

AUTOMATIC TWO ROWS POTATO PLANTER MACHINE

(PPM02-ALP-Automatic)

USER GUIDE



 **ALPLER**

ATTENTION



**DO NOT
OPERATE THE MACHINES
BEFORE READING THIS MANUEL!**

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WARNING SIGNS AND THEIR MEANINGS



Most of the accidents, which happen during the running, are due to the simplest safety rules and elementary precautions are not observed.

For this reason many accidents can be avoided when their causes are known and safety precautions are taken.

Consequently, this manual must be read carefully before operating the **PPM02-ALP-Automatic TWO ROWS POTATO PLANTER**. This will prevent the future problems at the beginning.

This manual contains cautions related safety rules. Three different symbols are situated on the top of every caution. These symbols and their means are as explained below;



DANGER

This symbol indicates that operator or someone else could be injured or killed if proper precautions are not taken.



WARNING

Denotes a hazard existing. If proper precautions are not taken, the operator or others could be seriously injured or killed.



CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

1. PPM02-ALP-Automatic TWO ROWS POTATO PLANTER

1.1. DESCRIPTION of THE MACHINE

PPM02-ALP-Automatic is potato planter which has the capability of processing two rows by only one pass. It's operational process is as follows; Potato seeds in the hopper of machine drop down by gravity and dropping ones are taken in side of seed cup one by one. The seed cups are mounted on a band-conveyor which moves on vertically. The band conveyor takes the movement from transmission system which joint to the side Wheel. At the highest point of band conveyor, cups are started to turn down and seeds are left the cups and are dropped down in a metal hole. At the bottom of this hole, fixed legs are prepare the seed bed. Seeds drop to the seed bed one by one and in the best planting spaces. The machine takes power from side Wheel. It is semi-hanged equipment which attached to tractor by it's tri-point joint system (categories 1 and 2).

PPM02-ALP-Automatic consist of main frame, joint system, hopper, transmission system, cup conveyor, seedbed legs, covering ploughs and side wheels. Main parts are illustrated at Figure 1.

1.2. MAIN PARTS of THE MACHINE

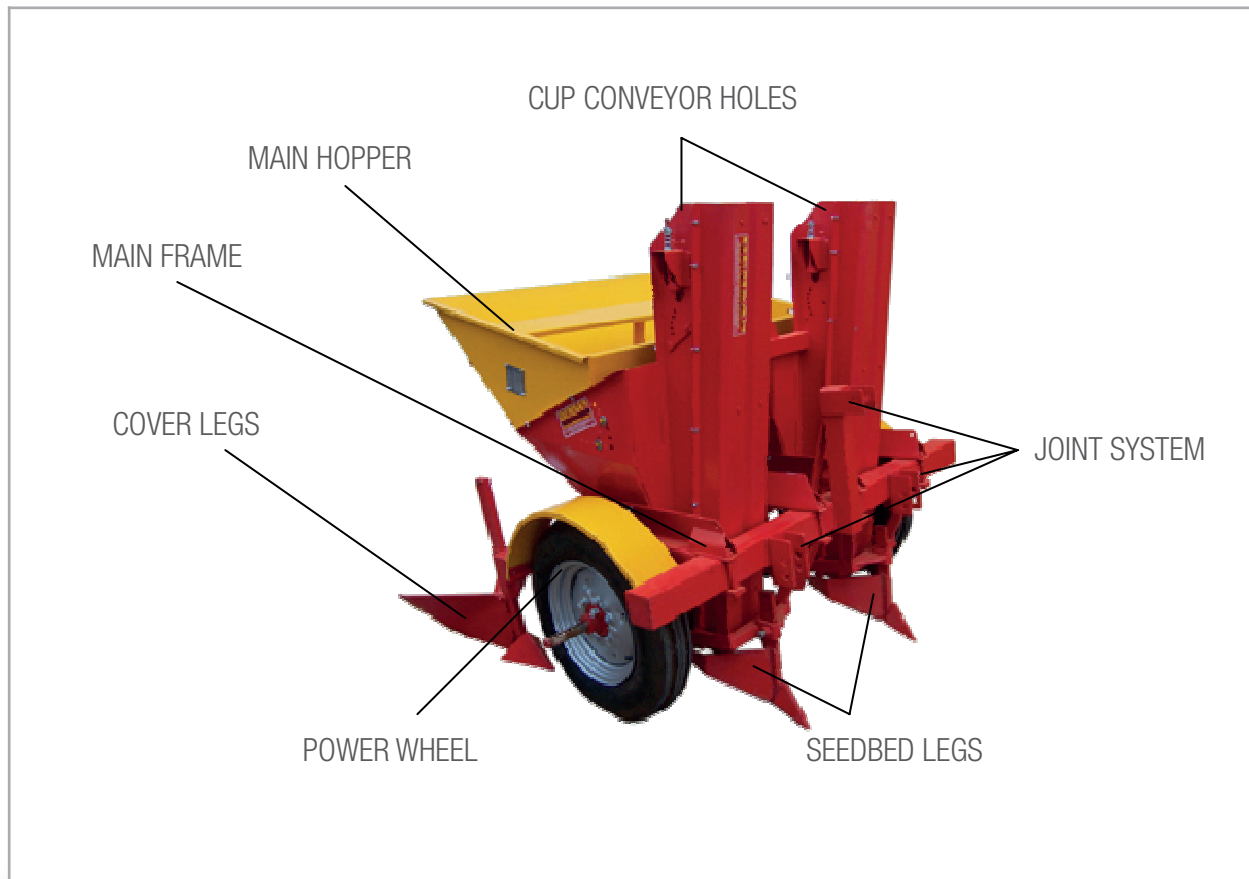


Figure 1

1. PPM02-ALP-Automatic TWO ROWS POTATO PLANTER

1.3. TECHNICAL SPECIFICATIONS

PPM02-ALP-Automatic Two Rows Potato Planter TECHNICAL SPECIFICATIONS	
MANUFACTURER	ALPLER Agricultural Machinery
MODEL	PPM02-ALP-Automatic
ATTACHMENT TYPE	Semi-hanging (Categories 1 and 2)
POWERED BY	Wheels
NO. OF PROCESSING ROWS	2
DISTANCE BETWEEN ROWS	700, 750 mm
OPERATIONAL WIDTH	180, 210, 230, 250, 300, 340, 380, 410 mm
OPERATIONAL WEIGHT	1400 mm
OPERATIONAL DEPTH	150-200 mm
OPERATIONAL CAPACITY	
@ 5.4 km/h	7,3 da/h
NO. Of CUPS	2 X40
NO. of BAND -CONVEYOR	2
DIMENSIONS of POTATO SEEDS	Diameter: \varnothing 30 - \varnothing 100 mm
HOPPER CAPACITY	600 kg
OVER-ALL DIMENSIONS	
WIDTH	1.800 mm
LENGTH	1.795 mm
HIGHT	1.655 mm
WEIGHT	470 kg

1.4. OVER ALL DIMENSION

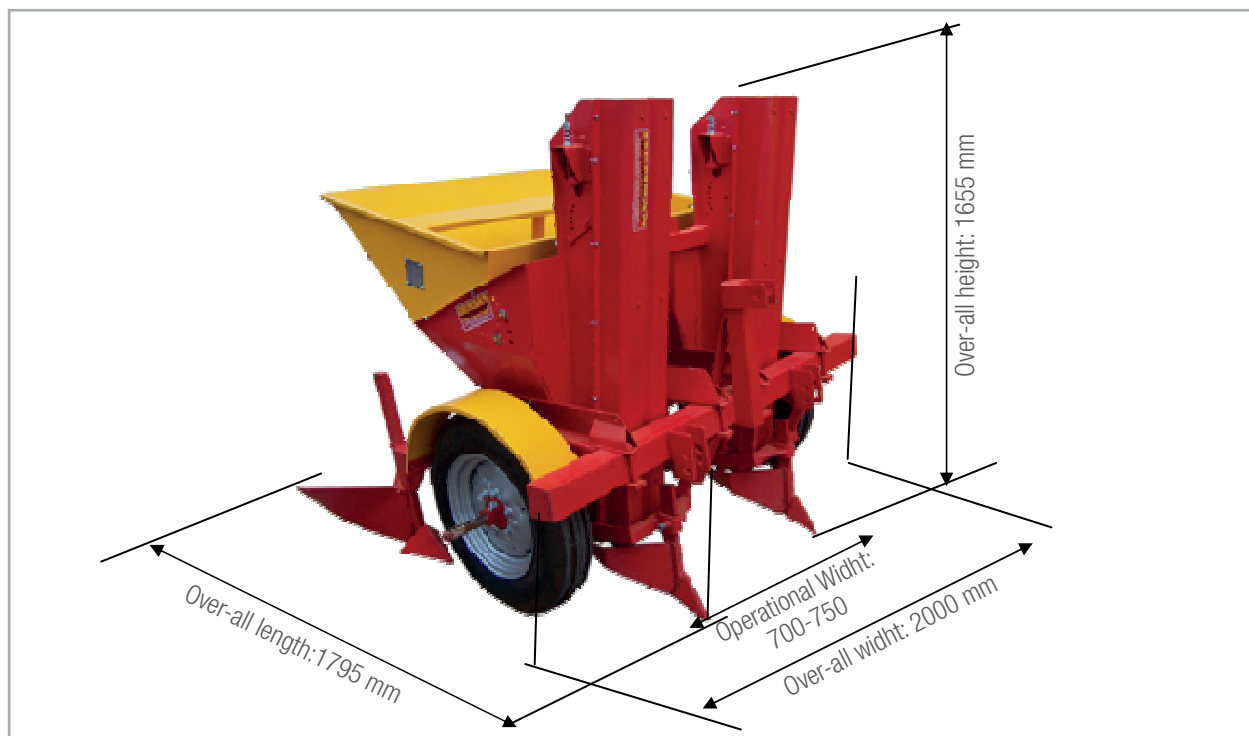


Figure 2. Over-all Dimensions of PPM02-ALP-Automatic TWO ROWS POTATO PLANTER

2. SAFETY NOTICES

2.1. GENERAL SAFETY NOTICES



OPERATORS

A well-qualified and professional operator takes the safety precautions and applies them in responsibility. Do not give permission of operating machine out of well-qualified operators.



READ MANUAL FIRST

Read the "Operating and Maintenance Manual" carefully before first start and keep the manual nearest.



OBEY RULES and REGULATIONS

Obey all laws, work site and local regulations which affect you and your vehicle.

WEAR CORRECT CLOTHING



You can be killed or injured if you do not wear the proper clothing. Loose clothing can get caught in the equipment. Wear protective clothing to suit the job. Examples of protective clothing are: a hard hat, safety shoes, safety glasses, a well fitting overall, ear-protectors and industrial gloves.

Keep cuffs fastened.

Do not wear a necktie or scarf. Keep long hair restrained.

2. SAFETY NOTICES



BEWARE OF RAISED ATTACHMENTS

You can be killed or injured by raised attachments. Raised attachments on certain kinds of equipment can fall.

Do not walk or work under raised attachments unless they are safely blocked.



NEVER MAKE MODIFICATIONS ON THE MACHINE

The machine is designed and produced due to cover needs and legal regulations. Any modifications that not approved by the manufacturer can cause dangerous results. Do not make any modification on the machine and do not use extra-equipment unapproved.



BEWARE OF ALCOHOL AND DRUGS

Operating machinery while under the influence of drugs or alcohol can cause death or injury.

Do not consume alcoholic drinks or take drugs before or while operating the vehicle or its attachments.

Be aware of prescription medicines, which can cause drowsiness.

2. SAFETY NOTICES

2.2. SAFETY NOTICES FOR OPERATING



DON'T USE DEFECTIVE EQUIPMENT

Defective equipment can kill or injure you or others.

Do not operate equipment, which is defective or has missing parts.

Make sure all maintenance procedures are completed before using the equipment.



EQUIPMENT LIMITS

You can be killed or injured when operating equipment beyond its design limits. It can also damage the equipment.

Do not operate the equipment outside its limits.

Do not try to upgrade the equipment performance with unapproved modifications.



POOR COMMUNICATIONS

You or others can be killed or injured by poor communications.

Keep people around you informed of what you will be doing.

Use hand signals when necessary. Work sites can be noisy; do not rely on spoken commands.

If you will be working with other people, make sure any hand signals that may be used are understood by everybody.



DISMOUNTING MOVING VEHICLES

You can be killed or injured if you dismount a moving vehicle.

Do not dismount a moving vehicle.

2. SAFETY NOTICES

2.3. SAFETY NOTICES FOR MAINTENANCE



POOR REPAIRS

You and others can be killed or injured by poor repair or maintenance work.

Do not try to do repairs or any other type of maintenance work you do not understand.

To avoid injury and/or damage get the work done by a specialist engineer.



MODIFICATIONS AND WELDING

You and others can be killed or injured by non-approved modifications.

Welds on cast iron can weaken the structure and break.

Do not weld cast iron.

Contact the manufacturer for advice before modifying the equipment.



METAL SPLINTERS

You can be killed or injured by flying metal splinters when driving metal pins in or out.

Use a soft-faced hammer or drift to remove and fit metal pins.

Always wear safety glasses.



ELECTRICAL CIRCUITS

You can be killed or injured by electrical shocks.

Understand the electrical circuit before connecting or disconnecting an electrical component.

A wrong connection can cause injury and/or damage.

2. SAFETY NOTICES

HYDRAULIC FLUID



You can be killed or injured by hydraulic fluid. Fine jets of hydraulic fluid at high pressure can penetrate the skin.

Do not use your fingers to check for hydraulic fluid leaks.

Do not put your face close to suspected leaks.

Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic fluid.



BADLY PARKED VEHICLES

You can be killed or injured working on a badly parked vehicle.

Before carrying out any servicing, park the vehicle on firm level ground.



WORKING ON RAISED VEHICLES

You can be killed or injured when working on a raised vehicle.

SOFT GROUND



You can be killed or injured when working under a machine on soft ground.

A vehicle can sink into soft ground.

Never work under a vehicle on soft ground.

Wear safety goggles when using a wire brush to clean components.

2. SAFETY NOTICES



SPRING-LOADED COMPONENTS

You can be killed or injured by spring-loaded components.

Always wear safety glasses when dismantling assemblies containing components under pressure from springs. This will protect against eye injury from components accidentally flying out.



CLEANING

Cleaning metal parts with incorrect solvents can cause corrosion.

Use only recommended cleaning agents and solvents.



NON APPROVED MODIFICATIONS

Non-approved modifications to axle ratios, vehicle weight or wheel and tire sizes may adversely affect the performance of the park brake. Do not make any modifications to the equipment without approval from manufacturer.



'O' RINGS, SEALS AND GASKETS

Badly installed, damaged or rotted 'O' rings, seals and gaskets can cause leakages and accidents.

Renew these items whenever they are disturbed, unless otherwise instructed.

Do not use Trichloroethane or paint thinners near 'O' rings and seals.

2. SAFETY NOTICES

OIL HYGIENE

Lubricants are not a health risk when used properly for their intended purposes.

However, excessive or prolonged skin contact can remove the natural fats from your skin, causing dryness and irritation.

Low viscosity oils are more likely to do this, so take special care when handling used oils, which might be diluted with fuel contamination.

Whenever you are handling oil products you should maintain good standards of care and personal and plant hygiene. For details of these precautions we advise you to read the relevant publications issued by your local health authority, plus the following.

Storage

Always keep lubricants out of the reach of children.

Never store lubricants in open or unlabeled containers.

Waste Disposal

All waste products should be disposed of in accordance with all the relevant regulations.

The collection and disposal of used oil should be in accordance with any local regulations. Never pour used oil into sewers, drains or on the ground.

Handling

New Oil

There are no special precautions needed for the handling or use of new oil, beside the normal care and hygiene practices.

Used Oil

Used lubricants contain harmful contaminants.

Here are precautions to protect your health when handling used oil:

1. Avoid prolonged, excessive or repeated skin contact with used oils.
2. Apply a barrier cream to the skin before handling used oil.
3. Note the following when removing oil from skin:
Wash your skin thoroughly with soap and water.
Using a nailbrush will help.
Use special hand cleaners to help clean dirty hands.
Never use petrol, diesel fuel, or paraffin for washing.
4. Avoid skin contact with oil soaked clothing.
5. Don't keep oily rags in pockets.
6. Wash dirty clothing before re-use.
7. Throw away oil-soaked shoes.

First Aid - Oil

Eyes

In the case of eye contact, flush with water for 15 minutes. If irritation persists, get medical attention.

Swallowing

If oil is swallowed do not induce vomiting. Get medical advice.

Skin

In the case of excessive skin contact, wash with soap and water.

Spillage

Absorb on sand or a locally approved brand of absorbent granules. Scrape up and remove to a chemical disposal area.

Fires

Extinguish with carbon dioxide, dry chemical or foam. Fire fighters should use self-contained breathing apparatus.

3. GENERAL INSPECTIONS

3.1. CLEANING CONTROL

- a. Clean windows, head lights and mirror.
- b. Clean and discharge dirt, grease and mud around joints, radiator, rams and rotating parts.
- c. Make sure that steps and handrails are clean and dry.
- d. Clean all safety plates and reflectors.

3.2. DAMAGE CONTROL

- a. Make a visual check all around the machine.
- b. Make sure that the clam shovel is in good condition.
- c. Check all rams and pivots.
- d. Make sure that there is no splitted windows. It may cause serious injuries.
- e. Check that there is no leakage.

3.3. TYRES CONTROL

- a. Check for correct tyre inflation.
- b. Check that there is no sharp material stuck into tyres and no damage. Do not use warned out and damaged tyres.

3.4. CONTROLS of ENGINE COVERS and FUEL FILLER CAP

- a. Keep the engine covers closed.
- b. Check the fuel filler cap close tightly and lock it.

18. GREASING

A periodical greasing is very important for the productivity and extended life of the machine.

After every hot washing, the machine must be greased.

The loader and backhoe equipment must be lowered and the machine must be in parking position while greasing.

Using a grease gun must make greasing. Dirty grease must be swept with a piece of clean rag.

18.1. GREASING POINTS on LOADER



Figure 3:
Grease Nipples Locations on the machine.



DO NOT GREASE the bushes made of rubber ,
that located into the bearings of vibrator arms.

5. OPERATING PD2 automatic

5.1.HOW IS PD2 Automatic ATTACHED TO THE TRACTOR?

PD2 Automatic is semi-hanging agricultural machine. It is operated with a tractor having three point joint system (categories 1 and 2).

Follow instructions given below to attach the machine;

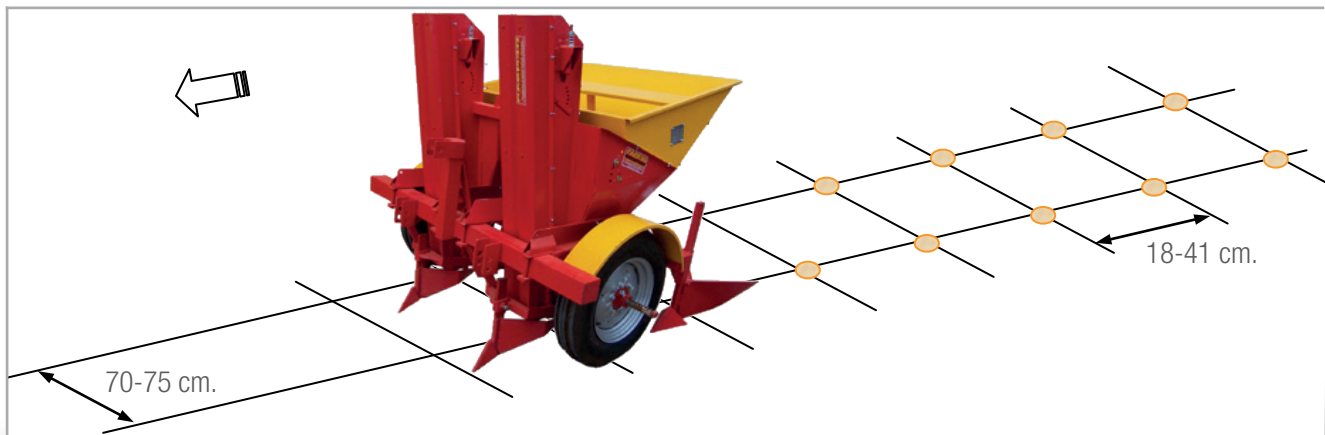
1. Approach to the machine with the tractor.
2. First fit the two side arms then fit the middle arm.
3. Adjust tension chains which fixed to the side arms.
4. Apply safety pins.

5.2. ADJUSTMENT OF DISTANCE BETWEEN TUBERS ON THE ROW

Due to profitable operation, some adjustments should be done before operating machine.

The most important adjustment is setting of distance between tubers on the row. PD2 automatic provides 8 different adjustable tuber distances that adjusted by replacing of transmission gears.

Distance between tubers will be steady as possible as it would. And it is free from driving speed because transmission system of machine takes the movement from side wheel.



Long distances are recommended for potato seed cultivation.

Figure 4. Distance Between Rows and Tuber Spaces.

PD2Automatic Tuber space is adjusted changing the chain between the chain-gears group mounted on drive axle and the chain-gear group mounted on axle of seed cups conveyors.

Chain Gears and no.of teeth		Tuber Space (cm)
Drive	Seed Cups	
D _{1z=14Tooths}	D _{2z=23Tooths}	25
	D _{4z=25Tooths}	23
	D _{5z=28Tooths}	21
	D _{6z=32Tooths}	18
D _{2z=23Tooths}	D _{2z=23Tooths}	41
	D _{4z=25Tooths}	38
	D _{5z=28Tooths}	34
	D _{6z=32Tooths}	30

Figure 5. Chain-Gear Groups used for tuber space adjustment.

5. OPERATING PD2 automatic

5.3. TRANSPORTING THE MACHINE

On road DO NOT operate the machine.

Keep the machine raised while roading.

Obey the traffic rules.

5.4. HOW IS PD2 RELEASED FROM THE TRACTOR AND PARKING?

Follow below instructions;

1. Lower the machine by using hydraulic control levers of the tractor.
2. Make sure that the machine will be parked on firm level ground.
3. Pull out the safety pins.
4. Release the middle joint arm.
5. Release the tension chains system.
6. Release the side arms.

For a long term parking, chose a closed area with firm level ground. This would protect the machine against outer effects and would extend life of the machine.

6. MAINTENANCE

PD2 SuperAutomatic requires low maintenance.

In the operation period;

1. After operating the machine for every two hours grease all nipples.
2. Keep the machine clear.
3. Clean and discharge dirt, grease and mud around joints and rotating parts.
4. Check for worned, loosed, old and broken parts. Change them if so.
5. Check for loosed studs, bolts, nuts, belts and other joints.

For a long term parking;

1. Paint scratched places.
2. Chose a closed area with firm level ground. These would protect the machine against outer effects and would extend life of the machine.

7. TROUBLESHOOTING

F.No.	Fault Description	Possible Cause	Suggestions
1	The machine does not plant seeds	<ul style="list-style-type: none"> - Plate between hopper and seed cups is closed - too large seeds - Mulfunction on the gear system - Mulfunction on the seed cups' conveyor 	<ul style="list-style-type: none"> - Check the plate between hopper and seed cups due to it is closed, if then make it open - Donot use seeds larger than 10cm - Check the gear system. <i>If the chain is damaged repair or renew it.</i> <i>Make sure that chain-gears on the drive axle turns.</i> <i>Make sure that chain tension system works properly.</i> - Make sure that conveyor runs properly
2	Irregular tuber spaces	<ul style="list-style-type: none"> - Unevenness field ground - Drive wheels do not runs on the ground - Damaged cups or jammed seeds - Mulfunction on the seed cups' conveyor system guiding parts 	<ul style="list-style-type: none"> - Slow down. - Adjust joint system of tractor to be able to run the wheels on the field ground. -Check if there is damaged cups or jammed seeds. - Check the guiding parts (made of delrin) Renew the gears if needed

8. WARRANTY

The manufacturer of the machine, **ALPLER Agricultural Machinery Industry, Aydın / TURKEY**, is responsible for supplying warranty for **1 (one) year**, that begins after the date getting the machine by the customer, against failures due to manufacturing mistakes.

Out of warranty,

Failures would be occurred because of operating machine out of its limits and making non-approved modifications will be out of warranty.

Consumption materials (rubber bushes, belts, blades) are out of warranty because they run out by usage terms.

Operating the machine out of operational & maintenance features indicated in this manual will be out of warranty.

Failure must be reported by an authorized service agency.



Exports to 70 countries
on 5 continents.

 **ALPLER**

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