SICOR
DRIVING THE FUTURE

SH/MR SERIES

GEARED MACHINES

DOC-FECMCBRP0C00EN
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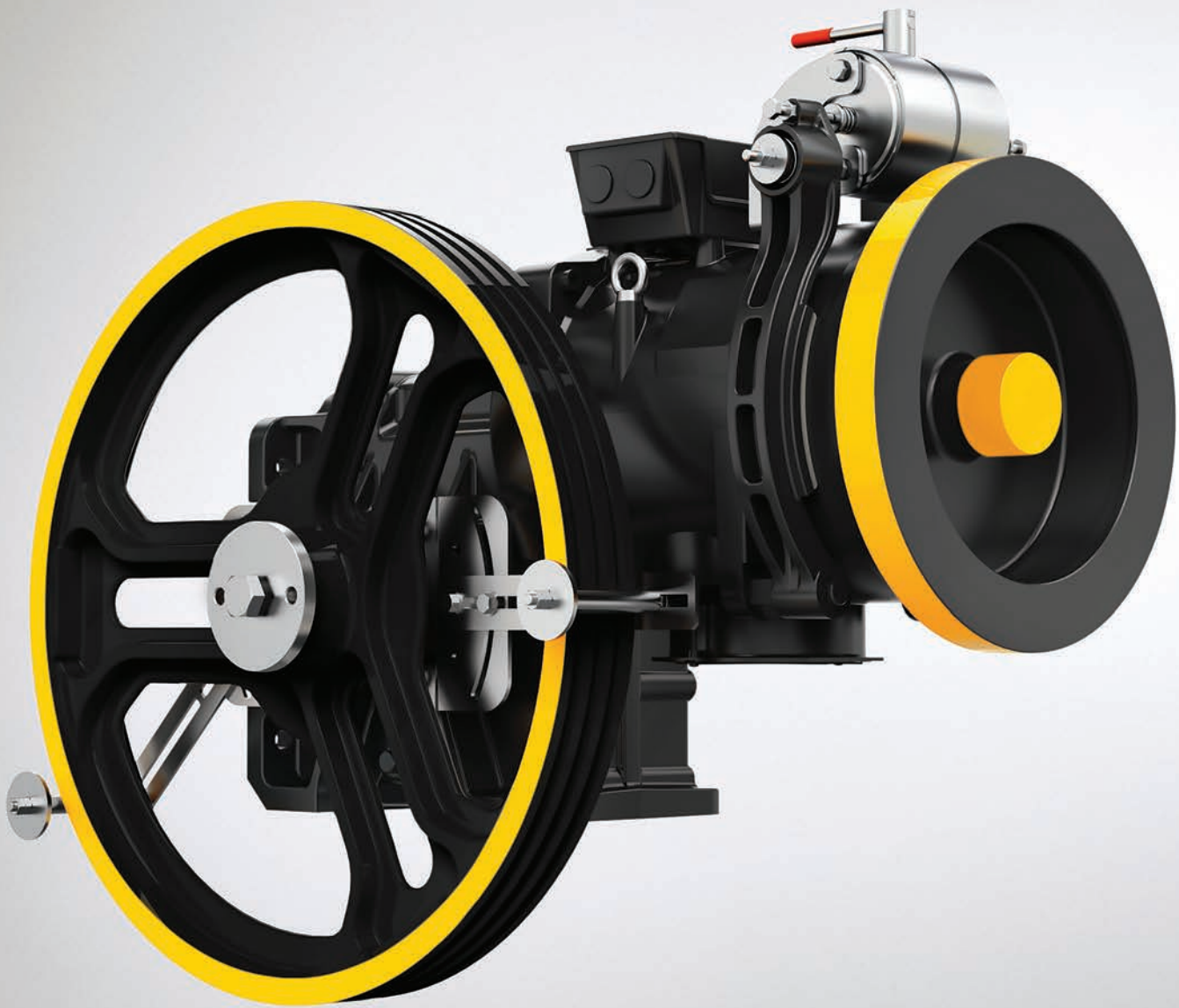
ENG

Understanding the market,
anticipating its needs,
making them ours and
building our projects on them.

Driving the future

Sicor S.R.L., founded in 1981 in Rovereto (TN) as a manufacturer of lifting machines for elevators. Always focused on the application, thanks to a constant process of research and development, Sicor S.R.L. has developed over the years a complete range of products, geared and gealress machines, fit to satisfy the many and varied needs of the market.

Design and production are carried out according to a tested Quality System which guarantees the reliability and performance of the machines.
Each produced motor is subjected to a rigorous final test and quality checks are carried out on all the components.
The test tower allows the verification of machines in the real operating environment of the final customer allowing a perfect set-up.
An innovative online product configurator allows to quickly identify the appropriate traction unit based on the main specifications of the lift system.
SICOR has also certified its quality system, its health and safety management system and its environmental management system according to the most important international standards.
The market needs new answers and Sicor offers them through a new vision, made up of agility, innovation, customer involvement and service quality.



INDEX

Features SH/MR series

Model	Power Range [50Hz] min - max	Power Range [60HZ] min - max	Max. Static Load	B	TS	LS	T
	[kW]	[kW]	[kN - kg]				
SH110B	2,7 ÷ 5,5	4 ÷ 6	20,6 - 2100	●	--	--	--
MR12C	2,7 ÷ 5,5	4 ÷ 6	25,5 - 2600	--	--	--	--
SH130	2,7 ÷ 7,5	4 ÷ 8,2	25,5 - 2600	●	--	--	--
SH130G	5,5 ÷ 7,5	6 ÷ 8,2	28,5 - 2900	●	--	--	--
SH140	2,6 ÷ 12	3 ÷ 12	34,3 [TS] - 3500 [TS]	●	--	--	●
SH160	5,1 ÷ 20	5,5 ÷ 18	42,2 - 4300	●	--	●	●
SH190	4,2 ÷ 30	4,7 ÷ 33	58,9 [TS] - 6000 [TS]	●	--	--	o
MR21	7,5 ÷ 30	8,2 ÷ 33	72,6 [TS] - 7400 [TS]	●	●	--	--
MR26	11 ÷ 43	11 ÷ 47	80,2 [TS] - 8175 [TS]	●	●	--	--
MR35	20 ÷ 90	22 ÷ 100	139,3 - 14200	--	●	--	--

● Available. ○ On request. **--** Not available. **B** Slow shaft brake. **TS** Third support. **LS** Long shaft. **T** Drum.

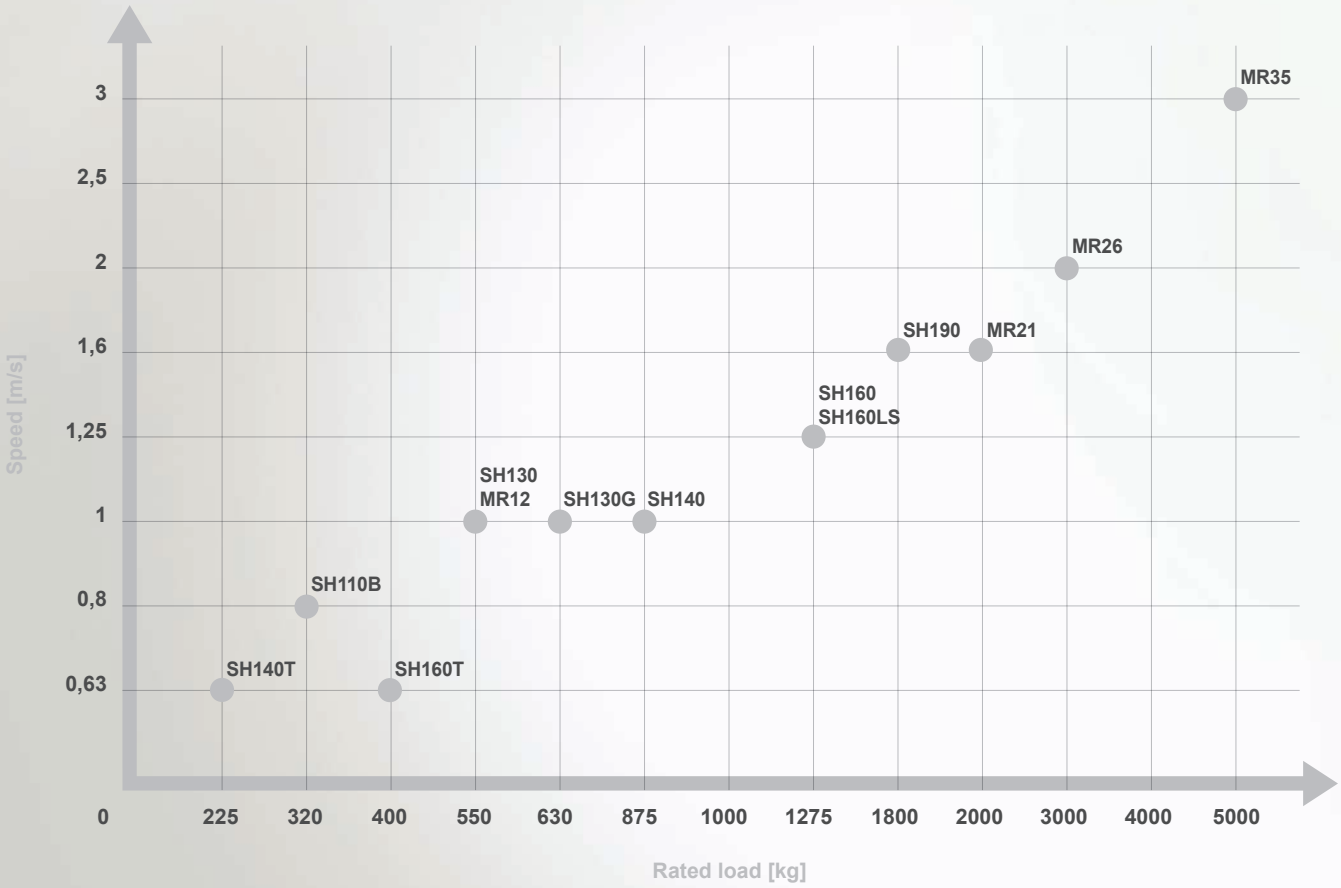
Sicor machines meet the requirements of the following Directives/Standards:
2006/42/CE, 2014/33/UE, 2014/30/UE, EN 81-20, EN 81-50, UNI EN 12100,

- Working process with CNC flexible machinery system. The components are tested with Zeiss three-dimensional testing machines.
- Final running-tests concerning vibrations, noise a.s.o. are carried out on 100% of geared machine production.
- Sicor geared machine, properly installed, ensure a smooth quite operation and are largely complying with the maximum noise levels established by the VDI 2566.
- Cast iron EN-GJS-700-2-UNI EN 1563 with hardness over 250HB is used for traction sheaves.
- Twin-Brakes with mechanically independent action.
- Synthetic oil is used for each model.
- The standard motors used are of italian production, insulation class F , degree of protection IP21 , forced ventilation 180 St/h and 240 St/h high efficiency duty cycle 60%.
- Standardized machine frames with/without deflection pulley, with vibration dampers are available.
- Geared machine can be supplied equipped with Encoder, Tachometer, standard safety protections and safety slow shaft brake.
- Each geared machine is complete with the “Operation and Maintenance Manual”. The “Certificate of Conformity” is supplied on demand.
- The high quality of both the geared machine projects criteria and the material used guarantee the long life of Sicor hoisting machines.

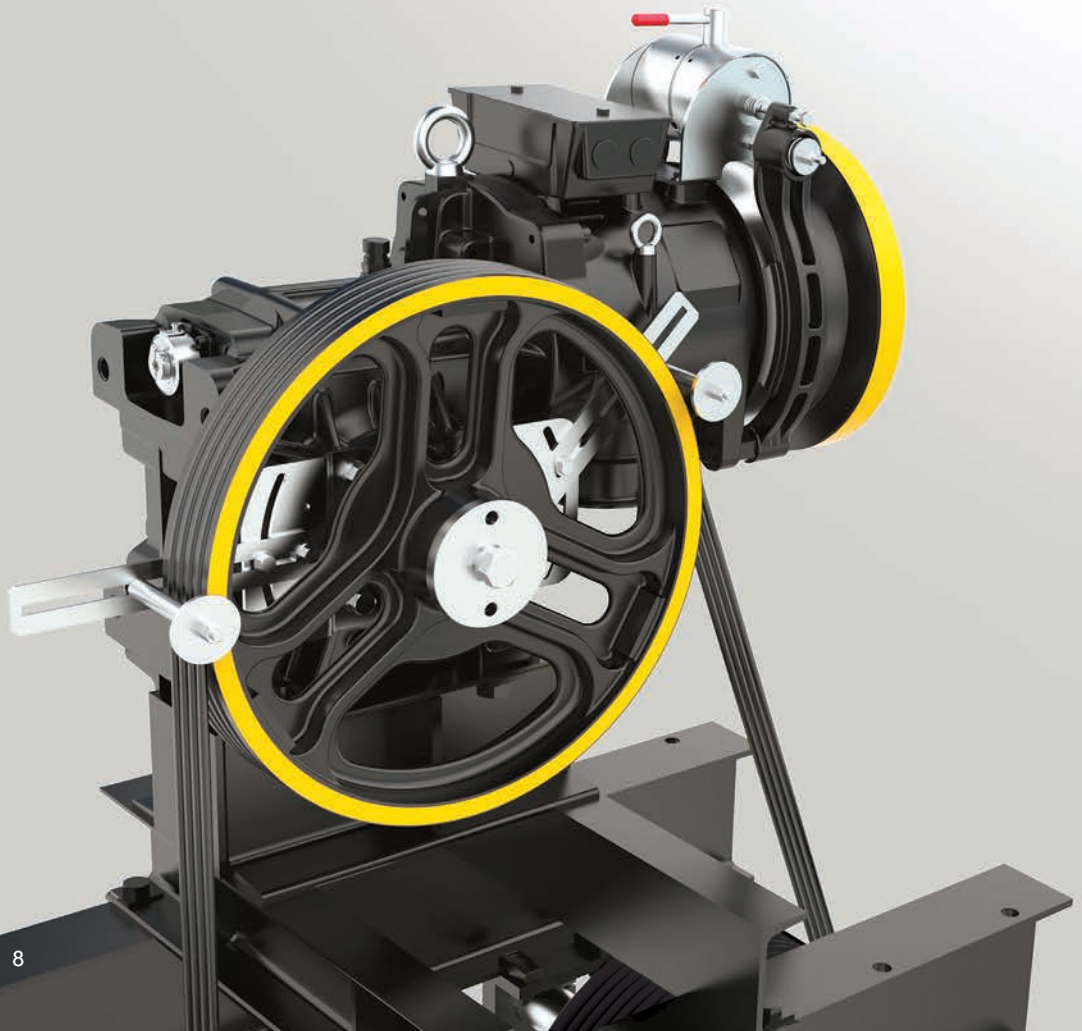
For further information, please refer to the technical catalogue. Our Sales Dept. is at your disposition for any information you may need.


CAUTION
OIL INSIDE
SHELL OMALA S4 WE 220

Performance



The production range of Sicor geared machines covers rated loads up to 5.500kg in roping 1:1, speeds of up to 4m/s with traction sheaves from 320 to 885mm.
Numerous special versions and options are available on request.

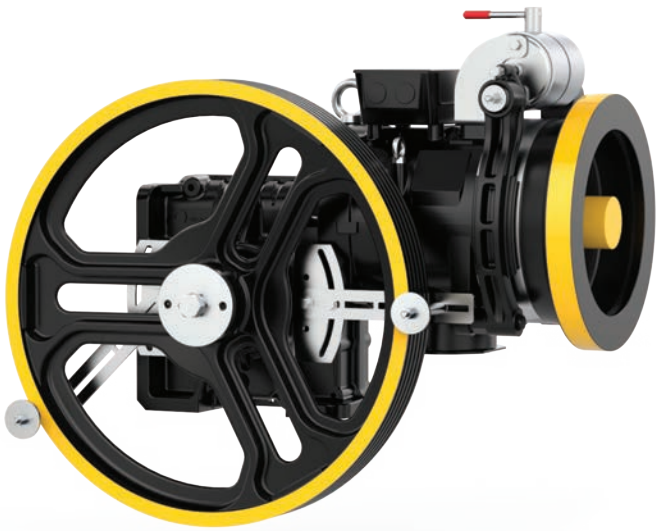


Product range

Roping 1 : 1

Model	For rated loads up to	Speed range synchronous		Traction sheaves diameter	Max Static Load
	[kg]	50Hz [m/s]	60Hz [m/s]	[mm]	[kN-kg]
SH110B 	**400**	0,30 ... 2,19	0,37 ... 2,63	320,360,400,450,480, 520,550,600	20,6 - 2100
MR12C 	**550**	0,34 ... 2,19	0,62 ... 2,63	340,420,440, 480,550,600	25,5 - 2600
SH130 	**550**	0,32 ... 3,51	0,39 ... 4,21	320,360,400,450,480, 520,550,600,650,700	25,5 -2600
SH130G 	**630**	0,72 ... 1,17	0,87 ... 1,40	480,520,550	28,4 - 2900
SH140 	**875**	0,25 ... 3,01	0,31 ... 3,61	360,400,450,480, 520,560,600	32,4 - 3300 34,3 - 3500 (TS)
SH140T 	**225**	0,60	--	400	--
SH160 	**1250**	0,43 ... 4,02	0,51 ... 4,83	450,520,560, 600,650,700	42,2 - 4300
SH160LS 	**1250**	0,43 ... 4,02	0,51 ... 4,83	450,520,560, 600,650,700	42,2 - 4300
SH160T 	**400**	0,63	--	400	--
SH190 	**1800**	0,44 ... 3,76	0,53 ... 4,51	520,600,650,690,750	51 - 5200 58,9 - 6000 (TS)
MR21 	**2000**	0,44 ... 3,76	0,53 ... 4,51	520,600,650,690,750	55 - 5600 72,6 - 7400 (TS)
MR26 	**3000**	0,41 ... 3,43	0,49 ... 4,11	560,600,650, 690,750,800	64,7 - 6600 80,2 - 8175 (TS)
MR35 	**5500**	0,62 ... 3,93	0,75 ... 4,72	690,770,800,885	139,3 - 14200

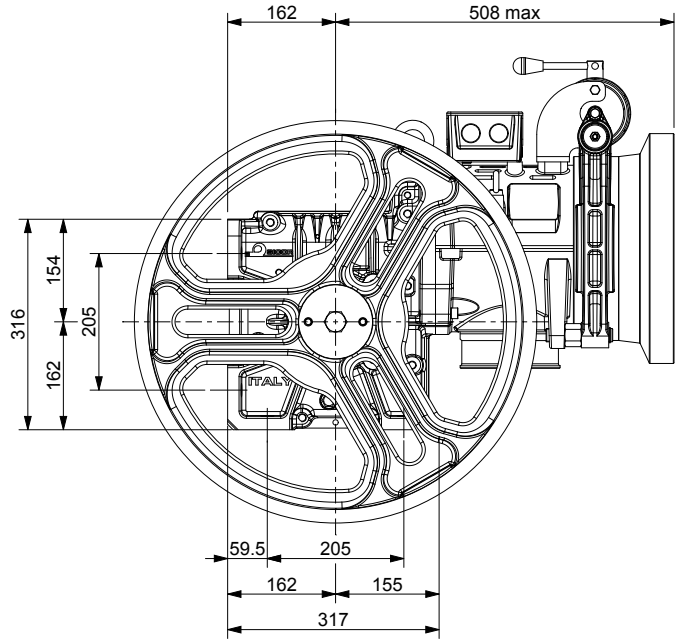
GEARED SH110B

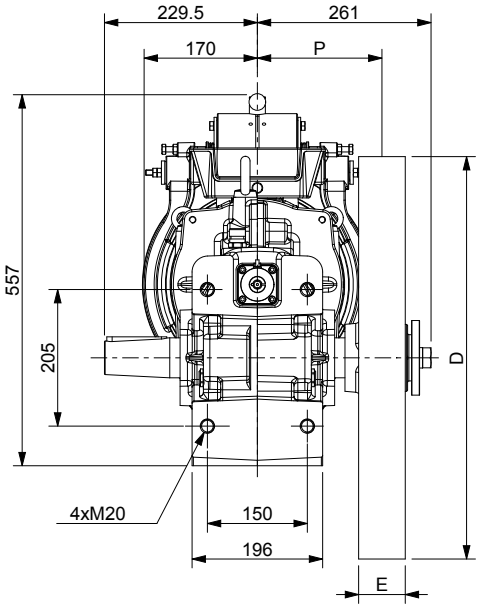


Max. Static Load SH110B	**20,6 kN - 2100 kg**
Power Range 50 Hz 4 poles VVVF	**4 ÷ 5,5 kW**
Power Range 50 Hz 4/16 poles	**4 kW**
Power Range 50 Hz 6 poles VVVF	**2,7 ÷ 3,6 kW**
Power Range 50 Hz 6/16 poles	**2,7 kW**
Power Range 60 Hz 4 poles VVVF	**4,4 ÷ 6 kW**
Power Range 60 Hz 4/16 poles	**4,4 kW**
Power Range 60 Hz 6 poles VVVF	**4 kW**
Ratio	**1/55; 1/43; 2/43; 2/55**
Geared Weight SH110B	**200 kg**
Oil capability	**2,9 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

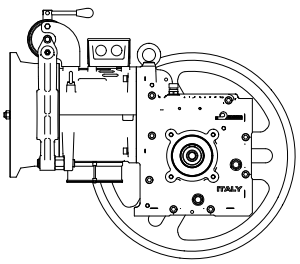
DIMENSIONS



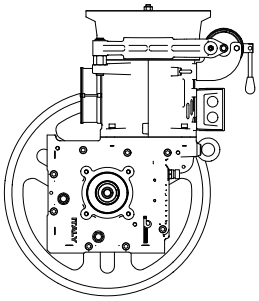


Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
CSW	320	76	190	20,6 - 2100	100% / 100% 100% / 100%
	360	70	187		
	400				
	450				
	480				
	520				
	550				
	600				

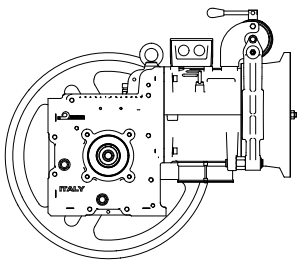
*) Max. static load on the slow shaft: CSW:Conventional single wrap



horizontal lh



vertical



horizontal rh

Brake Electromagnet		
[V]	[A]	[W]
24	5,25	126
48	2,30	110
60	1,77	106
80	1,50	120
110	1,02	112
200	0,63	126

DUTY TABLE

Roping 1:1

		50Hz			60Hz			50Hz			60Hz	
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles			**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles			**VVVF 1000 rpm** 6 Poles **AC2 1000/375 rpm** 6/16 Poles			**VVVF 1200 rpm** 6 Poles	
		Motor Output **[kW]** Asynchronous										
			VVVF/AC2 **4**	VVVF **5,5**		VVVF/AC2 **4,4**	VVVF **6**		VVVF/AC2 **2,7**	VVVF **3,6**		VVVF **4**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load		Speed syn.	Max Rated Load		Speed syn.	Max Rated Load		Speed syn.	Max Rated Load
[i]	[mm]	[m/s]	[kg]	[kg]	[m/s]	[kg]	[kg]	[m/s]	[kg]	[kg]	[m/s]	[kg]
1/55	320	0,46	650	--	0,55	650	--	0,30	650	--	0,37	650
1/55	360	0,51	620	--	0,62	620	--	0,34	620	--	0,41	620
1/55	400	0,57	555	--	0,69	555	--	0,38	555	--	0,46	555
1/43	320	0,58	650	--	0,70	650	--	0,39	650	--	0,47	650
1/55	450	0,64	495	--	0,77	495	--	0,43	495	--	0,51	495
1/43	360	0,66	635	--	0,79	630	635	0,44	650	--	0,53	650
1/55	480	0,69	465	--	0,82	465	--	0,46	465	--	0,55	465
1/43	400	0,73	575	--	0,88	565	575	0,49	615	--	0,58	615
1/55	520	0,74	430	--	0,89	430	--	0,50	430	--	0,59	430
1/55	550	0,79	405	--	0,94	405	--	0,52	405	--	0,63	405
1/43	450	0,82	510	--	0,99	505	510	0,55	545	--	0,66	545
1/55	600	0,86	370	--	1,03	370	--	0,57	370	--	0,69	370
1/43	480	0,88	480	--	1,05	470	480	0,58	510	--	0,70	510
2/55	320	0,91	535	650	1,10	485	650	0,61	540	650	0,73	650
1/43	520	0,95	440	--	1,14	435	440	0,63	475	--	0,76	475
1/43	550	1,00	420	--	1,21	410	420	0,67	445	--	0,80	445
2/55	360	1,03	475	610	1,23	430	610	0,69	480	610	0,82	610
1/43	600	1,10	385	--	1,32	375	385	0,73	410	--	0,88	410
2/55	400	1,14	425	550	1,37	385	550	0,76	435	550	0,91	550
2/43	320	1,17	430	605	1,40	385	540	0,78	435	595	0,94	540
2/55	450	1,29	380	490	1,54	345	485	0,86	385	490	1,03	485
2/43	360	1,32	380	535	1,58	345	480	0,88	385	525	1,05	480
2/55	480	1,37	355	460	1,65	320	455	0,91	360	460	1,10	455
2/43	400	1,46	340	485	1,75	310	435	0,97	345	475	1,17	435
2/55	520	1,49	330	425	1,78	295	420	0,99	330	425	1,19	420
2/55	550	1,57	310	400	1,88	280	400	1,05	315	400	1,26	400
2/43	450	1,64	305	430	1,97	275	385	1,10	305	420	1,32	385
2/55	600	1,71	285	365	2,06	255	365	1,14	290	365	1,37	365
2/43	480	1,75	285	400	2,10	255	360	1,17	290	395	1,40	360
2/43	520	1,90	260	370	2,28	235	335	1,27	265	365	1,52	335
2/43	550	2,01	250	350	2,41	225	315	1,34	250	345	1,61	315
2/43	600	2,19	225	320	2,63	205	290	1,46	230	315	1,75	290

	50Hz			60Hz			50Hz			60Hz	
	Motor Output **[kW]**										
		VVVF/AC2 **4**	VVVF **5,5**		VVVF/AC2 **4,4**	VVVF **6**		VVVF/AC2 **2,7**	VVVF **3,6**		VVVF **4**
R.R.	Max Output Torque	Geared Efficiency		Max Output Torque	Geared Efficiency		Max Output Torque	Geared Efficiency		Max Output Torque	Geared Efficiency
[i]	[Nm]			[Nm]			[Nm]			[Nm]	
1/55	680	0,71	--	680	0,70	--	680	0,70	--	680	0,72
1/43	700	0,73	0,75	700	0,73	0,75	750	0,73	0,75	750	0,74
2/55	670	0,79	0,81	670	0,78	0,81	670	0,79	0,81	670	0,81
2/43	700	0,81	0,83	700	0,80	0,82	740	0,81	0,83	740	0,82

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

ELECTRIC MOTOR DATA

		50Hz					
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles			**VVVF 1000 rpm** 6 Poles **AC2 1000/375 rpm** 6/16 Poles		
		Asynchronous Rated Power **[kW]**					
		VVVF **4**	VVVF **5,5**	AC2 **4**	VVVF **2,7**	VVVF **3,6**	AC2 **2,7**
		Motor Parameters					
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500/375	1000	1000	1000/375
Asynchronous Speed	[rpm]	1423	1424	1359/276	955	962	893/268
Rated Current (2)	[A]	9,4	12,4	11,3/11,1	8,4	10,9	10,9/11,5
Rated Torque	[Nm]	26,8	36,9	28,1	27	35,7	28,9
Cos φ Power Factor	[ ]	0,76	0,78	0,64	0,61	0,62	0,52
Starting Current	[A]	41	51	39	30	43	29
Starting Torque	[Nm]	54	78	79	46	80	69
Duty Cycle	[%]	60	60	30+10	60	60	30+10
Starts per Hour	[s/h]	240	240	180	240	240	180
Insulation Class	[ ]	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	--	--	--	--	--	--

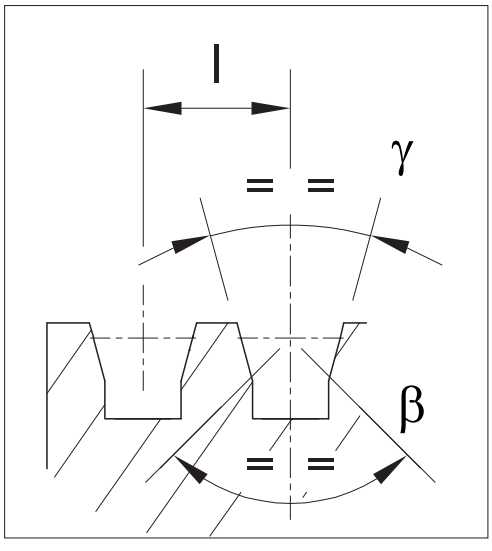
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

		60Hz			
		VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles			**VVVF 1200 rpm** 6 Poles
		Asynchronous Rated Power **[kW]**			
		VVVF **4,4**	VVVF **6**	AC2 **4,4**	VVVF **4**
		Motor Parameters			
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400
Frequency	[Hz]	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800/450	1200
Asynchronous Speed	[rpm]	1714	1708	1606/330	1138
Rated Current (2)	[A]	10,2	15,2	11,8/10	12,4
Rated Torque	[Nm]	24,5	33,5	26,2	33,6
Cos φ Power Factor	[ ]	0,75	0,7	0,63	0,6
Starting Current	[A]	48	70	39	49
Starting Torque	[Nm]	44	70	64	62
Duty Cycle	[%]	60	60	30+10	60
Starts per Hour	[s/h]	240	240	180	240
Insulation Class	[ ]	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21

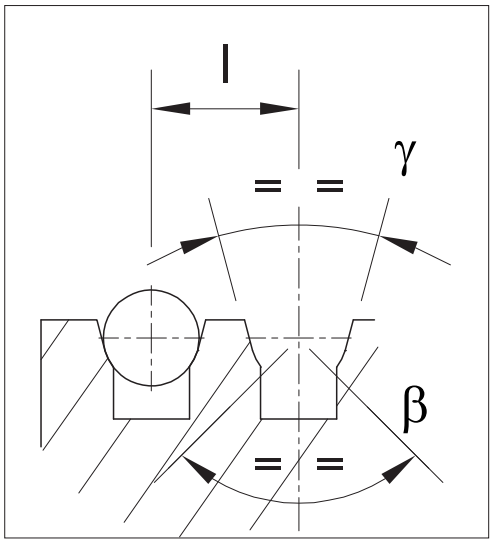
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
CSW	320	76	5xD8	14
	360	70	5xD8	14
	360	70	4xD9	17
	400	70	5xD8	14
	400	70	4xD9	17
	400	70	4xD10	17
	450	70	5xD8	14
	450	70	4xD9	17
	450	70	4xD10	17
	450	70	4xD11	17
	480	70	5xD8	14
	480	70	4xD9	17
	480	70	4xD10	17
	480	70	4xD11	17
	480	70	3xD12	19
	520	70	5xD8	14
	520	70	4xD9	17
	520	70	4xD10	17
	520	70	4xD11	17
	520	70	3xD12	19
	520	70	3xD13	19
	550	70	5xD8	14
	550	70	4xD9	17
	550	70	4xD10	17
	550	70	4xD11	17
	550	70	3xD12	19
	550	70	3xD13	19
	600	70	5xD8	14
	600	70	4xD9	17
	600	70	4xD10	17
	600	70	4xD11	17
	600	70	3xD12	19
	600	70	3xD13	19



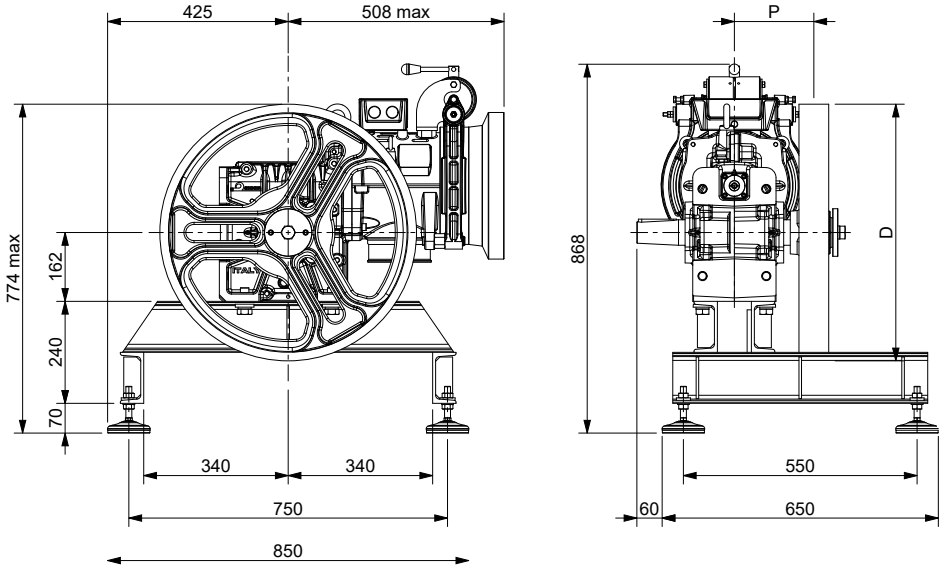
V grooves with undercut



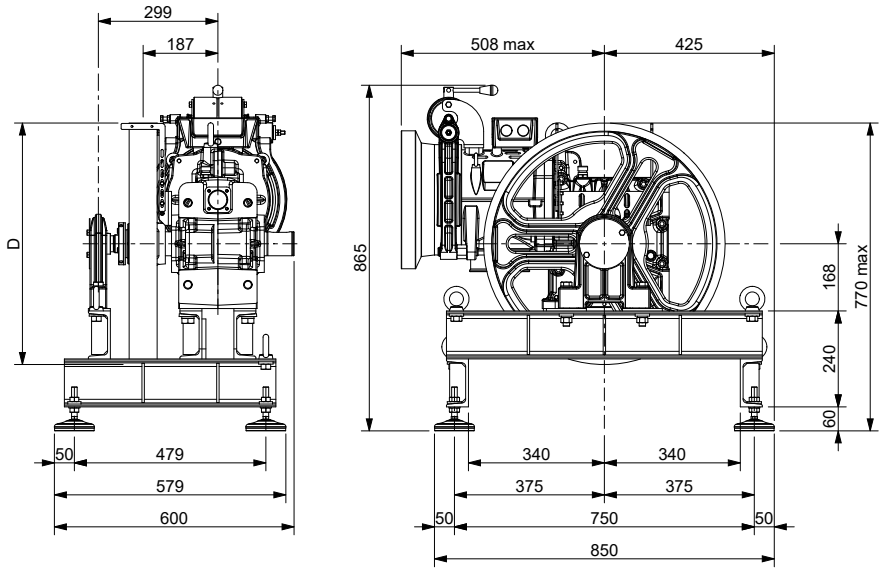
U grooves with undercut

γ = *groove angle*
β = *Undercut angle*

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WRAPPING

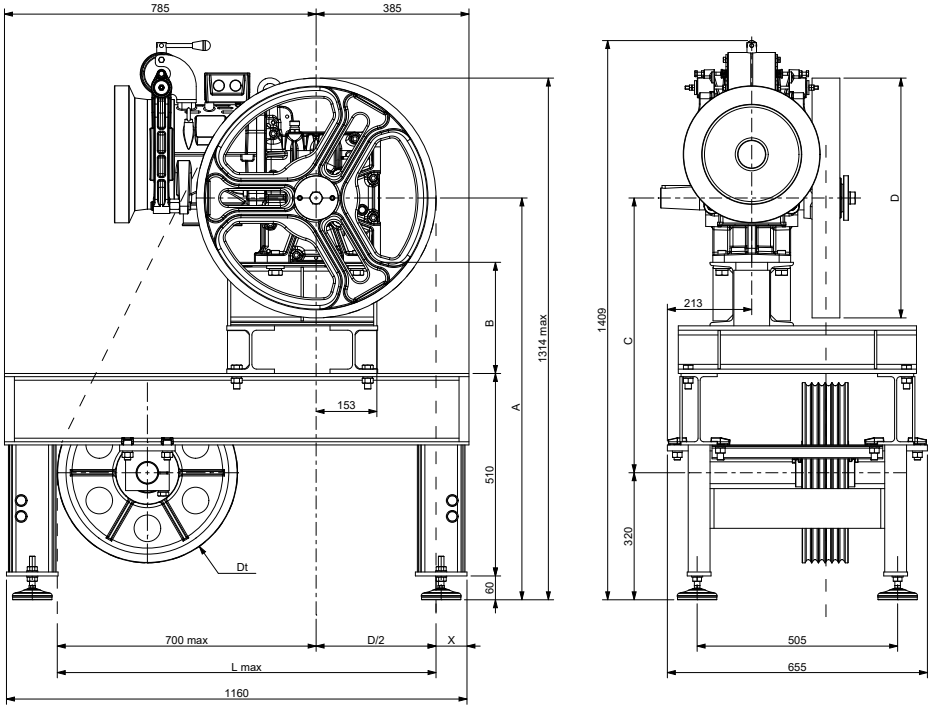


XTE0456 (included vibration dampers)
Weight of machine bedplate: 49 kg
(bedplate + vibration dampers)



XTE2091 (included vibration dampers)
Weight of machine bedplate: 60 kg
(bedplate + vibration dampers)

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WRAPPING

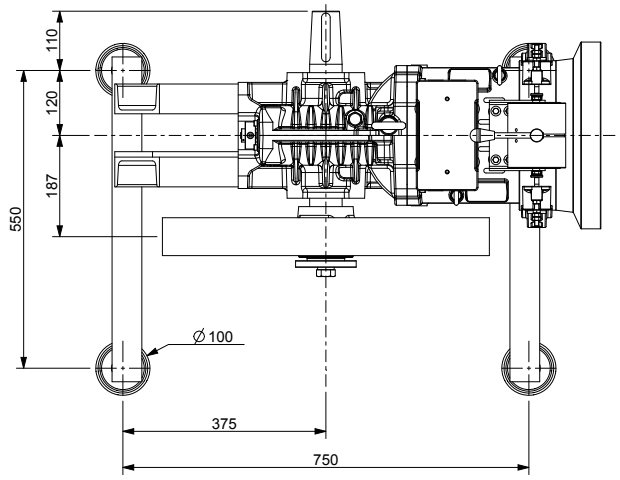


Diverting Pulley	A	B	C
Dt [mm]			
400	1012	280	692
450	1012	280	692
520	1032	300	712

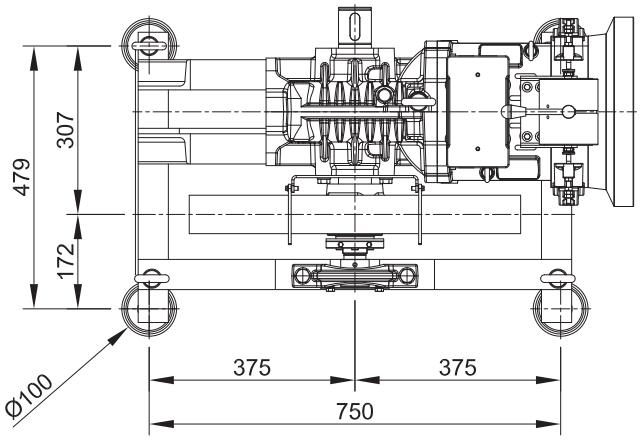
Traction Sheave	X	L max
D [mm]	[mm]	[mm]
360	200	880
400	180	900
450	155	925
480	140	940
520	120	960
550	105	975
600	80	1000

XTE0516 (Dt 520)–**XTE0517** (Dt 400-450)
(included vibration dampers)
Weight of machine bedplate: (XTE0516) 163 kg,
(XTE0517) 153Kg (bedplate + diverting pulley +
vibration dampers)

VIBRATIONS DAMPER SET UP FOR MACHINE BEDPLATE XTE0456

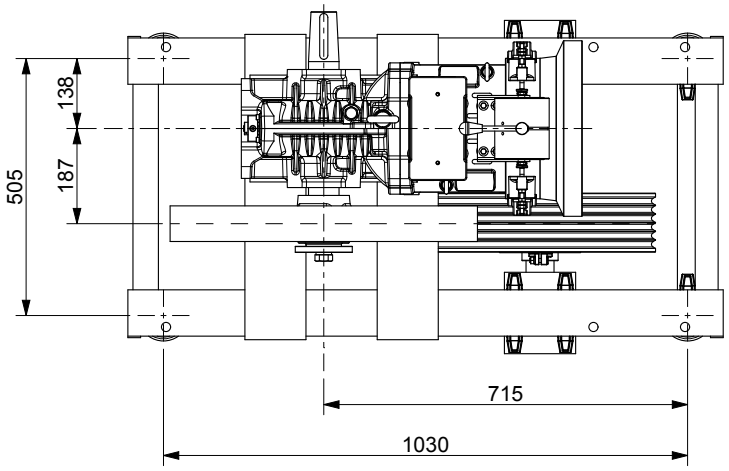


Damper code **TAI0110**
Dimension [mm] **D.100 x 28**



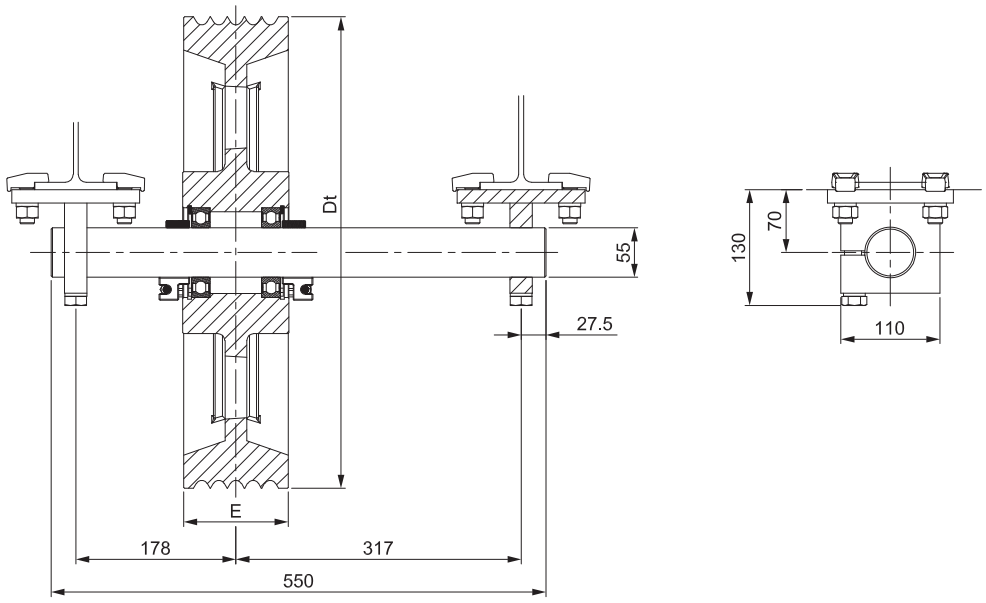
Damper code **TAI0110**
Dimension [mm] **D.100 x 28**

VIBRATIONS DAMPER SET UP



Damper code **TAI0110**
Dimension [mm] **D.100 x 28**

DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER

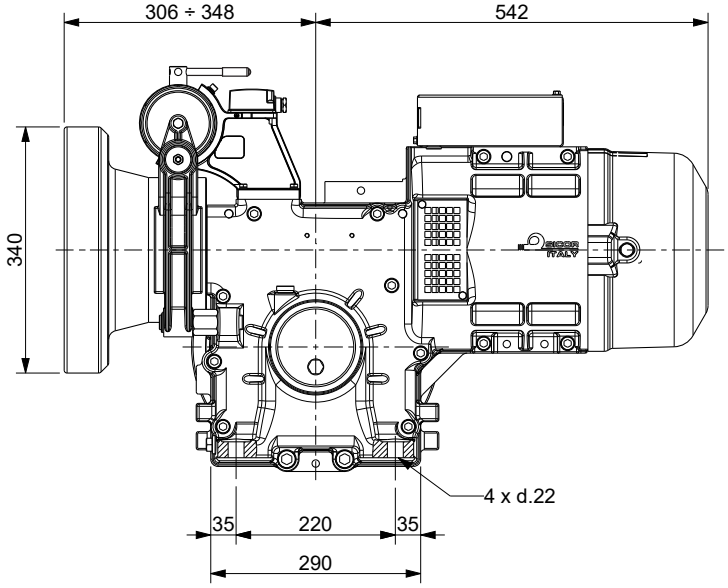


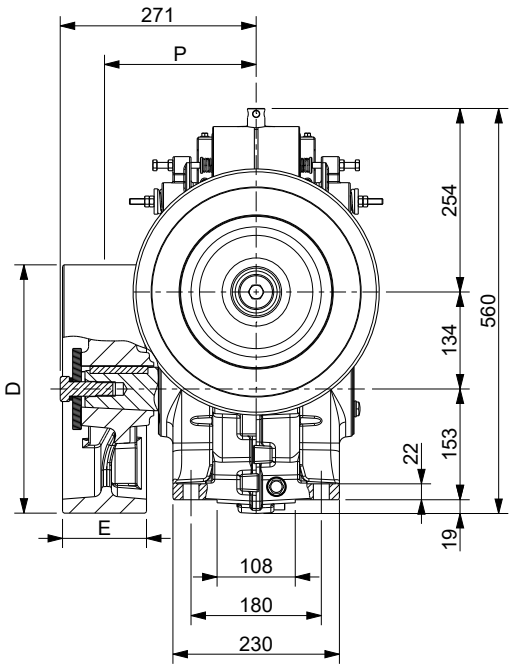
Diverting Pulley		Max n°Grooves x D	Grooves Pitch
Dt [mm]	E [mm]	n° x mm	l [mm]
400	116	7xD8	14
450	116	6xD9	17
		6xD10	17
		6xD11	17
520	116	5xD12	19
		5xD13	19

Max. Static Load	**25,5 kN - 2600 kg**
Power Range 50 Hz 4 poles VVVF	**4 ÷ 6,7 kW**
Power Range 50 Hz 4/16 poles	**4 ÷ 5,5 kW**
Power Range 50 Hz 6 poles VVVF	**2,7 ÷ 3,6 kW**
Power Range 50 Hz 6/16 poles	**2,7 ÷ 3,6 kW**
Power Range 60 Hz 4 poles VVVF	**4,4 ÷ 6 kW**
Power Range 60 Hz 4/16 poles	**4,4 ÷ 6 kW**
Power Range 60 Hz 6 poles VVVF	**4 kW**
Power Range 60 Hz 6/16 poles	**4 kW**
Ratio	**1/52; 1/45; 1/43; 2/53; 2/43**
Geared Weight	**240 kg**
Oil capability	**3,8 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Rh**

The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS





Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
ESW	340	116	210	22	↓ 100%
CSW	340	76	195	25,5 - 2600	100% ↑ 100% ← → 100% ↓ 100%
	340	100	202	24,7 - 2500	
	420	68	197	25,5 - 2600	
	440	68	197	25,5 - 2600	
	440	76	201	24,1 - 2450	
	480	78	202	25,5 - 2600	
	550	68	197	25,5 - 2600	
	550	76	204	23,3 - 2375	
	550	83	204	23,3 - 2375	
	600	68	232	17,7 - 1800	

Brake Electromagnet		
[V]	[A]	[W]
24	5,25	126
48	2,30	110
60	1,77	106
80	1,50	120
110	1,02	112
200	0,63	126

*) Max. static load on the slow shaft:
CSW: Conventional single wrap.
ESW: Extended single wrap (patented).

DUTY TABLE

Roping 1:1

				50Hz				60Hz		
				VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles				**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles		
				Motor Output **[kW]** Asynchronous						
					VVVF/AC2 **4**	VVVF/AC2 **5,5**	VVVF **6,7**		VVVF/AC2 **4,4**	VVVF/AC2 **6**
Wrapping system		R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load			Speed syn.	Max Rated Load	
CSW	ESW	[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]
X	X	1/52	340	0,51	750	--	--	0,62	750	--
X	X	1/45	340	0,59	750	--	--	0,71	705	750
X	X	1/43	340	0,62	715	750	--	0,75	655	750
X	--	1/52	420	0,63	700	750	--	0,76	640	750
X	--	1/52	440	0,66	670	725	--	0,80	610	725
X	--	1/52	480	0,72	630	660	--	0,87	575	660
X	--	1/45	420	0,73	625	750	--	0,88	570	690
X	--	1/43	420	0,77	580	745	--	0,92	530	745
X	--	1/45	440	0,77	595	725	--	0,92	545	655
X	--	1/43	440	0,80	555	710	--	0,96	505	710
X	--	1/52	550	0,83	550	580	--	1,00	500	580
X	--	1/45	480	0,84	585	665	--	1,01	530	600
X	--	1/43	480	0,88	520	650	--	1,05	475	650
X	--	1/52	600	0,91	530	--	--	1,09	500	530
X	--	1/45	550	0,96	510	580	--	1,15	465	525
X	--	1/43	550	1,00	490	570	--	1,21	445	570
X	X	2/53	340	1,01	485	690	750	1,21	440	625
X	--	1/45	600	1,05	475	530	--	1,26	435	480
X	--	1/43	600	1,10	455	520	--	1,32	415	520
X	X	2/43	340	1,24	395	560	710	1,49	360	510
X	--	2/53	420	1,24	400	570	660	1,49	365	515
X	--	2/53	440	1,30	375	535	630	1,56	340	485
X	--	2/53	480	1,42	350	500	580	1,71	320	450
X	--	2/43	420	1,53	295	460	575	1,84	295	420
X	--	2/43	440	1,61	280	400	550	1,93	260	365
X	--	2/53	550	1,63	280	395	505	1,96	255	360
X	--	2/43	480	1,75	260	365	505	2,10	235	335
X	--	2/53	600	1,78	255	360	465	2,13	235	330
X	--	2/43	550	2,01	225	320	440	2,41	205	290
X	--	2/43	600	2,19	205	295	400	2,63	190	270

	50Hz				60Hz		
	Motor Output **[kW]**						
		VVVF/AC2 **4**	VVVF/AC2 **5,5**	VVVF **6,7**		VVVF/AC2 **4,4**	VVVF/AC2 **6**
R.R.	Max Output Torque	Geared Efficiency			Max Output Torque	Geared Efficiency	
[i]	[Nm]				[Nm]		
1/52	978	0,72	--	--	978	0,72	--
1/45	980	0,74	0,76	--	980	0,73	--
1/43	963	0,74	0,76	0,78	963	0,74	0,76
2/53	856	0,79	0,82	0,83	856	0,79	0,82
2/43	895	0,81	0,83	0,85	895	0,80	0,83

Rated load values listed in the table include the weight of the ropes. To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top. Counterweight = 50%. Plant efficiency = 0,80

50Hz			60Hz	
VVVF 1000 rpm 6 Poles **AC2 1000/250 rpm** 6/24 Poles			**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles	
Motor Output **[kW]** Asynchronous				
	VVVF/AC2 **2,7**	VVVF **3,6**		VVVF/AC2 **4**
Speed syn.	Max Rated Load		Speed syn.	Max Rated Load
[m/s]	[kg]	[kg]	[m/s]	[kg]
0,34	750	--	0,41	750
0,40	750	--	0,47	750
0,41	725	750	0,50	750
0,42	710	750	0,51	750
0,44	675	750	0,53	750
0,48	640	720	0,58	725
0,49	630	750	0,59	750
0,51	585	750	0,61	745
0,51	605	750	0,61	750
0,54	560	750	0,64	710
0,55	555	630	0,66	635
0,56	595	730	0,67	735
0,58	530	730	0,70	670
0,60	560	575	0,72	580
0,64	520	640	0,77	645
0,67	495	650	0,80	625
0,67	495	680	0,81	625
0,70	485	585	0,84	590
0,73	460	595	0,88	585
0,83	400	550	0,99	505
0,83	405	560	1,00	515
0,87	380	525	1,04	480
0,95	355	490	1,14	450
1,02	330	455	1,23	415
1,07	285	395	1,29	365
1,09	280	390	1,30	355
1,17	260	360	1,40	330
1,19	260	355	1,42	325
1,34	230	315	1,61	290
1,46	210	290	1,75	265

50Hz			60Hz	
Motor Output **[kW]**				
	VVVF/AC2 **2,7**	VVVF **3,6**		VVVF/AC2 **4**
Max Output Torque	Geared Efficiency		Max Output Torque	Geared Efficiency
[Nm]			[Nm]	
1065	0,72	--	1065	0,74
1080	0,74	0,76	1080	0,76
1102	0,74	0,76	1102	0,76
992	0,79	0,82	992	0,81
1036	0,81	0,83	1036	0,83

ELECTRIC MOTOR DATA

		50Hz								
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles					**VVVF 1000 rpm** 6 Poles **AC2 1000/375 rpm** 6/16 Poles			
		Asynchronous Rated Power **[kW]**								
		VVVF **4**	VVVF **5,5**	VVVF **6,7**	AC2 **4**	AC2 **5,5**	VVVF **2,7**	VVVF **3,6**	AC2 **2,7**	AC2 **3,6**
		Motor Parameters								
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500/375	1500/375	1000	1000	1000/375	1000/375
Asynchronous Speed	[rpm]	1379	1368	1440	1359/276	1359/280	912	920	893/268	917/270
Rated Current (2)	[A]	10,4	15,2	16,5	12,7/11,4	15/15,5	8,8	11,5	10,9/11,5	15/12,4
Rated Torque	[Nm]	27,7	38,4	44,4	28,1	38,7	28,3	37,5	28,9	37,2
Cos φ Power Factor	[ ]	0,72	0,69	0,69	0,77	0,69	0,6	0,67	0,65	0,5
Starting Current	[A]	42	58	95	39	52	29	38	29	39
Starting Torque	[Nm]	73	114	115	79	94	77	111	69	98
Duty Cycle	[%]	40	40	40	30+10	30+10	40	40	30+10	30+10
Starts per Hour	[s/h]	240	240	240	180	180	240	240	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
Phase Resistance 4/6 poles at 20°C	$R_{4/6}$[Ω]	1,4	0,88	--	1,5	1,2	1,9	1,3	2,1	1,4
Phase Resistance 16 poles at 20°C	R_{16}[Ω]	--	--	--	7,5	4	--	--	5,6	4,8

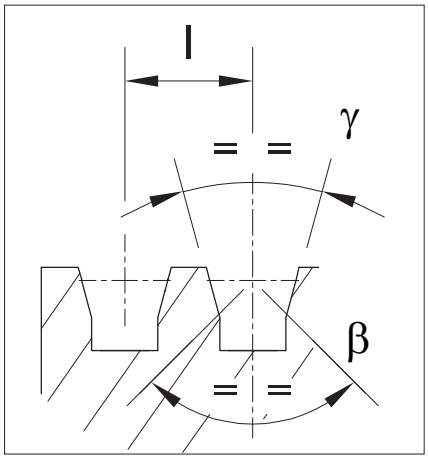
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

		60Hz					
		VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles				**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles	
		Asynchronous Rated Power **[kW]**					
		VVVF **4,4**	VVVF **6**	AC2 **4,4**	AC2 **6**	VVVF **4**	AC2 **4**
		Motor Parameters					
Rated Voltage (star connection) (1) (3)	[V]	380	400	400	400	400	380
Frequency	[Hz]	60	60	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800/450	1800/450	1200	1200/450
Asynchronous Speed	[rpm]	1630	1660	1606/330	1680/380	1100	1096/318
Rated Current (2)	[A]	11	15,2	11,8/10	18/14	20	13,2/10,4
Rated Torque	[Nm]	25,8	34,5	26,2	34,1	34,7	34,8
Cos φ Power Factor	[ ]	0,81	0,81	0,63	0,78	0,67	0,58
Starting Current	[A]	42	52	39	48	42	35
Starting Torque	[Nm]	65	113	64	74	73	57
Duty Cycle	[%]	40	40	30+10	30+10	40	30+10
Starts per Hour	[s/h]	240	240	180	180	240	180
Insulation Class	[ ]	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21
Phase Resistance 4/6 poles at 20°C	$R_{4/6}$[Ω]	0,98	0,57	--	0,9	1,62	--
Phase Resistance 16 poles at 20°C	R_{16}[Ω]	--	--	--	--	--	--

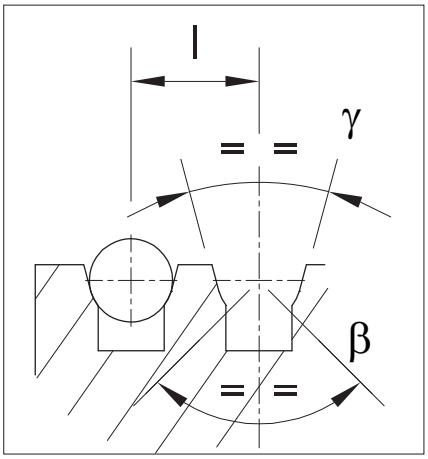
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Winding System	Traction sheave		Max n°Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
ESW	340	116	6xD8	20
CSW	340	76	6xD8	12
	340	100	8xD8	12
	420	68	5xD8	12
	420	68	4xD9	16
	420	68	4xD10	16
	440	68	5xD8	12
	440	68	4xD9	16
	440	68	4xD10	16
	440	68	3xD11	18
	440	76	6xD8	12
	440	76	4xD9	16
	440	76	4xD10	16
	440	76	4xD11	18
	480	78	6xD8	12
	480	78	4xD9	16
	480	78	4xD10	16
	480	78	4xD11	18
	480	78	4xD12	18
	550	68	5xD8	12
	550	68	4xD9	16
	550	68	4xD10	16
	550	68	3xD11	18
	550	68	3xD12	18
	550	68	3xD13	19
	550	76	6xD8	12
	550	76	4xD9	16
	550	76	4xD10	16
	550	76	4xD11	18
	550	76	3xD12	18
	550	76	3xD13	19
	550	83	6xD8	12
	550	83	5xD9	16
	550	83	4xD10	16
	550	83	4xD11	18
	550	83	4xD12	18
	550	83	4xD13	19
	600	68	5xD8	12
	600	68	4xD9	16
	600	68	4xD10	16
	600	68	3xD11	18
	600	68	3xD12	18
	600	68	3xD13	19



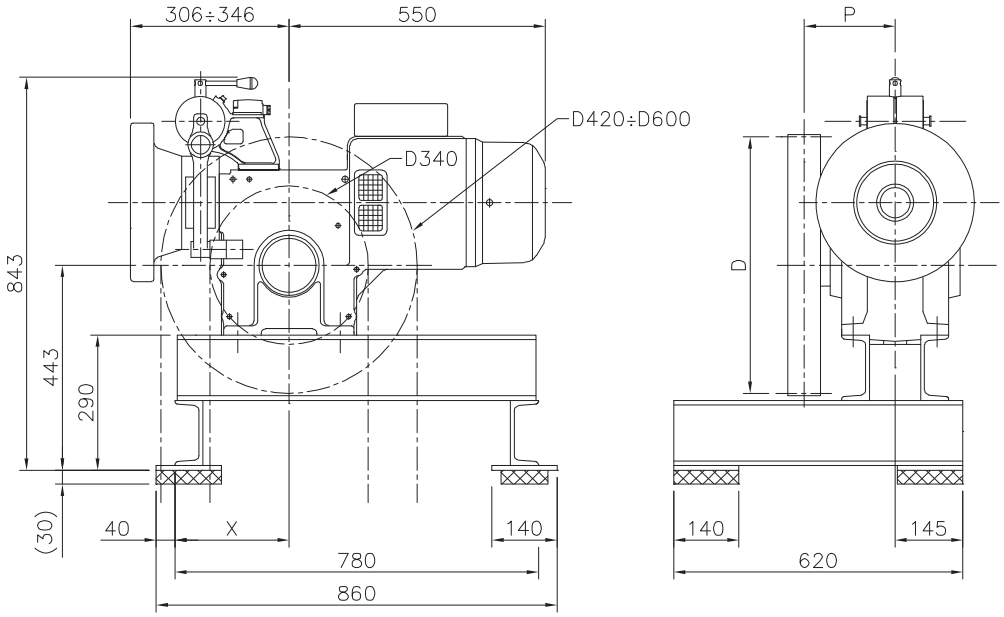
V grooves with undercut



U grooves with undercut

γ = *groove angle*
β = *Undercut angle*

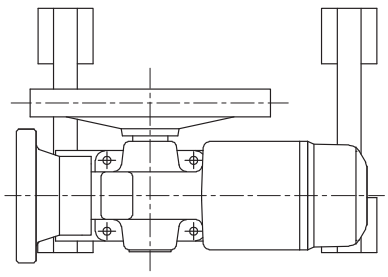
BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WRAPPING



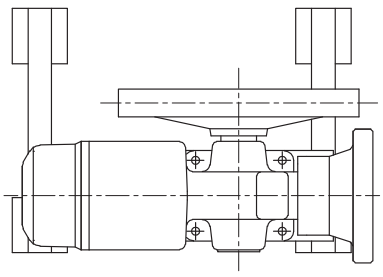
Code	Traction Sheave	P	X
	D [mm]	[mm]	[mm]
XTE0053 (included vibration dampers)	340	195 - 210	245
	420	197	180
	440	197 - 201	180
	480	202	180
	550	197 - 204	245
	600	232	245

Weight of machine bedplate: 60 kg (bedplate + vibration dampers)

INSTALLATION POSITION

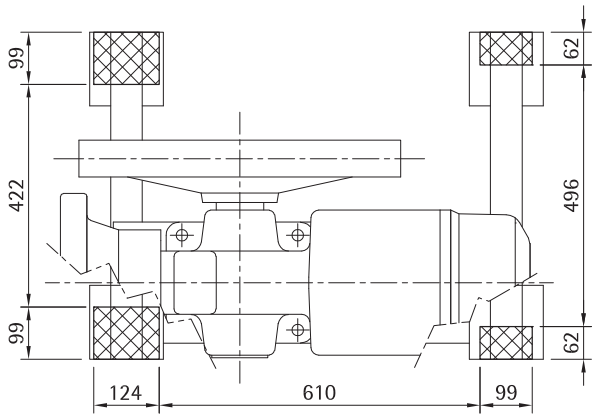


Right hand Machine



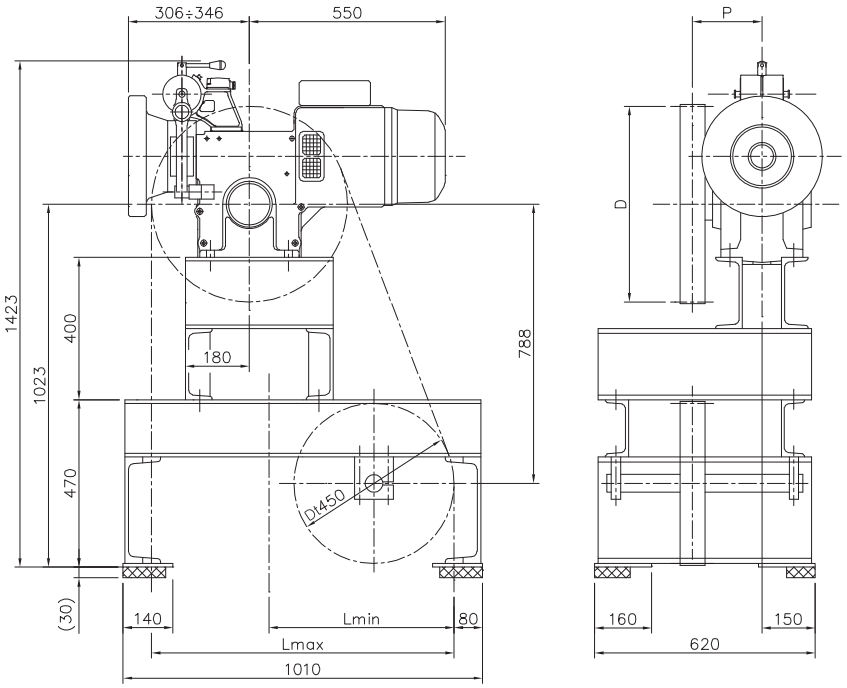
Left hand Machine

VIBRATIONS DAMPER SET UP



Damper code	Dimension
	[mm]
TAI0033	62x99xh30
TAI0017	99x124xh30

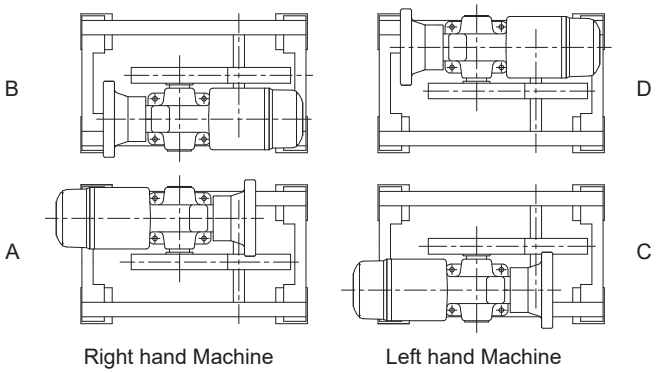
BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WRAPPING



Code	Traction Sheave	P	L min	L max	Ø Div. Pulley shaft
	D [mm]	[mm]	[mm]	[mm]	[mm]
XTE0055	420	197	520	850	50
	440	197 - 201	520		
	480	202	--		
	550	197 - 204	--		
	600	232	--		
XTE0056	420	197	520	850	55
	440	197 - 201	520		
	480	202	--		
	550	197 - 204	--		
	600	232	--		

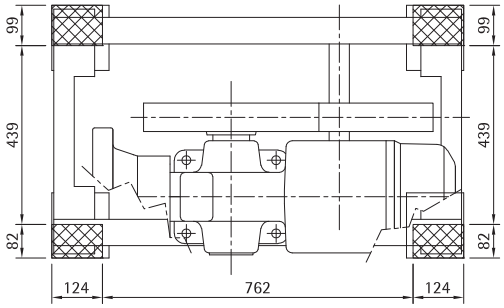
Weight of machine bedplate: 195 kg. (bedplate + diverting pulley Dt450 + vibration dampers)

INSTALLATION POSITION



Right hand Machine Left hand Machine

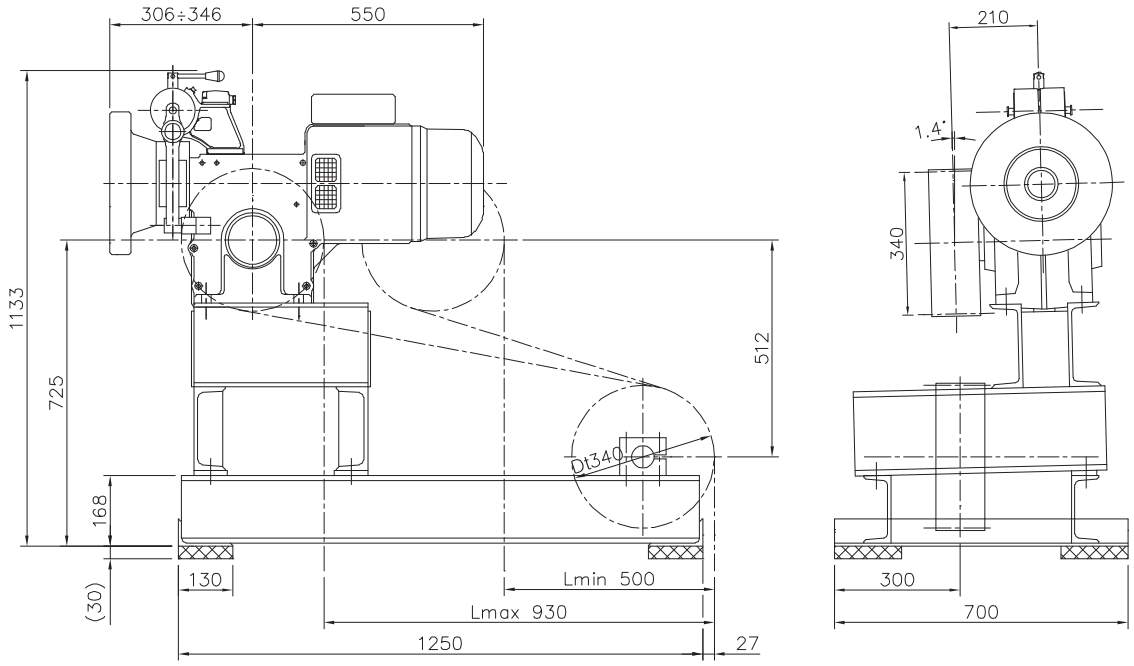
VIBRATIONS DAMPER SET UP



Damper code	Dimension
	[mm]
TAI0016	82x124xh30
TAI0017	99x124xh30

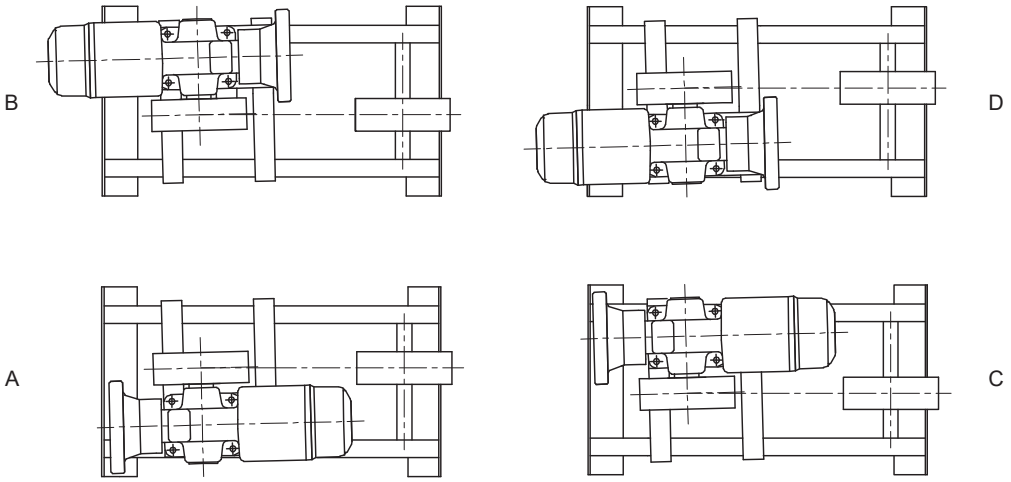
BEDPLATE | TOP MACHINE WITH Dt 340 DIVERTING PULLEY FOR ESW WINDING

Roping 1:1



XTE0057 (included vibration dampers)
Weight of machine bedplate: 150 kg
(bedplate + diverting pulley Dt340 + vibration dampers)

INSTALLATION POSITION

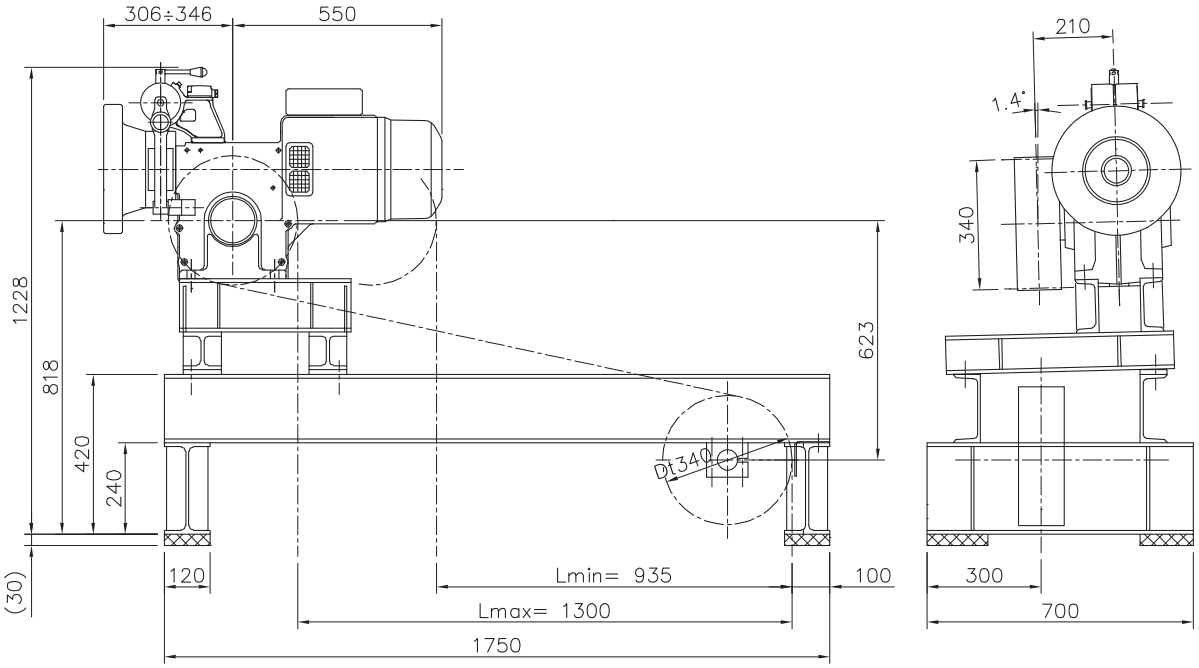


Right hand Machine

Left hand Machine

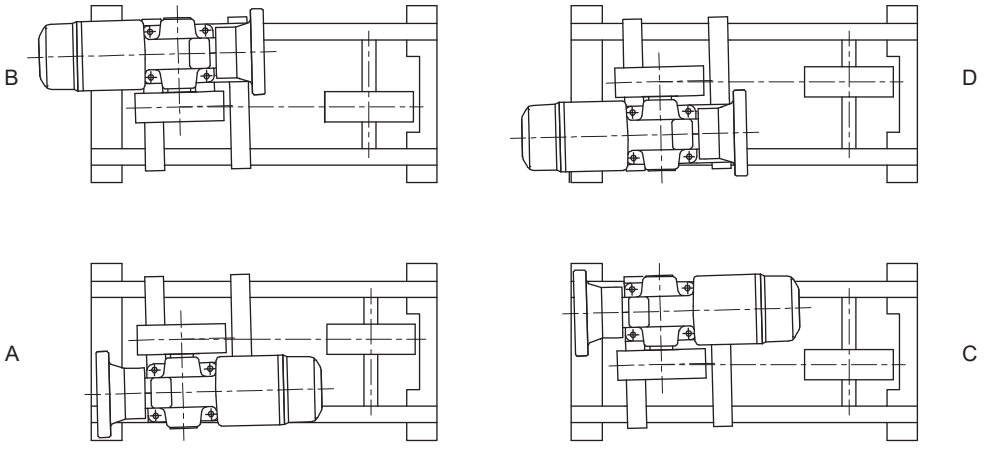
BEDPLATE | MACHINE FOR SIDE DRIVE LIFT WITH Dt 340 DIVERTING PULLEY

Roping 1:1



XTE0058 (included vibration dampers)
Weight of machine bedplate: 160 kg
(bedplate + diverting pulley Dt340 + vibration dampers)

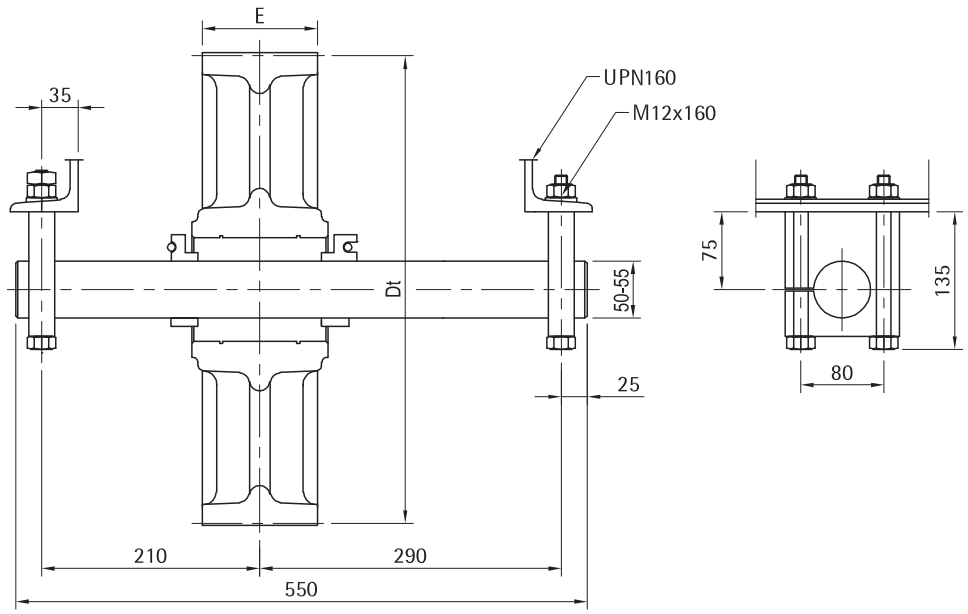
INSTALLATION POSITION



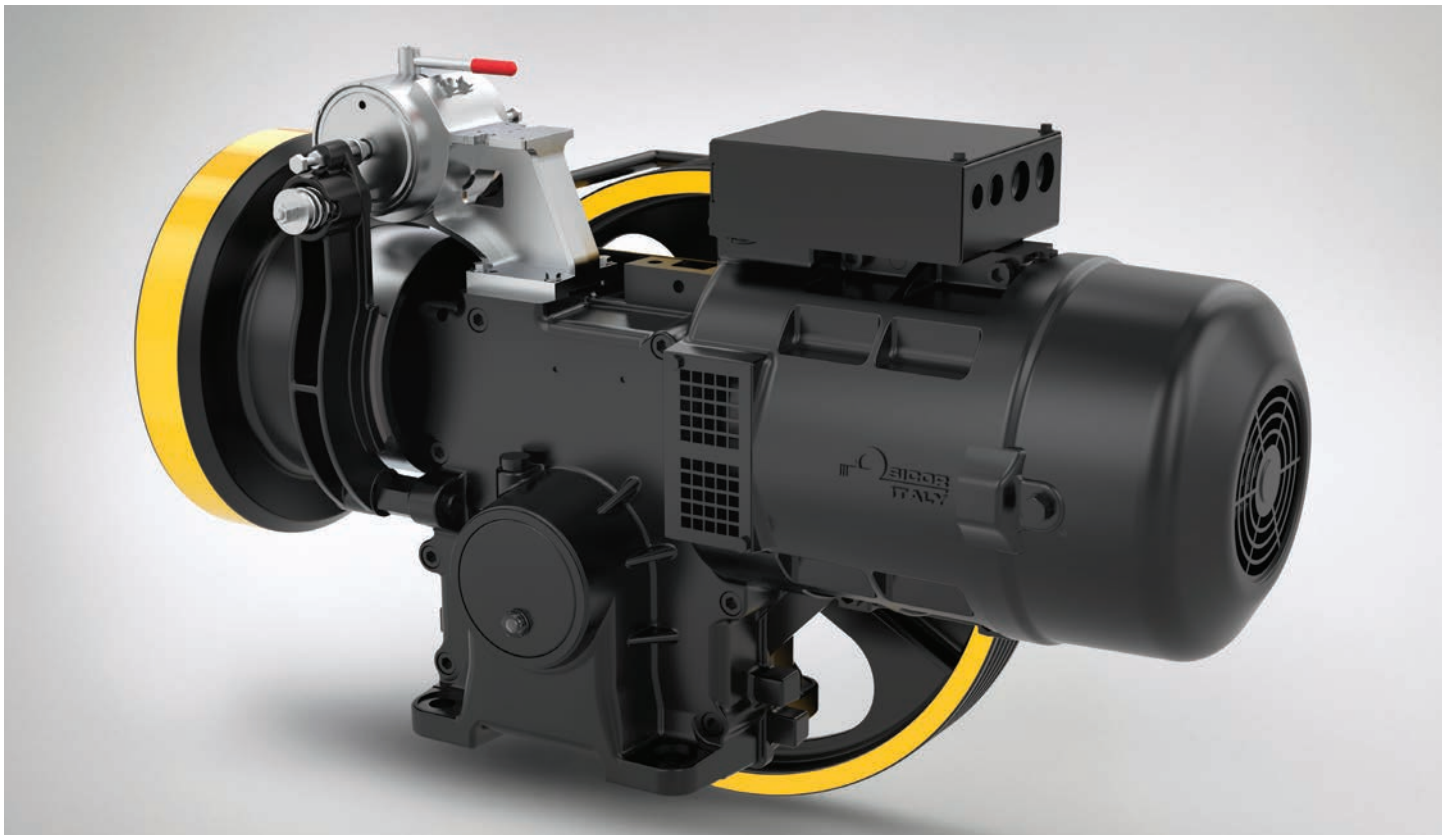
Right hand Machine

Left hand Machine

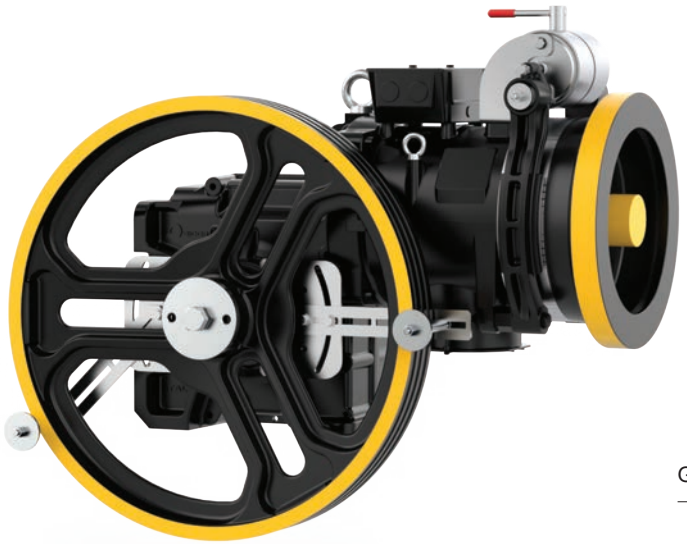
DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER



Diverting Pulley		Max n° Grooves x D	Grooves Pitch
Dt [mm]	E [mm]	n° x mm	l [mm]
340	80	6xD8	12
	120	6xD8	20
		8xD8	12
450	74	6xD8	12
	90	5xD9	16
		5xD10	16
		5xD11	16
		4xD11	18
		4xD12	18
530	90	3xD13	19



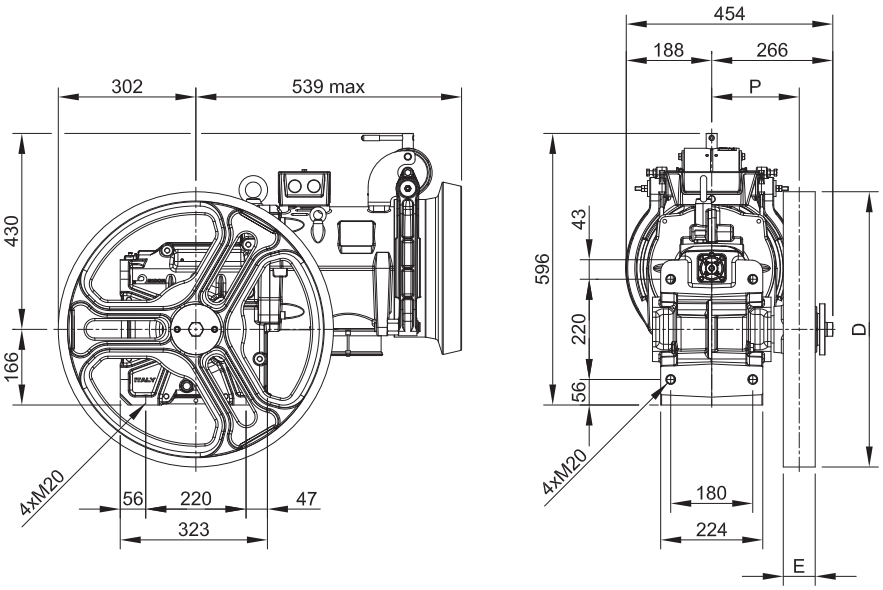
GEARED SH130



Max. Static Load SH130	**25,5 kN - 2600 kg**
Power Range 50 Hz 4 poles VVVF	**4 ÷ 7,5 kW**
Power Range 50 Hz 4/16 poles	**4 ÷ 5,5 kW**
Power Range 50 Hz 6 poles VVVF	**2,7 ÷ 4,2 kW**
Power Range 50 Hz 6/16 poles	**2,7 ÷ 3,6 kW**
Power Range 60 Hz 4 poles VVVF	**4,4 ÷ 8,2 kW**
Power Range 60 Hz 4/16 poles	**4,4 ÷ 6 kW**
Power Range 60 Hz 6 poles VVVF	**4 ÷ 4,7 kW**
Power Range 60 Hz 6/16 poles	**4 kW**
Ratio	**1/52; 1/45; 1/43; 1/37; 2/53; 2/43; 3/47**
Geared Weight SH130	**250 kg**
Geared WeightSH130TS	**260 kg**
Oil capability	**3,7 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

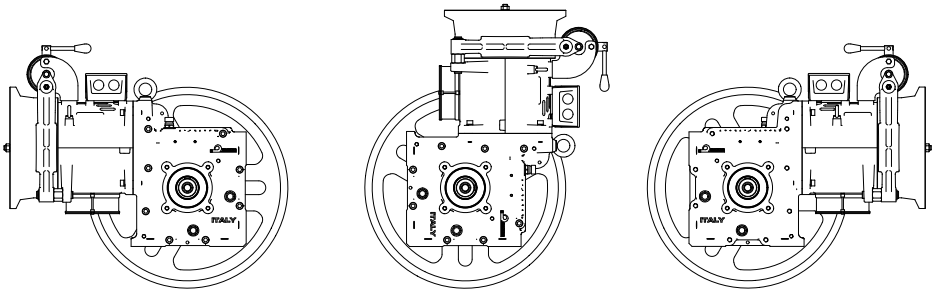
The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS



Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
CSW	320	76	195	25,5 - 2600	100% / 100% 100% / 100%
	360	70	192	25,5 - 2600	
	400				
	450				
	480	70/90	192/197	25,5 - 2600/23,5 - 2400	
	520	70/90	192/197	25,5 - 2600/23,5 - 2400	
	550	70/90	192/197	25,5 - 2600/23,5 - 2400	
	600	70	192	25,5 - 2600	
	650				
	700				

*) Max. static load on the slow shaft: CSW: Conventional single wrap



horizontal lh | vertical | horizontal rh

Brake Electromagnet		
[V]	[A]	[W]
24	5,25	126
48	2,30	110
60	1,77	106
80	1,50	120
110	1,02	112
200	0,63	126

DUTY TABLE
Roping 1:1

		50Hz				60Hz				50Hz				60Hz		
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles				**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles				**VVVF 1000 rpm** 6 Poles **AC2 1000/375 rpm** 6/16 Poles				**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles		
		Motor Output **[kW]** Asynchronous														
			VVVF/AC2 **4**	VVVF/AC2 **5,5**	VVVF **7,5**		VVVF/AC2 **4,4**	VVVF/AC2 **6**	VVVF **8,2**		VVVF/AC2 **2,7**	VVVF/AC2 **3,6**	VVVF **4,2**		VVVF/AC2 **4**	VVVF **4,7**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load			Speed syn.	Max Rated Load			Speed syn.	Max Rated Load			Speed syn.	Max Rated Load	
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]
1/52	320	0,48	750	--	--	0,58	750	--	--	0,32	750	--	--	0,39	750	--
1/52	360	0,54	750	--	--	0,65	750	--	--	0,36	750	--	--	0,43	750	--
1/45	320	0,56	750	--	--	0,67	750	--	--	0,37	750	--	--	0,45	750	--
1/43	320	0,58	750	--	--	0,70	715	750	--	0,39	750	--	--	0,47	750	--
1/52	400	0,60	740	750	--	0,72	675	750	--	0,40	745	750	--	0,48	750	--
1/45	360	0,63	735	750	--	0,75	665	750	--	0,42	735	750	--	0,50	750	--
1/43	360	0,66	700	750	--	0,79	635	750	--	0,44	705	750	--	0,53	750	--
1/37	320	0,68	695	750	--	0,82	630	750	--	0,45	700	750	--	0,54	750	--
1/52	450	0,68	660	715	--	0,82	600	695	--	0,45	660	750	--	0,54	750	--
1/45	400	0,70	660	750	--	0,84	600	725	--	0,47	660	750	--	0,56	750	--
1/52	480	0,72	620	670	--	0,87	560	650	--	0,48	620	750	--	0,58	740	--
1/43	400	0,73	630	750	--	0,88	570	725	--	0,49	635	750	--	0,58	750	--
1/37	360	0,76	615	750	--	0,92	560	750	--	0,51	620	750	--	0,61	750	--
1/52	520	0,79	570	620	--	0,94	530	645	--	0,52	570	695	--	0,63	680	--
1/45	450	0,79	585	710	--	0,94	520	600	--	0,52	585	750	--	0,63	750	--
1/43	450	0,82	560	710	--	0,99	505	645	--	0,55	565	750	--	0,66	715	750
1/52	550	0,83	540	585	--	1,00	490	565	--	0,55	540	655	--	0,66	645	--
1/45	480	0,84	550	665	--	1,01	500	600	--	0,56	550	750	--	0,67	700	730
1/37	400	0,85	555	750	--	1,02	505	705	--	0,57	560	750	--	0,68	705	750
1/43	480	0,88	525	665	--	1,05	475	600	--	0,58	530	730	750	0,70	670	730
1/52	600	0,91	495	535	--	1,09	450	520	--	0,60	495	600	--	0,72	590	--
1/45	520	0,91	505	610	--	1,09	460	555	--	0,61	510	700	--	0,73	645	675
2/53	320	0,95	520	740	750	1,14	470	665	750	0,63	525	720	750	0,76	665	750
1/43	520	0,95	485	610	--	1,14	440	555	--	0,63	485	670	700	0,76	620	675
1/37	450	0,96	490	695	--	1,15	445	630	--	0,64	495	685	750	0,76	630	750
1/45	550	0,96	480	580	--	1,15	435	525	--	0,64	480	660	--	0,77	610	640
1/52	650	0,98	455	495	--	1,18	415	480	--	0,65	455	555	--	0,79	545	--
1/43	550	1,00	460	580	--	1,21	415	525	--	0,67	460	635	660	0,80	585	640
1/37	480	1,02	460	650	--	1,22	420	590	--	0,68	465	640	745	0,82	590	705
1/45	600	1,05	440	530	--	1,26	400	480	--	0,70	440	605	--	0,84	560	585
1/52	700	1,06	425	460	--	1,27	385	445	--	0,70	425	515	--	0,85	505	--
2/53	360	1,07	460	660	750	1,28	415	590	750	0,71	465	640	750	0,85	590	705
1/43	600	1,10	420	530	--	1,32	380	480	--	0,73	420	580	605	0,88	535	585
1/37	520	1,10	425	600	--	1,32	385	545	--	0,74	430	590	690	0,88	545	650
1/45	650	1,13	405	490	--	1,36	370	445	--	0,76	405	560	--	0,91	515	540
1/37	550	1,17	400	565	--	1,40	365	515	--	0,78	405	560	650	0,93	515	615
2/43	320	1,17	430	610	750	1,40	385	550	750	0,78	435	595	705	0,94	545	655
2/53	400	1,19	415	590	750	1,42	375	530	730	0,79	420	575	680	0,95	530	635
1/43	650	1,19	385	490	--	1,42	350	445	--	0,79	390	535	560	0,95	495	540
1/45	700	1,22	375	455	--	1,47	340	410	--	0,81	375	520	--	0,98	480	500
1/37	600	1,27	370	520	--	1,53	335	470	--	0,85	370	510	595	1,02	470	560
1/43	700	1,28	360	455	--	1,53	325	410	--	0,85	360	500	520	1,02	460	500
2/43	360	1,32	380	545	750	1,58	345	490	685	0,88	385	530	625	1,05	485	580
2/53	450	1,33	370	525	710	1,60	335	475	650	0,89	370	510	605	1,07	470	560
1/37	650	1,38	340	480	--	1,66	310	435	--	0,92	345	470	550	1,10	435	520

		50Hz				60Hz				50Hz				60Hz		
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles				**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles				**VVVF 1000 rpm** 6 Poles **AC2 1000/375 rpm** 6/16 Poles				**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles		
		Motor Output **[kW]** Asynchronous														
			VVF/AC2 **4**	VVF/AC2 **5,5**	VVVF **7,5**		VVF/AC2 **4,4**	VVF/AC2 **6**	VVVF **8,2**		VVF/AC2 **2,7**	VVF/AC2 **3,6**	VVVF **4,2**		VVF/AC2 **4**	VVVF **4,7**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load			Speed syn.	Max Rated Load			Speed syn.	Max Rated Load			Speed syn.	Max Rated Load	
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]
2/53	480	1,42	345	495	665	1,71	310	445	610	0,95	350	480	570	1,14	440	525
2/43	400	1,46	345	490	680	1,75	310	440	615	0,97	345	475	565	1,17	435	520
1/37	700	1,49	315	445	--	1,78	285	405	--	0,99	320	440	510	1,19	405	480
2/53	520	1,54	320	455	610	1,85	290	410	560	1,03	320	445	525	1,23	405	485
3/47	320	1,60	320	455	635	1,93	290	410	575	1,07	320	445	525	1,28	410	485
2/53	550	1,63	300	430	580	1,96	270	385	530	1,09	305	420	495	1,30	385	460
2/43	450	1,64	305	435	605	1,97	275	390	550	1,10	305	425	500	1,32	390	465
2/43	480	1,75	285	405	570	2,10	255	365	515	1,17	290	395	470	1,40	365	435
2/53	600	1,78	275	395	530	2,13	250	355	485	1,19	280	385	455	1,42	355	420
3/47	360	1,80	285	405	565	2,17	255	365	510	1,20	285	395	465	1,44	365	435
2/43	520	1,90	265	375	525	2,28	235	335	475	1,27	265	365	430	1,52	335	400
2/53	650	1,93	255	365	490	2,31	230	325	450	1,28	255	355	420	1,54	325	390
3/47	400	2,01	255	365	510	2,41	230	330	460	1,34	255	355	420	1,60	325	390
2/43	550	2,01	250	355	495	2,41	225	320	450	1,34	250	345	410	1,61	315	380
2/53	700	2,07	235	335	455	2,49	215	305	415	1,38	240	330	390	1,66	300	360
2/43	600	2,19	230	325	455	2,63	205	290	410	1,46	230	315	375	1,75	290	345
3/47	450	2,26	225	325	450	2,71	205	290	410	1,50	230	315	370	1,80	290	345
2/43	650	2,37	210	300	420	2,85	190	270	380	1,58	210	290	345	1,90	270	320
3/47	480	2,41	210	300	425	2,89	190	275	385	1,60	215	295	350	1,93	270	325
2/43	700	2,56	195	280	390	3,07	175	250	350	1,70	195	270	320	2,05	250	295
3/47	520	2,61	195	280	390	3,13	175	250	355	1,74	195	270	320	2,09	250	300
3/47	550	2,76	185	265	370	3,31	165	240	335	1,84	185	255	305	2,21	235	285
3/47	600	3,01	170	240	340	3,61	155	220	305	2,01	170	235	280	2,41	215	260
3/47	650	3,26	155	225	310	3,91	140	200	280	2,17	155	215	255	2,61	200	240
3/47	700	3,51	145	205	290	4,21	130	185	260	2,34	145	200	240	2,81	185	220

	50Hz				60Hz				50Hz				60Hz		
	Motor Output **[kW]**														
		VVF/AC2 **4**	VVF/AC2 **5,5**	VVVF **7,5**		VVF/AC2 **4,4**	VVF/AC2 **6**	VVVF **8,2**		VVF/AC2 **2,7**	VVF/AC2 **3,6**	VVVF **4,2**		VVF/AC2 **4**	VVVF **4,7**
R.R.	Max Output Torque	Geared Efficiency			Max Output Torque	Geared Efficiency			Max Output Torque	Geared Efficiency			Max Output Torque	Geared Efficiency	
[i]	[Nm]				[Nm]				[Nm]				[Nm]		
1/52	990	0,72	--	--	960	0,72	--	--	1110	0,72	--	--	1090	0,74	--
1/45	980	0,74	--	--	890	0,74	0,77	--	1120	0,74	--	--	1080	0,76	0,77
1/43	980	0,75	0,77	--	890	0,74	0,77	0,79	1120	0,74	0,76	--	1080	0,76	0,77
1/37	960	0,76	0,79	--	870	0,75	0,78	0,80	1100	0,76	0,78	0,79	1060	0,78	0,79
2/53	980	0,80	0,82	0,84	900	0,79	0,82	0,84	1060	0,79	0,82	0,83	1090	0,81	0,83
2/43	960	0,81	0,84	0,86	880	0,80	0,83	0,85	1100	0,81	0,83	0,84	1070	0,83	0,84
3/47	960	0,83	0,86	0,88	870	0,82	0,85	0,87	1100	0,83	0,85	0,86	1060	0,85	0,86

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

		50Hz									
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles					**VVVF 1000 rpm** 6 Poles **AC2 1000/375 rpm** 6/16 Poles				
		Asynchronous Rated Power **[kW]**									
		VVVF **4**	VVVF **5,5**	VVVF **7,5**	AC2 **4**	AC2 **5,5**	VVVF **2,7**	VVVF **3,6**	VVVF **4,2**	AC2 **2,7**	AC2 **3,6**
		Motor Parameters									
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500/375	1500/375	1000	1000	1000	1000/375	1000/375
Asynchronous Speed	[rpm]	1423	1424	1450	1359/276	1359/280	955	962	974	893/268	917/270
Rated Current (2)	[A]	9,4	12,4	17,8	11,3/11,1	15/15,5	8,4	10,9	14,1	10,9/11,5	15/12,4
Rated Torque	[Nm]	26,8	36,9	49,4	28,1	38,7	27	35,7	41,2	28,9	37,2
Cos φ Power Factor	[ ]	0,76	0,78	0,72	0,64	0,69	0,61	0,62	0,54	0,52	0,5
Starting Current	[A]	41	51	95	39	52	30	43	63	29	39
Starting Torque	[Nm]	54	78	120	79	94	46	80	100	69	98
Duty Cycle	[%]	60	60	60	30+10	30+10	60	60	60	30+10	30+10
Starts per Hour	[s/h]	240	240	240	180	180	240	240	240	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

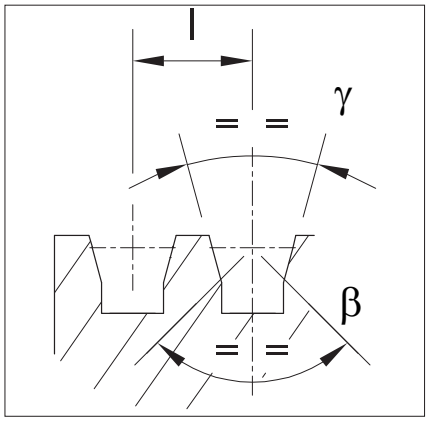
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

		60Hz							
		VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles					**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles		
		Asynchronous Rated Power **[kW]**							
		VVVF **4,4**	VVVF **6**	VVVF **8,2**	AC2 **4,4**	AC2 **6**	VVVF **4**	VVVF **4,7**	AC2 **4**
		Motor Parameters							
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400
Frequency	[Hz]	60	60	60	60	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800	1800/450	1800/450	1200	1200	1200/450
Asynchronous Speed	[rpm]	1714	1708	1741	1606/330	1680/380	1138	1160	1096/318
Rated Current (2)	[A]	10,2	15,2	19	11,8/10	18/14	12,4	15,4	18,7/14,3
Rated Torque	[Nm]	24,5	33,5	45	26,2	34,1	33,6	38,7	34,8
Cos φ Power Factor	[ ]	0,75	0,7	0,72	0,63	0,78	0,6	0,55	0,58
Starting Current	[A]	48	70	88	39	46	49	67	--
Starting Torque	[Nm]	44	70	101	64	73	62	74	--
Duty Cycle	[%]	60	60	60	30+10	30+10	60	60	30+10
Starts per Hour	[s/h]	240	240	240	180	180	240	240	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

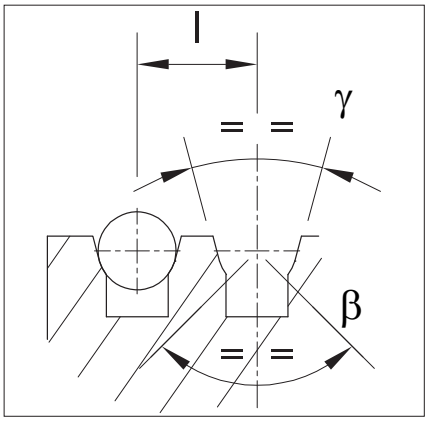
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
CSW	320	76	5xD8	14
	360	70	5xD8	14
	360	70	4xD9	17
	400	70	5xD8	14
	400	70	4xD9	17
	400	70	4xD10	17
	450	70	5xD8	14
	450	70	4xD9	17
	450	70	4xD10	17
	450	70	4xD11	17
	480	70/90	5xD8/6xD8	14
	480	70/90	4xD9/5xD9	17
	480	70/90	4xD10/5xD10	17
	480	70/90	4xD11/5xD11	17
	480	70/90	3xD12/5xD12	19
	520	70/90	5xD8/6xD8	14
	520	70/90	4xD9/5xD9	17
	520	70/90	4xD10/5xD10	17
	520	70/90	4xD11/5xD11	17
	520	70/90	3xD12/5xD12	19
	520	70/90	3xD13/4xD13	19
	550	70/90	5xD8/6xD8	14
	550	70/90	4xD9/5xD9	17
	550	70/90	4xD10/5xD10	17
	550	70/90	4xD11/5xD11	17
	550	70/90	3xD12/5xD12	19
	550	70/90	3xD13/4xD13	19
	600	70	5xD8	14
	600	70	4xD9	17
	600	70	4xD10	17
	600	70	4xD11	17
	600	70	3xD12	19
	600	70	3xD13	19
	650	70	5xD8	14
	650	70	4xD9	17
	650	70	4xD10	17
	650	70	4xD11	17
	650	70	3xD12	19
	650	70	3xD13	19
	700	70	5xD8	14
	700	70	4xD9	17
	700	70	4xD10	17
	700	70	4xD11	17
	700	70	3xD12	19
	700	70	3xD13	19



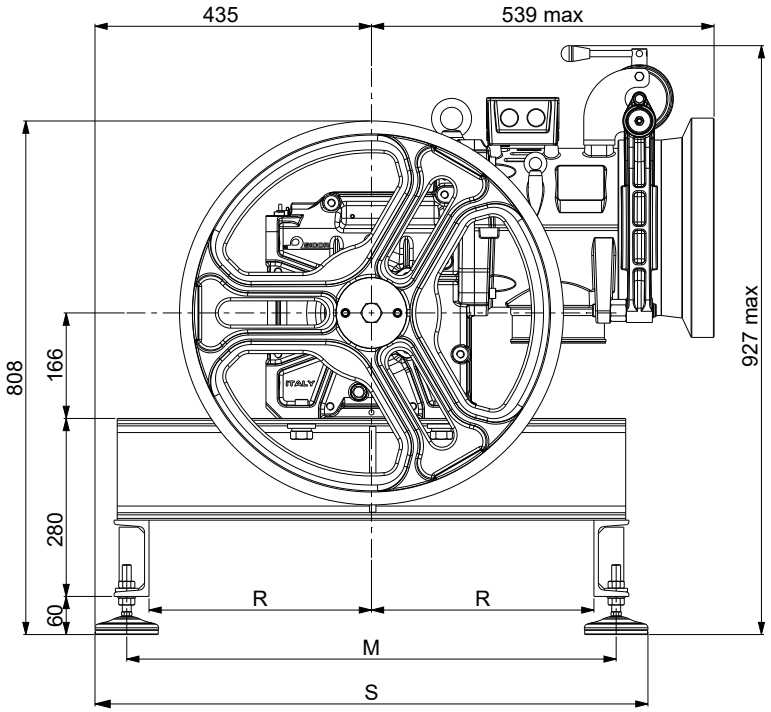
V grooves with undercut

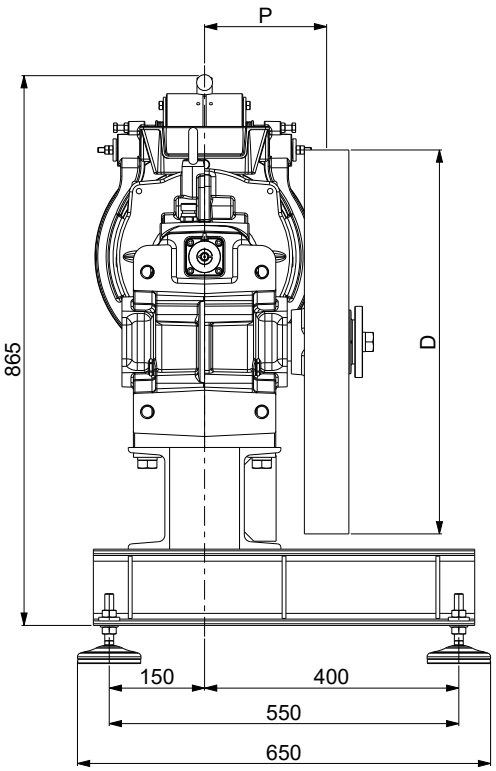


U grooves with undercut

γ = groove angle
β = Undercut angle

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WRAPPING

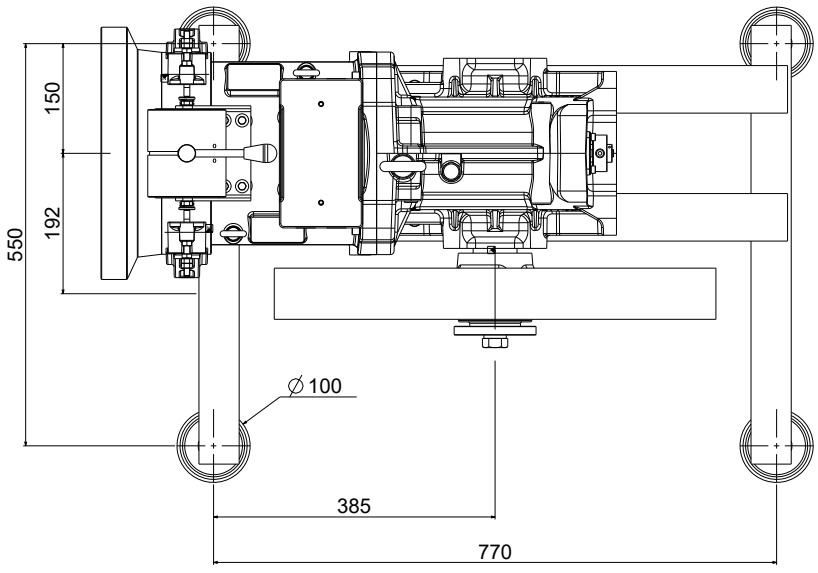




Code	M	R	S
	[mm]	[mm]	[mm]
XTE3020	770	350	870
XTE3021	540	235	640

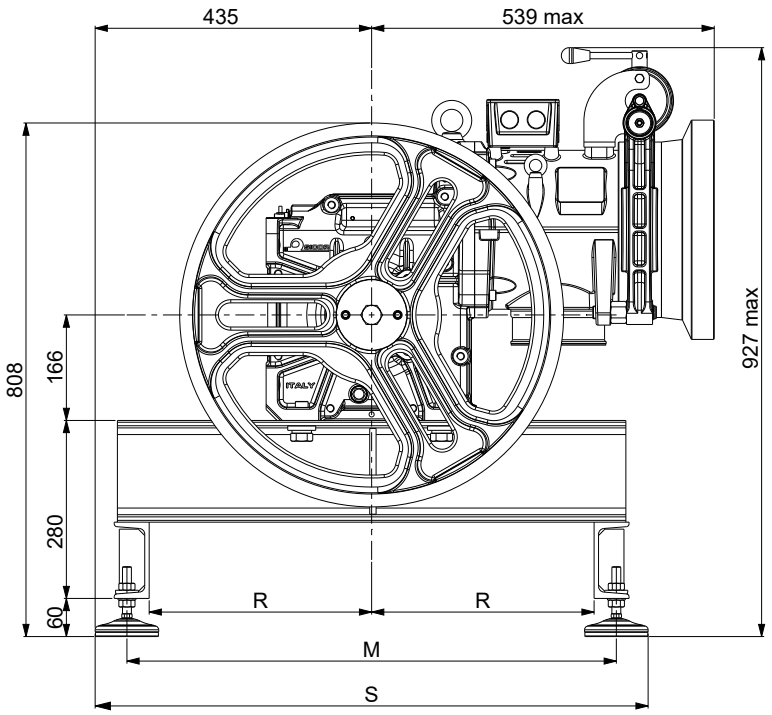
XTE3020 (D 320-600) - XTE3021 (D 650-700) (included vibration dampers)
Weight of machine bedplate: (XTE3020) 53 kg, (XTE3021) 48Kg (bedplate + vibration dampers)

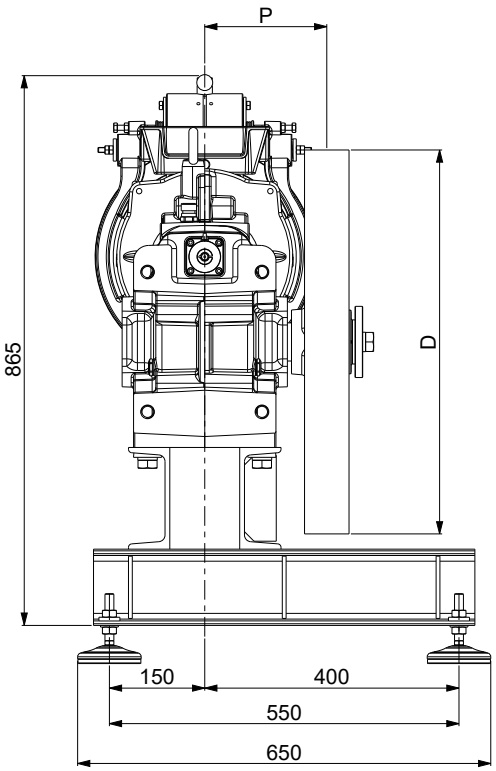
VIBRATIONS DAMPER SET UP



Damper code	Dimension
	[mm]
TAI0110	D.100x28

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WRAPPING



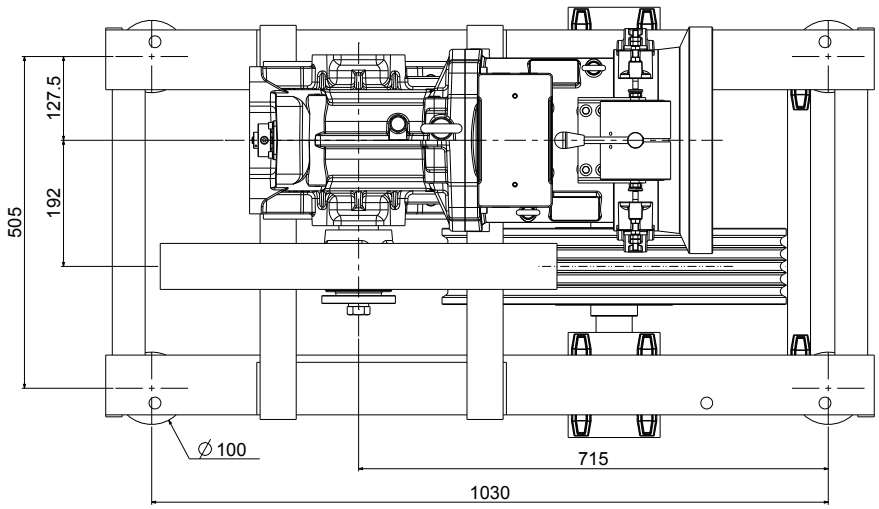


Traction Sheave	X	L max
D [mm]	[mm]	[mm]
360	200	880
400	180	900
450	155	925
480	140	940
520	120	960
550	105	975
600	80	1000

Diverting Pulley	A	B	C
Dt [mm]			
400	1016	280	696
450	1016	280	696
520	1036	300	716

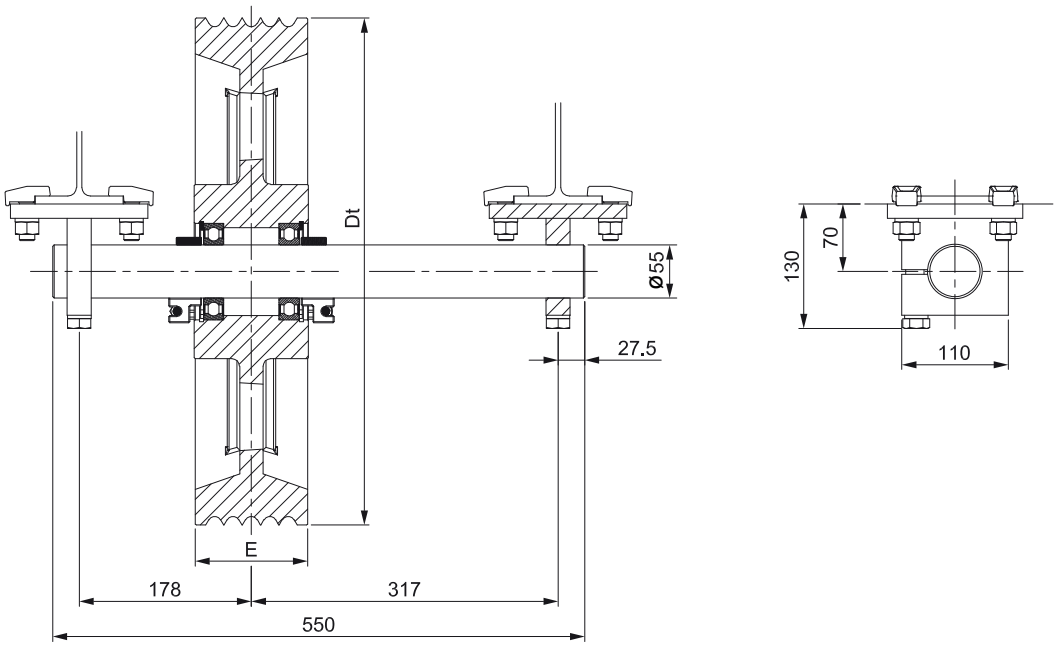
XTE3022 (Dt 400-450) - XTE3023 (Dt 520) (included vibration dampers)
Weight of machine bedplate: (XTE3022) 138 kg, (XTE3023) 148 kg (bedplate + diverting pulley + vibration dampers)

VIBRATIONS DAMPER SET UP

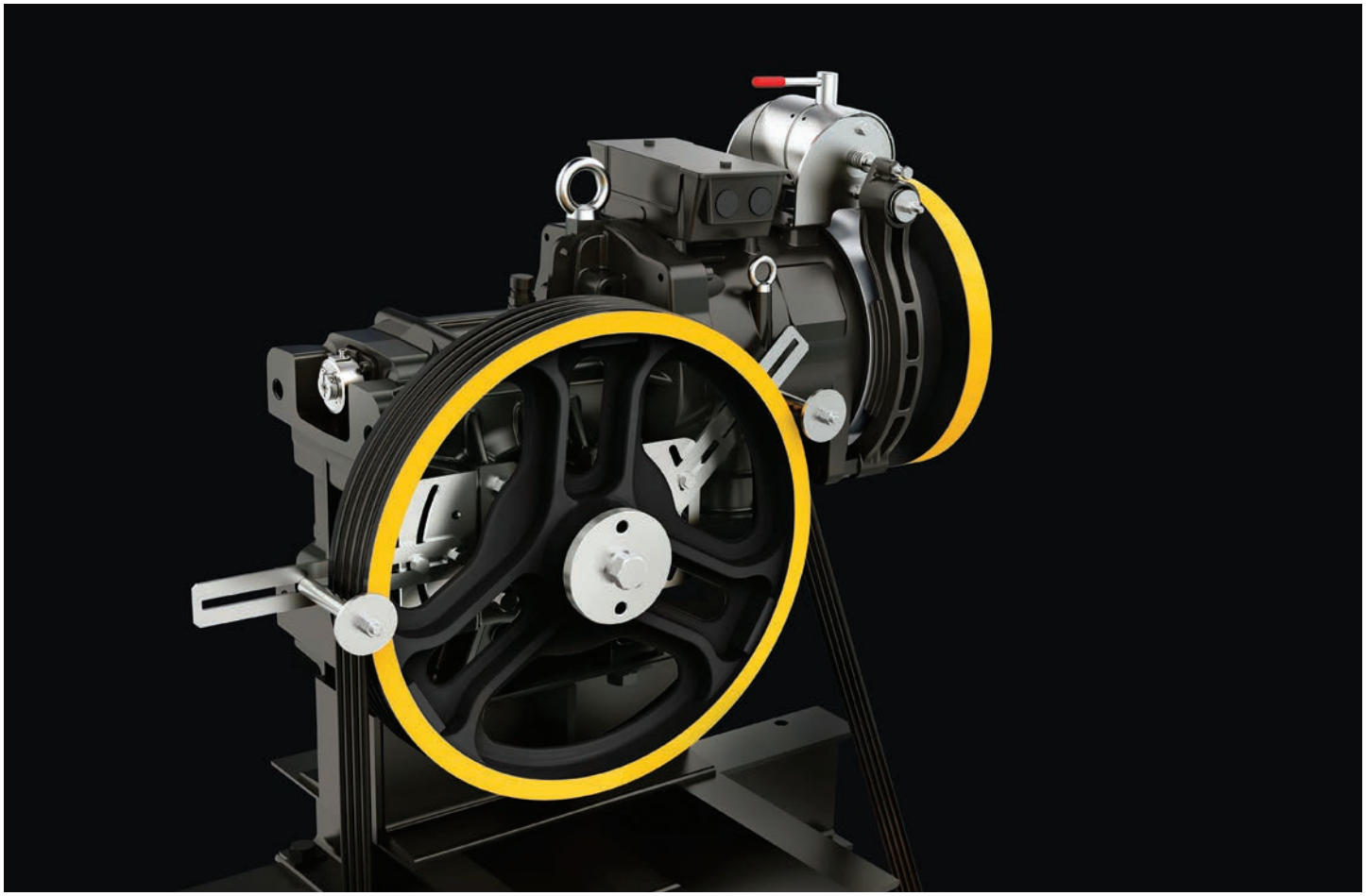


Damper code	Dimension
	[mm]
TAI0110	D.100x28

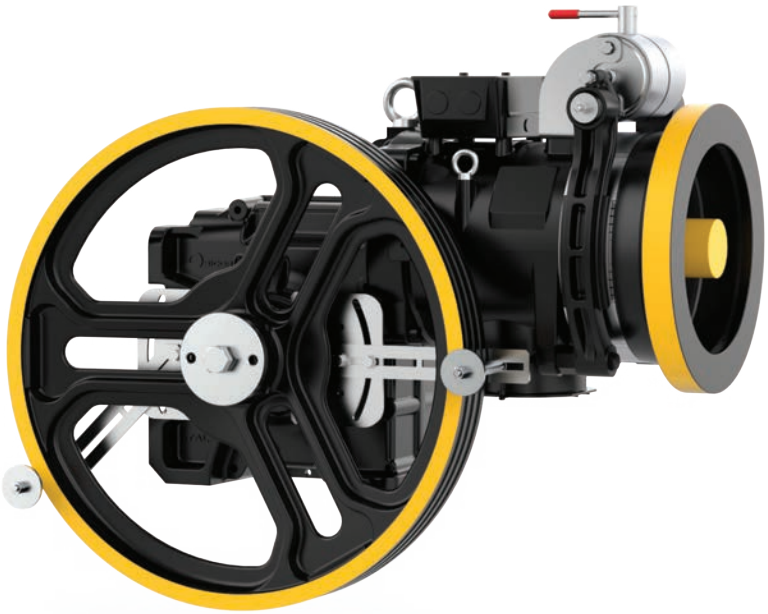
DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER



Diverting Pulley		Max n°Grooves x D	Grooves Pitch
Dt [mm]	E [mm]	n° x mm	l [mm]
400	116	7xD8	14
450	116	6xD9	17
		6xD10	17
		6xD11	17
520	116	5xD12	19
		5xD13	19



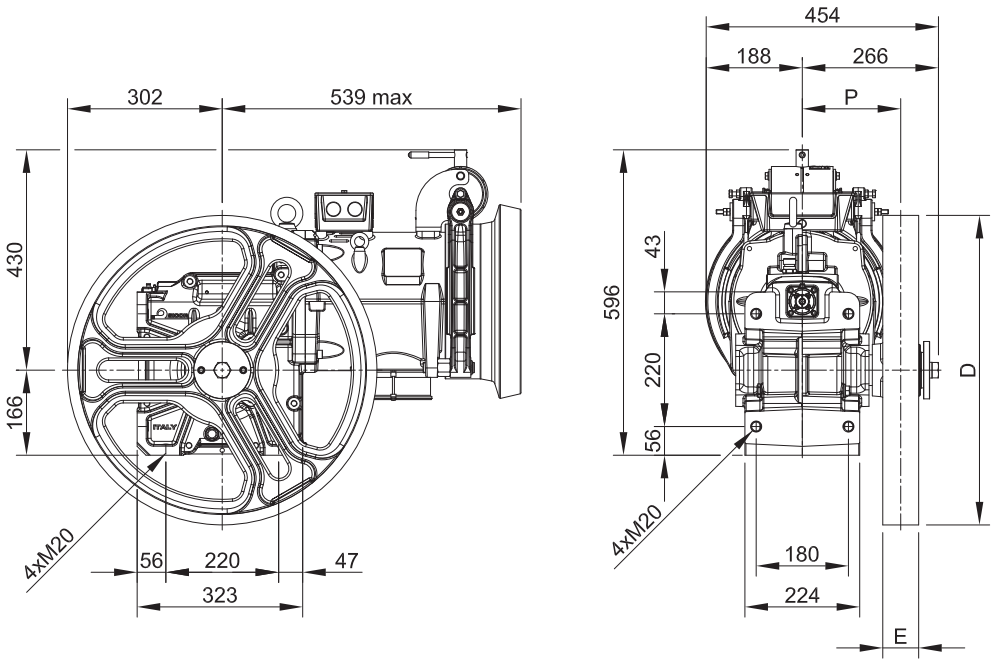
GEARED SH130G



Max. Static Load	**28,4 kN - 2900 kg**
Power Range 50 Hz 4 poles VVVF	**5,5 ÷ 7,5 kW**
Power Range 60 Hz 4 poles VVVF	**6 ÷ 8,2 kW**
Power Range 50 Hz 4/16 poles	**5,5 ÷ 7,5 kW**
Power Range 60 Hz 4/16 poles	**6 ÷ 8,2 kW**
Ratio	**1/52; 1/43; 1/37**
Geared Weight	**250 kg**
Oil capability	**3,7 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

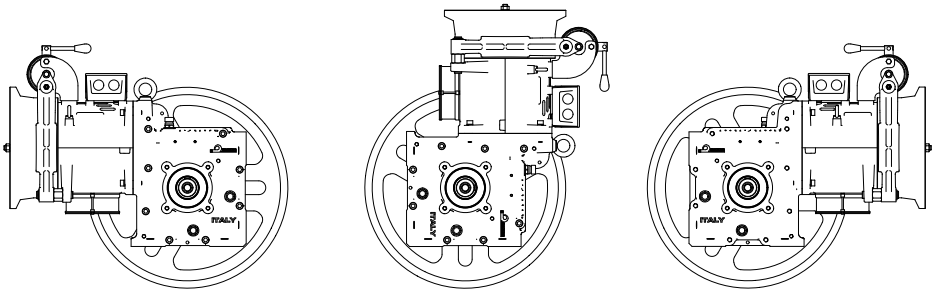
The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS



Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
CSW	480 520 550	90	197	28,4 - 2900	100% 100% 100% 100%

*) Max. static load on the slow shaft: CSW: Conventional single wrap



horizontal lh | vertical | horizontal rh

Brake Electromagnet		
[V]	[A]	[W]
24	5,25	126
48	2,30	110
60	1,77	106
80	1,50	120
110	1,02	112
200	0,63	126

DUTY TABLE

Roping 1:1

		50Hz					60Hz				
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles					**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles				
		Motor Output **[kW]** Asynchronous									
			VVVF/AC2 **5,5**	AC2 **6,7**	VVVF **7,5**	AC2 **7,5**		VVVF/AC2 **6**	AC2 **7,4**	VVVF **8,2**	AC2 **8,2**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load				Speed syn.	Max Rated Load			
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]
1/52	480	0,72	820	--	--	--	0,87	750	--	--	--
1/52	520	0,79	755	--	--	--	0,94	695	--	--	--
1/52	550	0,83	715	--	--	--	1,00	655	--	--	--
1/43	480	0,88	750	820	820	--	1,05	675	745	745	--
1/43	520	0,95	690	755	755	--	1,14	625	690	690	--
1/43	550	1,00	655	715	715	--	1,21	590	650	650	--
1/37	480	1,02	660	745	745	--	1,22	595	745	745	--
1/37	520	1,10	605	690	690	--	1,32	550	690	690	--
1/37	550	1,17	575	650	650	--	1,40	520	690	690	--

	50Hz					60Hz				
	Motor Output **[kW]**									
		VVVF/AC2 **5,5**	AC2 **6,7**	VVVF **7,5**	AC2 **7,5**		VVVF/AC2 **6**	AC2 **7,4**	VVVF **8,2**	AC2 **8,2**
R.R.	Max Output Torque	Geared Efficiency				Max Output Torque	Geared Efficiency			
[i]	[Nm]					[Nm]				
1/52	1210	0,75	0,76	0,77	--	1100	0,75	0,76	0,77	--
1/43	1210	0,77	0,78	0,79	--	1100	0,77	0,78	0,79	--
1/37	1100	0,79	0,80	0,81	--	1100	0,78	0,80	0,80	--

Rated load values listed in the table include the weight of the ropes. To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

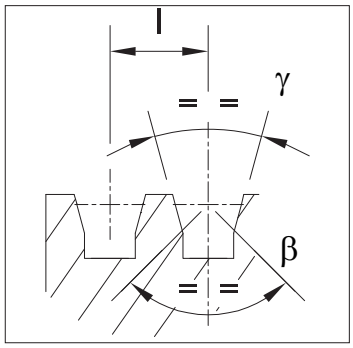
ELECTRIC MOTOR DATA

		50Hz					60Hz				
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles					**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles				
		Asynchronous Rated Power **[kW]**									
		VVVF **5,5**	VVVF **7,5**	AC2 **5,5**	AC2 **6,7**	AC2 **7,5**	VVVF **6**	VVVF **8,2**	AC2 **6**	AC2 **7,4**	AC2 **8,2**
		Motor Parameters									
Rated Voltage (star connection) (1)(3)	[V]	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	60	60	60	60	60
Synchronous Speed	[rpm]	1500	1500	1500/375	1500/375	1500/375	1800	1800	1800/450	1800/450	1800/450
Asynchronous Speed	[rpm]	1424	1426	1370/285	1410/310	1350/297	1708	1741	1680/380	1700/370	1670/350
Rated Current (2)	[A]	12,4	17,8	15/15,5	16,4/13,8	18,3/14,9	15,5	19	17,8/13,5	16,4/13,8	19,2/15
Rated Torque	[Nm]	36,9	49,4	38,3	45	53	33,5	45	34	41	47
Cos φ Power Factor	[ ]	0,78	0,72	0,70	0,67	0,78	0,70	0,72	0,78	0,73	0,76
Starting Current	[A]	51	95	52	73	65	80	125	52	70	60
Starting Torque	[Nm]	78	120	94	113	134	70	93	74	100	110
Duty Cycle	[%]	60	60	30+10	30+10	30+10	60	60	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	180	180	180	240	240	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

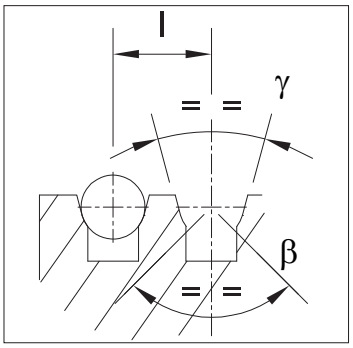
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
CSW	480	90	6xD8	14
	480	90	5xD9	17
	480	90	5xD10	17
	480	90	5xD11	17
	480	90	5xD12	19
	520	90	6xD8	14
	520	90	5xD9	17
	520	90	5xD10	17
	520	90	5xD11	17
	520	90	4xD12	19
	520	90	4xD13	19
	550	90	6xD8	14
	550	90	5xD9	17
	550	90	5xD10	17
	550	90	5xD11	17
	550	90	4xD12	19
	550	90	4xD13	19

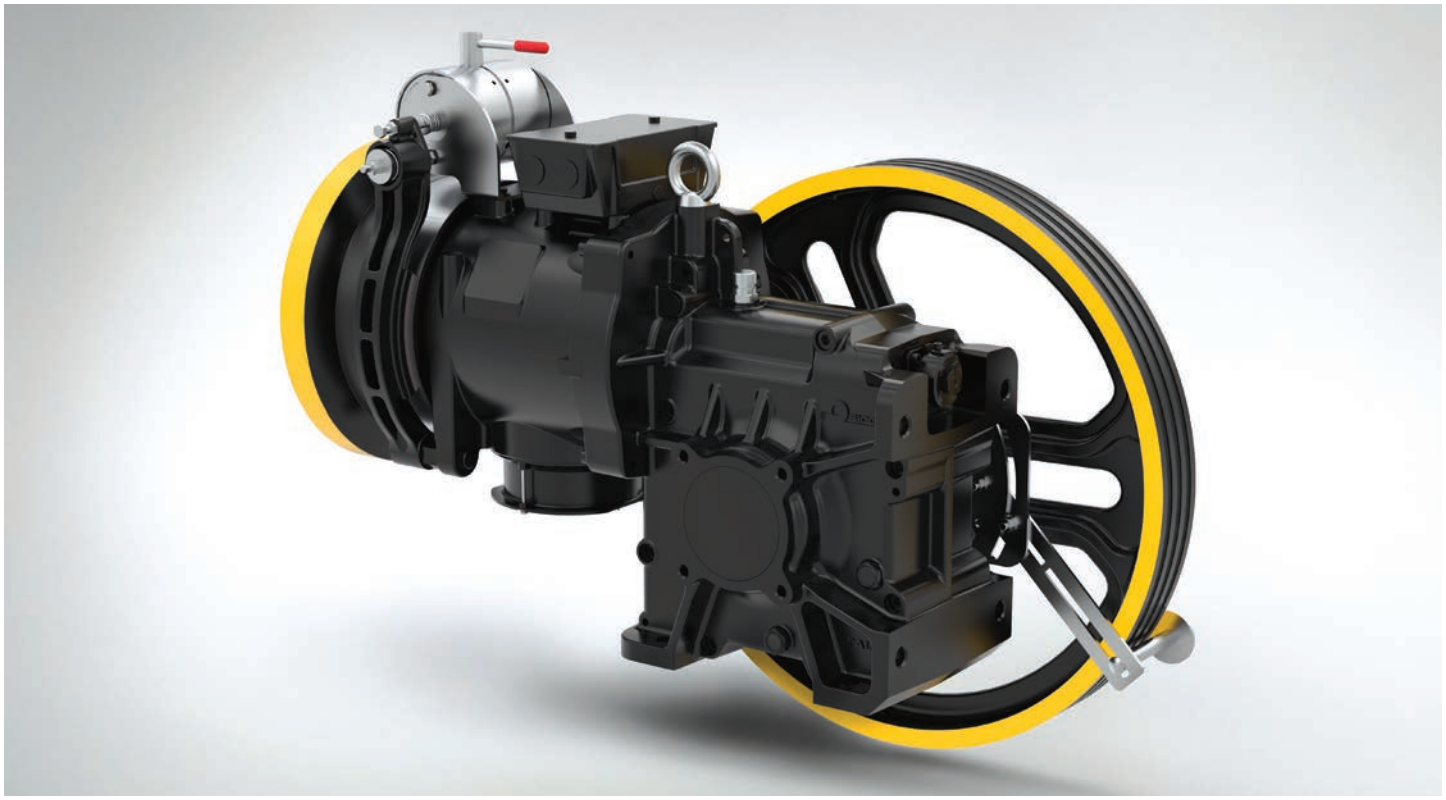


V grooves with undercut

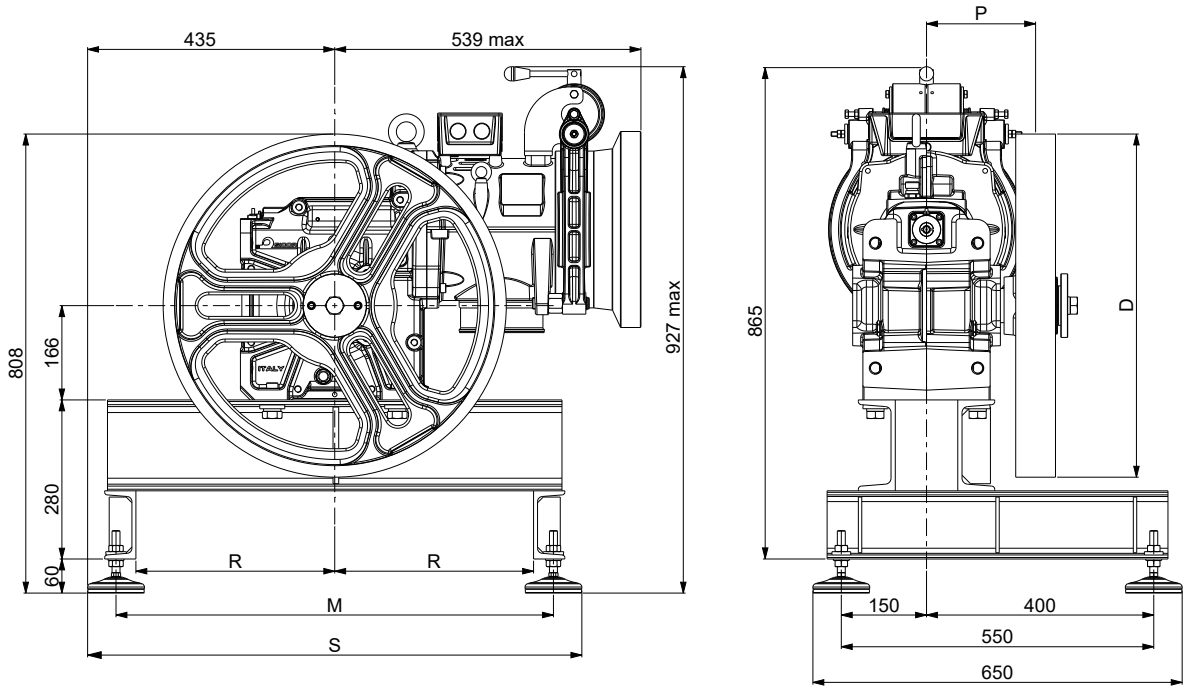


U grooves with undercut

γ = groove angle
β = Undercut angle



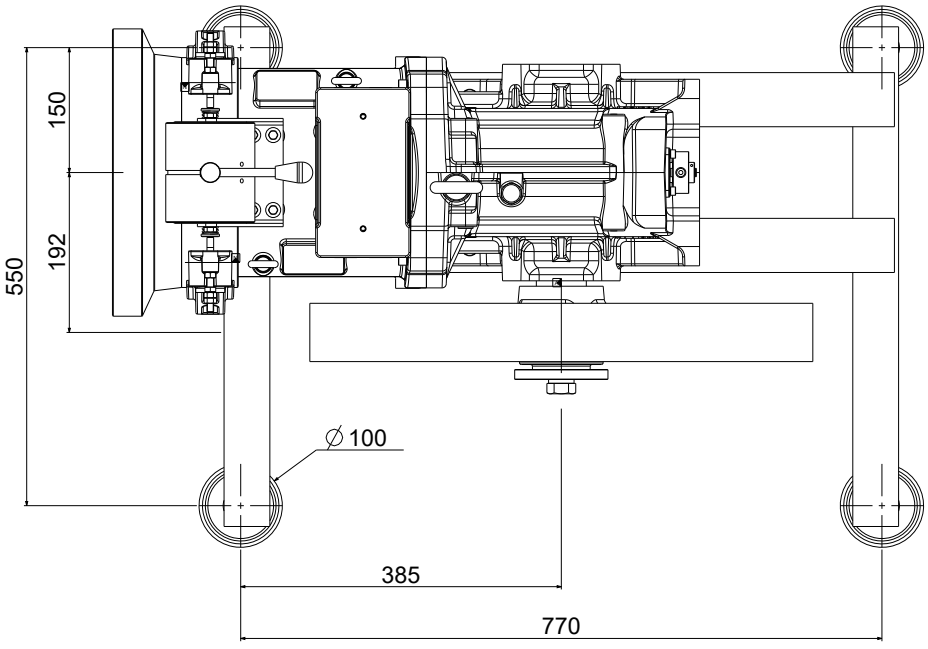
BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WRAPPING



	M	R	S
	[mm]	[mm]	[mm]
XTE3020	770	350	870

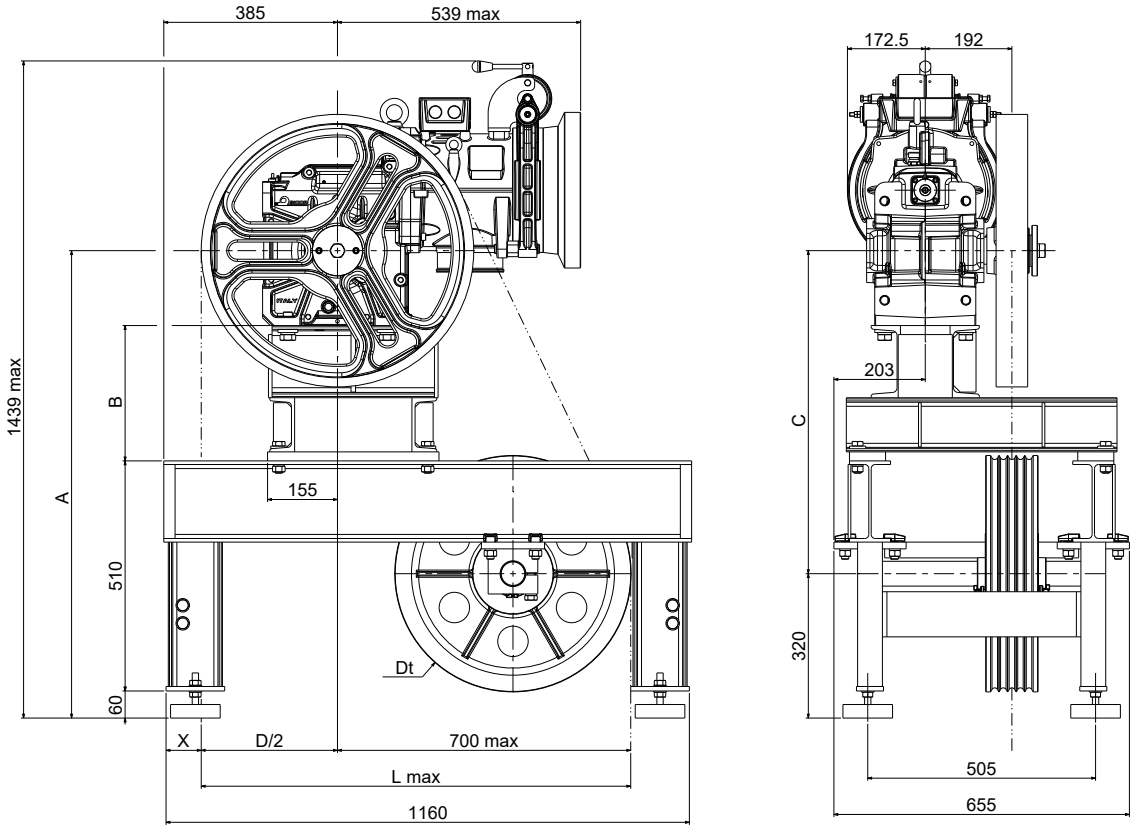
XTE3020 (D 320-600) (included vibration dampers)
Weight of machine bedplate: (XTE3020) 53 kg (bedplate + vibration dampers)

VIBRATIONS DAMPER SET UP



Damper code	Dimension
	[mm]
TAI0110	D.100x28

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WRAPPING

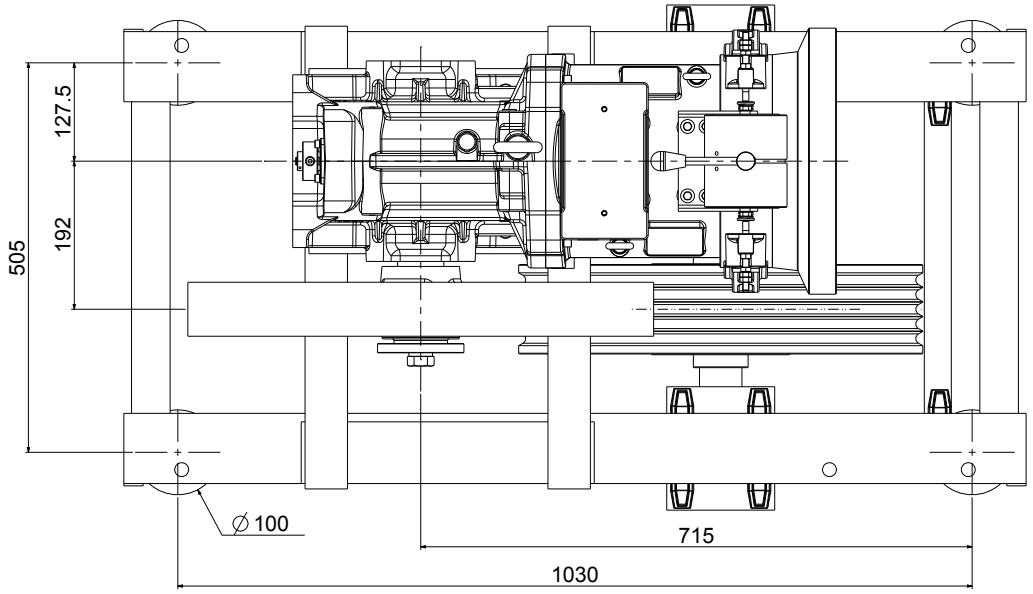


Traction Sheave	X	L max
D [mm]	[mm]	[mm]
480	140	940
520	120	960
550	105	975

Diverting Pulley	A	B	C
Dt [mm]			
400	1016	280	696
450	1016	280	696
520	1036	300	716

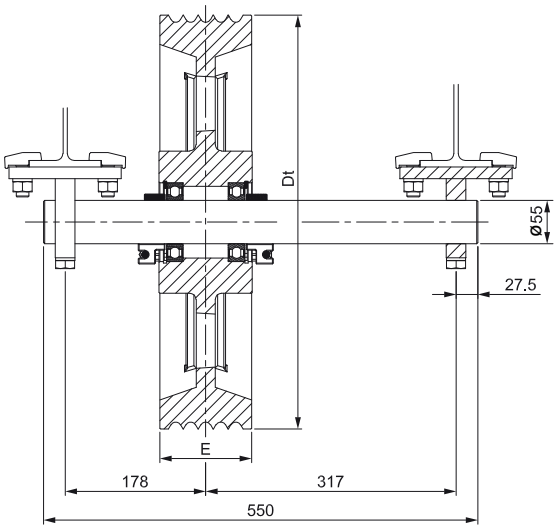
XTE3022 (Dt 400-450) - XTE3023 (Dt 520) (included vibration dampers)
Weight of machine bedplate: (XTE3022) 138 kg, (XTE3023) 148 kg (bedplate + diverting pulley + vibration dampers)

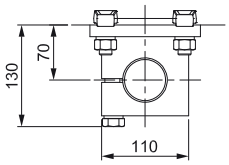
VIBRATIONS DAMPER SET UP



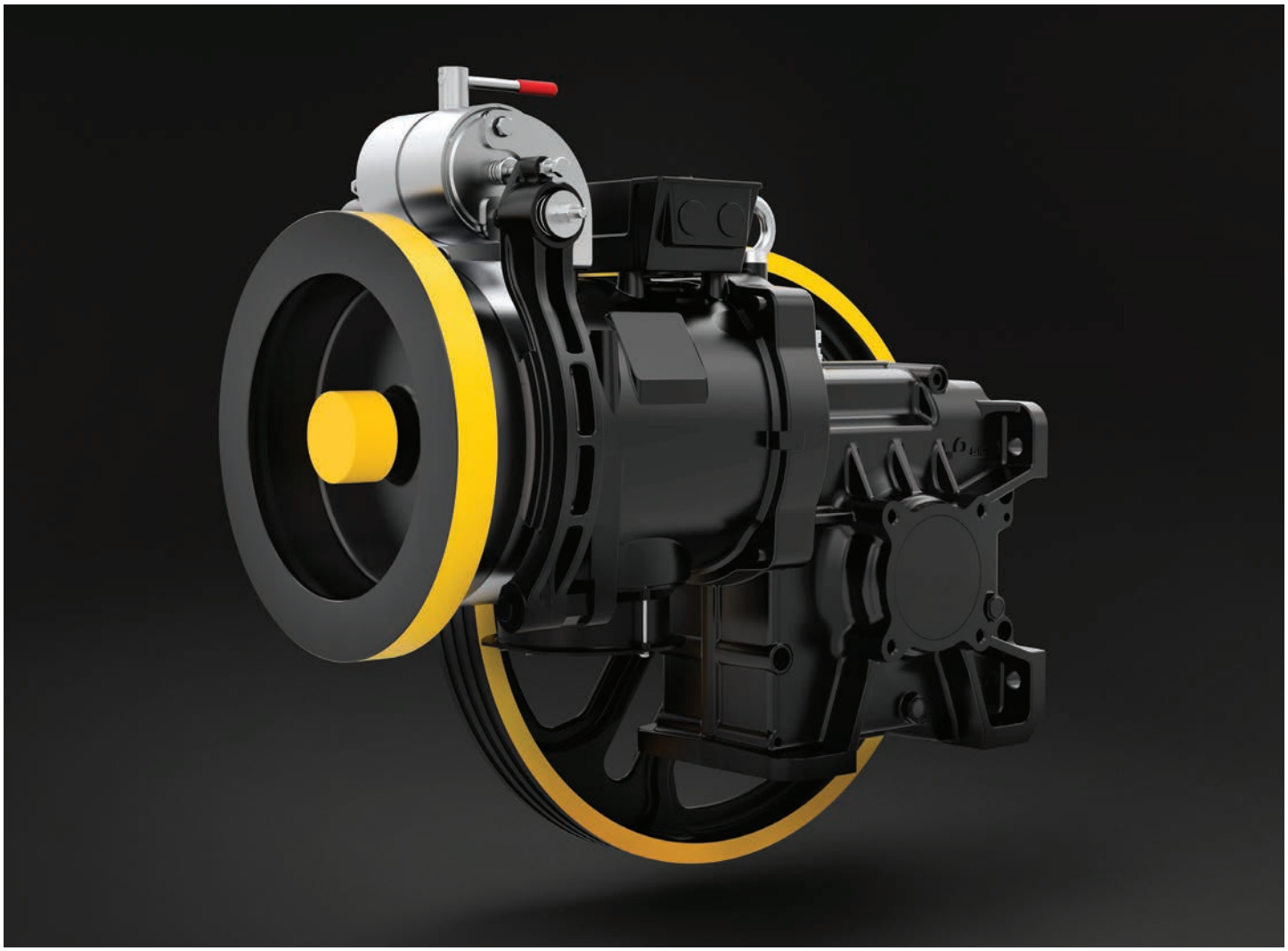
Damper code	Dimension
	[mm]
TAI0110	D.100x28

DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER





Diverting Pulley		Max n°Grooves x D	Grooves Pitch
Dt [mm]	E [mm]	n° x mm	l [mm]
400	116	7xD8	14
450	116	6xD9	17
		6xD10	17
		6xD11	17
520	116	5xD12	19
		5xD13	19

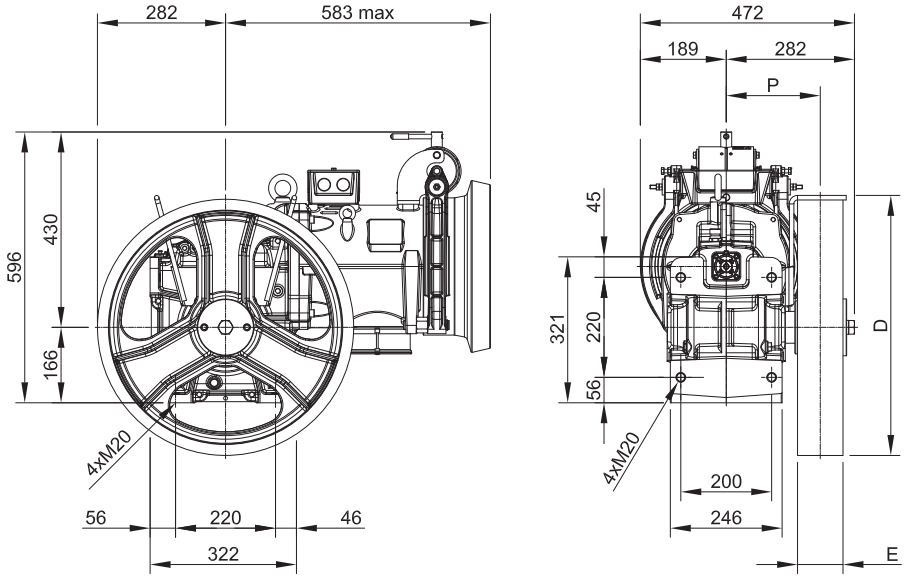


GEARED SH140

Max. Static Load SH140	**32,4 kN - 3300 kg**
Power Range 50 Hz 4 poles VVVF	**4 ÷ 11 kW**
Power Range 50 Hz 4/16 poles	**4 ÷ 9 kW**
Power Range 50 Hz 6 poles VVVF	**2,7 ÷ 5 kW**
Power Range 50 Hz 6/16 poles	**2,7 ÷ 4,5 kW**
Power Range 60 Hz 4 poles VVVF	**4,4 ÷ 12 kW**
Power Range 60 Hz 4/16 poles	**4,4 ÷ 10 kW**
Power Range 60 Hz 6 poles VVVF	**4 ÷ 5,5 kW**
Power Range 60 Hz 6/16 poles	**4 ÷ 4,9 kW**
Ratio	**1/71; 1/59; 1/52; 1/45; 1/37; 2/71; 2/53; 3/47**
Geared Weight SH140	**280 kg**
Oil capability	**3,6 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

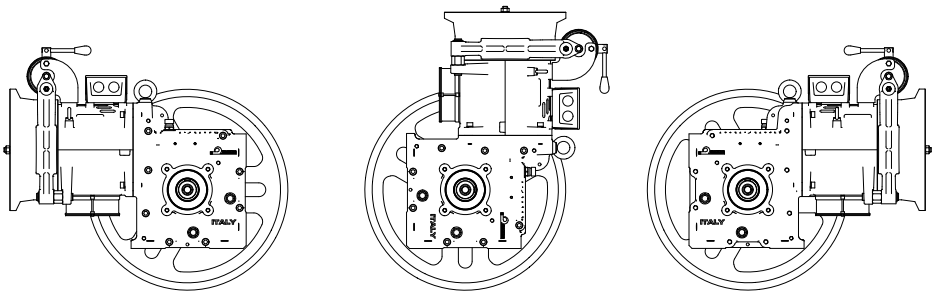
The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS



Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
CSW	360	100	207	32,4 - 3300	100% 100% 100% 100%
	400				
	450				
	480				
	520				
	560				
	600				

*) Max. static load on the slow shaft: CSW: Conventional single wrap



horizontal lh | vertical | horizontal rh

Brake Electromagnet		
[V]	[A]	[W]
24	5,25	126
48	2,30	110
60	1,77	106
80	1,50	120
110	1,02	112
200	0,63	126

DUTY TABLE

Roping 1:1

		50Hz									60Hz						
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles									**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles						
		Motor Output **[kW]** Asynchronous															
			VVVF/AC2 **4**	VVVF/AC2 **5,5**	AC2 **6,8**	VVVF **7,5**	AC2 **7,5**	AC2 **9**	VVVF **9,2**	VVVF **11**		VVVF/AC2 **4,4**	VVVF/AC2 **6**	AC2 **7,4**	VVVF/AC2 **8,2**	VVVF/AC2 **10**	VVVF **12**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load								Speed syn.	Max Rated Load					
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
1/71	360	0,40	950	--	--	--	--	--	--	--	0,48	860	950	--	--	--	--
1/71	400	0,44	855	--	--	--	--	--	--	--	0,53	770	850	--	--	--	--
1/59	360	0,48	840	950	--	--	--	--	--	--	0,58	680	950	--	--	--	--
1/71	450	0,50	760	--	--	--	--	--	--	--	0,60	640	760	--	--	--	--
1/71	480	0,53	710	--	--	--	--	--	--	--	0,64	590	710	--	--	--	--
1/59	400	0,53	755	950	--	--	--	--	--	--	0,64	550	930	--	930	--	--
1/52	360	0,54	765	950	--	--	--	--	--	--	0,65	510	950	--	950	--	--
1/71	520	0,58	655	--	--	--	--	--	--	--	0,69	750	650	--	--	--	--
1/59	450	0,60	670	910	--	--	--	--	--	--	0,72	680	830	--	--	--	--
1/52	400	0,60	690	950	--	--	--	--	--	--	0,72	600	880	950	950	--	--
1/71	560	0,62	610	--	--	--	--	--	--	--	0,74	560	610	--	--	--	--
1/45	360	0,63	680	950	--	--	--	--	--	--	0,75	520	870	950	950	--	--
1/59	480	0,64	630	855	--	--	--	--	--	--	0,77	480	780	--	--	--	--
1/71	600	0,66	570	--	--	--	--	--	--	--	0,80	450	570	--	--	--	--
1/52	450	0,68	610	870	950	950	--	--	--	--	0,82	690	780	900	900	--	--
1/59	520	0,69	580	790	--	--	--	--	--	--	0,83	620	720	--	--	--	--
1/45	400	0,70	610	875	950	950	--	--	--	--	0,84	550	780	950	950	--	--
1/52	480	0,72	575	815	920	920	--	--	--	--	0,87	510	730	840	840	--	--
1/59	560	0,75	540	730	--	--	--	--	--	--	0,89	470	660	--	--	--	--
1/37	360	0,76	580	830	950	950	--	--	--	--	0,92	440	740	930	950	--	--
1/45	450	0,79	545	775	950	950	--	--	--	--	0,94	410	690	880	950	--	--
1/52	520	0,79	530	755	850	850	--	--	--	--	0,94	610	670	780	780	--	--
2/71	360	0,80	565	800	950	950	--	--	--	--	0,96	550	680	860	950	--	--
1/59	600	0,80	500	685	--	--	--	--	--	--	0,96	490	620	--	--	--	--
1/45	480	0,84	510	730	920	950	950	--	--	--	1,01	460	650	820	910	--	--
1/52	560	0,85	490	700	790	790	--	--	--	--	1,01	420	620	720	720	--	--
1/37	400	0,85	525	745	930	935	--	--	--	--	1,02	390	670	840	890	--	--
2/71	400	0,88	505	720	850	855	--	--	--	--	1,06	360	620	780	850	--	--
1/52	600	0,91	460	655	730	735	--	--	--	--	1,09	520	580	670	670	--	--
1/45	520	0,91	470	670	850	890	890	--	--	--	1,09	470	600	760	840	--	--
1/37	450	0,96	465	660	830	830	--	--	--	--	1,15	420	590	740	790	--	--
1/45	560	0,98	435	625	780	825	820	--	--	--	1,17	390	560	700	780	--	--
2/71	450	1,00	450	640	760	760	--	--	--	--	1,19	360	550	690	760	--	--
1/37	480	1,02	435	620	780	780	--	--	--	--	1,22	330	550	700	740	--	--
1/45	600	1,05	405	580	730	770	770	--	--	--	1,26	310	520	660	730	--	--
2/71	480	1,06	420	600	710	710	--	--	--	--	1,27	500	510	650	710	--	--
2/53	360	1,07	440	625	790	875	870	950	950	--	1,28	450	560	710	740	930	950
1/37	520	1,10	400	575	720	720	--	--	--	--	1,32	400	510	640	690	--	--
2/71	520	1,15	390	555	650	655	--	--	--	--	1,38	380	470	600	650	--	--
2/53	400	1,19	395	565	710	790	790	950	950	--	1,42	350	500	630	670	830	930

50Hz						60Hz				
VVVF 1000 rpm 6 Poles **AC2 1000/375 rpm** 6/16 Poles						**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles				
Motor Output **[kW]** Asynchronous										
	VVVF/AC2 **2,7**	VVVF/AC2 **3,6**	VVVF **4,2**	AC2 **4,5**	VVVF **5**		VVVF/AC2 **4**	VVVF **4,7**	AC2 **4,9**	VVVF **5,5**
Speed syn.	Max Rated Load					Speed syn.	Max Rated Load			
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]
0,27	950	--	--	--	--	0,27	950	--	--	--
0,29	850	--	--	--	--	0,29	850	--	--	--
0,33	760	--	--	--	--	0,33	950	--	--	--
0,35	710	--	--	--	--	0,35	760	--	--	--
0,36	780	950	--	--	--	0,36	710	--	--	--
0,36	750	950	--	--	--	0,36	950	--	--	--
0,38	650	--	--	--	--	0,38	950	--	--	--
0,40	680	940	950	--	--	0,40	650	--	--	--
0,40	700	950	--	--	--	0,40	860	910	910	--
0,40	680	930	950	--	--	0,40	890	950	950	--
0,41	610	--	--	--	--	0,41	610	--	--	--
0,42	690	950	--	--	--	0,42	880	950	950	--
0,43	640	880	920	--	--	0,43	810	850	850	--
0,44	570	--	--	--	--	0,44	570	--	--	--
0,45	620	860	950	950	--	0,45	790	940	950	950
0,46	590	810	850	--	--	0,46	750	790	790	--
0,47	620	860	950	950	--	0,47	790	940	950	950
0,48	580	810	920	920	--	0,48	740	880	920	920
0,50	550	760	790	--	--	0,50	690	730	730	--
0,51	590	820	950	950	--	0,51	750	890	930	950
0,52	550	770	910	950	950	0,52	700	840	880	950
0,52	540	740	850	850	--	0,52	680	810	850	850
0,53	570	790	930	950	950	0,53	720	860	900	950
0,53	510	710	730	--	--	0,53	650	680	680	--
0,56	520	720	850	910	950	0,56	660	780	820	930
0,56	500	690	790	790	--	0,56	630	750	790	790
0,57	530	730	870	930	930	0,57	670	800	840	930
0,59	520	710	840	850	850	0,59	650	770	810	850
0,60	470	640	730	730	--	0,60	590	700	730	730
0,61	480	660	780	840	890	0,61	610	720	760	860
0,64	470	650	770	830	830	0,64	600	710	750	830
0,65	440	610	730	780	820	0,65	560	670	700	800
0,66	460	630	740	760	760	0,66	580	690	720	760
0,68	440	610	720	780	780	0,68	560	670	700	780
0,70	410	570	680	730	770	0,70	520	630	660	740
0,71	430	590	700	710	710	0,71	540	640	670	710
0,71	450	620	730	790	880	0,71	560	670	710	800
0,74	410	560	670	720	720	0,74	520	620	640	720
0,77	400	540	640	650	650	0,77	500	590	620	650
0,79	400	550	660	710	790	0,79	510	610	630	720

DUTY TABLE

Roping 1:1

		50Hz								60Hz						
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles								**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles						
		Motor Output **[kW]** Asynchronous														
		VVVF/AC2 **4**	VVVF/AC2 **5,5**	AC2 **6,8**	VVVF **7,5**	AC2 **7,5**	AC2 **9**	VVVF **9,2**	VVVF **11**		VVVF/AC2 **4,4**	VVVF/AC2 **6**	AC2 **7,4**	VVVF/AC2 **8,2**	VVVF/AC2 **10**	VVVF **12**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load								Speed syn.	Max Rated Load					
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
1/37	560	1,19	375	530	660	665	--	--	--	--	1,43	320	470	600	640	--	--
2/71	560	1,24	360	515	610	610	--	--	--	--	1,49	300	440	550	610	--	--
1/37	600	1,27	350	495	620	625	--	--	--	--	1,53	390	440	560	590	--	--
2/71	600	1,33	335	480	570	570	--	--	--	--	1,59	350	410	520	570	--	--
2/53	450	1,33	350	500	630	700	700	850	870	910	1,60	310	450	560	630	780	830
2/53	480	1,42	330	470	590	655	650	800	815	855	1,71	290	420	530	590	730	780
2/53	520	1,54	305	435	540	605	600	730	755	790	1,85	270	390	490	540	670	720
2/53	560	1,66	280	400	500	565	560	680	700	730	1,99	250	360	450	510	630	660
2/53	600	1,78	265	375	470	525	520	640	655	685	2,13	230	330	420	470	580	620
3/47	360	1,80	275	390	490	545	540	660	680	820	2,17	240	350	440	490	610	740
3/47	400	2,01	245	350	440	490	490	600	610	740	2,41	220	310	400	440	550	660
3/47	450	2,26	220	310	390	435	430	530	545	655	2,71	190	280	350	390	490	590
3/47	480	2,41	205	290	370	410	410	500	510	615	2,89	180	260	330	370	460	550
3/47	520	2,61	190	270	340	380	380	460	470	565	3,13	170	240	300	340	420	510
3/47	560	2,81	175	250	310	350	350	420	435	525	3,37	160	220	280	310	390	470
3/47	600	3,01	165	235	290	325	320	400	405	490	3,61	140	210	260	290	360	440

	50Hz									60Hz						
	Motor Output **[kW]**															
	VVVF/AC2 **4**	VVVF/AC2 **5,5**	AC2 **6,8**	VVVF **7,5**	AC2 **7,5**	AC2 **9**	VVVF **9,2**	VVVF **11**		VVVF/AC2 **4,4**	VVVF/AC2 **6**	AC2 **7,4**	VVVF/AC2 **8,2**	VVVF/AC2 **10**	VVVF **12**
R.R.	Max Output Torque	Geared Efficiency								Max Output Torque	Geared Efficiency					
[i]	[Nm]									[Nm]						
1/71	1050	0,61	0,63	0,64	0,65	0,65	0,65	0,65	0,66	1050	0,60	0,62	0,63	0,64	0,65	0,65
1/59	1260	0,65	0,67	0,68	0,69	0,69	0,70	0,70	0,70	1150	0,64	0,66	0,68	0,68	0,69	0,70
1/52	1250	0,67	0,70	0,71	0,71	0,71	0,72	0,72	0,73	1150	0,66	0,69	0,70	0,70	0,71	0,72
1/45	1350	0,69	0,72	0,73	0,74	0,74	0,74	0,75	0,75	1250	0,68	0,71	0,72	0,73	0,74	0,75
1/37	1150	0,72	0,74	0,76	0,76	0,76	0,77	0,77	0,78	1100	0,71	0,73	0,75	0,75	0,76	0,77
2/71	1050	0,72	0,75	0,76	0,77	0,77	0,77	0,77	0,78	1050	0,71	0,74	0,75	0,76	0,77	0,77
2/53	1260	0,76	0,79	0,80	0,81	0,81	0,81	0,82	0,82	1150	0,75	0,78	0,79	0,80	0,81	0,82
3/47	1240	0,80	0,83	0,85	0,85	0,85	0,86	0,86	0,87	1140	0,79	0,82	0,84	0,84	0,86	0,86

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

50Hz						60Hz				
VVVF 1000 rpm 6 Poles **AC2 1000/375 rpm** 6/16 Poles						**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles				
Motor Output **[kW]** Asynchronous										
	VVVF/AC2 **2,7**	VVVF/AC2 **3,6**	VVVF **4,2**	AC2 **4,5**	VVVF **5**		VVVF/AC2 **4**	VVVF **4,7**	AC2 **4,9**	VVVF **5,5**
Speed syn.	Max Rated Load					Speed syn.	Max Rated Load			
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]
0,79	380	520	620	660	660	0,79	480	570	600	660
0,83	370	510	600	610	610	0,83	460	550	580	610
0,85	350	490	580	620	620	0,85	450	530	560	620
0,88	340	470	560	570	570	0,88	430	510	540	570
0,89	360	490	580	630	700	0,89	450	540	560	640
0,95	330	460	550	590	660	0,95	420	500	530	600
1,03	310	430	500	540	610	1,03	390	470	490	550
1,11	290	390	470	500	560	1,11	360	430	450	510
1,19	270	370	440	470	530	1,19	340	400	420	480
1,20	280	380	450	490	550	1,20	350	420	440	500
1,34	250	340	410	440	490	1,34	320	380	390	450
1,50	220	310	360	390	440	1,50	280	330	350	400
1,60	210	290	340	370	410	1,60	260	310	330	370
1,74	190	260	310	340	380	1,74	240	290	300	340
1,87	180	240	290	310	350	1,87	220	270	280	320
2,01	160	230	270	290	330	2,01	210	250	260	300

50Hz						60Hz				
Motor Output **[kW]**										
	VVVF/AC2 **2,7**	VVVF/AC2 **3,6**	VVVF **4,2**	AC2 **4,5**	VVVF **5**		VVVF/AC2 **4**	VVVF **4,7**	AC2 **4,9**	VVVF **5,5**
Max Output Torque	Geared Efficiency					Max Output Torque	Geared Efficiency			
[Nm]						[Nm]				
1050	0,62	0,64	0,65	0,65	0,65	1050	0,63	0,64	0,64	0,65
1260	0,66	0,66	0,68	0,69	0,69	1260	0,67	0,68	0,68	0,69
1360	0,68	0,70	0,71	0,71	0,72	1360	0,69	0,70	0,71	0,71
1420	0,70	0,72	0,73	0,74	0,74	1420	0,71	0,72	0,73	0,73
1150	0,73	0,75	0,76	0,76	0,77	1150	0,74	0,75	0,75	0,76
1050	0,73	0,75	0,76	0,77	0,77	1050	0,75	0,76	0,76	0,76
1260	0,77	0,79	0,80	0,80	0,81	1260	0,78	0,79	0,80	0,80
1240	0,81	0,83	0,85	0,85	0,86	1240	0,83	0,84	0,84	0,85

		50Hz									
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles									
		Asynchronous Rated Power **[kW]**									
		VVVF **4**	VVVF **5,5**	VVVF **7,5**	VVVF **9,2**	VVVF **11**	AC2 **4**	AC2 **5,5**	AC2 **6,8**	AC2 **7,5**	AC2 **9**
		Motor Parameters									
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500	1500	1500/375	1500/375	1500/375	1500/375	1500/375
Asynchronous Speed	[rpm]	1423	1424	1450	1458	1457	1359/276	1359/280	1325/267	1350/297	1402/306
Rated Current (2)	[A]	9,4	12,4	17,8	22,5	24,1	11,3/11,1	15/15,5	16,5/10,8	18,3/14,9	20/16,7
Rated Torque	[Nm]	26,8	36,9	49,4	60	72	28,1	38,7	49	53	61
Cos φ Power Factor	[ ]	0,76	0,78	0,72	0,70	0,76	0,64	0,69	0,8	0,78	0,80
Starting Current	[A]	41	51	95	130	157	39	52	65	65	65
Starting Torque	[Nm]	54	78	120	158	163	79	94	114	134	147
Duty Cycle	[%]	60	60	60	60	60	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

		50Hz						
		VVVF 1000 rpm 6 Poles **AC2 1000/375 rpm** 6/16 Poles						
		Asynchronous Rated Power **[kW]**						
		VVVF **2,7**	VVVF **3,6**	VVVF **4,2**	VVVF **5**	AC2 **2,7**	AC2 **3,6**	AC2 **4,5**
		Motor Parameters						
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1000	1000	1000	1000	1000/375	1000/375	1000/375
Asynchronous Speed	[rpm]	955	962	947	957	893/268	917/270	929/287
Rated Current (2)	[A]	8,4	10,9	14,1	15,2	10,9/11,5	15/12,4	10,2/8,5
Rated Torque	[Nm]	27	35,7	41,2	50	28,9	37,2	45,5
Cos φ Power Factor	[ ]	0,61	0,62	0,54	0,65	0,52	0,50	0,66
Starting Current	[A]	30	43	63	72	29	39	46
Starting Torque	[Nm]	46	80	100	105	69	98	98
Duty Cycle	[%]	60	60	60	60	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

60Hz

VVVF 1800 rpm 4 Poles
AC2 1800/450 rpm 4/16 Poles

Asynchronous Rated Power **[kW]**									
VVVF **4,4**	VVVF **6**	VVVF **8,2**	VVVF **10**	VVVF **12**	AC2 **4,4**	AC2 **6**	AC2 **7,4**	AC2 **8,2**	AC2 **10**
Motor Parameters									
400	400	400	400	400	400	400	400	400	400
60	60	60	60	60	60	60	60	60	60
1800	1800	1800	1800	1800	1800/450	1800/450	1800/450	1800/450	1800/450
1714	1708	1741	1751	1748	1606/330	1680/380	1665/345	1670/362	1664/373
10,2	15,2	19	22,5	25,5	11,8/10	18/14	16,5/11,5	19,2/15	22/18,4
24,5	33,5	45	54,5	65	26,2	34,1	42	47	56,8
0,75	0,70	0,72	0,72	0,76	0,63	0,78	0,79	0,76	0,80
48	70	88	117	141	39	46	52	60	61
44	70	101	160	171	64	73	85	110	147
60	60	60	60	60	30+10	30+10	30+10	30+10	30+10
240	240	240	240	240	180	180	180	180	180
F	F	F	F	F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

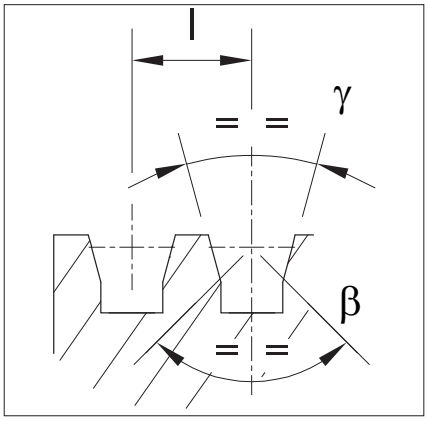
60Hz

VVVF 1200 rpm 6 Poles
AC2 1200/450 rpm 6/16 Poles

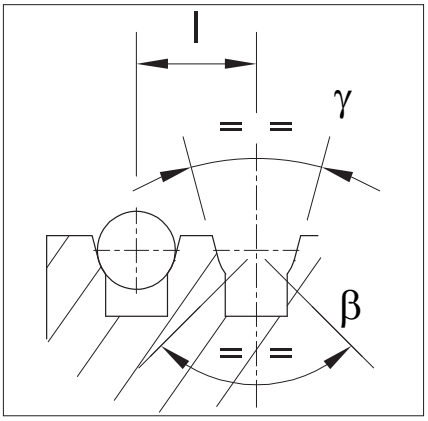
Asynchronous Rated Power **[kW]**				
VVVF **4**	VVVF **4,7**	VVVF **5,5**	AC2 **4**	AC2 **4,9**
Motor Parameters				
400	400	400	400	400
60	60	60	60	60
1200	1200	1200	1200/450	1200/450
1138	1160	1148	1096/318	1106/411
12,4	15,4	15	18,7/14,3	15,3/13,2
33,6	38,7	46	34,8	42,3
0,60	0,55	0,70	0,58	0,70
49	67	138	--	--
62	74	154	--	--
60	60	60	30+10	30+10
240	240	240	180	180
F	F	F	F	F
IP21	IP21	IP21	IP21	IP21

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
CSW	360	100	6xD8	14
	360	100	5xD9 (6xD9)	17 (16)
	400	100	6xD8	14
	400	100	5xD9 (6xD9)	17 (16)
	400	100	5xD10 (6xD10)	17 (16)
	450	100	6xD8	14
	450	100	5xD9 (6xD9)	17 (16)
	450	100	5xD10 (6xD10)	17 (16)
	450	100	5xD11 (6xD11)	17 (16)
	480	100	6xD8	14
	480	100	5xD9 (6xD9)	17 (16)
	480	100	5xD10 (6xD10)	17 (16)
	480	100	5xD11 (6xD11)	17 (16)
	480	100	4xD12	19
	520	100	6xD8	14
	520	100	5xD9 (6xD9)	17 (16)
	520	100	5xD10 (6xD10)	17 (16)
	520	100	5xD11 (6xD11)	17 (16)
	520	100	4xD12	19
	520	100	4xD13	19
	560	100	6xD8	14
	560	100	5xD9 (6xD9)	17 (16)
	560	100	5xD10 (6xD10)	17 (16)
	560	100	5xD11 (6xD11)	17 (16)
	560	100	4xD12	19
	560	100	4xD13	19
	600	100	6xD8	14
	600	100	5xD9 (6xD9)	17 (16)
	600	100	5xD10 (6xD10)	17 (16)
	600	100	5xD11 (6xD11)	17 (16)
	600	100	4xD12	19
	600	100	4xD13	19



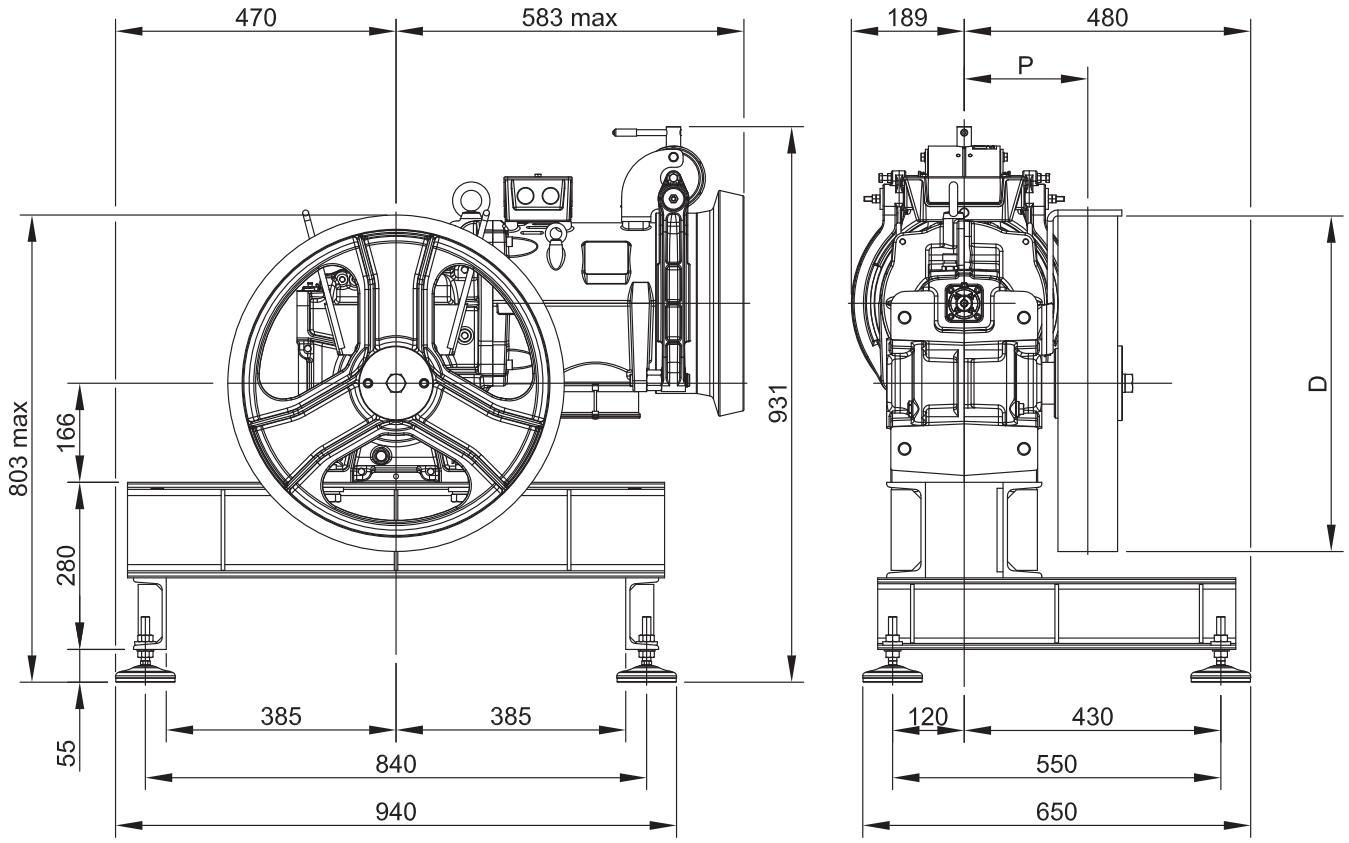
V grooves with undercut



U grooves with undercut

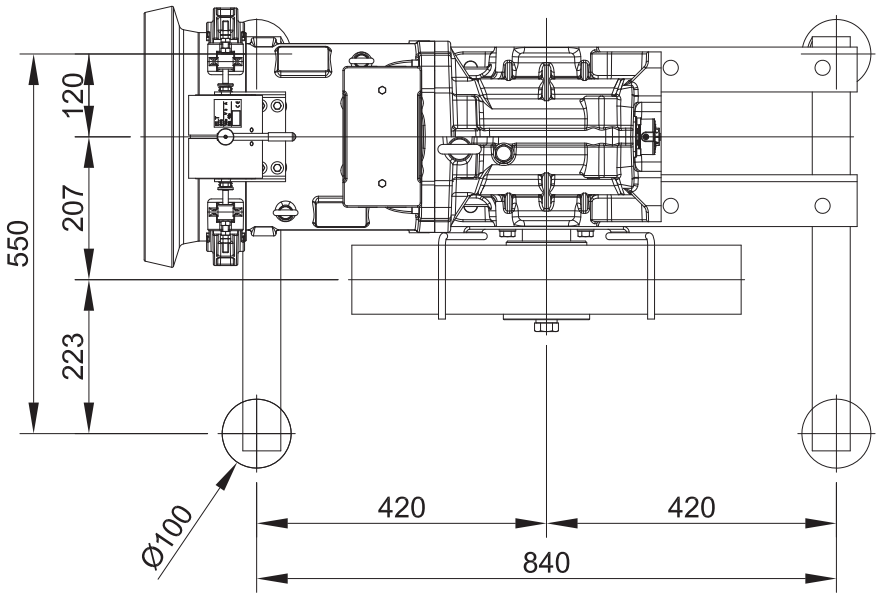
γ = *groove angle*
β = *Undercut angle*

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WINDING



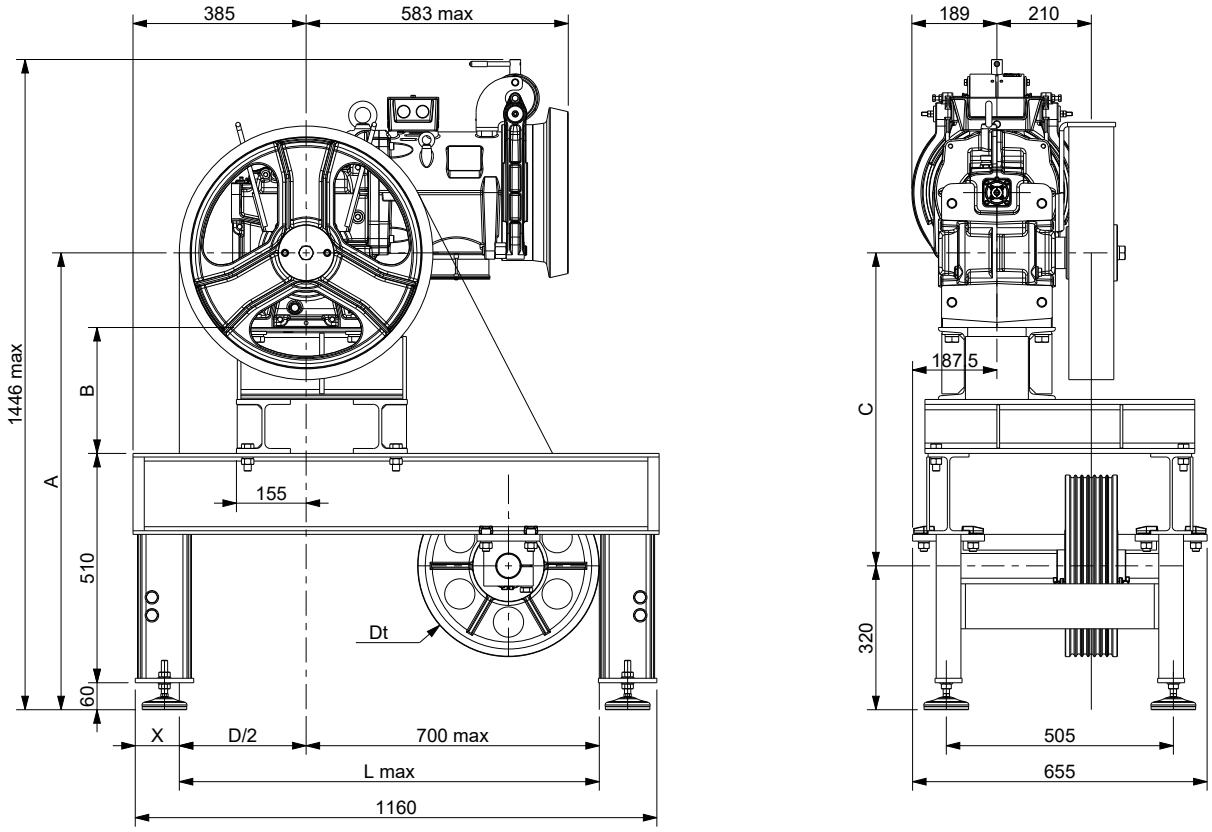
XTE0339 (included vibration dampers)
Weight of machine bedplate: 67 kg (bedplate + vibration dampers)

VIBRATIONS DAMPER SET UP



Damper code	Dimension
	[mm]
TAI0110	D.100x28

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WINDING

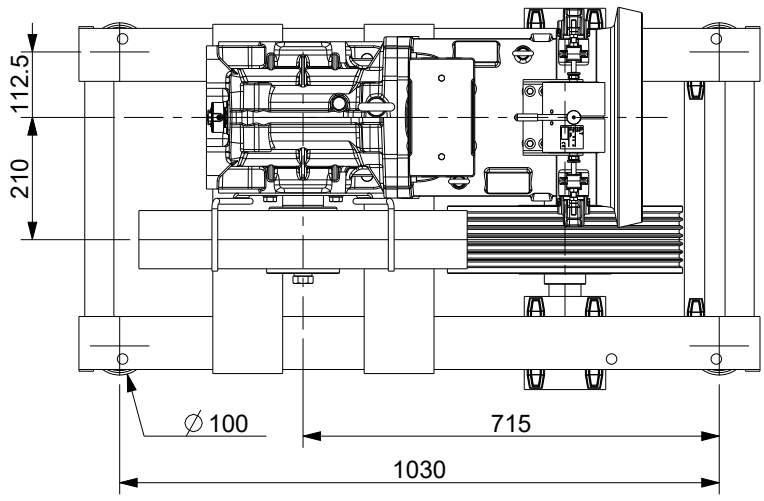


Traction Sheave	X	L max
D [mm]	[mm]	[mm]
360	200	880
400	180	900
450	155	925
480	140	940
520	120	960
560	105	975
600	80	1000

Diverting Pulley	A	B	C
Dt [mm]			
400	1016	280	696
450	1016	280	696
520	1036	300	716

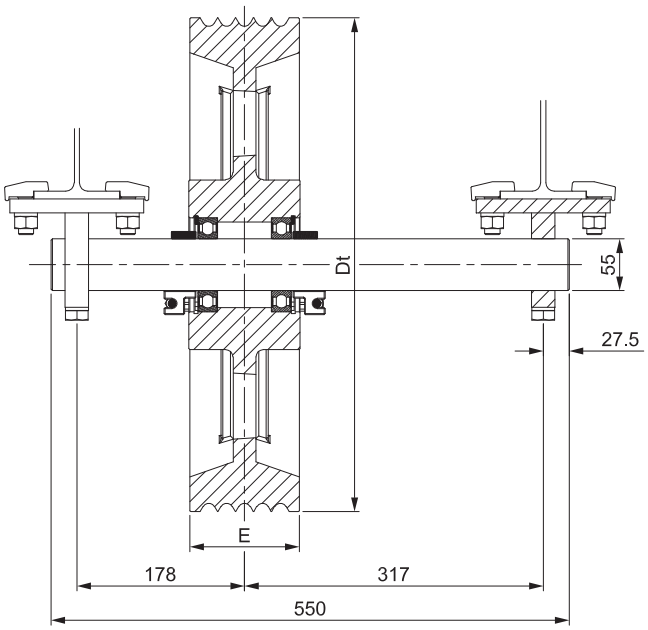
XTE6026 (Dt 400-450) - XTE6027 (Dt 520)
Weight of machine bedplate: (XTE6026) 159 Kg, (XTE6027) 176 Kg (bedplate + diverting pulley + vibration dampers)

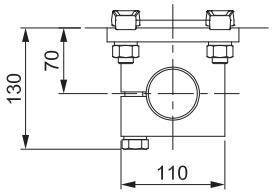
VIBRATIONS DAMPER SET UP



Damper code	Dimension
	[mm]
TAI0110	D.100x28

DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER





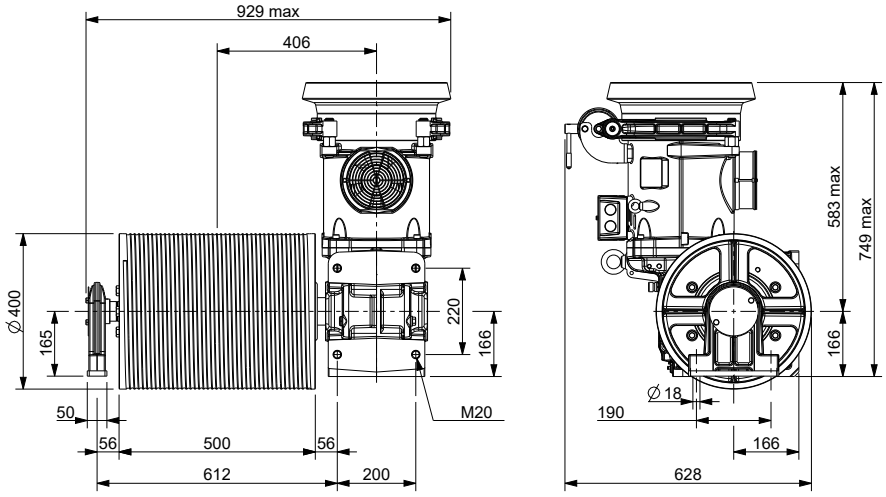
Diverting Pulley		Max n°Grooves x D	Grooves Pitch
Dt [mm]	E [mm]	n° x mm	I [mm]
400	116	7xD8	14
450	116	6xD9	17
		6xD10	17
		6xD11	17
520	116	5xD12	19
		5xD13	19

GEARED SH140T

Geared machine Lh

Power Range 50 Hz 4 poles VVVF **5,5 kW**
Ratio **1/52**
Speed synchronous **0,60 m/s**
Geared Weight **350 kg**
Oil capability **3,6 l**
Geared machine Rh o Lh (see from motor)

DIMENSIONS



Brake Electromagnet		
[V]	[A]	[W]
24	5,25	126
48	2,30	110
60	1,77	106
80	1,50	120
110	1,02	112
200	0,63	126

DUTY TABLE

Roping 1:1

50Hz
VVVF 1500 rpm 4 Poles
Motor Output **[kW]** Asynchronous
VVVF **5,5**

R.R.	Traction Drum Ø	Installation frequency	Max Rated Load	Max cabin load	Ropes Nr x diameter Ø	Max travel with 2 parallel ropes
[i]	[mm]	[Hz]	[kg]	[kg]	[mm]	[m]
1/52	400	50	225	300	2 x Ø8	29
					2 x Ø9	26
					2 x Ø10	23

Rated load values listed in the table include the weight of the ropes. To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Plant efficiency = 0,85

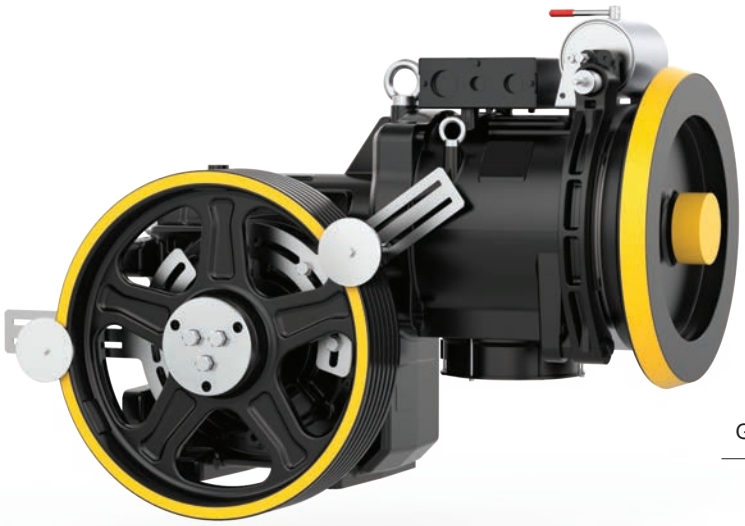
ELECTRIC MOTOR DATA

50Hz
VVVF 1500 rpm 4 Poles
Asynchronous Rated Power **[kW]**
VVVF **5,5**

		Motor Parameters
Rated Voltage (star connection)(1)(3)	[V]	400
Frequency	[Hz]	50
Synchronous Speed	[rpm]	1500
Asynchronous Speed	[rpm]	1424
Rated Current (2)	[A]	12,4
Rated Torque	[Nm]	36,9
Cos φ Power Factor	[ ]	0,78
Starting Current	[A]	51
Starting Torque	[Nm]	78
Duty Cycle	[%]	60
Starts per Hour	[s/h]	240
Insulation Class	[ ]	F
Degree of Protection IP	[ ]	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

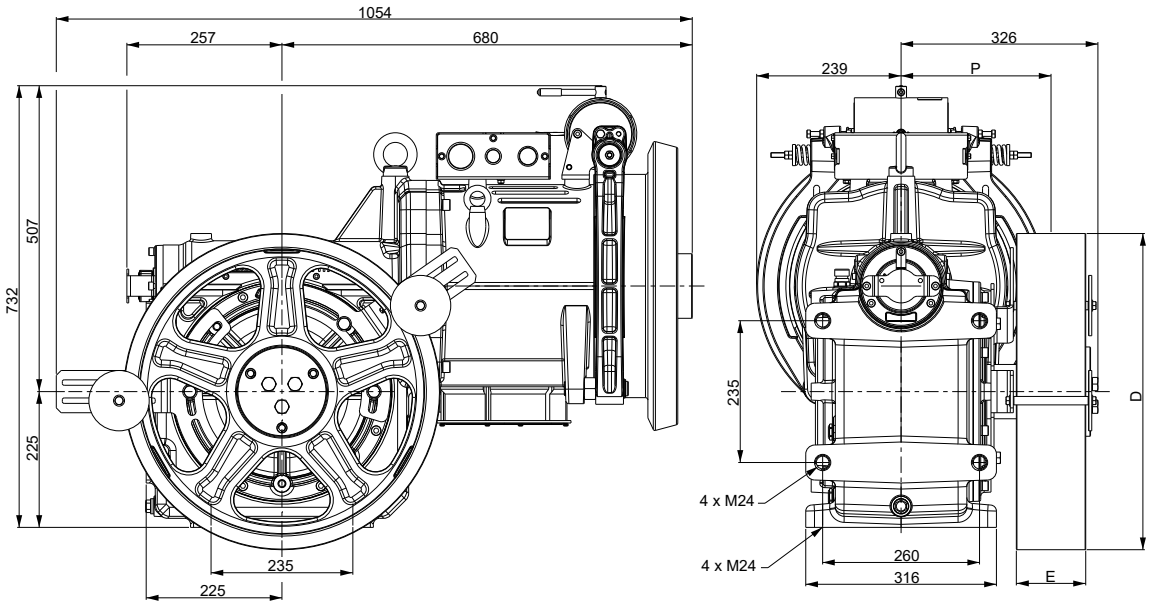
GEARED SH160



Maximum Static Load SH160	**42,2 kN - 4300 kg**
Power Range 50 Hz 4 poles VVVF	**7,5 ÷ 20 kW**
Power Range 50 Hz 4/16 poles	**7,5 ÷ 11 kW**
Power Range 50 Hz 6 poles VVVF	**7,5 ÷ 11 kW**
Power Range 50 Hz 6/16 poles	**5,1 ÷ 7,5 kW**
Power Range 60 Hz 4 poles VVVF	**8,2 ÷ 18 kW**
Power Range 60 Hz 4/16 poles	**8,2 ÷ 12 kW**
Power Range 60 Hz 6 poles VVVF	**8,2 ÷ 12 kW**
Power Range 60 Hz 6/16 poles	**5,5 ÷ 8,2 kW**
Riduction	**1/55; 1/43; 1/35; 2/53; 2/43; 3/41**
Weight	**450 kg**
Oil capacity	**9 l**
Geared machine Rh o Lh (see from motor)	**Picture Gear Lh**

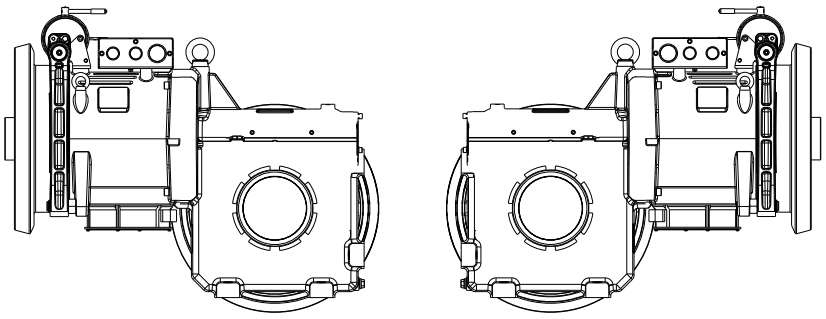
The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS



Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
CSW	450	115	238,5	42,2 - 4300	100% / 100% 100% / 100%
	520				
	560				
	600				
	650				
	700				

*) Max. static load on the slow shaft CSW: Conventional single wrap ESW: Extended single wrap



horizontal lh horizontal rh

Brake Electromagnet		
[V]	[A]	[W]
24	9,71	233
48	4,85	233
60	3,96	238
80	2,70	216
110	1,83	201
200	1,05	210

DUTY TABLE
Roping 1:1

		50Hz						60Hz					
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles						**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles					
		Motor Output **[kW]** Asynchronous											
		VVVF/AC2 **7,5**	VVVF/AC2 **9**	VVVF/AC2 **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF/AC2 **8,2**	VVVF/AC2 **10**	VVVF/AC2 **12**	VVVF **15*)**	VVVF **18*)**
R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load					Speed syn.	Max Rated Load				
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]
1/55	450	0,64	1250	--	--	--	--	--	0,77	1140	1250	--	--	--
1/55	520	0,74	1095	1220	--	--	--	--	0,89	985	1160	--	--	--
1/55	560	0,80	1015	1135	--	--	--	--	0,96	915	1075	--	--	--
1/43	450	0,82	1030	1250	--	--	--	--	0,99	925	1155	1250	--	--
1/55	600	0,86	945	1060	--	--	--	--	1,03	855	1005	--	--	--
1/55	650	0,93	875	975	--	--	--	--	1,11	790	925	--	--	--
1/43	520	0,95	890	1090	1250	--	--	--	1,14	800	1000	1220	1250	--
1/55	700	1,00	810	905	--	--	--	--	1,20	730	860	--	--	--
1/35	450	1,01	870	1065	1250	--	--	--	1,21	780	975	1190	1250	--
1/43	560	1,02	825	1010	1250	--	--	--	1,23	745	930	1135	1250	--
1/43	600	1,10	770	945	1175	1220	--	--	1,32	695	865	1060	1165	--
1/35	520	1,17	750	920	1145	1250	--	--	1,40	675	845	1030	1250	--
1/43	650	1,19	710	870	1085	1125	--	--	1,42	640	800	975	1075	--
1/35	560	1,26	700	855	1060	1250	--	--	1,51	625	780	955	1215	1250
1/43	700	1,28	660	810	1005	1045	--	--	1,53	595	745	905	1000	--
2/53	450	1,33	655	805	1000	1245	1250	--	1,60	590	735	900	1145	1250
1/35	600	1,35	650	795	990	1165	--	--	1,62	585	730	890	1135	1165
1/35	650	1,46	600	735	915	1075	--	--	1,75	540	675	825	1045	1075
2/53	520	1,54	605	740	920	1145	1160	--	1,85	545	680	830	1055	1095
1/35	700	1,57	595	725	905	1000	--	--	1,88	535	670	815	1000	--
2/43	450	1,64	570	695	865	1075	1250	--	1,97	510	640	780	990	1200
2/53	560	1,66	565	690	855	1065	1075	--	1,99	505	630	770	980	1015
2/53	600	1,78	525	640	800	990	1005	--	2,13	475	590	720	915	950
2/43	520	1,90	490	600	745	930	1145	1220	2,28	440	550	675	855	1035
2/53	650	1,93	500	615	760	925	--	--	2,31	450	565	685	870	875
2/43	560	2,05	475	580	715	890	1100	1135	2,45	425	530	645	820	995
2/53	700	2,07	465	570	705	860	--	--	2,49	420	520	635	810	815
2/43	600	2,19	440	540	670	830	1030	1060	2,63	395	495	605	765	930
2/43	650	2,37	405	495	620	770	950	975	2,85	365	455	555	705	855
2/43	700	2,56	380	460	575	715	880	905	3,07	340	425	515	655	795
3/41	450	2,59	360	440	550	680	840	1030	3,10	325	405	495	630	760
3/41	520	2,99	310	380	475	590	730	890	3,59	280	350	425	545	660
3/41	560	3,22	290	355	440	545	675	825	3,86	260	325	395	505	610
3/41	600	3,45	270	330	410	510	630	770	4,14	245	305	370	470	570
3/41	650	3,74	250	305	380	470	580	710	4,48	225	280	340	435	525
3/41	700	4,02	230	285	350	435	540	660	4,83	210	260	315	405	490

	50Hz							60Hz					
	Motor Output **[kW]**												
	VVVF/AC2 **7,5**	VVVF/AC2 **9**	VVVF/AC2 **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**		VVVF/AC2 **8,2**	VVVF/AC2 **10**	VVVF/AC2 **12**	VVVF **15**	VVVF **18**	
R.R.	Max Output Torque	Geared Efficiency						Max Output Torque	Geared Efficiency				
[i]	[Nm]							[Nm]					
1/55	1950	0,70	0,71	--	--	--	--	1850	0,69	0,71	--	--	--
1/43	2250	0,73	0,74	0,75	--	--	--	2150	0,72	0,74	0,75	--	--
1/35	2150	0,76	0,77	0,78	0,79	--	--	2150	0,74	0,76	0,78	0,79	--
2/53	1850	0,81	0,82	0,83	0,84	0,85	--	1750	0,80	0,81	0,83	0,84	0,85
2/43	1950	0,81	0,82	0,83	0,84	0,85	0,86	1750	0,80	0,81	0,83	0,84	0,85
3/41	1850	0,83	0,85	0,86	0,87	0,88	0,89	1900	0,82	0,84	0,85	0,87	0,88

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

50Hz						60Hz					
VVVF 1000 rpm 6 Poles **AC2 1000/375 rpm** 6/16 Poles						**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles					
Motor Output **[kW]** Asynchronous											
	AC2 **5,1**	AC2 **6**	VVVF/AC2 **7,5**	VVVF **9**	VVVF **11**		AC2 **5,5**	AC2 **6,7**	VVVF/AC2 **8,2**	VVVF **10**	VVVF **12**
Speed syn.	Max Rated Load					Speed syn.	Max Rated Load				
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]		[kg]	[kg]
0,43	1250	--	--	--	--	0,51	1145	1250	--	--	--
0,50	1115	1250	--	--	--	0,59	990	1230	1250	--	--
0,53	1035	1240	1250	--	--	0,64	920	1145	1250	--	--
0,55	1050	1250	--	--	--	0,66	935	1165	1250	--	--
0,57	965	1155	1165	--	--	0,69	860	1065	1165	--	--
0,62	890	1065	1075	--	--	0,74	790	985	1075	--	--
0,63	910	1090	1250	--	--	0,76	810	1005	1250	--	--
0,67	830	990	1000	--	--	0,80	735	915	1000	--	--
0,67	885	1065	1250	--	--	0,81	790	980	1225	1250	--
0,68	845	1010	1250	--	--	0,82	750	935	1165	1250	--
0,73	785	945	1200	1250	--	0,88	700	870	1085	1250	--
0,78	765	920	1170	1250	--	0,93	680	850	1060	1250	--
0,79	725	870	1105	1175	--	0,95	645	805	1005	1175	--
0,84	710	855	1085	1250	--	1,01	630	790	985	1215	1250
0,85	675	810	1030	1095	--	1,02	600	745	930	1095	--
0,89	670	805	1025	1245	1250	1,07	595	740	925	1145	1250
0,90	665	795	1015	1235	1250	1,08	590	735	915	1135	1250
0,97	615	735	935	1140	1150	1,17	545	680	845	1050	1150
1,03	620	740	940	1145	1250	1,23	550	680	850	1050	1250
1,05	605	725	925	1070	--	1,26	535	670	835	1035	1070
1,10	580	695	885	1075	1250	1,32	515	640	795	985	1195
1,11	575	690	875	1065	1160	1,33	510	635	790	975	1160
1,19	535	640	815	990	1085	1,42	475	590	735	910	1085
1,27	500	600	765	930	1145	1,52	445	555	690	855	1035
1,28	510	615	780	945	1000	1,54	455	565	705	875	1000
1,36	480	580	735	890	1100	1,64	430	535	665	820	995
1,38	475	570	725	880	930	1,66	425	525	655	810	930
1,46	450	540	685	830	1030	1,75	400	500	620	765	930
1,58	415	495	630	770	950	1,90	370	460	570	710	860
1,70	385	460	585	715	880	2,05	345	425	530	655	795
1,72	370	440	560	680	840	2,07	325	405	505	625	755
1,99	320	380	485	590	730	2,39	280	350	435	540	655
2,15	295	355	450	545	675	2,57	260	325	405	500	605
2,30	275	330	420	510	630	2,76	245	305	380	465	565
2,49	255	305	385	470	580	2,99	225	280	350	430	525
2,68	235	285	360	435	540	3,22	210	260	325	400	485

50Hz						60Hz					
Motor Output **[kW]**											
	AC2 **5,1**	AC2 **6**	VVVF/AC2 **7,5**	VVVF **9**	VVVF **11**		AC2 **5,5**	AC2 **6,7**	VVVF/AC2 **8,2**	VVVF **10**	VVVF **12**
Max Output Torque	Geared Efficiency					Max Output Torque	Geared Efficiency				
[Nm]						[Nm]					
2150	0,70	0,71	--	--	--	2150	0,69	0,70	0,72	--	--
2350	0,73	0,74	0,75	--	--	2350	0,72	0,74	0,75	0,76	--
2300	0,76	0,77	0,78	0,79	--	2300	0,75	0,76	0,78	0,79	0,80
2000	0,81	0,82	0,83	0,84	0,85	2000	0,79	0,81	0,82	0,83	0,84
2250	0,81	0,82	0,83	0,84	0,85	2250	0,79	0,81	0,83	0,84	0,85
2000	0,83	0,85	0,86	0,87	0,88	2000	0,83	0,84	0,86	0,87	0,88

		50Hz **VVVF 1500 rpm** 4 Poles **AC2 1500/375 rpm** 4/16 Poles								
		Asynchronous Rated Power **[kW]**								
		VVVF **7,5**	VVVF **9**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	AC2 **7,5**	AC2 **9**	AC2 **11**
		Motor Parameters								
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500	1500	1500	1500/375	1500/375	1500/375
Asynchronous Speed	[rpm]	1467	1471	1470	1475	1478	1480	1370/300	1370/300	1370/300
Rated Current (2)	[A]	16	19	22	28	35	42	22/13	25/15	29/17
Rated Torque	[Nm]	49	58	72	89	107	129	52	63	77
Cos φ Power Factor	[ ]	0,79	0,8	0,81	0,78	0,83	0,74	0,76	0,75	0,75
Starting Current	[A]	66	87	94	169	235	280	72	102	125
Starting Torque	[Nm]	60	80	86	136	238	257	125/78	150/93	183/114
Duty Cycle	[%]	60	60	60	60	60	60	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

		60Hz **VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles							
		Asynchronous Rated Power **[kW]**							
		VVVF **8,2**	VVVF **10**	VVVF **12**	VVVF **15**	VVVF **18**	AC2 **8,2**	AC2 **10**	AC2 **12**
		Motor Parameters							
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400
Frequency	[Hz]	60	60	60	60	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800	1800	1800	1800/450	1800/450	1800/450
Asynchronous Speed	[rpm]	1760	1763	1765	1770	1774	1645/360	1645/360	1645/360
Rated Current (2)	[A]	17	21	24	31	40	22/13	25/15	29/17
Rated Torque	[Nm]	44	54	65	81	97	48	58	70
Cos φ Power Factor	[ ]	0,79	0,8	0,81	0,82	0,83	0,76	0,74	0,75
Starting Current	[A]	--	--	--	--	--	72	102	125
Starting Torque	[Nm]	--	--	--	--	--	--	--	--
Duty Cycle	[%]	60	60	60	60	60	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

50Hz

VVVF 1000 rpm 6 Poles
AC2 1000/375 rpm 6/16 Poles

Asynchronous Rated Power **[kW]**					
VVVF **7,5**	VVVF **9**	VVVF **11**	AC2 **5,1**	AC2 **6**	AC2 **7,5**
Motor Parameters					
400	400	400	400	400	400
50	50	50	50	50	50
1000	1000	1000	1000/375	1000/375	1000/375
987	986	989	910/300	910/300	910/300
17	22	31	17	21	24
72	87	106	54	63	79
0,72	0,68	0,6	--	--	--
73	78	85	73	80	89
108	145	189	131	150	183
60	60	60	30+10	30+10	30+10
240	240	240	180	180	180
F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21

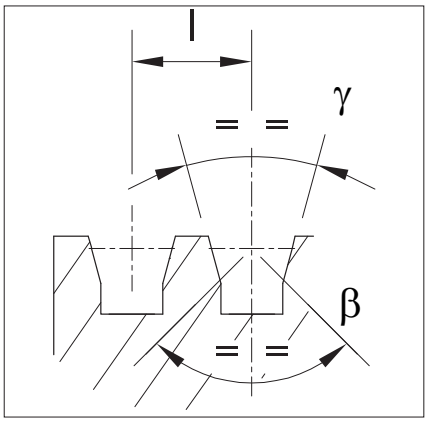
60Hz

VVVF 1200 rpm 6 Poles
AC2 1200/450 rpm 6/16 Poles

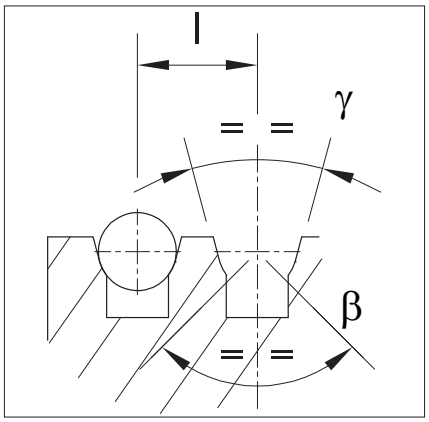
Asynchronous Rated Power **[kW]**					
VVVF **8,2**	VVVF **10**	VVVF **12**	AC2 **5,5**	AC2 **6,7**	AC2 **8,2**
Motor Parameters					
400	400	400	400	400	400
60	60	60	60	60	60
1200	1200	1200	1200/450	1200/450	1200/450
1185	1186	1187	1090/360	1090/360	1090/360
18,5	23,3	32,5	22	25	27
67	80,5	97	48	59	72
0,72	0,71	0,62	--	--	--
150	197	263	74	79	90
132	176,3	238	115	142	165
60	60	60	30+10	30+10	30+10
240	240	240	180	180	180
F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
CSW	450	115	7xD8	14
	450	115	6xD9	17
	450	115	6xD10	17
	450	115	6xD11	17
	520	115	7xD8	14
	520	115	6xD9	17
	520	115	6xD10	17
	520	115	6xD11	17
	520	115	5xD12	19
	520	115	5xD13	19
	560	115	7xD8	14
	560	115	6xD9	17
	560	115	6xD10	17
	560	115	6xD11	17
	560	115	5xD12	19
	560	115	5xD13	19
	560	115	4xD14	22
	600	115	7xD8	14
	600	115	6xD9	17
	600	115	6xD10	17
	600	115	6xD11	17
	600	115	5xD12	19
	600	115	5xD13	19
	600	115	4xD14	22
	600	115	4xD15	22
	650	115	7xD8	14
	650	115	6xD9	17
	650	115	6xD10	17
	650	115	6xD11	17
	650	115	5xD12	19
	650	115	5xD13	19
	650	115	4xD14	22
	650	115	4xD15	22
	650	115	4xD16	22
	700	115	7xD8	14
	700	115	6xD9	17
	700	115	6xD10	17
	700	115	6xD11	17
	700	115	5xD12	19
	700	115	5xD13	19
	700	115	4xD14	22
	700	115	4xD15	22
	700	115	4xD16	22



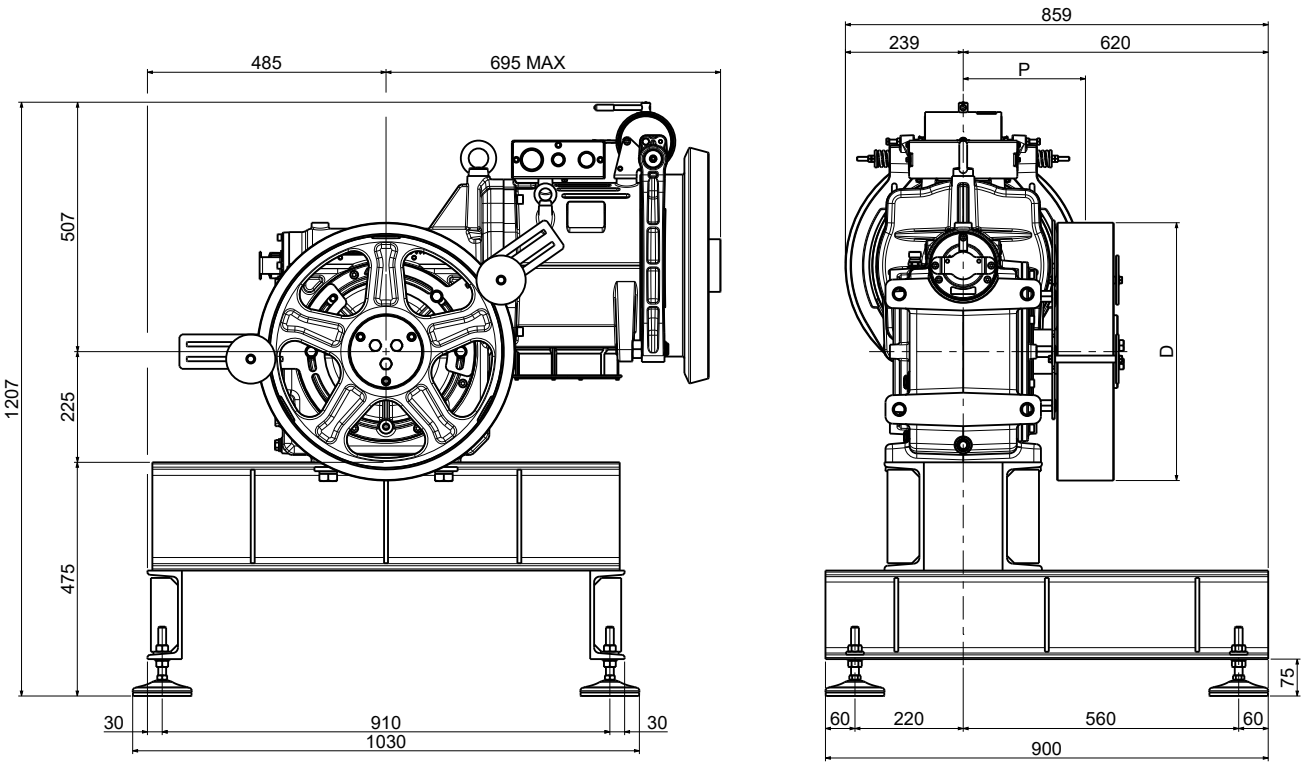
V grooves with undercut



U grooves with undercut

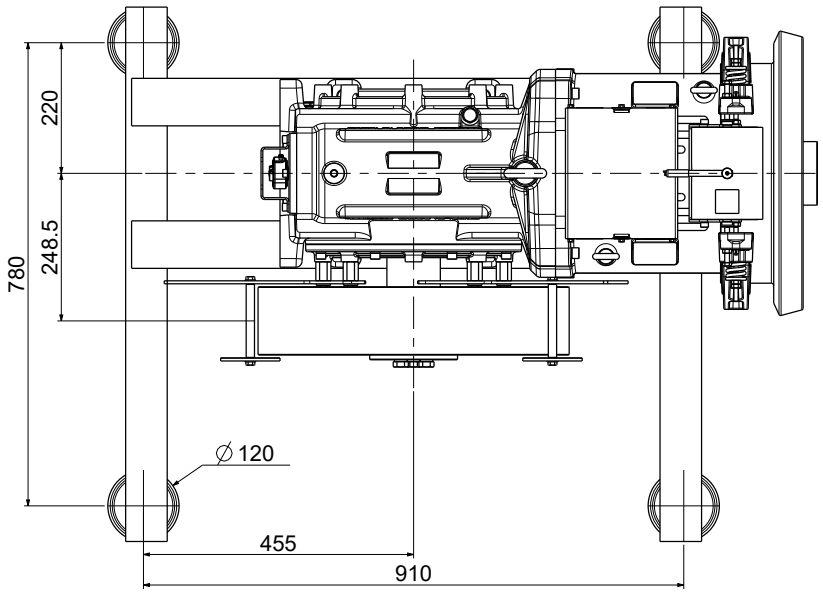
γ = *groove angle*
β = *Undercut angle*

BEDPLATE SH160 | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WRAPPING



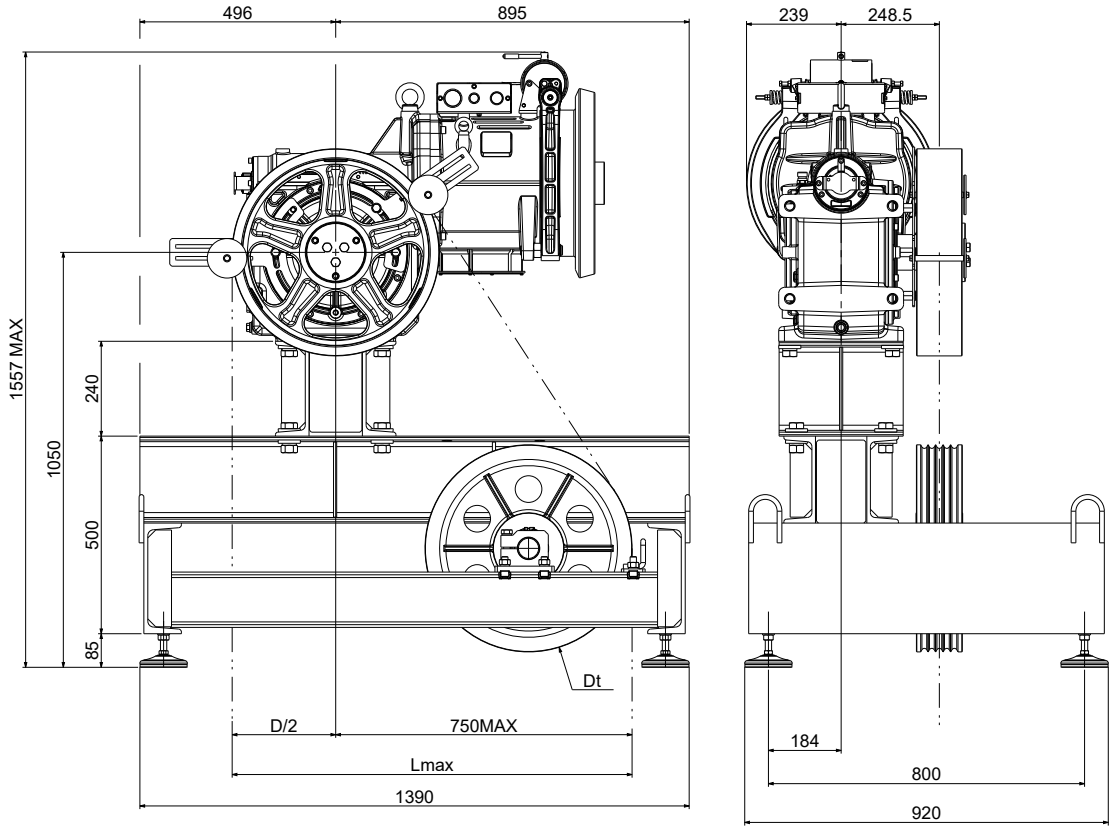
XTE1039 (D 450-700) (vibration dampers included)
Weight of machine bedplate: 108 kg (bedplate + vibration dampers)

VIBRATIONS DAMPER SET UP



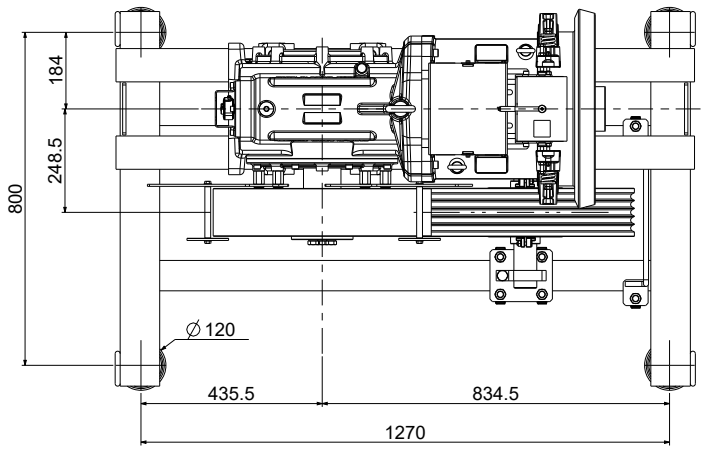
Damper code	Dimension
	[mm]
TAI0111	D.120x32

BEDPLATE SH160 | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WRAPPING



XTE1362 (Dt 400-450-520) (vibration dampers included)
Weight of machine bedplate: 293 kg. (bedplate + diverting pulley + vibration dampers)

VIBRATIONS DAMPER SET UP

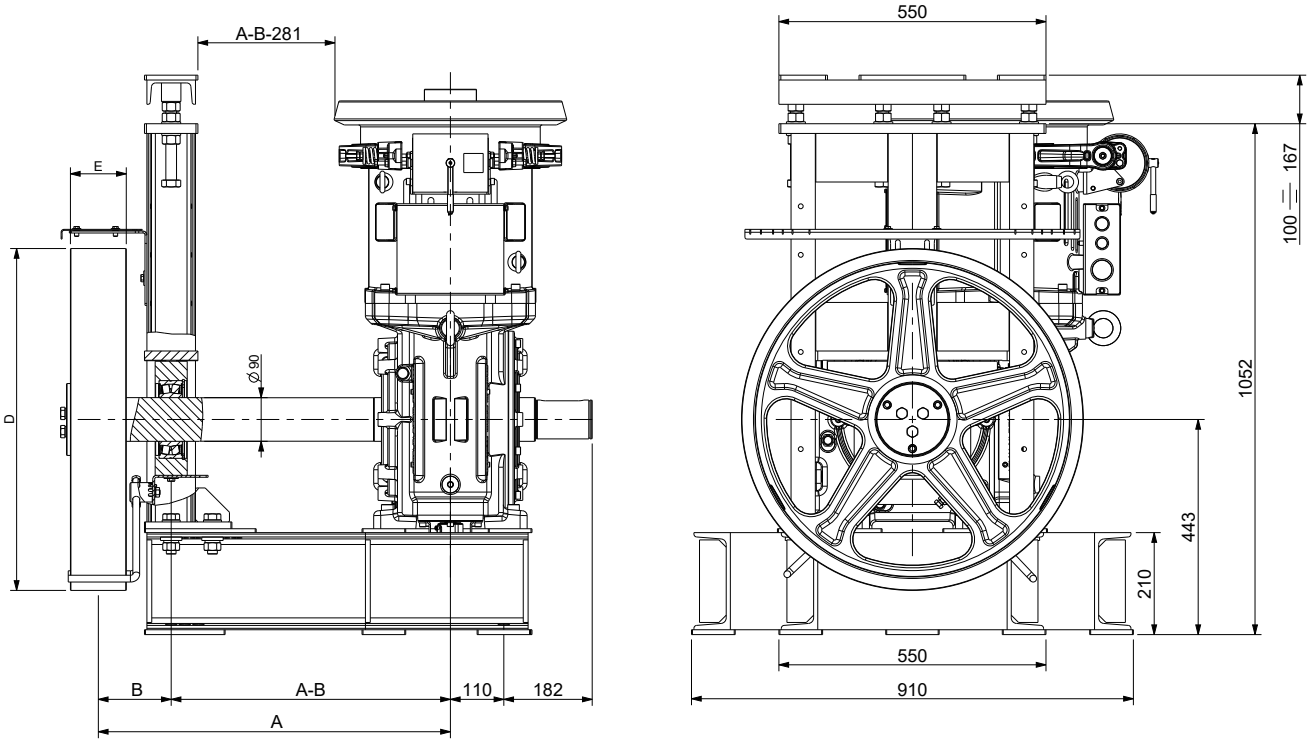


Traction Sheave	X	L max
D [mm]	[mm]	[mm]
450	270	975
520	235	1010
560	215	1030
600	195	1050
650	170	1075
700	145	1100
600	80	1000

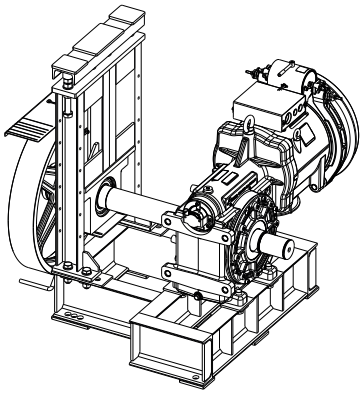
Damper code	Dimension
	[mm]
TAI0111	D.120x32

BEDPLATE SH160 LS | BOTTOM DRIVE MACHINE WITH CSW WRAPPING

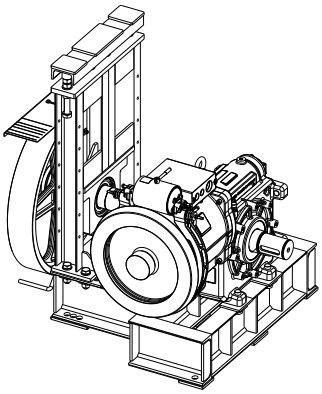
(Ropes upwards)



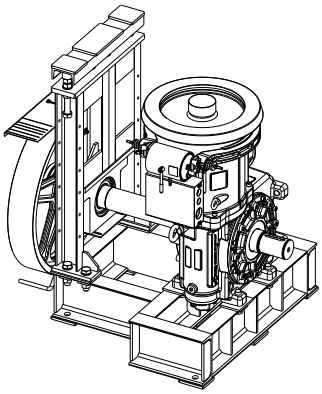
INSTALLATION POSITION



Right hand Machine

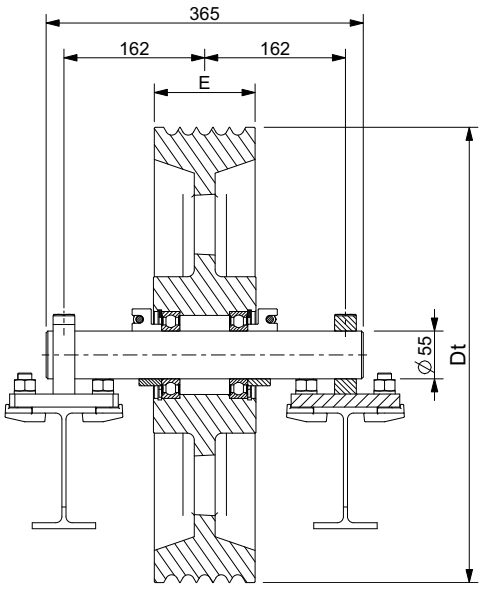


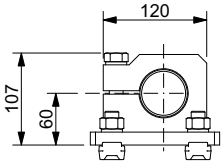
Left hand Machine



Vertical Machine

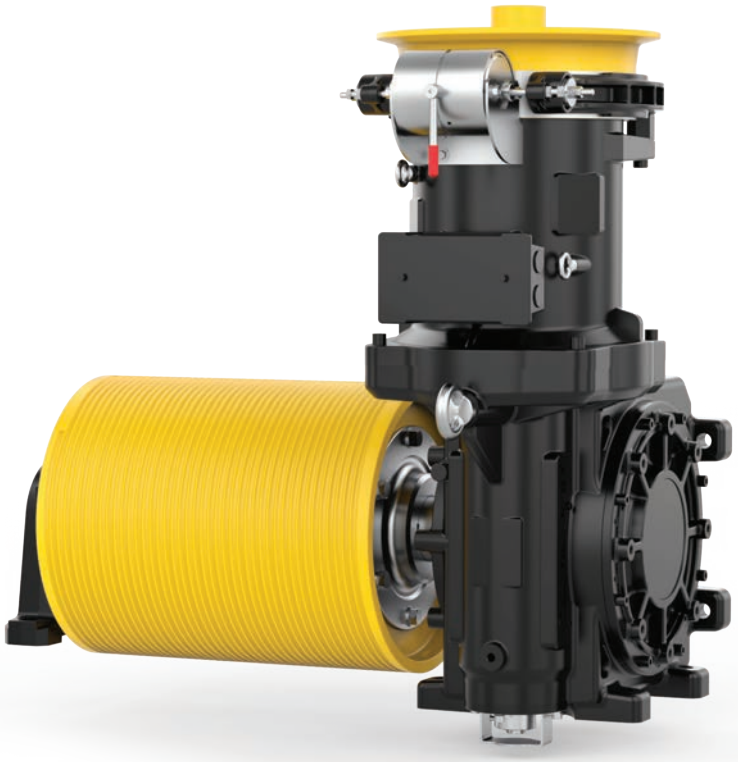
DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER





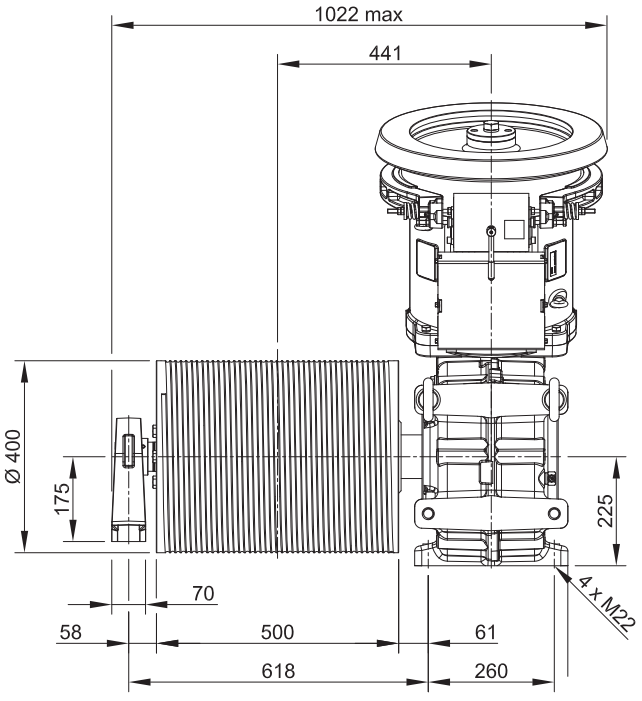
Diverting Pulley		Max n°Grooves x D	Grooves Pitch
Dt [mm]	E [mm]	n° x mm	l [mm]
400	116	7xD8	14
450	116	6xD9	17
		6xD10	17
		6xD11	17
520	116	5xD12	19
		5xD13	19

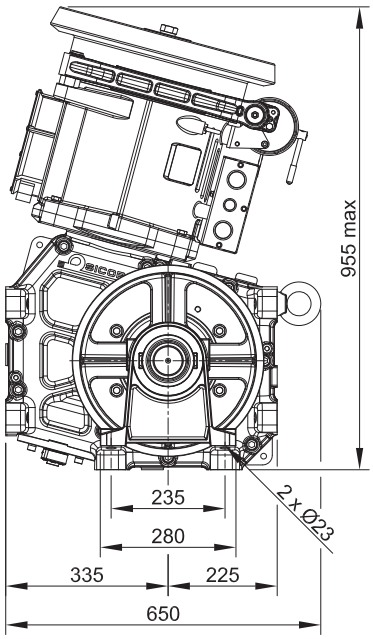
GEARED SH160T



Power Range 50 Hz 4 poles VVVF **9 - 11 kW**
Ratio **1/43**
Speed synchronous **0,63 m/s**
Geared Weight **550 kg**
Oil capability **9 l**
Geared machine Rh o Lh (see from motor)

DIMENSIONS





Brake Electromagnet		
[V]	[A]	[W]
24	9,71	233
48	4,85	233
60	3,96	238
80	2,70	216
110	1,83	201
200	1,05	210

DUTY TABLE

Roping 1:1

		50Hz					
		VVVF 1500 rpm 4 Poles					
		Motor Output **[kW]** Asynchronous					
			VVVF **9**	VVVF **11**			
R.R.	Traction Drum Ø	Installation frequency	Max Rated Load		Max cabin load	Ropes Nr x diameter Ø	Max travel with 2 parallel ropes
[i]	[mm]	[Hz]	[kg]	[kg]	[kg]	[mm]	[m]
1/43	400	43	225	--	500	2 x Ø8 (*)	29
						2 x Ø9 (*)	26
						2 x Ø10	23
		43	320	--	400	2 x Ø8 (*)	29
						2 x Ø9 (*)	26
						2 x Ø10	23
		43	--	400	500	2 x Ø9 (*)	26
						2 x Ø10 (*)	23

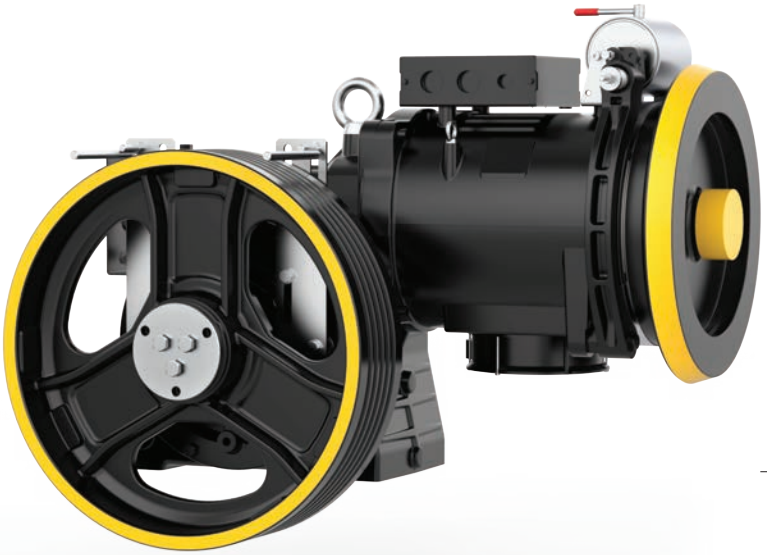
Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Plant efficiency = 0,80
(*) high tensile strenght ropes

ELECTRIC MOTOR DATA

		50Hz	
		VVVF 1500 rpm 4 Poles	
		Asynchronous Rated Power **[kW]**	
		VVVF **9**	VVVF **11**
		Motor Parameters	
Rated Voltage (star connection)(1)(3)	[V]	400	400
Frequency	[Hz]	50	50
Synchronous Speed	[rpm]	1500	1500
Asynchronous Speed	[rpm]	1471	1470
Rated Current (2)	[A]	19	22
Rated Torque	[Nm]	58	72
Cos φ Power Factor	[ ]	0,8	0,81
Starting Current	[A]	87	94
Starting Torque	[Nm]	80	86
Duty Cycle	[%]	60	60
Starts per Hour	[s/h]	240	240
Insulation Class	[ ]	F	F
Degree of Protection IP	[ ]	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

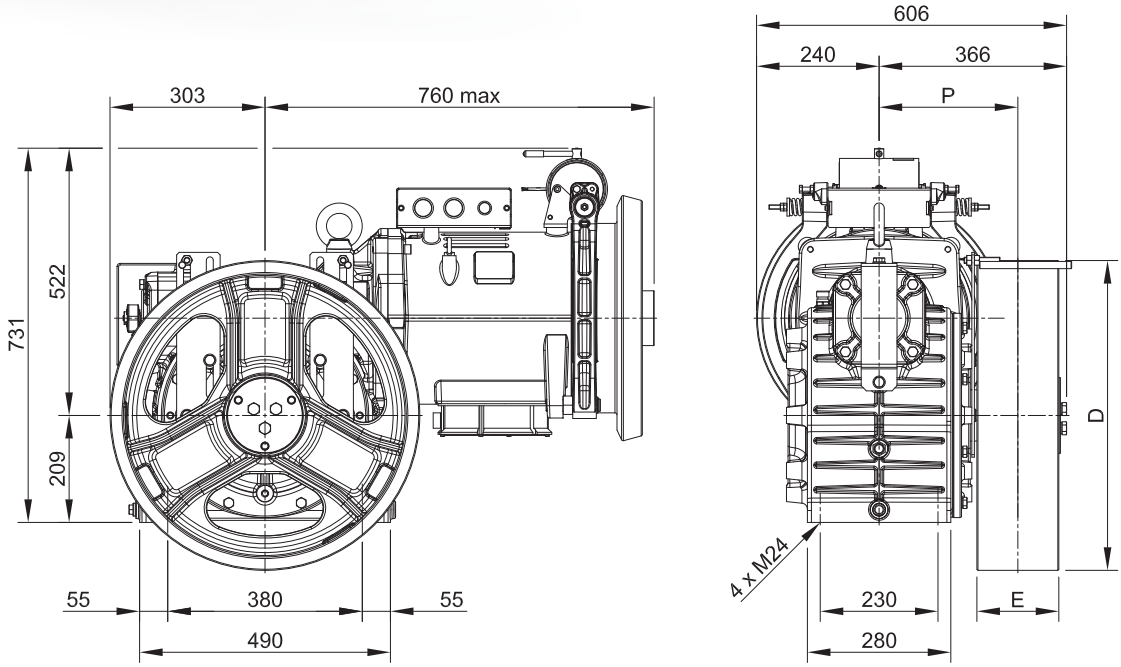
GEARED SH190



Max. Static Load SH190	**51 kN - 5200 kg**
Power Range 50 Hz 4 poles VVVF	**7,5 ÷ 30 kW**
Power Range 50 Hz 4/16 poles	**7,5 ÷ 16,5 kW**
Power Range 50 Hz 6 poles VVVF	**4,2 ÷ 20 kW**
Power Range 50 Hz 6/16 poles	**4,2 ÷ 9 kW**
Power Range 60 Hz 4 poles VVVF	**8,2 ÷ 33 kW**
Power Range 60 Hz 4/16 poles	**8,2 ÷ 18 kW**
Power Range 60 Hz 6 poles VVVF	**4,7 ÷ 22 kW**
Power Range 60 Hz 6/16 poles	**4,7 ÷ 10 kW**
Ratio	**1/40; 1/51; 1/62; 2/59; 3/47**
Geared Weight SH190	**620 kg**
Oil capability	**11,5 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

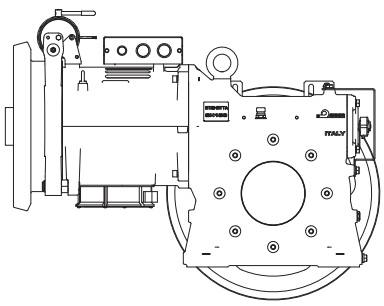
The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS

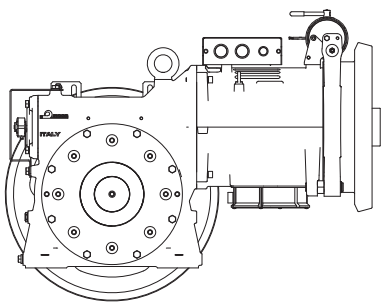


Wrapping System	Traction sheave		Dimension	Load*)	Static Load Direction
	D [mm]	E [mm]	P [mm]	F [kN - kg]	[%]
ESW/CSW	520	176	279	51 - 5200	100% / 100% 100% / 100%
CSW	600	160	271		
	650				
	690				
	750				

*) Max. static load on the slow shaft CSW: Conventional single wrap ESW: Extended single wrap



horizontal lh



horizontal rh

Brake Electromagnet		
[V]	[A]	[W]
24	9,71	233
48	4,85	233
60	3,95	237
80	2,70	215
110	1,83	200
200	1,05	210

DUTY TABLE

Roping 1:1

Wrapping system		R.R.	Trac. Sheave Ø	50Hz								60Hz							
				VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles								**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles							
				Motor Output **[kW]** Asynchronous															
				VVVF AC2 **7,5**	VVVF AC2 **9,2**	VVVF AC2 **11**	VVVF AC2 **13,5**	VVVF AC2 **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	VVVF AC2 **8,2**	VVVF AC2 **10**	VVVF AC2 **12**	VVVF AC2 **15**	VVVF AC2 **18**	VVVF **22**	VVVF **27**	VVVF **33**
CSW	ESW	[i]	[mm]	Speed syn.	Max Rated Load							Speed syn.	Max Rated Load						
				[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
X	X	1/62	520	0,66	1305	1625	1750	--	--	--	--	0,79	1175	1450	1750	--	--	--	--
X	--	1/62	600	0,76	1130	1410	1670	--	--	--	--	0,91	1015	1260	1550	1670	--	--	--
X	X	1/51	520	0,80	1075	1335	1620	1750	--	--	--	0,96	965	1195	1470	1750	--	--	--
X	--	1/62	650	0,82	1045	1300	1545	--	--	--	--	0,99	940	1160	1430	1545	--	--	--
X	--	1/62	690	0,87	985	1225	1455	--	--	--	--	1,05	885	1095	1350	1455	--	--	--
X	--	1/51	600	0,92	955	1205	1460	1630	--	--	--	1,11	860	1075	1310	1630	--	--	--
X	--	1/62	750	0,95	930	1170	1335	--	--	--	--	1,14	835	1045	1275	1335	--	--	--
X	--	1/51	650	1,00	880	1110	1345	1505	--	--	--	1,20	795	995	1210	1505	--	--	--
X	X	1/40	520	1,02	865	1090	1320	1640	1750	--	--	1,23	775	975	1185	1520	1750	--	--
X	--	1/51	690	1,06	830	1045	1270	1415	--	--	--	1,28	745	935	1140	1415	--	--	--
X	--	1/51	750	1,15	795	985	1210	1300	--	--	--	1,39	705	885	1085	1300	--	--	--
X	--	1/40	600	1,18	780	970	1185	1475	1690	--	--	1,41	690	865	1065	1350	1640	1690	--
X	--	1/40	650	1,28	720	895	1095	1360	1560	--	--	1,53	640	800	985	1245	1515	1560	--
X	--	1/40	690	1,35	675	840	1030	1280	1470	--	--	1,63	600	750	925	1175	1425	1470	--
X	X	2/59	520	1,38	660	825	1010	1255	1555	1750	--	1,66	590	735	905	1150	1395	1725	1750
X	--	1/40	750	1,47	640	805	985	1220	1350	--	--	1,77	575	720	885	1120	1350	--	--
X	--	2/59	600	1,60	590	740	905	1125	1395	1710	--	1,92	530	660	815	1030	1250	1550	1710
X	--	2/59	650	1,73	545	685	835	1040	1285	1575	1580	2,08	490	610	750	950	1155	1430	1580
X	--	2/59	690	1,84	510	645	790	980	1210	1485	--	2,20	460	575	710	895	1090	1345	1485
X	--	2/59	750	2,00	470	590	725	900	1115	1365	1370	2,40	425	530	650	825	1000	1240	1370
X	X	3/47	520	2,61	375	470	575	715	880	1080	1370	3,13	335	420	515	655	795	980	1220
X	--	3/47	600	3,01	325	405	495	620	765	935	1185	3,61	290	365	445	565	685	850	1055
X	--	3/47	650	3,26	300	375	460	570	705	865	1095	3,91	270	335	410	520	635	785	975
X	--	3/47	690	3,46	285	355	430	535	665	815	1030	4,15	250	315	390	490	595	740	915
X	--	3/47	750	3,76	260	325	395	495	610	750	950	4,51	230	290	355	450	550	680	845

	50Hz								60Hz							
	Motor Output **[kW]**															
	VVVF AC2 **7,5**	VVVF AC2 **9,2**	VVVF AC2 **11**	VVVF AC2 **13,5**	VVVF AC2 **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	VVVF AC2 **8,2**	VVVF AC2 **10**	VVVF AC2 **12**	VVVF AC2 **15**	VVVF AC2 **18**	VVVF **22**	VVVF **27**	VVVF **33**
R.R.	Max Output Torque	Geared Efficiency							Max Output Torque	Geared Efficiency						
[i]	[Nm]								[Nm]							
1/62	3080	0,74	0,75	0,76	0,78	0,78	0,79	--	--	3080	0,73	0,74	0,76	0,77	0,78	0,79	0,79	--
1/51	3000	0,76	0,78	0,79	0,80	0,81	0,82	0,83	--	3000	0,75	0,77	0,78	0,80	0,81	0,82	0,82	0,83
1/40	3110	0,79	0,80	0,82	0,83	0,84	0,85	0,86	0,86	3110	0,77	0,79	0,81	0,82	0,83	0,84	0,85	0,86
2/59	3150	0,81	0,83	0,85	0,86	0,87	0,88	0,88	0,89	3150	0,80	0,82	0,84	0,85	0,86	0,87	0,88	0,89
3/47	2860	0,85	0,86	0,88	0,89	0,90	0,91	0,92	0,92	2860	0,83	0,85	0,87	0,88	0,89	0,90	0,91	0,92

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

50Hz									60Hz								
VVVF 1000 rpm 6 Poles **AC2 1000/250 rpm** 6/16 Poles									**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles								
Motor Output **[kW]** Asynchronous																	
	VVVF AC2 **4,2**	VVVF AC2 **5**	VVVF AC2 **7,5**	VVVF AC2 **9**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**		VVVF AC2 **4,7**	VVVF AC2 **5,5**	VVVF AC2 **8,2**	VVVF AC2 **10**	VVVF **12**	VVVF **15**	VVVF **18**	VVVF **22**
Speed syn.	Max Rated Load								Speed syn.	Max Rated Load							
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
0,44	1050	1290	1750	--	--	--	--	--	0,53	965	1165	1750	--	--	--	--	--
0,51	910	1115	1745	1750	--	--	--	--	0,61	840	1010	1590	1750	--	--	--	--
0,53	865	1060	1655	1750	--	--	--	--	0,64	795	960	1510	1750	--	--	--	--
0,55	840	1030	1610	1750	--	--	--	--	0,66	775	930	1465	1750	--	--	--	--
0,58	790	970	1515	1700	--	--	--	--	0,70	730	875	1380	1700	--	--	--	--
0,62	780	955	1490	1750	--	--	--	--	0,74	720	865	1340	1680	1750	--	--	--
0,63	760	930	1450	1565	--	--	--	--	0,76	700	840	1305	1565	--	--	--	--
0,67	720	880	1375	1675	1750	--	--	--	0,80	665	800	1240	1550	1750	--	--	--
0,68	705	865	1350	1640	1750	--	--	--	0,82	650	780	1215	1520	1750	--	--	--
0,71	680	830	1295	1575	1650	--	--	--	0,85	625	750	1165	1460	1650	--	--	--
0,77	640	785	1240	1505	1520	--	--	--	0,92	590	710	1115	1375	1520	--	--	--
0,79	630	770	1215	1475	1750	--	--	--	0,94	580	695	1090	1350	1640	1750	--	--
0,85	580	710	1120	1360	1685	1750	--	--	1,02	535	640	1010	1245	1515	1750	--	--
0,90	545	670	1055	1280	1585	1650	--	--	1,08	505	605	950	1175	1425	1650	--	--
0,92	535	655	1035	1255	1555	1750	--	--	1,11	490	590	930	1150	1395	1750	--	--
0,98	530	640	1005	1220	1510	1520	--	--	1,18	480	580	905	1120	1360	1520	--	--
1,06	490	590	925	1125	1395	1730	1750	--	1,28	445	530	835	1030	1250	1585	1750	--
1,15	450	545	855	1040	1285	1595	1705	--	1,38	410	490	770	950	1155	1460	1705	--
1,22	425	510	805	980	1210	1505	1605	--	1,47	385	465	725	895	1090	1375	1605	--
1,33	390	470	740	900	1115	1385	1475	--	1,60	355	425	665	825	1000	1265	1475	--
1,74	310	375	585	715	880	1095	1340	1640	2,09	285	340	530	655	795	1005	1220	1505
2,01	270	325	510	620	765	950	1160	1425	2,41	245	290	460	565	685	870	1055	1305
2,17	245	300	470	570	705	875	1070	1315	2,61	225	270	425	520	635	800	975	1205
2,31	230	285	440	535	665	825	1010	1235	2,77	215	255	400	490	595	755	915	1135
2,51	215	260	405	495	610	760	930	1140	3,01	195	235	365	450	550	695	845	1045

50Hz									60Hz								
Motor Output **[kW]**																	
	VVVF AC2 **4,2**	VVVF AC2 **5**	VVVF AC2 **7,5**	VVVF AC2 **9**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**		VVVF AC2 **4,7**	VVVF AC2 **5,5**	VVVF AC2 **8,2**	VVVF AC2 **10**	VVVF **12**	VVVF **15**	VVVF **18**	VVVF **22**
Max Output Torque	Geared Efficiency								Max Output Torque	Geared Efficiency							
[Nm]									[Nm]								
3600	0,71	0,73	0,76	0,77	0,78	0,79	--	--	3600	0,70	0,72	0,76	0,77	0,78	0,79	--	--
3500	0,74	0,76	0,79	0,80	0,81	0,82	0,83	--	3500	0,73	0,75	0,78	0,80	0,81	0,82	0,82	0,83
3500	0,76	0,78	0,82	0,83	0,84	0,85	0,85	0,86	3500	0,75	0,77	0,81	0,82	0,83	0,84	0,85	0,86
3400	0,80	0,81	0,85	0,86	0,87	0,88	0,88	0,89	3400	0,78	0,80	0,84	0,85	0,86	0,87	0,88	0,89
3120	0,83	0,85	0,88	0,89	0,90	0,91	0,91	0,92	3120	0,82	0,83	0,87	0,88	0,89	0,90	0,91	0,92

		50Hz												
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles												
		Asynchronous Rated Power **[kW]**												
		VVVF **7,5**	VVVF **9,2**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	AC2 **7,5**	AC2 **9**	AC2 **11**	AC2 **13,5**	AC2 **16,5**
		Motor Parameters												
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500	1500	1500	1500	1500	1500/375	1500/375	1500/375	1500/375	1500/375
Asynchronous Speed	[rpm]	1458	1460	1457	1476	1477	1480	1481	1478	1386/297	1402/306	1370/300	1375/302	1368/298
Rated Current (2)	[A]	17,3	21,2	24,1	27,4	34,1	37	45,8	61,7	18,3/14,9	20/16,7	29/17	33/19	39/22
Rated Torque	[Nm]	50	63	72	87	107	129	161	194	53	61	76	94	115
Cos φ Power Factor	[ ]	0,72	0,7	0,76	0,84	0,84	0,84	0,84	0,79	0,78	0,80	0,75	0,78	0,78
Starting Current	[A]	110	133	157	123	162	225	305	441	65	65	125	145	158
Starting Torque	[Nm]	117	145	163	160	190	253	357	380	134	147	183	208	236
Duty Cycle	[%]	60	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	240	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

		60Hz												
		VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles												
		Asynchronous Rated Power **[kW]**												
		VVVF **8,2**	VVVF **10**	VVVF **12**	VVVF **15**	VVVF **18**	VVVF **22**	VVVF **27**	VVVF **33**	AC2 **8,2**	AC2 **10**	AC2 **12**	AC2 **15**	AC2 **18**
		Motor Parameters												
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	60	60	60	60	60	60	60	60	60	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800	1800	1800	1800	1800	1800	1800/450	1800/450	1800/450	1800/450	1800/450
Asynchronous Speed	[rpm]	1700	1710	1748	1774	1778	1779	1782	1781	1670/362	1664/373	1645/360	1650/358	1648/361
Rated Current (2)	[A]	19,2	21,5	25,5	27	35	44	55	65	19,2/15	22/18,4	31/18	40/24	49/26
Rated Torque	[Nm]	46	56	65	81	97	118	145	177	47	57	68	87	104
Cos φ Power Factor	[ ]	0,75	0,76	0,76	0,84	0,84	0,85	0,84	0,86	0,76	0,80	0,75	0,76	0,76
Starting Current	[A]	110	131	150	128	160	229	301	432	70	105	120	103	128
Starting Torque	[Nm]	105	125	163	160	176	230	335	400	110	147	159	199	239
Duty Cycle	[%]	60	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	240	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
Available on request 115V supply voltage.
The inertia value includes the high speed shaft, while the flywheel is excluded.

50Hz

VVVF 1000 rpm 6 Poles
AC2 1000/250 rpm 6/16 Poles

Asynchronous Rated Power **[kW]**											
VVVF **4,2**	VVVF **5**	VVVF **7,5**	VVVF **9**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	AC2 **4,2**	AC2 **5**	AC2 **7,5**	AC2 **9**
Motor Parameters											
400	400	400	400	400	400	400	400	400	400	400	400
50	50	50	50	50	50	50	50	50	50	50	50
1000	1000	1000	1000	1000	1000	1000	1000	1000/375	1000/375	1000/375	1000/375
960	957	963	985	986	983	985	986	929/287	920/292	910/300	912/298
12,3	15,2	20	21	26,1	33	39	47	12,3/10	18/14	24/20	29/24
42	55	74	87	106	131	160	194	45,5	52	76	94
0,63	0,65	0,66	0,71	0,71	0,70	0,70	0,69	0,66	0,65	0,66	0,67
53	65	69	72	96	108	131	175	43	52	56	58
87	105	125	134	162	195	225	253	90	105	125	134
60	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10
240	240	240	240	240	240	240	240	180	180	180	180
F	F	F	F	F	F	F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

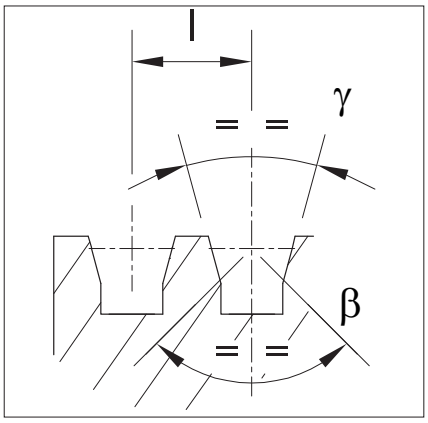
60Hz

VVVF 1200 rpm 6 Poles
AC2 1200/300 rpm 6/16 Poles

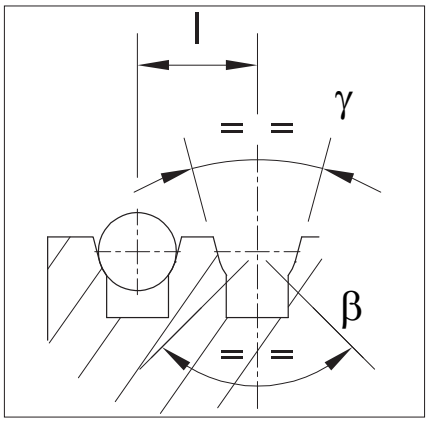
Asynchronous Rated Power **[kW]**											
VVVF **4,7**	VVVF **5,5**	VVVF **8,2**	VVVF **10**	VVVF **12**	VVVF **15**	VVVF **18**	VVVF **22**	AC2 **4,7**	AC2 **5,5**	AC2 **8,2**	AC2 **10**
Motor Parameters											
400	400	400	400	400	400	400	400	400	400	400	400
60	60	60	60	60	60	60	60	60	60	60	60
1200	1200	1200	1200	1200	1200	1200	1200	1200/450	1200/450	1200/450	1200/450
1160	1148	1152	1175	1173	1176	1174	1174	1089/361	1090/360	1095/363	1092/365
14,1	15	21	22	25,8	33	38	46	16/13	22/18	27/22	35/26
39	46	68	81	98	122	146	179	41	46	68	87
0,61	0,7	0,67	0,72	0,71	0,72	0,72	0,73	0,62	0,61	0,66	0,65
59	72	76	79	106	119	144	193	47	57	62	64
79	95	112,5	121	146	175	202,5	228	81	95	113	121
30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10
180	180	180	180	180	180	180	180	180	180	180	180
F	F	F	F	F	F	F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
ESW	520	176	7xD10	24
	520	176	6xD13	30
CSW	520	176	10xD10	16
	520	176	9xD11	18
	520	176	9xD12	18
	520	176	8xD13	19
	600	160	9xD10	16
	600	160	8xD11	18
	600	160	8xD12	18
	600	160	8xD13	19
	600	160	6xD14	22
	600	160	6xD15	22
	650	160	9xD10	16
	650	160	8xD11	18
	650	160	8xD12	18
	650	160	8xD13	19
	650	160	6xD14	22
	650	160	6xD15	22
	650	160	6xD16	22
	690	160	9xD10	16
	690	160	8xD11	18
	690	160	8xD12	18
	690	160	8xD13	19
	690	160	6xD14	22
	690	160	6xD15	22
	690	160	6xD16	22
	750	160	9xD10	16
	750	160	8xD11	18
	750	160	8xD12	18
	750	160	8xD13	19
	750	160	6xD14	22
	750	160	6xD15	22
	750	160	6xD16	22



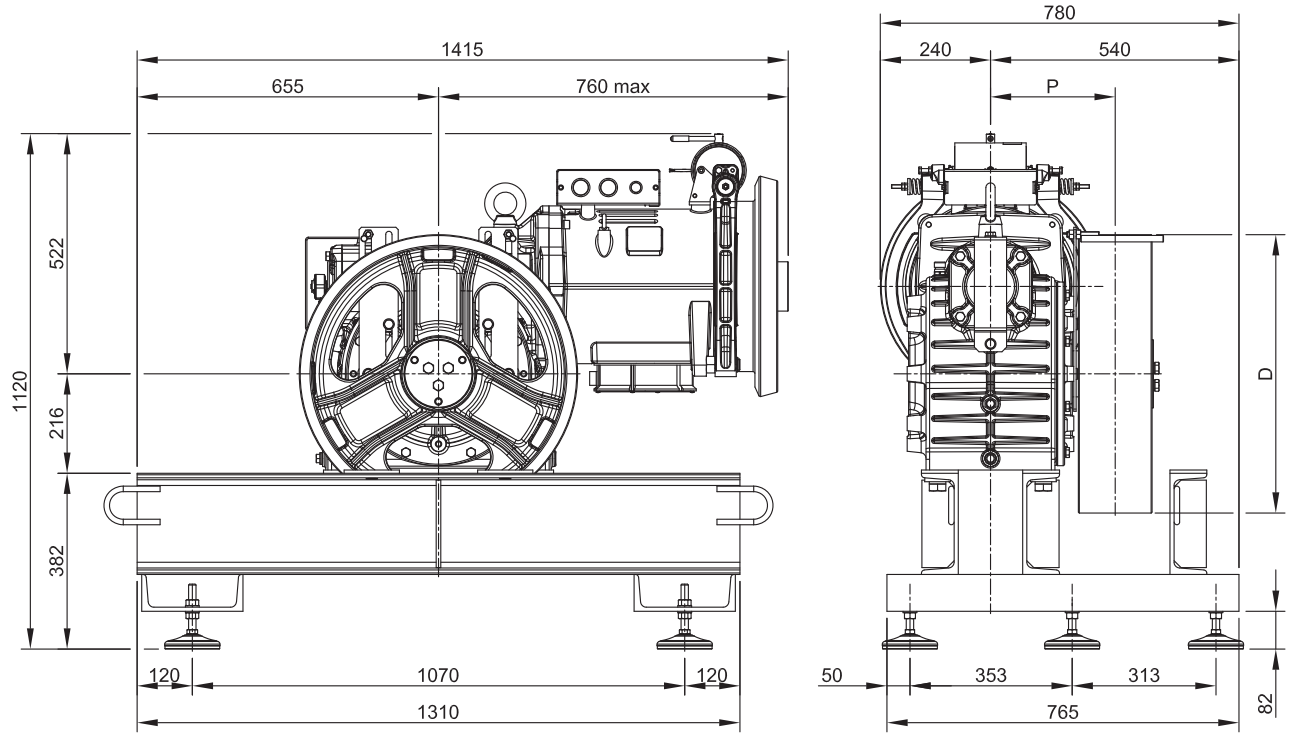
V grooves with undercut



U grooves with undercut

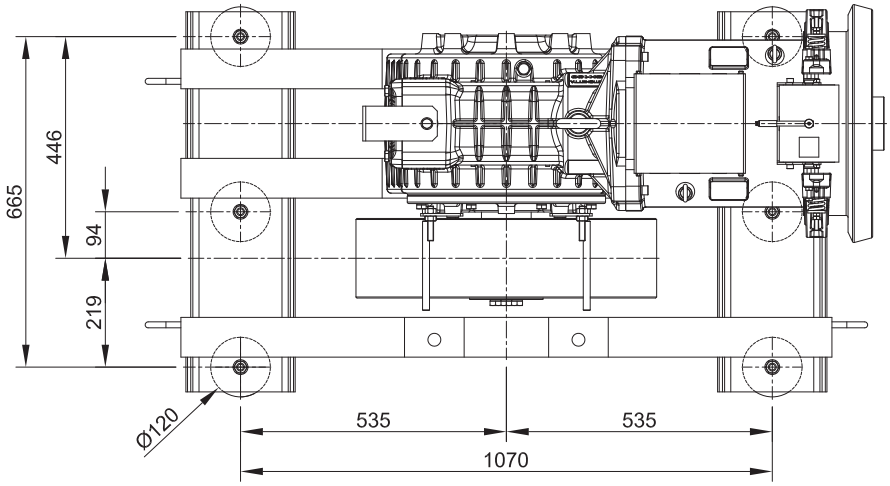
γ = *groove angle*
β = *Undercut angle*

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WRAPPING



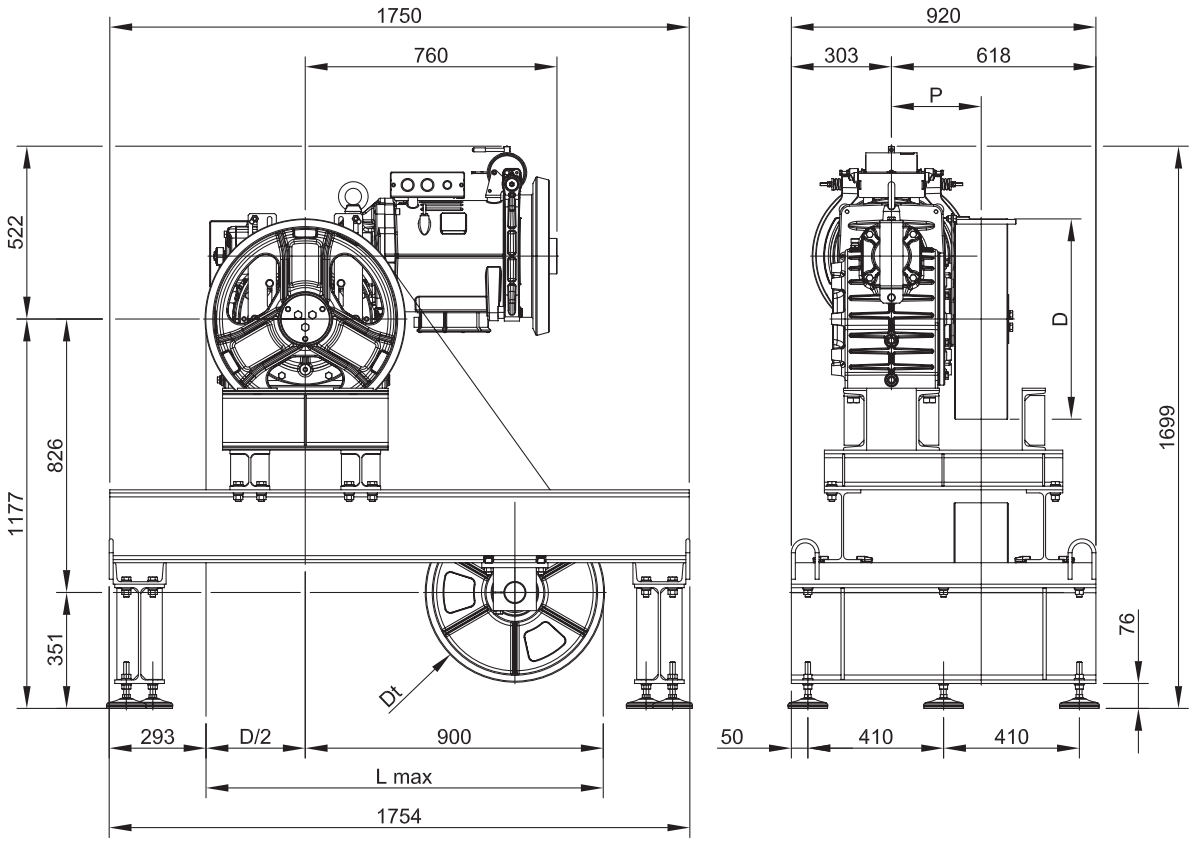
XTE3984 (included vibration dampers)
Max weight of machine bedplate: 180 kg (bedplate + vibration dampers)

VIBRATIONS DAMPER SET UP



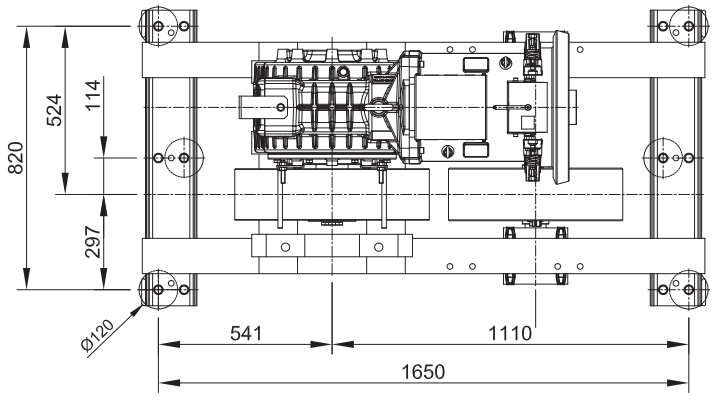
Damper code	Dimension
	[mm]
TAI0111	D.120x32

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WRAPPING



XTE3988 (included vibration dampers)
Max weight of machine bedplate: 565 kg (bedplate + diverting pulley + vibration dampers)

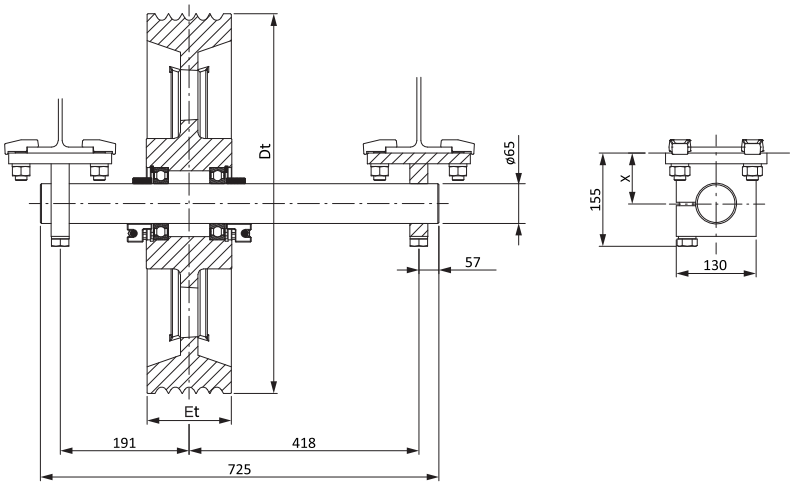
VIBRATIONS DAMPER SET UP



Traction Sheave	X	L max
D [mm]	[mm]	[mm]
520	340	1160
600	300	1200
650	275	1225
690	255	1245
750	225	1275

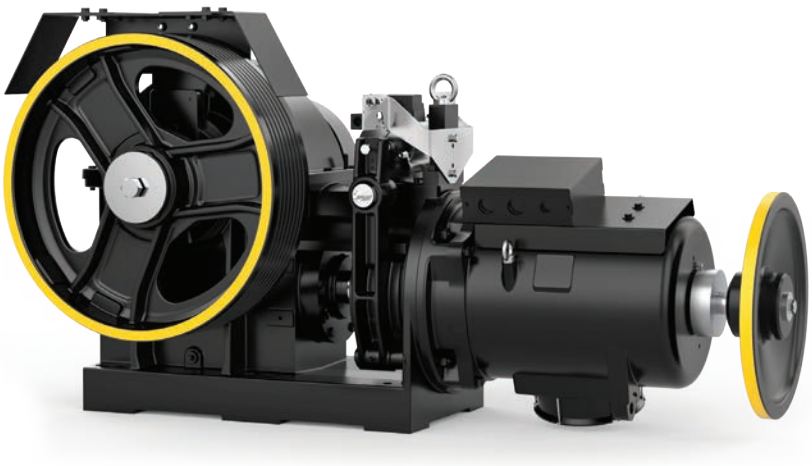
Damper code	Dimension
	[mm]
TAI0111	D.120x32

DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER



Diverting Pulley		Max n°Grooves x D	Grooves Pitch	Distance	Length	Force
Dt [mm]	Et [mm]	n° x mm	l [mm]	X [mm]	L [mm]	F max [kN]
534	124	7xD10	16	72÷90	725	23
		6xD11	18	72÷90	725	23
		6xD12	18	72÷90	725	23
		6xD13	19	72÷90	725	23
	164	10xD10	16	72÷90	725	24,2
		8xD11	18	72÷90	725	24,2
		8xD12	18	72÷90	725	24,2
		8xD13	19	72÷90	725	24,2
656	186	11xD10	16	122	725	24,9
		10xD11	18	122	725	24,9
		10xD12	18	122	725	24,9
		9xD13	19	122	725	24,9
		8xD14	22	122	725	24,9
		8xD15	22	122	725	24,9
		8xD16	22	122	725	24,9

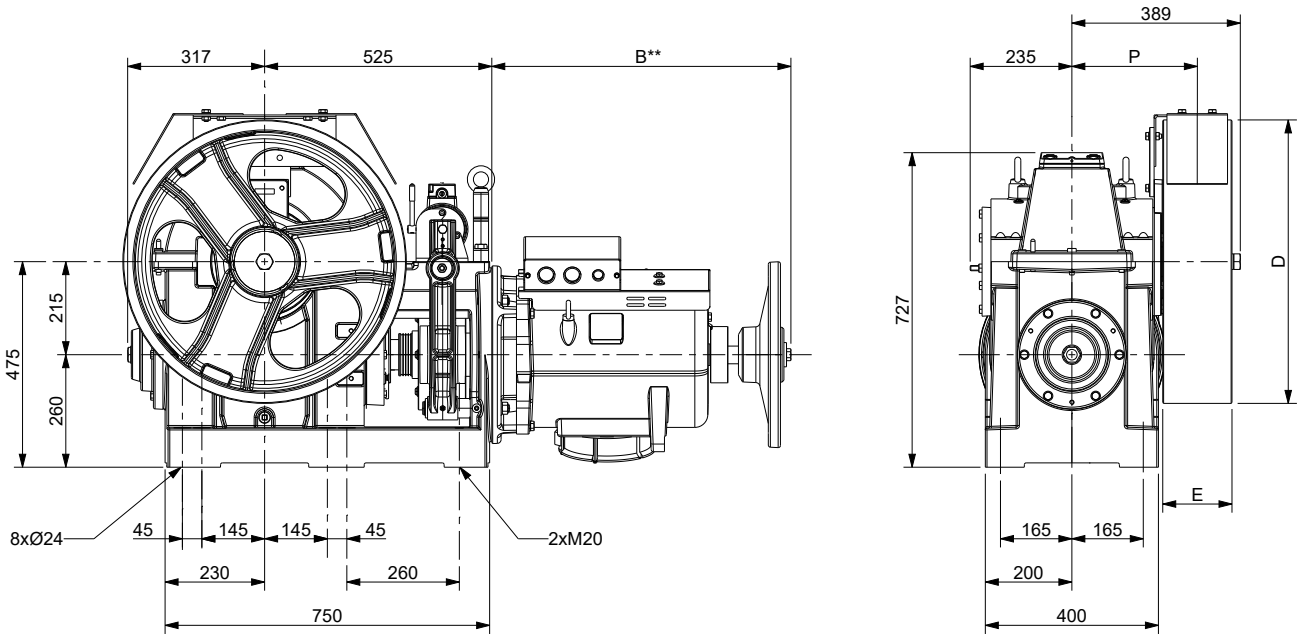
GEARED MR21



Max. Static Load MR21	**55 kN - 5600 kg**
Max. Static Load MR21TS	**72,6 kN - 7400 kg**
Power Range 50 Hz 4 poles ACVVVF	**9 ÷ 30 kW**
Power Range 50 Hz 4/16 poles	**9 ÷ 16,5 kW**
Power Range 50 Hz 6 poles ACVVVF	**7,5 ÷ 20 kW**
Power Range 50 Hz 6/16 poles	**7,5 ÷ 13,5 kW**
Power Range 60 Hz 4 poles ACVVVF	**10 ÷ 33 kW**
Power Range 60 Hz 4/16 poles	**10 ÷ 18 kW**
Power Range 60 Hz 6 poles ACVVVF	**8,2 ÷ 22 kW**
Power Range 60 Hz 6/16 poles	**8,2 ÷ 15 kW**
Ratio	**1/62; 1/51; 1/40; 2/63; 2/51; 3/47**
Gear Weight	**770 ÷ 1000 kg**
Oil capability	**7,8 l**
Gear Box Rh o Lh (see from motor)	**Pictures Gear Lh**

The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS MR21

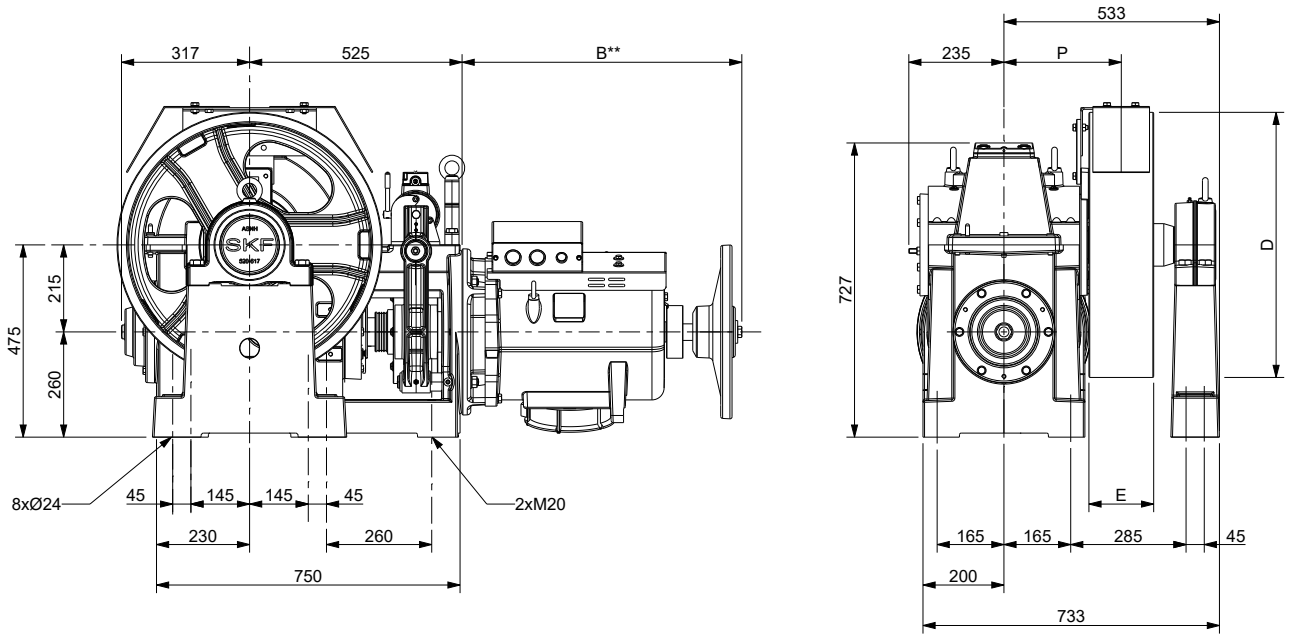


Wrapping System	Traction sheave		Dimension	Load*)
	D [mm]	E [mm]	P [mm]	F [kN - kg]
ESW	520	176	289	50
CSW	520	176	290	55 - 5600
	600	160		
	650	160		
	690	160		
	750	160		

*) Max. static load on the slow shaft:
CSW: Conventional single wrap
ESW: Extended single wrap (patented)
**) For the B value refer to "Electric motor data" table

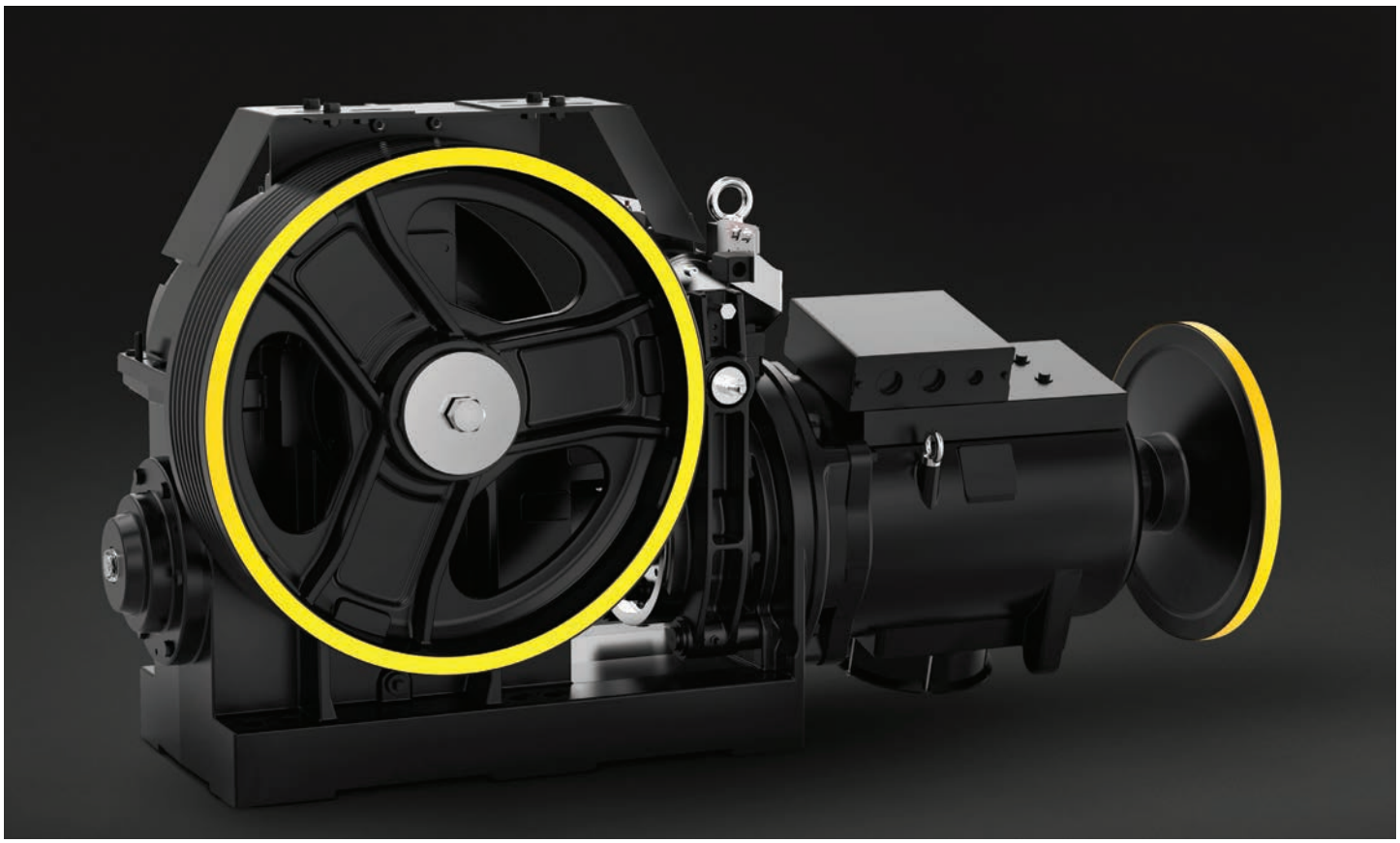
Brake Electromagnet		
[V]	[A]	[W]
48	4,85	233
60	3,96	238
80	2,7	216
110	1,83	200
200	1,05	210

DIMENSIONS MR21TS



Wrapping System	Traction sheave		Dimension	Load*)
	D [mm]	E [mm]	P [mm]	F [kN - kg]
ESW	520	176	298	62,8 - 6400
CSW	520	176	290	72,6 - 7400
	600	160		
	650	160		
	690	160		
	750	160		

*) Max. static load on the slow shaft:
CSW: Conventional single wrap
ESW: Extended single wrap (patented)
**) For the B value refer to “Electric motor data” table



DUTY TABLE

Roping 1:1

				50Hz							60Hz						
				VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles							**VVVF 1800 rpm** 4 Poles **AC2 1800/450 rpm** 4/16 Poles						
				Motor Output **[kW]** Asynchronous													
				VVVF AC2 **9**	VVVF AC2 **11**	VVVF AC2 **13,5**	VVVF AC2 **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	VVVF AC2 **10**	VVVF AC2 **12**	VVVF AC2 **15**	VVVF AC2 **18**	VVVF **22**	VVVF **27**	VVVF **33**
Wrapping system		R.R.	Trac. Sheave Ø	Speed syn.	Max Rated Load						Speed syn.	Max Rated Load					
CSW	ESW	[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
X	X	1/62	520	0,66	1440	1835	2045	--	--	--	--	0,79	1335	1635	--	--	--	--	--
X	--	1/62	600	0,76	1245	1590	1770	--	--	--	--	0,91	1155	1415	--	--	--	--	--
X	X	1/51	520	0,80	1185	1510	1920	2100	--	--	--	0,96	1100	1370	1765	--	--	--	--
X	--	1/62	650	0,82	1150	1470	1635	--	--	--	--	0,99	1070	1305	--	--	--	--	--
X	--	1/62	690	0,87	1085	1385	1540	--	--	--	--	1,05	1005	1230	--	--	--	--	--
X	--	1/51	600	0,92	1040	1335	1700	1910	--	--	--	1,11	970	1210	1530	--	--	--	--
X	--	1/62	750	0,95	1015	1295	1415	--	--	--	--	1,14	940	1135	--	--	--	--	--
X	--	1/51	650	1,00	960	1230	1565	1765	--	--	--	1,20	895	1115	1415	--	--	--	--
X	X	1/40	520	1,02	945	1205	1535	1930	2100	--	--	1,23	875	1095	1425	1755	1890	--	--
X	--	1/51	690	1,06	905	1160	1475	1660	--	--	--	1,28	840	1050	1330	--	--	--	--
X	--	1/51	750	1,15	835	1075	1370	1530	--	--	--	1,39	780	980	1225	--	--	--	--
X	--	1/40	600	1,18	815	1050	1345	1695	2100	--	--	1,41	765	960	1255	1550	1640	--	--
X	--	1/40	650	1,28	755	970	1240	1565	1945	2000	--	1,53	705	890	1160	1430	1515	--	--
X	X	2/63	520	1,30	740	955	1220	1540	1915	2100	--	1,56	695	875	1140	1405	1690	--	--
X	--	1/40	690	1,35	710	915	1170	1475	1830	1885	--	1,63	665	835	1090	1345	1425	--	--
X	--	1/40	750	1,47	705	895	1140	1430	1735	--	--	1,77	650	815	1055	1300	1310	--	--
X	--	2/63	600	1,50	690	885	1120	1410	1745	1835	--	1,80	640	800	1040	1280	1465	--	--
X	X	2/51	520	1,60	645	825	1050	1315	1625	2075	2100	1,92	600	750	970	1195	1490	1750	--
X	--	2/63	650	1,62	640	815	1035	1300	1610	1695	--	1,94	595	740	960	1180	1350	--	--
X	--	2/63	690	1,72	600	765	975	1225	1515	1595	--	2,06	560	695	905	1110	1275	--	--
X	--	2/51	600	1,85	560	715	910	1145	1415	1805	1890	2,22	520	650	845	1040	1300	1515	--
X	--	2/63	750	1,87	550	705	900	1130	1400	1470	--	2,24	510	640	835	1025	1170	--	--
X	--	2/51	650	2,00	515	660	840	1055	1305	1665	1745	2,40	480	600	780	960	1200	1400	--
X	--	2/51	690	2,13	485	620	790	995	1230	1570	1645	2,55	450	565	730	900	1130	1315	--
X	--	2/51	750	2,31	445	570	725	915	1130	1445	1510	2,77	415	520	675	830	1040	1210	--
X	X	3/47	520	2,61	400	515	655	825	1025	1305	1590	3,13	370	465	605	745	935	1170	1455
X	--	3/47	600	3,01	345	445	570	715	885	1130	1375	3,61	320	400	525	645	810	1015	1260
X	--	3/47	650	3,26	320	410	525	660	820	1045	1270	3,91	295	370	485	595	750	935	1165
X	--	3/47	690	3,46	300	385	495	620	770	985	1195	4,15	280	350	455	560	705	880	1095
X	--	3/47	750	3,76	275	355	455	570	710	905	1100	4,51	255	320	420	515	650	810	1010

	50Hz							60Hz							
	Motor Output **[kW]**														
	VVVF AC2 **9**	VVVF AC2 **11**	VVVF AC2 **13,5**	VVVF AC2 **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	VVVF AC2 **10**	VVVF AC2 **12**	VVVF AC2 **15**	VVVF AC2 **18**	VVVF **22**	VVVF **27**	VVVF **33**
R.R.	Max Output Torque	Geared Efficiency						Max Output Torque	Geared Efficiency						
[i]	[Nm]							[Nm]							
1/62	3260	0,68	0,71	0,73	--	--	--	2610	0,68	0,71	--	--	--	--	--
1/51	3520	0,69	0,72	0,75	0,77	--	--	2820	0,69	0,72	0,75	--	--	--	--
1/40	4060	0,69	0,73	0,76	0,78	0,80	0,82	3020	0,70	0,73	0,76	0,78	0,80	--	--
2/63	3380	0,74	0,78	0,80	0,82	0,84	0,86	2700	0,74	0,77	0,80	0,82	0,84	--	--
2/51	3480	0,74	0,78	0,80	0,83	0,84	0,86	2790	0,74	0,77	0,80	0,83	0,84	0,86	--
3/47	3560	0,75	0,79	0,82	0,84	0,86	0,88	3000	0,75	0,78	0,82	0,84	0,86	0,88	0,89

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

50Hz							60Hz						
VVVF 1000 rpm 6 Poles **AC2 1000/375 rpm** 6/16 Poles							**VVVF 1200 rpm** 6 Poles **AC2 1200/450 rpm** 6/16 Poles						
Motor Output **[kW]** Asynchronous													
	VVVF AC2 **7,5**	VVVF AC2 **9**	VVVF AC2 **11**	VVVF AC2 **13,5**	VVVF **16,5**	VVVF **20**		VVVF AC2 **8,2**	VVVF AC2 **10**	VVVF AC2 **12**	VVVF AC2 **15**	VVVF AC2 **18**	VVVF AC2 **22**
Speed syn.	Max Rated Load						Speed syn.	Max Rated Load					
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
0,44	1900	2045	--	--	--	--	0,53	1695	2045	--	--	--	--
0,51	1645	1770	--	--	--	--	0,61	1470	1770	--	--	--	--
0,53	1565	1930	2100	--	--	--	0,64	1395	1760	2100	--	--	--
0,55	1520	1635	--	--	--	--	0,66	1355	1635	--	--	--	--
0,58	1430	1540	--	--	--	--	0,70	1280	1540	--	--	--	--
0,62	1380	1710	1910	--	--	--	0,74	1230	1560	1910	--	--	--
0,63	1345	1415	--	--	--	--	0,76	1195	1415	--	--	--	--
0,67	1275	1575	1765	--	--	--	0,80	1135	1440	1765	--	--	--
0,68	1250	1545	1940	2100	--	--	0,82	1115	1410	1740	2100	--	--
0,71	1200	1485	1660	--	--	--	0,85	1070	1355	1660	--	--	--
0,77	1110	1380	1530	--	--	--	0,92	985	1255	1530	--	--	--
0,79	1090	1350	1705	2100	--	--	0,94	965	1230	1525	1965	2100	--
0,85	1005	1245	1570	1975	2035	--	1,02	890	1135	1405	1810	2035	--
0,86	990	1230	1545	1945	2100	--	1,04	880	1120	1385	1785	2100	--
0,90	945	1175	1480	1860	1915	--	1,08	840	1070	1325	1705	1915	--
0,98	930	1145	1440	1765	--	--	1,18	830	1045	1290	1655	1765	--
1,00	915	1130	1415	1775	1835	--	1,20	815	1030	1270	1625	1835	--
1,07	855	1055	1320	1655	2055	2100	1,28	760	960	1185	1520	1855	2100
1,08	845	1040	1305	1635	1695	--	1,30	755	950	1170	1500	1695	--
1,15	795	980	1230	1540	1595	--	1,38	710	895	1105	1415	1595	--
1,23	740	915	1150	1440	1790	1890	1,48	660	835	1030	1320	1615	1890
1,25	730	905	1135	1425	1470	--	1,50	650	825	1015	1305	1470	--
1,33	680	845	1060	1330	1655	1745	1,60	610	770	950	1220	1490	1745
1,42	645	795	1000	1255	1560	1645	1,70	570	725	895	1150	1405	1645
1,54	590	730	920	1150	1435	1510	1,85	525	665	825	1055	1290	1510
1,74	530	660	830	1040	1295	1595	2,09	475	600	745	955	1165	1450
2,01	460	570	720	905	1125	1380	2,41	410	520	645	825	1010	1255
2,17	425	525	665	835	1035	1275	2,61	380	480	595	765	935	1160
2,31	400	495	625	785	975	1200	2,77	355	450	560	720	880	1090
2,51	370	455	575	720	900	1105	3,01	330	415	515	660	810	1005

50Hz							60Hz						
Motor Output **[kW]**													
	VVVF AC2 **7,5**	VVVF AC2 **9**	VVVF AC2 **11**	VVVF AC2 **13,5**	VVVF **16,5**	VVVF **20**		VVVF AC2 **8,2**	VVVF AC2 **10**	VVVF AC2 **12**	VVVF AC2 **15**	VVVF AC2 **18**	VVVF AC2 **22**
Max Output Torque	Geared Efficiency						Max Output Torque	Geared Efficiency					
[Nm]							[Nm]						
3260	0,72	0,74	--	--	--	--	3260	0,70	0,73	--	--	--	--
3520	0,73	0,75	0,77	--	--	--	3520	0,72	0,74	0,76	--	--	--
4060	0,74	0,76	0,78	0,80	0,82	--	4060	0,72	0,75	0,77	0,80	0,81	--
3380	0,78	0,81	0,83	0,85	0,86	--	3380	0,77	0,80	0,82	0,84	0,85	--
3480	0,78	0,81	0,83	0,85	0,86	0,87	3480	0,77	0,80	0,82	0,84	0,86	0,87
3560	0,80	0,82	0,85	0,87	0,88	0,89	3560	0,78	0,81	0,83	0,86	0,87	0,89

		50Hz										
		VVVF 1500 rpm 4 Poles **AC2 1500/375 rpm** 4/16 Poles										
		Asynchronous Rated Power **[kW]**										
		VVVF **9**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	AC2 **9**	AC2 **11**	AC2 **13,5**	AC2 **16,5**
		Motor Parameters										
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500	1500	1500	1500	1500/375	1500/375	1500/375	1500/375
Asynchronous Speed	[rpm]	1460	1457	1476	1477	1480	1481	1478	1402/306	1370/300	1375/302	1368/298
Rated Current (2)	[A]	21,2	24,1	27,4	34,1	37	45.8	61,7	20/16,7	29/17	33/19	39/22
Rated Torque	[Nm]	63	72	87	107	129	161	194	61	76	94	115
Cos φ Power Factor	[ ]	0,7	0,76	0,84	0,84	0,84	0,84	0,79	0,8	0,75	0,78	0,78
Starting Current	[A]	133	157	123	162	225	305	441	65	125	145	158
Starting Torque	[Nm]	145	163	160	190	253	357	380	147	183	208	236
Duty Cycle	[%]	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	617	617	611	611	611	691	691	617	611	691	691

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
Motor are manufactured for 50Hz. Inverter must assure those frequencies and voltages independently from the net frequency.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.
The inertia includes motor and primary shaft masses without handwheel. Handwheel inertia: 0,17kgm2.
Phase to phase resistance = 2xR1

		60Hz										
		VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles										
		Asynchronous Rated Power **[kW]**										
		VVVF **10**	VVVF **12**	VVVF **15**	VVVF **18**	VVVF **22**	VVVF **27**	VVVF **33**	AC2 **10**	AC2 **12**	AC2 **15**	AC2 **18**
		Motor Parameters										
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	60	60	60	60	60	60	60	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800	1800	1800	1800	1800	1800/450	1800/450	1800/450	1800/450
Asynchronous Speed	[rpm]	1710	1748	1774	1778	1779	1782	1781	1664/373	1645/360	1650/358	1648/361
Rated Current (2)	[A]	21,5	25,5	27	35	44	55	65	22/18,4	31/18	40/24	49/26
Rated Torque	[Nm]	56	65	81	97	118	145	177	57	68	87	104
Cos φ Power Factor	[ ]	0,76	0,76	0,84	0,84	0,85	0,84	0,86	0,8	0,75	0,76	0,76
Starting Current	[A]	131	150	128	160	229	301	432	105	120	103	128
Starting Torque	[Nm]	125	163	160	176	230	335	400	147	159	199	239
Duty Cycle	[%]	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	617	617	611	611	611	691	691	617	611	691	691

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
Motor are manufactured for 60Hz. Inverter must assure those frequencies and voltages independently from the net frequency.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine is provided with fan keyed directly onto the shaft, except for some models for which the ventilation is servo-assisted by a fan 1-220...240V 50/60 hz,0,7
AThe inertia includes motor and primary shaft masses without handwheel. Handwheel inertia: 0,17kgm2.
Phase to phase resistance = 2xR1

50Hz

VVVF 1000 rpm 6 Poles
AC2 1000/375 rpm 6/16 Poles

Asynchronous Rated Power **[kW]**									
VVVF **7,5**	VVVF **9**	VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	AC2 **7,5**	AC2 **9**	AC2 **11**	AC2 **13,5**
Motor Parameters									
400	400	400	400	400	400	400	400	400	400
50	50	50	50	50	50	50	50	50	50
1000	1000	1000	1000	1000	1000	1000/375	1000/375	1000/375	1000/375
963	980	980	981	982	981	910/300	912/298	914/296	920/299
20	21	26	33	39	47	24/20	29/24	31/29	34/31
74	87	107	131	160	194	76	94	113	139
0,66	0,7	0,72	0,7	0,7	0,71	0,66	0,67	0,68	0,67
69	96	123	163	201	245	56	58	107	145
125	107	144	200	242	314	125	134	274	350
60	60	60	60	60	60	30+10	30+10	30+10	30+10
240	240	240	240	240	240	180	180	180	180
F	F	F	F	F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
617	611	611	611	691	691	611	691	691	691

60Hz

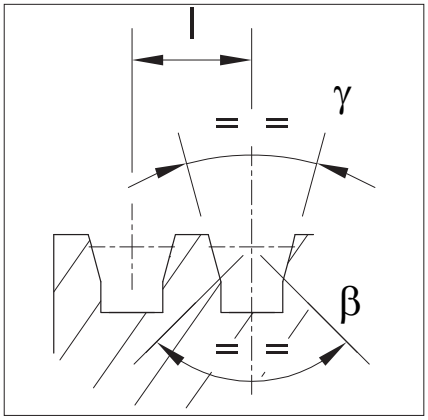
VVVF 1200 rpm 6 Poles
AC2 1200/450 rpm 6/16 Poles

Asynchronous Rated Power **[kW]**									
VVVF **8,2**	VVVF **10**	VVVF **12**	VVVF **15**	VVVF **18**	VVVF **22**	AC2 **8,2**	AC2 **10**	AC2 **12**	AC2 **15**
Motor Parameters									
400	400	400	400	400	400	400	400	400	400
60	60	60	60	60	60	60	60	60	60
1200	1200	1200	1200	1200	1200	1200/450	1200/450	1200/450	1200/450
1152	1175	1173	1176	1174	1174	1095/363	1092/365	1091/359	1093/361
21	22	25,8	33	38	46	27/22	35/26	36/31	43/37
68	81	98	122	146	179	68	87	105	131
0,67	0,72	0,71	0,72	0,72	0,73	0,66	0,65	0,67	0,66
76	79	106	119	144	193	62	64	134	165
112	121	146	175	202	228	113	121	247	310
30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10	30+10
180	180	180	180	180	180	180	180	180	180
F	F	F	F	F	F	F	F	F	F
IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
617	611	611	611	691	691	611	691	691	691

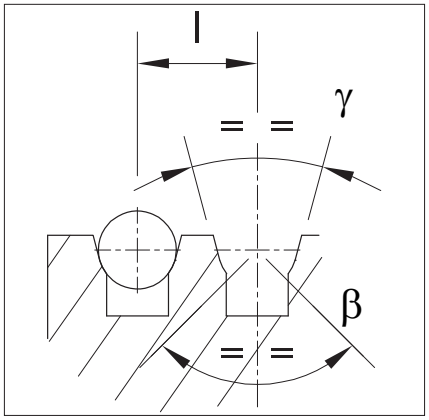
(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.

TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
ESW	520	176	7xD10	24
	520	176	6xD13	30
CSW	520	176	10xD10	16
	520	176	9xD11	18
	520	176	9xD12	18
	520	176	8xD13	19
	600	160	9xD10	16
	600	160	8xD11	18
	600	160	8xD12	18
	600	160	8xD13	19
	600	160	6xD14	22
	600	160	6xD15	22
	650	160	9xD10	16
	650	160	8xD11	18
	650	160	8xD12	18
	650	160	8xD13	19
	650	160	6xD14	22
	650	160	6xD15	22
	650	160	6xD16	22
	690	160	9xD10	16
	690	160	8xD11	18
	690	160	8xD12	18
	690	160	8xD13	19
	690	160	6xD14	22
	690	160	6xD15	22
	690	160	6xD16	22
	750	160	9xD10	16
	750	160	8xD11	18
	750	160	8xD12	18
	750	160	8xD13	19
	750	160	6xD14	22
	750	160	6xD15	22
	750	160	6xD16	22



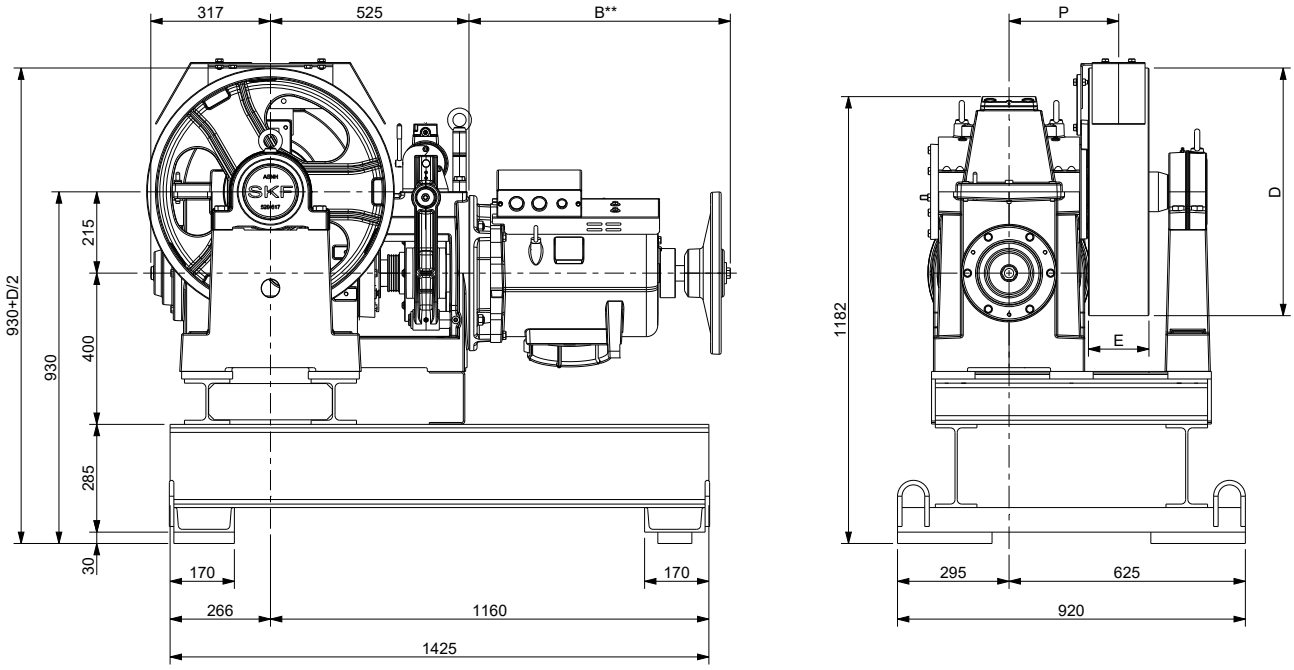
V grooves with undercut



U grooves with undercut

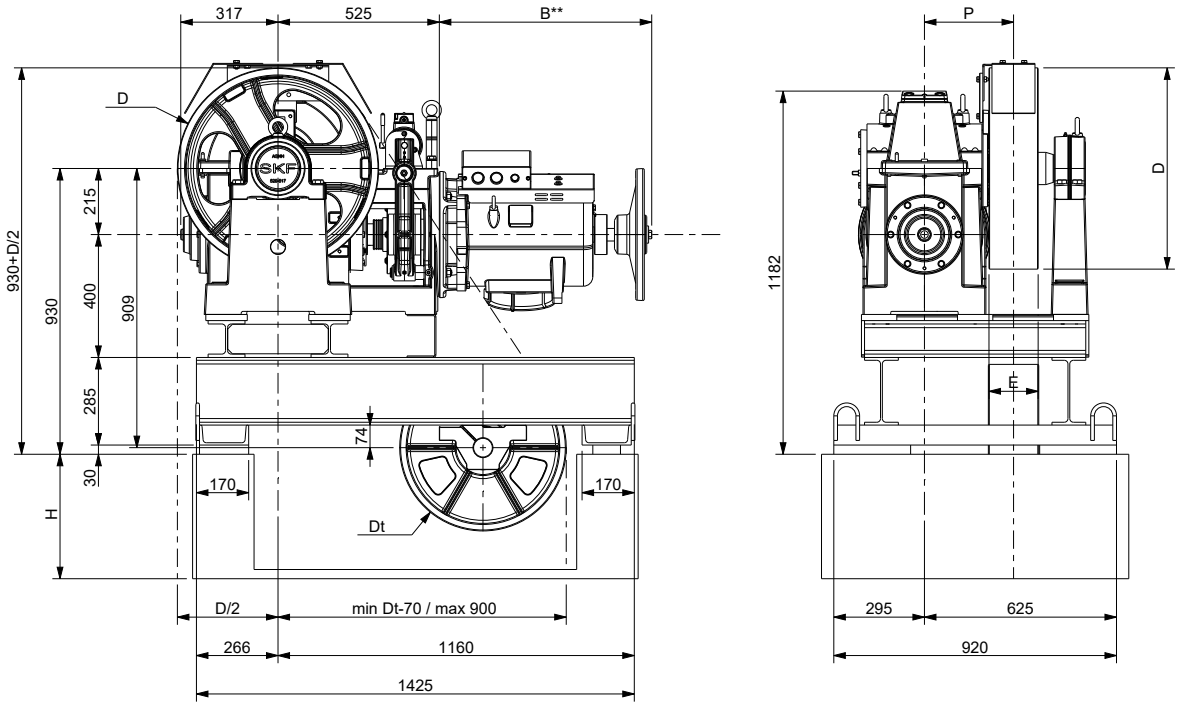
γ = *groove angle*
β = *Undercut angle*

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WINDING (SHORT)



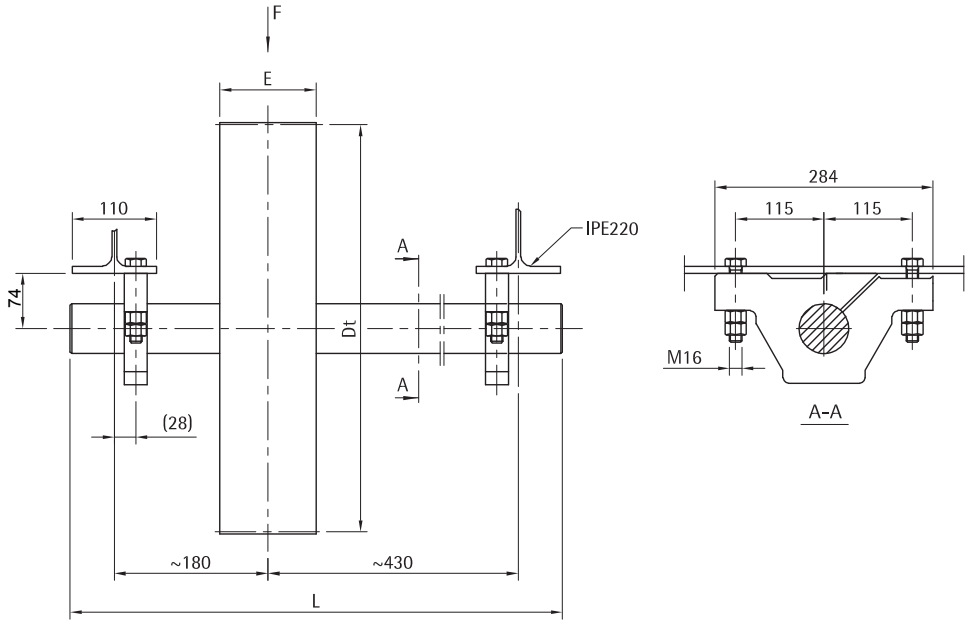
**) For the B value refer to “Electric motor data” table
MR21 XTE0025 Weight of machine bedplate: 175 kg.
MR21TS XTE2953 Weight of machine bedplate: 224 kg
Note: Machine room floor thickness min. 250 mm. The bed plate includes vibration dampers

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WINDING (SHORT)

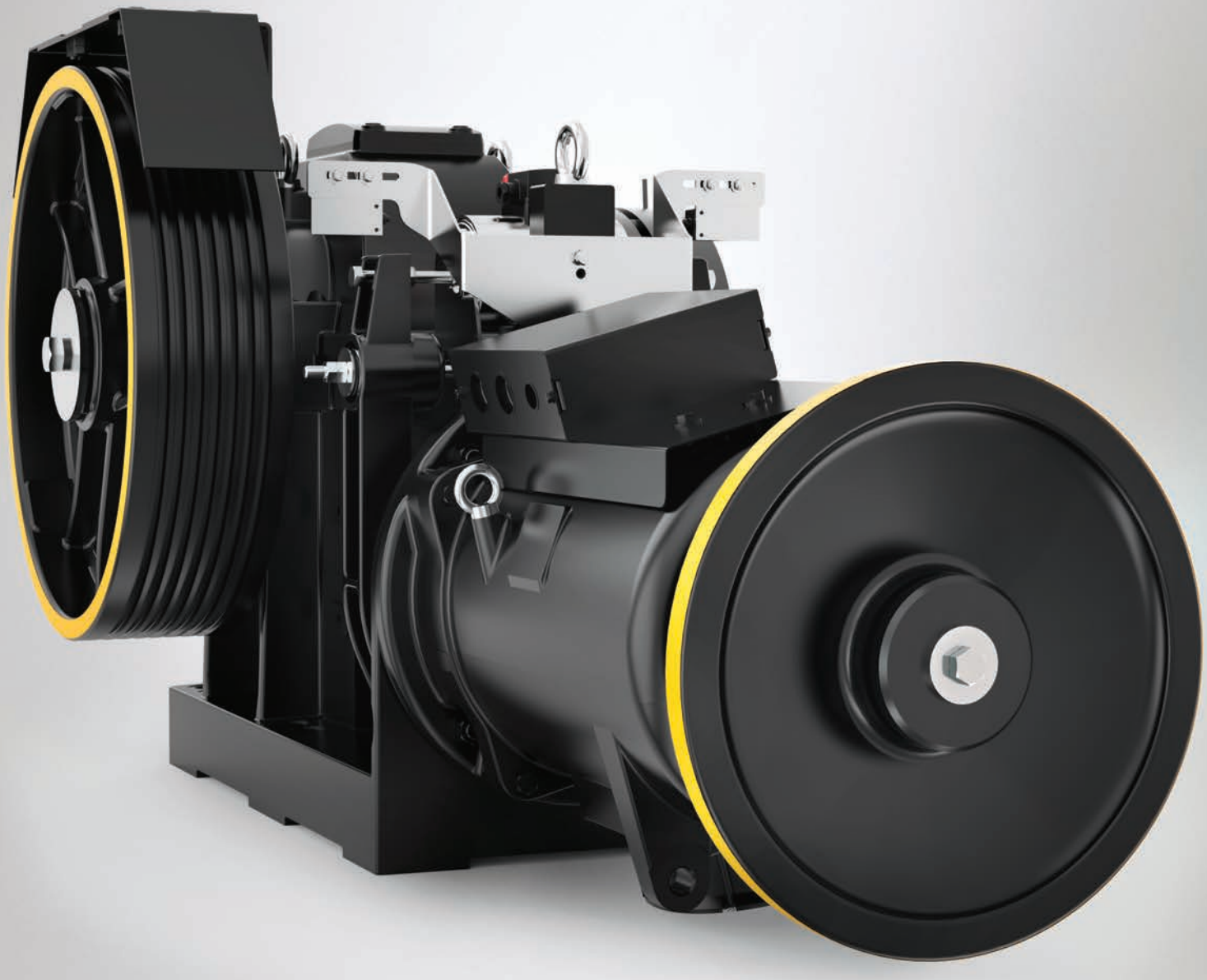


**) For the B value refer to “Electric motor data” table
MR21 XTE0029 Weight of machine bedplate: 175 kg.
MR21TS XTE2955 Weight of machine bedplate: 253 kg
Note: Machine room floor thickness min. 250 mm. The bed plate includes vibration dampers (without diverting pulley)
Dt = 534 mm
Dimension Hmin = (Dt/2) + 75

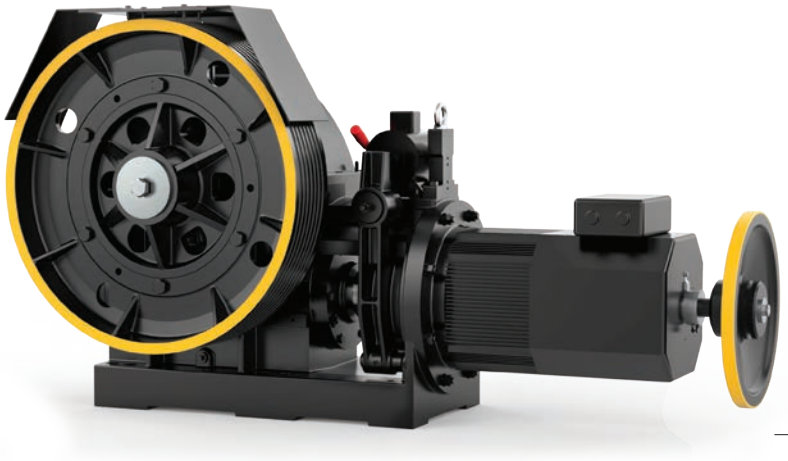
DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER



Diverting Pulley		Max n°Grooves x D	Grooves Pitch	Distance	Length	Force
Dt [mm]	Et [mm]	n° x mm	l [mm]	X [mm]	L [mm]	F max [kN]
534	124	7xD10	16	72÷90	725	23
		6xD11	18	72÷90	725	23
		6xD12	18	72÷90	725	23
		6xD13	19	72÷90	725	23
	164	10xD10	16	72÷90	725	24,2
		8xD11	18	72÷90	725	24,2
		8xD12	18	72÷90	725	24,2
		8xD13	19	72÷90	725	24,2
656	186	11xD10	16	122	725	24,9
		10xD11	18	122	725	24,9
		10xD12	18	122	725	24,9
		9xD13	19	122	725	24,9
		8xD14	22	122	725	24,9
		8xD15	22	122	725	24,9
		8xD16	22	122	725	24,9



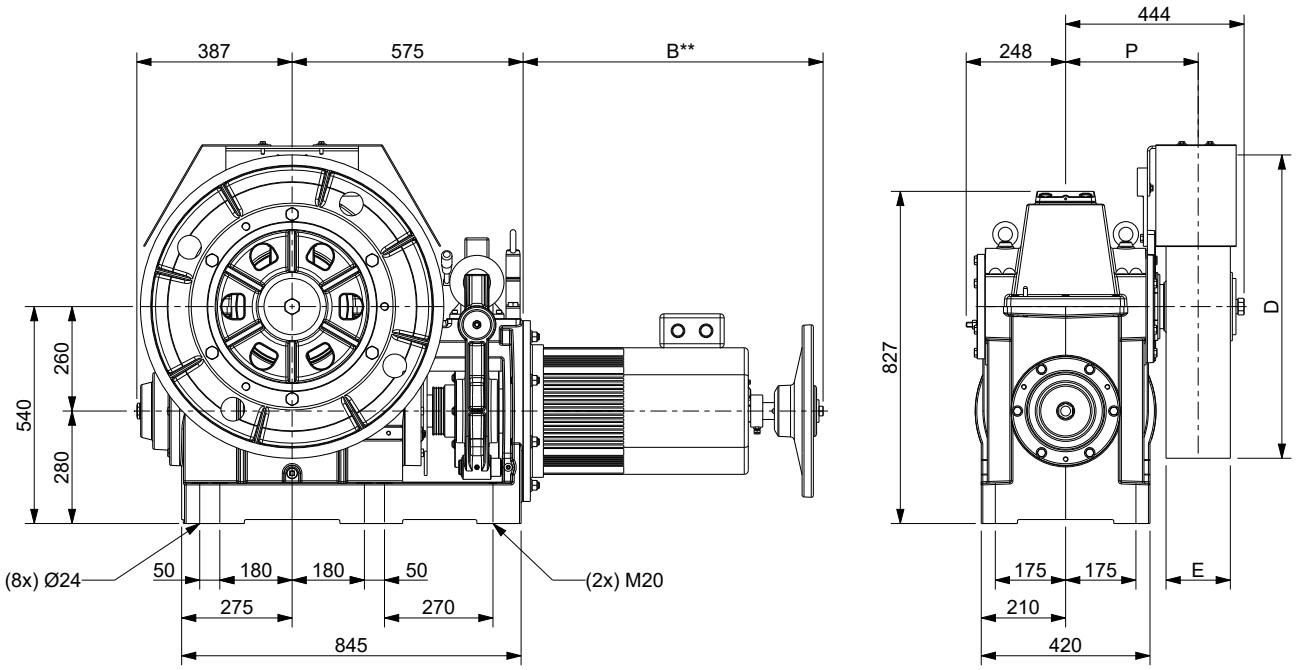
GEARED MR26



Max. Static Load MR26	**64,7 kN - 6600 kg**
Max. Static Load MR26TS	**80,2 kN - 8175 kg**
Power Range 50 Hz 4 poles VVVF	**13,5 ÷ 43 kW**
Power Range 50 Hz 4/16 poles	**13,5 ÷ 30 kW**
Power Range 33 Hz 4 poles	**11 ÷ 29 kW**
Power Range 50 Hz 6 poles VVVF	**11 ÷ 29 kW (on request)**
Power Range 60 Hz 4 poles VVVF	**15 ÷ 47 kW**
Power Range 60 Hz 4/16 poles	**15 ÷ 33 kW**
Ratio	**1/72; 1/57; 1/44; 2/63; 2/45; 3/55**
Geared Weight	**1200 ÷ 1600 kg**
Oil capability	**10,8 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS MR26

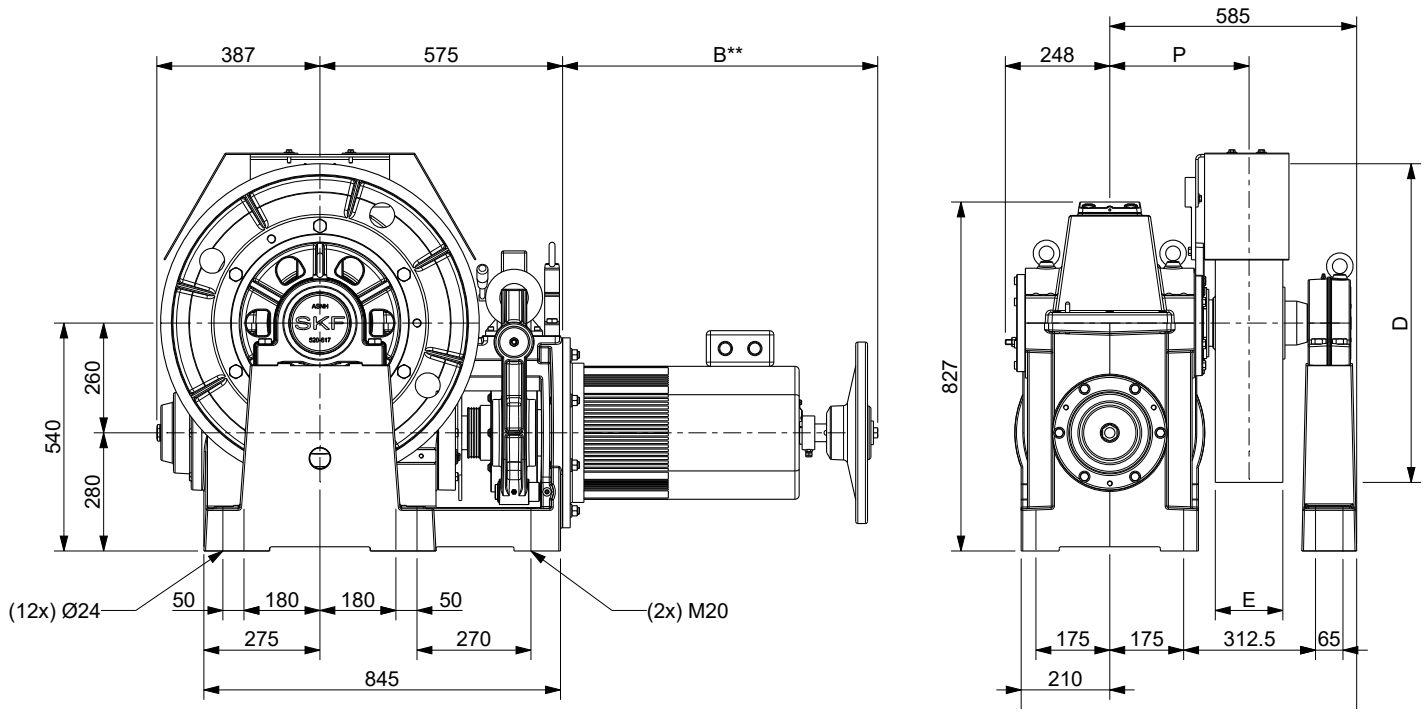


Wrapping System	Traction sheave		Dimension	Load*)
	D [mm]	E [mm]	P [mm]	F [kN - kg]
ESW	560	236	347	59 - 6000
CSW	600	160	330	64,7 - 6600
	650	160		
	690	160		
	750	160		
	800	160		

*) Max. static load on the slow shaft:
CSW: Conventional single wrap
ESW: Extended single wrap (patented)
**) For the B value refer to "Electric motor data" table

Brake Electromagnet		
[V]	[A]	[W]
48	5,16	243
60	4,2	252
80	3,2	252
110	2,3	253
205	1,3	262

DIMENSIONS MR26TS



Wrapping System	Traction sheave		Dimension	Load*)
	D [mm]	E [mm]	P [mm]	F [kN - kg]
ESW	560	236	347	70 - 7150
CSW	600	160	330	80,21) - 81751) 702) - 71502)
	650	160		
	690	160		
	750	160		
	800	160		

*) Max. static load on the slow shaft:
CSW: Conventional single wrap F= 80,2 kN1)
horizontal component not to exceed F= 70 kN2)
ESW: Extended single wrap (patented)
**) For the B value refer to “Electric motor data” table

Brake Electromagnet		
[V]	[A]	[W]
48	5,16	243
60	4,2	252
80	3,2	252
110	2,3	253
205	1,3	262

DUTY TABLE

Roping 1:1

50Hz

VVVF 1500 rpm 4 Poles
AC2 1500/375 rpm 4/16 Poles

Wrapping system CSW	Wrapping system ESW	R.R.	Traction Sheave Ø	Speed syn.	Max Rated Load — Motor Output **[kW]** Asynchronous								
					VVVF/AC2 **13,5**	VVVF/AC2 **16,5**	VVVF/AC2 **20**	VVVF/AC2 **25**	VVVF/AC2 **30**	VVVF **33**	VVVF **37**	VVVF **40**	VVVF **43**
CSW	ESW	[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
--	X	1/72	560	0,61	2175	2800	3155	--	--	--	--	--	--
X	--	1/72	600	0,65	2030	2615	2945	--	--	--	--	--	--
X	--	1/72	650	0,71	1875	2410	2715	--	--	--	--	--	--
X	--	1/72	690	0,75	1765	2270	2560	--	--	--	--	--	--
--	X	1/57	560	0,77	1785	2305	2915	3460	--	--	--	--	--
X	--	1/72	750	0,82	1625	2090	2355	--	--	--	--	--	--
X	--	1/57	600	0,83	1665	2155	2720	3225	--	--	--	--	--
X	--	1/72	800	0,87	1520	1960	2205	--	--	--	--	--	--
X	--	1/57	650	0,90	1540	1985	2510	2980	--	--	--	--	--
X	--	1/57	690	0,95	1450	1870	2365	2805	--	--	--	--	--
--	X	1/44	560	1,00	1410	1820	2305	2995	3550	--	--	--	--
X	--	1/57	750	1,03	1335	1720	2175	2580	--	--	--	--	--
X	--	1/44	600	1,07	1315	1700	2150	2795	3315	--	--	--	--
X	--	1/57	800	1,10	1250	1615	2040	2420	--	--	--	--	--
X	--	1/44	650	1,16	1210	1570	1985	2580	3060	--	--	--	--
X	--	1/44	690	1,23	1140	1480	1870	2430	2880	--	--	--	--
X	--	1/44	750	1,34	1050	1360	1720	2235	2650	--	--	--	--
--	X	2/63	560	1,40	1090	1400	1760	2270	2785	2935	3040	--	--
X	--	1/44	800	1,43	985	1275	1615	2095	2485	--	--	--	--
X	--	2/63	600	1,50	1015	1305	1640	2120	2600	2835	--	--	--
X	--	2/63	650	1,62	940	1205	1515	1955	2400	2615	--	--	--
X	--	2/63	690	1,72	885	1135	1425	1845	2260	2465	--	--	--
X	--	2/63	750	1,87	815	1045	1310	1695	2080	2270	--	--	--
--	X	2/45	560	1,95	770	995	1255	1630	2000	2210	2505	2725	2945
X	--	2/63	800	1,99	760	980	1230	1590	1950	2125	--	--	--
X	--	2/45	600	2,09	720	925	1170	1520	1865	2075	2355	2565	2770
X	--	2/45	650	2,27	665	855	1080	1400	1725	1915	2175	2365	2560
--	X	3/55	560	2,40	635	815	1030	1340	1645	1810	2055	2235	2420
X	--	2/45	690	2,41	625	805	1020	1320	1625	1805	2045	2230	2410
X	--	3/55	600	2,57	590	765	965	1250	1535	1690	1920	2090	2260
X	--	2/45	750	2,62	575	740	935	1215	1495	1675	1900	2070	2240
X	--	3/55	650	2,78	545	705	890	1155	1415	1575	1785	1945	2105
X	--	2/45	800	2,79	540	695	880	1140	1400	1570	1780	1940	2100
X	--	3/55	690	2,96	515	665	835	1085	1335	1485	1685	1830	1980
X	--	3/55	750	3,21	470	610	770	1000	1230	1365	1550	1685	1825
X	--	3/55	800	3,43	445	570	720	935	1150	1280	1450	1580	1710

50Hz

R.R.	Max Output Torque	Geared Efficiency — Motor Output **[kW]**								
		VVVF/AC2 **13,5**	VVVF/AC2 **16,5**	VVVF/AC2 **20**	VVVF/AC2 **25**	VVVF/AC2 **30**	VVVF **33**	VVVF **37**	VVVF **40**	VVVF **43**
[i]	[Nm]									
1/72	5420	0,63	0,67	0,69	--	--	--	--	--	--
1/57	5940	0,66	0,70	0,72	0,75	--	--	--	--	--
1/44	6100	0,67	0,71	0,74	0,77	0,79	--	--	--	--
2/63	5220	0,73	0,76	0,79	0,82	0,84	0,84	0,85	--	--
2/45	5550	0,72	0,76	0,79	0,82	0,84	0,85	0,86	0,86	0,87
3/55	5580	0,73	0,77	0,80	0,83	0,85	0,86	0,87	0,87	0,88

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

60Hz										33Hz						
VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles										**VVVF 1000 rpm** 6 Poles						
Motor Output **[kW]** Asynchronous																
	VVVF/AC2 **15**	VVVF/AC2 **18**	VVVF/AC2 **22**	VVVF/AC2 **27**	VVVF/AC2 **33**	VVVF **36**	VVVF **40**	VVVF **44**	VVVF **47**		VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF **25**	VVVF **29**
Speed syn.	Max Rated Load									Speed syn.	Max Rated Load					
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
0,73	2035	2455	--	--	--	--	--	--	--	0,41	2825	3155	--	--	--	--
0,79	1895	2290	--	--	--	--	--	--	--	0,44	2635	2945	--	--	--	--
0,85	1750	2115	--	--	--	--	--	--	--	0,47	2430	2715	--	--	--	--
0,90	1650	1995	--	--	--	--	--	--	--	0,50	2290	2560	--	--	--	--
0,93	1655	2090	2665	2905	--	--	--	--	--	0,51	2325	2975	3460	--	--	--
0,98	1515	1835	--	--	--	--	--	--	--	0,55	2105	2355	--	--	--	--
0,99	1545	1950	2490	2710	--	--	--	--	--	0,55	2170	2780	3225	--	--	--
1,05	1420	1720	--	--	--	--	--	--	--	0,58	1975	2205	--	--	--	--
1,07	1425	1800	2295	2500	--	--	--	--	--	0,60	2005	2565	2980	--	--	--
1,14	1340	1695	2165	2355	--	--	--	--	--	0,63	1890	2415	2805	--	--	--
1,20	1315	1665	2125	2700	2805	--	--	--	--	0,67	1840	2355	2980	3550	--	--
1,24	1235	1560	1990	2170	--	--	--	--	--	0,69	1735	2220	2580	--	--	--
1,29	1230	1550	1980	2520	2620	--	--	--	--	0,71	1715	2200	2780	3315	--	--
1,32	1155	1460	1865	2030	--	--	--	--	--	0,73	1630	2085	2420	--	--	--
1,39	1135	1430	1830	2325	2415	--	--	--	--	0,77	1585	2030	2565	3060	--	--
1,48	1070	1350	1725	2190	2275	--	--	--	--	0,82	1490	1910	2415	2880	--	--
1,61	985	1240	1585	2015	2095	--	--	--	--	0,89	1370	1760	2225	2650	--	--
1,68	1020	1275	1620	2045	2350	--	--	--	--	0,93	1410	1795	2260	2800	3040	--
1,71	920	1165	1485	1890	1965	--	--	--	--	0,95	1285	1650	2085	2485	--	--
1,80	950	1190	1510	1910	2195	--	--	--	--	1,00	1315	1675	2110	2610	2835	--
1,94	875	1100	1395	1765	2025	--	--	--	--	1,08	1215	1545	1945	2410	2615	--
2,06	825	1035	1315	1660	1905	--	--	--	--	1,15	1145	1455	1835	2270	2465	--
2,24	760	950	1205	1525	1755	--	--	--	--	1,25	1055	1340	1685	2090	2270	--
2,35	710	895	1145	1455	1830	2010	2255	2500	2685	1,30	1005	1280	1620	2010	2570	3015
2,39	710	890	1130	1430	1645	--	--	--	--	1,33	985	1255	1580	1960	2125	--
2,51	660	835	1070	1360	1705	1880	2110	2345	2520	1,40	935	1195	1510	1875	2395	2815
2,72	610	770	985	1255	1575	1735	1950	2165	2325	1,51	865	1105	1395	1730	2210	2600
2,88	590	745	950	1205	1510	1640	1845	2045	2200	1,60	825	1055	1330	1650	2110	2480
2,89	575	725	930	1180	1485	1635	1835	2040	2190	1,61	815	1040	1315	1630	2085	2445
3,08	550	695	885	1125	1410	1530	1720	1910	2050	1,71	770	985	1240	1540	1970	2315
3,14	530	670	855	1085	1365	1525	1710	1900	2040	1,75	750	955	1205	1500	1915	2250
3,34	510	640	815	1040	1300	1435	1610	1785	1920	1,86	710	910	1145	1425	1820	2135
3,35	495	625	800	1020	1280	1430	1605	1780	1915	1,86	700	895	1130	1405	1795	2110
3,55	480	605	770	975	1225	1350	1515	1680	1805	1,97	670	855	1080	1340	1715	2010
3,86	440	555	710	900	1130	1240	1395	1545	1660	2,14	615	785	995	1235	1575	1850
4,11	415	520	665	845	1055	1165	1310	1450	1560	2,28	575	740	930	1155	1480	1735

60Hz										33Hz						
Motor Output **[kW]**																
	VVVF/AC2 **15**	VVVF/AC2 **18**	VVVF/AC2 **22**	VVVF/AC2 **27**	VVVF/AC2 **33**	VVVF **36**	VVVF **40**	VVVF **44**	VVVF **47**		VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF **25**	VVVF **29**
Max Output Torque	Geared Efficiency									Max Output Torque	Geared Efficiency					
[Nm]										[Nm]						
4220	0,64	0,67	--	--	--	--	--	--	--	5420	0,67	0,70	--	--	--	--
4990	0,66	0,69	0,72	0,75	--	--	--	--	--	5940	0,70	0,73	0,75	--	--	--
4820	0,68	0,71	0,75	0,77	0,79	--	--	--	--	6100	0,72	0,75	0,77	0,79	--	--
4040	0,73	0,77	0,79	0,82	0,84	--	--	--	--	5220	0,77	0,80	0,82	0,84	0,86	--
4760	0,72	0,75	0,79	0,82	0,84	0,85	0,86	0,86	0,87	5550	0,77	0,80	0,82	0,84	0,86	0,87
4380	0,73	0,77	0,80	0,83	0,85	0,86	0,87	0,87	0,88	5580	0,77	0,81	0,83	0,85	0,87	0,88

50Hz

VVVF 1500 rpm 4 Poles
AC2 1500/375 rpm 4/16 Poles

		Asynchronous Rated Power **[kW]**													
		VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF **25**	VVVF **30**	VVVF **33**	VVVF **37**	VVVF **40**	VVVF **43**	AC2 **13,5**	AC2 **16,5**	AC2 **20**	AC2 **25**	AC2 **30**
		Motor Parameters													
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500/375	1500/375	1500/375	1500/375	1500/375
Asynchronous Speed	[rpm]	1464	1460	1462	1459	1459	1461	1456	1460	1457	1340/280	1340/270	1365/275	1384/300	1350/305
Rated Current (2)	[A]	27	34	42	50	59	66	74	80	86	39/24	42/27	47/33	59/39	69/51
Rated Torque	[Nm]	88	108	131	164	196	216	243	262	282	96	118	140	173	212
Cos φ Power Factor	[ ]	0,84	0,83	0,82	0,84	0,82	0,84	0,83	0,84	0,85	--	--	--	--	--
Starting Current	[A]	128	150	150	193	235	264	296	325	325	113	144	160	207	245
Starting Torque	[Nm]	220	270	330	410	510	550	630	700	700	229	280	329	419	514
Duty Cycle	[%]	60	60	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	240	240	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	755	755	755	755	755	785	785	785	785	735	735	735	835	835

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
Motor are manufactured for 50Hz. Inverter must assure those frequencies and voltages independently from the net frequency.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.
The inertia includes motor and primary shaft masses without handwheel. Handwheel inertia: 0,17kgm2.
Phase to phase resistance = 2xR1

60Hz

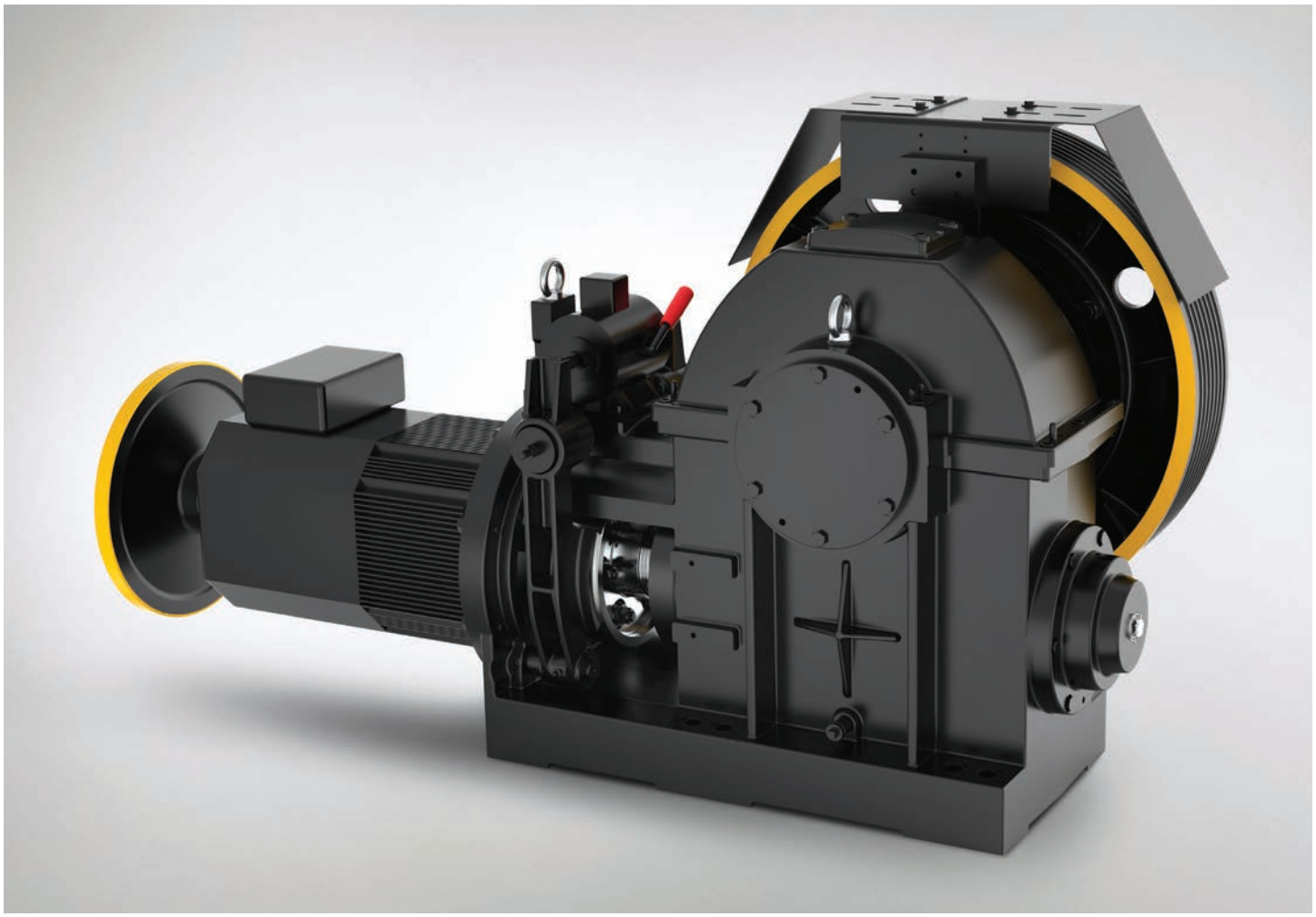
VVVF 1800 rpm 4 Poles
AC2 1800/450 rpm 4/16 Poles

		Asynchronous Rated Power **[kW]**													
		VVVF **15**	VVVF **18**	VVVF **22**	VVVF **27**	VVVF **33**	VVVF **36**	VVVF **40**	VVVF **44**	VVVF **47**	AC2 **15**	AC2 **18**	AC2 **22**	AC2 **27**	AC2 **33**
		Motor Parameters													
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Synchronous Speed	[rpm]	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800/450	1800/450	1800/450	1800/450	1800/450
Asynchronous Speed	[rpm]	1755	1755	1735	1750	1750	1750	1747	1747	1747	1620/350	1670/320	1660/345	1675/365	1680/380
Rated Current (2)	[A]	38	46	57	59	66	72	80	87	93	42/25	50/33	59/41	63/40	71/52
Rated Torque	[Nm]	82	98	121	149	182	196	219	240	257	88	103	126	154	188
Cos φ Power Factor	[ ]	0,87	0,88	0,88	0,88	0,86	0,87	0,84	0,81	0,83	--	--	--	--	--
Starting Current	[A]	143	175	210	230	250	275	--	--	--	130	166	185	220	261
Starting Torque	[Nm]	209	250	298	410	510	--	--	--	--	211	250	298	358	430
Duty Cycle	[%]	60	60	60	60	60	60	60	60	60	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	240	240	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	755	755	755	755	755	785	785	785	785	735	735	735	835	835

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
Motor are manufactured for 60Hz. Inverter must assure those frequencies and voltages independently from the net frequency.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine is provided with fan keyed directly onto the shaft, except for some models for which the ventilation is servo-assisted by a fan 1-220...240V 50/60 hz,0,7
AThe inertia includes motor and primary shaft masses without handwheel. Handwheel inertia: 0,17kgm2.
Phase to phase resistance = 2xR1

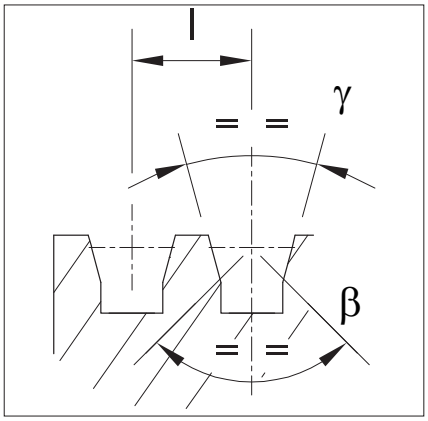
		33Hz					
		VVVF 1000 rpm 4 Poles					
		Asynchronous Rated Power **[kW]**					
		VVVF **11**	VVVF **13,5**	VVVF **16,5**	VVVF **20**	VVVF **25**	VVVF **29**
		Motor Parameters					
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400
Frequency	[Hz]	33	33	33	33	33	33
Synchronous Speed	[rpm]	990	990	990	990	990	990
Asynchronous Speed	[rpm]	959	958	956	954	943	948
Rated Current (2)	[A]	24	29	36	43	51	60
Rated Torque	[Nm]	110	135	165	200	253	292
Cos φ Power Factor	[ ]	0,81	0,82	0,81	0,81	0,85	0,83
Starting Current	[A]	111	135	167	205	224	242
Starting Torque	[Nm]	290	340	415	500	630	690
Duty Cycle	[%]	60	60	60	60	60	60
Starts per Hour	[s/h]	240	240	240	240	240	240
Insulation Class	[ ]	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	755	755	755	785	785	785

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
Motor are manufactured for 50Hz. Inverter must assure those frequencies and voltages independently from the net frequency.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.
The inertia includes motor and primary shaft masses without handwheel. Handwheel inertia: 0,17kgm2.
Phase to phase resistance = 2xR1

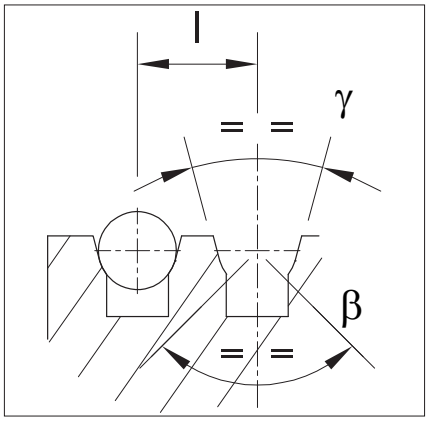


TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
ESW	560	236	8xD13	30
CSW	600	160	9xD10	16
	600	160	8xD11	18
	600	160	8xD12	18
	600	160	8xD13	19
	600	160	6xD14	22
	600	160	6xD15	22
	650	160	9xD10	16
	650	160	8xD11	18
	650	160	8xD12	18
	650	160	8xD13	19
	650	160	6xD14	22
	650	160	6xD15	22
	650	160	6xD16	22
	690	160	9xD10	16
	690	160	8xD11	18
	690	160	8xD12	18
	690	160	8xD13	19
	690	160	6xD14	22
	690	160	6xD15	22
	690	160	6xD16	22
	750	160	9xD10	16
	750	160	8xD11	18
	750	160	8xD12	18
	750	160	8xD13	19
	750	160	6xD14	22
	750	160	6xD15	22
	750	160	6xD16	22
	800	160	9xD10	16
	800	160	8xD11	18
	800	160	8xD12	18
	800	160	8xD13	19
	800	160	6xD14	22
	800	160	6xD15	22
	800	160	6xD16	22



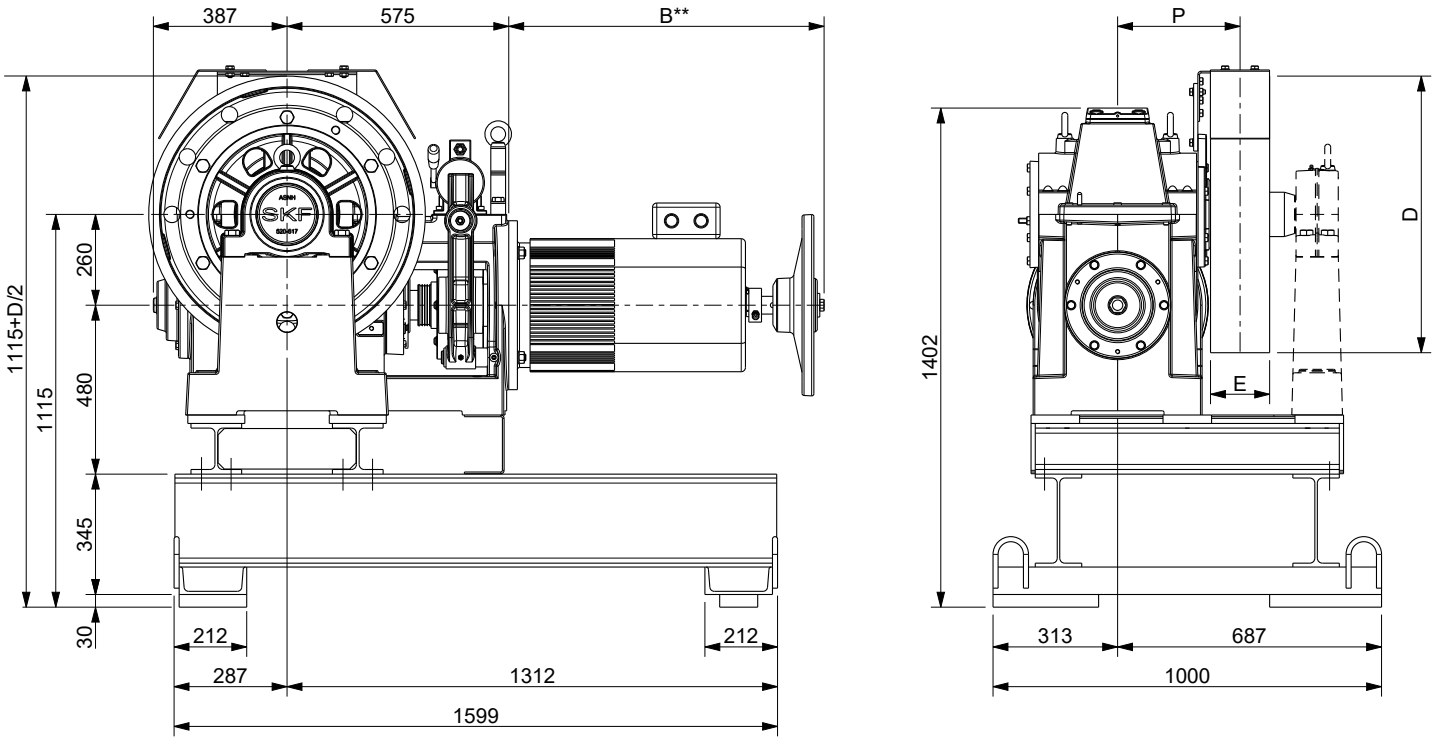
V grooves with undercut



U grooves with undercut

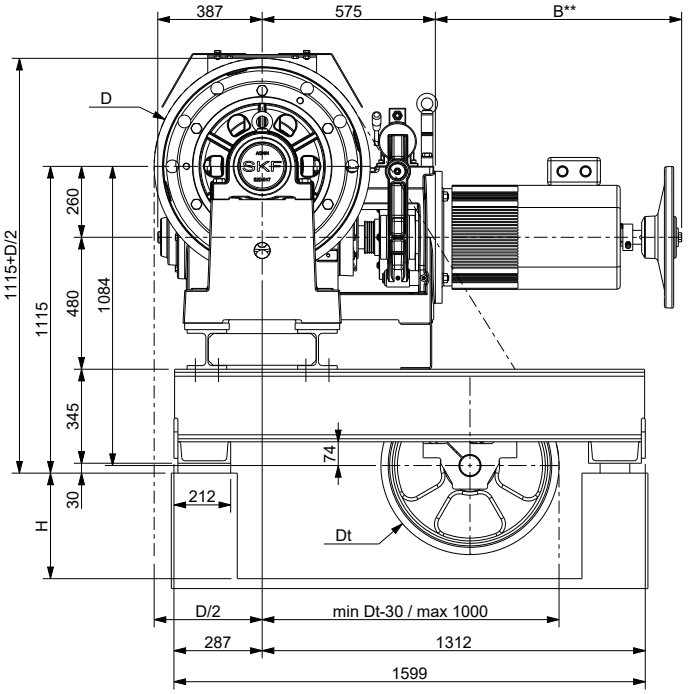
γ = *groove angle*
β = *Undercut angle*

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WINDING (SHORT)



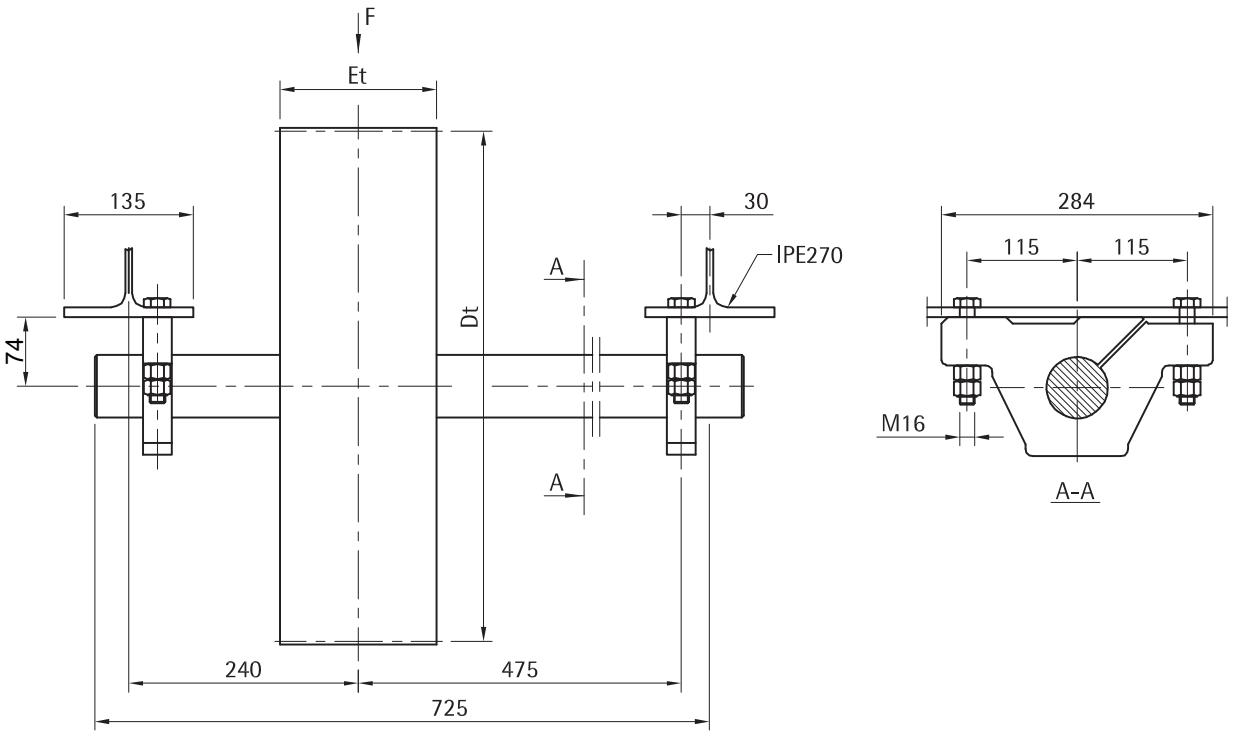
**) For the B value refer to “Electric motor data” table
MR26 XTE2959 Weight of machine bedplate: 313 kg.
MR26TS XTE0037 for top machine (included vibration dampers); XTE0069 for bottom/on side machine (included vibration dampers)
Weight of machine bedplate: 165 kg (Bedplate + vibration dampers)
Note: Machine room floor thickness min. 250 mm.

BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WINDING (SHORT)



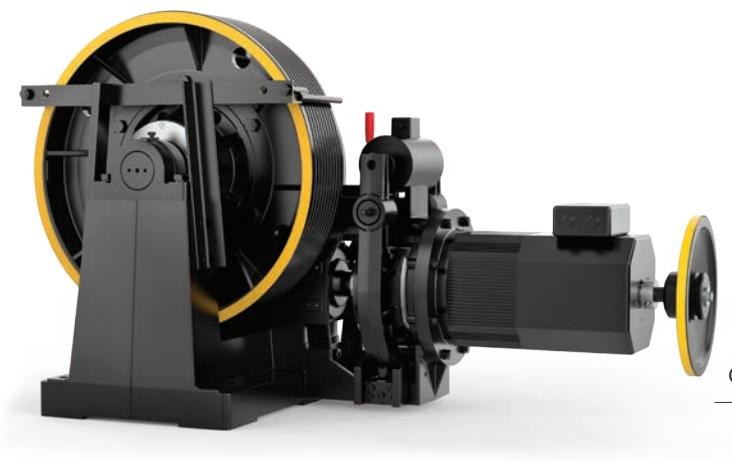
**) For the B value refer to “Electric motor data” table
MR26 XTE2961 Weight of machine bedplate: 465 kg.
MR26TS XTE0041 (included vibration dampers) Weight of machine bedplate: 534 kg (bedplate + diverting pulley + vibration dampers)
Note: Machine room floor thickness min. 250 mm. (without diverting pulley)
Dt = 534 mm
Dimension Hmin = (Dt/2) + 75

DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER



Diverting Pulley		Max n°Grooves x D	Grooves Pitch	Distance	Length	Force
D [mm]	E [mm]		I [mm]	X [mm]	L [mm]	F max [kN]
534	124	7xD10	16	72÷90	725	23
		6xD11	18	72÷90	725	23
		6xD12	18	72÷90	725	23
		6xD13	19	72÷90	725	23
	164	10xD10	16	72÷90	725	24,2
		8xD11	18	72÷90	725	24,2
		8xD12	18	72÷90	725	24,2
		8xD13	19	72÷90	725	24,2
656	186	11xD10	16	122	725	24,9
		10xD11	18	122	725	24,9
		10xD12	18	122	725	24,9
		9xD13	19	122	725	24,9
		8xD14	22	122	725	24,9
		8xD15	22	122	725	24,9
		8xD16	22	122	725	24,9

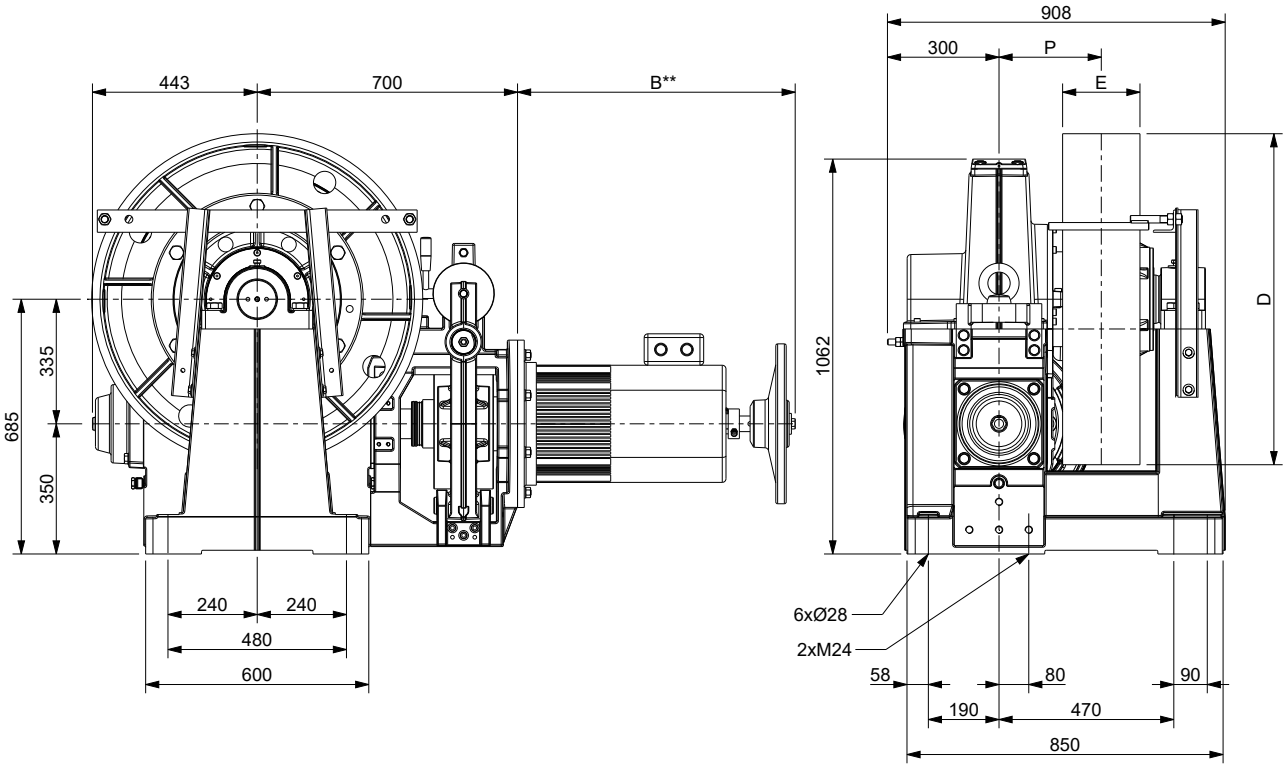
GEARED MR35



Max. Static Load	**140 kN - 14200 kg**
Power Range 50 Hz 4 poles VVVF	**25 ÷ 90 kW**
Power Range 50 Hz 4/16 poles	**25 ÷ 43 kW**
Power Range 33 Hz 4 poles	**20 ÷ 36 kW**
Power Range 50 Hz 6 poles VVVF	**20 ÷ 36 kW (on request)**
Power Range 60 Hz 4 poles VVVF	**27 ÷ 100 kW**
Power Range 60 Hz 4/16 poles	**27 ÷ 44 kW**
Ratio	**1/58; 1/53; 2/73; 2/60; 3/70; 3/53**
Geared Weight	**1600 ÷ 1900 kg**
Oil capability	**23,5 l**
Geared machine Rh o Lh (see from motor)	**Pictures Gear Lh**

The geared machine efficiency values are present above each "rated load" table
The motor efficiency values are present in the table "electric motor data"

DIMENSIONS MR35



Wrapping System	Traction sheave		Dimension	Load*)
	D [mm]	E [mm]	P [mm]	F [kN - kg]
CSW	690	208	275	140[1)]-70[2)] - 14200
	770	252		
	800	208		
	885	208		

*) Max. static load on the slow shaft:
CSW: Conventional single wrap; F= 140 kN 1) horizontal component not to exceed; F= 70 kN 2).
Diverting pulley must not be located on this (brake) side, rope moust go straight down.
**) For the B value refer to "Electric motor data" table

Brake Electromagnet		
[V]	[A]	[W]
48	4,9	235
60	4,5	270
80	3,2	256
110	2,9	319
205	1,6	320

DUTY TABLE
Roping 1:1

50Hz

VVVF 1500 rpm 4 Poles
AC2 1500/375 rpm 4/16 Poles

Motor Output **[kW]** Asynchronous

R.R.	Traction Sheave Ø	Speed syn.	VVVF/AC2 **25**	VVVF/AC2 **30**	VVVF/AC2 **33**	VVVF/AC2 **37**	VVVF/AC2 **40**	VVVF/AC2 **43**	VVVF **55**	VVVF **75**	VVVF **90**
			Max Rated Load								
[i]	[mm]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]
1/58	690	0,93	2975	3700	4100	--	--	--	--	--	--
1/53	690	1,02	2720	3380	3775	4100	--	--	--	--	--
1/58	770	1,04	2665	3315	3700	4100	--	--	--	--	--
1/58	800	1,08	2565	3190	3565	4065	4100	--	--	--	--
1/53	770	1,14	2455	3050	3410	3885	4100	--	--	--	--
1/53	800	1,19	2365	2935	3280	3740	4085	4100	--	--	--
1/58	885	1,20	2340	2905	3245	3700	4040	4100	--	--	--
1/53	885	1,31	2135	2655	2965	3380	3690	4000	4010	--	--
2/73	690	1,48	2045	2530	2820	3210	3500	3795	4100	--	--
2/73	770	1,66	1830	2265	2530	2875	3140	3400	4100	--	--
2/73	800	1,72	1765	2180	2435	2770	3020	3270	4100	--	--
2/60	690	1,81	1680	2080	2320	2640	2880	3115	4075	4100	--
2/73	885	1,90	1580	1960	2190	2495	2720	2950	3860	3905	--
2/60	770	2,02	1490	1850	2065	2355	2570	2785	3650	4100	--
2/60	800	2,09	1435	1780	1990	2265	2475	2680	3510	4100	--
2/60	885	2,32	1300	1610	1800	2050	2235	2425	3175	4035	4035
3/70	690	2,32	1315	1625	1815	2070	2255	2445	3200	4100	4100
3/70	770	2,59	1175	1460	1625	1855	2020	2190	2870	3995	4100
3/70	800	2,69	1130	1405	1565	1785	1945	2110	2760	3845	4100
3/70	885	2,98	1025	1270	1415	1610	1760	1905	2495	3475	3820
3/53	690	3,07	995	1235	1380	1575	1720	1865	2440	3405	4100
3/53	770	3,42	890	1110	1240	1410	1540	1670	2190	3050	3700
3/53	800	3,56	860	1065	1190	1360	1480	1605	2105	2935	3560
3/53	885	3,93	775	965	1075	1225	1340	1450	1905	2655	3220

50Hz

Motor Output **[kW]**

R.R.	Max Output Torque	VVVF/AC2 **25**	VVVF/AC2 **30**	VVVF/AC2 **33**	VVVF/AC2 **37**	VVVF/AC2 **40**	VVVF/AC2 **43**	VVVF **55**	VVVF **75**	VVVF **90**
		Geared Efficiency								
[i]	[Nm]									
1/58	11500	0,72	0,74	0,75	0,77	--	--	--	--	--
1/53	10880	0,72	0,75	0,76	0,77	0,78	--	--	--	--
2/73	10600	0,78	0,81	0,82	0,83	0,84	0,84	--	--	--
2/60	10950	0,78	0,80	0,81	0,83	0,83	0,84	0,86	--	--
3/70	10370	0,79	0,81	0,82	0,84	0,84	0,85	0,87	0,89	0,90
3/53	10570	0,79	0,82	0,83	0,84	0,85	0,86	0,88	0,90	0,91

Rated load values listed in the table include the weight of the ropes.
To know the theoretical load, subtract the weight of the ropes.
Position Of The Geared = Top Counterweight = 50% Plant efficiency = 0,80

60Hz										33Hz					
VVVF 1800 rpm 4 Poles **AC2 1800/450 rpm** 4/16 Poles										**VVVF 1000 rpm** 6 Poles					
Motor Output **[kW]** Asynchronous															
	VVVF/AC2 **27**	VVVF/AC2 **33**	VVVF/AC2 **36**	VVVF/AC2 **40**	VVVF/AC2 **44**	VVVF **47**	VVVF **60**	VVVF **90**	VVVF **100**		VVVF **20**	VVVF **25**	VVVF **29**	VVVF **32**	VVVF **36**
Speed syn.	Max Rated Load									Speed syn.	Max Rated Load				
[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg]	[m/s]	[kg]	[kg]	[kg]	[kg]	[kg]
1,12	2710	3435	3800	3975	--	--	--	--	--	0,62	3720	4800	5435	--	--
1,23	2480	3140	3470	3810	--	--	--	--	--	0,68	3395	4390	5180	5225	--
1,25	2430	3080	3405	3560	--	--	--	--	--	0,70	3330	4305	4870	--	--
1,30	2340	2965	3275	3425	--	--	--	--	--	0,72	3205	4140	4685	--	--
1,37	2235	2830	3125	3410	--	--	--	--	--	0,76	3060	3955	4670	4685	--
1,42	2150	2720	3010	3285	--	--	--	--	--	0,79	2945	3805	4495	4505	--
1,44	2125	2695	2975	3095	--	--	--	--	--	0,80	2915	3765	4235	--	--
1,57	1940	2460	2720	2970	--	--	--	--	--	0,87	2665	3440	4060	4075	--
1,78	1855	2345	2585	2910	3235	3475	3710	--	--	0,99	2545	3270	3855	4290	4875
1,99	1665	2100	2315	2610	2900	3115	3325	--	--	1,10	2280	2930	3455	3845	4370
2,07	1600	2020	2230	2510	2790	3000	3200	--	--	1,15	2195	2820	3325	3700	4205
2,17	1525	1925	2125	2390	2660	2860	3725	3910	--	1,20	2090	2690	3170	3525	4005
2,29	1435	1815	2005	2260	2510	2700	2890	--	--	1,27	1965	2535	2990	3330	3790
2,42	1355	1715	1895	2135	2370	2550	3330	3505	--	1,34	1855	2395	2825	3150	3580
2,51	1305	1650	1820	2055	2285	2455	3205	3375	--	1,40	1785	2305	2720	3030	3445
2,78	1180	1490	1645	1855	2065	2220	2900	3050	--	1,54	1615	2080	2455	2740	3115
2,79	1180	1495	1655	1865	2075	2230	2910	3950	--	1,55	1630	2100	2480	2760	3140
3,11	1060	1340	1480	1670	1860	2000	2610	3540	--	1,73	1460	1885	2220	2475	2815
3,23	1020	1290	1425	1605	1790	1925	2510	3405	--	1,80	1405	1810	2140	2380	2705
3,57	920	1165	1290	1450	1615	1740	2270	3080	--	1,99	1270	1640	1930	2155	2445
3,68	905	1150	1270	1430	1590	1710	2230	3435	3630	2,04	1240	1600	1890	2105	2395
4,11	810	1030	1135	1280	1425	1530	2000	3080	3250	2,28	1110	1435	1695	1885	2145
4,27	780	990	1095	1230	1370	1475	1925	2965	3130	2,37	1070	1380	1630	1815	2065
4,72	705	895	990	1115	1240	1335	1740	2680	2830	2,62	965	1245	1475	1640	1865

60Hz										33Hz					
Motor Output **[kW]**															
	VVVF/AC2 **27**	VVVF/AC2 **33**	VVVF/AC2 **36**	VVVF/AC2 **40**	VVVF/AC2 **44**	VVVF **47**	VVVF **60**	VVVF **90**	VVVF **100**		VVVF **20**	VVVF **25**	VVVF **29**	VVVF **32**	VVVF **36**
Max Output Torque	Geared Efficiency									Max Output Torque	Geared Efficiency				
[Nm]										[Nm]					
8410	0,73	0,75	0,76	0,77	0,78	0,79	--	--	--	11500	0,75	0,77	0,78	--	--
8060	0,73	0,76	0,77	0,78	0,79	0,79	--	--	--	11060	0,75	0,78	0,79	--	--
7850	0,79	0,82	0,82	0,84	0,84	0,85	0,87	0,89	0,89	10600	0,81	0,83	0,85	0,86	--
8280	0,78	0,81	0,82	0,83	0,84	0,85	0,87	0,89	0,89	11370	0,80	0,83	0,84	0,85	0,86
8360	0,79	0,82	0,83	0,84	0,85	0,85	0,87	0,89	0,90	10820	0,81	0,84	0,85	0,86	0,87
7680	0,80	0,83	0,84	0,85	0,86	0,86	0,88	0,91	0,91	10990	0,82	0,84	0,86	0,87	0,88

50Hz

VVVF 1500 rpm 4 Poles
AC2 1500/375 rpm 4/16 Poles

		Asynchronous Rated Power **[kW]**														
		VVVF **25**	VVVF **30**	VVVF **33**	VVVF **37**	VVVF **40**	VVVF **43**	VVVF **55**	VVVF **75**	VVVF **90**	AC2 **25**	AC2 **30**	AC2 **33**	AC2 **37**	AC2 **40**	AC2 **43**
		Motor Parameters														
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Frequency	[Hz]	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Synchronous Speed	[rpm]	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500/375	1500/375	1500/375	1500/375	1500/375	1500/375
Asynchronous Speed	[rpm]	1459	1459	1461	1456	1460	1457	1471	1461	1465	1384/300	1350/305	1370/290	1370/300	1380/315	1370/300
Rated Current (2)	[A]	50	61	66	74	80	86	90	91	91	59/39	69/51	73/55	82/55	88/62	95/63
Rated Torque	[Nm]	164	196	216	243	262	282	357	490	587	173	212	230	258	178	300
Cos φ Power Factor	[ ]	0,84	0,82	0,84	0,83	0,84	0,85	0,89	0,9	0,91	--	--	--	--	--	--
Starting Current	[A]	193	235	264	296	325	325	277	365	468	207	245	275	350	314	355
Starting Torque	[Nm]	410	510	550	630	700	700	821	1078	1291	419	514	570	639	667	745
Duty Cycle	[%]	60	60	60	60	60	60	40	40	40	30+10	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	240	240	240	240	240	240	240	240	240	180	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	755	755	785	785	785	785	1025	1025	1025	835	835	735	835	835	835

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.

60Hz

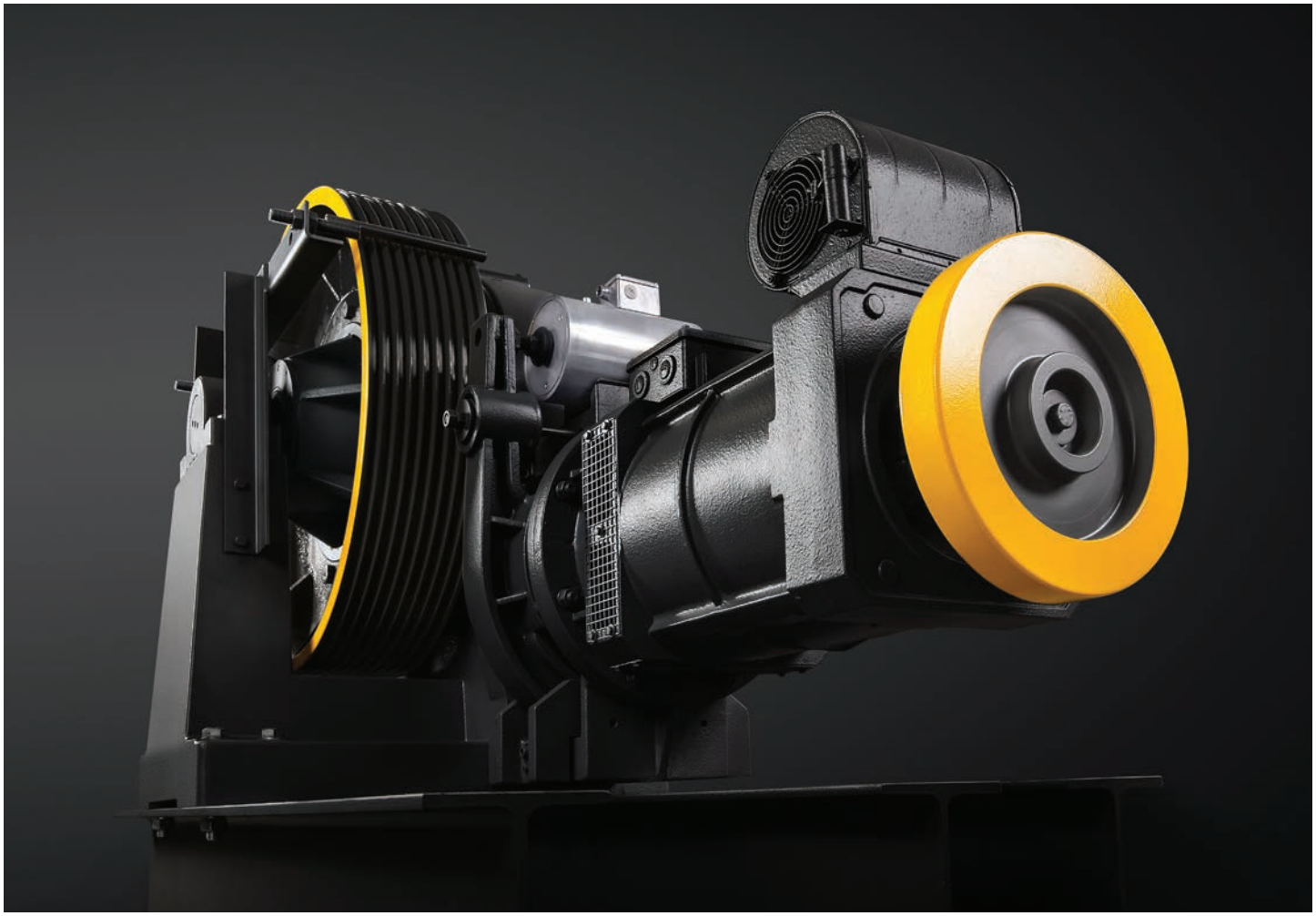
AC2 1800/450 rpm 4/16 Poles

		Asynchronous Rated Power **[kW]**				
		AC2 **27**	AC2 **33**	AC2 **36**	AC2 **40**	AC2 **44**
		Motor Parameters				
Rated Voltage (star connection) (1) (3)	[V]	400	400	400	400	400
Frequency	[Hz]	60	60	60	60	60
Synchronous Speed	[rpm]	1800/450	1800/450	1800/450	1800/450	1800/450
Asynchronous Speed	[rpm]	1675/365	1680/380	1670/360	1640/360	1655/375
Rated Current (2)	[A]	63/40	71/52	76/59	82/55	88/62
Rated Torque	[Nm]	154	188	234	265	289
Cos φ Power Factor	[ ]	--	--	--	--	--
Starting Current	[A]	220	261	275	285	315
Starting Torque	[Nm]	358	430	502	570	600
Duty Cycle	[%]	30+10	30+10	30+10	30+10	30+10
Starts per Hour	[s/h]	180	180	180	180	180
Insulation Class	[ ]	F	F	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21	IP21	IP21
Dimension (B)	[mm]	835	835	835	835	835

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.

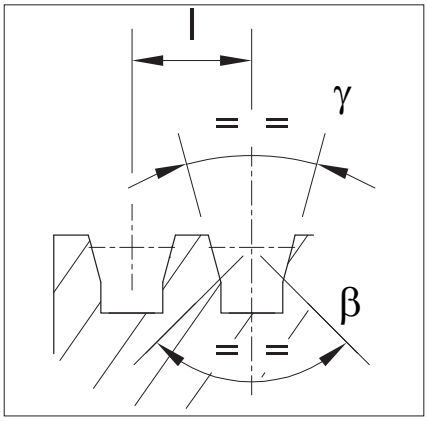
		33Hz		
		VVVF 1000 rpm 4 Poles		
		Asynchronous Rated Power **[kW]**		
		VVVF **20**	VVVF **25**	VVVF **29**
		Motor Parameters		
Rated Voltage (star connection) (1) (3)	[V]	400	400	400
Frequency	[Hz]	33	33	33
Synchronous Speed	[rpm]	990	990	990
Asynchronous Speed	[rpm]	954	943	948
Rated Current (2)	[A]	43	51	60
Rated Torque	[Nm]	200	253	292
Cos φ Power Factor	[ ]	0,81	0,85	0,83
Starting Current	[A]	205	224	242
Starting Torque	[Nm]	500	630	690
Duty Cycle	[%]	60	60	60
Starts per Hour	[s/h]	240	240	240
Insulation Class	[ ]	F	F	F
Degree of Protection IP	[ ]	IP21	IP21	IP21
Dimension (B)	[mm]	785	785	785

(1) The motors are standard supplied with star connection (Y), the customer can arrange a delta connection (Δ).
(2) The indicated current values are related to 400V voltage. For current values with delta connection, multiply the values by 1,732.
Motor are manufactured for 33HZ-50Hz. Inverter must assure those frequencies and voltages independently from the net frequency.
(3) The standard supply voltage is suitable for 380-400V/220-230V power supplies.
The geared machine includes a fan, 1~220...240V, 50/60Hz, 0,7A.
The inertia value includes the high speed shaft, while the flywheel is excluded.
The inertia includes motor and primary shaft masses without handwheel. Handwheel inertia: 0,17kgm2.
Phase to phase resistance = 2xR1

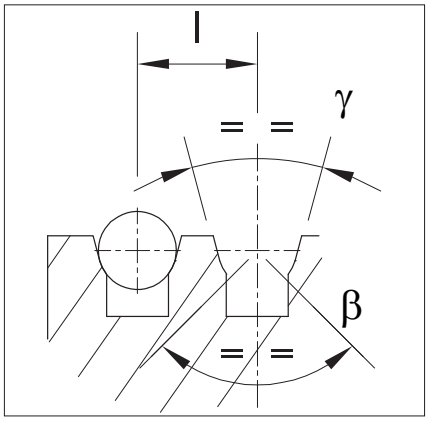


TRACTION SHEAVES AND GROOVES NUMBER x ROPES DIAMETER

Wrapping System	Traction sheave		Max n° Grooves x D	Grooves Pitch
	D [mm]	E [mm]	n° x mm	l [mm]
CSW	690	208	10xD13	19
	690	208	9xD14	22
	690	208	9xD15	22
	690	208	9xD16	22
	770	252	12xD13	19
	770	252	11xD14	22
	770	252	11xD15	22
	770	252	11xD16	22
	800	208	10xD13	19
	800	208	9xD14	22
	800	208	9xD15	22
	800	208	9xD16	22
	885	208	10xD13	19
	885	208	9xD14	22
	885	208	9xD15	22
	885	208	9xD16	22



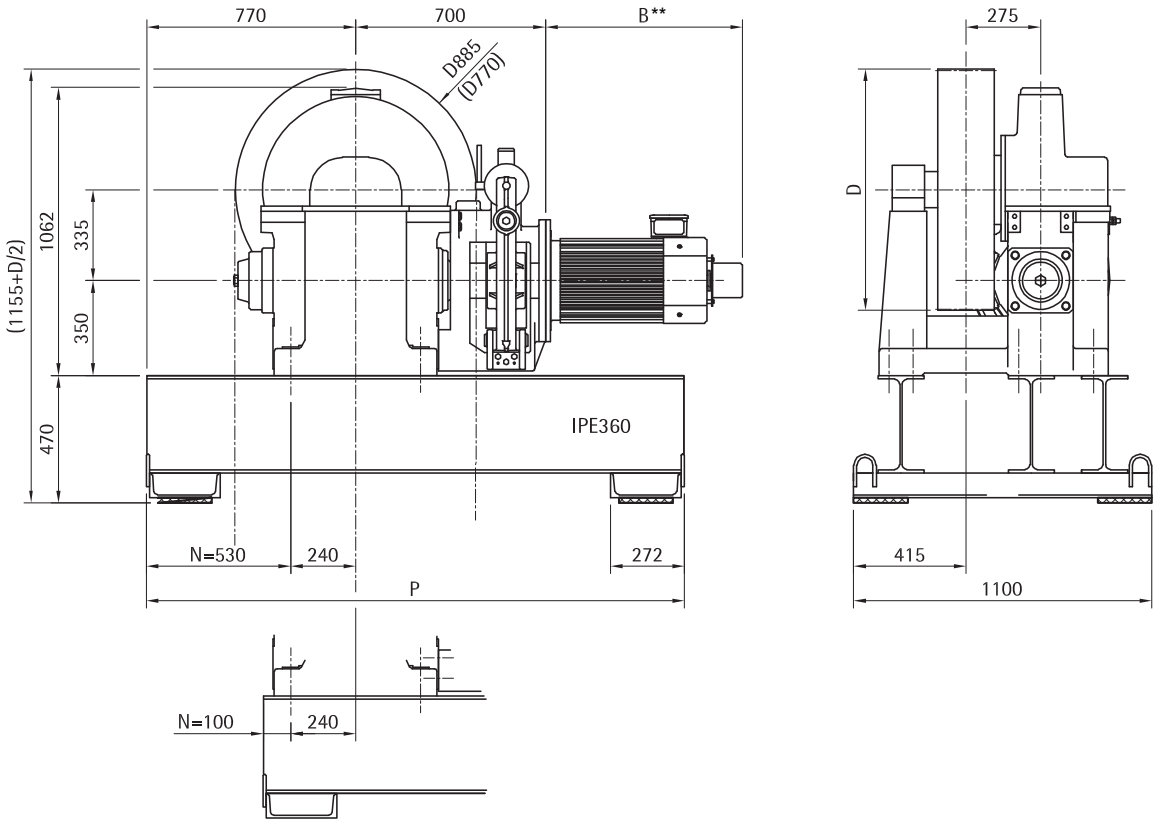
V grooves with undercut



U grooves with undercut

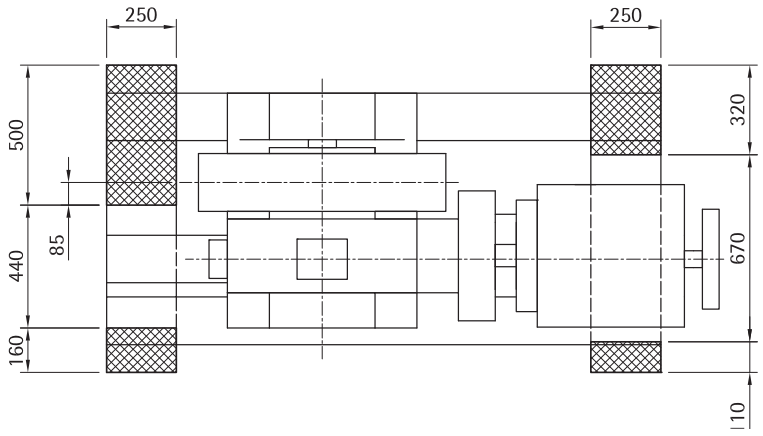
γ = *groove angle*
β = *Undercut angle*

BEDPLATE | TOP MACHINE WITHOUT DIVERTING PULLEY FOR CSW WINDING

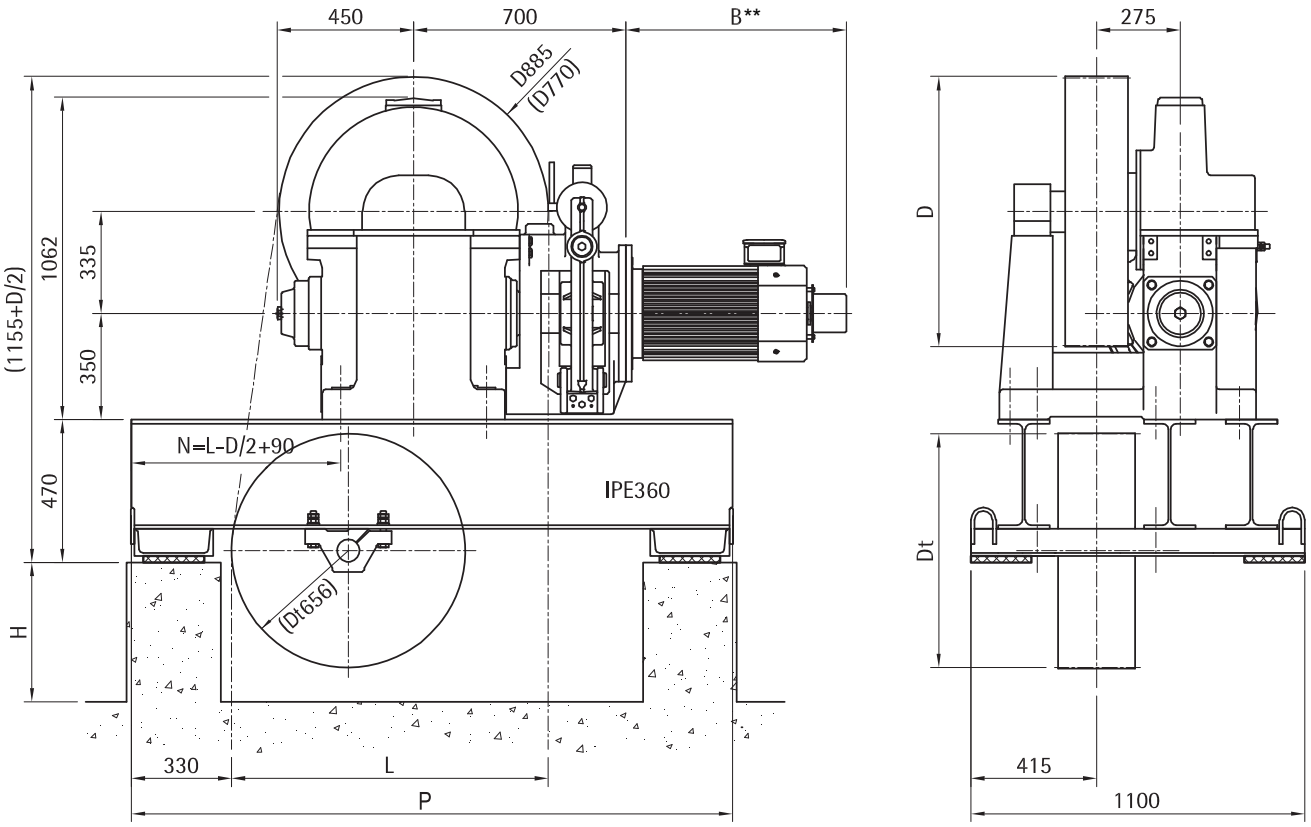


**) For the B value refer to “Electric motor data” table
To ask for dimension (included vibration dampers)
Dimensions P and N
P standard = 1980 weight of machine bedplate 430 kg.
P max = 3300 weight of machine bedplate 650 kg.
P min = 1590 weight of machine bedplate 360 kg.

VIBRATIONS DAMPER SET UP

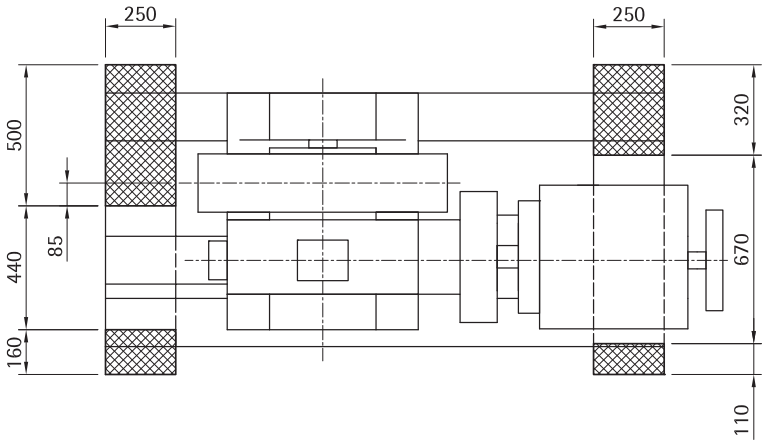


BEDPLATE | TOP MACHINE WITH DIVERTING PULLEY FOR CSW WINDING

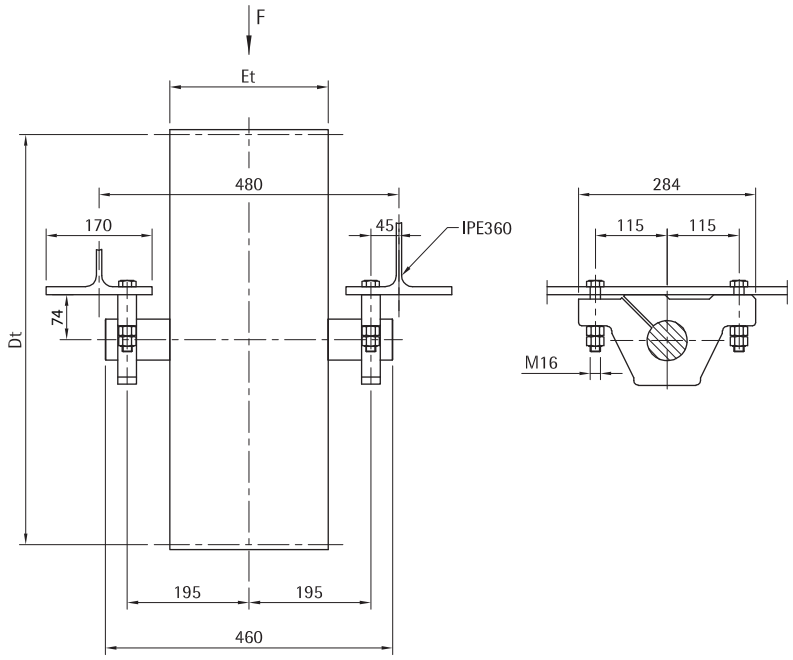


**) For the B value refer to “Electric motor data” table
To ask for dimension (included vibration dampers)
Dimensions P and N
P standard = 1980 weight of machine bedplate 430 Kg
P max = 3300 weight of machine bedplate 650 Kg
P min = 1590 weight of machine bedplate 360 Kg
Dimension Hmin = (Dt / 2) + 75
Diverting pulley must not be located on this (brake) side, rope moust go straight down.

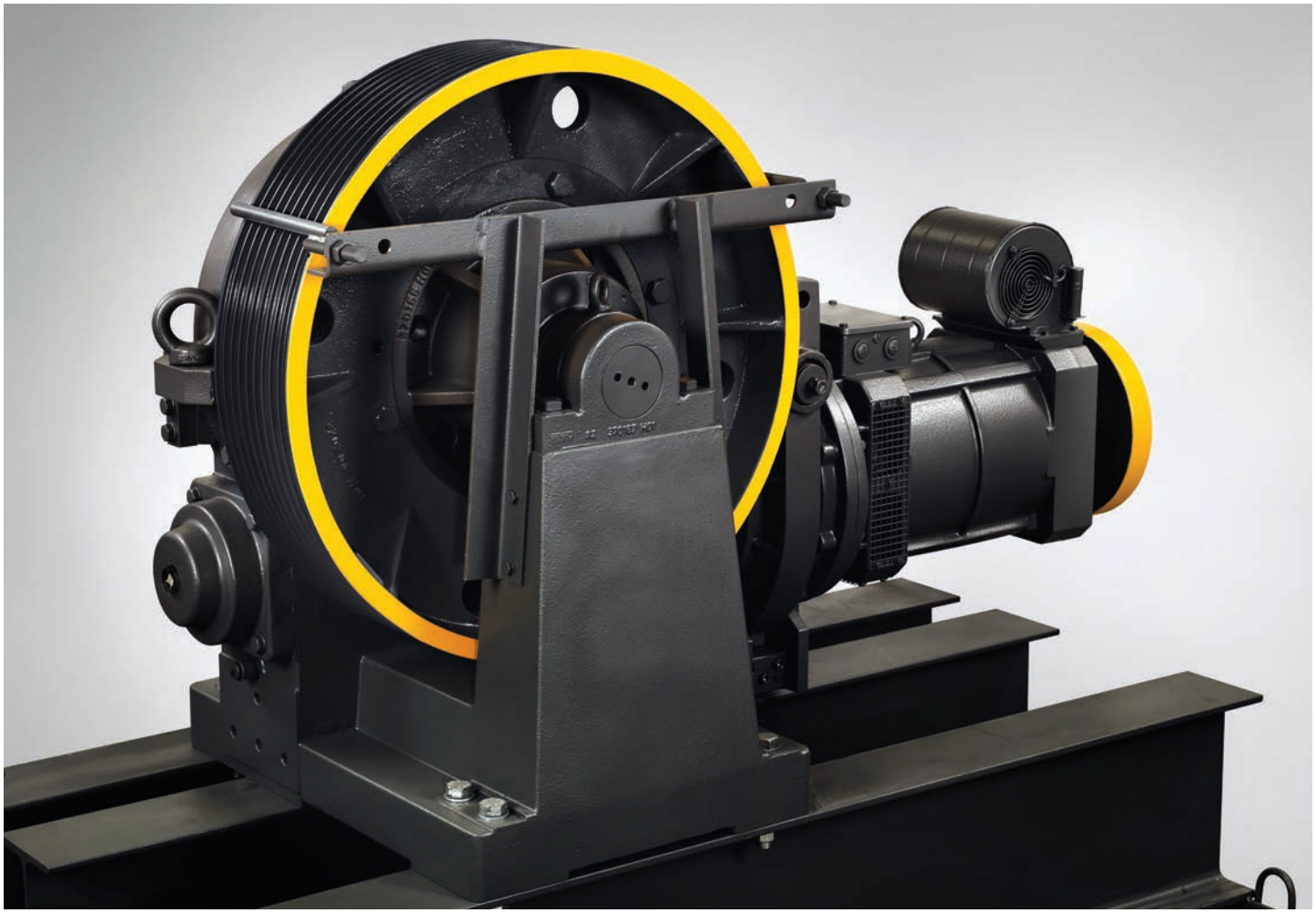
VIBRATIONS DAMPER SET UP



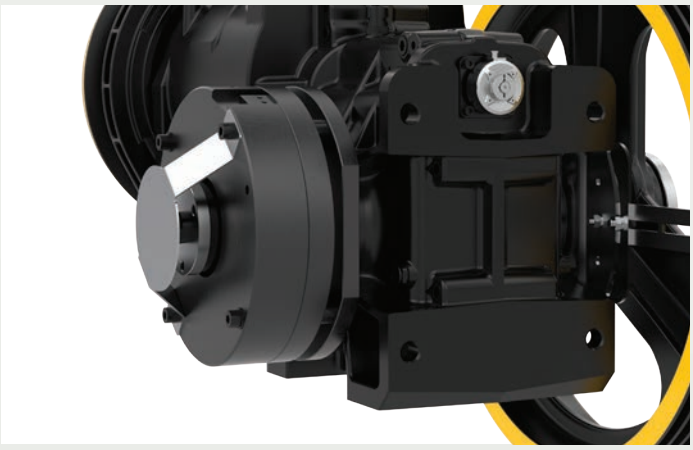
DIVERTING PULLEYS AND GROOVES NUMBER x ROPES DIAMETER



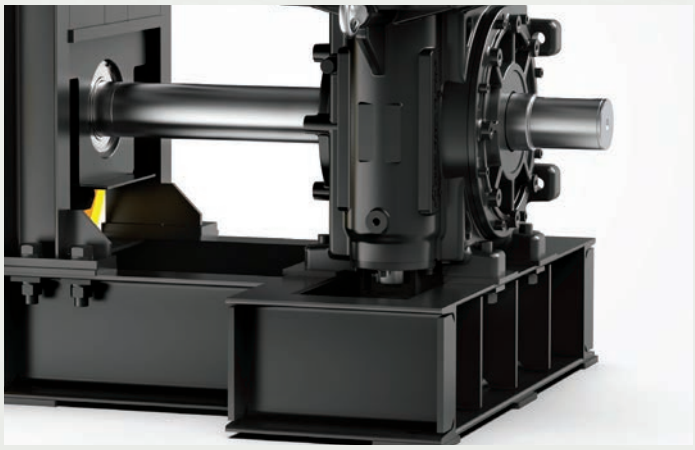
Diverting Pulley		Max n°Grooves x D	Grooves Pitch	Distance	Length	Force
D [mm]	E [mm]		l [mm]	X [mm]	L [mm]	F max [kN]
656	253	12xD13	19	72	915	42,6
		11xD14	22	72	915	42,6
		11xD15	22	72	915	42,6
		11xD16	22	72	915	42,6



Versions



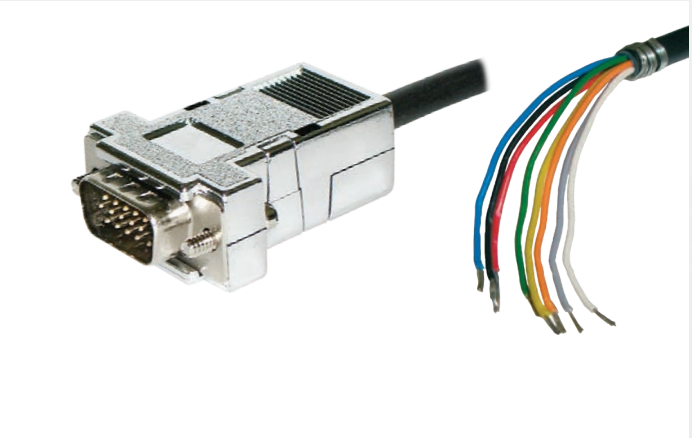
(B) SSB Brake



(LS) Extended shaft

(T) Drum

Protection for traction - diverting pulley



Encoder cable

Encoder

Bedplate

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