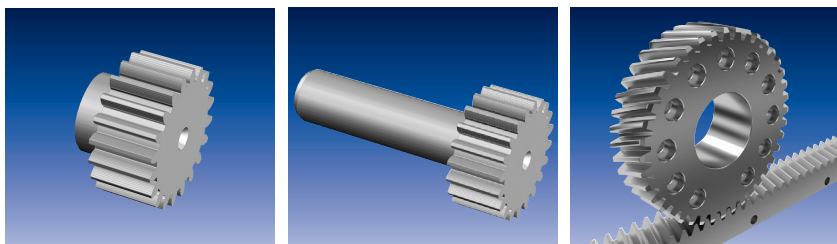


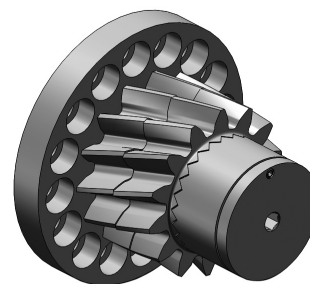
PINION CAPABILITIES



Standard Range:

The index on the next page provides an overview of our Standard range of straight (spur) and helical tooth pinions. Pinions in the standard range are usually in stock allowing for short delivery times. The standard pinions are available in 5 styles, master gear, plain bore

(soft bore allows customer to rework to required diameter), bored and keyed, flange mount to ISO 9409-1 and pinion shafts in modules 1 – 10 (diametral pitch (d.p.) = 25.4 – 2.54) with quality from AGMA 8 to AGMA 12.



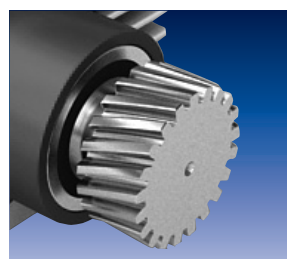
The standard range is completed by the innovative PDP split pinion for eliminating backlash between rack & pinion.

Custom Pinions:

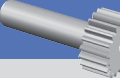
In addition to the standard range, Andantex can provide Straight or Helical pinions to customer designs with:

- Precision milled teeth in modules 0.5 - 20 (d.p. = 50.8 - 1.27) with pitch diameters up to 1500 mm (60in.) and widths up to 575 mm (22.6 in.)

- Shaped or hobbled teeth in modules 0.5 - 10 (d.p. = 50.8 – 2.54) with pitch diameters up to 800 mm (31.5 in.) and widths up to 180 mm (7 in.)
- Ground teeth in modules 1 – 10 (d.p. = 25.4 – 2.54) with pitch diameter up to 450 mm (17.7 in.)
- Material hardened or plated
- Stainless Steel
- Plastic

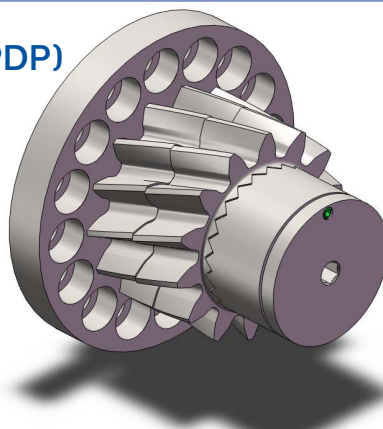


RANGE OF PINIONS

Part Numbers	Style	Module	Heat Treatment	Quality Level	Page
 Pinions - PDP (Preloaded Double Pinion)					
113-____	Straight (spur)	3, 4, 5, 6, 8	Hardened & Ground	6 e 25 (~ AGMA 11)	36-37
123-____	Helical	3, 4, 5, 6, 8	Hardened & Ground	6 e 25 (~ AGMA 11)	36-37
 Pinions - Master Gear					
117-____	Straight (spur)	2, 3, 4, 5, 6	Hardened & Ground	6 e 25 (~ AGMA 11)	38-40
127-____	Helical	2, 3, 4, 5, 6	Hardened & Ground	6 e 25 (~ AGMA 11)	41-42
 Pinions - Plain Bore					
254 0__	Straight (spur)	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10	Hardened & Ground	6 f 24 (~ AGMA 11)	43
254 5__	Helical	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10	Hardened & Ground	6 f 24 (~ AGMA 11)	43
154 ____	Straight (spur)	2, 5, 7.5, 10, 12.5, 16, 20, 25 Circular Pitch	Hardened & Ground	6 f 24 (~ AGMA 11)	43
  Pinions - Bored & Keyed					
113-____	Straight (spur)	2, 3, 4	Hardened & Ground	7 e 25 (~ AGMA 10)	44-46
123-____	Helical	2, 3, 4	Hardened & Ground	7 e 25 (~ AGMA 10)	47
154 ____	Straight (spur)	2, 5, 7.5, 10, 12.5, 16, 20, 25 Circular Pitch	Hardened & Ground	6 f 24 (~ AGMA 11)	48
14 ____	Straight (spur)	1.5, 2, 2.5, 3, 4, 5, 6	Hardened & Ground	6 f 24 (~ AGMA 11)	49
14 ____	Helical	1.5, 2, 2.5, 3, 4, 5, 6, 8	Hardened & Ground	6 f 24 (~ AGMA 11)	50
 Pinions - Flange mounted per ISO 9409-1					
OP ____	Helical	2.5, 3, 4, 5, 6	Hardened & Ground	5 f 24 (~ AGMA 13)	51
 Pinions - Shaft					
201 ____	Straight (spur)	1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10	Hardened & Ground	6 f 24 (~ AGMA 11)	52
4 ____	Straight (spur)	2, 3.33, 5, 7.5, 10, 12.5, 16, 20 Circular Pitch	Hardened & Ground	6 f 24 (~ AGMA 11)	52
211____	Helical	1.5, 2, 2.5, 3, 4.5, 5, 6, 8	Hardened & Ground	6 f 24 (~ AGMA 11)	53

NEW! PRELOADED DOUBLE PINION (PDP) WITH STRAIGHT & HELICAL TEETH

Our new Preloaded Double Pinion insures ZEROBACKLASH between the pinion and rack. A flange acc. to ISO 9409-1 connects the PDP with a gearbox. The PDP is available with either helical or straight teeth.



MODULE 3 - 6 & 8

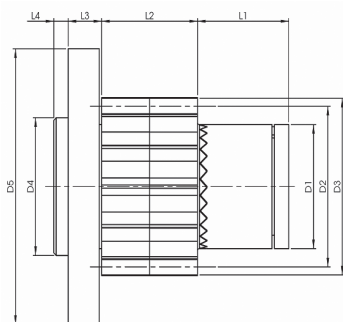
Straight (Spur) teeth or Helical,
Pressure angle $\alpha=20^\circ$

L.H. Helix angle $\beta=19^\circ 31'42''$

Material STEEL AISI 5115 DIN 1.7131 (16MnCr5)

Case hardened & ground teeth

Gear Quality 6e25 (~AGMA 11)



Straight Teeth

No. teeth	Module	β	x	D ₁	D ₂	D ₃	D ₄	D ₅	L ₁	L ₂	L ₃	L ₄	Part No.
15	3	0°	0.167	36	45	52	40	80	23	30	11	4	113-030-015
14	4	0°	0.250	45	56	66	50	100	38	40	14	6	113-040-014
15	5	0°	0.500	65	75	90	80	160	39	50	16	6	113-050-015
16	6	0°	0.500	85	96	114	100	180	52	60	19	10	113-060-016
14	8	0°	0.118	90	112	130	100	200	60	80	26	10	113-080-014

Helical Teeth

No. teeth	Module	β	x	D ₁	D ₂	D ₃	D ₄	D ₅	L ₁	L ₂	L ₃	L ₄	Part No.
14	3	19° 31' 42"	0.239	36	46	52	40	80	23	30	11	4	123-030-014
13	4	19° 31' 42"	0.353	45	55	66	50	100	38	40	14	6	123-040-013
14	5	19° 31' 42"	0.573	65	74	90	80	160	39	50	16	6	123-050-014
15	6	19° 31' 42"	0.542	85	95	114	100	180	52	60	19	10	123-060-015
13	8	19° 31' 42"	0.228	90	110	130	100	200	60	80	26	10	123-080-013

x = addendum modification

Load tables:

Values determined under following conditions:
speed: 2.5 m/s; KA = 1,25; 20.000h; grease

Straight Teeth

No. teeth	Module	x	Max. Torque [Nm]		Speed [r.p.m.]	Flange
			Without preload	With max. preload		
15	3	0.167	109	55	1061	ISO 9409-1 - 63
14	4	0.250	237	119	853	ISO 9409-1 - 80
15	5	0.500	623	312	637	ISO 9409-1 - 125
16	6	0.500	1199	600	497	ISO 9409-1 - 140
14	8	0.118	1847	924	426	ISO 9409-1 - 160

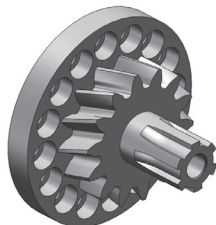
Helical Teeth

No. teeth	Module	x	Max. Torque [Nm]		Speed [r.p.m.]	Flange
			Without preload	With max. preload		
14	3	0.239	147	74	1071	ISO 9409-1 - 63
13	4	0.353	305	153	865	ISO 9409-1 - 80
14	5	0.573	594	297	643	ISO 9409-1 - 125
15	6	0.542	1125	563	500	ISO 9409-1 - 140
13	8	0.228	1911	956	433	ISO 9409-1 - 160

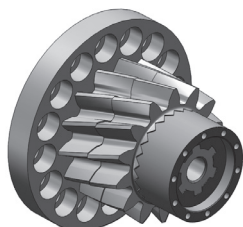
Dimensions are in mm and subject to change – consult factory.

Assembly Instructions

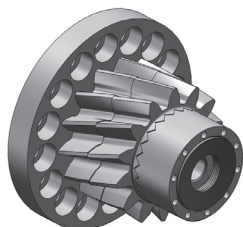
1. Assembly flange to the gearbox



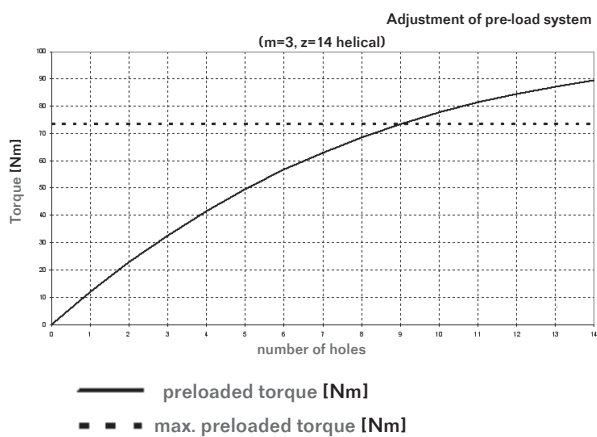
3. Install the pressure plate of the Hirth-Coupling



5. Set up the disc springs

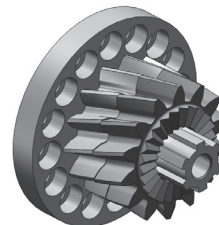


7. Use the diagram and turn the number of holes required for preload

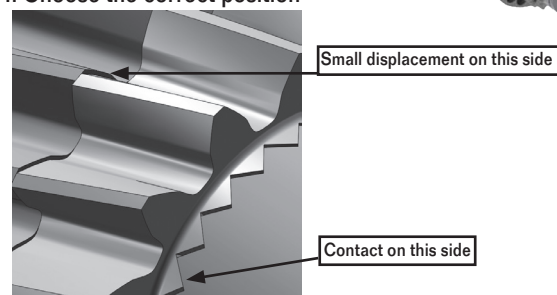


NEW! Preloaded Double Pinion (PDP)

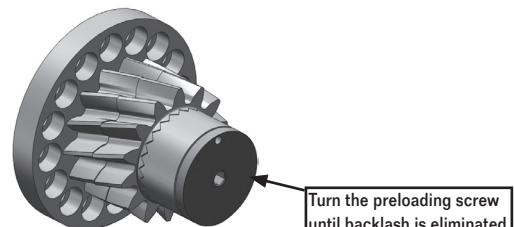
2. Install the PDP on the shaft



4. Choose the correct position



6. Insert the preloading screw and preload until backlash is eliminated



8. Insert the set screw

