



Wing Scanner

User's Manual

DMTA019-01EN — Rev. E
November 2014

This instruction manual contains essential information on how to use this Olympus 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.

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Labels and Symbols

Safety-related labels and symbols are attached to the Wing scanner at the locations shown in Figure i-1 on page 1. If any or all of the labels or symbols are missing or illegible, please contact Olympus.

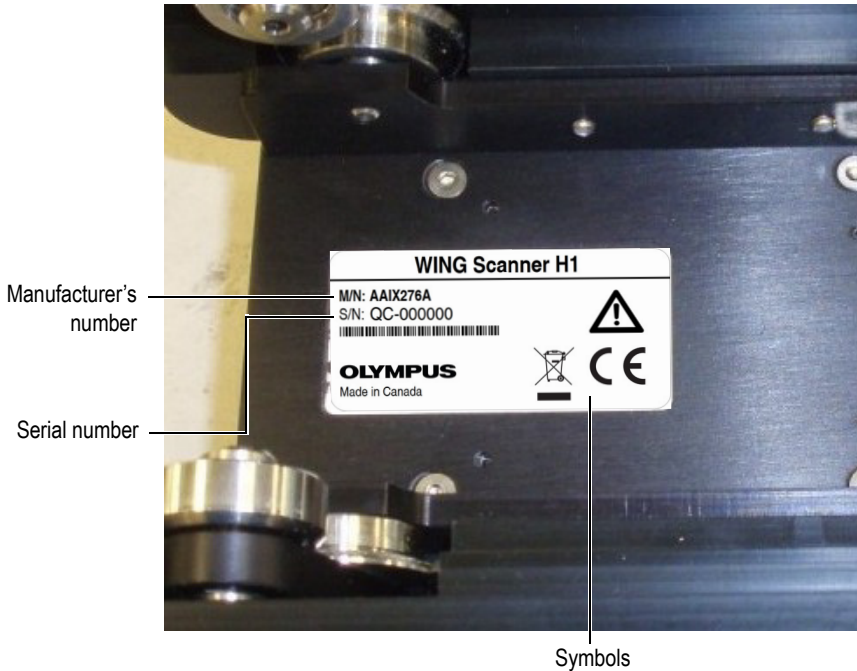





Figure i-1 Label location

Table 1 Content of the rating label

Content	
	The CE marking is a declaration that this product conforms to all the applicable directives of the European Community. See the <i>Declaration of Conformity</i> for details. Contact your Olympus representative for more information.
	The WEEE symbol indicates that the product must not be disposed of as unsorted municipal waste, but should be collected separately.
	The warning symbol indicates that the user must read the user's manual in order to find out the nature of the potential hazards and any actions to avoid them.
M/N	The manufacturer's number is an eight (8) digit number.
S/N	The serial number is an eight (8) digit number.

Important Information — Please Read Before Use

Intended Use

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



WARNING

Do not use the Wing scanner 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 Olympus 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 instrument. However, the operating principles remain the same.

Instrument Compatibility

The Wing scanner is compatible with the ancillary equipment listed in Table 2 on page 4.

**CAUTION**

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

**CAUTION**

The user is responsible for ensuring that no scanner parts have come loose or are lost in critical mechanisms being inspected or maintained. This is especially the case for aircraft. Use proper inspection before and after use to prevent foreign object debris (FOD) damage.

Table 2 Ancillary equipment

Equipment	Description
OmniScan PA and FOCUS LT	Several types of phased array instrument model can be used (may require one of the encoder cable adaptors listed below).
Phased array probe and wedge	Several models used.

Table 2 Ancillary equipment (continued)

Equipment	Description
OMNI-A2-ADP20 [U8775201]	Scanner interface adaptor to connect scanner encoder cables with DE15 connector to OmniScan MX2 with LEMO connector scanner interface.
OMNI-A-ADP27 [U8780329]	Scanner interface adaptor to connect scanner encoder cables with LEMO connector to OmniScan MX with DE15 connector scanner interface.

Repair and Modification

The Wing scanner contains user-serviceable parts. Refer to the maintenance procedures for more information about authorized repairs and maintenance.



CAUTION

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

Presence of Visual Interferences or Phantom Spots

IMPORTANT

Presence of strong electromagnetic interference could generate noise in the signal that is visually detectable. This interference is temporary and random in comparison with the signals generated by the physical features of the inspected part, which are coherent and persistent. This interference depends greatly on the nature, strength, and proximity of the electromagnetic source and it will only disappear when the source of the noise is no longer emitting signals.

Safety Symbols

The following safety symbols might appear on the instrument 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 instrument:



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 safety symbols could appear in the documentation of the instrument:

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

Warnings



WARNING

General Warnings

- Carefully read the instructions contained in this instruction manual prior to turning on the instrument.
- 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 instrument 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 instrument.

Equipment Disposal

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

CE (European Community)



This device complies with the requirements of both directive 2004/108/EC concerning electromagnetic compatibility and directive 2006/95/EC concerning low voltage. The CE marking indicates compliance with the above directives.

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 Olympus distributor for return and/or collection systems available in your country.

Warranty Information

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

The Olympus 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 Olympus for assistance with the damage claim and equipment replacement, if necessary.

This instruction manual explains the proper operation of your Olympus 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, Olympus 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.

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

Technical Support

Olympus 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 at: <http://www.olympus-ims.com>.

Introduction

This manual contains instructions on assembling, installing, and operating the Wing scanner. The Wing scanner is a 2-axis scanner for manual ultrasonic inspections. One scanning axis is flexible and follows the contour of the part being inspected. The scanner applications include airplane fuselages and plates.

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

- An overview of main components
- Scanner assembly and installation
- Operation
- Specifications and spare parts

1. Overview

This chapter provides an overview of the scanner components. An encoder module travels along a flexible rail that has vacuum cups to hold the rail down against the surface being inspected.

The Wing scanner is available in two configurations. The Wing scanner V model uses a rail that has vacuum cups connected to a vacuum generator. The Wing scanner H model uses manual vacuum cups with hand levers. The hand levers are pulled down to generate the vacuum (see Figure 1-1 on page 13). More scanner-component details are shown in Figure 1-2 on page 14.

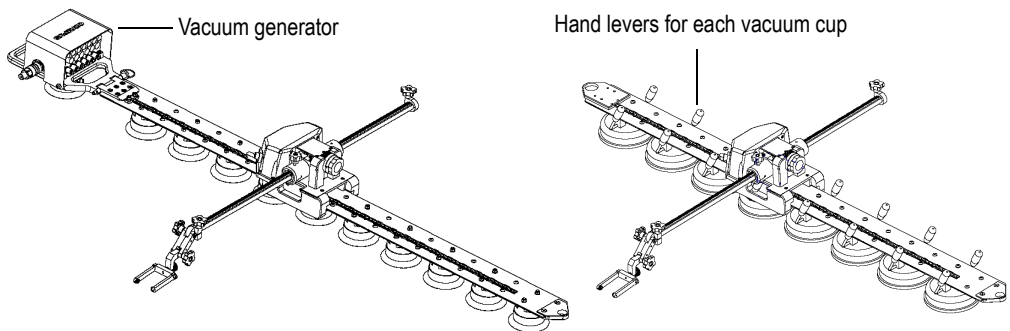


Figure 1-1 Two configurations: Wing scanner V (*left*) and Wing scanner H (*right*)

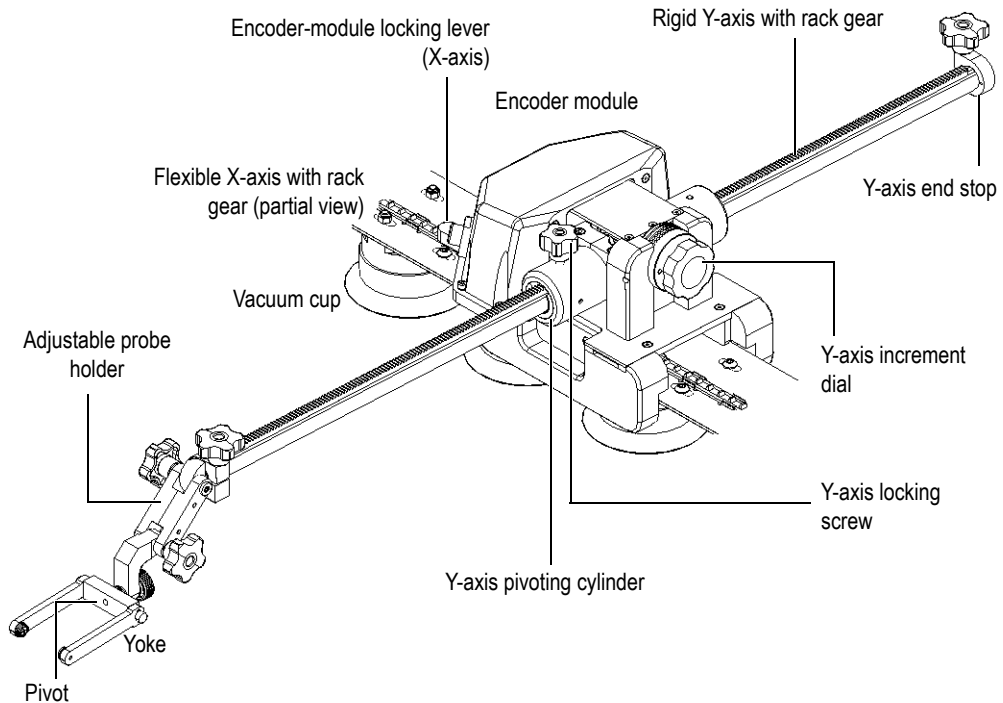


Figure 1-2 Scanner components

The Wing scanner is composed of three main parts: the flexible X-axis, the rigid Y-axis, and the encoder module.

Flexible X-axis

The flexible X-axis consists of a flexible rail with vacuum cups. The rail is equipped with a loop to secure the scanner against accidental falls.

Depending on the type of vacuum cup used, the vacuum is either created by a vacuum generator, located at one end of the flexible X-axis, or by a hand lever that is individually engaged for each vacuum cup.

If a vacuum generator is used, it must be connected to a compressed-air supply.

Rigid Y-axis

A rigid shaft with a rack gear passes through a pivoting cylinder in the encoder module. The Y-axis provides probe positioning perpendicular to the flexible rail. The Y-axis can be indexed with an increment dial.

A probe-alignment device is attached at one end of the rigid Y-axis. It is equipped with a pivot designed to hold the probe holder. The axis stroke is blocked at the other end of the shaft by an end stop (collar).

Encoder module

The encoder module is equipped with eight wheels that travel along the edges of the flexible rail. The wheels are spring-loaded to eliminate any mechanical backlash between the holder and the rail. The encoder module includes the encoders, which are used to provide accurate position information, and the Y-axis guide, which pivots to help the probe assembly follow the surface being inspected.

Two locking devices on the encoder module keep the axes from moving on their own; inadvertent movement could cause damage to the scanner, probe, or the part being inspected, and could also lead to injury. The following paragraphs describe these devices.

Y-axis locking screw

The Y-axis locking screw is located on top of the encoder module. When tightened, it locks the Y-axis rigidly into place.

Encoder-module locking lever

This locking lever is used to prevent movement of the encoder module on the rail when necessary. It is also designed to prevent the holder from sliding when the scanner is mounted in a vertical position, or while it is being either mounted on or removed from the part being inspected. The locking lever is located on the securing-loop side of the encoder module.

The locking force can be adjusted by tightening or loosening the screw at the bottom of the encoder module (see Figure 1-3 on page 16).

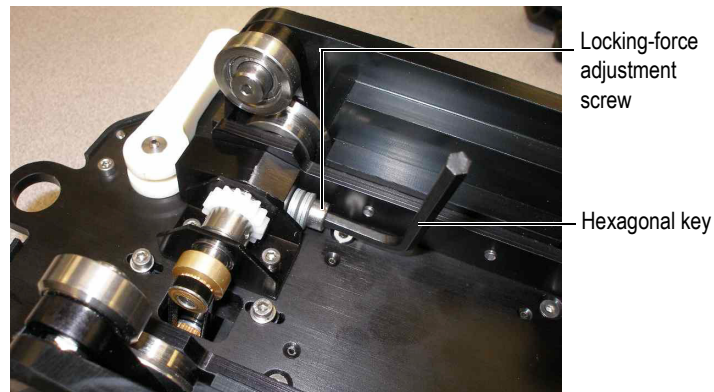


Figure 1-3 Adjustment of the locking lever

The manual scanner is supplied with a case (for storage and transport) that contains all the scanner parts (see Figure 1-4 on page 17). Compartments have been provided for additional accessories (not included), such as probes, probe holders, cables, and hoses.

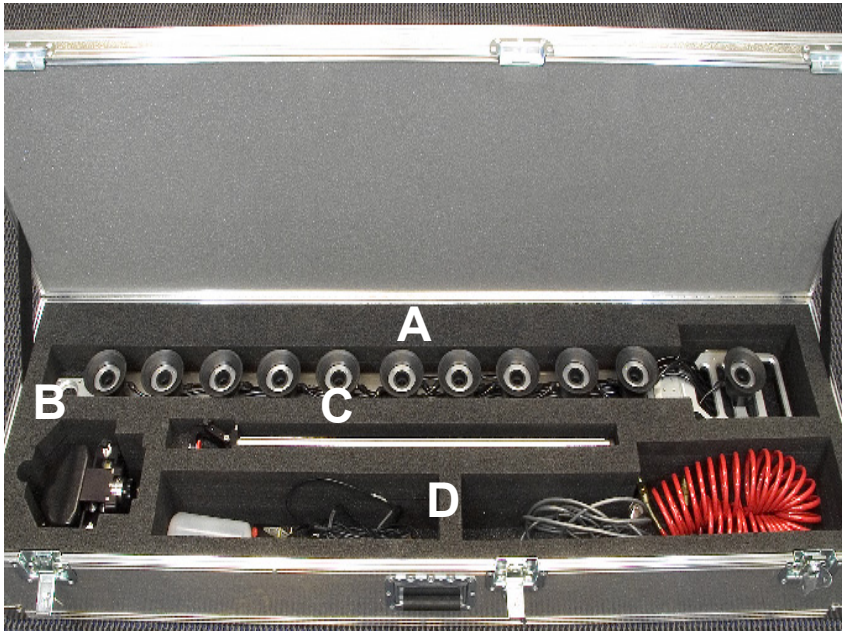


Figure 1-4 The case used for storage and transport

A – The flexible X-axis

B – The encoder module

C – The rigid Y-axis

D – The compartments for additional accessories (not included)

2. Assembling and Installing the Scanner

This chapter explains how to assemble the Wing scanner, and install it for an inspection.

2.1 Assembling the Scanner



WARNING

When moving the Wing scanner and changing the flexible axis' location, make sure that the lock is engaged. Failure to do so may result in serious injury or death.

The Wing scanner V and Wing scanner H models differ in how they are prepared for an inspection:

- The Wing scanner V model (with a vacuum generator) can be completely preassembled prior to installation on the inspected part.
- For the Wing scanner H model (with manual vacuum cups), the flexible rail must first be installed at the desired inspection location on the part surface (with the manual vacuum cups engaged) before the encoder module can be installed on the rail.

To assemble the scanner

1. Remove the flexible rail (X-axis) from the case.
2. Place the flexible rail on a clean, flat surface with the vacuum cups facing downward.

3. If you are using the Wing scanner H manual vacuum cup model, position the flexible axis on the desired inspection location, and then pull the hand levers of each vacuum cup down toward the mounting surface (see Figure 2-1 on page 20).

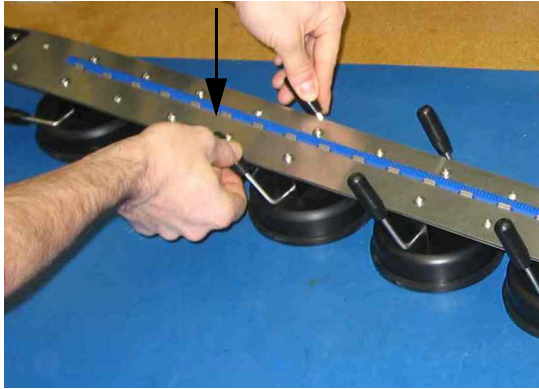


Figure 2-1 Pulling down the hand levers on a model with manual vacuum cups

4. Remove the encoder module from the case.
5. Position the encoder module against the end of the flexible X-axis in the orientation shown in Figure 2-2 on page 20.

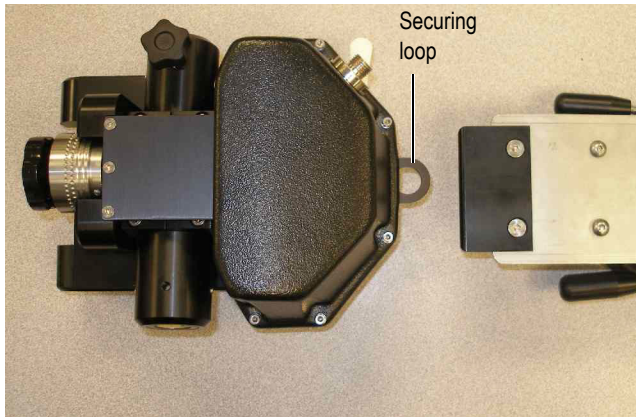
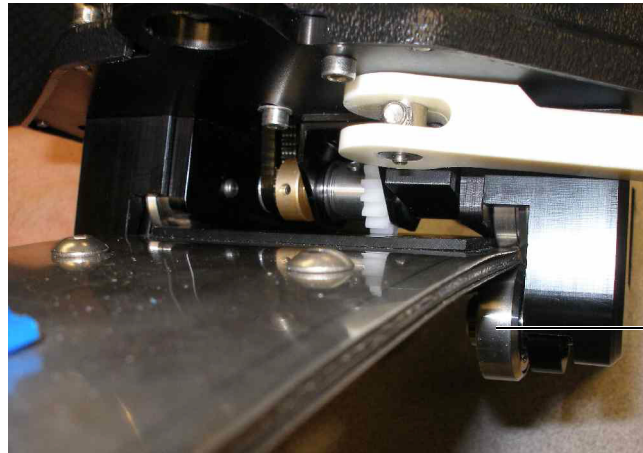


Figure 2-2 The encoder module

6. Insert the flexible axis rail between the encoder-holder guide wheels (see Figure 2-3 on page 21).



Spring-loaded guide wheels that can be pulled down if necessary

Figure 2-3 The flexible X-axis rail inserted between the encoder module's first set of wheels

7. Slide the encoder module onto the rail.
If necessary, pull the two spring-loaded guide wheels downward, and then slide the rail past the second pair of guide wheels (see Figure 2-3 on page 21).
8. Remove the rigid Y-axis from the case.
9. Remove the Y-axis end stop from the rigid Y-axis (see Figure 2-4 on page 21).

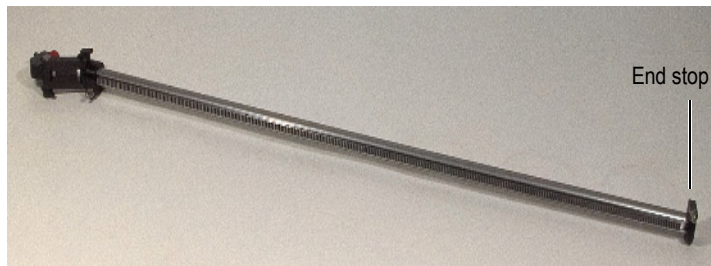


Figure 2-4 The rigid Y-axis end stop

10. Loosen the encoder module's Y-axis locking screw until it is fully raised.
11. Slide the Y-axis into the encoder module.
The Y-axis can be installed on either side of the encoder module, depending on your inspection requirements (see Figure 2-5 on page 22).

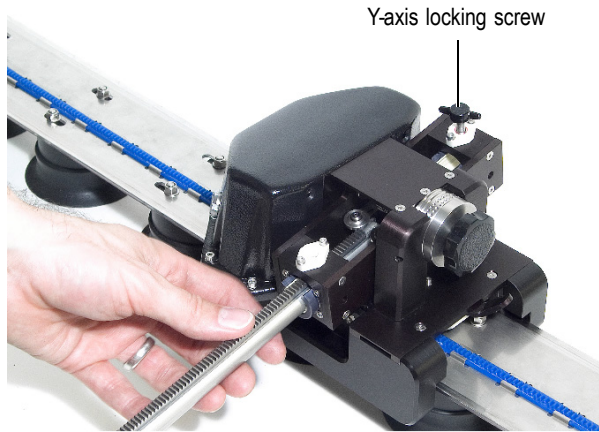


Figure 2-5 Inserting the Y-axis into the encoder module

12. Reinstall the Y-axis end stop (see Figure 2-6 on page 22).

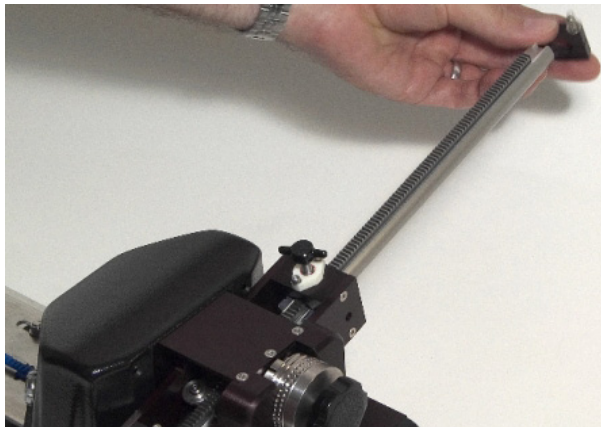


Figure 2-6 Reinstalling the Y-axis end stop

13. Install the yoke onto the probe holder (see Figure 2-7 on page 23).

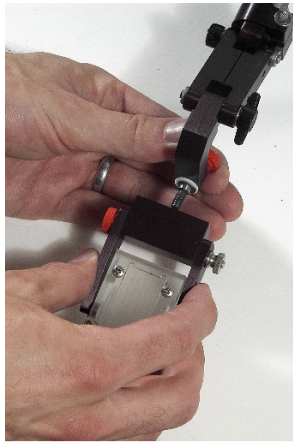


Figure 2-7 Installing the probe fork on the Y-axis

The probe holder is shown in Figure 2-8 on page 23, as installed on the Wing scanner H model.



Figure 2-8 The assembled components on the Wing scanner H model

14. Connect the probe cable to the acquisition instrument (see Figure 2-9 on page 24).

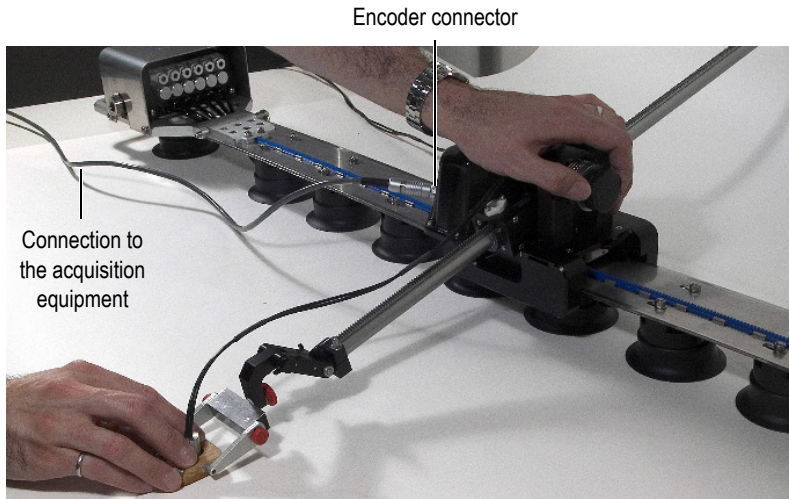


Figure 2-9 Connections to the scanner

15. Connect one end of the encoder cable to the connector on the encoder module (see Figure 2-9 on page 24).
16. Connect the other end of the encoder cable to the acquisition instrument.
17. If you are using the Wing scanner V model, connect the vacuum generator to an air supply (see Figure 2-10 on page 24).

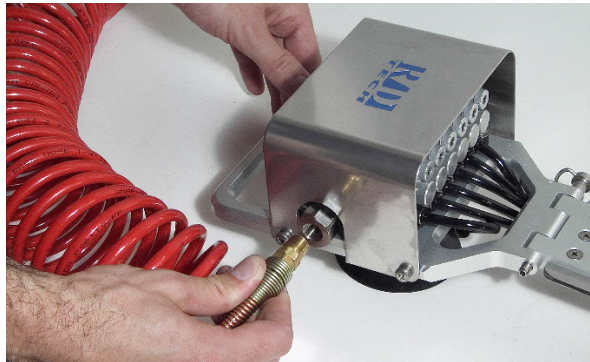


Figure 2-10 Connecting an air supply to the vacuum generator

**CAUTION**

The air supply for the Wing scanner V vacuum generator must be dehumidified and unlubricated. The pressure must be between 490 kPa (71 psi) and 690 kPa (100 psi), with a minimum flow rate of 566 nl/min (20 SCFM). Not adhering to these guidelines could cause damage to the scanner or affect its performance.

**WARNING**

When using the Wing scanner V, never exceed the recommended pressures for the vacuum generator. Exceeding pressure rating could result in serious collateral damage, serious injury and/or death.

2.2 Installing the Scanner

The Wing scanner V model with a vacuum generator can be installed on the inspected part as a preassembled unit. For the Wing scanner H model, the rail is first installed on the inspected part with the vacuum levers engaged, after which the encoder module is installed.

To install the scanner for an inspection

**CAUTION**

When you install the scanner or remove it from the part to be inspected, it is recommended to lock the Y-axis with the locking screw located on the encoder module, and to lock the encoder module with the X-axis locking lever. This prevents inadvertent movement that could potentially lead to equipment damage or injury.

1. Ensure that the vacuum cups and the part surface are clean.
 2. Position the flexible rail on the desired inspection location.
-

3. If you are using the Wing scanner V model, start the vacuum generator.

OR

If you are using the Wing scanner H model, pull down the hand levers on each of the vacuum cups, and then slide the encoder module onto the rail (see steps 3 to 7 in “Assembling the Scanner” on page 19).

4. Unlock the X-and Y-axes.

You are now ready to begin inspecting the part.

3. Operating the Scanner

This chapter explains how to use the Wing scanner to perform an inspection.



WARNING

When using the Wing scanner upside down or on a high structure, use a lanyard to prevent the scanner from falling.

To perform the scanning motion

- ◆ Operate the scanner using two hands: hold one hand on top of the encoder module and push it back and forth along the flexible axis during scanning (without applying any pressure against the inspection surface); rest the other hand on the probe and apply a slight downward pressure on the probe assembly (see Figure 3-1 on page 28).

This is the recommended scanning method for optimum inspection results.

Scanning motion, without applying pressure

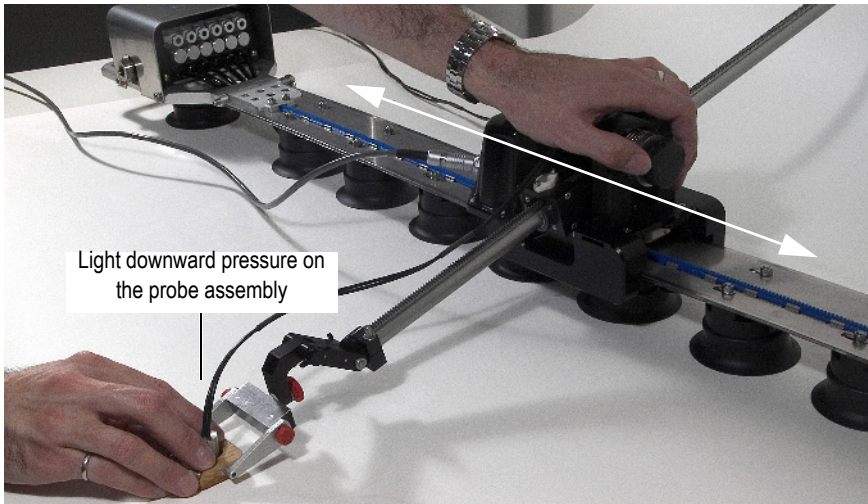


Figure 3-1 Performing an inspection with the scanner

Use the same hand that pushes the encoder module to set the index step value between the inspection passes on the rigid Y-axis.

To set the distance between inspection passes (index step value)

- ◆ Set the Y-axis index steps using the increment dial on the encoder module. Two increment positions and one free-running position are available:
 - If the dial is completely pushed in, the index value is 0.5 mm.
 - If it is pulled out one stop, the index value is 1 mm.
 - If the dial is completely pulled out, the rigid Y-axis disengages and runs freely (see Figure 3-2 on page 29).

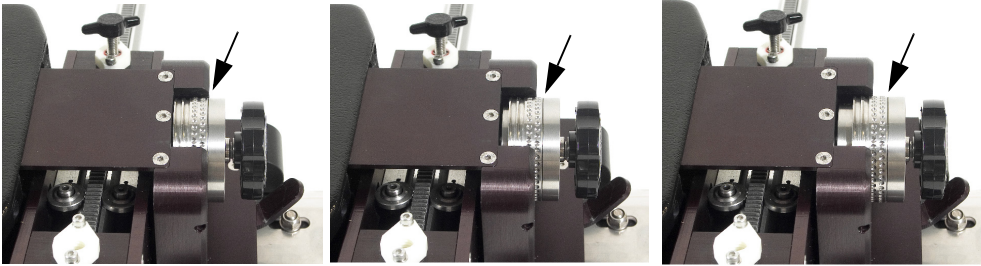


Figure 3-2 The three dial positions: 0.5 mm increment, 1 mm increment, and free running (left to right, respectively)

To adjust the probe position

- ◆ Adjust the probe position with the two adjustable and lockable joints (see Figure 3-3 on page 29).

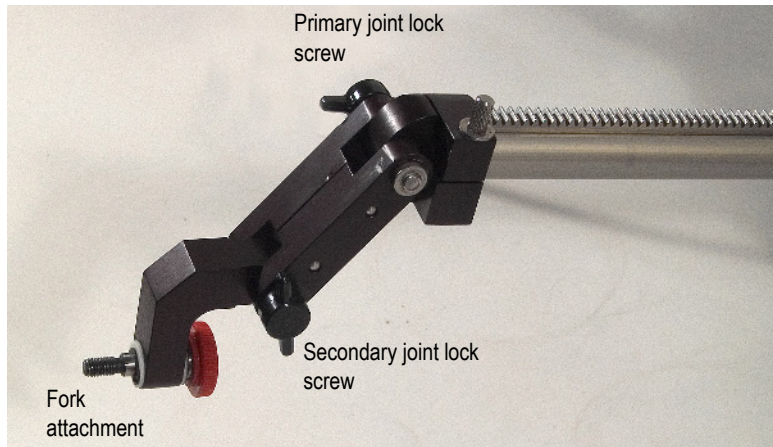


Figure 3-3 The probe-holder position adjustments

The joints on the probe holder permit movement when the screws are released, therefore try to keep the probe holder's position stable until it is locked into place. Ensure that the lock screws are sufficiently tight to prevent movement of the joints during inspection.

4. Specifications

Table 3 Specifications

Parameter	Value
General	
Dimensions (X-axis direction × Y-axis direction × height)	Wing scanner V1: 1394 mm × 790 mm × 157 mm
	Wing scanner V2: 2396 mm × 790 mm × 157 mm
	Wing scanner H1: 1120 mm × 790 mm × 165 mm
Net weight (assembled)	Wing scanner V1: 6.3 kg
	Wing scanner V2: 8.8 kg
	Wing scanner H1: 7.0 kg
Encoder module weight	2 kg
Environment	
Outdoor use	Yes
Altitude	Up to 2000 m
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Relative humidity (RH)	Maximum 80 % noncondensing
Wet locations	Yes
Pollution level	2
Waterproof	Yes
Compressed air (Wing scanner V model only)	
Required pressure	490 kPa to 690 kPa (71 psi to 100 psi)
Flow rate	566 nl/min (20 SCFM) minimum.
Air input connector	Quick-coupling male nipple, 1/4 NPT

Table 3 Specifications (continued)

Parameter	Value
Flexible X-axis	
Total stroke length	Wing scanner V1: 940 mm
	Wing scanner V2: 1940 mm
	Wing scanner H1: 940 mm
Indexing increment	Not available
Measurement precision ^a	At 300 mm extension or less: 0.5 mm total
	At 400 mm extension: 0.65 mm total
	At 500 mm extension: 1.25 mm total
	At 600 mm extension: 3.35 mm total
Minimum external-curve radius	Wing scanner V1: 360 mm
	Wing scanner V2: 380 mm
	Wing scanner H1: 450 mm
Minimum internal-curve radius	Wing scanner V1: 770 mm
	Wing scanner V2: 770 mm
	Wing scanner H1: 770 mm
Vacuum-cup holding force	Wing scanner V: 30 kg (66 lb) per cup if the vacuum generator is supplied with the correct air pressure.
	Wing scanner H: 11 kg (25 lb) per manual cup
Rigid Y-axis	
Total stroke (all models)	510 mm
Indexing increment	0.5 mm or 1 mm
Encoders	
Resolution	20.5 steps/mm
Type	Quadrature
Pinout	See Figure 4-1 on page 33 for the EWIX1416 cable pinout and Table 4 on page 33 for the EWIX618A cable pinout.
Power rating	5 VDC, 25 mA maximum
Frequency	0 kHz to 1.5 kHz (for a maximum displacement velocity of 10 cm/s [4 in./s])

- a. Note: For measurement precision, extension measurements are made from the front face of the forward Y-axis shaft bearing to the center axis of the probe.

Pinout for EWIX618A cable

Table 4 Encoder pinout for EWIX618A cable

Signal	Encoder connector	Wire color	FOCUS LT connector
PHB-1	1	Red/White	A
+5V	2	Red	S
GND	3	Green	D
PHA-2	4	Red/Yellow	C
PHB-2	5	Red/Black	P
PHA-1	6	Red/Blue	U

Pinout for EWIX1416 cable

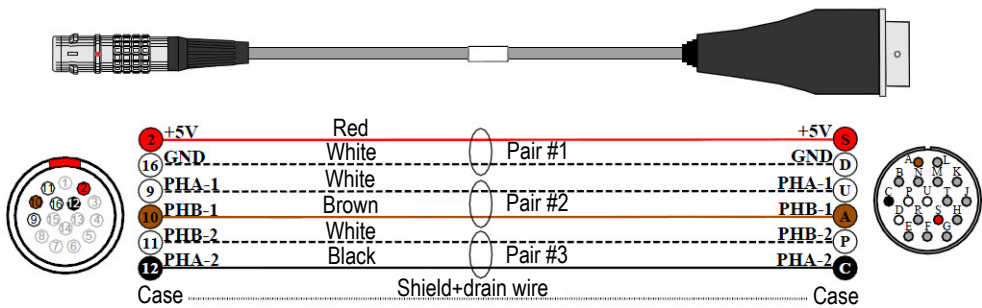


Figure 4-1 Pinout for EWIX1416 encoder cable

5. Accessories and Spare Parts

This chapter contains lists of accessories (such as yokes and pumps) and spare parts for the Wing scanner.

5.1 Yokes

Figure 5-1 on page 35 and Table 5 on page 36 provide ordering information for yokes. Yoke dimensions depend on the wedge model used.

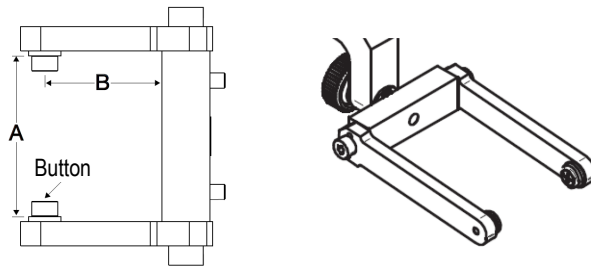


Figure 5-1 Yoke geometry

Table 5 Replacement yokes

Part number	Item number	Wedge compliance	Button OD (mm)	A (mm)	B (mm)
Standard yokes					
ADIX689 ^a	U8775048	ST1, ST2, SPE1, SPE2, SPE3, SA0	5	31.75	23.5
ADIX655 ^b	U8775047	SA1, SA2, SA10, SA11, SA12, SPWZ3, SNW1-AQ25 (WR), SNW3-AQ25	8	40	55
Other yokes					
ADIX612	U8775046	SA10 and SA11	8	40	38
ADIX1354	U8775187	SPWZ1 and SA14 (in reverse position)	8	40	46
ADIX1082	U8780194	SPWZ1, SA14, REXOFORM, SNW3-AQ25-WR	8	40	65
ADIX853	U8775055	SA1-L (lateral)	8	45	60
ADIX846	U8779096	SA3	8	50	55
ADIX893	U8775084	SA4, SA5, and HydroFORM-A-LiteHolder	8	55	55
ADIX908	U8779097	Water wedge	8	50	65
ADIX870	U8775056	Creeping wave probe holder (ADIX1129)[U8775080]	5	40	23
ADIX1325	U8775132	SNW1	8	31.75	55
ADIX1482	U8775165	SNW2	8	31.75	23.5
ADIX1481	U8775164	SNW3	8	31.75	65

- a. Standard yoke for TOFD-P/E probe mounting.
b. Standard yoke for phased array probe mounting.

5.2 Couplant-Feed Units

Couplant can be supplied to wedges by either an electric or a manual pump (see Table 6 on page 37).

Table 6 Couplant-feed units

Part number	Item number	Description
CFU03	U8780008	Electric couplant-feed unit. 3.78 l/min at 414 kPa (1 GPM at 60 psi) 100 VAC/240 VAC
CFU05	U8780009	Electric couplant-feed unit with suction capability. Same operating specification as CFU03.
WTR-SPRAYER-4L	U8775153	4 L manual water pump with irrigation tubes and fittings.
WTR-SPRAYER-8L	U8775001	8 L manual water pump with irrigation tubes and fittings.

5.3 Connector Reference

Wing scanner models sold after July 2013 come standard with a Bendix connector (which is compatible with the FOCUS LT instrument) and with a LEMO connector adaptor (which is compatible with the OmniScan MX2 and SX instruments). If the Wing scanner is used with an OmniScan MX instrument, an optional cable adaptor is required (part number: OMNI-A-ADP27 [U8780329]).

5.4 Spare Parts

A general view of the scanner is shown in Figure 5-2 on page 38. Table 7 on page 38 contains a list of spare parts.

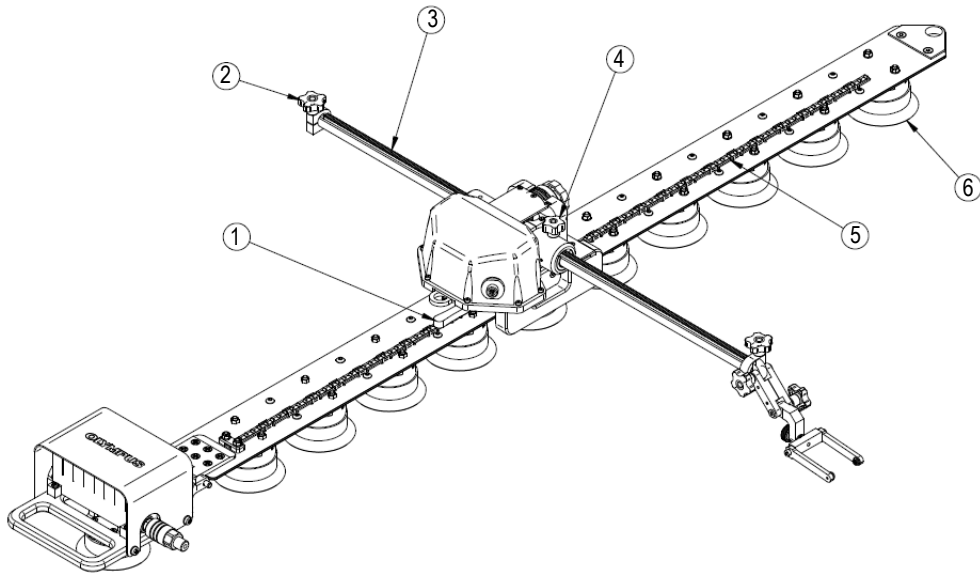


Figure 5-2 General view (Wing scanner V1 model shown)

Table 7 Spare parts

Drawing item	Scanner model	Quantity	Part number	Description
1	All models	1	MQIX9185	X-axis locking lever
2	All models	4	25AA118	Plastic thumb screw
3	All models	1	ABIX448	Y-axis arm assembly
4	All models	1	25AA1052	Y-axis locking thumb screw
5	V1, H1	0.5	25EA0077 (U8908568)	Encoder reference strip (2 m)
	V2	1	25EA0077 (U8908568)	Encoder reference strip (2 m)
6	V1	10	ACIX1703	Venturi vacuum cup
	V2	19	ACIX1703	Venturi vacuum cup
	H1	8	ACIX736	Manual vacuum cup

Table 7 Spare parts (continued)

Drawing item	Scanner model	Quantity	Part number	Description
Not Shown	All models	1	EWIX618	Encoder cable from scanner to FOCUS LT
Not Shown	All models	1	EWIX1416 (U8775310)	Encoder cable that adapts the FOCUS LT encoder cable connector to the OmniScan
Not shown	All models	0	OPTX0756 (U8908251)	Spare part kit

6. Maintenance

The service requirements of the Wing scanner are minimal. Depending on operating conditions, the Wing scanner parts might need periodic cleaning.

6.1 Preventive Maintenance

The Wing scanner does not require preventive maintenance. Only a regular inspection of the product is recommended to ensure that the Wing scanner functions correctly.

6.2 Unit Cleaning

The Wing scanner'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.

Wait until the unit dries completely before reconnecting the cables.

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