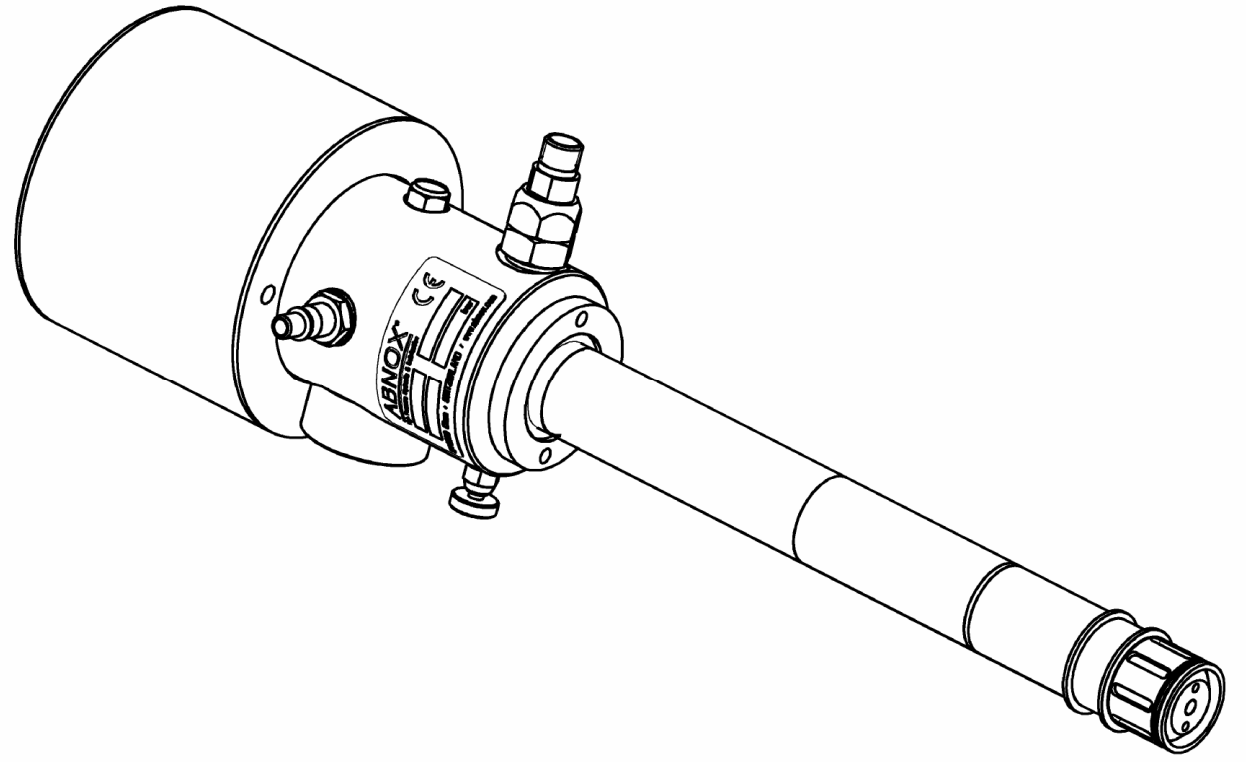
ABNOX®
High Pressure Hydraulic & Lubrication

Operating Manual

Lubricating Pump, Standard
Pressure ratio 60:1

Versions **40350.00, 40351.00, 40352.00, 40353.00, 40353.03, 40354.00, 40609.00, 40609.10**



Manufacturer

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Declaration

We, the end customer, confirm herewith that we have read and understood this operating manual, further that we have instructed and tested all employees and any other persons who may deal with the equipment described below.

Company stamp:

Place and date of issue:

Signature:

Preface

This operating manual serves to present to you our Lubricating Pump for Lubricants, and to help you to utilise this equipment to your best benefit and according to its purpose.

The operating manual contains important instructions allowing operating your equipment safely, professionally and at best efficiency. It helps to avoid safety hazard, as well as repair cost and down time, and further to upgrade the lifetime of the equipment.

The operating manual also provides hints supporting your effort to observe the instructions given by the national legislation of your country regarding accident prevention and environmental protection.

Please keep this operating manual always available for reference at the operating site of the equipment.

The operating manual should be familiar to, and all operation executed accordingly by each person performing any the following actions with the equipment:

- Operate equipment, including change of container, trouble-shooting, disposal of production waste material, maintenance, disposal of operating supplies
- Equipment maintenance (Servicing, inspection, repairs) and
- Transport and storage

In addition to the operation manual and the country-specific legal requirements for personal safety, the customer is requested to observe the approved standards regarding general operational safety and professional workmanship.

Declaration of Manufacturer – CE-Marking:

EC declaration of conformity

in accordance with the EC directive machinery 98/37/EC, annex II A

The construction of the machinery

Make: Förderpumpen 40350.00 bis 40609.10
Type: Übersetzung 60:1 (1 - 180kg)
Serial no: .

has been developed, designed and manufactured in accordance with the EC directive/s as above, in the sole responsibility of

Company: ABNOX AG (Schmiertechnik),
Postfach 65
Langackerstrasse 25
6330 Cham

The following harmonized and national standards and specifications have been applied:

EN ISO 12100-1 : 2003	Sicherheit von Maschinen - Grundbegriffe, allgemeine Gestaltungsleitsätze - Teil 1:Grundsätzliche Terminologie, Methodologie
EN ISO 12100-2 : 2003	Sicherheit von Maschinen - Grundbegriffe, allgemeine Gestaltungsleitsätze - Teil 2: Technische Leitsätze

Cham, 14.05.2007
Place, date

Signature
Roberto Bernich
Leiter Qualitätssicherung

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1 Safety Instructions

IMPORTANT
We kindly request that the customer may study this operating manual carefully, in order acquaint himself with the safe and efficient operation of this product. Please keep this manual for future reference.



This operating manual includes important instructions and details for safe and appropriate operation of the equipment. It supports the operating and maintenance staff, thus helping to reduce safety hazard, repair cost and down time, as well as to enhance reliability and service life considerably. It is therefore important at all times that any persons who are in charge of the equipment have access to this document.

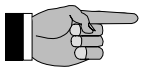
1.1 *Signs for hazard, hints and directions*

In this document, all text sections related to safety aspects are marked with a warning sign.



WARNING
Warning indications point out information regarding hazard of injury or property damage, if the product is handled or operated improperly.

In this document, all text sections related to technical requirements are marked with this indication sign.



NOTE
Indication signs point at useful information and hints. Disregarding of these may cause failure, inefficiency or breakdown.

1.2 *Basic Safety Directions*

Basic requirements for safe handling and trouble-free operation of this equipment are the following conditions:



- The equipment must not be used for purposes other than those intended.
- The equipment must not be modified. In case if modifications the customer takes all responsibility for any incidents due to such modifications. In case of a need for modification to the equipment, please contact ABNOX AG.
- Make sure that the equipment is always in safe operation condition. Qualified staff shall perform functional tests and checks for damage at regular intervals. Authorized staff only shall do disassembly, and according to operation instructions only. To ensure appropriate expertise of the customer's staff, ABNOX AG offers training courses upon request.
- The customer takes responsibility for the compliance to all appropriate safety measures.
- Never operate the equipment if it is pointing towards a person.
- Before begin of maintenance work, always disconnect equipment from mains, air pressure supply and lubricant feed pipe. All piping and hoses must be pressureless.
- Check all pipes, hoses and screw connectors for leaks and visible damage at regular intervals. Immediately remove all damage!
- Exposure of the sensors to magnetic fields may cause malfunction of the sensors.
- Ensure by regular checks that working place, equipment and environments are kept in clean and clearly arranged state.
- Rules and regulations regarding the prevention of accidents that apply to the working site should be observed.

1.3 *Relevance of Operating Manual*

The operating manual is relevant to the equipment as stated in the cover sheet of the manual only.

The manufacturer of the equipment accepts responsibility for safety, reliability and performance of the equipment under the pre-condition only that the user has read and signed the operating manual.

Kindly remember that the operating manual has been designed for your personal protection and safety.

Reading and understanding of the manual may further help to avoid expensive service work and inappropriate operation of the equipment, and hence substantially raise the customer’s benefit.

1.4 *Responsibilities of Operating Company and Staff*

- Reliable and trained staff only should be authorized to work with the equipment, and responsibilities clearly assigned to individuals.
- Maintenance of electrical components of the equipment must be performed by a professional electrician, or under supervision of a professional electrician, and according to electro-technical regulations.
- Maintenance of hydraulic equipment should be assigned to staff with hydraulics know-how and experience only!

1.5 *Staff Training*

- Persons should not work with the equipment unless they have been suitably trained and made familiar with the equipment.
- Responsibilities of personnel for assembly work, commissioning, operation, setting up, maintenance, transport and repair should be clearly assigned to individuals.

1.6 *Hazard of Working with Equipment / Device*

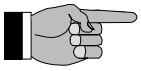
All equipment and devices are built to the state of the art and according to accredited safety rules. Nevertheless, safety hazard to the user or third persons, or deficiencies of the plant or its parts may occur if the equipment is not properly used.



The equipment must be used:

- Exclusively for its intended purpose.
- Only if working condition of equipment ensures full technical safety.
- Technical faults, which may degrade safety, should be repaired immediately.

1.7 *Safety Hazard of Lubricant Material*



NOTE
Urgently pay attention to the safety directions specified by the manufacturer of lubricant, and observe his instructions.
The manufacturer of this equipment refuses to accept any liability for incidents caused by disregarding directions, instructions or recommendations given by the manufacturer of lubricant.

1.8 *Safety Hazard of Hydraulic and Pneumatic Energy*

- Operation of hydraulic and pneumatic equipment should be assigned to staff with specific hydraulics and pneumatic know-how and experience only.
- Some versions of the equipment use hydraulic and pneumatic pressure. Prior to opening and repair sections under pressure, such as pressure pipes, valves or user devices, all pressure must be released and made sure that no residual pressure is present.
- Hydraulic and pneumatic hoses shall be replaced at adequate intervals, even if they show no sign of safety relevant damage.

1.9 *Personal Protective Gear and Complementary Measures*

- The user company is responsible for providing the required personal protective gear.
- All safety devices and installations should be tested at regular intervals.

1.10 *Usage of Equipment according to Intended Purpose*

The equipment may be used only under the specified operating conditions. The equipment must be used exclusively for transport of lubrication means according to detailed specification in chapter 2.1 of this operating manual.
Any usage other than or beyond that specified herein is regarded as not according to the intended purpose. The manufacturer company assumes no responsibility for any damage resulting from such improper usage.

Proper usage of equipment according to intended purpose comprises also:

- Observing and adherence to all operating instructions stated in this manual,
- Adherence to inspection and maintenance tasks.

1.11 *Inappropriate Usage*

The manufacturer company assumes no responsibility for any damage resulting from such inappropriate usage.

Inappropriate usage of the equipment comprises but is not limited to:

- Conveyance of any medium not specified by this manual, or material not specified in writing by the manufacturer.
- Conveyance or handling of corrosive, curing and abrasive material.
- Conveyance or handling of foods, and storage of foods within the environment of the equipment.

1.12 *Service and Maintenance, Fault Repair*

- The specified calibration and maintenance work should be performed timely according to the maintenance schedule.
- Inform operators prior to execution of calibration and maintenance work.
- Make sure that all screw connectors and fittings are fastened tightly.
- After completion of maintenance work test all functions and all safety devices.

1.13 *Warranty and Liability*

On principle, the general sales and delivery terms of ABNOX AG are applicable, as well as agreement in writing of the manufacturer company prior to ordering. All warranty and liability claims in case of damage to persons or material are excluded, if they are caused by one or more causes stated below:

- Usage of equipment other than that according to the intended purpose
- Work on equipment by persons other than those authorized to work with the equipment
- Improper transport, storage, assembly, commissioning, operation or maintenance of equipment
- Operation of equipment containing faulty safety devices, or safety devices not fitted properly, or safety and protection devices that are out of function
- Disregarding instructions regarding safety, transport, storage, assembly, operation, commissioning, maintenance and setting-up, as stated by the operations manual
- Modification of equipment not authorized by the manufacturer company
- Manipulation of pressure control device, change of supply pressure without authorisation by the manufacturer company
- Insufficient monitoring of equipment parts which are subject to wear
- Repairs executed improperly, use of spare parts from other suppliers
- Catastrophic impacts, e.g. by external matters or force majeure risks

1.14 *Intellectual Property Rights*

All intellectual property rights of this operating manual remain with ABNOX AG. This operating manual is intended for use by the staff of the user company exclusively.

Directions and instructions contained in this manual must not be copied, nor distributed nor communicated to third parties, neither wholly nor parts thereof.

2 Description of Product

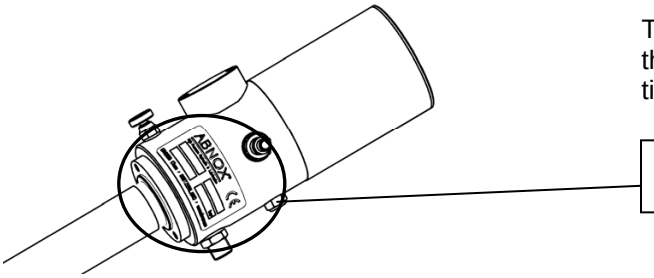
2.1 *Purpose of Product*

The Lubricating Pump is intended for feeding of the following media exclusively:

- Lubricants
- of viscosity NLGI 3 / 5'000 mPa s or less
- from containers according to data sheet in chapter 2.4.1

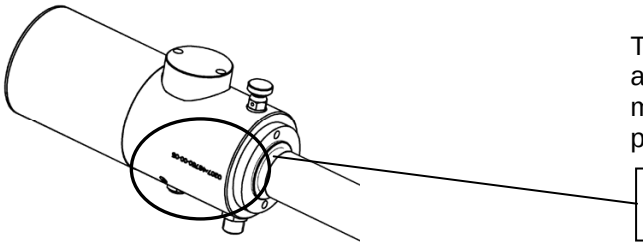
WARNING
The use of media other than those specified may cause malfunction or damage, or even destruction of the equipment.

2.2 *Labelling*



The type plate of the Lubricating pump is found at the pump body, containing all information to identify the equipment.

Type plate



Traction unit of Lubricating pump is identified by an engraving on the pump body, showing the manufacturing date and the article number of the product.

Engraving

NOTE
Please indicate the product information shown on the type plate and on the engraving when requesting spare parts or technical support.

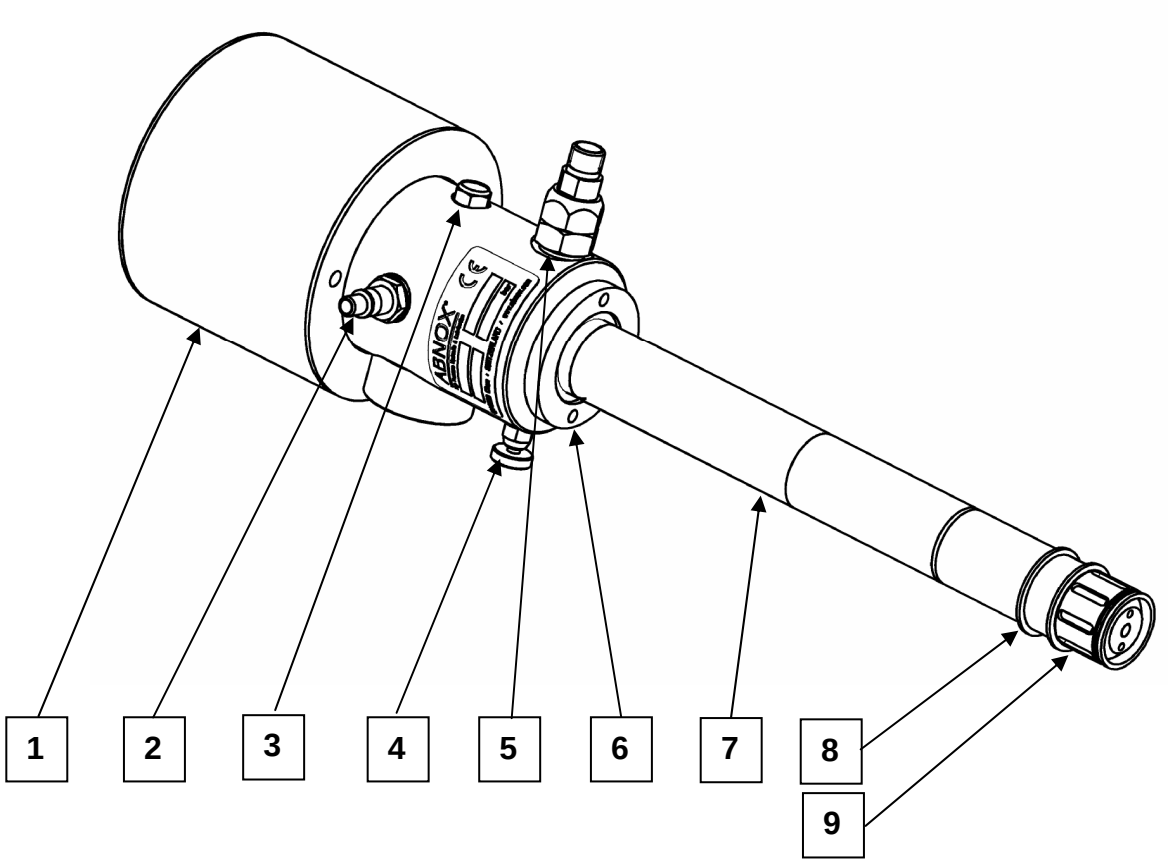
2.3 *Function*

Pressure ratio: 60:1
Construction type: Air operated Piston pump
All pumps are filled and factory tested prior to despatch.
The pump will operate immediately when the air supply is connected. If necessary, use air release valve to bleed the system.

WARNING
Due to testing, residues of test liquid may be found inside the pump.

NOTE
Because of the piston pulsation and pressure pulsation of this lubricating pumps, the max. pressure peak can partly exceed the specified maximum pressure.
(See chapter 2.4.1).

2.4 *Overview / Description of Parts*



1	**Traction unit** Differential pneumatic cylinder
2	**Air supply** Compressed air 2-10 bar
3	**Air bleed (Silencer)** Air vent for traction unit
4	**Air bleed valve** Air bleed valve for venting the conveying system
5	**Pressure connection** Connection for pumping medium
6	**Fastening nut** Not included in every pump type (as 50 kg)
7	**Suction tube**
8	**Retaining ring** Not included in every pump type
9	**Suction port (Suction valve)**

2.4.1 Technical Data

Modell Model	60:1
Bauform Construction type	Pneumatisch Air-Operated
Ausfuehrung [mm] Version [mm]	Blatt 3 Page 3
Gebinde Container	Blatt 3 Page 3
Anschluss Innengewinde P Connection internal thread P	G 1/4" 1/4" BSP
Anschluss Innengewinde E Connection internal thread E	M8 x 1
Anschluss Innengewinde 1 Connection internal thread 1	G 1/4" 1/4" BSP
Ansaugrohr-Ø [mm] Suction Tube Dia. [mm]	32
Ansaugrohrlaenge [mm] Suction tube length [mm]	Blatt 3 Page 3
Betriebsdruck bei 6 bar [bar] Operating pressure at 6 bar [bar]	335
Max. Druck [bar] Max. pressure [bar]	555
Min. pneum. Betriebsdruck [bar] Min. operating air pressure [bar]	2.0
Max. pneum. Betriebsdruck [bar] Max. operating air pressure [bar]	10.0
Optimaler pneum. Betriebsdruck [bar] Optimum operating air pressure [bar]	6.0
Druckuebersetzung Pressure ratio	60:1
Foerdermenge [cm³/min] Output [cm³/min]	500
Foerdermenge/Doppelhub [cm³] Output/Double stroke [cm³]	7.5
Max. Luftverbrauch [l/min] Max. air cunsumption [l/min]	217
Min. Temperatur [°C] Min. temperature [°C]	10
Max. Temperatur [°C] Max. temperature [°C]	40
Max. Penetration NLGI-Klasse Max. penetration NLGI classification	3
Max. dynamische scheinbare Viskositaet [mPas] Max. apparent dynamic viscosity [mPas]	5'000
Einsatzmediumspezifikation Specification for operation medium	Schmierstoffe Lubricants

Hauptabmessung : - mm — ERP ID Nr.:

Massstab: 1:2

	Datum	Visum
Gez.	09.08.06	LI
Gepr.		
Freigabe		

Benennung:
Foerderpumpe 60:1
Lubricating pump 60:1

ABNOX
Langackerstrasse 25
CH-6330 Cham
www.abnox.com

Zeichnungsnummer: M40350-99
Blatt Nr.: 2
Anzahl Bl.: 3

Zust.	Aenderung	Datum	Visum
01	04-007	06.02.07	LI

Modell: M40350-99.ASSEM | Z.-Format: A4
Ursp.: - | Ers. f.: -

NOTE
For additional technical data see Appendix / Drawing set at the end of this operating manual or see homepage www.abnox.com.

3 Packing and Transport

3.1 *Packing*

Preparation and packing of equipment is provided by ABNOX AG and is designed for transportation to the **first destination**.
The packaging must not be exposed to additional strain. The packaging and its contents should be protected against any influence of humidity. Ambient temperature during transport and storage must be kept within –20 °C to +40°C.

3.2 *Transport Damage*

Should damage due to transportation be discovered by the incoming goods inspection, the following procedure should be observed:

- Inform Transport Company (Carrier Company, railways etc.)
- Write damage report
- Inform supplier company

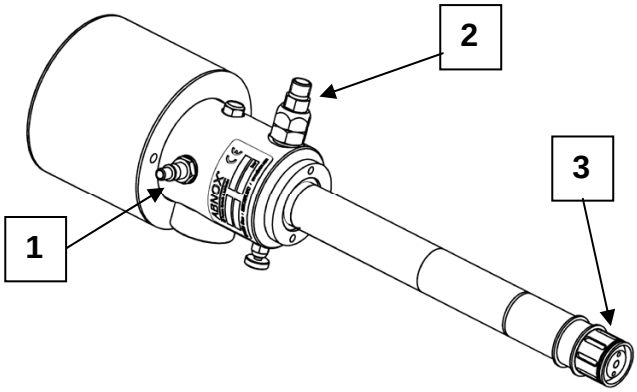
3.3 *Intermediate Storage*

Storage in an aggressive or moist environment or outdoors may lead to corrosion or other damage. ABNOX AG will not assume liability for such damage. Temperature must be kept within –20 °C to +40°C during transport and intermediate storage.

4 Mounting Site / Insertion into Plant

- All legal requirements for the mounting site should be identified and verified on site whether they are fulfilled.
- Prior to installation of the equipment, the condition of the floor and the size of the surrounding space should be checked, to ensure safety of operation for both personnel and equipment. The installation shall be such that continuous operation at a high safety level is ensured.
- The installation of the equipment, as well as commissioning of the equipment, or storage, shall be conducted by specialists trained and made familiar with the equipment only.
- The equipment is designed for use in areas witch are protected from weather influence.
- Operation or storage of the equipment in an aggressive or moist environment or outdoors may lead to corrosion or other damage. ABNOX AG will not assume liability for such damage.

5 Definition of Interface



1) Air Supply
Pressurized air is used to drive the Lubricating pump unit. The air supply connector is located at the pump body.

Connection nipple:	Nipple ARO 210
Supply pressure min.:	2 bar
Supply pressure max.:	10 bar

2) Lubricant Output
The lubricant output connector is located at the pump body.

Output pressure:	max. 555 bar
Connector:	G ¼“ (AGR)

3) Suction port

Suction tube - Ø:	32 mm
Suction tube length:	see Data sheet

NOTE
For additional technical data see Appendix / Drawing set at the end of this operating manual.

6 Assembly / Installation

- The equipment shall be installed at the intended operating site, under consideration of the conditions specified in chapter 4.
- The equipment installation shall be such that all operating controls and dials, as well as the container site are well accessible.
- The Lubricating Pump can be mounted with the fastening nut M40x1 (included in delivery).

NOTE
For physical dimensions of equipment see data sheets at the end of this operating manual.

7 Commissioning

WARNING
All Lubricating pumps are tested by the manufacturer prior to shipping. Due to testing, residues of test liquid may be found inside the pump.

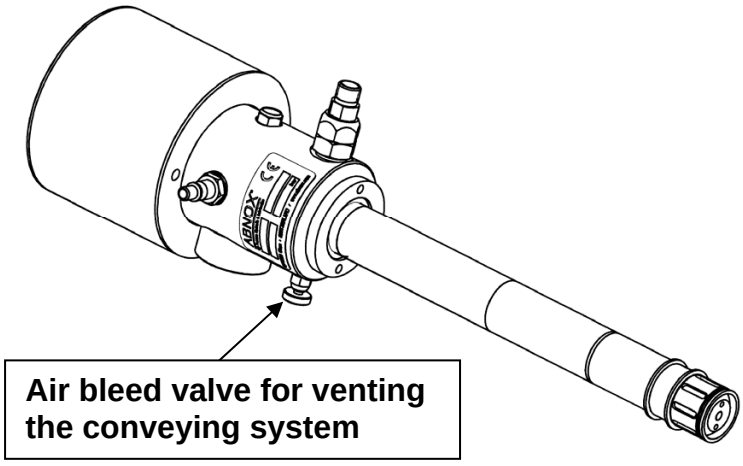
- Completely remove all packaging before initial operation of equipment.
- Put the suction tube with the corresponding follower plate into the grease container.
- Adjust the pneumatic pressure you need (between 2-10 bar).
- The pump will operate immediately when the air supply is connected.
- Use air release valve to bleed the conveying system.
- Allow the unit to operate until grease appears at the outlet.
- Disconnect air supply to stop conveying.
- Mount fitting or hose on the lubricant output.

INSTRUCTION
Make sure that all screw connectors and fittings are fastened tightly.

8 Operation

INSTRUCTION
Generally, if proper air is used, no Maintenance Unit has to be considered. Nevertheless, we do recommend to plan a Maintenance Unit (air filter + water trap) since it will reduce the failure proneness as well as the lifetime of the Pumps and Systems can be raised.

8.1 *Control Elements*



9 Troubleshooting

NOTE
Troubleshooting should be performed by a trained specialist only.

9.1 *Fault – Cause – Action*

Fault	Possible cause	Action	Comment
Pump does not work	Pump or Traction unit damaged	Controll pump and Traction unit	Call plant (mechanical) engineer, Supplier
	No air pressure	Check air supply	Call plant (mechanical) engineer
Pump supply low or no pressure	Trapped air in conveying system	bleed the conveying system (Air bleed valve)	
	Leakage	Check hoses and fittings	
	Air pressure low	Get air supply checked	Call plant (mechanical) engineer
	Air pockets into the lubricants (container)	Use original container	If not using original container, use Filler to decant the lubricant. See that the lubricant do not contains air pockets.

10 Taking out of Service

10.1 *Short Interruption*

For short interruptions (over night or during weekends), switch off equipment and make sure that no pressure is left in system.

10.2 *Long-term Interruption*

Please observe procedure stated below when taking equipment out of service for longer periods:

- Make sure that no pressure is left in system.
- Store equipment and its components such that they cause no risk of accident and no equipment damage is possible (e.g. cracking of hoses)

10.3 *Final Shut-down of Equipment*

For shut-down of equipment, please observe the following items:

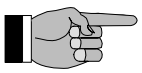
- Disconnect the Lubricating Pump from air pressure.
- Make sure that no pressure is left in system.
- Drain lubricant or oil and take care of professional disposal.
- Store equipment and its components such that they cause no risk of accident and no equipment damage is possible (e.g. cracking of hoses)



WARNING
Danger of accidents und environmental hazard: Do not spill lubricant or oil.
Take care of proper disposal of lubricant and oil (hazardous waste).

11 Maintenance

This chapter explains how to perform maintenance of the equipment. The maintenance table shows what should be checked and at which intervals.



NOTE
This chapter does not explain how to repair damage of the equipment. Damage repair shall be executed exclusively by skilled and trained experts, or by staff of the manufacturer's customer service.

11.1 *Maintenance Plan*

The maintenance intervals stated below are valid for single shift operation of the equipment. In case of multiple-shift or very intensive operation, maintenance intervals are shortened accordingly. Also take into account other influences on maintenance need, such as dirty environment, or degraded quality air supply.

WHEN	WHAT	HOW	WHO
Weekly	Check hoses and fittings for leaks	Visual inspection	User company expert
Monthly	Check the Pump for defects, clean it	Visual inspection	User company expert



WARNING
As a rule, all work must be executed with the equipment shut down only.
Pressure inside the pneumatic and the hydraulic systems must be removed.

11.2 *Customer Service / Support*

ABNOX AG
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Fax +41 (0) 41 780 44 50

E-Mail info@abnox.com
Internet www.abnox.com

12 Operating Supplies

No special substances are required to operate the equipment.

13 Accessories

- Pressure reducing valve Art.-No. 42307.00
- Maintenance unit Art.-No. 40243.00

For further information please contact the customer service.

14 Drawings

All drawings, lists of spare parts, dimension sheets and data sheets are contained in the drawing set at the end of this operating manual or see homepage www.abnox.com.

15 Spare Parts

All drawings and lists of spare parts are contained in the drawing set at the end of this operating manual or see homepage www.abnox.com.

16 Resale

This operating manual is part of the equipment and hence included in the delivery scope when reselling.

17 Material Disposal

Materials and liquids shall be individually handled and disposed of in a professional manner and in compliance with the applying national legal regulations.



WARNING

Lubricant material must be treated as hazardous waste.

Take care to not spill lubricant or oil. Take precautions to retain lubricant and oil spills before starting drainage of the system.

Product	Material	Disposal
Tubes, cylinders, valves …	Steel, aluminium, brass, bronze	Separation of materials, recycling
Gaskets	Rubber, plastics	Separation of materials, recycling
Lubricants	Oil, grease	Reconditioning or disposal according to local waste management legislation

18 Training

- Persons trained and made familiar with the equipment exclusively shall conduct work on the equipment. It is indispensable that these persons have read and understood all items of the operating manual, and are capable to control the equipment in all operating states, and that the person knows how to handle all safety hazards.
- Responsibilities of personnel for assembly work, commissioning, operation, setting up, maintenance, transport, storage and repair should be clearly assigned to individuals.
- Persons in training may work with the equipment under supervision of an experienced person only.

19 Shut-down of equipment

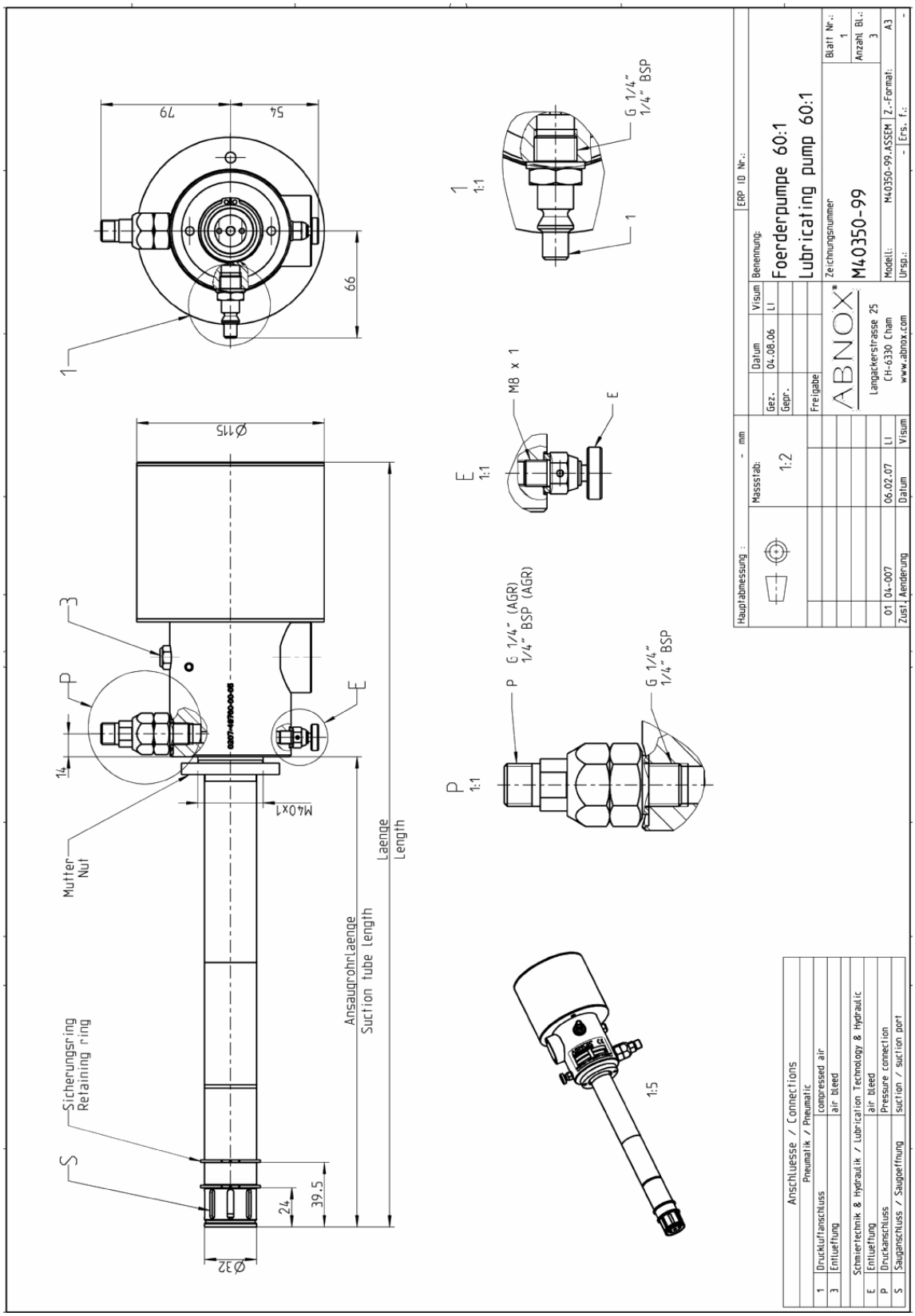


WARNING

Materials and liquids shall be individually handled and disposed of in a professional manner, and in compliance with the applicable national legal regulations.

20 Appendix / Drawing set

20.1 *Dimensioned Drawing all versions M40350-99*



20.2 *Data Sheet all versions M40350-99*

Modell Model	60:1
Bauform Construction type	Pneumatisch Air-Operated
Ausfuehrung [mm] Version [mm]	Blatt 3 Page 3
Gebinde Container	Blatt 3 Page 3
Anschluss Innengewinde P Connection internal thread P	G 1/4" 1/4" BSP
Anschluss Innengewinde E Connection internal thread E	M8 x 1
Anschluss Innengewinde 1 Connection internal thread 1	G 1/4" 1/4" BSP
Ansaugrohr-Ø [mm] Suction Tube Dia. [mm]	32
Ansaugrohrlaenge [mm] Suction tube length [mm]	Blatt 3 Page 3
Betriebsdruck bei 6 bar [bar] Operating pressure at 6 bar [bar]	335
Max. Druck [bar] Max. pressure [bar]	555
Min. pneum. Betriebsdruck [bar] Min. operating air pressure [bar]	2.0
Max. pneum. Betriebsdruck [bar] Max. operating air pressure [bar]	10.0
Optimaler pneum. Betriebsdruck [bar] Optimum operating air pressure [bar]	6.0
Druckuebersetzung Pressure ratio	60:1
Foerdermenge [cm³/min] Output [cm³/min]	500
Foerdermenge/Doppelhub [cm³] Output/Double stroke [cm³]	7.5
Max. Luftverbrauch [l/min] Max. air cunsumption [l/min]	217
Min. Temperatur [°C] Min. temperature [°C]	10
Max. Temperatur [°C] Max. temperature [°C]	40
Max. Penetration NLGI-Klasse Max. penetration NLGI classification	3
Max. dynamische scheinbare Viskositaet [mPas] Max. apparent dynamic viscosity [mPas]	5'000
Einsatzmediumspezifikation Specification for operation medium	Schmierstoffe Lubricants

Hauptabmessung : - mm						ERP ID Nr.:	
	Massstab: 1:2				Datum	Visum	Benennung:
				Gez.	09.08.06	LI	Foerderpumpe 60:1
				Gepr.			Lubricating pump 60:1
				Freigabe			
				ABNOX®			Zeichnungsnummer: M40350-99
							Blatt Nr.: 2
							Anzahl Bl.: 3
01	04-007	06.02.07	LI	Langackerstrasse 25 CH-6330 Cham www.abnox.com			Modell: M40350-99.ASSEM Z.-Format: A4
Zust.	Aenderung	Datum	Visum				Ursp.: - Ers. f.: -

.	.	.	.	.	.	.	.
40609.10	288	469	1-5kg/288mm	1-5	280	JA/YES	JA/YES
40609.00	260	441	1-5kg/260mm	1-5	250	JA/YES	JA/YES
40354.00	845	1026	180kg/845mm	180	850	NEIN/NO	JA/YES
40353.03	530	711	50kg/530mm	50	525	NEIN/NO	NEIN/NO
40353.00	720	901	50kg/720mm	50	640	NEIN/NO	NEIN/NO
40352.00	473	654	20-25kg/473mm	20-25	470	NEIN/NO	JA/YES
40351.00	370	551	14-18kg/370mm	14-18	350	NEIN/NO	JA/YES
40350.00	402	583	1-5kg/402mm	1-5	380	JA/YES	JA/YES
Art.-Nr. Pumpe Art.-No. Pump	Ansaugrohrlaenge Suction tube length [mm]	Lenge Length [mm]	Ausfuehrung Version	Inhalt Capacity [kg]	Hoehe Height [mm]	Sicherungsring Retaining ring	Mutter Nut
				Gebinde/Container			

Hauptabmessung : - mm

ERP ID Nr.:

Massstab: 1:1

	Datum	Visum
Gez.	08.08.06	LI
Gepr.		
Freigabe		

Benennung:

Foerderpumpe 60:1

Lubricating pump 60:1

Zust.	Aenderung	Datum	Visum
01	04-007	06.02.07	LI

ABNOX®
Langackerstrasse 25
CH-6330 Cham
www.abnox.com

Zeichnungsnummer: M40350-99

Blatt Nr.: 3

Anzahl Bl.: 3

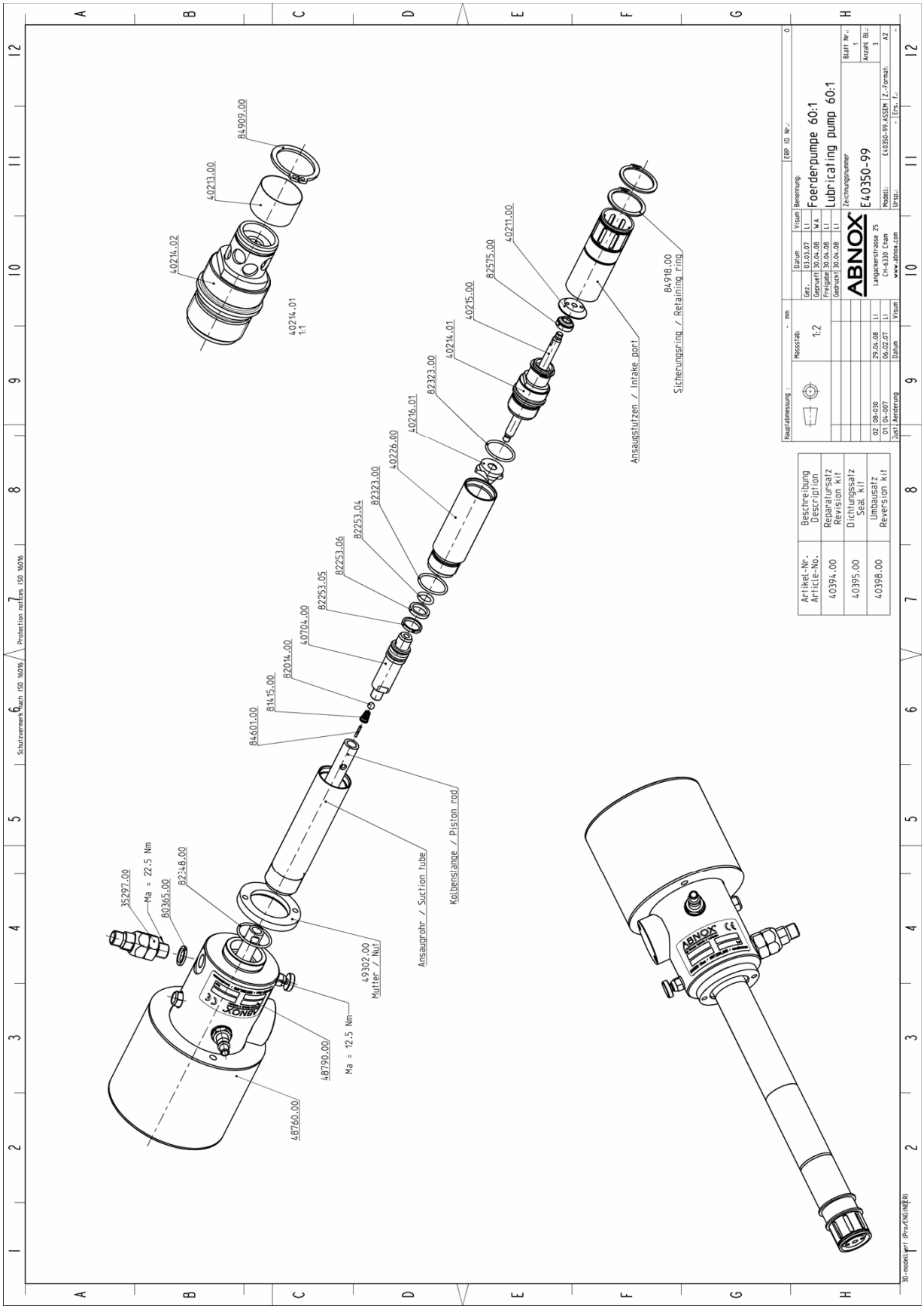
Modell: M40350-99.ASSEM

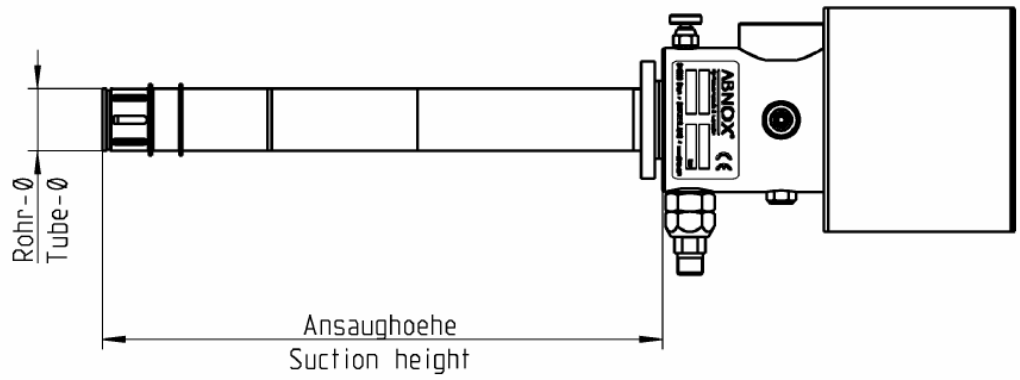
Z.-Format: A4

Ursp.: -

Ers. f.: -

20.3 *Drawing of Spare Parts all versions E40350-99*





.	.	.	.	.	.	.
40609.10	288 / 32	40219.18	40220.25	40212.03	JA/YES	JA/YES
40609.00	260 / 32	40219.13	40220.17	40212.03	JA/YES	JA/YES
40354.00	845 / 32	40219.02	40220.02	40212.00	NEIN/NO	JA/YES
40353.03	530 / 32	40219.14	40220.19	40212.00	NEIN/NO	NEIN/NO
40353.00	720 / 32	40219.01	40220.01	40212.00	NEIN/NO	NEIN/NO
40352.00	473 / 32	40219.03	40220.03	40212.00	NEIN/NO	JA/YES
40351.00	370 / 32	40219.00	40220.00	40212.00	NEIN/NO	JA/YES
40350.00	402 / 32	40219.17	40220.23	40212.03	JA/YES	JA/YES
Art.-Nr. Pumpe Art.-No. Pump	Ansaughoehe/Rohr-Ø Suction hight/Tube-Ø (mm)	Kolbenstange Art.-Nr. Piston rod Art.-No.	Ansaugrohr Art.-Nr. Suction tube Art.-No.	Ansaugstutzen Art.-Nr. Intake port Art.-No.	Sicherungsring Retaining ring	Mutter Nut

Hauptabmessung : - mm

ERP ID Nr.: 0

Massstab: 2:5

	Datum	Visum
Gez.	03.03.07	LI
Gepr.		
Freigabe		

Benennung:
Foerderpumpe 60:1
Lubricating pump 60:1

Zust.	Aenderung	Datum	Visum
01	04-007	06.02.07	LI

ABNOX®
Langackerstrasse 25
CH-6330 Cham
www.abnox.com

Zeichnungsnummer: E40350-99
Blatt Nr.: 2
Anzahl Bl.: 3

Modell: E40350-99.ASSEM | Z.-Format: A4
Ursp.: - | Ers. f.: -

20.3.1 Spare Parts list 40350.00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
84918.00	Sicherungsring	Retaining ring	2
40212.03	Ansaugstutzen	Intake port	1
40219.17	Kolbenstange	Piston rod	1
40220.23	Ansaugrohr	Suction tube	1
49302.00	Mutter	Nut	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

20.3.2 Spare Parts list 40351.00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
40212.00	Ansaugstutzen	Intake port	1
40219.00	Kolbenstange	Piston rod	1
40220.00	Ansaugrohr	Suction tube	1
49302.00	Mutter	Nut	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

20.3.3 Spare Parts list 40352.00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
40212.00	Ansaugstutzen	Intake port	1
40219.03	Kolbenstange	Piston rod	1
40220.03	Ansaugrohr	Suction tube	1
49302.00	Mutter	Nut	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

20.3.4 Spare Parts list 40353.00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
40212.00	Ansaugstutzen	Intake port	1
40219.01	Kolbenstange	Piston rod	1
40220.01	Ansaugrohr	Suction tube	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

20.3.5 Spare Parts list 40353.03

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
40212.03	Ansaugstutzen	Intake port	1
40219.14	Kolbenstange	Piston rod	1
40220.19	Ansaugrohr	Suction tube	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

20.3.6 Spare Parts list 40354.00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
40212.03	Ansaugstutzen	Intake port	1
40219.02	Kolbenstange	Piston rod	1
40220.02	Ansaugrohr	Suction tube	1
49302.00	Mutter	Nut	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

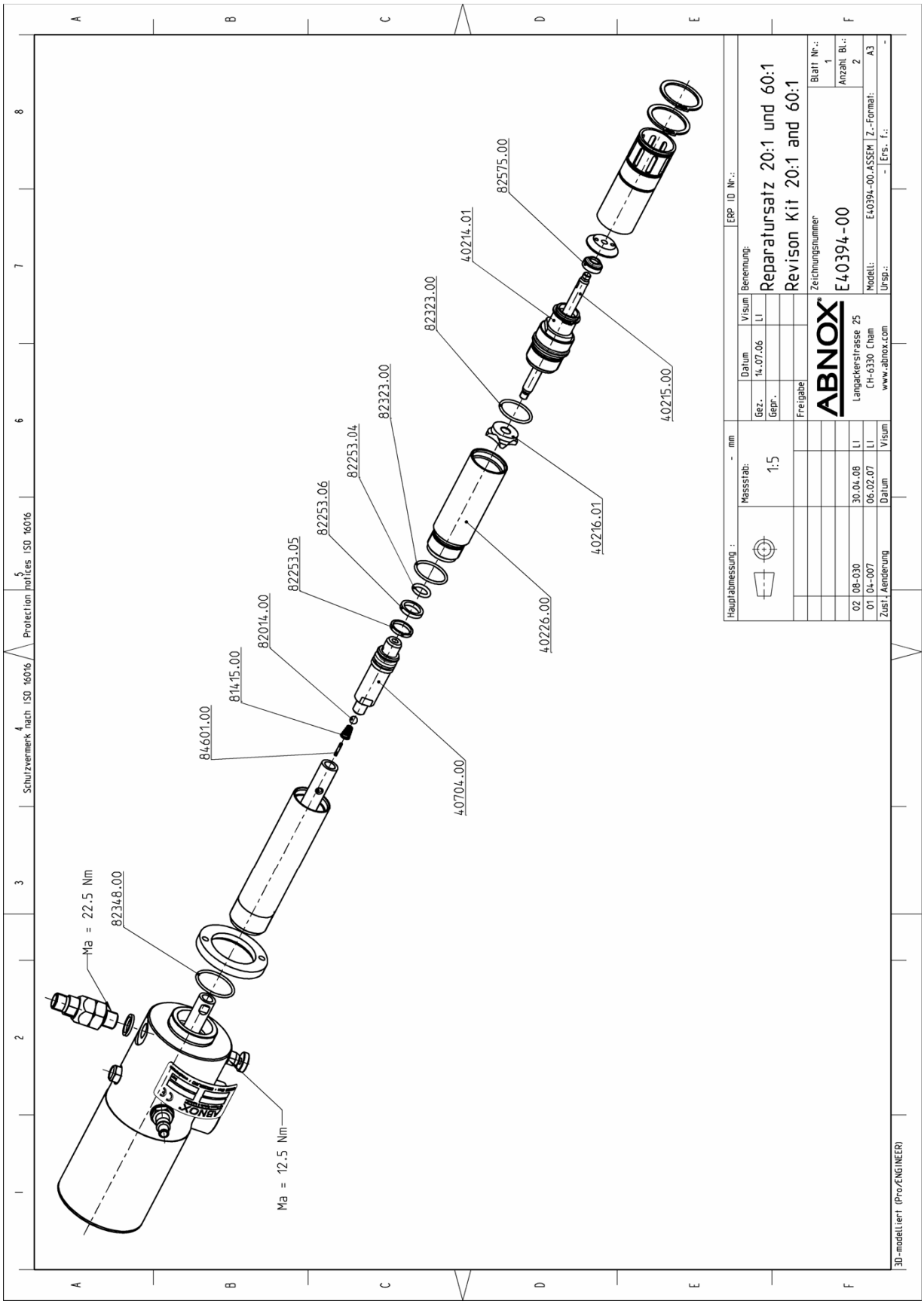
20.3.7 Spare Parts list 40609.00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
84918.00	Sicherungsring	Retaining ring	1
40212.03	Ansaugstutzen	Intake port	1
40219.13	Kolbenstange	Piston rod	1
40220.17	Ansaugrohr	Suction tube	1
49302.00	Mutter	Nut	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

20.3.8 Spare Parts list 40609.10

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
35297.00	Drehbare Kupplung	Rotary coupling	1
80365.00	Flachdichtung	Gasket	1
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Roll pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
40704.00	Kolben	Piston	1
82253.05	Slydring	Slydring	1
82253.06	Glydring	Glydring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40226.00	Druckzylinder	Pressure cylinder	1
40216.01	Ventil	Valve	1
40214.01	Adapter kpl.	Adapter cpl.	1
40215.00	Förderkolben	Stroke piston	1
82575.00	Abstreifer	Wiping seal	1
40211.00	Scheibe	Disc	1
84918.00	Sicherungsring	Retaining ring	2
40212.03	Ansaugstutzen	Intake port	1
40219.18	Kolbenstange	Piston rod	1
40220.25	Ansaugrohr	Suction tube	1
49302.00	Mutter	Nut	1
48790.00	Typenschild	Labeling	1
48760.00	Luftmotor	Air motor	1
40214.02	Adapter	Adapter	1
40213.00	Filter	Filter	1
84909.00	Sicherungsring	Retaining ring	1
40394.00	Reparatursatz	Revision kit	1
40396.00	Dichtungssatz	Seal kit	1
40398.00	Umbausatz	Reversion kit	1

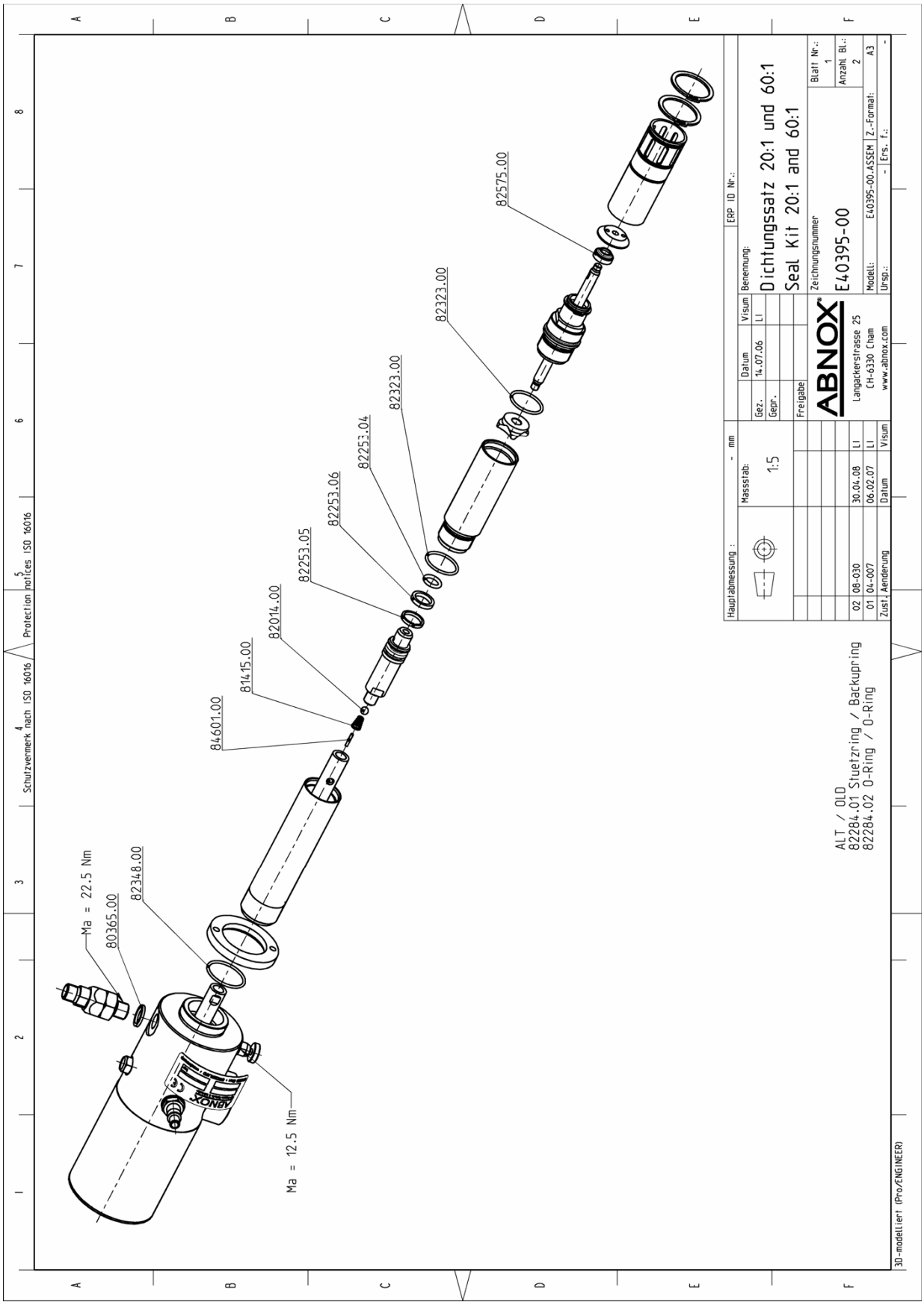
20.4 *Drawing of Spare Parts Revision kit E40394-00*



20.4.1 Spare Parts list Revision kit E40394-00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Straight pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
82253.05	Slyd-Ring	Slyd-Ring	1
82253.06	Glyde-Ring	Glyde-Ring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40214.01	Filter	Filter	1
82575.00	Abstreifer	Wiping seal	1
40215.00	Förderkolben	Stroke Piston	1
40216.01	Ventil	Valve	1
40226.00	Druckzylinder	Pressure Cylinder	1
40704.00	Kolben	Piston	1

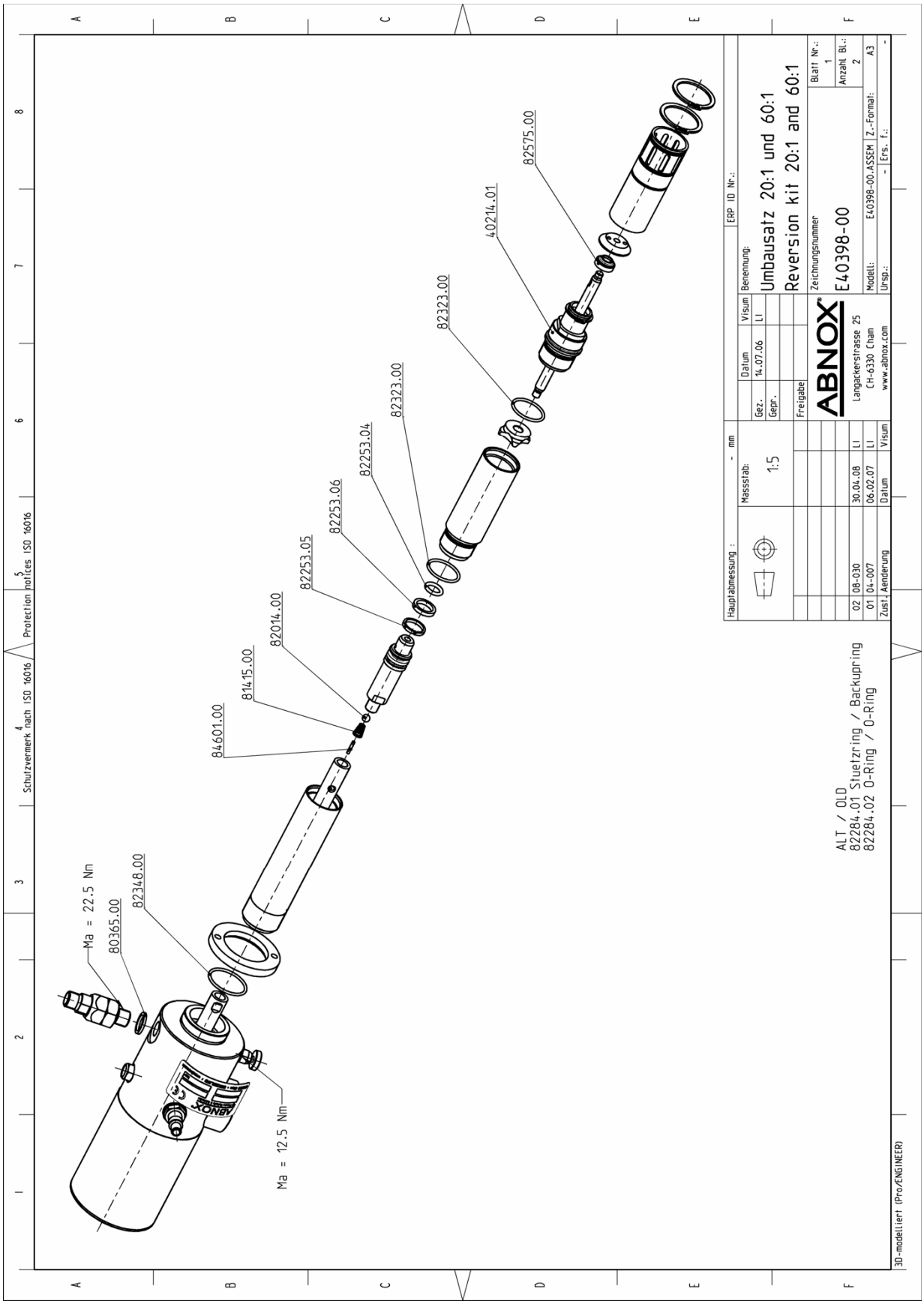
20.5 *Ersatzteilzeichnung Seal kit E40395-00*



20.5.1 Spare Parts list Seal kit E40395-00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Straight pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
82253.05	Slyd-Ring	Slyd-Ring	1
82253.06	Glyde-Ring	Glyde-Ring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
82575.00	Abstreifer	Wiping seal	1
80365.00	Dichtung	Seal	1
82284.01	Stützring	Backup ring	1
82284.02	O-Ring	O-Ring	1

20.6 *Ersatzteilzeichnung Reversion kit E40398-00*



20.6.1 Spare Parts list Reversion kit E40398-00

Art-Nr./Art-No.	Bezeichnung	Description	Menge/pieces
82348.00	O-Ring	O-Ring	1
84601.00	Spannstift	Straight pin	1
81415.00	Feder	Spring	1
82014.00	Kugel	Ball	1
82253.05	Slyd-Ring	Slyd-Ring	1
82253.06	Glyde-Ring	Glyde-Ring	1
82253.04	O-Ring	O-Ring	1
82323.00	O-Ring	O-Ring	2
40214.01	Filter	Filter	1
82575.00	Abstreifer	Wiping seal	1
80365.00	Dichtung	Seal	1
82284.01	Stützring	Backup ring	1
82284.02	O-Ring	O-Ring	1