

## Maschinenspezifikation

## Spécification de machine

Specifica macchina

Machine specification

## Especificación de máquina

Kundenname	Buehler Inc
Nom du client	
Name of customer	USA <u>Minneapolis</u>
Nome del cliente	
Nombre del cliente	

Bühler-Vertretung	Buehler Inc
Buhler-Représentation	Herr P.Stucki
Buhler-Representative	USA <u>Minneapolis</u>
Rappresentante Buhler	
Buhler-Representación	

Maschinentyp	
Type de machine	
Type of machine.....	GDM-H-400B DC Version 4.00
Tipo macchina	
Tipo de máquina	

Zuhaltekraft	kN	
Force de fermeture	kN	
Locking force	kN.....	4600
Forza di chiusura	kN	
Fuerza de cierre	kN	

Baujahr	
Année de construction	
Year of construction.....	1990
Anno di costruzione	
Ano de construcción	

Bestell-Nr	
No. de commande	
Order No. ....	592 175
No. di ordine	
No. de pedido	

Maschinen-Nr. (auf Firmenschild)	
No. de machine (sur plaque de constructeur)	
Machine No. (on name plate).....	10 188 493
No. macchina (sulla piastrina)	
No. de máquina (sobre placa del fabricante)	

Horizontal Cold-Chamber Die Casting Machine H-400B

Locking force (strain gauge tested).....	kN	4600
Injection force, consolidation phase (adjustable).....	kN	420 - 180
Plunger stroke.....	mm	480
Shot positions (standard).....	mm	0, -250
Ejection force.....	kN	240
Ejector stroke (adjustable).....	mm	145
Dimensions of fixed die platen (H x V).....	mm	990 x 1165
Dimensions of moving die platen (H x V).....	mm	990 x 990
Clearance between the tie bars.....	mm	640 x 640
Diameter of tie bars.....	mm	120
Die height min. ....	mm	250
Die height max. ....	mm	780
Stroke of moving die platen.....	mm	640
Rated installed power.....	kW	30
Machine area L x W (incl. safety gate).....	m	7.5 x 2.5
Machine height.....	m	2.3
Machine weight, ready for production.....	kg	16000
INTERCIRC control cabinet L x W x H.....	m	1.4 x 0.4 x 1.65
DATACESS control cabinet L x W x H (Standard).....	m	1.2 x 0.5 x 2.23
and DATACESS power cabinet L x W x H (Extended).....	m	0.8 x 0.5 x 1.8

Production data

Plunger diameter	mm	60	70	80	90	100	110
Theoretical shot volume (DIN 24480)	cm <sup>3</sup>	905	1231	1608	2035	2512	3040
Max. shot weight for Al*	kg	2.5	3.4	4.5	5.7	7.1	8.5
Max. specific injection pressure	bar	1485	1090	835	660	535	442
Max. projected area**	cm <sup>2</sup>	309	422	550	696	859	1040

\* The max. shot weight is calculated as follows:  
plunger stroke x plunger area x 0.75 x density

Alloy density of:	Al	Zn	Mg	Cu
g/cm <sup>3</sup>	2.5	6.25	1.63	8.0

\*\* Max. theoretical projected area at max. specific injection pressure, without consideration of core locking and dynamic part of injection process.

TECHNISCHE DATEN DONNEES TECHNIQUES TECHNICAL DATA	Maschinentyp Type de machine Type of machine	Hydraulikflüssigkeit: Einfüllmenge Fluide hydraulique: Volume de remplissage Hydraulic fluid: Filling volume	Inhalt: Stickstoff Capacité: Azote Capacity: Nitrogen		Hydraulik- flüssigkeit Fluide hyd. Hydr. fluid	Max. Druckluftverbrauch für eine Schutztüre Consommation d'air compr. max. d'une porte de séc. Max. compr. air consumption for one safety gate
			Flasche Bouteille Bottle	Kolbenspeicher Accumulateur à piston Piston accumulator		
	H-100B	250 l	2 x 10 l	3,0 l	2,5 l	15 dm <sup>3</sup> /Zyklus, Cycle
	Z-100B	250 l	1 x 10 l	0,94 l	0,9 l	15 dm <sup>3</sup> /Zyklus, Cycle
	H-160B	420 l	1 x 34,5 l	5,0 l	4,0 l	22 dm <sup>3</sup> /Zyklus, Cycle
	Z-160B	350 l	2 x 10 l	5,0 l	4,0 l	22 dm <sup>3</sup> /Zyklus, Cycle
	H-250B	510 l	2 x 34,5 l	11,0 l	10,0 l	22 dm <sup>3</sup> /Zyklus, Cycle
	H-400B	850 l	1 x 100 l	11,0 l	10,0 l	22 dm <sup>3</sup> /Zyklus, Cycle
	H-630B	1240 l	1 x 150 l	21,0 l	20,0 l	26 dm <sup>3</sup> /Zyklus, Cycle
	H-800B	1690 l	1 x 150 l	21,0 l	20,0 l	31 dm <sup>3</sup> /Zyklus, Cycle
TYPE: B-Reihe 8206 8505	Hydraulikflüssigkeit HF = Fluide hydraulique Hydraulic fluid		Tiegelinhalt Capacité du creuset Capacity of crucible		Z-100B  85l	Z-160B  85l

Wassermenge  
Quantité d'eau en m<sup>3</sup>/h  
Amount of water

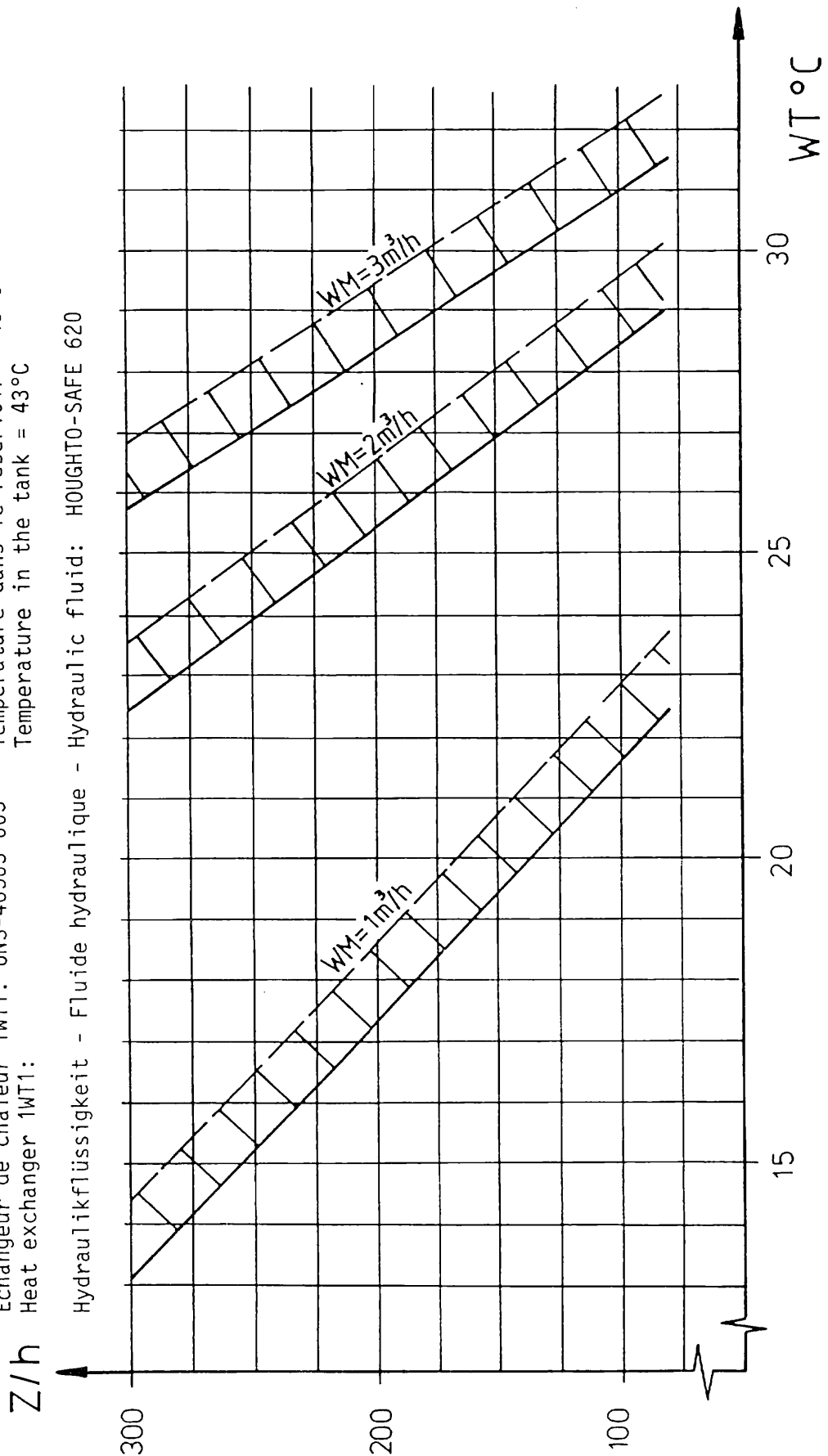
Wassereintrittstemperatur  
Température d'entrée de l'eau °C  
Water inlet temperature

Zyklen/h der Maschine  
Cycles/h de la machine  
Cycles/h of the machine

Tanktemperatur = 43°C  
Température dans le réservoir = 43°C  
Temperature in the tank = 43°C

Wärmetauscher 1WT1:  
Echangeur de chaleur 1WT1: UNS-46503-003  
Heat exchanger 1WT1:

Hydraulikflüssigkeit - Fluide hydraulique - Hydraulic fluid: HOUGHTO-SAFE 620

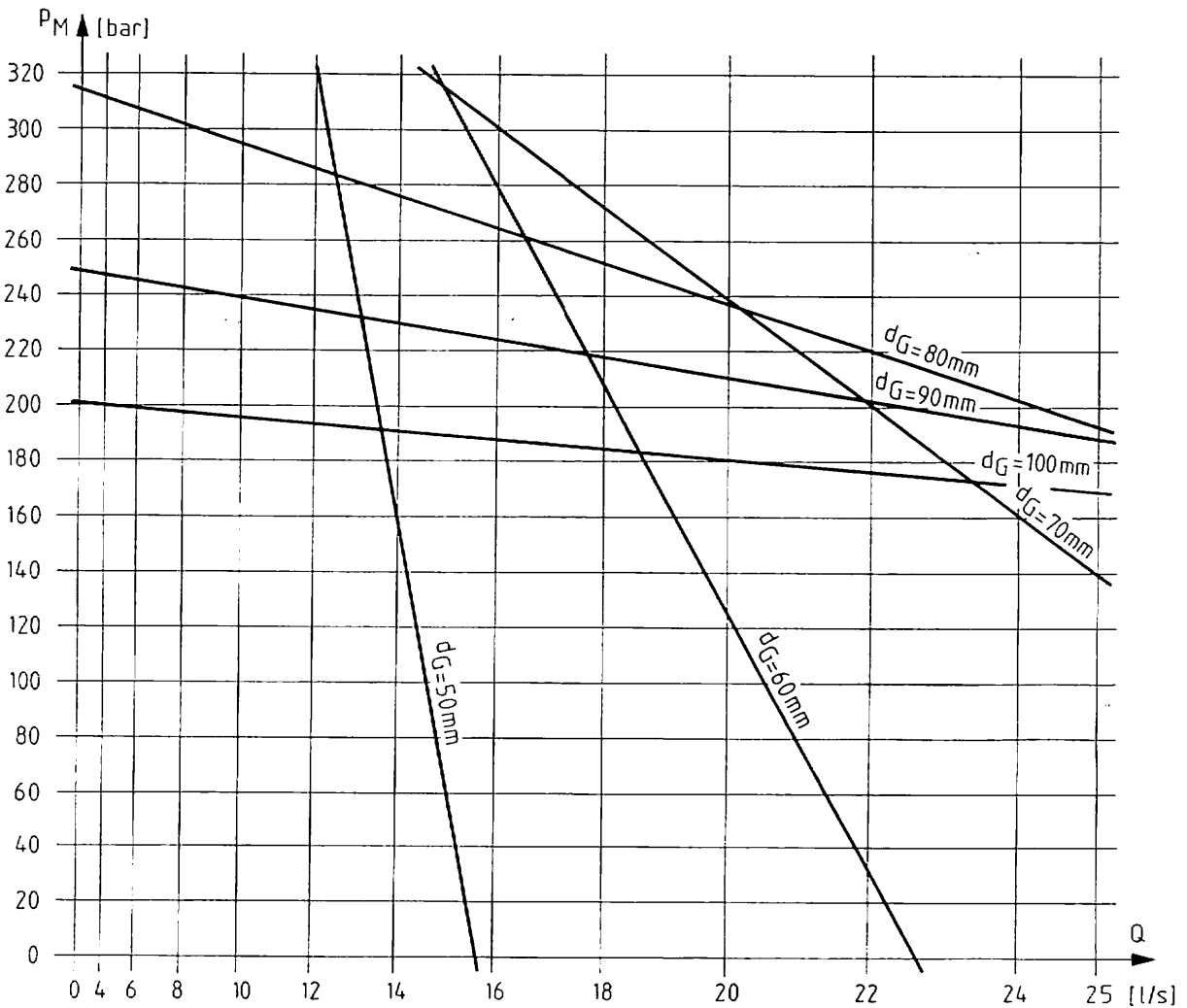
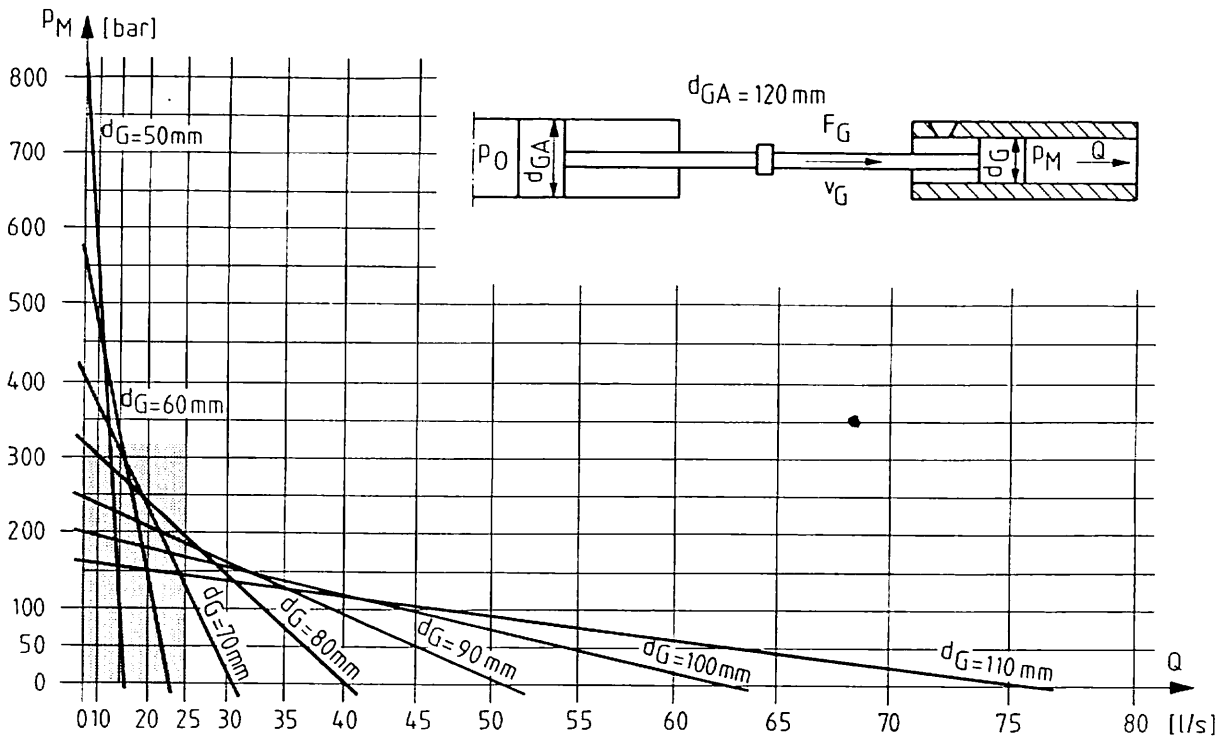


Kühlwasserverbrauch des Wärmetauschers  
Consommation d'eau de refroidissement de  
l'échangeur de chaleur

TYPE:  
GDM

DP - 5.1.8  
8209

**BUHLER**  
GDM-95068



pQ-Diagramm  
 Diagramme pQ  
 pQ-diagram

TYPE:  
 GDM  
 H-400B

DP - 5.1.8  
 8203

**BUHLER**

GDM-95065

## Buhler Horizontal Cold Chamber Die Casting Machines

### The pQ - diagram

The pQ-diagram is a graphic representation of the hydraulic performance of the injection unit during the dynamic cavity fill phase.

The metal flow rate  $Q$  (litres/sec), the horizontal coordinate (quadratic scale), is plotted against the metal pressure  $p_M$  (bar), the vertical coordinate (linear scale).

$p_M$  is proportional to  $Q^2$ .

The diagram contains the performance lines of the machine (hydraulic performance lines) for the various plunger diameters  $d_G$ .

The maximum metal pressure  $p_M$  corresponds to the maximum static pressure at the end of the dynamic cavity fill phase (measured value). The maximum metal flow rate  $Q_{max.}$  is calculated as follows:

$Q_{max.} = \text{idle shot speed of the plunger (measured value)} \times \text{plunger area.}$

Since the filling sleeves of horizontal cold chamber die casting machines up to the die consist of a smooth cylinder, all resistances (e.g. gates) entailing pressure and flow rate losses are located within the die.

pQ-diagram for  
Buhler Horizontal Cold Chamber

TYPE:

H-B

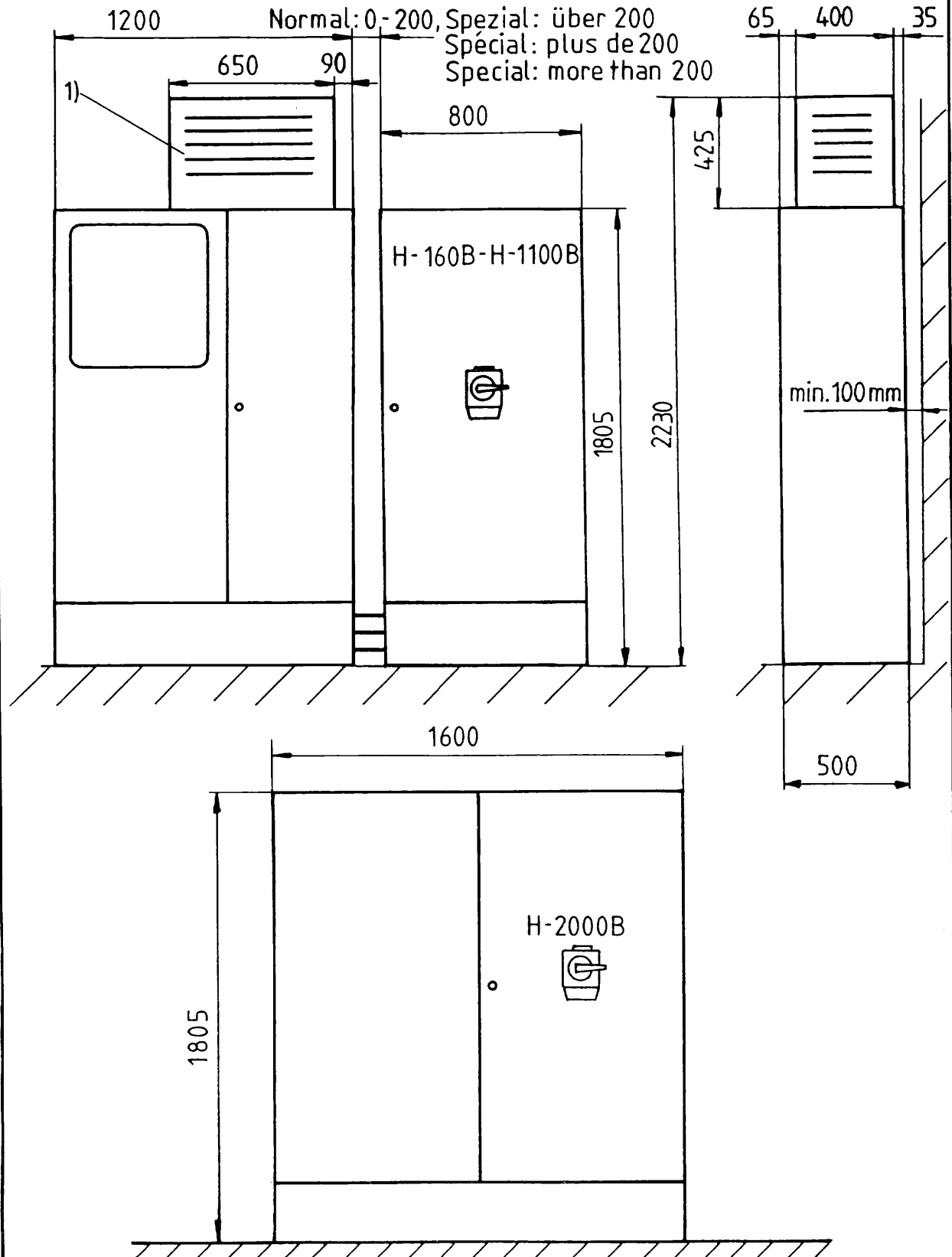
DP - 5.1.8

8203

**BUHLER**

GEA-95654

Kühlgerät (Zusatz)  
 1) Réfrigérant (accessoires)  
 Refrigerator (accessory equipment)

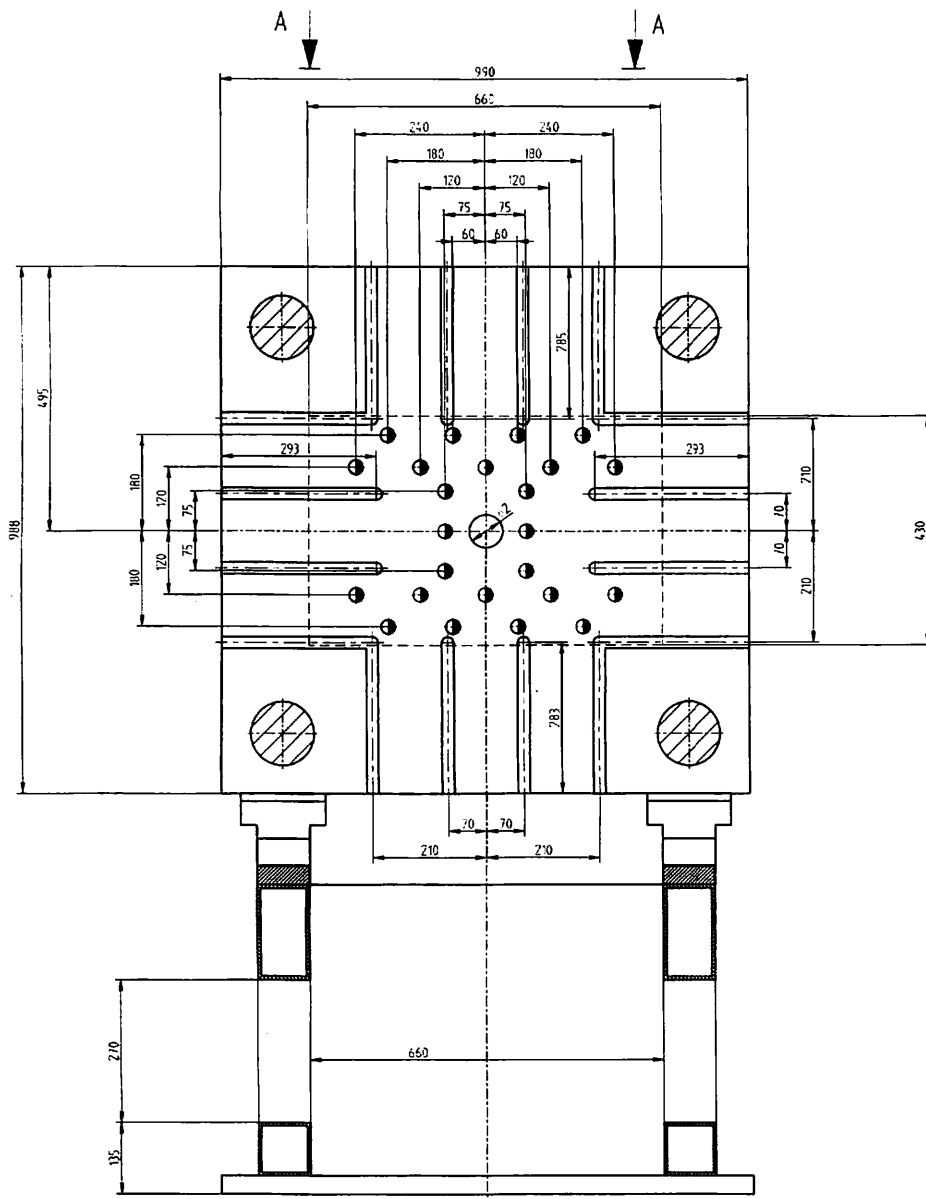


Steuerschrank  
 Armoire de commande  
 Control cabinet

TYPE:  
 DATACESS  
 extended

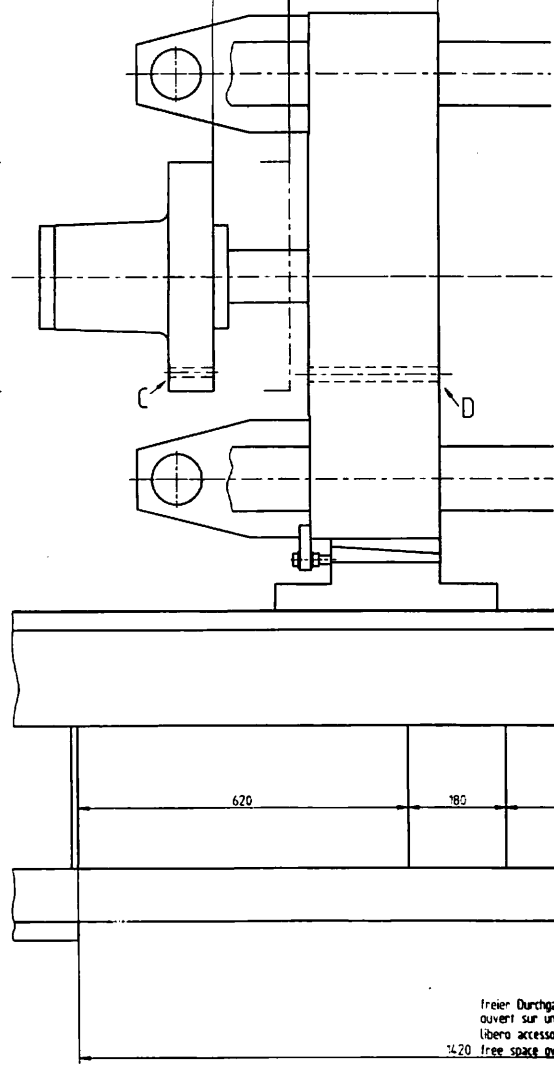
8610

**BUHLER**  
 GEA-95714



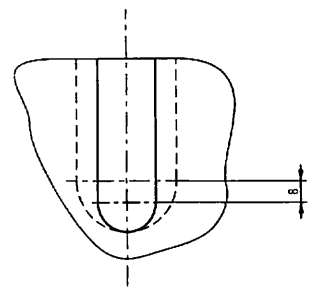
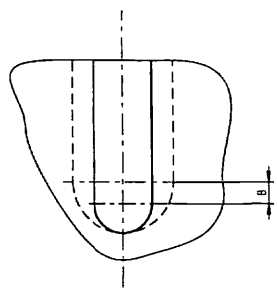
Hub der beweglichen Aufspannplatte max.  
 Course du plateau mobile max.  
 Corsa di piastra mobile max.  
 Stroke moving die platen max. 640

Auswerfweg regulierbar  
 Course d'éjection réglable  
 Corsa d'espulsione regolabile  
 Ejector stroke adjustable 0..155



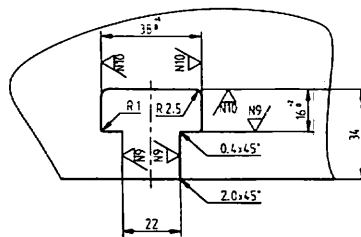
Bewegliche Aufspannplatte  
 Plateau mobile  
 Piastra mobile  
 Moving die platen

- Fuer Auswerfer mit Rueckzug  
 Pour éjecteur avec rappel  
 Per espulsore con ritorno  
 For retractable ejector



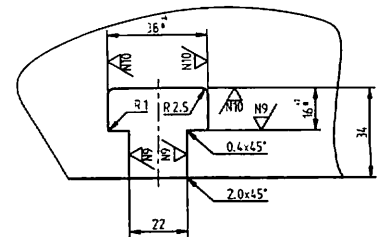
Auswerf-und Rueckzugkraft  
 Force d'éjection et de retour  
 Forza d'espulsione et di ritorno  
 Ejection and retracting force

240 KN



Nenn-Zuhaltkraft  
 Force de fermeture nominale  
 Forza di chiusura nominale  
 Nominal locking force

4000 KN



B - B M 1:1

