

Instruction Manual
Manuale di istruzioni
Manuel d'instructions
Manual de instrucciones
Bedienungsanleitung
操作指南

OHS 70RS Digital

F201A0723

General Information / Informazioni Generali / Informations Générales / Información General / Allgemeine Hinweise / 基本信息



Before using the unit, please read the following instruction manual carefully.

Prima dell'utilizzo dello strumento si raccomanda di leggere attentamente il seguente manuale operativo.

Avant d'utiliser l'instrument, il est recommandé de lire attentivement le présent manuel d'instructions.

Antes de utilizar el instrumento, le recomendamos que lea con atención el siguiente manual de instrucciones.

Bitte lesen Sie vor Inbetriebnahme des Geräts diese Bedienungsanleitung sorgfältig durch.

使用前请仔细阅读以下使用说明书。



Caution, hot surface!

Attenzione, superficie calda!

Attention, surface chaude!

Prudencia, superficie caliente!

Vorsicht, heiße Oberfläche!

注意：加热面高温



Do not dispose of this equipment as urban waste, in accordance with EEC directive 2012/19/UE.

Non smaltire l'apparecchiatura come rifiuto urbano, secondo quanto previsto dalla Direttiva 2012/19/UE.

Ne pas recycler l'appareil comme déchet solide urbain, conformément à la Directive 2012/19/UE.

No tirar el equipo en los residuos urbanos, como exige la Directiva 2012/19/UE.

Dieses Gerät unterliegt der Richtlinie 2012/19/UE und darf nicht mit dem normalen Hausmüll entsorgt werden.

按照 EEC 指令 2002/96/CE，不要将该设备作为城市垃圾处理。



The product can be used with flammable liquids.

Il prodotto può essere utilizzato con liquidi infiammabili.

Le produit peut être utilisé avec des liquides inflammables.

El producto puede utilizarse con líquidos inflamables.

Das Produkt kann mit brennbaren Flüssigkeiten verwendet werden.

本产品可与易燃液体混合使用。

This unit must be used for indoor laboratory applications only.
The manufacturer declines all responsibility for any use of the unit that does not comply with these instructions. If the product is used in a way not specified by the manufacturer or with unspecified accessories, the product's safety may be compromised.

Questo strumento deve essere utilizzato solo per applicazioni di laboratorio per uso interno.
La società produttrice declina ogni responsabilità sull'impiego non conforme alle istruzioni degli strumenti. Se il prodotto viene utilizzato in un modo non specificato o con accessori non specificati dal costruttore stesso, la sicurezza del prodotto potrebbe essere compromessa.

Cet instrument ne peut être utilisé pour les applications de laboratoire à l'intérieur seulement.
Le fabricant décline toute responsabilité en cas d'utilisation non conforme aux instructions concernant ces instruments. Si le produit est utilisé d'une manière non spécifiée par le fabricant ou accessoires non spécifiés, la sécurité du produit peut être compromise.

Este dispositivo sólo debe utilizarse para aplicaciones de laboratorio para uso interno.
El fabricante declina toda responsabilidad por el uso no conforme a las instrucciones de los dispositivos. Si se utiliza el producto de una manera no especificada o con accesorios no especificados de el fabricante, la seguridad del producto puede estar comprometida.

Dieses Gerät muss nur für Laboranwendungen verwendet werden.
Der Hersteller lehnt jede Haftung für unsachgemäße Verwendung oder Nichtbeachtung dieser Bedienungsanleitung ab. Wenn das Produkt in einer Weise verwendet wird, die nicht vom Hersteller oder mit unsachgemäßer Zubehör angegeben, kann das Produkt die Sicherheit beeinträchtigt werden.

这种装置只能在室内实验室使用。
制造商拒绝对任何不按照这些指示使用该装置的行为承担任何责任。如果产品是由制造商以未指定的方式使用或与未指定的配件一起使用，产品的安全可能会受到危害。

This unit has been designed and manufactured in compliance with the following standards:
Lo strumento è stato progettato e costruito in accordo con le seguenti norme:
L'instrument a été conçu et fabriqué conformément aux normes suivantes:
El dispositivo se ha sido diseñado y fabricado de acuerdo con las siguientes normas:
Das Gerät wurde in Übereinstimmung mit folgenden Normen entwickelt und gebaut:
这种装置的设计和制造符合下列标准:

Safety requirements for electrical equipment for measurement, control and for laboratory use
Prescrizioni di sicurezza per apparecchi elettrici di misura, controllo e per l'utilizzo in laboratorio
Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire
Prescripciones de seguridad para equipos eléctricos de medición, control y su uso en laboratorio
Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte
测量，控制和实验室用电气设备的安全要求

IEC/EN 61010-1
IEC/EN 61010-2-051

Electrical equipment for laboratory use

UL 61010-1

General requirement - Canadian electrical code

CAN/CSA-C22.2 No.61010-1

VELP reserves the right to modify the characteristics of its products with the aim to constantly improve their quality.
Nell'impegno di migliorare costantemente la qualità dei prodotti, VELP si riserva la facoltà di variarne le caratteristiche.
Dans le but d'améliorer constamment la qualité de ses produits, VELP se réserve le droit d'apporter des modifications aux caractéristiques de ceux-ci.
VELP se reserva el derecho de modificar las características de productos con el fin de mejorar constantemente su calidad.
VELP behält sich zum Zwecke der ständigen Verbesserung der Produktqualität das Recht auf Änderung der Geräteeigenschaften vor.
VELP 保留修改其产品特性的权利，以不断提高其质量。

Safety Regulations / Norme di Sicurezza / Consignes de Sécurité / Advertencias de Seguridad / Sicherheitshinweise / 安全法规

The plug disconnects the instrument. Therefore, place the instrument where it can be quickly disconnected.

La spina è il mezzo di disconnessione dell'apparecchio. Pertanto, non posizionare l'apparecchio in modo che sia difficile azionare il mezzo di disconnessione.

Le bouchon est le moyen de déconnexion de l'appareil. Par conséquent, placer l'appareil où il peut être rapidement débranché.

El enchufe es el medio de desconexión del dispositivo. No coloque el dispositivo en una forma que es difícil de desconectar.

Der Stecker trennt das Gerät. Daher Stellen Sie das Instrument, wo es schnell getrennt werden kann.

仪器插头可插拔。请将仪器放置在可快速插拔电源的地方。

Use only the power cable provided with the instrument.

Utilizzare solo il cavo di alimentazione fornito con lo strumento.

Utilisez uniquement le câble d'alimentation fournis avec l'instrument.

Utilizar únicamente el cable de alimentación suministrado con el instrumento.

Verwenden Sie nur das mit dem Gerät gelieferte Stromkabel verwenden.

请仅使用仪器随附的电源线。

The values indicated on the rating plate of the instrument must correspond to those of the a.c. mains supply.

I valori di tensione indicato sulla targhetta del modello e quello di rete devono coincidere.

Les valeurs indiquées sur la plaque signalétique de l'appareil doivent correspondre à ceux de l'alimentation.

Los valores de tensión indicados en la placa y que de la red debe ser los mismos.

Die angegebene Spannung Wert auf dem Typenschild und das Netzwerk muss gleich sein.

Fasten the control unit to the support rod (accessory) using the fixing block or placing it into specific drive unit holder (accessory). Position the instrument with a distance from the wall of 30 cm (at least).

Fissare saldamente l'unità di controllo allo stativo (accessorio) mediante il blocchetto di fissaggio o posizionarla nell'apposito supporto (accessorio). Posizionare lo strumento ad una distanza dalle pareti di almeno 30 cm.

Fixez l'unité de commande à le statif (accessoire) con le noix de fixation double en utilisant le bloc de fixation ou en la plaçant dans le support spécifique de l'unité d'entraînement (accessoire). Positionner l'appareil avec une distance de la paroi de 30 cm (au moins).

Asegurar firmemente la herramienta a la barra de soporte (accesorio) utilizando el bloque de fijación o colocándola en el soporte específico de la unidad de accionamiento (accesorio). Coloque la unidad con una distancia de la pared de 30 cm (por lo menos)

Befestigen Sie das Gerät an der H-Stativ (Zubehör) mit dem Befestigungsblock oder setzen Sie sie in die entsprechende Antriebseinheitenhalterung (Zubehör) ein. Stellen Sie das Gerät auf einer ebenen Fläche mit einem Abstand zur Wand von 30 cm (mindestens).

使用固定块将控制单元固定到支撑杆（附件）上，或将其放入专用驱动单元支架（附件）中。将仪器放置在距离墙壁至少 30 厘米的位置。

Safe working conditions are ensured only when the accessories described in the dedicated chapter are used.

Il funzionamento sicuro è garantito soltanto con gli accessori descritti nel relativo capitolo.

Conditions de travail sûres sont assurées que lorsque les accessoires décrits dans le chapitre dédié sont utilisés.

El funcionamiento es seguro sólo con los accesorios descritos en el capítulo correspondiente.

Sichere Arbeitsbedingungen sind gewährleistet, wenn das Zubehör in dem Kapitel beschrieben verwendet werden.

只有在使用专用章节中描述的附件时，才能确保安全的工作条件。

The working speed set on the instrument must be such as to avoid wobbling and/or splashes.

Il numero di giri impostato deve escludere eventuali squilibri dell'agitatore e possibili spruzzi del prodotto agitato.

Le nombre de tours de l'ensemble agitateur doit exclure les déséquilibres et les éclaboussures du produit agité.

El número de revoluciones del agitador debe excluir cualquier desequilibrio y posible de salpicar de el producto agitado.

Die Arbeitsgeschwindigkeit des Gerätes muss gesetzt sein, wie Wackeln und / oder Spritzer zu vermeiden.

仪器的运行速度必须设定得当，以避免晃动和/或飞溅。

Do not use with explosive or dangerous materials for which the equipment is not designed. The stirrer must not be used in explosive atmospheres, in bain-marie or to stir harmful liquids prior using protective measures according to the safety standards of the processed products and/or in force in the laboratories including personal protective equipment and the presence of an extraction hood which ensures at least 10-fold air change in accordance with the standards EN 14175 and DIN 12924.

Vietato l'uso con materiale esplosivo o pericoloso per cui l'apparecchio non è progettato. L'agitatore non può essere impiegato in atmosfere esplosive, a bagno maria o per agitare liquidi pericolosi previo utilizzo di misure di protezione in accordo con le norme di sicurezza dei prodotti in lavorazione e/o vigenti nei laboratori, compresi dispositivi di protezione individuale e la presenza di una cappa aspirante che garantisca almeno 10 ricambi di aria in accordo con le norme EN 14175 e DIN 12924.

Ne pas utiliser avec des matières explosives et dangereuses pour lesquelles l'équipement n'est pas conçu. L'agitateur ne doit pas être utilisé dans des atmosphères explosives, au bain-marie ou pour remuer des liquides nocifs avant l'utilisation de mesures de protection selon les normes de sécurité des produits transformés et / ou en vigueur dans les laboratoires, y compris les équipements de protection individuelle et la présence d'une extraction hotte assurant un renouvellement d'air d'au moins 10 fois conformément aux normes EN 14175 et DIN 12924.

No debe utilizarse con materiales explosivos y peligrosos para los que el equipo no está diseñado. El agitador no se debe usar en atmósferas explosivas, en baño de maría o para agitar líquidos dañinos antes de usar medidas de protección de acuerdo con las normas de seguridad de los productos procesados y / o vigentes en los laboratorios, incluido el equipo de protección personal y la presencia de una extracción. Capucha que garantiza un cambio de aire de al menos 10 veces de acuerdo con las normas EN 14175 y DIN 12924.

Nicht mit explosivem Material zu verwenden, für die das Gerät nicht ausgelegt ist. Das Gerät kann nicht in explosionsgefährdeten Bereichen eingesetzt werden, in einem Wasserbad oder zum Umrühren von schädlichen Flüssigkeiten verwendet werden, bevor Schutzmaßnahmen gemäß den Sicherheitsnormen der verarbeiteten Produkte durchgeführt werden und / oder in den Laboratorien einschließlich der persönlichen Schutzausrüstung und dem Vorhandensein einer Extraktion in Kraft sind Haube, die einen mindestens 10-fachen Luftwechsel gemäß den Normen EN 14175 und DIN 12924 gewährleistet.

请勿将本设备用于非设计的爆炸性或危险材料。搅拌器不得在爆炸性环境中使用，不得在蒸馏器中使用，也不得用于搅拌有害液体，之前应根据加工产品的安全标准和/或实验室的现行标准采取保护措施，包括个人防护设备和确保至少 10 倍换气量的抽气罩，符合 EN 14175 和 DIN 12924 标准的要求。

It is dangerous to run the unit with the stirring blade turning in free air. Always place the stirring shaft in the receptacle before turning the unit on.

Il funzionamento con estremità dell'albero in rotazione libera è pericoloso. Per ragioni di sicurezza, quindi, inserire l'asta di agitazione nel recipiente di agitazione prima di avviare lo strumento.

Il est dangereux de faire fonctionner l'unité avec la lame d'agitation tournant à l'air libre. Toujours placer la tige d'agitation dans le récipient avant de mettre l'appareil en marche.

Es peligroso ejecutar la unidad con la paleta de agitación en el aire libre. Coloque siempre la varilla de agitación en el recipiente antes de encender la unidad.

Es ist gefährlich, das Gerät mit dem Rührklinge Drehen in freier Luft laufen. Legen Sie immer die Rührwelle in der Aufnahme, bevor Sie das Gerät einschalten.

在自由空气中转动搅拌叶片的情况下运行设备是很危险的。在打开设备之前，一定要把搅拌轴放在容器中。

It is responsibility of the user to appropriately decontaminate the instrument in the case that dangerous substances fall on or in it, according to the safety datasheet of substances used and to the current laboratories' safety standards. It is not possible to decontaminate the product under steam.

It is also responsibility of the user to use substances for cleaning or decontaminating which do not react with internal parts of the instrument or with the material contained in it. In case of doubts about the compatibility of a cleaning solution, contact the manufacturer or local distributor.

È responsabilità dell'utilizzatore un'appropriata decontaminazione in caso di versamento di sostanze pericolose sul o dentro l'apparecchio in accordo con le schede di sicurezza delle sostanze utilizzate e agli standard di sicurezza in vigore nei laboratori. Non è possibile decontaminare il prodotto con corrente di vapore.

È inoltre responsabilità dell'utilizzatore l'uso di sostanze decontaminanti o per la pulizia che non producano pericolo a causa di reazioni con parti dell'apparecchio o con il materiale in esso contenuto. In caso di dubbio sulla compatibilità di un agente pulente o decontaminante, contattare il produttore o un distributore locale.

Est responsabilité de l'utilisateur la décontamination en cas de déversement de matières dangereuses sur ou à l'intérieur de l'équipement conformément à la fiche de données de sécurité des substances utilisées et aux normes de sécurité actuelles des laboratoires. Il n'est pas possible de décontaminer le produit sous la vapeur.

Est responsabilité de l'utilisateur à utiliser des substances qui ne produisent pas de danger pour le nettoyage ou de décontamination, qui ne réagissent pas avec les parties internes de l'appareil ou avec la matière qu'il contient. En cas de doute sur la compatibilité d'une solution de nettoyage, contactez le fabricant ou le distributeur local.

Es responsabilidad del usuario una descontaminación adecuada en caso de derrame de sustancias peligrosas en o dentro el equipo de acuerdo con las fichas de seguridad de las sustancias utilizadas y las normas de seguridad vigentes en los laboratorios. No es posible descontaminar el producto con corriente de vapor.

Es responsabilidad del usuario también utilizar sustancias que no producen peligro para limpiar o descontaminar, que no reaccionan con las partes internas del instrumento ni con el material contenido en él. En caso de duda sobre la compatibilidad de una solución de limpieza, póngase en contacto con el fabricante o el distribuidor local.

Der Benutzer ist dafür verantwortlich, für die ordnungsgemäße Dekontamination beim Freiwerden gefährlicher Stoffe auf oder im Inneren des Geräts entsprechend dem Sicherheitsdatenblatt der verwendeten Stoffe und Labors auf die aktuellen Sicherheitsstandards. Es ist nicht möglich, das Produkt unter Dampf zu dekontaminieren.

Der Benutzer ist dafür verantwortlich, für die Reinigung oder Dekontaminierungsmitteln, die nicht mit internen Teile des Gerätes oder mit dem Material in ihm enthaltenen reagieren. Im Zweifelsfall über die Vereinbarkeit einer Reinigungslösung den Hersteller, den Vertreiber oder den Händler.

当危险物质落在仪器上或仪器内时，使用者有责任根据所使用物质的安全资料和现行实验室的安全标准，对仪器进行适当的清洁。禁止使用蒸汽对本设备进行去污。

使用者亦有责任使用不会与仪器内部部件或仪器结构材料发生反应的物质进行清洁或去污。如果对清洁溶液的兼容性有疑问，请与制造商或当地经销商联系。

The solution may release toxic, dangerous or poisonous gases. Adequate safety measures must be taken, in accordance with the safety regulations in force, including the placement in a hood and personal protective equipment (masks, gloves, goggles, etc.).

Le sostanze potrebbero emanare gas tossici e/o pericolosi e/o velenosi. Adequate misure di sicurezza devono essere prese, in accordo con le normative di sicurezza dei prodotti in lavorazione e/o vigenti nei laboratori, compresa la presenza di cappe aspiranti e mezzi di protezione individuale (maschere, guanti, occhiali, camici, ecc.).

La solution peut libérer gaz toxiques ou dangereux. Des mesures de sécurité adéquates doivent être prises, en conformité avec les règlements de sécurité en vigueur, compris la présence de la hotte de laboratoire et équipements de protection individuelle (masques, gants, lunettes, etc.).

Las sustancias pueden emitir tóxicos o peligrosos gas. Medidas de seguridad adecuadas deben ser adoptadas, de acuerdo con las normas de seguridad vigentes en los laboratorios, incluyendo la presencia de la campana de humos y el equipo de protección personal (mascarillas, guantes, gafas, etc.).

Die Lösung kann giftige, gefährliche oder gesundheitsschädliche Gase freisetzen. Es sind geeignete Sicherheitsmaßnahmen gemäß den geltenden Sicherheitsvorschriften zu treffen, einschließlich der Verwendung eines Abzugs sowie persönlicher Schutzausrüstung (Masken, Schutzhandschuhe, Schutzbrille usw.).

该溶液可能释放有毒、有害或危险气体。必须根据现行安全法规采取适当的安全措施，包括在通风柜中进行操作并佩戴个人防护装备（口罩、手套、防护眼镜等）。

Switch off the instrument before removing stirring shaft.

Spegnere lo strumento prima di rimuovere l'asta di agitazione.

Éteignez l'appareil avant de retirer l'arbre d'agitation.

Apague el instrumento antes de retirar el eje de agitación.

Schalten Sie das Gerät aus, bevor Sie die Rührwelle entfernen.

拆卸搅拌轴前，请先关闭仪器电源。

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The OHS 70 RS Digital is designed to deliver powerful and precise mixing for fluid samples across low to high viscosities.

This instrument is used in a wide range of laboratory applications, operated either with stirring shafts or integrated with mini-jacketed reactors, particularly where constant speed and accurate torque control are required.

To maximize flexibility, safety, and durability, the motor is decoupled from the electronic control unit. Thanks to a 2-meter connection cable, the drive unit can be positioned conveniently on the Stand support, or even outside a fume hood, protecting the electronics and ensuring maximum instrument robustness and long-term reliability.

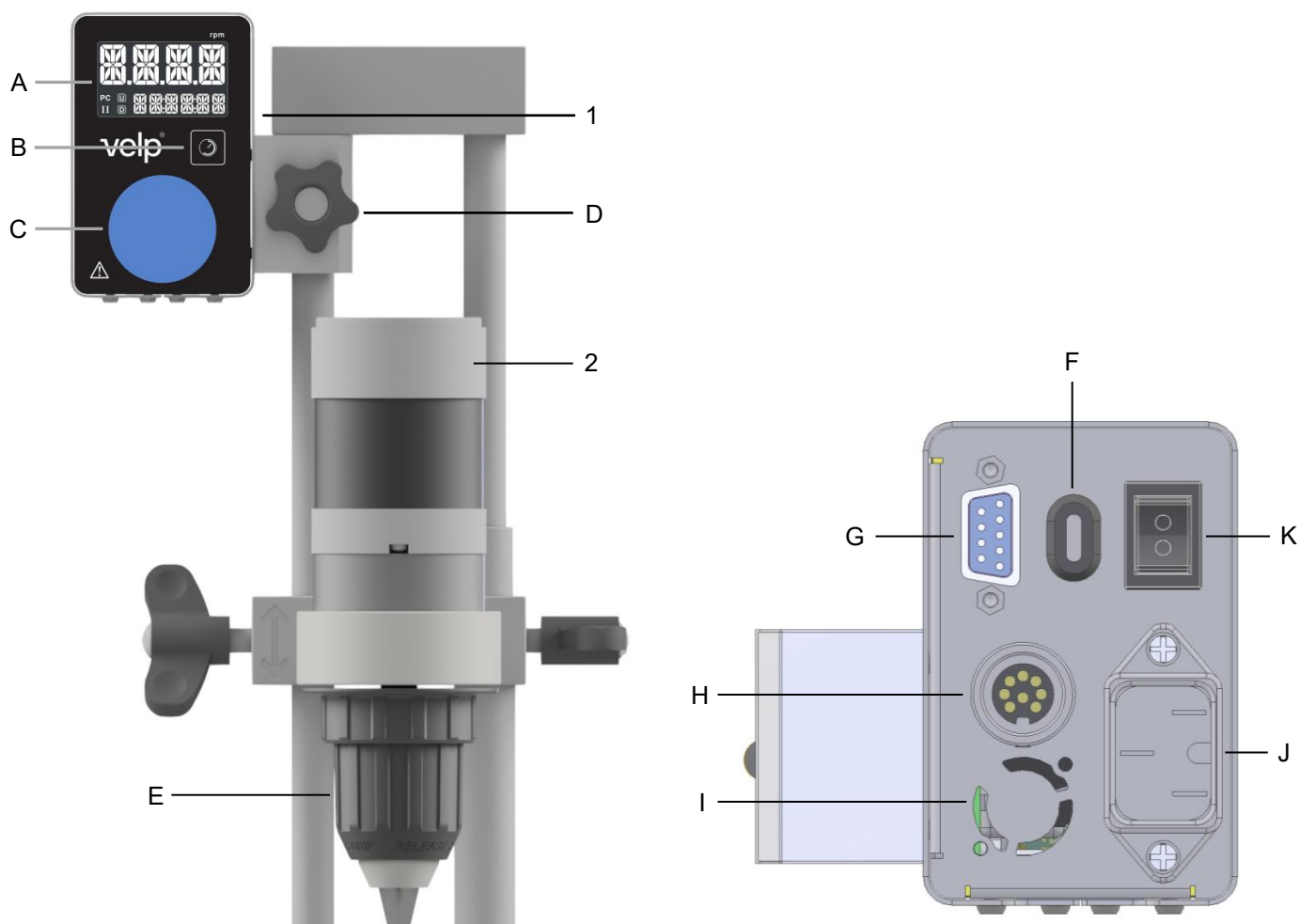
In addition, a broad range of interchangeable stirring shafts allows the OHS 70 RS Digital to adapt seamlessly to various container shapes, volumes, and sample characteristics.

Through the high-contrast LCD display, the instrument allows simple and easy programming of time and stirring speed.

Through the digital display, it is possible to monitor the test at any time, with the analysis time constantly shown.

Using default parameters, to ensure maximum safety, the unit automatically stops at the end of the analysis time.

Integrated safety features, including overload and over-temperature protection, ensure maximum operational safety by automatically stopping the unit if operating limits are exceeded



1 OHS 70RS Digital – Control Unit

2 OHS 70RS Digital – Drive Unit

A Display

B Timer button

C Control knob

D Fixing block

E Chuck

F USB-C port interface

G RS-232 port interface

H Motor connector

I Air vent

J Power connector

K Main switch

2. Installation

Unpacking

- Check the integrity of the unit after unpacking.

The box includes

- OHS 70RS Digital – Control Unit (1);
 - OHS 70RS Digital – Drive Unit (2);
 - Allen key and Allen head screw
 - Support shaft
 - Instruction manual;
 - EU (Schuko) power cable;
 - US (NEMA 5-15P) power cable.
- Note:** stirring shafts are not included and must be purchased separately

Installation

- Place the Control Unit (1) and the Drive Unit (2) on a non-flammable surface;
- Insert the Support shaft into the Drive Unit (2) and secure it tightly using the supplied Allen screw and key;
- Firmly secure the Drive Unit (2) to a suitable support (e.g. A00000484 Double Rod Mini H-Stand Set) using the Support shaft;
- Insert the Control Unit (1) into the dedicated optional accessory (A00000602 - Drive unit holder for OHS 70RS Digital) and place it on a stable, non-flammable surface, or secure it firmly to a suitable support rod using the Fixing block (D);
- Connect the Drive Unit (2) cable to the Motor Connector (H) of the Control Unit (1);
Note: Lock the connection in place by tightening the male connector's threaded ring onto the female connector.
- Position a suitable receptacle under the Drive Unit (2) and secure it;
- Slide the stirring shaft into the chuck (E) and tight it
- Adjust the Drive Unit (2) height to ensure the stirring blade is correctly positioned inside the sample
- Make sure that the technical specification of the unit and of the power supply line are the same;
- Make sure that the electrical network is grounded;
- Make sure that the Main switch (K) is OFF;
- Connect the instrument to an easily accessible socket (compliant with the current safety norms), using only the provided power cable;
Note: Keep the power cable far away from the moving elements.

3. Operation

Power-up

- Turn the unit on using the Main switch (K);
- The display shows the software version and the last settings.
Note: if the set starting mode is STOP ([see chap. 5](#)), the stirring and timer functions are not active. Otherwise, the instrument starts working at the last set speed setpoint with the last saved timer value.

Stirring

- Rotate the Control knob (C) to set the stirring speed;
- Push the Control knob (C) to start stirring;
- The real speed increases until set point achievement;
- A microprocessor ensures constant speed even if the viscosity changes (SpeedServo);
- Rotate the Control knob (C) to adjust the stirring speed;
- Push the Control knob (C) to stop stirring.

Timer

Count-Up:

By default, at first power-up and after resetting the unit ([see chap. 5](#)), the timer is set to Count-Up mode with an initial value of 00:00:00 (hours : minutes : seconds of operation).

When the timer operates in Count-Up mode, the Count-Up icon  is displayed.

Count-Up operation:

- Press the Timer button (B) to start counting, regardless of whether stirring is active or inactive;
- Once Count-Up has started, press the Timer button (B) once to pause it;
- To reset the Count-Up, double-press the Timer button (B) quickly;
- Upon reaching 99:59:59, the Count-Up timer automatically restarts from 00:00:00;
- Count-Up also automatically starts and stops when stirring is activated or stopped by pressing the Control knob (C).

Count-Down:

When the timer is stopped, hold the Timer button (B) for 2 seconds to switch from Count-Up to Count-Down mode. The

Count-Down icon  will appear on the display, the display shows the previously saved Count-Down value: The default Count-Down value after resetting the unit ([see chap. 5](#)) is 1 minute (00:01:00).

Edit and start/stop Count-Down:

- Press and hold the Timer button (H) for 2 seconds. The display digits (hh:mm:ss) will start flashing, indicating that the time can now be adjusted.
- Rotate the Control knob (C) to adjust the duration of the Count-Down up to 99:59:59.
- Confirm and save the new timer value by either pressing the Control knob (C) or the Timer button (B)
- The digits will stop flashing to confirm that the setpoint has been saved.
Note: to change the setpoint again, simply repeat the procedure described above.
- Press the Timer button (B) to start counting, regardless of whether stirring is active or inactive;
- Once Count-Down has started, press the Timer button (B) once to pause it;
- To reset the Count-Down, double-press the Timer button (B) quickly;
- Count-Down also automatically starts and stops when stirring is activated or stopped by pressing the Control knob (C).

When Count-Down expires:

- If the “TIME END” parameter is set to “OFF” ([see chap. 5](#)):
 - Stirring stops and display shows “OFF” and “END”;
 - The instrument beeps 3 times.
- If the “TIME END” parameter is set to “ON” ([see chap. 5](#)):
 - Stirring continues;
 - Display shows “END” without any audible beep.

Clearing the “END” message:

- Press the Timer button (B) to mute the beeps (if active), clear the “END” message, and restore the Count-Down setpoint.
- If stirring was stopped (TIME END = OFF), press the Control knob (C) to mute the beeps and immediately start a new stirring and Count-Down cycle.

Switching from Count-Down to Count-Up:

- While the Count-Down timer is stopped (paused or not started), press and hold the Timer button (B) for 2 seconds until the digits begin flashing.
- Press and hold the Timer button (B) for another 2 seconds.
- Display **B** will show 00:00:00.
- the Count-Up icon  is displayed
- The previously saved Count-Down setpoint and remaining time are preserved in memory for future Count-Down cycles.

4. Connection to PC

The instrument can be connected to a PC using a suitable cable for efficient data logging and remote control via dedicated software.

Hardware Interfaces:

- USB-C port interface (F): standard USB-C interface for PC connection;
- RS-232 port interface (G): 9 pin DE-9 female connector.

Communication Protocols ([see chap. 5](#)):

- “VELP”: select this protocol when using VELP ControllerSoft™;
- “OTHE” (Other): select this protocol when communicating with external third-party software or custom devices (using the commands described below).

“Other” protocol:

Command	Value (range)	Type*	Function
SS	0 (OFF)	Q/N	Sets or reads motor speed (RPM). • Sending SS starts stirring at the specified speed and locks speed adjustment using the Control knob (C) (start/stop via knob remains active); • Send RM to restore manual speed adjustment via the Control knob (C).
	30 - 800		
RM	None	N	Releases PC speed control lock and restores manual adjustment via the Control knob (C). Sending a new SS command locks knob adjustment again.
PI	None	Q	Returns instrument info (software version and serial number). <i>Example: OHS 15 Digital v1.0.0 SN_00609379</i>
MS	Nessuno	Q	Returns current motor status: • MS1: Motor stopped • MS4: Motor running at target speed • MS6: Alarm status
SN	None	Q	Returns instrument serial number

* Command Types: **Q** = Query / Read, **N** = Action / Write

Protocol Syntax

Commands are case sensitive and must be in upper case.

The end-of-line character is a carriage return <CR>, or Hex 0x0D. Do not add a linefeed to the end of line.

Query Format: <COMMAND><CR>	Command Format: < COMMAND ><Value><CR>
This example queries the instrument serial number. Example: • Command = SN<CR> • Reply = SN00123456<CR>	This example sets the motor rotational speed. Example: • Command = SS350<CR> • Reply = SS350<CR>

Communication parameters:

Baudrate [bps]	9600
Data bits	8
Stop bit	1
Parity	None

5. Setting mode

Press and hold the Control knob (C) for 3 seconds when stirring is not active to access the instrument menu.

Rotate the Control knob (C) to browse through the available parameters, listed below.

Press and turn the knob to modify the value of the parameter (except for motor counter). Press the knob to confirm.

To exit the setting mode, press and hold the Control knob (C) for 3 seconds or do not press/turn the knob for 10 seconds.

Instrument menu:

Parameter shown		Default value	Range	Description
LIMIT		800	OFF / 30 – 800	<u>Speed limit</u> It limits the maximum value of speed set point for the motor. If OFF is selected, stirring is “disabled”.
STRT	MODE	STOP	STOP - RUN	<u>Starting mode</u> - STOP: when the instrument is powered, stirring is not active. - RUN: when the instrument is powered, it starts working at the last working conditions.
TIME	END	OFF	ON - OFF	<u>Continue stirring after timer end</u> ➤ If ON, stirring continues after Count-Down ends.
COMM	PROTOD	VELP	VELP - OTHE	<u>Communication Protocol</u> - VELP: for Velp ControllerSoft™; - OTHE: for third-party software or devices.
COUN		-	-	<u>Motor operating time</u> It shows motor operating time. Operating time is shown in hours up to 9999 hours (around 416 days). Then they is shown in days.
CAL	MOTOR	NO	YES - NO	<u>Reset</u> It allows to perform a calibration of the motor (necessary operation if the motor has been replaced).
RSET		NO	YES - NO	<u>Reset</u> It allows to restore all system settings to their default values.

6. Error and warning messages

When the display shows an error message, the instrument functions automatically stop.

AL1	The motor doesn't start or not reach the set speed
AL3	Motor overload (torque out of range) / overcurrent
AL4	High internal temperature
AL5	Electronic board malfunction
AL8	Speed variation / oscillations too high
AL9... - AL15	Hardware malfunction

To remove the error message, restart the instrument from the main switch.

If the alarm persists on the display, please contact VELP Scientifica's technical assistance service.

7. Maintenance

No routine or extraordinary maintenance is required except periodic cleaning.

Cleaning

Disconnect the unit from the power supply and use a cloth dampened with a non-flammable non-aggressive detergent.

Repair

Repairs must be carried out by authorized Velp personnel only.

The transport of the instrument by freight forwarders, couriers or others must be carried out using the original shockproof packaging. Follow any instructions on the original packaging (e.g., palletizing).

It is the responsibility of the user to properly decontaminate the unit in case of hazardous substances remaining on the surface or interior of the device. If in doubt about the compatibility of a cleaning or decontamination product, contact the manufacturer or distributor.

8. Technical data

		OHS 70RS Digital
General features	Model	F201A0723
	Voltage and Frequency	115/230 V - 50/60 Hz
	Power input	90 W
	Control Unit - Dimensions (WxHxD)	93 x 95 x 130 mm (3,66 x 3,74 x 5,12 in)
	Control Unit - Weight	0,85 kg (1,87 lb)
	Drive Unit - Dimensions (WxHxD)	67 x 187 x 140 mm (2,64 x 7,37 x 5,5 in)
	Drive Unit - Weight	1,9 kg (4,18 lb)
	Construction material	Stainless steel enclosure – Tempered glass control panel
	User interface	LCD display and touch button
	Working in continuous	Admitted
	Noisiness	<< 80 dBa
	Environmental temperature admitted	+5...+40 °C
	Storage temperature admitted	-10...+60 °C
	Max humidity	80%
	Overvoltage category	II
	Pollution degree CEI EN61010-1	2
	Max altitude	2000 m
Stirring	Stirring capacity	Up to 40 l H ₂ O – Up to 50.000 mPa*s
	Max torque admitted	70 Ncm
	Programmable speed range	0 / 30 – 800 rpm
	Speed setting resolution	1 rpm
	Motor type	BLDC
	Motor rating output	60 W
	Chuck range diameter	2 – 13 mm
	Shaft diameter Pass-Through	N/A
Timer	Count-Up and Count-Down range	1 s ÷ 99 h 59 min 59 s (1 s steps)
Connectivity	USB interface	USB-C
	RS 232 interface	Yes
Counters	Motor counter	Operating hours/days

A00000366	Universal H-Stand / H-Stand Universale
A00000369	Telescopic H-Stand / H-Stand Telescopico
A00000484	Double Rod Mini H-Stand Set / Mini H-Stand con doppia asta completo
A00001301	Double clamp / Morsetto doppio per stativo
A00001302	Ribbon clamp / Pinza a nastro
A00001311	Stirring shaft with anchor / Asta di agitazione inox ad ancora
A00001306	Stirring shaft with fixed blade / Asta di agitazione inox a pala fissa
A00001304	Stirring shaft with floating blade / Asta di agitazione inox a pale flottanti
A00001305	Stirring shaft with folding blade / Asta di agitazione inox pala basculante
A00001308	Stirring shaft with paddle, 6 holes / Asta di agitazione inox pala a 6 fori
A00001307	Stirring shaft with propeller / Asta di agitazione inox a elica
A00001309	Stirring shaft with turbine / Asta di agitazione inox pala a turbina
A00001310	Stirring shaft with turbo propeller / Asta di agitazione inox a turbo elica
A00000391	OHS/ControllerSoft / OHS/ControllerSoft
A00000381	IQ/OQ OHS Digital Manual / IQ/OQ Manuale OHS Digital
A00000567	PTFE Stirrer Shaft, Centrifugal 8x300mm / Asta PTFE centrifuga 8x300mm
A00000568	PTFE Stirrer Shaft, Retreat Curv 8x300mm / Asta PTFE curva 8x300mm
A00000569	PTFE Stirrer Shaft, Screw Propel 8x300mm / Asta PTFE propeller 8x300mm
A00000597	PTFE Stirring shaft, half moon 8x300mm / Asta PTFE pala mezzaluna 8x300mm
A00000598	Ø8mm stirring shaft guide NS 29/32 / Guida per aste Ø8mm NS 29/32
A00000602	Drive unit holder for OHS 70RS Digital / Supporto per unità azionamento OHS70RS
A00000603	Flasks 1000 ml with 3 necks / Pallone 1000 ml a 3 colli

10. Declaration of conformity / Dichiarazione di conformità / Déclaration de conformité / Declaración de conformidad / Konformitätserklärung / 符合性声明

We, the manufacturer VELP Scientifica, under our responsibility declare that the product is manufactured in conformity with the following standards:

Noi, casa costruttrice VELP SCIENTIFICA, dichiariamo sotto la ns. responsabilità che il prodotto è conforme alle seguenti norme:

Nous, VELP Scientifica, déclarons sous notre responsabilité que le produit est conforme aux normes suivantes:

Nosotros casa fabricante, VELP Scientifica, declaramos bajo nuestra responsabilidad que el producto es conforme con las siguientes normas:

Der Hersteller, VELP Scientifica, erklärt unter eigener Verantwortung, dass das Gerät mit folgenden Normen übereinstimmt:

我们 VELP Scientifica 作为制造商, 在我们的责任下声明, 该产品的制造符合以下标准:

EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements
EN 61010-2-051	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-051: Particular requirements for laboratory equipment for mixing and stirring
EN 61326-1	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

and satisfies the essential requirements of the following directives:

e soddisfa i requisiti essenziali delle direttive:

et qu'il satisfait les exigences essentielles des directives:

y cumple con los requisitos esenciales de las directivas:

und den Anforderungen folgender Richtlinien entspricht:

并满足以下指令的基本要求:

2006/42/EC	Machinery directive
2014/30/EU	Electromagnetic compatibility directive
2015/863/EU (RoHS III)	Restriction of the use of certain hazardous substances
2012/19/EU (WEEE)	Waste of electric and electronic equipment

plus modifications / più modifiche / plus modifications / más sucesivas modificaciones / in der jeweils gültigen Fassung /
加修改.

11. Declaration of conformity

We, the manufacturer VELP Scientifica, under our responsibility declare that the product is manufactured in conformity with the following regulations:

S.I. 2017/1206 Radio Equipment Regulations 2017

according to the relevant designated standards:

EN 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use
Part 1: General requirements

EN 61010-2-051 Particular requirements for laboratory equipment for mixing and stirring

EN 61326-1 Electrical equipment for measurement, control and laboratory use - EMC requirements -
Part 1: General requirements

and satisfies the essential requirements of regulations:

S.I. 2008/1597 Supply of Machinery (Safety) Regulations 2008

S.I. 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic
Equipment Regulations 2012

S.I. 2013/3113 Waste Electrical and Electronic Equipment Regulations 2013

plus modifications.

Thank you for having chosen Velp!

Established in 1983, Velp is today one of the world's leading manufacturer of analytical instruments and laboratory equipment that has made an impact on the world-wide market with Italian products renowned for innovation, design and premium connectivity. Velp works according to **ISO 9001**, **ISO 14001** and **ISO 45001** Quality System Certification.

Our instruments are manufactured in Italy according to the IEC 1010-1 and CE regulation.

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Solvent Extractors
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Dietary Fiber Analyzers
Oxidation Stability Reactor
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Heating Plates
Overhead stirrers
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Cooled Incubators
Flocculators
Turbidimeter
Open Circulating Baths
Pumps

Grazie per aver scelto Velp!

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