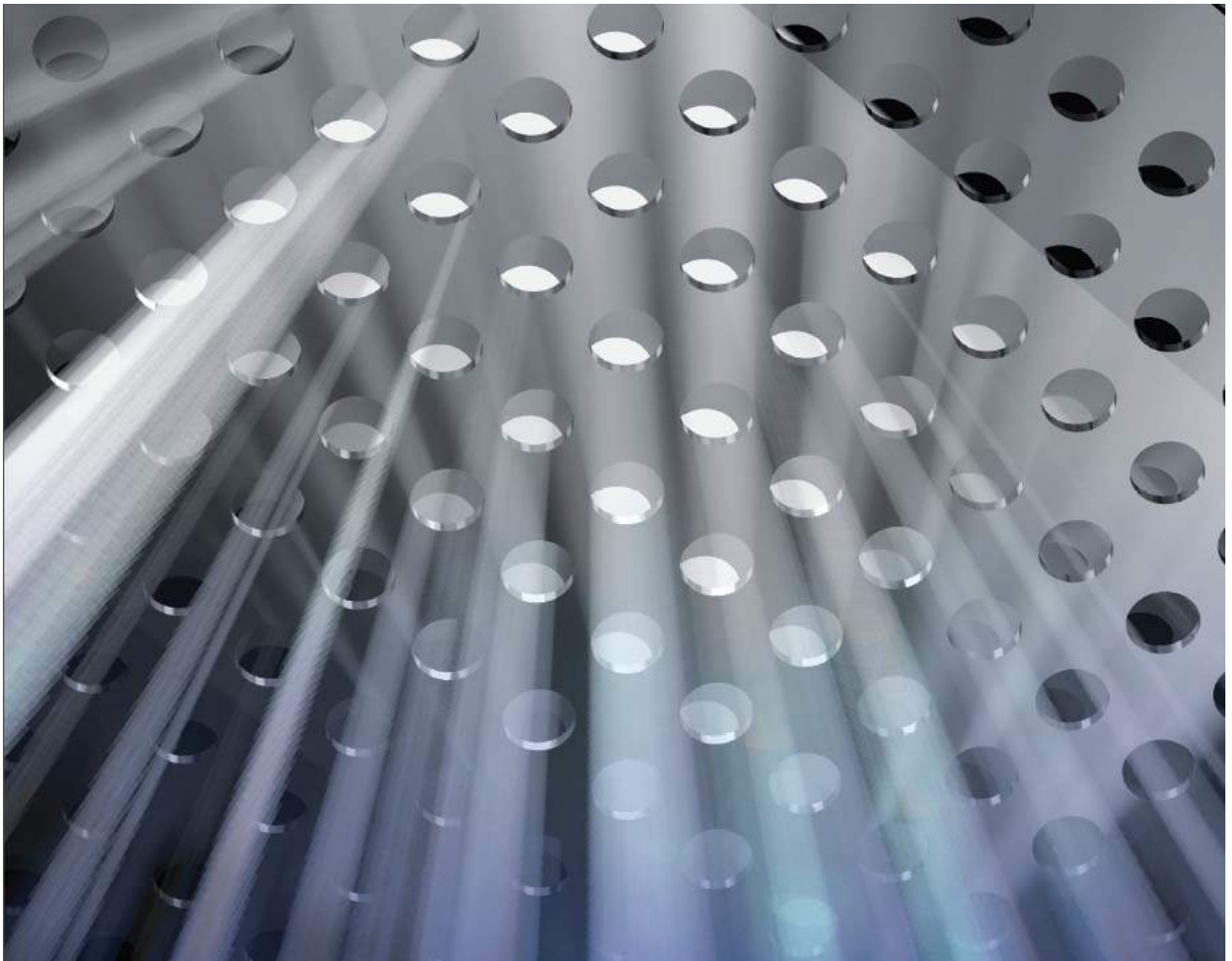


3D Welding Fixture



Freer Tool Welding Solutions

About Freer Tool

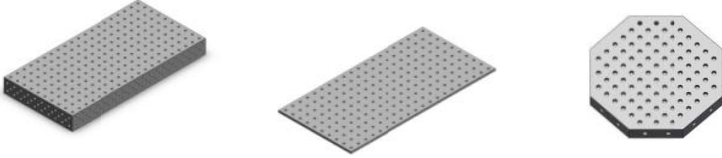
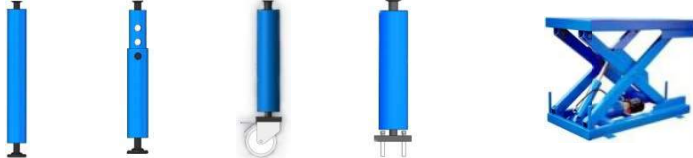







Freer Tool And Supply prides itself on earning a reputation that continually meets or exceeds our customers' expectations.

In today's global economy, companies that fail to deliver quality products and services on time, competitively priced to meet or beat both domestic & overseas competition, simply put, Freer Tool strives to be the best.

At Freer Tool, innovation is the hallmark of our purpose for being in business. Through a dedicated workforce where continuous staff training is expected, and on-going investment in the latest capital equipment is routine, Freer Tool has always been able to provide our customers with "World Class" products & services.

Our number one priority is to put the customer first all the time.

As an innovative Total Solution provider, our unique blend of services provides our valued customers the convenience of contacting one source for most of their tooling requirements. From Design to Build, make the right choice, choose Freer Tool And Supply as your one-stop solution source!

INDEX			
Table			4-9
Leg			10-11
Angle			12-18
Block			19-24
Stop			25-32
Bolt			33-37
Clamp			38-51
Support			52-56
Accessories			57-58

Make your work easier

Through the modular idea, you can set up complex and precise fixtures in short time. It is economical for both R&D and production runs.

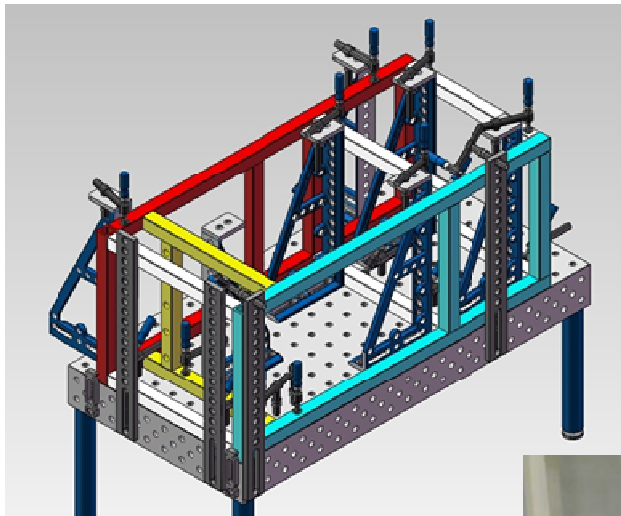
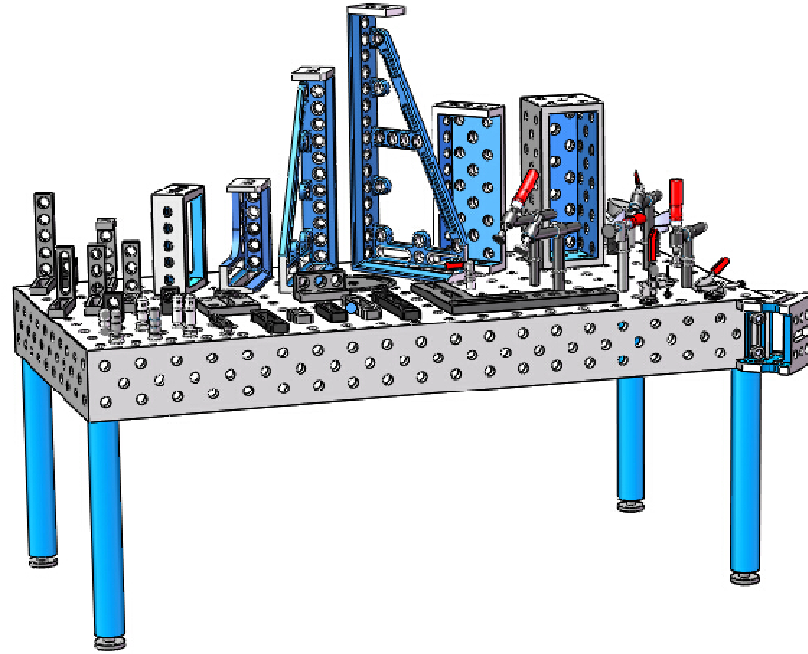


Table is a basic part of the fixture. It is a structure in the form of grid bores. According to diameter of bores, it is offered in the 28 size and series. The table has five surfaces to be extended in five directions. There are variety of specifications. The smallest size is 1000 × 500mm, the largest for the 4000 × 2000mm.

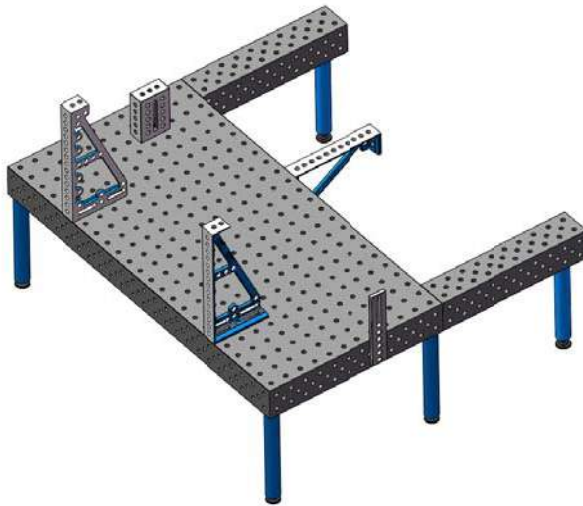
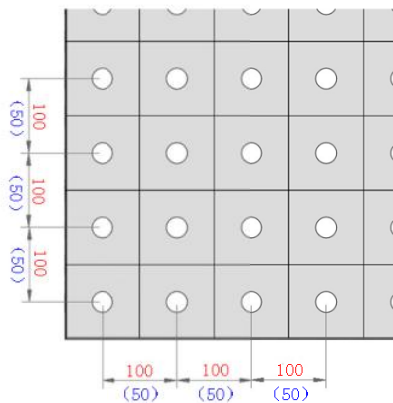
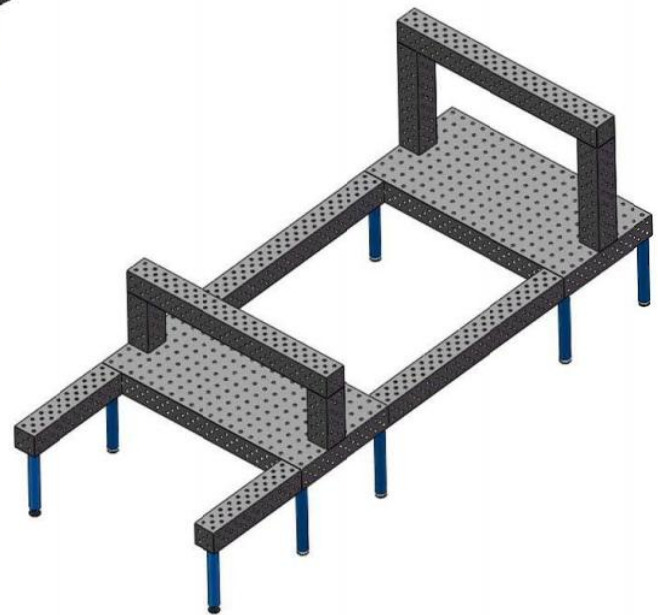
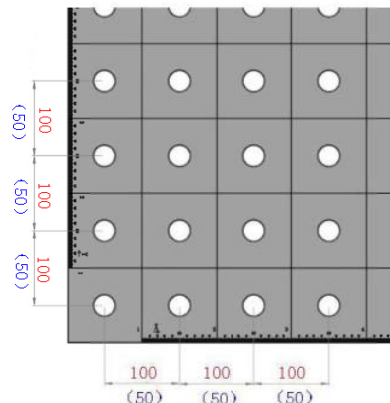


Table and table can be connected Together for large workpiece.

Table can be extended by some modules



B type
H type (Hardened Surface)

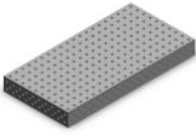






D type
HD type (Hardened Surface)

28

Table

3 Dimension Table

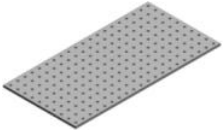

Leg	Size(mm)	N.W. (kg)	leg no.	B type 28-	D type 28-	H type 28-	HD type 28-
without legs 	1000x1000	310		01010-000	01010-100	01010-020	01010-120
	1200x1200	448		01212-000	01212-100	01212-020	01212-120
	1500x1000	485		01510-000	01510-100	01510-020	01510-120
	1500x1500	673		01515-000	01515-100	01515-020	01515-120
	2000x1000	592		02010-000	02010-100	02010-020	02010-120
	2400x1200	867		02412-000	02412-100	02412-020	02412-120
	3000x1500	1258		03015-000	03015-100	03015-020	03015-120
	4000x2000	2400		04020-000	04020-100		
H=850±30mm, with Standard Legs 	1000x1000	344	4	01010-001	01010-101	01010-021	01010-121
	1200x1200	482	4	01212-001	01212-101	01212-021	01212-121
	1500x1000	519	4	01510-001	01510-101	01510-021	01510-121
	1500x1500	707	4	01515-001	01515-101	01515-021	01515-121
	2000x1000	626	4	02010-001	02010-101	02010-021	02010-121
	2400x1200	901	4	02412-001	02412-101	02412-021	02412-121
	3000x1500	1309	6	03015-001	03015-101	03015-021	03015-121
	4000x2000	2451	6	04020-001	04020-101		
H=750-1100±30mm, with Telescoping Legs 	1000x1000	352	4	01010-002	01010-102	01010-022	01010-122
	1200x1200	490	4	01212-002	01212-102	01212-022	01212-122
	1500x1000	527	4	01510-002	01510-102	01510-022	01510-122
	1500x1500	715	4	01515-002	01515-102	01515-022	01515-122
	2000x1000	634	4	02010-002	02010-102	02010-022	02010-122
	2400x1200	909	4	02412-002	02412-102	02412-022	02412-122
	3000x1500	1321	6	03015-002	03015-102	03015-022	03015-122
	4000x2000	2463	6	04020-002	04020-102		
H=850±30mm, with Heavy Duty Wheels 	1000x1000	359	4	01010-003	01010-103	01010-023	01010-123
	1200x1200	497	4	01212-003	01212-103	01212-023	01212-123
	1500x1000	534	4	01510-003	01510-103	01510-023	01510-123
	1500x1500	722	4	01515-003	01515-103	01515-023	01515-123
	2000x1000	641	4	02010-003	02010-103	02010-023	02010-123
	2400x1200	916	4	02412-003	02412-103	02412-023	02412-123
H=850±30mm, with Anchoring Legs 	1000x1000	350	4	01010-004	01010-104	01010-024	01010-124
	1200x1200	488	4	01212-004	01212-104	01212-024	01212-124
	1500x1000	525	4	01510-004	01510-104	01510-024	01510-124
	1500x1500	713	4	01515-004	01515-104	01515-024	01515-124
	2000x1000	632	4	02010-004	02010-104	02010-024	02010-124
	2400x1200	907	4	02412-004	02412-104	02412-024	02412-124
	3000x1500	1317	6	03015-004	03015-104	03015-024	03015-124
	4000x2000	2459	6	04020-004	04020-104		

Other special specifications can be ordered.

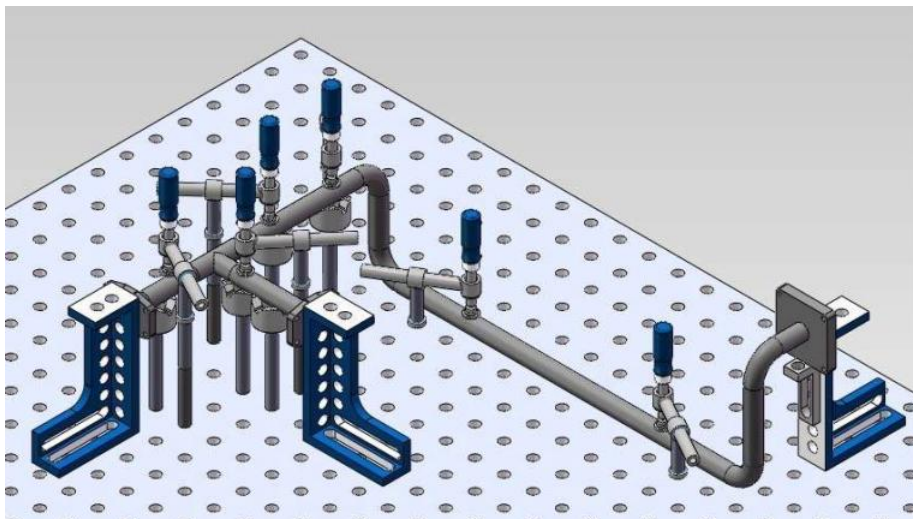
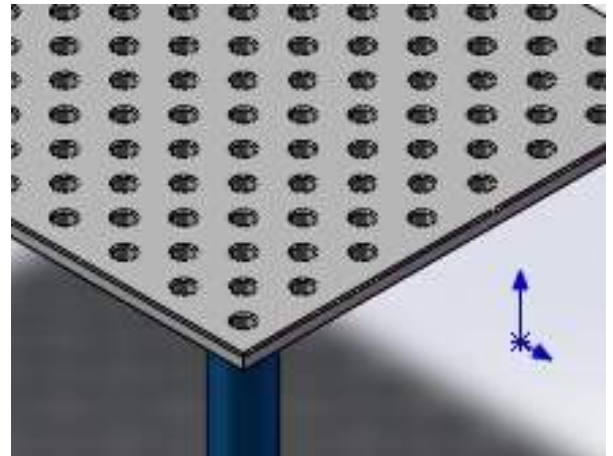
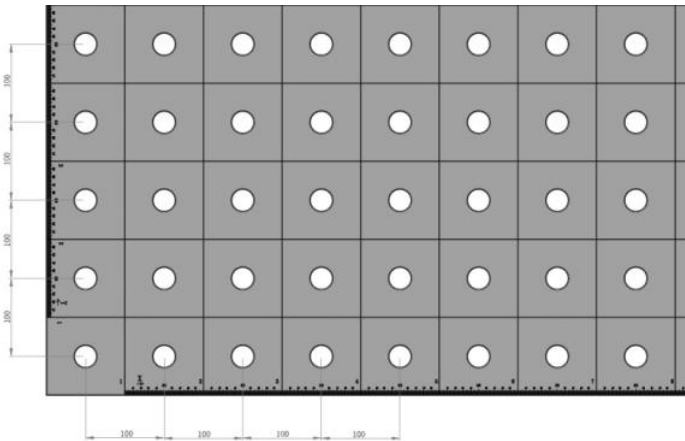
28

Table

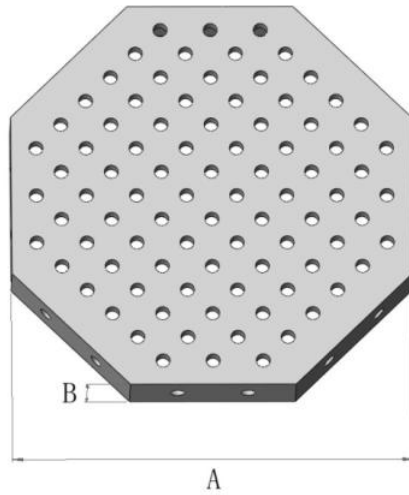
2 Dimension Table

Leg	Size(mm)	N.W. (kg)	leg no.	B type 28-	D type 28-	H type 28-	HD type 28-
without legs 	1000x1000	186		11010-000	11010-100	11010-020	11010-120
	1200x1200	276		11212-000	11212-100	11212-020	11212-120
	1500x1500	420		11515-000	11515-100	11515-020	11515-120
	2000x1000	386		12010-000	12010-100	12010-020	12010-120
	2400x1200	566		12412-000	12412-100	12412-020	12412-120
H=775±30mm, with Standard Legs 	1000x1000	220	4	11010-001	11010-101	11010-021	11010-121
	1200x1200	310	4	11212-001	11212-101	11212-021	11212-121
	1500x1500	488	4	11515-001	11515-101	11515-021	11515-121
	2000x1000	420	4	12010-001	12010-101	12010-021	12010-121
	2400x1200	600	4	12412-001	12412-101	12412-021	12412-121

More dimensions on request..

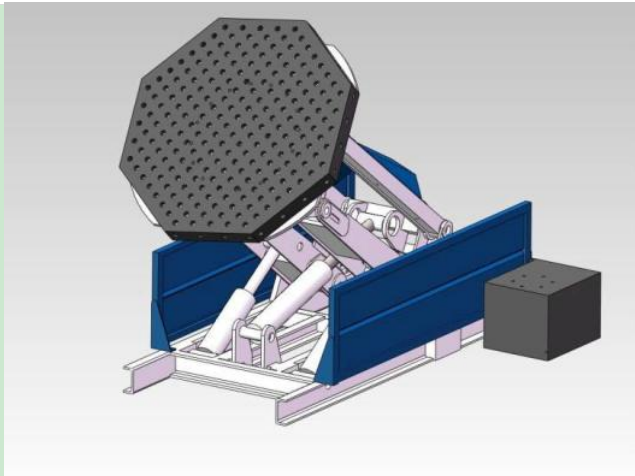


Octagonal Platform



Description

- Mainly used on a positioner of a robot cell.
- 9 sides for clamp, the fixturing are the same as the 3D table.
- More dimensions on request
- Connection size of the positioner is need before order.



Description	A × B	Weight	Item no.
Octagonal Platform Diagonal SW 600	SW 600×100	100	28-10600-000
Octagonal Platform Diagonal SW 800	SW 800×100	160	28-10800-000
Octagonal Platform Diagonal SW 1000	SW 1000×100	240	28-11000-000
Octagonal Platform Diagonal SW 1200	SW 1200×100	360	28-11200-000

28		Legs

Table Legs



Description

- All types of feet can be adjusted height ± 30 mm.
- Standard leg or anchored leg load is greater than 5 tons.
- Telescoping legs load is greater than 3 tons.
- Wheel leg max. load is 500 kg.
- More dimensions on request



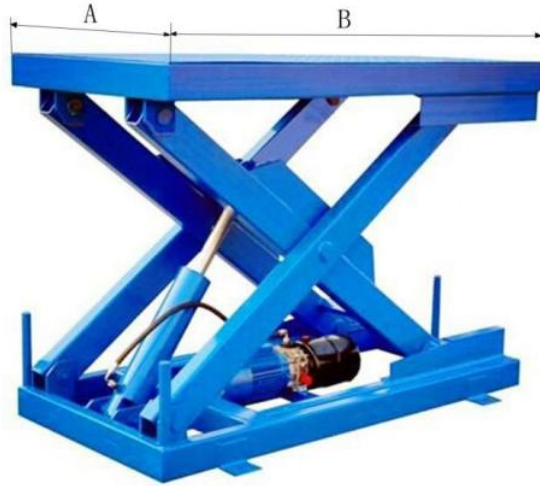
Description	A	Weight	Item no.
Standard Leg	650 \pm 30	8.44	00-B0010-001
Standard Leg	750 \pm 30	9.24	00-B0010-011
Telescoping Leg	(550-900) \pm 30	10.5	00-B0010-002
Wheel Leg with (without) Brake	650 \pm 30	11.40 (10.70)	00-B0010-003(013)
Wheel Leg with(without) Brake	750 \pm 30	12.20 (11.50)	00-B0010-023(033)
Anchored Leg	650 \pm 30	9.90	00-B0010-004

28

Legs

Hydraulic Lift

Hydraulic Lift



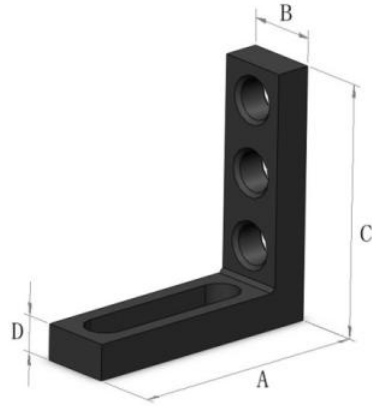
Description

- Match with the table, lift to any comfortable working position.
- Max. load: 2, 3, 4.5 tons;
Or according to the need of the use configuration.
- Equipped with high performance of hydraulic pump station and electric control system.
- Further demensions on request

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Description	A × B	Weight	Item no.
Hydraulic lift payload 2000 kg, height from 320 – 1220mm	1300×1000	600	28-B1310-005
Hydraulic lift payload 3000 kg, height from 350 – 1550mm	1800×1800	800	28-B1818-005
Hydraulic lift payload 4500 kg, height from 580 – 2080mm	2500×1500	1500	28-B2515-005

2 Sided Locating Angle



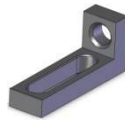
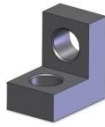
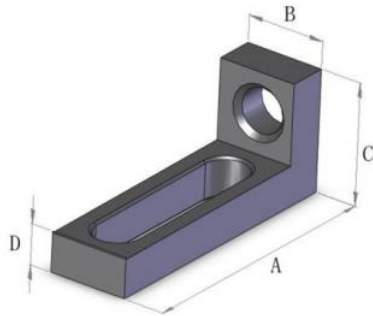
Description

- Commonly used angle.
- 2 sided locating and clamping.
- Many located options by combining the bores and slot.
- Can be a height adjustable surface by clamping the oblong slot.
- Black oxide finish.
- Precision scales on request.
- Optional: surface hardening treatment, stainless steel material.



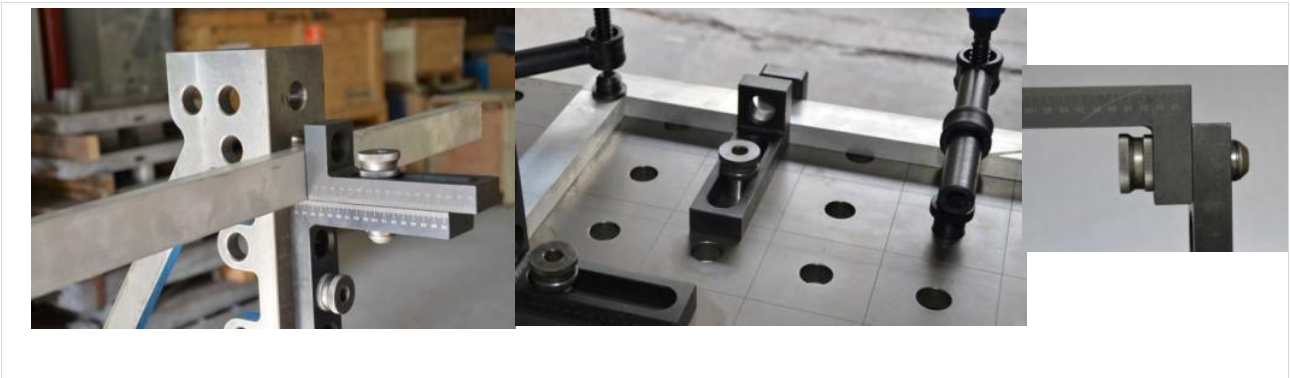
Description	A×B×C×D	Weight	Item no.
2 Sided Angle L175 Bores / Slot	175×50×175×25	2.02	28-30175-000
2 Sided Angle L175 Slot / Slot	175×50×175×25	1.74	28-30175-001
2 Sided Angle L175 Bores / Bores	175×50×175×25	2.34	28-30175-002

2 Sided Locating Angle Small



Description

- Commonly used angle.
- 2 sided locating and clamping.
- Many located ways by combining the bores and slot.
- Can be a height adjustable surface by clamping the oblong slot.
- Black oxide finish.
- Precision scales on request.
- Optional: surface hardening treatment, stainless steel material.



Description

A × B × C × D

Weight

Item no.

2 Sided Angle L75 Bore / Bore

75 × 75 × 50 × 25

0.98

28-30075-000

2 Sided Angle L175 Bore / Slot

175 × 50 × 75 × 25

1.40

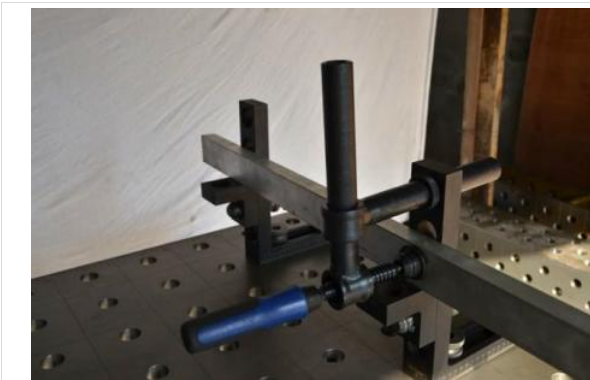
28-30175-003

2 Sided Locating Angle



Description

- Commonly used angle.
- 2 sided locating and clamping.
- Many located ways by combining the bores and slot.
- Can be a height adjustable surface by clamping the oblong slot
- Can be a table extension for light workpiece.
- For high workpiece.
- Black oxide finish.
- Precision scales on request.
- Optional: surface hardening treatment.



Description	A × B × C × D	Weight	Item no.
2 Sided Angle L275 Bores / Slot	175 × 50 × 275 × 25	2.74	28-30275-000
2 Sided Angle L500 Bores / Slot	200 × 75 × 500 × 25	9.70	28-30500-004

3 Sided Locating Angle



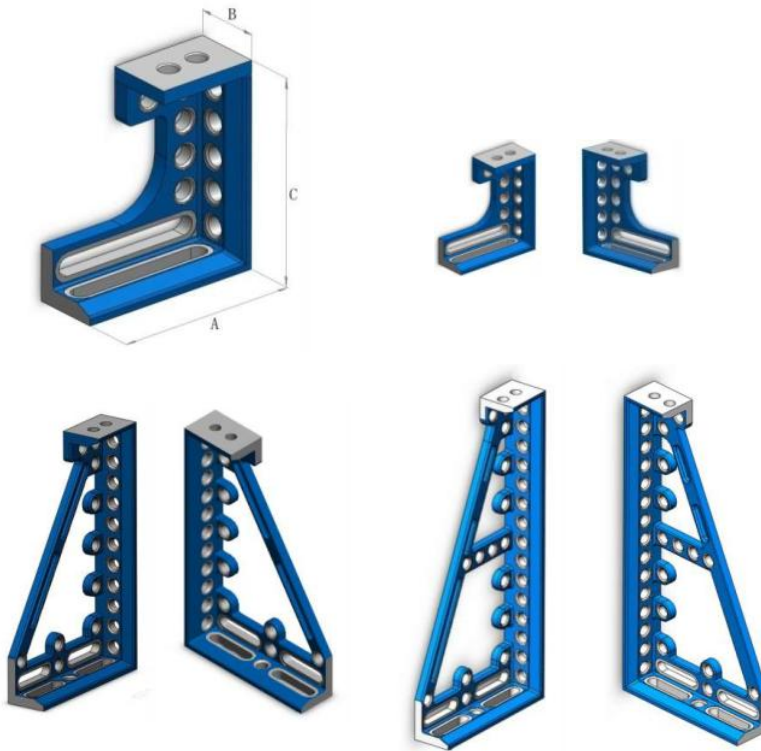
Description

- 3 sided locating and clamping.
- Many located ways by combining the bores and slot.
- Can be a height adjustable surface by clamping the oblong slot.
- Can be a table extension for light workpiece.
- For high workpiece.
- Black oxide finish.
- Precision scales on request.
- Optional: surface hardening treatment.



Description	A × B × C × D × E	Weight	Item no.
3 Sided Angle L200, Top one bore.	175 × 50 × 200 × 25 × 75	2.70	28-30200-001
3 Sided Angle L200, Top two bores.	175 × 50 × 200 × 25 × 125	2.90	28-30200-002
3 Sided Angle L300, Top two bores.	225 × 50 × 300 × 25 × 125	3.80	28-30300-002

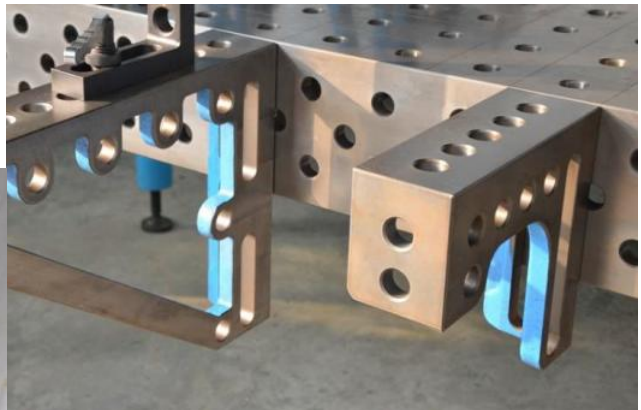
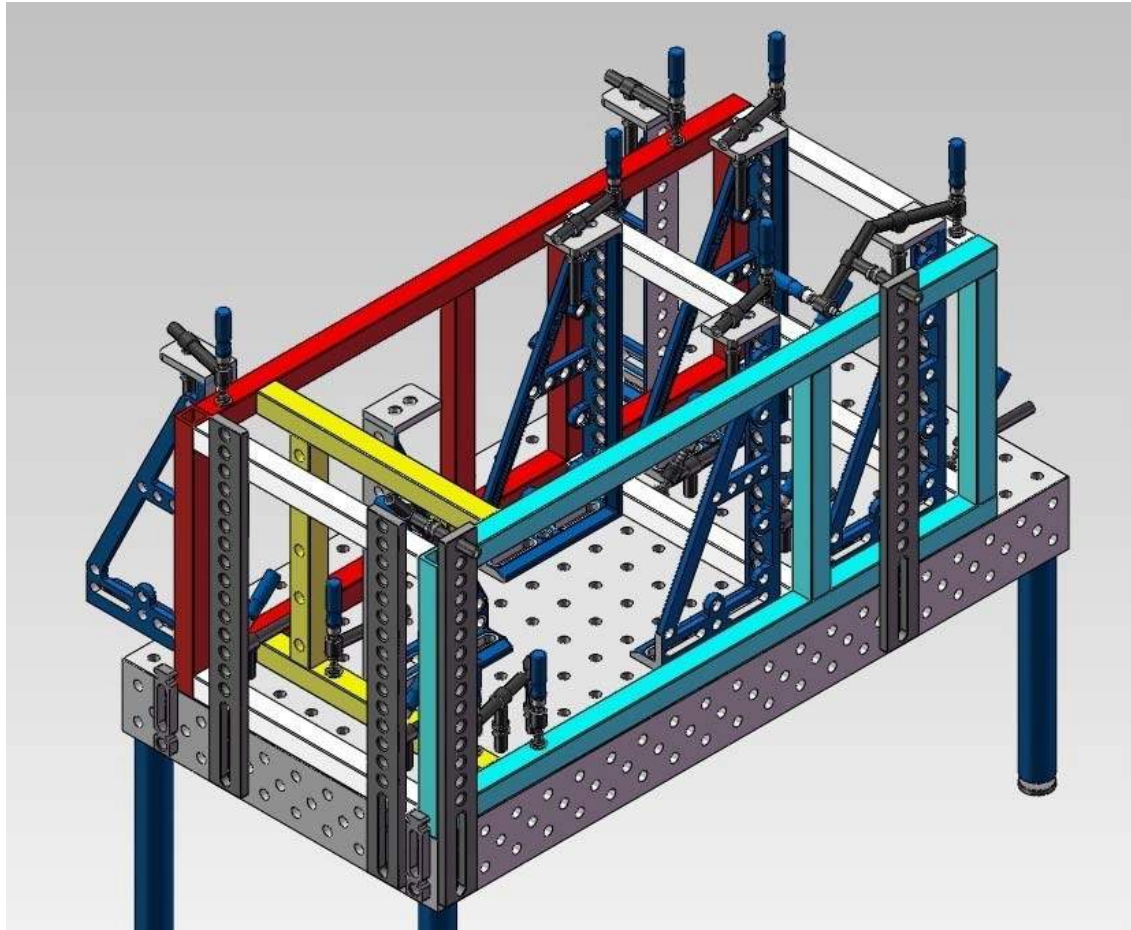
4 Sided Locating Angle



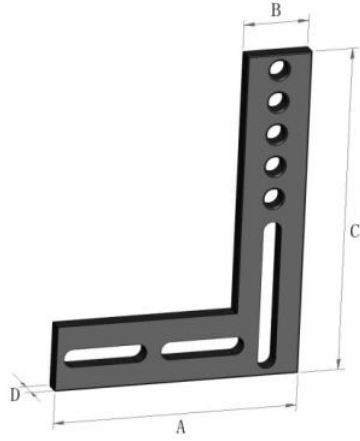
Description

- Multiduty angle.
- 4 support surfaces for locating and clamping.
- Multiple adjustment by combining the bores and slot.
- Can be a stop and table extension for heavy workpiece.
- Precision scales on request.
- Ordering in pairs is recommended.
- Material: QT500;
Tensile Strength: 500MPa.
- Optional: surface hardening treatment.

Description	A×B×C	Weight	Item no.
4 Sided Locating Angle L300, Right	275×100×300	11.10	28-30300-000
4 Sided Locating Angle L300, Left	275×100×300	11.10	28-30300-001
4 Sided Locating Angle L600, Right	375×100×600	19.54	28-30600-000
4 Sided Locating Angle L600, Left	375×100×600	19.54	28-30600-001
4 Sided Locating Angle L800, Right	375×100×800	24.40	28-30800-000
4 Sided Locating Angle L800, Left	375×100×800	24.40	28-30800-001

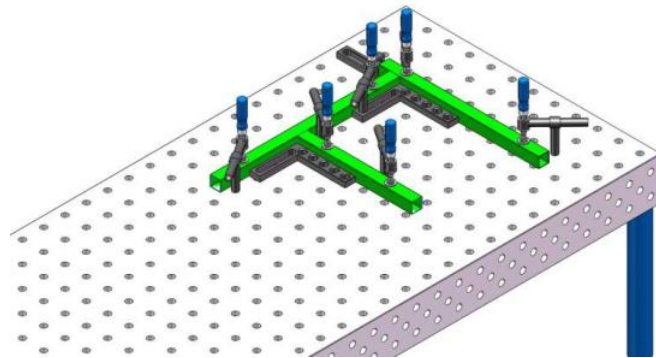
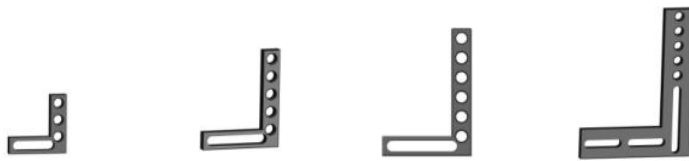


Flat Angle

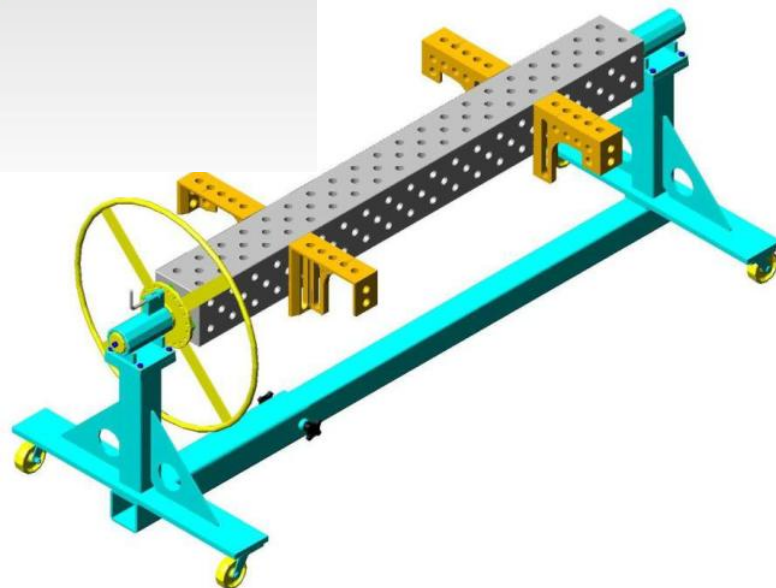
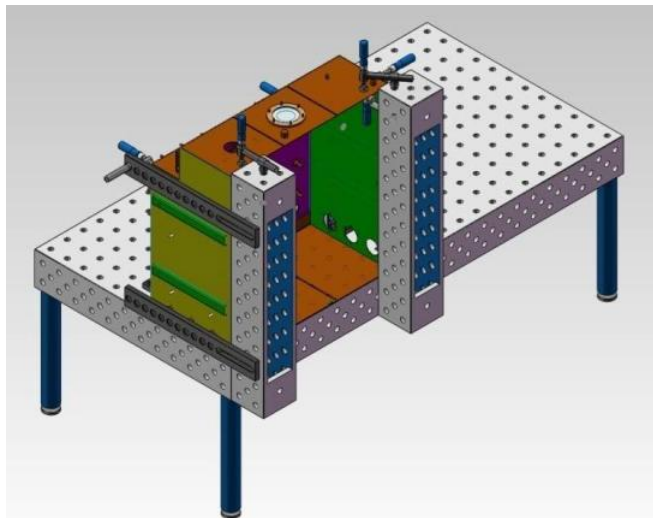
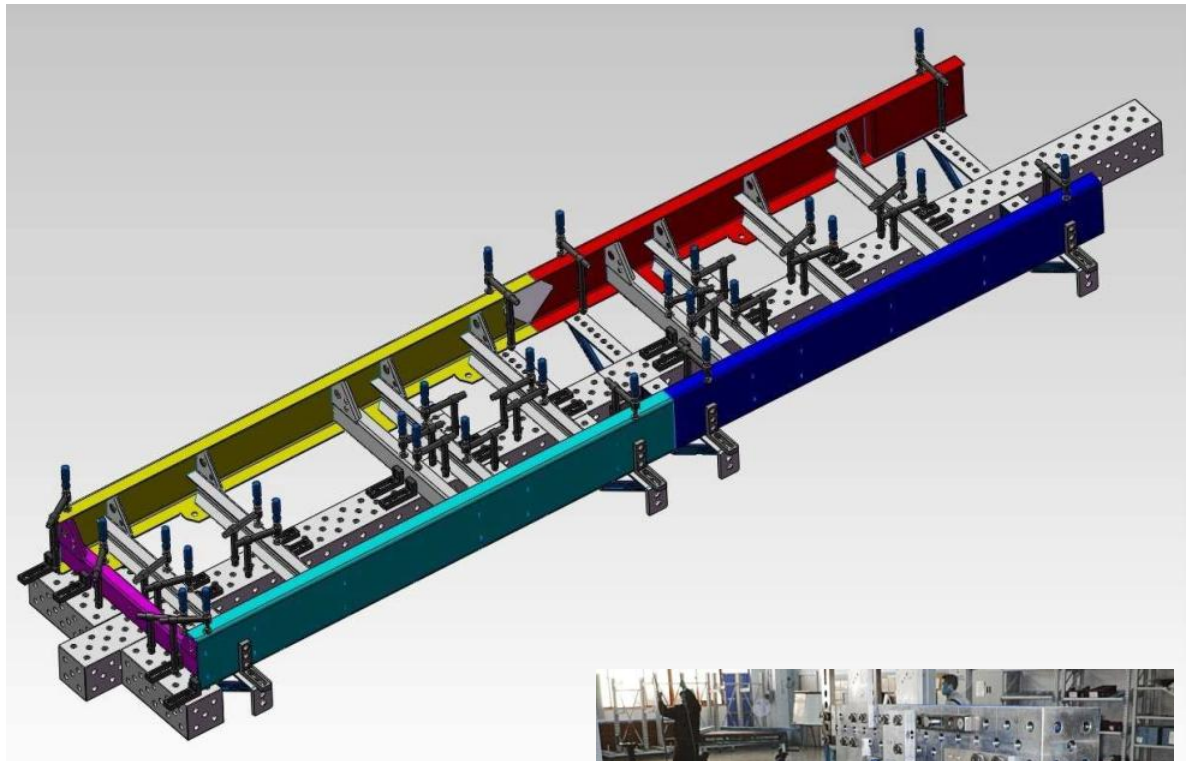


Description

- Locating at 90° angles by interior and exterior.
- Multiple options by combining the bores and slots.
- Optional: surface hardening treatment.

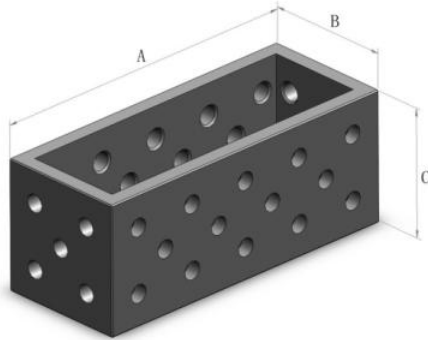


Description	A × B × C × D	Weight	Item no.
Flat Angle 175	175 × 50 × 175 × 25	1.85	28-35175-000
Flat Angle 275	225 × 50 × 275 × 25	3.00	28-35275-000
Flat Angle 325	225 × 50 × 325 × 25	3.50	28-35325-000
Flat Angle 500	375 × 100 × 500 × 25	11.84	28-35500-000



U-shape Block

- 5 sides support surfaces.
- Can be used for table extension. When as a cantilever frame, from 1000mm length need one table leg for support. When between two tables, from 2000mm length need one table leg for support.
- Can be used as height extension. Connect with several tables or other components.
- Optional: surface hardening treatment.



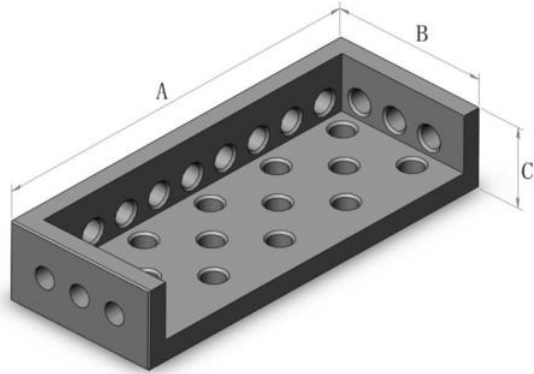
Description	A × B × C	Weight	Item no.
U-shape Block 500 × 200	500 × 200 × 200	55	28-40050-000
U-shape Block 1000 × 200	1000 × 200 × 200	102	28-40100-000
U-shape Block 1200 × 200	1200 × 200 × 200	120	28-40120-000
U-shape Block 1500 × 200	1500 × 200 × 200	180	28-40150-000
U-shape Block 2000 × 200	2000 × 200 × 200	200	28-40200-000
U-shape Block 2400 × 200	2400 × 200 × 200	240	28-40240-000
U-shape Block 3000 × 200	3000 × 200 × 200	285	28-40300-000
U-shape Block 4000 × 200	4000 × 200 × 200	374	28-40400-000
U-shape Block 500 × 400	500 × 400 × 200	81	28-40050-001
U-shape Block 1000 × 400	1000 × 400 × 200	149	28-40100-001
U-shape Block 1200 × 400	1200 × 400 × 200	174	28-40120-001
U-shape Block 1500 × 400	1500 × 400 × 200	219	28-40150-001
U-shape Block 2000 × 400	2000 × 400 × 200	281	28-40200-001
U-shape Block 2400 × 400	2400 × 400 × 200	329	28-40240-001
U-shape Block 3000 × 400	3000 × 400 × 200	410	28-40300-001
U-shape Block 4000 × 400	4000 × 400 × 200	534	28-40400-001

28

Block

L-shape Block

L-shape Block



Description

- 4 sides support surfaces.
- Connect tables and other component by many ways.
- Can be used as table extension and height extension.
- Optional: surface hardening treatment.



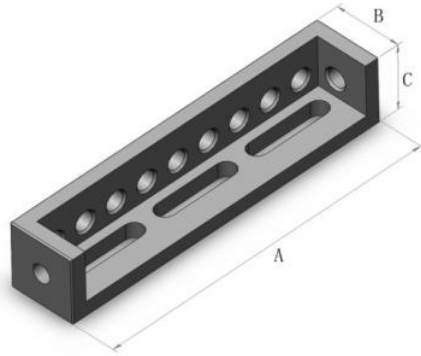
Description	A×B×C	Weight	Item no.
L-shape Block 500×200	500×200×100	26	28-41050-001
L-shape Block 1000×200	1000×200×100	52	28-41100-001
L-shape Block 1200×200	1200×200×100	63	28-41120-001
L-shape Block 1500×200	1500×200×100	79	28-41150-001
L-shape Block 2000×200	2000×200×100	106	28-41200-001

28

Block

Connection Angle

Connection Angle



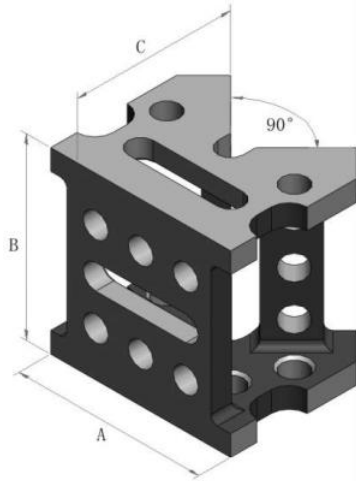
Description

- 4 sides support surfaces.
- Connect angles and tables.
- Can be table extension.
- Suitable for small space position.
- Optional: surface hardening treatment.

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Description	A × B × C	Weight	Item no.
Connection Angle	500 × 100 × 100	15	28-43050-000

Corner Module



Description

- Multiduty block. 90° opening.
- Positioning Right Angle type workpiece.
- Extensions on the corner of tables.
- Locating large circular pipes.
- Optional: surface hardening treatment.



Description

A×B×C

Weight

Item no.

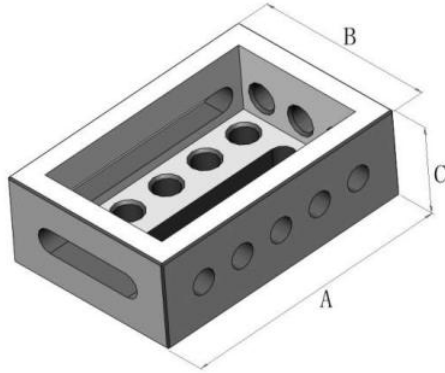
Corner Module

200×200×175

14

28-92020-000

Support Module



28-92020-001



28-93020-005

Description

- Multiduty block.
- Height direction supporting and positioning.
- Table and other modules extension.
- Optional: surface hardening treatment.

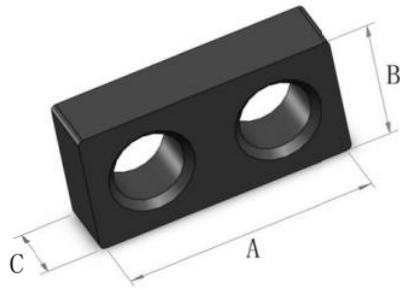


Description	A×B×C	Weight	Item no.
Support Module	300×200×100	15.00	28-93020-001
Support Frame	300×200×75	3.10	28-93020-005

28

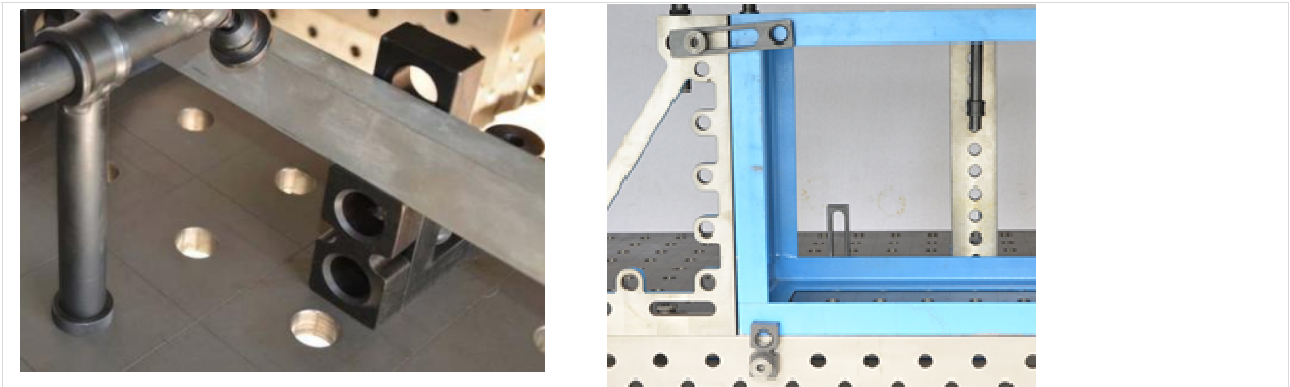
Stop

Small Stop



Description

- Commonly used stop.
- Suitable for small space position.
- Black oxide finish.
- Optional: surface hardening treatment.



Description

A×B×C

Weight

Item no.

Small Stop 100

100×50×25

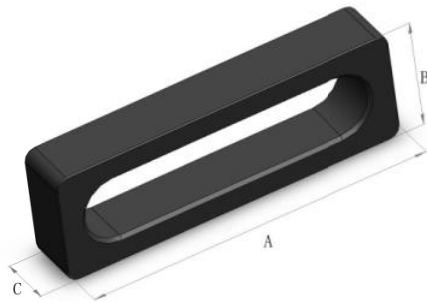
0.65

28-50010-000

28

Stop

Slot Stop



Description

- Commonly used stop
- 100mm length oblong slot for adjustment
- Black oxide finish
- Precision scales on request
- Optional: surface hardening treatment.



Description

A × B × C

Weight

Item no.

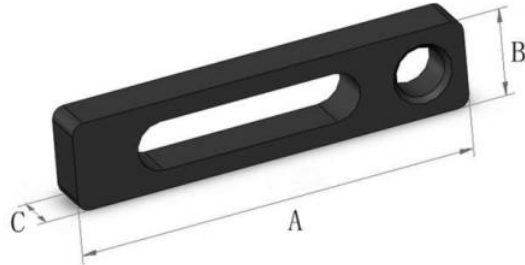
Slot Stop 150

150 × 50 × 25

0.90

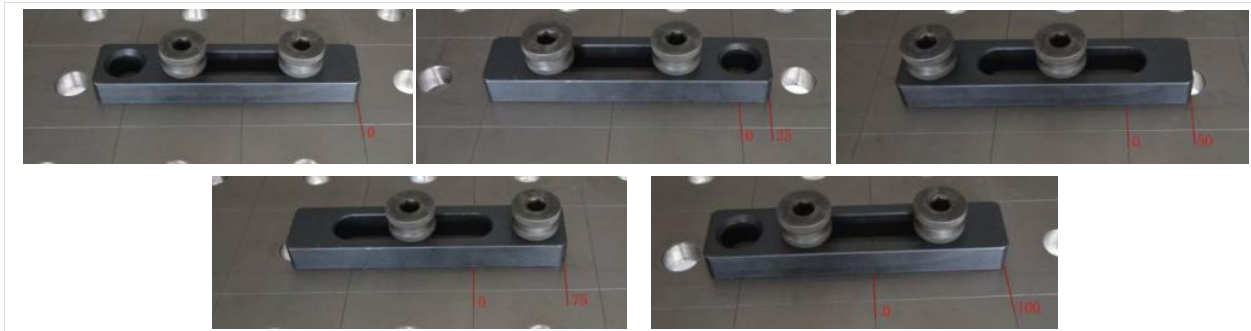
28-50150-000

Standard Stop



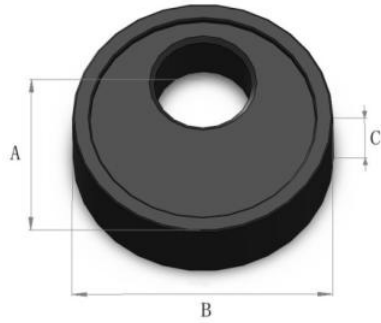
Description

- Commonly used stop.
- Many located options by combining the bores and slot.
- 100mm (28) / 50mm (16) length oblong slot for adjustment
- Standard stops form multiples of 25mm (28) / 12.5mm (16) dimension chain.
- Black oxide finish.
- Precision scales on request.
- Optional: surface hardening treatment.



Description	A×B×C	Weight	Item no.
Standard Stop 225	225×50×25	1.32	28-50022-000
Standard Stop 300	300×50×25	1.80	28-50030-000
Standard Stop 500	500×50×25	3.22	28-50050-000

Eccentric Stop



28-52075-000



28-52100-000



Description

- Use as stop or a support for irregular distance adjustment.
- Connect with standard bolt, infinitely adjusted by rotating.
- Suitable for small space position.
- Black oxide finish.

Description

A × B × C

Weight

Item no.

centric stop Φ75

50 × 75 × 25

0.70

28-52075-000

Eccentric stop Φ100

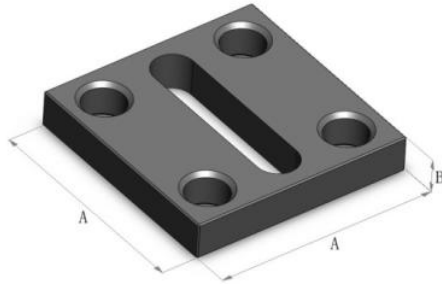
75 × 100 × 25

1.30

28-52100-000

28		Stop

Adapter Plate



Description

- When location dimension less than 100mm (28) / 50mm (16) or table system bores can not be reached.
- Connect 3D table system bores with components.
- Black oxide finish.

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Description	A × B	Weight	Item no.
Adapater plate	150 × 25	3.18	28-51515-000

28

Stop

Angle Plate

Angle Plate



Description

- Easy to locate angle on the table.
- Quick locating at 15°, 30°, 45°, 60°
- Slot can be adjusted from 0° to 90°.
- Black oxide finish.



Description

Angle Plate

ΦA × B

φ 250 x 150 x 5

Weight

0.88

Item no.

28-52515-003

28

Stop

Angle Block

Angle Block



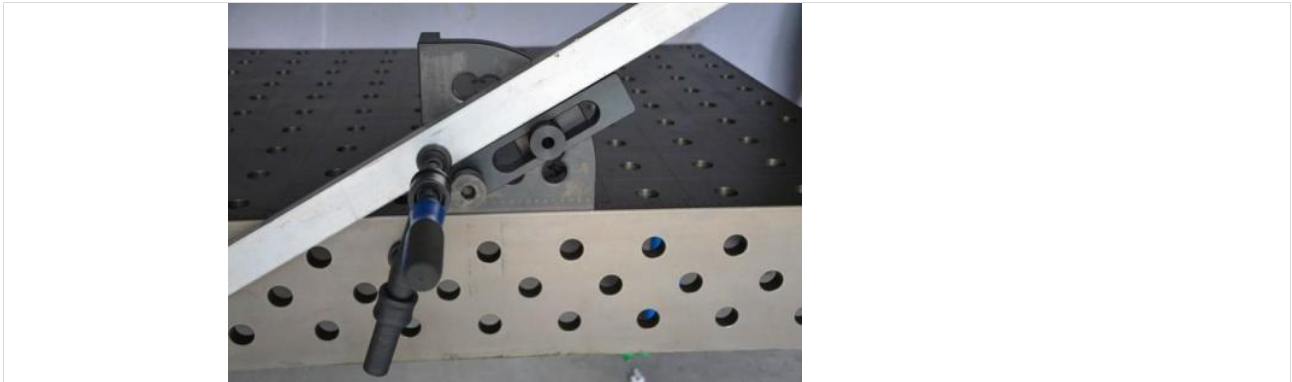
28-52020-004



28-52020-005

Description

- Multifunctional stop.
- Every 15° quick locating.
- Slot can be adjusted from 0° to 90°.
- Black oxide finish.



Description

A × B × C

Weight

Item no.

Angle Block, Right

200x200x75

7.30

28-52020-004

Angle Block, Left

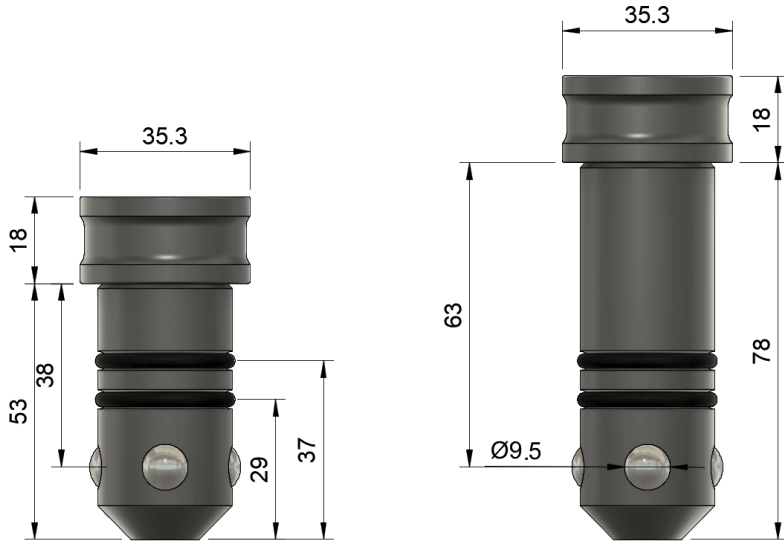
200x200x75

7.30

28-52020-005

28		Bolt

STQ Bolt



28
 Locking force approx.2 tons
 Shearing force approx.15 tons
 Tightening torque: 60 Nm

16
 Locking force approx.1 tons
 Shearing force approx.5 tons
 Tightening torque: 2 Nm

Description

- New type of advanced design.
- 4 ball design makes contact with the reverse of system bores..
- Have guide groove to make a lock and unlock more freely.
- Take away hoop for easy cleaning.
- No damage to the reverse of system bores.
- Using by one hand.
- Connect table with table, stop, angle, adapter plates, transport rings, etc.
- Clamp by hex wrench SW14 (28) / SW 8 (16).
- Surface HRC50.

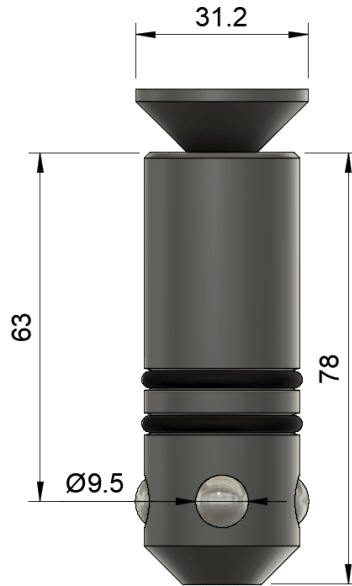
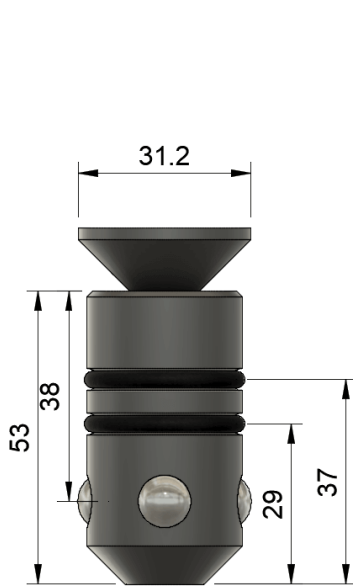


Description	ΦA × B	Weight	Item no.
STQ Bolt short	(28-0.01) × 18	0.60	28-60041-001
STQ Bolt long	(28-0.01) × 18	0.80	28-60041-002

28

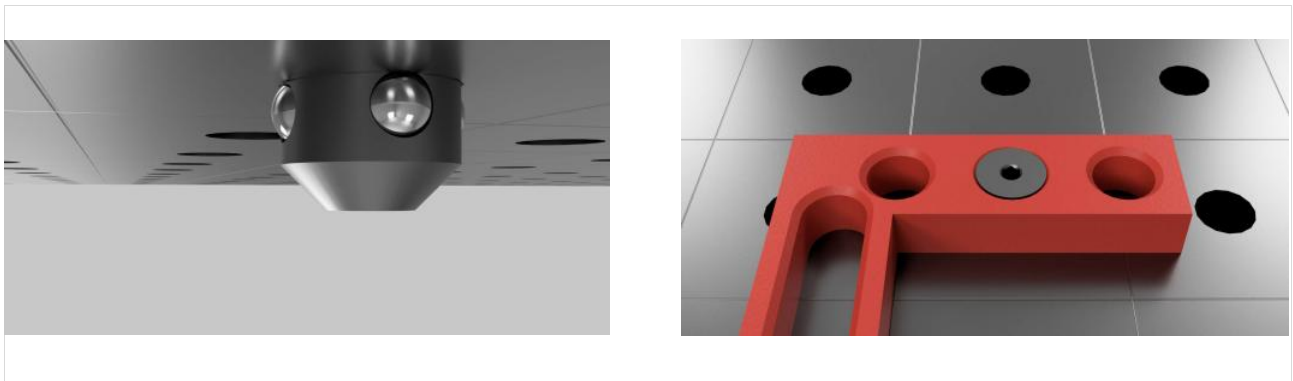
Bolt

STQ Countersunk Bolt



Description

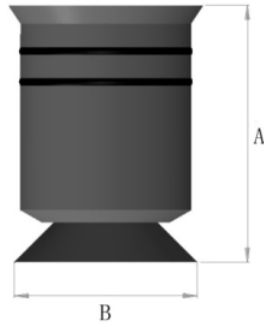
- Countersunk bolt head.
- Only use in bores, not for slots
- 4 ball design makes space contact with the reverse of system bores.
- Have guide groove to make a lock and unlock more freely.
- Take away hoop for easy cleaning.
- Connect table with table, stop, angle, adapter plates, transport rings, etc. no interference.
- Clamp by hex wrench SW8.
- Surface HRC50.



Description	ΦA × ΦB	Weight	Item no.
STQ Countersunk Bolt short	(28-0.01) × 31.6	0.24	28-60042-001
STQ Countersunk Bolt long	(28-0.01) × 31.6	0.36	28-60042-002

28		Bolt

Connection Bolt



Description

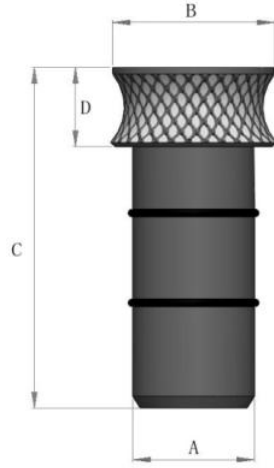
- Be used for long term connection.
- Both ends have countersunk bolt heads locked.
- Use for system bores.
- Clamp by hex wrench SW10 (28) / SW6 (16).



Description	A × ΦB	Weight	Item no.
Connection Bolt short	35.5 × 28	0.18	28-60003-000
Connection Bolt long	45 × 28	0.26	28-60003-002

28		Bolt

Positioning Bolt



Description

- Positioning without locking.
- Usually use with STQ bolt together.
- Economical substitute for a 2nd Clamping bolt.

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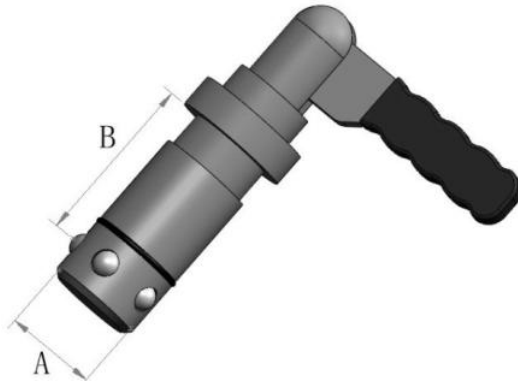
Description	$\Phi A \times \Phi B \times C \times D$	Weight	Item no.
Positioning bolt	28 × 40 × 74 × 25	0.28	28-60009-000

28

Bolt

Quick Clamping Bolt

Quick Clamping Bolt



Description

- 360° rotating.
- More quickly and flexible clamping workpiece.
- Positioning firmly.
- High locking and shearing force.
- Using by one hand.
- Plastic coated or chrome plated handle.



Description

$\Phi A \times B$

Weight

Item no.

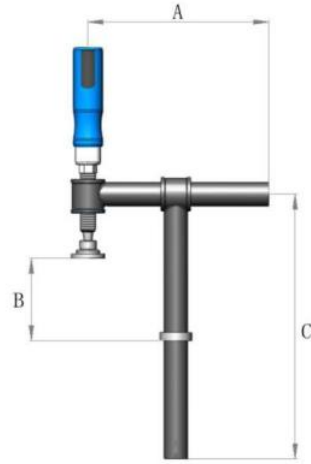
Quick Clamping Bolt

(28-0.01) × (31-50)

0.62

28-60007-000

Screw Clamp 180°

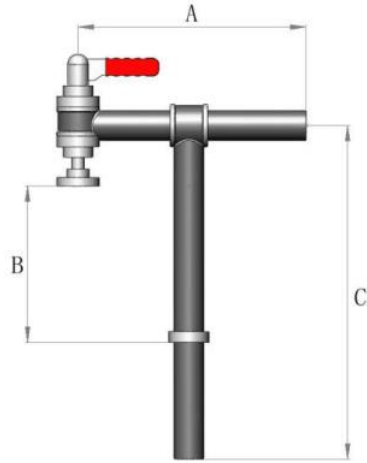


Description

- Rubber and plastic handle feeling comfortable, non-skid.
- Oval handle makes more powerful.
- Clamp by hex wrench makes much tighter.
- Each part can be used separately and recombined to other kinds of clamps.
- Handle is replaceable.
- Replace with a variety of clamping pad.
- Clamp horizontal and vertical distances are adjustable.

Description	A × B span × C	Weight	Item no.
Screw Clamp 180° / 220	220 × max.140 × 220	2.00	28-85022-000
Screw Clamp 180° / 350	220 × max.270 × 350	2.38	28-85035-000
Screw Clamp 180° / 500	220 × max.420 × 500	2.81	28-85050-000
Screw Handle	H=250	0.6	28-87020-000
Pipe 220	Φ28 x 220	0.685	28-85022-100
Pipe 350	Φ28 x 350	1.06	28-85035-100
Pipe 500	Φ28 x 500	1.49	28-85050-100
Stop Ring	Φ28 x 10	0.035	28-87003-000

Quick Clamp 180°

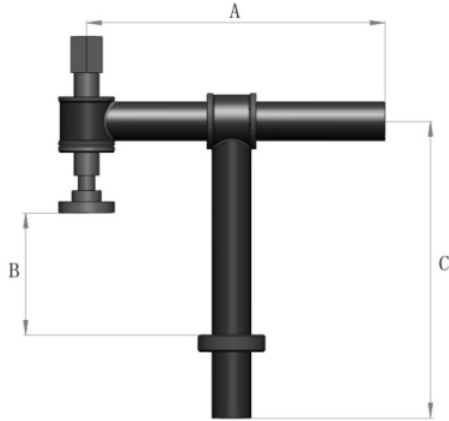


Description

- Faster clamping.
- Higher clamping force less effort.
- 360° rotating.
- Each part can be used separately and recombined to other kinds of clamps.
- Handle is replaceable.
- Replace with a variety of clamping pad.
- Clamp horizontal and vertical distances are adjustable.
- Plastic coated or chrome plated handle.

Description	A × B span × C	Weight	Item no.
Quick Clamp 180° / 220	220 × max.140 × 220	2.23	28-85022-001
Quick Clamp 180° / 350	220 × max.270 × 350	2.60	28-85035-001
Quick Clamp 180° / 500	220 × max.420 × 500	3.03	28-85050-001
Quick handle	220	0.82	28-87020-001
Pipe 220	Φ28 x 220	0.685	28-85022-100
Pipe 350	Φ28 x 350	1.06	28-85035-100
Pipe 500	Φ28 x 500	1.49	28-85050-100
Stop Ring	Φ28 x 10	0.035	28-87003-000

Hex head Clamp 180°

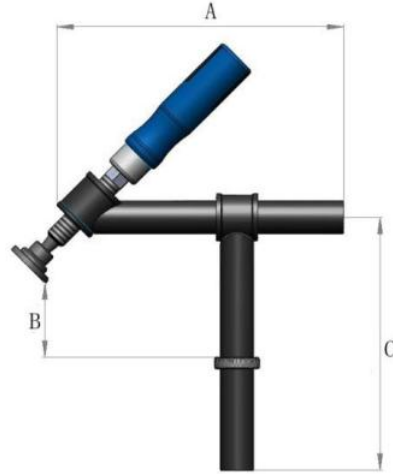


Description

- Highest clamp force.
- Each part can be used separately and recombined to other kinds of clamps.
- Handle is replaceable.
- Replace with a variety of clamping pad.
- Clamp horizontal and vertical distances are adjustable.
- Clamp by hex wrench SW14.

Description	A × B span × C	Weight	Item no.
Hex head Clamp 180° / 220	220 × max.140 × 220	1.79	28-85022-002
Hex head Clamp 180° / 350	220 × max.270 × 350	2.16	28-85035-002
Hex head Clamp 180° / 500	220 × max.420 × 500	2.59	28-85050-002
Hexagon Screw	135	0.38	28-87020-002
Pipe 220	Φ28 x 220	0.685	28-85022-100
Pipe 350	Φ28 x 350	1.07	28-85035-100
Pipe 500	Φ28 x 500	1.5	28-85050-100
Stop Ring	Φ28 x 10	0.035	28-87003-000

Screw Clamp 45°

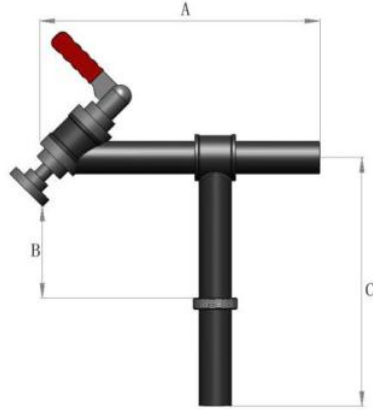


Description

- Rubber and plastic handle feeling comfortable, non-skid.
- Oval handle makes more powerful.
- Clamp by hex wrench makes much tighter.
- Each part can be used separately and recombined to other kinds of clamps.
- Handle is replaceable.
- Replace with a variety of clamping pad.
- Clamp horizontal and vertical distances are adjustable.

Description	A × B span × C	Weight	Item no.
Screw Clamp 45° with Handle / 220	220 × max.140 × 220	2.02	28-89022-000
Screw Clamp 45° with Handle / 350	220 × max.270 × 350	2.4	28-89035-000
Screw Clamp 45° with Handle / 500	220 × max.420 × 500	2.83	28-89050-000
Screw Clamp	250	0.6	28-87020-00
Pipe 45°	220	0.7	28-85022-200
Pipe 220	Φ28 x 220	0.685	28-85022-100
Pipe 350	Φ28 x 350	1.06	28-85035-100
Pipe 500	Φ28 x 500	1.49	28-85050-100
Stop Ring	Φ28 x 10	0.035	28-87003-000

Quick Clamp 45°

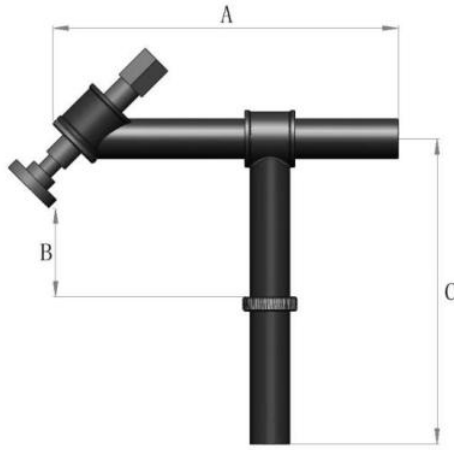


Description

- Faster clamping.
- Higher clamping force less effort.
- 360° rotating.
- Each part can be used separately and recombined to other kinds of clamps.
- Handle is replaceable.
- Replace with a variety of clamping pad.
- Clamp horizontal and vertical distance are adjustable.
- Plastic coated or chrome plated handle.

Description	A × B span × C	Weight	Item no.
Quick Clamp 45° / 220	220 × max.140 × 220	2.24	28-89022-001
Quick Clamp 45° / 350	220 × max.270 × 350	2.62	28-89035-001
Quick Clamp 45° / 500	220 × max.420 × 500	3.05	28-89050-001
Quick handle	220	0.82	28-87020-001
Pipe 45°	220	0.7	28-85022-200
Pipe 220	Φ28 x 220	0.685	28-85022-100
Pipe 350	Φ28 x 350	1.06	28-85035-100
Pipe 500	Φ28 x 500	1.49	28-85050-100
Stop Ring	Φ28 x 10	0.035	28-87003-000

Hex head Clamp 45°

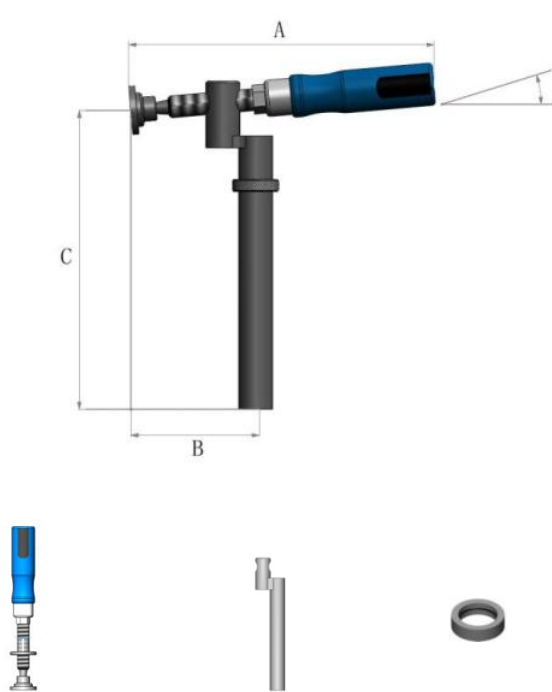


Description

- Highest clamp force.
- Each part can be used separately and recombined to other kinds of clamps.
- Handle is replaceable.
- Replace with a variety of clamping pad.
- Clamp horizontal and vertical distance are adjustable.
- Clamp by hex wrench SW14.

Description	A × B span × C	Weight	Item no.
Hex head Clamp 45° / 220	220 × max.140 × 220	1.8	28-89022-002
Hex head Clamp 45° / 350	220 × max.270 × 350	2.18	28-89035-002
Hex head Clamp 45° / 500	220 × max.420 × 500	2.61	28-89050-002
Hexagon Screw	135	0.38	28-87020-002
Pipe 45°	220	0.7	28-85022-200
Pipe 220	220	0.685	28-85022-100
Pipe 350	Φ28 x 220	1.06	28-85035-100
Pipe 500	Φ28 x 350	1.49	28-85050-100
Stop Ring	OD: Φ28, ID: Φ16, H: 30	0.035	28-87003-000

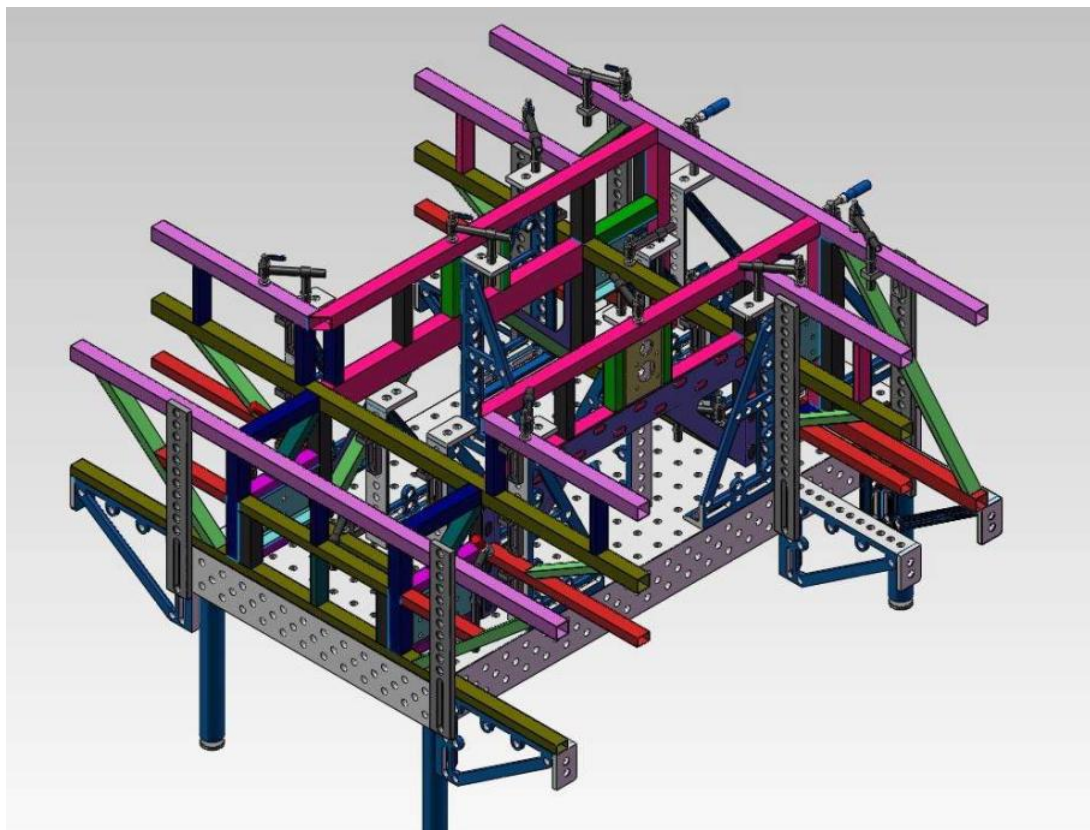
Screw Clamp 90°



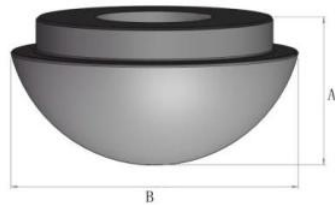
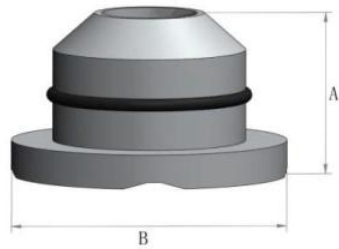
Description

- Rubber and plastic handle, feeling comfortable, non-skid.
- Oval handle, can make more powerful.
- Clamp by hex wrench makes much tighter.
- Height adjustment with stop ring.
- The clamping distance compensation 70mm.
- Handle is replaceable.
- Replace A variety of clamping pad.

Description	A × B span × C	Weight	Item no.
Screw Clamp 90° with Handle / 220	250 × max.100 × 220	1.26	28-88022-000
Screw Clamp 90° with Handle / 350	250 × max.100 × 350	1.69	28-88035-000
Screw Clamp 90° with Handle / 500	250 × max.100 × 500	2.12	28-88050-000
Screw Clamp	250	0.6	28-87020-00
Pipe 90°	220	0.62	28-85022-300
Pipe 90°	350	1.05	28-85035-300
Pipe 90°	500	1.48	28-85050-300
Stop Ring	Φ28 x 10	0.035	28-87003-000



General Clamping Pad



Description

- General pads clamp the common parts, inclined plane, small diameter pipe, etc.
- Ball head pads used in point contacts clamping.
- Ball connect with screw clamp.
- Easy to take down from clamps.
- By rotating for all the surface contact.
- Can insert into any system hole as a locating piece.
- Various materials for choice.
- Cross-shaped grooves for round or rectangular tubes to clamp.

Description	A × ΦB	Weight	Item no.
General Clamping Pad, Steel-doubleside	25x40	0.10	28-87011-010
General Clamping Pad, Stainless Steel	22x40	0.1	28-87011-011
General Clamping Pad, Polyamide	22x40	0.02	28-87011-012
General Clamping Pad, Aluminium	22x40	0.10	28-87011-019
Ball head Clamping Pad, Steel	21x35	0.09	28-87011-003
Ball head Clamping Pad, Stainless steel	21x35	0.09	28-87011-004
Ball head Clamping Pad, Polyamide	21x35	0.014	28-87011-005
Ball head Clamping Pad, Aluminium	21x35	0.07	28-87011-020

28

Clamp

Clamp sleeve

Clamp sleeve 45° /90°



Description

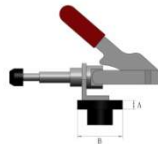
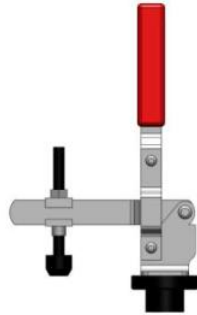
- Used as clamping position transformation of 45 ° or 90 °.
- Can be directly assembled clamp handle.
- The flexibility to bind with bolt, installed in any system bores.

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Description	Weight	Item no.
Clamp sleeve 90°	0.28	28-87034-000
Clamp sleeve 45°	0.26	28-87035-000

28		Clamp

Toggle Clamp with Round Pad



Description

- Round pad with vertical toggle clamp or horizontal toggle clamp.
- Suitable for fast clamping the light workpiece.
- Use for batch production.

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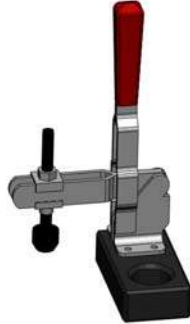
Description	A × ΦB	Weight	Item no.
Vertical toggle clamp	27 × 50	0.74	28-86001-000
Horizontal toggle clamp	27 × 50	0.74	28-86002-000

28

Clamp

Toggle Clamp

Toggle Clamp with Stop Piece



Description

- Flexible clamping position.
- Suitable for fast clamping the light workpiece.
- Use for batch production.
- Option different type of toggle clamps.

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Description	A × ΦB	Weight	Item no.
Vertical toggle clamp	27 × 50	0.98	28-86001-001
Horizontal toggle clamp	27 × 50	1.08	28-86002-001

28		Clamp

Stop Ring



Description

- Use for all clamping tubes.
- Adjust clamps to any height.



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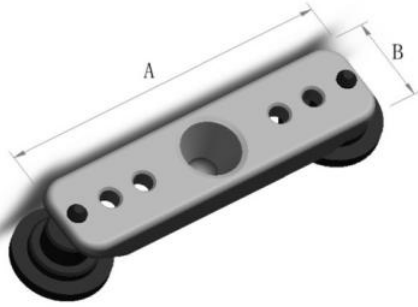
Description	Weight	Item no.
Stop ring $\Phi 28 \times 10\text{mm}$	0.035	28-87003-000

28

Clamp

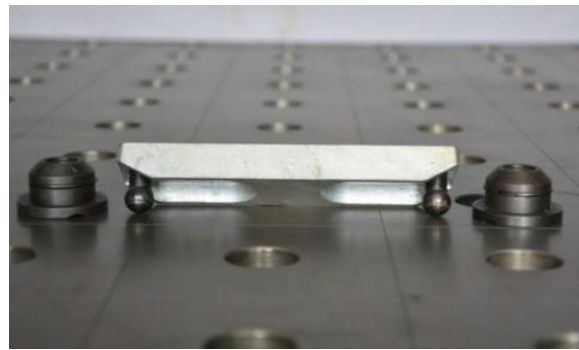
Clamping Bridge

2P – Clamping Bridge



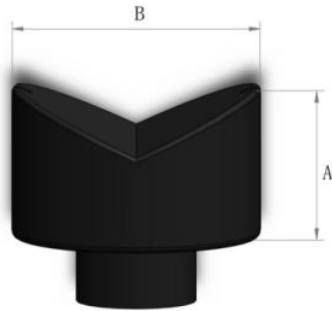
Description

- At the same time clamping two points.
- Clamping the different level of two points between 50 mm.
- The clamping points distance is adjustable.
- Can be used with any screw clamp.
- Galvanized surface.



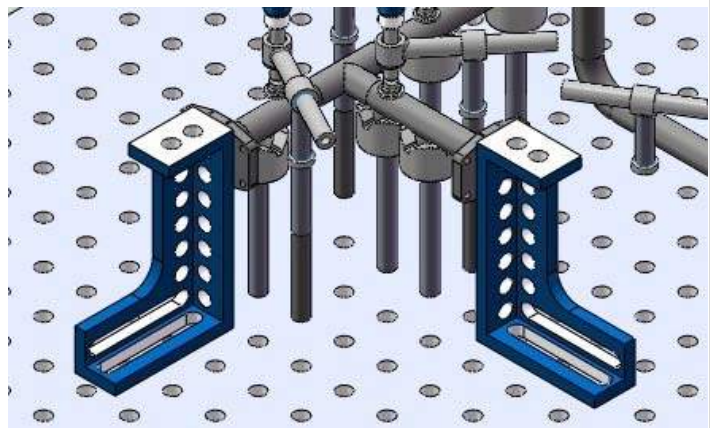
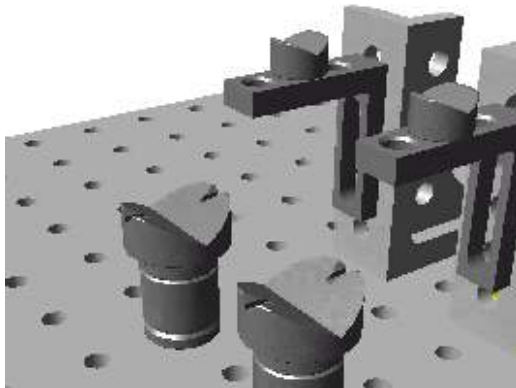
Description	A × ΦB	Weight	Item no.
2P – Clamping Bridge	130/97/65 × 35	0.62	28-87018-000

V-Block Ø 58 /130°



Description

- Apply to pipe and round workpiece.
- The diameter of workpiece can be up to 70mm.
- Fit any system bore with countersunk screw.

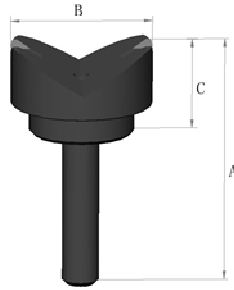


Description	A × ΦB	Weight	Item no.
V-Block Ø 58 /130°, Steel	35 × 58	0.68	28-90058-000
V-Block Ø 58 /130°, Polyamide	35 × 58	0.14	28-90058-001
V-Block Ø 58 /130°, Stainless steel	35 × 58	0.70	28-90058-002

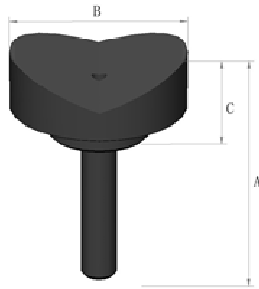
Cross V-Block with Shaft



V-Block Ø 80 / 90°



V-Block Ø 110 / 120°



V-Block Ø 140 / 140°

Description

- Apply to round and rectangular pipes.
- The diameter of workpiece can be up to 100mm, 180mm, 400mm.
- Fit any system bore.

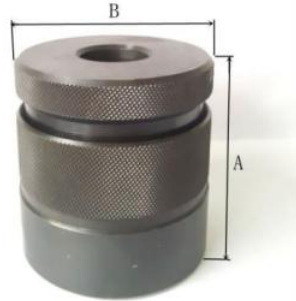
Description	A × ΦB × C	Weight	Item no.
Cross V-Block Ø 80 / 90° with shaft, Steel	45 × 80 × 60	2.16	28-90080-000
Cross V-Block Ø 80 / 90° with shaft, Polyamide	45 × 80 × 60	0.88	28-90080-001
Cross V-Block Ø 80 / 90° with shaft, Stainless steel	45 × 80 × 60	2.18	28-90080-002
Cross V-Block Ø 110 / 120° with shaft, Steel	190 × 110 × 70	3.70	28-90110-000
Cross V-Block Ø 110 / 120° with shaft, Polyamide	190 × 110 × 70	1.10	28-90110-001
Cross V-Block Ø 110 / 120° with shaft, Stainless steel	190 × 110 × 70	3.82	28-90110-002
Cross V-Block Ø 140 / 140° with shaft, Steel	190 × 140 × 70	5.22	28-90140-000
Cross V-Block Ø 140 / 140° with shaft, Polyamide	190 × 140 × 70	1.32	28-90140-001
Cross V-Block Ø 140 / 140° with shaft, Stainless steel	190 × 140 × 70	5.30	28-90140-002

28

Support

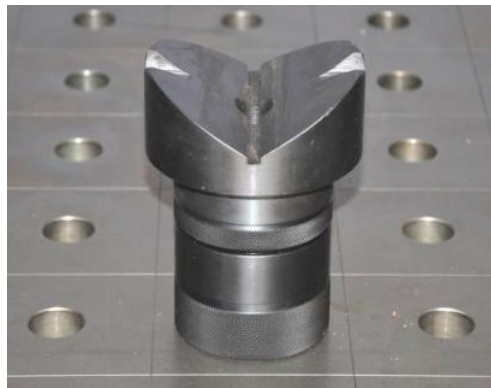
Height adjustment set

Height adjustment set



Description

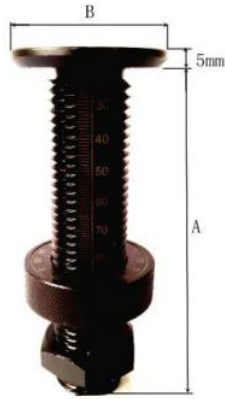
- Used with v- blocks, adjust the height of positioning location.
- Adjustable height 75-95 – mm.
- At the top of the hole can be directly use STQ bolt lock.



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Description	A × ΦB	Weight	Item no.
Height adjustment set	(75-95) × 80	2.34	28-90009-000

Precision Adjustment Screw



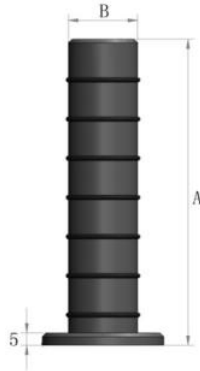
Description

- Positioning the distance and height of the workpiece.
- The adjusting range 22-105 mm.
- Adjust the distance accuracy to 0.1 mm.
- The maximum load 10 KN.



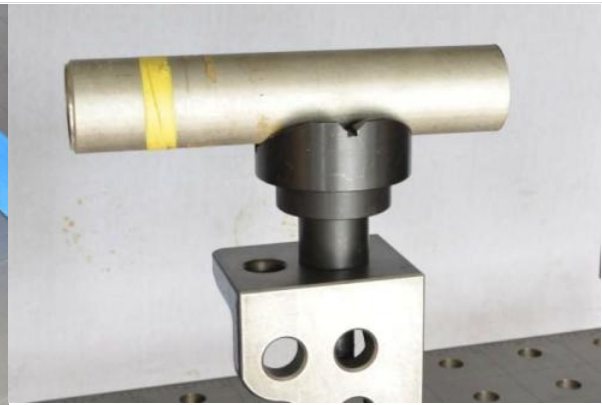
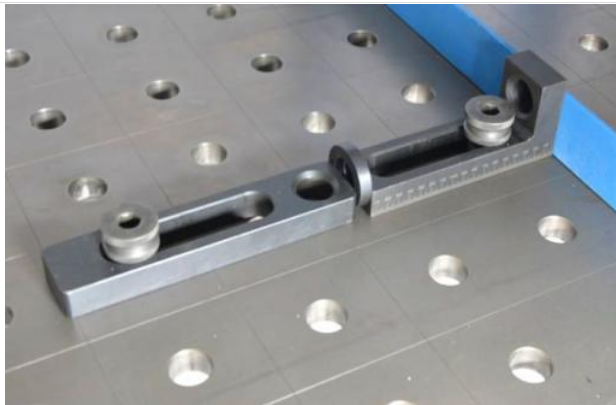
Description	A × B	Weight	Item no.
Precision Adjustment Screw Φ50		0.72	28-90005-000

Adjustable Spacer Set



Description

- The thickness of the Spacer: 1、2、2.5、3、4、5、10、20、40、50mm.
- Positioning the distance or height:5-100mm.
- Fits all system bores.
- Can be used with v-block.
- Combine with stop and angle, constitute all of the required sizes to position workpieces.



Description	A × ΦB	Weight	Item no.
Spacer set 11- pieces	(120+5) × 28	1.96	28-90001-000

Wrench, Transport Ring, Ground connector



00-C0008-xxx



00-C0016-001



28-C0015-000



00-C0001-000



28-C0009-000

Description

- Ball head hex wrench SW14 for STQ Bolt 28-60041-001(2) and table legs.
- Ball head hex wrench SW10 for Connection Bolt 28-60003-000(2)
- Ball head hex wrench SW8 for Bolt 16-60041-001(2) and STQ Countersunk Bolt 28-60042-001(2)
- Ball head hex wrench SW6 for Connection Bolt 16-60003-000(2)7
- Torque wrench of 28: 1/2" head with socket SW8 and SW14;
- Torque wrench of 16: 3/8" head with socket SW4、SW8.
- Ground connector, use for 28 series and 16 series.
- Transport ring loads 2500kg.

Description	Specification	Weight kg	Item no.
Hexagon wrench	SW 6	0.06	00-C0008-006
Hexagon wrench	SW 8	0.1	00-C0008-008
Hexagon wrench	SW 10	0.17	00-C0008-010
Hexagon wrench	SW 14	0.32	00-C0008-014
Special wrench	250 x 40mm	0.72	00-C0016-001
Torque wrench	SW14, SW8	0.76	28-C0015-000
Transport ring		4.72	00-C0001-000
Ground connector		0.34	00-C0009-000

28

Accessory

Cart, Round Brush, Pump bottle, Anti-spatter spray, Bench stone



- Description

- Cart has brake wheels with and aluminum alloy handles.
- Round brush material is stainless steel.

Description	Note	Weight kg	Item no.
Cart width x depth x height	1000 x 650 x 1100	45	28-C1001-000
Round brush		0.12	28-C0002-000
Pump bottle Capacity 1L		0.1	00-C0004-000
Anti-spatter spray	5 litre	5	00-C0006-000
Anti-spatter spray	20 litre	20	00-C0006-001
Bench stone	200×50×25	0.56	00-C0007-000