



Mitsubishi Dockyards, Nagasaki. - Ship No. 411.

Spare Gear to Lloyd's for 2 x 6ST60.

12.8 Coupling bolts for crankshaft with nuts and split pins.

2 Main bearing bolts nuts and split pins.

1 Main engine cylinder cover (without valves) with studs and water cooling connections.

2 Complete fuel valve and starting air valve casings complete with relief valves.

2 Primary starting air valves.

6 Fuel valve spindles.

18 Securing studs for cylinder cover $2\frac{1}{4}$ " x ^{535.}~~540.~~

1 Scavenge air valve nest.

2 Bottom end bolts for working cylinder.

2 Top end bolts for working cylinder.

1 Piston for working cylinder complete with rings, rod and attached cooling pipe.

7 Rings for working piston.

1 Inward working scraper rings.

1 Scraper ring.

20 Piston rings for L.P. compressor piston.

24 " " " I.P. " "

24 " " " H.P. " "

1 Lower spiral gear wheel (bronze) for vertical shaft.

1 " " " (steel) " " "

1 Upper " " " (bronze) " " "

1 " " " (steel) " " "

4 Scraper rings for compressor piston.

6 Fuel pump plungers with bushes.

6 Suction valves for fuel pump.

6 Discharge valves for fuel pump.

A quantity of assorted bolts nuts.

ZULZER

- 48 Ring valves 74 dia. for L.P. and I.P. compressor stage.
- 48 " " 40 " " " " " "
- 8 Suction valves for H.P. compressor stage.
- 8 Discharge valves for H.P. compressor stage.
- 1 Set of spare wheels and shaft for crosshead oil pumps.
- 1 Set of pipes for H.P. air and fuel oil.
- 1 Connecting rod top end bearing complete (2 bearings - 4 halves)
- 1 Set of main piston rings for 1 piston.
- 1 Set of spiral springs for 1 engine.
- 1 Connecting rod bottom end bearing (2 halves).

Spare Gear to Lloyd's for 3 x 4RH31.

- 6 Coupling bolts for crankshaft.
- 2 Studs for main bearing caps.
- 8 Studs for cylinder cover.
- 1 Fuel valve complete.
- 1 Starting air valve.
- 1 Relief valve for working cylinder.
- 6 Fuel valve needles with bushes.
- 2 Bolts, nuts and split pins for the connecting rod.
- 6 Piston rings for the working piston.
- 1 Scraper ring for the working piston.
- 1 Scraper ring for the scavenge pump.
- 4 Plungers and bushes for the fuel pump.
- 8 Fuel pump valves.
- 32 Scavenge pump valve discs.
- 6 Valves for ~~cooling water~~ and oil pumps.
- 1 Set of fuel pipes with nipples etc.
- 1 Piston and rod for oil pump complete.

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Further spare gear included in the price of engine.

- 6 Fuel valve spindles. *with brushes*
- 8 Fuel pump plungers. " "
- 12 ~~8~~ Fuel valve nozzles.
- 12 ~~8~~ Fuel valve pulverisers.
- 30 Piston rings.
- 1 Set of joints.
- 1 " " *springs*

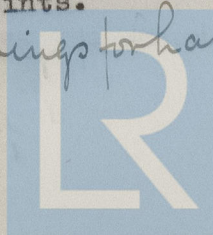
Spare Gear to Lloyd's for 1 x 2RH24.

- 6 Coupling bolts for crankshaft.
- 2 Studs for crankshaft bearing.
- 8 Studs for cylinder cover.
- 1 Complete fuel valve.
- 1 Complete starting air valve.
- 1 Fuel valve spindle with bush.
- 8 Scavenge air disc valves.
- 2 Bolts for connecting rod.
- 6 Piston rings 240 dia.
- 4 Fuel pump valves.
- 2 Pistons and bushes for fuel pump.
- 2 Valves and seats for cooling water pump.
- 1 Complete length of fuel piping.
- 1 Valve for oil pump.
- 1 Set of wheels for cog wheel oil pump.
- 1 *Relief Valve for Cylinder Cover.*

Further Spare Gear included in engine price.

- 1 Fuel valve spindle and bush,
- 2 Fuel valve nozzles.
- 2 Fuel valve pulverizers.
- 1 Set of springs.
- 1 Set of joints.

4 *Piston rings for hand Compressor.*



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Spare Gear to Lloyd's for 1 x MC6.

- 2 Bolts for crankshaft bearing,
- 2 Scavenging air suction valve discs.
- 1 Complete fuel valve.
- 1 Pulverising spiral.
- 1 Pulverising nozzle.
- 2 Connecting rod bolts complete.
- 5 Engine piston rings.
- 5 Piston rings for 2nd stage.
- 3 Piston rings for 1st stage.
- 1 Starting valve.
- 2 Fuel pump valves.
- 1 Fuel pump plunger.
- 1 Suction valve for 1st stage.
- 1 Discharge valve for 1st stage.
- 1 Suction valve for 2nd stage.
- 1 Discharge valve for 2nd stage.
- 2 Valves for cooling water pump.
- 3 Valves for cylinder lubricating oil pump.
- 1 Suction of piping for fuel and H.P. air.
- 1 Flame plate.

Further spare gear included in the price of the compressor.

- 1 Set of springs.
- 1 Set of spare parts to Lloyd's for 2 cooling water pumps.

- 1 Impeller.
- 1 Front bearing liner.
- 1 Rear bearing liner.
- 1 Shaft with keys.

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1 Set of spare parts to Lloyd's for 2 motors for cooling water pumps.

- 1 Set = 2 bearing bushes.
- 1 Set brush holders.
- 1 Set brushes.

1 Set of spare parts to Lloyd's for 1 reserve cooling water pump.

- 1 Impeller.
- 1 Front bearing liner.
- 1 Rear bearing liner.
- 1 Shaft with keys.

1 Set of spare parts to Lloyd's for motor for reserve cooling water pump.

- 1 Set bearing bushes,
- 1 Set brush holders.
- 1 Set brushes.

1 Set of spare parts to Lloyd's for 2 lubricating oil pumps.

- 1 Set of gear wheels with axles.

1 Set of spare parts to Lloyd's for 9 HP motors for lubricating oil pumps.

- 2 Bearing bushes.
- 1 Set brush holders.
- 1 Set brushes.

1 Set of spare parts to Lloyd's for 4 HP lubricating oil pump.

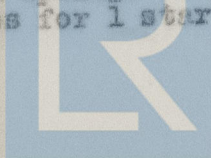
- 1 Set of gear wheels with axles.

1 Set of spare parts to Lloyd's for 4 HP motor for lubricating oil pump.

- 2 Bearing bushes.
- 1 Set brush holders.
- 1 Set brushes.

Spare gear to Lloyd's for 2 piston cooling pumps and motors.

- 1 Set valves for 1 pump.
- 1 Set springs for 1 pump.
- 1 Set rings for each bucket for 1 pump.
- 1 Set bearings for 1 pump.
- 1 Set brushes for 1 motor.
- 1 Set brush springs for 1 motor.
- 1 Set spares for 1 starter.



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Spare gear to Lloyd's for 2 bilge pumps and motors.

- 1 Set valves for 1 pump.
- 1 Set springs for 1 pump.
- 1 Set rings for each bucket of 1 pump.
- 1 Set bearings for 1 motor.
- 1 Set brushes for 1 motor.
- 1 Set brush springs for 1 motor.
- 1 Set spares for 1 starter.

Spare Gear for 2 Blowers and Starters.Blowers :

- 1 Set of joints.
- 1 Thrust bearing bushes (complete for 1 bearing).
- 1/10 all bolts, nuts and studs, minimum 2 of each kind.

Motors :

- 1 Supporting bearing bushes (complete for 1 bearing).
- 1 Field coil.
- 1 Interpole coil.
- 1 Set (24 pieces) of brush holders.
- 3 Sets (72 pieces) of carbon brushes.
- 1/10 all bolts, nuts and studs, minimum 2 of each kind.

Starters :

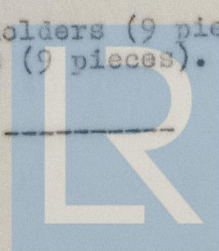
- 1 Set (8 pieces) contact fingers.
- 1 Set sparking contacts.
- 1 Set (4 pieces) blow-out coils.
- 1 No-volt coil.
- 1 Set springs = 1 of each spring on a starter,
total 6 springs.

Spares for 3 dynamos :

- 1 Field pole coil.
- 1 Interpole coil.
- 1 Bearing bush.
- 1 Set of brush holders (30 pieces).
- 1 Set of carbon brushes (30 pieces).

Spare gear for 1 generator :

- 1 Field pole coil.
- 1 Interpole coil.
- 1 Bearing bush.
- 1 Set of brush holders (9 pieces).
- 1 Set of brushes (9 pieces).



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