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MT 2000

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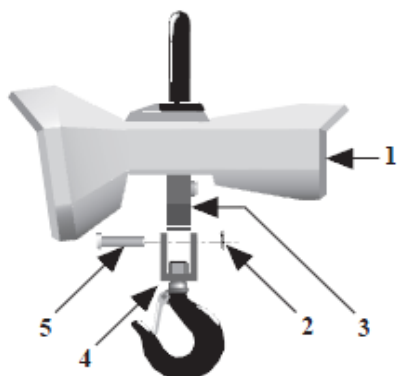


Operation Manual

MT 2000

Crane Scale

MSI-3380 Assembly
Parts drawing.



- 1) Slide hook clevis over load cell with open end of hook toward front of scale.
- 2) Align holes of clevis and load cell.
- 3) Slide the clevis pin through the clevis and load cell holes.
- 4) Lock clevis pin in place with cotter pin. Bend cotter pin.



WARNING: Scale will be unsafe for use if clevis pin is not properly secured with the cotter pin.

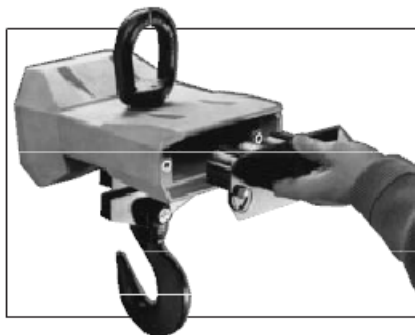
- 5) Slide battery pack into battery compartment. The battery will automatically engage with its connectors.
- 6) Secure battery pack by turning the two locking fasteners on access door clockwise 1/4 turn.
- 7) The scale is now ready for use.

BATTERY PACK

The Challenger 2 is powered by a six volt rechargeable battery. The battery is permanently attached to the battery door.

To remove the battery pack, turn the two fasteners on the access door counter-clockwise 1/4 turn, then pull the battery pack straight out. The battery will automatically disengage from its connectors.

Battery pack installation
and removal



The battery will operate for up to 100 hours (depending on LED brightness setting) before requiring recharging. In order to conserve battery life, the scale includes an Automatic Power Off Mode which senses operational status for no activity after 12 minutes or one hour, and turns the scale off. An additional battery saving feature is the Automatic Sleep Mode. This feature preserves battery life by dimming the display after 1 minute of no scale activity. Charging time for a completely discharged battery is approximately 16 hours. A spare battery pack is recommended to keep the Challenger 2 in continuous operation.

Note: To obtain maximum service life from your batteries they should be stored between -4°F and 122°F (-20°C and +50°C). Stored batteries should be recharged every three months. Battery is fully charged when the status indicator is flashing.

BATTERY CHARGER

- 1) Remove the battery from the scale.
- 2) Plug battery charger into an AC power receptacle of the same voltage and frequency stamped on the plug-in module.
- 3) Slide the battery charger connector plate over the top of the battery until the battery terminals mate with the charger connectors, as seen through the two observation holes.
- 4) Approximately 16 hours is required to recharge a fully discharged battery.

Shown is the charger and battery assemblies.

Note that a second battery is recommended to enable you to use your scale continuously.

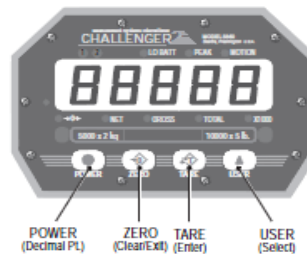
Keep one on the charger while the other is in service.



Note: To obtain maximum service life from your batteries, the manufacturer suggests recharging after each 20 hours of use. Continuous deep discharging will inhibit maximum battery life cycle estimated at 2000 cycles.

OPERATION GUIDE

Challenger 2 operation is controlled by four push buttons located below the display window.



Activating the push buttons with a sharp object, such as a screwdriver may cause permanent damage or broken seals.

POWER

Function

Turns the scale on/off (toggle action).

Use

- 1) The battery pack must have enough charge to ensure accurate operation (>5.4V).
- 2) Ambient temperature must be greater than -30°C and less than 60°C (-22°F to 140°F).

Action

- 1) Press **POWER** and hold for one second.
- 2) Display check: All segment and indicator LED's are illuminated for one second.
- 3) Numerics display the software version number for one second.
- 4) Any weight on the scale up to 5% of capacity will be automatically zeroed.
- 5) During display test, all internal operations are checked and any non-conformance causes an Error message display.

Final

Scale reads the current weight in the last set Mode (NET, GROSS, PEAK NET, PEAK GROSS).

ZERO

Function

Sets scale to ZERO.

Use

- 1) The scale must be stable. The scale will not ZERO if the motion detect indicator is on.
- 2) The scale must be in the GROSS Mode. The scale will not ZERO in NET Mode.
- 3) The scale will accept a ZERO setting over the full range of the scale (Legal For Trade models might have a limited ZERO range). ZERO settings greater than 5% of capacity will subtract from the overall capacity of the scale.


Action

- 1) Press **ZERO**. The weight reading must be stable within ± 1 division. If this condition is met, the digits display "0" (or "0.0" or "0.00", depending on resolution).

- 2) The ZERO setting is stored in backup memory, and the setting will be restored the next time the scale is turned on.

Final

GROSS indicator is illuminated and display will be "0" (or "0.0" or "0.00", depending on resolution).

TARE **Function**

TARE IN - Stores a TARE weight when in GROSS Mode and displays all subsequent readings in NET Mode;

or,

TARE OUT - Clears the TARE weight when in NET Mode and returns the scale to GROSS Mode.

Action**TARE IN**

- 1) Press **TARE**.
- 2) The scale must be in GROSS Mode: The entire range of the scale can be tared.
- 3) The Motion indicator must be off and the weight reading must be stable. (The weight reading must be stable within ± 1 division).
- 4) If the Motion condition is met, the NET indicator lights and the weight registers "0". All subsequent readings are deviations from the set TARE value.
- 5) Only positive weight readings can be tared.
- 6) Setting or changing TARE has no effect on the ZERO setting.
- 7) Tareing will reduce the apparent overrange of the scale. For example, if a 1000 lb container is tared and the scale capacity is 5000 lb, the scale will overload at a new weight of 4000 lb (5000 - 1000) plus any additional allowed overload (usually 9 divisions).
- 8) TARE value is stored in backup memory, and the value will be restored the next time the scale is turned on.

TARE OUT

- 1) The scale must be in NET Mode.
- 2) Press **TARE** to clear the value.
- 3) Returns to GROSS Mode.

Final**TARE IN**

TARE is set, displaying NET weight.

TARE OUT

TARE weight will be cleared and the scale will revert to GROSS Mode.

POWER**To turn on the Scale:**

- 1) Aim the IR Remote at the Challenger front panel.
- 2) Press and hold down the **POWER** key until the Challenger turns on. Once the display lights up, release the button. This usually takes 2 to 4 seconds.

To turn off the Scale:

- 1) Aim the IR Remote at the Challenger Front Panel.
- 2) Press the **POWER** key. The Challenger will turn off immediately.

See User Guide page 11 for more POWER key information.

ZERO

See User Guide page 11.

TARE

See User Guide page 12.

RECALL TARE

To view the currently stored tare value, press the **2ND** button and then press the **RCL TARE** button. Don't forget to press the **SCALE** button to reactivate the main IR Remote key functions.

NET/GROSS

The NET/GROSS function is available on the Challenger 2 as a USER key function. The Remote provides this function full time through the use of the NET/GROSS key. See User Guide page 19 for more detail on NET/GROSS.

USER

The USER key is programmable to any of five functions: TEST, NET/GROSS, TOTAL, UNIT, and PEAK. If you are making regular use of the Remote, there

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1.0 PRECAUTION BEFORE USING THE SCALE

1.1 Environment

The scale should always be used in an environment, which is free from excessive air currents, corrosives, vibration, and temperature or humidity extremes. These factors will affect weight reading.

DO NOT install the scale:

- Next to open windows or doors causing drafts or rapid temperature changes.
- Near air conditioning or heating vents.
- Near vibrating, rotating or reciprocating equipment.
- Near magnetic fields or equipment that generates magnetic fields.
- On an unstable work surface
- In a dusty environment
- In direct sunlight.

1.2 Leveling the Scale

The scale is equipped with a level indicator on the left bottom side of the front panel and four adjustable leveling feet. Adjust the leveling feet until the bubble appears in the center circle of the indicator

1.3 Turn on Scale

Do not turn on scale with anything on the platform. The switch is located

On the left side of the scale. The scale will start to count down from nine to zero and will display the max capacity of the scale in the display. The scale is then ready for use. Give a warm-up for 15-30 minutes before use.

2.0 Keyboard functions.

Tare

Tare the weight of a container. indicate that the current weight reading is net weight.

Zero/B.L

If there is a minor weight displayed without anything on the pan, press this key, the weight will become "0". and Select backlight key.

Unit/Enter

Select unit key, and also Enter key.

3.0 Operation.

3.1 Tare function.

Tare weight is the weight of a container and can be subtracted by placing an empty container on the scale pan. when the display is stable, press the **Tare** Key and the display will become zero and the display will have a tare indication.

Cancel the tare function by pressing the **Tare** key with no weight on the scale pan. Tare range is the full capacity of the scale.

3.2 Zero function.

If the zero shifts during operation, press the **Zero/B.L** key to set it to zero. The zero function is only active over a $\pm 2\%$ Range.

3.3 Unit selection.

Press the **Unit/Enter** key to choose the weighing units and the display will be changed to the new value with units shown. There are two units of weight (kg/g and lb) that can be enabled.

4.0 Backlight function.

a. Press the **Zero/B.L** key, the display will show "bl.1" which means "Auto backlight" mode. when the weight is over 10 scale divisions or any of the keys are pressed, the backlight will be effective. when the weight is zero for about 8 seconds, the backlight will go off automatically.

b. Press the **Zero/B.L** key again, the display will show "bl.2" which means the backlight will always be on.

c. Press the **Zero/B.L** key once, the display will show "bl.3" which means the backlight will be turned off.

5.0 Simple Auto Calibration.

5.1 Switch on the scale,during the self-checking press **Tare** , **Zero/B.L** **Unit/Enter** the scale will display “CAL” about two seconds after will display 00000.

5.2 Press **Unit/Enter** key,on the windows will display -----

5.3 Press **Unit/Enter** key again,on the windows will display weight inner code.

- Put on the 1/3 Max of full capacity weight,press **Unit/Enter** key affirm it.
- Put on the 2/3 Max of full capacity weight,press **Unit/Enter** key affirm it.
- Put on the 3/3 Max of full capacity weight,press **Unit/Enter** key affirm it.
- Switch off and take off all the weight,then switch on ,the scale can be used it.

Charge Messages.

- Voltage display function: Switch on the scale when the scale self-checking after,windows will display Voltage about two seconds,example DC6.2 ,that mean Voltage for 6.2v.
- Charge indication function:During used scale,if the scale check the voltage value lower than 5.6V,that scale will remind you voltage value interval 30seconds at once,and also on the scale will have “di ...di..”sound,that remind to you must charge it for scale.

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