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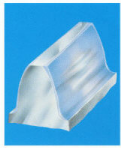
WORK BOATS

16. 06. 2004

REINTJES

EXPERIENCE



REINTJES has been manufacturing marine gearboxes exclusively since 1999.

Drawing on decades of experience, REINTJES is an expert designer and producer of top-quality work-boat gears.

REINTJES' optimally effective, highly reliable, longlife marine gears are inexpensive to operate, maintain and repair.

With its state-of-the-art design and manufacturing processes REINTJES can produce marine gears with optimal precision in series or as single units.

To achieve constant high product quality, REINTJES has developed a recognized quality assurance system, which is regularly monitored and recertified by a neutral and internationally acknowledged society.

Quality assurance based on DIN ISO 9001 and certified by DNV.

Quality means reliability and cost-efficiency; it begins with design and ends with service. We subject our systems to thorough tests using modern measuring technology as well as testing on the test stand to guarantee quality and reliability.

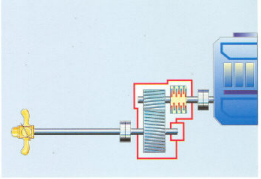
SYSTEMS

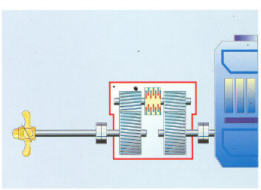
REINTJES gears are installed in ships of various types in service all over the world.

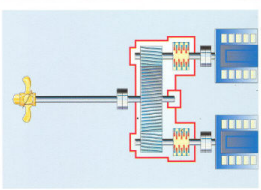
REINTJES produces reliable, optimally coordinated drive systems for all work boats with engine performances of 250-20.000 kW as standard or custom-made units.

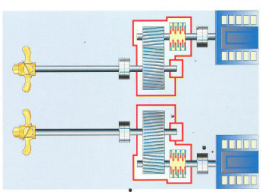
REINTJES' effective modular approach using well-tested components is based on uniform design principles, making it possible to streamline and systematize logistics, design and installation planning.

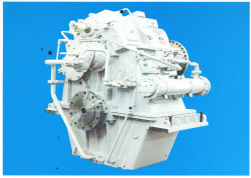
We will continue to lead the market in the development and production of ever more efficient and reliable marine gears.
Our strong market position is based on over 70 years of experience in the field of ship propulsion, taking account of the latest findings and applying state-of-the-art technologies.





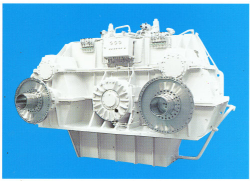






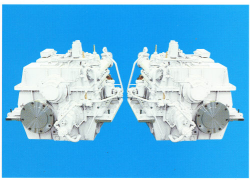
Vertically offset gearboxes.
Types WAF, LAF, VA

Partly offset and co-axial gearboxes.
Types WGF, WGV, WGL



Co-axial and vertically offset twin input, single output gearboxes
Types DWG, DLG, DUG, DWV, DLV, DUV

Horizontally offset gearboxes
Types WAF, LAF, VA



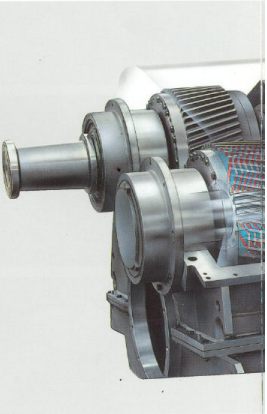
THE EXPERTS.

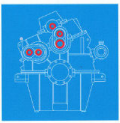
OPTIONS

In addition to its comprehensive standard product range, REINTJES offers customers special systems individually tailored to meet their propulsion unit requirements.

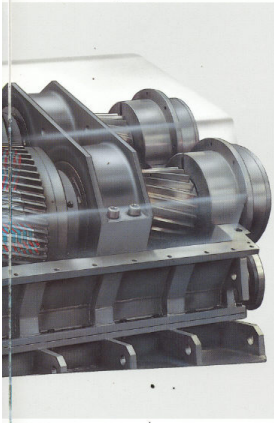
REINTJES gears are suitable for a wide range of service conditions and propulsion plants. Thanks to their flexibility, REINTJES gears are frequently used for highly specialized applications.

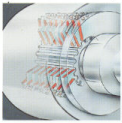
Servo oil systems
The hydraulic system for the propeller pitch control may be combined with the reduction gear lubricating system.

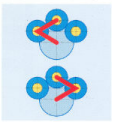




Power take off
If required, the gears can be fitted with an additional power take off (PTO/PTI). Our system offers many possibilities for this.
Reverse reduction gearbox with one controllable and one non-controllable PTO each developing 300 kW for a fishing vessel. The controllable PTO drives the upper deck winches used to haul in the nets. A generator for the power supply is attached to the non-controllable PTO.







Disk brake
The gears can be fitted with a disk brake for assisting with reversing manoeuvres or serving as stopping brake on twin-screw vessels.
Disk brake incorporated in a WAF 5555 reverse reduction gearbox for a trawler. This gearbox was also equipped with two PTOs (K31 and K41) as well as the ADS system.

Unattended operation
All gears can be supplied with additional units for unattended operation. The monitoring instruments are combined into a single system on the basis of the latest findings.

Two-speed gears
Two selectable gear ratios are provided between input and output shaft, making it possible to operate the propeller closer to optimum pitch.

THE EXPERTS.

WAF 144 – 572

The gears of the WAF series were developed specially for workboats, such as tugs, fishing vessels, inland waterway craft, ferries and special-purpose ships with similarly high requirements. We have the backing of over 70 years of experience in marine gears production and use state-of-the-art computation tools and manufacturing technologies. The hydraulically shifting reverse-reduction gears of the WAF series designed for workboats deployed under extremely difficult conditions have a number of special advantages:

- Simple operation and maintenance
- High operating reliability
- Compact size for easy installation
- Optimally quiet running characteristics

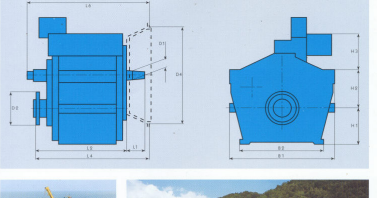
WAF series
Free-standing
Flange-mounted

WAF series
Reverse-reduction gear for propulsion with fixed propeller

LAF series
Reduction gear for propulsion with ntrollable pitch propeller

WAF 144 - 464

Reverse-reduction gears with hydraulically operated clutches. Vertically offset.

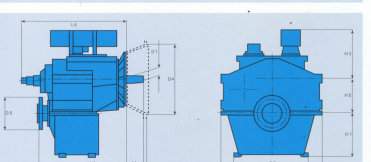


Gearbox WAF/ LAF	WAF	Main dimensions (mm) B1	B2	D1	D2	D4 SAE 1	D4 SAE 0	H1	H2	H3	L1	L2	L4	L6	SAE 1	SAE 0	Weight (kg)[1] WAF	LAF
144	144 L	640	535	55	140	511,9	647,7	240	315	400	69	563	627	700	34	57	455	415
164	164 L	660	510	55	285	511,9	647,7	315	390	400	69	593	660	700	34	57	525	475
244	244 L	640	535	55	140	511,9	647,7	240	315	400	69	563	627	700	34	57	455	415
264	264 L	670	545	55	285	511,9	647,7	345	315	400	69	594	658	700	34	57	635	585
274	274 L	830	700	55	325	511,9	647,7	400	380	400	69	602	666	700	34	57	900	850
344	344 L	700	575	60	285	511,9	647,7	365	350	500	80	644	750	750	34	60	555	505
364	364 L	750	580	60	325	511,9	647,7	380	345	500	80	667	773	770	34	60	810	740
374	374 L	930	800	60	325	511,9	647,7	460	410	500	80	667	773	770	34	60	1900	1130
444	444 L	740	505	75	300	511,9	647,7	285	370	500	97	721	800	859	40	63	765	705
464	464 L	800	585	75	325	511,9	647,7	400	375	500	97	723	822	850	40	63	940	880

1) Gearbox standard design (dry). + Dimensions and weights not strictly binding. Subject to changes.

WAF 542 - 562

Reverse-reduction gears with hydraulically operated clutches. Vertically offset.



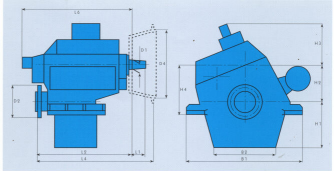
Gearbox WAF/ LAF	WAF	Main dimensions (mm) B1	B2	D1	D2	D4 SAE 0	D4 SAE 00	H1	H2	H3	L1	L2	L4 SAE 0	L4 SAE 00	L6	SAE 0	SAE 00	Weight (kg)[1] WAF	LAF
542	542 L	840	615	75	395	647,7	787,4	380	310	520	97	776	895	911	1000	45	105	1035	995
562	562 L	999	645	75	350	647,7	787,4	475	410	520	97	892	941	957	1000	45 -	105	1370	1250

1) Gearbox standard design (dry). + Dimensions and weights not strictly binding. Subject to changes.

WAF 474 - 572

Reverse-reduction

- **gears** with hydraulically operated clutches. Vertically offset.



Gearbox WAF/ LAF		B1	B2	D1	D2	D4	D4	D4	H1	H2	H3	H4	L1	L2	L4	L4	L4	L6	L6	SAE 1	SAE 0	SAE 00	Weight (kg) [1] SAE 1	SAE 0	SAE 00	WAF	LAF
474	474 L	1310	760	75	350	511,2	647,7	787,4	510	460	490	600	97	745	844	844	844	791	40	63	90	1830	1700			
572	572 L	1360	690	75	375	–	647,7	787,4	575	505	590	645	97	836	–	955	971	1000	–	45	105	9045	1885			

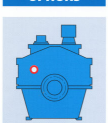
1) Gearbox standard design (dry). + Dimensions and weights not strictly binding. Subject to changes.

OPTIONS

Basic design

In addition to our comprehensive standard WAF/LAF gears, we offer customers special systems individually tailored to meet their propulsion unit requirements.

OPTIONS



Power take off

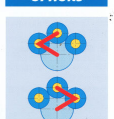
If required, the gears can be fitted with an additional power take off (PTO).

OPTIONS

Unattended operation

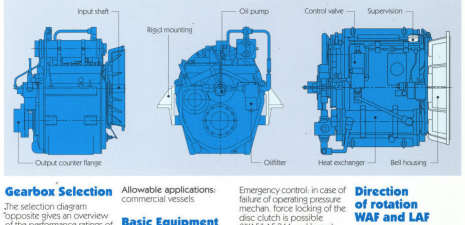
All gears can be supplied with additional units for unattended operation. The monitoring instruments are combined into a single system on the basis of the latest findings.

OPTIONS



Two-speed gears

Two selectable gear ratios are provided between input and output shaft, making it possible to operate the propeller closer to optimum pitch.



Gearbox Selection

The selection diagram opposite gives an overview of the performance ratings of the basic WAF types. These also apply for WAF/L, LAF and LAF/L units.
However, for the final selection of gears only the ratings of the applicable gears selection table are binding. Here the particular application groups must be taken into consideration.

Duty Cycle Classifications

M Medium Duty

Intermittent operation with some variations in engine speed and power.

Average engine operating hours limit:
4,000 hours/year

Allowable hull forms:
planing, semi-displacement

Allowable applications:
private, charter and commercial craft (example: crew boats), naval and police activities

C Continuous Duty

Continuous operation with little or no variations in engine speed and power.

Average engine operating hours:
unlimited

Allowable hull forms:
semi-displacement, displacement

Allowable applications:
commercial vessels

Basic Equipment

Housing made from grey cast iron, completely prepared for mounting of SAE-bell housings as well as mounting brackets for foundation connection.

Spur wheels helically toothed, carburized and tooth flank ground.

Built-in, hydraulically operated disc clutches with steel/sinter friction surface. Smooth engagement by adapted pressure increase during shifting.

Full power transmission and same reduction in both output senses of rotation.

Scope of Supply

Standard

Independent oil supply. Common circuit for operating pressure and lube oil. Oil pump and oil filter accessible from the outside.

Fitted heat exchanger for cooling water inlet temperature of max. 32 degr. C, seawater resistant. (Max. permissible operating temperature for gearboxes and accessories is 80 degr. C).

Fitted pressure gauge for operating pressure as well as connection facility for remote supervision of pressure and temperature.

Built-on control valve, mechanically operated.

Emergency control: in case of failure of operating pressure mechan. force locking of the disc clutch is possible (WAF/LAF 344 and larger)

Input: free shaft end with taper 1:30

Output: forged-on flange with output counter flange

Paint coating with synthetic resin varnish. Colour: RAL 7023 concrete grey

Options

Rigid mounting

SAE-bell housing

Flexible coupling

Supervision instruments

Spare parts kit as per classification rules

Paint coating with synthetic resin varnish in all RAL-colours

Special

Heat exchanger for increased cooling water temperature higher than 32 degr. C. (Max. permissible operating temperature for gearbox and accessories is 80 degr. C.)

PTO, execution K 21

Control valve, electrically or pneumatically operated

Resilient mounting

Special reduction ratios

Connection facility for electr. pumps

Trailing pump

Direction of rotation WAF and LAF

Seen from propeller onto engine flywheel

Subject to changes

THE EXPERTS.

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