
ITW Dynatec GmbH
Industriestraße 28
D- 40822 Mettmann
phone 0049 (0)2104 915 0
fax 0049 (0)2104 915 111

Revision
07/2009



Adhesive Application Solutions • ISO 9001
certified

Circulation System

Dynamelt M

**IMPORTANT! - READ ALL INSTRUCTIONS BEFORE OPERATING THIS
EQUIPMENT**

It is the customer's responsibility to have all operators and service personnel
read and understand this information.
Contact your ITW Dynatec customer service representative for additional copies.

NOTICE! Please be sure to include the serial number of your application system
each time you order replacement parts and/or supplies. This will enable us to
send you the correct items that you need.

ITW Dynatec Service: +49-(0)2104-915134

Table of Content

1	Overview.....	3
2	Reasons for Circulation.....	4
3	Principle of Circulation.....	5
4	Return Flow Adjustment	5
5	System Drawing Return Flow Module (Single Pump)	6
6	System Drawing Return Flow Module (Dual Pump).....	8
7	Drawing Adapter Plate (Single Pump)	10
8	Drawing Adapter Plate (Dual Pump)	12
9	Schematic Drawing Return Module	14

1 Overview

The pressure of the adhesive application system is dependent on three factors:

- The diameter of the nozzle
- The viscosity of the adhesive
- The throughput of the pumps

The pressure range of the system has to be defined in a way that overpressure relief valves don't open during standard operating mode. Only when the overpressure relief valve is closed, the adhesive amount can be controlled accurately and the process quality can be guaranteed.



The overpressure relief valve is a safety valve. It is not meant to be used as an adjustable valve for controlling adhesive amounts.

2 Reasons for Circulation

Circulation is used if the system pressure has to be constant (and with that the application amount per time).

This is the case for example during

- During intermittent applications with larger breaks inside the application pattern or between application patterns
- During system stops and the run up phase of the machine

What happens if there is no circulation installed?

If the application valve is closed and the pump is running, the system pressure increases – either up to the pressure when the relief valve opens or until the next time the application head opens up.

In both cases the accurate application amount can't be guaranteed.

When the overpressure relief valve is open, the application amount is less than the desired value, when the system pressure increases to far, the application amount is more than the desired value.

To compensate these effects a circulation valve with built-in regulator will be installed.

There are two ways of installing a circulation system:

- When using high-flow applications, the circulation system has to be attached directly to application head (due to the needed short reaction times)
- When using standard applications, the circulation system can also be attached to the tank unit cause reaction times are not that important

3 Principle of Circulation

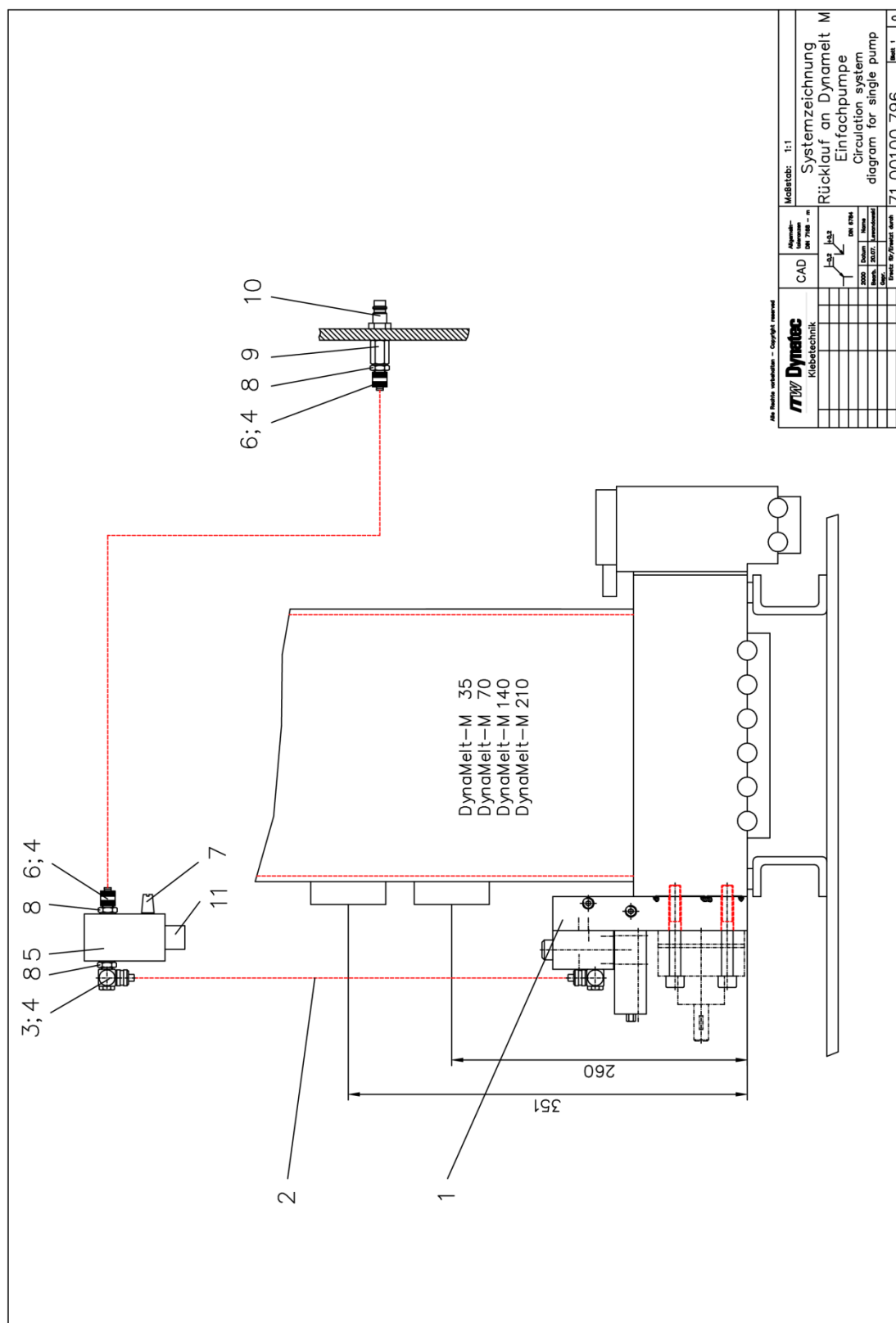
At the same time when the application head is closed, a return valve is opened and the adhesive from the pump is reverted back to the tank. This functionality requires the flow and return pressures to be identical. To achieve this, an additional valve after the return module is fitted.

4 Return Flow Adjustment

The exact method to set the return flow pressure is to measure the output pressure using digital or analogue pressure sensors. Then set the return flow valve to a point that the measured return flow pressure matches the output pressure exactly.

If the pressure calibration procedure is finished, the adhesive amount should be accurate from the start of the application on.

5 System Drawing Return Flow Module (Single Pump)



Spare Parts List

Return Module with Accessories

For Dynamelt M unit with single gear pump part no. 71.00100.796

Item No.	Part Number	Description	Qty
1	17.00000.724	Adapter Plate	1
2	08.00604.103	PTFE pneumatic tube D=6/4	2 m
3	07.10490.001	Fitting 90°	1
4	02.11050.483	Cu Seal Ring	4
5	07.93200.302	Solenoid valve	1
6	07.00600.117	Straight Fitting	2
7	07.41320.501	Muffler	1
8	07.01418.401	Reduction Fitting	3
9	07.01400.401	Sleeve Fitting	1
10	07.41014.401	Push in Fitting	1
11	07.93000.024	Coil	1
12	05.01003.103	Connector	1

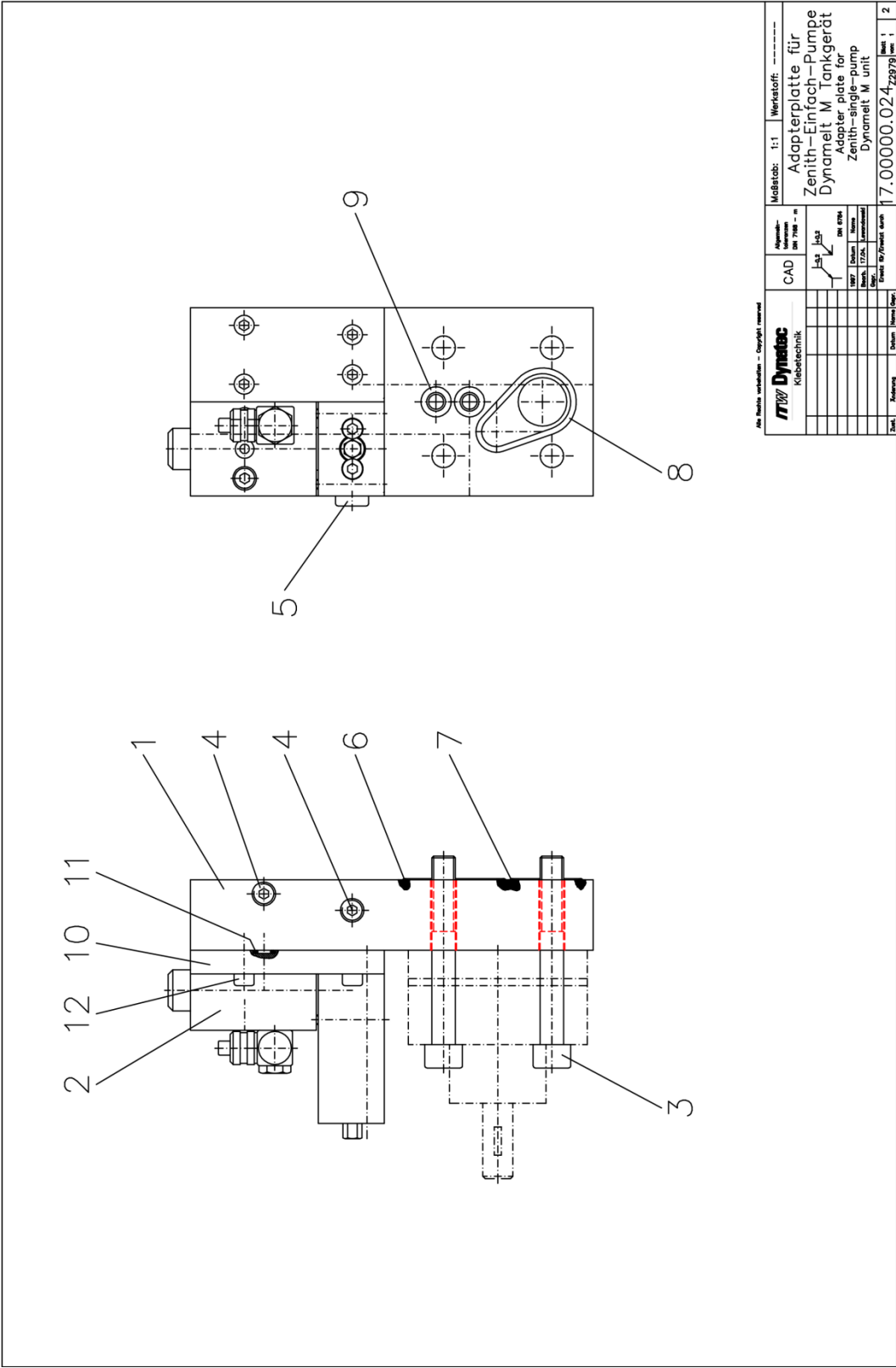
Spare Parts List

Return Module with Accessories

For Dynamelt M unit with double gear pump part no 71.00100.797

Item No.	Part Number	Description	Qty
1	17.00000.723	Adapter Plate	1
2	08.00604.103	PTFE pneumatic tube D=6/4	2,5 m
3	07.10490.001	Fitting 90°	2
4	02.11050.483	Cu Seal Ring	8
5	07.93200.302	Solenoid valve	2
6	07.00600.117	Straight Fitting	4
7	07.41320.501	Muffler	2
8	07.01418.401	Reduction Fitting	2
9	07.01400.401	Sleeve Fitting	1
10	07.41014.401	Push in Fitting	1
11	07.93000.024	Coil	2
12	05.01003.103	Connector	2

7 Drawing Adapter Plate (Single Pump)



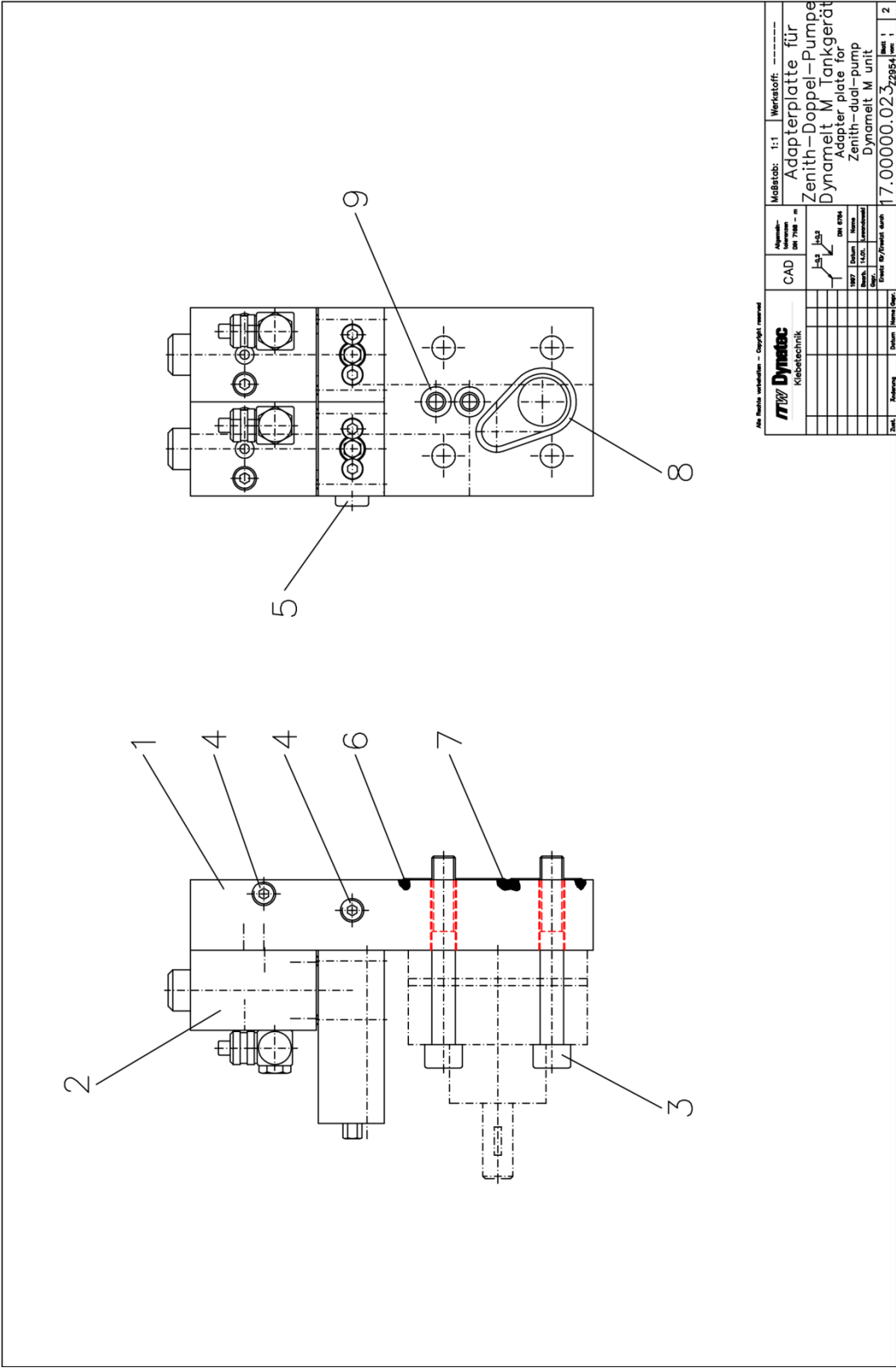
Spare Parts List

Adapter Plate for Single Gear Pump

For Dynamelt M unit with adjustable return module part no 17.00000.724

Item No.	Part Number	Description	Qty
1	17.00000.161	Adapter Plate Valve	1
2	71.00100.793	Return Module	1
3	00.11080.912	Screw	4
4	00.60970.101	Screw	6
5	00.60970.101	Plug	1
6	069X240	O-Ring	1
7	06.02830.024	O-Ring	1
8	06.03465.028	O-Ring	1
9	06.00925.012	O-Ring	2
10	00.80606.913	Screw	1

8 Drawing Adapter Plate (Dual Pump)



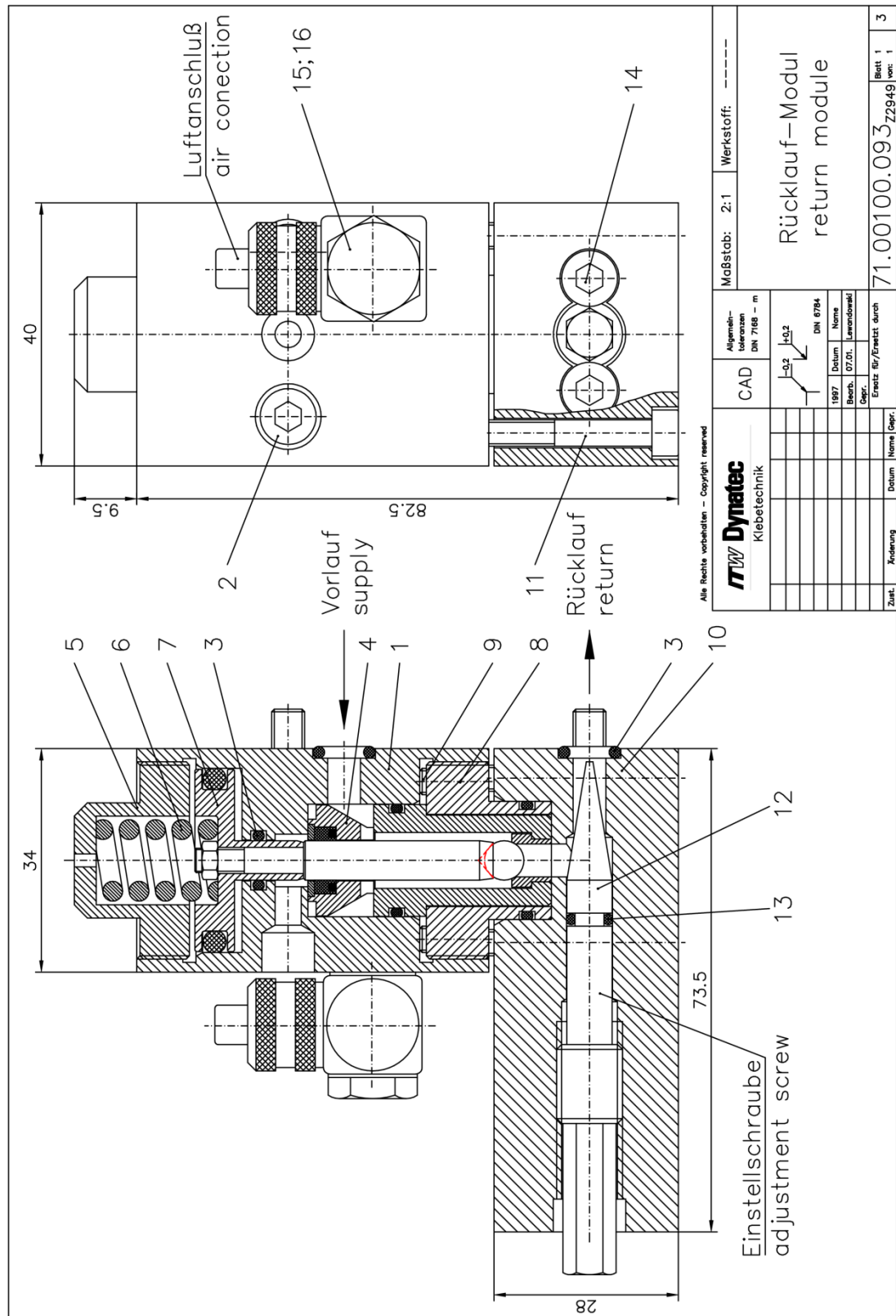
Spare Parts List

Adapter Plate for Dual Gear Pump

For Dynamelt M unit with adjustable return module part no 17.00000.723

Item No.	Part Number	Description	Qty
1	17.00000.161	Adapter Plate Valve	1
2	71.00100.793	Return Module	2
3	00.11080.912	Screw	4
4	00.60970.101	Screw	6
5	00.60970.101	Plug	1
6	069X240	O-Ring	1
7	06.02830.024	O-Ring	1
8	06.03465.028	O-Ring	1
9	06.00925.012	O-Ring	2

9 Schematic Drawing Return Module



Spare Parts List

Return Module

For Dynamelt M unit with 6 mm needle part no 71.00100.793

Item No.	Part Number	Description	Qty
1	71.00100.324	Gun Body Valve	1
2	00.10535.912	Screw	2
3	06.00570.582	O-Ring	3
4	71.00100.789	Seal Cartridge Assembly	1
5	71.00100.104	Spring Bush house	1
6	04.12310.098	Spring Bush	1
	04.11306.098	Spring Bush	1
7	71.00100.790	Needle compl.	1
8	71.00600.106	Guide Bush	1
9	00.80410.916	Thread Pin	2
10	71.00100.325	Reduction Bloc	1
11	00.10430.912	Screw	4
12	71.00100.326	Reduction Screw	1
13	06.00447.008	O-Ring	1
14	00.10570.912	Screw	2
15	07.10800.501	Swivel Connector	1
16	02.11050.483	Cu Seal Ring	2
17	06.01400.015	O-Ring	1