Operating Manual

Tabletop Greasing Unit

Article number:	TBV-H-01	dosing volume 0.001 – 0.020 cm³
	TBV-H-02	dosing volume 0.010 – 0.200 cm³
	TBV-H-03	dosing volume 0.100 – 2.000 cm³
	TBV-H-04	dosing volume 1.000 – 6.000 cm³

TBV-H-01	**TBV-H-03**
Tabletop greasing unit 0.001 – 0.020 cm³ (1 - 20 mm³)	Tabletop greasing unit 0.100 – 2.000 cm³ (100 - 2000 mm³)
	
TBV-H-02	**TBV-H-04**
Tabletop greasing unit 0.010 – 0.200 cm³ (10 - 200 mm³)	Tabletop greasing unit 1.000 – 6.000 cm³ (1000 - 6000 mm³)

NOTE
Please read this Operating Manual carefully before first using the device and strictly adhere to the instructions!

This device may only be worked with and worked on by persons who are familiar with this Operating Manual and the current regulations for industrial safety and accident prevention.

Keep this Operating Manual at a safe place close to the device!
The instructions must be available at all times!

Walther Systemtechnik GmbH – D 76726 Germersheim
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http://www.walther-2000.de – info@walther-2000.de

EC Declaration of Conformity

in accordance with the EC Machinery Directive 2006/42/EC of May 17th, 2006, Annex II A

We herewith declare, that the design and construction of the machine marketed by us as described below corresponds with the safety requirements of the EC Directive 2006/42/EC. If the machine is modified without our consent, this declaration loses its validity.

Manufacturer

Walther Systemtechnik GmbH
Hockenheimer Straße 3
D- 76726 Germersheim

Description

Tabletop greasing unit, Art.-No.TBV-H-01, TBV-H-02, TBV-H-03 and TBV-H-04

We declare that the product is in accordance with the following relevant regulations:

Pressure Equipment Directive (97/23/EC) of May 27th, 1997
EMC Directive (2004/108/EC) of Dec. 15th, 2004

The following harmonized European Standards have been applied:

DIN EN 12100-1	Safety of machinery; basic concepts, general principles for design – Part 1: Basic terminology, methodology
DIN EN 12100-2	Safety of machinery; basic concepts, general principles for design – Part 2: Technical principles

Other applied technical standards and specifications:

Authorized representative for the technical documentations:

Stefan Hirl, Hockenheimer Straße 3, D- 76726 Germersheim

Germersheim, March 21st, 2012
(place, date) (Stefan Hirl, management)

Inhaltsverzeichnis Seite

1 Introduction

1.1 Target group of this Operating Manual

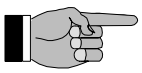
- Operating personal
- Maintenance personal

1.2 List of signs and symbols

This operating manual warns users of operations which may put their health at risk. The warnings are indicated by combinations of text and symbols as follows:

WARNING
Signals a possible dangerous situation.
Death or severe injuries **can** follow, if you do not avoid this situation

CAUTION
Signals a possible dangerous situation.
Slight or minor injuries **can** follow, if you do not avoid this situation. This sign is also used where damage to property is possible.



IMPORTANT
Indicates tips for usage and other particularly useful information.
No dangerous situation.

2 Safety

2.1 General information

The construction of this device is according to the latest technology and is absolutely reliable. The individual components as well as the complete device are continuously checked by our quality management.

Dangers due to residual energy

Please instruct the operating personnel on the respective measures to be taken against the occurance of mechanical, hydraulic, pneumatic and electric / electronic residual energies.

2.2 Warrant

According to the conditions laid down by the German Engineering Federation (VDMA), Walther Systemtechnik GmbH has a guarantee of 12 months under normal European operating conditions on its own parts (spare parts are excluded); or according to the conditions of the manufacturer.
This guarantee can only be granted by Walther Systemtechnik GmbH, if:

- the user has thorough knowledge of the content of this operating manual;
- the user follows the instructions and notes contained in this operating manual;
- the user does not rebuild or make changes on parts of the device without prior consent of WST Systemtechnik GmbH.

2.3 Correct use of the device

The device must be used under the specified operating conditions only. The device must be used exclusively for conveying lubricants according to the detailed specifications in chapter 3 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 incorrect use.

Correct use of the device also includes:

- Observing and adhering to all operating instruction s stated in this manual.
- Adherence to inspection and maintenance tasks.

2.4 Incorrect use

- Operating the device with insufficient knowledge about the operation, maintenance and care of the device.
- Making changes, extensions or alterations on the device that may hamper its safety without the prior consent of Walther Systemtechnik GmbH.
- Operating the device with defective safety installations or not properly attached or malfunctioning safety devices.
- Using unsuitable materials.
- Handling the device while energized.

3 Functional description

3.1 Function

The special construction of our dosing valves enables the supply of a specific lubricant in a specific amount at a specific time and location. The dosing valves are also suitable for use with oil.

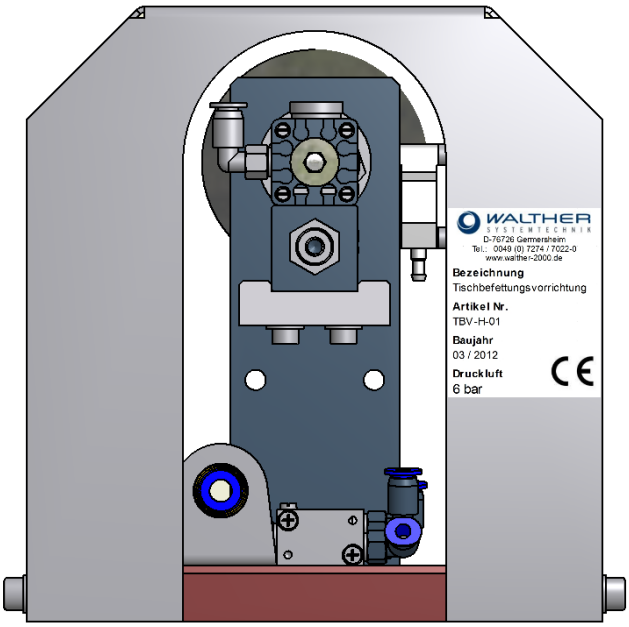
3.2 Type label

The article number of the tabletop greasing unit (abbreviated TBV) has the following set up:

TBV Tabletop greasing unit
H horizontal version
01...04 Installed WALTHER dosing valves
The type label is located on the back of the TBV.

The dosing range is engraved on the WALTHER dosing valve.

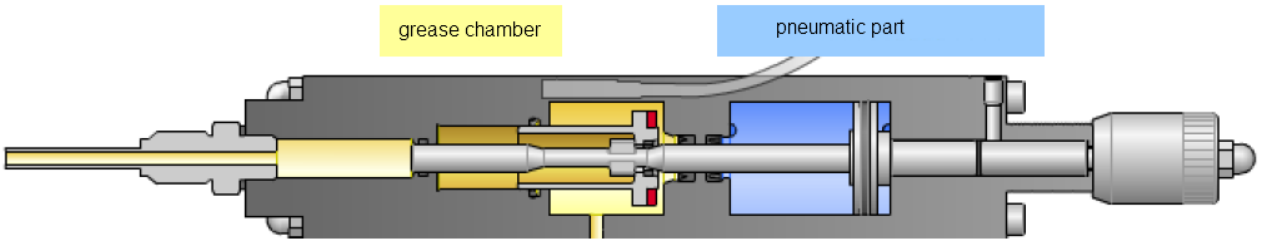
WDV-01
1 - 20 mm³
pmax. 200 bar



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

3.3 Function

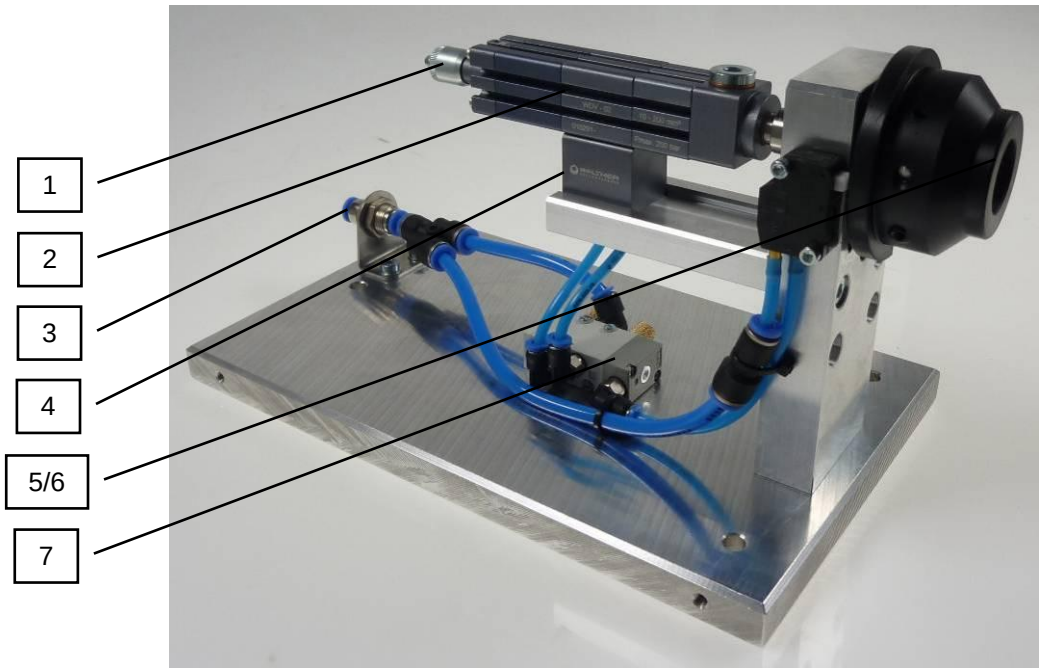
The pneumatic part of the dosing valve is controlled by a 5/2-way valve installed in the housing. Pressing the trigger initiates ejection of the dosed medium. The output pressure depends on the lubricant feed pressure (medium). The pneumatic system is separated from the grease chamber.



3.4 Versions

TBV-H-01	dosing volume 0.001 – 0.020 cm³
TBV-H-02	dosing volume 0.010 – 0.200 cm³
TBV-H-03	dosing volume 0.100 – 2.000 cm³
TBV-H-04	dosing volume 1.000 – 6.000 cm³

3.5 Definition of interfaces



Picture without cover hood

Pos.	Description
1	Adjustment screw
2	Dosing valve *(WDV 1...4)*
3	Compressed air connection
4	Material inlet
5	Pickup application tool *(M16x1)*
6	Trigger unit
7	5/2-way valve

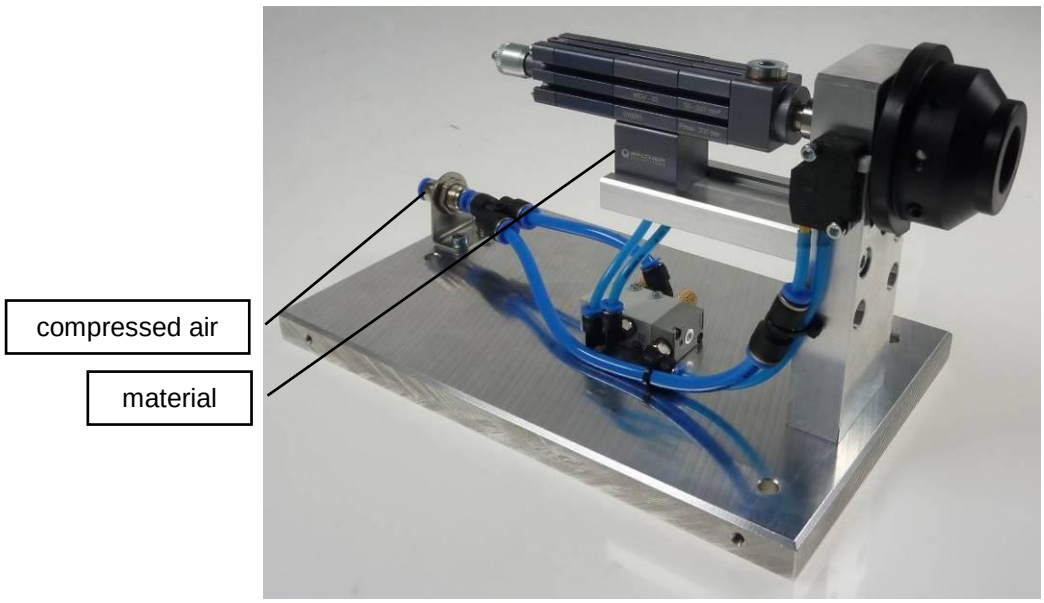
3.6 Technical data

Article number	**TBV-H-01**	**TBV-H-02**	**TBV-H-03**	**TBV-H-04**
Version	horizontal			
Dispensing range [cm³]	0.001 – 0.020	0.010 – 0.200	0.100 – 2.000	1.000 – 6.000
Weight [kg]				
Pickup application tool	M16x1			
Material inlet external thread	G 1/8“		G 1/4"	
Compressed air connection [hose Ø]	Ø6			
min. /max. material inlet pressure [bar]	20 / 200		20 / 160	
min. /max. pneumatic operating pressure [bar]	5 / 7			

4 Initial start-up

4.1 Setup and installation

IMPORTANT
We recommend adding a maintenance unit to the control air.



Picture without cover hood

4.2 Adjustment

NOTE
In order to ensure optimal operation of the valves, make sure that the air supply pressure is set to approx. 6 bar.
The lubricant feed pressure should not exceed 200 bar (160 bar respectively) at the input. To ensure this, check the pressure conversion ratio of the lubricant feed pump. The feed pressure may be reduced by means of an air pressure control valve (The use of an air pressure control valve may be advantageous, although it is not imperative).

IMPORTANT
All dosing valves are tested by the manufacturer prior to shipping. Due to testing, residues of test liquid may be found inside the valve.

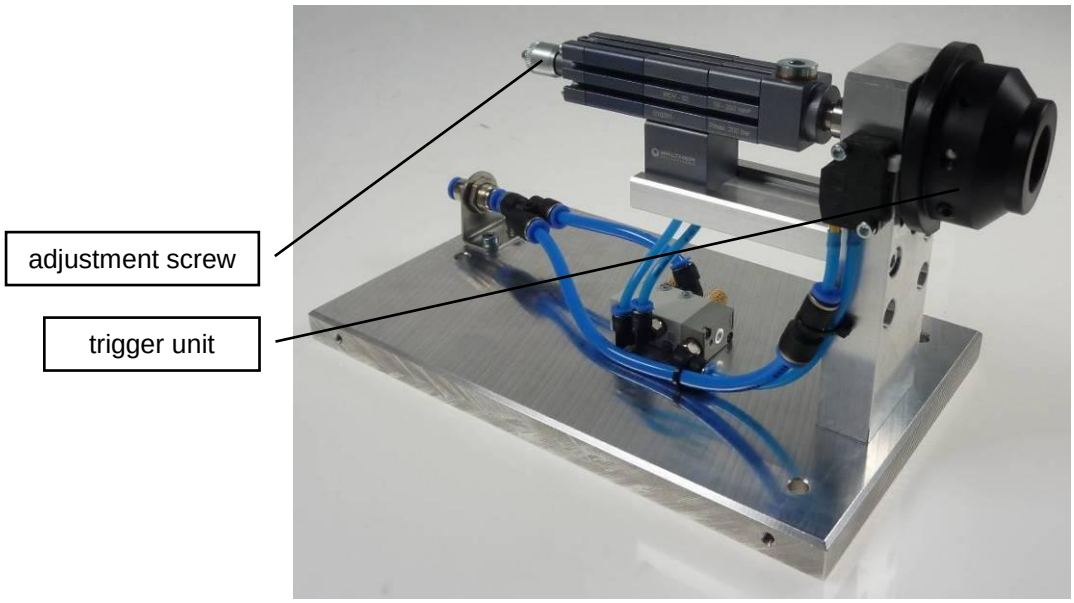
1) Make sure that the lubricant feed hose is filled with lubricant and all air is removed. Then connect feed hose and air connectors according to drawing.
2) For first operation, set valve to maximum dosage (i.e. turn adjustment screw to outmost position).
3) If the adjustment screw cannot be turned, change position of change-over-valve. The adjustment screw should now be unlocked.
4) Execute a first shot of lubricant. Then set the adjustment screw to the desired grease quantity.
5) The minimum cycle time depends on the viscosity of the lubricant, as well as on the lubricant feed pressure.
6) The tabletop greasing unit can be fastened to the work station with 3 screws M6 *(bore holes in the base plate).*

5 Operation

5.1 General information

This device may only be operated if the safety-related equipment is permanently effective and not suspended during operation or altered in its intended effectivity.

5.2 Operating components



6 Maintenance and repair

6.1 General information

CAUTION
Before starting any maintenance or repair work, ensure that all air-operated tools are depressurized and disconnected from the air and fluid supply.

IMPORTANT
This chapter does not explain how to repair damage of the device. Repair work shall be executed exclusively by skilled and trained experts, or by staff of the manufacturer`s customer service..

6.2 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 must be shortened accordingly. Also take into account other influences on maintenance need, such as dirty environment.

WHEN	WHAT	HOW	WHO
Weekly	Check dosing valve for leak-tightness and damage	Visual inspection	Specialists
Monthly	Check electric lines for damage.	Visual inspection	specialists

6.3 Customer service / support

Walther Systemtechnik GmbH
Hockenheimer Straße 3
D-76726 Germersheim
Germany

phone ++49(0)7274-7022-0
fax ++49(0)7274-7022-91
e-mail info@walther-2000.de
internet www.walther-2000.de

7 Troubleshooting

7.1 General information

IMPORTANT
First check all supply lines for connectivity and serviceability.

In case of serious problems that cannot be resolved, please contact the Walther Systemtechnik GmbH customer service.

Fault	Possible cause	Action
Valve is actuated, but no lubricant is ejected.	Does the feed pump transport lubricant?	Check feed pump. See operating manual of feed pump.
		Check venting screw of feed pump. See operating manual of feed pump.
	Leakage	Check dosing valve.
Permanent signal from sensor	Sensor defective	Exchange sensor
	Dosing piston not in end position	Check dosing valve; check settings of dosing volume
No signal from sensor	Broken cable	Exchange cable
	Sensor defective	Exchange sensor
	Loose cable	Check cable connections
	Retainer loose	Tighten retainer
	Sensor loose in retainer	Tighten sensor to retainer
Permanent signal from proximity switch	Air piston permanently in starting position	Check dosing valve
	Proximity switch defective	Exchange proximity switch
No signal from proximity switch	Air piston not in starting position or defective	Check dosing valve
LED defective	LED or sensor defective	Exchange cables, exchange sensor
Air pockets in grease system.	Air pockets in grease Container. Air pockets in tubing.	Disconnect tubing to dosing valve. Drain a quantum of grease. Restart with dosage adjustment screw set to maximum.

8 Taking out of service

8.1 Short interruption

For short interruptions, such as overnight or during weekends switch off main switch. Pressure inside equipment is removed and electrical power off (check displays).

8.2 Long-term interruption

- Please observe procedure stated below when taking equipment out of service for longer periods:
- • Switch off main switch.
- • Disconnect mains plug.
- • Pressure inside equipment must be removed (check displays).

8.3 Final shut-down of device

- Please observe the following procedure, when finally shutting down the device:
- • Switch off main switch.
- • Disconnect mains plug.
- • Pressure inside equipment must be removed (check displays).
- • Drain grease or oil and take care of proper disposal.

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

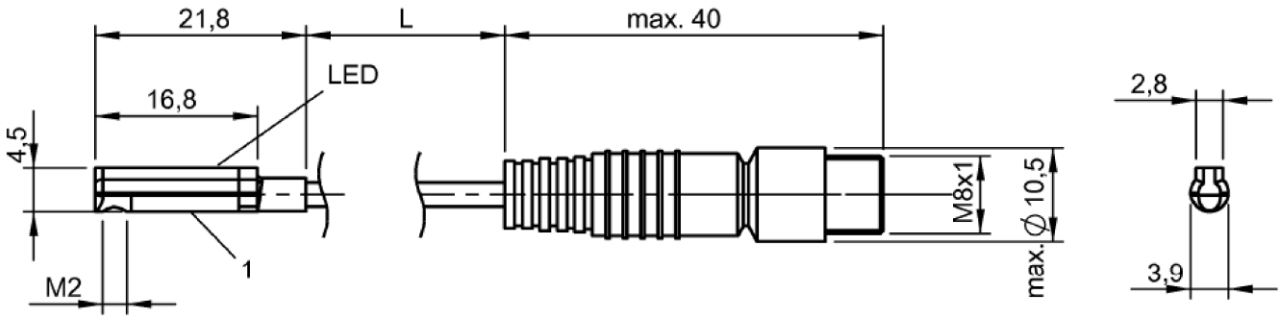
9 Accessories (optional)

Sensor for dosing piston **WDV-DS**
A sensor can optionally be added to the tabletop greasing unit. The sensor registers the end position of the grease piston in the dosing valve.
To achieve highest process safety, WALTHER Systemtechnik recommends the use of position switches on both end positions.

Pressure sensors **97PA-21x-xxx**
The pressure sensors of the 97PA-21x-xxx series serve to monitor entstehenden pressures and converting them into electric signals.

10 Appendix

10.1 Data sheet “sensor for dosing piston“ (article-No. WDV-DS)



Electrical data:

Turn off time	0,07 ms
Rating oper. field strength Hn	1,2 KA/m
Turn on time	0,07 ms
Assured operat. field strength	2 KA/m
Connection	cable with connector
Output resistance (Ra)	open drain
Rated Operational Voltage (UB)	24 DC V
Rated Operating Current (Ie)	100 mA
Rated insulation voltage (Ui)	75 DC V
Rated conditional s.c. current	100 A
Electrical type	DC
Switching output	PNP
Switching element function	NO
Operating frequency (f)	7000 Hz
Voltage drop static max	2,5 V
Supply voltage max. (UB)	30.0 V
Supply voltage min. (UB)	10.0 V
Utilization category	DC 13
Load capacitance max	1 µF
No-load supply current max.	8 mA
Off-state current max (Ir)	80.0 µA
Ripple of power supply	15.0 %

Mechanical data:

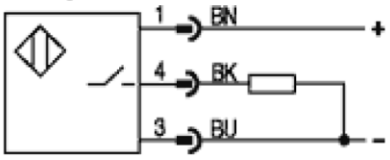
Ambient temperature max	85 °C
Ambient temperature min	-25 °C
Degree of polution	3
Sensing face material	PA 12
Housing material	PA 12
Temperature drift max (of Hn)	0.3 %

General data:

Polarity reversal resistant	yes
Approval	CE, cULus
Function indication	yes
Short circuit protected	yes
Degree of protection IP	IP67

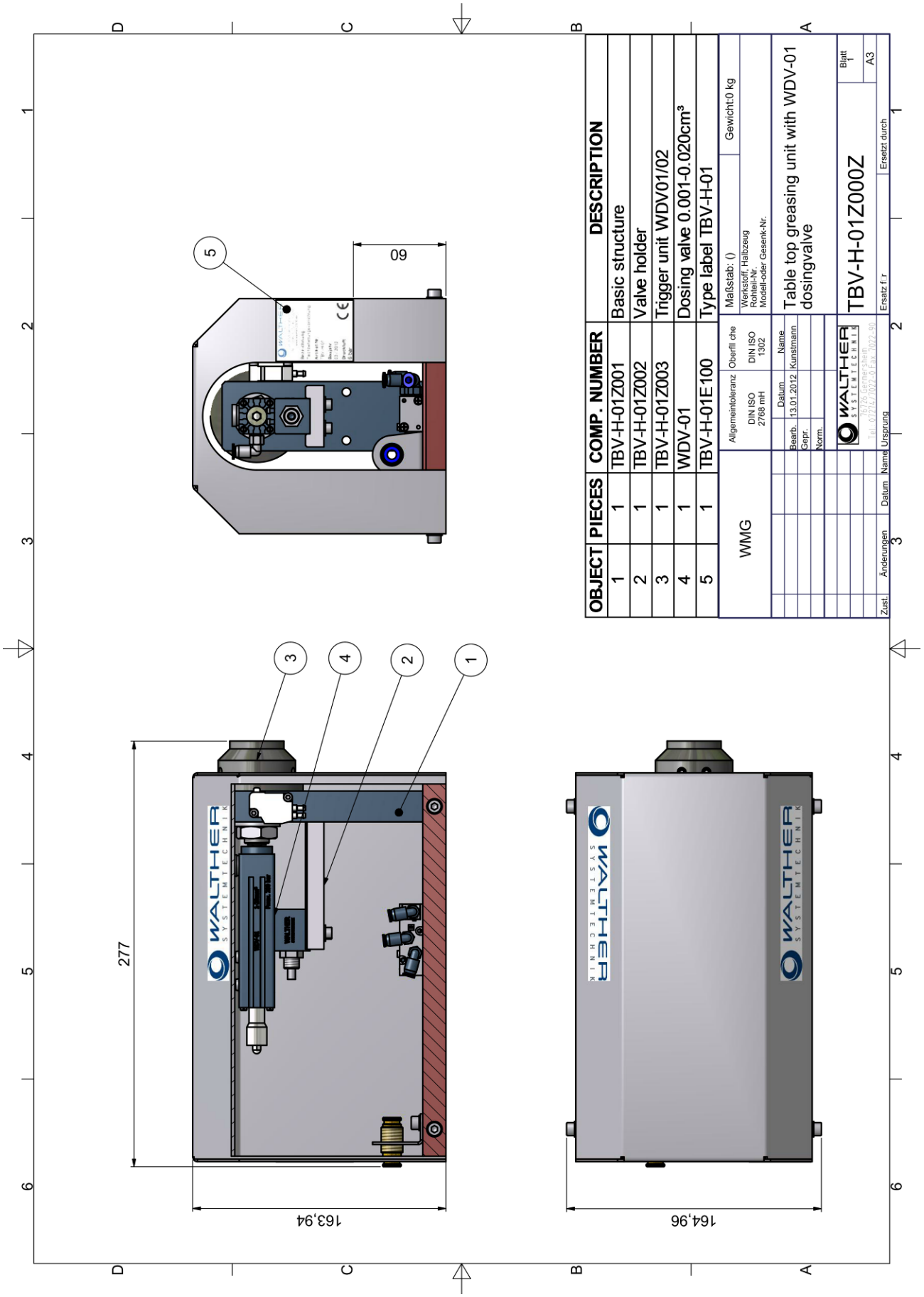
When overload is removed, sensor resumes function.

Wiring:

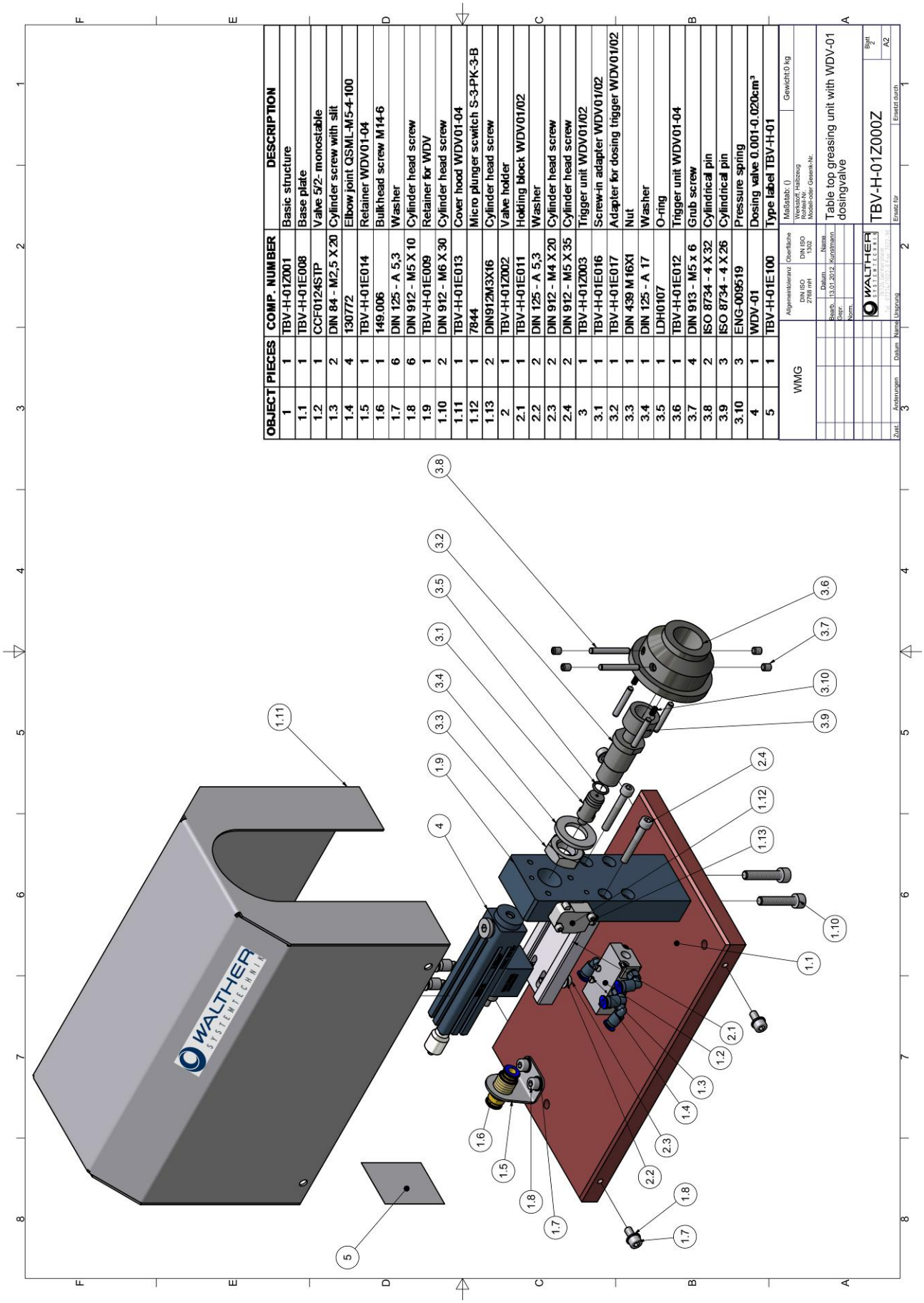


Pinout:

10.2 Dimensioned drawing TBV-H-01



10.3 Spare parts drawing TBV-H-01



OBJECT	PIECES	COMP. NUMBER	DESCRIPTION
1	1	TBV-H-01Z001	Basic structure
1.1	1	TBV-H-01E008	Base plate
1.2	1	CCF0124STP	Valve 5/2- monostable
1.3	2	DIN 84 - M2,5 X 20	Cylinder screw with slit
1.4	4	130772	Elbow joint QSML-M5-4-100
1.5	1	TBV-H-01E014	Retainer WDV01-04
1.6	1	149.006	Bulkhead screw M14-6
1.7	6	DIN 125 - A 5,3	Washer
1.8	6	DIN 912 - M5 X 10	Cylinder head screw
1.9	1	TBV-H-01E009	Retainer for WDV
1.10	2	DIN 912 - M6 X 30	Cylinder head screw
1.11	1	TBV-H-01E013	Cover hood WDV01-04
1.12	1	7844	Micro plunger swtich S-3-PK-3-B
1.13	2	DIN912M3X16	Cylinder head screw
2	1	TBV-H-01Z002	Valve holder
2.1	1	TBV-H-01E011	Holding block WDV01/02
2.2	2	DIN 125 - A 5,3	Washer
2.3	2	DIN 912 - M4 X 20	Cylinder head screw
2.4	2	DIN 912 - M5 X 35	Cylinder head screw
3	1	TBV-H-01Z003	Trigger unit WDV01/02
3.1	1	TBV-H-01E016	Screw-in adapter WDV01/02
3.2	1	TBV-H-01E017	Adapter for dosing trigger WDV01/02
3.3	1	DIN 439 M 16X1	Nut
3.4	1	DIN 125 - A 17	Washer
3.5	1	LDH0107	O-ring
3.6	1	TBV-H-01E012	Trigger unit WDV01-04
3.7	4	DIN 913 - M5 x 6	Grub screw
3.8	2	ISO 8734 - 4 X 32	Cylindrical pin
3.9	3	ISO 8734 - 4 X 26	Cylindrical pin
3.10	3	ENG-009519	Pressure spring
4	1	WDV-01	Dosing valve 0.001-0.020cm³
5	1	TBV-H-01E100	Type label TBV-H-01

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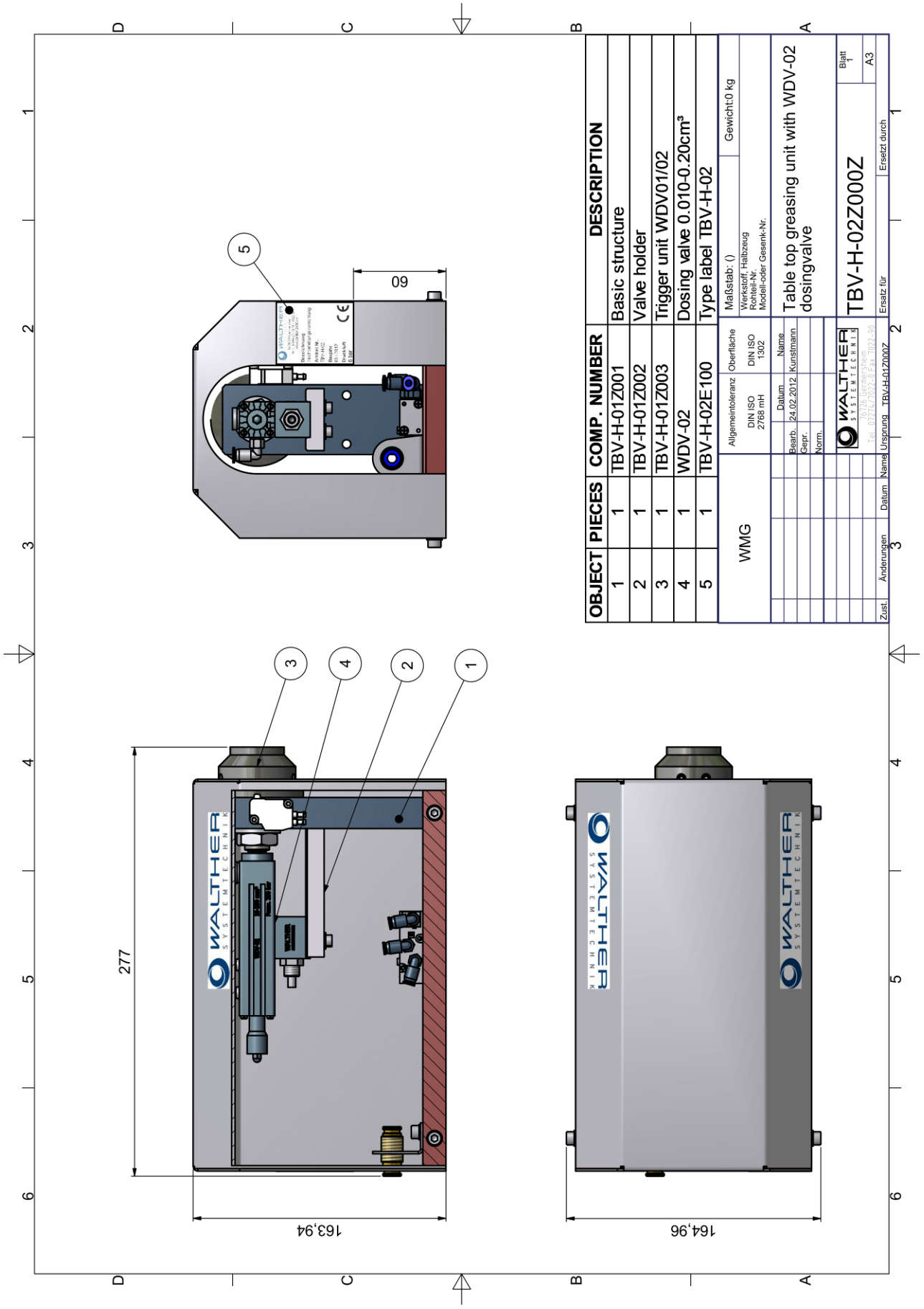
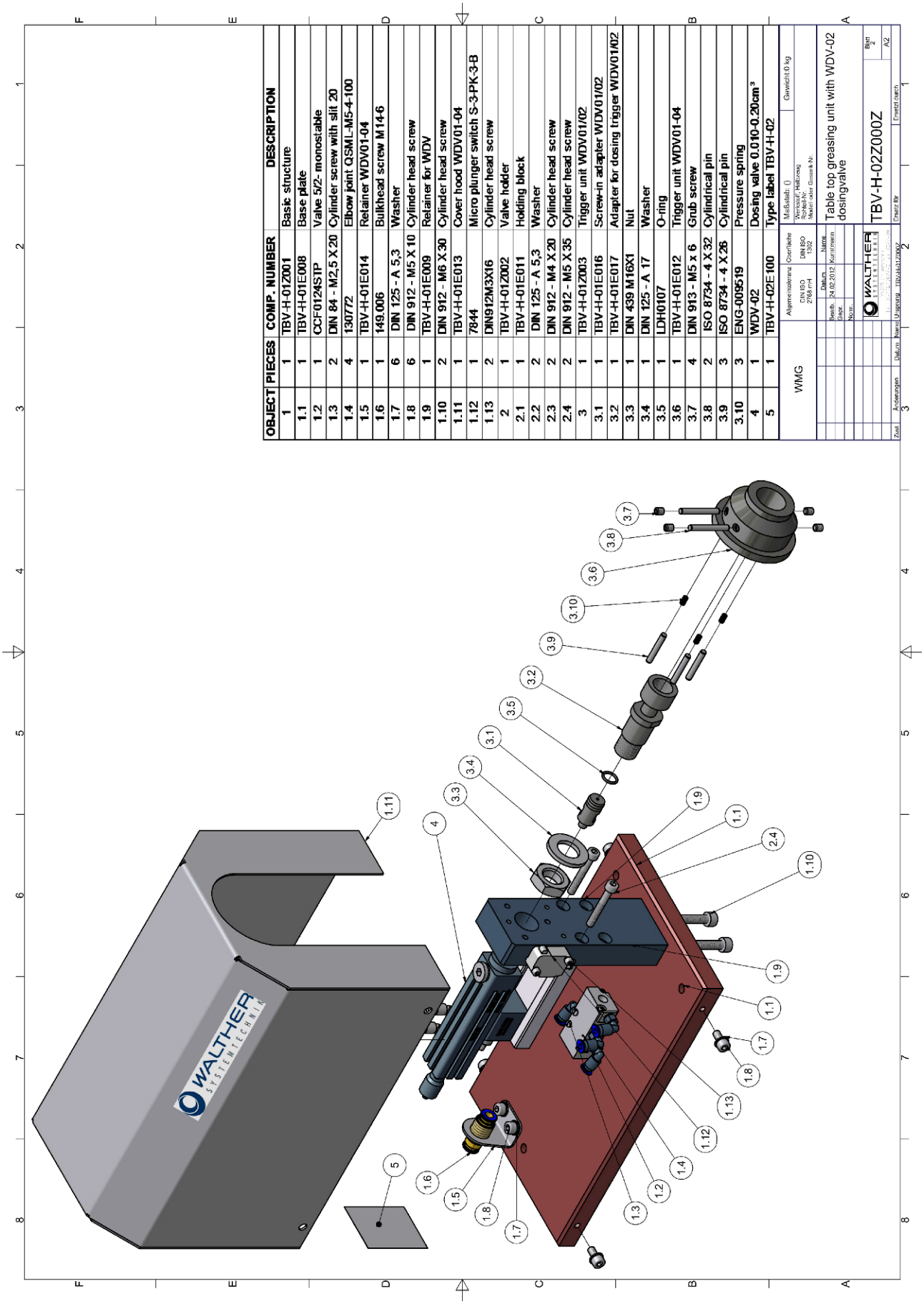
Table top greasing unit with WDV-01 dosingvalve

TBV-H-01Z000Z

10.4 Measured drawing TBV-H-02



10.5 Spare parts drawing TBV-H-02



OBJECT	PIECES	COMP. NUMBER	DESCRIPTION
1	1	TBV-H-01Z001	Basic structure
1.1	1	TBV-H-01E008	Base plate
1.2	1	CCF01248STP	Valve 5/2- monostable
1.3	2	DIN 84 - M2,5 X 20	Cylinder screw with slit 20
1.4	4	130772	Elbow joint QSML-M5-4-100
1.5	1	TBV-H-01E014	Retainer WDV01-04
1.6	1	149.006	Bulkhead screw M14-6
1.7	6	DIN 125 - A 5,3	Washer
1.8	6	DIN 912 - M5 X 10	Cylinder head screw
1.9	1	TBV-H-01E009	Retainer for WDV
1.10	2	DIN 912 - M6 X 30	Cylinder head screw
1.11	1	TBV-H-01E013	Cover hood WDV01-04
1.12	1	7844	Micro plunger switch S-3-PK-3-B
1.13	2	DIN912M3X16	Cylinder head screw
2	1	TBV-H-01Z002	Valve holder
2.1	1	TBV-H-01E011	Holding block
2.2	2	DIN 125 - A 5,3	Washer
2.3	2	DIN 912 - M4 X 20	Cylinder head screw
2.4	2	DIN 912 - M5 X 35	Cylinder head screw
3	1	TBV-H-01Z003	Trigger unit WDV01/02
3.1	1	TBV-H-01E016	Screw-in adapter WDV01/02
3.2	1	TBV-H-01E017	Adapter for dosing trigger WDV01/02
3.3	1	DIN 439 M16X1	Nut
3.4	1	DIN 125 - A 17	Washer
3.5	1	LDH0107	O-ring
3.6	1	TBV-H-01E012	Trigger unit WDV01-04
3.7	4	DIN 913 - M5 x 6	Grub screw
3.8	2	ISO 8734 - 4 X 32	Cylindrical pin
3.9	3	ISO 8734 - 4 X 26	Cylindrical pin
3.10	3	ENG-009519	Pressure spring
4	1	WDV-02	Dosing valve 0.010-0.20cm³
5	1	TBV-H-02E100	Type label TBV-H-02

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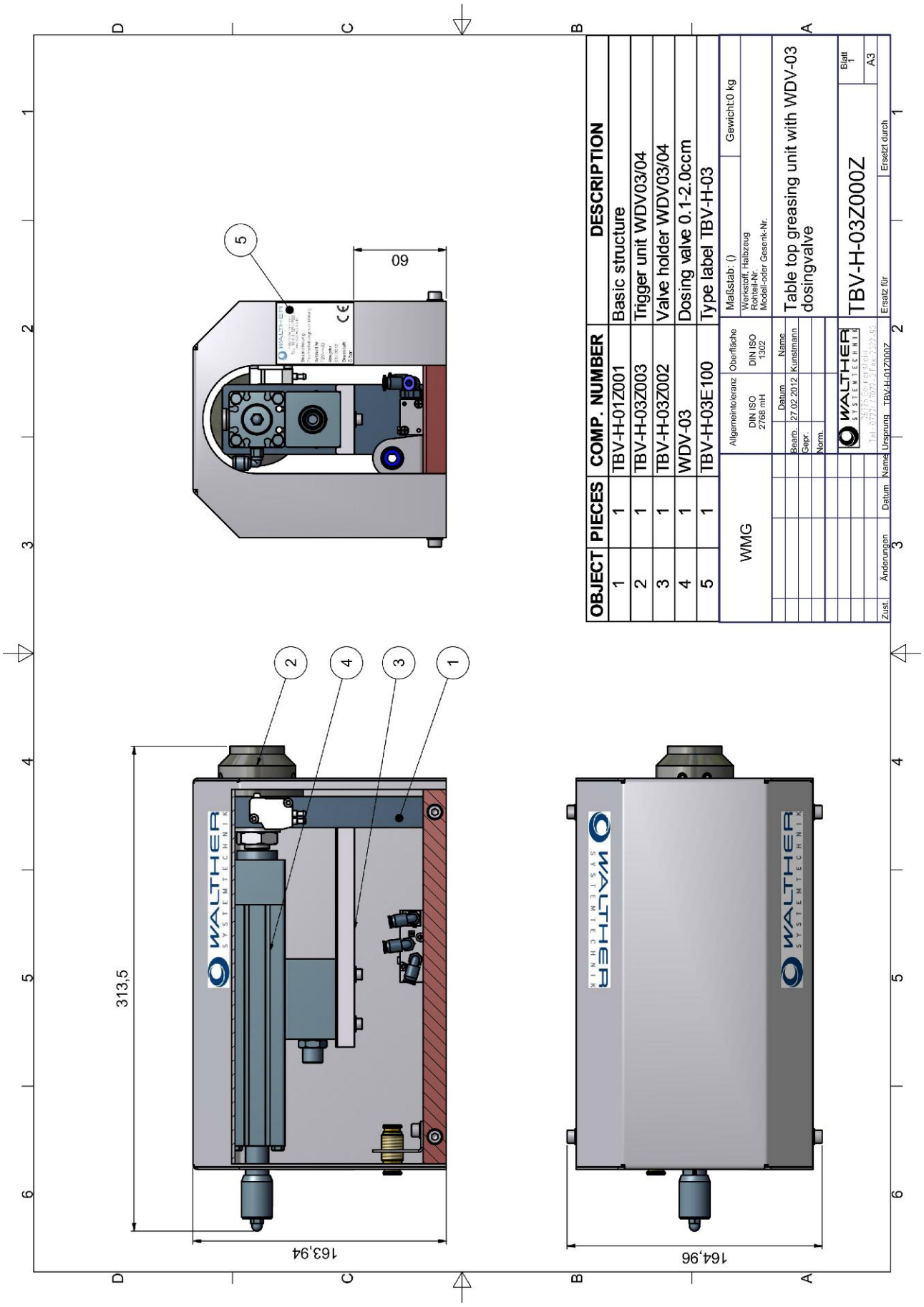
Table top greasing unit with WDV-02 dosingvalve

TBV-H-02Z000Z

10.6 Dimensioned drawing TBV-H-03



10.7 Spare parts drawing TBV-H-03

OBJECT	PIECES	COMP. NUMBER	DESCRIPTION
1	1	TBV-H-01Z001	Basic structure
1.1	1	TBV-H-01E008	Base plate
1.2	1	CCF01248STP	Valve 5/2- monostable
1.3	2	DIN 84 - M2,5 X 20	Cylinder screw with slit
1.4	4	130772	Elbow joint QSML-M5-4-100
1.5	1	TBV-H-01E014	Retainer WDV01-04
1.6	1	149.006	Bulkhead screw M14-6
1.7	6	DIN 125 - A 5,3	Washer
1.8	6	DIN 912 - M5 X 10	Cylinder head screw
1.9	1	TBV-H-01E009	Retainer for WDV
1.10	2	DIN 912 - M6 X 30	Cylinder head screw
1.11	1	TBV-H-01E013	Cover hood WDV01-04
1.12	1	7844	Micro plunger switch S-3-PK-3-B
1.13	2	DIN912M3X16	Cylinder head screw
2	1	TBV-H-03Z003	Trigger unit WDV03/04
2.1	1	TBV-H-03E013	Screw-in adapter WDV03/04
2.2	1	TBV-H-01E017	Adapter for dosing trigger WDV01/02
2.3	1	DIN 439 M16X1	Nut
2.4	1	DIN 125 - A 17	Washer
2.5	1	LDH0107	O-ring
2.6	1	TBV-H-01E012	Trigger unit WDV01-04
2.7	4	DIN 913 - M5 x 6	Grub screw
2.8	2	ISO 8734 - 4 X 32	Cylindrical pin
2.9	3	ISO 8734 - 4 X 26	Cylindrical pin
2.10	3	ENG-009519	Pressure spring
3	1	TBV-H-03Z002	Valve holder WDV03/04
3.1	2	DIN 125 - A 5,3	Washer
3.2	2	DIN 912 - M5 X 35	Cylinder head screw
3.3	1	TBV-H-03E002	Holding block WDV03/04
3.4	2	DIN 912 - M4 X 20	Cylinder head screw
4	1	WDV-03	Dosing valve 0.1-2.0ccm
5	1	TBV-H-03E100	Type label TBV-H-03

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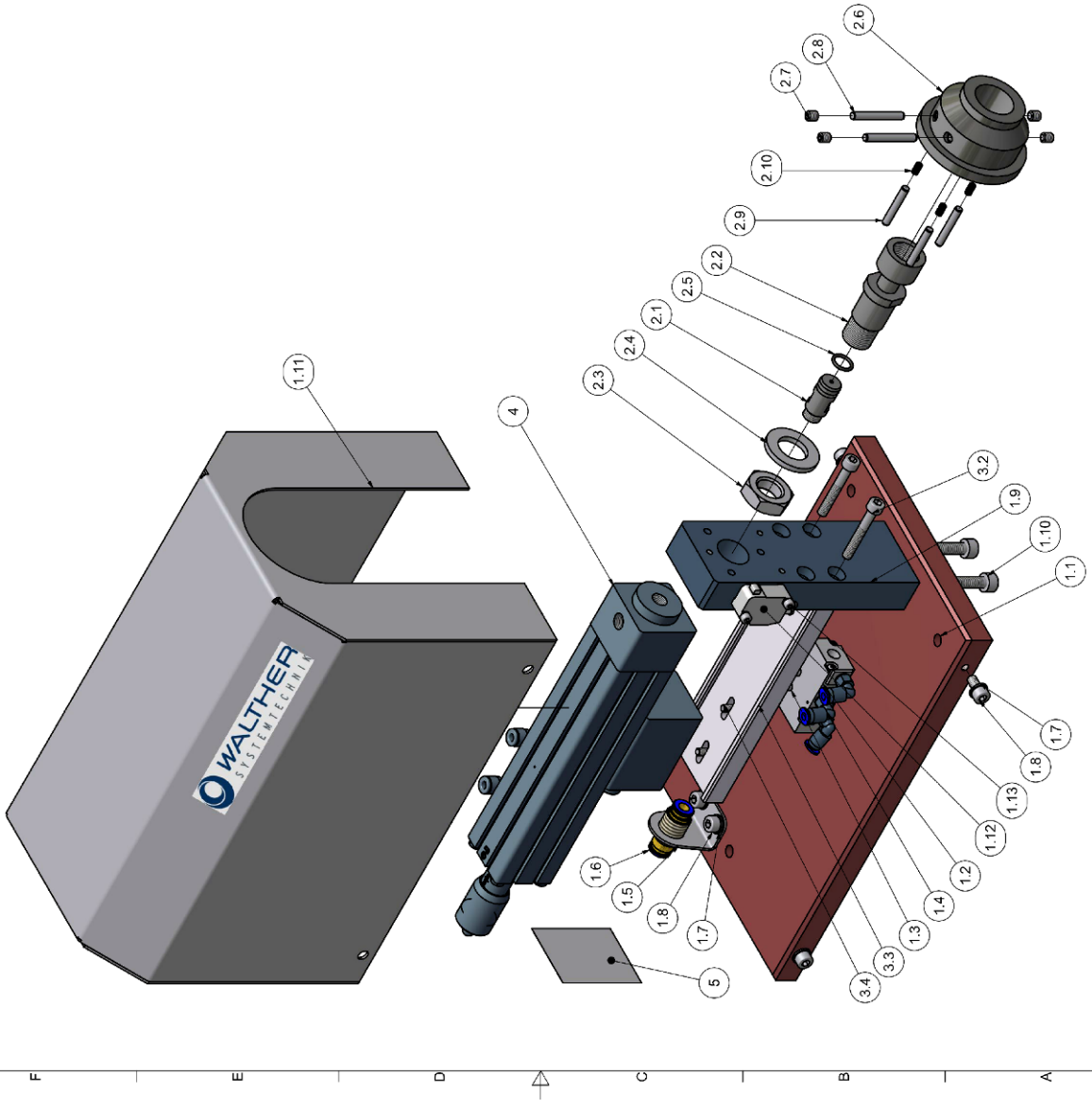
Maßstab: 0 Gewicht: 0 kg

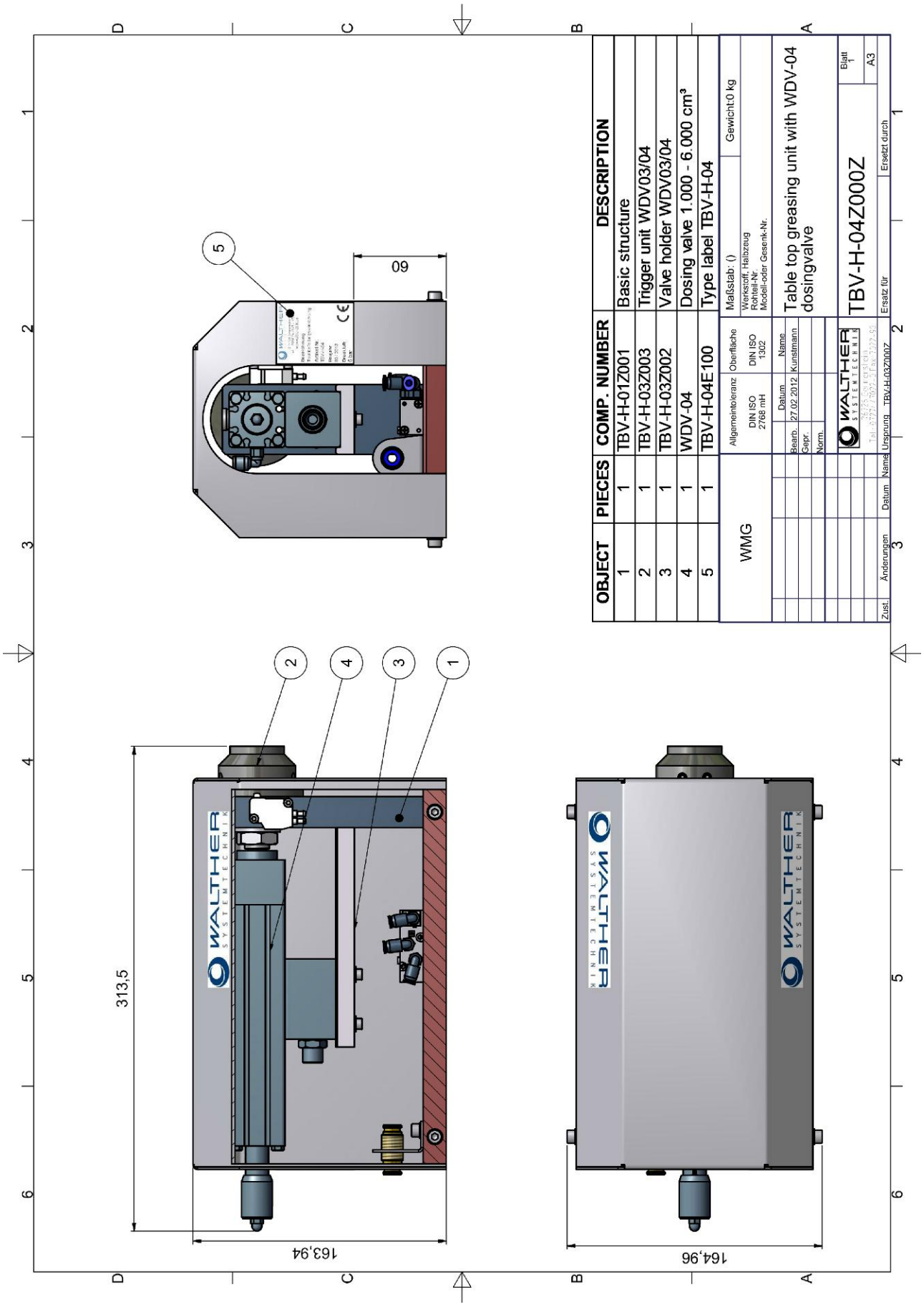
Table top greasing unit with WDV-03 dosingvalve

TBV-H-03Z000Z

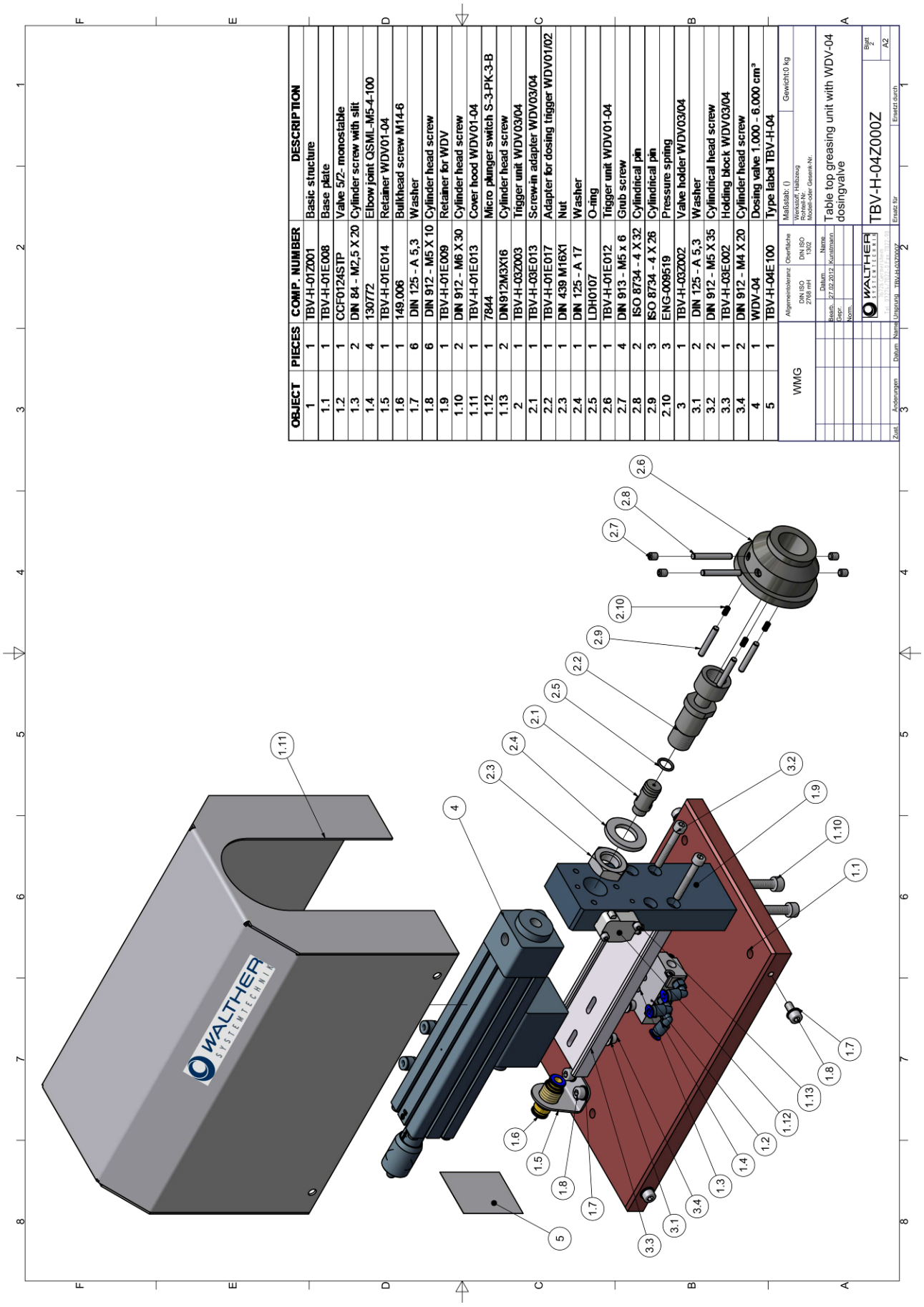
Blatt 1 A2



10.8 Dimensioned drawing TBV-H-04



10.9 Spare parts drawing TBV-H-04



OBJECT	PIECES	COMP. NUMBER	DESCRIPTION
1	1	TBV-H-012001	Basic structure
1.1	1	TBV-H-01E008	Base plate
1.2	1	CCF0124STP	Valve 5/2- monostable
1.3	2	DIN 84 - M2,5 X 20	Cylinder screw with slit
1.4	4	130772	Elbow joint QSML-M5-4-100
1.5	1	TBV-H-01E014	Retainer WDV01-04
1.6	1	149.006	Bulkhead screw M14-6
1.7	6	DIN 125 - A 5,3	Washer
1.8	6	DIN 912 - M5 X 10	Cylinder head screw
1.9	1	TBV-H-01E009	Retainer for WDV
1.10	2	DIN 912 - M6 X 30	Cylinder head screw
1.11	1	TBV-H-01E013	Cover hood WDV01-04
1.12	1	7844	Micro plunger switch S-3-PK-3-B
1.13	2	DIN912M3X16	Cylinder head screw
2	1	TBV-H-032003	Trigger unit WDV03/04
2.1	1	TBV-H-03E013	Screw-in adapter WDV03/04
2.2	1	TBV-H-01E017	Adapter for dosing trigger WDV01/02
2.3	1	DIN 439 M16X1	Nut
2.4	1	DIN 125 - A 17	Washer
2.5	1	LDH0107	O-ring
2.6	1	TBV-H-01E012	Trigger unit WDV01-04
2.7	4	DIN 913 - M5 x 6	Grub screw
2.8	2	ISO 8734 - 4 X 32	Cylindrical pin
2.9	3	ISO 8734 - 4 X 26	Cylindrical pin
2.10	3	ENG-008519	Pressure spring
3	1	TBV-H-032002	Valve holder WDV03/04
3.1	2	DIN 125 - A 5,3	Washer
3.2	2	DIN 912 - M5 X 35	Cylindrical head screw
3.3	1	TBV-H-03E002	Holding block WDV03/04
3.4	2	DIN 912 - M4 X 20	Cylinder head screw
4	1	WDV-04	Dosing valve 1.000 - 6.000 cm³
5	1	TBV-H-04E100	Type label TBV-H-04

WMG

Allgemeintoleranz DIN ISO 2768 mH | Oberfläche DIN ISO 1302

Maßstab: () Gewicht:0 kg

Werkstoff, Halbzeug
Profil-Nr.
Modell-oder Gesenk-Nr.

Table top greasing unit with WDV-04 dosingvalve

TBV-H-04Z000Z

Bgtt
Bl
A2

Beam. 27.02.2012 Kunstmann
Gepr.
Norm.

Zust. Änderungen Datum Name Ursprung: TBV-H-04Z000Z

Ersatz für: Ersetzt durch: