# **ZV** rack and pinion drives for automation and robotics



Rack and pinion system for the ServoFit® gear unit series: P / PA / PK / PKX

PE

KS

K

KL





## **Ready-to-install solutions**

## Pinions and options for ServoFit® servo gear units ① with solid shaft output

For the gear units in the series P / PA / PK / PKX / PE / KS / K / KL the pinions on the rack and pinion drives are supplied in a backlashfree shaft-hub connection (shrinkfit and keyed).

For accurate mounting and for lubrication of the rack and pinion system optional accessories are available.

## **Option: Setting plates**

There are specific setting plates for mounting and positioning of the different rack and pinion drives. Positioning can be made easier by an optional adjustment device.

## **Option: Lubrication**

A felt gear (with mounting kit) is used to lubricate the pinion or alternatively the rack. The grease can be supplied either decentrally via an automated lubricator (optional) or via a central lubricant supply.

## **Option: Clamping set**

For the gear unit models P5, P7, PE5, K2, K3 and K4, it is possible to attach the pinion with a clamping set.



Pinion attached by clamping set

(1) or synchronous servo geared motors from STOBER, e.g. SMS P planetary geared motor



Setting plate (adjustment path > tooth height) for P and PE gear units with optional adjustment device, pinion in mounting position E

## Gearing

Helical and spur gearing (with crowning) Case hardened and ground Gearing quality 7 Modules 2, 3, 4



Setting plate for K and KL gear units with adjustment device (front) and lubricating pinion with bracket, pinion in mounting

## **Pinion mounting positions**

Mounting position **E** Gearing flush with shaft end

Mounting position S Gearing flush with shaft shoulder



Helical pinions m 2/3/4



Spur pinions m 2/3/4 Small pinion on left mounting position S

## **Technical data** Example: gear unit models K and P

Module m	Helical gearing				Spur gearing			
	No. of teeth Z	Feed force Fv2B [N] pos <b>S</b> ③	Feed force Fv2B [N] pos <b>E</b>	Linear backlash Δs [μm]	No. of teeth Z	Feed force Fv2B [N] pos <b>S</b> ③	Feed force Fv2B [N] pos <b>E</b>	Linear backlash Δs [μm]
2	20	4 900	3 350	74	21	6 670	4 100	74
2	25	8 290	5 240	78	26	8 470	6 000	76
3	18	7 680	5 410	84	19	7 720	6 320	82
2	25	12 180	5 200	78	26	12 420	5 960	75
3	18	10 750	5 340	83	19	13 680	6 260	83
3	22	16 450	6 570	103	23	17 390	7 510	100
4	18	14 950	6 780	110	19	15 790	7 790	110
2	16	2 000	1 750	20	17	2 690	2 240	20
2	20	4 855	3 280	25	21	5 710	4 050	24
2	25	8 670	5 130	23	26	10 380	5 650	23
3	18	8 480	5 270	25	19	10 140	5 860	25
3	22	10 340	7 050	31	23	12 490	8 060	30
4	18	9 980	7 360	33	19	10 030	8 630	33
	m 2 2 3 2 3 4 2 2 2 3 3 3 4 2 2 3 3 3	Module m         No. of teeth z           2         20           2         25           3         18           2         25           3         18           3         22           4         18           2         16           2         20           2         25           3         18           3         22	Module         No. of teeth force         Feed force           m         Z         Fv2B [N] pos \$5®           2         20         4 900           2         25         8 290           3         18         7 680           2         25         12 180           3         18         10 750           3         22         16 450           4         18         14 950           2         16         2 000           2         20         4 855           2         25         8 670           3         18         8 480           3         22         10 340	Module         No. of teeth force force         Feed force force           m         Z         Fv2B [N] pos \$\$ Fv2B [N] pos \$E\$           2         20         4 900         3 350           2         25         8 290         5 240           3         18         7 680         5 410           2         25         12 180         5 200           3         18         10 750         5 340           3         22         16 450         6 570           4         18         14 950         6 780           2         16         2 000         1 750           2         20         4 855         3 280           2         25         8 670         5 130           3         18         8 480         5 270           3         22         10 340         7 050	Module m         No. of teeth force force packlash         Feed force force force packlash         Linear backlash force packlash           2         20         4 900         3 350         74           2         25         8 290         5 240         78           3         18         7 680         5 410         84           2         25         12 180         5 200         78           3         18         10 750         5 340         83           3         22         16 450         6 570         103           4         18         14 950         6 780         110           2         20         4 855         3 280         25           2         25         8 670         5 130         23           3         18         8 480         5 270         25           3         22         10 340         7 050         31	Module m         No. of teeth force force packlash force force teeth force and to teeth force force backlash force force backlash force force backlash force force backlash force force force backlash force force force force backlash force	Module m         No. of teeth force force porce         Feed force force porce         Linear backlash teeth force porce         No. of teeth force porce           2         20         4 900         3 350         74         21         6 670           2         25         8 290         5 240         78         26         8 470           3         18         7 680         5 410         84         19         7 720           2         25         12 180         5 200         78         26         12 420           3         18         10 750         5 340         83         19         13 680           3         22         16 450         6 570         103         23         17 390           4         18         14 950         6 780         110         19         15 790           2         20         4 855         3 280         25         21         5 710           2         25         8 670         5 130         23         26         10 380           3         18         8 480         5 270         25         19         10 140           3         22         10 340         7 050         31         23	Module m         No. of teeth force force between force force and teeth force general force force backlash force and teeth force force backlash force force general force force force general force force general force gener

2 also applies to versions PA / PK / PKX

Mounting position S: In this mounting position the feed force can be increased to up to 2.3 times compared to mounting position E because the point of force application is closer to the gear unit bearings.

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