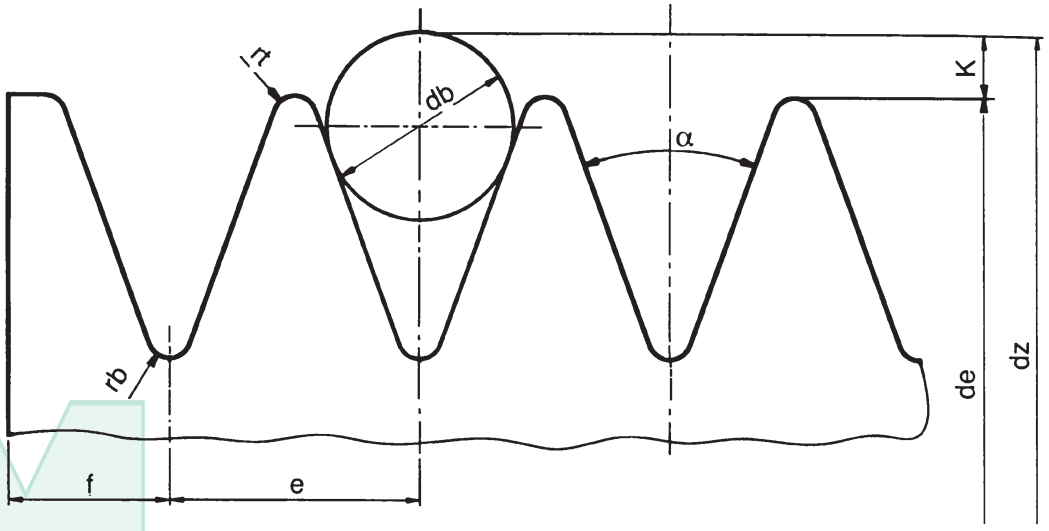
POLY – V TAPER-LOCK®
PULLEYS

Types
Grooved pulleys designed for industrial transmissions are identified by reference to the dimensions and the groove pitch in the following types: **PPV-J – PPV-L**

Profile dimensions
The transverse profile dimensions of a grooved pulley are shown in the figure and in the table.



TABLE

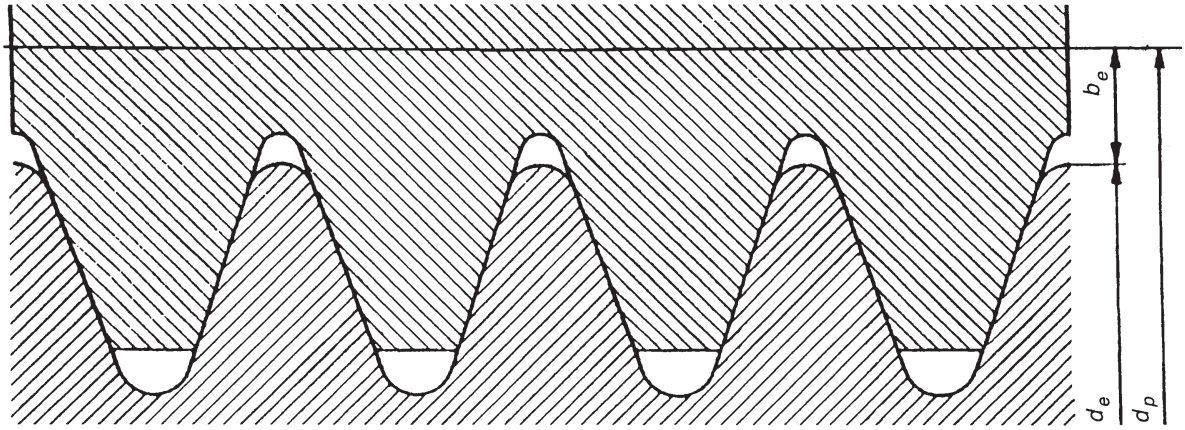
Type		PPV-J	PPV-L
Grooves pitch **e**		2.34	4.70
Tolerance for **e***		±0.03	±0.05
Sum of tolerances **e****		±0.30	±0.30
Race angle **α**** ±0,5		40°	40°
rt	min.	0.20	0.40
rb	max.	0.40	0.40
Diameter of the control sphere or roller **db ± 0.01**		1.50	3.50
2K**	nominal	0.23	2.36
f	min.	1.8	3.3

* = this tolerance applies to the distance between the axes of two consecutive grooves
** = the sum of all the tolerances "e" for all the races of each pulley must not exceed the value foreseen in the table
* = the axis of each groove must form a 90° ± 0.5° angle with the pulley axis
** = K is not in relation to the pulley's nominal diameter but is measured from the position of the measurement sphere or roller.

Pitch line diameter

The position of a grooved belt in contact with the corresponding pulley is shown in cross-section in the figure.

The real pitch line diameter **dp** of a grooved pulley measured along the belt is slightly greater than the actual diameter **de** and the exact value depends on the type of belt used. For the purposes of illustration, the table shows the value **be** normally adopted to calculate the transmission ratio. In practice it is sufficient to use the actual diameter **de** to calculate the transmission ratio.



$$dp \cong de + 2be$$

Type	PPV-J	PPV-L
2 be	2	5

Designation

The designation includes the following details, in the order given: the "pulley" domination, the reference of the current standard, the number of grooves, the type and the actual diameter expressed in millimetres.

An example of the designation for a PPV-J type grooved pulley designed for industrial transmissions with 8 grooves and an actual diameter of 200mm.: **8 PPV-J 200.**

Degree of finish of the grooves

The surface roughness of the groves shall be **Ra 3.2** in compliance with ISO 254.

MATERIALS

C45 UNI 7845

Pulleys are manufactured in steel.

Balancing

UNI 4218 – ISO 1940

Pulleys prepared for a tapered bush are statically balanced within grade G.6.3.

It is possible to perform dynamic balancing, on request.

Dynamic balancing is essential for speeds exceeding 30 m/s.

Design power calculation

Make a note of the nominal power to be transmitted **P** (kw) (normally the nominal power of the electric motor), select the service factor **Co** based on the table and calculate the design power output **Pc** (kw) as follows: **Pc = Co x P**

Service factor (Co)

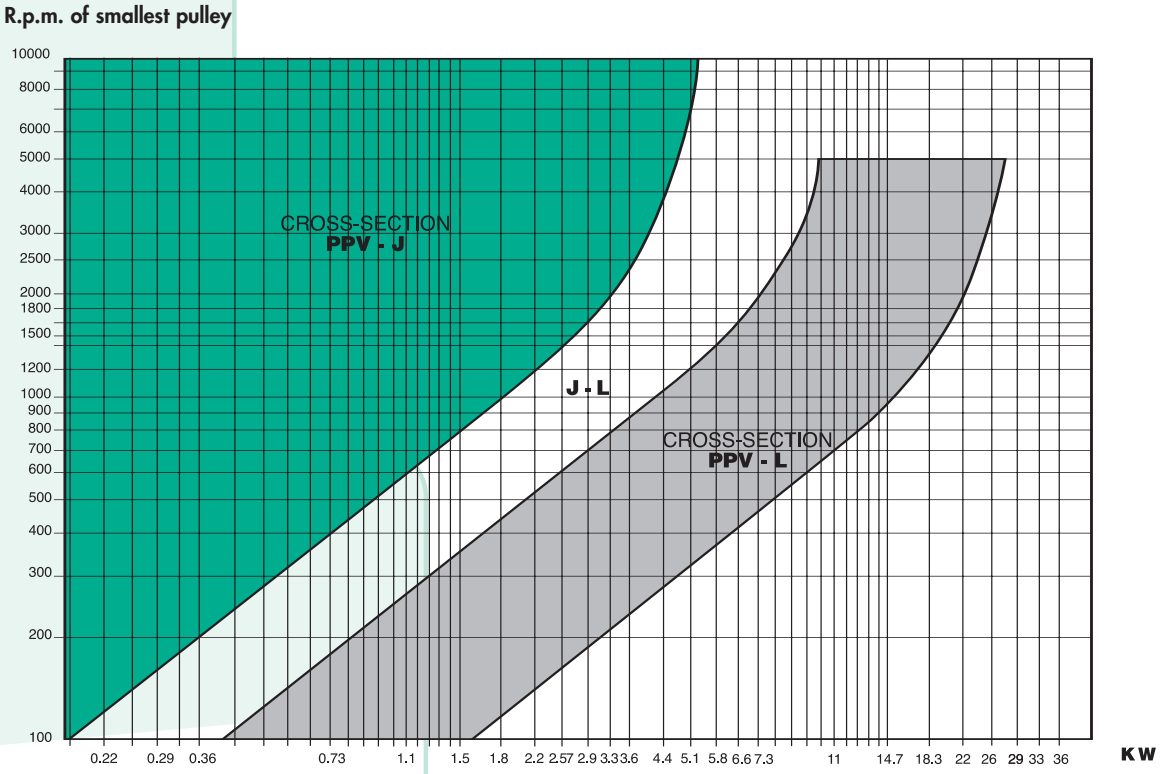
MOTOR TYPE

Class A	Class B
• Synchronous and asynchronous, squirrel cage, normal torque, alternating current motor. • Shunt winding direct current motor • Internal combustion engine (steady-state condition ≥ 700 r.p.m.) • Turbines	• Asynchronous, squirrel cage, high torque alternating current motor • Compound winding direct current motor • Internal combustion engine (steady-state condition ≥ 700 r.p.m.) • Clutches

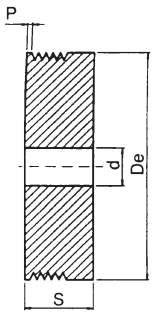
Type of machine driven	Class A Motor			Class B Motor		
	Number of daily operating hours					
	< 10	10 ÷ 16	> 16	< 10	< 10÷ 16	> 16
• Liquid mixers • Blowers • Extractors • Centrifuge fans • Lightweight conveyors	1	1.1	1.2	1.1	1.2	1.3
• Mixers designed for pasty products • Blenders • Generators • Laundry machines • Machine tools	1.1	1.2	1.3	1.2	1.3	1.4
• Rotary compressors • Rotary pumps • Sieves • Heavyweight conveyors • Spraying systems • Dynamo • Bakery machines • Printing machines • Wood working machines • Axial fans • Brick making machines	1.2	1.3	1.4	1.3	1.4	1.5
• Piston compressors • Piston pumps • Crushers • Bucket elevators • Elevators • Paper making machines • Mills • Hoists	1.4	1.5	1.6	1.5	1.6	1.8
• Grinding machines • Crushing machines • Drainage systems • Calenders and extruders for rubber and plastics	1.6	1.7	1.8	1.7	1.8	2

CROSS-SECTION SELECTION

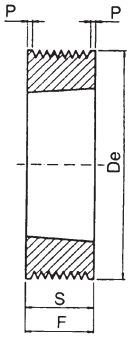
The type of cross-section is selected by using the diagram shown below



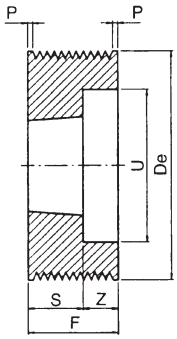
DIMENSIONS OF POLY-V TAPER-LOCK® PULLEYS



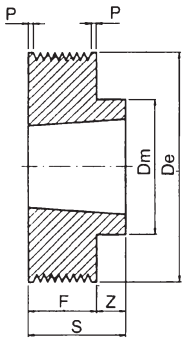
EXECUTION 1



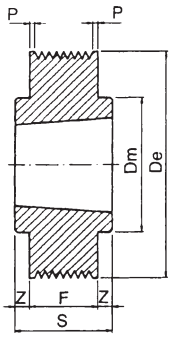
EXECUTION 2



EXECUTION 3



EXECUTION 4



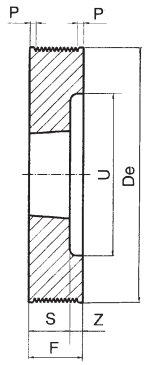
EXECUTION 5

PPV – L CROSS-SECTION

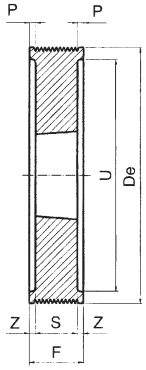
De	Exec.	No. of Grooves	Bush	S	Z	Dm	U		De	Exec.	No. of Grooves	Bush	S	Z	Dm	U
	1	8	-	32	-	-	-	12		4	8	1610	26	3	82	-
40	1	12	-	41.5	-	-	-	12	106	3	12	1610	26	6.5	-	88
	1	16	-	51	-	-	-	12		3	16	1610	26	16	-	88
	1	8	-	32	-	-	-	12		4	8	1610	26	3	90	-
45	1	12	-	41.5	-	-	-	12	112	3	12	1610	26	6.5	-	88
	1	16	-	51	-	-	-	12		3	16	1610	26	16	-	88
	1	8	-	32	-	-	-	12		4	8	1610	26	3	90	-
50	1	12	-	41.5	-	-	-	12	118	3	12	2012	32	0.5	-	98
	1	16	-	51	-	-	-	12		3	16	2012	32	10	-	98
	2	8	1108	23	-	-	-	-		4	8	1610	26	3	90	-
56	1	12	-	41.5	-	-	-	12	125	3	12	2012	32	0.5	-	98
	1	16	-	51	-	-	-	12		3	16	2012	32	10	-	98
	2	8	1108	23	-	-	-	-		4	8	1610	26	3	90	-
63	3	12	1108	23	9.5	-	46	-	132	3	12	2012	32	0.5	-	98
	1	16	-	51	-	-	-	12		3	16	2012	32	10	-	98
	2	8	1108	23	-	-	-	-		4	8	1610	26	3	90	-
71	3	12	1108	23	9.5	-	46	-	140	4	12	2517	45	12.5	120	-
	2	16	1215	42	-	-	55	-		4	16	2517	45	3	120	-
	2	8	1108	23	-	-	-	-		5	8	2012	32	4.5	110	-
75	3	12	1610	26	6.5	-	60	-	160	4	12	2517	45	12.5	120	-
	3	16	1610	26	16	-	60	-		4	16	2517	45	3	120	-
	4	8	1610	26	3	70	-	-		5	8	2012	32	4.5	110	-
80	3	12	1610	26	6.5	-	60	-	180	5	12	2517	45	6.25	120	-
	3	16	1610	26	16	-	60	-		5	16	2517	45	1.5	120	-
	4	8	1610	26	3	70	-	-		5	8	2012	32	4.5	110	-
85	3	12	1610	26	6.5	-	60	-	200	5	12	2517	45	6.25	120	-
	3	16	1610	26	16	-	60	-		5	16	2517	45	1.5	120	-
	4	8	1610	26	3	70	-	-		5	8	2012	32	4.5	110	-
90	3	12	1610	26	6.5	-	74	-	224	5	12	2517	45	6.25	120	-
	3	16	1610	26	16	-	74	-		5	16	2517	45	1.5	120	-
	4	8	1610	26	3	82	-	-		5	8	2012	32	4.5	110	-
95	3	12	1610	26	6.5	-	74	-	250	5	12	2517	45	6.25	120	-
	3	16	1610	26	16	-	74	-		5	16	2517	45	1.5	120	-
	4	8	1610	26	3	82	-	-								
100	3	12	1610	26	6.5	-	74	-								
	3	16	1610	26	16	-	74	-								

No. of Grooves	F±0.1	P
8	23	3.31
12	32.5	3.38
16	42	3.45

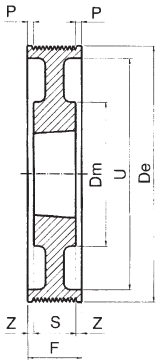
DIMENSIONS OF POLY-V TAPER-LOCK® PULLEYS



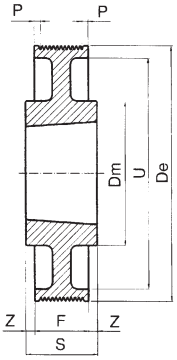
EXECUTION 3



EXECUTION 6



EXECUTION 7



EXECUTION 8

PPV – L CROSS-SECTION

De	Exec.	No. of Grooves	Bush	S	Z	Dm	U
	3	8	1210	26	22	-	56
75	3	12	1215	42	25	-	56
	3	8	1210	26	22	-	56
80	3	12	1215	42	25	-	56
	3	8	1210	26	22	-	61
85	3	12	1215	42	25	-	61
	6	16	1215	42	22	-	61
	3	8	1610	26	22	-	66
90	3	12	1615	42	25	-	66
	6	16	1615	42	22	-	66
	3	8	1610	26	22	-	71
95	3	12	1615	42	25	-	71
	6	16	1615	42	22	-	71
	3	8	1610	26	22	-	76
100	3	12	2012	32	35	-	79
	6	16	2012	32	27	-	79
	3	8	1610	26	22	-	82
106	3	12	2012	32	35	-	82
	6	16	2012	32	27	-	82
	3	8	1610	26	22	-	88
112	3	12	2012	32	35	-	88
	6	16	2012	32	27	-	88
	3	8	2012	32	16	-	94
118	6	12	2517	45	11	-	97
	6	16	2517	45	20.5	-	97
	3	8	2012	32	16	-	101
125	6	12	2517	45	11	-	101
	6	16	2517	45	20.5	-	101
	3	8	2012	32	16	-	108
132	6	12	2517	45	11	-	108
	6	16	2517	45	20.5	-	108

De	Exec.	No. of Grooves	Bush	S	Z	Dm	U
	3	8	2517	45	3	82	116
140	6	12	2517	45	11	-	116
	6	16	2517	45	20.5	-	116
	3	8	2517	45	3	-	126
150	6	12	2517	45	11	-	126
	6	16	2517	45	20.5	-	126
	3	8	2517	45	3	-	136
160	6	12	2517	45	11	-	136
	6	16	3020	52	17	-	136
	3	8	2517	45	3	-	146
170	6	12	2517	45	11	-	146
	6	16	3020	52	17	-	146
	7	8	2517	45	1.5	120	156
180	7	12	2517	45	11	120	156
	6	16	3020	52	17	-	156
	7	8	2517	45	1.5	120	176
200	7	12	3020	52	7.5	146	176
	7	16	3020	52	17	146	176
	7	8	2517	45	1.5	120	202
224	7	12	3020	52	7.5	146	202
	7	16	3020	52	17	146	202
	8	8	3020	52	2	146	228
250	7	12	3020	52	7.5	146	228
	8	16	3535	89	1.5	178	228
	8	8	3020	52	2	146	256
280	7	12	3020	52	7.5	146	256
	8	16	3535	89	1.5	178	256
	8	8	3020	52	2	146	285
315	8	12	3535	89	11	178	285
	8	16	3535	89	1.5	178	285

No. of Grooves	F±0.1	P
8	48	7,55
12	67	7,65
16	86	7,75