

**LOOSE CROSS ROLLERS TYPES, SIZES GUIDES & CATALOGUES: PRECISION V(30°45°60°)CHAMFER CROSS ROLLERS FOR LINEAR BEARINGS! SHORT CROSS ROLLERS & CYLINDRICAL ROLLING ELEMENTS FOR SLIDES, GUIDE RAILS, SLEWING BEARINGS ETC.**



**YDTECH® MANUFACTURERS OF CROSSED ROLLERS FOR TABLES, THIN WALL BEARINGS, SLEWING RINGS, GUIDE RAILS! SUPPLIERS OF HARDENED SHORT CROSS ROLLERS FOR LINEAR GUIDEWAYS, CROSS BEARINGS IN CHINA..**



crossed rollers include high precision, rigidity, and the ability to handle both radial and axial loads. cross rollers find applications in various industries. we are professional manufacture of bearing rollers and cylindrical needle rollers. we produce rollers of diameter 0.5 mm to 60 mm. the rollers could satisfy the request of DIN 5402 G2 rollers.



short rollers for crossed roller linear guides(P, V s, Ultra-thin series) application: thin bearings, thin wall bearings, thin wall cross roller bearings, robot bearings, anti creep crossed roller linear guides, cylindrical roller linear rails, ultra thin crossed roller linear guide, linear bearings, linear motors, oneway bearings, oneway clutches, heavy load linear rails, linear rails for CNC, etc



cross rollers are the rolling elements positioned between the carriage and the guide rail. the term "cross" comes from the arrangement of these rollers, which are set at right angles to each other. This design offers benefits such as increased load capacity, rigidity, and accuracy in linear motion.



- home
- products
- contact
- equipments
- customized rolls
- small short rollers
- cross roller bearings
- robot bearings
- fuel pump roller
- linear guides
- wedge blocks
- V chamfering
- cylindrical roller bearings
- steel balls
- dowel pins
- CNC parts
- valve balls
- tungsten pins
- bearing steel
- needle rollers
- cylindrical rollers

**sizes of loose cross roller bearing rollers, super short cross rollers catalogues precision rollers, super short rollers, cylindrical rollers**

OD cross rollers types	spec : OD*Length
1.00mm types	1.00*0.50, 1.00*0.90, 1.00*1.10
2.00mm types	2.00*0.90, 2.00*1.10, 2.00*1.50
2.53mm types	2.53*1.10, 2.53*1.32, 2.53*1.42
2.57mm types	2.57*1.10, 2.57*1.32, 2.57*1.42
2.90mm types	2.90*1.10, 2.90*1.30, 2.90*1.50
3.00mm types	3.00*1.32, 3.00*1.45, 3.00*1.55
3.17mm types	3.17*1.32, 3.17*1.47, 3.17*1.55
3.17mm types	3.17*1.62, 3.17*1.97, 3.17*2.05
4.00mm types	4.00*1.40, 4.00*1.50, 4.00*2.00
5.00mm types	5.00*1.90, 5.00*3.50, 5.50*3.03
6.00mm types	6.00*4.30, 6.30*4.40, 6.50*4.30
8.00mm types	8.00*3.72, 8.00*4.60, 8.00*6.00
cross roller bearing rollers, cross roller rings, cross roller linear bearings, crossed roller linear guideways ,cross roller guide rails	

**cross rolling elements for crossed roller bearing**

cross rollers, in the context of guide rails, refer to the rolling elements that facilitate smooth and precise linear motion. These rollers are typically arranged in a crossed pattern between the rail and the carriage. cross rollers are the rolling elements positioned between the carriage and the guide rail. the term "cross" comes from

the arrangement of these rollers, which are set at right angles to each other. This design offers benefits such as increased load capacity, rigidity, and accuracy in linear motion.

the carriage or slider of cross rollers are the component attached to the load that moves along the guide rail. It typically contains the cross rollers and may have additional features like seals, lubrication systems, or mounting interfaces. in a cross bearing, two sets of cylindrical rollers are arranged at right angles to each other and placed between two parallel guide rails. The rollers are typically made of high-strength bearing steel and are preloaded to ensure consistent contact between the rollers and the guide rails. The design of the cross bearing allows it to accommodate both radial and axial loads, as well as moments about both axes.

**chamfer limits angle for crossed roller bearing rollers, short cylindrical rollers**

standard chamfer chamfer:V(30°45°60°) tolerance:+/-2°, or customize.

needle rollers pins, cylindrical rollers, crossed rollers  
loose , short rollers, bearing rollers

ends	Dmm <sub>w</sub>	Lmm <sub>w</sub>	<sup>max</sup> r1mm <sub>min</sub>	<sup>max</sup> r2mm <sub>min</sub>
types	0.5-50	1.5--50(DIN-5402)	0.3-0.8(DIN-5402)	0.3-1
I-types	NRA	TB	rounded, polished faces, rounded ends	D <sub>w</sub> 1 mm - 6 mm
II-types	NRB	TT	flat ends Underground (available only from about 5 mm as standard, small diameters on request)	D <sub>w</sub> 1 mm - 6 mm
III-types	TR	(RC,ZRO)	standard with polished faces	D <sub>w</sub> 3mm - 50 mm
IV-types	ZB	TP	no cut face	D <sub>w</sub> 3mm-50 mm
V-types	CE	CE	cuspidal enden, cuspidal ends	D <sub>w</sub> 5mm,50mm
needle rollers pins, cylindrical rollers, crossed rollers loose , short rollers, bearing rollers				

The selection of the appropriate cylindrical roller size, material, and accuracy depends on the specific requirements of the cross bearing and the application. The load capacity, precision requirements, and environmental conditions of the application are important factors to consider when selecting cylindrical rollers for use in cross bearings.

**short rollers for crossed roller linear guides(P types)**

precision rollers for crossed roller linear guides P types  
(with round chamfer)

OD cross rollers types	spec OD*Length
1.50mm	1.50*1.40, 1.50*1.43, 1.50*1.45
2.00mm	2.00*1.85, 2.00*1.90, 2.00*1.93, 2.00*1.95
2.50mm	2.50*2.40
3.00mm	3.00*2.90, 3.00*2.93, 3.00*2.95
3.50mm	3.50*3.40
4.00mm	4.00*3.90, 4.00*3.93, 4.00*3.95
4.50mm	4.50*4.30
6.00 mm	6.00*5.90, 6.00*5.93, 6.00*5.95
9.00 mm	9.00*8.90, 9.00*8.93, 9.00*8.95
cross roller bearing rollers, cross roller rings, cross roller linear bearings, crossed roller linear guideways ,cross roller guide rails	

cross roller bearings, cross bearings, joint bearings, rotary table bearings, wind turbine bearings, motor bearings, linear bearings, cross roller bearings, high-grade precision cylinder, one-way clutch, roller one-way clutch, robot, robot bearings, precision instrument bearings, rotary table, automated production lines, wind turbines, new energy projects, environmental protection motor, high-speed table bearings, precision rotary table bearings, linear bearings, crossed roller bearings, joint bearings, precision rotary table bearings ,precision main shaft bearings, high precision bearings.

**catalogues of short cylindrical rollers for crossed roller linear guides(V types)**

cylindrical rollers can be used in cross guide rails to provide smooth and precise linear motion. cross guide rails are typically used in precision machining applications, such as machine tools and semiconductor

manufacturing equipment.

the cylindrical rollers are then inserted into the guide rail and arranged in a specific pattern, such as a V shaped or U shaped groove, to provide the desired linear motion. the rollers are usually preloaded to ensure consistent contact between the rollers and the guide rails, which helps to reduce friction and improve precision.

### precision rollers for crossed roller linear guides V series (with 45 degree chamfer)

cross rollers types	spec OD*Length
3.00mm	V3.0*2.90
4.00mm	V4.0*3.90
6.00 mm	V6.0*5.90
9.00 mm	V9.0*8.90
12.0 mm	V12*11.85
15.0 mm	V15*14.85
18.0 mm	V18*11.85
cross roller bearing rollers, cross roller rings, cross roller linear bearings, crossed roller linear guideways ,cross roller guide rails	

to ensure smooth and reliable linear motion, the cross guide rail and cylindrical rollers must be properly lubricated and maintained. the lubricant used should be selected based on the specific application requirements, such as temperature, speed, and load capacity. regular cleaning and inspection of the cross guide rail and cylindrical rollers are also important to ensure optimal performance and long service life.

crossed roller bearing is one of the commonly used robot bearings, it is a special type of bearing with outer ring rotation and inner ring division. due to its special structure, it can bear radial load, axial load and moment load and other multi-directional load. the size of crossed roller bearings can be miniaturized according to the requirements of the equipment, and the extremely thin form of bearings is close to the limit of the small size, it has high rigidity, and the accuracy can reach P5, P4, P2 level. crossed roller bearings are often used in joints and rotating parts of industrial robots, rotary tables of machining centers, hospital equipment, military, etc. they are available in RA, RB, RU, CRBH, SX, etc

### types of short rollers for crossed roller linear guides ultra thin series(length is mostly half of OD)

#### precision rollers for crossed roller linear guides, ultra thin series

cross rollers types	spec OD*Length
1.50mm	1.50*0.90
2.00mm	2.00*1.10
3.00mm	3.00*1.60
4.00mm	4.00*2.70
4.50mm	4.50*2.60
6.00 mm	6.00*4.10
cross roller bearing rollers, cross roller rings, cross roller linear bearings, crossed roller linear guideways ,cross roller guide rails	

cylindrical rollers can be used in cross one-way bearings, as indexing clutches or sprag clutches, which are used in various applications to provide unidirectional motion and to prevent reverse rotation.

in a cross one-way bearing, the cylindrical rollers are arranged in a cross pattern and placed between two concentric rings. one of the rings has ramps on the inner surface, which allow the rollers to move in one direction and lock in the other direction. The other ring is typically stationary and serves as the housing for the bearing.

### parameters of precision rollers for crossed roller linear

#### precision rollers for crossed roller linear guides

Material:	GCR15 ,AISI5200, 100Cr6
Hardness	HRC60-65
OD tolerance	0.001mm (Group OD per 0.001mm)
Length tolerance	+0/-0.03mm
Parallelism	0.005mm
Perpendicularity	0.005mm
End face runout	0.005mm
Roundness	0.0005mm
Roughness	Ra0.08um
cross roller bearing rollers, cross roller rings, cross roller linear bearings, crossed roller linear guideways ,cross roller guide rails	

**cross roller bearing rollers, cross roller rings, cross roller linear bearings**

when the bearing is rotated in the direction of the ramps, the rollers are forced to roll over the ramps and engage with the outer ring, providing unidirectional motion. When the bearing is rotated in the opposite direction, the rollers move in the opposite direction, disengaging from the outer ring and preventing reverse rotation.

the use of cylindrical rollers in cross one-way bearings provides high load capacity and low friction, making them suitable for applications that require high torque transmission, such as printing presses, conveyors, and packaging machinery.

**grouping of crossed rollers,cylindrical rollers, bearing rollers, cylindrical rolling elements**

crossed rollers,cylindrical rollers, bearing rollers,  
cylindrical rolling elements

separation efficiency	0.5um/1um/2um (precision can be customized)
speed sorting	150 - 300 pcs/min(stepless)
range	needles 1.5mm ~ 6.35mm Length: 4mm ~ 35mm roller 5mm ~ 16mm Length: 3mm ~ 35mm rollers 1mm ~ 16mm
static stability	0.5 micron/24 hours
packet interval	0.5 micron - 3.0 micron (adjustable)
packet group number	3-20 groups
needle rollers pins,crossed rollers,cylindrical rollers, bearing roller pins,	

**cross rolling elements for guide rail**

cross rollerse are the rolling elements positioned between the carriage and the guide rail. cross rollers are set at right angles to each other. the cross rollers design offers benefits. the carriage or slider typically contains the cross rollers and may have additional features like seals, lubrication systems, or mounting interfaces.

cross rollers, in the context of guide rails, refer to the rolling elements that facilitate smooth and precise linear motion. These rollers are typically arranged in a crossed pattern between the rail and the carriage. crossed roller guide rails are components used in linear motion systems to guide and support the movement of loads along a specific path.

the advantages of crossed rollers include high precision, rigidity, and the ability to handle both radial and axial loads. They find applications in various industries, such as manufacturing, automation, semiconductor production, and precision machinery, where precise linear motion is crucial.

**chemical properties for stainless steel cross rollers only ,and short cylindrical rollers**

stainless steel - crossed rollers,cylindrical rollers, bearing  
rollers, cylindrical rolling elements

types	AISI 302	AISI 304	AISI 316	AISI 316L	AISI 420	AISI 440C
chrome	17-19	18-20	16-18	16-18	12-14	16-18
carbon	0.15 max	0.08 max	0.08 max	0.03 max	0.15 max	0.95-1.2
nickel	8-10	8-10.5	10-14	10-14	-	-
manganese	2max	2 max	2 max	2 max	1 max	max
silicon	1max	1max	1max	1 max	1 max	1 max

phosphorous	0.045max	0.045max	0.045max	0.045 max	0.045max	.040 max
suphur	0.03max	0.03max	0.03max	0.03max	0.03 max	0.03 max
molybdenum	...	...	...	2-3	2-3	...0.75 max
stainless steel crossed rollers,cylindrical rollers, bearing rollers, cylindrical rolling elements						

both inner and outer rings have a solid one piece onstruction. therefore, high accuracy and high rigidity are achieved, and mounting errors can be minimized. as separators are incorporated between the cylindrical rollers for smooth rotation, these bearings are suitable for applications where rotational speed is comparatively high.

the selection of the appropriate cylindrical roller size, material, and accuracy depends on the specific requirements of the cross one-way bearing and the application. the load capacity, torque requirements, and environmental conditions of the application are important factors to consider when selecting cylindrical rollers for use in cross one-way bearings.

### chemical properties for crossed rollers,cylindrical rollers, bearing rollers, cylindrical rolling elements

#### crossed rollers,cylindrical rollers, bearing rollers, cylindrical rolling elements

specification	mark	C	Si	Mn	S	P	Cr	Mo
china(GB)	GCr15	0.95-1.05	0.15-0.35	0.25-0.45	<0.025	<0.025	1.40-1.65	-
USA(AISI,UNS)	52100(G52986)	0.98-1.10	0.15-0.35	<0.5	<0.025	<0.025	1.30-1.60	<0.10
japan (JIS)	SUJ2	0.95-1.10	0.15-0.35	<0.5	<0.025	<0.025	1.30-1.60	<0.08
germany(DIN/W-Nr)	100Cr6/w3(1.3505)	0.95-1.05	0.15-0.35	<0.5	<0.025	<0.025	1.30-1.60	<0.08
france NF	100C6	0.95-1.05	0.15-0.35	<0.5	<0.025	<0.025	1.30-1.60	<0.08
UK(BS)	535A99	0.95-1.05	0.15-0.35	<0.5	<0.025	<0.025	1.30-1.60	<0.08
sweden(SKF)	SKF3	0.95-1.05	0.15-0.35	<0.5	<0.025	<0.025	1.30-1.60	<0.08
crossed rollers,cylindrical rollers, bearing rollers, cylindrical rolling elements								

### cross rolling elements for rotary table

crossed rollers offer excellent precision and accuracy, making them suitable for applications where precise angular positioning is essential. these crossed roller bearings are known for their compact design, making them suitable for applications where space is limited.

the crossed rollers arrangement of the rollers provides high rigidity, allowing the rotary table to handle varying loads without significant deflection.

cross rollers refer to a type of bearing arrangement used to support and facilitate smooth rotation of the table. rotary table is a mechanical device that allows objects to be rotated around a central axis. crossed roller bearings are often employed in rotary tables due to their ability to handle both radial and axial loads while maintaining high precision.

crossed roller bearings consist of cylindrical rollers arranged in a crossed pattern between the inner and outer races. this design allows for high rigidity and load capacity in both radial and axial directions. The crossed arrangement minimizes friction, provides more contact points, and ensures even load distribution.