

Unwinder

Original operating manual



UW 52/520
520

Retain for future use!

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1. Safety regulations	
General Safety regulations	3
Responsible person for security	3
Electrical Connection	4
Technical info	
Specification	5
Connections and dimensions	5
3. General description	6
Installation	7
Control elements	
Control panel front side	8
Control panel at the cabinet	9
Description of the Control elements (switches)	10
Set-up	
First activation	12
Lift in a paper reel	12
Schematic design of the Unwind UW 52	13
Draw in the paper	13
Change of paper reel	14
Webguide	14
7. Maintenance	
7.1 Lubrication schedule	15
7.2 Spare part list	16
8. Trouble shooting	17

update: January 03 person dealing: MS.

1. Safety regulations

General safety regulations

With this regulations we don't define the fully range of regulations.
In case of questions and problems please contact directly to:

The unwind unit UW 52 corresponds at the time of delivery with the current standard and state of the art.

There is a danger caused by the unwind for persons or other machines of the user if:

- unqualified persons are working with the unwind.
- the unwind is not operated according to the advice.

The unwind unit must be projected in a way that no danger exist to persons if the unit is planed correctly and operated according to the advises given in that manual.

Operate the unwind only under correct conditions.

By working with the unwind please take care of rotating and turning parts which cause danger to draw in or squeeze hands or loose cloth parts.

Operate the unwind only with closed covers and closed el. cabinet.

Modifications and add ones to the unwind are strictly forbidden. Any modifications has to be signed by MBO GmbH.

Take care that in case of malfunction of the unwind no person or devices are damaged.

Responsible persons for security

User is any natural or legal person which operates the unwind or advice other persons to operate the unwind.

The user or the security supervisor must take care that:

- all relevant advises prescriptions and laws are fulfilled.
- only qualified persons are operating the unwind.

Qualified person are people which are authorised due to their education, experience and training. To have knowledge about security, norms and operation, to keep all aspects regarding security and safety norms by operating the unwind.

This people has to be authorised by a person which is responsible for security in the company.(Definition of qualified people according to IEC 364).

1.3 Electrical Connection

While working with devices connected to electric power you have to regard the national safety prescriptions.

The electrical Connection has to be done according to the local norms e.g. cable dimension, fuses, earth etc.). Further advises are in the documentation for the unwind.

For connection of the unwind with other modules like the sheeter of MBO GmbH we provided two plugs:

(Walter 6pol. power-plug and Walther 32pol. Control signals).

Optional the unwind is equipped with a 16A- Cekon plug for connecting of an external exhaust or cutter.

The asynchron motors of the unit are designed for a right- hand- turning el. connection with 3 phases (400V) and earth- contact.

2. Technical data

2.1 Specification

Production speed max.	300 m/Min.
Reel diameter max.	52" (= 1321 mm)
Web width min	150 mm
standard 520 mm	
optional larger	
Reversible (inverse) turning direction	
Reel end Sensor	
Core diameter min	70 mm
optional larger	
Paper quality	36 gr./m ² - 400 gr./m ²
Web storage (dancer) with Set-up-infeed position	
Splice table manual with pneumatic bares	
Decurling device	
Webguide (optional)	

2.2 Connections and dimensions

El. Connection 3X32 A, 380 V, N, PE
Air 6 bar dried and oiled air 6X1 tube
W X H X D = 2,2 m X 1,8 m X 1,3 m
Weight 1640kg

3. General description

The unwind unit UW 52 is a servomotor driven core Unwind with electric lifting unit. The unwind motor is controlled by a dancer which keep as well the adjustable web tension.

As option the unwind can be equipped with a web guide to keep the web in exact side wise position for the later processing with web tension. If the unwind unit has to feed the web without tension (for example in digital printing lines) an electrical feeding unit and slope Control can be installed.

The pneumatic expanding unwind shaft has a standard diameter of 70mm. But it can be delivered in any larger diameter according to the requirement of the customer. We propose larger diameters if the customer is using thick papers or cartons.

The air pistol to fill the expansion shaft is delivered with the machine.

The electric lift is operated with the switches up and down at the operation panel by the cabinet.

The unwind direction is counter clock wise (view from the operation side). It can be reversed by the corresponding switch at the operation panel. Upon the reel lift the reel end Sensor (emitter/receiver) is mounted. This Sensor is activated by the minimum diameter of the paper reel and causes a stop of the whole line.

At the upper side of the unwind there is a manual Splice table with two pneumatic clamping bares. Those bares fix the web during the splice process and support the web connection by a reel change.

Furthermore the unwind is equipped with a Decurling bare which is turned by a spindle and gear.

For the adjustment of the web tension the dancer is supplied by a pressure gage with manometer. The pressure should be adjusted to 4-6bar. The connection to the external air supply is made by a 6 X 1mm tube.

There are two operation panels: Panel1 is located at the operation side close to the dancer. Panel2 is located at the el. cabinet close to the unwind shaft.

The unwind unit is equipped with a two- wire emergency stop circuit.

The function and operation of the operation elements is described in the corresponding chapter.

As a further option an additional length sheeting unit can be fixed at the output of the unwind for the side trim of the web. This option is needed in case of a MBO GmbH ploughfold unit is installed directly after the unwind.

4. Installation

By installing the unwind you have to take care that the unit is levelled in horizontal and longitudinal direction. Further the unwind should be aligned with the other modules of the total line to guarantee a straight webpath.

The distance between frame and floor should be adjusted to approx. 80mm to make sure that even with a 52 " reel there is still a free distance of 30mm between paper and floor.

Please make sure that during the installation all security instructions are fulfilled.

5. Control elements

5.1 Control panel front side

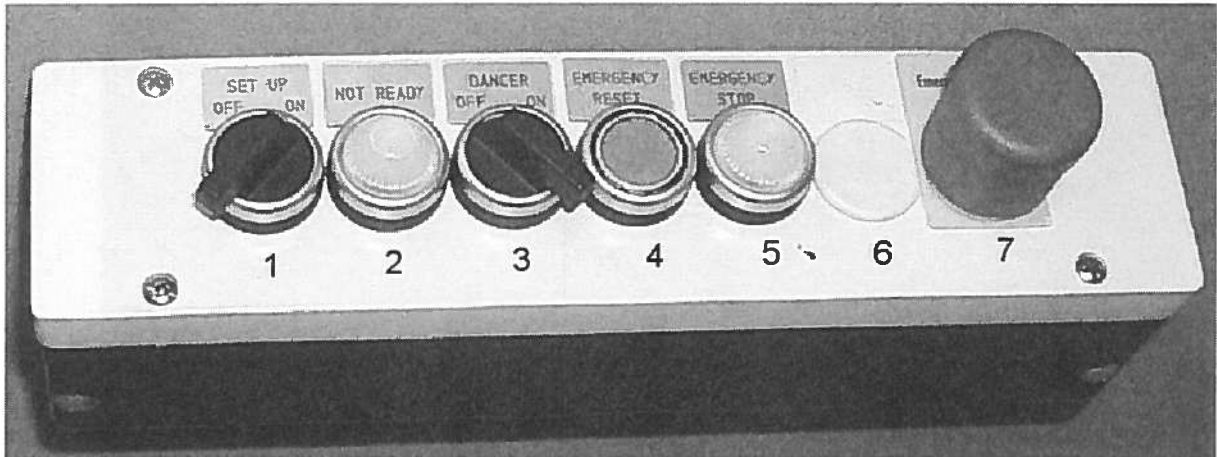


Fig.5.1 Operation panel for the unwind 52 front side

1 = Set-up switch off- on
indication lamp

2 = Not ready indication lamp

3 = Dancer lift off- on
button

4 = Reset button for emergency stop

5 = Emergency

6 = spare space

7 = Emergency stop

5.2 Control panel of the cabinet

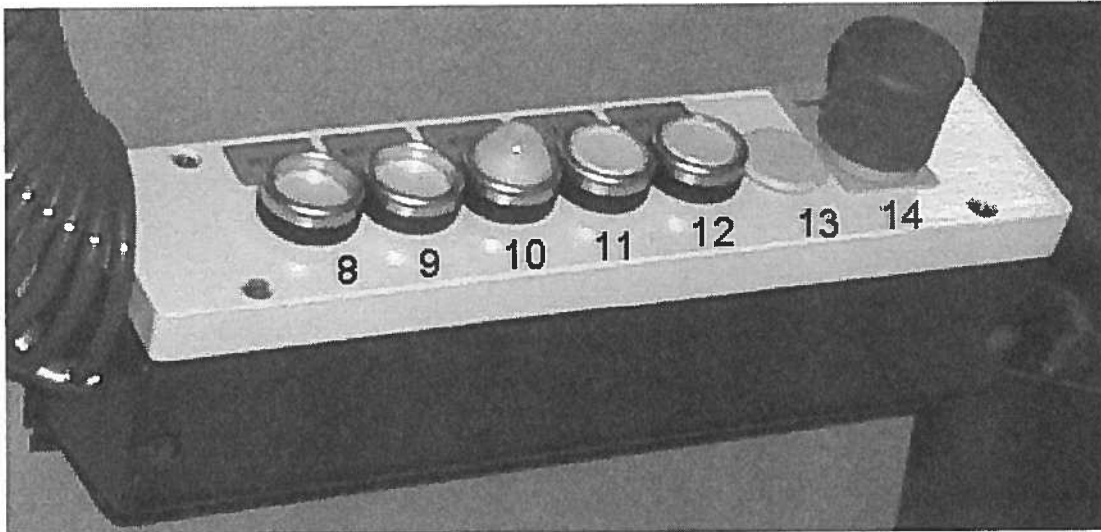


Fig.5.2 Operation panel for the unwind 52 at the cabinet

8 = Release button off- on

9 = Unwind direction Inverse off- on

10 = Reel end indication

11 = Lift up button

12 = Lift down button

13 = Spare space

14 = Emergency stop button

Note:

The description and operation of those elements is done in chapter 5.3.

5.3 Description of the Control elements (switches)

1 = Set-up switch off- on

By activating this switch the unwind goes to Set-up mode to enable a reel change and the lifting motor.

2 = Not ready

This lamp is activated if the unwind is not operational because of reel end or malfunction

3 = Dancer lift off- on

By activating this switch the dancer comes up to the infeed position if the air is connected. (In this position the web can be easily inserted).

4 = Reset button for emergency stop

After all problems for emergency stop are eliminated the stop can be reseted.

5 = Emergency stop indication lamp

this lamp is activated in case of emergency stop caused by any emergency button or signal in the line.

6 = Spare place

7 = Emergency button

By activating this button the emergency stop is active which force an immediate stop of the whole line.

8 = Release button

By activating this switch the unwind shaft is disconnected from the break and the driving motor can be free turned.

9 = Inverse unwind direction

By activating this switch the unwind direction is switched to clockwise (view from the operation side).

10 = Reel end indication lamp

As soon as the reel end Sensor is activated, this lamp is illuminated and cause a normal stop if the line is in running mode. After the same time the "Not ready lamp (2)" is lighted.

11 = Lift up button

In case the "set-up switch (1)" is activated you can lift up the unwind shaft by pressing this button.

12 = Lift down button

In case the "set-up switch (1)" is activated you can lift down the unwind shaft by pressing this button.

13 = Spare space

14 = Emergency button

By activating this button the emergency stop is active which force an immediate stop of the whole line.

6. Set-up

6.1 First activation

Before the first switch on, check that the power connection is done correctly and complete regarding short-circuit and connection to earth.

Power connection: Connect the unwind either directly to the line via L1,L2,L3,N,PE or alternative via the 6pol. plug

Control connection: See special description or via 32pol. Control-plug.

Take care of the 3 phase right turning connection

Connect the external air (6bar dried and oiled)

Make sure that the covers and cabinets are mounted and closed.

Take care that the machine is levelled and aligned.

Take care that the safety instructions are fulfilled.

If you see any damages it's not allowed to operate the unwind.

6.2 Lift in a paper reel

The pneumatic expansion shaft can be released by pressing the small valve at any side of the shaft with the finger or a pen. Then the shaft can be shifted into the new reel. (Take care of the correct sidewise position). Now the unwind shaft can be expanded by putting air with the delivered air pistol through the small valves for about 3 seconds.

Now the reel can be rolled directly in front of the paper lift. There fore you can level down the paper lift with button (Set-up (1)), (Release button (8)) and (Lift down button (12)). After levelling lifting forks down the reel can be completely rolled into lifting position. Take as well care of the correct sidewise position of the unwinding shaft.

Now lift the reel with (Lift up button (11)).

Just before of reaching the upper unwind position you should turn the reel slowly to enable a correct slip in of the gears.

Take care that the cover of unwind shaft at the gear side is completely closed and the shaft did totally reach the unwind position.

6.3 Schematic design of the Unwind UW 52

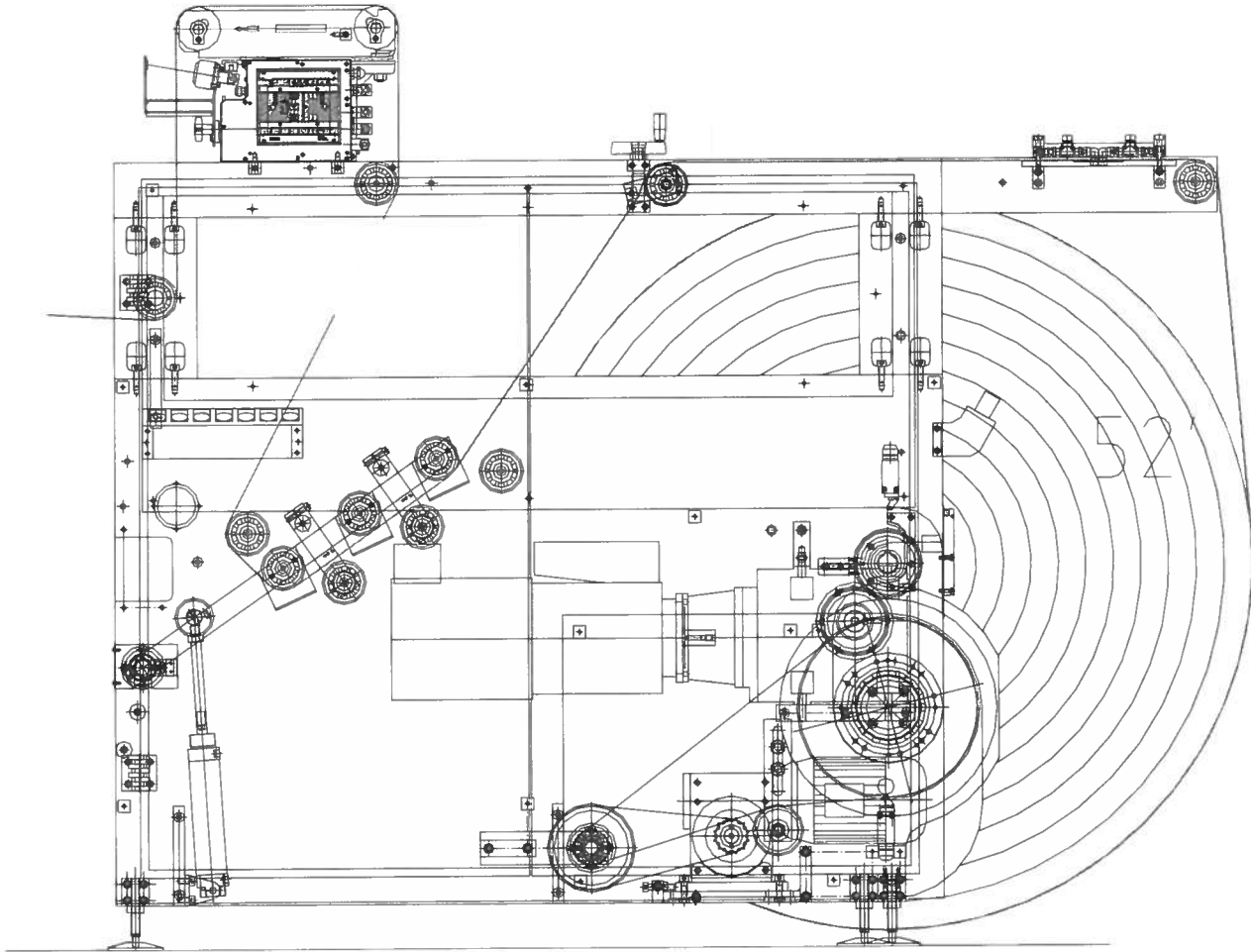


Fig.6.3 Schematic design of the unwind unit UW 52

Note:

The red line represents the web path in the unwind.
Dancer in Set-up position.

6.4 Draw in the paper

After lifting in the reel according to chapter 6.2 the reel is ready for draw in.

Attention: The reel will turn immediately according to the dancer position if (Release button (8)) is not pressed.

Now you can either draw in the paper if there is no web remaining from the last run or connect the new reel at the splicetable to the remaining web.

If the unwind is empty you first lift the dancer with (Dancer lift off-on (3)) button in infeed position and draw in the paper according to drawing shown in chapter 6.3.

Pay attention, that the (Dancer lift (3)) is in Set-up position.

Now insert the web either over the webguide or directly to the output idle roller. From this point the web is guided to the next processing station (for example the sheeter VC-520 from MBO GmbH).

Make sure that the brake of the Unwind shaft (Release button off-on (8)) is lifted, before you switch off the (Dancer lift off- on (3)) button. (The dancer lift moves now down). Release now again the brake (Release off-on (8) = off). At least switch (Set-up off-on (1)) to off position. Now the web is rewind and the dancer is lifted to the unwind position for automatic unwind.

The unwind is now ready for production in automatic mode.

6.5 Change of paper reel

When the reel end Sensor was activated the unwind shows the status not ready (Not ready indication lamp (2) is lighted).

This cause a stop of the unwind and the whole line. When the line came to a complete stop you switch the (Set-up button (1)) to on position, you lift the brake by switching (Release button (8)= on). Now the web tension will be released. After that you fix the web with the pneumatic switches for fixing bares at the splicetable. Now you can cut the web with a knife in the gap between the blades in the splicetable. Now you open the clamping bare at the reel side and you can change the reel according to chapter 6.2.

After mounting a new reel you can connect the new web to the old with an adhesive tape after you did cut the front end at the new web in the same way as before. Now you can switch off the switches (Release (8)) and ((Set-up (1))). Which bring the unwind to the automatic status and the (Not ready indication lamp goes off). The reel will be turned until the dancer comes to unwind position.

6.6 Webguide

Connect the webguide via the 4pin plug

The voltage indication 5V DC –LED should then be lighted.

Take care of the web running direction

Switch the webguide to rectangular mode

Bring the edge Sensor to middle position

Adjust the wanted webguide mode (Sensor ω)

Choose the actual Sensor type and mode (line, edge, dark or white)

Switch the webguide to regulation mode

Note:

For the detailed Set-up and operation see the separate special manual of the webguide.

7. Maintenance

7.1 Lubrication schedule

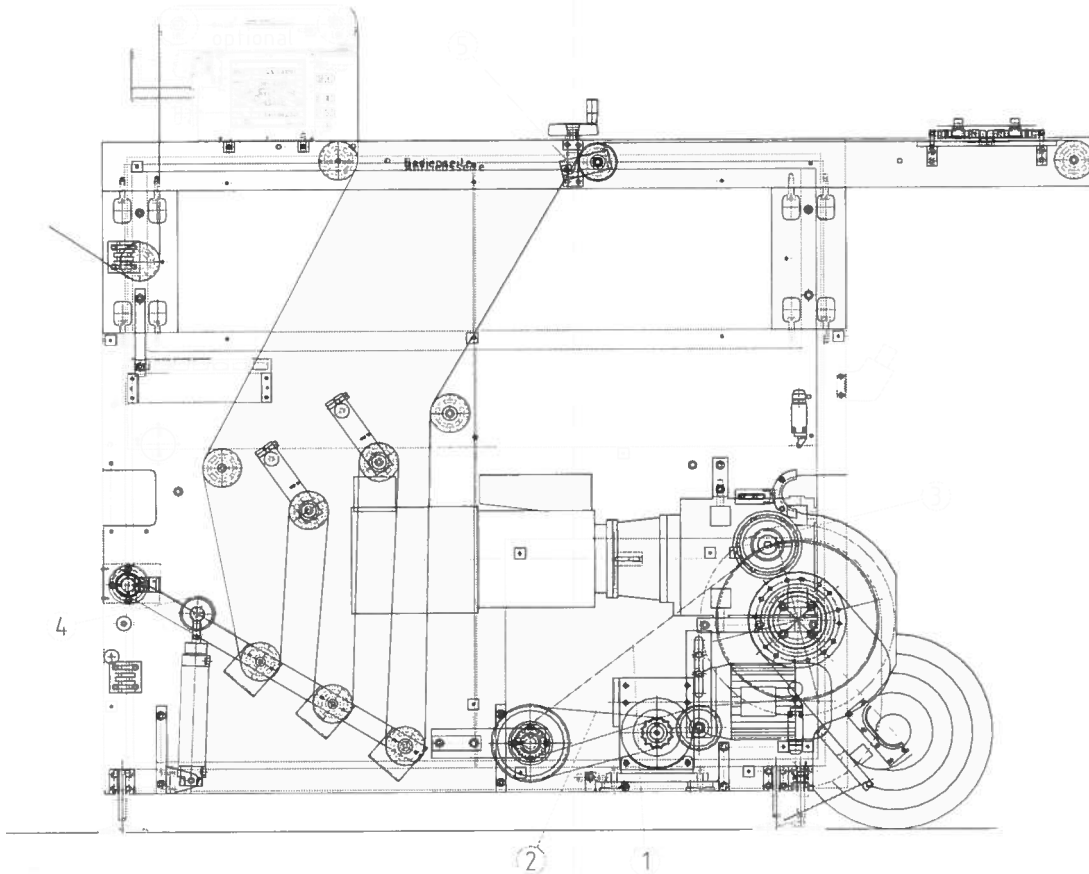


Fig7.1 Lubrication points of the unwind UW 52

Lifting chain: both chains are located inside the frame. Remove the covers and dampen the chain with Iwis chainspray VP6. Maintenance interval: 6 month.

Double chain for the lifting motor: This chain is positioned inside the cabinet below the unwind motor. Switch off the power, open the cabinet and lubricate the chain with chain spray Iwis VP6. Maintenance interval: 6 month.

(3) Gear at the unwind shaft: Lubricate with grease according to DIN 51502 K3N-30.

For e.g. with L71V. Maintenance interval: every month.

Grease point at dancer lifting cylinder: (DIN 51502 K3N-30). Maintenance interval: 6 month.

Gear at Decurling device: (DIN 51502 K3N-30). Maintenance interval: 6 month.

7.2 Spare part list

Recommended Spare parts

Description	Pos.	Art. -Nr.
Reel end Sensor. (emitter/receiver)	1 each	WS/WE 150 P430
Dancer lift pneumatic valve	1	BU- 5728400420
Dancer potentiometer	1	MEG-NCP 30
Pressure regulator 8,5bar	2	DRU-R00-C1-000
Manual valve splicetable	2	HE 3- 1/8
Clamping tube splicetable	2	Ø 10 X 1 X 790 lg.
Pressure gage	2	WILL 1/8" -H Ø 40

Note:

The total spare part list of all used electrical points is added to the circuit diagram of the unwind UW 52.

8. Trouble shooting

Error	Possible reason	How to remove
No function of the operational elements	No power connected	Connect Main supply and Control signals
Emergency stop not resetable	Emergency stop still active	Check fuse 10F1 all emergency buttons - emergency modules 10K1 and all following - relay 14K1,14K2 must be in off position
Dancer lift not functioning	No air connected (air pressure)	Connect the air via 6X1mm tube
Dancer unwind position is wrong	The dancer potentiometer is wrong adjusted.	
Reel end Sensor not working	Sensor not adjusted or not connected	Adjust the Sensor position that the light spot of the emitter meets the receiver when the reel is empty. Check relay 15K1 and 15K2.
Unwind motor does not Function	Emergency stop active. Dancer potentiometer wrong adjusted. Unwind not ready.	Reset the emergency stop circuit Check the moveability of the dancer. Switch off the power for 20sec. and ON again.
Web does not run straight	Unwind not aligned Webguide in wrong operation mode. Web Sensor not correct adjusted. Paper reel position wrong Unwind in wrong operation mode.	Adjust the unwind position according to chapter 4. Switch the webguide to automatic mode. Adjust the web edge Sensor. Position the reel on the unwind shaft correctly.
No lifting of unwind shaft possible	Unwind in wrong operation mode.	Switch the machine to Set-up mode. (see chapter 6.2).

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