ATEK
DRIVE SOLUTIONS
BRAKES·GEARS·MOTORS

FLOATING CALIPER BRAKES

Passive floating caliper brakes (safety brakes)

- **Spring-operated closing, hydraulically operated opening**

Features and applications

EBS FL stands for: Elephant Brakes Safety Floating
The modular floating caliper brake type EBS-FL has been designed to be reliable, robust and corrosion-resistant.
Important aspects are the long service life, low maintenance and the virtually wear-free disc springs.

The brakes in the EBS-FL series

... develop braking forces between 15 and 370 kN.

... are used where there is insufficient installation space for a two-module brake design or where economic interests are paramount.

... are designed in such a way that no significant moments are introduced into the upright construction.

... can be used with different brake disc thicknesses by arranging a lining plate between the spring brake module and floating calliper module.

... have an air gap prevention device to prevent the floating calliper module from touching the brake disc when the brake is released.

Typical areas of application for these spring-applied, hydraulically opening brake callipers are cranes, hoists and heavy industry.
A large area of application for these systems are holding and emergency stop brakes, which are closed by the spring when not in use.
Examples of applications include use as safety brakes in heavy industry, conveyor system construction and for lifting equipment of all kinds and, of course, in general mechanical engineering.

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Floating caliper brake of the EBS series

Braking forces from 15 - 370 kN

EBS 001 FL

- Braking force: 15 to 30 kN
- Opening pressure: 72 to 200 bar
- for brake discs ≥500 mm
- Total mass: 40 kg

EBS 002 FL

- Braking force: 29 to 47 kN
- Opening pressure: 91 to 135 bar
- for brake discs ≥500 mm
- Total mass: 80 kg

EBS 004 FL

- Braking force: 53 to 104 kN
- Opening pressure: 86 to 150 bar
- For brake discs ≥800 mm
- Total mass: 185 kg

EBS 006 FL

- Braking force: 80 to 180 kN
- Opening pressure: 68 to 165 bar
- For brake discs ≥1200 mm
- Total mass: 470 kg

EBS 008 FL

- Braking force: 180 to 370 kN
- Opening pressure: 105 to 200 bar
- For brake discs ≥1500 mm
- Total mass: 815 kg

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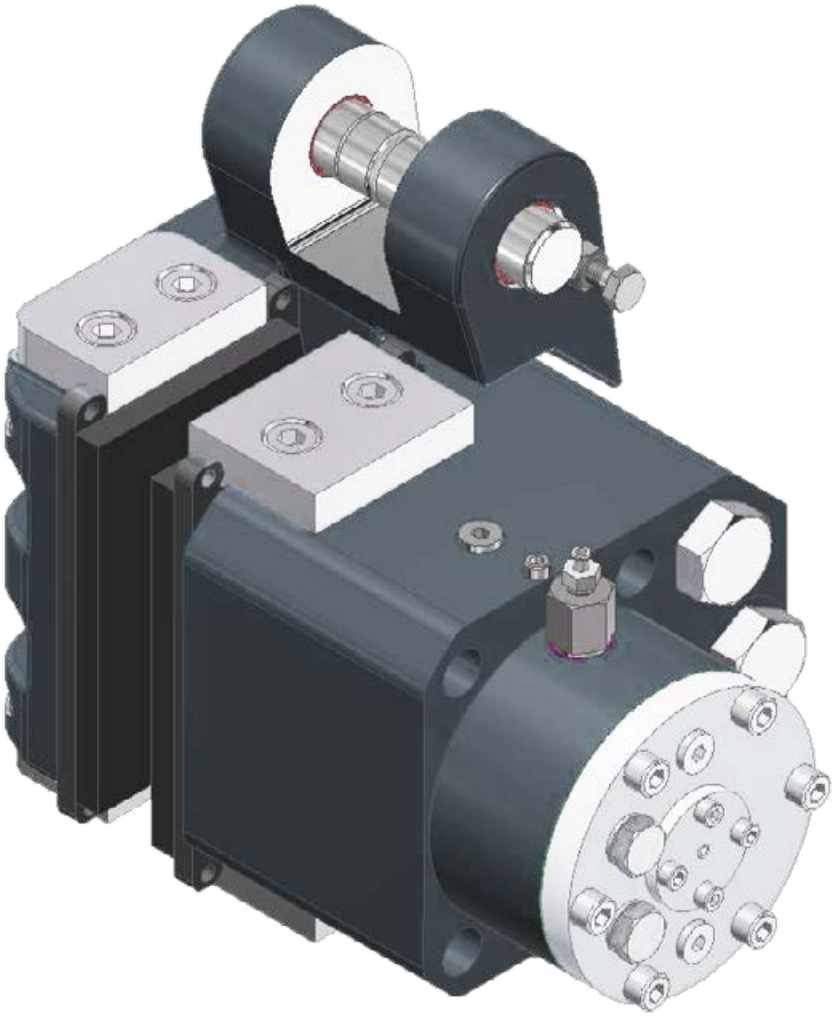

Bremsmoment M_{Br} [kNm] = Bremskraft [kN] eff. Bremsscheibenradius [m]
eff. Bremsscheibenradius = (0,5 × Bremsscheibenaußen-Ø [m]) – 0,049 m

Type	Part-No.	Braking force [kN]	Braking force loss per 1 mm stroke [%]	$p_{min.}$ [bar]	$p_{max.}$ [bar]
EBS 001 – 30 FL	60099-30FL	30	15,4	154	200
EBS 001 – 22 FL	60099-22FL	22	15,8	103	149
EBS 001 – 15 FL	60099-15FL	15	16,2	72	118

Oil requirement with 0.5 mm air gap per side: 2 cm^3
Brake suitable for mounting on brake discs to DIN 15432 Dmin. Ø ≥ 500 mm
Mass: 38 kg

All data based on 0.5 mm air gap per side, coefficient of friction μ = 0.34

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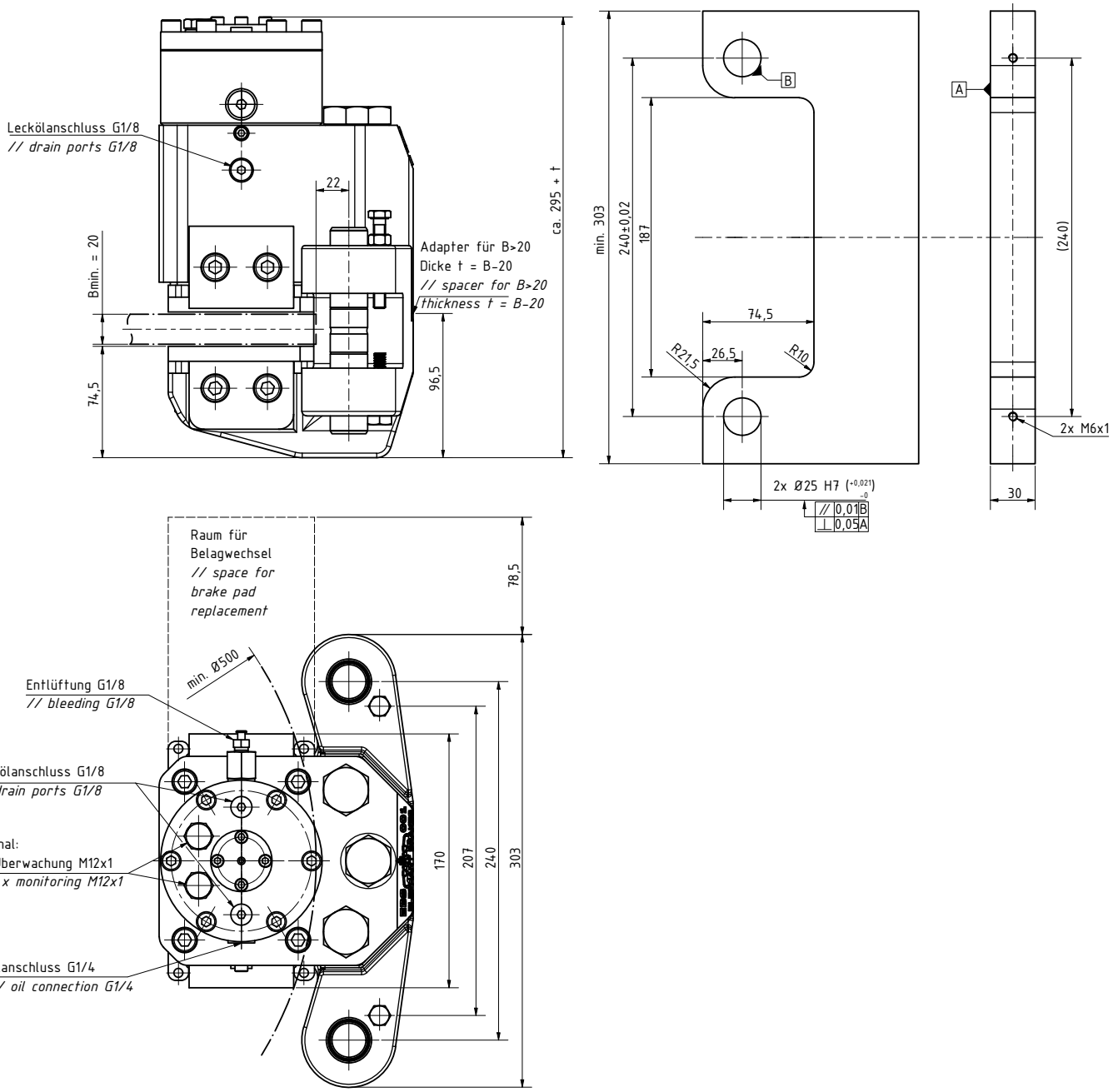

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Braking torque T_{Br} [kNm] = Braking force [kN] × eff. disc radius [m]
eff. disc radius = (0,5 × brake disc o/d [m]) – 0,078 m

Type	Part-No.	Braking force [kN]	Loss of force per 1 mm stroke [%]	$p_{min.}$ [bar]	$p_{max.}$ [bar]
EBS 002 – 50 FL	60096-50FL	50	7,4	135	180
EBS 002 – 48 FL	60096-48FL	48	8	126	171
EBS 002 – 45 FL	60096-45FL	45	9	118	163
EBS 002 – 41 FL	60096-41FL	41	10	109	154
EBS 002 – 37 FL	60096-37FL	37	9,5	101	146
EBS 002 – 35 FL	60096-35FL	35	11,2	96	141
EBS 002 – 32 FL	60096-32FL	32	13,5	91	136

Oil demand at 1 mm air gap: 7 cm^3
Brake suitable for mounting on brake discs according to DIN 15432 Dmin. Ø ≥ 500 mm
Mass: 77 kg

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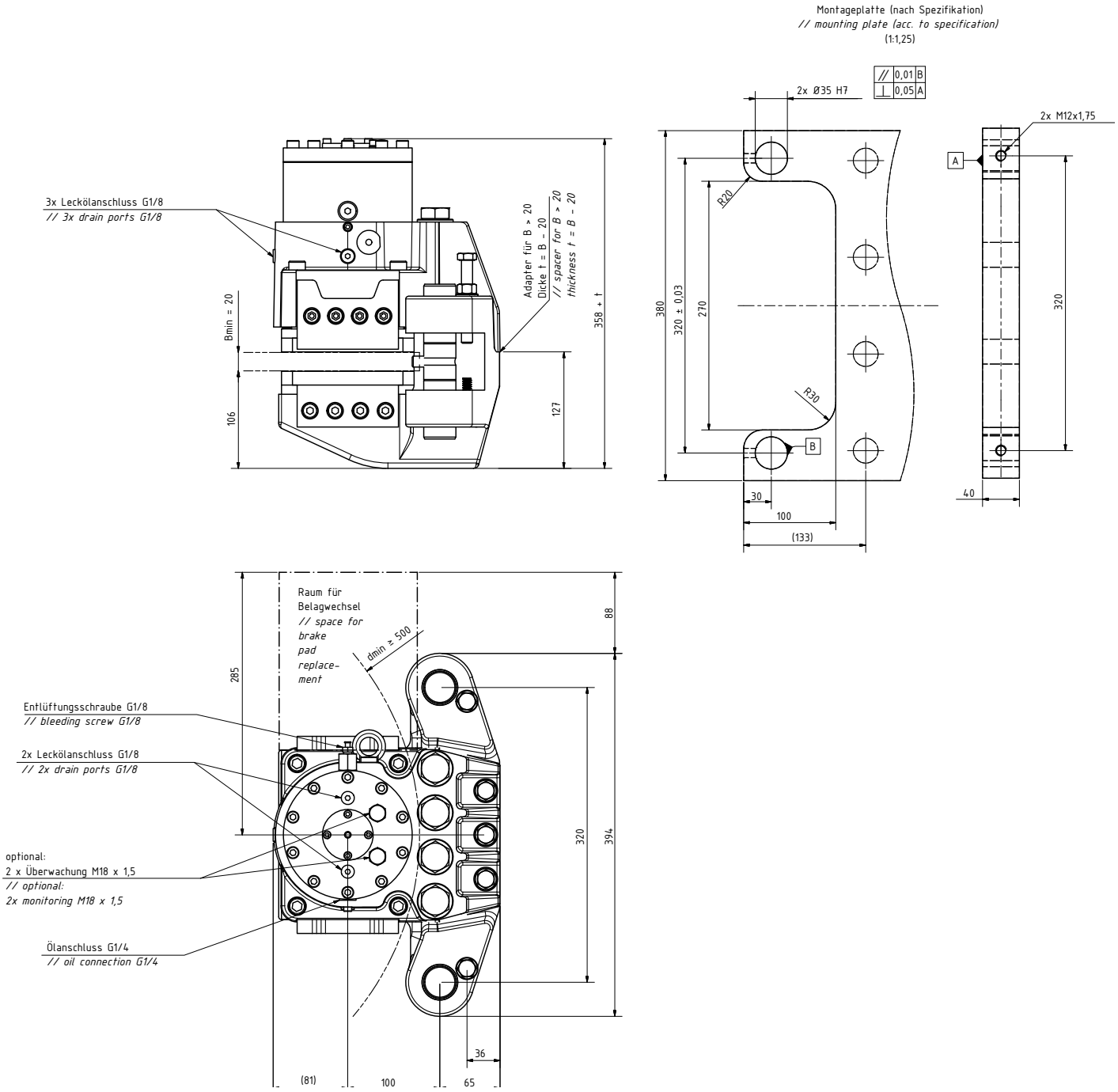

Fixing screws and nuts are not scope of supply.
Min. quality of fixing materials: 8.8

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Braking torque T_{Br} [kNm] = Braking force [kN] × eff. disc radius [m]
eff. disc radius = (0,5 × brake disc o/d [m]) – 0,095 m

Type	Part-No.	Braking force [kN]	Loss of force per 1 mm stroke [%]	$p_{min.}$ [bar]	$p_{max.}$ [bar]
EBS 004 – 104 FL	60095-104FL	104	7,7	150	195
EBS 004 – 96 FL	60095-96FL	96	7,9	138	183
EBS 004 – 88 FL	60095-88FL	88	8,1	131	176
EBS 004 – 80 FL	60095-80FL	80	8,3	121	166
EBS 004 – 72 FL	60095-72FL	72	8,5	112	157
EBS 004 – 68 FL	60095-68FL	68	8,8	105	150
EBS 004 – 61 FL	60095-61FL	61	9	97	142
EBS 004 – 53 FL	60095-53FL	53	9,3	86	131

Oil demand at 1 mm air gap per side: 28 cm^3
Brake suitable for mounting on brake discs according to DIN 15432 Dmin. Ø ≥ 800 mm
Mass: 126 kg

All information based on coefficient of friction μ = 0.34

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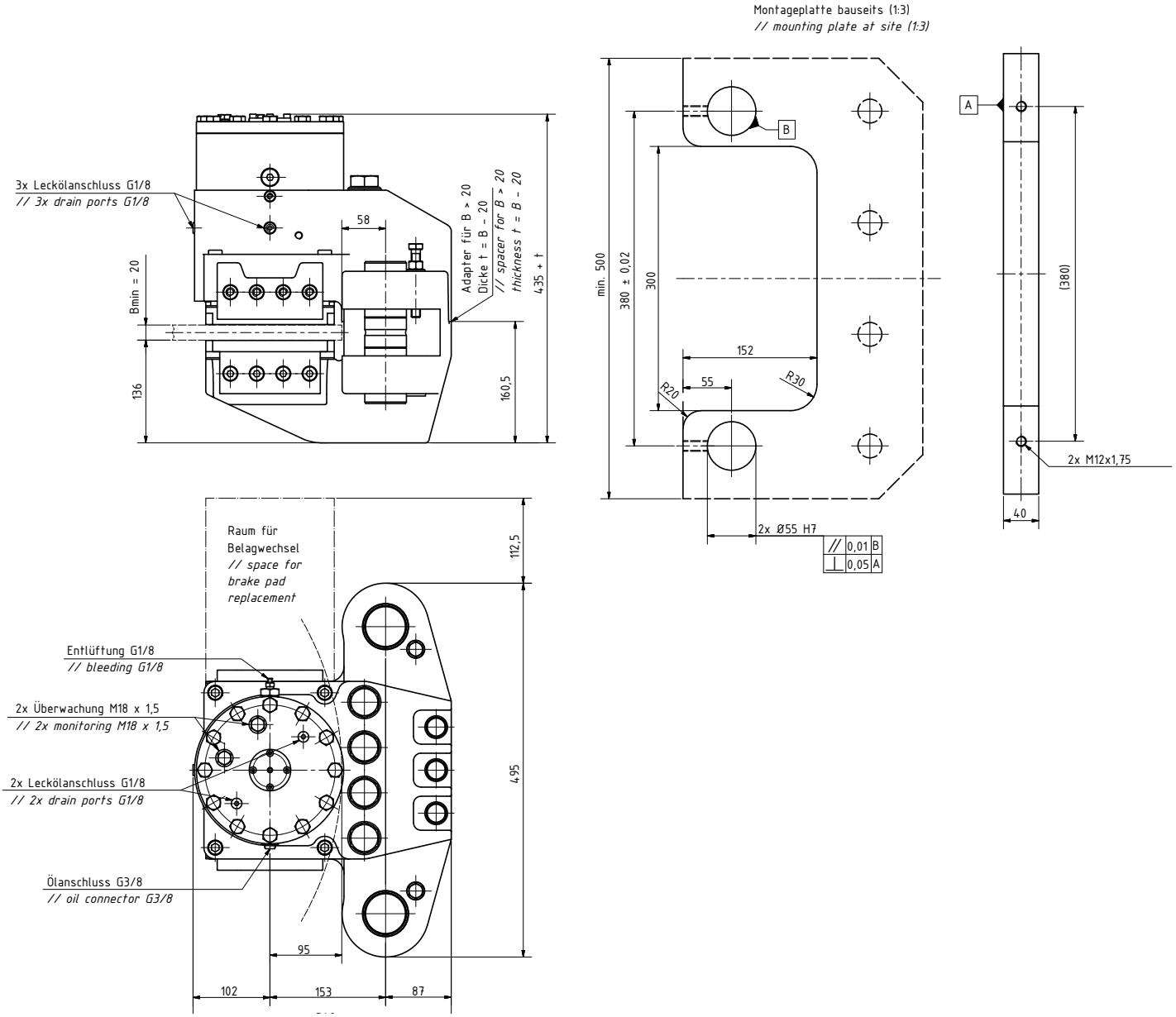

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