

**ASSEMBLING INSTRUCTION
FOR
CATCHER “POLAR STAR”**



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ASSEMBLY INSTRUCTIONS FOR " POLAR STAR ", CATCHER

Let us express our sincere thanks for your favoring Saito Seisakusho, Ltd., particularly for your purchase of the "POLAR STAR", Catcher.

For your convenience, please prepare the following tools and adhesives before assembly.

Scroll Saw, Small Plane (Balsa Plane, etc.), Cutting Pliers, Nipper, Hair Dryer, Soldering Iron, Pincette, Small Electric Drill, Files (Ordinary type - about 10 m/m, Round type - about 3 m/m and 8 m/m) Sandpapers (#240 & 80), Compass, Metal Rod for Fittings (6 m/m x 200 m/m, with 5 m/m depth of the top cut by metal saw).

Adhesives

[1] Cvano-instant adhesive (about 20 grams)

2 types are available such as thickening and thin type. But, please use thin type only. The delicate point is a small quantity and flat a contact surface as much as possible. If you apply a large quantity, wipe it with cloth.

At this time, an instant cementation is available, if you use an accelerant. This is good for temporary houses and veneer sections so that assembly time is largely saved.

[2] Epoxy adhesive (5 minutes type) (about 80 grams)

Use a hair dryer and induce with wire, etc., for beautiful glueing with a small quantity. Glueing time is faster. Please do not use a hair dryer for pile arrangement.

[3] Epoxy adhesive (6 hours type) (about 30 grams)

Use glueing with hull and decks. Please do not use hair dryer. Surrounding temperature (20°C over) is preferable in winter.

Coating

Spraying --- White colour (Small can), Lacquer Surfacer, Putty,
Thinner 3 litre.

Lacquer, Black colour (Small can) & Black Iron Colour.

" Red colour (1/5 litre) & Blue (Small can).

Gray colour (1/5 litre) & Yellow (Small can)

Greenish Brown (White and small quantity of green)

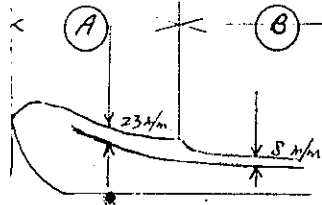
Houses are painted with gray adding a little of blue. Ship's bottom is painted with red adding a little of black and yellow. Inside of the ship is painted with greenish brown.

Brushing --- Enamel, Red, Gray, White, Black, Blue, Yellow (Small cans) and mixing ratio is same as the above lacquer. Lacquer surfacer, putty, benzine and enamel are concerned, mix well without thinner and paint as the first coat.

Waterproof abrasive paper ---- #400 3 sheets and #800 1 sheet.

Hull

First, modify with file on the hull broadside line and symmetrize the both sides. File the hull inside with sandpapers in the kit. Glassfiber should be stripped 1 sheet by sandpaper, etc., before glueing. Just same as the soldering and one day is available. Next, use a compass and make a line (23 m/m) at (A) and also make a line (8 m/m) at (B) in the hull insides (Right and Left). See below:-



Put together the line and Hinoki pole (A4) should be fastened temporarily to (A) with special clips (See drawing). (B) is temporarily fastened by clothespins. And confirm the poles are symmetrized. Glue with [1] for 30 m/m intervals. In this case, use hair dryer for prompt glueing. Use hair dryer for all glueing from this time onward. Heat with hair dryer to the whole by [2] as per drawing. Do not heat too much since the adhesive flows down from the dents so that adjust heat accordingly. Make holes (5 m/m) for stern tube fitting and rudder fitting hole with drill while stern tube fitting hole is a little larger against tube. Rudder fitting hole is tightly made to meet (H11). Check right and left, vertical from a view of the stern and after confirm of vertical from the sides, glue with [1] temporarily. [2] is mounted on the hull inside fitting sections without using hair dryer.

Fixing of engine bed

Attach engine to engine bed (H1) (See drawing). Place it on the ship bottom and fit universal joint (See drawing). (H4) (H6) are fixed to the stern tube and glue (H6) only to stern tube with [1] at a point where allows easy revolution. Take off (H4) and put it into the hull. Then, insert (A7) and fix (H4) again for easy revolution and glue with [1]. Attach propeller joint to propeller shaft and the joint is allowed to move about 1 m/m before and behind by adjusting engine bed while the engine section is in a vertical position against right and left. Next, (A5) (H5) and (H6) are temporarily fastened with [1]. At this time, do not glue (H1). After glueing, take off (H1) quietly so as to glue (A5) (H5) (H6) with [2]. (A6) is temporarily fastened with [1] and glue with [2] without any crevice in surroundings. Attach engine, boiler and burner to engine bed, which is coated in 3 times by clear lacquer. Pay your attention to a junction point of house funnel against boiler funnel position (See drawing).

Again, attach engine and boiler to the hull and make holes to meet Servo motor which is used for Servo motor fitting board (A8). Also, engine throttle lever (Boiler part) and engine reverse lever meet the fixing conditions. And fix Servo motor temporarily while (A6) is drilled for rod hole. (A8) is glued with [2] for surroundings. In accordance with drawing of bilge keel (See separate drawing), mark keel position and also mark keel itself. Finish the keel in accordance with the mark position previously.

Deck

Modify (C6) and (C7), etc., around (C1) to meet the size of cutting line of the fitting. Glue (C2) and (C3) with [1]. At this time, use "C" type clamps because strong power is needed and glue with [2]. Modify deck surroundings to meet with the hull. By this time, take note of the sizes (200 m/m) of ship outside. Take off the deck and modify stem (A12) ovally, in accordance with drawing, for glueing. File the top of deck with sandpaper #240. Paint clear lacquer in 3 times to the back side. Also, paint clear lacquer in 3 times to the top of deck as per ship drawing (B) (without decorated decks) and file with waterproof abrasive papers #400. Then, coat clear lacquer again. Some intervals of deck surroundings are covered with (A2) and (A3). Spread [3] to ship inside (A4) and place the deck to glue with (A4). At this time, place a square lumber, etc., on the deck and press down with strings or gum tape. Clean the extra adhesive [3] on the decks. Make slow and steady work since [3] is 24 hours type. Pay your attention to ship's torsion and symmetry. After completion of glueing, modify projections of [3]. Coat (B) with a brush, etc., to (A2) and (A3) of bulwark section on the deck. ((B) is packed in the kit and is not adhesive. Take care of FIRE since this is inflammable and vaporable liquid. Cover the bottle at once after application). At this time, glue with [3] within 20 minutes. After finish, make holes to previous (A12) and (A13). Put together (A10) and (A11) to meet the hull (Rather higher). The straight line section is clipped with clothespins for 30 m/m interval from the hull center to stem and glue with [1] from the center to stem. Curved line section is heated by hair dryer and bend along the hull so as to clamp little by little for glueing. Modify the glueing section with files to meet the hull. Glue (A9) from the hull center to stem with the above manner. After glueing, finish the hull surroundings with files and sandpaper. Next, glue fore castle (B1) to meet the hull with (B2). At this time, the upper part (Hull glassfiber) of (B1) should be flattened. (Paint clear lacquer in 3 times on the back side). Glue (C4) / (C7) to meet the house insides.

Stern handrails and sunshade support

After completion of the hull painting, make fitting hole (C60) with 1.5 m/m drill (about 3 m/m depth). Ready the handrails, which are about 3 m/m longer than actual ones, and glue them vertically with [1]. After glueing, make a 47 m/m cardboard gauge, which is measured from the top of gunwale, and also make all of uniform height by a nipper. The upper curved section is bent along gunwale section. First, solder from flag staff (C60) (C61), then, also solder to stem from side to side alternately.

House

Modify every cutting veneer to meet exact sizes. File every surface with sandpaper #240. Finish the square and round windows, doors and entrances. The holes of round windows are allowed to enter (F54) easily. Engine room and sky light section (F21/F27) are separately assembled. And glue upto (F65) / (F68) with [1] after painting. Small parts such as (F29) are completed individually and glue with [1] at the conditions of surfacer painting. (F18) (F56) (F75) (F84) (F87) and (F92) and other small parts are glued with [1] after final coating. Make holes previously for (F81) and (F75). Modify ventilator holes (F56) to meet (F56). Handrail holes and (F94) are concerned, make holes and glue with [1] after final coating. The side of boat fixing deck is piled up with 2 wooden materials (@1.5 x 8 m/m) and glue them with [1]. (F52) is concerned, make round as per drawing before glueing and glue with [1] from the edge using hair dryer. (F4) (F2) and (F47) are glued with [1]. Funnel (F60) (F59) (F58) (F60) are suited to (F59) and fasten temporarily with [1]. Then, glue with [2] in a small quantity. After surfacer painting of the funnel, glue (F62) (F61), etc., with [2] and paint it with black (Upper and lower) and red (middle). Paint red enamel with a brush since red section is peeled away if you use masked tape. The top of (F59) should be extended about 3 m/m from the house back side. In case of glueing to the house, glue with [2] to the back side of (F58) with a small quantity and the house back side should be glued. Pay your attention to the cutting position of (F32) as per drawing and solder it to loop antenna (F33). After soldering of the frame (F44), paint it with white color. Then, glue (F45) with [1]. Before painting, decorated deck materials should be masked by paper tape. (F105) should be bent along to the outline of handrail fitting center line. Insert necessary quantity of (F106) to (F105). Drill about 5 m/m for house fitting hole (F106) as per drawing. Insert temporary assembled (F105) (Glue from the edges with [1] as (F106) becomes plumb while take care of lifting for the back of house) and modify (F105) in order to glue with (F106) by [1].

Outfit

Tension wire - Screw fitting (F39) previously. Pass wire to spring and coil 3 - 4 times with thread and glue with [1]. Hook spring, which extends about 3 m/m, to fittings and coil the top of wire 3 - 4 times with thread and glue with [1]. Funnel section (F64) is concerned, fix to fittings from the bottom and stretch wire tightly. At this time, pay your attention to right and left. (In order to give real strength). For your convenience, use enamel with a brush for small parts. Anchor chain is concerned, first, attach the chain to anchor (B17) and coil to (C11) and fasten temporarily with [1] to the inside (C12). Then, glue with [2]. Ratlines (C44) (C45) are concerned, the top of spring is tied with thread and extend 3 m/m fastening to the upper fittings. (Be careful of the unbalance of mast for attachment). Thread knot should be glued with [1]. Next, cut (C45) at the length of extra 2 m/m from the both end threads and make-round on the both ends with sandpapers. Use deck material 7 m/m (width) as gauge and hold (C45) with pincette. Then, glue with [1]. (Glue from the upper to the lower part). Glue to the center thread with [1]. After completion of glueing, make knot with a fine thread. Coil thread in the rope basket (B19) and a thread is glued to the whale gun with [1]. (E4) / (E6) are concerned, decide the length of both ends covering the house to the hull. Do not tighten because this is removable at every operation. (G1) / (G27) are hatches so that finish them to fit closely. Glue decorated decks on the decks. Outlines of each fitting section (D4) (C19) (C12) are previously produced and glued. Glue the decks from the center to right and left. At this time, use the same grain of wood for previous hatch (D1). Glue with [1]. Decorated decks are finished by clear lacquer. The hull painting is concerned, decorated decks are masked by paper tape and finish firstly the outside of ship with surfacer. Secondly, mask the waterline with paper tape and paint with black color. Next, mask black section and paint with a white line. Mask the white line and paint the bottom color (Red, Black and small quantity of yellow).

Decal affixing

Position ship's decal and soak the decals, without pasteboards, into thin soapsuds. Coat soapsuds at the fixed positions of the ship and affix them holding lightly with soft cloth. After affixing, push strongly from the center with the utmost care. Do not rub them. (Please note that adhesion is very strong if you do not use soapsuds. Decals are waterproofed).

Fitting of steam engine

Attach engine, boiler and burner on engine bed and also fix it to engine bed fitting board.

At this time, do not forget the universal joint. Confirm that revolution is made lightly. In case of heavy revolution, check and eliminate the troubles. Lubricate light oil (Sewing machine oil) to the stern tube. Grease is prohibited. There is no problem for submersion from the stern tube. Attach each linkage. Reverse gear lever is concerned, make a cushion with rod, which is bent as "U" type at the middle, and fix as allowing about extra 2 m/m before and behind. Propeller, rudder, universal joint and fitting screws are sometimes tightened for readjustment.

Ballast

In operating condition (Water and alcohol are filled), set the ballast to meet the waterline of the ship. This is a very important factor because, if the ballast is light and shallow water line, the ship will be overturned as strong wind. Gunwale is so low that the deck swims with water in case of rough waves. However, inundation is in small quantity.

Navigation

First, take off the wire hook of the mast back (E6), house and burner hatches. Oil to every part of the engine and pour regular water and alcohol into the boiler and the burner. Pour alcohol to the waste heat plate about one half with a squirt. (If alcohol drops to the deck, paint becomes white. Therefore, hold the squirt outlet up until put alcohol into the waste heat plate). Ignite the waste heat plate and, then, burner is heated. Open slowly the needle valve about $\frac{1}{4}$ turn. After complete combustion of the waste heat plate, burner heats itself normally. Again, open the needle valve $\frac{1}{4}$ turn. Combustion is finally made at the point of $\frac{1}{2}$ turn. Switch on transmitter and receiver. Insert silicon tubes, which are attached to the top of (F61) (F62), to safety valve and whistle fitting mouth about 4 m/m. Then, house is attached. Furthermore, hook the fore mast wire to the aft mast. Attach E6. Check the combustion conditions and close burner hatches. In cold season, do not operate the compulsive ventilator because of the low temperature. Steam comes up after 3 - 4 minutes later. At this time, set transmitter lever on the full opening position for reverse normal revolution throttle. As propeller begins to rotate, position the throttle to minimum revolution for 30 seconds and warm the engine. If you set the throttle to maximum revolution position at the beginning, oil (oiler) will be quickly exhausted by drain. First, grasp combustion time and operate the ship before 1 - 2 minutes or within about 10 meters.

Pay your attention to burner sound. If burner sound is stopped, the engine is also suspended so that, in this case, the ship should be immediately returned by remaining steam.

Supplement

Hull painting

Make soapsudes with tepid water (Preventing cloggy condition of water proof abrasive paper and allowing smooth water-grind) and file any damage during assembly procedures with water proof abrasive paper #400. Coat surfacer in 3 times. File with #800 paper every coating. Coat final painting in 3 times and file with #800 paper every coating. Every coating is made after complete dry. Because of lacquer painting, take care of injection of fuel alcohol. Enamel painting is concerned, drying time is slow and enamel drops later if you use too much with a brush, etc. Key point is a quantity of the brush. Do not use too much and paint with a small quantity for dilution. Paint the ship in a clean place. Solvent is benzine and 2 coatings are preferable.

In case of T2DR use

Attach B2F Boiler Funnel and ship's funnel to meet the center-line and steam pipe should be connected, after extension of super heater, covering the distance. As you extend it, use your hand for bend because it will be broken at angle if you use a plyers, etc. Annealing is required if super heater pipe became hard.

Catcher " POLAR STAR "

Specification:

Reduced Scale	:	1/50
Length Overall	:	1,300 m/m
Breadth Extreme	:	200 m/m
Height	:	500 m/m
Steam Engine	:	T2DR or T3DR
Boiler	:	B2F or B3
Radio Control	:	2 - 3 Channels

Part List

Part No.	Description	Quantity	Remarks
A 1	Hull	1	FRP
2	Side Sparring		ABS 1 x 20
3	" "		" 1 x 5
4	Gunwale		4 x 4 Wood
5	Engine Bed Fitting Board	3	Plywood
6	Bulkhead	1	"
7	Stern Tube Rest	1	"
8	Servo Motor Fitting Board	1	"
9	Handrail		ABS 1 x 6
10	Fender		" 1.5 x 3
11	"		" 3 x 3
12	Mooring Pipe	12	Brass
13	" " (Round)	2	"
14	Keel	2	Plywood
15	Forward Roller	2	Al.
16	Spacer	3	Brass
17	Frame		ABS 1 x 20
18	Shaft	1	Brass 2 m/m
B 1/4	Fore Castle		Plywood
5/6	Flying Passage Stay		
7	Whale Gun	1	Al. casting
8	Gun Carriage	1	
9	////////////////////		Missing No.
10	Gun Carriage	1	Al.
11/12	Sight & Handle	2	Brass 1.5 m/m
13	Anchor Davit	2	Al.
14	Block	2	Plastic
15	Pulley	2	Al.
16	Flange	2	"
17	Anchor	2	Al. casting
18	" Stock		Brass 1.5 m/m
19	Rope Basket	1	"
20	" " Bottom Plating	1	Wood
21	Handrail Stanchion	13	Brass
22	"		" 1 m/m
23	Stairway		Wood
24	Rope		Kite String
25	Towing Hook	1	Brass 1.5 m/m
B25	Hook	2	" "

C	1	Deck	1	Plywood
	2/3	Cross Beam	3	"
	4	Burner Hatch Holder	2	"
	5/7	Cabin Holder	5	"
	8	Anchor Chain		
	9	" " Slide Way	2	ABS 1 x 10 x 120
	10	Chain Compressor	2	" 1 x 20
	11	Capstan	2	Al.
	12/15	" Base	5	Plywood
	16/17	Ventilator (S)	4	Al. & Brass
	18	Port	4	Brass
	19/25	Door Way	11	Wood
	26	Door & Window	1	Balsa & Metal Eyelet
	27	Mast-Reinforce	1	8 m/m Plywood
	28	Mast Flange	1	Brass
	29	Fore Mast	1	Wood
	30/31	Passage Stay	2	ABS 1 x 20
	32/33	Ladder		Wood, Brass 1 m/m
	34	Crosstree	1	Brass 1.5 m/m
	35	Radio Antenna	2	Wire
	36	Handle	2	Brass 1 m/m
	37	Mast Top		Al.
	38	Crow's Nest Rail	1	Brass 1.5 m/m
	39	" " Cover	1	ABS 1 x 20
	40	Lamp	2	
	41	Crow's Nest	1	Plywood
	42	Fittings	22	
	43	Fore Stay	4	Wire
	44	Shrouds	6	"
	45	Ratline		
	46	Rigging Screw	12	Spring
	47	Roller	4	Al.
	48	Bollard (L)	36	"
	49/50	" Base	13	ABS
	51/52	Fair-Leader	8	Al.
	53	" Base	5	Wood
	54	Fair-Leader	1	Al.
	55/57	After Winch Rest	4	Plywood
	58	Handrail Stanchion	10	Brass
	59	"		" 1 m/m
	60	Shade Frame		" 2 m/m
	61	Fittings	1	
	62	Passage Stay Fitting Board	1	Brass
	63	Deck Plank W8		
	64	" " W6		
	65	Bulwark Stay W5		
	66	Antenna Hook	2	Brass 1 m/m
D	1	Burner Hatch	1	Plywood
	2	Ventilator	1	Al. & Brass
	3	Hatch Stay	1	Brass 1.5 m/m
	4/8	"	6	4 & 5 ABS, Plywood
	9	Spacer	2	Wood 4 x 4
	10	Winch Base	1	Plywood
	11	Stanchion	2	ABS
	12	Drum	4	Al.
	13	Gear (S)	2	
	14	Frame	3	Plywood

	15	Stay Bolt	2	Brass	2 m/m
	16	Shaft	2	"	"
	17	Gear (L)	4		
	18	Cylinder Block	2	Wood	
	19	Regulator	2	"	5 m/m x 25
	20	Cylinder Head	4	Al.	
	21	Valve Head	4	"	
	22/23	Lever (S & L)	4	Brass	1.5 m/m
	24	Cover	1	ABS	1 x 20
	25/26	Valve Cock	8	Brass	
	27	Vapour Pipe	2	"	2 m/m
	28	Deck Plank W8			
	29	" " W6			
E	1	Channel Decoration		Brass	1 m/m
	2	Stringer		Wood	1.5t x 7
	3	Crosstree		4 x 4 Wood	
	4	Stair		Wood	
	5	Handrail Stanchion	24	Brass	
	6	"		"	1 m/m
	7	Life Buoy	2	Plastic	
F	1/10	House		Plywood	
	11/19	"		F16 ABS, Plywood	
	20	"	6	Plywood	
	21/27	Engine Room, Skylight	9	F21 ABS, Plywood	
	28/30	Door Way	5	F28 ABS, F30 Wood	4 x 4
	31	Door	2	Balsa	
	32	Loop Antenna	2	Brass	1.5 m/m
	33	" " Stay	1	"	"
	34	Signal Lamp	2		
	35	Crosstree	1	Brass	1.5 m/m
	36	Stanchion	1	"	3 m/m
	37	Antenna Forestay	4	Wire	
	38	Rigging Screw	8	Spring	
	39	Fittings	28		
	40/42	Compass Stand	4	Al.	
	43	Steering Wheel	1	Brass	
	44	Wind Screen Frame		"	1 m/m
	45	" "			
	46	Handrail		ABS	3 x 3
	47	Wind Screen		Wood	
	48/50	Searchlight	1	Al. & ABS	
	51	Wind Screen		Brass	1.5 m/m
	52	" "		ABS	3 x 3
	53	Sidelight	2	Brass ,	ABS 1x25x80
	54	Port	28	Brass	
	55/57	Ventilator	4	Al. & Antimony	
	58/59	Flange, Funnel	2	"	
	60	Ring	3	Brass	
	61	////////////////		Missing No.	
	62	Whistle	1	"	
	63	Pipe Stay	2	"	1 m/m
	64	Funnel Forestay	4	Wire	
	65	Skylight Stay		Brass	1 m/m
	66	" " Stanchion	4	"	
	67	Port	22	"	
	68	Skylight	6	ABS	
	69	Flange	6	Brass	1.5 m/m

	70	Mast Top	1	Al.
	71	Crosstree	1	Brass 1.5 m/m
	72	Shrouds	5	Wire
	73/74	Crosstree, Lamp	9	F73 Brass 1m/m.
	75	Mast	1	Wood
	76/77	Mast Flange, Reinforce	1	Brass & 8m/m Plywood
	78	Bollard (S)	4	Al. & Brass
	79	Pulley	4	"
	80	Block	8	Plastic
	81/82	Boat Davit, Flange	8	Al.
	83	Boat Chock	4	Plywood
	84	Motor Boat	1	Plastic
	85	Lever	4	Brass 1 m/m
	86	Reel	4	Al.
	87	Frame	4	ABS 1 x 20
	88	Rope		Kite String
	89	Whale Boat	1	Plastic
	90	Lamp	2	
	91	Stairway Handrails	4	Wood
	92	"	4	"
	93	" Stay	2	Brass 1.5 m/m
	94	Handrail Stanchion	35	"
	95	"		" 1 m/m
	96	Life Bouy	2	Plastic
	97	Spare Anchor	1	Antimony
	98/99	Pent Roof, Hinge	6	ABS 1 x 20
	100	Door	2	"
	101	Steering Door	2	Balsa
	102/103	Guide Rails	4	Wood
	104	Ladder	1	Brass 1.5 m/m
	105	Handrail		" 1 m/m
	106	" Stanchion	31	Brass
	107	////////////////////		Missing No.
	108	Wire Net	1	
	109	Deck Plank W8		
	110	" " W6		
	111	Boat Stay	2	4 x 4 Wood
G	1	Winch Drum	1	Al.
	2/3	Cock, Valve	4	Brass
	4	Vapour Pipe	2	" 2 m/m
	5/9	Winch Base	6	Plywood
H	1	Engine Bed	1	Wood
	2	Burner Fitting Spring	2	
	3	Universal Joint	1	
	4	Shaft Bearing	1	Brass
	5	Stern Tube	1	"
	6	Shaft Bearing	1	"
	7	Teflon Washer	1	
	8	Propeller Shaft	1	Stainless Steel
	9	"	1	Brass
	10	Rudder Arm	1	"
	11	" Shaft Bearing	1	"
	12	"	1	Al. & Brass
	13	////////////////////		Missing No.
	14	Rubber Tube	1	3.4 m/m (Inside dia)
	15	Exhaust Pipe	2	Brass
	16	Rubber Tube	1	2.3 m/m (Inside dia)

17	Wood Screw	6	3 x 15
18	" "	4	2 x 6
19	////////////////////		Missing No.
20	Screw	4	3 x 12
21	"	4	3 x 20
22	Nut	8	M3
23	Washer	12	
24	////////////////////		Missing No.
J 1/9	////////////////////		Missing Nos.
10	Adjuster	2	
11	Ball-Link	4	
12	Control Rod	9	Brass
13	Screw	2	2 x 10
14	Nut	2	
15	Wood Screw	2	2 x 6
H 25	Oil Pipe	1	Aluminum

Catcher " POLAR STAR "

Reduced Scale : 1/50
Length Overall : 1,300 m/m
Breadth Extreme : 200 m/m
Height : 500 m/m
Gross Weight : 11 kgs.

Color Instructions and Others

- (A) 97 m/m (Cutting Section at A.A.)
(B) Use a compass.
(C) Write your port.
(D) Length of Water Line ---- White Colour
Broadside ---- Black "
Bottom ---- Red "
(E1) White Light
(E2) " "
(E3) Red "
(E4) White "
(E5) Red "
(E6) Green "
(E7) Black Color
(E8) Red Light
(E9) Black Color (Upper Part)
(E10) Gray " (Lower Part)
(F) Red Light
(G) Green Light
(H) Black Color
(I) Red "
(J) Black "
(K) Pipe (White Color)
(L) Gray Color
(M) White Color
(N) " Light
(O) " "
(P) Red Light
(Q) White Light
(R) Gray Color (Upper Part)
(S) White " (Lower Part)
(T) Green Light
(U) Red "
(V) White Color
(W) Gray "

Part List
&
Instructions

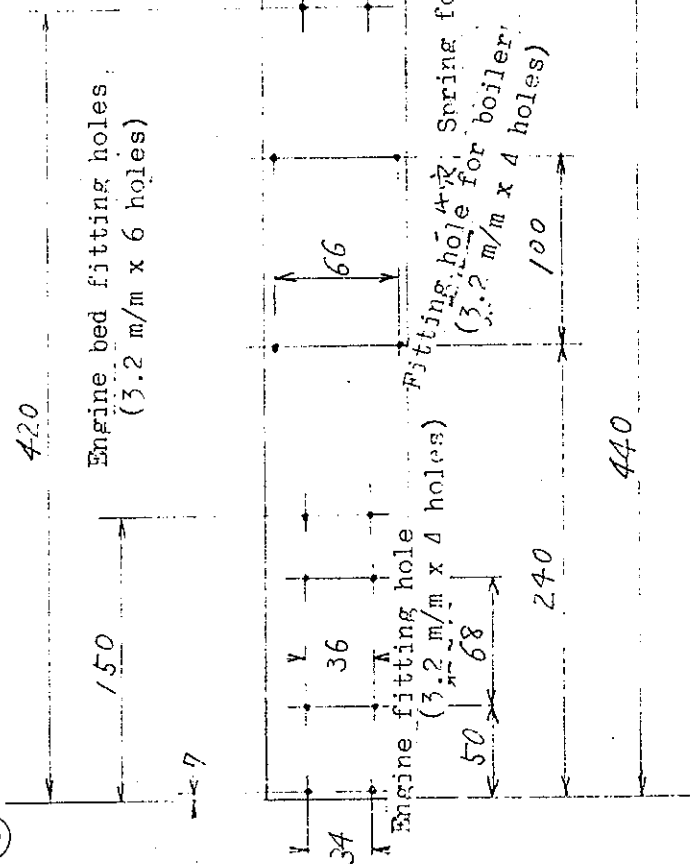
<u>Part No.</u>	<u>Description</u>	<u>Quantity</u>	<u>Remarks</u>
A4	Base Line Drawing		Use a compass
A4	Glue with [2]		
A18	Brass wire, 2 m/m		
B6	4 m/m mouth, Hinoki Pole		
	Also, attach to house side.		
B8	From Deck materials		
B11	Brass wire, 1.5 m/m		
B12	" " 1.5 m/m		
B18	Put into anchor and make 2 balls on both ends with adhesive.		
B19	Brass wire, 1.5 m/m		
B22	" " 1 m/m		
B24	Rope is wound for basket and glue its top to harpoon.		
B25	Brass wire, 1.5 m/m		
C10	From ABS Spare.		
C25	Hinoki Pole, 4 m/m		
C30	From ABS		
C31	" "		
C32	Deck materials		
C33	Brass wire, 1 m/m		
C34	" " 1.5 m/m		
C36	" " 1 m/m		
C38	" " 1.5 m/m		
C48	Black Iron Colour		
C50	" " "		
C51	" " "		
C52	" " "		
C53	Pile up deck materials.		
C58	Cut and finish with a file.		
C59	Brass wire (white), 1 m/m		
C60	" " " 2 m/m		Paint gray (oblique section) under boat deck.
C61	Fitting		
C65	From deck materials		Soldering.
C66	Brass wire, 1 m/m		Soldering.

D2	Red (Inside)	
D3	Brass wire, 1.5 m/m	
D11	From ABS	
D15	Brass wire, 2 m/m	
D16	" " 2 m/m	
D22	" " 1.5 m/m	
D23	" " 1.5 m/m	
D24	From ABS	
D25	Brass wire, 1.5 m/m	
D27	Brass wire (white), 2 m/m	
E1	" " 1 m/m	
E2	Deck materials, 7 m/m	
E3	Hinoki Pole, 4 m/m	
E6	Brass wire, 1m/m	
F10	Attach right above (A6) prevent- ing to enter the steam into mechanical section.	
F30	Hinoki Pole, 4m/m	
F31	From Balsa, 1.5 m/m	Cutting
F33	Brass wire, 1.5 m/m	
F40	Copper colour	
F43	Mahogany colour	
F44	Brass wire, 1 m/m	
F47	Deck materials, 6 m/m	
F48	Search light	Paint gray except lens (Aluminum)
F49	From ABS Spare	
F51	Brass wire, 1.5 m/m	
F52	ABS, 3 m/m	
F61	To Safety Valve.	
F62	To Regulator	
F63	Brass wire, 1 m/m	
F65	Brass wire, 1 m/m	
F71	" " 1.5 m/m	
F73	" " 1 m/m	
F85	" " 1 m/m	
F87	From ABS Spare.	
F91	Brass wire, 1 m/m	
F92	From deck materials, 5 m/m	
F93	Brass wire, 1.5 m/m	
F95	" " 1 m/m	
F98	From ABS Spare.	
F99	" " "	
F101	From Balsa, 1.5 m/m	Cutting
F102	From Deck materials	
F103	" " "	
F104	Brass wire, 1.5 m/m	
F105	" " 1 m/m	
F107	To Exhaust Pipe.	
F107	To Whistle.	
F108	Attach the back of (F22)	
F111	Hinoki Pole, 4 m/m	

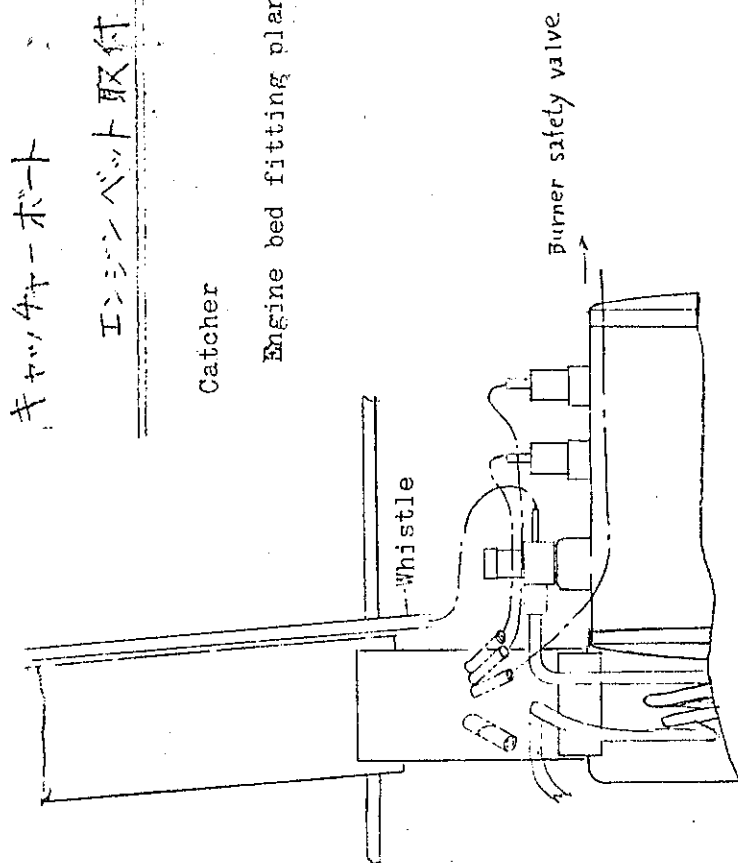
G1 Black Iron Color.
G4 Brass wire, 2 m/m.

NOTE :

- (H) Fitting holes of power output section are poured with instant adhesive for reinforcement. The holes are not broken as removal.
- (I) Block 10 x 10 m/m, Rubber Band, Veneer 3 m/m, Wood 4 x 4 m/m.
- (J) Drill hole 3 m/m.
- (K) Glue with [2].
- (L) Glue with [2].
- (M) [2] is heaped up and glued for reinforcement.
- (N) Round off the corners of deck materials before applying.
- (O) Paint white except aluminum section (Oblique lines). ABS or deck materials.
- (P) Red (Inside).
- (Q) Wind a thread around the wire and fix it with instant adhesive.
- (R) Deck plank
1. Deck materials (64) are framed against inside of gunwale.
2. Next, all hatches are exactly positioned and glued. Each hatch should be glued by deck materials (63) allowing extra frame 6 m/m.
3. Deck materials (64) are glued along the center line of ship and glue them to both gunwales piece by piece. The other way, it is quite difficult to glue the materials in parallel with ship's center line, if you begin glueing from gunwale to inside. Moreover, breaks just like burner hatches and decks are glued under one line with the same board for better joint. Do not use separate boards at breaks.
- (S) In case of removal of Mast for transport, attach a proper bottom board which fits for it securely. Plane the Mast to fit tightly and adjust it completely.
- (T) Bottom Board.
- (U) In order to screw the fittings, use a metal round pole (5 m/m) cutting a ditch by metal saw and adjust the width to hold the fittings lightly.
- (V) In order to bend Burner Hatch along Sheer, make notches every 10 m/m interval on the deck using a saw. Then, [2] is rubbed into the notches and place it on the hull hatch receiver, which was already assembled, with a weight. Notch depth is 2 m/m and is not required other section before and behind 30 m/m each. [2] is not required for both sides 15 m/m each so as to prevent contact with the hatch receiver.

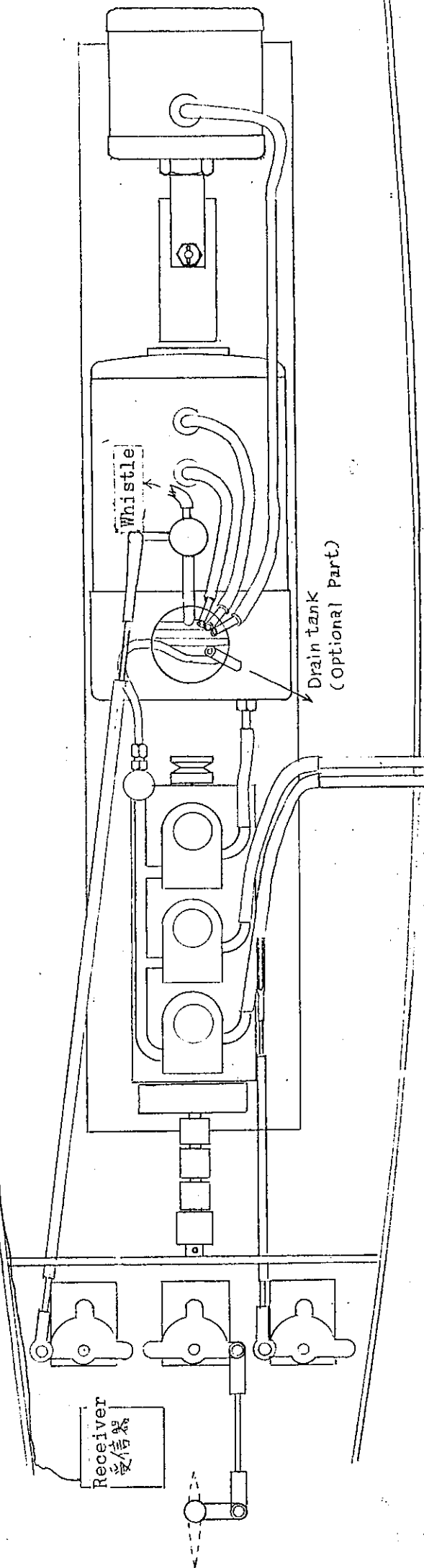


Pull out antenna from small hole
and line it on the deck;



キタマボート

エンジンベント取付図



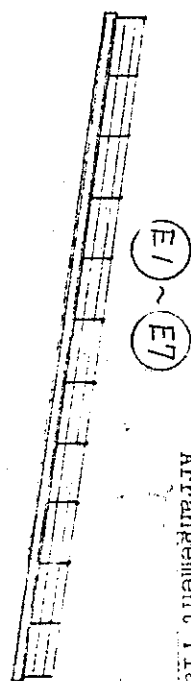
ホバーラースは完成後の
部分に分解できます。各部の
構成部品は次のようになります。

The ship is divided into 6 sections which are as follows:

キャッチャーボット
Catcher (12)

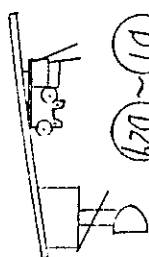
配製方

Arrangement Plan

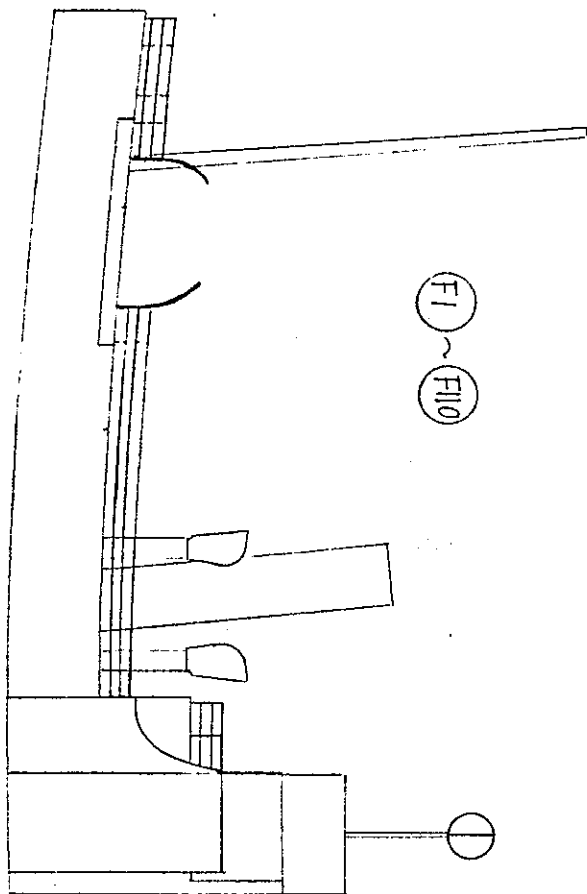


⑦
⑧

D1 ~ D29



$F_1 \sim F_{110}$



1. 本体 Body

$$\textcircled{A1} \sim \textcircled{A/8}$$

③1 ~ ③25

⑥ ~ ⑦

(H3) ~ (H1/2) (H1/5)

2. 1/4"-f-1 1/4" Burner hatch

D1 ~ D29

3. 常設步路 Stairway.

(E1) ~ (E7)

4, 1178 House

⑤ ~ ⑥

Heat Winch

51 ~ 99

6. 動力部 (G1)

(H1) ~ (H3)

⑪⑫

①H/16
→
①H/19



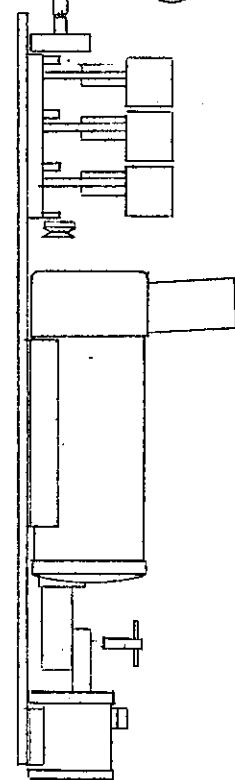
GG

H1 ~ H3

H13 H14

H16 ~ H17

①



993-17

B1 ~ B25

A1 ~ A18

H3 ~ H12

H/5

