

## USER MANUAL

EN

*Please read this manual carefully before using the Cambo ARTES ETP unit!*

## Thank you for purchasing a Cambo® product

*The EPT head is developed for the lightweight range of Video Booms. The motor-driven controls allows for over 360 degrees rotation of unobstructed pan and tilt. Durable motors assure for a long and reliable life. The head unit is connected with a standard UTP cable up to 10 meter to the control unit.*

**Please note:** the manual is divided into two parts. The first part is the instruction for the EPT-unit and the second part is the instruction for the ARTES-unit.

### The ARTES/EPT unit includes:

- ARTES video boom
- EPT adapter stud
- Head Unit with Camera Platform
- Remote Control Joystick including handle and clamp unit
- Control frame including clamp unit
- AC/DC power adapter 110-240 V
- Signal/power cable 5meter length CAT-6 UTP cable

## ⚠ WARNING



**WARNING: rotating gears** - finger or hand entanglement

Please keep hands and fingers clear from the operational gear units.



**WARNING: moving parts** - finger or hand crush

Please keep hands and fingers clear from the moving parts of the operational EPT unit.



**WARNING: twisting of the cables**

Never rotate the pan or tilt movement more than two times around the axis (720degrees).

Before use check if the cables are twisted. Always untwist the cables before using the EPT unit. To untwist the cables at the pan and tilt axis by rotating the head in the opposite direction of the twisted cable.

**WARNING: keep clear of obstacles** when operating the EPT head.

**CAUTION:** do not manually force the pan or tilt movement when the gears are coupled, this may irreversibly damage the gears.

**CAUTION:** do not over-tighten knobs (5) and (6) shown in figure 1

## INSTRUCTION EPT-UNIT

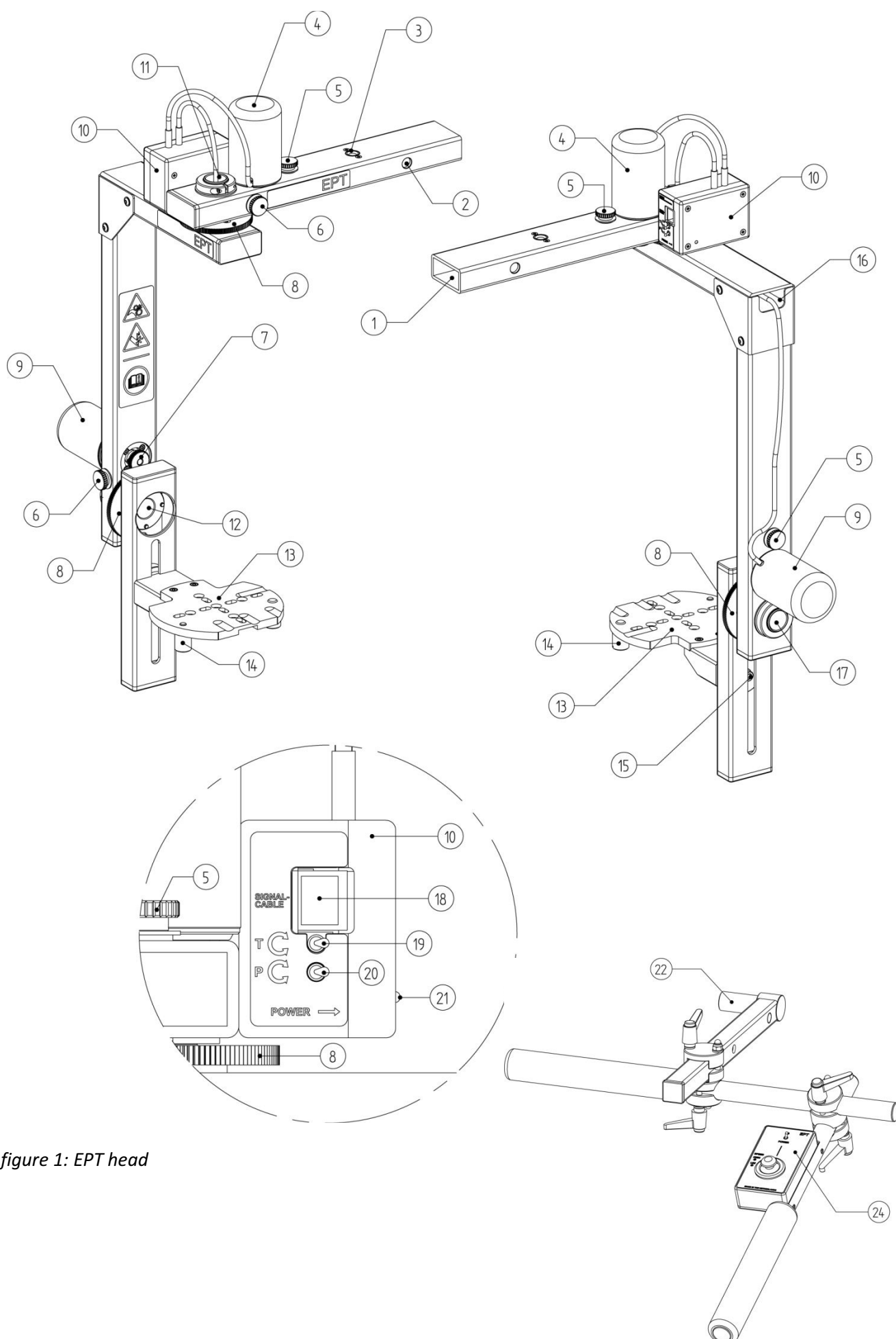


figure 1: EPT head

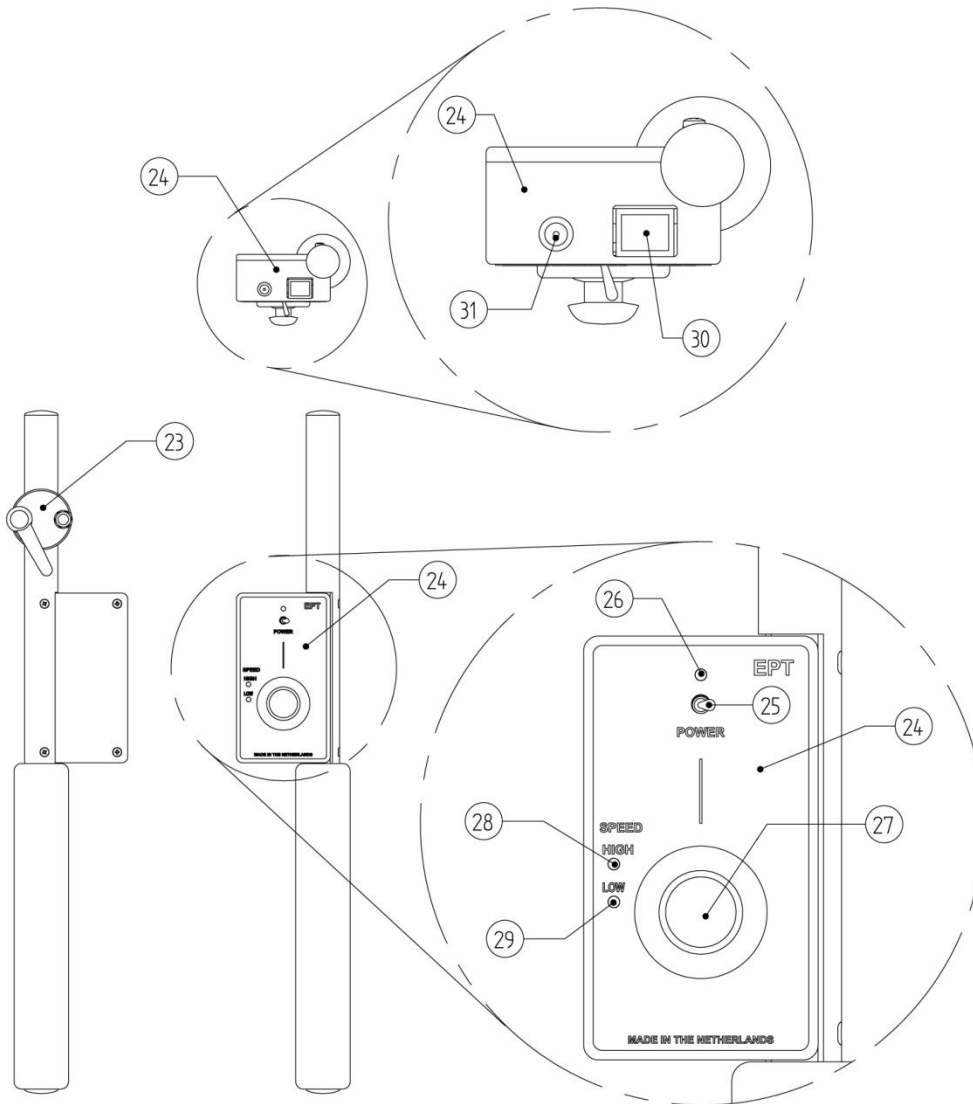
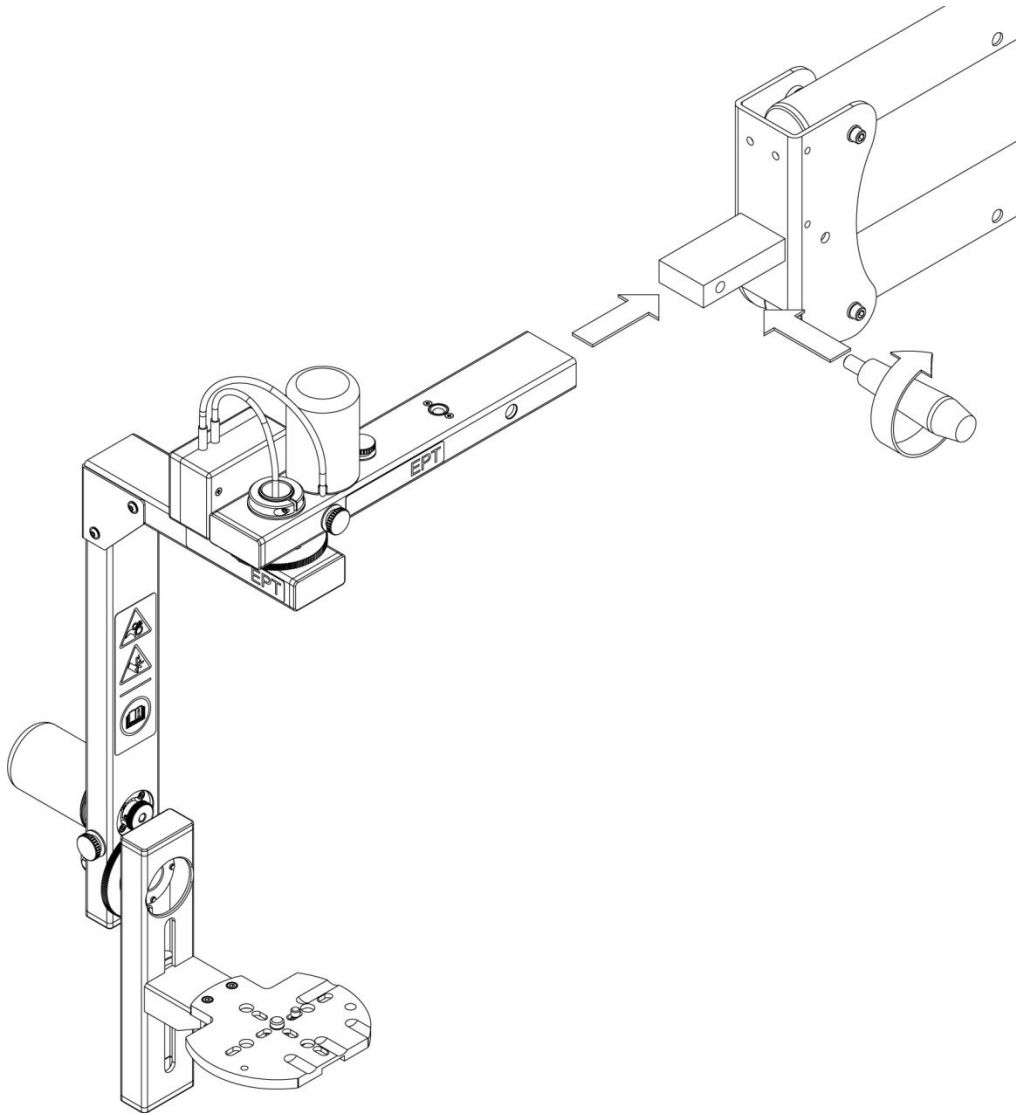


figure 2: EPT remote

**Please note: these numbers only correspond to images 9 to 15.**

- |    |  |    |  |
|----|--|----|--|
| 1  | Cambo video-boom mount                       | 16 | Cable output EPT topside                 |
| 2  | Mount hole attachment handle                 | 17 | Cable feed-through to the camera         |
| 3  | Tripod mount (3/8")                          | 18 | Cable connector for the joystick unit    |
| 4  | Motor unit pan-movement                      | 19 | Direction switch tilt movement           |
| 5  | Locking knob motor slider (top)              | 20 | Direction switch pan movement            |
| 6  | Locking knob motor slider (side)             | 21 | Power-on led motor control unit          |
| 7  | Brass motor gear (M0.5 z=42)                 | 22 | Cambo control frame mount                |
| 8  | Delrin gear (M0.5 z=140)                     | 23 | Clamp joystick handle                    |
| 9  | Motor unit tilt-movement                     | 24 | Joystick unit                            |
| 10 | Motor control unit                           | 25 | Power switch EPT                         |
| 11 | Cable feed-through EPT topside               | 26 | Power-on led joystick unit               |
| 12 | Cable output camera side                     | 27 | Joystick pan/tilt movement, speed switch |
| 13 | Camera plate                                 | 28 | Led indicator high speed setting         |
| 14 | Camera screw (3/8" and 1/4")                 | 29 | Led indicator low speed setting          |
| 15 | Camera height adjustment screw (Hex key 5mm) |    |  |

## Mounting the EPT unit to the ARTES



*figure 3: EPT mount*

The image above shows the EPT unit mounted to the ARTES.

## Mounting the EPT unit to a tripod

The EPT can also be mounted upside-down to a tripod using the tripod mount (20). When the EPT is used upside down the directions are mirrored, you can use the switches (19) and (20) to change the direction as desired.

## Mounting and balancing the camera

Camera's up to 5 kg can be used with the EPT head. It is advised to use a sliding quick release plate for mounting the camera to the EPT head.

It is important that the camera is balanced correctly for an optimal pan and tilt movement.

The camera is balanced correctly when the **centre of mass** of the camera, lens, adapter plate and camera plate (13 fig.1) is in the axis of the tilt movement.

To **balance** the camera:

1. decouple the gears by loosening the two knobs (5) and (6)
2. slide the motor unit (9) upwards
3. when the gears are decoupled please lock either knob (5) or (6)
4. now the tilt movement can swivel freely around its axis, move the camera to the front or back until the camera is stationary (when doesn't tilt forward or backwards)
5. to align the centre of mass in the vertical direction please unlock hex bolt (15 fig.1), using a metric hex key 5mm
6. when the camera is balanced correctly please slide back the motor unit to couple the gears, **then slightly tighten knob (5) and (6)**

The pan and tilt motor unit is separated from the frame using a silicone rubber seal to reduce the vibration.

**IT IS IMPORTANT NOT TO OVERTIGHTEN THE KNOB (5) AND (6)** THIS WILL INCREASE THE VIBRATION LEVEL OF THE MOTOR UNIT

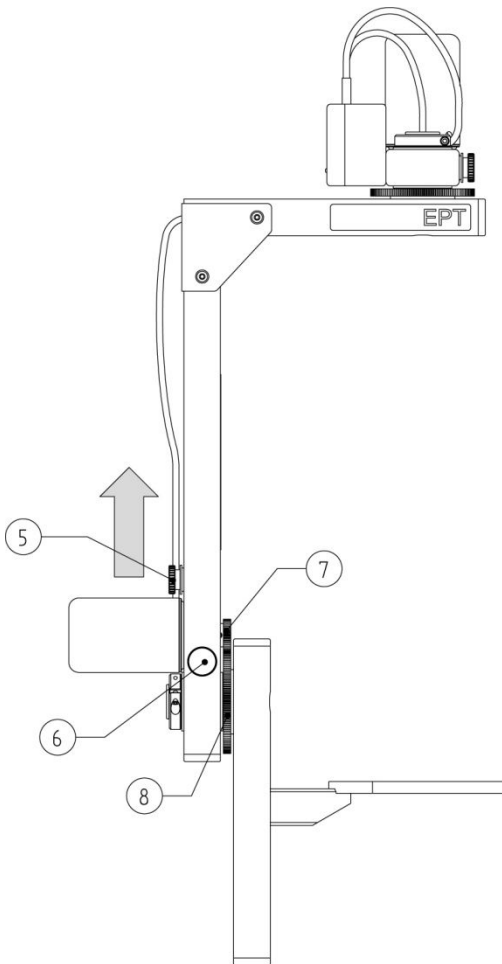


figure 4: decouple the gears

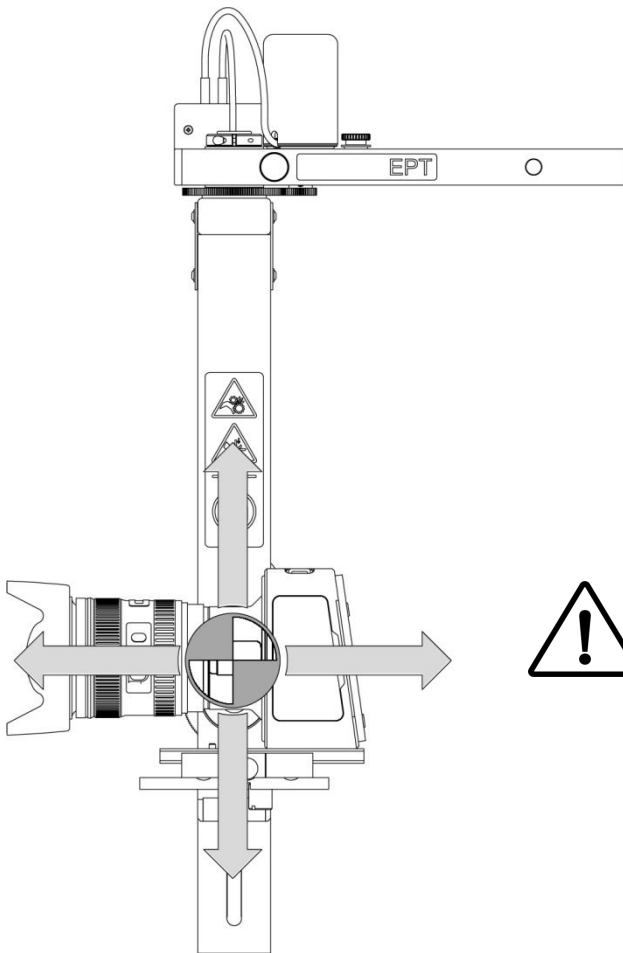


figure 5: balance the camera

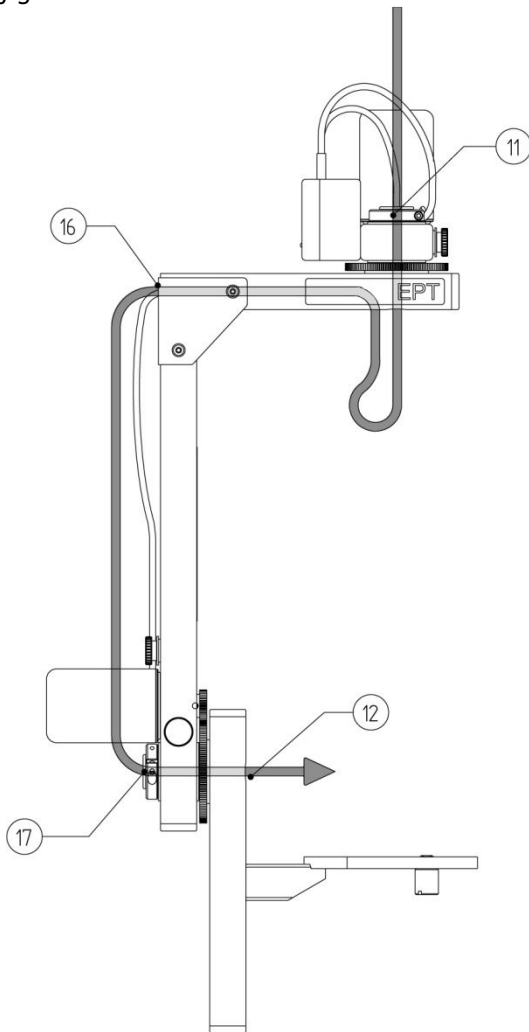


figure 6: feed-trough camera cables

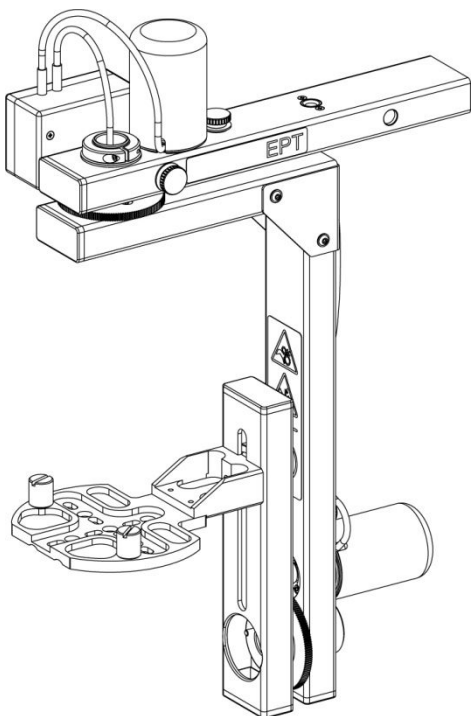


figure 7: compact transport configuration

## Feed-trough camera cables

To feed through the signal or power cables to the camera please use the path shown in figure 6.

By feeding the cables through the axis of the pan a tilt movement the EPT head is capable of rotating freely up to 720 degrees around its axis without damaging the cables.

Safe use without damaging the cables is guaranteed up to 720 degrees of continuous rotation in one direction.

Cambo is not responsible for damage to cables or camera that is caused by rotating (twisting) the head (cables) more than 720 degrees.



**ALWAYS RETURN TO THE NEUTRAL POSITION (UNTWISTED CABLE POSITION) BEFORE USE.**

## Compact transport configuration

There are two ways to prepare the EPT for compact transport;

### Option 1

- use the motor drive to rotate the pan and tilt unit to the position shown in figure 7

### Option 2

- unlock knob (5) and (6)
- slide back the motor unit to decouple the gears
- rotate the pan and tilt unit to the position shown in figure 7
- slightly lock knobs (5) and (6)

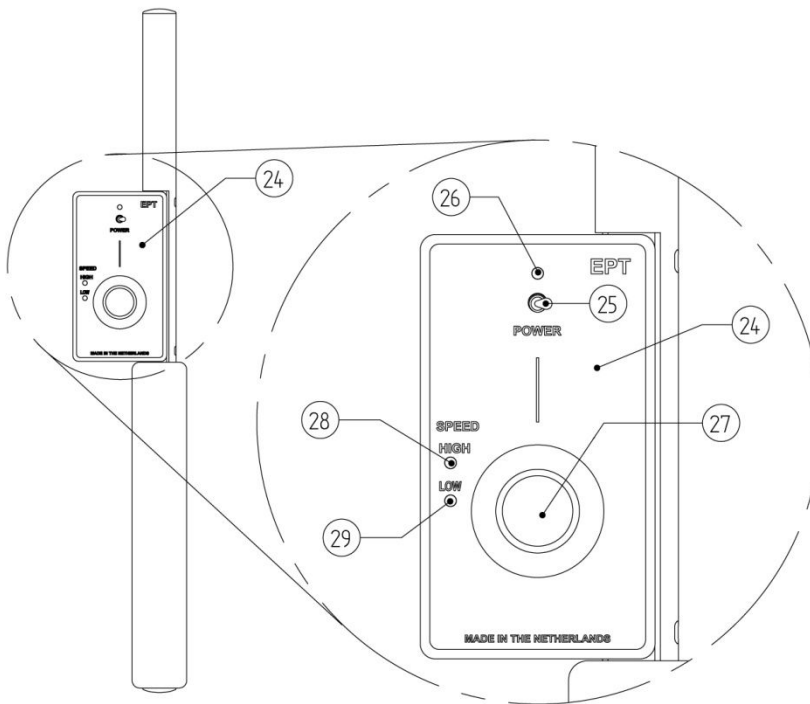


figure 8: EPT remote control unit

## EPT signal and power cable

The remote control unit (24) is connected to the EPT head using a standard UPT cable (up to 10m). The cable is attached to the remote unit at connector (30 - fig2.) and at the motor control box at connector (18 - fig1.).

The EPT can be power by an 12V adapter or a 12-14.7V battery'

*Note: correct operation of the EPT is only guaranteed when using the supplied power adapter.*

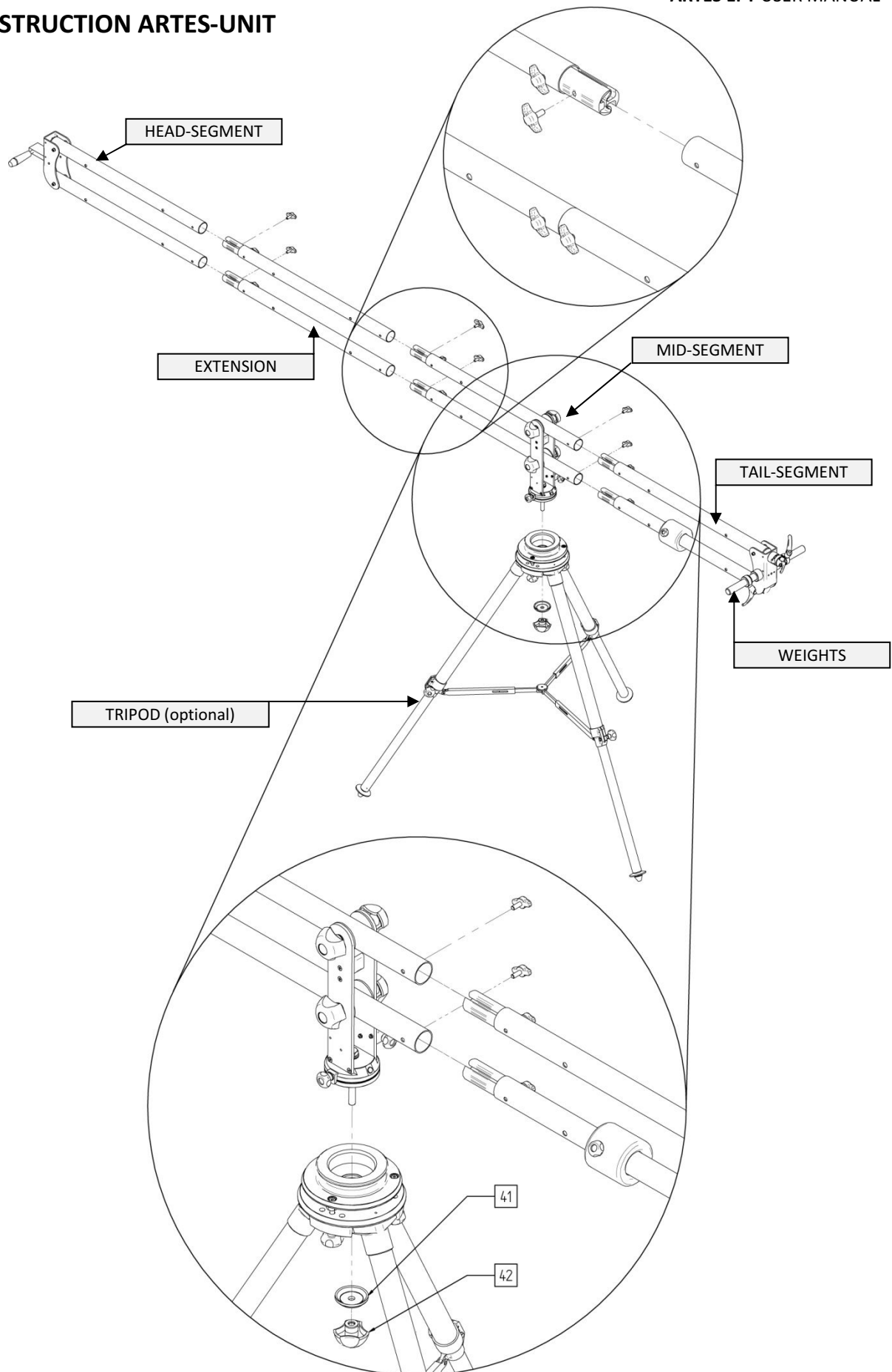
## Remote control unit

To turn on or off the EPT head please use switch (25).

To switch between the two speed setting please press the joystick (thumb-stick).



## INSTRUCTION ARTES-UNIT

*figure 9: ARTES setup overview*

# ITEM LIST ARTES

*Please note: these numbers only correspond to images 9 to 15.*

1	Tube clamp	23	Hexagon Dome Nuts M6 (din1587)
2	Locking bolt tube clamp	24	Washer 6,4 (din125a1)
3	Tube segment (0,75m)	25	Hexagon Socket Head M6x75 din912
4	Reinforced tube segment	26	Front segment assembly
5	Nylon bearing disc	27	Brass bearing
6	Locking knob ARTES rotation	28	Adjustable counterweight
7	Teflon <sup>®</sup> ring	29	Hexagon Socket Head M6x20 din912
8	Locking knob with axis	30	Washer 6,4 (din125a1) (same as #24)
9	Washer 10,5 (din125a1)	31	Rear-end profile (same as #22)
10	Locking knob ARTES movement	32	Clamp for EPT control frame
11	Mid-segment assembly	33	Hexagon Socket Head M8x20 din912
12	Hexagon Prevailing Torque Nut M4 (din985)	34	Washer 8,4 (din125a1)
13	Standard stud adapter (e.g. monitor arm)	35	Filling ring counterweights
14	Locking knob accessory stud	36	Locking ring counterweights
15	Cross Countersunk Screws M4x40 (din965)	37	Counterweights axis
16	End cap tube segment	38	Direct camera plate (if not using the EPT)
17	Handle and locking bolt EPT-unit	39	Hexagon Socket Head M5x16 din912
18	Adapter for EPT unit	40	Washer 5,3 (din125a1) (same as #19)
19	Washer 5,3 (din125a1)	41	Clamp ring tripod bowl
20	Hexagon Socket Head M5x16 (din912)	42	Knob clamp ring tripod bowl
21	Delrin <sup>®</sup> filling ring		
22	Front-end profile		

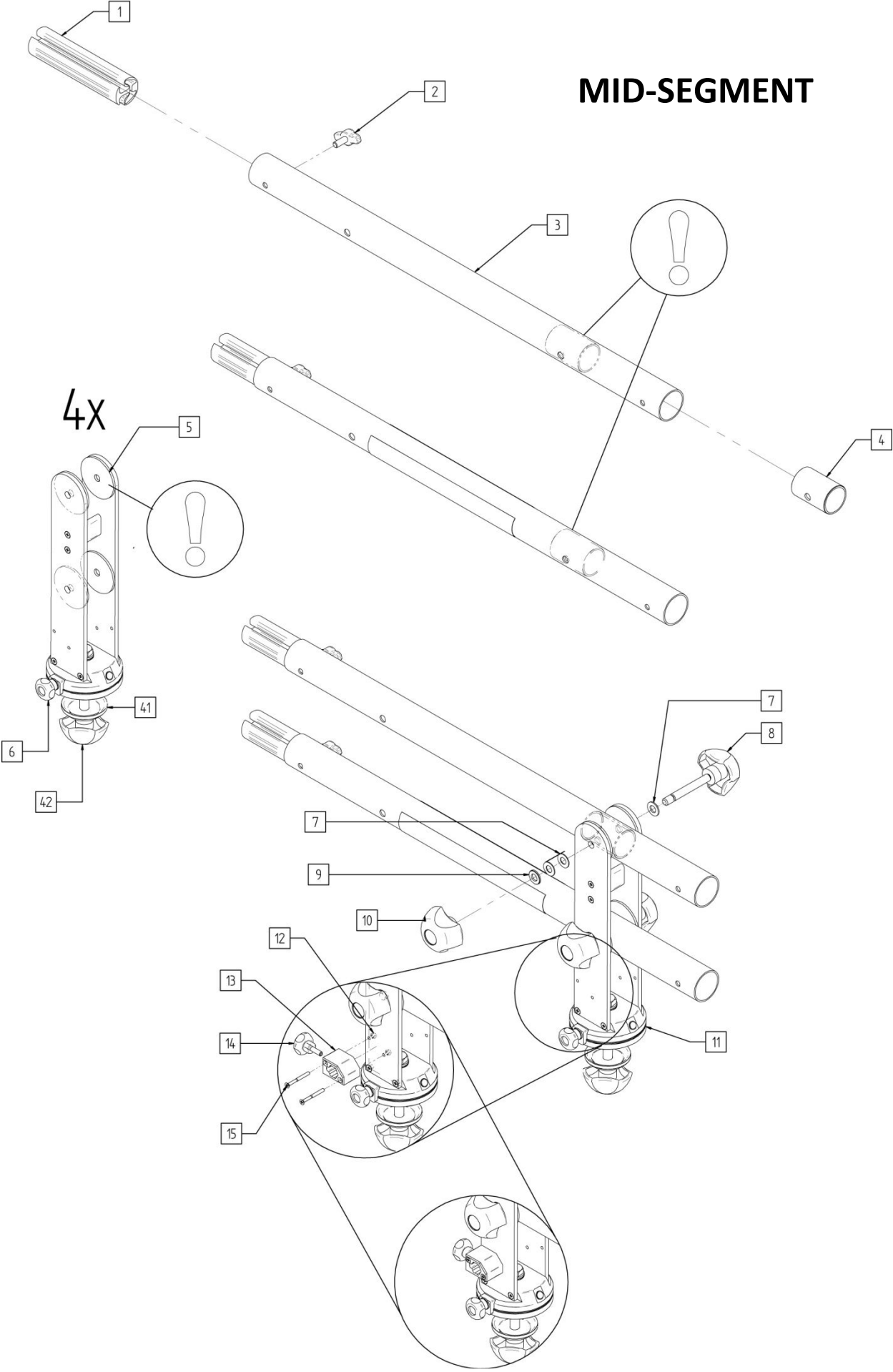
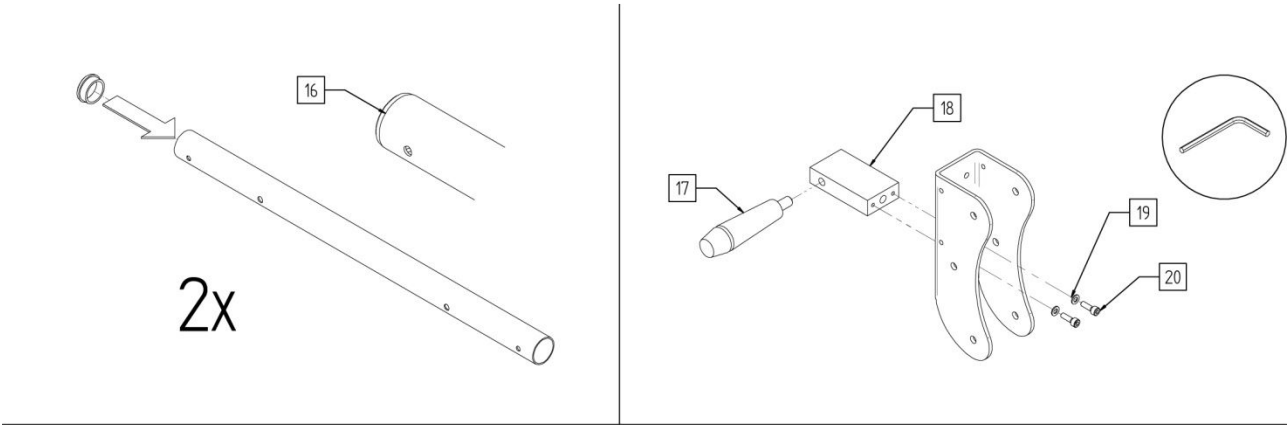


figure 10: ARTES mid-segment



HEAD-SEGMENT

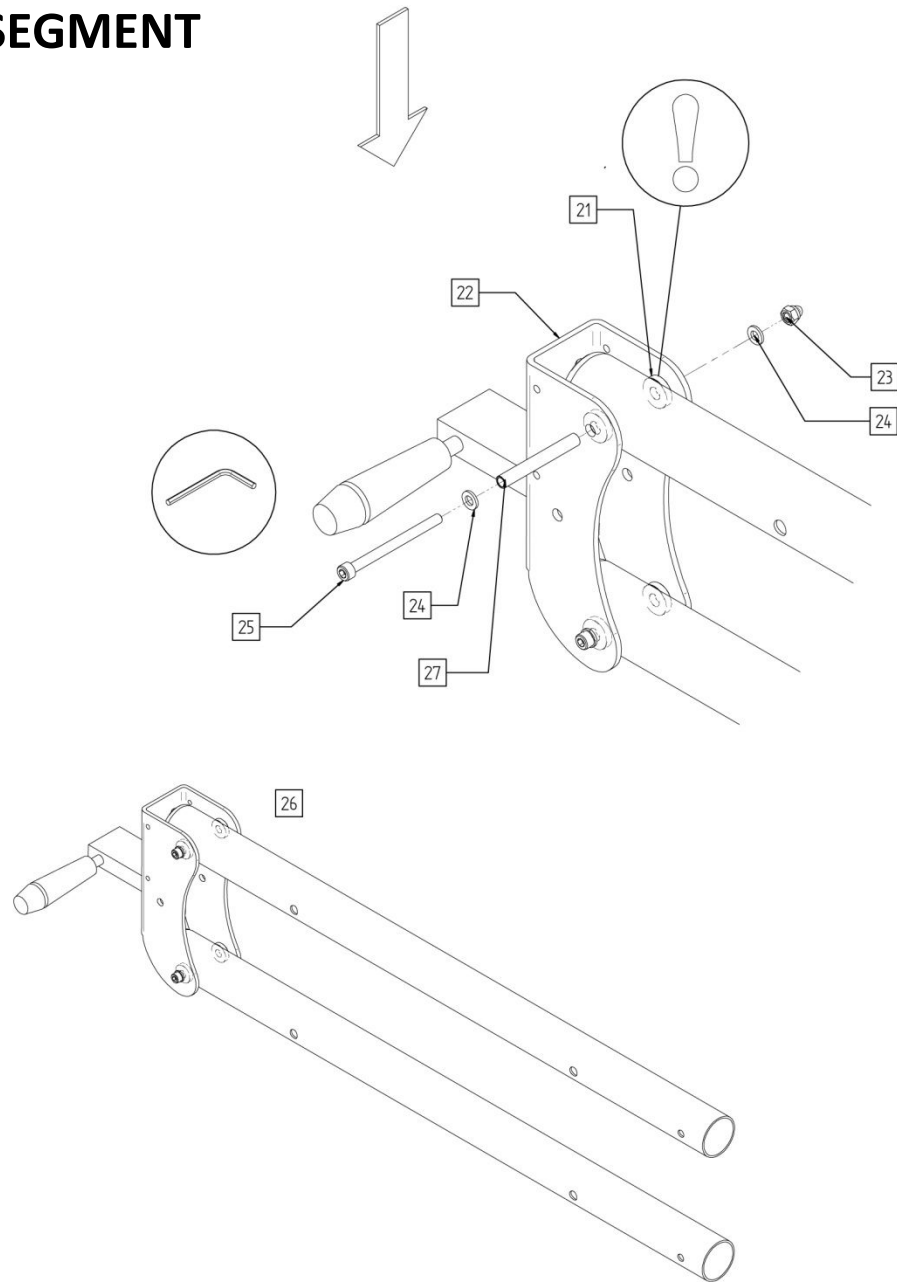
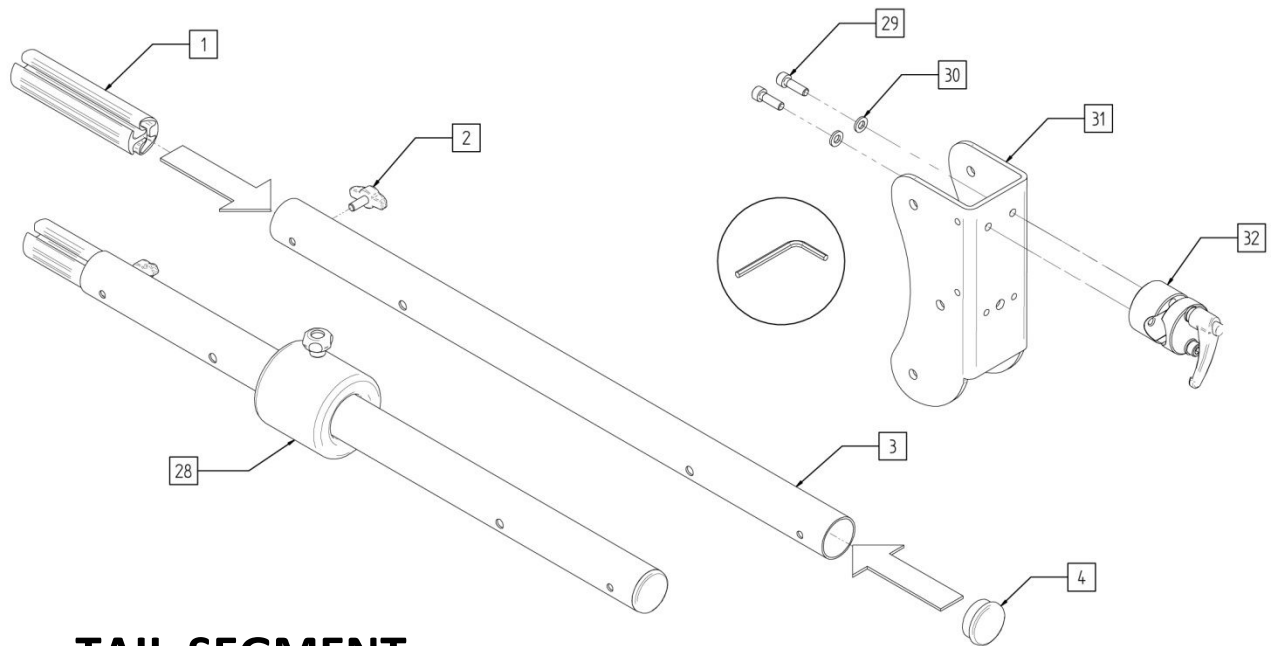


figure 12: ARTES head-segment



## TAIL-SEGMENT

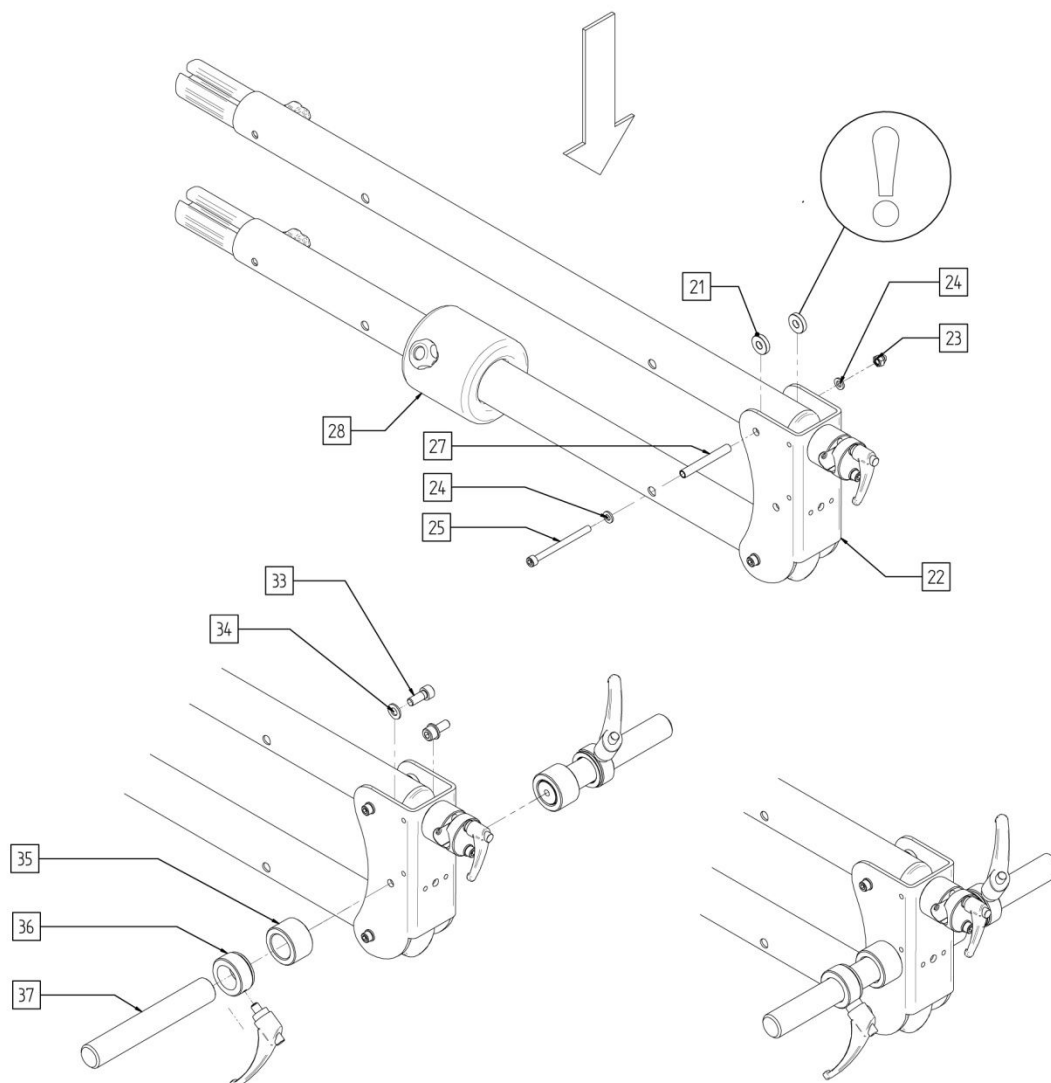


figure 11: ARTES tail-segment

# ASSEMBLY STEPS

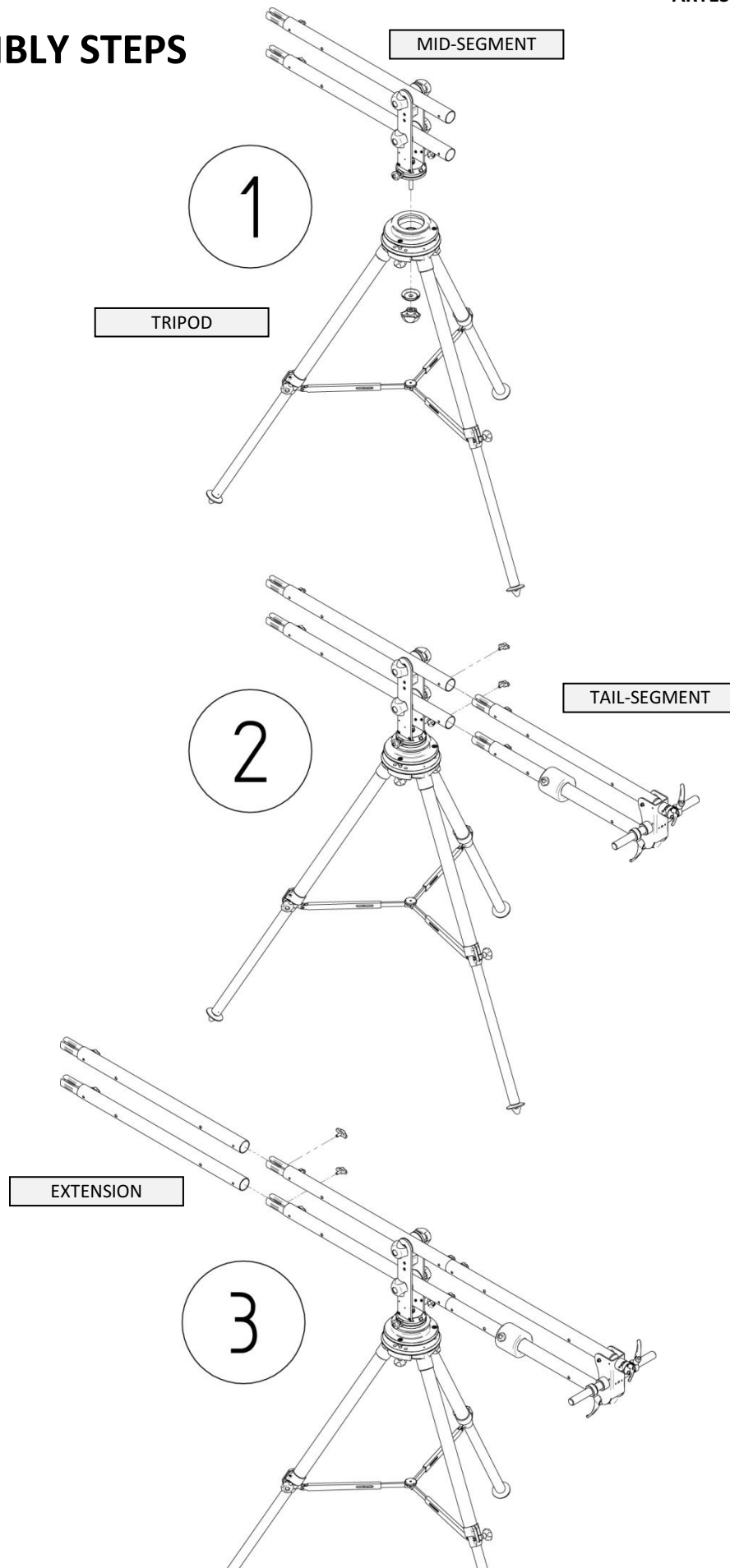


figure 13: assembly steps ARTES

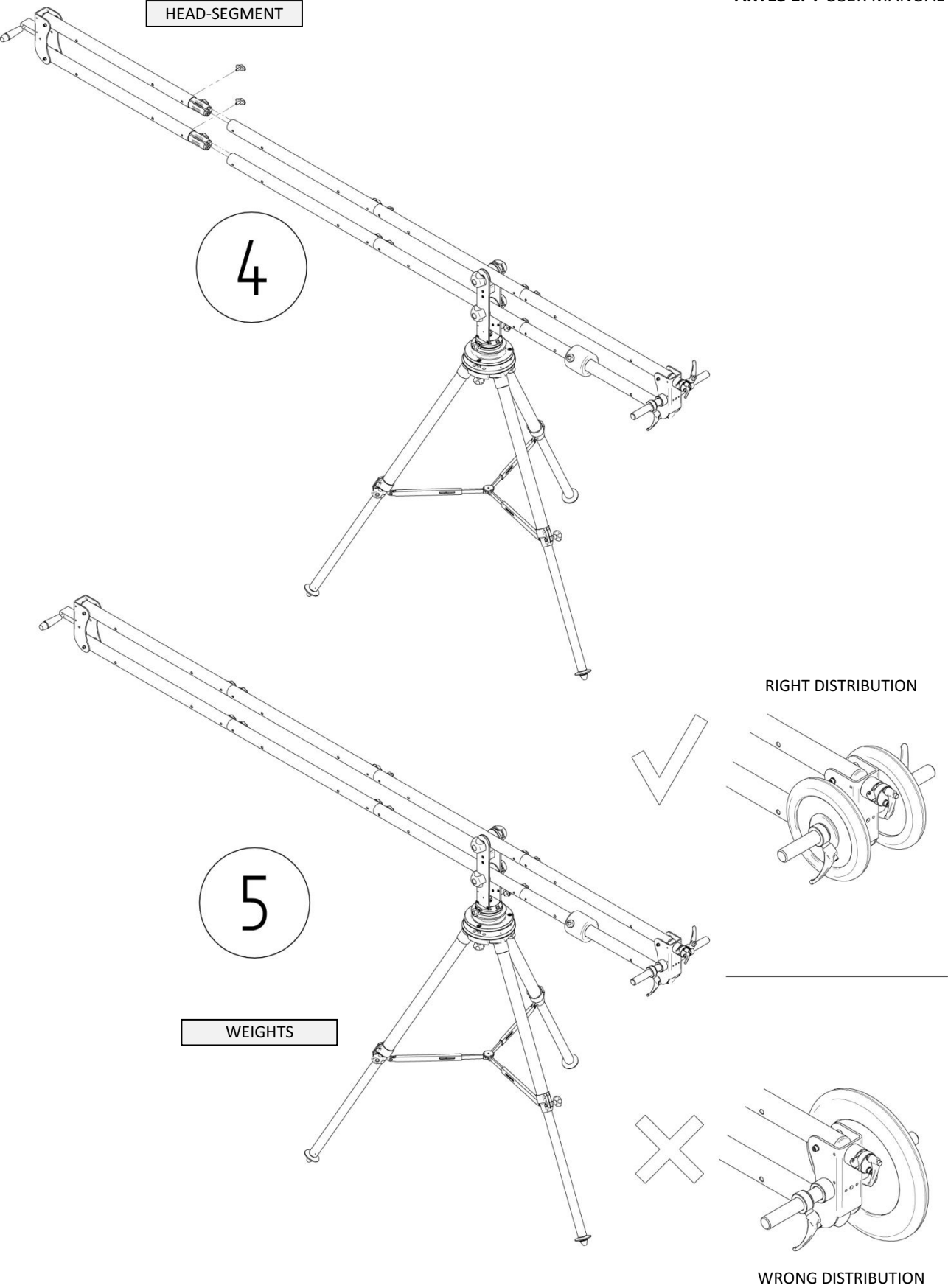
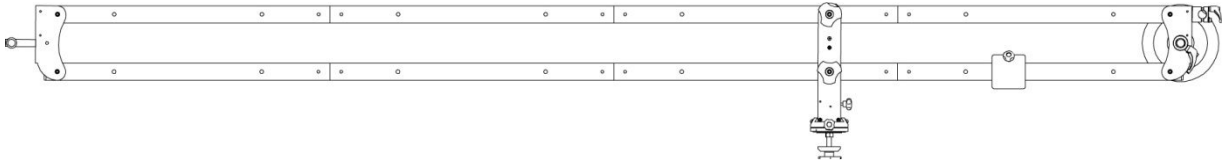
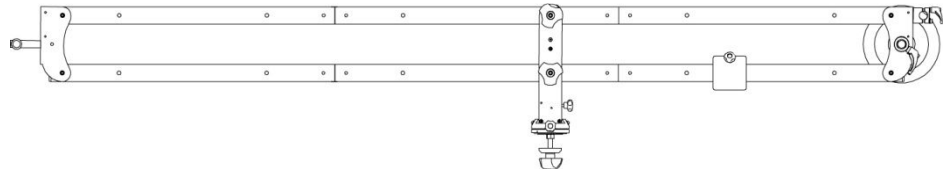
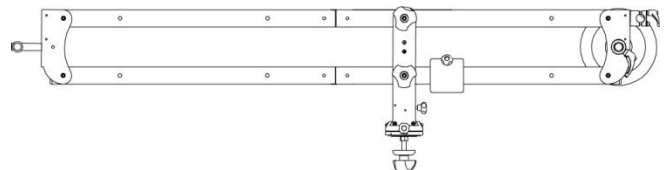


figure 13: assembly steps ARTES

**Standard length (with 0,75m extension)****Short length (without 0,75m extension)****Compact setup (with 0,75m extension)****Compact setup short (without 0,75m extension)***figure 14: different ARTES setups***Load Specifications**

- Load Capacity ARTES/EPT Standard Length: 4,5 kg (10 lbs)
- Load Capacity ARTES/EPT Short Length: 7,5 kg (16,5 lbs)
- Load Capacity ARTES/TILT Compact Standard: 7,5 kg (16,5 lbs)
- Load Capacity ARTES/TILT Compact Short: 12 kg (26,5 lbs)
- Load Capacity EPT (on tripod): 7,5 kg (16,5 lbs)

**Specifications EPT-unit**

- Head Unit weight: 3 kg (6,5 lbs)
- Head Dimensions: 44x31x13cm (17x12x5")
- Durable brushless motors
- Black anodised aluminium
- Standard UTP for communication and power cable
- Power requirement 12 -14,8 V DC
- Tripod (3/8") mount option

**Specifications ARTES-unit****(excl. EPT head and counterweights)**

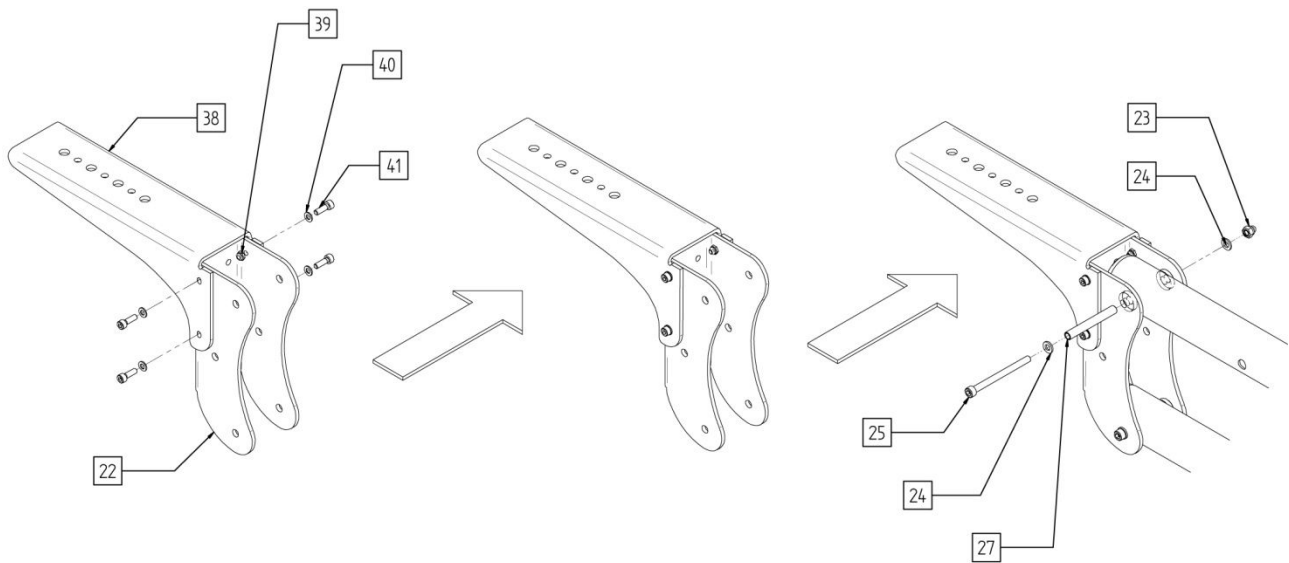
- Weight ARTES Standard Length 9,6 kg
- Weight ARTES Short Length 8,1 kg
- Weight ARTES Compact Standard Length 8,1 kg
- Weight ARTES Short Length 6,6 kg
- Black anodised aluminium





## OPTIONAL ARTES-TILT SETUP

FIXED CAMERA PLATE HEAD SEGMENT (when not using the EPT head)



*figure 15: Fixed camera plate, alternative setup head-segment ARTES*

# CAMBO

This instruction manual is prepared with care, although no responsibility, financial or otherwise, is accepted for any consequences related the information stated in this instruction manual. All specifications in this instruction manual are subject to change without notice.

For more information please visit the Cambo website: [www.cambo.com](http://www.cambo.com)