OPERATION MANUAL

Made in Germany

QNix® 9500

QUALITY „MADE IN GERMANY"

AUTOMATION Dr. NIX

1. Allgemeine Hinweise

Diese Betriebsanleitung beschreibt die Geräte QNix® 9500B (Basic), QNix® 9500P (Premium) und QNix® 9500P+ (Premium+). Lesen Sie vor der Inbetriebnahme diese Hinweise aufmerksam durch. Bewahren Sie die Anleitung zusammen mit dem Gerät auf. Eine ausführliche Gebrauchsanleitung finden Sie zum Download unter www.q-nix.com/de/download/bda/

1.1. Bestimmungsgemäße Verwendung

Das Gerät dient je nach Variante zur Messung der Schichtdicke von ausgehärteten Beschichtungen auf einem metallischen Untergrund. Bei Untergründen aus Stahl oder Eisen (FE-Sonde) kann die Schichtdicke sowohl von nichtleitenden Überzügen (z.B. Lacke, Emaille) als auch von leitenden, aber nichtferromagnetischen Beschichtungen (z.B. Chrom, Kupfer, Zink) bestimmt werden. Auf nichtferromagnetischen metallischen Untergründen (z.B. Aluminium, Kupfer; Messing) kann mit einer NFe- oder einer Dual-Sonde die Dicke jeder nichtleitenden Beschichtung bestimmt werden. Jede darüber hinausgehende Verwendung gilt als nicht bestimmungsgemäß. Für daraus entstehende Schäden haftet der Anwender.

1.2. Lieferumfang

QNix® 9500, 2 Referenzplatten Fe / NFe mit Prüffolien, Software QN9 (auf dem Gerät gespeichert), 2 Batterien Typ Mignon AA, 1 Typ CR-1220, Bedienungsanleitung, Koffer, Zertifikat
Bei QNix® 9500 mit Kabel-Variante: Sonde und Kabel (optional), Sondenhalter (optional)

1.3. Sicherheitshinweise

Beachten Sie die Sicherheitshinweise, da bei Nichtbeachtung Personen oder die Umwelt gefährdet werden oder Schäden am Gerät entstehen können.

Vorsicht Eingriff in das Gerät: Öffnen Sie das Gerät nicht und führen Sie keine Änderungen am Gerät durch. Reparaturen dürfen nur vom Hersteller oder autorisierten Fachhändlern durchgeführt werden.

Vorsicht Elektromagnetische Verträglichkeit: Elektromagnetische Einflüsse stören das Gerät, falsche Messergebnisse können entstehen. Verwenden Sie zum Anschluss des Gerätes für das Sondenkabel wie für den USB-Anschluss nur Kabel unter 3 m. Betreiben Sie das Gerät nicht mit einer externen USB-Spannungsversorgung.

Hinweis Umgang mit Batterien: Entfernen Sie die Batterie, wenn Sie das Gerät länger nicht benutzen, um ein Auslaufen zu verhindern. Entsorgen Sie verbrauchte Batterien gemäß der örtlichen Vorschrift.

Hinweis Handhabung: Schützen Sie das Gerät vor Schmutz, Staub, Feuchtigkeit, Chemikalien und aggressiven Gasen. Vermeiden Sie direkte Sonneneinstrahlung oder große Temperaturschwankungen.

1.4. Transport und Lagerung

Um ausreichenden Schutz beim Transport zu gewährleisten, transportieren Sie das Messgerät ausschließlich im Koffer. Wenn Sie das Gerät für längere Zeit nicht benutzen, entnehmen Sie die Batterien und lagern Sie das Gerät im Koffer.

1.5. Reinigung und Pflege

Gerät: Vor der Reinigung Gerät ausschalten! Verwenden Sie ein feuchtes, fusselfreies Tuch und milde Reinigungsmittel, bei Verschmutzungen durch Farbe und Lack verdünnte Lösungsmittel (Ethanol, Nitroverdünnung, Waschbenzin). Achtung! Aceton nicht für Weichgummiteile oder Displays verwenden.
Display: Verwenden Sie ein feuchtes, weiches, fusselfreies Tuch. Bei stärkeren Verschmutzungen, wenn Wasser nicht ausreicht, bitte milde Reinigungsmittel verwenden. Achtung! Aceton kann die Displaydichtung beschädigen..

1.6. Entsorgung

Entsorgen Sie verbrauchte Batterien und das Gerät nach den örtlichen Vorschriften. Werfen Sie weder Batterien, noch das Gerät in den Hausmüll.

1. General Information

These operating instructions describe the gauges QNix® 9500B (Basic) QNix® 9500P (Premium) and QNix® 9500P+ (Premium+). Carefully read the information before use. Keep the instructions with the device.

1.1. Intended Use

This device, depending on the connected probe, is used to measure the thickness of coatings over metallic surfaces. For surfaces made from steel or iron (FE probe) the coating thickness can be determined for both non-conductive coatings (e.g. paint, enamel) as well as conductive, non-magnetic coatings (e.g. chrome, copper, zinc). On non-magnetic, metallic surfaces (e.g. aluminium, copper, brass), an NFe probe or a duplex probe can be used to determine the thickness of each nonconductive coating. Any other use is considered improper use. The user is liable for any damages resulting from improper use.

1.2. Scope of Delivery

QNix® 9500, 2 reference plates Fe / NFe with test films, Software QN9 (loaded on the device), 2 batteries type mignon/AA, 1 type CR-1220, Operation manual, Case, Certificate
For QNix® 9500 with cable: Probe and cable (optional), Probe holder (optional)

1.3. Safety Notes

Observe the safety notes, as failure to do so may result in dangers to persons or the environment or device damage.

Caution CAUTION Device modification: Do not open or modify the device. Repairs must be performed by the manufacturer or authorised speciality retailer.

Caution Electromagnetic compatibility: Electromagnetic influences in the surrounding area may interfere with the device resulting in false readings. Only use probe cables and USB cables under 3 m in length to connect the device. Do not operate the device with an external USB power supply.

Notice Handling batteries Remove the battery if the device will not be used for extended periods to prevent battery leakage. Dispose of the used batteries in compliance with local regulations.

Notice Operating the Gauge Protect the device from dust,dirt and moisture, chemicals and aggressive gases. Avoid direct sunlight or extreme temperature fluctuations.

1.4. Transport and Storage

Always transport the gauge inside the case to ensure it is properly protected. If the device will not be used for extended periods, remove the batteries and store the device inside the case.

1.5. Cleaning and Care

Device: Before cleaning please switch it off! Use a damp lint free cloth with mild detergents. For soiling due to paint and varnish, please use diluted solvents (ethanol, nitro thinner, petroleum ether). Notice! Do not use acetone on soft rubber parts or display!
Display: Use a damp, lint free cloth. If very dirty (water is not enough) use mild detergents. Note! Acetone can damage the display seal.

1.6. Disposal

Dispose of used batteries and the device in compliance with local regulations. Do not dispose of batteries or the device in the household waste.

1. Avisos generales

1.1. Uso adecuado

Según su variante, este dispositivo se emplea para medir el espesor del recubrimiento de una superficie metálica. En el caso de superficies de acero o hierro (sondas FE) el espesor puede determinarse a partir de revestimientos no conductores (por ejemplo, laca o esmalte), así como de revestimientos conductores pero no magnéticos (por ejemplo, cromo, cobre, zinc). En el caso de superficies metálicas no magnéticas (por ejemplo, aluminio, cobre o latón) puede determinarse el grosor de los recubrimientos no conductores utilizando una sonda NFe o una dual. Cualquier uso distinto al indicado se considera inadecuado. El usuario será el responsable de los daños resultantes.

1.2. Indicaciones de seguridad

Tenga en cuenta las indicaciones de seguridad, ya que su incumplimiento supondría un riesgo para las personas y el medio ambiente, así como posibles daños en el dispositivo.

Precaución Intervención en el dispositivo: No abra el dispositivo ni realice modificaciones en el mismo. Las reparaciones únicamente podrán ser realizadas por el fabricante o por un distribuidor autorizado.

Precaución Compatibilidad electromagnética: Las influencias electromagnéticas en el entorno pueden estropear el dispositivo y ofrecer resultados de medición erróneos. Para conectar el dispositivo, tanto para el cable de sonda como para la conexión USB, utilice únicamente un cable de menos de 3 m de longitud. No utilice el dispositivo con una fuente de alimentación USB externa.

Aviso Tratamiento de las pilas: Retire las pilas si no va a utilizar el dispositivo durante mucho tiempo, de esta forma evitará su sulfatación. Deseche las pilas gastadas de acuerdo con la normativa aplicable.

Aviso Manejo: Proteja el dispositivo frente a la suciedad y el polvo. Proteja el dispositivo frente a la humedad, los productos químicos y los gases agresivos. Evite la acción directa del sol y los cambios bruscos de temperatura.

2. Fabricante

Las reparaciones en el equipo solo deberán ser realizadas por personal autorizado por el fabricante. Si tiene preguntas consulte a su distribuidor más cercano o a nuestro servicio técnico: www.q-nix.com/support
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1. Indications générales

1.1. Utilisation conforme

L'appareil est utilisé selon sa version pour mesure l'épaisseur des revêtements sur un support métallique. Pour les supports en acier ou en fer (sonde FE), l'épaisseur peut être déterminée à partir de revêtements non conducteurs (par ex. peinture, émail) comme de revêtements conducteurs mais non magnétiques (par ex. le chrome, le
cuivre, le zinc). Sur les supports métalliques non magnétiques (par ex. l'aluminium, le cuivre, le laiton), l'épaisseur de revêtements non conducteurs peut être déterminée par le biais d'une sonde NFe ou double. Toute autre utilisation est considérée comme non conforme. L'utilisateur est alors responsable de tout dommage en découlant.

1.2. Consignes de sécurité

Veuillez respecter les consignes de sécurité sous peine que des personnes ou l'environnement soient mis en danger ou que l'appareil soit endommagé.

Attention Ouverture de l'appareil: N'ouvrez pas cet appareil pour y réaliser des modifications. Les réparations ne peuvent être effectuées que par le fabricant ou un revendeur agréé.

Attention Compatibilité électromagnétique: Des influences électromagnétiques à proximité de l'appareil peuvent l'endommager et être à l'origine de résultats de mesure erronés. N'utilisez pour raccorder l'appareil, tant pour le câble de la sonde que pour le câble USB, qu'un câble d'une longueur inférieure à 3 m. Ne faites pas fonctionner l'appareil avec une alimentation secteur USB externe.

Avis Manipulation des batteries: Retirez la batterie si l'appareil ne doit pas être utilisé pendant une durée prolongée pour éviter tout écoulement. Mettez les batteries au rebut selon les directives locales.

Avis Manipulation: Protégez l'appareil de la saleté et de la poussière. Protéger l'appareil de l'humidité, des produits chimiques et des gaz agressifs. Évitez tout ensoleillement direct ainsi que des variations importantes de température.

2. Fabricant

Les réparations sur les outils d'exploitation ne peuvent être effectuées que par des personnes autorisées par le constructeur. Si vous avez d'autres questions, merci de vous adresser à votre revendeur local ou à notre service: www.q-nix.com/support
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1. Indicazioni generali

1.1. Utilizzo conforme alla destinazione d'uso

A seconda della variante l'apparecchiatura serve alla misurazione dello spessore di rivestimenti su un fondo metallico. Per fondi in acciaio o ferro (sonda per FE) è possibile determinare lo spessore di rivestimenti non conduttivi (ad es. vernici, smalti) e di rivestimenti conduttivi ma non magnetici (ad es. cromo, rame, zinco). Su fondi metallici non magnetici (ad es. alluminio, rame, ottone), con una sonda per NFe o Dual è possibile determinare lo spessore di ogni rivestimento non conduttivo. Ogni utilizzo diverso da quelli indicati è considerato non conforme alle disposizioni. Dei danni da ciò risultanti è responsabile l'utente.

1.2. Avvertenze in materia di sicurezza

Attenersi alle avvertenze in materia di sicurezza, dato che la loro mancata osservanza può costituire un pericolo per le persone o per l'ambiente o causare danni all'apparecchiatura.

Attenzione Intervento sull'apparecchiatura: Aprire l'apparecchiatura e non eseguire modifiche alle modifiche all'apparecchiatura. Le riparazioni possono essere effettuate solo dal produttore o dal rivenditore specializzato autorizzato.

Attenzione Compatibilità elettromagnetica: A causa di interferenze elettromagnetiche nell'ambiente l'apparecchiatura può essere danneggiata e fornire risultati di misurazione errati. Per il collegamento dell'apparecchiatura utilizzare il cavo della sonda e per il collegamento USB solo cavi di lunghezza inferiore ai 3 m. Non azionare l'apparecchiatura con un alimentatore USB esterno.

Nota Uso delle batterie: Rimuovere la batteria se non si utilizza l'apparecchiatura per un lungo periodo per evitare che si scarichi. Smaltire le batterie consumate in base alle norme locali.

Nota Uso: Proteggere l'apparecchiatura da sporcizia e polvere. Proteggere l'apparecchiatura da umidità, sostanze chimiche e gas aggressivi. Evitare radiazioni solari dirette o grandi oscillazioni di temperature.

2. Produttore

Le riparazioni dei mezzi d'esercizio possono essere effettuate esclusivamente da personale autorizzato dal produttore. Per domande o chiarimenti, rivolgersi al proprio rivenditore in loco o al nostro servizio di assistenza: www.q-nix.com/support
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1. Algemene opmerkingen

1.1. Utilizzo conforme alla destinazione d'uso

Het apparaat dient afhankelijk van de variant voor het meten van de laagdikte van coatings op een metalen ondergrond. Bij ondergronden van staal of ijzer (FE-sensor) kan de laagdikte zowel van nietgeleidende coatings (bijv. lak, emaille) alsook van geleidende, maar niet-magnetische coatings (bijv. chroom, koper, zink) worden bepaald. Op niet-magnetische metalen ondergronden (bijv. aluminium, koper; messing) kan met een NFe- of een Dual-sensor de dikte van elke niet-geleidende coating worden bepaald. Elk ander gebruik geldt als niet correct en doelmatig. Voor daaruit voortvloeiende schade is de gebruiker aansprakelijk.

1.2. Veiligheidsinstructies

Neem de veiligheidsinstructies in acht. Bij het niet in acht nemen bestaat gevaar voor personen of het milieu of kan het apparaat beschadigd raken.

Pas op Ingrepen aan het apparaat: Open het apparaat niet en breng geen wijzigingen aan het apparaat aan. Reparaties mogen alleen door de fabrikant of een geautoriseerde specialist worden uitgevoerd.

Pas op Elektromagnetische Verdraagzaamheid: Het apparaat kan worden gestoord door elektromagnetische invloeden in de omgeving en daardoor foutieve meetresultaten leveren. Gebruik voor het aansluiten van het apparaat, zowel voor de sensor-kabel alsook voor de USB-aansluiting, alleen kabels met een lengte van minder dan 3 meter. Gebruik het apparaat niet met een externe USB-netadapter.

Aanwijzing Omgang met batterijen: Verwijder de batterij als u het apparaat een langere tijd niet gebruikt om te voorkomen dat deze gaat lekken. Voer gebruikte batterijen volgens de plaatselijke voorschriften af.

Aanwijzing Omgang met het apparaat: Bescherm het apparaat tegen vuil en stof. Bescherm het apparaat tegen vocht, chemicaliën en agressieve gassen. Vermijd direct zonlicht of sterke temperatuurwisselingen.

2. Fabrikant

Reparaties aan de bedrijfsmiddelen mogen alleen worden uitgevoerd door personeel dat door de fabrikant is geautoriseerd. Indien u vragen hebt, kunt u contact opnemen met uw plaatselijke dealer of met onze support: www.q-nix.com/support
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1. Ogólne wskazówki

1.1. Stosowanie zgodnie z przeznaczeniem

Urządzenie w zależności od wersji służy do pomiaru grubości warstwy powłok na podłożu metalicznym. W przypadku podłoży stalowych lub żeliwnych (sonda FE) grubość warstwy można określić zarówno na powłokach nieprzewodzących (np. lakiery, emalie), jak i na powłokach przewodzących, ale niemagnetycznych (np. chrom, miedź, cynk). Na niemagnetycznych podłożach metalicznych (np. aluminium, miedź, mosiądz) grubość każdej nieprzewodzącej powłoki można określić za pomocą sondy NFe lub sondy dualnej. Każde inne zastosowanie uważane jest za niezgodne z przeznaczeniem. Za powstałe z tego powodu szkody odpowiada użytkownik.

1.2. Wskazówki bezpieczeństwa

Należy przestrzegać wskazówek bezpieczeństwa, ponieważ ich nieprzestrzeganie może spowodować zagrożenie dla osób lub środowiska lub uszkodzenie urządzenia.

Ostrożnie Ingerencja w urządzenie: Nie otwierać urządzenia i nie dokonywać w nim żadnych modyfikacji. Naprawy mogą być wykonywane wyłącznie przez producenta lub autoryzowanego przedstawiciela handlowego.

Ostrożnie Kompatybilność elektromagnetyczna: Wpływy elektromagnetyczne w środowisku mogą zakłócać pracę urządzenia i prowadzić do nieprawidłowych wyników pomiarów. Do podłączenia urządzenia należy używać wyłącznie kabli o długości mniejszej niż 3 m, zarówno w przypadku kabla do sondy, jak i złącza USB. Nie używać urządzenia przy wykorzystaniu zewnętrznego zasilacza USB.

Wskazówka Postępowanie z bateriami: Aby zapobiec wyciekom, należy wyjąć baterię, jeśli urządzenie nie będzie używane przez dłuższy czas. Zużyte baterie należy wyrzucić zgodnie z lokalnymi przepisami.

Wskazówka Obsługa: Chronić urządzenie przed brudem i pyłem. Chronić urządzenie przed wilgocią, chemikaliami i agresywnymi gazami. Unikać bezpośredniego światła słonecznego lub dużych wahań temperatury.

2. Producent

Naprawy środków roboczych mogą być wykonywane wyłącznie przez personel autoryzowany przez producenta. W razie pytań prosimy zwrócić się do swojego dystrybutora na miejscu lub do naszego działu obsługi klienta: www.q-nix.com/support
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1. 일반 사항

본 사용자 메뉴얼은 QNix® 9500B (기본) QNix® 9500P (Premium) 및 QNix® 9500P + (Premium +) 게이지에 대한 메뉴얼입니다. 사용하기 전에 메뉴얼을 주의 깊게 읽고 게이지와 함께 메뉴얼을 보관하십시오.

1.1. 용도

연결된 프로브에 따라 게이지는 금속 표면 위의 코팅 두께를 측정하는데 사용됩니다. 강철 또는 철 (FE 프로브)로 만든 표면의 경우 비전도성 코팅 (예 : 페인트, 에나멜)과 전도성, 비자성 코팅 (예 : 크롬, 구리, 아연) 모두에 대해 코팅 두께를 측정할 수 있습니다. 비자성 금속 표면 (예 : 알루미늄, 구리, 황동)에서 NFe 프로브 또는 듀얼 프로브를 사용하여 각 비전도성 코팅의 두께를 측정할 수 있습니다. 다른 어플리케이션에서는 측정이 안될수있습니다. 메뉴얼에서 지정되지 않은 사용으로 인한 모든 손해에 대한 책임은 사용자에게 있습니다.

1.2. 제공 범위

QNix® 9500, 테스트 필름이 포함된 2 개의 기준 플레이트 Fe / NFe, 소프트웨어 QN9 (장치에 로드 됨), 배터리 유형 mignon / AA 2 개, 유형 CR-1220 1 개, 사용 설명서, 케이스, 인증서
케이블이있는 QNix® 9500의 경우: 프로브 및 케이블 (옵션), 프로브 홀더 (옵션)

1.3. 안전 참고 사항

사용법을 준수하지않을 시 사람이나 환경에 위험을 초래하거나 장치가 손상 될 수 있으므로 안전 지침을 준수하십시오.

주의 : 장치 개조 : 장치를 열거나 개조하지 마십시오. 수리는 제조업체 또는 공인된 공식 업체에서 수행해야 합니다.

주의 전자기 호환성 : 주변 영역의 전자기 영향이 장치를 방해하여 잘못된 판독 값을 초래할 수 있습니다. 장치를 연결할 때는 길이가 3m 미만인 프로브 케이블과 USB 케이블 만 사용하십시오. 외부 USB 전원 공급 장치로 장치를 작동하지 마십시오.

유의 사항 배터리 취급 : 배터리 누수를 방지하기 위해 게이지를 장기간 사용하지 않을 경우 배터리를 제거하십시오. 사용한 배터리는 현지 규정에 따라 폐기하십시오.

유의 사항 게이지 작동 : 먼지와 오물로부터 게이지를 보호하십시오. 습기, 화학 물질 및 공격적인 가스로부터 게이지를 보호하십시오. 직사광선이나 극심한 온도 변화를 피하십시오.

2. 서비스 및 수리

게이지는 당사 서비스 파트너 또는 제조업체 공인 기술자가 수리해야합니다. 제품과 관련하여 문의 사항이 있으시면 지역 판매점 또는 본사기술 지원팀에 문의하십시오:
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2. Device Overview

Key functions

	Status LEDs	Indicates USB connection
	Power/Menu/Home button	Switch device on or off, or switch between menu and measurement display
Q	**Q button**	Context-based or programmable function Programmable functions: QNix® 9500B: Start adjustment QNix® 9500P, 9500P+: Start adjustment or advance area
	Navigation buttons	Navigation within the screen / menu
OK	**OK button**	Confirm entry

2.1. Menu Overview

Use the navigation buttons to navigate within the four main menus (Jobs, Limits, Adjustment , Settings).

Navigating within the menus:

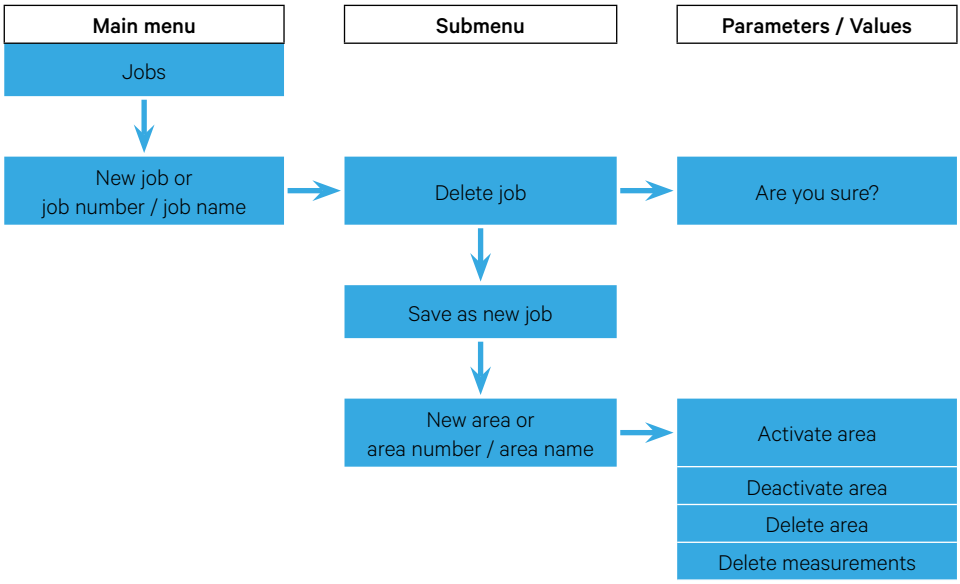
◁ ▷	Previous / next menu; when entering values: previous / next decimal place
△ ▽	Previous / next menu item; when entering values: value up / down (hold button for fast scan)
OK	Confirm value / go to submenu / confirm selection
	Previous; context-based Q button On / Off Q
On / Off	Home; return to measurement display context-based button Power / Menu / Home

Context and model-based symbols in the menus:

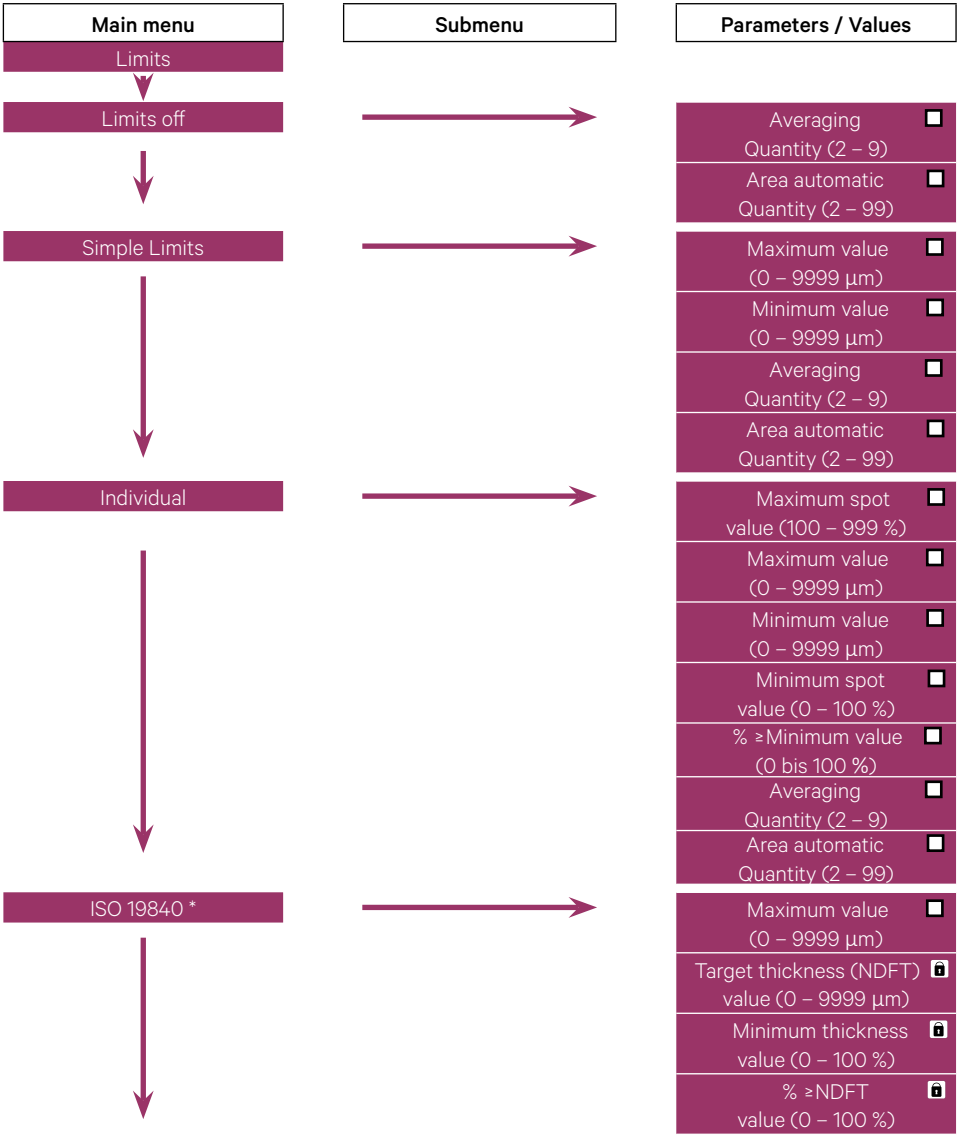
The background colours of the symbols correspond with the colours of the main menu.

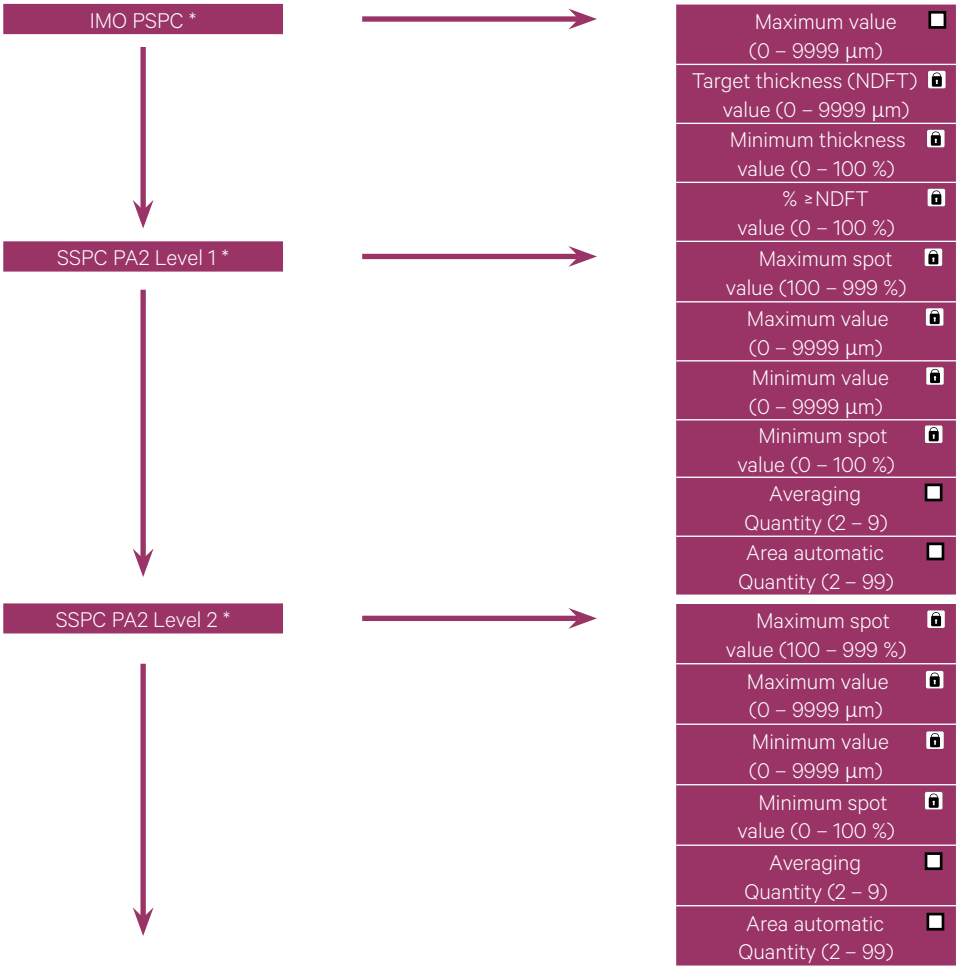
	Job (only if several jobs exist)
	Job contains the enabled area
	Defined area
	Enabled area
	Menu item has a submenu
	Menu item contains an entry or selection list
	Checkbox, multiple items can be selected
	Radio button, only one item can be selected

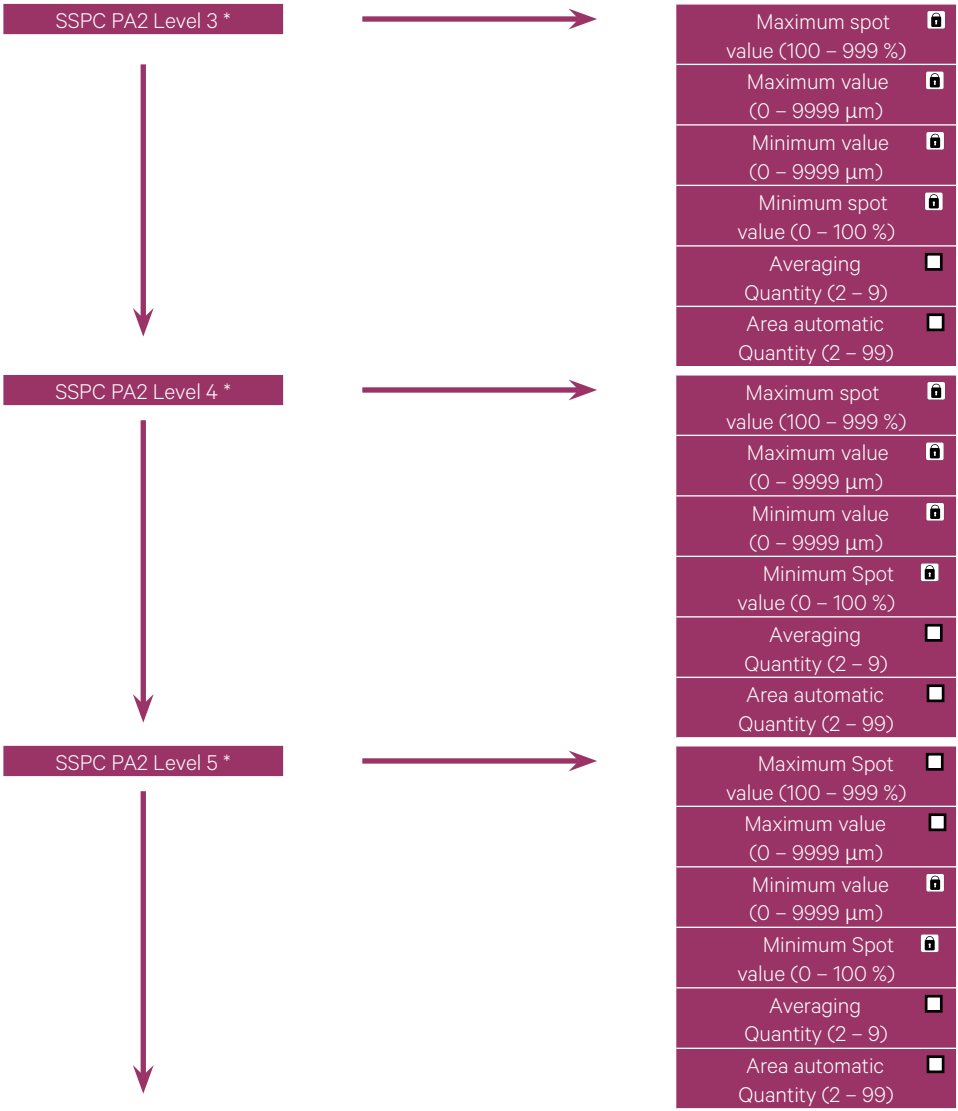
2.1.1. „Jobs“ Menu



2.1.2. „Limits“ Menu

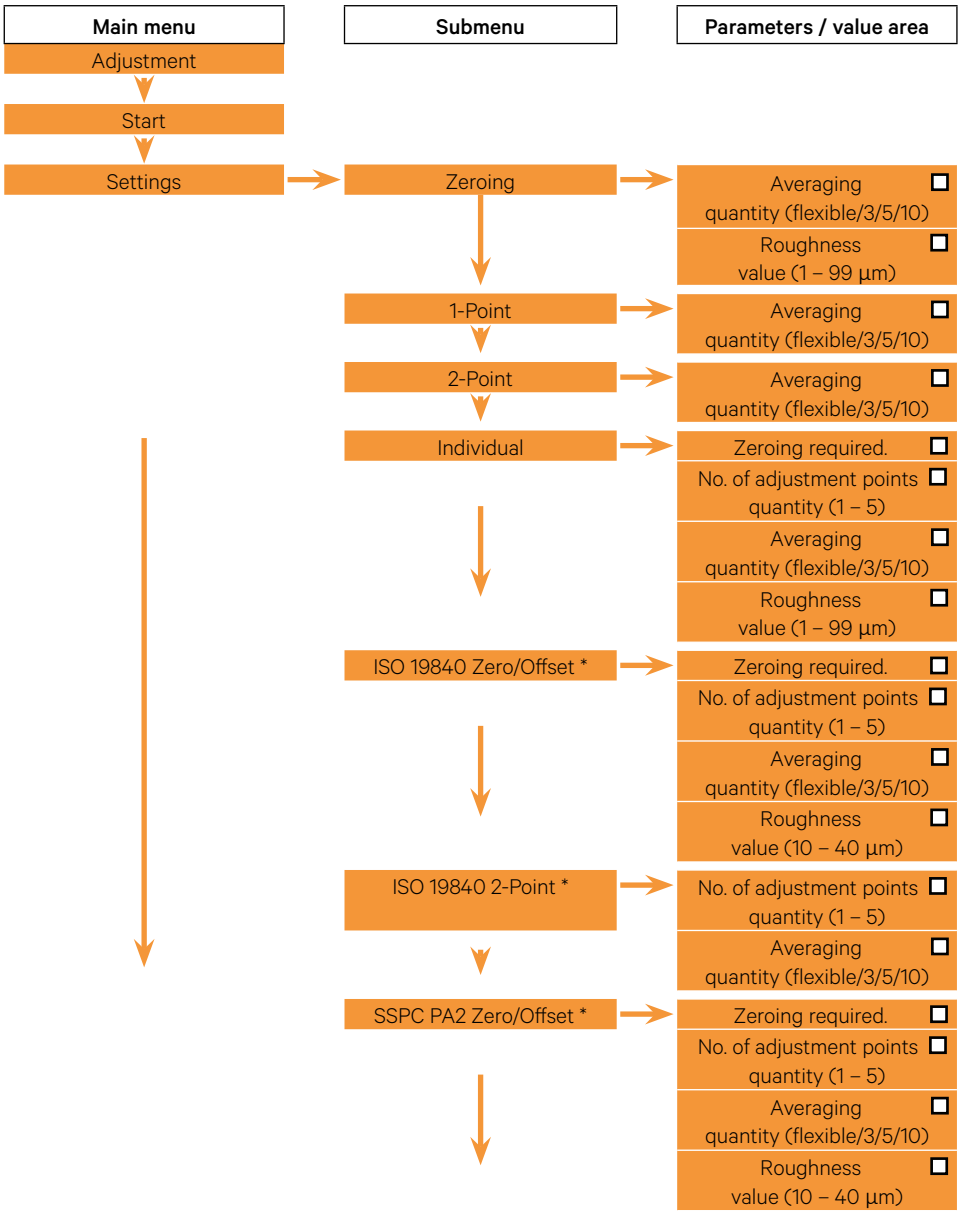


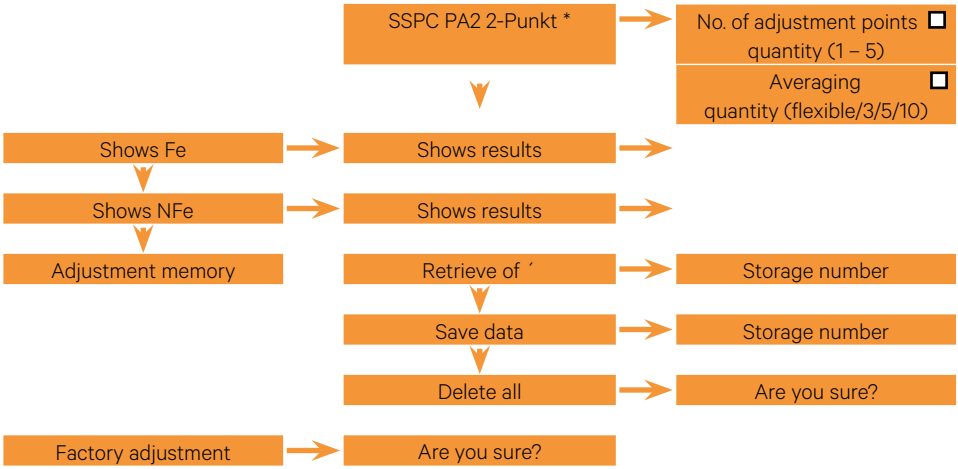

IMO PSPC *
SSPC PA2 Level 1 *
SSPC PA2 Level 2 *
Maximum value (0 – 9999 µm)
Target thickness (NDFT) value (0 – 9999 µm)
Minimum thickness value (0 – 100 %)
% ≥NDFT value (0 – 100 %)
Maximum spot value (100 – 999 %)
Maximum value (0 – 9999 µm)
Minimum value (0 – 9999 µm)
Minimum spot value (0 – 100 %)
Averaging Quantity (2 – 9)
Area automatic Quantity (2 – 99)
Maximum spot value (100 – 999 %)
Maximum value (0 – 9999 µm)
Minimum value (0 – 9999 µm)
Minimum spot value (0 – 100 %)
Averaging Quantity (2 – 9)
Area automatic Quantity (2 – 99)



* only QNix® 9500P+

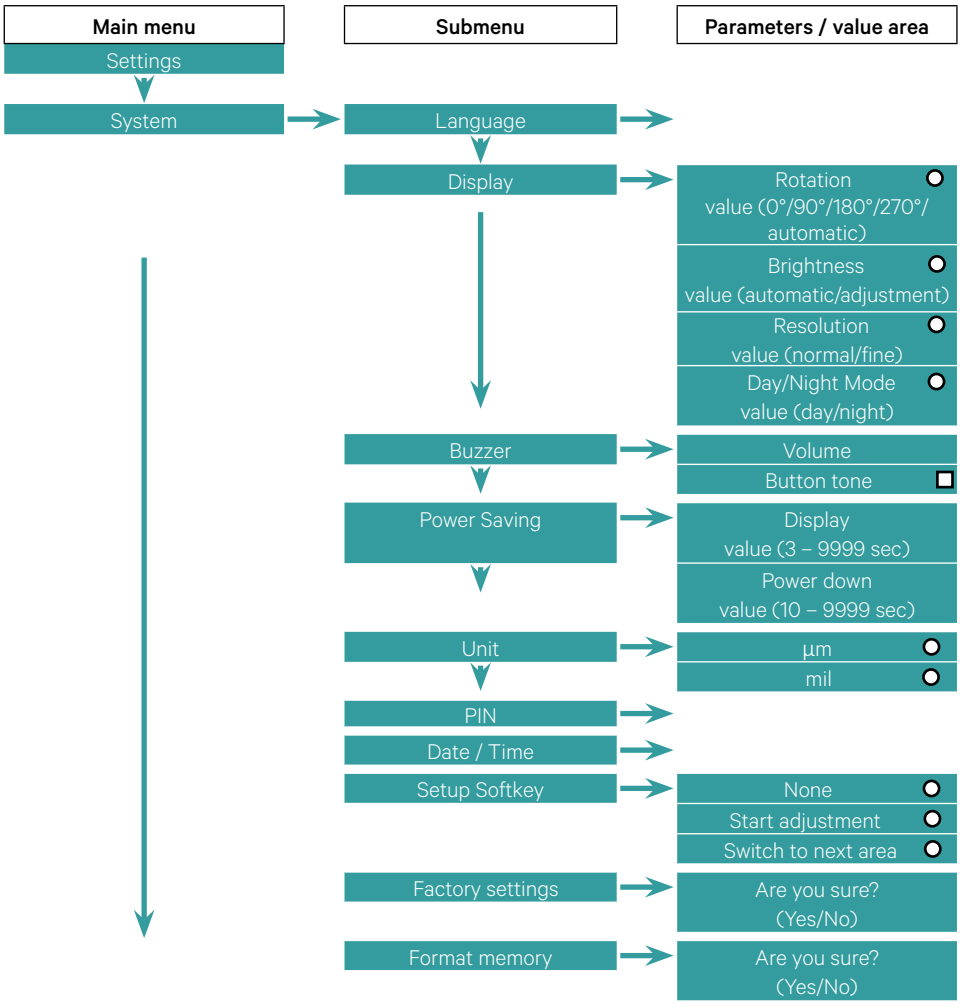
2.1.3. „Adjustment“ Menu

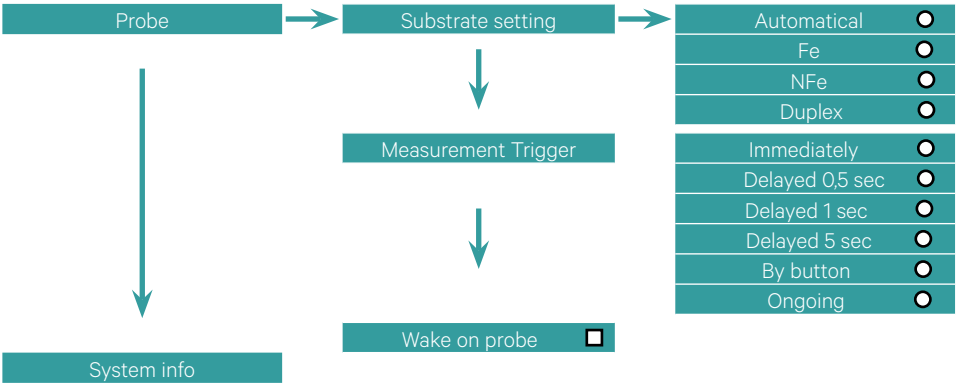




Model QNix® 9500P+ has adjustment methods based on relevant standards preallocated. Use menu item „Custom“ or the software QN9 to customise the adjustment.

2.1.4. „Settings“ Menu




Probe
Substrate setting
Automatical
Fe
NFe
Duplex
Measurement Trigger
Immediately
Delayed 0,5 sec
Delayed 1 sec
Delayed 5 sec
By button
Ongoing
Wake on probe
System info

3. Initial Operation

3.1. Insert Battery

This device includes::

- Type mignon/AA (LR6 / FR 6 / AM3); quantity 2
- Type button cell CR-1220 (backup battery for system clock); quantity 1

The battery compartment is located at the back of the device.

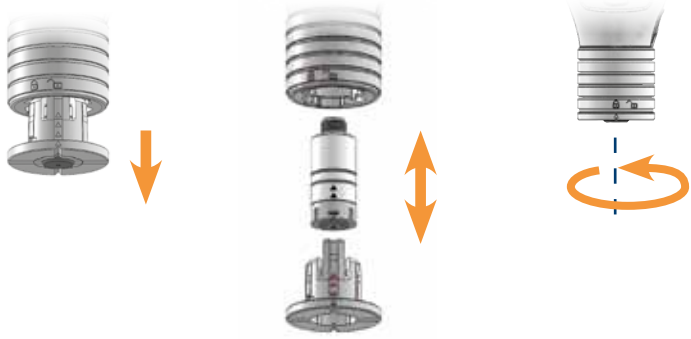
- To unlock the cover, turn the ring anti-clockwise
- Lift off cover
- Insert or replace battery
- Attach the battery cover at the bottom and lock

Notice **Replacing batteries**

Please note the correct polarity when inserting the battery. When replacing the backup battery (CR-1220), leave the regular battery in the device or connect the device via USB port otherwise date and clock will be reset. Please dispose batteries in compliance with local regulations!

3.2. Insert Probe (optional)

On devices with replaceable probe (grey probe latch), insert the probe as follows:



Remove the probe holder or probe cable from the probe input

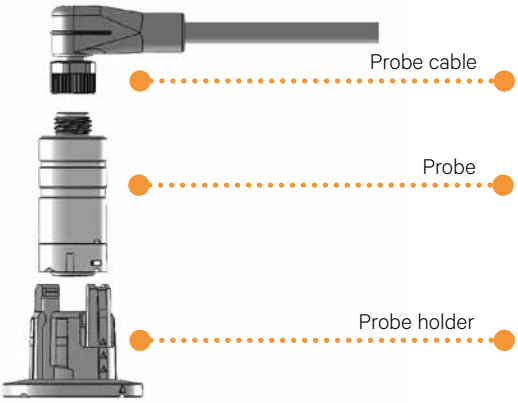
- To unlock, turn the probe input anti-clockwise. The arrow on the probe holder shows the open padlock on the probe input.
- Pull the probe holder from the input.

Insert the probe in the probe holder

- Push the probe into the probe holder using a slight turn/push movement. The arrow on the probe and on the probe holder must align. When aligned correctly, all 4 lugs will lock into the respective groove on the probe.
- Reinsert the probe holder or plug the probe into the cable and screw in place.
- To lock the probe input in place, turn clockwise until it locks. The arrow on the probe holder points at the locked padlock on the probe input.

Connect the probe to the probe cable

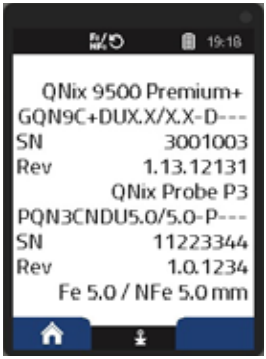
- Screw the probe together with the cable. For this purpose, always turn only the union nut of the cable. A turning movement of the angled cable connection can lead to permanent damage of the electrical contacts. This entails the loss of guarantee.
- For better probe guidance, insert the probe into the probe holder of the gauge.



The gauge is now ready for use. To remove a probe, follow the above steps in reverse order.

3.3. On / off

Turn on the gauge by pressing the „On/off“ Button.
To turn it off press an hold the „on/off“ Button until the countdown has turned to „0“.
In case the gauge has not been used for longer time the display gets dimmed after 30 seconds and the gauge turns off after further 60 seconds. If „wake on probe“ is set in the probe settings, the device turns back on automatically when pressing the probe on an object.



After turning on the gauge a successful connection to the probe will be shown by displaying a list of Information on both gauge and probe containing type, version, measurement range and firmware version.

3.4. Check Basic Settings

Check and, if necessary, change the factory settings of your device. At a minimum, check the settings for

- language
- unit
- date and time
- configuration of the Q button
- power save options

These settings can be found in the „System“ menu. The settings pertaining to the measurement job can be found in the menu „Jobs“, „Limits“ and „Adjustment“.

3.5. Software Backup

The „QN9“ is loaded on the device. This software is used to later manage the device and the recorded measurements on the PC. Back this software up to your PC.

Notice **Formatting will erase all data**

Formatting the memory will also erase the software from the device. You can download the software from www.q-nix.com/download.

4. Operation and Controls

4.1. About Operation

Please note the following instructions to ensure conclusive results:

- Hold the device by the probe holder
- Carefully place the device or the probe perpendicular on the surface
- Ensure the probe makes good contact with the surface and avoid the probe shaking
- Do not drag the probe across the coated surface

If the device does not register a measurement or no button is pushed within the amount of time set under menu „System“ > „Power save options“, the display will first dim, then the device will switch off. To reduce unstable measurements, you can set a delay from when the probe is applied and measurement starts. For the settings, go to menu „Settings“ > „Probe“ > „Measure“

4.2 Adjustment

The gauge will need to be calibrated before first using it, after replacing t
rement jobs, or as necessary. Either use our reference plates or, ideally, a
tested.

Notice **Push softkey to start adjustment**

**On delivery, the Q button is programmed to the function „Start adjust
adjustment directly from the measurement display. The adjustment w
preset parameters.**

Notice **Incorrect adjustment**

Calibrating with the incorrect reference plate can reduce accuracy.

Notice **Using reference plates**

The included test films are not certified. Certified films are available from the address in chapter Service and Repair.

Notice **Measurement results**

During adjustment use the uncoated original substrate for the most accurate measurements.

Notice **Error of measurement**

Rough surfaces or dirt can cause errors of measurement.

Adjustment methods

Zeroing	For zero point adjustment, simply place the probe on the uncoated original substrate. This adjustment is ideal for smooth surfaces.
1-Point	For 1-point adjustment, select a suitable reference film close to the expectancy range and a smooth, uncoated original substrate.
2-Point	For 2-point adjustment, select two reference films of different thicknesses which also include the expectancy range and a smooth, uncoated original substrate.
Individual	Here you can customise your adjustment method (only QNix® 9500P und P+)
Standardized adjustment modes	Different ISO- and SSPC-standardized adjustment modes (only QNix® 9500P+)

Setting adjustment parameters

In the „Adjustment“ menu you can set the following parameters prior to adjustment:

- Open the „Adjustment“ menu
- Under „Settings“, select the adjustment based on the job or the limit set
- If necessary, adjust the parameters

The different adjustment methods are especially suitable for these measuring tasks:

1. Zeroing: for simple measurements on flat objects to be measured with uncoated substrate.
2. 1-Point: for simple measurements on flat objects to be measured with coated substrate of known coating thickness.
3. 2-Point and individual: for special substrates and measuring object geometries with strong curvatures.
4. Standard based adjustments: for measuring tasks, subject to such standards

Available options		Unit		
		QNix® 9500B	QNix® 9500P	QNix® 9500P+
Settings	Zeroing	x	x	x
	1-Point	x	x	x
	2-Point	x	x	x
	Individual	-	x	x
	ISO 19840 Zero/Offset	-	-	x
	ISO 19840 2-Point	-	-	x
	SSPC PA2 Zero/Offset	-	-	x
	SSPC PA2 2-Point	-	-	x
	Averaging on/off (flexible, 3, 5, 10)	x	x	x
	Roughness on/off (roughness adjustable)	x	x	x
Adjustment memory	Save and retrieve adjustment results	-	x	x
Show Fe	Shows the adjustment results	-	x	x
Show NFe	Shows the adjustment results	-	x	x
Factory adjustment	Resets adjustment to the factory settings	x	x	x

Start adjustment

- Keep the gauge far from any disturbing influence like metals or magnetic fields.
- Press Q-button (assuming the Q button on 9500P or 9500P+ is not set for a different function)
- If the Q-button is reconfigured on QNix® 9500P or P+.
- Select „Start“ and press the button to start the adjustment:
- Place the gauge on a suitable substrate or reference plates and perform the necessary number of measurements.
- If necessary, save the results to the adjustment memory.

Caution Factory adjustment

After confirming the selection, the current adjustment settings will be erased, factory settings are restored. If necessary, recalibrate the device after carrying out the factory adjustment.

4.3 Measurement Display

The measurement display contains these areas

Depending on the context, the measurement display will contain the following information:

Section	Symbols	Description
Device status bar		Areas are enabled. Measurements are saved to the enabled area.
		Conformance display indicating conformance / nonconformance with the selected limits; always pertains to the measurements in an area
		User's adjustment done
		Current substrate setting is displayed
		Current setting for the measurement trigger (immediately, delay, by button, continuous)
		Battery level 100 % / 50 % / 25 % / empty **Note!** When the batteries are below 25 %, a warning screen will appear. Press „OK" to confirm the screen and replace the batteries as soon as possible.
	12:40	Clock

Section	Symbols	Description
Job / Area	nnnnn/nnnnn	Selected job and enabled area
Measurement range	n:	Number of spots used in the enabled area
		Number of measurements used for averaging, if over 5 values the display will show a number. filled boxes correspond to the number of measurements recorded
	µm / mil	Unit for the coating thickness
	294.3	Current measurement (within the limits)
	291.0	Not all measurements for averaging have been recorded
	316.1	Measurement outside the limits
	n-1 n-2	Last and next to last measurement
	NFe / Fe	Substrate setting of the current measurement
Analysis area		**Note:** The analysis area is split into three areas: Graphics, statistics and conformance. This describes the area statistics value. For more information, please see chapter „Analysing Measurements“.
	$\bar{x}$	Average
	x-max	Highest measurement
	x-min	Lowest measurement
	σ	Standard deviation
Probe status		Probe connected
Assignment Menu key		Switch to menu (On/Off button)
		Switch directly to measurement
Assignment Q button		Manually advance area (with Q button assigned accordingly; QNix® 9500P and QNix® 9500P+ only)
		All areas disabled
		Start adjustment (with Q button assigned accordingly)
		In menu: one level up When selecting a limit set: Open settings

4.3.1. Focus Frame

You can already navigate through measurements whilst the test is running to analyse these or erase individual values. To do so, open the focus frame with the △ and ▽ buttons and navigate to the desired area.

Use the △ and ▽ buttons to navigate between „Job/Area“, „Measurement area“ and „Analysis area“. The focus frame will highlight the selected area..

Navigation job/area bar	Use △ and ▽ buttons to swap the active area.
Navigating the measurement area	With the measurement area selected, use the △ and ▽ buttons to browse recorded measurements and if necessary press the Q button (paper bin) to erase these.
Navigating the analysis area	Use the △ and ▽ buttons in the analysis area to view three types of statistics.

Notice **View limits**

This display varies based on the selected limit sets. The example shows a view with „simple limits“ and averaging selected.

Default	**Overview of minimum / maximum measurement, average and standard deviation**
Navigate left	**Shows the measurements in a bar diagram; displays the selected limits, minimum / maximum measurement and current measurement**
Navigate right	**Number of spots saved in the area; limit condition met or exceeded**

To exit the focus frame, press the. button

4.4. Adding Jobs (QNix® 9500P+)

Depending on the mode, measurements are stored in jobs and areas:

Memory	QNix® 9500B	QNix® 9500P	QNix® 9500P+
Number of jobs	1	1	100
Number of areas per job	1	100	100
Number of spots per area, max.	10 000	10 000	10 000
Max. memory number of spots	10 000	1 000 000	2 000 000

Both the QNix® 9500B and QNix® 9500P only offer one job.

The following description only applies to QNix® 9500P+:

- Open the „Jobs“ menu. If there is more than one job, the job the enabled area is under will be highlighted. You can now
- press „Add job“ to add a new job. This adds a new job to an area. The settings of the currently enabled area will be applied.
- or select a job and „Save as new job“. The selected job will be copied. The settings for the areas will be applied..

Notice **Job templates**

If you have created templates for jobs in the QN9 software and uploaded these to the handheld unit, you will be able to use the function „Create job from template“. You can select the respective template. The defined names for job and areas will remain stored.

4.5. Measure and Save

Notice **Check device**

Check the device with the zero plates before every job and calibrate if necessary.

Zero with the uncoated original substrate for optimal measurements.

- Select job (QNix® 9500P+ only)
- Enable start area (QNix® 9500P and QNix® 9500P+); typically area 0001

  NOTICE Measurements are always saved to the enabled area.
- If necessary, calibrate or select a saved adjustment
- Apply the probe and take a measurement

  NOTICE If measurements are already stored under the job / area, a warning will appear. Overwrite the measurements or select a different job.
- Analyse the data on the PC in QN9.

4.6. Analysing Measurements

You can already navigate through measurements whilst the test is running to analyse these and if necessary erase individual values, or erase the measurements in an area or an entire series of measurements. If limits are set, an icon indicating if the measurements are within / above the limits will appear in the status bar and the measurement area:: ✓ ✗

Erase individual measurement

- Use the △ and ▽ buttons to set the focus frame to the measurement area
- Use the △ and ▽ buttons to select the measurement
- Use the Q button (paper bin) to erase the measurement

Erase all measurements in an area (QNix® 9500P and Qnix® 9500P+)

- Open the „Jobs“ menu. The current job is highlighted.
- Press OK to confirm: The current job will open with the current area selected..
- Select the desired area and press OK to confirm.

- „Select „Erase measurements“ and press OK to confirm. A confirmation message will appear..
- Use the △ and ▽ buttons to confirm ✓ or cancel ✗ and press OK to confirm.
  NOTICE! A confirmation will not appear, the measurements in the selected area have been erased
- If necessary, enable the selected area and repeat the measurement.

4.7. Editing Areas (QNix® 9500P and QNix® 9500P+)

4.7.1. Configuring Areas

With models QNix® 9500P and QNix® 9500P+ you can configure several areas for one job (see chart in previous chapter). You can assign a different limit set for each area..

- Select the „Jobs“ menu.
- Select job and press OK to confirm. The existing areas will be displayed.
- Select „New area“ and press OK to confirm. The new area has been added.
  The limits for the enabled area will be applied.

To configure a different limit set for the new area:

- Select „Enable area“ and press OK to confirm. This will enable the area.
- Use the navigation buttons ◁ and ▷ to got to the „Limits“ menu.
- Select the limits set and if necessary adjust (also see chapter „Configure Limits).
- Return to the „Jobs“ menu.

4.7.2. Add area during measurement

There are two options for adding an area during a measurement:

- Via autorange
- With the Q button

Adding via autorange:

If the „Autorange“ field is enabled in a limit set, a new area will automatically be added when the set number of spots has been reached. The icon in the status bar indicates whether autorange is enabled
(Also see chapter „Configure Limits“).

Adding via the Q button

If the Q-button has been programmed to „Advance area“, you can add or advance to areas during a measurement. The menu bar will show the icon ›› (see chapter „Configure softkey“).

Enabled area

The number of the enabled area will appear in the „Jobs / Area“ bar in the measurement display. When adding an area, the number will automatically increase..

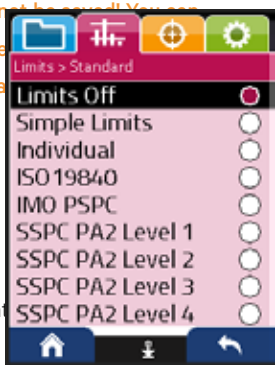
4.7.3. Enable / Disable Area

You can enable or disable an area:

- Open the „Jobs“ menu.
- Select the desired job and press OK to confirm.
- Select the desired area and press OK to confirm.

Caution **Enable / Disable Area**

You can disable all areas, however when doing so the measurements will n
only enable one area at a time. The job containing the enabled area will be
The line „Job / Area“ within the measuring value display is empty, if all a



4.7.4. Delete Area or Measurements

- Open the „Jobs“ menu. The current job will be selected.
- Press OK to confirm. The current job will open with the current
- Select the desired area and press OK to confirm.

Delete all measurements in an area

- Select „Erase measurements“ and press OK to confirm. A confirmation message will appear.
- Use the △ and ▽ buttons to confirm ✓ or cancel ✗, then press OK to confirm
  Notice! A confirmation will not appear, the measurements in the selected area have been erased.
- If necessary, enable the selected area and repeat the measurement.

Delete entire area

- Select „Delete area“ and press OK to confirm. A confirmation message will appear.
- Use the △ and ▽ buttons to confirm ✓ or cancel ✗, then press OK to confirm.
  Notice! A confirmation will not appear, if the selected area has been deleted. The numbering will not change.

4.8. Configure Limits

You can change the limit parameters in the „Limits“ menu. You can configure a different limit set for each area..

! Notice **Edit limits**

You can only change the limit set and the limits if there currently are no measurements. The function is disabled if any measurement has been carried out. You can configure the limit set and the parameters if no area is active, presumed there are no measurements.

Example: Limit menu for QNix® 9500P+

- Open the „Limits“ menu.
- Select the desired limit set and press OK to enable.
- Adjust all limits and press OK to apply.
- Close the limit set with Q or press the ⏻ button to go directly to the measurement display.

These limit settings are available according to device type

Available options	QNix® 9500B	QNix® 9500P	QNix® 9500P+
No limits	x	x	x
Simple limits	x	x	x
Individual	-	x	x
ISO 19840	-	-	x
IMO PSPC	-	-	x
SSPC PA (Level 1-5)	-	-	x

The probe has a colour indicator to show when the set limits have been exceeded.

- Green: measurement within the limits
- Red: below minimum coating thickness limits
- Yellow: over maximum coating thickness limit
- Blue: measurement outside the measuring range; also see chapter „Troubleshooting“

4.8.1. Edit Limits

Press the ⌂ button to open the limit menu and to edit limit sets. Some limits are protected with a padlock icon and cannot be changed. Limit sets which can be edited can be enabled or disabled with OK and then edited. Depending on the limit set selected you can select and deselect different limits as well as set parameters.

According to device type a variety of limit settings of different complexity are available. They can either be set per area generally for all devices or individually for QNix® 9500P and QNix® 9500P+, as long as no measuring values are available yet. To set the limits per area, please follow these steps:

- Activate the area in the job menu.
- Change to the limits menu by using ▷.
- Do the limit settings.
- Deactivate the area in the job menu.
- If necessary please change the limit settings of other areas one after the other in the same way.

To do measurements by using the specific limit settings, the following steps must be carried out:

- Select the first of the areas to be filled in and activate it.
- Do your measurements. If the area automatic within the limit settings is active, the next area will be activated automatically when you reach the number of measurements set in the area automatic.
- If you do not want to change the area, please deactivate area automatic within the limit settings. In this case, area changes have to be done manually when reaching the desired number of measurements.
- When the last area, available with area automatic, has been reached, it will be filled in when measuring is continued. Then, if area automatic is active, a new area with identical limit settings is generated, selected and filled in when continuing the measurements.

Notice **Limit settings**

Limit settings of a selected area can be passed over to new generated areas. It is not necessary to set individual limits.

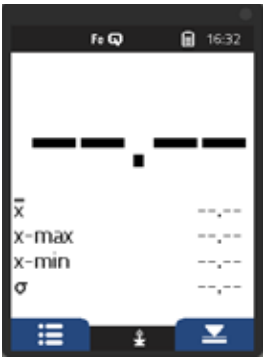
5. Probe Setting

5.1. Setup Substrate

Following substrate setting are possible:

- Fe-Substrate (ferromagnetic metals, e.g. Iron, steel, nickel). The substrate setting (Fe) is shown in the status line.
- NFe-Substrate (non-ferromagnetic metals, electrically conductive metals, e.g. aluminium, zinc, copper). The substrate setting (NFe) is shown in the status line.
- Automatic substrate setting (Fe/NFe). „Fe/NFe“ is shown in the status line.
- Duplex mode (Fe+NFe). Both Fe and NFe mesurements are taken at the same measurement point. This type of measurement is suited for tinned or galvanised ferrous substrates which are additionally painted. The probe shows two measurement values: the thickness of the Sn/Zn layer and the paint thickness. „Fe+NFe“ is shown in the status line.

5.2. Measurement Trigger



Following settings are possible for the measurement trigger:

- immediately: the probe starts the measurement immediately after placing it on the object
- delay 0.5 sec.: the probe starts the measurement 0.5 seconds after placing it on the object
- delay 1 sec.: the probe starts the measurement 1 second after placing it on the object
- delay 5 sec.: the probe starts the measurement 5 seconds after placing it on the object
- by button.: the probe starts the measurement when pressing the "Q" button
- continuous.: the probe measures continuously as long as it is placed on the object

5.3. Wake on Probe

Using this setting the probe is abe to wake up the gauge if it previously turned off automatically after a longer time of not being used.

6. System Settings

You can configure the device in the „Settings“ menu.

6.1. Select Language

Use menu item „Language“ to configure the language for the entire device.

- Open the „Settings“ menu and press OK to confirm „System“.
- Press OK to confirm „Language“.
- Select the language and press OK to confirm.

Notice **Language options**

If the language options only show German and English, first save your measurements with the QN9 software, then reset the device and memory to the factory settings.

6.2. Configure Display Options

You can choose from the display options rotation, brightness, resolution and day/night mode.

- Open the „Settings“ menu and press OK to confirm „System“.
- Press OK to confirm „Display“.
- Select the desired display option.
- Configure the settings and press OK to confirm.

Notice

The rotation of the display is accompagnied by the rotation of the arrow buttons as long as you are in the measurement value display. Accordingly the focus frame will be moved to measurement values or statistics by using the arrow keys. When moving the focus frame to navigation or device info, display and key functions automatically turn to a vertical position. The rotation only refers to the measurement value display; the menu and status lines do not rotate.

6.3. Set Buzzer

You can change the volume and the touch sound.

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Press OK to confirm „Buzzer“.
- Select „Volume“ and press OK to confirm. Adjust the volume in the submenu and press OK to confirm.
- Press OK to enable or disable the „Touch sound“.

6.4. Configure Power Save Option

To extend the life of the batteries you can configure, when the backlight will dim and the device shuts off. If no button is pressed or measurement taken during the set display time, first the backlight will dim. Then the device will shut off completely.

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Press OK to confirm „Power save options“.
- Select „Display“ or „Off“ and press OK to confirm.
- Set the desired time in seconds with the △ or ▽ buttons.
- Press OK to confirm your entry.

6.5. Change Unit

You can select the unit, measurements are displayed in.

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Press OK to confirm „Unit“.
- Select „µm“ or „mil“ and press OK to confirm.

! Notice **Changing units**

When changing the unit, all values (including previous measurements) will be converted and displayed accordingly.

6.6. Set PIN

You can add a 4-digit PIN to lock certain device functions.

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Press OK to confirm „PIN“.
- Enter the 4-digit PIN with the △ or ▽ buttons.
- Press OK to apply the PIN.

Notice **Impacts of using a PIN**

Entering and confirming the PIN will lock ALL configured measurements options. You can still configure the system settings. You will also still be able to add or edit jobs. The PIN can be reset in the QN9 software or by entering it again.

6.7. Set Date / Time

The format for date and time is YYYY-MM-DD-hh-mm

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Press OK to confirm „Date / Time“.
- Set date / time with the △ or ▽ buttons and press OK to confirm.

6.8. Configure Softkey

The softkey can be programmed to two functions, „Calibrate“ and „Advance area“.

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Select „Configure softkey“ and press OK to confirm.
- Select the desired setting and press OK to confirm.

6.9. Factory Settings

Caution Factory Settings

This function goes back to the original factory settings.

- **Open menu „Settings“, select „System“ and press OK to confirm.**
- **Confirm „factory settings“.**

An „are you sure“ question appears. You have to confirm it, if you are sure.

In case an error occurs, please repeat this process. This action will also replace a possibly active user‘s adjustment by factory adjustment.

6.10. Format Memory

Caution Format Memory

The „Format memory“ function will erase all jobs, areas, measurements, all user settings and the QN9 software on the device.

- Open the „Settings“ menu, select „System“ and press OK to confirm.
- Select „Format memory“.

A confirmation message will appear. If you actually want to reformat the memory, confirm the message. If an error occurs, repeat the formatting process. If you are still unable to format the memory, please contact your retailer.

7. Device Management via PC in QN9

You can use the QN9 software to manage your devices on a PC. Among other things, you will be able to

- generate jobs and job templates and change them.
- generate test reports and report templates and change them.
- perform live measurements.
- configure device settings on the PC and copy to one or multiple hand-held units.
- request help and support via remote maintenance.

and much more. For more information, please see the help section in the QN9 software.

Index	Software Menu	Function
1, 11	Jobs	Create job template Manage jobs Edit job Create job Specifications Manage measurement memory
2, 14	Live Measuring	View Settings
3	Create	3-click report
4, 5	Support	Instructions Information Help/Support Teamviewer session / remote maintenance
6	Connect to gauge	Shows connection status
7	File sync	Synchronises the current files on the gauge
8	USB	Indicates if connected via USB
9	Program settings	File paths Connection status Language Reports Unit Help/Support Exit
10	Reports	Create Templates
12	Device Settings	Probe System Limit settings Status Adjustment certificate
13	Adjustment	Settings
15	Home	Return to start screen

7.1. Install App

You can download the app from our website at www.q-nix.com/downloads or directly from the hand-held unit when using the device for the first time. Proceed as follows:

- Connect the gauge to the computer via USB cable.
- Select and execute the file „Start_QN9“.
- Start the software.

Notive **Detect device**

The software automatically detects your device.

A few selected functions of the QN9 software will be described hereafter. You will find more and detailed information in the QN9 software operation manual.

7.2. Manage Jobs

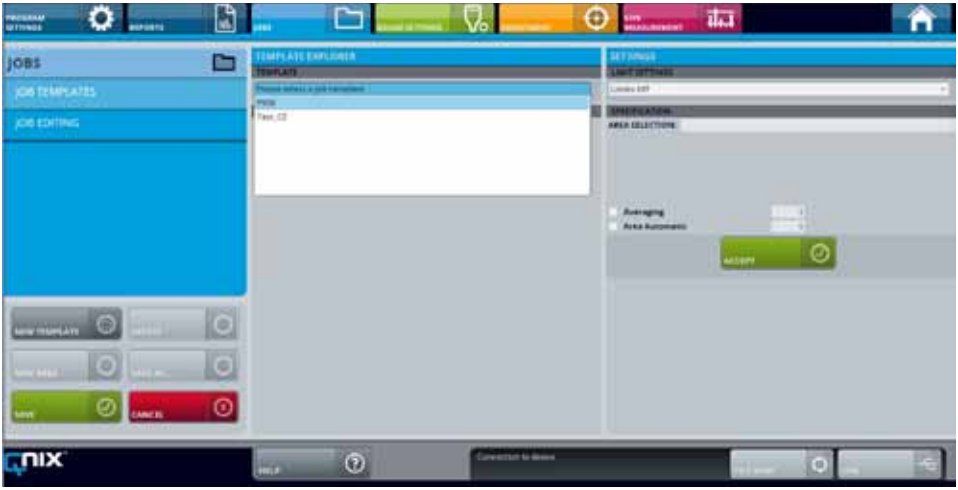
You can easily prepare jobs on the PC and then transfer them to the hand-held unit. The software allows you to replace the number with any alphanumeric name. You can further configure multiple devices the same way for more efficient measurements. The jobs, areas, limit sets, etc., work the same in the QN9 software as on the actual device.

You can use the software to import measurement series from the device, save these, and generate test reports. In addition to the standard templates, you can also customise these or create new templates.

7.2.1. Create Templates

You can use the software to create job templates with actual names and transfer these to the device. If you then create a new job from a template on the device, the actual names will also be applied. You can name both jobs and areas.

- From the home screen, click on the quick menu „Jobs“.
- Select an existing template to edit or click the „New Template“ button to create a new template.
- Under „Settings“, configure the limits for the area. Here you can also decide whether to apply the settings for all areas under the job or only the selected area.
- Click „Accept“ to save the settings.
- Click the „File Sync“ button to transfer the templates to one or more devices.

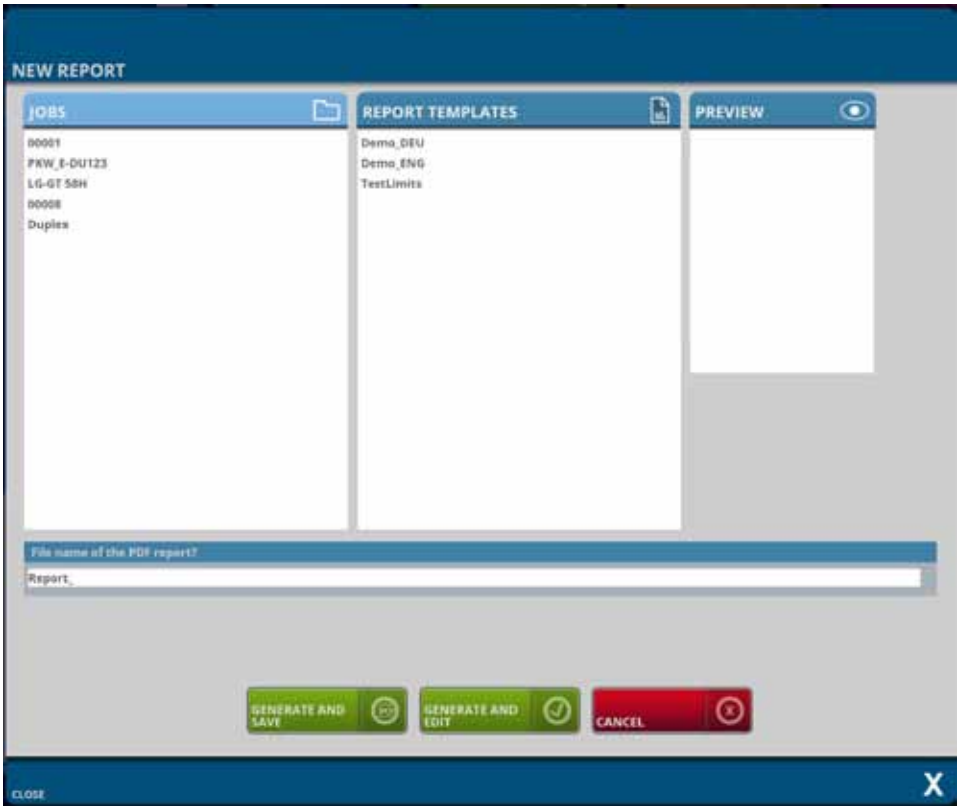


7.2.2. 3-Click-Report

After exporting the measurement data from the hand-held unit, you can generate a report with just 3 clicks.

- On the home screen, click the quick menu „Create“
- Select the desired template from „Report Templates“
- Select „Create and save“

The report will be saved to the defined directory. To add or edit project-specific data, e.g. job number, select „Create and edit“.



8. Troubleshooting

If the device is not responding as expected, please check the following items:

Symptom	Possible Cause	Action
Device doesn't switch on	Batteries empty	Replace the batteries or connect the device to a USB connection.
Adjustment with reference plates produces implausible results	Incorrect reference plate selected	Select the reference plate Fe/NFe based on your probe.
	Faulty adjustment	Carry out a new user adjustment.
	Device or probe defective	Please contact your authorised service location.
When placed on an object sensor lights up blue* and the gauge produces an acoustic error signal	Measuring range exceeded	
Sensor ring briefly lights up blue during probe change	No error Probe is connected correctly	
when area activated or scrolling through the menu "System Error" pops up	Possible memory error	If neccessary save measurement data then format the gauge memory (see sections 3.5, 6.10 and 7). See also section 9.5 Trouble-shooting in the user manual of the QN9 (starting from Version 3/2022)

*An integrated probe has no visible sensor ring.

9. Service and Repair

The equipment must be repaired by a manufacturer authorised technician. If you have any questions, please contact your local retailer or our support: www.q-nix.com/support

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10. Appendix

10.1. Gauge Technical Data

10.1.1. Gauge Mechanical Data

Mechanical Data	
Display	IPS-LCD, 2.4“, colour, 600 lm viewing angle 70° in all directions
Dimensions (L x W x H)	Ca. 160 mm x 68 mm x 38 mm
Weight (without batteries)	Ca. 270 g
Ambient conditions	
Operating temperature	-20 °C to +70 °C
Storage temperature	-20 °C to +70 °C

10.1.2. Gauge Electrical Data

Electrical data	
Protection rating	III
Device power supply	2 batteries 1.5 V (type AA) or via USB
Battery life without operation at min. 50 % battery capacity	> 1 year
Battery life at one measurement per second	Ca. 60 000
System clock power supply	1 x CR1220
System clock battery life	> 2 years

10.2. Technical Data Probe

10.2.1. Mechanical Data Probe

Mechanical Data Probe	
Upper housing material	Stainless steel (1.4305)
Bottom housing material	Trogamid® (CX7323)
Material measuring tip	Polished ruby (Al_2O_3)
Dimensions (length / diameter)	35,5 mm / 14,5 mm
Weight	11,9 g
Robustness / ambient conditions	
IP-rating	IP65 (closed)
Operating temperature	-20 °C to +70 °C
Storage temperature	-20 °C to +70 °C
Max. surface temperature in continuous measurement mode	80 °C
Max. surface temperature at 1s test time ever 20s	100° C

10.2.2. Electrical Data Probe

The probes may only be used with the gauges QNix® 9500 and QNix® 5500.

10.3. Measuring Data

Measuring Data	Fe	NFe
Principle of Measurement	Magnetic field principal, Magnetic field change, Hall effect	Magnetic field principal, Eddy current
As per standard (varies by model)	DIN EN ISO 2808, DIN EN ISO 2178	DIN EN ISO 2808, DIN EN ISO 2360
	DIN 50981, DIN 50984, BS 5411 (3 & 11), BS 3900-C5, ASTM B 499, ASTM D 1400, ASTM D 1186, ASTM D 7091	
Status indication	By RGB-LED at the probe	
Limits indication	By RGB-LED at the probe	
Probe type	See probe data sheet	
Measuring range	Varies by probe type	
Measuring interval	≥ 100 measurements / min	
Units	µm / mil	
Display resolution	0,01 µm	
Measurement uncertainty* (based on factory standards)	± (1 µm + 2 %) to 2 mm ± 3 % from 2 mm	± (2 µm + 2 %) to 2 mm ± 3 % from 2 mm
Minimum measuring area	14,5 mm ø	14,5 mm ø
Minimum curvature radius, convex (accuracy tested up to 250 µm)	4 mm with 2-point-adjustment (zero and 250 µm) on original substrate 6 mm with zero adjustment on original substrate	30 mm with 2-point-adjustment (zero and 250 µm) on original substrate 50 mm with zero adjustment on original substrate
Minimum thickness of the base material (accuracy tested up to 250 µm)	25 µm with 2-point-adjustment (zero and 250 µm) on original substrate 100 µm with zero adjustment on original substrate	20 µm with 2-point-adjustment (zero and 250 µm) on original substrate 50 µm with zero adjustment on original substrate

* Accuracy may deviate outside a range of -5 °C to 65 °C, but not more than the factor 2 of the measurement uncertainty

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