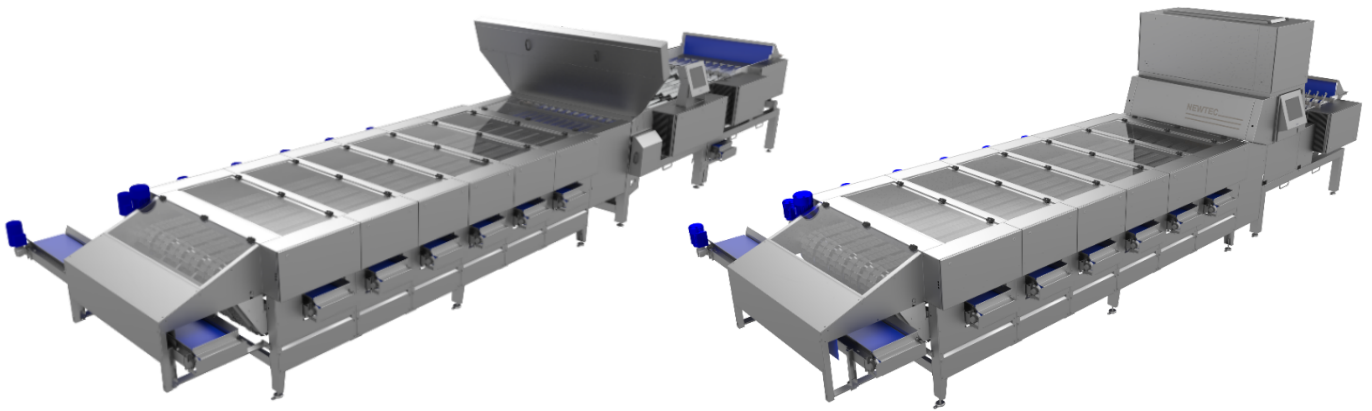


INTERNAL INFORMATION

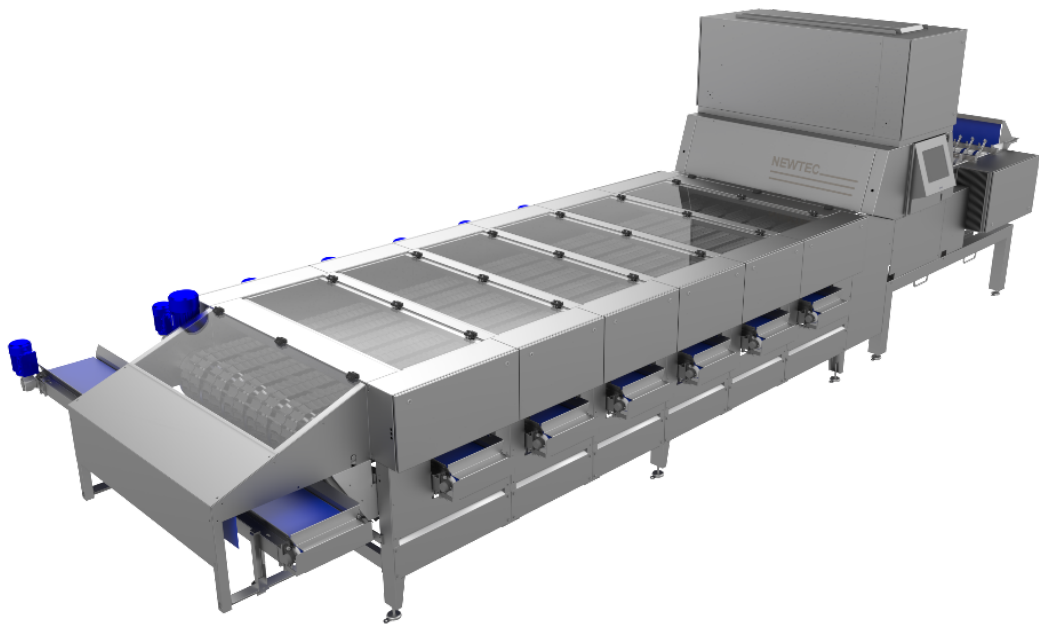
Upgrade Kits for Celox P-UHD and C-UHD



Overview

	Already standard on new machines	Will be standard on new machines (New pricelist will be released)	Available as an option	Available as an upgrade kit	The feature is expected to be available
Celox P-UHD					
UHD - Upgrade from XT to UHD	Yes	Yes	No	yes	Now
Dual lens	No	Yes	No	Yes	Q2 - 2023
New fingers	No	Yes	No	Yes	Q2 - 2023
New trigger boxes	No	Yes	No	Yes	Q2 - 2023
Signal tower	Yes	Yes	Yes	Yes	Now
Infrared Illumination	No				Q3 - 2023
Transmissive Illumination	No				Q3 - 2023
Newtec AI Vision Engine Gen. 3.0	No				Q3 - 2023
Celox C-UHD					
Light upgrade	Yes	Yes	No	Yes	Now
Infrared Illumination	Yes	Yes	No	No	Now
Infeed "tilt"	Yes	Yes	No	Yes	Now
Infeed "extra section"	No	Yes	Yes	Yes	Now
New trigger boxes	No	Yes	No	Yes	Q2 - 2023
New fingers	No	Yes	No	Yes	Q2 - 2023
Air-vent	Yes	Yes	No	Yes	Now
Signal tower	Yes	Yes	Yes	Yes	Now

Celox P-UHD Upgrade Kits



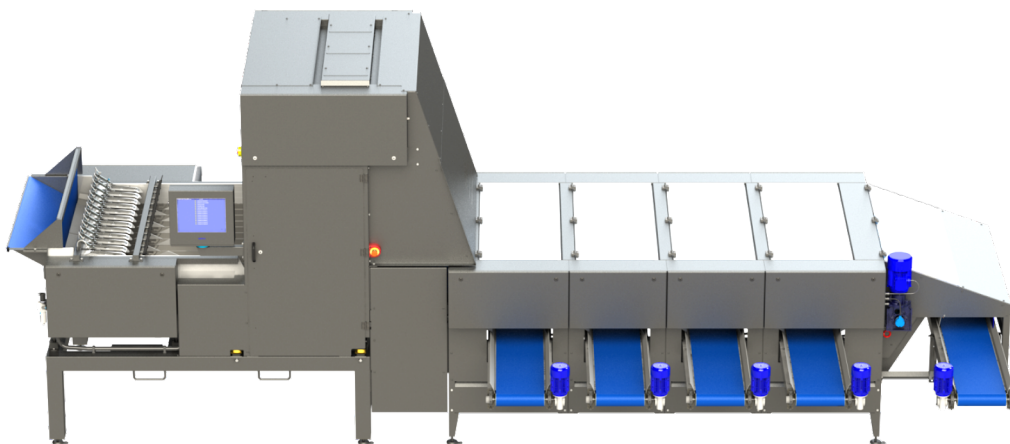
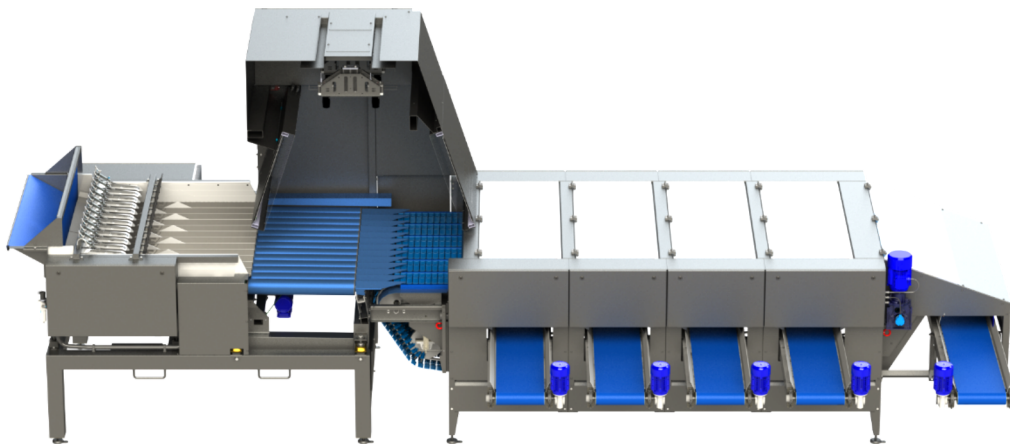
Dual Camera

Feature: New light chamber, cameras and fingers.

Advantages:

- Increased tracking area.
- Increased capacity.
- Higher grading accuracy.

NOTE: Spinaflex fingers need to be changed to new blue fingers.



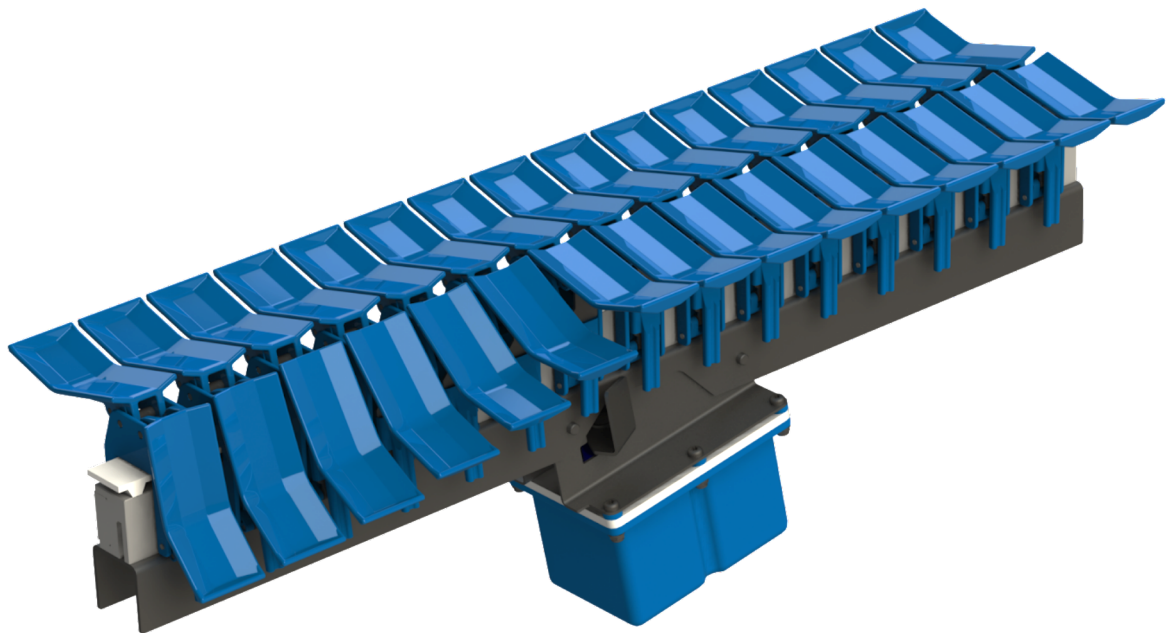
New fingers and trigger boxes

Redesigned and improved Spinaflex fingers

- New colour - Blue reflects light differently making it easier to differentiate products from the Spinaflex™ belt - **Essential with the new dual lens system.**
- Added edge on finger to prevent small potatoes from rolling off the finger.

New trigger box

- New improved design with step motors.
- min. IP 65 rating.
- Constant monitoring of performance and temperature.
- Feedback with warning on the screen if the trigger box is failing.



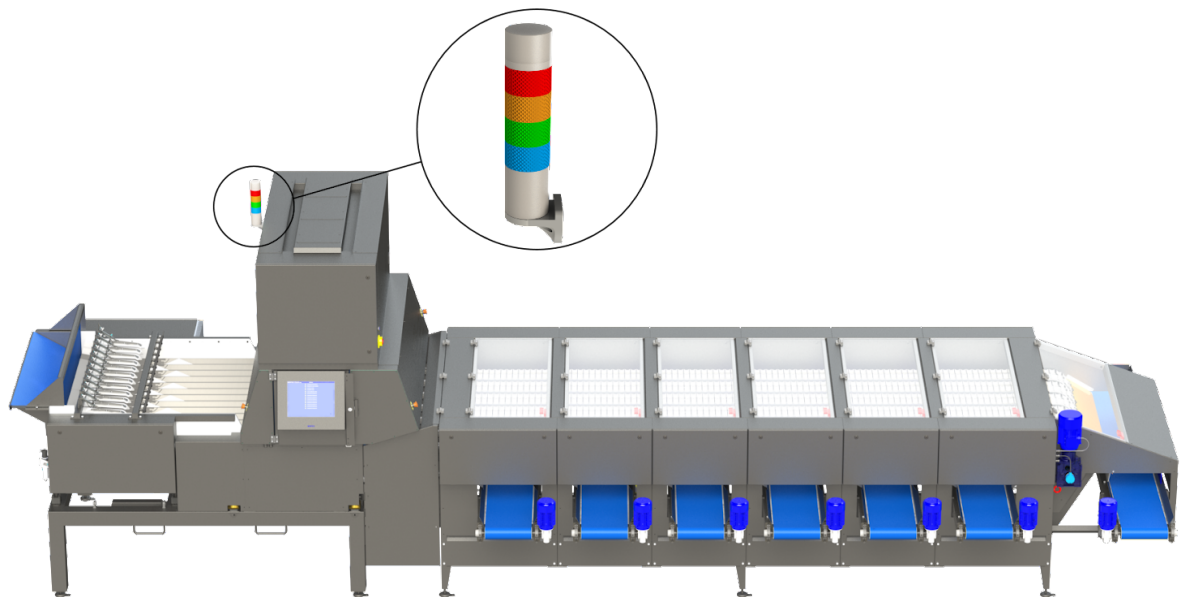
Signal tower

Feature: Signal tower to indicate the state of the machine.

Advantage: On top of the improved reliability in the **notification system***, it is optional to connect a signal tower to indicate the state of the machine enabling the operator to clearly see at a distance whether there are any acute problems that need urgent attention or whether everything is running smoothly.

***Notification system:**

Integration with the infeed system, and subscription-based alerts and actions.
The signal tower is integrated with the alarm system.



Signal colour	Meaning
Buzzer	Sounds for about 7 seconds prior to starting the machine's mechanical parts (this feature can be enabled/disabled)
Red (flashing)	Possible danger: <ul style="list-style-type: none"> Emergency stop triggered Motor-overload on Spinaflex-conveyor or outlet conveyor belts Possible jamming of Spinaflex-conveyor
Amber (solid)	Abnormal situations posing no danger: <ul style="list-style-type: none"> Non-critical warnings from the machine's internal alarm system. The machine can however continue production Uneven product filling Very low product speed on rollers (check roller-vibrators) Rollers may require cleaning Over-filling of machine
Amber (flashing)	Outlet conveyors are not running (CC Verification) Only applicable if conveyor belts are not controlled by the machine
Green (solid)	No action required <ul style="list-style-type: none"> The machine is running normally
Green (flashing)	No action required <ul style="list-style-type: none"> The machine is running normally, but with low filling of the infeed section. The machine can process products faster than they are currently fed into the machine
Blue (solid)	Machine requires operator intervention: <ul style="list-style-type: none"> Machine is stopped. Operator can start the machine Infeed section is stopped. Operator can start the infeed section
Blue (flashing) (In combination with green light)	External stop signal while running production: <ul style="list-style-type: none"> The infeed section has been stopped by an external signal while it was running. It will start again when the stop signal has been released.

From Celox XT to Celox P-UHD

Improvements of Newtec optical sorting machine (Celox P-UHD)

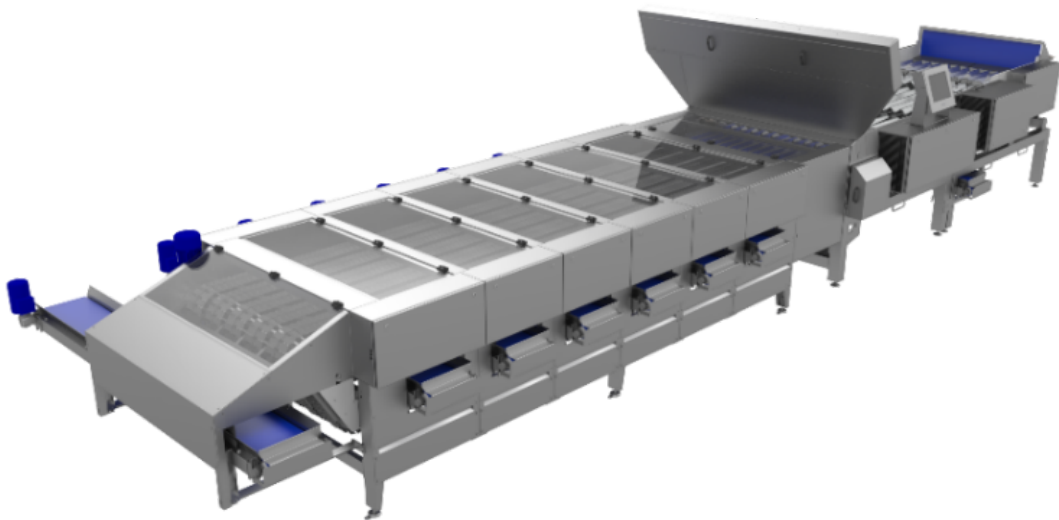
Essential changes to the Celox model, Celox P-UHD, compared to the XT-model

- Improved integration with the customer's production.
- Improved optical resolution (1 pixel = 1mm² -> 1 pixel = 0.16mm²). We can detect smaller flaws/spots.
- Improved color-dynamics in cameras. Flaws can more easily be distinguished.
- Better light sources (LED-lights) with better color-dynamics. Flaws can more easily be distinguished.
- Longer lifespan of LED-lights. Less maintenance.
- LED-lights are more consistent over time, meaning they do not change color as much as fluorescent lamps.
- Less power consumption with LED-lights. Less energy consumption and less generation of heat.
- Better distribution of lights, meaning all lanes are more uniform in regard to cassation-percentages.
- Removal of the detector plates in the light-box (less cleaning and less prone to errors)
- The lights are automatically focused on the potatoes rather than the detector plates, giving a more dynamic and precise setting of light, which is done automatically without user action.
- Better defect-filters can be created due to better lighting.
- Significantly improved measurement of spots (could vary approximately 1000 % on the XT, whilst only approximately 200-300 % on the UHD) which gives more consistent results.
- Improved size-measuring (within approximately 1mm)
- Requires less cleaning: The advanced data processing makes the machine more robust to loose skin from the potatoes.
- Operating is made easier due to simplifications and improved assisting functions in the software.
- Lane surveillance: Notification system indicating dirt and vibration problems.
- Biannual software upgrades available for download

Above-mentioned improvements of camera functions, LED-lights as well as the platform itself result in a lower margin of error. The improved platform is continuously being developed, and biannual software releases are available for download directly from the machines.

Please note that the capacity of the machine is not changed.

Celox C-UHD Upgrade Kits



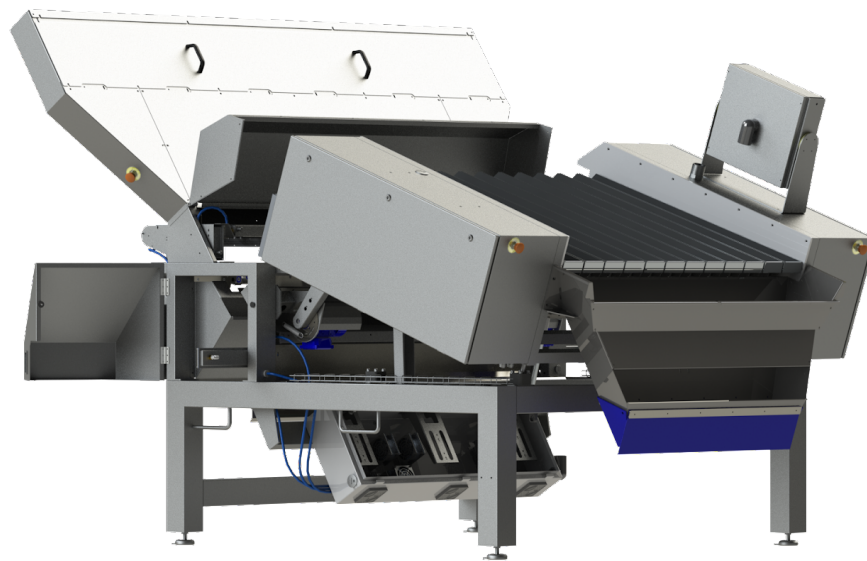
Ventilation of LED light bars

Feature: Ventilation system for the LED light bars.

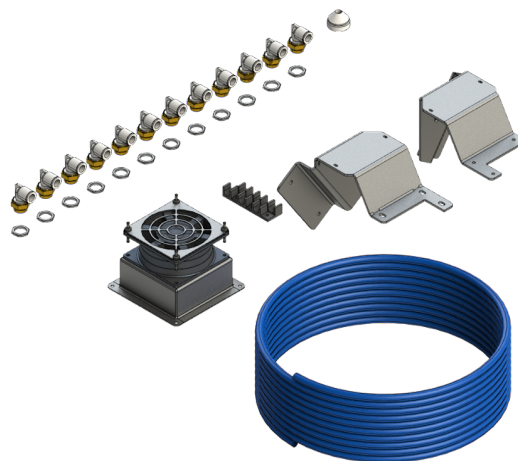
Advantage:

- Reduced moist condensation inside of the light bars.
- Improved light intensity and expected LED lifetime.

See the drawing/manual no. 469750 B in my.newtec.com.



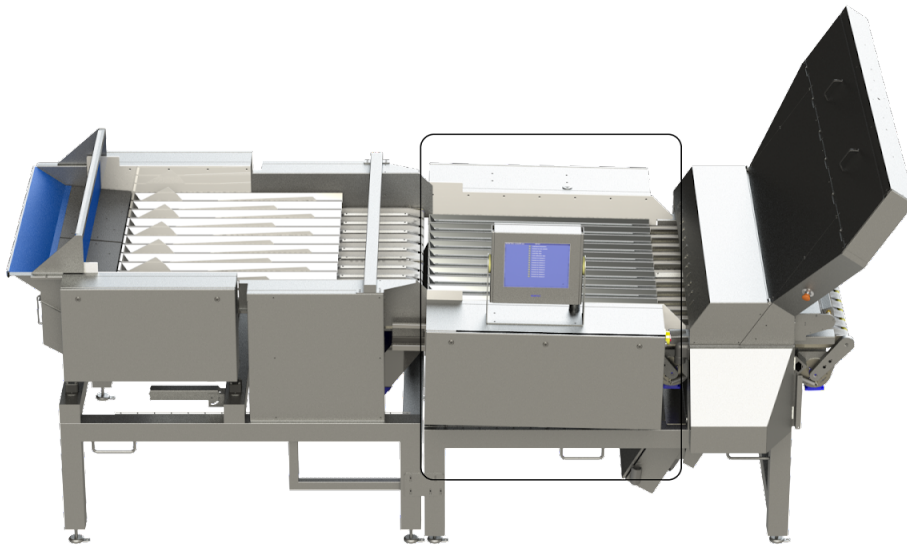
To carry out the upgrade, you need:



Tilted infeed

Feature: Tilted camera section infeed with specific incline.

Advantage: Improved capacity and product flow with better product singulation.



See the drawing/manual no. 467415_A in my newtec.com.

To carry out the upgrade, you need:



New improved infeed

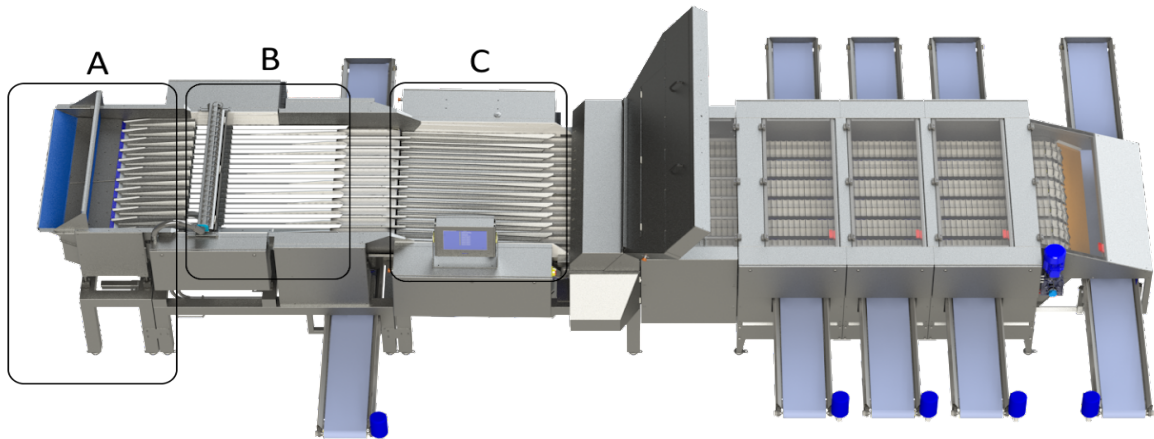
Feature: Extra infeed section and optimized chute design.

Advantage:

- Increased capacity.
- Reduced number of doubles.
- Optimized product flow.

To carry out the upgrade, the following is needed:

- A) New vibrator section with 12 channels
- B) New W-shaped vibrator chutes incl. photocell beam with 24 photocells
- C) New re-designed super-chutes



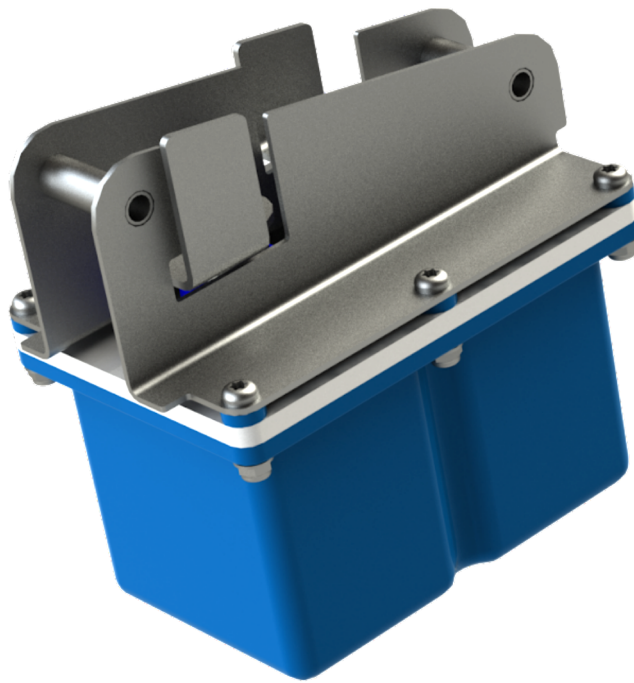
NOTE: Additional space of 500mm required on some machine models!

New trigger boxes

Feature: New improved design with step motors.

Advantage:

- New improved design with step motors.
- Min. IP 65 rating.
- Constant monitoring of performance and temperature.
- Feedback with warning on the screen if the trigger box is failing.



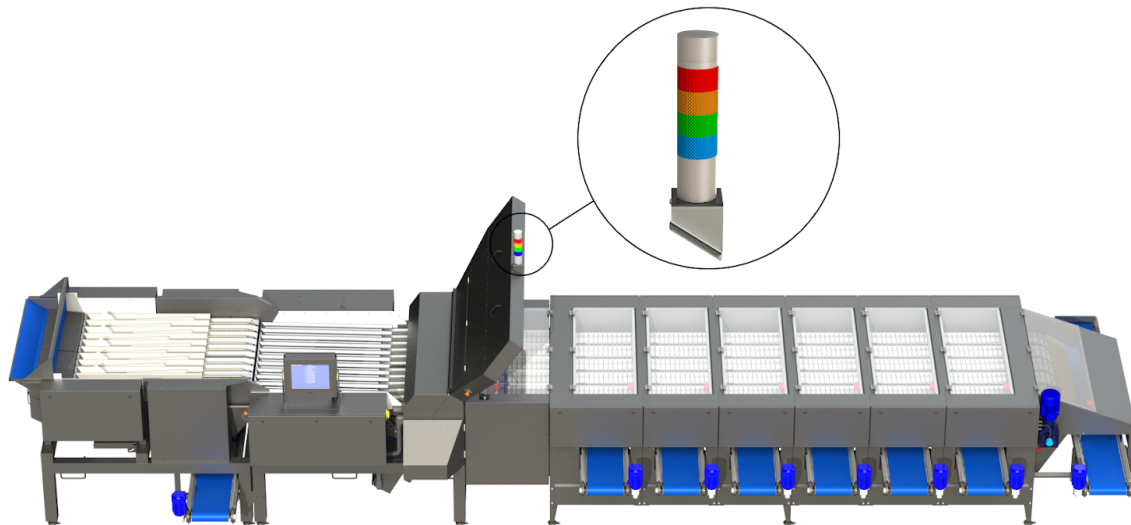
Signal tower

Feature: Signal tower to indicate the state of the machine.

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Amber (solid)	Abnormal situations posing no danger: <ul style="list-style-type: none"> • Non-critical warnings from the machine's internal alarm system. The machine can however continue production • Uneven product filling • Very low product speed on rollers (check roller-vibrators) • Rollers may require cleaning • Over-filling of machine
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Blue (flashing) (In combination with green light)	External stop signal while running production: <ul style="list-style-type: none"> • The infeed section has been stopped by an external signal while it was running. It will start again when the stop signal has been released.

Improved lighting

Feature: Improved light fixtures and optimization of their placement.

Advantage:

- More homogeneous light distribution across all lanes in turn improving the grading result and its consistency.
- Optimized position of the light bars drastically easing the daily maintenance during production as it is less prone to catching debris from the belts.
- Improved light allowing for better analysis of the end and crown areas of the carrots. There are many new filters addressing crown rot and end defects.
- Improved reliability in the notification system and possibility of connecting a light tower to indicate the state of the machine.

