TABLE OF CONTENTS

0.0: REVISIONS NOTICES

Coming soon:

- Recipe manager for KLR.5051-AB to be done.
- Download program for stepper motor for KLR.5051-AB.

2024-03-07: 13.5 bottom scoop frame updated parts

2023-12-20: Updated Exploded view to include KR-STEPPER (x6). Updated the wiring of these motor 9.3.1

2023-07-27: Reworked on 9.3: Stepper motor assembly for KLR.5051 (shneiders):

- Location on the bagger
- DIP switches update according to UIM240 and UIM340 drives.

2023-04-20:

Fixed these following exploded views:

- 13.3 Infeed tunnel
- 13.3.1: Added option aligner.
- 13.4 Infeed conveyor: some parts was difficult to see on printed version (added 13.4.1 – 4)
- 13.8.1: Added nitrogen nozzle.
- 13.14.1 Added bag table belt section assembly details.
- 13.14.2 Added blower assist.
- 13.18.1: Added option starter blower.
- 13.21: Added safety guard options.
- 13.15 Added new sensor bracket.

Added 9.2.6 adjusting safety light curtain.

2022-11-25: Exploded views added. Spare parts list updated.

2022-08-24: Deep switches resolution setting for KLR.5051 (9.4.2) is now explained in more details.

2022-08-23: Clarified the wiring part of integrated stepper motor 9.4 and 9.5.

2022-07-05: Added normal wiring and on bench test for Lexium Mdrive stepper motor (9.3.2 and 9.3.2.1). Added LED indicators description (9.3.3)

2022-06-16: Mdrive motor download procedure for KLR.5051-AB (in progress)

2022-04-22: Parameters for the KLR.5051-AB

2022-04-21: New 6.2 maintenance step version. Completion of the 7.0 KLR.5051-SPARE-AB. KLR.5051-SPARE still need to be address.

2022-03-21: Initial version of the 6.0 maintenance.

2022-02-22: Initial version of the 2.0 identification, 3.0 product specification, 4.0 operation and 5.0 recipe setting page.

1.0: SAFETY PRECAUTIONS

⚠ CAUTION

- The Flat bread bagger is covered with a safety door. For any interventions during functioning of the machine regarding to product jam, material disfunction, cleaning, etc: operator must open the door to stop the machine assuring maximum safety and minimizing risk;
- The equipment described in this manual designed and manufactured to the highest KLR standards. Special attention made to ensure that the operation of the machine is safe and convenient;
- Even with the safety cover opened or closed, keep hands away from the working machine. Go against this notice can result in a severe injury or death;
- Always use two (2) lockout devices, one on the supply and one on the air supply when performing any maintenance or cleaning;
- If the system is linked to another machine or install onto another machine. Lock the electrical box of the other machines before performing any maintenance on this equipment. Please refer to the local regulations and laws on locking out machinery;
- When working in the electrical box. Disconnect the equipment at the source and use a lockout device to avoid any risk of danger. Make sure you also have the space required to complete the work to avoid any risk of danger.
- Any modifications with any aspect of the mechanical, safety, electrical design, design, or any parts connected with the equipment will void the warranty and liability of KLR Systems. If a change is required, you should contact KLR Systems for approval. All technical handling must be done by a qualified technician or by KLR Systems;
- KLR is not responsible for any abuse, mishandling, misuse, improper maintenance and repair by owners and users;
- Equipment must be supervised when operating;

⚠ CAUTION

- This machine designed to be as safe as possible. Danger areas have been enclosed with guards and doors for better protection;
- Safety switches: DO NOT bypass any safety components for any reason. Violation will void all guaranties and responsibility from KLR Systems. If a safety switch is broken, the machine will not start, but the safety switch must be replaced before starting the machine;
- Safety panel (fix panel) or safety doors: As a safety, component does not try to remove or unscrew them unless it is necessary for a maintenance operation. If it is the only option, use a lockout device during this procedure and reassemble every single parts as it was when finished.
- When closing the safety door, careful about the pinch points. Make sure nobody's hands or fingers are in the way;
- When the air supply is OFF and it is required in a maintenance to move manually the bag table in order to access something. When the maintenance is over, DO NOT put the pressure back if the machine is in ready state. ALWAYS push the emergency button before putting the pressure on the machine. Go against this notice can result in equipment damage;
- When the air pressure is turned ON, the bag table may move promptly depending of what position is the bag table valve. To avoid this problem, unscrew the air regulator until it reaches 0 pressure before Turning ON the main air pressure, Then crank slowly the air supply regulator back to 80 PSI . Go against this notice can result in a severe injury or death.

2.0: IDENTIFICATION

2.1: Product brand and type designation:

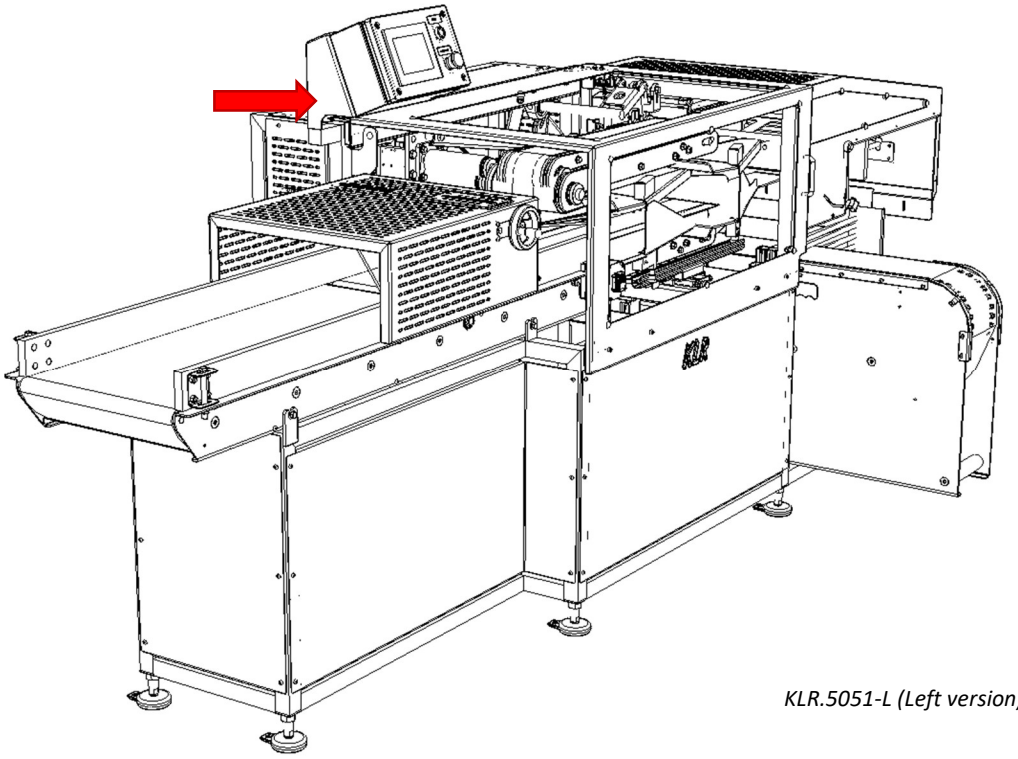
Automatic Flat Bread Bagger

Models:

- KLR.5051 (Schneider)
- KLR.5051-AB (Allen Bradley)

Serial number and specification location:

On the support of the touch screen.



KLR.5051-L (Left version) picture 2A

2.2: Name and manufacturer contact:

KLR SYSTEMS INC. Packaging systems manufacturer

Address: 944 rue des Hérons,

City, province, Country: Saint-Pie, Québec, Canada

Zip code: J0H 1W0

Phone: 450-388-0404

Web site: http://klrsystems.com/

Technical support Email: support@klrsystems.com

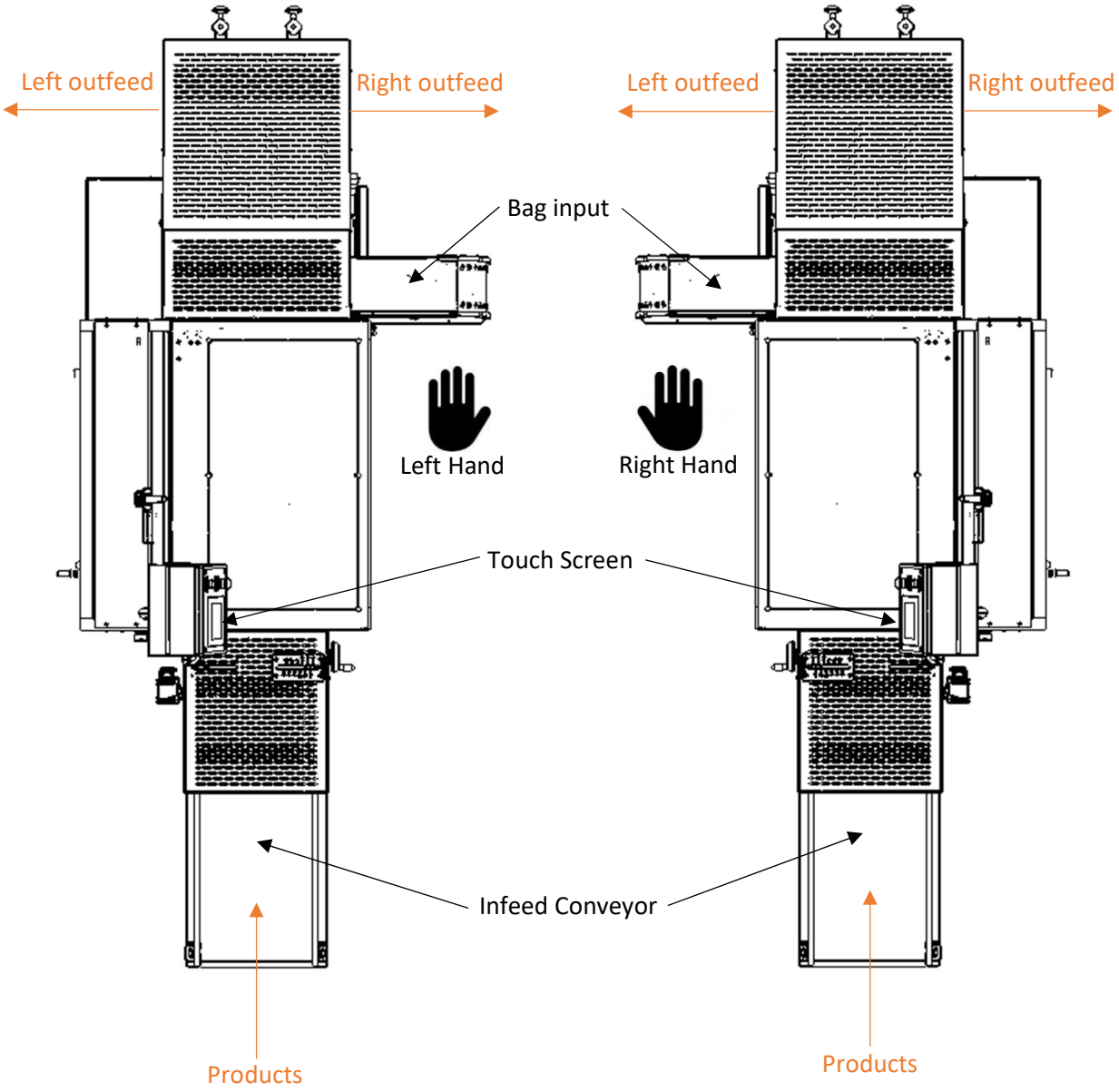
For other information: info@klrsystems.com

3.0: PRODUCT SPECIFICATION

3.1: Right or left version

Standing on the operator side of the machine (able to work with the touch screen) and looking toward the direction of products. The hand closer to the machine tells what version (right or left).

KLR.5051 (Basic)



picture 3A

3.2: General functions intended use:

Equipment designed to bag flat bread.

3.3: Dimensions for transport

Stand alone (without outfeed conveyor)

Height: 55"

Length: 132"

Width: 57"

3.4: Power data – Electricity and Pneumatic

3.4.1: Electricity data

See serial number specification for specific voltage since KLR offer different voltage options.

3.4.2: Pneumatic data

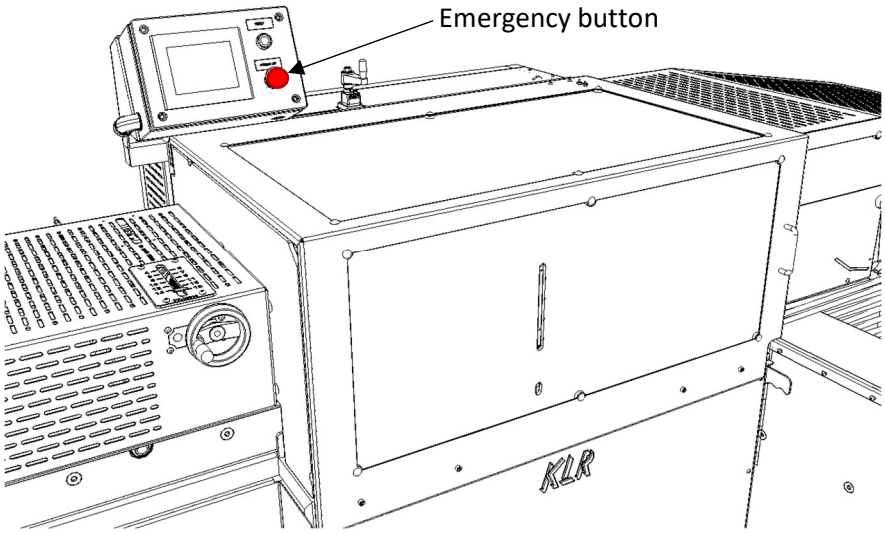
Flow: 5 CFM

Pressure: 80 PSI

3.5: Safety specification

3.5.1: Emergency button

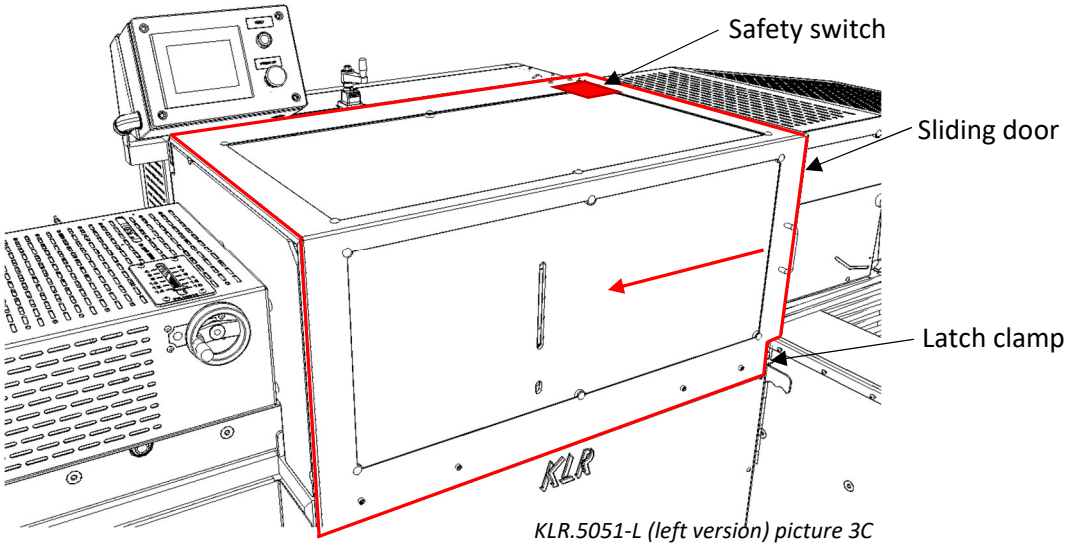
Pressing the emergency stop everything in the machine instantly. It requires a second action to reset the machine when pulled off.



KLR.5051-L (left version) picture 3B

3.5.2: Sliding door

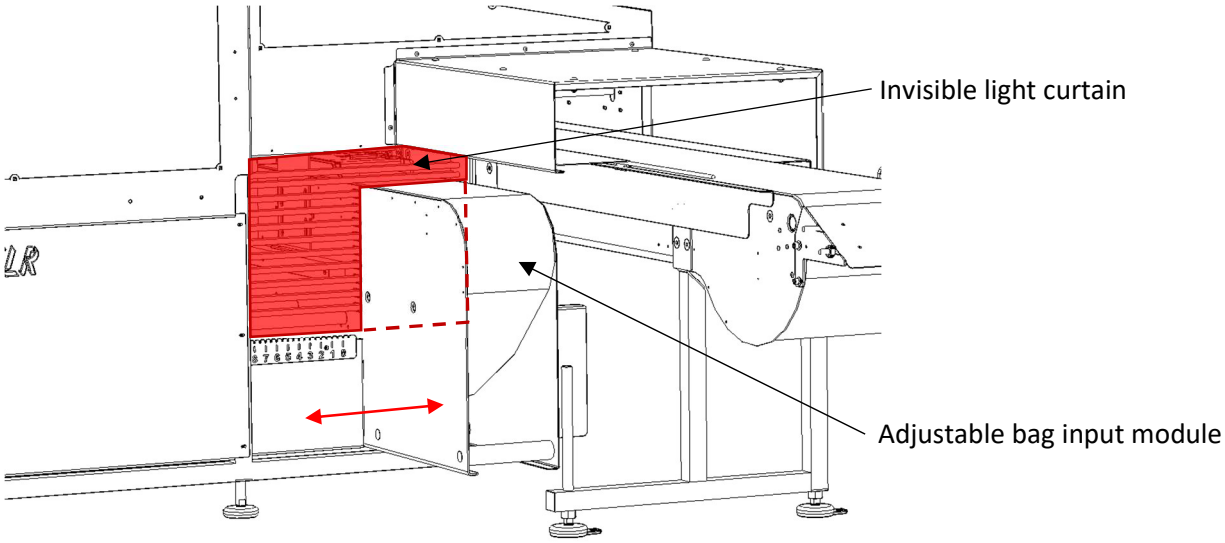
Open the sliding door during operation stop instantly all moving mechanisms including conveyors. A latch clamp prevents the door from opening unintentionally.



KLR.5051-L (left version) picture 3C

3.5.3: Safety light curtain

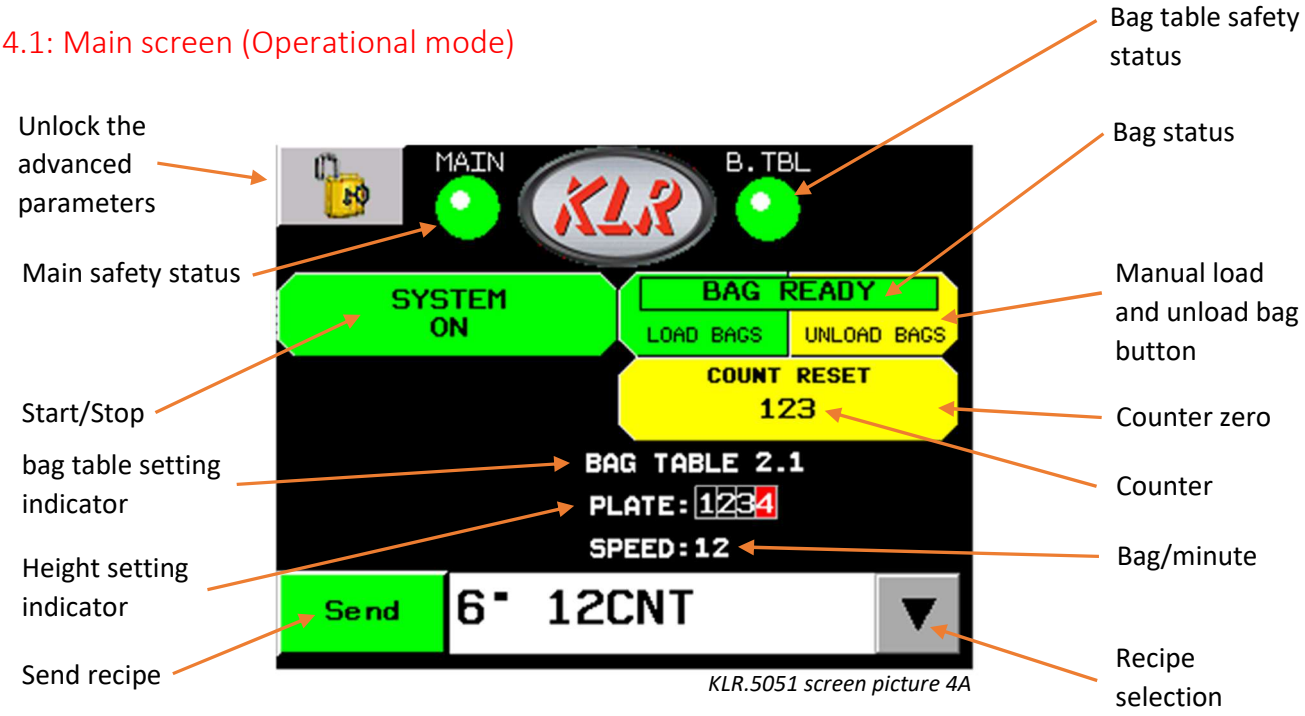
Since the bag input module is adjustable from front to rear, it creates a gap. If operator passing his hand thought the gap, the light curtain stops instantly the moving parts inside the machine. However, the conveyors do not stop because it does not represent a danger in that case.



KLR.5051-L (left version) picture 3D

4.0: OPERATION KLR.5051

4.1: Main screen (Operational mode)



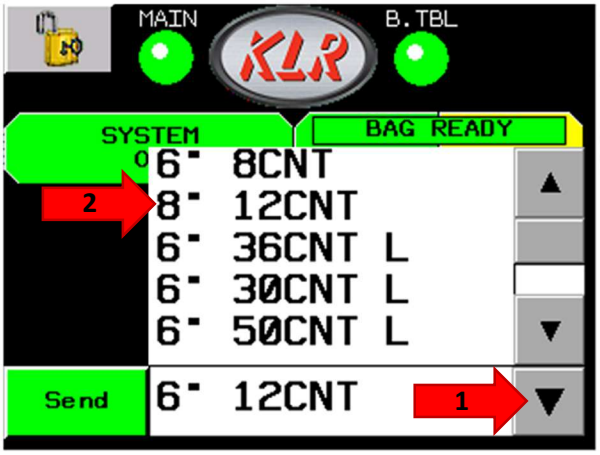
KLR.5051 screen picture 4A

Once the power turned ON, the machine and the main page appears, follow these steps to start the bagger (refer to the "Procedure for startup" section for more information):

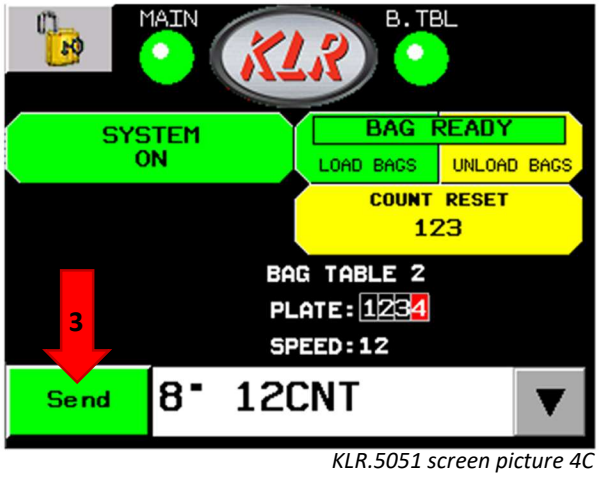
4.2: Procedure for start up

4.2.1: Choosing recipes

Press the recipe selector (1). Select the desired product to bag (2), then press SEND (3).



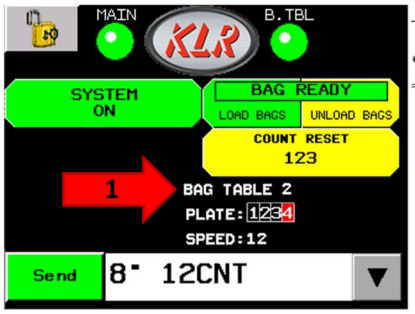
KLR.5051 screen picture 4B



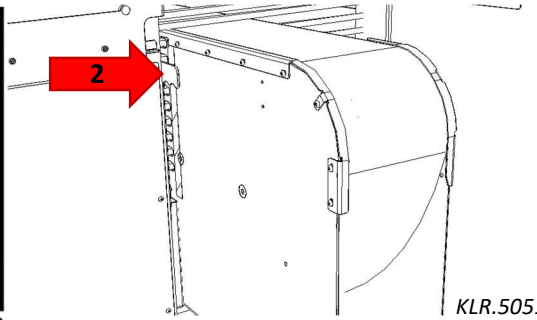
KLR.5051 screen picture 4C

4.2.2: Bag table adjustment

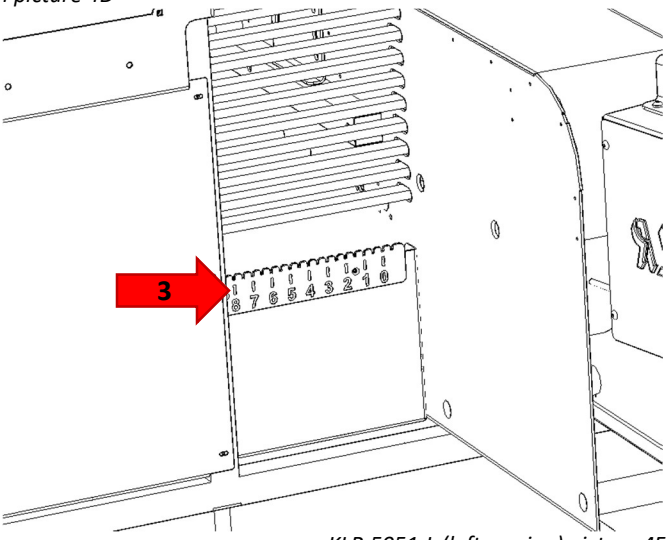
It is important to select the recipe first. See "Choosing recipe". Look at the value for BAG TABLE measurement on the display (1), Pull up the bag table latch (2) and adjust according to the measure (3). Secure with the bag table latch.



KLR.5051 screen picture 4D



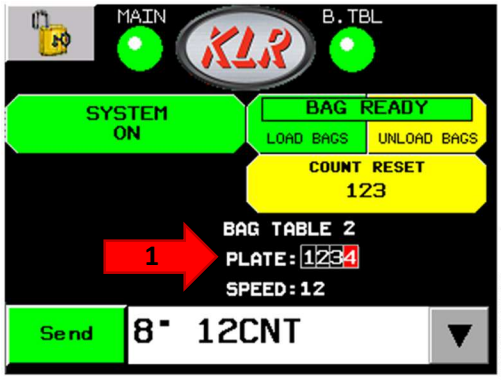
KLR.5051-L (left version) picture 4E



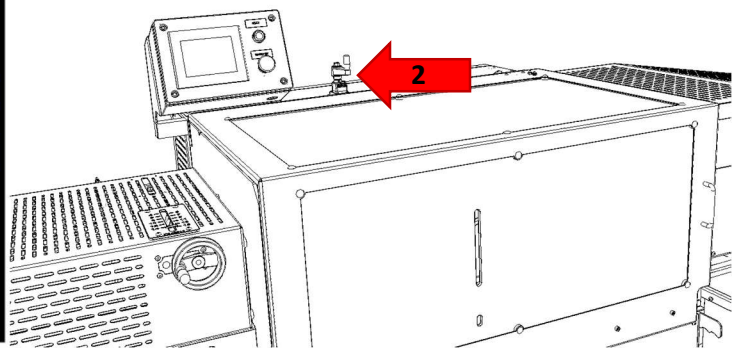
KLR.5051-L (left version) picture 4F

4.2.3: Plate height adjustment

It is important to select the recipe first. See "Choosing recipe". Look at the PLATE setting (1) and adjust the top crank according to the value on the display (2).



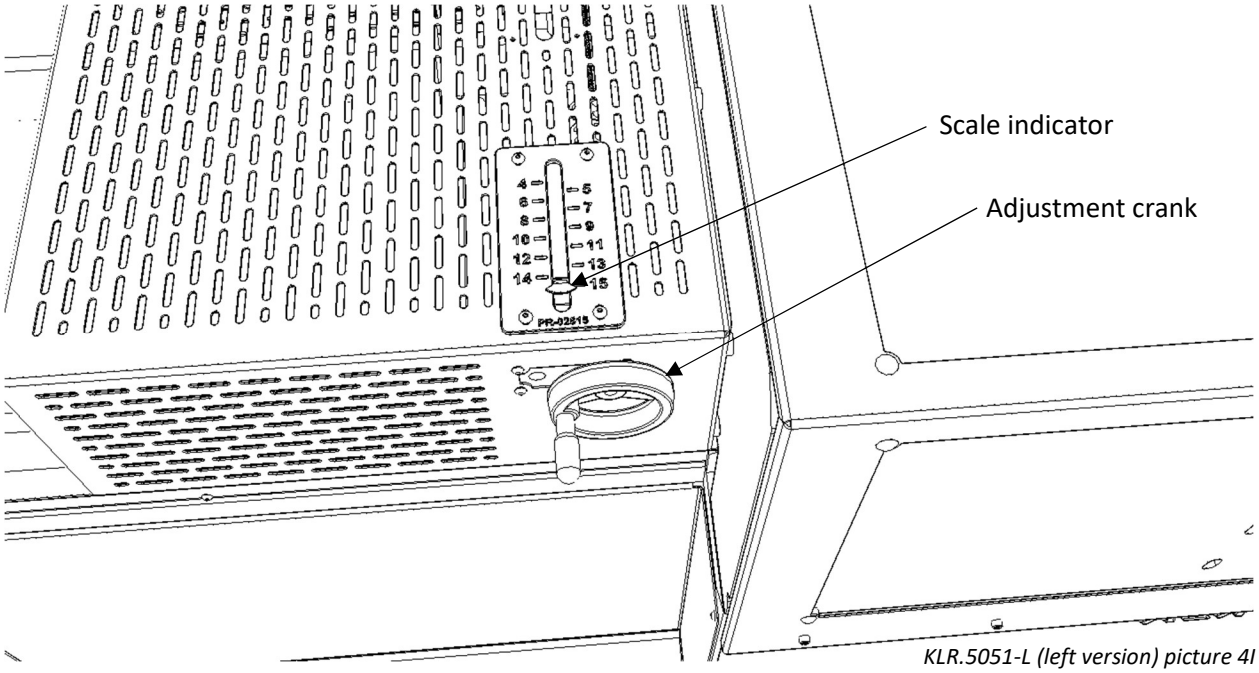
KLR.5051 screen picture 4G



KLR.5051-L (left version) picture 4H

4.2.4: Infeed guides adjustment

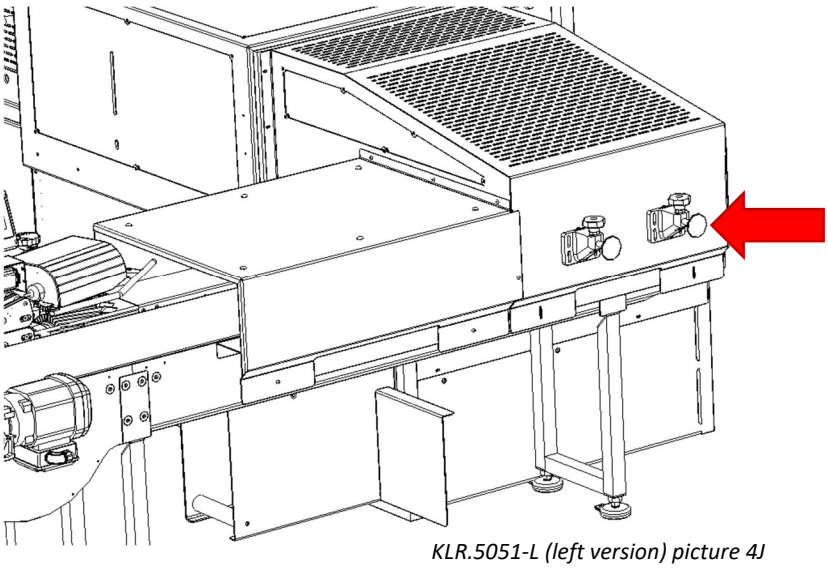
The numbers on the scale are in inches. Adjust a little bit bigger to the product size.



KLR.5051-L (left version) picture 4I

4.2.5: Outfeed guides adjustment

Adjust the back gauge on the outfeed conveyor so the products sit on the belt as close as possible to the bag closing machine without shifting on the side. If needed, fine tune on production.



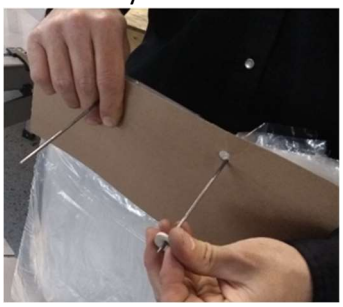
KLR.5051-L (left version) picture 4J

4.2.6: filling bag

When there is no bag, the bag status will show NO BAG.

KLR.5051 screen picture 4K

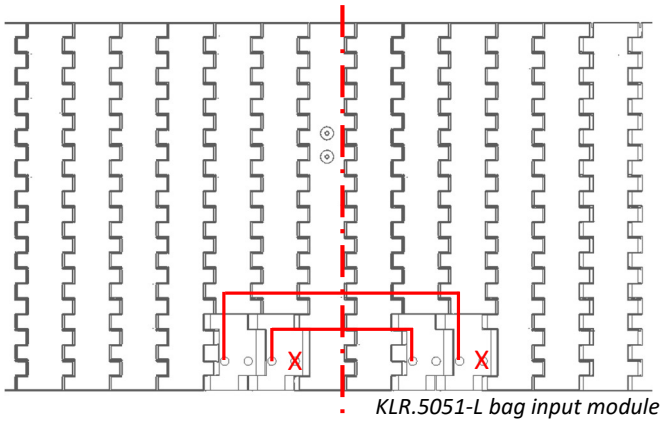
1. Remove any cardboard and rubber retainer from the bag stack.



Bag picture 4L

Bag picture 4M

2. Insert wicket tips into intended holes of the bag input belt. Flatten the bags and verify under the stack for good placement. The following drawing is for a left version, A right version is a mirror of this.

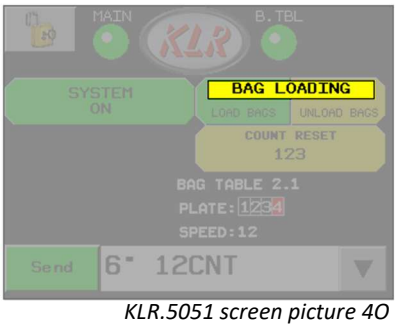


Theoretical center

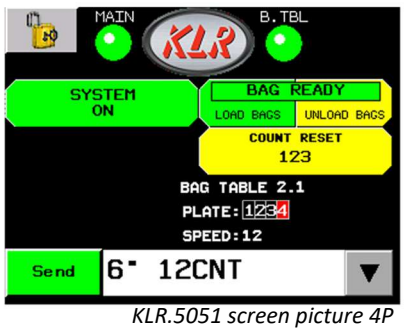
X Never used

KLR.5051-L bag input module picture 4N

3. Press LOAD BAGS.



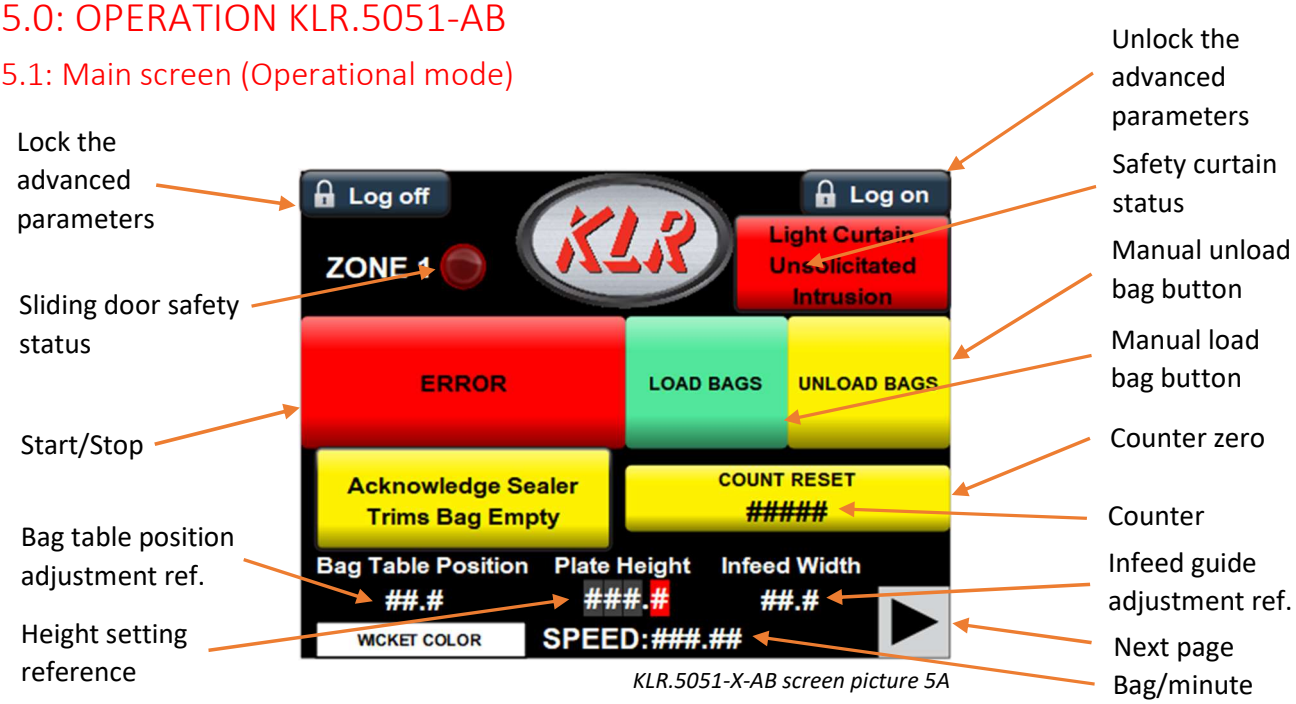
KLR.5051 screen picture 4O



KLR.5051 screen picture 4P

5.0: OPERATION KLR.5051-AB

5.1: Main screen (Operational mode)



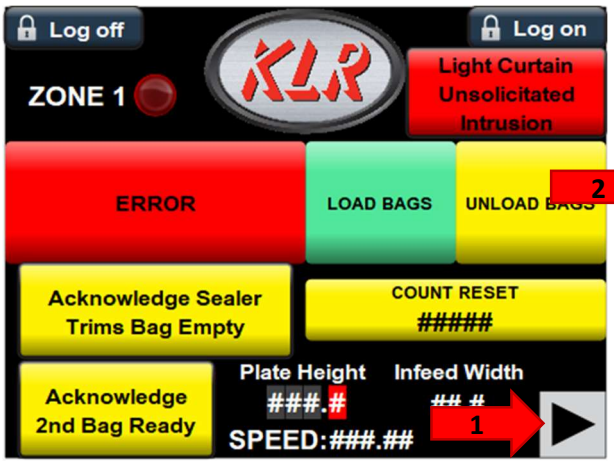
KLR.5051-X-AB screen picture 5A

Once the power turned ON, the machine and the main page appears, follow these steps to start the bagger (refer to the "Procedure for startup" section for more information):

5.2: Procedure for start up

5.2.1: Choosing recipes

Press next page to get to the recipe selector (1). Select the desired product to bag (2). Press SEND (3). Press left arrow (4) to get back to main screen.

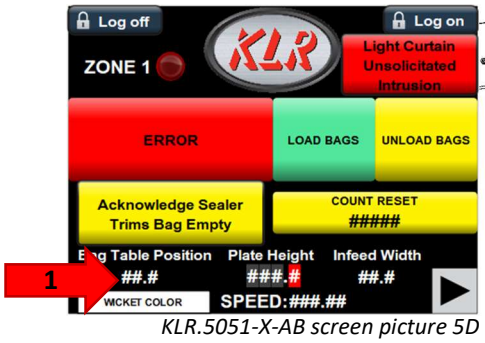


KLR.5051-X-AB screen picture 5B

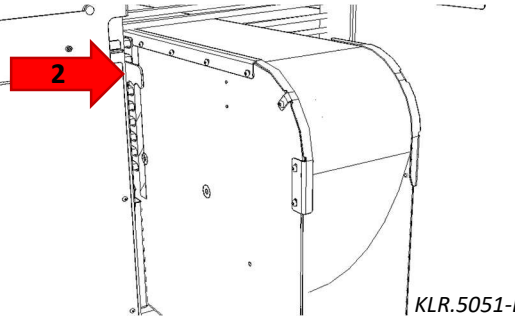
KLR.5051-X-AB screen picture 5C

5.2.2: Bag table adjustment

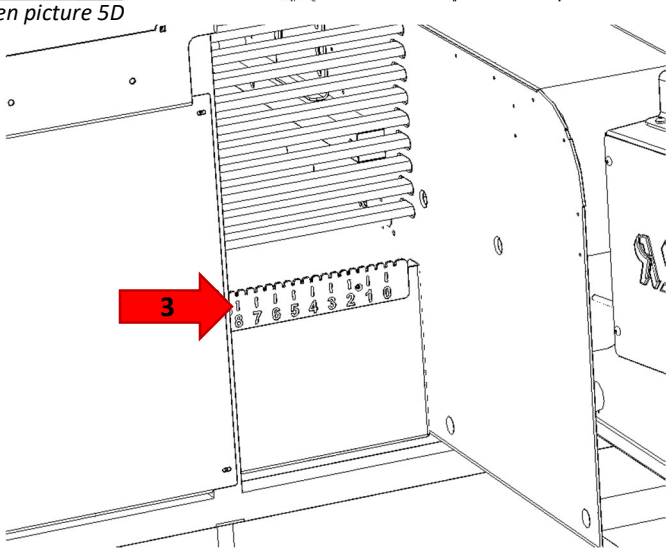
It is important to select the recipe first. See "Choosing recipe". Look at the value for BAG TABLE measurement on the display (1), Pull up the bag table latch (2) and adjust according to the measure (3). Secure with the bag table latch.



KLR.5051-X-AB screen picture 5D



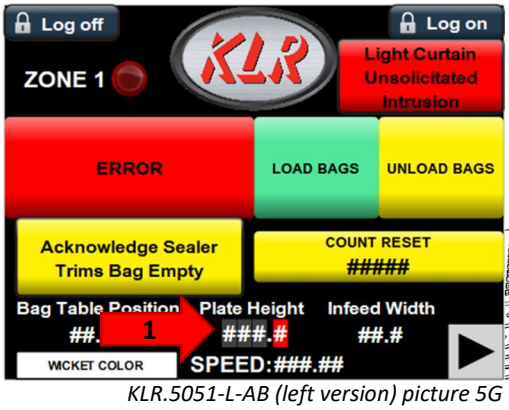
KLR.5051-L-AB (left version) picture 5E



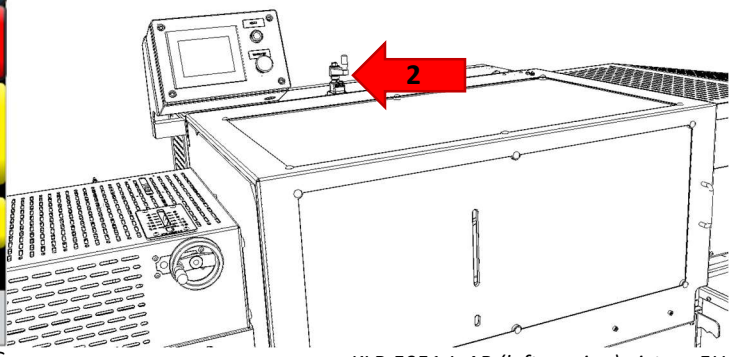
KLR.5051-L-AB (left version) picture 5F

5.2.3: Plate height adjustment

It is important to select the recipe first. See "Choosing recipe". Look at the PLATE setting (1) and adjust the top crank according to the value on the display (2).



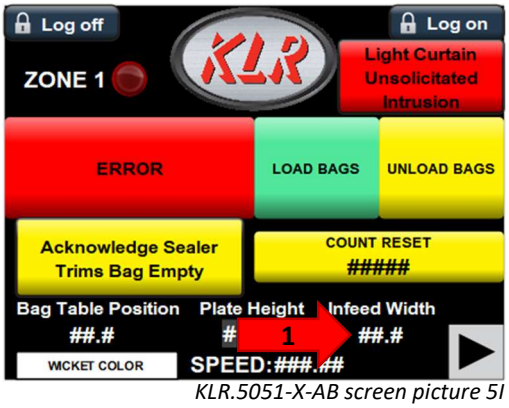
KLR.5051-L-AB (left version) picture 5G



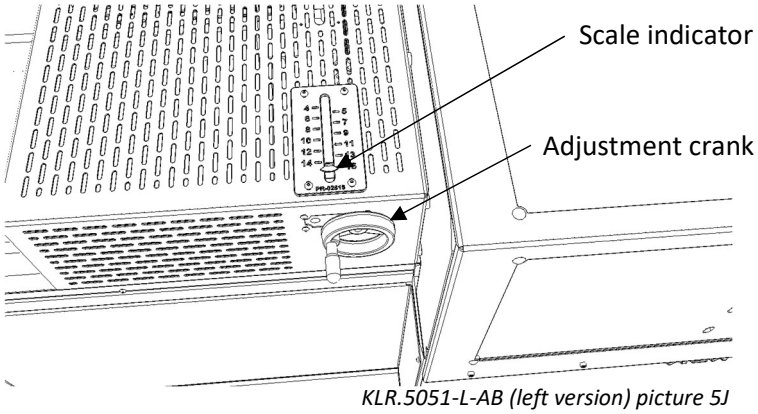
KLR.5051-L-AB (left version) picture 5H

5.2.4: Infeed guides adjustment

The numbers on the scale are in inches. Adjust according to the reference (1) with the adjustment crank (2).



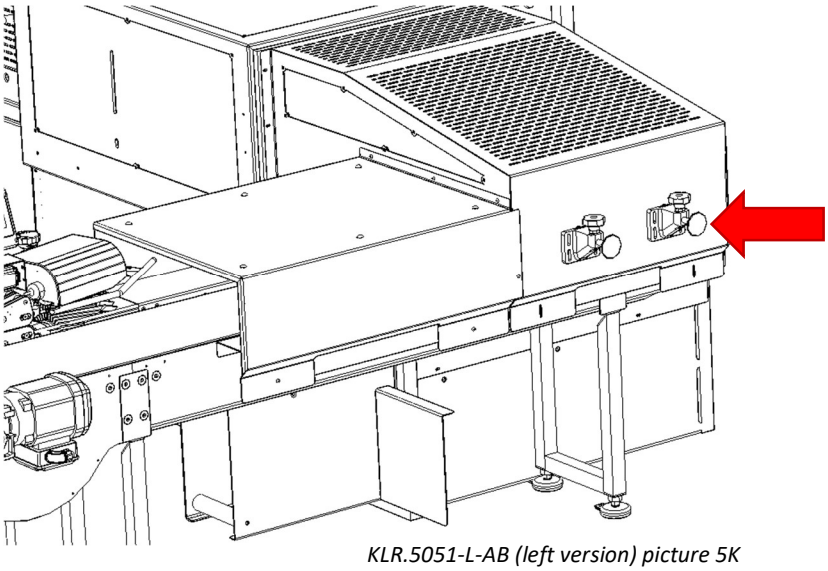
KLR.5051-X-AB screen picture 5I



KLR.5051-L-AB (left version) picture 5J

5.2.5: Outfeed guides adjustment

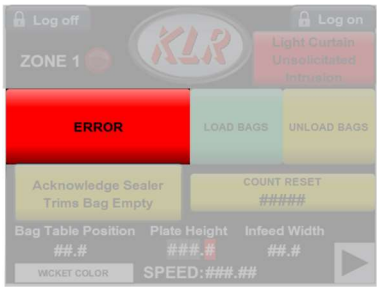
Adjust the back gauge on the outfeed conveyor so the products sit on the belt as close as possible to the bag closing machine without shifting on the side. If needed, fine tune on production.



KLR.5051-L-AB (left version) picture 5K

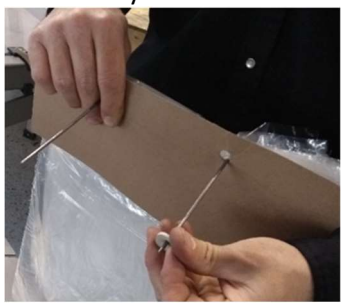
5.2.6: filling bag

When there is no bag, the bag status will show NO BAG.



KLR.5051-X-AB screen picture 5M

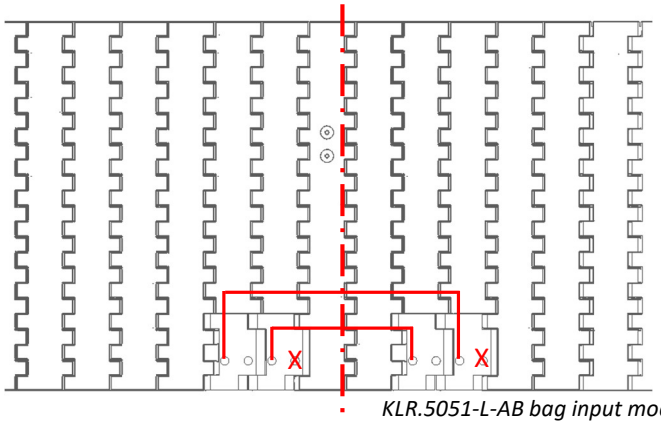
1. Remove any cardboard and rubber retainer from the bag stack.



Bag picture 5O

Bag picture 5P

2. Insert wicket tips into intended holes of the bag input belt. Flatten the bags and verify under the stack for good placement. The following drawing is for a left version, A right version is a mirror of this.

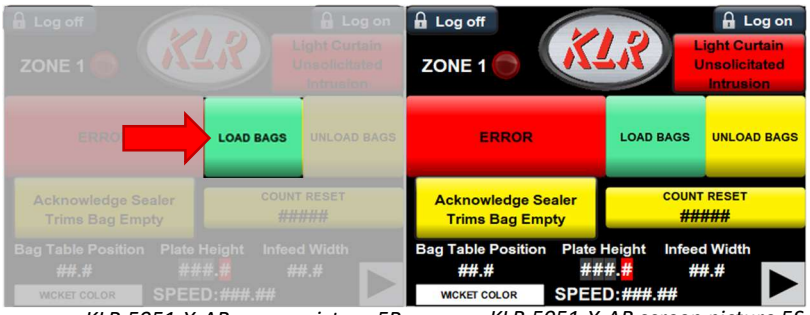


Theoretical center

X Never used

KLR.5051-L-AB bag input module picture 5Q

3. Press LOAD BAGS.

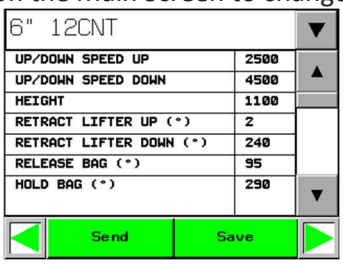


KLR.5051-X-AB screen picture 5R *KLR.5051-X-AB screen picture 5S*

6.0: RECIPE SETTING PAGE KLR.5051

> ⚠
>
> - It is possible to adjust parameters to the point of a malfunction of the packaging machine. Exercise caution when making parameter changes and make changes in small increments. See recipe manager (next page) to save your recipe and be able to keep track of your changes.

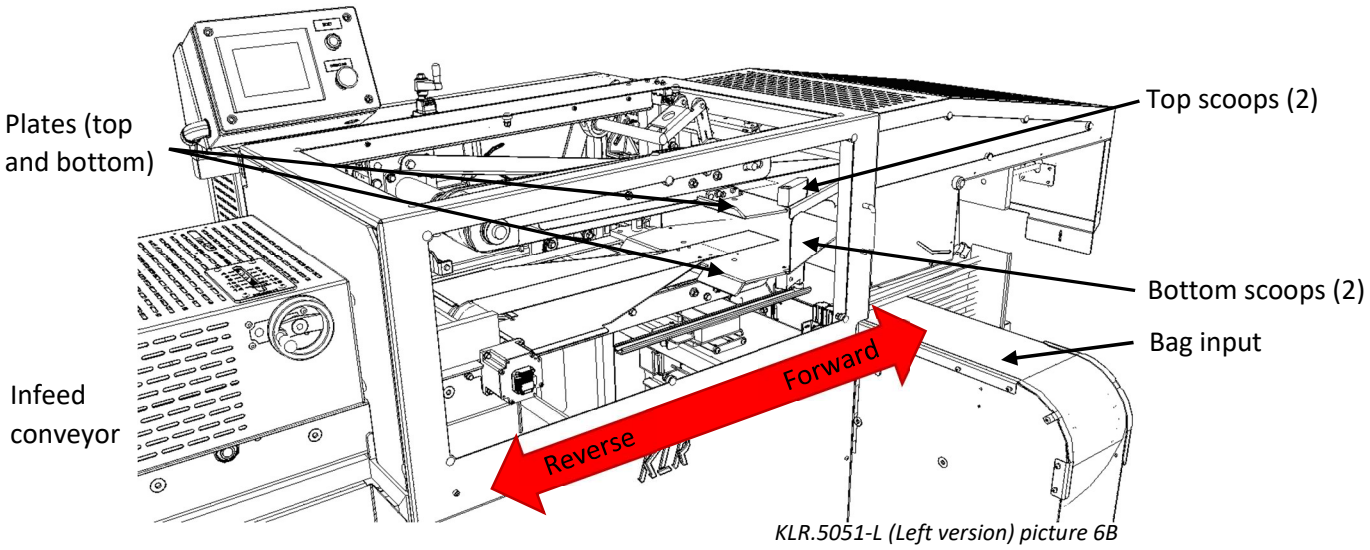
Advanced Settings must be unlocked on the Main Screen to change recipe parameters.



KLR.5051 screen picture 6A

6.1: Definitions of functions and acronyms

This figure below will be used to describe couple next parameters. Keep in mind that picture features a full options machine. General parts remain the same concept through all the machines. With parameters that only available with certain options will not be visible from the display. In this document, all parameters are explained in the same order of the touch screen.



KLR.5051-L (Left version) picture 6B

6.1.2: Acronyms

Fwd: The bagging cycle can be split into two different actions, forward and reverse. "Fwd" Stand for forward movement. See picture above.

Rev: The bagging cycle can be split into two different actions, forward and reverse. "Rev" Stand for reverse movement. See picture above.

Deg: Stand for degree. A bagging start at 0deg and end at 360deg thus create a pattern cycle. The machine has an intern clock that keep cycling thought 360 degrees, which every action is made during that period.

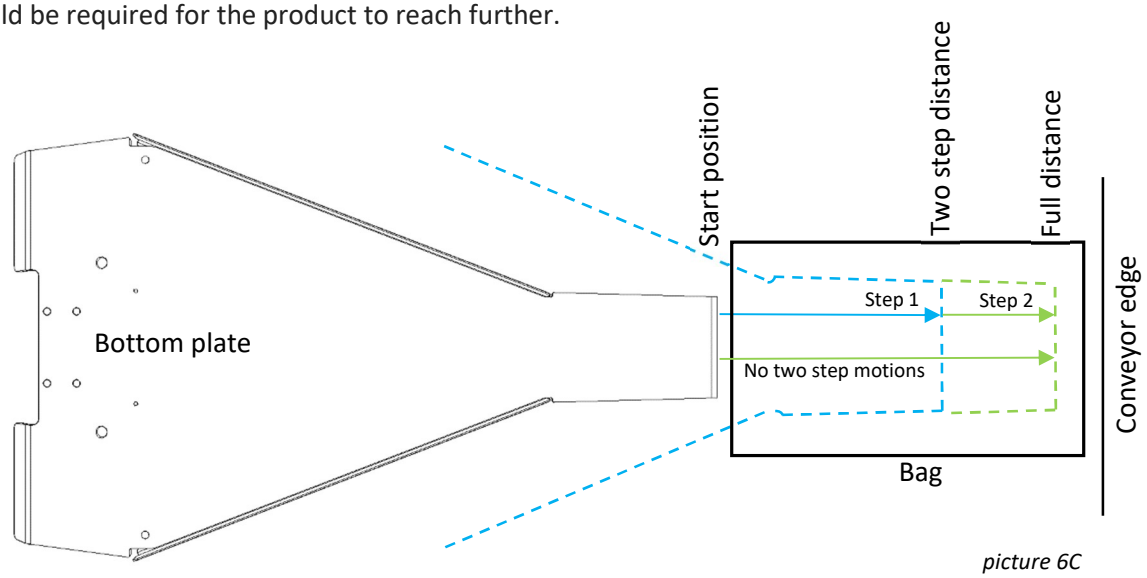
ABS: Stand for absolute. The actual value or measurement nonrelative to another value.

In: Inches measurement

Ms: millisecond. One thousandth of a second.

6.1.3: Two step motions

Used when the bags are small, and the plate need to travel further to deposit the bagged product on a conveyor. In other words, step 1 (in blue) would be required to bag properly, and step 2 (in green) would be required for the product to reach further.

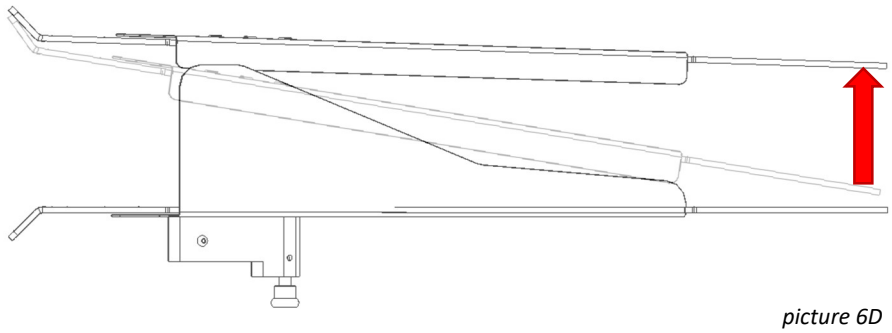


picture 6C

6.2: Definitions of parameters

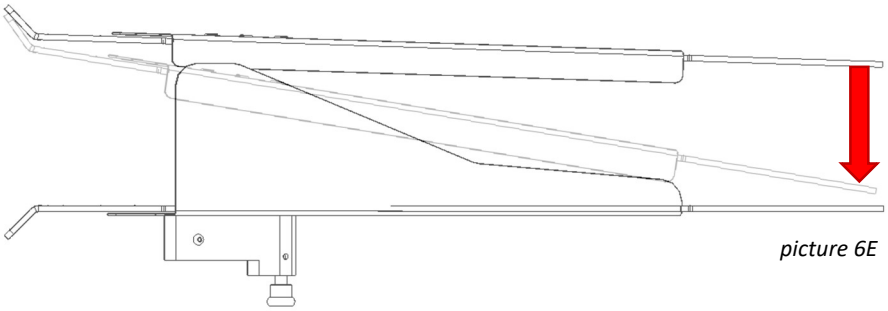
Up/down Speed up (Retract lifter)

It reacts in relation of the parameter "**Height**". The value tells the machine how fast the top plate must raise to the height value during one cycle. Raise the value will increase the speed. That speed is constant (except the acceleration and deceleration of the motor itself). A too slow value will either jam the product inside or make the retract belt slip.



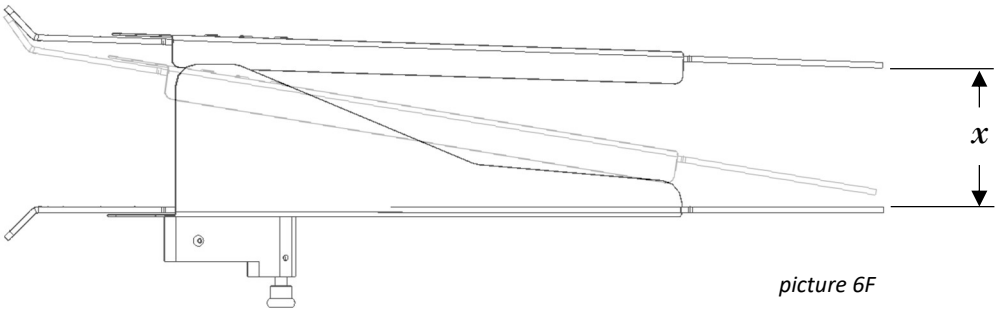
picture 6D

Up/down Speed down (Retract lifter)
It tells the machine how fast the plate comes back to the homing position after the bagging sequence



picture 6E

Height
Value given to ''the up/down motor'' to raise the top plate at the height value during the bagging sequence. The value is associated to the thickness of the product stacks, the value is in inches.



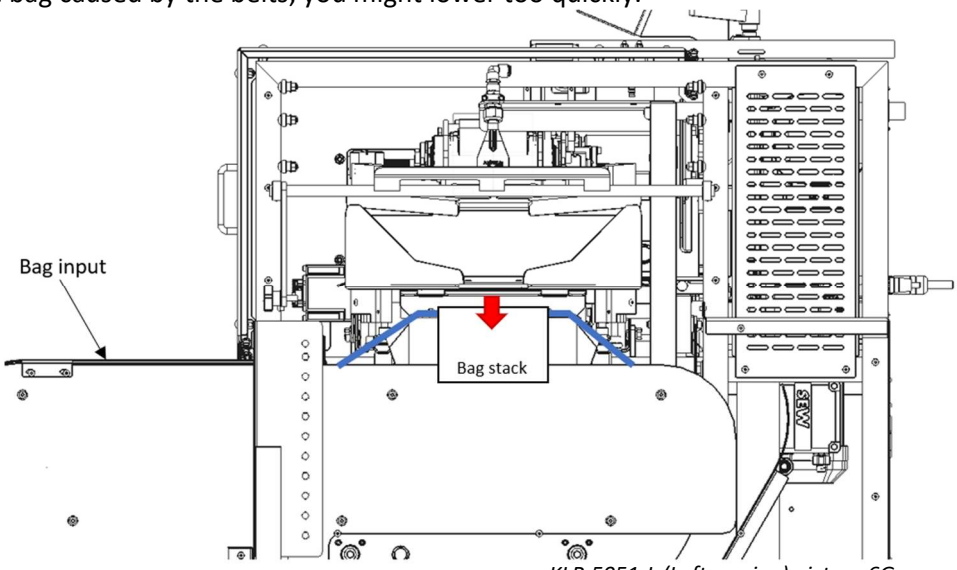
picture 6F

Retract lifter up (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The retract lifter will start raising at that setting. See picture 5C.

Retract lifter down (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The retract lifter will start lowering at that setting. See picture 5D.

Release bag (deg)

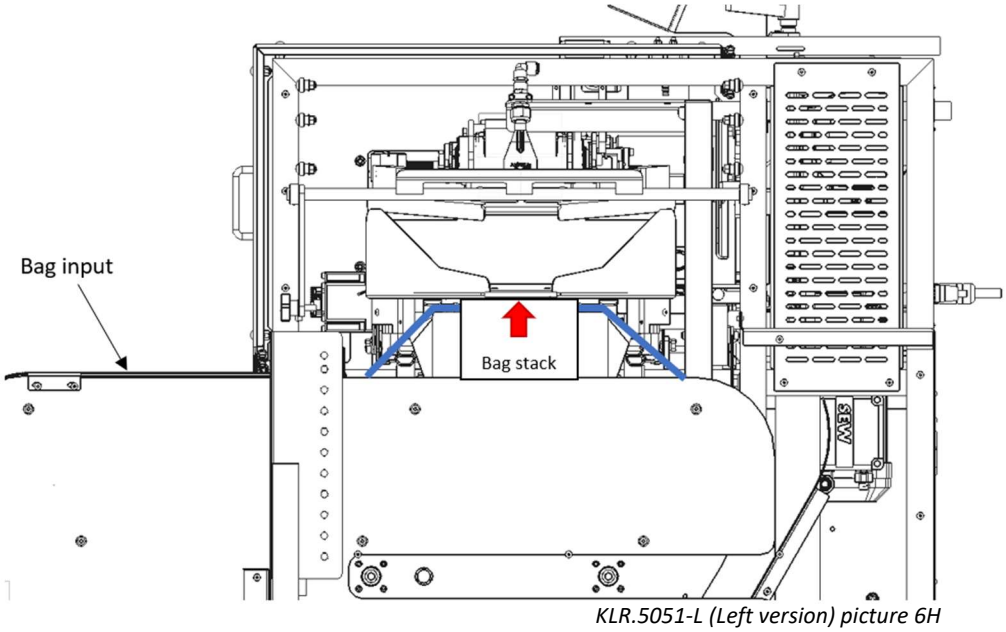
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The bag lifter will release the bag at that setting. If the bag tail has tearing, lower that value. On the other hands, if you have cuts on top of the bag caused by the belts, you might lower too quickly.



KLR.5051-L (Left version) picture 6G

Hold bag (deg)

The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The bag lifter will hold the bags at the setting. If the value is too early, the belts while turning will bring some bag with it on the way back.

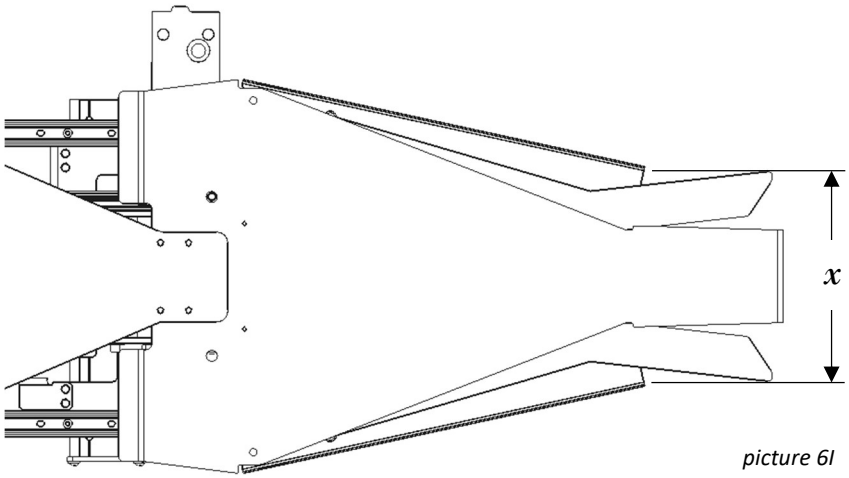


KLR.5051-L (Left version) picture 6H

Scoop speed (Forward) Fwd/Rev

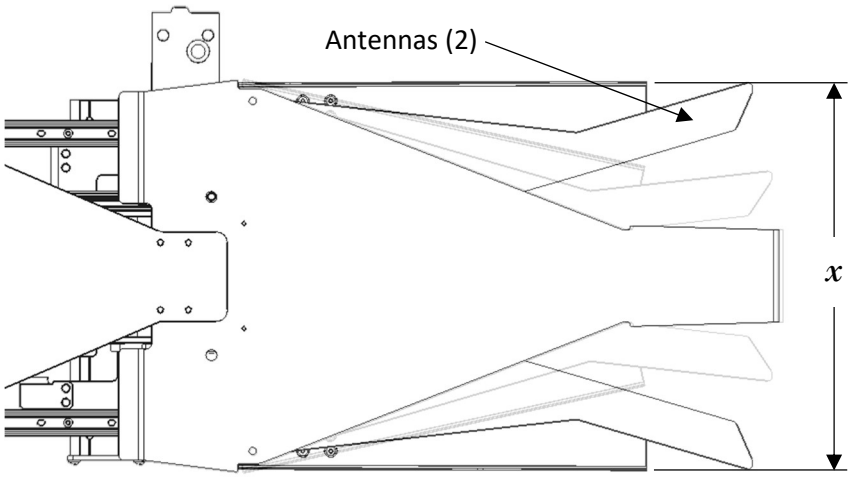
This value tells the scoops how fast they need to open and close. It only controls the bottom ones. See picture 5H.

Scoop opening (in)
This value tells the scoop how wide it needs to open. The value is in inches and should be set a bit bigger than the product size. Only the bottom scoops are controlled, the top ones will be opened by the product itself.



picture 6I

Scoop opening 2 (in)
This value tells the scoop how wide it needs to open on the second step. The second step of the scoop is intended to flatten the bag with the "antenna" after the product went into the bag since the bag is larger than the product. Value should be close to the bag width.

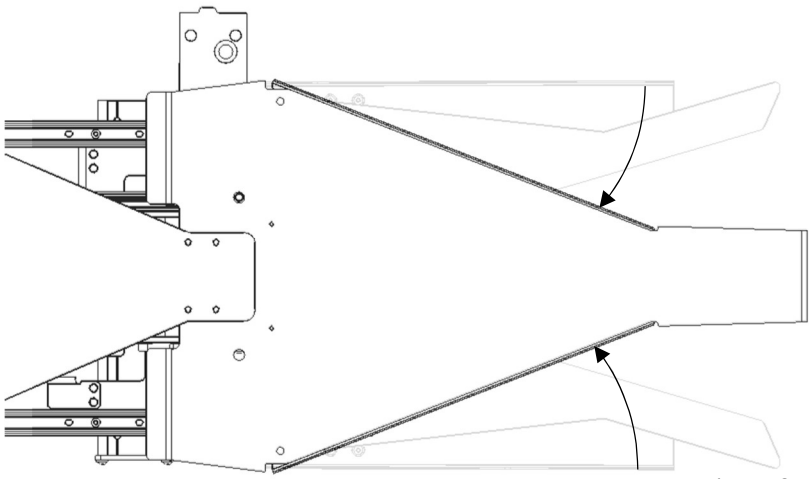


picture 6J

Open scoop Fwd (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. On the way forward, this value tells when to open the scoop. See picture 5H

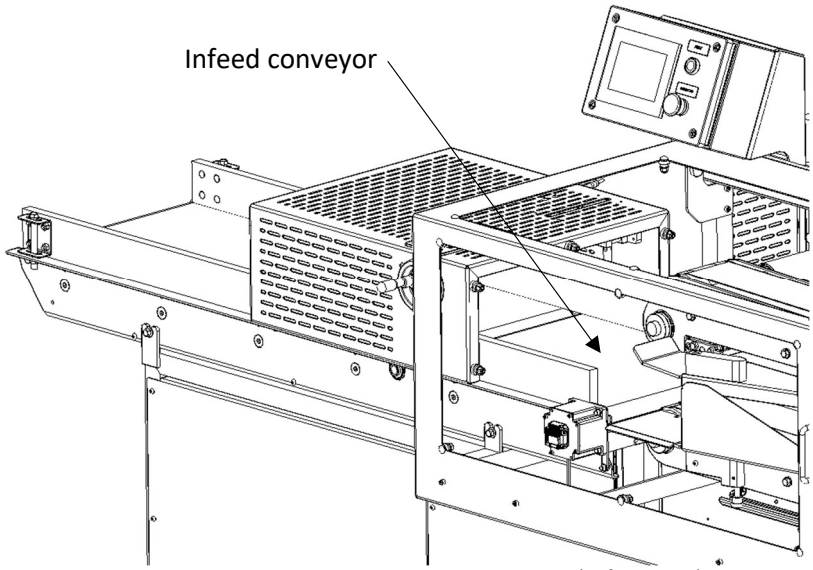
Open scoop Fwd 2 (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. On the way forward, this value tells when to open the scoop. See picture 5I.

Close scoop Rev (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. On the way back, this value tells when to close the scoop. Must be higher than "open scoop Fwd".



picture 6J.1

Infeed speed
Setting is in hertz. Raise the number to raise the speed. If the speed needs to be changed, verify that the machine creates double products. In that case, increase "Stop infeed delay (ms)".

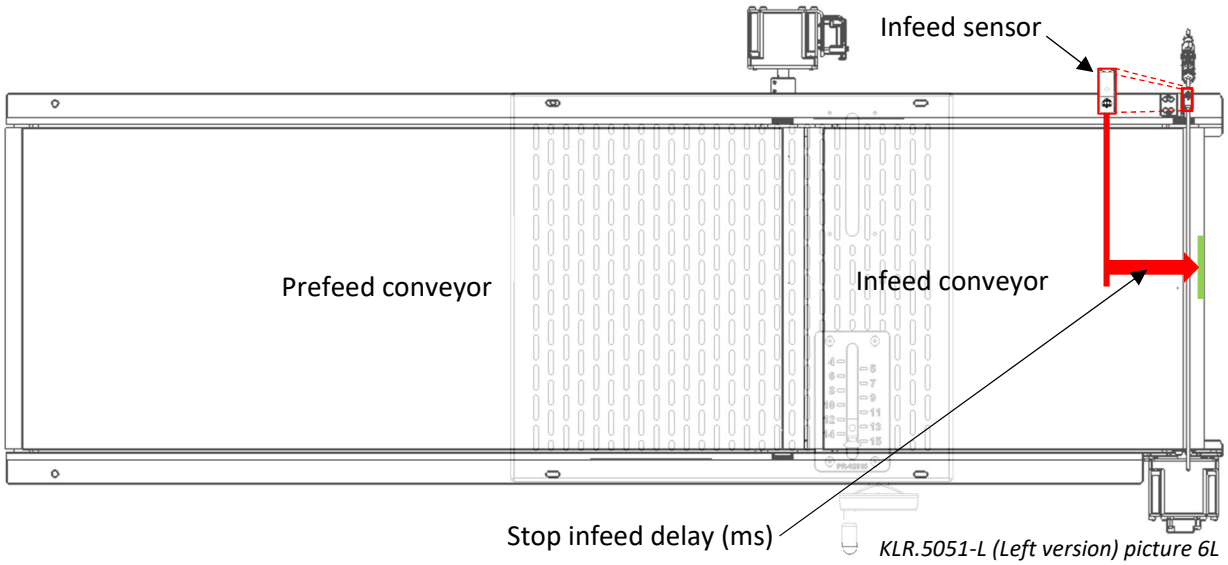


KLR.5051-L (Left version) picture 6K

Restart infeed (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. When the plates have traveled back to their 0 position, the machine waits this value before starting back the infeed conveyor. If there is no product waiting, the infeed conveyor would still run. See picture 5J

Stop infeed delay (ms)

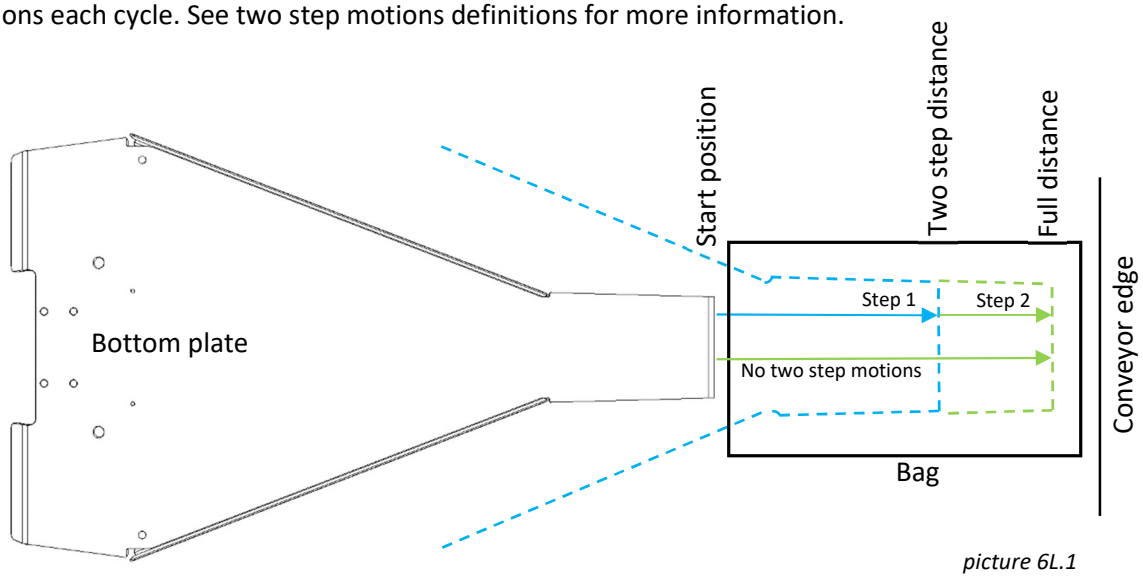
This parameter is only relevant when the products arrive really close each other. This delay will start only if a product is already inside the plates and another product arrive. It is the time the infeed takes to stop when a product triggers the sensor located on the infeed conveyor. From the time the sensor sees a product (red line) until it reaches the end of the infeed belt (infeed must stop when the product reaches green line). The position of that sensor is subject to change from a machine to another.



KLR.5051-L (Left version) picture 6L

Two step restarts (deg)

When set to 0, the function is disabled, and the machine will skip the first step and go to the full distance. But as long that there is a lower value then the full distance, the machine will do a 2 step motions each cycle. See two step motions definitions for more information.

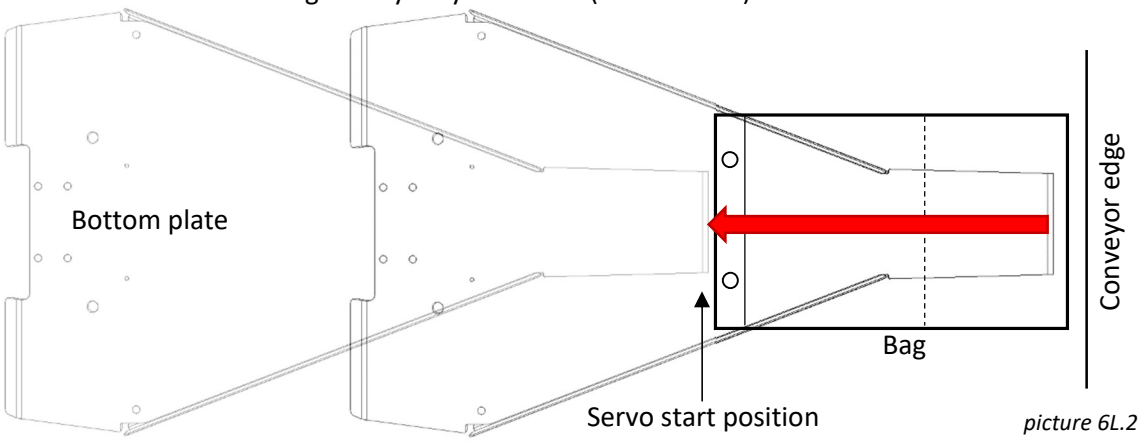


picture 6L.1

Two step distance (in)

This is the parameter that set the first step position in inches. See picture 5K.1.

Plate return (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The parameter basically tells the machine how long to stay fully extended (full distance).



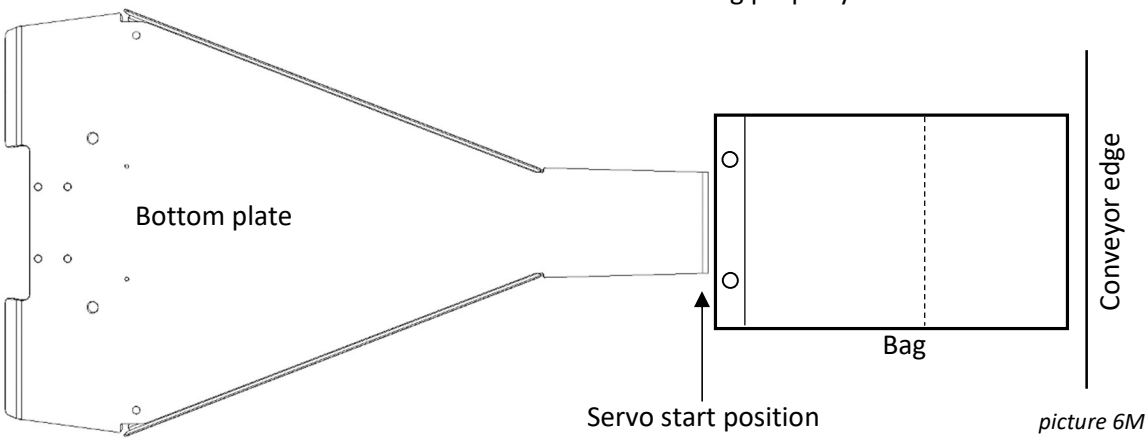
picture 6L.2

Speed plate Fwd (forward) (in/s)
Speed in inches per seconds of the plates when moving forward in the bag sequence. Raise the number to raise the speed. Most of the recipe will be between 2000 and 6000. Finetuning this parameter is necessary when the product arrives first in front, in this case it need to be lowered down. The goal is: when the plate has reached the destination, the product should arrive just after.

Changing this parameter may required to revisit other parameters. Check: retract belt speed and delay plates (ms).

Speed plate Rev (Reverse) (in/s)
Speed in inches per seconds of the plates when moving reverse (back) in the bag sequence. Used specially to retract quick enough from the bag, to avoid the infeed conveyor stopping too often and loosing efficiency. The value should be rather high but can be lowered down to save on the mechanic side when the package per minute is low.

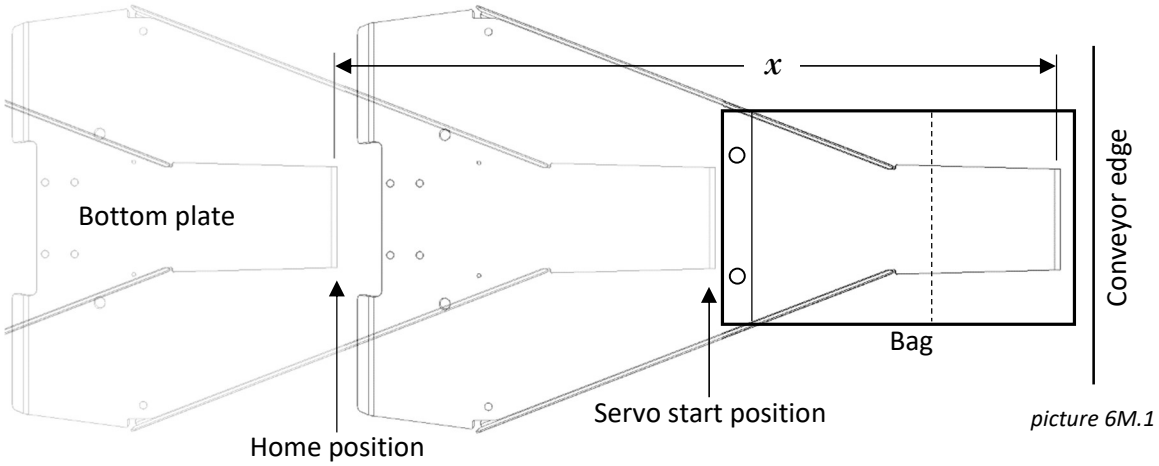
Servo start position
The bag table must always be adjusted so the tail of the bag is close to the conveyor. The parameter is used to set a different 0 position (or waiting position) to eliminate useless movement of the mechanism. Make sure it is not too far so the blower cannot inflate the bag properly



picture 6M

Full distance (in) ABS

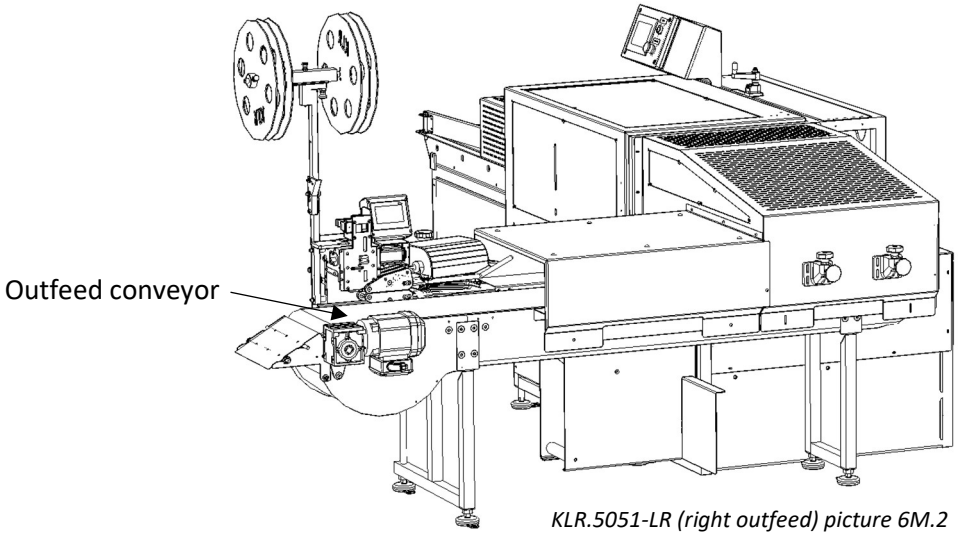
Distance in inches where the mechanism at the end of forward movement. The value must be set according to where to deposit the product onto the outfeed conveyor. Typically set so the product sits on the edge of the conveyor to get closed or sealed.



picture 6M.1

Outfeed speed

Speed in hertz of the outfeed conveyor. Set this value to create a certain gap in between each product to facilitate the bag closer machine. Usually, sealer method requires a slower speed then a clip method.



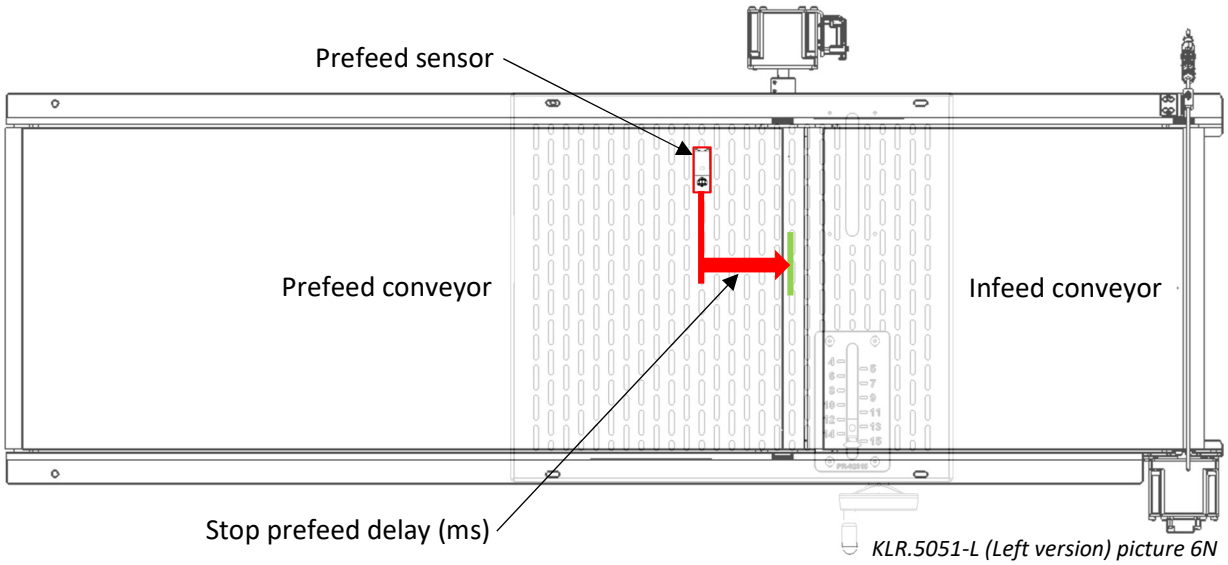
KLR.5051-LR (right outfeed) picture 6M.2

Retract belt speed

Speed of the retract belt in hertz. Raise the number to raise the speed. A speed too high would make the product arrives before the moment the scoops open. On the other hand, a speed too low would not let the product enough momentum to reach the bottom of the bag. Change this parameter will affect the efficiency of Open scoop Fwd (deg) and Up/down Speed up (Retract lifter). It will require an adjustment of these two setting as well.

Stop prefeed delay (ms)

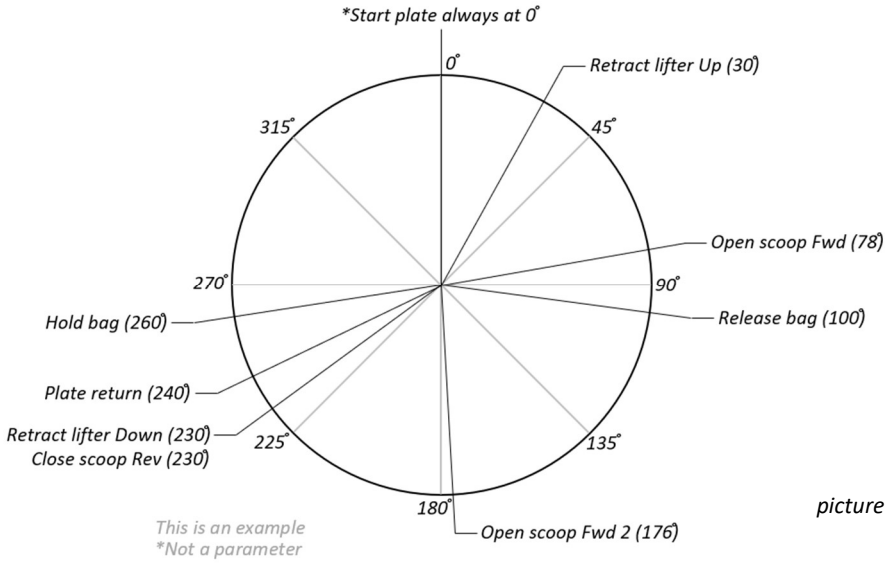
It is the time the prefeed conveyor takes to stop when a product triggers the sensor located on the prefeed conveyor. From the time the sensor sees a product (red line) until it reaches the end of the infeed belt (infeed must stop when the product reaches green line). The position of that sensor is subject to change from a machine to another.



KLR.5051-L (Left version) picture 6N

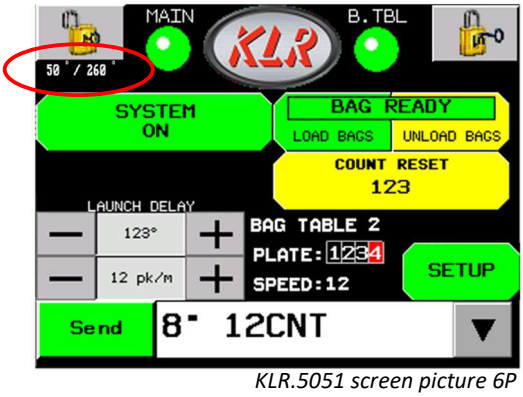
Pack per minute

This parameter is configuring the speed of the intern degree clock which relate to every parameter set in degrees. Take note that raising the number make it quicker but does not necessarily make the bagger bag quicker. When changing "Pack per minute", All the parameters that refer to SPEED might need to be readdressed.



picture 6O

Almost all parameters in that list give a start with a certain speed for something. We assume that it takes some time to complete the action, but we do not know where it stops on the degree clock. While bagging, there is an indication in the main screen that help finding out in degrees when the plates are stopping. On the next picture, the value on the left is when the plate stops moving at full "distance" and the value on the right is when the plate stops moving on the way back. If the value on the right has excided 360 degrees, it will show for example 003. That means that the intern clock is too fast.



KLR.5051 screen picture 6P

Delay flattener (ms)

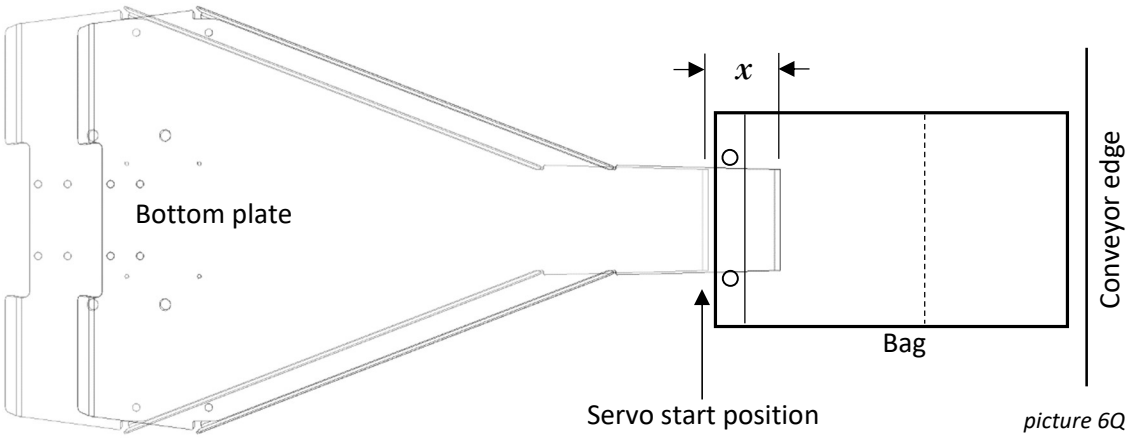
Flattener is an option dedicated to flatten properly the bag before it goes into a sealer device. It helps getting rid of wrinkles on the seal. The parameter set the machine to start the blower after the product landed onto the conveyor. The value is in milliseconds.

Time flattener

After the start of the flattener blower, this is how long it remains ON.

Blower distance (in)

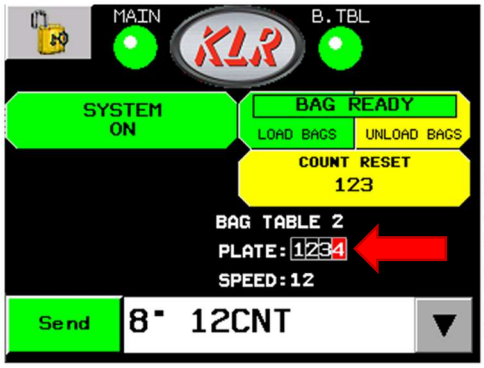
This measure is relative to servo start position and create a space (x) in between blower distance and servo start position where the blower is allowed to inflate the bag.



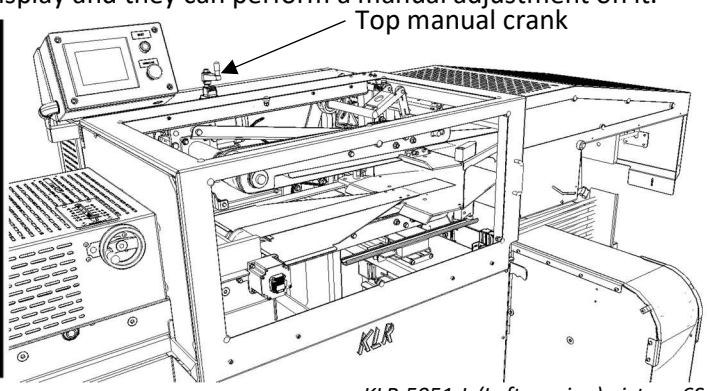
picture 6Q

Plate height

This is the adjustment communicated to operators of the machine via the touch screen. They can look at the value which translate to the crank display and they can perform a manual adjustment on it.



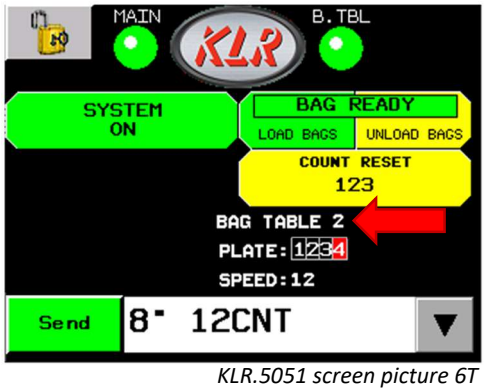
KLR.5051 screen picture 6R



KLR.5051-L (Left version) picture 6S

Bag table position

Value appearing on the main screen according to that recipe. Value to communicate to the operators on change over.



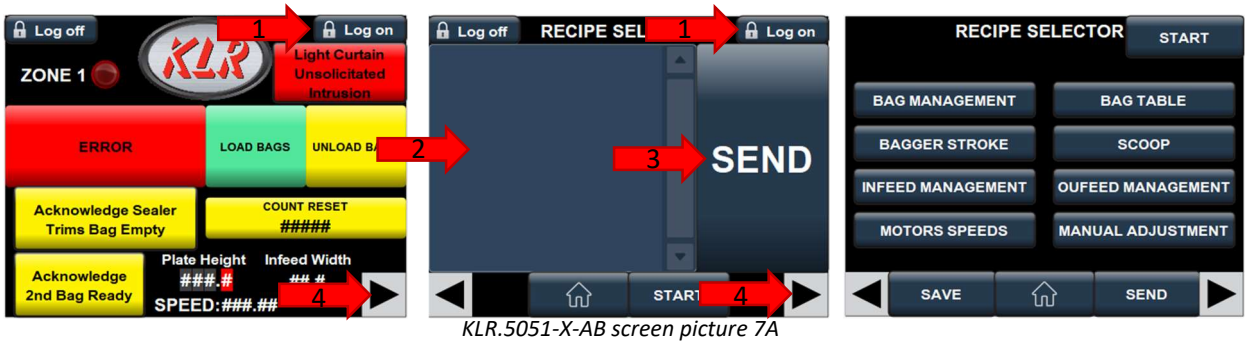
KLR.5051 screen picture 6T

7.0: RECIPE SETTING PAGE KLR.5051-AB

> ⚠
>
> ➢ It is possible to adjust parameters to the point of a malfunction of the packaging machine. Exercise caution when making parameter changes and make changes in small increments. See recipe manager for KLR.5051-AB to save your recipe and be able to keep track of your changes.

7.1: Unlock advance parameters

Advanced Settings must be unlocked by pressing Log on (1), select the recipe desired to be modified (2) and press SEND (3). press to the arrows (4) until the third page. From now one, every parameter changed will affect the recipe previously selected.



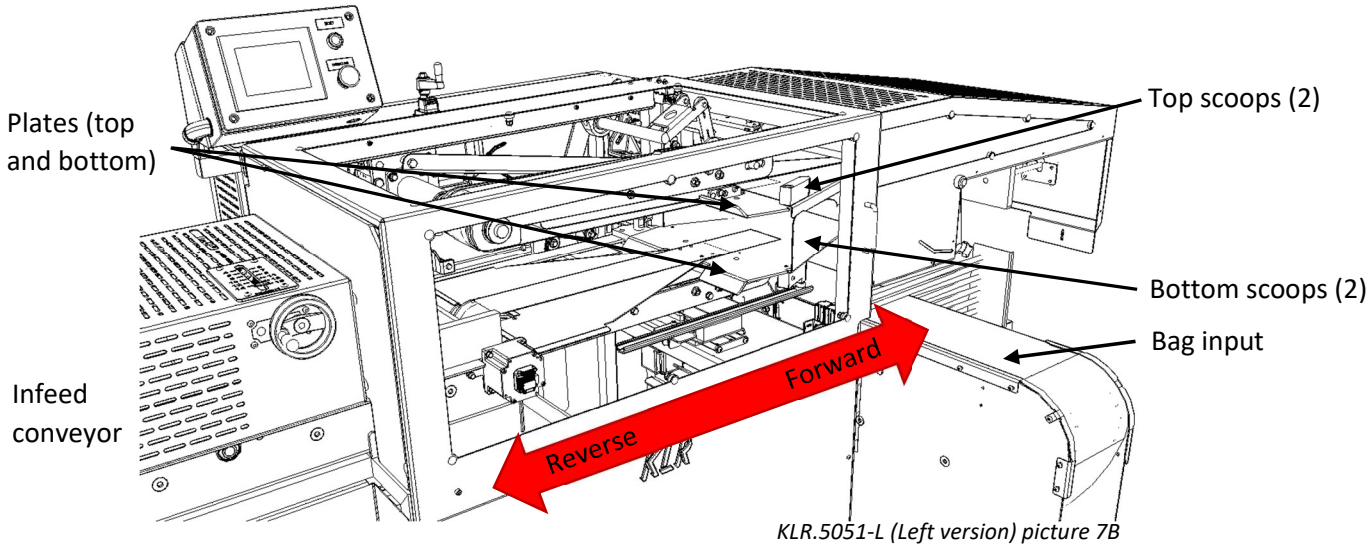
KLR.5051-X-AB screen picture 7A

When a parameter is modified, it is important to SAVE and SEND:

- to make it permanent and remains this way on power cycle: press SAVE.
- to make the machine acknoledge the new changed recipe and start using it: press SEND.

7.2: Definitions of functions and acronyms

This figure below will be used to describe couple next parameters. Keep in mind that picture features a full options machine. General parts remain the same concept through all the machines. With parameters that only available with certain options will not be visible from the display. In this document, all parameters are explained in the same order of the touch screen.



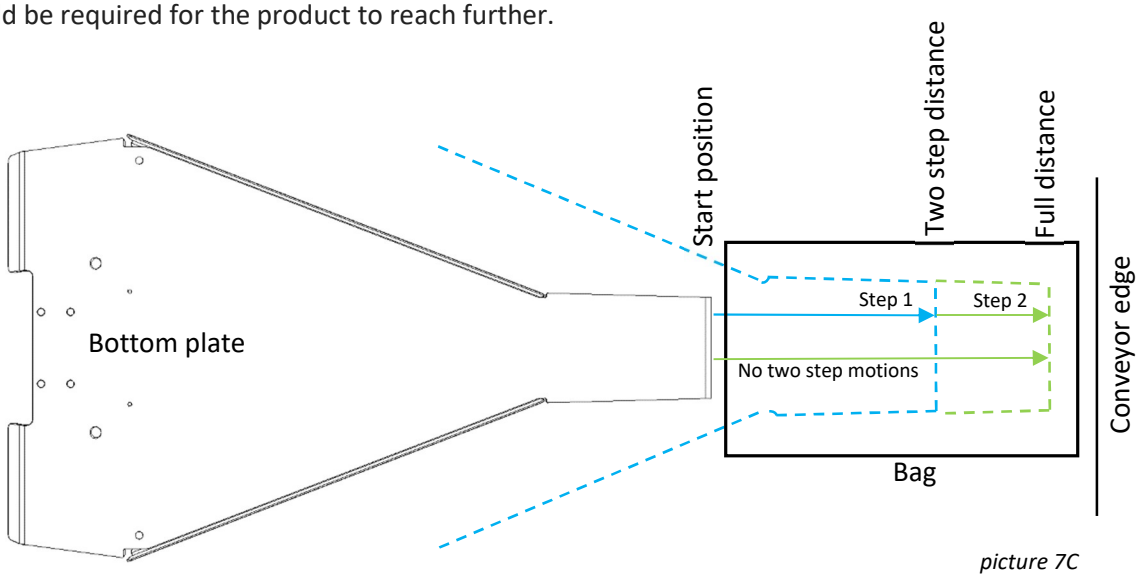
KLR.5051-L (Left version) picture 7B

7.2.2: Acronyms

Acronyms	Description
Fwd	The bagging cycle can be split into two different actions, forward and reverse. "Fwd" Stand for forward movement. See picture above.
Rev	The bagging cycle can be split into two different actions, forward and reverse. "Rev" Stand for reverse movement. See picture above.
Deg	Stand for degree. A bagging start at 0deg and end at 360deg thus create a pattern cycle. The machine has an intern clock that keep cycling thought 360 degrees, which every action is made during that period.
ABS	Stand for absolute. The actual value or measurement nonrelative to another value.
In	Inches measurement
Ms	millisecond. One thousandth of a second.

7.2.3: Two step motions

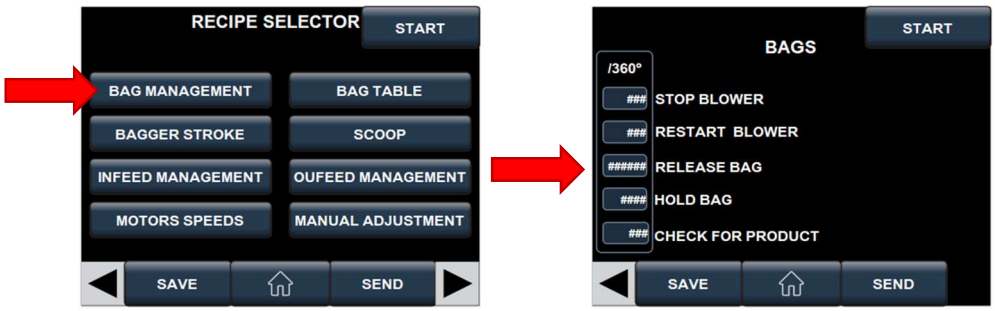
Used when the bags are small, and the plate need to travel further to deposit the bagged product on a conveyor. In other words, step 1 (in blue) would be required to bag properly, and step 2 (in green) would be required for the product to reach further.



picture 7C

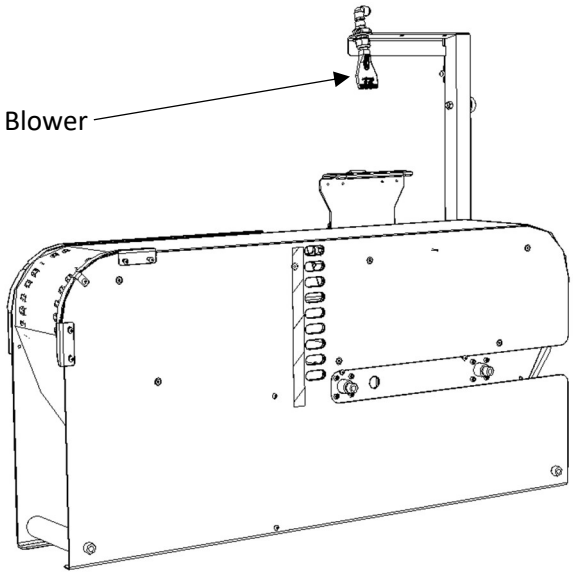
7.3: Bag management

To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press Bag management.



KLR.5051-X-AB screen picture 7D

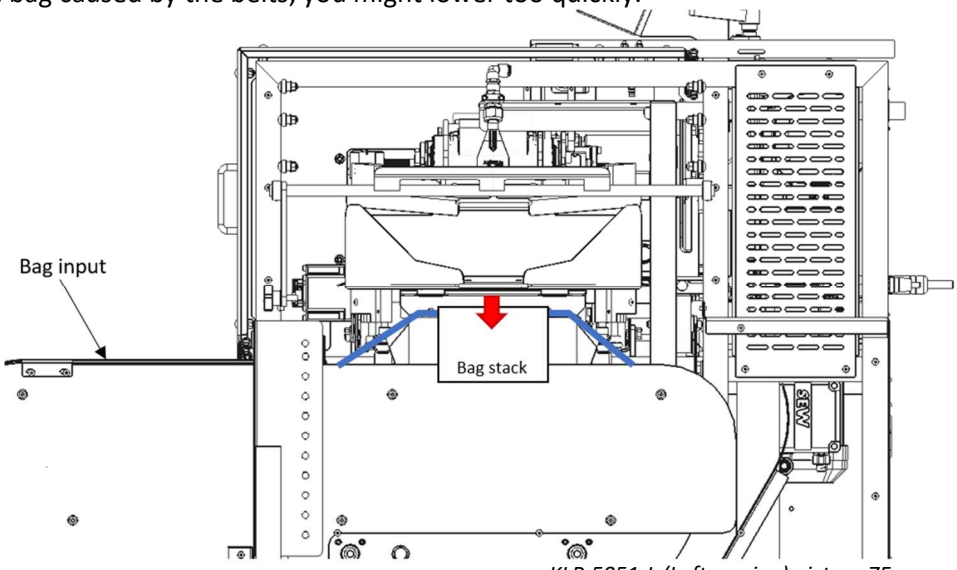
Stop blower (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. This value tells the machine when to stop the blower according to this intern clock. Make sure it is long enough so the retract systems can enter the bag before shutting the blower.



Bag input module (Left version) picture 7E

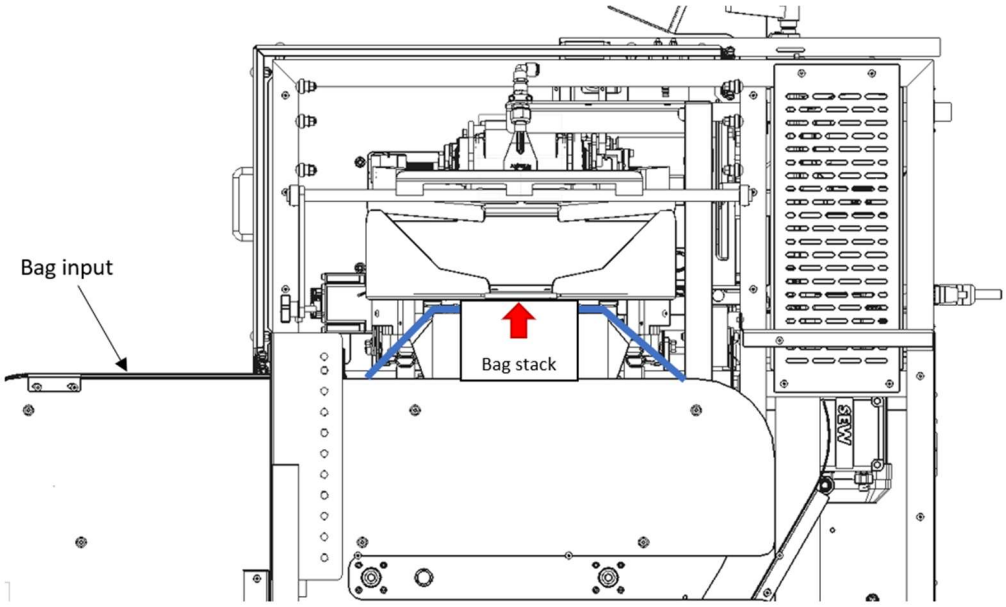
Restart blower (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. This value tells the machine when to stop the blower according to this intern clock. The value must be bigger than "Stop blower". The blower will not start if there is no product ready to be bagged.

Release bag (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The bag lifter will release the bag at that setting. If the bag tail has tearing, lower that value. On the other hands, if you have cuts on top of the bag caused by the belts, you might lower too quickly.



KLR.5051-L (Left version) picture 7F

Hold bag (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The bag lifter will hold the bags at the setting. If the value is too early, the belts while turning will bring some bag with it on the way back.

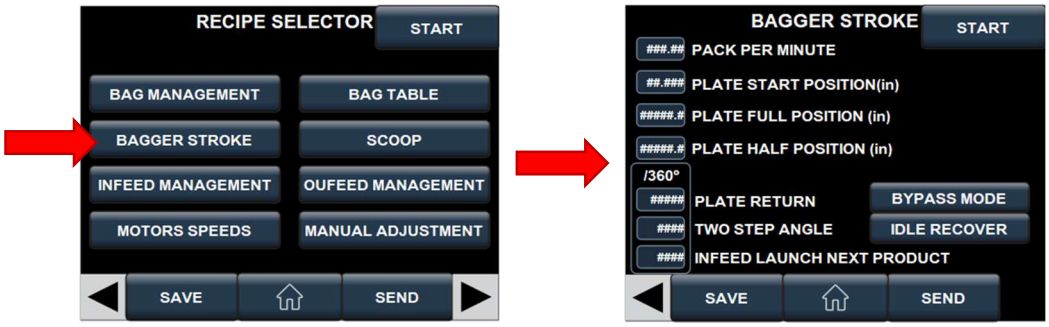


KLR.5051-L (Left version) picture 7G

Check for product (deg)
On the way reverse (back), the machine will go check if a product is already waiting to be bagged. If there is in fact one ready, it will for example: allowed blower to start, keep the retract belt ongoing. the value of "Check for product" will determine when to check.

7.4: Bagger stroke

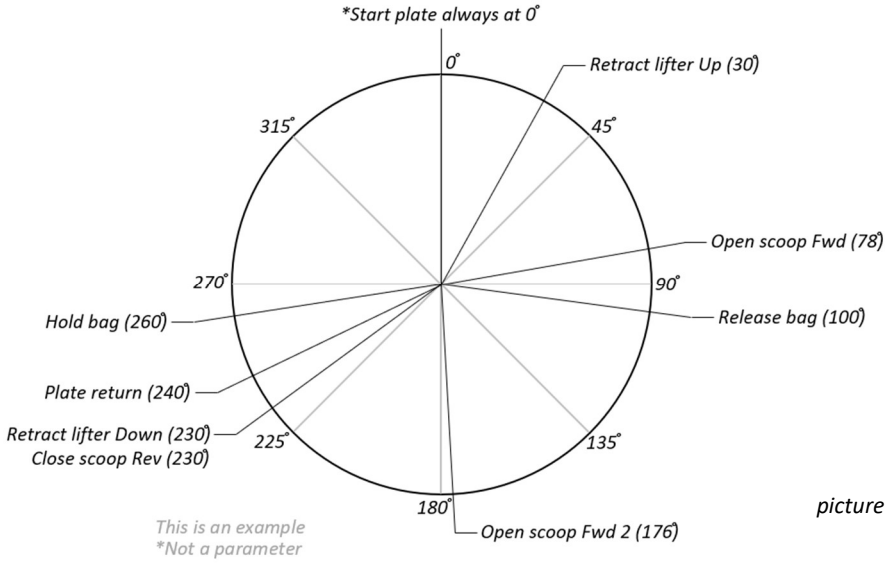
To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press Bag management.



KLR.5051-X-AB screen picture 7H

Pack per minute

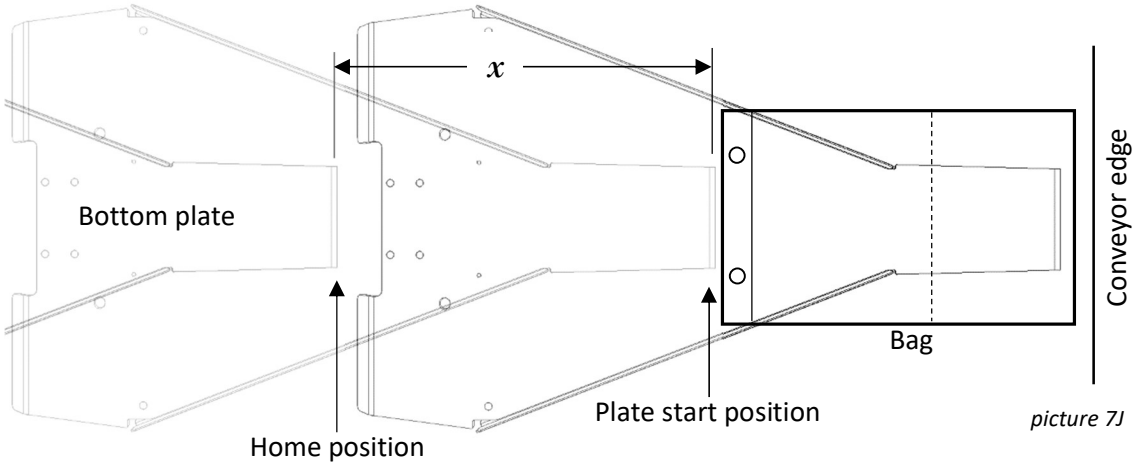
This parameter is configuring the speed of the intern degree clock which relate to every parameter set in degrees. Take note that raising the number make it quicker but does not necessarily make the bagger bag quicker. When changing "Pack per minute", All the parameters that refer to SPEED might need to be readdressed.



picture 7I

Plate start position (in)

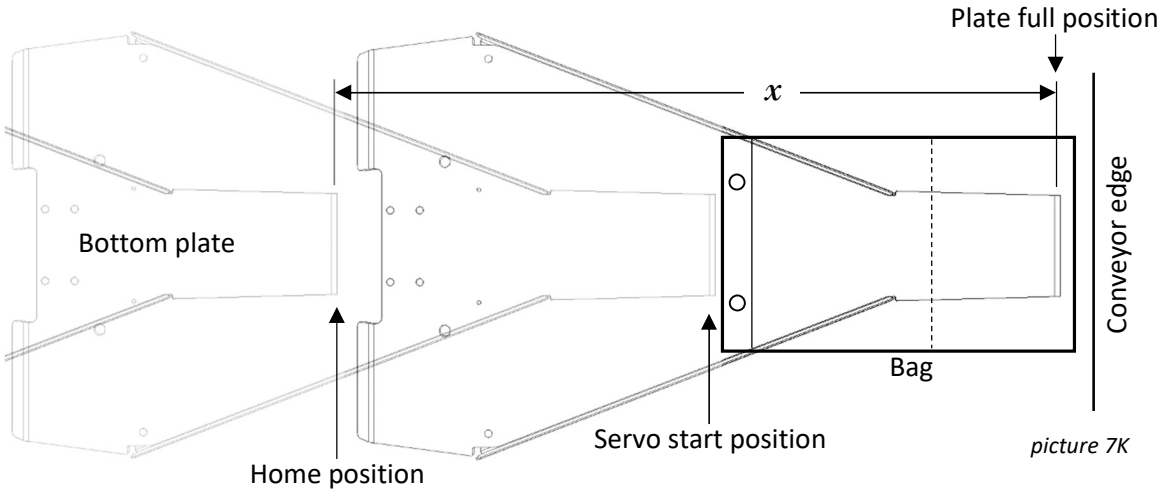
The bag table must always be adjusted so the tail of the bag is close to the conveyor. The parameter is used to set a different 0 position (or waiting position) to eliminate useless movement of the mechanism. Make sure it is not too far so the blower cannot inflate the bag properly



picture 7J

Plate full position (in) ABS

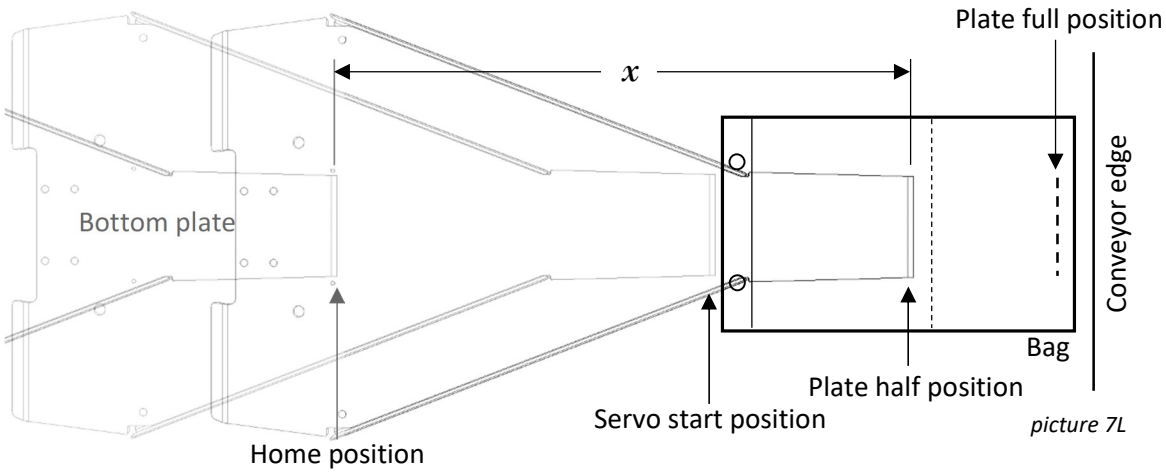
Distance in inches where the mechanism at the end of forward movement. The dimension the value must be set according to where to deposit the product onto the outfeed conveyor. Typically set so the product sits on the edge of the conveyor to get closed or sealed.



picture 7K

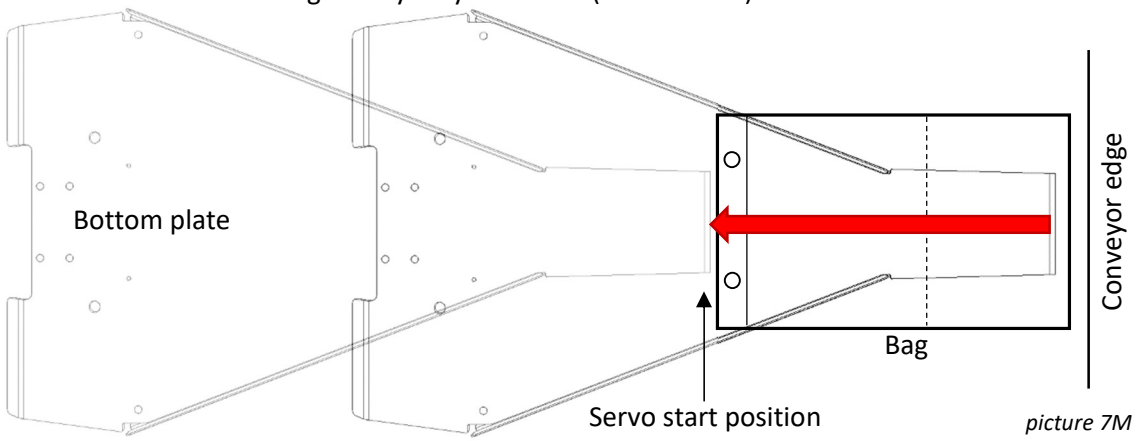
Plate half position (in) ABS

Distance in inches where the mechanism at the end of the first step movement. See "**two step motions**" for more information. The plate half position is the first position the retract system will go. The objective is: as soon as it reaches this location, open scoops and right after that the product comes in the bag. Typically set so the scoop opens nicely on the edge of the bag.



picture 7L

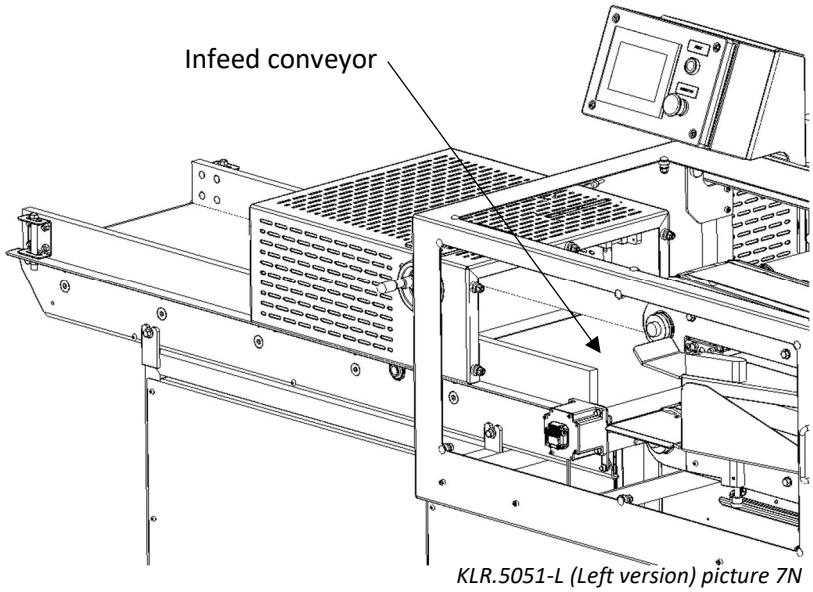
Plate return (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. The parameter basically tells the machine how long to stay fully extended (full distance).



picture 7M

Two step angle (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. It is the time which the retract system stop waiting in the half position (first step) and proceed to the full distance (second step).

Infeed launch next product (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. When the retract system is on the way back, this parameter stand for when the machine is allowed to send the next product.



KLR.5051-L (Left version) picture 7N

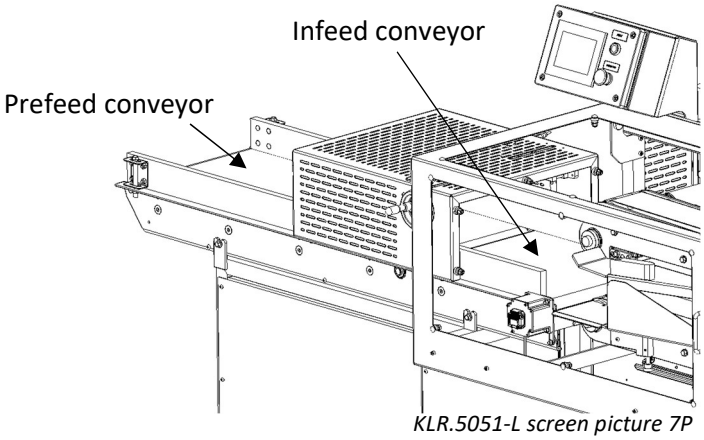
7.5: Infeed management

To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press Infeed management.

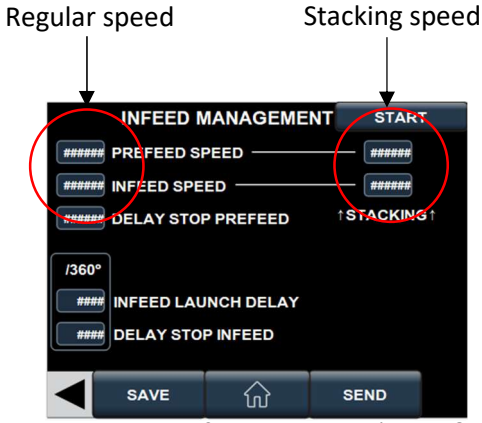
KLR.5051-X-AB screen picture 7O

Prefeed speed and Infeed speed

Speed of the prefeed and infeed conveyor respectively. There are two speed which this conveyor will use: Regular and stacking. Regular speed is active most of the time with normal operation. On the other hand, stacking speed will be active on bag change or when another machine in the line tells the bagger to prepare to stop via interlock. Stacking speed will then create a buffer.



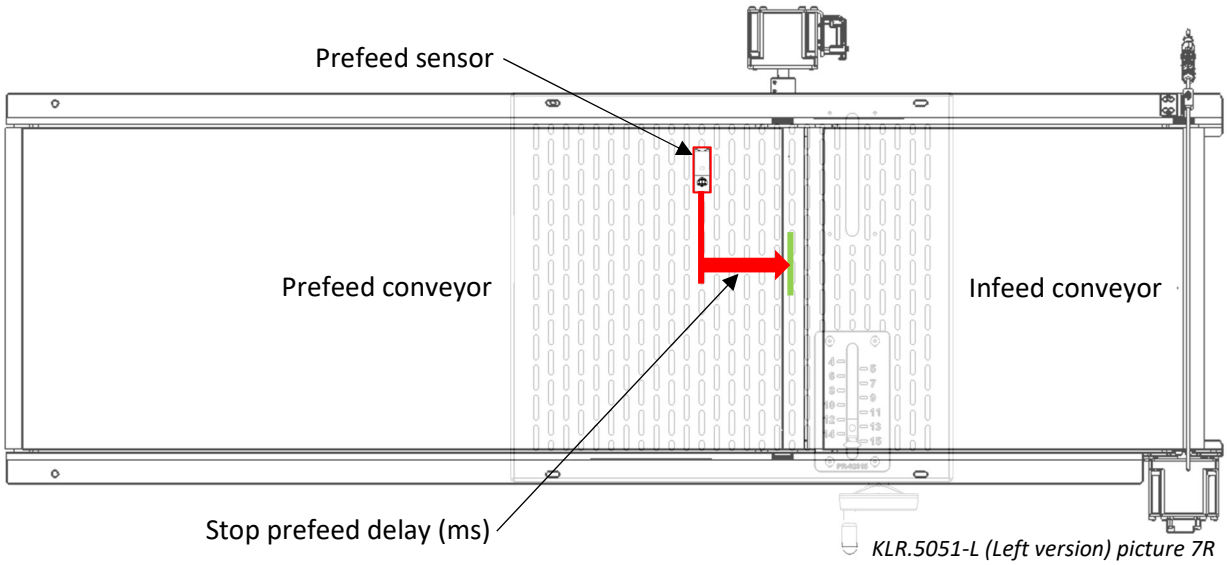
KLR.5051-L screen picture 7P



KLR.5051-X-AB screen picture 7Q

Stop prefeed delay (ms)

It is the time the prefeed conveyor takes to stop when a product triggers the sensor located on the prefeed conveyor. From the time the sensor sees a product (red line) until it reaches the end of the infeed belt (infeed must stop when the product reaches green line). The position of that sensor is subject to change from a machine to another.

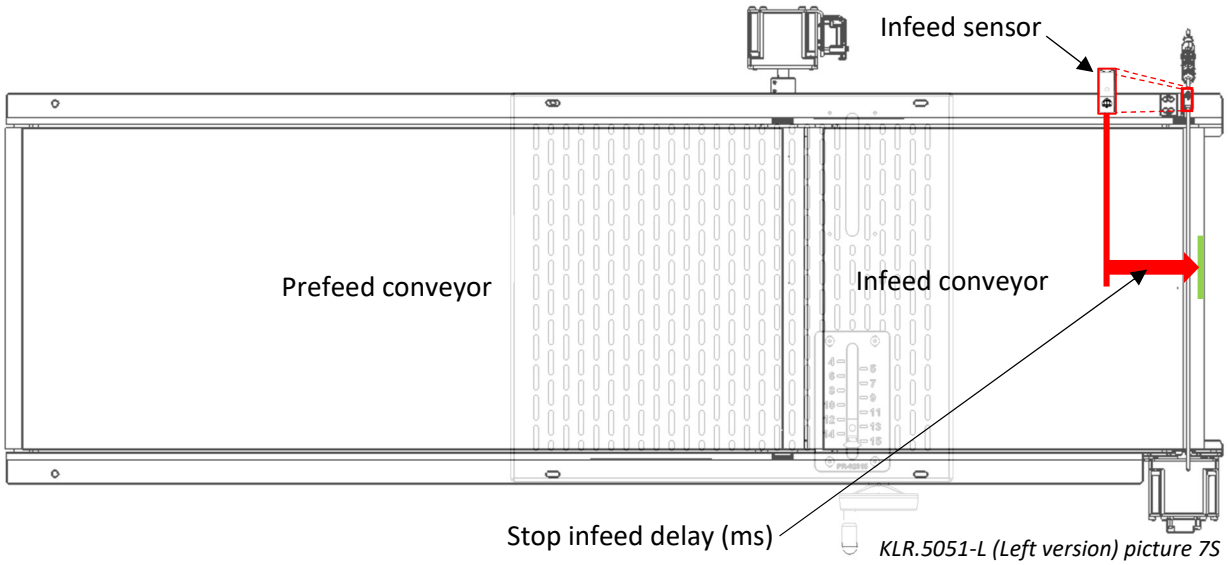


KLR.5051-L (Left version) picture 7R

Infeed launch delay

The value is in degree, which a bagging cycle start at 0deg and end at 360deg. Unlike **Infeed launch next product** is for when the machine is allowed to send the next product, **Infeed launch delay** is the parameter that sending the next product.

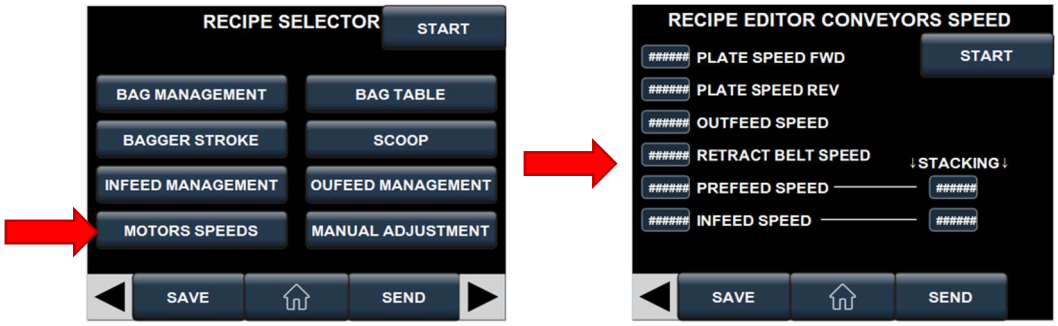
Stop infeed delay (ms)
This parameter is only relevant when the products arrive really close each other. This delay will start only if a product is already inside the plates and another product arrive. It is the time the infeed takes to stop when a product triggers the sensor located on the infeed conveyor. From the time the sensor sees a product (red line) until it reaches the end of the infeed belt (infeed must stop when the product reaches green line). The position of that sensor is subject to change from a machine to another.



KLR.5051-L (Left version) picture 7S

7.6: Motor speed

To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press motor speed.



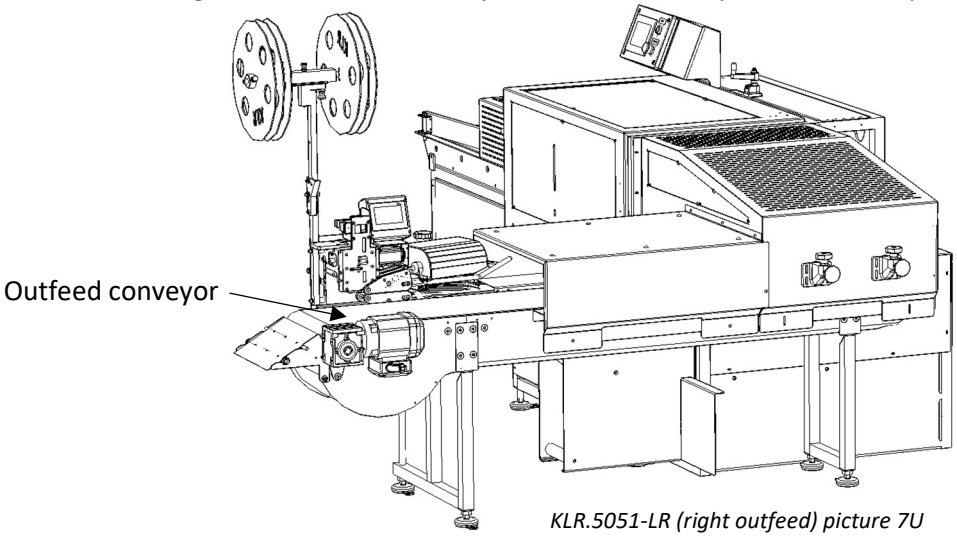
KLR.5051-X-AB screen picture 7T

Plate speed Fwd (in/s)
Speed in inches per seconds of the plates when moving forward in the bag sequence. Raise the number to raise the speed. Most of the recipe will be between 2000 and 6000. Finetuning this parameter is necessary when the product arrives first in front, in this case it need to be lowered down. The goal is: when the plate has reached the destination, the product should arrive just after.

Changing this parameter may required to revisit other parameters. Check: retract belt speed and delay plates (ms).

Speed plate Rev (Reverse) (in/s)
Speed in inches per seconds of the plates when moving reverse (back) in the bag sequence. Used specially to retract quick enough from the bag, to avoid the infeed conveyor stopping too often and loosing efficiency. The value should be rather high but can be lowered down to save on the mechanic side when the package per minute is low.

Outfeed speed
Speed in hertz of the outfeed conveyor. Set this value to create a certain gap in between each product to facilitate the bag closer machine. Usually, sealer method requires a slower speed then a clip method.

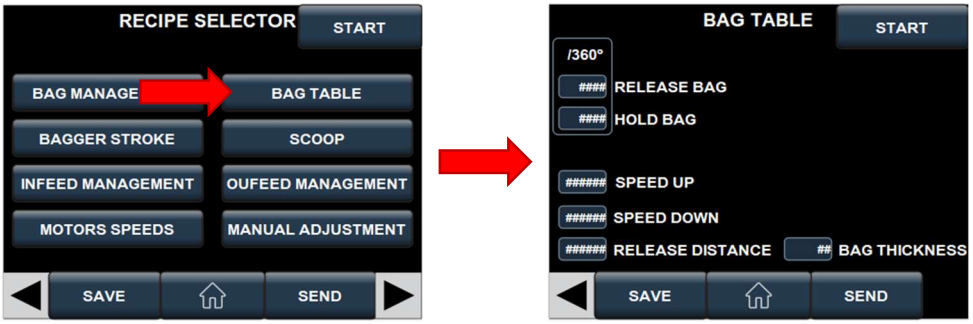


KLR.5051-LR (right outfeed) picture 7U

Retract belt speed
Speed of the retract belt in hertz. Raise the number to raise the speed. A speed too high would make the product arrives before the moment the scoops open. On the other hand, a speed too low would not let the product enough momentum to reach the bottom of the bag. Change this parameter will affect the efficiency of Open scoop Fwd (deg) and Up/down Speed up (Retract lifter). It will require an adjustment of these two setting as well.

7.7: Bag table

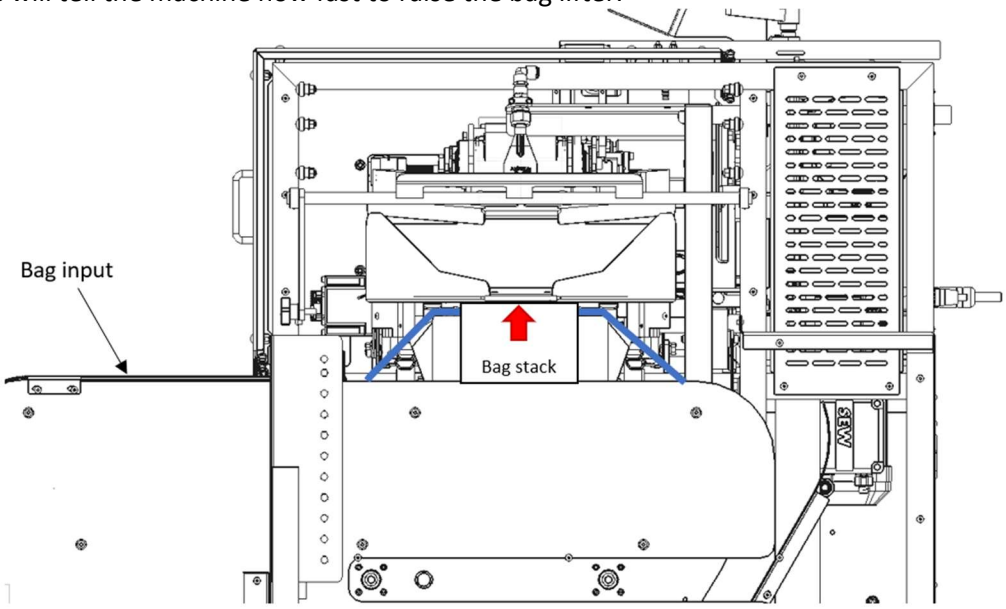
To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press Bag table. "Release bag" and "Hold bag" have already been addressed in section **Bag**.



KLR.5051-X-AB screen picture 7V

Speed up

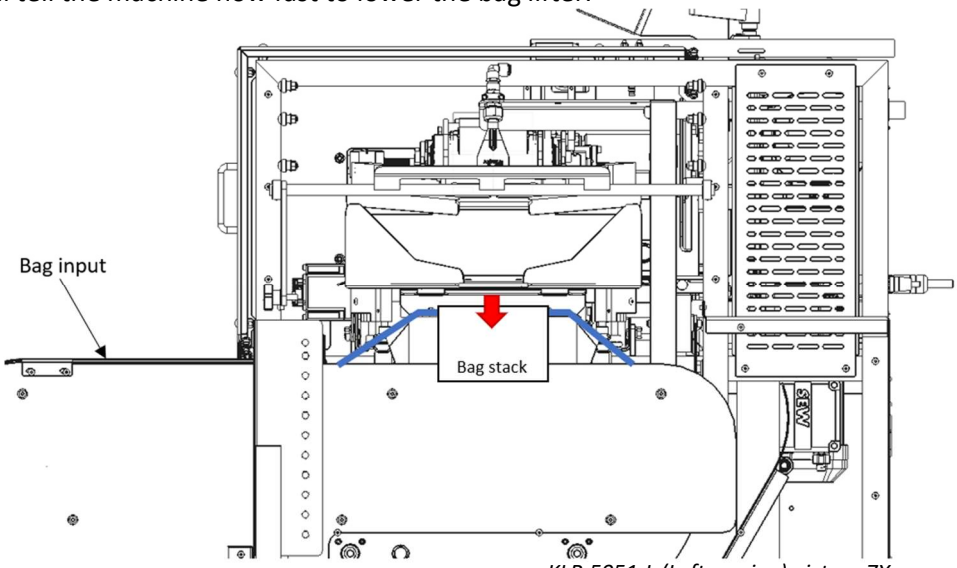
The value will tell the machine how fast to raise the bag lifter.



KLR.5051-L (Left version) picture 7W

Speed down

The value will tell the machine how fast to lower the bag lifter.



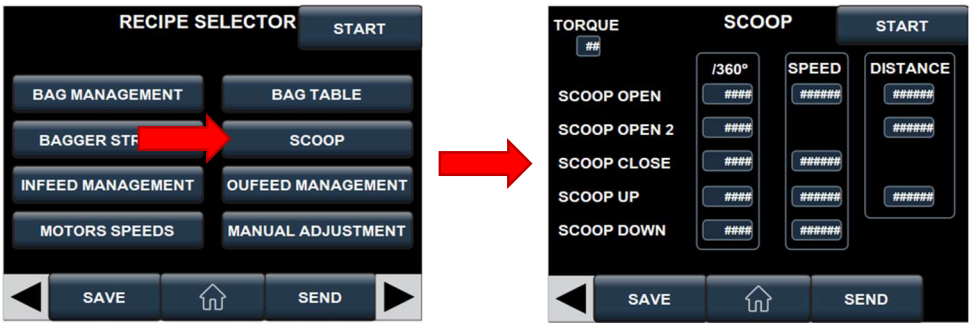
KLR.5051-L (Left version) picture 7X

Release distance (in)

This parameter is in inches. This value set how far the bag lifter drop each cycle. To be set at the higher possible so it is faster to get ready.

7.8: Scoop

To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press Scoop.

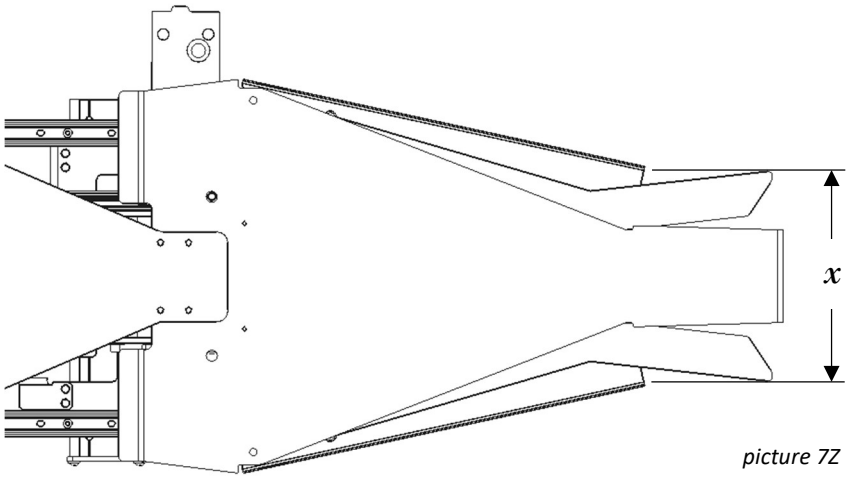


KLR.5051-X-AB screen picture 7Y

Scoop open (Deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. This value tells the scoops when to stop according to the intern clock. It only controls the bottom ones.

Scoop open (Speed)
This value tells the scoops how fast they need to open. It only controls the bottom ones.

Scoop open (distance)
This value tells the scoop how wide it needs to open. The value is in inches and should be set a bit bigger than the product size. Only the bottom scoops are controlled, the top ones will be opened by the product itself.

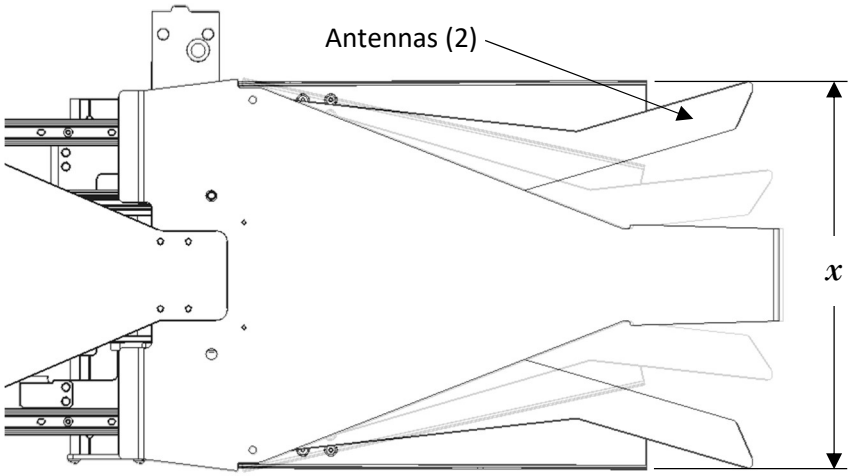


picture 7Z

Scoop open 2 (Deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. This value tells the scoops when to stop according to the intern clock. It only controls the bottom ones.

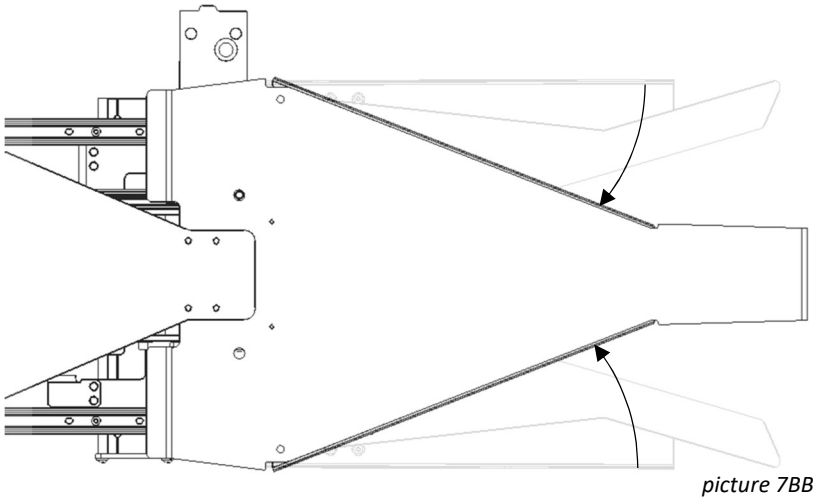
Scoop open 2 (Speed)
Use the same value of "**Scoop open**".

Scoop open 2 (distance)
This value tells the scoop how wide it needs to open on the second step. The second step of the scoop is intended to flatten the bag with the "antenna" after the product went into the bag since the bag is larger than the product. Value should be close to the bag width.



picture 7AA

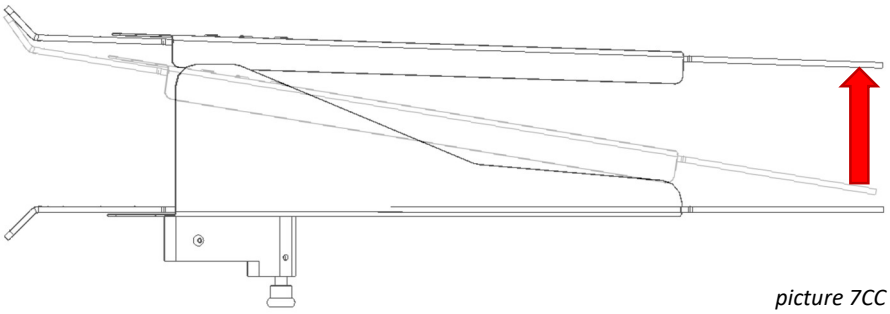
Scoop close (deg)
The value is in degree, which a bagging cycle start at 0deg and end at 360deg. On the way back, this value tells when to close the scoop. Must be higher than "open scoop Fwd".


picture 7BB

Scoop close (Speed)
This value tells the scoops how fast they need to close. It only controls the bottom ones.

Scoop up (deg)

The value is in degree, which a bagging cycle start at 0deg and end at 360deg. This value tells the scoops when they need to raise. It only controls the top ones.



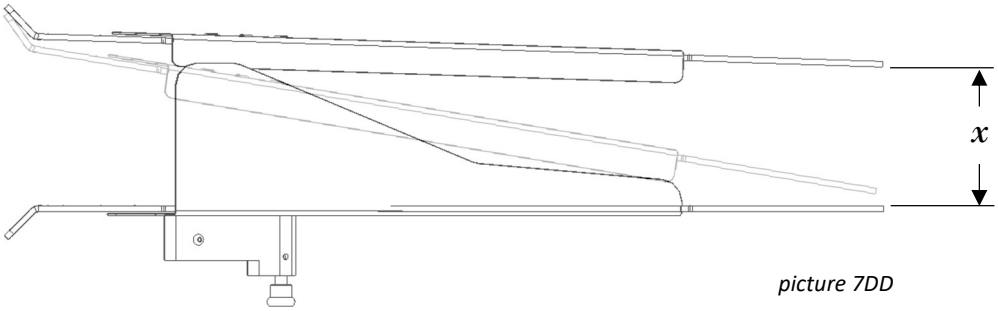
picture 7CC

Scoop up (speed)

This value tells the scoops how fast they need to raise. It only controls the top ones.

Scoop up (distance)

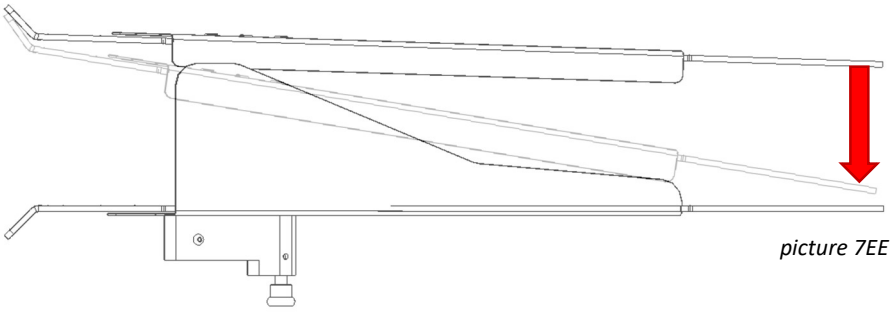
This value tells the scoops how high they need to raise. It only controls the top ones.



picture 7DD

Scoop down (deg)

The value is in degree, which a bagging cycle start at 0deg and end at 360deg. This value tells the scoops when they need to lower. It only controls the top ones.



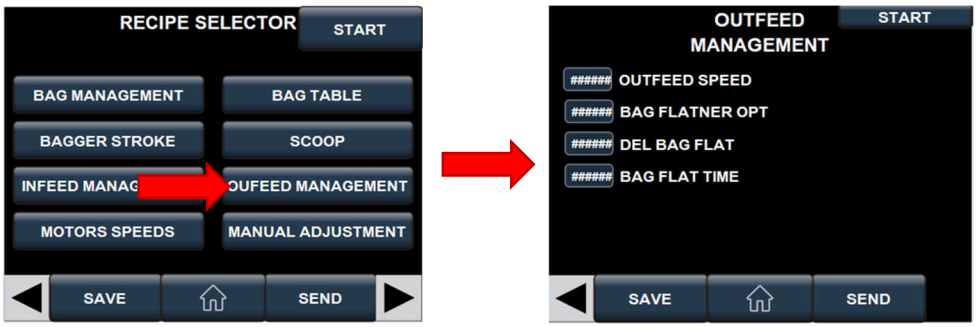
picture 7EE

Scoop down (speed)

This value tells the scoops how fast they need to go back to home position. It only controls the top ones.

7.9: Outfeed management

To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press "Outfeed management". "Outfeed speed" has already been addressed in "Motors speeds"



KLR.5051-X-AB screen picture 7FF

Bag flatner OPT

Bag flatner is an option of a nozzle that flatten the bag tail before closure. 1 = ON ; 0 = OFF.

Del. Bag flat. (ms)

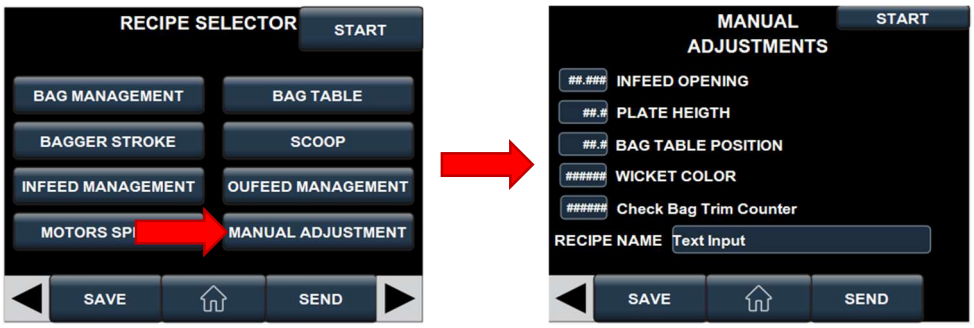
Bag flatner is an option of a nozzle that flatten the bag tail before closure. This parameter tells the machine when to blow air on the bag tail. The value is in milliseconds.

Bag flat. time (ms)

Bag flatner is an option of a nozzle that flatten the bag tail before closure. This parameter tells the machine how long to blow air on the bag tail. The value is in milliseconds.

7.10: Manual adjustment

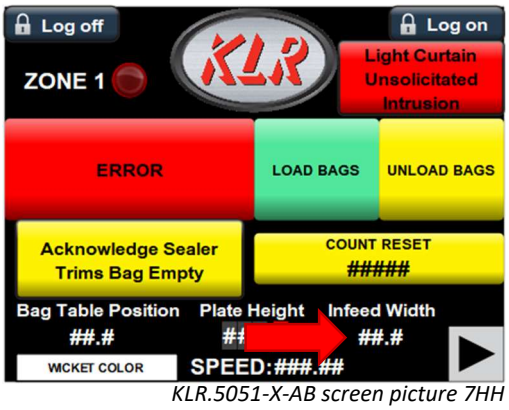
To reach bag management, the machine must be unlocked with a valid username and password. **See "Unlock advanced parameters"**. Press "manual adjustment". Everything in this page is for reference that speak to the operator on change over.



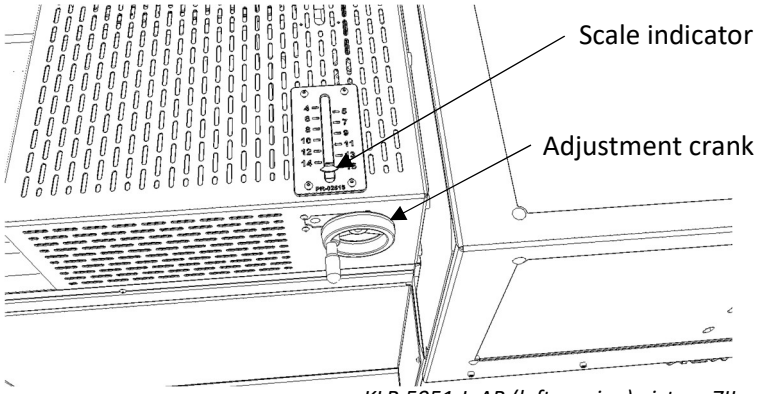
Infeed opening

KLR.5051-X-AB screen picture 7GG

This is the adjustment communicated to operators of the machine via the touch screen for the adjustment of the infeed guide.



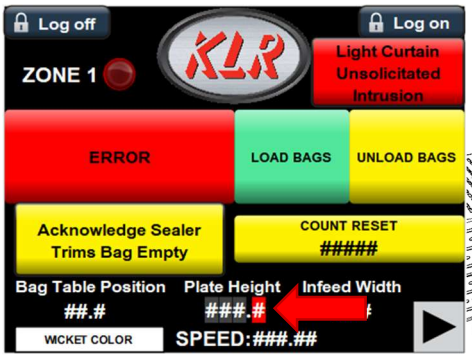
KLR.5051-X-AB screen picture 7HH



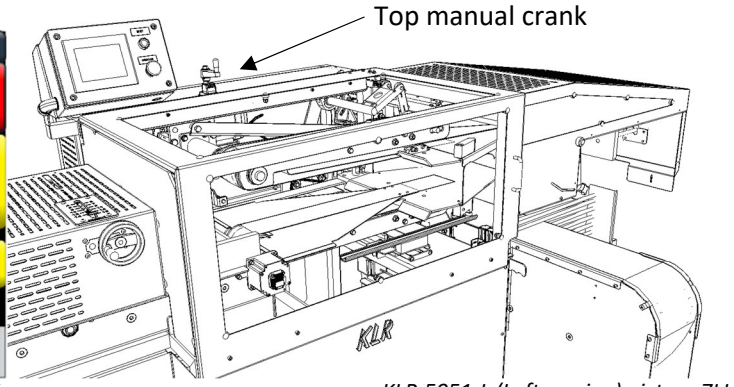
KLR.5051-L-AB (left version) picture 7II

Plate height

This is the adjustment communicated to operators of the machine via the touch screen. They can look at the value which translate to the crank display and they can perform a manual adjustment on it.



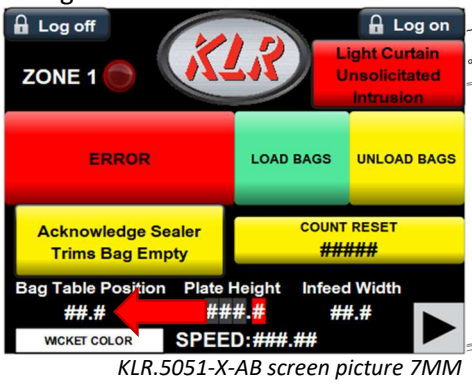
KLR.5051-X-AB screen picture 7KK



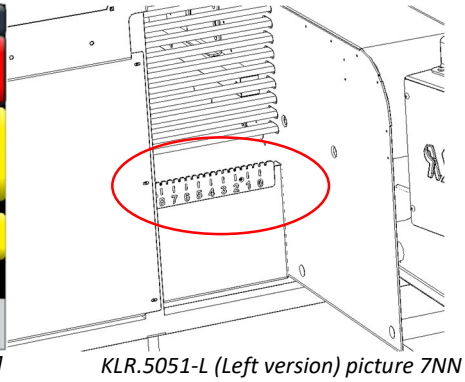
KLR.5051-L (Left version) picture 7LL

Bag table position

Value appearing on the main screen according to that recipe. Value to communicate to the operators on change over.



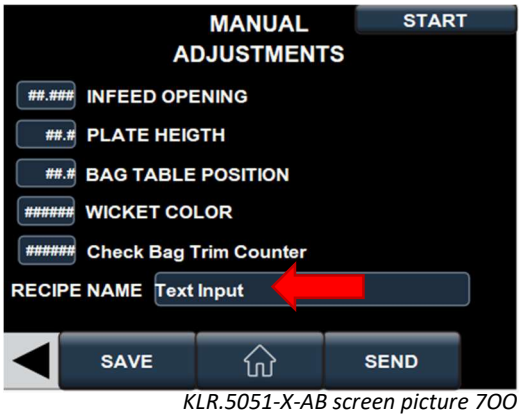
KLR.5051-X-AB screen picture 7MM



KLR.5051-L (Left version) picture 7NN

Recipe name

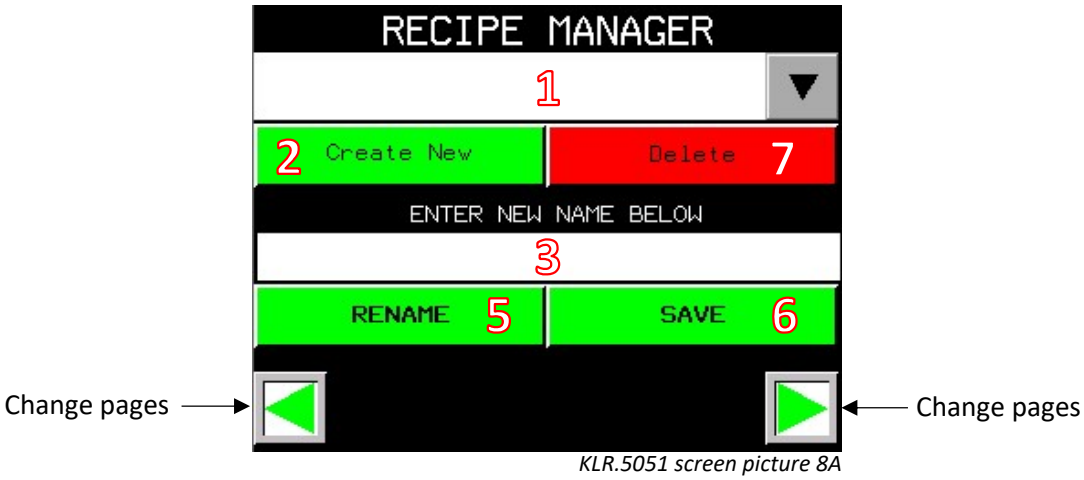
Enter a new name in the field to rename a recipe. Make sure to select the recipe that is required to change first.



KLR.5051-X-AB screen picture 7OO

8.0: RECIPE MANAGER KLR.5051

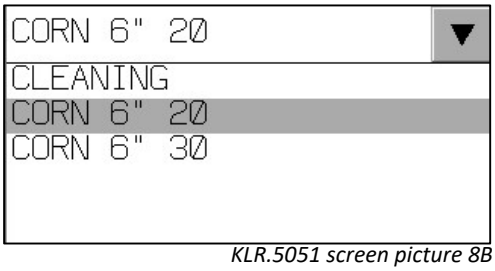
Here is where to copy, rename and create new recipes. This also helps to track changes.



KLR.5051 screen picture 8A

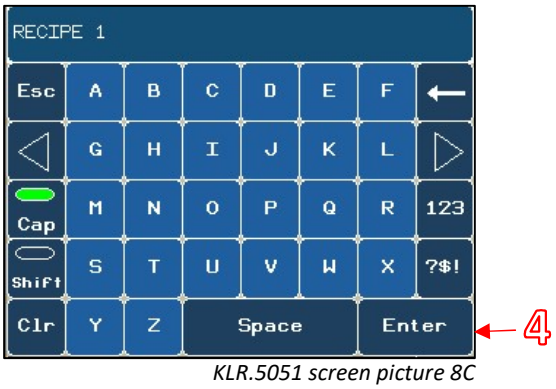
Create a new recipe:

- Select a current recipe (1).



KLR.5051 screen picture 8B

- Create new recipes (2), it will automatically copy the current recipe and ask to rename it.
- Press in the text box (3) and type a different name.



KLR.5051 screen picture 8C

- Enter (4).
- Rename (5).
- Save (6).

To delete a recipe:

Select the recipe to be deleted (1) and press delete (7).

9.0: MAINTENANCE

- Before doing the maintenance on the equipment, every operator and maintenance personnel should take part in a training session given by a KLR systems technician.

9.1: Preventive maintenance schedules

Due to the complexity of our machine, these procedures are subject to change and should be adequately adjusted in extreme conditions. The interval is fixed according to a facility doing 3 shift/6 days a week:

GREASING AND CLEANING PREVENTIVE MAINTENANCE SCHEDULE			
Location	**Procedure**	**Time interval**	**Remarks**
Pillow bearing up and down retract	2 greasing ports.	Quarterly (3 months)	Change greasing ports when leaking.
Bearing forward and reverse of retract plates	2 greasing ports.	Monthly (1 month), Weekly (1 week) if products are heavily floured	Make sure there is NO burrs on the linear rail.
Retract lifter shaft	Check if there is grease on it. If dry, grease lightly.	Daily (once per day)	Use a brush or a disposal glove.
Cleaning the machine	If the products are heavily floured. Blow air to remove all flour and blow gently air on prefeed, infeed and bag sensors.	Once per shift	Use dry and clean air supply.
	Clean the dust with an air blower and sanitize all the surfaces that are in contact with food.	Daily (Once per day)	DO NOT use aggressive chemical on plexiglass.

TROUBLESHOOTING PREVENTIVE MAINTENANCE SCHEDULE				
Location	**Procedure**	**Time interval**	**Possible causes**	**Remarks**
Retract plates	Test the retract lifter arms. Raise it by hand up and let it go. Check if there is restriction.	Monthly (1 month)	Bearing wear, not well adjusted	If there is restriction, replace bearings or adjust.
	Move by hand the plate forward and reverse. Check if there is restriction. Don't forget that it will always be a little difficult by hand, note any changes over time	Monthly (1 month)	Burrs on linear bearing, lack of greasing.	Means replace linear rail and linear bearing. (Lack of grease).
			Too much tension on servo belt. (Teeth belt)	Apply tension on home position is easier.
			Tracking of the servo belt	Verify if the servo belt (on forward and reverse movement) remains in the center of the aluminum roller and the drive sprocket. Both axes must be parallel.
Scoop rails	Check wear on the scoop plastic rollers (2). Verify there is not too much slack. Make sure the shafts are not touching the bottom of the rails (at home and full forward position).	Weekly (1 week)	Wear on the plastic roller. Loose set screws or wrong adjustment	Some time, wear will not be on the circumference but wear straight. This means the roller is not capable of turning on the shaft. Make sure to verify both (2) rollers.
Bag input module	Disassemble the front plate and remove belt. Blow air to remove dust and bag particles.	Monthly (1 month)	None, look for normal wear	⚠ **Important:** When reassembling, make sure to time the backlash of the belt sprocket to get the full potential. Make sure the belt has some play when the machine is loaded but with no bags.
	Check for gear wear and linear bearing.		Normal wear	When moved by hands, the restriction may come from generation of current by the motor
	Check for gearbox leaks.		Seals	None.

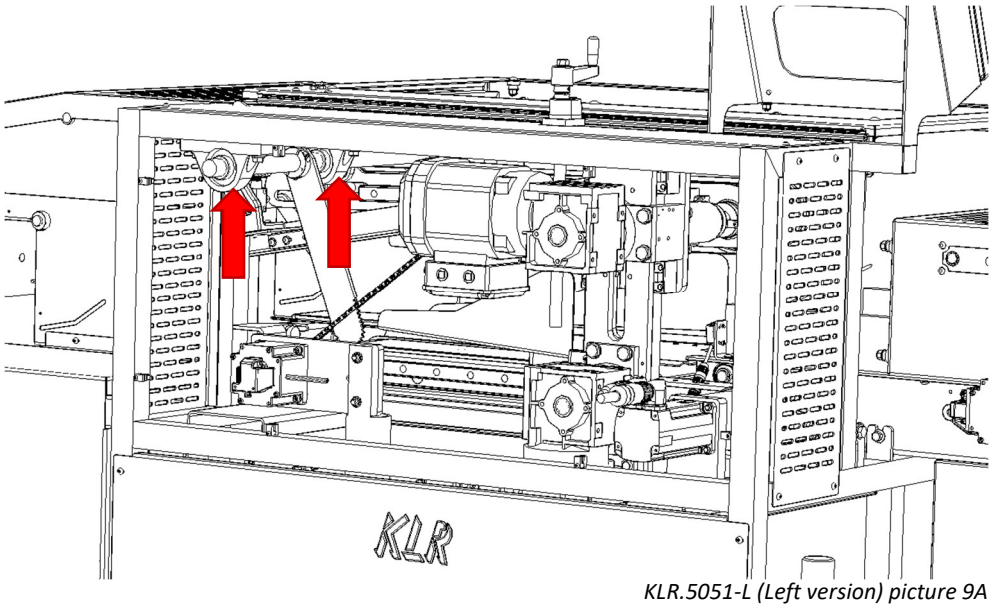
9.2: Maintenance steps

> ⚠ ➢ When performing maintenance, ALWAYS use two (2) lock out devices on each supply: electric and pneumatic.

9.2.1: Greasing ports

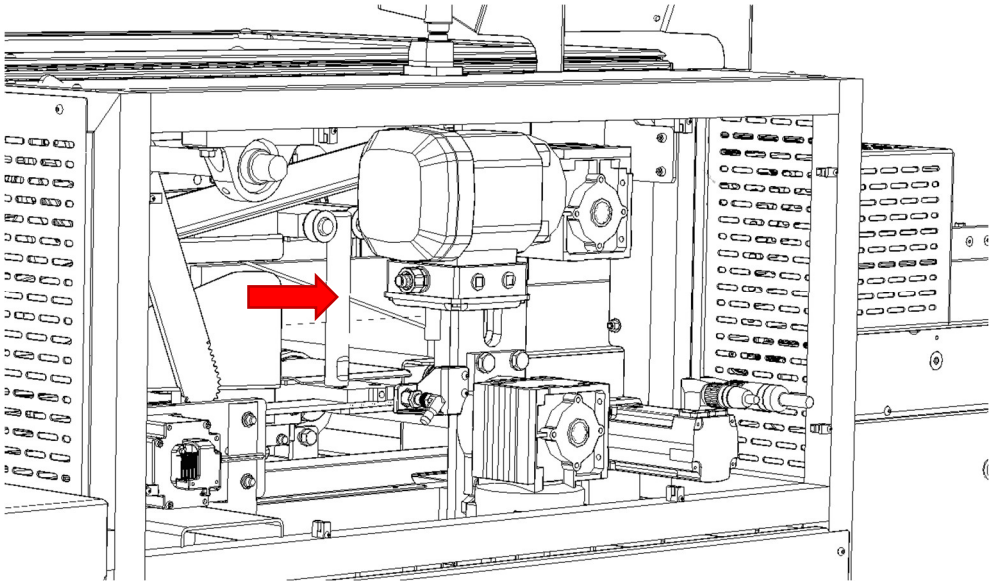
Note: The pictures have been taken from the back perspective for clarity purpose only. The grease ports are accessible via the sliding door.

Pillow bearings



KLR.5051-L (Left version) picture 9A

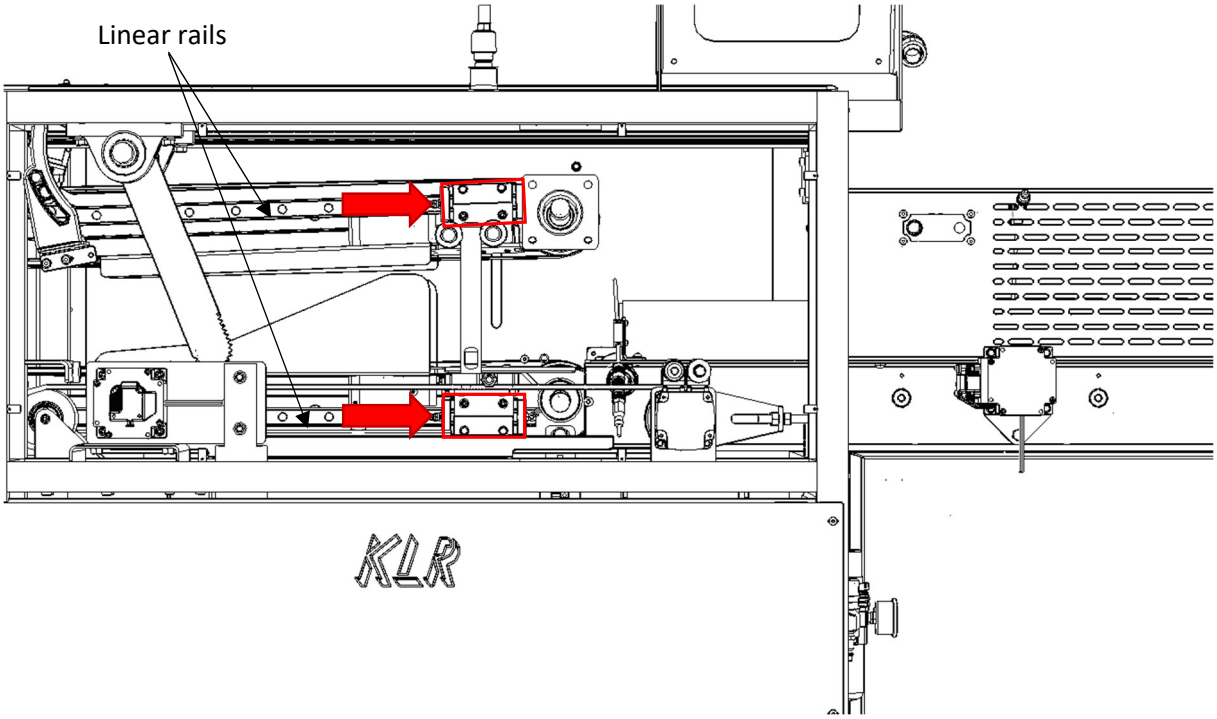
Retract lifter shaft



KLR.5051-L (Left version) picture 9B

Retract linear bearings

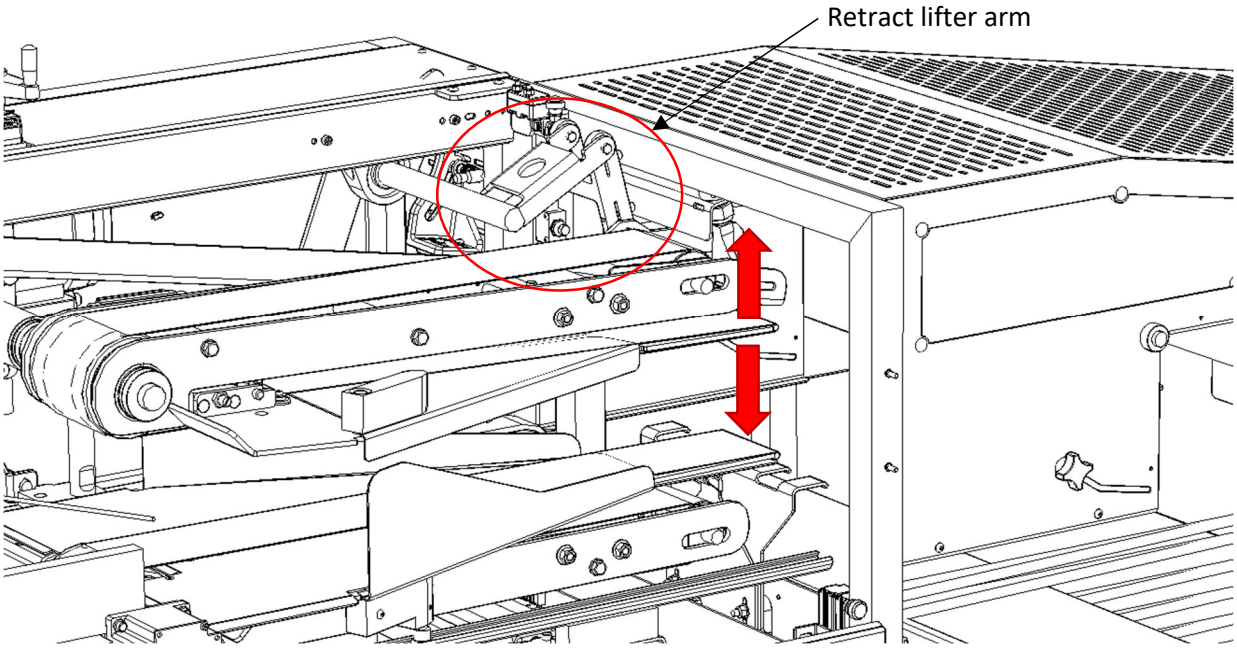
Wipe linear rails if old dirty grease. Inspect the linear rails for any burr. Grease the two (2) linear bearings.



KLR.5051-L (Left version) picture 9C
– Some parts have been removed for clarity –

9.2.2: Retract plates

Test the retract lifter arm by moving up and down by hands. Three (3) bearings.

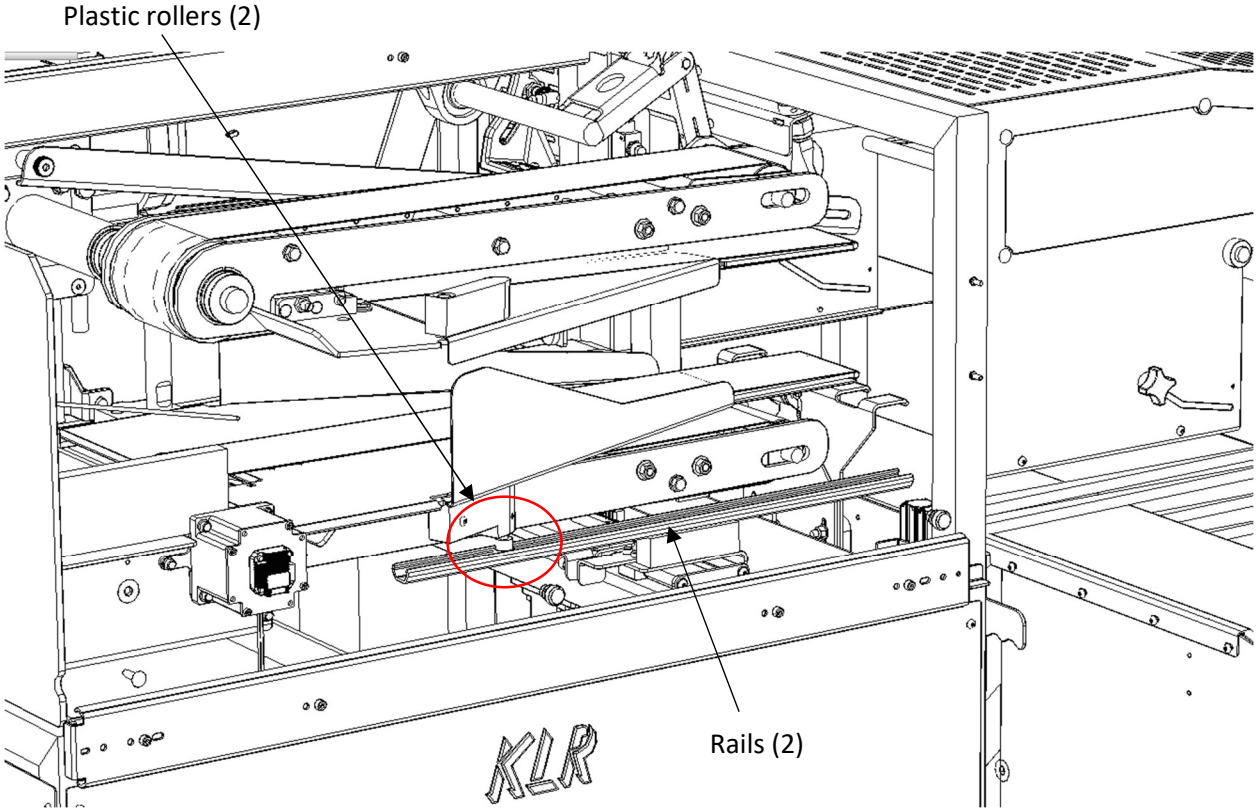


KLR.5051-L (Left version) picture 9D

9.2.3: Scoop rails

Note: also, look at the one on the opposite side. Make sure each shaft of those rollers is not in contact with the bottom of the tracks respectively. This inspection must be done by manually placing the retract system at the beginning and at the end of the tracks.

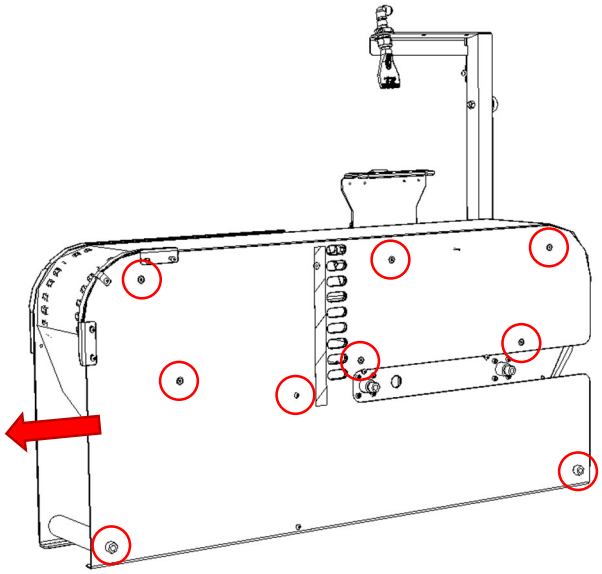
Verify the wear of the plastic rollers. Make sure there is no flat spot and they turn freely.



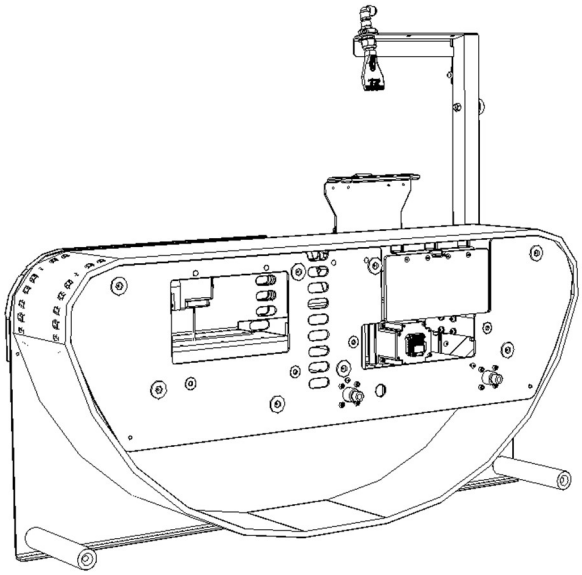
KLR.5051-L (Left version) picture 9E

9.2.4: Bag inputs module

1. Turn off the power and put a pad lock device for safety.
2. Remove all those screws and remove the cover by sliding on the side.

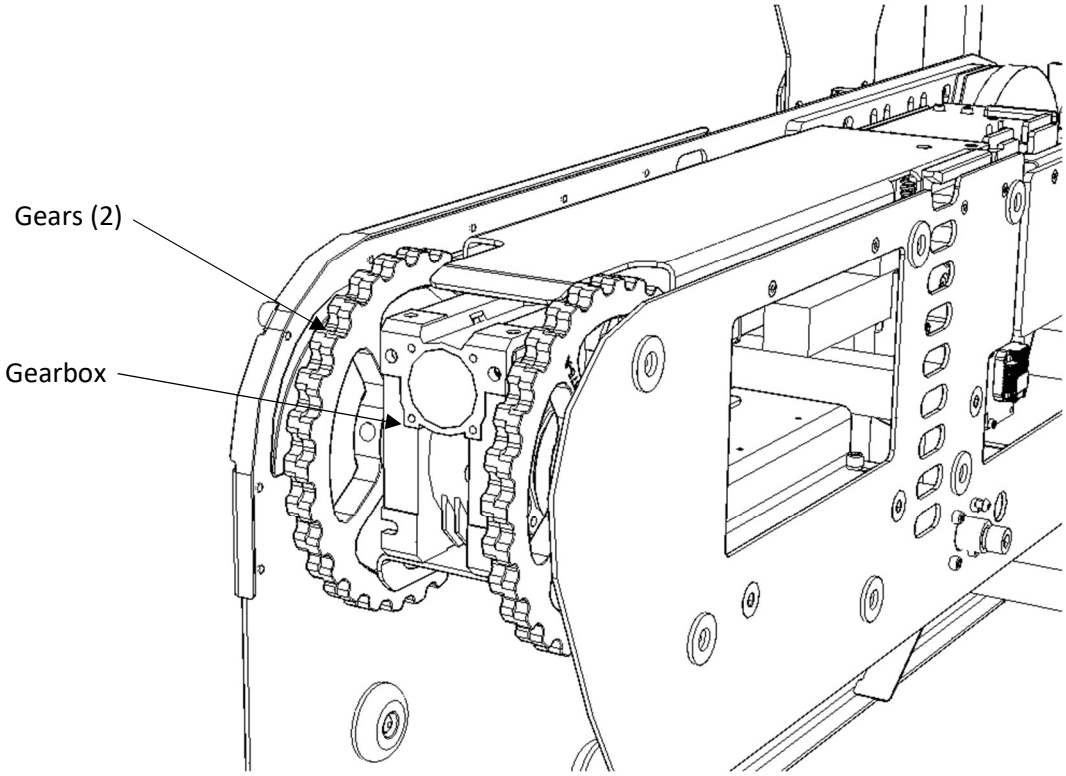


KLR.5051-L (Left version) picture 6F



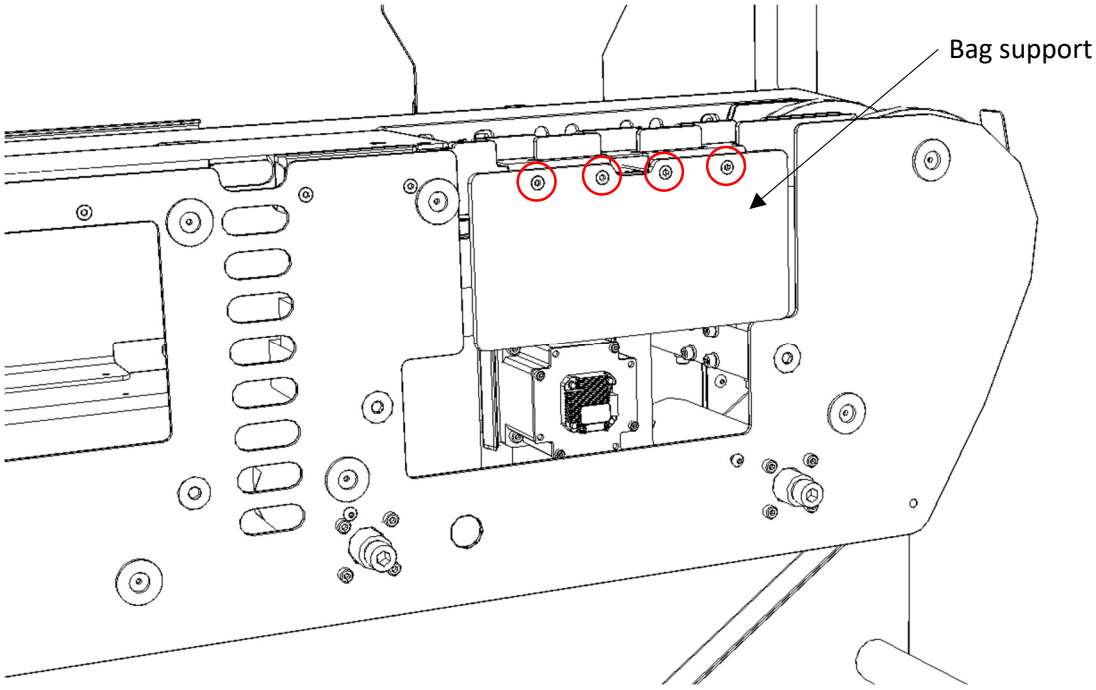
KLR.5051-L (Left version) picture 9G

3. Remove the belt. Inspect the plastic gears and inspect if there is leak on the gearbox. For reinstall, **see "Timing of plastic gear"**



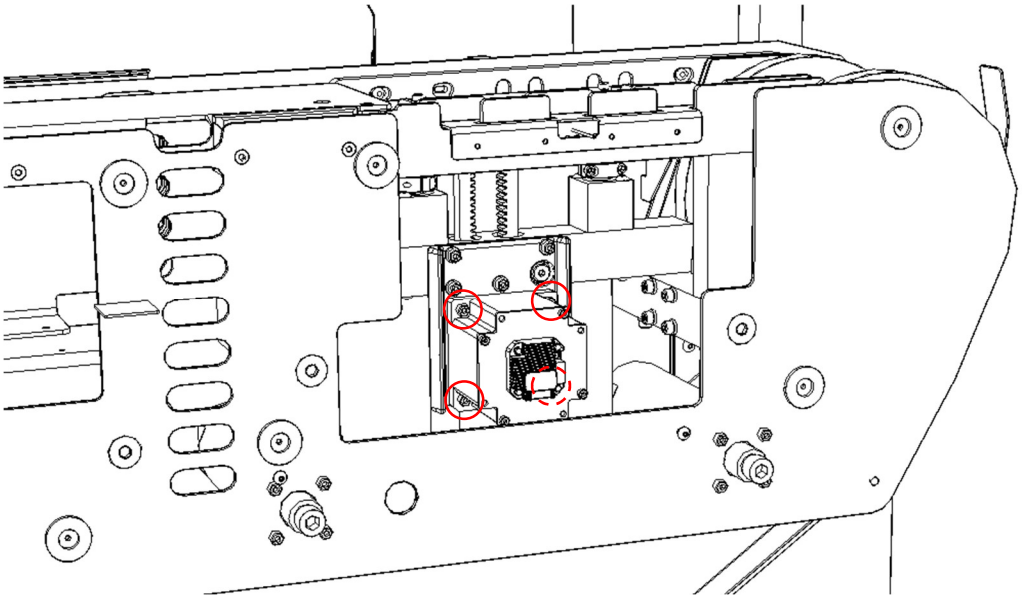
KLR.5051-L (Left version) picture 9H

4. The bag support can be removed for more accessibility.



KLR.5051-L (Left version) picture 9I

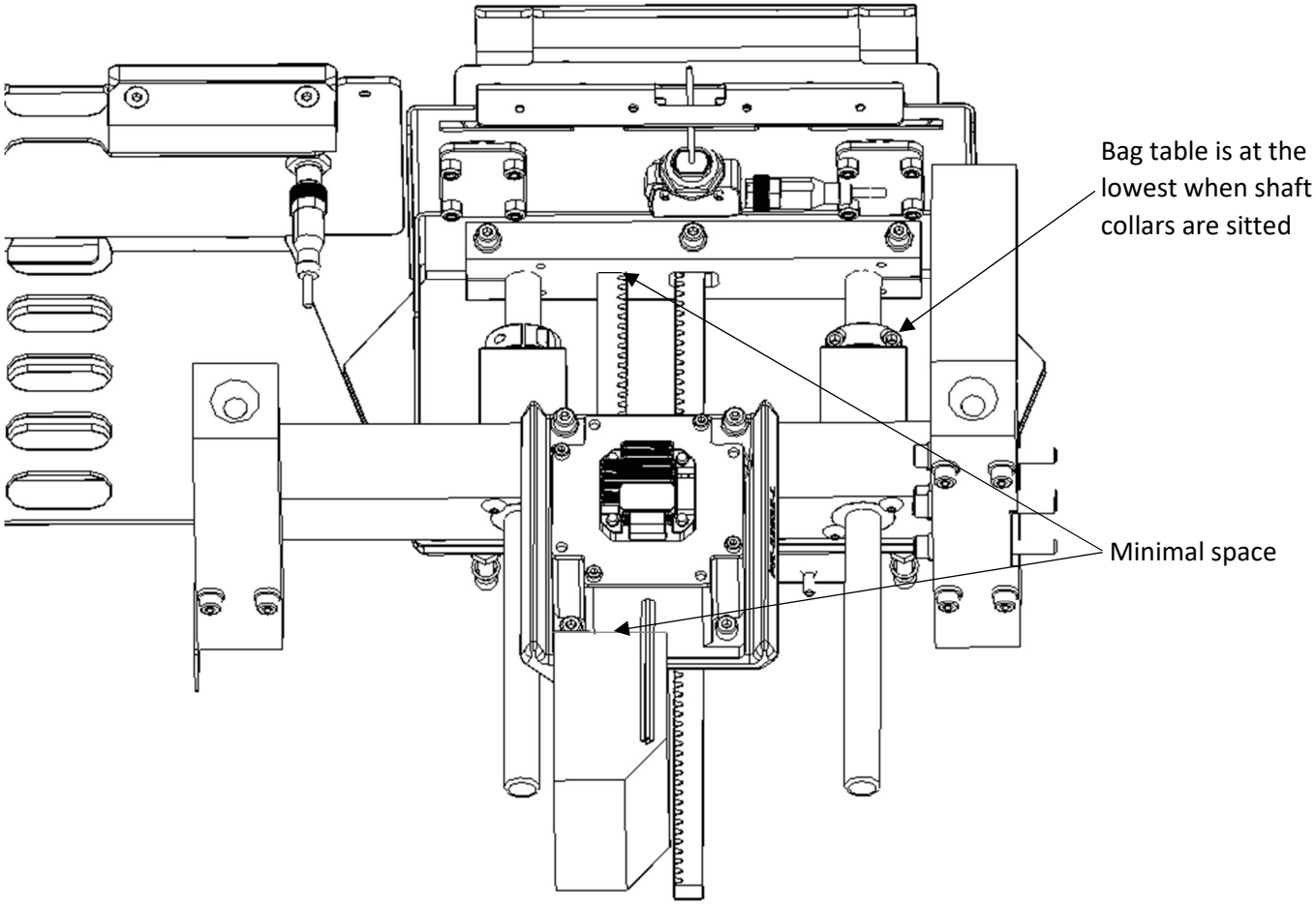
5. Disconnect the bag lifter motor, remove the 4 screws, and pull out the motor. **Careful, the weight section will fall.** Inspect the racks and pinion. On reinstall, take care of timing the system properly. **See "Timing of bag lifter weight"**



KLR.5051-L (Left version) picture 9J

9.2.4.1: Timing of bag lifter weight (No weight on KLR.5051-L-AB and KLR.5051-R-AB)

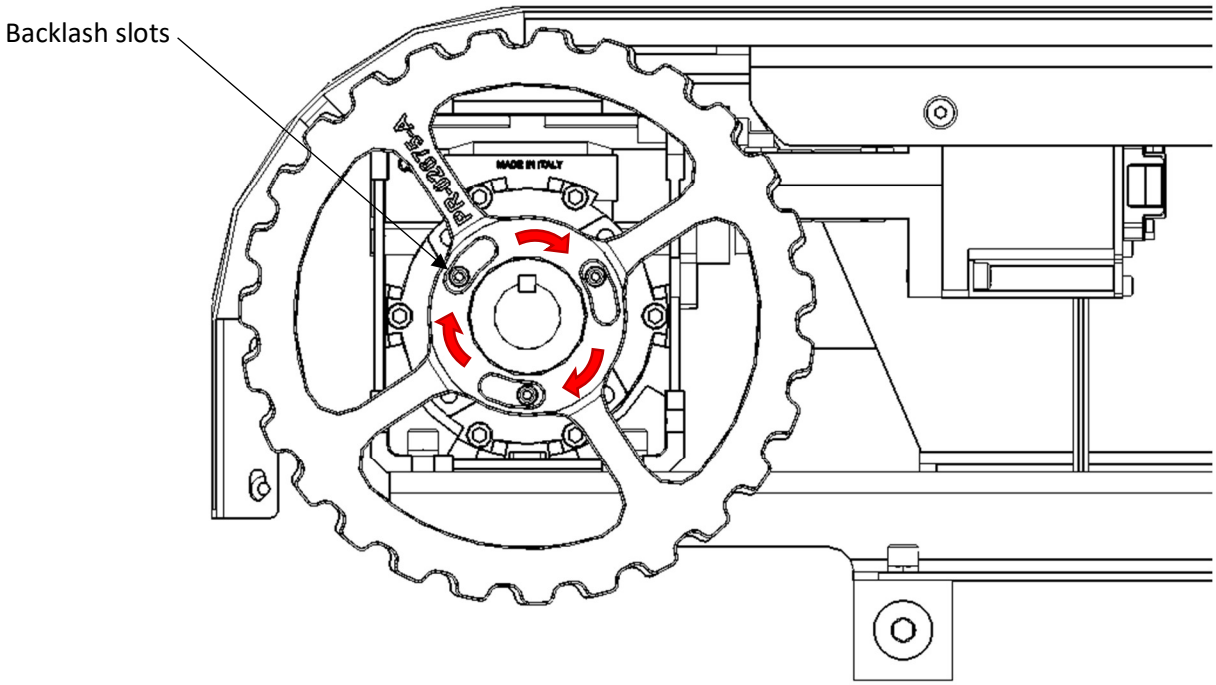
When the bag table is at the lowest, make sure there is minimal space in between the weight rack and the aluminum fixture. Also, it must be minimal space in between the weight and the motor body.



KLR.5051-L (Left version) picture 9K
– Some parts have been removed for clarity –

9.2.4.2: Timing of plastic gear

On reinstallation of the belt, it is important to time the backlashes of the two (2) plastic gears the same way. Otherwise, it restrains the maximum movement. Simply orient both backlash gears completely one side (does not matter if it is in or out) and then reinstall the belt.



KLR.5051-L (Left version) picture 9L
– Some parts have been removed for clarity –

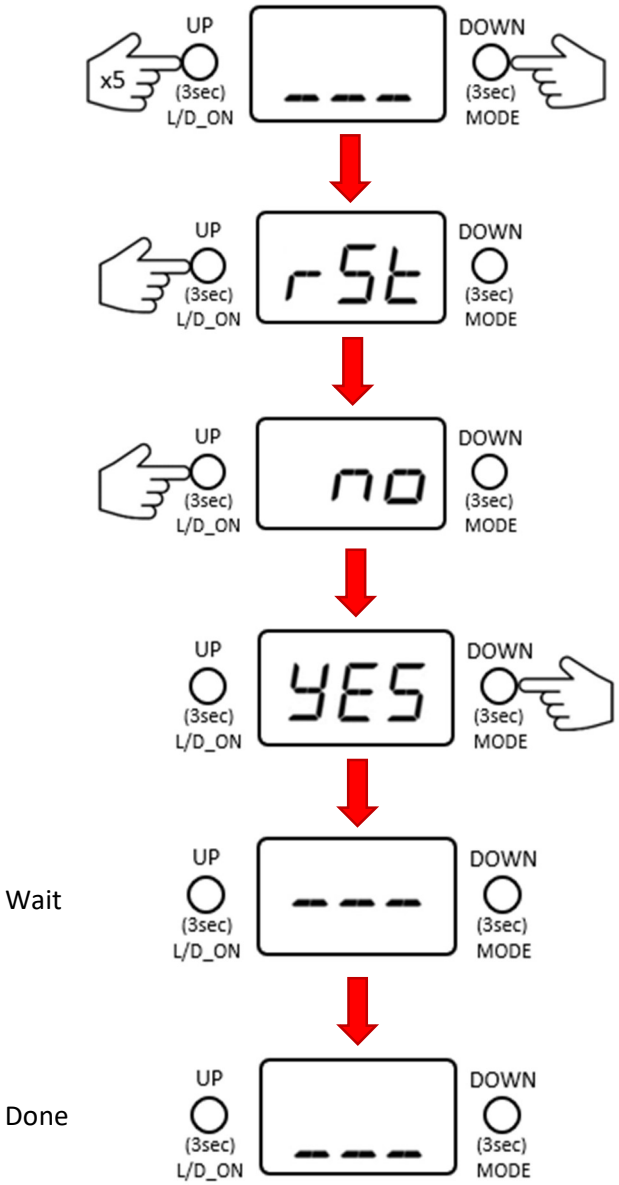
9.2.5: Bag sensor programming

See "Bag input module" to know how to get to the sensor. On power up, display will show:

Bag sensor picture 6M

9.2.5.1: Reset to default

1. While pressing on DOWN, press five (5) times on UP. A question will then display.
2. Press UP twice to select YES.
3. Press DOWN to reset.

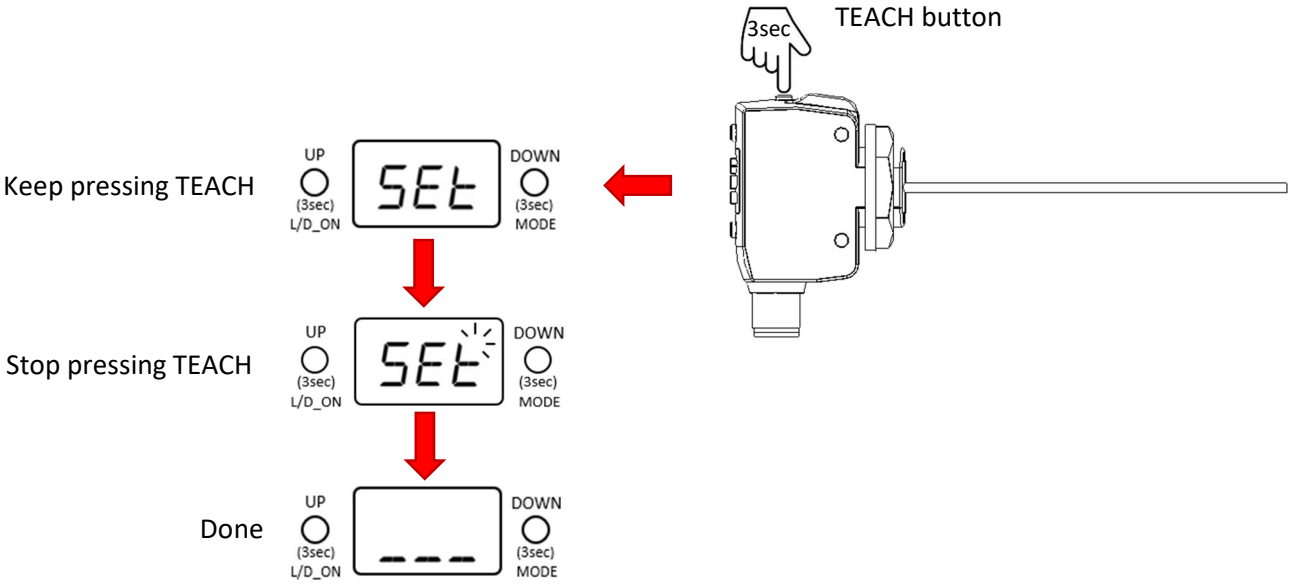


Bag sensor picture 9N

9.2.5.2: Teach the bag sensor

Note: On this model, no need to select PNP or NPN.

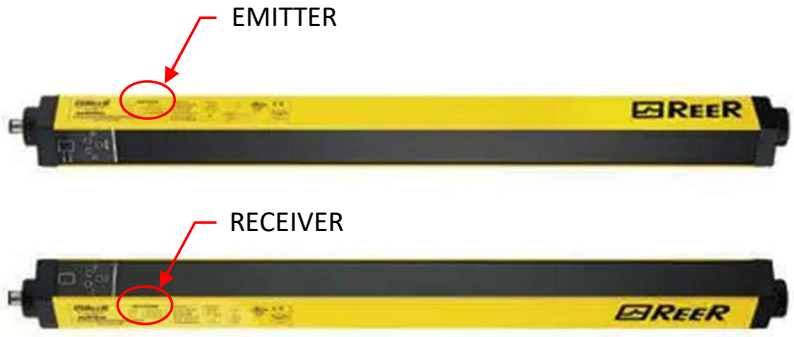
1. With nothing in front of the sensor, press the TEACH button for 3 seconds (until the SET flashes in the display).
2. Wait until it is done, then redo step 1 one more time.



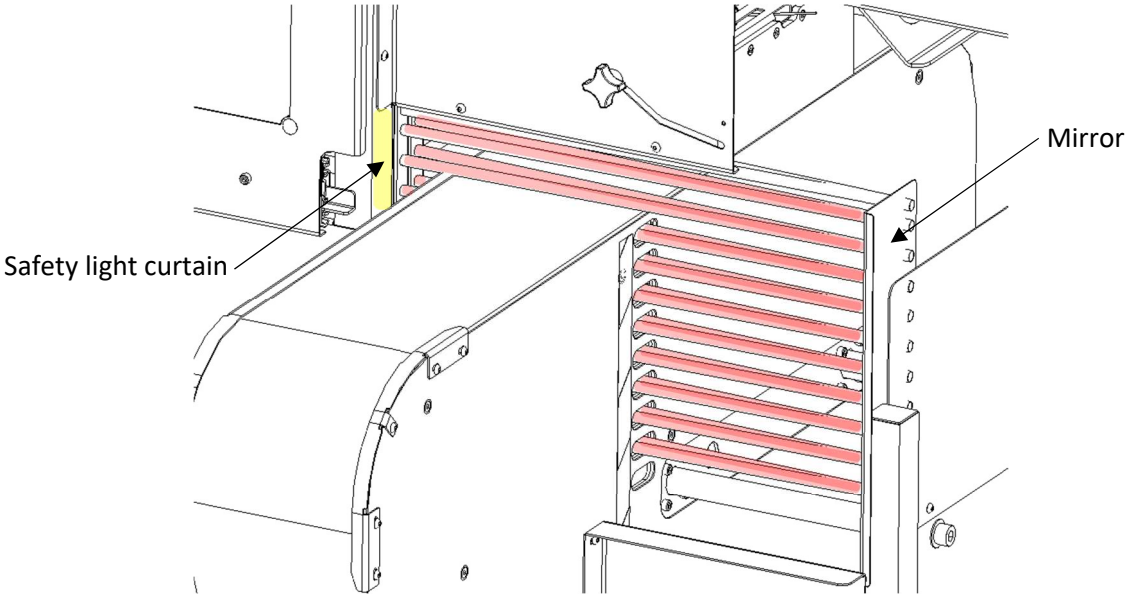
Bag sensor picture 9O

9.2.6: Adjusting safety light curtain (SN: 2415 – 3031)

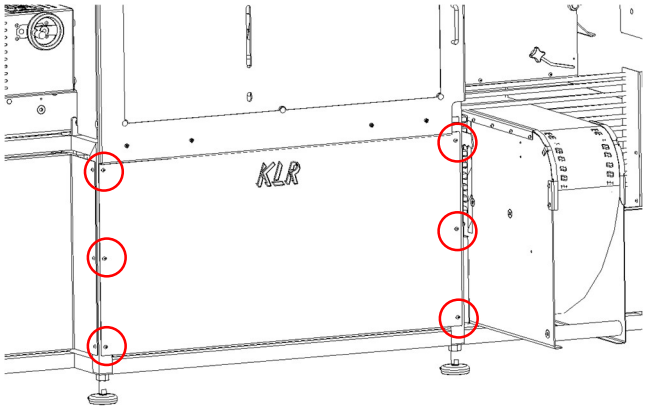
The safety curtain consists into an emitter and a receiver. Make sure the unit matches the cable identification and the wiring.



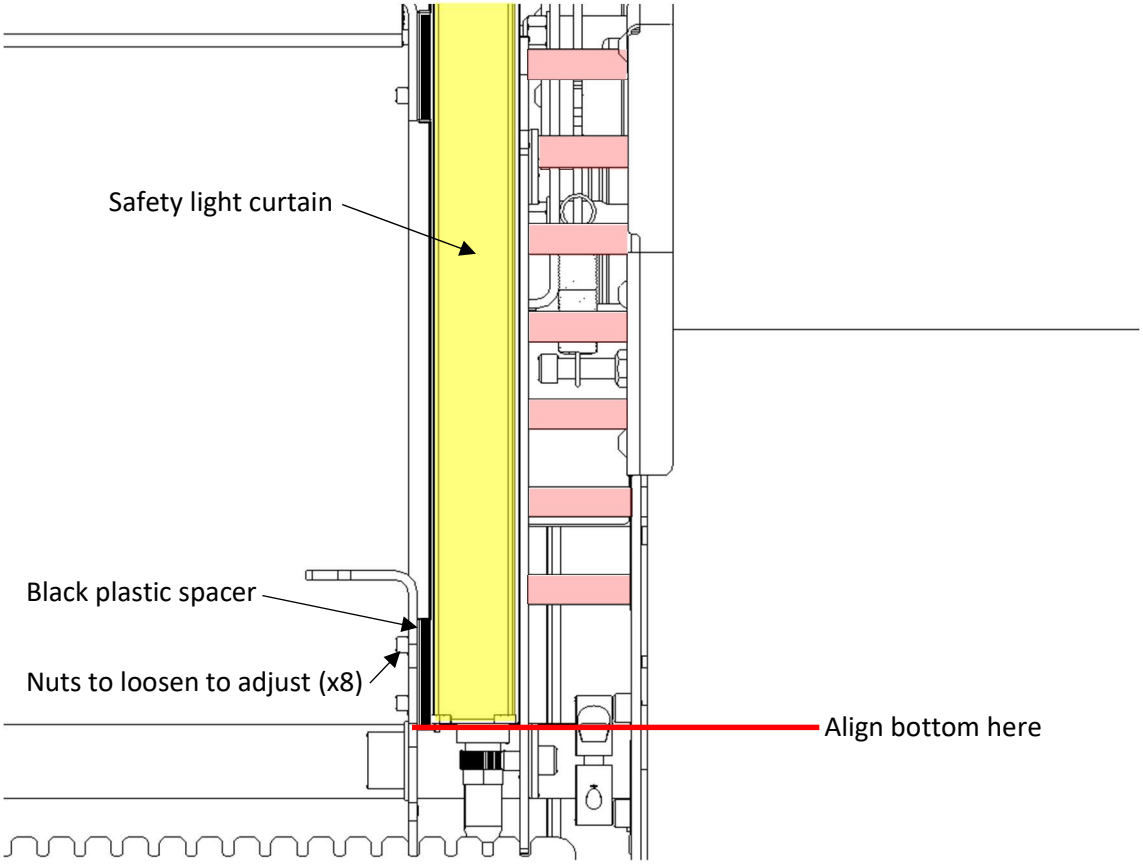
Invisible light beams go trough the bag table assembly and bounce on a mirror to offer protection on both side of it. To adjust the unit, the lights beams need to avoid detecting the bag table at all.



1. Remove the front panel (6 screws).

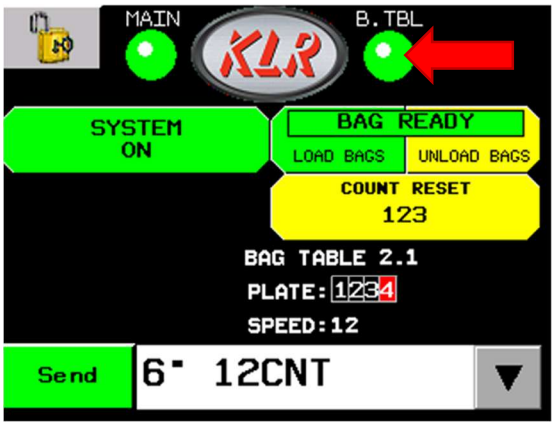


2. Quick adjustment by aligning the unit with the black plastic spacer. Always adjust the emitter and the receiver the same level.

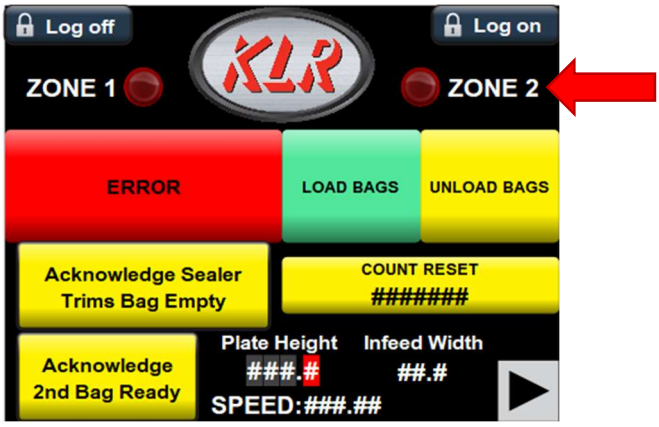


3. Fine tune until on the main screen, the safety B. TBL (ZONE 2) is green.

KLR.5051-X

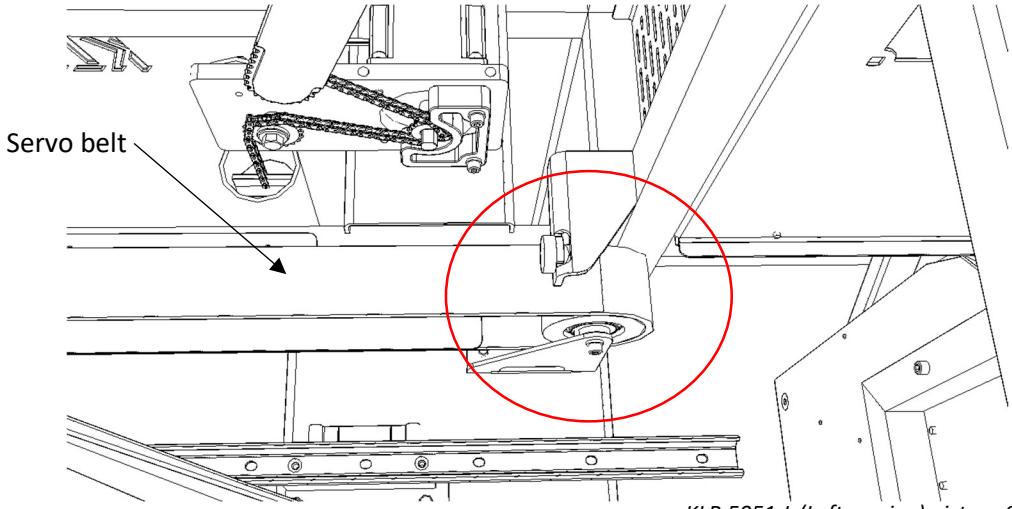


KLR.5051-X-AB



9.2.7: Servo belt

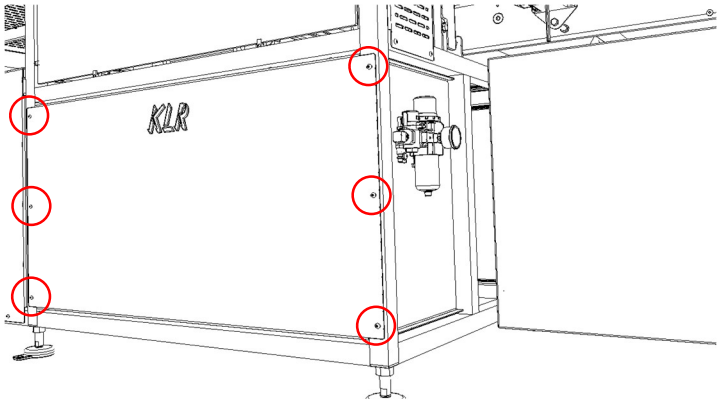
1. Make sure the tension is adequate on the servo belt.
2. Verify the tracking is correct. The belt must NOT touch on either side on all position of the system.



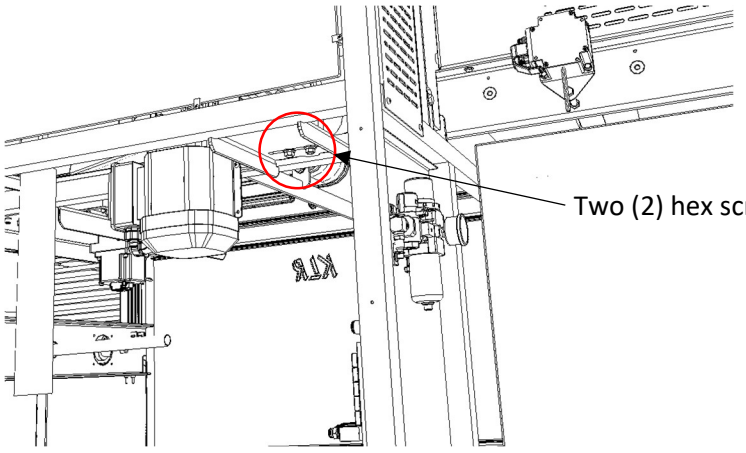
KLR.5051-L (Left version) picture 6L

9.2.7.1: Servo belt tension

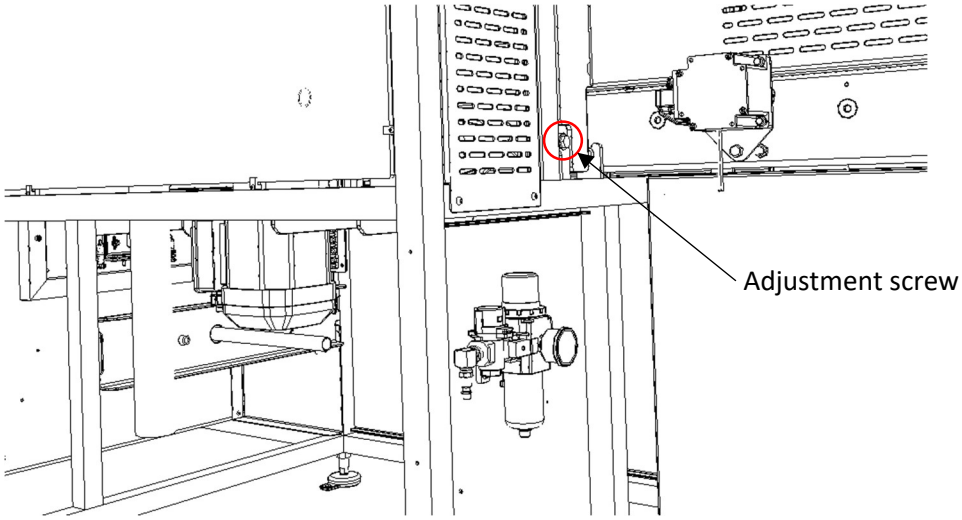
1. Remove rear panel.



2. Loosen slightly the two (2) hex screws.



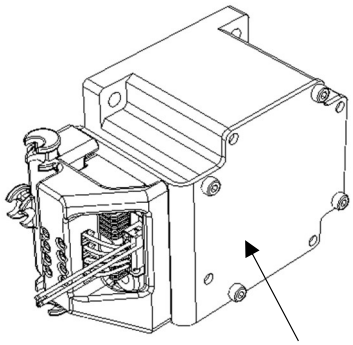
3. Adjust tension via the adjustment screw.



9.3: Stepper motor assembly for KLR.5051

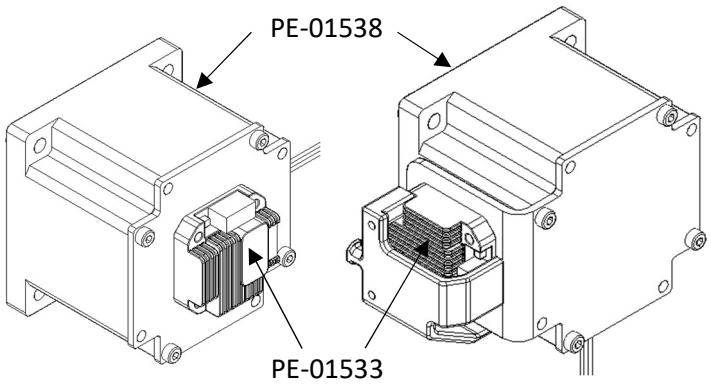
The KLR.5051 has at least 6 stepper motors.

SN: 3032 – beyond (KLR-00001 – Beyond)



KR-STEPPER (assembly)

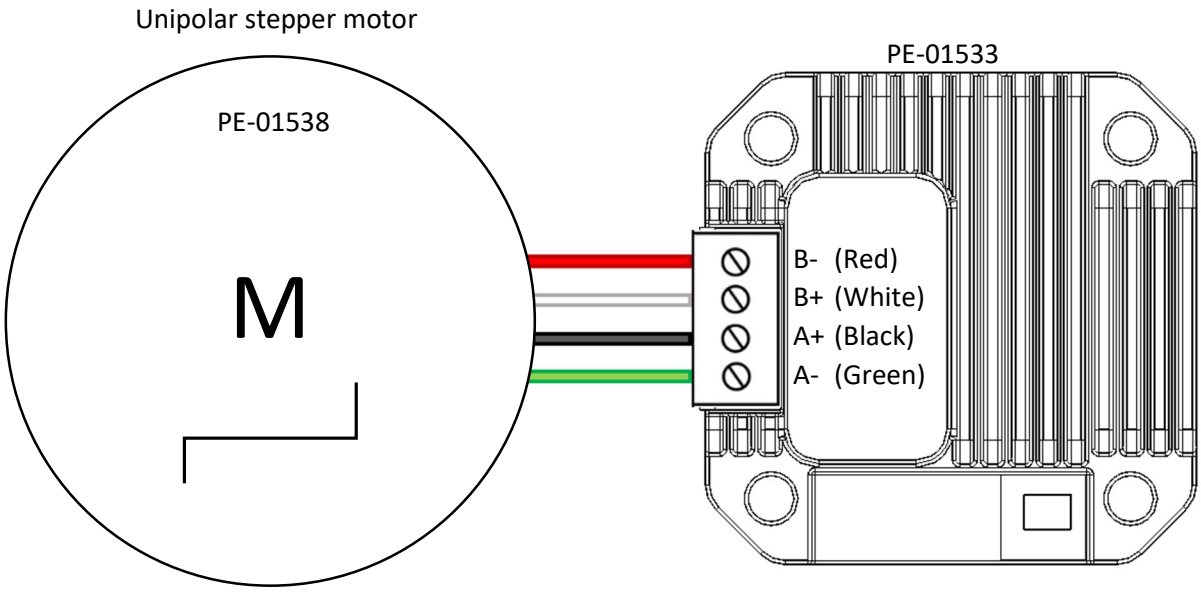
SN: 2415 - 3031



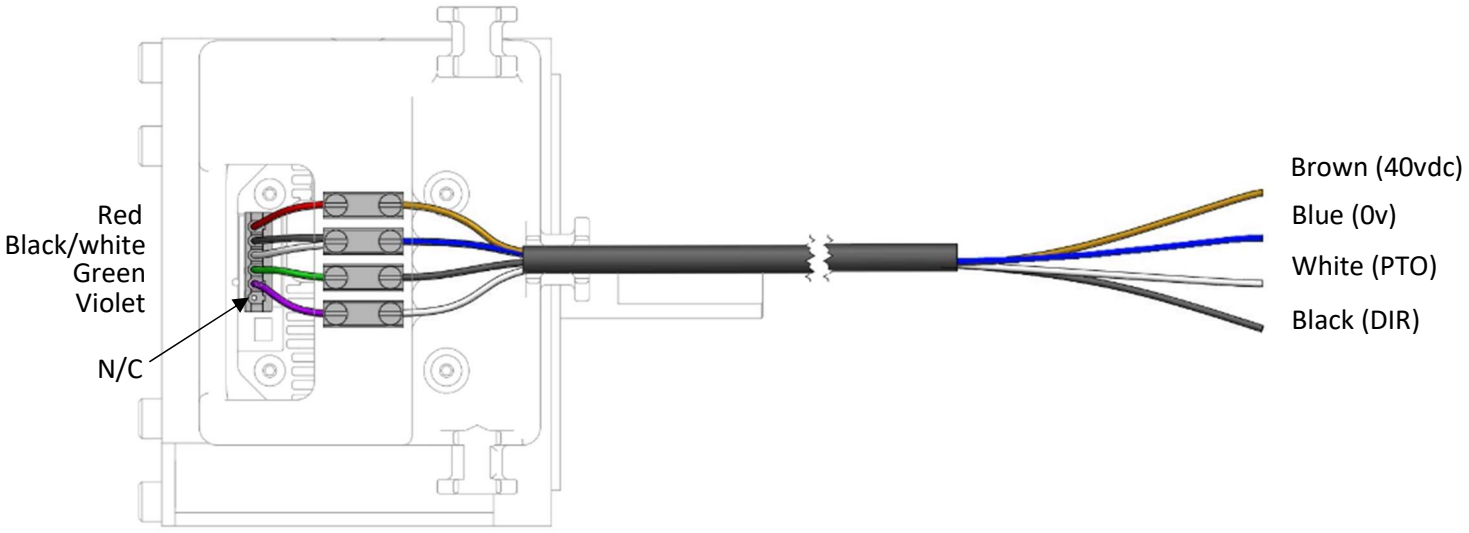
9.3.1: Wiring

9.3.1.1: Integrated stepper drive

The integrated stepper drive must follow this wiring:

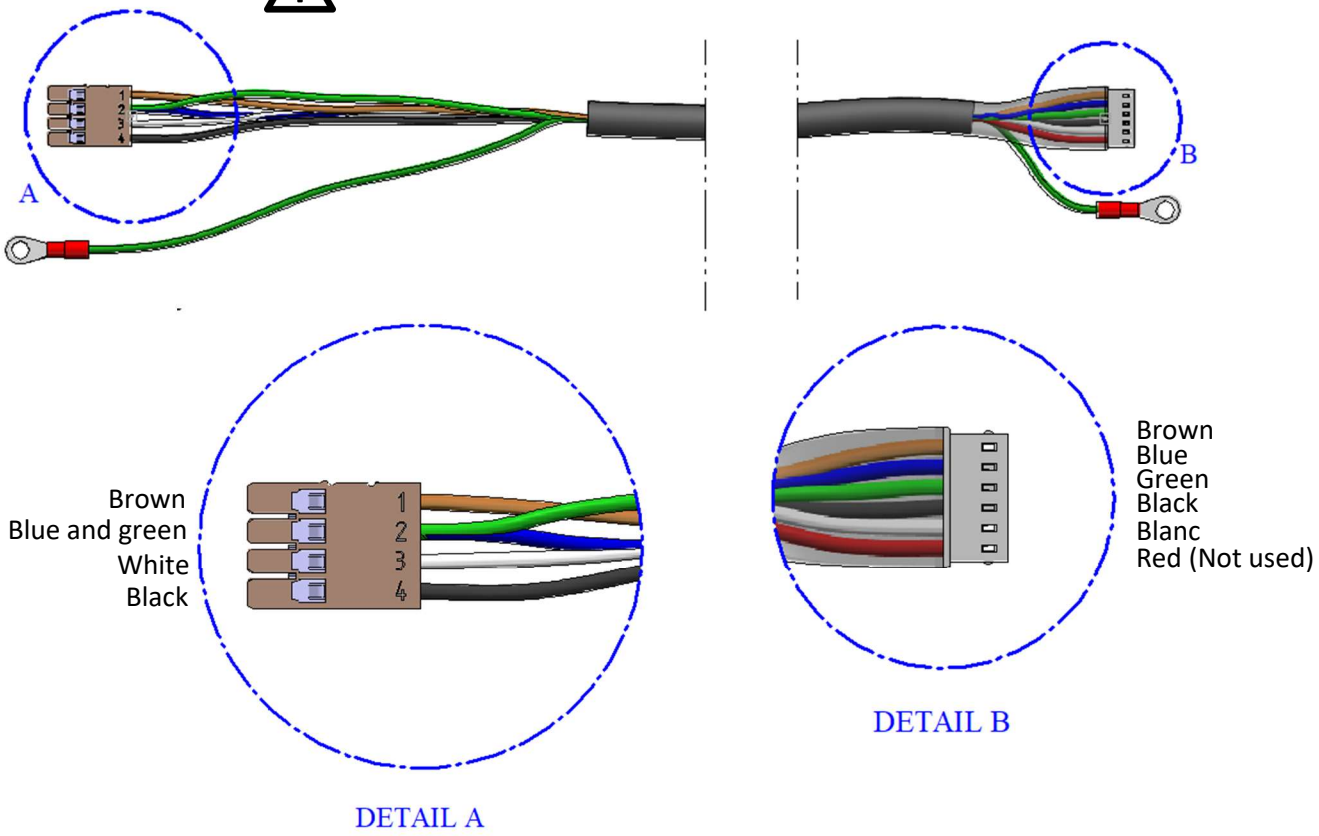


9.3.1.2: Wire from motor to the control panel (SN: 3032 – beyond; KLR-00001 – beyond)



9.3.1.3: Wire from motor to the control panel (SN: 2415-3031)

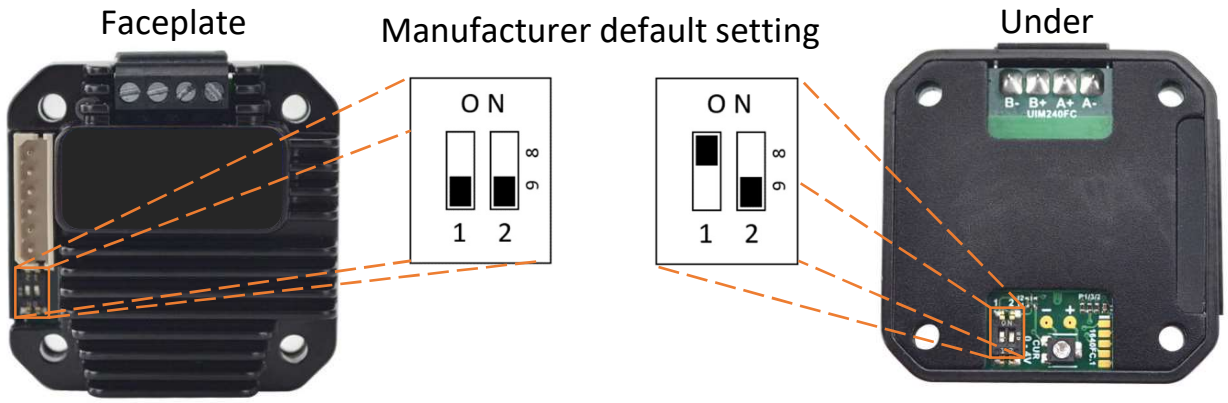
⚠ *IF machine has been retrofitted, use **9.3.1.2** section.*



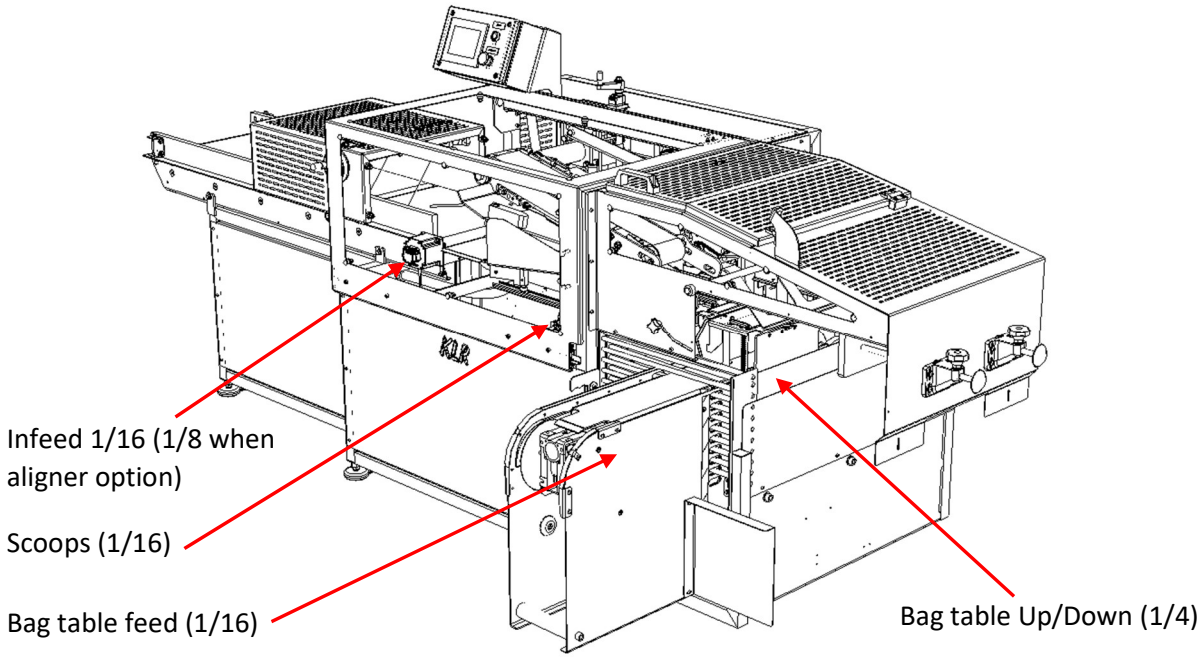
9.3.2: DIP switch resolution setting

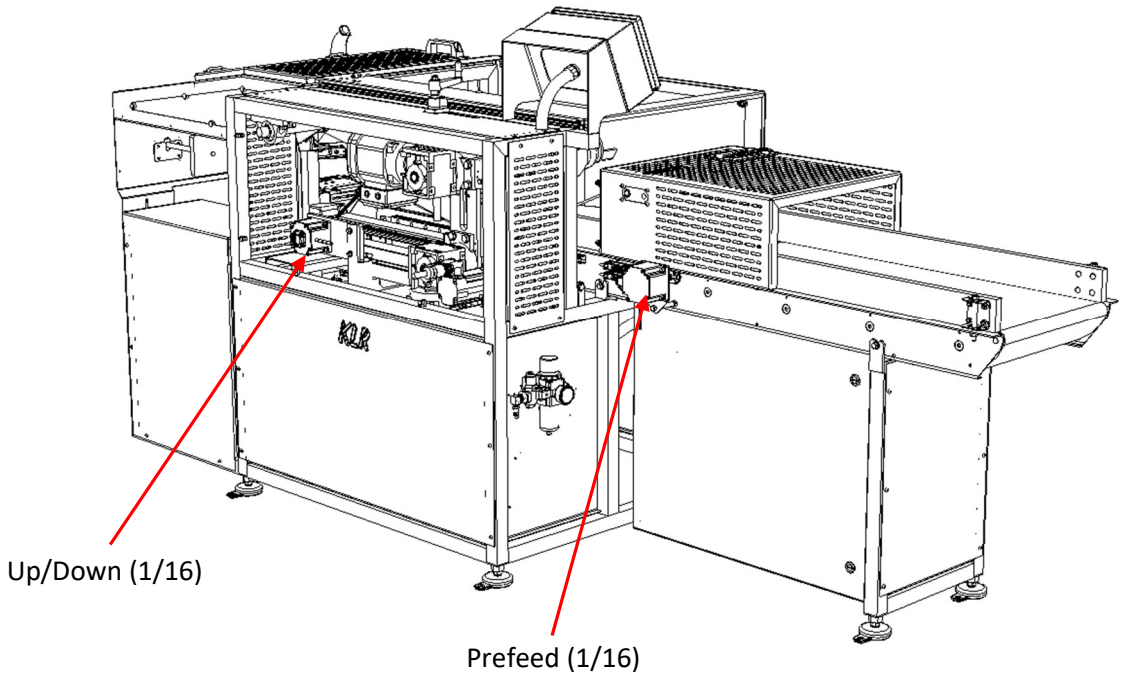
9.3.2.1: Manufacturer default setting

On the drive, there are two (2) sets of DIP switches.



9.3.2.2: Location on the bagger





9.3.2.3: Settings

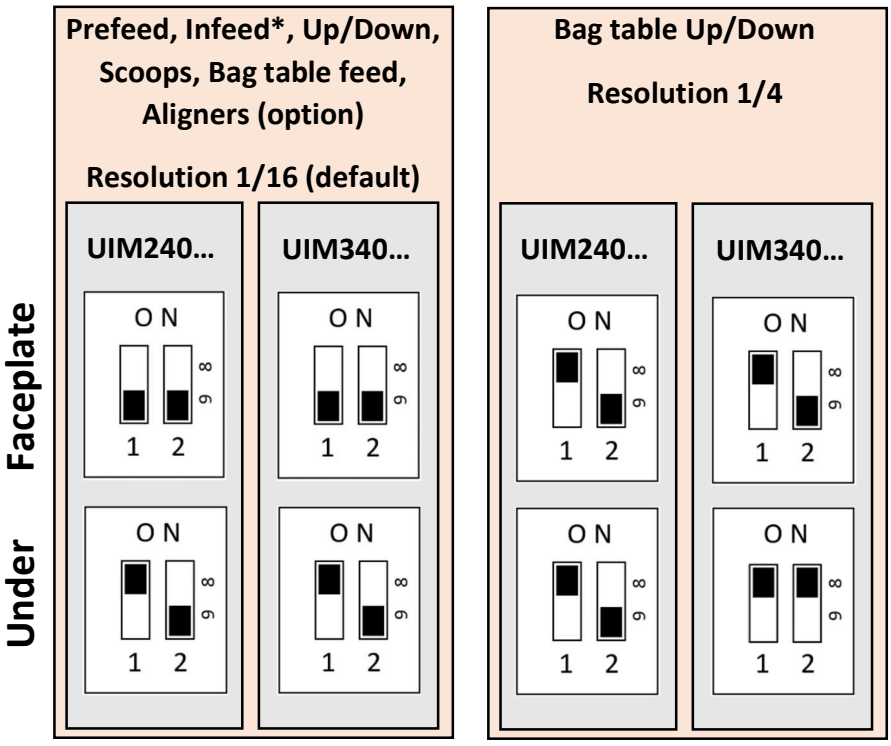
⚠ Only relevant for the stepper motor axis setting that must be change from the default value. See **DIP switch setting**.

Due to the recent shortage in electric components, the manufacturer of the drive used a different part into the making of it. Result: Two different drives are in circulation.

Only on resolution changes

UIM240… = Leave the DIP switches behind as is.

UIM340… = Change DIP switch behind to be equivalent



**When Aligners Option, Infeed become 1/8 resolution.*

9.4: Stepper motor for KLR.5051-X-AB

Prior replacing a Lexium Mdrive stepper motor (PE-00628), it is required to be programmed. Download and use the **Lexium software suite**. It does not require a license and it is completely free to use. Please, use version 1.0.1.8 or above.

KLR part number: PE-00628

Default IP address on purchase: 192.168.33.1

9.4.1: Local IP address

Here are the local IP addresses for the Lexium stepper motors.

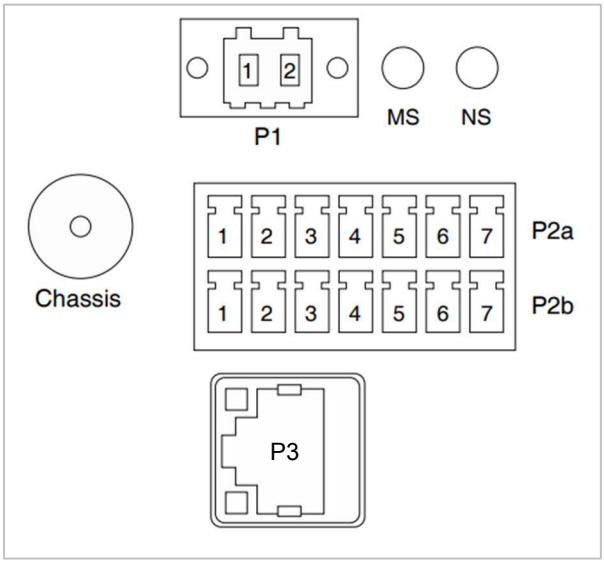
Motors	Address
Prefeed	192.168.10.71
Infeed	192.168.10.72
Scoop	192.168.10.73
Up/down	192.168.10.74
B.T. feed*	192.168.10.75
B.T. up/down*	192.168.10.76
Subnet (all)	255.255.255.0
Gateway (all)	192.168.10.1

*B.T. Bag table

9.4.2: Wire stepper motor

Name	Assignment
P1	DC voltage supply
P2	I/O interface
P3	Ethernet interface
Chassis	Ground
MS LED	Module status
NS LED	Network status

Pin	Assignment	Color
P1		
1	48VDC*	Black
2	0V	Blue
P2a		
1	Sinking input	Green
2	Input 1	White
3	Input 2	Red
4 - 7	Not used	N/A
P2b		
1	Aux. 24VDC	Brown
2 - 7	Not used	N/A



For programming purposes, a 24VDC supply can be connected instead. See "wire in a bench test**".*

9.4.2.1: Wire in a bench test (programming purpose)

⚠ Lexium Mdrive stepper motor (PE-00628) coils are intended to operate, in normal condition, at **48VDC**. But the integrated drive on the motor support 24VDC as well for programming.

1. Wire P1 at 24VDC (or 48VDC) and 0V (only for programming on bench test).
2. Plug Ethernet cable from P3 to computer.

9.4.3: LED indicators description

The Lexium Mdrive stepper motor has two (2) dual-color (red/green) LEDs visible from the back of the integrated drive to give status and error indication.

Color	State	Description
NS – Networks status		
None	Off	No power, no ethernet connection
Red	Solid	Unrecoverable fault
	Flashing	Recoverable fault or I/O connection timed out
Green	Solid	Normal runtime operation (I/O connection allocated)
	Flashing	Device is idle or not allocated to a PLC
Red/green	Alternating	Power-up self test in progress
MS – Module status (I/O status)		
None	Off	No power
Red	Solid	Unrecovered fault
	Flashing	Minor, recoverable fault
Green	Solid	I/O connection established
	Flashing	Standby, no I/O connection established
Red/green	Alternating	Power-up self test in progress

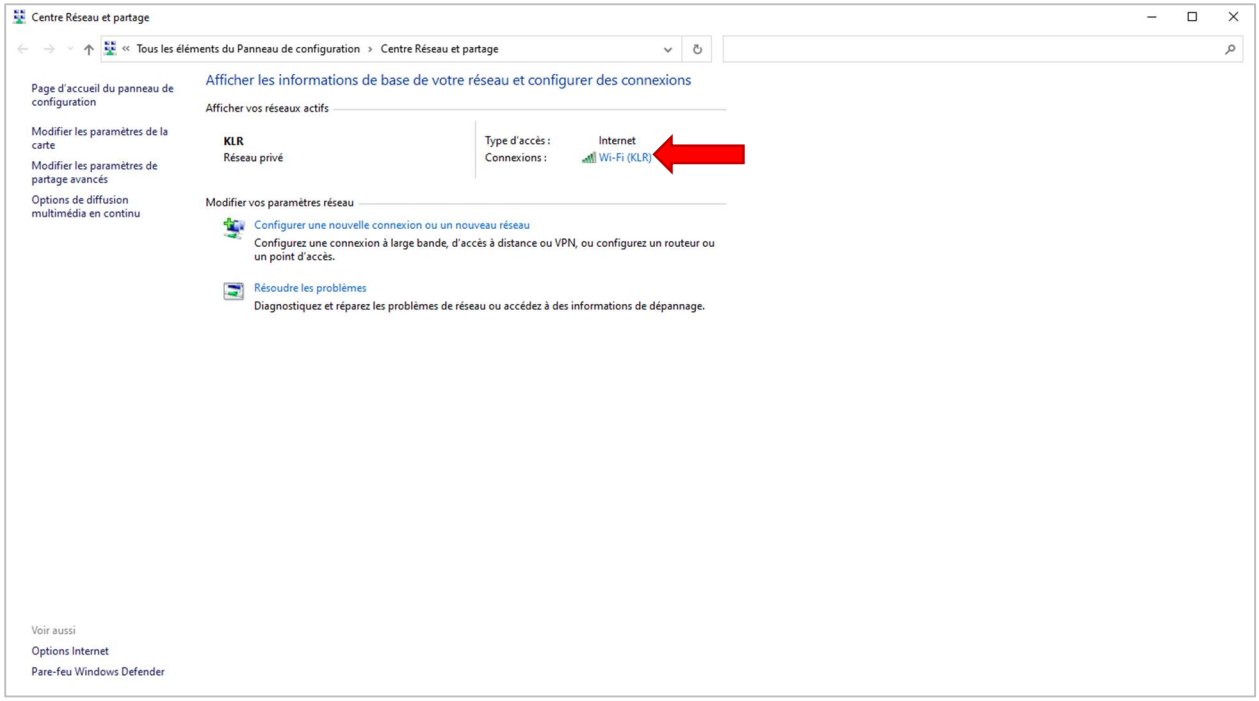
9.4.4: Set IPv4 address of the computer

The machine has two (2) IP address which one is used locally in electrical box, and one used to connect to the infrastructure (including connecting to a secure VPN). By default, the local IP address is the same through all the machines.

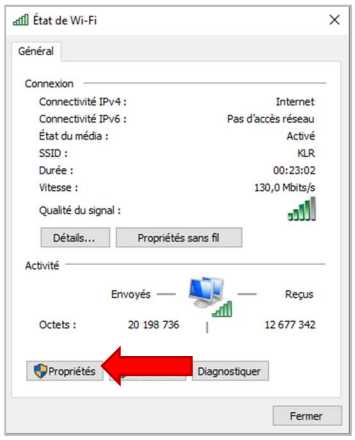
Default IP address on motor (on purchase): 192.168.33.1

Default local IP address range for the bagger: 192.168.10.XXX

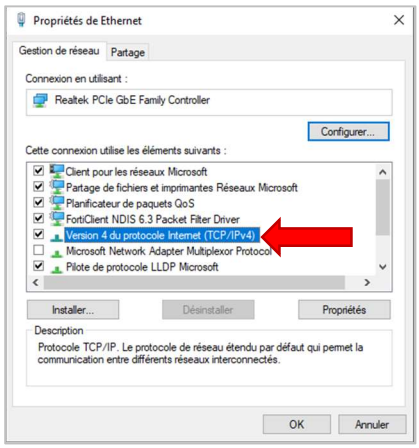
1. Open Network and sharing center.
2. Click on ethernet.



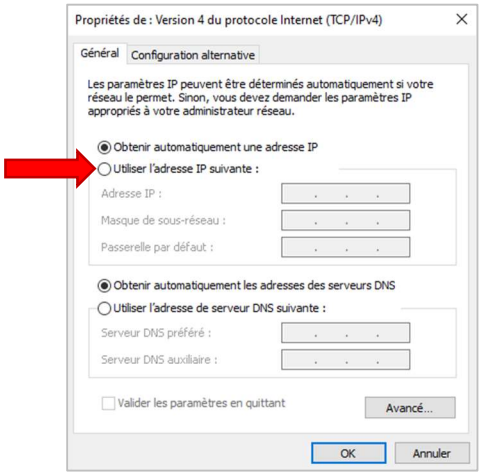
3. Click Properties.



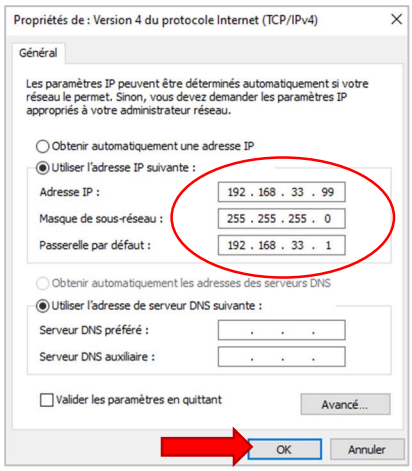
4. Double click on **Internet protocol TCP/IPv4**.



5. Click on **Use this IP address**.



6. Insert an IP address that match the default IP address of the motor.



9.4.5: Lexium Software Suite

Procedure to program the stepper motor is coming soon. Contact support at KLR.

9.5: Error messages on KLR.5051-X-AB

In an event a motor gets faulted, the user will be warned by a sign. By pressing on it, it will reveal what error it is in question. If there are multiple errors, the pop-up screen will alternate between them.

9.6: Cleaning

Cleaning is an important part of a maintenance program. We recommend cleaning the following areas every working day. The machine must be stopped when cleaning. Please, decrease time interval of each cleaning when products are floury.

Cleaning interior

- Open the doors to get access.
- Use air blowers to remove dust and remain product small pieces.
- Sanitize the retract belts, both the upper and lower belts.
- Clean the retract scoop guards.
- Clean and grease the retract lifter shaft.

Cleaning the infeed and outfeed conveyor

- Blow with air guns on top and under.
- Spray sanitizer directly on the belt, wipe.

Cleaning sensors

- Blow gently with air guns on the lens of each sensor to remove dust.
- **DO NOT** scrub with abrasive or use chemicals on the sensors.

Note: Cleaning is a good time to do a visual inspection of the belts. Any cracks or wear can easily be seen during cleaning. Worn belts should be replaced before they can fail. See spare parts list in this document.

10.0: LISTS OF SPARE PARTS AND CONSUMABLES

There are multiple options available for your machine. If you need to order a piece, make sure to look in the correct list. If you need assistance, see contact information.

10.1: KLR.5051

Suggested spare part list per machine for KLR.5051-X

KLR.5051-SPARE			
Numbers	Part numbers	Quantity	Descriptions
1	PB-00519-4-WH	4	RETRACT BELT 5051 – 4.00" x 115" WHITE
2	PO2-00133	8	CIRCLIP BEARING
3	PP-00521	1	VALVE 2 POSITIONS – 24VDC – DIN
4	PE-00900-PNP	1	PHOTOCELL PNP DIFFUSE
5	PE-00911	1	M12 MALE O FIELD-WIREABLE (IDC)
6	PE-00141-NO-PNP	2	PROXYMITY SWITCH M12 – NO – PNP
7	PM-00191-THK	2	LINEAR BEARING CARRIER LONG
8	PR-02827	1	HEIGHT ADJUSTER GUIDE
9	PP-00588	2	AIR NOZZLE
10	PE-1538	1	STEPPER MOTOR ASSEMBLY
11	PE-01533	2	STEPPER MOTOR DRIVE
12	PE-00957	1	LASER SENSOR 10 – 30VDC DIST. 25 – 90MM
13	PM-01541	2	BEARING CYL. COLLAR
14	PR-06311-1	2	WHEEL
15	PO2-00199	2	NIDDLE BEARING
16	PR-10445-01	6	TRACK ROLLER NYLATRON
17	PR-02753	2	GUIDE RAIL
18	PE-00538	1	SAFETY SWITCH MAGNETIC
19	PM-00196-1	1	LINEAR BEARING, SERIE SHS-R FOR RAIL 15MM
20	PR-02885	2	GUIDE SCOOP
21	PR-02690	4	SPACER
22	PO2-00049	4	BEARING
23	PR-02884-A	1	LEFT ANTENNA
24	PR-02884-B	1	RIGHT ANTENNA
25	PO2-00095	4	BEARING
26	PR-00350-1	6	SPACER
27	PR-00352-1	2	MODIFIED HEX SCREW 3/8-24
28	PR-02693-A	1	BOTTOM SCOOP (A)
29	PR-02693-B	1	BOTTOM SCOOP (B)

10.2: KLR.5051-AB

Suggested spare part list per machine for KLR.5051-X-AB

KLR.5051-SPARE-AB			
Numbers	Part numbers	Quantity	Descriptions
1	PB-00519-4-WH	4	RETRACT BELT 5051 – 4.00" x 115" WHITE
2	PO2-00133	8	CIRCLIP BEARING
3	PP-00521	1	VALVE 2 POSITIONS – 24VDC – DIN
4	PE-00900-PNP	1	PHOTOCELL PNP DIFFUSE
5	PE-00911	1	M12 MALE O FIELD-WIREABLE (IDC)
6	PE-00141-NO-PNP	2	PROXYMITY SWITCH M12 – NO – PNP
7	PM-00191-THK	2	LINEAR BEARING CARRIER LONG
8	PR-2827	1	HEIGHT ADJUSTER GUIDE
9	PP-00588	2	AIR NOZZLE
10	PE-00628	1	LEXIUM MDRIVE, HY, CL, ETH, 85MM, 2 STACKS
11	PE-00957	1	LASER SENSOR 10 – 30VDC DIST. 25 – 90MM
12	PM-01541	2	BEARING CYL. COLLAR
13	PR-06311-1	2	WHEEL
14	PO2-00199	2	NIDDLE BEARING
15	PR-10445-01	6	TRACK ROLLER NYLATRON
16	PR-02753	2	GUIDE RAIL
17	PE-00538	1	SAFETY SWITCH MAGNETIC
18	PM-00196-1	1	LINEAR BEARING, SERIE SHS-R FOR RAIL 15MM
19	PR-02885	2	GUIDE SCOOP
20	PR-02690	4	SPACER
21	PO2-00049	4	BEARING
22	PR-02884-A	1	LEFT ANTENNA
23	PR-02884-B	1	RIGHT ANTENNA
24	PO2-00095	4	BEARING
25	PR-00350-1	6	SPACER
26	PR-00352-1	2	MODIFIED HEX SCREW 3/8-24
27	PR-02693-A	1	BOTTOM SCOOP (A)
28	PR-02693-B	1	BOTTOM SCOOP (B)

11.0: Maintenance and repairs by specialized technicians from KLR Systems Inc.

11.1: Contact information

KLR SYSTEMS INC. Packaging systems manufacturer

Address: 944 rue des Hérons,

City, province, Country: Saint-Pie, Québec, Canada

Zip code: J0H 1W0

Phone: 450-388-0404

Web site: http://klrsystems.com/

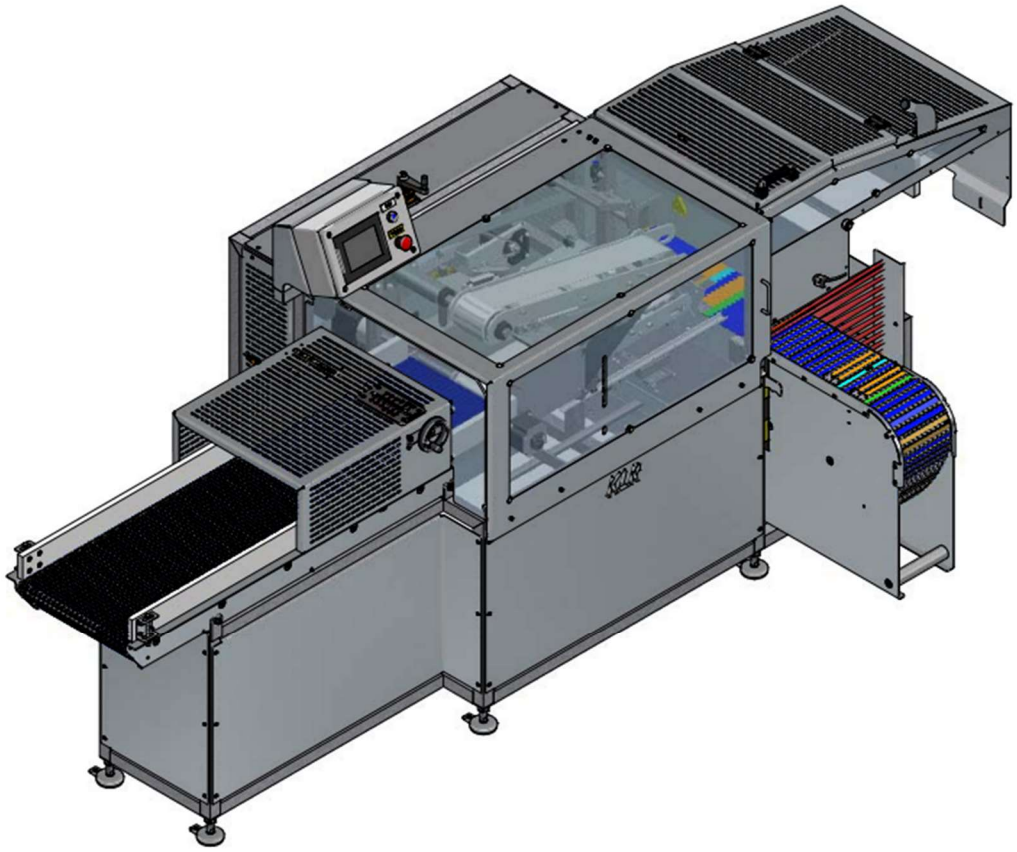
Technical support Email: support@klrsystems.com

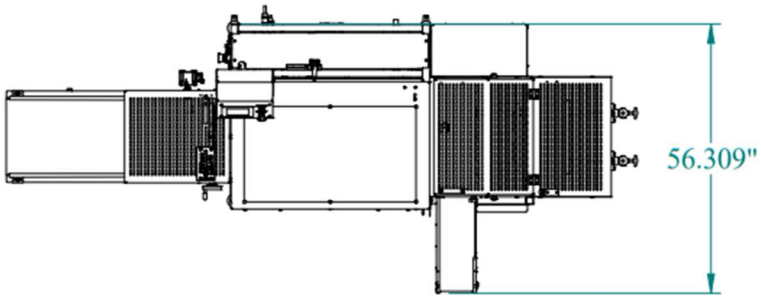
For other information: info@klrsystems.com

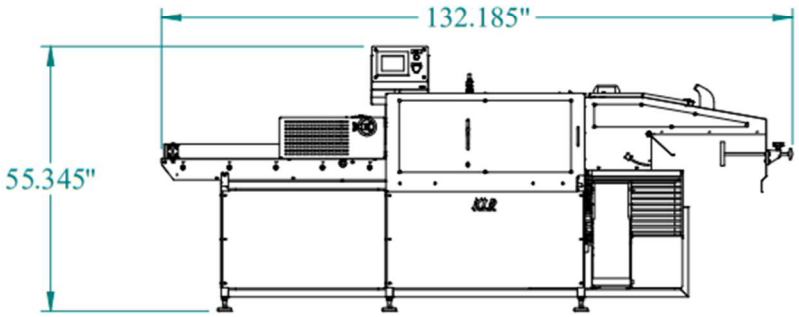
12.0: DECOMMISSIONING OF THE MACHINE

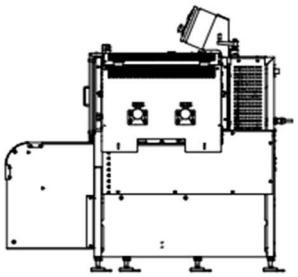
It is advisable to schedule a visit from KLR to reinstall the equipment after an extended decommissioning or relocation.
Destruction, recycling, scrapping

13.0: KLR.5051-L AND KLR.5051-L-AB EXPLOSED VIEWS

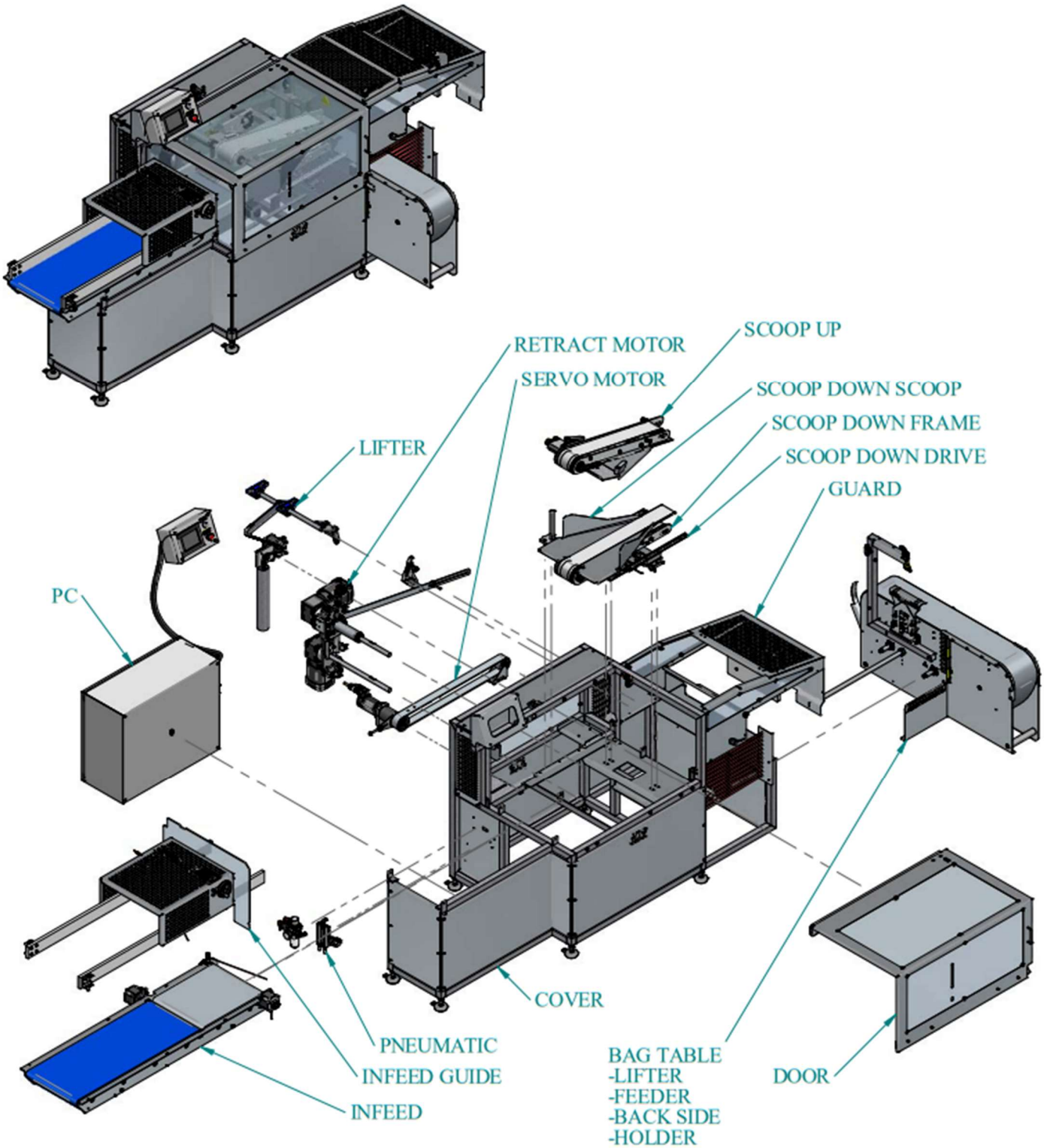




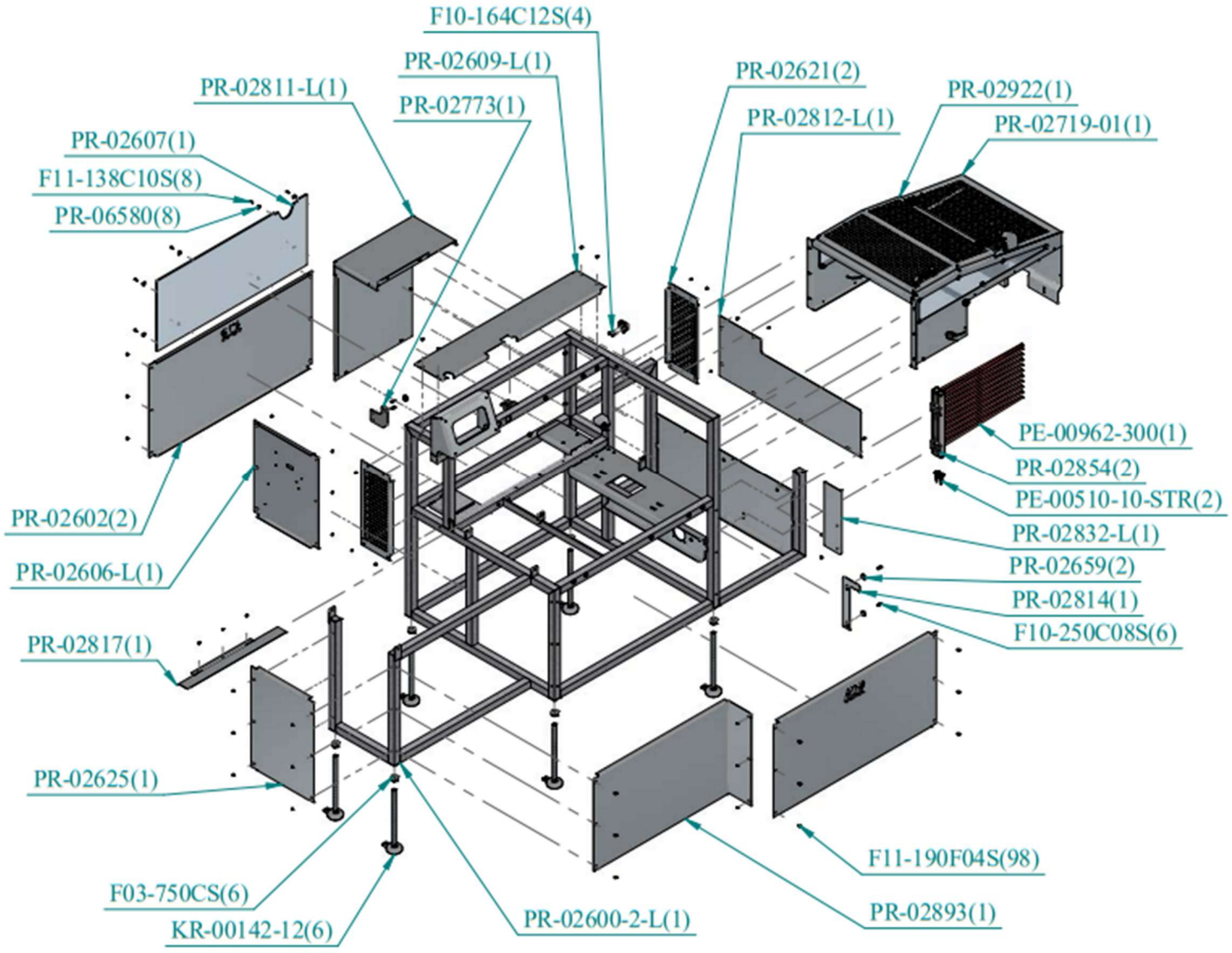




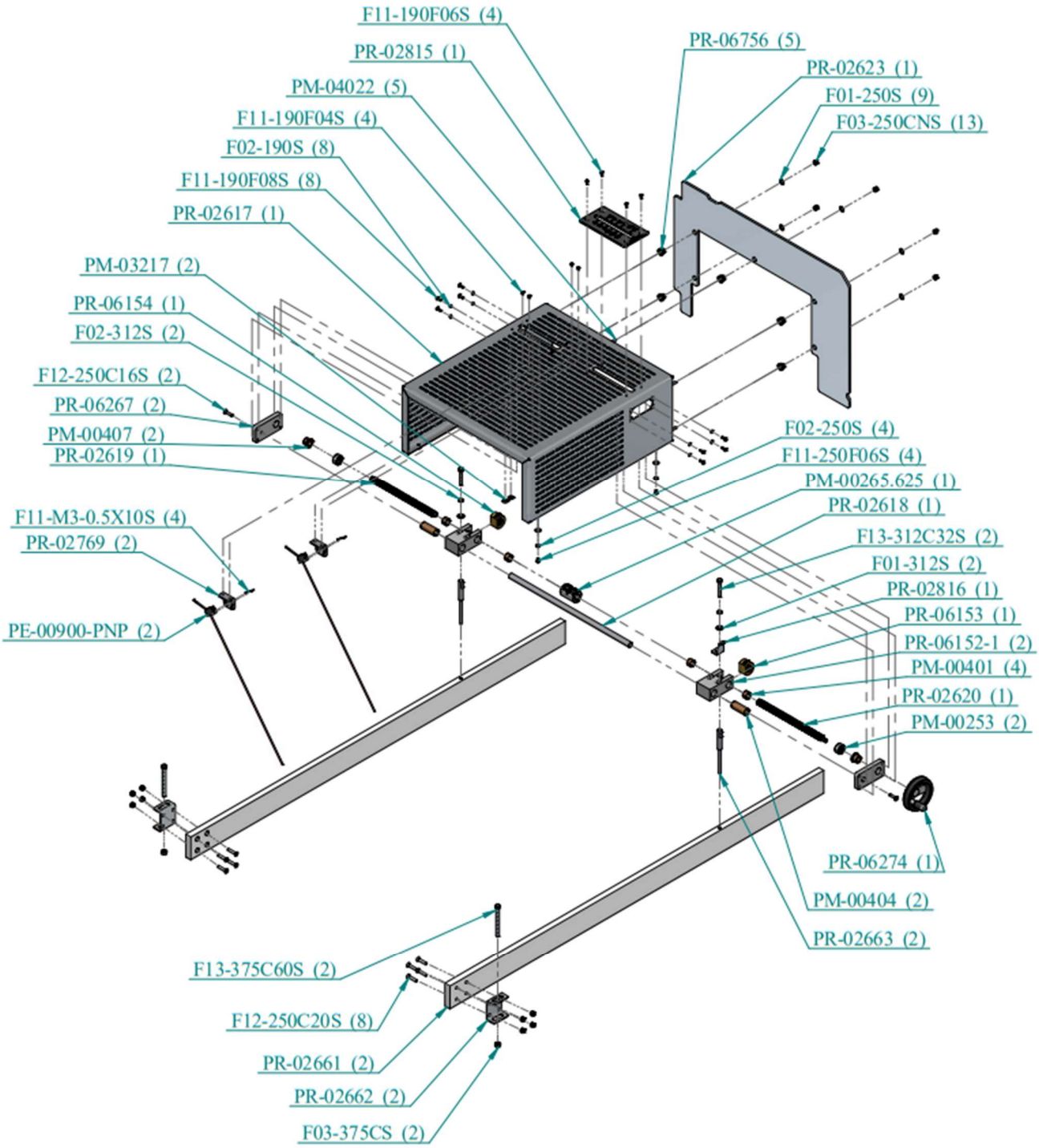
13.1: Main body



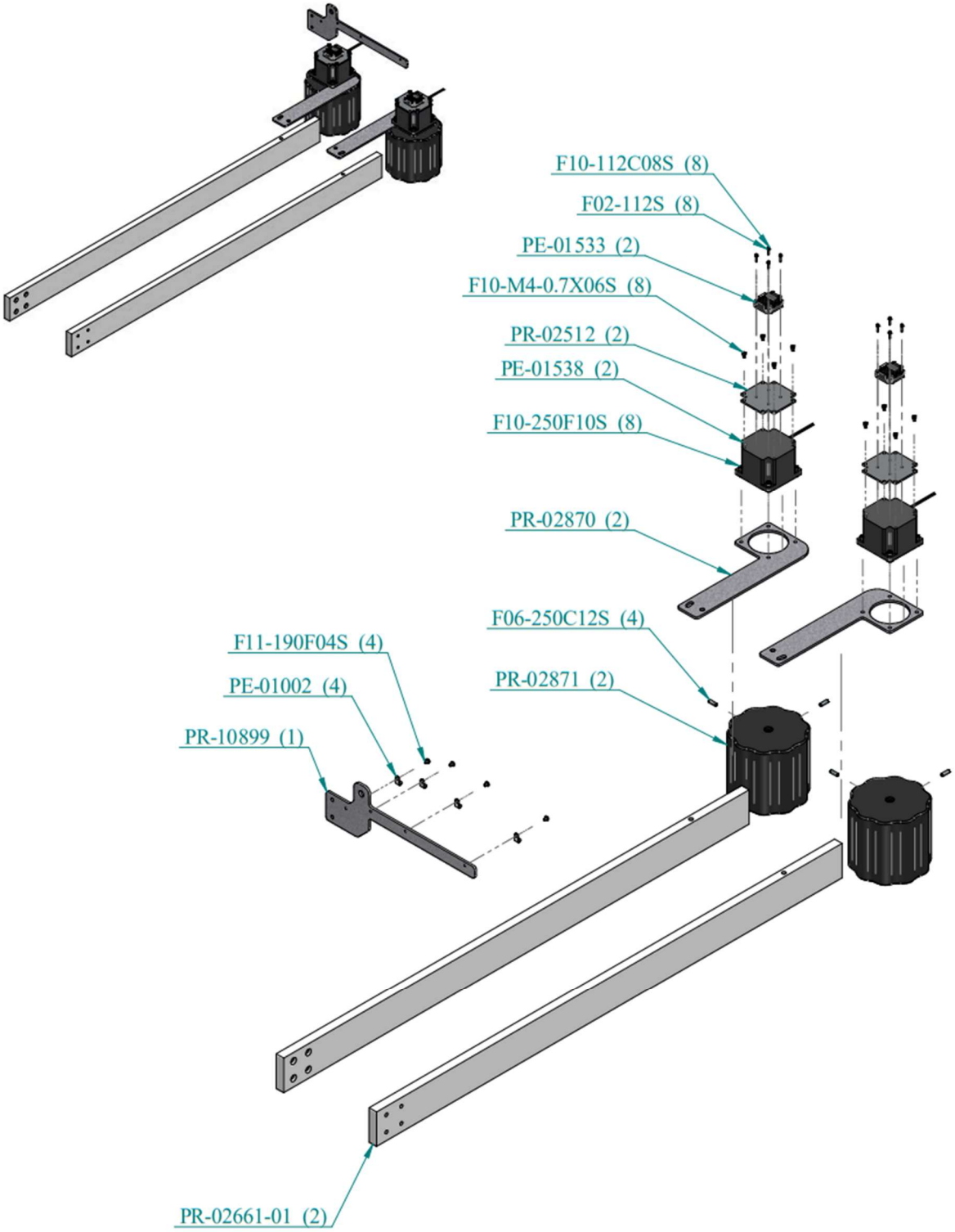
13.2: Covers


F10-164C12S(4)
PR-02609-L(1)
PR-02811-L(1)
PR-02773(1)
PR-02621(2)
PR-02922(1)
PR-02812-L(1)
PR-02719-01(1)
PR-02607(1)
F11-138C10S(8)
PR-06580(8)
PE-00962-300(1)
PR-02854(2)
PE-00510-10-STR(2)
PR-02832-L(1)
PR-02659(2)
PR-02814(1)
F10-250C08S(6)
PR-02602(2)
PR-02606-L(1)
PR-02817(1)
PR-02625(1)
F11-190F04S(98)
PR-02893(1)
F03-750CS(6)
KR-00142-12(6)
PR-02600-2-L(1)

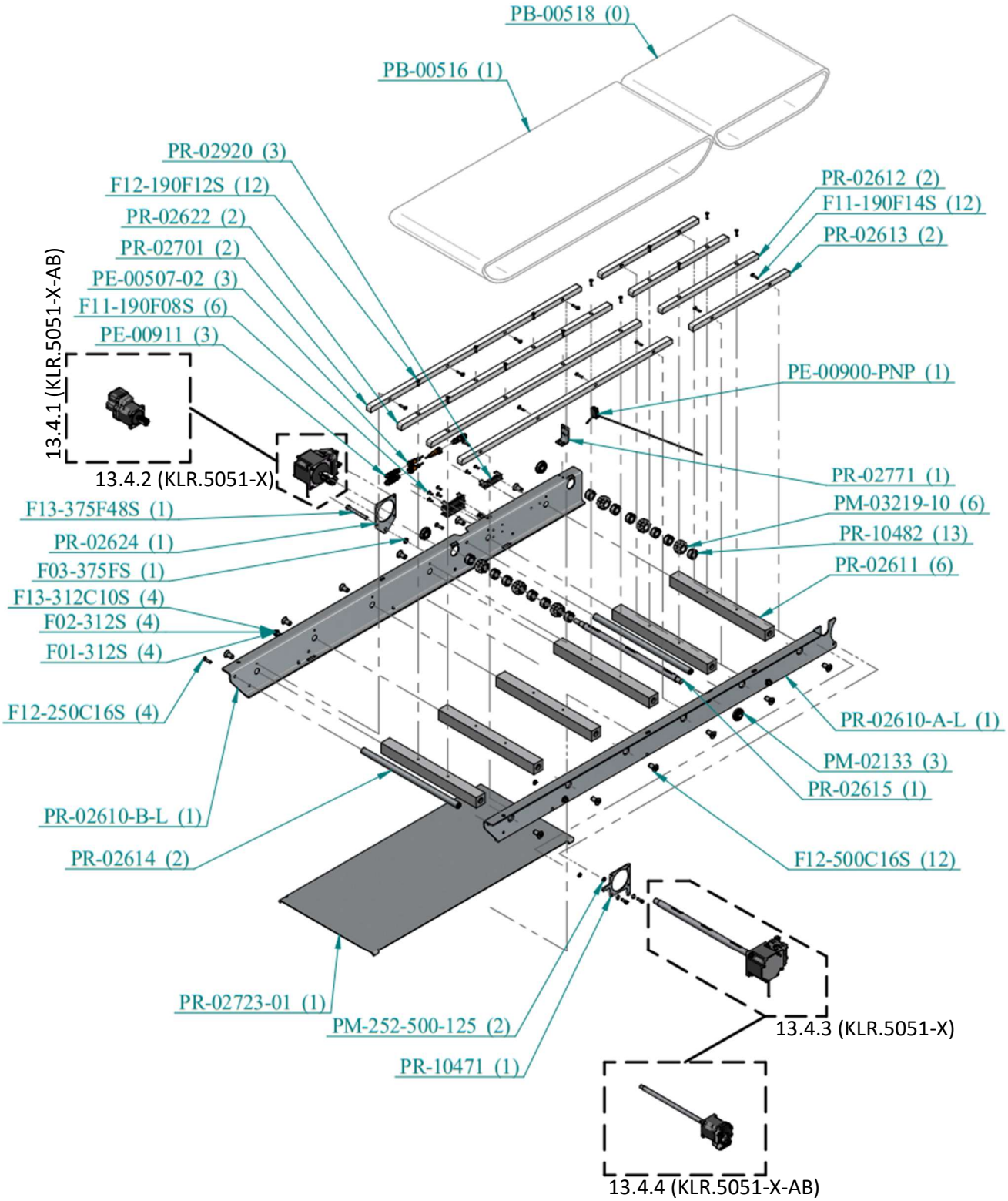
13.3: Infeed tunnel



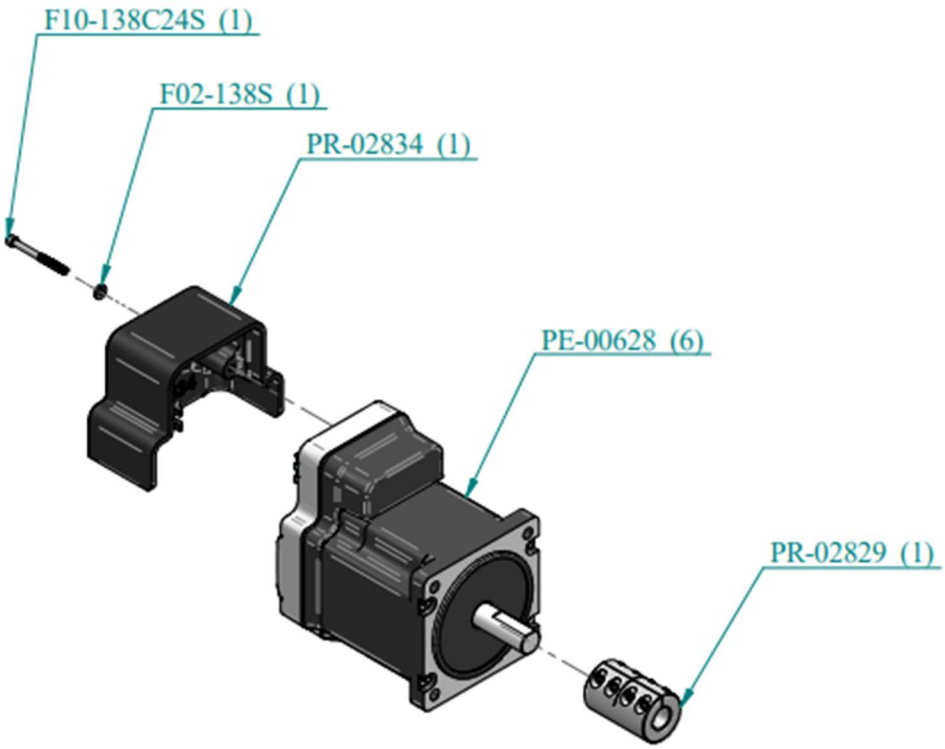
13.3.1: OPTION Aligner (KR-5051-IN-ALIGNER)



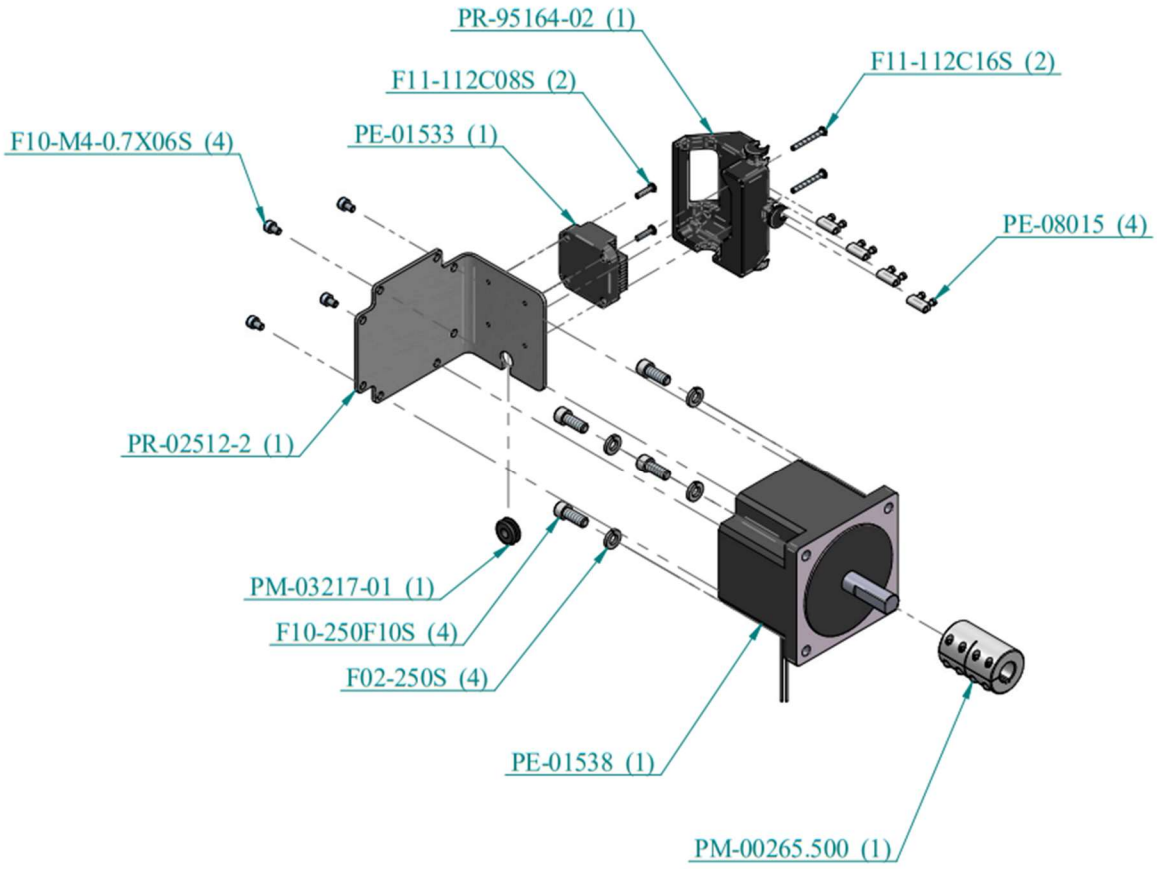
13.4: Infeed conveyor



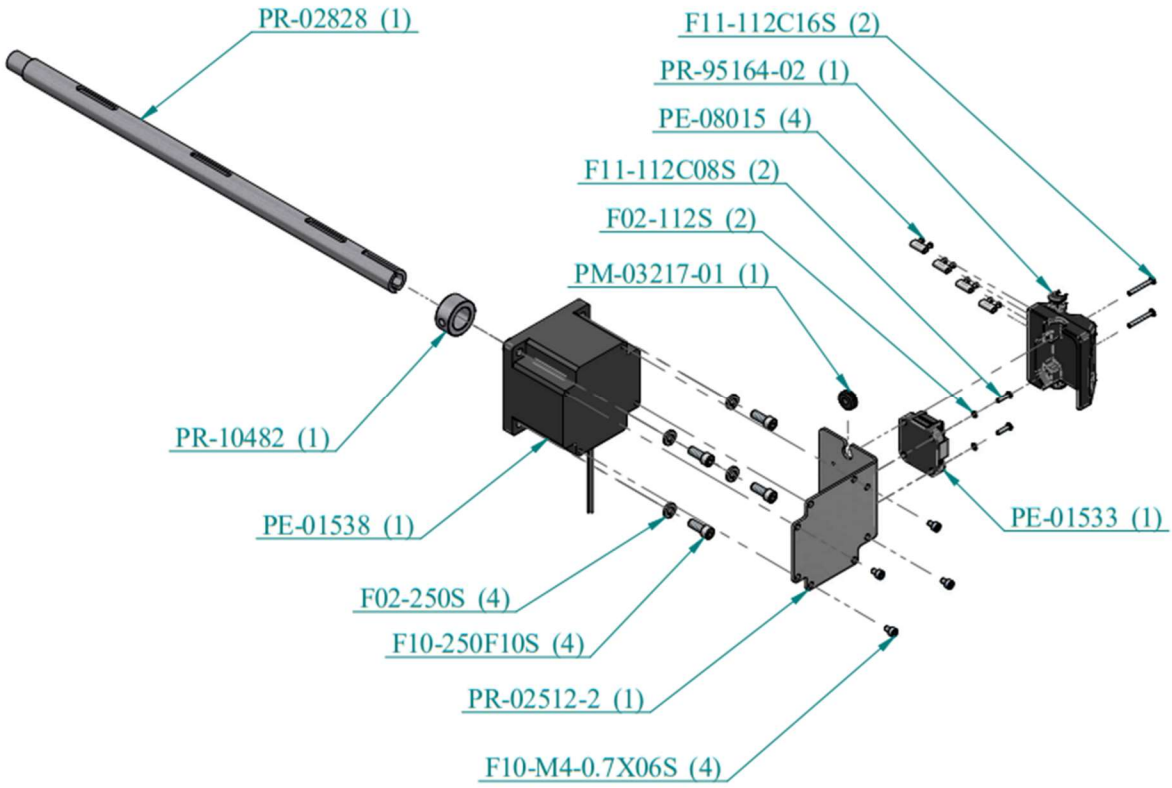
13.4.1: Prefeed stepper motor for KLR.5051-X-AB



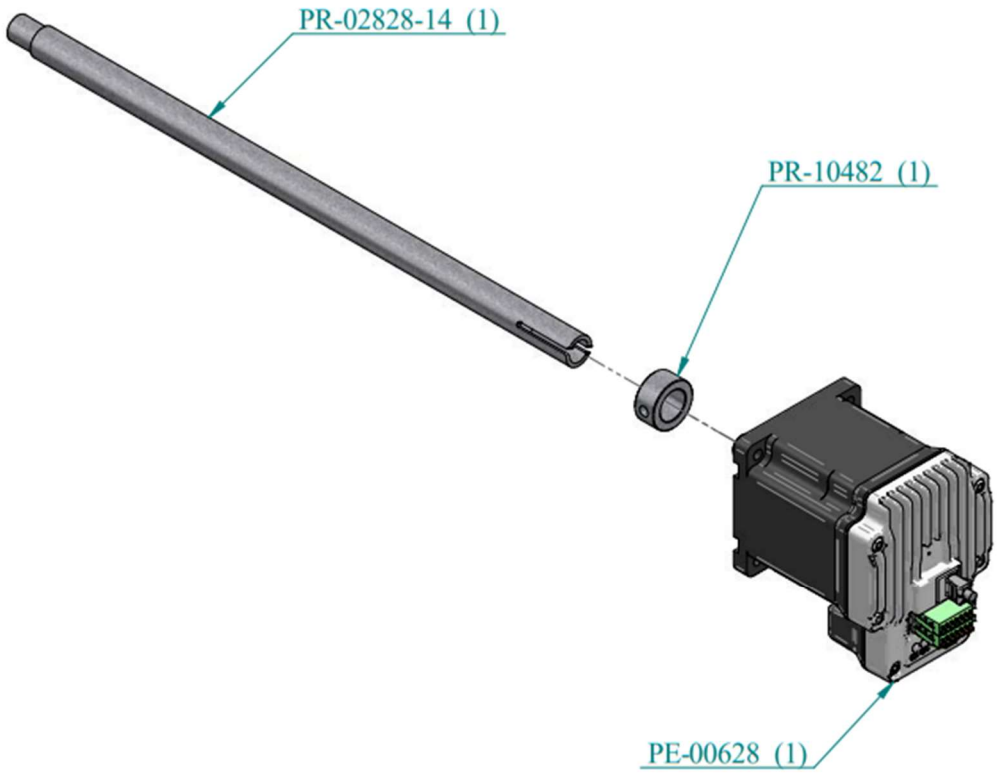
13.4.2: Prefeed stepper motor for KLR.5051-X



13.4.3: Infeed stepper motor for KLR.5051-X

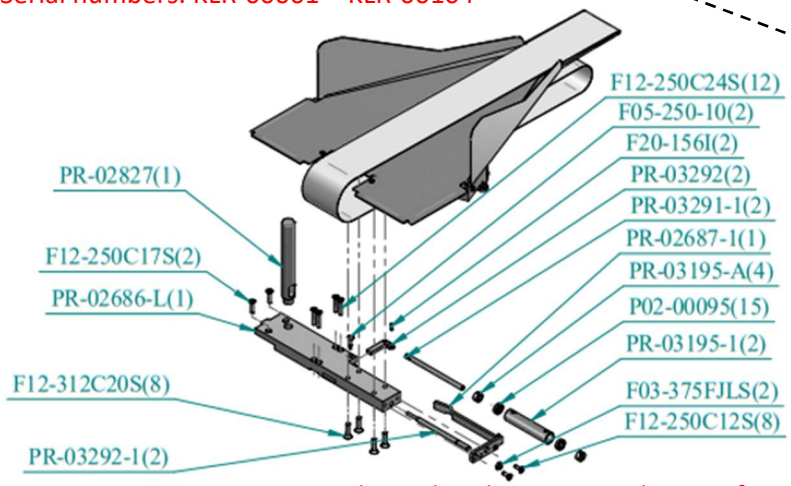


13.4.4: Infeed stepper motor for KLR.5051-X-AB



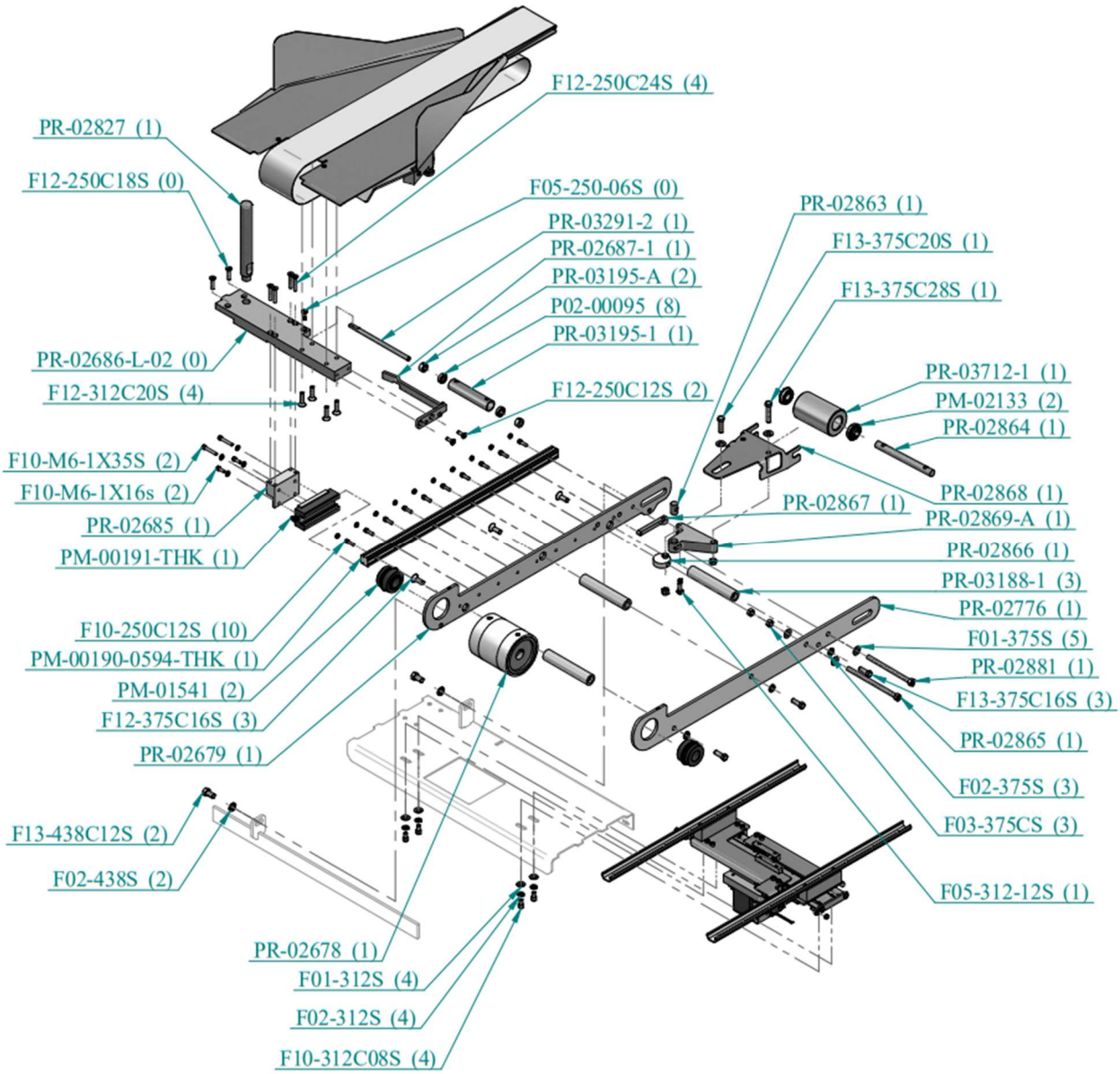
13.5: Bottom scoop frame

Serial numbers: KLR-00001 – KLR-00104

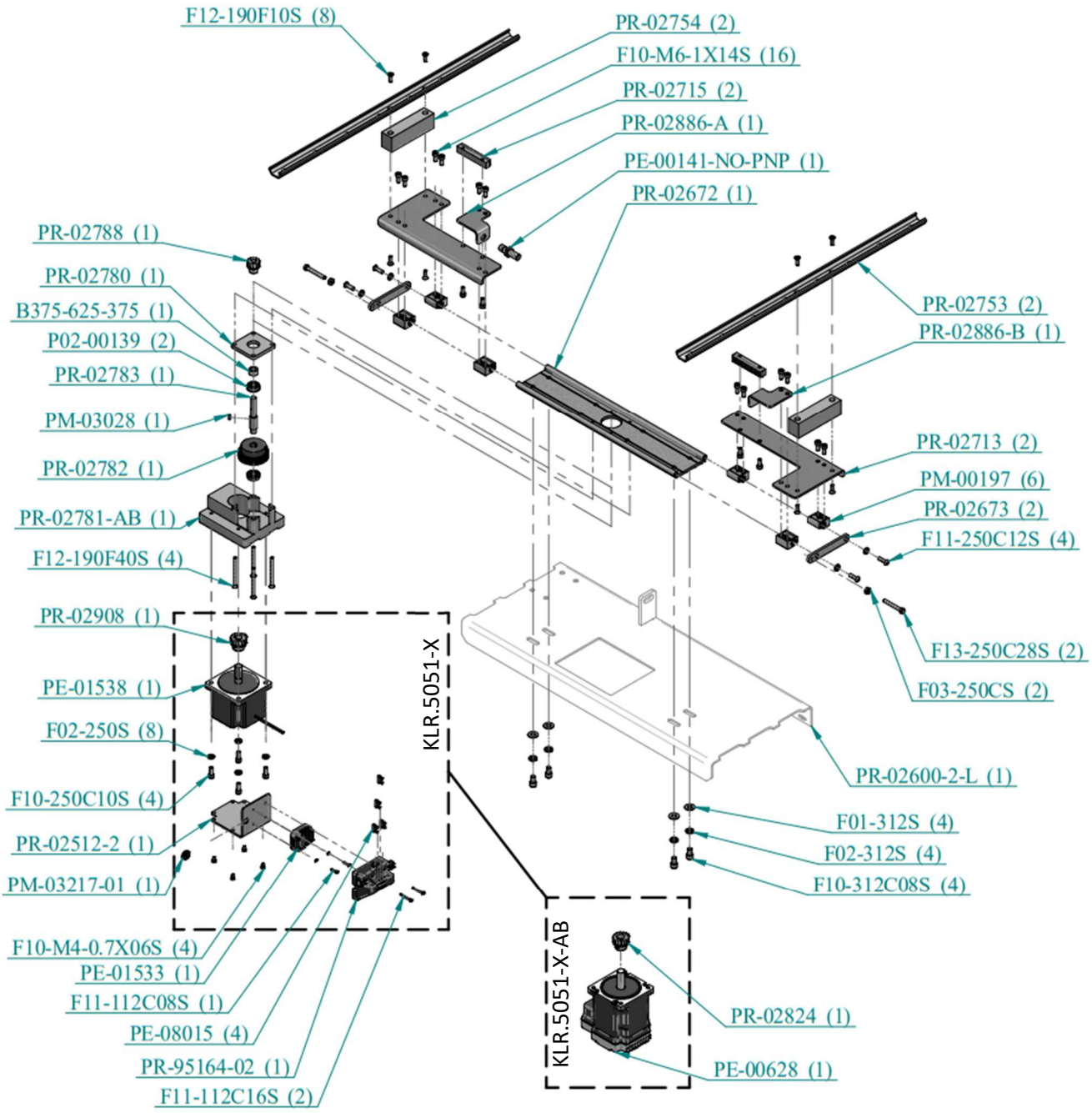


On request, the updated version can be retrofitted.

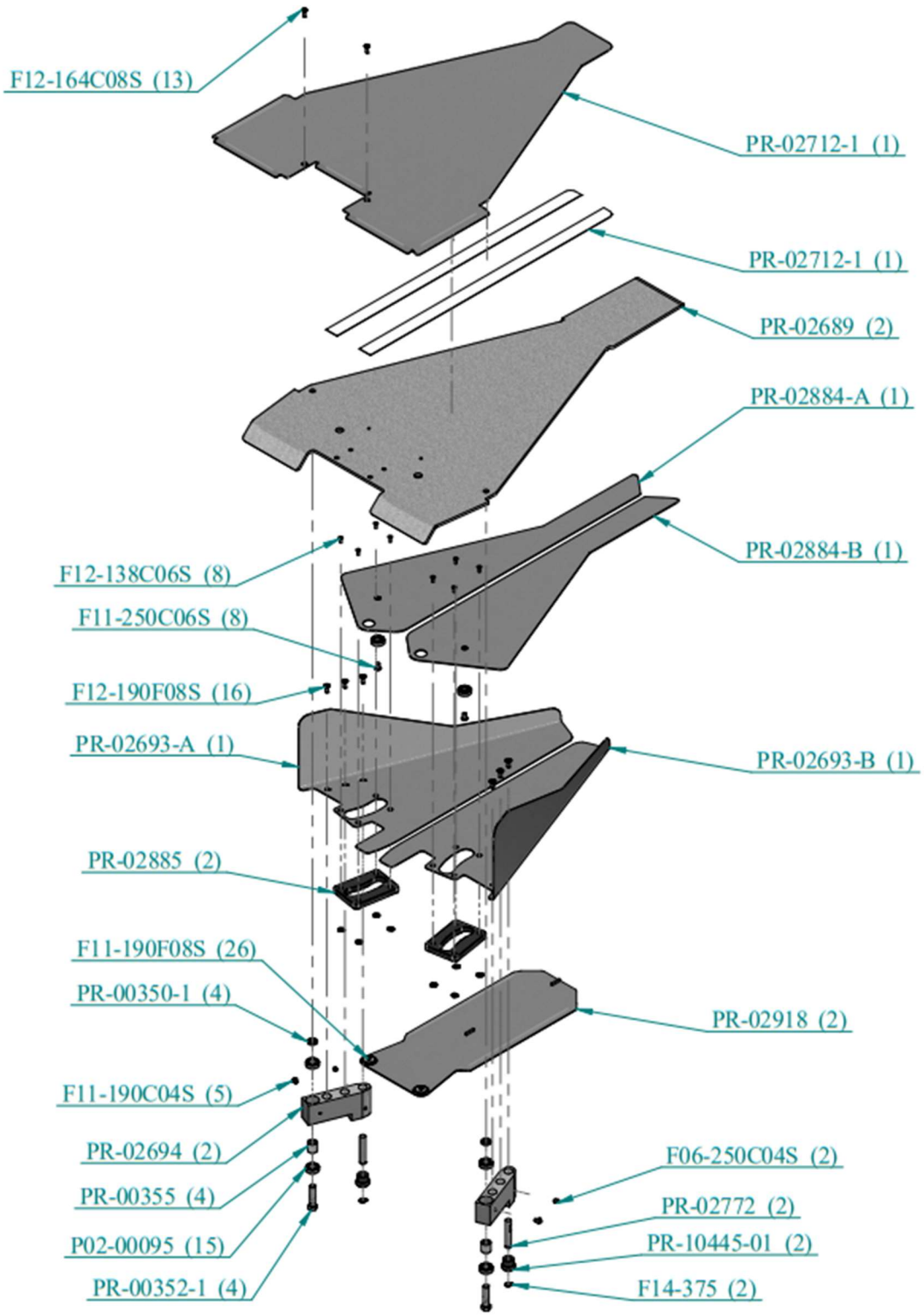
Serial numbers: KLR-00105 - beyond



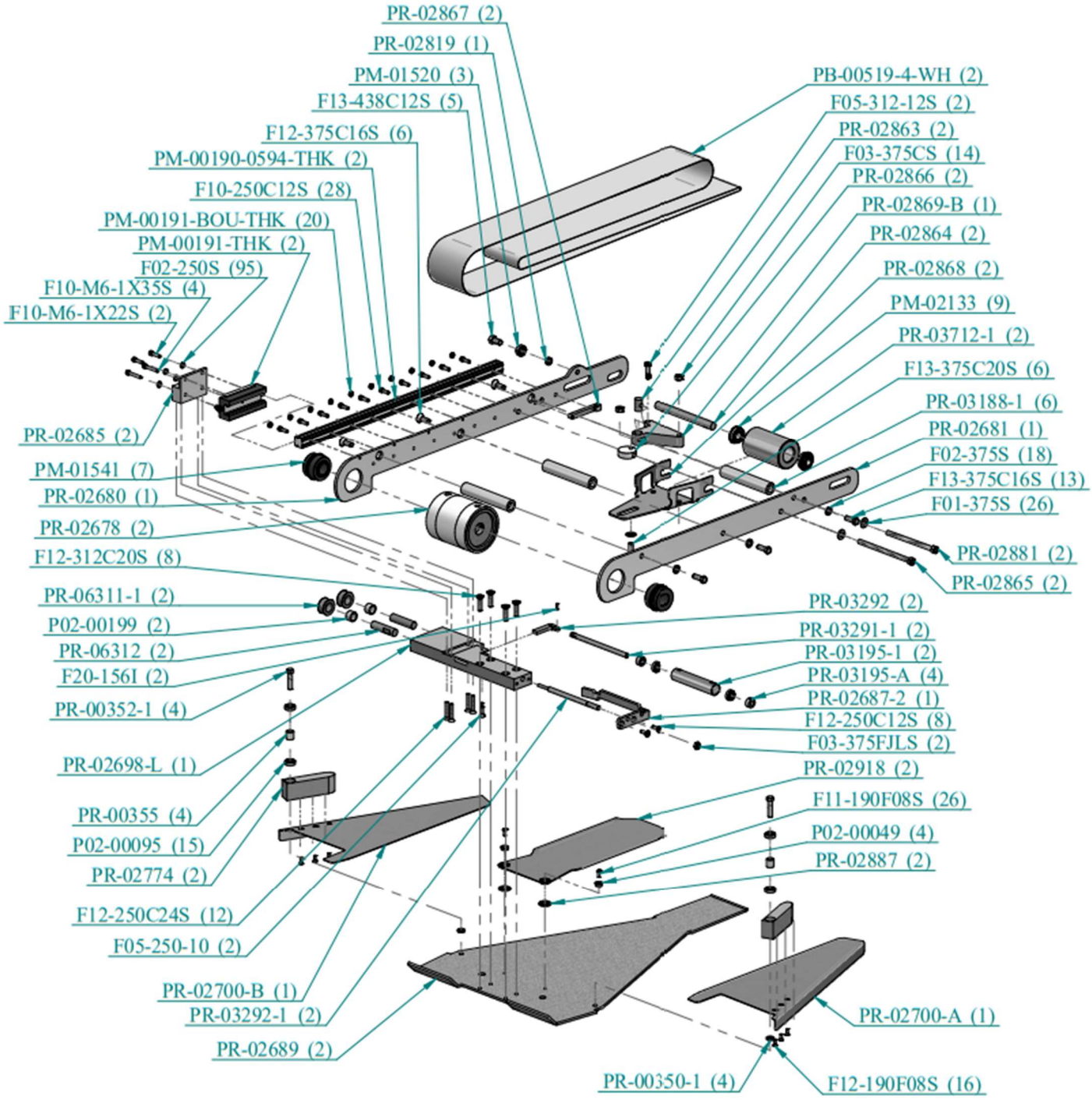
13.6: Bottom scoop motor drive



13.7: Bottom scoop

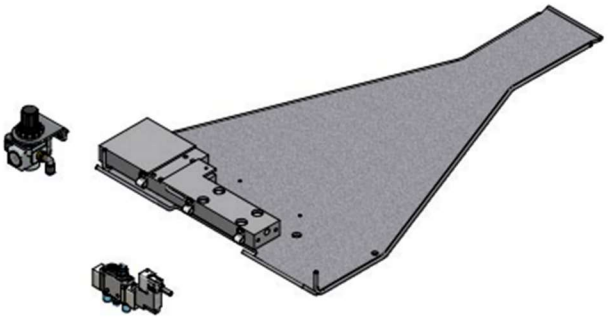


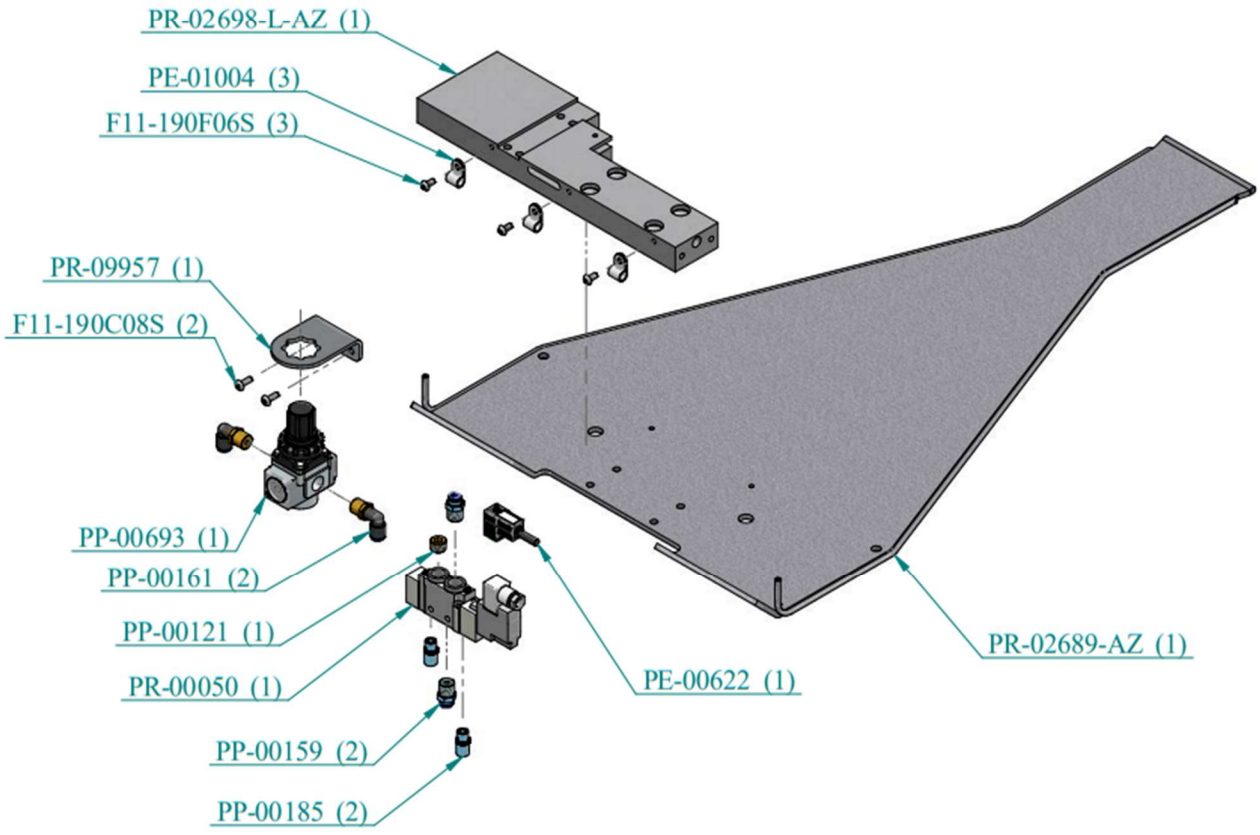
13.8: Upper scoop



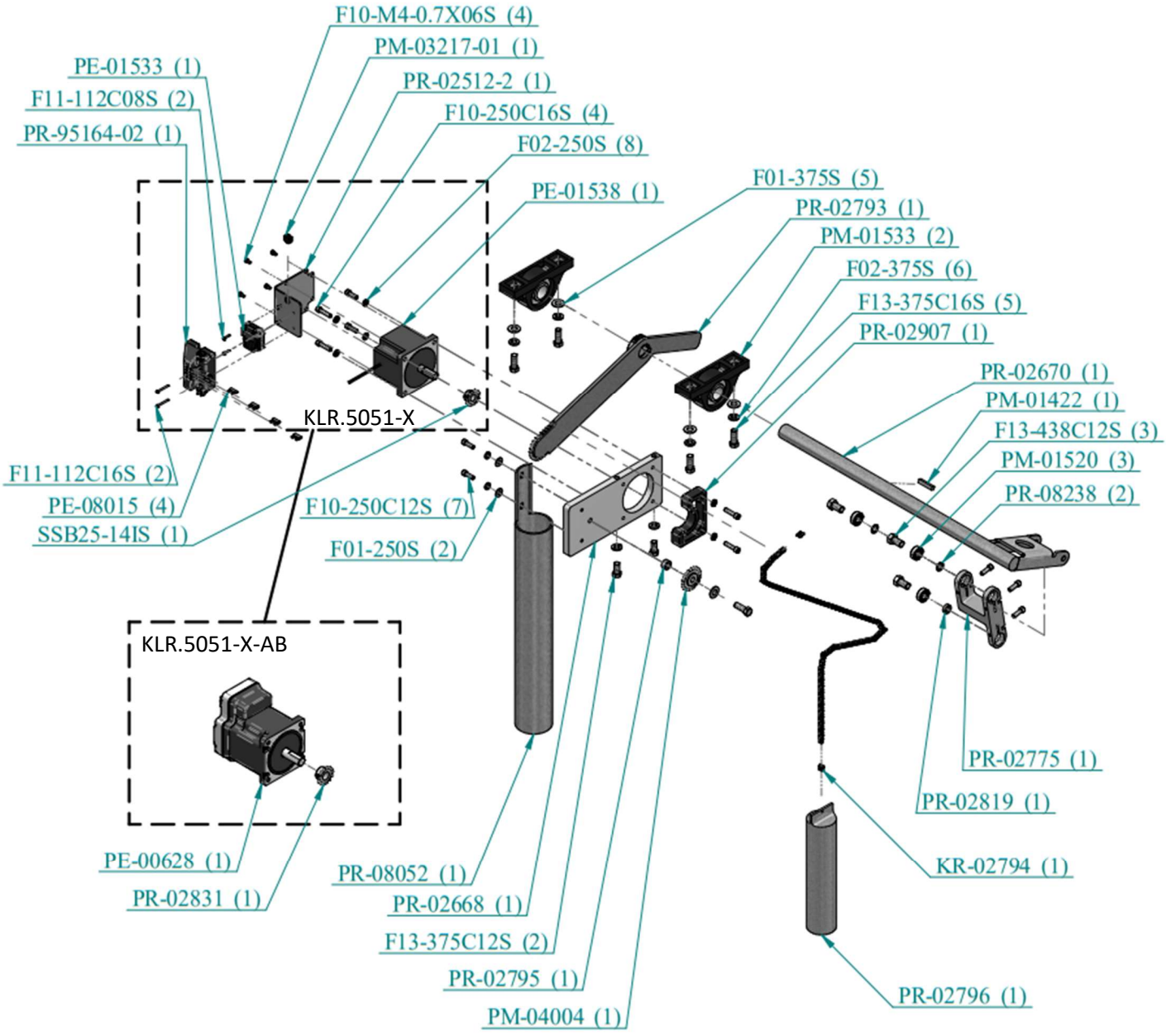
13.8.1: OPTION Nitrogen nozzle (KR-5051-AZOTE-L)

Left version

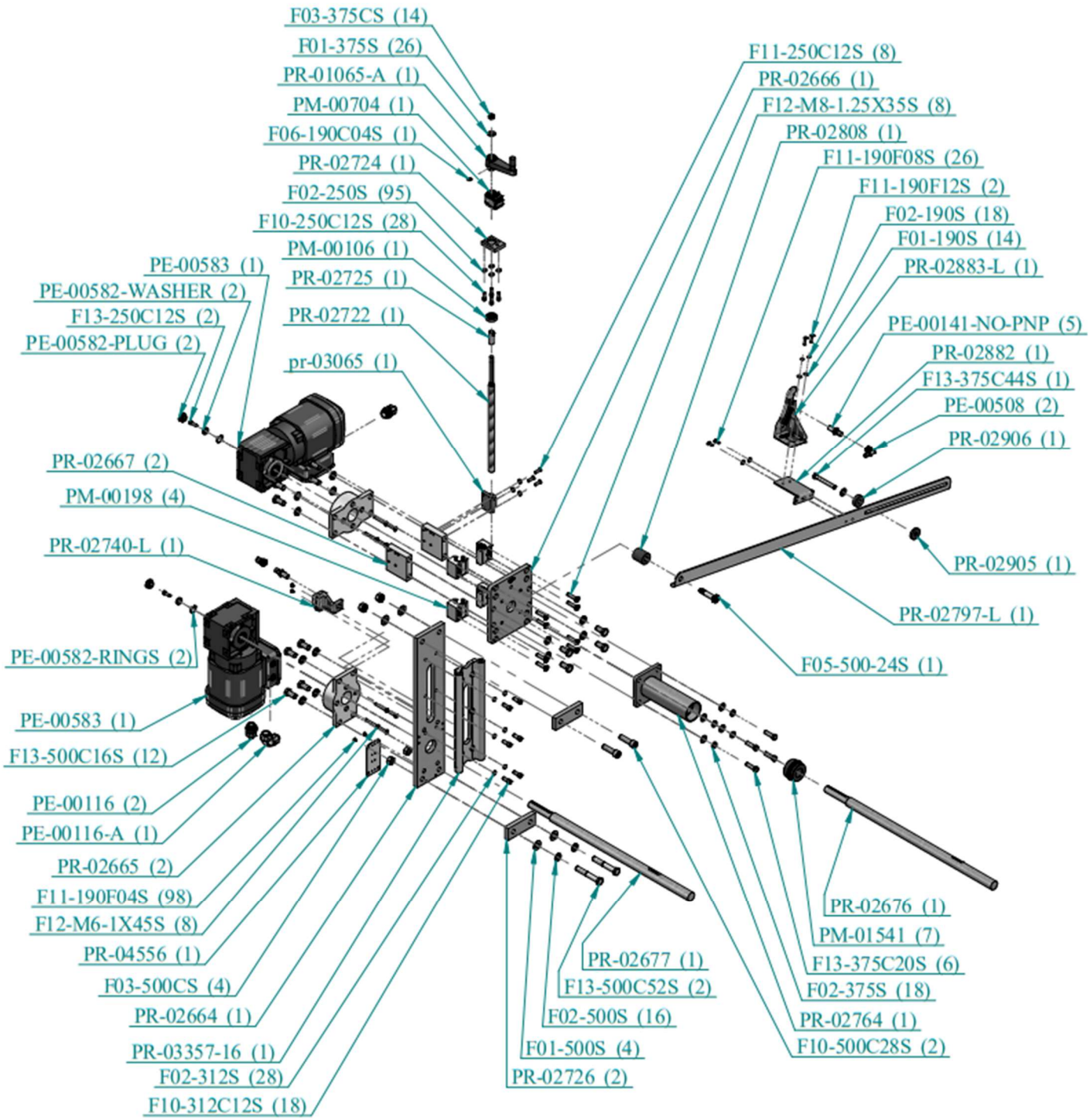




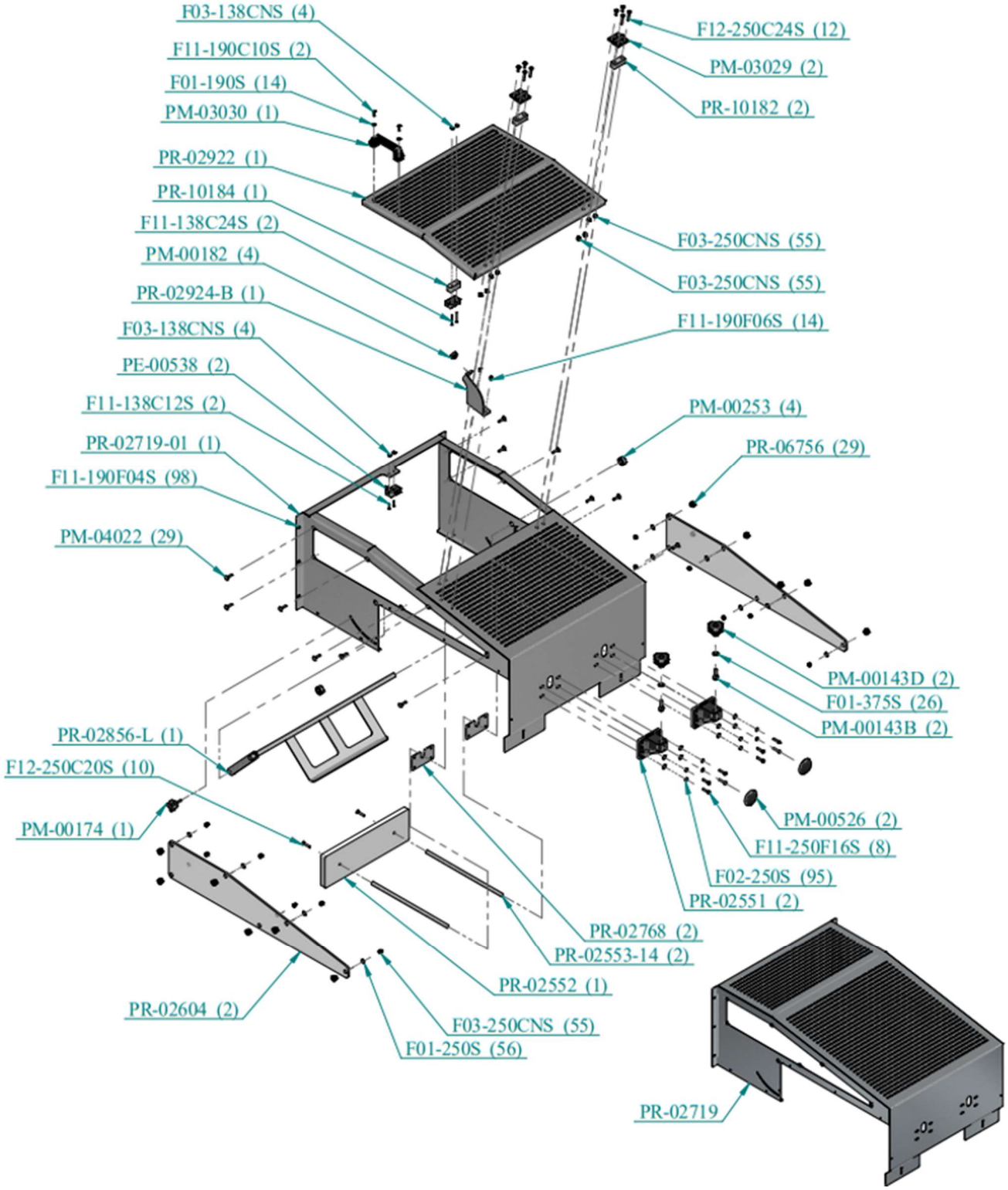
13.9: Retract lifter



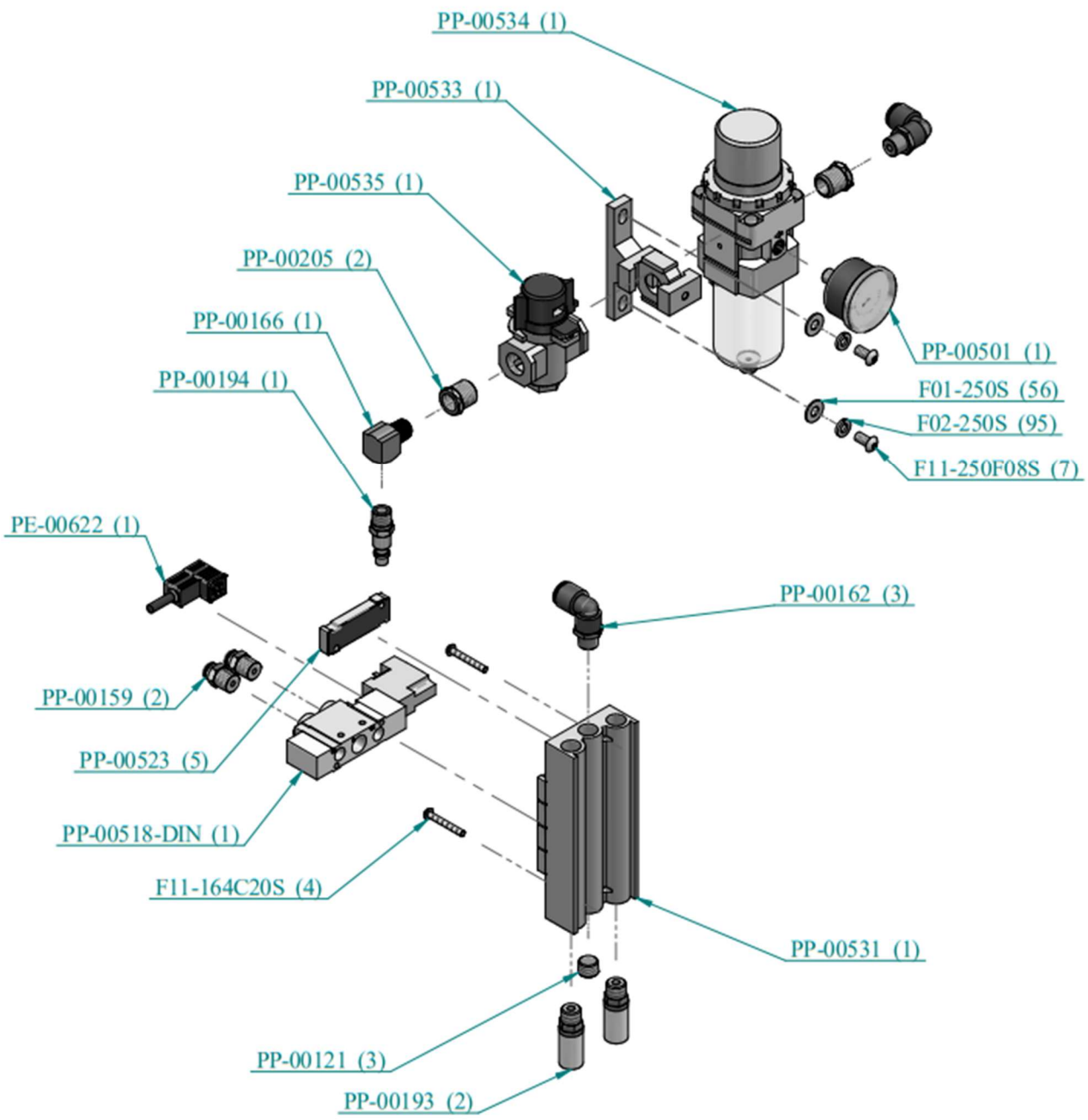
13.10: Retract motors



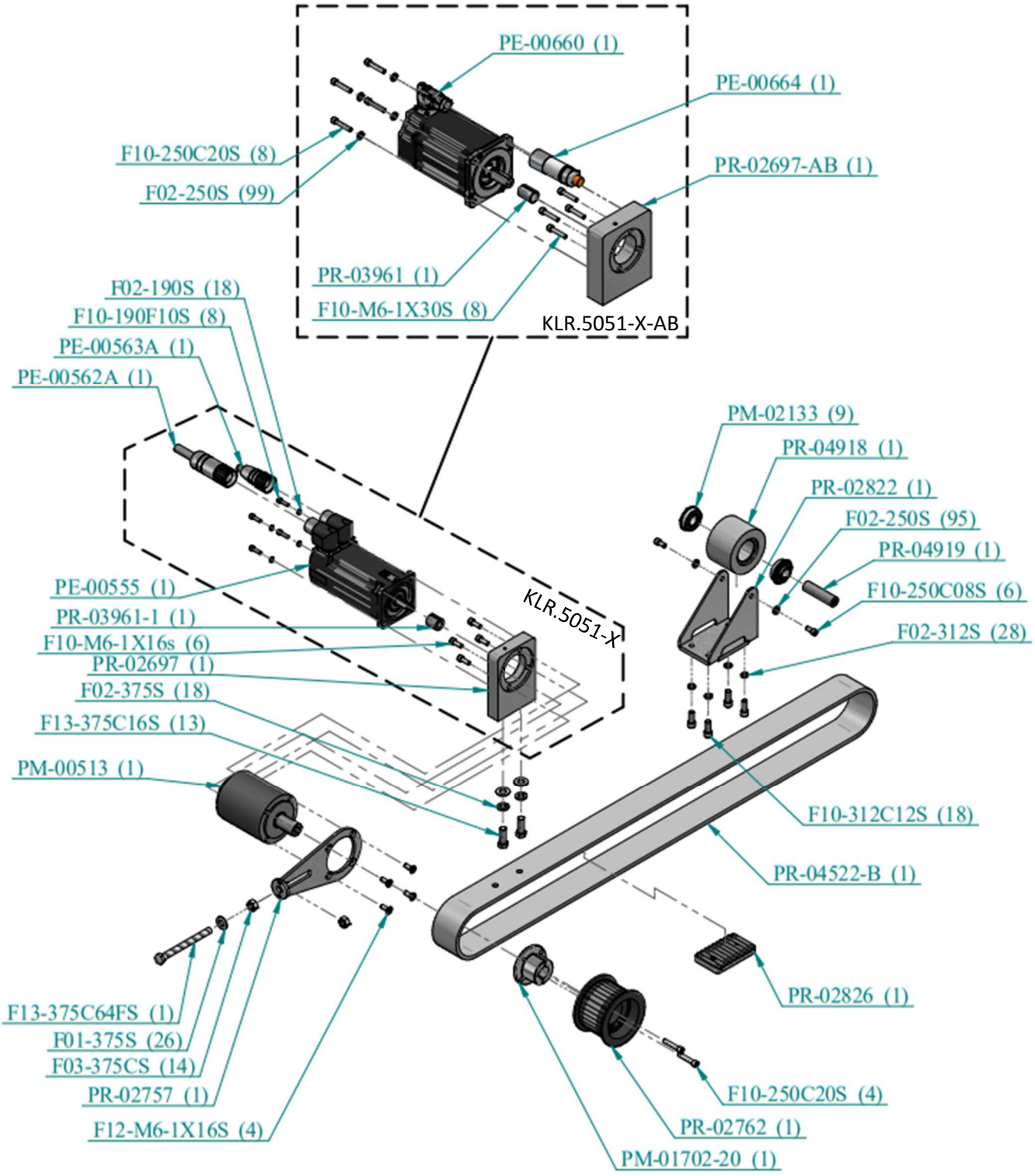
13.11: Slanted guard



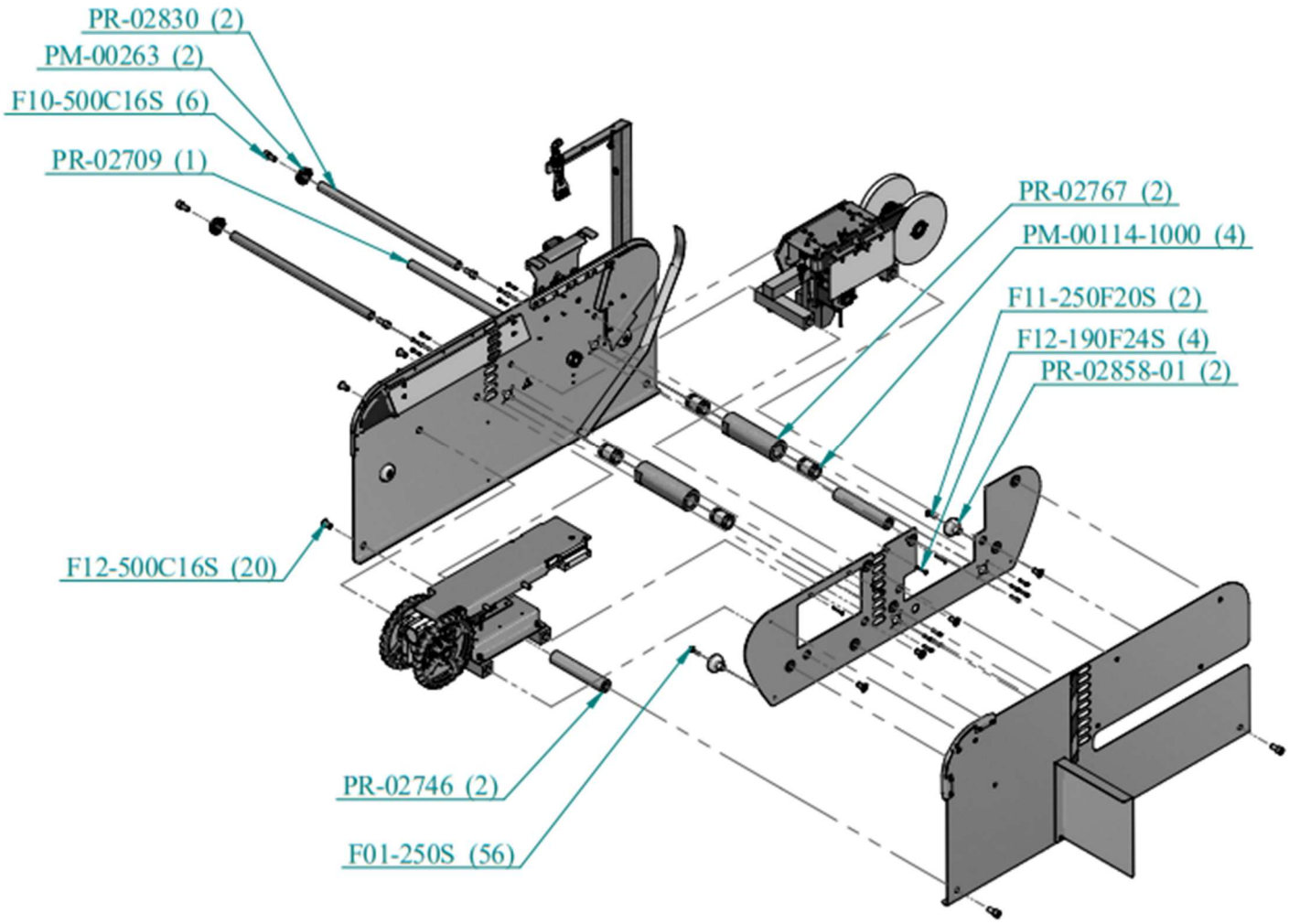
13.12: Pneumatic



13.13: Servo motor



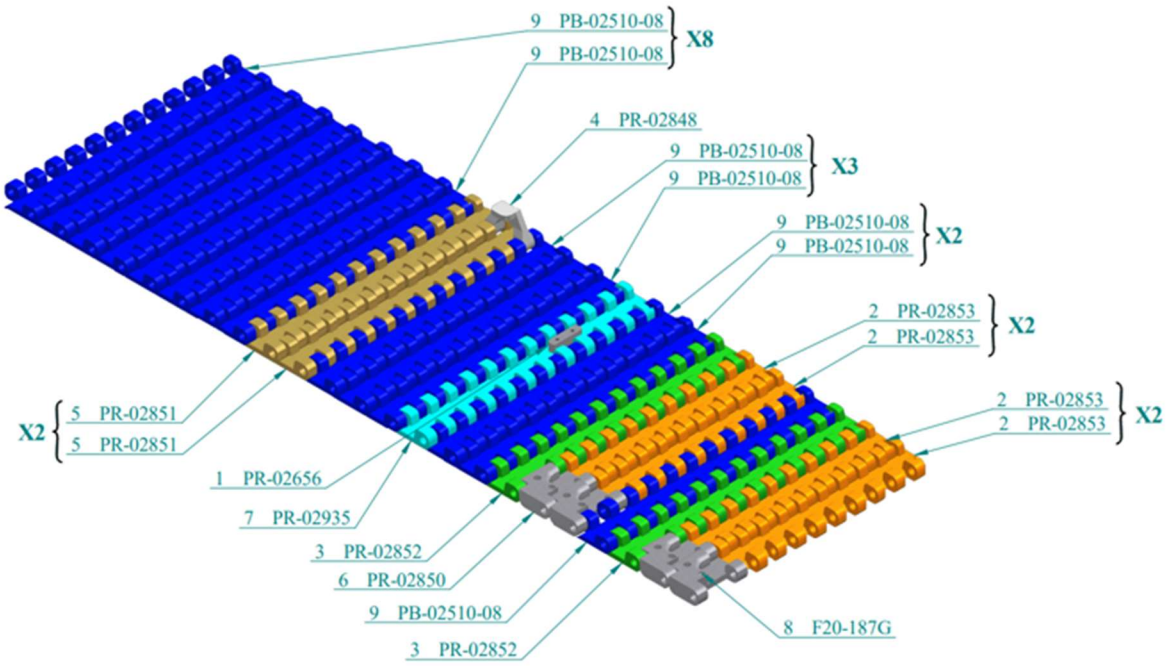
13.14: Bag table frame



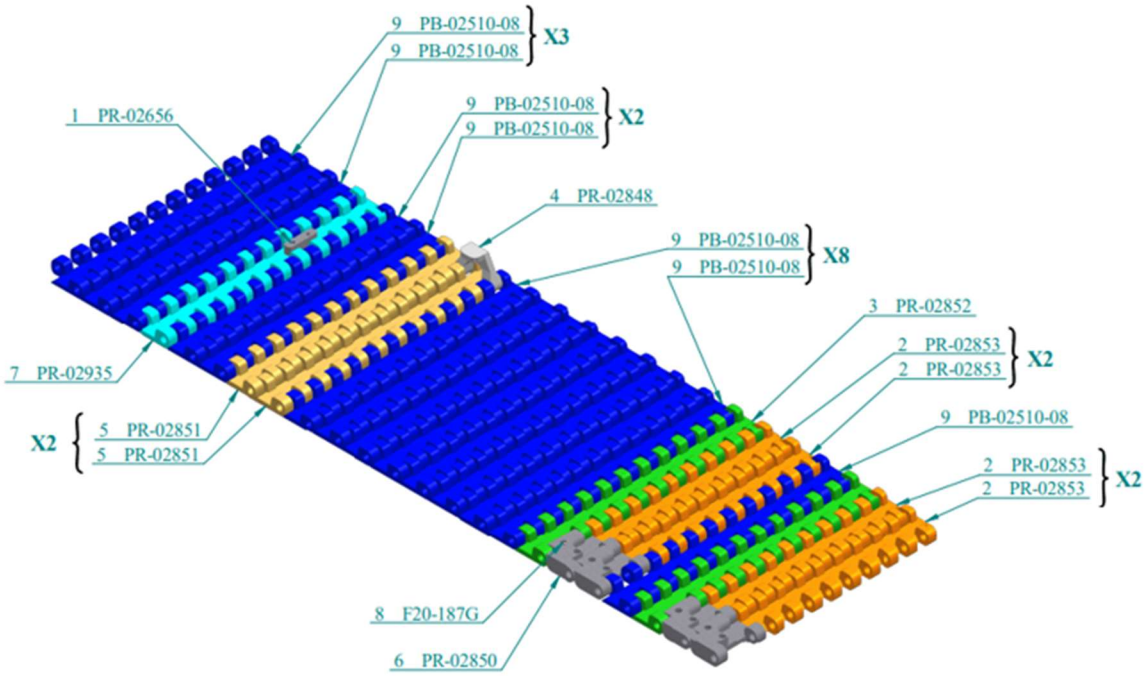
13.14.1: Bag table belt section (SN 3032-3097; KLR-00001-beyond or program rev. + 231206)

⚠ Left and right-handed version are similar but have difference in the assembly. Use caution in using this exact assembly. Anything else then that will end up with a bag table not loading properly.

LEFT VERSION Full belt: PB-00517-L (use this section 5 times)



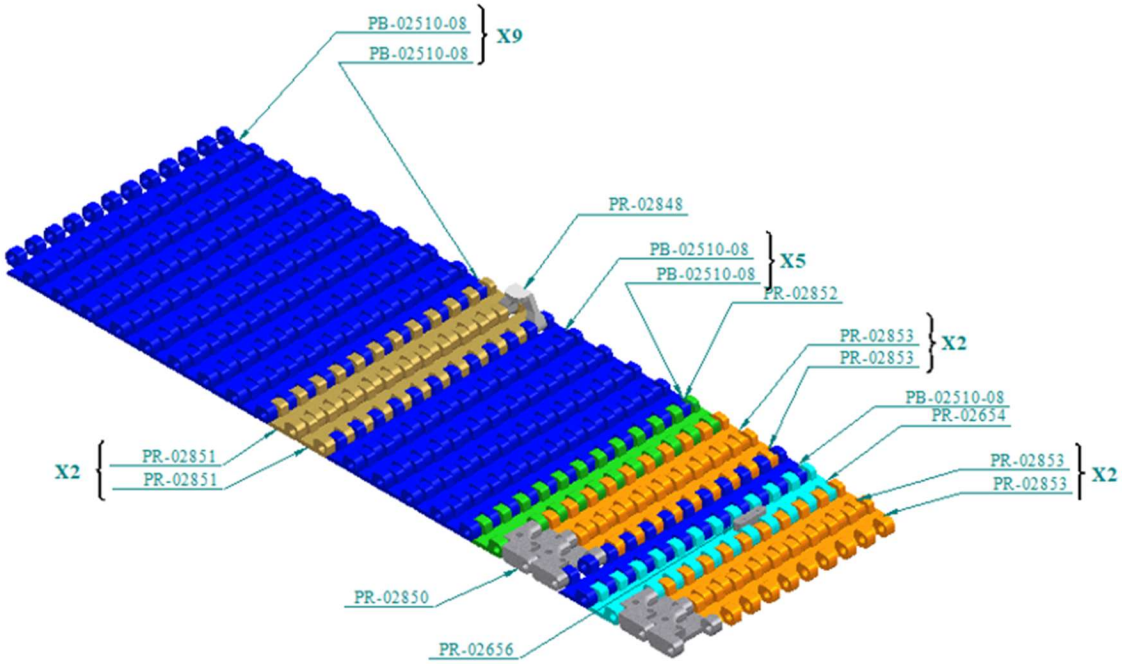
RIGHT VERSION Full belt: PB-00517-R (use this section 5 times)



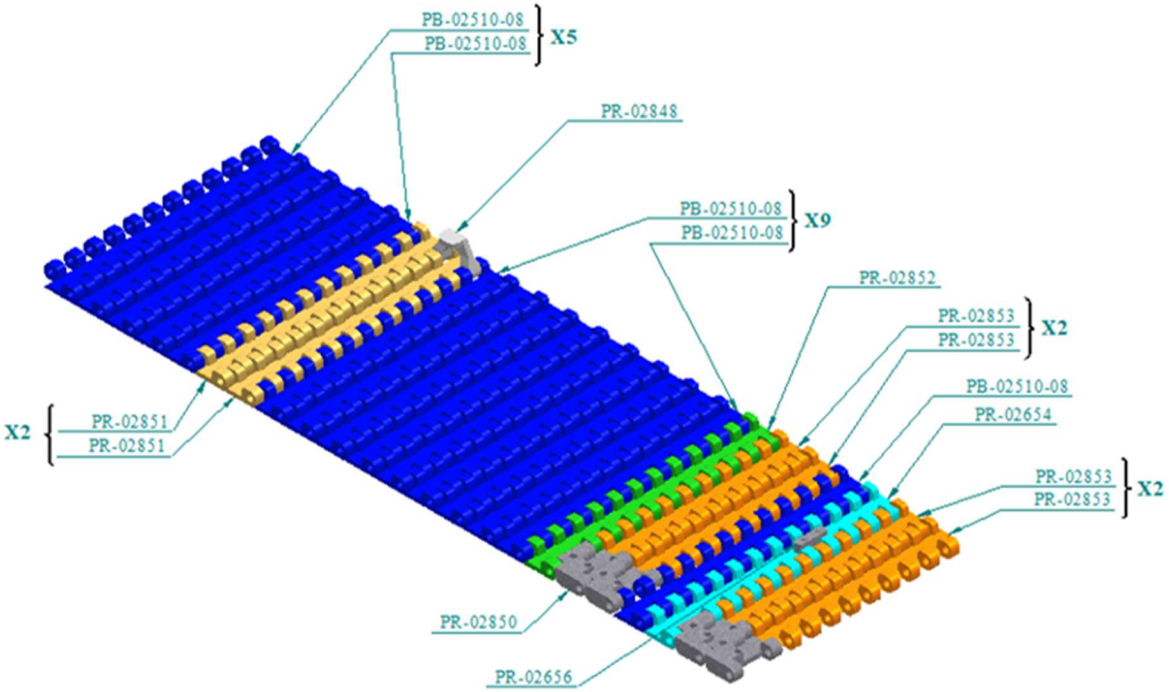
13.14.2: Bag table belt section (SN: 2415 – 2642; 2681 – 2682)

⚠ Left and right handed version are similar but have difference in the assembly. Use caution in using this exact assembly. Anything else then that will end up with a bag table not loading properly.

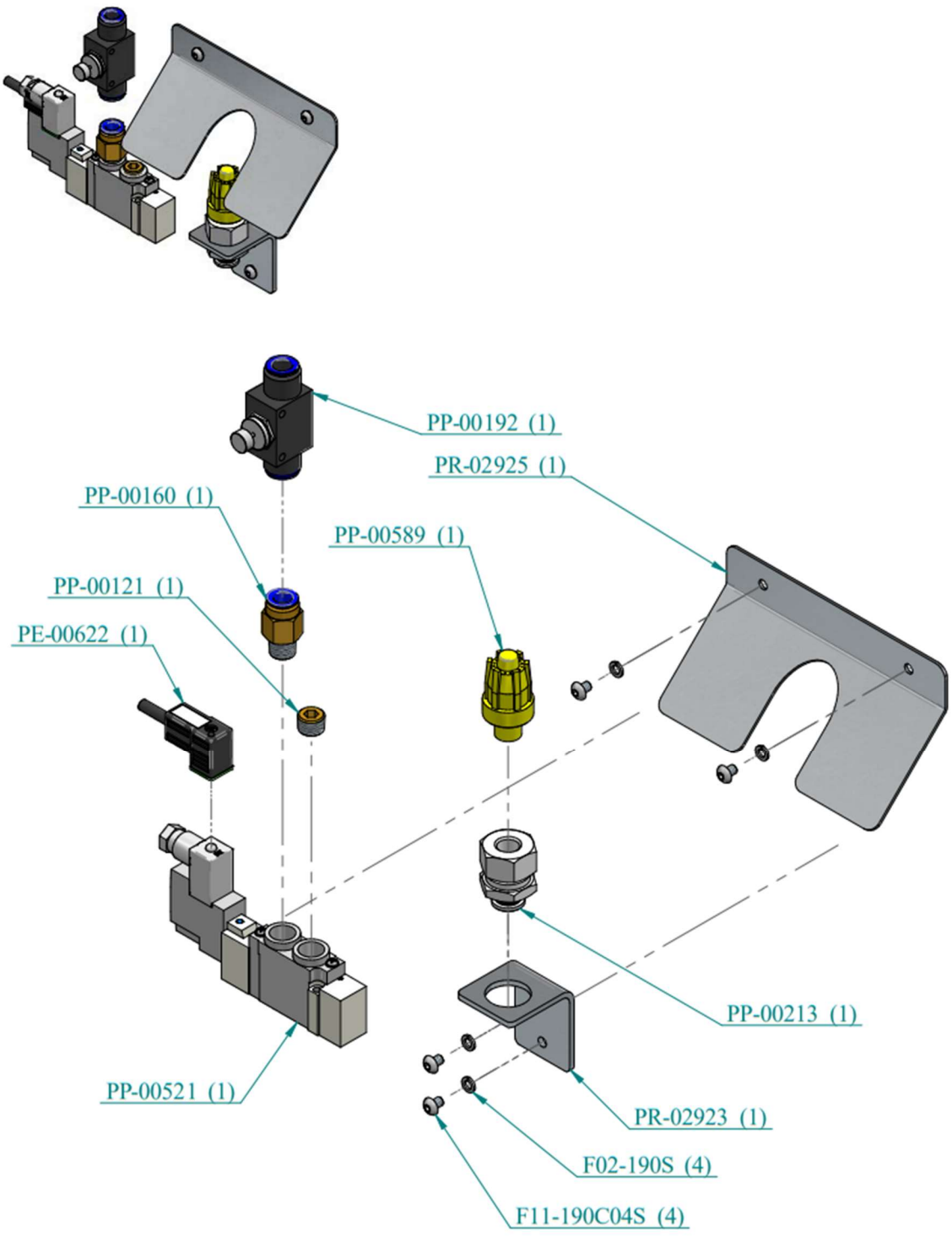
LEFT VERSION Full belt: PB-00517-L (use this section 5 times)



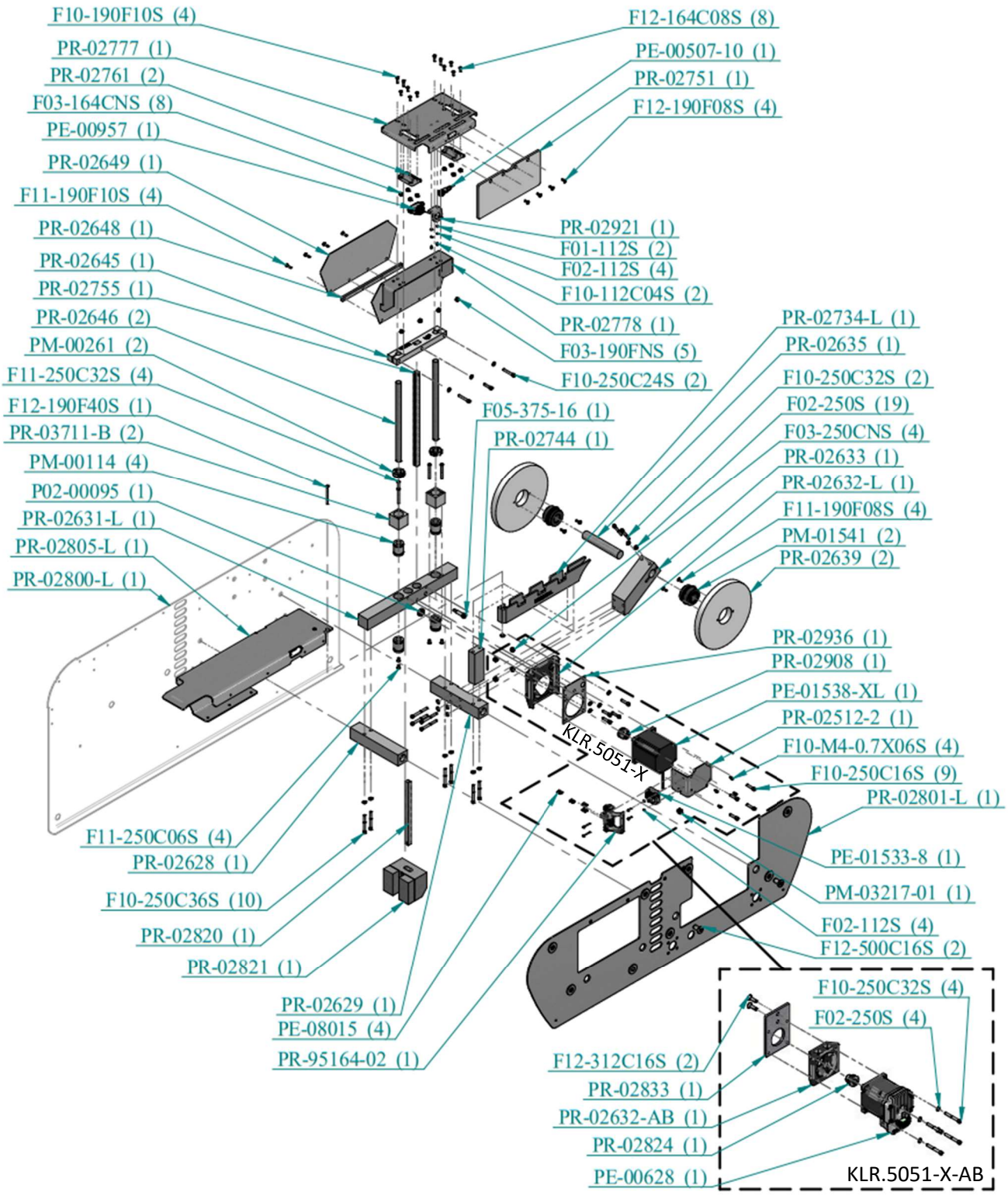
RIGHT VERSION Full belt: PB-00517-R (use this section 5 times)



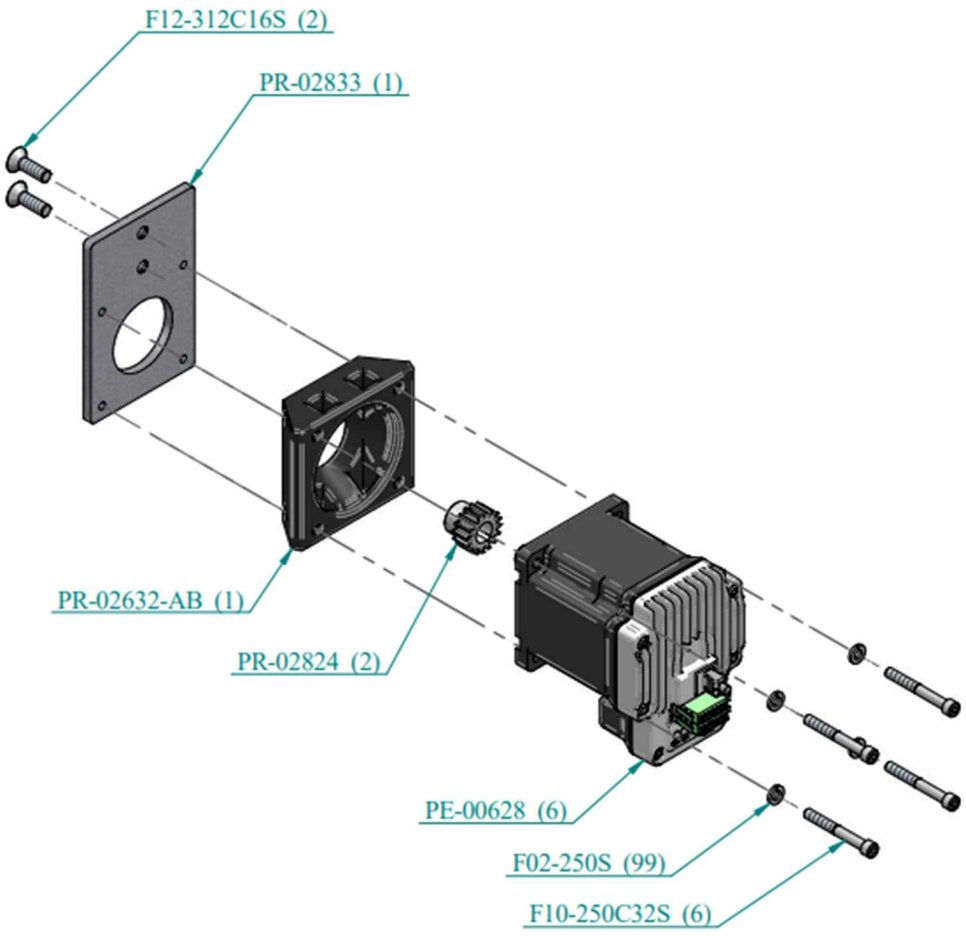
13.14.3: OPTION blower assist (KR-5051-BLOW-ASSIST)



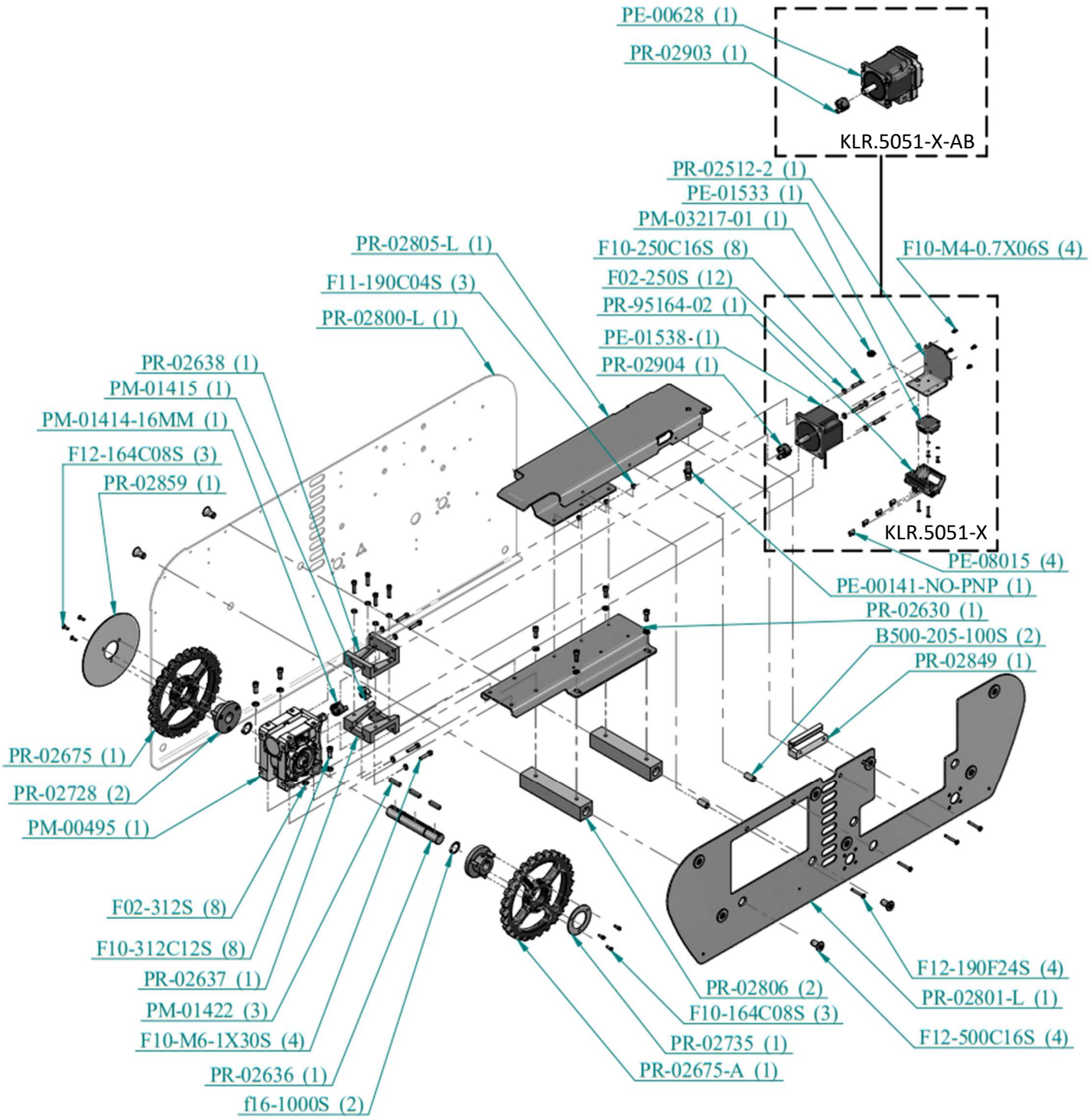
13.15: Bag table lifter



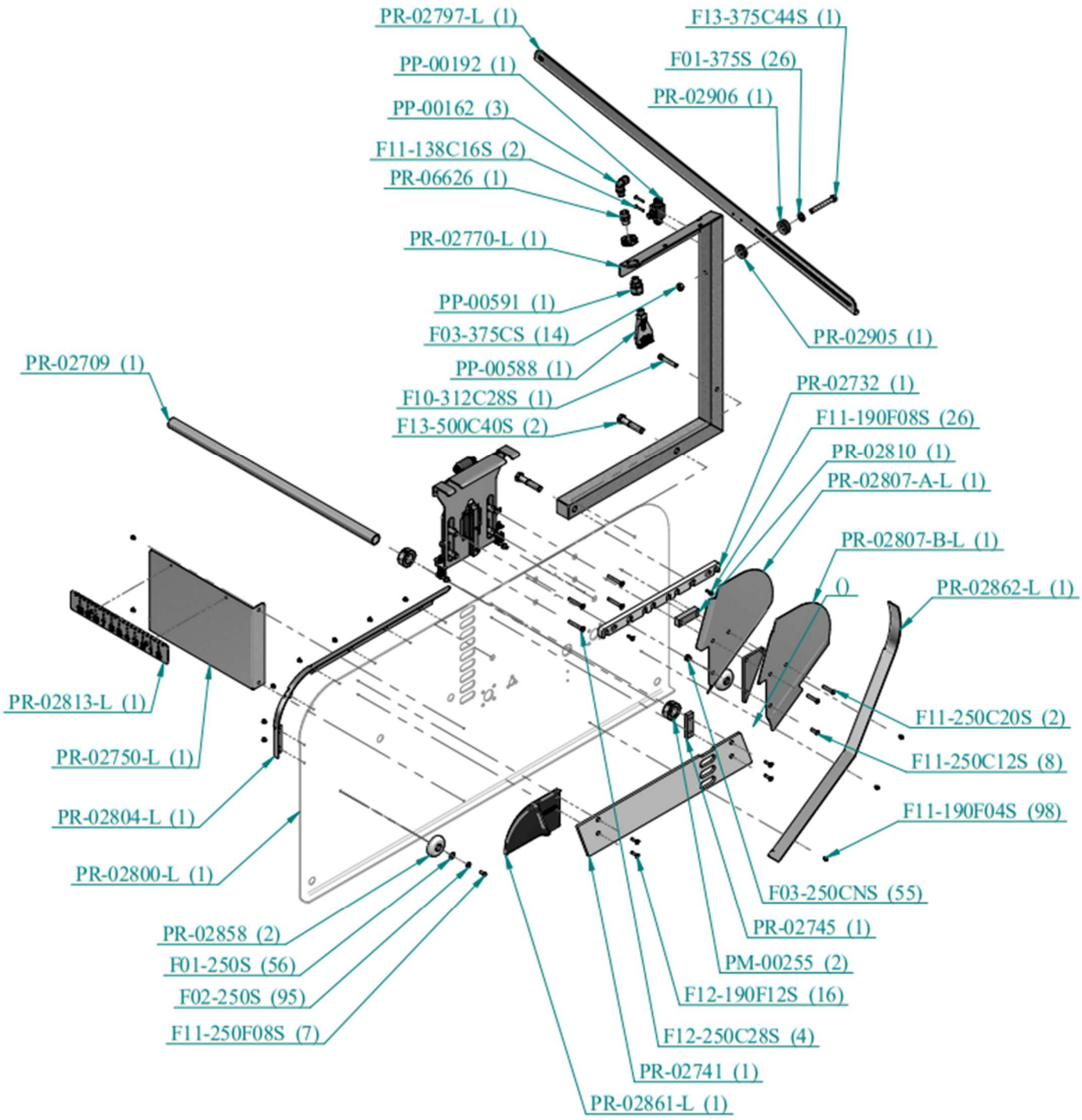
13.15.1: Retract lifter stepper motor for KLR.5051-X-AB



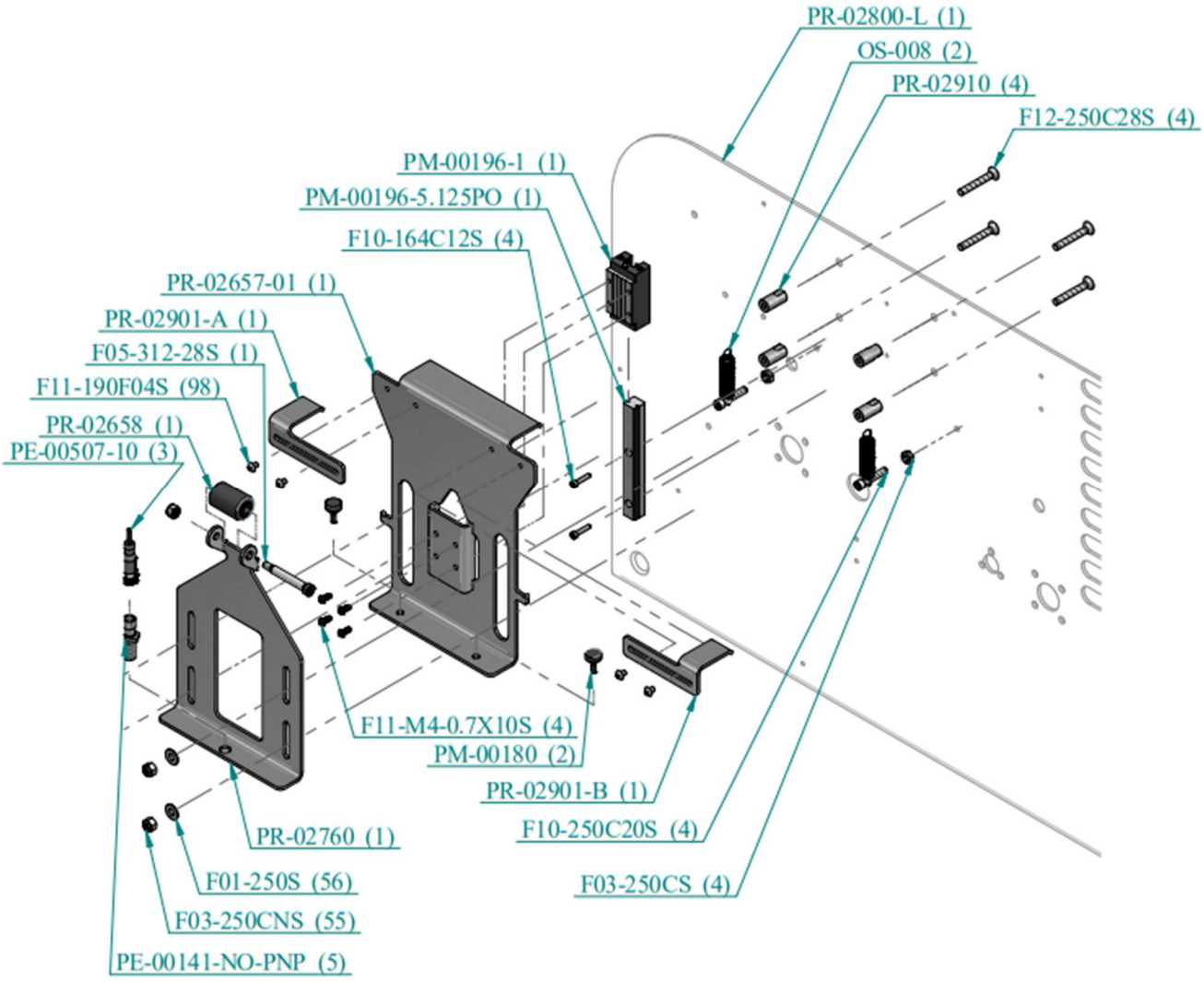
13.16: Bag table feeder



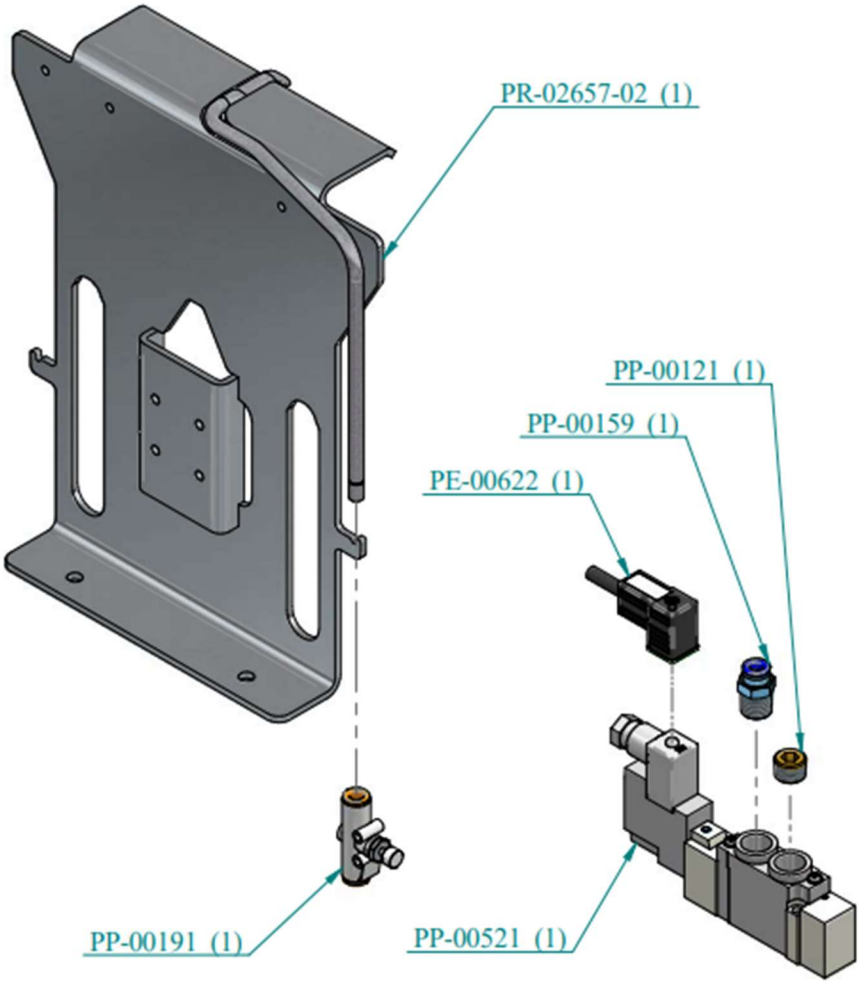
13.17: Bag table back side



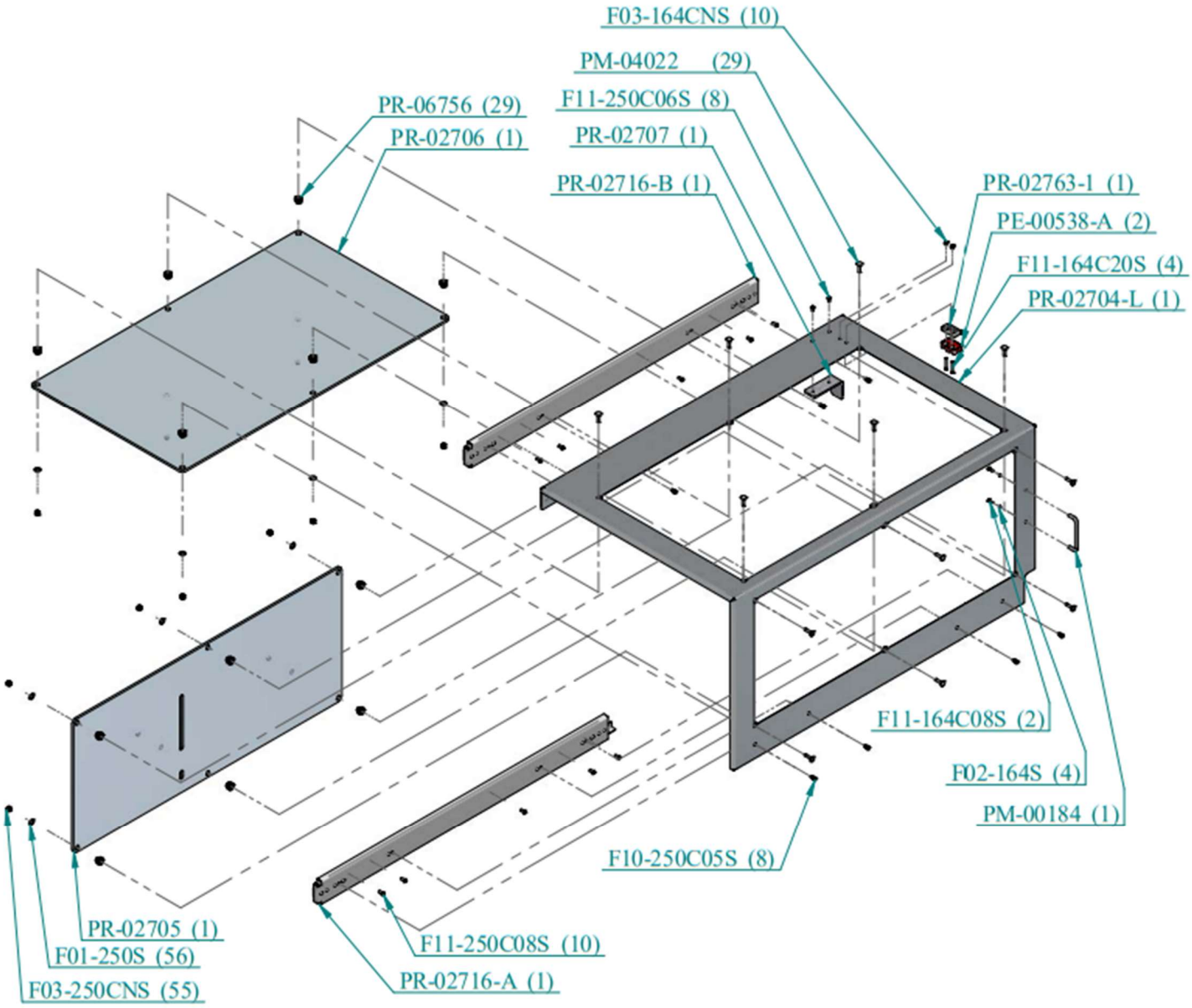
13.18: Bag holder



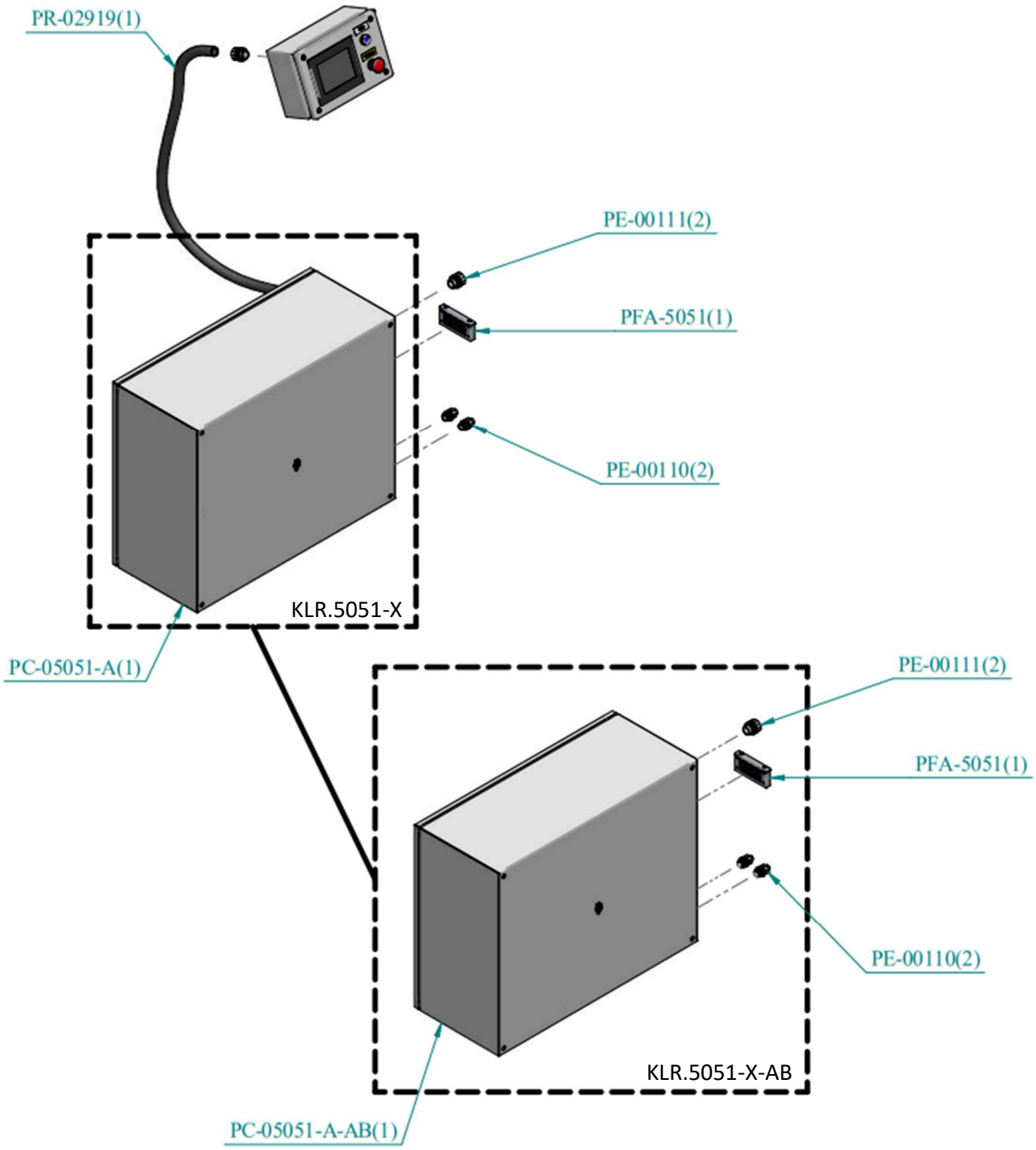
13.18.1: OPTION starter blower (KR-5051-STARTER-BLOWER)



13.19: Sliding door

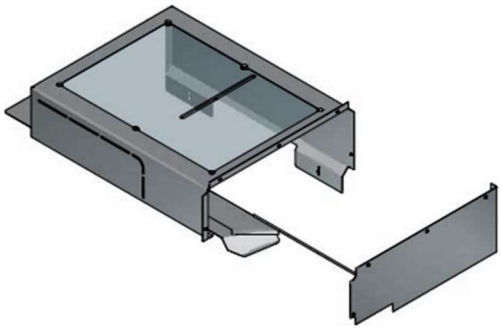


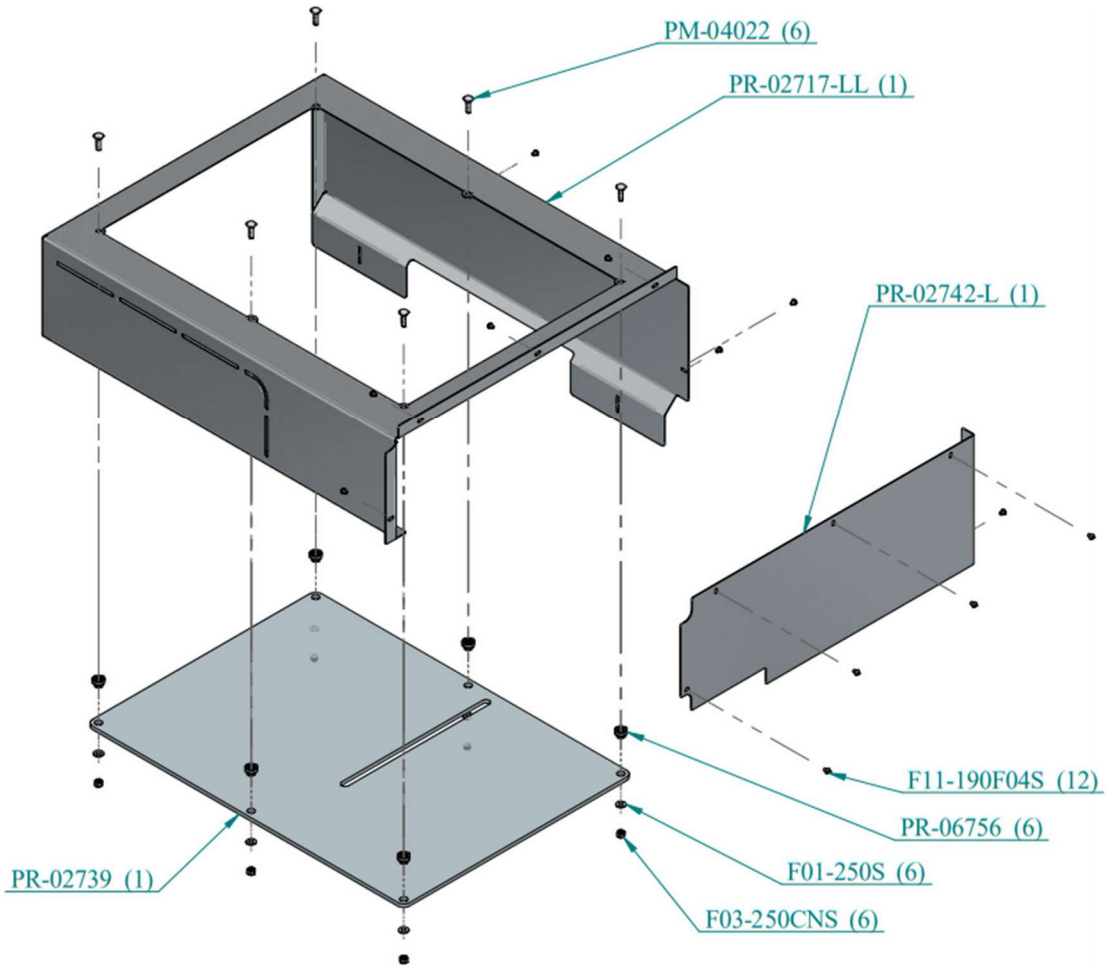
13.20: Control panel



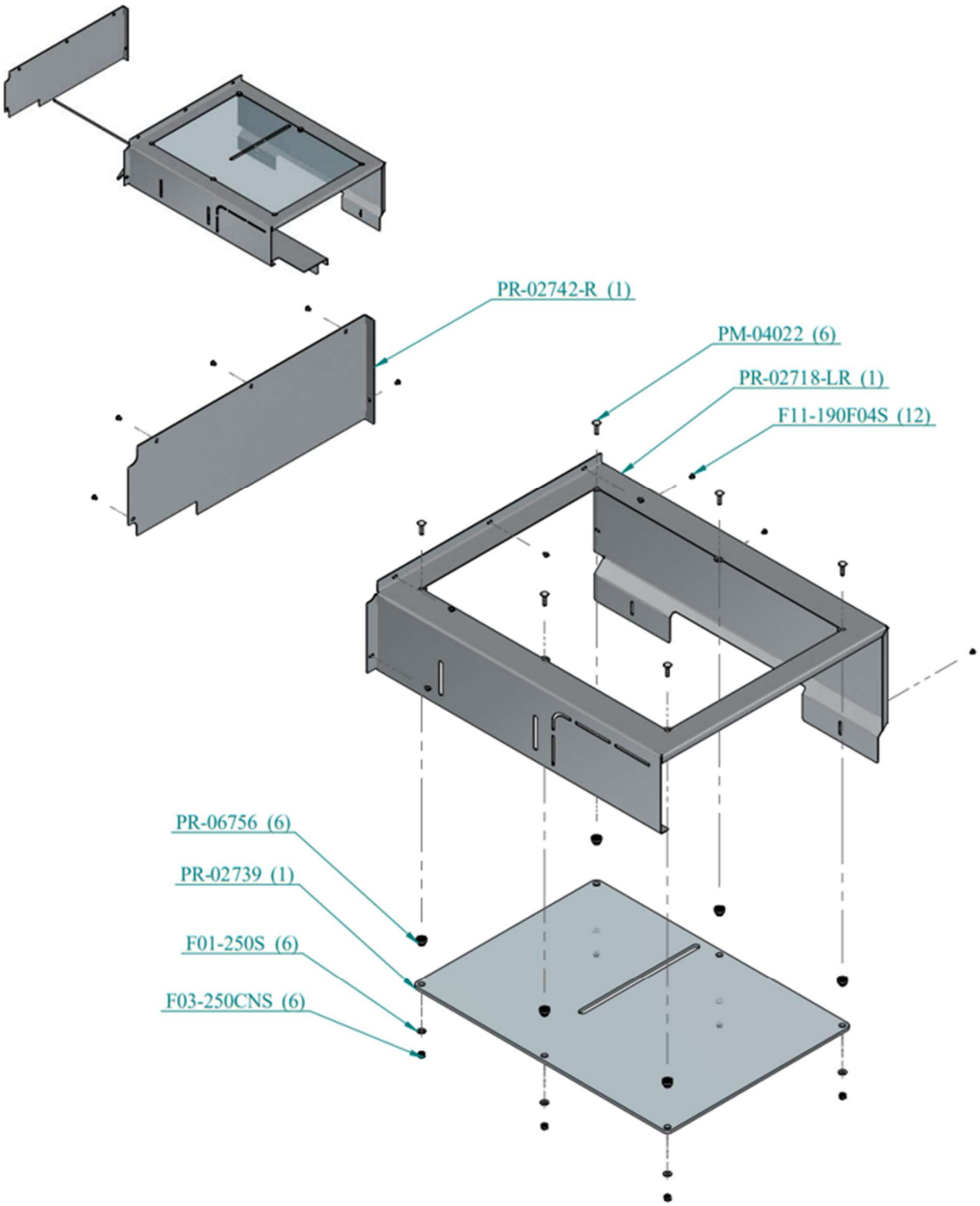
13.21: SAFETY GUARD OPTIONS

13.21.1: KR-5051-SG-LL

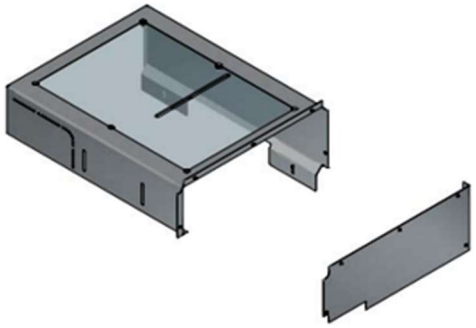


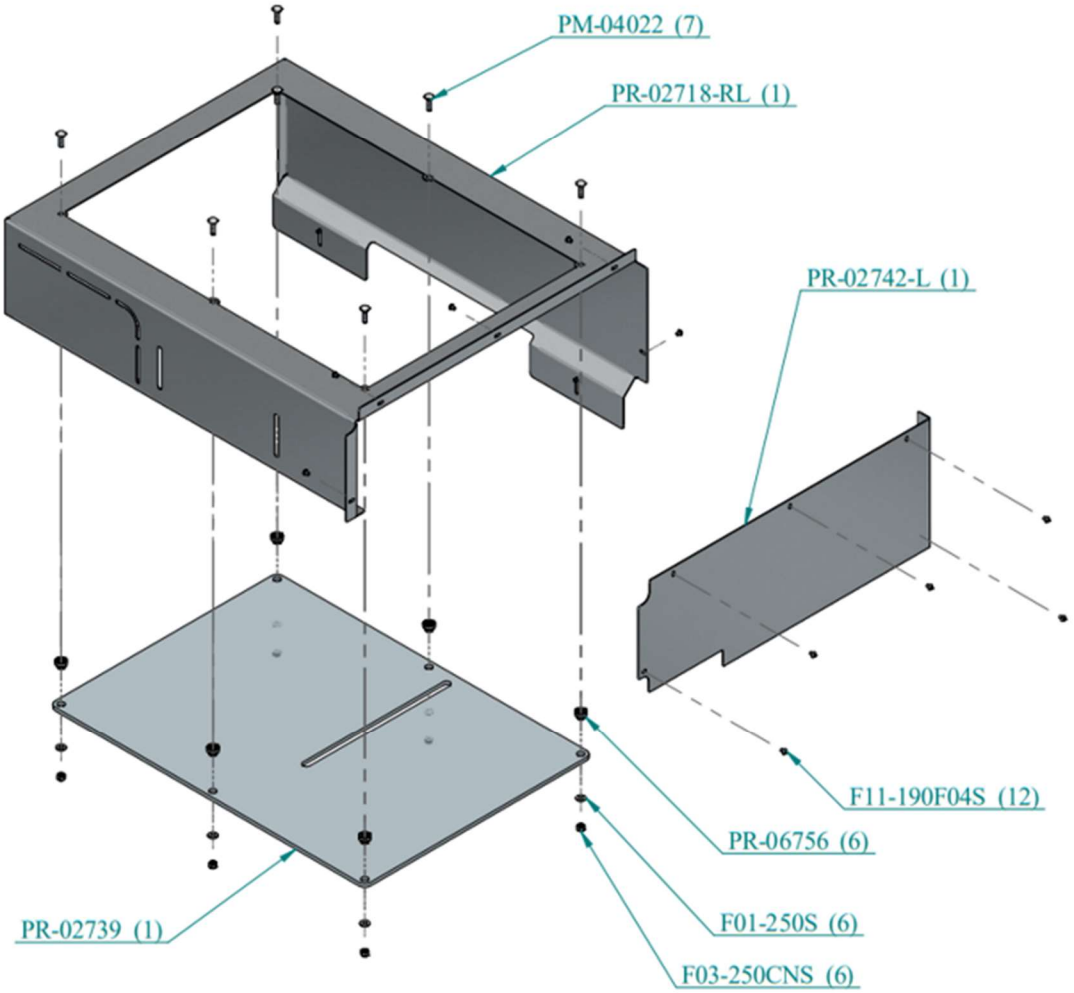


13.21.2: KR-5051-SG-LR

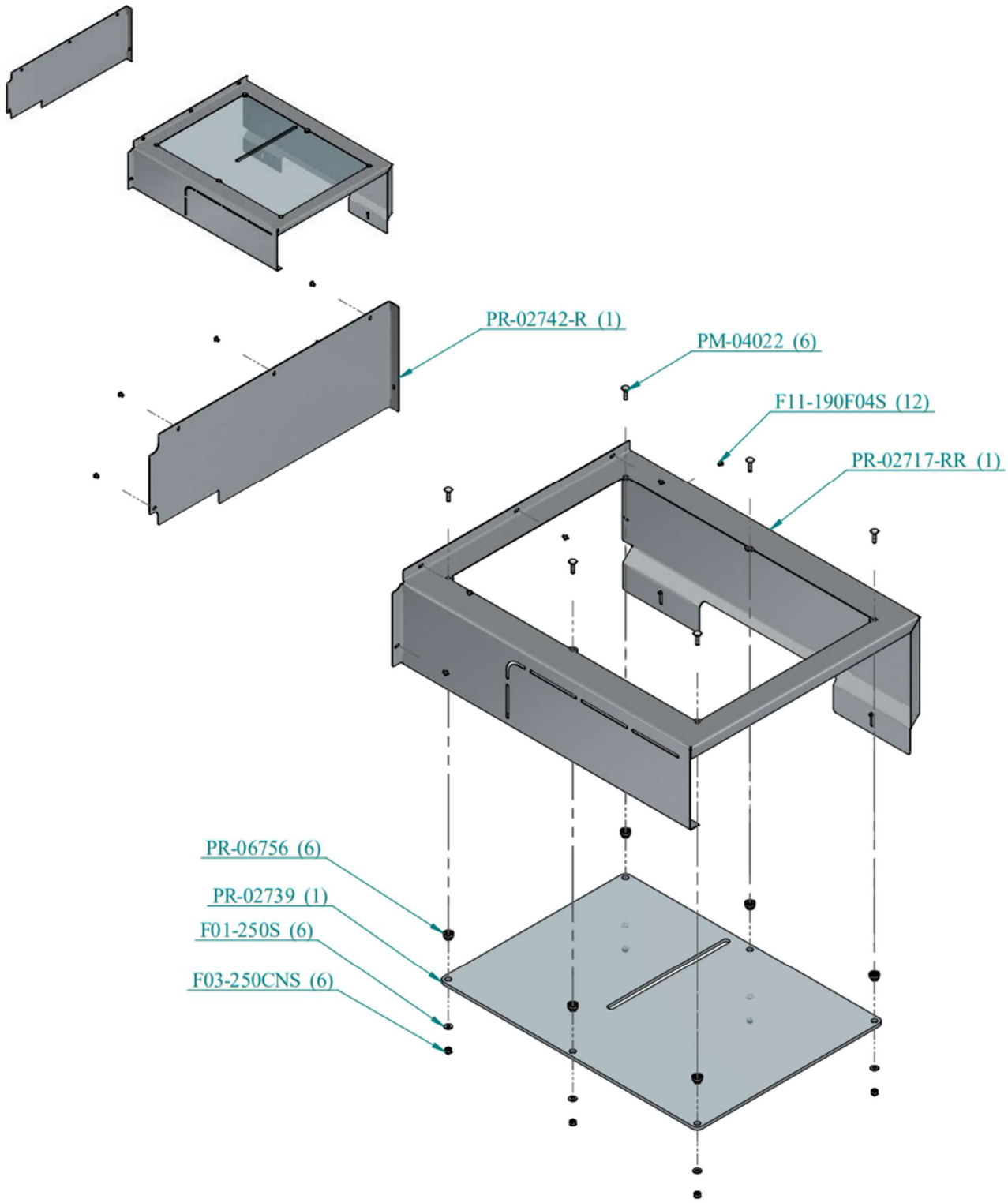


13.21.3: KR- 5051-SG-RL

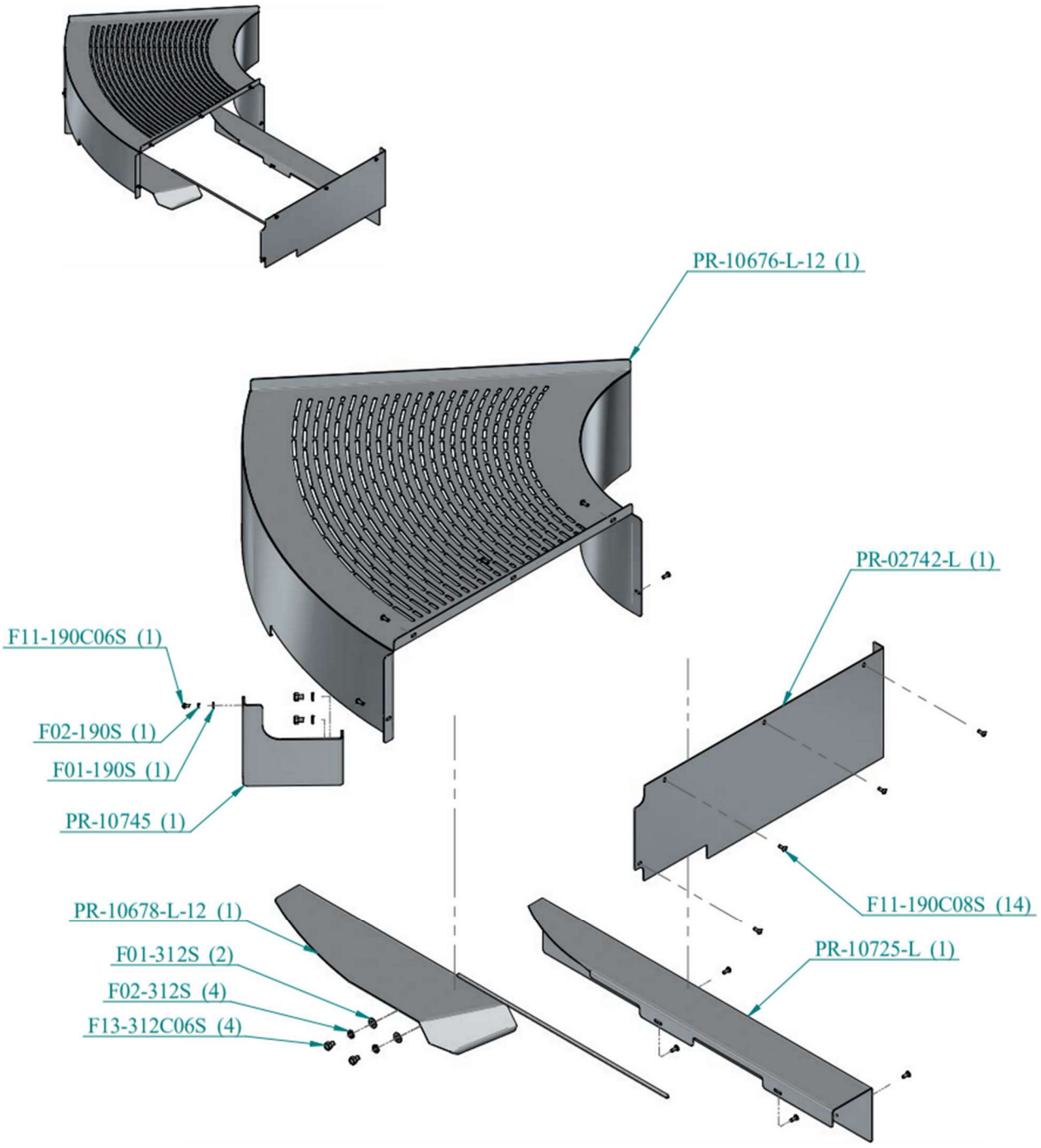




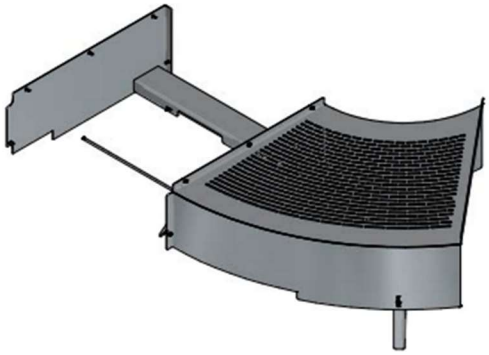
13.21.4: KR-5051-SG-RR

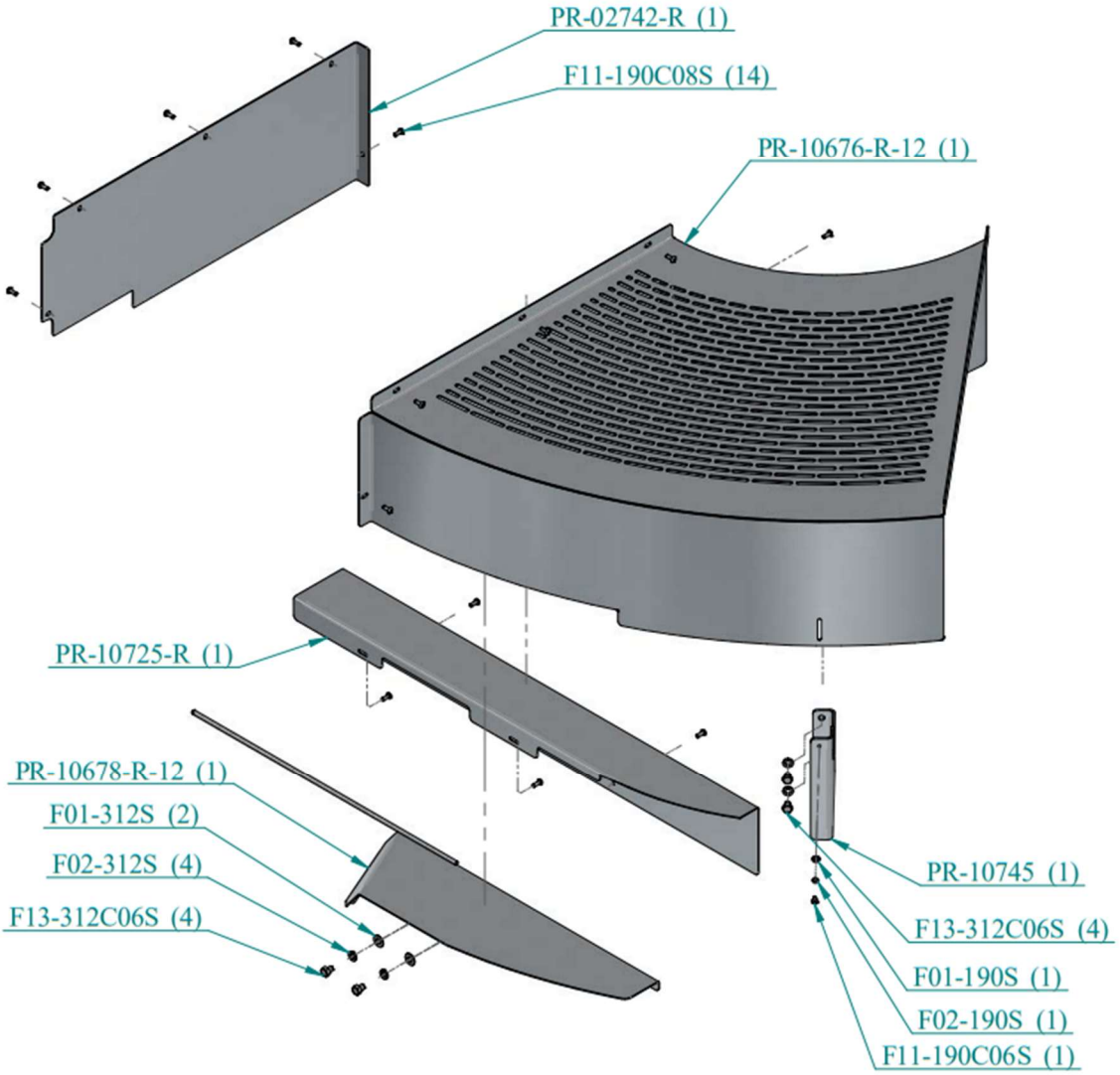


13.21.5: KR-5051-SG-CO-L-12

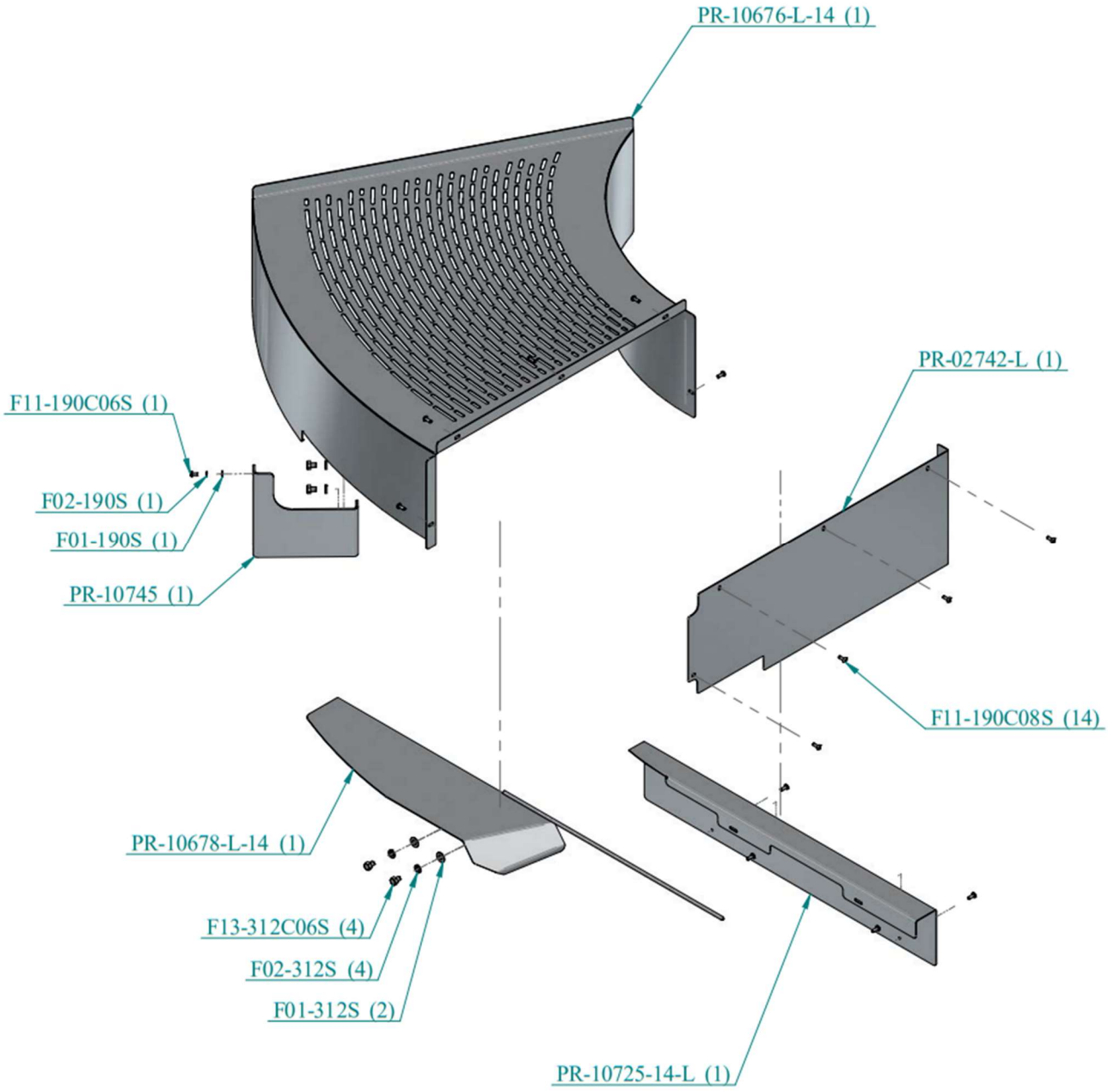


13.21.6: KR-5051-SG-CO-R-12

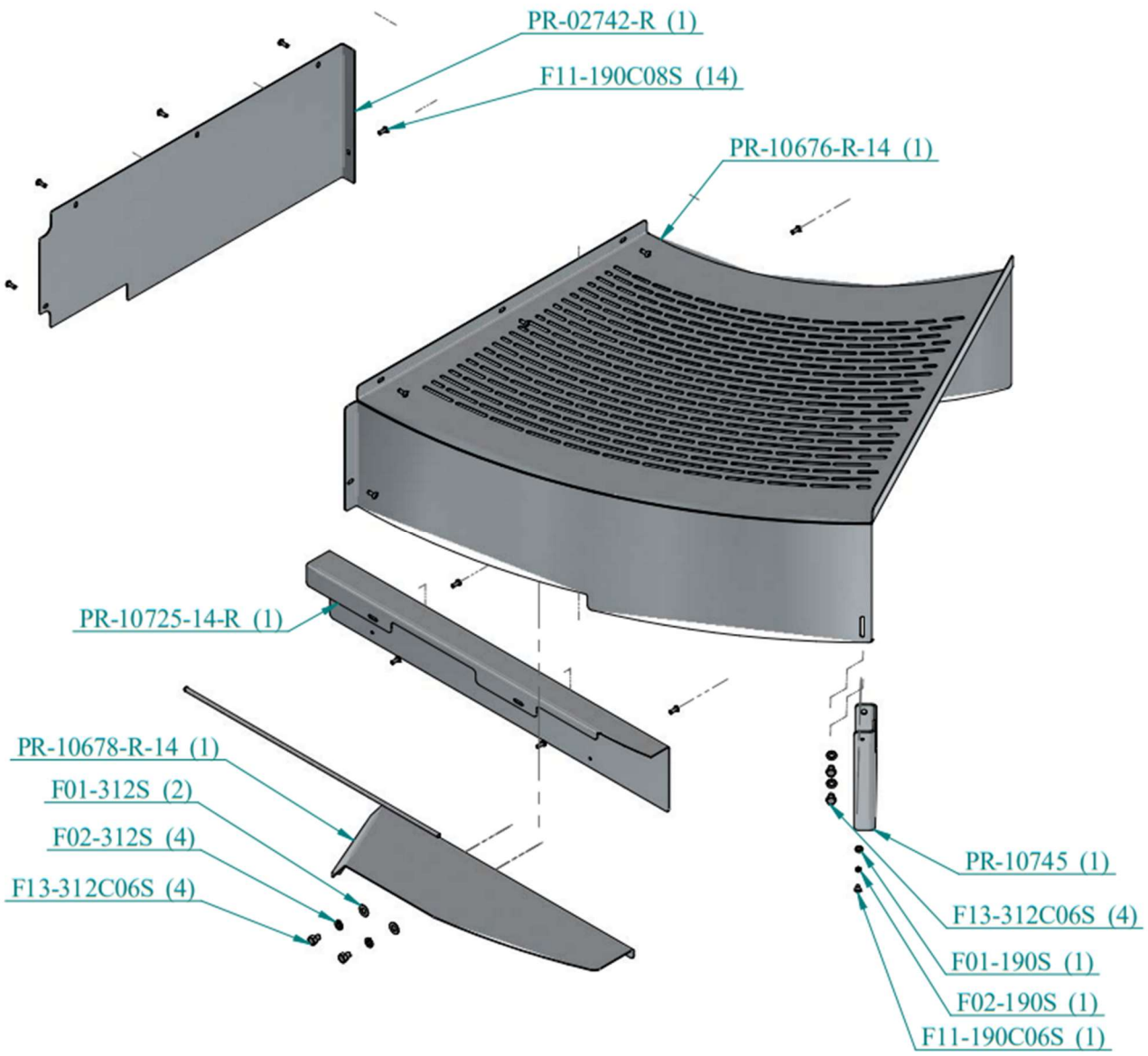




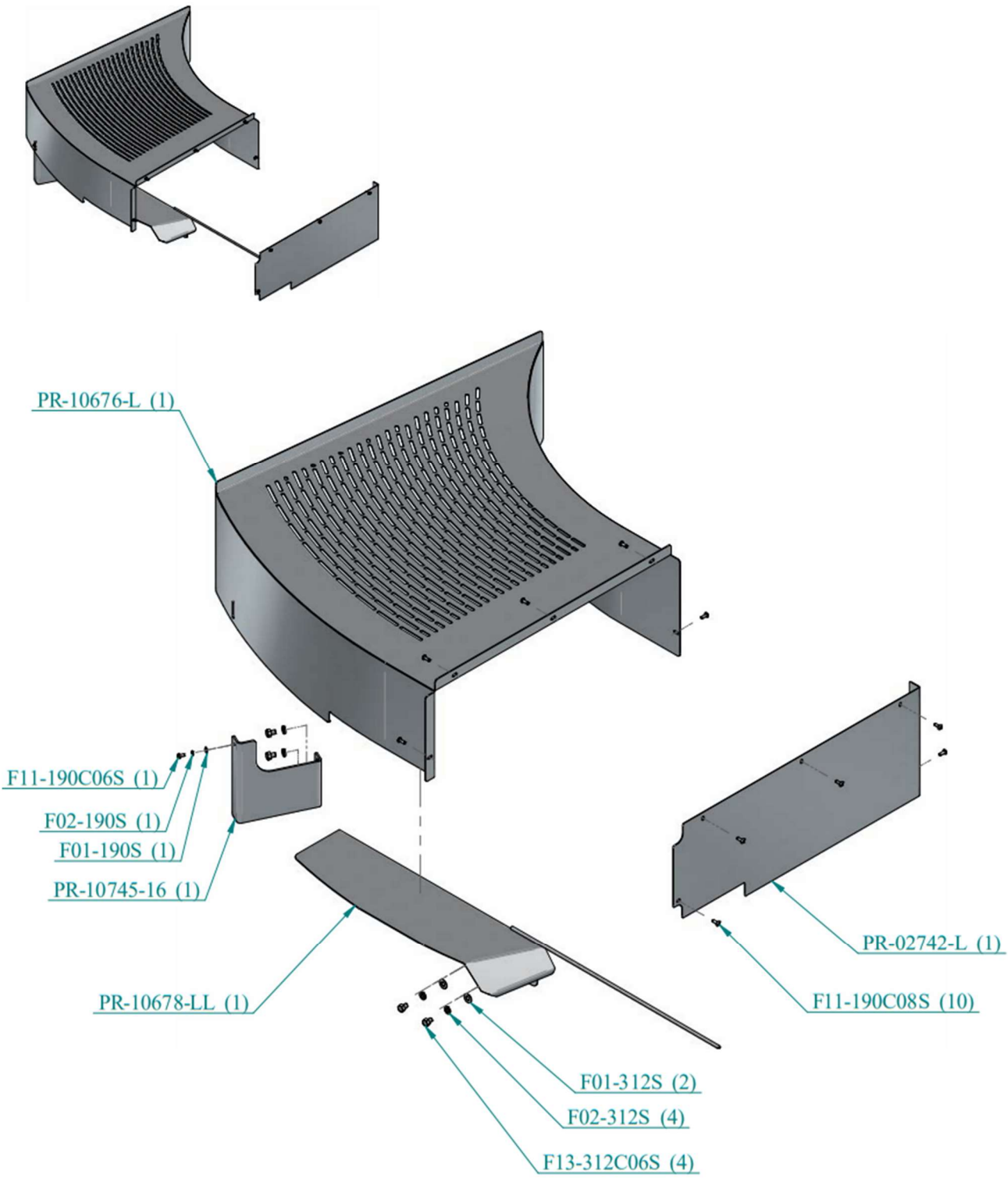
13.21.7: KR-5051-SG-CO-L-14



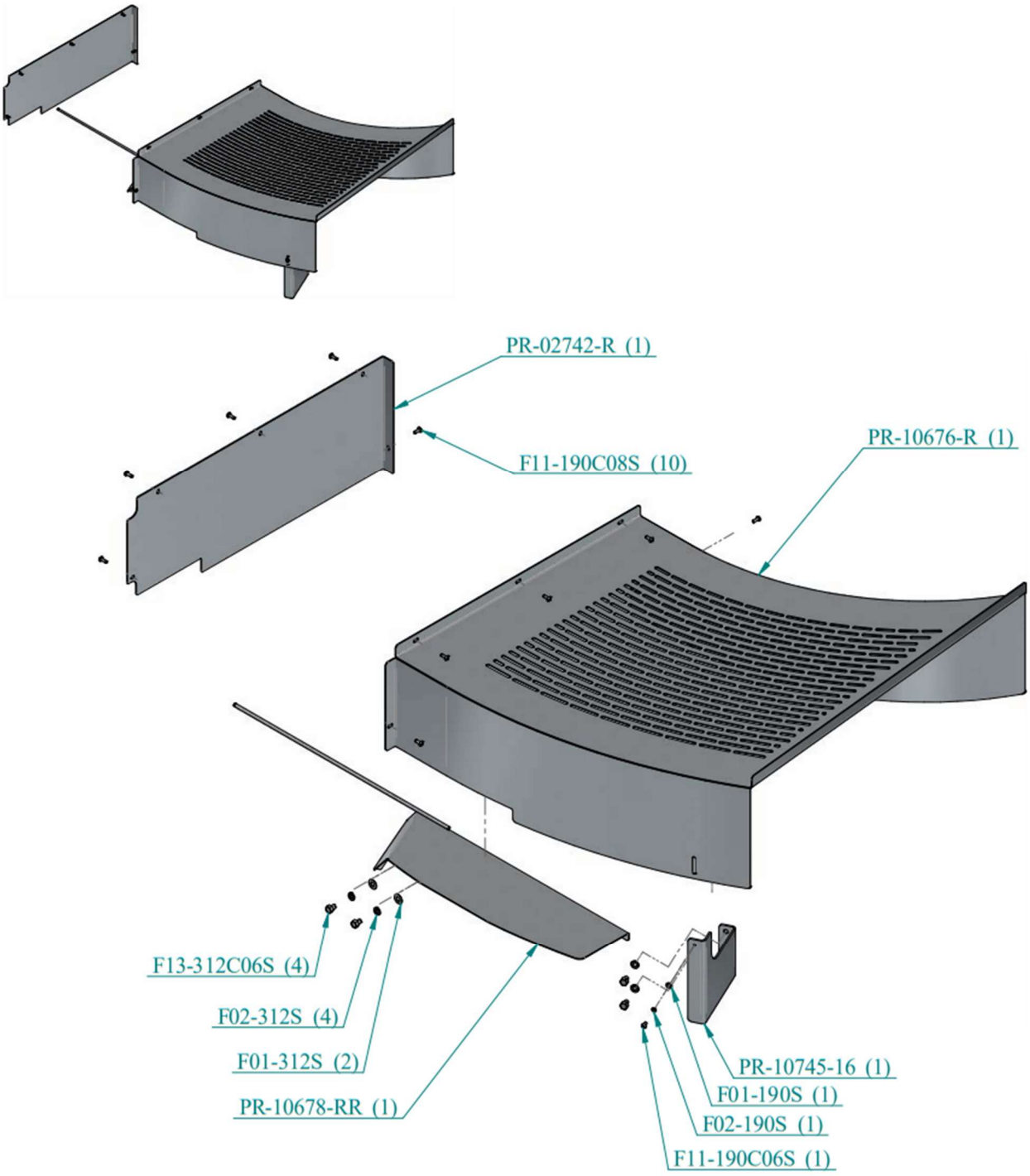
13.21.8: KR-5051-SG-CO-R-14



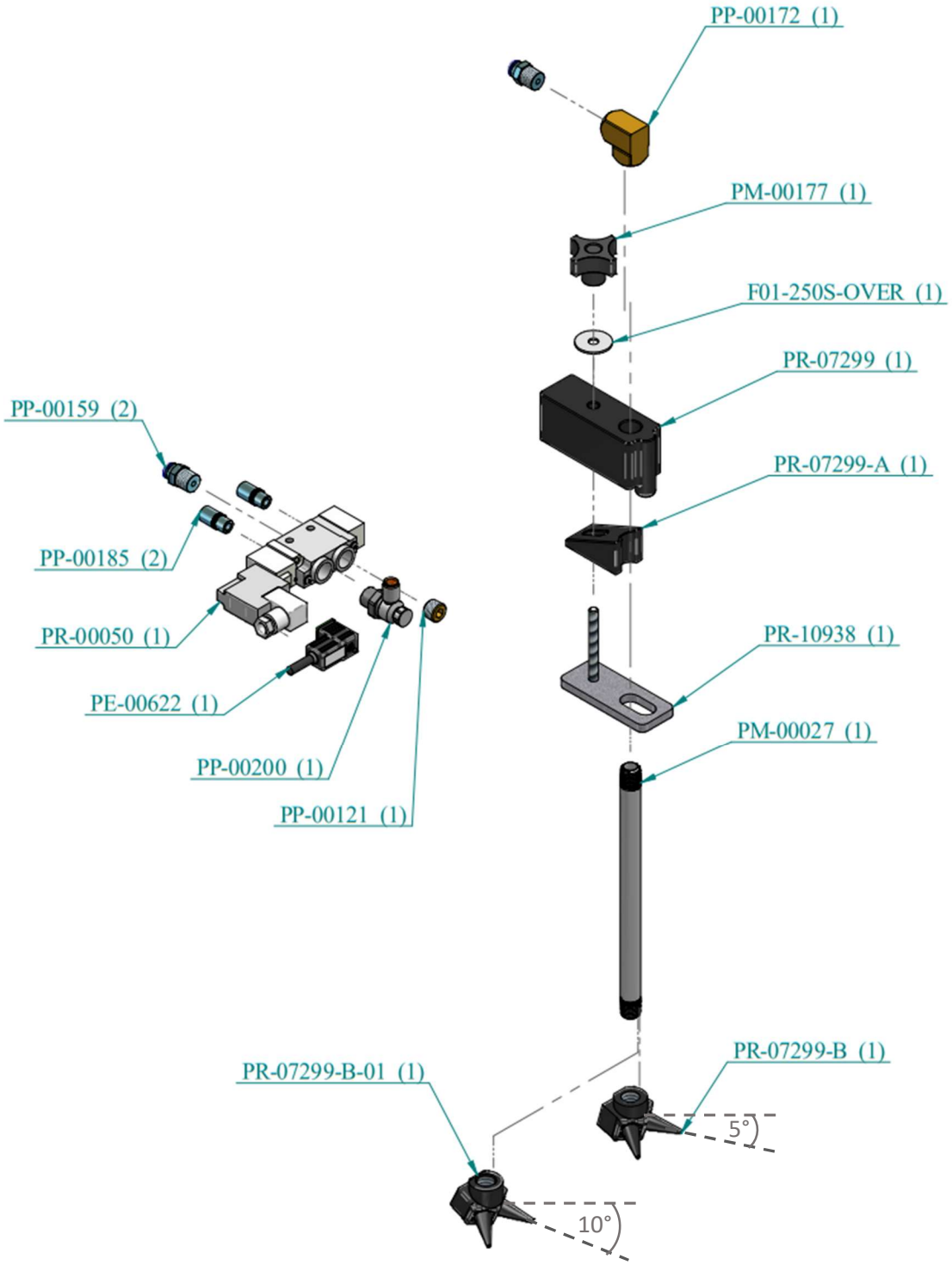
13.21.9: KR-5051-SG-CO-L-16



13.21.9: KR-5051-SG-CO-R-16



13.21.10: KR-HS70B-FLATBAG-G



13.21.10: KR-HS70B-FLATBAG-C