

Spear & Tongues

4PVD
Service & Supply

3-fold Rotation for Inserts



Rods

Base Plates

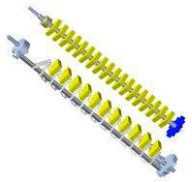

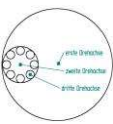
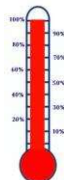
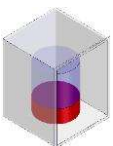

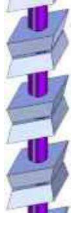
Spacers & more

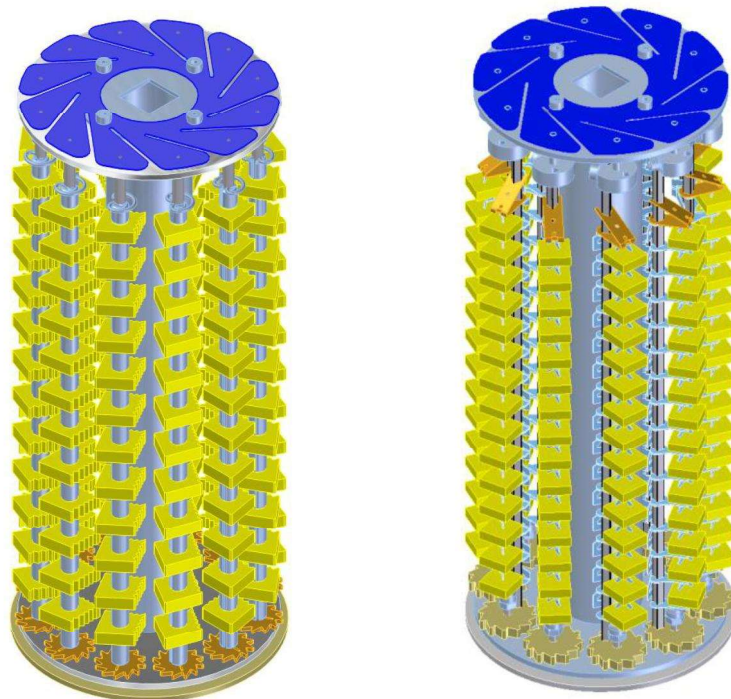
www.webshop.4pvd.de

Spear & TongS Fixture system for indexable inserts and small parts


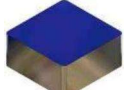

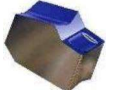


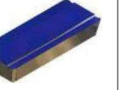

Spear and TongS fixtures hold a large quantity of small substrates as indexable inserts in a very compact space. If the substrates have a hole where the fixture can hold them, the Spear holder is a very simple rod with a gear for the third rotation axle at the bottom end.

For substrates without that hole, TongS fixtures are used which keep the substrates between their tips by force. The standard Spear and Tongs fixture sizes fit to plates with a bearing on the lower and the upper end. They may rotate around two or three axes on the substrate table. A spring protects the rods against unwanted displacement.

Modell Spear / TongS	Planet	Axles	T_{max}	Economy	Mix	SDV
	 Ø80 — Ø200	 2-3	 500°C	 high	 suitable	 very uniform

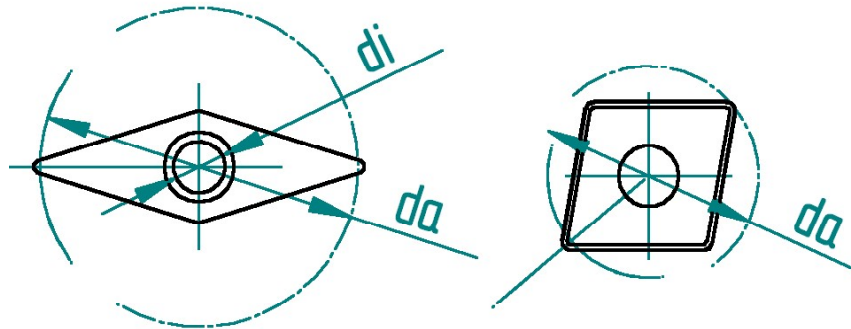


Base Plate with Spear (le.) and TongS (ri.) Rods

with hole 	negative 	positive 	cut off 1-s. 	cut off 2-s. 	cut off 4-s 	reaming 	Rough turn. 
+	+	+	○	○	+	○	+

Spear / TongS fixtures fit well (+) with limitations (o) or not (-) for the above marked substrates

For the selection of the suitable size of **Spear** fixtures basically two dimensions of the substrates are important. First this is the diameter of the hole (If there is no hole we need all dimensions of the substrate). The rod should be at least 0,5mm smaller in diameter than the hole in the substrate. Smaller gaps may lead to problems while unloading. Larger gaps lead to more fuzzy position of the insert on the rod.



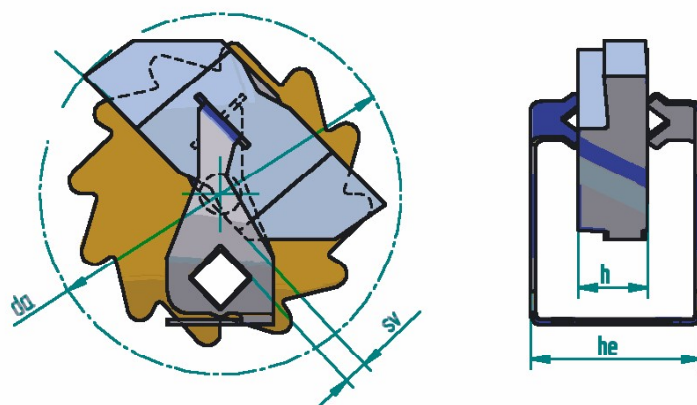
Indexable inserts with outer circle d_a and hole d_i

The outer circle around the substrate defines the necessary distance from the edge of the substrate table or planetary plate. This also defines the size of the gear at the bottom end of the Spear rod.

Next the length of the rod has to be defined. Rods in 250mm and 300mm length are usually on stock. Other lengths are available on demand. Rods of diameter 3,0mm and higher can be built from stainless steel up to a length of 300mm. Thinner rods should be selected shorter or be made from more stiff (and more expensive) materials

Thicker rods can span over larger distances. This is useful if the coating length is e. g. 450mm. But usually for coating zone height of 400mm and more two or more levels of Spear rods are used.

The choice for **TongS** clips also will follow the outer circle (d_a) and the thickness of the substrates (h).



Dimensions of TongS clips

The height h (or thickness) of the substrates defines the nominal width of the opening of the TongS clip and with this also the total height of the TongS clip element (h_e). Mostly TongS clip elements are of two or three times the height than the substrates they are made for ($2 \cdot h < h_e < 3 \cdot h$). With this the distance from substrate to substrate is adjusted. One size of TongS can take substrates of nominal height $h \pm 1,0\text{mm}$.

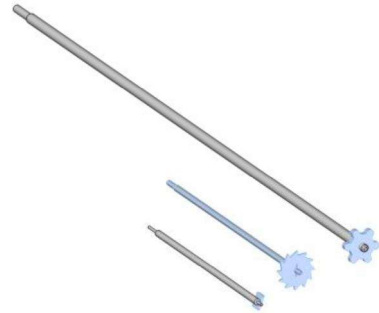
Spear / TongS Custom Designs

Spear and Tongs custom designs are adapted to special applications. The available sizes are listed in separate publications:

Custom Dimensions

Rods and Plates may be manufactured in other dimensions than listed in this catalogue:

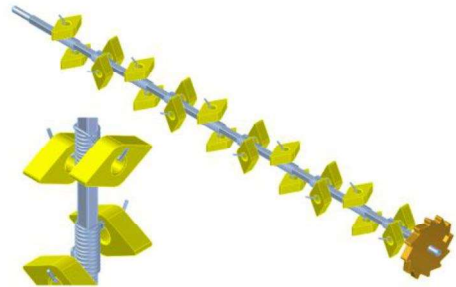
- Different length and height
- Different diameter of plates, rods or end of the rods
- For rotation CW of both senses
- Custom gears and custom plates



Rod with Hooks

For substrates with only small holes:

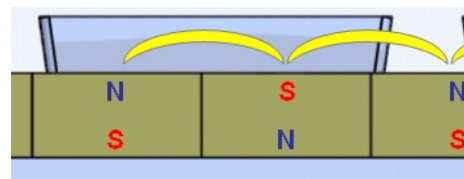
- Hole diameter from Ø 1,0mm
- High density for small pieces
- Easy loading
- Not for pretreatment and cleaning
- Decorative coating all over



Magnetic Rods

If nothing works the magnet will still do it:

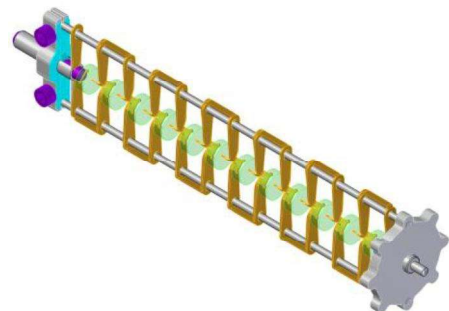
- For extremely small parts
- At least one flat surface required
- Easy and flexible loading
- Not for pretreatment and cleaning



TongS 2

TongS System with double rods:

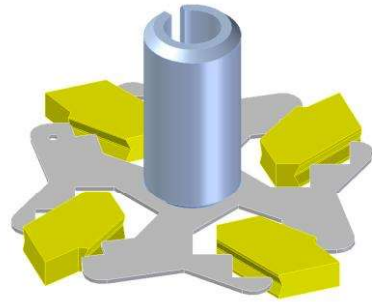
- More uniform thickness distribution
- High clamping force
- Lower batch density



Fixture for single sided cut-off GRIP

Clips with form following shape for single sided cut-off inserts:

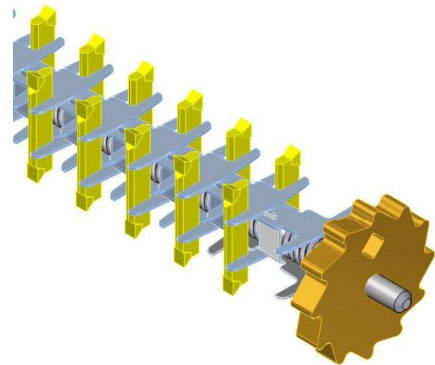
- Optimized orientation of cutting edge
- High batch density
- Easy loading
- Also for cleaning
- One holder for one size of inserts



TongS for double sided cut-off

TongS clips with force-fitting geometry for double sided cut-off inserts:

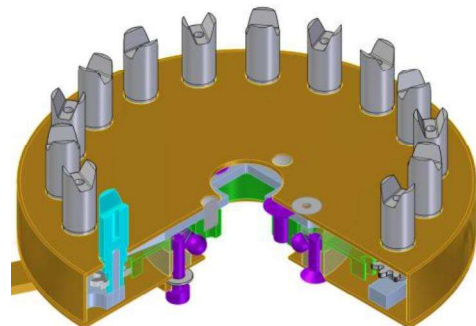
- High batch density
- Optimized orientation of cutting edge
- High clamping force
- Also for cleaning
- Relatively flexible usage



Base plates with permanent rotation

Colt Plates with continuous enforced rotation

- High reliability of rotation
- For right and left rotation
- Capsuled design
- Smooth rotation
- Overload clutch



On the following pages you will find our stock program:

- Rods for Inserts with hole (page 6 ff.)
- Base Plates for Spear and TongS (page 7 ff.)
- TongS Clips, Rods and Accessory (page 10 ff.)
- Kicker fingers for the third rotation axle (page 11)
- Spacer tubes, locker clips and accessory (page 12)

Further accessory, complete table systems and adaptors you will find in catalogue No. 9 "table systems".

Rods with Gear for Kicker Ø 15mm

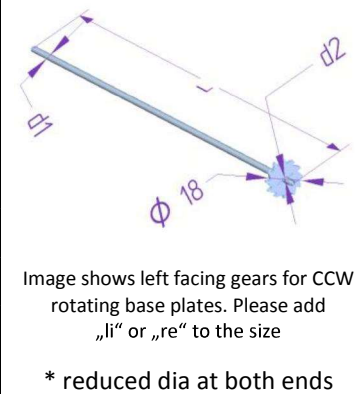
Size	d1 Ø Rod	d2 Ø End	€ @ 10	€ @ 50	€ @ 100	€ @ 500	Item number
Z15 x 1,5	1,5	1,5	5,20	4,40	4,00	3,60	403941828-1
Z15 x 2,0	2,0	2,0	5,20	4,40	4,00	3,60	403941828-2
Z15 x 2,5	2,5	2,5	5,20	4,40	4,00	3,60	403941828-25
Z15 x 3,0	3,0	3,0	5,20	4,40	4,00	3,60	403941828-3
Z15 x 4,0	4,0	4,0	5,20	4,40	4,00	3,60	403941828-4
Z15a x 5,0*	5,0	4,0	10,40	8,90	8,00	7,30	403941829-5
Z15a x 6,0*	6,0	4,0	10,40	8,90	8,00	7,30	403941829-6



Size fits to base plates with holes Ø 4,3 and distance hole to OD (r1) = 7,5 – 9,0mm
Please add the wanted length and rotation sense to the size e.g. Z15 x 4,0 L250 li

Rods with Gear for Kicker Ø 18mm

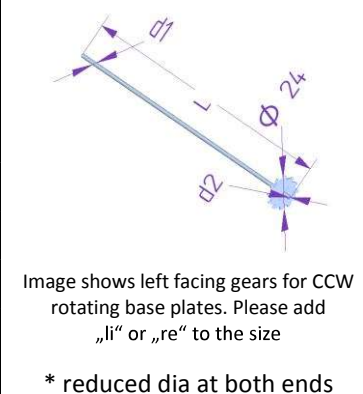
Size	d1 Ø Rod	d2 Ø End	€ @ 10	€ @ 50	€ @ 100	€ @ 500	Item number
Z20 x 1,5	1,5	1,5	5,20	4,40	4,00	3,60	403941830-1
Z20 x 2,0	2,0	2,0	5,20	4,40	4,00	3,60	403941830-2
Z20 x 2,5	2,5	2,5	5,20	4,40	4,00	3,60	403941830-25
Z20 x 3,0	3,0	3,0	5,20	4,40	4,00	3,60	403941830-3
Z20 x 4,0	4,0	4,0	5,20	4,40	4,00	3,60	403941830-4
Z20a x 5,0*	5,0	4,0	10,40	8,90	8,00	7,30	403941831-5
Z20a x 6,0*	6,0	4,0	10,40	8,90	8,00	7,30	403941831-6



Size fits to base plates with holes Ø 4,3 and distance hole to OD (r1) = 9,0 – 12,5mm
Please add the wanted length and rotation sense to the size e.g. Z20 x 4,0 L250 li

Rods with Gear for Kicker Ø 24mm

Size	d1 Ø Rod	d2 Ø End	€ @ 10	€ @ 50	€ @ 100	€ @ 500	Item number
Z26 x 1,5	1,5	1,5	5,20	4,40	4,00	3,60	403941832-1
Z26 x 2,0	2,0	2,0	5,20	4,40	4,00	3,60	403941832-2
Z26 x 2,5	2,5	2,5	5,20	4,40	4,00	3,60	403941832-25
Z26 x 3,0	3,0	3,0	5,20	4,40	4,00	3,60	403941832-3
Z26 x 4,0	4,0	4,0	5,20	4,40	4,00	3,60	403941832-4
Z26a x 5,0*	5,0	4,0	10,40	8,90	8,00	7,30	403941833-5
Z26a x 6,0*	6,0	4,0	10,40	8,90	8,00	7,30	403941833-6



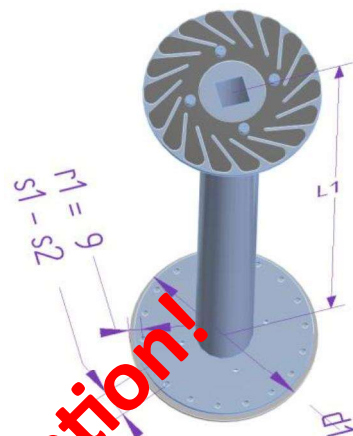
Size fits to base plates with holes Ø 4,3 and distance hole to OD (r1) = 12 - 20mm
Please add the wanted length and rotation sense to the size e.g. Z26 x 4,0 L250 li

Further gears and lengths at www.webshop.4pvd.de or upon inquiry.

Base Plates for Rods with Gear up to Ø 15mm

Size OD x hole Qty.	d1 PCD	s1-s2 r1	€ @ 1	€ @ 3	€ @ 10	€ @ 20	Item number
BT120 x 18	120	17,5	166,40	143,30	128,00	117,70	Upon Inquiry
	18	9,0					
BT130x18	130	19,0	166,40	143,30	128,00	117,70	403941041
	18	9,0					
BT130x18s2*	130	19,0	166,40	143,30	128,00	117,70	Upon Inquiry
	18	9,0					

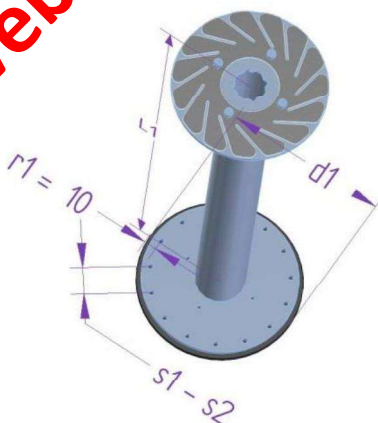
* for rod diameter up to Ø 2mm (the thin rods will run more precisely)
Please add **Central hole** and **Height** to the size e. g. BT130 x 18 **V15 h300**



Base Plates for Rods with Gear up to Ø 18mm

Size OD x hole Qty.	d1 PCD	s1-s2 r1	€ @ 1	€ @ 3	€ @ 10	€ @ 20	Item number
BT120 x 15	120	20,0	166,40	143,30	128,00	117,70	Upon Inquiry
	15	9,0					
BT130x15	130	22,9	166,40	143,30	128,00	117,70	403941040
	15	10,0					
BT130x15s2*	130	22,9	166,40	143,30	128,00	117,70	Upon Inquiry
	15	10,0					

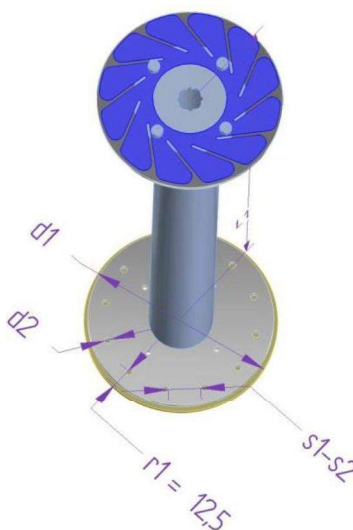
* for rod diameter up to Ø 2mm (the thin rods will run more precisely)
Please add **Central hole** and **Height** to the size e. g. BT130 x 15 **V15 h300**



Base Plates for Rods with Gear up to Ø 24mm

Size OD x hole Qty.	d1 PCD	s1-s2 r1	€ @ 1	€ @ 3	€ @ 10	€ @ 20	Item number
BT120 x 12	120	24,6	159,90	137,70	123,00	113,10	415550330
	12	12,5					
BT130x12	130	27,2	159,90	137,70	123,00	113,10	403941039
	12	12,5					
BT130x12s2*	130	27,2	159,90	137,70	123,00	113,10	Upon Inquiry
	12	12,5					

* for rod diameter up to Ø 2mm (the thin rods will run more precisely)
Please add **Central hole** and **Height** to the size e. g. BT130 x 12 **V15 h300**



Further diameters, division and lengths at www.webshop.4pvd.de or upon inquiry.

Rods with Gear for Kicker Ø 32mm

Size	d1 Ø Rod	d2 Ø End	€ @ 10	€ @ 50	€ @ 100	€ @ 500	Item number
Z32 x 1,5	1,5	1,5	5,20	4,40	4,00	3,60	403941834-1
Z32 x 2,0	2,0	2,0	5,20	4,40	4,00	3,60	403941834-2
Z32 x 2,5	2,5	2,5	5,20	4,40	4,00	3,60	403941834-25
Z32 x 3,0	3,0	3,0	5,20	4,40	4,00	3,60	403941834-3
Z32 x 4,0	4,0	4,0	5,20	4,40	4,00	3,60	403941834-4
Z32a x 5,0*	5,0	4,0	10,40	8,90	8,00	7,30	403941835-5
Z32a x 6,0*	6,0	4,0	10,40	8,90	8,00	7,30	403941835-6

Image shows left facing gears for CCW rotating base plates. Please add „li“ or „re“ to the size

* reduced dia at both ends

Size fits to base plates with holes Ø 4,3 and distance hole to OD (r1) = 16 - 20mm
Please add the wanted length and rotation sense to the size e.g. Z32 x 4,0 L250 li

Rods with Gear for Kicker Ø 41mm

Size	d1 Ø Rod	d2 Ø End	€ @ 10	€ @ 50	€ @ 100	€ @ 500	Item number
Z40 x 1,5	1,5	1,5	5,20	4,40	4,00	3,60	403941836-1
Z40 x 2,0	2,0	2,0	5,20	4,40	4,00	3,60	403941836-2
Z40 x 2,5	2,5	2,5	5,20	4,40	4,00	3,60	403941836-25
Z40 x 3,0	3,0	3,0	5,20	4,40	4,00	3,60	403941836-3
Z40 x 4,0	4,0	4,0	5,20	4,40	4,00	3,60	403941836-4
Z40a x 5,0*	5,0	4,0	10,40	8,90	8,00	7,30	403941837-5
Z40a x 6,0*	6,0	4,0	10,40	8,90	8,00	7,30	403941837-6

Image shows left facing gears for CCW rotating base plates. Please add „li“ or „re“ to the size

* reduced dia at both ends

Size fits to base plates with holes Ø 4,3 and distance hole to OD (r1) = 20 - 25mm
Please add the wanted length and rotation sense to the size e.g. Z32 x 4,0 L250 li

Interface Base plates / planetary shank table

V12 V15

V20

RF20

RN15

RN25

RN36

The figure shows frequent used centric reception of base plates. You can choose them by attaching the brief description at the size or Item number, e.g. BT130 x 06 [V15](#).

Further diameters and lengths at www.webshop.4pvd.de or upon inquiry.

Base Plates for Rods with Gear up to Ø 32mm

Size OD x hole Qty.	d1 PCD	s1-s2 r1	€ @ 1	€ @ 3	€ @ 10	€ @ 20	Item number
BT120 x 08	120	33,7	159,90	137,70	123,00	113,10	415550331
	08	16,0					
BT130x08	130	37,5	159,90	137,70	123,00	113,10	403941037
	08	16,0					
BT130x08s2*	130	37,5	159,90	137,70	123,00	113,10	Upon Inquiry
	08	16,0					

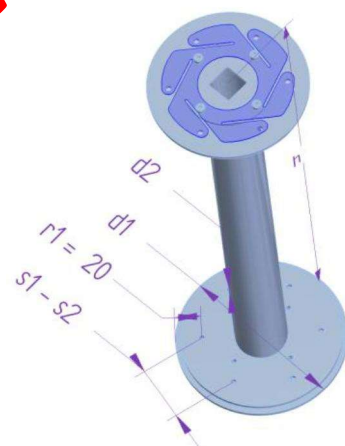
* for rod diameter up to Ø 2mm (the thin rods will run more precisely)
Please add **Central hole** and **Height** to the size e. g. BT130 x 08 **V15 h300**



Base Plates for Rods with Gear up to Ø 40mm

Size OD x hole Qty.	d1 PCD	s1-s2 r1	€ @ 1	€ @ 3	€ @ 10	€ @ 20	Item number
BT120 x 05	120	47,5	153,40	132,10	118,00	108,50	Upon Inquiry
	05	20,0					
BT130x06	130	45,0	153,40	132,10	118,00	108,50	403941036
	06	20,0					
BT130x06s2*	130	45,0	153,40	132,10	118,00	108,50	Upon Inquiry
	06	20,0					

* for rod diameter up to Ø 2mm (the thin rods will run more precisely)
Please add **Central hole** and **Height** to the size e. g. BT130 x 06 **V15 h300**



Spare Springs for base plates Ø 130

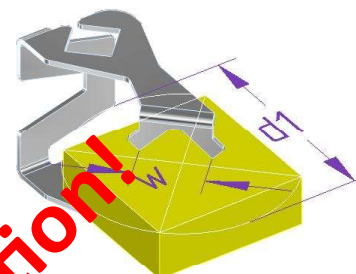
Size	d1 of plate s	PCD (div.)	€ @ 5	€ @ 10	€ @ 100	Item number
spring 130T06	130	6	15,20	13,10	11,70	392931818
spring 130T08	130	8	16,50	14,20	12,70	392932123
spring 130T10	130	10	17,80	15,30	13,70	400891538
spring 130T12	130	12	19,10	16,40	14,70	392932052
spring 130T15	130	15	20,40	17,50	15,70	394581947
spring 130T18	130	18	21,70	18,70	16,70	392931819



Tongs rods and clips are ordered separately, as the quantity of clips on a rod depends of the length of the rod and of the thickness of the inserts. The price per rod is added from the rod with gear, head and locker clip plus the quantity of clips needed. For a rod of 300mm length you will need approx. 14 clips and one more clip for each 15mm added. Clips of sizes 2 – 4 will fit on the same size of rods, but may not be mixed within one rod.

TongS Clips for cutting insert without hole

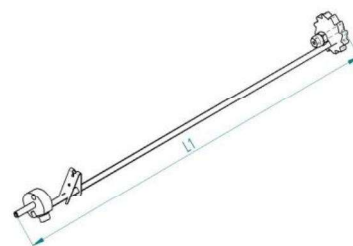
Size	Clamp width w	Max. OD Ø d1	€ @ 10	€ @ 50	€ @ 100	€ @ 500	Item number
TGS No. 02	3,0-5,0	17,0	2,70	2,30	2,10	1,90	403962233
TGS No. 03	5,0	22,0	2,80	2,40	2,20	2,00	396172119
TGS No. 04	6,0	20,0	2,90	2,50	2,30	2,10	389850214
TGS No. 05	6,0	32,0	3,90	3,30	3,00	2,70	390241305
TGS No. 06	15,0	40,0	5,20	4,40	4,00	3,60	Upon inquiry



Attach your insert thickness h after the size e.g. TGS Nr.04 h=5. Clamping range = $h \pm 1\text{mm}$

TongS Rods (without Clips)

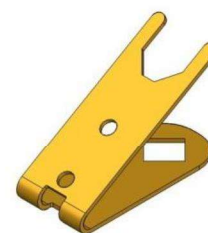
Size (for Clip)	d1 Ø Gear	€ @ 10	€ @ 50	€ @ 100	Item number
No. 2 – 4	30,0	53,80	46,30	41,40	403961808
No. 5	42,0	57,30	49,30	44,10	403961809
No. 6	58,0	61,00	52,60	47,00	Upon inquiry



Attach needed length of Rod and direction of rotation after the size e.g. Nr.2-4 L250 li

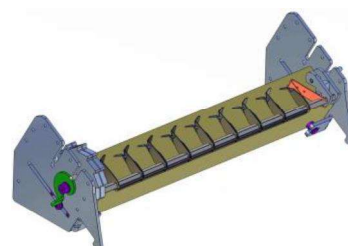
Spare parts for TongS Rods

Type	€ @ 10	€ @ 50	€ @ 100	Item number
clip No. 2-4	1,80	1,50	1,40	389392010
clip No. 5	1,90	1,60	1,50	389392011
clip No. 6	3,60	3,10	2,80	Upon inquiry



Loading Tray for TongS Rods

Type	€ @ 1	€ @ 5	Item number
Loading Tray UNI	190,00	154,30	397891523
PinUNI	8,00	6,50	Upon inquiry



Further diameters and lengths at www.webshop.4pvd.de or upon inquiry.

Kicker Spring Holder for third and higher rotation axle (also triggers, spring or clinch)

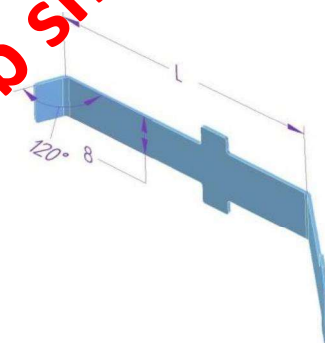
Size	d1 Ø Rod	Corr. Spring	€ @ 1	€ @ 10	€ @ 50	€ @ 100	Item-- number
FCL 10	10,0	12-16	15,60	12,70	10,90	9,80	390821649
FCL 12	12,0	12-16	15,60	12,70	10,90	9,80	403531031
FCL 16	16,0	12-16	15,60	12,70	10,90	9,80	405640937
FCL 25	25,0	25	19,00	15,40	13,30	11,90	400622133



Order Springs separately from the charts below

Slim Springs for Kicker Spring Holder (Holders as above)

Size 12-16	Length [mm]	Thick [mm]	for Holder	€ @ 10	€ @ 50	€ @ 100	Item-- number
M45	45	0,6	10-16	2,90	2,50	2,30	3921312
M60	60	0,6	10-16	2,90	2,50	2,30	389491803
M60-0,8	60	0,8	10-16	3,30	2,90	2,60	405221056
M90-0,8	90	0,8	10-16	3,50	3,00	2,70	415550148
Size 25							
M60-0,8	60	0,8	25	3,70	3,20	2,90	400622134

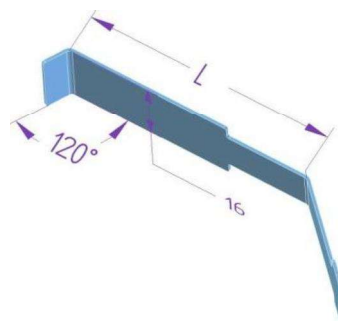


Length L from rod to nose

Slim springs for broad gears (COLT)

Broad Springs for Kicker Spring Holder (Holders as above)

Size 12-16	Length [mm]	Thick [mm]	for Holder	€ @ 10	€ @ 50	€ @ 100	Item-- number
B45	45	0,6	10-16	2,90	2,50	2,30	405061307
B60	60	0,6	10-16	2,90	2,50	2,30	392521939
B60-0,8	60	0,8	10-16	3,60	3,10	2,80	415550725
B90-0,8	90	0,8	10-16	3,50	3,00	2,70	399860958
Size 25							
B60-0,8	60	0,8	25	3,70	3,20	2,90	400622134

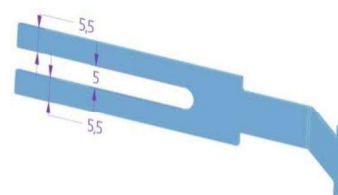


Length L from rod to nose

Broad Springs for slim gears (SPEAR, TONGS), Length taken from kicker rod to working point

Double Springs for Kicker Spring Holder (Holders as above)

Size 12-16	Length [mm]	Thick [mm]	for Holder	€ @ 10	€ @ 50	€ @ 100	Item-- number
D60	60	0,6	10-16	3,70	3,20	2,90	389491806
Size 25							
D60	60	0,8	25	3,70	3,20	2,90	400622134

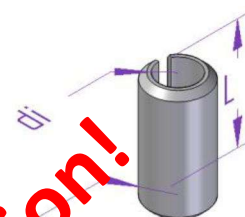


Springs with double end, ends not bend at delivery.

These kicker assemblies are mounted to the rods parallel to the planetary axes. They transmit the rotation to the Colt, Boxer, Spear and TongS fixtures for the third and higher rotation axes. The assemblies can be mounted to the rod sideways. The position is fixed with the central bolt. The spring can be changed without tools, if the assembly is not mounted to the rod.

Spacer for Spear Rods

Size da Ø x L	di Ø	L Length	€ @ 10	€ @ 100	€ @ 500	€ @ 1000	Item number
3 x 12	1,7	12	0,30	0,15	0,13	0,12	DIN1481D03L12
3 x 16	1,7	16	0,30	0,15	0,13	0,12	DIN1481D03L16
3 x 20	1,7	20	0,30	0,15	0,13	0,12	DIN1481D03L20
4 x 12	2,7	12	0,30	0,15	0,13	0,12	DIN1481D04L12
4 x 16	2,7	16	0,30	0,15	0,13	0,12	DIN1481D04L16
4 x 20	2,7	20	0,30	0,15	0,13	0,12	DIN1481D04L20
5 x 12	3,2	12	0,30	0,15	0,13	0,12	DIN1481D05L12
5 x 16	3,2	16	0,32	0,16	0,14	0,13	DIN1481D05L16
6 x 12	4,1	12	0,50	0,20	0,16	0,14	DIN1481D06L12
6 x 16	4,1	16	0,50	0,20	0,16	0,14	DIN1481D06L16
6 x 20	4,1	20	0,50	0,20	0,16	0,14	DIN1481D06L20
8 x 16	5,3	16	0,50	0,25	0,20	0,18	DIN1481D08L16
8 x 20	5,3	20	0,60	0,25	0,20	0,18	DIN1481D08L20



Spacers, slotted at the side to put them between the rod and the reversing plates

Safety Clip for Spear Rods

Size		€ @ 5	€ @ 10	€ @ 20	€ @ 50	Item number
Rod lock spring 2	2 - 6	2,30	2,00	1,80	1,60	393781017

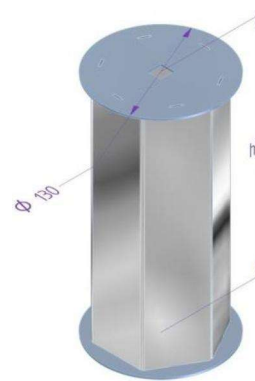


Spring have to be twisted once only and may be bent back multiple times.

Dummy towers to fill non-used planetary positions

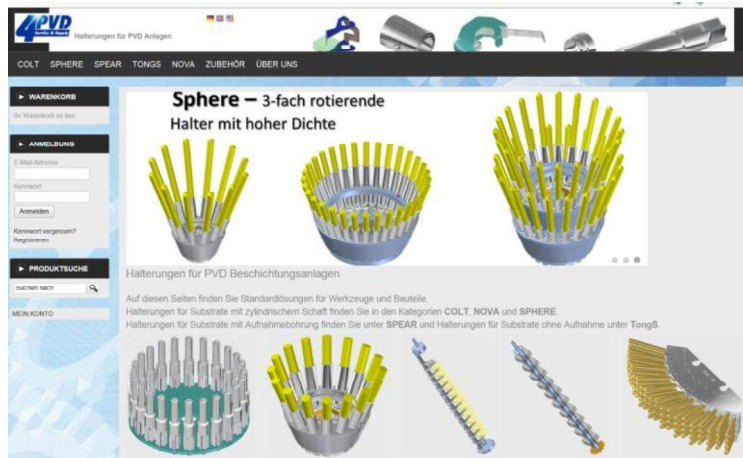
Size	H1	€ @ 1	€ @ 3	€ @ 5	€ @ 10	Item number
DMY130-250va	250	93,30	80,40	96,90	66,00	Auf Anfrage
DMY130-300va	300	85,80	73,90	96,90	60,70	Auf Anfrage
DMY130-250St	250	85,80	73,90	96,90	60,70	Auf Anfrage
DMY130-300St	300	85,80	73,90	96,90	60,70	Auf Anfrage

Dummy-tower available in stainless steel (VA) and magnetic steel (St).
Samples can be attached at a magnetic Dummy with magnets.



Choose center hole of the table (page 8) und attach at the size (e.g. DMY130-250va-V15)

Easy product finding in our 4pvd Online Shop



On the main page our products are sorted according to our product lines Colt, Sphere, Spear, TongS, Nova and accessory.

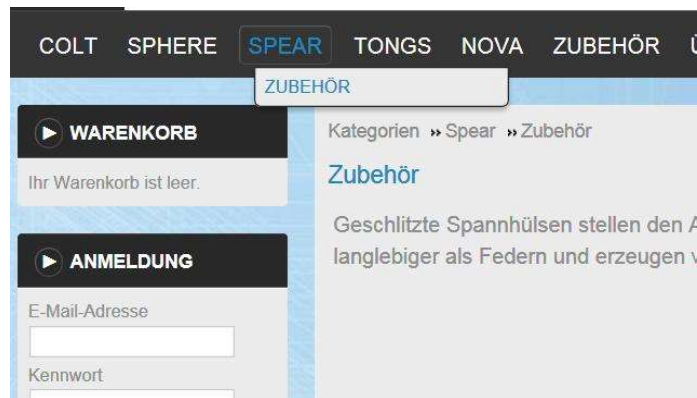
In the center some examples will appear in intervals.

You can browse through the shop with or without log-in.

Behind the main categories other menus are available.

You may also search for key words or item numbers.

A log in account is only necessary for ordering. If you are already a 4pvd customer, please let us fill your account data.



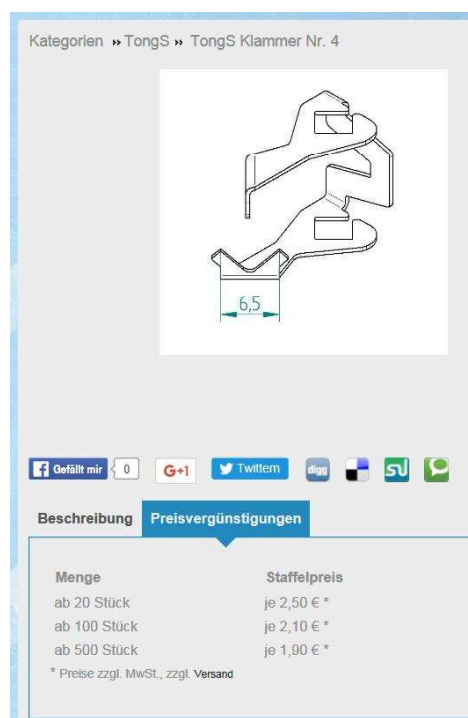
For each item you can find dimensions, prices and discounts as well as stock availability.

Corresponding accessory is listed at the bottom part of the item window.

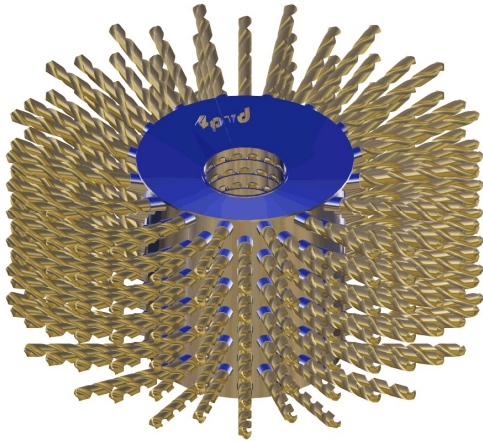
Get into the shop via the link for our website www.4pvd.de or directly via: www.webshop.4pvd.de

The pages and descriptions may be displayed in English and German language.

Earlier orders can be recalled and products can be place on the memory board until the next visit.



Other 4pvd Fixture Systems



Nova fixtures position the products radial, so the tips face to the evaporators and get the highest coating thickness. Nova is most useful for products with short length of operation as end mills, micro drills, punches, etc.

If rotation along the products axle is not necessary, nova provides huge capacity for your furnace.

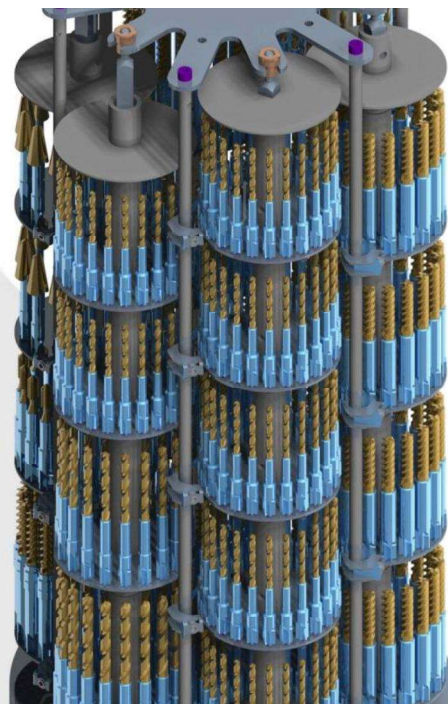
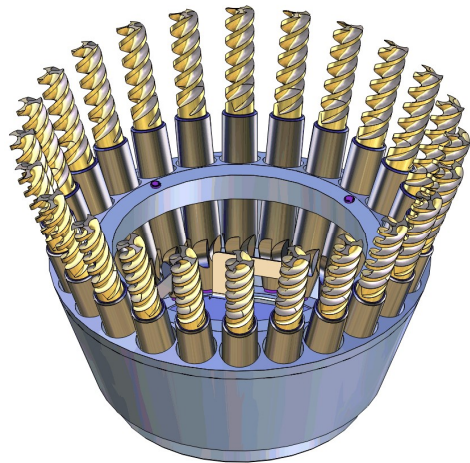
Nova is available for up to three rotation axes, with encoding and optional with integrated clinch.

By use of the **Sphere** fixtures your products are tilt with the tips to the evaporators and the highest film thickness is applied on the top.

This provides best quality to your products and optimized utilization of the target material e. g. for coating of drills, mills, punches, forming tools and bolts.

Sphere is available for up to three rotation axes, with encoding and integrated clinch.

<http://www.4pvd.de/html/sphere.html>



Holders of the Cold series resemble the mostly used system of the manufacturer in the point of the arrangement of sleeves.

Through a rotation with the maximum of the triple an even coat is applied at the perimeter of your products, a **must-have** for drills, cutter, taps and reamers.

It is available with up to four rotation axes, with a one - sided or overhung extension, with encoding and with integrated actuator.

Find out more at: <http://www.4pvd.de/html/colt.html>

Other 4pvd Products

Table Systems

Substrate tables for 2-fold rotation with up to 18 planets, optionally on different PCD (e. g. for occasionally coating of bigger parts)

Flat design for maximum utilization of your coating zone. Modular concept for fast maintenance. Low weight, low torque.

Double shield set for better heat insulation available.

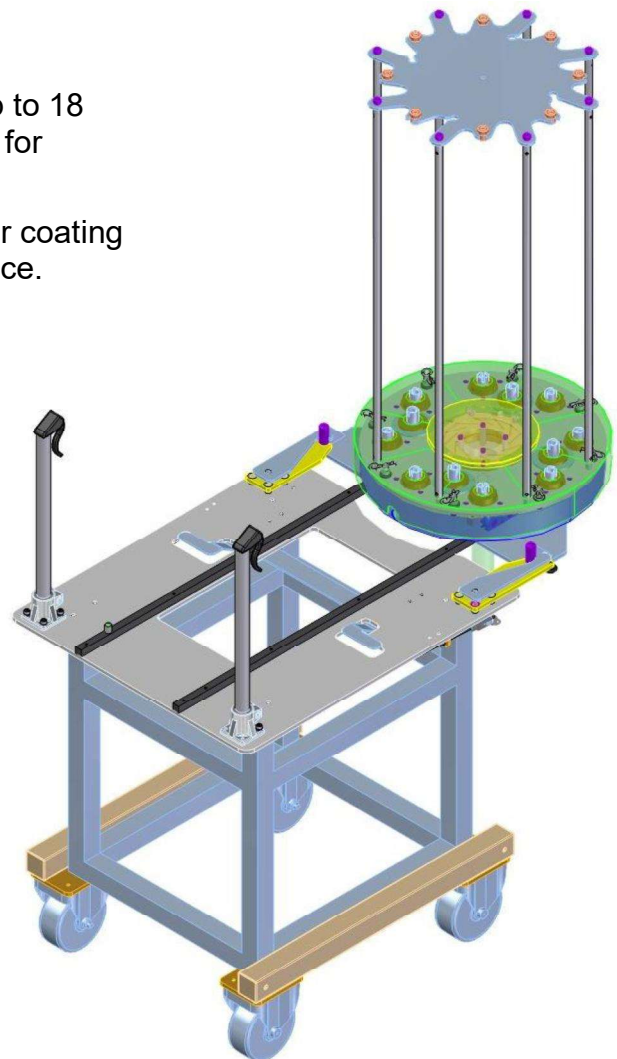
Exchangeable liners on floating potential.

Prepared with kicker rods and upper bearing plate for operation of third rotation axis.

Installation kits with rails and clutch system for easy roll-in and roll-out.

Batching cart with clutch system and brakes as well as parking stations for preloading.

Accessory as planet adaptors
High load platforms and
all fixtures from our supply.

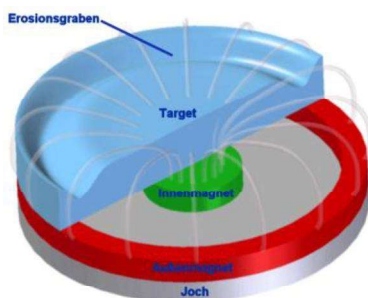
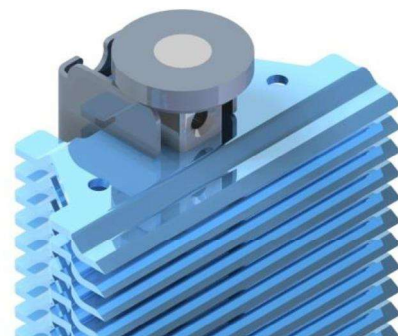


Custom Design Fixtures

Did not find your product here or anything fitting for your application?

We will be happy to help you with your challenge.

Be the No. 1 in terms of quality, economics and speed. Use 4pvd know how and fixture systems.



Consulting, Training and Design Work

4pvd assists you during development, marketing and distribution of your coated products as well as the related material flow and logistics.

With our experience you can place your products quickly, exactly and at reasonable cost. 4pvd will check your chances before you invest lots of money.