</td>
</tr>
<tr>
<td>ZF aT 3000 WM-CR</td>
<td>300 kW</td>
<td>1125 mm</td>
<td>44 inch</td>
</tr>
<tr>
<td>ZF aT 4000 WM-CR</td>
<td>385 kW</td>
<td>1000 mm</td>
<td>39 inch</td>
</tr>
<tr>
<td>ZF aT 5000 WM-CR</td>
<td>770 kW</td>
<td>1400 mm</td>
<td>55 inch</td>
</tr>
</tbody>
</table>

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### CONTRA Rotation Azimuth Thrusters

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. Power*</th>
<th>Typical prop. dia. open</th>
<th>Typical prop. dia. nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF aT 2000 DM-Fp</td>
<td>180 kW</td>
<td>750 mm</td>
<td>30 inch</td>
</tr>
<tr>
<td>ZF aT 3000 DM-Fp</td>
<td>300 kW</td>
<td>1050 mm</td>
<td>41 inch</td>
</tr>
<tr>
<td>ZF aT 400 DM-Fp</td>
<td>440 kW</td>
<td>1150 mm</td>
<td>43 inch</td>
</tr>
<tr>
<td>ZF aT 4000 DM-Fp</td>
<td>525 kW</td>
<td>1350 mm</td>
<td>49 inch</td>
</tr>
<tr>
<td>ZF aT 5000 DM-Fp</td>
<td>825 kW</td>
<td>1700 mm</td>
<td>67 inch</td>
</tr>
</tbody>
</table>

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**DECK MOUNTED AZIMUTH THRUSTERS**

**Z-DRIVE** Horizontal input shaft

**Z-DRIVE & L-DRIVE**

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## RETRACTABLE AZIMUTH THRUSTERS

### Z-DRIVE
Horizontal input shaft

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power* [kW]</th>
<th>Hp</th>
<th>Typical prop. dia. nozzle [mm]</th>
<th>inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF AT 2000 RT-FP</td>
<td>180</td>
<td>241</td>
<td>700</td>
<td>28</td>
</tr>
<tr>
<td>ZF AT 3000 RT-FP</td>
<td>300</td>
<td>402</td>
<td>1000</td>
<td>39</td>
</tr>
<tr>
<td>ZF AT 4000 RT-FP</td>
<td>440</td>
<td>590</td>
<td>1100</td>
<td>43</td>
</tr>
<tr>
<td>ZF AT 5000 RT-FP</td>
<td>525</td>
<td>703</td>
<td>1300</td>
<td>51</td>
</tr>
<tr>
<td>ZF AT 6000 RT-FP</td>
<td>825</td>
<td>1105</td>
<td>1650</td>
<td>65</td>
</tr>
<tr>
<td>ZF AT 7000 RT-FP</td>
<td>1200</td>
<td>1608</td>
<td>1900</td>
<td>76</td>
</tr>
<tr>
<td>ZF AT 8000 RT-FP</td>
<td>2000</td>
<td>2680</td>
<td>2400</td>
<td>94</td>
</tr>
</tbody>
</table>

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Consult ZF Marine Krimpen’s technical staff to determine applicable power for each specific use.

### L-DRIVE
Vertical input shaft

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power* [kW]</th>
<th>Hp</th>
<th>Typical prop. dia. nozzle [mm]</th>
<th>inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF AT 2000 RT-FP</td>
<td>200</td>
<td>268</td>
<td>700</td>
<td>28</td>
</tr>
<tr>
<td>ZF AT 3000 RT-FP</td>
<td>300</td>
<td>402</td>
<td>1000</td>
<td>39</td>
</tr>
<tr>
<td>ZF AT 4000 RT-FP</td>
<td>440</td>
<td>590</td>
<td>1150</td>
<td>45</td>
</tr>
<tr>
<td>ZF AT 5000 RT-FP</td>
<td>525</td>
<td>703</td>
<td>1300</td>
<td>51</td>
</tr>
<tr>
<td>ZF AT 6000 RT-FP</td>
<td>825</td>
<td>1105</td>
<td>1650</td>
<td>65</td>
</tr>
<tr>
<td>ZF AT 7000 RT-FP</td>
<td>1200</td>
<td>1608</td>
<td>1900</td>
<td>76</td>
</tr>
<tr>
<td>ZF AT 8000 RT-FP</td>
<td>2000</td>
<td>2680</td>
<td>2400</td>
<td>94</td>
</tr>
</tbody>
</table>

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**SELECTION TABLE OF ZF THRUSTER RANGE**

### Fixed Pitch Tunnel Thrusters

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power*</th>
<th>Typical prop. dia.</th>
<th>Tunnel outer dia.</th>
<th>Tunnel wall thickness stand.</th>
<th>Tunnel length stand.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF TT 1000 FP</td>
<td>100</td>
<td>134</td>
<td>600</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>ZF TT 2000 FP</td>
<td>180</td>
<td>241</td>
<td>700</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>ZF TT 3000 FP</td>
<td>300</td>
<td>402</td>
<td>1050</td>
<td>41</td>
<td>15</td>
</tr>
<tr>
<td>ZF TT 4000 FP</td>
<td>440</td>
<td>590</td>
<td>1150</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>ZF TT 5000 FP</td>
<td>625</td>
<td>703</td>
<td>1350</td>
<td>53</td>
<td>16</td>
</tr>
<tr>
<td>ZF TT 6000 FP</td>
<td>1200</td>
<td>1608</td>
<td>1900</td>
<td>75</td>
<td>20</td>
</tr>
<tr>
<td>ZF TT 7000 FP</td>
<td>2300</td>
<td>2211</td>
<td>2300</td>
<td>91</td>
<td>22</td>
</tr>
<tr>
<td>ZF TT 8000 FP</td>
<td>2000</td>
<td>2680</td>
<td>2450</td>
<td>97</td>
<td>22</td>
</tr>
</tbody>
</table>

### Controllable Pitch Tunnel Thrusters

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power*</th>
<th>Typical prop. dia.</th>
<th>Tunnel outer dia.</th>
<th>Tunnel wall thickness stand.</th>
<th>Tunnel length stand.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF TT 4000 CP</td>
<td>500</td>
<td>670</td>
<td>1360</td>
<td>53</td>
<td>16</td>
</tr>
<tr>
<td>ZF TT 5000 CP</td>
<td>850</td>
<td>1139</td>
<td>1660</td>
<td>65</td>
<td>18</td>
</tr>
</tbody>
</table>

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**Fixed Pitch Tunnel Thrusters**

Z-DRIVE Horizontal inputshaft

L-DRIVE Vertical inputshaft
SHALLOW DRAUGHT THRUSTERS

Z-DRIVE & L-DRIVE

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**ZF Shallow Draught Thruster**
- 360° steering, no thrust deduction in any angle.
- Compact design, water intake and nozzle within one circle.
- Thanks to the unique design a relatively low intake speed of water, reducing the chances of sucking-in foreign objects or debris. Also very safe for divers.

This thruster can be used as:

1. **Main Propulsion**
   - on ships required to be able to navigate in shallow waters e.g. ferries, pontoons, landing craft.

2. **Auxiliary Propulsion**
   - as steerable thruster for auxiliary or back-up type propulsion e.g. research vessels, offshore-platforms, coaters (as ‘get-you-home’ unit), inland cargo ships.

3. **Bow Thruster**
   - as better alternative and also to replace (especially long) tunnel thrusters e.g. work pontoons, freighters (inland and ocean going), sheerlegs, dredgers.

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**ZF Thruster Systems** offers you this thruster in combination with the other range of steerable thrusters (retractable, well mounted and deck mounted propulsion units) and tunnel thrusters.

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**THRUSTER MOUNTING CONFIGURATIONS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Max. power**</th>
<th>Diameter outer well appr.</th>
<th>Height of outer well appr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kW</td>
<td>hp</td>
<td>mm</td>
</tr>
<tr>
<td>ZF SDT 2000 FP</td>
<td>180</td>
<td>134</td>
<td>1030</td>
</tr>
<tr>
<td>ZF SDT 3000 FP</td>
<td>195</td>
<td>261</td>
<td>1460</td>
</tr>
<tr>
<td>ZF SDT 4000 FP</td>
<td>350</td>
<td>469</td>
<td>1960</td>
</tr>
<tr>
<td>ZF SDT 5000 FP</td>
<td>575</td>
<td>770</td>
<td>2520</td>
</tr>
<tr>
<td>ZF SDT 6000 FP</td>
<td>825</td>
<td>1105</td>
<td>3060</td>
</tr>
</tbody>
</table>

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---

There are three different mounting configurations within the range of the ZF thrusters used for main propulsion.

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**WELL MOUNTED FROM TOP**
Well mounted top removal

Recommended for ships operating in areas with limited dry-docking facilities. This mounting configuration makes it possible to either install or remove the thruster from the ship while the vessel is still afloat.

**Advantages of this configuration are:**
- Easy maintenance or repair is possible since the thruster can be removed from the vessel without the need for dry-docking. This requires a permanent deck hatch or soft patch above the thruster.
- Downtime is limited since repair or replacement of a damaged thruster is easily accomplished in hours.
When neither a top mounting nor bottom mounting arrangement is possible or desired, the thruster can be delivered with a suitable welding structure around the vertical stem section, which will be incorporated into the vessel’s hull construction and welded into place.

A complete remote control system is a standard item in the ZF scope of supply. It is designed to control a single azimuth thruster and provides follow-up steering- and propulsion control, as well as independent backup- and emergency stop functionality.

A retractable thruster is used for auxiliary propulsion system or to increase the vessel’s “station keeping” capabilities. Once deployed below the hull, the thruster operates in full azimuth mode and when retracted, the thruster is completely “parked” inside the hull. A retractable thrusters is most commonly installed in the bow of a vessel where a tunnel can be incorporated into the design of the outer well to allow the thruster to be used as a conventional side thruster when fully retracted in shallow water.

In addition to the conventional tunnel thruster arrangement where the tunnel is welded integral to the vessel’s structure with the gearbox bolted directly onto the mounting flange, it is also possible to suspend the thruster in rubber. In this manner the thruster is isolated from the hull and direct contact between tunnel and hull construction is avoided. This reduces “structure borne noise” significantly. The flange arrangement also makes it possible to remove the thruster from the vessel without drydocking, provided that the vessel can be trimmed so the outerwell flange is above the waterline for removal.

When top mounting isn't possible due to design restrictions in the vessel’s construction that make access via a deck hatch above the thruster impossible, the thruster can be installed from below with a bottom mounting flange arrangement. The main advantage of this design is that the thruster can still be withdrawn from the ship if required. Dry-docking of the vessel is usually required, unless its possible to trim the vessel sufficiently forward to allow the thruster to be removed from below while keeping the outer well flange and thruster upper gearbox above the waterline.
REMOTE CONTROL SYSTEM

Standard control system consists of a Thruster Control Unit (TCU), which is to be placed in the immediate vicinity of the thruster, and one remote control panel on the bridge. Optionally a number of additional remote control panels can be connected. The local control facility is mounted on the door of the TCU. The TCU houses the electronics for interfacing with the thruster and power sources for steering and propulsion, as well as vertical positioning.

INTERFACING

Interfacing to several other systems such as Dynamic Positioning, joystick system, auto pilot, Voyage Data Recorder (VDR), alarm- and monitoring etc. can be supplied as an option.
2880T HEAVY FUEL TANKER “NORDEN” – SWEDEN

Length o.a.: 79.95 m
Breadth: 13.40 m
Draught: 5.00 m
ZF Reference: 5823
Model: ZF AT 6000 WM-FP / ZF TT 3000 FP
Rated power: 746 kW at 1600 rpm / 300 kW at 1500 rpm
Shipyard: Bodewes Shipyards – the Netherlands
Owner: OljOla AB – Sweden

Equipped with two (2) ZF AT 6111 well mounted azimuth thrusters and one (1) ZT TT 3001 electric driven tunnel thruster.
3000 M3 TANKER VESSEL “BARNOIL” – SPAIN

Length o.a. : 66.00 m
Breadth : 15.00 m
Draught : 5.00 m
ZF Reference : 4782
Model : ZF AT 6000 WM-FP / ZF TT 3000 FP
Rated power : 1020 kW at 1500 rpm / 300 kW at 1500 rpm
Supplied to : Astilleros Zamakona – Spain

Equipped with two (2) ZF AT 6411 well mounted azimuth thrusters and one (1) ZF TT 3001 electric driven tunnel thruster.
Length o.a. : 100.22 m
Breadth : 15.54 m
Draught : 5.00 m
ZF Reference : 4522
Model : ZF AT 7000 WM-FP (main propulsion) / ZF TT 5000 FP
Rated power : 1250 kW at 1800 rpm / 550 kW at 1225 rpm
Supplied to : Remontowa Shipyard – Poland
Owner : Van der Kamp B.V. – Netherlands

Equipped with two (2) ZF AT 7111 well mounted depth adjustable azimuth thrusters and
one (1) ZF TT 5000 tunnel thruster complete with
one (1) ZF MultiThruster Control System.
MULTI-PURPOSE SUPPORT VESSEL
"ZWERVER III" — NETHERLANDS

Length o.a. : 35.10 m
Breadth : 15.00 m
Draught : 2.60 m
ZF Reference : 10983 / 10984
Model : ZF AT 6000 WM-FP / ZF TT 3000 FP
Rated power : 940 kW at 1600 rpm / 220 kW at 1500 rpm
Supplied to : Shipyard Kooiman – Netherlands
Owner : Hvs Dredging Support – Netherlands

Equipped with one (1) ZF AT 6311 well mounted azimuth thruster and two (2) ZF TT 3001 hydraulic driven tunnel thrusters.
**PUSHER TUG**

**“MV FREEDOM” – USA**

Length o.a.: 25.00 m  
Breadth: 10.00 m  
Draught: 3.30 m  
ZF-Reference: 14119  
Model: ZF AT 5000 WM-FP  
Rated power: 746 kW at 1800 rpm  
Shipyard: John Bludworth Ship Yard, LLC – USA  
Owner: Enterprise Marine Services – USA

Equipped with two (2) ZF AT 5111 well mounted azimuth thrusters.
70M ACCOMODATION BARGE “ELISA” – TURKEY

Length o.a.: 70.00 m  
Breadth: 20.00 m  
Draught: 2.30 m  
ZF Reference: 6158  
Model: ZF AT 4000 WM-FP / ZF TT 3000 FP  
Rated power: 525 kW at 1200 rpm (main)  
270 kW at 1500 rpm (tunnel)  
Shipyard: Gelibolu Shipyards – Turkey  
Owner: ABC Maritime – Switzerland

Equipped with two (2) ZF AT 4011 well mounted azimuth thrusters and one (1) ZF TT 3001 electric driven tunnel thruster.
PIPE LAYING VESSEL
“C MASTER” (EX JASCON 5) – NIGERIA

Length o.a. : 140.00 m
Breadth : 40.60 m
Draught : 5.80 m
ZF-Reference : 3701 / 3078
Model : HRP 700
Rated power : 1566 kW at 1800 rpm
Supplied to : Sembawang Shipyard – Singapore
Owner : Kito Enterprises – UAE

Equipped with three (3) HRP 711 well mounted azimuth thrusters (aft) and two (2) HRP 711 retractable azimuth thrusters (midship) and three (3) HRP 711 well mounted azimuth thrusters (fore).
2X STAND-BY “ESVAGT CORONA” & “ESVAGT CAPELLA” – DENMARK

Length o.a.: 44.00 m
Breadth: 11.50 m
Draught: 4.20 m
ZF Reference: 4838
Model: ZF AT 5000 WM-FP / ZF SDT 5000 FP
Rated power: 715 kW at 1200 rpm / 300 kW at 1200 rpm
Supplied to: Astilleros Zamakona – Spain
Owner: Esvagt – Denmark

Equipped with two (2) ZF AT 5011 well mounted azimuth thrusters and one (1) ZF SDT 5010 shallow draught bow thruster.
2300 M3 TRAILING SUCTION HOPPER
DREDGER “UKD ORCA” – UK

Length o.a.: 78.00 m
Breadth: 15.85 m
Draught: 4.50 m
ZF Reference: 8355
Model: ZF AT 8000 WM-FP / ZF TT 5000 FP
Rated power: 1500 kW at 1200 rpm / 500 kW at 1500 rpm
Supplied to: Barkmeijer – Netherlands
Owner: UK Dredging – UK

Equipped with two (2) ZF AT 8411 well mounted azimuth thrusters and one (1) ZF TT 5003 electric driven tunnel thruster.
THAMES PASSENGER VESSEL
“MERCURIA” – UK

Length o.a.: 35.00 m
Breadth: 7.25 m
Draught: 1.40 m
ZF Reference: 5992
Model: ZF AT 3000 WM-FP
Rated power: 184 kW at 1800 rpm
Supplied to: Tinnemans B.V. – Netherlands
Owner: Westminster Party boats – UK

Equipped with two (2) ZF AT 3111
well mounted azimuth thrusters.
Length o.a.: 135.00 m
Breadth: 11.45 m
Draught: 3.00 m
ZF Reference: 6595
Model: ZF AT 5000 WM-FP
Rated power: 700 kW at 1940 rpm
Supplied to: St. Antonius - Netherlands
Owner: Jero Scheepvaartbedrijf B.V. – Netherlands

Equipped with two (2) ZF AT 5111 well mounted azimuth thrusters.
29M NAVY RESEARCH VESSEL
“A 541” & “A 543” – DENMARK

Length o.a.: 28.90 m
Breadth: 6.30 m
Draught: 1.74 m
ZF Reference: 5770
Model: ZF AT 400 WM-FP
Rated power: 375 kW at 1800 rpm
Supplied to: Nordhaven A/S – Denmark
Owner: Danish Navy

Each equipped with two (2) ZF 411-51 well mounted azimuth thrusters complete with Multi-Thruster Control System.
LIFTBOAT
"LEWEK LEADER" – SINGAPORE

Length o.a. : 56.00 m
Breadth : 44.00 m
Draught : 3.40 m
ZF Reference : 7987
Model : ZF AT 6000 WM-FP / ZF TT 4000 FP
Rated power : 1100 kW at 1200 rpm / 440 kW at 1200 rpm
Supplied to : Ezra Marine Services Pte Ltd
Owner : Teras Cargo Transport – Singapore

Equipped with three (3) ZF AT 6011 well mounted azimuth thrusters and one (1) ZF TT 4001 tunnel thruster.
ASD TUGBOAT
"TIGER 6" – HAWAII

Length o.a. : 21.00 m
Breadth : 8.50 m
Draught : 3.50 m
ZF Reference : 5155
Model : ZF AT 7000 WM-FP
Rated power : 1566 kW at 1600 rpm
Supplied to : P&R Watertaxi – Hawaii
Owner : P&R Watertaxi – Hawaii

Equipped with two (2) ZF AT 7311 well mounted azimuth thrusters.
EXPEDITION TRI-DECK YACHT
“IRIE MAN” – ITALY

Length o.a. : 23.90 m
Breadth : 8.00 m
Draught : 2.50 m
ZF-Reference : 11938
Model : ZF AT 4000 WM-FP / ZF TT 1000 FP
Rated power : 525 kW at 1800 rpm / 75 kW at 1500 rpm
Supplied to : CNC Yachting – Italy

Equipped with two (2) ZF AT 4111 diesel driven well mounted azimuth thrusters and one (1) ZF TT 1001 tunnel thruster in the bow.
PUSHER TUG
"FRANK T. STEGBAUER" – USA

Length o.a.: 120.00 m
Breadth: 34.00 m
Draught: 3.00 m
ZF Reference: 7706
Model: ZF AT 8000 WM-FP
Rated power: 1190 kW at 1800 rpm
Supplied to: Steiner Shipyard Inc. – USA
Owner: Southern Towing – USA

Equipped with two (2) ZF AT 6111 well mounted azimuth thrusters.
2X 60 TONS BOLLARD PULL TUGS
“C DIAMANTE” & “C BRILHANTE” – BRASIL

Length o.a.: 32.00 m
Breadth: 11.60 m
Draught: 3.70 m
ZF Reference: 7277
Model: ZF AT 7000 WM-FP
Rated power: 1650 kW at 1800 rpm
Supplied to: Detroit Brasil LTDA – Brasil
Owner: Camorim Servicos Maritimos LTDA – Brasil

Each vessel equipped with two (2) ZF AT 7111 well mounted azimuth thrusters.
45 TONS BOLLARD PULL TUG “SHUSWAP” – CANADA

Length o.a.: 17.67 m
Breadth: 8.58 m
Draught: 3.81 m
ZF Reference: 10861
Model: ZF AT 6000 WM-FP
Rated power: 1200 kW at 1600 rpm
Owner: Samson Tug Boats Inc. – Canada

Equipped with two (2) ZF AT 6311 well mounted azimuth thrusters.
PUSHER TUG
“BROOKE BANTA” – USA

Length o.a.: 23.00 m
Breadth: 9.00 m
Draught: 2.80 m
ZF Reference: 9254
Model: ZF AT 4000 WM-FP
Rated power: 440 kW at 1600 rpm
Supplied to: Chem Carriers LLC – USA
Owner: The Sunshine – USA

Equipped with two (2) ZF AT 4111 well mounted azimuth thrusters.
BALANCE DIPPER
“DE NEUS” – BELGIUM

Length o.a.: 53.00 m
Breadth: 19.00 m
Draught: 1.80 m
ZF Reference: 4230
Model: ZF AT 400 WM-FP
Rated power: 325 kW at 1250 rpm
Supplied to: Shipyard de Donge – Netherlands
Owner: Antwerp Harbour Authorities – Belgium

Equipped with two (2) ZF AT 430-50 well mounted azimuth thrusters.
Length o.a.: 70.00 m  
Breadth: 18.28 m  
Draught: 3.37 m  
ZF Reference: 3281  
Model: ZF AT 400 WM-FP  
Rated power: 400 kW at 1800 rpm  
Supplied to: Smit Pentow – South Africa

Equipped with two (2) ZF AT 410-50 well mounted azimuth thrusters.
87M DOUBLE-ENDED FERRY “CRES” – CROATIA

Length o.a.: 87.60 m
Breadth: 17.50 m
Draught: 2.40 m
ZF Reference: 5716
Model: ZF AT 4000 WM-FP
Rated power: 403 kW at 1800 rpm
Supplied to: Brodosplit – Croatia
Owner: JADROLINIJA – Croatia

Equipped with four (4) ZF AT 4111 well mounted azimuth thrusters.
55M CAR/PASSENGER FERRY “MARY” – DENMARK

Length o.a. : 55.00 m
Breadth : 13.00 m
Draught : 2.50 m
ZF Reference : 6006
Model : ZF AT 400 WM-FP
Rated power : 300 kW at 1800 rpm
Supplied to : Assens Shipyard – Denmark
Owner : Hvalpsund – Denmark

Equipped with two (2) ZF AT 411-51 well mounted azimuth thrusters.
41 TONS BOLLARD PULL TRACTOR TUG “ARION” – NETHERLANDS

Length o.a. : 28.00 m  
Breadth : 9.00 m  
Draught : 5.20 m  
ZF Reference : 10817  
Model : ZF AT 8000 WM-FP  
Rated power : 1150 kW at 1000 rpm  
Supplied to : Sleepdienst B. Iskes & Zn. BV – Netherlands  
Owner : Sleepdienst B. Iskes & Zn. BV – Netherlands

Equipped with two (2) ZF AT 6611 well mounted azimuth thrusters.
95M CAR/PASSENGER FERRY
“GLYKOFILOUSSA I & II” – GREECE

Length o.a.: 85.00 m
Breadth: 20.00 m
Draught: 2.30 m
ZF Reference: 5914 / 6742
Model: ZF AT 4000 WM-FP
Rated power: 525 kW at 1800 rpm
Supplied to: F/B Panagiotis TH – Greece
Owner: Mr. Theodoropoulos – Greece

Each vessel equipped with four (4) ZF AT 4111 well mounted azimuth thrusters.
DOUBLE-ENDED FERRY
“CHRISTINA” – NETHERLANDS

Length o.a. : 42.66 m
Breath : 10.50 m
ZF-Reference : 11134
Model : ZF AT 2000 WM-FP
Rated power : 133 kw at 2200 rpm
Owner : Veerbedrijf De Visser B.V. – Netherlands

Equipped with four (4) ZF AT 2111 well mounted azimuth thrusters.
43M DOUBLE-ENDED FERRY “ARAWHITI” – NEW ZEALAND

Length o.a. : 43.00 m
Breadth : 13.00 m
Draught : 1.40 m
ZF Reference : 5815
Model : ZF AT 2000 WM-FP
Rated power : 186 kW at 2400 rpm
Supplied to : Shipco Marine Constructors Ltd
Owner : Fullers Bay of Islands

Equipped with two (2) ZF AT 2111 well mounted azimuth thrusters.
BACKHOE DREDGERS “VITRUVIUS” & “MIMAR SINAN” – BELGIUM

Length o.a.: 64.90 m
Breadth: 18.00 m
Draught: 3.35 m
ZF Reference: 6646
Model: ZF AT 4000 WM-FP
Rated power: 500 kW at 1200 rpm
Supplied to: de Donge Shipyard – Netherlands
Owner: Jan de Nul – Belgium

Equipped with two (2) ZF AT 4011 well mounted azimuth thrusters.
70M PLATFORM SUPPLY VESSEL “DMS COURAGEOUS” – QATAR

Length o.a.: 70.00 m  
Breadth: 16.80 m  
Draught: 5.70 m  
ZF Reference: 6696  
Model: ZF AT 8000 WM-FP  
Rated power: 1835 kW at 1600 rpm  
Supplied to: Mawei Shipbuilding – China  
Owner: Doha Marine Services – Qatar

Equipped with two (2) ZF AT 8311 well mounted azimuth thrusters.
49.5M BUNKER BARGE
“GIANNIS ARETI” – GREECE

Length o.a. : 49.50 m
Breadth : 10.00 m
Draught : 3.75 m
ZF-Reference : 6743
Model : ZF AT 4000 WI-FP
Rated power : 525 kW at 1800 rpm
Supplied to : Amilla Naftiki Eteria – Greece
Owner : Amilla Naftiki Eteria – Greece

Equipped with two (2) ZF AT 4111 weld-in azimuth thrusters.
48M AHTS VESSEL
“SWISSCO SUPERIOR” – SINGAPORE

Length o.a.: 48.00 m
Breadth: 10.00 m
Draught: 4.00 m
ZF Reference: 7121
Model: ZT AT 8000 WM-FP / ZF TT 3000 FP
Rated power: 1746 kW at 1600 rpm
Supplied to: Lingshan Shipyard – China
Owner: Swissco Offshore – Singapore

Equipped with two (2) ZF AT 8311 well mounted azimuth thrusters and one (1) ZF TT 3001 tunnel thruster and Multi-Thruster Control System.
CHEMICAL TANKERS “CHEM FLOWER”, “ROSE” & “VIOLET” – TURKEY

Length o.a. : 85.00 m
Breadth : 12.60 m
Draught : 5.30 m
ZF Reference : 7466 / 7646 / 7647
Model : ZF AT 7000 WM-FP / ZF TT 2000 FP
Rated power : 940 kW at 1600 rpm / 200 kW at 1480 rpm
Supplied to : Cicek SY – Turkey

Each vessel equipped with two (2) ZF AT 7311 well mounted azimuth thrusters with ICE 1B classification and one (1) ZF TT 2001 tunnel thruster, electric driven.
RIVER GOING TANKER VESSEL
"TILL DEYMANN" – GERMANY

Length o.a.: 109.80 m
Breadth: 11.45 m
Draught: 3.75 m
ZF Reference: 6303
Model: ZF AT 3000 WM-FP / ZF AT 4000 WM-FP
Rated power: 300 / 525 kW at 1800 rpm
Supplied to: Köterwerft – Germany
Owner: Reederei Deymann – Germany

Equipped with two (2) ZF AT 3111 well mounted azimuth thrusters and two (2) ZF AT 4111 well mounted azimuth thrusters.
91M NORDIC FERRY
"KANHAVE" - NORWAY

Length o.a.: 91.43 m
Breadth: 16.20 m
Draught: 3.20 m
ZF Reference: 7656
Model: ZF AT 6000 WM-FP
Rated power: 1170 kW at 1600 rpm
Supplied to: Technical Office Petihakis - Greece
Owner: Bornholms Trafikken - Norway

Equipped with four (4) ZF AT 6311 WM-FP well mounted azimuth thrusters.
JACK-UP VESSELS “SEAJACKS KRAKEN” & “SEAJACKS LEVIATHAN” – BERMUDA

Length o.a. : 61.00 m
Breadth : 36.00 m
Draught : 6.00 m
ZF-Reference : 7878 & 7879
Model : ZF AT 7000 WM-FP
Rated power : 1500 kW at 1000 rpm
Supplied to : Lamprell Group – Dubai
Owner : Seajacks International Ltd – UK

Each equipped with four (4) ZF AT 7011 well mounted azimuth thrusters.
40M CAR/PASSENGER FERRY
"REGINA FLUMINUM II" – NETHERLANDS

Length o.a. : 39.95 m
Breadth : 12.40 m
Draught : 1.55 m

ZF Reference : 8234
Model : ZF AT 2000 WM-FP
Rated power : 180 kW at 1800 rpm
Supplied to : Shipyard Den Breejen – Netherlands
Owner : Veerdienst Eck & Wiel – Netherlands

Equipped with two (2) ZF AT 2111 well mounted azimuth thrusters.
MULTI-PURPOSE CARGO VESSEL
"JAGUAR" - NETHERLANDS

Length o.a. : 107.20 m
Breadth : 16.00 m
Draught : 6.45 m
ZF-Reference : 11535/11536
Model : ZF AT 7000 WM-FP & ZF TT 4000 FP
Rated power : 1445 kW at 1800 rpm / 400 kW at 1800 rpm
Supplied to : Shipkits B.V. – Netherlands
Owner : Jaguar Shipping – Netherlands

Equipped with two (2) ZF AT 7111 well mounted azimuth thrusters, electric driven and two (2) ZF TT 4004 tunnel thrusters, electric driven.
MULTI-PURPOSE CARGO VESSEL
“ABIS DOVER” – NETHERLANDS

Length o.a.: 107.95 m
Breadth: 16.00 m
Draught: 9.30 m
ZF Reference: 11537/11538
Model: ZF AT 7000 WM-FP & ZF TT 4000 FP
Rated power: 1445 kW at 1800 rpm / 400 kW at 1800 rpm
Supplied to: Shipkits B.V. – Netherlands
Owner: ABIS Shipping – Netherlands

Equipped with two (2) ZF AT 7111 well mounted azimuth thrusters, electric driven and two (2) ZF TT 4004 tunnel thrusters, electric driven.
"35 TON FLOAT CRANE BARGE “EXPERT 1” – MALTA"

Length o.a. : 40.32 m
Breadth : 20.00 m
Draught : 4.00 m
ZF-Reference : 13704
Model : ZF AT 4000 WM-FP
Rated power : 525 kW at 1800 rpm
Supplied to : Ganz Danubius Shipyard – Budapest
Owner : STS Expert Shipping Co. Ltd – Malta

Equipped with two (2) ZF AT 4111 well mounted azimuth thrusters.
Length o.a. : 76.00 m
Breadth : 36.00 m
Draught : 6.00 m
ZF Reference : 8963
Model : ZF AT 6000 WM-FP
Rated power : 1200 kW at 1200 rpm
Owner : Gulf Marine Services – Abu Dhabi

Equipped with four (4) ZF AT 6011 well mounted azimuth thrusters.
RIVER PUSHER TUG
“M/V AMERICAN WAY” – USA

Length o.a.: 23.00 m
Breadth: 9.00 m
ZF-Reference: 14456
Model: ZF AT 5000 WM-FP
Rated power: 746 kW at 1800 rpm
Shipyard: Steiner Construction – USA
Owner: American Commercial Lines – USA

Equipped with two (2) ZF AT 5111 well mounted azimuth thrusters, diesel driven.
TUG “RENEGADE” (BACKGROUND: “NUMAS WARRIOR”) – USA

Length o.a. : 17.00 m
Breath : 6.00 m
ZF-Reference : 11699
Model : ZF AT 5000 WM-FP
Rated power : 821 kW at 1800 rpm
Owner : Standard Towing LTD – Jack Davies

Equipped with two (2) ZF AT 5111 well mounted azimuth thrusters.
TOWBOAT
"Z SHARON" - USA

Length o.a. : 28.00 m
Breadth : 9.00 m
ZF-Reference : 12170
Model : ZF AT 5000 WM-FP
Rated power : 672 kW at 1800 rpm
Owner : DeLoach Marine - USA

Equipped with two (2) ZF AT 5111 well mounted azimuth thrusters.
RIVER CRUISE PASSENGERS VESSEL
“SERENADE 1” – NETHERLANDS

Length o.a.: 110.00 m
Breadth: 11.45 m
Draught: 1.55 m
ZF-Reference: 6377
Model: ZF AT 5000 WM-CR
Rated power: 783 kW at 1600 rpm
Supplied to: De Gerlien van Tiem B.V. – Netherlands
Owner: Select Cruise Voyages B.V. – Netherlands

Equipped with two (2) ZF AT 5116 well mounted azimuth thrusters with contra-rotating propellers.
PASSENGERS VESSEL “ERASMUS” – NETHERLANDS

Length o.a.: 30.00 m
Breadth: 5.95 m
Draught: 1.10 m
ZF Reference: 4486
Model: ZF AT 2000 WM-CR
Rated power: 184 kW at 2000 rpm
Supplied to: Rhein und Ijssel AG – Switzerland

Equipped with two (2) ZF AT 2111 well mounted azimuth thrusters with contra-rotating propellers.
1180 M3 RIVER GOING TANKER VESSEL “SARDANA” – NETHERLANDS

Length o.a.: 84.70 m
Breadth: 9.98 m
Draught: 3.19 m
ZF-Reference: 5517
Model: ZF AT 4000 WM-CR
Rated power: 500 kW at 1800 rpm
Supplied to: Scheepswerf L.J. Boer – Netherlands
Owner: Xander Kleine – Netherlands

Equipped with two (2) ZF AT 4116 well mounted azimuth thrusters with contra-rotating propellers.
RIVER CRUISE PASSENGER VESSEL
“NESTROY” – SWITZERLAND

Length o.a.: 124.85 m
Breadth: 11.45 m
Draught: 1.55 m
ZF Reference: 6959
Model: ZF AT 5000 WM-CR
Rated power: 800 kW at 1800 rpm
Supplied to: Den Breejen Shipyard B.V. – Netherlands
Owner: Swiss Cruises International Kreuzfahrten GmbH (SCI)

Equipped with two (2) ZF AT 5116 well mounted azimuth thrusters with contra-rotating propellers.
81M WIND FARM INSTALLATION VESSEL 
"ZARATAN" – PANAMA

Length o.a. : 81.00 m
Breadth : 41.00 m
Draught : 7.00 m
ZF Reference : 11136
Model : ZF AT 8000 RT-FP / ZF AT 7000 WM-FP
Rated power : 2000 kW at 900 rpm / 1500 kW at 1000 rpm
Supplied to : Lamprell Energy – Dubai
Owner : Seajacks International Ltd – UK

Equipped with two (2) ZF AT 8011 retractable azimuth thrusters and three (3) ZF AT 7011 well mounted azimuth thrusters.
Length o.a. : 90.00 m  
Breadth : 28.40 m  
Draught : 4.90 m  
ZF Reference : 7726  
Model : ZF AT 6000 RT-FP / ZF AT 6000 WM-FP / ZF TT 5000 FP  
Rated power : 1150 kW at 1600 rpm / 650 kW at 1200 rpm  
Owner : Stemat Marine Services – Netherlands  

Equipped with two (2) ZF AT 6111 retractable azimuth thrusters, two (2) ZF AT 6111 well mounted azimuth thrusters and one (1) ZF TT 5001 tunnel thruster.
SEAGOING SUCTION DREDGER “D’ARTAGNAN” – BELGIUM

Length o.a.: 123.80 m
Breadth: 25.20 m
Draught: 6.20 m
ZF Reference: 5183
Model: ZF AT 5000 RT-FP
Rated power: 1000 kW at 1500 rpm
Supplied to: IHC – Netherlands
Owner: DEME – Belgium

Equipped with one (1) ZF AT 5011 retractable thruster, electric driven.
Length o.a. : 97.50 m  
Breadth : 16.50 m  
Draught : 5.61 m  
ZF-Reference : 6210  
Model : ZF AT 6000 RT-FP  
Rated power : 1100 kW at 1200 rpm  
Owner : Ministry of Research and Technology – Germany

Equipped with one (1) ZF AT 6011 retractable azimuth thruster with tunnel mode.
Length o.a.: 123.80 m
Breadth: 25.20 m
Draught: 8.20 m
ZF Reference: 11499
Model: ZF AT 5000 RT-FP
Rated power: 1000 kW at 1650 rpm
Supplied to: IHC Dredgers B.V. – Netherlands
Owner: Deme N.V. – Belgium

Equipped with one (1) ZF AT 5013 retractable azimuth thruster.
STANDBY VESSEL
“GRAMPIAN DON” – SPAIN

Length o.a.: 50.70 m
Breadth: 13.00 m
Draught: 4.30 m
ZF-Reference: 11255
Model: ZF AT 4000 RT-FP
Rated power: 380 kW at 1200 rpm
Supplied to: Astilleros Balenciaga – Spain
Owner: North Star Shipping – Spain

Equipped with one (1) ZF AT 4011 retractable azimuth thruster.
187M RIVER GOING VESSEL
“CAMARO I & II” – NETHERLANDS

Length o.a.: 187.00 m
Breadth: 11.45 m
Draught: 3.00 m
ZF-Reference: 4078
Model: ZF AT 400 RT-FP
Rated power: 400 kW at 1800 rpm
Supplied to: Scheepswerf en Machinefabriek Gebr. Kooiman
Owner: Camaro B.V. – Netherlands

Equipped with one (1) ZF AT 410-50 retractable azimuth thruster.
75M MAINTENANCE & SUPPORT VESSEL “ARMADA FIRMAN 2” – SINGAPORE

Length o.a.: 75.00 m
Breadth: 16.00 m
Draught: 5.95 m
ZF Reference: 7137
Model: ZF AT 5000 RT-FP / ZF TT 5000 FP
Rated power: 705 kW at 1500 rpm / 735 kW at 1200 rpm
Supplied to: Pan United Shipyard – Singapore
Owner: Bumi Armada Navigation Sdn Bhd – Singapore

Equipped with two (2) ZF AT 5011 retractable azimuth thruster and two (2) ZF TT 5007 tunnel thrusters.
76M TRANSPORT VESSEL "TROPICAL DAWN" – SINGAPORE

Length o.a.: 76.00 m
Breadth: 17.20 m
Draught: 3.00 m
ZF Reference: 6183
Model: ZF AT 5000 DM-FP
Rated power: 882 kW at 1800 rpm
Supplied to: Sembawang Kimtrans Ltd – Singapore
Owner: Tropical Shipping – Singapore

Equipped with two (2) ZF AT 5111 deck mounted azimuth thrusters.
Length o.a. : 91.00 m
Breadth : 20.00 m
Draught : 3.90 m
ZF Reference : 10794
Model : ZF AT 5000 DM-FP
Rated power : 746 kW at 1800 rpm
Supplied to : Maritec NV – Belgium
Owner : Maritec NV – Belgium

Equipped with two (2) ZF AT 5111 deck mounted azimuth thrusters.
4700 DWT COAL BARGES “SINAR BARITO/BORNEO/BANJAR” – INDONESIA

Length o.a. : 82.30 m
Breath : 21.40 m
Draught : 3.71 m
ZF Reference : 4401
Model : ZF AT 4000 DM-FP
Rated power : 529 kW at 1800 rpm
Supplied to : ASL Shipyard Batam – Indonesia
Owner : PT Cumavis – Indonesia

Equipped with two (2) ZF AT 4111
deck mounted azimuth thrusters.
CEMENT CARRIERS
“SHUTTEL 1 & 2” – BELGIUM

Length o.a.: 27.00 m
Breadth: 9.15 m
Draught: 1.00 m
ZF-Reference: 4330
Model: ZF AT 2000 DM-FP
Rated power: 130 kW at 1800 rpm
Supplied to: BESIX – Belgium

Equipped with four (2x2) ZF AT 2111 deck mounted azimuth thrusters.
Length o.a. : 67.45 m
Breadth : 16.00 m
Draught : 2.50 m
ZF-Reference : 11031
Model : ZF AT 5000 SM-FP
Rated power : 820 kW at 1800 rpm
Owner : River Cruise vessel – USA

Equipped with two (2) ZF AT 5111 stern mounted azimuth thrusters.
86M PARTY SHIP
“OCEAN DIVA” – NETHERLANDS

Length o.a.: 60.30 m
Breadth: 11.30 m
Draught: 3.38 m
ZF Reference: 4585
Model: ZF AT 3000 DM-FP / ZF TT 3000 FP
Rated power: 350 kW at 1800 rpm
Supplied to: Volharding Shipyards – Netherlands
Owner: Ocean Diva B.V. – Netherlands

Equipped with two (2) ZF AT 3111 deck mounted azimuth thrusters and one (1) ZF TT 2101 tunnel thruster.
HEAVY LIFT JACK UP
“GOLIATH” – LUXEMBOURG

Length o.a.: 55.50 m
Breadth: 32.20 m
Draught: 3.60 m
ZF Reference: 11072
Model: ZF AT 6000 DM-FP
Rated power: 970 kW at 1800 rpm
Owner: Geo Sea – Luxembourg

Equipped with four (4) ZF 6111 deck mounted azimuth thrusters complete with Multi Thruster Control System.
DAMEN MOTOR FERRY 2106
"GOLUBICA" – VUKOVAR, CROATIA

Length o.a.: 22.50 m
Breadth: 6.00 m
Draught: 1.45 m
ZF Reference: 10552
Model: ZF AT 2000 DM-FP
Rated power: 130 kW at 1900 rpm
Supplied to: Damen Shipyard Hardinxveld – Netherlands

Equipped with two (2) ZF AT 2111
deck mounted azimuth thrusters.
LAKE FERRY
“PEARL” – UGANDA

ZF-Reference : 10956
Model : ZF AT 3000 DM-FP
Rated power : 300 kW at 1800 rpm
Supplied to : Songoro Marine Transport Boatyard – Tanzania

Equipped with two (2) ZF AT 3111
deck mounted azimuth thrusters, diesel driven
HEAVY CARGO SHIP
“OCEANIC” – NETHERLANDS

Length o.a.: 92.90 m
Breadth: 15.30 m
Draught: 5.60 m
ZF-Reference: 11803
Model: ZF TT 3000 FP
Rated power: 300 kW at 1500 rpm
Supplied to: Hartman Marine Shipbuilding – Netherlands
Owner: Global Seatrade – Netherlands

Equipped with two (2) ZF TT 3001
tunnel thrusters, bow and stern.
CONTAINER VESSELS “MAASSTROOM” & "MERWEDESTROOM" – NETHERLANDS

Length o.a. : 141.60 m
Breadth : 20.60 m
Draught : 7.30 m
ZF Reference : 4153 / 5016
Model : ZF TT 5000 CP
Rated power : 700 kW at 1750 rpm
Supplied to : IHDA Shipbuilding – Netherlands
Owner : Universal Marine – Netherlands

Each vessel equipped with
one (1) ZF TT 5008 tunnel thruster.
96M FERRY “AQUA JEWEL” – GREECE

Length o.a. : 96.00 m
Breadth : 16.80 m
Draught : 4.40 m
ZF-Reference : 5941
Model : ZF TT 3000 FP
Rated power : 250 kW at 1800 rpm
Supplied to : Alpha Ferries – Greece

Equipped with one (1) electric driven ZF TT 3001 tunnel thruster.
Length o.a.: 60.00 m
Breadth: 20.00 m
Draught: 5.20 m
ZF-Reference: 6200
Model: ZF TT 4000 CP
Rated power: 515 kW at 1800 rpm
Supplied to: Muhibbah Marine Engineering – Malaysia
Owner: Tanjung Offshore – Malaysia

Equipped with one (1) ZF TT 4009 tunnel thruster, electric driven.
12,000M³ SUCTION HOPPER DREDGER
“CHANG JIANG KOU 01” – CHINA

Length o.a.: 132.00 m
Breadth: 27.30 m
Draught: 8.37 m
ZF-Reference: 10821
Model: ZF TT 5000 CP
Rated power: 500 kW at 1780 rpm
Supplied to: IHC Dredgers – Netherlands
Owner: Yangtze Estuary Waterway Administration Bureau MOT – China

Equipped with two (2) ZF TT 5009 WM-CP electric driven controllable pitch tunnel thrusters.
ICEBREAKER SUPPLY VESSEL
“ARCTICABORG” – KAZAKHSTAN

Length o.a. : 65.10 m
Breadth : 16.60 m
Draft : 2.90 m
ZF-Reference : 2395
Model : ZF TT 400 FP
Rated power : 150 kW at 1450 rpm (Ice class 1A Super)
Supplied to : Kvearner – Finland
Owner : Royal Wagenborg – Netherlands

Equipped with one (1) ZF TT 401C-FP tunnel thruster.
5400 HP AHSV
"MORRISON TIDE" - USA

Length o.a.: 64.00 m
Breadth: 14.00 m
Draft: 4.00 m
ZF Reference: 5266
Model: ZF TT 4000 CP
Rated power: 400 kW at 1800 rpm
Supplied to: P.T. Batamec Shipyard - Indonesia
Owner: Tidewater - USA

Equipped with two (2) electric driven ZF TT 4008 controllable pitch tunnel thrusters (bow and stern).
56M NAVY PATROL BOAT “LARRAKIA” – AUSTRALIA

Length o.a.: 56.80 m
ZF-Reference: 4766
Model: ZF TT 2000 ALU-FP
Rated power: 160 kW
Supplied to: Australia
Owner: Royal Australian Navy

Equipped with one (1) ZF TT 2001 ALU-FP electric driven aluminium tunnel thruster.
50M DECK CARGO VESSEL “MERLIN III” — ST. VINCENT & GRENADINES

Length o.a.: 49.80 m
Breadth: 10.90 m
Draught: 2.19 m
ZF Reference: 4940
Model: ZF TT 3000 Fp
Rated power: 254 kW at 1218 rpm
Supplied to: Gelibolu Shipyard – Turkey
Owner: Arabella Shipping Ltd – Kingstown

Equipped with two (2) diesel driven ZF TT 3001 tunnel thrusters.
CATAMARAN FERRYBOAT “SPIRIT OF KANGAROO ISLAND” – AUSTRALIA

Length o.a. : 50.40 m
Breadth : 17.80 m
Draught : 2.50 m
ZF-Reference : 4766
Model : ZF TT 2000 FP
Rated power : 160 kW at 1500 rpm
Supplied to : AUSTAL Ships – Australia
Owner : Sealink Kangaroo Island – Australia

Equipped with two (2) ZF TT 2001 electric driven tunnel thrusters.
90M THREE MAST SCHOONER “ATHENA” – NETHERLANDS

Length : 90.00 m
Breadth : 12.20 m
Draught : 5.50 m
ZF-Reference : 3436
Model : HRP 300-60
Rated power : 220 kW
Supplied to : Royal Huisman Shipyard – Netherlands

Equipped with two (2) hydraulic driven HRP 300-60 bow and stern tunnel thrusters.
65M ALUMINIUM YACHT
“GALATICA STAR” – NETHERLANDS

Length o.a.: 65.00 m
Breath: 11.30 m
Draught: 3.10 m
ZF-Reference: 11541
Model: ZF TT 2000 ALU-FP
Rated power: 165 kW at 1500 rpm
Supplied to: Heesen Yachts – Netherlands

Equipped with one (1) ZF TT 2001 ALU-FP
electric driven aluminium tunnel thruster.
116M ICEBREAKER
“MOSKVA” – RUSSIA

Length o.a. : 116.00 m
Breadth : 26.50 m
Draught : 8.50 m
ZF-Reference : 6202
Model : ZF TT 8000 FP
Rated power : 1000 kW at 1200 rpm
Supplied to : Baltiysky Zavod JSC Shipyard
Owner : Rosmorport

Equipped with two (2) ZF TT 8001 fixed pitch tunnel thrusters.
54M YACHT
“LEO FUN” – TURKEY

Length o.a. : 53.70 m
Breadth : 9.40 m
Draught : 3.05 m
ZF-Reference : 6889
Model : ZF TT 1000 FP
Rated power : 100 kW at 1480 rpm
Supplied to : Proteksan – Turkey

Equipped with one (1) electric driven
ZF TT 1001 tunnel thruster.
Length o.a.: 48.40 m
ZF-Reference: 7842
Model: ZF TT 1000 FP
Rated power: 65 kW
Supplied to: Samusky Shipbuilding – Russia
Design: Proline – Ukraine

Equipped with one (1) ZF TT 1001 tunnel thruster.
10.900 DWT OIL/CHEMICAL TANKERS
“T. GÖNUL” & “T. SEVGI” – TURKEY

Length o.a.: 131.85 m
Breadth: 18.90 m
Draft: 7.98 m
ZF Reference: 7903
Model: ZF TT 4000 FP
Rated power: 500 kW at 1780 rpm
Supplied to: RMK Marine – Turkey

Each vessel equipped with one (1) ZF TT 4004 electric driven tunnel thruster.
90M TUNA VESSEL
“FRANCHE TERRE” – FRANCE

Length o.a.: 90.00 m
Breadth: 14.50 m
Draught: 6.80 m
ZF Reference: 8270
Model: ZF TT 4000 FP
Rated power: 400 kW at 1800 rpm
Supplied to: Chantiers Piriou – France
Owner: SAPMER / Franche Terre

Equipped with two (2) ZF TT 4004 fixed pitch tunnel thrusters.
217M CONTAINER SHIP
"LOG-IN JACARANDA" – BRAZIL

Length o.a.: 217.00 m
Breadth: 28.00 m
Draught: 8.90 m
ZF-Reference: 10158
Model: ZF TT 6000 FP
Rated power: 1100 kW at 1200 rpm
Supplied to: Elisa Shipyard, Rio de Janeiro
Owner: Log-In Logistica, Rio de Janeiro

Equipped with one (1) ZF TT 3001 electric driven tunnel thruster.
Length o.a.: 122.50 m
Breadth: 21.70 m
Draught: 6.80 m
ZF Reference: 14412 / 14413
Model: ZF TT 3000 FP / ZF AT 7000 WM-FP
Rated power: 250 kW at 1485 rpm / 1590 kW at 1000 rpm
Supplied to: IHC Holland B.V.
Owner: Huta Marine Works – Saudi Arabia

Equipped with one (1) ZF TT 3001 electric driven tunnel thruster and two (2) ZF AT 7011 well mounted azimuth thrusters.
MULTIPURPOSE SALVAGE VESSEL
"MPSV07" – RUSSIA

Length o.a. : 73.00 m
Breadth : 16.60 m
Draught : 6.70 m
ZF Reference : 14709
Model : ZF TT 7000 FP
Rated power : 1000 kW at 1200 rpm
Supplied to : Nevsky Shipyard – Russia
Owner : Federal Marine and River Transport Agency – Russian Federation

Equipped with two (2) ZF TT 7001 fixed pitch tunnel thrusters
59M SUPPLY VESSEL “PERMINT AMAN” & “PERMINT DAMAI” – MALAYSIA

Length o.a.: 59.00 m
Breadth: 13.80 m
Draught: 4.75 m
ZF-Reference: 5651
Model: ZF SDT 5000 FP
Rated power: 537 kW at 1800 rpm
Supplied to: Muhibbah Marine Engineering – Malaysia

Equipped with one (1) ZF SDT 5110 shallow draught thruster.
HIGH-PURPOSE/ANCHOR HANDLING VESSEL “SIDI C” – NETHERLANDS

Length o.a.: 32.00 m
Breadth: 11.10 m
Draught: 3.50 m
ZF Reference: 6291
Model: ZF SDT 4000 FP
Rated power: 350 kW at 1800 rpm
Supplied to: Neptune Marine Service B.V. – Netherlands

Equipped with one (1) ZF SDT 4110 shallow draught thruster.
32M MULTIPURPOSE VESSEL DP-2
"ANNA-B" – NETHERLANDS

Length o.a.: 32.00 m
Breadth: 12.00 m
Draught: 3.40 m
ZF Reference: 13729
Model: ZF SDT 4000FP / ZF AT 6000 WM-FP
Rated power: 250 kW at 1200 rpm / 1140 kW at 1800 rpm
Supplied to: Neptune Shipyards B.V.
Owner: Stemat Marine Services – Netherlands

Equipped with two (2) ZF SDT 4010 electrical driven shallow draft thrusters in the bow and two (2) ZF AT 6311 diesel driven well mounted azimuth thrusters in the stern.
THE ZF GROUP

Shaping the future responsibly

Our enthusiasm for innovative products and processes and our uncompromising pursuit of quality have made us a global leader in driveline and chassis technology. We are contributing towards a sustainable future by producing advanced technology solutions with the goal of improving mobility, increasing the efficiency of our products and systems, and conserving resources.

Our customers in the automotive and industrial sectors welcome our determined focus on products and services, which provide great customer value. Improvements in energy efficiency, cost-effectiveness, dynamics, safety, and comfort are key to our work. Simultaneously, we are aiming for continuous improvement in our business processes and the services we provide. As a globally active company, we react quickly and flexibly to changing regional market demands with the goal of always providing a competitive price/performance ratio.

Our independence and financial security form the basis of our long-term business success. Our profitability allows us to make the necessary investments in new products, technologies, and markets, thus securing the future of our company on behalf of our customers, market affiliates, employees, and the owners of ZF.

Our tradition and values strengthen our managerial decisions. Together, they are both an obligation and an incentive to maintain a reliable and respectful relationship with customers, market affiliates, and employees. Our worldwide compliance organization ensures that locally applicable laws and regulations are adhered to. We accept our responsibility towards society and will protect the environment at all of our locations.

Our employees worldwide recognize us as a fair employer, focusing on the future and offering attractive career prospects. We value the varied cultural backgrounds of our employees, their competencies, and their diligence and motivation. Their goal-oriented dedication to ZF, beyond the borders of their own field of work and location, shapes our company culture and is the key to our success.

ZF lenksysteme gmbh is a joint venture of ZF Friedrichshafen Ag and Robert Bosch gmbH.