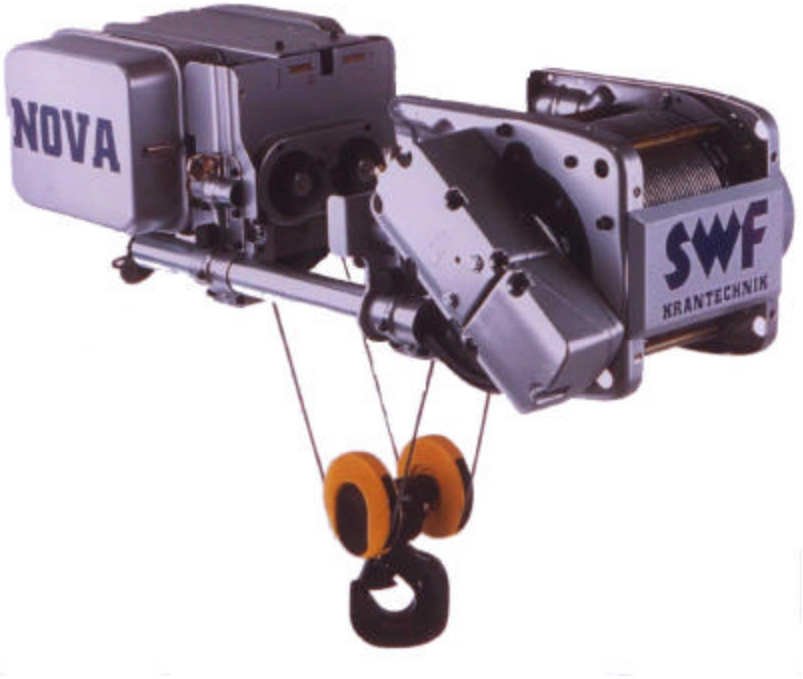

TECHNICAL GUIDE
CHARASTERISTICS
WIRE ROPE HOIST *NOVA*

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Table of content

1 NOVA PRODUCT CODE

NB	04	1	L	5	A	F	P	2	405	48	358	A	T	20	1	N
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

Pos	Code sample	Feature	Available properties	
1,2	**NB**	Hoist Size	NA NB	NA= 303mm drum, 1.8kW NB= 303mm drum, 3.6kW
3,4	**04**	Rope falls	01 02 04 08 12	1 fall 2 falls …. …. 12 falls
5	**1**	Ropes fixed to drum	1 2 4	1 rope fixed to the drum 2 ropes… 4 ropes
6	**L**	Trolley type	F L H M W (D) N	Fixed hoist Low headroom trolley Double girder trolley standard connection Double girder trolley medium connection Double girder trolley low connection *Not available* Double girder trolley (reserved for system use) Normal headroom trolley
7	**5**	Hoist duty class	3 4 5 6 7 8	ISO M3 = 1Bm ISO M4 = 1Am ISO M5 = 2m ISO M6 = 3m ISO M7 = 4m *Not available* ISO M8 = 5m *Not available*
8	**A**	Drum length	A B C D E	310 mm rope drum length 340 mm rope drum length *Not available* 440 mm rope drum length 540 mm rope drum length *Not available* 660 mm rope drum length *Not available*
9	**F**	Hoisting gear	E F G H J	Rope speed (50Hz) 16 m/min *Not available* Rope speed (50Hz) 20 m/min Rope speed (50Hz) 25 m/min Rope speed (50Hz) 32 m/min *Not available* Rope speed (50Hz) 40 m/min *Not available*
10	**P**	Hoist motor type	P O T	Pole change motor Single speed motor *Not available* Frequency converter motor
11	**2**	Hoist motor size	1 2 3 4	1,8 kW (50Hz) 3,6 kW (50Hz)
12,13, 14	**405**	Main voltage and frequency	385 405 505 …	380V Main Voltage, 50 Hz … … …
15,16	**48**	Control voltage	48 15 23	48V Control Voltage 115V Control Voltage 230V Control Voltage
17,18, 19,20	**358**	Rail gauge / flange width		Flange width or rail gauge in cm

20	**A**	Overload device	A B	Mechanical overload device Condition monitoring device
21	**T**	Trolley motor type	N P O T	No trolley motor controls Pole change motor Single speed motor *Not available* Frequency converter motor
22,23	**20**	Max travelling speed		Fast speed for travelling is 20 m/min
24	**1**	Hoist usage type	1 2 3	Single hoist for crane Hoist for tandem use Solo hoist
25	**N**	Special properties	N F S	Standard hoist without any options Options selected only from feature list Special properties

2 TECHNICAL CHARACTERISTICS

Load	Duty class		HOL	Drum		Rope			Trolley type				Hoist motor	Motor power	Gear ratio	Hoist speed	Hoist motor	Motor power	Gear ratio	Hoist speed
	Fem	ISO		Len.	Dia.	Rop. Dia.	Reeving	Rop. Load	L	D	N	F	I	I	I	I	II	II	II	II
(kg)			(m)	(mm)	(mm)	(mm)		(kg)						(kW)		(m/min)		(kW)		(m/min)
500	3m	M6	12	310	303	6.5	2/1	250	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
			19	440	303	6.5	2/1	250	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
630	3m	M6	12	310	303	6.5	2/1	315	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
			19	440	303	6.5	2/1	315	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
800	3m	M6	12	310	303	6.5	2/1	400	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
			19	440	303	6.5	2/1	400	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
1000	2m	M5	12	310	303	6.5	2/1	500	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
			19	440	303	6.5	2/1	500	L	D	N	F	P1	1.8/0.3	134.2	10/1.6	-	-	-	-
	3m	M6	6	310	303	6.5	4/1	250	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
			9.5	440	303	6.5	4/1	250	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
			12	310	303	6.5	2/1	500	L	D	N	F	P2	3.6/0.6	134.2	10/1.6	P2	3.6/0.6	106	12.5/2
			19	440	303	6.5	2/1	500	L	D	N	F	P2	3.6/0.6	134.2	10/1.6	P2	3.6/0.6	106	12.5/2
1250	3m	M6	6	310	303	6.5	4/1	313	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
			9.5	440	303	6.5	4/1	313	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
			12	310	303	6.5	2/1	625	L	D	N	F	P2	3.6/0.6	134.2	10/1.6	P2	3.6/0.6	106	12.5/2
			19	440	303	6.5	2/1	625	L	D	N	F	P2	3.6/0.6	134. 2	10/1.6	P2	3.6/0.6	106	12.5/2
1600	2m	M5	12	310	303	6.5	2/1	800	L	D	N	F	P2	3.6/0.6	134.2	10/1.6	P2	3.6/0.6	106	12.5/2
			19	440	303	6.5	2/1	800	L	D	N	F	P2	3.6/0.6	134.2	10/1.6	P2	3.6/0.6	106	12.5/2
	3m	M6	6	310	303	6.5	4/1	400	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
			9.5	440	303	6.5	4/1	400	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
2000	2m	M5	6	310	303	6.5	4/1	500	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
			9.5	440	303	6.5	4/1	500	L	D	N	F	P1	1.8/0.3	134.2	5/0.8	-	-	-	-
	3m	M6	6	310	303	6.5	4/1	500	L	D	N	F	P2	3.6/0.6	134.2	5/0.8	P2	3.6/0.6	106	6.3/1
			9.5	440	303	6.5	4/1	500	L	D	N	F	P2	3.6/0.6	134.2	5/0.8	P2	3.6/0.6	106	6.3/1
			12	340	355	8	2/1	1000	L	D	N	F	P3	4.5/0.7	160.3	10/1.6	P4	7.5/1.2	104.7	16/2.6
			18	440	355	8	2/1	1000	L	D	N	F	P3	4.5/0.7	160.3	10/1.6	P4	7.5/1.2	104.7	16/2.6
2500	2m	M5	12	340	355	8	2/1	1250	L	D	N	F	P3	4.5/0.7	160.3	10/1.6	P4	7.5/1.2	104.7	16/2.6
			18	440	355	8	2/1	1250	L	D	N	F	P3	4.5/0.7	160.3	10/1.6	P4	7.5/1.2	104.7	16/2.6
	3m	M6	6	310	303	6.5	4/1	625	L	D	N	F	P2	3.6/0.6	134.2	5/0.8	P2	3.6/0.6	106	6.3/1
			9.5	440	303	6.5	4/1	625	L	D	N	F	P2	3.6/0.6	134.2	5/0.8	P2	3.6/0.6	106	6.3/1
3200	2m	M5	6	310	303	6.5	4/1	800	L	D	N	F	P2	3.6/0.6	134.2	5/0.8	P2	3.6/0.6	106	6.3/1
			9.5	440	303	6.5	4/1	800	L	D	N	F	P2	3.6/0.6	134.2	5/0.8	P2	3.6/0.6	106	6.3/1

3 HOISTING MOTOR

3.1 Motor data, 50 Hz

Duty Class (Fem/ISO)	Motor code & type**)		P1 MF10M-106		P2 MF10Z-106	
			fast	slow	fast	slow
	Synchronized speed	RPM	3000	500	3000	500
	Braking torque	Nm	21	21	21	21
	Max el. br. torque	Nm		32		63
	El. br. torque	Nm		12,6		25
	Power fact. start		0,80	0,83	0,83	0,78
	Starting torque	Nm	12,4	10,7	25	22
	Weight	kg	22,6	22,6	30,6	30,6
	Inertia	Kgm^2	0,0027	0,0027	0,0049	0,0049
	Load	Tm/min	10	1,5	20	2,8
	Nominal power*)	kW	1,8	0,25	3,6	0,5
1Bm/M3	Nominal torque	Nm	6,1	6,1	12,3	12,3
180 starts/h	Nominal speed	RPM	2780	420	2800	400
40 % ED	Short time duty	min	60	15	60	15
	Power factor		0,82	0,67	0,87	0,63
	Efficiency		0,66	0,24	0,73	0,3
	Load	Tm/min	10	1,5	20	2,8
	Nominal power*)	kW	1,8	0,25	3,6	0,5
1Am/M4	Nominal torque	Nm	6,1	6,1	12,3	12,3
180 starts/h	Nominal speed	RPM	2780	420	2800	400
40 % ED	Short time duty	min	60	15	60	15
	Power factor		0,82	0,67	0,87	0,63
	Efficiency		0,66	0,24	0,73	0,3
	Load	Tm/min	10	1,5	20	2,8
	Nominal power*)	kW	1,8	0,25	3,6	0,5
2m/M5	Nominal torque	Nm	6,1	6,1	12,3	12,3
240 starts/h	Nominal speed	RPM	2780	420	2800	400
40 % ED	Short time duty	min	60	15	60	15
	Power factor		0,82	0,67	0,87	0,63
	Efficiency		0,66	0,24	0,73	0,3
	Load	Tm/min	10	1,5	20	2,8
	Nominal power*)	kW	1,8	0,25	3,6	0,5
3m/M6	Nominal torque	Nm	6,1	6,1	12,3	12,3
300 starts/h	Nominal speed	RPM	2780	420	2800	400
50 % ED	Short time duty	min	60	15	60	15
	Power factor		0,82	0,67	0,87	0,63
	Efficiency		0,66	0,24	0,73	0,3
	Load	tm/min	10	1,5	20	2,8
	Nominal power*)	kW	1,8	0,25	3,6	0,5
4m/M7	Nominal torque	Nm	6,1	6,1	12,3	12,3
360 starts/h	Nominal speed	RPM	2780	420	2800	400
60 % ED	Short time duty	min	60	15	60	15
	Power factor		0,82	0,67	0,87	0,63
	Efficiency		0,66	0,24	0,73	0,3

*) Powers are given with nominal load

**) P1, P2 are 2- speed pole change motors

3.2 Currents, 50 Hz

Motor code & type	**Currents*)**	**Duty Class (Fem/ISO)**	**Voltages**							
	Nominal voltage		**230 V**		**400 V**		**500 V**		**660 V**	
	Used in voltage range		**220…240 V**		**380…415 V**		**500…525 V**		**660…690 V**	
			fast	slow	fast	slow	fast	slow	fast	slow
P1 MF10M-106	Starting current (A)		32	6,1	18,5	3,5	14,8	2,8	11,2	2,1
	Nominal current (A)	1Bm/M3	8,2	4,2	4,7	2,4	3,8	1,9	2,8	1,5
		1Am/M4	8,2	4,2	4,7	2,4	3,8	1,9	2,8	1,5
		2m/M5	8,2	4,2	4,7	2,4	3,8	1,9	2,8	1,5
		3m/M6	8,2	4,2	4,7	2,4	3,8	1,9	2,8	1,5
		4m/M7	8,2	4,2	4,7	2,4	3,8	1,9	2,8	1,5
	No-load curren (A)		5,2	4,5	3	2,6	2,4	2,1	1,8	1,6
P2 MF10Z-106	Starting current (A)		64	11,3	37	6,5	30	5,2	22	3,9
	Nominal current (A)	1Bm/M3	14,3	6,8	8,2	3,9	6,6	3,1	5,0	2,4
		1Am/M4	14,3	6,8	8,2	3,9	6,6	3,1	5,0	2,4
		2m/M5	14,3	6,8	8,2	3,9	6,6	3,1	5,0	2,4
		3m/M6	14,3	6,8	8,2	3,9	6,6	3,1	5,0	2,4
		4m/M7	14,3	6,8	8,2	3,9	6,6	3,1	5,0	2,4
	No-load current (A)		6,4	7,1	3,7	4,1	3,0	3,3	2,2	2,5

*) Currents are given with nominal load and voltage.

3.3 Motor data, 60 Hz

Duty Class (Fem/ISO)	Motor code & type**)		P1 MF10M-106		P2 MF10Z-106	
			fast	slow	fast	slow
	Synchronized speed	RPM	3600	600	3600	600
	Braking torque	Nm	21	21	21	21
	Max el. br. torque	Nm		32		63
	El. br. torque	Nm		12,6		25
	Power fact. start		0,76	0,81	0,77	0,73
	Starting torque	Nm	12,4	10,7	24,6	21,7
	Weight	Kg				
	Inertia	Kgm^2	0,0027	0,0027	0,0049	0,0049
1Bm/M3 180 starts/h 40 % ED	Load	tm/min	12	1,8	24	3,4
	Nominal power*)	KW	2,1	0,3	4,2	0,6
	Nominal torque	Nm	6,1	6,1	12,3	12,3
	Nominal speed	RPM	3410	525	3400	500
	Short time duty	Min	60	15	60	15
	Power factor		0,83	0,63	0,89	0,61
	Efficiency		0,71	0,28	0,75	0,38
1Am/M4 180 starts/h 40 % ED	Load	tm/min	12	1,8	24	3,4
	Nominal power*)	KW	2,1	0,3	4,2	0,6
	Nominal torque	Nm	6,1	6,1	12,3	12,3
	Nominal speed	RPM	3410	525	3400	500
	Short time duty	Min	60	15	60	15
	Power factor		0,83	0,63	0,89	0,61
	Efficiency		0,71	0,28	0,75	0,38
2m/M5 240 starts/h 40 % ED	Load	tm/min	12	1,8	24	3,4
	Nominal power*)	KW	2,1	0,3	4,2	0,6
	Nominal torque	Nm	6,1	6,1	12,3	12,3
	Nominal speed	RPM	3410	525	3400	500
	Short time duty	Min	60	15	60	15
	Power factor		0,83	0,63	0,89	0,61
	Efficiency		0,71	0,28	0,75	0,38
3m/M6 300 starts/h 50 % ED	Load	tm/min	12	1,8	24	3,4
	Nominal power*)	KW	2,1	0,3	4,2	0,6
	Nominal torque	Nm	6,1	6,1	12,3	12,3
	Nominal speed	RPM	3410	525	3400	500
	Short time duty	Min	60	15	60	15
	Power factor		0,83	0,63	0,89	0,61
	Efficiency		0,71	0,28	0,75	0,38
4m/M7 360 starts/h 60 % ED	Load	tm/min	12	1,8	24	3,4
	Nominal power*)	KW	2,1	0,3	4,2	0,6
	Nominal torque	Nm	6,1	6,1	12,3	12,3
	Nominal speed	RPM	3410	525	3400	500
	Short time duty	Min	60	15	60	15
	Power factor		0,83	0,63	0,89	0,61
	Efficiency		0,71	0,28	0,75	0,38

*) Powers are given with nominal load

**) P1, P2 are 2- speed pole change motors

3.4 Currents, 60 Hz

Motor code & type	**Currents**[*)]	**Duty Class (Fem/ISO)**	**Voltages**							
	Nominal voltage		**230 V**		**380 V**		**460 V**		**575 V**	
	Used in voltage range		**220…240 V**		**360…400 V**		**440…480 V**		**575…600 V**	
			fast	slow	fast	slow	fast	slow	fast	slow
P1 MF10M-106	Starting current (A)		38	7,8	23	4,7	19,0	3,9	15,2	3,1
	Nominal current (A)	1Bm/M3	9,0	4,6	5	2,8	4,5	2,3	3,6	1,8
		1Am/M4	9,0	4,6	5	2,8	4,5	2,3	3,6	1,8
		2m/M5	9,0	4,6	5	2,8	4,5	2,3	3,6	1,8
		3m/M6	9,0	4,6	5	2,8	4,5	2,3	3,6	1,8
		4m/M7	9,0	4,6	5	2,8	4,5	2,3	3,6	1,8
	No-load current (A)		5,0	5,2	3,0	3,1	2,5	2,6	2,0	2,1
P2 MF10Z-106	Starting current (A)		82	14,0	50	8,5	41	7	33	5,6
	Nominal current (A)	1Bm/M3	16,0	7,6	10	4,6	8	3,8	6,4	3,0
		1Am/M4	16,0	7,6	10	4,6	8	3,8	6,4	3,0
		2m/M5	16,0	7,6	10	4,6	8	3,8	6,4	3,0
		3m/M6	16,0	7,6	10	4,6	8	3,8	6,4	3,0
		4m/M7	16,0	7,6	10	4,6	8	3,8	6,4	3,0
	No-load current (A)		6,4	7,8	4	4,7	3,2	3,9	2,6	3,1

*) Currents are given with nominal load and voltage.

4 TRAVELLING MOTOR

4.1 One speed, 3000 RPM (100 Hz), 3600 RPM (120 Hz) and 4800 rpm(80Hz)

Duty type	Motor code		MF06MA100		MF06MA200			
	Speed control		**inverter**		**inverter**			
	Voltage		**400 V**		**400 V**	**460 V**		
	Frequency		**80 Hz**		**100 Hz**	**120 Hz**		
	Synchronous speed	RPM	4800		3000	3600		
	Braking torque	Nm	1.2		1.2	1.2		
	Starting torque	Nm	2.4		2.0	1.9		
	Electric braking torque	Nm	2.0		2.0	2.0		
	Starting current	A	5.6		3.6	3.6		
	Maximum torque	Nm	2.4		2.2	2.2		
	Speed at max. torque	RPM	2800		1810	2170		
	80% of max. torque	Nm	1.95		1.8	1.8		
	Speed at 80% torque	RPM	3700		2550	3150		
	Current at 80% torque	A	3.4		1.8	1.8		
	Inertia	kgm^2	0.0004		0.0004	0.0004		
	Inertia with flywheel	kgm^2	-		-	-		
	Power factor, starting		0.39		0.39	0.39		
	Weight with fan	kg						
	Weight with flywheel	kg	-		-	-		
	No-load current	A	1.7		1.1	1.1		
	Iron losses	W						
	Stator resistance at 20 °C	Ω	19.5		34	34		
	Speed	RPM	4440		2800	3380		
	Power	kW	0.45		0.3	0.37		
S3-20%	Current	A	2.1		1.3	1.3		
	Starting burden	kgm^2/h						
	Power factor		0.55		0.53	0.53		
	Efficiency		0.58		0.65	0.65		
	Speed	RPM	4440		2800	3380		
	Power	kW	0.45		0.3	0.36		
S3-40%	Current	A	2.1		1.3	1.3		
	Starting burden	kgm^2/h						
	Power factor		0.55		0.53	0.53		
	Efficiency		0.58		0.65	0.65		
	Speed	RPM						
	Power	kW						
S3-60%	Current	A						
	Starting burden	kgm^2/h						
	Power factor							
	Efficiency							
	Speed	RPM						
	Power	kW						
S3-100%	Current	A						
	Starting burden	kgm^2/h						
	Power factor							
	Efficiency							

4.2 Two speed, 3000/750 RPM (50Hz) and 3600/900 RPM (60Hz)

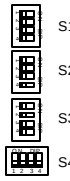
Duty type	Motor code		MF06MA104		MF06MA104			
	Speed control		**2-speed**		**2-speed**			
	Voltage		**400 V**		**460 V**			
	Frequency		**50 Hz**		**60 Hz**			
			fast	**slow**	**fast**	**slow**		
	Synchronous speed	RPM	3000	750	3600	900		
	Braking torque	Nm	2	2	2	2		
	Starting torque	Nm	2.2	1.7	2.2	1.8		
	Electric braking torque	Nm		5.6/2.0		5.6/2.0		
	Starting current	A	3.5	1.0	3.9	1.1		
	Maximum torque	Nm	2.2	1.8	2.2	1.8		
	Speed at max. torque	RPM	2150	400	2750	550		
	80% of max. torque	Nm	-	-	-	-		
	Speed at 80% torque	RPM	-	-	-	-		
	Current at 80% torque	A	-	-	-	-		
	Inertia with fan	kgm^2	0.0004	0.0004	0.0009	0.0009		
	Inertia with flywheel	kgm^2	-	-	-	-		
	Power factor, starting		0.94	0.93	0.91	0.92		
	Weight with fan	kg						
	Weight with flywheel	kg	-	-	-	-		
	No-load current	A	0,9	0.8	0.9	0.8		
	Iron losses	W	-	-	-	-		
	Stator resistance at 20 °C	Ω	-	-	-	-		
	Speed	RPM	2800	690	3400	810		
	Power	kW	0,3	0,05	0,36	0,07		
S3-20%	Current	A	1,0	0,8	0,9	0,8		
	Starting burden	kgm^2/h	2		1,4			
	Power factor		0,7	0,77	0,74	0,78		
	Efficiency		0,67	0,12	0,67	0,12		
	Speed	RPM	2800	690	3400	810		
	Power	kW	0,3	0,05	0,36	0,07		
S3-40%	Current	A	1,0	0,8	0,9	0,7		
	Starting burden	kgm^2/h	1,5		1,0			
	Power factor		0,7	0,77	0,74	0,78		
	Efficiency		0,67	0,12	0,67	0,12		
	Speed	RPM						
	Power	kW						
S3-60%	Current	A						
	Starting burden	kgm^2/h						
	Power factor							
	Efficiency							
	Speed	RPM						
	Power	kW						
S3-100%	Current	A						
	Starting burden	kgm^2/h						
	Power factor							
	Efficiency							

5 TROLLEY SPEED TABLES

5.1 Inverter control (T)

Acceleration / deceleration ramp times:

Trolley Speed [m/min]	Recommended Acc./Dec. time [s]	Switch S3			
		1	2	3	4
10 - 15	1.5	1	0	0	0
16 - 21	2.0	0	1	0	0
22 - 27	2.5	0	0	0	0
28 - 33	3.0	0	0	1	0
34 - 40	3.5	0	0	0	1



S1 = Maximum speed
S2 = Minimimum speed
S3 = Acceleration / deceleration time
S4 = Control mode and motor type

5.1.1 Low headroom trolley (L)

Hoist Frame	Gear type/ Motor type	Total ratio/ Wheel diam. [mm]	Max. load [kg]	Inv. type	Mot Pcs
A	GEK106PT1B0 MF06MA100	i=34.9 80	3200	MM 007	1
A	GEK106PT1B0 MF06MA200	i=34.9 80	3200	MM 007	1

Max speed						
Trolley Speed [m/min]	Mot. Feq. [Hz]	Sync. Mot. S. [rpm]	Switch S1			
			1	2	3	4
33	80	4800	1	0	0	0
32	77	4620	0	0	0	0
25	62	3720	0	1	0	0
20	50	3000	0	0	1	0
16	42	2520	0	0	0	1
24	115 *)	3450	1	0	0	0
20	100	3000	0	0	0	0
16	80	2400	0	1	0	0
12.5	62	1860	0	0	1	0
10	50	1500	0	0	0	1

Min speed						
Trolley Speed [m/min]	Mot. Feq. [Hz]	Sync. Mot.S. [rpm]	Switch S2			
			1	2	3	4
15	40	2400	1	0	0	0
11	30	1800	0	1	0	0
8	22	1320	0	0	0	0
6	18	1080	0	0	1	0
4	14	840	0	0	0	1
10	50	1500	1	0	0	0
6	32	960	0	1	0	0
5	29	870	0	0	0	0
4	23	690	0	0	1	0
2	14	420	0	0	0	1

*) Voltage have to be at least 460 V.

5.1.2 Normal headroom trolley (N)

Hoist Frame	Gear type/ Motor type	Total ratio/ Wheel diam. [mm]	Max. load [kg]	Inv. Type	Mot Pcs
A	GEK106PT1B0 MF06MA100	i=34.9 80	3200	MM 007	1
A	GEK106PT1B0 MF06MA200	i=34.9 80	3200	MM 007	1

Max speed						
Trolley Speed [m/min]	Mot. Feq. [Hz]	Sync. Mot. S. [rpm]	Switch S1			
			1	2	3	4
33	80	4800	1	0	0	0
32	77	4620	0	0	0	0
25	62	3720	0	1	0	0
20	50	3000	0	0	1	0
16	42	2520	0	0	0	1
24	115 *)	3450	1	0	0	0
20	100	3000	0	0	0	0
16	80	2400	0	1	0	0
12.5	62	1860	0	0	1	0
10	50	1500	0	0	0	1

Min speed						
Trolley Speed [m/min]	Mot. Feq. [Hz]	Sync. Mot.S. [rpm]	Switch S2			
			1	2	3	4
15	40	2400	1	0	0	0
11	30	1800	0	1	0	0
8	22	1320	0	0	0	0
6	18	1080	0	0	1	0
4	14	840	0	0	0	1
10	50	1500	1	0	0	0
6	32	960	0	1	0	0
5	29	870	0	0	0	0
4	23	690	0	0	1	0
2	14	420	0	0	0	1

*) Voltage have to be at least 460 V.

5.1.3 Double girder trolley (D)

Hoist Frame	Gear type/ Motor type	Total ratio/ Wheel diam. [mm]	Max. load [kg]	Inv. Type	Mot Pcs	Max speed							Min speed						
						Trolley Speed [m/min]	Mot. Feq. [Hz]	Sync. Mot. S. [rpm]	Switch S1				Trolley Speed [m/min]	Mot. Feq. [Hz]	Sync. Mot.S. [rpm]	Switch S2			
									1	2	3	4				1	2	3	4
A	GS240 MF06MA100	i=40 88	3200	MM 007	1	33	80	4800	1	0	0	0	15	40	2400	1	0	0	0
						32	77	4620	0	0	0	0	11	30	1800	0	1	0	0
						25	62	3720	0	1	0	0	8	22	1320	0	0	0	0
						20	50	3000	0	0	1	0	6	18	1080	0	0	1	0
						16	42	2520	0	0	0	1	4	14	840	0	0	0	1
A	GS240 MF06MA200	i=40 88	3200	MM 007	1	24	115 *)	3450	1	0	0	0	10	50	1500	1	0	0	0
						20	100	3000	0	0	0	0	6	32	960	0	1	0	0
						16	80	2400	0	1	0	0	5	29	870	0	0	0	0
						12.5	62	1860	0	0	1	0	4	23	690	0	0	1	0
						10	50	1500	0	0	0	1	2	14	420	0	0	0	1

*) Voltage have to be at least 460 V

5.2 Contactor control (P)

5.2.1 Low headroom trolley (L)

Hoist Frame	Gear type/ Motor type	Total ratio i	Wheel diam. [mm]	Max. load [kg]	Pcs	50 Hz				60 Hz			
						Max speed		Min speed		Max speed		Min speed	
						Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]
A	GEK106PT1B0 MF06MA104	i=34.9	80	3200	1	20	3000	5	750	24	3600	6	900

5.2.2 Normal headroom trolley (N)

Hoist Frame	Gear type/ Motor type	Total ratio i	Wheel diam. [mm]	Max. load [kg]	Pcs	50 Hz				60 Hz			
						Max speed		Min speed		Max speed		Min speed	
						Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]
A	GEK106PT1B0 MF06MA104	i=34.9	80	3200	1	20	3000	5	750	24	3600	6	900

5.2.3 Double girder trolley (D)

Hoist Frame	Gear type/ Motor type	Total ratio i	Wheel diam. [mm]	Max. load [kg]	Pcs	50 Hz				60 Hz			
						Max speed		Min speed		Max speed		Min speed	
						Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]	Trolley Speed [m/min]	Sync. Mot. Speed [rpm]
A	GS240 MF06MA104	i=40	88	3200	1	20	3000	5	750	24	3600	6	900

6 HOOK BLOCK

6.1 Hook block dimensions

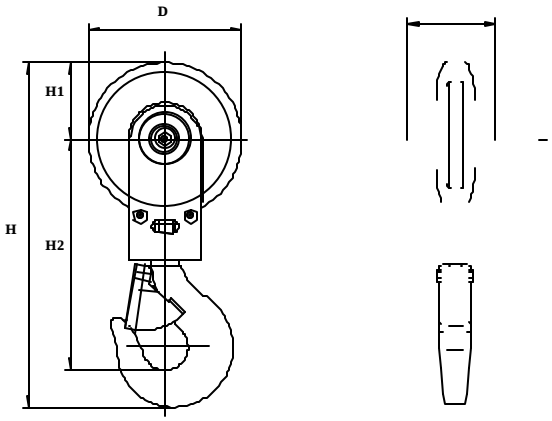


Figure 1

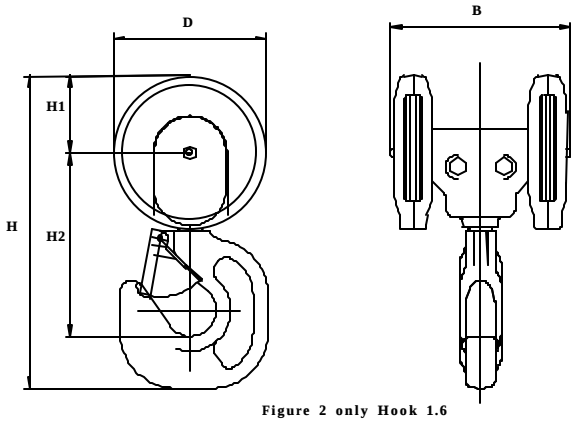
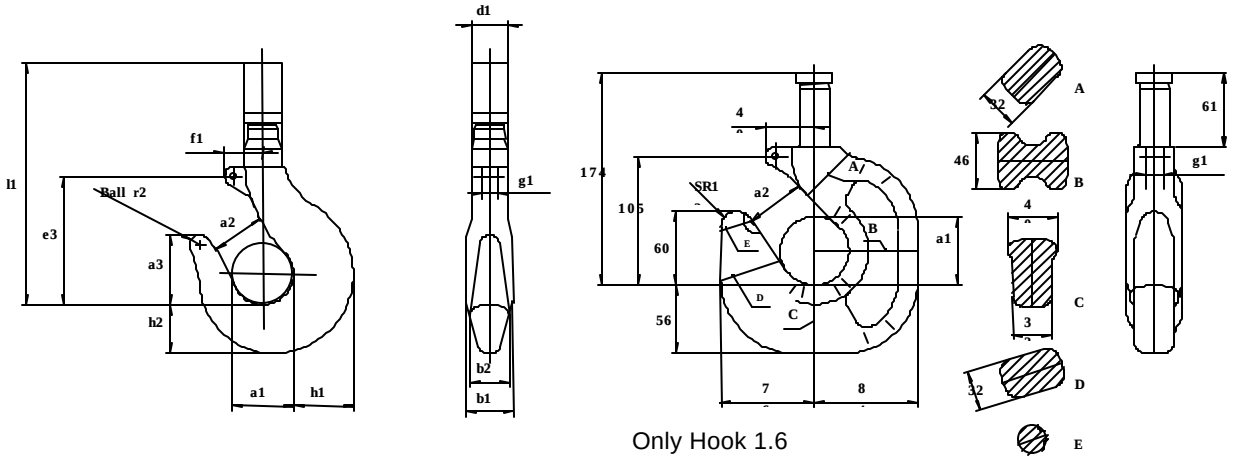


Figure 2 only Hook 1.6

Load	Rope	Hoist Duty (Fem/ISO)			Hook forging	Figure No.	Hook block dimensions (mm)					Hook block weight
(kg)	Reeving	1Am	2m	3m			H	H1	H2	D	B	(kg)
		M4	M5	M6								
Trolley types L, D, N, F												
500	2/1	•	•	•	RSN 1	1	372	83	249	166	96	8.4
630	2/1	•	•	•	RSN 1	1	372	83	249	166	96	8.4
800	2/1	•	•	•	RSN 1	1	372	83	249	166	96	8.4
1000	2/1	•	•		RSN 1	1	372	83	249	166	96	8.4
	2/1	•	•	•	RSN 1	1	372	83	249	166	96	8.4
	4/1	•	•	•	RSN 1.6	2	337	83	198	166	195	12
1250	2/1	•	•	•	RSN 1	1	372	83	249	166	96	8.4
	4/1	•	•	•	RSN 1.6	2	337	83	198	166	195	12
1600	2/1	•	•		RSN 1	1	372	83	249	166	96	8.4
	4/1	•	•	•	RSN 1.6	2	337	83	198	166	195	12
2000	4/1	•	•		RSN 1.6	2	337	83	198	166	195	12
	4/1	•	•	•	RSN 1.6	2	337	83	198	166	195	12
2500	4/1	•	•	•	RSN 1.6	2	337	83	198	166	195	12
3200	4/1	•	•		RSN 1.6	2	337	83	198	166	195	12

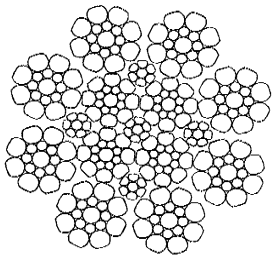
6.2 Hook forging dimensions



Only Hook 1.6

	RSN 1	RSN 1.6	RSN 4	RSN 5	RSN 6
a_1	50	56	71	80	90
a_2	40	45	56	63	71
a_2	57	64	80	90	101
b_1	38	45	63	71	80
b_2	32	38	53	60	67
d_1	30	36	48	53	60
e_1	120	135	172	194	218
e_2	128	146	190	215	240
e_3	105	118	148	165	185
f_1	31	35	45	51	57
g_1	12.5	14	16	18	18
h_1	48	56	80	90	100
h_2	40	48	67	75	85
l_1	197	210	285	318	374
r_1	5	6	8	9	10
r_2	8	9	12	14	16
r_3	55	60	71	80	90
r_4	106	118	150	170	190
r_5	106	118	150	170	190
r_6	65	76	103	114	131
r_7	60	68	90	100	112
r_9	96	112	160	180	200
weight (forging)	3.2 kg	4.5 kg	8.8 kg	12.3 kg	17.1 kg

7 WIRE ROPE DATA



Cross section
Rope type: A

Rope	Dia. mm	Minimum Breaking Load kN	Strand Constr.	Wire Strength N/mm2	Core	Rope Lay	Compacted Outer Strands	Wire Material	Weight kg/m	Rot. resist.
A	6.4	41,8	8 x17	2160	Steel core parallel strands	LR	YES	Galvanized steel	0,20	NO

LR = left hand regular lay
LL = left hand Lang´s lay

8 SURFACE TREATMENT

Finish coats are spray painted with 2- component EPOXY finishing paint, one layer 50 µm colour. Painting, drying time and temperature is chosen according to paint manufactures instructions.

Parts	Colour
Hoist machinery	
Hoist motor (frame)	Anodised (black)
Hoist motor (cover)	None
Hoist gear (frame)	RAL 9006
Junction box	RAL 9006
Drum	None
Rope reeving	
Hook forging	RAL 7021
Cross bar	RAL 7021
Cover plate	RAL 1021
Locking plate	RAL 7021
Sheave	RAL 7021
Sheave support	RAL 9006
Overload device	Yellow passivated*)
Rope guide	RAL 7021
Rope fastener	Yellow passivated*)
Electrical cubicle	
Cubicle bottom	RAL 9006
Cubicle cover	RAL 9006
Cubicle support (LA)	RAL 9006
Back plate (LA)	RAL 9006
Counterweight	RAL 9006
Hoist frame	
Hoist frame, DA	RAL 9006
Hoist frame, LA	RAL 9006
Intermediate beam	Zinc coating**)
Hoist frame, FA	RAL 9006
Hoist frame, NA	RAL 9006
Traveling machinery	
Travel motor (frame)	Anodised (black)
Travel gear (frame)	None
Coupling motor/gear	Yellow passivated*)
Travel wheel (monorail)	RAL 7021
Rail wheel	None

*) Fe/Zn 12 cC ISO R 2081
**) DIN 50961- Fe/Zn 12 A (Colorless)