

DIRECTION FINDER

TD-L1550A

INSTRUCTION MANUAL

- OPERATION MANUAL -**
- INSTRUCTION MANUAL -**
- MAINTENANCE -**

TAIYO MUSEN CO., LTD.

EDITION

5

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Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

DIRECTION FINDER TD-L1550A

INSTRUCTION MANUAL

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Chapter I OPERATION MANUAL

1. OUTLINE

1.1 General Descriptions

TD-L1550A is an automatic direction finder, designed for reception and direction measurement of radio waves in international VHF band and U. S. weather channels (or Scandinavian fishing channels). Though it is light and handy in size, a large character display and a linear indicator are provided.

Its main functions and displays are :

- Quartz-locked synthesizer, controlled by a one-chip microprocessor, enables simple, precise and stable reception.
- Manual, spot and scan reception are selectable and all operations are made with keys its front panel.
- The channel number with the type of station, ship, coast or weather, can be stored in 100 addresses with two code numbers, from 00 to 99.
- The direction of incoming radio signal with respect to bow direction of own ship is shown with two displays, a linear indicator for quick recognition and a numeric display.
- H type Adcock antenna allows precise direction measurement with high sensitivity.
- As a power source, DC 10 V ~16 V is suitable and adapters are prepared for DC 10 V~16 V or AC (option).

1.2 Specifications

(1) Antenna

Adcock antenna H type 4-element Adcock antenna, EA-351A

(2) Signal

Frequency International VHF band (spot reception)
 U.S. weather channel (or Scandinavian fishing channel)
 Distress frequency, 121.5 MHz

Wave form F3E, A3E(121.5 MHz only)

(3) Receiver

a. Reception type Double superheterodyne with PLL synthesizer

b. IF 21.4 MHz and 455 kHz

c. Sensitivity 0.5 μ V/m (12 dB SINAD, except 121.5 MHz)

d. Image ratio 55 dB or more(except 121.5 MHz)

e. Selectivity - 6 dB at \pm 5 kHz and - 40 dB at \pm 12.5 kHz

(4) Display

a. Direction Numeric display 1° step for direction
 It is also used for address number of memory

b. Linear indicator 10° , 20° or 30 ° step and a green center light

c. Channel Numeric display

d. Level indicator 6 steps for signal strength

e. Type indicator Ship, coast or weather, fishing, EPIRB (121.5MHz)

f. Scan indicator Red light

(5) Audio output 2 W (4 Ω)

(6) Control

a. Memory 100 sets of channel and type of station

b. Scanning Max. 10 groups, each consisting of upto 10 channels

(7) Power, size and environment

a. Power source DC 10 V ~ 16 V, minus side grounded
 (DC 10 V~ 16 V or AC, option)

b. Size 213(H)×205(W)×95(D) mm, 2.7 kg

c. Environment 0 ° ~ 45 ° C

1.3 Composition

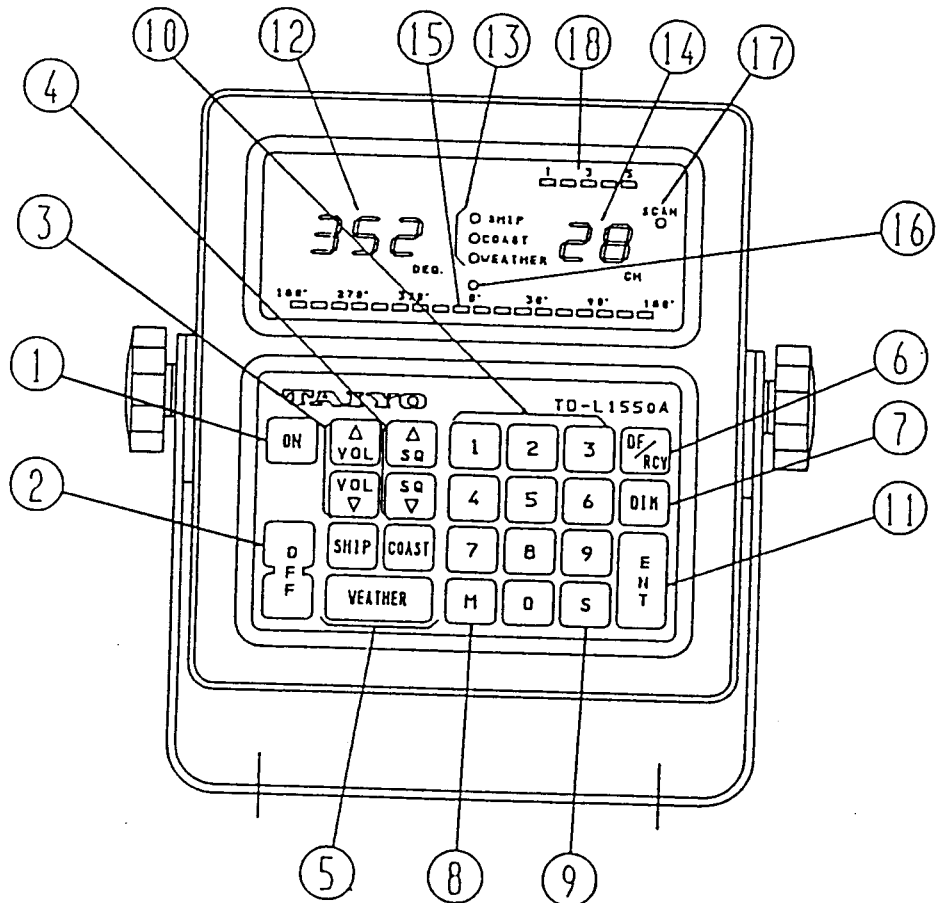
List of components supplied is shown below.

Components	Quantity	Remarks
Main Unit	1	
Adcock antenna	1	Type EA-351A
Speaker box	1	4Ω. with cable and plug
Antenna cable	1 pair	With plugs Standard 10 m long
Power cable	3 m	
Operation manual	1	
Spare parts	1 set	Fuse (2A, 5.2 mm φ, 20mm)

2. QUICK REFERENCE

2.1 layout of Operation Panel

Left figure shows its operation panel.



2.2 Functions of keys and displays

Following table gives names and function of keys and displays.

No.	Notation	Name	Function
①	ON	Power-On	Press to turn on power
②	OFF	Power-Off	Press upper and lower parts to turn off
③	VOL	Volume	To control loudness
④	SQ	Squelch	To control squelch, Δ : close ∇ :open
⑤	TYPE	Type entry	To select SHIP, COAST or WEATHER
⑥	DF/RCV	Mode switching	Cyclic key to select DF or reception
⑦	DIM	Dimmer	Brightness control
⑧	M	Memory	Function key for memory
⑨	S	Scan start	To start scan reception or change memory
⑩	0~9	Numeric	Numeric key. Some of them are used as function key
⑪	ENT	Entry	Entry key to execute a function
⑫	DEG	Direction display	3 numerics for direction or memory address
⑬		Type indicator	3 LEDs to indicate SHIP, COAST or WEATHER
⑭	CH	Channel display	2 numerics to indicate international VHF channel from 01 to 88 and other channels WEATHER(U1, U2, U3, U4), FISHING(F1, F2, F3) and 121.5 MHz (EP)
⑮		Linear indicator	To indicate direction
⑯		Bow indicator	Indicate the direction of tge bow as 0°
⑰	SCAN	Scan indicator	A red lamp is lit while in scanning reception
⑱		Level indicator	To indicate the level of signal

2.3 Quick Reference for Operation

There are 3 modes of reception, i. e., "MANUAL", "SPOT" and "SCAN" reception. When "DF" is selected, the direction of incoming signal is displayed both by the numeric display and the linear indicator and its sound can be heard. However, the direction is not displayed when RCV (reception) is selected.

Following shows operation procedures as quick reference.

(1) Manual reception

International VHF channels with types of stations and their frequencies have been stored in the microprocessor. Refer to the table on page OM6 for VHF channels. In manual mode, call up a frequency by the type of station and the channel number.

(a) International VHF channel (from 01 to 88)

[TYPE] → [CHANNEL NUMBER] → [ENT]

(a) Weather or emergency (WEATHER or FISHING should have been specified)

[WEATHER] → [1, 2, 3 or 4] → [ENT] (weather channel)

[WEATHER] → [1, 2 or 3] → [ENT] (fishing channel)

[SHIP] → [99] → [ENT] (ship station in distress)

(2) Spot reception

(a) Enter a channel by following procedure to a memory with address number :

[TYPE] → [CHANNEL NUMBER] → [ENT] → [M] → [ADDRESS NUMBER] → [M]

(b) Recall a channel from a memory with an address number by following procedure :

[M] → [ADDRESS NUMBER] → [ENT]

(c) Delete stored memory by following procedure :

[9] → [7] → [M] → [ADDRESS NUMBER] → [M]

(3) Scan reception

(a) Enter a channel by following procedure to a memory with address number :

[TYPE] → [CHANNEL NUMBER] → [ENT] → [M] → [ADDRESS NUMBER] → [M]

Then, Iterate the procedure for other channels as many as necessary.

(b) Start scan by following procedure.

[SQ Δ] → [M] → [GROUP NUMBER] → [S]

(c) Stop scan by following procedure.

[ENT]

(d) Scan pass by following procedure :

[9] → [9] → [S]

(e) Release scan pass by following procedure :

[9] → [8] → [S]

VHF-MARINE RADIODIOTELEPHONE CHANNELS

Channel Designation	Frequency (MHz)		Channel Designation	Frequency (MHz)	
	Ship	Coast		Ship	Coast
01	156.050	160.650	60	156.025	160.625
02	156.100	160.700	61	156.075	160.675
03	156.150	160.750	62	156.125	160.725
04	156.200	160.800	63	156.175	160.775
05	156.250	160.850	64	156.225	160.825
06	156.300	--	65	156.275	160.875
07	156.350	160.950	66	156.325	160.925
08	156.400	--	67	156.375	156.375
09	156.450	156.450	68	156.425	156.425
10	156.500	156.500	69	156.475	156.475
11	156.550	156.550	70	156.525	--
12	156.600	156.600	71	156.575	156.575
13	156.650	156.650	72	156.625	--
14	156.700	156.700	73	156.675	156.675
15	156.750	156.750	74	156.725	156.725
16	156.800	156.800	77	156.875	--
17	156.850	156.850	78	156.925	161.525
18	156.900	161.500	79	156.975	161.575
19	156.950	161.550	80	157.025	161.625
20	157.000	161.600	81	157.075	161.675
21	157.050	161.650	82	157.125	161.725
22	157.100	161.700	83	157.175	161.775
23	157.150	161.750	84	157.225	161.825
24	157.200	161.800	85	157.275	161.875
25	157.250	161.850	86	157.325	161.925
26	157.300	161.900	87	157.375	161.975
27	157.350	161.950	88	157.425	162.025
28	157.400	162.000			
Fishing 1	155.625		Weather 1	162.550	
2	155.775		2	162.400	
3	155.825		3	162.475	
Distress Frequency	121.500		4	161.650	