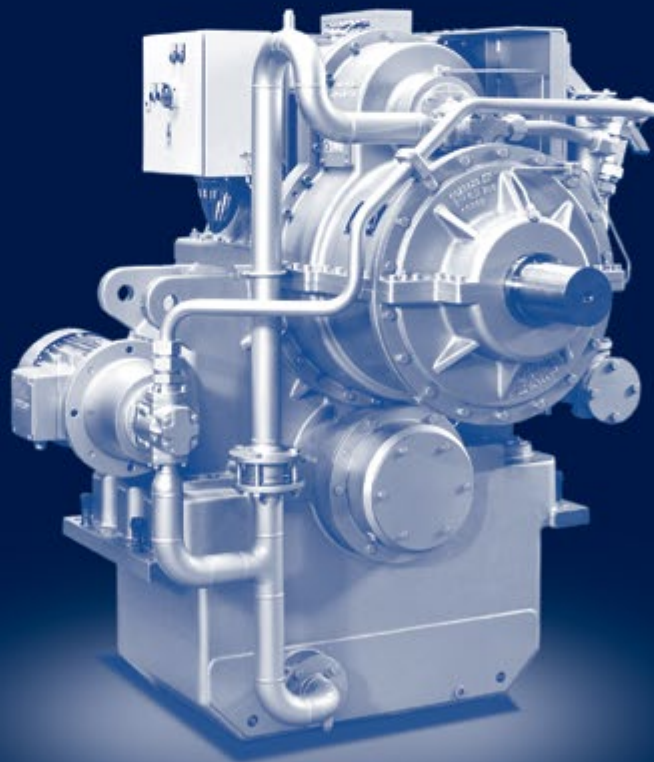




Innovative Power Transmission



T²RECS
Leading Propulsion Technology

T²RECS: Rugged. Reliable. Safe.

Marine gear units for the toughest challenges



RENK marine gear units from Rheine

Thousandfold proven – in container ships, tankers, service vessels, and ferries. RENK is world leader in gear units for LNG tankers. Its customers have the utmost confidence in the marine gear solutions from Rheine's design and production engineers.

An assurance of innovative engineering is RENK's unremitting research into tomorrow's marine propulsion systems. In fact, RENK enjoys over a century of experience in these products. The Company commands the finest technology, backed by a heritage of expertise – technology that is closely committed to needs of our customers. RENK is an active member of FVA – Germany's R&D association for the propulsion sector – and works with universities and research

institutes. This speeds up access to the newest research results. Ultimate reliability, superior technology and professional advice regarding gear units for single- and twin-screw vessels are the outcome. Our customers acquire state-of-the-art propulsion technology while benefiting from top-class know-how in consultancy and service.

T²RECS

T² = Torque R = Reliable E = Economic C = Compact S = Standardized Transmission

T²RECS: the aggregate of experience

Experience accumulated from RENK's well-known gear unit ranges. In the shape of the T²RECS, RENK has developed a family of gear units that addresses the foremost operational requirements of single-engine marine propulsion – perfected for ratings of 500 to 5,000 kW and main engine speeds of 500 to 2,200 RPM.

The compact no-frills design makes for safe onboard operation. Easy maintenance and high dependability are among the hallmarks of the T²RECS range. Thanks to the carefully engineered modular design, basic configurations are easy to compile for all model variations including multiple-disc clutch, primary PTO, secondary PTO and PTH.

The chief components have been refined for optimum efficiency. In fact, the T²RECS exemplifies a range of standard gear units designed for the most challenging conditions, one that operates most dependably even under most punishing conditions.

RENK's own in-house standards ensure high-quality macro- and micro-geometries for the case-hardened helical gearing to ensure quiet, smooth running and extended longevity.

The very latest manufacturing technology and measuring machines are used to manufacture products of such dependability and quality.

T²RECS: compact and efficient

Ratings from 500 to 5,000 kW

Engine speeds from 500 to 2,200 RPM

The new, single-stage modular marine gear units for single or twin screw vessels intended for offshore work (OSV, AHTS, PSV, etc.), commercial duties (MPV, container feeders, etc.) and the fishing industry. T²RECS stands for straightforward modular design that allows the customer to easily compile the components for individual gear unit configurations.

Technical data

The new series comes in 7 sizes, with center distances of 400 to 710 mm, ratings of 500 to 5,000 kW, torque transmission ratios of about 2:1 to 7.7:1, and engine speeds of 500 to 2,200 RPM.

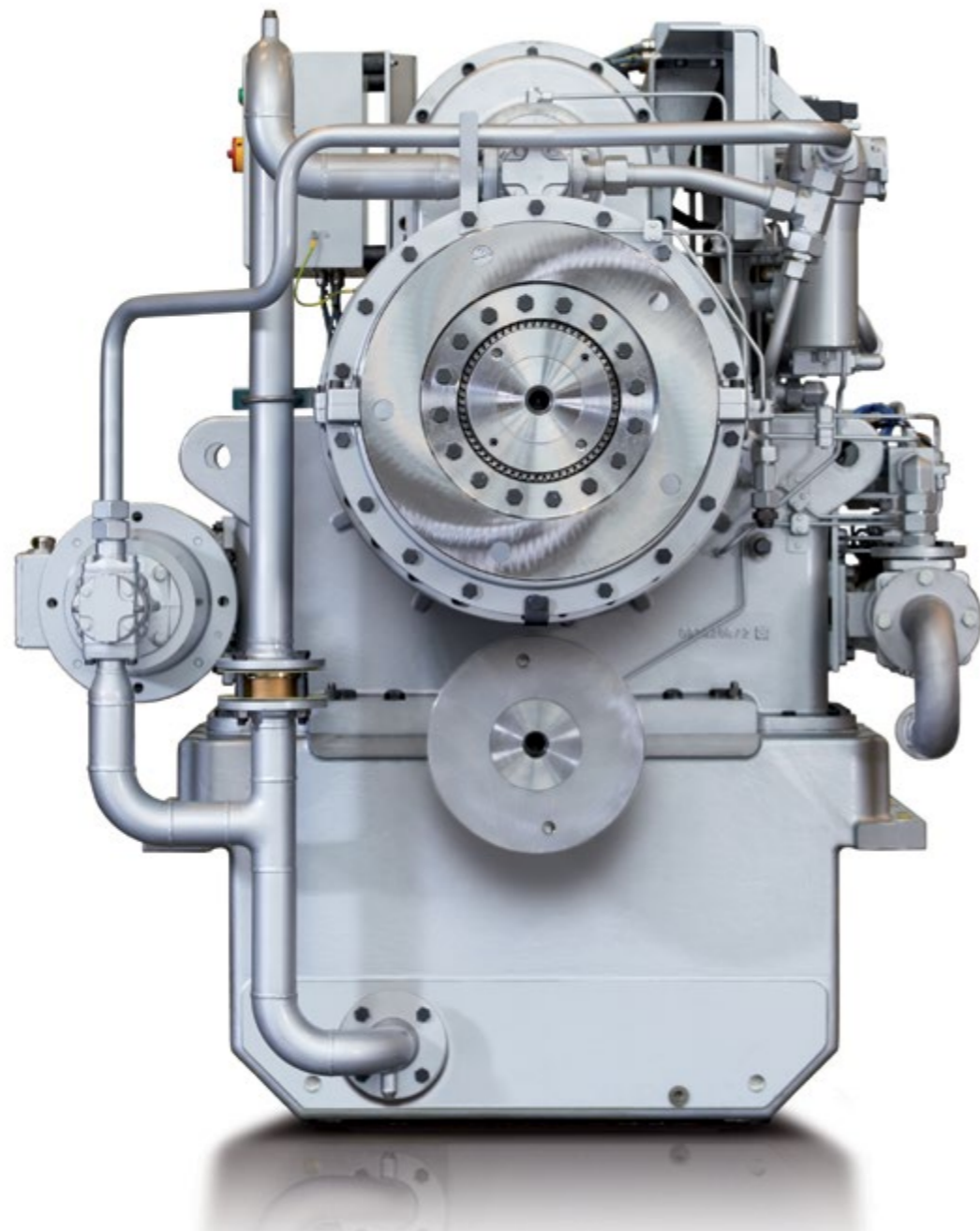
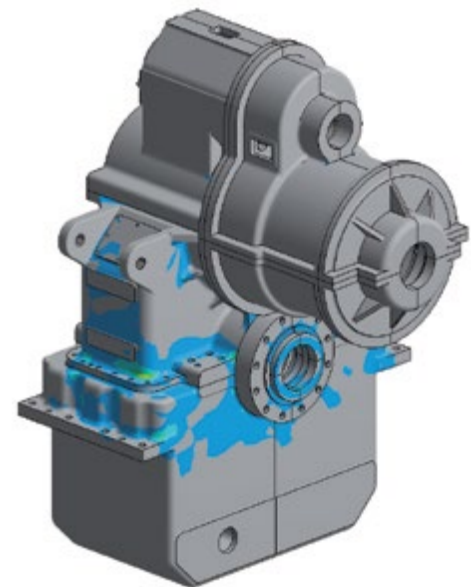
The robust and rugged gray cast iron housings are FEM inspected for any critical areas and to ensure a torsionally rigid construction that will accept severe punishment. Each gear unit, moreover, is computed twice: according to the requirements of the classification society and according to RENK's own regulations. Simple, standardized add-on modules permit the gear units to be configured to match specific operations. This also allows the option of hydraulically actuated multiple-disc clutches. Our own proprietary clutches are a proven RENK product with demonstrably ample reliability and longevity even under extreme conditions.

Various configurations are possible:

- Power Take-Off (PTO): for driving a generator for onboard power
- Power Take-In (PTI): for additional booster power from a generator
- Power Take Home (PTH): redundant propeller drive system via a generator/electric motor

Another advantage is the split-housing design for easy maintenance. Quick access to the pinion shaft and multiple-disc clutch is an added benefit when servicing. The pressure bearing at the wheel shaft can be replaced without opening the housing. The latest filtering technology ensures sustained oil purity and longer bearing life. Easy dismantling of all the hydraulic components during maintenance is a final touch.

Finite Element Method

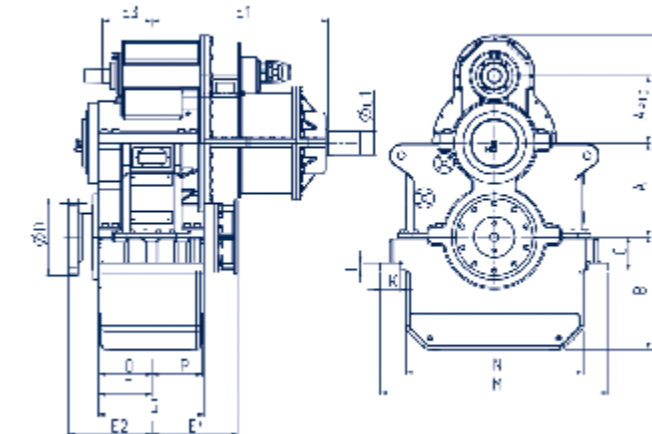


T²RECS: zero-compromise quality

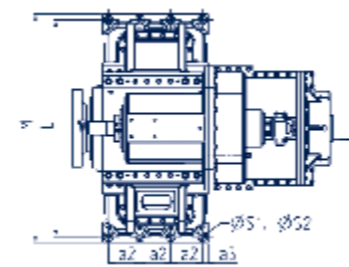
Consistent test systems offer security



T²RECS dimensions



A	L	M	N	O	P	a ₂	h	S ₁	S ₂
400	970	1030	780	225	215	137	38	400	400
450	1800	1150	870	225	400	154	38	8 x 22	58
500	1160	1230	960	280	400	170			
560	1290	1360	1060	300	400	186	55	8 x 26	73
630	1430	1520	1200	325	400	204			
670	1510	1600	1130	335	400	210			
710	1610	1700	1220	335	355	222			



A	A _{PTO}	B	C	ØD	E ₁	E _{1L}	E ₂	E ₃	E ₄	F	G	H	K
400	280	650	140	315	380	830	355	300	410	245	475	1450	85
450	315	680	160	350	410	900	400	300	450	270	530	1650	90
500	355	725	180	390	480	960	450	320	480	295	580	1800	110
560	400	770	200	440	480	1052	500	330	525	320	630	2100	120
630	450	850	225	490	560	1230	560	400	580	400	690	2280	125
670	500	900	250	510	600	1315	600	410	630	400	710	2450	130
710	530	950		540	630	1380	630	440	400	400	750	2640	140

E₄ = incl. cover

T²RECS test run

The quality of RENK products is verified and documented by repeated measurements. Finished components always undergo a test run before shipped out. Our quality management system is certified to the latest DIN EN ISO 9001/2001. All this gives customers the assurance of getting from RENK safe, reliable and top-quality products.

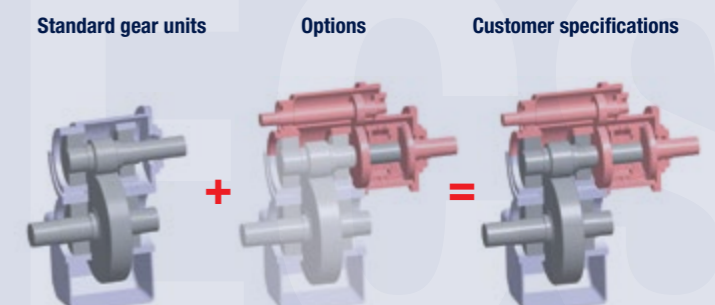


Back-to-back testing of a T²RECS 560 LL

Modular system

PTO/PTH/PTI / multiple-disc clutch

- Primary PTO**
 - The PTO can be operated independently of the propeller
- Secondary PTO**
 - The PTO continuously co-rotates with the propeller





RENK Aktiengesellschaft

Rheine Plant

Rodder Damm 170

48432 Rheine

Germany

Phone: +49 5971 790-0

Fax: +49 5971 790-208

Email: info.rheine@renk.biz

www.renk-ag.com