HDN-1 DC drive for Slide Kamera S series

User Manual

Slide Kamera drive specially designed for smooth shots in motion ranging from 2mm/s to 55mm/s as well as Timelapse photos.
The cart is is driven by a DC motor connected to the controller.
Drive can be supplied from either AC adapter or three R6/AA batteries.

HDN-2 DC drive for Slide Kamera HSK series

Software Version rev 2.2

HDN-3 DC drive for Slide Kamera HSO-4

HDN-1 DC drive for Slide Kamera S series
HDN-1 PRO DC drive for Slide Kamera S series
HDN-2 DC drive for Slide Kamera HSK series
HDN-2 PRO DC drive for Slide Kamera HSK series
HDN-3 DC drive for Slide Kamera HSO-4
HDN-3 PRO DC drive for Slide Kamera HSO-4

Pdf version of the manual available for download: www.slidekamera.eu

slidekamera®
made in POLAND

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Before you start your work with HDN DC drive we strongly recommend to read the manual carrefully. **Please note that using the drive in a manner inconsistent with these instructions, unauthorized repair attempts or any kind of modification of the drive can cause damage the manufacturer is not responsible for.**

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Slide Kamera ®

High Engineering Technology CNC s.c.
Sebastian Pawelec Karol Mikulski
Glina 45
82-522 Sadlinki
Vat Identification Number: 581-188-33-32

Slide Kamera Office
80-175 Gdańsk (Poland)
Ul. Kartuska 386

tel./fax (+48) 58 710 41 04
e-mail: biuro@slidekamera.pl / office@slidekamera.eu
www.slidekamera.pl / www.slidekamera.eu

1. Elements of the drive

Once the shipment is received please make sure that all elements of the drive are inside.

Wyposażenie zestawu:	**HDN-1**	**HDN-1 PRO**	**HDN-2**	**HDN-2 PRO**	**HDN-3**	**HDN-3 PRO**
Controller **[1]**	HDN-ST	HDN-ST PRO	HDN-ST	HDN-ST PRO	HDN-ST	HDN-ST PRO
Power unit **[2]**	HDN-ZN-1	HDN-ZN-1	HDN-ZN-2	HDN-ZN-2	HDN-ZN-3	HDN-ZN-3
AC adapter **[3]**	✔	✔	✔	✔	✔	✔
R6/AA batteries (3pcs)	✔	✔	✔	✔	✔	✔
Cable release: WS-1, WS-2, WS-3, WS-4, WS-5, WS-6 (one item to choose from)		✔		✔		✔

2. Construction

2.1. HDN-ST / HDN-ST PRO controller

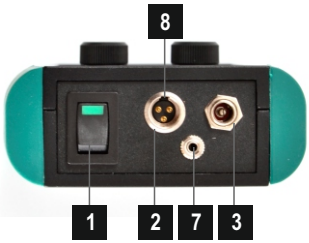
Display unit and the knobs are located on the front panel of the electric drive controller. Electric connector sockets and the power switch are located on the side of the controller housing.

It is advisable to pay special attention so that retaining PIN at the end of the motor cable [9] enters the socket pit of the controller[8].

HDN-ST controller

Power switch **[1]**
Motor socket **[2]**
Power socket **[3]**
LCD display **[4]**
MODE knob **[5]**
SPEED knob **[6]**
Cable release socket **[7]**
Socket pit **[8]**
1/4" mounting hole **[9]**

HDN-ST PRO controller



1/4" mounting hole placed in HDN-ST/HDN-ST PRO controller base allows to mount the controller on Slide Kamera devices with the use of articulated arm.

HDN-ST PRO controller mounted on Slide Kamera S series cart

HDN-ST PRO controller mounted on Slide Kamera HSK series cart

Cable releases that trigger the shutter in the photo camera are compatible only with DC drives PRO version.

- ☑ **WS-1** cable release is intended for cameras such as:Canon EOS 1V, 3, 5, 1D, D60, 1Ds, 1D Mark II, 1Ds Mark II, 1D Mark III, 1Ds Mark III, 10D, 20D, 30D, 40D, 50D, 5D, 5D Mark II.
- ☑ **WS-2** cable release is intended for cameras such as: Canon Powershot G11, G12, EOS 50, EOS 50E, EOS 300, EOS 3000, EOS 500N, EOS 500, EOS 5000, EOS 3000N, EOS 300V, EOS 300X, EOS 300D, EOS 350D, 400D oraz 450D, 500D, 550D, 600D, 60D and1100D.
- ☑ **WS-3** cable release is intended for cameras such as: Nikon D700, D800, D300D, D300, D200, D3X, D3S, D3,D4, D2X, D2H, D2, F5, F6, F100, F90x, D100 z MB-D100, Fuji Finepix S3 pro, S5 pro, Kodak DCS-14n
- ☑ **WS-4** cable release is intended for cameras such as: Nikon D90, D5000, D5100, D3100, D7000, D600
- ☑ **WS-5** cable release is intended for cameras such as: Nikon D80, D70/s
- ☑ **WS-6** cable release is intended for cameras such as: Panasonic LUMIX GH1, GH2, GH3

WS-1

WS-2

WS-3

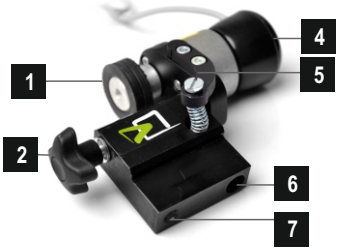
WS-4

WS-5

WS-6

2.2. Power unit

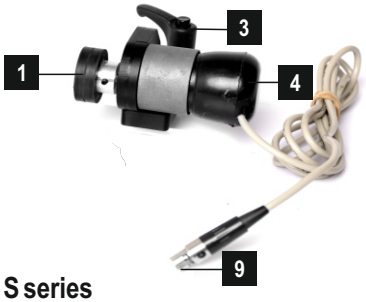
HDN-ZN-1 power unit



Drive roller **[1]**
Clamping knob that locks the position of the motor arm **[2]**
Clamping lever that locks the position of the motor arm **[3]**
Motor with the cable **[4]**
Motor arm **[5]**
Set screw hole **[6]**
Mounting screw hole **[7]**
Standstill brake integrated with power unit **[8]**
Retaining PIN at the end of the cable **[9]**

HDN-ZN-2 power unit

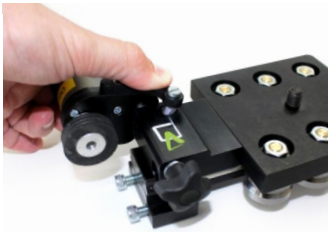
HDN-ZN-3 power unit



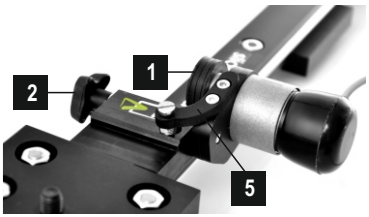
3.Mounting

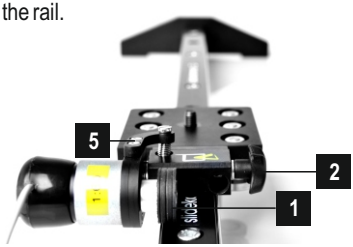
3.1. Mounting HDN-1 DC drive for Slide Kamera S series

To mount the HDN-1 DC drive for Slide Kamera S Series first remove the side feet on the side, where the standstill brake is mounted. Next, remove the standstill brake from the cart.



Screw the attached M6x10mm screw into the left mounting hole of the Slide Kamera cart (the screw is used to determine the proper position of the drive in relation to the cart plate). Lift up and lock the arm and the motor using the clamping knob **[2]** then move the cart to the centre of the rail.





Loosen the clamping knob that locks the motor arm. This will result in pressing down the drive roller **[1]** to the rail (the drive is ready to use). Next, mount the side feet back to the Slide Kamera. In order to shoot without using the drive lift the motor arm **[5]** and lock it in this position with the clamping knob. The cart will move freely.

3.2. Mounting HDN-2 DC drive for Slide Kamera HSK series

To mount HDN-2 DC drive for Slide Kamera HSK series unscrew standstill brake from the cart using 5mm Allen wrench and screw the drive instead. It is important that the drive is in parallel position in relation to the cart plate. Make sure that the arm with the motor is lifted (the spring should be compressed) before you mount the drive.

When using the drive, be sure to unlock standstill brake integrated with HDN-ZN-2 power unit. In order to shoot without using the drive lift the motor arm and lock it in this position with the clamping knob. The cart will move freely.

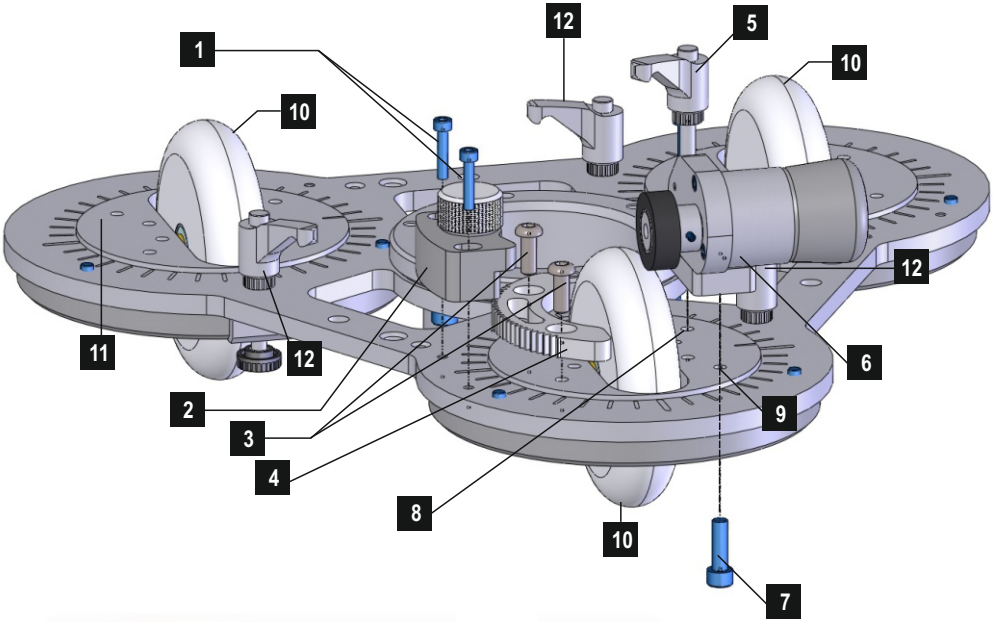
3.3. Mounting HDN-3 DC drive for Slide Kamera HSO-4

HDN-3 DC drive can be mounted, depending on the need, on one of three rotational heads **[11]** built in HSO-4. Each head is equipped with four mounting holes. To mount the drive screw the clamping lever **[5]** into the hole no.1 **[8]** and M6x20 screw into the hole no.2 **[7].** Please note that M6x20 screw is screwed from the bottom of the rotational head.

To connect and disconnect the drive move close or apart the drive roller and the caster wheel (motor and the motor base will move) and lock the power unit with the clamping lever **[5]**.

Mounting diagram of HDN-3 DC drive for Slide Kamera HSO-4

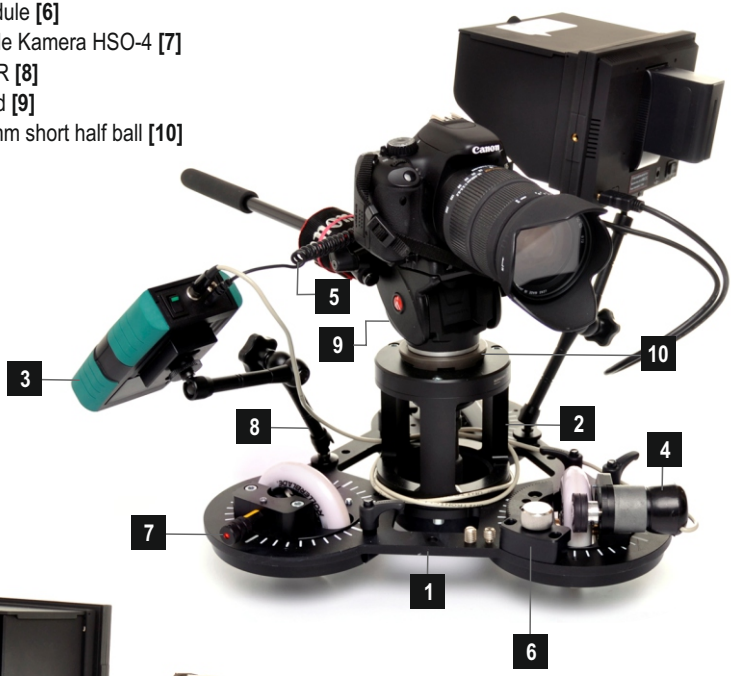
M4x20 screws that mount head angle adjustment module **[1]**
Head angle adjustment module housing **[2]**
M6x16 screws that mount the rack **[3]**
Head angle adjustment module rack **[4]**
Clamping lever that locks the position of the motor arm **[5]**
Power unit **[6]**
M6x20 screw that sets the position of the power unit **[7]**
Hole no.1 for mounting clamping lever **[8]**
Hole no.2 for mounting the M6x20 screw that sets the position of the power unit **[9]**
100mm caster wheels **[10]**
Caster wheel rotational head **[11]**
Clamping knob that locks the rotation of the caster wheel head **[12]**



Sample configuration of Slide Kamera HSO-4 with accessories

Slide Kamera HSO-4 **[1]**
Slide Kamera AF-15 Adapter **[2]**
HDN-3 PRO DC drive for Slide Kamera HSO-4
- HDN-ST PRO controller **[3]**
- HDN-ZN-3 power unit **[4]**
- Cable release for HDN PRO drive **[5]**

Head angle adjustment module **[6]**
AFL-1 laser pointers for Slide Kamera HSO-4 **[7]**
11" Articulated Arm for DSLR **[8]**
Manfrotto 701HDV Pro head **[9]**
Manfrotto 520 BALLSH 75mm short half ball **[10]**
LCD display **[11]**
Photo camera/camera **[12]**

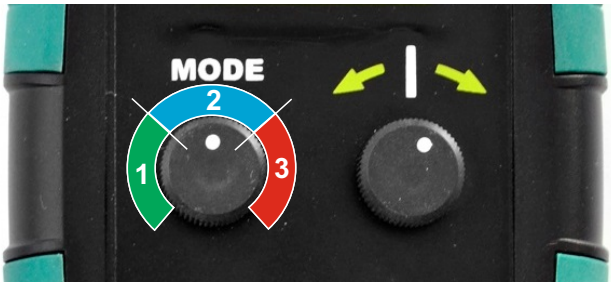


4. Controller modes

HDN-ST/HDN-ST PRO controller has three working modes: VIDEO, LOOP and PULSE (TIMELAPSE). Use MODE knob to choose a proper working mode.

Range of working modes:

LOOP **[1]**
VIDEO **[2]**
PULSE (TIMELAPSE) **[3]**



4.1. VIDEO Mode

VIDEO mode is designed for smooth shots from the camera or a photo camera mounted on a cart of Slide Kamera device. It is possible to control the direction and speed of the shift using SPEED knob.
To set the VIDEO mode: set the MODE knob in the middle. The sign VIDEO should appear on the upper line of the screen. The bottom line displays the current set point speed. The maximum speed corresponds to the value of the 99. The sign "-" indicates the movement in the opposite direction (depending on the place where the operator stands).

Name of the selected mode **[1]**
Speed **[2]**
Battery level **[3]**

VIDEO mode enables the uphill track at the angle of 20°, with a load up to 2 kg. In this case, the motor should be in the back of the cart. In VIDEO mode, the drive always tries to maintain the desired speed of the cart (also after reaching the end of movement range). This setting results in batteries discharging faster.

4.2. LOOP Mode

LOOP mode similarly to VIDEO mode, is designed for smooth shots from the camera or a photo camera mounted on a cart of Slide Kamera device. In this mode, when the drive encounters too much resistance, it automatically starts to move in the opposite direction.
To set the LOOP mode: turn the MODE knob left. Set the desired speed with the SPEED knob. The sign LOOP should appear on the upper line of the screen. The bottom line displays the absolute value of the current set point speed.

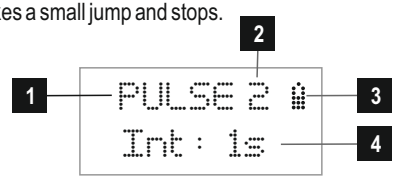
Name of the selected mode **[1]**
Speed **[2]**
Battery level **[3]**

NOTE: Friction factor of the drive roller is very essential in LOOP mode. If the cart in HDN-1 and HDN-2 drive does not turn round automatically, make sure that the rail of the device and the drive roller are clean.
NOTE: When working with HDN-2 drive make sure that the standstill brake is loose. If the cart turns back before it reaches the determined obstacle, loosen the brake.
NOTE: Slide Kamera HSO-4 device should move on a flat and level surface in LOOP mode .

4.3. PULSE Mode (TIMELAPSE)

PULSE mode is designed for Timelapse shots synchronized with the movement of the cart (Motion Timelapse). In this mode, the cart moves in pulses, i.e. periodically makes a small jump and stops.

Name of the mode **[1]**
Length of the jump **[2]**
Battery level **[3]**
"Interval" - time at which the pulses appear **[4]**



In order to set the PULSE mode firstly set the desireable length of the jump by turning the MODE knob right. Numbers ranging from 1 to 8 correspond to pulse length ranging approximately from 0.2 mm to about 2.4 mm. Length of the jump is a variable that depends, among other things, on the load, on the rolling resistance of the cart and on how accurately Slide Kamera device is leveled. However, in normal operating conditions it is repeatable.

SPEED knob selects the direction of movement and interval, that is time at which the cart makes following jump. The controller allows to set the interval within the range of 1-20s with 0,2s splits.

In PRO version thanks to the cable release that connects the controller with the photo camera, the drive controller releases the shutter in time when the cart is motionless. If you do not have the PRO version, we suggest using a wireless timer and shutter release.

NOTE: Slide Kamera HSO-4 should move on a flat and level surface in PULSE mode (TIMELAPSE) .

Approximate amount of shots (jumps) during the track on a Slide Kamera device.

	HSK-6 800	S-980, HSK-5 1000	S-1500, HSK-5 1500	HSK-5 2000	HSO-4 at 1000mm distance
Pulse 1	3200	3900	6400	8900	5000
Pulse 2	1600	1960	3200	4450	2500
Pulse 3	990	1200	1970	2470	1500
Pulse 4	690	840	1370	1900	1070
Pulse 5	490	600	970	1350	760
Pulse 6	380	460	760	1050	600
Pulse 7	320	390	640	890	500
Pulse 8	260	310	515	710	400

Approximate time of the track with the interval 1s.

	HSK-6 800	S-980, HSK-5 1000	S-1500, HSK-5 1500	HSK-5 2000	HSO-4 at 1000mm distance
Pulse 1	53min.	1h 5min.	1h 45min.	2h 20min.	1h 25min.
Pulse 2	26min.	32min. 30s.	53min.	1h 15min.	42min.
Pulse 3	16min	20min.	33min.	45min.	26min.
Pulse 4	11min.	14min.	23min.	32min.	18min.
Pulse 5	8min.	10min.	16min.	22min.	13min.
Pulse 6	6min. 20s.	7min. 45s.	12 min. 45s.	17min. 30s.	10min.
Pulse 7	5min. 50s.	6min. 30s.	10min. 40s.	14min. 50s.	8min. 20s.
Pulse 8	4min. 15s.	5min. 15s.	8min. 30s.	12min.	6min. 40s.

Length of time will increase for longer intervals.

Sample setting:
Slide Kamera S-980,
Pulse 3,
Interval = 10s :

Approximate time of the track = 20 min * 10 = 200min. = 3h 20min.

5. Technical Specification

Top speed in VIDEO and LOOP modes	~55mm/s
Minimal speed in VIDEO and LOOP modes	<2mm/s (~11cm/min)
Battery runtime	about 3 hours in VIDEO and LOOP mode (rail set up horizontally, load 3 kg), up to10 h in PULSE mode
Cart load (horizontal track)	Slide Kamera S series – up to 3kg Slide Kamera HSK series – up to10 kg Slide Kamera HSO-4 – up to 10kg

6. Terms of warranty

All products are covered with Slide Kamera warranty for a period of 12 months from the date of sale. Warranty covers defects in design and material.
The warranty covers repair, or if the repair is impossible, replacing the product with a new one. However the cost of repair cannot overrun the catalog value of the product. The warranty does not cover damage and / or product defects resulting from improper use, as well as non-compliance with maintenance of the product.

The warranty is also void if:

- ☑ unauthorized attempts to repair or modify
- ☑ mechanical damage caused during transport and operation of such features, scratches, dents, pits, dirt, etc ...
- ☑ flooding, moisture

To obtain warranty service the purchaser should deliver the damaged product with proof of purchase and proof of payment (invoice, receipt, cash) to the point where the equipment was purchased. At the end of each guarantee period, you can purchase a replacement part from the manufacturer or in selected retail outlets listed on www.slidekamera.eu / www.slidekamera.pl

Producer after sales service is also available at:
HET-CNC sc, 80-175 Gdańsk, Ul. Kartuska 386

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