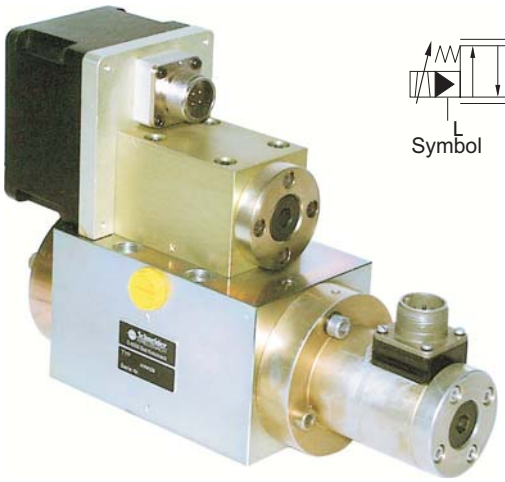
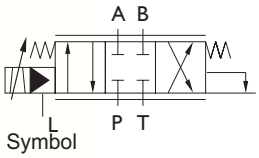
Schneider KREUZNACH

Elektrohydraulic Servovalves Typ HVM 106





Symbol

Special features:
- high reliability
- easy service
- electric feedback of the main spool
- high dynamic response
- internal or external pilot supply
- variable metering orifices only
- Qmax = 120l/min at Δp =70bar
- p_N = 315 bar

General description:

Type	:	two- or three-stage servovalve slighting spool only without fixed jet pipes or nozzles,
Control	:	servovalves model HVM 025 or HVM 055
main spool	:	with inductive LVDT,
Style of mounting	:	subplate
Mounting position	:	unrestricted
Weight	:	9,5kg

Technical Data

1. Hydraulic Data (definition according to DIN 24311)

.1	rated pressure	p_N	=	315	[bar]	
.2	operating pressure main stage	$p_{b\,min}$	=	0	[bar]	(external pilot supply)
		$p_{b\,max}$	=	420	[bar]	
	operating pressure pilot	$p_{b\,min}$	=	10	[bar]	
		$p_{b\,max}$	=	150	[bar]	
.2.1	backstroke pressure	$p_{r\,max}$	=	315	[bar]	(external pilot supply)
	backstroke pressure	$p_{r\,max}$	=	50	[bar]	(internal pilot supply)
.3	max. pressure (static test pressure)	p_{max}	=	500	[bar]	
.4	rated flow at Δp = 70 bar	Q_N	=	60/80/100/120		[l/min]
.5	quiescent flow, max. at pn	Q_{01+02}	<	3 % Q_N		
.6	internal max. leakage bei p_n = 210 bar	Q_L	<	200	[cm^3/min]	
.7	hysteresis	H	<	0,5 % i_N	(with Dither)	
.8	threshold sensitivityt	E	<	0,2 % i_N	(with Dither)	
.9	threshold span	S	<	0,4% i_N	(with Dither)	
.10	linearity deviation		<	8% i_N		
.11	flow symmetry -Q_N at +Q_N		<	7% i_N		
.12	pressure gain (see diagram)	V_N	>	1 P_b / 1% i_N		
.13	overlap, standard	h	=	-1...+3% i_N		
.14	operating temperature range	δ_M	=	253...353	[K]	
.14.1	temperature drift		≤	3% i_N / 50K		
.15	viscosity range of fluid	γ_{min}	=	10...1000 mm^2/s approximate value normal: ISO VG 10...ISO VG 46		
.16	filtration of fluid		<	class 4-5 class 15/14/11		to NAS 1638 or to ISO 4406
.17	fluid standard		=	HLP-hydraulic oils as per DIN 51524 Teil 2 (Special equipments possible)		

Status 010/2002

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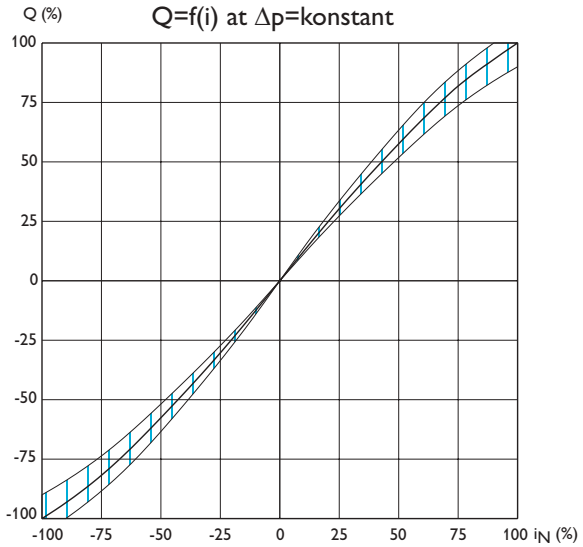
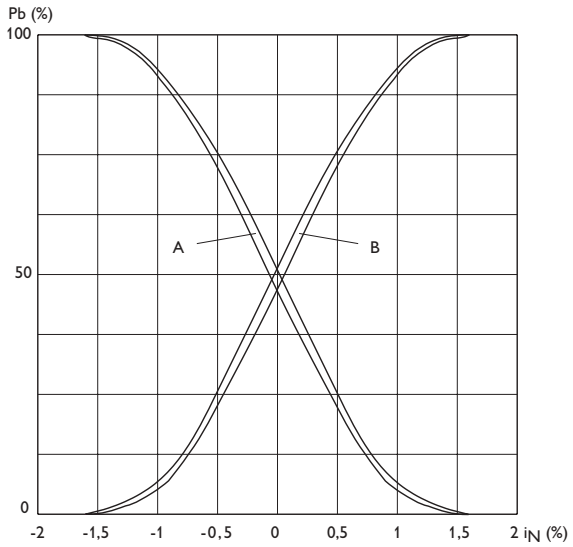
2. Diagrams HVM 106

Flow rate-signal function

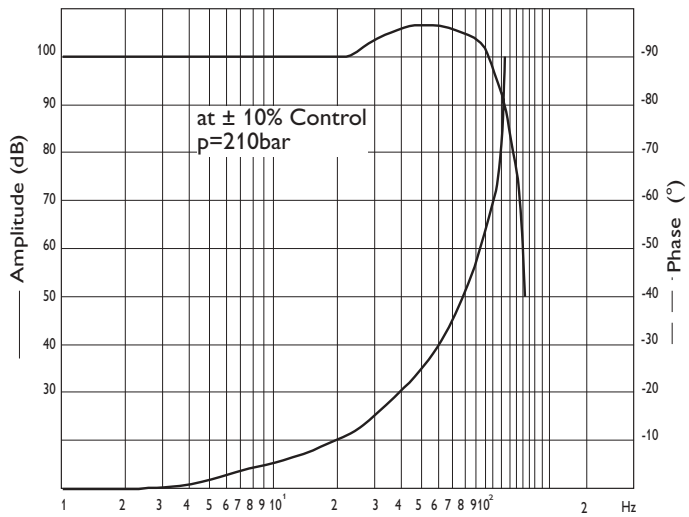


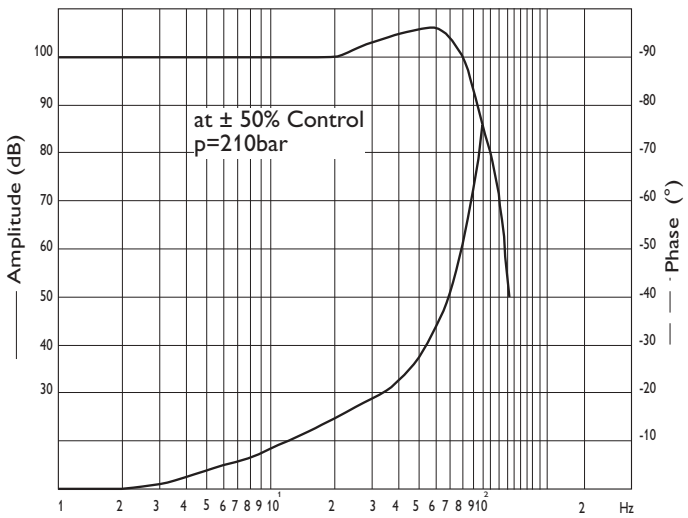
Pressure gain

$$V_p = \tan\alpha = \frac{\Delta_p}{\Delta_I}$$



Frequency Response
with Servovalve HVM 025-003-1211-0G





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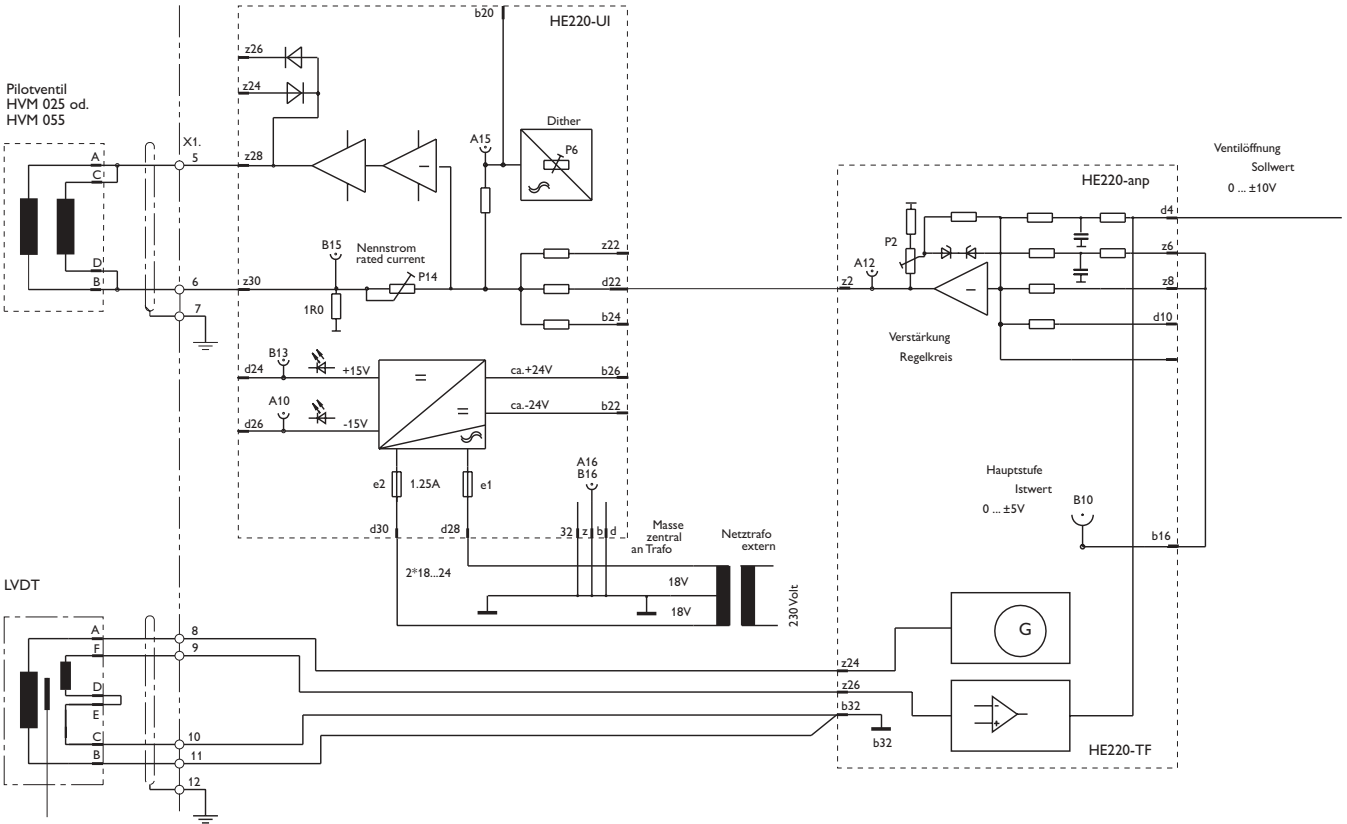
3.Electrical data

3.1.1 Basic block diagram with PID-Amplifier HE 261

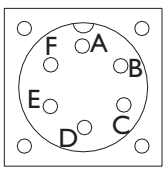


3.1.2 Technical data of the LVDT

• impedance at the primary coil	= 650	Ω/coil at 2,5kHz
• impedance at the secondary coil	= 920	Ω at 2,5kHz
• input voltage	= 6	V max.
• carrier frequency	= 1..10	kHz
• senstvity ati 2,5 kHz	= 98	mV/Vmm

for the electrial data of the amplifier and the servovalve
see table for amplifier HE 261 and servovalve HVM 025 or HVM 055.
Flow-direction of the main spool from P to B or from A to R, if there AC+ and BD 0 voltage at the servovalve.

connector 6 pol.
DIN 43563



View on the valve
pins visible

Cable recommendation:
twisted pair cable up to cable length 25 mtr.:
Type LiYCY 4x0,25mm²
up to cable length 200 mtr.:
Type LiYCY 4x0,75mm²

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Order Information

HVM 106 - 120 - XXXX - X - X - X- X - XX

Model

106

Rated flow

QN at Δp =70 bar
60 l/min
80 l/min
120 l/min

Seal material

1 Perbunan
2 Viton
3 Butyl
4 Vulkollan
5 Ethylen-Propylen

Resistance / coil [R20](Servovalve)

1 11,5 Ω
2 60 Ω

Overlap

0 Zero overlap
1 Positiv overlap
2 Negativ overlap

Amount of overlap

positive oder negative
1..9

Design letter

assigned by manufacturer

stroke of main spool (mm)

1 ± 1
2 ± 1,8

Pilotvalve

1 HVM 025-001
2 HVM 025-003
3 HVM 025-005
4 HVM 055-010

Electric

1 without Electronic
2 with integrated Electronik (in preparation)

pilot supply

	P	T	L
1	internal	internal	Block
2	external	internal	Block
3	external	external	Block
4	internal	external	Block

5.Accessories:

Description			Order No.
Connector	4pol. for Servovalve	CA06COM 14S2S	13018
Connector	6pol. for LVDTr	CA06COM 14S6S	13446
Sub plate	HVM 106	HZ 033	14264
scavenger plate	HVM 106	HZ 035	14258
Amplifier		HE 261-0XX-12801-3A	10300

Important remarks:
Valve mounting surface must be flat within 0,02mm and smoothness not to exceed 6µm. Easy hydraulic Zero adjustment by means of Allen key S8 DIN 911. Max. permissible drain line pressure 10 bar.Valves with modified characteristics available. Modifications, which serve technical progress, remain reserving.

Stand 10/2002

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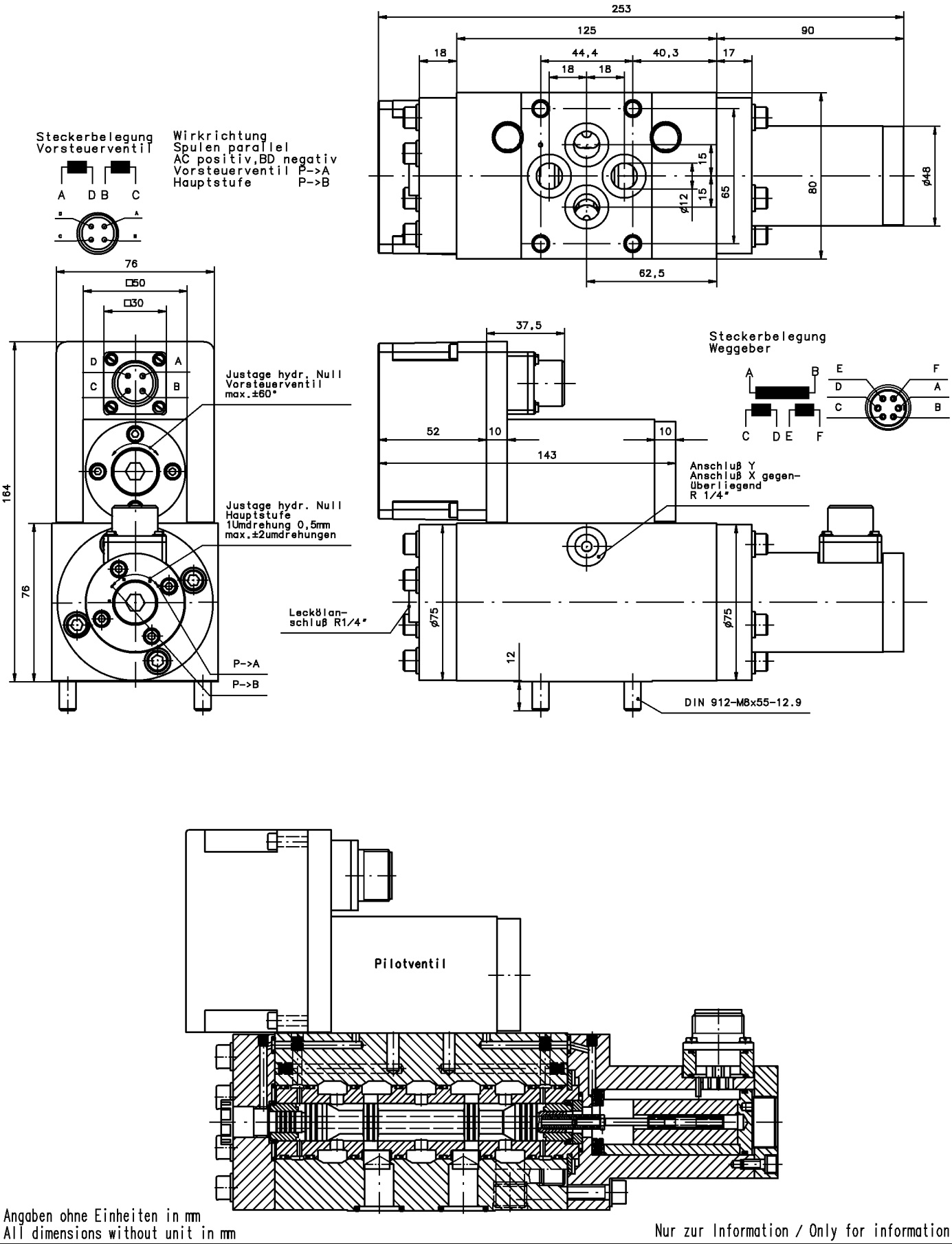

Angaben ohne Einheiten in mm
All dimensions without unit in mm

Nur zur Information / Only for information

Änderungsindex / Amendment index			Ventil / Valve	Id.- Nr.
–			HVM 106-XXX-XXXX-X-X-X-X-XX	–
	Datum / Date	Name / Name		
dwg.	10.10.01	Dindorf		

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