

LLOYD'S REGISTER OF SHIPPING.
MEIKAI BUILDING
32, AKASHI-MACHI,
KOBE.

SPARE GEAR

FOR

HARIMA NO.123

- 1 Cylinder cover complete for main engines with valves, seats and springs etc.
- 1 Complete set of valves, seats, springs etc. for one cylinder of main and of the auxiliary Diesel Engines together with 6 fuel needle valves for main and 6 fuel needle valves for auxiliary engines.
- 1 main piston complete with rings, nuts studs and cooling tubes for the main engines.
- In addition 5 sets of piston rings for main engines and 3 sets of same for auxiliary engines.
- 1 complete set of main skew wheels for 1 main engine.
- 2 connecting rod top end bolts and nuts for main engine. (Auxiliary engine trunk piston type).
- 2 connecting rod bottom end bolts and nuts for main engines and 3 sets of same for auxiliary engines.
- 2 set main bearing bolts and nuts for main engines and 6 sets of same for auxiliary engines.
- 1 set of coupling bolts for crank shaft.
- 1 set of coupling bolts for intermediate shaft.
- 1 complete set of piston rings for each piston of main and auxiliary compressors with a number of additional spare rings for each.
- 1 half set of valves for the main and the auxiliary compressors.
- 1 complete set of working parts for fuel pump of main engines.
- 3 complete fuel pumps for auxiliary engines with additional spares.



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1 complete set of valves and seats for daily fuel supply pump.

1 complete set of valves and seats for piston cooling water pump.
(Jacket circulating pumps are centrifugal).

1 complete set of valves for Bilge pump.

1 complete set of scavenging air valves with nest for 1 cylinder of main engines. (Scavenging by Turbo-Blower).

Lubricating Oil Pumps air WEIDIG type - motor driven.

Quantity of bolts and nuts including 1 set (18 in number) of cylinder cover studs and nuts.

Lengths of pipes suitable for fuel delivery, and blast pipes to the cylinders and the air delivery from the compressors to the receivers, with unions and flanges suitable for each.

In addition to the above the following spares have also been supplied.

MAIN ENGINES:-

- 1 set of air compressor main bearing brasses with studs and nuts.
- 1 set of air compressor crank pin brasses with bolts and nuts.
- 1 set of compressor crosshead brasses with bolts and nuts.
- 4 oil wiper rings for air compressor.
- 4 piston cooling outer tubes.
- 4 piston cooling inner tubes.
- 4 piston cooling injection tubes.
- 1 bearing for horizontal camshaft.
- 1 ball bearing for horizontal camshaft.
- 2 fuel valve cams.
- 2 starting air valve cams.
- 2 cam rollers.
- 2 cam roller pins.
- 1 thrust bearing for vertical shaft.

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- 1 outer tube for crosshead lubrication.
- 1 inner tube for crosshead lubrication.
- 1 complete set of pressure gauges.
- 1 set of springs of all kinds.
- 1 wheel and shaft for crosshead lubricating oil pump.
- 1 tube nest with tube plates and tubes complete for air cooler tubes for air compressor L.P. stage.
- 1 tube nest with tube plates and tubes complete for air cooler tubes for air compressor I.P. & H.P. stage.
- 3 off relief valves for air compressor, each 1 for H.P., I.P. & L.P.
- 1 round thrust rings for thrust bearings.
- 1 set of Bosch lubricator.
- 20 off oil cooler tubes.
- 1 set of piston packing rings for starting engine.
- 1 set of piston packing rings for turning engine.
- 2 sets of ball bearings for governor, 1 large and 1 small.

AUXILIARY ENGINES:-

- 3 cylinder covers.
- 24 cylinder cover bolts and nuts.
- 3 sets of circulating water pump suction and delivery valves with seats, springs complete.
- 1 circulating pump escape valve with spring complete.
- 6 circulating pump valve springs.
- 6 exhaust valve springs.
- 6 fuel spray valves.
- 3 set of generator outside bearing.
- 3 sets of lubricating geared oil pump gear.
- 6 column(long) bolts.
- 1 pet valve for circulating pump.
- 3 relief valves for air reservoir.
- 3 sets of skew wheels.
- 12 white metal bushes.
- 48 fuel spray nozzle cleaning needles.

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AUXILIARY AIR COMPRESSOR:-

- 1 set of bolts and nuts for crank shaft bearing.
- 1 set of bolts and nuts for connecting rod.
- 1 set of bolts and nuts for cylinder cover.
- 1 set of wheel for cog wheel oil pump.
- 1 set of crank pin brasses with bolts and nuts.
- 1 set of gudgeon pin brasses with bolts and nuts.
- 1 set of main bearing brasses.
- 2 springs for relief valve.

EMERGENCY COMPRESSOR AND ENGINE:-

- 1 set of fuel valve complete with additional spares.
- 2 connecting rod bolts complete.
- 5 main piston rings (1 set).
- 5 piston rings for 2nd stage of air compressor.
- 3 piston rings for 1st stage of air compressor.
- 1 set ~~of~~ starting valve complete.
- 1 fuel pump plunger.
- 2 fuel pump valves.
- 2 valves for cooling water pumps.
- 3 valves for cylinder lubricating oil pumps.
- 1 set of assorted springs.
- 2 bolts for crank shaft bearing.
- 2 scavenging air chamber discs.

TURBO-BLOWER:

- 1 set of joints.
- 1 set of bearing bushes for the combined thrust and journal bearing.

ELECTRIC GENERATOR:

- 1 set of bearing brasses.
- 1 set of brushes for each dynamo.
- 1 set of brush-holders for each dynamo.



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- $\frac{1}{2}$ set of flexible connections for brushes for one dynamo.
- 1 field pole coil.
- 1 interpole coil.

AUXILIARY COMPRESSOR MOTOR:-

- 1 set of carbon brushes.
- 2 sets of brush holders.
- 1 set of brush holder springs.
- 1 set of bearing brass.
- 1 field coil.
- 1 set of contact piece and fingers with springs.
- $\frac{1}{2}$ set of springs assorted.

TURBO-BLOWER MOTORS:-

- 3 sets of carbon brushes.
- 1 set of bearing brasses.
- 1 set of brush holders.
- 1 set of brush holder springs.
- 2 field coils.
- 1 set of contact piece and fingers with springs.
- 1 set of springs assorted.

OTHER MOTORS:-

- 1 set of carbon brushes for each motor.
- 1 set of brush holder springs for each size motor.
- 1 field coil for each motor.
- 1 set of fuse case for main switch for each size motor.
- $\frac{1}{2}$ set of contact piece and fingers with springs, if used, for each size motor.
- $\frac{1}{2}$ set of spring assorted for each size motor.
- 2 pilot lamps for each size motor.

RECIPROCATING PUMP:- (EACH)

- 1 set of bucket rings.
- 1 set of bearing brasses with bolts and nuts.
- 1 set of crank and gudgeon pin brasses with bolts and nuts.
- 1 set of steam piston packing rings (donkey boiler feed pumps).
- 1 set of slide valve spindle (donkey boiler feed pumps).
- 1 set of piston rod (donkey boiler feed pumps).

1 set of springs for relief valves.

CENTRIFUGAL TYPE PUMP EACH:

- 1 impeller.
- 1 impeller shaft with key.
- 1 set of shaft bearings.
- 1 set of stuffing bushes for shaft.
- 1 set of flexible coupling rubber.

DONKEY BOILER:-

- 1/30 of total number of boiler tubes.
- 1 set of feed check valves and seats.
- 6 gauge glasses.
- 1 safety valve spring.
- 1 set of man and mud hole doors with cross bars, nuts and bolts complete.

Also Complete set of spanners and tools etc., packing and jointing material.

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