

Rittal – The System.

Faster – better – everywhere.

Hydraulic cylinder CW 120 with
hydraulic hose

4055.806/4055.807

Operating instructions

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



Foreword

Dear Customer,

We thank you for choosing our Rittal product. Read these operating instructions carefully before using your new unit for the first time and retain them together with the supplied Product Control Card so they can be consulted when required.

We wish you every success.

Kind regards,
Rittal GmbH & Co. KG

Rittal GmbH & Co. KG
Auf dem Stützelberg

35745 Herborn
Germany

Phone: +49(0)2772 505-0
Fax: +49(0)2772 505-2319

E-mail: info@rittal.com
www.rittal.com

We are always happy to answer any technical questions regarding our entire range of products.

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1 CE labelling

Rittal GmbH & Co. KG confirms that the "hydraulic cylinder with hydraulic hose" is compliant with machine directive 2006/42/EC. An appropriate declaration of conformity has been issued. It can be found at the end of this document, on the Rittal Homepage or accompanies the unit as separate document.

2 Safety instructions

2.1 Symbols in these operating instructions

The following symbols are used in this documentation:



Warning!

A hazardous situation which may lead to death or serious injury if the instructions are not followed.



Caution!

Hazardous situation which may lead to (minor) injuries if the instructions are not followed.



Note:

Important notices and indication of situations which may result in material damage.

- This symbol indicates an "action point" and shows that you should perform an operation or work step.

2.2 Symbols on the unit

The following symbols are attached to the unit.



Risk of being crushed or cut by moving unit components.



Risk of damage: when punching, do not place the male die on the base of the female die.



Observe the operating instructions.



Wear safety goggles.

2.3 General safety instructions

When working with high-pressure hydraulic units, improper handling and/or poor maintenance can damage the unit and cause severe injuries. Consequently, observe all the following safety instructions and contact our service team should you have any questions.

Caution...

- ... when handling hydraulic oil. The oil can become very hot after longer operation. There is a risk of injury!
- Large punching tools are very heavy. Together with the hydraulic cylinder CW 120, secure against falling. Risk of injury!
- To extend the service life of the unit, the hydraulic cylinder should not travel to the limit stop under full pressure.

Always...

- ... machine only suitable sheet metal. Observe the maximum diameter.
- ... remove objects and foreign bodies from the work area.
- ... screw the tensioner completely into the cylinder.
- ... observe the maximum permitted dimensions of the workpieces.
- ... inspect electrical and hydraulic connection lines for damage before deploying the unit.
- ... ensure the secure footing of the unit.
- ... observe the information contained in the operating instructions.
- ... instruct new users in the safe use of the unit.
- ... wear safety goggles when working with the unit.
- ... observe the local, country-specific regulations.
- ... store and deploy the unit in dry and well ventilated spaces.

Never...

- ... deploy the unit when parts are damaged or missing.
- ... make any changes to the unit or remove the warning signs.
- ... intervene in the work area of the tools.
- ... open couplings under pressure.
- ... apply pressure to unconnected hose couplings.
- ... exceed the maximum operating pressure.
- ... operate the unit unattended.
- ... subject the unit to corrosive materials.
- ... deploy the unit unless the operating instructions have been read and understood completely.
- ... store or operate the unit at temperatures above 45 °C (113 °F).
- ... deploy the unit in an explosion risk area.

2.4 Personal protective equipment

The operating and maintenance personnel must always wear personal protective equipment when working on the unit. The personal protective equipment comprises at least the following components:

- Safety work shoes: for all work on the unit
- Safety goggles: for all work on the unit
- Gloves: for all work on the unit

2.5 Residual risks when using the unit

During operation, there is the risk that a hydraulic hose bursts or that a screw fastening leaks. This can cause oil to escape at high pressure.

- Wear your personal protective equipment for all work performed on the unit (see section 2.4 "Personal protective equipment").

3 Proper usage

The Rittal hydraulic cylinder CW 120 (Model No. 4055.806) is a mobile work station with a single-acting high-pressure hydraulic cylinder for punching holes in steel (S235) with maximum thickness of 3 mm and in stainless steel (V2AVV2A) with maximum thickness of 2 mm. Only the mobile busbar machining unit CW 120-M (Model No. 4055.800) or the electro-hydraulic pump CW 120-S (Model No. 4055.720), each together with the foot-operated switch, may be deployed as drive for the hydraulic cylinder CW 120.

4 Technical specifications

Technical specifications	
Model No. and designation	4055.806 hydraulic cylinder CW 120
Max. pressure	700 bar (10150 psi)
Max. compressive force	232.2 kN (52200 lbs)
Max. delivery rate	0.95 l/min (0.25 gal/min)
Permissible materials	Steel, stainless steel
Max. diameter round	152 mm (5.98")
Max. side length	138 mm x 138 mm (5.43" x 5.43")
Max. tractive force	11 t (107.84 kN)
Max. stroke	26 mm (1.02")
Weight	2.5 kg (5.51 lbs)

Tab. 1: Technical specifications

5 Available accessories

Available accessories	Model No.
Hydraulic hose (3 m)	4055.807

Tab. 2: Available accessories

6 Unit description

The hydraulic cylinder CW 120 is a multipurpose hydraulic cylinder for making holes hydraulically in sheet metal. It is single-acting.

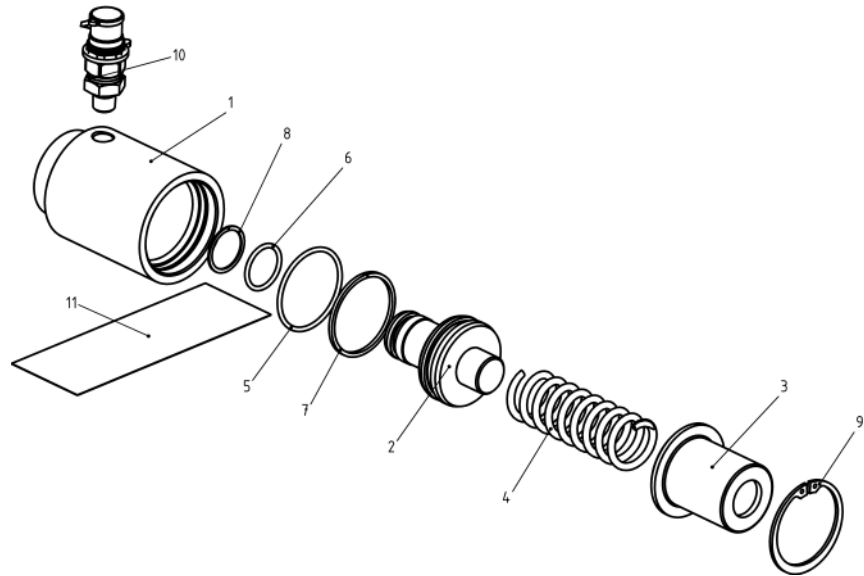


Fig. 1: Overall view

Legend

- 1 Body
- 2 Piston
- 3 Spring guide, ferrule
- 4 Pressure spring
- 5 O-ring 48.9 x 2.62
- 6 O-ring 25.07 x 2.62
- 7 Supporting ring SPR 49.3 x 45 x 2.5 PTFE
- 8 Supporting ring SPR 25.3 x 30 x 1 PTFE
- 9 Circlip DIN 471
- 10 Nipple 1/4" NPT
- 11 Sticker

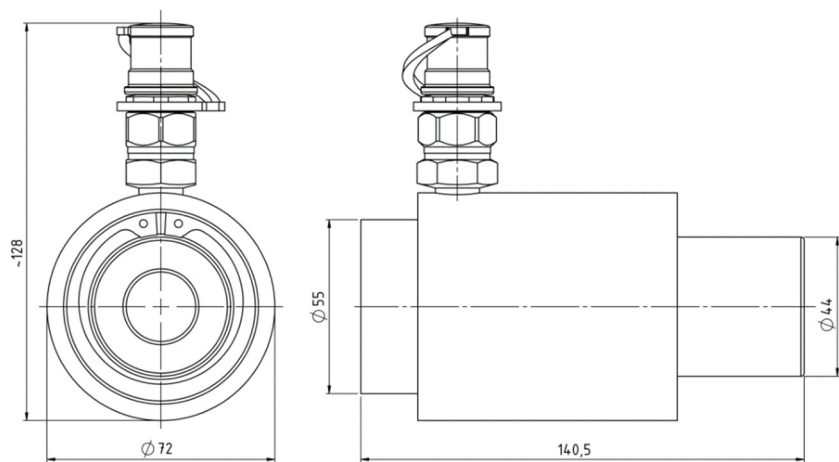


Fig. 2: Dimensions in mm

7 Commissioning

You receive a fully mounted hydraulic cylinder with quick-release coupling as well as detailed operating instructions.

- On receiving the goods, check them for possible transport damage and the delivery for completeness.
- In the event of problems, contact the manufacturer or your vendor without delay.
- In any case, read the complete operating instructions as well as all supplied documents before commissioning.

- Check the hydraulic hose for crushing or other damage. Never use damaged hydraulic hoses.
- Connect the hydraulic cylinder securely with the quick-release coupling to the supply pressure.
- Test the emergency stop function on the foot-operated switch.
- Then insert the lead of the foot-operated switch in the connection socket.



Warning!

If a dangerous situation occurs when working with the unit, stop all dangerous movements of the unit without delay.

- **In a dangerous situation, press the red emergency stop switch on the connected unit to stop the pump motor and to deactivate the magnetic valve!**
- **As an alternative, press the foot-operated switch beyond the first pressure point. This also causes the work operation to stop immediately.**

After triggering an emergency stop:

- Turn the emergency stop switch slightly on the connected unit so that it returns to its initial position.
The pump is returned to ready mode. After activating the foot pedal, it can be reactivated.
- If the emergency stop was activated via the foot-operated switch: release the foot-operated switch by pressing the blue silicone cover at the side (see fig. 3).

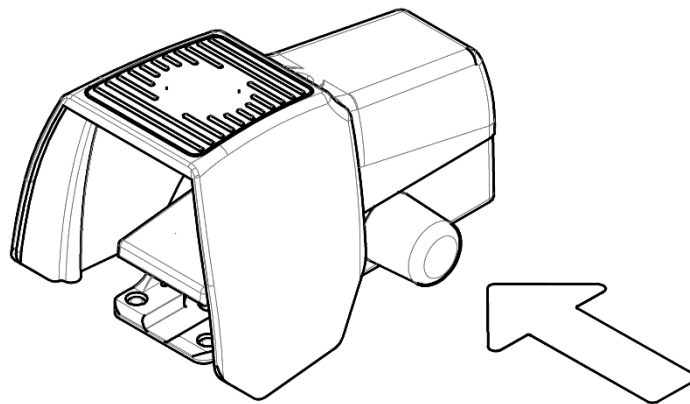


Fig. 3: Releasing the foot-operated switch

8 Connecting the hydraulic cylinder

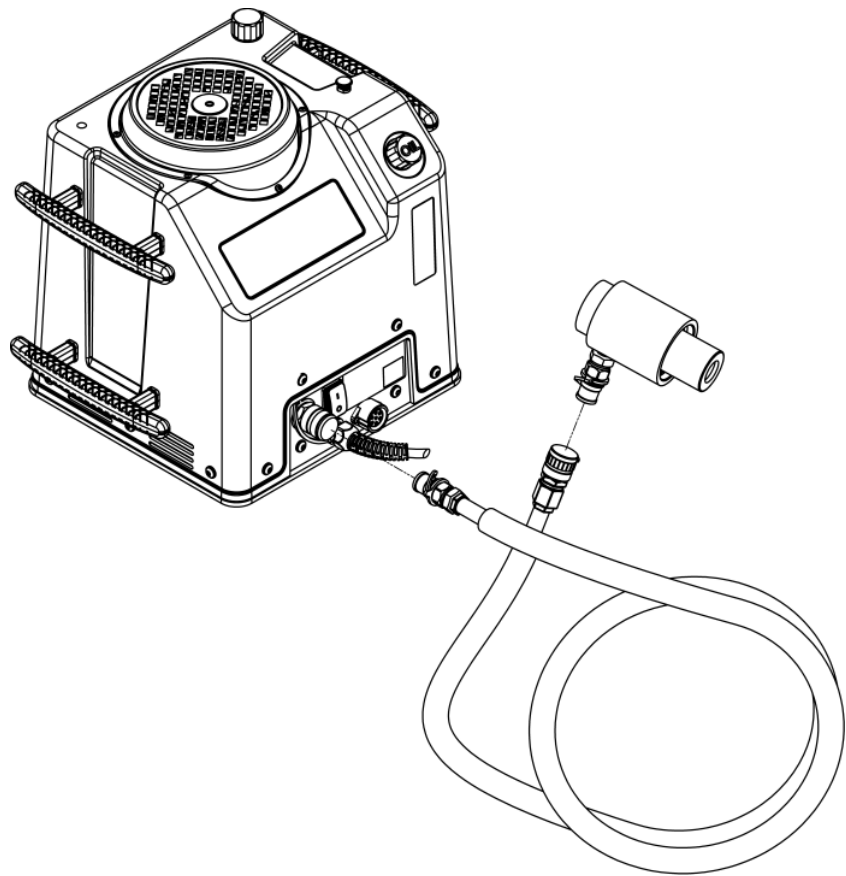


Fig. 4: Connection to the electro-hydraulic pump "CW 120-S"

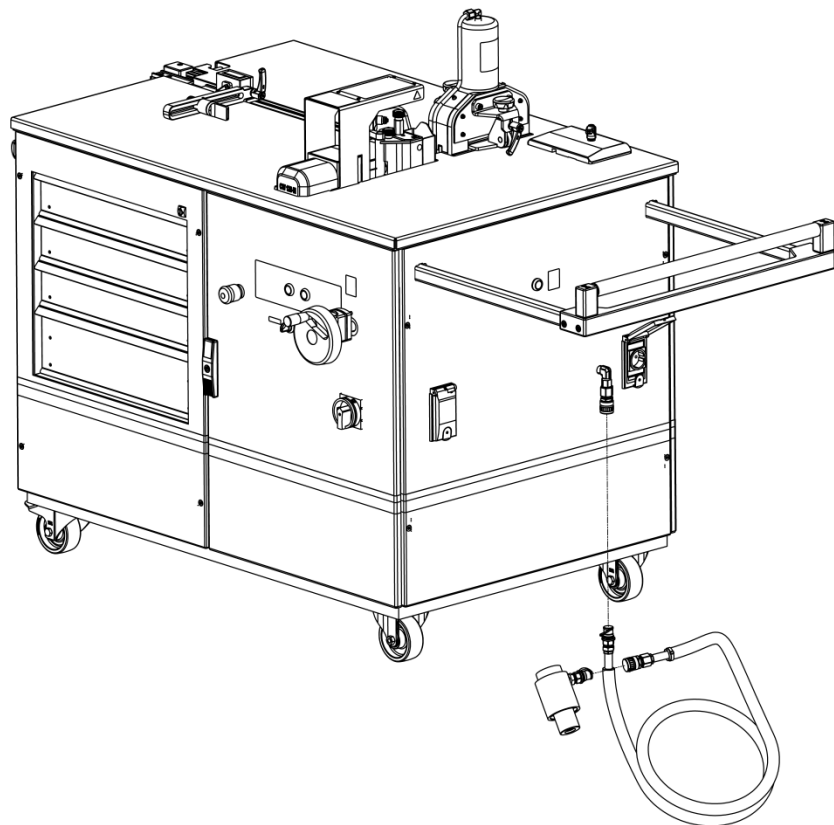


Fig. 5: Connection to the mobile busbar machining unit "CW 120-M"

9 Maintenance and inspection

The user is obliged to maintain and service the "hydraulic cylinder with hydraulic hose" in accordance with the details in the operating instructions, and in accordance with country-specific standards and rules.

The maintenance intervals are classified in accordance with the recommended frequency.



Caution!

When a unit has been switched on, there is the risk of it starting, such as for an inadvertent actuation of the foot-operated switch with the associated risk of injury in the area of unit components.

- **Before any servicing and repair work, ensure that the unit mains plug has been removed to prevent inadvertent starting.**

Before every use ...

- ... visually inspect the hydraulic cylinder and hydraulic hose for damage.
- ... check the correct, secure attachment of the hydraulic couplings.

Weekly ...

- ... check the correct functioning of the emergency stop switches on the machining carriage for activated pump.
- ... check the correct functioning of the safety shutdown on the foot-operated switch.



Warning!

There is risk of injury for defective safety equipment.

- **If the inspection of the safety shutdown equipment determined that they do not stop the unit, bring the unit to standstill immediately.**
- **Repair the safety shutdown equipment without delay.**
- **Operate the unit again only after the repair work has been completed.**

Monthly...

- ... visually inspect tools and the main body for defects or breakouts, and replace if necessary.
- ... check the markings and warning signs on the unit for readability and damage, and replace if necessary (see section 2.2 "Symbols on the unit").
- ... check the oil level, and add HLP 46 hydraulic oil to the "Max" marking if necessary (on the hydraulic pump).

Every 6 years...

- ... replace the hydraulic hose.

Maintenance, inspections and repairs must be performed by qualified electricians in accordance with the regulations valid in the associated country.

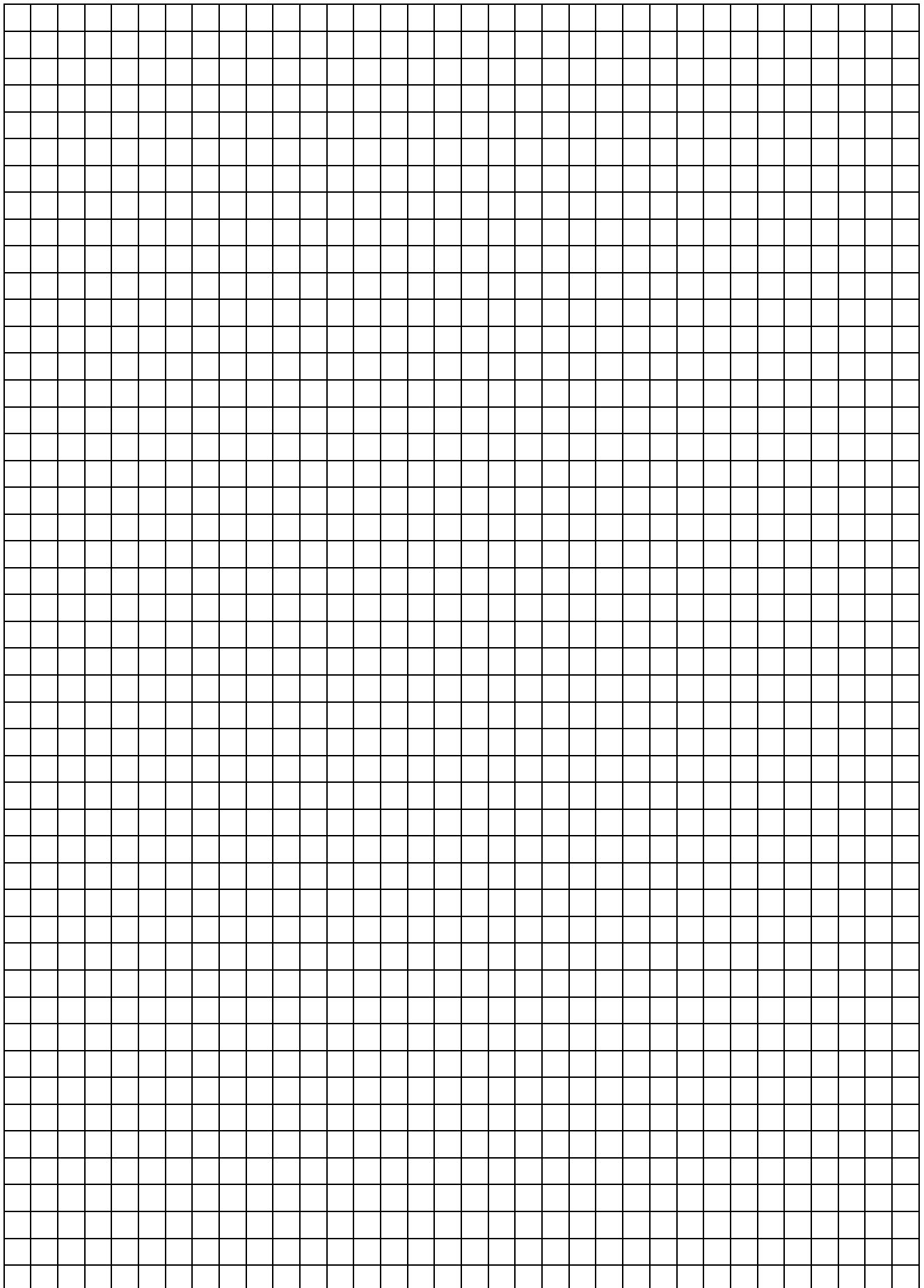
10 Dismantling and disposal

- Wear your personal protective equipment, in particular gloves and safety work shoes, also for the dismantling and disposal of the unit (see section 2.4 "Personal protective equipment").

The "hydraulic cylinder and hydraulic hose" must be disposed of or recycled appropriately in accordance with the country-specific regulations.

11 Contacts

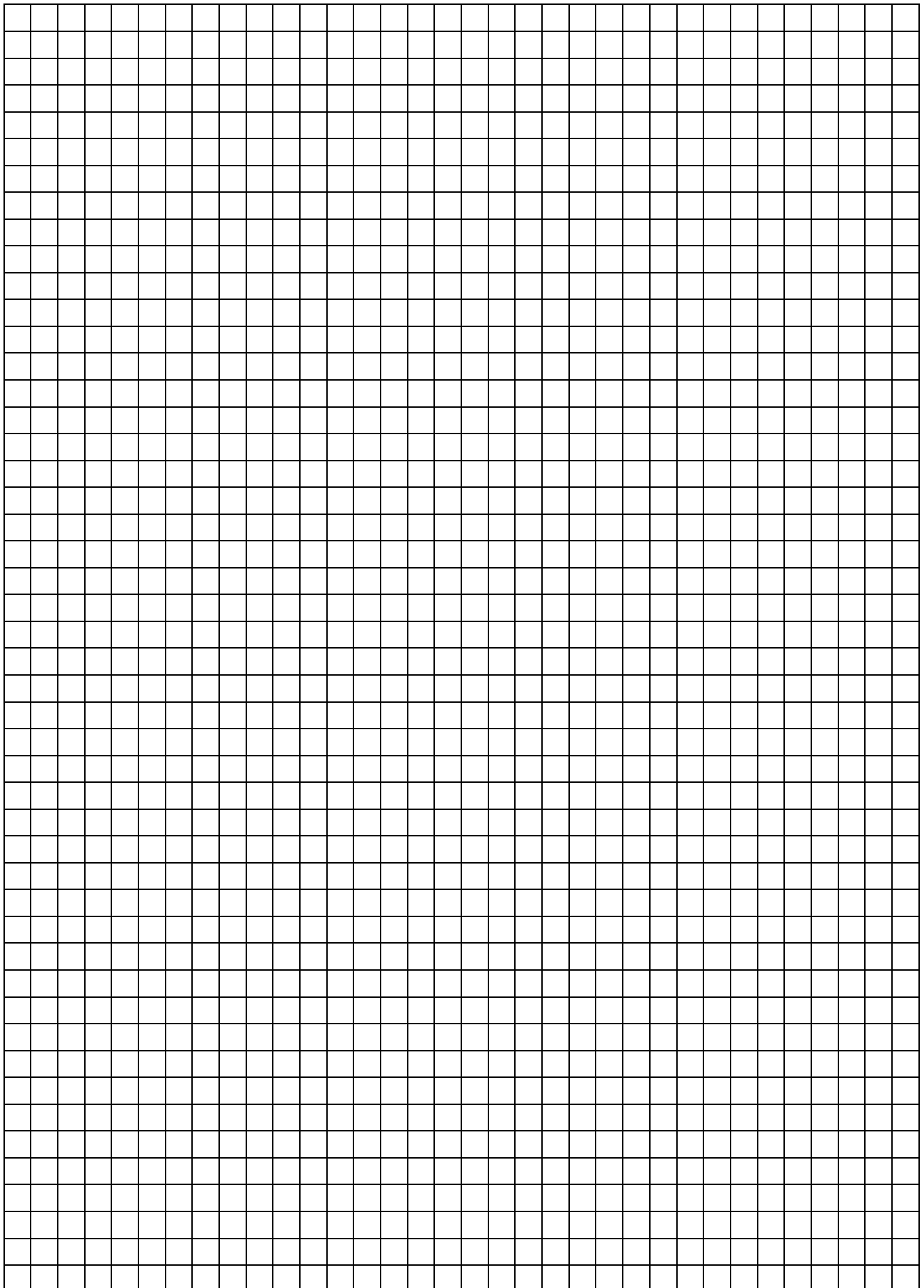
- For technical queries, please contact:
 - Phone: +49(0)2772 505-9052
 - E-mail: info@rittal.com
 - Homepage: www.rittal.com
- For sales or service requests, please contact your local Rittal organisation which can be found at www.rittal.com/contact.



Notes

EN

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



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You can find the contact details of all Rittal companies throughout the world here.



www.rittal.com/contact

RITTAL GmbH & Co. KG
Postfach 1662 · D-35726 Herborn
Phone +49(0)2772 505-0 · Fax +49(0)2772 505-2319
E-mail: info@rittal.de · www.rittal.com



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