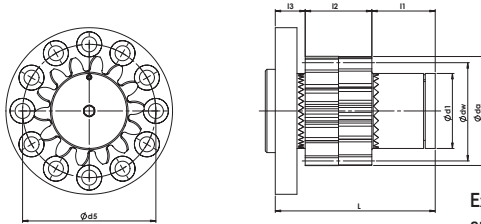


NEW! PRELOADED DOUBLE PINION WITH STRAIGHT & HELICAL TEETH - VERSION 2013

Our new Preloaded Double Pinion enables a back-lash-free drive in connection with a rack. A flange acc. to ISO 9409-1 connects the Preloaded Double Pinion with a gearbox. The Preloaded Double Pinion is available as either helical or straight teeth type. Unique hirth couplings are used to preload the pinion and connect it to the flange. In addition to our standard range shown below, we offer customized Preloaded Double Pinions as well. Parameters such as module or number of teeth can be chosen to suit customers' requirements.



Example of flange hole pattern - for types and dimensions see page A 4.

MODULE 2-5

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

Module	No. teeth	β	x	d_1	d_w	d_a	d_5	L	l_1	l_2	l_3	Flange Type	Part No.
2	22	0°	0.500	36	46	50	63	63	23	25	15	1	113-020-122
3	15	0°	0.167	36	46	52	63	68	23	30	15	1	113-030-115
4	14	0°	0.250	45	58	66	80	96	38	40	18	2	113-040-114
5	15	0°	0.500	65	80	90	125	113	38	50	25	3	113-050-115

Helical Teeth

Module	No. teeth	β	x	d_1	d_w	d_a	d_5	L	l_1	l_2	l_3	Flange Type	Part No.
2	22	$19^\circ 31' 42''$	0.330	36	48	52	63	63	23	25	15	1	123-020-122
3	14	$19^\circ 31' 42''$	0.239	36	46	52	63	68	23	30	15	1	123-030-114
4	13	$19^\circ 31' 42''$	0.353	45	58	66	80	96	38	40	18	2	123-040-113
5	14	$19^\circ 31' 42''$	0.573	65	80	90	125	113	38	50	25	3	123-050-114

x - addendum modification. Due to different preload options, the length l_1 and therefore the overall length L may vary by ± 1.5 mm.

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

Straight Teeth

Module	No. teeth	x	Max. Torque [Nm]		Speed [r.p.m.]	Flange
			Without preload	With max. preload		
2	22	0.500	92	46	1061	ISO 9409-1 - 63
3	15	0.167	109	55	1061	ISO 9409-1 - 63
4	14	0.250	237	119	853	ISO 9409-1 - 80
5	15	0.500	594	297	637	ISO 9409-1 - 125

Helical Teeth

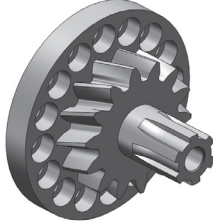
Module	No. Teeth	x	Max. Torque [Nm]		Speed [r.p.m.]	Flange
			Without preload	With max. preload		
2	22	0.330	132	66	1071	ISO 9409-1 - 63
3	14	0.239	147	74	1071	ISO 9409-1 - 63
4	13	0.353	305	153	865	ISO 9409-1 - 80
5	14	0.573	623	312	643	ISO 9409-1 - 125

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

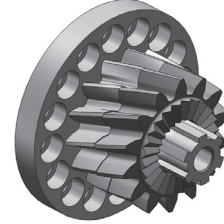
Assembly Instructions

NEW! Preloaded Double Pinion (PDP)

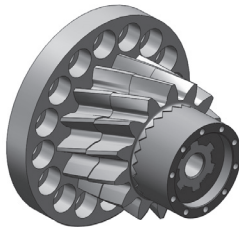
1. Assembly flange to the gearbox



2. Install the PDP on the shaft

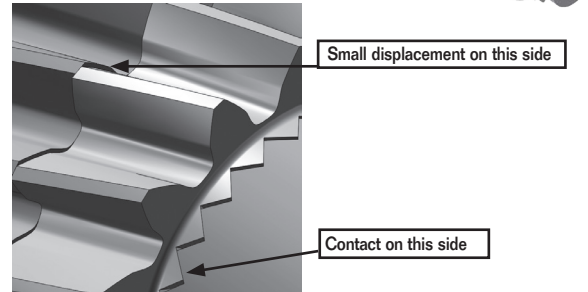


3. Install the pressure plate of the Hirth-Coupling

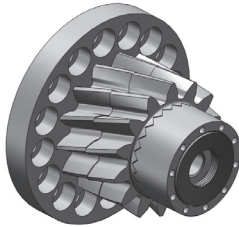


CAUTION: THE DISPLACEMENT AND CONTACT MUST BE AS SHOWN BEFORE PRELOADING TO AVOID DAMAGING PDP

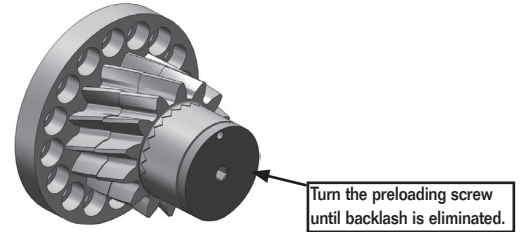
4. Choose the correct position



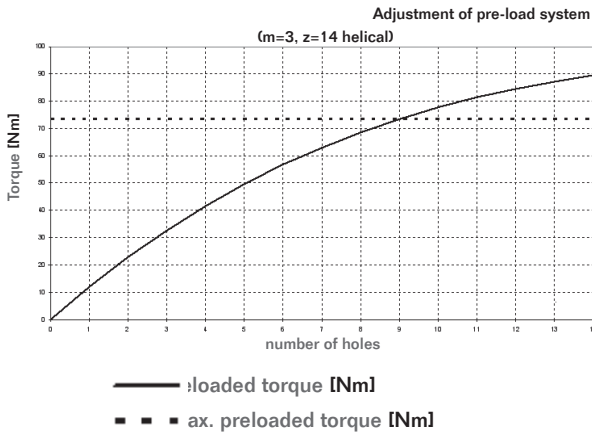
5. Install the disc springs



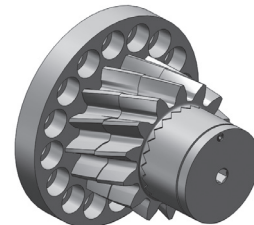
6. Insert the preloading screw and preload until backlash is eliminated



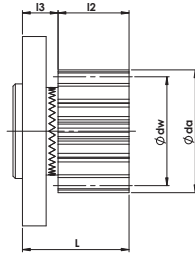
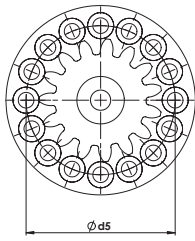
7. Use the diagram and turn the number of holes required for preload



8. Insert the locking set screw



NEW! FLANGE PINION



MODULES 2 - 5

Straight (Spur) teeth or Helical,
 Pressure angle $\phi=20^\circ$
 L.H. Helix angle $\beta=19^\circ 31' 42''$
 Material STEEL AISI 5115 DIN 1.7131 (16MnCr5)
 Case Hardened & Ground Teeth 58-62 HRc
 Gear Quality 6e24 (~AGMA 11)

Straight Teeth

Module	No. Teeth	β	x	d_w	d_a	d_5	L	l_2	l_3	Flange Type	Part No.
2	22	0°	0.500	46	50	63	40	25	15	1	112-120-022
3	15	0°	0.167	46	52	63	45	30	15	1	112-130-015
3	19	0°	0.500	60	66	80	58	30	18	2	112-230-019
4	14	0°	0.250	58	66	80	58	40	18	2	112-240-014
4	20	0°	0.250	82	90	125	65	40	25	3	112-340-020
5	15	0°	0.500	80	90	125	75	50	25	3	112-350-015

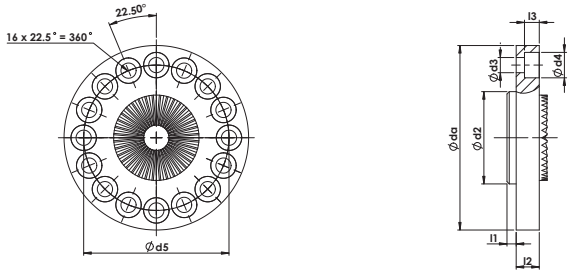
Helical Teeth

Module	No. teeth	β	x	d_w	d_a	d_5	L	l_2	l_3	Flange Type	Part No.
2	22	$19^\circ 31' 42''$	0.330	48	52	63	40	25	15	1	122-120-022
3	14	$19^\circ 31' 42''$	0.239	46	52	63	45	30	15	1	122-130-014
3	18	$19^\circ 31' 42''$	0.450	60	66	80	58	30	18	2	122-230-018
4	13	$19^\circ 31' 42''$	0.353	58	66	80	58	40	18	2	122-240-013
4	19	$19^\circ 31' 42''$	0.170	82	90	125	65	40	25	3	122-340-019
5	14	$19^\circ 31' 42''$	0.573	80	90	125	75	50	25	3	122-350-014

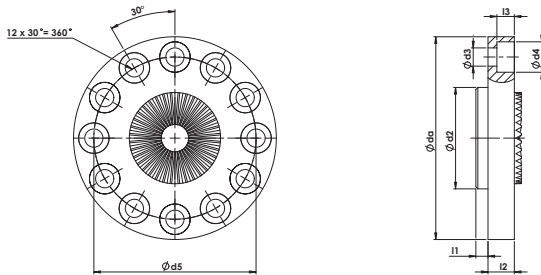
x - addendum modification.

In addition to our standard range shown above, we offer customized Flange Pinions as well. Parameters such as module or number of teeth can be chosen to suit customers' requirements.

FLANGE DIMENSIONS Use for Preloaded Double Pinion & Flange Pinion



Flange Type	d_a	d_2	d_3	d_4	d_5	l_1	l_2	l_3
1	80	40	6.6	11	63	4	10	6.4



Flange Type	d_a	d_2	d_3	d_4	d_5	l_1	l_2	l_3
2	100	50	9	15	80	6	13	8.6
3	160	80	11	18	125	6	20	10.6

