

Selection

SELECTION CRITERIA

To choose the right hoists the following criteria should be taken account:

1. What will be the maximum loading capacity?
2. What will be the maximum lifting height?
3. What hoisting speed is to be employed?
4. Will an auxiliary reduced lifting speed be required?
5. What will the operational conditions be?
6. What will the travelling speed be, if required?
7. How do you need to operate the hoists?

The type of the hoists is to be defined in accordance with the load spectrum, the average operating time per day in hours, the loading capacity and the reeving.

SELECTION EXAMPLE

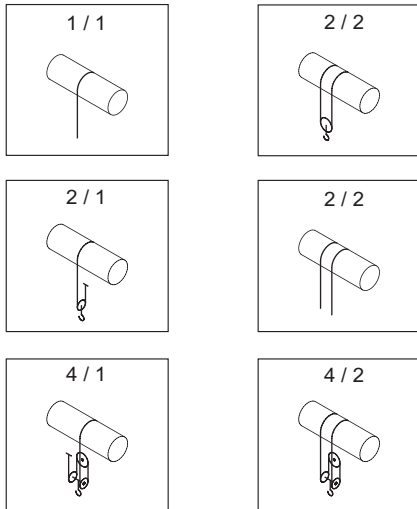
Loading capacity **- 4000 kg**
 Average lifting path of the hook (H) **- 5 m**
 Hoisting speed (V) **- 4 m/min**
 Reeving **- 4/1**
 Load spectrum **- "medium"**
 Cycles per hour (N) **- 15**
 Average operating time per day (T) **- 6 hours**

The average operating time per day of the hoist is to be calculated in the in the following manner:

$$T_m = \frac{2 \times H \times N \times T}{60 \times V} = \frac{2 \times 5 \times 15 \times 6}{60 \times 4} = 3.75 \text{ hours}$$

For the "medium" load spectrum and average operating time per day of 3.75 hours the group "2m" is shown in table "LOAD SPECTRUM-CLASS OF OPERATING TIME".

For loading capacity of 4000 kg and 4/1 reeving the type of the hoist "MHM 4-10" or "MH 6-10" is shown in table 1 - "TYPE SELECTION".



Load Spectrum (Duty operation mode) DEFINITION			Class of Operating Time average operating time per day Tm in hours		
LIGHT	Mechanisms, usually subject to very small loads and in exceptional cases only to maximum loads		2 - 4	4 - 8	8 - 16
MEDIUM	Mechanisms, usually subject to small loads but rather often to maximum loads		1 - 2	2 - 4	4 - 8
HEAVY	Mechanisms, usually subject to medium loads but frequently maximum loads		0.5 - 1	1 - 2	2 - 4
VERY HEAVY	Mechanisms, usually subject to maximum or almost maximum loads		0.25 - 0.5	0.5 - 1	1 - 2
GROUP - DIN 15 020 / FEM 9.511			1 Am	2 m	3 m
GROUP - ISO 4301			M4	M5	M6

Type Selection

CAPACITY, kg			SERIES	SIZE		
REEVING						
1 / 1 2 / 2	2 / 1 4 / 2	4 / 1				
400	800	1600	MH 3 MHM 4 MHM 5	-	-	MH 3-04 MHM 4-04 MHM 5-04
500	1000	2000		-	MH 3-05 MHM 4-05 MHM 5-05	-
800	1600	3200	MH 3 MHM 4 MH 6	MH 3-08	-	MHM 4-08 MH 6-08
1000	2000	4000		-	MHM 4-10 MH 6-10	-
1250	2500	5000	MHM 5	-	-	MHM 5-12 MH 6-12
1600	3200	6300	MH 6	-	MHM 5-16 MH 6-16	-
2000	4000	8000	MH 6 MH 7	-	-	MH 6-20 MH 7-20
2500	5000	10000		-	MH 6-25 MH 7-25	-
3200	6300	12500		-	MH 7-32	-
4000	8000	16000	MH 7	MH 7-40	-	-
5000	10000	20000		-	MH 7-50	-
6300	12500	25000		MH 7-63	-	-

Type selection

Table 1

Capacity, kg	Type	DIN 15020 FEM 9.511	ISO 4301	REEVING	Size of drums								Lifting speed, m/min		
					01	02	03	04	05	06	07	08	V1 V1/M1	V2 V2/M2	
					Lifting height H, m										
400	MH 3-04	3m	M6	1/1	12	19	26	40,5	54,5	-	-	-	16 16/4	24 24/4	
	MHM 4-04				-	-	-	-	72,5	-	-	-			
	MHM 5-04				-	-	-	-	81	102	-	-			
	MH 3-04			2/2	-	-	11	20,5	29,5	-	-	-			
	MHM 4-04				-	-	15	-	-	-	-	-			
	MHM 5-04				-	-	-	31,5	-	-	-	-			
500	MH 3-05	2m	M5	1/1	12	19	26	40,5	54,5	-	-	-	16 16/4	24 24/4	
	MHM 4-05				-	-	-	-	72,5	-	-	-			
	MHM 5-05				-	-	-	-	81	102	-	-			
	MH 3-05			2/2	-	-	11	20,5	29,5	-	-	-			
	MHM 4-05				-	-	15	-	-	-	-	-			
	MHM 5-05				-	-	-	31,5	-	-	-	-			
800	MH 3-08	1Am	M4	1/1	12	19	26	40,5	54,5	-	-	-	16 16/4	-	
	MHM 4-08	3m	M6		10	17	24	37	50,5	-	-	-			24 24/4
	MH 6-08				-	-	-	-	67	76	91,5	-			
	MH 3-08	1Am	M4	2/2	-	-	11	20,5	29,5	-	-	-		-	
	MHM 4-08	3m	M6		-	-	10	19,5	29	-	-	-		24 24/4	
	MH 6-08				-	-	-	-	39,5	46,5	56,5	-			
	MH 3-04	3m	M6	2/1	6	9,5	13	20	27	-	-	-	8 8/2	12 12/2	
	MHM 4-04				-	-	-	-	36	-	-	-			
	MHM 5-04				-	-	-	-	40,5	51	-	-			
	MH 3-04			4/2	-	-	-	10	14,5	-	-	-			
	MHM 4-04				-	-	7,5	-	-	-	-	-			
	MHM 5-04				-	-	-	15,5	-	-	-	-			
1000	MHM 4-10	2m	M5	1/1	10	17	24	37	50,5	-	-	-	16 16/4	24 24/4	
	MH 6-10				-	-	-	-	67	76	91,5	-			
	MHM 4-10				-	-	10	19,5	29	-	-	-			
	MH 6-10			2/2	-	-	-	-	39,5	46,5	56,5	-			
	MH 3-05				2/1	6	9,5	13	20	27	-	-		-	
	MHM 4-05					-	-	-	-	36	-	-		-	
	MHM 5-05			-		-	-	-	40,5	51	-	-			
	MH 3-05			4/2	-	-	-	10	14,5	-	-	-			
	MHM 4-05				-	-	7,5	-	-	-	-	-			
MHM 5-05	-	-	-		15,5	-	-	-	-						
1250	MHM 5-12	3m	M6	1/1	10 (12)	16 (20)	22,5 (27)	34,5 (42)	46,5 (56,5)	59 (71)	-	-	16 16/4	24 24/4	
	MH 6-12				-	-	-	-	55,5 (67)	63 (76)	75,5 (91,5)	-			
	MHM 5-12			2/2	-	-	7	14,5	22	29	-	-			
	MH 6-12				-	-	-	-	25,5	30,5	37,5	-			

Table 1 - cont'd

Capacity, kg	Type	DIN 15020 FEM 9.511	ISO 4301	REEVING	Size of drums								Lifting speed, m/min		
					01	02	03	04	05	06	07	08	V1 V1/M1	V2 V2/M2	
					Lifting height H, m										
1600	MHM 5-16	2m	M5	1/1	10 (12)	16 (20)	22,5 (27)	34,5 (42)	46,5 (56,5)	59 (71)	-	-	16 16/4	24 24/4	
	MH 6-16				-	-	-	-	55,5 (67)	63 (76)	75,5 (91,5)	-			
	MHM 5-16			2/2	-	-	7	14,5	22	29	-	-			
	MH 6-16				-	-	-	-	25,5	30,5	37,5	-			
	MH 3-08	1Am	M4	2/1	6	9,5	13	20	27	-	-	-	8 8/2	-	
	MHM 4-08	3m	M6		5	8,5	12	18,5	25	-	-	-			
	MH 6-08				-	-	-	-	33,5	38	45,5	-			
	MH 3-08	1Am	M4		-	-	-	10	14,5	-	-	-			
	MHM 4-08	3m	M6		4/2	-	-	-	9,5	14,5	-	-	-	8 8/2	12 12/2
	MH 6-08					-	-	-	-	19,5	23	28	-		
	MH 3-04				-	-	6,5	10	13,5	-	-	-	-		
	MHM 4-04				4/1	-	-	-	-	18	-	-	-		
MHM 5-04	-	-	-			-	20	25,5	-	-					
2000	MH 6-20	3m	M6		1/1	-	14,5 (17)	20,5 (24)	33 (38)	45 (52,5)	51 (59,5)	61 (71)	-	16 16/4	24 24/4
	MH 7-20					-	-	-	-	-	66,5 (76,5)	80 (92)	-		
	MH 6-20				2/2	-	-	-	11,5	19	22,5	29	-		
	MH 7-20			-		-	-	-	31	39,5	-	-			
	MHM 4-10	2m	M5	2/1	5	8,5	12	18,5	25	-	-	-	8 8/2	12 12/2	
	MH 6-10				-	-	-	-	33,5	38	45,5	-			
	MHM 4-10			4/2	-	-	-	9,5	14,5	-	-	-			
	MH 6-10				-	-	-	-	19,5	23	28	-			
	MH 3-05			4/1	-	-	6,5	10	13,5	-	-	-			
	MHM 4-05				-	-	-	-	18	-	-	-			
	MHM 5-05			-	-	-	-	20	25,5	-	-				
	2500			MH 6-25	2m	M5	1/1	-	14,5 (17)	20,5 (24)	33 (38)	45 (52,5)	51 (59,5)	61 (71)	-
MH 7-25		-	-	-				-	-	66,5 (76,5)	80 (92)	-			
MH 6-25		2/2	-	-			-	11,5	19	22,5	29	-			
MH 7-25			-	-			-	-	31	39,5	-	-			
MHM 5-12		3m	M6	2/1	5	8	11	17	23	29,5	-	-	8 8/2	12 12/2	
MH 6-12					-	-	-	-	27,5 (33)	31,5 (38)	37,5 (45,5)	-			
MHM 5-12				4/2	-	-	-	7	11	14,5	-	-			
MH 6-12					-	-	-	-	12,5	15	18,5	-			
3200	MH 7-32	2m	M5	1/1	-	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	-	16 16/4	-	
	MHM 5-16				2/1	-	-	-	10	16,5	24	30,5			-
	MH 6-16			5 (6)		8 (10)	11 (13,5)	17 (21)	23 (28)	29,5 (35,5)	-	-			
	MHM 5-16			4/2	-	-	-	-	27,5 (33)	31,5 (38)	37,5 (45,5)	-			
	MH 6-16	-	-		-	7	11	14,5	-	-					
	MH 3-08	1Am	M4	4/1	-	-	6,5	10	13,5	-	-	4 4/1	-		
	MHM 4-08	3m	M6		-	-	6	9	12,5	-	-				
	MH 6-08				-	-	-	-	16,5	19	22,5			-	

Table 1 - cont'd

Capacity, kg	Type	DIN 15020 FEM 9.511	ISO 4301	REEVING	Size of drums								Lifting speed, m/min	
					01	02	03	04	05	06	07	08	V1 V1/M1	V2 V2/M2
					Lifting height, m									
4000	MH 7-40	1Am	M4	1/1	-	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	-	16 16/4	-
				2/2	-	-	-	10	16,5	24	30,5	-		
	MH 6-20	3m	M6	2/1	-	7 (8,5)	10 (12)	16,5 (19)	22,5 (26)	25,5 (29,5)	30,5 (35,5)	-	8 8/2	12 12/2
					-	-	-	-	-	33 (38)	40 (46)	-		
				4/2	-	-	-	-	9,5	11	14,5	-		
					-	-	-	-	-	15,5	19,5	-		
MHM 4-10	2m	M5	4/1	-	-	6	9	12,5	-	-	-	4 4/1	6 6/1	
				-	-	-	-	16,5	19	22,5	-			
5000	MH 7-50	2m	M5	1/1	-	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	-	12,5 12,5/3,2	-
				2/2	-	-	-	10	16,5	24	30,5	-		
	MH 6-25	2m	M5	2/1	-	7 (8,5)	10 (12)	16,5 (19)	22,5 (26)	25,5 (29,5)	30,5 (35,5)	-	8 8/2	12 12/2
					-	-	-	-	-	33 (38)	40 (46)	-		
				4/2	-	-	-	-	9,5	11	14,5	-		
					-	-	-	-	-	15,5	19,5	-		
MHM 5-12	3m	M6	4/1	-	-	5,5 (6,5)	8,5 (10,5)	11,5 (14)	14,5 (17,5)	-	-	4 4/1	6 6/1	
				-	-	-	-	13,5 (16,5)	15,5 (19)	18,5 (22,5)	-			
6300	MH 7-63	1Am	M4	1/1	-	15 (17,5)	24 (28)	33,5 (38)	45,5 (52)	57,5 (66)	69,5 (79,5)	-	10,5 10,5/2,6	-
				2/1	-	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	-		
	MH 7-32	2m	M5	4/2	-	-	-	5	8	12	15	-	8 8/2	-
				4/1	-	-	5,5 (6,5)	8,5 (10,5)	11,5 (14)	14,5 (17,5)	-	-		
MHM 5-16	2m	M5	4/1	-	-	-	-	13,5 (16,5)	15,5 (19)	18,5 (22,5)	-	4 4/1	6 6/1	
				-	-	-	-	13,5 (16,5)	15,5 (19)	18,5 (22,5)	-			
8000	MH 7-40	1Am	M4	2/1	-	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	-	8 8/2	-
				4/2	-	-	-	5	8	12	15	-		
	MH 6-20	3m	M6	4/1	-	-	5 (6)	8 (9,5)	11 (13)	12,5 (14,5)	15 (17,5)	-	4 4/1	6 6/1
-					-	-	-	-	16,5 (19)	20 (23)	-			
10000	MH 7-50	2m	M5	2/1	-	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	-	6,3 6,3/1,6	-
				4/2	-	-	-	5	8	12	15	-		
	MH 6-25	2m	M5	4/1	-	-	5 (6)	8 (9,5)	11 (13)	12,5 (14,5)	15 (17,5)	-	4 4/1	6 6/1
					-	-	-	-	-	16,5 (19)	20 (23)	-		
12500	MH 7-63	1Am	M4	2/1	-	7,5 (8,5)	12 (14)	16,5 (19)	22,5 (26)	28,5 (33)	34,5 (39,5)	-	5,2 5,2/1,3	-
				4/1	-	-	-	8 (9,5)	11 (13)	14 (16,5)	17 (19,5)	-		
16000	MH 7-40	1Am	M4	4/1	-	-	-	8 (9,5)	11 (13)	14 (16,5)	17 (19,5)	-	4 4/1	-
20000	MH 7-50	2m	M5	4/1	-	-	-	8	11	14	17	19,5	3,2 3,2/0,8	-
25000	MH 7-63	1Am	M4	4/1	-	-	-	8	11	14	17	19,5	2,6 2,6/0,65	-
32000	MH 7-80	1Bm	M3	4/1	-	-	-	6,5	9	11,5	14	16	2,2 2,2/0,5	-

¹⁾ The data given in brackets are to be considered for wire ropes with high strength and smaller diameter.

