

## Description

### Material:

Polyacetal (POM) or polyketone (PK).

### Version:

Injection moulded, straight teeth. Engagement angle 20°. Machined bore.

Polyacetal, white.

Polyketone, ivory-tone.

### Note:

Polyacetal: Standard material with high hardness grade and low coefficient of friction.

Polyketone: Material with significantly longer service life, higher power transmission and greater security against tooth breakage due to the extraordinarily high wear resistance and very good tribological properties.

Can be used under water and other media.

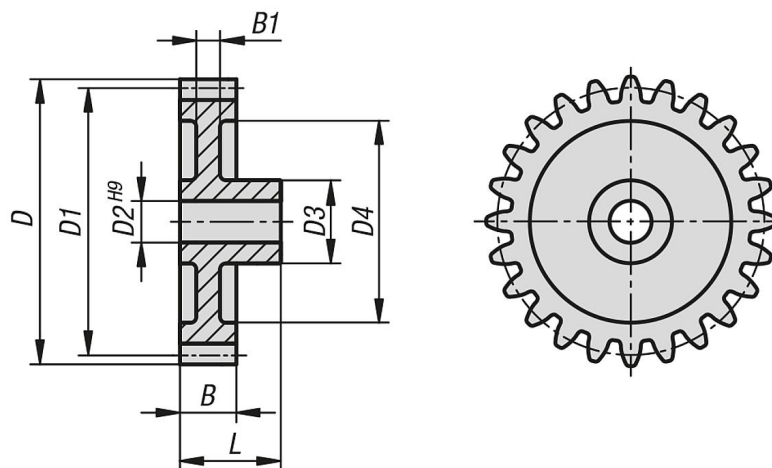
Injection moulded gear wheels may have internal manufacture-related cavities. These may become visible during drilling or broaching. They do not impair the function.

### Temperature range:

-40 °C to +140 °C (taking amount and duration of load into account).

### Note:

The torques specified in the tables relate exclusively to the toothing. The shaft diameter, key size, etc. are not taken into account. The permissible load calculations are based on the basic principles of the pitting load capacity of the tooth flanks as well as the occurring tooth root stress. The respective permissible load of a gear wheel depends on so many different factors that the values specified can only be reference values meant to make selection easier. The torque specifications relate to a single tooth. The overlap, which is essential for determining the transmissible torque, occurs depending on the pitch diameter, gear wheel pairing, etc. In the simplest straight tooth cases, an overlap ratio of 1.1 to 1.25 is normal. To increase the overlap, a higher number of teeth with smaller modules is used. A good profile overlap can minimise damage such as pitting.



Overview of items

Order No.	Main material	No. of teeth	D	D1	D2	D3	D4	B	B1	L	Max. torque Ncm
22402-1150012	polyacetal	12	21	18	6	14	-	12	12	23	50,8
22402-1150013	polyacetal	13	22,5	19,5	6	14	-	12	12	23	55,1
22402-1150014	polyacetal	14	24	21	6	14	13	12	10,5	23	59,3
22402-1150015	polyacetal	15	25,5	22,5	6	14	16	12	10,5	23	63,6
22402-1150016	polyacetal	16	27	24	6	14	16	12	10,5	23	67,8
22402-1150017	polyacetal	17	28,5	25,5	6	14	16	12	10,5	23	72,1
22402-1150018	polyacetal	18	30	27	8	17	18,5	12	10,5	23	76,3
22402-1150019	polyacetal	19	31,5	28,5	8	17	18,5	12	10,5	23	80,5
22402-1150020	polyacetal	20	33	30	8	17	22,5	12	9	23	84,8
22402-1150021	polyacetal	21	34,5	31,5	8	17	22,5	12	5	23	89
22402-1150022	polyacetal	22	36	33	8	17	22,5	12	5	23	93,3
22402-1150023	polyacetal	23	37,5	34,5	8	17	22,5	12	5	23	97,5
22402-1150024	polyacetal	24	39	36	8	19	26,5	12	5	23	101,7
22402-1150025	polyacetal	25	40,5	37,5	8	19	26,5	12	5	23	106
22402-1150026	polyacetal	26	42	39	8	19	26,5	12	5	23	110,2
22402-1150027	polyacetal	27	43,5	40,5	8	19	25,5	12	5	23	114,5
22402-1150028	polyacetal	28	45	42	8	19	25,5	12	5	23	118,7
22402-1150030	polyacetal	30	48	45	10	24	33,5	12	5	23	127,2
22402-1150032	polyacetal	32	51	48	10	24	33,5	12	5	23	135,7
22402-1150035	polyacetal	35	55,5	52,5	10	24	41,5	12	5	23	148,4
22402-1150036	polyacetal	36	57	54	10	24	41,5	12	5	23	152,6
22402-1150038	polyacetal	38	60	57	10	24	41,5	12	5	23	161,1
22402-1150040	polyacetal	40	63	60	10	24	48,5	12	5	23	169,6
22402-1150042	polyacetal	42	66	63	10	24	48,5	12	5	23	178,1
22402-1150045	polyacetal	45	70,5	67,5	10	24	48,5	12	5	23	190,8
22402-1150048	polyacetal	48	75	72	10	24	48,5	12	5	23	203,5
22402-1150050	polyacetal	50	78	75	12	27	63	12	5	23	212
22402-1150052	polyacetal	52	81	78	12	27	63	12	5	23	220,5
22402-1150054	polyacetal	54	84	81	12	27	63	12	5	23	229
22402-1150055	polyacetal	55	85,5	82,5	12	27	63	12	5	23	233,2
22402-1150060	polyacetal	60	93	90	12	27	63	12	5	23	254,4
22402-1150070	polyacetal	70	108	105	14	30	88	12	5	23	296,8
22402-1150080	polyacetal	80	123	120	14	30	104	12	5	23	339,2
22402-1150090	polyacetal	90	138	135	14	30	116	12	5	23	381,7
22402-1150100	polyacetal	100	153	150	20	40	133	19	8	34 +1,5	671,5
22402-1150110	polyacetal	110	168	165	20	40	148	19	8	34 +1,5	738,6
22402-1150120	polyacetal	120	183	180	20	40	163	19	8	34 +1,5	805,8
22402-1150130	polyacetal	130	198	195	20	40	178	19	8	34 +1,5	872,9
22402-1150140	polyacetal	140	213	210	20	40	193	19	8	34 +1,5	940,1
22402-1150150	polyacetal	150	228	225	20	40	208	19	8	34 +1,5	1007,2
22402-2150012	polyketone	12	21	18	6	14	-	12	12	23	53,4
22402-2150013	polyketone	13	22,5	19,5	6	14	-	12	12	23	57,8

# 22402 Spur gears, plastic, module 1.5 injection moulded, straight teeth, engagement angle 20°



## Overview of items

Order No.	Main material	No. of teeth	D	D1	D2	D3	D4	B	B1	L	Max. torque Ncm
22402-2150014	polyketone	14	24	21	6	14	13	12	10,5	23	62,3
22402-2150015	polyketone	15	25,5	22,5	6	14	16	12	10,5	23	66,8
22402-2150016	polyketone	16	27	24	6	14	16	12	10,5	23	71,2
22402-2150017	polyketone	17	28,5	25,5	6	14	16	12	10,5	23	75,7
22402-2150018	polyketone	18	30	27	8	17	18,5	12	10,5	23	80,1
22402-2150019	polyketone	19	31,5	28,5	8	17	18,5	12	10,5	23	84,6
22402-2150020	polyketone	20	33	30	8	17	22,5	12	9	23	89
22402-2150021	polyketone	21	34,5	31,5	8	17	22,5	12	5	23	93,5
22402-2150022	polyketone	22	36	33	8	17	22,5	12	5	23	97,9
22402-2150023	polyketone	23	37,5	34,5	8	17	22,5	12	5	23	102,4
22402-2150024	polyketone	24	39	36	8	19	26,5	12	5	23	106,8
22402-2150025	polyketone	25	40,5	37,5	8	19	26,5	12	5	23	111,3
22402-2150026	polyketone	26	42	39	8	19	26,5	12	5	23	115,7
22402-2150027	polyketone	27	43,5	40,5	8	19	25,5	12	5	23	120,2
22402-2150028	polyketone	28	45	42	8	19	25,5	12	5	23	124,6
22402-2150030	polyketone	30	48	45	10	24	33,5	12	5	23	133,5
22402-2150032	polyketone	32	51	48	10	24	33,5	12	5	23	142,5
22402-2150035	polyketone	35	55,5	52,5	10	24	41,5	12	5	23	155,8
22402-2150036	polyketone	36	57	54	10	24	41,5	12	5	23	160,3
22402-2150038	polyketone	38	60	57	10	24	41,5	12	5	23	169,2
22402-2150040	polyketone	40	63	60	10	24	48,5	12	5	23	178,1
22402-2150042	polyketone	42	66	63	10	24	48,5	12	5	23	187
22402-2150045	polyketone	45	70,5	67,5	10	24	48,5	12	5	23	200,3
22402-2150048	polyketone	48	75	72	10	24	48,5	12	5	23	213,7
22402-2150050	polyketone	50	78	75	12	27	63	12	5	23	222,6
22402-2150052	polyketone	52	81	78	12	27	63	12	5	23	231,5
22402-2150054	polyketone	54	84	81	12	27	63	12	5	23	240,4
22402-2150055	polyketone	55	85,5	82,5	12	27	63	12	5	23	244,9
22402-2150060	polyketone	60	93	90	12	27	63	12	5	23	267,1
22402-2150070	polyketone	70	108	105	14	30	88	12	5	23	311,7
22402-2150080	polyketone	80	123	120	14	30	104	12	5	23	356,2
22402-2150090	polyketone	90	138	135	14	30	116	12	5	23	400,7
22402-2150100	polyketone	100	153	150	20	40	133	19	8	34 +1,5	705,1
22402-2150110	polyketone	110	168	165	20	40	148	19	8	34 +1,5	775,6
22402-2150120	polyketone	120	183	180	20	40	163	19	8	34 +1,5	846,1
22402-2150130	polyketone	130	198	195	20	40	178	19	8	34 +1,5	916,6
22402-2150140	polyketone	140	213	210	20	40	193	19	8	34 +1,5	987,1
22402-2150150	polyketone	150	228	225	20	40	208	19	8	34 +1,5	1057,6