PEINEMANN EQUIPMENT

BUILT FOR THE TOUGHEST JOBS

PEINEMANN 1-XS

MANUAL MAY 2023

PEINEMANNEQUIPMENT.COM

Dear Customer,

Thank you for acquiring the Peinemann Equipment 1-Xs. Please read this manual thoroughly and in completeness before installation or conducting operations. Information in this manual is essential for the safe and correct usage of the machine. Please get in touch with Peinemann Equipment B.V. when questions concerning safe installation and operation arise.

CONTENT

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1. GENERAL INFORMATION

1.1 Intended audience

This manual is intended for field engineering, installation, operation, and repair personnel. Every effort has been made to ensure the accuracy of the information. However, Peinemann Equipment will not be held liable for errors in this manual or consequences arising from the misuse of this manual.

1.2 Special information

Detailed descriptions of standard procedures, safety principles and service operations are not included. Please note that this manual contains warnings about procedures which could damage equipment, make it unsafe, or cause PERSONAL INJURY. Anyone using service procedures or tools, whether or not recommended by Peinemann Equipment, must be thoroughly satisfied that neither personal safety nor equipment safety will be jeopardized.

All information in this manual is based upon the latest product information available at any time of printing. We reserve the right to make changes at any time without notice.

1.3 Illustrations

Illustrations (figures) represent equipment components for use in identifying parts or establishing nomenclature. These figures may or may not be drawn to scale.

1.4 Safety requirements

The 1-Xs is installed and operated in a controlled environment involving hazardous situations. Proper maintenance is essential for safe and reliable operation. Procedures outlined in Peinemann Equipment manuals are the recommended methods for performing operations and maintenance.

1.5 Personnel training

All personnel performing installation, operations, repair, or maintenance procedures on the equipment, or those in the vicinity of the equipment, should be trained accordingly to ensure their safety.

! Personnel should wear protective gear during installation, maintenance, and operations.

1.6 Recommend tools

Service operations may require using tools designed specifically for the purpose described. Peinemann Equipment recommends that only those tools specified be used when stated. Ensure that personnel and equipment safety is not jeopardized when following service procedures.

1. GENERAL INFORMATION

1.7 General system safety practices

The equipment discussed in this manual may require or contains one or more utilities, such as electrical, hydraulic, pneumatic, or oil.

- Isolate energy sources before beginning work.
- Avoid performing maintenance or repairs while the equipment is in operation.
- Wear proper protective equipment during equipment installation, maintenance, or repair.

! Read and follow the guidelines below before installing equipment or performing maintenance.

1.8 Replacing components

- Verify that all components, such as cables and hoses, are tagged and labelled during assembly and disassembly of equipment to ensure correct installation.
- Replace failed or damaged components with Peinemann Equipment certified parts. Failure to do so could result in equipment damage or injury to personnel.
- Only use parts that are suitable for high pressure and carry a valid test certificate.

1.9 Routine maintenance

Equipment must be maintained on a routine basis. See Ch.7 for maintenance guidelines.

! Failure to conduct routine maintenance could result in equipment damage or injury to personnel.

1.10 Limited warranty

Warranty provided will be void if the 1-Xs or parts were either:

- Unauthorized modified repaired or serviced.
- Not properly maintained.
- Replacement parts not manufactured by Peinemann Equipment were utilized.

1.11 Hose sizes and pressures

The 1-Xs is suitable for use with various hose sizes and pressures. However, the maximum throughput of the 1-Xs is Ø27 milimeter (1.06 in). The most common hose sizes (3/2 - 6/2), hose catchers, nozzles and end stops are available from stock. Different lengths and shapes for the front lances are also available.

1. GENERAL INFORMATION

1.12 SIR Regulations

The 1-Xs is a semi-automatic high-pressure flex lance transit machine, and current SIR regulations regarding high-pressure cleaning apply (or the applicable rules in the country where you are currently working). It is recommended to comply with SIR regulations. The general safety regulations apply, just as for other high-pressure cleaning activities. The nozzles to be used must align with the cleaning activity's nature. It is advised to refrain from using nozzles that exert a major push or pull force.

1.13 Accountability

Peinemann Equipment B.V. cannot be held accountable for any material and non-material damage caused during the installation and operation of the 1-Xs. Therefore, users must carefully read this manual and handle the machine with care.

1.14 General terms and conditions

"All offers, orders, assignments and agreements for the lease, sale and/or delivery of services by Peinemann Equipment B.V. are subject to Peinemann's General Terms and Conditions as lastly filed with the Chamber of Commerce and Industry in Rotterdam under number 24175469. The General Terms and Conditions can also be found on Peinemann.nl. Any other general terms and conditions are expressly rejected."

2. SAFETY INSTRUCTIONS

2.1 General

- Use this machine only for the purpose it was developed and as instructed in the manual.
- This machine may only be used by qualified and trained personnel.
- The area around the work should be cordoned off to exclude untrained individuals.
- All personnel in the vicinity must wear appropriate protective clothing and eye and ear protection, per the specific requirements.
- Inspect the equipment for apparent damage or incorrect assembly. Wait to use the machine until this has been fixed.
- Rinse out the hoses before the nozzles are fitted to avoid any blockages.
- Check that all threaded connections are assembled tightly and leak-proof. Use stainless steel thread grease to avoid thread galling.
- Check that there are no blockages in the nozzles. If the nozzles are blocked, they must be cleaned or replaced.
- This machine must always be used with a foot pedal and/or dump valve that has been checked by an inspector and that automatically releases any water pressure when released.
- Water spray nozzles create a strong reactive force, and these forces can become unbalanced if a nozzle gets stuck. Use the equipment correctly to resist these forces.
- Check that all operating functions are working correctly before commencing high-pressure activities.
- Increase the pressure gradually when starting up the machine to ensure that everything is working correctly and that the equipment is appropriately balanced and positioned.
- Use fittings marked with the maximum working pressure and covered by a valid certificate. Stay within the maximum working pressure for each component in the system.

2.2 Steel lance and/or flex lance

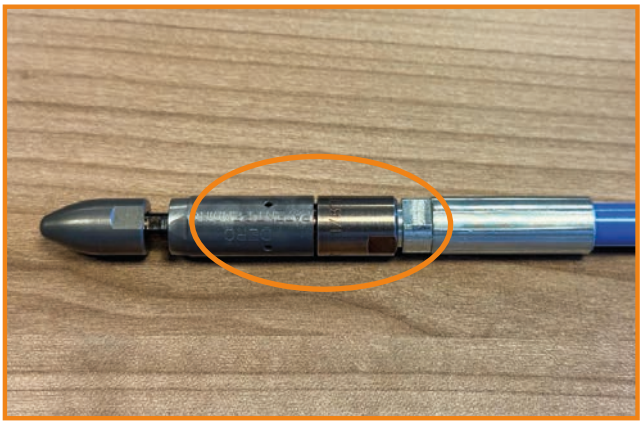
- The farthest end of the bundle to be cleaned should be cordoned off with a 6 meter (19.69” in) radius. If there are other workers nearby, a screen should be used.
- The person closest to the nozzles must control the high pressure.
- The lance machine should be safeguarded against the reactive force of the water spray and the possibility of hydraulicking.
- The operator must take a position where he can see the pipe plate, but is far enough away not to be troubled by rebounding water spray during cleaning.
- Mechanical end stops must be fitted to ensure that the flex lance does not escape from the heat exchanger.
- The length of a nozzle, including the end stop, on a high-pressure hose, must be the same or larger than the pipe’s internal diameter to be cleaned to prevent the lance from turning. If not, a lead pipe must be installed between the end of the holes and the lance.
- It is recommended to use an anti-withdrawal device so that the machine cannot be pushed from the tube plate.
- When cleaning blocked pipes with small diameters, use a lance and hose diameter of less than 2/3 of the pipe diameter so that the waste water can escape. In addition, it is recommended to use an anti-withdrawal device to protect the operator against the hose being pushed back out of the pipe.
- High-pressure cleaning can damage pipes if the nozzles are not moved under pressure. Therefore, always ensure that there is a cleaning protocol stating maximum water pressure.

3. CRIMP FITTING, NOZZLE, STOP SLEEVE, AND HOSE CATCHER CONFIGURATION

All Peinemann flex lance feeders such as the TLE, (X)LTC, TLX and Xs series must be operated with a correct nozzle, crimp fitting, stop sleeve and hose catcher configuration. Therefore, before starting operations, review the steps below to ensure a correct and safe operating configuration.

First, always use a nozzle with the same or larger diameter than the crimp fitting on the hose. When the nozzle has a smaller diameter than the crimp fitting, the risk of hydraulicking arises.

Nozzle diameter smaller than crimp fitting diameter = **incorrect**

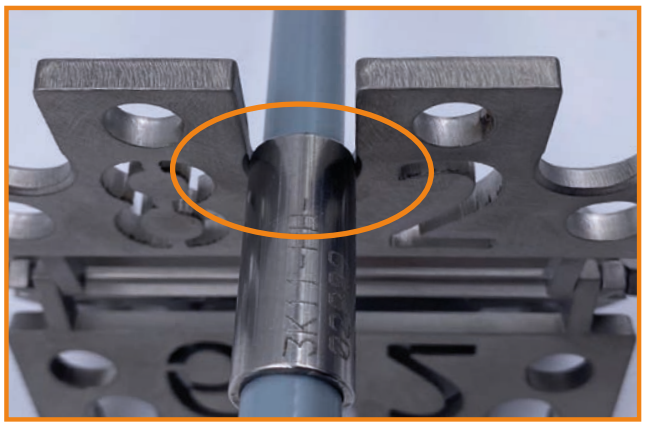


Nozzle diameter the same or larger than crimp fitting diameter = **correct**

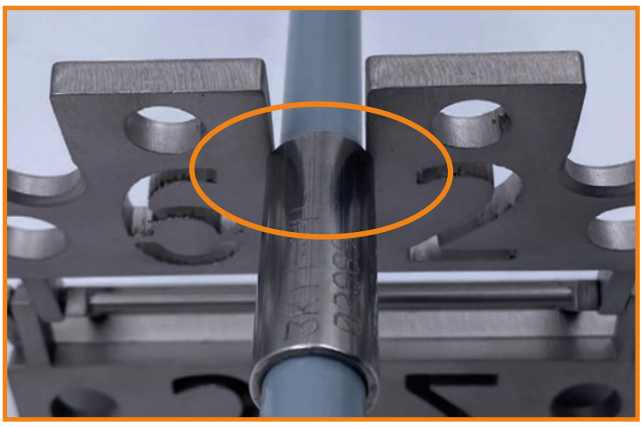
Second, always use a hose with a stop sleeve (safety sleeve) at 5 centimeter (2 in) before the crimp fitting on the hose. Check that the stop sleeve has a large enough diameter to be safely stopped by the hose catcher. If a stop sleeve cannot be used (not recommended), then make sure that the crimp fitting has a large enough diameter to be safely stopped by the hose catcher. There is a risk of the hose coming through the hose catcher or getting stuck in the hose catcher when the stop sleeve and/or crimp fitting diameter is not significantly larger than the hose catcher diameter. The stop sleeve and/or crimp fitting is highly recommended to have at least a 3 millimeter (0.12 in) larger diameter than the hose catcher (=+1.5 mm around). If this is not the case, we recommend using a different configuration.

3. CRIMP FITTING, NOZZLE, STOP SLEEVE, AND HOSE CATCHER CONFIGURATION

Third, always physically check that the hose catcher stops the stop sleeve and/or crimp fitting (not recommended) on the hose. Do not only rely on the size engraved onto the crimp fitting, stop sleeve, and hose catcher. It is also recommended to measure if the crimp fitting and/or stop sleeve has a 3 millimeter (0.12 in) or larger diameter than the hose catcher (=+1.5 mm around).



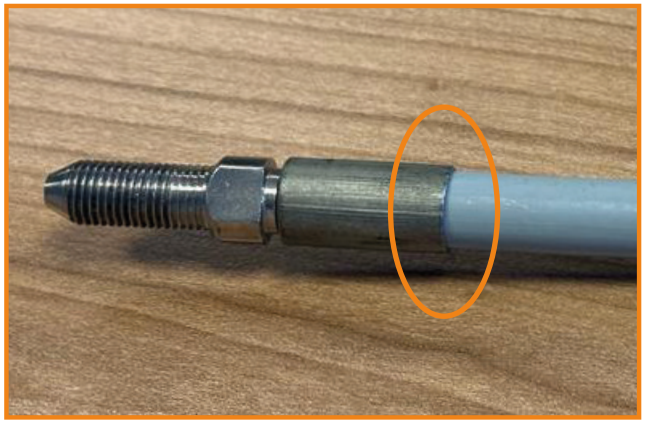
Stop sleeve diameter too small for the hose catcher = **incorrect**



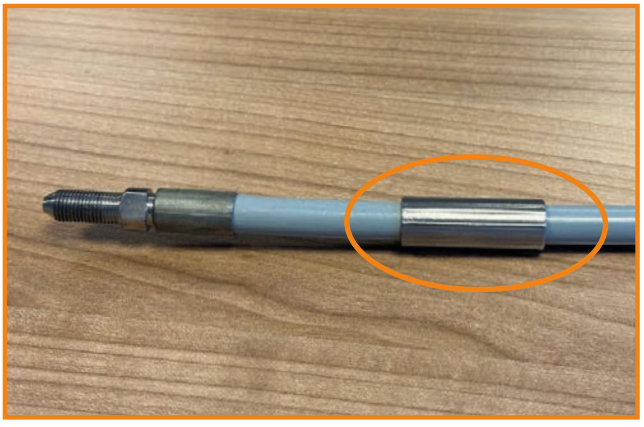
Stop sleeve diameter large enough for the hose catcher (stop sleeve diameter is min. 3mm larger then hose diameter (=+1.5mm around)) = **correct**

Special warning

Peinemann Equipment B.V. espescially advises not to work with so called “Blast-Pro” or “Pro-lance” crimp fittings without the previously described stop sleeves fitted on the hose. These special crimp fittings are known to have a small diameter crimp fitting which could get stuck in the hose catcher and in worst case scenarios could pass the hose catcher if it returns in the flex lance cleaner at high speeds. Always add a correct stop sleeve to the hose if working with a “Blast-Pro” or “Pro-lance” coupling. Double-check that the stop sleeve diameter is minimally 3 millimeter (0.12 in) larger than the hose catcher after clamping the stop sleeve to the hose (=+1.5 mm around). The diameter of the stop sleeve might have decreased in the clamping process.



Typical “Blast-Pro” crimp fitting that could pass through the hose catcher



Always use a stop sleeve when using “Blast-Pro” or “Pro-Lance” crimp fitting

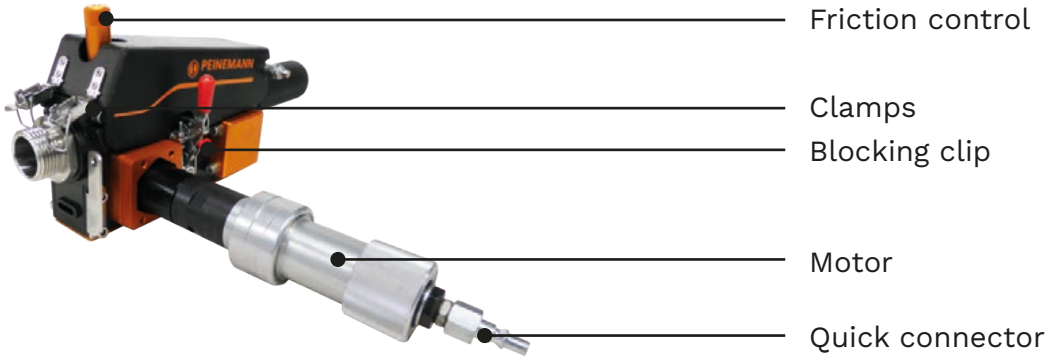
4. GENERAL SPECIFATIONS

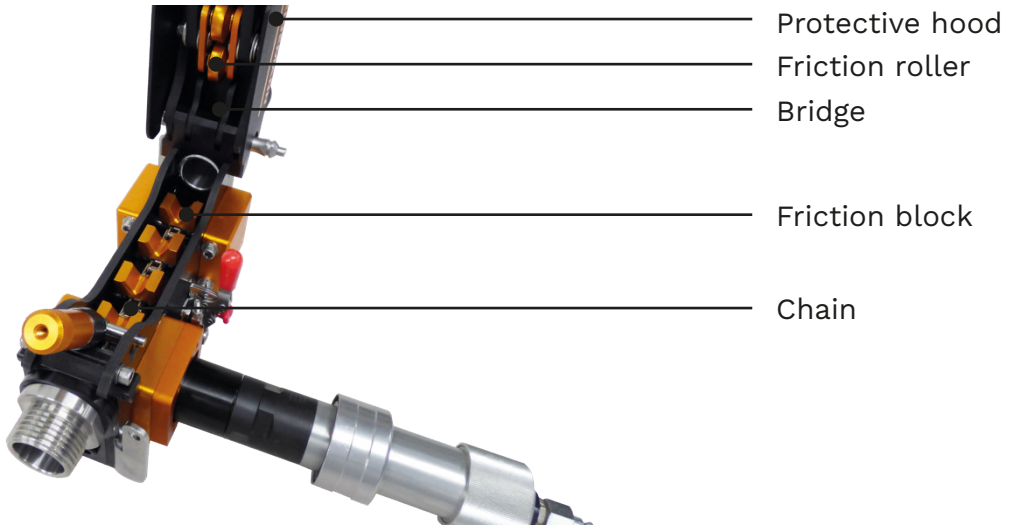
4.1 Technical specifications (approx.)

General	
Length (drive unit)	28.0 cm (11.0 in)
Width (drive unit)	30.0 cm (11.8 in)
Height (drive unit)	19.0 cm (7.5 in)
Weight (drive unit)	6.0 kg (13.2 lb)
Hose feed rate	40 - 70 cm/s (15.7 - 27.6 in/s)
Max. push/pull force	50 kg (110 lb)
Pitch adjustment range	N.a.
Motor	
Motor model Atlas Copco	LZB33-ML-AR009-001
Max. output per motor	0.62 kW (0.83 hp)
Min. air pressure	3.0 bar (43.5 psi)
Operating air pressue	6.3 bar (91.4 psi)
Max. air pressure	7.0 bar (101.5 psi)
Max. air consumption	14 l/s (29.7 cfm)
Stall torque per motor	32 Nm (23.3 ft lb)
Vane type	Lubrication free
Hose specifications	
Hose size	3/2 - 6/2
Hose outer diameter	7 - 11.5 mm (0.28 - 0.45 in)
Max. hose coupling diameter	27 mm (1.06 in)

4. GENERAL SPECIFATIONS

4.2 Components





5. INSTALLATION

5.1 Check items

Check whether all required items are present. The following items should be present.

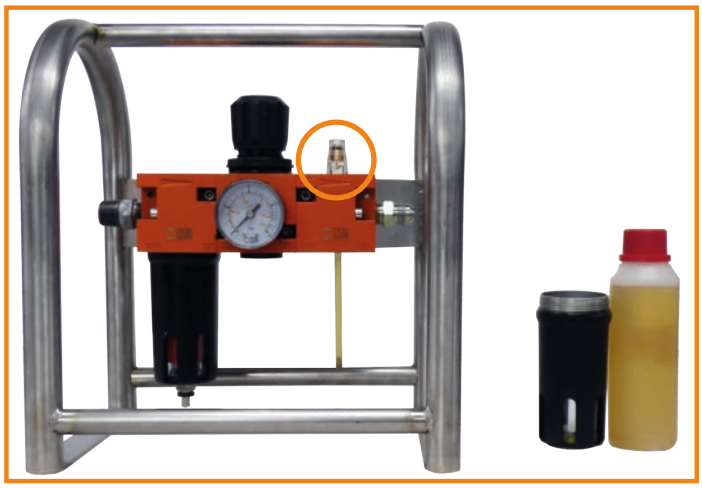
- 1-Xs heart
- Oil lubricator
- Lubricator oil
- Special chain grease
- Optional products

5.2 Filling the oil lubricator

Fill the drum of the oil lubricator with the supplied oil. The oil drum is located on the exit side of the oil lubricator. Unscrew the drum by turning it counterclockwise, after which it can be filled along the open side. Screw the drum back into the block and tighten it firmly without additional tools. Always use the supplied oil for initial usage. For refilling, please use oil that is specifically intended for pneumatic tools.

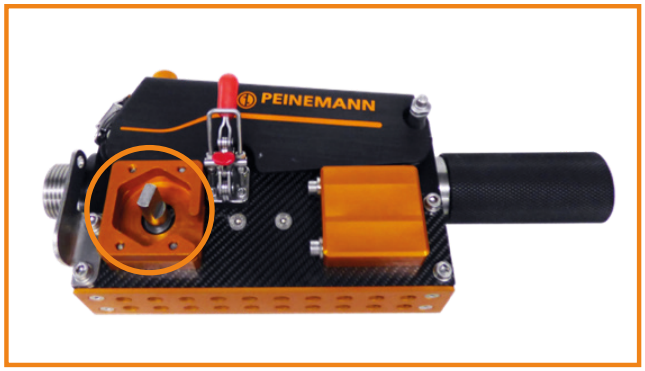
5.3 Adjusting the oil lubricator

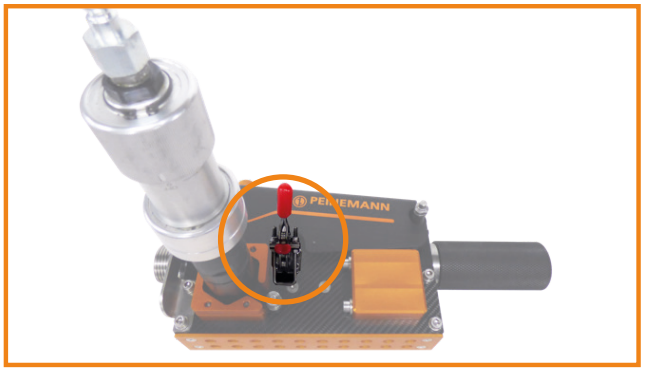
The oil lubricator can be adjusted using a screwdriver. Unscrewing the screw will cause drops to be released more frequently. Unscrew the regulating screw to such an extent that 1 drop per 5 seconds is released.



5.4 Mounting the motor

Mount the motor onto the machine. First, ensure the machine's axle is aligned with the small fork of the air motor. Then push the motor over the axle, turn it counterclockwise and block it using the blocking clip.





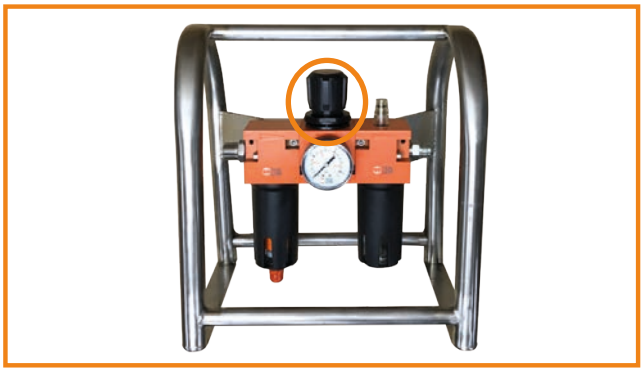
5. INSTALLATION

5.5 Connecting the air hose

Blow through the input air hose and connect it to the air supply unit and oil lubricator. Connect the output hose to the oil lubricator and motor.

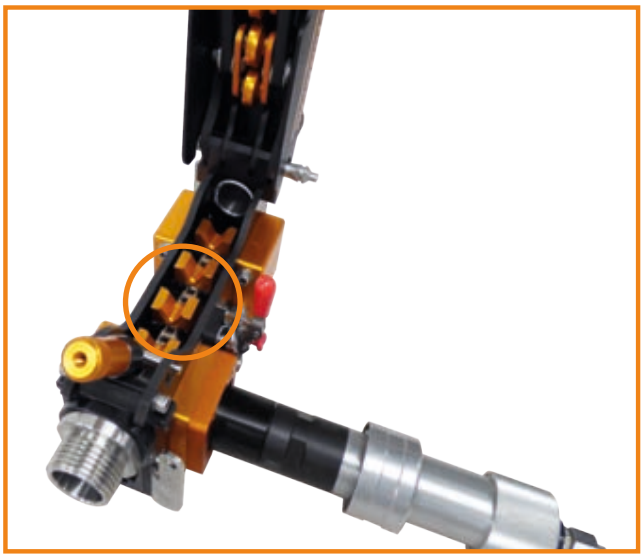
5.6 Setting the air pressure

Set the air pressure between a minimum of 3 bar and a maximum of 6.3 bar.



5.7 Greasing the chain

Grease the chain by injecting the supplied special chain grease.

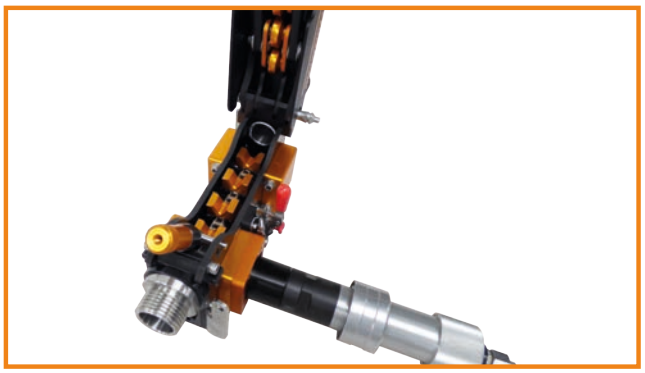


6. OPERATIONS

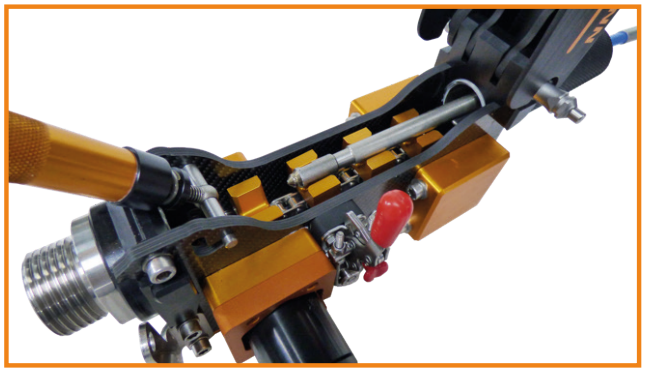
6.1 Operating the 1-Xs manually

6.1.1 Installing the lance and hose catcher

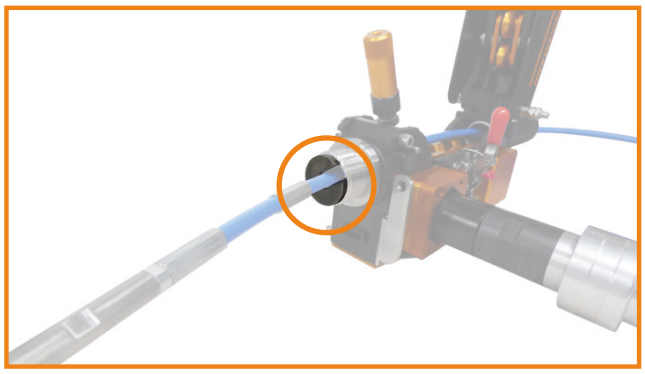
Remove the air supply hose from the machine. Open the hood of the machine by relieving the clamps at the front of the machine. Then relieve the friction control by turning it counterclockwise. Finally, topple the friction control to the front, enabling the bridge with friction rollers to hinge upwards.

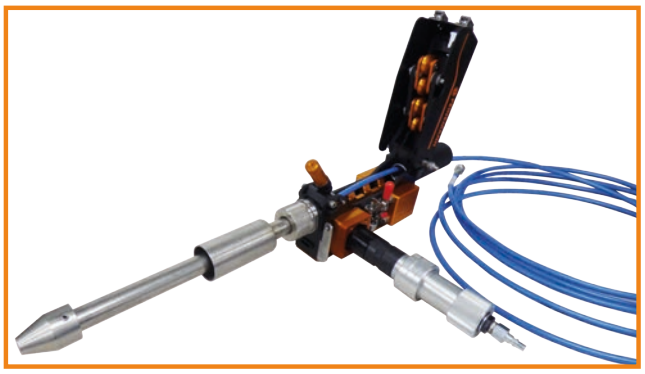


Attach the nozzle and the stinger to the flexible lance. Guide the flex lance into the back hose input until it has passed the front of the machine by approx. 30 centimeter (11.81 in).



Next, mount the correct size hose catcher and guide tube to the front of the 1-Xs. Check that the hose collar cannot pass through the hose catcher. Pull the high-pressure hose to check whether the hose catcher is functioning.

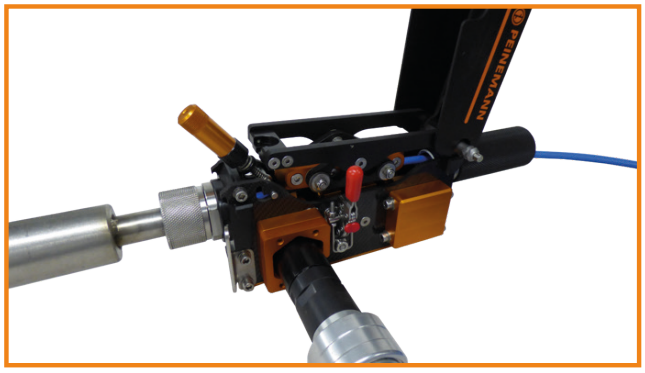


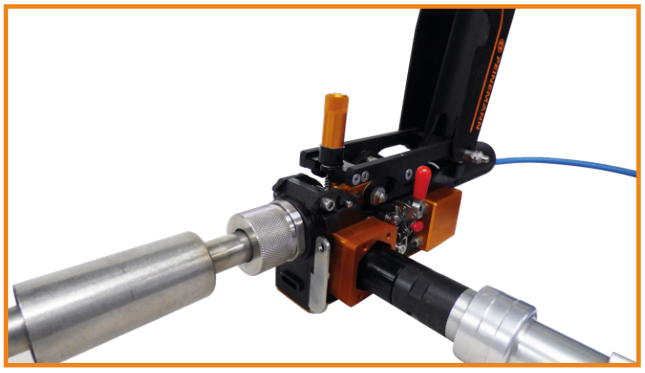


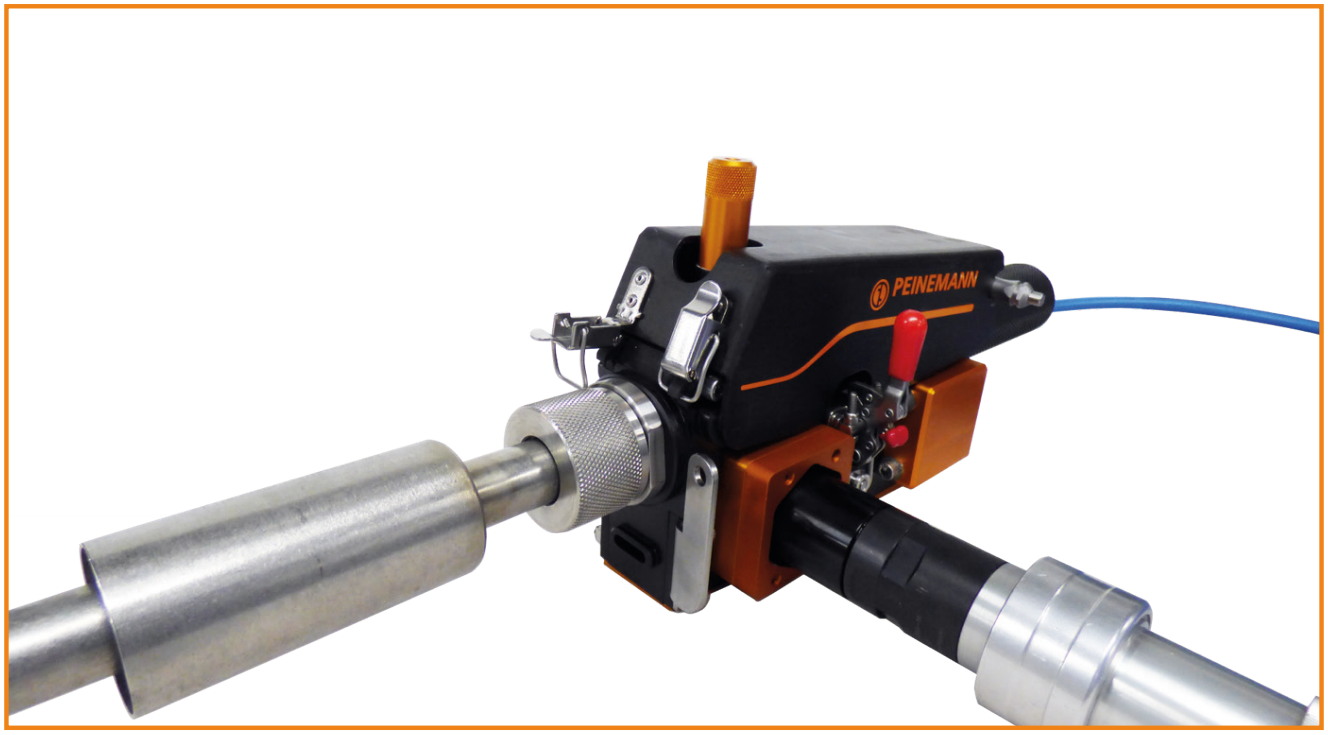
! If the hose catcher is not attached correctly, the flex lance may pop out of the machine under high pressure.

6. OPERATIONS

Close the bridge, tighten the friction control and close the protective hood. If there is too much slip on the flex lances during operations, then adjust the friction control.





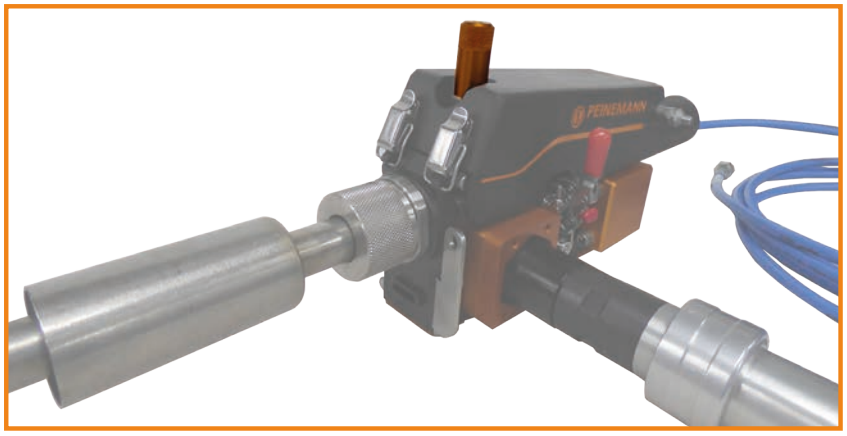


! Too much friction can damage the flex lances or the 1-Xs.

! The chain is automatically kept at the correct tension. Always check the chain for wear and damage before usage. Also, check before use whether the chain runs smoothly without the motor. The clearance should be approx. 5 milimeters (0.20 in) when you pull the friction blocks up.

6.1.2 Setting the friction

There are multiple ways of setting the correct friction tension on the 1-Xs. Peinemann Equipment recommends the following method. Hold the 1-Xs vertically and activate the motor. When the motor is activated, the hose is pushed against the floor. Turn the friction control until the machine almost detaches itself from the floor. The machine will now start slipping as soon as a reactive force higher than approx. 10 kg (22.05 lb) is produced.



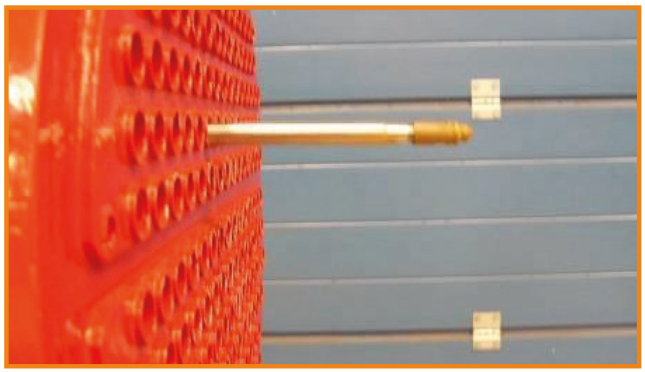
6.1.3 Setting the friction for horizontal use

Follow the instructions in Ch.6.1.2 to set the initial friction tension. Then hold the 1-Xs horizontally against the tube plate and perform a quick test against the tube plate. You can instantly find out whether the force is not too strong. The force is too strong when the operator is pushed away from the bundle.

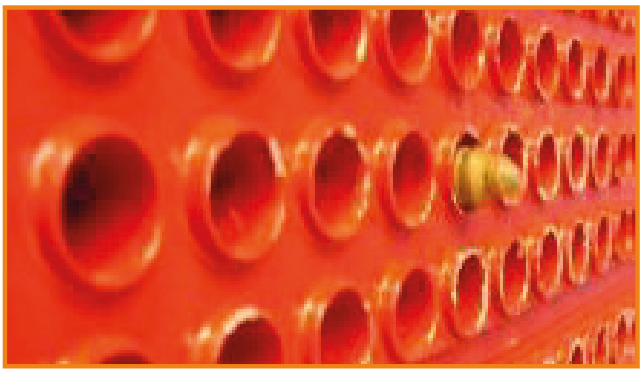
! Always check the friction setting before starting operations.

6.1.4 Mounting the end stop

The maximum reach of the lance can be set by screwing the end stop onto the flex lance. The correct position of the end stop can be determined by manoeuvring the hose in one of the bundle pipes until the nozzle extends beyond the tube plate. By screwing the end stop against the rear hose input on the flex lance, the length of the flex lance will never be too long, meaning that the nozzle will never protrude too far out of the pipe and create a potentially hazardous situation.

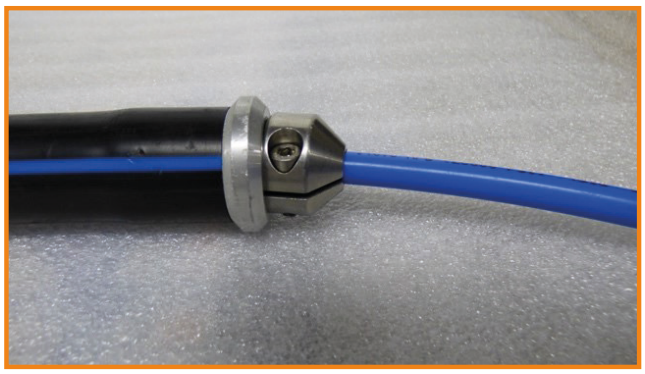


Incorrect



Correct

If the end stop touches the back of the machine during cleaning, the machine will start to slip, and the reverse movement can be started (check whether the end stop is actually touching the back of the machine). The reverse movement can be stopped if the reducer sleeve on the flex lance touches the hose catcher in the machine and the 1-Xs starts to slip. When working with the 1-Xs, it is advised to use a stinger.



! When cleaning a “U bundle” using a small hose with no stinger, this must be adjusted so that it cannot leave the pipe.

6.1.5 Carrying strap

It is possible to operate the 1-Xs by carrying it over your shoulders using a carrying strap.

! It is advised to use the 1-Xs with a balancer and anti-withdrawal device. This will take the weight of the machine out of your hands.

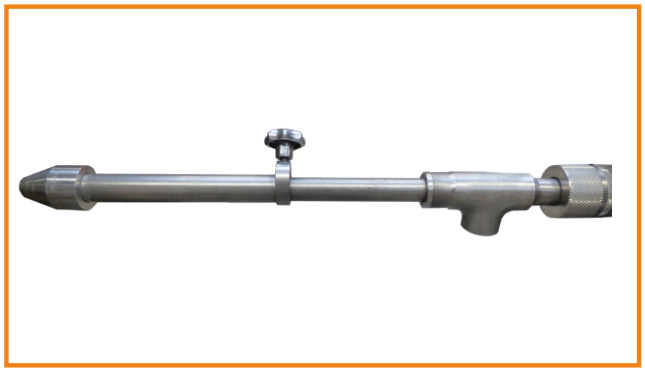
6. OPERATIONS

6.2 Usage in combination with the Orion Indexer

6.2.1 Required equipment

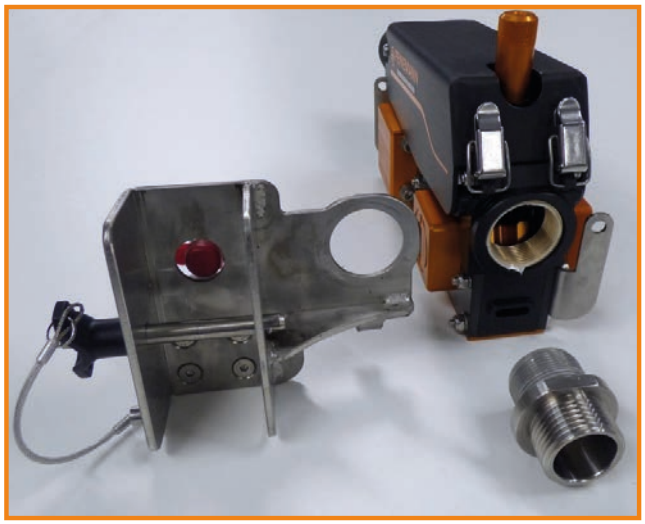
Check whether the required equipment for combining the 1-Xs and Orion Indexer is present.

- Adjustable tube guide
- Automatic motor
- Adapter



Adjustable tube guide

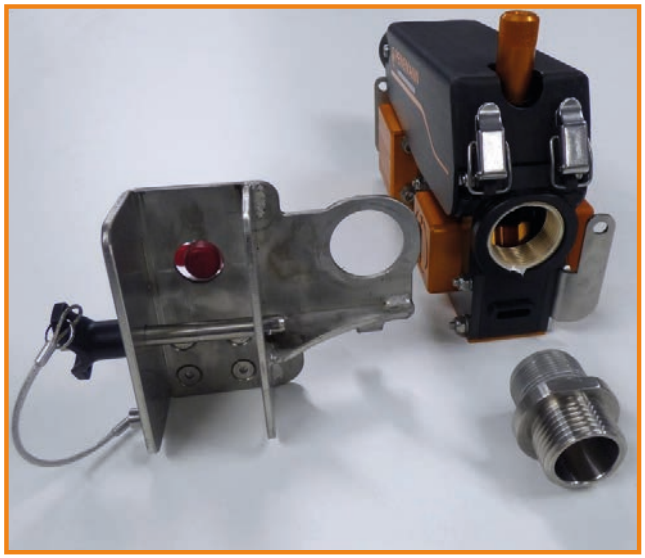
Automatic motor



Adapter

6.2.2 Installing the adapter

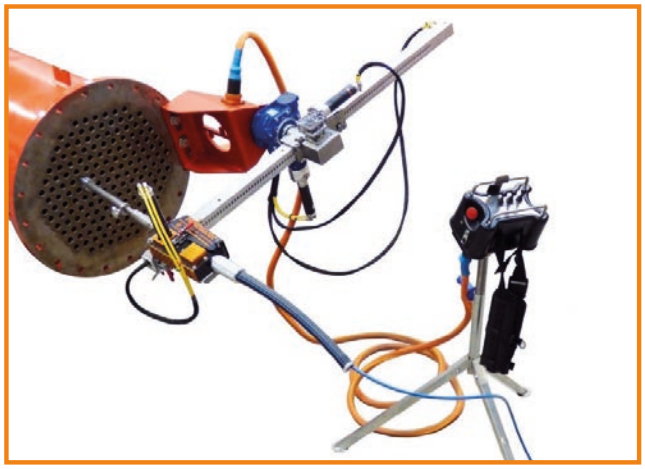
Install the adapter on the 1-Xs accordingly.



6.2.3 Installing the automatic motor and adjustable tube guide

Remove the manual motor (if necessary) and mount the automatic motor. Make sure to lock the blocking clip. Then, mount the adjustable tube guide to the 1-Xs.

6.2.4 Setting up the 1-Xs and Orion Indexer



Horizontal setup

Vertical setup

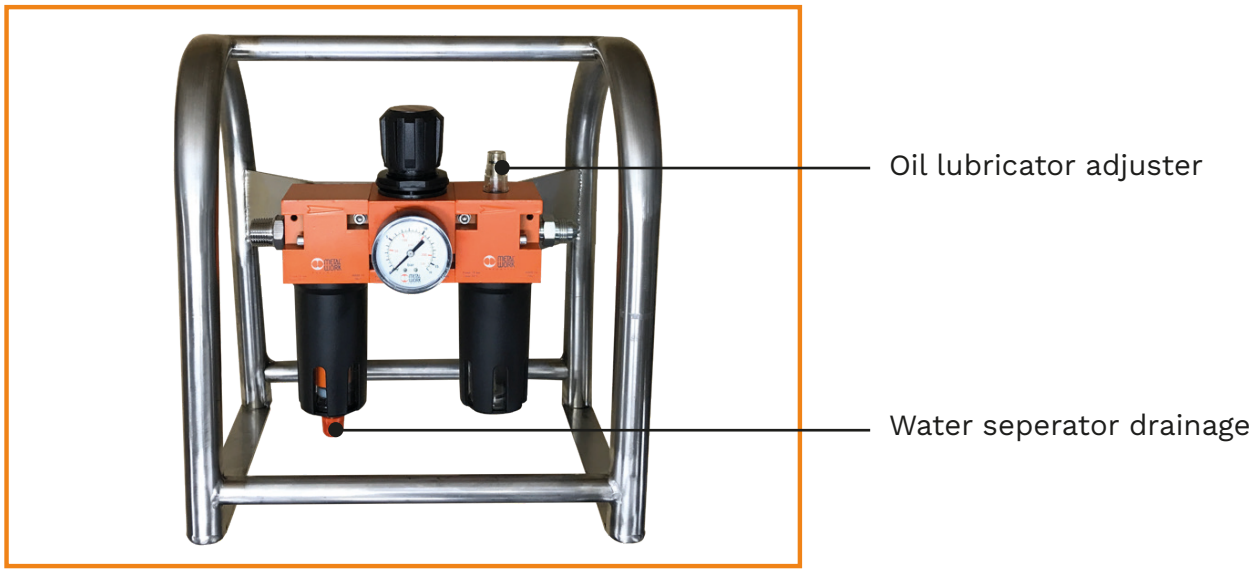
6.3 High-pressure hose reel (option)

The 1-Xs can be fitted to a high-pressure hose reel.

7. MAINTENANCE

7.1 Daily maintenance

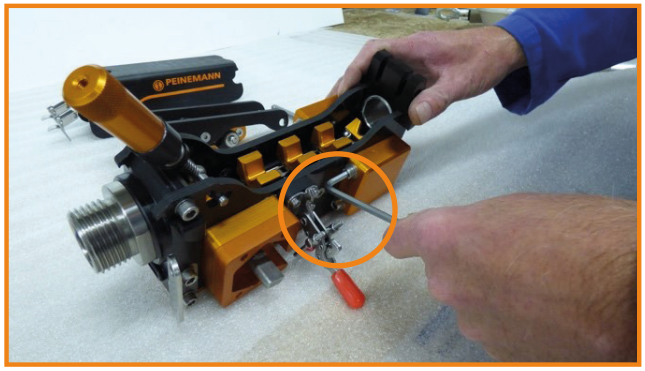
- Before use, check if the water separator in the oil lubricator is empty and that there is enough oil in the oil drum. The water separator is fitted with automatic water drainage, but it is essential to check that no water is present in the reservoir.
- After operating, clean the machine with water and/or cleaning agents.
- Grease the chain after operating.
- The motor must be filled with the supplied oil through the air inlet, after which the motor should briefly run with air. This allows the oil to spread throughout the rotor, which prevents the blades from sticking.
- Check the condition of the friction blocks. Replace if needed.



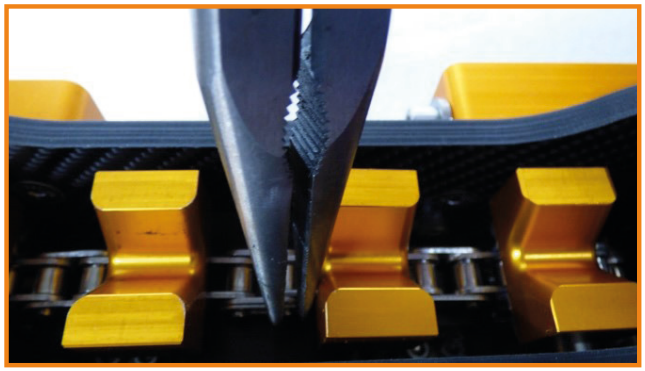
7. MAINTENANCE

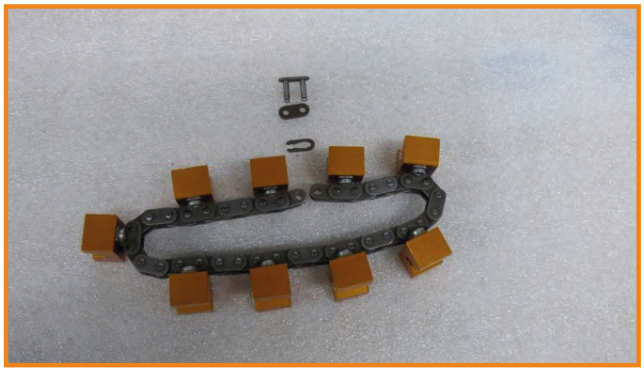
7.1.1 Replacing friction blocks

Release the tension from the chain. Turn the bolt counterclockwise with an allen key.



Uncouple the coupling link on the chain and remove the chain. Once the chain has been removed, check the chain and chain guide blocks for wear and tear. Replace parts where needed.





Mount the new friction block(s) and/or chain(s) and interlock with the coupling link. Then bring the chain tensioner back to the correct tension and test whether the chain runs smoothly. Apply grease if needed.

7.2 Major maintenance

Check the 1-Xs by a qualified engineer every 500 service hours. If there is no record of service hours, then check the machine after one year. Contact Peinemann Equipment or one of our dealers for major maintenance and/or replacement of parts.

8. DECISION TREE

Decision tree
An analysis of the reported high-pressure accidents over a period of many years has shown that most high-pressure accidents occur during manual cleaning with a flex lance or lance. It has therefore been decided to switch to a different method of decision-making before proceeding with manual high-pressure cleaning using a flex lance or lance. The purpose of the method described below is to drastically reduce this type of accident. This decision-making method has been the acceptable approach for this type of high-pressure cleaning work since 2008. The risks must be assessed before starting any cleaning work using a flex lance or lance. The cleaning method can be chosen on the basis of the following decision tree. Follow the steps in the decision tree from the point when the contract is secured until the work can be safely undertaken. The decision tree distinguishes six levels, with level 1 being the safest working method and level 6 representing a forbidden zone.

Level 1
The aim here is to use automatic equipment as far as possible, so that people need not be present in the immediate vicinity of the high-pressure spray cleaning work.

Level 2
If it is not possible to use automatic equipment, then the choice may be made to use semi-automatic equipment.

Level 3
If work with semi-automatic equipment is not possible, then a choice may be made to work manually with a flex lance. This must be fitted with a reducer sleeve where the flex lance is held in place by a hose collar. The hose collar must be attached to the item to be cleaned. The reducer sleeve must absorb the shock if the hose reverses out of control. This reducer sleeve must be clamped between 5 centimeter (1.97”) and 20 (7.87”) centimeter behind the pressure sleeve on the flex lance. The marking ring is not used in these situations. The certificate for this type of flex lance must state that it is fitted with a reducer sleeve and that the flex lance in question is only suitable to be used for cleaning with a hose collar. This means that the reducer sleeve is not a replacement for the marking ring, or vice versa. Check whether the flex lance with reducer sleeve is suitable for the hose collar being used. The spray operator must be aware of the risks associated with this working method and must wear personal protective equipment designed for the risks of working in this way.

Before proceeding to level 4 or 5: If it is not possible to work according to one of the three methods outlined above, then there must first be a consultation between the client and the cleaning company about the working method, including an assessment of the associated risks. Both parties must agree on the chosen working method. This agreement must be demonstrable by means of a document signed by both parties.

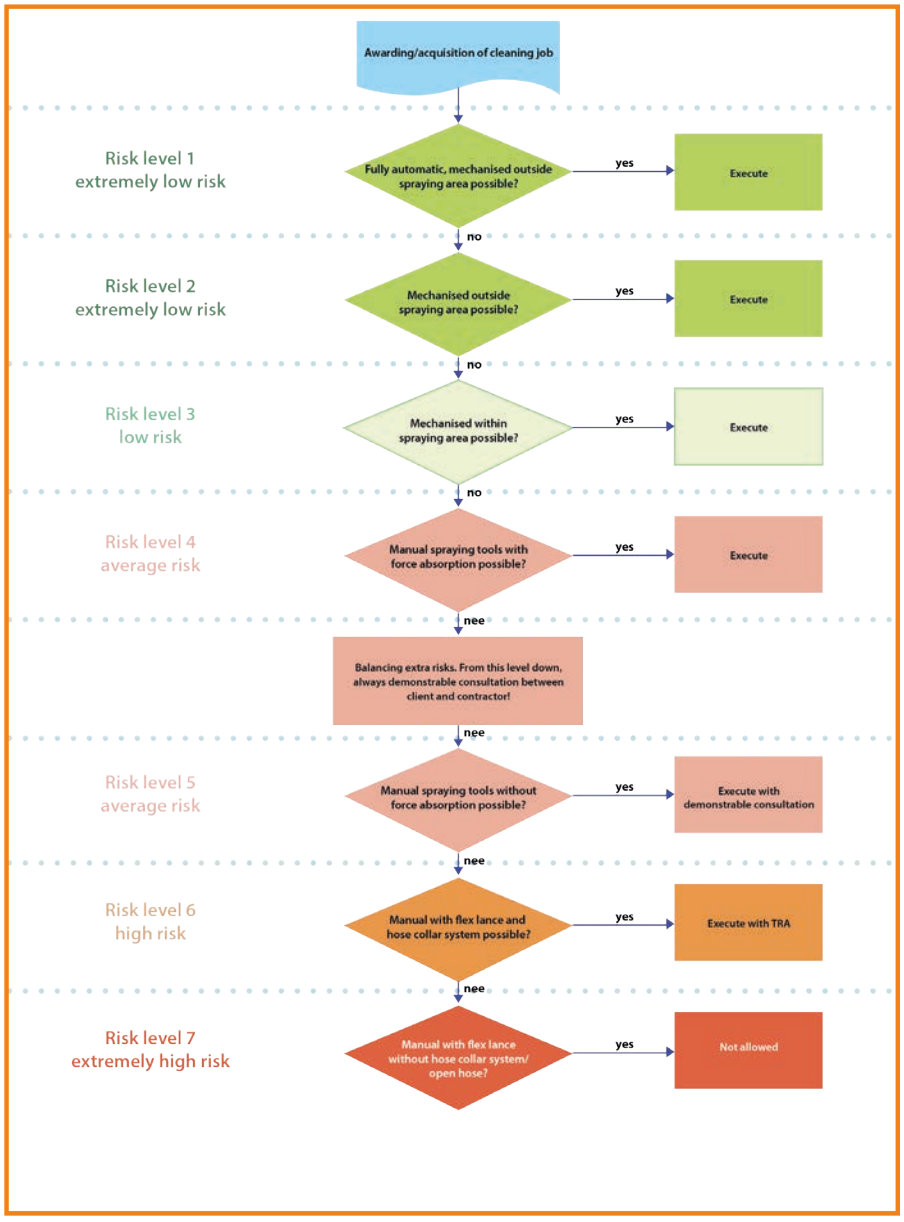
The following working methods for a flex lance are still permitted but are strongly discouraged because of the considerable risk.

8. DECISION TREE

Level 4
If using one of the previous three methods is not possible, then the choice can be made to work manually with a flex lance that has been fitted with a lead pipe. The flex lance must be fitted with a marking ring. Note that a lead pipe should be used that is longer than the diameter of the pipe or tube in order to prevent any boomerang effect. The spray operator must wear comprehensive personal protective equipment designed to withstand the risks of this working method.

Level 5
If working with a flex lance and lead pipe is not possible, then it is possible to work manually with a flex lance, which must be fitted with a marking ring. Note that the nozzle should be longer than the diameter of the pipe or tube in order to prevent any boomerang effect. Manual cleaning with a lance also comes under level 5. The spray operator must wear comprehensive personal protective equipment designed to withstand the risks of this working method.

Level 6
Stop! Manual cleaning using a flex lance without a marking ring is prohibited.



9. WARRANTY

Warranty

1. Peinemann will provide warranties only if and insofar as this has been agreed explicitly in writing.

2. If and to the extent that a warranty has been agreed, Peinemann in respect of the Other Party warrants the soundness of the equipment and/or goods delivered by Peinemann, in the sense that if any shortcomings in the spare parts become clear during the warranty period and a complaint is submitted in good time, Peinemann will re-deliver spare parts at no cost by sending the spare parts to the Other Party. Peinemann will in principle not assemble the spare parts, unless parties explicitly agree otherwise in which case Peinemann will be compensated for all costs related to the assembly, travel costs included.

3. If and to the extent that a warranty has been agreed, this warranty will never exceed the warranty obligation which Peinemann's supplier has in respect of Peinemann and the opportunity for recovery which this supplier provides to Peinemann. Peinemann will be discharged in this respect if its assigns its claim to this third party to the Other Party. Warranty claims will not cause the Other Party's payment obligation to be suspended.

4. Peinemann does not warrant that equipment, spare parts, goods and/or services delivered by Peinemann are or will be fit for a particular purpose for which they are or will be used.

5. Agreed warranty on equipment, goods, spare parts and/or services delivered by Peinemann does not apply if defects are the result of:

• non-compliance with instructions given by Peinemann, including instructions regarding storage, placement, testing, installing, check and maintenance;
• improper use of the equipment, spare parts or goods or use not in accordance with the agreed or customary designated use;
• use of the equipment, spare parts or goods not in accordance with the corresponding manual;
• work performed to the equipment, spare parts, goods or services (within the warranty period) by the Other Party or third parties which have not been engaged by Peinemann, without Peinemann's permission;
• equipment, spare parts and/or goods being affected as a consequence of external causes, such as rain, water, heating, fire etc.;
• the Other Party not properly meeting one of its obligations under the agreement, or does not do so in good time;
• installation, assembly, modification or repair by the Other party or by third parties;
• defects in or unsuitability of spare parts or goods originating from or prescribed by the Other Party;
• defects in or unsuitability of materials or tools used by the Other Party;
• normal wear and tear.

9. WARRANTY

6. No warranty is given on:

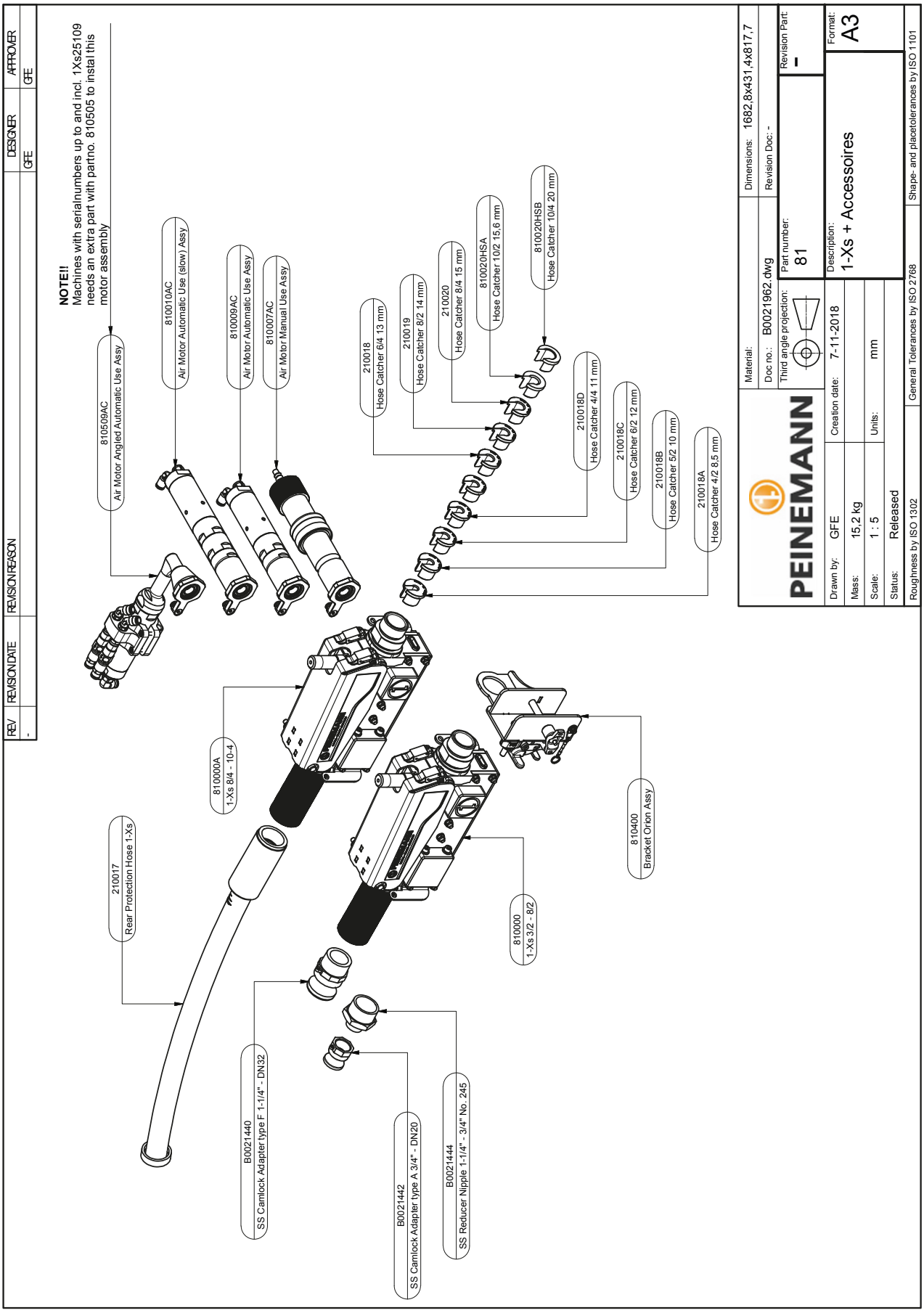
- equipment, spare parts and/or goods delivered that were not new at the time of delivery;
- the inspection and repair of equipment, spare parts or other goods of the Other Party;
- parts for which a manufacturer's warranty has been given.

Complaints

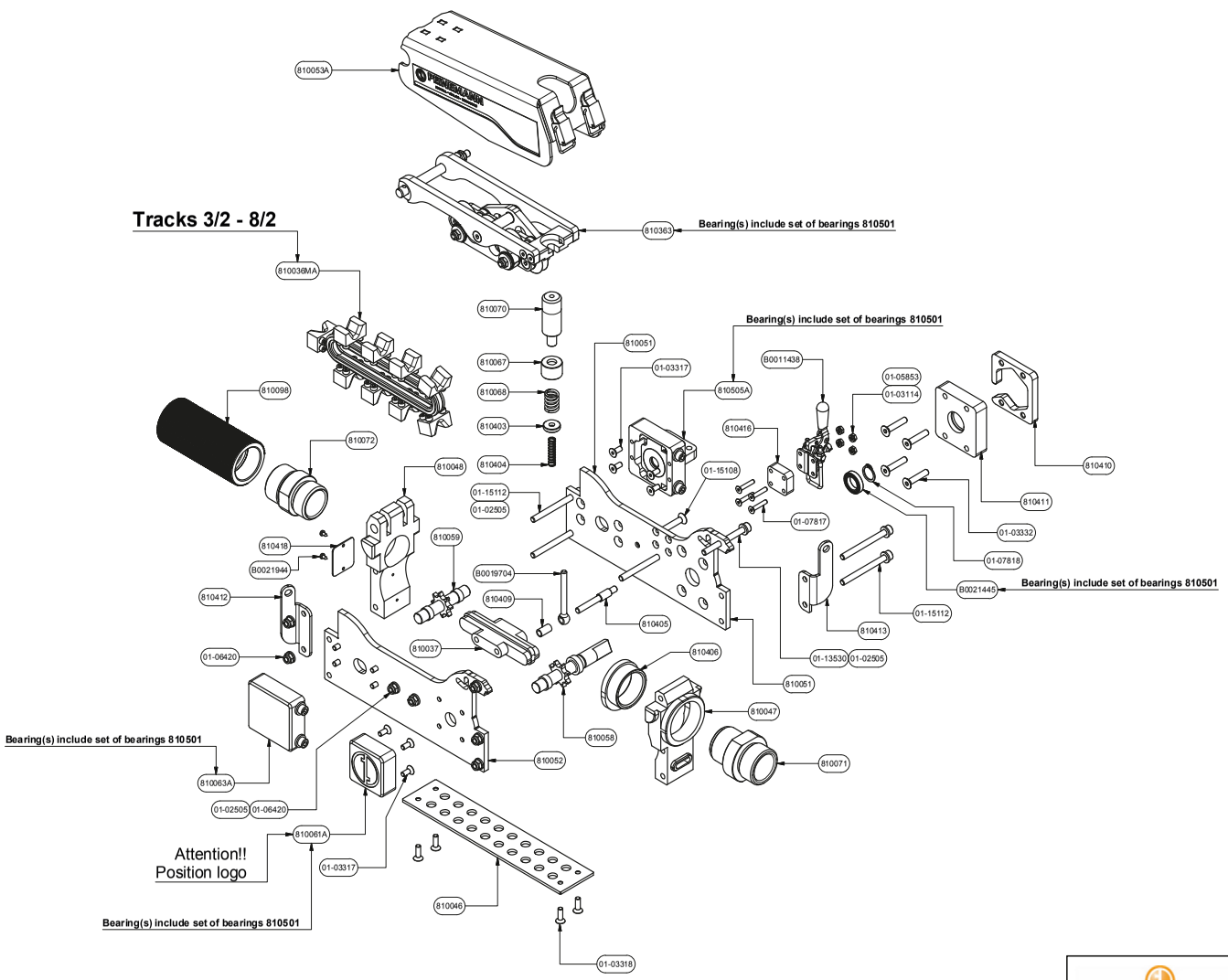
1. The Other Party must inspect the delivered equipment, spare parts, goods and/or services on delivery and must submit any visible shortcomings to Peinemann in writing no later than seven days after the delivery, failing which any claim against Peinemann will lapse.
2. Complaints regarding other shortcomings must be submitted in writing within seven days after they have become manifest, subject to lapsing of any claim against Peinemann.
3. Complaints regarding insignificant deviations in terms of quality, quantity, size, finishing etc. and/or deviations on the aforementioned terms that are permissible on the market or technically unavoidable, as well as complaints regarding the circumstance that certain equipment or goods have been removed from the assortment, will not be deemed founded by Peinemann

10. APPENDIX

10.1 Schematic drawings



REV	REVISIONDATE	REVISIONREASON	DESIGNER	APPROVER
-			GFE	GFE



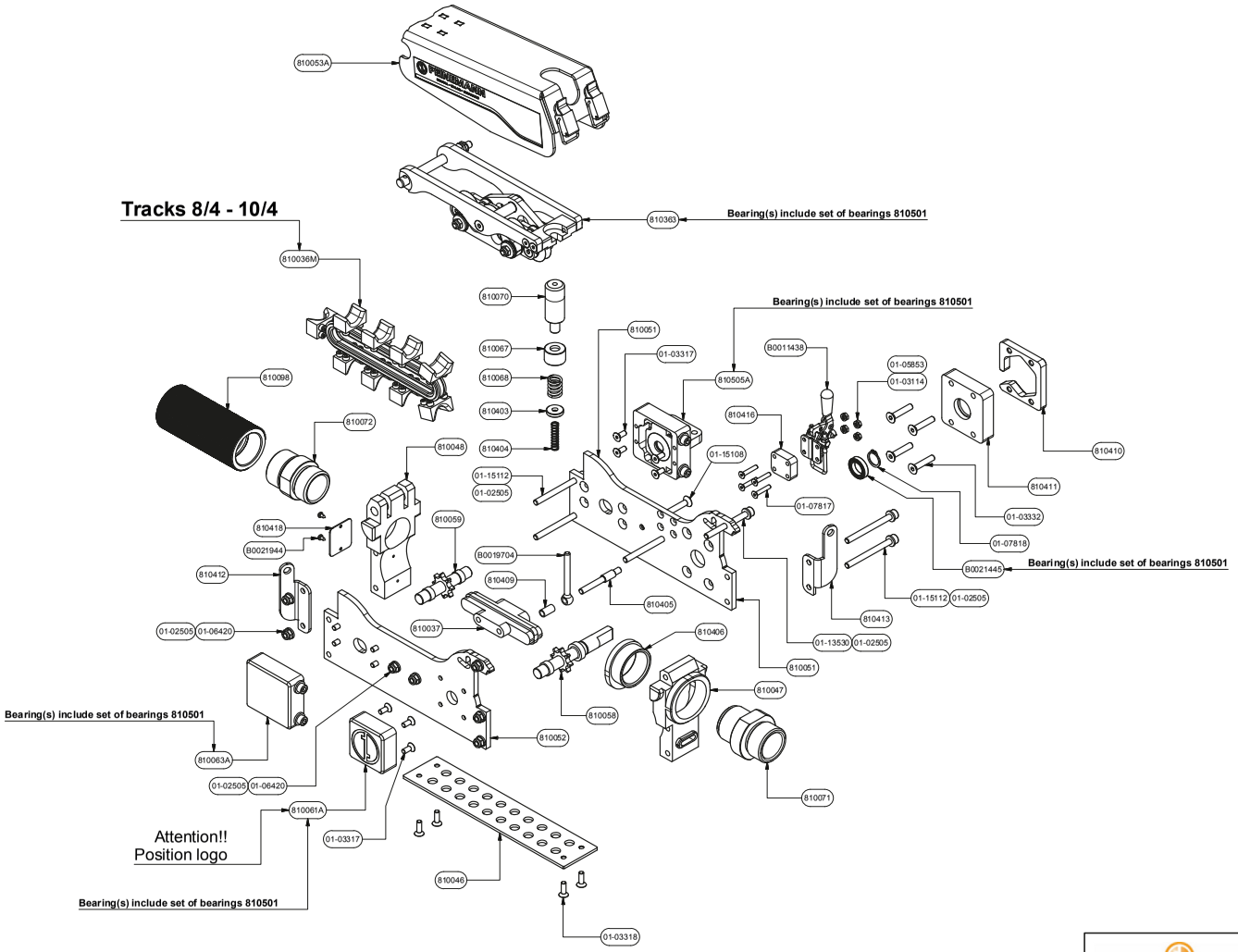
Parts included delivering machine:
110027: Carrying Belt
110028: Allen Key Set
110030: Air Lubricator Oil 0,2 liter
110031: Special Chain Lubricant 0,2 liter

Part number	Qty	Description
B0021944	2	Tapping Screw-2,9x6,5-ISO14585C-RVS-A2
B0021445	1	Deep Groove Ball Bearing 61802-2RS1
B0019704	1	SS Swing Bolt GN 1524 M6x60
B0011438	1	SS Pull Action Latch Clamp 323-RSS
810505A	1	Bearing House Chain Tensioner Assy
810418	1	ID Plate Xs
810416	1	Plate 10 mm
810413	1	Plate 3 mm
810412	1	Plate 3 mm
810411	1	Intermediate Plate
810410	1	Locking Plate
810409	1	Filling Bush
810406	1	Bronze Insert M39x2
810405	1	Axle
810404	1	SS Compression Spring
810403	1	Locking Ring Spring
810363	1	Cartridge Roll Assy
810098	1	Handle Rear Hose Guide
810072	1	Nipple M38x1,5 - M40x3
810071	1	Nipple M39x2 - M40x3
810070	1	Friction Adjustment Knob
810068	1	SS Compression Spring
810067	1	Support Bush Spring
810063A	1	Bearing House Chain Tensioner Assy
810061A	1	Bearing House Close Assy
810059	1	Non Driven Shaft
810058	1	Driven Shaft
810053A	1	Cover Assy
810052	1	Sideplate Right
810051	1	Sideplate Left
810048	1	Headblock Rear
810047	1	Headblock Front
810046	1	Plate 3 mm
810037	1	Chain Guide Block
810036MA	1	Tracks 3/2 - 8/2
01-15112	4	Hex. Head Screw-M6x65-DIN912-RVS-A2
01-15108	2	Hex. CSK Screw-DIN7991-M6x60-RVS-A2
01-13530	1	Hex. Head Screw-M6x60-DIN912-RVS-A2
01-07818	1	Circlip-15x1-DIN471-RVS-A2
01-07817	4	Hex. CSK Screw-DIN7991-M4x22-RVS-A2
01-06420	7	Hex Lock Nut-M6-DIN985-RVS-A2
01-05853	4	Spring Washer-A4-DIN 127-RVS-A2
01-03332	4	Hex. CSK Screw-DIN7991-M6x30-RVS-A2
01-03318	4	Hex. CSK Screw-DIN7991-M5x16-RVS-A2
01-03317	12	Hex. CSK Screw-DIN7991-M5x12-RVS-A2
01-03114	4	Hex Nut-M4x0,7-DIN934-RVS-A2
01-02505	12	Flat Washer-6,4-DIN125-A-RVS-A2

Set of Bearings 1-Xs
Partnumber: 810501
Caution: Only the bearings themselves, not the complete assemblies!!

PEINEMANN	Material:	Dimensions: 412x193,5x118,1	
	Doc no.: B0021330.dwg	Revision Doc: -	
	Third angle projection:	Part number: 810000	Revision Part: -
Drawn by: GFE	Creation date: 27-10-2017	Description: 1-Xs 3/2 - 8/2	Format: A2
Mass: 4,3 kg			
Scale: 1 : 3	Units: mm		
Status: Released			
Roughness by ISO 1302	General Tolerances by ISO 2768	Shape- and placetolerances by ISO 1101	

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE



Parts included delivering machine:
110027: Carrying Belt
110028: Allen Key Set
110030: Air Lubricator Oil 0,2 liter
110031: Special Chain Lubricant 0,2 liter

Part number	Qty	Description
B0021944	2	Tapping Screw-2.9x6,5-ISO14585C-RVS-A2
B0021445	1	Deep Groove Ball Bearing 61802-2RS1
B0019704	1	SS Swing Bolt GN 1524 M6x60
B0011438	1	SS Pull Action Latch Clamp 323-RSS
810505A	1	Bearing House Chain Tensioner Assy
810418	1	ID Plate Xs
810416	1	Plate 10 mm
810413	1	Plate 3 mm
810412	1	Plate 3 mm
810411	1	Intermediate Plate
810410	1	Locking Plate
810409	1	Filling Bush
810406	1	Bronze Insert M39x2
810405	1	Axle
810404	1	SS Compression Spring
810403	1	Locking Ring Spring
810363	1	Cartridge Roll Assy
810098	1	Handle Rear Hose Guide
810072	1	Nipple M38x1,5 - M40x3
810071	1	Nipple M39x2 - M40x3
810070	1	Friction Adjustment Knob
810068	1	SS Compression Spring
810067	1	Support Bush Spring
810063A	1	Bearing House Chain Tensioner Assy
810061A	1	Bearing House Close Assy
810059	1	Non Driven Shaft
810058	1	Driven Shaft
810053A	1	Cover Assy
810052	1	Sideplate Right
810051	1	Sideplate Left
810048	1	Headblock Rear
810047	1	Headblock Front
810046	1	Plate 3 mm
810037	1	Chain Guide Block
810036M	1	Tracks 8/4 - 10/4
01-15112	4	Hex. Head Screw-M6x65-DIN912-RVS-A2
01-15108	2	Hex. CSK Screw-DIN7991-M6x60-RVS-A2
01-13530	1	Hex. Head Screw-M6x60-DIN912-RVS-A2
01-07818	1	Circlip-15x1-DIN471-RVS-A2
01-07817	4	Hex. CSK Screw-DIN7991-M4x22-RVS-A2
01-06420	7	Hex Lock Nut-M6-DIN985-RVS-A2
01-05853	4	Spring Washer-A4-DIN127-RVS-A2
01-03332	4	Hex. CSK Screw-DIN7991-M6x30-RVS-A2
01-03318	4	Hex. CSK Screw-DIN7991-M5x16-RVS-A2
01-03317	12	Hex. CSK Screw-DIN7991-M5x12-RVS-A2
01-03114	4	Hex Nut-M4x0,7-DIN934-RVS-A2
01-02505	12	Flat Washer-M6-DIN125A-RVS-A2

Set of Bearings 1-Xs
Partnumber: 810501
Caution: Only the bearings themselves, not the complete assemblies!!

PEINEMANN

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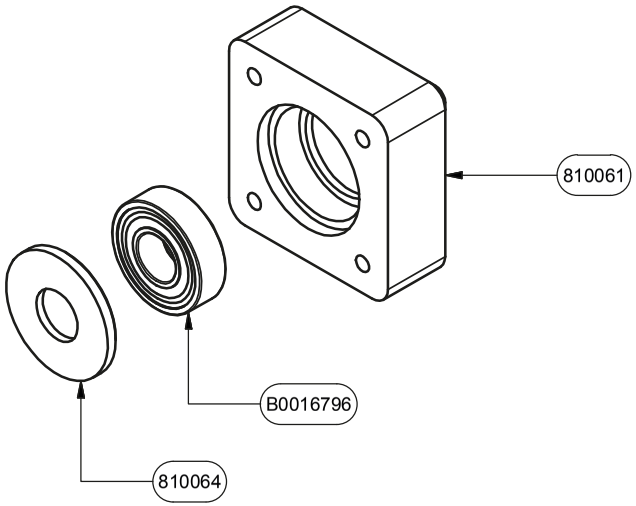
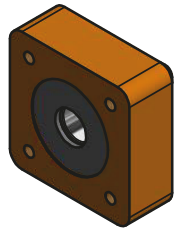
Doc no.: B0021519.dwg		Revision Doc: -	
Third angle projection:		Part number: 810000A	Revision Part: -
Drawn by: GFE	Creation date: 17-9-2018	Description: 1-Xs 8/4 - 10-4	Format: A2
Mass: 4,3 kg			
Scale: 1 : 3	Units: mm		
Status: Released			

Roughness by ISO 1302 | General Tolerances by ISO 2768 | Shape- and placetolerances by ISO 1101

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE



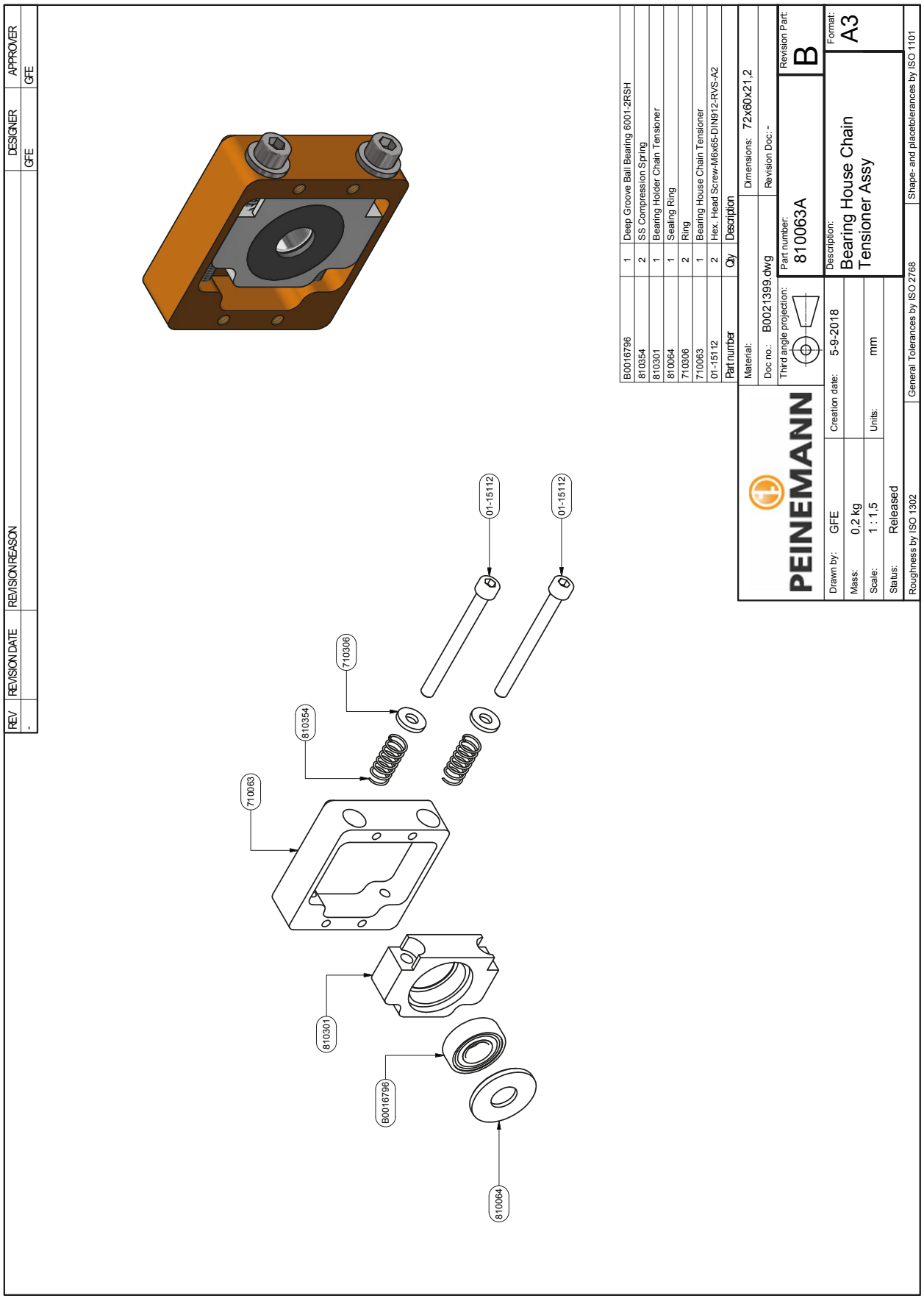


Part number	Qty	Description
B0016796	1	Deep Groove Ball Bearing 6001-2RSH
810064	1	Sealing Ring
810061	1	Bearing House Close

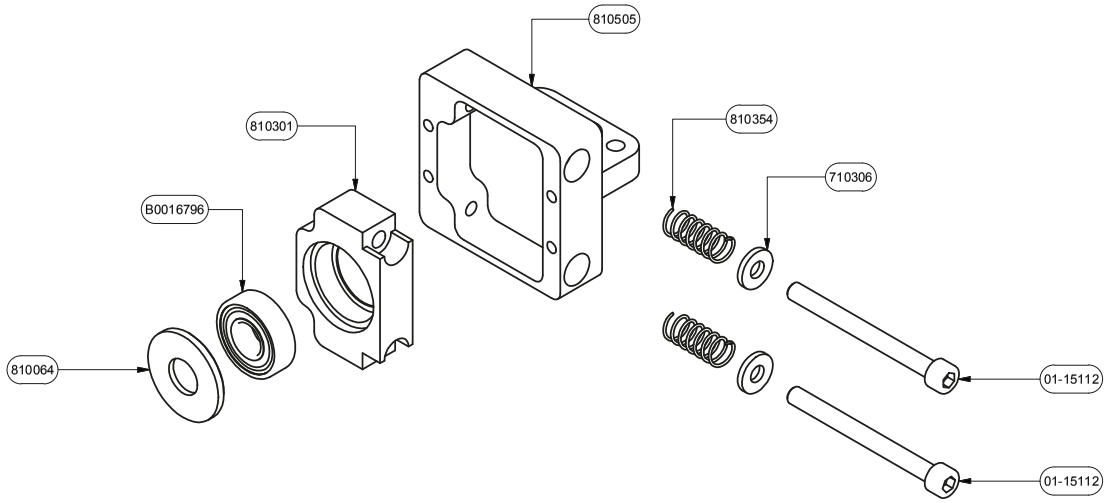
PEINEMANN

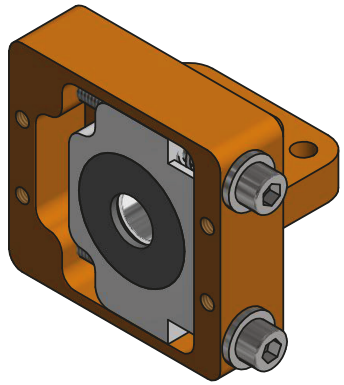
Material:		Dimensions: 50x50x20	
Doc no.: B0021402.dwg		Revision Doc: -	
Third angle projection:		Part number: 810061A	Revision Part: A
Drawn by: GFE	Creation date: 6-9-2018	Description: Bearing House Close Assy	Format: A4
Mass: 0,1 kg			
Scale: 1 : 1,5	Units: mm		
Status: Released			
Roughness by ISO 1302	General Tolerances by ISO 2768	Shape- and placetolerances by ISO 1101	

10. APPENDIX


REV
REVISION DATE
REVISION REASON
DESIGNER
APPROVER
-
GFE
GFE
B0016796 1 Deep Groove Ball Bearing 6001-2RSH
810354 2 SS Compression Spring
810301 1 Bearing Holder Chain Tensioner
810064 1 Sealing Ring
710306 2 Ring
710063 1 Bearing House Chain Tensioner
01-15112 2 Hex. Head Screw-M6x65-DIN912-RVS-A2
Part number Qty Description
Material:
Dimensions: 72x60x21.2
Doc no.: B0021399.dwg
Revision Doc: -
Third angle projection:
Part number: 810063A
Revision Part: B
PEINEMANN
Drawn by: GFE
Creation date: 5-9-2018
Description: Bearing House Chain Tensioner Assy
Format: A3
Mass: 0,2 kg
Scale: 1 : 1,5
Units: mm
Status: Released
Roughness by ISO 1302
General Tolerances by ISO 2768
Shape- and placetolerances by ISO 1101
01-15112
01-15112
710306
810354
710063
810301
B0016796
810064

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE



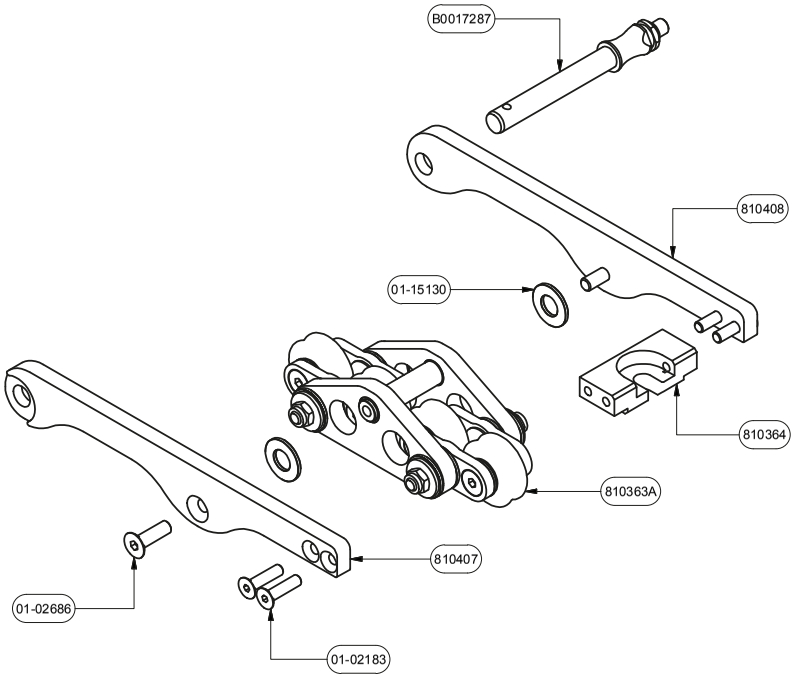


Part number	Qty	Description
B0016796	1	Deep Groove Ball Bearing 6001-2RSH
810505	1	Bearing House Chain Tensioner w/ Susp.
810354	2	SS Compression Spring
810301	1	Bearing Holder Chain Tensioner
810064	1	Sealing Ring
710306	2	Ring
01-15112	2	Hex. Head Screw-M6x65-DIN912-RVS-A2

PEINEMANN

Material:		Dimensions: 72x60x47,3	
Doc no.: B0023103.dwg		Revision Doc: -	
Third angle projection:		Part number: 810505A	Revision Part: -
Drawn by: GFE	Creation date: 29-4-2019	Description: Bearing House Chain Tensioner Assy	Format: A3
Mass: 0,2 kg			
Scale: 1 : 1,5	Units: mm		
Status: Released			
Roughness by ISO 1302	General Tolerances by ISO 2768	Shape- and placetolerances by ISO 1101	

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE

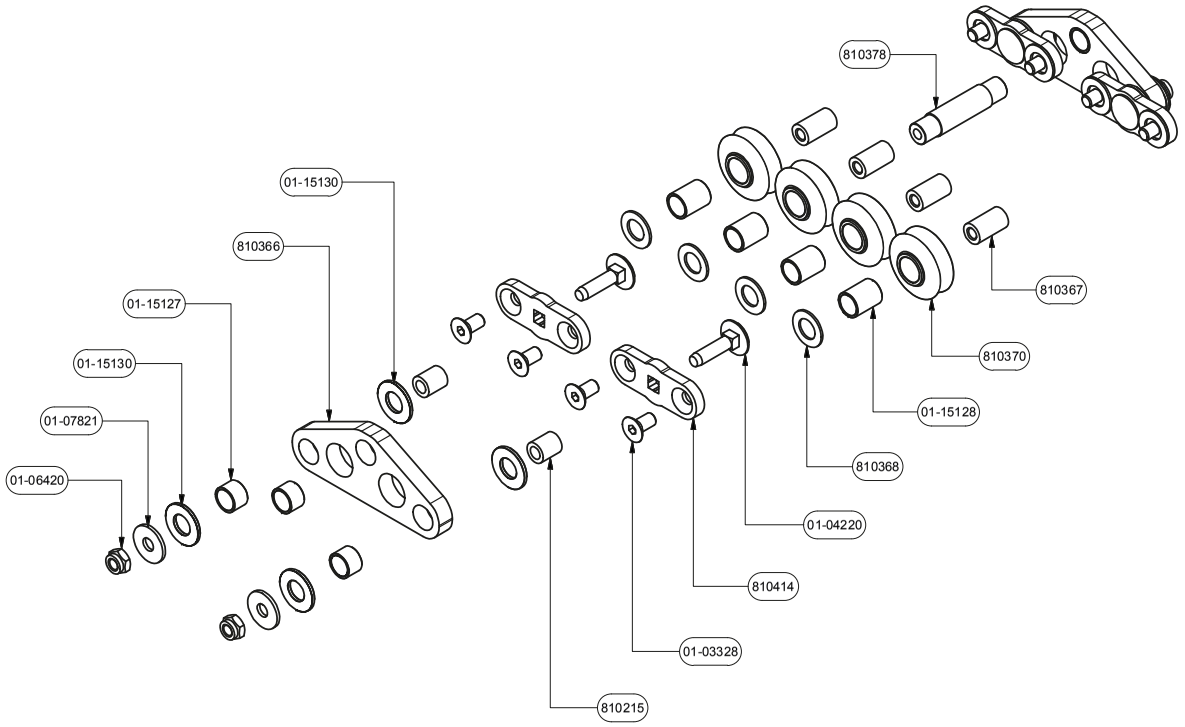


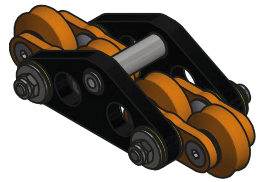
Part number	Qty	Description
B0017287	1	SS Ball Lock Pin Ø10 60mm
810408	1	Plate 8 mm
810407	1	Plate 8 mm
810364	1	Block
810363A	1	Pendulum Part Roll Assy
01-15130	2	Bearing Ring PCMW E 10x20x1,5
01-02686	2	Hex. CSK Screw-DIN7991-M6x20-RVS-A2
01-02183	4	Hex. CSK Screw-DIN7991-M5x20-RVS-A2

PEINEMANN

Material:		Dimensions:	206,1x59,2x102,9
Doc no.:	B0021374.dwg	Revision Doc:	-
Third angle projection:		Part number:	810363
		Revision Part:	-
Drawn by:	GFE	Creation date:	5-9-2018
Mass:	0,5 kg		
Scale:	1 : 2	Units:	mm
Status:	Released		
Description:	Cartridge Roll Assy	Format:	A3
Roughness by ISO 1302		General Tolerances by ISO 2768	Shape- and placetolerances by ISO 1101

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE





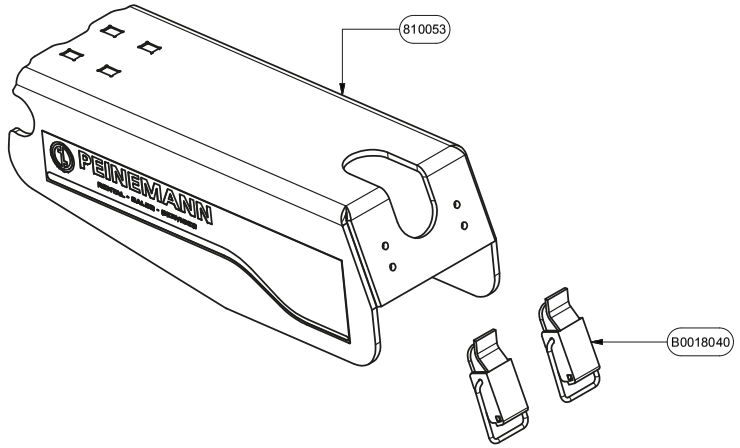
Part number	Qty	Description
810414	4	Plate 5 mm
810378	1	Axle
810370	4	Wheel Aluminium
810368	8	Ring
810367	4	Axle
810366	2	Plate 8 mm
810215	4	Bush
01-15130	8	Bearing Ring PCMW E 10x20x1,5
01-15128	4	Bearing Bush PCM-10x12x15
01-15127	6	Bearing Bush PCM-10x12x8
01-07821	4	Carrosserie Washer-M6-DIN9021-RVS-A2
01-06420	4	Hex Lock Nut-M6-DIN985-RVS-A2
01-04220	4	Carriage Bolt-M6x25-DIN603-RVS-A2
01-03328	8	Hex. CSK Screw-DIN7991-M6x12-RVS-A2

PEINEMANN

Material:		Dimensions:	146,5x48,2x67,5
Doc no.:	B0021361.dwg	Revision Doc:	-
Third angle projection:		Part number:	810363A
		Revision Part:	-
Drawn by:	GFE	Creation date:	5-9-2018
Mass:	0,4 kg		
Scale:	1 : 2	Units:	mm
Status:	Released		
Description:	Pendulum Part Roll Assy	Format:	A3

Roughness by ISO 1302 | General Tolerances by ISO 2768 | Shape- and placetolerances by ISO 1101

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE



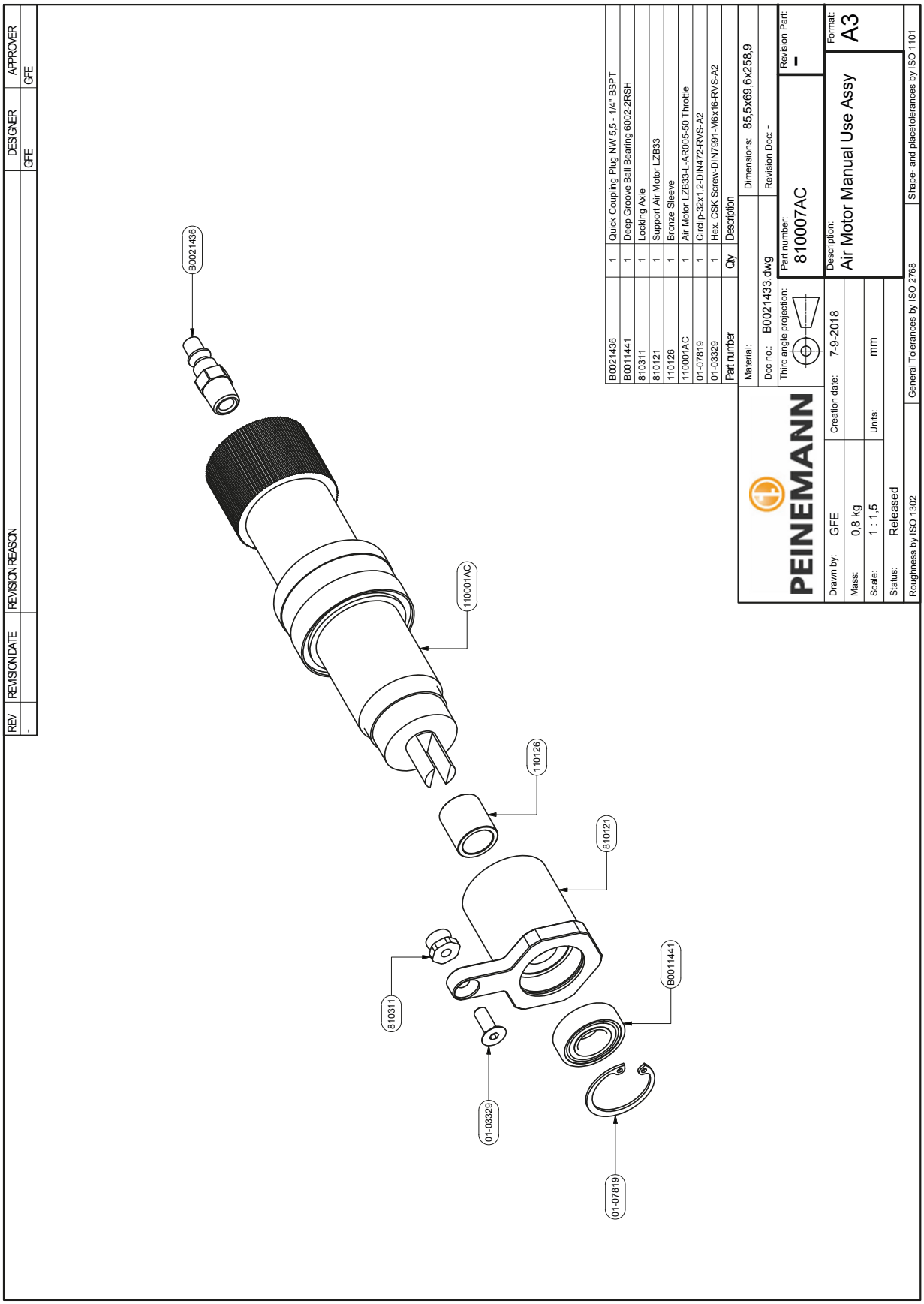
Part number	Qty	Description
B0018040	2	SS Hook Clamp TLV
810053	1	Hood Weldment

PEINEMANN

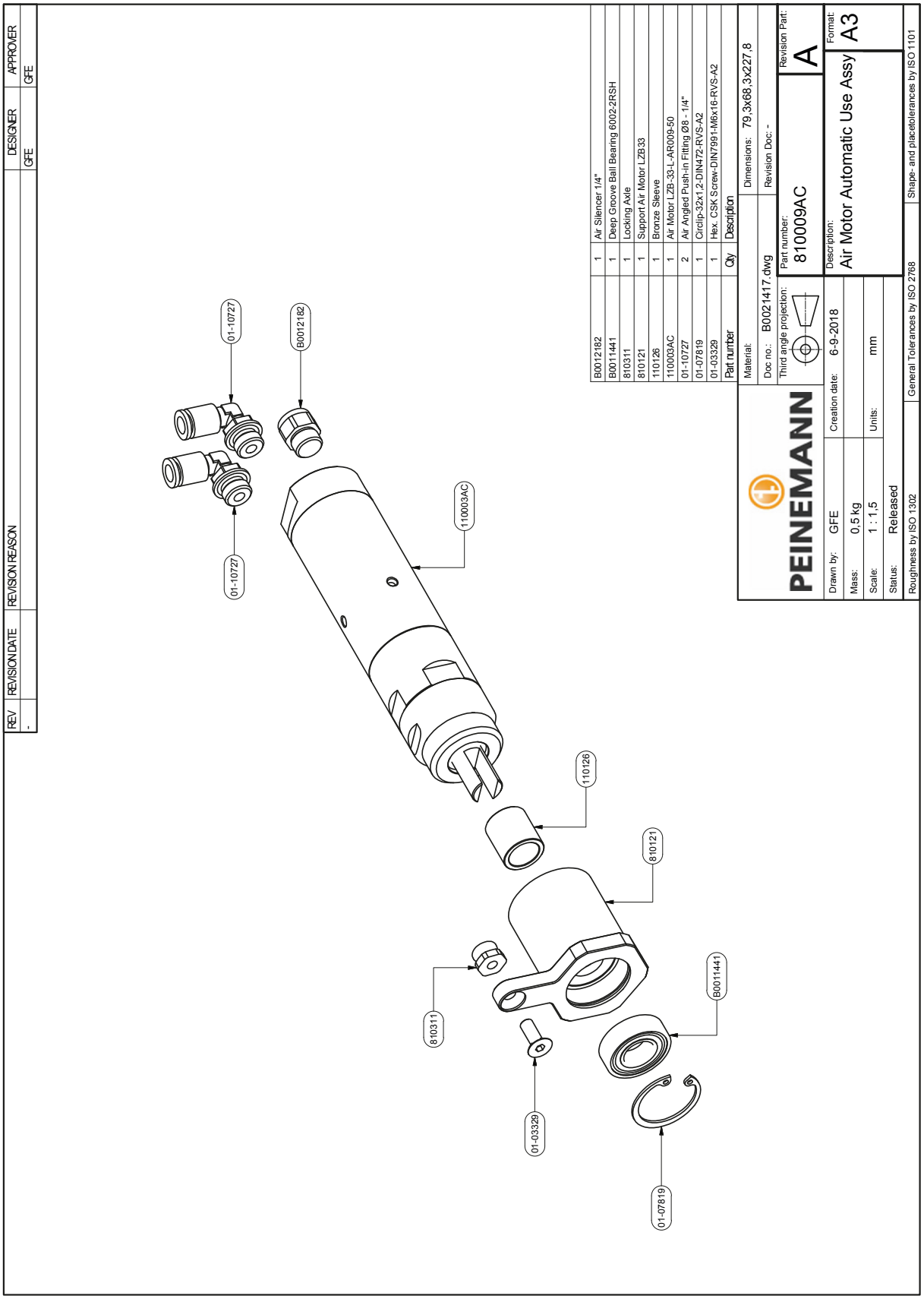
Material:		Dimensions:	244,9x103,4x76,5
Doc no.:	B0021356.dwg	Revision Doc:	-
Third angle projection:		Part number:	810053A
		Revision Part:	B
Drawn by:	GFE	Creation date:	5-9-2018
Mass:	0,2 kg		
Scale:	1 : 2	Units:	mm
Status:	Released		
Description:	Cover Assy	Format:	A3

Roughness by ISO 1302 | General Tolerances by ISO 2768 | Shape- and placetolerances by ISO 1101

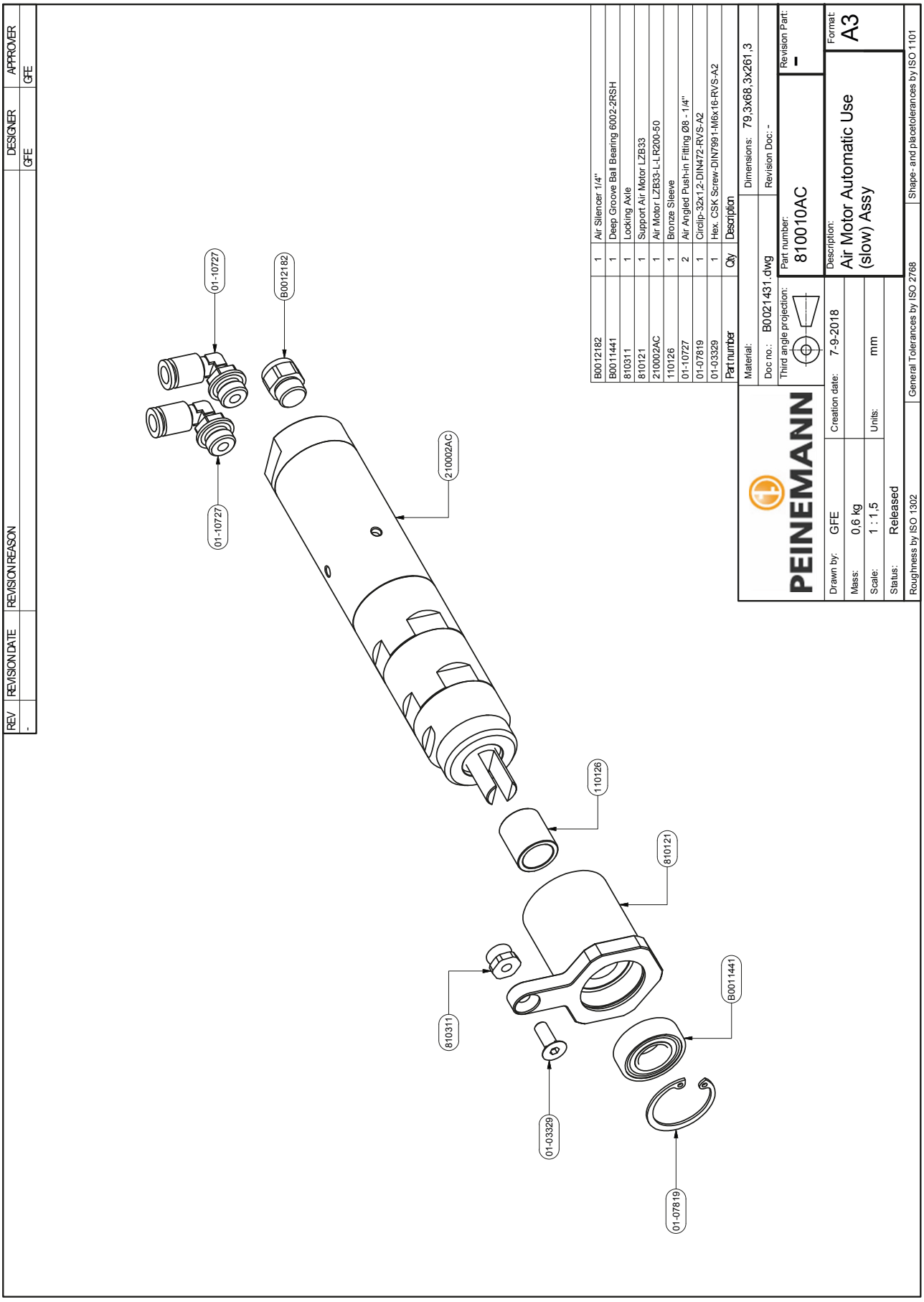
10. APPENDIX


REV
REVISION DATE
REVISION REASON
DESIGNER
APPROVER
-
GFE
GFE
B0021436
110001AC
110126
810121
810311
B0011441
01-03329
01-07819
B0021436 1 Quick Coupling Plug NW 5,5 - 1/4" BSPT
B0011441 1 Deep Groove Ball Bearing 6002-2RSH
810311 1 Locking Axle
810121 1 Support Air Motor LZB33
110126 1 Bronze Sleeve
110001AC 1 Air Motor LZB33-L-AR005-50 Throttle
01-07819 1 Circlip 32x1,2-DIN472-RVS-A2
01-03329 1 Hex. CSK Screw-DIN7991-M6x16-RVS-A2
Part number Qty Description
PEINEMANN
Material:
Dimensions: 85,5x69,6x258,9
Doc no.: B0021433.dwg
Revision Doc: -
Third angle projection:
Part number: 810007AC
Revision Part: -
Drawn by: GFE
Creation date: 7-9-2018
Description: Air Motor Manual Use Assy
Format: A3
Mass: 0,8 kg
Scale: 1 : 1,5
Units: mm
Status: Released
Roughness by ISO 1302
General Tolerances by ISO 2768
Shape- and placetolerances by ISO 1101

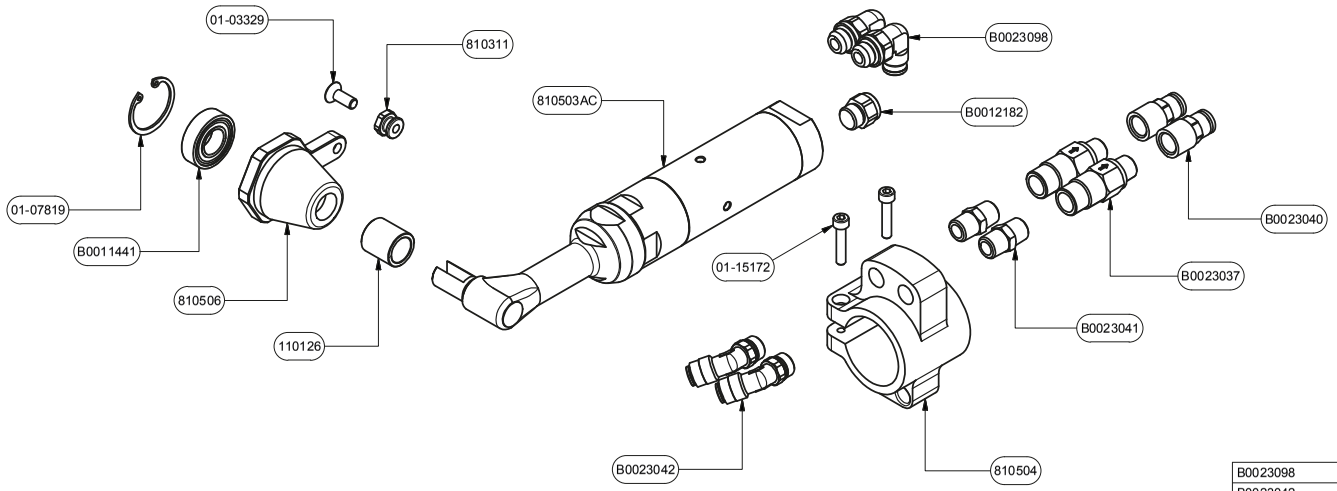
10. APPENDIX


REV
REVISION DATE
REVISION REASON
DESIGNER
APPROVER
-
GFE
GFE
01-10727
B0012182
110003AC
110126
810121
810311
B0011441
01-03329
01-07819
01-10727
B0012182 1 Air Silencer 1/4"
B0011441 1 Deep Groove Ball Bearing 6002-2RSH
810311 1 Locking Axle
810121 1 Support Air Motor LZB33
110126 1 Bronze Sleeve
110003AC 1 Air Motor LZB-33-L-AR009-50
01-10727 2 Air Angled Push-in Fitting Ø6 - 1/4"
01-07819 1 Circlip-32x1,2-DIN472-RVS-A2
01-03329 1 Hex. CSK Screw-DIN7991-M6x16-RVS-A2
Part number Qty Description
Material:
Dimensions: 79,3x68,3x227,8
Doc no.: B0021417.dwg
Revision Doc: -
PEINEMANN
Third angle projection:
Part number:
810009AC
Revision Part:
A
Drawn by: GFE
Creation date: 6-9-2018
Description:
Air Motor Automatic Use Assy
Format:
A3
Mass: 0,5 kg
Scale: 1 : 1,5
Units: mm
Status: Released
Roughness by ISO 1302
General Tolerances by ISO 2768
Shape- and placetolerances by ISO 1101

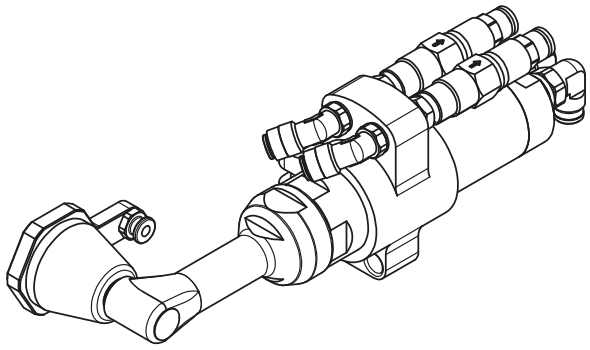
10. APPENDIX


REV
REVISION DATE
REVISION REASON
DESIGNER
APPROVER
-
GFE
GFE
01-10727
B0012182
01-10727
210002AC
110126
810121
810311
B0011441
01-03329
01-07819
B0012182 1 Air Silencer 1/4"
B0011441 1 Deep Groove Ball Bearing 6002-2RSH
810311 1 Locking Axle
810121 1 Support Air Motor LZB33
210002AC 1 Air Motor LZB33-L-LR200-50
110126 1 Bronze Sleeve
01-10727 2 Air Angled Push-in Fitting Ø8 - 1/4"
01-07819 1 Circlip-32x1.2-DIN472-RVS-A2
01-03329 1 Hex. CSK Screw-DIN7991-M6x16-RVS-A2
Part number Qty Description
PEINEMANN
Material:
Dimensions: 79,3x68,3x261,3
Doc no.: B0021431.dwg
Revision Doc: -
Third angle projection:
Part number:
810010AC
Revision Part:
-
Drawn by: GFE
Creation date: 7-9-2018
Mass: 0,6 kg
Scale: 1 : 1,5
Units: mm
Status: Released
Description:
Air Motor Automatic Use
(slow) Assy
Format:
A3
Roughness by ISO 1302
General Tolerances by ISO 2768
Shape- and placetolerances by ISO 1101

REV	REVISION DATE	REVISION REASON	DESIGNER	APPROVER
-			GFE	GFE



NOTE!!
Machines with serialnumbers up to and incl. 1Xs25109 needs an extra part with partno. 810505 to instal this motor assembly

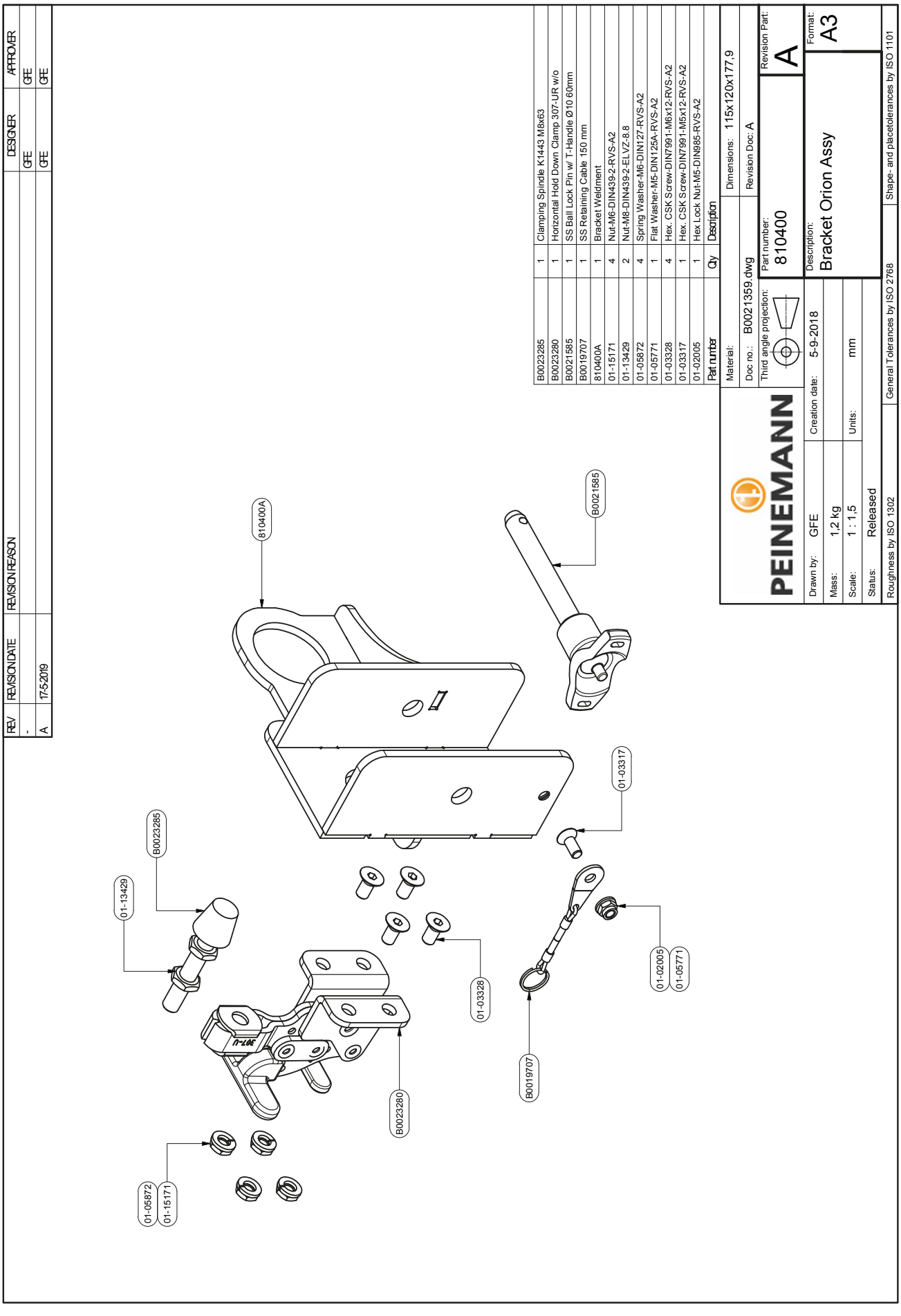


Part number	Qty	Description
B0023098	2	Air 90° Push-in Fitting 10247 Ø8 - 1/4''
B0023042	2	Air 45° Push-in Fitting Ø8 - 1/4"
B0023041	2	Air Double Fitting 1/4" BSPT
B0023040	2	Air Push-in Fitting Ø8 - 1/4" F
B0023037	2	Air Quick Exhaust Valve 7971 - 1/4"
B0012182	1	Air Silencer 1/4''
B0011441	1	Deep Groove Ball Bearing 6002-2RSH
810506	1	Support Angled Air Motor LZB33
810504	1	Mounting Bracket Angled Air Motor
810503AC	1	Air Motor LZB33-ML-AR009-001
810311	1	Locking Axle
110126	1	Bronze Sleeve
01-15172	2	Hex. Head Screw-M5x25-DIN912-RVS-A2
01-07819	1	Circlip-32x1,2-DIN472-RVS-A2
01-03329	1	Hex. CSK Screw-DIN7991-M6x16-RVS-A2

PEINEMANN

Material:		Dimensions: 287,1x89x88,7	
Doc no.: B0023105.dwg		Revision Doc: -	
Third angle projection:		Part number: 810509AC	Revision Part: -
Drawn by: GFE	Creation date: 29-4-2019	Description: Air Motor Angled Automatic Use Assy	Format: A3
Mass: 1,5 kg			
Scale: 1 : 2,5	Units: mm		
Status: Released			
Roughness by ISO 1302	General Tolerances by ISO 2768	Shape- and placetolerances by ISO 1101	

10. APPENDIX


REV
REVISION DATE
REVISION REASON
DESIGNER
APPROVER
- GFE GFE
A 17-5-2019 GFE GFE
Part number
Description
Qty
B0023285 Clamping Spindle K1443 M8x63 1
B0023280 Horizontal Hold Down Clamp 307-UR w/o 1
B0021585 SS Ball Lock Pin w/ T-Handle Ø10 60mm 1
B0019707 SS Retaining Cable 150 mm 1
810400A Bracket Weldment 1
01-15171 Nut-M6-DIN439-2-RVS-A2 4
01-13429 Nut-M8-DIN439-2-ELVZ-8.8 2
01-05872 Spring Washer-M6-DIN127-RVS-A2 4
01-05771 Flat Washer-M5-DIN125A-RVS-A2 1
01-03328 Hex. CSK Screw-DIN7991-M6x12-RVS-A2 4
01-03317 Hex. CSK Screw-DIN7991-M5x12-RVS-A2 1
01-02005 Hex Lock Nut-M5-DIN985-RVS-A2 1
PEINEMANN
Material:
Dimensions: 115x120x177,9
Doc no.: B0021359.dwg
Revision Doc: A
Third angle projection:
Part number: 810400
Revision Part: A
Drawn by: GFE
Creation date: 5-9-2018
Description: Bracket Orion Assy
Format: A3
Mass: 1,2 kg
Scale: 1 : 1,5
Units: mm
Status: Released
Roughness by ISO 1302
General Tolerances by ISO 2768
Shape- and placetolerances by ISO 1101
810400A
B0021585
01-03317
B0023285
01-13429
01-03328
B0023280
B0019707
01-02005
01-05771
01-05872
01-15171

10. APPENDIX

10.2 Parts list
10.3 Certifications
10.4 Declaration of Conformity

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