TRANSVERSE THRUSTER

INDISPENSABLE MANOEUVRING AID

SCHOTTEL Transverse Thrusters for manoeuvring and dynamic positioning.
INDISPENSABLE FOR MANOEUVRING AND DYNAMIC POSITIONING

Transverse thrusters are installed in the bow or stern in order to improve manoeuvrability of the ship. Depending on the type of vessel, the range of application for transverse thrusters extends from brief docking and undocking in ports with a limited number of operating hours every year up to continuous operation under extreme load conditions in demanding offshore applications with dynamic positioning.

INDIVIDUALLY TAILORED CONFIGURATION

The transverse thrusters are individually configured by SCHOTTEL project engineers to suit the particular application. Light manoeuvring duties allow high specific thruster performance with the propeller running at a peripheral speed of up to 33 m/s. In tough offshore applications, the propellers operate at lower blade tip speeds.

CHOICE OF PRIME MOVERS

SCHOTTEL Transverse Thrusters can be powered by diesel engines, electric motors or hydraulic motors. Electric motors are included optionally in the scope of supply. The prime mover can be connected either horizontally or vertically and thus incorporated optimally into the naval architectural design.

When fixed-pitch propellers are used, electric and hydraulic motors allow the direction of thrust to be reversed. An additional reversing gearbox is required if the thruster is powered by a diesel engine.

The transverse thruster types STT 1 to 8 are available with either fixed-pitch or controllable-pitch propellers. Thrusters with controllable-pitch propellers can be powered in the same way as those with fixed-pitch propellers - however it is not necessary to equip a diesel engine with a reversing gearbox in this case.
Thrust is the decisive criterion of a transverse thruster. SCHOTTEL therefore attaches great importance to an optimum propeller design that is individually adapted to the vessel geometry in each case.

At the same time, the propeller design takes into account any special requirements in terms of noise level that are relevant for the application.

A major parameter for the effectiveness of a transverse thruster is the size of the gap between the tunnel and the propeller, which SCHOTTEL has reduced to a minimum on all models.

OPTIMUM DESIGN FOR MORE THRUST

Advantages:

- For extreme load conditions, e.g. in the offshore sector
- For continuous and short-term service
- Low noise emission
- Available with either fixed or controllable-pitch propellers
- Compact design due to horizontal, vertical or inclined arrangement of the power input flange
- Combinable with diesel, hydraulic or electric drive

Here you can find the technical data
MAXIMUM RELIABILITY IN ALL APPLICATIONS

SCHOTTEL TRANSVERSE THRUSTERS IN YACHTS

Particularly for use in yachts, SCHOTTEL has systematically analysed the causes of noise, focusing on minimizing noise emission during operation of the transverse thruster.

SCHOTTEL has achieved this by using larger gear reductions to reduce the propeller blade tip speed to well below 30 m/s. At the same time, the number of blades has been increased to four, and the pressure pulses on the tunnel wall reduced by means of individual propeller design.

In addition to the mechanical system of the transverse thruster, SCHOTTEL optionally offers frequency-controlled drive motors. In this way, the motor speed and thus also the propeller speed can be variably adjusted.

SCHOTTEL TRANSVERSE THRUSTERS IN MERCHANT SHIPS

In merchant ships, SCHOTTEL Transverse Thrusters are indispensable for short-term manoeuvring in harbours. Here, transverse thrusters with fixed pitch propellers are mainly used. With these systems, too, SCHOTTEL optionally offers electric drive motors.

In contrast to the frequency-controlled electric motors, the speed can be set here in 3 steps: (100 - 85 - 70 - 0 - 70 - 85 - 100 %).

The power range of SCHOTTEL Transverse Thrusters for this application lies between 100 kW and 1400 kW. The advantage of using 3-step electric motors lies in the simple design and ease of operation and maintenance. Furthermore, these systems represent a cost-effective alternative to frequency-controlled drive motors.

**MOTOR YACHT EXCELLENCE V**
- 1 x SCHOTTEL Pump Jet Type SPJ 57 RD (185 kW)
- 1 x SCHOTTEL Transverse Thruster Type STT 110 (185 kW)

**TANKER VF TANKER – 16**
- 2 x SCHOTTEL Rudderpropeller Type SRP 1012 (1200 kW each)
- 1 x SCHOTTEL Transverse Thruster Type STT 170 (230 kW)
**SCHOTTEL TRANSVERSE THRUSTERS IN THE HIGH POWER RANGE FOR OFFSHORE VESSELS**

The toughest requirements made on transverse thrusters are found in offshore applications. Here, vessels are exposed to the full force of wind, waves and current. Dynamic positioning under these difficult conditions therefore requires particularly robust and powerful manoeuvring aids.

In order to meet the demanding requirements, these systems are equipped with ample reserves. The propeller blade tip speed and propeller load have been reduced to a minimum. This substantially increases the service life of the drive seals and bearings, and of the propeller hub and blades.

SCHOTTEL STT units can be equipped with a Leakage Control System (LeaCon) which is able to monitor potential leakages in the propeller shaft seal area according to classification requirements or operator demands.

The propulsion units can optionally be supplied with electric drive motors. The power range of these high-performance drives lies between 350 kW and 3000 kW.

**STEERING SYSTEM**

Propulsion systems are only as good as their steering. Optimally adapted data exchange between the different components, together with a user interface that has been made as intuitive as possible, ensures simple operation – even with frequent changes of master.

The electric steering system for the propeller pitch control of the drives can be integrated into a range of shipboard electric power systems. Diverse interfaces, such as DP, joystick and VDR interfaces, are integrated into the control cabinets, thereby fulfilling the requirements of fleet operators in the offshore sector.
RELIABILITY AND HIGHEST QUALITY ARE OUR TOP PRIORITY

To ensure the best possible protection of the gearbox housing, the SCHOTTEL Transverse Thruster is sand-blasted and the underwater housing is provided with an abrasion-resistant coating (Ceramic S-Metal). This coating gives extremely high resistance to erosion and cavitation, and offers excellent protection against abrasion and electrolytic corrosion.

Stiffening rings around the tunnel and appropriately thick tunnel material minimize distortion during welding into the hull. Preparations for the weld seams at the ends of the tunnel simplify installation by the shipyard.

All SCHOTTEL Transverse Thrusters are fitted with a durable stainless steel wearing ring in the path of the propeller. This additional equipment reduces the wear on the tunnel and increases the service life of the transverse thruster. Another positive side-effect: the use of the wearing ring achieves an additional thickening of the tunnel in the area of the propeller. This decreases the amount of vibration and noise.

MODERN MANUFACTURING – EFFICIENT PROCESSES

For SCHOTTEL, the customer is at the centre of our activities. All our corporate processes are geared towards responding quickly and flexibly to our customers’ requirements.

That is why SCHOTTEL attaches great importance to keeping a large portion of our manufacturing in-house. This not only saves time and simplifies our business processes, but also safeguards our know-how and ensures consistently high quality.

State-of-the-art manufacturing facilities are indispensable prerequisites for top quality. The machines and systems used at SCHOTTEL’s German production plants in Spay and Wismar and at our Chinese subsidiary in Suzhou operate with outstanding precision and make a major contribution to the constant high quality of our products. Exhaustive trial runs on the test bed ensure that only first-class products leave the SCHOTTEL works.
**MULTIFUNCTIONAL HEAVY LIFT TRANSPORT VESSEL ROLLDUCK STAR**
2 x SCHOTTEL Controllable Pitch Propeller Type SCP 108/4-XS (4500 kW each)
1 x SCHOTTEL Transverse Thruster Type STT 4 (1200 kW)

**TRAINING VESSEL HANSE EXPLORER**
1 x SCHOTTEL Transverse Thruster Type STT 170 LK (300 kW)

**RESEARCH VESSEL PLANET**
4 x SCHOTTEL Transverse Thruster Type STT 170 LK (350 kW each)

**AHTS MEGA BAKTI**
2 x SCHOTTEL Transverse Thruster Type STT 4 CP (880 kW each)
2 x SCHOTTEL Transverse Thruster Type STT 3 CP (880 kW each)

**FISV NINGA MBANDI**
2 x SCHOTTEL Controllable Pitch Propeller Type SCP 060/4-XG (2320 kW each)
1 x SCHOTTEL Transverse Thruster Type STT 110 (150 kW)

**65 T BP ASD TUG SVITZER GAIA**
2 x SCHOTTEL Combi Drive Type SCD 1515 (2100 kW each)
1 x SCHOTTEL Transverse Thruster Type STT 110 (180 kW)

**IMR VESSEL UNGUNDJA**
3 x SRP 1215 (1686 kW each) 1 x SRP 550 ZSV (760 kW)
2 x SCHOTTEL Transverse Thruster Type STT 4 (843 kW each)
PROFESSIONAL PARTNERSHIP – THROUGHOUT THE VESSEL’S LIFE

As a SCHOTTEL customer, you benefit from individual, in-depth advice and support at all stages of a project, from planning and commissioning through to preventive maintenance.

A dense worldwide service network is ready to offer assistance and ensures the swift supply of spare parts – along with experienced SCHOTTEL technicians if required.

The name of SCHOTTEL traditionally stands for quality in engineering, with over 90 years of experience in design and the precision workmanship of a family-owned enterprise. Our innovative propulsion systems are a byword for reliability and high performance and set standards in global shipping.