

Operating instructions

VisionLine RWC 2.0
VisionLine EAC 2.0
VisionLine EC 2.0



Table of contents

Notes on symbols and markings	3
Preface.....	4
Illustration of the EC declaration of conformity VisionLine	5
1 Introduction	7
1.1 Liability	7
1.2 Warranty.....	7
1.3 Return and handling.....	8
2 Description of the camera system.....	8
2.1 Intendend use.....	8
2.2 Structure of the camera systems.....	10
3 Installation	12
3.1 Before Installation.....	12
1.1 Mechanical installation.....	12
3.2 Mechanical installation.....	13
3.3 Flying connection.....	17
3.4 Electrical installation	18
3.5 Pneumatic installation	20
4 Operation	21
4.1 Commisioning	21
4.2 Control.....	22
4.3 Maintenance / Servicing	23
4.4 Error diagnostics	26
4.5 Decomissioning / Disposal.....	27
5 Appendix.....	27

Notes on symbols and markings

This operating manual uses symbols and images to help you understand how to use the product safely and to warn you of potential hazards due to incorrect connection, mounting, selection and operation. It is important that you know the meaning of the notes to this manual exactly in order to use this camera system correctly.

HAZARD



This hazard note indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING



This hazard note indicates a potentially hazardous situation which, if not avoided, may result in death or a serious injury.

CAUTION



This hazard note indicates a potentially hazardous situation which, if not observed, may result in minor or moderate injuries.

NOTICE



This notice indicates possible damage to property or a process of special interest / importance that may arise if the safety measures are not followed.

Preface

NOTICE



Read these operating instructions carefully to gain a thorough understanding of the camera system and its operation and maintenance. Only use the device in accordance with this manual to avoid personal injury or property damage. Do not operate the device on the basis of assumptions. Have the operating instructions available at the site of operation of the camera system and consult it if you doubt the execution of any procedure. The manufacturer assumes no liability for problems caused by non-observance of these operating instructions.

Customer service

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Operating instructions

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Illustration of the EC declaration of conformity VisionLine

1 Introduction

The models of the VisionLine series are camera systems for visual process monitoring of wet and dry areas. The camera used provides a high-resolution image that allows the user to monitor processes in real time.

1.1 Liability

The removal of defects is only authorized by expert personnel of the manufacturer. The liability of the manufacturer is limited to damage caused by normal use.

Violations

- against the safety instructions,
- against the notes of special hazards,
- against the prohibition of unauthorized modifications and changes and
- against the use of components and spare-parts that are not approved by the manufacturer

exclude the liability of the manufacturer for consequences. In these cases the liability is transferred to the operator. UYAR GmbH & Co. KG will charge the operator for any resulting repairs.

The manufacturer is not liable for any accidental loss resulting through the due to use or non-use of this product, such as loss of business incomes/profits.

1.2 Warranty

The operator of the camera system is not allowed to not make any changes or modifications without our permission.

The used spare parts must be approved by us. This is guaranteed only with original spare parts from the valid spare parts list.

Please contact us directly for possible warranty claims. The warranty for the camera system and accessories is limited to a period of 12 months from the date of the delivery note. The warranty can only be claimed in conjunction with the proof of purchase.

Defects covered by the warranty will be remedied within the scope of these warranty conditions. If the warranty claim is valid, we will repair or replace it. The decision on where the service is provided or made available is up to us. The above warranty is exclusive and supersedes all other written, oral or indirect warranties. For the product, it represents the only claim of the buyer and the only liability on our part. Through performed warranty repairs, the original warranty period of the device is not extended.

During a warranty repair, we do not provide a replacement device. The sender is liable for transport damages and losses that occur during the return to us.

We reserve the right to make technical changes for the purpose of product improvements or the technical progress.

1.3 Return and handling

Any warranty claim must be asserted during the warranty period and received by us in a timely manner.

If a product needs to be sent in for repair and/or adjustment, our consent is required beforehand (Phone: +49 (0) 5201/97 180 - 0).

Any material sent in for inspection and/or warranty repair should be insured for the means of transport specified by us.

If a warranty claim exists, please indicate the serial number of the camera system. The general responsibility for determining the cause and nature of an error and the final decision on it, is in any case, exclusively with us.

Serial number VisionLine RWC



Serial number VisionLine EAC / EC



2 Description of the camera system

2.1 Intended use

Camera system VisionLine RWC 2.0 and VisionLine EAC 2.0

In machine tools, coolants are used to reduce heat during the production process. The coolant is slung away by the rotation of the tool or the part and adheres to walls and windows of the machine interior, whereby the view of the operator is affected.

The UYAR camera systems of the RWC and EAC series are mounted inside the working area of a machine tool. The rotating special pane of glass in the VisionLine RWC throws both the impinging coolant and the chips away to the outside and thus out of sight. With the VisionLine EAC, this function is performed by an air curtain generated by compressed air in front of the pane. The view of the production process is clear.

VisionLine EC 2.0

Thanks to the well-sealed housing with IP67 standard, the VisionLine EC models can be used wherever conventional cameras fail after a short time. The housing of the VisionLine EC is not only dust- and waterproof: All seals are also resistant to oils and cooling lubricants.

NOTICE



The coolant jet must not be directed at the camera system. The device must not be operated completely or partially under water, coolant or other liquids.

2.2 Structure of the camera systems

2.2.1 VisionLine RWC 2.0



2.2.2 VisionLine EAC 2.0



2.2.3 VisionLine EC 2.0



2.2.4 Hinge

Hinge
external ball joint



3 Installation

The installation of our camera systems is generally uncomplicated, but must be done exactly according to the installation instructions listed in the following chapters.

The installation of the camera and the electrical installation is only permitted by qualified personnel.

These installation instructions include the standard installation for industrial processing machines. However, depending on the type of construction or the type of system another mounting style can be more appropriate. If you have any questions, please contact us directly:

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3.1 Before Installation

WARNING



The system to be equipped must be switched off by qualified personnel and secured against being switched on again. Infringement may result in injury.

CAUTION



When working in the workspace, there is a risk of injury from edges. Wear suitable protective equipment!

First determine a suitable position for the camera system taking into account the following points:

- The camera must be located outside possible collision areas,
- The process to be observed must be optimally visible,
- The coolant jet must not be directed at the camera system,
- The position of the camera system should be determined in such a way that there is enough hose left outside the machine to be able to position the flying connection in a meaningful and accessible manner.

A suitable and user-friendly mounting position should also be found for the monitor.

For smaller screens up to 22" screen diagonal, the mounting above the HMI panel of the machine tool is recommended. Depending on the application a different position may be more appropriate.

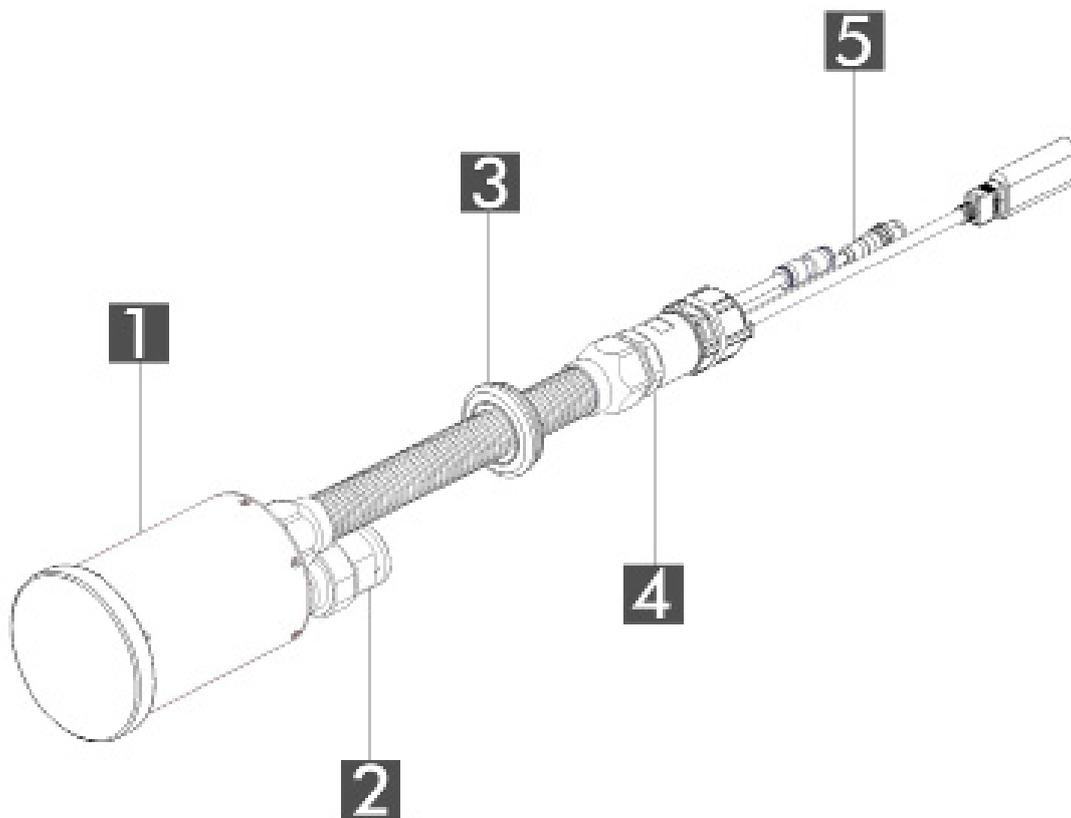
3.2 Mechanical installation

- The following installation instructions are equally valid for the VisionLine RWC, EAC and EC models. The respective installation instructions can be found in one of the following chapters, depending on your camera:
 - 3.2.2 Installation of the wall mount

For installation instructions on how to use the optional wall bushing, please refer to the chapter

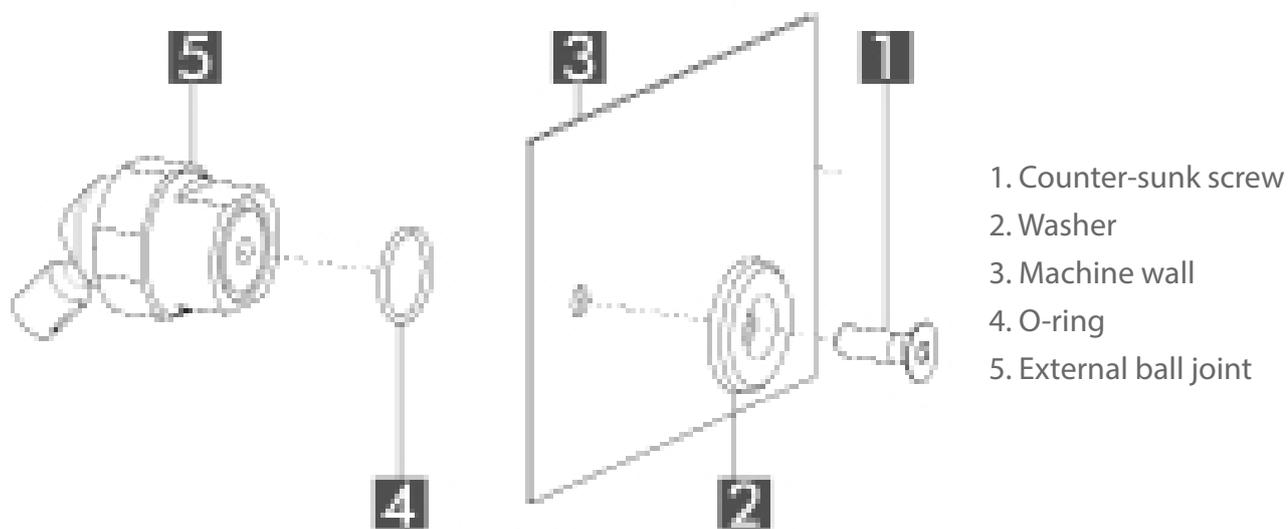
- 3.2.3 Installation of the wall bushing „assembly seal“

3.2.1 Installation of the camera



1. Camera
2. External ball joint
3. Wall bushing „assembly seal“
4. Tight cable gland
5. Flying connection consisting of:
 - compressed air adapter Ø6mm
 - M12, 5-pin connector, A-coded
 - HDMI adapter (HDMI repeater)

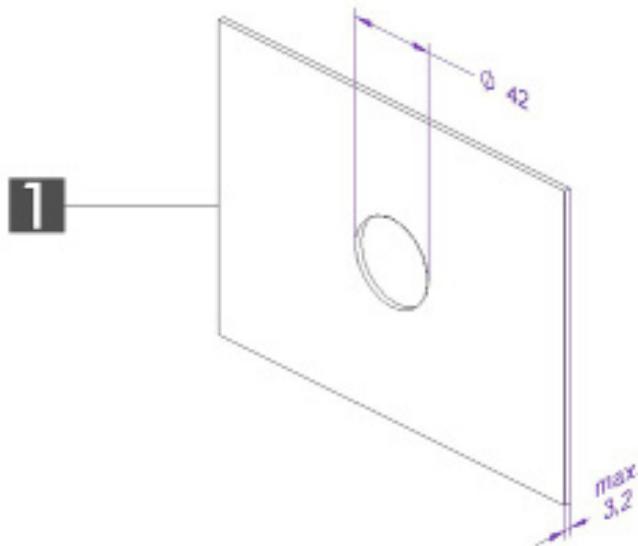
3.2.2 Installation of the wall mount



If you have not purchased a magnetic holder for your camera system, a $\varnothing 8.2\text{mm}$ hole is required at the position specified in Chapter 3.1. Here the camera is attached to the external ball joint (incl. O-ring) with washer and countersunk screw (included in delivery) according to the above exploded view.

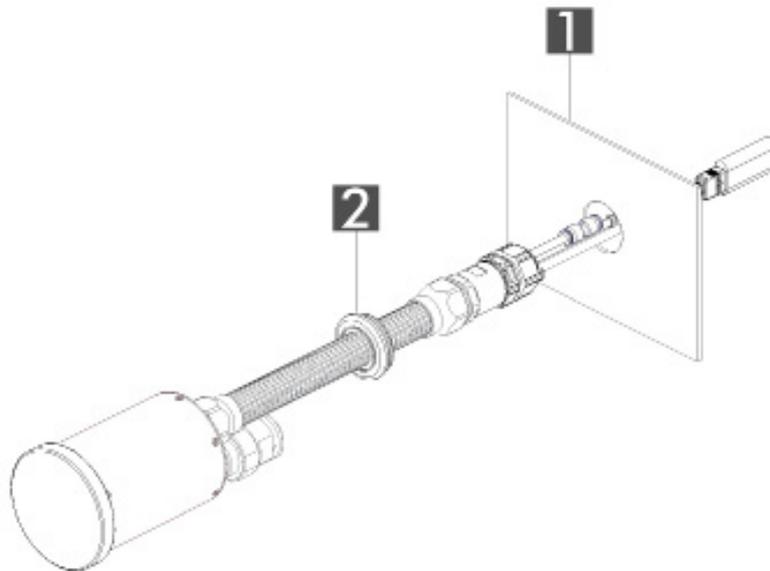
3.2.3 Installation of the wall bushing „assembly seal“

If the camera is positioned, a suitable position for the wall duct of the hose package must be found. Ideally, this should be freely accessible. The position should also be determined in such a way that there is enough hose left outside the machine to be able to position the flying connection in a meaningful and accessible manner.



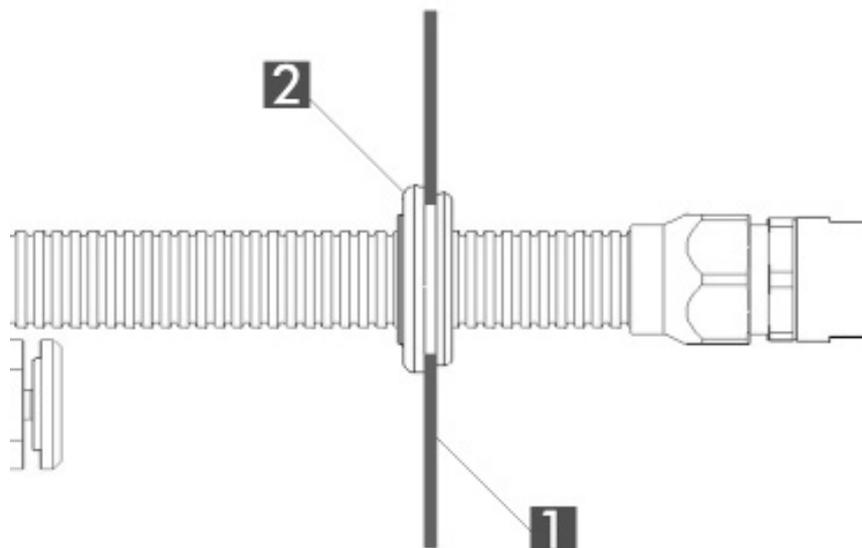
1. Machine wall

At the position just determined, a $\varnothing 42\text{mm}$ hole is required in the machine wall (pos. 1). This should preferably be inserted into the machine wall using a step drill or a sheet metal punch. The maximum machine wall thickness must not exceed 3.2mm. Make sure that the contact surfaces on both sides are free of burrs and dirt so that the assembly seal seals properly.



- 1. Machine wall
- 2. Assembly seal

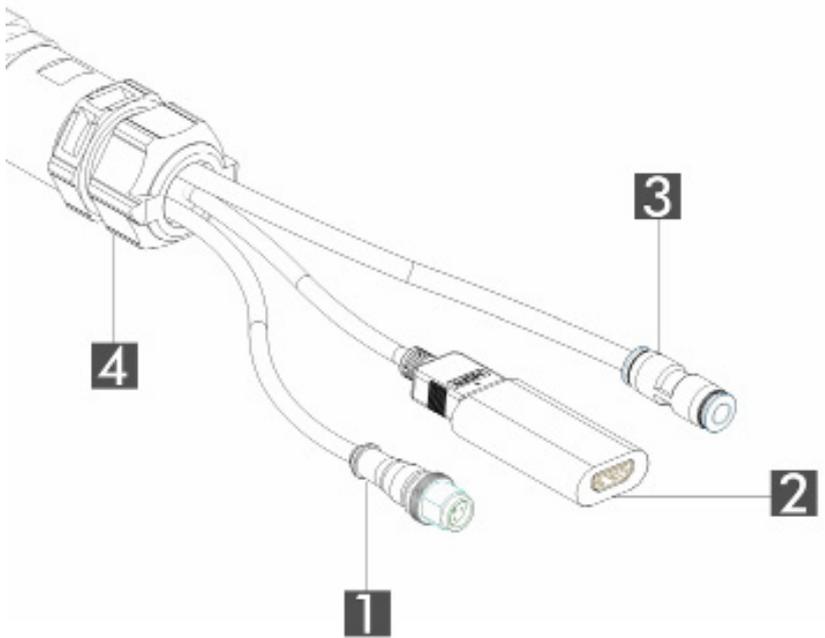
Guide the hose package with the attached assembly seal (pos. 2) from the interior of the machine through the hole in the machine wall. The hose package must be aligned with the connections so that there is an optimal hose and cable routing.



- 1. machine wall
- 2. assembly seal

Press the assembly seal (pos. 2) into the machine wall (pos. 1). Optimal fit as shown below.

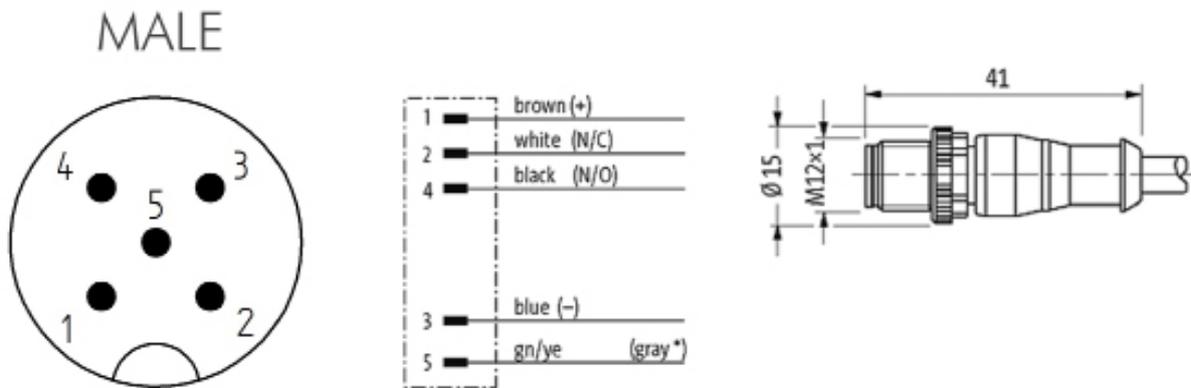
3.3 Flying connection



1. M12, 5-pin connector, A-coded
2. HDMI adapter (HDMI repeater)
3. Compressed air adapter Ø6mm
4. Cable gland with TPE sealing insert

The standardized M12, A-coded 5-pin connector (pos. 1) is for the power supply of the camera system.

Data of the camera side installed M12 connector:



The appropriate circuit diagram can be found in the chapter:

- 3.4.1 Electrical connection diagram of the model VisionLine RWC 2.0 - 24V
- 3.4.2 Electrical connection diagram of the models VisionLine EAC 2.0 / EC 2.0 - 24V

HDMI (pos. 2) is used for signal transmission. An HDMI repeater (signal amplifier up to 20m) serves as a connecting bridge, which must be connected with the HDMI cable type A connector.

With the compressed air adapter (pos. 3) pneumatic hoses can be connected with an outside diameter of Ø6mm.

3.4 Electrical installation

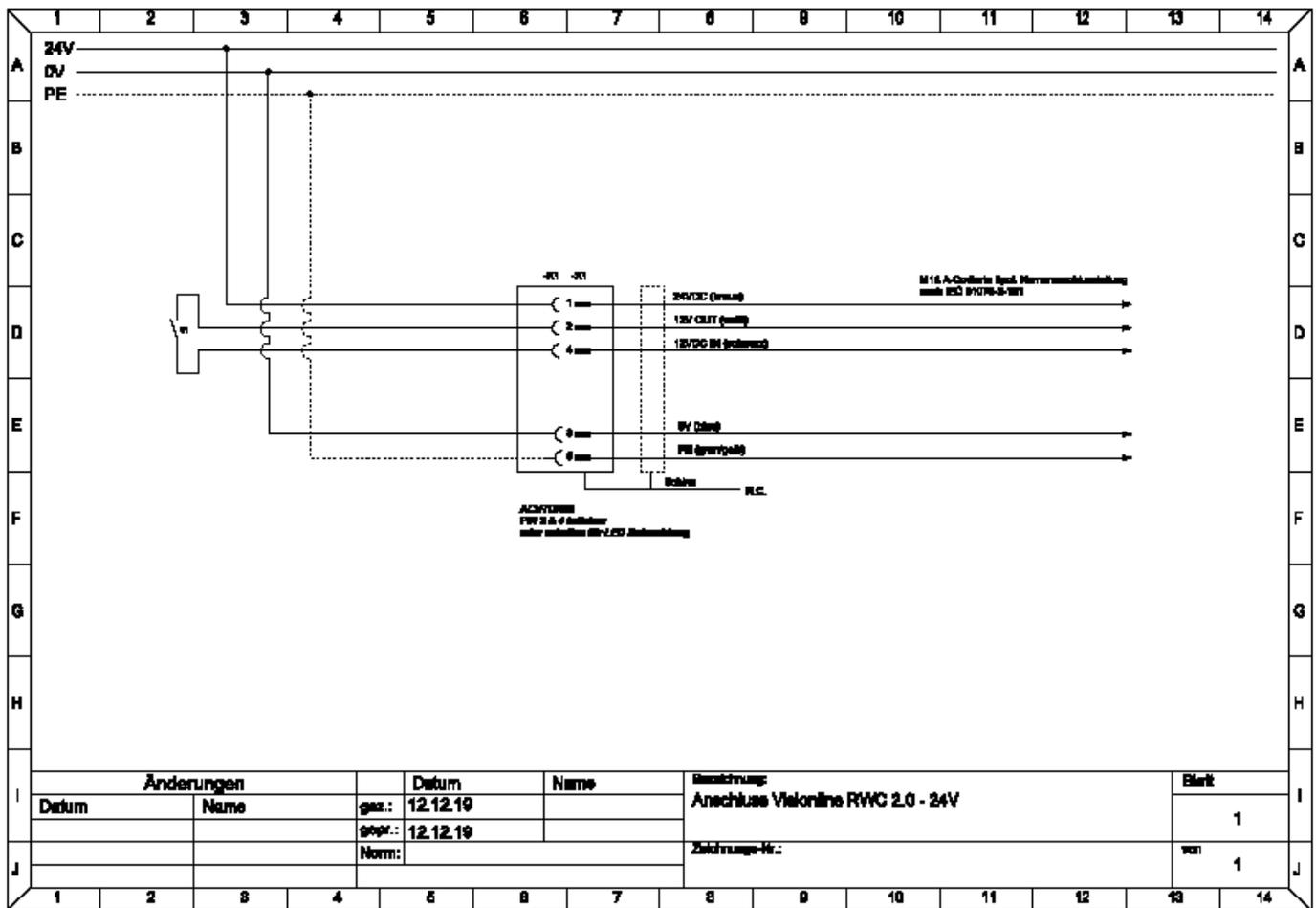
HAZARD



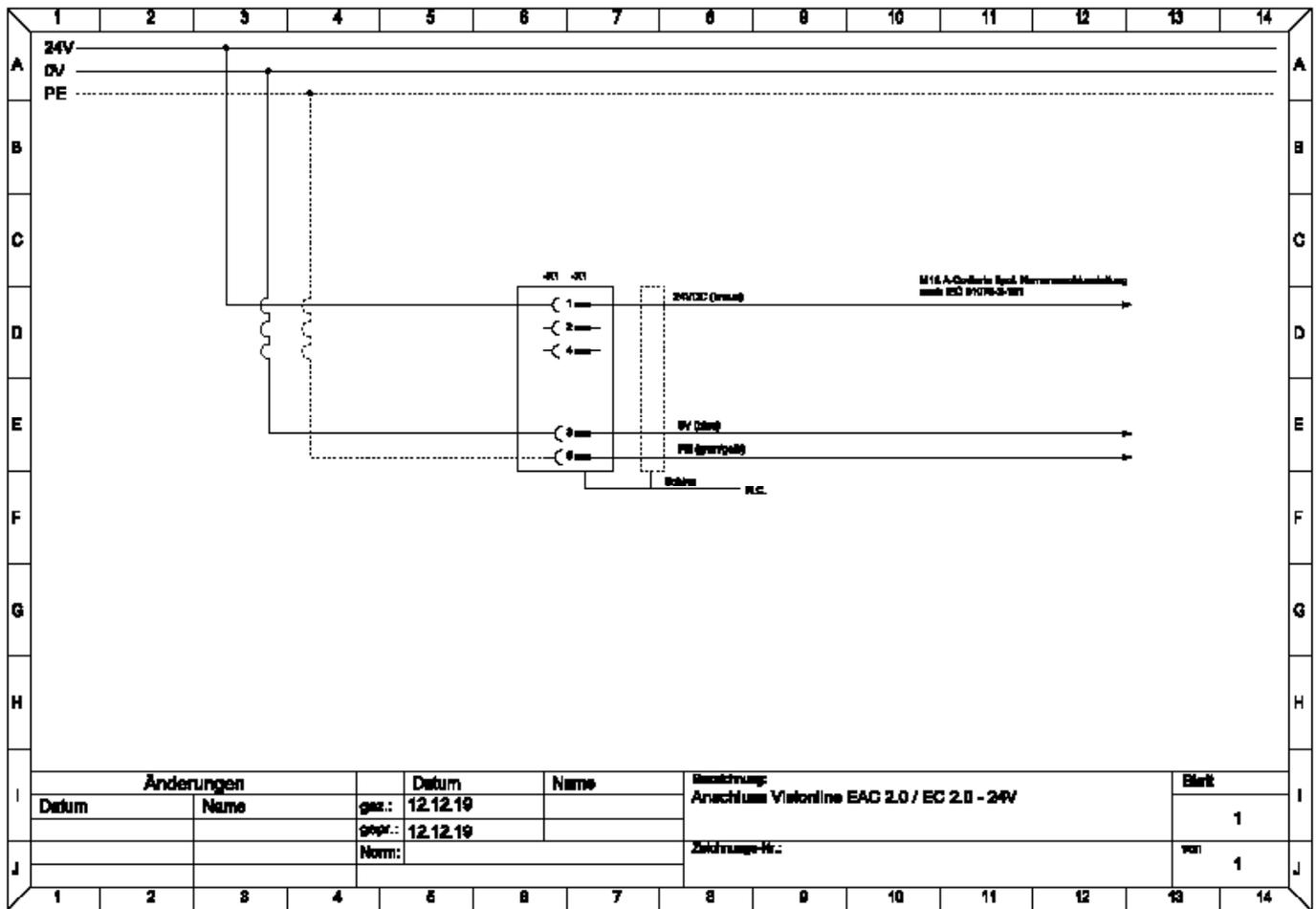
The electrical installation is only permitted by a qualified electrician. Danger due to electric currents!

Please note the different information on the power connection for the VisionLine RWC and VisionLine EAC / EC models!

3.4.1 Electrical connection diagram of the VisionLine RWC 2.0 - 24V



3.4.2 Electrical connection diagram of the VisionLine EAC 2.0 / EC 2.0 - 24V



3.5 Pneumatic installation

CAUTION



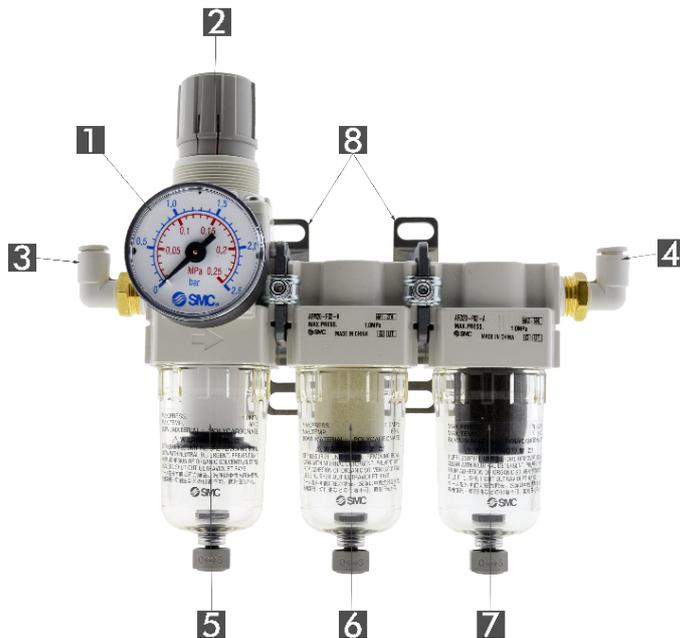
Make sure that the system is not under pressure before starting to work! Risk of injury!

Notice for the Model VisionLine EC:

Since the VisionLine EC model does not need to be supplied with compressed air, a blanking plug is located in the compressed air inlet of the control box when delivered. This is not allowed to be removed, otherwise there is a danger of liquid entering the control box.

Mount the air service unit in a suitable place. This must be chosen so that:

- the pressure gauge (pos.1) of the air service unit is always visible,
- the pressure regulator (pos.2) of the air service unit is freely accessible and movable,
- all pneumatic lines are not kinked, crushed or otherwise restricted in their function.



1. Pressure gauge
2. Pressure regulator
3. Air service unit input
4. Air service unit output
5. Coarse filter (5 micrometer)
6. Fine filter (>0,3 micrometer)
7. Super fine filter (>0,01 micrometer)
8. Mounting brackets

Connect the output side (pos.4) of the air service unit to the control box via a standard pneumatic hose, type PA6.

Connect the input side (pos.3) of the air service unit to your in-house compressed air network with a standard pneumatic hose.

4 Operation

The camera system is designed for continuous operation and can therefore remain switched on continuously.

NOTICE



During the operation of the machine, it is not allowed to interrupt the compressed air supply (1 bar) of the camera systems VisionLine RWC and VisionLine EAC.

4.1 Commissioning

CAUTION



Commissioning is only authorized by qualified personnel. During commissioning there is a risk of starting or rotating parts. Avoid contact during the operation.

When the assembly has been successfully completed, commissioning can begin.

- First pressurize the system with compressed air: Set the air service unit via the pressure regulator so that the pressure gauge shows a pressure of approx. 0.3 to 0.5 bar.
- Make sure that both, the control box and the playback device, are connected to the power supply.
- Connect the control box and a suitable playback device (with the HDMI input) by plugging an HDMI cable into the appropriate ports of the respective devices. Make sure the HDMI connector on the control box snaps into place.
- For the RWC and EAC models, connect the Ø6mm compressed air adapter with a compressed air supply of 1 bar.
- Now switch on the playback device: probably you have to set the signal input to „HDMI“ on the monitor. Instructions for this are provided by the manufacturer of the playback device you are using.
- Now switch on the camera system.
- After powering up the system on the control box, it may take up to 30 seconds before the first footage is transferred to your monitor.

Your new UYAR camera system is now ready for use!

4.2 Control

After the successful commissioning, your camera system is already running in operating mode. Since our components are designed for continuous operation, you only have to turn off the camera for maintenance.

To do this, press the on/off switch on the control box.

Users with an optional operating unit also have the option to deactivate the system using the “Maintenance” key-operated switch. In addition, the LED lamps can be switched on and off separately with the operating unit.

The VisionLine RWC model can be temporarily taken out of service and still remain in the running machine tool.

- First switch off the camera system as described above.
- Once this has been done, the compressed air supply can also be turned off via the regulator of the air service unit.
- As soon as the disc no longer rotates and the compressed air supply has been interrupted, it is absolutely necessary to push the protective cap included in the scope of supply onto the camera housing from the front.

NOTICE



As soon as the protective cap is removed from the camera housing of VisionLine RWC and the machine tool is put into operation, it is essential to ensure a constant supply of compressed air!

Since the VisionLine EAC model does not have a protective cap, a permanent supply of compressed air is absolutely essential. So do not forget to turn on the compressed air at the air service unit again to the intended working pressure.

4.3 Maintenance / Servicing

Of particular importance is the regular check for contamination and if necessary the prompt and thorough cleaning. Only with regular care and cleaning the trouble-free and permanent operation of UYAR camera systems is possible.

With our special glass panes, which are installed in all models of the VisionLine RWC, you have acquired a low-maintenance and robust product that makes it easy to clean or even change the special glass pane.

Different concentrations of cooling lubricants, aluminum processing and changing minimum lubrication, may have a negative impact on the visibility of the disc due to coating.

daily	Checking the pane for damage
	Cleaning the pane of glass
weekly	Check the hose system for leaks
	Check operating pressure at pressure gauge
monthly	Checking the camera mount for loosened screw connections
	Checking the monitor holder for loosened screw connections
	Checking the filter elements of the air service unit
if required	Replacing the filter elements of the air service unit

NOTICE



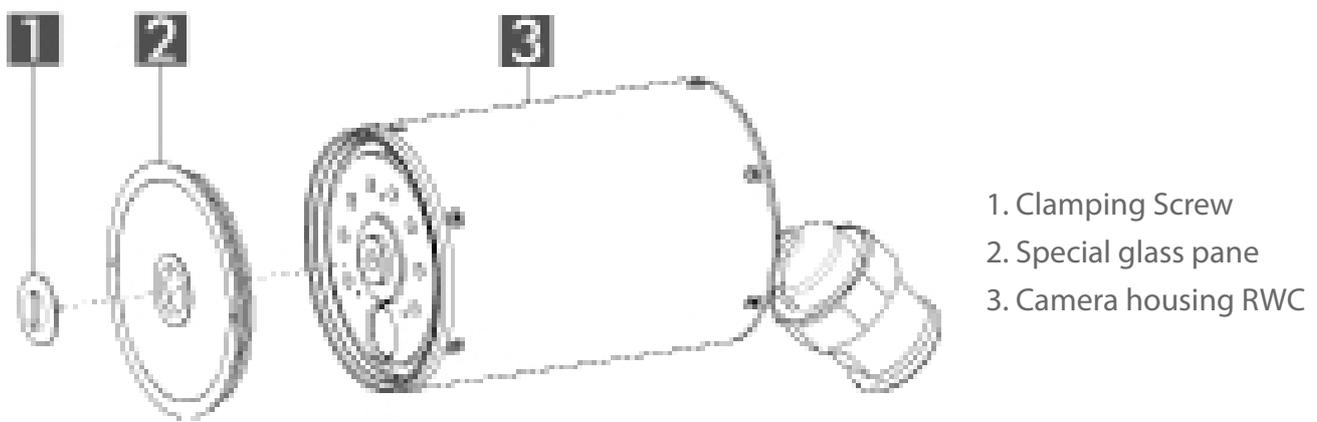
For a permanently good view on the process and optimal production conditions, we recommend holding an interchangeable glass pane and inserting and cleaning it alternately. The special glass pane is a wearing part. A contamination and damage by chips on the glass pane does not constitute a reason for complaint.

4.3.1 Changing the special glass pane

The special glass panes of our cameras are extremely robust and designed for continuous operation under the influence of cooling lubricants and metal chips.

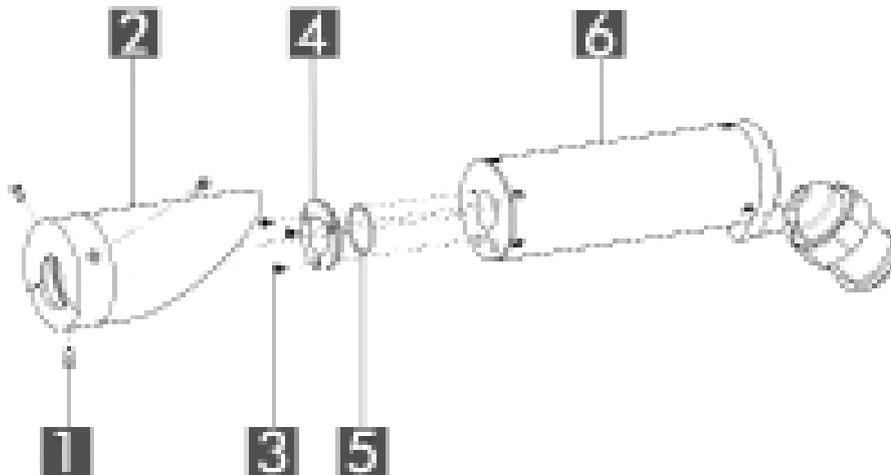
Nevertheless, the special glass pane is a spare or wear part on all models. The permanent operation of cooling lubricants and metal chip bombardment which can lead to deposits, scratches or other defects. The glass pane of all models can be changed in a few easy steps.

Pane change VisionLine RWC



Loosen the clamping screw (pos. 1). To do this, fix the pane (pos. 2) in place with the aid of a face spanner over the two holes in the outer ring. Then pull the pane forward from the mount and place the new pane on top. Tighten the new pane in the same way as you removed the old pane.

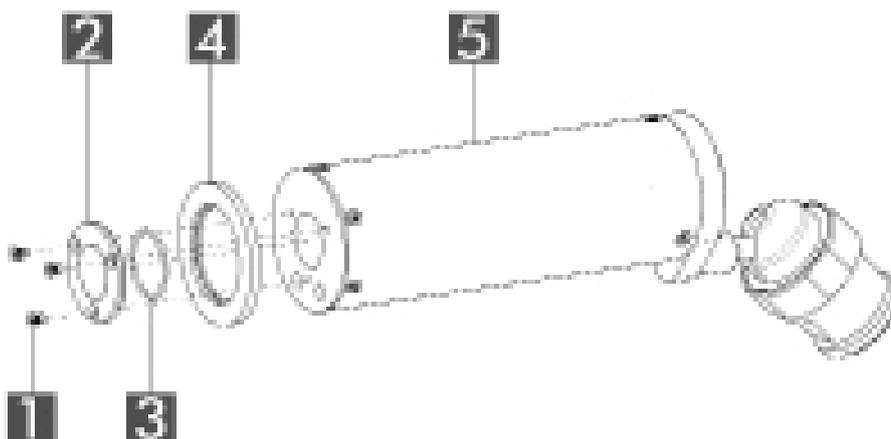
Pane change VisionLine EAC



1. Countersunk screw M3x8
2. Air attachment
3. Countersunk screw M3x5
4. Special glass pane
5. O-ring
6. Camera housing EAC

First loosen the three countersunk screws (pos. 1) from the air attachment (pos. 2). Then remove it from the camera housing (pos. 6). Three further countersunk screws (pos. 3) must be loosened on the face side so that the pane (pos. 4) with holder can be loosened. Replace both the pane and the supplied O-ring (pos. 5) behind the pane. First tighten the three countersunk screws (pos. 3) on the front, then mount the air attachment.

Pane change VisionLine EC



1. Countersunk screw M3x5
2. Special glass pane
3. O-ring
4. Outer ring
5. Camera housing EC

Loosen the three countersunk screws (pos. 1) and remove the pane (pos. 2) incl. outer ring (pos. 4). Replace both the pane (pos. 2) and the supplied O-ring (pos. 3) behind the pane. Then mount the new pane including outer ring (pos. 4) and tighten the three countersunk screws (pos. 1) on the face side.

4.4 Error diagnostics

Disturbance / error	Reason	Remedy
Rocker switch is in position „I“: System still remains out of service	Power supply provided by customer is out of service	Put power supply into operation
	Power supply not connected	Connect plug
	Fuse damaged / triggered	Change the fuse ¹
Pressure regulator is open, but no compressed air flows	Supply line provided by customer is kinked	Renew the hose and secure it against kinking ²
	Compressed air is not switched on	Check switching behaviour and change if necessary ²
Compressed air does not flow consistent during operation	Switching behaviour of the compressed air does not fit the system	Check switching behaviour and change if necessary ²
Camera is switched on, but no picture appears on the monitor	HDMI cable is not connected	Connect HDMI cable. Pay attention to directional cables.
	Monitor is not switched on / connected	Switch on the monitor

VisionLine RWC

On the displayed picture a „swimming“ occurs	Frequency of the machine LED and rotation of the special glass pane superimpose each other	Slightly increase the speed of the motor. (Please contact us in this case.)
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VisionLine EAC

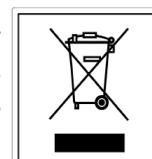
Pane is too slowly cleared of coolant	Compressed air leakage within the camera system	Check camera system for leakage and replace defective parts
	Set pressure is too low	Increase pressure at pressure gauge

¹ Disconnect before starting the repair. Observe safety rules!

² Switch off the compressed air before starting the repair.

4.5 Decomissioning / Disposal

According to the WEEE (Waste of Electrical and Electronic Equipment) guideline electronic and electrical devices does not belong into the household waste. This product and its components must be recycled or disposed separately. The consumer obliges to dispose the product in accordance with the legal regulations. WEEE reg.-nr.: 75524980



5 Appendix