

RESS

The Producer

Visual Inspection Sweep Instruments Measuring Instruments

Camera Manuals



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Manual Monitor SK7



Summary of the contents

Monitor SK7

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Monitor SK7

with quick plug Art.-Nr. 2629

1. Delivery contents

- Monitor SK7
- 20 meter cable
- Charger
- SD-card
- Carrying straps
- Sun protection

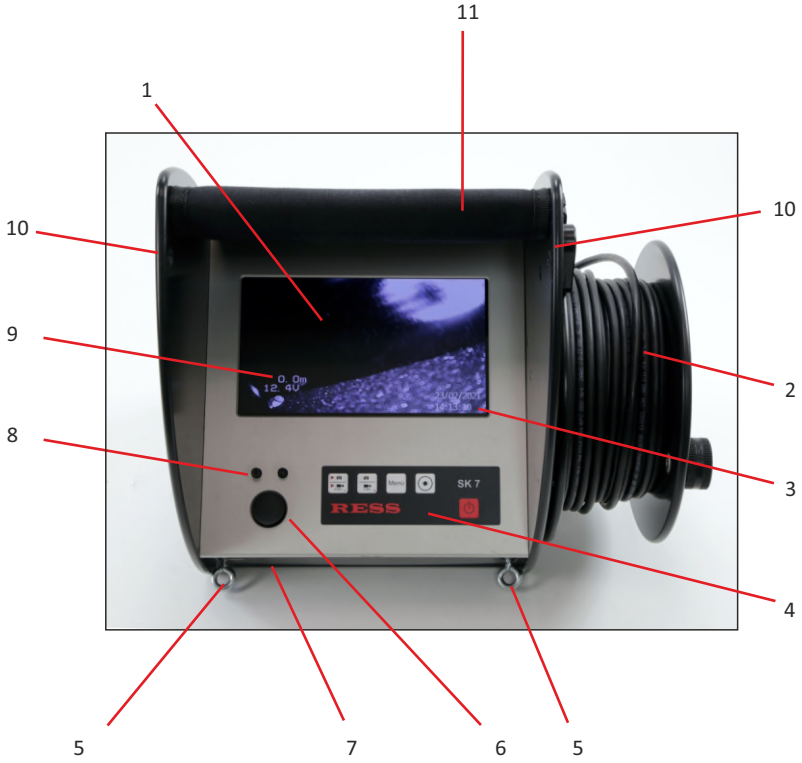
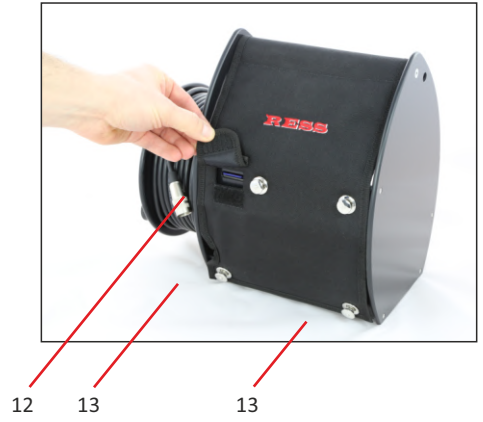


2. Safety Notes

- The video inspection system is not waterproof!
- The video inspection system is not for use in the medical field!
- Any kind of reparations on inside of the unit, must be carried out, exclusively by qualified staff!
(If required, contact the RESS-customer service)
- **The connection and disconnection, the respective components of the system, must always be carried out without power supply!**
- The video inspection system must be switched off after it has been used!
- To clean the monitor and the housing, please use a damp, clean cloth to prevent scratches! We recommend a microfibre cloth.
- Please avoid contact with water of any kind.
- Please avoid collisions at any time! (use strap)
- Do not use aggressive cleanser for cleaning!
- Do not use the inspection system near a strong magnetic field!
- Avoid temperatures above 40 degrees Celsius. Only accomplish an inspection if heating is switched off!
- This product has a certificate of conformity according to the guidelines 2004/108/EG.

3.1 Overall view

- 1 Monitor
- 2 Revolving cable reel
- 3 LC-Display
- 4 Control keys
- 5 Loop to connect the carrying strap
- 6 Joystick control
- 8 Charging socket
- 8 Trimmer for basic position of the Rotary-Ball-Camera
- 9 Voltage display/Meter counter
- 10 Gap to connect the carrying strap
- 11 Sun protection
- 12 SD-Cardslot
- 13 Buttons to open the compartment



3.2 Start-up



12 pin:

Connect the jack of the camera to the 12-pin connector on the camera head. Please make sure that the groove guide of the plug matches with the socket. Screw the plug with the threaded screw tight.

Bayonet plug:

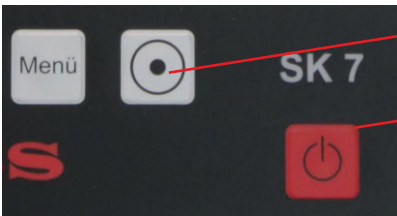
Connect the cable quick plug with the socket of the camera head. Place the the white arrow with the open lock above the white mark, connect and lock by a quarter turn clockwise. To unlock turn anticlockwise.



The fixing brake clamps the cable to prevent an unwinding during an inspection or transporting. Always clamp the cable with the fixing brake, before letting go of the cable during an inspection.

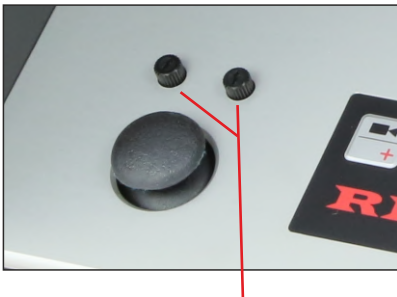
The meter counter will start automatically as soon as you begin to unroll the cable. With the zero button (1) the counter can be reset to zero anytime.

The working temperature for the camera cable should not fall below +5°C. There is a risk of cable breakage.



1. Reset meter counter

2. With the power switch you put the device in operation.



Stabilizer for the basic setting of the Rotary-Ball-Camera.

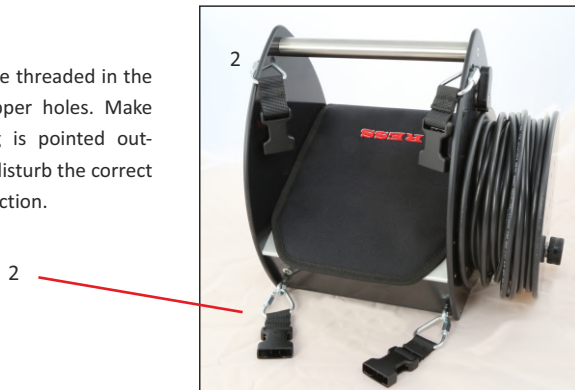
The Rotary-Ball-Camera can perform swinging or pivoting movements or can run only in one direction. This can be adjusted by using the stabilizer. The left controller is responsible for the rotational movement, and the right one for the pivoting movement. Turn the trimmer until the desired setting is achieved. For a detailed description see manual of the camera head.

3.3 Start-up: Carrying strap

The buckles (1) can be removed...
... and remain on the device.



The carabines (2) must be threaded in the lower loops and the upper holes. Make sure, that the screwing is pointed outwards. Otherwise it can disturb the correct function of the sun protection.



Shoulder strap

The shoulder strap can be connected with the upper buckles.



So both strap-systems can be changed as needed.

4. Working with the device



- Button 1: Video recording start/stop
- Button 2: System settings
- Button 3: Selection of video memory
- Button 4: Photo storage
- Button 5: Selection of photo memory
- Button 6: Reset meter counter
- Button 7: On/Off switch

Basic functions

By using the on/off switch (7) the whole camera system is put into use. While the system is switched on, the continuous current battery voltage (in volts) will show on the LCD-display. The standby time is approx. 3 hours, before the device goes off. This will happen at 10.5 V

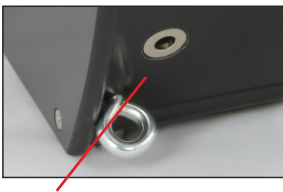
With button no.1 you start video recording. By pressing the button again, the recording will stop. To save pictures press button no. 4. You can take a look at the recordings by pressing button no.3 and for photos no. 5.

Further functions at the following page.

Power supply

At a new purchase of the devices, the battery is pre-charged. The using time with a full charged battery is approximately 180 minutes, depending on which camera head is connected. Over the charging socket the Camera-Handset will be recharged. The delivery contents a charger. This will recharge the battery. Charging takes round about 5 hours. The charger has an over-discharge-protection. It automatically switches off when the battery is fully charged. If the device has not been used for a long time, it is necessary to check, if the battery voltage has dropped. If this is the case, then reconnect with charger. A fully charged battery has approx. 13 V.

Advice: Never forget to turn the camera off (6) at the end of an inspection, to avoid discharging the battery unnecessarily! Press the button for 3 seconds.



8 charging socket

Connect the charger plug to the charging-socket (8). Then please connect with a socket. The green light indicates, that the charger is on. If the light is red, the battery is being charged. Charging is completed when the red light switches off. The charger will switch off automatically, so an overcharging is impossible.

5. Control buttons



Basic functions

- Button no. 1: Video recording
- Button no. 2: System settings
- Button no. 3: Selection of video memory
- Button no. 4: Photo storage
- Button no. 5: Selection of photo memory
- Button no. 6: Reset meter counter
- Button no. 7: On/Off switch

Other configuration of the control buttons

After opening the video memory (3)

- Button no. 1: Scroll forward
- Button no. 2: Start / Stop video
- Button no. 3: Backward
- Button no. 4: Delete (definitive delete press 2x)

After opening the photo memory (5)

- Button no. 1: Scroll forward
- Button no. 3: Backward
- Button no. 4: Delete (definitive delete press 2x)
- Button no. 5: Escape

It will switch back to the live image automatically, if there is no selection within 10 seconds.

After opening the system settings (4)

The active number of current setting is marked yellow.

- Button no. 1: Counting up
- Button no. 2: Next
- Button no. 3: Exit menu
- Button no. 4: Back
- Button no. 5: Count down

DATE: Setting of date year/month/day

TIME: Setting of hour : minutes

REC MODE: Does not have to be changed. Can stand on PICTURE or AVI.

REC TIME: Setting of running time: 5-300 sec.*

BRIGHTNESS: Setting of display

CONAST: Setting of display

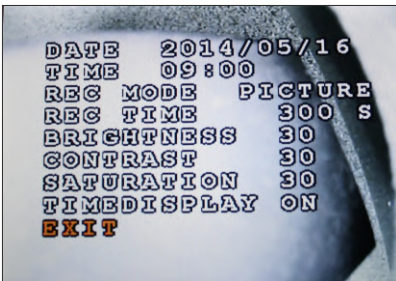
SATURATION: Setting of display

TIMEDISPLAY Fade in/out the date/time with button no.1

EXIT: Back to live image

Exit the menu, by pressing button no.3 or by selecting EXIT in the menu and press no.1 or 5. It will switch back to the live image automatically, if there is no selection within 10 seconds.

* If you want to save longer video sequences, you must press after 300 seconds the record button again, to trigger further storage.



6. Memory card



The SD-card slot is on the right side of the monitor unit. The delivery contents an SD-card, where photos and movies are saved onto.



Insert the SD-card with the writing at bottom until you hear a "click". Now the SD-card is locked and ready to be used. To remove, please push the SD-card until you hear a "click" again. The card will pop out automatically. Now it can be connected to a reading device (not supplied).

Please note that the monitor supports SD-cards of 1-8 GB.

7. Technical data

Overall dimension	307 x 285 x 200 (L / W / H)
Weight	ca. 4,9 kg
Cable length	20 meters
Monitor	7" TFT color screen 156 x 86 mm
Storage media	4 GB SD-card 1 photo 32 kb (720x576 pixel) 120 second video 42 MB
Power supply	NiMh 12 V/3200 mAh
Voltage monitoring	LC-Display
Operating time	ca. 3 hours (depending on the camera head that is being used)
Charging time	ca. 5 hours

Manual

Monitor FM5 Pro



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Monitor FM5 Pro

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Camera accessories

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| - Transport bag | page 22 |
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Monitor FM5

Art.-Nr. 2528

1. Delivery contents

- Monitor FM5
- Charger



2. Safety Notes

- The video inspection system is not waterproof!
- The video inspection system is not for use in the medical field!
- Any kind of reparations on inside of the unit, must be carried out, exclusively by qualified staff!
(If required, contact the RESS-customer service)
- The connection and disconnection, the respective components of the system, must always be carried out without power supply!
- The video inspection system must be switched off after it has been used!
- To clean the monitor and the housing, please use a damp, clean cloth to prevent scratches! We recommend a microfibre cloth.
- Please avoid contact with water of any kind.
- Please avoid collisions at any time! (use strap)
- Do not use aggressive cleanser for cleaning!
- Do not use the inspection system near a strong magnetic field!
- Avoid temperatures above 40 degrees Celsius. Only accomplish an inspection if heating is switched off!
- This product has a certificate of conformity according to the guidelines 2004/108/EG.

3. Overall view

- 1 Monitor
- 2 SD card slot
- 3 Cabel and charging socket
- 4 Control keys
- 5 On/Off switch
- 6 Trimmer switch
- 7 Push button for camera head control

2 The SD card slot is on the right hand sight of the device



4. Start-up



Connect the cable quick plug with the socket of the monitor. Place the the white arrow with the open lock above the white mark, connect and lock by a quarter turn clockwise. To unlock turn anticlockwise.



12 pin:

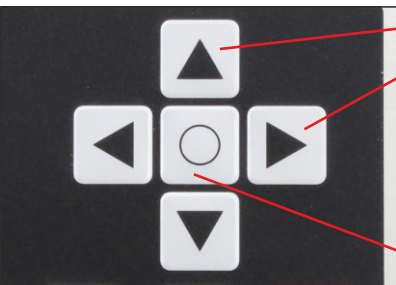
Connect the jack of the camera to the 12-pin connector on the camera head. Please make sure that the groove guide of the plug matches with the socket. Screw the plug with the threaded screw tight.

Bayonet plug:

Connect the cable quick plug with the socket of the camera head. Place the the white arrow with the open lock above the white mark, connect and lock by a quarter turn clockwise. To unlock turn anticlockwise.



By using the on/off switch the whole camera system is put into use.

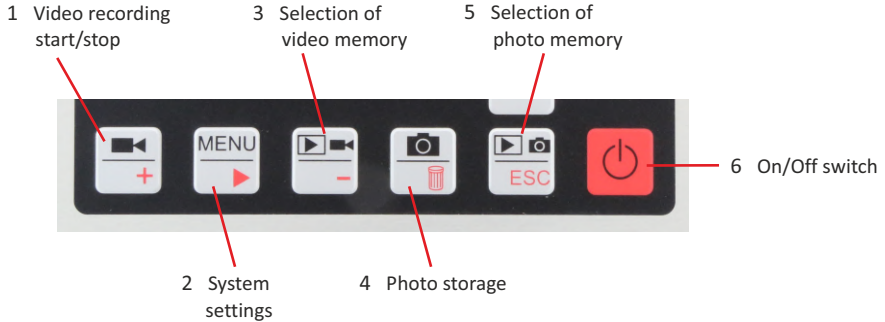


Movements are controlled over the arrow buttons.

How to adjust the Rotary ball camera correctly, is explained in all its details on page 13.

Settings are controlled over adjustment button.

5. Working with the device



Basic functions

By using the on/off switch (6) the whole camera system is put into use. With button no.1 you start video recording. Pressing the button again stops the recording. To save pictures press no. 4. You can take a look at the recordings by pressing button no.3 and for photos no. 5.

Further functions on page 8.

Power supply

At a new purchase of the device, the battery is empty. Please charge it. The using time with a full charged battery is approximately 120 minutes, depending on which camera head is connected. Over the charging socket the camera-handset will be recharged. The delivery contents a charger. This will recharge the battery. Charging takes round about 2 hours. The charger has an over-discharge-protection. It automatically switches off when the battery is fully charged. If the device has not been used for a long time, it is necessary to check, if the battery voltage has dropped. If this is the case, then reconnect with charger.

Advice: Never forget to turn the camera off (6) at the end of an inspection, to avoid discharging the battery unnecessarily! Press the button for 3 seconds.

Charging battery:



To charge the battery, please switch off the Monitor by pushing the on/off button. Connect the charger plug to the socket of the handset. Connect the power plug with the 230V socket.

The LED light of the charger will shine yellow when connected correctly and will turn orange while charging. When charging is completed, the LED light will blink green and orange. After a while the charger will turn into a standby mode. Then the LED light will turn green.

The indicator for the battery is located in the LCD screen and is displayed as a percentage. The battery must be charged at the latest, when "Batt?" appears. Then you have about another 5 minutes operating voltage.

6. Control buttons



Basic functions

- Button no. 1: Video recording
- Button no. 2: System settings
- Button no. 3: Selection of photo memory
- Button no. 4: Photo storage
- Button no. 5: Selection of video memory
- Button no. 6: On/Off switch

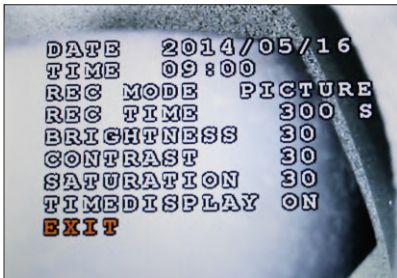
Other configuration of the control buttons

After opening the video memory (3)

- Button no. 1: Scroll forward
- Button no. 3: Scroll backward
- Button no. 2: Start / stop video
- Button no. 4: Delete (definitive delete press 2x)
- Button no. 5: Backward

After opening the photo memory (5)

- Button no. 1: Scroll forward
- Button no. 3: Scroll backward
- Button no. 3: Delete (definitive delete press 2x)
- Button no. 5: Backward



After opening the system settings (4)

The active number of current setting is marked yellow.

- Button no. 1: Counting up
- Button no. 2: Next
- Button no. 3: Exit menu
- Button no. 4: Back
- Button no. 5: Count down

- DATE: Setting of date year/month/day
- TIME: Setting of hour : minutes
- REC MODE: Does not have to be changed. Can stand on PICTURE or AVI.
- REC TIME: Setting of running time: 5-300 sec.*
- BRIGHTNESS: Setting of display
- CONAST: Setting of display
- SATURATION: Setting of display
- TIMEDISPLAY: Fade in/out the date/time
- EXIT: Back to live image

Exit the menu, by pressing button no.3 or by selecting EXIT in the menu and press no.1 or 5. It will switch back to the live image automatically, if there is no selection within 10 seconds.

- * If you want to save longer video sequences, you must press after 300 seconds the record button again, to trigger further storage.

6. Memory card



The SD-card slot is on the top of the Handset. The delivery contents an SD-card, where photos and movies are saved onto.

Please note that the monitor supports SD-cards of 1-8 GB.



Insert the SD-card with the writing on top until you hear a "click". Now the SD-card is locked and ready to be used. To remove, please push the SD-card until you hear a "click" again. The card will pop out automatically. Now it can be connected to a reading device (not supplied).

7. Technical data

Overall dimension	135 x 220 x 73 (W / H / D)
Weight	ca. 1100 g
Casing	Synthetic material / Powder-coated aluminum
Monitor	5 inches LCD-TFT color screen 102 x 73 mm
Storage media	2 GB SD-card 1 photo 32 kb (720x576 pixel) 300 second video
Power supply	Lead acid battery 12 V/2,1 Ah
Voltage monitoring	LCD-display
Operating time	Approx. 2 hours (depending on the camera head that is being used)
Charging time	Approx. 2 hours

Transport- & functional bag for Mini-Handset

Art.-no. 2604

1.



Open the hook-and-loop fastener.
Put the camera-handset with the
monitor up faced into the bag. Close
the hook-and-loop fastener.



2.



Open the sun protection. Press the
„TENAX“-Knobs onto the complement.
In order to release the knobs, easily pull it.

- 3.** Hook the belt into the ears.
Be careful, that the longer side will
be hooked into the upper ears.



- 4.** Now you can hold it in front of the body.



Manual

Cabel Reel for Monitor FM5 Pro



Summary of the contents

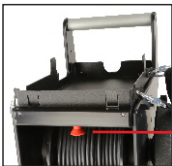
Cable Reel for Monitor FM5 Pro

- | | |
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| 2. How to insert the monitor into the metal box | page 27 |

The cable drum is only suitable in combination with the Monitor FM5 Pro (Art.-Nr. 2529-J). There are 3 variants of the cable drums: without cable, with 20 meter and with 30 meter of cable.

Functional overview

- 1 Lens Hood with a magnet
- 2 Locking screw for cable reel
- 3 Crank of the cable drum, option to fold out
- 4 Bayonet spiral cable, suitable for Monitor FM5 Pro
- 5 Bayonet connection cable suitable for Rotary-ball-camera
- 6 Cable wound on drum
- 7 Locking bolts (red) for metal box- 8 Metal box for FM5 Pro
- 9 Ears for belt (4 pieces)
- 10 Holder for Rotary ball Camera
- 11 Reset metercounter



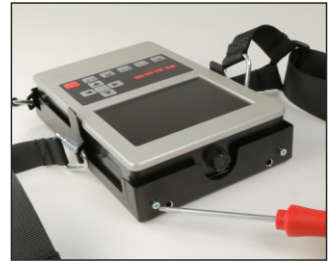
How to insert the Monitor FM5 Pro into the metal box



Please pull the red locking bolts. Push the metal box upwards and remove.



Insert the Monitor FM5 Pro into the Metal Box. First attach the lower side and then the top. Secure monitor with both screws.



Mounting the camera cable



Remove plug from the inside of the core and insert into the left side of the narrow outlet (picture). Now the bayonet plug and camera cable can be connected. Push the connected cable to the right (out of the fixture) and then place into the inner core. Now you can wrap the camera cable onto the drum

These following cable types can be connected:

- 20 meter cable (bayonet / 12 pin) Art.-no.2602-J
- 20 meter cable (bayonet / bayonet) Art.-no.2613-J
- 30 meter cable (bayonet / bayonet) Art.-no.2614-J

Digital meter counting



The Counter can be resetted manually at any time, during the inspection, by touching the reset-field. This is useful if you want to perform a relative measurement. This is possible in both directions.

Please notice that there is a slight tolerance deviation, depending on how good the cable was rolled up (10% difference).

Manual Monitor FM5 / FM7



Summary of the contents

Monitor FM5 / FM7

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Monitor FM5 / FM7

Art.-Nr. 2528 / 2800

1. Delivery contents

- Monitor
- Charger



2. Safety Notes

- The video inspection system is not waterproof!
- The video inspection system is not for use in the medical field!
- Any kind of reparations on inside of the unit, must be carried out, exclusively by qualified staff!
(If required, contact the RESS-customer service)
- **The connection and disconnection, the respective components of the system, must always be carried out without power supply!**
- The video inspection system must be switched off after it has been used!
- To clean the monitor and the housing, please use a damp, clean cloth to prevent scratches! We recommend a microfibre cloth.
- Please avoid contact with water of any kind.
- Please avoid collisions at any time! (use strap)
- Do not use aggressive cleanser for cleaning!
- Do not use the inspection system near a strong magnetic field!
- Avoid temperatures above 40 degrees Celsius. Only accomplish an inspection if heating is switched off!
- This product has a certificate of conformity according to the guidelines 2004/108/EG.

3. Overview

- 1 monitor
- 2 cable socket / charging socket
- 3 on/off slide switches



4. Start up



Connect the cable quick plug with the socket of the monitor. Place the the white arrow with the open lock above the white mark, connect and lock by a quarter turn clockwise. To unlock turn anticlockwise.



By using the on/off switch the whole camera system is put into use.

Slide switch to the left: On
Slide switch to the right: Off

5. Working with the device

Power supply

At a new purchase of the devices, the battery is empty. The using time with a full charged battery is approximately 4 hours, depending on which camera head is connected. Over the charging socket the monitor will be recharged. The delivery contents a charger. This will recharge the battery. Charging takes round about 2 hours. The charger has an over-discharge-protection. It automatically switches off when the battery is fully charged. If the device has not been used for a long time, it is necessary to check, if the battery voltage has dropped. If this is the case, then reconnect with charger.

Advice: Never forget to turn the camera off (6) at the end of an inspection, to avoid discharging the battery unnecessarily! Press the button for 3 seconds.



Charging battery:

To charge the battery, please switch off the Monitor by pushing the on/off switch to the right. Connect the charger plug to the socket of the handset. Connect the power plug with the 230V socket. The LED light of the charger will shine yellow when connected correctly and will turn orange while charging.

When charging is completed, the LED light will blink green and orange. After a while the charger will turn into a standby mode. Then the LED light will turn green.

6. Technical data

Monitor FM5:

Overall dimension:	ca. 134 x 162 x 33 mm (LxHxW)
Weight:	ca. 750 g
Casing:	Synthetic material
Monitor:	5" LCD-TFT-color screen (102 x 73 mm)
Power supply:	Lead acid battery 12V/2100mAh
Operating time:	Approx. 4 hours (depending on the camera head that is being used)
Charging time:	Approx. 2 hours

Monitor FM7:

Overall dimension:	ca. 181 x 136 x 32 mm (LxHxW)
Weight:	ca. 825 g
Casing:	Synthetic material
Monitor:	7" LCD-TFT-color screen (154 x 86 mm)
Power supply:	Lead acid battery 12V/2100mAh
Operating time:	Approx. 4 hours (depending on the camera head that is being used)
Charging time:	Approx. 2 hours

Manual Rotary-Ball-Camera Pro



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Rotary-Ball-Camera Pro

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Rotary-Ball-Camera Pro

Art.-no. 2608

1. Delivery contents

- Rotary-Ball-Camera Pro



2. Safety Notes

- **Never rotate or stop the camera head of the Rotary-Ball-Camera by hand! This will cause enormous damage to the mechanics!**
- The camera head is not waterproof!
- The camera head is not for use in the medical field!
- Warranty is void when camera head has been open manually!
- **The connection and disconnection, the respective components of the system, must always be carried out without power supply!**
- Do not use aggressive cleanser for cleaning!
- Please avoid collisions at any time!
- Do not use the inspection system near a strong magnetic field!
- Avoid temperatures above 40 degrees Celsius. Only accomplish an inspection if heating is switched off!
- This product has a certificate of conformity according to the guidelines 2004/108/EG.

3. Start-up



Connect the camera cable with the connector on the camera head. The white arrow on the connector must be in a line with the white marker on the socket. Lock the plug with a quarter movement clockwise. Important: all cables must be connected before camera head is switched on. The Rotary-Ball-Camera is controlled by using the arrow keys on the keypad panel.



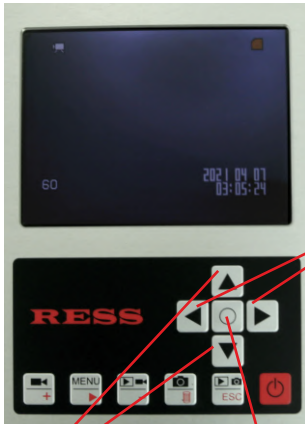
4. Technical data

Modular unit:	CCD
Lens:	3,6 mm
Diameter:	49 mm
Length:	153 mm
Lighting:	15 SMDs
Weight:	312 g
Sharpness zone:	from 10 cm
Operating voltage:	12 Volt
Light sensitivity:	0,8 Lux
Pan range:	0° - 90°
Rotation range:	endless
Connection:	8-pin bayonet plug

5. Readjustment for the Rotary-Ball-Camera Pro

Attention!

Never rotate or stop the camera head of the Rotary-Ball-Camera by hand!
This will cause enormous damage to the mechanics!

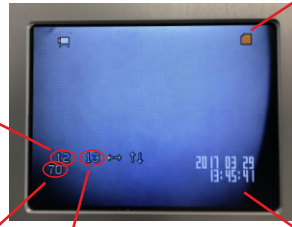


Readjustment the constant rotation

„◀“ Button for „+“ and

„▶“ Button for „-“

SD-card inserted



Value for rotation

Voltage

Value for movement

Date and time

Readjustment the constant movement

„▼“ Button for „-“ and

„▲“ Button for „+“

Circle button for readjustment of the camera head



Adjustment of the camera head:

If the camera moves independently when using the camera for the first time, the camera can be adjusted via the monitor.

Press the circle button for 2 seconds. Now the display setting appears to adjust the head. The left-hand digit represents the rotation of the camera, which can be changed by using the left and right arrow buttons. The right-hand digit represents the pan movement of the camera, which can be changed by using the up and down arrow buttons. Change both digits until the camera head comes to a standstill. **The ideal values are „+16“ for the rotation and pan movement.** If this is not the case, slowly approach the value. To save settings press circle button until "End" appears.

How to change the key assignment for the running direction:

It is possible to change the functions of the buttons of the Rotary-Ball-Camera. Press the circle button for 2 seconds.

Now the display for the trimming will appear. When the buttons up/down and left/right are all pressed at the same time, respective function is reversed. To save settings press circle button until "End" appears.

6. Camera Accessories

Viper Connector Pro

Art.-no. 2563



Connect the viper connector with the M10 thread to a reel or a rod.



Connect the camera head with the bayonet jack



The Rotary-Ball-Camera must be pushed into the aluminum sleeve. Pass the cable through the cable slot and firmly lock (example side 7 - point 3).



Protection Basket

Art.-no. 25782



To protect the rotatable part of the rotary-ball-camera during use, please place the protection basket over the casing, until you reach the impact ring and secure with the knurled screw. The view and lighting is only affected minimal, but the protection of the camera is maximized!

Attention: Do not fasten the fixing screw with pressure, otherwise the casing of the rotary ball camera could be damaged!

Reflector



For the ball- and rotary-ball-cameras
Art.-Nr. 2568

Repair-Kit



Suitable for the ball camera, the rotary ball cameras
and miniature camera head RS29.2

2 glass panels, 1 x silicon glue
Art.-no.: 2542

1 glass panel
Art.-no.: 25421



Camera cabel

20 meter, bayonet, 8 pin
Art.-no. 2613-J

30 meter, bayonet, 8 pin
Art.-no. 2614-J

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	1	2	3	4
5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20

Meter-marker, self-sticking

2 x 1 up to 20 m Art.-no. 2594-J

1 x 1 up to 40 m Art.-no. 25941-J

Chimney roller guide

For chimney head, flat Art.-no. 0043-B



For chimney-door, angled Art.-no. 0042-B



Manual

Camera Head MK28 / MK29



Summary of the contents

Camera Head MK28 / MK29

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1. Delivery contents

Camera Head MK29

Art.-no. 2626



Camera Head MK28

Art.-no. 2810



2. Safety Notes

- The camera head is not waterproof!
- The camera head is not for use in the medical field!
- Warranty is void when camera head has been open manually!
- **The connection and disconnection, the respective components of the system, must always be carried out without power supply!**
- Do not use aggressive cleanser for cleaning!
- Please avoid collisions at any time!
- Do not use the inspection system near a strong magnetic field!
- Avoid temperatures above 40 degrees Celsius. Only accomplish an inspection if heating is switched off!
- This product has a certificate of conformity according to the guidelines 2004/108/EG.

3. Start-up MK28



Connect the jack of the camera to the 12-pin connector on the camera head. Please make sure that the groove guide of the plug matches with the socket. Screw the plug with the threaded screw tight. Please note, that the camera can only be put into use, when all connections of the system have been made and the basic-unit is switched on. If this process was successful, all lights on the inside of the camera, which are used for the illumination of the chimney, will turn on.

The camera head is splash-proof, not waterproof. It only resists a certain amount of moisture. Be careful not to push it through large water holes. This can damage the camera head.

4. Technical data

MK29

Modul unit:	color
Lens:	2,5 mm
Diameter:	29 mm
Length of Head:	65 mm
Length:	ca. 185 mm
Lighting:	15 SMDs
Weight:	ca. 113 g
Sharpness zone:	from 1 cm
Operating voltage:	12 Volt
Field of view:	135°
Connection:	12-pin plug

MK28

Modul unit:	color
Lens:	2,5 mm
Diameter:	29 mm
Length of Head:	65 mm
Length:	ca. 63 mm
Lighting:	15 SMDs
Weight:	ca. 60 g
Sharpness zone:	from 1 cm
Operating voltage:	12 Volt
Field of view:	135°
Connection:	bayonet plug

4. Accessory for MK29/RS29.2

Protection

Art.-no. 2598



1. Make sure that the frame is on the right side.



2. Loosen the screw as far as possible. Slide the sleeve from behind onto the camerhead.



3. Push the protection until the limit stop. Now fasten screw by hand, until a small gap is left. Clean the camera lense with a soft cloth.

Manual Camera Vipers



Summary of the contents

Camera Viper

1. Safety notes	page 50
2. Special instructions	page 50
3. Start-up	page 51
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5. Technical data	page 52

Mini-Camera Viper

Art.-Nr. 2640

Combine-Camera Viper

Art.-Nr. 26401

Maxi-Camera Viper

Art.-Nr. 26402



1. Safety Notes

- The plugs of the Camera-Viper are not waterproof! Please avoid contact with water of any kind.
- The video inspection system is not for use in the medical field!
- Any kind of reparations on inside of the unit, must be carried out, exclusively by qualified Staff!
(If required, contact the RESS-customer service)
- **The connection and disconnection, the respective components of the system, must always be carried out without power supply!**
- During unwinding the rod, do not place your fingers between the spokes of the viper!
- The video inspection system must be switched off after it has been used!
- Please avoid collisions at any time! (use strap)
- Do not use aggressive cleanser for cleaning!
- Do not pull the GFK-rod over a sharp edge!
- Only clean the GFK-rod while connected with the camera head, to avoid moisture and dirt getting into the connections.
- Please avoid high temperature at all times! Do not underestimate the high temperatures in your car during the summer period!

2. Special Instructions

The GFK-rod is exclusively for leading and for the power supply of the camera heads. It should never be used as a sweeping rod or as a pull rope! To guarantee a precise meter counter, the GFK-rod has to be rolled up completely to the viper (there is no absolute 100% accuracy). Before rolling it up, please switch the on basic unit.

3. Start-up

Before using the unit, please control if it has been damaged or if it is dirty. Particular the connectors and the thread have to be dry and clean. The connection and disconnection of the respective components of the system must always be carried out, without power supply!



To connect, match the arrow of the bayonet jack with the bayonet plug. Now mount the Camera-Head onto the end of the GRP-Rod and secure with the union nut.

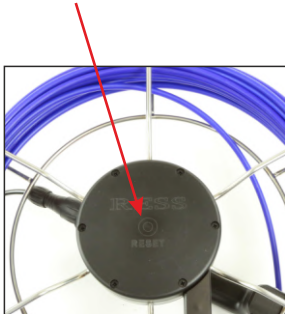


The reel is equipped with a fuse so that the Rod can not run out independently. To unlock the basket, pull the red button upwards and rotate a quarter turn to secure it.

4. Inspection

Please do not pull or push the GFK-rod over sharp edges! Never fall below the minimum bending radius to avoid the GFK-rod of snapping. Always wear working gloves to prevent injuries. Always hold the rod close to the attachment point, otherwise it can break. By reeling the rod in, it should be cleaned using a damp, clean cloth, to prevent dirtying the drum.

Touch control field



The reel has a digital Meter-Counter which is displayed in the display. The Counter can be resetted manually at any time, during the inspection, by touching the reset-field. This is useful if you want to perform a relative measurement. This is possible in both directions.

Please notice that there is a slight tolerance deviation, depending on how good the GFK-rod was rolled up (10% difference).

5. Technical data

	Mini-Viper	Combine-Viper	Maxi-Viper
Weight:	1,7 kg	3,1 kg	3,4 kg
Basket diameter:	32 cm	42 cm	42 cm
GFK-rod Ø:	5 mm	6 mm	7 mm
Electric line:	4 x 0,3 mm ²	6x 0,5 mm ²	6 x 0,5 mm ²
Storage temperature:	-20° C bis +50° C		
Operating temperature:	0 ° C bis +50° C		
Meter counting:	Incremental encoder		

Troubleshooting

Fault

The device does not turn on.

The device image does not appear on the monitor screen.

Malfunction during recording or playback of a video.

The device does not record.

The camera-head is moving independently.

The screws can only be fastened or opened with pressure.

Solution

Maybe the battery is too low? Try again after recharging. The device needs a basic voltage, so the monitor can be started.

Please check the plug connection to the camera head

Switch the device off and on.

Please check if a SD-card is inlaid. Note that the monitor supports SD-cards of 1-8 GB.

Monitor SK7: Maybe the trim has been moved. Turn the buttons until the camera-head comes to a standstill. For readjustment see page 8 and 38.

Monitor FM5 Pro: For readjustment see page 38.

The cable is broken. -> The cable has to be changed from our service.

Please clean as recommended and check on any damages.

Safety note

Always be fully aware of your safety! At all times!

Tips for the inspection

Inspection of a default

To determine if the chimney has a default, hold the camera vertical in the centre of the chimney at its lowest cleaning door. You will see the light on the monitor. Lead the camera in a circular motion through the chimney. With a little practice, you will be able to determine the default and its direction. A precise localization you can achieve from the attic.

Inspection in the attic or on the rooftop

After switching the device on, gently lower the camerahead into the chimney. By using a cable with marks, you can see how deep the camera is inside. The cable has been made for this use, so even if you use the full length, it will carry the weight of the camera easily. A roller-stand can come in quite handy in this situation. It is available as an accessories (chimney door Art.-No.: 0042 / chimney cap Art.-No.:0043)

Cable use

The working temperature for the camera cable should not fall below +5°C. There is a risk of cable breakage.

Care and service

- Please clean on a regular base. Do not use aggressive cleanser of any kind!
- Please avoid contact with water at all times and of any kind!
- By reeling the rod back in, it should be cleaned using a damp, clean cloth to prevent dirtying the drum.

Attention: Warranty is void when camera head or monitor has been open manually.



RESS

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