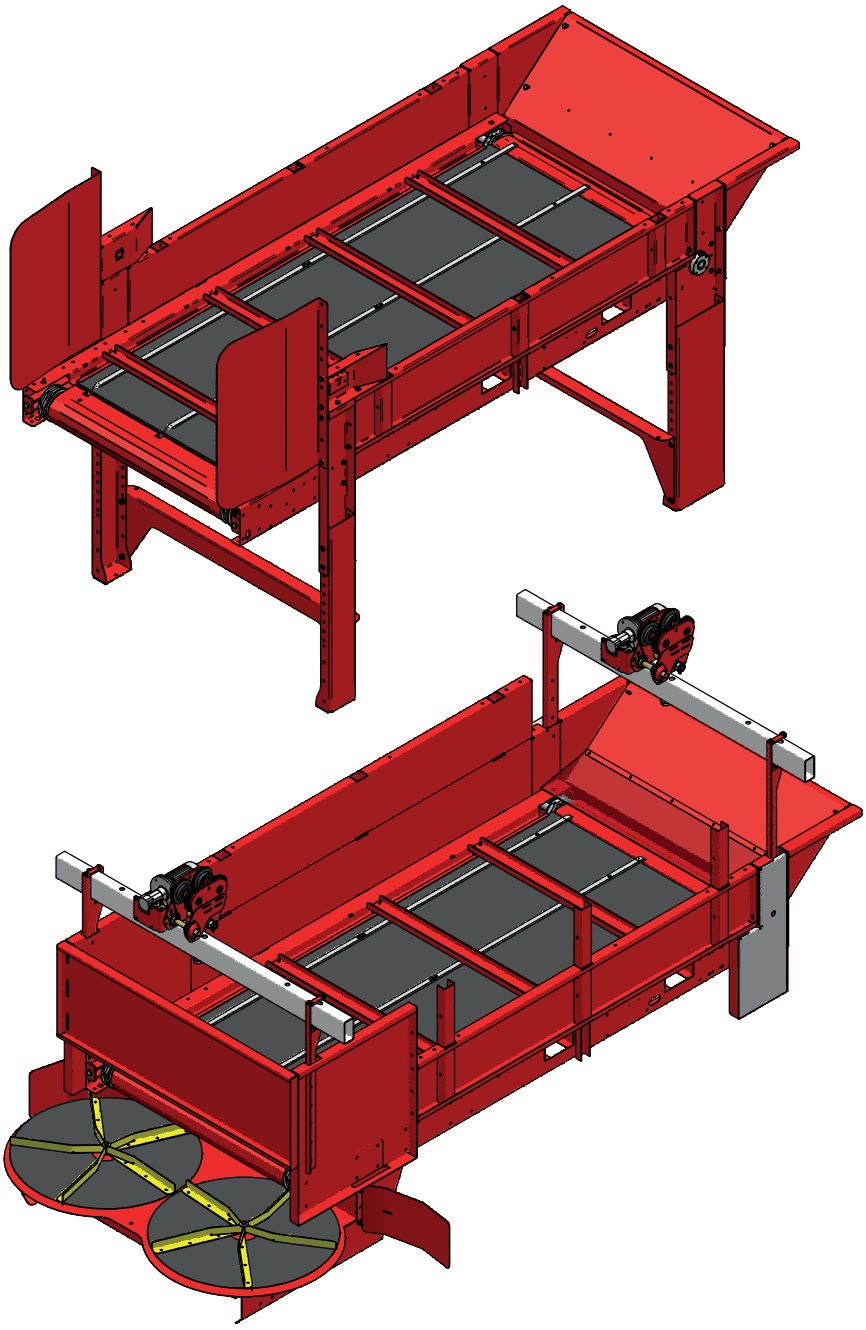
Operator's manual - Spare parts list Magazine R2



CE - Certificate of conformity

We,
T. Kverneland & Sønner AS,

Kvernelandsvegen 100
N-4355 Kverneland
Norge
declare that the product:

TKS - Magazine R2

has been built in conformity with the Machine Directive and meets the relevant fundamental health and safety requirements.

Kverneland, 31 March 2018

Atle Sjølyst - Kverneland

Atle Sjølyst - Kverneland
Daglig leder

Enter the serial number of the machine here:

_____

T. Kverneland & Sønner AS, manufacturer of agricultural products, reserves the right to change the design and/ or specification of its products without prior warning.
This does not imply any obligation to modify previously supplied machines.

Guarantee

This TKS product is guaranteed against manufacturing and material defects for one year.

If the owner wishes a defect to be covered by the product guarantee, he or his representative must inform the dealer of this when ordering parts and/ or repairs.
Claims must be reported within the guarantee period.
The dealer must complete a claims form for each case covered by a guarantee and send it to TKS or TKS's distributor/ importer within the 10th of the month following the one in which the defect was reported.
The defective parts shall be marked with the claim number and be kept for up to 6 months so that TKS or TKS's distributor/ importer can inspect them.
Since TKS products are used outside the manufacturer's control, we can only guarantee the product quality, and not that it will perform its function, nor are we liable for any consequential damage.

The guarantee is not valid if:

a) third party spare parts are used, or the product is repaired or altered without the approval of TKS.
b) the operating and servicing instructions have not been followed.
c) the machine has been used for other purposes than those for which it is designed.

The guarantee does not cover damage due to normal wear and tear.
Official safety regulations specify requirements that apply to the users/ owners and manufacturers of this machine, relating to the careful review of safety hazards that may arise when this type of machine is used correctly.
Therefore, TKS and our importer/ distributor are not responsible for the functioning of components that are not shown in the spare parts catalogue for this product. TKS reserves the right to change the design of the product without this implying any obligations in relation to previously supplied machines.

NB! It must be possible to identify all enquiries relating to this product by the product's serial number; see page 7 on Machine identification.

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Introduction

Congratulations on buying your new TKS product. You have chosen a functional, high quality product. A network of helpful dealers will be able to advise you on its use, as well as provide servicing and spare parts.
All TKS products are designed, tested and built in close cooperation with farmers and machine workshops to ensure optimal efficiency and reliability.

Please read this instruction manual carefully and familiarise yourself with the machine‘s manner of operation before starting to use it. There are many conditions and variables that can affect the machine’s functionality and manner of operation. It is therefore vital that you consider all known conditions and adapt usage according to these. A good understanding of the machine‘s manner of operation and performance, together with a high degree of knowledge with regard to feeding and feed types/consistencies will ensure the best possible result. The machine is a highly advanced feed robot that operates without the need for supervision and must be used in accordance with the applicable instructions from the manufacturer and other regulations in force at any given time.

By being thorough and making the necessary adaptations to local conditions, you will ensure the best possible results.

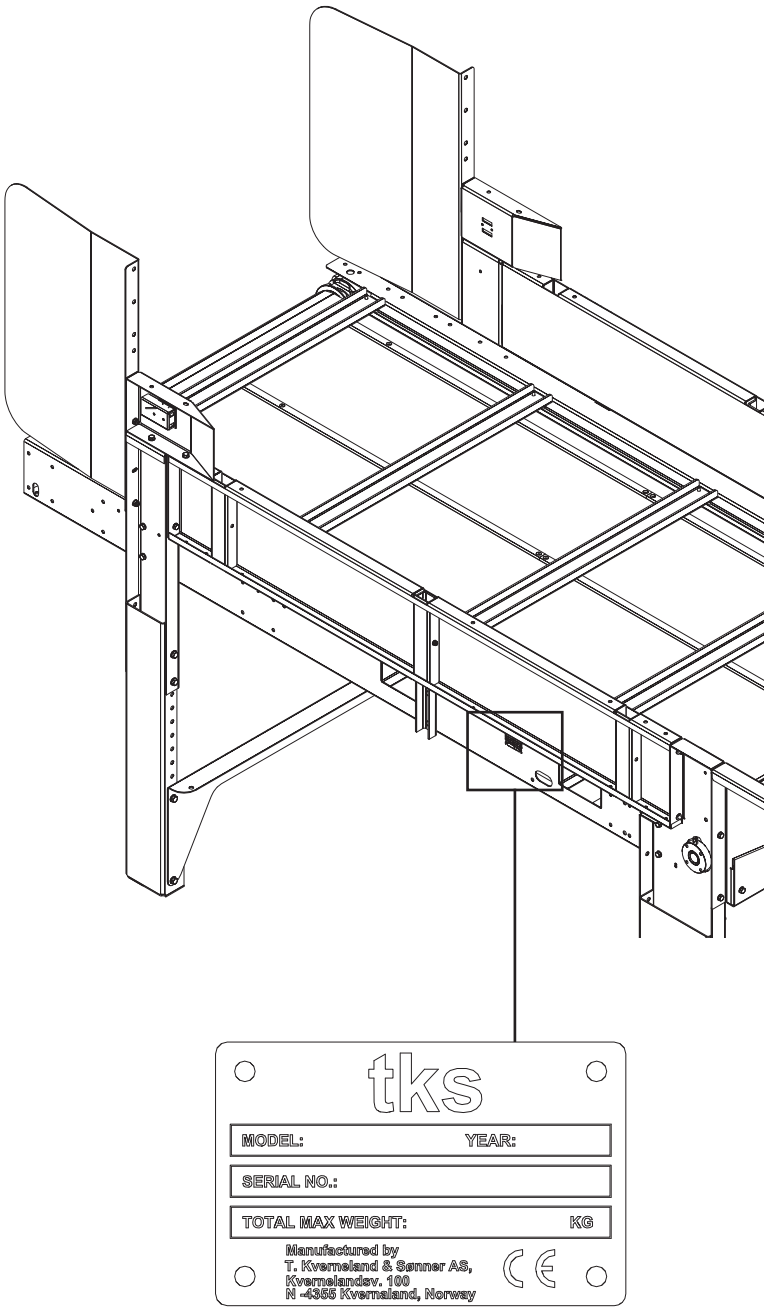
Yours faithfully
T. Kverneland & Sønner AS

T. Kverneland & Sønner AS,
Kvernelandsvegen 100
N-4355 Kverneland
Norway

www.tks-as.no
e-post : post@tks-as.no
Phone : + 47 51 77 05 00

Machine identification

The machine's serial number and the address of the manufacturer are written on the machine. See the illustration on this page.
Please use the information on the name plate when making any enquiries about spare parts or servicing.
This product is CE marked. This mark, along with the associated written EU confirmation, means that the product fulfils current health and safety requirements, and complies with the following directives: Machine Directive

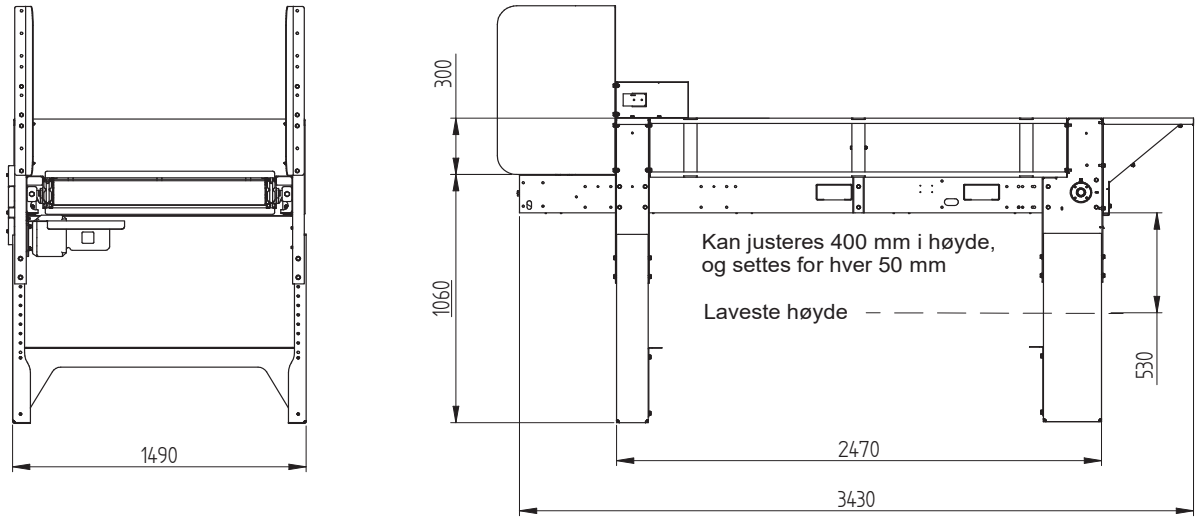


IR2_02

Dimensions Magazine R2

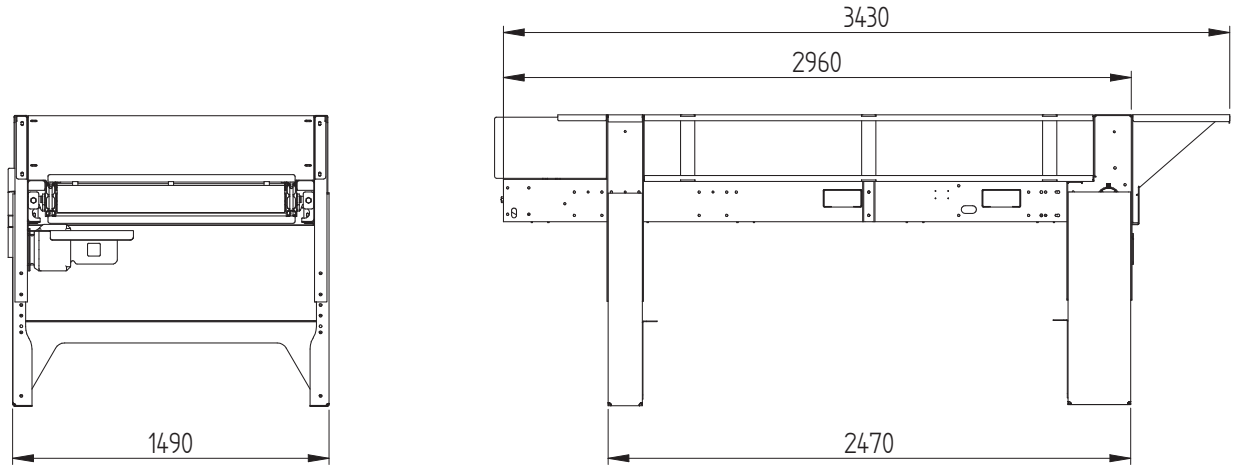
All measurements are in mm

Magazine R2 autofilling 3m



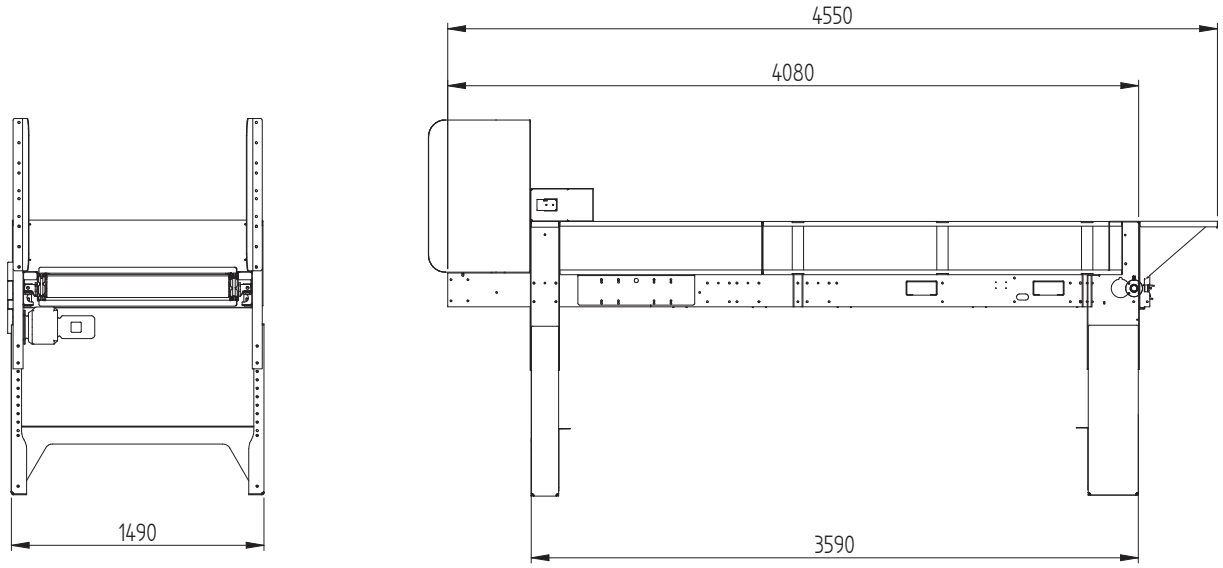
IR2_13

Magazine R2 stationary 3m



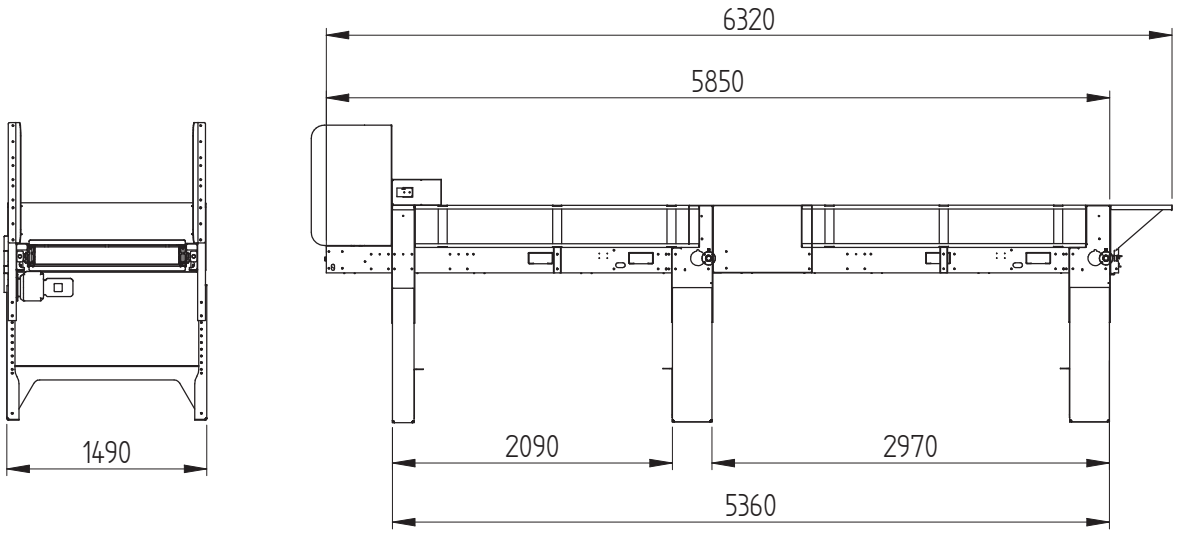
IR2_06

Magazine R2 3m + 1m



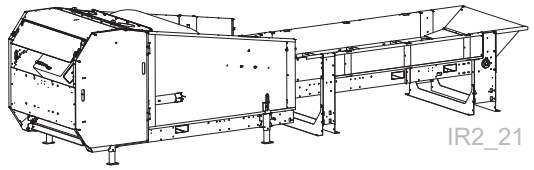
IR2_07

Magazine R2 3m + 3m

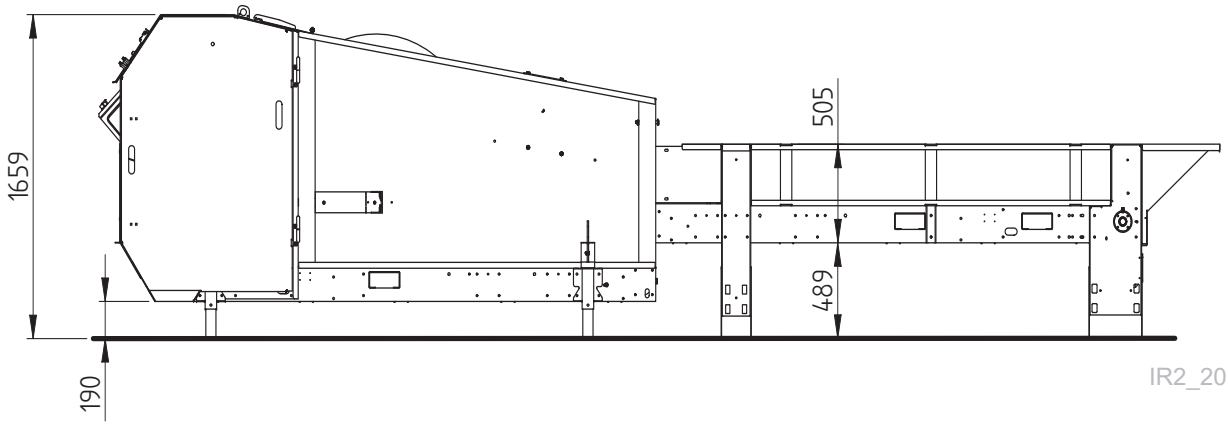


IR2_08

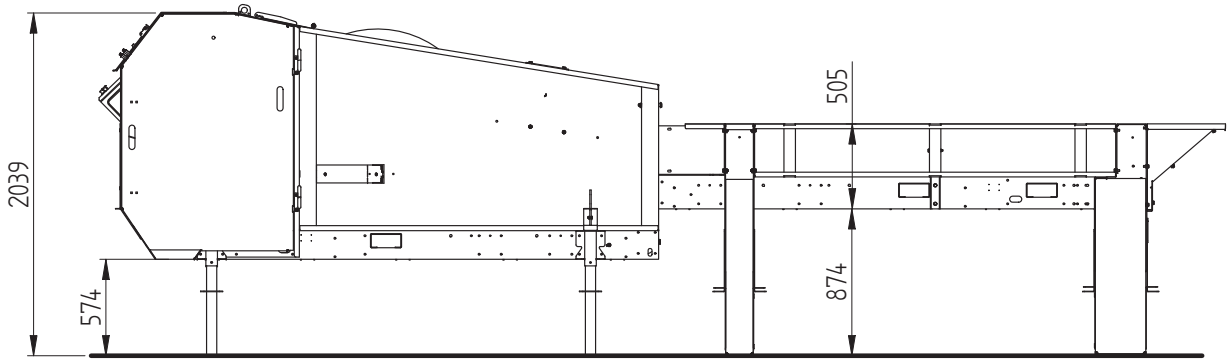
Magazine R2 stationary filling



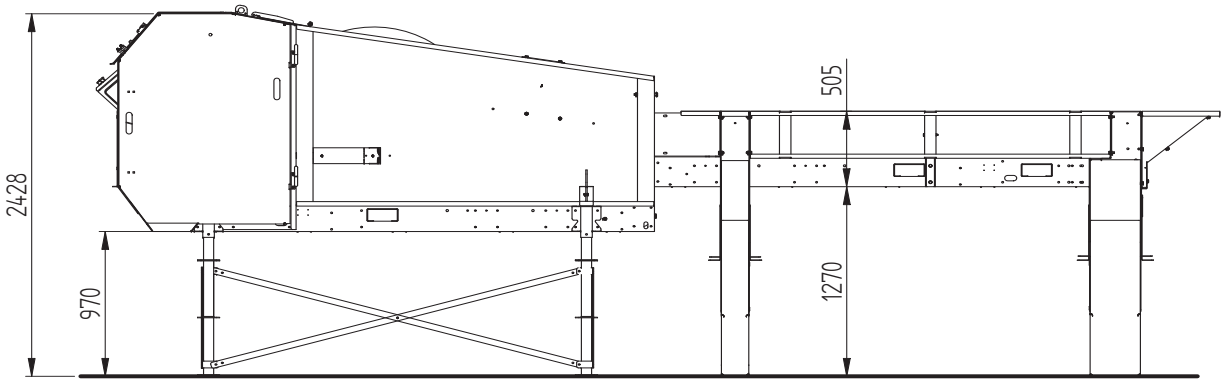
IR2_21



IR2_20

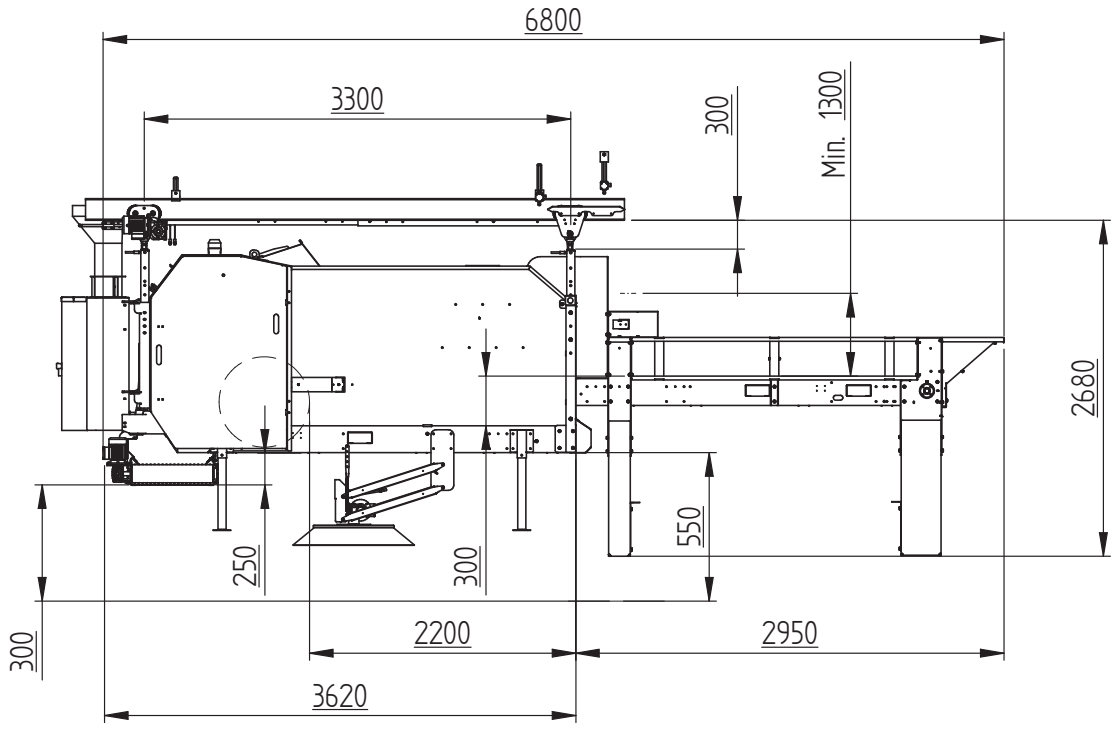


IR2_22



IR2_23

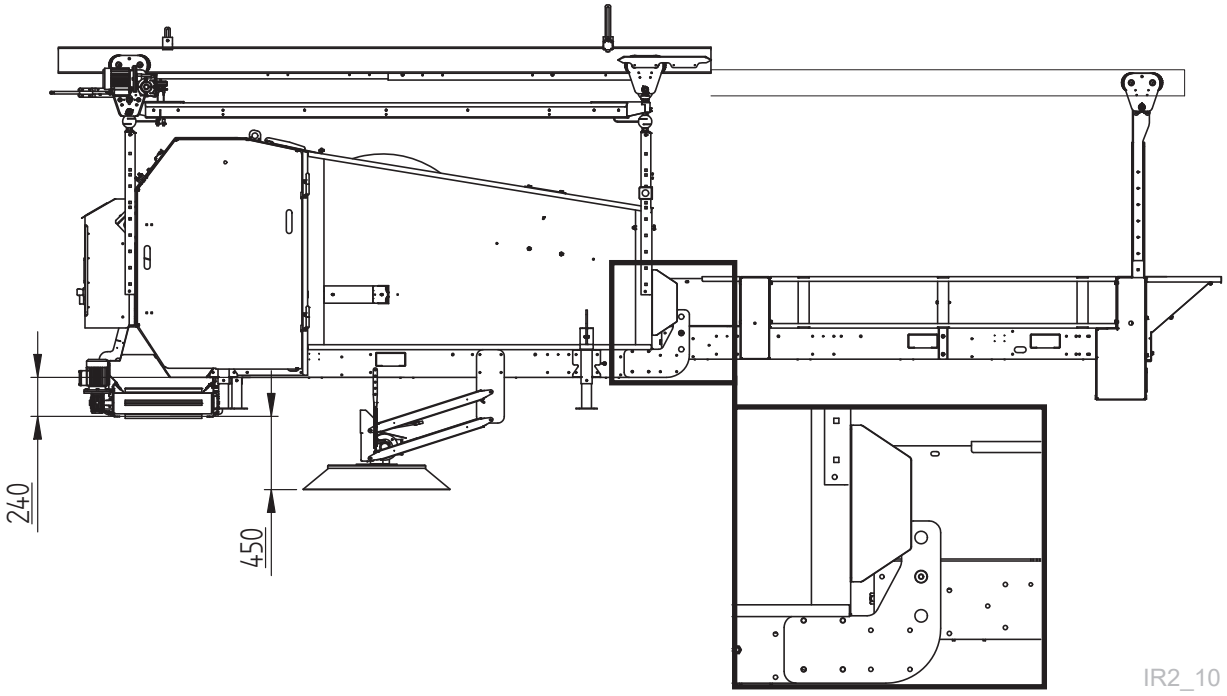
Magazine R2 stationary, together with K2 on rails



IR2_11

NB! The round bale must go underneath the crossbeam on the suspension.

Magazine R2 stationary, together with K2 on rails



IR2_10

Technical data

WEIGHT Magazine R2	590 Kg	
POWER		
LOOR BELT	0,75	KW
ELECTRICITY		
CONTROL CURRENT	24	V (DC)
VOLTAGE	230/240	V (N/BY 400V)
VOLTAGE TOLERANCE	+/- 10%	

Model description and area of use

The TKS Magazine R2 is an add-on unit for use with K2 CombiCutter and TKS Robot carriages.
The Magazine R2 can be used for storing feed for up to 24 hours.
It is suitable for round/square bales, blocks from silage pits and for silage loads.
The Magazine can be supplied in different sizes holding from 2 to 6 round bales and is suitable for most uses.

It is important to take size into account when choosing a Magazine R2 so that it is capable of storing feed for a full 24 hours. The Magazine R2 can therefore be supplied as a stationary unit or on rails for use in combination with a cutter.

Operation

- The Magazine R2 is operated using one or two geared motors, depending on the size of the Magazine
- Round bales and silage can be loaded into the machine from the rear and from both sides.
- The pendant control is located at the front of the Magazine but can be pulled out during operation in order to operate the Magazine while also monitoring the mass.
- A separate operating panel is supplied for use in combination with TKS Robot carriages and should be installed in a suitable location.

NOTE! The recommendations contained in this instruction manual are based on normal use. Individual users may encounter situations that require a different approach from the guidelines given here. Changes to the machine and equipment as a result of such situations do not give grounds for claims against the manufacturer or supplier.

Accessories:
Extension 1m and 3m
Ceiling-mounted

Safety

Please pay particular attention to this symbol. It means that there is a safety risk, and describes precautions that should be taken in order to avoid accidents.

Before operating, adjusting or repairing the machine, the user, technician or owner should familiarise himself with the safety instructions contained in this installation manual.
Pay attention and be careful when handling agricultural machinery. Read and take note of the safety instructions in this manual.

Safety at work is your responsibility!

General safety instructions

Please read and understand these general safety instructions.

Use of the machine
The machine must only be used for the purpose for which it is designed.

Operation
The operator of the machine must stay at the end of the machine where the control panel is located.

Supervision
The operator should monitor the machine continually before start-up and during operation. This is very important in order to ensure optimum operating safety.

How the machine works
The operator must familiarise himself with how the machine works and functions, so that it can be used safely and properly.

Keep a safe distance
Humans and animals must be kept away from the machine when it is in operation.
Keep your distance from working, rotating and moving parts.

Be safety conscious
Never enter the machine when it is in operation.
When performing maintenance, disconnect the power supply.

Shields
Check that all shields are sound and correctly installed. Do not start the machine before doing this.
Damaged screens must be repaired or replaced immediately.

Spare parts
For safety reasons we recommend that you only use original spare parts. The use of third-party spares invalidates the product guarantee.

Maintenance
Ensure that the machine is properly maintained and is kept in good condition. Never attempt to change the mechanical workings of the machine.

Control panel
The power supply must be cut off before opening the panel

Additional safety instructions

The machine is marked with warning signs. If these signs are damaged, they must be replaced.
The order number is shown on the illustrations in this section.
See Fig. 4 for their location on the machine.

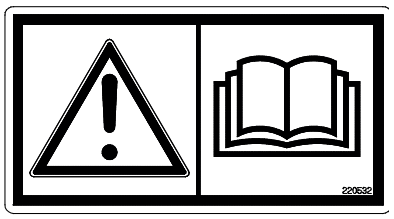


Fig. 1

Warning sign UH220532 (Fig. 1)
Caution! Read and understand the instruction manual before using the machine, and before making any adjustments or performing any maintenance.

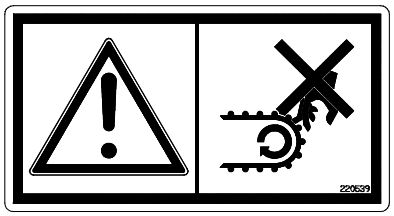


Fig. 2

Warning sign UH220539 (Fig. 2)
Risk of breaking your fingers. You risk breaking your fingers if you trap them between the conveyor and the base.

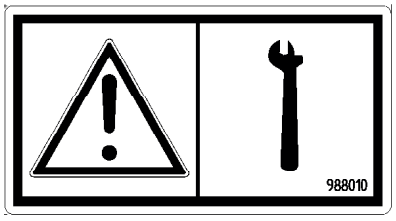


Fig. 3

Warning sign 988010 (Fig. 3)
NB! The conveyor belt must be kept tight, and the screws on the belt must be retightened.

Overview of safety risks

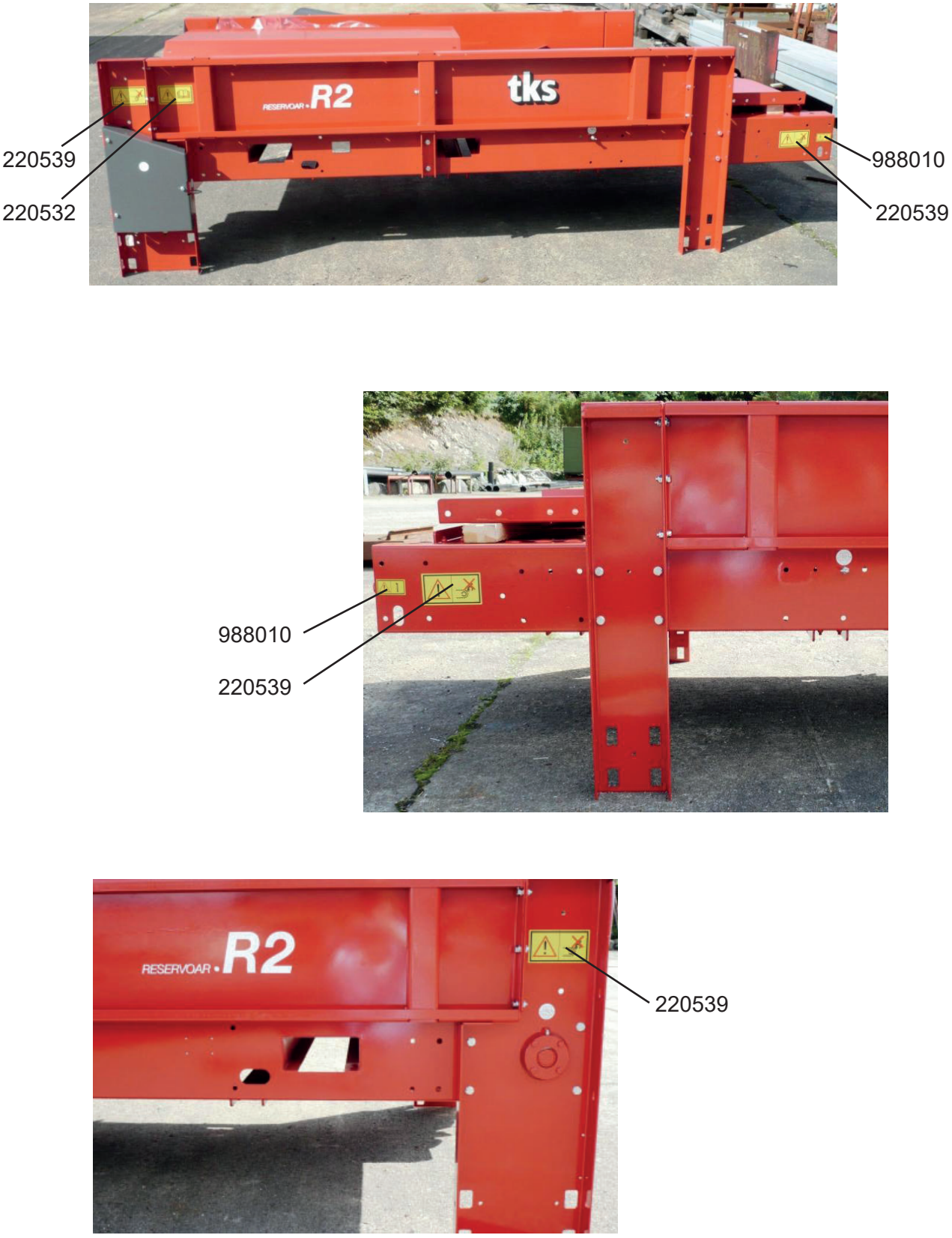


Fig. 4

Lifting the Magazine with a crane

Only use approved lifting equipment.
We recommend using a front loader or forklift truck to move the Magazine R2 .
See Fig. 5

Caution!
Ensure that no-one is under or close to the Magazine when it is being lifted

New machine – caution

Read the instruction manual.
Be particularly careful when starting a new machine for the first time. Installation faults, incorrect operation, etc. may lead to expensive repairs and loss of earnings. The TKS product guarantee does not cover damage resulting from failure to follow the recommendations contained in the instruction manual.
Please pay particular attention to this symbol. It is used to highlight important information, to help prevent incorrect installation and operation.

Pay particular attention to the following when commissioning a new machine:
Check that the machine is correctly installed and that it is not damaged. Check that electric cables are long enough and positioned such that they can follow the movements of the machine without being damaged.

Lifting point

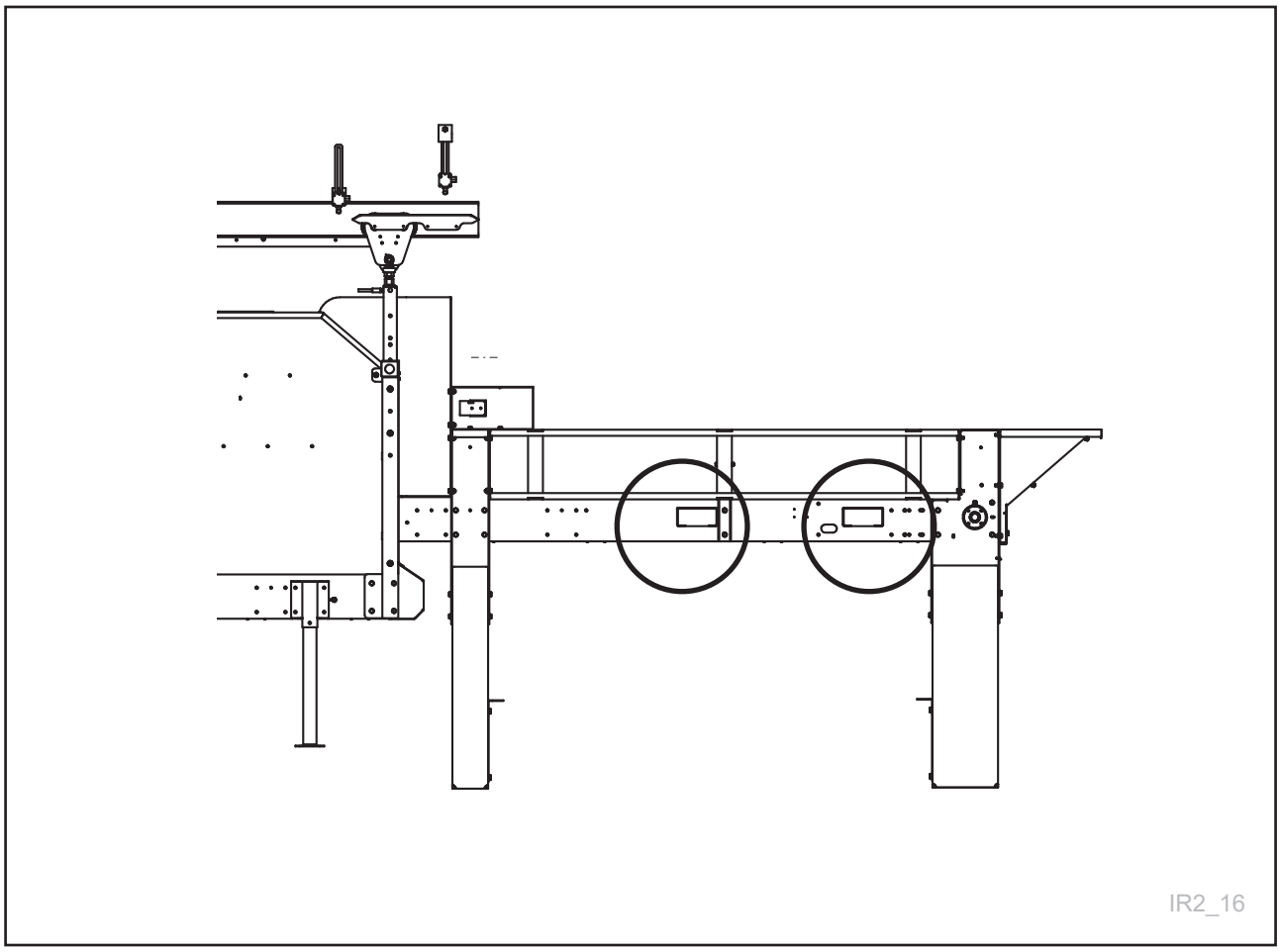
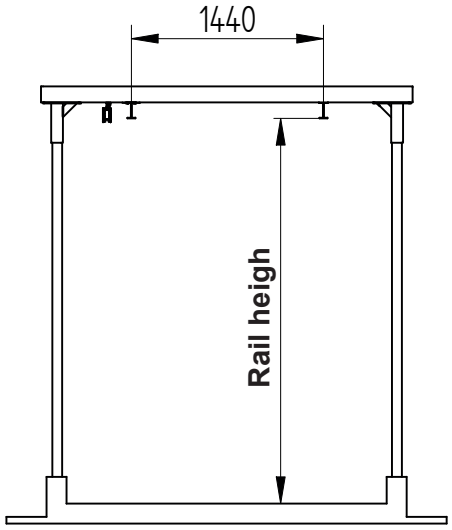


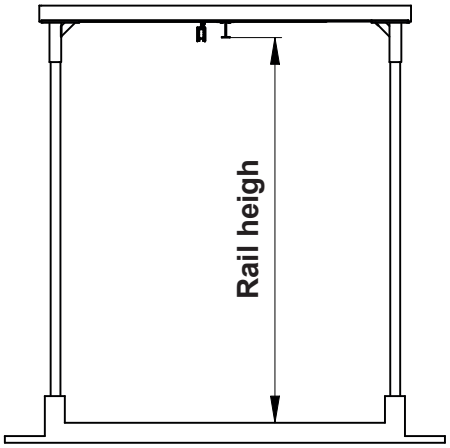
Fig. 5

1 Installing the rails

Ceiling-mounted unit on 2 rails



Ceiling-mounted unit on 1 rail



IKO2_10

Fig. 6

Height under rail (minimum measurement) (recommended absolute measure)	**Filling from Magazine R2**	**Manual/other filling incl. cross conveyor**	**Without cross conveyor**
K2 CombiCutter on 2 rails	2400	2100	1800
K2 CombiCutter on 1 rails	2600	2010	2000
Width from cradle edge-cradle edge	**1200 Min. width**	**1600 Min. width**	**1200 and 1600 Max. width**
K2 CombiCutter without cross conveyor	1400	1800	-
K2 CombiCutter with short cross conveyor	1400	1800	2400
K2 CombiCutter with usual cross conveyor	1600	2000	3000
K2 CombiCutter (on request)			4000

1.1 Recommended rail sizes on 1-rail suspension

Rail size	Length between portal
IPE 120	Max 1,5 m (Not recommended from TKS)
IPE 160	Max 3,5 m
IPE 220	Max 5,0 m

1.2 Recommended rail sizes on 2-rails suspension

Rail size	Length between portal
IPE 120	Max 3,0 m
IPE 160	Max 5,0 m
IPE 220	Max 7,0 m

For other rail portals please contact TKS

Torque for K80 bolts (8.8)

M6	M8	M10	M12	M16	M20	M22	M24
10,8Nm	27,5Nm	51Nm	89,2Nm	221,6Nm	44,0 kpm	585,5Nm	745,3Nm

Important notes regarding assembling of TKS' monorails

- All rails are to be designed correctly based on "load" vs. "span" according to table above. Local stresses on flange are acceptable as long as value of load is "above" the black stepline in table above.
- Be sure the structure/building can withstand your actual load.
- TKS monorail profiles of IPE120/160/220 have full capacity in their joints. Thus one may place the joints independent of the suspension clamps.
- Make sure that the profiles are mounted such that one have the dual-joint (two bolts) at the bottom, and the single-joint on top (IPE120/160). For IPE 220, have three bolts at bottom and two on top. Only with this orientation one will achieve the proper capacity of the rail. For monorails with curves, it is important to have suspensions point in the middle of the curve as well as in each end of it, to eliminate torsion of the profile.

Important: It is of greatest importance to check the torque of the bolt-connections regularly (min. once a year)

2 Installation and use of Magazine R2

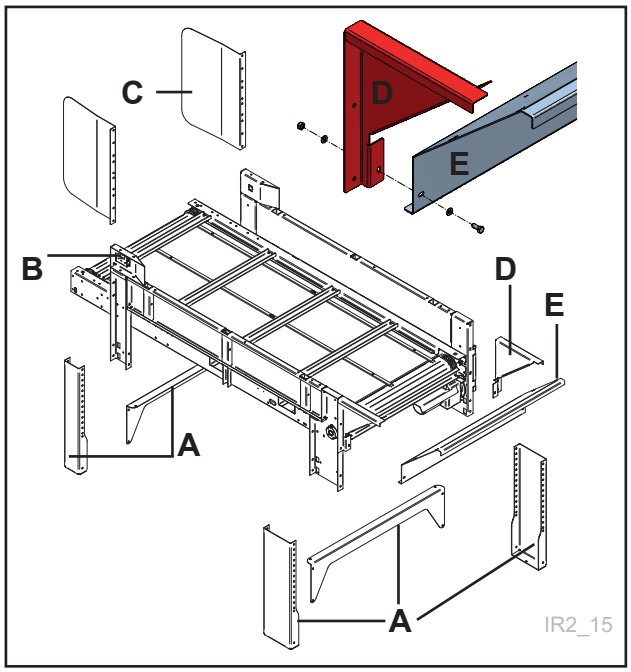


Fig. 7

Magazine R2

Leg **A**, photocell **B**, guide screen **C**, support triangle **D**, and extension plate **E** are packed and should be fitted before positioning the Magazine.
See Fig. 7

The height of the Magazine R2 is determined by the location of the machine.
As mentioned previously, the Magazine R2 should be positioned **15 cm** higher than the machine, measured from the side members.

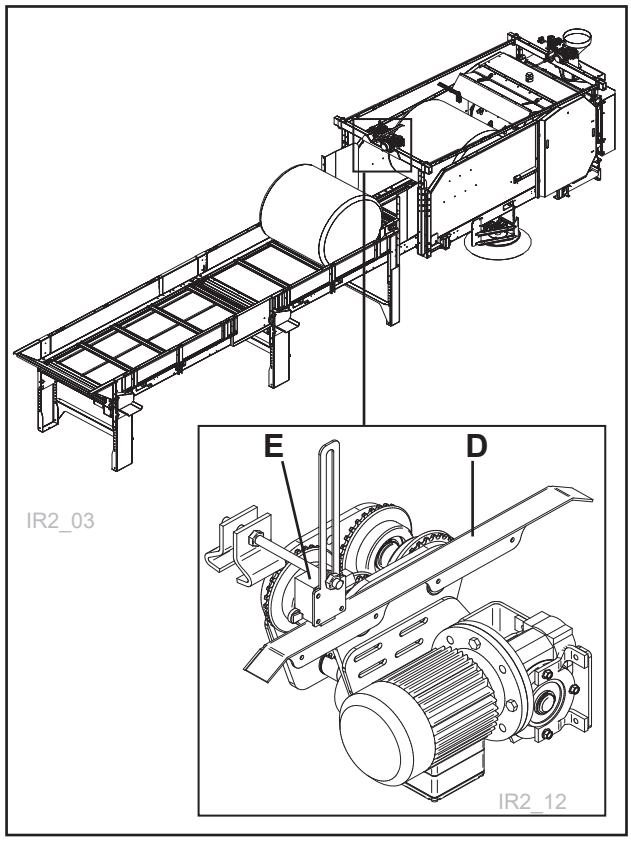


Fig. 8

Switch rail

- The switch rail D should be fitted to the traversing carriage and serves the switch **E** fitted to the rail at the filling point.
- The carriage end position switch should be screwed into the rail. This must be activated when K2 is right next to the Magazine (rear edge of frame is against front edge of leg); the switch must be almost at the switch rail on the traversing carriage.
- When the robot registers that it is empty, it will move to the filling point, and the switch is then activated by the switch rail **D** fitted to the traversing carriage.
- The Magazine starts up, and when filling is complete the robot will continue the feeding session.
- If the robot is pushed away during filling, the switch will come off the rail and filling is interrupted.

See Fig. 8

2.1 Installing the Magazine R2 in conjunction with stationary cutter

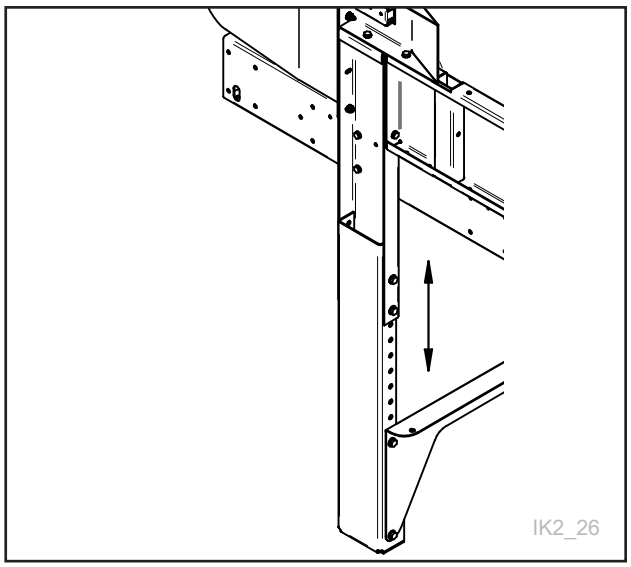


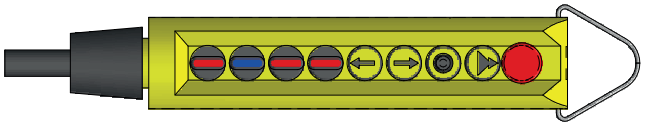
Fig. 9

Using the Magazine in a stationary position together with a cutter requires minimal preparation, as all the equipment comes fully assembled from the factory and can simply be positioned as required. Once the location of the Magazine R2 has been decided, the machine and Magazine R2 must both be bolted to the floor.

The height of the Magazine R2 should be such that the carrier on the Magazine R2 and the carrier on the cutter do not collide. The height of the Magazine R2 can be adjusted by loosening the screws and pulling the legs down.
Use a pallet jack or a forklift truck to lift the Magazine R2 .
See Fig. 9

Position the machine to provide easy access when loading feed. It is common to use a rail and a TKS ElectroTackle with a claw or hydraulic bucket or a tractor with a round bale spear
or similar attachment to load round bales.
The operating panel should be positioned so that the Magazine R2 can be monitored while transferring feed to the cutter. This is to ensure optimum operation.

2.2 Use of stationary Magazine R2 in conjunction with stationary cutter



- When transferring feed from the Magazine R2 to the machine it is important that both the conveyor belt on the machine and the one on the Magazine R2 are moving.
- For optimum operation, the conveyor belt on the machine should move faster than the belt on the Magazine R2 .
- The Magazine R2 is equipped with a separate pendant control for moving it back and forth.

See Fig. 10 og 11

2.3 Installing the Magazine R2 on rails in conjunction with cutter

Magazine R2 for use on rails together with a cutter are supplied separately.
The Magazine R2 is supplied with the traversing carriage brackets already fitted.

- The traversing carriages are supplied separately.
- Install the rails first.
- See separate brochure for information on “crane equipment”.
- Next, slide the traversing carriages onto the ceiling rail.
- Then fit the rail end stops to the rail.
- Hang the Magazine R2 from the traversing carriages and fix it to the machine.
- To prevent the risk of crushing, do not route the Magazine R2 too close to the end wall.
- Use the end stops as buffers.

2.4 Use of Magazine R2 on rails in conjunction with cutter

It is important that the conveyor belt is moving inside the machine when transferring feed from the Magazine R2.

- For optimum operation the conveyor belt on the machine should move faster than the belt on the Magazine R2.
- Control functions for the Magazine R2 can be found on the same pendant control as the machine controls.

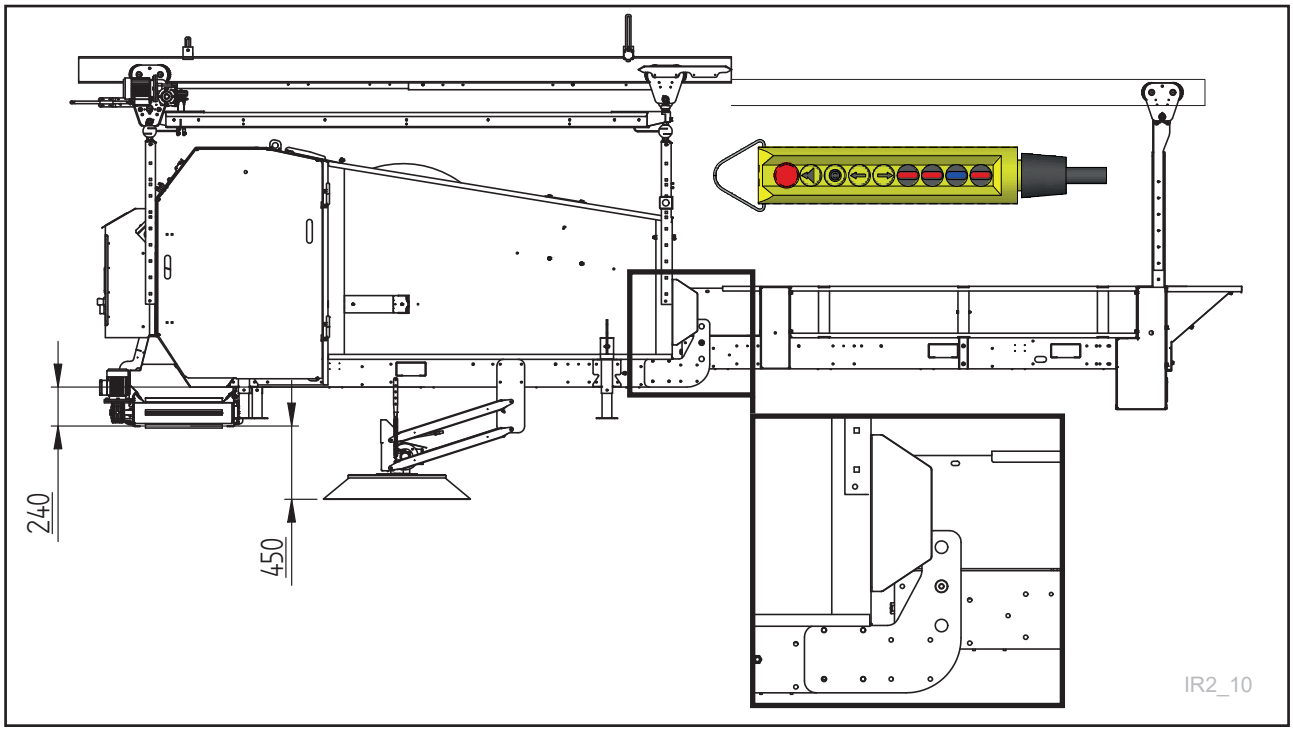


Fig. 10

2.5 Installing stationary Magazine R2 in conjunction with ceiling-mounted cutter

When installing a stationary Magazine R2 for use with a rail-mounted cutter, it is common to position the Magazine R2 at one end of the feed tray, e.g. in the feed store. Where there is restricted indoor space, the Magazine R2 can also be placed outdoors.
It is important to position the Magazine R2 so that it enters the cutter when transferring feed – it should therefore be positioned higher than the machine.
There should be a min. 15 cm height difference between Magazine R2 and machine, measured from the side members
(see measurements in the instruction booklet for the machine).
The Magazine R2 is supplied with legs that can be extended to adjust its height in relation to the height of the cutter.
Once the location of the Magazine R2 has been decided, the machine and Magazine R2 must both be bolted to the floor.

2.6 Use of stationary Magazine R2 in conjunction with ceiling-mounted cutter

When transferring feed from the Magazine R2 to the machine, the machine must be moved right next to the Magazine R2. The conveyor belts on both the machine and the Magazine R2 must be running. It is important that the conveyor belt on the machine moves faster than the belt on the Magazine R2, otherwise the machine will be pushed away.
NB!
Keep a close eye on the Magazine R2 when transferring feed.

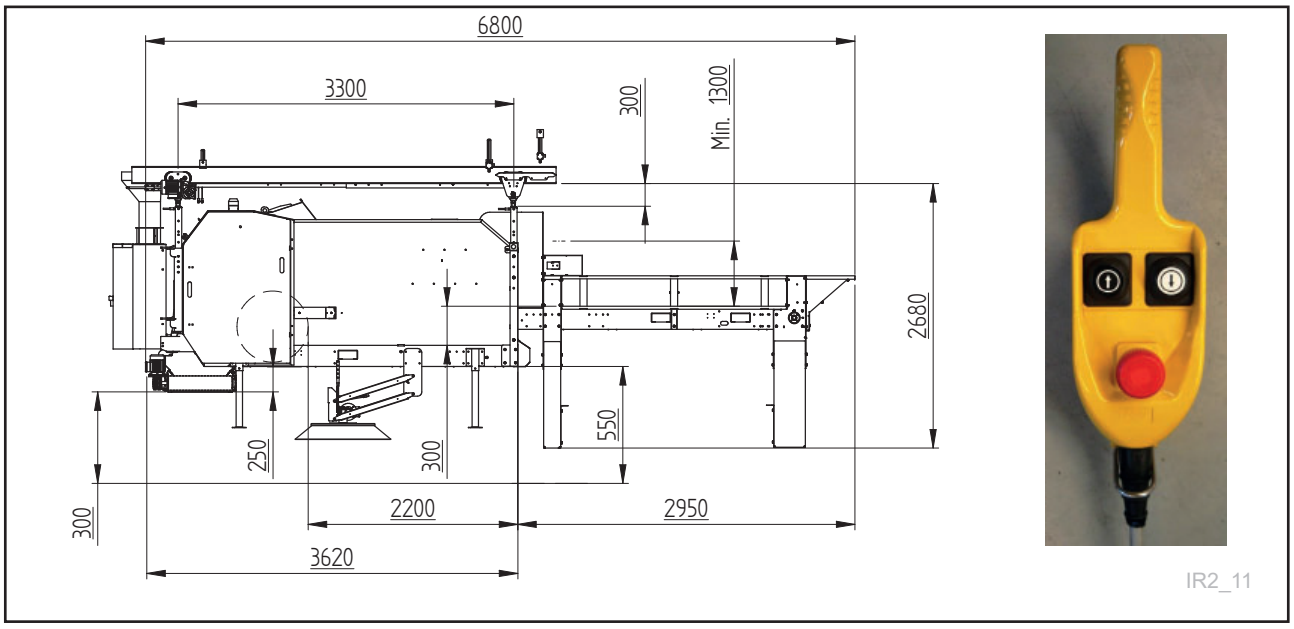


Fig. 11

Robot carriages:

- If the equipment has been installed as instructed, the cutter and Magazine R2 will operate
- automatically.
- Individual adjustments can be made depending on feed type, feed consistency, etc.
- It is important to monitor the equipment for a while after installation and when changing feed type.

If the Magazine R2 has been placed outdoors, the machine is able to automatically open a hatch and collect feed. (Contact TKS for more info.)

Description of function:

- The photocells in the machine register when the robot is empty. For trouble-free filling, the belt on the machine is reversed so that all the feed is emptied into the feed tray in the location where the robot registered that it was empty.
- The robot then moves into a set-up position and waits there for a predetermined period of time.
- It then moves slowly towards the Magazine R2 , and the switch on the rail is activated when the robot is in place (bracket fitted to the traversing carriage operates the switch on the switch rail).
- The audio/light alarm is also activated.
- The Magazine R2 starts up and the conveyor belt in the robot starts running.
  The Magazine R2 transfers the first bale / silage load over to the machine. The photocells on the Magazine R2 record the space between the transferred bale and the next bale.
- The Magazine R2 stops when the next bale reaches the photocell.
- The conveyor belt on the machine moves to the photocells, which register the arrival of the bale and stop filling.
- The robot starts dispensing feed again in the area after the spot where it ran out.

3 Installing the power supply

All electrical installation must be done by a qualified electrician.
Use power supply cables of a suitable diameter (at least 1.5 mm²).

Attention! Please remove the plug socket and assure that the fuse box is disconnected before opening it. The type of power supply you use should reflect your power requirements, the type of installation and any structural issues. The installation procedure for stationary machines is simplest, requiring a socket for the machine's power supply cable.

3.1 Check list before starting the machine

VERY IMPORTANT!

- The power supply must have sufficient voltage in all phases, and fuses and cables must have the appropriate dimensions.
- The power supply to the Magazine R2 operating panel must be connected by an authorised electrician.

4 Controls K2/R2

A F8 Motor shield.
B Q5 and Q6 are contactors.
See Fig. 12

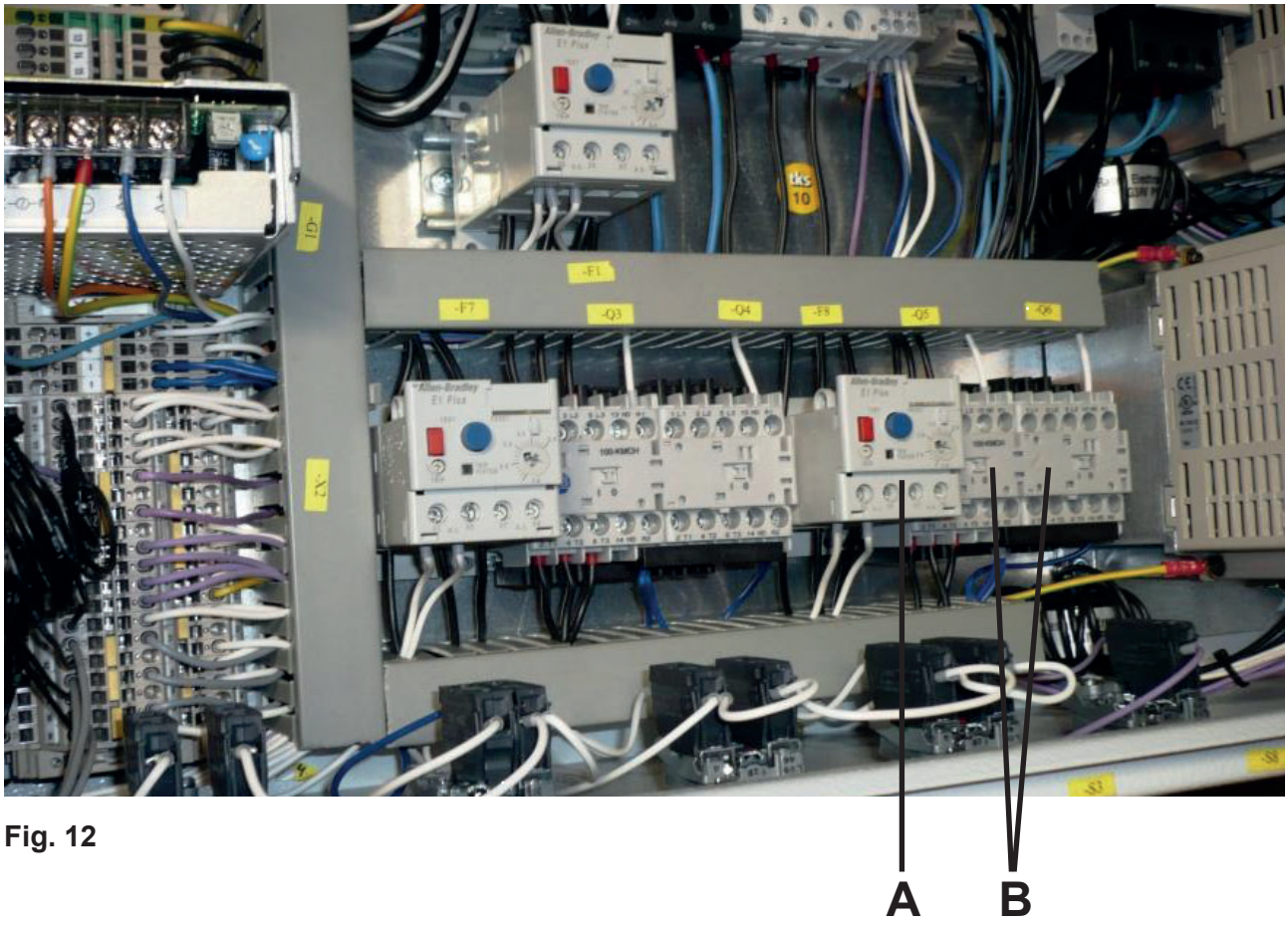


Fig. 12

5 Controls R2/K2 FeedRobot

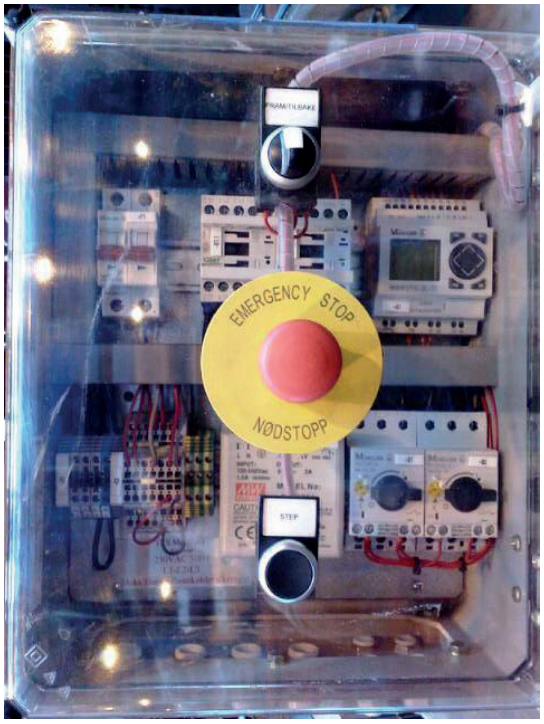


Fig. 13

General

The system is operated and monitored by a unit called EASY, a Modeller system. EASY comprises a programmable logic controller. This unit has been programmed to monitor and operate the Magazine R2 and to adjust time settings.

Functions

Emergency stop

The system has an “emergency stop” button at the front as well as the option of an external emergency stop loop, to which the required number of emergency stop switches can be connected. When the emergency stop is activated the system will come to a halt immediately.

Loading hay bales, stepping and stepping time

Stepping and stepping time is a function that can be used when loading hay bales into the Magazine R2 . When activating the “step” switch at the front of the control box, the conveyor belt on the Magazine R2 will move forward by the preset time so that the hay bale moves forward by one bale length. There will then be space to load another hay bale and repeat the procedure until it is full.

The step function is no longer available once a bale has reached and activated the photocell at the front of the Magazine R2 .

Automatic filling of feed carriage/robot

Once the feed carriage has reached the filling position, the end switch on the Magazine R2 will be activated.
This launches the filling sequence and the following happens:

The conveyor belt on the Magazine R2 starts moving forward until the round bale has reached that feed carriage and a new bale has reached the photocell.

The conveyor belt may also stop because the maximum time has been exceeded, i.e. no new bale has been loaded into the feed carriage or no new bale has reached the photocell within the preset time period.

If no new bale has reached the photocell by the time the robot leaves the Magazine R2 , a new function will be activated. The conveyor belt on the Magazine R2 will then stop and remain stationary for a preset period before it starts moving again. It will then continue running until a new bale has arrived or until the preset operating time after filling has been exceeded.

Photocell time

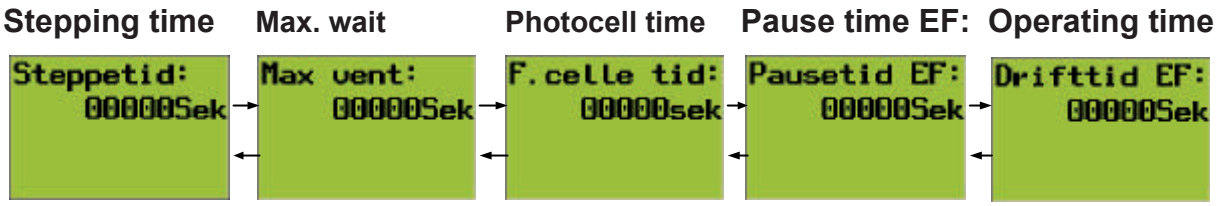
The photocell on the Magazine R2 comprises a transmitter and a receiver. The time of the photocell can be adjusted on the display. If an object passes between the transmitter and receiver, the operation of the conveyor belt will stop after the preset photocell time. This is so that straws or other objects are not recognised as a straw bale, thus interrupting the operation. If the time is set to 2 seconds, for example, an object must remain in front of the photocell for 2 seconds before the cell reacts. This does not apply where the view is uninterrupted – in this case it will respond immediately.

Manual operation

The conveyor belt on the Magazine R2 can be moved back and forth manually by activating the turn switch on the control panel of the Magazine R2 . If this switch is activated during the filling of the feed carriage or when the step sequence is active, these operations will be halted immediately. This is not recommended.

Display menu

The figure below shows how the menu levels on the display are organised. The operator can move from screen to screen with the right/left arrow keys and change the value with the up/down arrows.



Pre-settings

Stepping time:	60 sek
Max. wait:	180 sek
Photocell time	2 sek
Pause time EF:	30 sek
Operating time EF:	20 sek

Terminal blocks on Magazine R2

X1 : Main voltage		
No.	**Type**	**Function**
1	230VAC	Voltage input to control panel
2	230VAC	
3	230VAC	

X3 : Control voltage		
No.	**Type**	**Function**
1	+24V	“Carriage end position”
2	Signal	
3	+24V	Start stepping
4	Signal	
5	+24V	Photocell send
6	0V	
7	+24V	Photocell receive
8	0V	
9	Signal	
10		Available
11	+24V	Before emergency stop
12	+24V	After emergency stop
13	0V	Before emergency stop
14	0V	After emergency stop

6 Controls R2/K2 FeedRobot/EasyFeed

Fig. 14

Functions

Emergency stop

The system has an “emergency stop” button at the front as well as the option of an external emergency stop loop, to which the required number of emergency stop switches can be connected. When the emergency stop is activated the system will come to a halt immediately.

Loading hay bales, stepping and stepping time

Stepping and stepping time is a function that can be used when loading hay bales into the Magazine R2 . When activating the “step” switch at the front of the control box, the conveyor belt on the Magazine R2 will move forward by the preset time so that the hay bale moves forward by one bale length. There will then be space to load another hay bale and repeat the procedure until it is full. The step function is no longer available once a bale has reached and activated the photocell at the front of the Magazine R2 .

When the feed carrier is in the filling position, the limit switch on Magazine R2 is activated.

Automatic filling of feed carriage/robot

Once the feed carriage has reached the filling position, the end switch on the Magazine R2 will be activated. This launches the filling sequence and the following happens:

The conveyor belt on the Magazine R2 starts moving forward until the round bale has reached that feed carriage and a new bale has reached the photocell.

The conveyor belt may also stop because the maximum time has been exceeded, i.e. no new bale has been loaded into the feed carriage or no new bale has reached the photocell within the preset time period.

If no new bale has reached the photocell by the time the robot leaves the Magazine R2 , a new function will be activated. The conveyor belt on the Magazine R2 will then stop and remain stationary for a preset period before it starts moving again. It will then continue running until a new bale has arrived or until the preset operating time after filling has been exceeded.

Photocell time

The photocell on the Magazine R2 comprises a transmitter and a receiver. The time of the photocell can be adjusted on the display. If an object passes between the transmitter and receiver, the operation of the conveyor belt will stop after the preset photocell time. This is so that straws or other objects are not recognised as a straw bale, thus interrupting the operation. If the time is set to 2 seconds, for example, an object must remain in front of the photocell for 2 seconds before the cell reacts. This does not apply where the view is uninterrupted – in this case it will respond immediately.

7 Use of PLS – Control R2/K2

Fig. 15

Screen and keypad

PLS has two lines of monochrome text on the screen and a numeric keypad with a number of function keys.

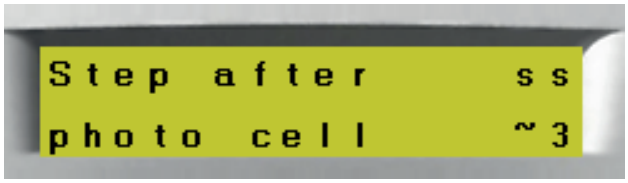
1. Keypad – function key
2. Back key **i**
3. Enter key ↵
4. Use the arrow keys ▲▼ ◀▶to scroll through the menu
5. Use the left/right arrow keys ◀▶ to operate the conveyor belt manually

- Enter the menu by pressing **Enter**-key↵
- Scroll through the menu using the up and down keys▲▼
- Exit the menu using the back key I
- On a screen containing values, the **Enter** ↵ key can be pressed to continue without changing a value.
- Switch to the screen which shows the next feeding session by pressing the back **key I**, when the main screen is shown.
- If the cursor **(_)** is flashing on the display, this means that the keypad must be used for entering numbers.
- If the numbers have decimals, enter the whole number first, followed by the decimal.
- **Enter** ↵ is used to move the cursor to the next value.

7.1 PLS menu – screenshots

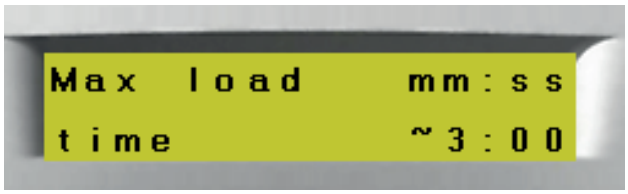
- The system is in sleep mode.
- On this screen you can press the key to the left or right to control the conveyor belt manually.
- When this screen is shown, you can press the Enter key to specify setup.

On this screen, you can adjust the step delay according to load. The step function is used to prepare the next bale load.
Press Enter and the next screen will be displayed:



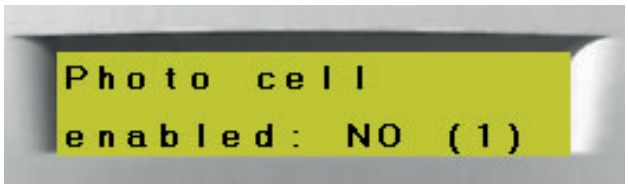
This setting adjusts the movement time that the conveyor belt needs to move itself forward after the bale has reached the photocell.

This setting adjusts how long the next load will be paused for.



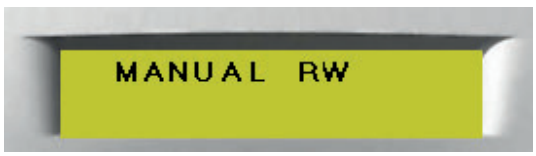
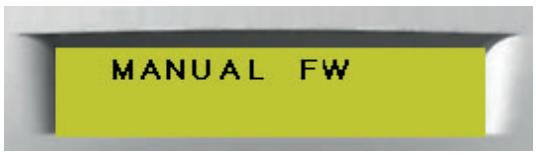
Select max. loading time.
If it takes longer, refilling is stopped and the error message is shown.
Press Enter and the next screen will be displayed:

Enter max. stepping time.
If the photocell is not reached during this time, stepping will be stopped and the **“EMPTY”** error message will be shown.
Press Enter and the next screen will be displayed:



This setting is set regardless of whether the photocell is activated or not. The setting can be changed **(YES/NO)** by pressing the **"1"** key.
When the photocell is deactivated, the step function does not work.
It is recommended that you only deactivate the photocell for 1 bale size R2 Magazine.
This is the final settings window, so when the Enter key is pressed, it will go back to the main screen **(STANDBY).**
All of the settings can be cancelled at any time by pressing the back key I

Status screens:

	No activity
	R2 Magazine moving to filling
	*The conveyor belt is moving manually in reverse*
	*The conveyor belt is moving manually forward*
	Prepare new bale

8 Troubleshooting

Error type	*Cause*	*Action*
	• *The emergency stop button has been activated*	• *Ensure that it is safe to start the machine before releasing the emergency stop button.*
	• *Motor 1 is overloaded*	• *Check whether the F2 fuse is set to correct the motor's power and press the reset key.* • *Check that there is no mechanical damage to the R2 Magazine.* • *Check that the R2 Magazine is not overloaded.*
	• *Motor 2 is overloaded*	• *Check whether the F3 fuse is set to correct the motor's power and press the reset key.* • *Check that there is no mechanical damage to the R2 Magazine.* • *Check that the R2 Magazine is not overloaded.*
	• *R2 Magazine is empty* • *Max. stepping time that has elapsed without the bale having reached the photocell.*	• *If the R2 Magazine is not empty* • *Check that the photocell works as it should and ensure that the stepping time is not too short. Will be reset automatically after 3 minutes.*
	• *Loading error* • *R2 Magazine has reached the maximum operating time.*	• *If the R2 Magazine is empty, load a new bale* • *Check K2 FeedRobot*

Press the **"STEP/OK"** button in the operating panel to start the stepping manually and acknowledge alarms.

9 Model description and use of spreader unit

The TKS spreader unit is an alternative piece of equipment designed to spread straw, hay, paper and sawdust. It can also be used to spread other light materials.
The spreader unit is fitted to the front of the Magazine R2 .
The spreader blades are driven by two motors that are mounted on the underside of the spreader unit.

The Magazine R2 with spreader unit is rail-mounted to the ceiling above the livestock (min. 1.5 m above ground level).
The spreader unit is equipped with two plates on each side, and these can be adjusted according to the desired spread range (2–7 m).

The material is moved forwards using the conveyor belt and then further out onto the spreader unit. The conveyor belt has its own gear motor. The speed of the Magazine R2 with spreader unit can be adjusted using a frequency converter. This makes the forward traction extremely flexible.

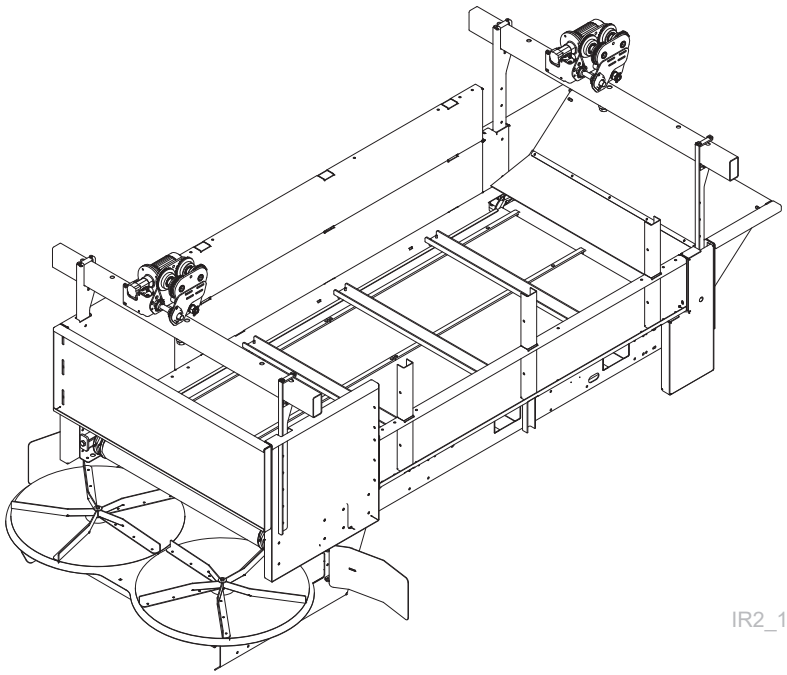
The spreading material can be loaded on either side by moving the frames from right to left.

All functions of the machine are controlled via remote control.

NB! The instructions given in this operator's manual apply to standard operating conditions. Individual circumstances may arise on user premises that deviate from the instructions provided here. Changes to the machines and equipment as a result of such circumstances shall not constitute grounds for making a claim against the manufacturer or supplier.

Climate, temperature, material, moisture and mown/cutting length are some of the factors that may affect the functionality and performance of the machine.
It is important to adapt and adjust the machine to suit local conditions.

This is important to achieve the best possible result.



IR2_17

Technical data

Weight Magazine R2 standard	590 Kg	
Weight Magazine R2 w/spreader unit	890 Kg	
POWER		
LOOR BELT	0,75	KW
ELECTRICITY		
CONTROL CURRENT	24	V (DC)
VOLTAGE	230/240	V (N/BY 400V)
VOLTAGE TOLERANCE	+/- 10%	

10 Using the machine with spreader unit

The spreading material can be loaded on either side by moving the frames from right to left.
All functions of the machine are controlled via remote control. The material is moved forwards using the conveyor belt and then further out onto the spreader unit.

Individual adjustment is the key to obtaining a good result.

Checklist before starting the machine with spreader unit

VERY IMPORTANT!

- The power supply must have sufficient voltage in all phases, and fuses and cables must have the appropriate dimensions.
- The power supply to the CombiCutter's operating panel must be connected by an authorised electrician. Adjust the motor protection according to the dimensions and rated current of the equipment.
- The cutter is equipped with frequency control for the feed on the conveyor belt. The belt can also be run manually both forwards and backwards.

Depending on the use/spreading material, this must adjusted appropriately.

11 Main measurements for machine with spreader unit

- The distance from the ground to the suspended cart must be at least 1,500 mm.

All measurements are given in mm

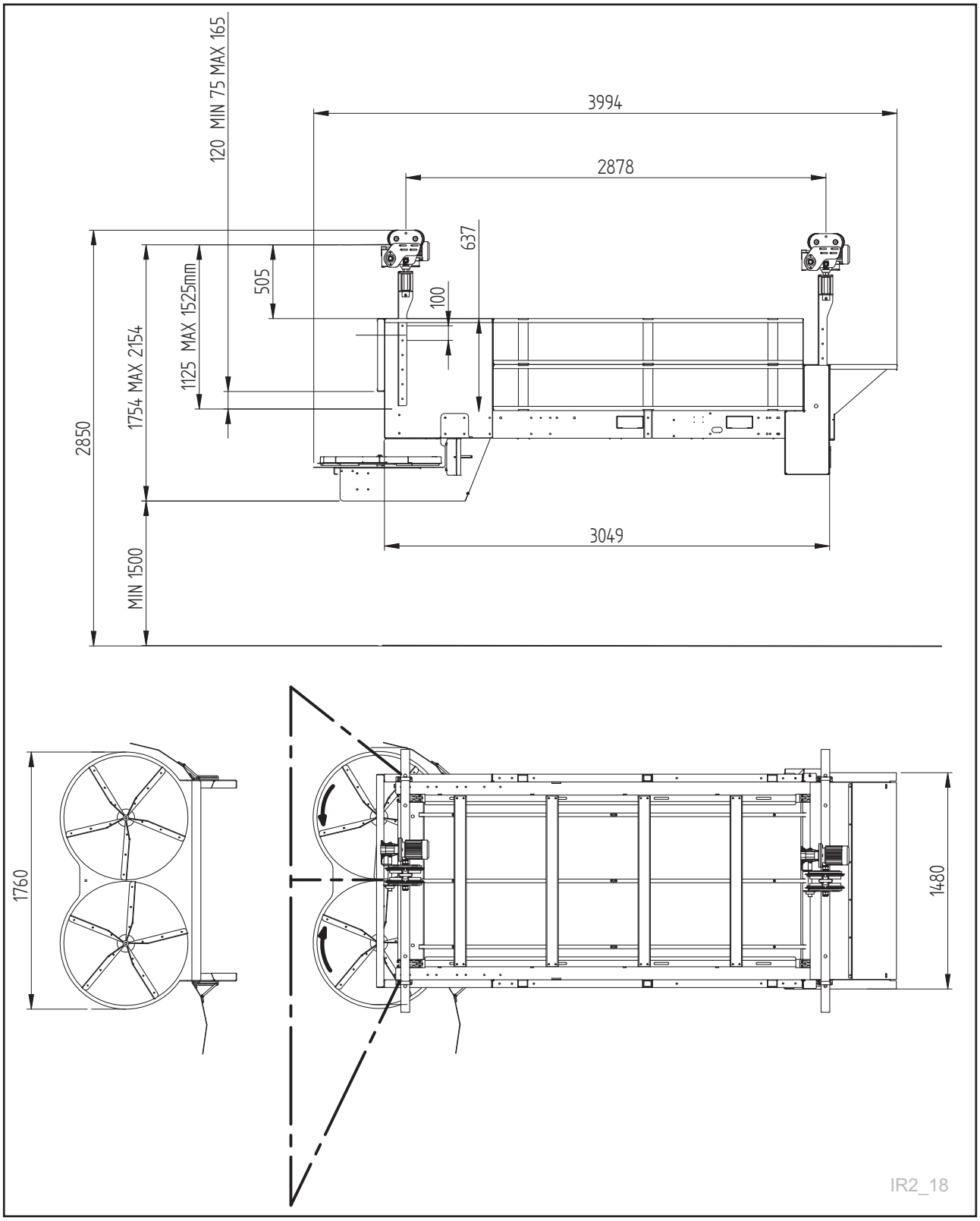


Fig. 16

12 Width adjustment on spreader unit

- The spreading width can be adjusted by changing the angle of side plates **A**.
- Once the side plates have been adjusted, you can achieve a spreading width that may vary from 2 to 7 m.
- The speed of disc **B** can be changed on the operating panel.
- The speed of the spreader unit is adjusted using switch **C** on the converter on the operating panel.

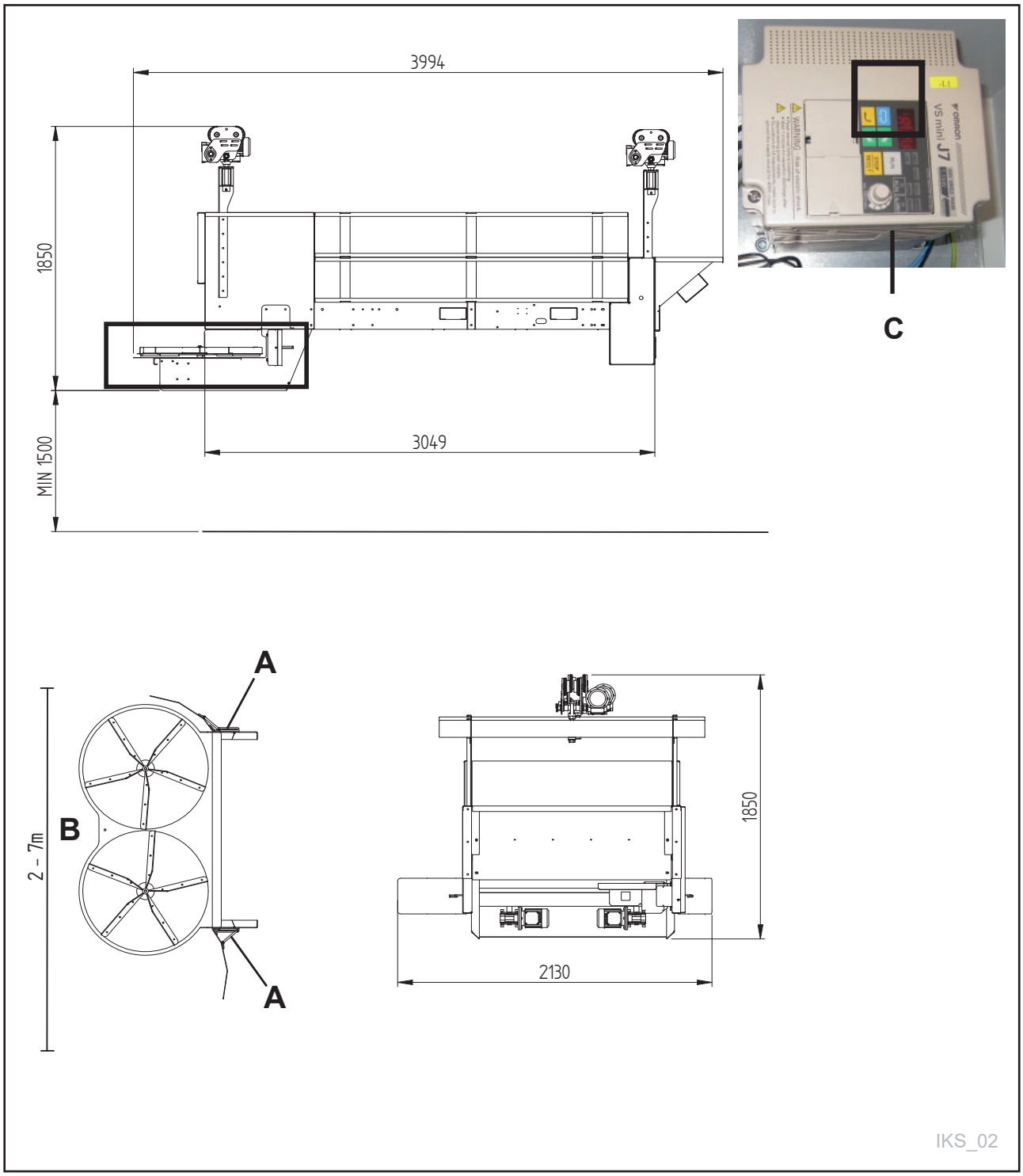


Fig. 17

13 Remote control

Functions

A	Start roller
B	Start conveyor belt
C	Conveyor belt return
D	Outbound
E	Return
F	Activate – maintain operation
G	Stop all
H	Emergency stop

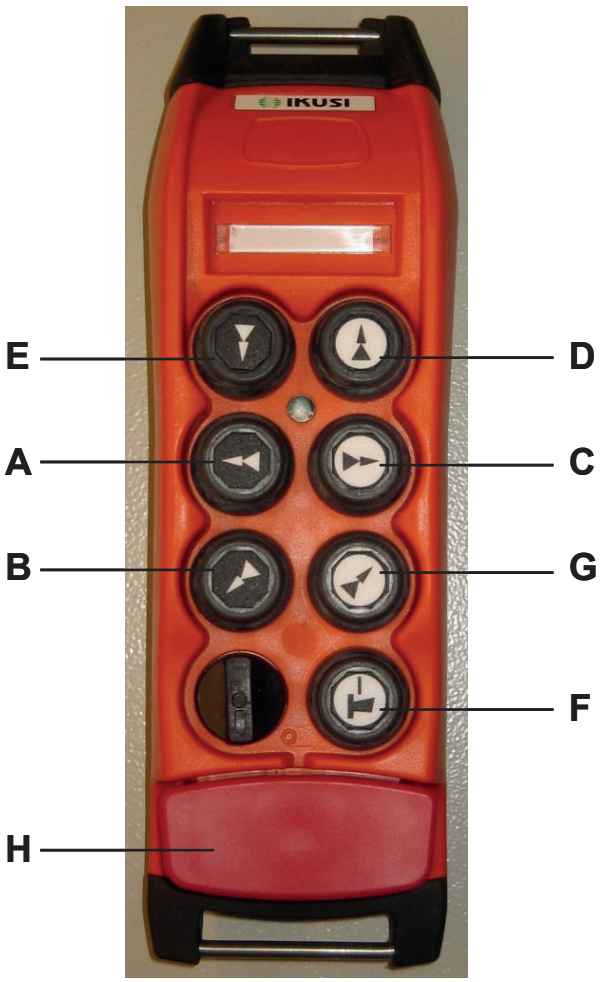


Fig. 18

14 Maintenance and care

NB!
Always pull out the plug before inspecting, maintaining or repairing the machine.

- Remove any remaining material from the conveyor belt and spreader unit daily. This can also be removed using compressed air.

- Clean the conveyor belt, chain wheels, shafts and bearing shields as and when necessary and at least once a week.

IMPORTANT!

- Do not tighten the conveyor belt to tight or askew. Ensure that drive chains are also kept tight. Check them regularly for slack or damage.

- Bearing journals and chains should be lubricated every 24 operating hours or at least once a week.

- Ensure that electrical equipment is not subjected to excessive temperature fluctuations. This can lead to condensation and short circuits.

- The oil in the worm gears should not be exposed to temperatures below -30°C. If the machine needs to run normally at below -30°C, contact the manufacturer for advice and guidance

- **NB!** It is important to clean the machine's spreading discs, conveyor belt and rear shields once a week. TKS recommends cleaning with compressed air rather than using a high pressure washer.

Lubrication

Component / location		Quantity	Action	Operating time
1	Grease nipple - bearing on operating side of conveyor	1	Lubr.	10 h
2	Grease nipple - bearing on reverse side of conveyor	1	Lubr.	10 h
3	Chain lubrication	1	Lubr.	24 h

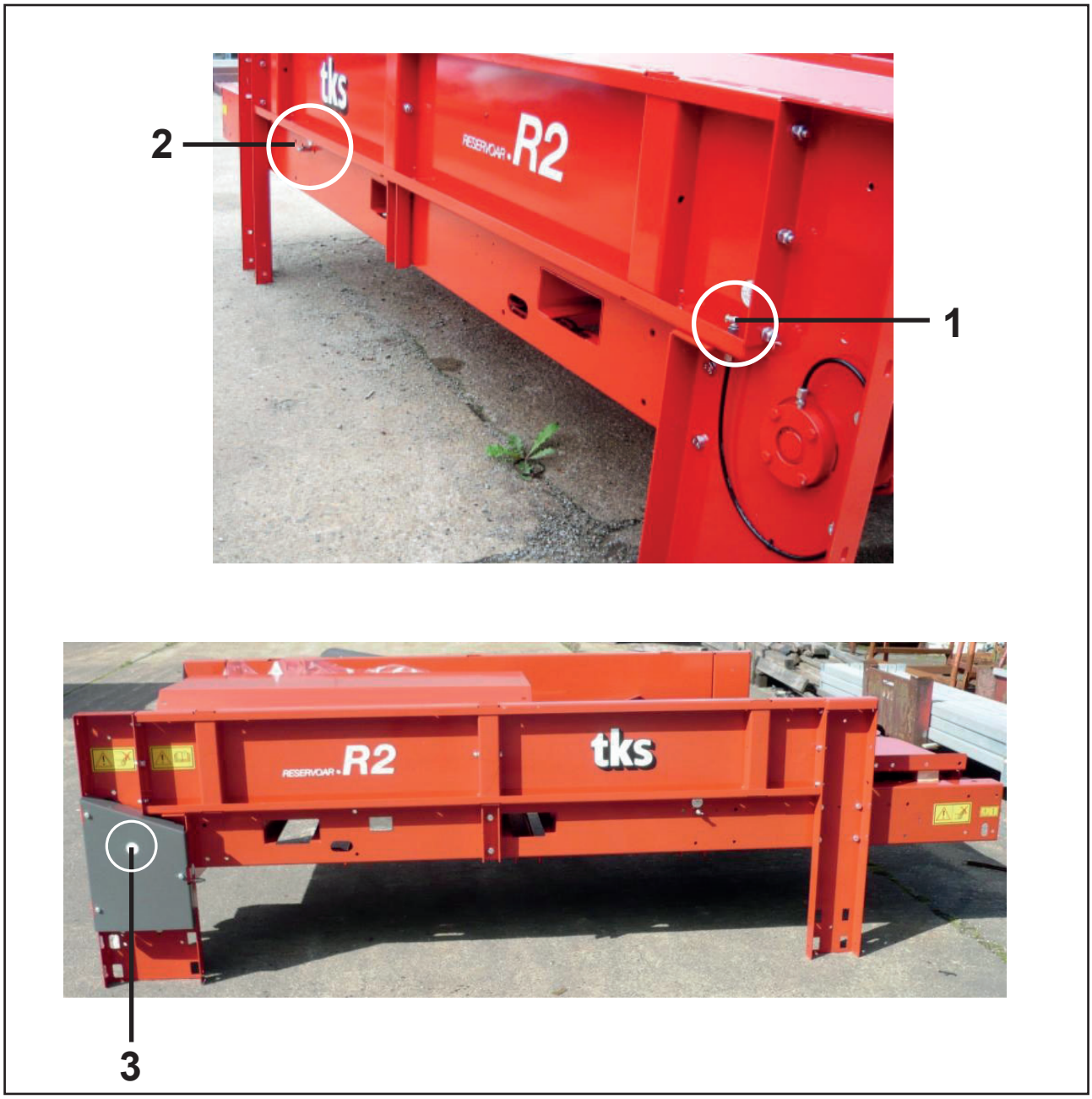


Fig. 19

Tightening the conveyor belt

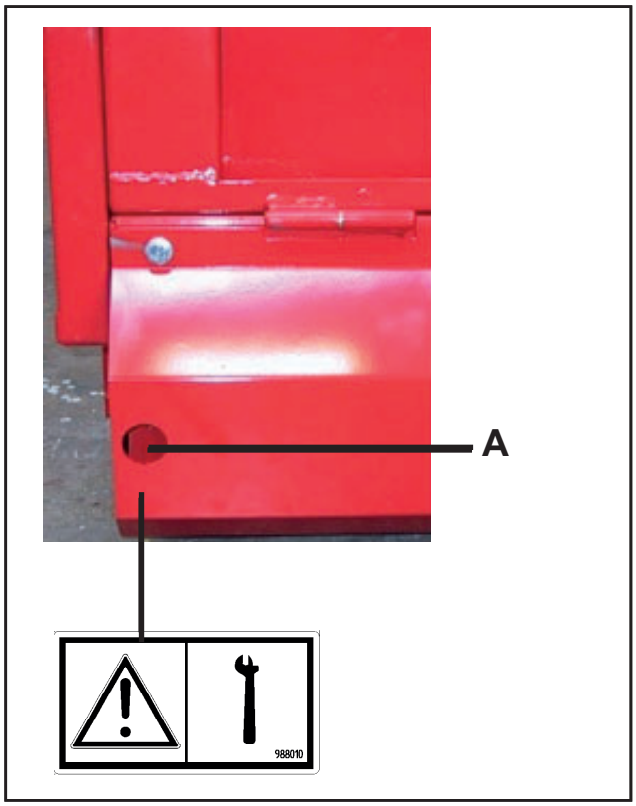


Fig. 20

It is important to keep the conveyor belt tight. This should be checked at regular intervals. Tighten the conveyor belt by turning the adjustment screw on the back of the machine. **See Fig. 20**

OBS!
It is important to retighten it after only 1-2 bales/ cut bales because of varnish etc. that gets rubbed off and makes the belt slack.

Remember to tighten it the same number of turns on both sides.
Run the conveyor belt without any load after tightening it to check that everything is working properly.

- **A Adjusting screw**

NB!

Bottom chain B must be tensioned until the entire bottom girder can be seen from the side.
Se Fig. 21

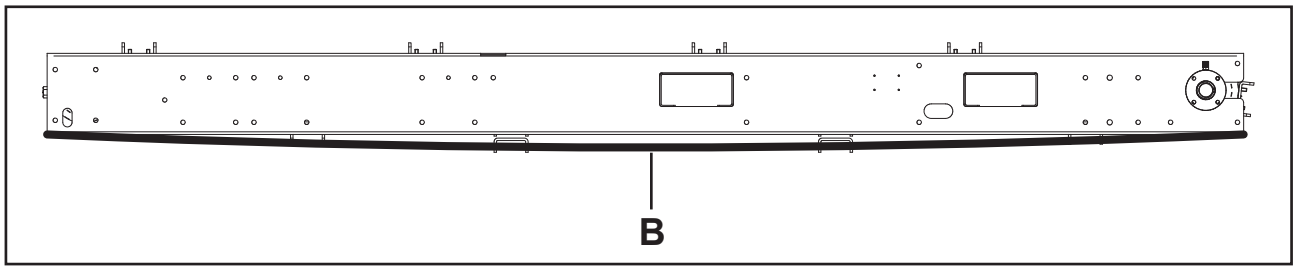


Fig. 21

Maintenance and inspection of current collector

It is recommended that the current collector is inspected after one month of operation, then every 1,000 km or once a year thereafter.

- Sweep the protective membrane along the conductor rail using a brush/sponge
- Inspect brushes
- Remove copper strip and clean
- Clean cart

Recycling
- waste to resource -

TKS's products rely on electrical and electronic components in order to work.
These fall under the generic term of EE products. TKS's products use typical components such as cables, switches, motors, control units, etc.

When TKS products are thrown away those components containing contaminants should be treated and sorted in such a way that they do not pollute the environment.
Contaminants should be taken care of safely.

Distributors are obliged to accept EE waste from products in the range of goods they sell.
This waste should be kept safe and sent on to an approved waste recipient or treatment plant.
EE waste must be sorted and transported in such a way that it is not damaged or destroyed.

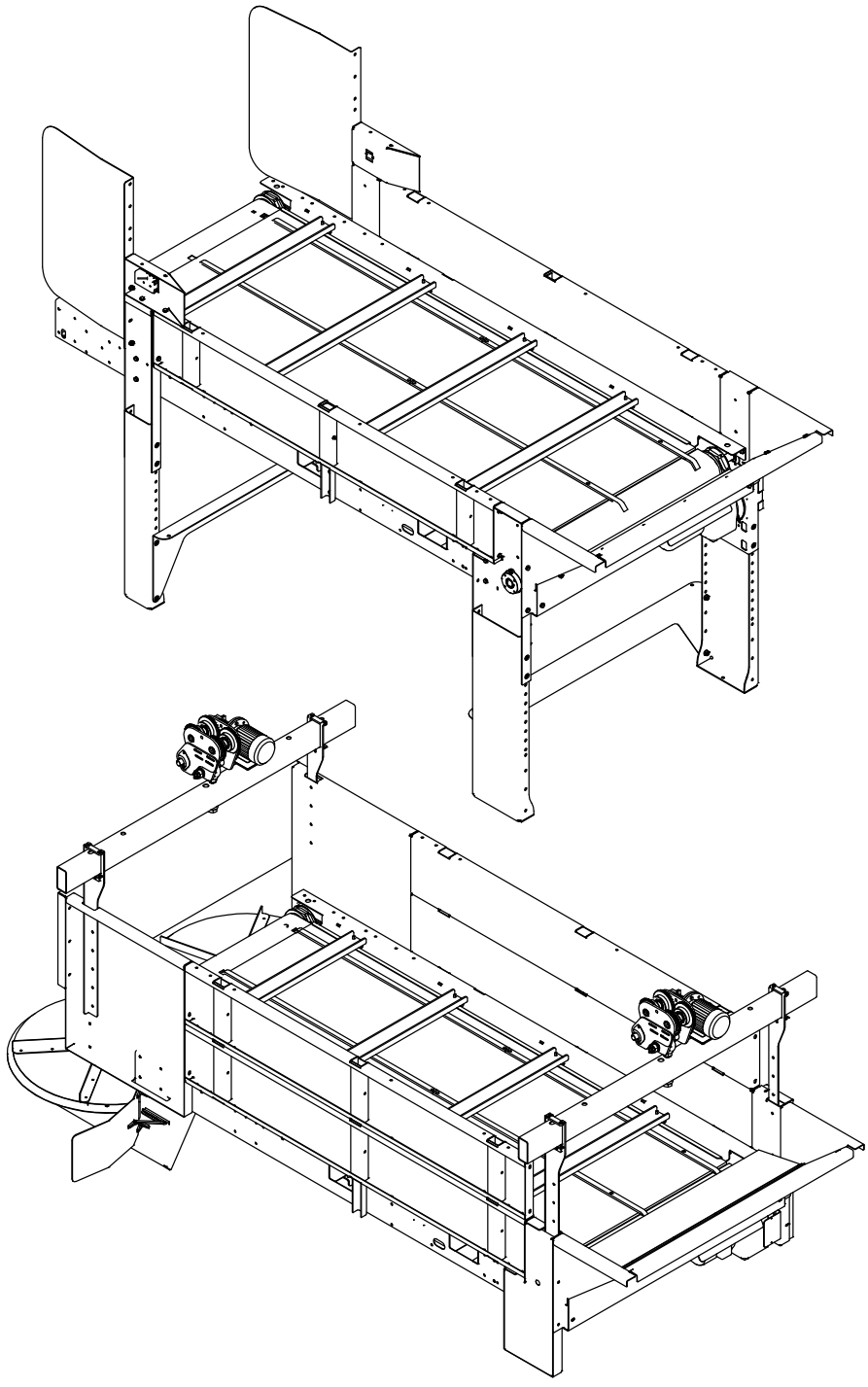
If you need further information on the treatment of EE waste, please contact your distributor.

TKS is a member of Renas.
(National program for the collection/treatment of electrical/electronic waste)

Regards
TKS AS

Notes

Spare parts list
Magazine R2



Spare parts list
Magazine R2

Reservedelsliste
Magazine R2

Valid from serial no./Gyldig fra serienr.:

Please note the following when ordering spare parts:

It should always be refered to serial number. This is found on the identification plate.
The spare part number and description should be used.
The reference number is used only to help identifying the spare part on the illustration.

Ved bestilling av deler må en merke seg følgende:

Oppgi alltid serienummer. Dette står på identifikasjonsskiltet.
Oppgi delenummer og benevnelse.
Referansenummeret brukes bare for å sammenholde deletegning og betegnelse i lista og skal derfor ikke oppgis.

Supplied by:

Innhold	Content	Fig.	Side/Page
BUNN	BOTTOM	1	54
TILKOBLINGSDELER	EXTENSION PARTS	2	56
R2 FOTSETT 2M - 3M+1M	R2 FOOT KIT 2M - 3M+1M	3	58
R2 FOTSETT 3M+2M - 3M+3M	R2 FOOT KIT 3M+2M - 3M+3M	4	60
DIVERSE DELER	VARIOUS PARTS	5	62
FORLENGELSE 1M OG 3M	EXTENSION UNIT 1M AND 3M	6	64
STYRING 1	CONTROL SYSTEM 1	7	66
STYRETABLÅ	PENDENT CONTROL	8	68
STYRING 2	CONTROL SYSTEM 2	9	70
STYRING AUTOFOFYLLING	CONTROL SYSTEM AUTOFILLING	10	72
STRØAGGREGAT	BEDDING SYSTEM	11	74
STRØAGGREGAT - DEKSLER	BEDDING SYSTEM - COVERS	12	76
STYRING - STRØAGGREGAT	CONTROL SYSTEM - BEDDING SYSTEM	13	78

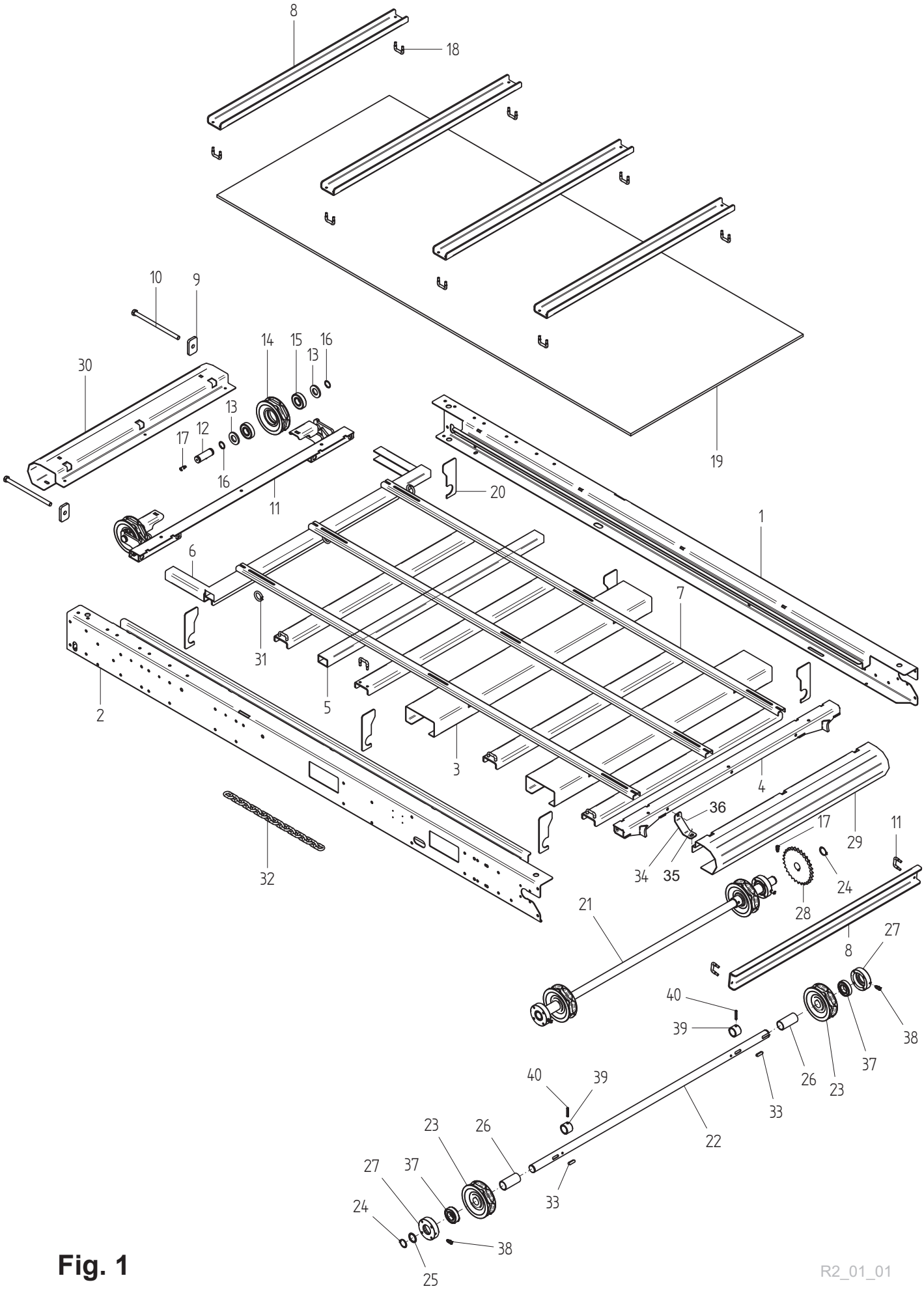

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Fig. 1

R2_01_01

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	tks
Dato: Date: **08-10**	Enhet: Unit: **BUNN BOTTOM**	Fig: **1**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	273080	1	SIDEVANG BUNN V. LANG	BOTTOM FRAME LH LONG	
2	273081	1	SIDEVANG BUNN H. LANG	BOTTOM FRAME RH LONG	
3	273082	2	TRUCKFESTE	BRACKET	
4	273075	1	FREMRE BJELKE	FRONT BEAM	
5	270006	2	TVERRBJELKE	CROSS BEAM	
6	270015	2	GLIDESKINNE BAK	GLIDE RAIL REAR	
7	270005	3	KANAL BUNNVANGE	CANAL	
8	270014	10	MEDBRINGER	CARRIER	
9	270016	2	MOTSTÅL	COUNTERROD	
10	911622	2	STRAMMEBOLT	TIGHTENING BOLT	
11	273078	1	STRAMME BJELKE	TENSIONING BEAM	
12	270019	2	RETURAKSLING	RETURN SHAFT	
13	920251	4	SKIVE Ø31/Ø58-6	WASHER Ø31/Ø58-6	
14	265019	2	KABELARHJUL 10X35	CHAIN SPROCKET WHEEL10X35	
15	933007	2	KULELAGER Ø30/Ø72-19 6306 RS	BALL BEARING Ø30/Ø72-19	
16	UH868431	2	LÅSERING UTV. AV30X1.5	LOCK RING	
17	UH415758	4	ANSATS M8	FITTING M8	
18	921428	20	SKJØTELØKKE 10mm x 45	LINK	
19	989009	1	KRYSSFINER 1075 X2580 X12 mm	PLYWOOD	
20	273106	6	SIDEVANGE FORSTERKNING	FRAME AMPLIFICATION	
21	273087	1	DRIV AKS. KOMPL.	DRIVE SHAFT ASSY.	
22	273451	1	AKSLING DRIFT BUNNBELTE	SHAFT DRIVE BOTTOM BELT	1600
23	273079	2	KABELARHJUL Ø35 10X35	CHAIN SPROCKET WHEEL10X35	
24	921002	2	SEGERING A-35	CIRCLIP A-35	
25	920236	1	STØTTERING Ø35-45-2	WASHER Ø35-45-2	
26	273452	2	HYLSE	COLLAR	
27	273070	2	LAGERHUS	BALL BEARING	
28	273237	1	KJEDEHJUL Z28 3/4"	SPROCKET Z28 3/4”	
29	273741	1	AKSLING DEKSEL	COVER	
30	273054	1	RETUR DEKSEL	COVER	
31	400542	3	KABELRING	CABLE RING	
32a	921471	1	KJETTING 10X35MM 17 LEDD	CHAIN 10X35MM 17 LINKS	
32b	921473	1	KJETTING 10X35MM 15 LEDD	CHAIN 10X35MM 15 LINKS	
33	920330	3	KILE 10X8X36 M/RUNDE ENDER	KEY 10X8X36 ROUND ENDS	
34	273738	3	PLATEVINKEL	PLATE ANGLE	
35	911063	3	6KT. SKRUE M10X30	HEX.BOLT M10X30	
	920154	6	BRIKKE M10/Ø21/2MM	WASHER M10/D21/2MM	
	917204	3	LÅSEMUTTER M10	LOCK NUT M10	
36	911032	3	LÅSESKRUE M10X25	LOCK SCREW M10X25	
	920154		BRIKKE M10/Ø21/2MM	WASHER M10/D21/2MM	
	917204		LÅSEMUTTER M10	LOCK NUT M10	
37	933502	2	KULELAGER Ø35Ø72-17 6207 1Z	BALL BEARING Ø35Ø72-17 6207	
38	UH415758	2	ANSATS M8X1	FITTING M8X1	
39	273453	2	STØTTEHYLSE	COLLAR	
40	UH866455	2	SPENNHYLSE 8X55	TENSION PIN 8X55	

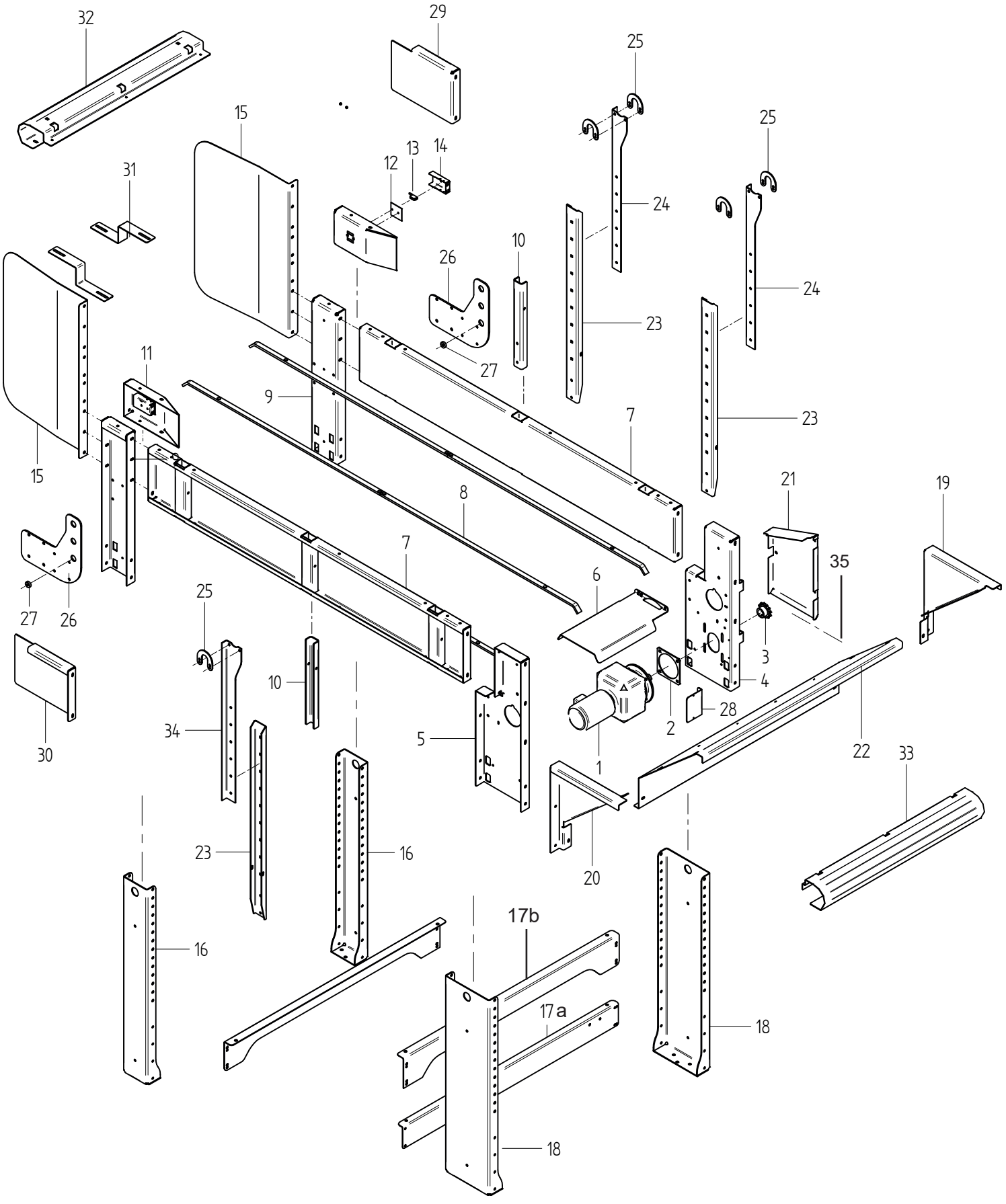
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Fig. 2

R2_02

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **08-10**	Enhet: Unit: **TILKOBLINGSDELER EXTENSION PARTS**	Fig: **2**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	925043	1	GEARMOTOR 0,55Kw P603A F21	GEARMOTOR 0,55Kw P603A F21	
2	270416	1	MELLOMLEGGSPLATE, MOTOR	PLATE, MOTOR	
3	270456	1	KJEDEHJUL Z12 - 3/4"	SPROCKET Z12 - 3/4”	
4	270460	1	BAKFOT H.	HIND FOOT RH	
5	270461	1	BAKFOT V.	HIND FOOT LH	
6	270454	1	DEKKPLATE FOR MOTOR	COVER PLATE FOR MOTOR	
7	270404	2	SIDEKARM AUTO	SIDE FRAME AUTO	
8	273059	6	GLIDESKINNE	GLIDE RAIL FOR LONG BASE	
9	270407	2	FRAMFOT, STASJONÆR	FRONT FOOT STATIONARY	
10	270399	2	AVSTIVERKANAL	SUPPORT CANAL	
11	270395	2	STYREPLATE	GUIDING PLATE	
12	270394	2	VINDU PLEXI	WINDOW PLEXI	
13	959634	2	FOTOCELLE TYPE E3Z-T81	FOTOCELLE TYPE E3Z-T81	
14	270392	2	HOLDER FOTOCELLE K1	HOLDER FOTOCELLE K1	
15	270455	2	STYREPLATE AUTO	GUIDING PLATE AUTO	
16	270502	2	HØY FOT SMAL	HIGH FOOT NARROW	
17a	270577	2	STØTTE	SUPPORT	Valid from 733→
17b	270504	2	STØTTE	SUPPORT	Valid up to →732
18	270503	2	HØY FOT BRED	HIGH FOOT WIDE	
19	270391	1	STØTTETREKANT H.	SUPPORT PLATE RH	
20	270390	1	STØTTETREKANT V.	SUPPORT PLATE LH	
21	270462	1	DEKSEL	COVER	
22	270389	1	FORLENGERPLATE	EXTENSION PLATE	
23	270440	3	OPPHENGSFESTE	SUSPENSION PLATE	
24	270434	2	OPPHENG MIDT V.	SUSPENSION RH	
25	231032	5	FESTEBØYLE TALJE Ø40	FASTENING ELEMENT	
26	270433	2	BRAKETT	BRACKET	
27	270436	2	HYLSE	COLLAR	
28	270448	1	FESTE	BRACKET	
29	270437	1	EKSTRAKARM H.	EXTRA FRAME RH	
30	270439	1	EKSTRAKARM V.	EXTRA FRAME LH	
31	270451	2	DEKKPLATE SKJØT	COVER PLATE	
32	273054	1	RETUR DEKSEL	COVER PLATE	
33	273099	1	AKSLING DEKSEL	COVER PLATE	
34	270435	1	OPPHENG MIDT H.	SUSPENSION RH	
35a	273333	1	KJEDE 3/4’ 45 LEDD 12B-1 REINFORCED	CHAIN 3/4’ 45 LINKS 12B-1 REIN-	
35b	921489	1	KJEDELÅS 3/4’ 12B-1 REINFORCED	CHAIN LOCK 3/4 12B-1	

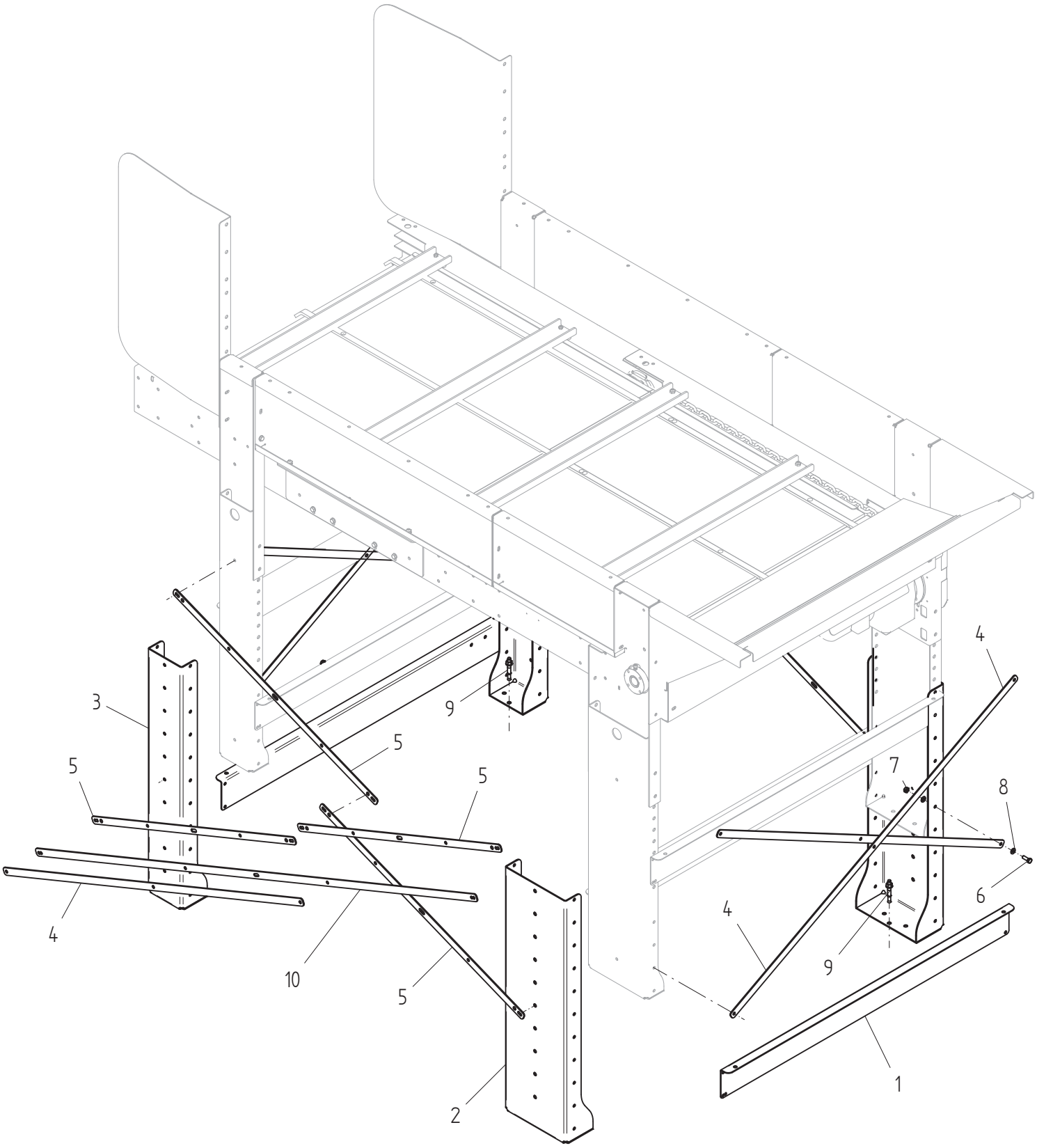

Fig. 3

R2_04

Utgave: / Issue: 3	Redskap: / Implement: **MAGAZINE R2**	
Dato: / Date: **05-16**	Enhet: / Unit: **R2 FOTSETT 2M - 3M+1M** / **R2 FOOT KIT 2M - 3M+1M**	Fig: **3**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
	27658		**R2 FOTSETT 2M HØYT**	**R2 FOOT KIT 2M HIGH**	
1	270577	2	STØTTE	SUPPORT	
2	274171	2	FOT BRED R2 HØY	FOOT WIDE HIGH	
3	274172	2	FOT SMAL R2 HØY	FOOT NARROW HIGH	
4	274174	4	AVSTIVERSTAG SIDE	CROSS STAY SIDE	
5	274176	8	AVSTIVERSTAG KORT 1M	CROSS STAY SHORT 1M	
6	911009	40	6KT. SKRUE M10X30	HEX. BOLT M10X30	
7	917204	40	LÅSEMUTTER M10	LOCK NUT M10	
8	920262	80	BRIKKE M10/Ø20/2MM	WASHER M10/D20/2MM	
9	911235	4	EKSPANSJONSBOLT M12X103	EXPANSION BOLT M12X103	
	27657		**R2 FOTSETT - 2M HØYT**	**R2 FOOT KIT - 2M HIGHT**	
5	274176	4	AVSTIVERSTAG KORT 1M	CROSS STAY SHORT 1M	
	27659		**R2 FOTSETT - 3M HØYT**	**R2 FOOT KIT - 3M HIGHT**	
10	274173	4	AVSTIVERSTAG KORT 1M	CROSS STAY SHORT 1M	
	27668		**R2 FOTSETT - 3M+1M HØYT**	R2 FOOT KIT - 3M+1M HIGH	
11	274175	4	AVSTIVERSTAG MELLOM	CROSS STAY BETWEEN	
5	274176	4	AVSTIVERSTAG KORT 1M	CROSS STAY SHORT 1M	

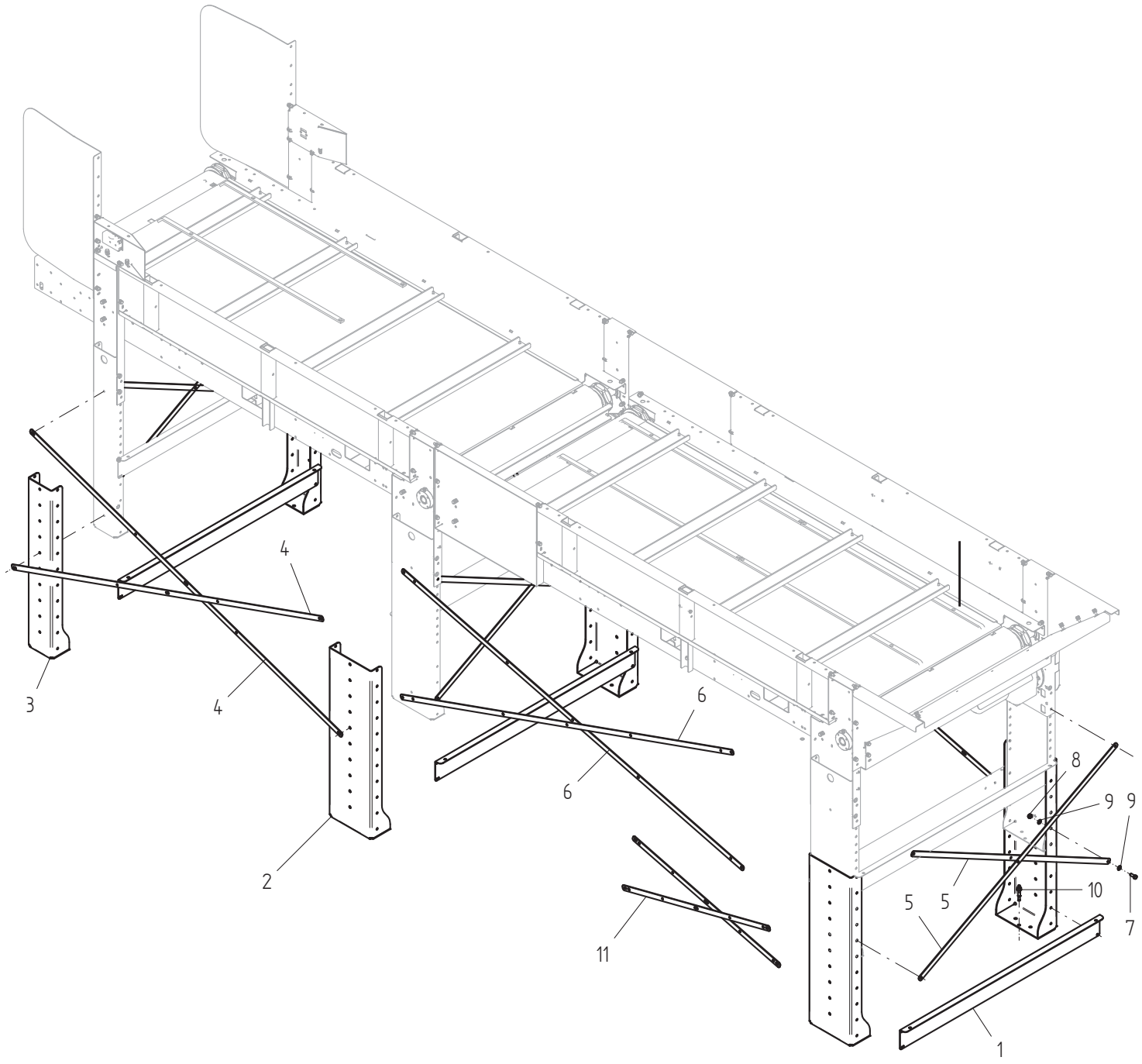

Fig. 4

R2_10

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **05-16**	Enhet: Unit: **R2 FOTSETT 3M+2M - 3M+3M** **R2 FOOT KIT 3M+2M - 3M+3M**	Fig: 4

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
	27669		**R2 FOTSETT 3M+2M**	**R2 FOOT KIT 3M+2M**	
1	270577	3	STØTTE	SUPPORT	
2	274171	2	FOT BRED R2 HØY	FOOT WIDE HIGH	
3	274172	4	FOT SMAL R2 HØY	FOOT NARROW HIGH	
4	274173	4	AVSTIVERSTAG LANG	CROSS STAY LONG	
5	274174	6	AVSTIVERSTAG SIDE	CROSS STAY SIDE	
6	274175	4	AVSTIVERSTAG MELLOM	CROSS STAY BETWEEN	
7	911009	72	6KT. SKRUE M10X30	HEX. BOLT M10X30	
8	917204	144	LÅSEMUTTER M10	LOCK NUT M10	
9	920262	72	BRIKKE M10/Ø20/2MM	WASHER M10/D20/2MM	
10	911235	6	EKSPANSJONSBOLT M12X103	EXPANSION BOLT M12X103	
	27687		**R2 FOTSETT 3M+3M**	**R2 FOOT KIT 3M+3M**	
1	270577	3	STØTTE	SUPPORT	
2	274171	4	FOT BRED R2 HØY	FOOT WIDE HIGH	
3	274172	2	FOT SMAL R2 HØY	FOOT NARROW HIGH	
4	274173	8	AVSTIVERSTAG LANG	CROSS STAY LONG	
5	274174	6	AVSTIVERSTAG SIDE	CROSS STAY SIDE	
11	274176	4	AVSTIVERSTAG KORT 1M	CROSS STAY SHORT	
7	911009	72	6KT. SKRUE M10X30	HEX. BOLT M10X30	
8	917204	144	LÅSEMUTTER M10	LOCK NUT M10	
9	920262	72	BRIKKE M10/Ø20/2MM	WASHER M10/D20/2MM	
10	911235	6	EKSPANSJONSBOLT M12X103	EXPANSION BOLT M12X103	

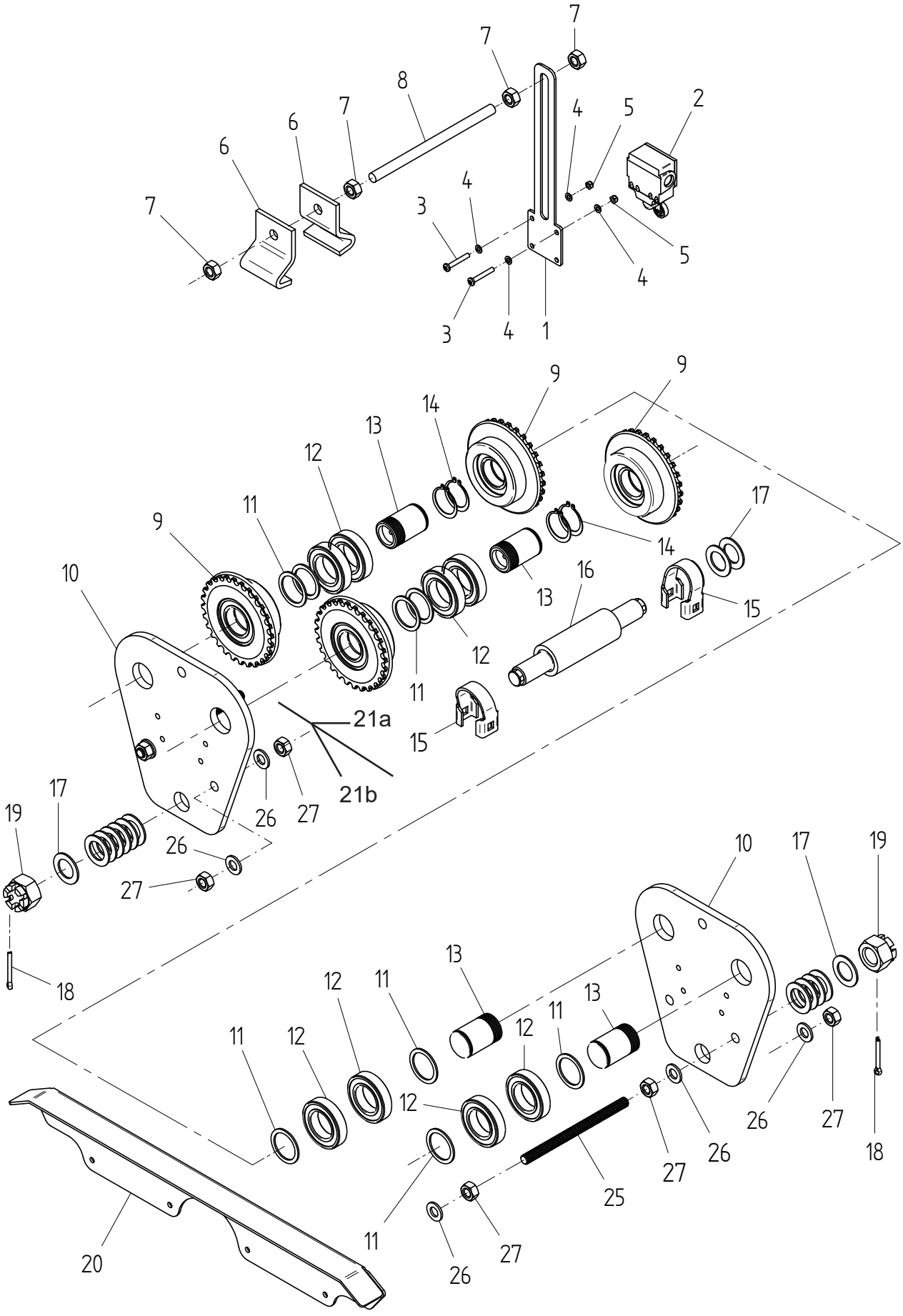
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Fig. 5

R2_03

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **08-10**	Enhet: Unit: **DIVERSE DELER VARIOUS PARTS**	Fig: **5**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	271114	1	HOLDER	BRACKET	
2	957140	1	BRYTER ENDE	SWITCH	
3	910527	2	SYL.HODE. M5X35	CYL.HODE. M5X35	
4	920151	4	SKIVE Ø5	WASHER Ø5	
5	917200	2	LÅSEMUTTER M5	LOCK NUT M5	
6	200511	2	FESTEKLOHALVDEL IPE120	BRACKET HALF IPE120	
7	917103	4	MUTTER M12	NUT M12	
8	264040	1	GJENGEBOLT M12X200	THREADED BOLT	
9	232030	4	LØPEHJUL	RUNNER	
10	231086	2	LØPEKATTSIDE	TRANSVERSE CARRIER SIDE	
11	922030	8	SKIVE Ø35.6XØ45X2	WASHER Ø35.6XØ45X2	
12	933503	8	LAGER Ø35-Ø62-14 6007 2RS	WEAR Ø35-Ø62-14 6007 2RS	
13	231022	4	HJULAKSLING LØPEKATT	WHEEL SHAFT	
14	921002	4	SEGERING A-35	CIRCLIP A-35	
15	232018	2	KLEMME	CLAMP	
16	231050IPE120-180	1	TALJEAKSLING IPE 120-180	TACKLE SHAFT IPE 120-180	IPE 120-180
17	920235	14	SKIVE Ø40XØ25X2	WASHER Ø40XØ25X2	
18	921605	2	SPLINT 94-5X40	SPLIT PIN DIN 94-5X40	
19	917503	2	MUTTER DIN 935-M24	NUT DIN 935-M24	
20	270388	1	BRYTERSKINNE	SWITCH RAIL	
21a	921501	1	KJEDE 1/2X3/16 62 LEDD VELIO	CHAIN 1/2X3/16 62 LINKS	→ 2019
	921502	1	KJEDELÅS 1/2 X3/16 VELIO	CHAIN LOCK 1/2 X3/16	→ 2019
21b	921541	1	KJEDE 1/2”X3/16” 62 LEDD	CHAIN 1/2”X3/16” 62 LINKS	2019 →
	921587	1	KJEDELÅS 1/2”X 3/16”	CHAIN LOCK 1/2”X3/16”	2019 →
25	231041IPE120-180	2	FORBINDELSESBOLT IPE 120-180	BOLT IPE 120-180	IPE 120-180
26	920155	8	BRIKKE M12/Ø24/2,5MM	WASHER M12/D24/2.5MM	
27	917103	8	6KT.MUTTER M12	HEX.NUT M12	

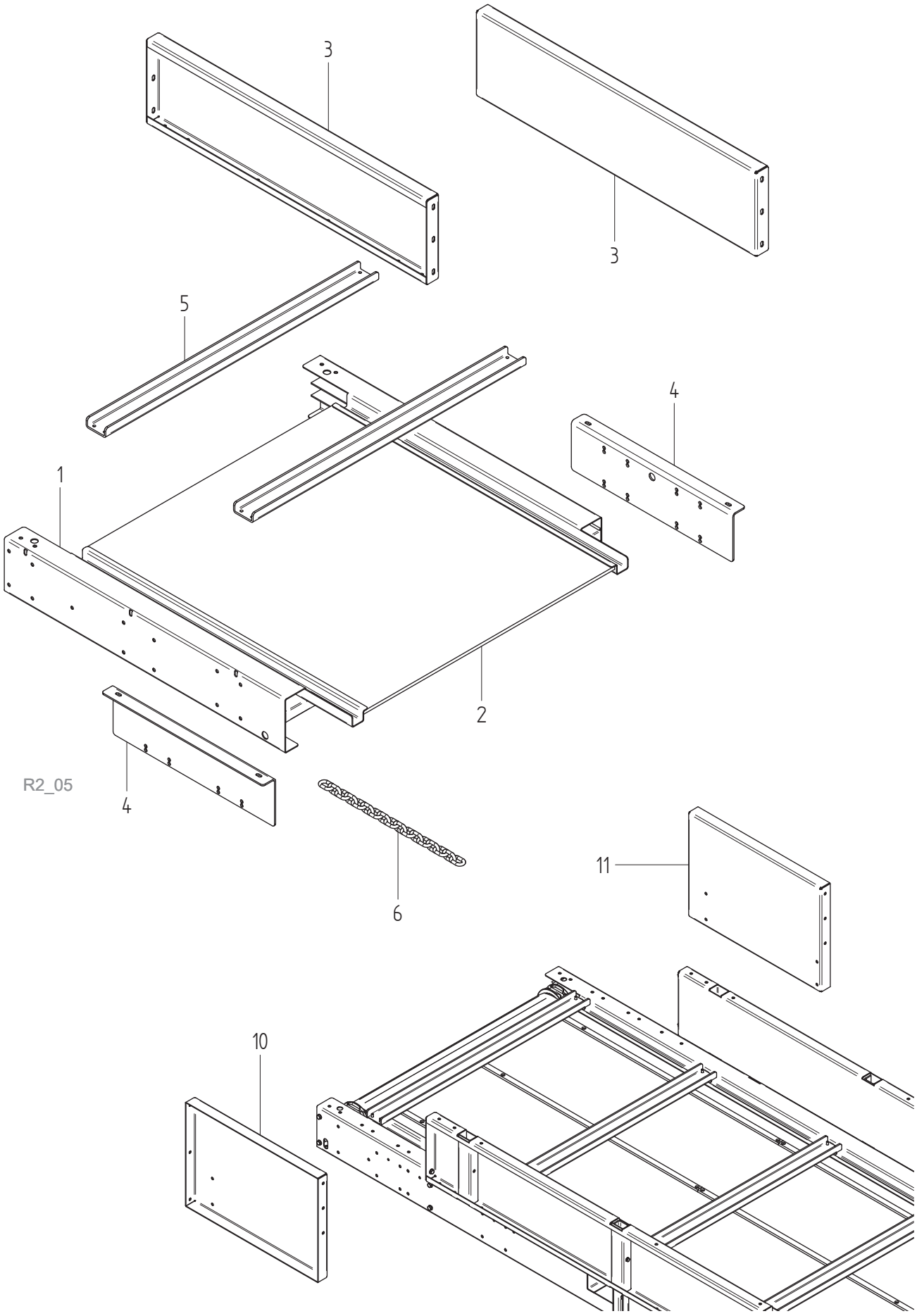


Fig. 6

R2_06

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **08-10**	Enhet: Unit: **FORLENGELSE 1M OG 3M EXTENSION UNIT 1M AND 3M**	Fig: 6

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	273158	1	1M SEKSJON	1M UNIT	
2	273153	2	KRYSSFINER 1075 X1200 X12 mm	PLYWOOD	
3	270463	2	KARM FORLENGERSEKSJON 1M	FRAME EXTENSION UNIT 1M	
4	273157	2	SKJØTEPLATE 1M SEKSJON	SPLICING PLATE UNIT 1M	
5	270014	4	MEDBRINGER	CARRIER	
6a	921471	1	KJETTING 10X35MM 17 LEDD	CHAIN 10X35MM 17 LINKS	
6b	921473	1	KJETTING 10X35MM 15 LEDD	CHAIN 10X35MM 15 LINKS	
6c	921495	1	KJETTING 10X35MM 17 LEDD	CHAIN 10X35MM 17 LINKS	RUSTFRI
6d	921494	1	KJETTING 10X35MM15 LEDD	CHAIN 10X35MM 15 LINKS	“
			FORLENGELSE 3M	EXTENSION 3M	
10	270464	1	FOT FORLENGERBORD H.	FOOT EXTENSION UNIT 3M RH	
11	270465	1	FOT FORLENGERBORD V.	FOOT EXTENSION UNIT 3M LH	

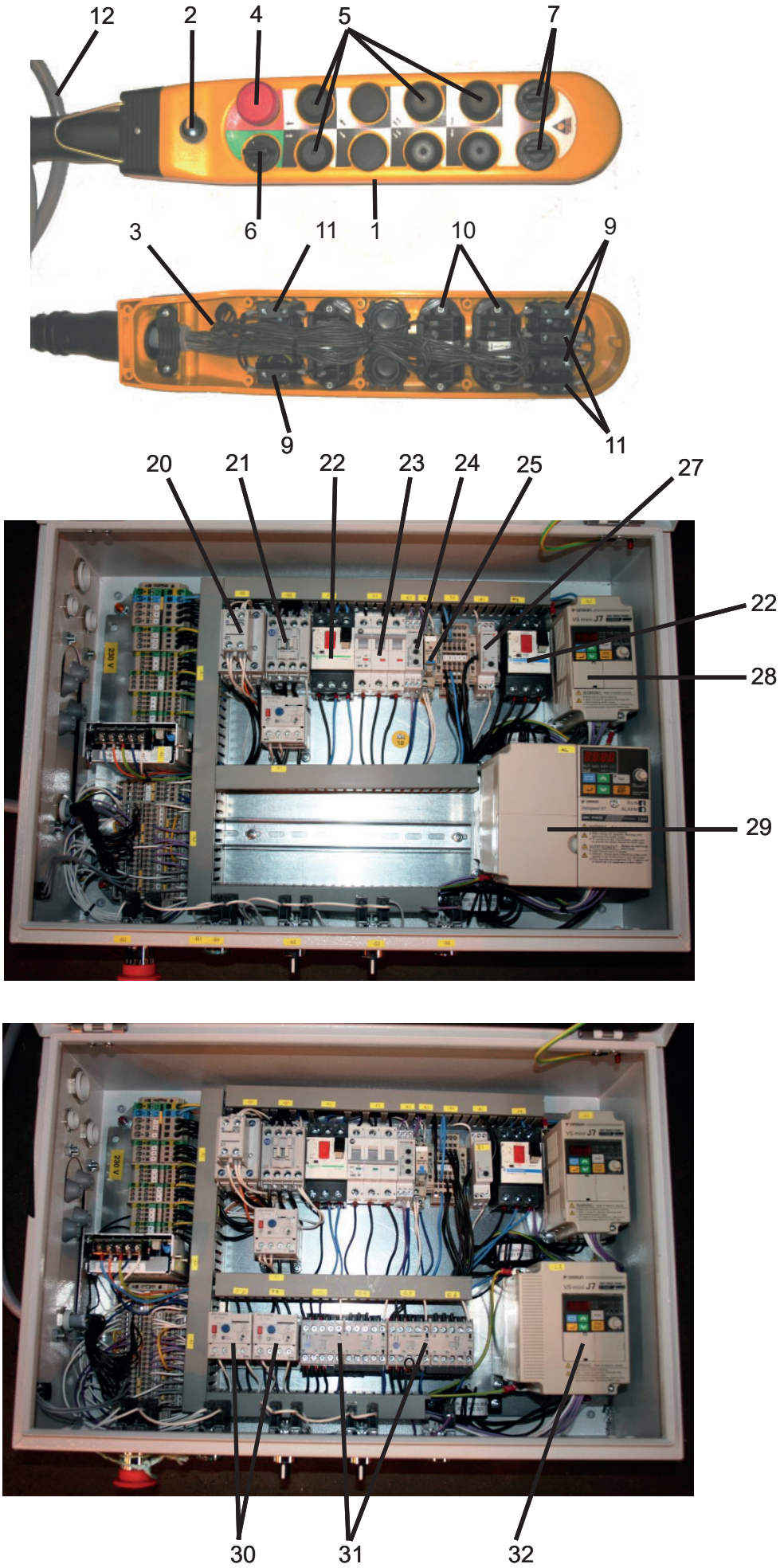


Fig. 7

Utgave: / Issue: 3	Redskap: / Implement: **MAGAZINE R2**	
Dato: / Date: **08-10**	Enhet: / Unit: **STYRING 1 27304 / 27305** **CONTROL SYSTEM 1 27304 / 27305**	Fig: 7

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	947043	1	STYREKABEL K1,R1,R2	CONTROL CABLE K1,R1,R2	
2	956993	1	POT. RATT 20MM	POTENTIOMETER HANDLE	
3	956992	1	POTENSIOMETER 4,7KOHM	POTENTIOMETER 4,7KOHM	
4	956164	1	NØDSTOPPKNAPP	EMERGENCY STOP BUTTOM	
5	956188	1	BRYTERHETTE	SWITCH CAP	
6	956166	1	BRYTER M/3 POS. 1-0-2	SWITCH W/3 POS. 1-0-2	
7	956168	1	BRYTER M/3 POS. 1-0-2 M/RETUR	SWITCH W/3 POS. 1-0-2	
9	956163	2	KONTAKTELEMENT ENKELT 1NC	CONTACT MEMBER SINGLE 1	
10	956160	1	KONTAKTELEMENT DOBB. 1HAST	CONTACT MEMBER DOUBLE 1	
11	956162	1	KONTAKTELEMENT ENKELT 1NO	CONTACT MEMBER SINGLE 1	
12	952514	1	KABEL PVC-110 YJ-Z 20X0,75MM2	CABLE PVC-110 20X0 75MM2	
20	951574	1	KONTAKTOR 100-C30EJ00	CONTACTOR 100-C30EJ00	
21	951575	1	KONTAKTOR 100-C23EJ10	CONTACTOR 100-C23EJ10	
22	951577	1	ELEKTRISK MOTORVERN	ELECTRIC MOTOR PROT.	
23	951765	1	MOTORVERNBRY. GV2-M14 6-10A	MOTOR-PROTECTING SWITCH	
24	951592	1	3 POLET SIKRING D-AUTOMAT 6A	3 P. FUSE D-AUTOMAT 6A	
25	951843	1	TIDSRELE DMB51CM24	TIME-LAG RELAY	
26	951797	1	RELE OMRON 24VDC	RELAY OMRON 24VDC	
27	957503	1	MÅLE-RELE 5-50A	RELAY 5-50A	
28	957522	1	FREKVENSOMFORMER	FREQ. CONVERTER	
29	957528	1	FREQ. INVERTER	FREQ. INVERTER	
30	951594	1	KONTAKTOR MINI 5A	CONTACTOR MINI 5A	
31	951535	1	ELEKTRONISK MOTORVERN	EL. MOTOR PROTECTION	
32	957526	1	FREKVENSOMFORMER 1,1 KW	FREQ. CONVERTER 1,1 KW	

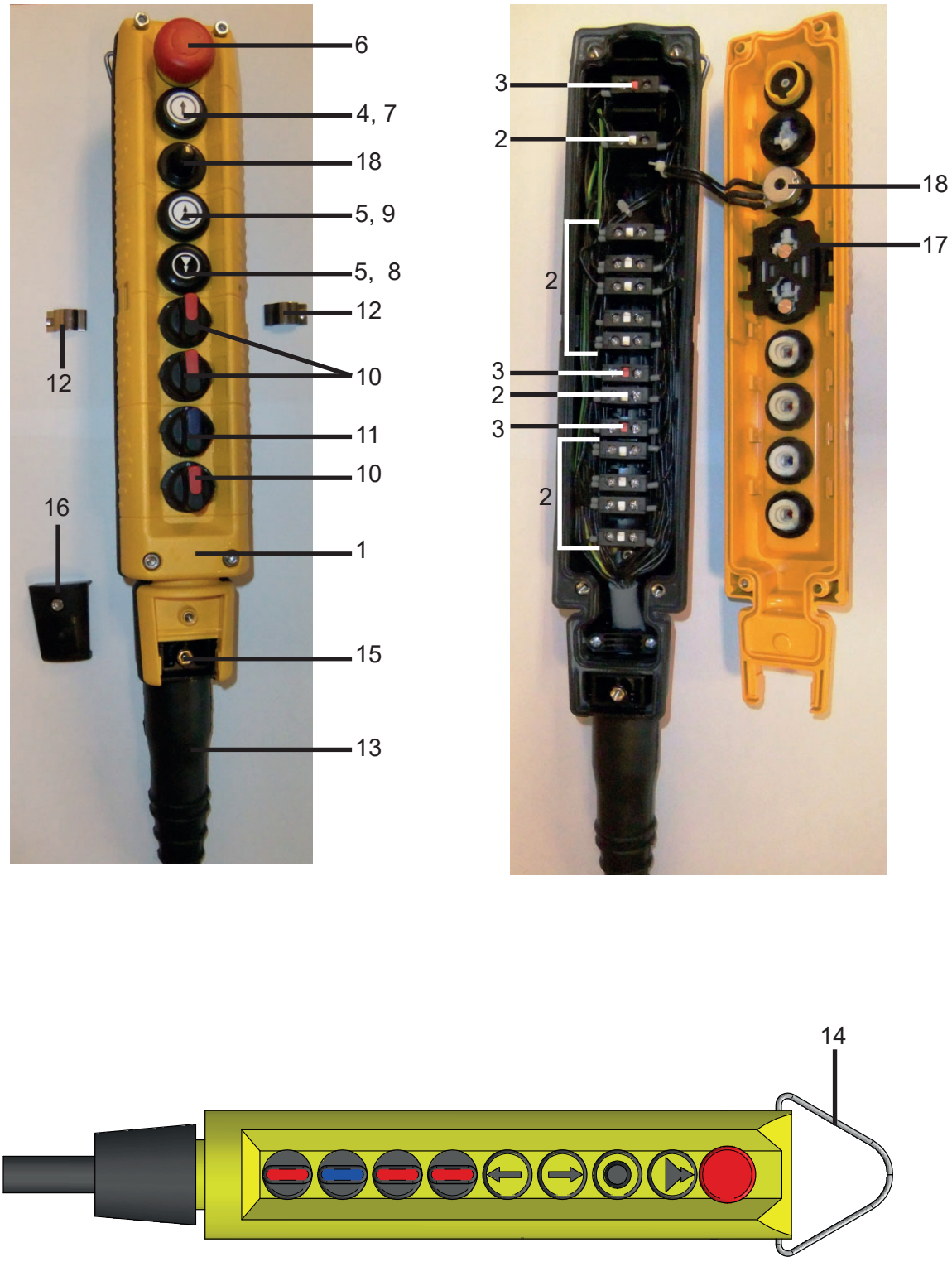
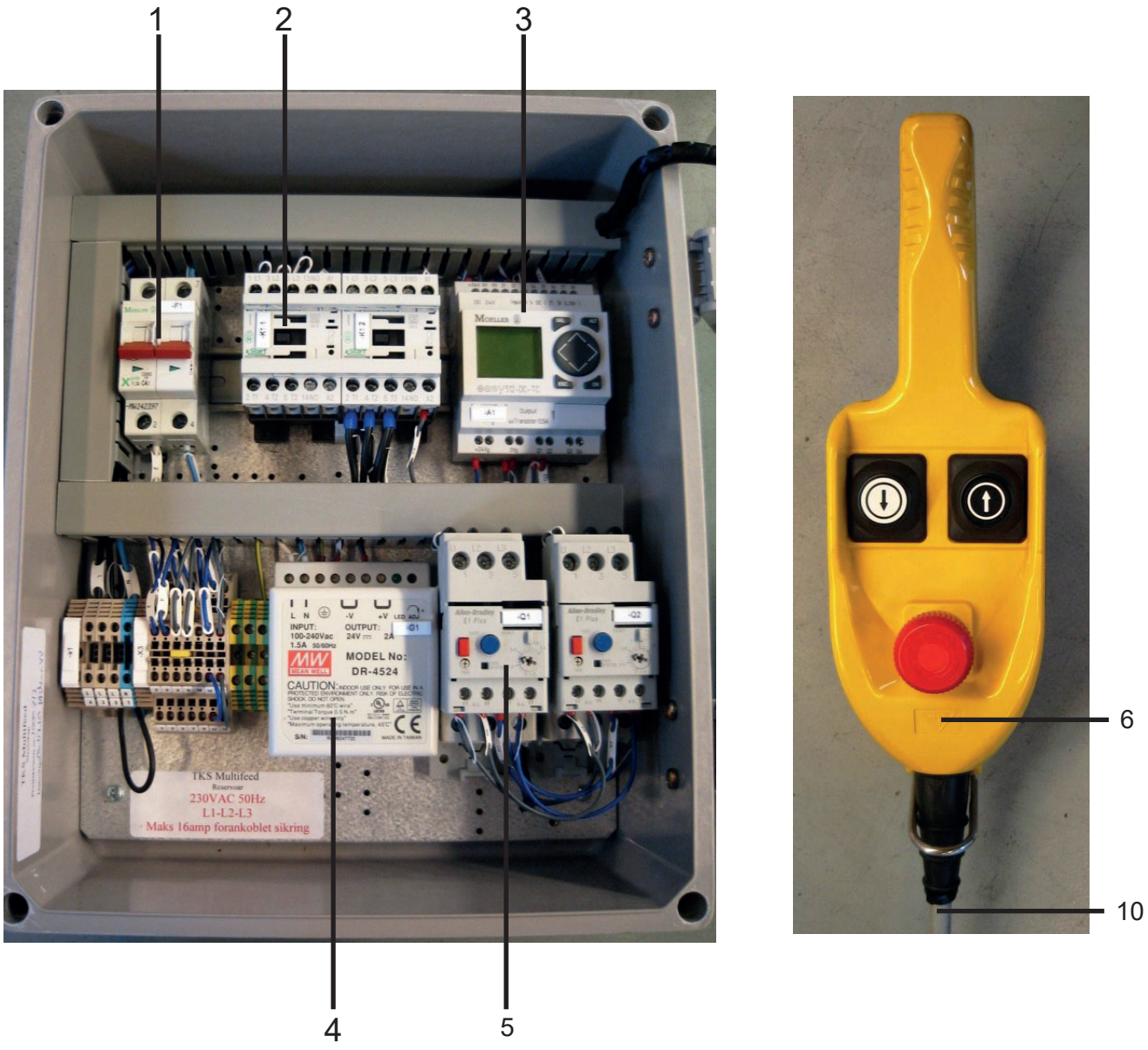


Fig. 8

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **01-14**	Enhet: Unit: **STYRETABLÅ PENDENT CONTROL**	Fig: **8**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	**956205**	**1**	**STYRETABLÅ FOR K2 KOMPL.**	**PENDENT CONTROL K2 ASSY.**	
2	956206	1	KONTAKTELEMENT 1 NO HVIT	CONTACT MEMBER 1NO WHITE	
3	956207	1	KONTAKTELEMENT 1 NC SVART	CONTACT MEMBER 1NC BLACK	
4	956208	1	TRYKKBRYTER 1 SPEED	PUSH BUTTON 1 SPEED	
5	956209	1	TRYKKBRYTER 2 SPEED	PUSH BUTTON 2 SPEED	
6	956210	1	NØDSTOPPKNAPP Ø40	EMERGENCY STOP SWITCH Ø40	
7	956211	1	SYMBOL PIL HVIT ENKEL	SYMBOL ARROW WHITE SIMPLE	
8	956212	1	SYMBOL PIL SORT DOBBEL	SYMBOL ARROW BLACK DOUBLE	
9	956213	1	SYMBOL PIL HVIT DOBBEL	SYMBOL ARROW WHITE DOUBLE	
10	956214	1	VRIBRYTER 1-0-2 RETUR RØD	TURN SWITCH 1-0-2 RETURN RED	
11	956215	1	VRIBRYTER 1-0-2 HOLD BLÅ	TURN SWITCH 1-0-2 RETURN BLUE	
12	956216	1	LÅSEKLIPS PRTR1035PE MIKE	LOCKING CLIP PRTR1035PE	
13	956217	1	KABELBESKYTTELSE	CABLE PROTECTION	
14	956218	1	KROK PRSL1896PI MIKE	HOOK PRSL1896PI MIKE	
15	956219	1	WIRE KLEMME PRSL1896PI MIKE	WIRE CLAMP PRSL1896PI	
16	956221	1	KABELDEKSEL PRSL1821PI MIKE	CABLE COVER PRSL1821PI	
17	956223	1	MEKANISK LÅS FOR BRYTERE	MECH. LOCK FOR SWITCH	
18	956224	1	POTENSIOMETER 4,7 OHM LIN	POTENTIOMETER 4,7 OHM LIN	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Maks 16amp forankoblet sikring
MODEL No:
DR-4524
-K1.2
Tilbake / Frem
NØDSTOPP
STEP

Fig. 9

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **08-10**	Enhet: Unit: **STYRING 2** **CONTROL SYSTEM 2**	Fig: **9**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	959653	1	SIKRING. ELEMENTAUTOMAT 20A	FUSE	
2	268605	1	KONTAKTOR	CONTACTOR	
3	268618	1	PLS RESERVOAR R2	PLS RESERVOAR R2	
4	268582	1	5V STRØMFORSYNING	5V POWER SUPPLY	
5	951535	1	ELEKTRONISK MOTORVERN 1-5A	EL. MOTOR PROTECTION 1-5A	
6	956151	1	TABLÅ CHARLIE 24V	PENDENT CONTROL 24V	
7	268690	1	BRYTER FREM/TILBAKE R2	SWITCH FORWARD/BACK R2	
8	268691	1	TRYKKNAPP STEPKJØRING R2	SWITCH STEP DRIVING R2	
9	268584	1	NØDSTOPPBRYTER	EMERGENCY STOP SWITCH	
10	952588	1	KABEL PUR 7X1.5mm^2 GRÅ	CABLE PUR 7X1.5mm^2 GREY	

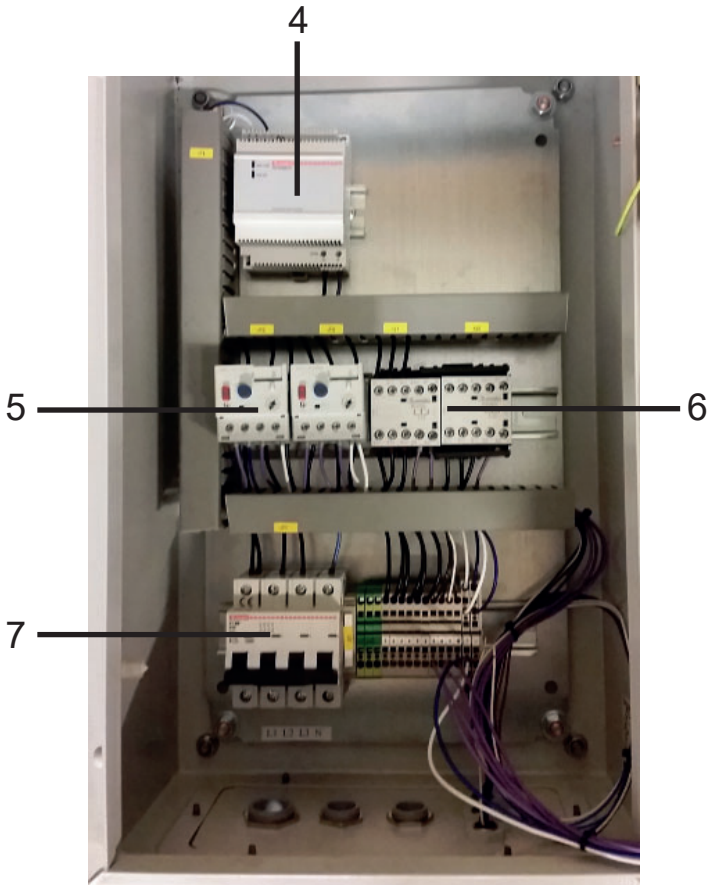

Fig. 10

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **03-16**	Enhet: Unit: **STYRING AUTOFYLLING CONTROL SYSTEM AUTOFILLING**	Fig: **10**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
	27548		**STYRING AUTOFYLLING**	**CONTROL SYSTEM AUTOF.**	
1	959978	1	PLS JAZZ AUTOF. R2 M/PRG	PLS JAZZ AUTOF. R2 W/PRG	
2	951516	1	NØDSTOPPKNAPP TRYKK/VRI	EMERGENCY STOP SWITCH	
3	951517	1	TRYKKNAPP GRØNT	GREEN SWITCH KNOB	
4	957494	1	POWER SUPPLY 2,5A	CONTACTOR	
5	951535	2	ELEKTRONISK MOTORVERN 1-5A	ELECTRIC MOTOR PROTEC.1-5A	
6	951476	2	KONTAKTOR MINI 11 BG12 01	CONTACTOR	
7	957718	1	SIKRING. ELEMENTAUTOMAT 10A	FUSE	

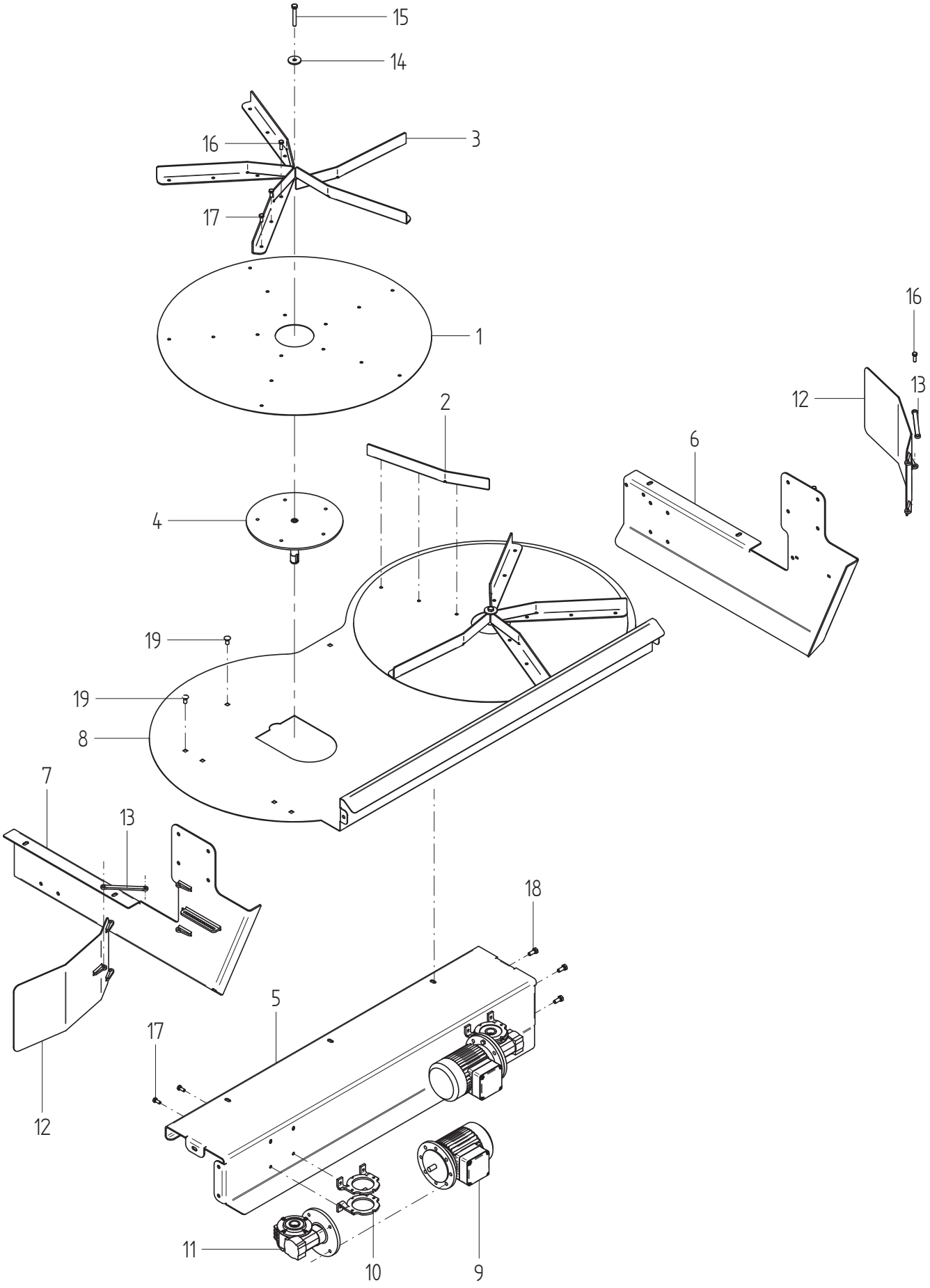

Fig. 11

R2_09

Utgave: Issue: 3	Redskap: Implement: **MAGAZINE R2**	
Dato: Date: **08-10**	Enhet: Unit: **STRØAGGREGAT BEDDING SYSTEM**	Fig: **11**

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	273405	2	KASTE SKIVE	PLATE	
2	273408	5	VINGE KNEKK H	WING PROFILE RH	
3	273409	5	VINGE KNEKK V	WING PROFILE LH	
4	273400	2	KASTEVALSE AKSLING SV	SHAFT PLATE	
5	273407	1	PROFIL SNEKKEFESTE	PROFILE BRACKET	
6	273412	1	FESTEPLATE H	CLAMP RH	
7	273413	1	FESTEPLATE V	CLAMP LH	
8	273403	1	KASTEVALSE DEKSEL	COVER	
9	989860	2	MOTOR 71 B5 0.9 KW-1500	MOTOR 71 B5 0.9 KW-1500 2PG	
10	268060	4	SNEKKEFOT BONFIG 49	WORM BRACKET BONFIG 49	
11	409015	2	SNEKKE 49 1:7 MVF49P P71B5	WORM 49 1:7 MVF49P P71B5	
12	273411	2	SKJERMPLATE	GUARD PLATE	
13	273415	2	STAG	STAY	
14	911018	2	6KT. SKRUE M10X70	HEX. BOLT M10X70	
15	920225	2	BRIKKE M10/Ø40/4MM	WASHER M10/Ø40/4MM	
16	910823	20	6KT. SKRUE M8X25	HEX. BOLT M8X25	
	917202	20	LÅSEMUTTER M8	LOCK NUT M8	
17	910808	28	6KT. SKRUE M8X20	HEX. BOLT M8X20	
	917202	28	LÅSEMUTTER M8	LOCK NUT M8	
18	911006	6	6KT.SKRUE M10X25	HEX. BOLT M10X25	
	917204	6	LÅSEMUTTER M10	LOCK NUT M10	
19	911022	7	LÅSESKRUE M10X20	LOCK SCREW M10X20	
	917204	7	LÅSEMUTTER M10	LOCK NUT M10	

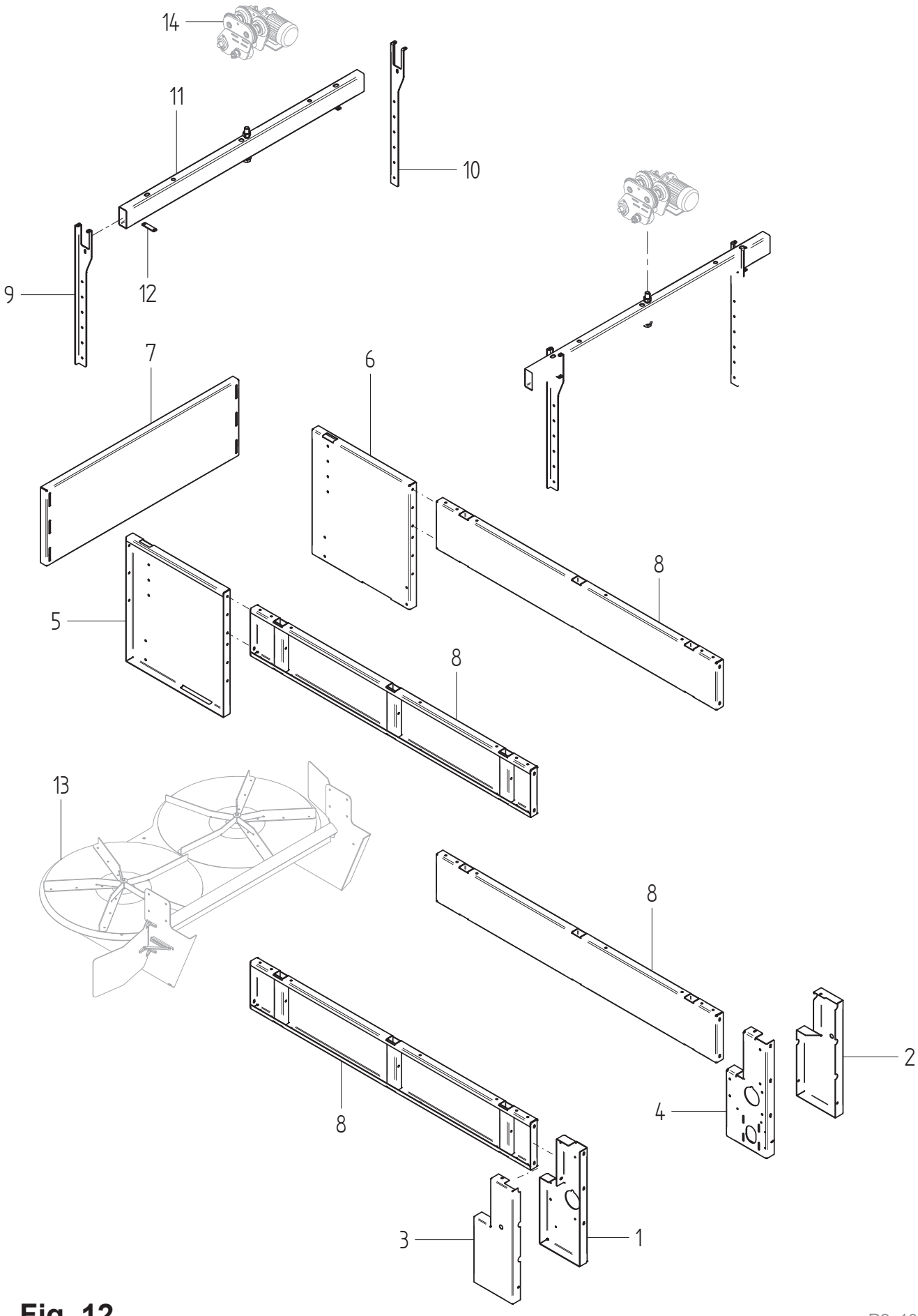

Fig. 12

R2_10

Utgave: / Issue: 3	Redskap: / Implement: **MAGAZINE R2**	
Dato: / Date: **06-12**	Enhet: / Unit: **STRØAGGREGAT - DEKSLER / BEDDING SYSTEM - COVERS**	Fig: **12**

Ref. No.	Delenr. Part nr.	Ant.	Gjenstand:	Description:	Anmerkning:
1	270466	1	BAKFOT OPPHENG V.	SUSPENSION LH	
2	270429	1	DEKSEL H BAK	COVER RH REAR	
3	270424	1	DEKSEL V BAK	COVER LH REAR	
4	270467	1	BAKFOT OPPHENG H.	SUSPENSION RH	
5	270492	1	ENDEPLATE H.	PLATE RH	
6	270493	1	ENDEPLATE V.	PLATE LH	
7	270494	1	FRONTPLATE	PLATE FRONT	
8	270405	4	PLATE KARM	PLATE	
9	270188	1	OPPHENGSPLATE V.	SUSPENSION PLATE LH	
10	270189	1	OPPHENGSPLATE H.	SUSPENSION PLATE RH	
11	270186	1	OPPHENGSBOM 1800MM	SUSPENSION BRACKET	
12	270195	2	KLEMPLATE	CLAMP	
13	**27385**	**1**	**STRØAGGREGAT**	**BEDDING SYSTEM**	
14	**23602**	**2**	**MOTOR LØPEKATT**	**MOTOR TROLLEY**	

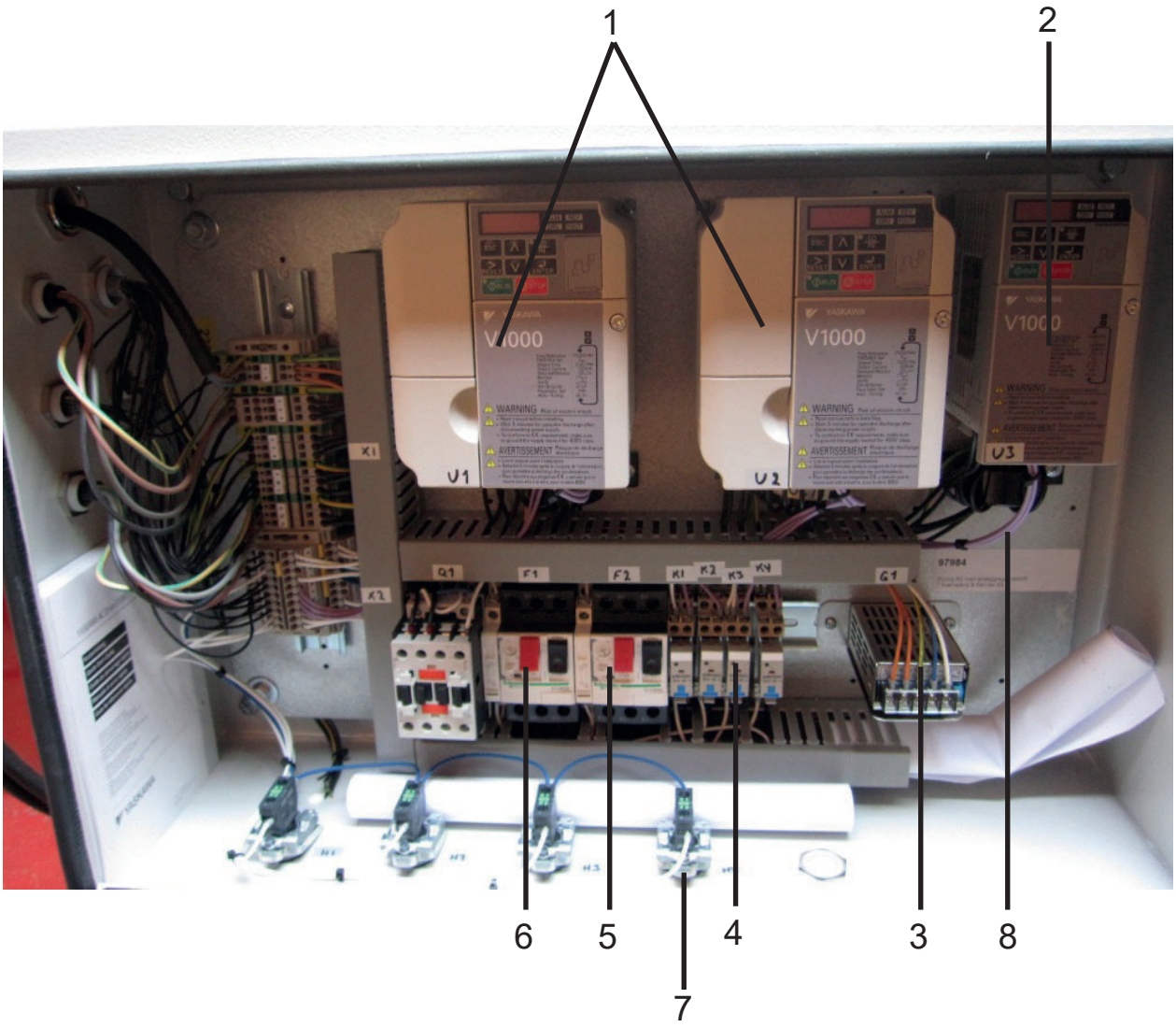
1
2
V1000
V1000
V1000
WARNING
AVERTISSEMENT
U1
U2
U3
X1
X7
Q1
F1
F2
K1
K2
K3
K4
G1
97984
6
5
4
3
8
7

Fig. 13

Utgave: Issue:	3	Redskap: Implement:	MAGAZINE R2	tks
Dato: Date:	06-12	Enhet: Unit:	STYRING - STRØAGGREGAT CONTROLLER - BEDDING SYSTEM	Fig: 13

Ref. No.	Delenr. Part nr.	Ant. Qty.	Gjenstand:	Description:	Anmerkning:
1	957571	2	FREKVENSOMFORMER 1,5	FREQ. CONVERTER 1,5	
2	957570	1	FREKVENSOMFORMER 0,55kWHD	FREQ. CONVERTER 0,55 kWHD	
3	951938	1	TRAFO TR50 230V/24V M/SIKRING	TRAFO TR50 230V/24V	
4	951826	1	RELE 24V AC	RELAY 24V AC	
5	951510	1	MOTORVERNBRYTER 6-10A	MOTOR-PROT. SWITCH 6-10A	
6	951586	1	HJELPEKONTAKT HN-10 B&J	CONTACT HN-10 B&J	
7	951502	4	LYS GRØN LM2T MB3	LIGHT GREEN LM2T MB3	
8	957540	1	FERRIT BESKYTTELSE	FERRIT PROTECTION	

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