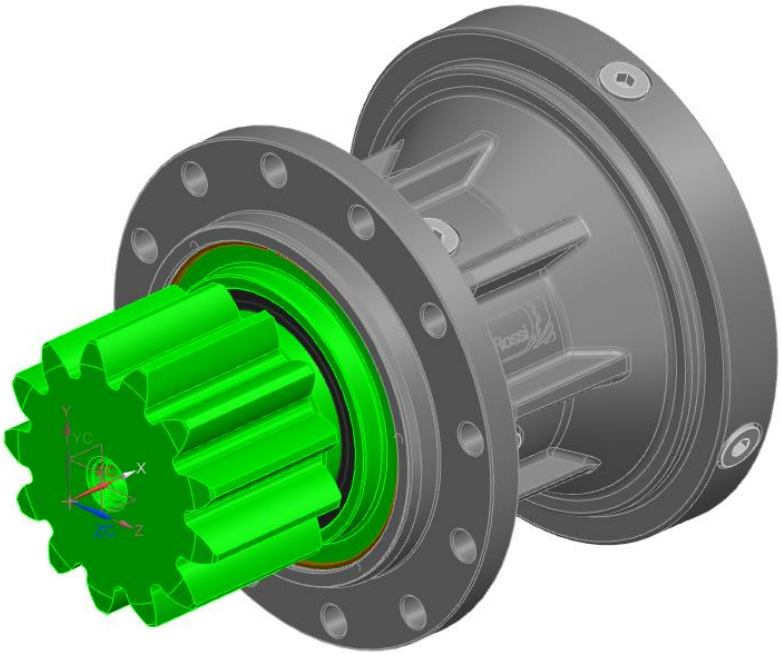
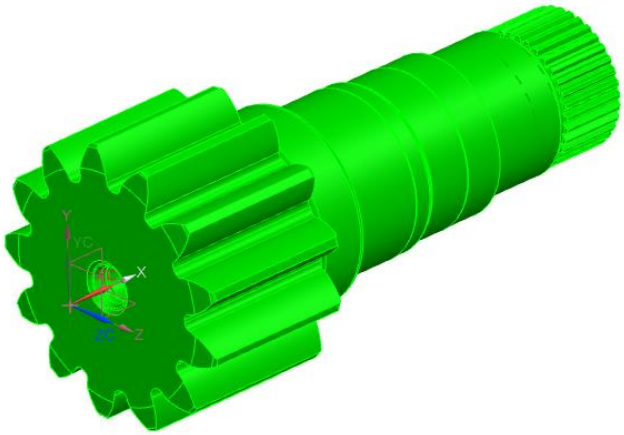
Lista di dist.

Preferred integral pinion for slewing output

[EP Slewing drives catalogue]



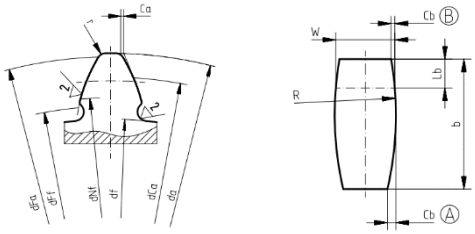


redazione Michele De Pascalis data 23.12.2021
verifica Michele De Pascalis data 23.12.2021
approvazione Stefano Cioffi data 23.12.2021

DESIGN FEATURES:

Integral pinions available for slewing outputs have the following general features:

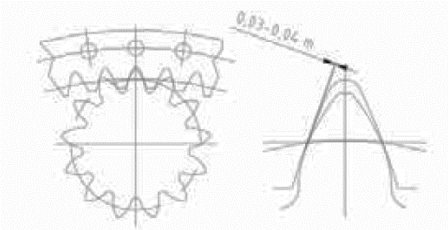
- profile shift coefficient: **x = 0.5**
- gear quality: **DIN 7**
- material: **case-hardened high alloy steel**
- final machining**: grounding**
- tooth trace modification: **crowning and tip relief**



MESHING WITH SLEW GEAR

When the pinion is supplied by Rossi, all relevant information of the gear geometry is provided, to allow the verification of the correct pinion / slew gear meshing.

A normal backlash of *(0,03 ÷ 0,04)·m* between pinion and slew gear (or rack) flank is recommended (see figure below). To adjust the backlash is possible to exploit the eccentricity of output support (if available).



SUMMARY TABLES

Table 1 resume available pinion shafts for each gear reducer size. An indication of compatible output supports type is also stated. For others combinations, please consult us.

Legend:

- module (***m***)
- number of teeth (***z***)
- tip circle diameter (***Da***)
- face width (***b***)

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Size	*m*	*z*	*Da*	*b*	*Code*	*Rossi Solution designation*	*Output support type*
004 - 006 - 007	10	11	138.5	100	50070117	R1011c	R - S - H
		12	148.5	78	50070113	R1012a	R - S - H
		13	159	80	50060123	R1013a	S(31)
009 - 012 - 015	8	15	142.8	68	50120115	R0815a	H(36)
		18	166.8	70	50120116	R0818a	H(20)
	10	13	158	95	50120111	R1013b	H(20)
			158.5	110	50150122	R1013c	R(32)
	12	11	166.2	110	50150126	R1211c	R - S
		13	191	105	50120114	R1213a	H(35)
018 - 021	8	24	215.2	90	50210112	R0824a	R - S - H
	10	16	189	100	50210107	R1016a	S(11)
		20	229	95	50210109	R1020a	R - S - H
	12	12	178.2	140	50210111	R1212b	R - S - H
		13	191	110	50180120	R1213b	S(10)
		14	202.8	140	50210104	R1214b	R - S - H
	14	12	209	105	50210101	R1412a	S(11)
		14	235.9	110	50210108	R1414d	R - S - H
030	16	14	265.5	145	50300117	R1614	R(32)
	18	11	249.3	160	50300121	R1811a	R - S - H
042	16	15	286	125	50420101	R1615a	S(10)
	18	11	250	160	50420106	R1811a	R - S
		12	267.3	150	50420104CT	R1812a	H(32)
	20	11	279	205	50420102CT	R2011a	H(32)

Table 1 – available pinion shafts

The chromatic abacus shown below (*Table 2*), give an indication of allowable (m, z) combinations obtainable from existing raw-pinion shaft geometry, featured with different color (*Table 3*).

The nominal tip circle diameter, calculated with the following formula:

$$Da = m \cdot z + 2 \cdot m \cdot x + 2 \cdot m - 2 \cdot 0.1 \cdot m$$

is also stated in the table.

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Number of teeth [-] \ Module [mm]	8	10	12	14	16	18	20
Da [mm]							
10	102.4	128	153.6	179.2	204.8	230.4	256
11	110.4	138	165.6	193.2	220.8	248.4	276
12	118.4	148	177.6	207.2	236.8	266.4	296
13	126.4	158	189.6	221.2	252.8	282.6	316
14	134.4	168	201.6	235.2	268.8	302.4	336
15	142.4	178	213.6	249.2	284.8	320.4	356
16	150.4	188	225.6	263.2	300.8	338.4	376
17	158.4	198	237.6	277.2	316.8	356.4	
18	166.4	208	249.6	291.2	332.8	374.4	
19	174.4	218	261.6	305.2	348.8		
20	182.4	228	273.6	319.2	364.8		

Table 2 – allowable (m,z) combinations

	Da_{max} [mm]	Df_{min} [mm]	b_{max} [mm]
	172	110	100
	209	115	108
	218	115	110
	238	125	130
	285	160	208
Consult us			

Table 3 – max allowable dimensions

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redazione Michele De Pascalis	verifica Michele De Pascalis	approvazione Stefano Cioffi
data 23.12.2021	data 23.12.2021	data 23.12.2021

Legend:

- maximum tip circle diameter (***Da**max*)
- minimum root form diameter (***Df**min*)
- maximum face width (***b**max*)

The data in these tables must be understood as a rough guide of feasibility which, in any case, must be shared and analyzed with the **TSS EP office**.

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verifica	Michele De Pascalis	data 23.12.2021
approvazione	Stefano Cioffi	data 23.12.2021