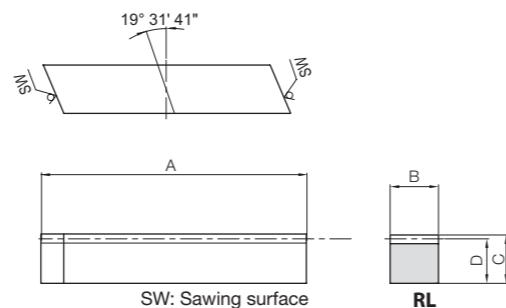




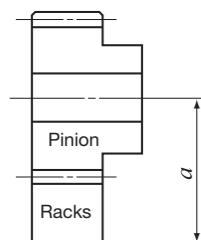
Specifications	
Precision grade	KHK R 001 grade 2
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Helix angle/direction	19° 31' 41" left helix
Material	S45C
Heat treatment	—
Tooth hardness	(less than HB210)
Surface treatment	Black oxide coating



Catalog Number	Normal module (front pitch mm)	Effective No. of teeth	Shape	Total Length				Weight (kg)
				A	B	C	D	
ZST1.5-GL	m1.5 (CP5)	9	RL	59	17	17	15.5	0.11
ZST2-GL	m2 (CP6.667)	7		66	25	25	23	0.26
ZST3-GL	m3 (CP10)	8		108	30	30	27	0.62
ZST4-GL	m4 (CP13.333)	6		118	40	40	36	1.17
ZST5-GL	m5 (CP16.667)	4		115	50	50	45	1.72
ZST6-GL	m6 (CP20)	3		119	60	60	54	2.49

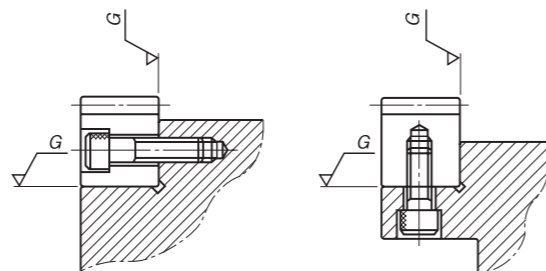
Points of Caution in Assembling

① ZST/ZSTD ground racks are designed to give the proper backlash when assembled using the mounting distance (tolerance of H7 to H8 required) given by the ZSTP Mating Pinion Dimension Table (Page 262). Make sure that the mounting distance stays constant for the length of the rack.

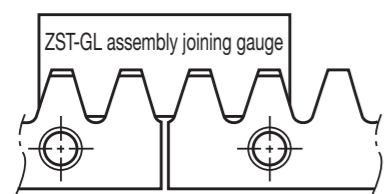


② Machined end type racks such as the ZST and ZSTD Series have pitch tolerance of -0.05 to -0.4mm at the end face. If you try to connect the racks without any space, the pitch will be too small and will cause problems. Please follow the following diagrams, "Connecting the Racks," for assembly.

③ The ZST/ZSTD type of KHK stock ground racks have four surfaces ground parallel with high precision. To maintain true angle, they should be mounted on high precision bases (within 10 μm recommended) as shown below. It is even possible to correct for the angular errors of racks by compensating the mounting base. With recent increases in the requirement for zero backlash linear drives, such accurate assembly as shown is becoming more important. If the racks are not secured properly to the base, they could shift during operation and cause unexpected problems. It is very important to insure firm mounting by the use of dowel pins or similar devices. Please see Page 222 for more details.



Connecting the Racks



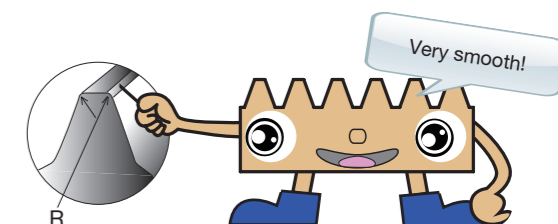
[NOTE] Please use the ZST-GL assembly gauge for the joining rack.



CP Racks & Pinions

KTSCP [CP] Tapered Pinions Material: SCM440 CP5, 10 Page 274	STRCPF/STRCPFD [CP] Tapered Racks Material: S45C CP5, 10 Page 274	MSCP [CP] Ground Spur Gears Material: SCM415 CP5, 10 Page 276	MRGCPF/MRGCPFD [CP] Hardened Ground Racks Material: SCM415 CP5, 10 Page 276	KSCP [CP] Ground Spur Gears Material: SCM440 CP5, 10 Page 278	KRGCPF-H/KRGCPFD-H [CP] Hardened Ground Racks Material: SCM440 CP5, 10 Page 278	KRGCP/KRGCPF/KRGCPFD [CP] Thermal Refined Ground Racks Material: SCM440 CP5, 10 Page 280
SSCPGS [CP] Ground Spur Pinion Shafts Material: S45C CP5, 10 Page 282	SSCPG [CP] Ground Spur Gears Additional Material: S45C CP5~20 Page 282	SRGCP/SRGCPF/SRGCPFD [CP] Hardened Ground Racks Material: S45C CP5~20 Page 284	KRCPF-H/KRCPFD-H [CP] Hardened Racks Material: SCM440 CP5, 10 Page 286	KSSCP [CP] Thermal Refined Spur Gears Material: SCM440 CP5, 10 Page 288	KRCPF/KRCPFD [CP] Thermal Refined Racks Material: SCM440 CP5, 10 Page 288	SSCP [CP] Spur Gears Material: S45C CP2.5~20 Page 290
SRCPF-H/SRCPFD-H [CP] Hardened Racks Material: S45C CP5~20 Page 292	SRCPF-HL/SRCPFD-HL [CP] Laser hardened Material: S45C CP5~20 Page 294	SRCP/SRCPF/SRCPFD/SRCPFK [CP] Racks Material: S45C CP2.5~20 Page 296	SUSCP [CP] Stainless Steel Spur Gears Material: SUS303 CP5, 10 Page 298	SURCPF/SURCPFD [CP] Stainless Steel Racks Material: SUS304 CP5, 10 Page 298	SROCP [CP] Round Racks Material: S45C CP2.5~10 Page 300	FRCP [CP] Metal Flexible Racks Material: SS400 CP5 Page 300

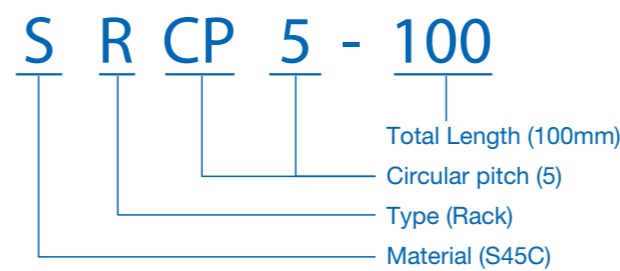
M Includes Made to Order



Catalog Number of KHK Stock Gears

The Catalog Number for KHK stock gears is based on the simple formula listed below. Please order KHK gears by specifying the Catalog Numbers.

(Example) Racks



Material		Other Information	
M	SCM415	F	Racks with Machined Ends
K	SCM440	D	Racks with Bolt Holes
S	S45C	K	Racks with Drill Holes
SU	Stainless Steel	G	Ground Gears
F	SS400	H	Gear teeth induction hardened
Type		S	Pinion Shafts
R	Racks	HL	Laser hardened
RO	Round Racks		
S	Spur Gears		
TR(TS)	Tapered Racks (Spur Gears)		