



VersaMOUSE

Manual One-Axis Indexer Scanner

User's Manual

DMTA-20030-01EN — Rev. D
September 2022

This instruction manual contains essential information on how to use this Evident product safely and effectively. Before using this product, thoroughly review this instruction manual. Use the product as instructed. Keep this instruction manual in a safe, accessible location.

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This document was prepared with particular attention to usage to ensure the accuracy of the information contained therein, and corresponds to the version of the product manufactured prior to the date appearing on the title page. There could, however, be some differences between the manual and the product if the product was modified thereafter.

The information contained in this document is subject to change without notice.

Part number: DMTA-20030-01EN

Rev. D

September 2022

Printed in Canada

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Important Information — Please Read Before Use

Intended Use

The VersaMOUSE is designed to perform nondestructive inspections on industrial and commercial materials.



WARNING

Do not use the VersaMOUSE for any purpose other than its intended use. It must never be used to inspect or examine human or animal body parts.

Instruction Manual

This instruction manual contains essential information on how to use this product safely and effectively. Before using this product, thoroughly review this instruction manual. Use the product as instructed. Keep this instruction manual in a safe, accessible location.

IMPORTANT

Some of the details of components illustrated in this manual may differ from the components installed on your device. However, the operating principles remain the same.

Device Compatibility

Only use this device with the approved ancillary equipment provided by Evident. Equipment provided by Evident and approved for use with this device is described later in this manual.



CAUTION

Always use equipment and accessories that meet Evident specifications. Using incompatible equipment could cause equipment malfunction and/or damage, or human injury.

Repair and Modification

This device does not contain any user-serviceable parts. Opening the device might void the warranty.



CAUTION

In order to prevent human injury and/or equipment damage, do not disassemble, modify, or attempt to repair the device.

Safety Symbols

The following safety symbols might appear on the device and in the instruction manual:



General warning symbol

This symbol is used to alert the user to potential hazards. All safety messages that follow this symbol shall be obeyed to avoid possible harm or material damage.



High voltage warning symbol

This symbol is used to alert the user to potential electric shock hazards greater than 1000 volts. All safety messages that follow this symbol shall be obeyed to avoid possible harm.

Safety Signal Words

The following safety symbols might appear in the documentation of the device:



DANGER

The DANGER signal word indicates an imminently hazardous situation. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, will result in death or serious personal injury. Do not proceed beyond a DANGER signal word until the indicated conditions are fully understood and met.



WARNING

The WARNING signal word indicates a potentially hazardous situation. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in death or serious personal injury. Do not proceed beyond a WARNING signal word until the indicated conditions are fully understood and met.



CAUTION

The CAUTION signal word indicates a potentially hazardous situation. It calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, may result in minor or moderate personal injury, material damage, particularly to the product, destruction of part or all of the product, or loss of data. Do not proceed beyond a CAUTION signal word until the indicated conditions are fully understood and met.

Note Signal Words

The following note signal words could appear in the documentation of the device:

IMPORTANT

The IMPORTANT signal word calls attention to a note that provides important information, or information essential to the completion of a task.

NOTE

The NOTE signal word calls attention to an operating procedure, practice, or the like, which requires special attention. A note also denotes related parenthetical information that is useful, but not imperative.

TIP

The TIP signal word calls attention to a type of note that helps you apply the techniques and procedures described in the manual to your specific needs, or provides hints on how to effectively use the capabilities of the product.

Safety

Before turning on the device, verify that the correct safety precautions have been taken (see the following warnings). In addition, note the external markings on the device, which are described under “Safety Symbols.”

Warnings



WARNING

General Warnings

- Carefully read the instructions contained in this instruction manual prior to turning on the device.
- Keep this instruction manual in a safe place for further reference.

- Follow the installation and operation procedures.
- It is imperative to respect the safety warnings on the device and in this instruction manual.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment could be impaired.
- Do not install substitute parts or perform any unauthorized modification to the device.
- Service instructions, when applicable, are for trained service personnel. To avoid the risk of electric shock, do not perform any work on the device unless qualified to do so. For any problem or question regarding this device, contact Evident or an authorized Evident representative.
- Do not touch the connectors directly by hand. Otherwise, a malfunction or electric shock may result.
- Do not allow metallic or foreign objects to enter the device through connectors or any other openings. Otherwise, a malfunction or electric shock may result.

**WARNING****Electrical Warning**

The device must only be connected to a power source corresponding to the type indicated on the rating label.

**CAUTION**

If a non-approved power supply cord not dedicated to Evident products is used, Evident will not be able to ensure the electrical safety of the equipment.

Battery Precautions**CAUTION**

- Before disposing of a battery, check your local laws, rules, and regulations, and follow them accordingly.

- Transportation of lithium-ion batteries is regulated by the United Nations under the United Nations Recommendations on the Transport of Dangerous Goods. It is expected that governments, intergovernmental organizations, and other international organizations shall conform to the principles laid down in these regulations, thus contributing to worldwide harmonization in this field. These international organizations include the International Civil Aviation organization (ICAO), the International Air Transport Association (IATA), the International Maritime Organization (IMO), the US Department of Transportation (USDOT), Transport Canada (TC), and others. Please contact the transporter and confirm current regulations before transportation of lithium-ion batteries.
- For California (USA) only:
The device may contain a CR battery. The CR battery contains perchlorate material, and special handling may be required. Refer to <http://www.dtsc.ca.gov/hazardouswaste/perchlorate>.
- Do not open, crush, or perforate batteries; doing so could cause injury.
- Do not incinerate batteries. Keep batteries away from fire and other sources of extreme heat. Exposing batteries to extreme heat (over 80 °C) could result in an explosion or personal injury.
- Do not drop, hit, or otherwise abuse a battery, as doing so could expose the cell contents, which are corrosive and explosive.
- Do not short-circuit the battery terminals. A short circuit could cause injury and severe damage to a battery making it unusable.
- Do not expose a battery to moisture or rain; doing so could cause an electric shock.
- Only use an external charger approved by Evident to charge the batteries.
- Only use batteries supplied by Evident.
- Do not store batteries that have less than 40 % remaining charge. Recharge batteries to between 40 % and 80 % capacity before storing them.
- During storage, keep the battery charge between 40 % and 80 %.
- Do not leave batteries in the VersaMOUSE unit during device storage.

Regulations for Shipping Products with Lithium-Ion Batteries

IMPORTANT

When shipping a Li-ion battery or batteries, be sure to follow all local transportation regulations.



WARNING

Damaged batteries cannot be shipped through normal routes — DO NOT ship damaged batteries to Evident. Contact your local Evident representative or material disposal professionals.

Equipment Disposal

Before disposing of the VersaMOUSE, check your local laws, rules, and regulations, and follow them accordingly.

BC (Battery Charger - California, USA Community)



The BC marking indicates that this product has been tested and complies with the Appliance Efficiency Regulations as stated in the California Code of Regulations Title 20, Sections 1601 through 1608 for Battery Charger Systems. The internal battery charger within this device has been tested and certified pursuant to the California Energy Commission's (CEC) requirements; this device is listed on the online CEC's (T20) database.

CE (European Community)



This device complies with the requirements of directive 2014/30/EU concerning electromagnetic compatibility, directive 2014/35/EU concerning low voltage, and directive 2015/863 which amends 2011/65/EU concerning restriction of hazardous substances (RoHS). The CE marking is a declaration that this product conforms to all the applicable directives of the European Community.

UKCA (United Kingdom)



This device complies with the requirements of the Electromagnetic Compatibility Regulations 2016, the Electrical Equipment (Safety) Regulations 2016, and the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012. The UKCA marking indicates compliance with the above regulations.

RCM (Australia)



The regulatory compliance mark (RCM) label indicates that the product complies with all applicable standards, and has been registered with the Australian Communications and Media Authority (ACMA) for placement on the Australian market.

WEEE Directive



In accordance with European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE), this symbol indicates that the product must not be disposed of as unsorted municipal waste, but should be collected separately. Refer to your local Evident distributor for return and/or collection systems available in your country.



China RoHS

China RoHS is the term used by industry generally to describe legislation implemented by the Ministry of Information Industry (MII) in the People's Republic of China for the control of pollution by electronic information products (EIP).



The China RoHS mark indicates the product's Environment-Friendly Use Period (EFUP). The EFUP is defined as the number of years for which listed controlled substances will not leak or chemically deteriorate while in the product. The EFUP for the VersaMOUSE has been determined to be 15 years.

Note: The Environment-Friendly Use Period (EFUP) is not meant to be interpreted as the period assuring functionality and product performance.



电器电子产品有害
物质限制使用
标志

本标志是根据“电器电子产品有害物质限制使用管理办法”以及“电子电气产品有害物质限制使用标识要求”的规定，适用于在中国销售的电器电子产品上的电器电子产品有害物质使用限制标志。

（注意）电器电子产品有害物质限制使用标志内的数字为在正常的使用条件下有害物质等不泄漏的期限，不是保证产品功能性能的期间。

产品中有害物质的名称及含量

| 部件名称 | | 有害物质 | | | | | |
|------|------|----------------|----------------|----------------|------------------------|---------------|-----------------|
| | | 铅及其化合物 (Pb) | 汞及其化合物 (Hg) | 镉及其化合物 (Cd) | 六价铬及其化合物 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 主体 | 机构部件 | × | ○ | ○ | ○ | ○ | ○ |
| | 光学部件 | × | ○ | ○ | ○ | ○ | ○ |
| | 电气部件 | × | ○ | ○ | ○ | ○ | ○ |

产品中有害物质的名称及含量

| 部件名称 | 有害物质 | | | | | |
|--|----------------|----------------|----------------|------------------------|---------------|-----------------|
| | 铅及其化合物 (Pb) | 汞及其化合物 (Hg) | 镉及其化合物 (Cd) | 六价铬及其化合物 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 附件 | × | ○ | ○ | ○ | ○ | ○ |
| 本表格依据 SJ/T 11364 的规定编制。 ○：表示该有害物质在该部件所有均质材料中的含量均在 GB/T26572 规定的限量要求以下。 ×：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T26572 规定的限量要求。 | | | | | | |

Korea Communications Commission (KCC)



Seller and user shall be noticed that this equipment is suitable for electromagnetic equipment for office work (class A) and it can be used outside the home. This device complies with the EMC requirements of Korea.

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다 .

EMC Directive Compliance

This equipment generates and uses radio-frequency energy and, if not installed and used properly (that is, in strict accordance with the manufacturer's instructions), may cause interference. The VersaMOUSE has been tested and found to comply with the limits for an industrial device in accordance with the specifications of the EMC directive.

FCC (USA) Compliance

| |
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| NOTE |
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This product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. This product generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, might cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

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| IMPORTANT |
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Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

FCC Supplier's Declaration of Conformity

Hereby declares that the product,

Product name: VersaMOUSE

Model: VersaMOUSE-MR/VersaMOUSE-CW

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107 and Section 15.109.

Supplementary information:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Responsible party name:

EVIDENT CANADA

Address:

3415, Rue Pierre-Ardouin Québec (QC) G1P 0B3 Canada

Phone number:

+1 781-419-3900

ICES-001 (Canada) Compliance

This Class A digital apparatus complies with Canadian ICES-001.

Cet appareil numérique de la classe A est conforme à la norme NMB-001 du Canada.

Warranty Information

Evident guarantees your Evident product to be free from defects in materials and workmanship for a specific period, and in accordance with conditions specified in the Terms and Conditions available at <https://www.olympus-ims.com/en/terms/>.

The Evident warranty only covers equipment that has been used in a proper manner, as described in this instruction manual, and that has not been subjected to excessive abuse, attempted unauthorized repair, or modification.

Inspect materials thoroughly on receipt for evidence of external or internal damage that might have occurred during shipment. Immediately notify the carrier making the delivery of any damage, because the carrier is normally liable for damage during shipment. Retain packing materials, waybills, and other shipping documentation needed in order to file a damage claim. After notifying the carrier, contact Evident for assistance with the damage claim and equipment replacement, if necessary.

This instruction manual explains the proper operation of your Evident product. The information contained herein is intended solely as a teaching aid, and shall not be used in any particular application without independent testing and/or verification by the operator or the supervisor. Such independent verification of procedures becomes increasingly important as the criticality of the application increases. For this reason, Evident makes no warranty, expressed or implied, that the techniques, examples, or procedures described herein are consistent with industry standards, nor that they meet the requirements of any particular application.

Evident reserves the right to modify any product without incurring the responsibility for modifying previously manufactured products.

Technical Support

Evident is firmly committed to providing the highest level of customer service and product support. If you experience any difficulties when using our product, or if it fails to operate as described in the documentation, first consult the user's manual, and then, if you are still in need of assistance, contact our After-Sales Service. To locate the nearest service center, visit the Service Centers page on the Evident Scientific Web site.

Introduction

This manual contains instructions on assembling, installing, and operating the VersaMOUSE scanner (see Figure i-1 on page 19).

The VersaMOUSE is a scanner designed for linear encoded scans with a phased array probe. The integrated indexing button makes it ideal for 2-D mapping applications such as CFRP flat panel and corrosion inspections.

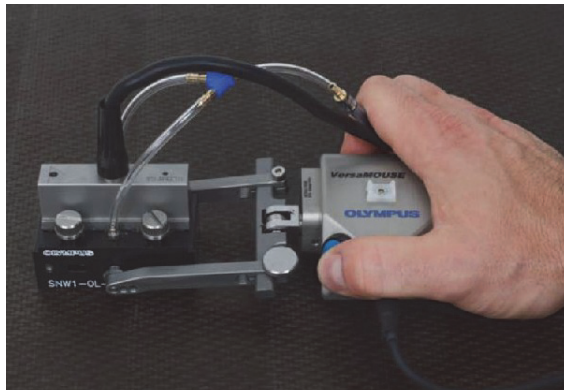


Figure i-1 VersaMOUSE scanner with the probe installed

To help users understand and safely use the scanner, this manual provides the following subject matter:

- An overview of main components
- Operation
- Maintenance
- Specifications

1. Overview

The VersaMOUSE is designed for ease of adjustment and quick exchange of different probe types and sizes. The contents of a standard case are shown in Figure 1-1 on page 21.

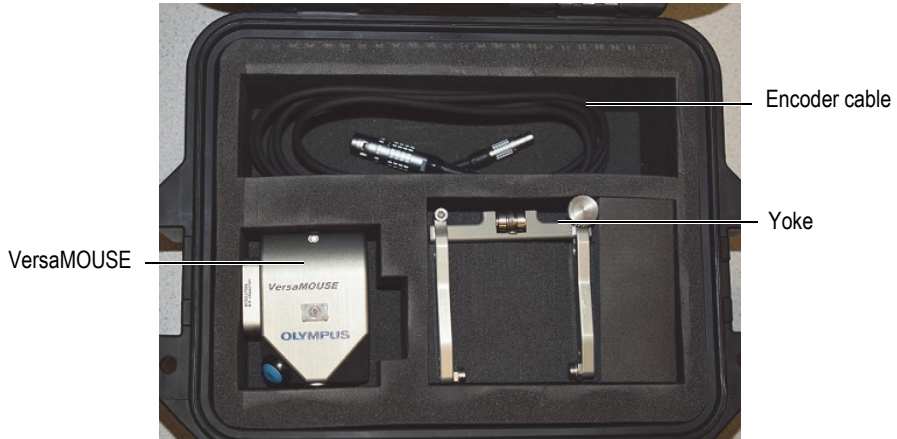


Figure 1-1 Case contents

The VersaMOUSE's main components are shown in Figure 1-2 on page 22.

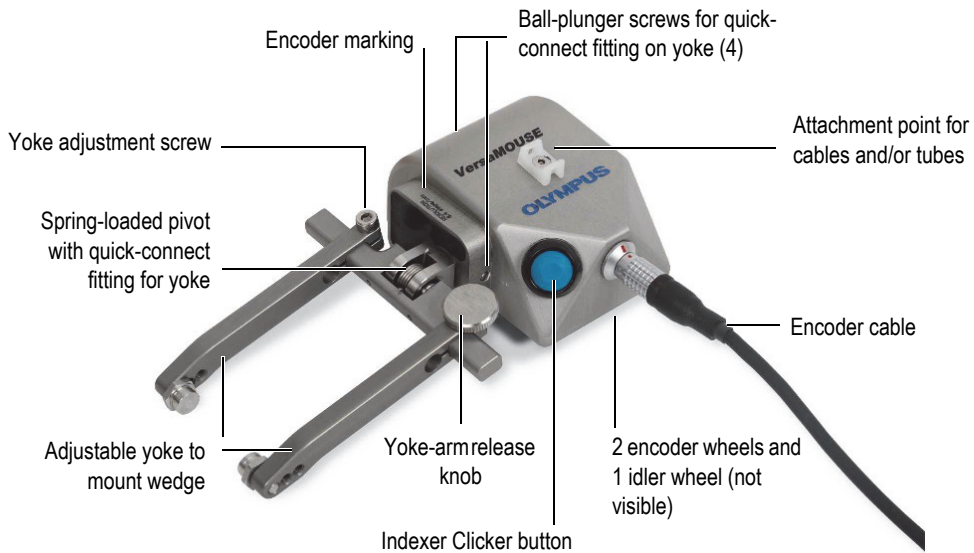


Figure 1-2 VersaMOUSE components

Adjustable yoke

Consists of two movable arms that hold the wedge, and a spring-loaded pivot.

Yoke adjustment screw

Requires an Allen key. Set it so that it centers the wedge on the pivot point.

Yoke-arm release knob

Use your finger to tighten or loosen the knob for quick wedge installation or removal.

Spring-loaded pivot

Exerts a constant downward force on the wedge, pressing it against the inspection surface. Mount the pivot on one of the quick connections provided. The most common location is on the side. A second possible location is at 90°, opposite the encoder cable.

Ball-plunger screws (quick connect)

Two screws are located on each quick connect fitting. Adjust these screws for optimum retention of the mounting pin on the spring-loaded pivot.

Encoder cable

Must be connected in the correct orientation following the alignment marks.

Wheels

The encoder-wheel revolutions track the distance traveled by the VersaMOUSE during inspection scans. The wheels on the VersaMOUSE are interchangeable (see Figure 1-3 on page 23). Magnetic wheels (optional kit, P/N: VersaMOUSE-A-MagWheel [U8775247]) can be installed for use on ferromagnetic surfaces. For more information about wheels, see “Maintenance” on page 31.

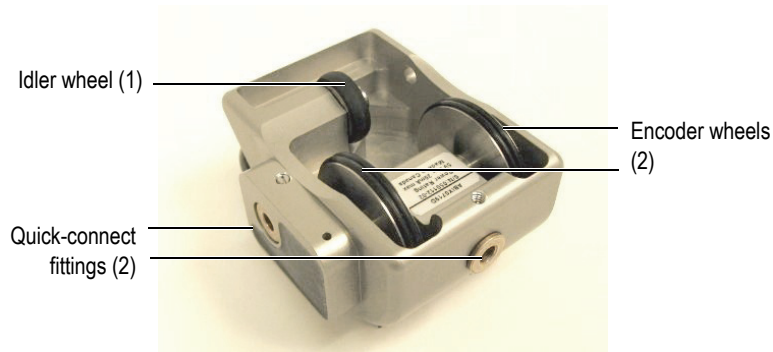


Figure 1-3 Encoder and idler wheels

Indexer Clicker **button**

Used to send an indexing signal to the instrument, which allows you to perform 2-D mapping inspections. For more information about the Indexer Clicker, see “Operation” on page 25.

2. Operation

This chapter explains basic operation of the VersaMOUSE.

2.1 Performing an Inspection

To perform a one-line inspection

1. Mount the probe on the wedge (see Figure 2-1 on page 25). Make sure that sufficient couplant is applied between the probe face and wedge.

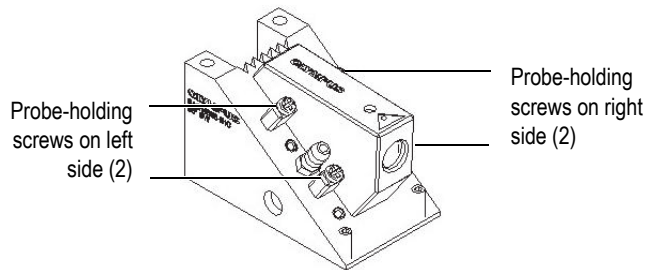


Figure 2-1 Probe and screws on wedge



CAUTION

To avoid damaging the wedge, do not overtighten the screws.

2. Install the wedge on the yoke using the yoke-arm release knob.
3. Install the yoke on the desired quick-connect fitting.
4. Connect the encoder cable to the VersaMOUSE (align the connector marks), and connect the other end of the cable to the instrument.
5. Connect the probe to the instrument.
6. Connect the couplant tubes and start the couplant flow.
7. Set the encoder-resolution parameters on the instrument (see “Setting up the Scanner on the OmniScan” on page 27).
8. Hold the VersaMOUSE securely with one hand, and the wedge with the other hand for maximum stability, and then move the unit along the inspection path in a smooth, continuous motion (see Figure 2-2 on page 26).

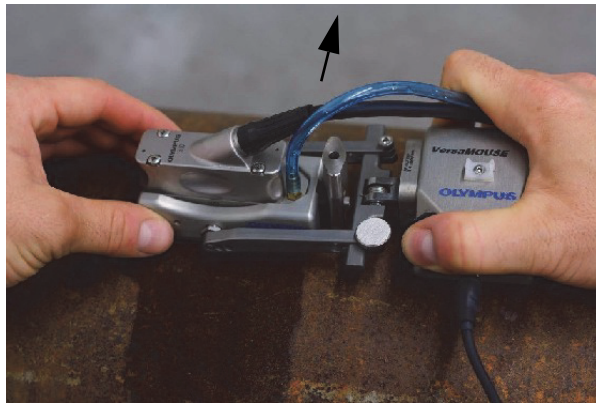


Figure 2-2 VersaMOUSE inspection sweep

To perform a 2-D mapping inspection

1. Make sure that the Indexer Clicker is set up on the OmniScan (see “Setting up the Scanner on the OmniScan” on page 27).
2. At the end of the inspection scan (see the procedure above), completely stop all motion, and then lift the VersaMOUSE to the starting point of the next inspection sweep.

IMPORTANT

If the VersaMOUSE is lifted off the surface while in motion, the encoder wheels might spin freely and give a false position reading. You must stop motion before lifting the unit off the surface.

3. Press the blue Indexer Clicker button once (release the button), and then start the next inspection sweep.
Repeat this process until all necessary sweeps are completed.

2.2 Setting up the Scanner on the OmniScan

To set up the scanner on the OmniScan

- ◆ In the OmniScan software, select **Scan > Inspection > Type = Raster Scan**.

Scanning modes

Two modes are available when using a scanner with an Indexer Clicker (OmniScan MXU 3.1 and higher):

1. Unidirectional Mode

There are two principal advantages to performing a unidirectional scan (see Figure 2-3 on page 28).

- a) The first advantage is that the same starting reference is retained for each scan, because the encoder in the scan direction is always reset to the origin value each time the clicker is pressed. This improves the precision of the position in the scan direction, because the error from the encoder-wheel motion during the index is eliminated.
- b) The second advantage is that the part is always scanned in the same direction. This reduces the scan-axis position error due to mechanical backlash between the scanner and the probe holder.

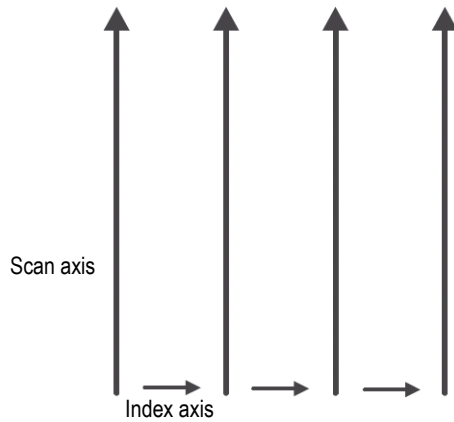


Figure 2-3 Unidirectional scan

2. Bidirectional Mode

The main advantage of a bidirectional scan is the limited back-and-forth movement of the scanner. This way, faster mapping can be achieved (see Figure 2-4 on page 28).

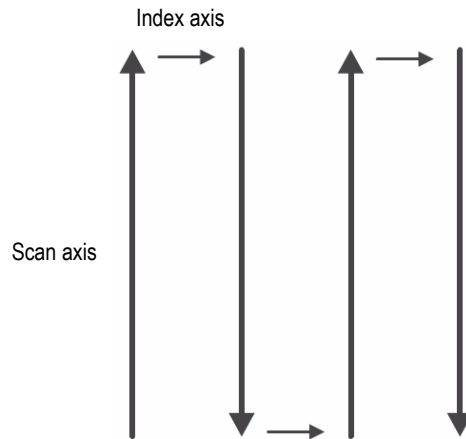


Figure 2-4 Bidirectional scan

To set up the Indexer Clicker in unidirectional mode

1. In the OmniScan MXU software, set the scanner encoder as encoder 1 (**Scan > Encoder > Encoder = 1**), and then set the encoder type to **Quad (Scan > Encoder > Type = Quad)**. Set the encoder resolution (**Scan > Encoder > Resolution = 8.4**) in steps/mm.
2. Set the Indexer Clicker as encoder 2 (**Scan > Encoder > Encoder = 2**), and then set the encoder type to **Clicker + Preset (Scan > Encoder > Type = Clicker + Preset)**. Each time the clicker is pressed, the position on the corresponding axis is incremented according to the Resolution parameter value (which as already been set from the **Scan > Encoder > Resolution** menu) in mm/step, and the position of encoder 1 is reset to the **Origin** parameter value (which is set from the **Scan > Encoder > Origin** menu).
3. Set the C-scan dimensions.

To set up the Indexer Clicker in bidirectional mode

1. In the OmniScan MXU software, set the scanner encoder as encoder 1 (**Scan > Encoder > Encoder = 1**), and then set the encoder type to **Quad (Scan > Encoder > Type = Quad)**. Set the encoder resolution (**Scan > Encoder > Resolution = 8.4**) in steps/mm.
2. Set the Indexer Clicker as encoder 2 (**Scan > Encoder > Encoder = 2**), and then set the encoder type to **Clicker (Scan > Encoder > Type = Clicker)**. Each time the Indexer Clicker is pressed, the position on the corresponding axis is incremented according to the **Resolution** parameter value (which as already been set from the **Scan > Encoder > Resolution** menu) in mm/step.
3. Set the C-scan dimensions.

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| IMPORTANT |
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When you want to scan with an overlap between scan lines, you need to use Linear at 0° mode (**Focal Law > Configuration > Law Config. = Linear at 0°**).

If an overlap is not required, or if you want to use an angle other than 0°, you need to use Linear mode (**Focal Law > Configuration > Law Config. = Linear**), and you must set the encoder resolution linked to the Indexer Clicker (**Scan > Encoder > Resolution**) to equal the index value. The index value is available at **Scan > Area > Index Start** or **Index End** (see Figure 2-5 on page 30).

| | |
|---------------------|---------------------------------|
| 0.00 | 245.95 |
| Index Start (mm) | Index End (mm) Δ61.49 |

Figure 2-5 Index value in OmniScan

Refer to the *OmniScan MXU Software User's Manual* (DMTA-20018-01EN [U8778404]) for more information.

3. Maintenance

The service requirements of the VersaMOUSE are minimal. The standard rubber-covered wheels can be changed to optional magnetic wheels for use on ferromagnetic surfaces. Also, the quick-disconnect fitting on the yoke might require adjustment for ease of assembly. Depending on operating conditions, the VersaMOUSE parts might need periodic cleaning.

3.1 Changing the Wheels or Replacing Rubber O-rings

Two wheels are mounted on a single shaft that connects to the encoder. The shaft and wheels are shown in a disassembled state in Figure 3-1 on page 31.

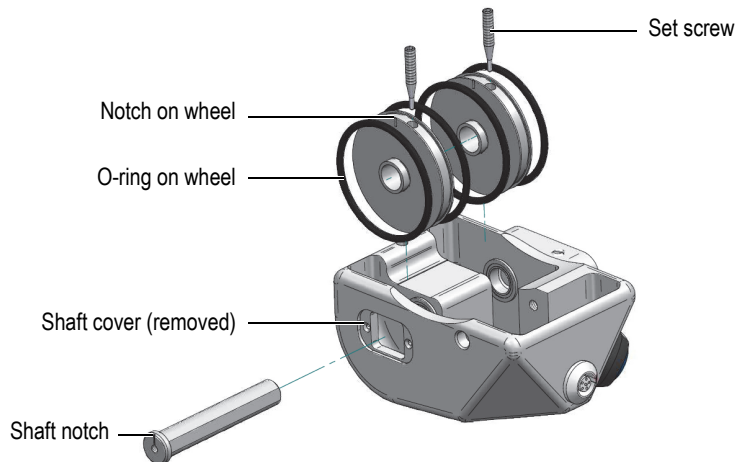


Figure 3-1 Encoder shaft and wheels

To change the encoder wheels

1. Remove the shaft cover using an Allen key (see Figure 3-2 on page 32).



Figure 3-2 Encoder-shaft cover

2. Carefully pull the O-rings away from the wheel groove to expose the set screws (see Figure 3-1 on page 31).
3. Loosen the set screws on both wheels using an Allen key.
4. Attach the puller screw (supplied with the optional magnetic kit) to the end of the shaft, and use it to pull the shaft out of the VersaMOUSE (see Figure 3-3 on page 32).



Figure 3-3 Pulling the shaft out of the VersaMOUSE

5. Remove the puller screw from the shaft.
6. Remove the wheels, and change the rubber O-rings if necessary.

- Align the notches on the shaft with the notches on the new wheel, and then, starting with the wheel closest to the shaft cover, carefully slide the shaft through each new wheel. Make sure that the notches are facing the same direction, and that the shaft is fully inserted and properly seated.
- Tighten the set screws on both wheels, making sure that the set screws are fully extended against the flat on the shaft and securely lock each wheel. Always make sure the notches are aligned when tightening the screws.
- Reinstall the shaft cover.

To change the idler wheel

- Loosen and remove the screw on the end of the idler-wheel shaft, using an Allen key (see Figure 3-4 on page 33).

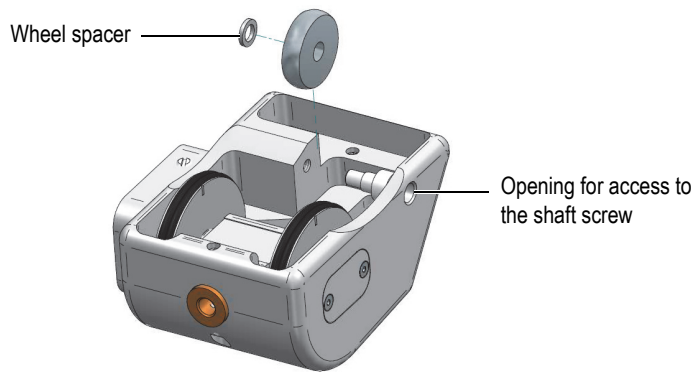


Figure 3-4 Idler wheel

- Pull out the wheel and spacer.
- Press the plastic bushing (spacer) into the magnetized wheel, then slide the shaft screw through the wheel from the other side (see Figure 3-5 on page 33).

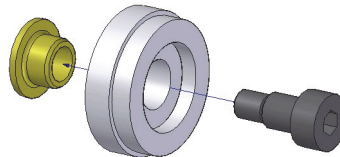


Figure 3-5 Idler-wheel assembly detail

4. Tighten the shaft screw to secure the assembly into place.

3.2 Adjusting the Ball-Plunger Screws on the Quick-Connect Fittings

The ball-plunger screws on the yoke's quick-connect fittings might require adjustment to make it easier to insert or release the yoke.

To adjust the ball-plunger screws on the quick-connect fittings

1. Locate the ball-plunger screws on the quick-connect fitting.

On the quick-release fitting located on the side of the scanner, one screw is below the opening, and the other is offset by 90°. On the second quick-release fitting, the screws are directly opposed at 180° (see Figure 3-6 on page 34).

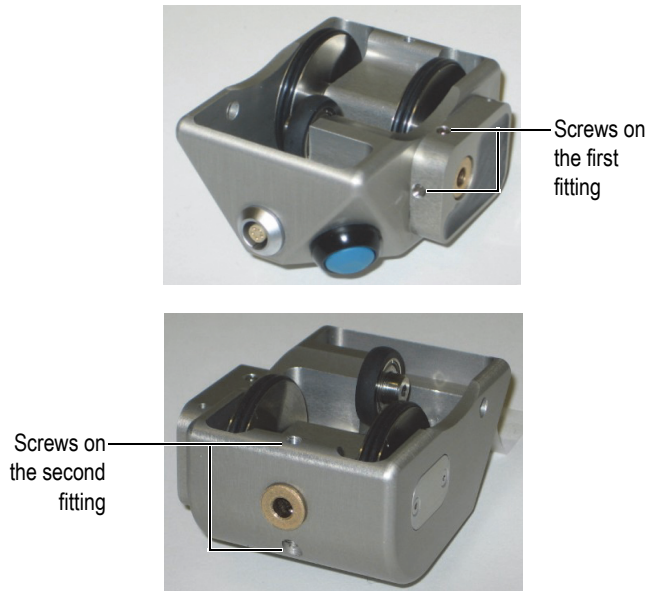


Figure 3-6 Adjustment screws for quick-release fittings

2. Slide the yoke shaft into the opening, and check the resistance as the yoke shaft slides past the ball plungers.

3. Adjust the ball plungers to obtain the desired resistance and locking force. You can also look into the quick-connect fitting hole to make sure that the two ball plungers are engaged at approximately the same distance inwards toward the center.
4. Make sure that the screws have sufficient resistance on the threads to prevent accidental loosening.
If necessary, remove the screw and apply Vibra-TITE or a similar thread locker, and then readjust the screw.

3.3 Unit Cleaning

The VersaMOUSE's external surfaces can be cleaned when needed.

To clean the unit

1. Ensure the unit is turned off by removing the source of power.
2. Disconnect all cables.
3. To bring the unit back to its original finish, clean the housing with a soft cloth.
4. To remove persistent stains, use a damp cloth with a soft, soapy solution. Do not use abrasive products or powerful solvents that could damage the finish.
5. Wait until the unit dries completely before reconnecting the cables.

4. Specifications

This chapter contains general specifications for the VersaMOUSE.

Table 1 General specifications

| Parameter | Value |
|------------------------|---|
| Dimensions and weight | See Table 2 on page 38. |
| Encoder | Type: Quadrature |
| | Resolution: 8.4 steps/mm \pm 0.15 steps/mm (Encoder calibration is recommended for every setup.) |
| | Waterproof IP65 |
| | Pinout: see Figure 4-1 on page 38. |
| | Power rating: 5 VDC, 25 mA maximum |
| | Frequency: 0 kHz to 1 kHz (for a maximum displacement velocity of 10 cm/s [4 in./s]) |
| Outdoor use | Yes |
| Altitude | Up to 2000 m |
| Operating temperature | -10 °C to 50 °C. |
| Storage temperature | -20 °C to 60 °C. |
| Relative humidity (RH) | Max. 85 %, noncondensing |
| Wet locations | Yes |
| Pollution level | 1 |
| IP rating | Waterproof—designed for IP 65 |

Table 2 Dimensions and weight

| Probe-holder position | Length in scan axis (mm) | Width (mm) | Height (mm) | Weight (kg) |
|-----------------------|--------------------------|------------|-------------|-------------|
| Front | 170 | 80 | 42 | 0.4 |
| Side | 80 | 152 | 42 | 0.4 |

Figure 4-1 on page 38 contains the pinout for the LEMO connector used on the OmniScan MX2 model.

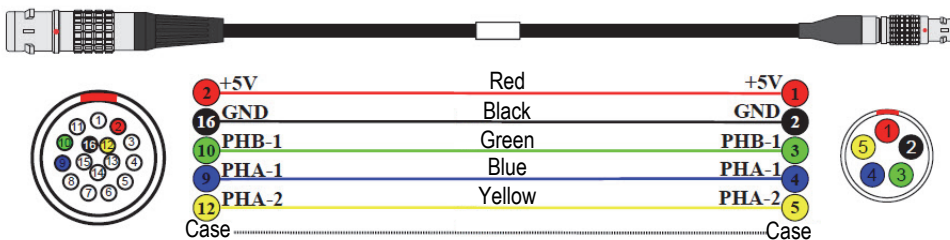


Figure 4-1 Pinout for EWIX1414 cable

Appendix: Spare and Optional Parts

This section provides information about the spare parts that are available for the VersaMOUSE scanner. Standard parts are shown in Figure 4-2 on page 40 and listed in Table 3 on page 40. Optional parts are listed in Table 4 on page 41 and the required encoder cable adaptors are listed in Table 5 on page 42.

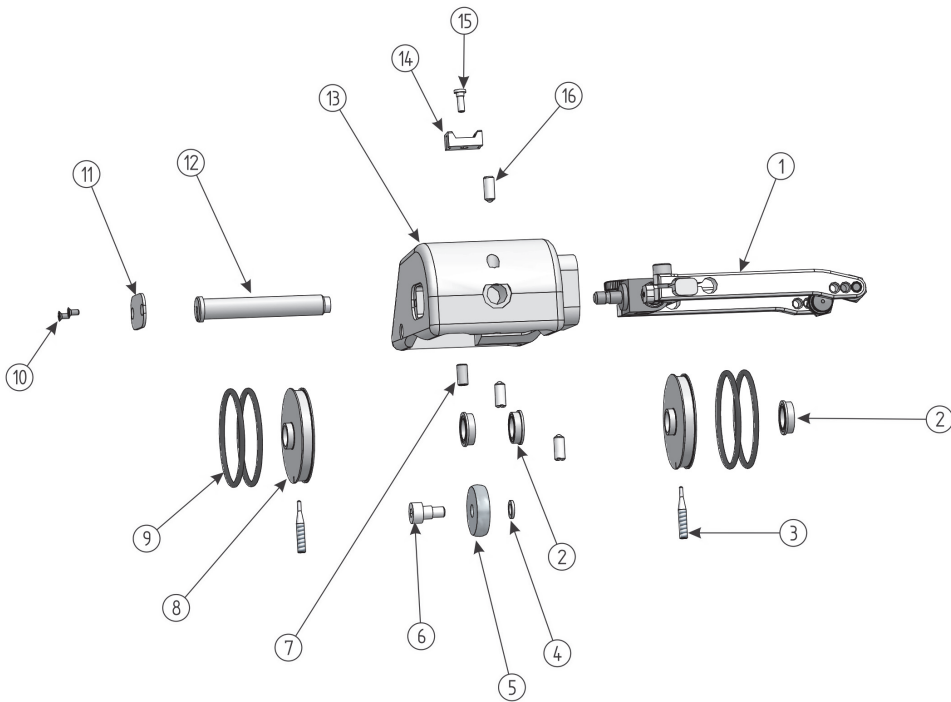


Figure 4-2 Exploded view

Table 3 Spare parts

| Drawing number | Qty ^a | Part number | Part description |
|----------------|------------------|-------------|---|
| 1 | 1 | U8775208 | Adjustable fork |
| 2 | 3 | U8909086 | Flange bearing 8 mm ID, 12 mm OD, 3.5 mm wide |
| 3 | 2 | Q8300921 | Locking screw |
| 4 | 1 | Q8300916 | Stainless steel M4 washer 7 mm OD, 1 mm wide |
| 5 | 1 | Q8300912 | Urethane mold bearing 20 mm OD |
| 6 | 1 | Q8300918 | M4 stainless steel shoulder screw 5 mm OD × 4 mm long |

Table 3 Spare parts(continued)

| Drawing number | Qty ^a | Part number | Part description |
|----------------|------------------|-------------|--|
| 7 | 1 | Q8300917 | Hexagonal s-set M4 × 8 mm stainless steel screw |
| 8 | 2 | Q8300923 | Wheel front |
| 9 | 4 | Q8300915 | Black o-ring 34 mm ID, 2 mm wide |
| 10 | 2 | U8909929 | M2 × 4 mm Phillips flathead stainless steel screw |
| 11 | 1 | Q8300926 | Protection plate |
| 12 | 1 | Q8300928 | Shaft with magnet |
| 13 | 1 | Q8300925 | VersaMOUSE body |
| 14 | 1 | Q1500156 | Tie-wrap support screw #4 |
| 15 | 1 | Q8300922 | M2.5 × 6 mm hexagonal stainless steel screw (modified) |
| 16 | 4 | Q8300914 | M4 ball plunger w/o lock |

- a. This number represents the typical quantity initially included with in your scanner package.

A magnetic-wheel kit is available for maximum adherence of the wheels on ferromagnetic surfaces and improved stability. A cable adaptor for the TomoScan FOCUS LT or OmniScan MX is available, and an additional adjustable fork can also be ordered.

Table 4 Optional parts

| Part | Part number | Description |
|---------------------------|-------------|--|
| VersaMOUSE-A-MagWheel | U8775247 | Magnetic-wheel kit |
| HS-A-FORK | U8775208 | Replacement adjustable fork |
| VersaMouse-SP-Lcable-2.5m | U8775324 | Replacement encoder cable, 2.5 m long (for OmniScan MX2 and SX models) |

VersaMOUSE scanners sold after July 2013 come standard with the LEMO connector, which is compatible with the OmniScan MX2 and SX instruments. For use with a different instrument, an optional adaptor is required (see Table 5 on page 42).

Table 5 Required encoder cable adaptors

| Scanner Connector | Instrument | | |
|---------------------------------|---------------|--------------------------------|-------------------|
| | OmniScan MX | OmniScan MX2, SX, and FOCUS PX | TomoScan FOCUS LT |
| LEMO (from July 2013 onward) | P/N: U8780329 | — | P/N: U8769010 |
| DE15 (Prior to July 2013) | — | P/N: U8775201 | P/N: U8767107 |

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