

DMG user manual

Digital Motorized Gauge

For Sylvac and Mahr display edition.		Doc. No.: D-17250	Rev.: A
English	Date 6. Dec. 2017	Leitech ref. Søren Jakobsen	

Specifications.

Thread size:	M4 - M22 M22 – M27 Special	
Torque:	8 – 16 – 24 – 32 N/cm.	
Maximum Depth.	55 mm.	
Rotation Speed:	30 - 450 rpm.	
Weight:	800 Gram.	
Digital Inductive measure system:	Sylvac (ready for OPTO RS 232 wired /wireless) Mahr Wireless via Mahr connect.	
Display resolution:	0.01 mm / 0.0005 inch.	
Accuracy:	+ /- 0.025 mm	
Battery for motor	Rechargeable Protected Type 18650 Li-ion 3.7V 3500 mAh. Leitech recommend KEEPOWER P1835J-Button Top. Length 69mm weight 48 gr. <i>(Please take caution of copy products)</i>	
Useable time on battery	1 to 6 Hours depending on load.	
Battery for Display:	Cell 3V CR 2032 (the default battery is not rechargeable)	
Recognition of display edition:	DMG with SYLVAC display – two buttons on left side. DMG with MAHR display – two buttons on top.	

Be aware:

- **The DMG are not covered by any IP protection code. DMG can not withstand being used in a splashing environment.**
- **Unauthorized opening of the DMG will cancel the warranty.**
- **Oil or other liquid on the measure liner, can cause error in measuring. Use a clean dry cloth, to remove the contamination. Do not use any chemicals, as this can damage the surface of the gauge.**

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Changing battery for the Sylvac display.

The Sylvac Display is equipped with an inside back up battery. If you need to change the display battery, the setting will be stored while shifting battery.

1. Remove the cover for the computer port and battery.
2. Drag the battery out with a little screwdriver or similar. Press the new into the holder. + polarity upwards.
3. Mount the cover.
4. If the display is not in function, press the contact in the little hole on the right side of the handle with a non-conducting tool. (a toothpick)
5. In the remaining life of the battery the display will count correctly.
6. Battery life is app. 3000 hours. The sign "B" will appear in the display when the battery needs to be changed.

Changing battery on Mahr display:

The Mahr display will not keep the setting while changing battery, please write down the set of setting before changing battery.

1. The remark "low bat" will appear in the display.
2. Remove the cover on the left side, with a small screwdriver.
3. Replace the battery with + pol upwards
4. See the Mahr user manual to set up the setting.

Please also see the separate manual for the display.

Mounting of a gauge plug in the handle.

1. Mount the gauge plug in the adapter with a light blow from a plastic hammer.
2. To remove the gauge plug from the adapter, put the adapter in a device with soft jaws, so that the circular face of the clamp part is supported by the soft jaws. Use a cylindrical mandrel at an appropriate diameter and a hammer to loosen the gauge plug from the adapter.

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3. The measuring sleeve must be moved backwards, so that the hole in sleeve is located over the hole in the handle.
4. Remove the Nose.
5. The adapter is placed over the gearbox shaft, so that the screw is located over the hole in the handle. Note that the insert screw in adapter is over the flat face on the gear shaft.
6. Use the delivered tool to tighten the screw in the adapter hard. This to prevent that the adapter will turn, on the shaft, and the position screw will damage the shaft.
7. Mount the Nose into the measuring sleeve.

Note:

The Screw in the adapter must not be tightened if the adapter not is placed on the shaft of the gearbox. This to prevent deformation of the adapter leading to fit problems.

When loosen the screw in the adapter: ONLY loosen. If the screw is too loose, the head of the screw can damage the inside of the sleeve when dismantling the adapter.

Calibration of the gauge.

After mounting the gauge adapter in the DMG handle, the DMG must be calibrated, so that the correct thread depth is displayed.

The procedure for using the adjusting piece is following.

1. Choose the adjusting piece which fit the plug pitch in the DMG. See the pitch size at the bottom of the adjusting piece.
2. Turn on the display by using the on/off button.
3. Press the adjusting piece towards the plug, so that the plug is inside the recess of the adjusting piece.
4. Zero the display by pressing the on/off button shortly.
5. Now the handle is calibrated for the actual pitch, and will show the distance from the middle of the deepest full thread profile to the edge of the wear bushing
6. The display will hold its setting until the on/off button is pressed.
7. It is possible to lock the calibration of the thread gauge, by pre-set the display.

If the DMG is mounted with extended plug, or point 7 is needed, please follow the document with instruction for pre-set value in display.

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Mounting of the battery for the motor.

1. Turn the back cover and place the battery inside the hole. + is outside.
2. If the battery is placed wrong, the motor doesn't start. Nothing is damage by mount the battery wrong.

Charging of motor battery.

Put the batteries in the charger. Note polarity.

In charging mode the LED's are red

When fully charged the LED's are green.

The batteries are equipped with an electronic protection circuit.

The voltage is cut off, if short connected or voltage under discharge is lower than 2.4 volt.

Setting of the torque.

Torque-setting is done by the knob on the rear side of the handle.

Leitech suggest following torques:

Thread size	Torque N/cm	Size type
M4 – M6	8	300
M7 – M12	16	400
M14 – M16	24	500
M18 – M22	32	600

The thread must be cleaned before checking.

The out screwing of the thread is always done by max. torque, and max. speed.

When the DMG is not in use, it is recommended to turn the Torque knob to "off" position.

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Mounting of the RS 232 Opto data port.

(Only for Sylvac display)

The handle can be connected to a computer for recording.

1. Move the cap on the side of the display, horizontal. The OPTO RS 232 can be mounted by push the Opto sleeve into the hole in the display, to a “click” can be felt. Connect the other end to the computer. Or if it’s a wireless, connect by reading the manual for the Opto.
2. The handle can now transfer data to the computer.

Measuring of thread depth.

When the handle is calibrated, the thread depth of a thread hole can be measured.

1. Push the measure sleeve backwards via the button on the side, so the end of the thread plug is free.
2. Activate the start start/stop button on the top, so the plug starts turning into the thread. Due to the sleeve, there is no movable joint between motor and thread plug, and the handle must be positioned so the axe of the thread plug, and the axe of the thread hole correspond. This can be a little difficult in the beginning, but will soon be learned.
3. The sleeve will move, and the display will show the depth of the thread.
4. When the plug is in the bottom of the thread, the DMG will shut off, at the given torque. Now it is correct to read the measure of the display.
 - a. **For the Sylvac display:** If the DMG is difficult to read due to art positioning in the work-piece. The display can hold the measure. Press REF to show the REF I in the display. Then you can press the SET quickly when the plug is in the bottom of the thread hole. The measure will be hold, until the SET is pressed again.
 - b. **For the Mahr display:** If the wireless is on, the HOLD is not an option. If the wireless is not active, the wireless button serves as a HOLD button.

Reference documents:

- Sylvac Display user manual.
- Instruction for Pre-set value in SYLVAC display Doc.No. D-17265
- Mahr Display user manual.
- Mahr Software user manual. (MarCom V5.0)
- Instruction for Pre-set value in MAHR display Doc.No. D-17266

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- | Pos. | Description |
|------|---|
| 1 | Torque set button |
| 2 | Back cover for Motor battery, turn for release of battery |
| 3 | Display edition SYLVAC and MAHR |
| 4 | Measure liner |
| 5 | Nose |
| 6 | Button for moving measure sleeve |
| 7 | Button for variable motor speed |
| 8 | Measure sleeve |
| 9 | Hole for release of gauge plug |

