



**521-522-523-524 SERIES MANFROTTO ZOOM
CONTROLLERS SERVICE MANUAL**

This manual covers following products:

- 522 – 522A – 522C – 522CA
- 523 – 523PRO
- 521 – 521PRO – 521P
- 522P
- 524AX – 524FN – 524CN

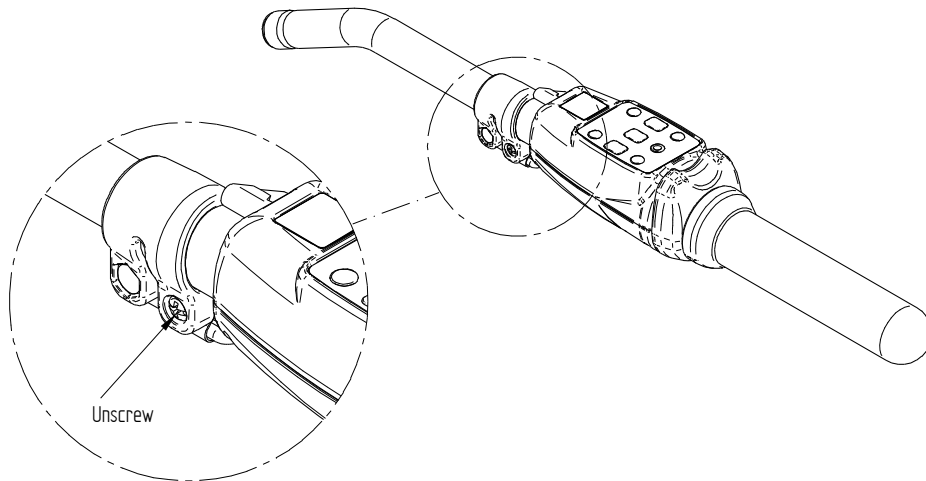
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Table of Contents

522-523-524 disassembly instructions.....	4
522-523-524 assembly instructions.....	6
521 series cable exchange.....	11
Solving common problems.....	12
Returning the goods to service center.....	14
521-522-523 zoom controllers compatibility chart (updated 11.2005).....	15
524 zoom controllers compatibility chart (updated 11.2005).....	16

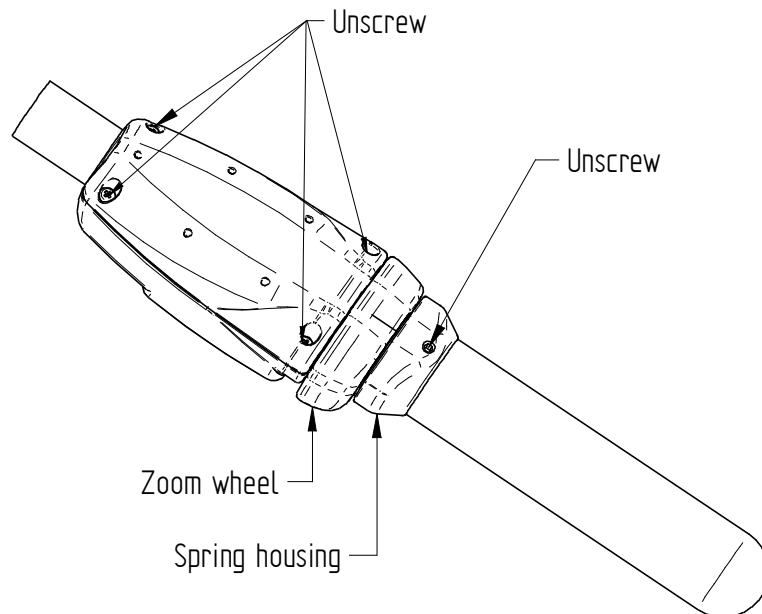
522-523-524 disassembly instructions

1. Remove the cable from 2.5 mm jack and unlock the screw found on the side of the collar (only 522 and 523 series)



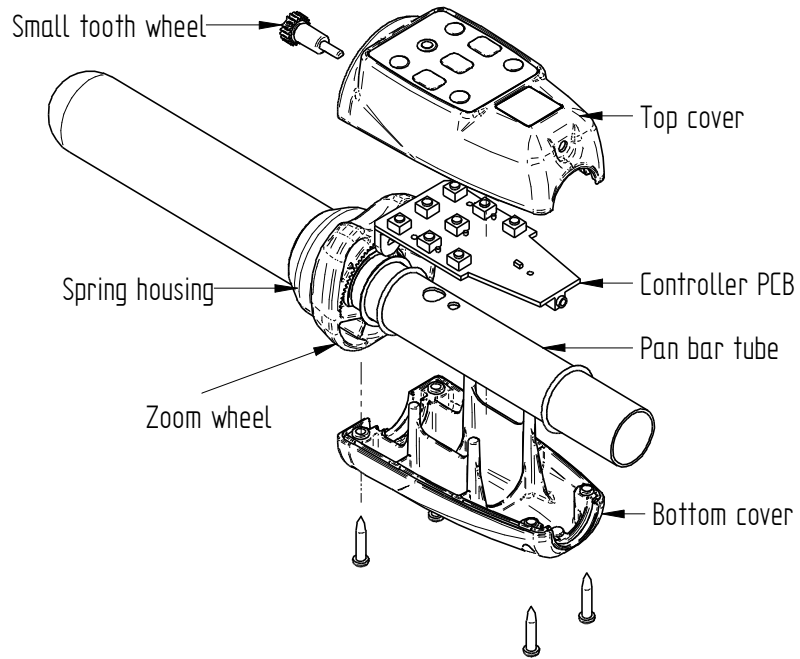
Drawing 1: Disassembly of pan bar tube

2. Remove the collar along with the pan bar tube
3. Unscrew the four screws found on the bottom side of the controller and disassembly the body
4. Unscrew the hexagonal screw locking the spring housing



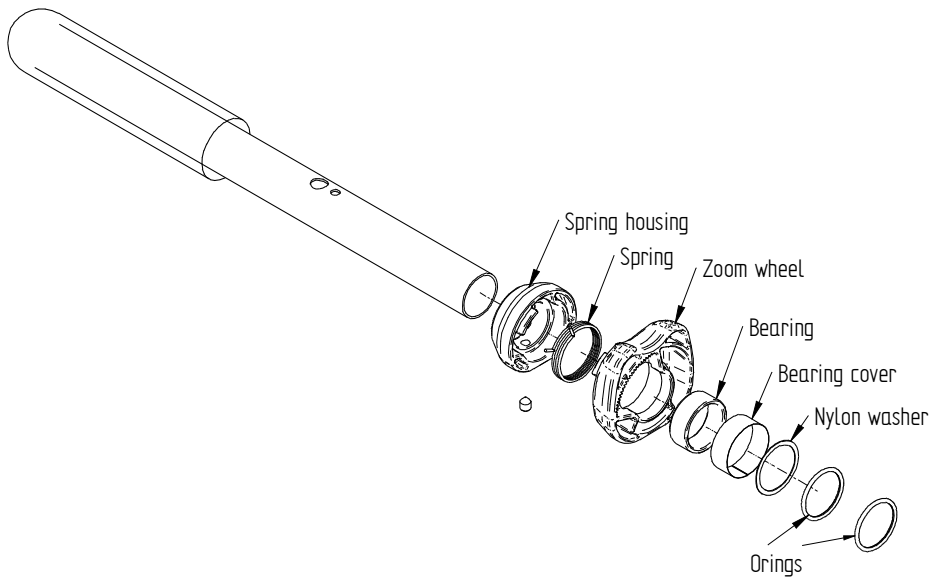
Drawing 2: Screws to untight

5. Disassembly the controller body



Drawing 3: Controller body disassembly

Note for 524xx controllers: do not take the PCB out of the controller body as it is permanently attached to the cable.

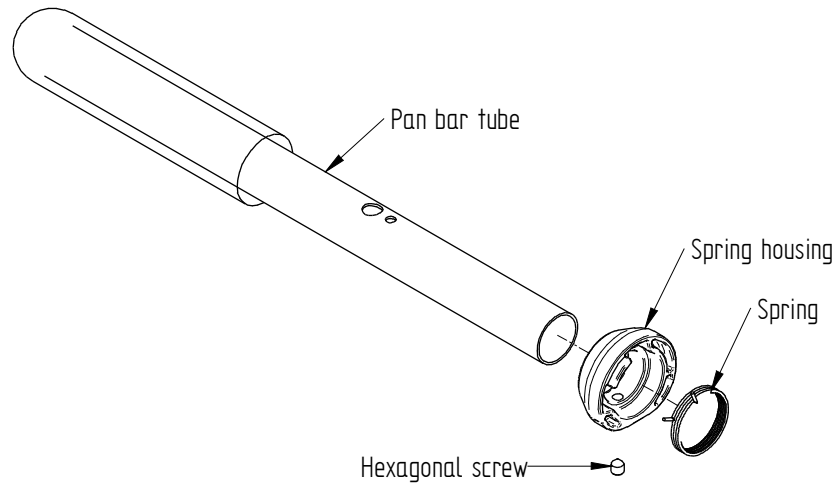


Drawing 4: Zoom wheel disassembly

Note for 522P controllers: you must first disassembly the power supply cable before disassembling the zoom wheel.

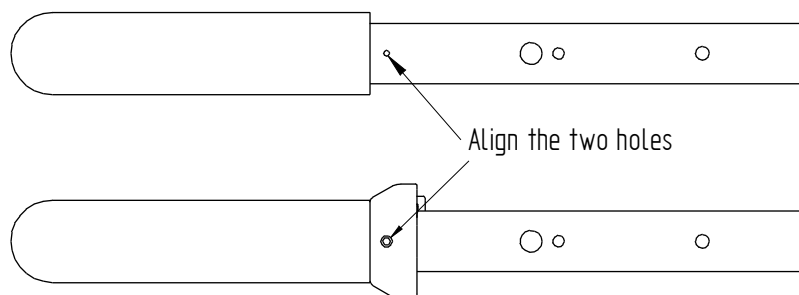
522-523-524 assembly instructions

1. Assembly spring housing as shown in Drawing 5



Drawing 5: Assembling spring housing

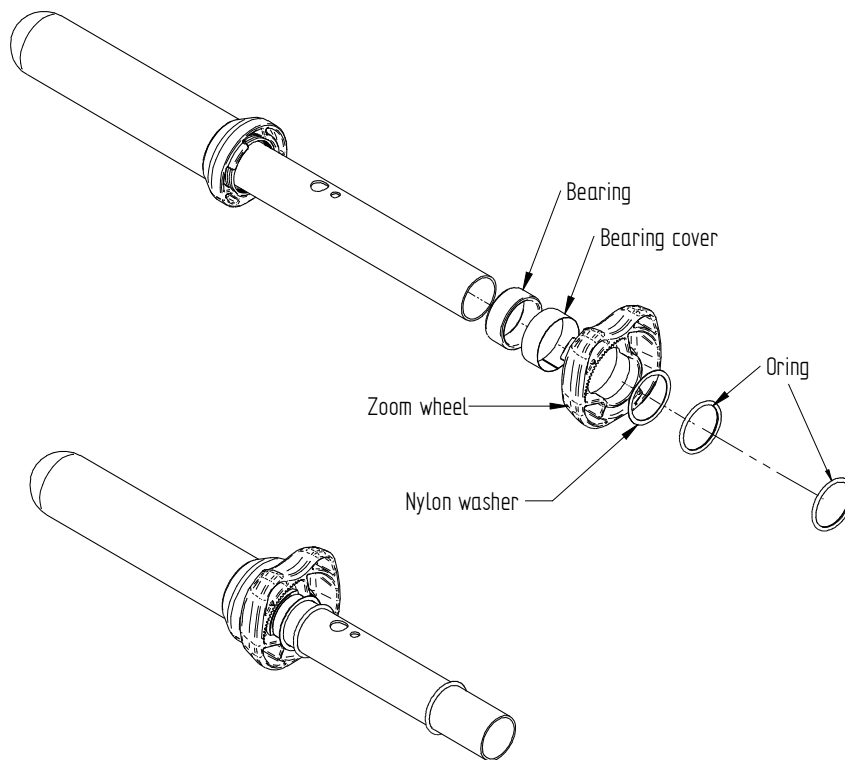
Make sure to properly align the spring housing threaded hole with the positioning hole found in the pan bar tube (see. Drawing 6)



Drawing 6: Aligning spring housing

Pay attention to not to over tight the hexagonal screw as you may break the spring housing thread.

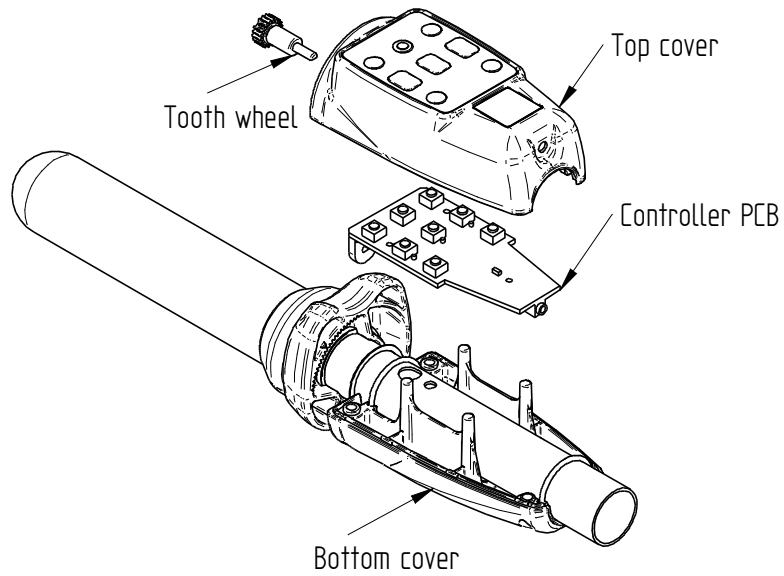
2. Assembly zoom wheel – make sure to put some teflon grease on the bearing (Drawing see 7)



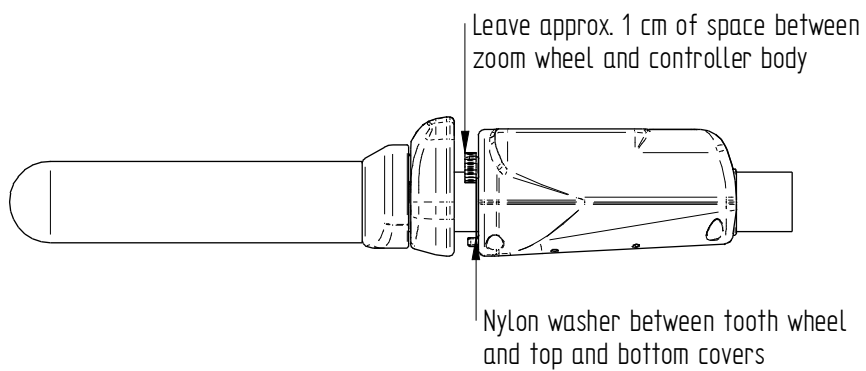
Drawing see 7: Zoom wheel assembly

3. Assembly the controller body – follow Drawing 8 and Drawing 9
- Position bottom cover about 1 cm away from the zoom wheel (see. Drawing 9)
 - Make sure both orings are properly placed in the immersions found in the bottom cover
 - Insert the PCB into the top cover
 - Insert teeth wheel into the top cover
 - Put the top cover on top of the bottom one – the controller should look as in Drawing 9

Note for 522P controllers: before assembling both covers, you must first assembly back the power supply cable and plug it into jack found on the controller PCB

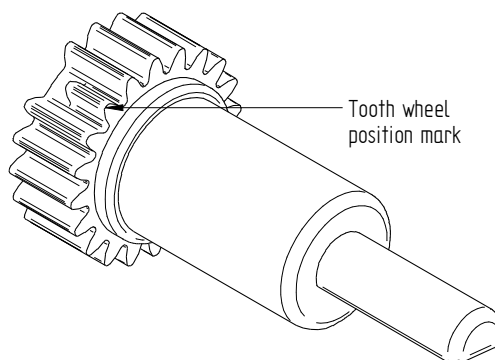


Drawing 8: Controller body assembly

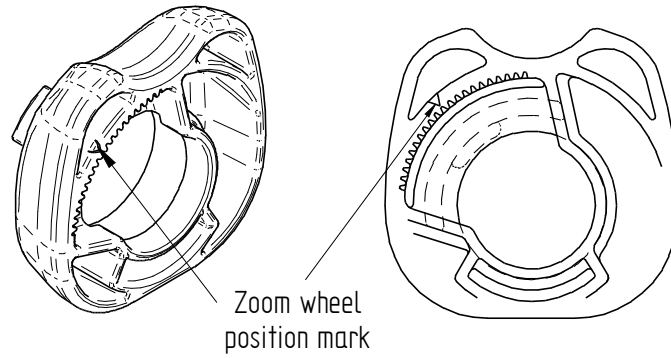


Drawing 9: Controller body assembled

4. Slide the controller body into the zoom wheel
 - Make sure the teeth wheel is properly aligned with zoom wheel – both have special marks to help you: one of the tooth of the small wheel is shorter (see Drawing 10), while the zoom wheel has an arrow pointing into the place where the tooth should be placed (see Drawing 11)

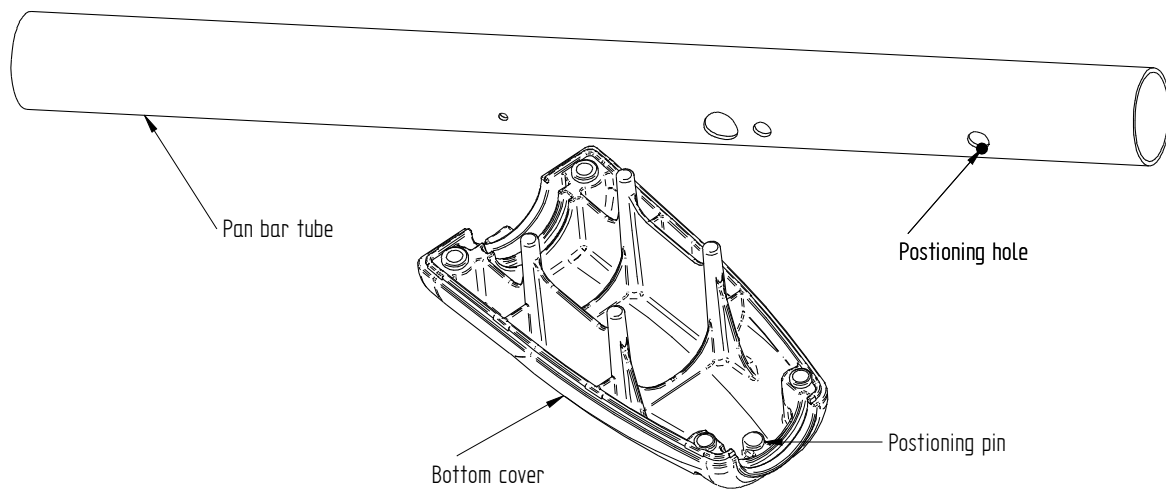


Drawing 10: Small teeth wheel position mark



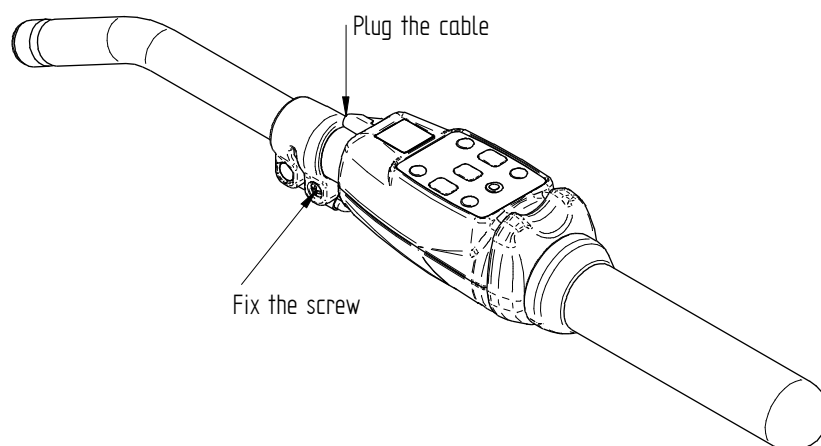
Drawing 11: Zoom wheel position mark

- Slide in the controller body into the zoom wheel
- Turn the controller body left and right a bit to properly position it against pan bar tube – there is a positioning pin found on the inside of the bottom cover which must be fitted into the hole found on the bottom side of the pan bar tube (see Drawing 12)
- Fix both covers with the four screws



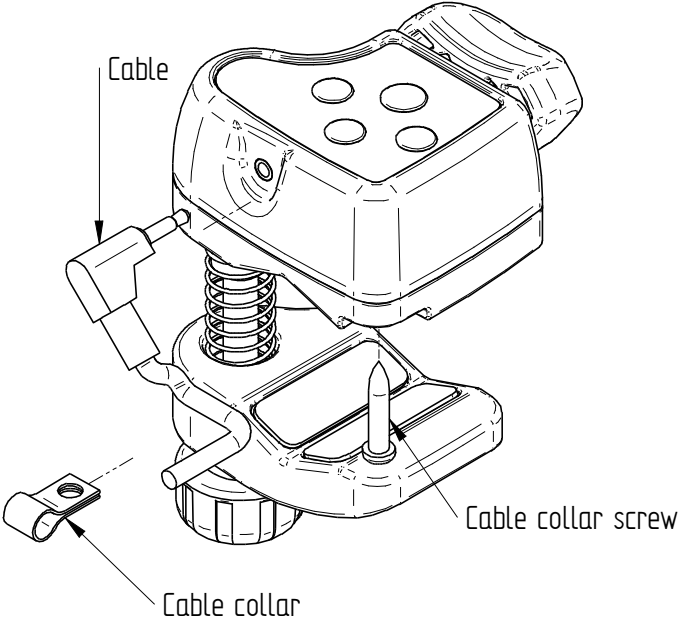
Drawing 12: Positioning pin and positioning hole

5. Assembly the other part of the pan bar (see Drawing 12)
 - Fix the locking screw
 - Plug the cable into 2.5 mm plug (except 524xx controllers where the cable is permanently attached)



Drawing 13: Final assembly

521 series cable exchange



Drawing 14: 521 cable exchange

Solving common problems

Malfunction 1:

When controller plugged into the camera, none of the functions is working, the main LED is not on

Controller:

522 – 522A – 523 – 523PRO – 521 – 521PRO

Solution:

Exchange the cable (repair set no. 522SCA), if the controller is still not working, return it to the service center

Malfunction 2:

When controller plugged into the camera, the Main LED is blinking, none of the functions is working

Controller:

522 – 522A – 523 – 523PRO – 521 – 521PRO

Solution:

Exchange the cable (repair set no. 522SCA), if the controller is still not working, return it to the service center

Malfunction 3:

When controller plugged into the camera, the Main LED goes on (in case of 522P one of the zoom speed LEDs goes on), the camera begins to zoom immediately without pressing the zoom wheel, no other function is working. The spring housing (see Drawing 3) is broken – plastic is cracked.

Controller:

522 – 522A – 523 – 523PRO – 522P – 524xx

Solution:

Exchange the broken part with repair kit no. R522,06, assembly the controller according to “522-523-524 assembly instructions”

Malfunction 4:

When controller is plugged into the camera, the Main LED goes on (in case of 522P one of the zoom speed LEDs goes on), the camera begins to zoom immediately without pressing the zoom wheel, no other function is working. The spring housing (see Drawing 3) is not broken. Usually, the zoom wheel is not working smoothly – you can feel sort of clicking when moving it.

Controller:

522 – 522A – 523 – 523PRO – 522P – 524xx

Solution:

This problem usually means that the controller was dropped and the small teeth wheel got misaligned with zoom wheel gear (see Drawing 10 and Drawing 11).

Disassembly the controller and assembly back following "522-523-524 disassembly/assembly instructions"

Check the bottom cover – sometimes the positioning pin (see Drawing 12) is mechanically broken by misuse and it is not possible to properly align controller body with zoom wheel – exchange the bottom cover with repair kit no. R522,02.

If this problem will repeat, it can also mean a machining problem with top cover – in this case replace the part with repair set no. R522,01. Follow 522-523-524 assembly instructions” to assembly the controller.

Malfunction 5:

Zoom does not stop when the zoom wheel is in neutral position, even though it was already repaired as described in previous "malfunction solution"

Controller:

522P

Solution:

This problem considers only few 522P controllers, which had a software problem. In such a case return the controller to service center, for software upgrade.

Malfunction 6:

It is not possible to switch the camera on when it is in standby mode, or
It is not possible to put the camera into standby mode, or
When controller is plugged it switches the camera into standby mode without pressing the on/off button.

Controller:

522 – 522A – 523 – 523PRO – 521 – 521PRO

Solution:

Exchange the cable (repair set no. 522SCA), if the controller is still not working properly, return it to the service center.

Malfunction 7:

Most of the functions are working well, except one or two, e.g. push auto focus is not working with Canon XL-2 camera.

Controller:

522 – 522A – 523 – 523PRO – 521 – 521PRO

Solution:

On most cases the controller is not broken. This usually means that the specific function is not implemented with the specific camera. LANC commands are "interpreted" differently by different cameras. Please check the "compatibility chart" for the functions compatibility with the specific camera. If you are sure that the specific function should work, but it is not please return the controller to the service center. When returning please indicate the type of the camera and function which is not working.

Malfunction 8:

Controller does not work when plugged into Sony DSR-250 – the LED is blinking.

Controller:

523 – 523PRO – 521 – 521PRO

Solution:

The problem related to old controllers – exchange for the brand new one, or sent to service center for upgrade. When returning please indicate that the problem is related to the SONY DSR-250 camera.

Malfunction 9:

A part of the controller is mechanically broken by misuse.

Controller:

all types

Solution:

Use appropriate repair kit to repair the controller. Follow assembly/disassembly instructions.

In all other cases return to the service center.

Returning the goods to service center

In order to receive fast and problem – free service, please follow the rules when returning broken controllers to the service center:

- Please always return with filled "REMOTE CONTROLLER REPAIR FORM"
- Sent to address: "ZPUH Ventis s.c. Sienkiewicza 48, 42-600 Tarnowskie Góry POLAND"
- If you are sending the broken controller from outside the EU, attach a pro-forma invoice and write for each controller: "Zoom controller sample" – unit price 5 USD. Write in the invoice "Product samples value for custom purposes only". Do not indicate anywhere, that it is returned for repair. The overall invoice value must not exceed 20 USD. - lower unit price, if necessary.

521-522-523 zoom controllers compatibility chart (updated 11.2005)

	521	521P	521PRO	522/522A	522C/522CA	522P	523	523PRO
SONY								
HVR-A1U	X		X	X	X		X	X
HVR-Z1U	X		X	X	X		X	X
DSR-PDX10	X		X	X	X		X	X
DSR-PD170	X		X	X	X		X	X
DSR-PD150	X		X	X	X		X	X
DSR-250	X		X	X	X		X	X
DSR-200	X		X	X	X		X	X
DCR-VX2100	X		X	X	X		X	X
DCR-VX2000	X		X	X	X		X	X
DCR-VX1000	X		X (no PAF)	X	X		X	X (no PAF)
DCR-TRV950	X		X	X	X		X	X
DCR-PC330	X		X	X	X		X	X
CANON								
XL-H1	X		X (no PAF)		X		X	X (no PAF)
XM-1	X		X		X		X	X
GL-1	X		X		X		X	X
XM-2	X		X		X		X	X
GL-2	X		X		X		X	X
XL1	X		X (no PAF)		X		X	X (no PAF)
XL1s	X		X (no PAF)		X		X	X (no PAF)
PANASONIC								
AG-HVX200		X				X		
AG-DVX100BE		X				X		
AG-DVX100B		X				X		
AG-DVX100E		X				X		
AG-DVX100A		X				X		
AG-DVC80		X				X		
AG-DVC30		X				X		

no PAF – no Push Auto Focus function (puts camera into auto focus mode while the button is pressed)

524 zoom controllers compatibility chart (updated 11.2005)

Lenses Model	Lenses Type	Manfrotto products applicable	Manufacturer
YH12x4.8 IRS-A/KRS-A	Pro-video	524CN	Canon
YH19x6.7 IRS / KRS	Pro-video	524CN	Canon
YJ12x6.5B IRS/KRS	Pro-video	524CN	Canon
YJ13x6B IRS/KRS	Pro-video	524CN	Canon
YH18x6.7IRS/KRS	Pro-video	524CN	Canon
YJ18x9B IRS/KRS	Pro-video	524CN	Canon
YJ19x9B IRS/KRS	Pro-video	524CN	Canon
YJ20x8.5B KRS	Pro-video	524CN	Canon
YH16x7 KRS	Pro-video	524CN	Canon
HJ40x10B IASD-V	HDTV ENG/EFP	524CN	Canon
HJ40x14B IASD-V	HDTV ENG/EFP	524CN	Canon
HJ22ex7.6B IRSE/IASE	HDTV ENG/EFP	524CN	Canon
HJ21ex7.5B IRSE/IASE	HDTV ENG/EFP	524CN	Canon
HJ21ex7.8B IRSD/IASD	HDTV ENG/EFP	524CN	Canon
HJ17ex7.7B IRSE/IASE	HDTV ENG/EFP	524CN	Canon
HJ17ex7.6B IRSE/IASE	HDTV ENG/EFP	524CN	Canon
HJ11ex4.7B IRSE/IASE	HDTV ENG/EFP	524CN	Canon
J35ex11B IASD	SDTV ENG/EFP	524CN	Canon
J35ex15B IASD	SDTV ENG/EFP	524CN	Canon
J33ax11B IASD	SDTV ENG/EFP	524CN	Canon
J33ax15B IASD	SDTV ENG/EFP	524CN	Canon
J22ex7.6B IRSE/IASE	SDTV ENG/EFP	524CN	Canon
J17ex7.7B IRCE/IASE	SDTV ENG/EFP	524CN	Canon
J11ex4.5B IRSE/IASE	SDTV ENG/EFP	524CN	Canon
12x5.3 AIF.HR	Video SDTV ENG/EFP	524AX	Angenieux
15x8.3 AIF.HR	Video SDTV ENG/EFP	524AX	Angenieux
HA42x9.7ERD	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA42x13.5ERD	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA36x10.5 ERD	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA25X16.5BERD	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA22X7.8ERM/ERD*	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA22X7.3ERM/ERD*	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA18x7.6ERM/ERD*	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA13X4.5ERM/ERD*	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA25X11.5BERD	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HSs18X5.5BRD	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA13X4.5BRD/PF*	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
HA22X7.3RD/PF*	HDTV ENG/EFP	524FN with 524ADAPT	Fujinon
S20x6.4RM	Professional ENG/EFP	524FN	Fujinon
S20x6.4ERM	Professional ENG/EFP	524FN	Fujinon
S17x6.6 RM	Professional ENG/EFP	524FN	Fujinon
S13X4.6RM	Professional ENG/EFP	524FN	Fujinon
S13X4.6ERM	Professional ENG/EFP	524FN	Fujinon
A20x8.6RM	Professional ENG/EFP	524FN	Fujinon
A20x8.6ERM	Professional ENG/EFP	524FN	Fujinon
A13X6.3RM	Professional ENG/EFP	524FN	Fujinon
A17x9 RM	Professional ENG/EFP	524FN	Fujinon
A13X6.3ERM	Professional ENG/EFP	524FN	Fujinon
A36x14.5 ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A36x10.5 ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A22x7.8 ERM/ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A22x7.8 DERM/DERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A18x7.6ERM/ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A18x7.6DERM/DERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A13x4.5ERM/ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A13x4.5DERM/DERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A42x9.7 ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon
A42x13.5 ERD*	Broadcast ENG/EFP	524FN with 524ADAPT	Fujinon

Please note: We made every effort to make sure that information contained herein is correct and accurate, but we shall take no liability for any errors or omissions.

