

REPORT ON BOILERS.

No. 9468

Received at London Office

-1 MAY 1936

Date of writing Report 3rd April 1936 When handed in at Local Office 13th Apr 1936 Port of KOBE

No. in Survey held at KOBE Date, First Survey Nov. 15th 1935 Last Survey Mar. 3rd 1936

Reg. Book. SINGLE SCREW VESSEL "KINUGASA MARU" (Number of Visits 6808) Tons { Gross 6808 Net 3717

Master ✓ Built at KOBE By whom built KAWASAKI DOCKYARD CO. LTD. Yard No. 591 When built 1936

Engines made at KOBE By whom made KAWASAKI DOCKYARD CO. LTD. Engine No. 222 When made 1936

Boilers made at KOBE By whom made KAWASAKI DOCKYARD CO. LTD. Boiler No. ✓ When made 1936

Nominal Horse Power (2187) 1850 Owners KOKUSAI KISEN KABUSHIKI KAISHA Port belonging to TOKYO

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel Kawasaki Dockyard Co. Ltd. Fukiiai Plate Mills (Letter for Record S. ✓)

Total Heating Surface of Boilers 249.96 M² 250 M² Is forced draught fitted no Oil fired & Ex. GAS. ✓

No. and Description of Boilers One, two furnace multitubular. Working Pressure 100 LB/IN²

Tested by hydraulic pressure to 200 LB/IN² Date of test 24-12-25 No. of Certificate 4855 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler O.F. ✓ No. and Description of safety valves to each boiler one set double spring. ✓

Area of each set of valves per boiler { per Rule 114.0 m² as fitted 122.7 m² Pressure to which they are adjusted 100 LB. Are they fitted with easing gear yes. ✓

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no main boilers. ✓

Smallest distance between boilers or uptakes and bunkers or woodwork none in vicinity Is oil fuel carried in the double bottom under boilers no.

Smallest distance between shell of boiler and tank top plating Boiler in tween deck Is the bottom of the boiler insulated yes. ✓

Largest internal dia. of boilers 3886 mm. Length 3497 mm. Shell plates: Material Steel Tensile strength 28-32 TONS/IN²

Thickness 22 mm. Are the shell plates welded or flanged no. Description of riveting: circ. seams { end D.R. lap. inter. D.R. lap.

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 30 mm. 1 3/16 Pitch of rivets { 80 mm. long. seams 27 mm. 1 1/16 173 mm. ✓

Percentage of strength of circ. end seams { plate 62.5 rivets 66. Percentage of strength of circ. intermediate seam { plate 62.5 rivets 66.

Percentage of strength of longitudinal joint { plate 84.3. rivets 116 combined 92. Working pressure of shell by Rules 147 LB/IN²

Thickness of butt straps { outer 19 mm. inner 22 mm. No. and Description of Furnaces in each Boiler 2 Morrison Corrugated. ✓

Material Steel. Tensile strength 26-30 TONS/IN² Smallest outside diameter 47.5" ✓

Length of plain part { top 4.9" bottom " Thickness of plates { crown 1 1/16" Description of longitudinal joint Welded. ✓

Dimensions of stiffening rings on furnace or c.c. bottom none. Working pressure of furnace by Rules 214 LB/IN²

End plates in steam space: Material Steel. Tensile strength 26-30 TONS/IN² Thickness 28 mm. Pitch of stays 500 mm. ✓

How are stays secured double nuts + loose washers. Working pressure by Rules 153 LB/IN²

Tube plates: Material { front Steel back Steel. Tensile strength { 26-30 TONS/IN² Thickness { 22 mm. 19 mm.

Mean pitch of stay tubes in nests 270 mm. Pitch across wide water spaces 350 x 180 mm. Working pressure { front 276 LB/IN² back 262 "

Girders to combustion chamber tops: Material Steel. Tensile strength 28-32 TONS/IN² Depth and thickness of girder at centre 180 mm x 44 mm. Length as per Rule 758 mm. Distance apart 270 mm. No. and pitch of stays in each 2 @ 290 mm. Working pressure by Rules 176 LB/IN² Combustion chamber plates: Material Steel. ✓

Tensile strength 26-30 TONS/IN² Thickness: Sides 16 mm. Back 15 mm. Top 16 mm. Bottom 19 mm.

Pitch of stays to ditto: Sides 290 x 265 mm. Back 215 x 235 mm. Top 290 x 270 mm. Are stays fitted with nuts or riveted over nuts. ✓

Working pressure by Rules 112 LB/IN² Front plate at bottom: Material Steel. Tensile strength 26-30 TONS/IN²

Thickness 22 mm. Lower back plate: Material Steel. Tensile strength 26-30 TONS/IN² Thickness 22 mm. ✓

Pitch of stays at wide water space 350 mm x 215 mm. Are stays fitted with nuts or riveted over nuts. ✓

Working Pressure 234 LB/IN² Main stays: Material Steel. Tensile strength 28-32 TONS/IN²

Diameter { At body of stay, 3 1/4" No. of threads per inch 6. Area supported by each stay 500 x 1040 mm. ✓

Working pressure by Rules 100 LB/IN² Screw stays: Material Steel. Tensile strength 26-30 TONS/IN²

Diameter { At turned off part, 34, 37, 40 mm. No. of threads per inch 9. Area supported by each stay 78.5 sq. ins.

Over threads 1 1/2", 1 5/8", 1 3/4"

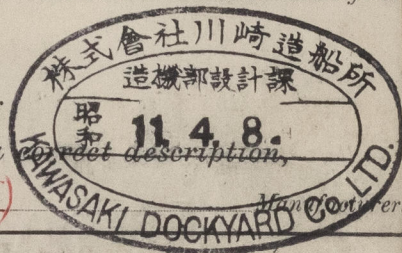
Working pressure by Rules $158 \frac{LB}{IN^2}$ ✓ At the stays drilled at the outer ends yes ✓ Margin stays: Diameter { At turned off part, 47 mm or Over threads $2 \frac{1}{2} \text{ inches}$ ✓
No. of threads per inch 9 ✓ Area supported by each stay 97.5 sq. ins. Working pressure by Rules $243 \frac{LB}{IN^2}$ ✓
Tubes: Material Steel ✓ External diameter { Plain $2 \frac{1}{2} \text{ inches}$ Stay $2 \frac{1}{2} \text{ inches}$ ✓ Thickness { 11 S.W.G. $5/16 \text{ inches}$ ✓ No. of threads per inch 9 ✓
Pitch of tubes 90 x 90 mm. ✓ Working pressure by Rules $180 \frac{LB}{IN^2}$ ✓ Manhole compensation: Size of opening in shell plate 445 x 546 mm. Section of compensating ring 500 x 22 mm. ✓ No. of rivets and diameter of rivet holes 34 x $1 \frac{5}{16} \text{ inches}$ ✓
Outer row rivet pitch at ends 173 mm. Depth of flange if manhole flanged 90 mm. ✓ Steam Dome: Material Steel ✓
Tensile strength 26-30 TONS/IN² Thickness of shell 16 mm. ✓ Description of longitudinal joint S.R. Lap. ✓
Diameter of rivet holes 27 mm. ✓ Pitch of rivets 55 mm. ✓ Percentage of strength of joint { Plate 51.0 Rivets 53.4 ✓
Internal diameter 1000 mm. ✓ Working pressure by Rules $186 \frac{LB}{IN^2}$ ✓ Thickness of crown 16 mm. ✓ No. and diameter of stays none ✓ Inner radius of crown 1000 mm. ✓ Working pressure by Rules $190 \frac{LB}{IN^2}$ ✓
How connected to shell 104 rivets $1 \frac{5}{16} \text{ holes}$ ✓ Size of doubling plate under dome 772 x 672 x 22 mm. ✓ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 24 mm. x 75 mm pitch ✓

Type of Superheater none ✓ Manufacturers of { Tubes _____ Steel castings _____
Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____
Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____
Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____
Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Working pressure as per Rules _____
Pressure to which the safety valves are adjusted _____ Hydraulic test pressure _____
tubes _____, castings _____ and after assembly in place _____ Are drain cocks or valves fitted to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes ✓

The foregoing is a correct description,

T. C. [Signature]



Dates of Survey { During progress of 1935 Nov. 15, 20, 26, 28, Dec. 7, 9, 12, 16, 17 Are the approved plans of boiler and superheater forwarded herewith 20/8/35 ✓
work in shops - - - - - (If not state date of approval.)
while building { During erection on 1936 Jan. 9, 15, 28, Feb. 16 Mar. 3 Total No. of visits 14 ✓
board vessel - - - - -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This boiler has been constructed under Special Survey in accordance with the Rules + approved plans.

The materials + workmanship are good.

The boiler was tested by hydraulic pressure to 14 kgs per sq. cm + found sound + tight, afterwards being installed in the vessel in accordance with the Rules + the safety valves adjusted under steam to 100 lb. per sq. inch.

This boiler, in our opinion, is eligible to have the record of D.B. 100 lb.

Survey Fee £ 56-17-0 } When applied for, 2nd Mar. 1926
Travelling Expenses (if any) £ : : } When received, 17th Mar. 1926

E. Macpherson & Yamada

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 15 MAY 1936

Assigned

See other J.E.

Nob. 9468



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