

2.16 Noise level of the DCM

Sound

Sources:

- the drive unit.
- during the casting process.

Depends on: machine load during operation.

Regulations: observe the local regulations.



WARNING !

If the noise emission is higher than the permissible values the personnel must wear appropriate ear protectors!

Measuring setup

- Casting process without metal (plastic plug). When casting with metal smaller pulse coefficients ΔL_I eq (ca. 3dB) must be expected.
- Data are related exclusively to the DCM (without peripheral units).
- Measurements carried out according to DIN 45635 Section 1.
- Variations from the given values L_{eq} and ΔL_I eq are contingent to the operating conditions t_{Cyc} , v_l and $v_l Br$.

Results

L_{eq}	A-rating equivalent		
	continuous sound level pressure at the working place	75	dB(A)
ΔL_I eq	pulse coefficient	9.5	dB

Operating conditions

t_{Cyc}	cycling time	80	s
v_l	plunger speed	3.0	m/s
$v_l Br$	braking velocity	1.0	m/s

2.17 Peripheral units

Please take the technical details of peripheral units from the relevant instruction manuals.

2.18 Enclosures

Checklist

Dimension sheets: Die-casting machine

Platens

Shot unit

Check list technical data / operating materials

Check the following points according to check list:

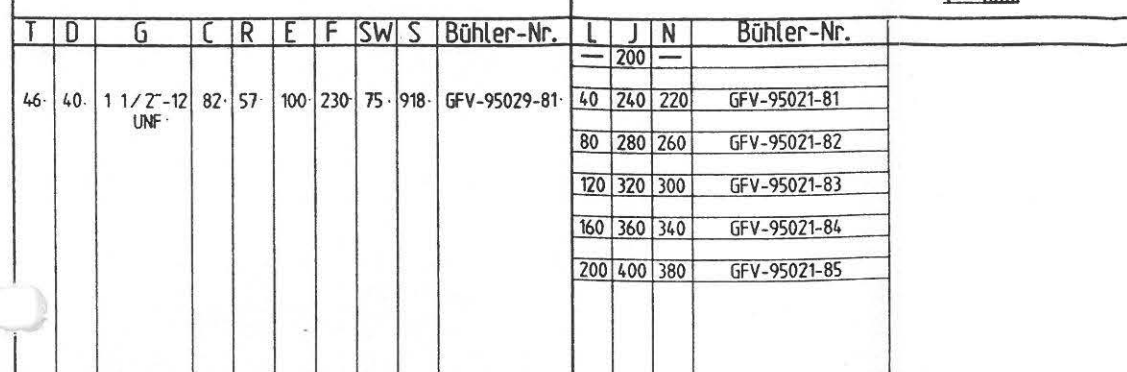
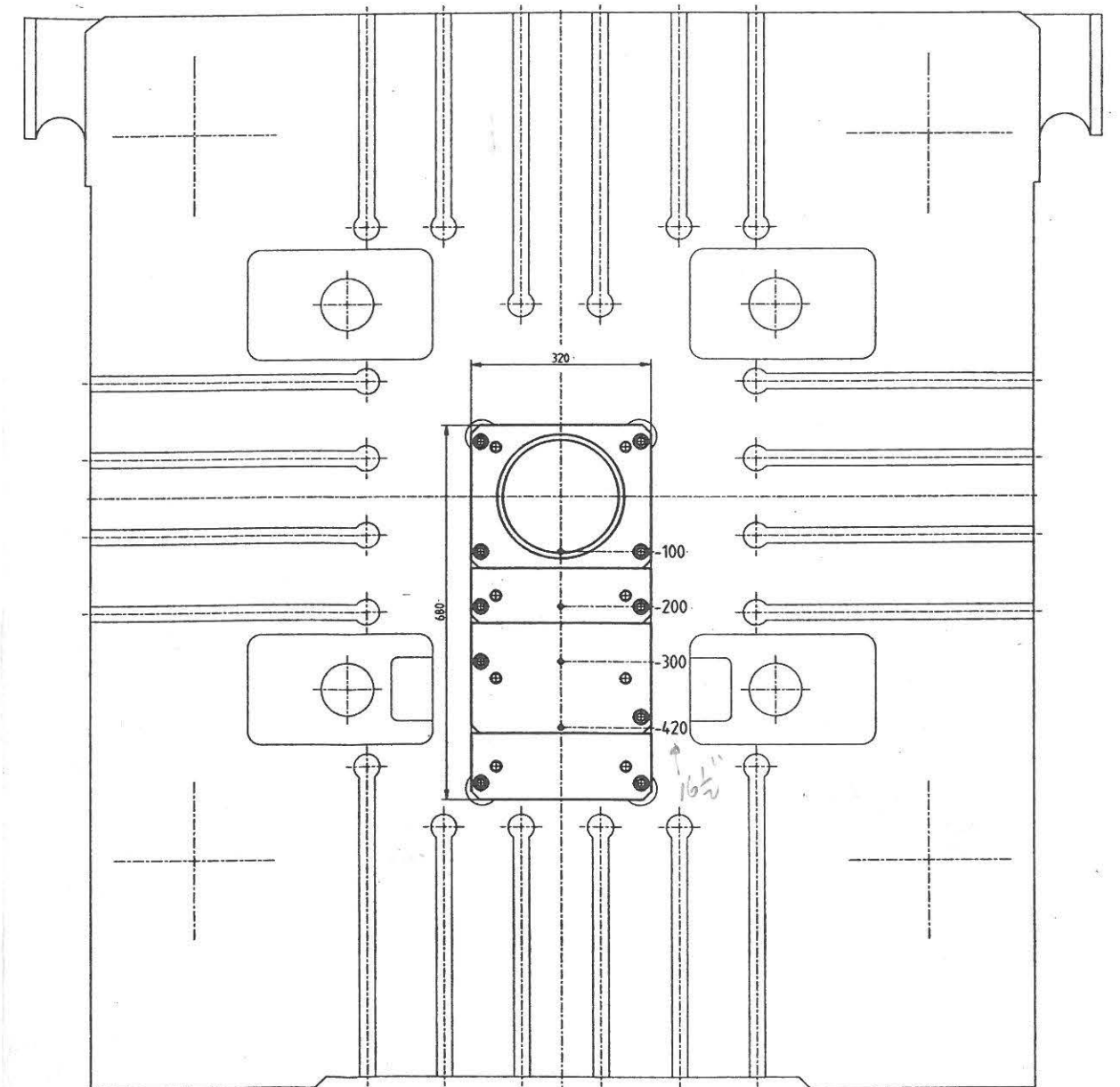
OK = ✓

- The required amount of hydraulic fluid is available ☐
- The required lubricant for the central lubricating system is available ☐
- The required pneumatics oil is available ☐
- The required plunger lubricant is available ☐
- The required nitrogen is available ☐
- Lubricating grease for the die-casting machine is available ☐
- Lubricating grease for the electric motors is available ☐

Notes

Date:

Signature:



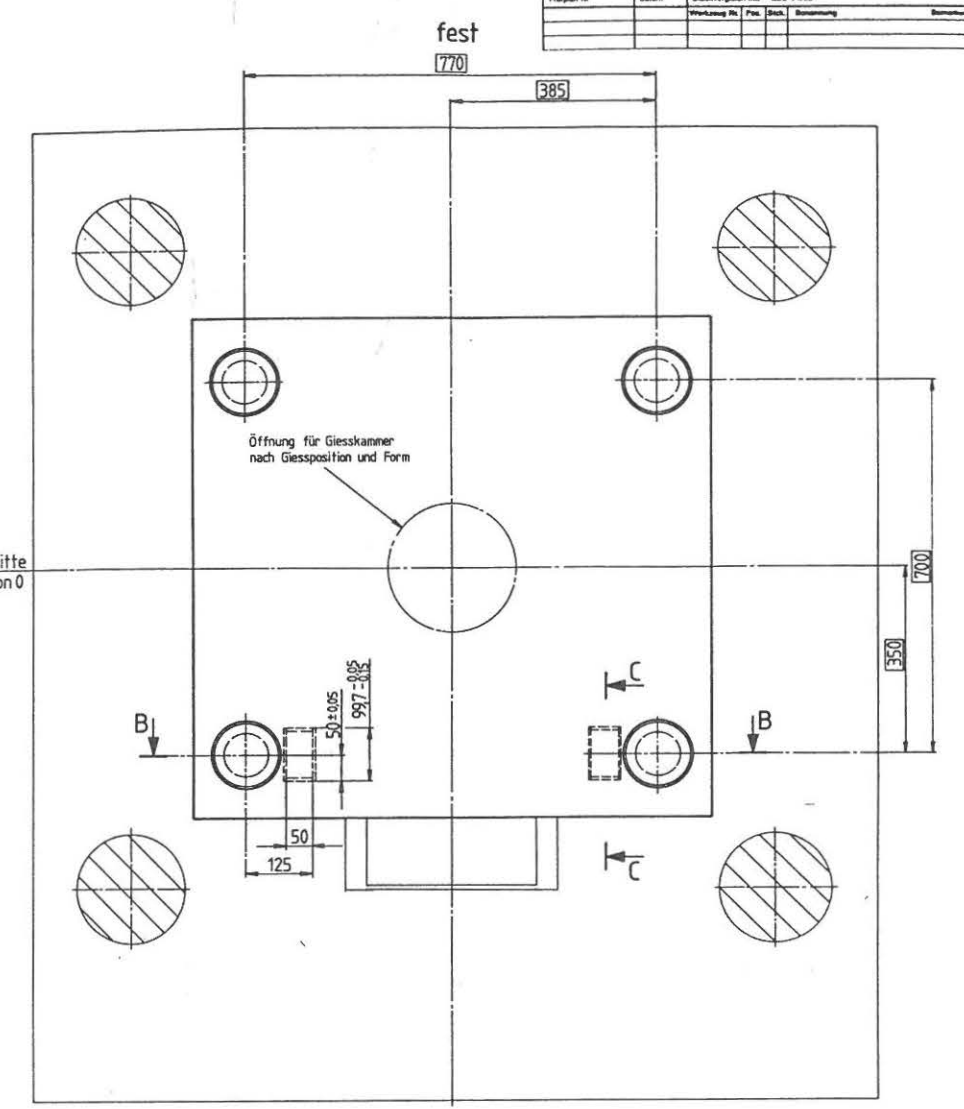
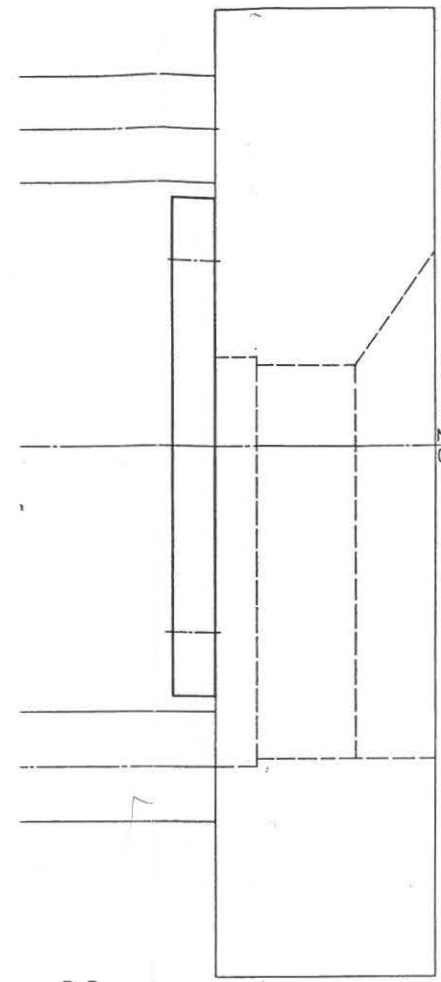
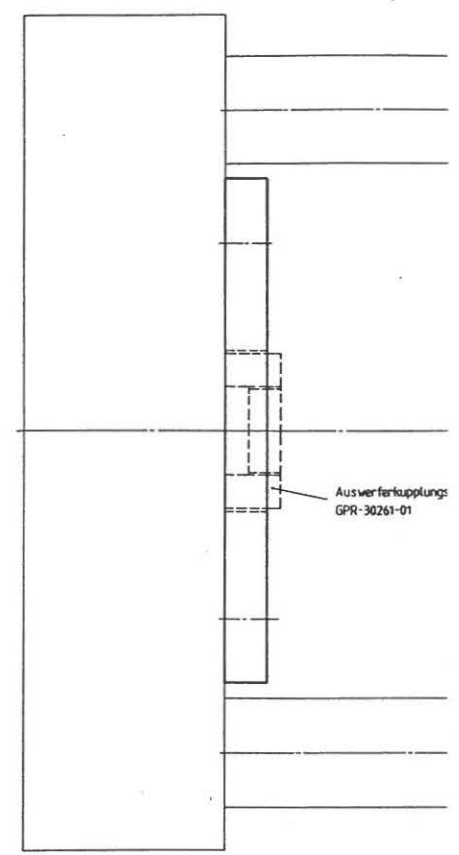
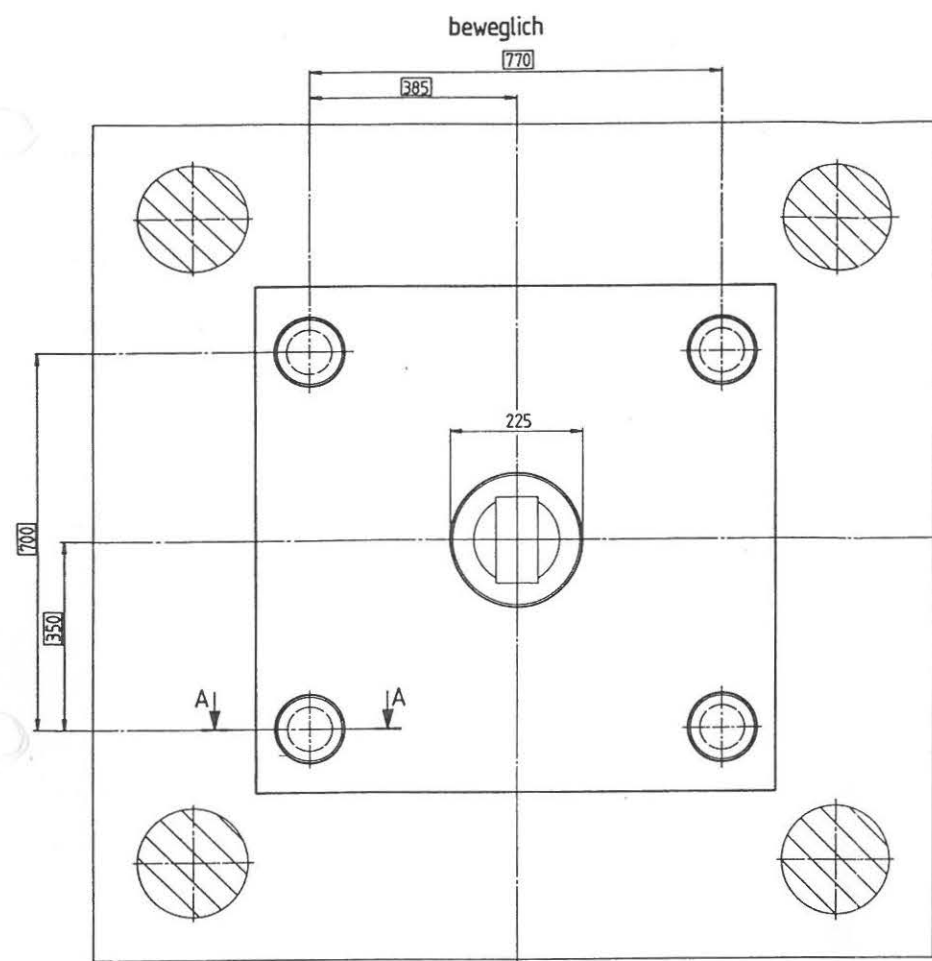
SC 10 / 120 Giessgarnitur Garniture d'injection Casting outfit Guarnitura d'iniezione	Total Cast Q.Nr. 331 125
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1. 00		5.00
1. 50		7.50
1. 70		3.50

Nr.	Beschreibung	Menge	Preis	Gesamt
01	Gussform / Moulding	25		
02		25		
03		25		
04		25		

Diese Liste ist eine Kopie der Originalrechnung und ist nicht verbindlich.
 This list is a copy of the original invoice and is not binding.
 Questa lista è una copia della fattura originale e non ha valore legale.
 Este documento é uma cópia da fatura original e não tem validade legal.

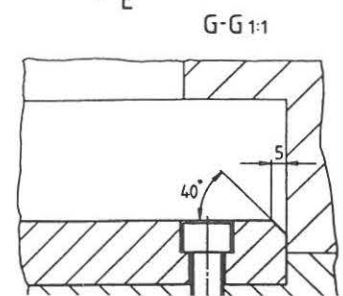
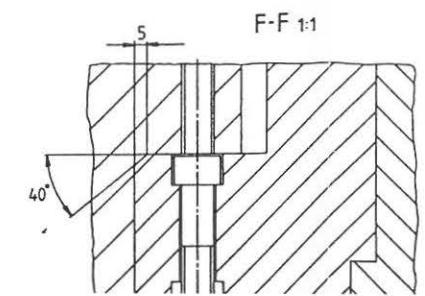
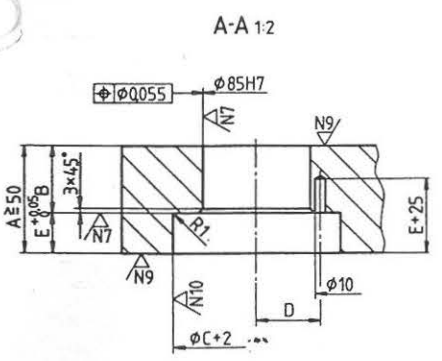
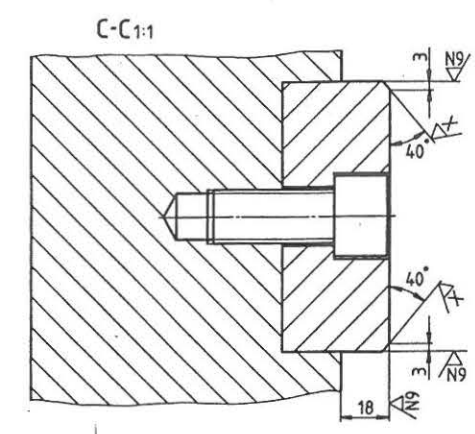
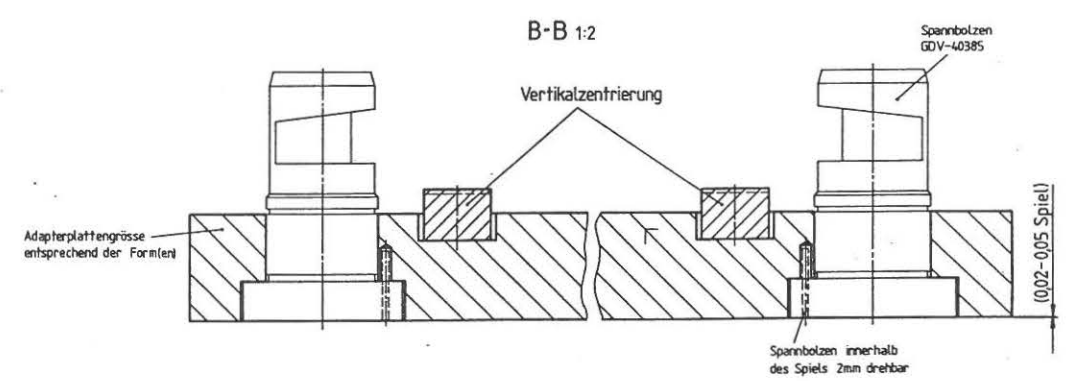
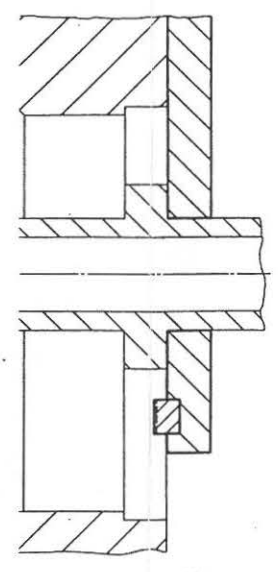
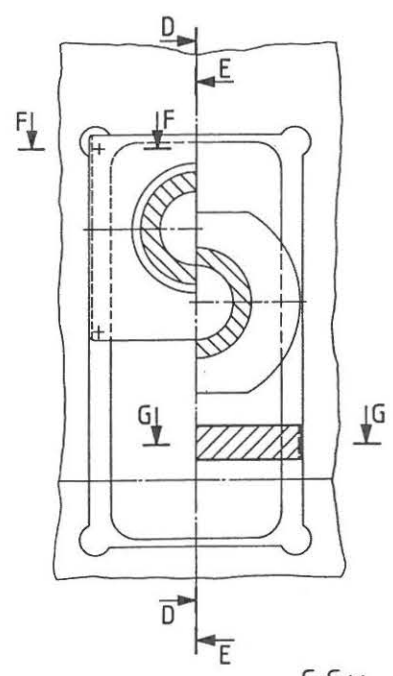
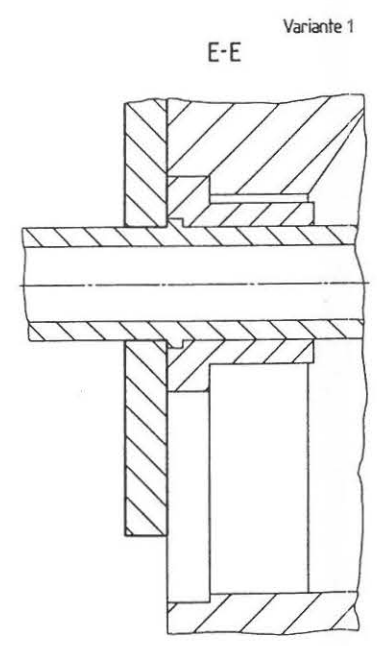
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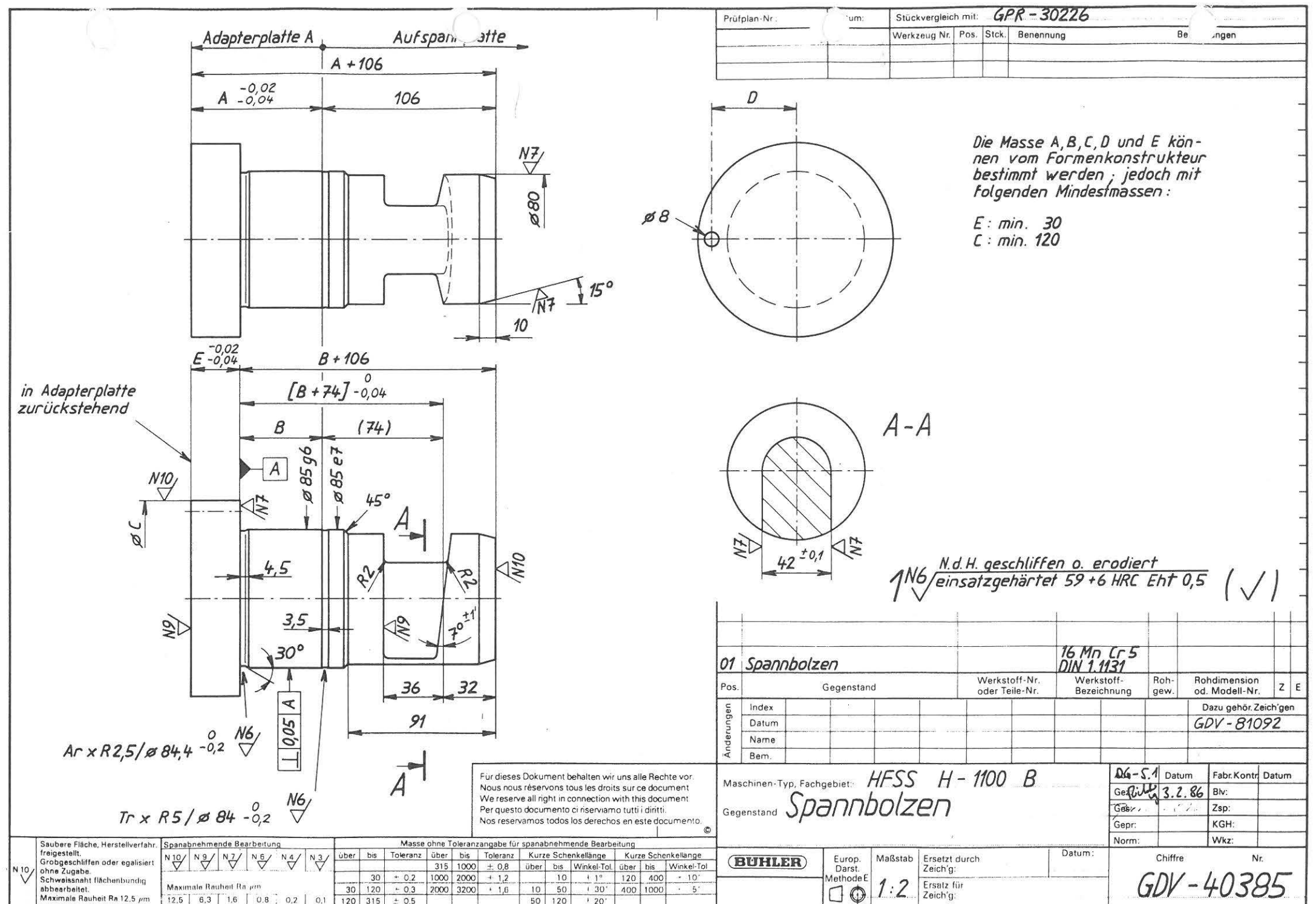
Horizontalzentrierung

Variant

D-D



Pos.	Geometrie	Werkstoff-Nr. oder Teil-Nr.	Werkstoff-Beschreibung	Form-gew.	Rundformen und Modell-Nr.	z.
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3 Preparing the site of installation

Contents

3.1	Place of installation	2
3.2	Method of placement	2
3.3	Foundation	3
3.4	Reinforcement	3
3.5	Danger areas of die-casting installations	3
3.6	Fencing	5
3.7	Enclosures	6

3.1 Place of installation

Following points should be observed when determining the place where DCM or DCI will be installed.

- Do not cut off escape routes
- Observe safety distances. (Local regulations)
- Leave sufficient space for peripheral units, pallets etc.
- Make sure accessibility is granted for die changing, tie bar drawing, maintenance, etc.
- Lifting gear with sufficient loading capacity should be available for die changing, maintenance etc.
- The working place of the caster must be well lit and ventilated.
- Provide an oil collecting tray. (For dimensions see foundation plan of DCM)
- Gases and vapours must drawn off and filtered.



WARNING !
Noxious substances in the air !

- Source: • from spraying the die
- Dependent: • from the type of spraying agent
• from the quantity of spraying agent used
• from the die temperature
- Regulations: • observe the local regulations

3.2 Method of placement

The DCM is placed on levelling shoes and lined out.

The levelling shoes are bolted to the DCM and placed directly on the floor.

Make horizontal fixations as shown in the foundation plan.



CAUTION !
The levelling shoes must be placed on good bearing concrete (e.g. PC 300)!
Check the requirements of the foundation with the installation plan!

3.3 Foundation

Take the necessary details for building and layout of the foundation from the enclosed foundation plan.

Provide channels and ducts for the power supply. (See also the examples in Chapter "Preparing the electrical system")

**CAUTION!**

Observe the drying time for concrete (e.g. PC 300)! See the instructions of the suppliers.

3.4 Reinforcement

Take the necessary details for making the reinforcement from the enclosed foundation reinforcement plan.

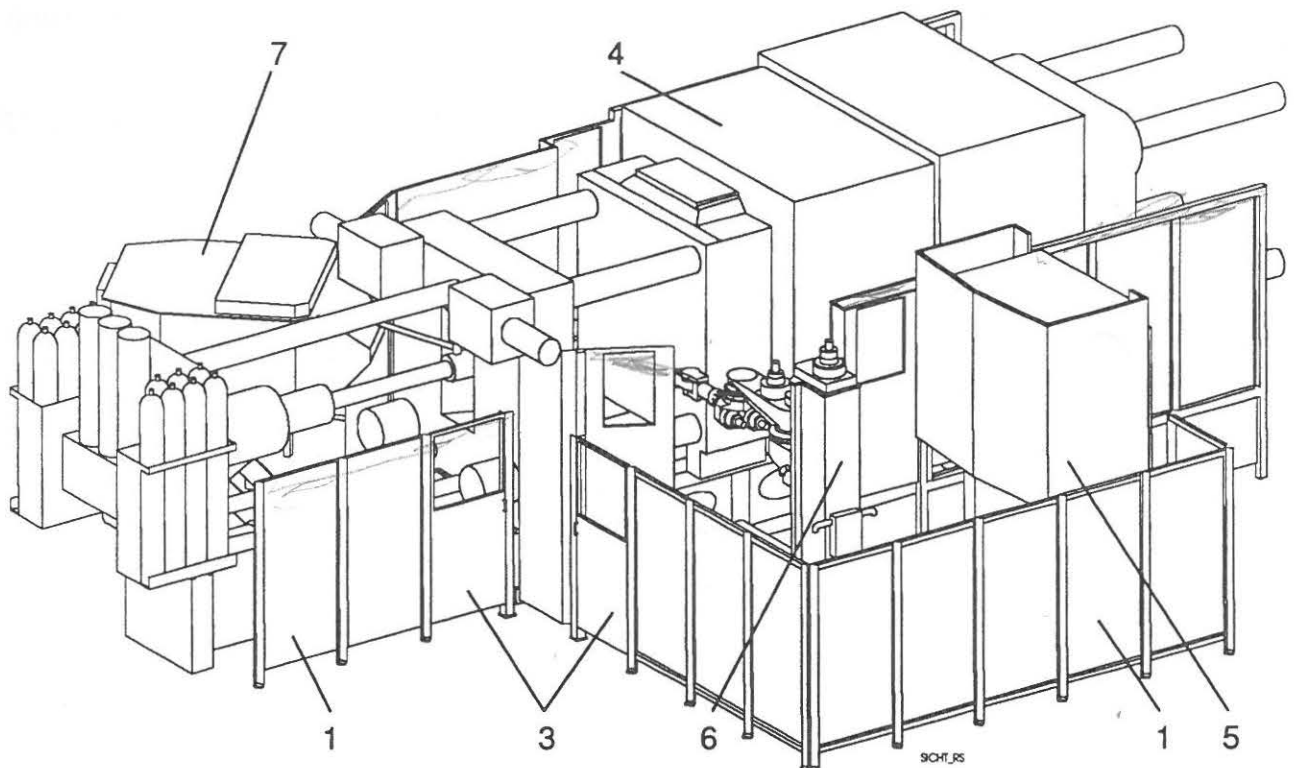
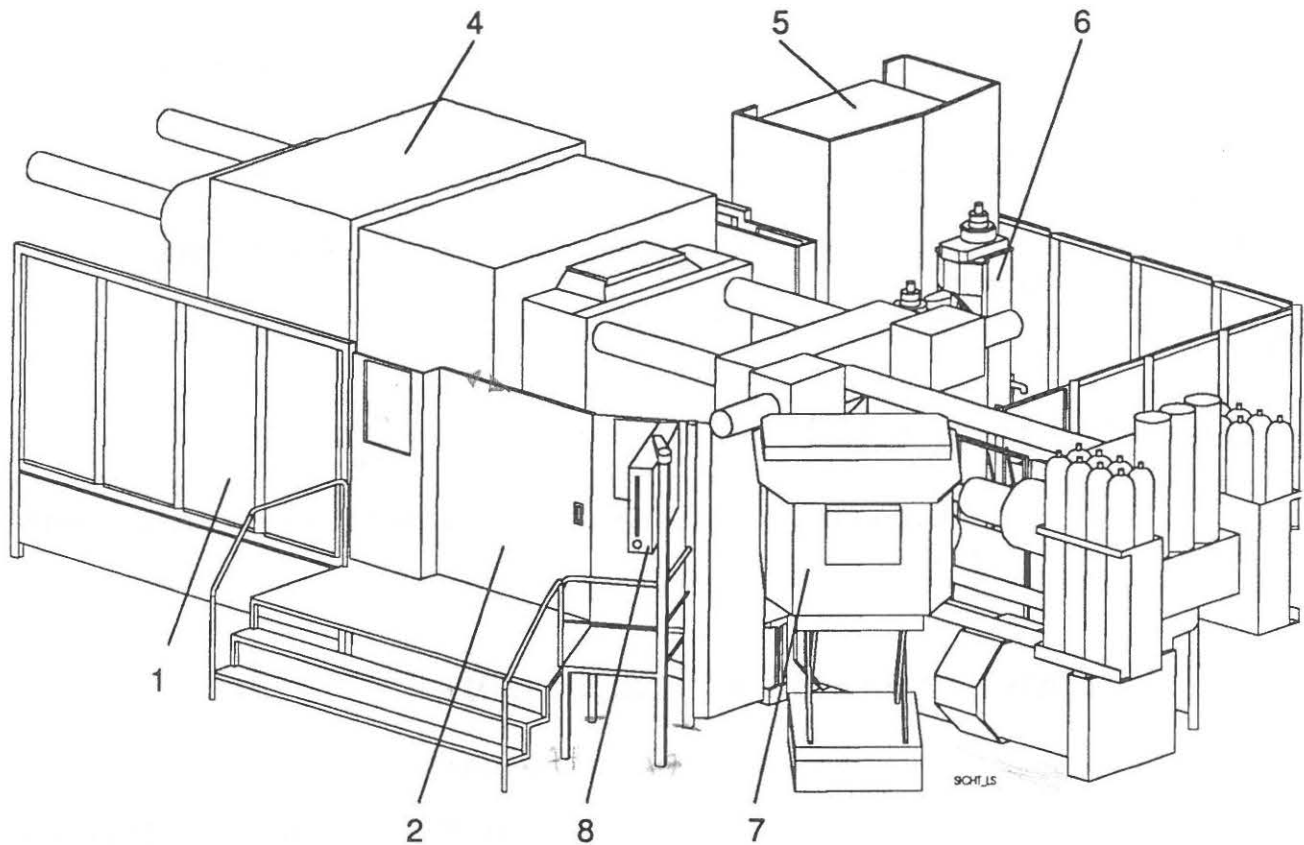
3.5 Danger areas of die-casting installations

The dangerous areas of a die-casting installation are:

- The moving components of the die-casting machine such as: the toggle system, the injection unit, the die area, etc.
- Peripheral units such as: the spraying unit, the extractor, the metal ladling unit, the trimming press, etc.

These danger areas must be cordoned off by a fencing system (see following pages).

Example of fencing for die-casting installations



3.6 Fencing

- Fencing is a means of protection which surrounds the hazardous areas in such a manner, that this alone or in combination with other components inhibits the access to these areas from outside.
- Surmounting or reaching through the fencing without aids must not be possible.
- The safeguarded area can be entered only via doors. The doors are interlocked with the control system of the installation in such a manner that the hazardous area can be entered only in the non-hazardous condition.

Legend to "Example of fencing for die-casting installations"

- 1) Fencing is usually built up in a unit-composed system. For the design of the fencing system following safety aspects must be taken into account.:
 - The height of the fencing must be such that reaching over the fence is not possible.
 - The free space between floor and fencing must be so that it will not be possible to reach under the fence.
 - The mesh of the fencing grid must so that it will not be possible to reach through the fence.
- 2) Buhler safety gate
- 3) Admission doors. Doors giving admittance to the fenced off area are to be electrically interlocked with the control system of the installation so that access to the hazardous area will be possible only in the non-dangerous condition of the installation.
- 4) Buhler die-casting machine
- 5) Trimming press
- 6) Extractor, e.g. robot
- 7) Metal ladling system, e.g. by means of feeding furnace or holding furnace with metal ladling unit
- 8) Operating unit. The operating unit is located outside the fencing so that the personnel can operate the DCI only from outside the hazardous area.

3.7 Enclosures

Checklist

Installation plan DCM

Foundation plan DCM

Foundation reinforcement plan DCM

Checklist for preparation of erection site

Check following points according to check list:

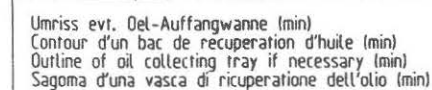
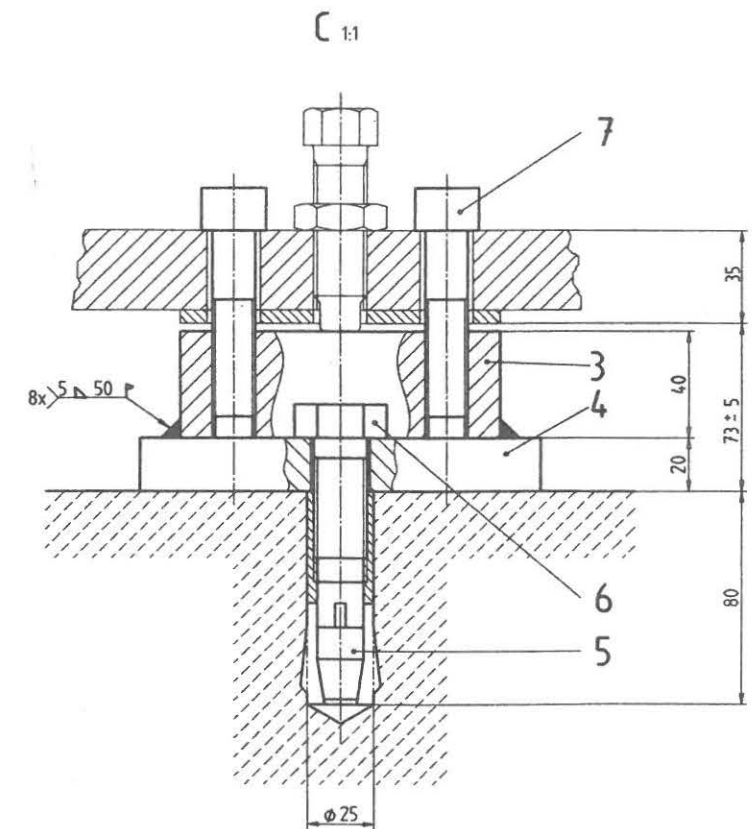
OK = ✓

- Are escape routes accessible ☐
- Are safety distances observed ☐
- Is lifting gear with adequate loading capacity available ☐
- Have recesses for the horizontal fixation of the DCM been provided ☐
- Does the foundation meet the requirements ☐
- Has the fencing for the hazardous areas been provided ☐
- Have rags and cleaning utensils been provided for removal of oil / Tectyl ☐
- Is office space with desk and telephone available for the service engineer ☐

Notes

Date:

Signature:



Technical drawing of a machine component, likely a pump or motor housing, showing dimensions in millimeters (mm). The drawing includes a top view and a side view. Key dimensions are:

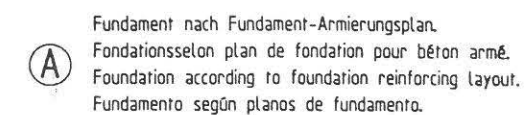
- Overall width: 250 mm
- Overall height: 220 mm
- Distance from top edge to centerline: 110 mm
- Distance from centerline to right edge: 98 mm
- Distance from centerline to left edge: 54 mm
- Distance from bottom edge to centerline: 145 mm
- Distance from bottom edge to right edge: 58.5 mm
- Distance from bottom edge to left edge: 117 mm

The drawing is labeled "D 1:2" in the top right corner, indicating a scale of 1:2. The text "ER MASCHINE" is partially visible at the bottom left.

Technical drawing of a concrete beam under a point load. The drawing shows a cross-section of the beam with a point load $F=200 \text{ KN}$ applied at the top. The beam is supported by a base. The drawing includes dimensions: 80 ± 25 (width of the top reinforcement), 73 ± 5 (height of the top reinforcement), 715 (height of the beam), and 130 (width of the bottom reinforcement). The drawing also shows the internal reinforcement structure, including stirrups and longitudinal bars. The drawing is labeled with 'B 1.5' and 'Zement traction (jeu concrete contraction)'.

Fundamentplan mit
Plan de fondation avec
Foundation plan with
Piano di fondazione con

1. 100		2. 50		3. 20		4. 10		5. 5		6. 2		7. 1		8. 0,5		9. 0,2		10. 0,1	
1	100	2	50	3	20	4	10	5	5	6	2	7	1	8	0,5	9	0,2	10	0,1
11	100	12	50	13	20	14	10	15	5	16	2	17	1	18	0,5	19	0,2	20	0,1
21	100	22	50	23	20	24	10	25	5	26	2	27	1	28	0,5	29	0,2	30	0,1
31	100	32	50	33	20	34	10	35	5	36	2	37	1	38	0,5	39	0,2	40	0,1
41	100	42	50	43	20	44	10	45	5	46	2	47	1	48	0,5	49	0,2	50	0,1
51	100	52	50	53	20	54	10	55	5	56	2	57	1	58	0,5	59	0,2	60	0,1
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71	100	72	50	73	20	74	10	75	5	76	2	77	1	78	0,5	79	0,2	80	0,1
81	100	82	50	83	20	84	10	85	5	86	2	87	1	88	0,5	89	0,2	90	0,1
91	100	92	50	93	20	94	10	95	5	96	2	97	1	98	0,5	99	0,2	100	0,1



Einnivellieren in Längs- und Querrichtung max. Abweichung 0.1mm pro m;
zur Kontrolle müssen die Säulen achsial verschiebbar sein.
Niveler en long et en travers. écart max. 0.1mm par m;

(B) pour le contrôle, les colonnes doivent pouvoir être déplacées axialement.
 Level machine lengthwise and crosswise, max. allowance 0.1mm per m (0.0012"per foot).
 Afterwards check alignment by shifting tie bars axially.
 Nivelado en sentido longitudinal y transversal. Tolerancia max. 0.1mm/m.
 Como control se deben poder mover las columnas en sentido longitudinal.

Kühlwasser Zuleitung

① Conduite d'eau de refroidissement
Inlet piping for cooling water
Conducto de agua de refrigeración

G 2" (1A = G 1 1/4")

Kühlwasser Rücklauf

② Evacuación d'agua de refrigeramiento
Drain for cooling water
Retorno agua de refrigeración

G 2"

Pressluft Zuleitung

③ Conduite d'air comprimé
Piping for compressed air
Conducto de aire comprimido

G 3/8"

Elektr. Steuerleitung

④ Conduite de pilotage électrique
Electric control line
Conexión eléctrica de comando

Starkstromleitung

⑤ Conduit à courant fort
Power line
Conexión de alta tensión

y { Fundamentplan. Ausf. mit Nivellierschuhen
Plan de fondation, exécution avec éléments de nivelage
Foundation plan, design with levelling shoes
Piano di fondazione, esecuzione con pattini di livellamento

GFV-91006

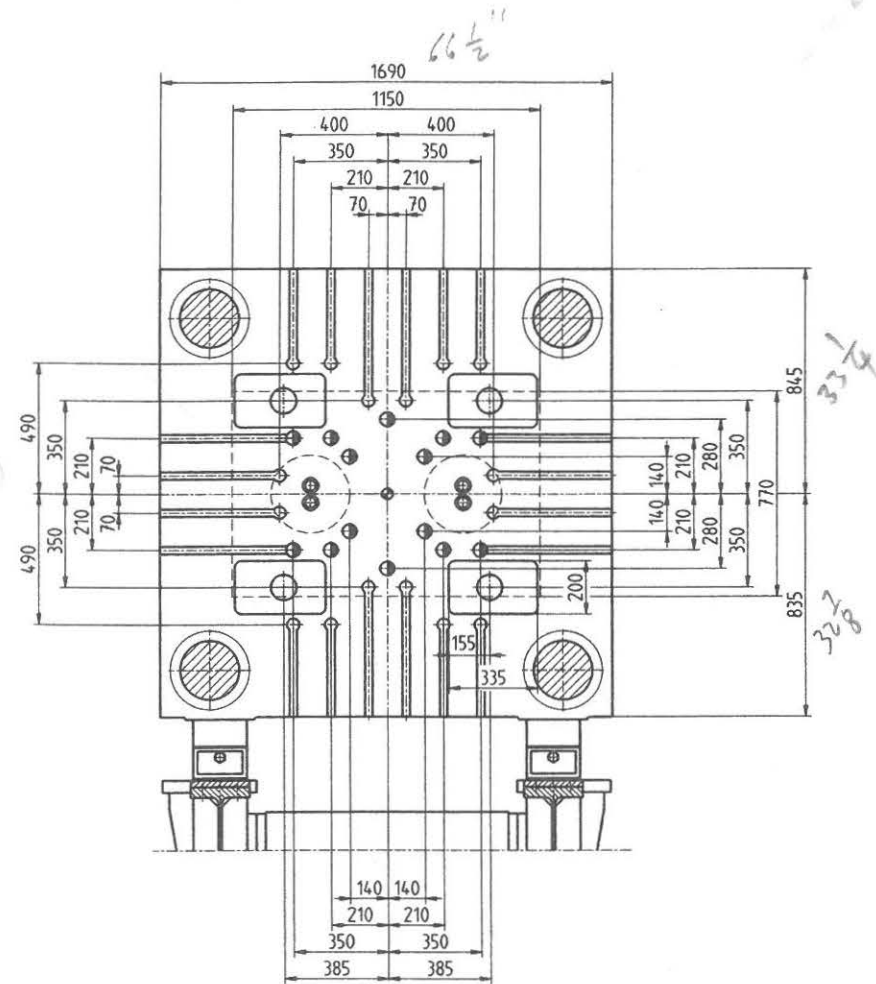
Maschinenmasse siehe
Dimensions de machine voir
Dimensions of the machine see
Dimensiones de la máquina

GFV-91005

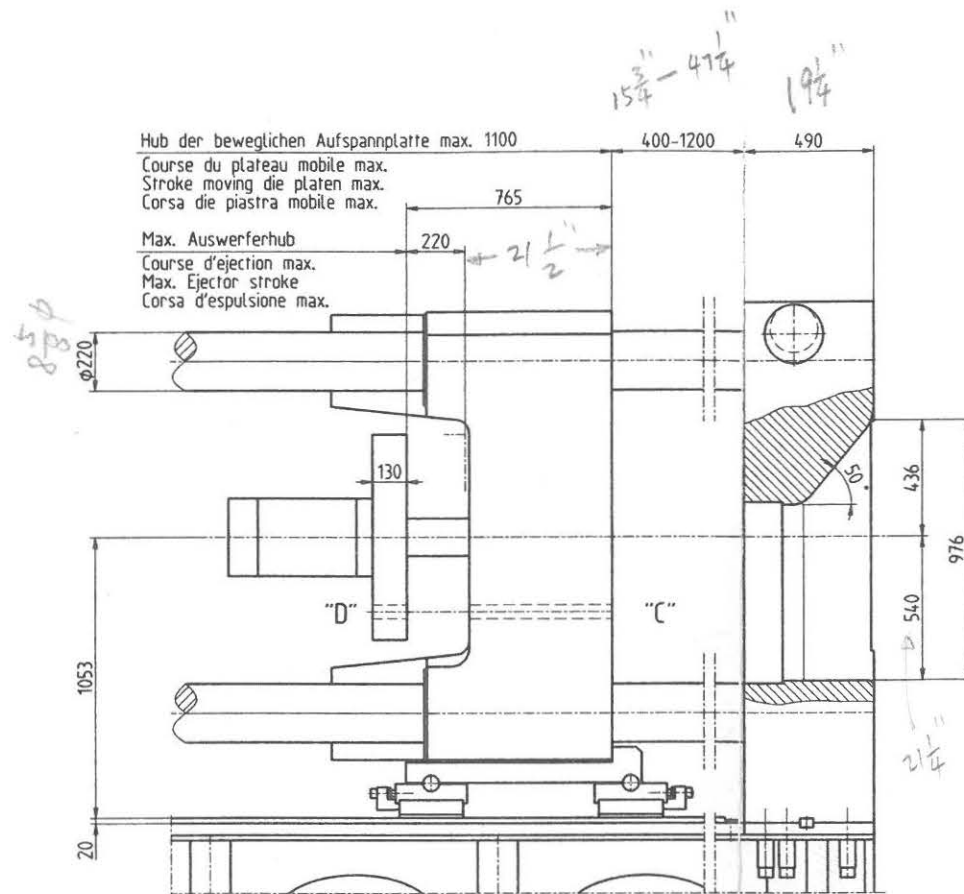
SC 10/120

Aufstellungsplan
Plan d'installation
Machine installation plan
Plano de la instalación

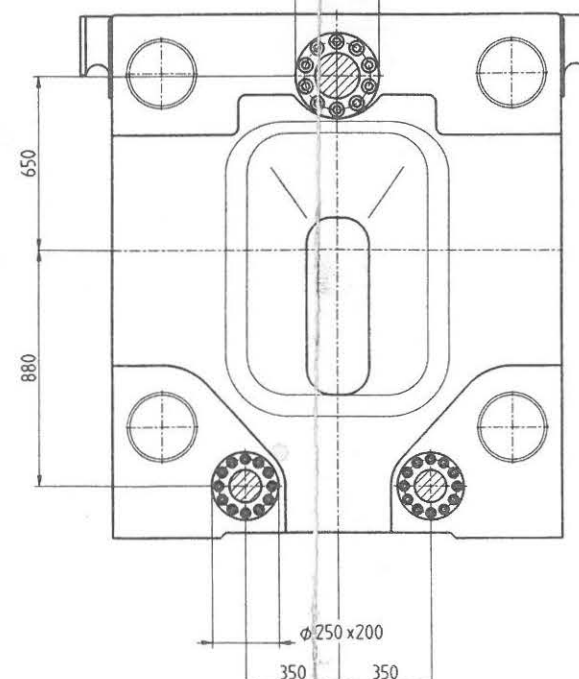
Bewegliche Aufspannplatte
Plateau mobile
Moving die platen
Piastra mobile



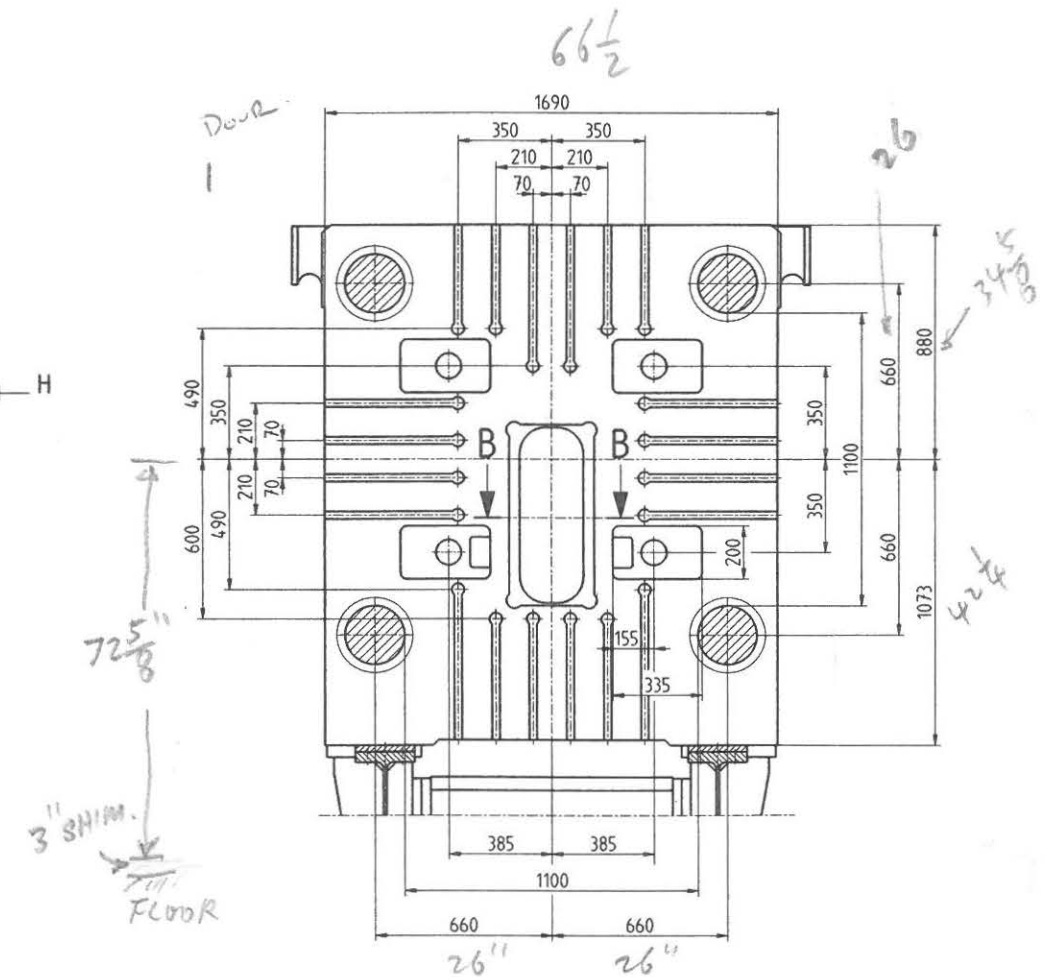
Hub der beweglichen Aufspannplatte max. 1100
Course du plateau mobile max.
Stroke moving die platen max.
Corsa die piastra mobile max.
Max. Auswerferhub
Course d'ejection max.
Max. Ejector stroke
Corsa d'espulsione max.



Ansicht H M 1:10
ø 320 x 180



Feste Aufspannplatte
Plateau fixe
Stationary die platen
Piastra fissa

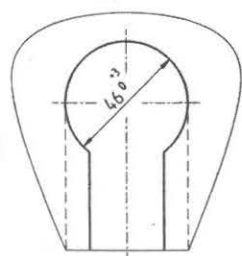


Adapterplatte (HFSS)
Plaque d'adaption (HFSS)
Adapter plate (HFSS)
Piastra di adattamento (HFSS)
Spannbolzen
Douille de serrage
Clamping pin
Perno di tensionamento

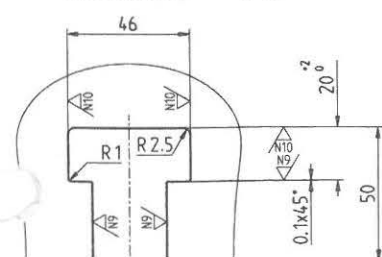
GDV-91014
GDV-40385

• Fuer Auswerfer mit Rueckzug
Pour ejecteur avec rappel
For retractable ejector
Per espulsore con ritorno
Minimale Form-Aufspannflaeche
Surface d'appui minimale des moules
Minimum area of die casting dies
Area minima di fissaggio per stampi 800x800 mm

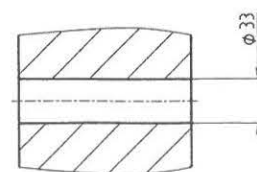
Nutenauslauf M 1:1



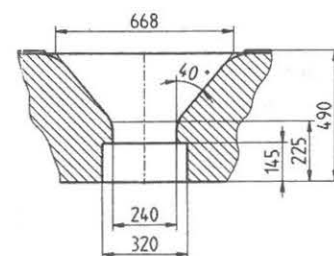
Nutendetail M 1:1



Detail D M 1:2



Schnitt B - B M 1:2



Detail C M 1:5



[illegible]

4 Preparing the electrical system

Contents

4.1	Important advice	2
4.2	Connections	3
4.2.1	External supply	3
4.2.2	Motors	5
4.3	Laying cables	6
4.4	List of materials	7
4.5	Enclosures	7

**WARNING !**

Electrical installations must be installed and maintained only by instructed, trained qualified personnel!

**CAUTION**

Welding work can be carried out in the vicinity of the DCM or DCI when the control system is switched on!

For welding work directly on the DCM or DCI switch off the control system with the main switch and lock the main switch.!

Place the earthing tong (minus pole) as near as possible to the welding point!

4.1 Important advice

Location of the control unit

- unhindered access
- out of range of metal spray
- at least 10 cm away from the wall
- ambient temperature < 55 °C
- not exposed to direct sunlight
- not in the neighbourhood of the holding furnace



CAUTION !

The lower the temperature inside the control cabinet, the smaller chances of failure of electronic components!

Always keep doors of the control cabinet closed!

4.4 List of materials

The following table shows which material has to be furnished by which contracting party.

To be furnished by	Customer	Buhler
Supply cable > control system	✓	
Cable control system > motor M1	✓	
Cable control system > motor M2	✓	
Cable control system > motor M6	✓	
Cable control system > motor M8	✓	
Cable control system > motor M9	✓	
Cable ducts and tubes	✓	
Connecting and incidental material	✓	
Electrical hand tools	✓	
Cable-lug press	✓	
Measuring instruments (Volt/Ohmmeter)	✓	

MAT_04_A

4.5 Enclosures

Checklist

Dimension sketch of control cabinet

Check list for preparation of the electric system

Check following points according to check list:

OK = ✓

- Is the location for the control unit suitable ☐
- Is the required quantity of energy available ☐
- Are safety systems included in the external supply ☐
- Is the safety system of the external supply selective ☐
- Are cable ducts and lead-throughs available ☐
- The required material has been made available according to material lists ☐
- The preparations have been made for peripheral units ☐

Notes

Date:

Signature: