BETEX

Mobile Hydraulic Heavy-Duty Hook Puller

HXPM-100T, HXPM-150T

User Manual

We pioneer motion

SCHAEFFLER

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1 About the manual

This manual is part of the product and contains important information. Read the manual thoroughly prior to use and follow the instructions precisely.

The original language of the manual is German. All other languages are translations from the original language.

1.1 Symbols

The warning and hazard symbols are defined in accordance with ANSI Z535.6-2011.

1 Warning and hazard symbols

Signs and descriptions	
⚠ DANGER	In case of non-compliance, death or serious injury will occur.
⚠ WARNING	In case of non-compliance, death or serious injury may occur.
⚠ CAUTION	In case of non-compliance, minor or moderate injury may occur.
NOTICE	In case of non-compliance, damage or malfunctions in the product or the adjacent construction may occur.

1.2 Signs

The warning, prohibition and mandatory signs are defined in accordance with DIN EN ISO 7010 or DIN 4844-2.

2 Warning, prohibition and mandatory signs

Signs and descriptions	
	General warning
	Electrical voltage warning
	Observe the manual
	Wear safety gloves
	Wear safety shoes
	Wear eye protection
	Wear ear protection
	General mandatory sign
	Disconnect mains plug from electrical outlet
	Earth before use

1.3 Availability

A current version of this manual can be found at:
https://www.schaeffler.de/std/2007

Ensure that this manual is always complete and legible and is available to all persons engaged in transporting, fitting, dismantling, commissioning, operating or maintaining the product.

Keep the manual in a safe place for immediate reference.

1.4 Legal guidelines

The information in this manual reflects the status at the time of publication.

Unauthorised modifications to or improper use of the product are not permitted. Schaeffler accepts no liability in these cases.

1.5 Images

The images in this manual may be schematic representations and may differ from the delivered device.

1.6 Further information

Address any questions on fitting to your local contact at Schaeffler.

2 General safety regulations

2.1 Intended use

The puller may only be used to dismantle pulleys, bearings, couplings and other rotationally symmetrical workpieces mounted on a shaft.

The outer contour of the component to be removed must allow the puller claws to grip securely and support the transfer of extraction forces.

The centring piece should sit fully against the shaft face. Small centring holes are permissible. The contact face must be large enough to prevent deformation or damage to both the shaft and the puller during dismantling.

The puller may only be operated in strict accordance with the technical data provided.

Only use original spare parts and accessories supplied by Schaeffler.

2.2 Usage not for the intended purpose

The device must not be used to transport components or tools.

2.3 Qualified personnel

Obligations of the operator:

- Ensure that only qualified and authorised personnel perform the activities described in this manual.
- Ensure that personal protective equipment is used.

Qualified personnel must:

- Ensure adequate product knowledge, e.g. through training on proper handling and use of the product
- be fully familiar with the contents of this manual, particularly all safety instructions
- be aware of any relevant country-specific regulations

2.4 Protective equipment

For certain work on the product, suitable protective equipment must be worn. Personal protective equipment consists of:

3 Required personal protective equipment

Personal protective equipment	Mandatory signs in accordance with DIN EN ISO 7010
Protective gloves	
Safety shoes	
Eye protection	
Ear protection	

2.5 Safety equipment

The following safety equipment is provided to protect both the user and the device from potential harm and damage:

- The device is equipped with an emergency stop switch.
- Use the safety blanket included with the device to protect the user from flying parts.
- The master cylinder is equipped with a pressure limitation valve. If the pressure exceeds 700 bar, the pressure limitation valve will open, allowing hydraulic oil to enter into the pump reservoir.

2.6 Safety regulations

Keep safety instructions, warning information and operating instructions on the device in a legible condition. Replace any damaged or obliterated signs or labels on the device immediately.

When handling hydraulic oil, observe the information and regulations provided in the corresponding safety data sheet.

2.6.1 Transport

In transport, the relevant safety and accident prevention regulations must be observed.

Transport the device using the appropriate transportation or lifting equipment only.

2.6.2 Commissioning

When converting the arms, use a suitable lifting tool to support the arm that is being dismantled or fitted.

2.6.3 Operation

As a result of the design principle, various hazards associated with the electric voltage, hydraulic unit or pump, height adjustments or the pressure cylinder may arise during operation.

Only operate the device under the environmental conditions provided.

2.6.4 Maintenance and repair

Maintenance work and repairs may only be carried out by qualified personnel.

Deactivate the device before performing maintenance work or repairs.

2.7 Hazards

2.7.1 Danger of death

Danger of death from flying components

1. Wear personal protective equipment.
2. Apply the safety blanket to the component.

Danger of death from exceeding the maximum permissible pressure

1. Do not alter the settings for the integrated pressure limitation valve.
2. Monitor the manometer display during operation.
3. Do not exceed a hydraulic pressure of 700 bar.

2.7.2 Risk of injury

Risk of injury during disassembly if components suddenly become detached

1. Wear personal protective equipment.
2. Maintain a distance of 1 m from the puller.
3. Assume a lateral position behind the puller during operation.
4. Use a chain or strap to limit the movement of the puller, ensuring that the master cylinder has sufficient stroke for operation.

Risk of injury from incorrect alignment of the master cylinder

1. Wear personal protective equipment.
2. Align the centre axis of the master cylinder with the centre of the shaft and the component to be removed.
3. Adjust the inclination of the master cylinder if necessary.

Risk of injury from hydraulic pressure

1. Wear personal protective equipment.
2. Check the hydraulic hoses for signs of wear and damage before each use.
3. Replace any damaged hoses immediately.
4. Observe the minimum bending radius for hydraulic hoses as specified by the manufacturer.
5. Do not touch pressurised hydraulic hoses.
6. Use hose protection.

Risk of injury from toppling puller

1. Place the device on an even, stable surface.
2. Release the brakes on the rollers, as the puller may shift during disassembly.
3. Use a lifting strap with a crane or forklift to secure any heavy components that are to be removed.

Risk of injury from leaking hydraulic oil

1. Wear personal protective equipment.
2. Remove any leaking hydraulic oil immediately.

Risk of injury from crushing when adjusting the working height or inclination of the master cylinder

1. Wear personal protective equipment.
2. Keep hands and feet clear of the danger area.

Risk of injury from hydraulic oil

1. Wear personal protective equipment.
2. Observe the safety instructions provided in the safety data sheet for the hydraulic oil.

2.7.3 Material damage

Material damage caused by the introduction of heat

1. Do not heat the component while the puller is in contact with it.
2. Do not expose the puller to heat or naked flames.

Material damage caused by incorrect alignment of the master cylinder

1. Align the centre axis of the master cylinder with the centre of the shaft and the component to be removed.
2. Adjust the inclination of the master cylinder if necessary.

Material damage caused by improper use of hoses and cables

1. Check the hydraulic hoses for signs of wear and damage before each use.
2. Check the cables for signs of wear and damage before each use.
3. Never expose hoses and cables to naked flames, sharp components, severe impacts and extreme temperatures.
4. Avoid kinking, twisting or bending hoses and cables.
5. Maintain a minimum bending radius of 60 mm for the hoses.
6. Do not apply paint to hoses and cables and keep them away from corrosive materials.
7. Do not apply any colour to hoses and couplings.
8. Never pull on hoses or cables to disconnect them from attached devices.

Material damage caused by an upended puller

1. Place the device on an even, stable surface.
2. Release the brakes on the rollers, as the puller may shift during disassembly.
3. Use a lifting strap with a crane or forklift to secure any heavy components that are to be removed.

Material damage and environmental damage caused by hydraulic oil

1. Observe the safety instructions provided in the safety data sheet for the hydraulic oil.

3 Scope of delivery

1 Scope of delivery for HXPM-100T and HXPM-150T

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1	Puller (1×)	2	Remote control (1×)
3	Safety blanket (1×)	4	Hydraulic oil LPS 78 ISO15 (1×)
5	Adapter piece Ø70 mm, length 300 mm (2×)	6	Adapter piece Ø70 mm, length 150 mm (2×)
7	Adapter piece Ø70 mm, length 100 mm (1×)	8	Adapter piece Ø70 mm, length 75 mm (1×)
9	Adapter piece Ø70 mm, length 50 mm (1×)	10	Centring piece (1×)
11	Mains connection cable	12	User manual

3.1 Check for defects

1. Check the product immediately upon delivery for any visible defects.
2. Report any defects promptly to the distributor of the product.
3. Do not put damaged products into operation.

3.2 Check for transport damage

1. Check the product immediately upon delivery for transport damage.
2. Report any transport damage promptly to the carrier.

4 Product description

The mobile hydraulic heavy-duty hook puller is suitable for removing pulleys, bearings, couplings and other rotationally symmetrical workpieces mounted on a shaft. The workpieces should be axially and radially accessible and suitable for grasping from the outside.

The puller grasps behind the component to be dismantled with its claws. The component is removed axially from the shaft with the movement of the master cylinder.

The puller is self-centring. The arms move inwards and outwards at the same time when the grip width is adjusted, which prevents the bearing from tilting during the dismounting process, thus preventing any damage to the shaft and bearing.

The device is equipped with an electrically operated hydraulic unit for both height adjustment and master cylinder movement. The device is operated manually utilising valves and a remote control.

The device operates at a maximum hydraulic pressure of 700 bar. The manometer displays the current pressure within the master cylinder in both bar and psi.

The device includes a pressure limitation valve, which is integrated into the hydraulic unit. If the hydraulic pressure exceeds 700 bar, hydraulic oil is released into the pump reservoir.

Schaeffler recommends using 3 arms where work conditions permit. 3 arms ensure a more secure grip and a more evenly distributed pulling force.

4.1 Control elements and valves

4.1.1 HXPM-100T-2-ARM

2 Control elements and displays HXPM-100T-2-ARM

1	Manometer	2	Remote control
3	Claw spindle	4	Valves
5	Pump accumulator	6	Transport frame
7	Master cylinder	8	Lifting cylinder
9	Arm cylinder		

4 Control elements and displays

Control element	Use
Manometer	• Displaying the pressure
Remote control	• Moving the master cylinder ➤31|8.2.8 • Adjusting the working height ➤28|8.2.3 • Opening and closing the arms ➤29|8.2.5
Claw spindle	• Setting the adjustable claws ➤30|8.2.7

4.1.2 HXPM-100T-2/3-ARM and HXPM-150T-3-ARM

3 Control elements and displays HXPM-100T-2/3-ARM and HXPM-150T-3-ARM

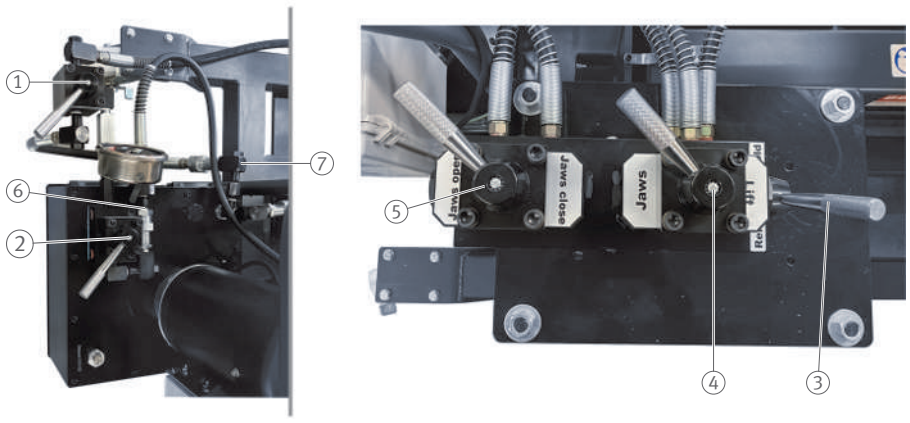
1	Manometer	2	Remote control
3	Claw spindle	4	Tilt adjustment
5	Valves	6	Pump accumulator
7	Transport frame	8	Master cylinder
9	Lifting cylinder	10	Arm cylinder
11	Arm centring		

5 Control elements and displays

Control element	Use
Manometer	• Displaying the pressure
Remote control	• Moving the master cylinder ➤31|8.2.8 • Adjusting the working height ➤28|8.2.3 • Opening and closing the arms ➤29|8.2.5
Claw spindle	• Setting the adjustable claws ➤30|8.2.7
Crank arm for tilt adjustment	• Adjusting the inclination of the master cylinder ➤28|8.2.4
Arm centring	• Centring the arms manually ➤29|8.2.6

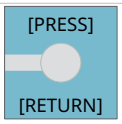
4.2 Valves

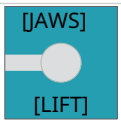
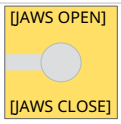
4 Valves



1	Master cylinder valve	2	Operating mode valve
3	Lifting valve	4	Function valve
5	Arm valve	6	Speed control
7	Pressure relief valve		

6 Valves

Valve	Positions		Use
Master cylinder valve		[PRESS]	Extending the piston
		[NEUTRAL]	Neutral position
		[RETURN]	Retracting the piston
Operating mode valve		[PRESS]	Moving the master cylinder
		[NEUTRAL]	Neutral position
		[ADJUSTING]	Adjusting the working height, opening and closing the arms
Lifting valve		[RET]	Reducing the working height
		[HOLD]	Increasing the working height

Valve	Positions		Use
Function valve		[JAWS]	Opening and closing the arms
		[NEUTRAL]	Neutral position
		[LIFT]	Adjusting the working height
Arm valve		[JAWS OPEN]	Opening the arms
		[NEUTRAL]	Neutral position
		[JAWS CLOSE]	Closing the arms
Speed control		[SPEED ADJUSTING]	Setting the adjustment speed

5 Transport and storage

5.1 Transport

The safety regulations for transport must be observed.

5.1.1 Internal transport

1. Decommission the device ➤39|11.
2. Transport the device using the assembled trolley.

5.1.2 External transport

1. Decommission the device ➤39|11.
2. Pack the device in a box, adding sufficient filling material.
3. Alternatively, lift the device onto a pallet and tie it down securely, ensuring that no hoses or cables are pinched or crushed.

If the device is being transported by air, drain the hydraulic oil from the pump before shipping.

5.2 Storage

1. Decommission the device ➤39|11.
2. Apply the trolley brake.
3. Store the device in a dry, clean environment.
4. For extended storage periods, use a plastic cover to protect the device from dust.
5. Store hydraulic oil in accordance with the regulations specified in the corresponding data sheet.

After extended storage, special inspections must be performed before commissioning, the scope of which depends on the storage period ➤22|7.1.

6 Mounting

6.1 Unpacking and installation

✓ Suitable operating location selected ➤42|13.1.

1. Set down the pallet.
2. Remove the packaging.
3. Carefully lift the device off the pallet.
4. Remove the transport retainer on the lifting cylinder.
5. Remove the arm supports.

If using a lifting device, ensure that the entire transport frame is supported.

6.2 Filling the pump accumulator with hydraulic oil

The puller is delivered unfilled. The pump reservoir must be filled with hydraulic oil prior to initial operation.

✓ Use hydraulic oil LPS 78, ISO 15.

✓ Wear gloves to avoid contact with the hydraulic oil.

✓ Wear eye protection

1. Fully retract the master cylinder.
2. Move the puller to the lowest working height ➤28|8.2.3.
3. Open the filling hole on the pump reservoir.

5 Opening the filling port on the pump accumulator

1	Filling port

4. Using a funnel, fill the pump reservoir with hydraulic oil until a fill level of approx. 2 cm below the container lid is reached.

6 Filling the pump accumulator

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5. Close the filling hole using the plug.
6. Remove any drops of oil from the pump reservoir and puller.
7. Bleeding the oil circuit ➤38|10.4.
8. Carrying out a test run ➤23|7.4.

7 Commissioning

7.1 Commissioning after extended storage

If the device has not been used for an extended period, the following inspections must be performed before commissioning.

7 Inspections to be performed after extended storage

Inspection	Storage period in months		
	≤ 3	3 < ... < 10	≥ 10
Basic inspection and lubrication ➤22|7.1.1	✓	✓	✓
Inspection of electrical system, motor, valves, and pump reservoir ➤22|7.1.2	–	✓	✓
Inspection of hydraulic system ➤22|7.1.3	–	–	✓

7.1.1 Basic inspection and lubrication

1. Check device for visible damage.
2. Clean screws, pins, and moving components.
3. Lubricate screws, pins, and moving components with spray grease.

7.1.2 Inspection of electrical system, motor, valves, and pump reservoir

✓ The device is not connected to the power supply.

1. Check the power lines in the control box for corrosion and loose connections.
2. Check the motor for visible damage.
3. Clean the motor fan.

› The motor fan must be rotatable by hand.

4. Check that the valves are functioning correctly.

› The valves must be adjustable

5. Set the valves to [RETURN].
6. Check the fill level of the pump reservoir.

› The pump reservoir must be at least 80 % full ➤37|10.3.

7.1.3 Inspection of hydraulic system

✓ The hydraulic hoses must not show any signs of damage.

1. Check the quick-action couplings and hose locks ➤23|7.2.
2. Establish the power supply ➤23|7.3.
3. Set the valves to [RETURN].
4. Operate the electric pump for 15 s.
5. Retract and extend the master cylinder several times ➤31|8.2.8.
6. Fully extend the master cylinder and operate for 10 s at a maximum pressure of 700.bar.

› No oil must leak.

› The pressure must not drop.

7. Open and close the arms ➤29|8.2.5.
› The arms must open and close completely.
8. Move the puller to the minimum and maximum working height ➤28|8.2.3.
› The minimum and maximum working heights must be reached.

7.2 Checking the quick-action couplings and hose locks

1. Check that the quick-action couplings are securely seated.
2. Check that the hose locks are properly connected.

7.3 Establishing the power supply

✓ Ensure that the mains connection cable and plug are in perfect working condition.
✓ The power supply must comply with the technical data provided ➤41|▦12.
1. Lay the mains connection cable in such a way as to prevent a trip hazard.
2. Insert the mains connection plug into a suitable socket.
3. Switch on the device using the main switch.

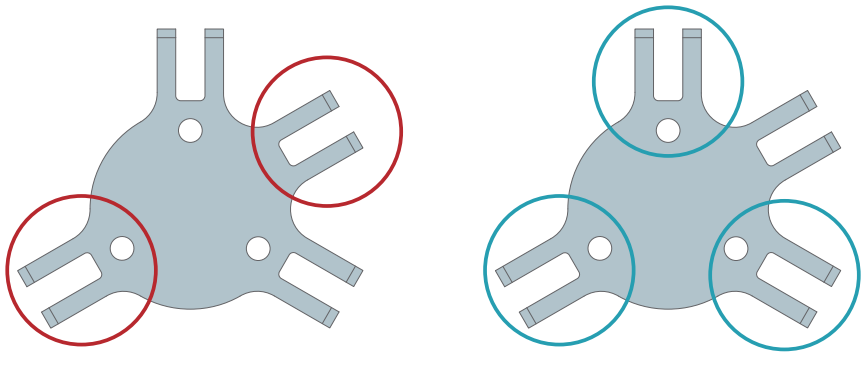
7.4 Performing a test run

✓ The hydraulic hoses must not show any signs of damage.
1. Bleeding the oil circuit ➤38|10.4.
2. Checking the function of the pressure limitation valve ➤38|10.5.

7.5 Converting the arms

Conversion of the arms is possible for product variant HXPM-100T-2/3-ARM.

7 Mounting position for the arms



⚠ WARNING

Heavy product

Risk of herniated disc or back injury.

- Only lift without the use of support aids if the product weighs less than 23 kg.
- Use appropriate support aids where necessary.

7.5.1 Required support aids

The following support aids are required for commissioning:

- crane or forklift truck with a load capacity > 220 kg
- lifting strap with adequate load capacity
- spanner
- Allen key
- hammer
- drift punch

7.5.2 Converting from 3 arms to 2 arms

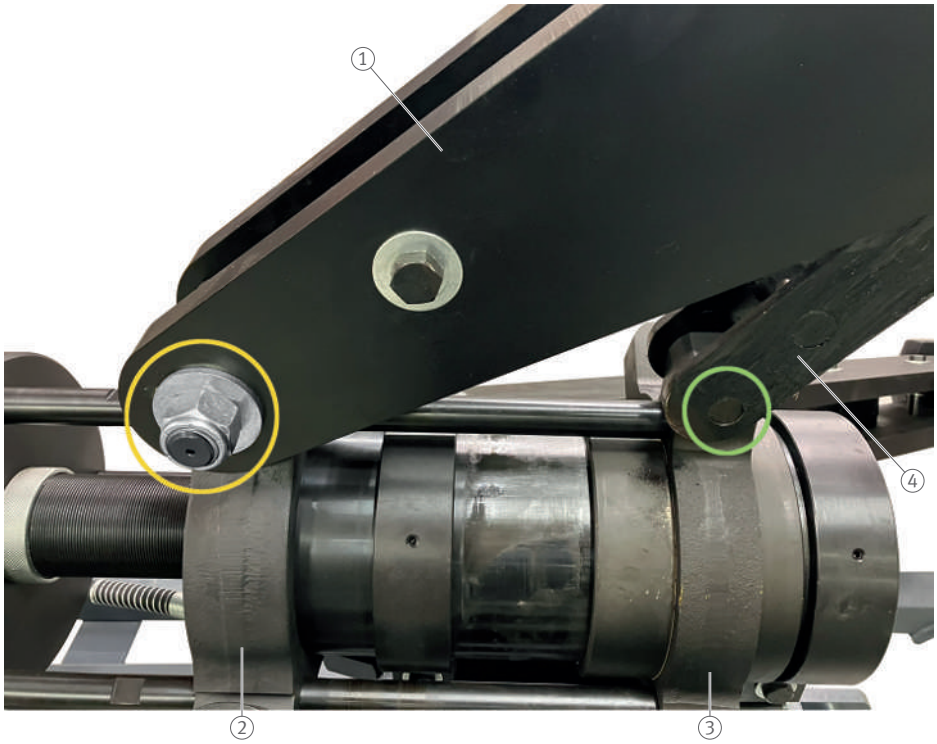
1. Dismantle the arms at the fixing points marked in blue on the rear and front star ➤25|7.5.4.1.
2. Fit the arms at the fixing points marked in red on the rear and front star ➤26|7.5.4.2.
3. Check the centring of the arms ➤26|7.6.

7.5.3 Converting from 2 arms to 3 arms

1. Dismantle the arms at the fixing points marked in red on the rear and front star ➤25|7.5.4.1.
2. Fit the arms at the fixing points marked in blue on the rear and front star ➤26|7.5.4.2.
3. Check the centring of the arms ➤26|7.6.

7.5.4 Fitting and dismantling the arms

8 Components for fitting and dismantling the arms



1	Arm	2	Rear star
3	Front star	4	Strut

One arm weighs > 200 kg. An arm to be dismantled must be supported by a crane or forklift truck using a lifting strap.

7.5.4.1 Dismantling an arm

✓ The arm is supported using a lifting strap with a crane or forklift.

1. Loosen the nut (yellow) between the arm and the rear star.
2. Remove the spacer washers between the arm and the rear star (yellow).
3. Loosen the set screw (green) between the strut and the front star.
4. Drive out the pin (green) between the strut and the front star using a drift punch.
5. Support the arm to be dismantled. After dismantling, uncontrolled movement of the arm may occur.
6. Completely unscrew the pin (yellow) between the arm and the rear star and drive it out using a drift punch.

› The arm is now dismantled.

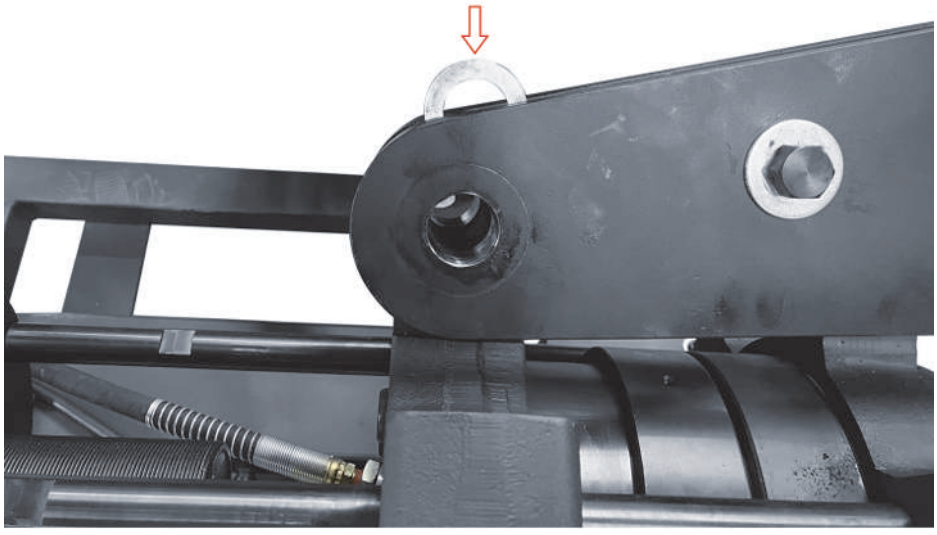
7. Store the dismantled arm and its components in a dry, clean environment, supporting them as necessary.

7.5.4.2 Fitting an arm

✓ The arm is supported using a lifting strap with a crane or forklift.

1. Position the arm so that the hole in the strut aligns with the hole in the front star (green).
2. Insert the pin into the hole in the arm and the hole in the front star (green) and secure using the set screw.
3. Pull the arm outwards.
4. Position the arm so that the hole in the arm aligns with the hole in the rear star (yellow).
5. Insert the pin into the hole in the rear star (yellow).
6. Insert the spacer washers between the arm and the rear star (yellow).

9 Aligning the holes while inserting the washers



7. Screw in the nut and tighten by hand.
8. Remove the lifting strap.

» The arm is now fitted.

7.6 Checking the centring of the arms

1. Completely close the arms ➤29|8.2.5.

› Arms must be centred at a single point.

2. If the arms are not centred, recentre the individual arms ➤29|8.2.6

8 Operation

8.1 Carrying out protective measures

The following protective measures must be carried out prior to operation:

1. Wear personal protective equipment.
2. Ensure that the ambient conditions are appropriate ➤42|⊞13.
3. Check the hydraulic hoses for signs of wear and damage before each use.
4. Replace any damaged hoses immediately.
5. Use a lifting strap with a crane or forklift to secure any heavy components that are to be removed.
6. Do not exceed a maximum pressure of 700 bar.
7. Do not heat the component while the puller is in contact with it.

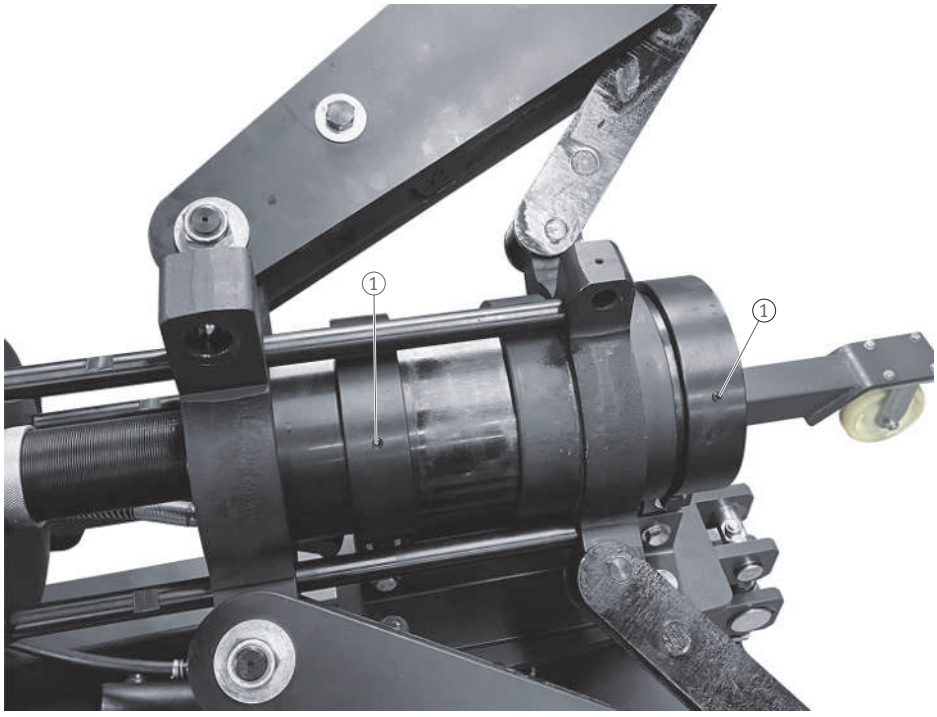
8.2 Operating the puller

The puller is operated using the control elements and valves ➤15|4.1.

8.2.1 Rotating the puller about its central axis

Rotation of the puller about its central axis is possible for product variants HXPM-100T-2/3-ARM and HXPM-150T-3-ARM.

10 Rotation of the puller about its central axis



1	2 fixing screws per side

1. Loosen the 2 fixing screws on each side.
2. Rotate the arms about the central axis into the desired position.
3. Tighten the fixing screws fully.
4. Check that the arms are securely fixed against rotation.

8.2.2 Setting the adjustment speed

The adjustment speed automatically increases as the operating temperature rises.

Reducing the adjustment speed

1. Turn the speed control [SPEED ADJUSTING] clockwise.
» The speed for opening and closing the arms decreases.
» The speed for adjusting the working height decreases.

Increasing the adjustment speed

1. Turn the speed control [SPEED ADJUSTING] anti-clockwise.
» The speed for opening and closing the arms increases.
» The speed for adjusting the working height increases.

8.2.3 Adjusting the working height

Increasing the working height

1. Set the lifting valve to [HOLD].
2. Press the button on the remote control.
› Pressing and holding the button on the remote control raises the puller.
3. Release the button once the desired working height has been reached.
4. Leave the lifting valve in the [HOLD] position.

Reducing the working height

1. Set the lifting valve to [RELEASE].
› Setting the lifting valve to [RELEASE] lowers the puller.
2. Set the lifting valve to [HOLD] once the desired working height has been reached.

8.2.4 Adjusting the inclination of the master cylinder

The inclination can be adjusted for product variants HXPM-100T-2/3-ARM and HXPM-150T-3-ARM.

Tilting the master cylinder forwards

1. Turn the crank arm clockwise.
» The master cylinder will tilt forwards.

Tilting the master cylinder backwards

1. Turn the crank wheel anti-clockwise.
» The master cylinder will tilt backwards.

8.2.5 Opening and closing the arms

Opening the arms

1. Set the operating mode valve to [ADJUSTING].
2. Set the function valve to [JAWS].
3. Set the arm valve to [JAWS OPEN].
4. Press the button on the remote control.

» Pressing and holding the remote control button opens the arms.

Closing the arms

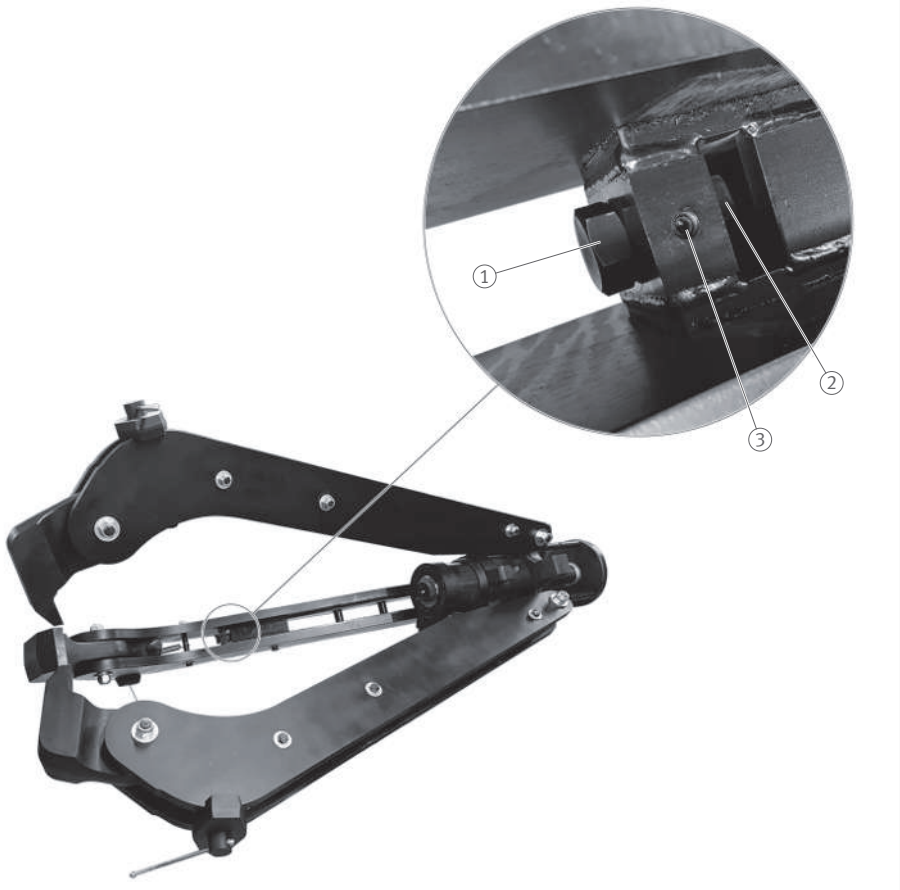
1. Set the operating mode valve to [ADJUSTING].
2. Set the function valve to [JAWS].
3. Set the arm valve to [JAWS CLOSE].
4. Press the button on the remote control.

» Pressing and holding the remote control button closes the arms.

8.2.6 Centring individual arms

Each arm can be centred individually. This is done by turning the adjustment screw on the arm-centring device.

11 Centring the arms



1	Adjustment screw	2	Lock nut
3	Set screw		

Adjusting the outer position of the arm

✓ Lift the upper arm from the outside while making the adjustment.

1. Loosen the lock nut.
2. Loosen the set screw.
3. Turn the adjustment screw anti-clockwise.

› The spread of the arm increases.

4. Tighten the lock nut.
5. Tighten the set screw.

» The adjustment screw is locked in position.

Adjusting the inner position of the arm

✓ Lift the upper arm from the outside while making the adjustment.

1. Loosen the lock nut.
2. Loosen the set screw.
3. Turn the adjustment screw clockwise.

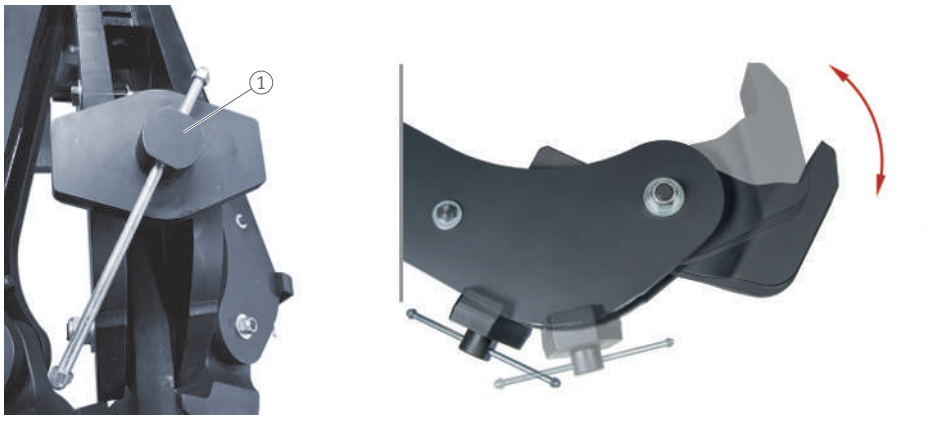
› The spread of the arm decreases.

4. Tighten the lock nut.
5. Tighten the set screw.

» The adjustment screw is locked in position.

8.2.7 Setting the adjustable claw

12 Adjusting the claw



1	Claw spindle

1. Turn the claw spindle anti-clockwise.

› The claw is adjustable.

2. Set the claw to the desired position.
3. Turn the claw spindle clockwise.

» The claw is locked in place

8.2.8 Moving the master cylinder

Extending the master cylinder

1. Set the master cylinder valve to [PRESS].
2. Set the operating mode valve to [PRESS].
3. Press the button on the remote control.

» Pressing and holding the remote control button extends the master cylinder.

Retracting the master cylinder for HXPM-100T

1. Set the operating mode valve to [PRESS].
2. Set the master cylinder valve to [RETURN].

› Setting the master cylinder valve to [RETURN] retracts the master cylinder.

3. To hold the current position, set the operating mode valve to [ADJUSTING].

Retracting the master cylinder for HXPM-150T

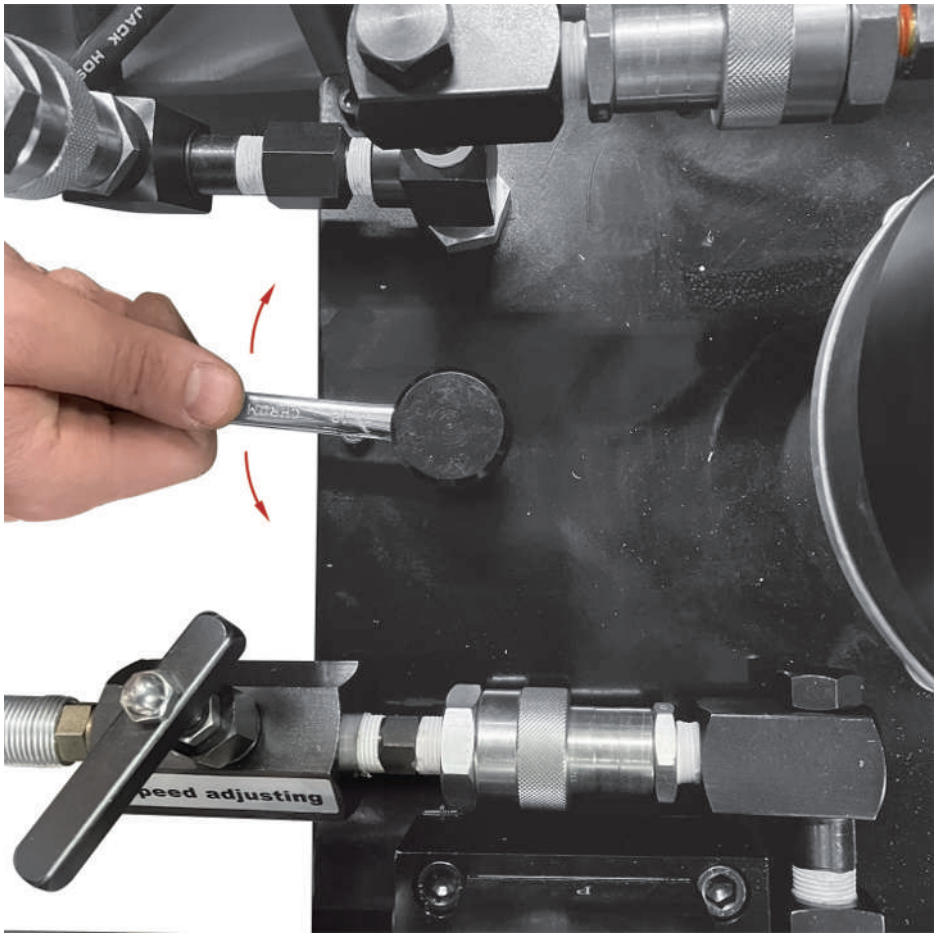
1. Set the operating mode valve to [PRESS].
2. Set the master cylinder valve to [RETURN].
3. Press the button on the remote control.

› Pressing and holding the remote control button extends the master cylinder.

4. To hold the current position, set the operating mode valve to [ADJUSTING].

8.2.9 Reducing the removal pressure

13 Reducing the removal pressure



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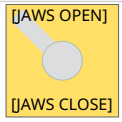
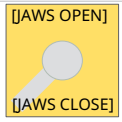
1. Loosen the lock nut on the pump accumulator
2. Turn the rotary knob clockwise
› The pressure is reduced
3. Tighten the lock nut again

8.3 Brief overview of operation

8 Brief overview of operation

Activity	Work steps				
	1	2	3	4	5
➤28 | 8.2.2		–	–	–	–
➤28 | 8.2.2		–	–	–	–
➤28 | 8.2.3					–
➤28 | 8.2.3				–	–
➤28 | 8.2.4		–	–	–	–
➤28 | 8.2.4		–	–	–	–
➤29 | 8.2.5					–
➤29 | 8.2.5					–
➤31 | 8.2.8					–
➤31 | 8.2.8					–

8

8.4 Dismounting the component

8.4.1 Positioning the claws around the component

✓ Puller is appropriate for the component's dimensions.

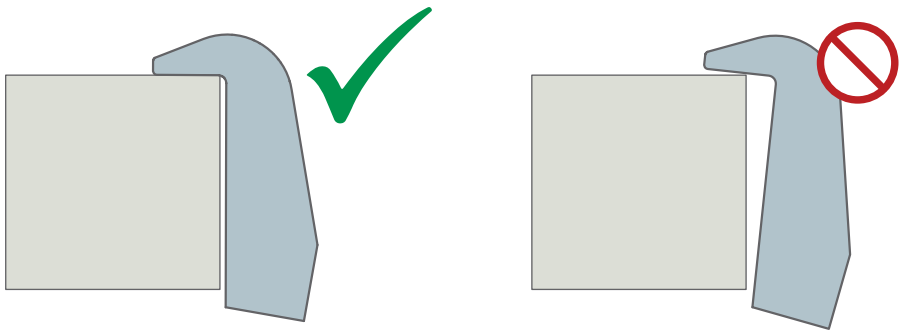
✓ The device is operational.

✓ All protective measures have been carried out.

1. Open the arms ➤29|8.2.5.
2. Adjust the puller to the target height ➤28|8.2.3.
3. Align the centre line of the master cylinder with the centre line of the shaft. Adjust the inclination of the puller if necessary.
4. Move the puller into position, placing the arms behind the component until they fully enclose it.
5. Close the arms ➤29|8.2.5.
6. Ensure that the claws are correctly positioned on the component.
7. If necessary, adjust the spread of the individual arms.
8. Align the claws on the rear side of the component ➤30|8.2.7.

› The component is lightly clamped.

14 Correct placement of the claws on the component



8.4.2 Preparing for the removal process

✓ Claws correctly positioned on the component.

1. Insert the centring piece.
2. Extend the master cylinder until the centring piece comes into contact with the shaft.
3. If a gap remains between the centring piece and shaft, insert an adapter piece ➤35|8.4.2.1.
4. Check that the centre line of the master cylinder aligns with the centre line of the shaft and adjust if necessary.
5. Apply the safety blanket to the component.

8.4.2.1 Using an adapter piece during operation

1. Retract the master cylinder sufficiently for an adapter piece to be inserted.
2. Remove the centring piece.
3. Insert one or more adapter pieces.
4. Insert the centring piece.
5. Extend the master cylinder until the centring piece comes into contact with the shaft.
6. Check that the centre line of the master cylinder aligns with the centre line of the shaft and adjust if necessary.
7. Apply the safety blanket to the component.
8. Assume a lateral position behind the puller to allow monitoring of the manometer, maintaining a distance of 1 m from the device.
9. Proceed with the dismounting process.

8.4.3 Carrying out the removal process

DANGER

Danger from exceeding the maximum permissible pressure

Danger of death from hydraulic oil spatter

Danger of death from flying parts caused by damage to the hydraulic hose

- Do not exceed a pressure of 700 bar.

WARNING

Flying components

Danger of death from flying components

- Use the safety blanket.

✓ Claws correctly positioned on the component.

✓ Preparations for the dismounting process are complete.

1. Assume a lateral position behind the puller to allow monitoring of the manometer, maintaining a distance of 1 m from the device.
2. Release the brakes on the rollers, as the puller may shift during disassembly.
3. If necessary, use a chain or strap to limit the movement of the puller if the components to be removed could suddenly come loose.
4. Insert an additional adapter piece if the master cylinder's travel distance is insufficient ➤35|8.4.2.1.
5. Continue to extend the master cylinder until the component has been removed.

› The component has now been removed.

6. Removing the safety blanket
7. Move the puller away.
8. Open the arms ➤29|8.2.5.
9. Remove the component from the arms.

If the removal process is unsuccessful, despite using a pressure of 700 bar, the removal force is insufficient. Observe the remedial measures provided ➤36|9.

9 Troubleshooting

Maintenance work and repairs may only be carried out by qualified personnel.

9 Malfunctions

Malfunction	Possible cause	Remedy
Dismounting process has been unsuccessful	The pressure is 700 bar, but the component could not be removed. The extraction force is insufficient.	1. Check supporting methods. 2. Use an alternative puller with a higher extraction force.
Motor fails to turn when remote control is pressed	No voltage present	1. Check that the power supply corresponds to the technical data provided. 2. Check for voltage at the socket.
	Automatic circuit breaker has tripped	1. Disconnect the device from the power supply. 2. Remove the control cabinet cover. 3. Check whether the automatic circuit breaker has tripped. 4. Reactivate the automatic circuit breaker. 5. Refit the control cabinet cover. 6. Restart the device.
	Remote control cable fault	1. Disconnect the device from the power supply. 2. Check the functionality of the remote control cable using a multimeter. 3. Replace the remote control cable if necessary.
	Faulty relay	1. Replace the faulty relay.
	Faulty circuit board	1. Replace the entire electrical unit.
Motor turns without any appreciable movement of the master cylinder	Oil level too low	1. Retract the master cylinder and lifting cylinder. 2. Check whether the oil level is ±2 cm below the upper edge of the pump accumulator. 3. Replenish the hydraulic oil if required.
	Leaking hydraulic hose	✓ Never touch pressurised hoses. 1. Move the puller to its lowest position. 2. Retract the master cylinder to its fullest extent. › Hoses are depressurised 3. Check hoses for damage. 4. Replace any damaged hoses.
	Quick-action couplings not properly closed	1. Check quick-action couplings. 2. Replace any damaged quick-action couplings.
	Motor runs in the wrong direction	1. Check that the motor's direction of rotation corresponds to the direction of the arrow on the top of the motor. 2. If the direction of rotation is incorrect: replace the phases in the plug.
Hydraulic oil is leaking from the front of the master cylinder	Pressure relief valve active, pressure above 720 bar	1. Check whether the return line is blocked. 2. Check whether the quick-action coupling on the return line has come loose.
	Master cylinder seal is leaking	1. Replace the master cylinder seal.
Puller lowers unintentionally	Action valve not closed	1. Set the action valve to [ADV].
	Lifting cylinder hose is leaking	1. Replace the lifting cylinder hose.
	Lifting cylinder seal is leaking	1. Replace the lifting cylinder seal.
Arms do not open or close, and the working height cannot be adjusted	Adjustment speed set too low	1. Increase the adjustment speed

10 Maintenance

Maintenance work and repairs may only be carried out by qualified personnel.

10.1 Maintenance plan

10 Maintenance plan

Activity	If required	Monthly	Every 4 a (years)	Every 5 a (years)
Cleaning the device	✓			
Relubricating the pivot points	✓			
Lubricating the arm running surfaces	✓			
Checking the oil level (2 cm below the cover). Replenishing the hydraulic oil if necessary.		✓		
Replacing the hydraulic hoses			✓	
Oil change (≈ 7,5 l)				✓

After extended storage, special inspections must be performed before commissioning, the scope of which depends on the storage period ➤22|7.1.

10.2 Cleaning the device

Do not use aggressive cleaning agents.

1. Decommission the device ➤39|11.
2. Clean the device with a dry cloth.

10.3 Replenishing the hydraulic oil

✓ Use hydraulic oil LPS 78, ISO 15.

✓ Wear gloves to avoid contact with the hydraulic oil.

✓ Wear eye protection

1. Decommission the device ➤39|11.
2. Fully retract the master cylinder.
3. Move the puller to the lowest working height ➤28|8.2.3.
4. Open the filling hole on the pump reservoir.
5. Using a funnel, fill the pump reservoir with hydraulic oil until a fill level of approx. 2 cm below the container lid is reached.

15 Filling the pump accumulator

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6. Close the filling hole using the plug.
7. Remove any drops of oil from the pump reservoir and puller.
8. Bleeding the oil circuit ➤38|10.4.
9. Carrying out a test run ➤23|7.4.

10.4 Bleeding the oil circuit

The oil circuit must be bled prior to initial use and after each oil change to remove any air bubbles from the system.

- ▸ Retract and extend the master cylinder several times.
- » The oil circuit has now been bled.

10.5 Checking the function of the pressure limitation valve

1. Extend the master cylinder to the end position ➤31|8.2.8.
2. Press the remote control until the pressure in the master cylinder begins to rise.
3. Continue to press the remote control until the pressure stabilises.

» The valve is functioning correctly when the maximum pressure of 700 bar is not exceeded.

In the event of a non-functioning pressure limitation valve, contact Schaeffler ➤47|14.4.

11 Decommissioning

1. Move the puller to the lowest working height ➤28|8.2.3.
2. Fully retract the master cylinder ➤31|8.2.8.

› The system is depressurised.

3. Switch off the device using the main switch.
4. Disconnect the power supply.
5. Store the mains connection cable and remote control safely.

» The device is out of operation

12 Disposal

Observe the locally applicable regulations for disposal.

1. Decommission the device ➤39|11.
2. Drain hydraulic oil from the system.
3. Cut the connection cable from the hydraulic unit.
4. Remove the mains plug from the mains connection cable.

12.1 Draining the hydraulic oil

16 Pump reservoir

1	Drain screw	2	Pump accumulator filling port

The hydraulic oil can be removed using suction or by draining.

Removing the hydraulic oil using suction

1. Open the filling hole on the pump reservoir.
2. Use a pump to extract the hydraulic oil using suction.

Draining the hydraulic oil using a drain screw

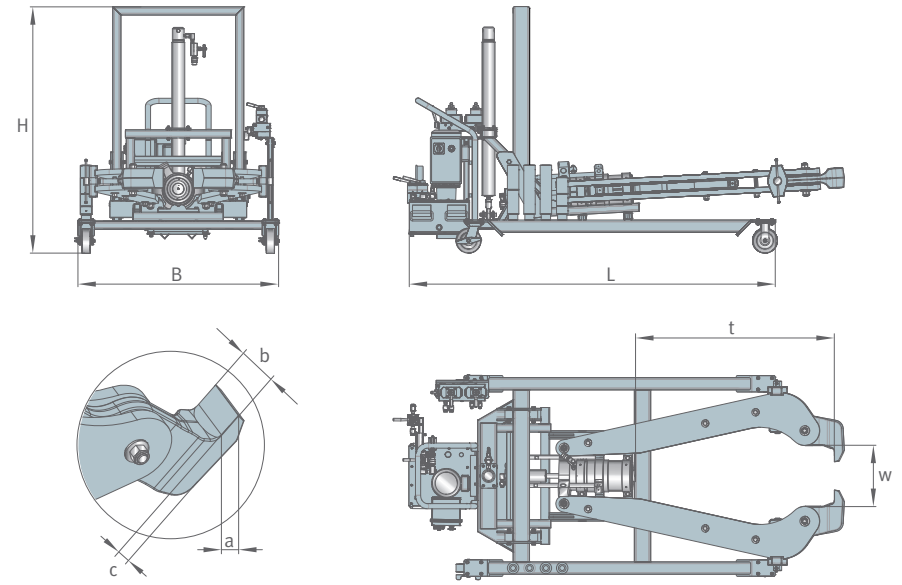
1. Place a container with a minimum capacity of 20 l under the drain port.
2. Open the drain screw at the drain port.
3. Allow the hydraulic oil to drain out completely.
4. Tilt the pump accumulator to ensure that all oil residues can drain out.
5. If necessary, use a pump to remove any remaining oil residues.
6. Screw the drain screw into place.

13 Technical data

11 Available versions

Version	Article number
HXPM-100T-2-ARM	301257973-0000-10
HXPM-100T-2/3-ARM	301257981-0000-10
HXPM-150T-3-ARM	301257990-0000-10

17 Dimensions



12 Technical data

Parameter		HXPM-100T-2-ARM	HXPM-100T-2/3-ARM	HXPM-150T-3-ARM
w_{min}	mm	300	300	300
w_{max}	mm	1500	1500	1650
t_{max}	mm	1220	1220	1220
F_P	kN	929	929	929
p_{max}	bar	700	700	700
$s_{cm\ max}$	mm	270	270	330
AH_{min}	mm	320	820	830
AH_{max}	mm	790	1320	1330
a	mm	65	65	65
b	mm	120	120	120
c	mm	58	58	58
U	V	400	400	400
f	Hz	50...60	50...60	50...60
L	mm	2450	2790	2990
B	mm	1350	1030	1030
H	mm	1200	1410	1390
m	kg	870	1120	1200

w	mm	Grip width
t	mm	Grip depth
F_P	kN	Extraction force
s_{cm}	mm	Working stroke
AH	mm	Working height
U	V	Voltage

f	Hz	Frequency
L	mm	Length
B	mm	Width
H	mm	Height
m	kg	Mass
p	bar	Pressure

13.1 Ambient conditions

Only operate the device under the following ambient conditions.

13 Ambient conditions

Designation	Value
Ambient temperature	0 °C to +50 °C
Humidity	5 % to 80 %, non-condensing
Operating location	• for industrial applications • flat, stable surface • in closed rooms only • no explosion risk in the environment

13.2 Declaration of Conformity

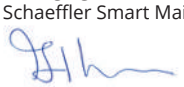
CE Declaration of Conformity

Manufacturer's name:	Schaeffler Smart Maintenance Tools BV
Manufacturer's address:	Schorsweg 15, 8171 ME Vaassen, NL www.schaeffler-smart-maintenance-tools.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Brand:	BETEX
Product description:	Hydraulic pullers
Product name/type:	• HXPM 100T 2-arm • HXPM 100T 2/3-arm • HXPM 150T 2/3-arm • HXPM-100T-2-arm • HXPM-100T-2/3-arm • HXPM-150T-2/3-arm
Comply with the requirements of:	• Low Voltage Directive 2014/35/EU • Machine Directive 2006/42/EC • EMC Directive 2014/30/EU
Applicable harmonized standards:	• EN-ISO 12100:2010 • EN-ISO 4413:2010

H. van Essen
Managing Director
Schaeffler Smart Maintenance Tools BV



Place, Date:
Vaassen, 10-11-2025

CE

UKCA Declaration of Conformity

Manufacturer's name:	Schaeffler Smart Maintenance Tools BV
Manufacturer's address:	Schorsweg 15, 8171 ME Vaassen, NL www.schaeffler-smart-maintenance-tools.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Brand:	BETEX
Product description:	Hydraulic pullers
Product name/type:	• HXPM 100T 2-arm • HXPM 100T 2/3-arm • HXPM 150T 2/3-arm • HXPM-100T-2-arm • HXPM-100T-2/3-arm • HXPM-150T-2/3-arm
Comply with the requirements of:	• Electrical Equipment (Safety) Regulations S.I. 2016:1101 • Supply of Machinery (Safety) Regulations S.I. 2008:1597 • Electromagnetic Compatibility Regulations S.I. 2016:1091
Applicable harmonized standards:	• BS-EN-ISO 12100:2010 • BS-EN-ISO 4413:2010

13

H. van Essen
Managing Director
Schaeffler Smart Maintenance Tools BV

Place, Date:
Vaassen, 10-11-2025

UK CA

14 Replacement parts

14.1 Hydraulic oil

18 Hydraulic oil

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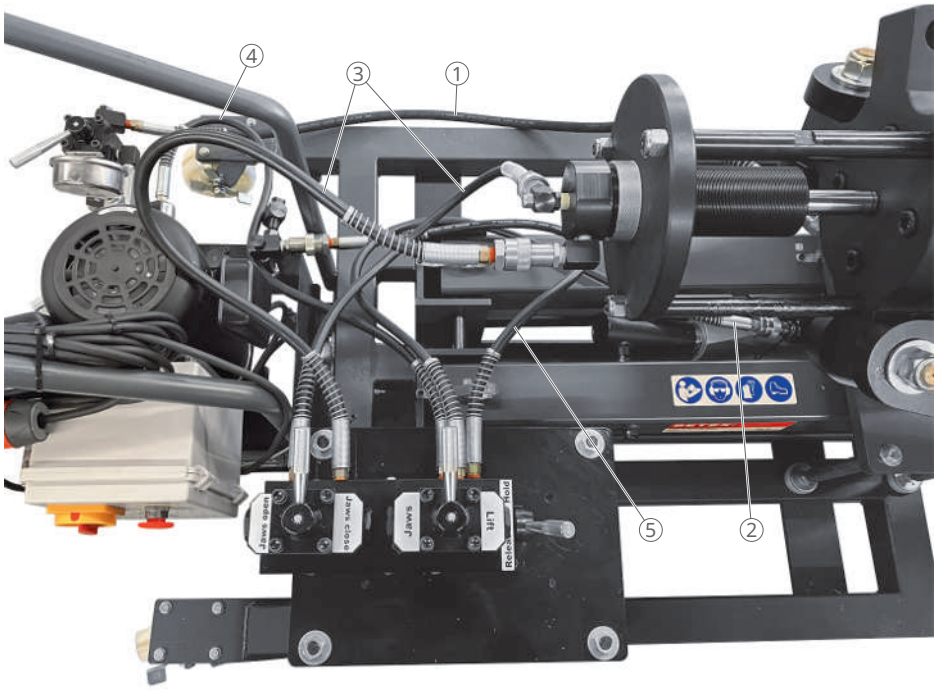
The pump accumulator has a maximum holding capacity of 20 l.

14 Hydraulic oil BETEX LPS 78 ISO 15

Quantity	Ordering designation
l	
1	PUMP.HYDOIL-LPS78-1L
2	PUMP.HYDOIL-LPS78-2L
4	PUMP.HYDOIL-LPS78-4L
5	PUMP.HYDOIL-LPS78-5L

14.2 Hoses

19 Hoses and hose components



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1	Master cylinder hose	2	Lifting cylinder hose
3	Arm hose	4	Valve block hose
5	Hydraulic unit hose		

15 Hoses for HXPM-100T-2-ARM

Description	Ordering designation
Master cylinder hose	PUMP.HPHOSE-HFHS336-1800MM
Lifting cylinder hose	PUMP.HPHOSE-HS335-1500MM
Arm hose (2×)	PUMP.HPHOSE-HS334-1200MM
Valve block hose (2×)	PUMP.HPHOSE-HS333-900MM
Hydraulic unit hose	PUMP.HPHOSE-HFHS332-600MM

16 Hoses for HXPM-100T-2/3-ARM

Description	Ordering designation
Master cylinder hose	PUMP.HPHOSE-HFHS335-1500MM
Lifting cylinder hose	PUMP.HPHOSE-HS333-900MM
Arm hose (2×)	PUMP.HPHOSE-HS334-1200MM
Valve block hose (2×)	PUMP.HPHOSE-HS334-1200MM
Hydraulic unit hose	PUMP.HPHOSE-HFHS332-600MM

17 Hoses for HXPM-150T-3-ARM

Description	Ordering designation
Master cylinder hose, inlet	PUMP.HPHOSE-HFHS335-1500MM
Master cylinder hose, return	PUMP.HPHOSE-HFHS336-1800MM
Lifting cylinder hose	PUMP.HPHOSE-HS333-900MM
Arm hose (2×)	PUMP.HPHOSE-HS334-1200MM
Valve block hose (2×)	PUMP.HPHOSE-HS334-1200MM
Hydraulic unit hose	PUMP.HPHOSE-HFHS332-600MM

14.3 Other replacement parts

20 Other replacement parts

1	Manometer	2	Adapter piece, various lengths
3	Centring piece		

18 Other replacement parts

Description	Ordering designation
Manometer	PUMP.MANO-M0031B-700BAR
Adapter piece Ø70 mm, length 50 mm	HP.ADAPTER-D70/L50
Adapter piece Ø70 mm, length 75 mm	HP.ADAPTER-D70/L75
Adapter piece Ø70 mm, length 100 mm	HP.ADAPTER-D70/L100
Adapter piece Ø70 mm, length 150 mm	HP.ADAPTER-D70/L150
Adapter piece Ø70 mm, length 200 mm	HP.ADAPTER-D70/L200
Adapter piece Ø70 mm, length 300 mm	HP.ADAPTER-D70/L300
Centring piece	HP.SHAFT-PROTECTOR-D70

Other replacement parts available by agreement:
or-hzr-tool-repair@schaeffler.com

14.4 Service

Schaeffler service portal:
https://www.schaeffler.de/std/21F3

Service Smart Maintenance Tools:
service.smt@schaeffler.com

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