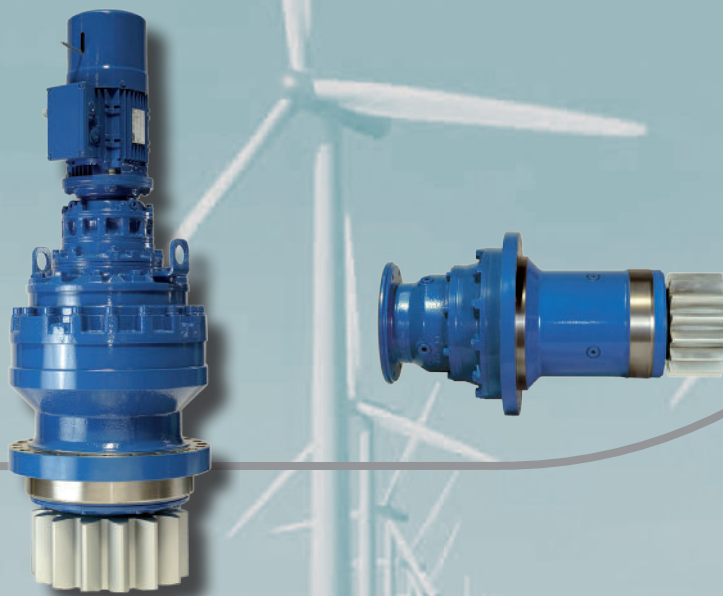


Wind Drives

Yaw and Pitch
Planetary gear systems

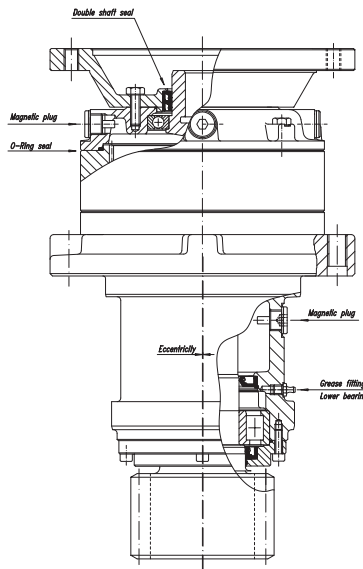
Edition September 2010



Features and Benefits

Specific solutions ...

- Wide range of planetary gear reducers, from 1 to 200 kN m torque with modular concept
- Customized output mounting interface
- High quality output pinion gear designed to specifications
- Pitch vs Yaw drive specific features
- IEC Electric yaw brake motor wound and set for the specific application
- Low Temperature Environment features
- UL compliance certificate
- ISO 12944 class paint on request

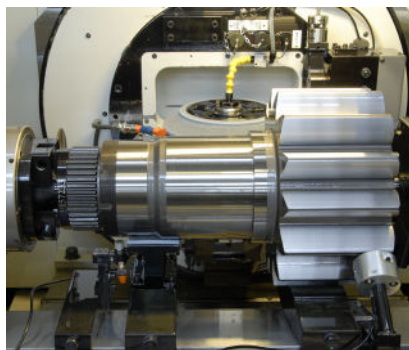


- **The right drive for a cost-effective solution**
- **Our drives perfectly integrate into wind tower design**
- **Achieving the best solution for the most severe operational conditions**
- **Different needs: performance without compromising**
- **Designing and manufacturing complete drives not simply assembling components**
- **Challenging the most severe demands**
- **Accomplishing U.S.A. specifications**
- **Assuring the best coating for your drives**

... reliable products

World class machining tools ...

- Precision
- Gears with ground finish
- Efficient, precise and up-graded machine tools
- Cutting edge industrial technology
- High tech controlling instruments

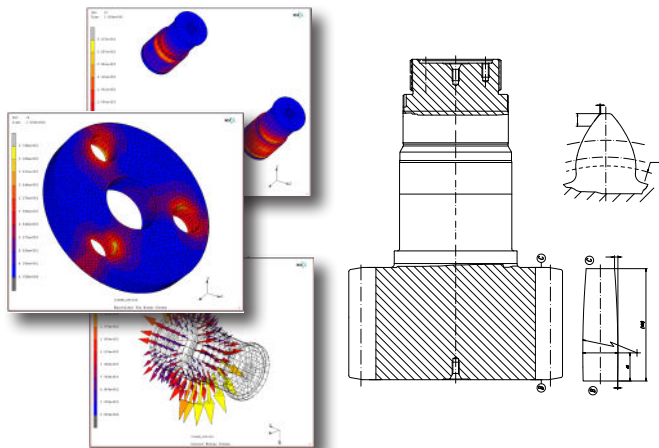


- **Meeting very demanding design needs in wind industry**
- **Performance, reliability, durability, long maintenance intervals**
- **Cost effectiveness, precision, low backlash, safety, environment-friendly machining**
- **High-quality standards, production flexibility, lean thinking production methods**
- **Process quality control**

... high quality products

Advanced technical solutions

We know how to conceive gears ...



Gear reducer design features

- Case hardened ground gears designed and rated according to DIN 3990
- nodular cast iron housing and planet carrier, full complement needle roller bearings
- accurate machining and controls among many other features

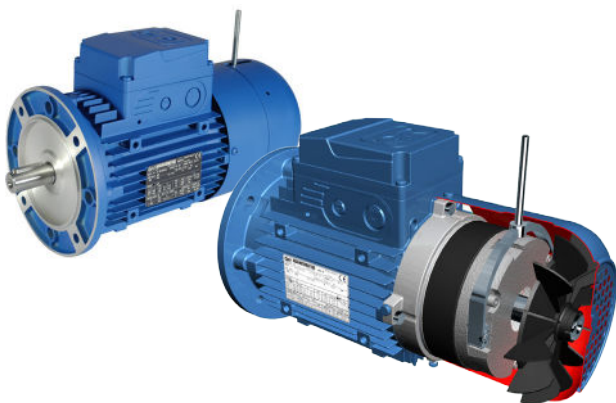
grant a very strong, well-designed and reliable planetary gear reducer product range.

Pinion teeth with full helix modification

Involute profile and helix modification calculated and produced according to the operational load conditions improve contact patterns and nominal rating, resulting in the ideal ring gear and pinion engagement.

... strong and reliable gear reducers

We know how to develop motors and brakes ...



Fail-safe parking brake motors

The anti-sticking design of the parking brake ensures constant braking performance.

The braking torque adjustment protects the drive from external overloads, whereas the customized star winding protects the drive from motor overloads.

Brake with ready air-gap reset option (patented)

Brake wear / jam sensing device option (patented)

Customized rated voltage multi-frequency range simplifies the tower design and allows the achievement of more flexibility.

Comprehensive option availability on request, i.e.:

motors certified to CSA and UL, Cold Weather

Extreme, remote signals for wear or jam/release, etc.

... designed for wind drives

We know how to design with you the right solution ...



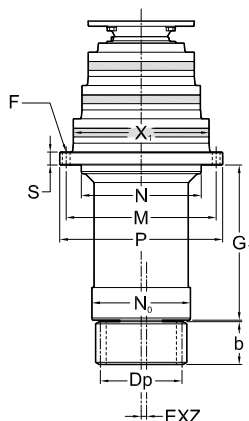
A tailor-made product

Our professional technical service with its long experience and know-how is at the Customer's disposal in order to select the most suitable product and to co-design the gear reducer application.

Even certification processes become easier as we are able to supply all calculations needed by the main certifying bodies.

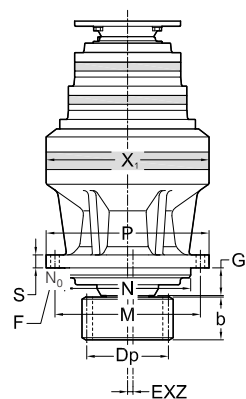
... support in selection and customization

Pitch drives



Type GR

Double pilot extended output support



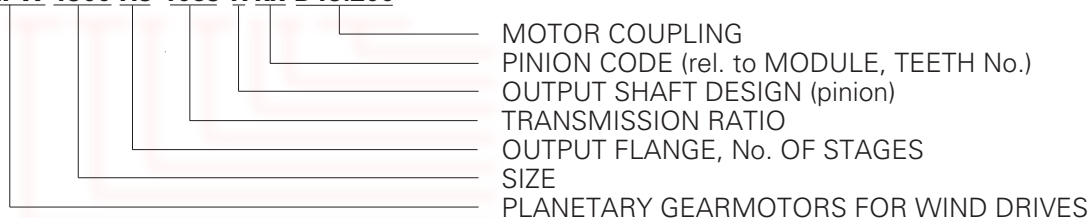
Type H, KT, S

Front fixing flange output support

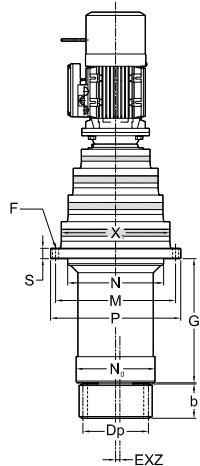
Gear reducer EPW	Torque and range of ratios			Dimensions									Output pinion			
	Nominal torque	Peak static torque	Range of nom. ratios	Ds	F	G ₁	M	N	N ₀	P	S	X ₁	module	b	Dp _{min}	EXZ
	M_{N2}	M_{K2}	3 stages													
Size Type	N m	N m	min ÷ max		mm nr.	mm	mm	mm	mm	mm	mm	mm	m mm	mm	mm	mm
100 H	1 600	2 200	42,5 ÷ 530	DIN 5482	10,5 ⁸	6	165	–	110	185	12	200	5 - 6	55	80	–
100 GR	1 600	2 200	42,5 ÷ 530	58 × 53	17,5 ⁴	162	240	160	150	275	32	200	5 - 6	68	98	0,5
200 GR	2 500	4 000	42,5 ÷ 530	58 × 53	17,5 ⁴	162	240	160	150	275	32	200	6 - 8	68	98	0,5
300 H	3 600	5 000	42,5 ÷ 530	70 × 64	12,5 ¹⁰	39	245	–	175	272	20	240	6 - 8	90	110	–
300 GR	3 600	5 000	42,5 ÷ 530	70 × 64	10,5 ⁸	142	224	200	195	244	63	240	8	90	110	–
500 H	6 300	10 000	42,5 ÷ 450	70 × 64	12,5 ¹⁰	39	245	–	175	272	20	240	8 - 10	90	110	–
500 GR	6 300	10 000	42,5 ÷ 450	70 × 64	10,5 ⁸	142	224	200	195	244	78	240	8 - 10	90	110	–
800 H	9 500	15 000	47,5 ÷ 375	80 × 74	17,0 ¹²	40	250	–	200	280	22	280	10 - 12	90	120	–
800 GR	9 500	15 000	47,5 ÷ 375	80 × 74	12,5 ¹⁰	184	260	240	200	280	80	280	10 - 12	90	120	–
900 S	9 500	15 000	47,5 ÷ 375	70 × 64	22,0 ¹²	142,5	330	–	290	372	20	280	10 - 12	74	120	1,5
900 GR	9 500	15 000	54,5 ÷ 280	80 × 74	14,5 ¹²	292	325	290	184	350	20	290	10 - 12	90	120	–
904 GR	9 500	15 000	54,5 ÷ 280	80 × 74	22,0 ⁴	278	280	160	155	315	102	315	10 - 12	90	120	–
990 H	9 500	18 000	47,5 ÷ 307	80 × 74	17,0 ¹²	72	250	–	220	285	22	280	10 - 12	90	120	1
990 GR	9 500	18 000	47,5 ÷ 307	100 × 94	17,0 ²⁰	245	315	270	230	355	34	280	10 - 12	110	160	1
1000 GR	12 000	20 000	61,5 ÷ 375	100 × 94	17,0 ¹⁶	303	350	278	228	380	30	313	12	110	160	0,75
1300 H	15 000	30 000	42,5 ÷ 325	100 × 94	16,5 ²⁰	57	295	–	250	325	30	353	12 - 14	110	160	–
1300 S	15 000	30 000	42,5 ÷ 325	100 × 94	13,5 ²⁴	120	295	–	257	325	40	353	12 - 14	110	160	1,5
1300 GR	15 000	30 000	42,5 ÷ 325	100 × 94	17,0 ¹⁸	233	325	290	250	363	96	363	12 - 14	110	160	0,5
1400 GR	16 500	30 000	48,7 ÷ 212	100 × 94	17,0 ¹⁶	303	350	278	228	380	30	313	12 - 14	110	160	0,75
1800 H	20 000	40 000	42,5 ÷ 280	100 × 94	16,5 ²⁰	57	295	–	250	325	30	353	12 ... 16	110	160	–
1800 GR	20 000	40 000	42,5 ÷ 280	100 × 94	17,0 ¹⁸	233	325	290	250	363	118	363	12 ... 16	110	160	0,5
2500 GR	26 000	52 000	54,5 ÷ 280	100 × 94	17,0 ¹⁸	238	325	290	250	363	118	363	14 - 16	110	160	0,5
3000 GR	36 000	72 000	46,2 ÷ 230	DIN 5480	22,0 ²⁴	355 min 1855 max	475	430	340	515	40	428	16 ... 20	150	224	2,5/5
3300 KT	36 000	98 000	48,7 ÷ 185	150 × 5	22,0 ²⁴	89	400	–	365	437	50	430	16 ... 20	150	224	1,5
4000 GR	48 000	83 000	41,2 ÷ 236	140 × 5	22,0 ²⁴	355 min 1855 max	475	430	340	515	40	428	16 ... 20	150	224	2,5/5
4000 KT	48 000	102 000	48,7 ÷ 185	150 × 5	22,0 ²⁴	89	400	–	365	437	50	430	16 ... 20	150	224	1,5

Designation example:

EPW 1300 H3-1083-R xx-D19.200

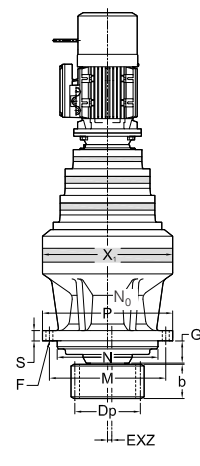


Yaw drives



Type GR, GR-KT

Double pilot extended output support



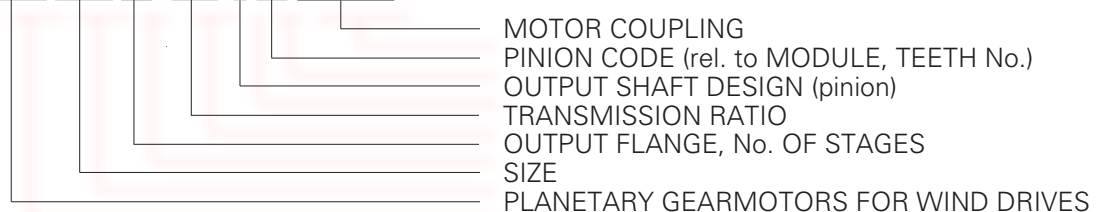
Type H, KT, S

Front fixing flange output support

Gear reducer EPW		Torque and range of ratios		Dimensions										Output pinion			
Size	Type	Nominal torque M_{N2} N m	Peak static torque M_{K2} N m	Range of nom. ratios 4 stages min ÷ max	Ds	F	G ₁	M	N	N ₀	P	S	X ₁	module	b	Dp _{min}	EXZ
						mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
					DIN 5482												
800 H	800 GR	9 500	15 000	165 ÷ 3 150	80 × 74	17,0 ¹²	40	250	–	200	280	22	280	10 - 12	90	120	–
900 S	900 GR	9 500	15 000	165 ÷ 3 150	80 × 74	12,5 ¹⁰	184	260	240	200	280	80	280	10 - 12	90	120	–
900 S	900 GR	9 500	15 000	165 ÷ 3 150	70 × 64	22,0 ¹²	142,5	330	–	290	372	20	280	10 - 12	74	120	1,5
904 GR	904 GR	9 500	15 000	195 ÷ 2 360	80 × 74	14,5 ¹²	292	325	290	184	350	20	290	10 - 12	90	120	–
990 H	990 GR	9 500	15 000	195 ÷ 2 360	80 × 74	22,0 ⁴	278	280	160	155	315	102	315	10 - 12	90	120	–
990 H	990 GR	9 500	18 000	165 ÷ 2 650	80 × 74	17,0 ¹²	72	250	–	220	285	22	280	10 - 12	90	120	1
990 GR	990 GR	9 500	18 000	165 ÷ 2 650	100 × 94	17,0 ²⁰	245	315	270	230	355	34	280	10 - 12	110	160	1
1000 GR	1000 GR	12 000	20 000	212 ÷ 3 150	100 × 94	17,0 ¹⁶	303	350	278	228	380	30	313	12	110	160	0,75
1300 H	1300 S	15 000	30 000	145 ÷ 2 800	100 × 94	16,5 ²⁰	67	295	–	250	325	30	353	12 - 14	110	160	–
1300 S	1300 GR	15 000	30 000	145 ÷ 2 800	100 × 94	13,5 ²⁴	120	295	–	257	325	40	353	12 - 14	110	160	1,5
1300 GR	1300 GR	15 000	30 000	145 ÷ 2 800	100 × 94	17,0 ¹⁸	233	325	290	250	363	96	363	12 - 14	110	160	0,5
1400 GR	1400 GR	16 500	30 000	170 ÷ 1 800	100 × 94	17,0 ¹⁶	303	350	278	228	380	30	313	12 - 14	110	160	0,75
1800 H	1800 GR	20 000	40 000	145 ÷ 2 360	100 × 94	16,5 ²⁰	57	295	–	250	325	30	353	12 ... 16	110	160	–
1800 GR	1800 GR	20 000	40 000	145 ÷ 2 360	100 × 94	17,0 ¹⁸	233	325	290	250	363	118	363	12 ... 16	110	160	0,5
2500 GR	2500 GR	26 000	52 000	195 ÷ 2 360	100 × 94	17,0 ¹⁸	238	325	290	250	363	118	363	14 - 16	110	160	0,5
					DIN 5480												
3000 GR	3000 GR	36 000	72 000	160 ÷ 1 950	140 × 5	22,0 ²⁴	355min 1855max	475	430	340	515	40	428	16 ... 20	150	224	2,5/5
3300 KT	3300 KT	36 000	98 000	170 ÷ 1 600	150 × 5	22,0 ²⁴	89	400	–	365	437	50	430	16 ... 20	150	224	1,5
4000 GR	4000 GR	48 000	83 000	145 ÷ 1 700	140 × 5	22,0 ²⁴	355min 1855max	475	430	340	515	40	428	16 ... 20	150	224	2,5/5
4000 KT	4000 KT	48 000	102 000	170 ÷ 1 360	150 × 5	22,0 ²⁴	89	400	–	365	437	50	430	16 ... 20	150	224	1,5
6000 GR	6000 GR	60 000	120 000	140 ÷ 1 750	160 × 5	26,0 ²⁴	385min 1885max	525	465	340	575	45	445	18 ... 22	150	224	2,5/5
6000 GR-KT	6000 GR-KT	75 000	150 000	230 ÷ 1 180	170 × 5	26,0 ²⁴	115	435	395	393	485	50	450	20 - 22	165	250	1,5
8000 GR	8000 GR	100 000	200 000	140 ÷ 1 500	200 × 5	26,0 ²⁴	710min 1810max	630	580	510	690	50	542	20 - 22	170	300	5
8000 GR-KT	8000 GR-KT	100 000	200 000	170 ÷ 1 150	200 × 5	33,0 ²⁴	195	615	550	490	680	80	550	20 - 22	210	300	1,5
10000 GR	10000 GR	125 000	250 000	140 ÷ 1 500	200 × 5	26,0 ²⁴	730min 1830max	680	630	510	740	50	542	20 - 24	170	300	5
10000 GR-KT	10000 GR-KT	125 000	250 000	170 ÷ 1 150	200 × 5	33,0 ²⁴	195	615	550	490	680	80	550	20 - 24	210	300	1,5

Designation example:

EPW 1300 S4-1083-R xx-D19.200



Reliability, quality and certifications



More than:

- **50 years** of experience and success in the **power transmission** field
- **20 years** in **wind industry**
- **100 000 wind drives** installed

enables Rossi Gearmotors to offer Customers a comprehensive product range including helical, bevel, worm, planetary gear reducers and gearmotors; gear reducer for heavy applications, electric motors, servomotors, inverters, servoinverters, and on board inverter drives.



Three year warranty on complete Rossi product range offered since 1997.

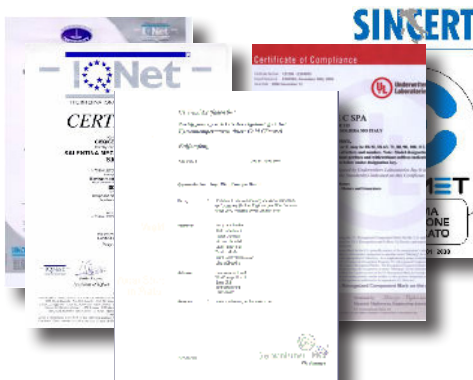


Our attention to every detail and adoption of **all appropriate technological and construction**, machining and assembly **measures** give the product outstanding performance, reliability and competitiveness.

Systematic, extensive quality controls on every stage of the production process (from materials to final controls under load using computerized brakes at the end of the line) allow quality to be produced and not just achieved through selection, and permit monitoring and improving the whole process.

H.A.L.T. (Highly Accelerated Life Test) simulates actual life and ensures life dependability.

Gear reducers and brake motors are 100% tested before delivery. **Braking torque is set to application requirements and certified.**



Quality is Rossi Gearmotors way of life, and its methods find full expression in ISO 9001.

For this reason **Rossi Gearmotors** - which in 1992 was the first mechanical transmission manufacturer in Italy and the second in Europe to obtain ISO 9001 conformity certification - **can now boast main certifications** as:

- ISO 9001 and 14000,
- ATEX,
- UL CSA,
- Germanischer Lloyds.

Experience and success



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