

Maschinenspezifikation

Spécification de machine

Machine specification

Kundenname	Alumetco
Nom du client	
Name of customer	<u>Brantford</u> / Kanada

Bühler-Vertretung	Buhler - Miag
Buhler-Représentation	
Buhler-Representative	<u>Toronto</u> / Kanada

Maschinentyp	GDM-H-400B DC Version 4.00
Type de machine	
Type of machine	

Zuhältekraft	kN	4600
Force de fermeture	kN	
Locking force	kN	

Baujahr	1989
Année de construction	
Year of construction	

Bestell-Nr.	565'164
No. de commande	
Order No.	

Maschinen-Nr.	10'178'562
(auf Firmaschild)	
No. de machine	
(sur plaque de constructeur)	
Machine No.	
(on name plate)	



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 ³	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 ²	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 ³	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.

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 ³ /Zyklus, Cycle
Z-100B	250 l	1 x 10 l	0,94 l	0,9 l	15 dm ³ /Zyklus, Cycle
H-160B	420 l	1 x 34,5 l	5,0 l	4,0 l	22 dm ³ /Zyklus, Cycle
Z-160B	350 l	2 x 10 l	5,0 l	4,0 l	22 dm ³ /Zyklus, Cycle
H-250B	510 l	2 x 34,5 l	11,0 l	10,0 l	22 dm ³ /Zyklus, Cycle
H-400B	850 l	1 x 100 l	11,0 l	10,0 l	22 dm ³ /Zyklus, Cycle
H-630B	1240 l	1 x 150 l	21,0 l	20,0 l	26 dm ³ /Zyklus, Cycle
H-800B	1690 l	1 x 150 l	21,0 l	20,0 l	31 dm ³ /Zyklus, Cycle
Hydraulikflüssigkeit HF = Fluide hydraulique Hydraulic fluid		Tiegelinhalt Capacité du creuset Capacity of crucible		Z-100B	Z-160B
				85l	85l

Zyklen/h der Maschine
 Z/h = Cycles/h of the machine
 Cycles/h of the machine

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

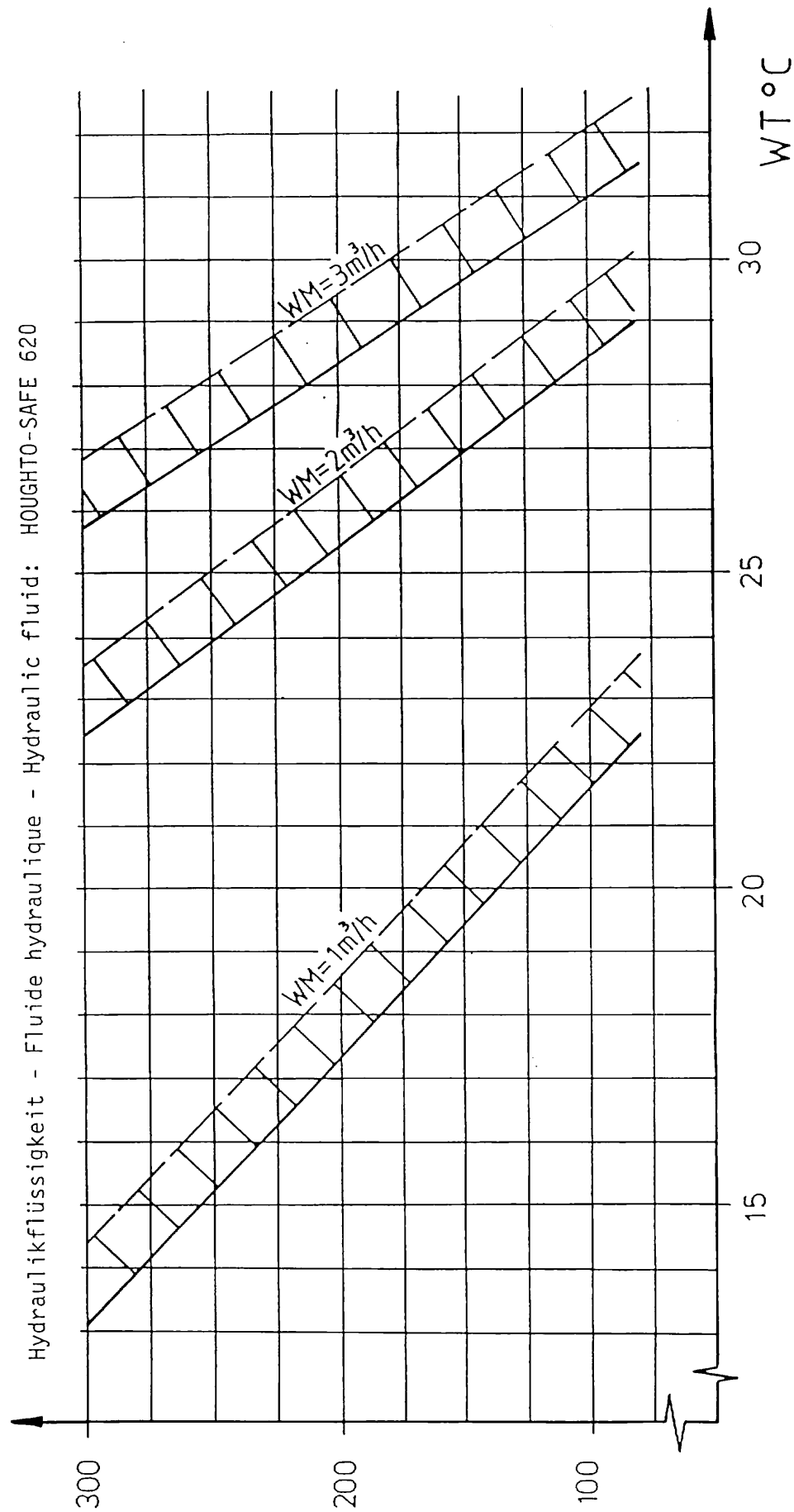
Wassermenge
 WM = Quantité d'eau en m³/h
 Amount of water

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

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

Z/h

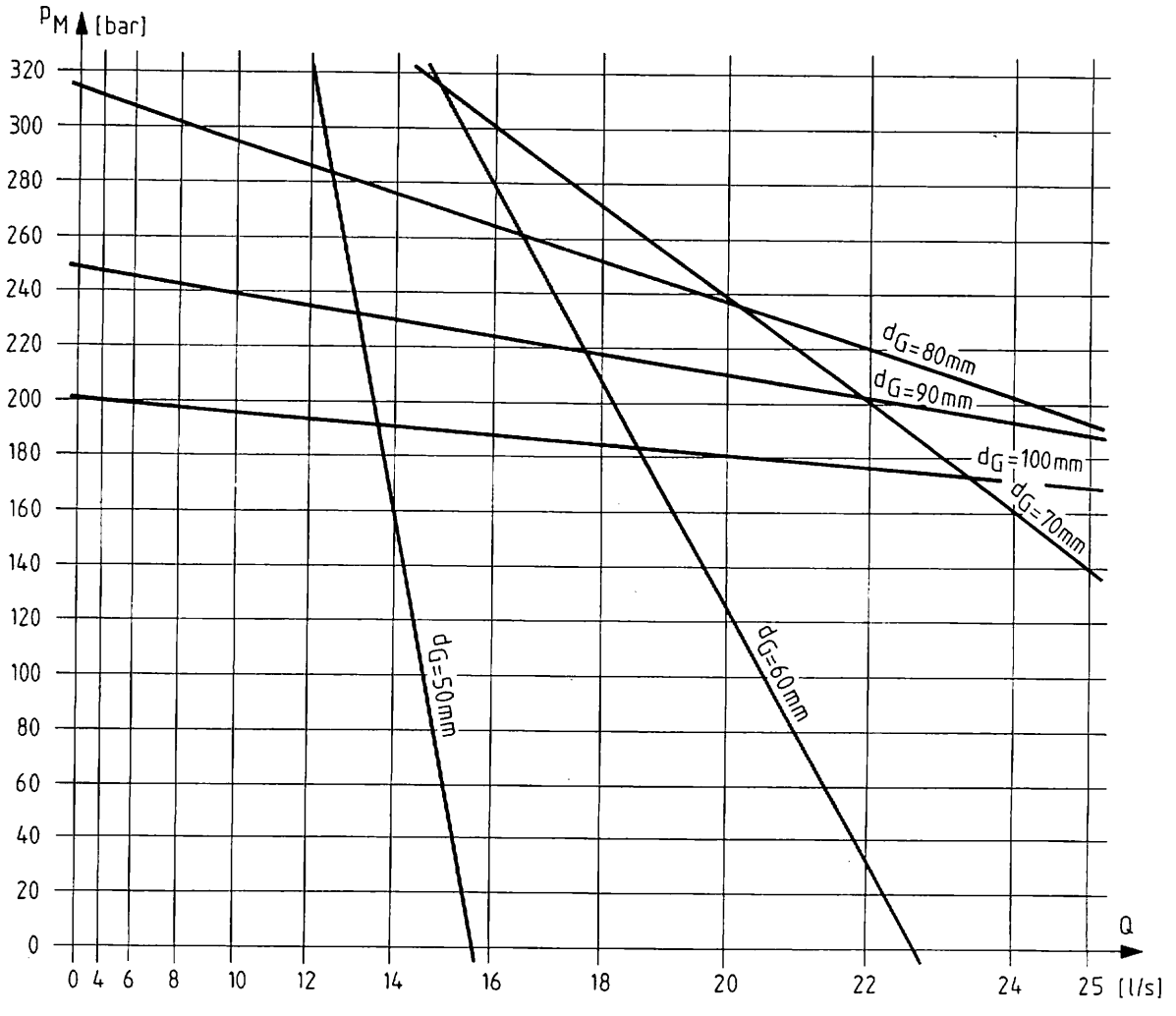
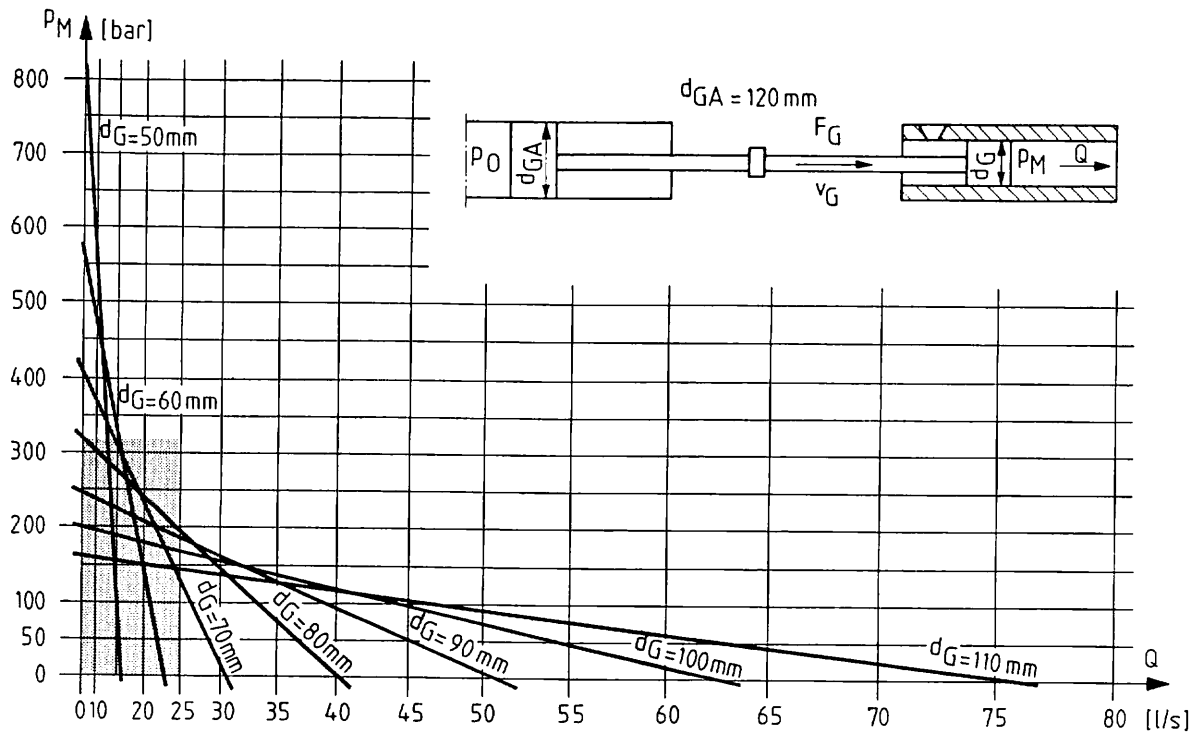
Hydraulikflüssigkeit - Fluide hydraulique - Hydraulic fluid: HOUGHTO-SAFE 620



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

TYPE: DP - 5.1.8
 GDM 8209

BUHLER
 GDM-95068



pQ-Diagram
 Diagramme pQ
 pQ-diagram

TYPE:
 GDM
 H-400B

DP - 5.1.8
 8203

BUHLER

GDM-95065

303/1909
 307/1909

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

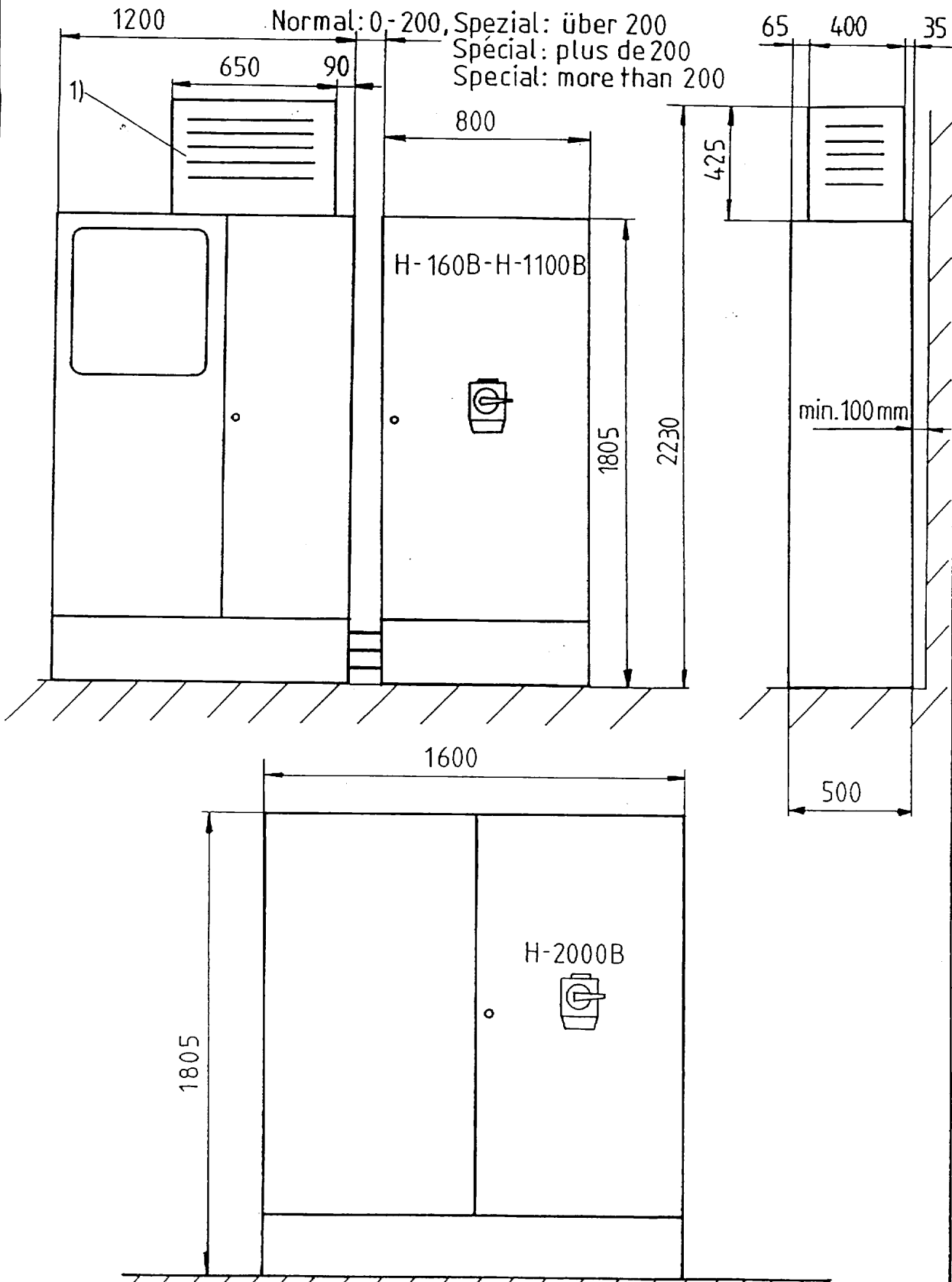
DP - 5.1.8

8203

BUHLER

GEA-95654

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



Steuerschrank
 Armoire de commande
 Control cabinet

TYPE:
 DATAACCESS
 extended

8610

BUHLER
 GEA-95714