

WARD

Zoom Profile Spotlights

Service Manual
Issue 1.0



ADB
Lighting Technologies

Foreword

This version 1.0 of the Service Manual for *WARD* precedes the complete manual for the *WARD*.

The latest version of ADB Service Manuals is available from the ADB website.

www.adblighting.com

For *WARD* and *Motorised WARD*

www.adblighting.com > ADB Products > Theatre Luminaires > WARP Motorised

Zaventem, 8 February 2010.

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2 Introduction

About This Guide

This manual is for the service and maintenance of *WARD*. It is intended to serve as a reference for personnel who are trained in the service and repair of the *WARD*.

WARD is warranted for one (1) year from the date of purchase. ADB assumes no responsibility for damage to units occurring from improper service or being adjusted contrary to these instructions. These units will not be covered by this warranty.

The following procedures are designed to be performed by a qualified service technician. This document is intended as a guide and does not provide the detail necessary for a novice to make repairs.

“Spare Parts Kit” list contains the parts required to make repairs described in this document.

Always disconnect the power to the system before dismantling any component to avoid shorts and possible component damage.

3 Tools

Adequate tools are required to service the *WARD*. ADB assumes no responsibility for damage to units occurring from improper tools. These units will not be covered by this warranty.

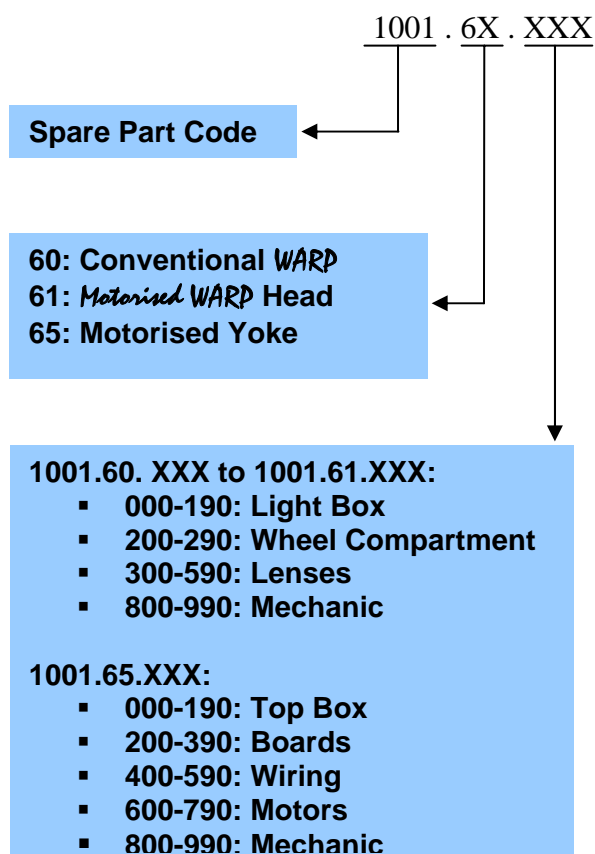
List of tools:

- Screwdriver Philips Standard # 0
- Screwdriver Philips Standard # 1
- Screwdriver Philips Standard # 2
- Screwdriver Positive Standard # 0
- Screwdriver Positive Standard # 1
- Screwdriver Positive Standard # 2
- Screwdriver Flat 1
- Screwdriver Flat 2
- Screwdriver Flat 3
- Nut driver set metric
- Hex. driver set metric
- Pliers
- Cutter, pliers wrench set

4 Spare Parts

4.1 Code Description

The chart below describes how the “Spare part numbers” are build-up.

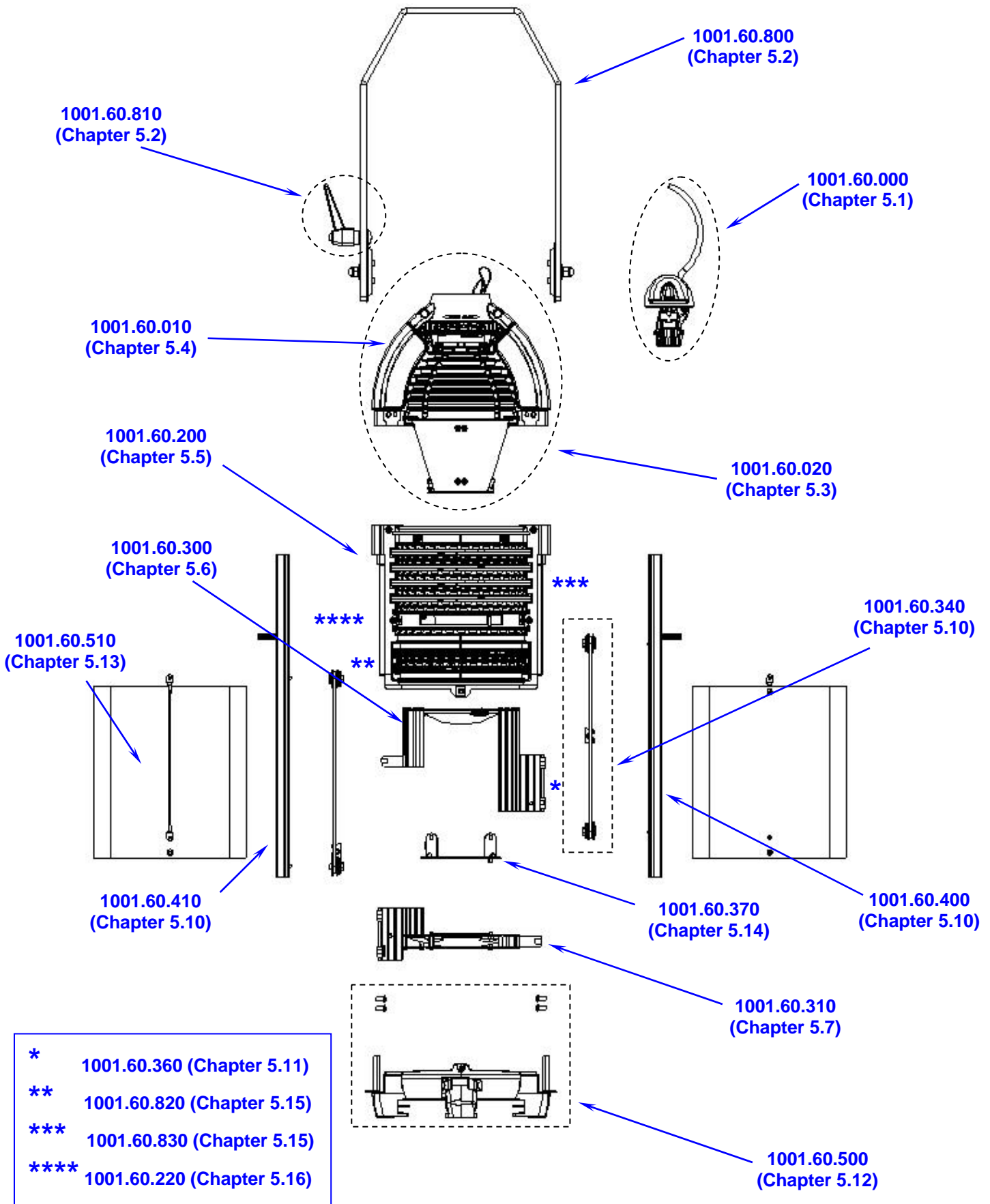


Example: 1001.61.000
 1001 => spare part
 61 => *Motorised WARD* Head
 000 => Light Box

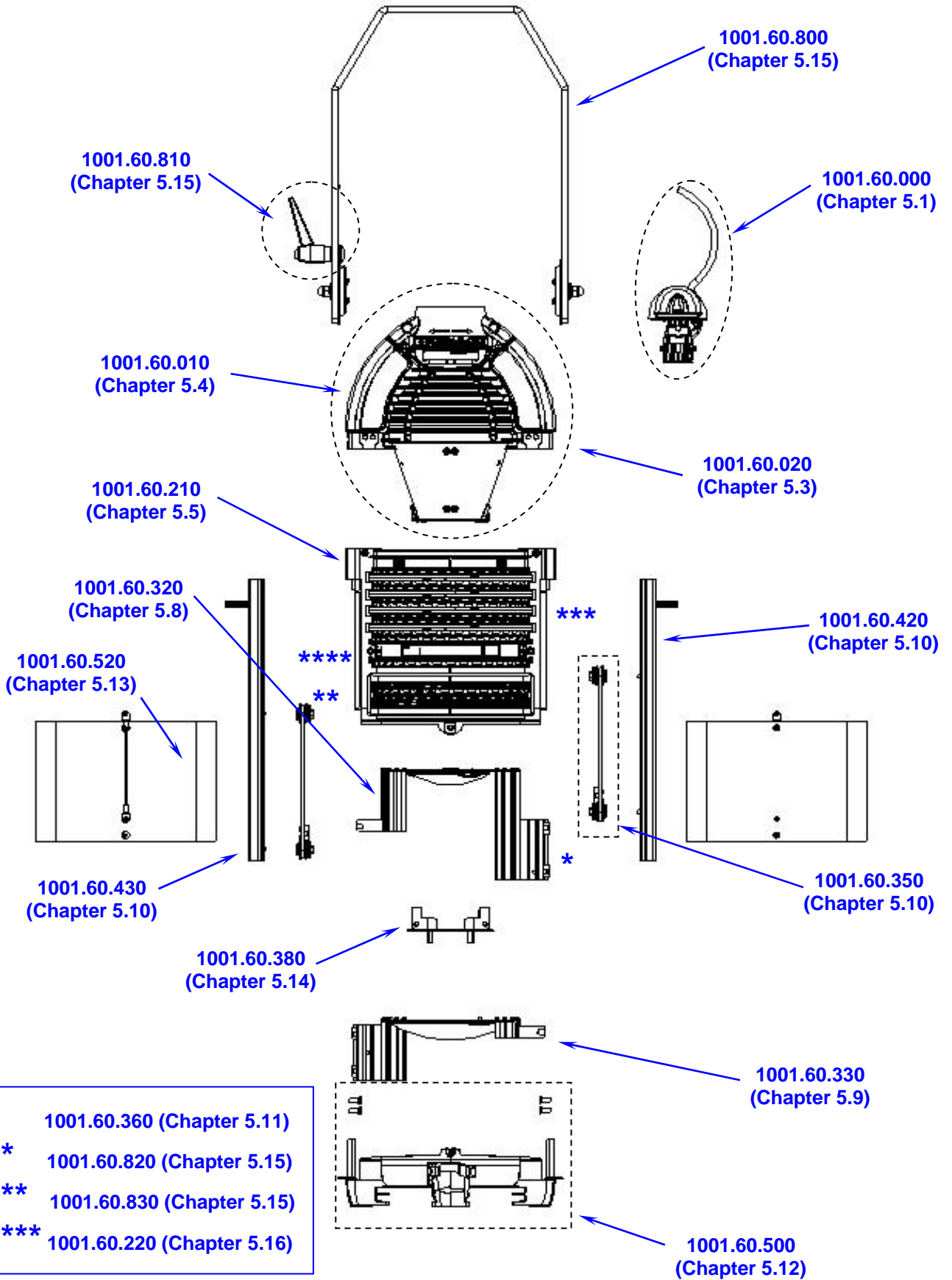
4.2 Spare Parts for the Manual WARP

Sub Assembly	Code Number	Chapter
WARP Lamp Assembly	1001.60.000	5.1
Reflector	1001.60.010	5.4
Complete Light Box	1001.60.020	5.3
Sub Assembly	Code Number	Chapter
Complete Wheel Compartment 12°-30°	1001.60.200	5.5
Complete Wheel Compartment 22°-50°	1001.60.210	5.5
Brake Lense Wheel Kit	1001.60.220	5.16
Sub Assembly	Code Number	Chapter
Back Lens 12°-30° Kit	1001.60.300	5.6
Front Lens 12°-30° Kit	1001.60.310	5.7
Back Lens 22°-50° Kit	1001.60.320	5.8
Front Lens 22°-50° Kit	1001.60.330	5.9
Belt Kit for WARP/M 12°-30°	1001.60.340	5.10
Belt Kit for WARP/M 22°-50	1001.60.350	5.10
Teflon Ring Kit	1001.60.360	5.11
Diaphragm 12°-30°	1001.60.370	5.14
Diaphragm 22°-50°	1001.60.380	5.14
Sub Assembly	Code Number	Chapter
Focus Arm 12°-30°	1001.60.400	5.10
Zoom Arm 12°-30°	1001.60.410	5.10
Focus Arm 22°-50°	1001.60.420	5.10
Zoom Arm 22°-50°	1001.60.430	5.10
Sub Assembly	Code Number	Chapter
Filter Cassette	1001.60.500	5.12
Lenses Cover 12°-30°	1001.60.510	5.13
Lenses Cover 22°-50°	1001.60.520	5.13
Sub Assembly	Code Number	Chapter
Yoke	1001.60.800	5.2
Yoke Handle	1001.60.810	5.2
Lens Wheel Handle	1001.60.820	5.15
Shutter Wheel Handle	1001.60.830	5.15

Spare part code for WARD 12°-30°



Spare part code for WARD 22°-50°



5 Maintenance Sheet

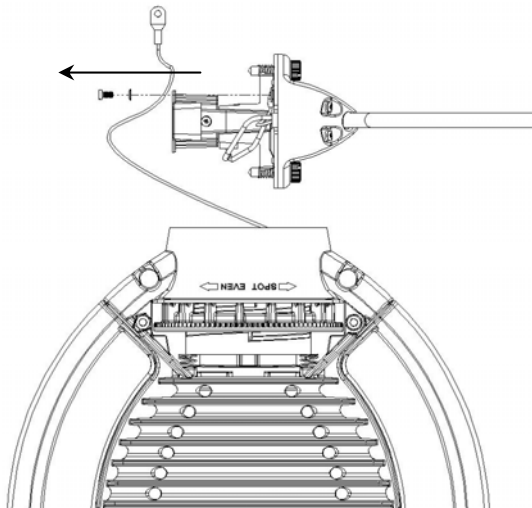
5.1 How to change the lamp assembly

Required Tool(s)	Spare Part Code	Time needed
Flat Screw Driver Screw Driver PZ1	1001.60.000	15 min.

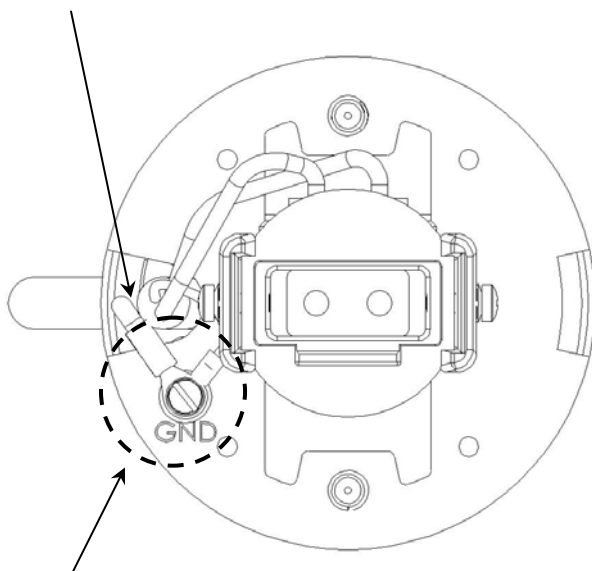
Before Change the lamp Assembly Unplug the WARP and remove the lamp:

1001.60.000 includes:

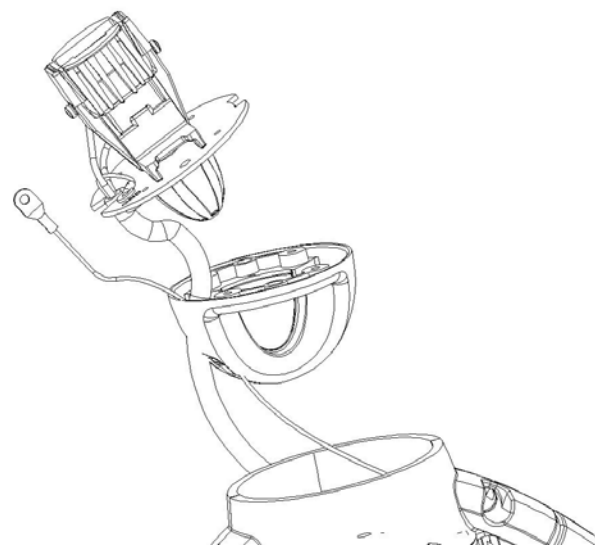
- 1 complete lamp assembly
- 4 M3 * 10 Taptite+ 1 M3*6
- 2 Finger screws + springs



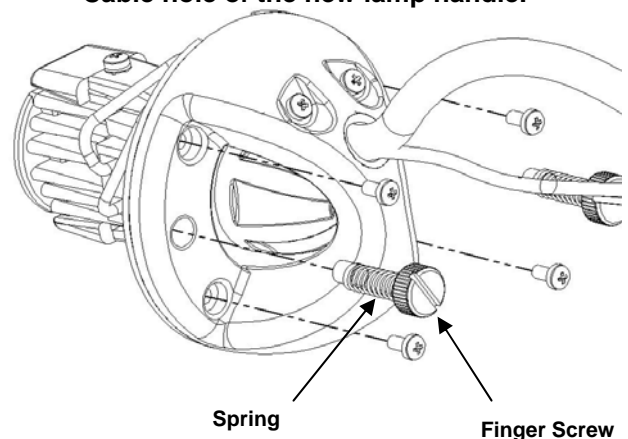
- 1 - Open the Lamp Holder
- 2 - Keep the security cable on the peak and flat cylinder
- 3 - Remove it from the old lamp assembly (screw which fix the earth wire).



- 5 - Fix the safety cable on the new lamp Assembly, using the Screw M3*6 (put the washer between lamp plate and earth wire).



- 4 - Pass the safety cable through the Lamp Cable hole of the new lamp handle.



- 6 - Unclose the New Lamp Assembly using the 4 black taptite screws.
- 7 - Screw the 2 Finger Screws with the 2 springs.

Maintenance Sheet

Required Tool(s)	Spare Part Code	Time needed
Metric Wrench 13	1001.60.800 1001.60.810	5 min.

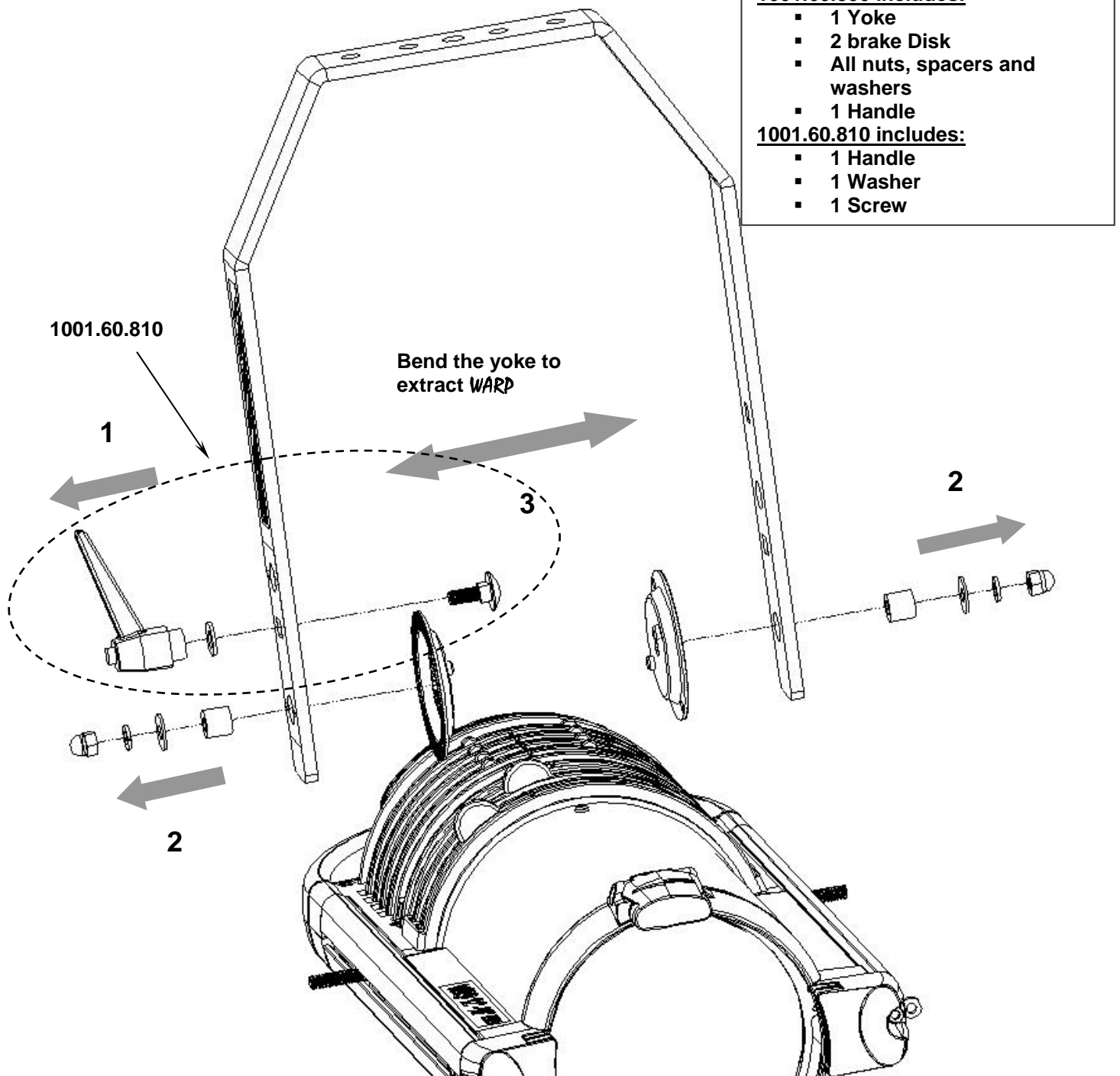
1. Unplug the *WARD*
2. Remove the break Handle
3. Remove nuts and washer using Wrench 13, on the two sides.
4. Open the yoke (bend arms) to extract *WARD*

1001.60.800 includes:

- 1 Yoke
- 2 brake Disk
- All nuts, spacers and washers
- 1 Handle

1001.60.810 includes:

- 1 Handle
- 1 Washer
- 1 Screw



5.2 Remove / Change the light Box

Required Tool(s)	Spare Part Code	Time needed
Hexagonal H4	1001.60.020	5 min.

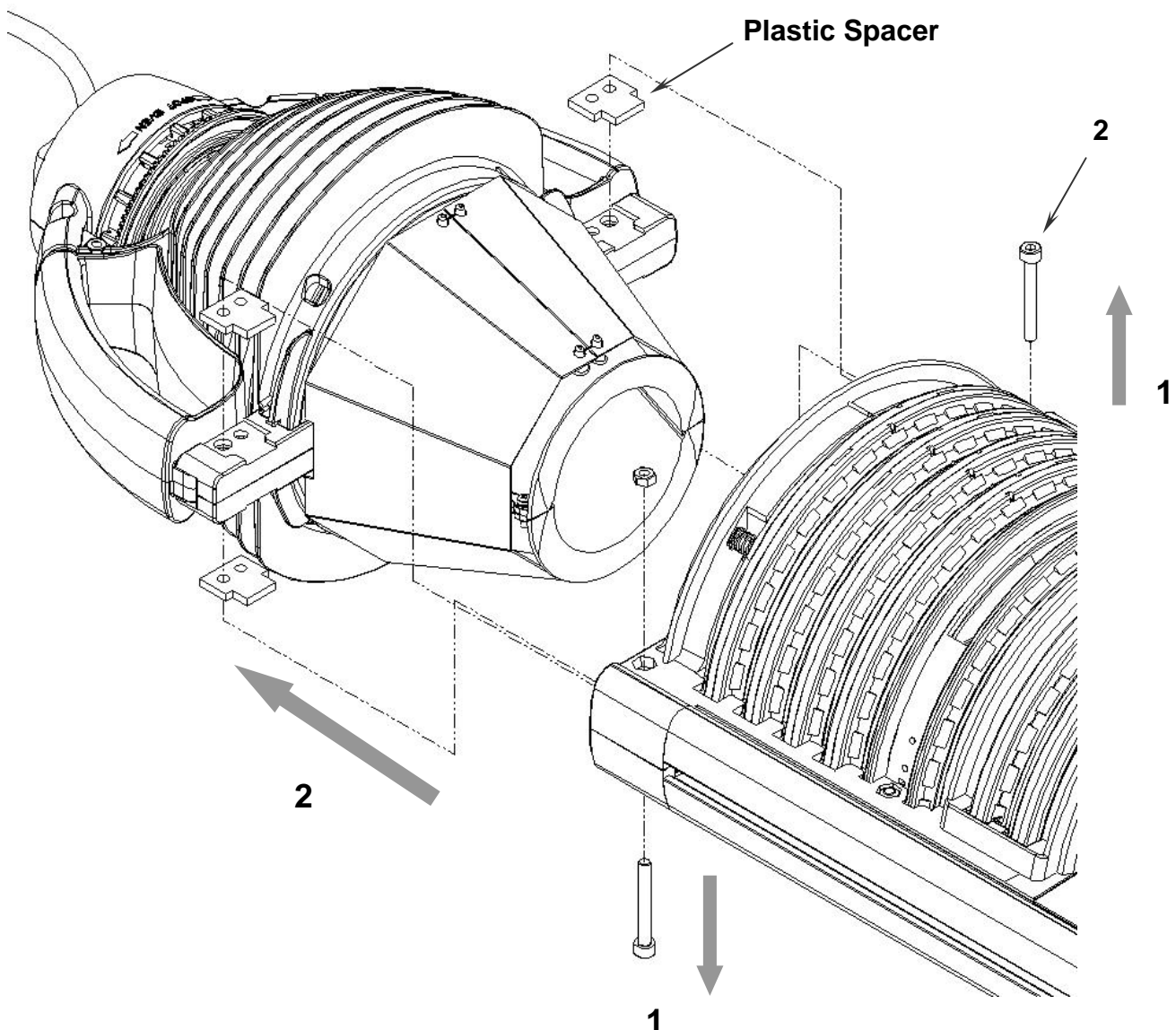
1. Unplug the *WARD* and remove the lamp:
2. Remove the 2 screws into the wheels compartment using H4
3. Remove / Replace the Light Box and the 4 Plastic spacers

WARNING:

Don't forget the 4 plastic spacers when you replace the light Box

1001.60.020 includes:

- 1 complete light box
- 2 Screws M5 * 40 + 2nuts
- 4 plastic Spacers



5.3 Replace the Reflector

Required Tool(s)	Spare Part Code	Time needed
Hexagonal H4 Poqidrive PZ2	1001.60.010	20 min.

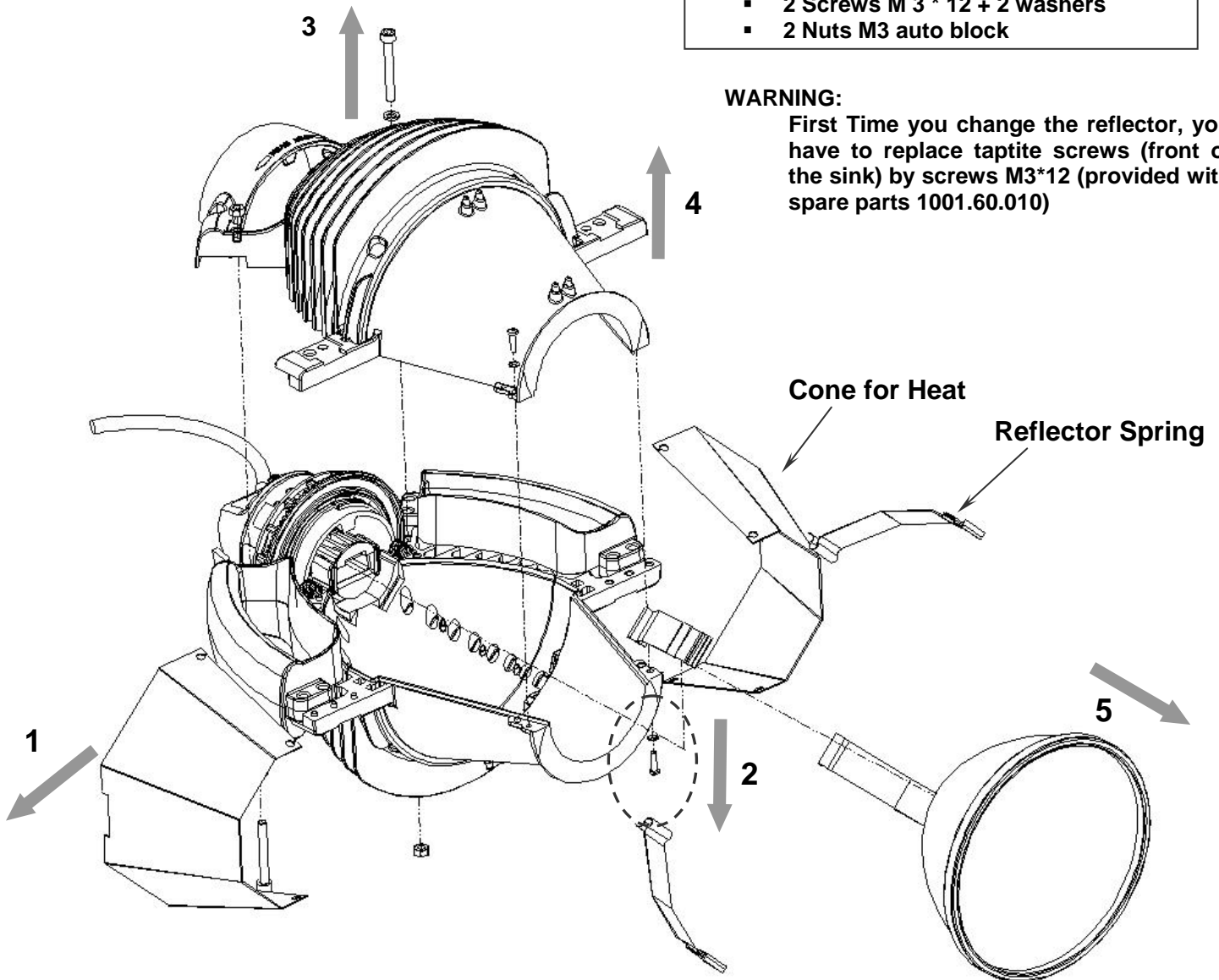
1. Unplug the *WARD* and remove the lamp:
2. Remove the Light Box from the *WARD* (see Chapter 5.3)
3. Remove the 2 Cones for heat
4. Remove screws M3 on the Front of the cone (PZ2)
5. Remove Screws H4 on the back (near the Peak and Flat)
6. Open the Light box
7. Replace the Reflector

1001.60.010 includes:

- 1 reflector
- 4 reflector Springs
- 2 Screws M 3 * 12 + 2 washers
- 2 Nuts M3 auto block

WARNING:

First Time you change the reflector, you have to replace taptite screws (front of the sink) by screws M3*12 (provided with spare parts 1001.60.010)



5.4 Change the Wheels Compartment

Required Tool(s)	Spare Part Code	Time Needed
Screw Driver PZ2 Hexagonal H4 Hexagonal H5	1001.60.200 1001.60.210	30 min.

5.4.1 How to Remove the Wheel Compartment

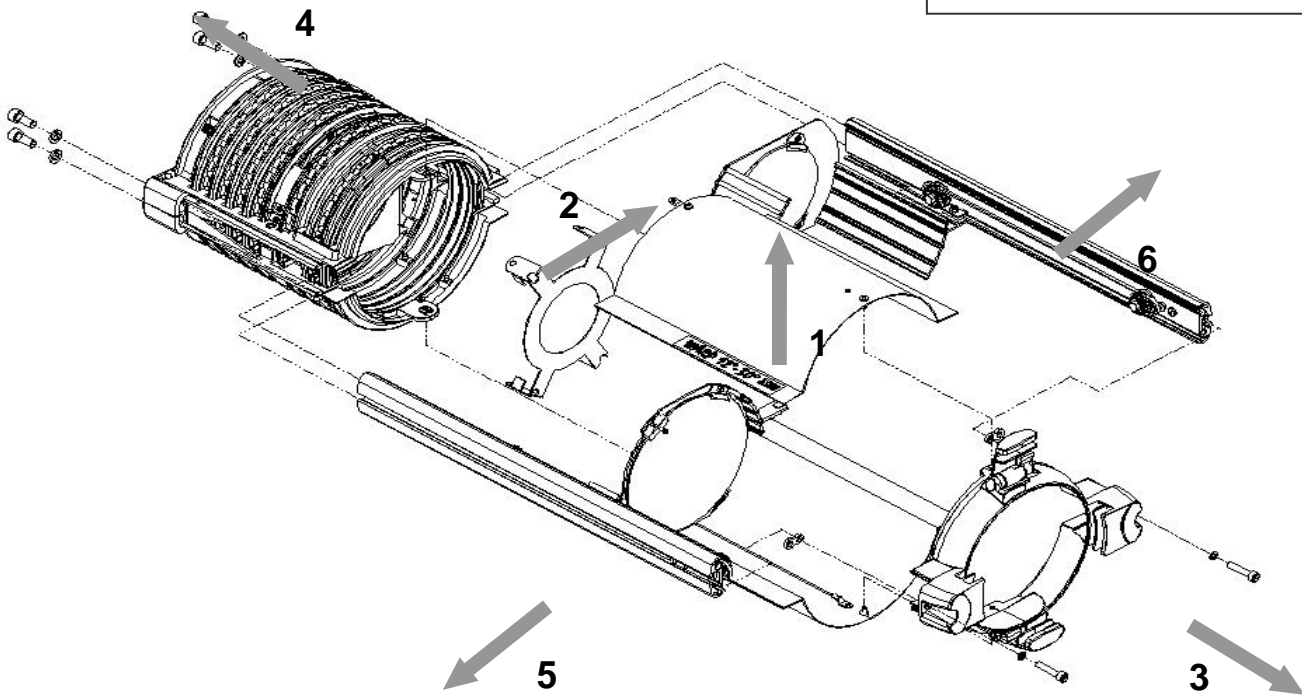
1. Unplug the *WARD* and remove the lamp
2. Remove the Yoke (see chapter 5.2)
3. Remove Lenses Covers (see chapter 5.13)
4. Remove the light Box (see chapter 5.3)
5. Remove the Front Filter Cassette (see chapter 5.12)
6. Remove Diaphragm (see chapter 5.14)
7. Remove the 4 screws in the back of the wheel compartment
8. Remove the 2 arms

1001.60.200 includes:

- 1 complete Wheel Compartment
- 2 screws M6*30 + Washers for Front Cassette
- 4 screws and washer to fix Arms on wheel compartment
- 3 Black rivets
- 2 safety cable for 12-30°

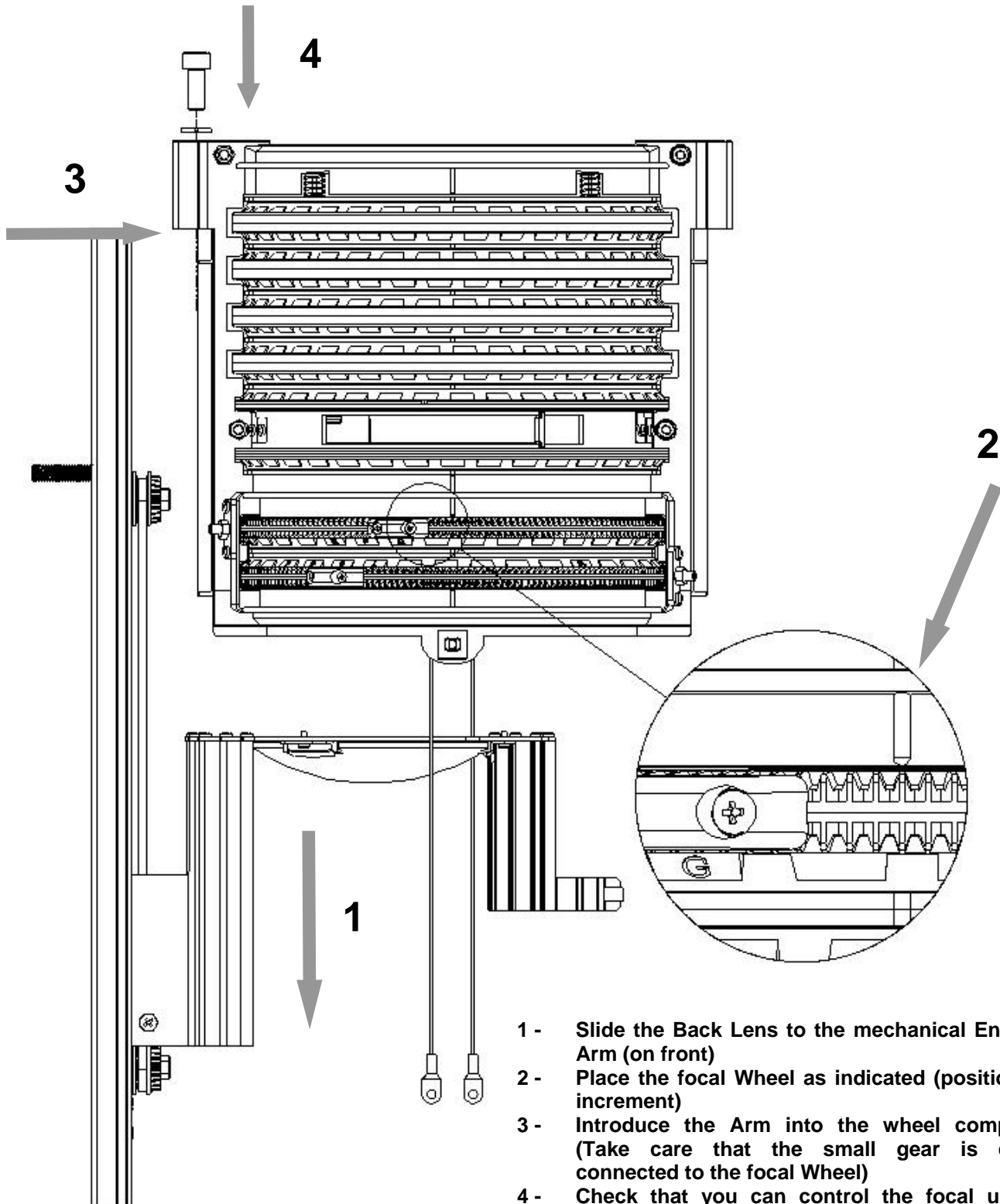
1001.60.210 includes:

- 1 complete Wheel Compartment
- 2 screws M6*30 + Washers for Front Cassette
- 4 screws and washer to fix Arms on wheel compartment
- 3 Black rivets
- 2 safety cable for 22-50°



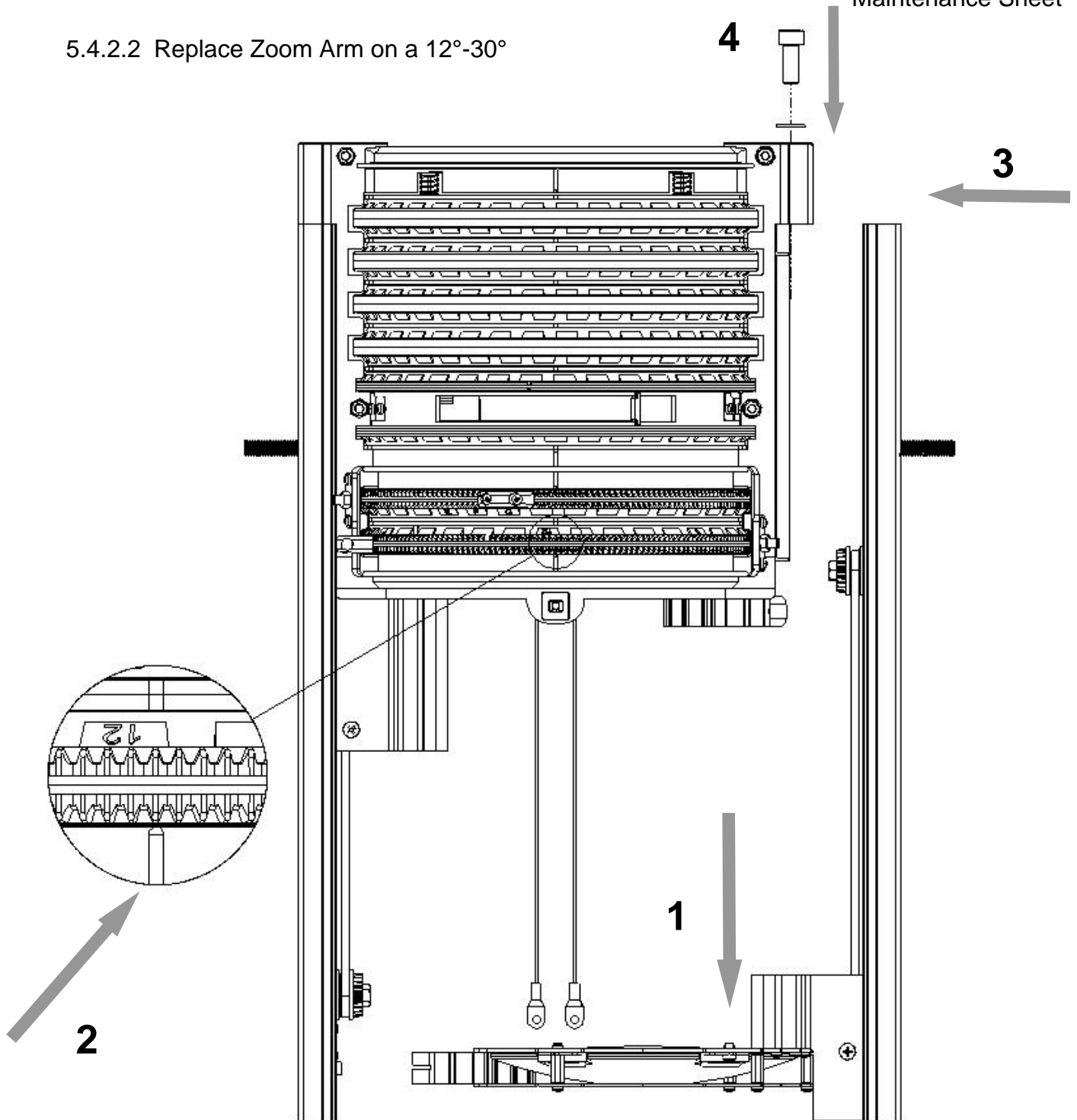
5.4.2 How replace the Wheel Compartment on a 12°-30°

5.4.2.1 Replace Focus Arm on a 12°-30°



- 1 - Slide the Back Lens to the mechanical End on the Arm (on front)
- 2 - Place the focal Wheel as indicated (position G + 1 increment)
- 3 - Introduce the Arm into the wheel compartment (Take care that the small gear is correctly connected to the focal Wheel)
- 4 - Check that you can control the focal using the wheel
- 5 - Put the 2 screws to fix the arm (back of the wheel compartment)
- 6 - Slide the Focal until 0 position
- 7 - Introduce the diaphragm (see chapter 5.14)

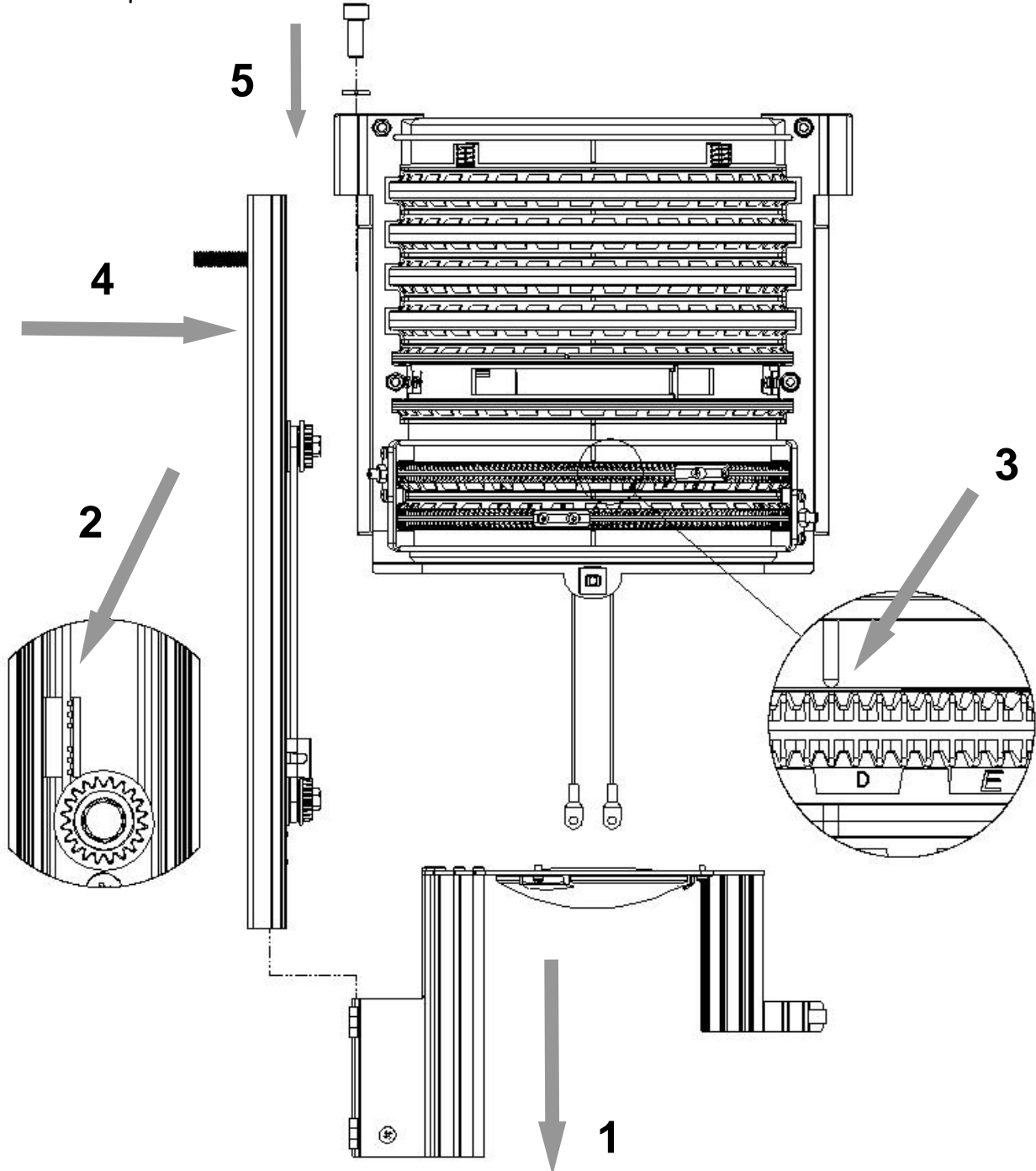
5.4.2.2 Replace Zoom Arm on a 12°-30°



- 8 - Slide the Front lens to the mechanical end on the Arm (on front)
- 9 - Place the Zoom Wheel as indicated (position 12)
- 10 - Introduce the Arm into the wheel compartment (Take care that the small gear is correctly connected to the Zoom Wheel)
- 11 - Check that you can control the Zoom using the wheel
- 12 - Put the 2 screws to fix the arm (back of the wheel compartment)
- 13 - Replace the diaphragm (see chapter 5.14) the Filter Cassette (see chapter 5.12)
- 14 - Replace Lenses Cover (screw inside the wheel compartment) (see chapter 5.13)
- 15 - Replace the Light Box (see chapter 5.3)
- 16 - Replace the Yoke (see chapter 5.2)

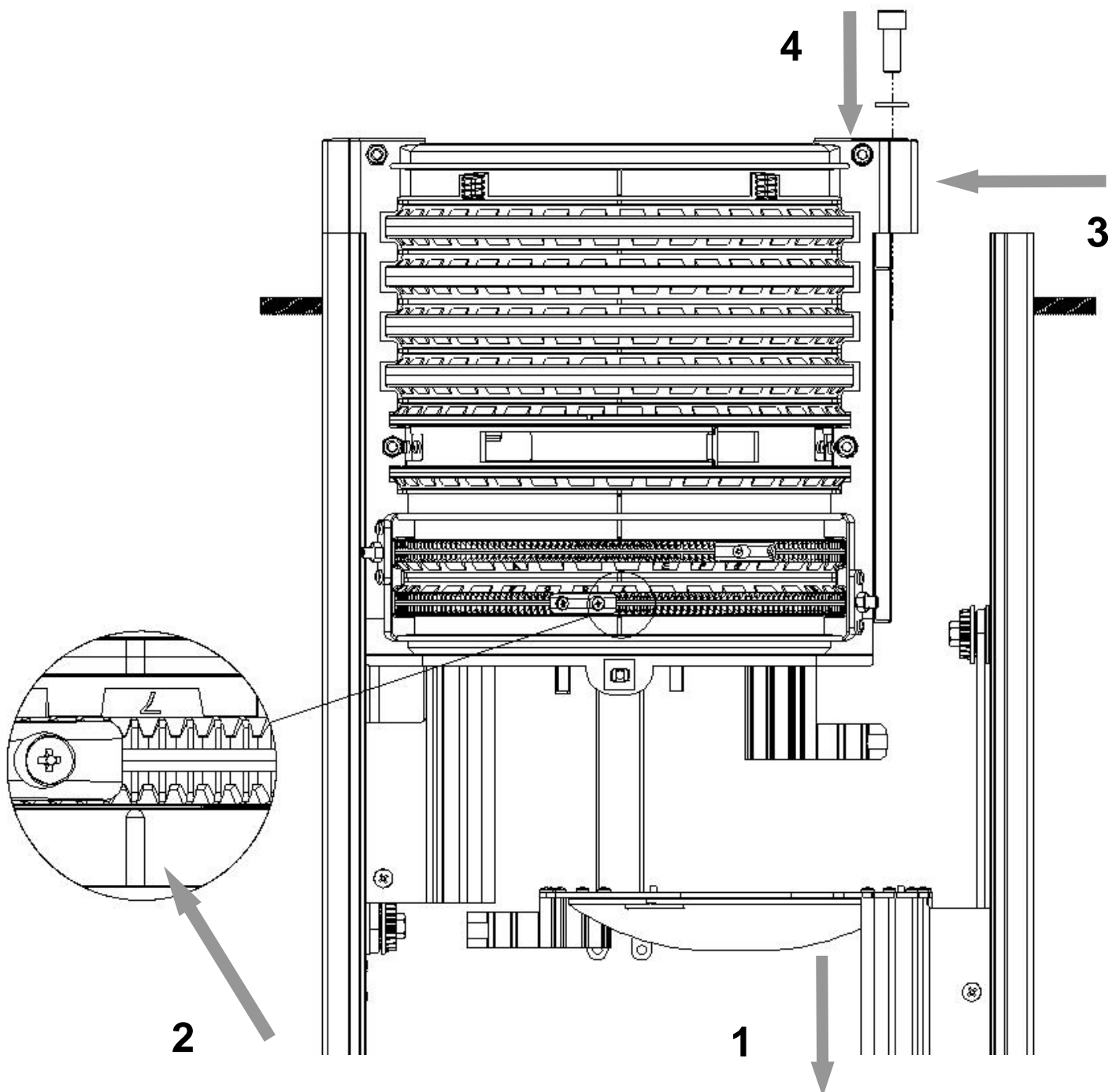
5.4.3 How replace the Wheel Compartment on a 22°-50°

5.4.3.1 Replace Focus Arm on a 22°-50°



- 1 - Slide and Remove the Back Lens from the arm. Put the Belt Clip near the front gear.
- 2 - Place the focal Wheel as indicated (position D)
- 3 - Introduce the Arm into the wheel compartment (Take care that the small gear is correctly connected to the focal Wheel)
- 4 - Introduce the lens support into the arm profile and screw it on the belt clip
- 5 - Check that you can control the focal using the wheel (0-Full)
- 6 - Put the 2 screws to fix the arm (back of the wheel compartment)
- 7 - Slide the Focal until 0 position
- 8 - Introduce the diaphragm (see chapter 5.14)

5.4.3.2 Replace Zoom Arm on a 22°-50°



- 9 - Slide the Front lens to the mechanical end on the Arm (on front)
- 10 - Place the Zoom Wheel as indicated (position 7)
- 11 - Introduce the Arm into the wheel compartment (Take care that the small gear is correctly connected to the Zoom Wheel)
- 12 - Check that you can control the front lens using the wheel
- 13 - Put the 2 screws into the arm

- 14 - Replace the diaphragm (see chapter 5.14) the Filter Cassette (see chapter 5.12)
- 15 - Replace Lenses Cover (screw inside the wheel compartment) (see chapter 5.13)
- 16 - Replace the Light Box (see chapter 5.3)
- 17 - Replace the Yoke (see chapter 5.2)

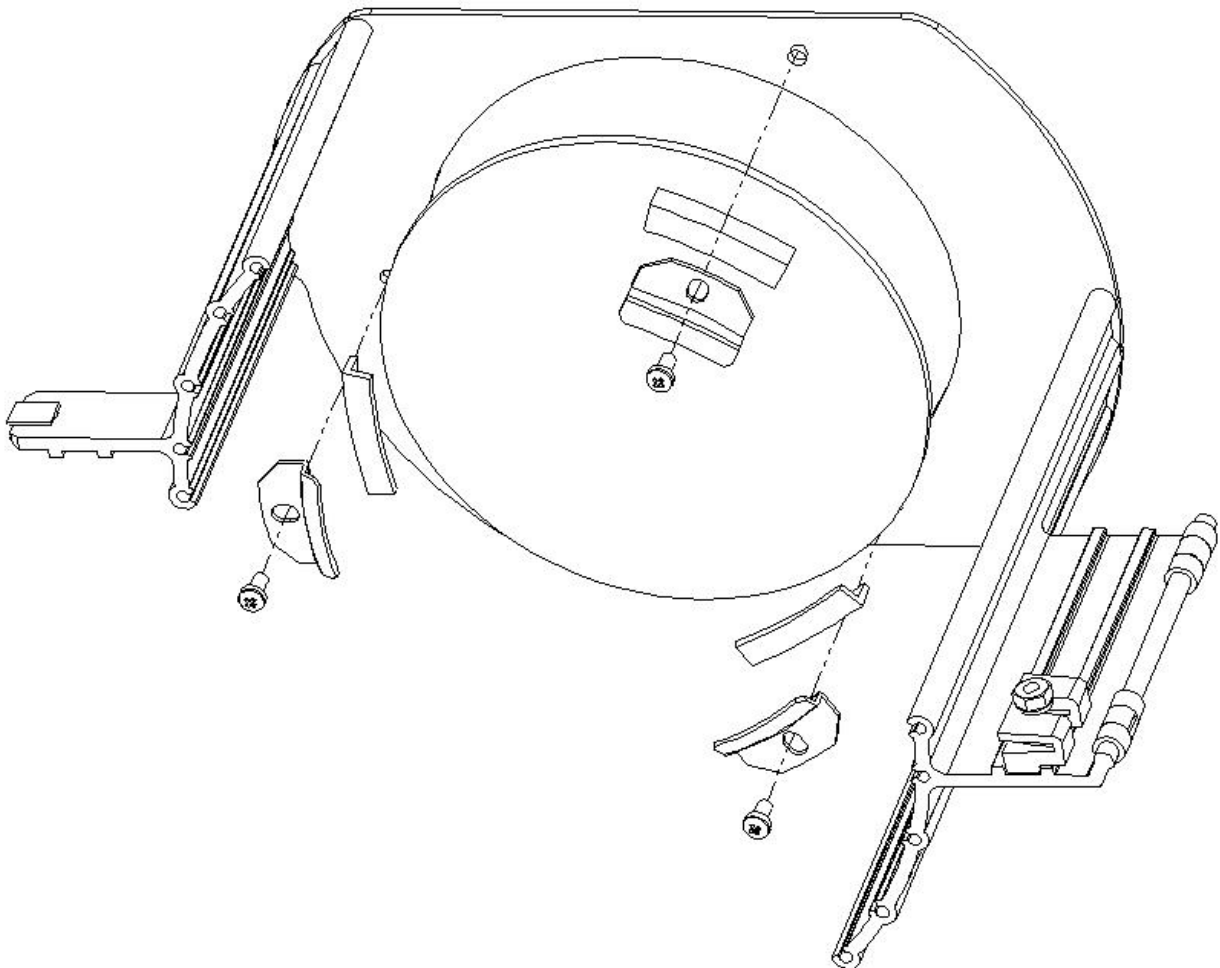
5.5 Replace the Back Lens on 12°-30° WARP

Required Tool(s)	Spare Part Code	Time Needed
Screw Driver PZ2	1001.60.300	10 min.

1. Unplug the *WARP*
2. Open the two lenses cover
3. Remove the Diaphragm (see chapter 5.14)
4. Put Front and back lenses at Full
5. Remove the 3 taptite screws from the Lens plate
6. Remove the 3 Isolations and the ADB Clip.
7. Change the Lens

1001.60.300 includes:

- Back Lens 12-30°
- 3 New screws
- 3 Isolations
- 3 ADB Clip.



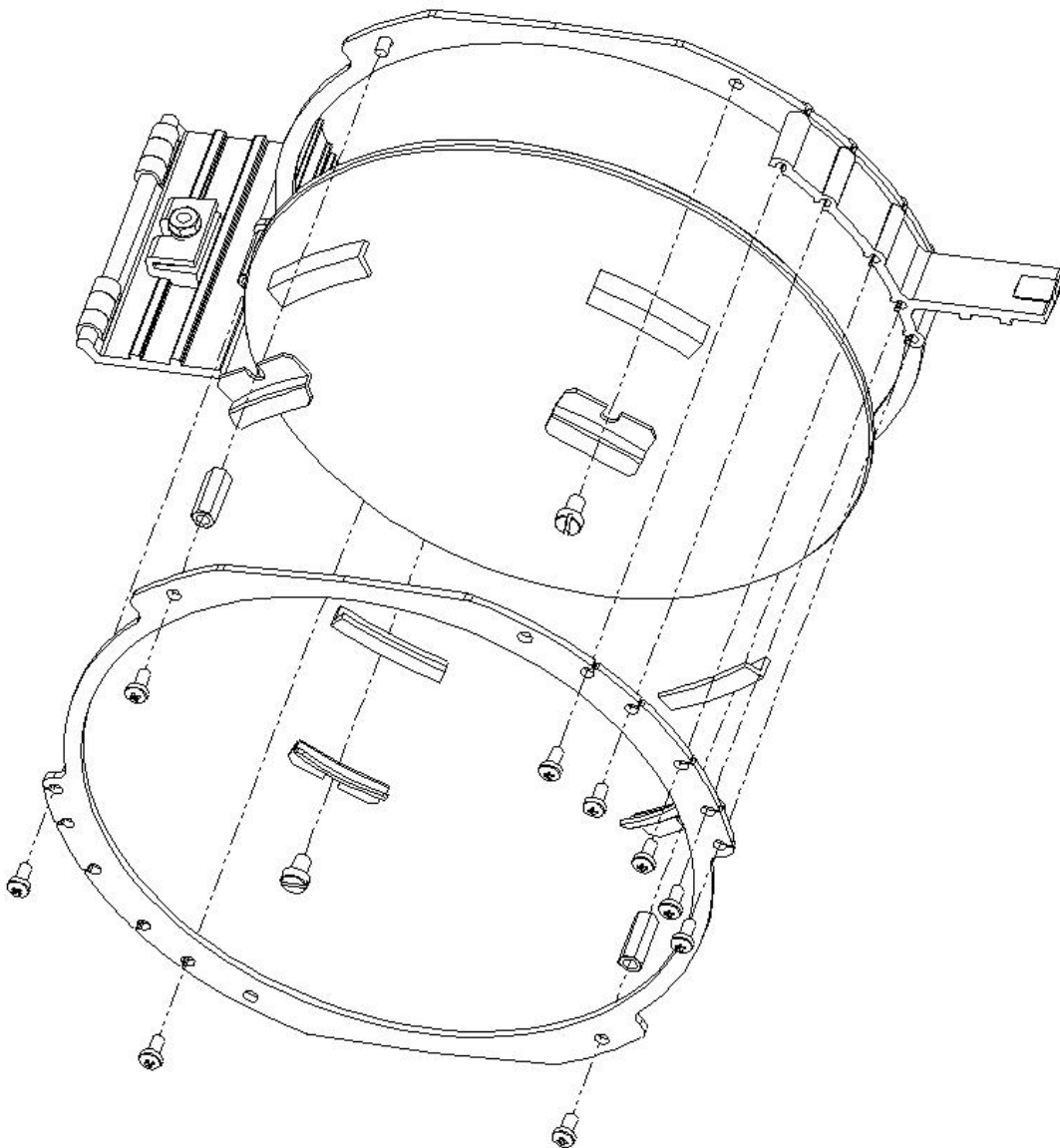
5.6 Replace the Front Lens on 12°-30° WARD

Required Tool(s)	Spare Part Code	Time Needed
Flat Screw Driver Screw Driver PZ2	1001.60.310	10 min.

1. Unplug the WARD
2. Open the two lenses cover and remove the diaphragm (see chapter 5.14)
3. Put Front and back lenses at 0
4. Remove the 9 Taptite Screws and the front lens plate
5. Remove the 2 screws and the 2 spacers
6. Remove the 4 isolations and Clips
7. Change the Lens

1001.60.310 includes:

- Front Lens 12-30°
- 10 New screws for Lens plate
- 4 Isolations
- 4 ADB Clip.
- 2 Screws



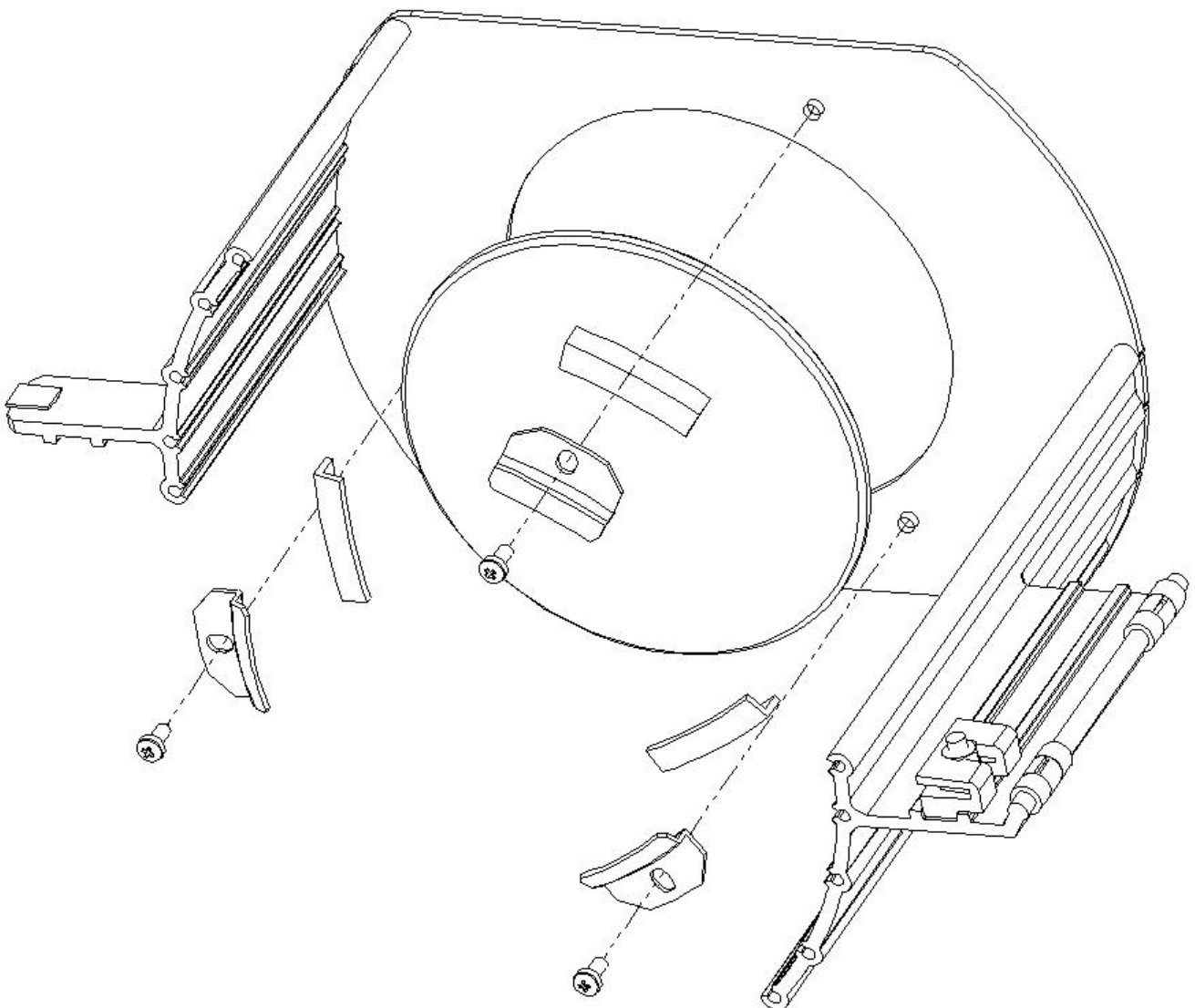
5.7 Replace the Back Lens on 22°-50° WARD

Required Tool(s)	Spare Part Code	Time Needed
Screw Driver PZ2	1001.60.320	10 min.

1. Unplug the *WARD*
2. Open the two lenses cover
3. Remove the Diaphragm (see chapter 5.14)
4. Put Front and back lenses at Full
5. Remove the 3 taprite screws
6. Remove the 3 Isolations and the ADB Clip.
7. Change the Lens

1001.60.320 includes:

- Back Lens 22-50°
- 3 New screws
- 3 Isolations
- 3 ADB Clip.



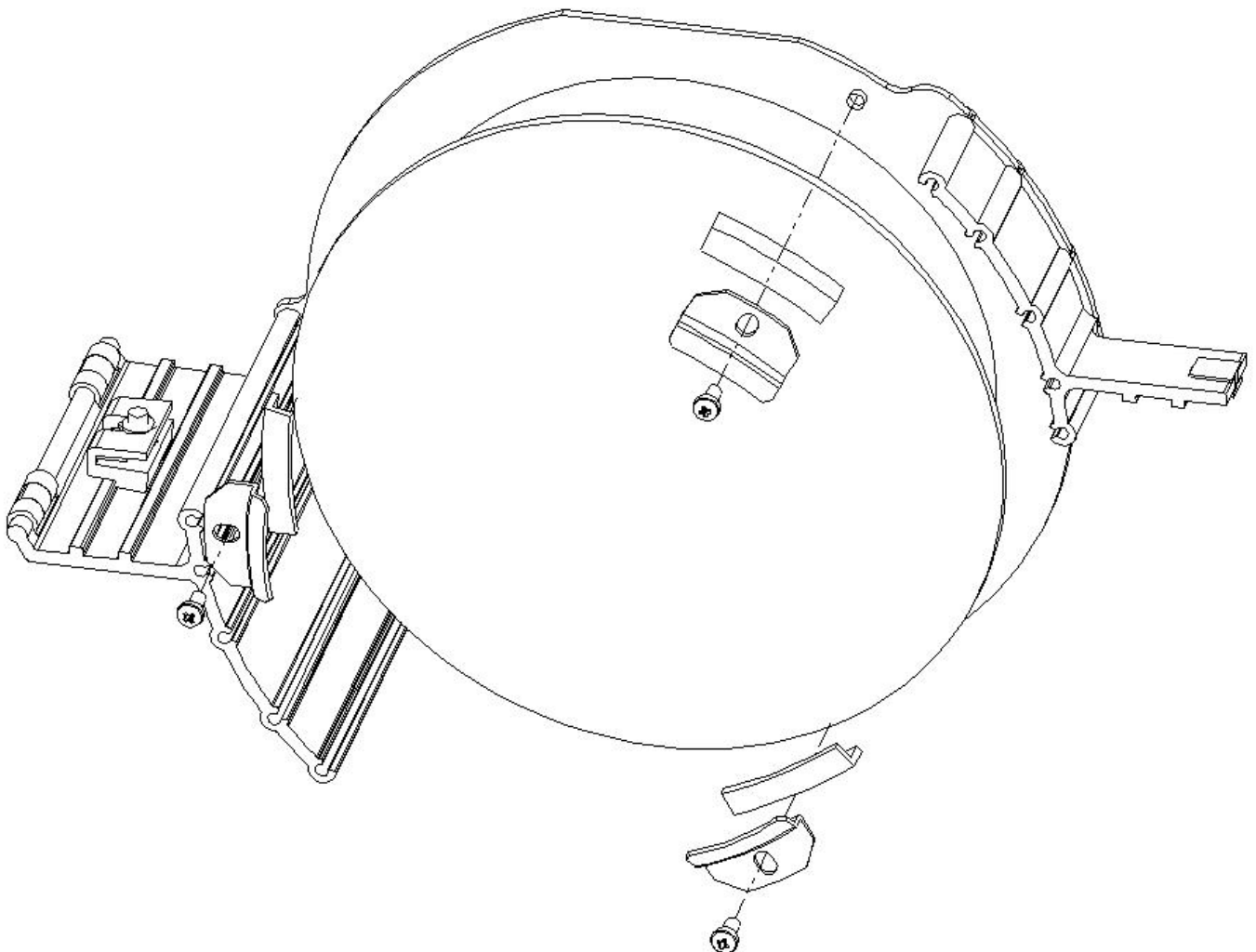
5.8 Replace the Front Lens on 22°-50° WARD

Required Tool(s)	Spare Part Code	Time needed
Screw Driver PZ2	1001.60.330	10 min.

1. Unplug the *WARD*
2. Open the two lenses cover
3. Put Front and back lenses at 0
4. Remove the 3 screws
5. Remove the 3 isolations and Clips
6. Change the Lens

1001.60.330 includes:

- Front Lens 22-50°
- 3 New screws
- 3 Isolations
- 3 ADB Clip.



5.9 Change Gears & Belts on 12°-30° & 22°-50°

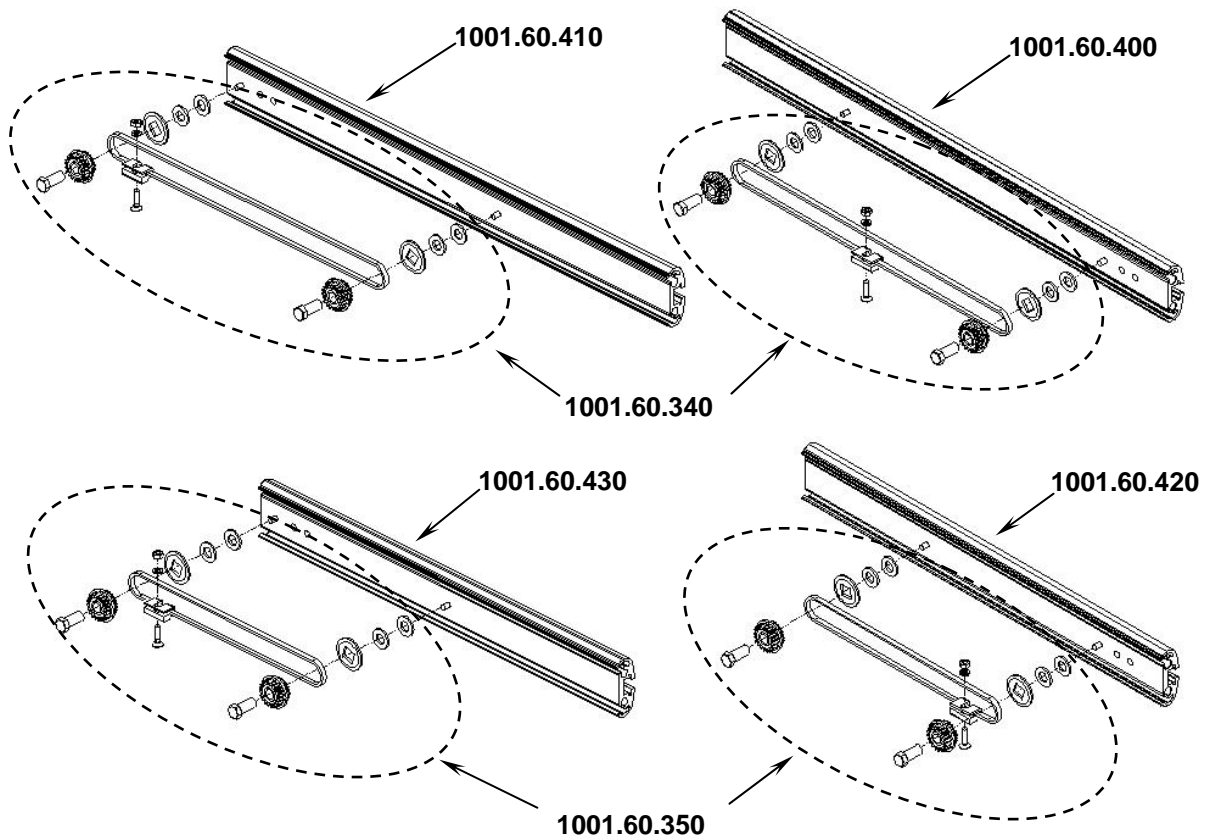
Required Tool(s)	Spare Part Code	Time Needed
Screw Driver PZ2 Metric Wrench 10	1001.60.340	45 min.
	1001.60.350	
	1001.60.400	
	1001.60.410	
	1001.60.420	
	1001.60.430	

Important: On the *WARD* you have to remove Arms to change all gear and belt. To replace Arms correctly, please see chapter 5.5.2 for 12°-30° and chapter 5.5.3 for 22°-50°.

1. Unplug the *WARD*
2. Remove arms from *WARD* (see chapter 5.5.1)
3. Use wrench 10 to remove gear shafts

1001.60.340 & 1001.60.350 include:

- 2 Belts T3 * 420
- 2 Belt Clip
- Screw washer and nut for Belt Clip
- 4 Lens Gears and Washer
- 2 gear Shaft
- 8 Washers M8



5.10 Replace Teflon Ring

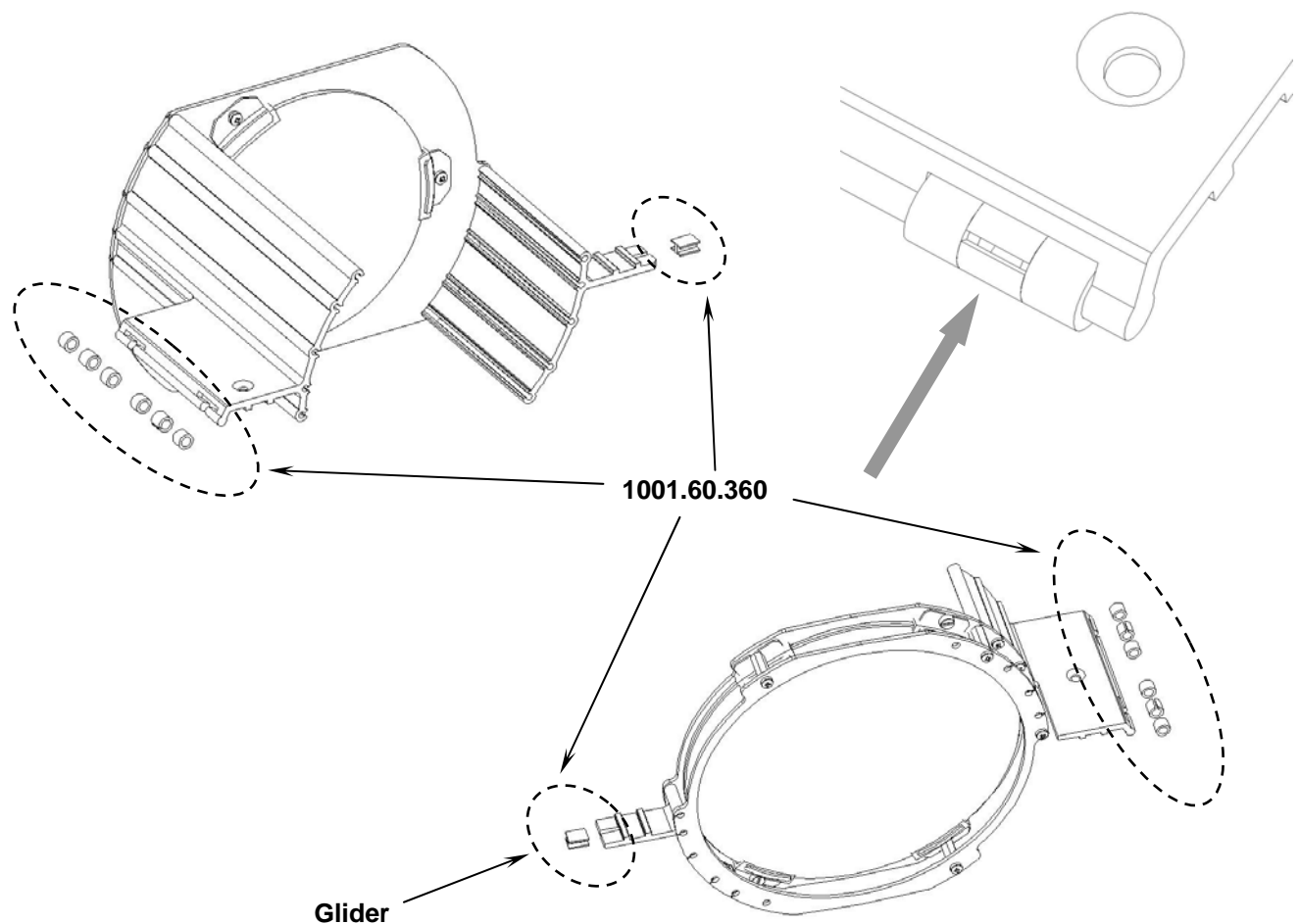
Required Tool(s)	Spare Part Code	Time
None	1001.60.360	30 min.

Important: After a few years of operation, it could be necessary to change the Teflon ring to facilitate the sliding of the lenses.

1. Unplug the *WARD*
2. Open Covers and remove Filter Cassette (see chapter 5.12)
3. Remove Diaphragm (see chapter 5.14)
4. Unlink the 2 lenses from belts (remove screws and nuts from the belt clip)
5. Slide and remove completely lenses support from arms
6. Change all Teflon parts as initially assembled on each lens support
7. Replace lenses into arm profile.
8. Replace Diaphragm Filter Cassette and covers

1001.60.360 includes:

- 10 Lens Stears
- 5 Lens Opened Stears
- 3 Lens Gliders



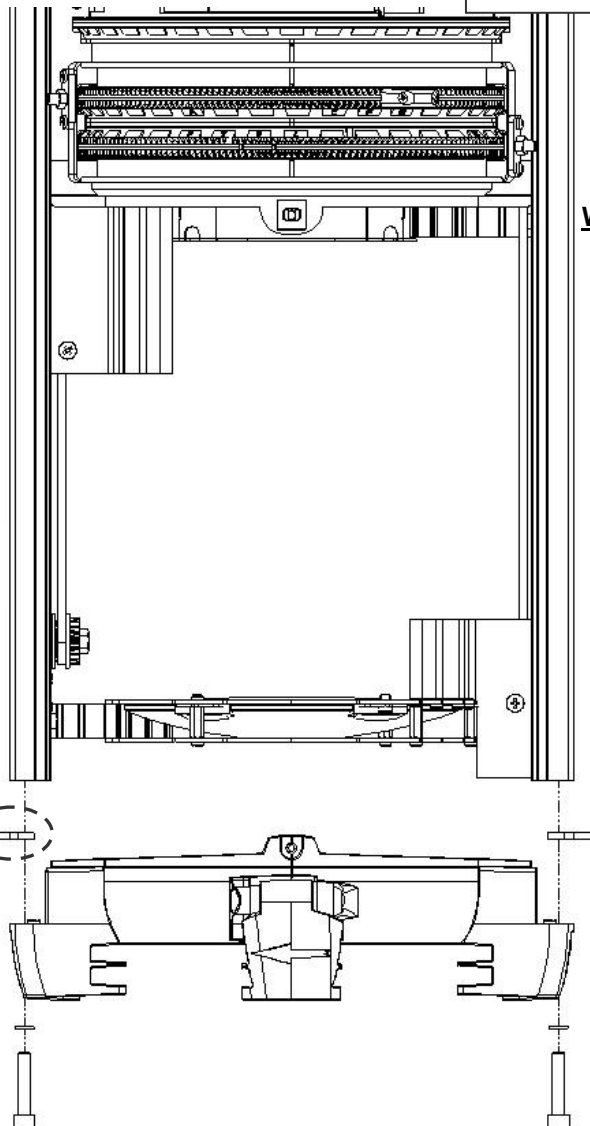
5.11 Remove / Change Front Filter cassette

Required Tool(s)	Spare Part Code	Time needed
Screw Driver PZ2 Hexagonal H5	1001.60.500	10 min.

1. Unplug the *WARD*
2. Open the two lenses cover
3. Remove the 2 screws M6 on the front
4. Remove the Filter Cassette

1001.60.500 includes:

- 1 Complete Filter Cassette
- 2 screws M6 * 30
- 2 Locking Washers
- 2 Safety Wire Attachment



Don't forget the Safety Wire Attachment

WARNING:

Due to mechanical adjustment, some *WARD* were manufactured with a small sheet spacer between the filter cassette and arms.

Before you remove the cassette, make note of the spacer position, to replace it correctly.

5.12 Replace Lenses Cover

Required Tool(s)	Spare Part Code	Time Needed
Screw Driver PZ2	1001.60.510 (12°-30°) 1001.60.520 (22°-50°)	10 min.

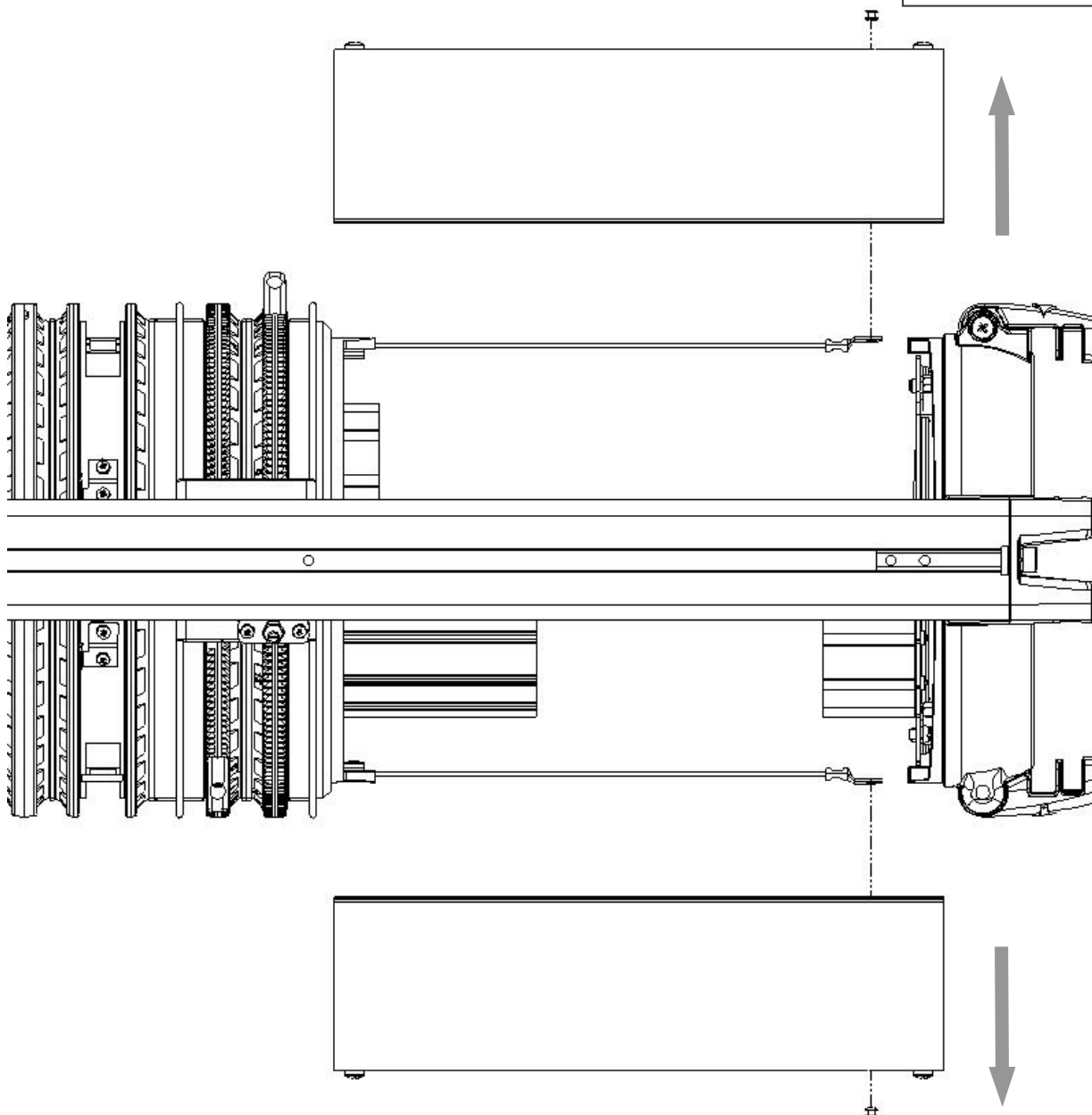
1. Unplug the *WARD*
2. Open the two lenses cover
3. Put the Back Lens at 0 and the Front Lens at Full
4. Drill the 2 rivet on covers
5. Remove covers and replace new one

1001.60.510 includes:

- 2 complete 12°-30° Covers
- 4 black rivets

1001.60.520 includes:

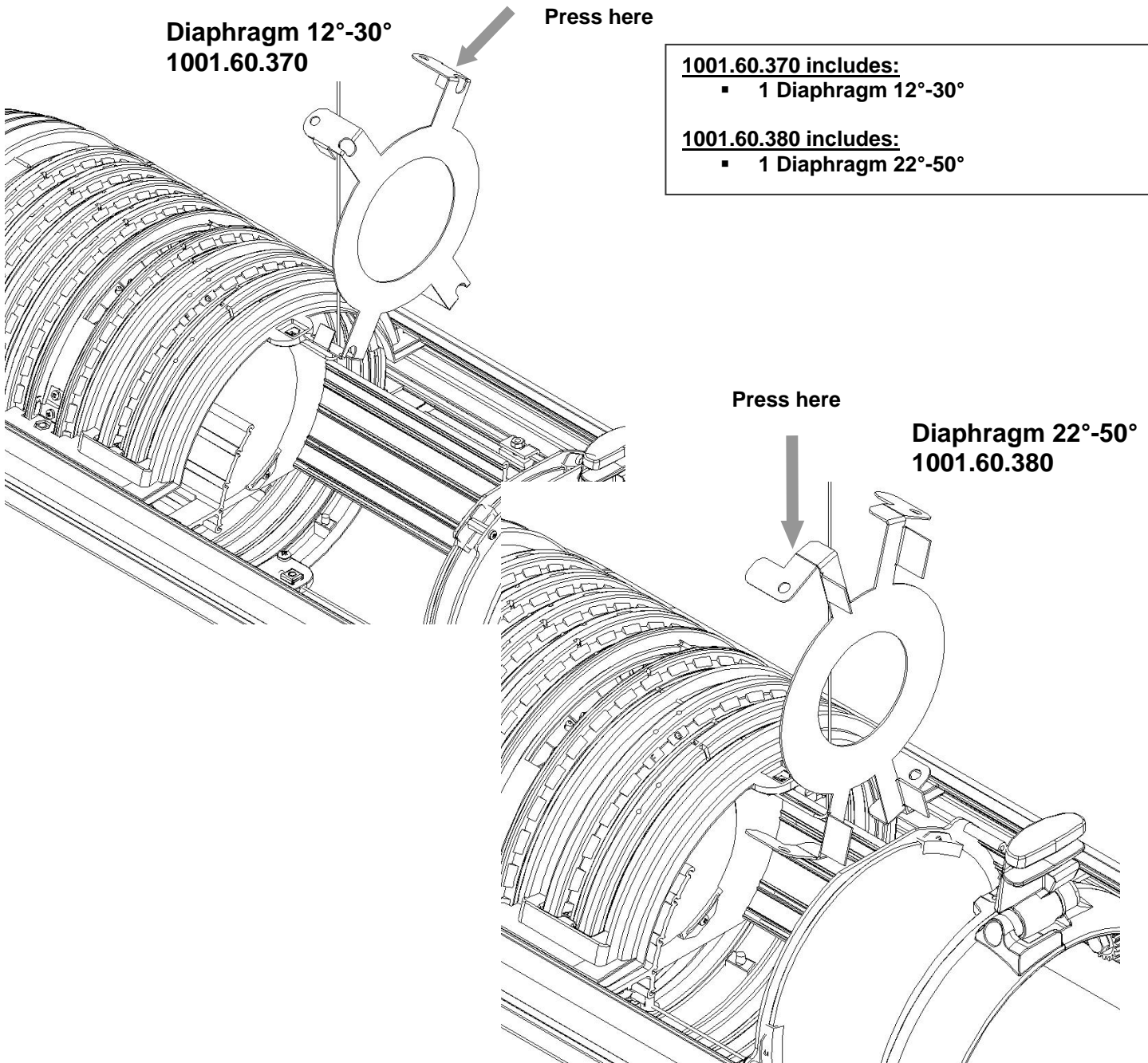
- 2 complete 22°-50° Covers
- 4 black rivets



5.13 Replace Diaphragm

Required Tool(s)	Spare Part Code	Time Needed
None	1001.60.370 1001.60.380	2 min

1. Unplug the *WARD*
2. Open the two lens covers
3. Press on diaphragm arms and remove it from wheel compartment.



5.14 Replace Wheel Handle

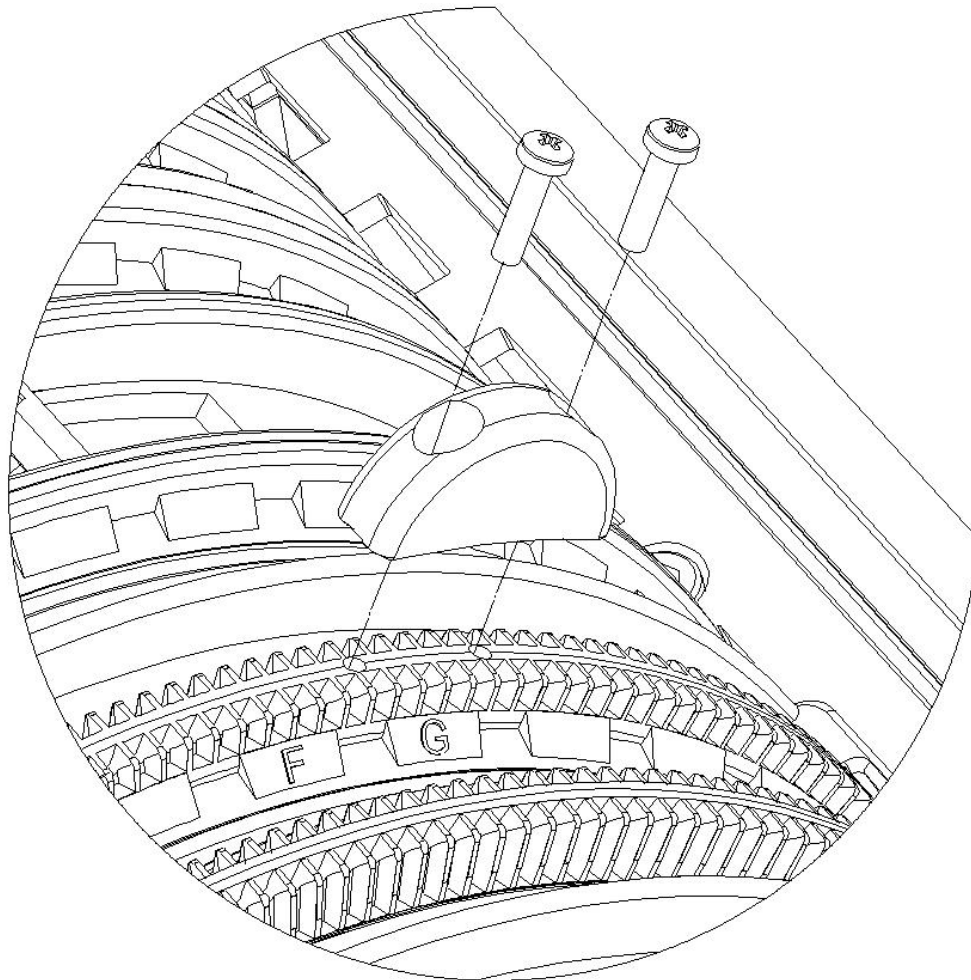
5.14.1 Lens wheel

Required Tool(s)	Spare Part Code	Time Needed
Screw Driver PZ1	1001.60.820	10 min

1. Unplug the *WARD*
2. Remove the 2 screws into handles

1001.60.820 includes:

- 4 Big blue handle zoom-focus
- 8 screws M3*12

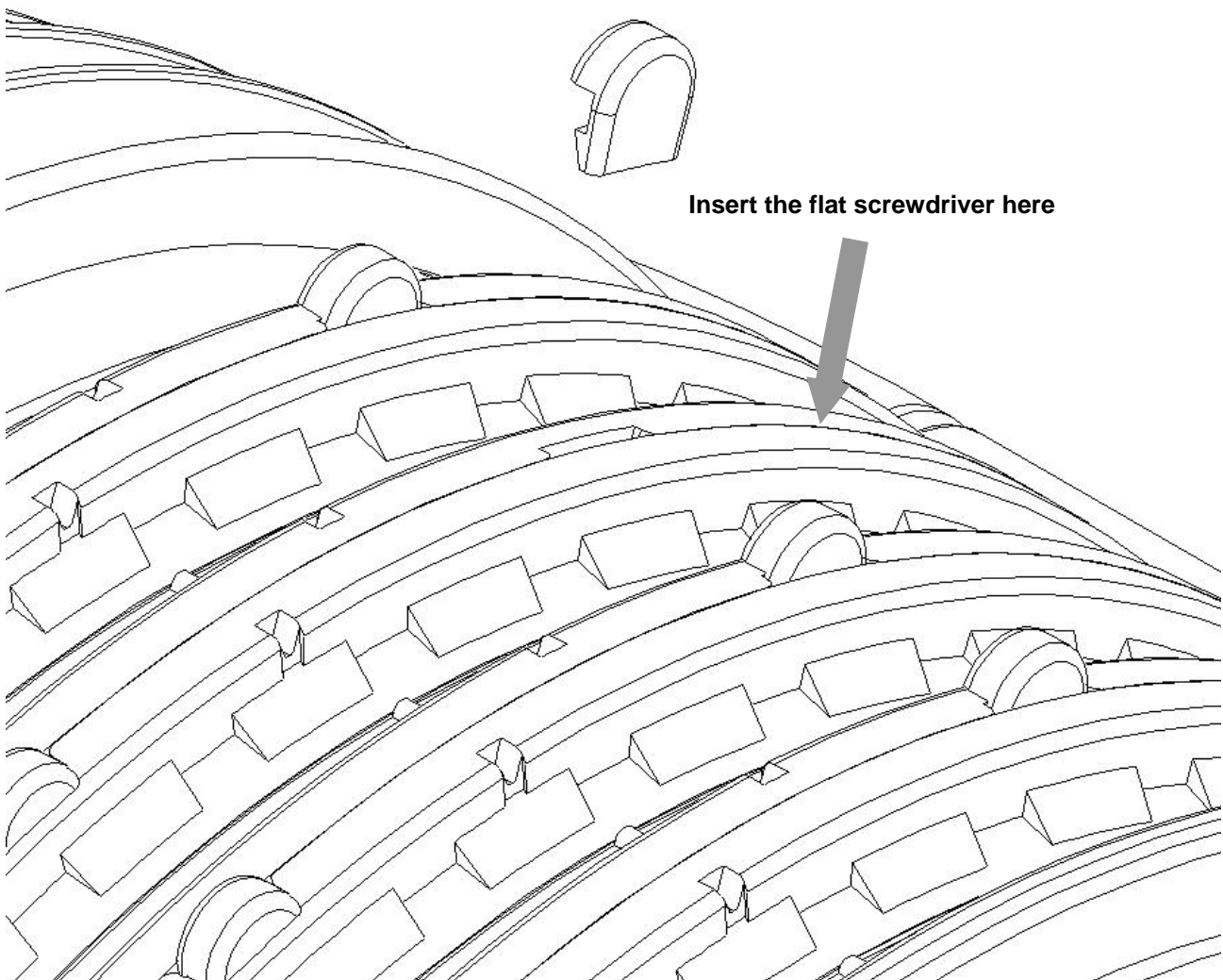


5.14.2 Shutter wheel

Required Tool(s)	Spare Part Code	Time Needed
Flat Screw Driver	1001.60.830	5 min

1. Unplug the *WARD*
2. Insert the flat screwdriver between the wheels and remove the blade handle
3. Replace the blade handle

1001.60.830 includes:
▪ 9 Blade handle



5.15 How to adjust Brake on Lens Wheel

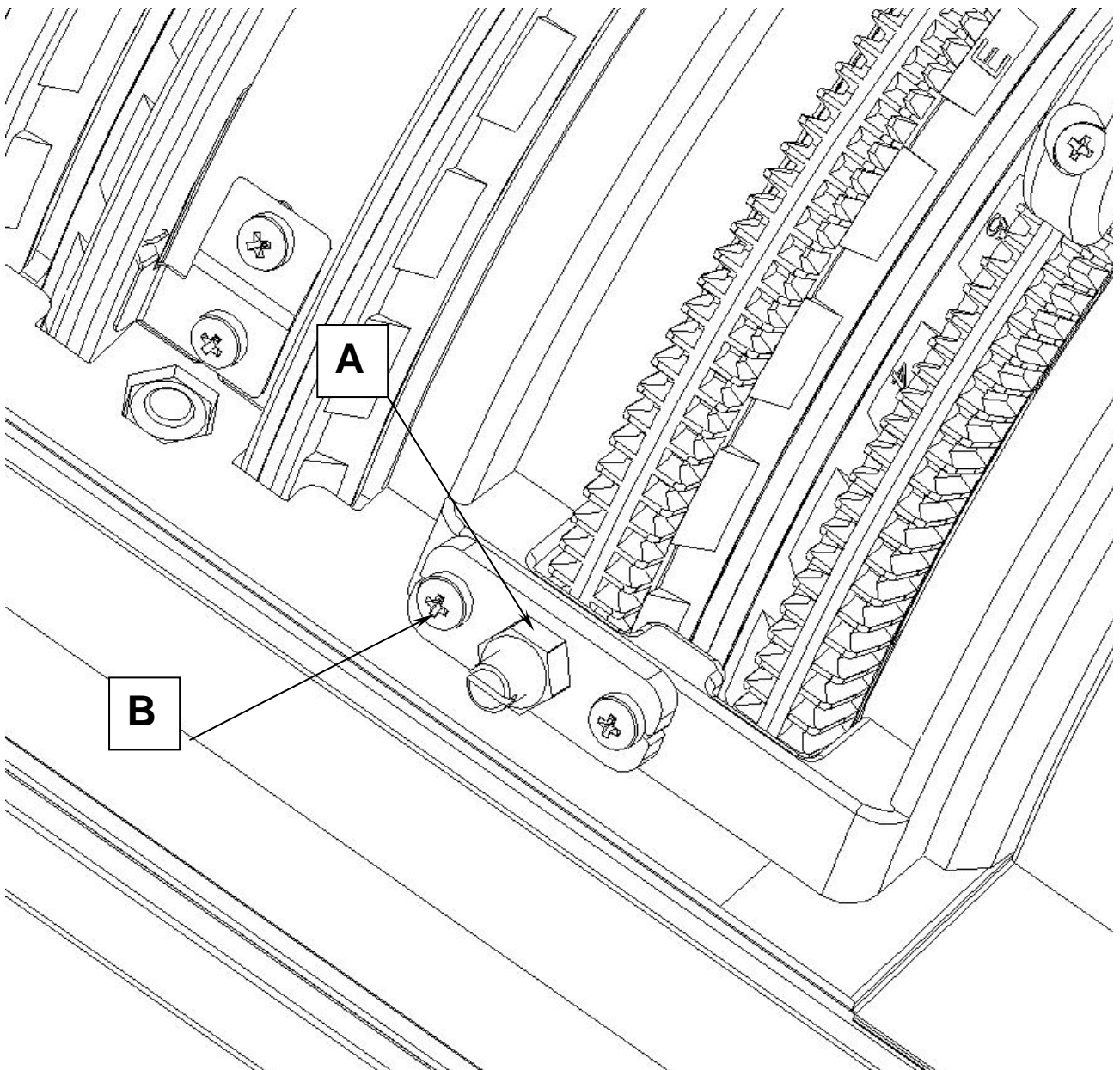
Required Tool(s)	Spare Part Code	Time Needed
Flat Screw Driver Metric Wrench 7	1001.60.220	5 min

1. Put the *WARD* Downwards
2. Release lock nut **A** (use 8 Metric Wrench)
3. Adjust the friction with screw **B** (use screw driver)
Don't block the ball inside the screw
Good adjustment: the wheel could manually turn
the lens can't fall when *WARD* Downwards
4. Tighten the lock nut **A**

1001.60.220 includes:

- 2 Pression Screws
- 2 Nuts

Notice: If the ball is out of the screw, you must change the complete screw **B**



Maintenance Sheet

Notes



ADB - Your Partner for Light

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