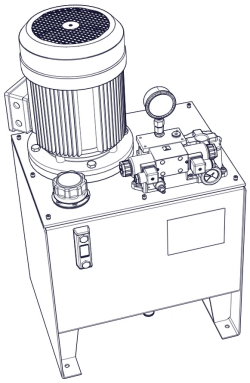
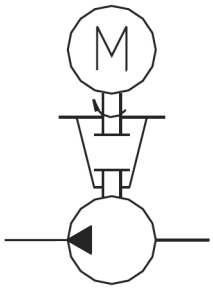
Hydraulic power unit type H650

motor output	**0.75 - 15 kW**
volume flow V_{max}	**2-38 L**





Product characteristics

The hydraulic power unit consists of motor, tank, pump, manometer, and basic block with integrated pressure relief valves and check valves, as well as return line filter and the connection possibility of an oil cooler. Further options are, for example, a level gauge with temperature monitoring, an oil heater, or a filter contamination indicator. The modular structure of power unit series H650 enables an easy combination of components using the modular principle.

- several control options via assembly modules – without tubes – possible
- tank feet and oil drain plug simplify the maintenance
- external gear pump in high pressure design for operating pressures up to 270 bar

or

- internal gear pump in high pressure design for operating pressures up to 325 bar
- tank and tank cap with oil resistant priming (inside & outside)

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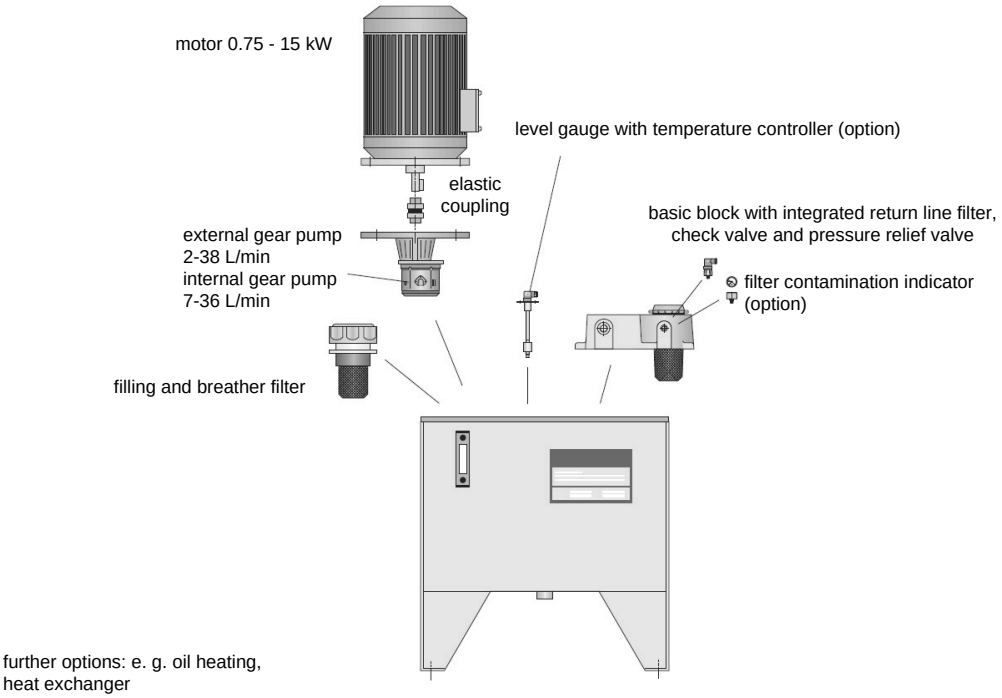
Structure


motor 0.75 - 15 kW
level gauge with temperature controller (option)
elastic coupling
basic block with integrated return line filter, check valve and pressure relief valve
external gear pump 2-38 L/min
internal gear pump 7-36 L/min
filter contamination indicator (option)
filling and breather filter
further options: e. g. oil heating, heat exchanger

Technical data

General

ambient temperature	-10 to +40 °C
mounting position	motor vertical
corrosion protection	motor*: painted according RAL6000 tank*: primed according RAL1015 tank cap*: primed according RAL1015 basic block: phosphated filling und breather filter chromated bell housing: aluminum, bright *coating possible
mounting	feet at the tank

Hydraulic parameters

Hydraulic fluid: mineral oil according to DIN 51524, other media on request

pump type	external / internal gear pump
volume flow	2-38 L (see order information)
hydraulic fluid temperature	-10 to +70 °C
viscosity	10-600 mm²/s
starting viscosity	1600 mm²/s
permissible degree of pollution	max. class 20/18/15 according ISO 4406
filter recommendation	when using proportional valves, a pressure filter is recommended (see assembly modules)
tank volume	30-120 L

Electrical parameters

Three-phase motor

rated output	0.75-15.0 kW

voltage range	up to 4 kW:	220-240 / 380-420 V; 50 Hz 254-280 / 440-480 V; 60 Hz
	from 5,5 kW:	380-415 / 660-720 V; 50 Hz 440-480 / 760-830 V; 60 Hz
duty cycle	dependent on application	
nominal speed	1450 min^{-1} (4 poles)	
ingree protection class (DIN 40050)	IP55	
rotation direction motor	clockwise looking at the fan	
insulation class (IEC34-1)	F	
type (IEC-34-7)	IM V1 without protective roof	

Maximum full scale operating pressure p [bar] with the following motor/pump combination: (η=0,8)

kW \ cm³/U; cm³/rev; cm³/t	013	020	027	034	041	050	051	063	070	080	095	110	113	130	140	158	160	178	190	207	220	225	250	264
007	189	124	92	73	61	49	48	40	35	31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
011	260	182	135	108	89	72	71	58	52	46	38	33	32	--	--	--	--	--	--	--	--	--	--	--
015	260	248	185	147	122	99	97	79	71	62	52	45	45	38	35	31	31	--	--	--	--	--	--	--
022	260	260	260	216	179	145	143	116	104	91	77	66	64	56	52	46	46	41	38	35	33	32	--	--
030	260	260	260	260	244	197	195	158	141	124	104	91	88	76	71	63	62	56	52	48	45	44	40	38
040	260	260	260	260	250	250	250	211	188	165	139	121	117	102	95	84	83	74	70	64	60	59	53	50
055	--	--	--	--	--	250	--	270	259	228	191	166	161	140	130	115	114	102	96	88	83	81	72	69
075	--	--	--	--	--	250	--	270	270	250	260	226	220	190	177	157	155	140	130	120	113	110	99	94
110	--	--	--	--	--	250	--	270	270	250	260	250	260	250	250	231	228	205	191	176	165	162	145	138
150	--	--	--	--	--	250	--	270	270	250	260	250	260	250	250	250	250	240	250	240	226	221	198	188

Level gauge

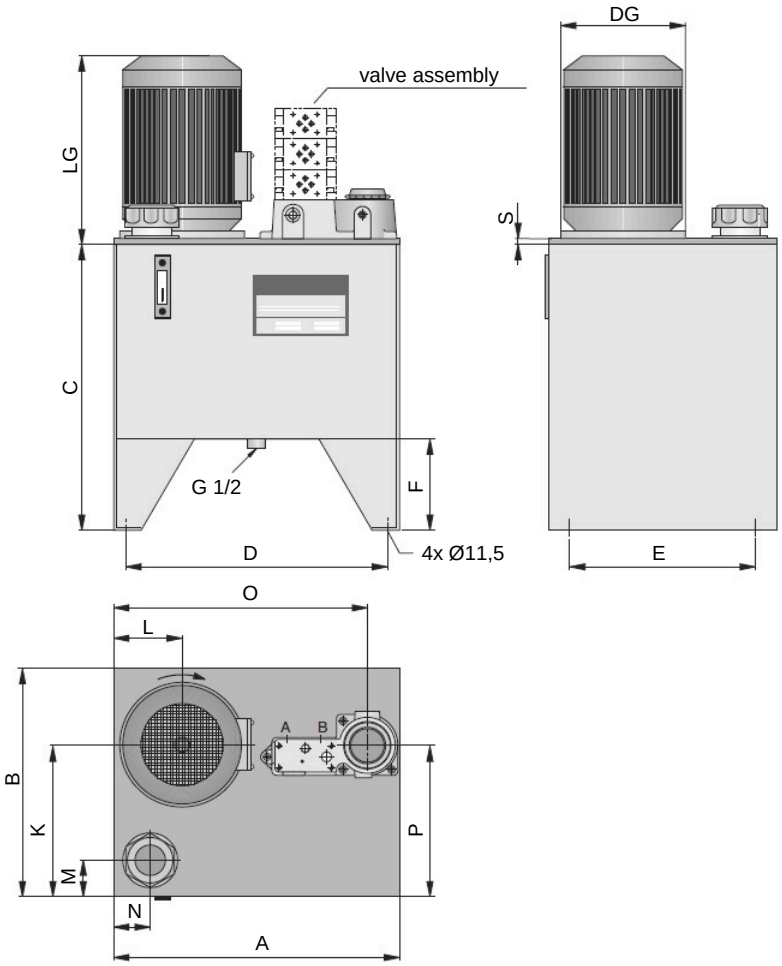
monitoring min. level	break contact at decreasing level
thermal switch	switches at 60 °C (break contact)
switching voltage	max. 230 V
switching current	max. 2 A

Contamination indicator

voltage	max. 250 V	
current	max. 2 A	
pressure range	optical indicator:	0-9 bar
	electrical indicator:	1-10 bar

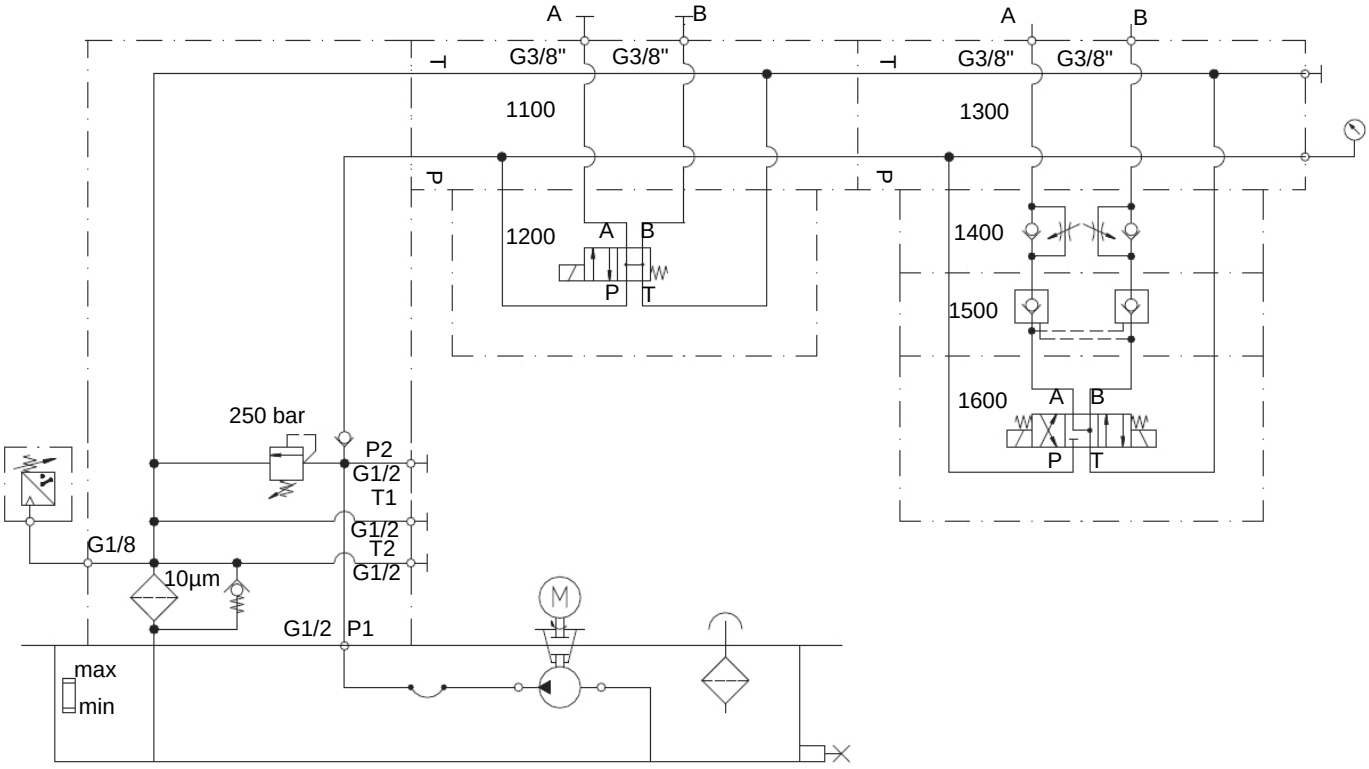
Dimensions and connections

Dimensions are given in mm.



tank								motor			assembly				electric motor		
								power	position		filler / breather		basic block		3-phase, 4 poles		
NG	A	B	C	D	E	F	S	kW	K	L	M	N	O	P	kW	LG	DG
30	410	325	450	364	270	150	6	0.75-1.5	220	100	75	65	355	90	0.75	237	200
50	470	375	480	428	312	150	6	0.75-1.5	250	125	80	80	395	180	1.1	260	200
								2.2-4	245	145	80	80	395	90	1.5	287	200
								5.5-7.5	225	320	300	75	175	80	2.2	317	250
80	600	470	550	548	401	150	6	0.75-1.5	345	125	90	90	520	370	3	317	250
								2.2-4	320	150	90	90	520	370	4	317	250
								5.5-7.5	290	175	90	90	520	180	5.5	377	300
120	675	520	600	625	455	150	6	2.2-4	370	150	90	90	595	420	7.5	414	300
								5.5-7.5	345	170	90	90	595	420	11	526	350
								11-15	320	200	90	90	595	180	15	526	350

Circuit diagram



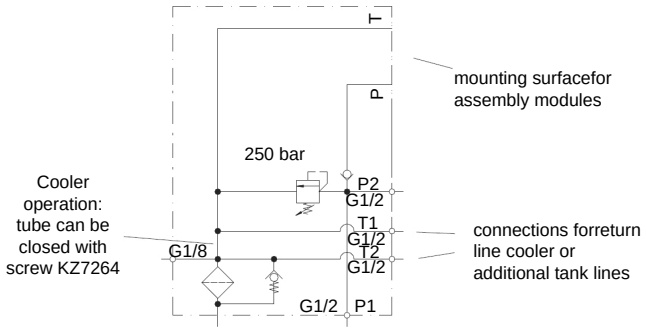
Order example

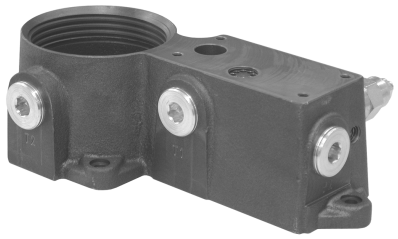
Technical data for desired power unit:	order information: (according catalogue and data sheets)
pump: 4.8 L/min	basic power unit H650X030CA034E05X
pressure: 250 bar	valve station 1:
motor: 400 V	Pos. 1100: sub-base unit VK06-200
motor power: 3 kW	Pos. 1200: 4/2-way directional control valve SAM210PC06P
filter contamination indicator: electrical	
tank size: NG50	valve station 2:
valve voltage: 24 VDC	Pos. 1300: sub-base unit VK06-200
valve station 1: valve for pressureless circulation	Pos. 1400: throttle valve VDR2Z_
valve station 2: 4/3-way directional control valve	Pos. 1500: check valve GRV2Z_
double throttle check valve, hydraulically unlockable, manometer	Pos. 1600: 4/3-way directional control valve SCM380PC06P

Assembly modules

Basic block

VK06-100/...
included in power unit
H650

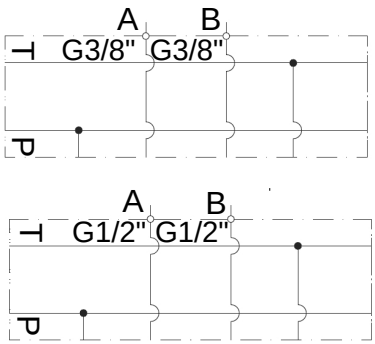




Sub-base unit

VK06-200
identification no. HV06276
port size NG06
ISO4401-03-02-0-05
P and T: G1/4
A and B: G3/8

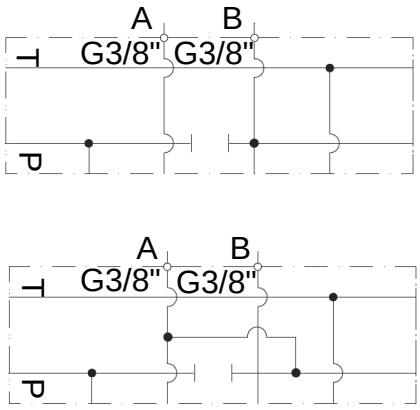
VK06-204
identification no. HV06449
port size NG10
ISO4401-03-02-0-05
P and T: G3/8
A and B: G1/2



Intermediate modules

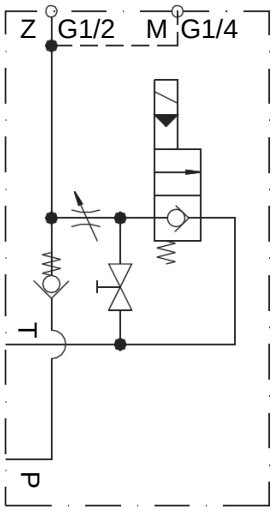
VK06-202
identification no. HV06440

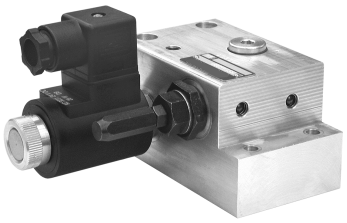
VK06-203
identification no. HV06441
port size NG06
ISO4401-03-02-0-05
P and T: G1/4
A and B: G3/8



Lifting- and lowering valve

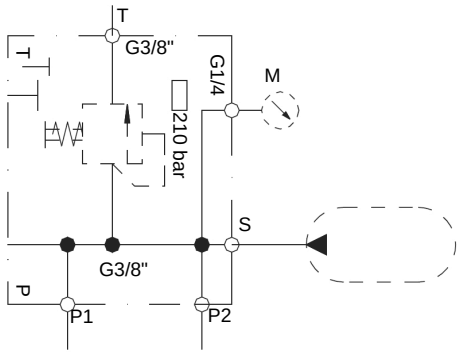
HSVAG08 (final module)
consisting of:
2/2-poppet valve
check valve
adjustable lowering valve
emergency relief valve
connections:
M: G1/4
Z: G1/2

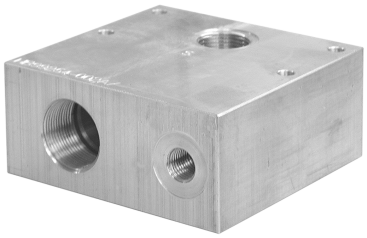




Accumulator block

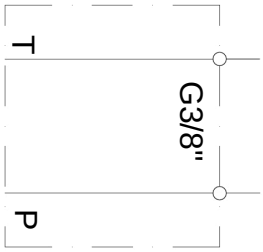
VK06-300 (final module)
for diaphragm accumulator max. 2 L
connections:
P and T: G3/8
M: G1/4
S: M22 x 1,5





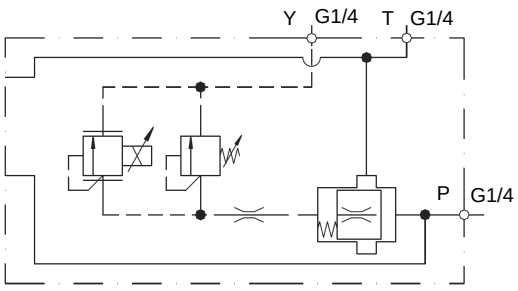
Final sub-base unit

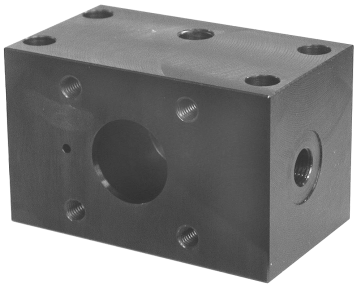
VK06-201
identification no. HV06439
P and T: G3/8



Modular sub-plate for proportional pressure relief valve

VK06-207
identification no. HV07713
P and T: G1/4

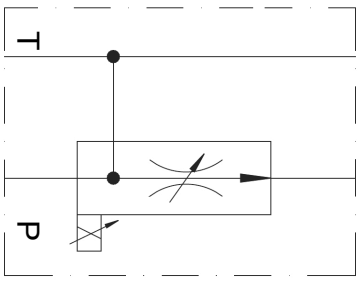


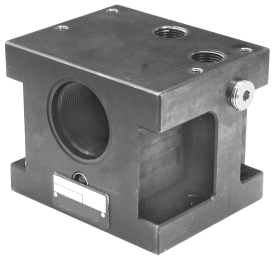


Modular sub-plate for proportional flow control valve

Modular sub-plate for proportional flow control valve

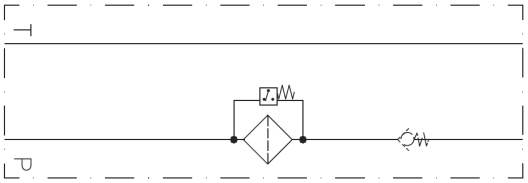
VK06-208
identification no. HV07734

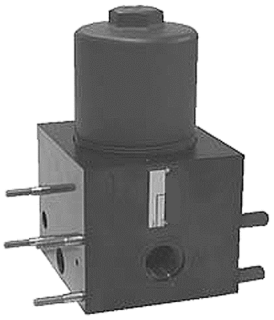




Sandwich plate with pressure filter

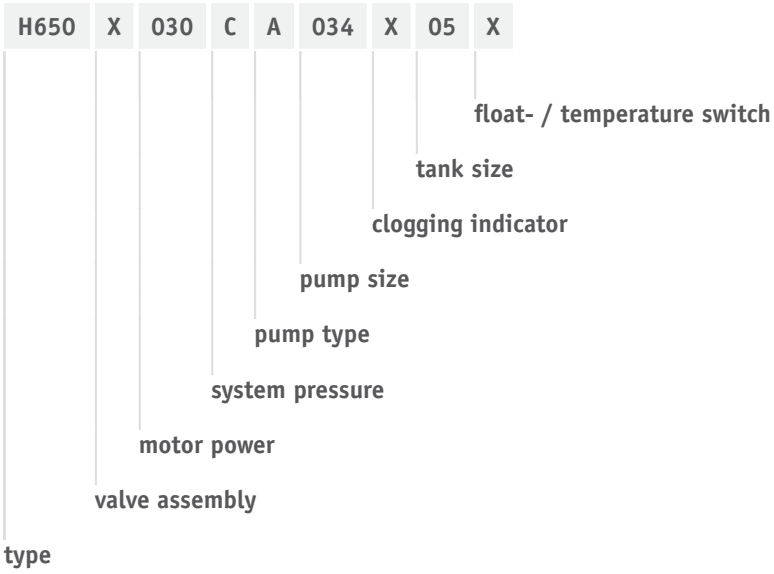
VK06-301
identification no. HV06597





Order information

Type code



valve assembly

X	prepared for modular bodies
Y	tube connection P and T

motor power

007	75 kW
011	1.10 kW
015	1.50 kW
022	2.20 kW
030	3.00 kW
040	4.00 kW
055	5.50 kW
075	7.50 kW
110	11.0 kW
150	15.0 kW

system pressure

A	10-100 bar
B	20-210 bar
C	30-350 bar

pump type

A	external gear pump
I	internal gear pump

pump size

external gear pump	internal gear pump	cm³/U	L/min	Pmax
013		1.3	1.9	260
020		2.0	2.9	260
027		2.7	3.9	260
034		3.4	4.9	260
041		4.1	5.9	250*
	050	5.0	7.3	250
051		5.1	7.4	250
063	063	1.3	1.9	270/250*
070		7.0	10.2	270
	080	8.0	11.6	250*
095		9.5	13.8	260*
	110	11.0	15.9	250*
113		11.3	16.4	260
	130	13.0	18.9	250*
140		14.0	20.3	250
158		15.8	22.9	250
	160	16.0	23.2	250*
178		17.8	25.8	240
	190	19.0	27.6	250*
207		20.7	30.0	270
	220	22.0	31.9	250*
225		22.5	32.6	270
	250	25.0	36.3	250*
264		26.4	38.3	270

* max. operating pressure see data sheet HQI2

clogging indicator

X	without indicator
M	manometer
E	electrical

tank size

03	30 L
05	50 L
08	80 L
12	120 L

float- / temperature switch

X	without switch
A	with switch

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