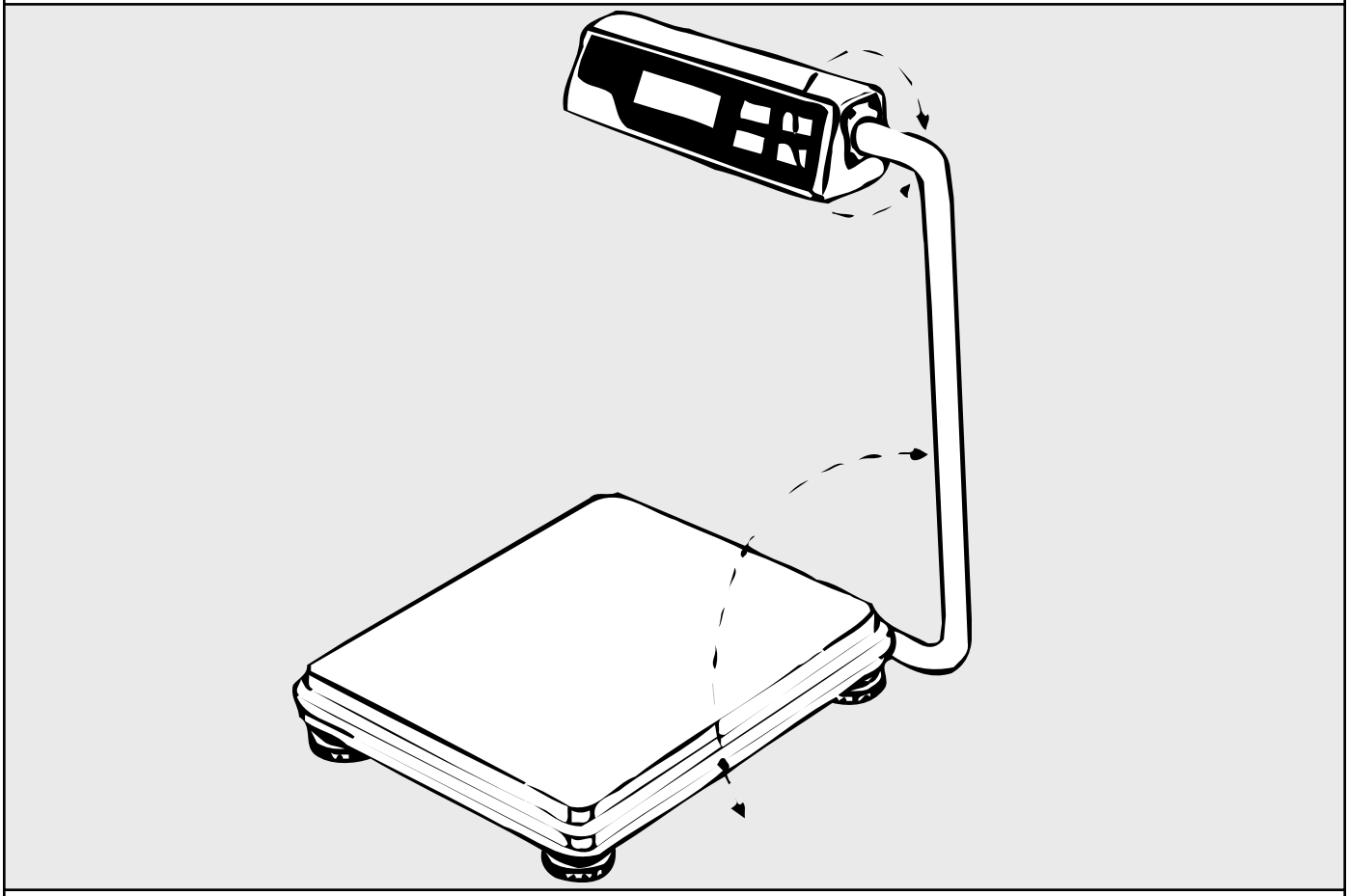
MODEL DP-8100
TECHNICAL MANUAL



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DP-8100 Technical Manual

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I. FEATURES

Introduction and General Description

The Yamato DP-8100 Series Scales are 1,500 external count units that incorporate the latest microprocessor technology. The DP-8100 is versatile and reliable. Standard Features include:

- zero tracking
- automatic zero reset
- push-button zero reset
- center zero indication
- stability indication
- push-button lb/Kg toggle
- net/gross weighing
- auto display check
- low battery indication
- overload display warning
- large, easily readable 0.8" LCD
- color switch panel
- programmable auto-shutoff for long battery life
- programmable start-up in either lb or Kg

Additional Standard Features include:

- shatterproof ABS plastic indicator housing
- large (20" x 15") stainless steel platform, base, and swivel column
- vibrating wire sensing element

Optional Features:

- AC adapter

I. FEATURES (CONT.)

Specifications

MODEL: DP-8100
CLASSIFICATION: 1500 divisions, USDA accepted
SCALE CAPACITIES/GRADUATIONS:

Capacity	Minimum Graduation
75 kg 150 lb	0.05 kg 0.1 lb
150 Kg 300 lb	0.1 kg 0.2 lb

LOAD CELL: Parallelogram type (Vibrating Wire Load Cell)
PLATFORM: Stainless Steel; 20" x 15"
DISPLAY: 7 Segment LCD
INITIAL ZERO RANGE: -7% to +12% of Full Scale (FS)
ZERO RESET % TRACKING: +/- 1.9% of FS
TARE: Available up to FS
STABILIZER: Incorporated in electronic circuitry
MICROPROCESSOR: Model # M38223

LOAD CELL MODEL NUMBERS:

Scale Capacity	Load Cell Model Number
75 Kg	VP110-75-CY
150 Kg	VP110-150-CY

POWER: 6 VDC (use 4 1.5 V "D" cell batteries)
POWER CONSUMPTION: 0.02 W (max)
OPERATING TEMPERATURE: 32°F to 104°F (0°C to 40°C)
WEIGHT: 37.5 lb (17 Kg)

I. FEATURES (CONT.)

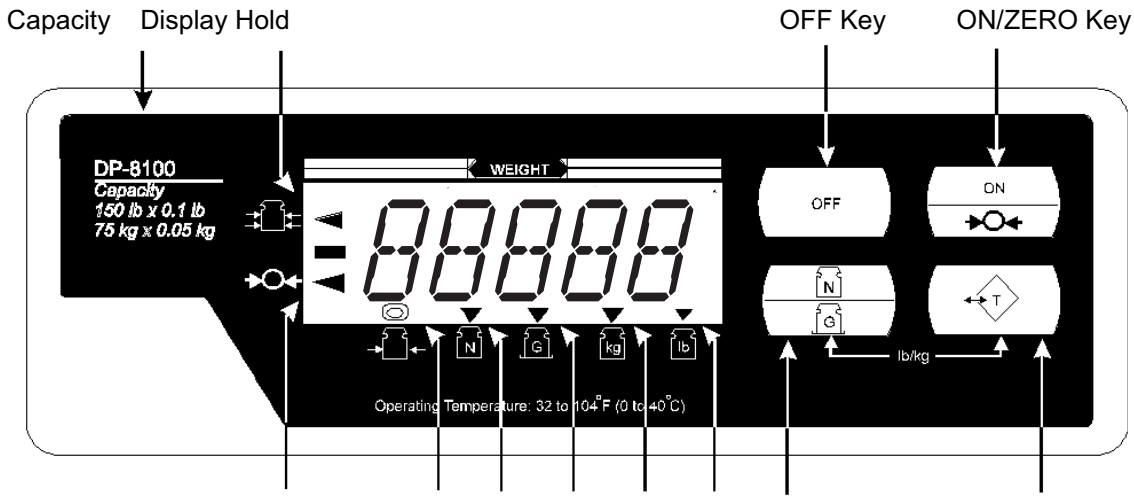
VIBRATING SENSOR:

Sensor Type / Specification	VP110 75-CY	VP110 150-CY
Capacity	75 kg / 150 lb	150 kg / 300 lb
Initial Output (Hz)	3150 +/- 20	3150 +/- 20
No-Load Output (Hz)	3200 +/- 60	3200 +/- 60
Rated Output (Hz)	3600 +/- 100	3600 +/- 100
Linearity (%RO)	0.025	0.025
Repeatability	0.01	0.01
Creep (%RO)	0.05	0.05
Hysteresis (%RO)	0.02	0.02
Temp. Effect on Zero (%/5°C)	0.05	0.05
Temp. Effect on Output (%/5°C)	0.04	0.04

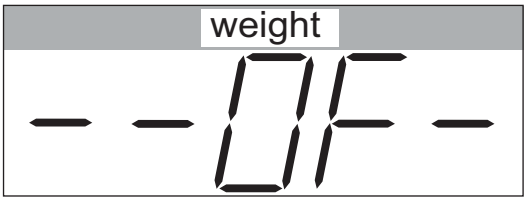
SAFE TEMPERATURE: -4°F to 158°F (-20°C to 70°C)
SAFE OVERLOAD: 150% maximum capacity
MAXIMUM OVERLOAD: 200% maximum capacity

Note: Linearity, Temp. Effect on Zero, and Temp. Effect on Output are calibrated through the parameter settings of the scale.

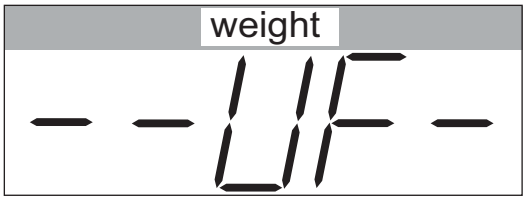
II. DISPLAY LAYOUT



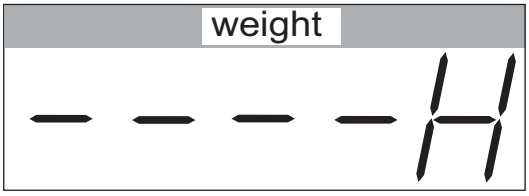
*Press  and  simultaneously to toggle between Kg and lb.



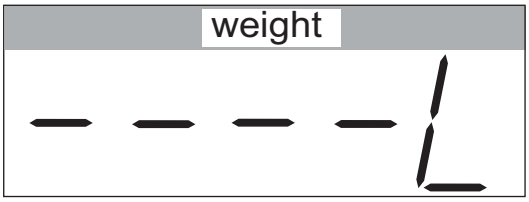
OVERLOAD display



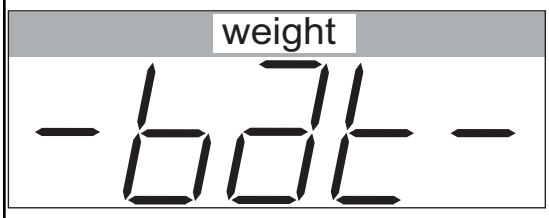
UNDERLOAD display



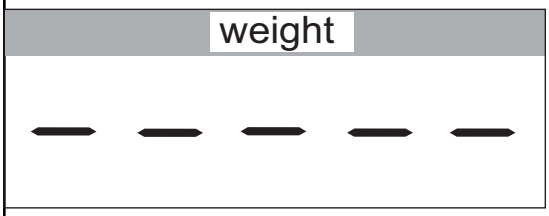
INITIAL ERROR (high) display



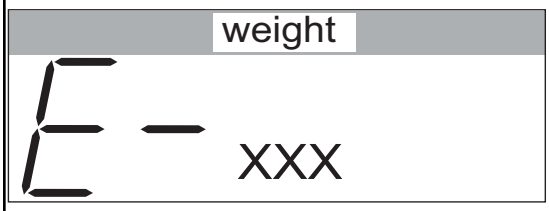
INITIAL ERROR (low) display



Low battery display



Weighing detecting system trouble/defect.



CPU trouble display

III. SCALE SETUP

1) Carefully unpack the scale.

2) Follow instructions shown on battery cover to install batteries. Use four "C" size batteries. (Or optional AC adapter)

3) Place the unit on a firm, flat surface where it will be convenient to use.

4) The bubble level is located at the rear of the platform, near the column. Rotate the adjustable legs under the scale platform until the bubble is centered. Make sure all four legs are resting firmly on the supporting surface, and then finger tighten the leg locking nut on each adjustable leg.

5) Adjust the swivel display and swivel column to the preferred viewing position.

IV. CALIBRATION

Keyword Modes

Figure 1 shows a flow chart which illustrates how to access the different modes of the DP-8100. The USER'S KEYWORD MODE allows users to adjust different parameters, such as the length of the auto off feature or lb/kg priority at power up. The SYSTEM KEYWORD MODE allows scale technicians to change the capacity and minimum increment of the scale. (See **VII. Parameter Settings** for the specific parameter settings.)

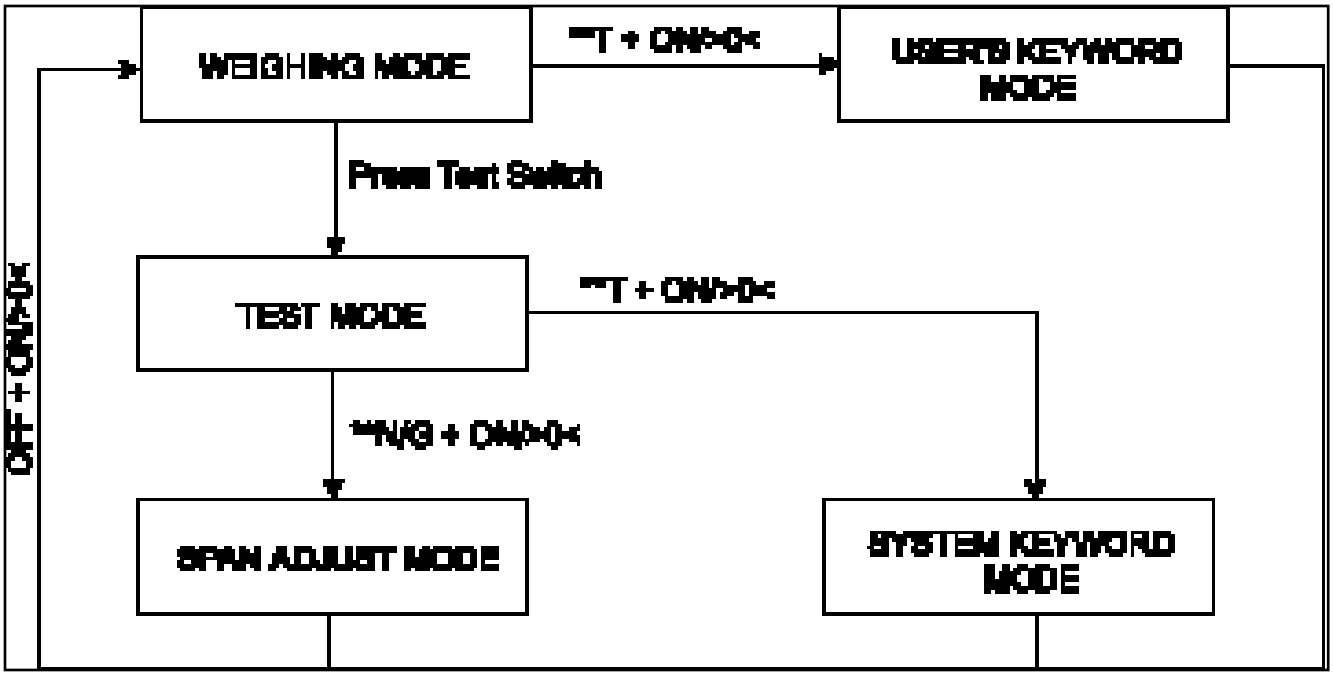


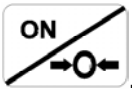
Figure 1: DP-8100 Modes

When in the SYSTEM KEYWORD MODE or the USERS KEYWORD MODE, the display will look like "30 ; 016". "30" designates the keyword number and "016" designates the parameter value. To increment the keyword number, press **ON/>0<**. To decrement the keyword number, press ****N/G + ON/>0<**. To increment the parameter value, press **T**. To decrement the parameter value, press **N/G**.

Note: ****T + ON/>0<** = Hold 

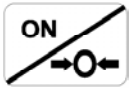
and press .

****N/G + ON/>0<** = Hold 

and press 

.

OFF + ON/>0< = Press 

and release, then press 

and release.

IV. CALIBRATION (CONT.)

Location of Test Switch

On the bottom of the indicator housing is a small red plate. This plate is labelled, "**WARNING** TO BE OPENED BY QUALIFIED TECHNICIAN ONLY." Remove the two screws which fasten this plate to the housing and remove the plate. Removing the plate will reveal the test switch. Press this switch to access the TEST MODE of the DP-8100.

Span Adjustment Procedure

1) Turn the scale on and enter the TEST MODE by pressing the test switch.
2) ****N/G + ON/>0<**

2 : 0 / 1	
N/G	
3 : 0 / 2	0/2 (no load)
T	Press T.
3 : 1 / 2	1/2 capacity load (kg)
T	Press T.
3 : 2 / 2	Add another 1/2 capacity load (kg)
T	Press T.
15,000	Display shows 15,000 counts.
OFF	Calibration stored in memory.
ON	Calibration complete.

IV. CALIBRATION (CONT.

Span Adjustment Procedure (cont.)

When performing the span adjustment procedure on the DP-8100:

Insure that the scale is stable at zero, then press **T**. Place 1/2 of the scale capacity (kg) on the platform and wait for the scale to become stable. Press **T** again and then place another 1/2 capacity load on the platform. When the indicator becomes stable, press **T**. The indicator will count down until it reaches 15,000 counts. Remove the load from the platform and turn the scale off. Turn the scale on again, and the calibration is complete.

V. PARTS REPLACEMENT

Load Cell, Vibrating Wire, and A/D Board Removal and Replacement

A 13mm wrench, 8 mm wrench, 3 mm tubular torque wrench, soldering iron, flat-bladed screw driver, and Phillips screw driver are needed to complete the following procedures.

1) Removing the load cell

a) Remove the stainless steel platform cover. This will reveal the upper spider, lower spider, and the load cell.
b) With the 13mm wrench, remove the (4) load cell bolts towards the side of the column attachment. This will free the upper spider from the load cell.
c) Remove the remaining (4) load cell bolts. This will free the load cell from the lower spider.
d) Remove the wire cluster from the clasp holding the wires to the base housing.
e) Disconnect the 5-pin and 4-pin connectors. The load cell is now free from the base.

2) Removing the vibrating wire

If the vibrating wire needs to be removed, follow the next procedure. Please also refer to **Figure 3**.

a) Remove the load cell.
b) Remove both 3 mm nuts.
c) Remove the springwasher from the UPPER SIDE (US).
d) Remove the lock washer from the LOWER SIDE (LS).
e) Remove the round, counter weight from the LS.
f) Remove the load cell stopper from the US.
g) Remove the rubber gasket from the US.
h) Remove the magnet holder.

V. PARTS REPLACEMENT (CONT.)

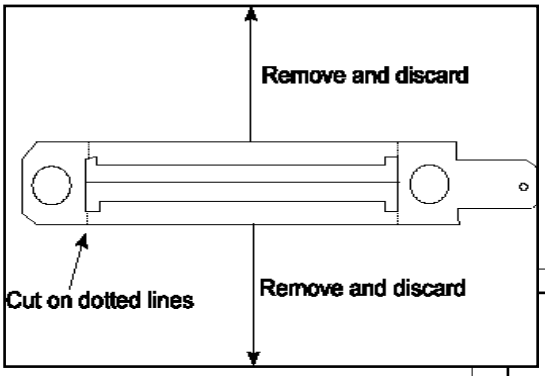


Figure 2: Vibrating Wire

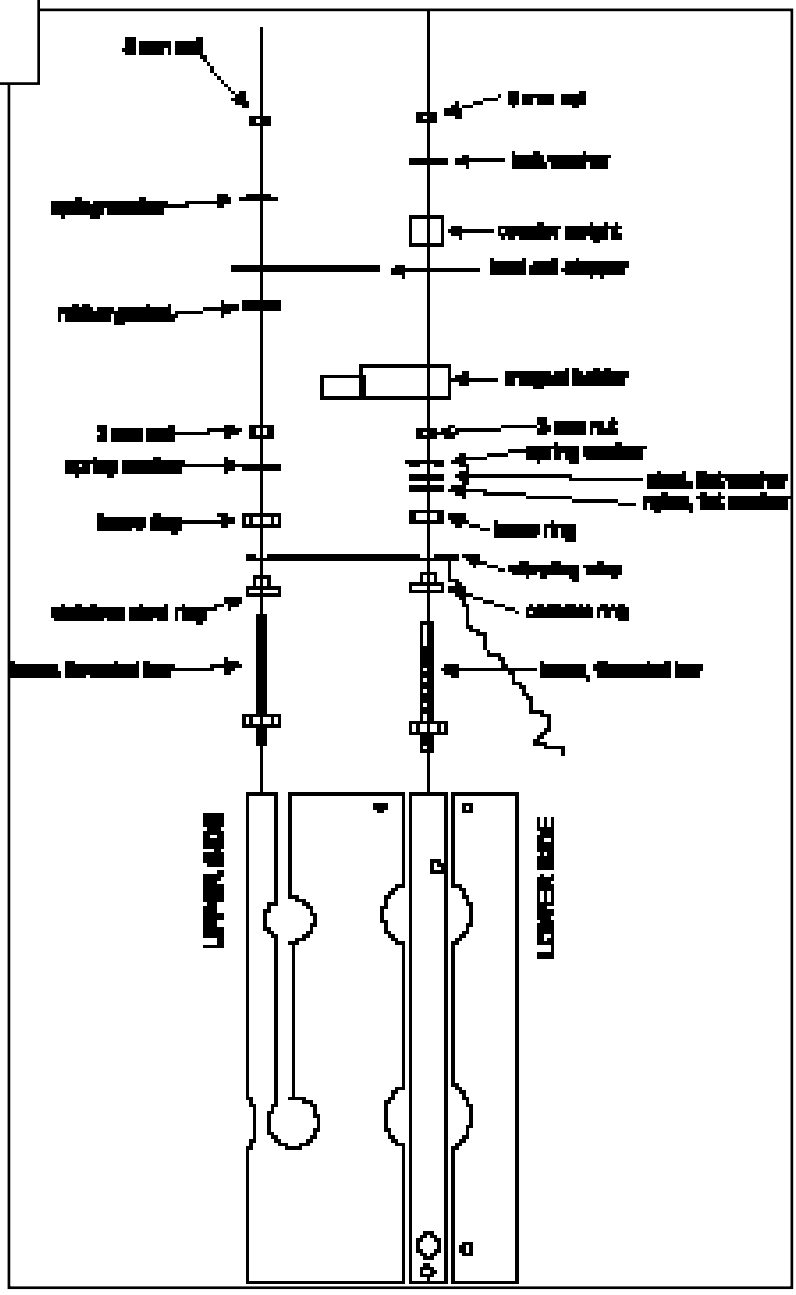


Figure 3: Vibrating Wire Assembly

V. PARTS REPLACEMENT (CONT.

2) (cont.)

h) Remove both 3 mm nuts.
i) Remove both spring washers.
j) Remove the steel, flat washer from the LS.
k) Remove the nylon, flat washer from the LS.
l) Remove both brass rings.
m) Remove the vibrating wire.
n) Remove the stainless steel ring from the US.
o) Remove the ceramic ring from the LS.
p) Remove the brass threaded bars (if necessary).

3) Removing the A/D board

a) Remove the load cell.
b) Desolder the (2) blue wires from the vibrating wire.
c) Unscrew the Phillips head screw which holds the two yellow ground wires to the load cell body.
d) Remove the screw which holds the A/D board to the load cell. There is a small metal spacer that sits between the A/D board and the load cell. Be careful when removing the board so that the spacer is not lost.
e) The board is now free from the load cell.

4) Installing the A/D board

a) Before installing the new A/D board, twist one blue wire together with one yellow wire. Repeat for the other blue wire and yellow wire.
b) Insert the two blue wires through the hole in the side of the load cell. This will place the wires next to the vibrating wire. If you are also installing a new vibrating wire, this will place the blue wires next to where the new vibrating wire will be installed.
c) Solder the blue wires to the vibrating wire. If installing a new vibrating wire, skip this soldering step.
d) Screw the yellow, ground wires back into place against the load cell body.
e) Screw the new A/D board into place, making sure that the metal spacer is placed on the screw, in between the board and load cell.
f) If installing a new vibrating wire, go to step 5b.

5) Installing the vibrating wire

To install the vibrating wire, follow the next procedure. Please also refer to **Figure 3** and **Figure 4**.

a) Desolder the (2) blue wires from the old vibrating wire.
b) Cut the vibrating wire, as shown in **Figure 3**.

V. PARTS REPLACEMENT (CONT.)

5) (cont.)

c) Solder the (2) blue wires to the new vibrating wire.
d) Replace both brass, threaded bars.
e) Replace the ceramic ring on the LS and the stainless steel ring on the US.
f) Carefully place the vibrating wire over both rings. The wires face the LS.
g) Replace both brass rings, flange-side down.
h) Replace the nylon, flat washer on the LS.
i) Replace the steel, flat washer on the US.
j) Replace both spring washers.
k) Replace both 3 mm nuts. Torque each nut to 6.9 kgf cm. Use an 8 mm wrench to hold the brass rings in place as each nut is tightened.
l) Replace the magnet holder.
m) Replace therubber gasket on the US.
n) Replace the load cell stopper on the US.
o) Replace the round, counter weight on the LS.
p) Replace the lock washer on the LS.
q) Replace the spring washer on the US.
r) Replace both 3 mm nuts.

6) Installing the load cell

a) Connect the 4-pin and 5-pin connectors from the load cell to the 4-pin and 5-pin connectors on the base.
b) Bolt the load cell to the lower spider, with the black shielding to the top and the vibrating wire towards the side of the column mount.
c) Bolt the upper spider to the load cell, making sure that the spider is level.
d) Place the wire cluster into the metal clasp on the base.
e) Put the stainless steel platform on the upper spider and screw it on.

CPU Board Removal and Replacement

7) Removing CPU board (see **VIII. Blowup and Parts List** for location of most parts)

a) Loosen the two-prong thumbscrew so that the indicator rotates freely.
b) Remove the battery cover.
c) Disconnect the 4-pin and 5-pin connectors located above the column, inside of the indicator housing.
d) Remove the (2) holding screws in the column inside of the indicator housing.
e) Slide the indicator over 1/2" to 1". This will free the column from the AC adapter bracket (number 15 on p. 17).
f) Remove the screw on the AC adapter bracket.
g) Remove the bracket. Be careful, when threading the wire cluster through the bracket, to not damage the connectors.
h) Slide the indicator housing off of the column.

7) (cont.)

i) Remove the (2) battery holder screws.
j) Remove the battery holder.
k) Remove the (2) CPU screws.
l) Remove the CPU board and test switch.
m) Desolder the battery holder from the board (pads VB and 0V).
n) Desolder the test switch from the board (pads TEST and GND)

8) Installing CPU board

a) Solder the test switch to pads TEST and GND.
b) Solder the battery holder to pads VB and 0V.
c) Screw the CPU board into place.
d) Place the test switch back into the slot below the display lens.
e) Screw the battery holder into place.
f) Slide the indicator onto the column.
g) Thread the wires, from the column, through the hole in the AC adapter bracket and into the notch at the top of the bracket.
h) Screw the bracket into place.
i) Slide the indicator over, until the column slides into the AC adaptor bracket.
j) Replace the (2) holding screws in the column.
k) Connect the 5-pin and 4-pin connectors.
l) Replace the battery cover.

VI. TROUBLE SHOOTING

1) The display will not turn on.

Check the batteries. If they are bad, replace them. If the batteries are good, check the ribbon cable on the keyswitch and the keyswitch itself. Also, insure that all of the wires are securely soldered to the CPU board.

2) The display shows all 8's when on.

First, make certain that the platform is on the scale. Check the vibrating wire and make sure that the wire is not broken and that it is installed correctly. Next, check the display board assembly and the load cell.

3) The display shows "- - - L" when on.

First, make sure that the platform is on the scale. If the scale still does not work properly, calibrate the scale. The next step is to replace the load cell.

4) The display shows "- - - H" when on.

Make sure that there is no load on the platform. If the scale still does not work properly, calibrate the scale. The next step is to replace the load cell.

5) Display will not stabilize.

Ensure that the scale is on a firm, flat surface. Next, make sure that the platform is installed correctly. If the scale still does not work properly, recalibrate the scale and check the parameter values.

6) The scale does not weigh properly.

Check the level indicator on the scale and make sure that the scale is level. Next, recalibrate the scale. If the scale still does not work properly, replace the load cell.

If the DSY-1100 still does not work, please contact the Yamato Service Department for further assistance.

VII. PARAMETER SETTING

System Keyword Mode

The Following chart is the parameter settings for the DP-8100 series scale when changing from lb. to lb./oz.

1. The parameters for the DP-8100 in the decimal pound configuration.

Capacity	Parameters									
lb (kg)	31	33	34	35	36	42	43	44	45	46
150lb x 0.1lb (75kg x 0.05kg)	004	075	002	002	002	015	002	001	001	003
300lb x 0.2lb (150kg x 0.1kg)	004	015	002	000	001	003	003	001	002	003

2. The parameters for the lb / oz. configuration.

Capacity	Parameters									
lb/oz (kg)	31	33	34	35	36	42	43	44	45	46
150lb x 2 oz. (75k x 0.05kg)	005	075	002	002	002	015	001	002	002	002
300lb x 4 oz (150kg x 0.1kg)	005	015	002	000	001	030	001	002	004	002

VII. PARAMETER SETTINGS (CONT.)

VII. A User's Keyword Mode

Key word	Function	Std value:	Description
07	Auto off time	000	"auto off" off
		001 - 060	auto off after 1 - 60 minutes
08	Tare clearing at auto off	000	Clear tare at switch on after auto off
		001	Hold tare at switch on after auto off
09	lb/kg priority at power on	000	gram unit at power on
		001	pound unit at power on
10	Length of Display Hold	not available without sealed system keyword through test mode	

VII. B Factory's Parameters

Key word	Function	Std value:	Description
30	Display to ID Hardware	016	Crystal Display Type
		017	Fluorescent tube display type
31	Scale Mode	000	Fixed Single Increment
		001	Multi-Increment
		002	Do Not Set
		003	Do Not Set
		004	Change-Over / Gram Mode- Decimal LB Mode
		005	Change -Over/ Gram Mode- lb/oz Mode
		006	lb/oz Mode
		007	Change-Over/Gram Mode-Continuous oz Mode (On and After V.2.05)
32	Multi-Increments, Complex Increment Mode	000	Fixed single increment
		001	Fixed Accuracy, 3 Increments
		002	Fixed Accuracy, 2 Increments
		003	5 Increment Change at 50% FS, 2 Increments
		004	Increment Change at 80% FS, 2 Increments
		005	Increment Change at 64% FS, 2 Increments
		006	Increment Change at 40% FS, 2 Increments
33	Weighing Capacity Base Value	000-009	
34	Weighing Capacity Index Value	001-004	
35	Minimum Increment	000	1
		001	2
		002	5
		003	10
		004	20
		005	50
		006	100
		007	200
36	Location of Dec Point	000	0
		001	0.0
		002	0.00
		003	0.000

VII. B Factory's Parameters(con't)

Key word	Function	Std value	Description
37	Weighing Unit	000 001 002 003 004	No Unit g kg lb oz
38	Internal Resolution	000	Do Not Set
39	Zero Point Range	000-015 000	 Fixed Single Increment
40	Zero Point Range	000-100	Do Not Set Over 039
41	Over Scale	000-010	
42	Pound Weithing Capacity Base Value	000 001-099	Do Not Set in lb Mode
43	Pound Weighing Capacity Index Value	000-004	
44	Location of Decimal pt/ Colon (<At Decimal lb Mode>) (<At lb / oz Mode>)	 000 001 002 003 004 000 001 002 003-004	 0 0.0 0.00 0.000 0.0000 0: 0.00 0: 0.0 0: 0 Do Not Set
45	Pound Increment	000-008	
46	Pound Conversion Coefficient	000 001 002 003	Conversion Efficient = 1.00000 Conversion Efficient = 0.705479 Conversion Efficient = 0.881849 Conversion Efficient = 1.10231
50	Sensor Sampling Count	001-255	
51	Steady-State Smapling Count	000-060	
52	Steady-State Average Count	001 001-006	Not Averaging (Same as 001) After Averaging the specified times, the display is renewed.
53	Steady-State Count	000-255	
54	Count Collapasing Steady-state	000-255	
55	Polarity Steady-State Count	000-255	
56	Zero Tracking Timing	000 001-255	No Zero Tracking Zero Tracking At a Specified Interval(Count)
57	Temp- State Timing	000 001-003 004-200	Same as 001 Once in 3 Samplings Once in a Specified times
58	Anti-Glimmer count On and After V.2.0	000 001-009	Disable feature Avoid Glimmer of the Specified Count
60	Zero Reset Under Tare Operation	000 001	Zero Reset possible Zero Reset Impossible

VII. B Factory's Parameters(con't)

Key word	Function	Std Value	Description
61	Stable Mark	000	Displays the Stable Mark -
		001	Doesn't Display the Stable Mark -
62	Display Hold Function	000	Will Not Hold
		001	Hold For the weight more than Net + 10 Divisions
		002	Hold For the weight more than Net + 10 Divisions, Hold Key is invalid
		003	Hold For the weight more than Net + 20 Divisions
		004	Hold For the weight more than Net + 20 Divisions #10 is invalid
		005	Hold For the weight more than Net+20 Hold Key is invalid, #10 is invalid
63	Hold release Against increased weight	000	Hold against any increased weight
		001- 005	Hold Release Against a Specified Increase
64	Tare Function	000	No Tare
		001	One-Time Tare (FS/ UP to the Lighter Range)
		002	Consecutive Tare(FS/ UP to the Lighter Range)
		003	One -Time Tare (FS/ UP from the lighter range to 1 division)
		004	Consecutive Tare(FS/ From the Lighter Range to 1 Division)
65	Battery Check On and After	000	In 1 Second
		001	In 5 Minutes
		002	In 1 Hour
66	Power Off With On Key (On & After v.2.0)	000	On Key Invalid
		001	On Key Valid (Using By Crane Scale)
		002	kg
67	Special Function for stability (On & After v.2.0)	000	No Function
		001	Enforcement (Using by crane scale)
		002	EU Mode (On & After V.2.03)

VII. C System Parameters

Key word	Function		Description
70	Gravity Compensation	*	No Compensation Compensation for a specified area (Japan only) Compensation / Acceleration of Gravity (mm/s2) - 9700
71	Linearity Compensation	*	(-256 to -1)
72	Zero point Compensation Under Low Temp	*	No Compensation Compensation on Plus Side (1 to 500) Compensation on Minus Side (-499 to -1)
73	Zero point Compensation Under High Temp	*	No Compensation Compensation on Plus Side (1 to 500) Compensation on Minus Side (-128 to -1)
74	Zero Temp Span compensation 1 (Low temp side)	*	No Compensation Compensation on Plus Side (1 to 127 Compensation on Minus Side (-128 to -1)

VII. C System Parameters (con't)

Key word	Function	Description
75*	Temp Span Compensation 2 (High Temp Side)	No Compensation Compensation on Plus Side (1 to 127) Compensation on Minus Side (-128 to -1)
80*	Span Coefficient 1	Automatically set at Span Adjustment Do Not Set
81*	Span Coefficient 2	Automatically set at Span Adjustment Do Not Set
82*	Span Coefficient 3	Automatically set at Span Adjustment Do Not Set
83*	Mechanical Zero 1	Automatically set at Span Adjustment Do Not Set
84*	Mechanical Zero 2	Automatically set at Span Adjustment Do Not Set
85*	Mechanical Zero 3	Automatically set at Span Adjustment Do Not Set
86*	Temperature Count 1	Automatically set at Span Adjustment Do Not Set
87*	Temperature Count 2	Automatically set at Span Adjustment Do Not Set
88*	Regional NO. & Gravity	Automatically set at Span Adjustment Do Not Set
90*	Inhibit the user keyword Easy test mode	Automatically set at Span Adjustment Do Not Set

* Automatically set at Span Adjustment Do Not Set

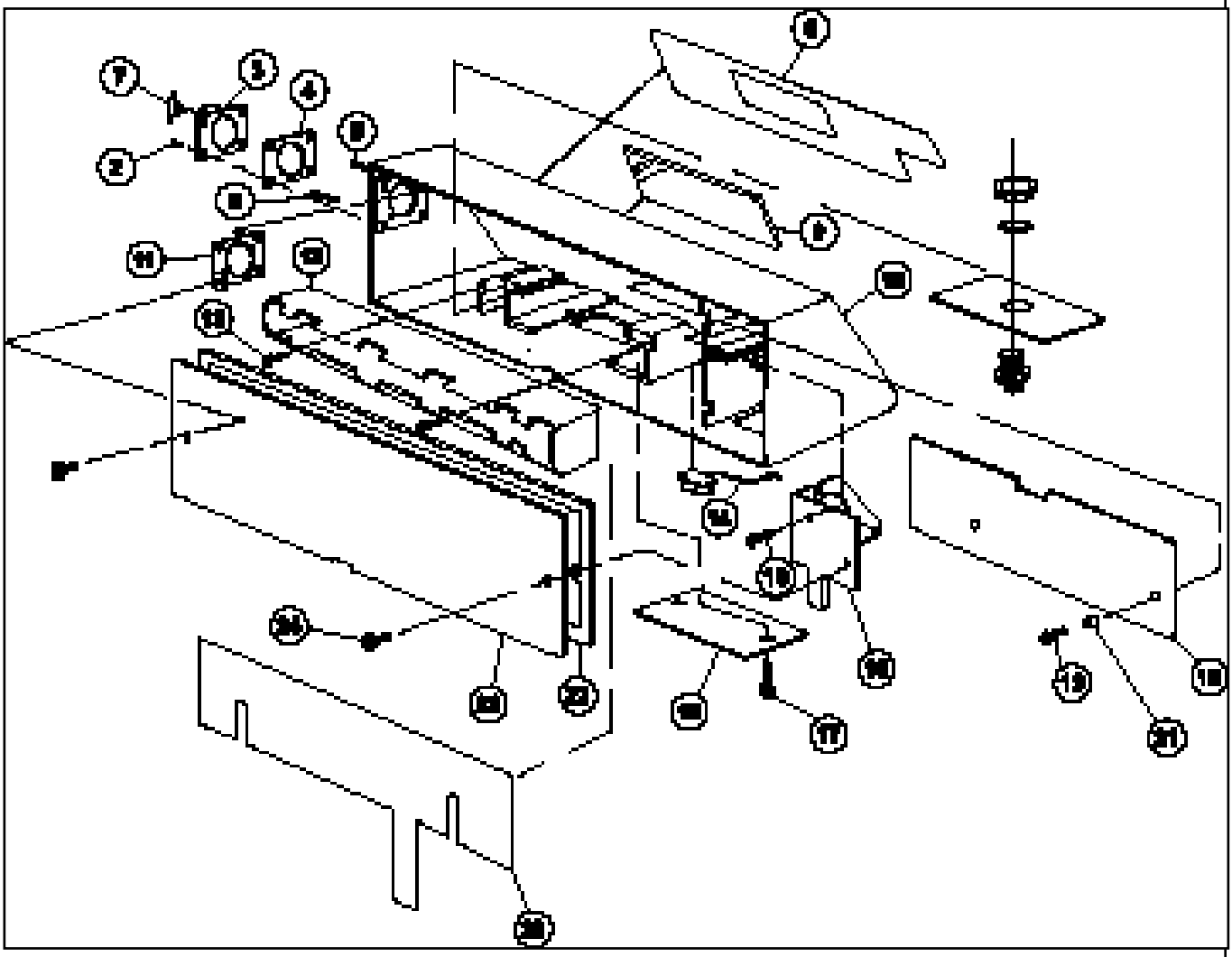
VII. D Standard Factory Parameters Settings

Key word	Function	STD. SETTING 75 kg	STD. SETTING 150 kg
51	Steady-State Sampling	4	4
52	Steady-State Average Count	4	4
53	Steady-State Count	12	12
54	Count Collapsing Steady-State	30	30
55	Polarity Steady-State Count	8	8
56	Zero Tracking Timing	10	10
57	Temperature State Timing	8	8
58	Anti-Glimmer Count	1	1
60	Zero Reset Under Tare Operation	1	1
62	Display Hold Function	4	4
63	Hold Replacement Against Increase weight	1	1
64	Tare Function	2	2
65	Battery Check	0	0
66	Power off with on Key	0	0
67	Special Function for Stability	0	0
70	Gravity Compensation	*	*
71	Linearity Compensation	*	*
72	Zero Point Compensation Under Low Temp	*	*
73	Zero Point Compensation Under High Temp	*	*
74	Temperature Span Compensation 1	*	*
75	Temp Span Compensation 2 * *		
80	Span Coefficient 1 * *		
81	Span Coefficient 2 * *		

VII. D Standard Factory Parameters Settings

Key word	Function	STD. SETTING	
		75 kg	150 kg
82	Span Coefficient 3	*	*
83	Mechanical Zero 1	*	*
84	Mechanical Zero 2	*	*
85	Mechanical Zero 3	*	*
86	Temperature Count 1	*	*
87	Temperature Count 2	*	*
88	Regional No. and Gravity	*	*
90	Inhibit the user keyword	*	*
	easy test mode		
98		*	*
99		*	*
	*Automatically Set at Span Adj. (DO NOT SET)		

VIII. BLOWUP DIAGRAM AND PARTS LIST



VIII. BLOWUP DIAGRAM AND PARTS LIST

ITEM	PART #	DESCRIPTION	QTY.	PRICE (EA)
2	MCH-5000-046060	Screw, Round, Phillips, M3 x 8mm	4	
3	YAM-1400-001010	Bracket, Mounting, Column (1210)	1	
4	YAM-1400-001020	Gasket, Mounting Bracket	1	
5		Screw, M3 x 13	1	
6		Screw, M3 x 13	1	
7	YAM-1400-001030	Thumbscrew, M5 x 10	1	
8	YAM-1400-810001	Membrane Panel, 150 lb	1	
		Membrane Panel, 300 lb	1	
9	YAM-1400-001070	Lens, Display	1	
10	YAM-1400-001090	Housing, Indicator	1	
11	YAM-1400-001100	Bracket Attaching Plate (M.S.)	1	
				YAM-1400-001105
Bracket Attaching Plate (S.S.)		1		
12	YAM-1400-001110	Holder, Battery	1	
13	MCH-5000-046070	Screw, Round, Phillips, M3 x 10	4	
14	YAM-1400-001120	Adaptor / Battery Cable	1	
15	YAM-1400-001130	Bracket, AC Jack	1	
16		Screw	1	
17		Screw, M3 x 7, Switch Cover	2	
18	YAM-1400-001140	Cover, Test Switch	1	
19	YAM-1400-810002	Board, CPU	1	
20	YAM-1400-001160	Film, Shielding	1	
21		Washer, CPU Board	2	
22	YAM-1400-001170	Gasket, Back Plate	1	
23	YAM-1400-001180	Plate, Back	1	
24	YAM-1350-921022	Thumbscrew, M3 x 6	2	
	YAM-1400-001330	Switch, TSO	4	
	YAM-1400-100442	Load Cell, 150 lb / 75 kg	1	
	YAM-1400-100443	Load Cell, 300 lb / 150 kg	1	
	YAM-1400-101320	Vibrating Wire Kit (same as DSY-1100)	1	
	YAM-1400-001280	Leg, Levelling, (M.S.)	4	
	YAM-1400-001285	Leg, Levelling, (S.S.)	4	
	YAM-1400-811220	Board, A/D	1	