

Original manual language: Slovak | This document: English translation

RUNI EPS Compactor Line

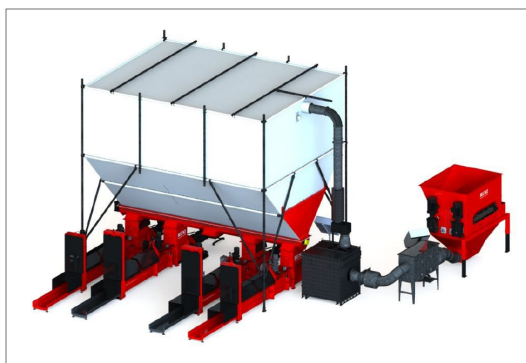
Operation Manual

Silo line L209-2025 • Pre-crusher P051-2025 • Silo S0109-2025

4x RUNI SK370 screw compactor (2661-2025, 2662-2025, 1786-2017, 1873-2018) • 4x guillotine block divider



ORIGINÁLNY NÁVOD NA OBSLUHU INŠTALÁCIA SILA RUNI



Linka so silom L209-2025:

Model P (HD preddrvič)- Sér.č.: P051-2025

Model S (silo s rozdeľovacou závitovkou) - Sér.č.: S0109-2025

V súvislosti so závitovkovými lismi SK370, sér.č. 2661-2025, 2662-2025, 1786-2017, 1873-2018
pozri príslušné návody na obsluhu

Manufacturer: RUNI A/S, Industriparken 8, DK-6880 Tarm, Denmark | Tel: +45 9737 1799 |
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English translation of the original Slovak operation manual. In case of any discrepancy, the original Slovak-language manual takes precedence.

PART 1

RUNI SILO INSTALLATION MANUAL — LINE L209

Cover data

ORIGINAL OPERATION MANUAL — SILO INSTALLATION

Line with silo L209-2025:

Model P (HD pre-crusher) – Serial no.: P051-2025

Model S (silo with distribution screw) – Serial no.: S0109-2025

Regarding the screw presses SK370, serial no. 2661-2025, 2662-2025, 1786-2017, 1873-2018, see the respective operation manuals.

1. EU Declaration of Conformity

Manufacturer	RUNI A/S, Industriparken 8, DK-6880 Tarm, Denmark. Tel: +45 9737 1799
Authorised to compile the technical file	Anders Thygesen, CEO, Industriparken 8, DK-6880 Tarm
We hereby declare	Type: L (RUNI Line) Serial no.: L209 Year: 2025

Manufactured in accordance with the requirements of Directive 2006/42/EC of the European Parliament and of the Council. The relevant parts of the following standards have been applied:

- EN ISO 12100:2010 – Safety of machinery – General principles for design – Risk assessment and risk reduction
- EN ISO 13854:2019 – Safety of machinery – Minimum gaps to avoid crushing of parts of the human body
- EN ISO 13857:2019 – Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs
- EN 60204-1:2018 – Safety of machinery – Electrical equipment of machines – Part 1: General requirements
- ISO 13849-1:2015 – Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
- ISO 20607:2019 – Safety of machinery – Instructions for use – General drafting principles

Signed: Anders Thygesen, CEO

Machine assemblies: When forming part of an assembly of machinery, §38 of the Guide to the application of the Machinery Directive applies.
Before putting the equipment into service under Directive 2009/104/EC the following must be carried out: inspection by a competent person; a workplace assessment.
The machine's electrical power components comply with Directive 2014/35/EU (Low Voltage Directive). The electronic components in the machine's electrical equipment comply with Directive 2014/30/EU (EMC Directive).

1.1 Declaration of Incorporation – Type P (Pre-crusher)

Manufacturer	RUNI A/S, Industriparken 8, DK-6880 Tarm, Denmark
We hereby declare	Type: P (Pre-crusher) Serial no.: P051 Year: 2025
Machine function	EPS pre-crusher

We hereby declare that the essential requirements of Machinery Directive 2006/42/EC, Annex I, sections 1.1.1 h), 1.1.1 i), 1.1.2 b), 1.1.3, 1.3.1, 1.3.2, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.5.1, 1.7.4 are fulfilled.

It is declared that the partly completed machinery complies with all relevant provisions of Directive 2006/42/EC, the Low Voltage Directive 2014/35/EU and the EMC Directive

2014/30/EU. The manufacturer of the partly completed machinery undertakes, on a justified request from national authorities, to provide the relevant data (by e-mail).

Note: Partly completed machinery must not be put into service until the final machine into which it is to be incorporated has been declared in conformity with Directive 2006/42/EC.

1.1 Declaration of Incorporation — Type S (Silo with distribution screw)

We hereby declare	Type: S (silo with distribution screw) Serial no.: S0109 Year: 2025
Machine function	Distribution of EPS to the screw presses beneath the silo

Same essential requirements, standards and declaration text as above (Annex I sections 1.1.1 h), 1.1.1 i), 1.1.2 b), 1.1.3, 1.3.1, 1.3.2, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.5.1, 1.7.4), signed by Anders Thygesen, CEO.

1.2 Certificate of Modification — SK70 screw press, serial no. 1786 (2017)

Type: SK70 screw press **Serial no.:** 1786 **Year:** 2017

Modification performed: Replacement of the hopper so that it forms part of the RUNI L209 installation; replacement of the hydraulic flow-control valve and software update to bring the machine in line with serial numbers 2661-2025 and 2662-2025 (including temperature sensor and air purge for the photo sensors).

Modified in accordance with the requirements of Council Directive 2006/42/EC, Article 2, second indent; Low Voltage Directive 2014/35/EU; EMC Directive 2014/30/EU. Relevant parts of standards EN ISO 12100:2010, EN ISO 13854:2019, EN ISO 13857:2019, EN 60204-1:2018, ISO 13849-1:2015 and ISO 20607:2019 were applied. Signed: Anders Thygesen, CEO.

This machine is incomplete under Article 2, second indent of Directive 2006/42/EC. New parts must be correctly connected to the machine. The machine must be fitted with a hopper extension complying with ISO 13857. To form part of the L209 installation, the emergency circuit must be integrated with L209 so as to comply with EN 60204-1. Before commissioning under Directive 2009/104/EC: inspection by a competent person is required (incl. testing of all safety functions of both original and new parts), and a workplace assessment must be performed.

1.2 Certificate of Modification — SK70 screw press, serial no. 1873 (2018)

Identical modification, standards and requirements as for serial no. 1786 above (hopper replacement for integration into RUNI L209; hydraulic flow-control valve replacement and software update to match serial numbers 2661-2025 / 2662-2025). Type: SK70 screw press, Serial no.: 1873, Year: 2018. Signed: Anders Thygesen, CEO.

2. Field of application

The silo installation is designed for pre-crushing, storing and feeding used EPS into the RUNI screw press.

This press is configured for the following material: Degassed EPS (expanded polystyrene).

3. Warranty and liability

Warranty and liability for personal injury or damage to the machine are excluded if caused by one or more of the following:

- Use of the machine for a purpose other than intended
- Installation, commissioning, operation or maintenance by unqualified personnel
- Use of the machine by unqualified or unauthorised personnel
- Operation with damaged, incorrectly fitted or non-functioning safety and protective devices
- Failure to follow the instructions in this manual regarding transport, assembly, commissioning, operation and maintenance
- Insufficient cleaning of the machine
- Structural interventions or modifications to the equipment
- Insufficient inspection of wear parts
- Repairs carried out by unqualified personnel
- Insufficient removal of pressed material
- Repairs or disassembly during the warranty period performed by anyone other than a supplier's technician, unless otherwise agreed in advance
- Intrusion of foreign objects, natural disaster or force majeure

Interfaces: If the machine is integrated into an existing system, new hazard points may arise at the interfaces. RUNI A/S is not responsible for such new hazard points arising from integration of the machine into an existing system or production process. Our declaration of conformity becomes invalid in such cases.

4. Safety precautions

The machine must not be started if exposed persons* are present in the danger zone. If an exposed person must be present in the danger zone during inspection, service or maintenance, the following measures must be observed:

- 1. Disconnect the machine's power supply**
- 2. Fit a lock to the main switch**
- 3. Clearly mark that the machine must not be started**

The operator is responsible for ensuring that no exposed persons are present in the danger zone during operation.

* **Danger zone:** all areas in and around the machine that present a health and safety risk during operation. Pay particular attention to: hopper, pre-crusher, screw, pressing chamber and electrical components.

* **Exposed person:** any person who is fully or partly within the danger zone.

- It is forbidden to climb onto the machine.
- It is strictly forbidden to climb into the hopper.
- It is forbidden to operate the machine with damaged, incorrectly positioned or non-functioning safety and protective devices.

Some foam plastics may contain flammable or explosive gases for an extended period after production. Only equipment specially configured and approved for processing gas-releasing foam plastics may be used.

Due to the high noise levels generated during crushing and pressing, the operator must always wear approved hearing protection when working with the equipment. Idle noise level is approx. 55 dB; noise during material processing varies significantly by material type and can reach **91-113 dB(A,C)** in the operator's working area. Other persons near the equipment should also be given hearing protection if the noise level exceeds 80 dB(A). Hearing protection is recommended in all cases. The work area must be clearly marked with the appropriate blue symbol (hearing protection mandatory).

Note: the ability to orient oneself in the surroundings may be reduced while wearing hearing protection; the workplace must therefore be arranged to avoid risk to the operator and others.

WARNING! Note that the machine starts automatically if configured to do so.

Pressing of waste materials may release spores, bacteria, gases and chemical substances that can contaminate the working environment. Personal protective equipment against these substances must be worn near the machine. Manual feeding of material into the machine may cause damage to the musculoskeletal system; the work process must be designed with sufficient variability to prevent this. The machine is intended for industrial use in operating and storage areas in connection with commercial premises and similar; it is not intended for private use or use in schools or sheltered workshops. The equipment may only be operated by trained personnel. Read these safety instructions thoroughly before starting the equipment. Safety instructions are located on the control box.

5. Owner responsibility

The owner is responsible for ensuring that the operator has the necessary skills and qualifications. The operator is responsible for ensuring that no exposed persons are present in the danger zone during operation. Since use of the RUNI equipment takes place outside the manufacturer's control, RUNI can only guarantee the quality of the equipment itself and assumes no responsibility for its performance during operation. Any personal injury caused by exposed persons being present in the danger zone is the sole responsibility of the owner.

The owner is responsible for ensuring the machine is installed in accordance with local regulations. Particular attention must be paid to:

- The control box must be protected by an external circuit breaker
- The control box must be properly earthed
- No ladders, platforms or other objects that would allow climbing must be placed near the equipment, as this reduces the safe distance from hazardous parts or creates a risk of falling into the machine
- The equipment must not be integrated with other machinery without a risk assessment and subsequent CE marking of the whole system
- The machine must not be used if safety devices are damaged, incorrectly fitted or non-functioning

The user is responsible for keeping the machine undamaged and properly maintained: all protective devices must be intact and in accordance with the documentation; bearings must be lubricated per instructions with the correct type of grease; cables, pressure hoses and the safety circuit must be inspected and replaced as needed; filters must be cleaned as described in the relevant section. The user is responsible for ensuring the equipment is operated only by trained personnel.

Important precautions: the safety switch is switched off and locked when the machine is not operated by trained personnel; instructions cover all safety devices listed in this manual; animals, children, persons with mental impairment and unauthorised private persons must not have access to the danger zone, nor be able to operate or climb the machine intentionally or accidentally; safety instructions include appropriate protection for persons standing near the machine (hearing protection and protection against hazardous substances); pressing of waste material may release spores, bacteria, gases, chemicals etc. that can contaminate the working environment; the equipment may only be used for its approved purpose — only machines specially adapted and configured for processing gas-containing foam plastics may be used for that purpose.

CAUTION! The operator must not wear long or loose clothing, e.g. a long scarf, that could be caught and pulled into the machine.

All screws and nuts must be checked regularly and re-tightened if necessary. The emergency stop button is used in dangerous situations and must stop the machine immediately. The optional inspection-door safety switch increases operator safety when the door is opened. During normal operation the machine is stopped using the STOP button.

5.1 Disposal

Packaging must be disposed of in accordance with local regulations for used packaging materials. The machine is made from materials that cannot be disposed of as household waste. Before disposal, oil and grease must be drained and all connections closed. Uninstall and dismantle the machine intended for disposal in accordance with applicable local regulations for the disposal of individual parts.

6. Technical data

Type: L (line with silo)	
Serial no.	L209
Year of manufacture	2025
Dimension drawing no.	5500000711
Required electrical connection	3 x 400 V + protective conductor, 50 Hz
Fuse	63 A gL/gG
Electrical diagram	3-356-582-AB0
Software version	PLC: Runi_PLC_3-356-582-Ver2 HMI: Runi_3-356-582-Ver1
Ambient temperature for control box	5-40 °C
Design lifetime	10 years

Type: P (HD pre-crusher)	
Serial no.	P051
Year of manufacture	2025
Dimension drawing no.	5500000714
Drawing numbers	5000044200, 5000044201, 5000044147, 5000041095
Max. motor load	2 x 7.5 kW

Type: Fan JK_35D	
Year of manufacture	2025
Max. motor load	11 kW

Type: S (silo with distribution screw)	
Serial no.	S0109
Year of manufacture	2025
Dimension drawing no.	5500000715
Drawing numbers	5000044157, 5000044158, 5000044166, 5000016613, 5000044151
Max. motor load	4 kW

Type: SK370_modification	
Serial no.	1786-2017 + 1873-2018
Year of modification	2025
New parts drawings	5000027182, 5000026416, 5000031984, 5000039555
New software	

V15.30.06 (for operating description with updated software, see manual for SK370 serial no. 2661+2662-2025)

7. Description of the silo line

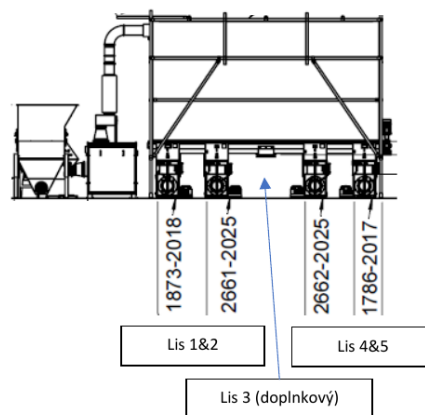
This RUNI line is designed for:

- Pre-crushing used EPS, fed into the pre-crusher by conveyor, truck or by hand
- EPS is fed into the pre-crusher
- The pre-crusher chops the EPS into small pieces which are then conveyed pneumatically into the silo
- Crushed EPS falls from the silo into the screw presses located beneath it. When the light sensor in the press hopper detects the presence of material, the press starts
- When a press "requests" material, the distribution screw starts operating forward/reverse to feed the press. If the press does not register material within x seconds, the alarm "A07 TIMEOUT FEEDING COMPACTOR 1 & 2", "A08 TIMEOUT FEEDING COMPACTOR 3" or "A09 TIMEOUT FEEDING COMPACTOR 4 & 5" is triggered and the line stops
- A sensor at the top of the silo stops (or pauses) the pre-crusher and fan when the silo is full

Screw presses must be positioned as shown in the diagram (Press 1&2, Press 3 (optional), Press 4&5). It is possible to add "screw press 3" to the line, giving a total of 5 presses. The L209 line control is superior to the individual press controls, so all active presses must first be reset before the line control can be reset.

Závitovkové lisy musia byť umiestnené podľa zobrazenia.

Je možné pridať do linky „závitovkový lis 3“, takže celkovo bude 5 lisov.



Riadenie linky L209 je nadradené riadeniam lisov, preto je potrebné najskôr resetovať všetky zapnuté lisy, a až potom je možné resetovať riadenie linky.

8 Inštalácia

Predpokladá sa, že potrebné naprogramovanie, preprava, montáž, inštalácia a spustenie vykoná kvalifikovaný a autorizovaný personál.

V prípade pochybností sa prosím obráťte na RUNI.

8.1 Umiestnenie/montáž stroja

1. Odporúča sa umiestniť stroj v suchom priestore (pod strechou) a zabezpečiť dostatočný voľný priestor okolo.
2. Stroj musí byť umiestnený tak, aby bol priestor na obsluhu a servis všetkých funkcií a hlavných komponentov.
3. Stroj by mal byť postavený na rovnej podlahe.
4. Za určitých okolností môže byť potrebné kotviť komponenty stroja do podlahy (v niektorých prípadoch to nie je nutné).

Fig. — Press layout under the silo (Press 1&2, Press 3 optional, Press 4&5) and start of section 8 Installation. Original page reproduced; Slovak on-screen labels are translated in the running text.

8. Installation

It is assumed that the necessary programming, transport, assembly, installation and commissioning will be carried out by qualified and authorised personnel. In case of doubt, please contact RUNI.

8.1 Machine placement / assembly

1. It is recommended to place the machine in a dry area (under a roof) with sufficient free space around it
2. The machine must be positioned to allow operating and service access to all functions and main components
3. The machine should be placed on a level floor
4. Under certain circumstances it may be necessary to anchor machine components to the floor (in some cases this is not necessary)

8.2 Electrical connection

The machines require 3 x 400 V + protective conductor, 50 Hz, max. fuse 63 A gL/gG. Maximum power input of components: Pre-crusher 2 x 7.5 kW; Fan 11 kW; Distribution screw 4.0 kW.

The electrical connection must be carried out by a certified electrician.

9. Start-up of the silo installation

The silo installation is activated using the green "START" button on the display.

9.1 Control box — buttons

8.2 Elektrické pripojenie

Stroje vyžadujú 3×400 V + ochranný vodič, 50 Hz, max. poistka 63 A gL/gG.
Maximálny príkon komponentov:

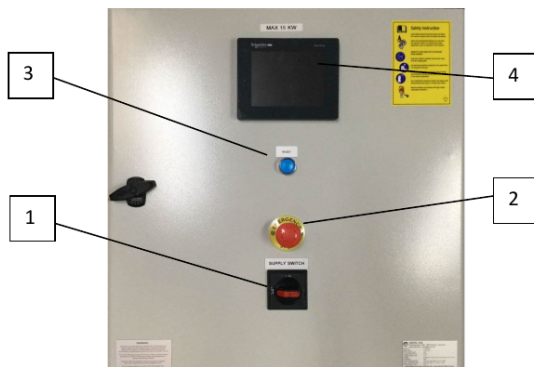
Preddrvič: 2 × 7,5 kW
Ventilátor: 11 kW
Rozdeľovacia závitovka: 4,0 kW

Elektrické pripojenie musí vykonať certifikovaný elektrikár.

9 Spustenie inštalácie sila

Inštalácia sila sa aktivuje pomocou zeleného tlačidla „START“ na displeji.

9.1 Ovládacia skrinka—tlačidlá



Označenie	Názov	Popis	Funkcia a poznámky
1	SUPPLY SWITCH	Uzamykateľný servisný izolačný spínač	Odpojí všetko elektrické napájanie inštalácie sila.
2	EMERGENCY STOP	Núdzové zastavenie	
3	RESET	Reset, chyba – modré	Pozri kapitolu 9.2
4		Displej	Podrobne opísané v kapitole 10

9.2 Alarm/reset

Ak nastane porucha, stroj sa zastaví a rozsvieti sa modré svetlo. Dôvod sa zobrazí na displeji. Pred opätovným spustením stroja najprv stlačte reset, aby modré svetlo zhaslo. Najprv odstráň samotnú príčinu poruchy.

Fig. — Control box layout: 1 Supply switch, 2 Emergency stop, 3 Reset, 4 Display

Item	Name	Description	Function / notes
1	SUPPLY SWITCH		

		Lockable service isolator	Disconnects all electrical power to the silo installation
2	EMERGENCY STOP	Emergency stop	—
3	RESET	Reset, fault — blue	See section 9.2
4	—	Display	Described in detail in section 10

9.2 Alarm / reset

If a fault occurs, the machine stops and the blue light comes on. The reason is shown on the display. Before restarting the machine, first press reset so that the blue light goes off. First remove the cause of the fault.

9.3 Start-up and operation of the silo installation

1. Turn the service isolator switch. The blue RESET indicator/button lights up. It lights up whenever power is switched off or the emergency stop is activated. (It also flashes briefly when the rotary sensor in the silo reports the silo is full.)
2. Press the RESET button (the indicator should now go off).
3. Start the system by pressing the start button on the display.
4. Stop the system when there is no more material in the pre-crusher.

Silo full: the rotary sensor at the top of the silo automatically stops the pre-crusher and fan when the silo is full. The blue reset button will flash briefly.

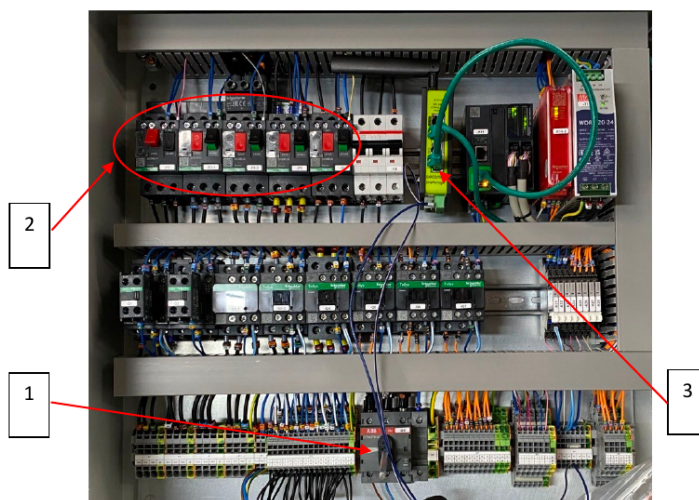
9.4 Warning and emergency stop

Warning: In manual mode of the distribution screw, take care not to feed too much EPS to one end of the screw housing/silo, as this may damage the screw and/or silo.

Emergency stop: Press the EMERGENCY STOP button to immediately stop the RUNI machines.

9.5 Control cabinet — internal view

9.5 Rozvádzač—vnútorný pohľad



Označenie	Názov	Poznámka
1	Servisný izolačný spínač	
2	Motorové ističe	
3	Secomea	Voliteľné, v tomto riadení nie je

9.6 Rotačný snímač

Na vrchu sila je snímač. Keď sa silo naplní, zastaví predrdvič a ventilátor.
Typ: Mollet DF11

Návod výrobcu sa musí striktnie dodržiavať. Pozri dátový list rotačného snímača (príloha 8).
Rotačný snímač deteguje prítomnosť alebo neprítomnosť materiálu.

Nastavenie citlivosti

Rotačný snímač má tri úrovne citlivosti. Od výroby je nastavená stredná citlivosť.



Regulátor citlivosti je pod krytkou

Fig. — Control cabinet interior (1 Service isolator switch, 2 Motor circuit breakers, 3 Secomea — optional, not fitted in this control system) and Rotary sensor (section 9.6)

Item	Name	Note
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1	Service isolator switch	—
2	Motor circuit breakers	—
3	Secomea	Optional, not fitted in this control system

9.6 Rotary sensor

There is a sensor at the top of the silo. When the silo is full, it stops the pre-crusher and fan. **Type: Mollet DF11.** The manufacturer's instructions must be strictly followed — see the sensor data sheet (Appendix 8). The rotary sensor detects the presence or absence of material.

Sensitivity setting: the rotary sensor has three sensitivity levels; medium sensitivity is set at the factory. The sensitivity control is located under the cover.

10. PLC operation — automatic operation

This chapter applies only to automatic operation of the machine. During manual operation the operator bears full responsibility for the machine.

10.1 Display

Blue fields: touch fields. **Greyed-out blue fields:** you do not have permission to change this menu. **Red arrow down:** return to the previous screen. **Blue arrows in the top corners:** move to the next/previous menu.

10.1.1 Start screen

This screen is displayed when the machine starts or is reset. Each motor (conveyor, pre-crusher, fan, distribution screw) has an indicator light, coloured as follows: **Yellow** = "MAN" (manual) operation; **Red** = "0" (function stopped); **Green** = "AUTO" (automatic) operation. There is a rotary-sensor indicator at the top of the silo, which lights green when it detects material (silo full), stopping the pre-crusher and fan. Feed signals from the screw presses below the silo are shown beneath the silo (grey when there is no signal).

10.1.2 Selection of manual or automatic operation

To change the mode of the pre-crusher, fan or distribution screw, press the relevant motor on the display; a grey menu bar appears: MAN – 0 – AUT (Manual – Off – Automatic). In some situations (e.g. during service) it may be necessary to operate the machine manually. Blue-and-white directional arrows appear on screen to activate movements; the relevant motors/functions are active only while the button is held, except that this rule does not apply to all functions — in that case the function continues even after the button is released and must be stopped by pressing the same arrow again or selecting "0" in the menu.

10.1.3 Start/Stop Auto screen

During automatic operation this screen is displayed after a few seconds. Functions in AUTO mode can be started and stopped from this screen. All active functions are shown with black arrows.

10.1.4 Changing PLC settings/parameters

Pressing a blue field containing a numeric value opens the entry screen (the current value is shown in the top field). Enter the required value and press ENTER to return to the edited screen.

10.1.5 Setup screen

This screen appears after selecting "SETUP" on the start screen. All settings/parameters can be selected from this screen (Feed-In, Silo Full, Distribution Screw, Other Settings).

10.1.6 Feed-in setting

Parameter	Description
CRUSHER DELAY ON	Time until the pre-crusher starts after the fan on start-up
FEED SIGNAL / FEED. CONV. DELAY ON	Time until the conveyor starts after the fan on start-up
CRUSHER DELAY OFF	Time until the pre-crusher switches off after stopping
BLOWER DELAY OFF	Time until the fan stops after the pre-crusher stops (on shutdown)

10.1.7 Distribution screw setting

"**FORWARD**" and "**REVERSE**" set the time the screw rotates and moves material forward/back when presses request material. "**TIMEOUT**" is the permitted time to feed a press that is requesting material; if the sensor in that press does not register material within this window, a Timeout error is issued and shown on the display.

10.1.8 "Silo full" setting

"**DELAY**" sets the delays for when the silo may again accept material and when it is evaluated as full.

10.1.9 Other settings

Pressing "OTHER SETTINGS" on the Setup display opens this screen, including login/logout, and setting time/date via the clock icon.

Alarms

Select this screen to view alarms that have occurred since the machine was last started (on some machines the history is retained even after power is disconnected). When an alarm occurs, this screen is displayed with a red bar across it. Use the up/down arrows to view the full alarm log.

Alarm colour coding: Green = historical alarms not yet cleared (clear via the single- or clear-all icon); Red = active alarms; Yellow = alarms whose reaction has been acknowledged (single or "acknowledge all" icon).

Possible alarms and warnings:

- A01 EMERGENCY STOP ACTIVATED
- A02 THERMAL ERROR DISTRIBUTION SCREW
- A03 THERMAL ERROR CRUSHER
- A04 THERMAL ERROR BLOWER
- A07 TIMEOUT FEEDING COMPACTOR 1 & 2
- A08 TIMEOUT FEEDING COMPACTOR 3
- A09 TIMEOUT FEEDING COMPACTOR 4 & 5
- W01 GREASE BEARINGS NOW
- W04 BATTERY LEVEL LOW

Hour meters / counters

"TOTAL" shows the total number of operating hours (cannot be changed or reset).
"GREASE C/D" ("Grease Count Down") starts at 100 h and counts down to 0; at 0 an alarm indicates that the pre-crusher gears need greasing. The machine may continue running with this alarm active, but the RESET indicator will flash until the counter is reset.
Resetting the hour counter: after greasing the gears, hold the RESET button continuously for 10 seconds. This counter can be reset at any time regardless of its current value.

Factory settings

Press and hold "LOAD FACTORY SET" continuously for 3 seconds to restore the PLC parameters to factory settings (requires login with the ADMIN 3 password).

Language

On this screen you can select the display language (not all languages are available).

| 10.2 Login

Name	Description
ADMIN1	User login
ADMIN2	Super-user login
ADMIN3	Administrator login

To log in: press the "LOGIN" button; the login screen appears. Press the field next to "Name:" and enter the user name. Press the field next to "Password:" and enter the password (press "123" to display the numeric keypad).

Icons: unlock icon = the PLC will be unlocked for 5 minutes; return-arrow icon = return to the "ACCESS ADMINISTRATION" menu, where a new access level can now be set/selected; home icon = software version.

11. Service and maintenance

11.1 Pre-crusher — gearboxes

First oil change after 100 operating hours; thereafter every 2,500 operating hours or 1 year, whichever comes first. Oil type: see Appendix 3. Oil quantity: 4.3 litres. Gearbox temperature must not exceed 95 °C.

11.2 Pre-crusher — gears

The gears are greased via the grease nipple on top of the housing. The pre-crusher must be running during greasing. Gears must be greased every 100 operating hours. Grease type: FUCHS GREASEWAY CAH 92 / AGIP AUTOL TOP 2000 / Shell Gadus S3 A1300 C2 / Shell Gadus S5 V1350 1. Quantity: approx. 20 cm³.

11.3 Distribution screw

Gearbox: first oil change after 100 operating hours; thereafter every 2,500 operating hours or 1 year, whichever comes first. Oil type: FUCHS RENOLIN CLP 150 or SHELL OMALA 150 gear oil. Quantity: 3.6 litres. Gearbox temperature must not exceed 95 °C.

11.4 Silo

Fabric silo: when air is blown into the silo, it must be able to escape again so pressure does not build up. A filter fabric is fitted at the top of the silo to prevent small material particles from escaping. Clean the filter fabric as needed (watch for the silo walls beginning to bulge) so air can escape. If filters are not cleaned, pressure will increase and the silo may eventually suffer self-destructive damage. Insufficient filter cleaning voids the warranty. Gently tap the top of the silo to shake it, or use a fan or industrial vacuum cleaner. Appendix 3 contains a table for logging and signing off cleaning.

11.5 Metal and stone separator

The metal and stone separator must be emptied regularly. Stop the pre-crusher/fan before emptying. See Appendix 2 for adjusting sorting intensity (more/less).

12. Transport

Ensure the machine is stably placed on a firm surface and that accompanying parts are thoroughly secured or packed separately. The machine should be transported using a forklift or a lifting trolley.

13. Contact

Before contacting the service department or ordering spare parts, please have this operation manual ready — the model number and serial number of the equipment are shown on the cover page. When ordering spare parts, please state: 1) Model number and serial number; 2) Part catalogue numbers and names (found in the drawings in Appendix 1); 3) Quantity ordered. If the machine was purchased through a distributor, please contact the distributor directly. Otherwise contact:

RUNI A/S

Industriparken 8, DK-6880 Tårn, Denmark

Tel.: +45 9737 1799 Fax: +45 9737 3800 Email: runi@runi.dk

14. Appendices (list)

1. Assembly instructions for partly completed machine; drawings / parts list
2. Assembly and disassembly
3. Maintenance
4. Electrical diagram
5. Qualification and training matrix
6. Inspection door
7. Fan
8. Rotary sensor
9. Factory settings

Appendix 9 — Factory setup table

Setup	Description	Unit	Factory setting	Setting after commissioning	Current setting
Feed-in	Crusher delay on	sec	10		
	Feed signal / feed. conv. delay on	sec	10		
	Crusher delay off	sec	10		
	Blower delay off	sec	10		
Distribution screw	Delay start forward	sec	2.0		
	Delay start reverse	sec	2.0		
	Forward duration	sec	10		
	Reverse duration	sec	10		
	Timeout feeding compactor 1 & 2	sec	5		
	Timeout feeding compactor 3	sec	5		
	Timeout feeding compactor 4 & 5	sec	5		
Silo full	Silo full delay on	sec	2.0		
	Silo full delay on	sec	2.0		

PART 2

RUNI SCREW COMPACTOR SK370 — OPERATION MANUAL

Applies to SK370 units serial no. 2661-2025 and 2662-2025 (new). For the two refurbished units (serial no. 1786-2017 and 1873-2018), the same operating description applies following the 2025 software/hardware update — see Certificates of Modification in Part 1.

1. Declaration of Incorporation — SK370 press, serial no. 2661 (2025)

Manufacturer	RUNI A/S, Industriparken 8, DK-6880 Tarm, Denmark
We hereby declare	Type: SK370 press Serial no.: 2661 Year: 2025
Machine function	EPS pressing

We hereby declare that the essential requirements of Machinery Directive 2006/42/EC, Annex I, sections 1.1.1 h), 1.1.1 i), 1.1.2 b), 1.1.3, 1.2, 1.3.1, 1.3.2, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.5.1, 1.7.4 are fulfilled, and that the partly completed machinery complies with Directive 2006/42/EC, the Low Voltage Directive 2014/35/EU and the EMC Directive 2014/30/EU. Signed: Anders Thygesen, CEO.

1. Declaration of Incorporation — SK370 press, serial no. 2662 (2025)

Identical declaration as above. Type: SK370 silo/press, Serial no.: 2662, Year: 2025,
Machine function: EPS pressing. Signed: Anders Thygesen, CEO.

2. Field of application

The screw press was developed for continuous pressing of material. The screw press is able to maintain a high and stable pressure. The jaws and extrusion head therefore form the heart of the press. The screw press contains systems protected by a utility model registered with the Danish Patent and Trademark Office (utility model registration no. DK 99500220 U3).

The screw press is designed for processing waste such as EPS (expanded polystyrene), plastic bottles and containers, aluminium and tin cans, textile waste, etc. To improve processing of large EPS pieces such as fish boxes, the machine is fitted with a special hopper with an integrated pre-crusher, whose task is to break the material down enough for it to fall between the screw flights.

Pressed material can be discharged directly into a container or into a continuous plastic bag, which can easily be cut and tied at both ends — also preventing dust problems. The material can then be easily disposed of in an environmentally sound way. The screw press can also be built to empty liquid content from various containers and to dewater many types of material.

The screw press must not be used to press hard, solid components, as these may damage the machine. Hazardous, corrosive or explosive materials must not be pressed in the screw press unless it has been specially constructed and manufactured for this purpose. Note that some foam plastics may contain excess flammable or explosive gases for an extended time after production. Only machines specially configured and approved for gas-containing foam plastics may be used. The manufacturer's warranty does not cover use of the screw press outside its intended field of application.

Block divider: developed based on experience gained from RUNI's screw presses. After several technical trials with EPS blocks, RUNI chose a simple and effective cutting principle: cutting blocks with a knife using hydraulics. The machine is designed to cut EPS blocks (expanded polystyrene) to a defined length; the length is set by the operator and controlled by the automation. The block divider is in fact a partly completed machine for the SK370/SK240 and must be installed in the press's stabilising chamber as the final part of the pressing process. Pressed and cut material can be loaded onto EUR pallets for further transport; variable block length allows stable pallet loading. Packing blocks in a plastic bag can prevent dust problems. The block divider must not be used on hard, sintered blocks or other materials, as this may damage the machine; the manufacturer's warranty does not cover such misuse.

This press is configured to compact the following material: Degassed EPS (expanded polystyrene).

2.1 Machine description

This press is designed to press the materials listed above. The press screw and hydraulic jaws must be correctly set for optimum performance (SCREW SETUP + JAWS SETUP). The machine is designed as part of a RUNI line with pre-crusher. In automatic mode, a light

sensor in the hopper detects when there is enough material in the hopper to start the machine (see SCREW SETUP 1). The machine is also equipped with a temperature sensor (see JAWS SETUP 4+5), which helps prevent melting of the material and ensures firm, uniform blocks. The block divider cuts the pressed blocks to defined lengths.

This machine is configured as part of the RUNI L209 line: in automatic mode the machine is started and stopped by the L209/P051 Master Control. Inside the hopper is a light sensor that detects sufficient material to start the press and stops the press when there is too little material; delays can be set on the touchscreen (SCREW SETUP 1). When the press is set to AUTO START without material detected, a feed-request signal is sent to the L209 control. The L209 line control is superior to the press control, so all active presses must be reset first before the line control can be reset.

3. Warranty and liability

Warranty and liability for personal injury or damage to the machine are excluded if caused by one or more of the following: use of the machine for an unintended purpose; installation, commissioning, operation or maintenance by unqualified personnel; use by unqualified or unauthorised personnel; operation with damaged, incorrectly fitted or non-functioning safety devices; failure to follow this manual regarding transport, assembly, commissioning, operation and maintenance; insufficient cleaning; structural modifications; insufficient inspection of wear parts; repairs by unqualified personnel; insufficient removal of pressed material; repairs/disassembly during the warranty period by anyone other than a supplier's technician (unless agreed in advance); intrusion of foreign objects, natural disaster or force majeure.

Interfaces: if the equipment is incorporated into an existing system, new hazard points may arise at the interfaces. RUNI A/S bears no responsibility for such new risks arising from integration into an existing system or production process; the declaration of conformity becomes invalid in such cases.

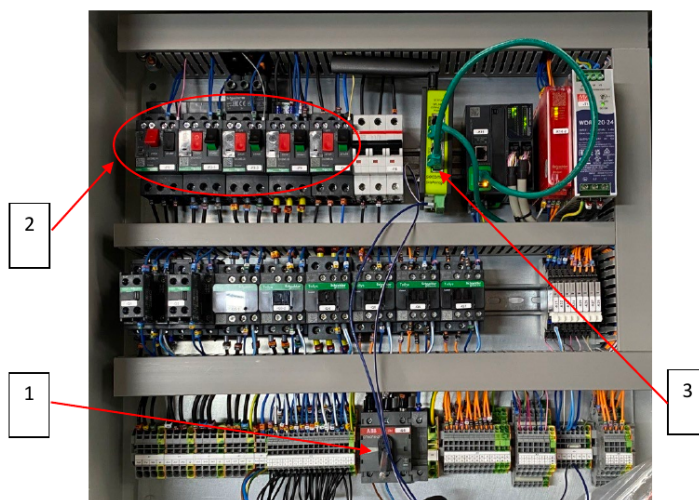
4. Safety around the machine

The machine must not be started if exposed persons* are present in the danger zone. If an exposed person must be present in the danger zone during inspection, service or maintenance, the following measures must be observed: 1) Disconnect the machine's power supply; 2) Fit a lock to the main switch; 3) Clearly mark that the machine must not be started. The operator is responsible for ensuring that no exposed persons are present in the danger zone during operation.

* **Danger zone:** all areas in and around the machine presenting a health and safety risk during operation — hopper, pre-crusher, screw, pressing chamber and electrical components. * **Exposed person:** anyone fully or partly within the danger zone.

- It is strictly forbidden to climb into the hopper.
- Entering the pressing chamber, even when empty, is explicitly forbidden.
- It is forbidden to climb onto the machine.
- It is forbidden to operate the machine with damaged, incorrectly positioned or non-functioning safety devices.

9.5 Rozvádzač—vnútorný pohľad



Označenie	Názov	Poznámka
1	Servisný izolačný spínač	
2	Motorové ističe	
3	Secomea	Voliteľné, v tomto riadení nie je

9.6 Rotačný snímač

Na vrchu sila je snímač. Keď sa silo naplní, zastaví preddrvič a ventilátor.
Typ: Mollet DF11

Návod výrobcu sa musí striktnie dodržiavať. Pozri dátový list rotačného snímača (príloha 8).
Rotačný snímač deteguje prítomnosť alebo neprítomnosť materiálu.

Nastavenie citlivosti

Rotačný snímač má tri úrovne citlivosti. Od výroby je nastavená stredná citlivosť.



Regulátor citlivosti je pod krytkou

(Illustrative control-cabinet figure — see equivalent diagrams in the manufacturer's documentation for the service/working area clearance diagram around the press, min. 1000 mm sides / 800 mm rear / 2500 mm front working area.)

Some foam plastics may contain flammable or explosive gases for an extended time after production. Only equipment specially configured and approved for gas-containing

expanded plastics may be used. Due to high noise levels from crushing and pressing, the operator must always wear approved hearing protection. Idle noise level approx. 55 dB; noise during processing can reach 91–113 dB(A,C) in the operator's working area. Others nearby should also be given hearing protection above 80 dB(A); recommended in all cases. The work area must be marked with the hearing-protection-mandatory symbol where required.

WARNING! Note that the machine starts automatically if configured to do so.

Handling waste materials may release spores, bacteria, gases and chemicals that can contaminate the working environment — appropriate PPE must be worn near the machine. Manual feeding may cause musculoskeletal damage; the work process must allow sufficient variability to prevent this. The machine is for industrial use in operating/storage areas connected with commercial premises; not for private use, schools or sheltered workshops. Only trained personnel may operate the equipment. Read these safety instructions thoroughly before starting; they are located on the control box.

5. Owner responsibility

The owner is responsible for the operator having the necessary skills and qualifications. The operator is responsible for ensuring no exposed persons are present in the danger zone during operation. As use of the RUNI press occurs outside the manufacturer's control, RUNI can only guarantee the quality of the equipment itself and assumes no responsibility for its performance in operation. Any injury from exposed persons being in the danger zone is the owner's sole responsibility.

The owner must ensure the machine is installed per local regulations, with particular attention to: the control box being protected by an external circuit breaker and properly earthed; no ladders/platforms/climbing aids near the press; no integration with other machinery without a risk assessment and CE marking of the whole system; the machine not being used if safety devices are damaged, incorrectly fitted or non-functioning.

The user is responsible for keeping the screw press undamaged and properly maintained: protective devices intact and per documentation; bearings lubricated per instructions with correct grease; cables, pressure hoses and safety circuit inspected/replaced as needed. The user must ensure only trained personnel operate the press.

Important precautions: the safety switch is off and locked when the machine is not operated by trained personnel; instructions cover all safety devices in this manual; animals, children, persons with mental impairment and unauthorised private persons must have no access to the danger zone nor be able to operate/climb the machine intentionally or accidentally; suitable protection near the machine (hearing + hazardous-substance protection); pressing waste material may release spores, bacteria, gases, chemicals, etc.; the equipment may only be used for its approved purpose.

WARNING! The operator must not wear long or loose clothing, e.g. a long scarf, which could be caught and pulled into the machine.

All screws and nuts must be regularly checked and re-tightened as needed. The emergency stop button is for dangerous situations and must stop the machine immediately. The optional inspection-door safety switch increases safety when opening the door. Normal operation is stopped with the STOP button on the touchscreen.

5.1 Disposal

Packaging must be disposed of per local regulations. The machine is made of materials that cannot be disposed of as household waste. Before disposal, drain oil and grease and close all connections. Uninstall and dismantle the machine per applicable local regulations for disposal of individual parts.

6. Technical data

Type: SK370 — Serial no. 2661	
Year of manufacture	2025
Dimension drawing no.	5500000712
Drawing numbers	5000043043, 5000008675, 5000039018, 5000044319, 5000041259, 5000039381, 5000003771, 5000014048, 5000031984, 5000031892, 5000027182
Main dimensions (H x W x L, mm)	1125/2053 x 935 x 7473
Weight	approx. 1.7 tonnes
Max. main motor load	15 kW
Required power supply	3 x 400 V + protective conductor, 50 Hz
Fuse	Min. 50 A / Max. 63 A gL/gG
Wiring diagram no.	3-356-260-LS-AB3
Software version	15.30.06
Display	HMIS5T
Noise	No load: 55 dB Under load: 91–113 dB
Ambient temperature for control box	0–40 °C
Design lifetime	10 years

Type: SK370 — Serial no. 2662	
Year of manufacture	2025
Dimension drawing no.	5500000713
Drawing numbers	5000043043, 5000008675, 5000039018, 5000044319, 5000041259, 5000039381, 5000003771, 5000014048, 5000031984, 5000031892, 5000027182
Main dimensions (H x W x L, mm)	1125/2053 x 935 x 7473
Weight	approx. 1.7 tonnes
Max. main motor load	15 kW
Required power supply	3 x 400 V + protective conductor, 50 Hz
Fuse	Min. 50 A / Max. 63 A gL/gG
Wiring diagram no.	3-356-260-LS-AB3
Software version	15.30.06
Display	HMIS5T
Noise	No load: 55 dB Under load: 91–113 dB

Ambient temperature for control box	0-40 °C
Design lifetime	10 years

The two refurbished units (serial no. 1786-2017 and 1873-2018) share the same operating envelope after the 2025 modification (new hopper, hydraulic control valve and software V15.30.06) — see Part 1, Certificates of Modification, and Part 1 Technical Data "SK370_modification".

7. Control box — buttons

Item	Name	Function and comments
1	SUPPLY SWITCH	Lockable supply switch — disconnects all electrical power to the press
2	EMERGENCY STOP	—
3	RESET — blue	Steady on (ALARM): machine stopped due to alarm. Flashing (WARNING): control has detected a fault but the machine continues running. Error message shown on display (alarms start with "A", warnings with "W" — see section 13).
4	Display	Described in section 10.1

8. Starting the press

To start the machine/control system: turn the SUPPLY SWITCH to "on". After approx. 30 seconds of initialisation, the start screen appears on the display. Check that the EMERGENCY STOP button is pulled out (power enabled). If the press has stopped and the blue indicator is lit, you must press "reset" before restarting. For first start-up / starting an empty press, see section 19.

9. Automatic operation

This chapter applies only to automatic operation of the machine. During manual operation the operator bears full responsibility for the machine.

9.1.1 Selecting the automatic operation method

When the machine runs in automatic mode (see section 10.1.2), the hydraulic jaws can be controlled in two ways.

9.1.2 Power control (KW control)

The PLC continuously monitors the main motor's kW draw. If the draw exceeds the set upper limit ("KW HIGH"), the jaws open to reduce pressure on the pressed material and thus reduce motor draw. When draw falls below the set lower limit (Quick Modify — "KW HIGH" minus "DIFFERENCE"), the jaws begin pressing down to increase the main motor load. The control thus continuously tries to keep the main motor's kW draw between these two limits, so pressing is even. Adjustments occur at separate intervals; the adjustment frequency and the interval during which the hydraulic cylinder/pump may run can be set in JAWS SETUP 7.

9.1.3 Speed control (recommended in most cases)

The main setup parameter is PROD. SPEED (production speed) — available in QUICK MODIFY or JAWS SETUP — and is often the only parameter needed for fine-tuning after initial installation. During automatic operation the PLC continuously measures the speed ("PROD. SPEED" — millimetres per minute) at which the pressed block is extruded from the press, measured by a speed-monitoring device above the stabilising chamber. Since the main screw's RPM is always constant, the machine's capacity will always be similar. The lower the set production speed, the higher the degree of compaction achieved, and vice versa.

WARNING: If the value is set too low, friction will cause the material to overheat, leading to melting, which can permanently damage machine components.

The recommended "PROD. SPEED" value is 50–140 mm/min depending on material type. After changing a setting, the press must extrude approx. 500 mm of block before the change can be observed. It is recommended to adjust in increments of 10 mm for larger deviations and 3–5 mm for fine-tuning.

9.2 Machine stop outside load limits

If the PLC cannot keep the kW draw / production speed within the defined limits by adjusting the jaws, the control stops the press after a predefined time. The press also stops if the motor is unloaded due to lack of material for a defined interval. This prevents material melting inside the machine — the screw tip can become very hot if it continuously acts on the same spot of material.

If the press screw is jammed by a large hard foreign object in the waste, you can switch to manual operation and reverse the main motor; the screw will reverse for 2 seconds. Then switch off and lock the supply switch and remove the foreign object. If this does not resolve the problem, switch off and lock the supply switch and the machine must be disassembled to remove the blockage.

| 9.3 Reset

On a fault, the machine stops and the blue indicator lights up; the reason is shown on the display. To restart, first press "reset" (on the control box or the reset touch field on the display, see section 13) so the blue indicator goes off — but first remove the cause of the problem.

| 9.4 Timers

The PLC contains several built-in timers, e.g. a short delay at start and stop so the machine does not react exactly the moment the light sensor etc. detects presence/absence of material — this prevents the machine starting/stopping too frequently.

Another timer switches off the hydraulic pump once the jaws are pressed fully down, which (1) reduces pump running time, extending its life, and (2) reduces heat build-up and oil temperature, further extending pump life. There are also machine operating-hour timers: after 100 operating hours the main bearings must be greased — a corresponding message is shown on the display. Total operating hours can also be displayed.

10. PLC and display operation

10.1 Display

All settings/adjustments to the control unit/PLC are made via the touchscreen. **Blue fields:** touch fields. **Greyed-out blue fields:** you do not have permission to change this menu. **Red arrow down:** return to previous screen. **Blue arrows in top corners:** next/previous menu. **Pale green fields:** selected fields (chosen). **Red fields:** selected fields (NOT chosen).

10.1.1 Start screen

This screen appears at every start or reset of the machine. The top field shows current main motor kW draw and production speed/temperature — choose whether the status screen (section 10.1.3) shows temperature or production speed. Tap the globe icon to select a different language. From this screen you access SETUP or QUICK MODIFY. Motor indicators: yellow = MAN (manual), red = 0 (stopped), green = AUTO. At the hopper, sensor indicators turn green when sensors detect material. Tap the blue arrow at the top to view/change block divider operation (see section 24).

10.1.2 Manual or automatic operation selection

To change the mode of the screw motor, jaws or pre-crusher (optional), press the relevant motor on the display; a grey menu bar appears: MAN – 0 – AUT. Option: the machine can be set to AUTO mode from a connected external control and receive a start signal (see EXTERNAL LINKS → LINE SIGNAL – MASTER CONTROL, section 12.4). In certain situations (e.g. service) it may be necessary to manually move the screw or jaws — select MAN and the relevant motor indicator lights yellow; directional arrows appear on screen; the relevant motors/functions are active only while the button is pressed. This does not apply to forward screw rotation and the pre-crusher (optional): if activated with a brief press, they continue running after release and must be stopped by pressing the same arrow again or selecting 0 in the menu. On the start screen, black arrows are shown for screw, jaws and pre-crusher operation in both manual and automatic mode.

10.1.3 Status screen

This status screen is displayed during automatic operation. If the start screen is not touched, it switches to the status screen after approx. 10 seconds and shows the current kW draw. Touching the MM field shows the measured production speed (extrusion speed of the pressed block per minute). Touching the temperature field shows the actual temperature on both the status and start screens. To run the press automatically you must press the START AUTO field (per PLC settings); press STOP to stop automatic operation. Once started, START AUTO lights green (STOP dark red); once stopped, STOP lights red (START AUTO dark green).

WARNING:

- **Use STOP for normal stops during routine operation (breaks, switch-over, fault correction, etc.)**

- **EMERGENCY STOP and the inspection-cover safety switch are part of the safety circuit and must not be used as a routine "STOP"**
- **Use emergency stop in dangerous situations requiring immediate machine stop**
- **The inspection-cover safety switch increases personnel safety when opening the cover**

To return to the start screen, press the red arrow down. In manual mode, start/stop cannot be initiated from the status screen (screw, jaws — and pre-crusher — must all be in AUTO mode).

10.1.4 Setup screen

Shown after selecting SETUP on the start screen. All settings/parameters can be selected from here — see section 12.

10.1.5 Changing PLC settings/parameters

Pressing a blue field with a numeric value opens the entry screen (value shown in the top field). Enter the required value and press ENTER to return to the edited screen.

| 10.2 Product 2 (optional)

(Reserved for optional second-product configuration; not used in the standard configuration of this line.)

11. Quick settings (Quick Modify)

Pressing QUICK MODIFY on the start screen displays a menu with the most frequently adjusted parameters. To select the control method, see JAWS SETUP 6 (section 12.3).

Power control mode: "KW HIGH" is the limit value at which the jaws open. "DIFFERENCE" is the difference between the value that determines when the jaws close and "KW HIGH". Recommended value: 0.5–1 kW.

Speed control mode: "PROD. SPEED" (optional) is the speed at which the pressed block is extruded from the press — see section 9.1.3.

When pressing materials such as EPS, the limits should be adjusted regularly to suit weather conditions (temperature and air humidity) to achieve a satisfactory result (see section 14 — EPS pressing tips).

12. Other parameters

To change values/parameters not available under "QUICK MODIFY", select "SETUP" instead of "QUICK MODIFY" on the start screen. This gives access to all menus/parameters, including those in Quick Modify. Choose the menu for the relevant machine section: hydraulic jaws → "JAWS"; screw/main motor → "SCREW"; sensors/pre-crusher → "HOPPER/PRE-CRUSHER"; other settings → "OTHER SETTINGS".

12.1 Screw setup

Screw setup 1 — auto start/stop delay settings. "DELAY ON": delay before machine start (recommended min. 1 s). "DELAY OFF": delay before machine stop (recommended min. 1 s).

Screw setup 2 (optional) — "INTERVAL MODE" lets the machine run in set intervals; useful when the pressed material heats up significantly and the machine should run for a fixed time then be allowed to cool.

Screw setup 3/4/5 (optional).

12.2 Hopper/pre-crusher setup

Setup 1 — "DELAY ON"/"DELAY OFF" options; "LEVELS" — number of sensor levels.

Setup 2/3 (optional).

Setup 4 — the machine may be fitted with air purging to keep the light sensors clean. When activated, continuous purging runs in front of the sensors; three modes are selectable: no purging, purging after machine power-on, or purging only after AUTOSTART is activated.

Setup 5/6/7 (optional).

12.3 Jaws setup

Setup 1 (used in power control mode) — "KW HIGH" is the limit value at which the jaws open; "DIFFERENCE" is the difference between the value determining jaw closing (KW LOW) and "KW HIGH" (recommended 0.5–1 kW). A time delay is applied to reduce unnecessarily frequent jaw movement — a continuous time window during which load is above KW HIGH or below KW LOW. Recommended: DELAY OPEN 1–2 s; DELAY CLOSE 0–1 s. "CLOSE ON STOP" presses the jaws down for a set time after the machine stops, to "hold" material and prevent it slipping (recommended 0–3 s).

Setup 2 — "TIMEOUT KW HIGH" stops the machine if load is above the upper limit for X seconds; "TIMEOUT KW LOW" stops the machine if load is below the lower limit for Y seconds — this self-monitoring prevents overload and material melting, especially when the screw runs empty and heat builds up at the screw end. "PUMP MAX RUNTIME JAWS CLOSE" switches off the hydraulic pump if downward closing is active longer than X seconds, to (1) reduce pump runtime and extend its life, and (2) reduce heat build-up and oil temperature. "TIMEOUT SPEED LOW" and "DELAY TIMEOUT SPEED LOW" automatically stop the machine if production speed is below the limit X mm for Y seconds, preventing material melting.

Setup 3 (used in speed control mode) — "PROD. SPEED" is the extrusion speed (mm/min); the lower the speed, the higher the compaction degree (see section 9.1.2 [i.e. 9.1.3]). "TIMEOUT SPEED ALARM DB+" and "DB-" stop the machine if operation is outside the permitted band (DB+/DB-) for longer than X seconds. "CLOSE ON STOP" — do not use unless RUNI recommends otherwise.

Setup 4 (temperature control) — MAXIMUM TEMPERATURE: the machine stops at the set temperature (approx. 60–90 °C depending on material density/moisture). TEMPERATURE HYSTERESIS: after a high-temperature stop, the machine restarts once temperature drops by the set number of degrees.

Setup 5 (cold mode, optional) — suitable for frequent cold starts; reduces the output difference between a cold and warmed-up machine. "COLD MODE OPERATION TEMPERATURE" — below this temperature the machine runs in cold mode if set to YES. Power control: "COLD MODE KW OFFSET (+)" — the machine runs x kW above the "KW HIGH" setting until temperature stabilises. Speed control: "COLD MODE SPEED OFFSET (-)" — the machine runs x mm/min below the PROD. SPEED setting until temperature stabilises.

Setup 6 — select "KW CONTROL" or "SPEED CONTROL" (see section 9.1).

Setup 7 — "REG. INTERVAL": the interval (X seconds) at which jaw adjustment occurs, giving the control time for a new measurement after each action. "PULSE TIME OPEN" and "PULSE TIME CLOSE" define how much time the machine has to adjust the jaws.

12.4 Other settings

Pressing "OTHER SETTINGS" on the setup screen opens a screen with several sub-categories: clock icon (date/time, optional), login, logout, machine info icon (machine number, I/O status, gatemanager status, software version), external-links icon (optional), and ALARMS (see section 13).

Machine number: shows the machine serial number; you can enter location and machine name.

Inputs and outputs (I/O): shows current inputs (I) and outputs (Q) — see Appendix 6 electrical documentation.

Secomea Sitemanager (optional accessory): shows status of the optional external gatemanager — red = no connection, green = connection OK.

Software version screen.

External connections screen

Icons: not available / no signal / signal present. Options:

- **LINE SIGNAL - MASTER CONTROL:** receives a start/stop signal from the master control; the machine requires this signal to operate. When on, all motors are forced into automatic mode and AUTOSTART is activated. The machine then runs when the hopper light sensor detects material. While present, the machine can still be operated locally and stopped, and motors controlled manually. When the master-control signal goes off, the machine stops; when it returns, all motors are again forced to automatic and AUTOSTART is activated. *Note: §38 of the Machinery Directive guide applies when forming part of a machine assembly — risks from this function must be carefully assessed and controlled before use.*

- **FEED SIGNAL:** the machine sends a signal when the start light sensor does not detect material (see "FEED SETUP" below).
- **ALARM SIGNAL:** sent whenever any alarm occurs.
- **SYSTEM HEALTHY SIGNAL:** sent when the machine has no faults and AUTOSTART/START is active.
- **RUNNING SIGNAL:** sent while the main motor is running.
- **HOPPER FULL SIGNAL:** sent when the upper hopper light sensor detects material.

Feed setup

A relay function (NO/NC) allowing the press sensor to control an external feeding device (feed screw, feed belt conveyor, etc.). Start/stop delays can be added via "FEED ON DELAY" and "FEED OFF DELAY". Option: "AUTOSTART TIMEOUT" (YES/NO) — if YES and the machine runs in AUTO but the sensor does not detect product for x minutes, AUTO start stops (and with it the feed signal); the operator must press AUTO-START on the status screen to resume.

Language

Select the display language (not all languages available). Accessible via the globe icon on the start, setup and status screens.

Hour meters / counters

"TOTAL" — total operating hours (cannot be changed/reset). "OVERLOAD MANUAL" — hours run above the max kW limit during manual operation. "OVERLOAD TOTAL" — total hours run above the max kW limit. "ACTUAL PERCENTAGE" — percentage of time run above the max kW limit, overall and for the last x hours.

Parameter list

A multi-page, view-only list of all parameters (cannot be edited from this menu).

"ACCESS ADMINISTRATION" — see section 12.5. **"EASY BREAK" (optional).** **"BLOCK DIVIDER"** — see section 24.

| 12.5 Access levels and service settings

12.5.1 Access administration

Certain functions can be locked to 3 user levels: MASTER (full access to change SETUP parameters), SUPERUSER and USER (restricted access). Log in as MASTER → select "YES" for the relevant function → press the permitted levels for that function; selected items light green. Your access depends on your user status.

12.5.2 Login

Press "LOGIN"; enter the user name next to "Name:" and the password next to "Password:" (press "123" for the numeric keypad). Icons: unlock = PLC unlocked for 5

minutes; return-arrow = back to ACCESS ADMINISTRATION menu to set a new access level; home = software version.

12.5.3 Factory settings

Press and hold "LOAD FACTORY SET" for 3 seconds to reset PLC parameters to factory settings (requires MASTER login).

12.5.4 E-mail setup (optional)

Available only if the control includes a Gatemanager/Remote access kit (can also be purchased later). Up to two recipients can receive e-mail notifications for: service intervals (lubrication, wear-part inspection, annual/2,500-hour inspection), overload, and a list of this e-mail service (single recipient only).

12.5.5 Service settings

Wear-part inspection / service reminder: a service reminder can be set, useful when the machine processes more abrasive materials, allowing wear parts to be repaired/reconditioned before a full replacement is needed. Reset by touch-and-hold of the reset field for 3 seconds; can be reset at any time. The machine can continue operating in this alarm state, but the reset indicator flashes until the counter is reset.

GREASE C/D — Grease Count Down, starts at 100 hours, counts to 0; at 0 an alarm indicates the main bearings need greasing. Reset by holding the reset button for 10 seconds after greasing.

Annual inspection: the machine must undergo a mandatory annual inspection and service by a competent person (a RUNI service technician or distributor technician). If the machine runs more than 2,500 hours/year, inspection must occur every 2,500 hours. Reset by touch-and-hold of the reset field for 10 seconds after the inspection.

13. Alarms / Error messages

When an alarm triggers, a red bar runs across the screen. This alarms screen can always be viewed via SETUP → OTHER SETTINGS → ALARMS. Use the up/down arrows to view the full log; reset by touching the RESET field.

Colour coding: Green = historical alarms not cleared (clear single/all via icons); Red = active alarms; Yellow = alarms whose reaction has been acknowledged (single/all).

13.1 Error messages

ALARM (message starting with "A"): the machine stops and the RESET button lights steadily. **WARNING** (message starting with "W"): the control has detected a fault but the machine continues running, and the RESET button flashes. Full list of error messages in Appendix 4.

13.1.1 Most common warnings

W01 GREASE BEARINGS NOW — time to grease the main bearings (see section 20.5); after greasing, reset the hour counter (hold reset for 10 seconds).

W04 BATTERY LEVEL LOW — time to replace the PLC battery (see Appendix 3). Backup data may be lost — perform the battery replacement in one continuous operation. We recommend replacing the battery no later than one week after the alarm to avoid data loss.

W09 BLOCK DIVIDER NOT IN TOP POSITION — the block divider is not in the top position, e.g. after manual operation. See also "A50 BLOCK DIVIDER NOT IN TOP POSITION".

W14 TEMPERATURE HIGH — the temperature sensor has detected excessive temperature. The machine restarts once temperature drops per the hysteresis setting in JAWS SETUP 4.

13.1.2 Most common alarms

A01 EMERGENCY STOP ACTIVATED — shown if the machine was stopped by an emergency stop button (on the control panel or an external emergency stop wired to the RUNI control box), or a door switch was opened.

Possible cause & remedy: 1) Check the emergency stop button is pulled out. 2) Check all external emergency stops are deactivated and door switches closed. 3) Press "reset" to resume.

A02 THERMAL ERROR — shown if a motor was overloaded and the thermal relay tripped.

Possible cause & remedy: 1) A foreign object entered the machine and jammed the screw — check and remove if necessary. 2) The main motor is operating above its rated power/current — slightly reduce limit values if necessary. Open the control box and re-engage the motor protection switch. Press "reset" to resume.

A03 TIMEOUT KW HIGH — shown if Jaws Setup 1's upper kW limit was exceeded longer than permitted (timeout defined in Jaws Setup 2).

Possible cause & remedy: 1) Possible electrical/hydraulic problem with jaw opening/closing — switch to manual and check. 2) "PULSE TIME OPEN" (Jaws Setup 7) may be set too low — increase gradually. Press "reset" to resume.

A04 TIMEOUT KW LOW — shown if the limit "KW HIGH minus DIFFERENCE" (Jaws Setup 1) was not reached within the permitted time (Jaws Setup 2).

Possible cause & remedy: 1) Insufficient material or material too slippery/thin — check feeding, increase the permitted time in Jaws Setup 2. 2) Possible electrical/hydraulic jaw problem — check in manual mode. 3) "PULSE TIME CLOSE" (Jaws Setup 7) may be too low — increase gradually. Press "reset" to resume.

A05 TIMEOUT SPEED LOW — shown if the press ran below the permitted production speed longer than allowed (Jaws Setup 3).

Possible cause & remedy: 1) Electrical/hydraulic jaw problem — check in manual mode. 2) Insufficient material — check feeding. 3) Speed sensing not registering. 4) Lower light sensor blocked/dirty. 5) "PULSE TIME OPEN" too low — increase gradually. Press "reset" to resume.

A06 TIMEOUT SPEED HIGH — shown if the press ran above the permitted production speed longer than allowed (Jaws Setup 3, "TIMEOUT SPEED ALARM DB+").

Possible cause & remedy: 1) Increase the permitted time in Jaws Setup 3. 2) Electrical/hydraulic jaw problem. 3) "PULSE TIME CLOSE" too low — increase gradually. Press "reset" to resume.

A07 TIMEOUT — LOW SPEED (POWER CONTROL MODE) — shown if the press ran with too low a production speed longer than permitted (Jaws Setup 2).

Possible cause & remedy: 1) Insufficient material — check feeding. 2) Electrical/hydraulic jaw problem. Press "reset" to resume.

A50 BLOCK DIVIDER NOT IN TOP POSITION — when the top position of the block divider is not detected, a re-positioning sequence starts; after 3 failed sequences this alarm is triggered. The distance between the sensor and the screw should be set to approx. 4 mm — if too large, the sensor cannot receive a signal.

14. Tips for pressing EPS

1. For pressing EPS, operation in speed control (SPEED CONTROL) mode is recommended.
2. Make sure EPS does not melt inside the machine. If EPS melts, the machine will usually need to be disassembled, and this can be very difficult after melting.
3. If the machine shows a fault and the blue indicator lights up, do not simply press reset — first read the error message on the display. Repeatedly pressing reset without resolving the problem usually leads to melting.
4. If the machine does not stop and the hopper is empty, this is usually caused by dirt on top of the sensors — clean the sensors.
5. If the hopper is not empty, the usual cause is a bridge forming above the screw. Switch off and lock the press at the supply switch. Push a hoe, broom handle or similar through the EPS down to the screw to break up the bridge.
6. The timer in Screw Setup 1 – DELAY OFF must be set short enough that the screw does not run empty of EPS. If the screw runs empty before the machine stops, load drops and it takes time to reach the required load again — this causes uneven operation and significantly increases the risk of melting.
7. EPS density 25–30 g/l: an 80 cm pressed EPS block should weigh 40–45 kg (20 cm $\approx$ 10–11 kg; 40 cm $\approx$ 20–22 kg; 60 cm $\approx$ 30–34 kg, etc.). Always monitor block weight. If generally too heavy, lower the limits to protect against melting; if too light, raise the limits to keep blocks cohesive. Limits often need adjusting as ambient temperature or EPS moisture changes.
8. When EPS melts, it behaves like hot chewing gum/dough — this eases its passage through the machine and kW draw drops. To protect against melting, the TIMEOUT values in Jaws Setup 2 must not be set too high.
9. Note: when melted EPS cools it becomes very hard, and in most cases the screw will jam.
10. RUNI has many customers who have been satisfied with their presses for years. Trouble-free operation is only possible with regular bearing lubrication at the correct intervals and quantities.

15. Electrical component settings

Item	Name	Comment
1	Power converter for main motor/screw monitoring	APM10
2	Amplifier for the hopper light sensor	—
3	Amplifier for the light sensor below the pre-crusher	Optional accessory
4	Amplifier for the light sensor above the pre-crusher (set no. 2)	Optional accessory
5	Secomea remote access kit	—
6	Temperature monitor	—

15.1 Photo (light) sensor

Indicators/controls: 1 Green LED = power on; 2 Sensitivity control; 3 Long/short range switch; 4 Light/dark switch (always set to "dark"); 5 Signal status indicator (lights green with correct signal); 6 Output signal (indicates a signal is sent to the PLC).

Light sensors detect when there is enough material in the machine to start. Manufacturer's instructions must be strictly followed — see the sensor data sheet (Appendix 7). **Sensitivity setting** is set at the factory; best fine-tuned by trial and error. Sensors can occasionally be triggered by dust or steam — if this occurs, adjust sensitivity via the control button (and possibly the long/short-range switch).

15.2 Power converter for main motor/screw monitoring

There is only one correct setting for the power converter — the factory setting (see Appendix 6).

16. Hydraulic jaws setting

Hydraulically operated pressure plate: the pressure plate presses down and rises automatically via the hydraulic system, consisting of a hydraulic cylinder, pump and electronic control. The hydraulic cylinder is double-acting and mounted at the top of the pressing chamber; the piston rod is attached to the movable pressure plate. Electronic control is built into the control box.

Setting and adjusting oil pressure: the pressure relief valve (section 17, item 6b) must be set between 80–200 bar depending on material (MAX 200 bar). Recommended: 150 bar. Remove the cover from the relief valve; loosen the lock nut (tightened against the adjusting screw); turn the Allen screw until the desired pressure is reached; then tighten the lock nut and refit the cover. This is done by manually raising the jaws and continuously activating them so the hydraulic cylinder reaches the end of its stroke, producing the maximum pressure that can be read off.

17. Hydraulic system

18 Regulátor kapacity (voliteľná výbava)

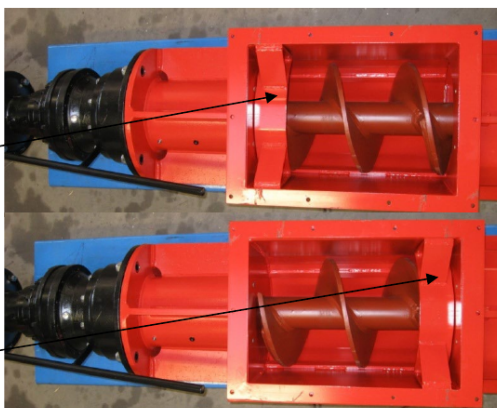
V niektorých prípadoch môže byť ťažké dosiahnuť optimálnu kapacitu a/alebo stupeň zlisovania (pri hustote EPS 25–30 g/l: 180–200 kg/hod). Na úpravu prietoku materiálu cez stroj možno zaradiť regulátor kapacity. Regulátor kapacity sa inštaluje medzi násypku predhrviča a teleso závitovky a môže sa osadiť v jednej z dvoch polôh:

“A” – v tejto polohe sa kapacita znižuje (napr. pre EPS s vysokou hustotou alebo mokrý EPS, XPS, EPP, atď.).

Pozícia “A”

“B” – v tejto polohe sa kapacita zvyšuje (napr. pre EPS s nízkou hustotou).

Pozícia “B”



19 Prvé spustenie lisu

Spustenie prázdneho lisu

Pri spustení prázdneho lisu nie je v lisovacej komore zlisovaný materiál a teda ani počiatočný protitlak. Preto je potrebné vytvoriť protitlak manuálne. Postupujte nasledovne:

1. Zvoľte „**MAN**“ – manuálnu prevádzku závitovky a „**MAN**“ - manuálnu prevádzku čelustí (kontrolky motorov na displeji budú svietiť nažltlo, pozrite časť 10.1.2).
2. Skontrolujte, že smer otáčania závitovky je správny (proti smeru hodinových ručičiek pri pohľade od strany prevodovky).
3. Tlačeníím šípky hore na dotykovej obrazovke vyžehňte pohyblivú čelusť úplne hore. Zastavte stroj a uzamknite prívodný vypínač. Zasuňte nový materiál „proti smeru“ do lisovacej komory, kým nebude úplne plná. Odomknite prívodný vypínač a pokračujte v „**MAN**“ prevádzke závitovky a čelustí. Tlačeníím šípky dole na dotykovej obrazovke spustíte pohyblivú čelusť úplne dole.
4. Zvoľte „**AUTOMATIC**“ prevádzku závitovky a „**AUTOMATIC**“ prevádzku čelustí. V **JAWS SETUP 6** - nastavenie čelustí 6 zvoľte **KW CONTROL** – riadenie podľa výkonu a požadovaný tlak nastavte v „**KW HIGH**“ v **QUICK MODIFY** – rýchle nastavenia. Spustíte stroj a vkladajte surový materiál na lisovanie do násypky.
5. Po 60 sekundách vyhlásite „**A04 TIMEOUT KW LOW**“ a „**A05/A07 TIMEOUT SPEED LOW**“. Je to preto, že nedosiahneme požadované pracovné zaťaženie „**KW HIGH – DIFFERENCE**“, a „**SPEED LIMIT**“, pretože riadenie rýchlosti sa ešte nerozbehlo. Musíte stlačiť reset a spustiť znova. Alarmy sa vyhlásia niekoľkokrát, kým sa nedosiahne normálna prevádzka.

Fig. — Capacity regulator positions “A” (reduced capacity, e.g. high-density or wet EPS/XPS/EPP) and “B” (increased capacity, e.g. low-density EPS) — see section 18. (Original hydraulic-system photos are contained in the source manual, item table below.)

Item	Name	Description
1	Pressure gauge	0–250 bar, 1/4" RG
2	Pressure gauge cock	ES090
3	Electric motor	0.55 kW, 3 x 400 V, 50 Hz
4	Double solenoid valve	NG06
5	Pilot-operated check valve	NG06
6a	Pressure relief valve, locked	Fully tightened
6b	Pressure relief valve, adjustable	Adjustable
7	Filler cap	—
8	Oil tank	5 L
9	Fixed-flow valve with filter	—
10	Directional connector	—
11	Flange for pump station	2000000659

18. Capacity regulator (optional accessory)

In some cases it may be difficult to achieve optimum capacity and/or degree of compaction (at EPS density 25–30 g/l: 180–200 kg/h). A capacity regulator can be fitted between the pre-crusher hopper and the screw housing to adjust material flow through the machine, and can be fitted in one of two positions:

"A" — reduces capacity (e.g. for high-density or wet EPS, XPS, EPP, etc.). **"B"** — increases capacity (e.g. for low-density EPS).

18 Regulátor kapacity (voliteľná výbava)

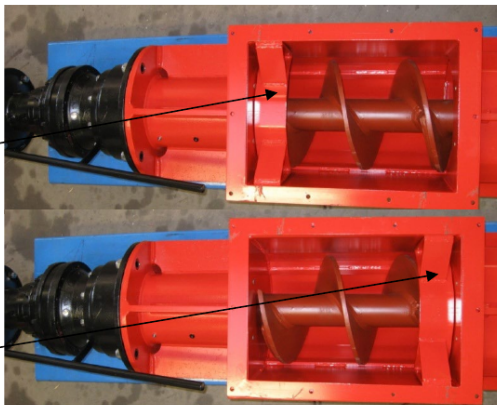
V niektorých prípadoch môže byť ťažké dosiahnuť optimálnu kapacitu a/alebo stupeň zlisovania (pri hustote EPS 25–30 g/l: 180–200 kg/hod). Na úpravu prietoku materiálu cez stroj možno zaradiť regulátor kapacity. Regulátor kapacity sa inštaluje medzi násypku preddrviča a teleso závitovky a môže sa osadiť v jednej z dvoch polôh:

“A” – v tejto polohe sa kapacita znižuje (napr. pre EPS s vysokou hustotou alebo mokrý EPS, XPS, EPP, atď.).

Pozícia “A”

“B” – v tejto polohe sa kapacita zvyšuje (napr. pre EPS s nízkou hustotou).

Pozícia “B”



19 Prvé spustenie lisu

Spustenie prázdneho lisu

Pri spustení prázdneho lisu nie je v lisovacej komore zlisovaný materiál a teda ani počiatočný protitlak. Preto je potrebné vytvoriť protitlak manuálne. Postupujte nasledovne:

1. Zvoľte „**MAN**“ – manuálnu prevádzku závitovky a „**MAN**“ - manuálnu prevádzku čelustí (kontrolky motorov na displeji budú svietiť nažltlo, pozrite časť 10.1.2).
2. Skontrolujte, že smer otáčania závitovky je správny (proti smeru hodinových ručičiek pri pohľade od strany prevodovky).
3. Tlačeníím šípky hore na dotykovej obrazovke vyžehňte pohyblivú čelusť úplne hore. Zastavte stroj a uzamknite prívodný vypínač. Zasuňte nový materiál „proti smeru“ do lisovacej komory, kým nebude úplne plná. Odomknite prívodný vypínač a pokračujte v „**MAN**“ prevádzke závitovky a čelustí. Tlačeníím šípky dole na dotykovej obrazovke spustíte pohyblivú čelusť úplne dole.
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5. Po 60 sekundách vyhlásite „**A04 TIMEOUT KW LOW**“ a „**A05/A07 TIMEOUT SPEED LOW**“. Je to preto, že nedosiahneme požadované pracovné zaťaženie „**KW HIGH – DIFFERENCE**“, a „**SPEED LIMIT**“, pretože riadenie rýchlosti sa ešte nerozbehlo. Musíte stlačiť reset a spustiť znova. Alarmy sa vyhlásia niekoľkokrát, kým sa nedosiahne normálna prevádzka.

Fig. — Capacity regulator, positions “A” and “B”

19. First start-up of the press

| Starting an empty press

When starting an empty press there is no pressed material in the pressing chamber and therefore no initial back-pressure. Back-pressure must therefore be created manually, as follows:

1. Select "MAN" for the screw and "MAN" for the jaws (motor indicators on the display will light yellow, see section 10.1.2).
2. Check the screw rotation direction is correct (counter-clockwise viewed from the gearbox side).
3. Using the up arrow on the touchscreen, drive the movable jaw fully up. Stop the machine and lock the supply switch. Feed new material "against the direction of travel" into the pressing chamber until it is completely full. Unlock the supply switch and continue in "MAN" mode for the screw and jaws; using the down arrow on the touchscreen, drive the movable jaw fully down.
4. Select "AUTOMATIC" for the screw and "AUTOMATIC" for the jaws. In JAWS SETUP 6 select KW CONTROL (power control) and set the required pressure in "KW HIGH" under QUICK MODIFY. Start the machine and feed raw material for pressing into the hopper.
5. After 60 seconds "A04 TIMEOUT KW LOW" and "A05/A07 TIMEOUT SPEED LOW" will be triggered, because the required working load ("KW HIGH - DIFFERENCE") and "SPEED LIMIT" have not yet been reached, as speed control has not yet stabilised. Press reset and restart — these alarms will trigger several times until normal operation is reached. These alarms are not significant during the start-up process, BUT are very important during normal operation.
6. Watch the machine to ensure kW draw is rising.
7. If kW draw does not rise and material is extruded from the pressing chamber without being compacted, repeat step 3 with firmer material. The machine will now automatically regulate back-pressure according to "JAW SETUP 1 - KW HIGH/ DIFFERENCE" or the speed-control settings, if that mode is selected (speed control is recommended for EPS).
8. If it is necessary to remove the "starting plug/material": stop the machine. There is now a "plug" in the chamber, and the machine can be started and stopped without needing to re-establish back-pressure. In other words, this procedure is only needed the first time an empty machine is started.

Situations may arise where the screw jams and the electric motor stops, e.g. if a hard foreign object becomes lodged. To free the screw, it can be rotated in reverse: select "Manual" screw operation and press the reverse arrow on the touchscreen. This must only be done briefly — **maximum 2 seconds at a time**. If the screw runs in reverse for longer, there is a significant risk that material will compact at the front end of the screw housing and potentially force debris into the bearing housing.

20. Service and maintenance

Repairs may only be carried out by qualified persons (see Appendix 5). Particular attention must be paid to: service and repairs must be carried out without endangering anyone; the supply switch must be switched off and locked before any repair; this installation has more than one isolator/service switch — isolate the relevant parts before repair; use necessary tools, PPE, lifting equipment, scaffolding and fall-protection equipment; heavy or angled lifts must be avoided by proper use of equipment; pinch points between machine parts must be avoided through correct service procedure; the technical and safety instructions in this manual must be followed; a disassembled machine must not be put into operation.

This chapter describes correct machine maintenance. Appendix 3 contains a maintenance plan describing service intervals and a maintenance log, to be used for recording monthly, annual and 2,500-hour service.

20.1 Cleaning

Proper maintenance includes cleaning so the machine functions as intended. The warranty does not cover damage caused by insufficient cleaning. The supply switch must be switched off and locked before any cleaning. The machine is cleaned with clean water, or optionally a cold-water pressure washer. Covers can be removed to ease cleaning and refitted afterwards. The machine must not be cleaned with corrosive cleaning agents. The control panel cannot withstand intensive water cleaning.

20.2 Lubrication

Lubrication is important for the machine's lifetime and function. Bearing lubrication and checking the oil in the planetary gearbox and the pump station's hydraulic oil are especially important — see Appendix 3 for lubrication instructions.

20.3 Press screw

See instructions in Appendix 3. The material processed by the machine may vary greatly in composition. We recommend using/updating the "CHECK WEAR PARTS - SERVICE REMINDER" function in the control (see section 12.5.5).

20.4 Tightening bolts

All bolts were oiled at the factory. All bolts must be re-tightened: once a year, and after 30 operating hours following any assembly related to repair, service, etc. See Appendix 3.

20.5 Main bearings

The main bearings (drawing 5000008675, item 2) are greased via two grease nipples on the side of the bearing housing. Remember the screw must be running during greasing. Grease every 100 operating hours — IMPORTANT! (see Appendix 3). Grease type: FUCHS

GREASEWAY CAH 92 / AGIP AUTOL TOP 2000 / Shell Gadus S3 A1300 C2 / Shell Gadus S5 V1350 1. Quantity: approx. 50 cm³ (50 ml) per bearing.

20.6 Planetary gearbox

Planetary gearbox (drawing 5000039018, item 1). First oil change after 100 operating hours; thereafter every 2,500 operating hours or 1 year, whichever comes first. Oil type/ quantity: see Appendix 3. Gearbox temperature must not exceed 80 °C.

20.7 Hydraulic system

The hydraulic system is described in sections 16/17. Regularly check the oil level and top up as needed. Regularly check hoses and fittings for leaks. Otherwise, normal rules for hydraulic systems apply. First oil change after 100 operating hours; thereafter every 2,500 operating hours or 1 year, whichever comes first. Oil type: hydraulic oil, viscosity ISO 46. Oil quantity: 6 litres. If the hydraulic system needs to be depressurised, the material in the jaw should be extruded and the jaw moved to the upper position.

20.8 Hopper

Light sensors: whenever the light sensors become dirty, they must be cleaned.

20.9 Block divider

See section 24.4.

20.10 Drainage in the screw channel (optional)

Drainage holes at the bottom of the screw channel are closed with plugs. If the pressed material is wet, the plugs can be removed. Drainage holes must be kept clean and unobstructed to function properly.

21. Transport instructions

Ensure the machine is stable on a firm base and that accompanying parts are carefully secured or packed separately. The machine should be transported using a forklift or lifting trolley.

22. Installation

For correct use and commissioning, the following conditions must be met: level and firm ground; correct transport (see section 21); installation carried out by authorised personnel. In case of doubt, please contact the importer or manufacturer.

Placement

1. It is recommended to place the press in a dry area (under shelter) with sufficient free space around it.
2. The press must be positioned to allow easy access for maintenance and service of all functions and main components.
3. The press must be placed on a level floor.
4. It is recommended to bolt the machine to the floor.
5. Do not install ladders, platforms or other climbing aids around the machine, as this reduces the safe distance from hazardous areas or creates a risk of falling into the machine.
6. Manual feeding of the machine may cause musculoskeletal damage; the work process must be designed with sufficient variability to prevent this.
7. If the machine is intended for manual feeding, the user must ensure a good working environment in terms of lighting, temperature, ventilation, anti-slip measures and equipment needed for heavy lifting.
8. Lighting must be positioned out of the operator's reach from the machine. If mounted above the machine, it must be at least 2.7 metres above the operator's walking level.
9. Secure the block divider, stabilising chamber and discharge (outlet) tray together using four bolts.
10. Level the machine height using the adjustable feet.
11. Connect the block divider's power cable to the control box.
12. Fit the covers (safety guards).

Power connection

All internal wiring is completed and ready when the machine leaves the factory. The machine must be connected to the electrical supply by an authorised electrician. Particular attention: the connection must comply with the electrical documentation (Appendix 6); a residual-current device (RCD) must be installed upstream of our control panel; correct earthing to our control panel must be installed.

| 22.1 Block divider installation

RISK OF TIPPING! THE BLOCK DIVIDER WILL TIP OVER IF NOT SECURED FROM ABOVE WHEN THE TRANSPORT BOLTS ARE REMOVED. Before removing the bolts securing the block divider to the pallet, the block divider must be secured from above to prevent tipping. Ensure that straps (or similar) are tensioned to a crane (or similar) before removing the bolts. The block divider

must remain in this secured position until the levelling feet are fitted and the block divider is assembled with the stabilising chamber.

8. Osvetlenie musí byť umiestnené mimo dosah obsluhy zo stroja. Ak je osvetlenie umiestnené nad strojom, musí byť minimálne 2,7 metra nad pojazdnou úrovňou obsluhy.
9. Zabezpečte deliace zariadenie, stabilizačnú komoru a odkladaciu (výstupnú) vaň skrutkami spolu pomocou štyroch skrutiek.
10. Vyrovnajte výšku stroja pomocou nastaviteľných oporných nôh.
11. Pripojte napájacie vedenie deliaceho zariadenia do ovládacej skrinky.
12. Namontujte kryty (bezpečnostné zábrany).

Pripojenie napájania

Všetka vnútorná kabeláž je dokončená a pripravená keď stroj odchádza z výroby.

Stroj musí pripojiť k elektrickej sieti autorizovaný elektrotechnik. Osobitne venujte pozornosť:

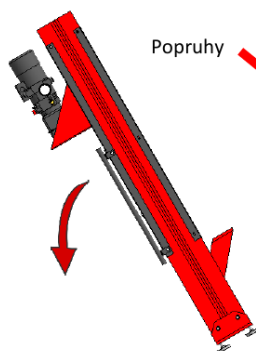
- Pripojenie musí byť v súlade s elektrickou dokumentáciou – príloha 6.
- Pred naším ovládacím panelom musí byť inštalovaný prúdový chránič.
- Musí byť nainštalované správne uzemnenie k nášmu ovládacímu panelu.

22.1 Inštalácia deliaceho zariadenia

Riziko prevrátenia!



POZOR! DELIACE ZARIADENIE SA PREVRÁTI, AK NIE JE ZAISTENÉ ZHORA, KEĎ SA ODSTRÁŇA PREPRAVNÉ SKRUTKY.



Pred odstránením skrutiek, ktoré upevňujú deliace zariadenie k palete, musí byť deliace zariadenie hore zaistené, aby sa zabránilo prevráteniu. Uistite sa, že popruhy (alebo podobné) sú napnuté na žeriav (alebo podobné) ešte pred odstránením skrutiek. Deliace zariadenie musí zostať v tejto zaistenej polohe až do namontovania vyrovnávacích nôh a do zmontovania deliaceho zariadenia so stabilizačnou komorou.

1. Upevnite popruhy (alebo podobné) v hornej časti deliaceho zariadenia, ako je zobrazené na obrázku vpravo, a napnite ich pomocou žeriava (alebo podobného zariadenia).
2. Povoľte skrutky, ktoré upevňujú deliace zariadenie k palete.
3. Namontujte vyrovnávacie nohy (4 ks) na deliace zariadenie.
4. Prišraubujte deliace zariadenie k stabilizačnej komore a k výstupnej vani.
5. Po dotiahnutí skrutiek odstráňte popruhy.



Fig. — Block divider installation: securing with straps before removing transport bolts (risk of tipping)

1. Attach straps (or similar) to the top of the block divider as shown, and tension using a crane (or similar equipment).
2. Loosen the bolts securing the block divider to the pallet.
3. Fit the levelling feet (4 pcs) to the block divider.
4. Bolt the block divider to the stabilising chamber and to the discharge tray.
5. Remove the straps once the bolts are tightened.

22.1.1 Drainage in the screw channel (optional)

Drainage holes at the bottom of the screw channel are closed with plugs; they can be removed if the pressed material is wet.

23. Assembly and disassembly

See instructions in Appendix 2.

24. Block divider

The block divider has two operating modes: manual and automatic. First read the screw press manual carefully, which describes these modes and settings. The operating mode is set via the touchscreen: touch the blue arrow at the top of the start screen to display the block-divider screen; touch the motor indicator on the block divider to display the operating-mode selection bar.

24.1 Manual operation

In some cases you may want to manually move the block-divider knife. This is done by selecting manual operation on the touchscreen; the relevant arrows for these movements are then shown. If the function does not start, press "RESET". In manual operation, block length is determined by the operator. *Note: end manual operation with the knife in the upper position.*

24.2 PLC operation

When automatic mode is selected, PLC operation begins (note: all functions must be switched to "AUT" mode).

Block divider — status screen

When the block divider is enabled, a blue "BLOCK DIVIDER" field is shown on the start screen. Pressing this field shows a screen displaying the status of the block-divider process. You can also reset the "BLOCK DIVIDER" cycle by pressing "RESET BLOCK DIVIDER" — the cycle then restarts from the beginning.

Block length / quantity

Block length and quantity can be defined via SETUP → OTHER SETTINGS → BLOCK DIVIDER; after selecting "YES" to activate the block-divider program, this screen appears, where up to 3 different block lengths can be defined together with the quantity to produce of each. After producing x pcs of length A, y pcs of length B and z pcs of length C, the cycle restarts from the beginning.

Recommended values for EUR pallets: Series A: 1200 mm, quantity 2. Series B: 800 mm, quantity 3. Series C: 1200 mm, quantity 2. Blocks can then be loaded onto a EUR pallet.

WARNING! Use lifting equipment to load blocks. Wrapping in stretch film is recommended to secure load stability.

Block divider settings

"BLOCK DIVIDER CYCLE TIMEOUT" — maximum cycle time before the machine enters alarm mode (the cycle itself takes 30 s, but a hard foreign object too tough for the block divider may occur). "CLOSE ON STOP" — number of seconds the jaws press down before

the block-divider cycle starts (so the block does not push against the divider during the cycle). Recommended value: 3 s.

24.3 Hydraulic system

The cutting mechanism is activated by the hydraulic system shown in the diagram (electric motor, single-stage relief valve (adjustable), check valve spring-closed, tank, pilot-to-open check valve, hose, pressure gauge, cylinder). The relief valve is factory-set to 200 bar.

Setting the relief valve (MAX 220 bar): a) Remove the cover. b) Loosen the upper nut on the relief valve. c) Slightly loosen (unscrew) the safety valve, as it is tightened against the adjusting screw. d) Set the pressure using the flat screw directly under the upper nut. e) Tighten the nut. f) Refit the cover.

The hydraulic pump has two ports, "A" and "B". Port "A" connects to the (–) side of the cylinder (lower); port "B" connects to the (+) side (upper).

24.4 Service and maintenance

Please be aware of the tipping risk — see section 22.1. The machine requires no special maintenance beyond greasing the cylinder mounts (grease nipples) and checking the hydraulic oil. Clean as needed using normal methods to maintain the machine's appearance. The control box and electric motors must not be sprayed directly with water.

24.4.1 Hydraulic system

Regularly check the oil level and top up as needed; regularly check hoses and fittings for leaks. Otherwise normal hydraulic-system rules apply. First oil change after 100 operating hours; thereafter every 2,500 operating hours or 1 year, whichever comes first. Oil type: hydraulic oil, viscosity ISO 46. Oil quantity: 7 litres.

24.4.2 Inductive sensors

Keep the inductive sensors clean, as dust from the blocks or other debris can interfere with machine operation. Regularly check sensor condition and clean with compressed air. Sensor function can be verified via the light indicator on the sensor. In the standard setting the lower sensor is mounted in the middle hole; if the block does not get cut, the sensor must be lowered to the bottom hole in the housing.

24.4.3 Knife

Visually check that the blade's cutting geometry is correct, that the blade is straight and free of surface cracks. If the knife has tungsten-carbide edges, check the nuts are tight and re-tighten if necessary.

25. Glossary

Term	Meaning
EPS	Expanded polystyrene, also called Styropor or Styrofoam.
PLC	Programmable Logic Controller — a small computer used to automatically control simple processes, e.g. controlling motors in industrial plants. A PLC-based control system replaces a large number of relays and timers compared with traditional control.
Motor protection switch	An electrical component protecting the electric motor from prolonged overload. If this occurs, power to the motor is interrupted and the PLC logs the event. The machine can only be restarted once the motor protection switch (red button) is returned to its original position.
Reset	Returning to the initial state, often in order to continue work from a known starting position.

26. Contact

Before contacting the service department or ordering spare parts, please have this operation manual ready — the model number and serial number are shown on the cover page. When ordering spare parts, please state: 1) Model number and serial number; 2) Part catalogue numbers and names (found in the drawings in Appendix 1); 3) Quantity ordered. If the machine was purchased through a distributor, please contact the distributor directly. Otherwise contact:

RUNI A/S

Industriparken 8, DK-6880 Tårn, Denmark

Tel.: +45 9737 1799 Fax: +45 9737 3800 Email: runi@runi.dk

27. Appendices (list)

1. Drawings, parts lists and recommended spare parts
2. Assembly and disassembly instructions
3. Maintenance
4. Assembly instructions for partly completed machine; factory settings / alarm list
5. Qualification and training chart
6. Electrical documentation
7. Light sensors
8. Inspection cover switch

Translator's note

This is a faithful English translation of the original Slovak-language RUNI operation manuals (silo installation L209 and screw compactor SK370) prepared to accompany the machine for resale purposes. Diagrams, control-panel photographs and touchscreen illustrations from the original manual are reproduced where included above; on-screen menu text visible in Slovak within those figures is translated in the accompanying running text. For full assembly drawings, parts lists, electrical schematics and other appendices referenced above, please refer to the original Slovak PDF, which remains the authoritative technical document and can be provided alongside this translation.