

Copenhagen Report No. 7087.

List of Spare Gear for the machinery of the
Twin Screw Motor Vessel "GRIPSHOLM", of Gothenburg.

Yard No. 999 by Messrs. Armstrong. Whitworth & Co. Ld. Newcastle.
Engines No. 1000 & 1001 by Messrs. Burmeister & Wain. Copenhagen.

Main Diesel Oil Engines:

- 2 cylinder covers for the top-ends complete with studs and nuts.
- 2 cylinder covers for the bottom-ends " " " " "
- 2 set of studs and nuts for one top cylinder cover
- 2 set of studs and nuts for one bottom ditto.
- 2 cylinder liners with lubricating arrangement attached complete.
- 2 cooling water jackets for cylinder liners.
- 1 piston with piston rod and liner for piston rod complete.
- 1 set of studs and nuts for one piston.
- 2 set of piston packing rings.
- 2 set of packing rings for the piston rod stuffing box.
- 4 scraping rings for the piston rod stuffing box.
- 12 exhaust valves with all mountings complete for the top-ends.
- 6 exhaust valve spindles complete for the top-end valves.
- 2 air inlet valves with all mountings complete for the top-ends.
- 2 starting air valves with all mountings complete for the " "
- 6 oil fuel injection valves with all mountings complete for the
top-ends.
- 3 oil fuel injection valve spindles for the top-end valves.
- 6 bottom parts of oil fuel injection valve chests for the top-
end valves.
- 12 exhaust valves with all mountings complete for the bottom-ends.
- 6 exhaust valve spindles complete for the bottom-end valves.
- 6 exhaust valve seats " " " " " "
- 6 exhaust valve discs for the bottom-end valves.
- 2 air inlet valves with all mountings complete for the bottom-ends

- 2 starting valves with all mountings complete for the bottom-ends.
- 6 oil fuel injection valves with all mountings complete for the
bottom-ends.
- 3 oil fuel injection valve spindles for the bottom-end valves.
- 6 bottom parts of oil fuel injection valve chests for the
bottom-end valves.
- 2 pair of main bearing brasses.
- 8 studs with bolts for the main bearings.
- 2 pair of connecting rod bottom-end brasses.
- 4 connecting rod bottom-end bolts and nuts.
- 4 pair of connecting rod top-end brasses.
- 8 connecting rod top-end bolts and nuts.
- 1 set of coupling bolts and nuts for the crank shafts.
- 2 escape valves for the cylinder top-ends.
- 2 ditto for the cylinder bottom-ends.
- 2 roller with shafts for exhaust valve gear to the top-end valves.
- 2 ditto ditto for air inlet valve gear to " " " "
- 1 ditto do for starting valve gear to " " " "
- 7 ditto ditto for oil fuel valve gear to " " " "
- 2 do do for exhaust valve gear to the bottom-end
valves.
- 2 do do for air inlet valve gear to the " " "
- 1 do do for starting valve gear to the " " "
- 1 do do for oil fuel valve gear to the " " "
- 2 pistons for the oil fuel pumps to the top-ends.
- 2 ditto for the ditto to the bottom ends.
- 2 delivery valves for the oil fuel pumps.
- 2 suction valves for the oil fuel pumps.
- 18 packing rings for the oil fuel pump pistons.
- 2 telescope pipes for the piston oil cooling.
- 2 flanges for do do.
- 1 guide bush for do do.
- 12 safety caps for the oil fuel injection valves.
- 12 caps for the do do.
- 6 safety caps for starting air piping.



- 2 spindles for the oil fuel overflow valves.
- One length of chain for the camshaft motion, and 10 links for same
- One chain wheel for the camshaft motion.
- One wheel for the chain leader.
- One wheel for the chain tighener.
- 18 packing rings for the top fuel injection valve.
- 18 " " " " bottom " "
- 36 brass tubes for the fresh water cooler, 16 & 19 & 2152 m/m.
- 34 " " " " oil cooler 8 & 11 & 1350 "
- A number of assorted rubber packing rings, packing material, bolts with nuts, oil gauge glasses, thermometers &c. and a number of pipes in suitable lengths with cones and unions.
- 1 complete set of all springs used for one engine.
- for the fuel oil starting and injection air.

Auxiliary Diesel engines:

- 1 cylinder cover with cylinder liner and water jacket.
- 1 pair of crank pin brasses with bolts and nuts.
- 1 " " crosshead "
- 1 " " main bearing brasses.
- 1 " " " " " for compressor.
- 2 Studs with nuts for main bearings.
- 1 Piston complete with rod and packing rings.
- 10 Piston packing rings.
- 2 Scrapperings.
- 4 Exhaust valves complete.
- 4 Spindles for do.
- 4 Seats for do.
- 4 Valve discs. for do.
- 2 Air inlet valves complete.
- 2 Starting air valves complete.
- 4 Oil fuel injection valves complete.
- 4 Spindles for do.
- 4 Seats for do.

- 2 Escape valves complete for cylinders.
 3 Rollers with shafts for valve gear.
 1 Shaft for do.
 6 Safety caps for the fuel injection valve.
 ½ Set of all moving parts for fuel oil pump.
 2 Tubes with packing rings for the piston cooling.
 10 Studs with nuts for one cylinder cover.
 2 Chains and 10 links for the valve gear.

compressor.

- 1 Pair of crank pin brasses with bolts for 3 cylinder engine.
 1 " " " " " " " 4 " "
 1 " " crosshead " " " 3 " "
 1 " " " " " " " 4 " "
 7 HP piston packing rings)
 1 " " scrape ")
 5 IP " packing ") for the 3 " "
 1 " " scrape ")
 4 LP " packing ")
 7 HP piston packing rings)
 1 " " scrape ")
 5 IP " packing ") for the 4 cyl. engine.
 1 " " scrape ")
 4 LP " packing ")
 4 HP suction valves complete)
 4 " discharge " ") for the 3 cyl. engine.
 4 " " valve discs.)
 4 " suction " ")
 16 " " valves complete)
 16 " discharge " ") for the 4 cyl. engine.
 16 " " valve discs.)
 16 " suction " ")
 14 IP " valves complete.
 14 " discharge " "

14 IP discharge valve discs.
 14 " suction " "
 16 LP " valves complete.
 15 " discharge " "
 15 " " valve discs.
 16 " suction " "
 3 cooling coils for the HP cylinder.

1 lubricating oil filter.
 2 fuel oil filters.
 2 safety caps for the starting air pipes.
 1 complete set of all springs used for one 3 cyl. engine.
 1 " " " " " " " " 4 " "

A number of pipes in suitable lengths with cones and unions for the oil fuel, starting and injection air.

36 brass tubes for the fresh water cooler.
 34 " " " " oil cooler.
 12 " " " " LP air cooler.
 5 " " " " IP " "

Rubber packing rings, packing material, oil gauge glasses, pistons and ball valves for the sight feed lubricators, valve spindles and nutting plugs for the air receivers, thermometers &c &c.

Auxiliary machinery.

1 ball bearing for the 200 ts lubricating oil pump.
 1 roller " " " " " "
 4 filters for the lubricating oil filter.
 1 impeller with shaft for the 250 ts cooling water pump.
 2 ball bearings for do.
 1 chain coupling for do.
 1 impeller with shaft for the 200 ts cooling water pump.
 1 ball bearing for do.
 4 wings for the tank- & oil fresh transfer pump.



8 blocks for do.

1 Roller bearing for the 30 ts daily service oil fuel pump.

2 filters for the fuel oil filter.

1 thrust shoe for the thrust block.

1 Rotor for the 200 ts lubricating oil pump.

8 Wings for do.

1 Electromotor for the lubricating oil separator.

1 ball bearing and

1 set of coal brushes and brushholders for each size of
Electromotor used.

1 Anchor complete for the daily service oil fuel pump.

1 set brushes with brushholders for one dynamo.

1/2 " Anchor coils for one dynamo.

2 " shunt " " " "

2 " comp. " " " "

2 " interpole " " "

1 " of coils, contacts and springs for one shunt field regulator.

*Examined on
board at 1000
L. M. Murdoch*



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