



CATALOG : HSM D.C. SERVO MOTORS

catalogue record : 3

SERVO MOTOR HSM 150

DESCRIPTION

External contour servo-motor is cylindrical. We recommend that a sensor (tachodynamo, position pickup) should be mounted on the servomotor shaft on the commutator side and to connect the load to the other side of the shaft. Servo-motor electrically incorporates by the help of pinned connector.

The head produced by electrical and mechanical losses during servo motor operation is removed from Type HSM 150 C by means of cooling air which is supplied to the servo motor from the fan through dia. 36 mm flexible hose connected to the air distributor sleeve local on the rear shield of the servo motor. The cooling air is delivered to three dia. 16 mm input holes through which it enters radially into the inner space of the servo motor. The cooling air is further directed by means of a special insert along the surface of the rotor to remove head from it. The warm air gets out axially through four dia. 21 mm holes located on the front shield of the servo motor.

PERFORMANCE DATA

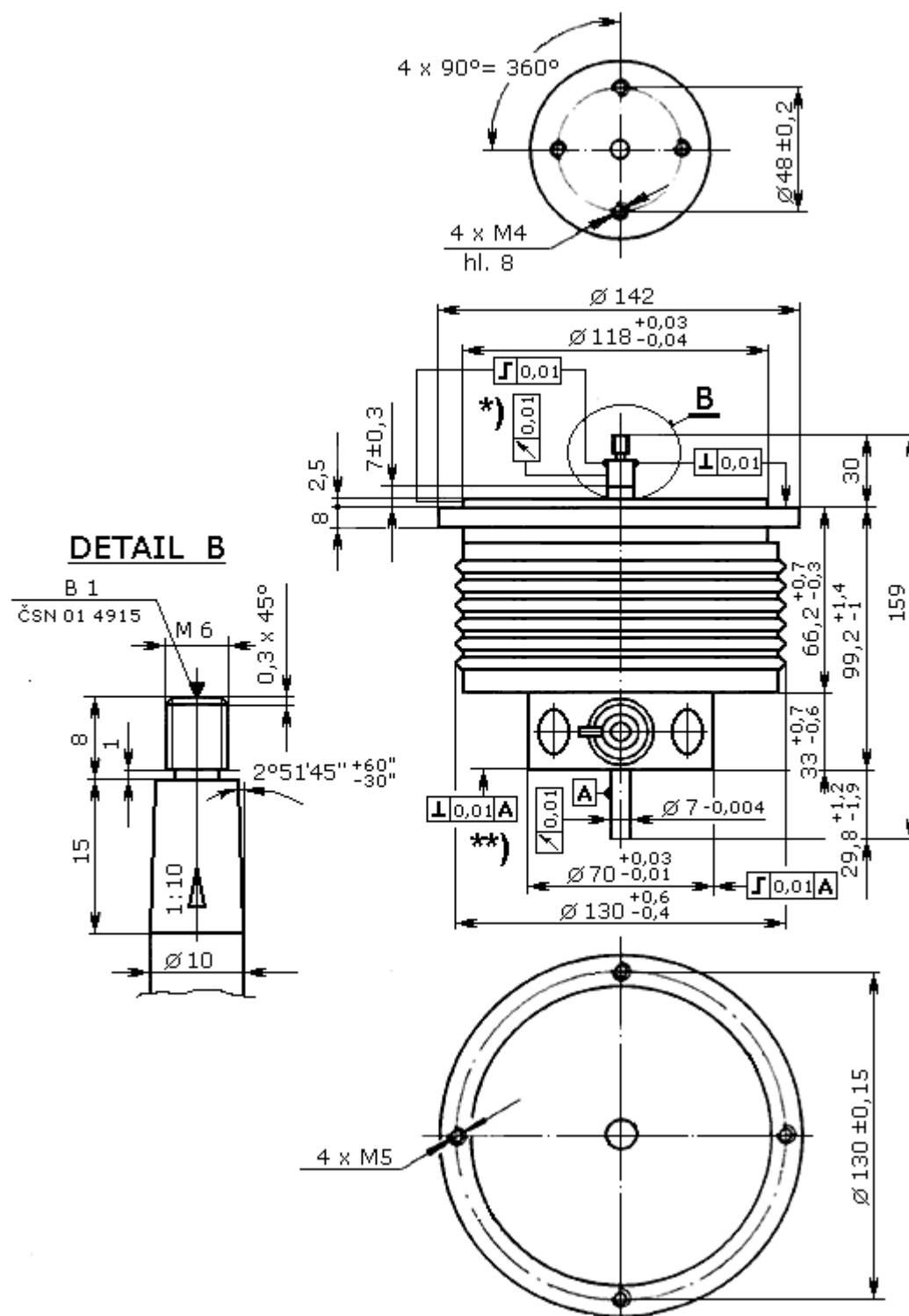
Rated parameters	Measure ment Unit	HSM 150	HSM 150 C
Voltage U_N	V	24	
Torque M_N	Nm	$\geq 0,39$	$\geq 0,52$
Speed n_N	min^{-1}	~ 3650	~ 3300
Current I_N	A	$\sim 8,5$	~ 11
Power output P_N	W	≥ 140	≥ 180
Efficiency	%	≥ 70	
Cooling air pressure	Pa		~ 80



Other parameters	Measure ment Unit	HSM 150
Operating supply voltage	V	$U_N \pm 50\%$
No-load speed	min^{-1}	~ 4600
Maximum speed	min^{-1}	7000 (at 36V)
Max. torque (at U_N)	Nm	$\geq 2,2$
Max. peak current	A	40 (at 24V)
Rotor moment of inertia	kgm^2	$\leq 130 \cdot 10^{-7}$
Electrical time constant	μs	≤ 140
Electromechanical time constant	ms	$\leq 2,9$
Total resistance at 20 °C	Ω	$\leq 0,7$
No-load current	A	$\leq 0,8$
No-load losses	W	≤ 24
Inductance	μH	≤ 90
Speed constant	rad/V.s	$20^{+1,16}_{-1,02}$
Moment of static friction	Nm	$\leq 0,016$
Max. angular acceleration	rad/s^2	$\geq 169\,000$
Power output rise factor	kW/s^2	≥ 372
Natural mechanical resonance	Hz	≥ 1700
Temperature of rotor	°C	≤ 130
Temperature of stator shell	°C	~ 70
Thermal resistance between stator and rotor	°C/W	$\leq 0,7$
Thermal resistance between stator and environment	°C/W	$\leq 0,6$

Life expectancy	: $\geq 10\,000$ hours
Enclosure	: IP 20 - HSM 150, IP 10 - HSM 150 C - ČSN EN 60529 (33 0330)
Weight	: $\sim 3,9$ kg - HSM 150 ~ 4 kg - HSM 150 C

DIMENSIONAL DRAWING HSM 150 WITH TAPERED SHAFT

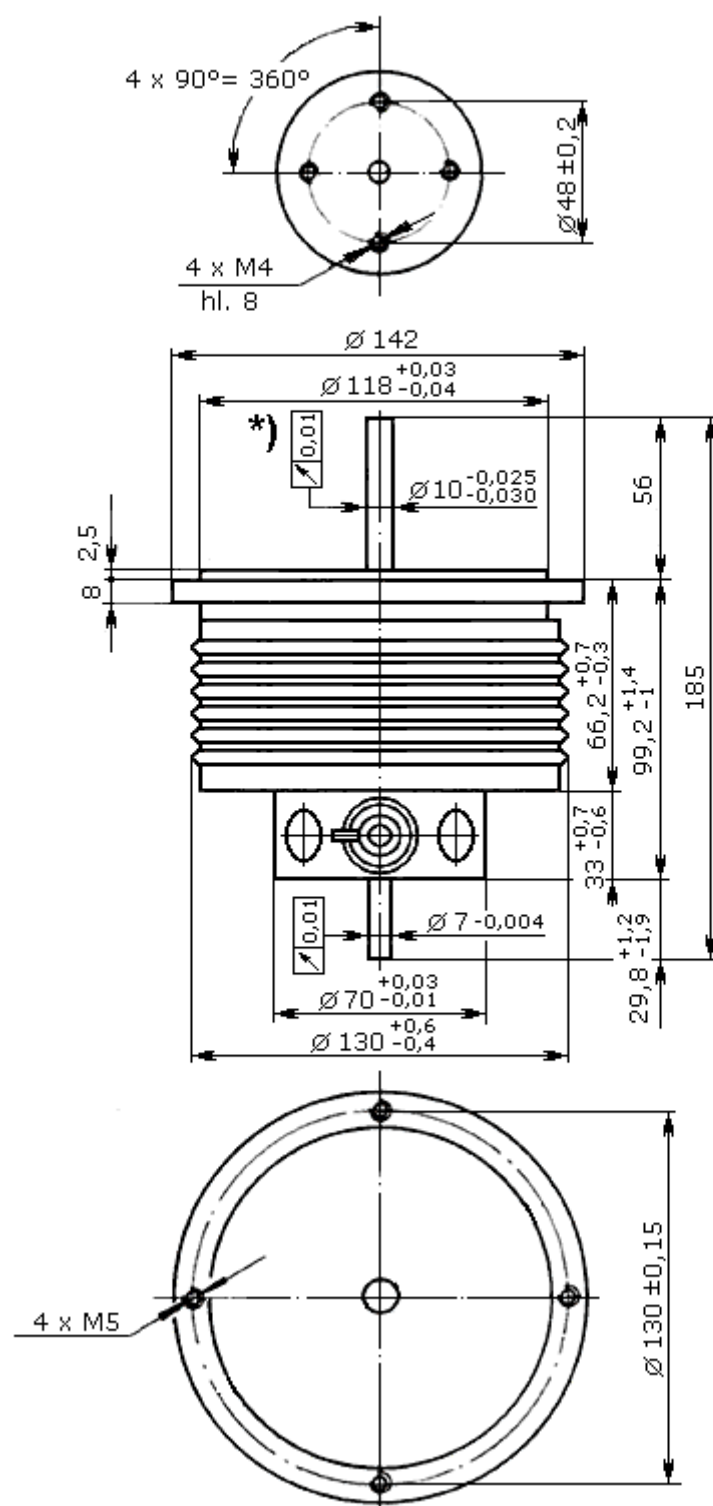


Detail B
Detail B
Length 5

*) radial run-out measured in the middle of projecting parts of the shaft

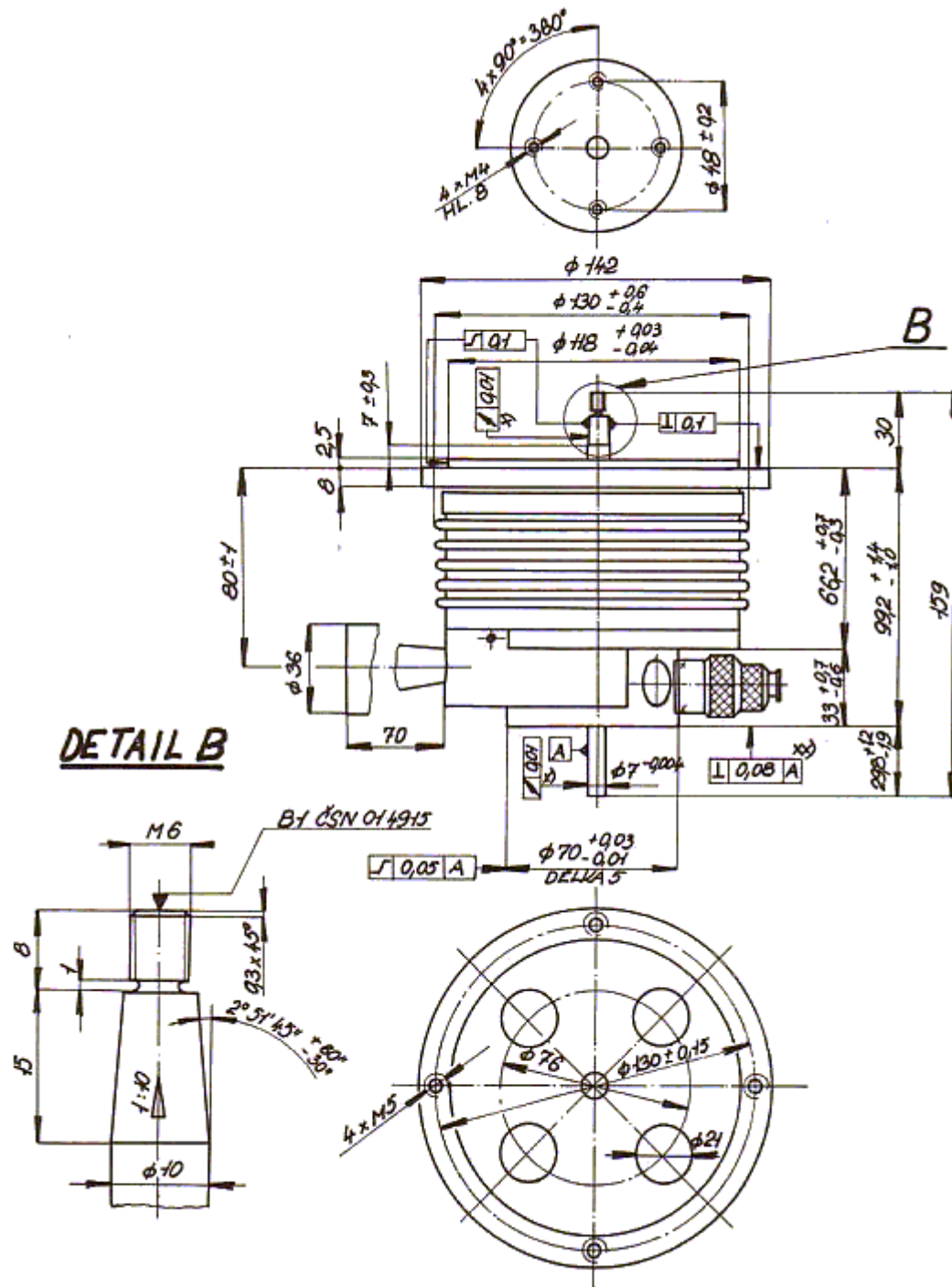
**) perpendicularity measured at radius R-30

DIMENSIONAL DRAWING HSM 150 WITH CYLINDRICAL SHAFT



*) radial run-out measured in the middle of projecting parts of the shaft

DIMENSIONAL DRAWING HSM 150 (FORCE COOLED) WITH TAPERED SHAFT

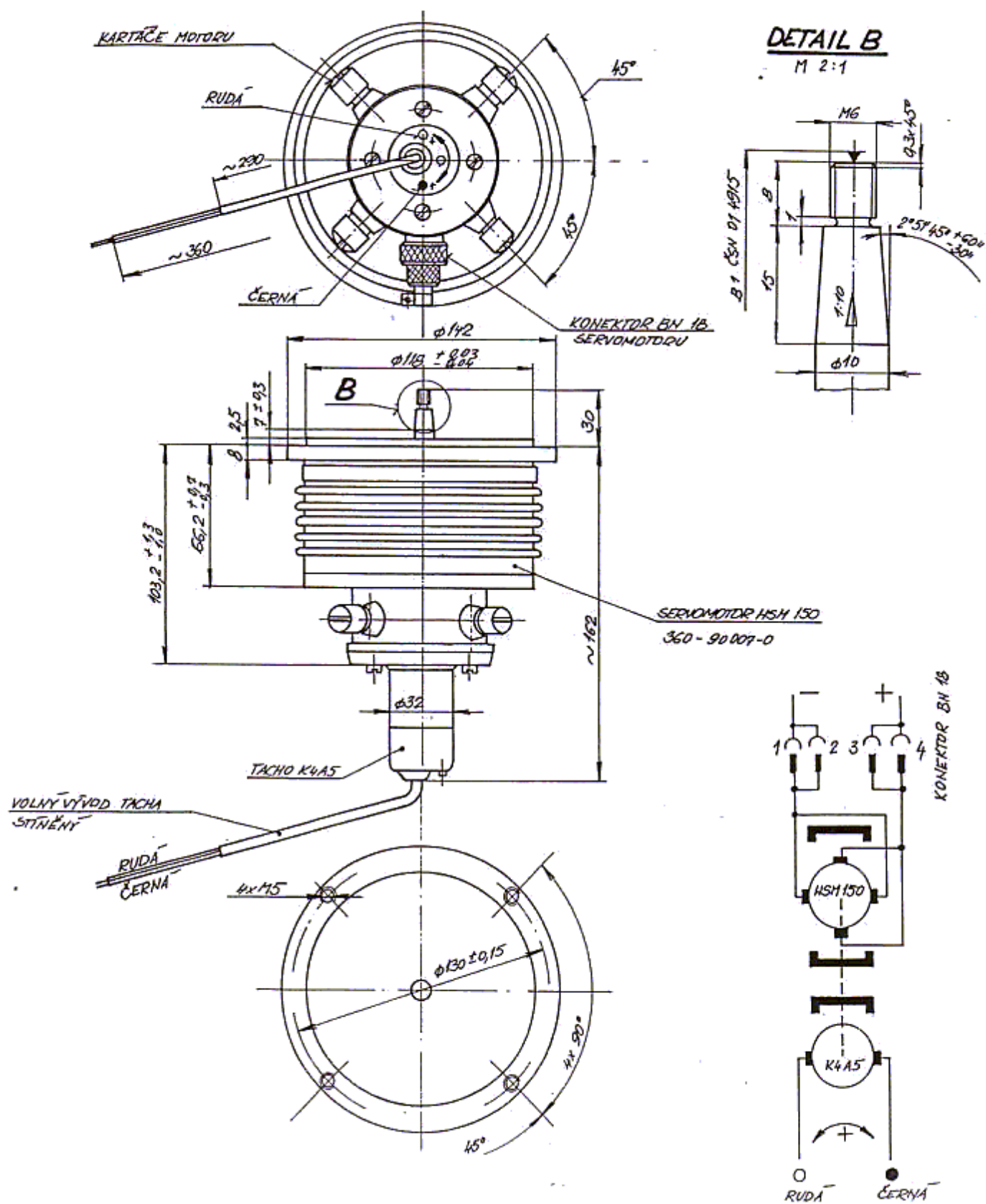


Detail B
Length 5

*) radial run-out measured in the middle of projecting parts of the shaft

**) perpendicularity measured at radius R-30

DIMENSIONAL DRAWING HSM 150 WITH TACHODYNAMO K4A5



WORKING CONDITIONS

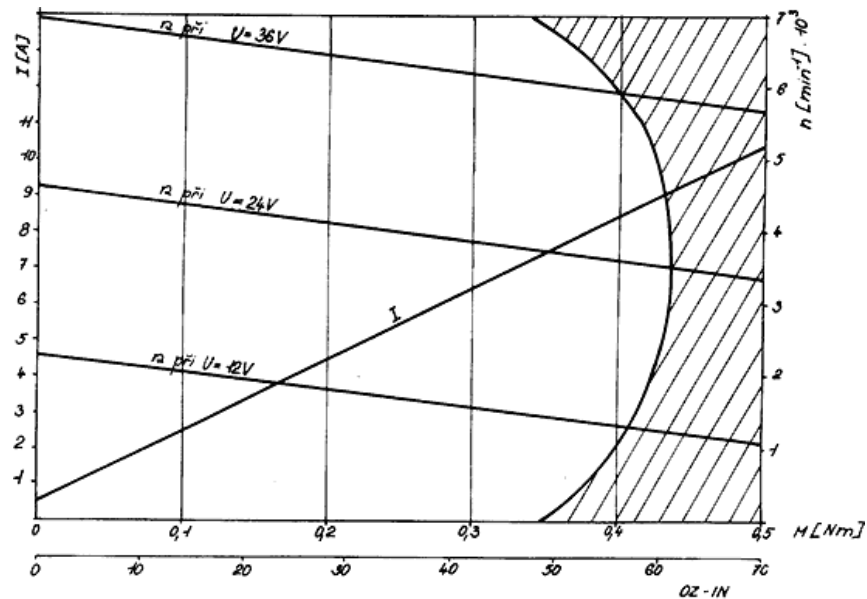
ambient temperature	: +5 °C to +35 °C
relative humidity of air	: max. 80%
atmospheric pressure	: 90 to 110 kPa
duty	: continuous
position	: arbitrary, but preferably horizontal
environment	: dust-free, without harmful effects

TABLE OF VERSIONS

360-90001-0	HSM 150	with tapered shaft
360-90002-0	HSM 150	with cylindrical shaft
360-90003-0	HSM 150 C (force cooled)	with tapered shaft
360-90004-0	HSM 150 C (force cooled)	with cylindrical shaft

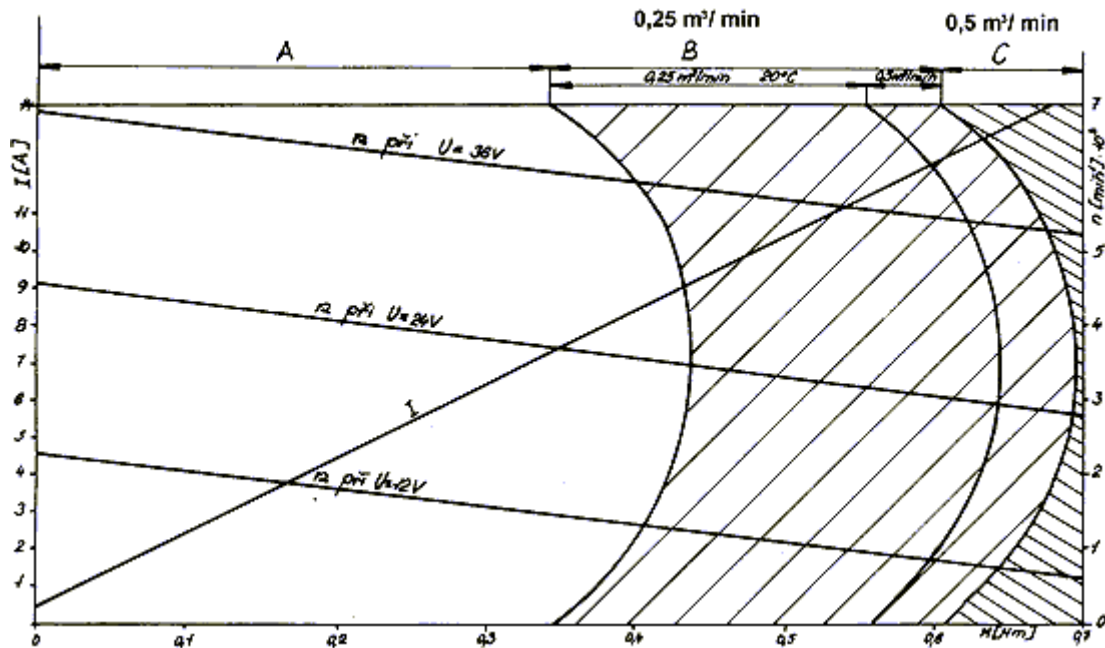
PERFORMANCE CHARACTERISTICS

performance characteristics HSM 150



Hatched surface denotes operation with forced cooling only.

performance characteristics HSM 150 (force cooled)



- A - Zone of operation without forced cooling.
- B - Zone of operation with forced cooling.
- C - Inapplicable prohibited area.

Continuous development may necessitate changes in details without notice.