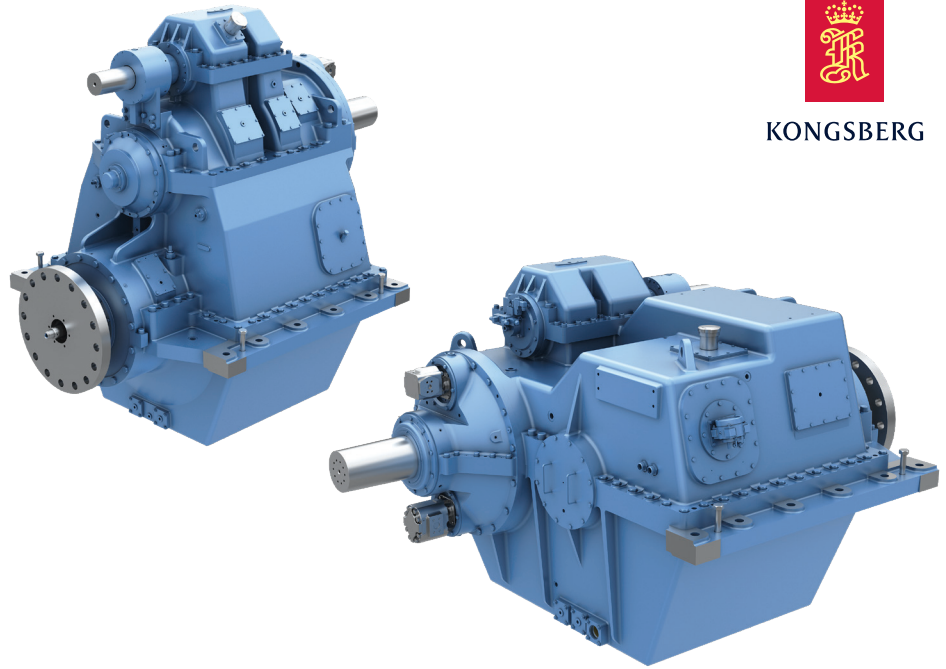


REDUCTION GEARBOX



KONGSBERG



KONGSBERG REDUCTION GEARBOX

Single in Single out series (vertical and horizontal Version)

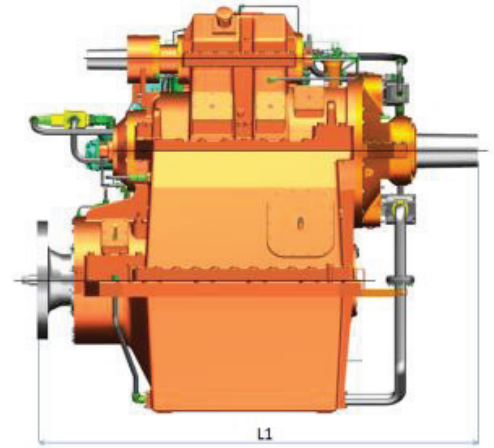
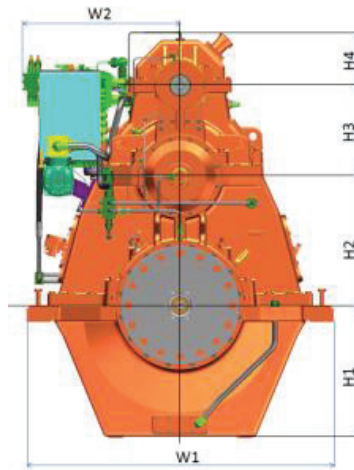
MAIN BENEFITS FOR SHIP YARDS/OWNERS:

- Integrated hydraulic system for propeller pitch control significantly reduces installations cost and complexity compared to separate CPP hydraulic system (i.e OD box mounted in gearbox) with separate tanks, pumps, pipe and valve system etc
- The gearbox is also delivered with completed hydraulic and electrical installations, which in turn reduces labour cost for the shipyards.
- Because of modularized design principles implemented in our standard gearbox design and its variants; maintenance, repair and overhauling activities of our gearboxes, saves considerable amount of time and cost to ship owners from service point of view.
- The input and PTO/PTI shaft is designed with tapered ends which makes it easier to mount and dismount the coupling with the generators or engine shaft.

Technical features:

- Integrated hydraulic system for the propeller pitch control mounted in the gearbox for most of the sizes.
- Thrust bearing is of tilting pad design to absorb high axial load from the propeller.
- Gearbox can be delivered with environmentally accepted lubricants (EAL).
- Thick wall journal bearing mounted on the output shaft to withstand high gear forces.
- Hydraulic operated clutch with mechanical/hydraulic soft clutch engagement system.
- Housing made of modular cast iron, which reduces vibration and noise compared to welded structures.
- Modularised and compact design of different variant for each gearbox size.
- Gearbox is deliver with one or two separate standby aggregate for startup, emergency and PTI operations.
- Installed mechanical gear pumps for lubrication and pitch control in our gearbox is mechanically driven by engine and therefore it removes the risks of sudden break down caused due to electrical failure as in case of electrical driven pumps.
- It is offered with variety of PTO/PTI mode operation i.e Primary PTO/PTI shaft, secondary PTO/PTI shaft, Secondary PTO/PTI shaft with clutch, Primary and Secondary PTO shaft with twin clutches.

Our gearbox product design definition and its performance is continuously studied and analyzed with latest CAD/CAE tools to ensure robust, smarter and optimized product is offered to the market in terms of product reliability, durability and safety.



PRINCIPAL DIMENSIONS

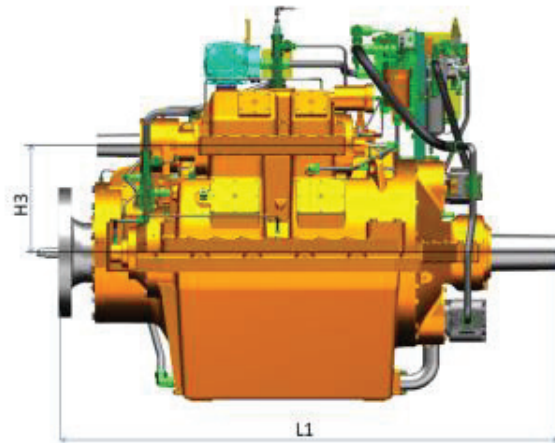
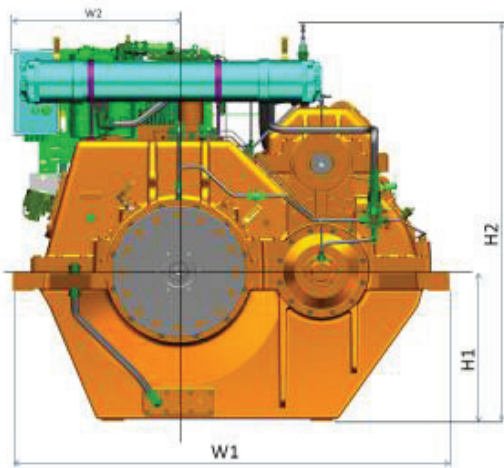
GEAR SIZE	GEAR VARIANT	PTO/PTI VARIANT	W1	W2	H1	H2	H3	H4	L1	DRY WEIGHT
480	AGHC/AGFC	WOPTO*	1140	562	580	480	375	-	1820	3000
480	AGHC/AGFC	KP400N	1140	562	580	480	400	300	1820	3300
480	AEGHC*	WOPTO*	1140	500	580	480	375	-	1995	4000
480	AEGHC*	KP400N*	1140	500	580	480	400	300	1995	4000
550	GHC/GFC	WOPTO*	1300	765	650	550	466	-	2025	4500
550	GHC/GFC	P450	1300	765	650	550	450	230	2025	5300
550	GHC/GFC	S450	1300	765	650	550	450	225	2025	5300
550	GHC/GFC	SC450	1300	765	650	550	450	225	2025	5300
650	GHC/GFC/GDC	WOPTO*	1515	766	695	650	443	-	2294	7350
650	GHC/GFC/GDC	P500	1515	766	695	650	500	267	2294	8000
650	GHC/GFC/GDC	S500	1515	808	695	650	500	270	2294	8200
650	GHC/GFC/GDC	SC500	1515	808	695	650	500	270	2294	8200
750	GHC/GFC/GDC	WOPTO*	1740	800	830	750	510	-	2525	9500
750	GHC/GFC/GDC	P600	1740	800	830	750	600	320	2525	10300
750	GHC/GFC/GDC	S600	1740	860	830	750	600	310	2525	10500
750	GHC/GFC/GDC	SC600	1740	860	830	750	600	310	2525	10500
850	GHC/GFC/GDC	WOPTO*	2025	990	875	850	584	-	2860	14110
850	GHC/GFC/GDC	P600	2025	990	875	850	600	320	2860	15100
850	GHC/GFC/GDC	S600	2025	990	875	850	600	310	2860	15200
850	GHC/GFC/GDC	SC600	2025	990	875	850	600	310	2860	15200
950	GHC/GFC/GDC	WOPTO*	2225	1020	960	950	583	-	3175	19865
950	GHC/GFC/GDC	P600	2225	1020	960	950	600	320	3175	20475
950	GHC/GFC/GDC	S600	2225	1020	960	950	600	310	3175	21310
950	GHC/GFC/GDC	SC600	2225	1020	960	950	600	310	3175	21310
1080	GHC/GFC/GDC	WOPTO*	2495	1060	1135	1080	650	-	3550	28000
1080	GHC/GFC/GDC	P650	2495	1060	1135	1080	650	360	3550	28750
1080	GHC/GFC/GDC	S650	2495	1060	1135	1080	650	384	3550	28160
1080	GHC/GFC/GDC	SC650	2495	1060	1135	1080	650	384	3550	28160
1080	GDC/GFC	WOPTO*	2700	1090	1225	1180	700	-	3670	34500
1080	GDC/GFC	P750	2700	1090	1225	1180	750	395	3670	34500
1080	GDC/GFC	S750	2700	1090	1225	1180	750	365	3670	35500
1080	GDC/GFC	SC750	2700	1090	1225	1180	750	365	3670	35500
1280	GDC/GFC	WOPTO*	2900	1242	1310	1280	700	-	3849	41000
1280	GDC/GFC	P750	2900	1242	1310	1280	750	365	3849	41000
1280	GDC/GFC	S750	2900	1242	1310	1280	750	365	3849	41500
1280	GDC/GFC	SC750	2900	1242	1310	1280	750	365	3849	41500

*WOPTO - With PTO/PTI shaft / * 480AEGHC -KP400N - Epicyclic gears

Note:

All the dimensions are in mm. Dry weight is in Kg.

The data shown in the chart are for reference purpose only and are subject to change without prior notice.



PRINCIPAL DIMENSIONS

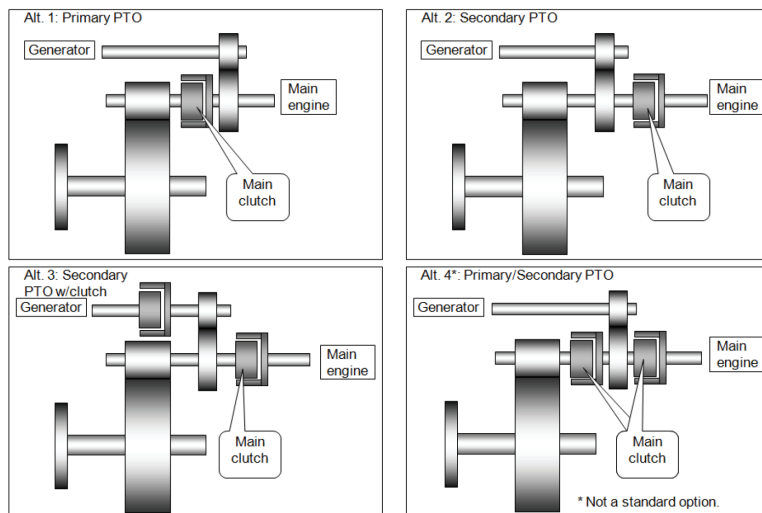
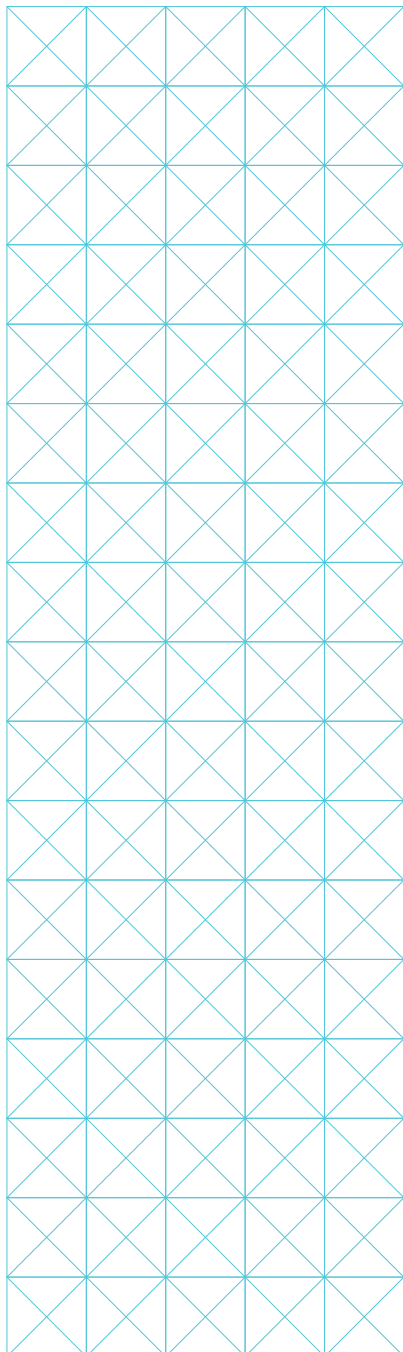
GEAR SIZE	GEAR VARIANT	PTO/PTI VARIANT	W1	W2	H1	H2	H3	L1	DRY WEIGHT
480	AGHC-S/AGFC-S	WOPTO*	1495	525	580	1596	-	1820	3000
480	AGHC-S/AGFC-S	KP400N	1495	525	580	1578	283	1820	3300
550	GHC-S/GFC-S	WOPTO*	1712	685	650	1880	-	2025	5100
550	GHC-S/GFC-S	P450	1712	685	650	1880	450	2025	5300
550	GHC-S/GFC-S	S450	1712	685	650	1880	450	2025	5300
550	GHC-S/GFC-S	SC450	1712	685	650	1880	450	2025	5300
650	GHC-S/GFC-S/GDC-S	WOPTO*	1990	725	695	1845	-	2294	7300
650	GHC-S/GFC-S/GDC-S	P500	1990	725	695	1845	500	2294	7900
650	GHC-S/GFC-S/GDC-S	S500	1990	725	695	1845	500	2294	8150
650	GHC-S/GFC-S/GDC-S	SC500	1990	725	695	1845	500	2294	8000
750	GHC-S/GFC-S/GDC-S	WOPTO*	2295	800	830	2240	-	2525	9500
750	GHC-S/GFC-S/GDC-S	P600	2295	800	830	2240	600	2525	10300
750	GHC-S/GFC-S/GDC-S	S600	2295	800	830	2190	600	2525	10500
750	GHC-S/GFC-S/GDC-S	SC600	2295	800	830	2190	600	2525	10500
850	GHC-S/GFC-S/GDC-S	WOPTO*	2575	1000	875	2112	-	2860	14100
850	GHC-S/GFC-S/GDC-S	P600	2575	1000	875	2112	600	2860	15000
850	GHC-S/GFC-S/GDC-S	S600	2575	1000	875	2205	600	2860	15200
850	GHC-S/GFC-S/GDC-S	SC600	2575	1000	875	2205	600	2860	15200
950	GHC-S/GFC-S/GDC-S	WOPTO*	2784	1000	960	2173	583	3175	19710
950	GHC-S/GFC-S/GDC-S	P600	2784	1000	960	2173	600	3175	20315
950	GHC-S/GFC-S/GDC-S	S600	2784	1000	960	2175	600	3175	21100
950	GHC-S/GFC-S/GDC-S	SC600	2784	1000	960	2175	600	3175	21100
1080	GHC-S/GFC-S/GDC-S	WOPTO*	3120	985	1135	2646	-	3550	28000
1080	GHC-S/GFC-S/GDC-S	P650	3120	985	1135	2646	650	3550	28500
1080	GHC-S/GFC-S/GDC-S	S500	3120	985	1135	2650	650	3550	27800
1080	GHC-S/GFC-S/GDC-S	SC650	3120	985	1135	2650	650	3550	27800
1080	GDC-S/GFC-S	WOPTO*	3170	1350	1225	2450	-	3670	34500
1080	GDC-S/GFC-S	P750	3170	1350	1225	2450	750	3670	34500
1080	GDC-S/GFC-S	S750	3170	1350	1225	2450	750	3670	35500
1080	GDC-S/GFC-S	SC750	3170	1350	1225	2450	750	3670	35500

*WOPTO - With PTO/PTI shaft

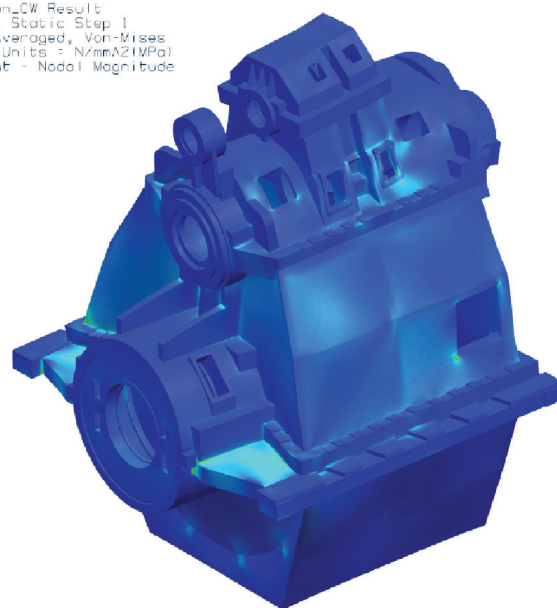
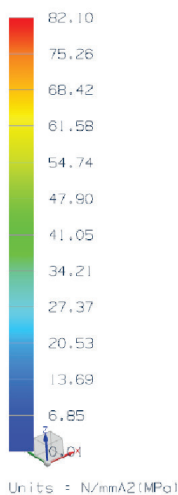
Note:

All the dimensions are in mm. Dry weight is in Kg.

The data shown in the chart are for reference purpose only and are subject to change without prior notice.



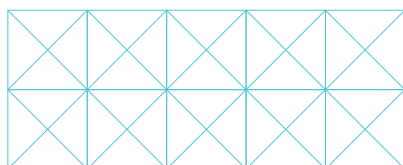
PFM000251493_sln3 : Pinion_QW Result
 Subcase : Static Loads 1, Static Step 1
 Stress - Element-Nodal, Averaged, Von-Mises
 Min : 0.00, Max : 97.34, Units : N/mm²(MPa)
 Deformation : Displacement - Nodal Magnitude



TECHNICAL DATA

GEAR SIZE	480	550	650	750	850	950	1080	1180	1280
Offset	480mm	550mm	650mm	750mm	850mm	950mm	1080mm	1180mm	1280mm
Offset direction	V/H	V/H	V/H	V/H	V/H	V/H	V/H	V	V
Max. torque in	23 KNm	36 KNm	46 KNm	57 KNm	90 KNm	130 KNm	235 KNm	275 KNm	340 KNm
Max. torque out	90 KNm	125 KNm	190 KNm	260 KNm	380 KNm	530 KNm	950 KNm	1100 KNm	1350 KNm
Min. ratio	1.8:1	2:1	2:1	2:1	2:1	2:1	2.0:1	2.0:1	2.0:1
Max. ratio	6:1	6:1	6.2:1	6.25:1	6.25:1	6.3:1	6.3:1	6.45:1	6.45:1
Engine input rpm max	1600	1600	1500	1200	1200	1000	750	750	750

All data are subject to change without prior notice.



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