MEDIUM X4 Product description

Status: 06-2021

TECHNIK ENTSCHEIDET

ZOELLER
KIRCHHOFF GRUPPE

Technik entscheidet

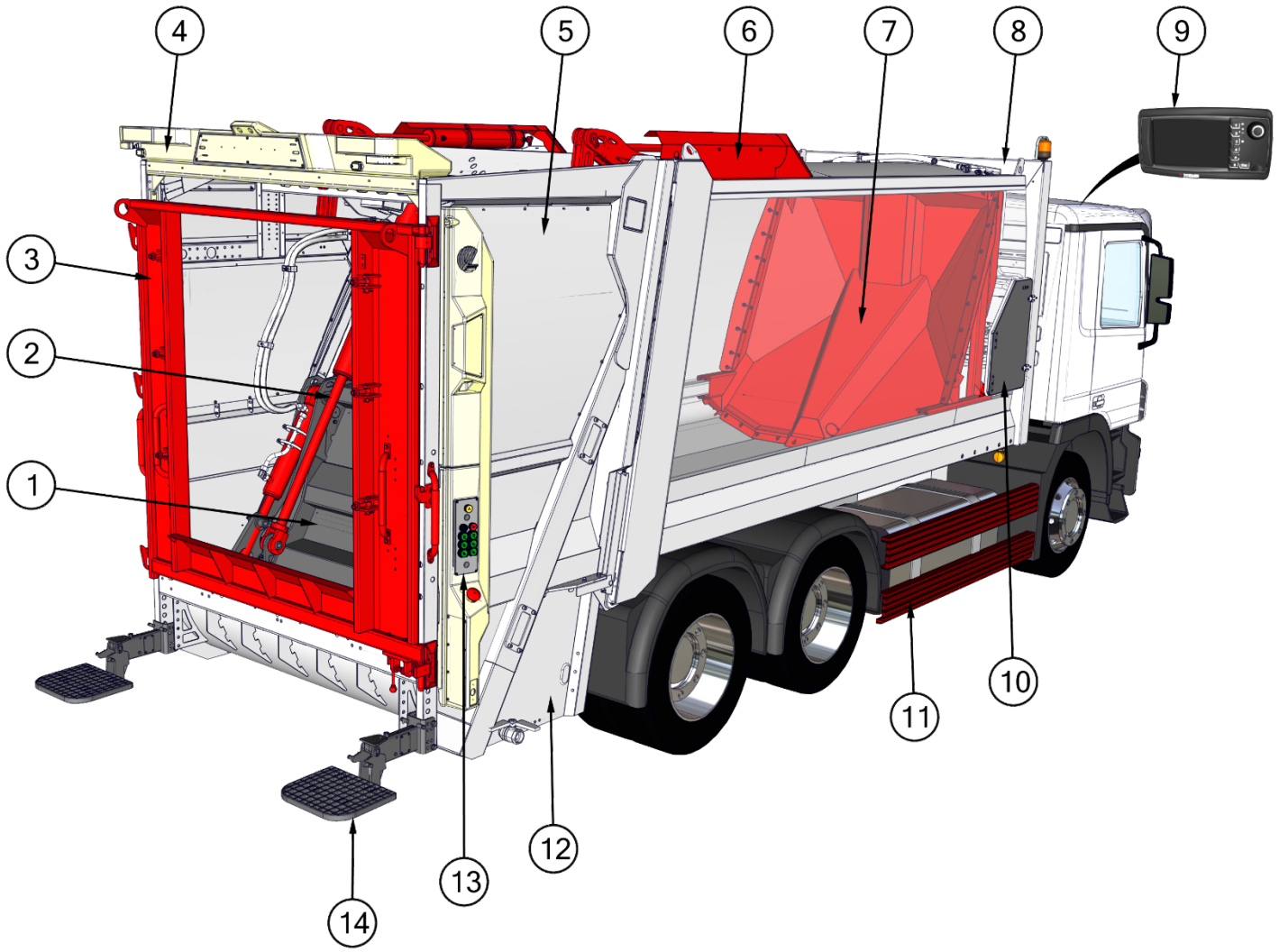
MEDIUM X4

Advantages

- MORE BODY & HOPPER VOLUME
- LIGHT DESIGN = MORE PAYLOAD
- OPTIMIZED CENTER OF GRAVITY
- EASY SERVICE
- NEW MODULAR ZCS SYSTEM
- SHORT TAILGATE = BETTER MANEUVERABILITY

MEDIUM X4 – Main components

According to norm EN-1501-1



MEDIUM X4	
1	Compaction mechanism
2	Compaction mechanism cylinders
3	Mounting frame
4	Lighting plastic panels
5	Tailgate
6	Lifting tailgate mechanism
7	Ejection plate
8	Body
9	Zoeller control system terminal
10	Inspection door
11	Side underrun protection
12	Hopper
13	Control panel
14	Footboard

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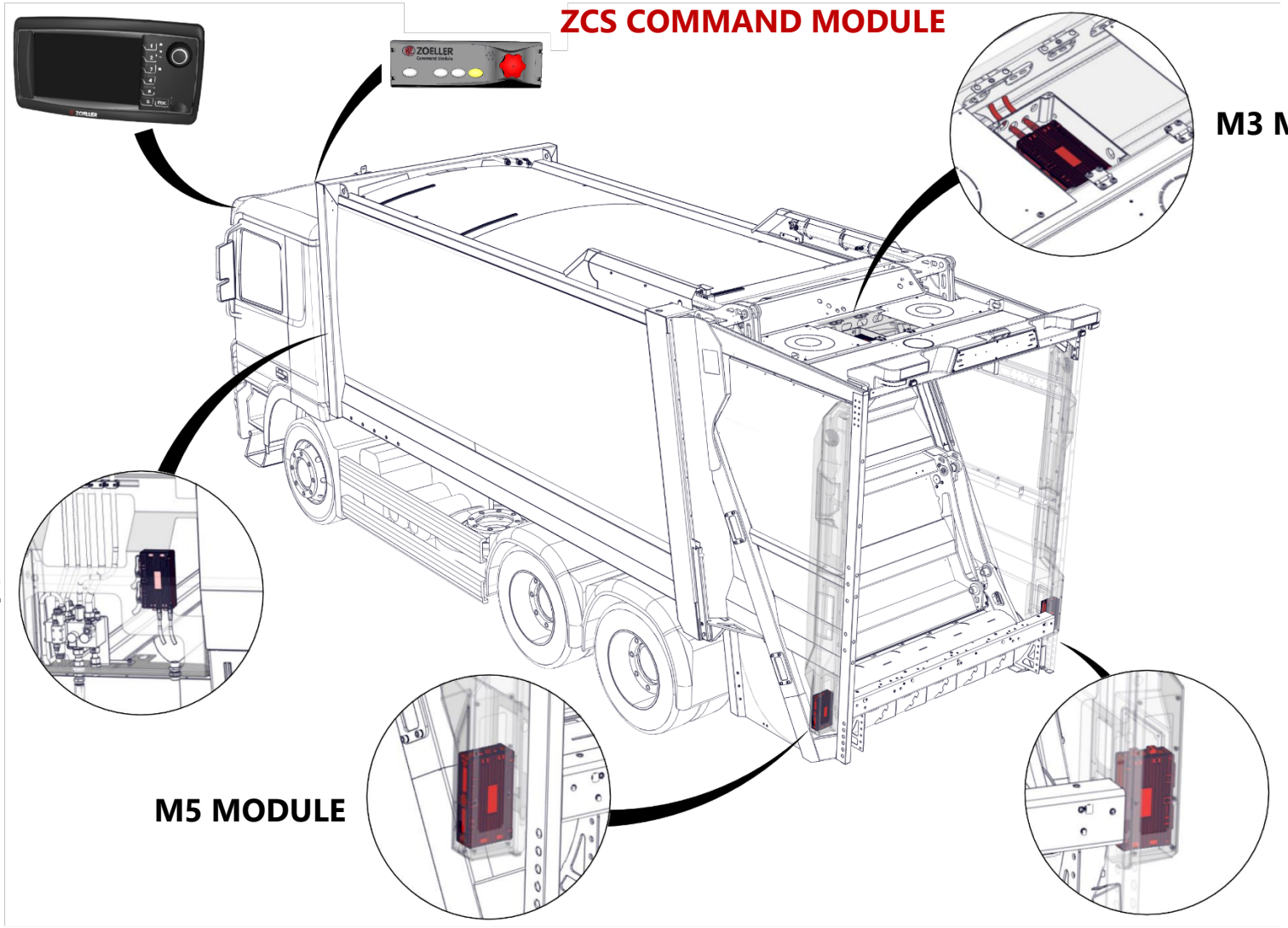
ZCS (ZOELLER CONTROL SYSTEM)

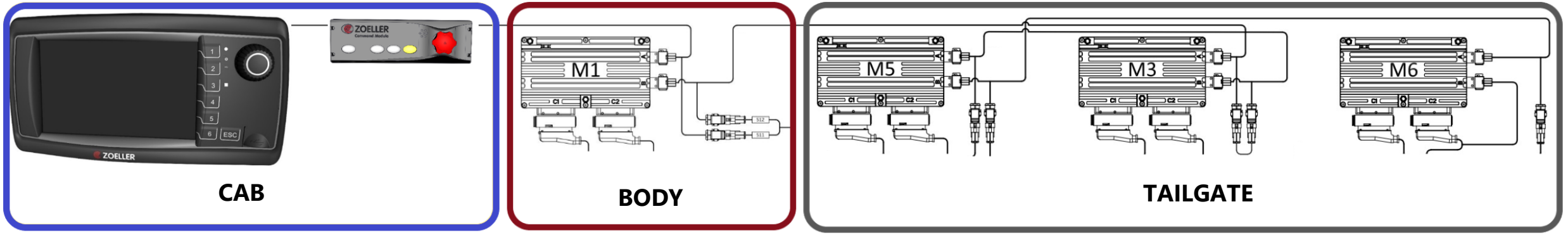
MEDIUM X4 – ZOELLER CONTROL SYSTEM

Electric elements of system



MEDIUM X4 – ZOELLER CONTROL SYSTEM

ZCS Topology



Zoeller control system is based on decentralized topology called **daisy chain** structure which uses minimum 4 modules (to even 9 modules) connected in a sequence

ZCS SYSTEM consists of:

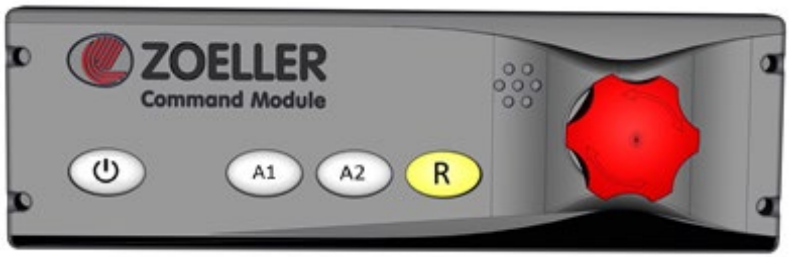
- **ZCS terminal:** displays working parameters & errors and monitors area behind the tailgate
- **ZCS command module**: necessary to start system, its directly connected with terminal & M1 module
- **Modules** (M1-M6): control individual components; box tightness class IP 67, aluminum die-cast with Gore-Tex-membrane

MEDIUM X4 – ZOELLER CONTROL SYSTEM

ZCS Terminal & Command Module

ZCS TERMINAL

- 6 function buttons + 1 esc button & knob
- USB port to easily upload or download set parameters
- 7" color screen displays working parameters & errors. User can easily customize video configuration like icon contrast, buzzer volume, contrast & brightness
- Terminal can be equipped with 1 CTV camera which is monitoring area behind the tailgate



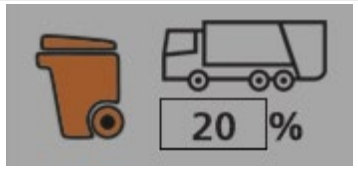
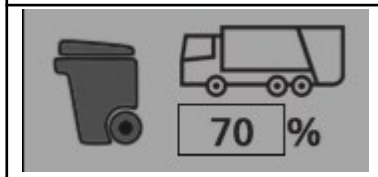
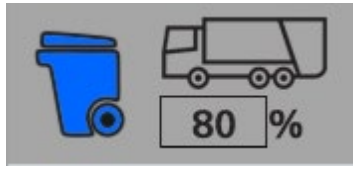
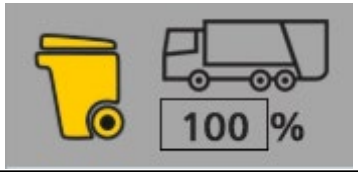
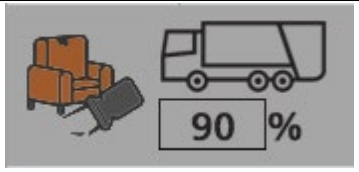
ZCS COMMAND MODULE

- START
- TURN OFF RESTRICTION OVERRIDE BUTTON
- FUNCTION BUTTON
- TURN ON RESTRICTION OVERRIDE BUTTON
- EMERGENCY STOP BUTTON

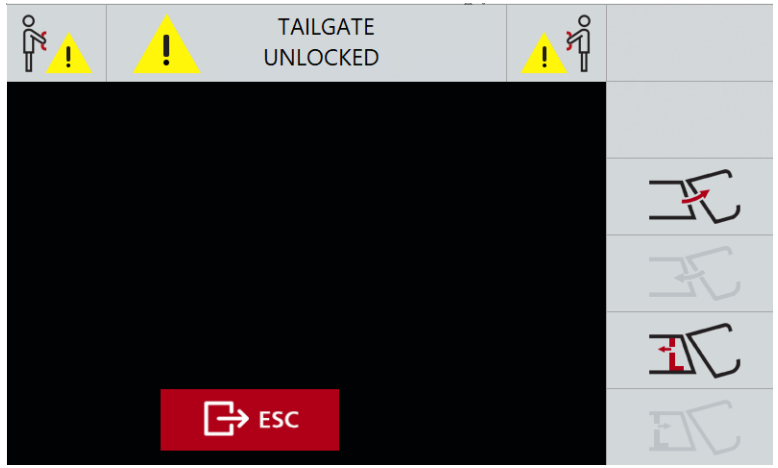
This module is necessary to start whole system. The emergency stop button can be also push by a driver in a cab

MEDIUM X4 – ZOELLER CONTROL SYSTEM

Collecting and emptying

FRACTION	
	Bio waste
	Mixed waste
	Paper
	Plastics
	Bulky waste

RCV is prepared to collect 5 predefined types of wastes: bio, mixed & bulky waste, paper and plastics. Operator selects a fraction to gather by using buttons and knob



OPEN TAILGATE

CLOSE TAILGATE

RETRACT EJECTION PLATE

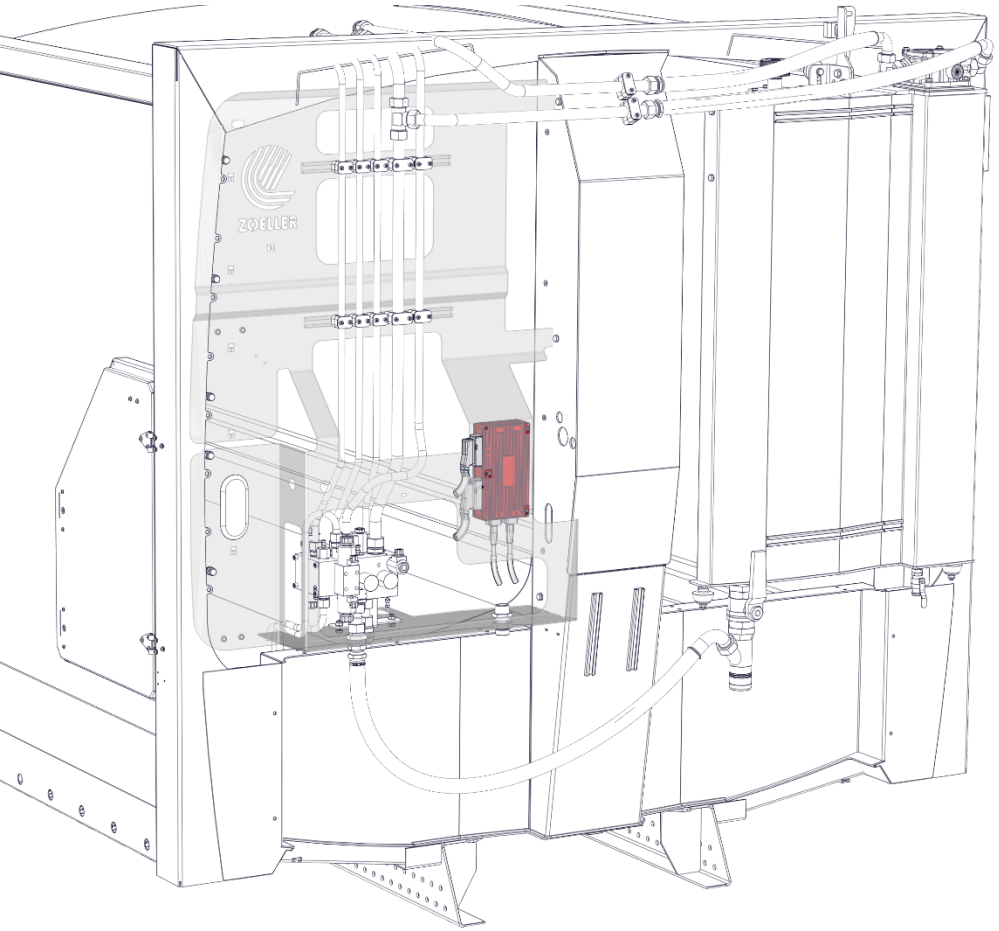
EJECT EJECTION PLATE

Emptying menu allows to control tailgate and ejection plate by operator in cab. According to safety standards mentioned in EN-1501 tailgate cannot be closed fully from terminal but with buttons on the body rear frame

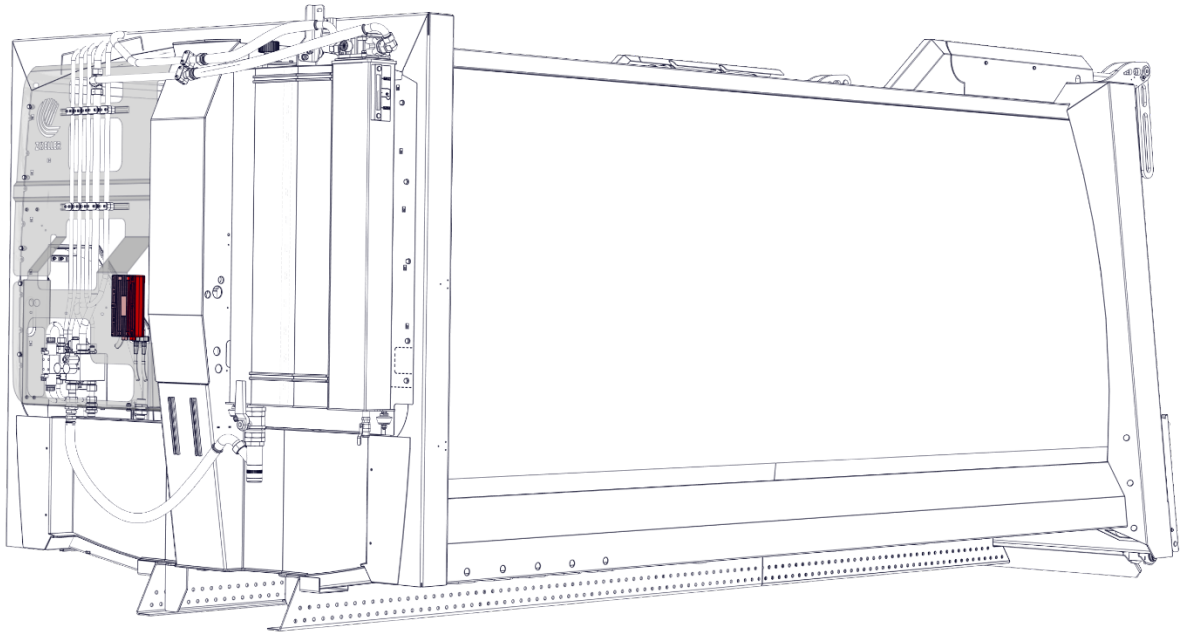
(more in electric chapter)

MEDIUM X4 – ZOELLER CONTROL SYSTEM

M1 module on the body

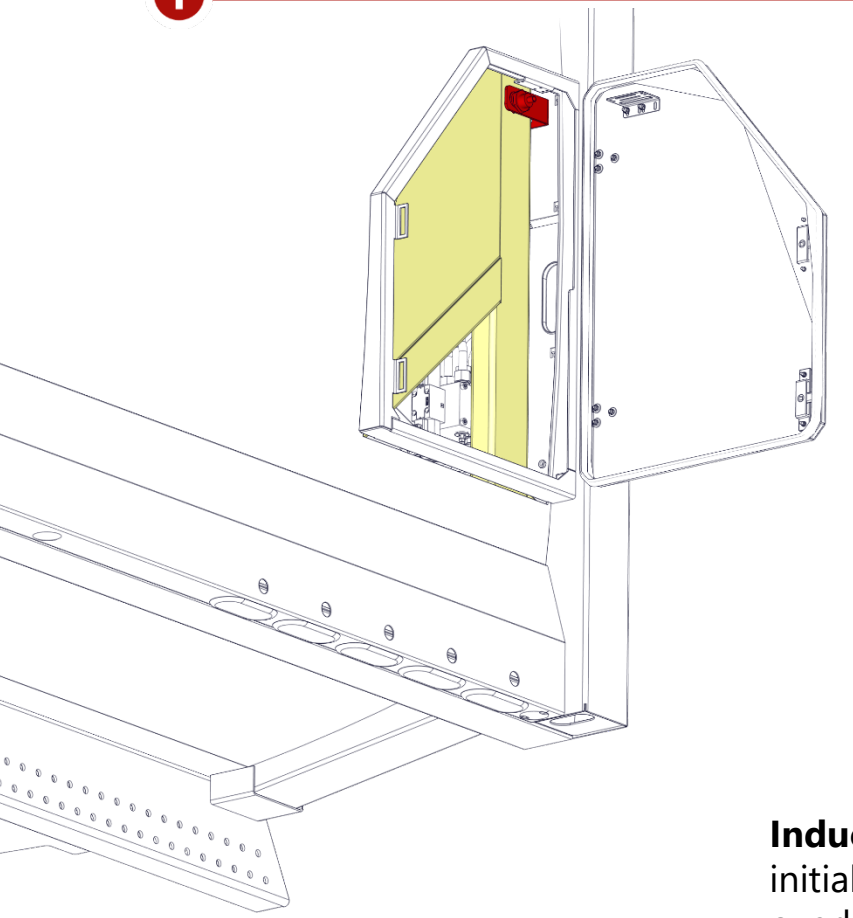


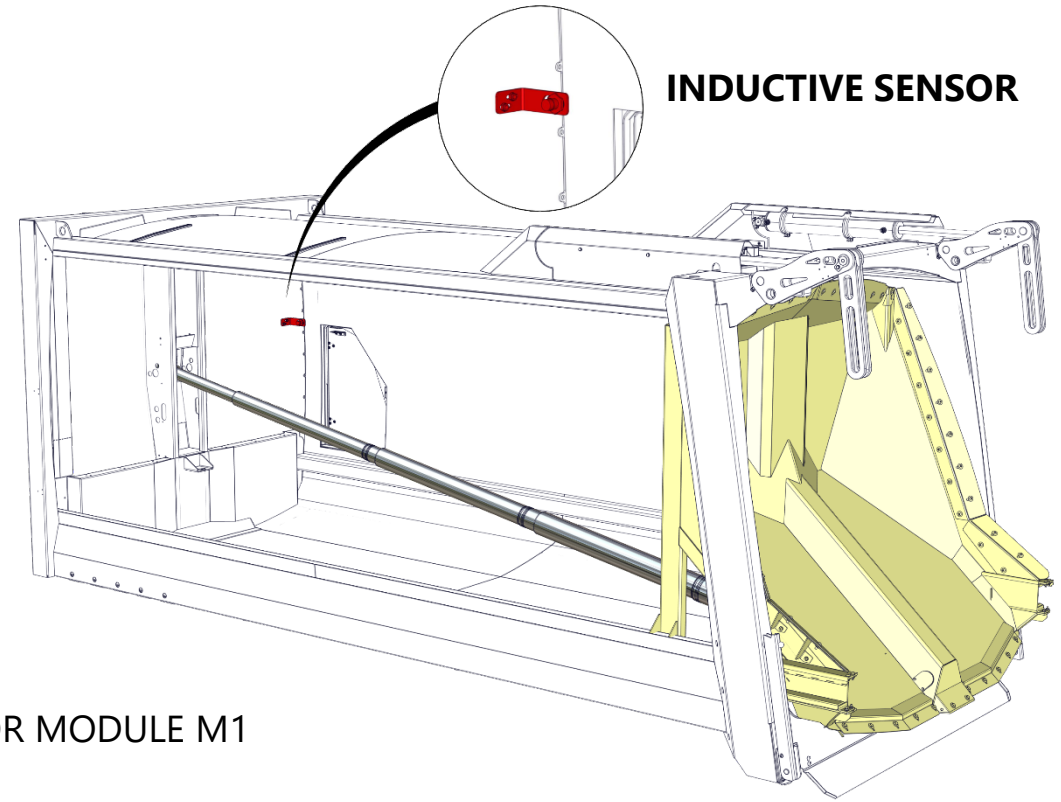
First **module M1** included in this system is placed on the front frame and it's hidden behind a hydraulic installation's sheet inside the body. This module is mainly responsible for tailgate and ejection plate movements,, working lamps and inspection door & ejection plate sensors. Its directly connected with chassis' wiring harness and M3 module on the tailgate



MEDIUM X4 – ZOELLER CONTROL SYSTEM

Ejection plate inductive sensor



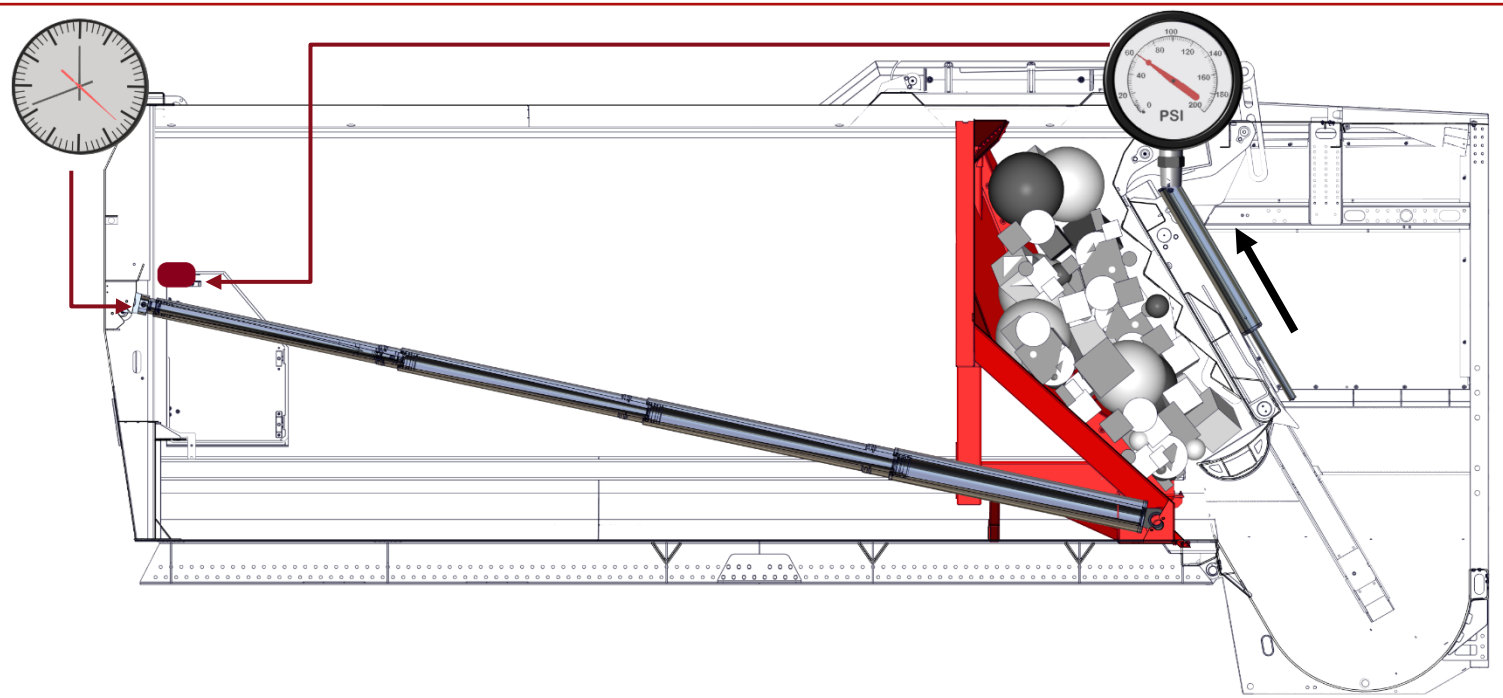


VARIANT I FOR MODULE M1

Inductive sensor detects position of ejection plate only when its in initial position (close to body front frame). In order to do not overload the body, there is available option to restrict the automatic compaction mechanism cycles from 1 – 10 when the sensor is active. Inductive sensor is mounted close to inspection doors and is directly connected with M1 module

MEDIUM X4 – ZOELLER CONTROL SYSTEM

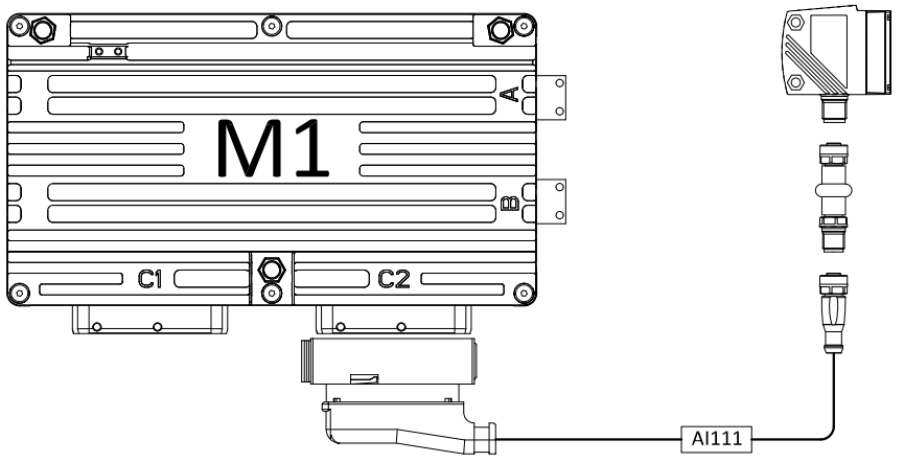
Principles of working – Inductive sensor



Inductive sensor mounted on the front frame cannot measure position of the ejection plate. Depending on selected fraction there is maximum pressure which can be exerted on the ejection plate by wastes. The pressure transmitter installed on compaction mechanism cylinders line evaluates signal about pressure and reports it to the control system. When pressure reached maximum (for given fraction) the ejection plate moves inward the body until the preset time is reached.
Active: Ejection plate movement is performed by opening hydraulic valve which supplies the oil to telescopic cylinder. Opening of the valve depends on time.
Passive: Ejection plate movement is performed by opening hydraulic valve which open the line between telescopic cylinder and oil tank. Wastes exerted pressure for ejection plate and oil flows to tank. Opening of the valve depends on time.

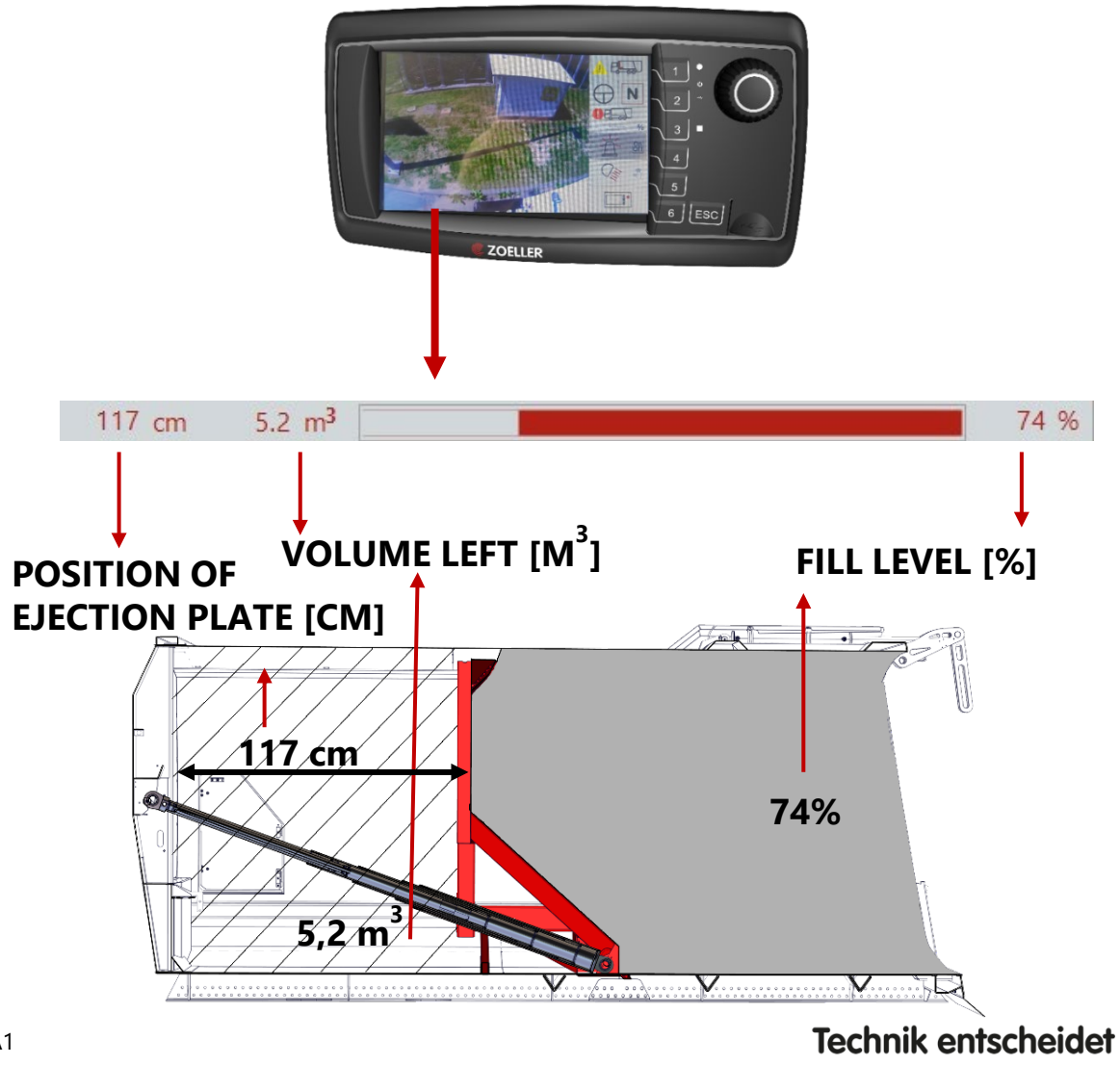
MEDIUM X4 – ZOELLER CONTROL SYSTEM

Ejection plate laser sensor



VARIANT II FOR MODULE M1

Laser sensor informs about position of ejection plate (distance between ejection plate and sensor located on front frame column). Additionally, the volume left, and fill level of the body is shown. All parameters are displayed on the screen of ZCS terminal. This solution helps an operator to determine when RCV needs to be emptied on a dump. Laser sensor is mounted in front frame column and is directly connected with M1 module



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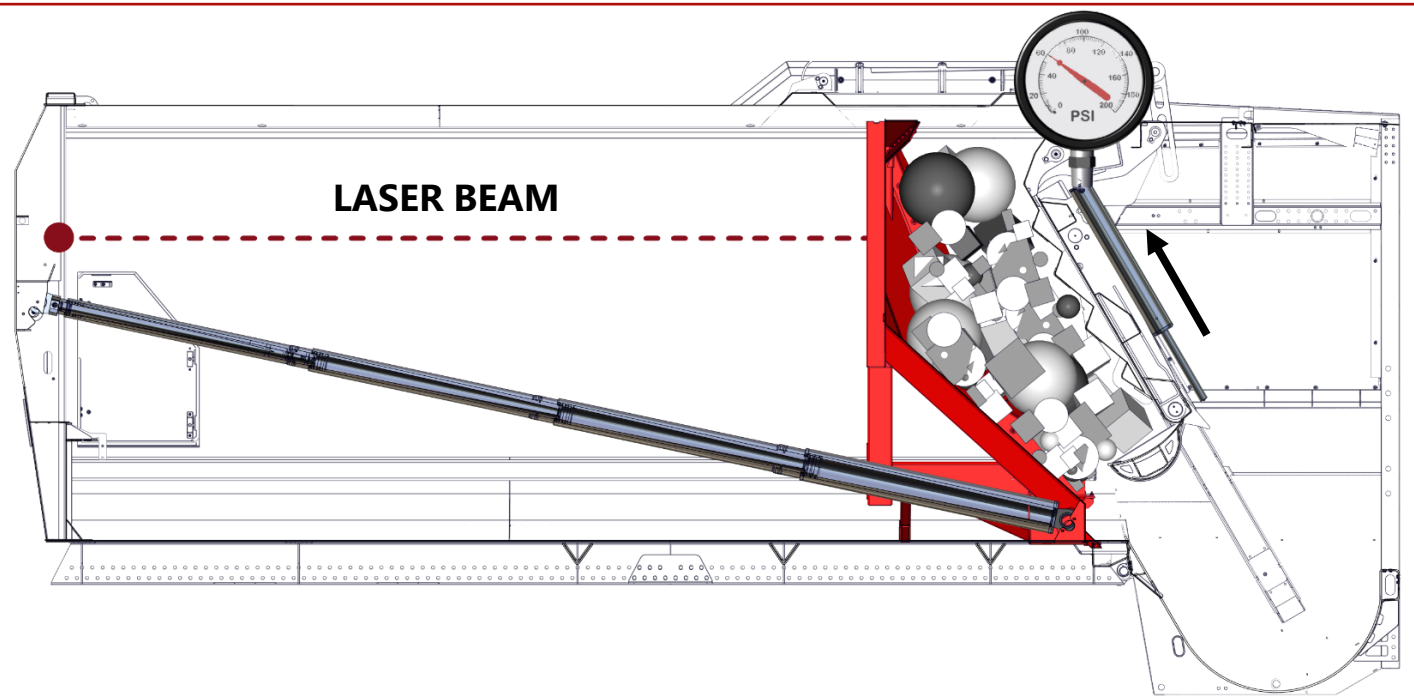
MEDIUM X4 – ZOELLER CONTROL SYSTEM

Principles of working – laser sensor



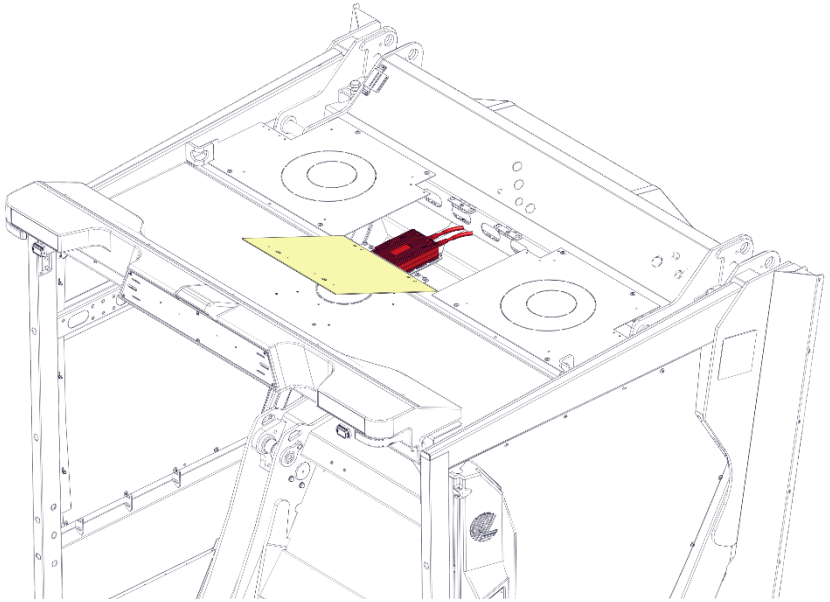
The position of ejection plate is constantly measured by a **laser sensor** mounted on the front frame column. Depending on selected fraction there is maximum pressure which can be exerted on the ejection plate by wastes. The pressure transmitter installed on compaction mechanism cylinders line evaluates signal about pressure and reports it to the control system. When pressure reached maximum (for given fraction) the ejection plate moves inward the body on the set distance.

Active: Ejection plate movement is performed by opening hydraulic valve which supplies the oil to telescopic cylinder. Opening of the valve depends on the ejection plate retracing distance measurement.

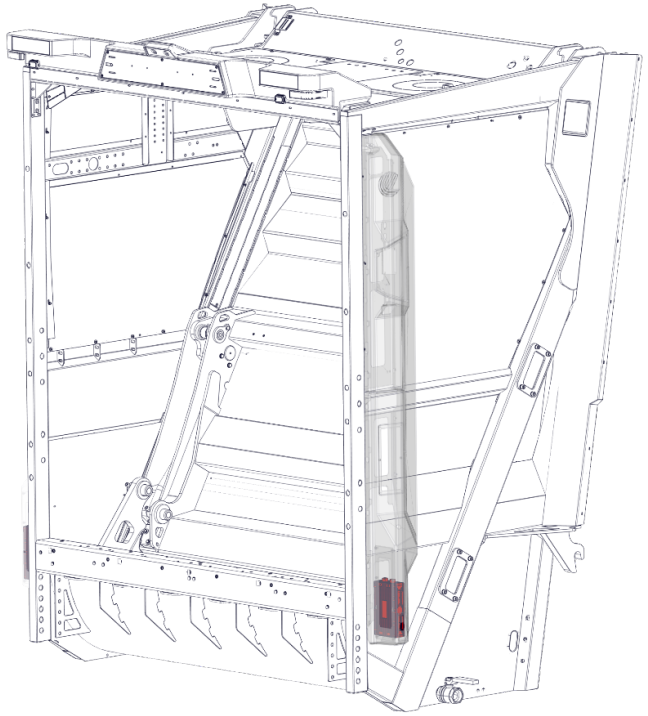
Passive: Ejection plate movement is performed by opening hydraulic valve which open the line between telescopic cylinder and oil tank. Pressure of compressed wastes moves the ejection plate and oil from cylinder flows to tank. Opening of the valve depends on the ejection plate retracing distance measurement.

MEDIUM X4 – ZOELLER CONTROL SYSTEM

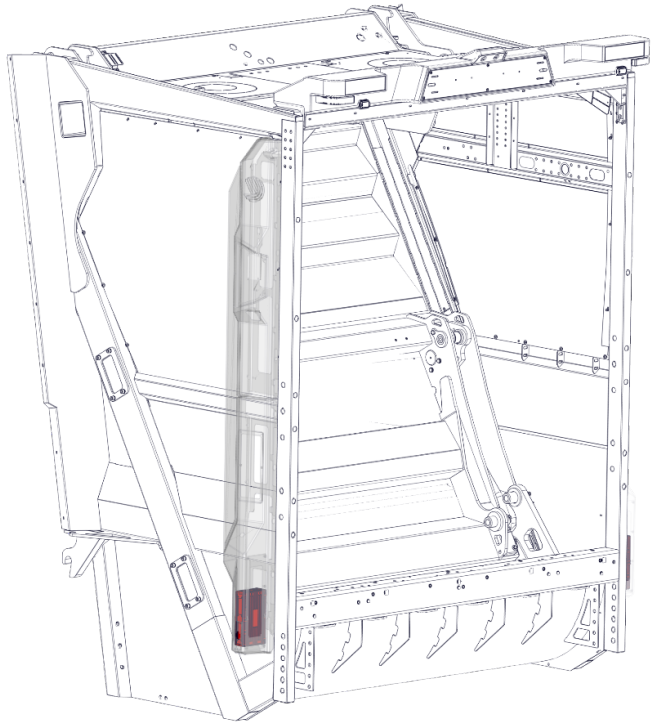
M3, M5 & M6 modules on the tailgate



Module M5 is placed inside left plastic panel and is mainly responsible for start and stop of compaction mechanism, central lubrication system (if installed), working lamps & buzzer. Its directly connected with M3 & M6 module on the tailgate



Module M3 is mainly responsible for tailgate lowering & position sensors, pressure transducer, packer and carriage plate movements and tailgate buzzer. **Roof flap** provides to easy access to electric installation of vehicle especially M3 module which is placed under that flap what protect it against external factors & weather conditions

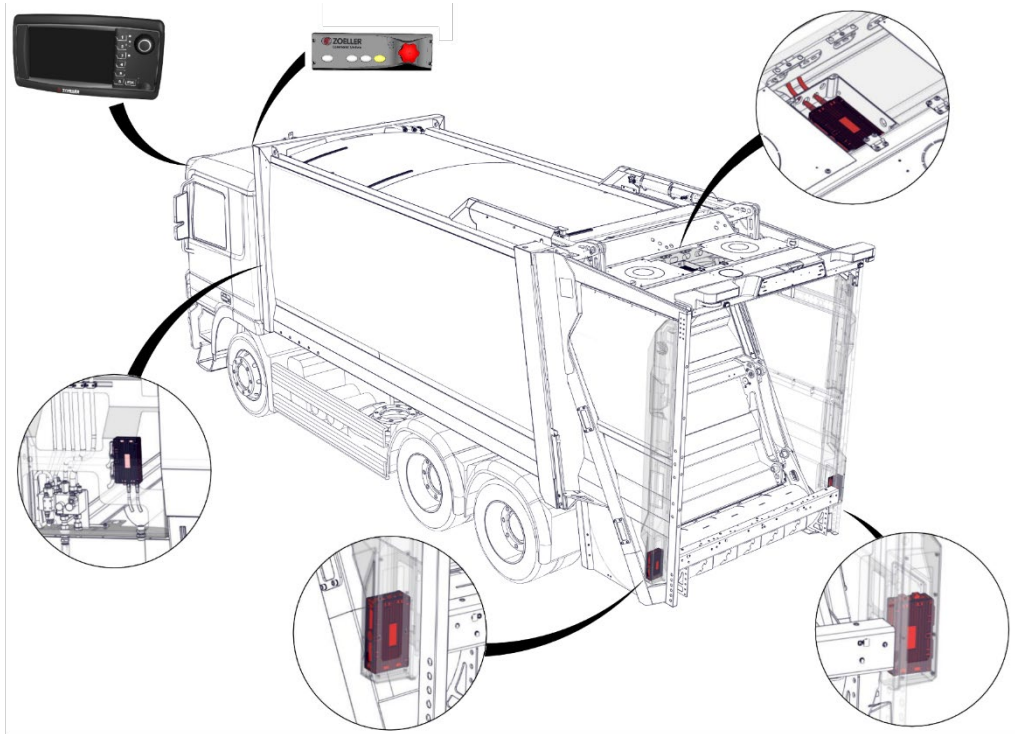


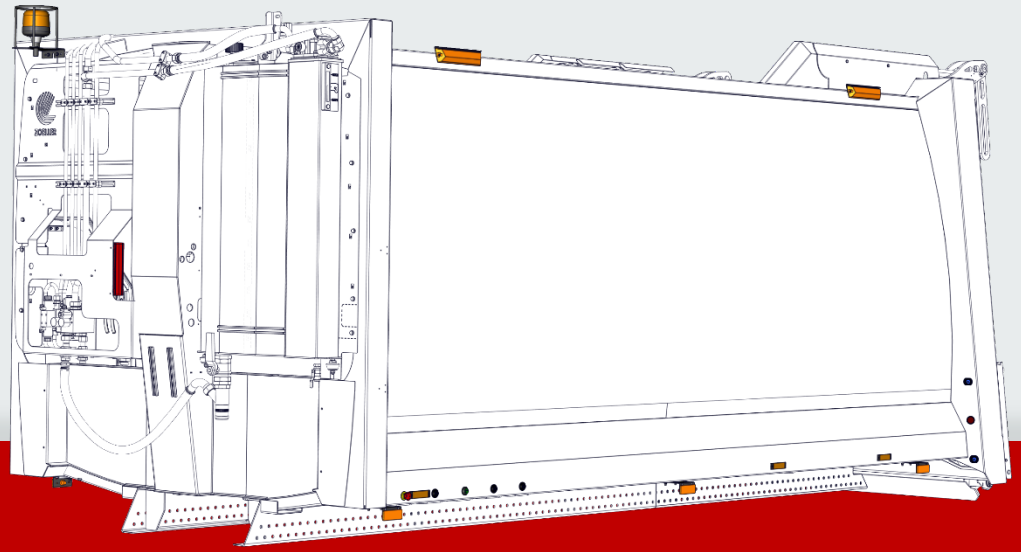
Module M6 is placed inside right plastic panel and its mainly responsible for carriage and packer plate movements & mounting door sensor

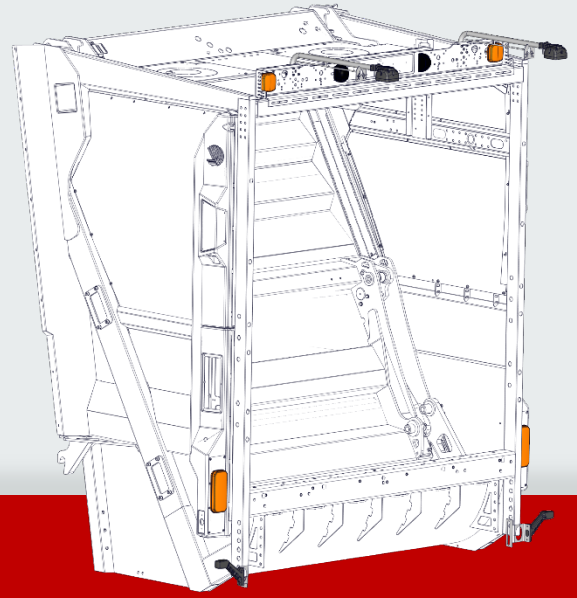
MEDIUM X4 – ZOELLER CONTROL SYSTEM

Summary

ELEMENT OF ZCS	POSITION	FUNCTION
ZCS terminal	Cabine	Control panel
ZCS command module		System-board computer
M1	Front frame of the body – behind hydraulic installation sheet	Tailgate and ejection plate movements, body & lifter bypass, working lamps, inspection door and ejection plate sensors
M3	On the tailgate – under roof flap screwed to profiles	Tailgate lowering & position sensors, pressure transducer, packer and carriage plate movements, tailgate buzzer, connection box – lights
M5	Left plastic panel – bottom side	Start and stop of compaction mechanism, emergency stop, central lubrication system (if installed), release, working lamps, footboard sensor (if installed) & cab buzzer
M6	Right plastic panel – bottom side	Carriage plate movements, mounting door sensor, emergency stop, start and stop of compaction mechanism, cab buzzer, function carriage plate, release & footboard sensor (if installed)



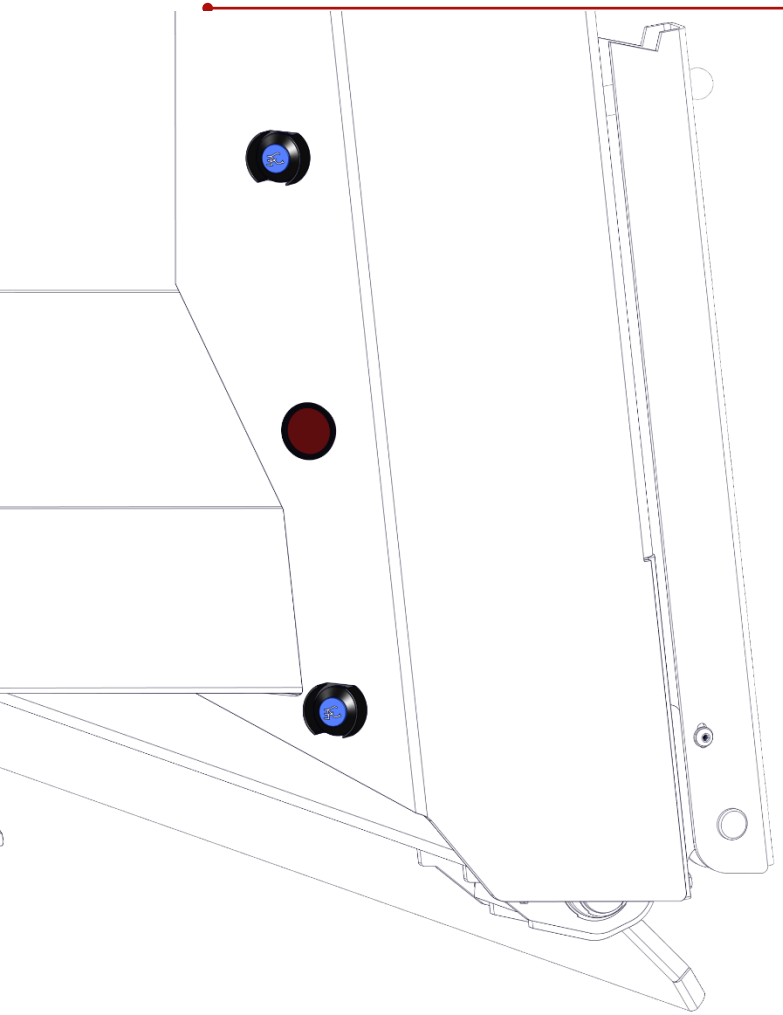




ELECTRIC

MEDIUM X4 – Electric – STANDARD

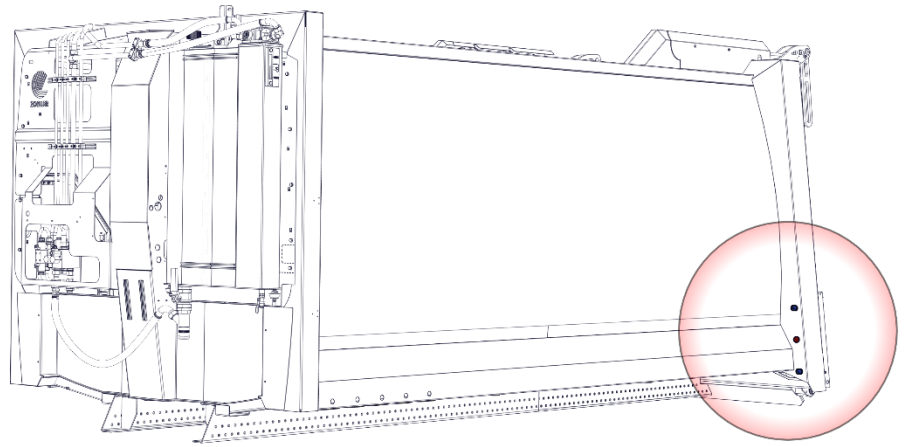
Lowering the tailgate buttons



LOWERING THE TAILGATE BUTTON

SIGNAL LAMP

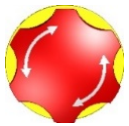
LOWERING THE TAILGATE BUTTON



The tailgate can only by completely closed if the tailgate lowering buttons are pressed with both hands according to **norm EN-1501.** In this way operator can observe tailgate area while lowering. Signal lamp turns off when tailgate lowering process ended

MEDIUM X4 – Electric – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Outside control buttons



EMERGENCY STOP

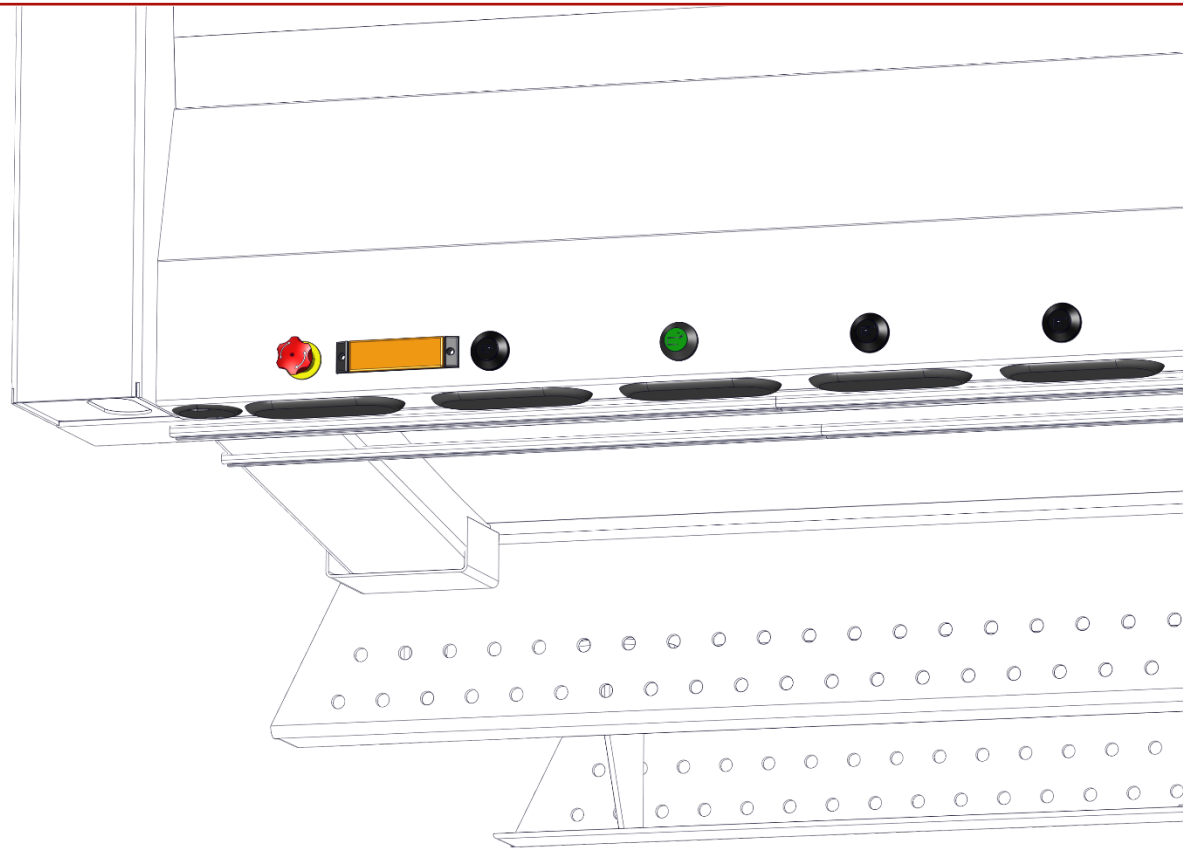
RAISING THE TAILGATE

EMPTYING THE HOPPER

EJECTING THE EJECTION PLATE

RETRACING THE EJECTION PLATE

On the left side of the body near the cab the optional **outside control buttons** can be mounted. Blind caps in welding blende of the body make easier access to electric installation



Pressing **the emergency stop button** brings the lifter & compaction mechanism to an immediate stop and the vehicle power is switched off. The emergency stop button must be unlocked again by pulling up the button after being pressed

MEDIUM X4 – Electric – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Control panels on tailgate

RELEASE BUTTON

SOUND SIGNAL BUTTON (BUZZER)

WORKING LIGHTS

COMPACTION MECHANISM STOP

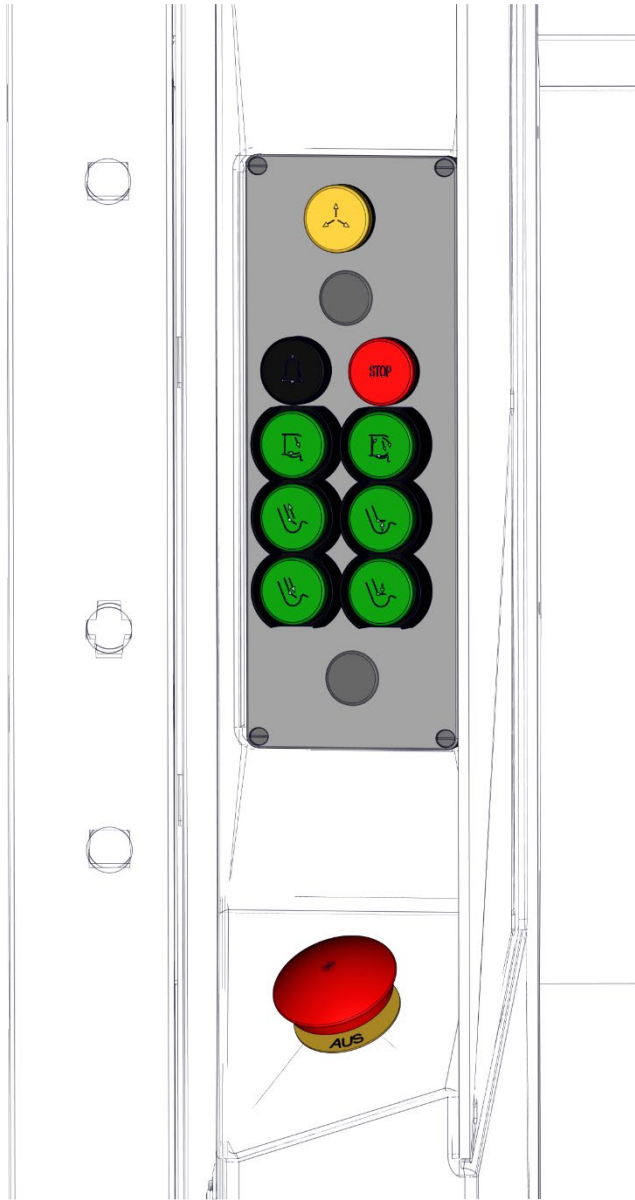
COMPACTION MECHANISM START

FUNCTION BUTTON

PACKER PLATE CLOSING/CARRIAGE PLATE RAISING

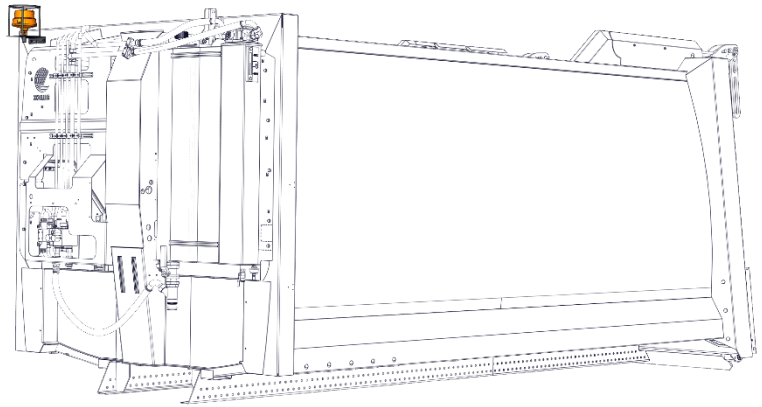
PACKER PLATE OPENING/CARRIAGE PLATE LOWERING

Control panels (left and right) can be installed inside boxes or optional plastic panels on the tailgate. The main panel contains the most important functions to run the cycle. Emergency stop button is mounted below control panel. Both panels can be equipped on a request depending on needs. The example composition of buttons is shown on picture

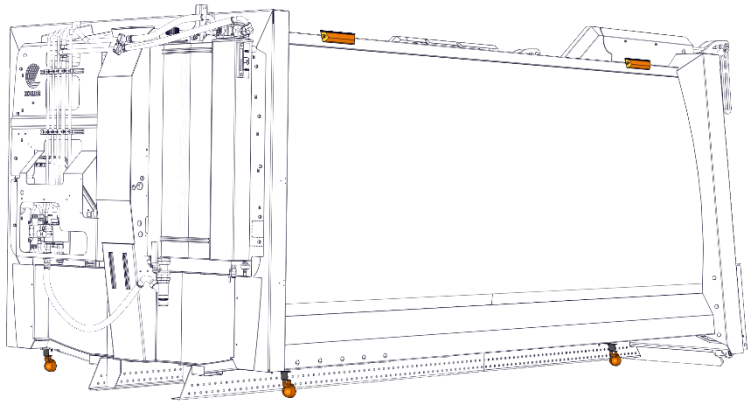


MEDIUM X4 – Electric – STANDARD & OPTION

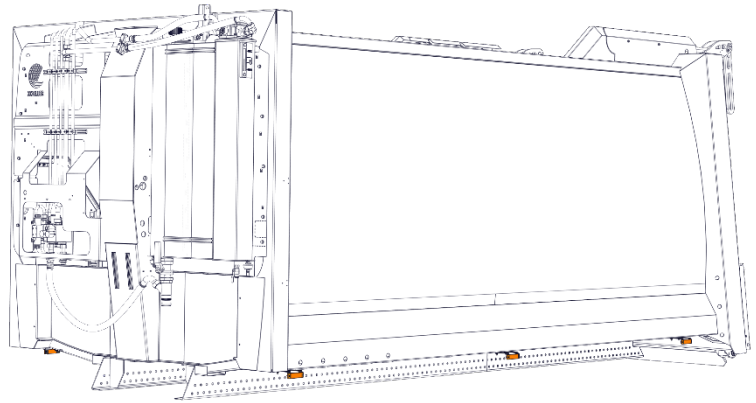
Lighting on body



WARNING LIGHTING



WORKING LIGHTING



DRIVING LIGHTING

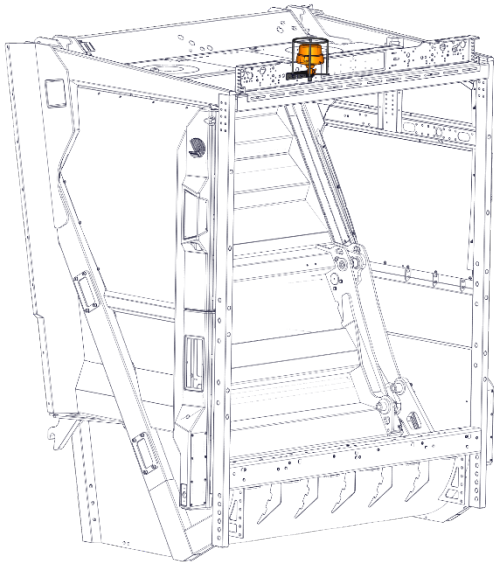
Three types of lighting are available on request:

- ✓ **Warning lighting** (beacon lamps): necessary for RCV vehicle which perform road works like colleting wastes or emptying body on a dump
- ✓ **Working lighting**: useful for lighting the work area for operators
- ✓ **Driving lighting**: necessary according to approval guidelines

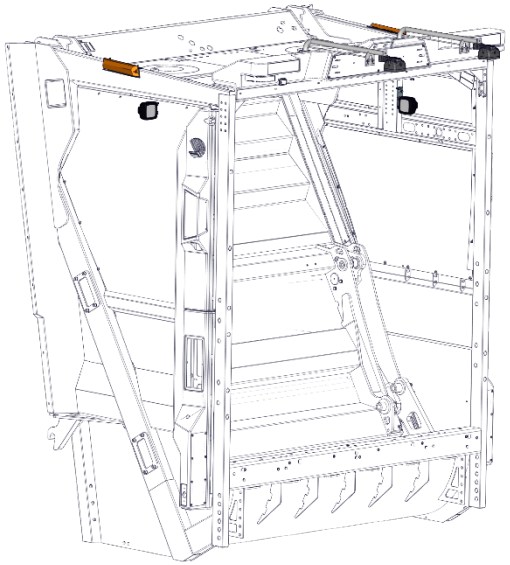
All options and assortment available in configurator

MEDIUM X4 – Electric – STANDARD & OPTION

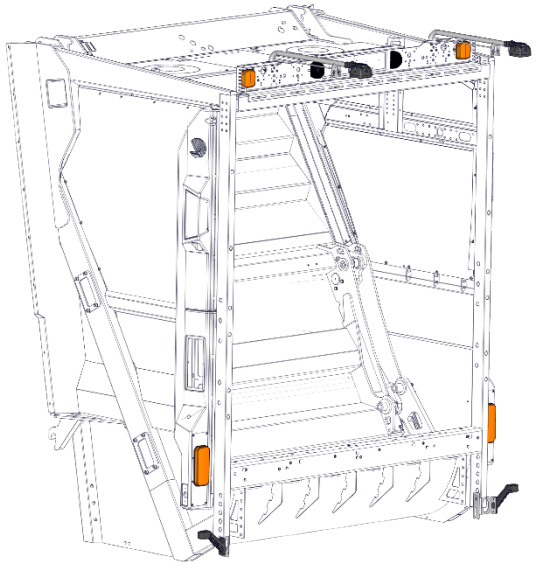
Lighting on tailgate



WARNING LIGHTING



WORKING LIGHTING



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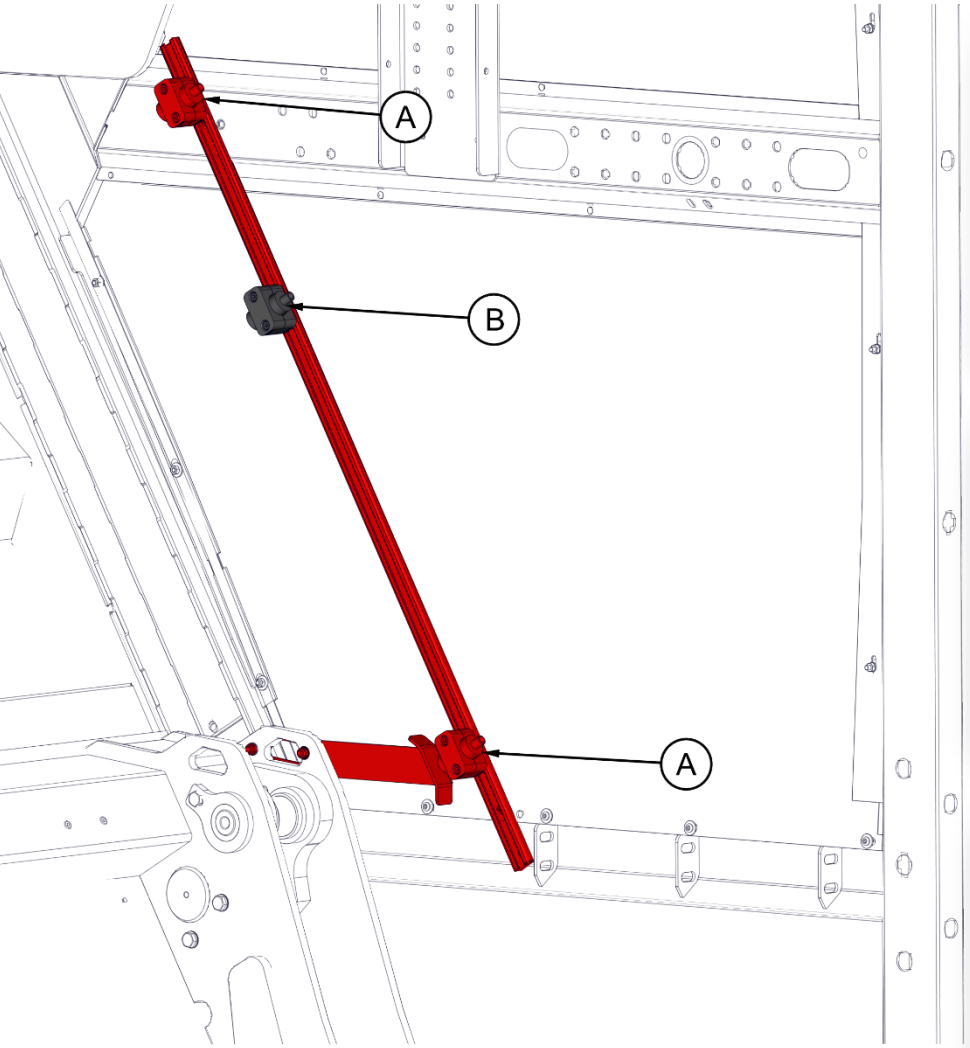
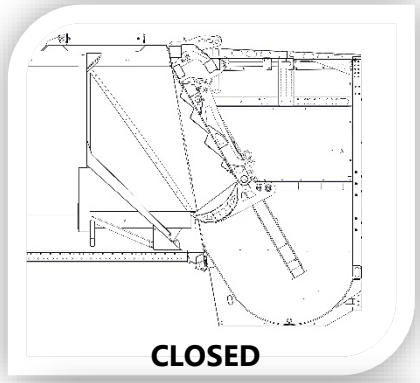
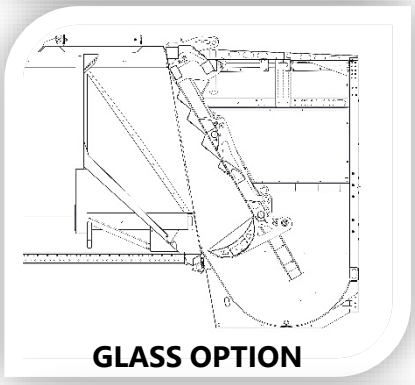
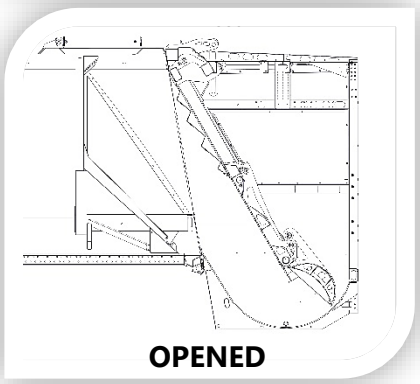
MEDIUM X4 – Electric – STANDARD & OPTION

Compaction mechanism sensor



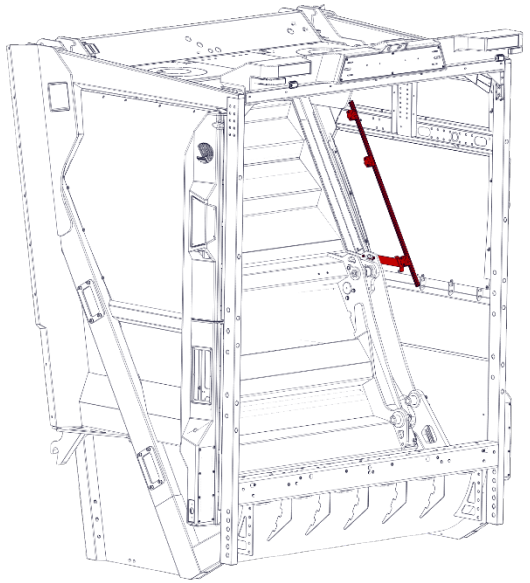


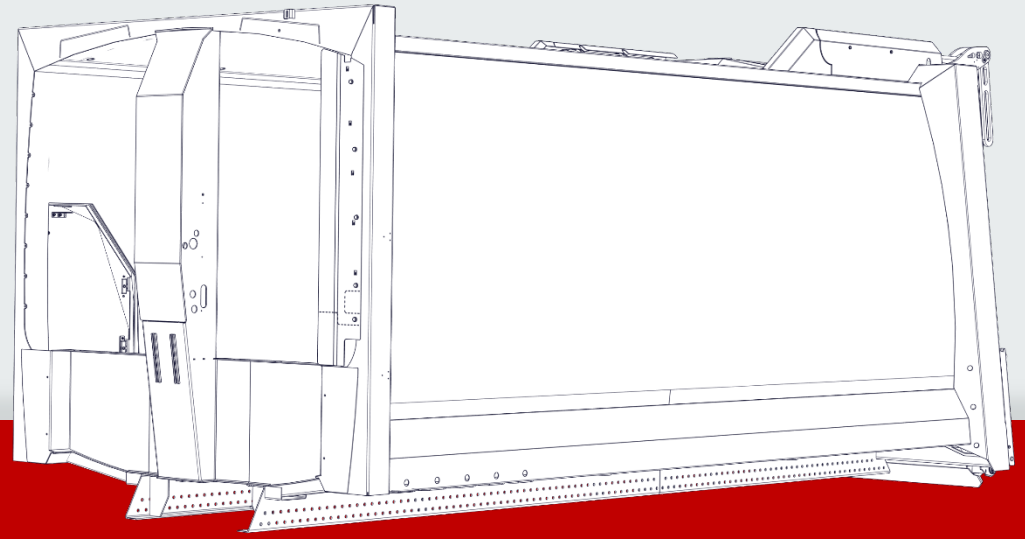


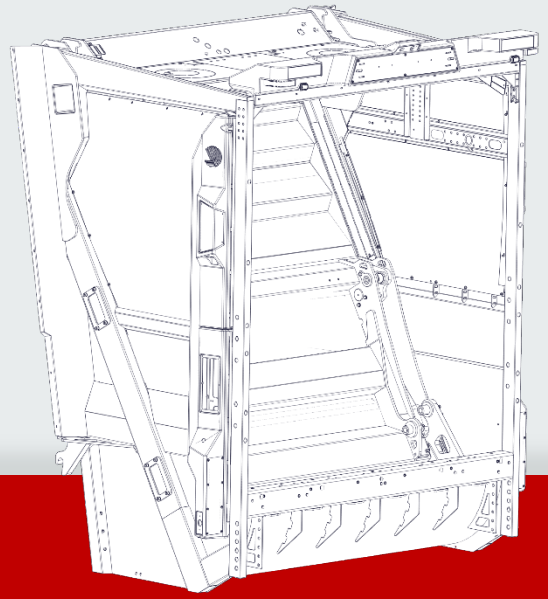


Compaction mechanism sensor detects carriage plate position:

- ✓ **Standard (A):** this set consists of two sensors which control the movement of compaction mechanism between upper (closed position) and lower (open position)
- ✓ **Option (A+B):** this set consists of standard and additional sensor for **glass option (B)** when packer plate is aligned with body floor.



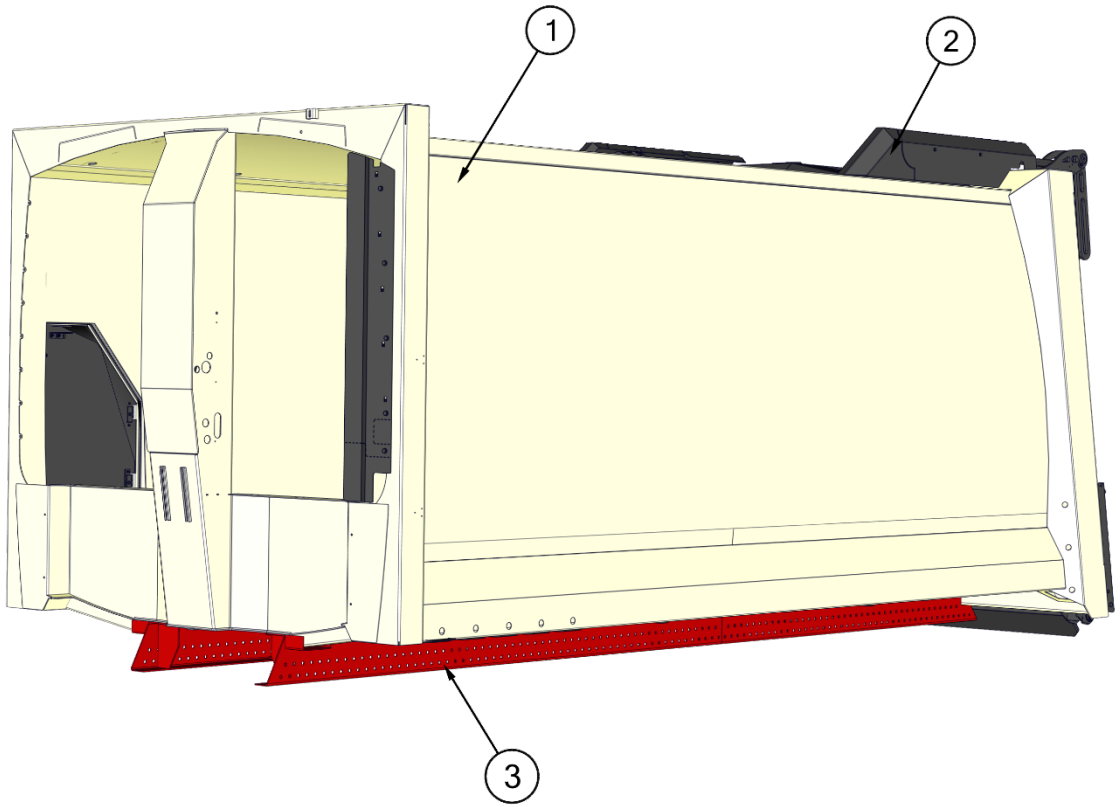




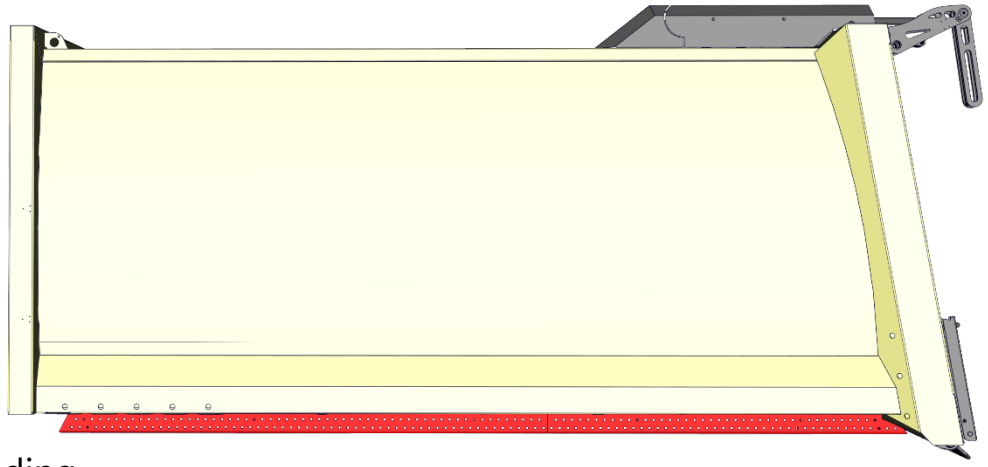
MECHANIC

MEDIUM X4 – Mechanic – STANDARD

Body construction



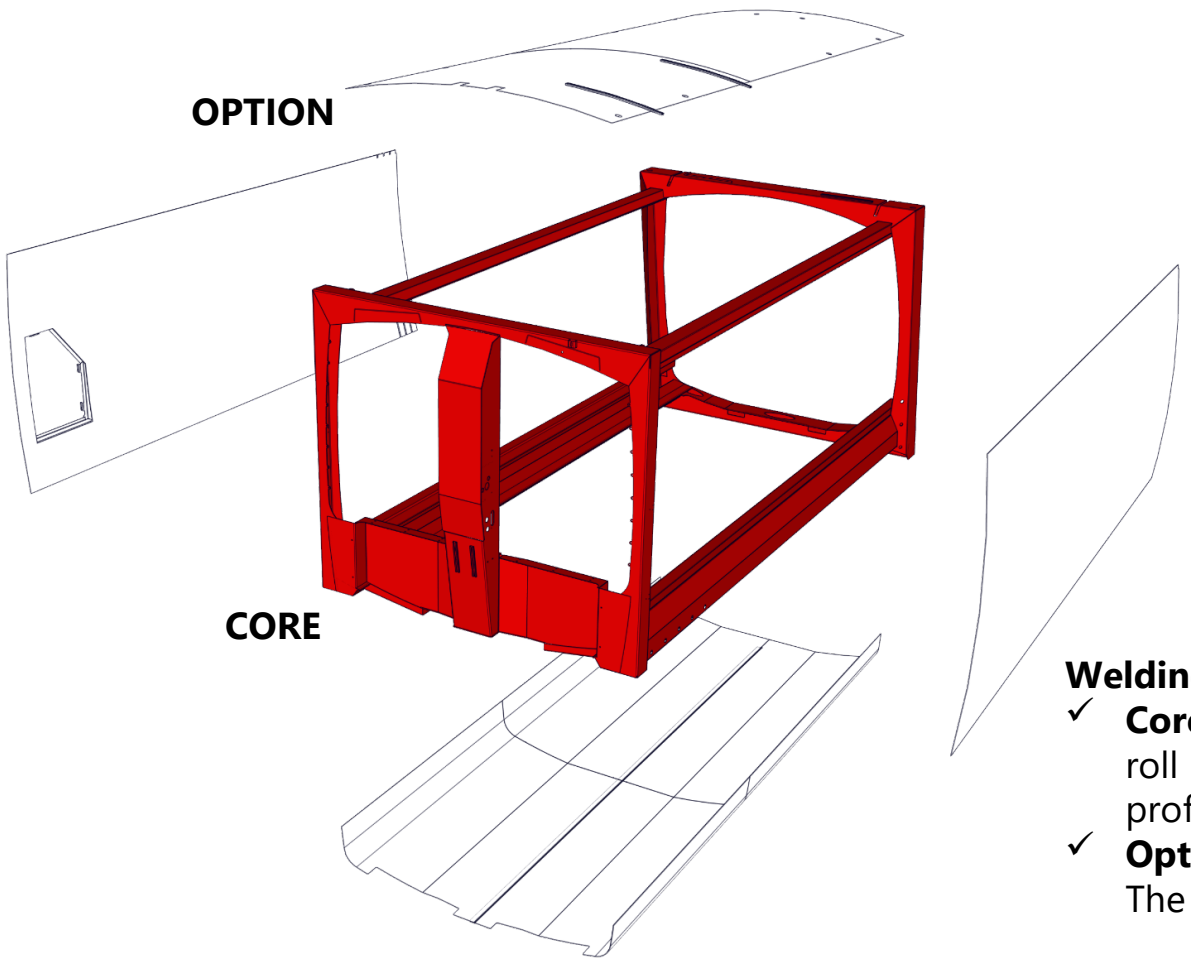
MEDIUM X4 STANDARD	
1	Welding body
2	Body retrofit
3	Midframe

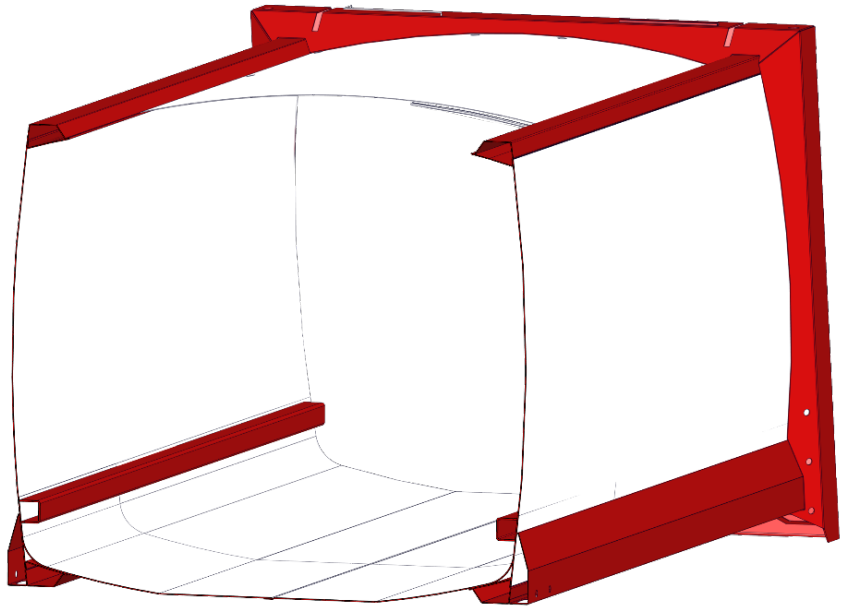


Standard construction of the RCV consists of welding body in different lengths and retrofit with covers, bolts & mechanism and also custom fitted midframe. This is basic construction of V20 type Body.

MEDIUM X4 – Mechanic – STANDARD & OPTION

Welding body construction





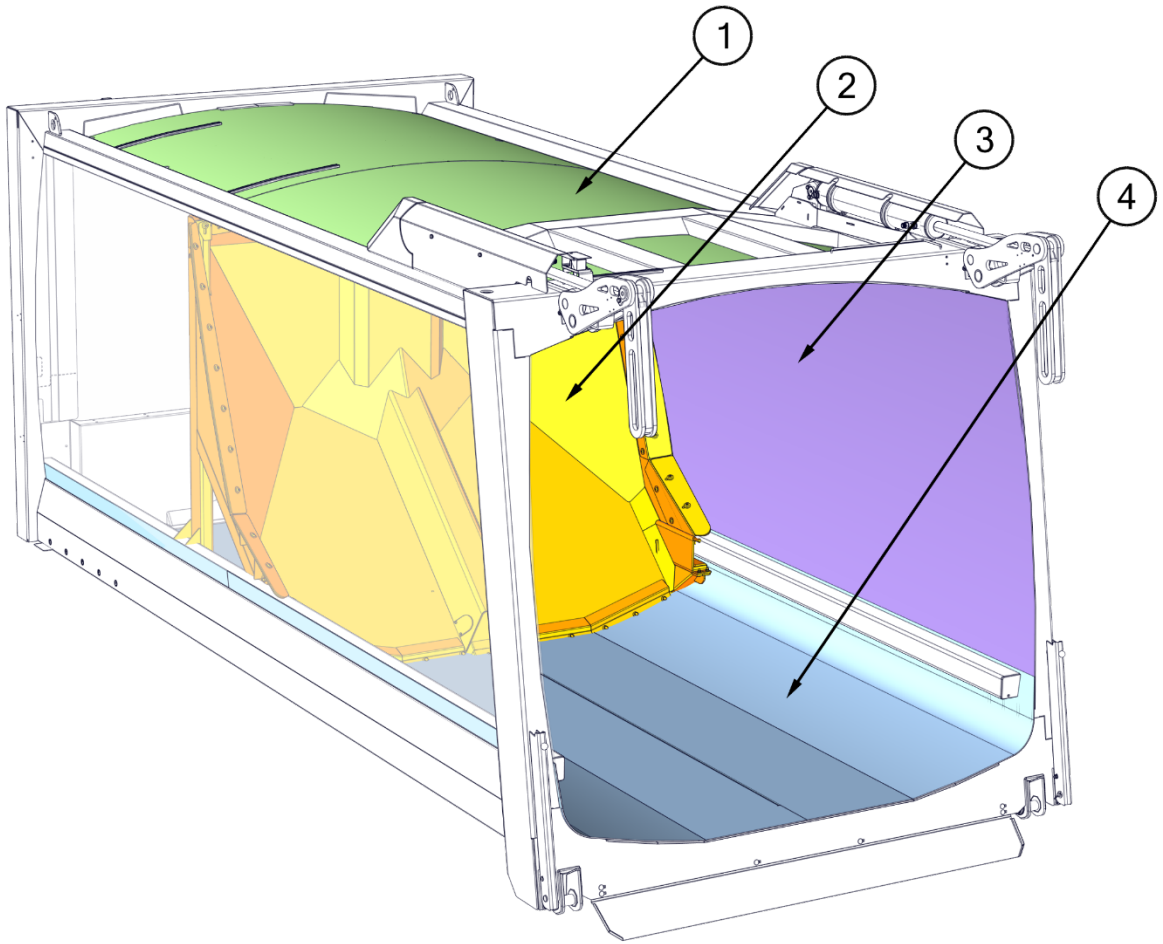
Welding body consists of:

- ✓ **Core:** frame consists of front & rear frame which are connected with special roll form profiles. Each body is welded the same way and only length of the profiles is changing
- ✓ **Option:** walls, roof & floor sheets are welded to the frame. The material and thickness can be chosen

Everything is welded together, and it creates stiff and solid construction

MEDIUM X4 – Standard & option

Body materials and thickness



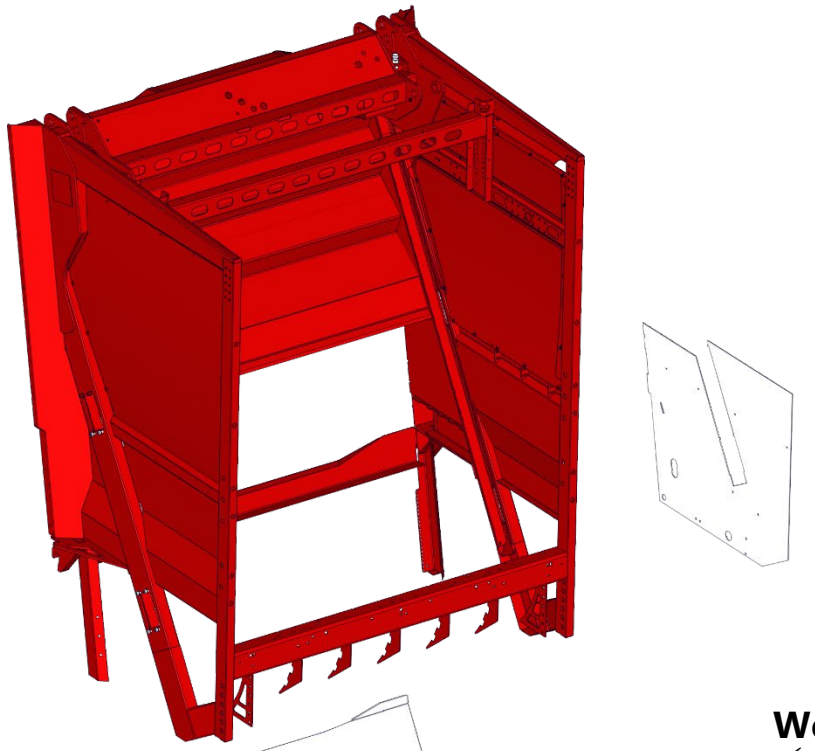
STANDARD				
Pos.	Thickness (mm)	Norm		
		DIN	EN	AISI
1	3	S355MC	1.0976	Gr. 50
2	3	S355MC	1.0976	Gr. 50
3	4	S355MC	1.0976	Gr. 50
4	4	S355MC	1.0976	Gr. 50
OPTION				
1	4	S355MC	1.0976	Gr. 50
3	4	HBW450*		
4	4	HBW450*		
	5	X5CrNi1810	1.4301	304
	6	S355MC	1.0976	Gr. 50

* **HBW450 is abrasion resistant steel and its described by Brinell Hardness (HBW) value. This kind of steel is heat, corrosion and wear resistant.**

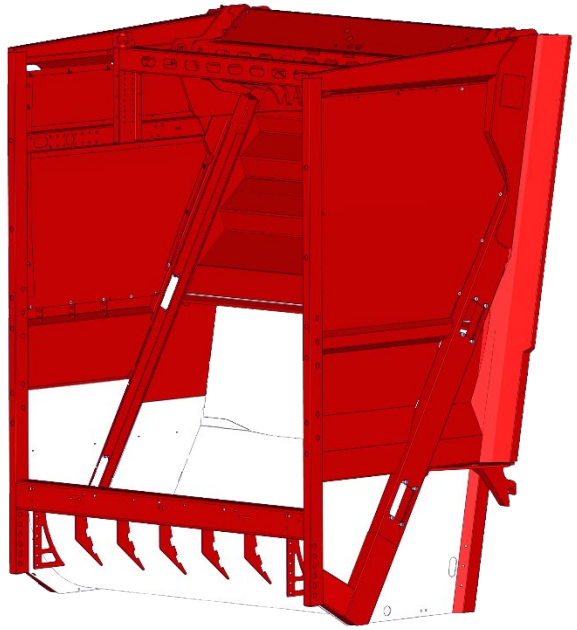
MEDIUM X4 – Mechanic – STANDARD & OPTION

Welding tailgate construction

CORE



OPTION



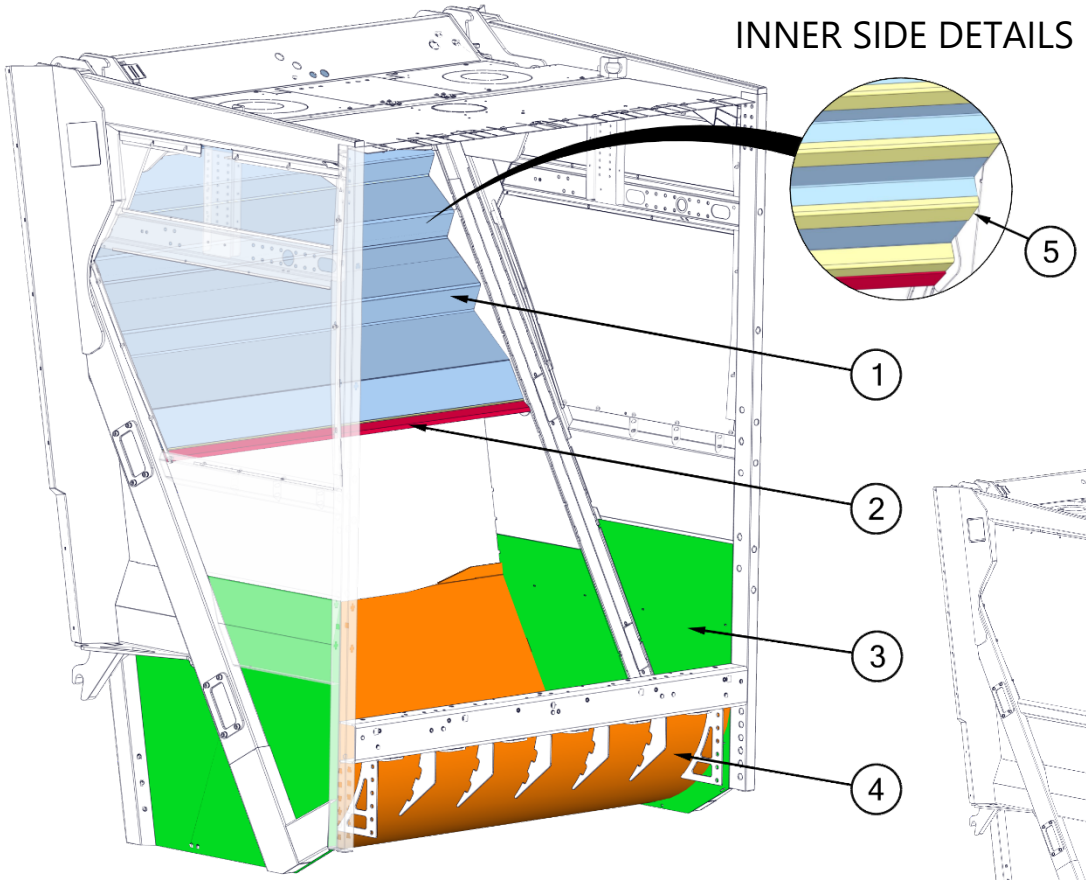
Welding tailgate consists of:

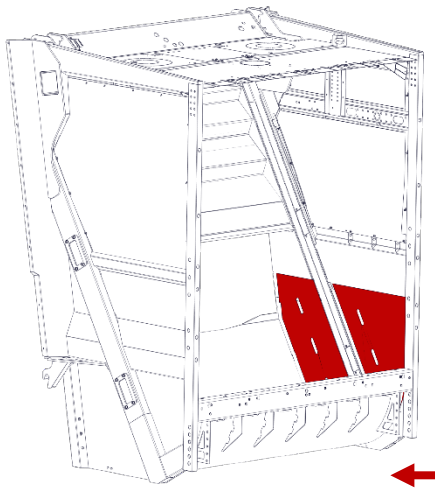
- ✓ **Core:** it's set of sheets and profiles welded together
- ✓ **Option:** walls & hopper sheets are welded to the core. The material and thickness can be chosen

Everything is welded together, and it creates stiff and solid construction

MEDIUM X4 – Standard & option

Tailgate materials and thickness





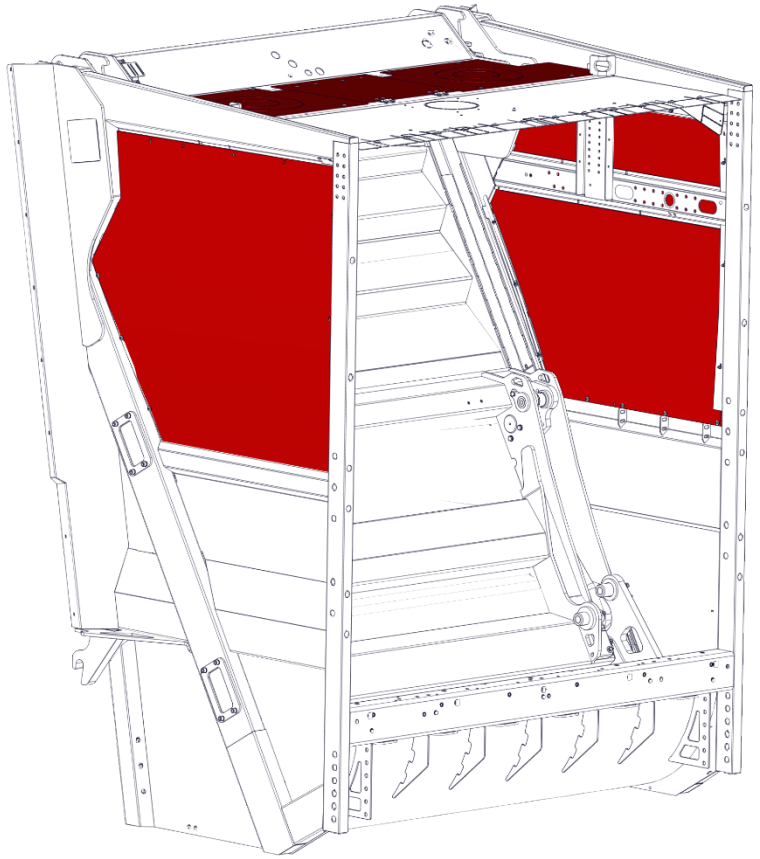
STANDARD				
Pos.	Thickness (mm)	Norm		
		DIN	EN	AISI
1	3	S355MC	1.0976	Gr. 50
2	4	HBW450*		
3	4	HBW450*		
4	8	HBW450*		
5	4	HBW450*		
OPTION				
3	6	HBW450*		
	6+4 (10) **	HBW450+HBW450*		
4	6	HBW450*		
	10	HBW450*		

* HBW450 is abrasion resistant steel and its described by Brinell Hardness (HBW) value. This kind of steel is heat and wear resistant.

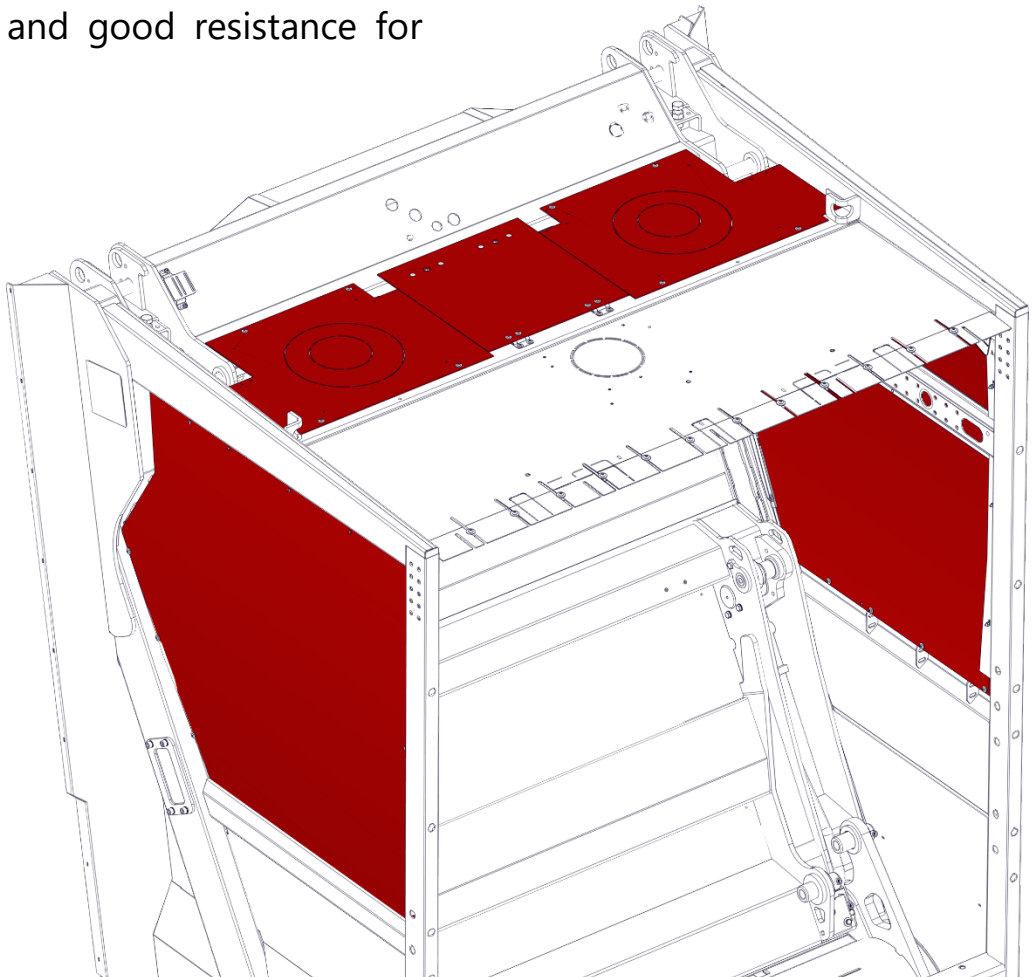
** Additional tailgate side walls plate used

MEDIUM X4 – Mechanic – STANDARD

Tailgate construction



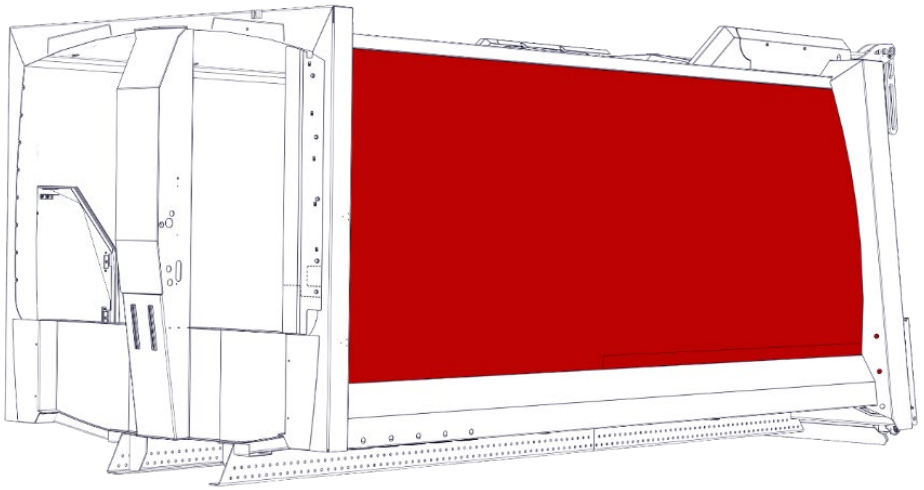
Side walls & top covers of tailgate are made of 3 mm **composite material** sheets. Its polyethylene coated by aluminum with high crushing resistance, smooth surface, high stiffness with low weight and good resistance for external factors & chemicals



MEDIUM X4 – Mechanic – STANDARD

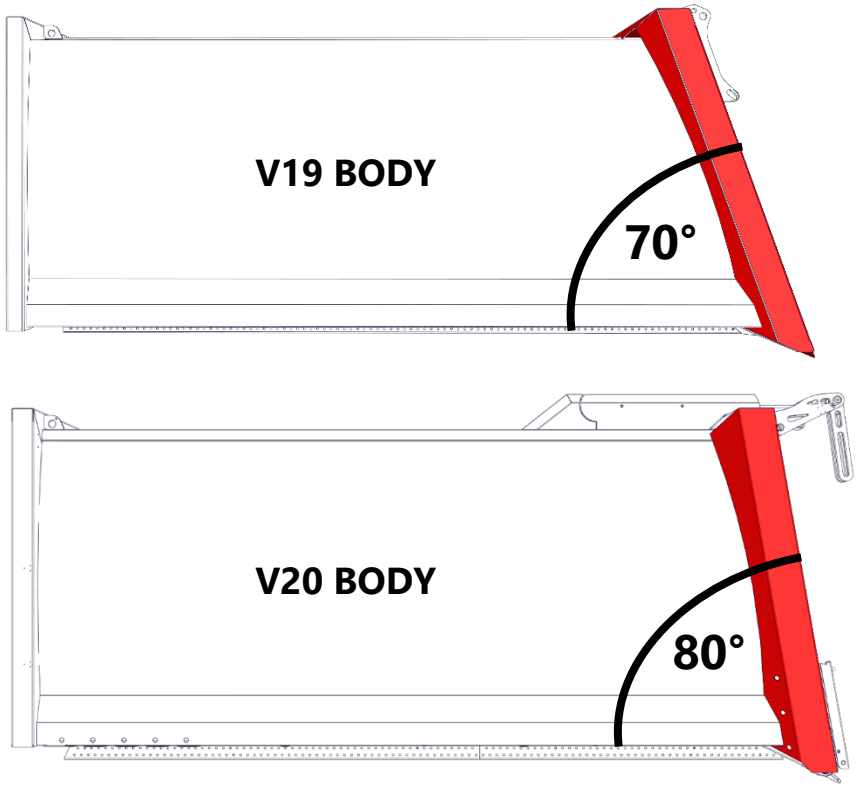
Welding body

MODERN DESING



Curved and smooth body walls can be advertising medium and get clean easily

MORE BODY VOLUME



Rear frame angle increased from 70° to 80° what provides to increased load body volume by 1 m^3

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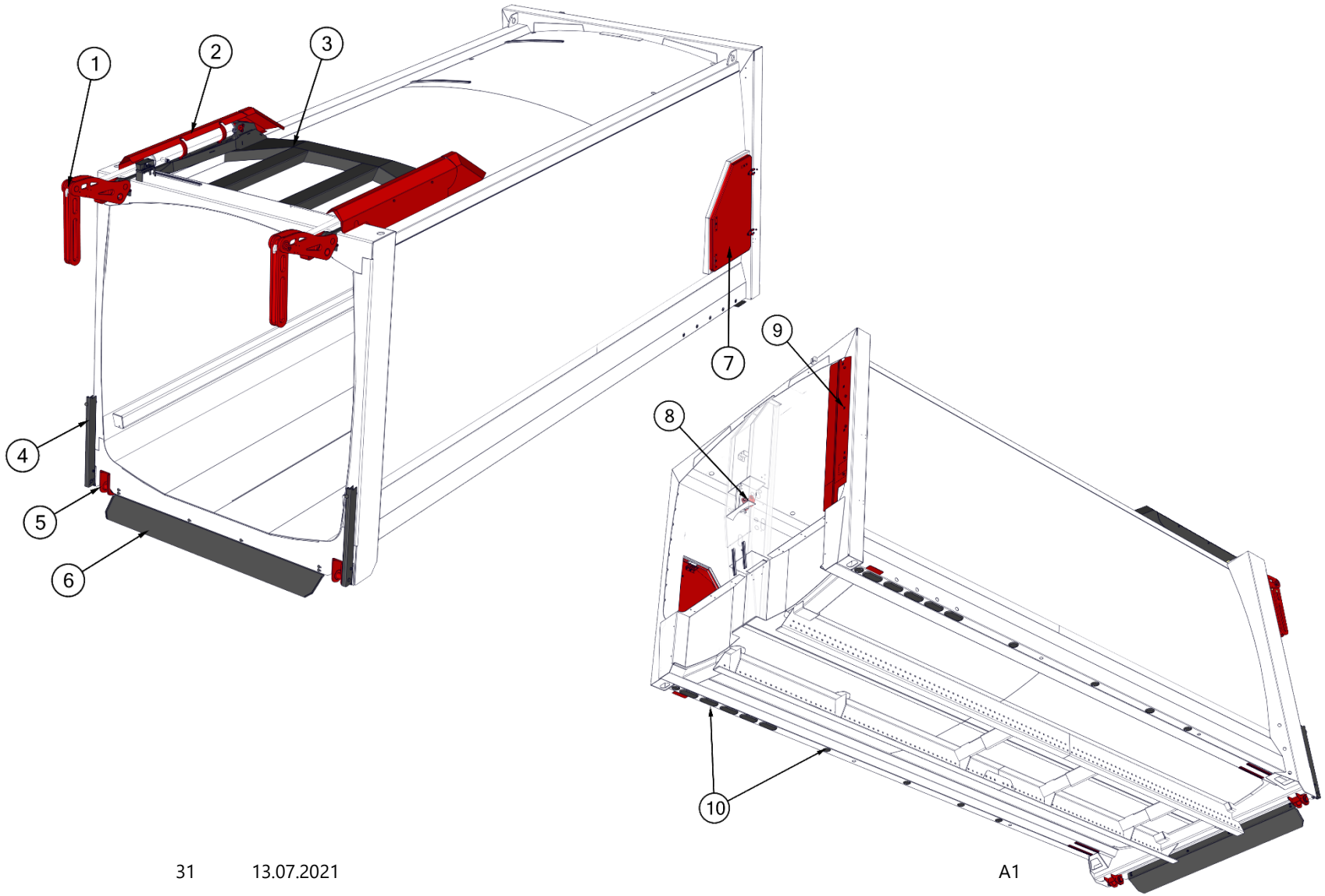
MEDIUM X4 – Mechanic – STANDARD

Body retrofit construction

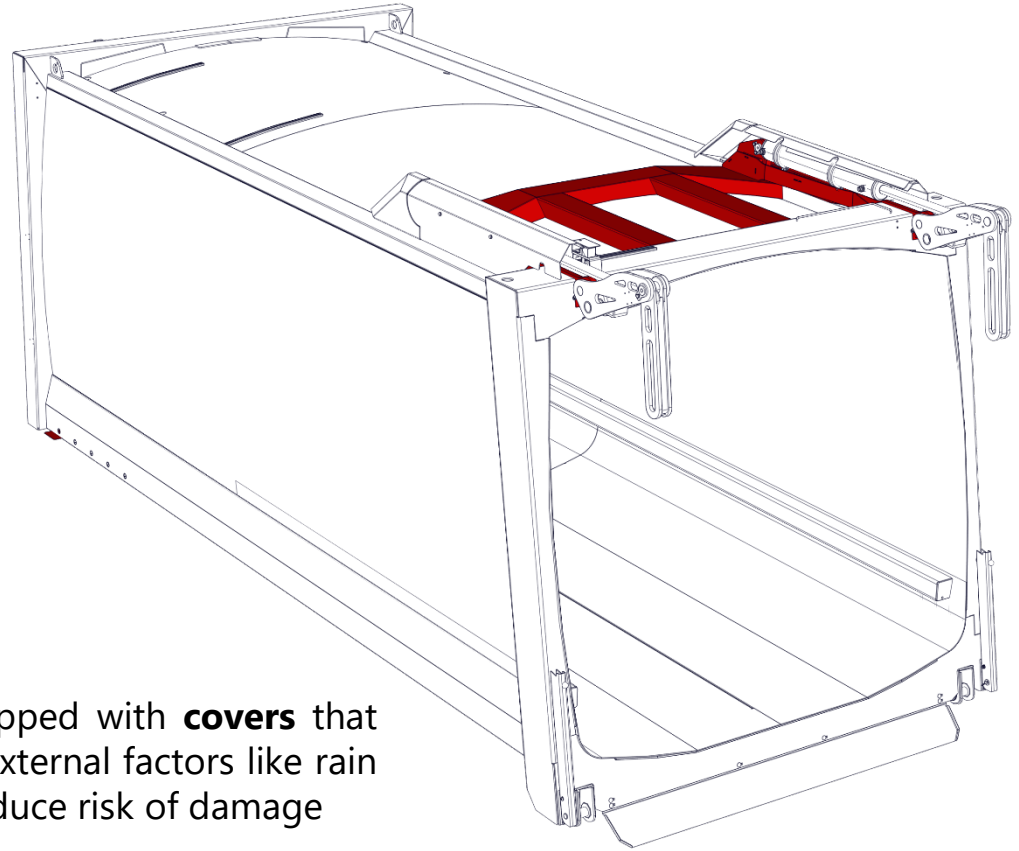


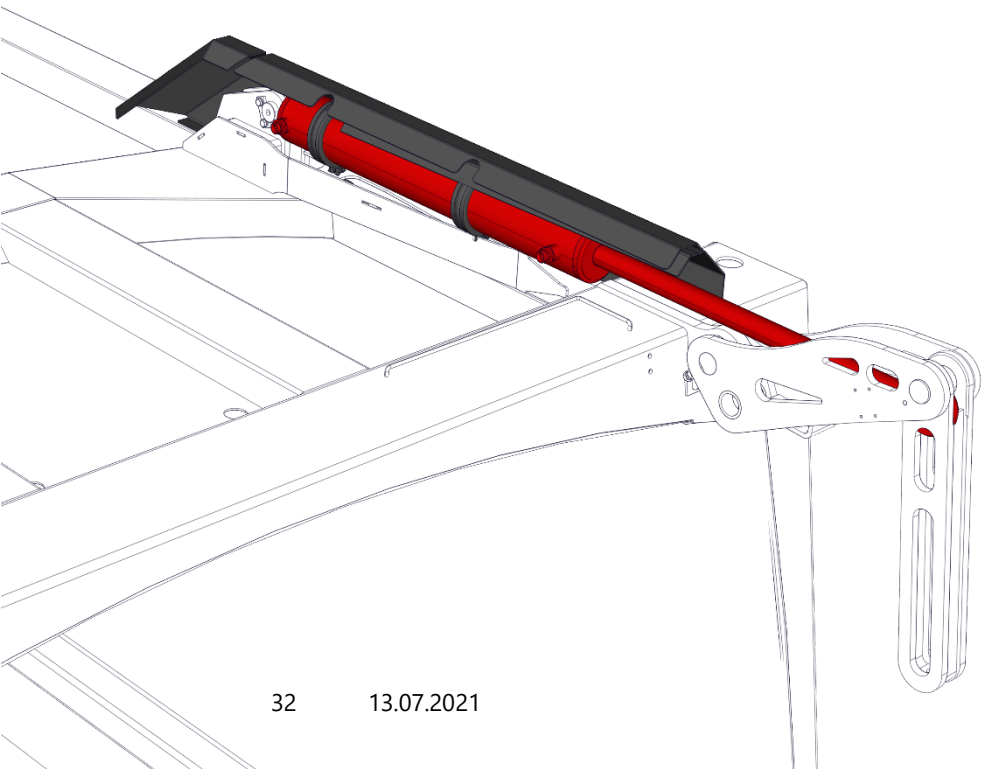
MEDIUM X4 BODY RETROFIT	
1	Lifting tailgate mechanism
2	Tailgate cylinders covers
3	Reinforcement of the body roof
4	Tailgate supports
5	Bolting unit
6	Body flap
7	Inspection door
8	Telecopic cylinder bolt
9	Body front frame cover
10	Blind caps

MEDIUM X4 – Mechanic – STANDARD

Tailgate cylinders with covers and reinforcement

Roof of the body is **reinforced** by set of sheets that strengthen the cylinder assembly and increase stiffness of the construction. This set counter the force created by the cylinders during opening the tailgate

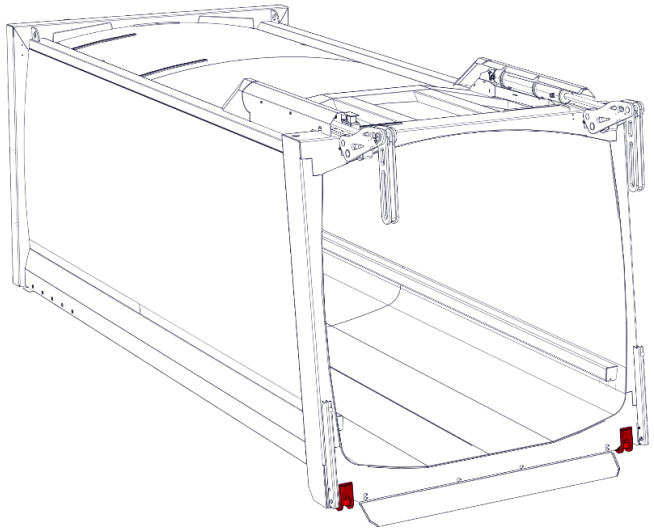


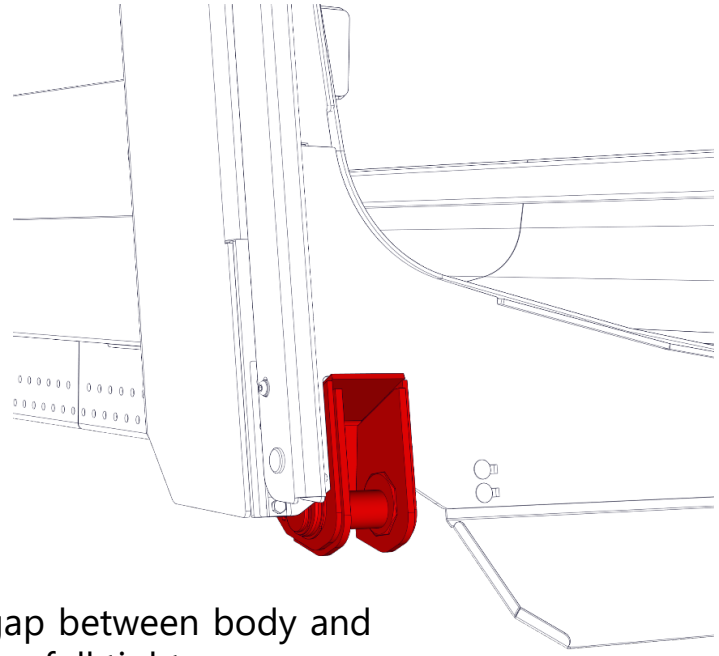


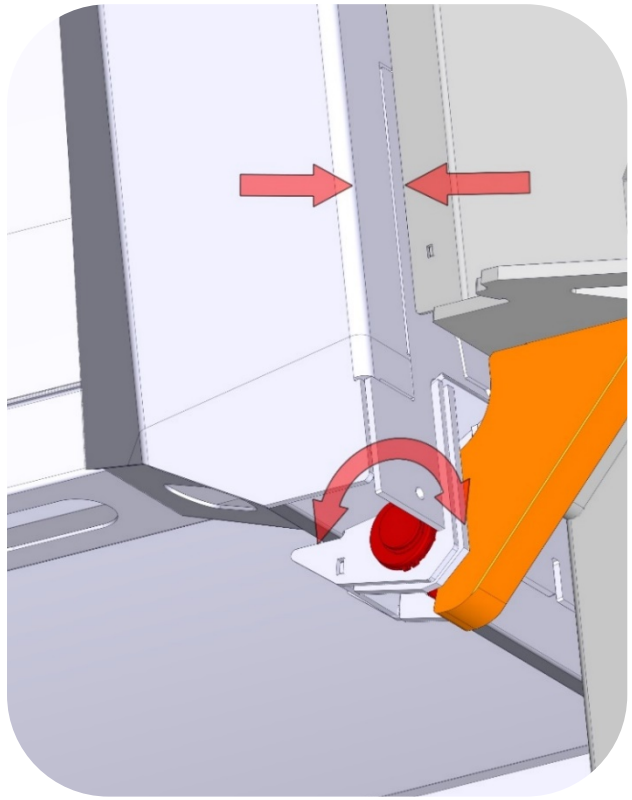
Tailgate cylinders are equipped with **covers** that protect moving unit from external factors like rain or branches of tress and reduce risk of damage

MEDIUM X4 – Mechanic – STANDARD

Bolting unit



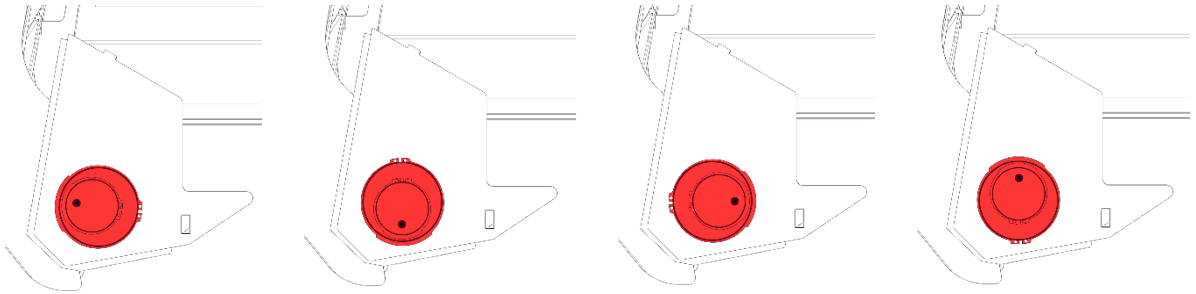




BODY TAILGATE HOOK

Bolting unit gives the possibility to regulate gap between body and tailgate. Useful after years of service to guarantee full tightness

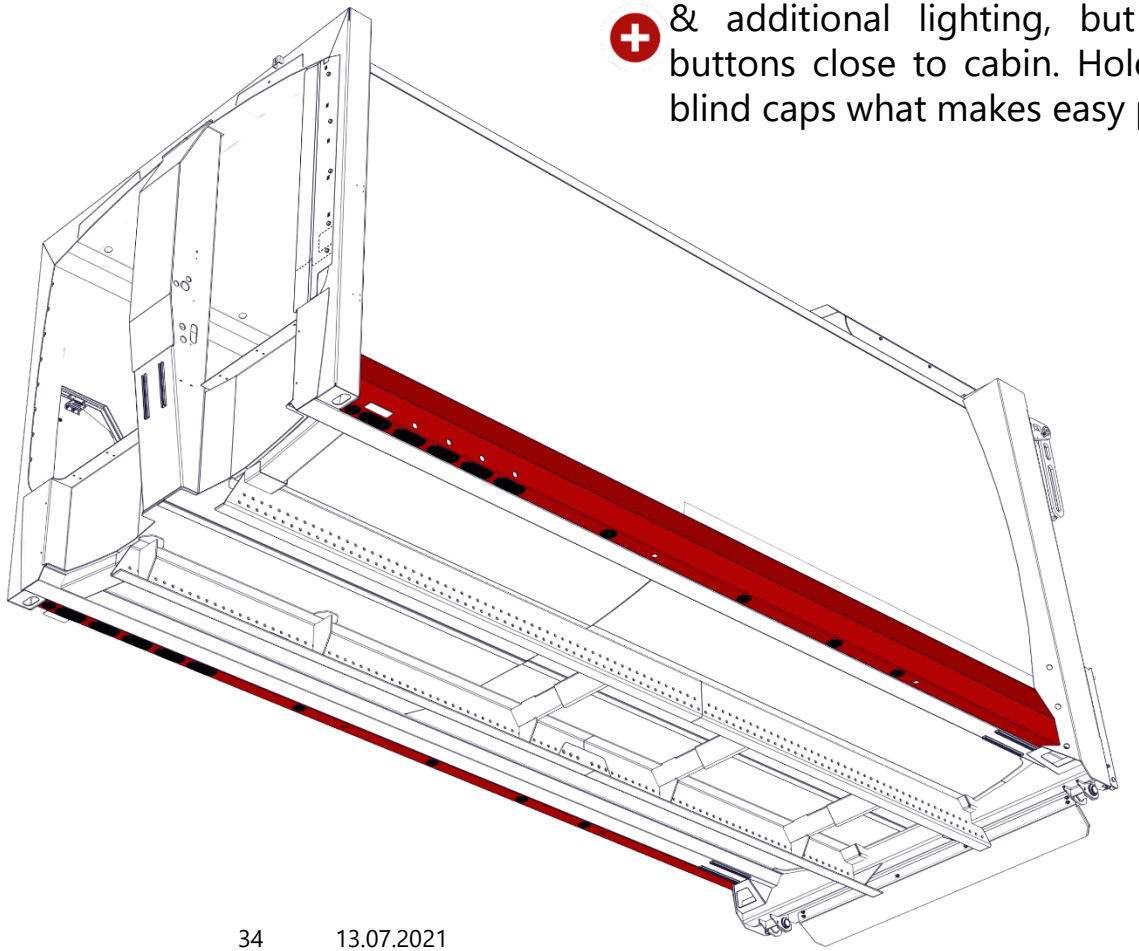
Range of regulation = 4 x 2,5 mm

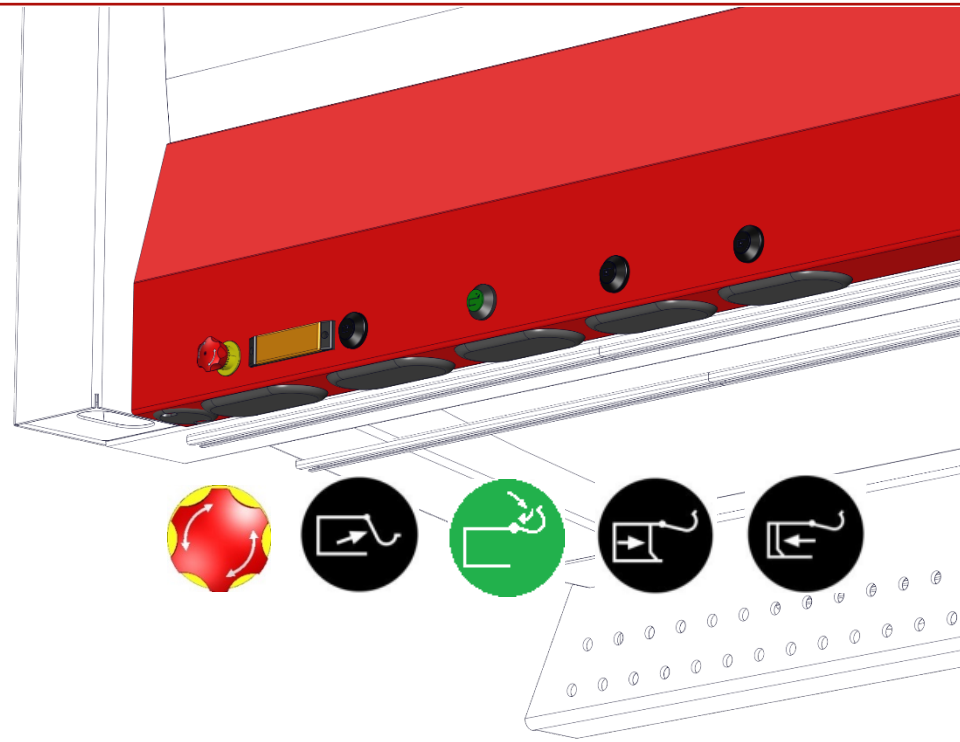


MEDIUM X4 – Mechanic – STANDARD

Welding body blende

Welding body blende is increasing the durability & stiffness of a structure. A holes in blende are necessary to easily equipped vehicle with standard & additional lighting, but also optional control buttons close to cabin. Holes are closed by plastic blind caps what makes easy possible repairs





Optional **control buttons** can be mounted on a request, and they consist of emergency stop button, raising the tailgate button, emptying the hopper button, ejecting & retracting the ejection plate buttons

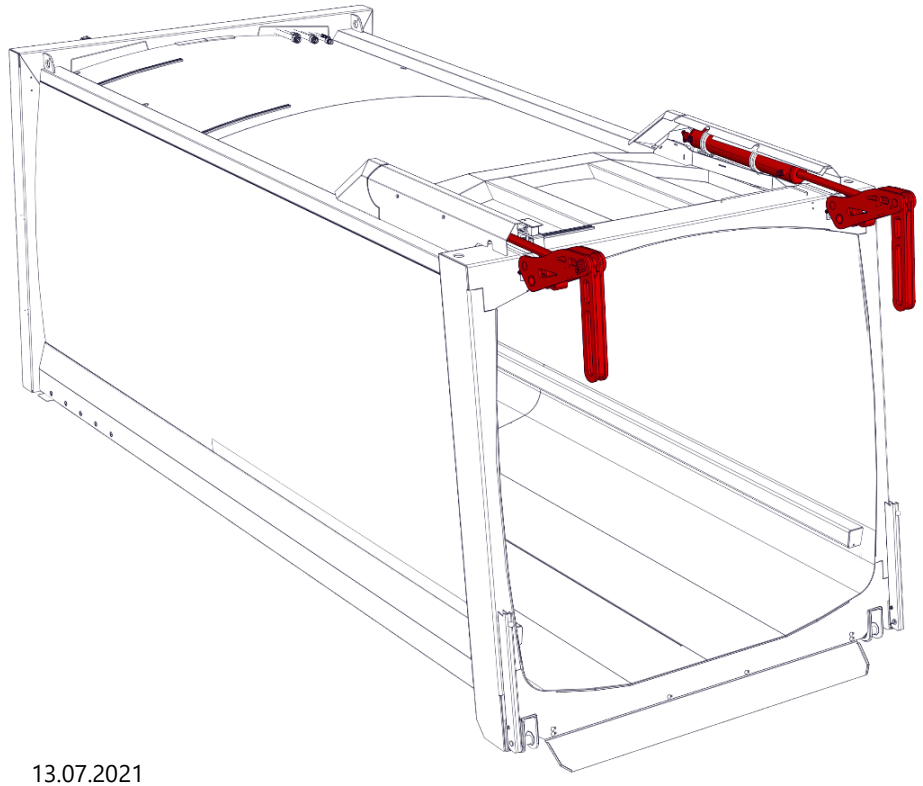
(More in body electric chapter)

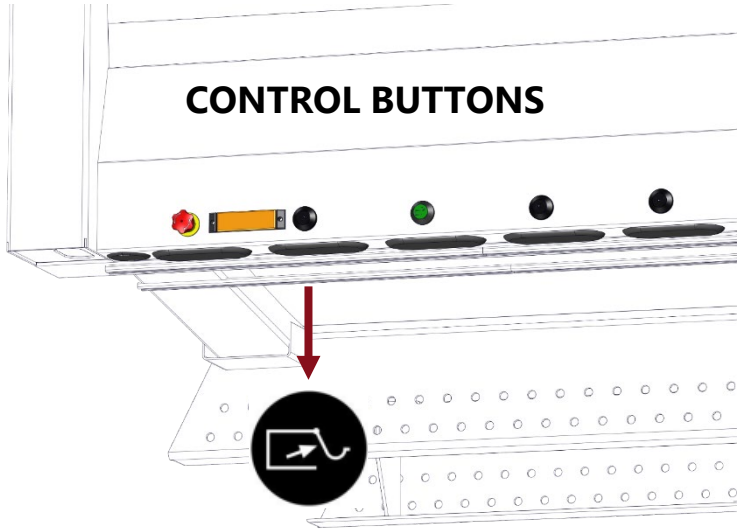
MEDIUM X4 – Mechanic – STANDARD

Tailgate lifting mechanism

The tailgate lifting mechanism (consists of arms and cylinders) is responsible for lifting the tailgate to empty the body from collected wastes.

Lifting is started by pushing an optional control button on the body's side near cab or on ZCS terminal in cab





OPEN THE TAILGATE

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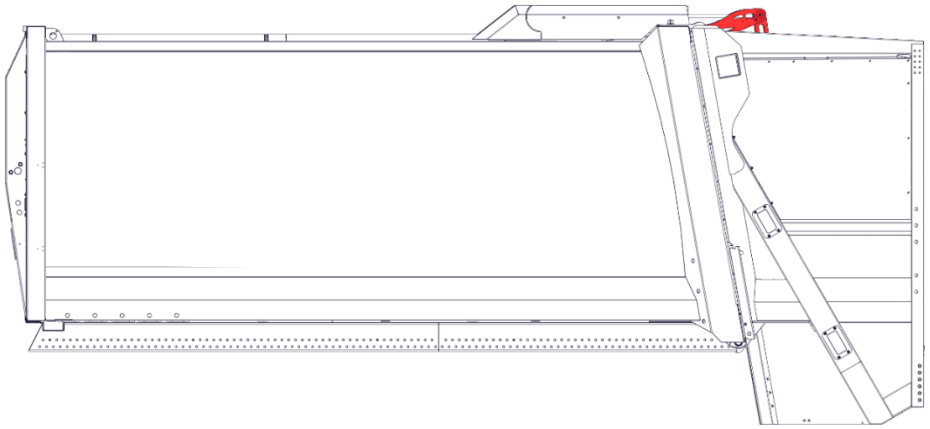
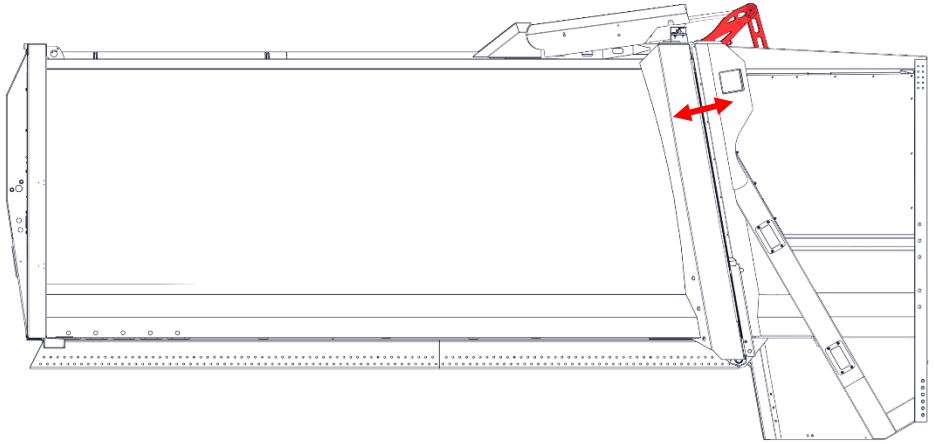
MEDIUM X4 – Mechanic – STANDARD

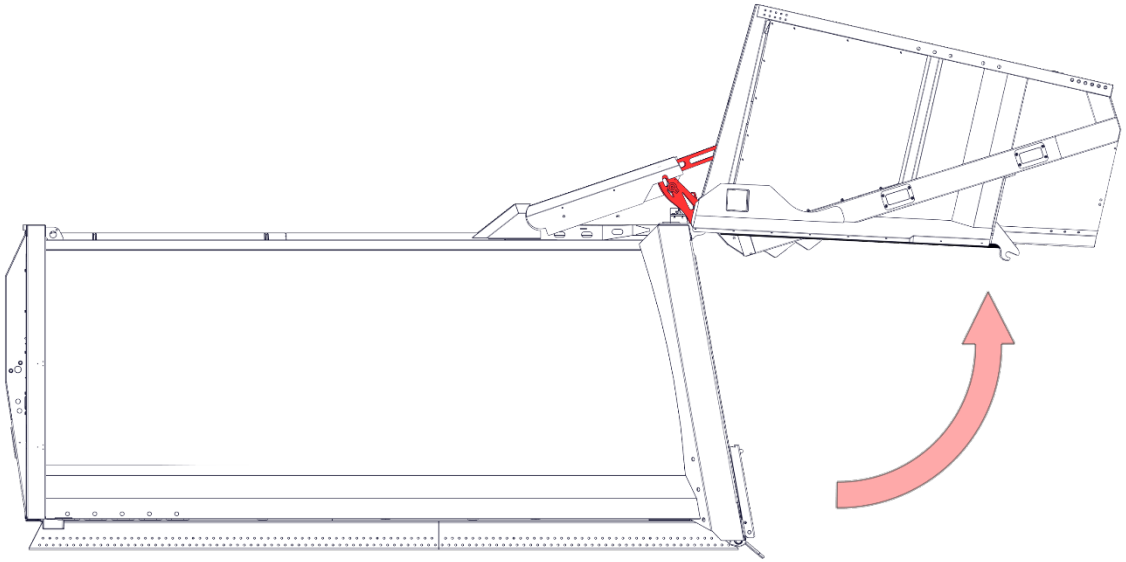
Lifting the tailgate



Step 1: Initial position. Cylinders are set horizontally. Tailgate is sticked to body's rear frame



Step 2: Cylinders and arms of the lifting mechanism slightly raise the tailgate & detach seal from the body's rear frame



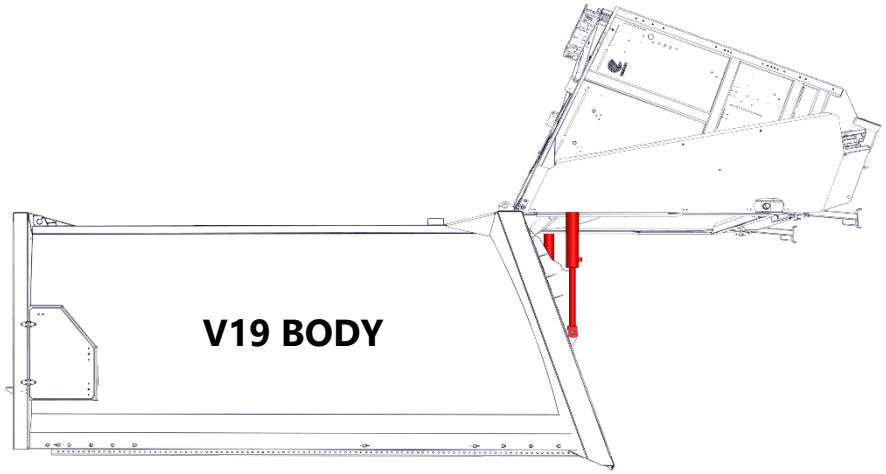
Step 3: Tailgate is lifting and reaching final position

MEDIUM X4 – Mechanic – STANDARD

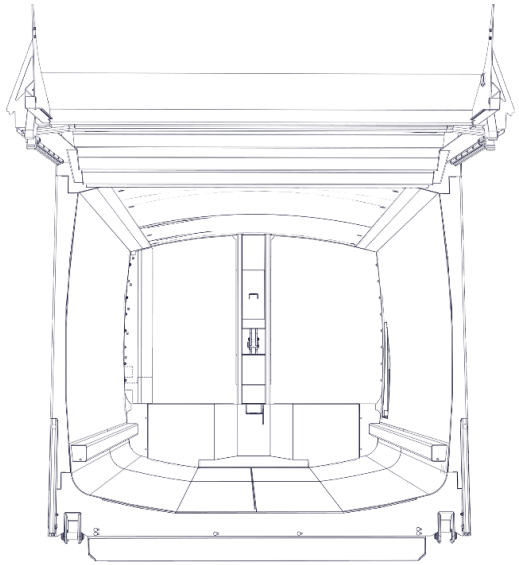
Lifting the tailgate – V20 body advantages

Advantages:

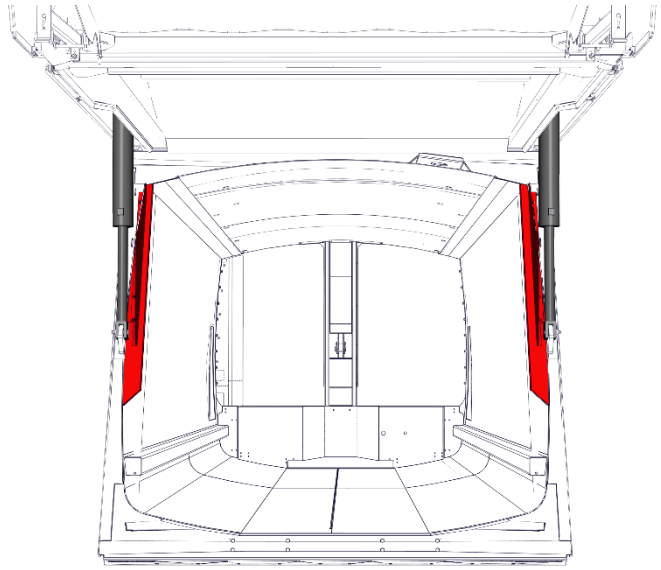
- ✓ Body type V20 comparing to cylinders installed on the body frame type V19, has no narrowing in the rear-end frame of the body. Wastes are not blocked by additional cylinders covers



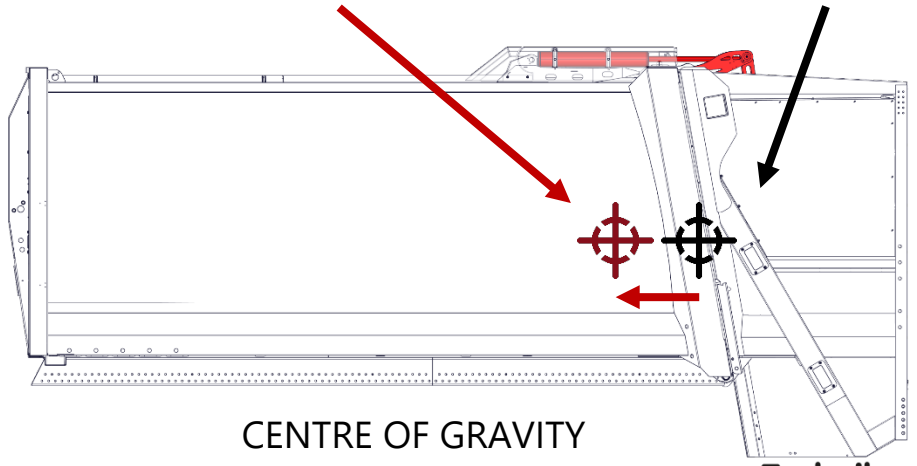
- ✓ Due to cylinders on the roof the center of gravity is moved to towards the cab (to front axle)
- ✓ In body type V20 cylinders are not exposed to damage during emptying the body
- ✓ The one-piece seal is installed only on the tailgate – longer seal life span and easy service



V20 BODY (NEW)



V19 BODY (OLD)



CENTRE OF GRAVITY

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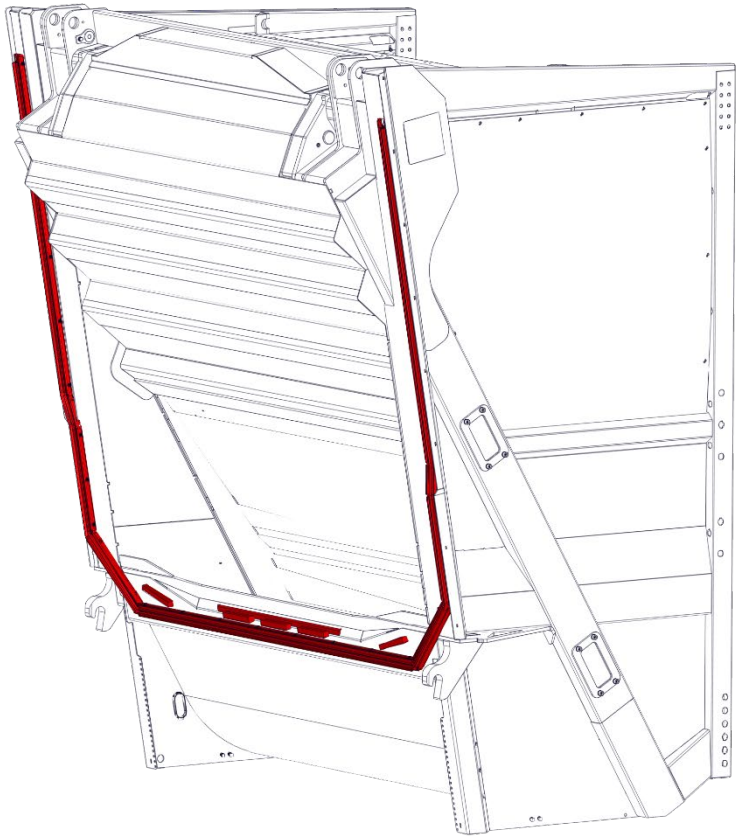
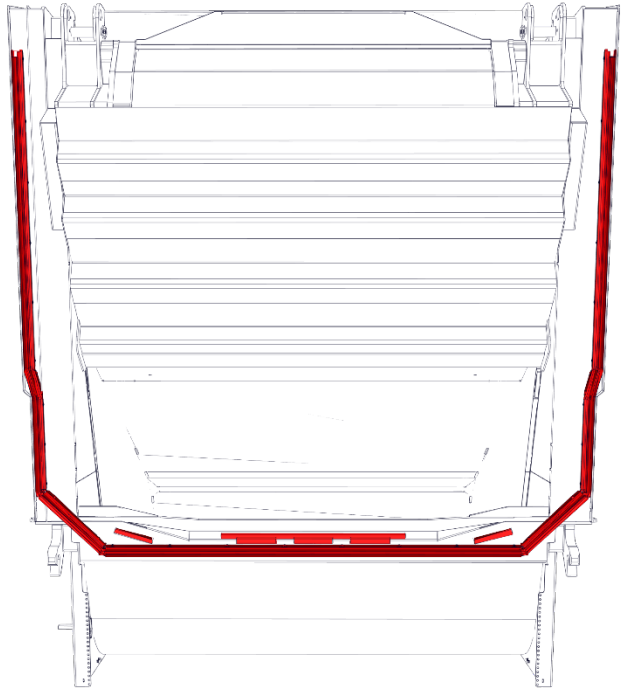
MEDIUM X4 – Mechanic – STANDARD

EPDM seal





One piece of the EPDM seal (Ethylene Propylene Diene Monomer rubber) is framed between body and tailgate. The seal is applied on whole height of the body what provides to full tightness while collecting wastes (even wet bio fraction). Good physical & chemical properties allow to use it in temperatures extremes (-60°C to +150°C), protect against weathering and chemical media including acids & alkali

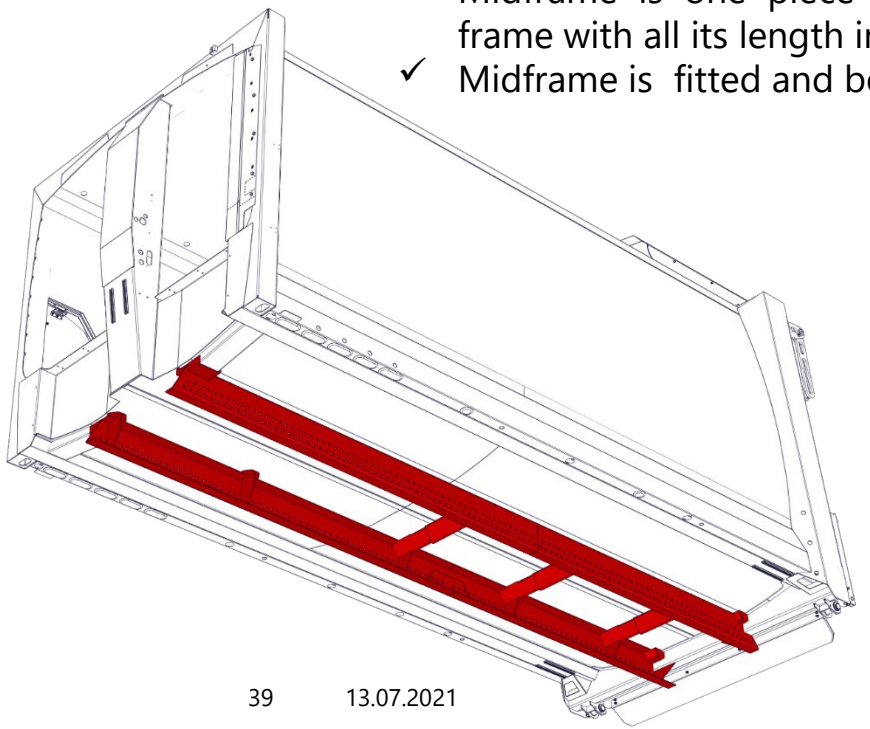
MEDIUM X4 – Mechanic – STANDARD

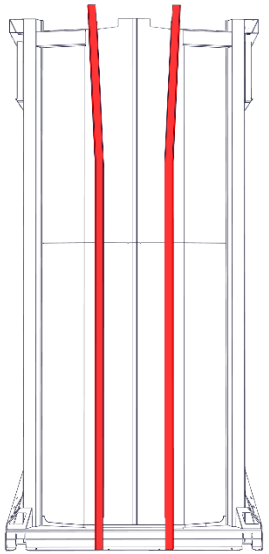
Midframe

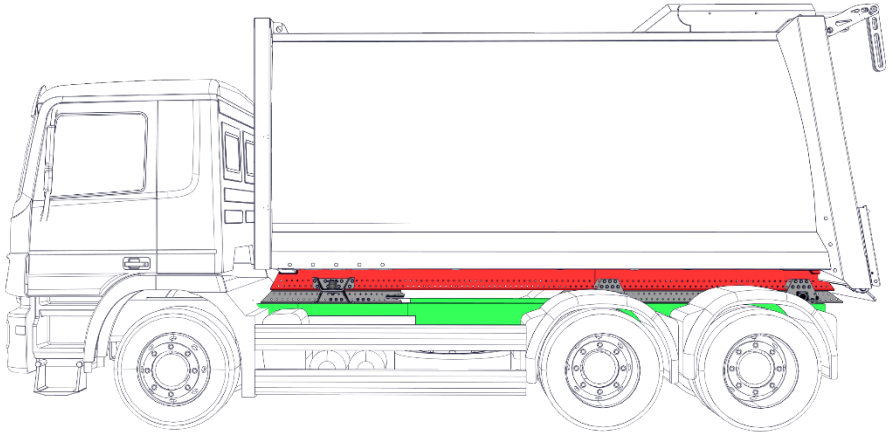
Midframe is mounted according to recommendations of chassis manufacturers. Its available in four heights:
180, 210, 250, 270 mm but height of midframe depends on the lifter type and chassis (2 to 4-axle)

Advantages:

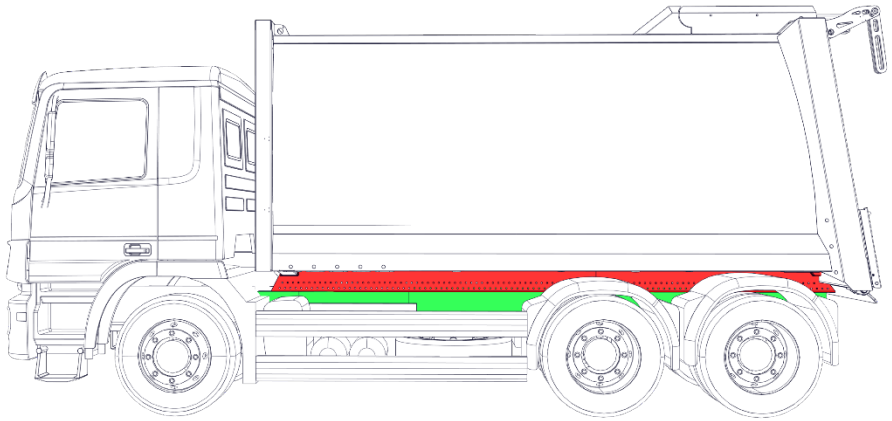
- ✓ Midframe is mounted directly to the chassis frame: its lighter solution compared to 3 frames (chassis, subframe and midframe) like before
- ✓ Midframe is one piece element, so it's based on the chassis frame with all its length instead of 2 or 3 pieces of subframe
- ✓ Midframe is fitted and bent exactly to the chassis frame shape







BEFORE



NOW

MIDFRAME SUBFRAME CHASSIS FRAME

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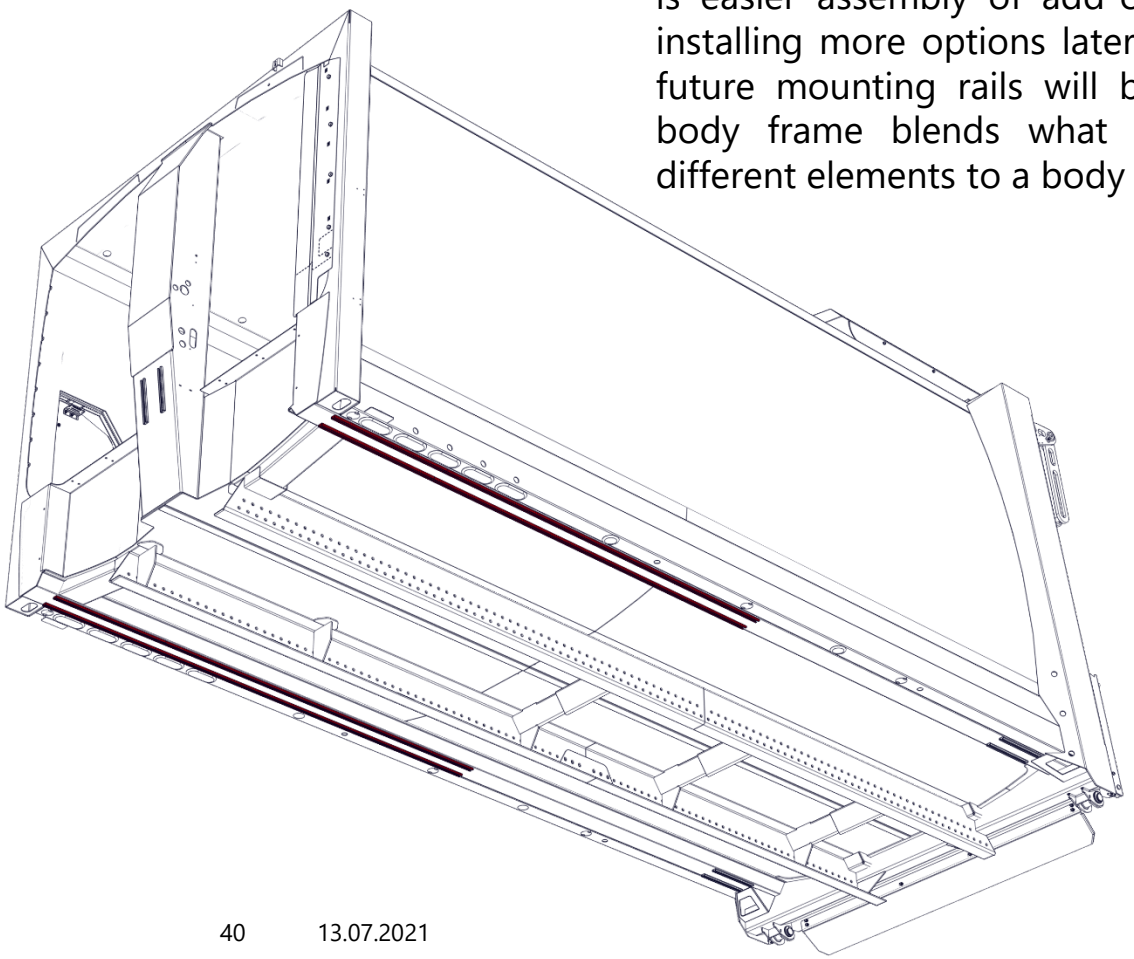
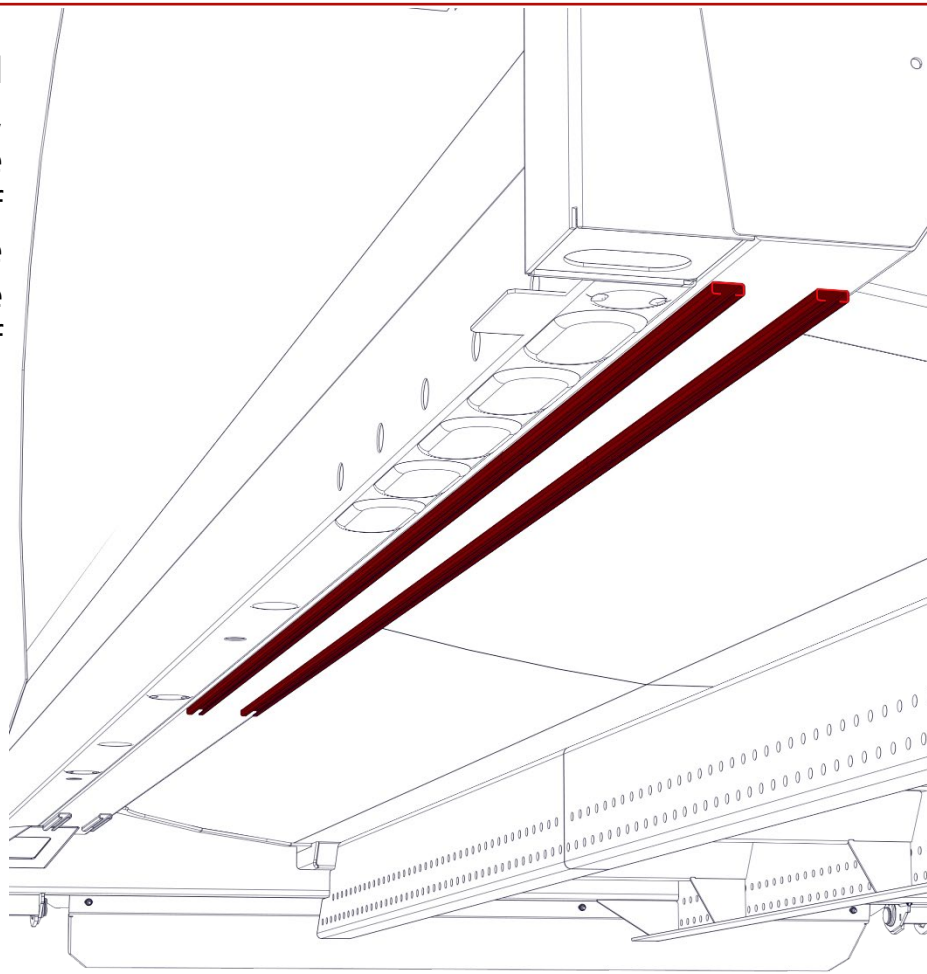
MEDIUM X4 – Mechanic – STANDARD

Mounting rail

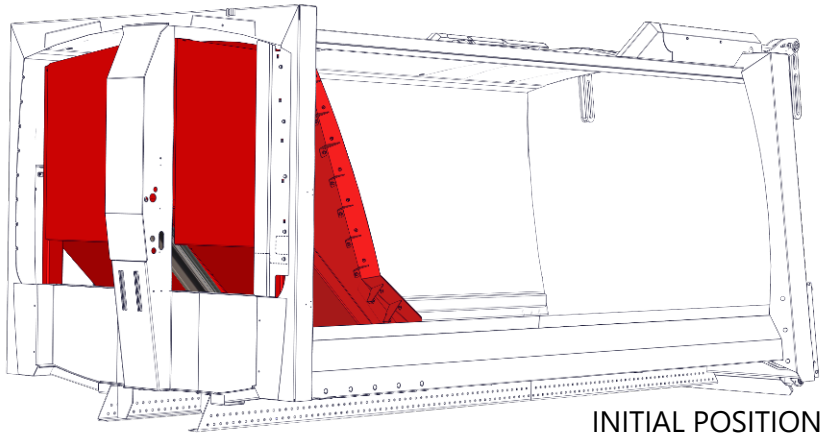
Mounting rail is used to install more optional equipment, for example toolbox, fire extinguisher, broom and shovel or pads for wheels. Their advantage is easier assembly of add-on parts and possibility of installing more options later while service work. In the future mounting rails will be integrated parts of the body frame blends what will simplify assembly of different elements to a body





MEDIUM X4 – Mechanic – STANDARD

Ejection plate

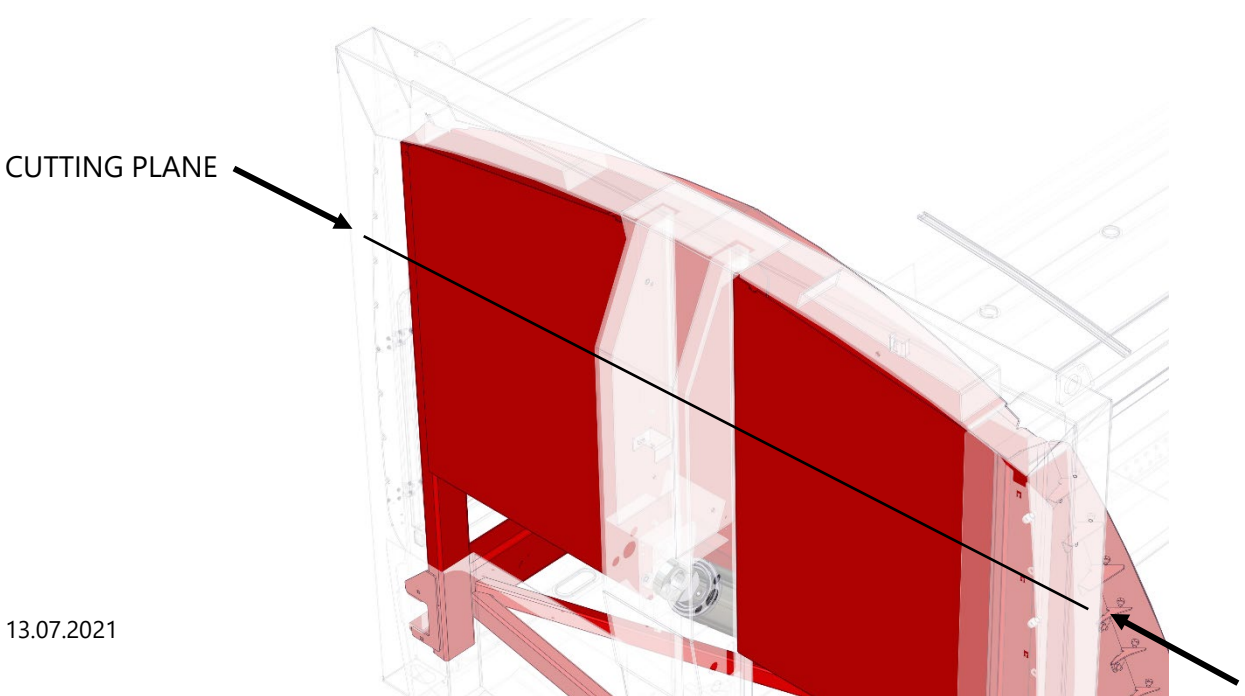


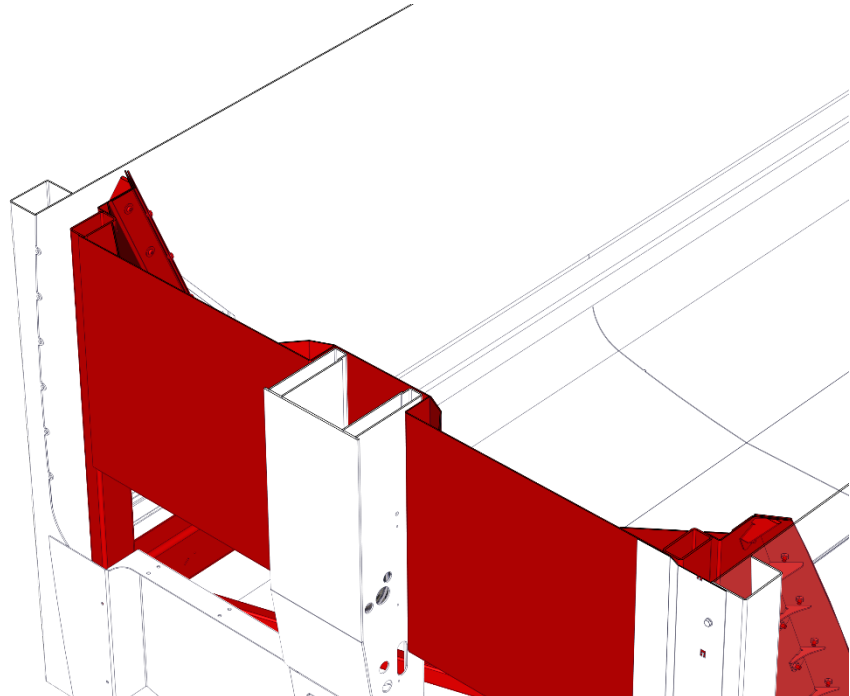
INITIAL POSITION

Ejection plate in **initial position** is fully retracted towards the front frame column

Advantages:

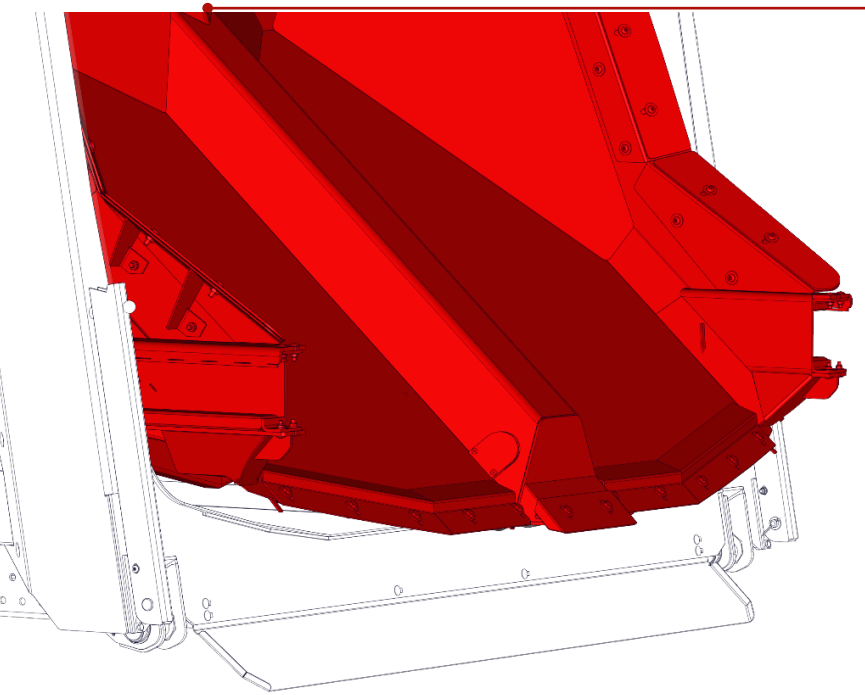
- ✓ New designed ejection plate is well fitted and can retracts maximally to the front frame column what is saving load volume space
- ✓ More load body volume by 1 m^3 comparing to the old „ribbed" bodies





MEDIUM X4 – Mechanic – STANDARD

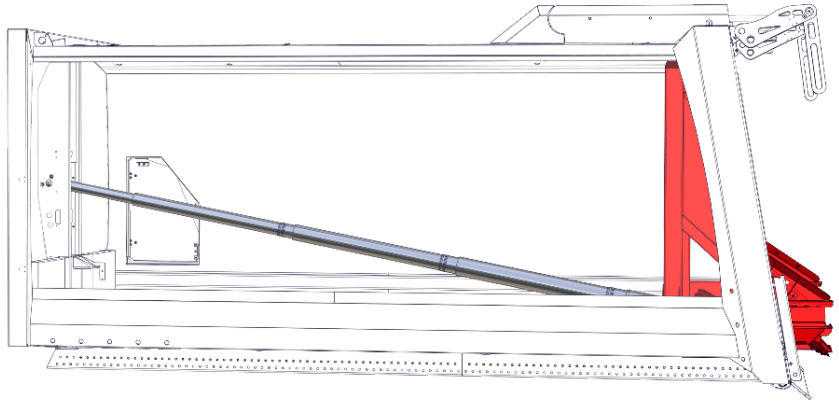
Ejection plate



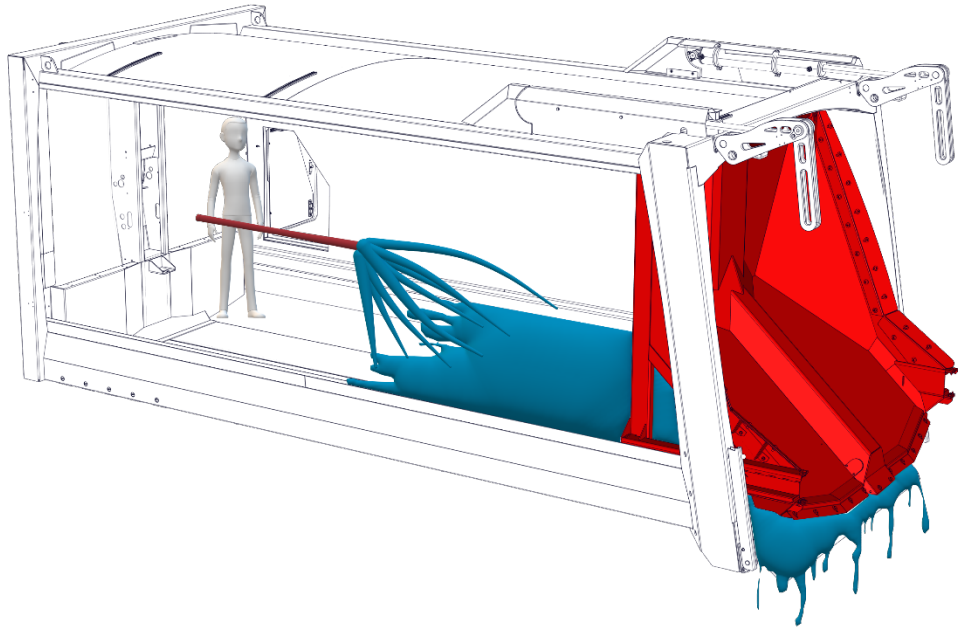
Ejection plate in **end position** is fully ejected towards the rear frame of the body

Advantages:

- ✓ Longer way of sliding outside the body to throw out all jammed wastes
- ✓ Complete and accurate process of emptying the body
- ✓ Gap between body floor and ejection plate allows to effective cleaning of the body interior with optional pressure washer

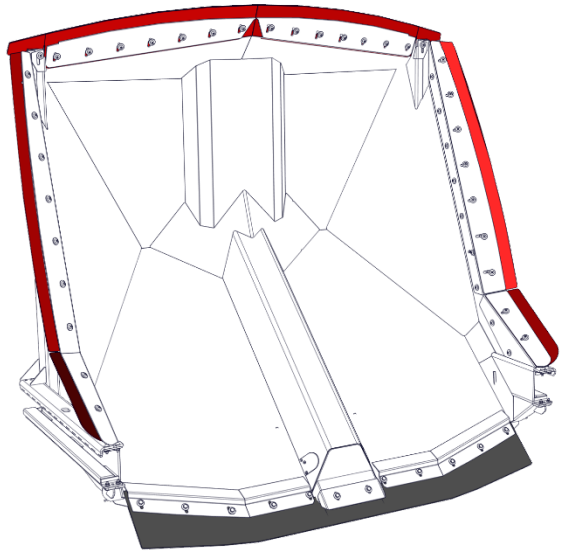


END POSITION



MEDIUM X4 – Mechanic – STANDARD & OPTION

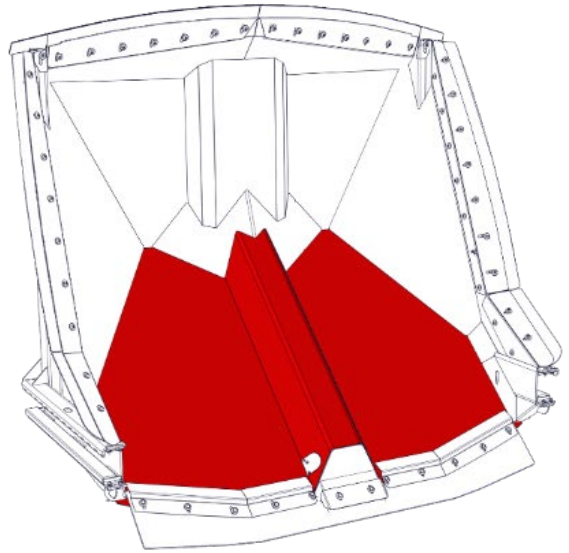
Ejection plate



New additional ejection plate **sealing** consists of:

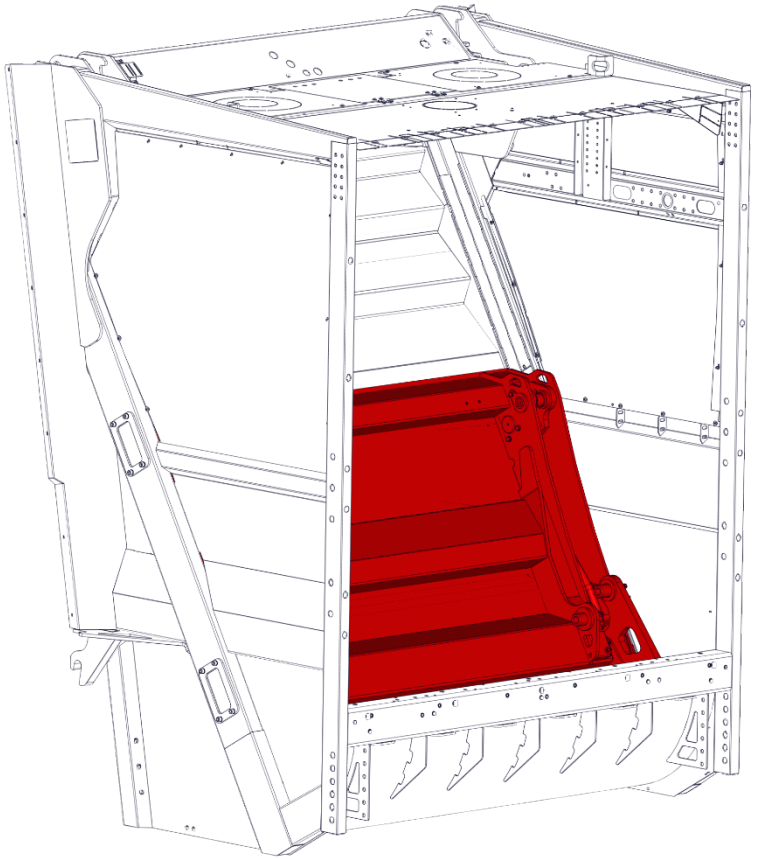
- ✓ **Side and top sealing:** high-density polyethylene (HDPE) which has high impact strength also in low temperatures (-30°C) and good chemical resistance
- ✓ **Bottom sealing:** polyurethane (Vulkollan) with 80 ShA hardness, high dynamic stress, good resistance to grease, oil and low temperature, good tear and wear resistance

Option: additional 4 mm steel sheets increase abrasion resistance and at the same time extend life span of ejection plate. However, the weight of the vehicle increases



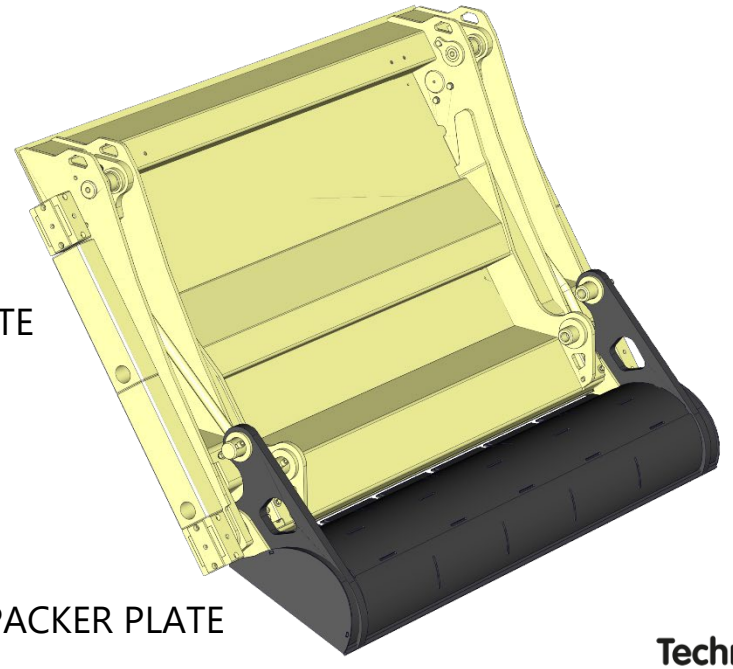
MEDIUM X4 – Mechanic – STANDARD

Compaction mechanism



Compaction mechanism consists of carriage & packer plate. When its moved upward the garbage are scooped from a hopper and moved towards the ejection plate. With each successive cycle, the waste is pressed more until the maximum pressure is reached, and ejection plate is moving towards the cab. Duration of the full cycle varies between 14 to 17 seconds. The pressure force during waste compression is about 26 kN

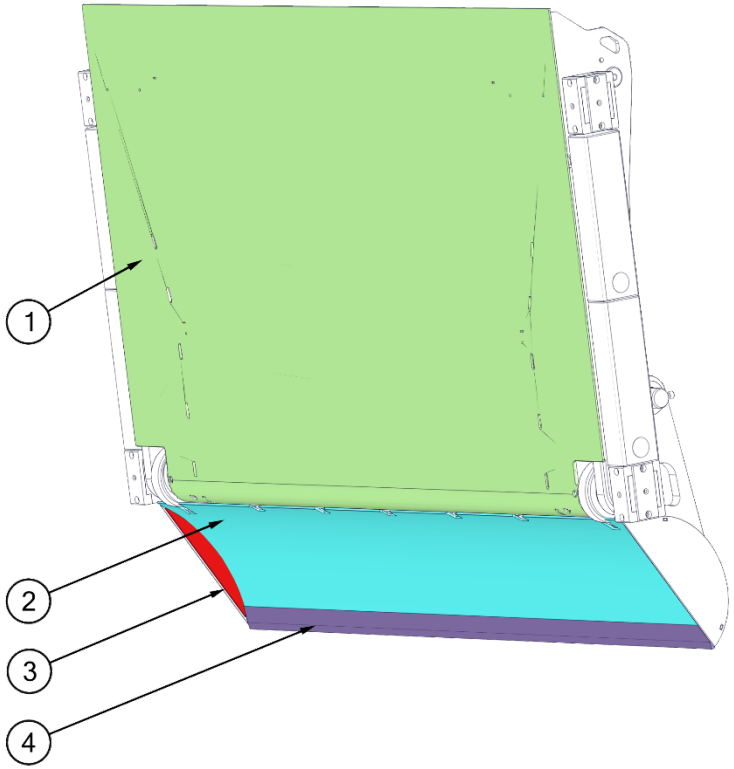
CARRIAGE PLATE

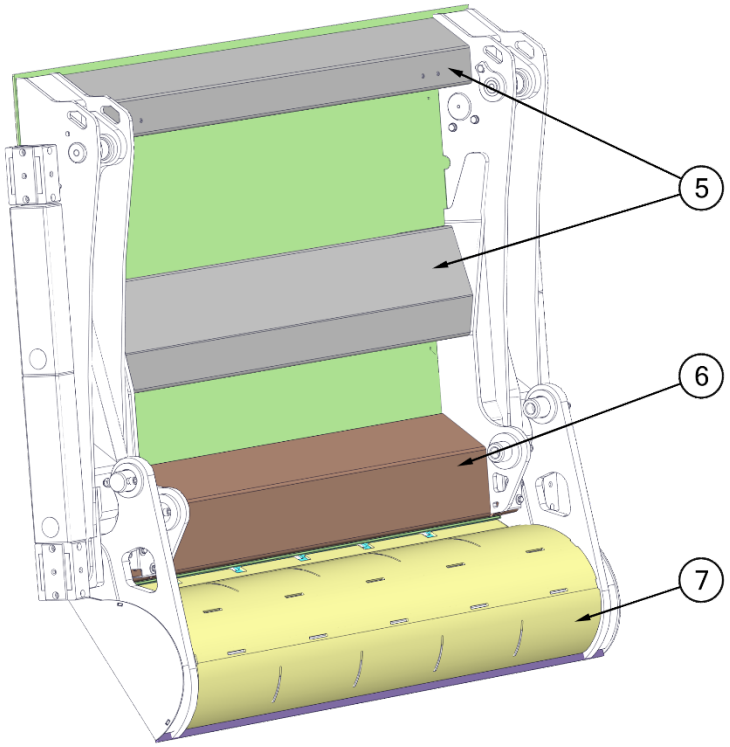


PACKER PLATE

MEDIUM X4 – Mechanic – STANDARD

Materials of the compaction mechanism



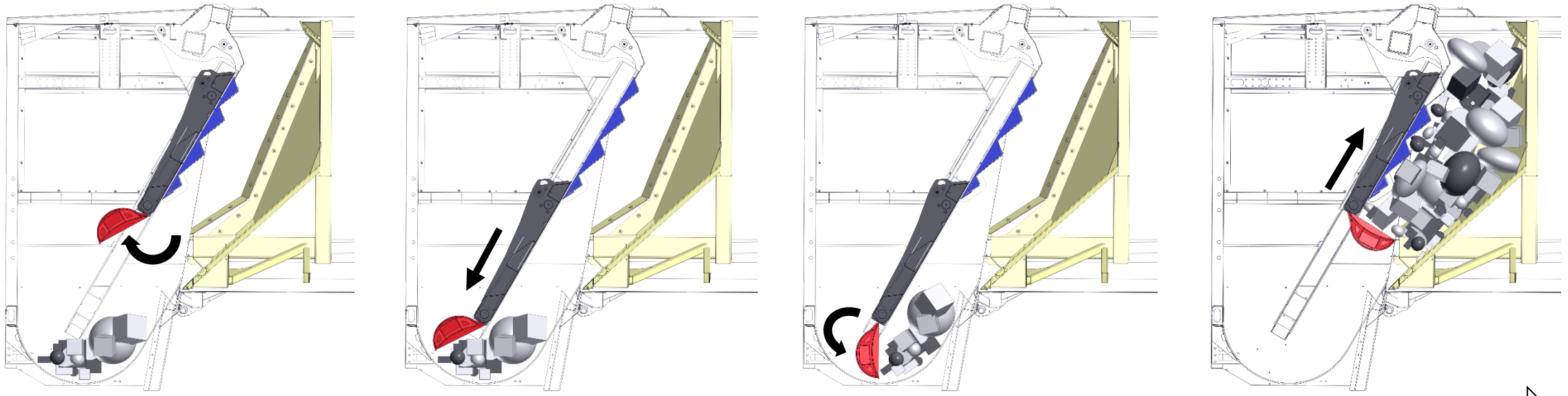


STANDARD				
Pos.	Thickness (mm)	Norm		
		DIN	EN	AISI
1	5	HBW450*		
2	6	HBW450*		
3	10	HBW450*		
4	5	HBW450*		
5	3	S355MC	1.0976	Gr. 50
6	5	S355MC	1.0976	Gr. 50
7	5	S700MC	1.0966	A514

* **HBW450 is abrasion resistant steel and its described by Brinell Hardness (HBW) value. This kind of steel is heat and wear resistant.**

MEDIUM X4 – Mechanic – STANDARD

Loading process



0 s — **TIME LINE** — 14- 17 s

Step 1: Packer plate opens

Step 2: Carriage plate goes down

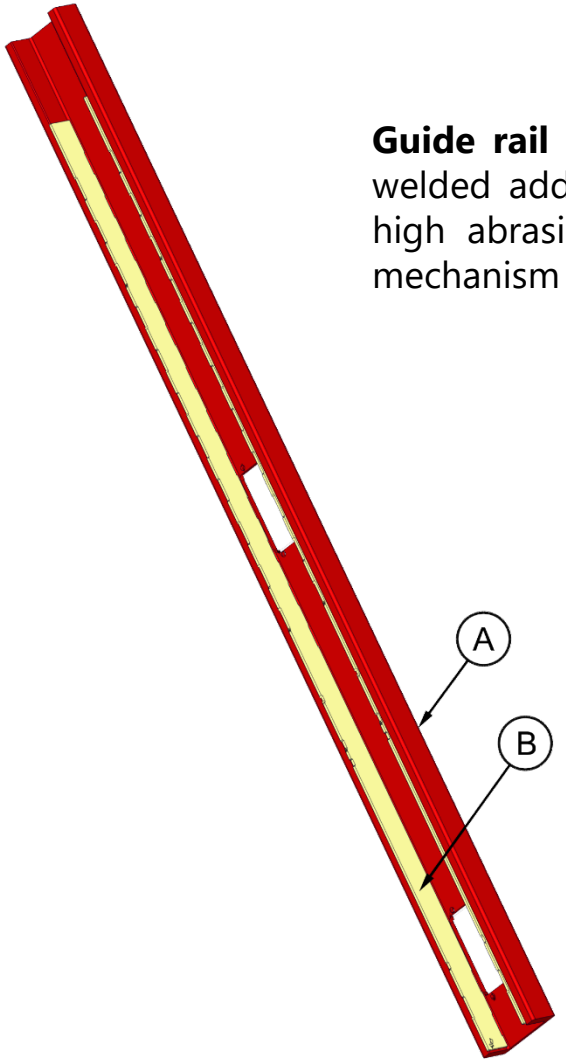
Step 3: Packer plate closes and empties the hopper by moving waste towards the ejection plate

Step 4: Carriage plate moves up with closed packer plate and compacts the wastes in the body. The cycle is ended, and the loading mechanism returns to its initial position. Back wall prevents wastes from turning to the hopper

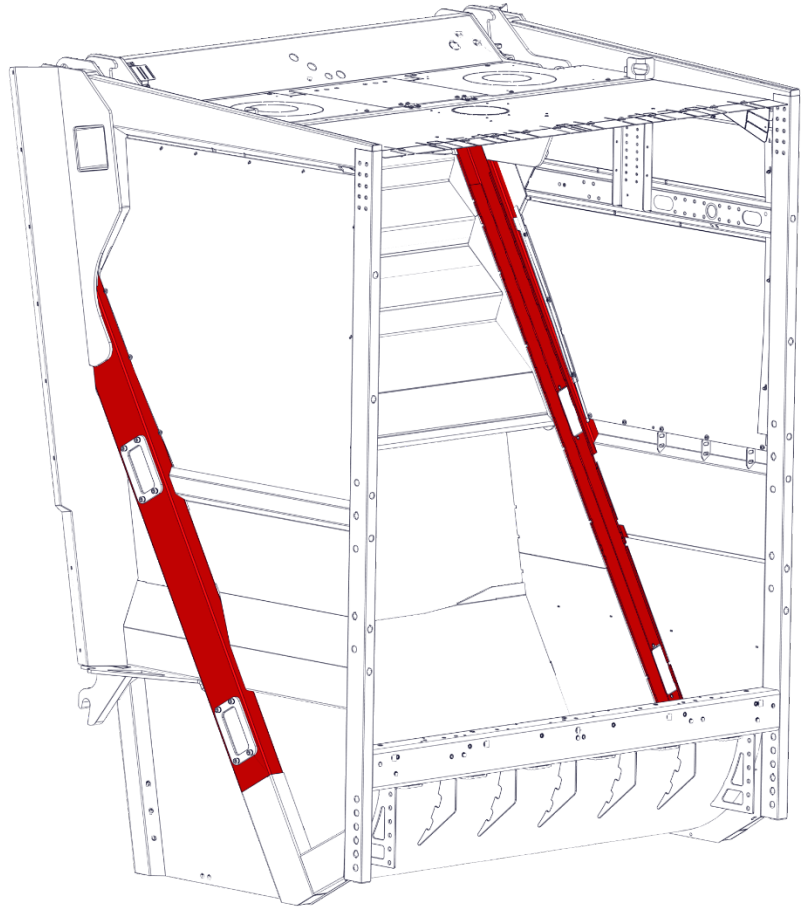
PACKER PLATE | CARRIAGE PLATE | EJECTION PLATE | BACK WALL | WASTES

MEDIUM X4 – Mechanic – STANDARD

Guide rail



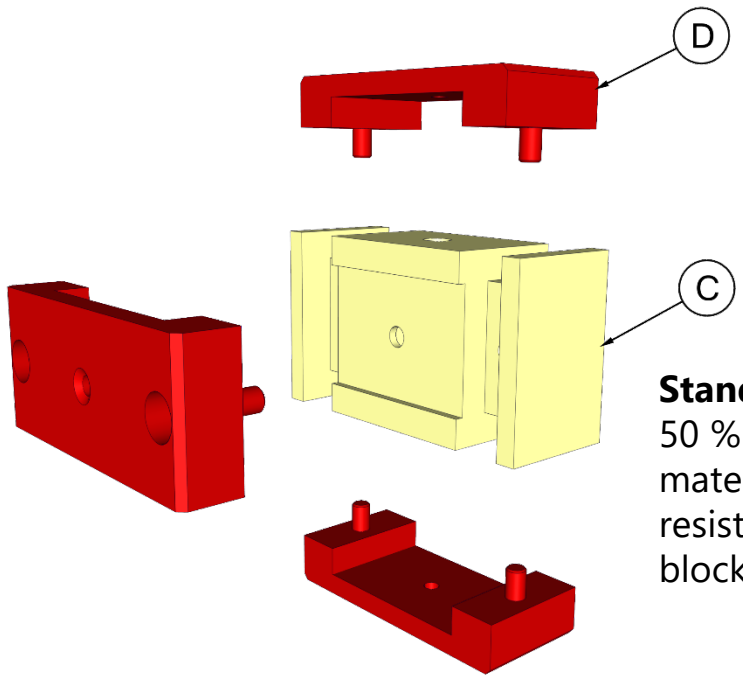
Guide rail consists of construction steel **special profile (A)** and welded additional 6 mm **plates (B)** made of HBW500 steel with high abrasion resistance. The sliding blocks of the compaction mechanism are moving on the guides



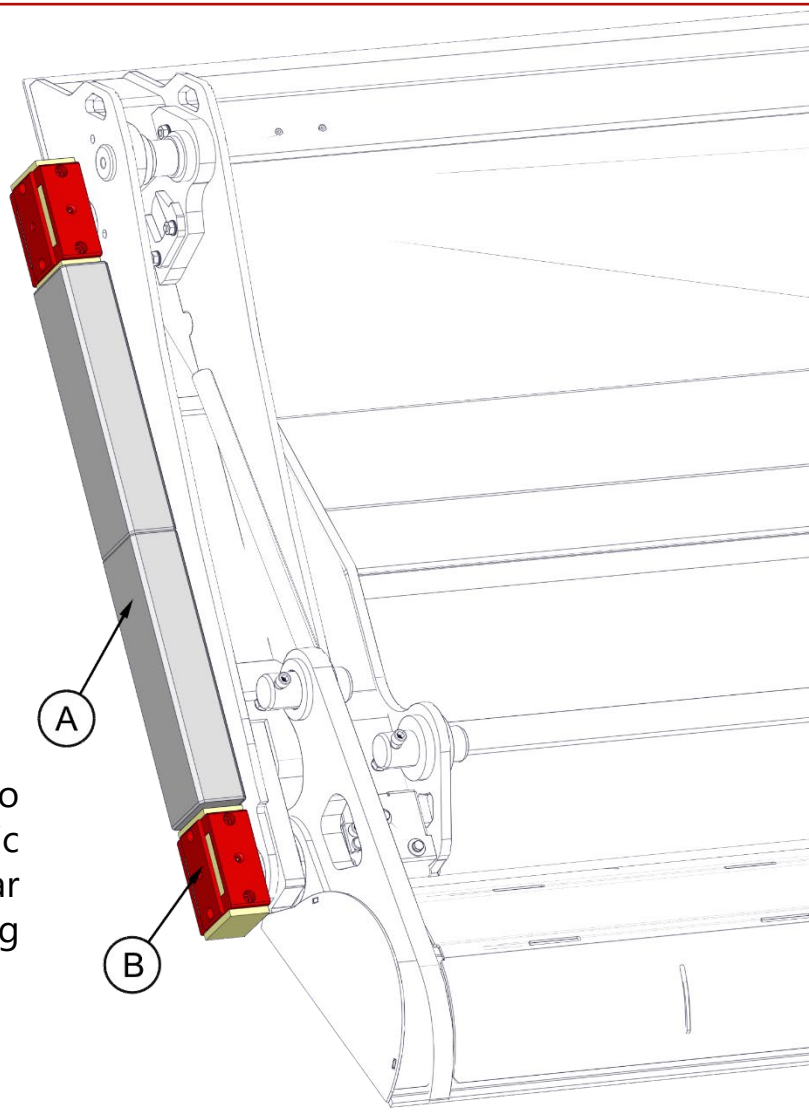
MEDIUM X4 – Mechanic – STANDARD

Sliding blocks

The compaction mechanism is equipped with **wooden blocks (A)** which filling the space between the sliding blocks and minimize the formation of deposits in rails. **Sliding blocks (B)** in the tailgate rails consists of **a steel core with supports (C)** to hold and protect blocks against damage what increase durability and life span. Three **abrasive pads (D)** are made of a special durable plastic



Standard abrasive pads: material: coefficient of friction is up to 50 % lower and wear resistant is up to 5 times better than classic materials. Advantages: self-lubricating, impact and wear resistance, high pressure resistance, longer life span of sliding blocks, better durability



MEDIUM X4 – Mechanic – STANDARD

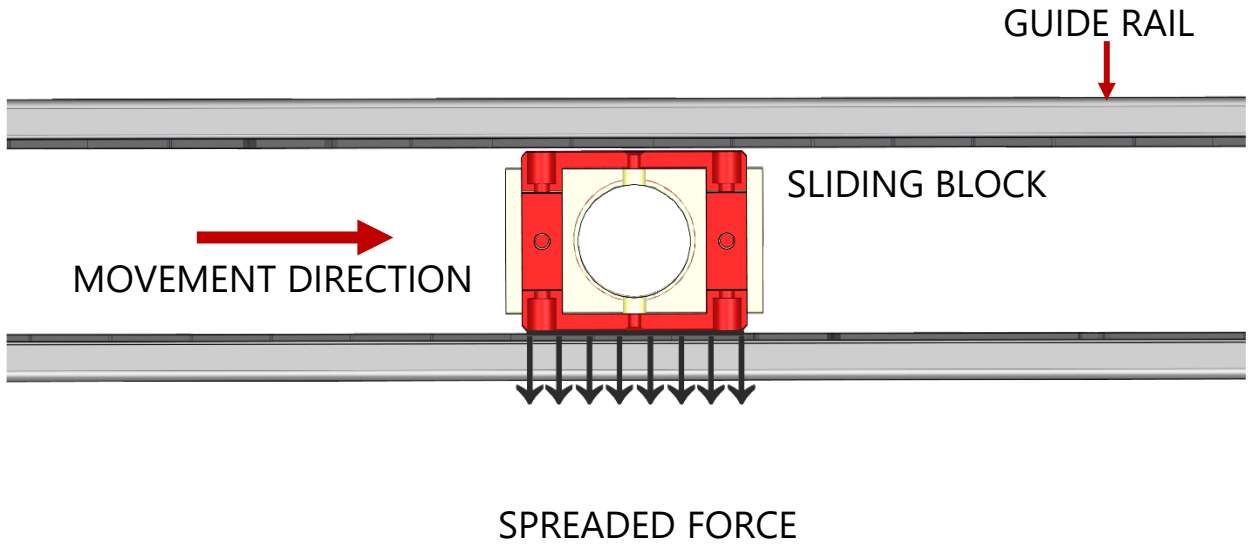
Sliding blocks – surface load

Sliding blocks

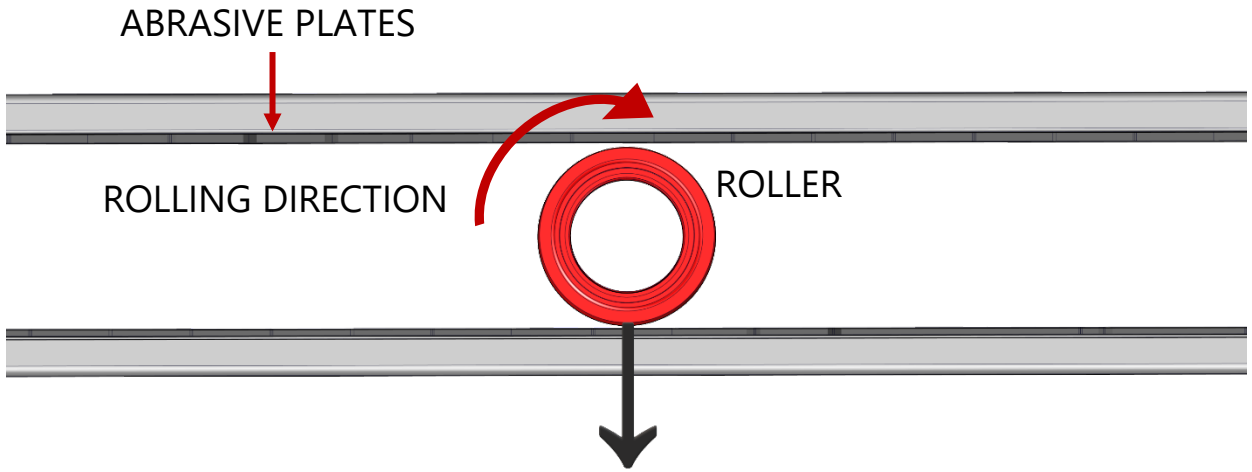
- ✓ Evenly spreaded pressure force
- ✓ Lower pressure exerted on the guide rails
- ✓ Sliding block is pushing the waste
- ✓ Longer life span of abrasive plates

Roller

- ○ One focused pressure force
- ○ Higher pressure exerted on the guide rails
- ○ Roller is run through the waste and crush it
- ○ Shorter life span of abrasive plates



SPREADED FORCE

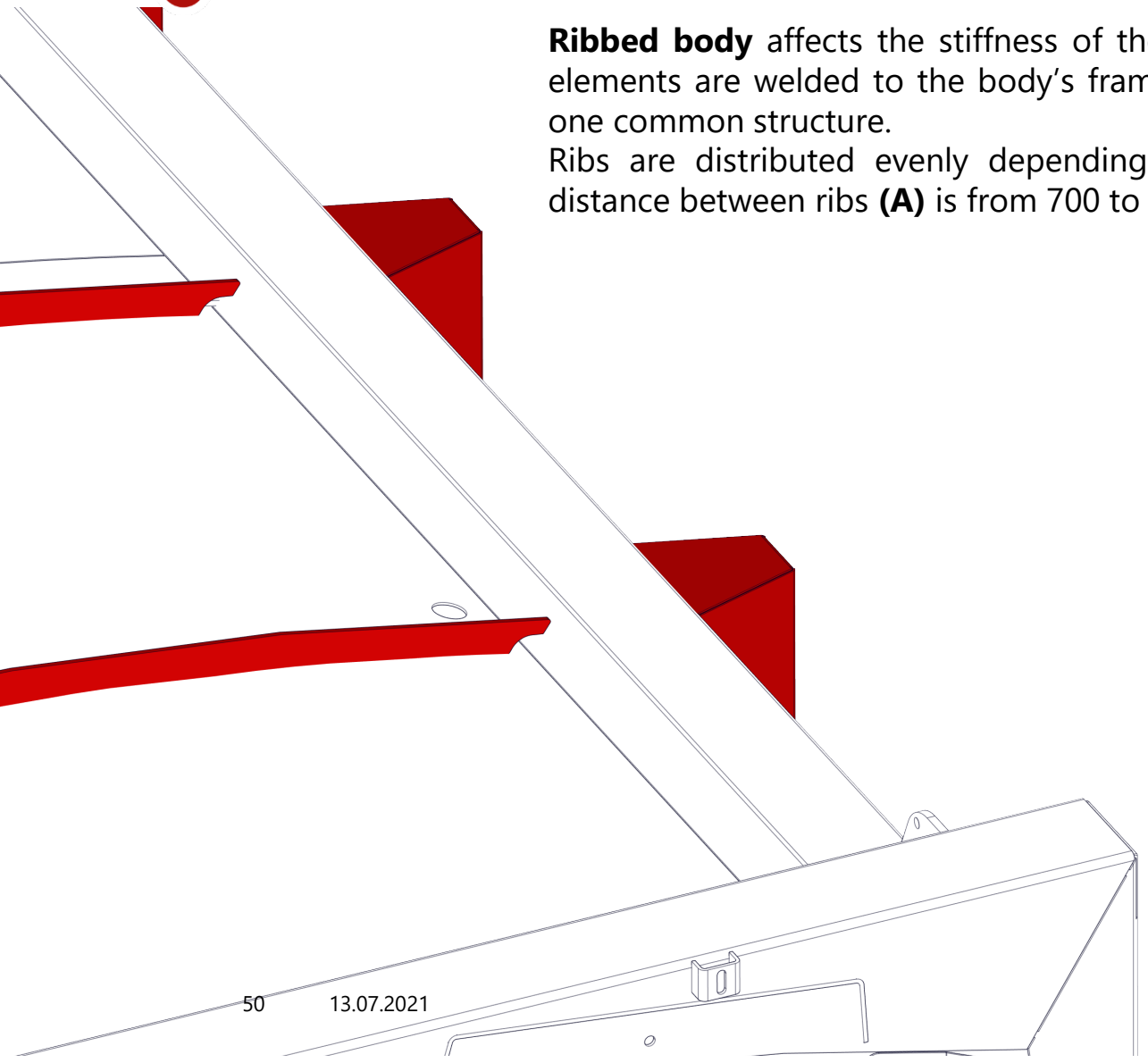


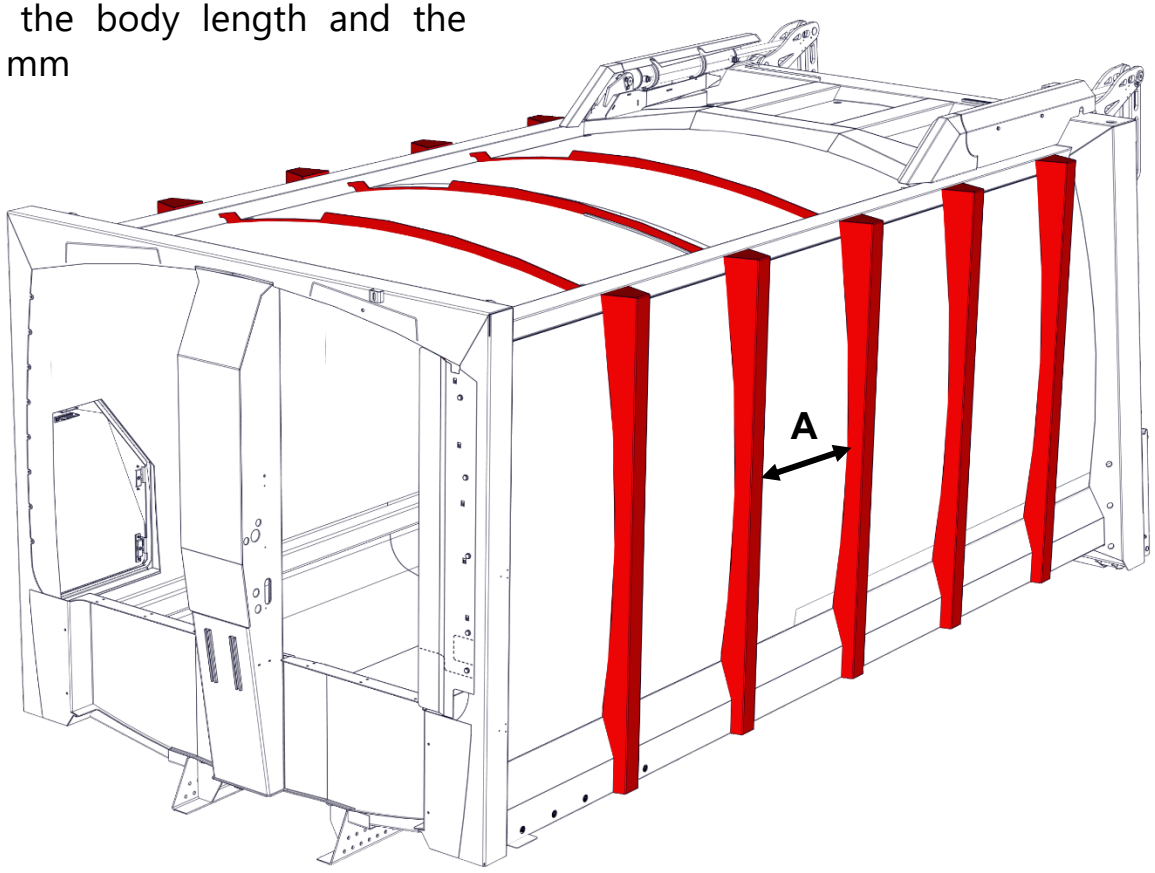
FOCUSED FORCE

MEDIUM X4 – Mechanic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

Ribbed body

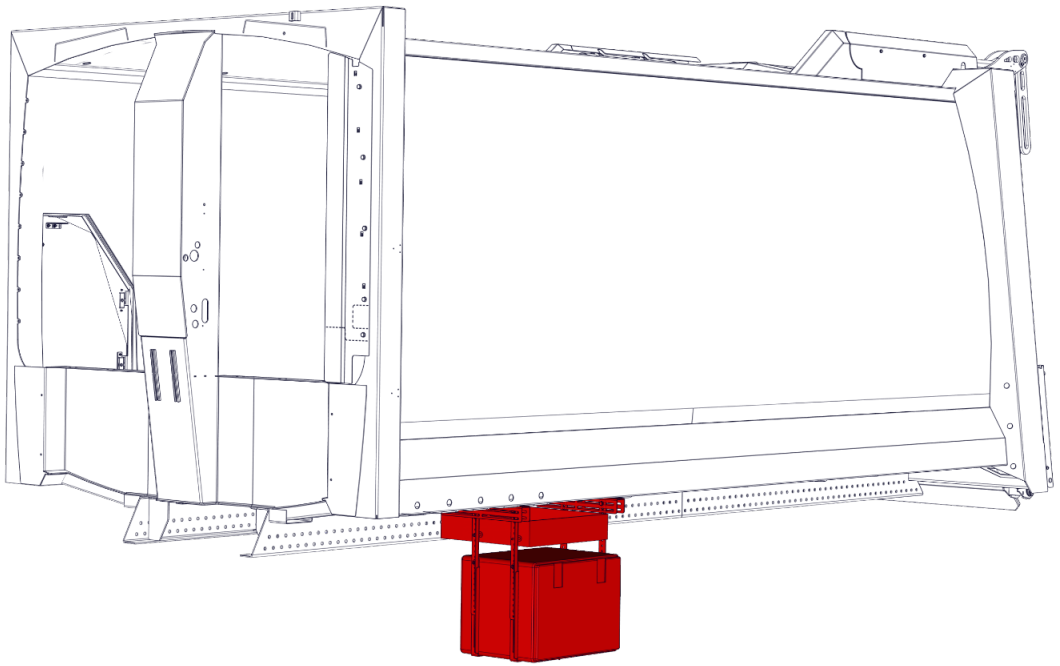
Ribbed body affects the stiffness of the body construction. Additional elements are welded to the body's frames, walls and roof what creates one common structure.
Ribs are distributed evenly depending on the body length and the distance between ribs **(A)** is from 700 to 950 mm



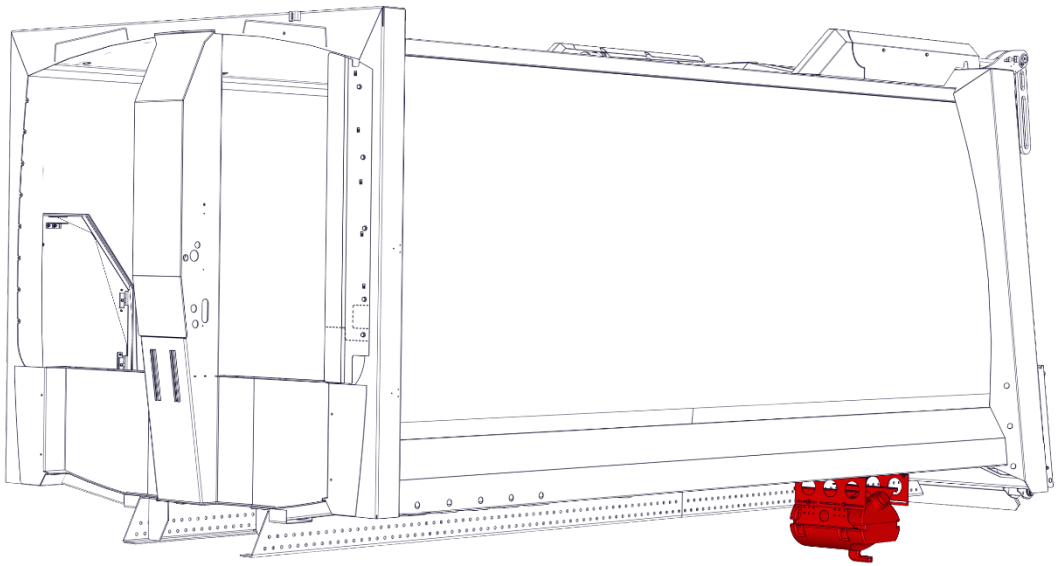


MEDIUM X4 – Mechanic – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Some examples of toolbox & water tank



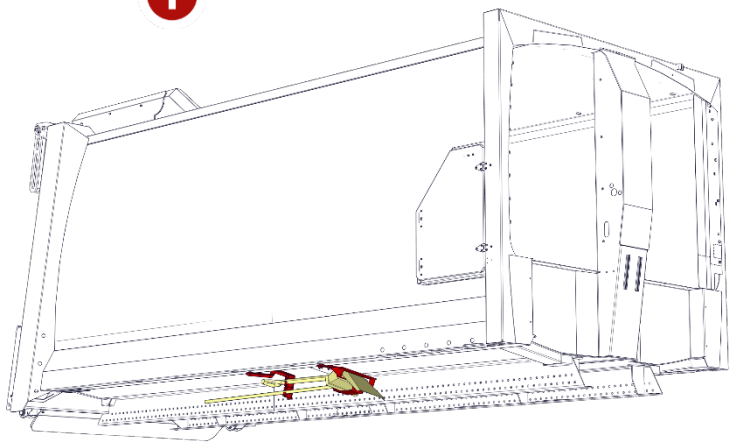
Toolbox can be mounted under the body in different positions. A lot of shapes and dimensions or material type like stainless steel or polyethylene can be chosen



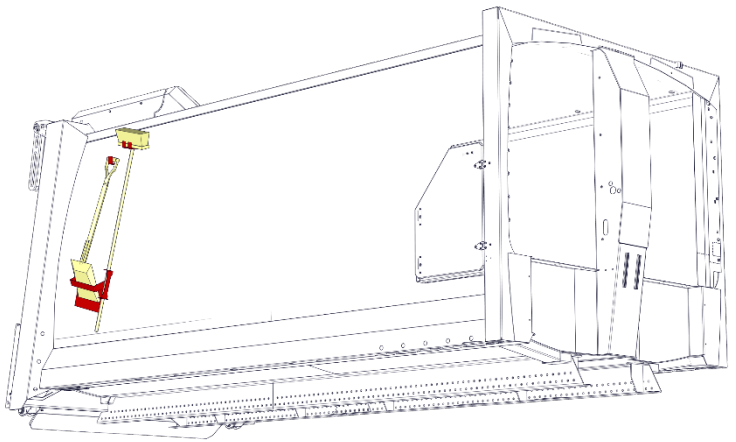
Hand wash equipment under body is used to wash hands for everyone who works mobile & in unhygienic conditions. There is a lot of tank types from 5 to 30 L with soap dispenser, hot & cold water or sink

MEDIUM X4 – Mechanic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

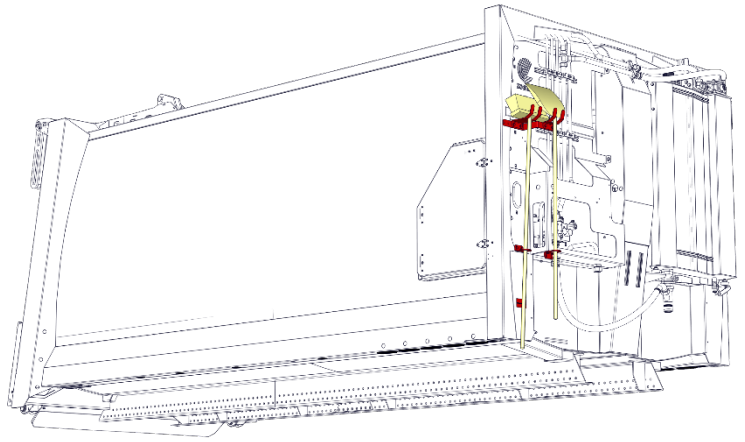
Additional holders for broom & shovel



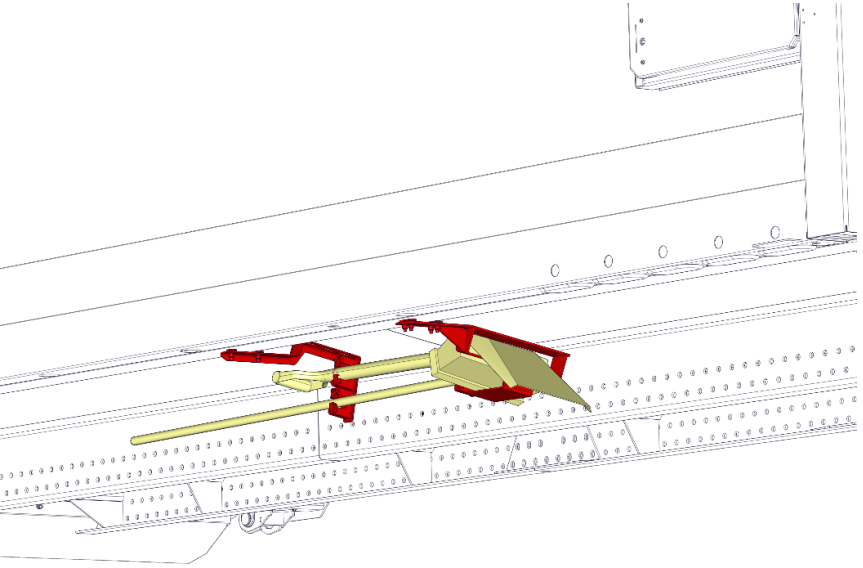
UNDER BODY



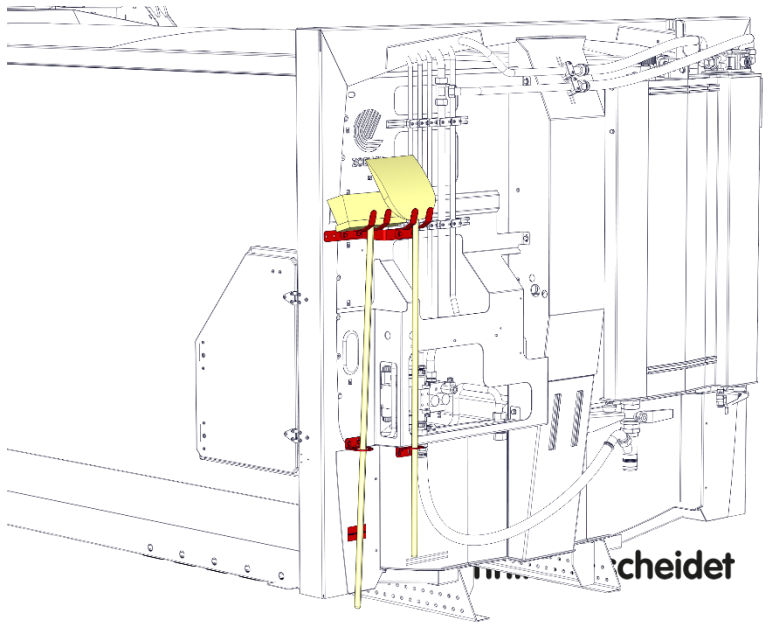
ON SIDE WALL



BEHIND CAB

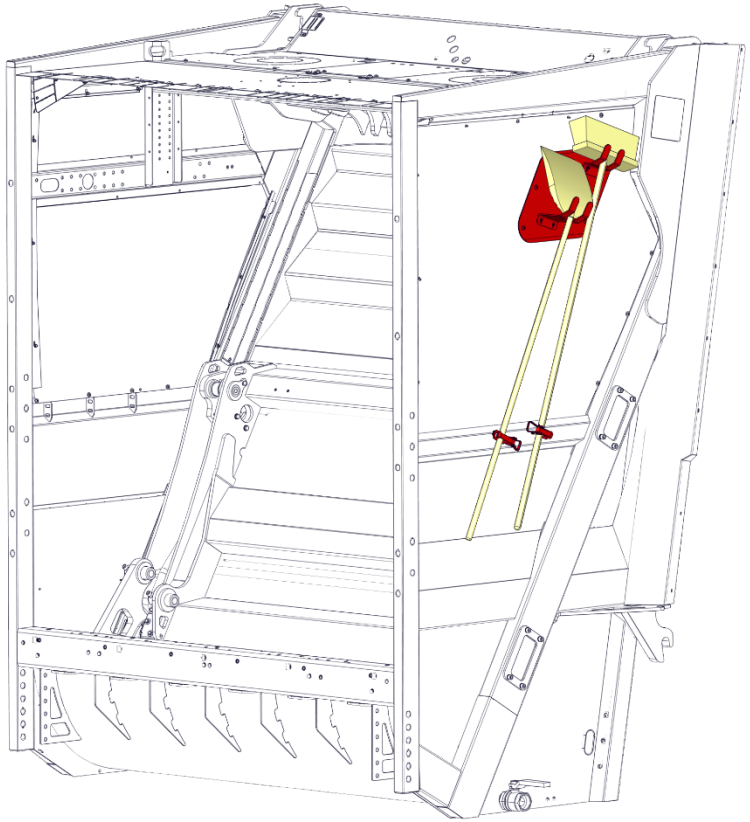


Additional holders store broom & shovel useful to keep clean vehicle inside but also around the RCV while collecting wastes. Holders are mounted under the body or on the side wall to mounting rails and behind the cab



MEDIUM X4 – Mechanic – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Additional holders for broom & shovel

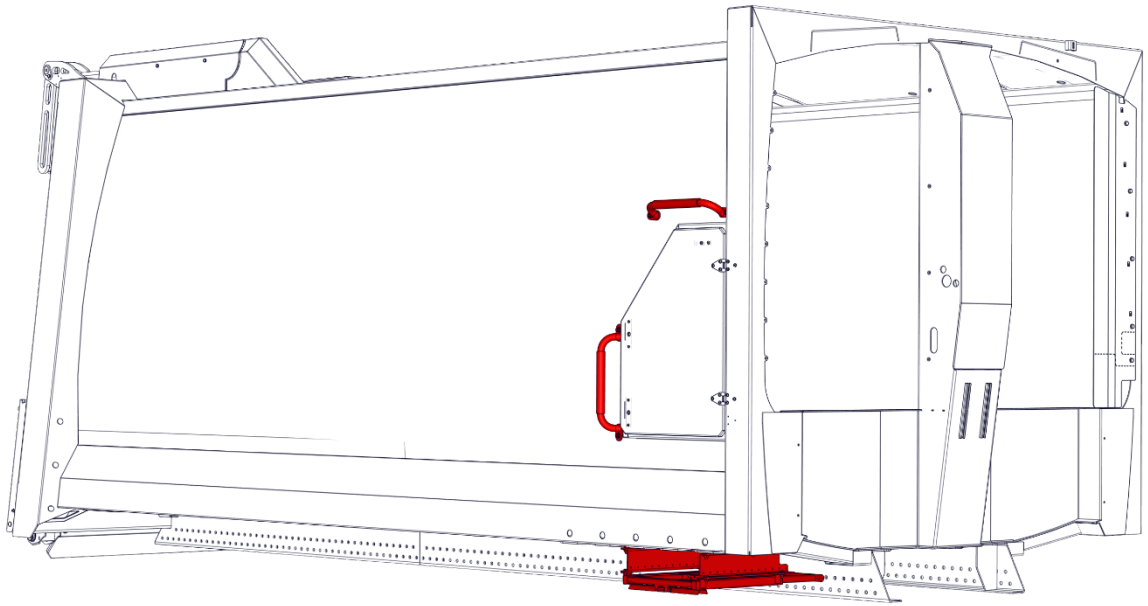


Additional holders store broom & shovel useful to keep clean vehicle inside but also around the RCV while collecting wastes. Holders are mounted on the tailgate side wall

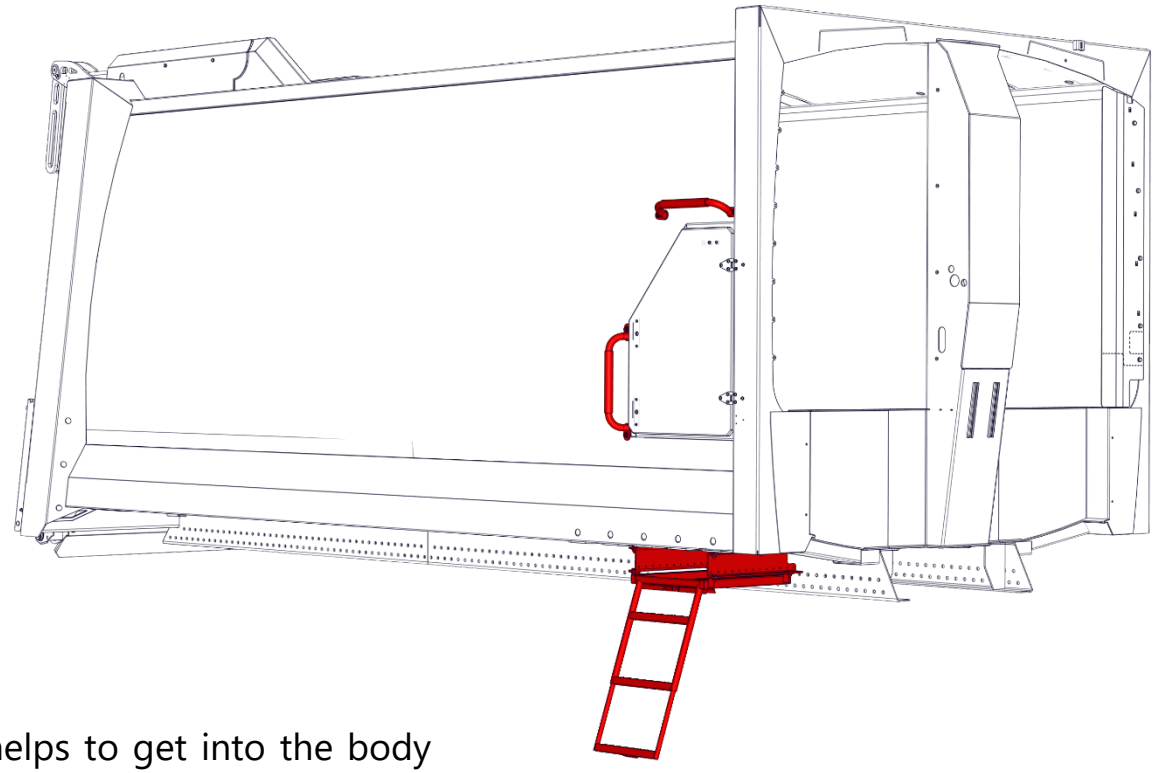
MEDIUM X4 – Mechanic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

Ladder to inspection door

FOLDED



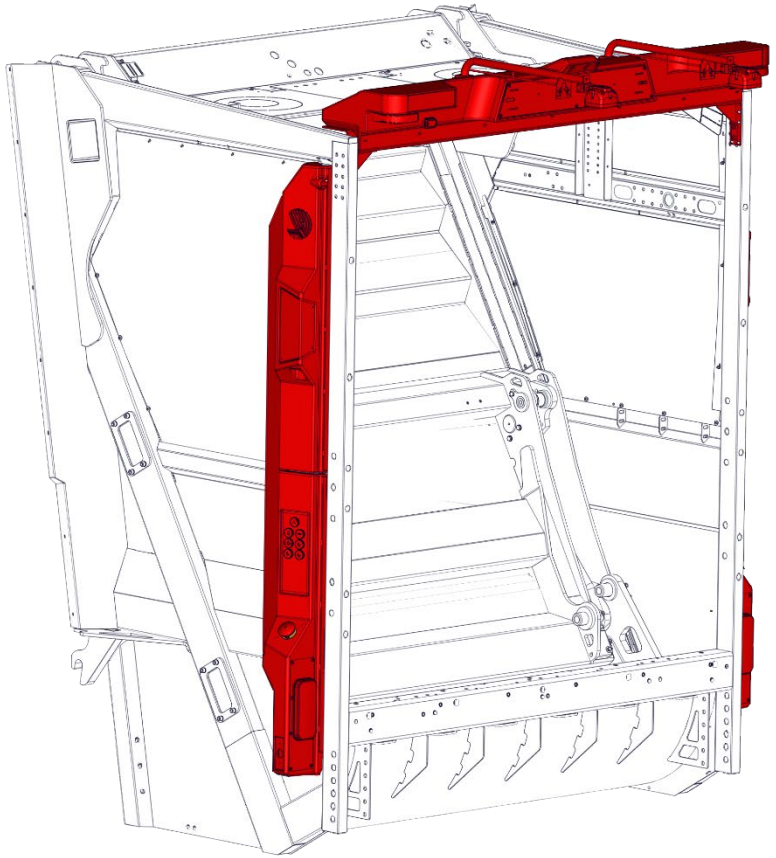
DEPLOYED



Ladder with additional handles helps to get into the body by the inspection door

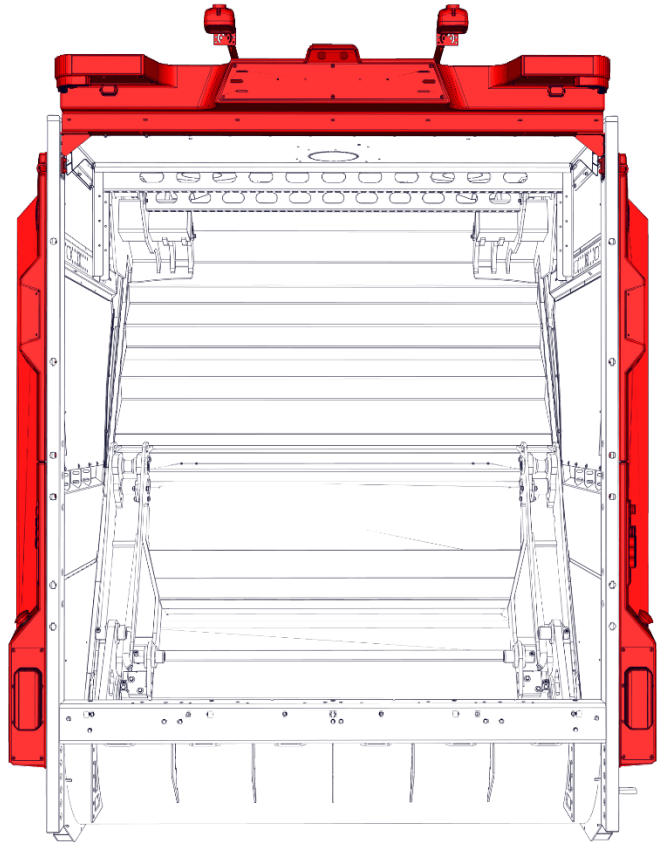
MEDIUM X4 – Mechanic – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Plastic lighting and control panels



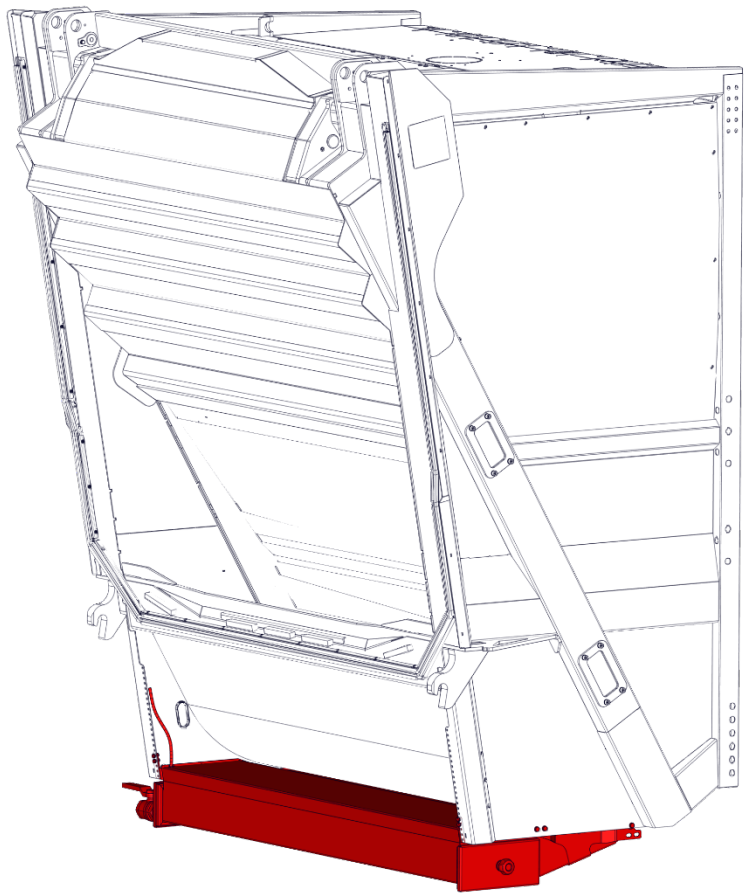
Plastic panels are used to install standard and optional lighting such as warning, working & driving lamps with 2 to 6-function lighting. Also, the control panels for compaction mechanism and electric modules are mounted

Panels are designed to fit the shape of the tailgate and are made of polymeric material which has good UV radiation and mechanical resistance



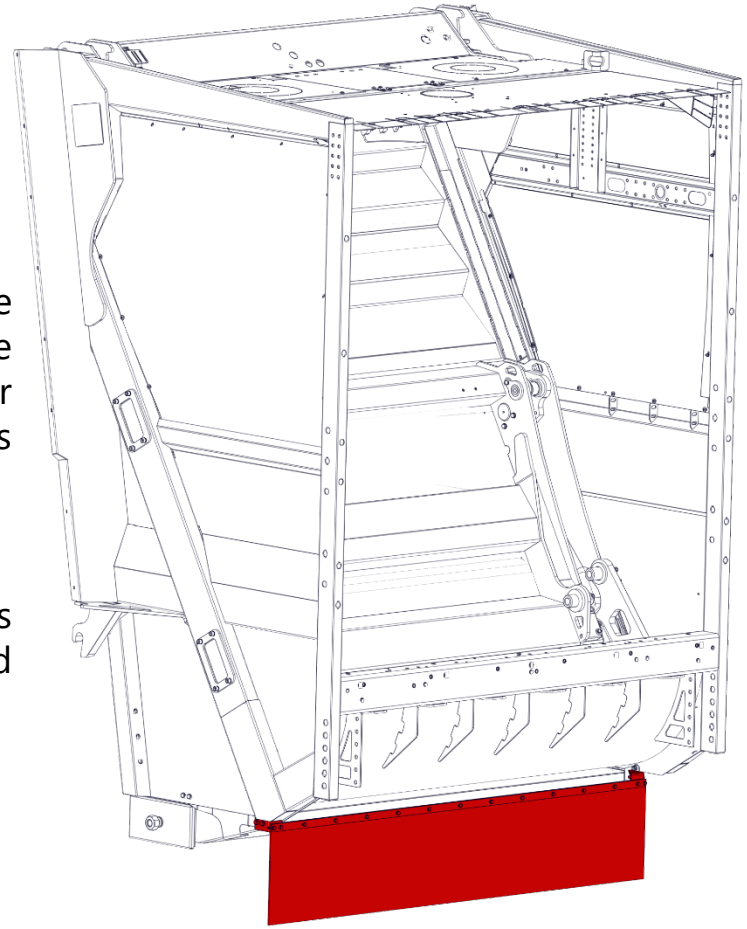
MEDIUM X4 – Mechanic – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Wastewater tank & mud flap



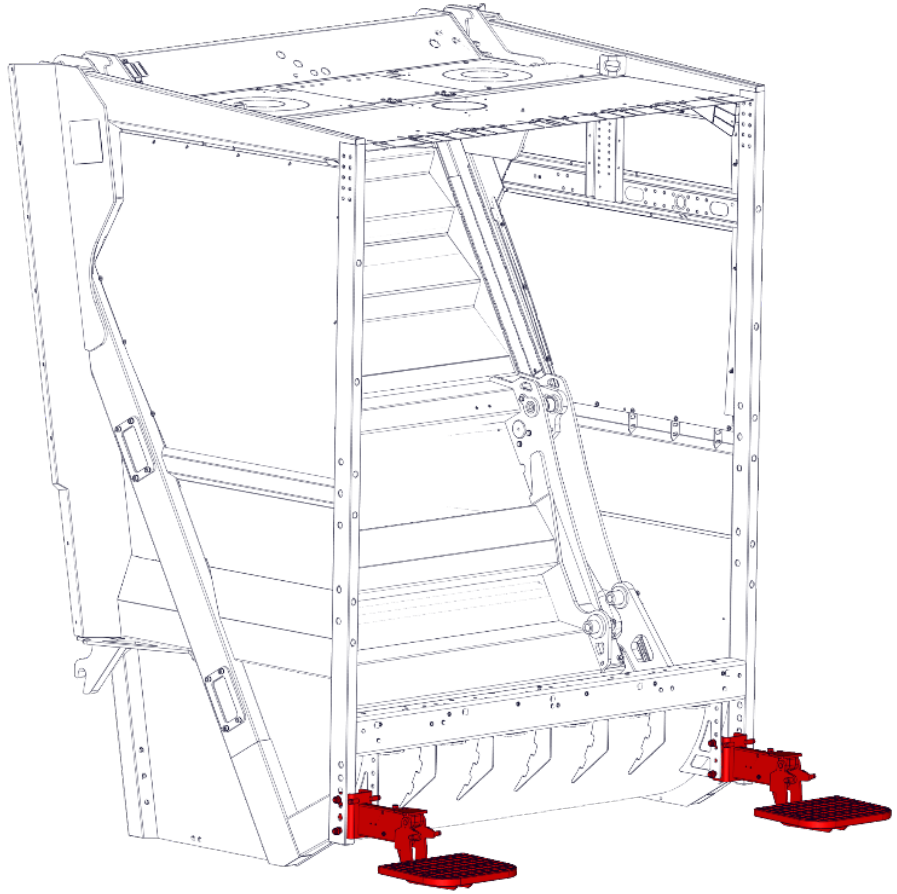
Stainless steel **wastewater tank** under the hopper is recommended if bio wastes are collected. It helps to keep the hopper cleaner and easily drain wastewater or other residues from a hopper

Rubber **mud flap** under the tailgate protects an operator who stands on the footboard against water splash or dust on the road



MEDIUM X4 – Mechanic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

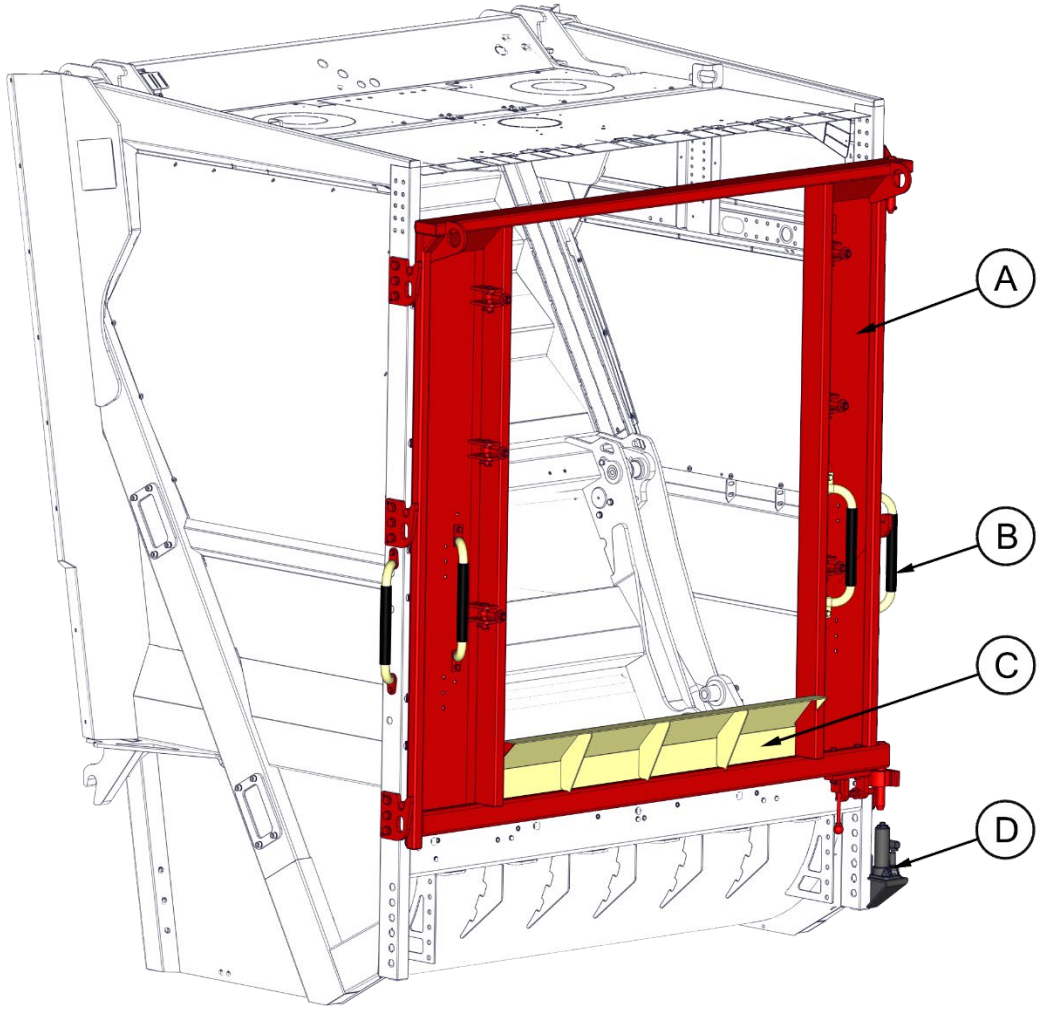
Footboard



Footboards are designed according to EN-1501 norm. Worker can travel only on the unfolded footboard position and using a handles

MEDIUM X4 – Mechanic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

Mounting frame



Mounting frame consists of **swivel door (A), operator holders (B), chute (C)** and **lift (D)**. This frame is necessary to install some types of lifters – especially demountable ones like Delta 2301. Chute gives an additional tailgate working volume – 0,7 m^3. Thanks to bolting units and lift, frame can be temporarily open and bulky waste can be collected and crushed by compaction mechanism. Frame can be equipped with hydraulic or manual lift

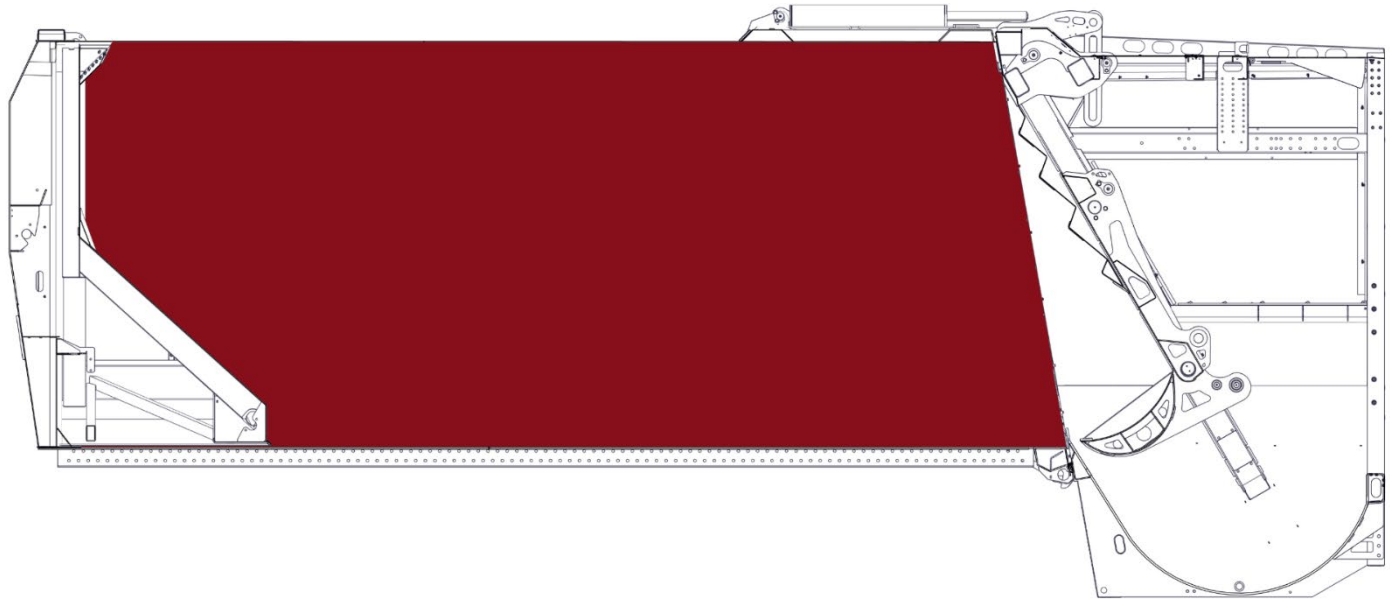
MEDIUM X4 – V20 body volumes

BODY PARAMETER		VALUE																																				
V20	BODY LENGTH * [mm]	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300**
	BODY VOLUME [m³]	11,5	12,0	12,4	12,9	13,4	13,8	14,3	14,7	15,2	15,7	16,1	16,6	17,0	17,5	18,0	18,4	18,9	19,3	19,8	20,3	20,7	21,2	21,6	22,1	22,6	23,0	23,5	23,9	24,4	24,9	25,3	26,2	26,7	27,2

*** other body length on a request**

**** special telescopic cylinder is needed – time of order realization is longer**

MIN 11,5 m³



MAX 27,2 m³

Technik entscheidet

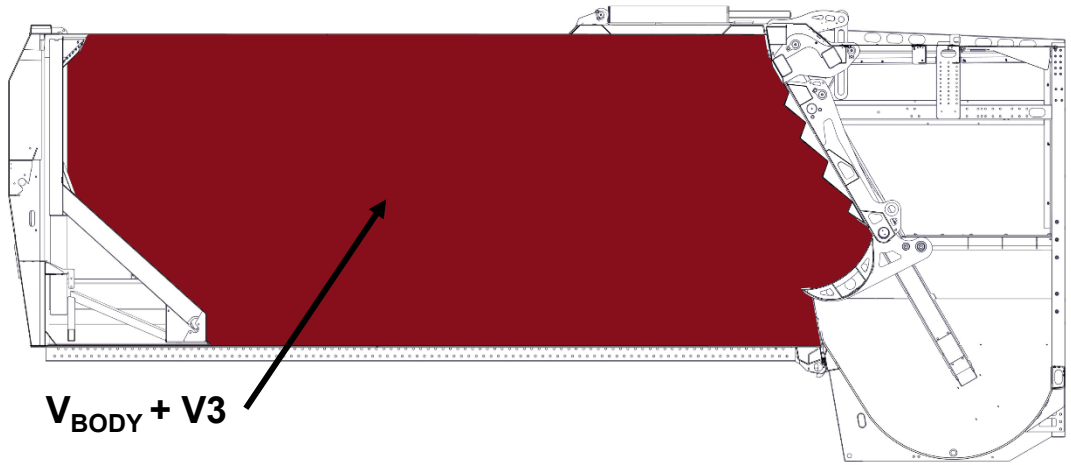
MEDIUM X4 + V20 BODY – Volumes acc. to EN-1501

BODY & TAILGATE PARAMETER		VALUE																														
MEDIUM X4 + V20	BODY LENGTH * [mm]	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300
	BODY VOLUME + V3 [m³]	11,8	12,3	12,8	13,2	13,7	14,1	14,6	15,1	15,5	16,0	16,4	16,9	17,4	17,8	18,3	18,7	19,2	19,7	20,1	20,6	21,0	21,5	22,0	22,4	22,9	23,3	23,8	24,3	24,7	25,2	25,6	26,6	27,0	27,5
	BODY VOLUME + V3 + V4 [m³]	12,1	12,6	13,1	13,5	14,0	14,4	14,9	15,4	15,8	16,3	16,7	17,2	17,7	18,1	18,6	19,0	19,5	20,0	20,4	20,9	21,3	21,8	22,3	22,7	23,2	23,6	24,1	24,6	25,0	25,5	25,9	26,9	27,3	27,8

*** other body length on a request** **** special telescopic cylinder is needed – time of order realization is longer**

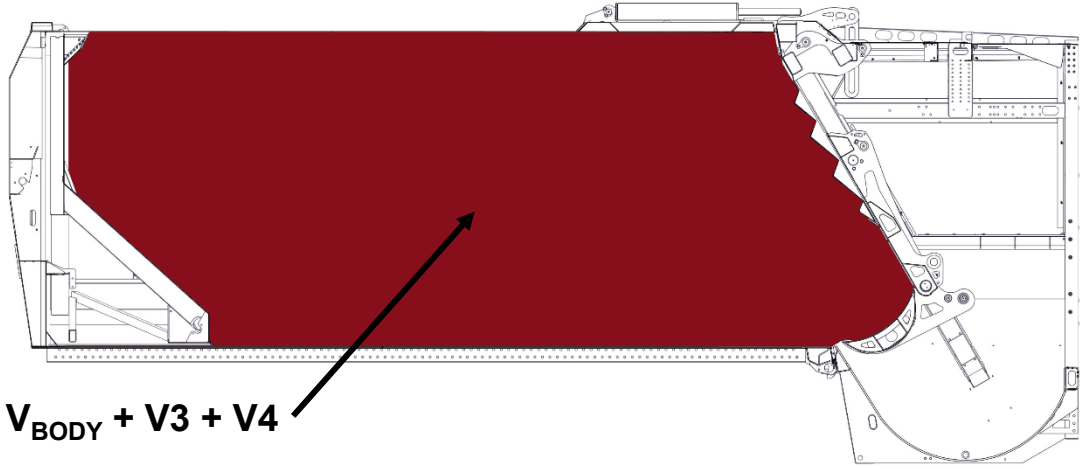
STANDARD

MIN 11,8 m³ **MAX 27,5 m³**

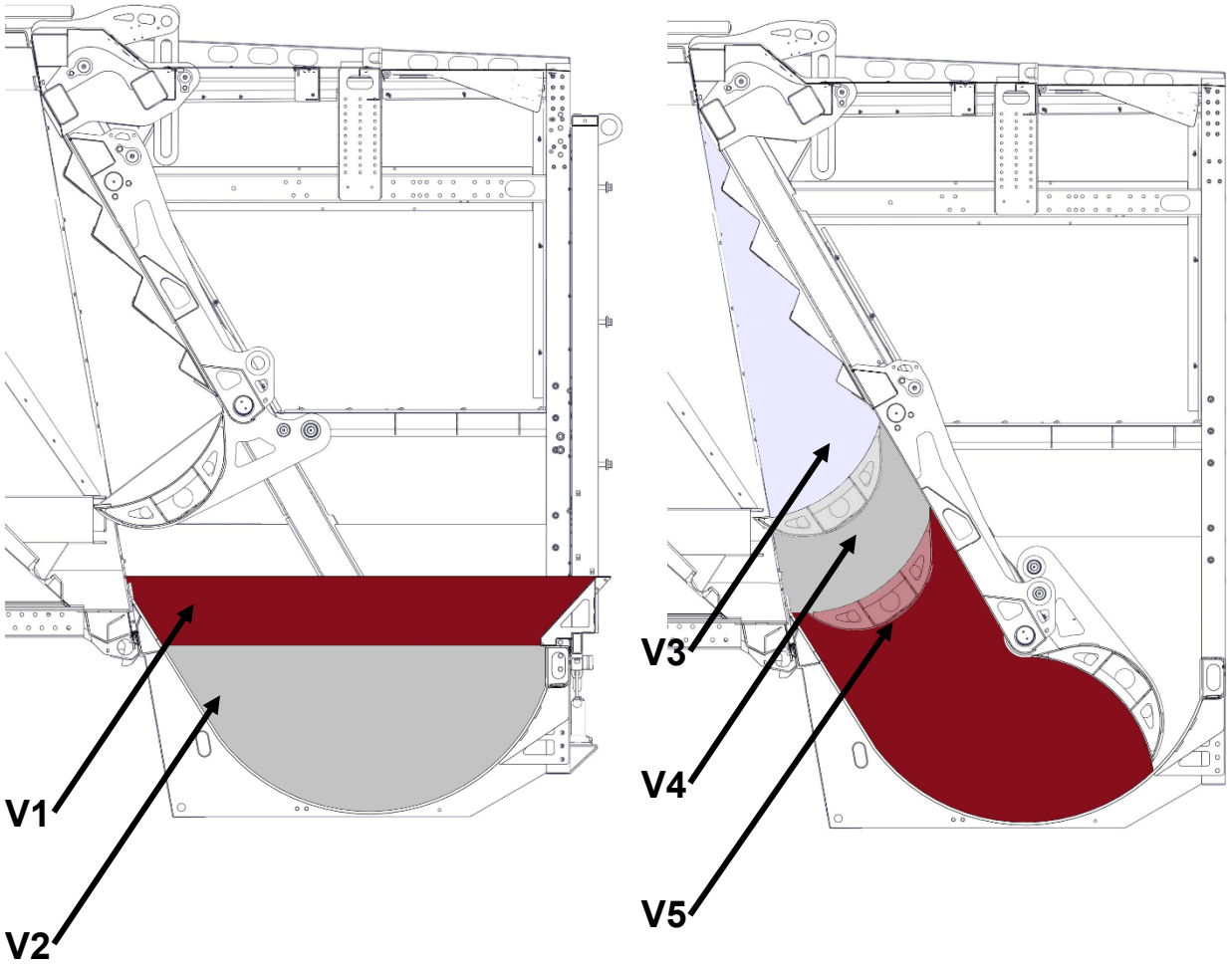


OPTION

MIN 12,1 m³ **MAX 27,8 m³**

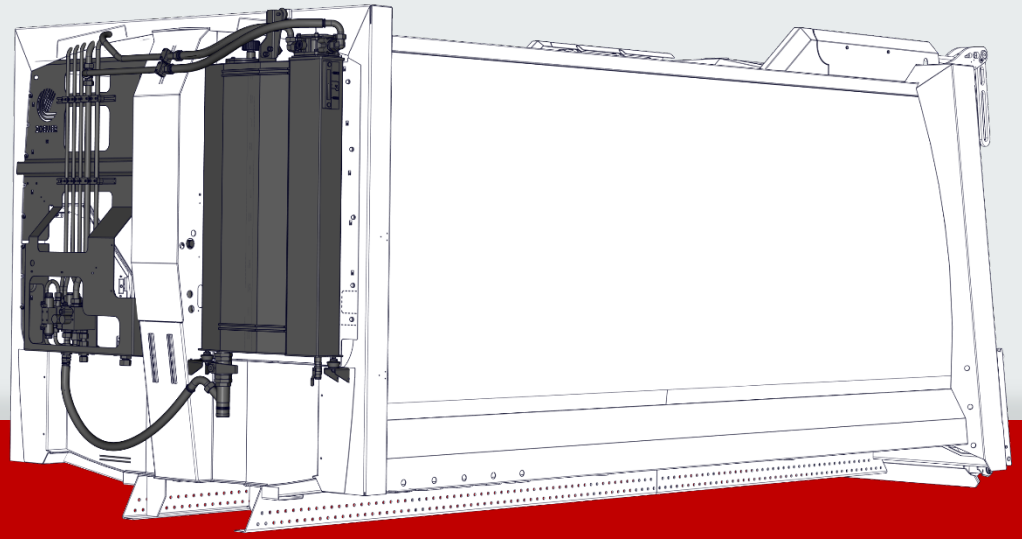


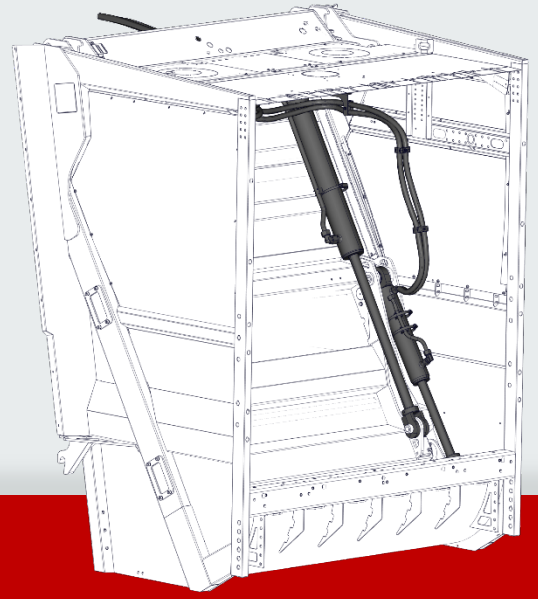
MEDIUM X4 TAILGATE – Volumes, cycle time & efficiencies



Type of taligate	V1 [m³]	V2 [m³]	V3 [m³]	V4 [m³]	V5 [m³]	T [s] max	T [s] min	L * [m³/min] max	L * [m³/min] min	Q [l/min] max	Q [l/min] min
MEDIUM X4	0,7	1,0	0,3	0,3	1,0	17	14	4,7	3,6	105	95
MEDIUM X2	0,8	1,4	0,8	0,6	1,5	20	17	6,2	4,5	85	75

V1	Guide flap volume (depends by lifter type)
V2	Hopper volume acc. to EN-1501
V3	Compaction mechanism closed volume
V4	Glass option volume
V5	Compaction mechanism volume in glass option
T	Cycle time
L	Compaction mechanism loading efficiency * It's counted for max T [s]: (MAX – V4+V5 ; MIN – V5)
Q	Pump output

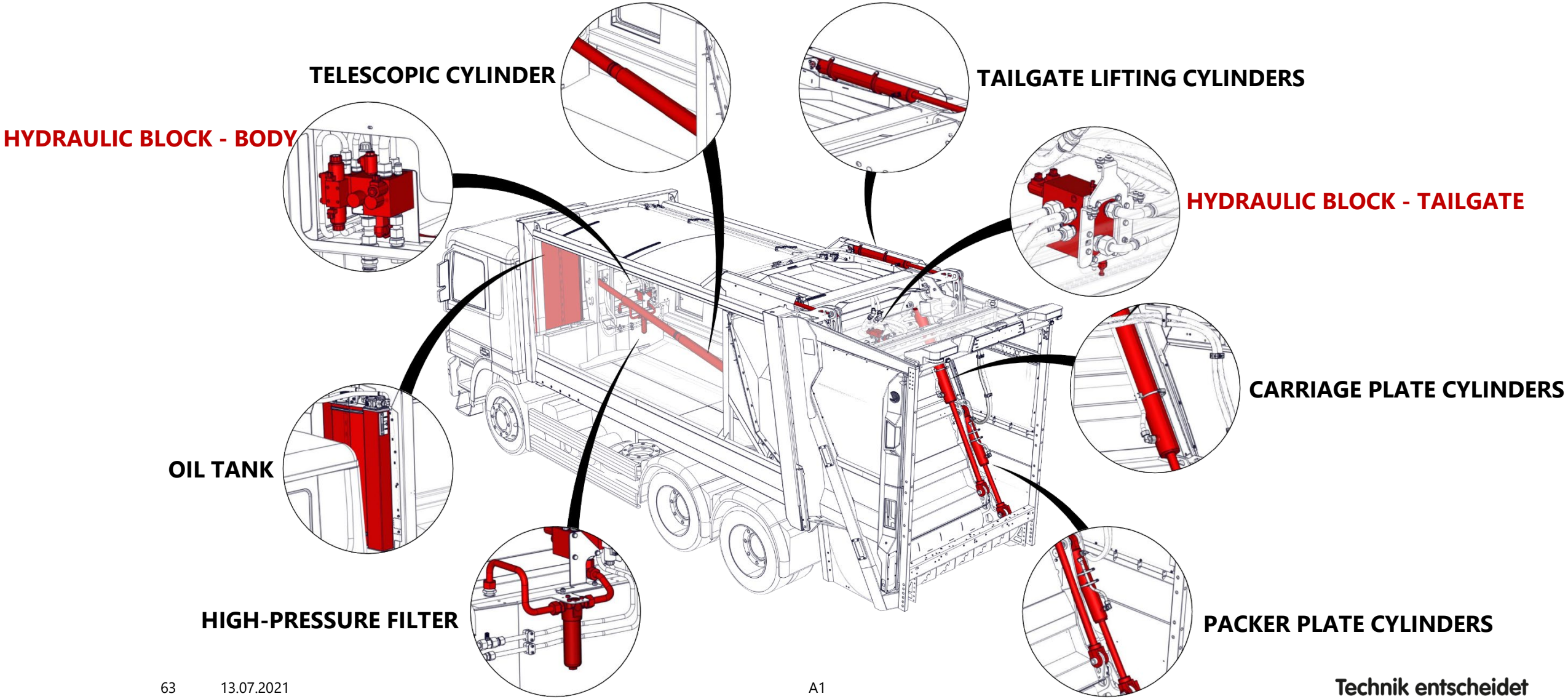




HYDRAULIC

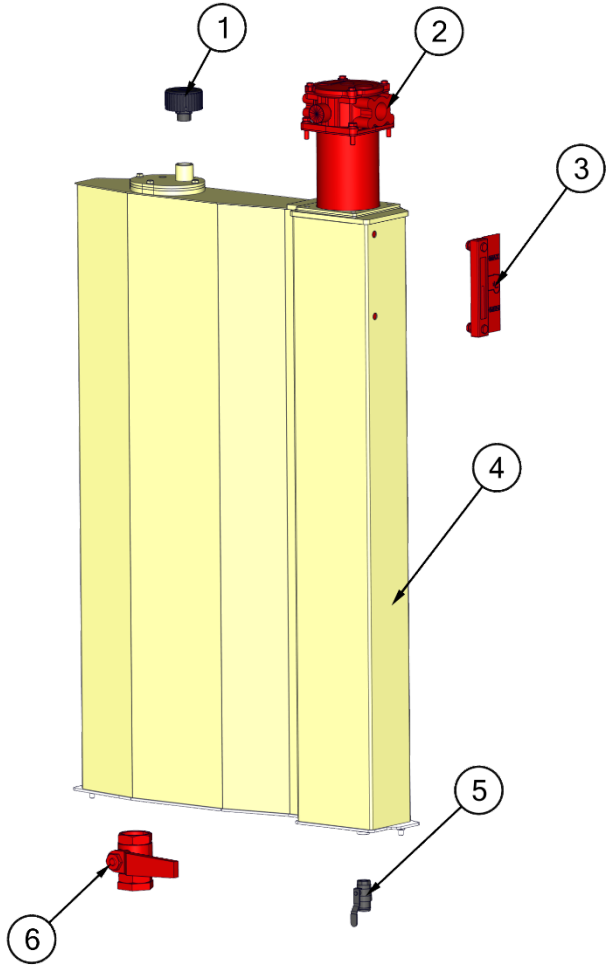
MEDIUM X4 – Hydraulic – STANDARD

Elements of hydraulic installation



MEDIUM X4 – Hydraulic – STANDARD

Body front frame oil tank



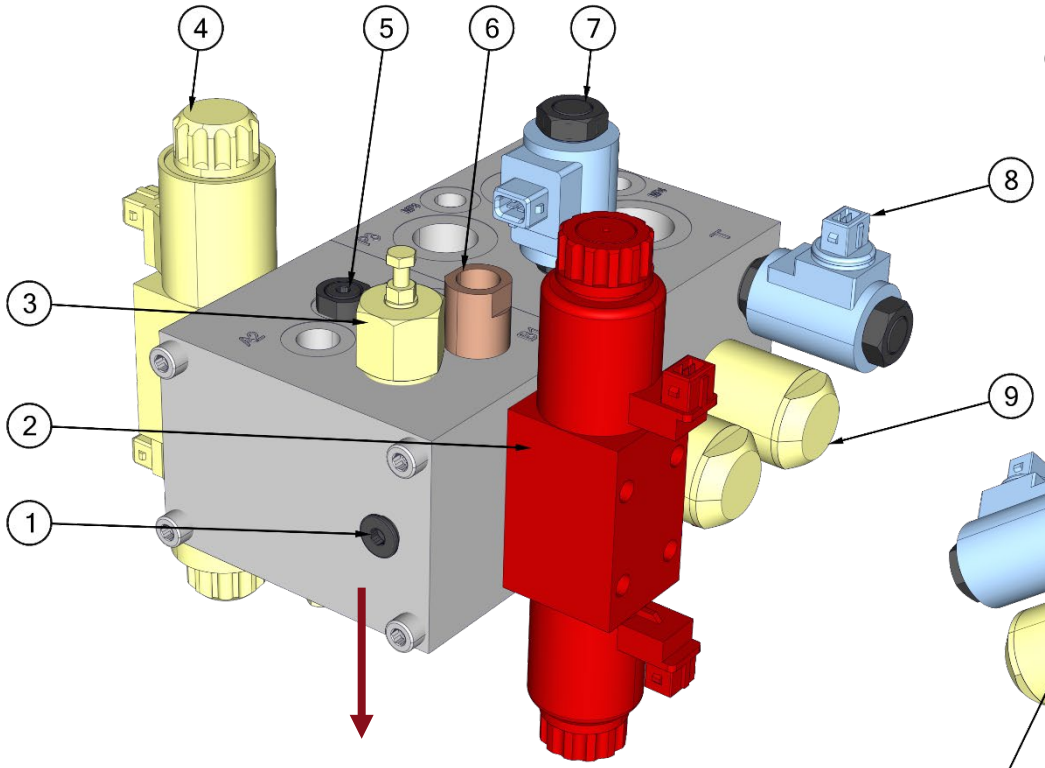
Using a **ventilation filter** in hydraulic installation, the outside air that is drawn in is filtered and the ingress of dust is therefore prevented. On the side of oil tank there is **oil level indicator** with the minimum and maximum level mark

Shut-off valve and **ball valve** are used to change oil in hydraulic installation. Shut-off valve close the oil flow to the pump. Ball valve is used to drain oil from tank. While filling oil in a hydraulic system the oil level indicator need to be between max and min level

MEDIUM X4	
1	Ventilation filter with a filling connector
2	Return filter
3	Oil level indicator
4	Hydraulic oil tank
5	Open ball valve
6	Shut-off valve

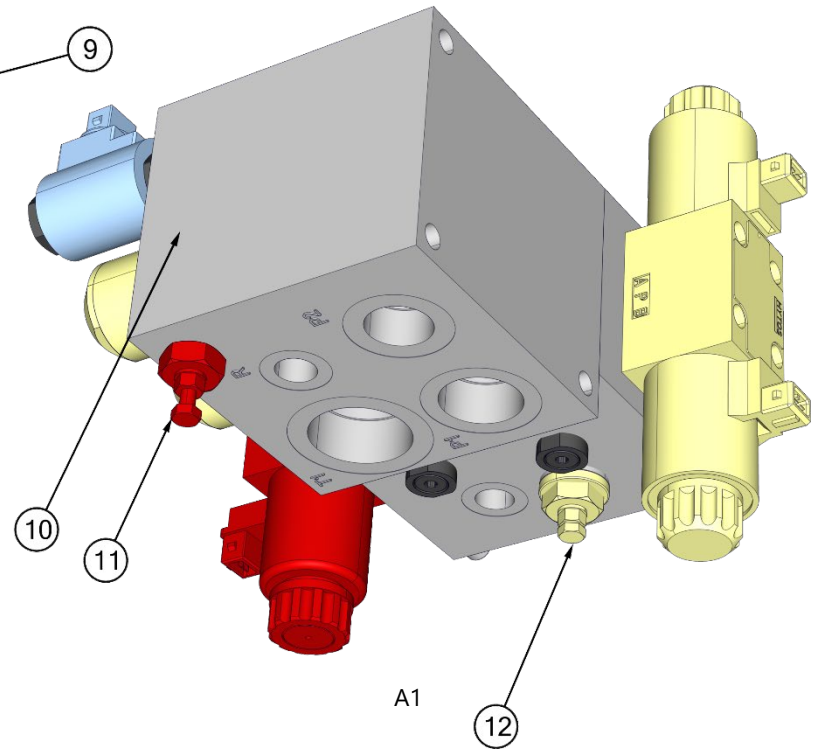
MEDIUM X4 – Hydraulic – STANDARD

Hydraulic block on the front frame



EJECTION PLATE/TAILGATE

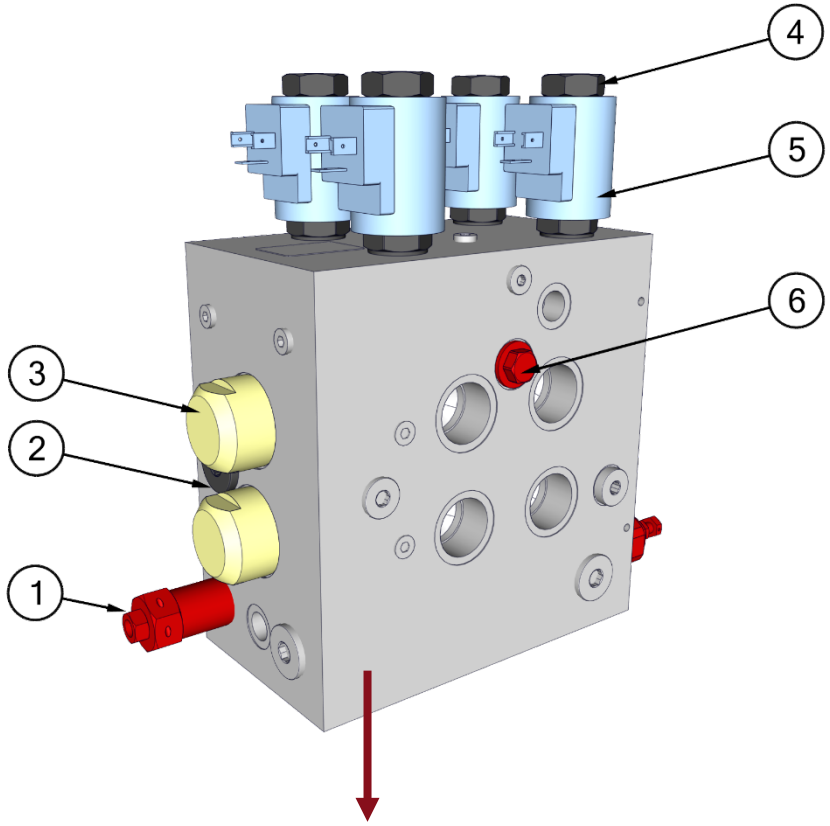
Hydraulic block on the front frame is responsible for ejection plate and opening & closing tailgate



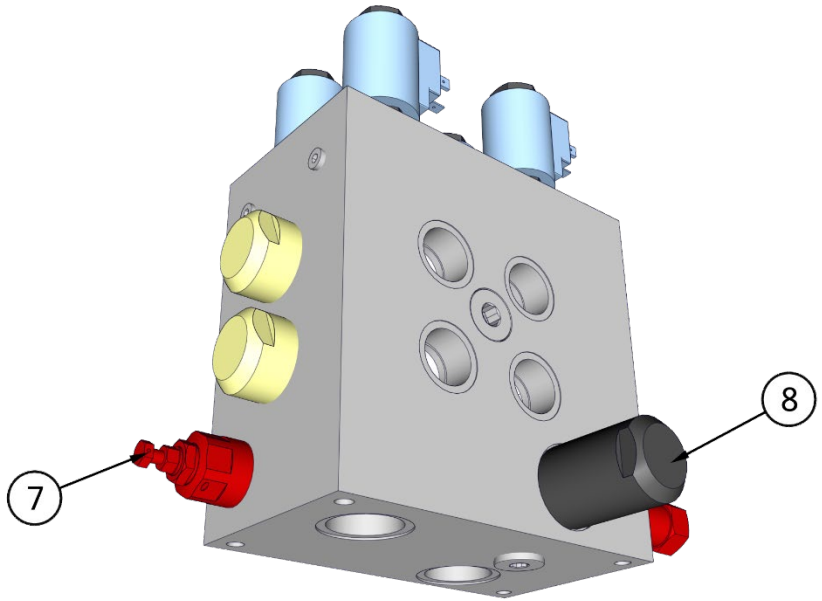
MEDIUM X4	
1	Check valve ng8,5
2	Proportional valve
3	Pressure relief valve
4	4/3 way pilot valve
5	Check valve cartridge
6	Adaptor long ng4
7	3/2 way pilot valve
8	Solenoid coil 27v dc
9	Cap with spring
10	Manifold
11	Pressure relief valve
12	Pressure relief valve

MEDIUM X4 – Hydraulic – STANDARD

Hydraulic block on the tailgate



Hydraulic block on the tailgate is responsible for compaction mechanism movement. Its directly connected with packer & carriage plate cylinders



MEDIUM X4	
1	Pressure relief valve lp3
2	Anti cavitation check valve
3	Cap with spring
4	3/2 way pilot valve
5	Solenoid coil 24v dc
6	Cap with spring
7	Pressure relief valve lp4
8	Controller

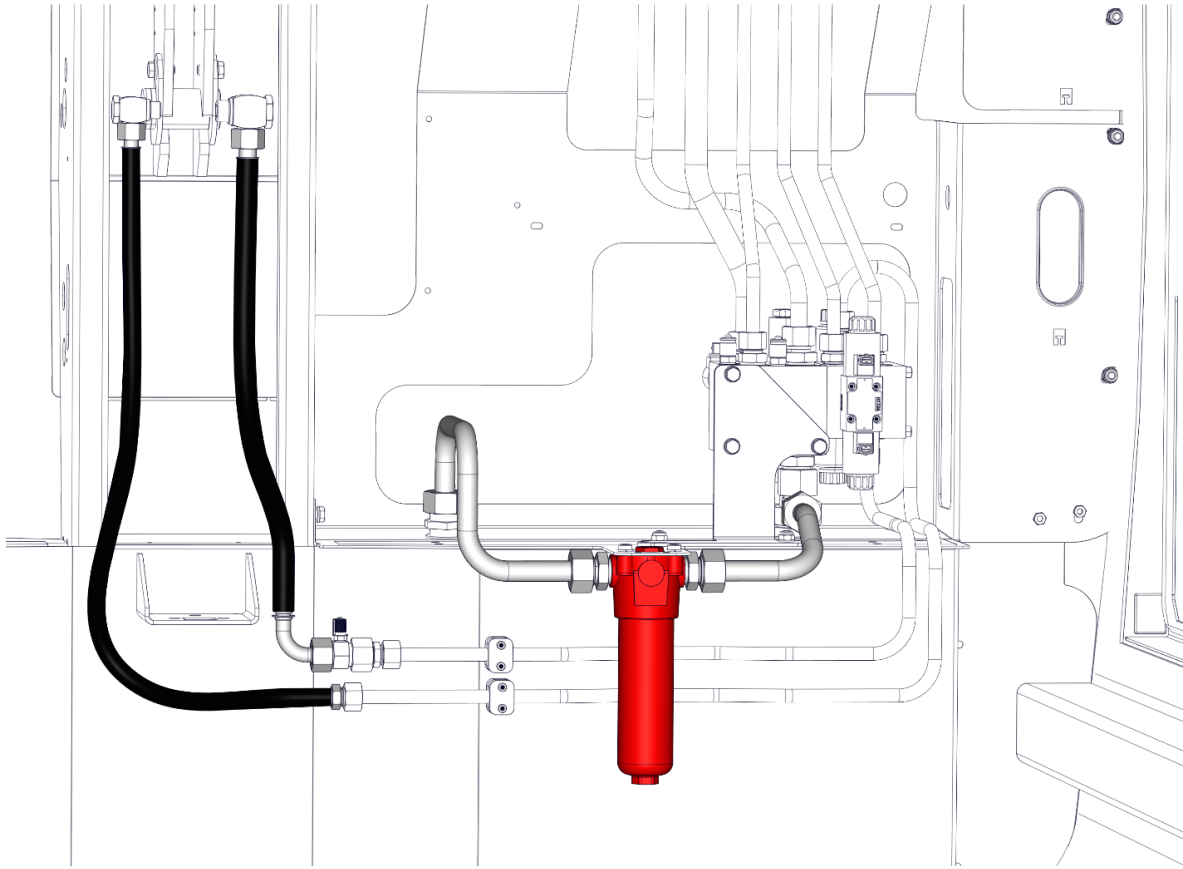
MEDIUM X4 – Hydraulic – STANDARD

High-pressure filter

Variant I high-pressure filter option for reversible oil flow
Technical data:

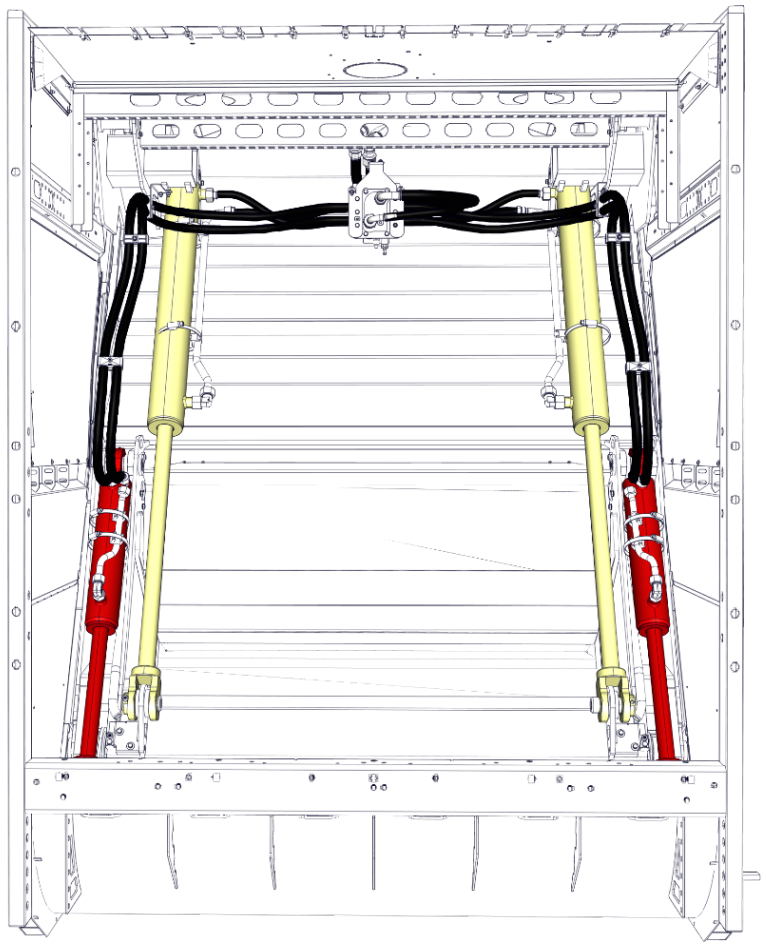
- ✓ Type: inline filter
- ✓ Working temperature: -30°C to +100°C
- ✓ Clogging indicator: stainless steel blanking plug in indicator port
- ✓ Filter media: optimicron 10 µm

Easy access to the filter element from inside the Body.



MEDIUM X4 – Hydraulic – STANDARD & OPTION

Solid cylinders



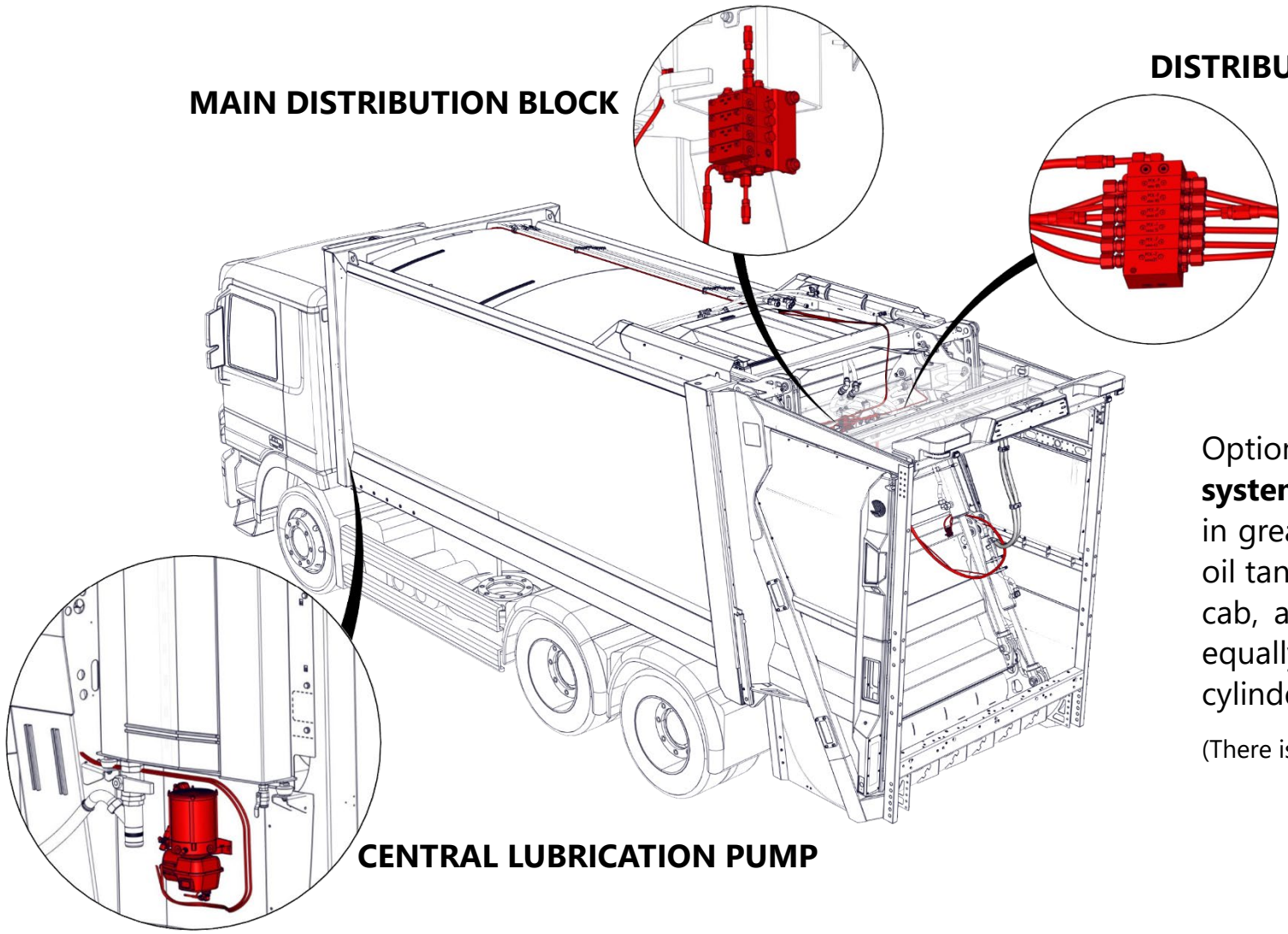
SOLID CYLINDERS

Cylinders in tailgate hydraulic installation respond to compaction mechanism movement:

- ✓ **Standard:** piston rods of solid cylinders are positioned in the bottom part

MEDIUM X4 – Hydraulic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

Central lubrication system

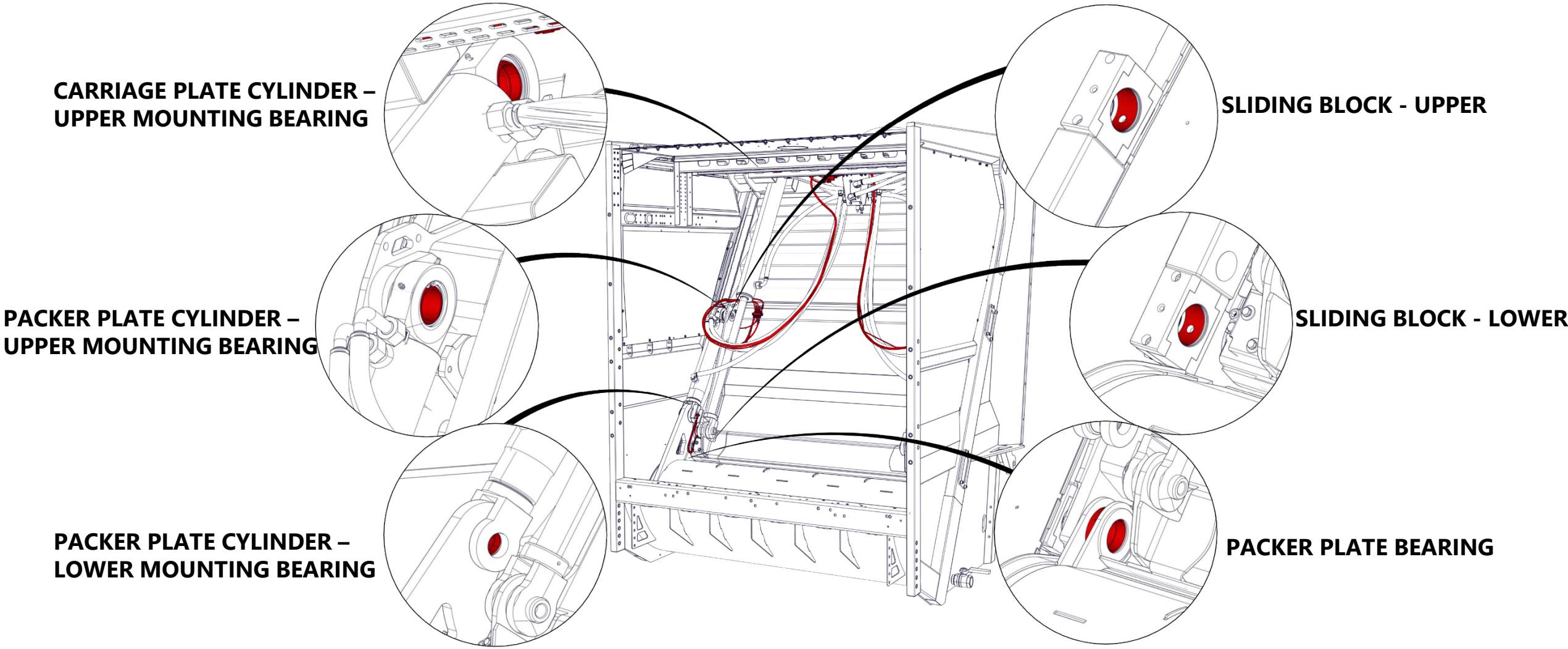


Optionally the body can be equipped with a **central lubrication system**. The main element of the system is a pump with a built-in grease tank, and it's mounted on the body front frame under oil tank. The pump is started automatically by the terminal in the cab, according to the programmed schedule. Pump lubricates equally left and right side points on compaction mechanism: cylinders, bearings and sliding blocks

(There is also option to lubricate the lifter and chassis)

MEDIUM X4 – Hydraulic – OPTION **(ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)**

Lubrication points on tailgate – in total 12 points (6 left & 6 right)



MEDIUM X4 – Hydraulic – OPTION (ONLY EXAMPLES ARE SHOWN, MORE AVALIABLE OPTIONS IN CONFIGURATOR)

Main distrubution block