

# Spur Gears

Stock Programme

**Made to order on request**  
**Large or small batch quantities**

## Spur gears with ground teeth

- max. diameter 450 mm
- modules 1 - 8
- to your drawing

## Spur gears

- straight or helical teeth
- pitch-Ø up to 1500 mm
- width of teeth up to 575 mm
- modules 0,5 - 20

## Spur gears

- shaped or hobbed
- pitch-Ø up to 800 mm (module 8)
- width of teeth up to 180 mm
- modules 0,5 - 8

## Spur gears

- shaped or hobbed
- material hardened or plated
- to customers design



***We offer more than competitive prices -  
contact our engineering department!***

# Spur Gears

*precision range*

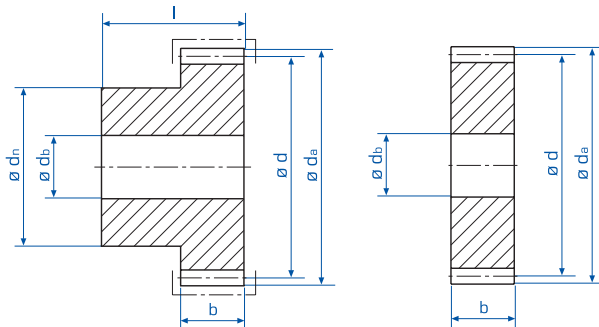
Module 1.0

Face Width = 8mm



Straight Teeth  
Pressure angle 20°  
Length Overall I = 18mm  
12 to 60 Teeth with Hub  
76 to 120 Teeth without Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	14,0	12,0	9	4	111-010-012
13	15,0	13,0	10	4	111-010-013
14	16,0	14,0	11	4	111-010-014
15	17,0	15,0	12	5	111-010-015
16	18,0	16,0	12	5	111-010-016
17	19,0	17,0	14	6	111-010-017
18	20,0	18,0	15	6	111-010-018
19	21,0	19,0	15	6	111-010-019
20	22,0	20,0	15	6	111-010-020
21	23,0	21,0	18	6	111-010-021
22	24,0	22,0	18	6	111-010-022
23	25,0	23,0	18	6	111-010-023
24	26,0	24,0	18	6	111-010-024
25	27,0	25,0	18	6	111-010-025
28	30,0	28,0	20	8	111-010-028
30	32,0	30,0	20	8	111-010-030
36	38,0	36,0	25	8	111-010-036
38	40,0	38,0	25	8	111-010-038
40	42,0	40,0	25	8	111-010-040
45	47,0	45,0	30	8	111-010-045
48	50,0	48,0	30	8	111-010-048
50	52,0	50,0	35	8	111-010-050
52	54,0	52,0	35	10	111-010-052
56	58,0	56,0	35	10	111-010-056
60	62,0	60,0	40	10	111-010-060
76	78,0	76,0	-	10	110-010-076
80	82,0	80,0	-	10	110-010-080
95	97,0	95,0	-	10	110-010-095
120	122,0	120,0	-	10	110-010-120

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 25mm  
 12 to 70 Teeth with Hub  
 76 to 114 Teeth without Hub

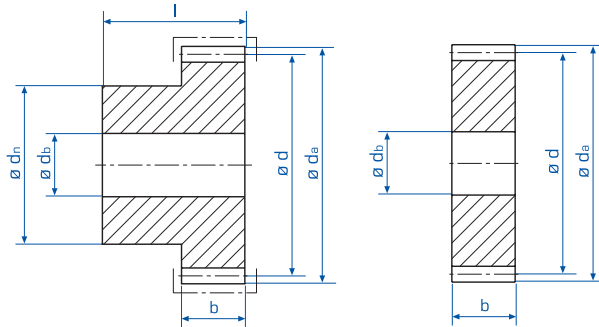
**Material: Steel EN8**

# Spur Gears

## commercial range

**Module 1.0**

**Face Width = 15mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	14,0	12,0	9	-	116-010-012
13	15,0	13,0	10	-	116-010-013
14	16,0	14,0	11	6	116-010-014
15	17,0	15,0	12	6	116-010-015
16	18,0	16,0	13	6	116-010-016
17	19,0	17,0	14	6	116-010-017
18	20,0	18,0	15	8	116-010-018
19	21,0	19,0	15	8	116-010-019
20	22,0	20,0	16	8	116-010-020
21	23,0	21,0	16	8	116-010-021
22	24,0	22,0	16	8	116-010-022
23	25,0	23,0	18	8	116-010-023
24	26,0	24,0	20	10	116-010-024
25	27,0	25,0	20	10	116-010-025
26	28,0	26,0	20	10	116-010-026
28	30,0	28,0	20	10	116-010-028
30	32,0	30,0	20	10	116-010-030
32	34,0	32,0	25	10	116-010-032
35	37,0	35,0	25	10	116-010-035
36	38,0	36,0	25	10	116-010-036
38	40,0	38,0	25	10	116-010-038
40	42,0	40,0	25	10	116-010-040
42	44,0	42,0	30	10	116-010-042
45	47,0	45,0	30	10	116-010-045
48	50,0	48,0	30	10	116-010-048
50	52,0	50,0	30	12	116-010-050
52	54,0	52,0	40	12	116-010-052
54	56,0	54,0	40	12	116-010-054
56	58,0	56,0	40	12	116-010-056
58	60,0	58,0	40	12	116-010-058
60	62,0	60,0	40	12	116-010-060
70	72,0	70,0	50	12	116-010-070
76	78,0	76,0	-	12	114-010-076
80	82,0	80,0	-	12	114-010-080
95	97,0	95,0	-	12	114-010-095
110	112,0	110,0	-	12	114-010-110
114	116,0	114,0	-	12	114-010-114

# Spur Gears with ground helical teeth

**precision range**

**Module 1.5**

**Face Width = 12mm**

Straight Teeth

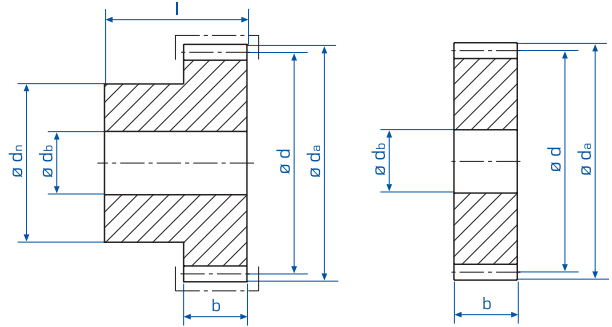
Pressure angle 20°

Length Overall I = 25mm

12 to 60 Teeth with Hub

76 to 120 Teeth without Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	21,0	18,0	14	6	111-015-012
13	22,5	19,5	15	6	111-015-013
14	24,0	21,0	16,5	6	111-015-014
15	25,5	22,5	18	6	111-015-015
16	27,0	24,0	18	6	111-015-016
17	28,5	25,5	20	6	111-015-017
18	30,0	27,0	20	8	111-015-018
19	31,5	28,5	20	8	111-015-019
20	33,0	30,0	20	8	111-015-020
21	34,5	31,5	25	8	111-015-021
22	36,0	33,0	25	8	111-015-022
23	37,5	34,5	25	8	111-015-023
24	39,0	36,0	25	8	111-015-024
25	40,5	37,5	25	8	111-015-025
28	45,0	42,0	30	10	111-015-028
30	48,0	45,0	30	10	111-015-030
36	57,0	54,0	40	10	111-015-036
38	60,0	57,0	40	10	111-015-038
40	63,0	60,0	40	10	111-015-040
45	70,5	67,5	45	10	111-015-045
48	75,0	72,0	45	10	111-015-048
50	78,0	75,0	50	12	111-015-050
52	81,0	78,0	50	12	111-015-052
56	87,0	84,0	50	12	111-015-056
60	93,0	90,0	60	12	111-015-060
76	117,0	114,0	-	16	110-015-076
80	123,0	120,0	-	16	110-015-080
95	145,5	142,5	-	16	110-015-095
120	183,0	180,0	-	16	110-015-120

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 30mm  
 12 to 70 Teeth with Hub  
 76 to 114 Teeth without Hub

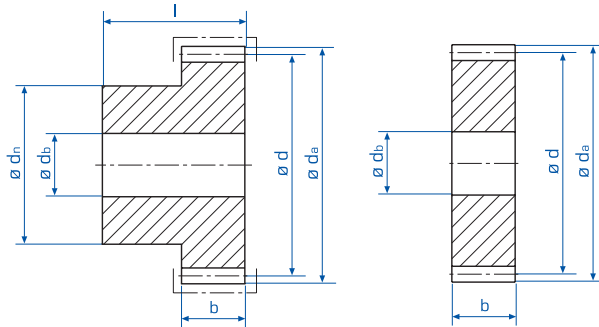
**Material: Steel EN8**

# Spur Gears

## commercial range

**Module 1.5**

**Face Width = 17mm**



No. teeth	d <sub>a</sub>	d	d <sub>n</sub>	d <sub>b</sub>	Part No.
12	21,0	18,0	14	8	116-015-012
13	22,5	19,5	15	8	116-015-013
14	24,0	21,0	17	8	116-015-014
15	25,5	22,5	18	8	116-015-015
16	27,0	24,0	19	8	116-015-016
17	28,5	25,5	20	8	116-015-017
18	30,0	27,0	20	8	116-015-018
19	31,5	28,5	20	8	116-015-019
20	33,0	30,0	25	8	116-015-020
21	34,5	31,5	25	10	116-015-021
22	36,0	33,0	25	10	116-015-022
23	37,5	34,5	25	10	116-015-023
24	39,0	36,0	25	10	116-015-024
25	40,5	37,5	25	10	116-015-025
26	42,0	39,0	30	12	116-015-026
28	45,0	42,0	30	12	116-015-028
30	48,0	45,0	30	12	116-015-030
32	51,0	48,0	35	12	116-015-032
35	55,5	52,5	35	12	116-015-035
36	57,0	54,0	35	12	116-015-036
38	60,0	57,0	40	12	116-015-038
40	63,0	60,0	40	12	116-015-040
42	66,0	63,0	50	12	116-015-042
45	70,5	67,5	50	12	116-015-045
48	75,0	72,0	50	14	116-015-048
50	78,0	75,0	50	14	116-015-050
52	81,0	78,0	60	14	116-015-052
54	84,0	81,0	60	14	116-015-054
56	87,0	84,0	60	16	116-015-056
58	90,0	87,0	60	16	116-015-058
60	93,0	90,0	60	16	116-015-060
70	108,0	105,0	70	16	116-015-070
76	117,0	114,0	-	16	114-015-076
80	123,0	120,0	-	16	114-015-080
95	145,5	142,5	-	16	114-015-095
110	168,0	165,0	-	16	114-015-110
114	174,0	171,0	-	16	114-015-114

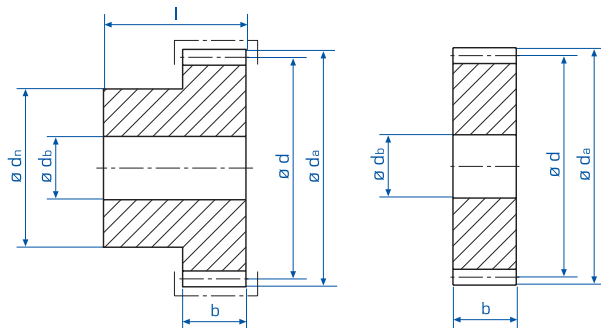
# Spur Gears

## precision range

Module 1.591, Pitch = 5mm  
Face Width = 12mm

Straight Teeth  
Pressure angle 20°  
Length Overall I = 25mm

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	22,3	19,1	14	6	111-016-012
15	27,0	23,9	18	6	111-016-015
18	31,8	28,6	20	8	111-016-018
20	35,0	31,8	20	8	111-016-020
24	41,4	38,2	25	8	111-016-024
25	43,0	39,8	25	8	111-016-025
30	50,9	47,7	30	10	110-016-030
36	60,5	57,3	40	10	110-016-036
40	66,8	63,6	40	10	110-016-040
45	74,8	71,6	45	10	110-016-045
50	82,7	79,6	50	12	110-016-050
60	98,6	95,5	60	12	110-016-060

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 30mm  
 12 to 60 Teeth with Hub  
 76 to 120 Teeth without Hub

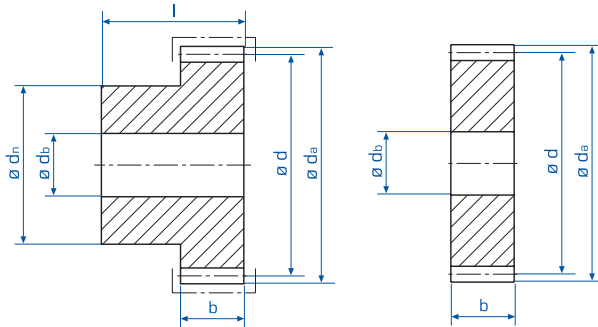
**Material: Steel EN8**

# Spur Gears

## precision range

**Module 2.0**

**Face Width = 16mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	28,0	24,0	18	8	111-020-012
13	30,0	26,0	20,5	8	111-020-013
14	32,0	28,0	22,5	8	111-020-014
15	34,0	30,0	24	8	111-020-015
16	36,0	32,0	25	8	111-020-016
17	38,0	34,0	27,5	8	111-020-017
18	40,0	36,0	28	10	111-020-018
19	42,0	38,0	28	10	111-020-019
20	44,0	40,0	28	10	111-020-020
21	46,0	42,0	30	10	111-020-021
22	48,0	44,0	30	10	111-020-022
23	50,0	46,0	30	10	111-020-023
24	52,0	48,0	30	10	111-020-024
25	54,0	50,0	30	10	111-020-025
28	60,0	56,0	40	10	111-020-028
30	64,0	60,0	40	12	111-020-030
36	76,0	72,0	50	12	111-020-036
38	80,0	76,0	50	12	111-020-038
40	84,0	80,0	50	12	111-020-040
45	94,0	90,0	60	12	111-020-045
48	100,0	96,0	60	12	111-020-048
50	104,0	100,0	70	15	111-020-050
52	108,0	104,0	70	15	111-020-052
56	116,0	112,0	70	15	111-020-056
60	124,0	120,0	80	15	111-020-060
76	156,0	152,0	-	16	110-020-076
80	164,0	160,0	-	16	110-020-080
95	194,0	190,0	-	16	110-020-095
120	244,0	240,0	-	20	110-020-120

# Spur Gears

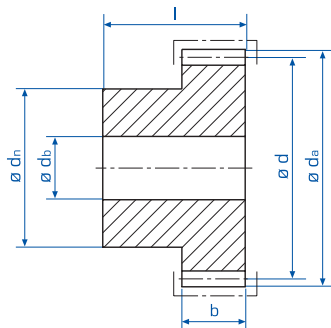
*precision range*

Module 2.0

Face Width = 20mm

Straight Teeth  
Pressure angle 20°  
Length Overall  $l = 35\text{mm}$   
12 to 30 Teeth with Hub

**Material: Steel EN24 Quality 8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	28,0	24,0	18	10	112-020-012
13	30,0	26,0	20	10	112-020-013
14	32,0	28,0	20	10	112-020-014
15	34,0	30,0	24	10	112-020-015
16	36,0	32,0	25	10	112-020-016
17	38,0	34,0	25	10	112-020-017
18	40,0	36,0	25	10	112-020-018
19	42,0	38,0	25	10	112-020-019
20	44,0	40,0	30	10	112-020-020
21	46,0	42,0	30	12	112-020-021
22	48,0	44,0	30	12	112-020-022
23	50,0	46,0	30	12	112-020-023
24	52,0	48,0	35	12	112-020-024
25	54,0	50,0	35	12	112-020-025
28	60,0	56,0	40	12	112-020-028
30	64,0	60,0	40	14	112-020-030

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 35mm  
 12 to 70 Teeth with Hub  
 76 to 114 Teeth without Hub

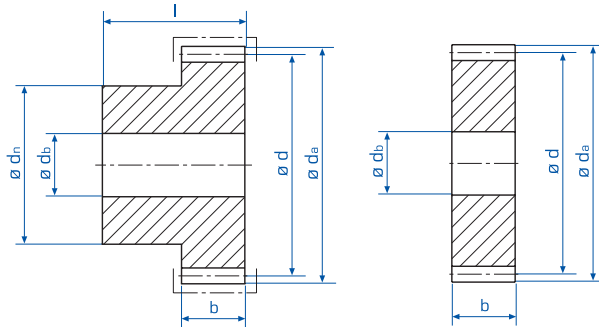
**Material: Steel EN8**

# Spur Gears

## commercial range

**Module 2.0**

**Face Width = 20mm**



No. teeth	d <sub>a</sub>	d	d <sub>n</sub>	d <sub>b</sub>	Part No.
12	28,0	24,0	18	10	116-020-012
13	30,0	26,0	20	10	116-020-013
14	32,0	28,0	20	10	116-020-014
15	34,0	30,0	24	10	116-020-015
16	36,0	32,0	25	10	116-020-016
17	38,0	34,0	25	10	116-020-017
18	40,0	36,0	25	10	116-020-018
19	42,0	38,0	25	10	116-020-019
20	44,0	40,0	30	10	116-020-020
21	46,0	42,0	30	12	116-020-021
22	48,0	44,0	30	12	116-020-022
23	50,0	46,0	30	12	116-020-023
24	52,0	48,0	35	12	116-020-024
25	54,0	50,0	35	12	116-020-025
26	56,0	52,0	40	12	116-020-026
28	60,0	56,0	40	12	116-020-028
30	64,0	60,0	40	14	116-020-030
32	68,0	64,0	45	14	116-020-032
35	74,0	70,0	45	14	116-020-035
36	76,0	72,0	45	14	116-020-036
38	80,0	76,0	50	14	116-020-038
40	84,0	80,0	50	14	116-020-040
42	88,0	84,0	55	16	116-020-042
45	94,0	90,0	60	16	116-020-045
48	100,0	96,0	70	16	116-020-048
50	104,0	100,0	70	16	116-020-050
52	108,0	104,0	70	16	116-020-052
54	112,0	108,0	70	16	116-020-054
56	116,0	112,0	70	16	116-020-056
58	120,0	116,0	70	16	116-020-058
60	124,0	120,0	70	16	116-020-060
70	144,0	140,0	80	16	116-020-070
76	156,0	152,0	-	20	114-020-076
80	164,0	160,0	-	20	114-020-080
95	194,0	190,0	-	20	114-020-095
110	224,0	220,0	-	20	114-020-110
114	232,0	228,0	-	20	114-020-114

# Spur Gears

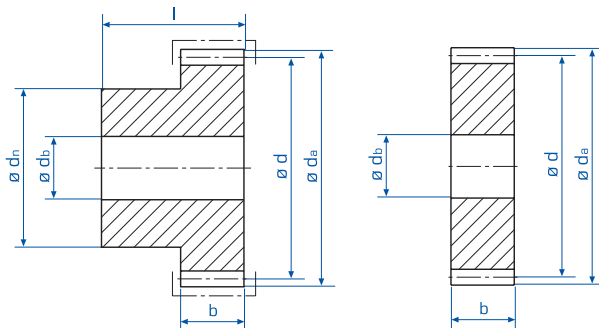
## precision range

Module 2.5

Face Width = 20mm

Straight Teeth  
Pressure angle 20°  
Length Overall I = 35mm  
12 to 60 Teeth with Hub  
76 to 95 Teeth without Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	35,0	30,0	23	10	111-025-012
13	37,5	32,5	25	10	111-025-013
14	40,0	35,0	25	10	111-025-014
15	42,5	37,5	25	10	111-025-015
16	45,0	40,0	25	10	111-025-016
17	47,5	42,5	30	10	111-025-017
18	50,0	45,0	30	12	111-025-018
19	52,5	47,5	30	12	111-025-019
20	55,0	50,0	30	12	111-025-020
21	57,5	52,5	40	12	111-025-021
22	60,0	55,0	40	12	111-025-022
23	62,5	57,5	40	12	111-025-023
24	65,0	60,0	40	12	111-025-024
25	67,5	62,5	40	12	111-025-025
28	75,0	70,0	45	12	111-025-028
30	80,0	75,0	50	15	111-025-030
36	95,0	90,0	60	15	111-025-036
38	100,0	95,0	60	15	111-025-038
40	105,0	100,0	60	15	111-025-040
45	117,5	112,5	70	15	111-025-045
48	125,0	120,0	70	15	111-025-048
50	130,0	125,0	80	20	111-025-050
52	135,0	130,0	80	20	111-025-052
56	145,0	140,0	80	20	111-025-056
60	155,0	150,0	90	20	111-025-060
76	195,0	190,0	-	16	110-025-076
80	205,0	200,0	-	16	110-025-080
95	242,5	237,5	-	16	110-025-095

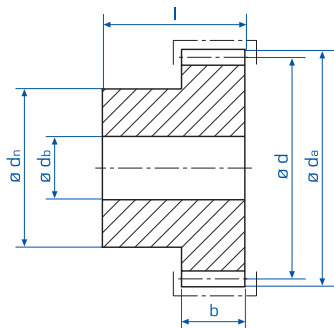
Straight Teeth  
 Pressure angle 20°  
 Length Overall l = 45mm  
 12 to 30 Teeth with Hub

**Material: Steel EN24 Quality 8**

# Spur Gears

## precision range

**Module 2.5**  
**Face Width b = 25mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	35,0	30,0	22	10	112-025-012
13	37,5	32,5	25	10	112-025-013
14	40,0	35,0	28	10	112-025-014
15	42,5	37,5	30	10	112-025-015
16	45,0	40,0	32	12	112-025-016
17	47,5	42,5	35	12	112-025-017
18	50,0	45,0	35	12	112-025-018
19	52,5	47,5	35	12	112-025-019
20	55,0	50,0	40	12	112-025-020
21	57,5	52,5	40	14	112-025-021
22	60,0	55,0	45	14	112-025-022
23	62,5	57,5	45	14	112-025-023
24	65,0	60,0	45	14	112-025-024
25	67,5	62,5	50	14	112-025-025
28	75,0	70,0	50	14	112-025-028
30	80,0	75,0	55	14	112-025-030

# Spur Gears

## commercial range

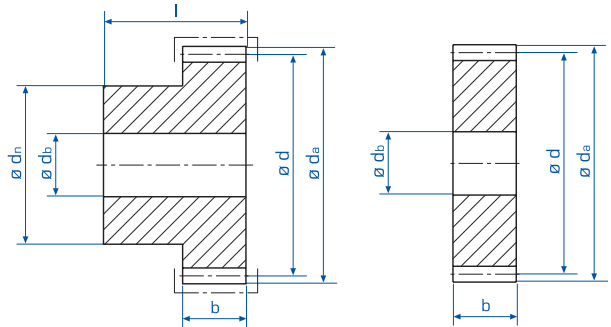
Module 2.5

Face Width = 25mm



Straight Teeth  
Pressure angle 20°  
Length Overall I = 45mm  
12 to 60 Teeth with Hub  
70 to 114 Teeth without Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	35,0	30,0	22	10	116-025-012
13	37,5	32,5	25	10	116-025-013
14	40,0	35,0	28	10	116-025-014
15	42,5	37,5	30	10	116-025-015
16	45,0	40,0	32	12	116-025-016
17	47,5	42,5	35	12	116-025-017
18	50,0	45,0	35	12	116-025-018
19	52,5	47,5	35	12	116-025-019
20	55,0	50,0	40	12	116-025-020
21	57,5	52,5	40	14	116-025-021
22	60,0	55,0	45	14	116-025-022
23	62,5	57,5	45	14	116-025-023
24	65,0	60,0	45	14	116-025-024
25	67,5	62,5	50	14	116-025-025
26	70,0	65,0	50	14	116-025-026
28	75,0	70,0	50	14	116-025-028
30	80,0	75,0	55	14	116-025-030
32	85,0	80,0	55	16	116-025-032
35	92,5	87,5	60	16	116-025-035
36	95,0	90,0	60	16	116-025-036
38	100,0	95,0	60	16	116-025-038
40	105,0	100,0	70	16	116-025-040
42	110,0	105,0	70	16	116-025-042
45	117,5	112,5	70	16	116-025-045
48	125,0	120,0	80	20	116-025-048
50	130,0	125,0	80	20	116-025-050
52	135,0	130,0	90	20	116-025-052
54	140,0	135,0	90	20	116-025-054
56	145,0	140,0	100	20	116-025-056
58	150,0	145,0	100	20	116-025-058
60	155,0	150,0	100	20	116-025-060
70	180,0	175,0	-	20	114-025-070
76	195,0	190,0	-	20	114-025-076
80	205,0	200,0	-	25	114-025-080
95	242,5	237,5	-	25	114-025-095
110	280,0	275,0	-	25	114-025-110
114	290,0	285,0	-	25	114-025-114

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 40mm  
 12 to 40 Teeth with Hub  
 45 to 95 Teeth without Hub

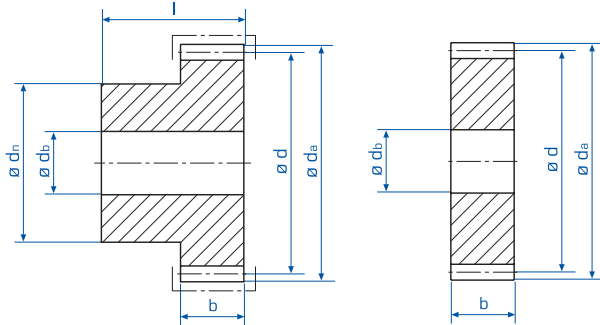
**Material: Steel EN8**

# Spur Gears

## precision range

**Module 3.0**

**Face Width = 25mm**



No. teeth	d <sub>a</sub>	d	d <sub>n</sub>	d <sub>b</sub>	Part No.
12	42,0	36,0	25	10	111-030-012
13	45,0	39,0	30	10	111-030-013
14	48,0	42,0	30	10	111-030-014
15	51,0	45,0	30	12	111-030-015
16	54,0	48,0	30	12	111-030-016
17	57,0	51,0	40	12	111-030-017
18	60,0	54,0	40	15	111-030-018
19	63,0	57,0	40	15	111-030-019
20	66,0	60,0	40	15	111-030-020
21	69,0	63,0	45	15	111-030-021
22	72,0	66,0	50	15	111-030-022
23	75,0	69,0	50	15	111-030-023
24	78,0	72,0	50	15	111-030-024
25	81,0	75,0	50	15	111-030-025
28	90,0	84,0	60	15	111-030-028
30	96,0	90,0	60	20	111-030-030
36	114,0	108,0	70	20	111-030-036
38	120,0	114,0	70	20	111-030-038
40	126,0	120,0	80	20	111-030-040
45	141,0	135,0	-	20	110-030-045
48	150,0	144,0	-	20	110-030-048
50	156,0	150,0	-	20	110-030-050
52	162,0	156,0	-	25	110-030-052
56	174,0	168,0	-	25	110-030-056
60	186,0	180,0	-	25	110-030-060
76	234,0	228,0	-	25	110-030-076
80	246,0	240,0	-	25	110-030-080
95	291,0	285,0	-	25	110-030-095

# Spur Gears

*precision range*

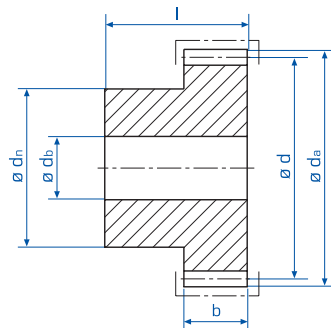
Module 3.0

Face Width  $b = 30\text{mm}$



Straight Teeth  
Pressure angle  $20^\circ$   
Length Overall  $l = 50\text{mm}$   
12 to 30 Teeth with Hub

**Material: Steel EN24 Quality 8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	42,0	36,0	27	12	112-030-012
13	45,0	39,0	30	12	112-030-013
14	48,0	42,0	33	12	112-030-014
15	51,0	45,0	35	12	112-030-015
16	54,0	48,0	38	14	112-030-016
17	57,0	51,0	42	14	112-030-017
18	60,0	54,0	45	14	112-030-018
19	63,0	57,0	45	14	112-030-019
20	66,0	60,0	45	14	112-030-020
21	69,0	63,0	45	16	112-030-021
22	72,0	66,0	50	16	112-030-022
23	75,0	69,0	50	16	112-030-023
24	78,0	72,0	50	16	112-030-024
25	81,0	75,0	60	16	112-030-025
28	90,0	84,0	60	16	112-030-028
30	96,0	90,0	60	16	112-030-030

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 35mm  
 12 to 70 Teeth with Hub  
 76 to 114 Teeth without Hub

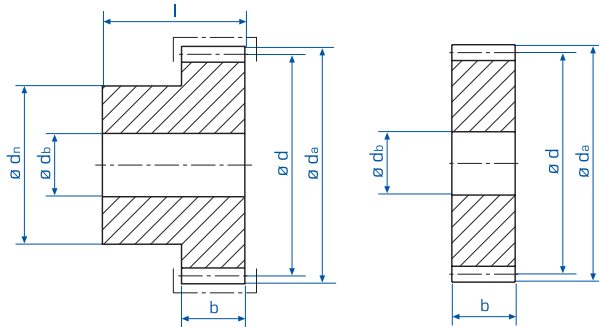
**Material: Steel EN8**

# Spur Gears

## commercial range

**Module 2.0**

**Face Width = 20mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	42,0	36,0	27	12	116-030-012
13	45,0	39,0	30	12	116-030-013
14	48,0	42,0	33	12	116-030-014
15	51,0	45,0	35	12	116-030-015
16	54,0	48,0	38	14	116-030-016
17	57,0	51,0	42	14	116-030-017
18	60,0	54,0	45	14	116-030-018
19	63,0	57,0	45	14	116-030-019
20	66,0	60,0	45	14	116-030-020
21	69,0	63,0	45	16	116-030-021
22	72,0	66,0	50	16	116-030-022
23	75,0	69,0	50	16	116-030-023
24	78,0	72,0	50	16	116-030-024
25	81,0	75,0	60	16	116-030-025
26	84,0	78,0	60	16	116-030-026
28	90,0	84,0	60	16	116-030-028
30	96,0	90,0	60	16	116-030-030
32	102,0	96,0	70	16	116-030-032
35	111,0	105,0	70	16	116-030-035
36	114,0	108,0	70	20	116-030-036
38	120,0	114,0	80	20	116-030-038
40	126,0	120,0	80	20	116-030-040
42	132,0	126,0	80	20	116-030-042
45	141,0	135,0	90	20	116-030-045
48	150,0	144,0	100	20	116-030-048
50	156,0	150,0	-	20	114-030-050
52	162,0	156,0	-	20	114-030-052
60	186,0	180,0	-	20	114-030-060
76	234,0	228,0	-	25	114-030-076
80	246,0	240,0	-	25	114-030-080
95	291,0	285,0	-	25	114-030-095
100	306,0	300,0	-	25	114-030-100
114	348,0	342,0	-	30	114-030-114

# Spur Gears

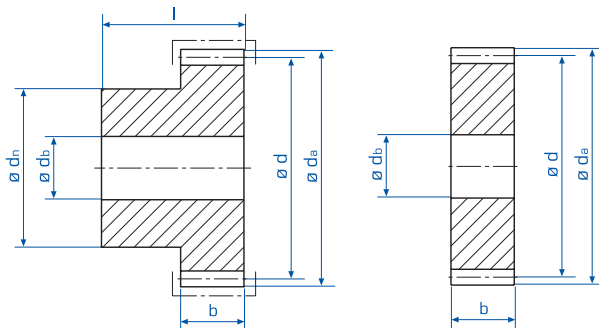
precision range

Module 3,183

Face Width = 25mm

Straight Teeth  
Pressure angle 20°  
Length Overall I = 25mm

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	44,6	38,2	25	10	111-031-012
15	54,1	47,7	30	12	111-031-015
18	63,7	57,3	40	15	111-031-018
20	70,0	63,7	40	15	111-031-020
24	82,8	76,4	50	15	111-031-024
25	85,9	79,6	50	15	111-031-025
30	101,9	95,5	60	20	111-031-030
36	121,0	114,6	70	20	111-031-036
40	133,7	127,3	80	20	111-031-040
45	149,6	143,2	-	20	111-031-045
50	165,5	159,2	-	20	111-031-050
60	197,3	191,0	-	25	111-031-060

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 50mm  
 12 to 30 Teeth with Hub  
 36 to 95 Teeth without Hub

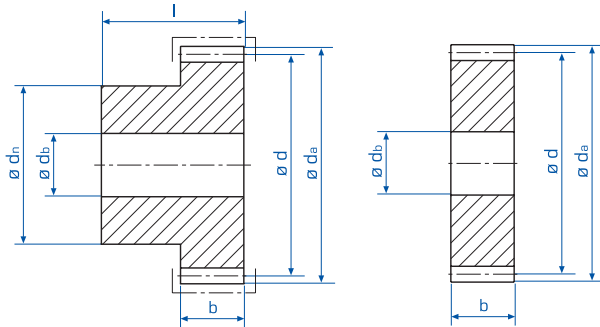
**Material: Steel EN8**

# Spur Gears

## precision range

**Module 4.0**

**Face Width = 32mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	56,0	48,0	36	12	111-040-012
13	60,0	52,0	40	12	111-040-013
14	64,0	56,0	44	12	111-040-014
15	68,0	60,0	45	15	111-040-015
16	72,0	64,0	45	15	111-040-016
17	76,0	68,0	50	15	111-040-017
18	80,0	72,0	50	20	111-040-018
19	84,0	76,0	50	20	111-040-019
20	88,0	80,0	50	20	111-040-020
21	92,0	84,0	60	20	111-040-021
22	96,0	88,0	60	20	111-040-022
23	100,0	92,0	60	20	111-040-023
24	104,0	96,0	60	20	111-040-024
25	108,0	100,0	60	20	111-040-025
28	120,0	112,0	70	20	111-040-028
30	128,0	120,0	80	25	111-040-030
36	152,0	144,0	-	25	110-040-036
38	160,0	152,0	-	25	110-040-038
40	168,0	160,0	-	25	110-040-040
45	188,0	180,0	-	25	110-040-045
48	200,0	192,0	-	25	110-040-048
50	208,0	200,0	-	25	110-040-050
52	216,0	208,0	-	30	110-040-052
56	232,0	224,0	-	30	110-040-056
60	248,0	240,0	-	30	110-040-060
76	312,0	304,0	-	30	110-040-076
80	328,0	320,0	-	30	110-040-080
95	388,0	380,0	-	30	110-040-095

# Spur Gears

*precision range*

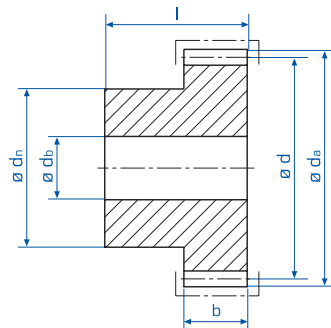
Module 4.0

Face Width  $b = 40\text{mm}$



Straight Teeth  
Pressure angle  $20^\circ$   
Length Overall  $l = 60\text{mm}$   
12 to 30 Teeth with Hub

**Material: Steel EN24 Quality 8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	56,0	48,0	35	14	112-040-012
13	60,0	52,0	40	14	112-040-013
14	64,0	56,0	45	14	112-040-014
15	68,0	60,0	45	14	112-040-015
16	72,0	64,0	50	16	112-040-016
17	76,0	68,0	50	16	112-040-017
18	80,0	72,0	50	16	112-040-018
19	84,0	76,0	60	16	112-040-019
20	88,0	80,0	60	16	112-040-020
21	92,0	84,0	70	16	112-040-021
22	96,0	88,0	70	16	112-040-022
23	100,0	92,0	75	20	112-040-023
24	104,0	96,0	75	20	112-040-024
25	108,0	100,0	75	20	112-040-025
28	120,0	112,0	75	20	112-040-028
30	128,0	120,0	75	20	112-040-030

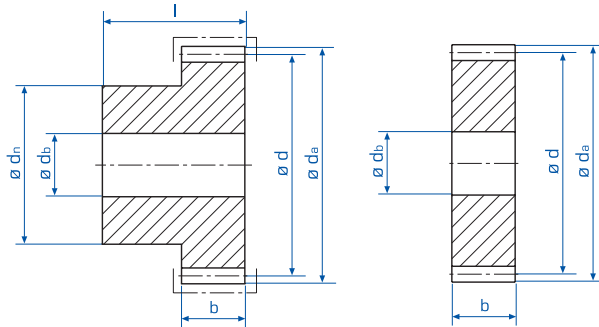
Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 60mm  
 12 to 36 Teeth with Hub  
 38 to 114 Teeth without Hub

**Material: Steel EN8**

# Spur Gears

## commercial range

**Module 4.0**  
**Face Width = 40mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	56,0	48,0	35	14	116-040-012
13	60,0	52,0	40	14	116-040-013
14	64,0	56,0	45	14	116-040-014
15	68,0	60,0	45	14	116-040-015
16	72,0	64,0	50	16	116-040-016
17	76,0	68,0	50	16	116-040-017
18	80,0	72,0	50	16	116-040-018
19	84,0	76,0	60	16	116-040-019
20	88,0	80,0	60	16	116-040-020
21	92,0	84,0	70	16	116-040-021
22	96,0	88,0	70	16	116-040-022
23	100,0	92,0	75	20	116-040-023
24	104,0	96,0	75	20	116-040-024
25	108,0	100,0	75	20	116-040-025
26	112,0	104,0	75	20	116-040-026
28	120,0	112,0	75	20	116-040-028
30	128,0	120,0	75	20	116-040-030
32	136,0	128,0	80	20	116-040-032
35	148,0	140,0	80	20	116-040-035
36	152,0	144,0	80	25	116-040-036
38	160,0	152,0	-	25	114-040-038
40	168,0	160,0	-	25	114-040-040
45	188,0	180,0	-	25	114-040-045
48	200,0	192,0	-	25	114-040-048
50	208,0	200,0	-	25	114-040-050
52	216,0	208,0	-	25	114-040-052
60	248,0	240,0	-	25	114-040-060
76	312,0	304,0	-	30	114-040-076
80	328,0	320,0	-	30	114-040-080
95	388,0	380,0	-	30	114-040-095
100	408,0	400,0	-	30	114-040-100
114	464,0	456,0	-	30	114-040-114

# Spur Gears

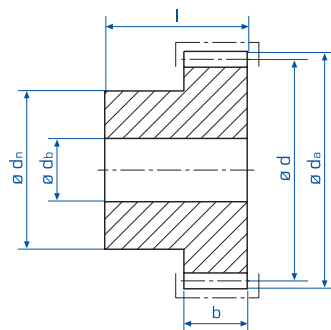
*precision range*

Module 4.5

Face Width  $b = 40\text{mm}$

Straight Teeth  
Pressure angle  $20^\circ$   
Length Overall  $l = 80\text{mm}$   
12 to 40 Teeth with Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	63	54	40	20	111-045-012
15	76.5	67.5	50	20	111-045-015
20	99	90	60	20	111-045-020
22	108	99	80	20	111-045-022
25	121.5	112.5	80	20	111-045-025
30	114	135	90	20	111-045-030
40	189	180	90	20	111-045-040

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 60mm  
 12 to 25 Teeth with Hub  
 28 to 95 Teeth without Hub

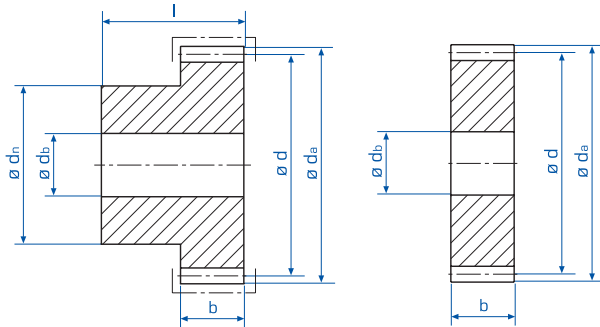
**Material: Steel EN8**

# Spur Gears

## precision range

**Module 5.0**

**Face Width = 40mm**



No. teeth	d <sub>a</sub>	d	d <sub>n</sub>	d <sub>b</sub>	Part No.
12	70,0	60,0	45	15	111-050-012
13	75,0	65,0	50	15	111-050-013
14	80,0	70,0	50	15	111-050-014
15	85,0	75,0	50	20	111-050-015
16	90,0	80,0	50	20	111-050-016
17	95,0	85,0	64	20	111-050-017
18	100,0	90,0	65	25	111-050-018
19	105,0	95,0	68	25	111-050-019
20	110,0	100,0	70	25	111-050-020
21	115,0	105,0	75	25	111-050-021
22	120,0	110,0	75	25	111-050-022
23	125,0	115,0	80	25	111-050-023
24	130,0	120,0	80	25	111-050-024
25	135,0	125,0	80	25	111-050-025
28	150,0	140,0	-	25	110-050-028
30	160,0	150,0	-	30	110-050-030
36	190,0	180,0	-	30	110-050-036
38	200,0	190,0	-	30	110-050-038
40	210,0	200,0	-	30	110-050-040
45	235,0	225,0	-	30	110-050-045
48	250,0	240,0	-	30	110-050-048
50	260,0	250,0	-	30	110-050-050
52	270,0	260,0	-	40	110-050-052
56	290,0	280,0	-	40	110-050-056
60	310,0	300,0	-	40	110-050-060
76	390,0	380,0	-	40	110-050-076
80	410,0	400,0	-	40	110-050-080
95	485,0	475,0	-	40	110-050-095

# Spur Gears

*precision range*

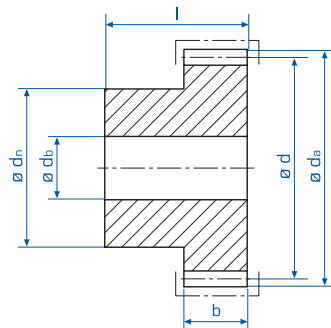
Module 5.0

Face Width  $b = 50\text{mm}$



Straight Teeth  
Pressure angle  $20^\circ$   
Length Overall  $l = 75\text{mm}$   
12 to 30 Teeth with Hub

**Material: Steel EN24 Quality 8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	70,0	60,0	45	20	112-050-012
13	75,0	65,0	50	20	112-050-013
14	80,0	70,0	55	20	112-050-014
15	85,0	75,0	60	20	112-050-015
16	90,0	80,0	65	20	112-050-016
17	95,0	85,0	70	20	112-050-017
18	100,0	90,0	70	20	112-050-018
19	105,0	95,0	70	20	112-050-019
20	110,0	100,0	80	20	112-050-020
21	115,0	105,0	80	20	112-050-021
22	120,0	110,0	80	20	112-050-022
23	125,0	115,0	90	20	112-050-023
24	130,0	120,0	90	20	112-050-024
25	135,0	125,0	90	20	112-050-025
26	140,0	130,0	100	20	112-050-026
28	150,0	140,0	100	25	112-050-028
30	160,0	150,0	110	25	112-050-030

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 75mm  
 12 to 30 Teeth with Hub  
 32 to 114 Teeth without Hub

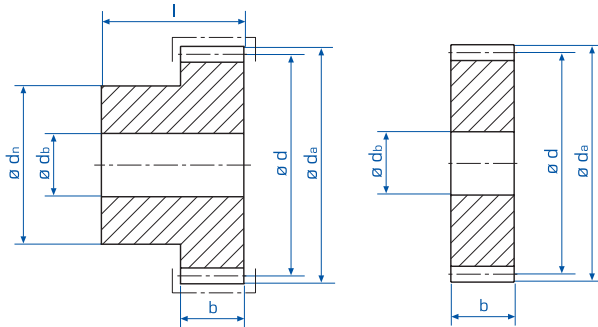
**Material: Steel EN8**

# Spur Gears

## commercial range

**Module 5.0**

**Face Width = 50mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	70,0	60,0	45	20	116-050-012
13	75,0	65,0	50	20	116-050-013
14	80,0	70,0	55	20	116-050-014
15	85,0	75,0	60	20	116-050-015
16	90,0	80,0	65	20	116-050-016
17	95,0	85,0	70	20	116-050-017
18	100,0	90,0	70	20	116-050-018
19	105,0	95,0	70	20	116-050-019
20	110,0	100,0	80	20	116-050-020
21	115,0	105,0	80	20	116-050-021
22	120,0	110,0	80	20	116-050-022
23	125,0	115,0	90	20	116-050-023
24	130,0	120,0	90	20	116-050-024
25	135,0	125,0	90	20	116-050-025
26	140,0	130,0	100	20	116-050-026
28	150,0	140,0	100	25	116-050-028
30	160,0	150,0	110	25	116-050-030
32	170,0	160,0	-	25	114-050-032
35	185,0	175,0	-	25	114-050-035
38	200,0	190,0	-	25	114-050-038
40	210,0	200,0	-	25	114-050-040
45	235,0	225,0	-	25	114-050-045
48	250,0	240,0	-	25	114-050-048
50	260,0	250,0	-	30	114-050-050
52	270,0	260,0	-	30	114-050-052
60	310,0	300,0	-	30	114-050-060
76	390,0	380,0	-	30	114-050-076
80	410,0	400,0	-	30	114-050-080
95	485,0	475,0	-	30	114-050-095
100	510,0	500,0	-	30	114-050-100
114	580,0	570,0	-	30	114-050-114

# Spur Gears

## precision range

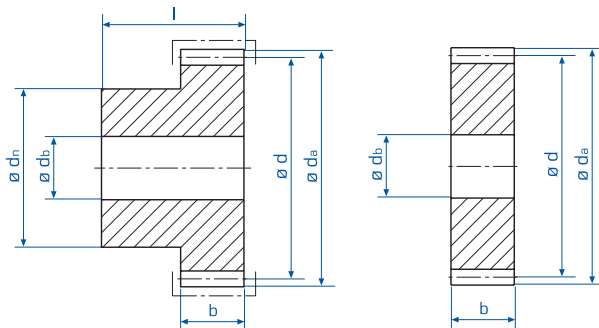
Module 6.0

Face Width = 48mm



Straight Teeth  
Pressure angle 20°  
Length Overall I = 70mm  
12 to 25 Teeth with Hub  
28 to 95 Teeth without Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	84,0	72,0	54	20	111-060-012
13	90,0	78,0	60	20	111-060-013
15	102,0	90,0	60	25	111-060-015
16	108,0	96,0	60	25	111-060-016
18	120,0	108,0	70	25	111-060-018
20	132,0	120,0	70	25	111-060-020
24	156,0	144,0	80	30	111-060-024
25	162,0	150,0	80	30	111-060-025
28	180,0	168,0	-	30	110-060-028
30	192,0	180,0	-	30	110-060-030
36	228,0	216,0	-	30	110-060-036
38	240,0	228,0	-	30	110-060-038
40	252,0	240,0	-	30	110-060-040
45	282,0	270,0	-	40	110-060-045
48	300,0	288,0	-	40	110-060-048
50	312,0	300,0	-	40	110-060-050
52	324,0	312,0	-	40	110-060-052
56	348,0	336,0	-	40	110-060-056
60	372,0	360,0	-	40	110-060-060
76	468,0	456,0	-	40	110-060-076
80	492,0	480,0	-	50	110-060-080
95	582,0	570,0	-	50	110-060-095

Straight Teeth  
 Pressure angle 20°  
 Length Overall l = 80mm  
 12 to 30 Teeth with Hub

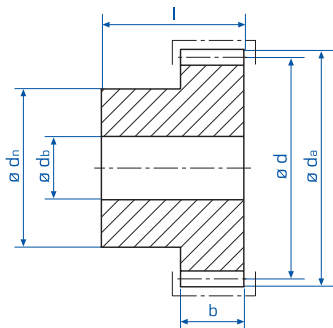
**Material: Steel EN24 Quality 8**

# Spur Gears with ground helical teeth

## precision range

**Module 6.0**

**Face Width b = 60mm**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	84,0	72,0	54	25	112-060-012
13	90,0	78,0	60	25	112-060-013
15	102,0	90,0	70	25	112-060-015
16	108,0	96,0	75	25	112-060-016
18	120,0	108,0	80	25	112-060-018
20	132,0	120,0	90	25	112-060-020
24	156,0	144,0	110	25	112-060-024
25	162,0	150,0	110	25	112-060-025
28	180,0	168,0	110	25	112-060-028
30	192,0	180,0	150	25	112-060-030

# Spur Gears

## commercial range

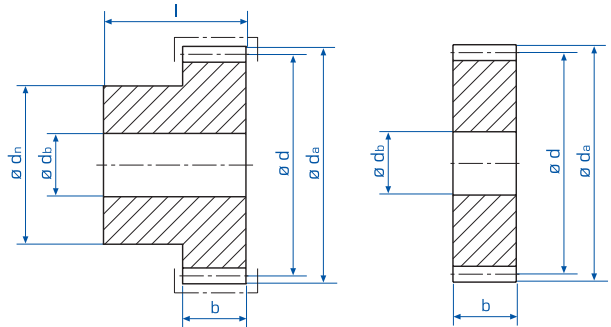
Module 6.0

Face Width = 60mm



Straight Teeth  
Pressure angle 20°  
Length Overall I = 80mm  
12 to 25 Teeth with Hub  
28 to 40 Teeth without Hub

**Material: Steel EN8**



No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
12	84,0	72,0	54	-	116-060-012
13	90,0	78,0	60	-	116-060-013
15	102,0	90,0	70	-	116-060-015
16	108,0	96,0	75	-	116-060-016
18	120,0	108,0	80	-	116-060-018
20	132,0	120,0	90	-	116-060-020
24	156,0	144,0	110	-	116-060-024
25	162,0	150,0	110	-	116-060-025
28	180,0	168,0	-	25	114-060-028
30	192,0	180,0	-	25	114-060-030
32	204,0	192,0	-	25	114-060-032
35	222,0	210,0	-	25	114-060-035
38	240,0	228,0	-	25	114-060-038
40	252,0	240,0	-	25	114-060-040

Straight Teeth  
 Pressure angle 20°  
 Length Overall I = 95mm  
 15 to 25 Teeth with Hub  
 30 to 60 Teeth without Hub

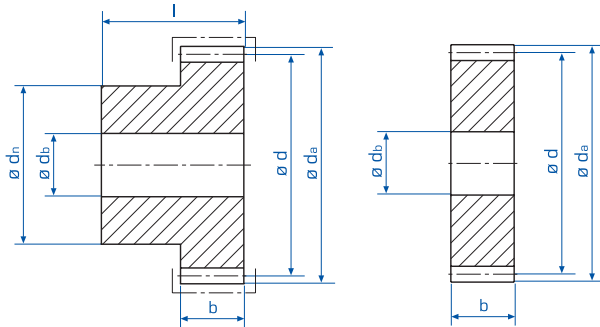
**Material: Steel EN8**

# Spur Gears

*precision range*

**Module 8.0**

**Face Width = 64mm**

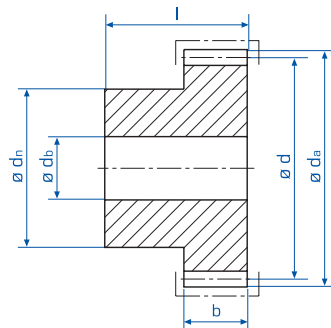


No. teeth	$d_a$	$d$	$d_n$	$d_b$	Part No.
15	136,0	120,0	80	25	111-080-015
20	176,0	160,0	100	30	111-080-020
25	216,0	200,0	125	30	111-080-025
30	256,0	240,0	-	30	110-080-030
40	336,0	320,0	-	40	110-080-040
60	496,0	480,0	-	50	110-080-060

# Spur Gears stainless steel precision range

Straight Teeth  
Pressure angle 20°  
stainless steel

**Material: Stainless Steel: 303 [X12CrNiS 188]**



## Module 1.0

**Material: Stainless Steel: 303 [X12CrNiS 188]**

No. teeth	$d_a$	d	$d_n$	$d_b$	l	b	Part No.
15	17,0	15,0	12	5	18	8	111-010-615
20	22,0	20,0	15	6	18	8	111-010-620
25	27,0	25,0	18	6	18	8	111-010-625
30	32,0	30,0	20	8	18	8	111-010-630
40	42,0	40,0	25	8	18	8	111-010-640
60	62,0	60,0	40	10	18	8	111-010-660

## Module 1.5

**Material: Stainless Steel: 303 [X12CrNiS 188]**

Straight Teeth  
Pressure angle 20°  
stainless steel

No. teeth	$d_a$	d	$d_n$	$d_b$	l	b	Part No.
15	25,5	22,5	18	6	25	12	111-015-615
20	33,0	30,0	20	8	25	12	111-015-620
25	40,5	37,5	25	8	25	12	111-015-625
30	48,0	45,0	30	10	25	12	111-015-630
40	63,0	60,0	40	10	25	12	111-015-640
60	93,0	90,0	60	12	25	12	111-015-660

## Module 2.0

**Material: Stainless Steel: 303 [X12CrNiS 188]**

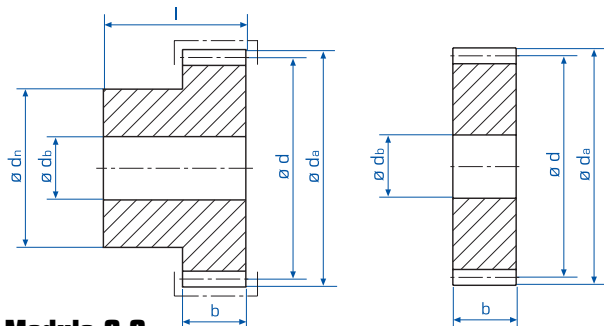
Straight Teeth  
Pressure angle 20°  
stainless steel

No. teeth	$d_a$	d	$d_n$	$d_b$	l	b	Part No.
15	34,0	30,0	24	8	30	16	111-020-615
20	44,0	40,0	28	10	30	16	111-020-620
25	54,0	50,0	30	10	30	16	111-020-625
30	64,0	60,0	40	12	30	16	111-020-630
40	84,0	80,0	50	12	30	16	111-020-640
60	124,0	120,0	80	15	30	16	111-020-660

Straight Teeth  
Pressure angle 20°  
stainless steel

# Spur Gears stainless steel precision range

**Material: Stainless Steel: 303 [X12CrNiS 188]**



## Module 3.0

**Material: Stainless Steel: 303 [X12CrNiS 188]**

No. teeth	$d_a$	$d$	$d_n$	$d_b$	$l$	$b$	Part No.
15	51,0	45,0	30	12	40	25	111-030-615
20	66,0	60,0	40	15	40	25	111-030-620
25	81,0	75,0	50	15	40	25	111-020-625
30	96,0	90,0	60	20	40	25	111-030-630
40	126,0	120,0	80	20	40	25	111-030-640
60	186,0	180,0	-	25	-	25	110-030-660

## Module 4.0

**Material: Stainless Steel : 303 [X12CrNiS 188]**

Straight Teeth  
Pressure angle 20°  
induction hardened

No. teeth	$d_a$	$d$	$d_n$	$db$	$l$	$b$	Part No.
15	68,0	60,0	45	15	50	32	111-040-615
20	88,0	80,0	50	20	50	32	111-040-620
25	108,0	100,0	60	20	50	32	111-040-625
30	128,0	120,0	80	25	50	32	111-040-630
40	168,0	160,0	-	25	-	32	110-040-640
60	248,0	240,0	-	30	-	32	110-040-660