Description	Symbol	Unit	MHD071B-061			
Type of cooling			Natural	Natural	Surface	Liquid
Motor overtemperature			60 K	100 K	60 K/100 K	60 K/100 K
Electric parameters						
Characteristic motor speed	n_K	min^{-1}	4500			
Continuous torque at standstill	M_{dN}	Nm	8.0	9.0	12.0	not
Continuous current at standstill	I_{dN}	A	11.2	13.2	16.8	available
Peak current	I_{max}	A	50.5			
Torque constant at 20 °C [1]	K_m	Nm/A	0.77			
Voltage constant at 20 °C	$K_{E(eff)}$	$V/1000min^{-1}$	70.0			
Winding resistance at 20 °C	R12	Ω	1.45			
Winding inductance	L12	mH	7.2			
Number of pole pairs	p		4			
Rated data [2]						
Rated speed	n_N	min^{-1}	4000	5000	5000	
Rated torque	M_N	Nm	1.7	5.3	7.8	
Rated current	I_N	A	1.7	5.5	7.7	not
Rated power	P_N	kW	0.8	3.4	4.8	available
Rated voltage	U_N	V	283	368	380	
Rated frequency	f_N	Hz	267	333	333	
Mechanical parameters						
Rotor inertia	J_M	kgm^2	8.7×10^{-4}			
Theoretical maximum torque	M_{max}	Nm	32.0			
Minimum strand cross-section [4]	S	mm^2	1.0	1.0	1.0	not
Thermal time constant	T_{th}	min	45	45	20	available
Maximum speed	n_{max}	min^{-1}	6000			
Motor mass [3] [5]	m	kg	8.8			
Perm. stor. a. transport temperature	T_L	°C	–20 to +80			
Permissible ambient temperature [6]	T_{um}	°C	0 to 40			
Maximum setup height [6]	h	m	1000 above MSL			
Protection category [7]			IP65			
Insulation class (according to DIN VDE 0530 Part 1)			F			
Housing coat			Prime coat black in a/w RAL 9005			

[1] K_m is to be used for calculations with crest values (I_{dN}, I_{max}). For calculations with root-mean-square values (rated data), the torque constant K_m must be multiplied by a factor of $\sqrt{2}$.
[2] Values determined according to EN 60034-1. Current and voltage specified as root-mean-square values.
[3] Without holding brake.
[4] Applicable to REXROTH INDRAMAT cables. Rated according to VDE0298-4 (1992) and installation type B2 according to EN 60204-1 (1993) at an ambient temperature of 40 °C.
[5] Without blower unit.
[6] If the limits specified are exceeded, the performance data must be reduced if necessary. For reduction factors, refer to the chapter entitled “Environmental Conditions”.
[7] Provided the power and encoder cables are mounted properly.

Fig. 7-3: Technical data of MHD071B-061

Holding Brake

Description	Symbol	Unit	Holding brake data	
Motor type			MHD071B	MHD071B
Holding torque	M_4	Nm	5.0	6.5
Rated voltage	U_N	V	DC 24 ± 10%	DC 24 ± 10%
Rated current	I_N	A	0.56	0.56
Moment of inertia	J_B	Kgm²	0.72×10^{-4}	0.72×10^{-4}
Clamping delay	t_1	ms	20	20
Release delay	T_2	ms	38	38
Mass	m_B	kg	0.6	0.6

Fig. 7-4: Technical data of MHD071 holding brake (optional)

7.2 Type Code – Ordering Name

Abbrev. Column →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Example:	M	H	D	0	7	1	B	-	0	6	1	-	N	G	0	-	U	N																								

1. Product
1.1 MHD . . . . . = MHD

2. Motor size
2.1 071 . . . . . = 071

3. Motor length
3.1 Lenghts . . . . . = A, B

4. Windings code
4.1 MHD071A . . . . . = 061
4.2 MHD071B . . . . . = 035, 061

5. Motor encoder
5.1 digital servo feedback . . . . . = N
5.2 digital servo feedback with integrated multiturn absolute encoder . . . . . = P

6. Driven shaft
6.1 plain shaft (with shaft sealing ring). . . . . = G
6.2 Shaft with key per DIN 6885-1 (with shaft sealing ring) . . . . . = P

7. Holding brake
7.1 without holding brake . . . . . = 0
7.2 holding brake 5 Nm. . . . . = 1 ①
7.3 holding brake 6.5 Nm. . . . . = 2 ①

8. Output direction of power connection
8.1 Connector turnable 270° . . . . . = U

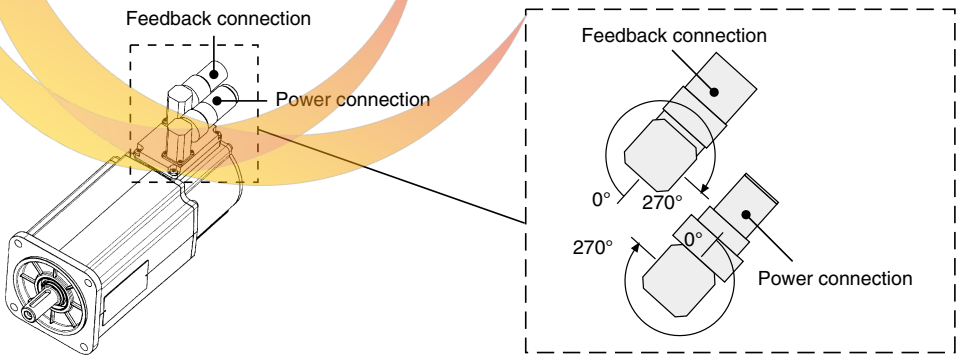
9. Housing design
9.1 for natural convection or surface cooling. . . . . = N
9.2 for natural convection or surface cooling with protection mode IP68. . . . . = P ②

10. Standard reference

Standard	Title	Edition
DIN 6885-1	Drive Type with Fastenings without Taper Action; Parallel Keys, Keyways, Deep Pattern	1968-08
DIN EN 60529	Degrees of protection provided by enclosures (IP code) (IEC 60529:1989 + A1:1999); German version EN 60529:1991 + A1:2000	2000-09

Note:
① Holding brake "1" and "2" are only available with motor length "B"
② Housing design "P" is only available with motor length "B" and windings code "061"
See project manual for definition of protection mode IP68

Illustration example: MHD071

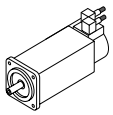


typecodeMHD071_M10.fh7

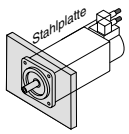
Fig. 7-5: MHD071 type code

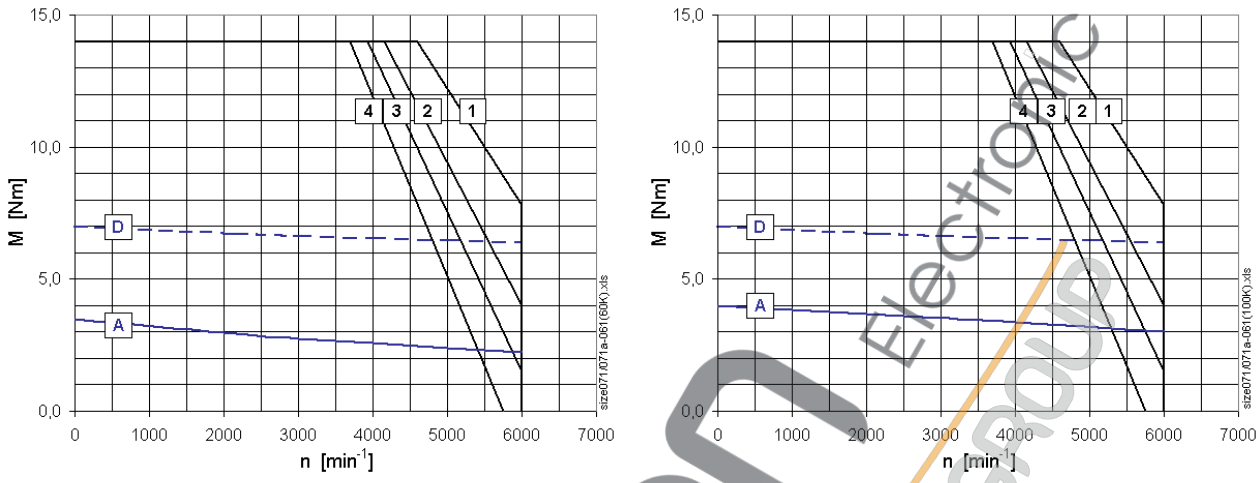
7.3 Speed-Torque Characteristics

Housing overtemperature
60 K
Insulated structure

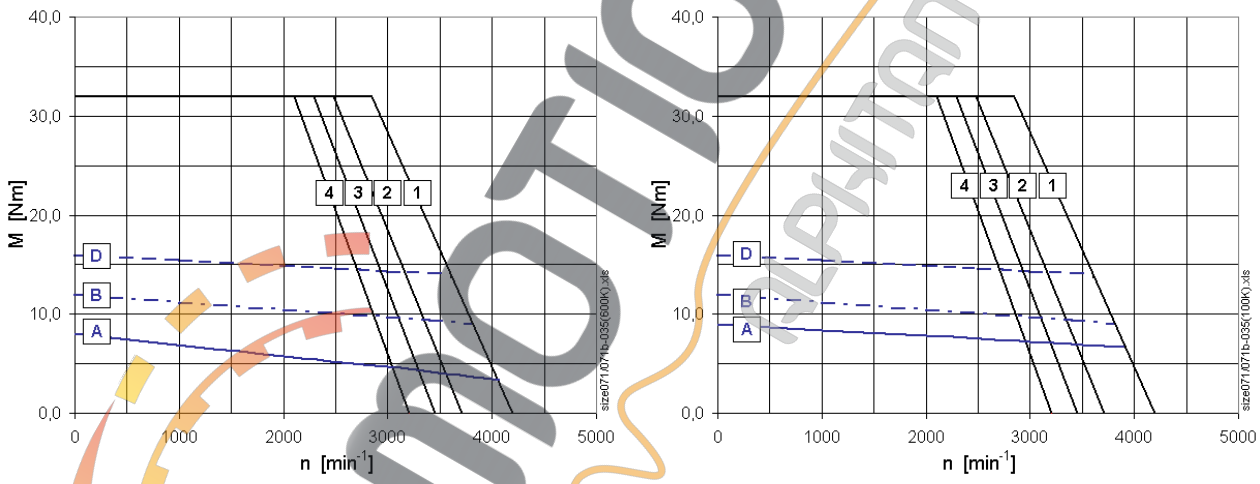


Winding overtemperature
100 K
Non-insulated structure

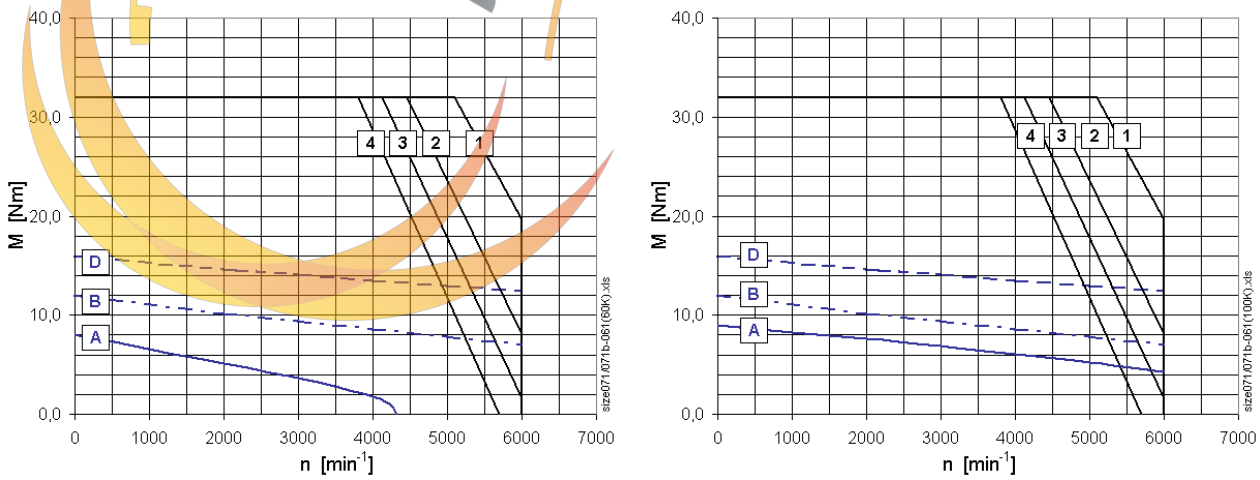




Speed-torque characteristics of MHD071A-061



Speed-torque characteristics of MHD071B-035



Speed-torque characteristics of MHD071B-061

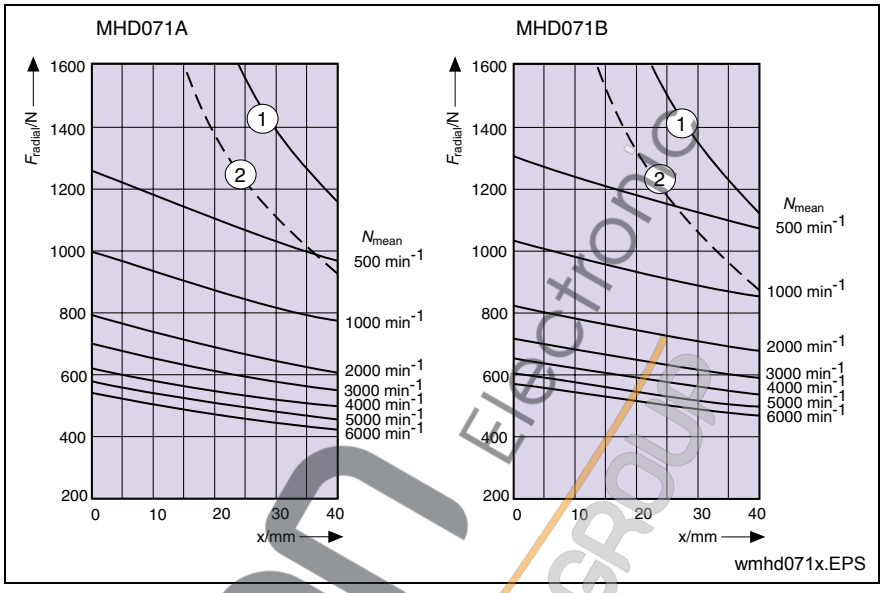
[A]: M_{dN} Natural conv. (S1 continuous operation)
[B]: M_{dN} Surface cooling (S1 continuous operation)
[C]: M_{dN} Liquid cooling (S1 continuous operation)
[D]: M_{KB} (S6 intermittent operation)
[1]: HDS to HVR
[2]: HDS to HVE or DKCxx.3 with a power connection of 3 x AC 480 V
[3]: HDS to HVE or DKCxx.3 with a power connection of 3 x AC 440 V
[4]: HDS to HVE or DKCxx.3 with a power connection of 3 x AC 400 V

Fig. 7-6: Speed-torque characteristics

7.4 Shaft Load

Permissible maximum radial force F_{radial_max} and permissible radial force F_{radial}

For explanations refer to Chapter 16.



(1): F_{radial_max} (plain shaft)
(2): F_{radial_max} (shaft with keyway)

Fig. 7-7: MHD071: Permissible maximum radial force F_{radial_max} and permissible radial force F_{radial}

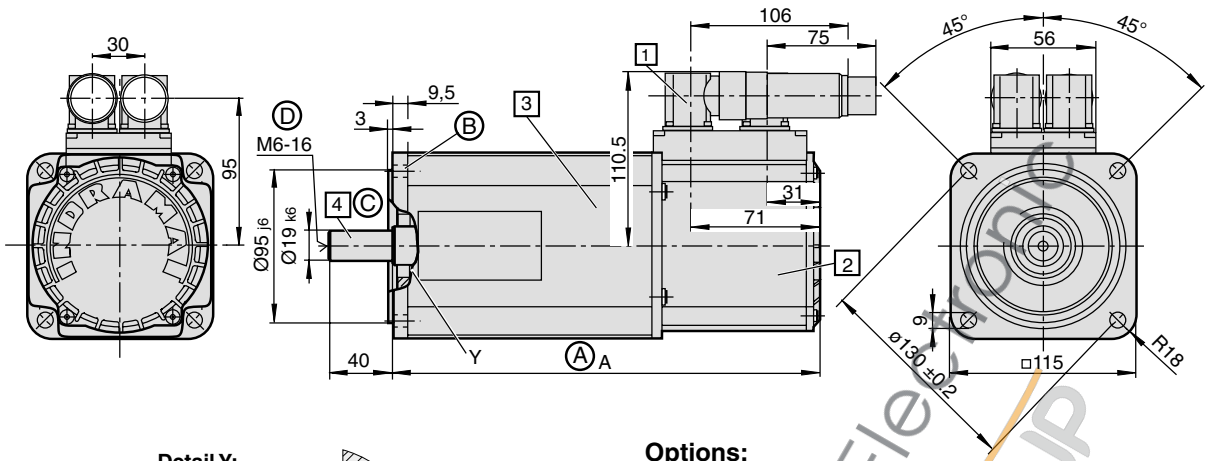
Permissible axial force F_{axial}

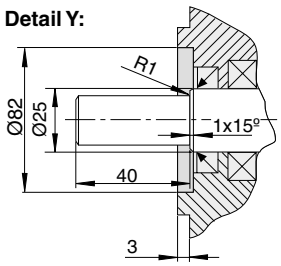
$$F_{axial} = x \cdot F_{radial}$$

x: 0.58 for MHD071A
0.55 for MHD071B
F_{axial}: permissible axial force in N
F_{radial}: permissible radial force in N

Fig. 7-8: MHD071: permissible axial force F_{axial}

7.5 Dimensions





Ⓐ **Size table**

Frame size	Meas. A
MHD071A	205
MHD071B	264

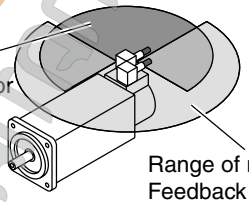
Ⓑ Motor design according to EN 60034-7, 1996-06, B5 for all installation positions

Ⓒ
- Flange according to DIN 42948, ed. 11.65
- Positional accuracy with regard to true running, axial running an coaxiality to the shaft according DIN 42955 Tolerance Class R, ed. 12.81

Ⓓ
- Shaft end according to DIN 748 Part 3, ed. 07.75, cylindrical
- Center hole DS M6 according to DIN 332 Part 2, ed. 05.83
  Max. tightening torque for screw 5.0 Nm
- Vibration severity grade R according to DIN VDE 0530 Part 14, ed. 02.93

Options:

1 **Output direction of power and feedback connectors**
The output direction of the power and/or feedback connectors must be selected during assembly. The direction can be selected as desired within a range of rotation of 270°. Please ensure that the output directions do not overlap.



2 **Motor encoder**
- Digital servo feedback (HSF)
- Digital servo feedback (HSF) with integrated multiturn absolute encoder

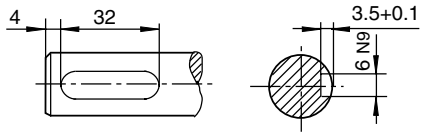
Measures are identical.

3 **Holding brake**
- Without holding brake
- With holding brake

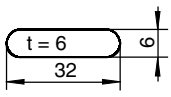
Measures are identical.

4 **Output shaft**
- Plain shaft (preferred type)
- With keyway according to DIN 6885 Sheet 1, ed. 08.68

(Caution! Balanced with entire keyway!)



The pertinent featherkey, DIN 6885-A 6 x 6 x 32, is not included in the scope of motor delivery.



M01MH071.fh7

Fig. 7-9: Dimensional data MHD071

7.6 Blower Units

MHD motors can also be delivered with optional blower units. Please refer to the “Surface” column of the data sheets for performance data of surface-cooled motors. The mechanical dimensions of the blower units are represented in the dimension drawings. The possibilities of combining motor and blower unit and the technical data of the blowers are represented in the table below.

Motor	**Ordering name of blower unit**			
	LEMD-RB071B1XX	**LEMD-RB071B2XX**		
MHD071A	---	---		
MHD071B	**x**	**x**		

Technical data of blower unit						
Description	**Symbol**	**Unit**				
Type of cooling			Radial		Axial	
Rated voltage	U_n	V	230 V, ± 15% 50 Hz	115 V, ± 10% 60 Hz		
Power consumption	P_n	W	18	17		
Rated current	I	A	0.08	0.15	Not	Not
Mean air volume	V	m³/h	180	206	available	available
Blower unit mass	m_L	kg				
Noise level		dB(A)	44	47		
Air flow			B → A blowing			
--- Blower installation not possible; x Blower installation possible						

Fig. 7-10: Technical data of MHD071 blower units (optional)

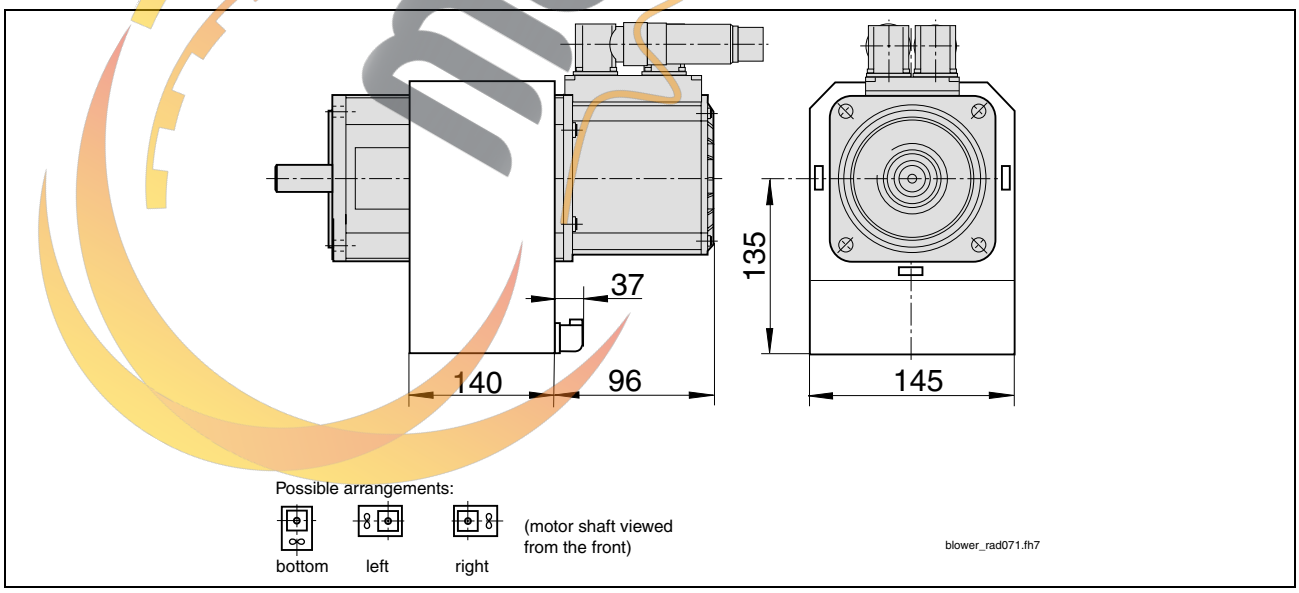


Fig. 7-11: Dimensional details of MHD071 with radial blower