

List of Spare Gear

for the machinery designated "OSAKA 1"

Burmeister & Wain's Main Engine No. 1590

Burmeister & Wain's auxiliary engines Nos. 1591, 1592 & 1593
for Yokohama Dock Co.'s Yard No. 175.

Main Diesel oil engine:-

1 cylinder cover complete with studs & nuts for fastening of
the valves, cylinder liner, water jacket etc.

1 set of studs and nuts complete for one cylinder cover.

1 cylinder liner.

2 pistons with piston rings complete, and studs and nuts for
fastening of piston rods.

16 piston rings.

3 scraping rings.

2 scraping rings for the piston rod stuffing box.

1 set of studs and nuts for one piston.

1 pair of main bearing brasses.

2 main bearing studs and nuts.

1 pair of crank pin bearing brasses.

2 crank pin bearing bolts and nuts.

1 pair of crosshead bearing brasses.

4 crosshead bearing bolts and nut.

2 sets of bolts and nuts for one crank shaft coupling.

One length of chain and various links for the chain to the
cam shaft gearing.

oil fuel injection valves.

6 oil fuel injection valves complete with springs, filters etc.
ready for use.

3 push spindles with liners.

3 valve spindles with pipes and liners.

12 atomizers.

2 air screw-plugs.



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6 springs.

1 set of internal parts for one filter.

Air inlet valves.

3 air inlet valves complete with springs etc. ready for use.

1 valve disc with spindle and nut.

12 springs.

1 guide with bolt for the valve lifting gear.

Exhaust valves.

6 exhaust valves complete with springs etc. ready for use.

6 valve discs with spindles and nuts.

3 valve discs.

3 steel nuts.

6 bottom parts for the valve chests.

12 springs.

1 guide roller with bolt for the valve lifting gear.

Starting air valves.

1 starting air valve complete with spring etc. ready for use.

1 valve chest with seat.

1 valve spindle.

12 springs.

1 guide roller with bolt for the valve lifting gear.

12 safety caps for starting air.

Oil fuel injection pumps.

1 oil fuel injection pump complete with manometer valve etc.
ready for use.

6 pump pistons with liners and bushes.

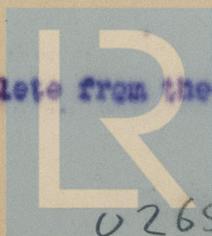
6 slide valves with valve chests and bushes.

6 suction valves complete.

6 springs for do.

6 drawing rods.

3 pressure pipes with flanges complete from the fuel pumps
to the injection valves.



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3 guide rollers with bolts and bearings for the pump levers.

Safety valves.

2 safety valves complete.

1 valve disc.

1 valve chest with seat.

6 springs.

Engine bilge and sanitary pump.

2 suction valve discs, seats and springs complete.

2 delivery " " " " " "

2 suction valve springs.

2 delivery " "

2 bearing brasses.

2 bolts with nuts.

1 bush.

One set of springs suitable for each size used.

A number of india packing rings suitable for each size used.

Auxiliary Diesel oil engines.

2 combined cylinder covers and liners with studs and nuts *
complete for fastening of valves etc.

2 sets of studs and nuts complete for 2 cylinder covers.

3 safety valves complete for cylinder covers.

2 safety valve springs.

1 trunk piston complete with crosshead gudgeon pin.

18 piston rings.

6 piston scraping rings.

3 pair of main bearing brasses.

6 main bearing studs and nuts.

3 crank pin bearing brasses.

6 crank pin bearing bolts and nuts.

3 crosshead bushes.

Oil fuel injection valves.

6 oil fuel injection valves complete with springs, filters etc.



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ready for use.

6 push spindles with liners.

5 valve spindles with pipes and liners.

28 atomizers.

3 air screw plugs.

6 springs.

1 rocking lever arm.

Air inlet valves.

3 air inlet valves complete with springs etc. ready for use.

6 springs.

1 guide roller with bolt for the valve lifting gear.

Exhaust valves.

12 exhaust valves complete with springs etc. ready for use.

6 springs.

1 guide roller with bolt for the valve lifting gear.

1 rocking lever arm.

Starting air valves.

1 starting air valves complete with springs etc. ready for use.

4 springs.

1 guide roller with bolt for the valve lifting gear.

1 rocking lever arm.

Oil fuel injection pumps.

1 oil fuel injection pump complete with manometer valve etc.
ready for use.

8 pump pistons with liners and bushes.

8 slide valves with valve chests, bushes and drawing rods.

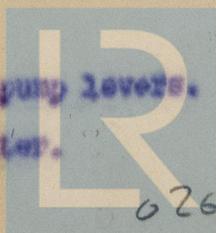
8 pressure pipes with flanges complete from the fuel pumps to
the injection valves.

8 suction valves complete.

4 springs for do.

4 guide rollers with bolts for the pump levers.

1 set of internal parts for one filter.



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One set of springs suitable for each size used.

A number of india rubber rings suitable for each size used.

Governors.

3 springs with holders.

2 cog wheels.

1 ball bearing.

Cooling water pump.

1 piston complete.

1 pair of brasses and bolts.

1 suction valve complete.

1 delivery valve complete.

1 valve disc for escape valve.

1 spring " " "

Lubricating oil pump.

2 liners for the pump.

2 cog wheels.

1 valve disc for the escape valve.

1 spring " " " "

3 filters " " " "

Oil fuel transfer pump.

2 shafts.

4 bushes.

2 cog wheels.

1 stuffing box gland.

1 spring for escape valve.

Lubricating oil cooler.

90 brass tubes.

1 spring for safety valve.

Bilge and sanitary pump.

1 pair of main bearing brasses.



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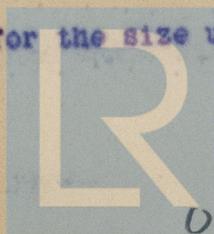
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- 2 main bearing bolts.
- 1 pair of crank pin bearing brasses.
- 2 crank pin bearing bolts.
- 1 crosshead bush.
- 1 crosshead gudgeon pin.
- 1 ball bearing.
- 1 suction valve complete.
- 1 delivery " "
- 1 spring for escape valve.

Manoeuvring air compressor.

- 1 pair of main bearing brasses.
- 1 pair of crank pin bearing brasses.
- 2 crank pin bearing bolts and nuts.
- 1 crosshead bush.
- 8 L.P. piston rings.
- 10 H.P. piston rings.
- 4 H.P. piston scraping rings.
- 7 L.P. suction valves complete.
- 7 L.P. delivery " "
- 8 H.P. suction " "
- 8 H.P. delivery " "
- 4 springs for L.P. suction valves.
- 4 " " L.P. delivery "
- 2 springs for H.P. suction valves.
- 2 springs for H.P. delivery valves.
- 1 safety valve complete for L.P. air cooler.
- 1 safety valve complete for H.P. air cooler.
- 1 spring for safety valve on L.P. air cooler.
- 1 " " " " " H.P. " "
- 2 cog wheels for the lubricating oil pump.
- 1 filter complete for " " "
- A number of brass tubes suitable for the size used in the L.P.
and H.P. air coolers.



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7.

1 spring for the safety valve on the emergency air bottle.

A quantity of assorted bolts and nuts.

A quantity of "Palmetto" packing material.

Generators and Electro motors.

1 magnetic coil, 1 set of carbon brushes, 1 set of brush holders with springs, $\frac{1}{2}$ set of flexible connections for the 100 K.W. main generators.

40 H.P. electro motor for cooling water pump and lubrication oil pump.

1 magnetic coil, 1 set of carbon brushes and 1 set of brush holders with springs.

10 H.P. electro motor for bilge & sanitary pumps and oil fuel transfer pump.

1 magnetic coil, 1 set of carbon brushes and 1 set of brush holders with springs.

8 H.P. electro motor for the turning gear.

1 magnetic coil, 1 set of carbon brushes and 1 set of brush holders with springs.

3 ball bearings for electro motors.



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