

Gearboxes for **Work Boats**

WAF/LAF 665 – 1973 | 700 – 3,650 kW

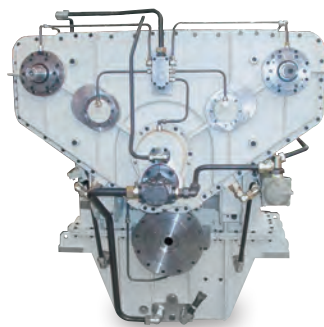


Applications for Work Boats

WAF/LAF 665 – 1973



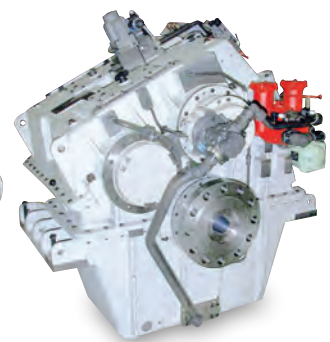
Reverse-reduction gearbox, vertically offset



Reduction gearbox with built-in clutch (Ptos for special application), vertically offset



Reverse-reduction gearbox, horizontally offset



Reduction gearbox with built-in clutch, vertically offset

Advantages

Gearboxes of the WAF and LAF series have been specially developed for work boats such as tugs, fishing vessels, inlandwaterway crafts, ferries and special-purpose ships with similarly high performance demands.

We have the backing of over 80 years of experience in marine gearbox production and use state-of-the-art computation tools and production technologies.

Owing to their design for specific areas of deployment, the hydraulically operated reverse-reduction gearboxes of the WAF series, as well as the reduction gearboxes of the LAF series offer various special advantages:

- High operating reliability
- Simple operation and maintenance
- Compact dimensions
- Low operating noise

Gearbox selection

The selection diagram opposite gives an overview of the performance ratings of the basic WAF and LAF types.

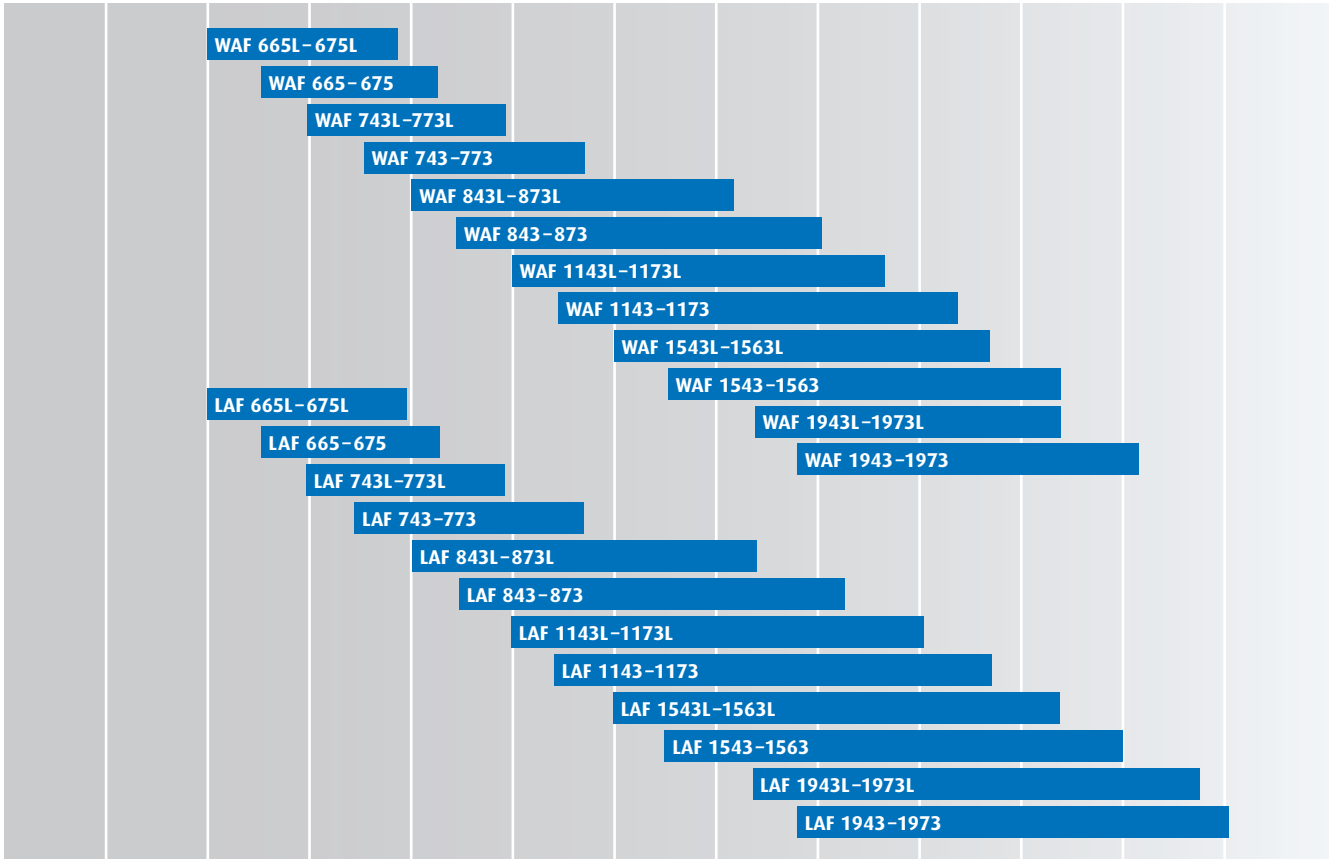
However, for the final selection of gearboxes only the ratings of the applicable gearbox selection table are binding.

DESIGNED FOR HEAVY DUTY APPLICATIONS



Engine power

kW	400	700	1000	1300	1600	1900	2200	2500	2800	3100	3400	3700
BHP	536	938	1340	1742	2144	2546	2948	3350	3752	4154	4556	4958

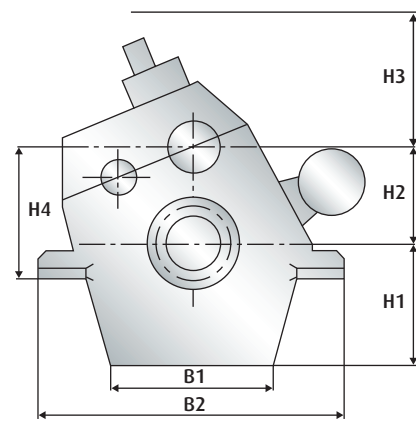
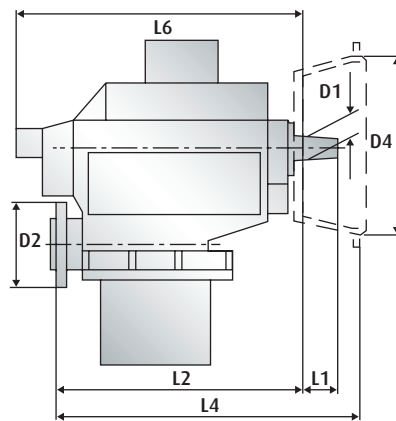


Marine Gearboxes

WAF/LAF 665 – 1973

WAF/LAF 665 – 773

Reverse-reduction
Reduction gearbox with
hydraulically operated
clutches.
Vertically offset

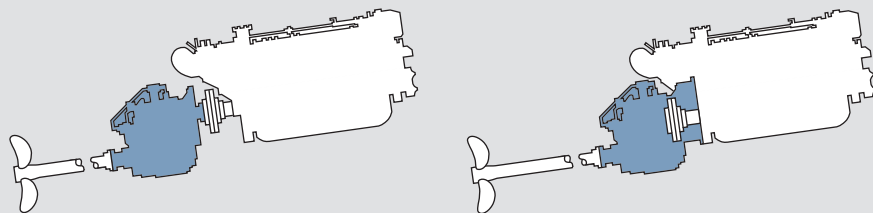


Gearbox WAF/LAF	Main Dimensions (mm)															Weight kg ¹⁾	
	B1	B2	D1	D2	D4 SAE 0	D4 SAE 00	H1	H2	H3	H4	L1	L2	L4 SAE 0	L4 SAE 00	L6	WAF	LAF
665	430	1160	85	420	647.7	787.4	490	430	540	560	101	881	1042	1042	1200	1950	1800
675	650	1480	85	420	647.7	787.4	610	550	540	680	101	892	1053	1053	1200	2600	2450
743	610	1160	92	350	-	787.4	490	380	550	510	107	933	-	1142	1190	1800	1600
763	680	1300	92	375	-	787.4	530	490	550	630	107	934	-	1143	1190	2300	2100
773	790	1670	92	420	-	787.4	680	620	550	760	107	951	-	-	1190	3200	3000

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

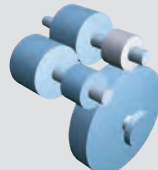
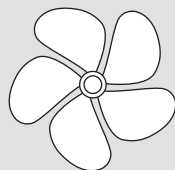
WAF series

Free-standing
Close-coupled

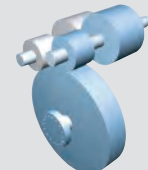


WAF series

Reverse-reduction
gearbox for propulsion
with fixed pitch propeller

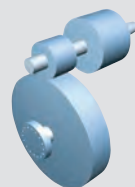
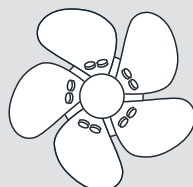


Counter or identical
rotation of input and
output as standard

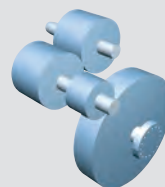


LAF series

Reduction gearbox for
propulsion with controll-
able pitch propeller



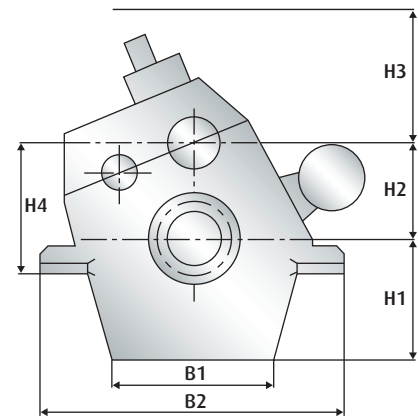
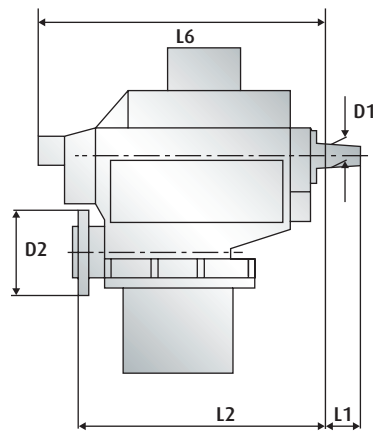
Counter rotation
of input and output
as standard,
identical rotation
available as option





WAF/LAF 843 - 1973

Reverse-reduction/
Reduction gearbox with
hydraulically operated
clutches.
Vertically offset

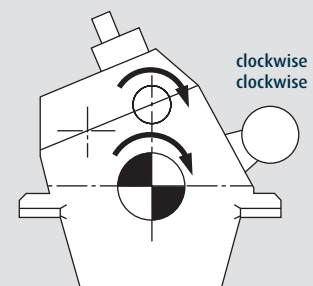
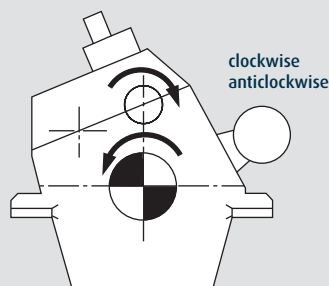
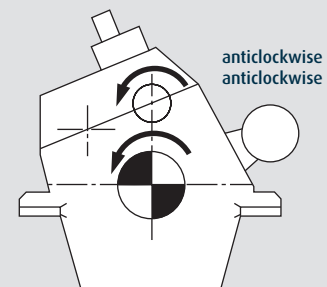
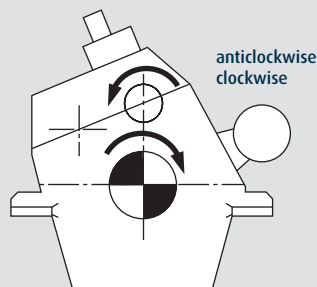


Gearbox WAF/LAF	Main Dimensions (mm)											Weight kg ¹⁾	
	B1	B2	D1	D2	H1	H2	H3	H4	L1	L2	L6	WAF	LAF
843	680	1300	107	375	530	425	550	565	142	970	1280	2300	2640
863	705	1400	107	420	590	540	550	690	142	1000	1280	3100	2850
873	860	1650	107	480	750	670	550	710	142	1030	1280	4100	3850
1143	705	1400	107	420	590	450	650	600	142	1053	1368	2750	2450
1163	855	1520	107	480	660	590	650	750	142	1085	1368	3600	3300
1173	1000	1800	107	550	810	730	880	890	142	1008	1400	5000	4600
1543	855	1520	117	480	660	490	650	650	154	1133	1413	3400	3000
1563	925	1620	117	550	675	630	650	790	154	1163	1413	4460	4000
1943	925	1620	127	550	675	485	600	645	162	1261	1556	4460	4060
1963	970	1680	127	600	720	675	600	845	162	1281	1556	5540	4940
1973	1000	2210	127	650	865	820	700	970	162	1347	1700	8500	7580

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

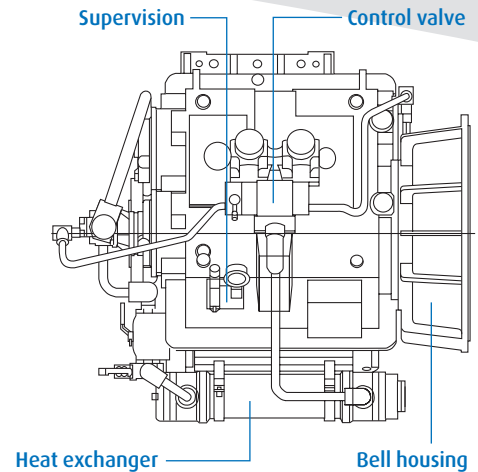
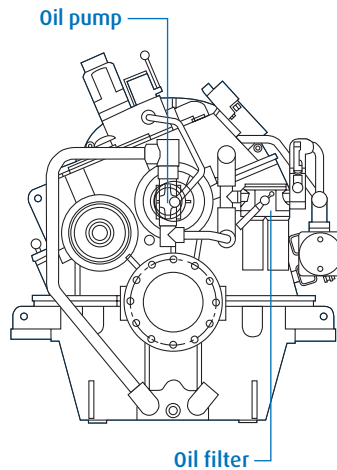
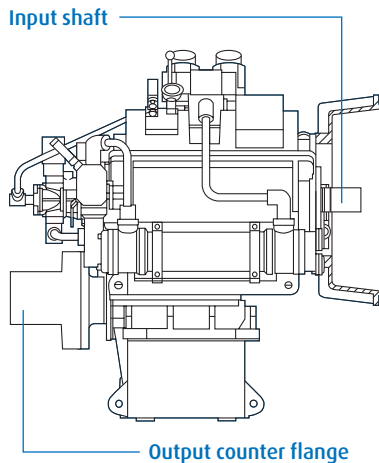
Direction of rotation WAF/LAF

Seen from propeller
onto engine flywheel
in direction of travel
ahead



Standards

WAF/LAF 665 – 1973



Basic equipment

- Housing made from grey cast iron or steel
- Prepared for mounting of SAE-bell housings (WAF/LAF 664-763)
- Spur wheels helically toothed, case hardened 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 in both output senses of rotation

Scope of supply

STANDARD

- Integrated oil sump. 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. 38° C, seawater resistant

- Connection facility for remote supervision of pressure and temperature
- Built-on control valve, electrically or pneumatically operated
- Emergency control: in case of failure of operating pressure the disc clutch can be locked mechanically
- Input: free shaft end with taper 1:30
- Output: forged-on-flange
- Supervision
 1. Pressure switch – operating pressure too low
 2. Thermometer – oil temperature behind heat exchanger
 3. Filter contamination – electrical units 1.-3. wired to terminal box
 4. Pressure gauge for operating oil pressure
 5. Connection facility for pressure switch: clutch ahead/ clutch astern engaged
- Paint coating with synthetic resin varnish. Colour: RAL 7023 concrete grey

EXTRAS

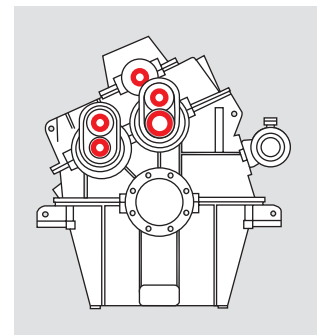
- SAE-bell housing (WAF/LAF 664 – 763 only)
- Output counter flange
- Flexible coupling
- Supervision instruments as per classification rules
- PTO executions incl. SAE pads
- Special PTI executions
- Spare part kit as per classification rules
- Paint coating with synthetic resin varnish in all RAL-colours
- Heat exchanger for cooling water inlet temperature higher than 38° C
- Trolling valve
- Resilient mounting
- Special reduction ratios
- Electrical stand-by or trailing pumps

Subject to change

Options

POWER TAKE OFF/IN

If required, the gearboxes can be fitted with additional power take off (PTO) and power take in (PTI) (application: hydraulic pumps and generators).



UNATTENDED MACHINERY SPACE

All gearboxes can be supplied with additional supervision instruments, according to classification society rules, enabling the operator to take all necessary information from the bridge.

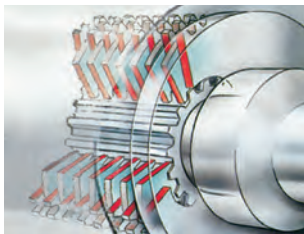


O P T I O N S A N D F E A T U R E S



SHAFT BRAKE

The gearboxes can be fitted with a hydraulically operated multiple disk brake built in for assisting with reversing manoeuvres or serving as fixing/stopping brake on twin-screw vessels.



OD BOX

Output shaft can be prepared with centre bore for all common CPP-systems, including interface for oil distributor box on the engine side. For free-standing applications only.



ADS (ACTIVE SPEED CONTROL SYSTEM) CLOSE LOOP OR CONTROLLED

The ADS is used for travelling at low propeller speeds. Speed is varied via the oil pressure in the clutch.

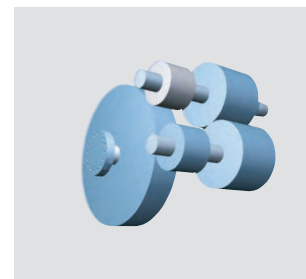
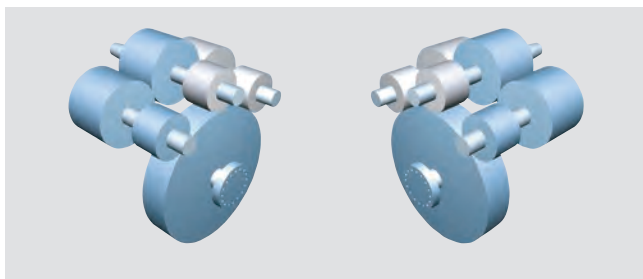
The ADS can be engaged in both AHEAD and ASTERN propulsion modes. Reversals with operative ADS are also possible at low ship speeds.

OFFSET CONFIGURATION

WAF/LAF gearboxes are also available in horizontally as well as in diagonally offset configuration.

TWO-SPEED GEARBOXES

Two selectable gear ratios are provided between input and output shaft. This ensures optimal operation of the ship.



Duty cycle classification



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

Approved quality

Several renowned classification societies have granted REINTJES permission to conduct inspection and approval procedures themselves. In the same way many gearbox types come with a type approval or full classification for the main classification societies (IACS members). Since 1990 REINTJES has been certified to DIN ISO 9001/EN 29001.



REINTJES GmbH
 Eugen-Reintjes-Straße 7
 31785 Hameln
 Germany
 Phone +49 51 51 104-0
 Fax +49 51 51 104-300
 E-Mail marine@reintjes-gears.de
www.reintjes-gears.de