PRODUCT MANUAL

ABDB series
Multi-line pump

ABDB-05
ABDB-15
ABDB-30

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Declaration of incorporation

Declaration of incorporation for incomplete machinery (acc. To EC-directive 2006/42/EG)

The manufacturer: Zhengzhou Autol Technology CO.,LTD., Hehuan Rd, 96, Zhengzhou High-Tech Zone, China
declares hereby, that the following fully completed machinery:

Designation: Centralized lubrication pump
Type: ABDB
Part No.: 20xxxxxxxx

is complying with all essential requirements of the above-mentioned machinery directives (2006/42/EG):
Annex I, article 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4, and 1.5.1.

The following coordinated standards have been used:
DIN EN 809
DIN EN ISO 12000

The following other specifications and standards have been used:

VDE 0530

The protection targets of the directive for have been electric equipment 2006/95/EG observed according to the annex I, no. 1.5.1 of the machine directive.

The incomplete machine may only be put into service as soon as there has been stated that the machine, into which the incomplete machine shall be installed, responds to the determinations of the machine directive (2006/42/EG).

The special documentation that responds to the machine, has been prepared according to annex VII-part B.

The manufacturer (documentation department, phone +86 400 6836 862, email: info@autol.net) obliges itself to pass on electronically the special documentation for partly completed machinery to individual national authorities upon request.

Zhengzhou, 01.10.2022

Teddy
General Manager

Zhengzhou Autol Technology CO.,LTD.

Legal disclosure

Manufacturer

Zhengzhou Autol Technology CO.,LTD
Add: Hehuan Rd, 96, Zhengzhou High-Tech Zone, China
E-Mail: info@autol.net
Website: www.autolgroup.com

Training courses

In order to provide a maximum of safety and economic viability, Autol Technology carries out detailed training courses. It is recommended that the training courses are attended. For more information, please contact Autol Technology.

Copyright

Warranty and extent of warranty

Unauthorised intervention will rule out your warranty claim!

Warranty regarding operational safety, reliability and performance of the lubricating pump is only accepted by the manufacturer under the following conditions:

- Assembly, connection, setting, maintenance and repair are carried out by authorized and specialized staff.
- The limits stipulated in the technical data must never be exceeded.
- Only original components or components approved by the manufacturer may be used for repair and maintenance work.

All guarantees and warranties expire for damages to central lubrication systems that are caused by operation with improper lubricants (e.g., piston wear, piston jamming, plugins, embrittled sealings).

Autol Technology does not assume liability on damages caused by lubricants, even if these lubricants have been tested and released by specialized laboratory, as damages caused by lubricants (e.g., by expired or improper stored lubricants, batch variations etc.) can not be retraced to their root cause in retrospect.

Service address

Hehuan Rd, 96, Zhengzhou High-Tech Zone, China
Tel.: +86 400 6836 862
E-Mail: info@autol.net

Explanation of symbols

Safety instructions which, if not complied with, may endanger persons, are marked specifically with the general hazard symbol:

This heading is used if inaccurate compliance or non-compliance with the Operating Instructions or specified work procedures etc. may result in damage

Points out Special Information

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Disclaimer

The manufacturer shall not be held responsible for damages caused by:

- Non appropriate use faulty assembly, operation, setting, maintenance, repair or accidents
- Use of inappropriate lubricants
- Improper or late response to malfunctions
- Unauthorized modifications of the product
- Intent or negligence
- Use of non-original Lubmann spare parts
- Faulty planning or layout of the centralized lubrication system

Liability for loss or damage resulting from the use of our products is limited to the maximum purchase price. Liability for consequential damages of whatever kind is excluded

Safety instructions

General information

Any safety-related faults must be eliminated without delay.

Below, please find fundamental instructions to be complied with, regarding assembly, operation and maintenance. The mechanical and the competent specialists / staff of the operating company must read the Operating Instructions on all accounts prior to starting assembly and commissioning. Moreover, the Operating Instructions must permanently be available on site.

Not only the safety instructions included under this item, but also the specific safety instructions appearing in other parts of this manual must be complied with.,

General risk reference

All system components have been designed in view of operational safety and accident prevention according to the applicable provisions for the design of technical equipment.

Nevertheless, utilization thereof may result in risks for the user or third parties and/or technical equipment. Thus, the system may only be used in proper technical working within its intended fields of application and in compliance with the safety provisions and the Operating Instructions.

Personal:

The staff in charge of operation, maintenance, inspection and assembly must be qualified accordingly for this work. The operating company must stipulate competences, responsibilities and the supervision of staff precisely. If the staff does not dispose of the appropriate knowledge, they must be trained and instructed. The operating company must ensure that the staff have understood the contents of the Operating Instructions

Danger due to non-observance of the safety information

Non-compliance with the safety information may put persons at risk and endanger the environment and/or the machine. Non-complinace with the safety instructions may rule out any claims for damages.

Non-compliance may lead, e. g. to the following dangers:

- Failure of important system functions,
- Failure of the specified maintenance and servicing methods,
- Endangering people due to electrical, mechanical and chemical effects,
- Endangering the environment due to leakages of dangerous materials.

Use in conformity with the intended purpose:

The pumps of the series ABDB serve only for the supply of central lubrication pumps in industry, heavy duty systems and heavy machines. Any use beyond this scope is regarded as being not in conformity with the intended purpose.

Assembly and maintenance

Observe for all assembly works at vehicles, systems and machines the valid local accident prevention regulations and safety instructions as well as the specifications for operation and maintenance.

All maintenance, inspection and assembly work may only be carried out by trained specialists. All work must only be carried out when the plant is at a standstill and while wearing appropriate protective clothing.

All the safety and protective equipment must be replaced immediately after completing work. Media that endangers the environment must be disposed in accordance with pertinent official specifications. Secure the system during maintenance and repair works, against intentional or unintentional reoperation.

Dispose of process materials in accordance with the safety data sheets of the lubricant manufacturer.

Safety information for operators/operating staff

- If hot or cold machine parts led to hazards, the customer must secure them from being touched. The guards on moving or rotating parts must not be removed.
- Drain leakages of dangerous materials in a way, that people or the environment are not endangered.
- Comply with legal regulations.
- Exclude any hazards by electric energy.

Unauthorized modification and spare part production

Modifications and alterations of the system require the manufacturer's prior approval. Original spare parts and accessories authorized by the manufacturer serve for higher safety. The use of other parts may rule out liability for the consequences of such use. For components, which are retrofitted by the operator, Autol Technology does not assume liability nor claims for compensation.

Danger caused by the electrics

The units may be connected to the power supply exclusively by appropriately trained qualified personal in conformity with the local connection conditions and regulation (e. g. DIN, VDE)!

Improperly connected equipment may lead to serious personal injury and damage to property!

Danger caused by system pressure

The units might be under pressure. Make them pressure less before you start with repairs, changes or extensions.

Use of hydraulic hose lines:

Installing hydraulic hose lines at the pump, the operator must observe respectively ensure the following items:

- Checks for proper assembly and function must be carried out according to the regional valid guidelines.
- Checks for a safe provisioning and use must be carried out according to the regional valid guidelines.
- The check deadline must not be exceeded.
- Exchange defect hydraulic hose lines immediately and professional.
- Hydraulic hose lines subject to a wear process and must be exchanged regularly and according to the manufacturer's details.

Cleaning

The pump has an IP65 protection rating! It is not allowed to clean the Autol Technology pumps with a high-pressure washer. The high-pressure spray can allow water to penetrate the seals into the pump. We do not provide a warranty when high-pressure washers are used!

Lubricant

The system has been designed for commercially available multi-purpose greases of NLGI class 2 for operation in summer and winter.

- Use greases with high-pressure additives (EP greases).
- Only use greases of the same saponification type.
- Lubricants containing solid contents must not be used (lubricants like graphite or MoS2 on request).
- Observe the vehicle manufacturer's specifications, when you select the lubricant.

Hazards to environment cause by lubricants

The lubricants which are recommended by the manufacturer of your vehicle, system or machine correspond in their composition to the common safety regulations. Mineral oils and greases are generally hazardous to ground water and their storage, processing and transport requires special precautions.

Inadmissible methods of operation

Operational security of the plant is only guaranteed if it is operated in accordance with the operating instructions. The limit values stated in the technical data must not be exceeded under any circumstances.

Transport and storage of the pump

The pumps of the series ABDB are packed commercially, according to the regulations of the recipient country and to the wish of the customer. There are no limitations with respect to land, air or sea transport. Store in a dry place at a temperature of -5° C to +35°C.

Order Key ABDB-05

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ABDB - 5 . 8 . 1 . 070 . N . PE 1.5C - PRC - 0 - 0 - 0 . 0000

Max. available pump elements	
5	max. 05 PEs

Reservoir size	
4	4 Liter plastic reservoir
8	8 Liter plastic reservoir
20	20 Liter plastic reservoir

Motor type	
1	220-240/380-420V AC 50Hz, 250-275/440-480V AC 60Hz multi-phase motor
2	290/500V AC 50Hz single-phase motor
3	free shaft without motor
X	customized motor type

Ratios	
070	i=070:1
300	i=300:1

Level monitoring sensor	
N	without level monitoring sensor
U	with 4 positions ultrasonic level monitoring sensor
L	with 2 positions laser level monitoring sensor
X	customized sentor type

Pump outlet configuration	
0	with blind plug M22x1.5
1.5C	PE 1.5 with SV-C
2.5C	PE 2.5 with SV-C
4.5C	PE 4.5 with SV-C
PRC	PE adjustable with SV-C
HP	with hand press adapter for refilling M22x1.5
X	customized pump outlet configuration

Special code	
0000	standard version
XXXX	customized version

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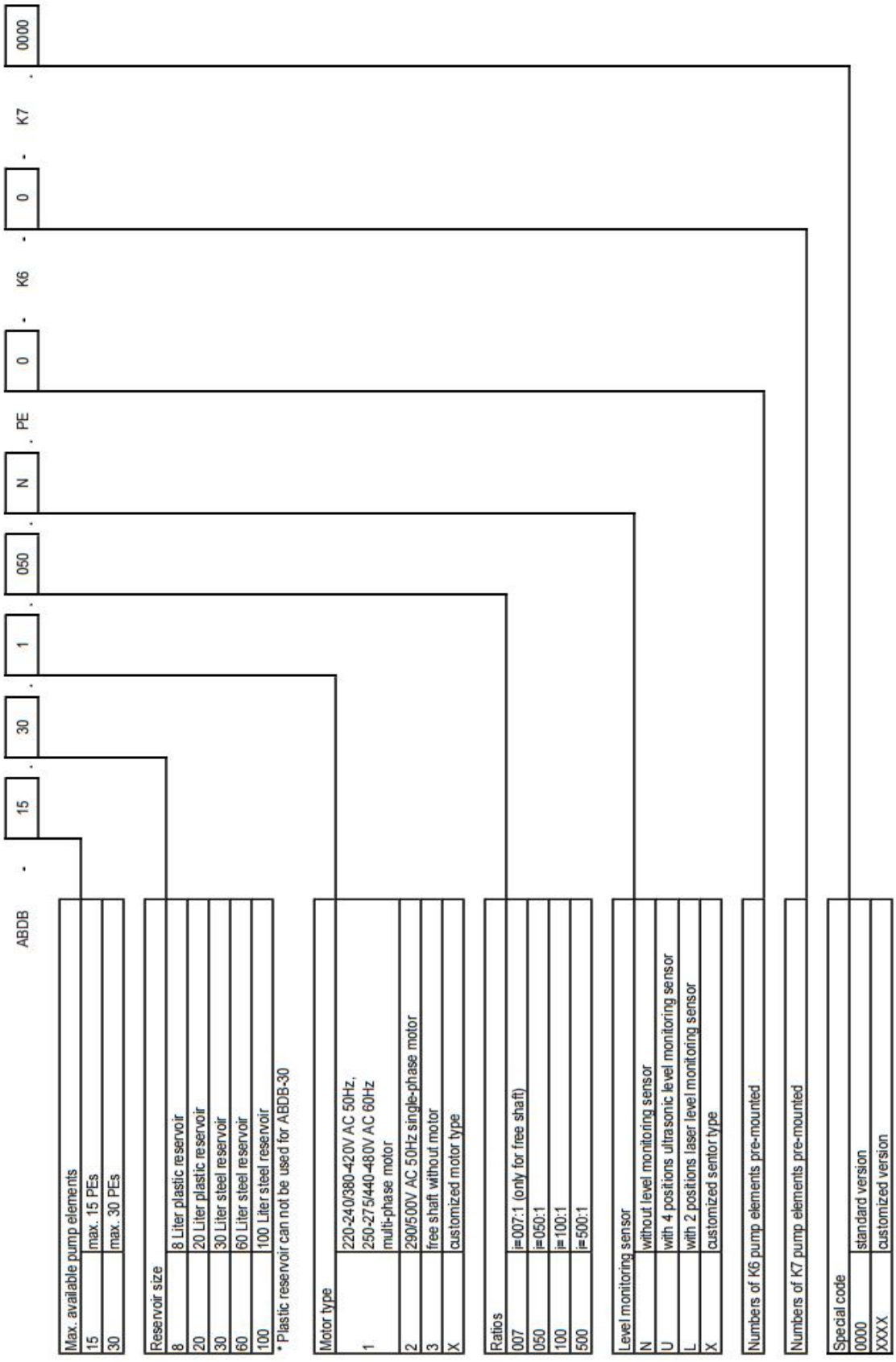
Order Key ABDB-15, ABDB-30



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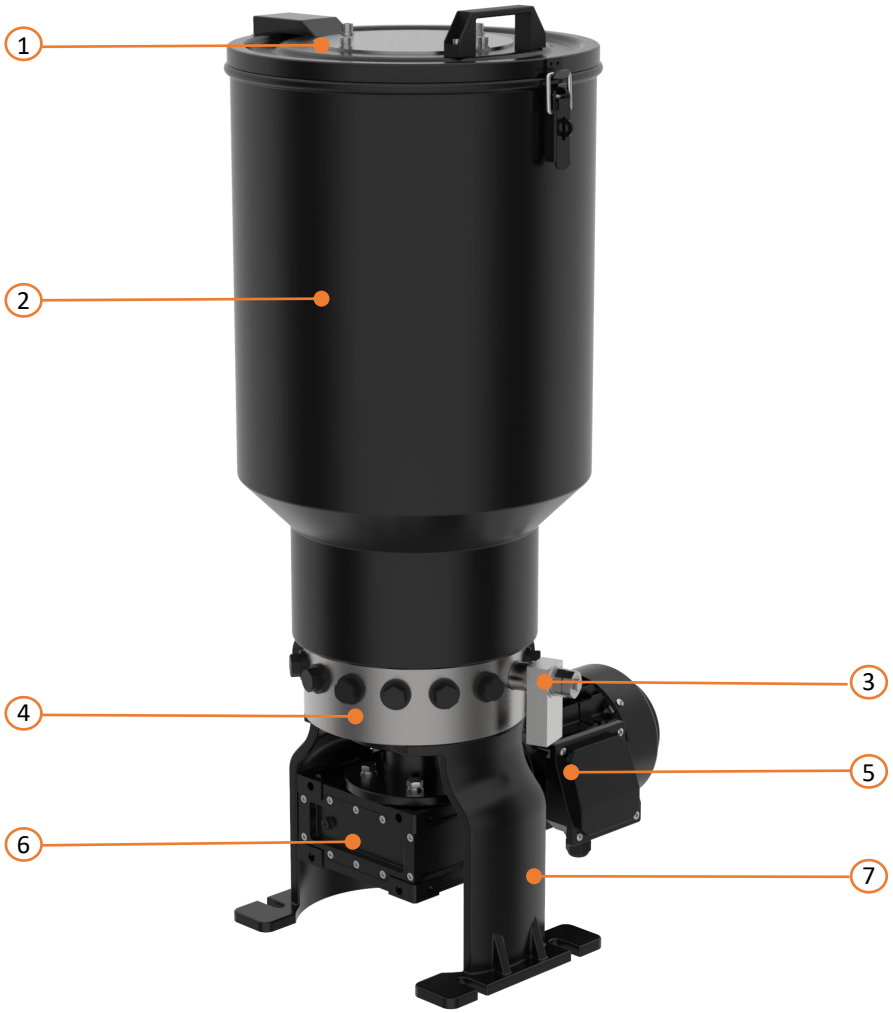
Technical data

Overview

Autol Technology multi-point centralized lubrication pump type - ABDB has been widely used in industries like mining, metallurgy, textiles, food, ports, and heavy mechanical equipment, etc. This is a heavy duty pump that can withstand harsh conditions and deliver high quantities of grease.

Our Autol Technology automatic lubrication system lubricates all lube points as required through lubrication system. It can reduce the friction resistance, reduce contact wear and decrease the friction surface temperature. Meanwhile, it plays a supporting role of anti-rust, shock absorption and sealing.



Dia. 11.1 Composition for
ABDB-15 Multi-Point Lubrication Pump

1. Top cover 2. Reservoir 3. Pump element
4. Pump body 5. Motor 6.Gear Box 7.Bracket

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Technical data

Technical data for ABDB-05			
Motor:	Single-range 50Hz	Multi-range 50Hz	Muti-range 60Hz
Motor type:	T4A63		
Construction type:	B5		
Frame size:	63		
Flange:	140mm		
Shaft:	D11x23		
IP class:	IP55		
Rated voltage:	290/500 V AC	220-240/380-420V AC	250-275/440-480V AC
Rated power:	0.12 kw	0.12 kw	0.12 kw
Rated revolution:	1400 rpm	1400 rpm	1680 rpm
Rated current:	0.9A, △ / 0.52A,Y	0.9A, △ / 0.52A,Y	0.9A, △ / 0.52A,Y
Gear box:			
Available transmission ratios:		70:1, 300:1	
Construction type:	B5		
Frame size:	63		
Flange:	140mm		
General:			
Working temperature:	-20℃~70℃	Mounting position:	Vertical
Max operating pressure:	350bar	Direction of rotation:	Clockwise
Sound pressure level:	≤55dB		
Level sensor as option:	Ultra sonic sensor (4 positions), Laser sensor (2 positions)		
Refilling:	Reservoir cover, quick coupling, grease nipple, hand press adapter		
Lubricant:	Lubrication greases from NLGI 000 up to and including NLGI 2. Lubrication oils with min. 40 mm2/s at operating temperature		
Reservoir size:	4 / 8 / 20 Liter transparent platic		
Max. pump elements:	5		
Type of pump elements:	PE 1,5 / 2,5 / 4,5 M22x1,5, PR adjustable M22x1,5		

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Technical data

Technical data for ABDB-15，ABDB-30			
Motor:	Single-range 50Hz	Multi-range 50Hz	Muti-range 60Hz
Motor type:	T4A71		
Construction type:	B14		
Frame size:	71		
Flange:	105mm		
Shaft:	D14x30		
IP class:	IP55		
Rated voltage:	290/500 V AC	220-240/380-420V AC	250-275/440-480V AC
Rated power:	0.25 kw	0.25 kw	0.25 kw
Rated revolution:	1400 rpm	1400 rpm	1680 rpm
Rated current:	1.24A, △ / 0.71A,Y	1.24A, △ / 0.71A,Y	1.24A, △ / 0.71A,Y
Gear box:			
Available transmission ratios:	7:1(free shaft), 50:1, 100:1, 500:1		
Construction type:	B14		
Frame size:	71		
Flange:	105mm		
General:			
Working temperature:	-20℃~70℃	Mounting position:	Vertical
Max operating pressure:	350bar	Direction of rotation:	Clockwise
Sound pressure level:	≤55dB		
Level sensor as option:	Ultra sonic sensor (4 positions), Laser sensor (2 positions)		
Refilling:	Reservoir cover, quick coupling, grease nipple, hand press adapter		
Lubricant:	Lubrication greases from NLGI 000 up to and including NLGI 2. Lubrication oils with min. 40 mm2/s at operating temperature		
	ABDB-15		ABDB-30
Reservoir size:	8 / 20 Liter transparent plastic, 30 / 60 / 100 Liter metal		30 / 60 / 100 Liter metal
Max. pump elements:	15		30
Type of pump elements:	K6 M22x1,5 G1/4 0,033-0,160cm3/cy, K7 M22x1,5 G1/4 0,046-0,230cm3/cy		
Type fo safety valve:	G1/4 M10x1		

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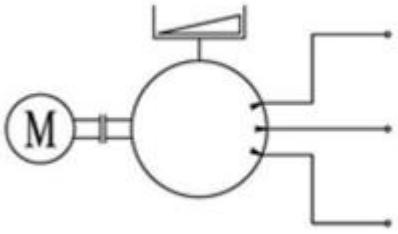
Areas of Application

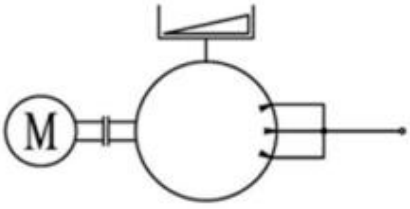
ABDB series multi-line pump serves as centralized lubrication pump in large-scale progressive lubrication system.

As a multi-line pump, ABDB can be connected directly to supply the lubricants to each lube point with hose or can supply to each lube by combining multiple pump elements (*Dia. A and B*).

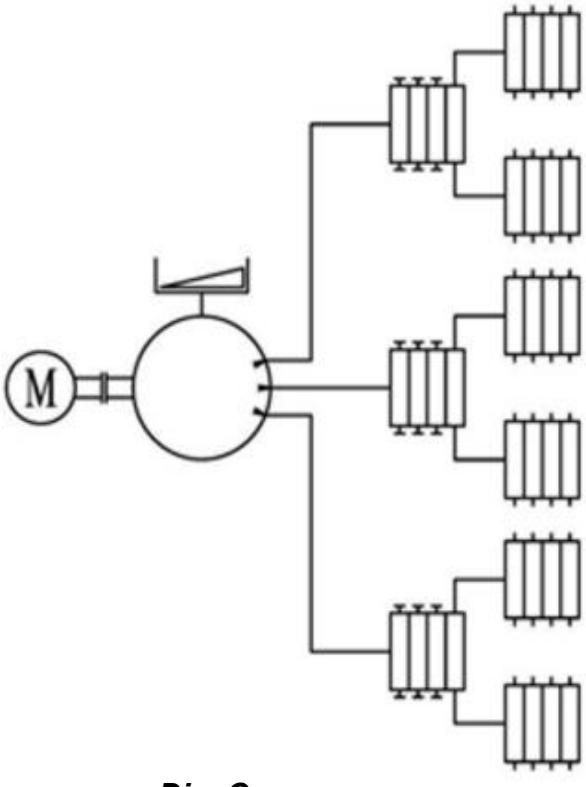
In the large-scale progressive lubrication system, ABDB series pump can supply the lubricant with a set or multiple sets of progressive dividers and at least 1 or multiple pump elements (*Dia. C and D*).



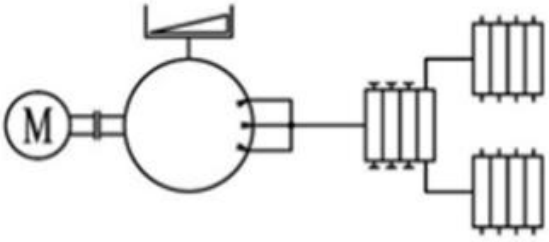
Dia. A



Dia. B



Dia. C



Dia. D

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Pump Element

Installation and removal of ABDB-05 pump element

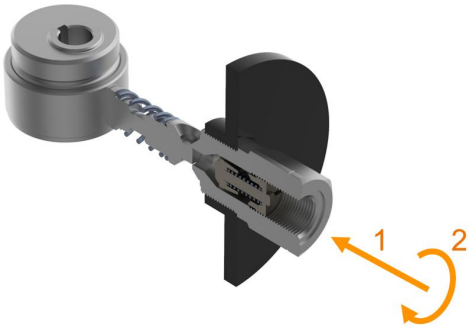
1. Insert the pump element vertically into the pump outlet housing drilling (*Dia. A*).

2. Tighten the pump element clockwise with a torque wrench, the pre-set value of the torque wrench cannot be less than 43 Nm +/- 2 Nm* (*Dia. A*).

**** Value is default setting by original manufacturer.***

3. For removal, reverse above sequence.

**** Only install or remove the pump element when pu power OFF!!!***



Dia. A Pump Element installation and removal for ABDB-05

Installation and removal of ABDB-15 and ABDB-30 pump element

1. Pull out the plunger of the pump element by around 28mm (*Dia. B-1*).

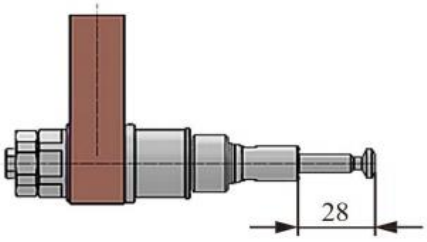
2. Tilt the pump element upwards as shown in the figure and install the pump element into the corresponding mounting outlet of the pump (*Dia. B-2*).

3. Place the pump element in a horizontal position and ensure that the head of the pump element has fallen into the groove between the mounting ring and cam shaft, then tighten the pump element with a torque wrench SW24. the preset value of the torque wrench cannot be less than 32.5 Nm +/- 2.5 Nm* (Dia. B-3).

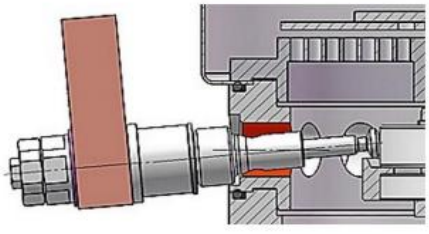
**** Value is default setting by original manufacturer.***

4. For removal, reverse above sequence.

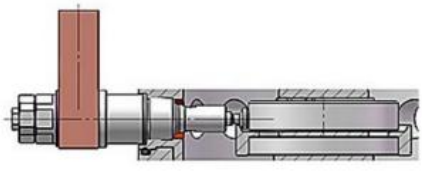
****Only install or remove the pump element when p power OFF!!!***



Dia. B-1



Dia. B-2



Dia. B-3

Dia. B Pump Element installation and removal for ABDB-15, ABDB-30

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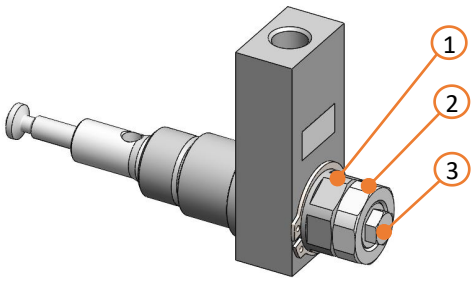
Pump Element

Delivery rate adjustment of K6 and K7 pump element



Dia. 15.1 K6 & K7 Pump Element Flow Adjustment
1.Body of pump element (SW24) 2.Locknut (SW24) 3.Adjusting bolt (SW10)

1.Setting the delivery rate information

1.1 Undo the locknut ②.

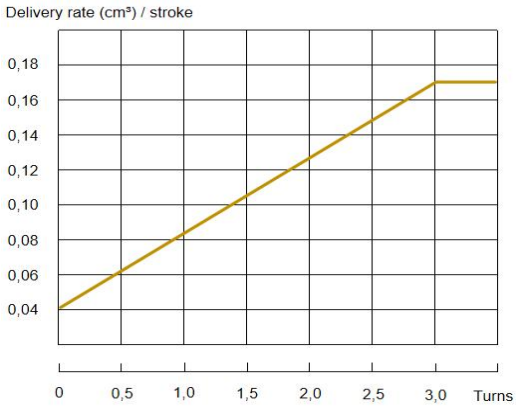
1.2 To set the delivery rate, turn the adjusting bolt ③ in the relevant direction:

- ↻ = lower delivery rate
- ↺ = higher delivery rate

After setting the delivery rate, tighten the locknut ② again, torque to apply: 15 Nm-1 Nm.

2.Setting the minimum delivery rate

Use SW24 wrench to undo the locknut ②, Turn the adjusting bolt ③ clockwise with the SW10 wrench until it cannot be turned, At this point, the pump element flow reaches the minimum value. Then keep the adjusting bolt ③ still,Tighten the locknut ② again.



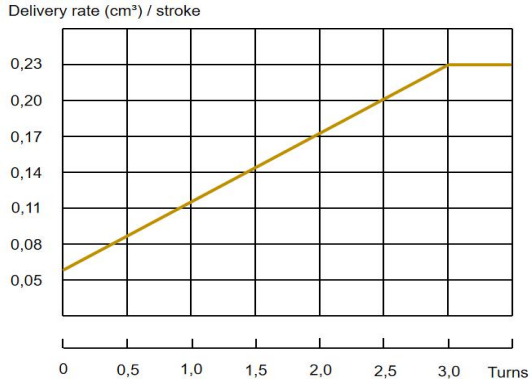
Dia. 15.2 K6 Pump Element Delivery Rate

3.Setting the maximum delivery rate

On the basis of the minimum delivery rate, Use SW24 wrench to undo the locknut ②, Turn the adjusting bolt ③ counterclockwise for 3 turns, At this point, the pump element flow reaches the maximum value. Then keep the adjusting bolt ③ still,Tighten the locknut ② again.

**** In the process of flow regulation, always keep the body of pump element ① still.***

**** The pump element flow regulation must starts from the minimum flow and cannot be turned counterclockwise for more than 3 turns, otherwise the pump element may be damaged!!!***



Dia. 15.3 K7 Pump Element Delivery Rate

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Safety Valve Type C: SV-C for PE (Standard Version)

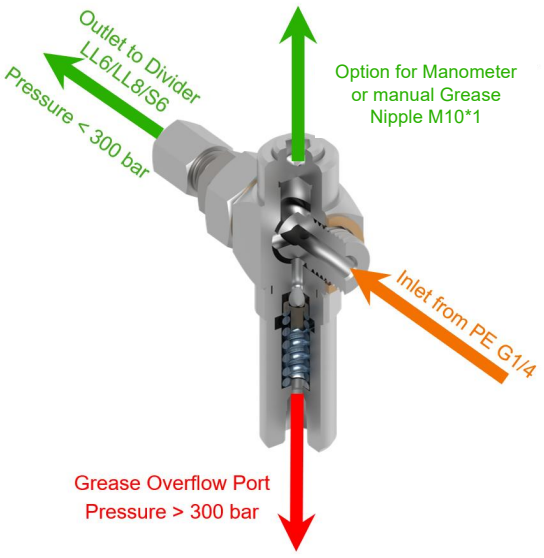
Safety valve Type C: without bypass function
Safety valve Type C: Pre-set to 300 bar

When the system pressure is higher than the pre-set valve (300 bar), the safety valve opens, lubricant flows from the safety valve overflow port out.

Please consider the relevant environmental conditions!

Order No. with Safety Valve Type C

	Option	Order No.
SV-C*	/	2031001116
Straight Coupling*	LL6	3012002826
	LL8	3012003039
Copper Ring	/	3014000576

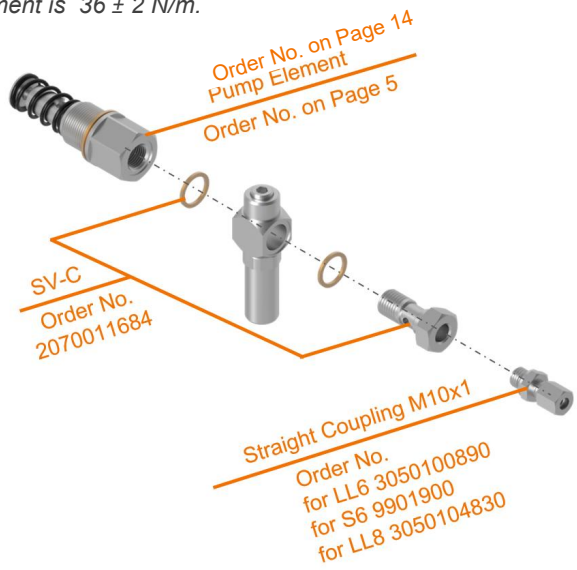


Dia. 16.1 Safety Valve C Working Principle

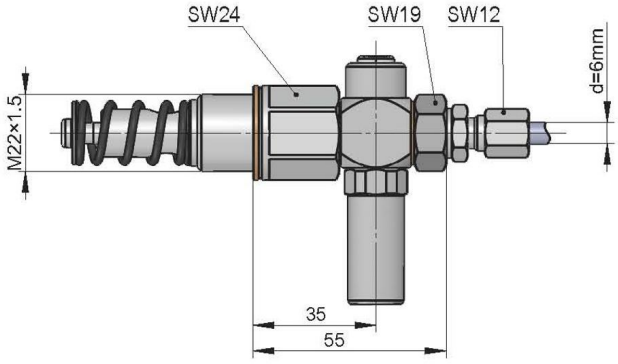
**** For SV-C Order No. 2070011684 already includes the copper rings. For extra Copper Ring Order No. is 3014000576.***

**** For further information to hose couplings like swivel type or elbow type please check our accessories catalog or contact us.***

The default setting by the original manufacturer for the torque value between safety valve and pump element is 36 ± 2 N/m.



Dia. 16.2 Explosion for SV-C with PE + Straight Coupling



Dia. 16.3 Installation Dimensions for SV-C + PE

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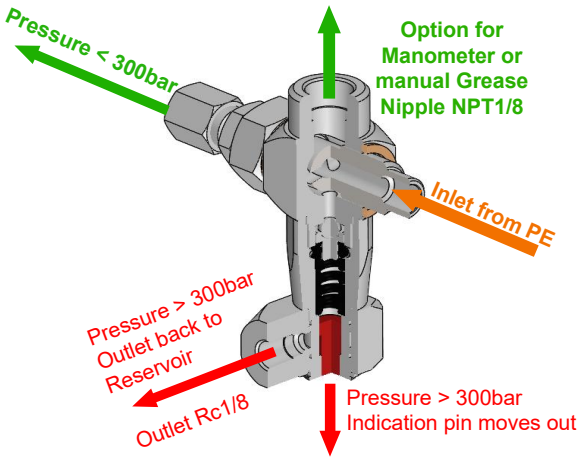
Safety Valve Type A: SV-A for PE

Safety valve Type A (SV-A): with bypass and indication pin function
Safety valve Type A (SV-A): Pre-set to 300 bar

When the system pressure is higher than the pre-set valve (300 bar), the safety valve opens, lubricant flows from the bypass of the safety valve and back to pump reservoir,indication pin moves out.
Safety valve Type A: single bypass function

Order No. with Safety Valve Type A

	Option	Order No.
SV-A*	/	2030000772
Bypass	Single bypass	2031000878
	Dual bypass	2031000619
Straight Coupling*	LL6	3012002826
	L8	3012003039
Copper Ring	/	3014000576

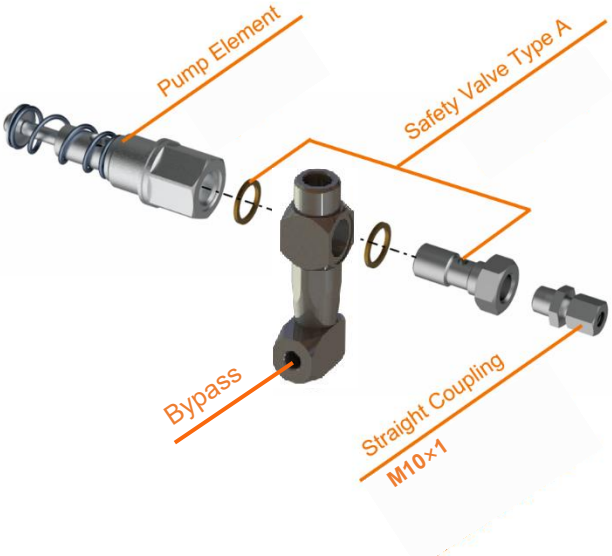


Dia. 17.1 Safety valve A working principle

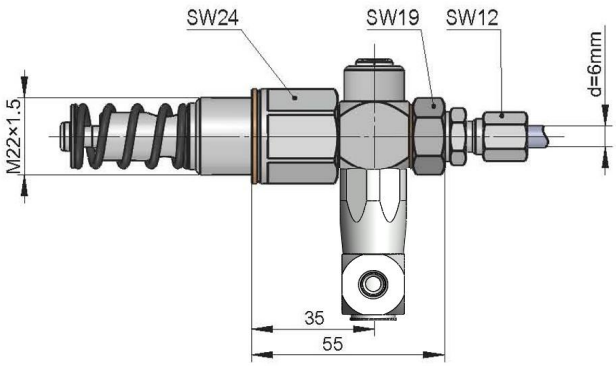
The default setting by the original manufacturer for the torque value between safety valve and pump element is 36 ± 2 N/m.

**** For SV-A Order No. 3012003039 already includes the copper rings. For extra Copper Ring Order No. is 3014000576.***

**** For further information to hose couplings like swivel type or elbow type please check our accessories catalog or contact us.***



Dia. 17.2 Explosion for SV-A with PE + Straight Coupling + Bypass



Dia. 17.3 Installation Dimensions for SV-A + PE

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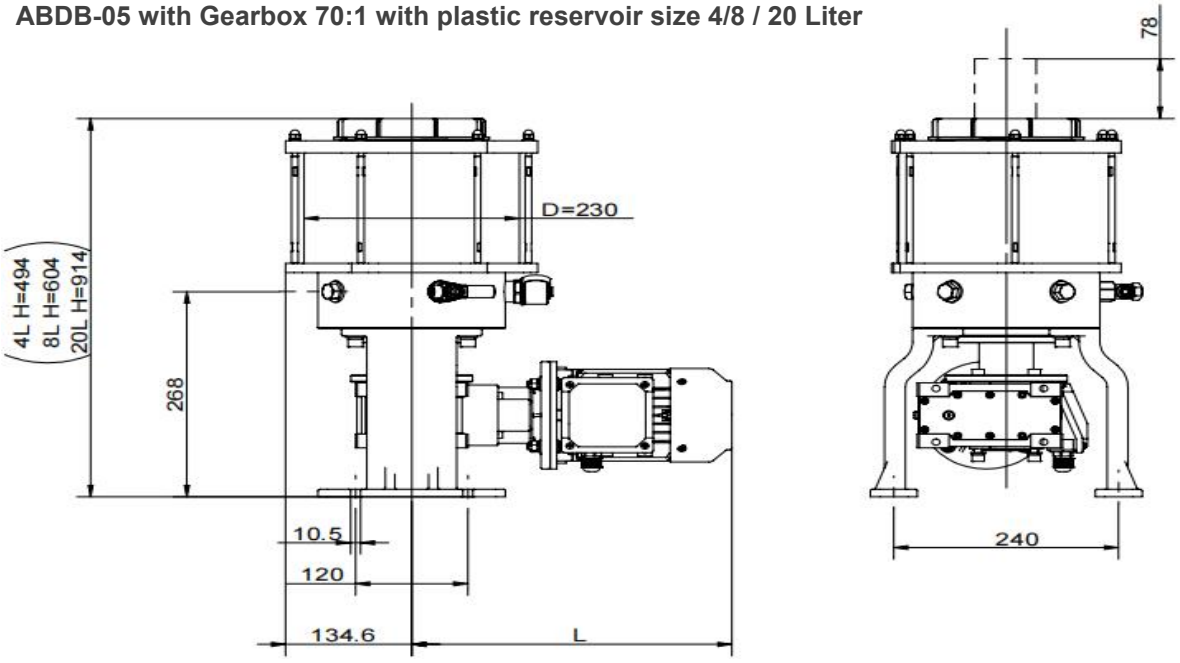
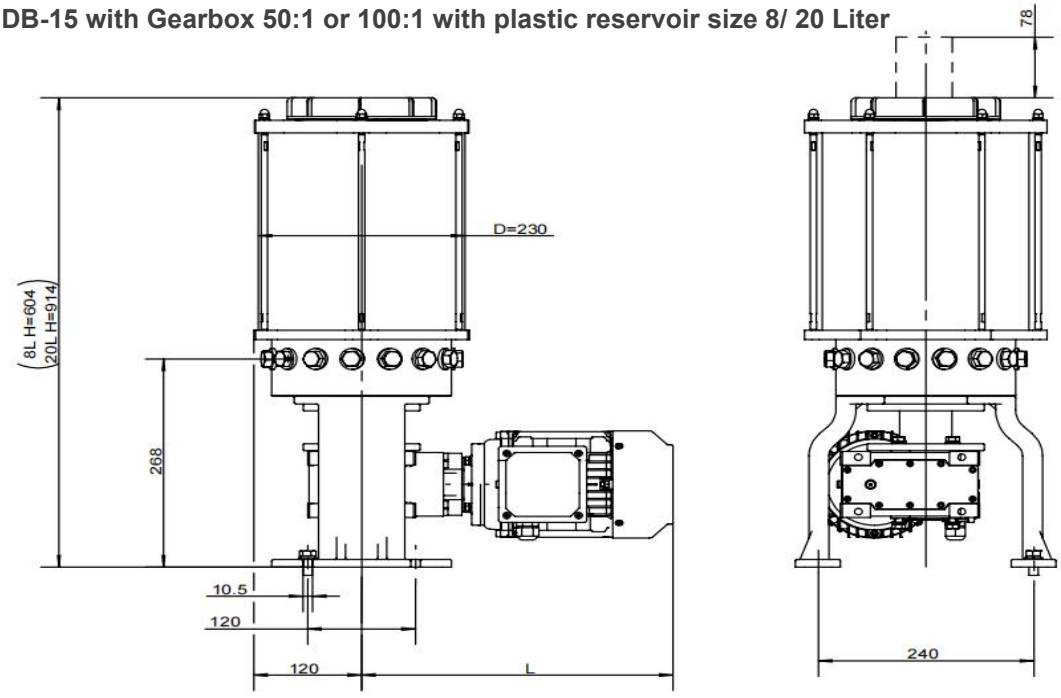
Installation Dimensions

ABDB-05 with Gearbox 70:1 with plastic reservoir size 4/8 / 20 Liter



** For ABDB-05, when a 70:1 ratio gear box is used, L = 342. ForABDB-05 with plastic reservoir pump, when the order key has only diference by the ultrasonic grease level monitoring sensor, the pump with sensor is 78 mm higher than without sensor pump.*

ABDB-15 with Gearbox 50:1 or 100:1 with plastic reservoir size 8/ 20 Liter

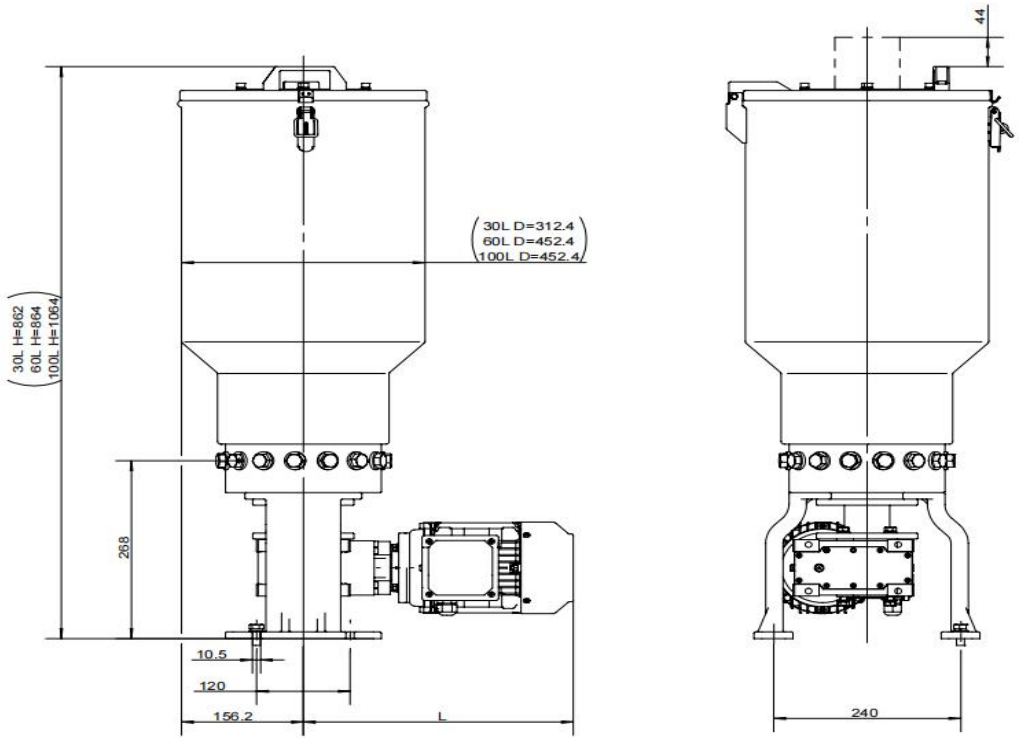


** For ABDB-15, when a 50:1 ratio gear box is used, L = 346.5, when a 100:1 ratio gear box is used L = 383. For ABDB-15 with plastic reservoir pump, when the order key has only diference by the ultrasonic grease level monitoring sensor, the pump with sensor is 78 mm higher than without sensor pump.*

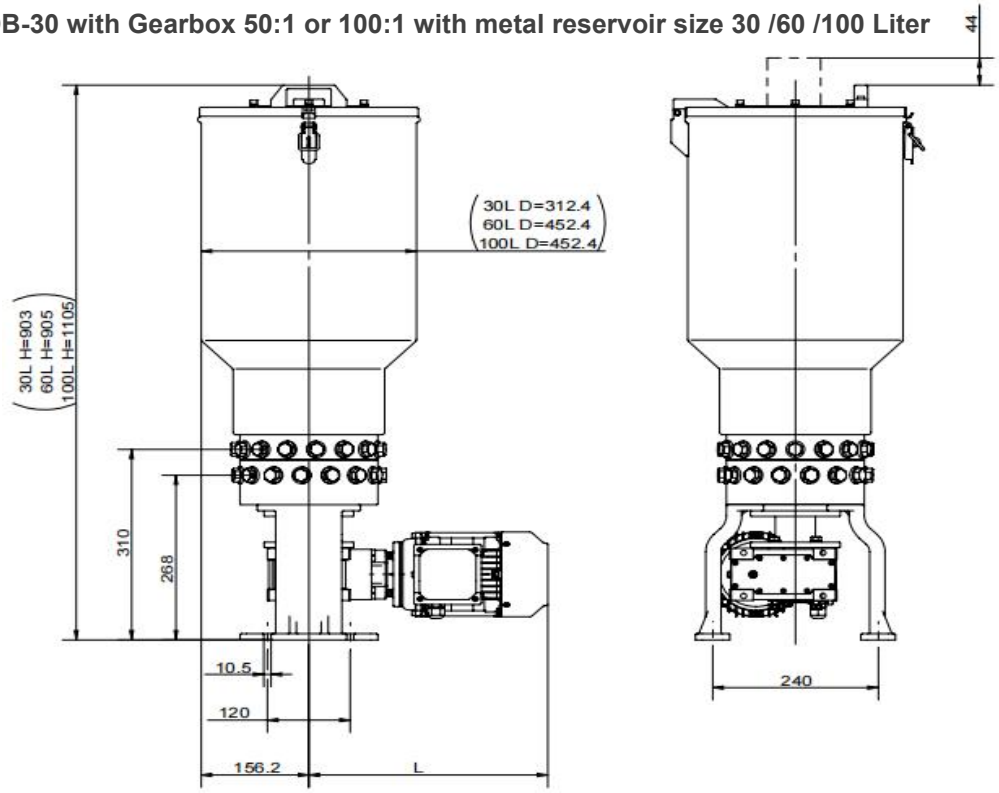
AUTOL

Installation Dimensions

ABDB-15 with Gearbox 50:1 or 100:1 with metal reservoir size 30 /60 / 100 Liter



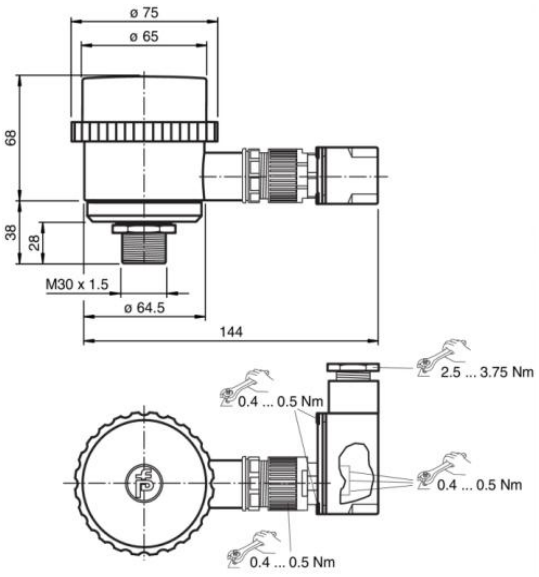
ABDB-30 with Gearbox 50:1 or 100:1 with metal reservoir size 30 /60 /100 Liter



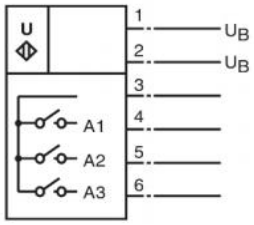
** For both ABDB-15 and ABDB-30, when a 50:1 ratio gear box is used, L = 346.5, when a 100:1 ratio gear box is used, L = 383. For both ABDB-15 and ABDB-30 with metal reservoir pump, when the order key has only difference by the ultrasonic grease level monitoring sensor, the pump with sensor is 44 mm higher than without sensor pump.*

AUTOL

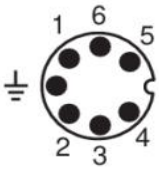
Ultrasonic level monitoring sensor



Dia. A Dimension for ultrasonic monitoring sensor



Dia. B Standard symbol / connection



Dia. C Connector V7

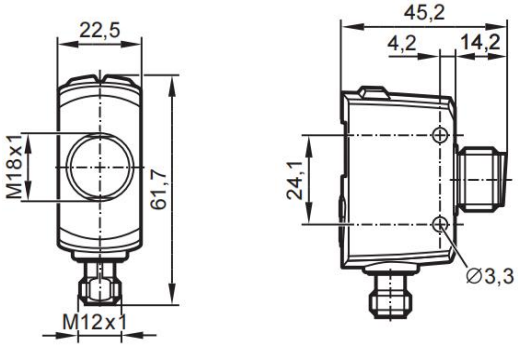
LED	S4 = OFF	S4 = ON
1 ⊗ (red)	full	full
2 ⊗ (green/yellow)	high	normal
3 ⊗ (green/yellow)	normal	low
4 ⊗ (red)	empty	empty

Dia. D Indicators

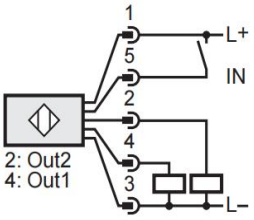
Technical data for ultrasonic level monitoring sensor		
General specifications:		
Sensing range:	6 to 550 mm	
Dead band:	0 to 60mm	
Standard target plate:	100mm x 100 mm	
Transducer frequency:	Approx. 380 kHz	
Response deday:	> 10 s, relay < 1 s, LEDs	
Ambient temperature:	-20 to 60 ° C	
Storage temperature:	-40 to 85 ° C	
Degree of protection:	IP65	
Indicators:		
LED red:	LED 1: overfill indication	LED 4: underfill indication
LED green / yellow:	LED 2: overfill warning and normal operation	LED 3: normal operation and underfill warning
DIP switch:	setting of the switch points/operating modes	
Electrical specifications:		
Operating voltage:	10 ... 253 V DC or 20 ... 253 V AC , 47 ... 63 Hz	
Standard conformity:	EN IEC 60947-5-2:2020 / IEC 60947-5-2:2019	

AUTOL

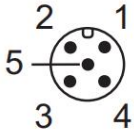
Laser level monitoring sensor



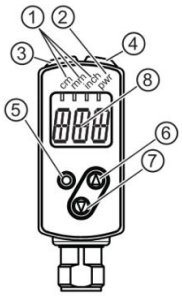
Dia. A Dimension for laser monitoring sensor



Dia. B Standard symbol / connection



Dia. C Connector V7



1: 3 x LED green	Active LED = set display unit (cm, mm, inch)
2: 1 x LED green	Active LED = power
3: 1x LED orange	Switching status Out 1
4: 1x LED orange	Switching status Out 2
5: Programming button [ENTER]	Selection of the parameters and acknowledgement of the parameter values.
6: Programming button "up"	Setting of the parameter values (scrolling by holding pressed; incremental by pressing briefly).
7: Programming button "down"	Setting of the parameter values (scrolling by holding pressed; incremental by pressing briefly).
8: 3-digit alphanumeric display	Indication of the measured distance, the parameters and parameter values.

Dia. D Indicators

Technical data for laser level monitoring sensor

General specifications:		
Sensing range:	0.025 to 1.5 m	
Dead band:	0 to 25mm	
Standard target plate:	100mm x 100 mm	
Transducer frequency:	33 Hz	
Response deday:	> 10 s, relay < 1 s, LEDs	
Ambient temperature:	-25 to 60 ° C	
Storage temperature:	-30 to 80 ° C	
Degree of protection:	IP65	
Display:		
LED green:	LED 1: Active LED = set display unit (cm, mm, inch)	LED 2: Active LED = power
LED yellow:	LED 3: Switching status Out 1	LED 4: Switching status Out 2
DIP switch:	setting of the switch points/operating modes	
Electrical specifications:		
Operating voltage:	10 ... 30 V DC	
Standard conformity:	EN 60947-5-2	

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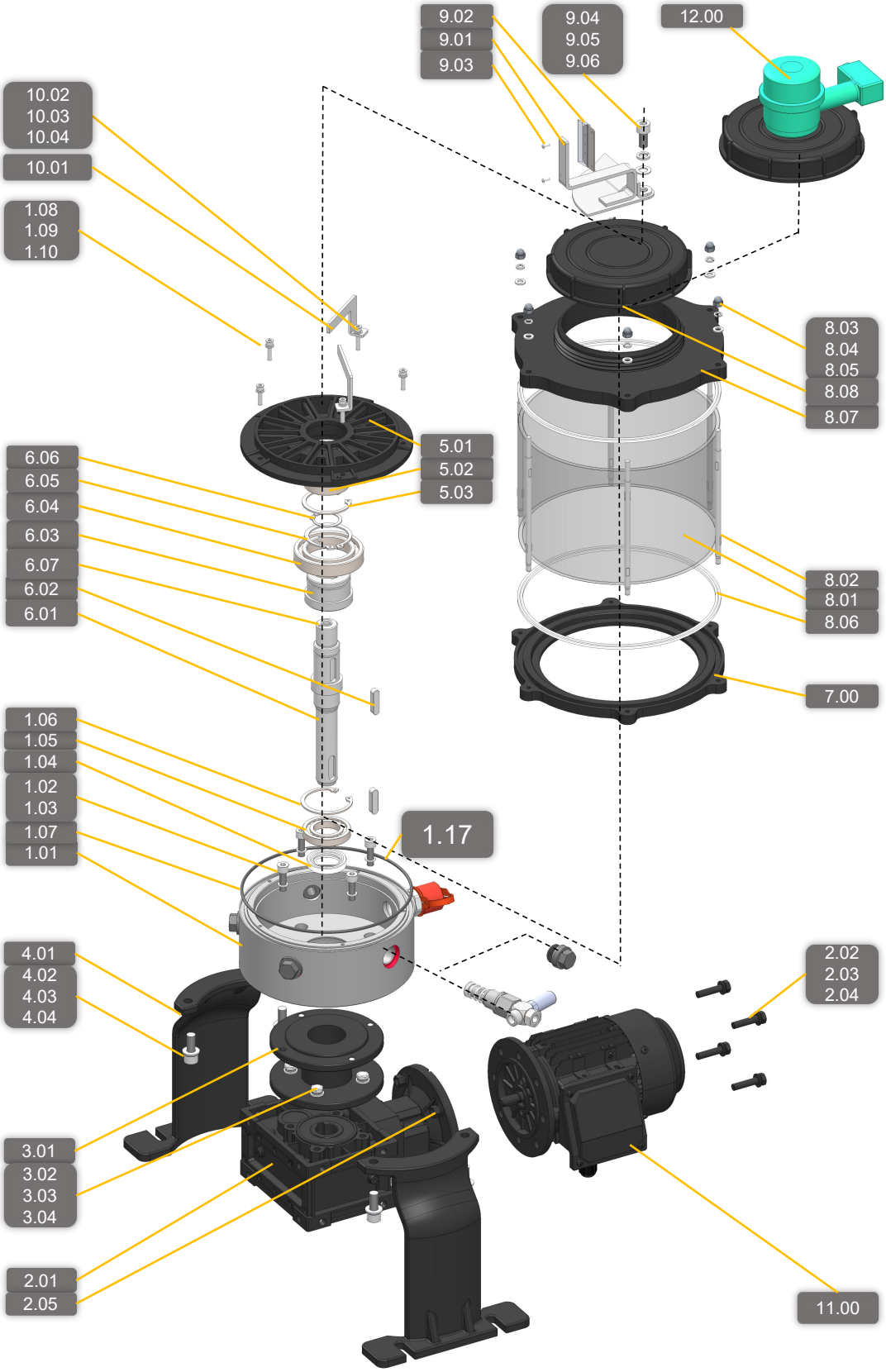
Explosion Drawing – ABDB-05 Pump



AUTOL

General BOM - ABDB05 Pump

Pos.	Qty.	Description	Part No.
1.01	1	ABDB05 pump body, Φ200*85 20	3012004942
1.02	4	Hexagon socket head cap screws, M8*25-A2-70	3014000430
1.03	4	Copper washer, 8*12*1	3014000580
1.04	1	Rotary shaft sealing, TC-type	3024000140
1.05	1	Deep groove ball bearing, 16006	3014000647
1.06	1	Circlip for hole, 55	3014000394
1.07	1	O-ring, 190*3.5-NBR	3024000141
1.08	3	Hexagon socket head cap screws, M5*20-A2-70	3014000266
1.09	3	Flat washer, 5-A2	3014000184
1.10	3	Spring washer, 5-A2	3014000185
2.01	1	Gear box kit 70:1, BKM0503/75/B7/（T4A633-4 IEC-0.12KW-63-B5-4P）	3014001739
2.02	4	Hexagon head bolt, M8*35-A2-70	3014000305
2.03	8	Flat washer, 8-A2	3014000200
2.04	8	Spring washer, 8-A2	3014000201
2.05	4	Hexagon nut, M8-A2-70	3014000315
3.01	1	Flange for gear box 70:1, Φ130*63	3012004956
3.02	4	Hexagon head bolt, M8*20-A2-70	3014000299
3.03	4	Flat washer, 8-A2	3014000200
3.04	4	Spring washer,8-A2	3014000201
4.01	2	ABDB pump bracket, 220*200*99	3012005264
4.02	4	Flat washer, 10-A2	3014000147
4.03	4	Spring washer, 10-A2	3014000865
4.04	4	Hexagon head bolt, M10*25-A2-70	3014001193
5.01	1	ABDB perforate plate, Φ197*26 PA	3021000394
5.02	1	Deep groove ball bearing, 6205	3014000651
5.03	1	Circlip for hole, 52	3014000448
6.01	1	ABDB-05 shaft, Φ36*185	3012004943

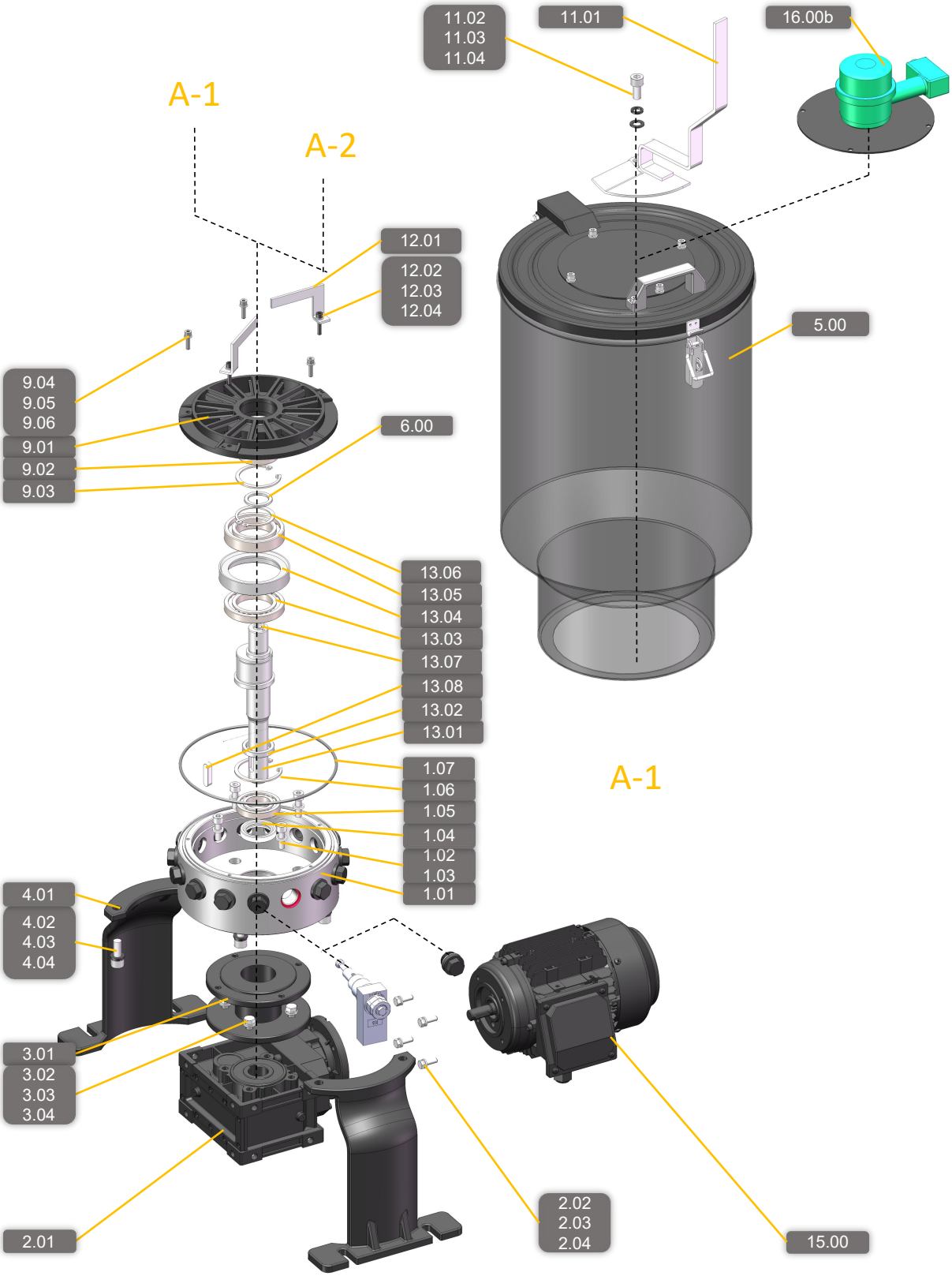
AUTOL

General BOM - ABDB05 Pump

Pos.	Qty.	Description	Part No.
6.02	2	Flat key, A8*32	3014000650
6.03	1	ABDB-05 eccentric wheel, Φ55*30	3012004944
6.04	1	Deep groove ball bearing, 6010	3014001636
6.05	1	Circlip for shaft, 50	3014001637
6.06	1	Circlip for shaft, 30 A-type	3014000172
6.07	1	Cylindrical pin, 4*8	3014000180
7.00	1	ABDB intermediate plate for transparent reservoir, Φ270*12	3012004728
8.01	1	ABDB transparent reservoir 4Liter, D220-230 H150	3022000085
8.02	6	Reservoir fixed stud, Φ7*176-M6	3012004214
8.03	6	Cap nut, M6-A1-50	3014000292
8.04	6	Flat washer, 6-A2	3014000191
8.05	6	Spring washer, 6-A2	3014000192
8.06	2	Reservoir gasket, Φ232*Φ220*3	3021000170
8.07	1	Reservoir top cover, Φ250*42	3021000357
8.08	1	Plastic cap kit, Φ166*27	3021000392
9.01	1	ABDB stirring paddle kit for transparent reservoir	3011001808
9.02	1	ABDB standing paddle kit	3011001776
9.03	2	Rivet, Φ2.4*8	3014001518
9.04	1	Hexagon socket head cap screws, M10*20-A2-70	3014000449
9.05	1	Flat washer, 10-A2	3014000147
9.06	1	Spring washer, 10-A2	3014000865
10.01	2	ABDB standing paddle, 75*45*18	3011001812
10.02	2	Hexagon socket head cap screws, M5*25-A2-70	3014000267
10.03	2	Flat washer, 5-A2	3014000184
10.04	2	Spring washer, 5-A2	3014000185
11.00a	0-1	Motor kit T4A631-4 (1E4,4P)IP55 0.12KW 220-260.440-480V AC	3030001051
11.00b	0-1	Motor kit T4A631-4 (1E4,4P)IP55 0.12KW 290/500V AC	3030001051
12.00	0-1	Ultrasonic level sensor kit on transparent reservoir cover	2051000135

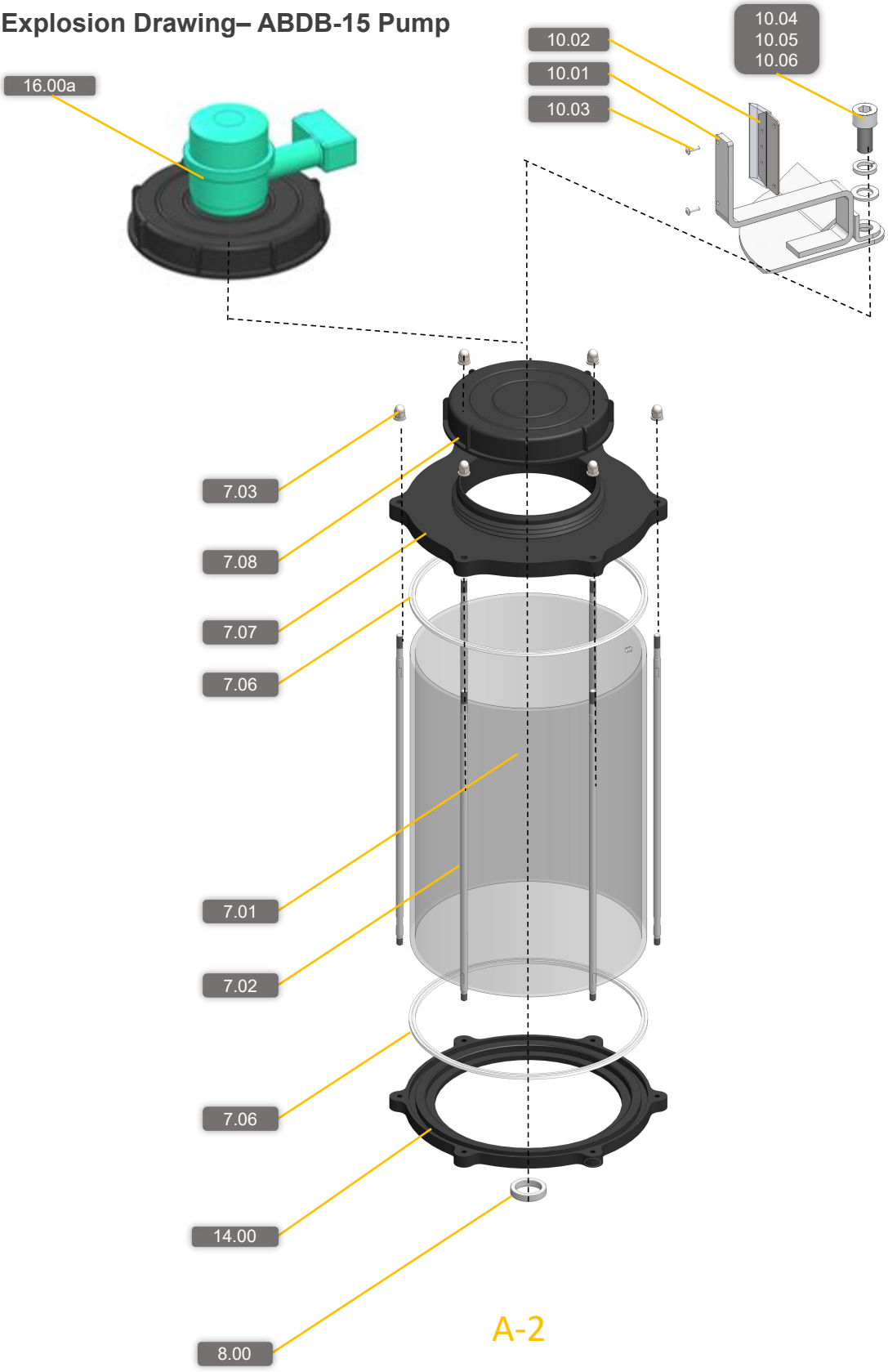
AUTOL

Explosion Drawing– ABDB-15 Pump



AUTOL

Explosion Drawing– ABDB-15 Pump



AUTOL

General BOM - ABDB15 Pump

Pos.	Qty.	Description	Part No.
1.01	1	ABDB05 pump body, Φ200*85	3012004946
1.02	4	Hexagon socket head cap screws, M8*25-A2-70	3014000430
1.03	4	Copper washer, 8*12*1	3014000580
1.04	1	Rotary shaft sealing, TC-type	3024000140
1.05	1	Deep groove ball bearing, 16006	3014000647
1.06	1	Circlip for hole, 55	3014000394
1.07	2	O-ring, 190*3.5-NBR	3024000141
2.01a	1	Gear box kit 50:1, BKM0502/50/B7/（T4A711-4 IEC-0.25KW-71-B14-4P）	3014001744
2.01b	1	Gear box kit 100:1, BKM0633/100/B7/（T4A711-4 IEC-0.25KW-71-B14-4P）	3014001745
2.02	4	Hexagon head bolt, M6*20-A2-70	3014000279
2.03	4	Flat washer, 6-A2	3014000191
2.04	4	Spring washer, 6-A2	3014000192
3.01a	1	Flange for gear box 70:1, Φ130*63	3012004956
3.01b	1	Flange for gear box 100:1, Φ130*63	3014001746
3.02	4	Flat washer, 8-A2	3014000200
3.03	4	Spring washer, 8-A2	3014000201
3.04	4	Hexagon head bolt, M8*20-A2-70	3014000299
4.01	2	ABDB pump bracket, 220*200*99	3012005264
4.02	4	Flat washer, 10-A2	3014000147
4.03	4	Spring washer, 10-A2	3014000865
4.04	4	hexagon socket head cap screws, M10*25-A2-70	3014001193
5.00	1	ABDB steel reservoir kit 30Liter, D311.4-313.4 H533	3012004953
6.00	1	Limit stop ring, Φ35*Φ25.5*3	3012005379
7.01	1	ABDB transparent reservoir kit 8Liter, D220-230 H260	3022000136
7.02	6	Reservoir fixed stud, Φ7*285-M6	3012005397
7.03	6	Cap nut, M6-A1-50	3014000292
7.04	6	Flat washer, 6-A2	3014000191
7.05	6	Spring washer, 6-A2	3014000192
7.06	2	Reservoir gasket, Φ232*Φ220*3	3021000170
7.07	1	Reservoir top cover, Φ250*42	3021000357
7.08	1	Plastic cap kit, Φ166*27	3021000392
8.00	1	Limit stop ring, Φ35*Φ25.5*7	3012005380

AUTOL

General BOM - ABDB15 Pump

Pos.	Qty.	Description	Part No.
9.01	1	ABDB perforate plate, Φ197*26 PA	3021000394
9.02	1	Deep groove ball bearing, 6205	3014000651
9.03	1	Circlip for hole, 52	3014000448
9.04	3	Hexagon socket head cap screws, M5*20-A2-70	3014000266
9.05	3	Flat washer, 5-A2	3014000184
9.06	3	Spring washer, 5-A2	3014000185
10.01	1	ABDB stirring paddle kit for transparent reservoir	3011001808
10.02	1	ABDB standing paddle kit	3011001776
10.03	2	Rivet, Φ2.4*8	3014001518
10.04	1	Hexagon socket head cap screws, M10*20-A2-70	3014000449
10.05	1	Flat washer, 10-A2	3014000147
10.06	1	Spring washer, 10-A2	3014000865
11.01	1	ABDB stirring paddle kit for steel reservoir	3012004949
11.02	1	Hexagon socket head cap screws, M10*20-A2-70	3014000449
11.03	1	Flat washer, 10-A2	3014000147
11.04	1	Spring washer, 10-A2	3014000865
12.01	2	ABDB standing paddle, 75*45*18	3011001812
12.02	2	Hexagon socket head cap screws, M5*25-A2-70	3014000267
12.03	2	Flat washer, 5-A2	3014000184
12.04	2	Spring washer, 5-A2	3014000185
13.01	1	ABDB-15 shaft, Φ50*220	3012004947
13.02	1	ABDB-15 crankshaft retaining ring, Φ40*7 45	3012004948
13.03	1	Deep groove ball bearing, 6009	3014000648
13.04	1	Plunger pull ring，Φ88*Φ65*16	3012001871
13.05	1	Deep groove ball bearing, 16009	3014000649
13.06	1	Circlip for shaft，45	3014000182
13.07	1	Cylinder pin， Φ4*8	3014000180
13.08	1	Flat key, A8*32	3014000650
14.00	0-1	ABDB intermediate plate for transparent reservoir, Φ270*12	3012004728
15.00a	0-1	Motor kit T4A711-4 (IE4,4P)IP55 0.25KW 220-260, 440-480V AC	3014001748
15.00b	0-1	Motor kit T4A711-4 (IE4, 4P)IP55 0.25KW 290/500V AC	3014001749
16.00a	0-1	Ultrasonic level sensor kit on transparent reservoir cover	2051000135
16.00b	0-1	Ultrasonic leve sensor kit on steel reservoir cover	2051000139

Delivery, returns and storage

Delivery

After receipt of the shipment, check the shipment for damage and completeness according to the shipping documents. Immediately report any transport damages to the forwarding agent. Keep the packaging material until any discrepancies are resolved. During in-house transport ensure safe handling.

Returns

Clean all parts and pack them properly (i.e., following the regulations of the recipient country) before returning them. Protect the product against mechanical influences such as impacts. There are no restrictions for land, sea or air transport.

Storage

AUTOL products are subject to the following storage conditions:

- dry, dust- and vibration-free in closed premises
- no corrosive, aggressive materials at the place of storage (e. g. UV rays, ozone)
- protected against pests and animals (insects, rodents, etc.)
- possibly in the original product packaging
- shielded from nearby sources of heat and coldness
- in case of high temperature fluctuations or high humidity take adequate measures (e. g. heater) to prevent the formation of condensation water

Storage conditions for parts filled with lubricant

The conditions mentioned in the following will have to be adhered to when storing products filled with lubricant.

Storage period of up to 6 months

The filled products can be used without having to take further measures.

Step for Storage period from 6 to 18 months - Pump

1. Connect the pump electrically
2. Switch the pump on and let it run, e.g., by triggering an additional lubrication, until about 4 cc of lubricant will leak from each pump element
3. Switch the pump off and disconnect it from the electrical grid
4. Remove and dispose of leaked lubricant

Step for Storage period from 6 to 18 months - Divider

1. Remove all connection lines and closure screws
2. Connect the pump which has been filled with new lubrication grease suitable for the application purpose to the divider
3. Let the pump run until new lubricant leaks from the divider
4. Remove leaked lubricant
5. Reinstall closure screws and connection lines

Step for Storage period from 6 to 18 months - Hose

1. Dismantle preassembled hose
2. Ensure that both sides of the hose remain open
3. Fill hose with new lubricant

Storage period exceeding 18 months

To avoid dysfunctions, consult the manufacturer before commissioning. The general procedure to remove the old grease filling corresponds to that of a storage period from 6 to 18 months

Installation

General information

Only qualified technical personnel may install the products described in these Instructions. During assembly pay attention to the following:

- Other units must not be damaged by the assembly
- The product must not be installed within the range of moving parts
- The product must be installed at an adequate distance from sources of heat and coldness
- Observe the product's IP degree of protection
- Adhere to safety distances and legal prescriptions on assembly and prevention of accidents
- Possible existing visual monitoring devices, e.g. pressure gauges, MIN/MAX markings or piston detectors, must be clearly visible
- Observe prescriptions in chapter Technical data regarding the installation position

Place of installation

Protect the product against humidity, dust and vibrations and install it in an easily accessible position to facilitate other installation and maintenance works.

Mechanical connection

- Minimum assembly dimensions

Ensure sufficient space for maintenance work or for attachment of further components to build a centralized lubrication system to the pump by leaving a free space of at least 100 mm into each direction in addition to the stated dimensions.

All the installation dimensions can be found on page 19.

- Installation bores

Risk of damage to the superior machine and to the pump

Drill the mounting bores on non-loadbearing parts of the superior machine only. Fastening must not be done on two parts moving against one another (e. g. machine bed and machine assembly).

- Electrical connection

Electric shock

Make sure to disconnect the product from the power supply before carrying out any works on electrical components.

Carry out the electrical connection according to the connection type of the pump,

1. Tailor the line for the power supply according to the respective connection diagram in these instructions or use pre-fabricated cable. It is mandatory to use a backup fuse. Check on page 11-12 !
2. In case the level monitoring function is not needed on the pump, insert the HS protective cap into the HS socket and tighten it. Only be doing so the degree of protection (IP class) can be complied with.

- Mount pump element and safety valve

Generally, a standard pump has a set of pump element and safety valve (SV-C) on the left side of the pump outlet. To mounting an extra set of pump element and safety valve, please make sure, the pump has been disconnected from the power supply.

Tightening torque for pump element (ABDB-05)= 43 Nm +/- 2,0 Nm
Tightening torque for pump element (ABDB-15, ABDB-30)= 32.5 Nm +/- 2.5 Nm
Tightening torque for safety valve = 36 Nm +/- 2.0 Nm

Trouble shooting

Fault	Possible cause	Solution
Pump does not run	▪ Power supply to pump interrupted – Superior machine is switched off – Connection cable of pump is loose or defective – External fuse is defective ▪ Pump is in the pause time mode ▪ Pump motor is defective ▪ Pump print board is defective ▪ Internal cable break	Check whether one of the indicated faults is present and remedy it in the frame of responsibilities. Faults outside of your own responsibility have to be reported to your superior to initiate further measures. If the fault cannot be determined and remedied, please contact our Customer Service
Pump runs but supplies no or only little lubricant	▪ Blockade, fault within the centralized lubrication system ▪ Grease level in reservoir under Min. level ▪ Defective non-retrun valve ▪ Defective safety valve ▪ Suction bore of pump element is clogged ▪ Close pump element ▪ Air bubbles in the pump body ▪ Too high lubricant consistency (at low temperatures) ▪ Too low lubricant consistency (at high temperatures) ▪ Wrong configuration of dividers	Check whether one of the indicated faults is present and remedy it in the frame of responsibilities. Faults outside of your own responsibility have to be reported to your superior to initiate further measures. If the fault cannot be determined and remedied, please contact our Customer Service

Shutdown and disposal

Temporary shutdown

Temporarily shut the system down by:

- Switching off the superior machine.
- Disconnecting the product from the power supply.

Final shutdown and disassembly

The final shutdown and disassembly of the product must be planned and carried out by the operator in a professional manner and in compliance with all regulations to be observed.

Disposal

- for Countries within the European Union

Disposal should be avoided or minimized wherever possible. Disposal of products contaminated with lubricant must be affected via licensed waste disposal contractor in accordance with environmental requirements and waste disposal regulations as well as local authority requirements.

The specific classification of the waste is in the waste producer's responsibility, as the European Waste Catalogue provides different waste disposal codes for the same type of waste but of different origin.

Electrical components have to be disposed of or recycled following WEEE directive 2012/19/EU.

Plastic or metal parts can be disposed of with the commercial waste.

- for Countries outside the European Union

The disposal must be done according to the valid national regulations and laws of the country where the product is used.