EuroLift

Floor Jacks

Table of contents

1 General notice

nogra lifts represent the result of an experience lasting for years. The high demand for quality as well as the superior concept guarantee reliability, high durability and economic operation. To avoid needless damage or danger, you should read carefully and observe these operating instructions.

These operating instructions are valid for underfloor lifts running on rail carriage (Abb. 1) and for freely moveable lifts (Abb. 2).

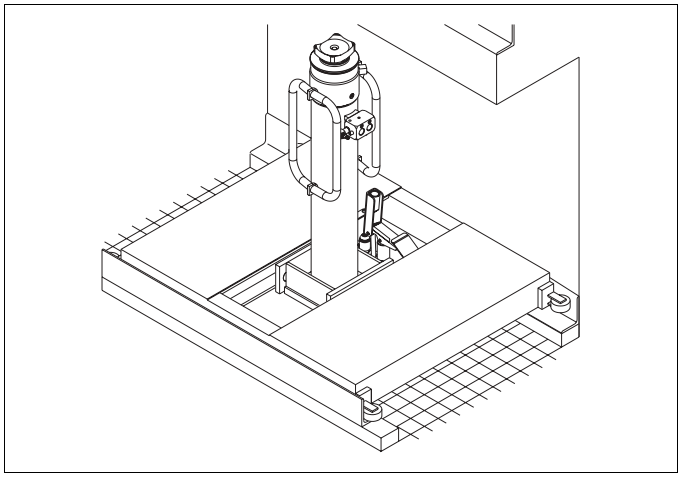


Abb. 1:

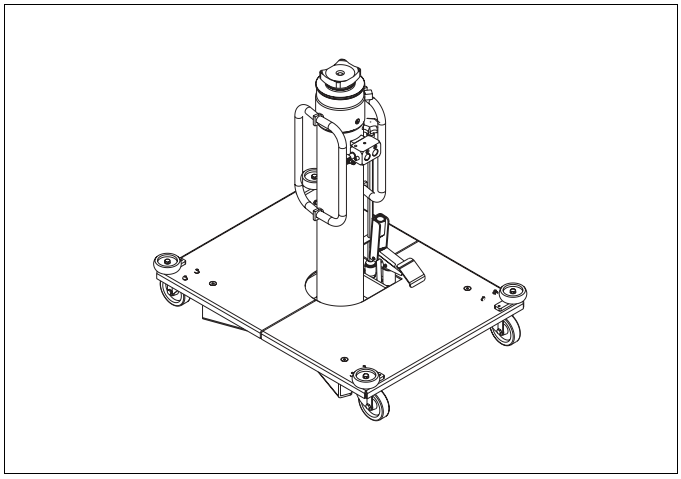


Abb. 2:

2 Application range nogra pit lifts

nogra Pit Lifts are only to be used for partial lifting of vehicles with follow up support and/or lifting or lowering of vehicle parts (as e.g. engines, gear-boxes etc.). The total load must not exceed the allowable capacity of the pit lift.

Any other use above the described function is not allowed. This goes in particular for mounting the pit lift and ascending with it.

The nogra GmbH will not take any responsibility for damages resulting from misuse. The risk is entirely on the part of the user. The appropriate operation also covers observation of all items of these instructions for use and the carrying out of Inspection- and Serviceworks and the specified tests.

3 Warranty and Liability

Generally our "General Conditions of Sales and supplies" are valid. These are available to the user as of the time of contracting. Warranty- and Liability- claims for personal and property damage are excluded if based on one or more of the following reasons:

- use of the lift contrary to its destined application.
- inexpert mounting, set to operate, running and maintaining the pit lift.
- Operation with condensate- and/or dirt-holding compressed air.
- Operating of the pit lift with defect safety devices or inexpertly mounted or not functionable safety and protection devices.
- Neglecting the remarks in the instructions for use concerning transport, storage, mounting, starting, operating and maintening of the pit lift.
- Unauthorised changing of the pit lift.
- Insufficient control of parts, which are liable to wear.
- Inexpertly carried out repairs.
- Cases of catastrophy by foreign matters and Act of God.

Service-requests and cost for returning, caused by non-observation of the listed points, cannot be accepted by us. Therefore in case of return please approach the manufacturer.

4 Safety/Accident Prevention

The pit lift must only be operated by trained personal. Unauthorised people are not allowed to operate the pit lift!

4.1 Remarks concerning observation of instructions for use

- Prior condition for safety-conform and faultless operation of the pit lift is the knowledge of the general safety remarks and safety instructions.
- The instruction for use have to be observed by all persons working with the pit lift. Especially the chapter „Safety/Accident Prevention" has to be observed.
- In addition to the safety remarks of the instructions for use the regulations and instructions being valid at the place of operation have to be considered.

4.2 Obligations of the operator

The operator is obliged to allow only those persons complying to the following requirements to work at the unit

- being well acquainted with the basic regulations concerning labour safety and accident prevention and being trained to operate the unit
- having read and understood the chapter concerning safety and warning instructions and confirmed that by their signature.

4.3 Dangers when operating the pit lift

nogra Pit Lifts are designed and built according to technical standard and the approved regulations for technical security. Yet, danger for body and life of the operator may turn up when using the pit lift inexpertly. The unit must only be operated

- for its appropriate use
- in unobjectionable condition concerning technical security

Disturbances prejudicing the safety have to be removed immediately.

- The pit lift must only be operated when there is no danger for persons.
- The motion area of the pit lift must be held free.
- No persons should be allowed within the motion area of the pit lift.
- The allowable capacity of the pit lift must not be exceeded. Entering of the pit lift, ascending with it and mounting of the load is forbidden.
- The lift must only be loaded centrically, lift the vehicle, look for safe harbouring of it and only then can the vehicle be lifted to the desired height. Secure vehicle against rolling off.
- Lifting and lowering movements must be carried out evenly. While in motion observe the load.
- Lifted load must be secured by supporting bridges or tripods. (see load carrying devices, page 8).

4.4 Organizing requirements

- The instructions for use are constantly to be kept at the place of operation being at hand at any time.
- In addition to the instructions for use rules pertaining to other regulations i. e. accident prevention and environmental rules are to be observed and directed.
- Safety- and dangeralert operation of personal is occasionally and by observing the instructions for use to be controlled.
- As far as required and ordered by regulations personal protective equipment is to be used.
- All safety- and danger-hints at the pit lift are to be observed.
- Keep all safety- and danger-hints at the pit lifts in readable condition.
- Changes, additional mountings or constructional variations impairing the safety must not be carried out without the approval of the manufacturers. This goes particularly as far as welding works at carrying parts are concerned.
- Spare parts must comply with technical requirements laid down by the manufacturer. This is only warranted with original parts.
- Consider time intervals given or fixed in instructions for use for repeated tests/inspections.
- **In case of malfunction stop and secure the pit lift immediately.** Care for remedy of faults immediately.

4.5 Maintenanceworks, remedy of faults and disposal

- Fixed Adjusting-, maintenance- and inspectionworks and time intervals including details for exchange of parts/ part components as mentioned in the instructions for use are to be adhered to. **These works must only be carried out by expert personal.**
- After maintenance- and repair works loose screw connections must always be firmly tightened.
- Care for safe and friendly to environment disposal of operating and auxiliary process materials as well as exchanged parts.

5 Special Dangers

5.1 Hydraulic, Pneumatic

Works at hydraulic devices must only be made by personal with special knowledge and experience in hydraulic!

All tubes, hoses and connections must in regular intervals be checked for leaks and visible damages. Damages must be repaired immediately. Splashing oil may lead to injures and fire!

Pressure lines to be opened (hydraulic, pneumatic) must be set pressureless prior to starting repair works.

Hydraulic- and pneumatic lines are to be laid out and mounted in an expert way. Do not interchange connections. Armatures, lengths and quality of tubings must comply with the requirements.

Oil, grease and other chemical substances: While handling oils, greases and other chemical substances the existing safety rules as they are valid for the single products are to be observed.

5.2 Complying Safety Standards

DIN EN 292 / DIN EN 294 / prEN 349 / EN 414 /
EN 418 / prEN 811 / EN 50099 / EN 60204
ISO 1219 / ISO/DIS 11530

5.3 Warning label identification

The following identifications or symbols for important works are used:

Danger
Imperative! Absolute care must be exercised. Carelessness can cause injuries. Non-compliance can cause damage to the equipment.

Attention
Please comply with these directions to prevent damage to property.

Important
Important information and recommendations.

6 Transport

During transport it is to be observed that in the horizontal position of the Lift the control instruments are to show upwards, as otherwise oil may be lost. (see also red label at pit lift)

7 Mounting

- ➔ Lifts running on rail carriage are adapted exactly to the width of your pit. Use the lift only in the pit made for.
- ➔ Equip pit bottom on both sides with angle profile all over its length. (e.g. 100x100x8 DIN 1028, UST 37-2)
- ➔ For reasons of safe working conditions separate lifting unit from rail carriage when installing the lift into the pit. Open hexagonal socket screws (1) and remove covering plates (2). Remove lifting unit through the gaps (3).

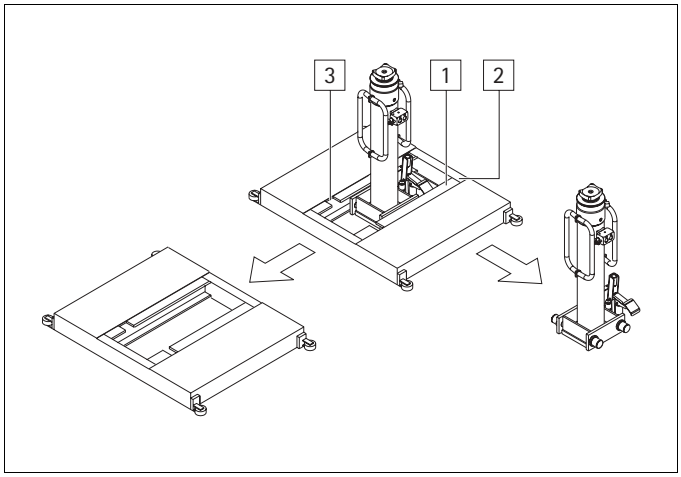


Abb. 3:

- ➔ Lower rail carriage and lifting unit into the pit with a suitable crane and mount lifting unit in rail carriage.

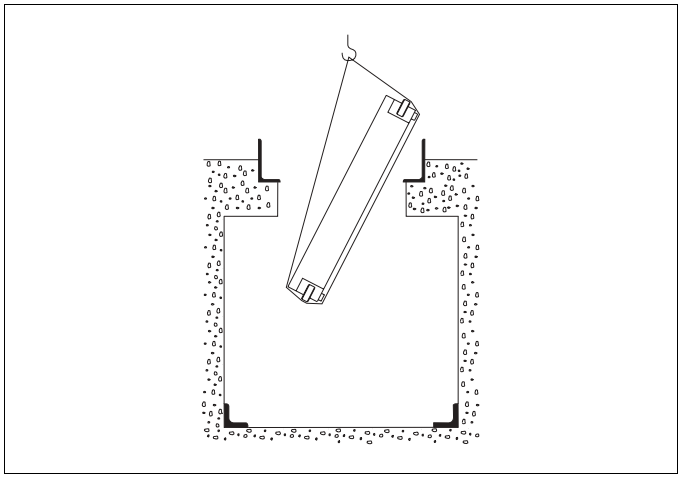


Abb. 4:

➔ Adjust the rollers (4) to the width of your pit. Take care for safe running of the lift all over the length of the pit.

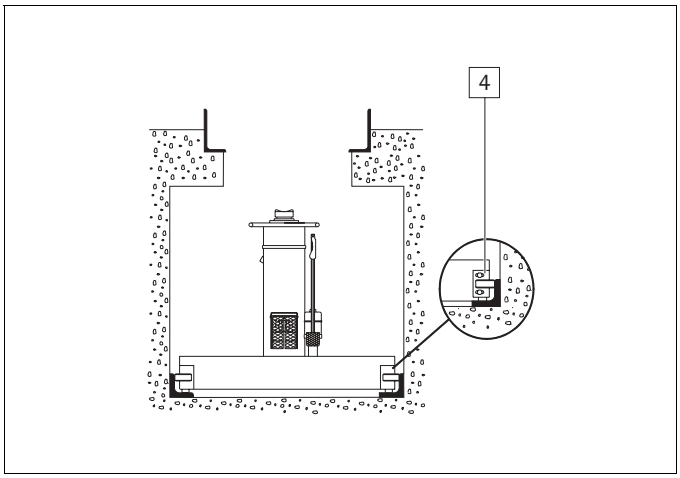


Abb. 5:

8 Initial Operation

Danger
The pit lift must be examined by an expert prior to first operation for proper installation in the pit, completeness and function. The result is to be entered into an examination book. (These books are available from the manufacturer)

8.1 Prior to starting operation

Compressed air supply must only be done via a service unit with water separator, oiler and pressure reducer installed directly in the pit. The unit has to be set to 13 bar. For the oiler must be used only non resinous hydraulic oil like HLP22.

➔ Check oil level (see section service, page 10)
➔ De-air hydraulic (see section service, page 10)

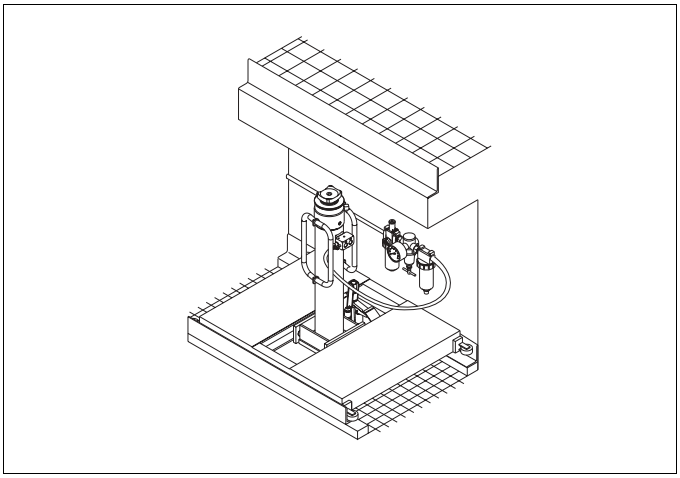


Abb. 6:

9 Handling and Operation

Danger
When operating the pit lift you will have to observe all instructions from section „safety" and the instructions for the valid accident prevention regulations.

- The pit lift must only be operated by specially trained personal.
- Pit lifts should only be put into movement when no persons are endangered.
- The movement range of the pit lift must be kept free and no persons should stay in the moving region.
- The maximal allowable capacity of the pit lift must not be exceeded.
- Standing on the pit lift, being lifted by it and mounting of load is not allowed.
- The lift must only be loaded centrically, lift the vehicle, look for safe harbouring of it and only then can the vehicle be lifted to the desired height.
- Lifting and lowering movements must be carried out evenly. While in motion observe the load.
- Lifted load must be secured by supporting bridges or tripods. (vide load carrying devices, page 8)

9.1 Load lifting

For load lifting the car wheel should be able to afterrun. (open break and put gear into neutral)

➔ If available press button "Quick lift" (2) until carrying plate has reached the load.
➔ Load carrying devices to be lead to even points meant for load lifting by car manufacturers.
➔ Start pumping with hydraulic food pump (3) until vehicle is slightly lifted.
➔ Check for safe load taking and continue pumping until the desired height is reached.
➔ Secure vehicle against rolling off (drag shoe) and use supporting bridges.

Models with pneumatic motor

➔ Button "Quick Lift" (2) to be pressed until carrying plate has reached the load carrying point.
➔ Load carrying device to be lead to even points meant for load lifting by car manufacturers.
➔ Button "Pneumatic Motor" (1) to be pressed until vehicle is slightly lifted.
➔ Button "Pneumatic Motor" (1) to be pressed until the load has reached the desired height.
➔ Secure vehicle against rolling off (drag shoe) and use supporting bridge.

Important
For exact adjustment of desired height and in case of insufficient air supply pumping can be done by the food hydraulic pump (3).

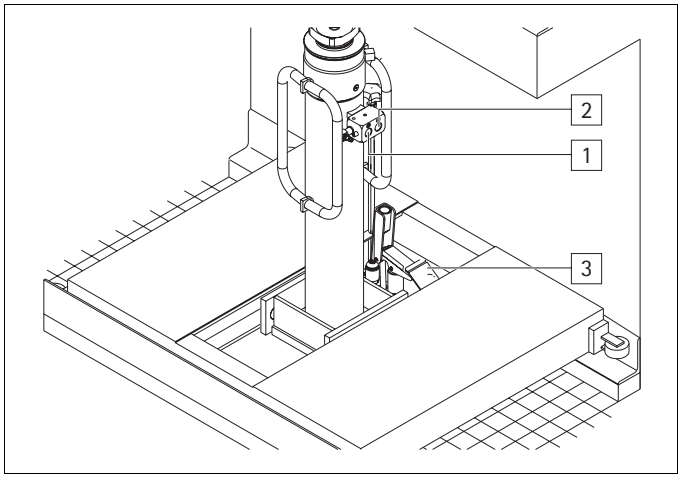


Abb. 7:

9.2 Lowering of load

Danger
Lowering motion to be carried out slowly and evenly. Observe the load during Motion.

➔ Remove roll-off-security measure (drag shoe)
➔ Lift vehicle slightly and remove supporting bridges.
➔ To lower the load turn the star grip (1) slowly anti-clockwise.

Important
The lowering speed will be regulated infinitely by the turning movement.

➔ To lower further without load turn star grip (1) to the left as far as it will go.

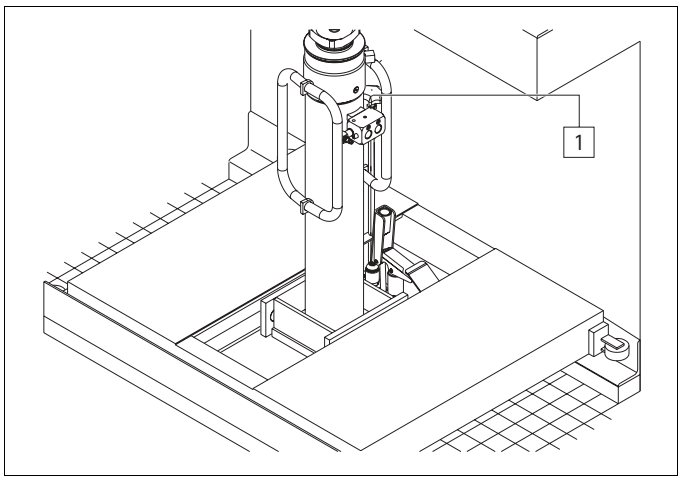


Abb. 8:

10 Load Carrying Devices

For safe lifting of vehicles and vehicle parts by means of the pit lift various load carrying devices are available, such as carrying plates, axle traverses, gear-box plates, special pick-up devices and extension pieces.

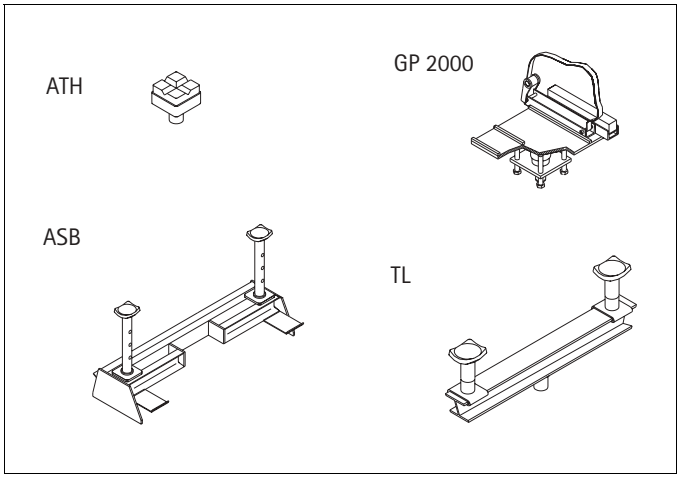


Abb. 9:

10.1 Supporting Bridges

Lifted vehicles have to be secured by means of supporting bridges or trestles. Supporting bridges are always manufactured according to pit measurements. Their safe support must be granted over the whole length of pit.

Important

- ➔ The allowable capacity of the load carrying device must not be exceeded.
- ➔ Irrespective of the load carrying device, always position the load-centre-point centrally over the pit lift.
- ➔ Use only load carrying devices with correct diameter of pin.
- ➔ Do not stack extension pieces.
- ➔ Vehicle parts must only be transported on the pit lift if it is completely lowered and if parts are secured with tapes or chains prior to being moved.
- ➔ Fix all load carrying devices directly on to the lifting ram. Do not use any extension pieces between the lift and the load carrying devices (traverses, gearbox plate etc.).

For further information concerning the complete program for load carrying and load supporting devices please approach the manufacturers.

nogra GmbH
Hüfinger Straße 57
D-78195 Bräunlingen
Telefon +49(0)771 89798-73
Telefax +49(0)771 89798-74

11 Faults/Reasons/Remedies

Piston rod does not move up completely

Reason	Remedy
Insufficient oil in tank.	➔ Refill oil up to recommended quantity. (see oil change in section "Maintenance and repair")

Piston rod does not move up or descends under load.

Reason	Remedy
Ball valves untight or lip ring damaged.	➔ Ask for service people!

Pit lift loses oil at the handhydraulic pump

Reason	Remedy
Seal untight or damaged.	➔ Complete hydraulic pump to be changed. (see section "Maintenance and repair")

Pit lift loses oil at the control.

Reason	Remedy
Condensate in hydraulic oil.	➔ Check oil level, if required drain condensate (see section "Maintenance and repair")
Piston gasket untight	➔ Ask for service people!

Losing oil at the piston.

Reason	Remedy
Piston damaged and consequently seal damaged.	➔ Ask for service people!

Push button blocks

Reason	Remedy
Contamination/damaged in the control.	➔ Exchange control (see section "Maintenance and repair")

Permanent exit of air at control.

Reason	Remedy
Contamination in control/seal damaged	➔ Exchange control (see section "Maintenance and repair")

12 Maintenance and repair

Danger

- Maintenance and repair works must only be carried out by specialists at unloaded, pressureless lift.
- After finishing maintenance and repairs loose screw connections are to be tightened properly.
- Care for safe and environment-friendly disposal of operating and auxiliary process materials (hydraulic oil) as well as exchanged parts.
- The lifting devices are to be kept in proper condition and prior to its use are to be checked for safety to the personal and the vehicles.
- Prior to all maintenance and repair works disconnect the pit lift from the air supply!
- After having finished work at the hydraulic system it must by all means be de-aired.
- After all Maintenance and repair works test the pit lift and enter the result into the examination book.

12.1 Maintenance works

General

- The ram and the pin of the load carrying device must be kept free from sand and dirt.
- While working with adhesive underseal agents or with lacquer the ram must be protected.
- The pit lift should not be cleaned with high pressure or steam cleaners.
- For cleaning the pit lift no aggressive cleaning agents should be used.

12.2 Time-fixed works

Weekly

➔ Service-unit of compressed air-line to be checked and serviced.
➔ With daily use remove condensate weekly (see page 10).
With occasional use of the pit lift drain condensate monthly.
➔ The pin of load carrying devices as well as the hole of the pit lift should be cleaned and sprayed with a rust protecting oil.

Quarterly

➔ Check oil level (see page 10)

Yearly

➔ Oil-change (see page 11)

12.3 Description of Maintenance works

De-Airing of hydraulic system

➔ Food pump (1) to be operated 5 to 10 times with simultane operation of the lowering valve (2).

Oil level control

Prior to oil level control

➔ Disconnect the pit lift from the pressure line.

Important
2 oil levels will have to be controlled.

Oil level 1 (Container for load stroke)

➔ lifting ram to be descended completely.
➔ Remove oil bar (4) by unscrewing and check oil level.

Important
Is the oil level too low: refill oil
With oil level too high: let off condensate.

Oil level 2 (container for descending)

➔ lifting ram to be ascended completely.
➔ Oil bar (3) to be unscrewed and oil level to be checked.

Important
Is the oil level too low: refill oil
With oil level too high: let off condensate.

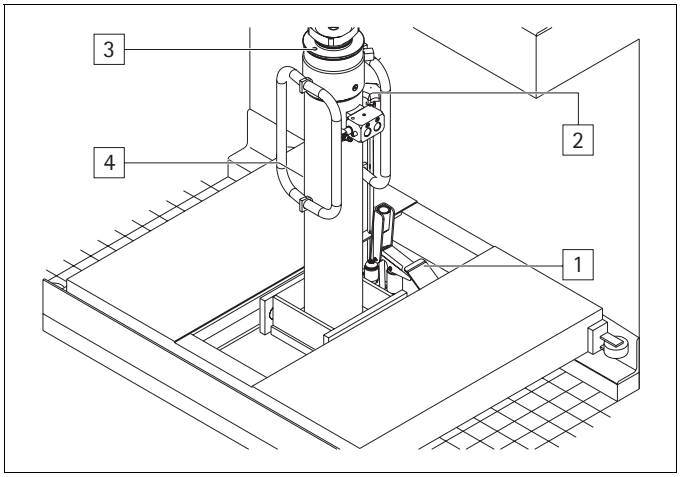


Abb. 10:

Condensate drain

Important
Condensate (water) may reach the hydraulic system with the air. The condensate rests at the bottom of the oil container. The oil level rises and possibly oil may extrude at the control.

For draining of condensate

➔ Oil drain screw (5) to be loosened until liquid (water/oil mixture) comes out. To do this lift by means of crane. In case of units with rail carriage the lifting unit has to be separated from the carriage.
➔ With drain of oil only: fasten the oil drain screw.
➔ In case of need refill oil

Oil change

Important
nogra Pit lifts are equipped with 2 hydraulic drives. The lower one actuates the load lifting. The upper one supports the return action and overflows with every lifting- and lowering motion the cylinder with oil. Thus an optimal rust protection over the complete cylinder surface is reached.

For oil change you will require:

- Oil tray
- Hydraulic oil, class HLP, viscosity ISO-VG 10, 22 or 32. (e,g,HLP 22). Quantity of oil see technical data.
- 4 seal rings (spare part catalogue items 28, 315, 337 and 379)

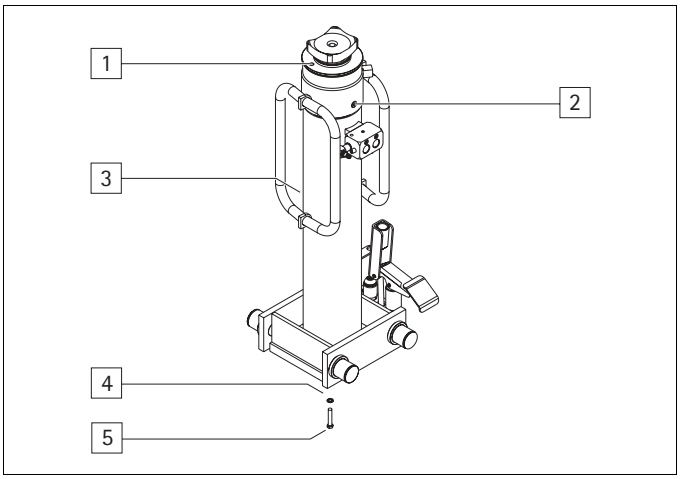


Abb. 11:

Before changing oil

➔ disconnect pit lift from air supply.
➔ In case of units with rail carriage the lifting unit has to be separated from the carriage.

Important
You will have to change oil contents from2 different oil containers!

Attention
Drain oil into a suitable container and care for proper disposal.

Oil container 1 (container for load stroke)
- descend ram completely.
- oil drain screw (5) to be taken out and oil to be drained.
- oil drain screw (5) with seal ring (Spare part item 28) to be inserted and fixed tightly.
- Oil bar (3) to be turned out.
- refill oil up to recommended level.
- Oil bar (3) with seal ring (Spare part item 337) to be turned in and fixed tightly.

Oil container 2 (descending)
- ascend ram completely
- turn out locking screw (2) and drain oil.
- Locking screw (2) with seal ring (Spare part item 315) to be remounted and tightly fixed.
- turn out oil bar (1)
- refill oil up to recommended level.
- Oil bar (1) with seal ring (Spare part item 379) to be turned in and fixed tightly.

12.4 Repair works

Exchange complete control
- Disconnect pit lift from air supply (1).
- hexagonal socket screws (5) to be unscrewed and turned out.
- control (7) to be removed by pulling towards operator.
- 0-ring (3) to be replaced.
- New control to be mounted and to be fixed by hexagonal socket screw (5).
- connect air supply (1).

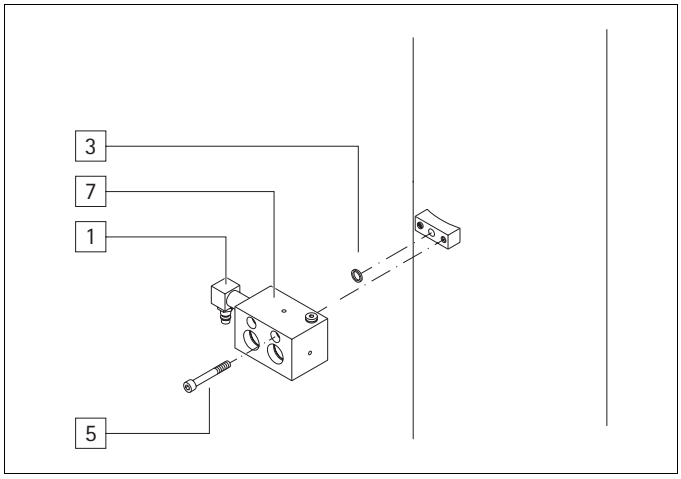


Abb. 12:

Complete hydraulic pump (pump block) to be exchanged
- Separate lift from air network and drain oil (see oil change).
- loosen compressed air connection (15).
- untighten screws (12) and turn them out.
- hydraulic pump (11) to be removed towards operator.
- replace 0-ring (13).
- remove sieve (14), clean and replace.
- mount new pump block and fix it with screws (12).
- reconnect air supply (15).
- refill oil (see oilchange).

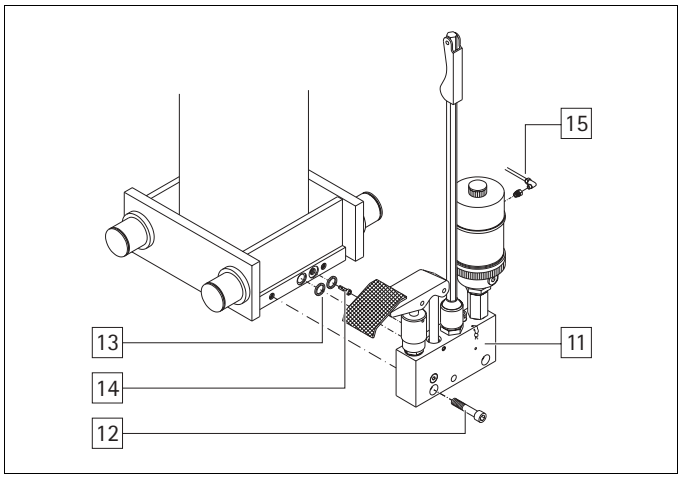
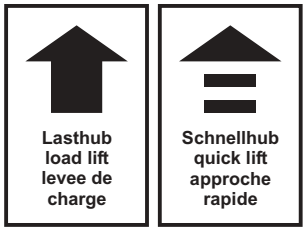


Abb. 13:

13 Technical data

13.1 Inscriptions at pit lift

Order No.	
3600012	
3303922	
3304922	
100841	
3306922	
3600920	
786657	
860930	

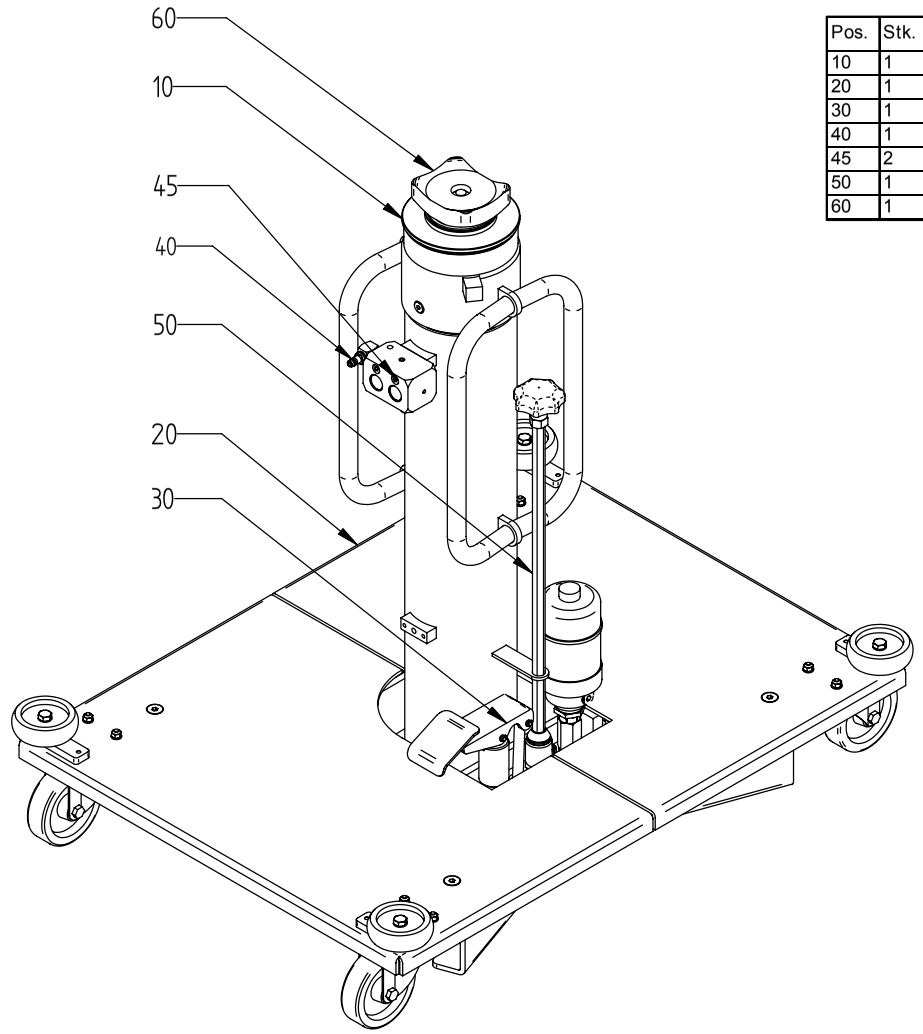
3720924	
708649	

13.2 Overview

Model						
PH, PH/S, LM, LM/S		6	10	15	20	
TLM, TLM/S						15/15

Capacity	t	6	10	15	20	15/15
Working pressure						
hydraulic	bar	120	199	220	163	220
pneumatic	bar	12	12	13	12	13
Oil capacity						
Tank 1	l	5,0	5,5	5,5	12	12
Tank 2	l	1,2	1,2	1,3	2,1	2,1
Lifting height	mm	760	760	760	760	1200
Noise level when descending with units having air connection L_{PA}	db(A))			83		
max. lowering speed at nominated load	m/s			0,15		

Check valves have been incorporated as security against undesired lifting or lowering motion. An overpressure valve cares against overloading. Adjusting values of overpressure valve see under working pressure.



Pos.	Stk.	Bezeichnung	PH 6	PH10	PH15	PH20	LM6	LM10	LM15	LM20	TLM15/15
10	1	Hubeinheit kpl.	101113	101113	101114	101115	101117	101117	101118	101119	101120
20	1	Fahrgestell kpl.	101058	101058	101058	101058	101058	101058	101058	101058	101058
30	1	Hydraulikpumpe kpl.	3179001	3179001	3179001	3179001	3178001	3178001	3178001	3178001	3178001
40	1	Steuerung kpl.	101056	101056	101056	101056	101056	101056	101056	101056	101056
45	2	Zylinderschraube	701012	701012	701012	701012	701012	701012	701012	701012	701012
50	1	Ablaßstange	101197	101197	101197	101197	101197	101197	101197	101197	101197
60	1	Tragteller	3325910	3325910	3325910	3326910	3325910	3325910	3325910	3326910	3325910

Allgemeintoleranzen für Schweißkonstruktionen DIN 8570

Genauigkeitsgrad	für Längenmaße L in mm: bis 30	über 30 bis 120	über 120 bis 315	über 315 bis 1000	über 1000 bis 2000	über 2000 bis 4000	Winkelmaße: bis 315	über 315 bis 1000	über 1000
A	±1	±1	±1	±2	±3	±4	±20'	±15'	±10'
B	±1	±2	±2	±3	±4	±6	±45'	±30'	±20'
C	±1	±3	±4	±6	±8	±11	±1°	±45'	±30'

Nennbereich L

α in ° und ' △ Schenkellänge

Diese Zeichnung darf nur zu den Zwecken benutzt werden, wozu sie dem Empfänger anvertraut ist, sie darf weder vervielfältigt, noch dritten Personen, insbesondere Konkurrenzfirmen ohne unsere Erlaubnis mitgeteilt oder zugänglich gemacht werden.

Zerspanende Fertigung Zulässige Abweichung für Maße ohne Toleranzangabe in mm DIN 2768

Genauigkeitsgrad	Nennbereiche in mm der Freimaße: über 0,5 bis 3	über 3 bis 6	über 6 bis 30	über 30 bis 120	über 120 bis 400	über 400 bis 1000	über 1000 bis 2000	über 2000 bis 4000
fein	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	—
mittel	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
grob	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
sehr grob	—	±0,5	±1	±1,5	±2,5	±4	±6	±8

Werkstoff / Halbzeug / DIN

Modell Nr. / Werkzeug Nr.

nogra GmbH
78199 Bräunlingen

Maßstab 1:8

Paßmaß | Abmaß

Oberflächenbehandlung

Die ⬭ Maße werden besonders geprüft

Ersatz für

Buchstabe	Änderung	Datum	Name

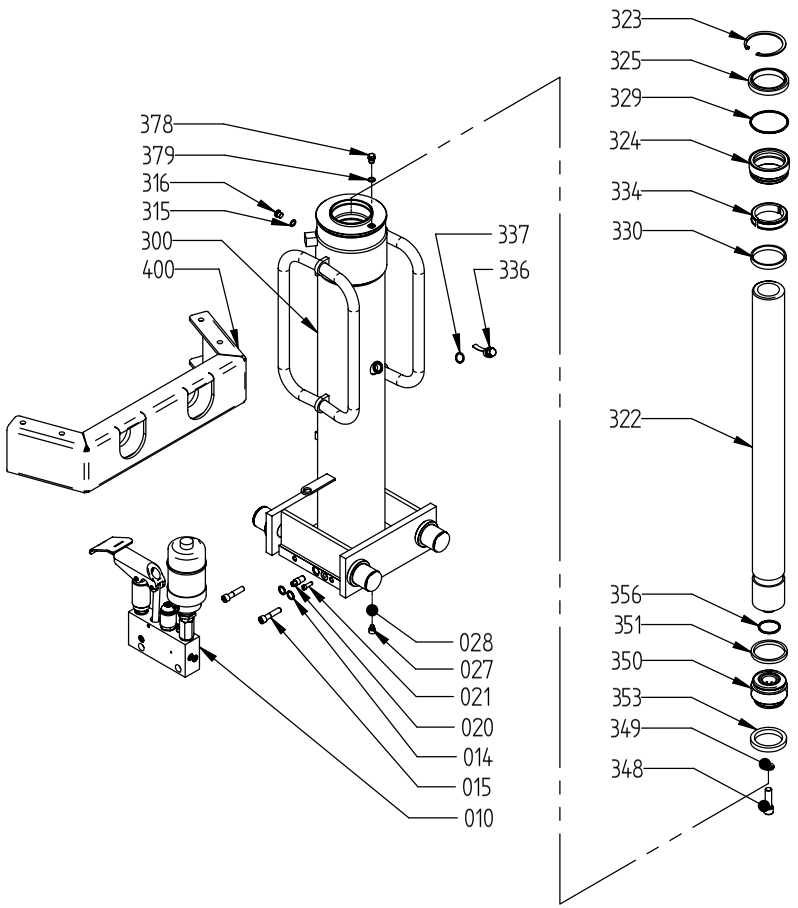
	Datum	Name
Gez.	17.01.03	b.stoerk
Gepr.		

Zeichn.Nr. 104382 0

Benennung

Ersatzteilliste nogra-Eurolift 0

nogra-Eurolift 6, 10 , 15, 20, 15/15



Pos.	Stk.	Bezeichnung	PH 6	PH10	PH15	PH20	LM6	LM10	LM15	LM20	Dichtsatz
10	1	Hydraulikpumpe kpl.	3179001	3179001	3179001	3179001	3178001	3178001	3178001	3178001	
14	2	O-Ring	707614	707614	707614	707614	707614	707614	707614	707614	X
15	2	Zylinderschraube	701012	701012	701012	701012	701012	701012	701012	701012	
20	1	Senkbremsventil	751702	751702	751702	751702	751702	751702	751702	751702	
21	1	Siebeinsatz	3142015	3142015	3142015	3142015	3142015	3142015	3142015	3142015	X
27	1	Zylinderschraube	7008340	7008340	7008340	7008340	7008340	7008340	7008340	7008340	
28	1	Dichtring	706801	706801	706801	706801	706801	706801	706801	706801	X
300	1	Hubeinheit geschw.	3726300	3726300	3727300	3728300	3726300	3726300	3727300	3728300	
315	1	Dichtring	706902	706902	706902	706902	706902	706902	706902	706902	X
316	1	Verschlußschraube	705525	705525	705525	705525	705525	705525	705525	705525	
322	1	Kolbenstange	3268322	3268322	3269322	3625322	3268322	3268322	3269322	3625322	
323	1	Sicherungsring	704131	704131	704132		704131	704131	704132		
324	1	Stopfbuchse	3602324	3602324	3107390	3107324	3602324	3602324	3107390	3107324	X
325	1	Abstreifring	36023251+	36023251+	707930	707931	36023251+	36023251	707930	707931	X
329	1	O-Ring	707635	707635	707680	707645	707635	707635	707680	707645	X
330	1	Stangendichtung	708006	708006	708014	707883	708006	708006	708014	707883	X
334	1	Distanzbuchse	3263334	3263334	3264334	3604334	3263334	3263334	3264334	3604334	
336	1	Öleinfüllstopfen	3260336	3260336	3260336	3260336	3260336	3260336	3260336	3260336	
337	1	Dichtring	706812	706812	706812	706812	706812	706812	706812	706812	X
348	1	Zylinderschraube	701012	701012	700885	700885	701012	701012	700885	700885	
349	1	Federring	703515	703515	7035070	7035070	703515	703515	7035070	7035070	
350	1	Kolben	3263350	3263350	3264350	3265350	3263350	3263350	3264350	3265350	
351	1	Kolbendichtung	----------	----------	707842	707886	----------	----------	707842	707886	X
353	1	Kolbendichtung	708012	708012	707884	707851	708012	708012	707884	707851	X
356	1	O-Ring	707667	707667	707667	707667	707667	707667	707667	707667	X
378	1	Ölmeßstab	3601378	3601378	3601378	3601378	3601378	3601378	3601378	3601378	
379	1	Dichtring	706902	706902	706902	706902	706902	706902	706902	706902	X
400	2	Füß kompl.	3738400	3738400	3738400	3738400	3738400	3738400	3738400	3738400	

Allgemeintoleranzen für Schweißkonstruktionen DIN 8570

Genauigkeitsgrad	für Längenmaße L in mm: bis 30	über 30 bis 120	über 120 bis 315	über 315 bis 1000	über 1000 bis 2000	über 2000 bis 4000	Winkelmaße α in ° und ' Schenkellänge: bis 315	über 315 bis 1000	über 1000
A	±1	±1	±1	±2	±3	±4	±20'	±15'	±10'
B	±1	±2	±2	±3	±4	±6	±45'	±30'	±20'
C	±1	±3	±4	±6	±8	±11	±1°	±45'	±30'

Diese Zeichnung darf nur zu den Zwecken benutzt werden, wozu sie dem Empfänger anvertraut ist, sie darf weder vervielfältigt, noch dritten Personen, insbesondere Konkurrenzfirmen ohne unsere Erlaubnis mitgeteilt oder zugänglich gemacht werden.

Zerspanende Fertigung Zulässige Abweichung für Maße ohne Toleranzangabe in mm DIN 2768

Genauigkeitsgrad	Nennbereiche in mm der Freimaße: über 0,5 bis 3	über 3 bis 6	über 6 bis 30	über 30 bis 120	über 120 bis 400	über 400 bis 1000	über 1000 bis 2000	über 2000 bis 4000
fein	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	—
mittel	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
grob	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
sehr grob	—	±0,5	±1	±1,5	±2,5	±4	±6	±8

Werkstoff / Halbzeug / DIN

Modell Nr. / Werkzeug Nr.

nogra GmbH
78199 Bräunlingen

Maßstab 1:5

Paßmaß | Abmaß

Oberflächenbehandlung

Die ⬭ Maße werden besonders geprüft

Ersatz für

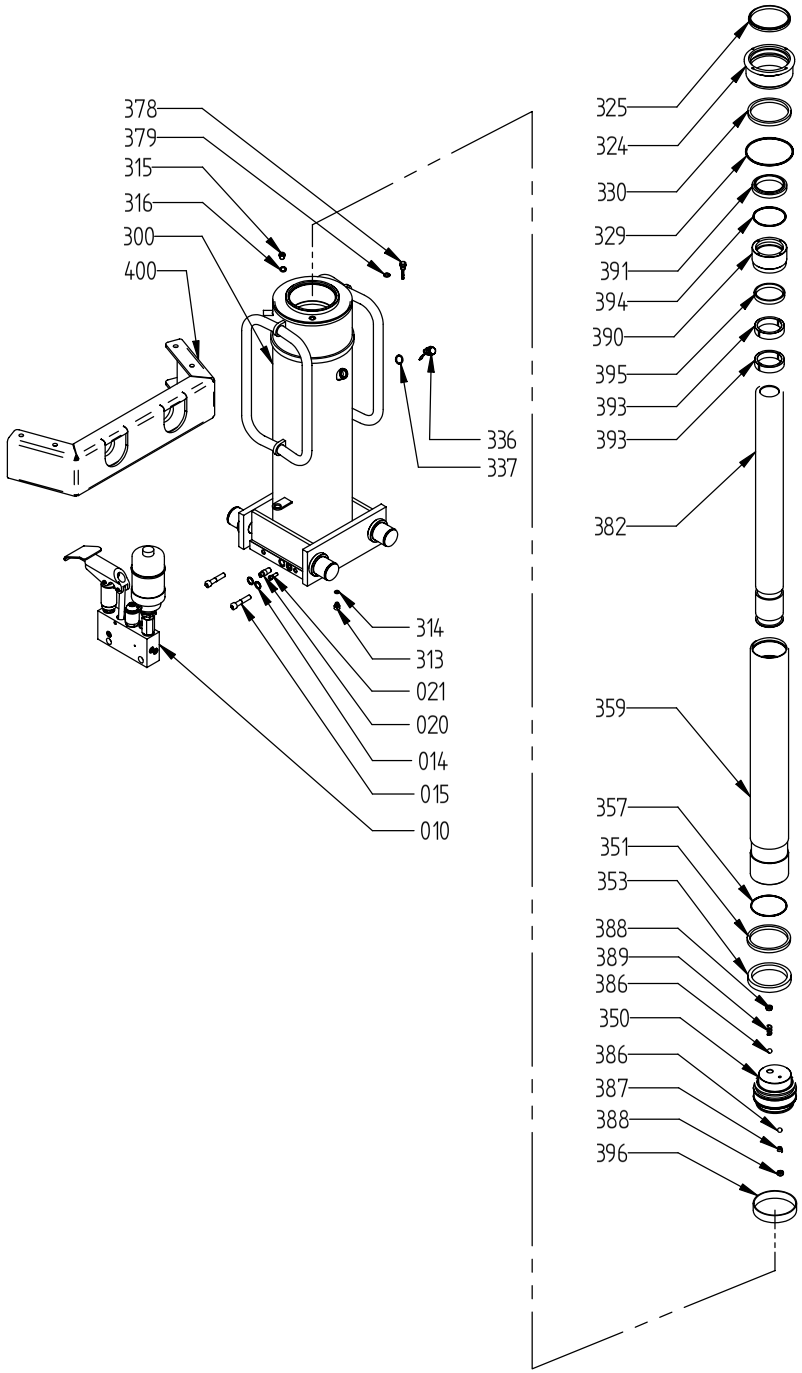
Buchstabe	Änderung	Datum	Name

	Datum	Name
Gez.	17.01.03	b.stoerk
Gepr.		

Zeichn.Nr. 104386 0

Benennung
Ersatzteilliste Hubeinheit vormont.

nogra-Eurolift PH u. LM



Pos.	Stk.	Bezeichnung	TLM 15/15	Dichtsatz
10	1	Hydraulikpumpe kpl.	3179001	
14	2	O-Ring	707614	X
15	2	Zylinderschraube	701012	
20	1	Senkbremsventil	751702	
21	1	Siebeinsatz	3142015	X
300	1	Hubeinheit geschw.	3726300	
313	1	Zylinderschraube	7008340	
314	1	Dichtring	706801	X
315	1	Dichtring	706902	X
316	1	Verschlußschraube	705525	
324	1	Führungsbuchse	3107324	
325	1	Abstreifring	707931	X
329	1	O-Ring	707645	X
330	1	Manschette	707883	X
336	1	Öleinfüllstopfen	3260336	
337	1	Dichtring		X
350	1	Kolben	3107350	
351	1	Kolbendichtubg	707886	X
353	1	PDF-Kolbendichtung	707851	X
357	1	O-Ring	707637	X
359	1	Stößelrohr kompl.	3720359	
378	1	Ölmeßstab kompl.	3601378	
379	1	Dichtring	706902	X
382	1	Teleskopkolbenstange	3107380	
386	2	Stahlkugel	707306	
387	1	Kegelfeder	2509014	
388	2	Stellring	3281388	
389	1	Druckfeder	3720389	
390	1	Buchse	3720390	
391	1	Abstreifring	707930	X
393	2	Distanzring	3720393	
394	1	O-Ring	707693	X
395	1	Stangendichtung	708014	X
396	1	DU-Sonderbuchse	794102	
400	2	Fuß kompl.	3738400	

Allgemeintoleranzen für Schweißkonstruktionen DIN 8570

Genauigkeitsgrad	für Längenmaße L in mm: bis 30	über 30 bis 120	über 120 bis 315	über 315 bis 1000	über 1000 bis 2000	über 2000 bis 4000	Winkelmaße α in ° und ' für Schenkellänge: bis 315	über 315 bis 1000	über 1000
A	±1	±1	±1	±2	±3	±4	±20'	±15'	±10'
B	±1	±2	±2	±3	±4	±6	±45'	±30'	±20'
C	±1	±3	±4	±6	±8	±11	±1°	±45'	±30'

Diese Zeichnung darf nur zu den Zwecken benutzt werden, wozu sie dem Empfänger anvertraut ist, sie darf weder vervielfältigt, noch dritten Personen, insbesondere Konkurrenzfirmen ohne unsere Erlaubnis mitgeteilt oder zugänglich gemacht werden.

Zerspanende Fertigung Zulässige Abweichung für Maße ohne Toleranzangabe in mm DIN 2768

Genauigkeitsgrad	Nennbereiche in mm der Freimaße: über 0,5 bis 3	über 3 bis 6	über 6 bis 30	über 30 bis 120	über 120 bis 400	über 400 bis 1000	über 1000 bis 2000	über 2000 bis 4000
fein	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	—
mittel	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
grob	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
sehr grob	—	±0,5	±1	±1,5	±2,5	±4	±6	±8

Werkstoff / Halbzeug / DIN

Modell Nr. / Werkzeug Nr.

nogra GmbH
78199 Bräunlingen

Maßstab 1:5

Paßmaß | Abmaß

Oberflächenbehandlung

Die ⬭ Maße werden besonders geprüft

Ersatz für

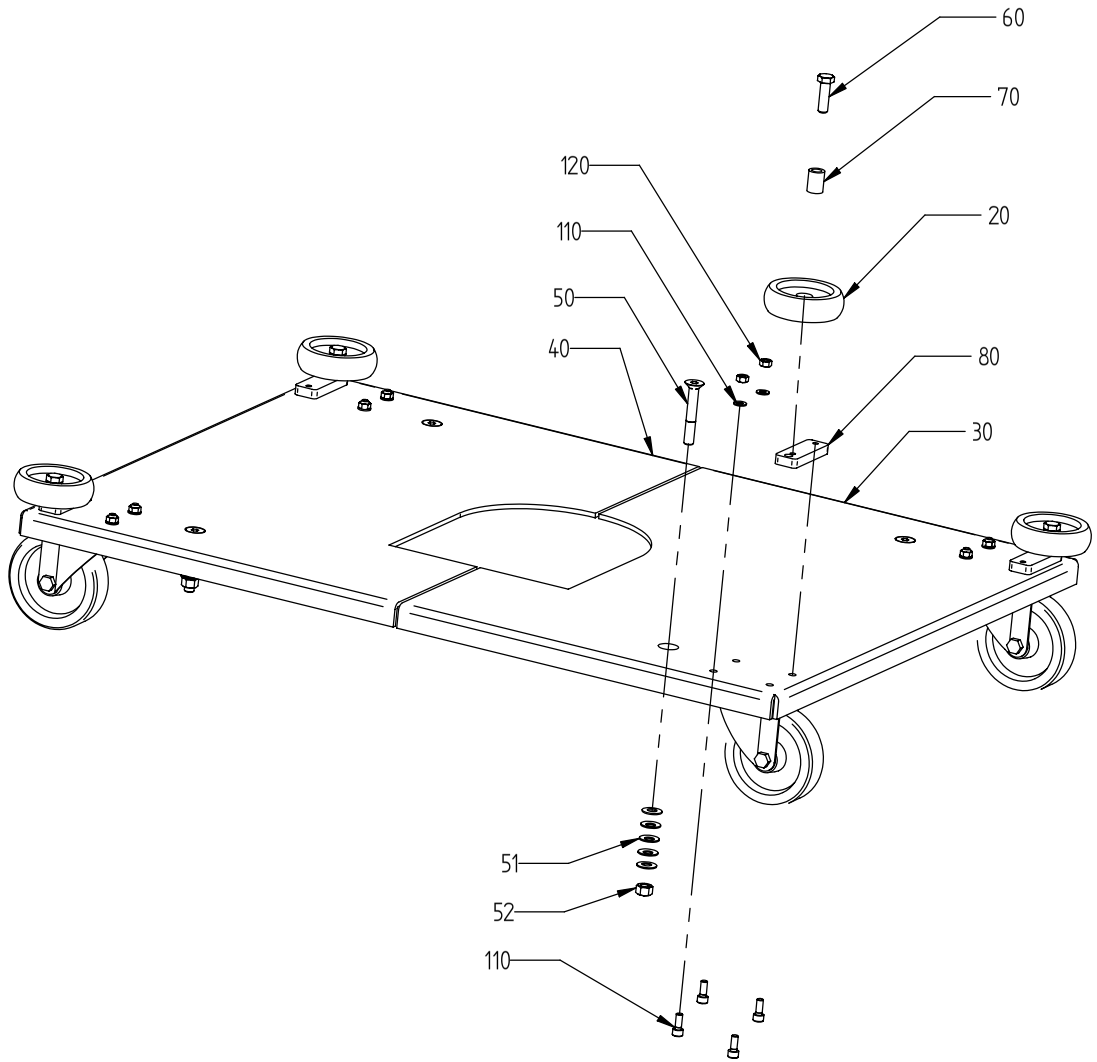
Buchstabe	Änderung	Datum	Name

	Datum	Name
Gez.	20.0103	b.stoerk
Gepr.		

Zeichn.Nr. 104407 0

Benennung
Ersatzteilliste Hubeinheit vormont.

nogra-Eurolift TLM 15/15



Pos.	Stk.	Bezeichnung	Teilenr.
10	4	Lenkrolle	751194
20	4	Abweiserrolle	3738430
30	1	Fußblech vorne	101133
40	1	Fußblech hinten	101134
50	4	Senkschraube	701717
51	96	Tellerfeder	704508
52	4	Sechskantmutter	703104
60	4	Sechskantschraube	700237
70	4	Buchse	3738431
80	4	Lasche	101059
100	16	Zylinderschraube	701017
110	8	Unterlegscheibe	703411
120	8	Sechskantmutter	703102

Allgemeintoleranzen für Schweißkonstruktionen DIN 8570

Genauigkeitsgrad	für Längenmaße L in mm: bis 30	über 30 bis 120	über 120 bis 315	über 315 bis 1000	über 1000 bis 2000	über 2000 bis 4000	Winkelmaße α in ° und '	über 315 bis 1000	über 1000
	Nennbereich L								
A	±1	±1	±1	±2	±3	±4	±20'	±15'	±10'
B	±1	±2	±2	±3	±4	±6	±45'	±30'	±20'
C	±1	±3	±4	±6	±8	±11	±1°	±45'	±30'

Diese Zeichnung darf nur zu den Zwecken benutzt werden, wozu sie dem Empfänger anvertraut ist, sie darf weder vervielfältigt, noch dritten Personen, insbesondere Konkurrenzfirmen ohne unsere Erlaubnis mitgeteilt oder zugänglich gemacht werden.

Zerspanende Fertigung Zulässige Abweichung für Maße ohne Toleranzangabe in mm DIN 2768

Genauigkeitsgrad	Nennbereiche (mm) der Freimaße: über 0,5 bis 3	über 3 bis 6	über 6 bis 30	über 30 bis 120	über 120 bis 400	über 400 bis 1000	über 1000 bis 2000	über 2000 bis 4000
fein	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	—
mittel	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
grob	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
sehr grob	—	±0,5	±1	±1,5	±2,5	±4	±6	±8

Werkstoff / Halbzeug / DIN

Modell Nr. / Werkzeug Nr.

nogra GmbH
78199 Bräunlingen

Maßstab 1:7

Paßmaß | Abmaß

Oberflächenbehandlung

Die ⬭ Maße werden besonders geprüft

Ersatz für

Buchstabe	Änderung	Datum	Name

	Datum	Name
Gez.	21.01.03	b.stoerk
Gepr.		

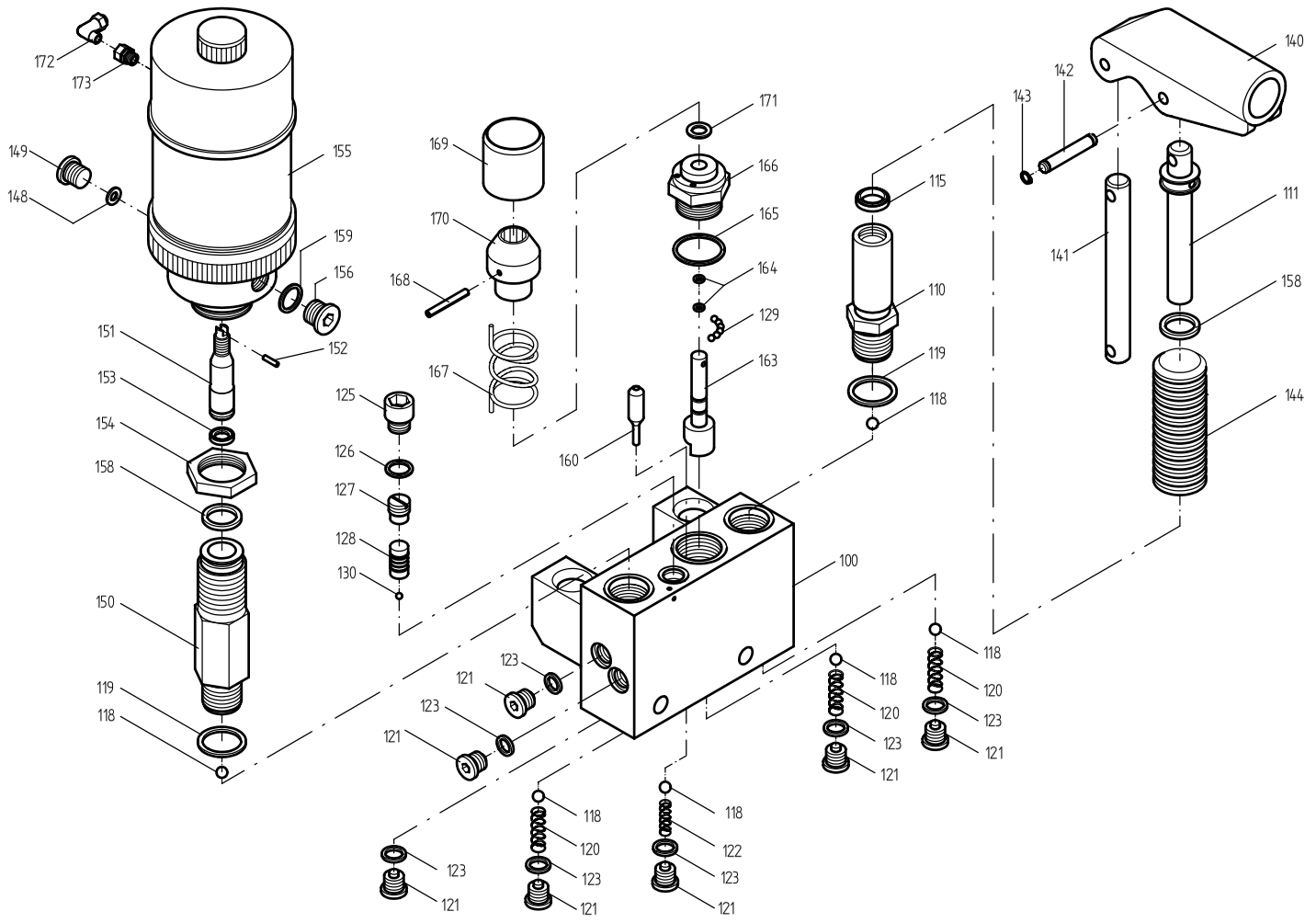
Zeichn.Nr. 104413 0

Benennung
Ersatzteilliste Fahrgestell

nogra-Eurolift PH, LM u. TLM

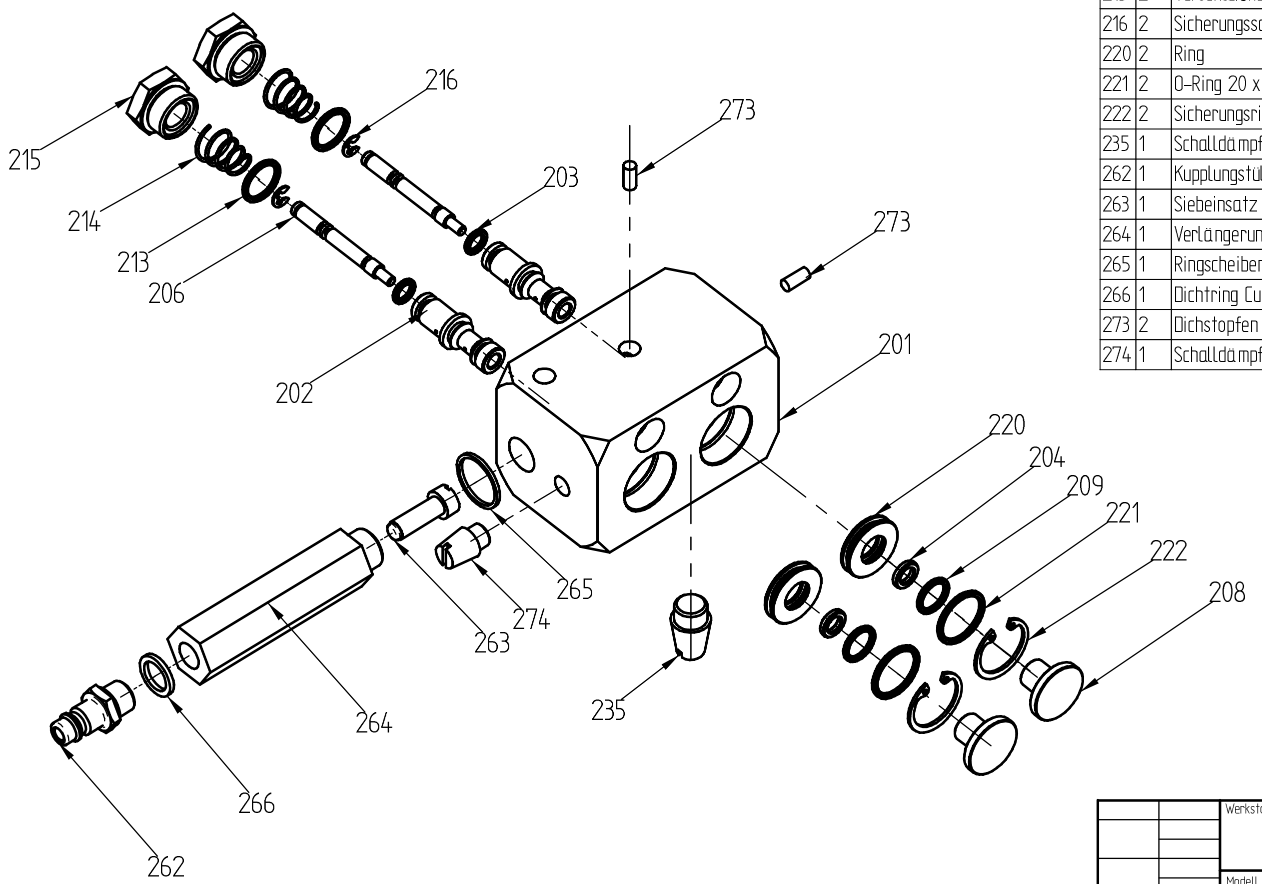
Pos.	Bezeichnung	M 16 Handpumpe	MP 16 Luftmotor	M 16/25 Doppelpumpe
1	Hydr. Pumpe kpl	3174000	3173000	3172000
100	Pumpenkörper kpl .	3173100	3173100	3173100
110	Pumpenzylinder Æ 16	31721106	31721106	31721106
110/1	Pumpenzylinder Æ 25	-	-	31721105
111	Pumpenstößel kpl.	3172111	3172111	3172111
111/1	Pumpenstößel kpl. Æ	-	-	3172202
115*	Doppelabstreifer	707961	707961	707961
115/1	Doppelabstreifer	-	-	707962
118	Stahlkugel	707312	707312	707312
119	Dichtring Cu	706814	706814	706814
120	Druckfeder	3173120	3173120	3173120
121	Verschlußschraube	3173121	3173121	3173121
122	Druckfeder	8505004	8505004	8505004
123	O-Ring	707608	707608	707608
124	Verschlußschraube	705513	-	-
125	Gewindestopfen	3173125	3173125	3173125
126*	Dichtring Cu	706806	706806	706806
127	Steilschraube	4100236	4100236	4100236
128	Federsatz kpl.	4004240	4004240	4004240
129	Stahlkugel	707301	707301	707301
130	Stahlkugel	707308	707308	707308
140	Pumpenmanschette	3174140	3174140	3174140
141	Gelenkstuck	3170141	3170141	3170141
141/1	Gelenkstück	-	-	3172141
142	Gelenkbolzen	31611271	31611271	31611271
143	Sicherungsring	704002	704002	704002
144	Faltenbalg	3161144	3161144	3161144
144/1	Faltenbalg	-	-	3164244
148	Dichtring Al	-	703709	-
149	Verschlußschraube	-	705533	-
150	Luftmotorzylinder	-	3173150	-
151	Luftmotorkolben	-	3173151	-
152	Spannhülse	-	708214	-
153	Zylinderdichtsatz	-	708000	-
154	Kontermutter	-	3173154	-
155	Luftmotor	-	751800	-
156	Stopfen	-	705534	-
158	O-Ring	707616	707616	707616
158/1	O-Ring	-	-	707618
159	Dichtring Cu	-	706807	-
160	Ventilstößel kpl.	3173160	3173160	3173160
163	Excenter	3173163	3173163	3173163
164*	O-Ring	707603	707603	707603
165	Dichtring Cu	706815	706815	706815
166	Stoßelfohreng	3173166	3173166	3173166
167	Rückstel Feder	3173167	3173167	31731 67
168	Spannhülse	708223	708223	708223
169	Abdeckrohr	3173169	3173169	3173169
170	Stößelkappe	3173170	3173170	3173170
171	Dichtring Cu	706850	706850	706850
172	Ermeto EVW	-	752129	-
173	Ermeto GE	-	752015	-

Ein Dichtsatz besteht aus den mit * gekennzeichneten Positionen.
A set of gaskets contains the positions marked with *.
Un jeu de joints contient les positions marquées par *.



		Werkstoff / Halbzeug / DIN			
		Modell Nr. / Werkzeug Nr.			
			Buchstabe	Änderung	Datum / Name
		nogra GmbH 78199 Bräunlingen	Maßstab 1:4	Gez. 15.01.2002 b.stoerk	Zeichn.Nr. 3173000X
				Gepr.	Benennung Hydraulikpumpe MP16 kompl. 0
Paßmaß	Abmaß	Oberflächenbehandlung	Die ⬭ Maße werden besonders geprüft	Ersatz für	

Pos.	Stk.	Benennung	Zg.Nr.	Dichtungssatz
201	1	Ventilkörper	3294201	
202	2	Ventilstößel	3220202	
203	2	O-Ring 7 x 2	707604	X
204	2	O-Ring 7 x 2,5, ca. 90 SH	7076891	X
206	2	Stößel	3220206	
208	2	Druckknopf	3294208	
209	2	O-Ring 12 x 2	707609	X
213	2	O-Ring 15 x 2	707684	X
214	2	Feder-Kegel Nr. 199	3616214	
215	2	Verschlußkappe	3294215	
216	2	Sicherungsscheibe schwarz	703901	
220	2	Ring	3294220	
221	2	O-Ring 20 x 2	707615	X
222	2	Sicherungsring schwarz	704105	
235	1	Schalldämpfer R 1/4"	708951	
262	1	Kupplungstülle	3255262	
263	1	Siebeinsatz kpl.	3142015	
264	1	Verlängerung	3294265	
265	1	Ringscheibenelement-Hit	706705	
266	1	Dichtring Cu R 1/4"	706902	X
273	2	Dichstopfen D 5	707030	
274	1	Schalldämpfer R 1/8"	708950	



Allgemeintoleranzen für Schweißkonstruktionen DIN 8570

	Genauigkeitsgrad	für Längenmaße Δ l in mm, Nennbereich l: bis 30	über 30 bis 120	über 120 bis 315	über 315 bis 1000	über 1000 bis 2000	über 2000 bis 4000	Winkelmaße α in ° und ' für Δ Schenkellänge: bis 315	über 315 bis 1000	über 1000
	A	±1	±1	±1	±2	±3	±4	±20'	±15'	±10'
X	B	±1	±2	±2	±3	±4	±6	±45'	±30'	±20'
	C	±1	±3	±4	±6	±8	±11	±1°	±45'	±30'

Zerspanende Fertigung: Zulässige Abweichung für Maße ohne Toleranzangabe in mm DIN 2768

	Genauigkeitsgrad	Nennbereiche (mm) der Freimaße: über 0,5 bis 3	über 3 bis 6	über 6 bis 30	über 30 bis 120	über 120 bis 400	über 400 bis 1000	über 1000 bis 2000	über 2000 bis 4000
	fein	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	—
X	mittel	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
	grob	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
	sehr grob	—	±0,5	±1	±1,5	±2,5	±4	±6	±8

Werkstoff / Halbzeug / DIN

Modell Nr. / Werkzeug Nr.

Buchstabe | Änderung | Datum | Name

nogra GmbH
78199 Bräunlingen

Paßmaß | Abmaß

Oberflächenbehandlung

Maßstab 1:2

	Datum	Name
Gez.	13.12.2001	b.stoerk
Gepr.		

Zeichn.Nr. 3294003X

Die ⬭ Maße werden besonders geprüft

Ersatz für

Benennung

Ventilkörper kompl.

0

nogra-Elephant LM

Type

Serial No.

Date

nogra GmbH

Hüfinger Straße 57
D-78199 Bräunlingen
Telefon +49(0)771 89798-73
Telefax +49(0)771 89798-74
eMail info@nogra.de
internet www.nogra.de