

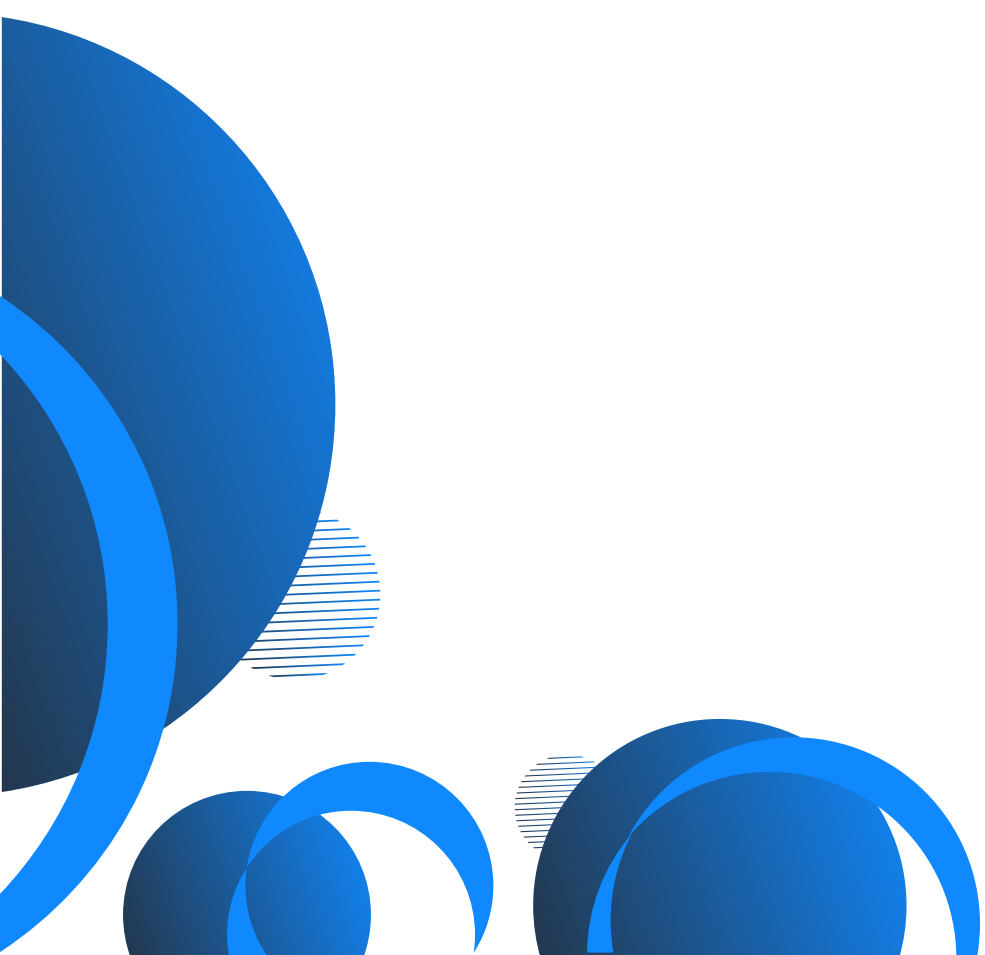
V-Clamp Catalogue



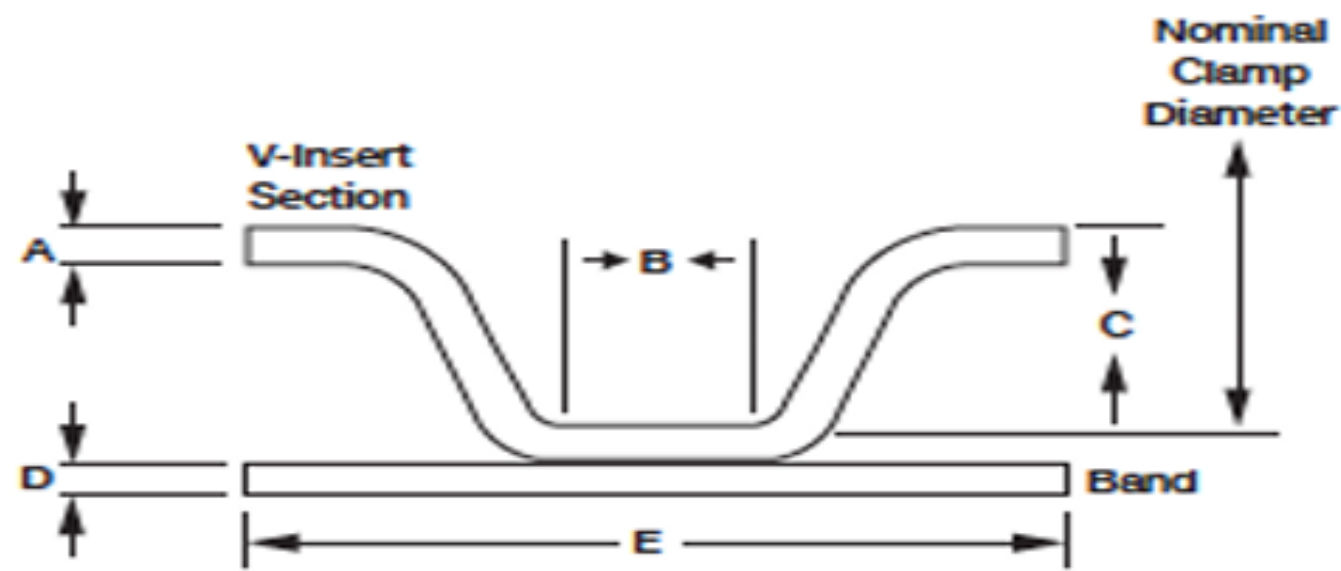
Invicta India has established a prime position for itself amongst leading manufacturers of Clamps and coupling since the year 1995. Invicta India clamps serve fail-proof joining solutions to various sectors viz. Automotive, Tractors, Diesel Engines, Irrigation, Marine, Chemical, Electrical, Filtration and many others. Since the past five decades, we have been continuously serving reputed OEMs and commercial markets worldwide. Having rich experience in the industry, Invicta team take pride in providing varied clamping solutions to suit the needs of its clients. Additionally, our team had various opportunities to develop special designs for Gas Turbine applications and clamps. Certain designs developed by us are patented. Our plants are well equipped with advanced machinery for the purposes of development and manufacturing & have its own special processes in-house viz. Trivalent Plating plant & Heat treatment. ETP plant is also in place for waste water recycling. We run our own Design Validation Process (DVP & R) with all necessary testing equipment. It is backed up with skilled employees who take efforts to ensure the quality of the clamps by testing their strength and reliability. Every clamp is passed through several quality checkpoints & is embossed with a batch number for reverse traceability.

Quality Assurance

Invicta India has been manufacturing clamps and fastenings for over 26 years. Quality is the cornerstone of our philosophy and has been the main contributor to our success and longevity. Although often a small and relatively inexpensive part of the overall equipment, their reliability and functionality are of paramount importance. All materials used by Invicta India are certified and manufacturing quality is closely monitored throughout, using a combination of in process and final inspection testing. Invicta India operates a stringent quality system, from the initial design conception right through the manufacturing process to final packing and indeed dispatch.



TECHNICAL INFORMATION



Part Number	Nominal Diameter	A	B	C	D	E	Insert angle column degree
		Insert Thickness	Apex Width	Insert Depth	Band Thickness	Band Width	
Rex-001	44.5	1.27	6.65	3.58	0.63	15.87	45
Rex-002	80	1.27	6.65	3.58	0.88	19.05	45
Rex-003	81.5	1.27	6.65	3.58	0.88	19.05	45
Rex-004	85.9	1.95	5.25	7.13	1.01	22.22	45
Rex-005	97	1.95	5.25	7.13	1.01	22.22	45
Rex-006	97	1.95	5.25	7.13	1.27	22.22	45
Rex-007	98.6	1.27	10.16	7.13	1.01	22.22	45
Rex-008	100.6	1.95	5.25	7.13	1.57	22.22	45
Rex-009	102.6	1.27	6.25	3.58	0.88	19.05	45
Rex-010	108	1.27	10.16	7.13	1.01	22.22	45
Rex-011	109.5	1.95	5.25	7.13	1.01	22.22	45
Rex-012	114.3	1.27	6.65	3.58	0.88	19.05	45
Rex-013	117.1	1.27	3.96	7.13	0.88	19.05	45
Rex-014	120.7	1.27	10.16	7.13	1.01	22.22	45
Rex-015	122.2	1.95	5.25	7.13	1.01	22.22	45
Rex-016	133.4	1.27	6.65	3.58	0.88	19.05	45
Rex-017	147.6	1.27	5.25	7.13	1.57	22.22	45
Rex-018	149.4	1.27	10.16	7.13	1.01	22.22	45
Rex-019	149.9	1.27	6.65	3.58	0.88	19.05	45
Rex-020	152.4	1.27	3.96	7.13	0.88	19.05	45
Rex-021	242.8	1.27	13.46	5.46	0.88	19.05	45
Rex-022	242.8	1.27	13.97	7.13	0.88	19.05	45
Rex-023	271.5	1.27	5.25	7.13	1.57	22.22	45

V-BAND CLAMP (EUROPEAN STYLE)



V-Band clamps provide fast, secure coupling for flanged joints.

V-Band clamps are engineered for long term durability, strength, corrosion resistance, easy usage with the highest quality standards.

The Advantages

- Compact design
- Space and weight saving design
- Durable and stronger closure system
- Easy handling
- Quick assembly

Outline Specifications

- Diameter range 55mm to 600mm
- High pressure, corrosion resistance and temperature rating up to 900 °C

Materials:

- 300 series stainless steel : 304, 301, 316, 316Ti
- 400 series stainless steel : 430, 409, 430Ti, 441

- Flange width range 4mm to 25mm
- Flange depth range 4mm to 20 mm

It is used in a wide range of applications including exhaust systems, turbochargers, pumps, filters, emission and industrial applications, diesel engines and other flanged joints.



V-Band Klemmen bieten an

Flanschverbindungen schnelle, sichere und qualitative Lösungen an. Bei Flanschverbindungen werden unter Berücksichtigung der wichtigsten Faktoren wie Temperatur, Druck und Vibration die am besten geeigneten Materialien und technischen Eigenschaften für die V-Bandklemmen-Herstellung verwendet, die Vibrationsfestigkeit und Abdichtung gewährleisten.

Vorteile

- Kompaktes Design
- Platz- und Gewichtsparnis
- Stabiler und dauerhafter Schließmechanismus
- leichte und schnelle Montage

Allgemeine Techniker Eigenschaften

- Durchmesserbereich 55mm bis 600mm (besondere Durchmesserwünsche werden bewertet.)

- Hohe Druck-, Korrosion- und bis zu 900 °C Temperaturfestigkeit

verwendete Materialien:

- 300 Serie Edelstahl : 304, 301, 316, 316Ti
- 400 Serie Edelstahl : 430, 409, 430Ti, 441

- Flanschbreite 4mm bis 25mm
- Flanschtiefe 4mm bis 20mm

Typische Einsatzgebiete: Emissionen - und industrielle Anwendungen, Turbolader Verbindungen, Abgasanlagen, Dieselmotoren , Pumpen und alle Flanschverbindungen.



Band Width (mm)	Band Thickness (mm)	Material	Bolt	
			Metric	Material
20 mm	1 - 1,2 - 1,5 mm	AISI 300 Series SS AISI 400 Series SS	M6 M8 M10	AISI 304 AISI 316
25 mm	1,2 - 1,5 - 2 mm			
30 mm	1,2 - 1,5 - 2 mm			

Closure Types

STC- Straight Trunnion Closure



Advantages:

- Low Friction Losses
- High Strength Precision-machined components
- Manufactured from consistently high quality materials
- State of the art automated manufacturing
- Competitively priced

QRC- Quick Release Closure



Advantages:

- All the advantages of STC-type closures
- Rapid closing and opening
- Captive closure component
- Significantly shorter installation times
- Closure bolt secured during tightening

NOMINAL DIAMETER	FLANGE O.D.
Ø97	Ø94
Ø103	Ø100
Ø110	Ø107
Ø131	Ø128
Ø243	Ø240
Ø117	Ø114
Ø68	Ø65
Ø197	Ø194
Ø124,4	Ø121,4
Ø76,5	Ø73,5
Ø127	Ø124
Ø115,8	Ø112,8
Ø115,8	Ø112,8
Ø127,4	Ø124,4
Ø127,4	Ø124,4
Ø145,8	Ø142,8
Ø155,8	Ø152,8
Ø145,8	Ø142,8
Ø70	Ø67

Band Width And Closure Size

V-Band Clamps are manufactured two different band width & with different closures on the type concerned

Closure Type	Cover Band 1.0x20 mm	Cover Band 1.5x25 mm			
STC	Bot M6x50	Bot M8x70	Single Closure 3 profile segments DA≤ 300		
DRC					
			Double Closure 2 profile segments Min dia 200 mm Max dia 500 mm		



Dual V-Band clamps provide high tightening torque and secure coupling for critical joints which includes large diameter applications and high vibration.

- High tightening torque and accurate sealing with double latch
- High resistance to pressure and vibration
- Long term durability, strength and corrosion resistance
- Space and weight saving compact design
- Easy handling
- Quick assembly

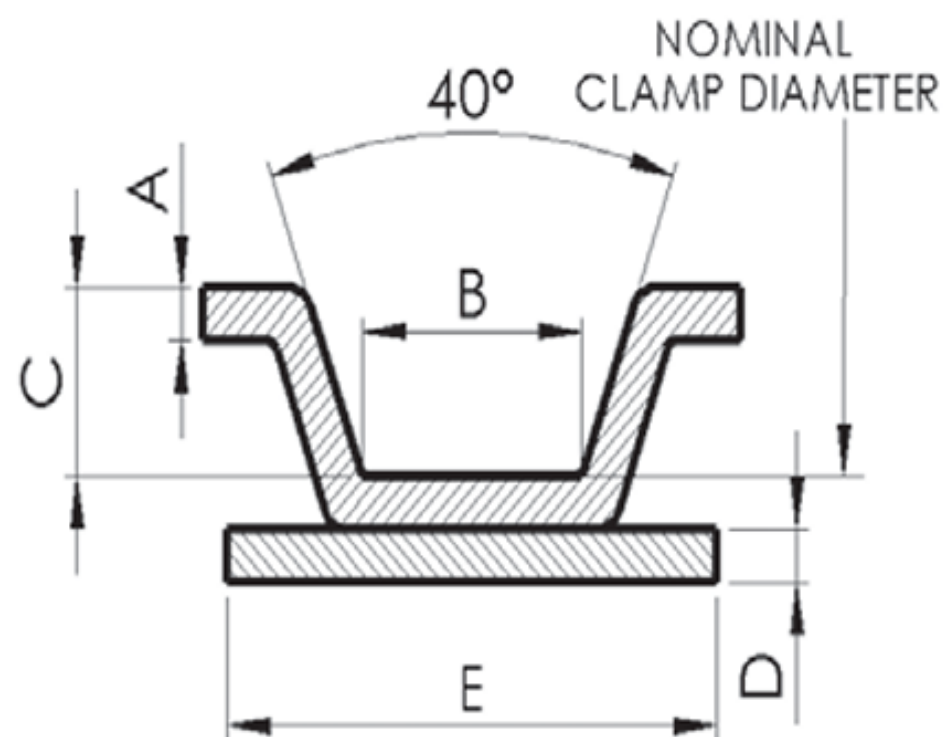
It is used in a wide range of applications including exhaust connections, pumps, ship exhaust systems and other flanged joints.



Doppel-V-Bandklemmen sind dafür konzipiert, dass sie vor allem bei großem Durchmesser und Vibrationen an kritischen Verbindungspunkten für hohen Drehmoment und eine vollständige Abdichtung sorgen.

- Mit doppeltem Schließmechanismus hoher Drehmoment und vollständige Abdichtung
- Hohe Beständigkeit gegen Druck und Vibration
- Langlebige hohe Korrosionsfestigkeit
- Platz- und Gewichtsparendes Design
- leichte und schnelle Montage-Möglichkeit

Typische Einsatzgebiete: Schifffahrt, Schiffsabgassysteme, industrielle Anwendungen, Pumpen und alle Flanschverbindungen.



NOMINAL DIAMETER	FLANGE O.D.
Ø300	Ø279
Ø193	Ø190
Ø211	Ø208
Ø373	Ø370

Band Wideness (mm)	Band Thickness (mm)	Material	Bolt		Material
			inch.	Metric	
19 mm	1 - 1,2 - 1,5 mm	AISI 300 Series SS AISI 400 Series SS	1/4 inc. 5/16 inc. 3/8 inc.	M6 M8 M10	AISI 410 AISI 304 Steel 8.8 (Geomet Plated)
22,2 mm	1 - 1,2 - 1,5 - 2 mm				
25 mm	1,2 - 1,5 - 2 mm				
31,8 mm	1,5 - 2 mm				

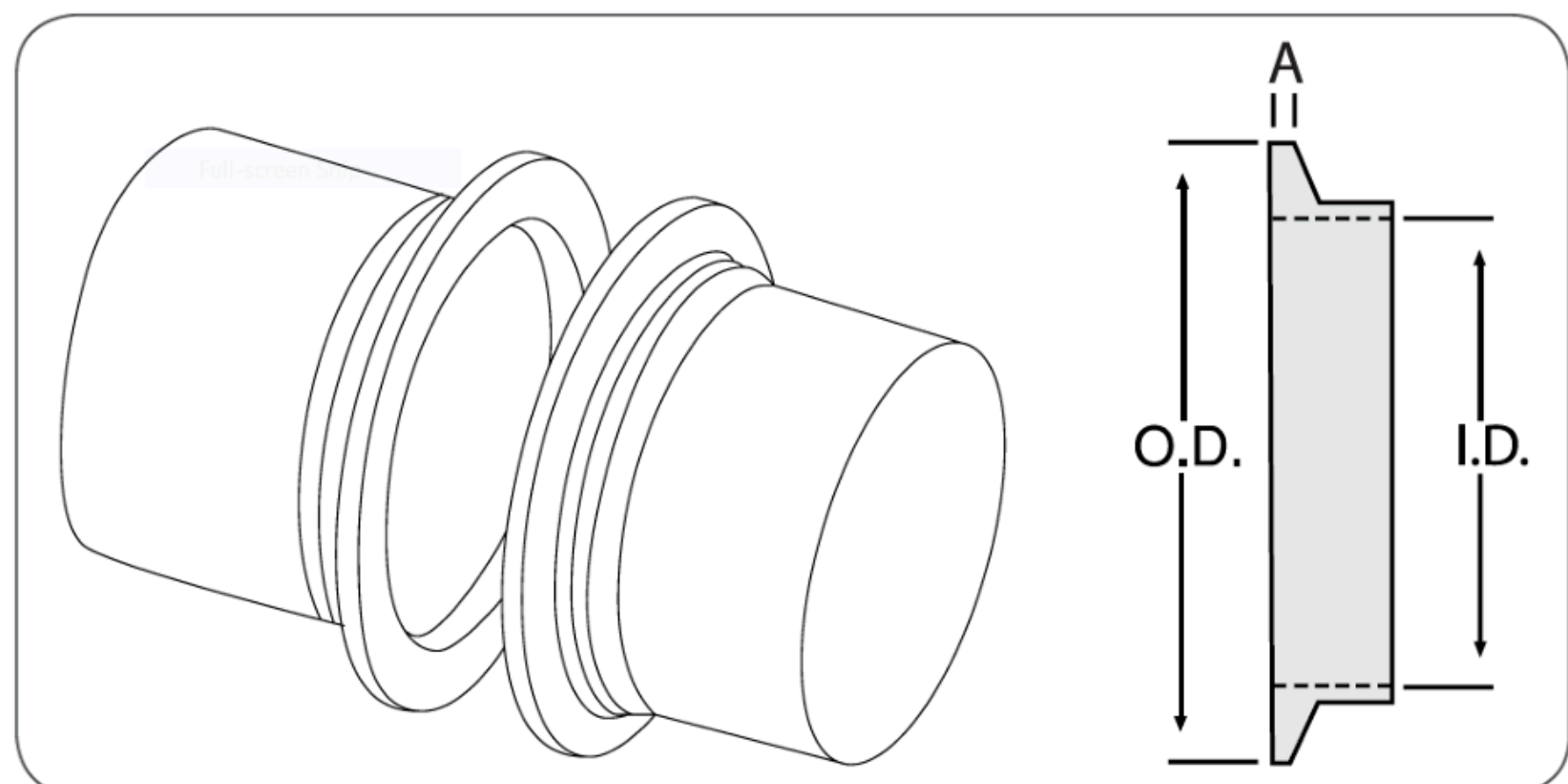


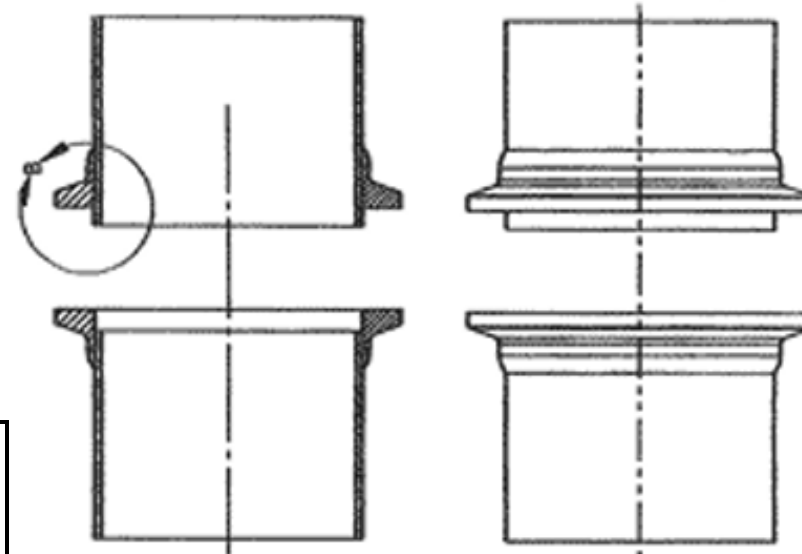
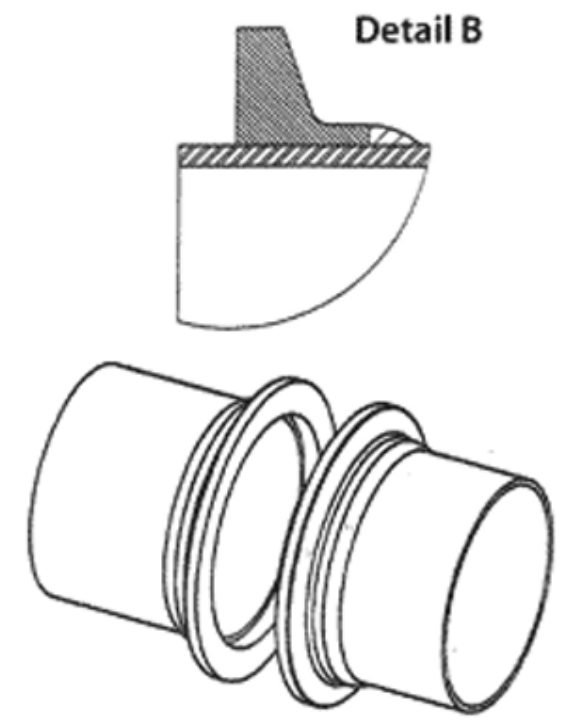
V-Band Flange Kit provide fast, secure coupling for tube connections. It is a perfect solution for easy installation and disassemble of tube connections. It is used in a wide range of applications including turbo charges, tube fixing, pumps, high pressure air and water systems.



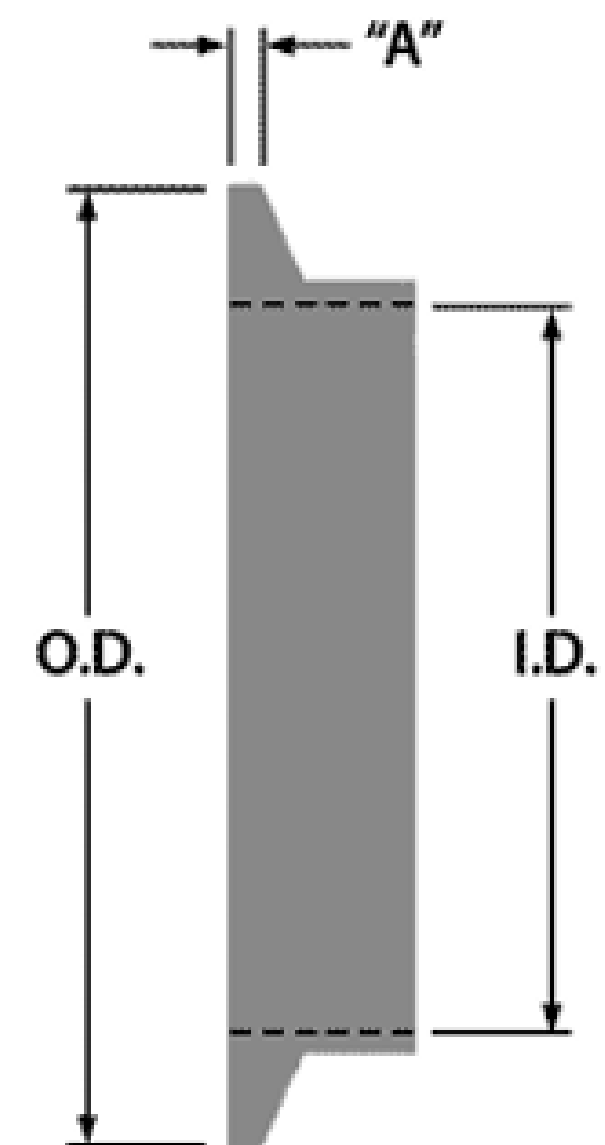
V-Band Flansch-Kit bietet für Rohre schnelle, sichere und hochwertige Verbindungen. Typische Einsatzgebiete: Turbolader Verbindungen, modifizierte Abgasverbindungen, Filter und bietet an allen Rohrverbindungen praktische Montagemöglichkeiten.

Turbo Size / O.D.	Part No V-Bant Kit	ID mm	OD	A dia mm
2,00"	VBK200	50,8 (+0,75)	70,55	4,08
2,50"	VBK250	63,5 (+0,75)	83,25	4,08
3,00"	VBK300	76,2 (+0,75)	95,95	4,08
3,50"	VBK350	88,9 (+0,75)	111	4,08
4,00"	VBK400	101,6 (+0,75)	124	4,08
4,50"	VBK450	114,3 (+0,75)	137,5	4,08
5,00"	VBK500	127 (+0,75)	149,5	4,08





Flange P/N #	I.D.	O.D.	A dia.
150	1.50"	2.24"	.150"
175	1.75"	2.49"	.150"
200	2.00"	2.69"	.150"
225	2.25"	2.99"	.150"
250	2.50"	3.22"	.150"
275	2.75"	3.49"	.150"
300	3.00"	3.69"	.150"
350	3.50"	4.22"	.150"
400	4.00"	4.69"	.150"
450	4.50"	5.10"	.150"
500	5.00"	5.59"	0.15



To complement the V-Clamps which we manufacture we also offer machined flanges and seals as part of a kit. Our flanges can be machined to work with flat gaskets, O-Ring gaskets or supplied without a gasket. The gaskets are available in Graphite, NBR, Viton, Silicone, EPDM, PTFE & Chloroprene. The flanges themselves can be machined in AISI304 & AISI316 stainless steels. As standard we produce flanges to suit 2", 2.5", 3", 3.5" & 4" tube OD's in many of our V Profiles. V-Band clamps have been around for ages. Sometimes called "Marmon clamps", they are used in a variety of commercial, industrial, and racing applications. In many cases the end of a tube/pipe is pressed to form the flange. We have designed a line weld on flanges that can be used to replace the old 3 bolt flange or slip and clamp connections. The precision CNC machined surface provides a gasket less seal. The T-bolt style latch allows the clamp to be installed quickly without removing the nut. INVICTA INDIA V-Bands are designed for use with INVICTA INDIA Sealing Flanges. The advertised size refers to the outside diameter of the tubing that will slide through the inside diameter of the sealing flange. Our V-Band clamps and sealing flanges are not designed specifically to be compatible with other manufactures flanges, such as turbine outlets. See the diagram and chart (right) for compatibility.



- Invicta V-Profile Clamps use an optimized design that reduces weight and maximizes space. The result is improved fuel consumption and a more flexible use of space around the application.

The advantages at a glance

- Quick assembly
- Compact design
- Lightweight
- Easy handling
- Wide range of existing profiles

Methods of Operation

- The profile clamp's method of operation is based on the principle of an inclined plane.
- When the closure bolt is tightened, this exerts circumferential force on the profile segments.
- The two halves of the flange are pressed together by means of the profile.
- The circumferential force that is exerted is translated into considerably higher axial force.

Why choose a V-Profile Clamp?

- Easy to handle and provide ease of assembly.
- Compact design requires minimal space
- Quick to assemble – only one bolt to tighten to produce a secure joint
- Lightweight, reducing the total weight of the system

Applications

- Exhaust gas systems Exhaust gas recirculation (EGR)
- Charged air applications
- Cooling systems
- Filter systems
- Selective catalytic reduction (SCR)
- Turbocharger manifold connections

Series-2



The Series-2 is a stamped V-Clamp that is a low-cost and economical continuously formed metal band with a flexible hinge point. The spot-weld-free construction enhances corrosion resistance.

Applications

- Air connections
- Exhaust connections
- Materials: Corrosion- and heat-resistant steel (Cold-rolled steel and stainless steel)
- Sizes: 2-1/8" – 7" (178 mm) or 1.75" (44.5 mm) to 7" (178 mm)
- Fasteners: 1/4" and 5/16"

Series-3



The Series-3 V-Clamp is a cost-effective continuously formed metal band having two 180° V-Retainer zones and an added hinge point for flexibility with a general purpose style closure.

Applications

- Light-duty Turbocharger connections
- Turbo exhaust outlet
- Diesel exhaust connections
- Materials: Corrosion-resistant and specialty steels 301SS, 304SS, 316SS
- Sizes: 4" (102 mm) to 9" (229 mm) diameter (limited dimensions)
- Fasteners: 1/4"

Series-4



Series-4 V-Clamp Halves feature two separate V-retainers with two bolts. This creates a more uniform clamping load than a single bolt clamp. The spot-weld-free construction enhances the corrosion resistance. Available options include carriage, hex head or special bolts, captivated nuts.

Applications

- Air brakes, exhaust connections
- Diaphragm pumps
- Materials: Steel, plated steel, corrosion- and heat-resistant steels
- Fasteners: #10, 1/4", 5/16"
- Sizes: 2" (51 mm) to 14" (356 mm) diameter
- Tooling: Application specific
- Options: Carriage, hex head or special bolts, captivated nuts

Series-5



The series-5 profile clamps are reliable and time-efficient connection elements.

Applications

- Turbocharger
- Hot end and cold end joints
- EGR, SCR injector and sensor joints
- Internal profile diameters available: Diameter 20 –180 mm (other diameters upon request)

Series-6



The series -6 V-Coupling is designed for limited space applications and has two retainers connected with a hinge for ease of installation. The spot-weld-free construction provides enhanced corrosion resistance.

Applications

- Small turbochargers
- Turbocharger turbine housing
- EGR systems □ Exhaust connections
- Materials: Corrosion- and heat-resistant steels
- Sizes: Diameter range 2" – 7"
- Fasteners: M6

Series-7



The Series-7 clamps offer a connection solution to applications exposed to high temperatures. A typical application is gasoline turbocharger connections.

Applications

- Turbo gasoline engine manifold, turbocharger and catalyst joints
- High temperature diesel engine manifold and turbocharger joints
- Internal profile diameters available: Diameter 69–138 mm (other diameters upon request)

Series-8



The Series-8 two-piece profile clamps enable fast and easy pre-assembly by using only two fingers. The special design is based on a spring element and a hook in the bottom of the clamp, in combination with a pre-assembled bolt.

Applications

- Turbocharger
- Hot end and cold end joints
- EGR, SCR injector and sensor joints
- Internal profile diameters available: Diameter 31 mm and 98 mm (other diameters upon request)

Series-9

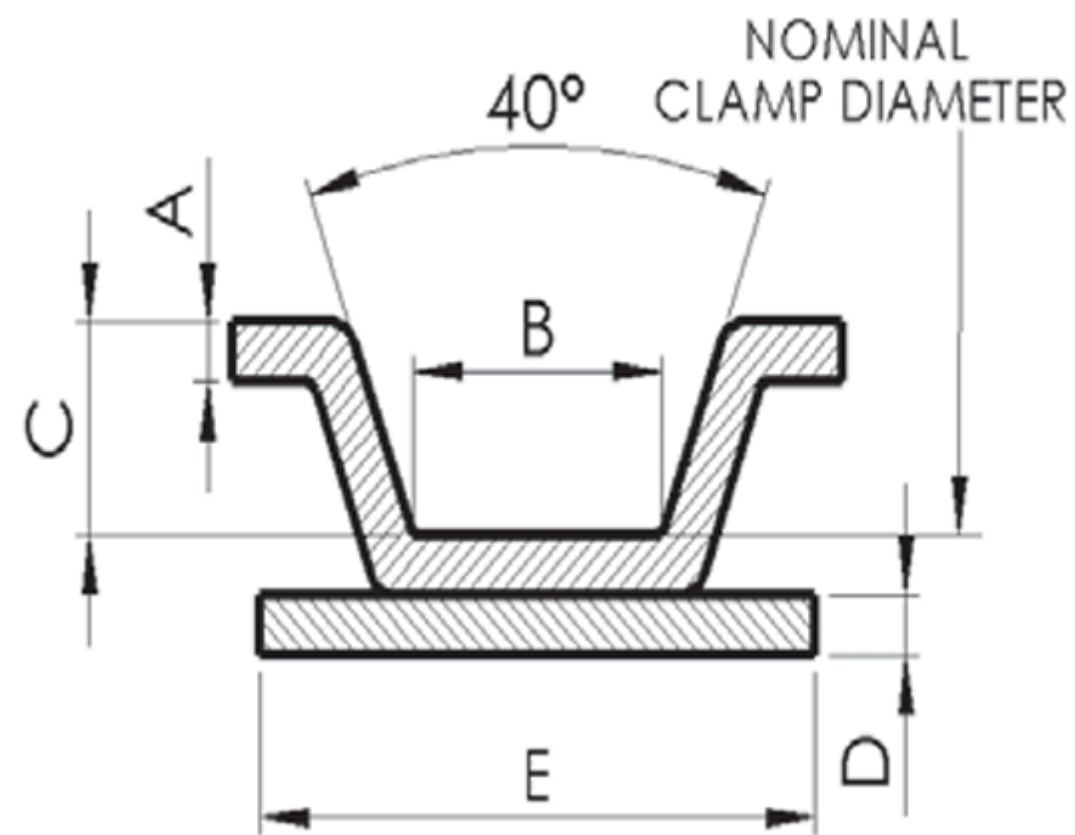


The Series-9 compact profile clamps are reliable and time-efficient connection elements. They are used in applications exposed to high temperatures. A typical application is gasoline turbocharger connections.

Applications

- Turbocharger
- Hot end and cold end joints
- EGR, SCR injector and sensor joints
- Internal profile diameters available: Diameter 50–98 mm (other diameters upon request)

ROLL FORMED T-BOLT V-BAND CLAMP / V-BAND CLAMPS - VTB

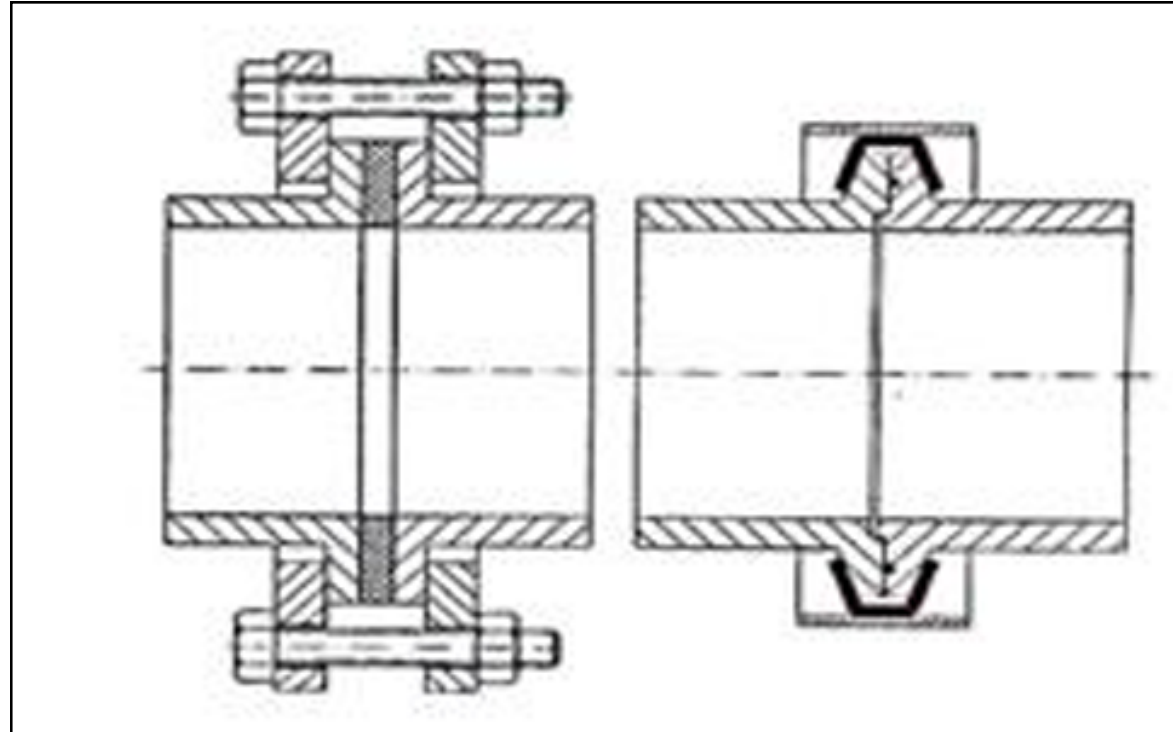


Band Wideness (mm)	Band Thickness (mm)	Material	Bolt inch.	Material
19 mm	1 - 1,2 - 1,5 mm	AISI 300 Series SS AISI 400 Series SS	1/4 inc.	AISI 410
22,2 mm	1 - 1,2 - 1,5 - 2 mm		1/4 - 5/16 inc.	AISI 304
25 - 25,4 mm	1,2 - 1,5 - 2 mm		5/16 inc.	Steel 8.8
31,8 - 32 mm	1,5 - 2 mm		3/8 inc.	(Geomet Plated)

NOMINAL DIAMETER	FLANGE O.D.
Ø98,5	Ø95,5
Ø119	Ø116
Ø81,50	Ø78,5
Ø73,55	Ø70,55
Ø86,25	Ø83,25
Ø98,95	Ø95,95
Ø114	Ø98,12
Ø127	Ø124
Ø140,5	Ø137,5
Ø152,5	Ø149,5
Ø184,28	Ø181,28
Ø88,9	Ø85,9
Ø129,5	Ø126,5
Ø103	Ø100
Ø121	Ø118
Ø129,5	Ø126,5
Ø206,2	Ø203,2
Ø288,75	Ø285,75
Ø75	Ø72
Ø89	Ø86
Ø109,5	Ø106,5
Ø109	Ø106
Ø137,5	Ø134,7
Ø98	Ø95
Ø91,8	Ø88,8

NOMINAL DIAMETER	FLANGE O.D.
Ø160	Ø157
Ø98	Ø95
Ø124	Ø121
Ø76,2	Ø73,2
Ø117	Ø114
Ø104,1	Ø101,1
Ø93	Ø90
Ø152,5	Ø149,5
Ø183	Ø180
Ø118	Ø115
Ø150	Ø147
Ø205	Ø202
Ø115	Ø112
Ø213	Ø210
Ø65	Ø62
Ø110,2	Ø107,2
Ø104	Ø101
Ø163	Ø160
Ø162	Ø159
Ø155	Ø152
Ø127	Ø124
Ø152,4	Ø149,4
Ø203,4	Ø204,4
Ø130	Ø127

ROLL FORMED T-BOLT V-BAND CLAMP / V-BAND CLAMPS - VTB



Invictaindia profile clamps are quick-release connecting elements for all flange and cover joints. They also present an economical alternative to conventional bolted flange joints are therefore the ideal clamps for containers, inlet and exhaust systems as well as for connecting suction and hydraulic lines or supply line system in cinematic, coolant or lubricant. Invictaindia offers the best solution for any application. All invictaindia profile clamps offer a variety of benefits, such as:

- **Easy handling** - Profile clamps are easy to handle and can be assembled with conventional tooling.
- **Time effective assembly** - Due to its handling properties and its quick-release feature, profile clamps are quickly assembled. with the single-part design, only one bolt has to be tightened to produce a secure joint.
- **Compact Design** - As the clamp requires only minimal space in contrast to conventional flanges, it can also be used in critical fitting situations
- **Light weight** - In comparison to flanges, profile clamps are extremely light -weight. this helps to reduce the total weight of complex system to a considerable extent.

Product Advantages

The Comprehensive range of profile clamps offers you:

- 39 different profiles
- 3 bandwidths
- 4 closure types
- Single-part and two-part clamp design
- 2 materials

In addition, the single -part clamps are available in either 2 or 3 segmented design. while the 2 segment clamp is higher in strength, the 3-segment clamp is recommended if maximum flexibility of the clamp is the key requirement

The table on the inside give an overview of the standard range. All profile clamp designs highlighted in blue are quickly available

Materials

Profile clamps are available in 2 material qualities:

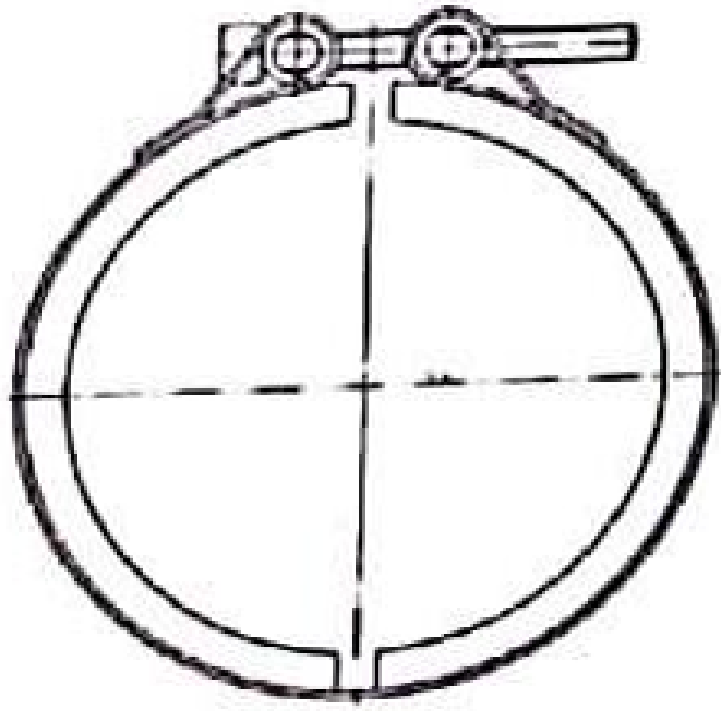
Code	Closure	Profile segments/clampband
W2	Zinc Plated Mild Steel	1.4301
W3	1.4301	

Material Cross reference table

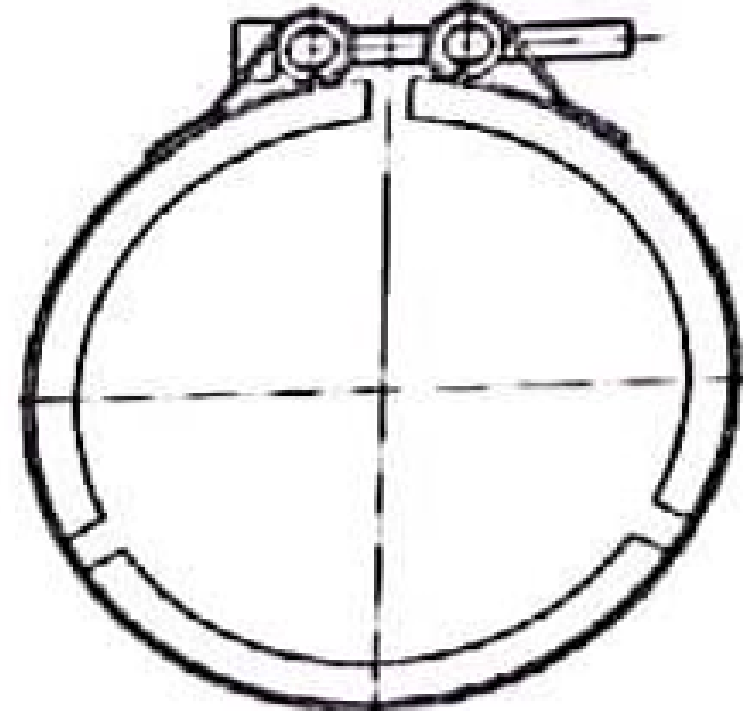
DIN	AISI/AS	BS	AFNOR
1.4301	304	304 S 31	Z6 CN 18-09



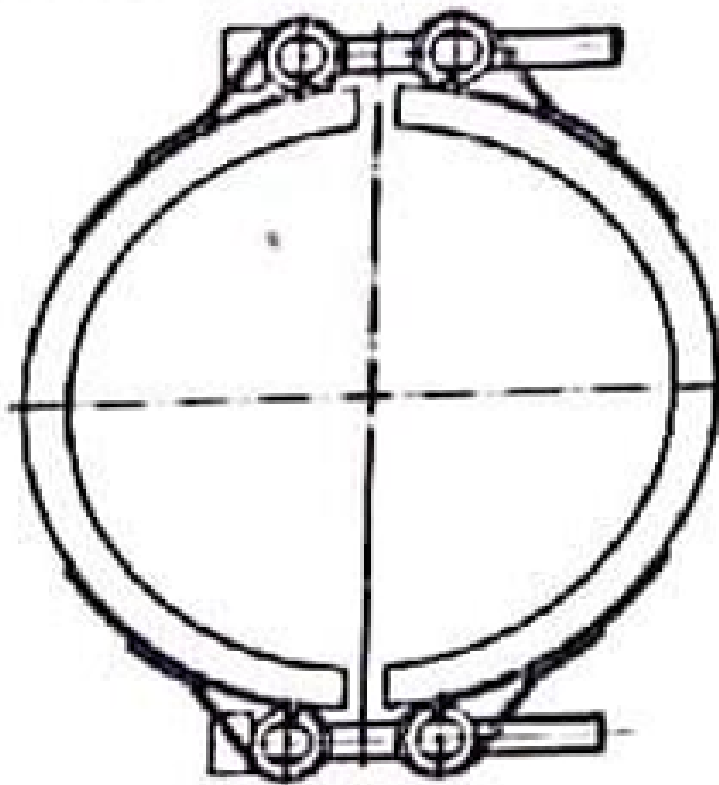
The STC closure type with its practical socket head cap screw is a modification of the common TBS Type



**Single-part
2 segments**



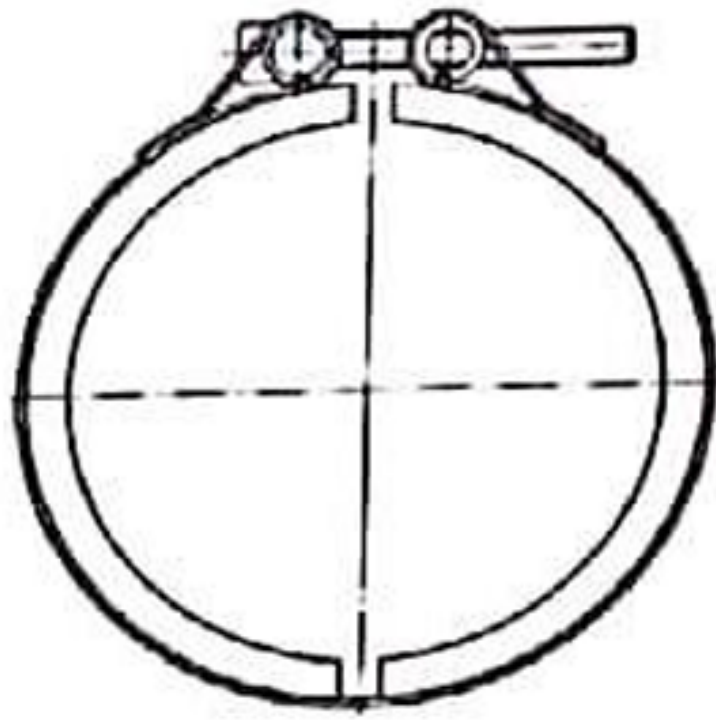
**Single-part
3 segments**



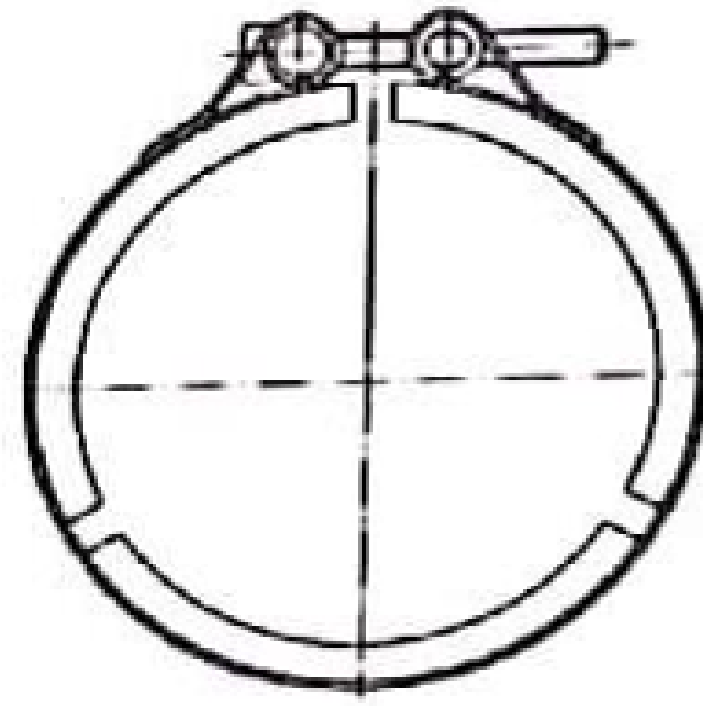
**Two-part
3 segments**



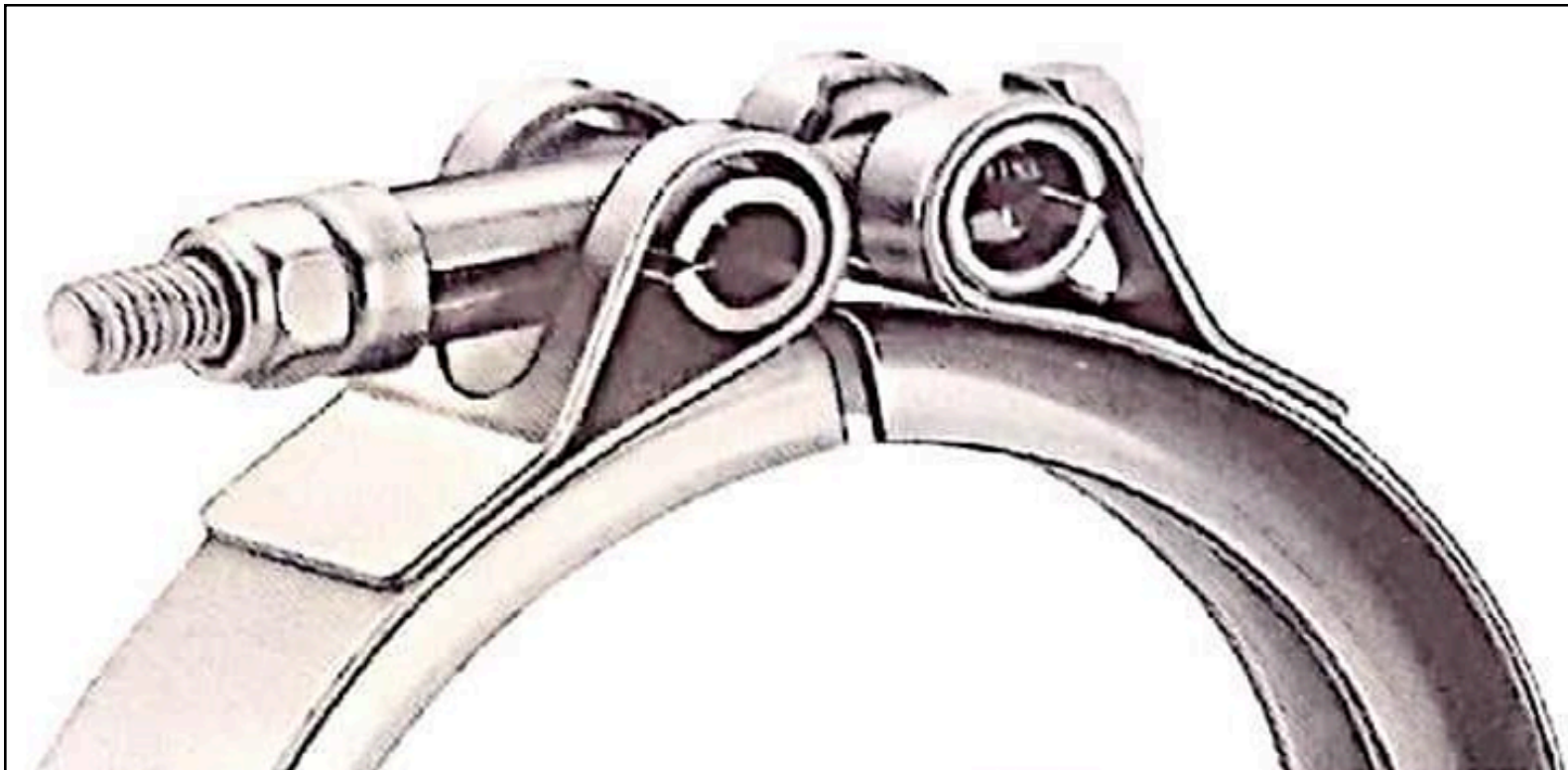
The QRC closure type can be opened very quickly and conveniently; at the same time, it eliminates the risk of accidental opening



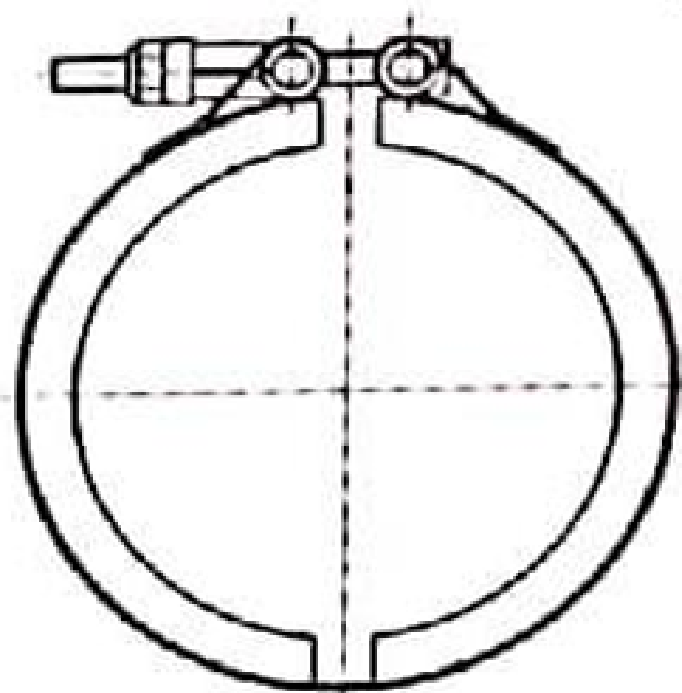
**Single-part
2 segments**



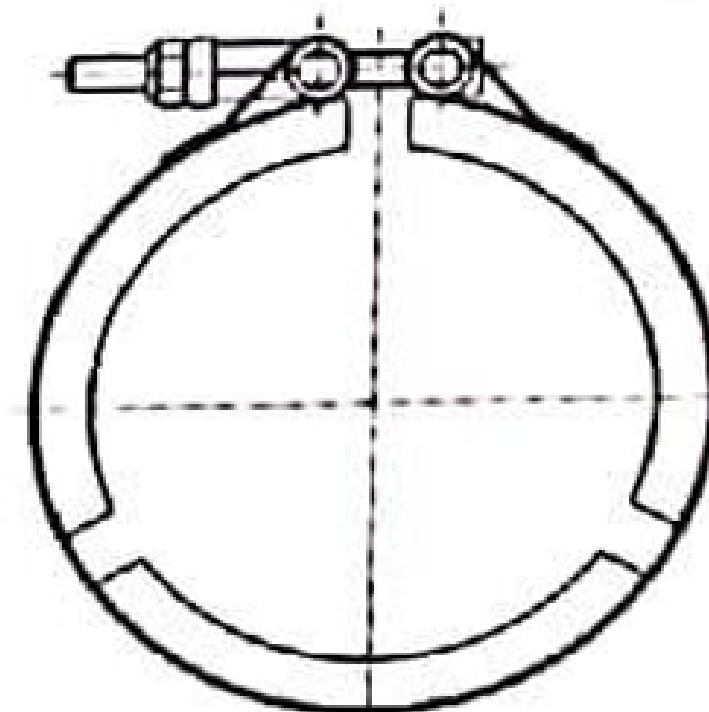
**Single-part
3 segments**



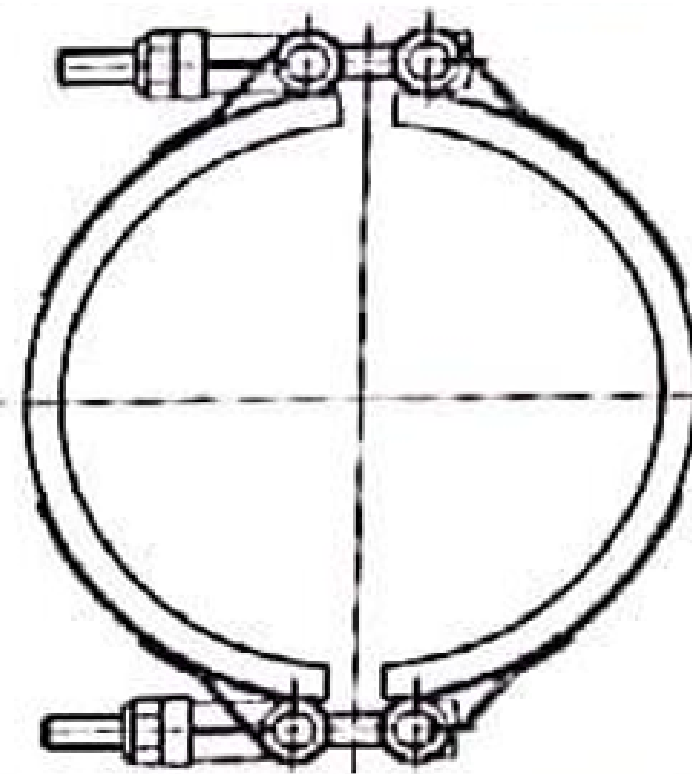
The TBS closure type is fitted with a strong T-bolt. This closure has been developed for high pressure tapered flange applications



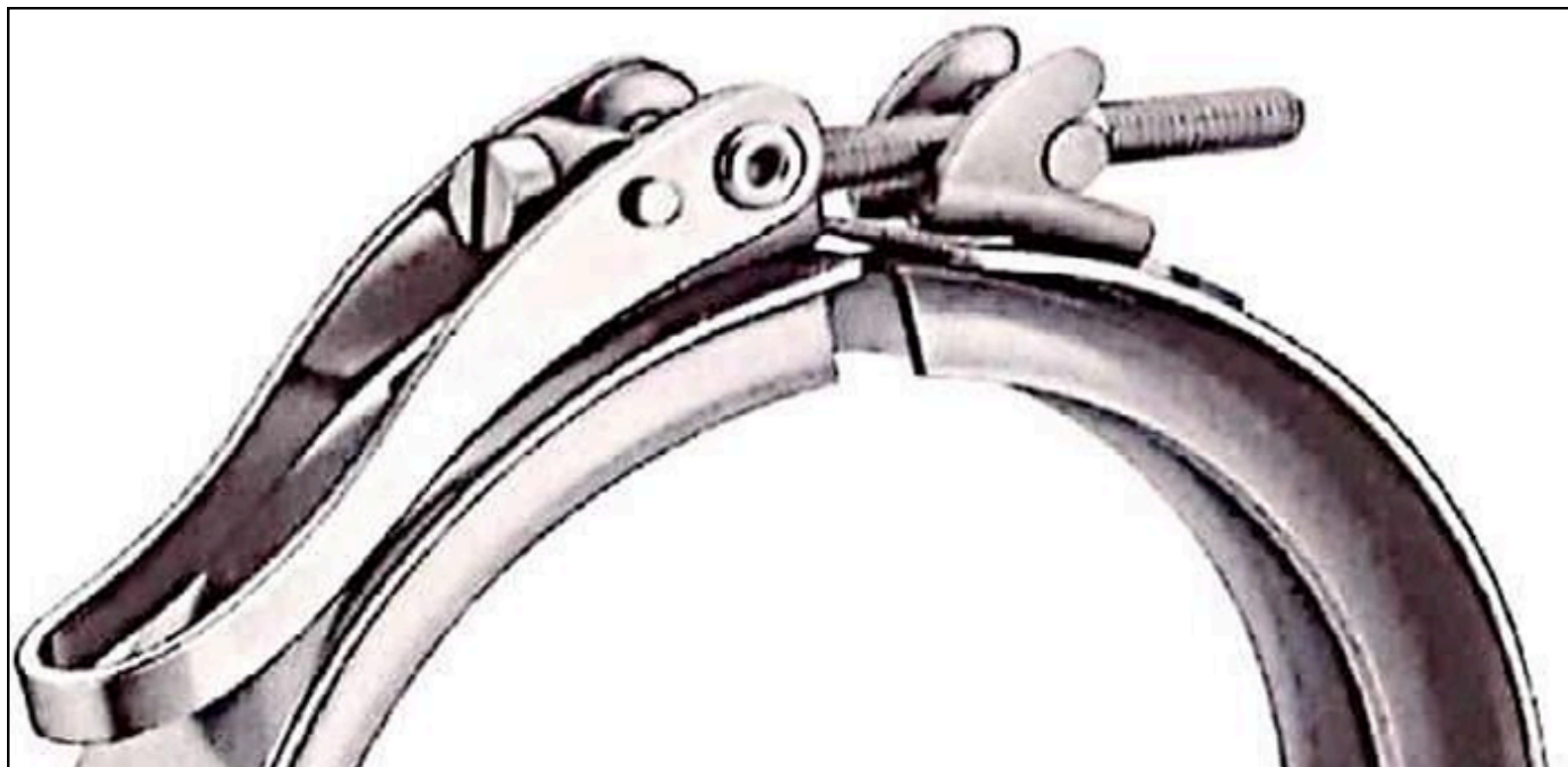
**Single-part
2 segments**



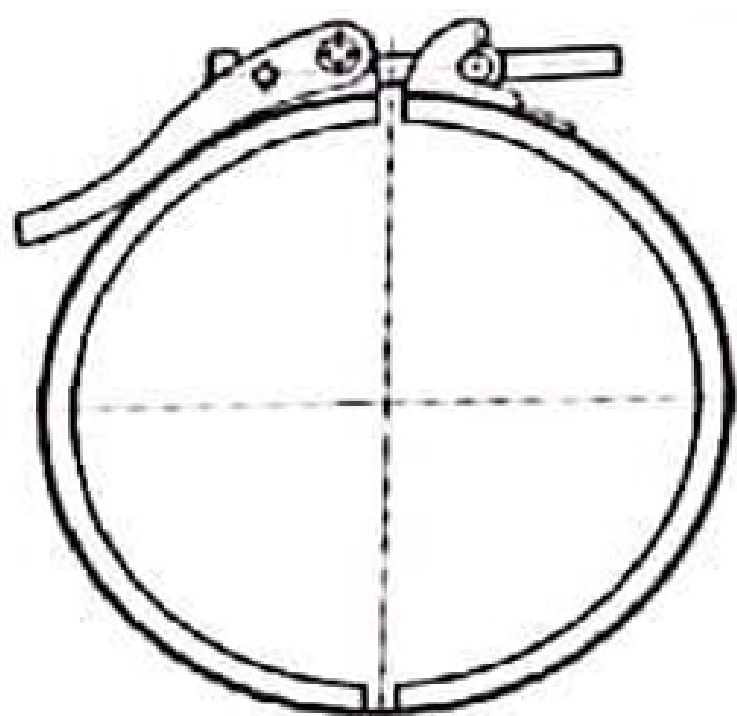
**Single-part
3 segments**



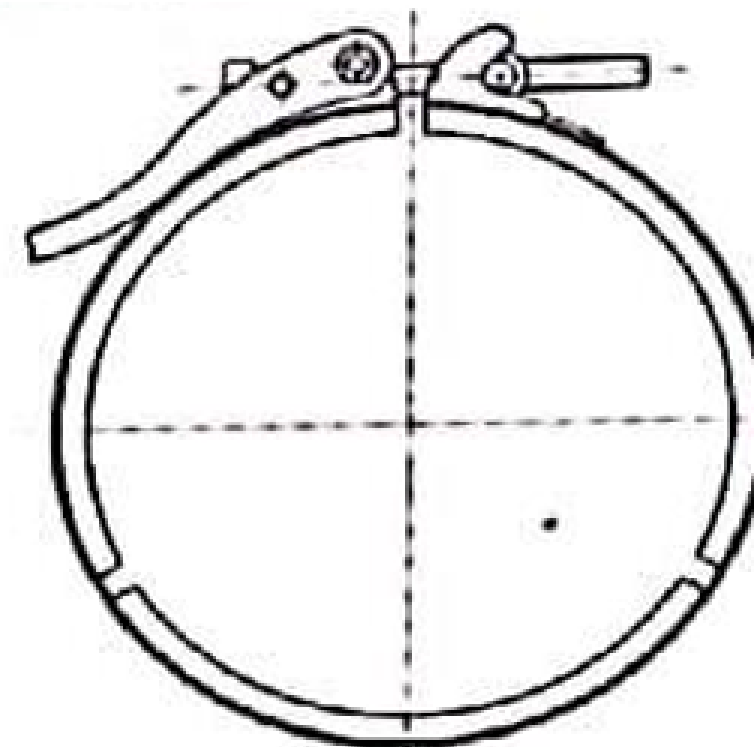
**Two-part
3 segments**



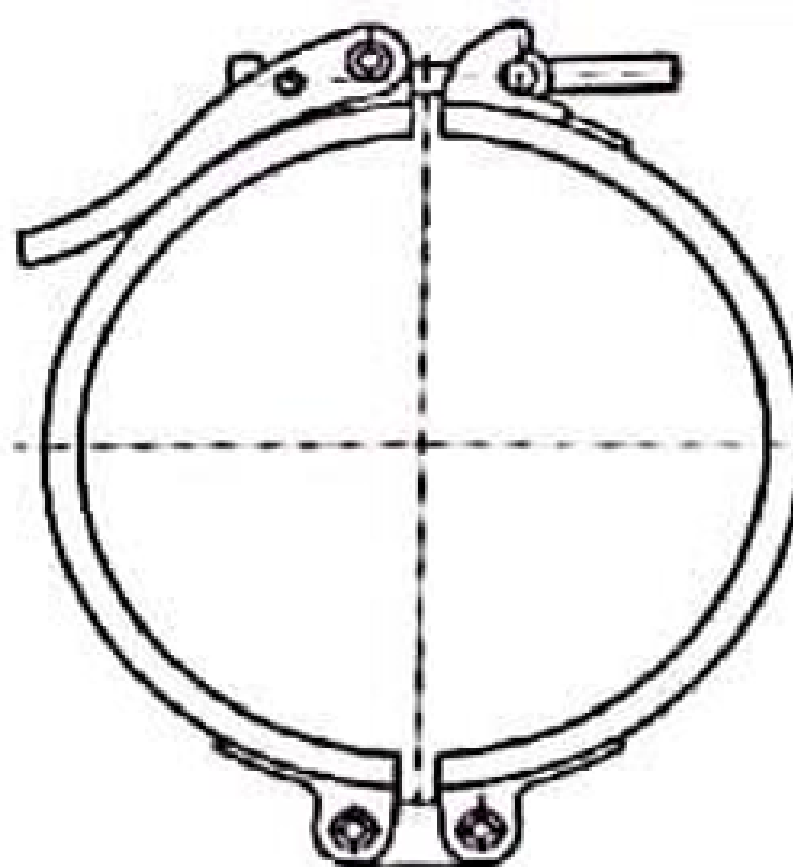
The SVS is an elbow lever-type closure, which can be opened and closed without tooling. It is recommended for applications which require frequent release of the joint, e.g. in filter constructions



**Single-part
2 segments**



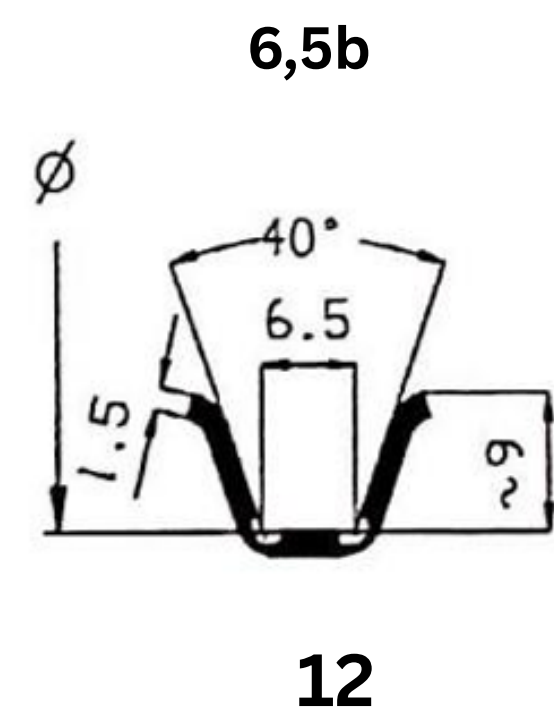
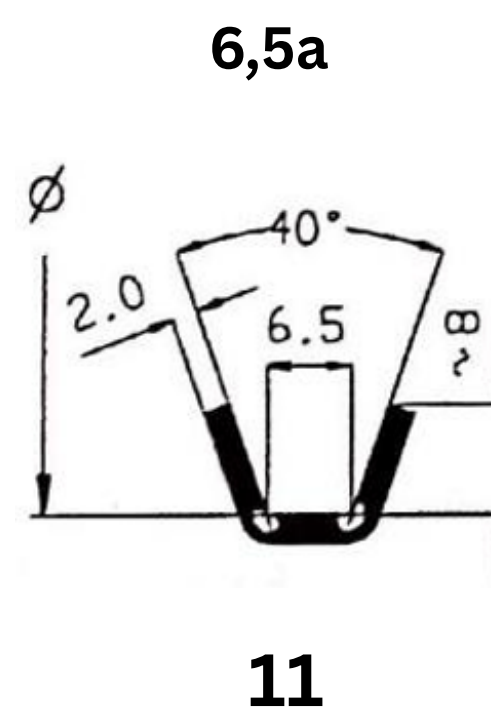
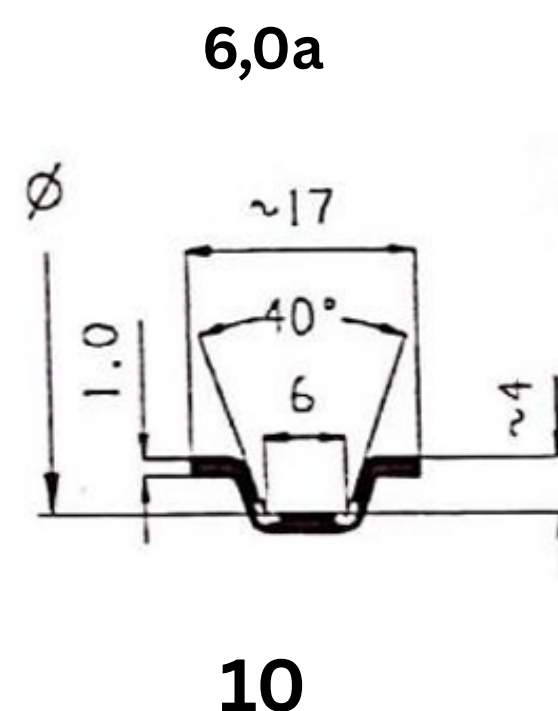
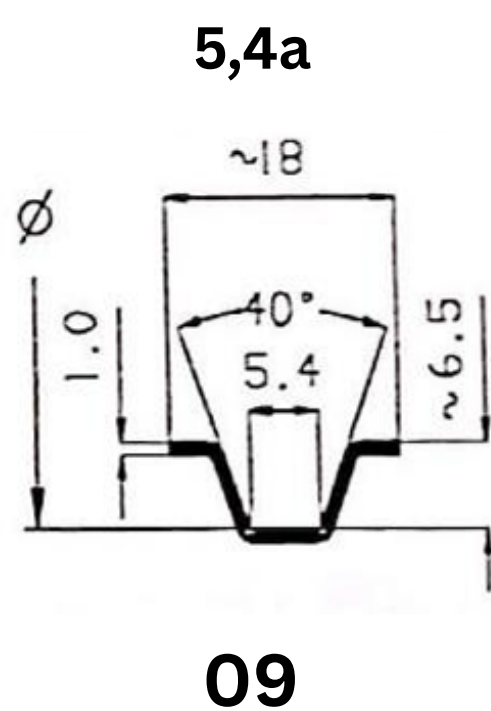
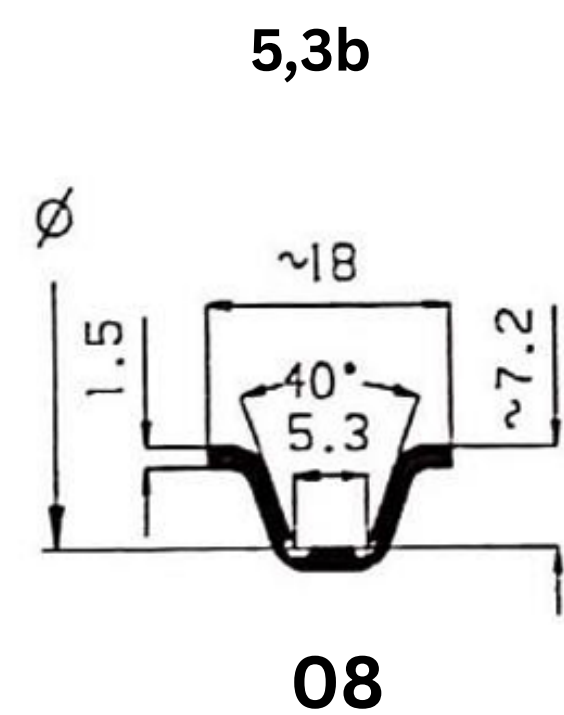
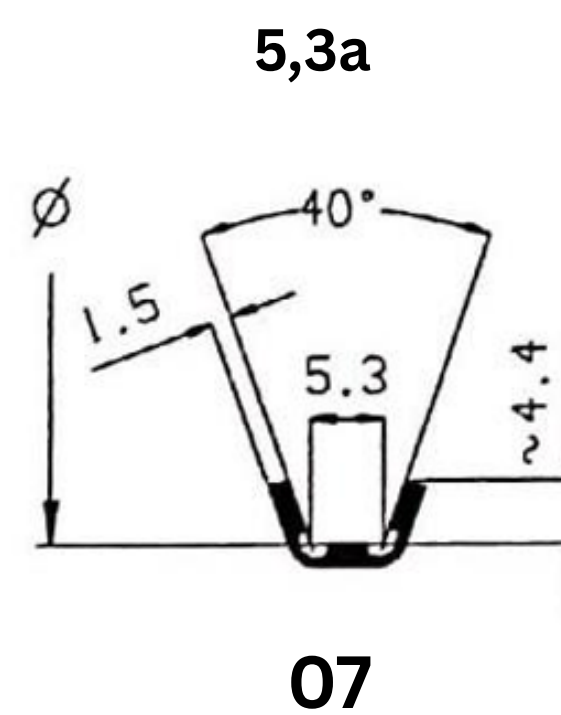
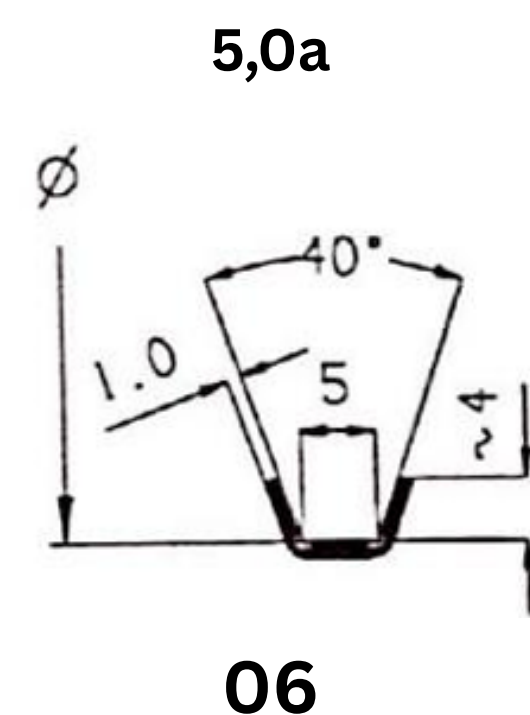
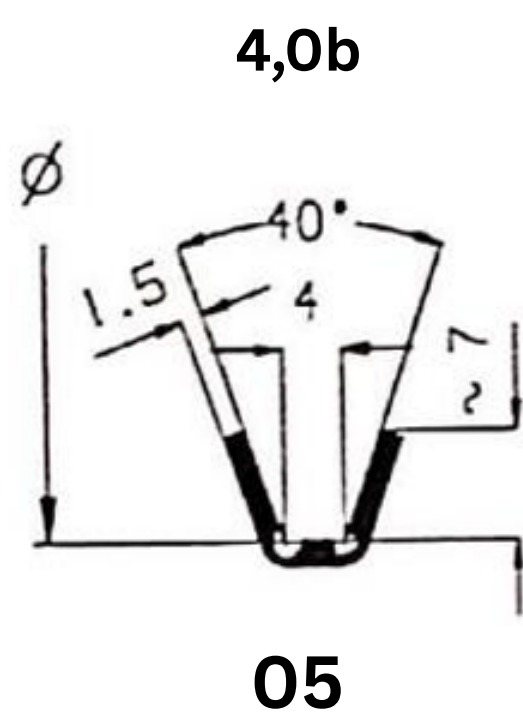
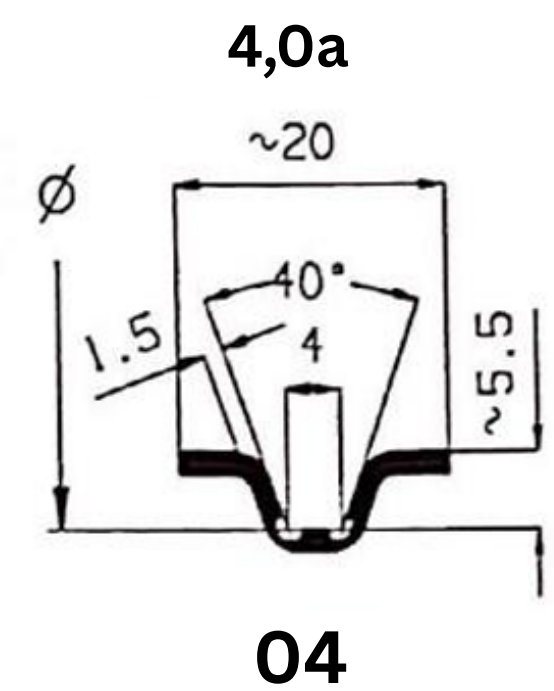
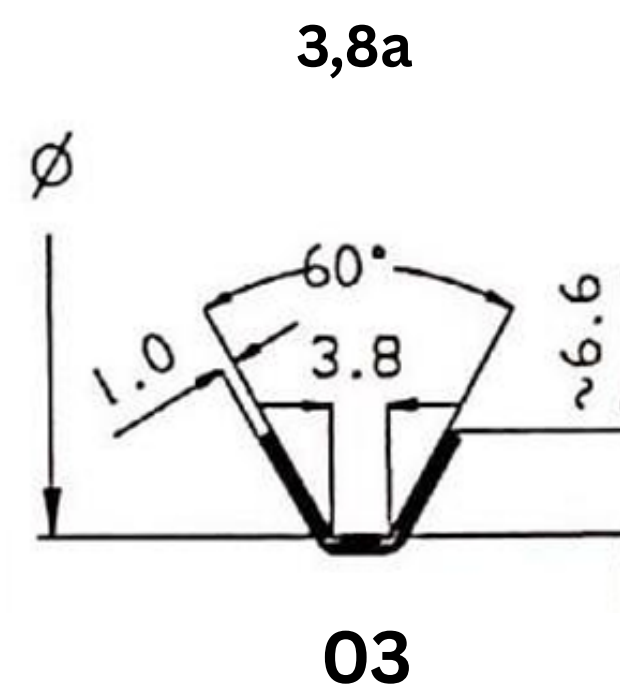
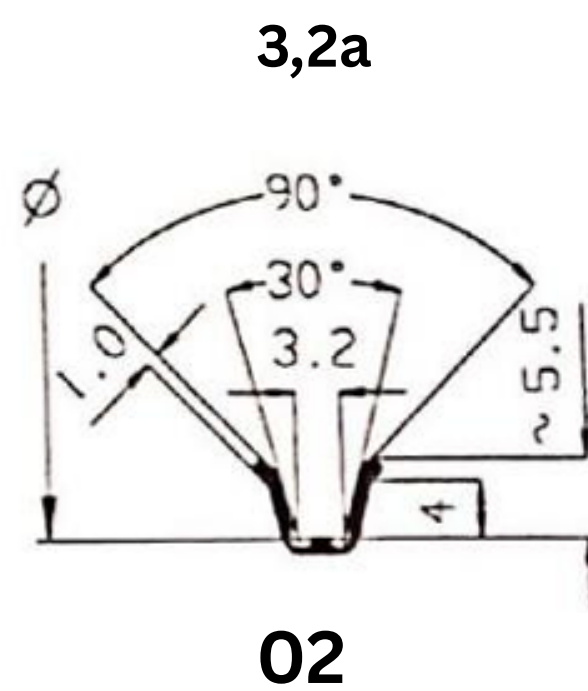
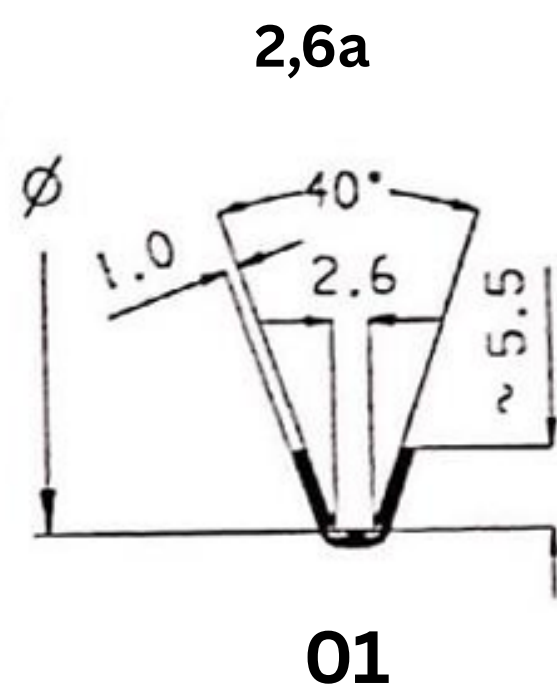
**Single-part
3 segments**

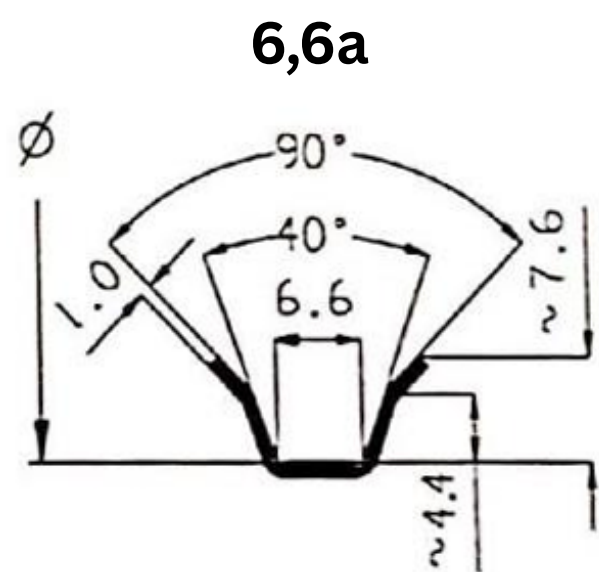


**Two-part
3 segments**

Invicta india v-clamp standard range. The respective inner profile diameter can be freely chosen in millimeter steps with consideration to the limits of minimum and maximum diameter.

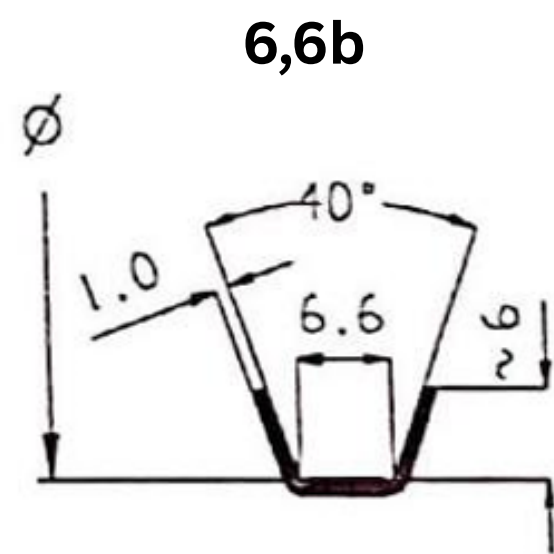
For any special application, please ask for further profile types in our invicta india v-clamp special range or special pressed profiles.





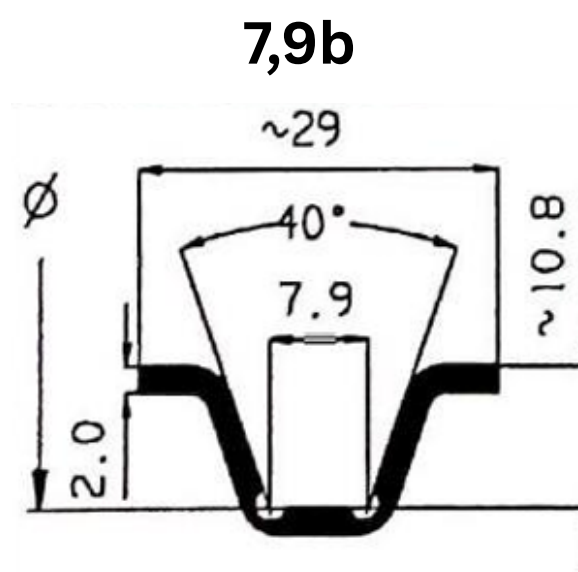
6,6a

13



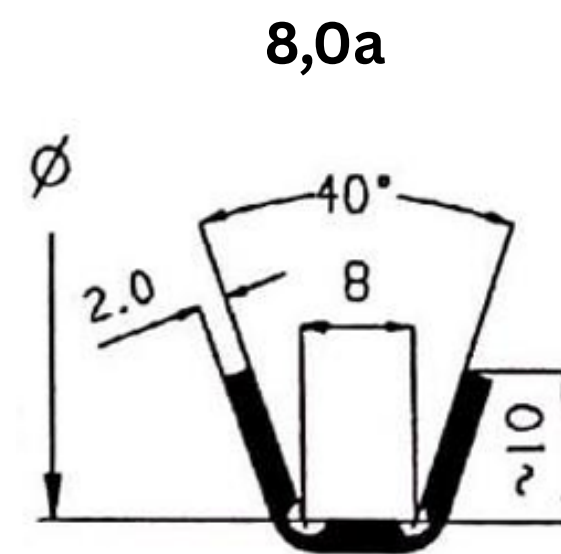
6,6b

14



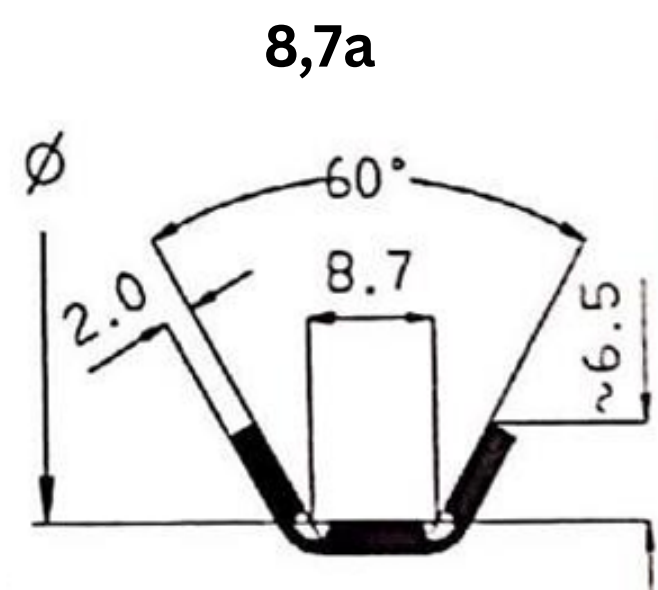
7,9b

15



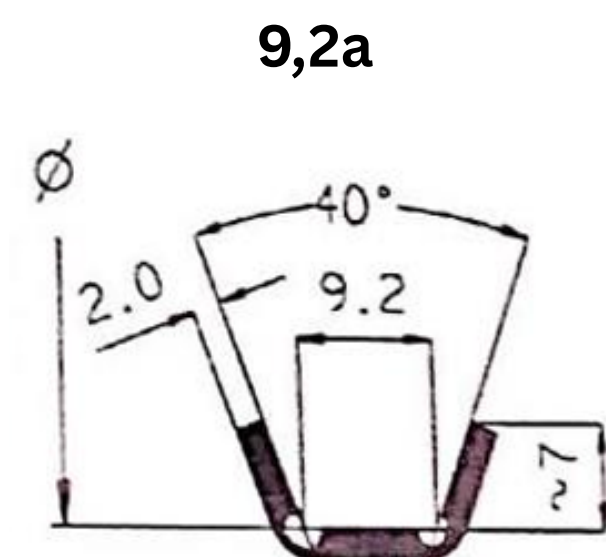
8,0a

16



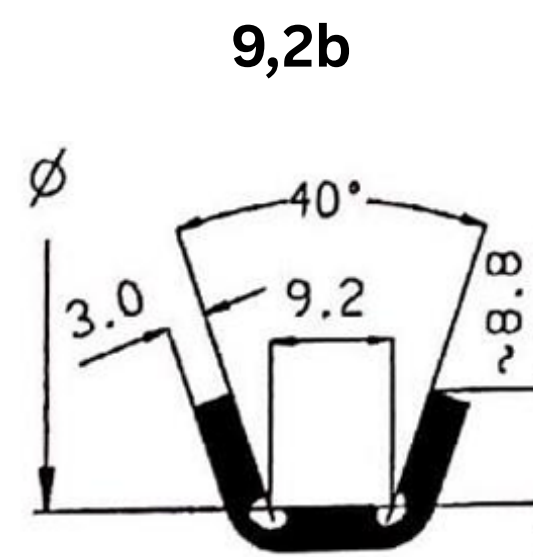
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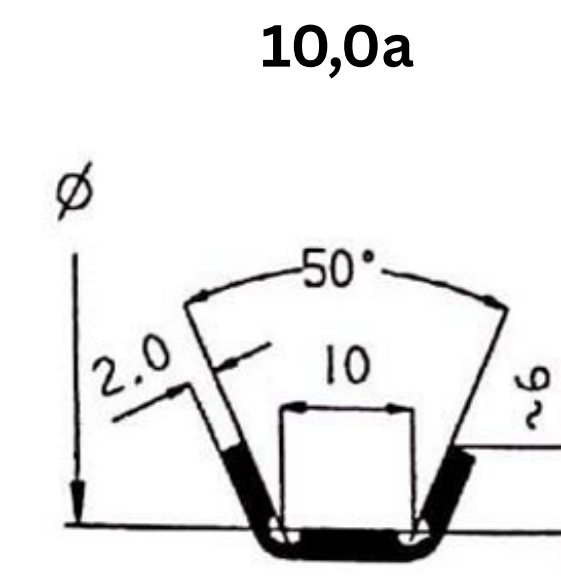
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18



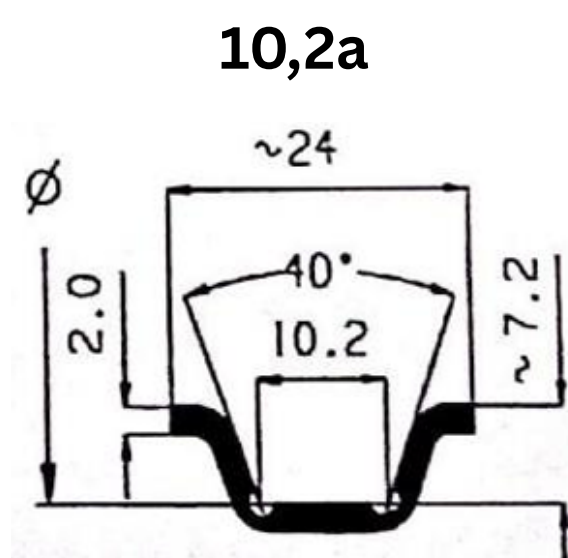
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19



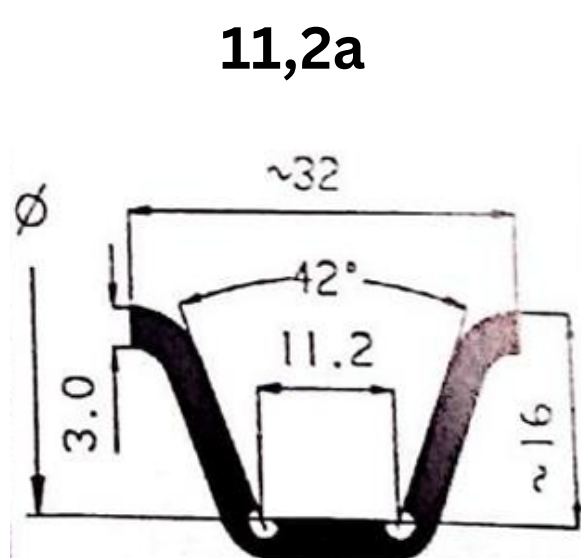
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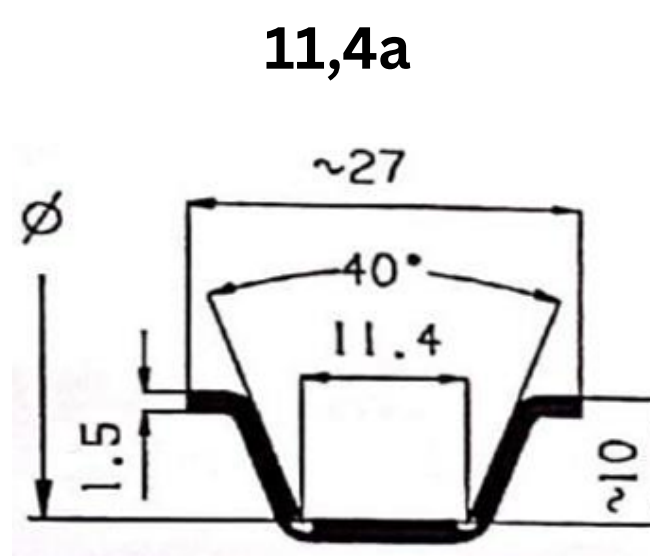
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21



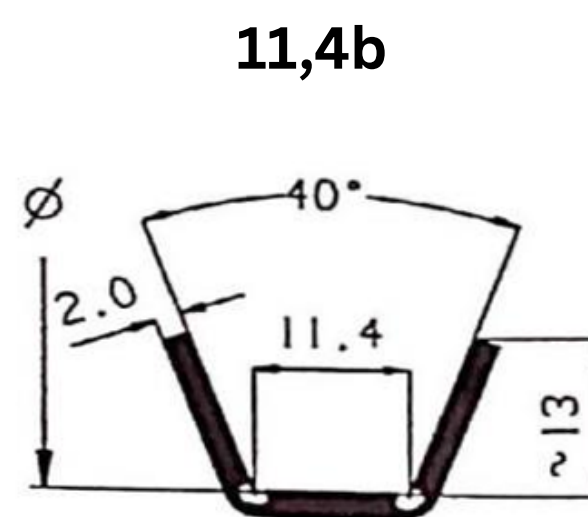
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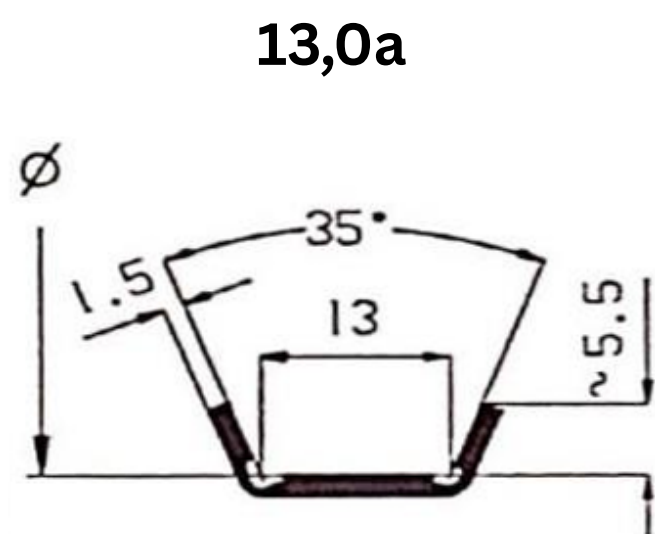
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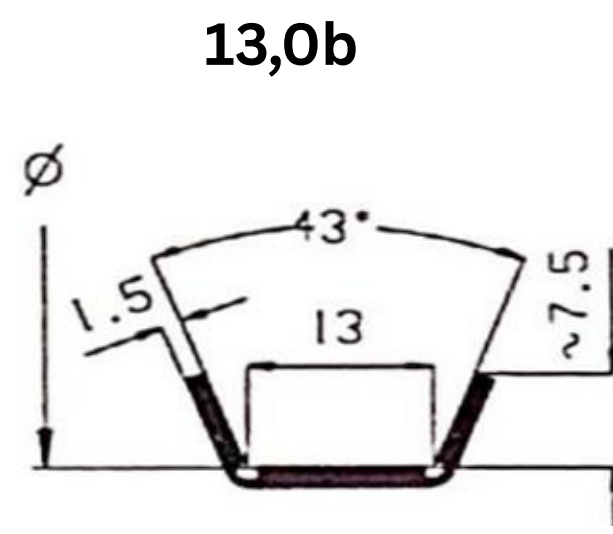
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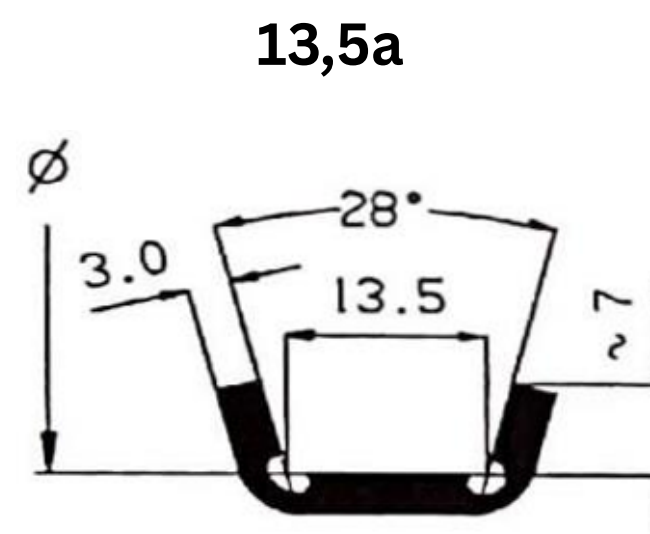
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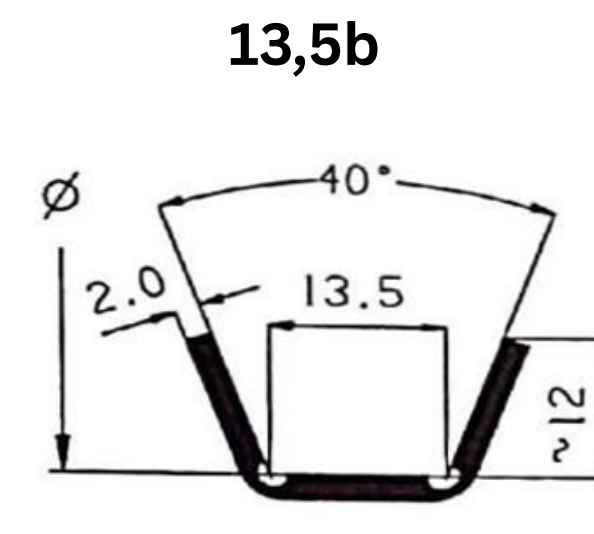
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13,5a

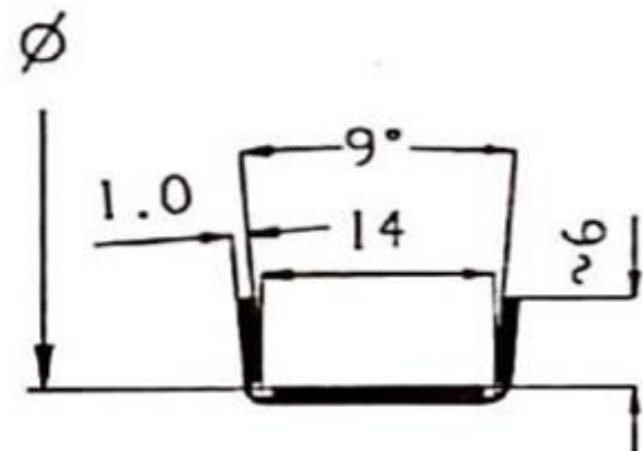
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13,5b

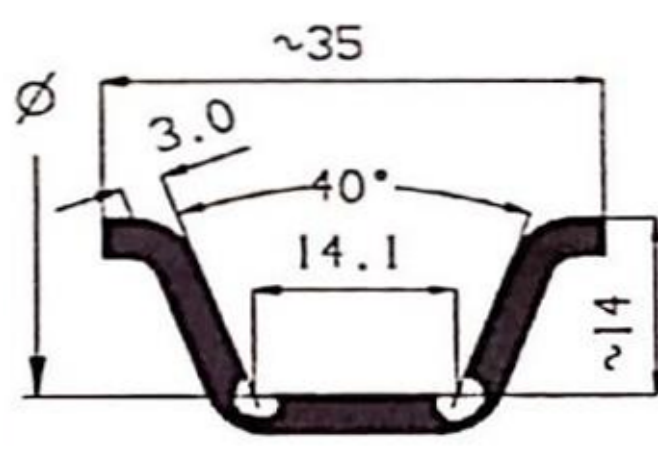
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14,0a



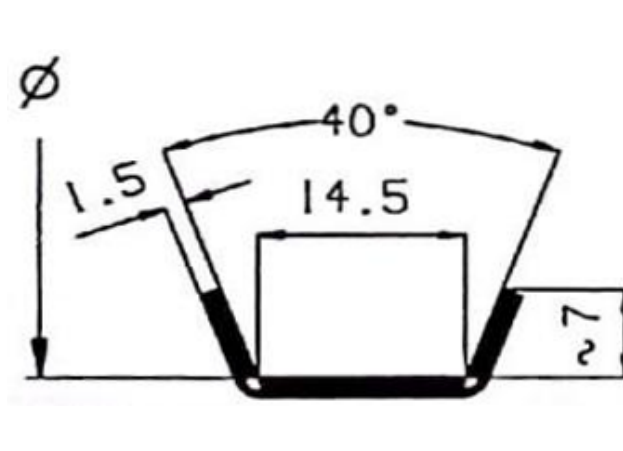
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14,1a



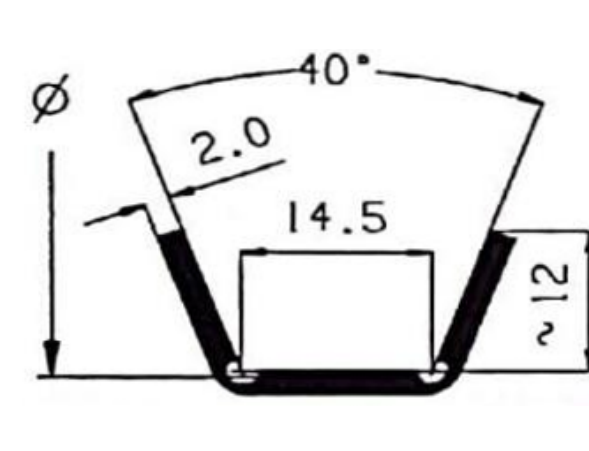
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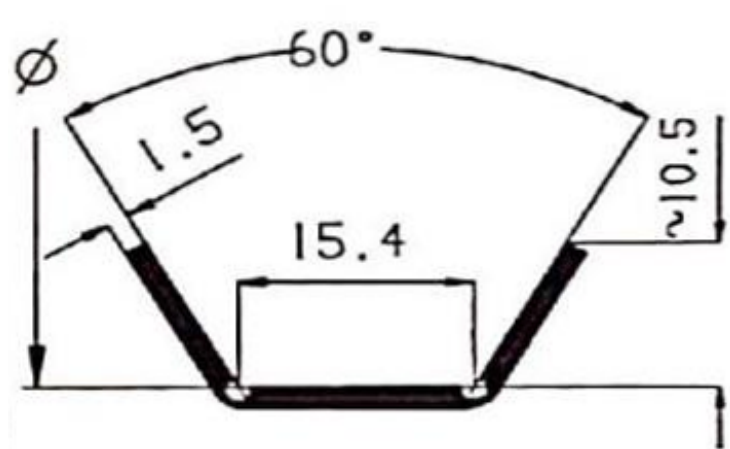
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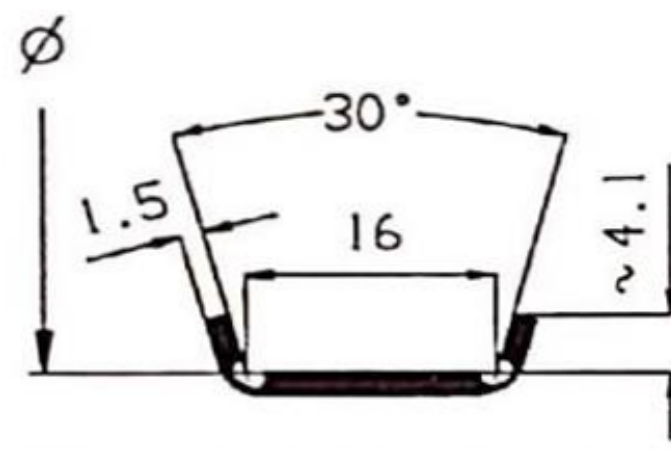
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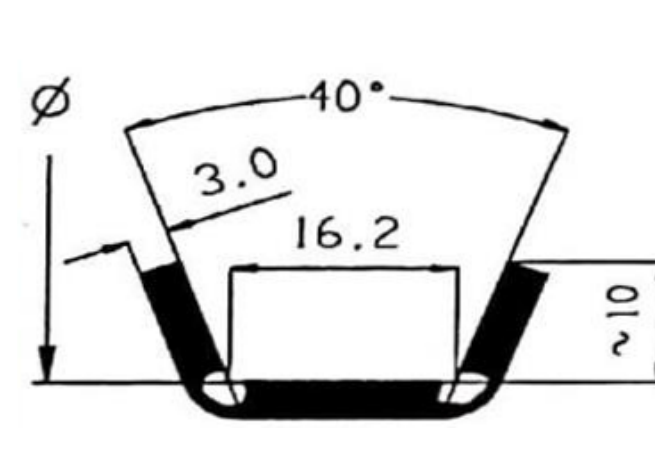
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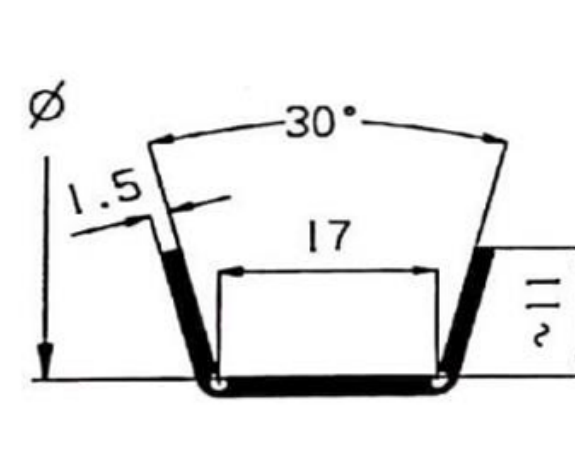
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16,2a



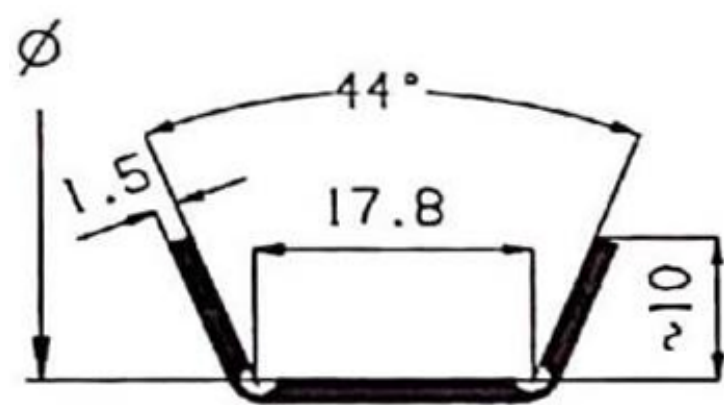
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17,0a



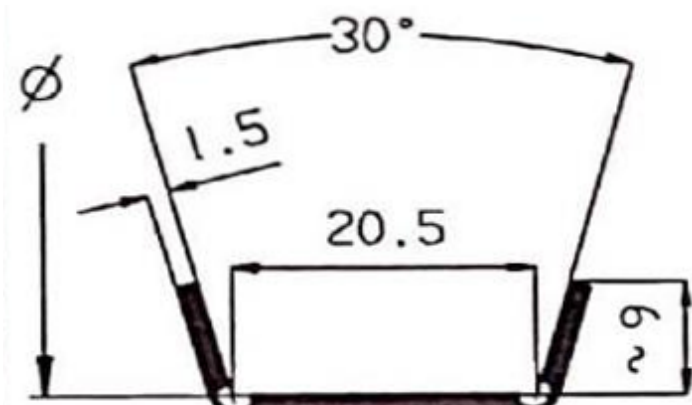
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17,8a



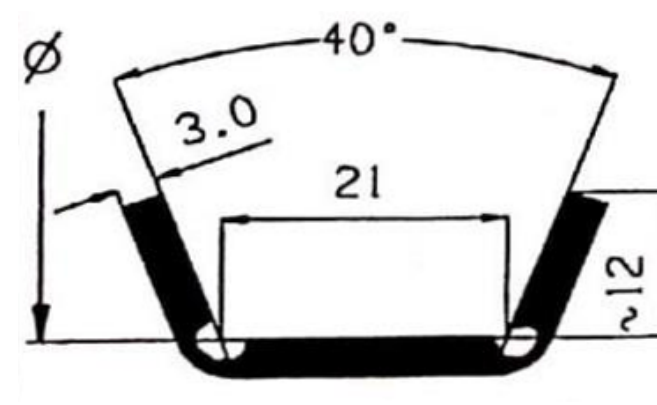
37

20,5a



38

21,0a



39

24

How to choose the right profile clamp design

1. Determine the operating or test pressure for your application.
2. Calculate the required inside diameter of the profile using the formula:
3. outer flange diameter + 3 mm
4. Use the formula of approximation (1) to check whether the thickness of profile you have chosen is sufficient:

Formula of approximation (1) for the allowable bending stress on the profile ring:

$$\sigma_p \text{ allow} = (d \cdot p \cdot 0.225 \text{ mm}) / s^2 \quad (1)$$

with

d = inside diameter of the profile (mm)
 p = static operating pressure (bar)
 s = thickness of the profile (mm)

$$\sigma_p \text{ allow} = 250 \text{ N/mm}^2$$

Note: Please put in the operating/test pressure into the formula in (bar)

Example:

inside diameter of the profile = 100 mm
 operating pressure = 10 bar
 thickness of profile = 2 mm
 $\sigma_p \approx (100 \text{ (mm)} \cdot 10 \text{ (bar)} \cdot 0.225 \text{ (mm)}) / 2 \text{ (mm)} \cdot 2 \text{ (mm)} = 56.25 \text{ (N/mm}^2\text{)}$

The allowable bending stress $\sigma_p \text{ allow}$ must not be exceeded with the wall thickness you have chosen. Please note that the result only gives a first approximate value.

It can be influenced by further factors, such as

- seal shape and material
- roughness of the flange surface
- operating temperatures
- bending loads
- pressure peaks
- required operating safety factors

It may be necessary to increase the thickness of the profile.

4. Take equation (2) in order to calculate the inner width of the profile and select the appropriate profile from the profile table (p. 4 and 9).

Note: For high pressure and bending loads, please select a profile with small inner width.

5. Standard profile clamps with an inside diameter of the profile up to 300 mm are exclusively manufactured in single-part design (1 closure). For standard applications, choose the design with 2 profile segments, or for unfavourable assembly situations, the design with 3 segments.

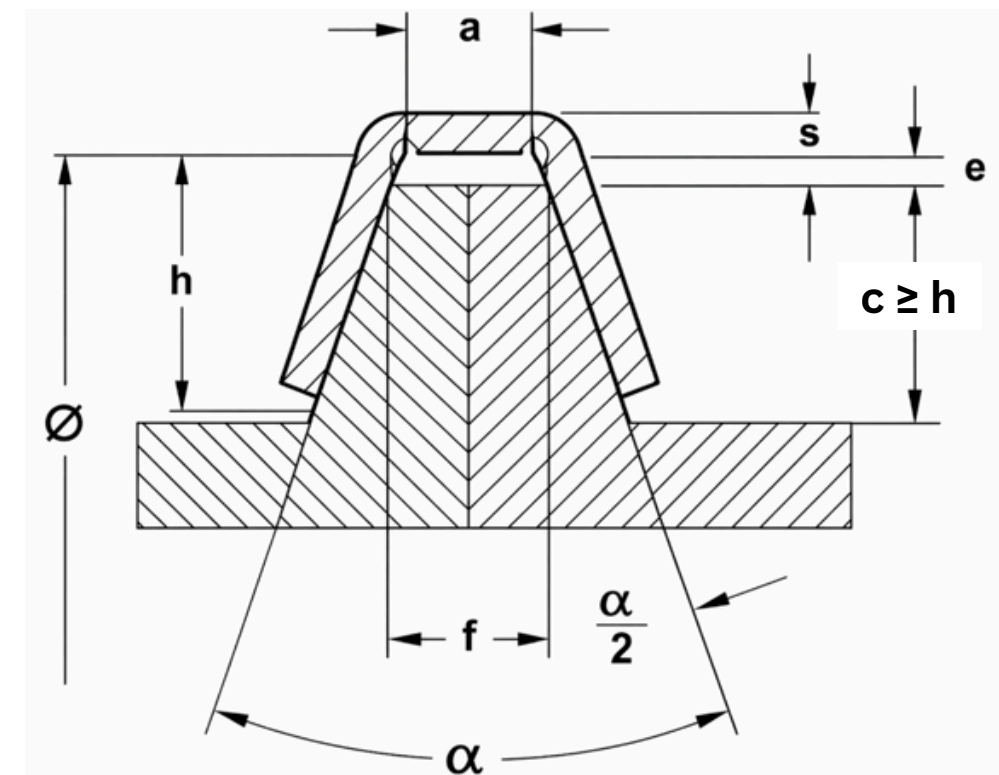
Standard profile clamps with an inside diameter of the profile of 301-999 mm are manufactured in two-part design (with 2 closures and 2 profile segments).

6. Good sealing results can be obtained with an axial round cord seal. For the groove, we recommend an insertion depth of approx. $0.75 \cdot$ round cord diameter. This avoids wearfatigue on the round cord seals.

7. Pressure peaks and bending torques can increase the gap between the flanges. To prevent damage to the round cord seals during operation, the flange gap should not be more than 0.3 mm.

8. Select band width and bolt size for the closure type from the table on page 5.

9. For bolt tightening torques for the different closure types as well as bolt sizes, please see tables 9a and 9b.



- a = inside width of the profile
- c = height of flange
- e = 1.5 mm standard gap
- f = closed flange dimension
- h = depth of profile
- s = thickness of profile
- α = profile/flange angle
- \emptyset = inside diameter of the profile
- z = increase
- $f = a + z \quad (2)$

Recommended angles range

α	30°	40°	50°	60°
Z	8	11	14	17

9a Closure types STC, QRC, TBS

band width	bolt size	tightening torque
20 mm	M6	≈ 6 Nm
25 mm	M8	≈ 12 Nm
30 mm	M10	≈ 30 Nm

9b Closure type SVS

bolt size	closure force
M6	≈ 80 N



Available Diameters

50mm to 300mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10, M12

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

M12 - 42Nm

M16 - 100Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

Operating Temperatures guide

Note stated temperatures are for guideline
only. For specific temperature ratings for
each clamp type and design please contact
our engineering department

From - 40°C to 900°C gas temp based on
correct material selection

Max Operating Pressure Guide

Note stated temperatures are for guideline
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each clamp type and design please contact
our engineering department

100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

RELEASE



Available Diameters

50mm to 500mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

M12 - 42Nm

M16 - 100Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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Max Operating Pressure Guide

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100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg



Available Diameters

50mm to 500mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10, M12

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

M12 - 42Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

3 SEGMENT V CLAMP WITH LEVER



Available Diameters

90mm to 800mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8

Bolt Sizes Available - Imperial

1/4", 5/16"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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Max Operating Pressure Guide

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100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

2 SEGMENT V CLAMP WITH LEVER AND HINGE



Available Diameters

70mm to 500mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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Max Operating Pressure Guide

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each clamp type and design please contact
our engineering department

100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

RELEASE



Available Diameters

50mm to 800mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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correct material selection

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each clamp type and design please contact
our engineering department

100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

4 SEGMENT V CLAMP QUICK RELEASE WITH HINGE



Available Diameters

100mm to 1000mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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our engineering department

100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

RELEASE



Available Diameters

60mm to 500mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8

Bolt Sizes Available - Imperial

1/4", 5/16"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

2 SEGMENT V CLAMP WITH

T-BOLT



Available Diameters

50mm to 800mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10, M12, M16

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

M12 - 42Nm

M16 - 100Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
and bolt size

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100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg

3 SEGMENT V CLAMP WITH T-BOLT



Available Diameters

50mm to 1000mm

Available Materials

300 & 400 series stainless steel, Inconel
others on request.

Bolt Sizes Available - Metric

M6, M8, M10, M12, M16

Bolt Sizes Available - Imperial

1/4", 5/16", 3/8"

Max Torque Settings - Metric

M6 - 10Nm

M8 - 20Nm

M10 - 27Nm

M12 - 42Nm

M16 - 100Nm

Max Torque Settings - Imperial

1/4" - 7.38 ft lb

5/16" - 14.75 ft lb

3/8" - 20 ft lb

Flange tip with range

4mm to 22mm

Flange depth range

3.5mm - 20mm

Strap width options

Strap width is determined by clamp design
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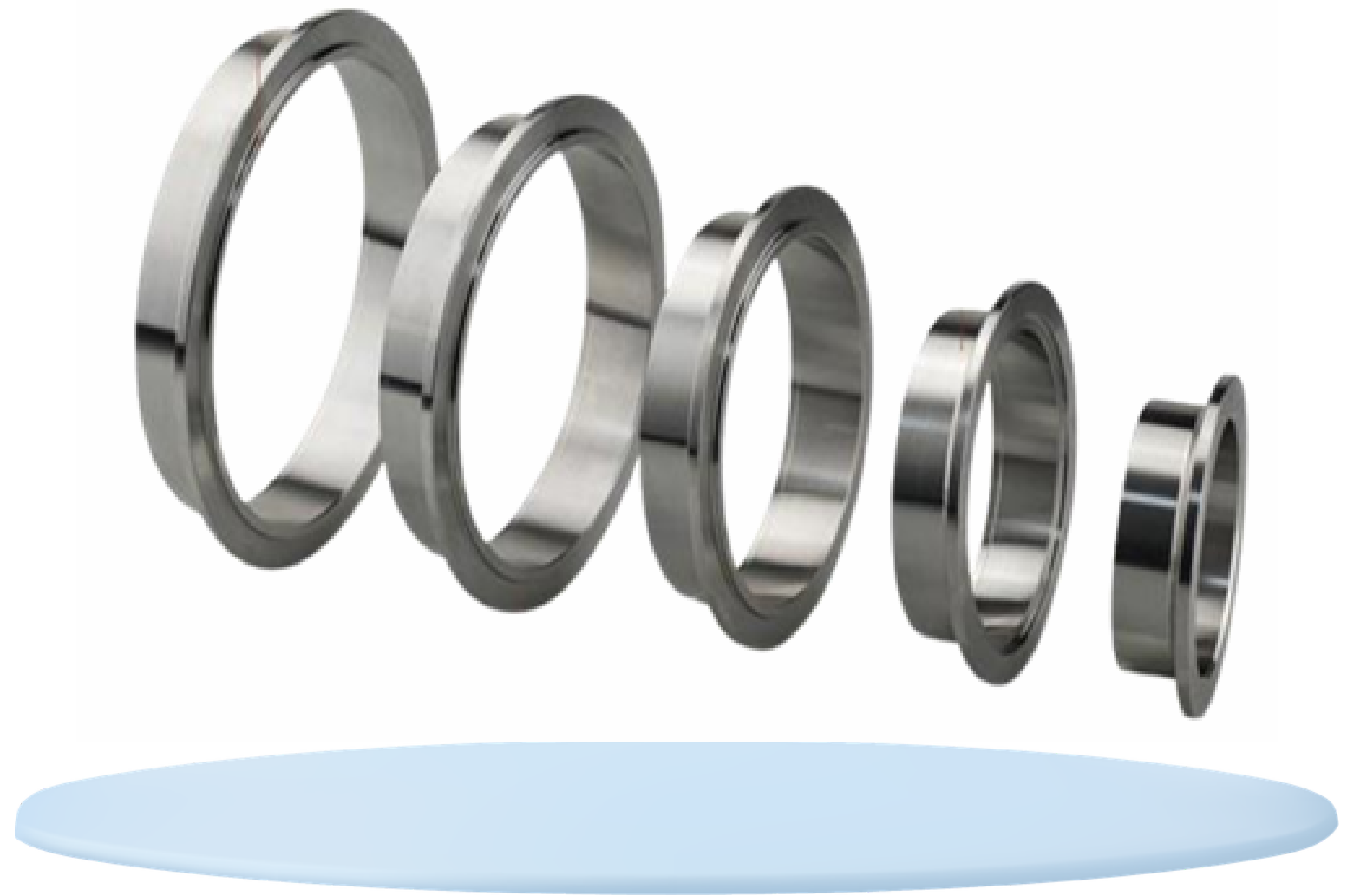
Max Operating Pressure Guide

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each clamp type and design please contact
our engineering department

100mm Dia. Max 200 Barg

300mm Dia. Max 70 Barg

500mm Dia. Max 25 Barg



V-band flanges are very easy to install and disassemble, have excellent performance leak-proof, can be applied in a extreme environment like corrosive, high temperature and vibratory. Our flanges are manufactured with forged stainless steel blanks and then fine finished, this kind of processing can ensure good physical performance, good welding and sealing property.

Features:

- Forged raw materials can make better mechanical and welding property.
- Raw material is optional, like stainless steel, aluminium, Mild steel, titanium etc.
- Male/female interlocking design



Heavy-duty V-band clamp designed for secure and leak-proof connections in high-pressure exhaust systems.

Materials: Band: SS-304 / SS-316 (optional); T-Bolt & Trunnion: SS-304; Nut: SS-304 / A2 Stainless Steel

Sizes: 1.75" to 7.0" (custom sizes available)

Features: High clamping force; Uniform load distribution; Suitable for high temperature & pressure; Corrosion resistant

Applications: Automotive exhaust systems; Turbocharger connections; Industrial piping

Double Hardware T-Bolt V-Band Clamp



Dual fastener V-band clamp for enhanced strength and uniform sealing in critical applications.

Materials: Band: SS-304 / SS-316; Dual T-Bolts: SS-304; Nuts: A2 Stainless Steel

Sizes: 2.0” to 7.0”

Features: Increased clamping force; Improved sealing under vibration; Better load balance

Applications: High-performance exhaust systems; Heavy-duty industrial applications

Roll Formed T-Bolt V-Band Clamp



Precision roll-formed V-band clamp offering consistent fit and improved structural integrity.

Materials: Band: SS-304 (Roll Formed); T-Bolt: SS-304; Nut: A2 Stainless Steel

Sizes: 1.75" to 7.0"

Features: Smooth edge finish; Enhanced durability; Improved concentricity

Applications: OEM exhaust systems; Performance exhaust assemblies



Light-duty V-band clamp designed for low-pressure applications with easy adjustability.

Materials: Band: SS-304; Screw: Zinc Plated Steel / SS optional.

Sizes: 1.75" to 7.0" (2" – 5.50" commonly used)

Features: 5/16" slotted hex screw; Easy installation and adjustment; 3 V-insert design

Applications: Low-pressure exhaust systems; Light-duty industrial use



V-band clamp with quick-release mechanism for fast assembly and disassembly.

Materials: Band: SS-304 / SS-316; Latch Mechanism: SS-304

Sizes: 1.75" to 7.0"

Features: Tool-free operation; Rapid maintenance access; Secure locking mechanism

Applications: Motorsport; Serviceable exhaust systems; Frequent maintenance setups

Spring Loaded V-Band Clamp (Turbocharger Applications)



Spring-loaded clamp designed to accommodate thermal expansion in high-temperature turbo systems.

Materials: Band: SS-304 / SS-321 (optional for high temp);
Spring Assembly: SS-304.

Sizes: 1.75" to 5.5"

Features: Compensates for thermal expansion; Maintains constant clamping force; Reduces stress on joints.

Applications: Turbochargers; High-temperature exhaust systems



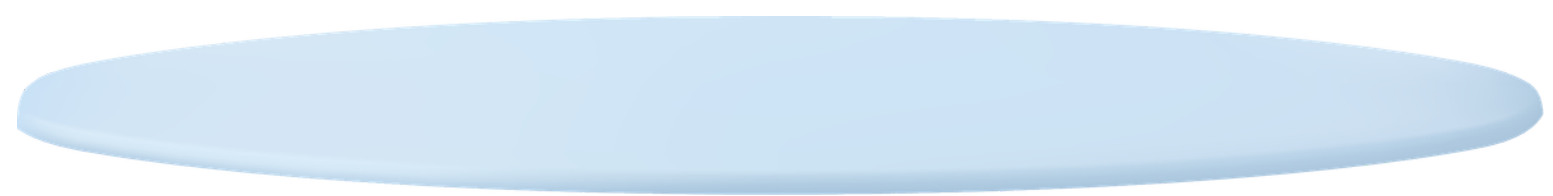
User-friendly V-band clamp with thumb screw for manual tightening in low-pressure applications.

Materials: Band: SS-304; Thumb Screw: SS-304.

Sizes: 1.75" to 7.0" (2" – 5.50" standard)

Features: Hand-tightening (no tools required); 3 V-insert design; Ideal for quick adjustments.

Applications: Low-pressure systems; Temporary or adjustable setups



V Band coupling clamp is a high strength customized V-shape profile clamp designed & manufactured by Invicta clamps for the leakproof clamping requirement of flanged connections. With the availability of a wide variety of frequently used sizes of V-band Clamp for OEM's as well as Aftermarket, Invicta V-band clamp is most used in Exhaust & related applications as well as in non-auto industrial segments.

- Invicta V-Band Coupling Clamp is designed as per customized requirement to connect Heavy Duty Metal flanges.
- V-Band Clamp uses principle of wedging action to clamp flanges with help of V-Petal & suitable to sustain high burst pressure of Exhaust with the help of high Axial clamp force.
- Invicta V-Band clamp is available in two, three or Four V-Petal configurations, this V-Petals are welded on a band with robust welded construction to ensure high strength.
- T-Bolt, Trunion & Nut mechanism is used to fix & tighten the clamp on assembly whereas self-locking nut configuration prevents loosening of clamp due heavy vibrations.
- Invicta V-Band clamp is available with several standard sizes frequently used in V-Profile.

Saddle Type Quick Release V- Band Clamp



Saddle type Quick Release V-Band clamp is designed & Developed by Invicta clamps for easy & quick installation of flanges connections. With availability of a wide range of V-profiles, quick release clamp is most widely used in applications where frequent assembly & Disassembly is required for maintenance activities.

Also known as Worm Gear V-Band Coupling, Profile Clamp with Cover Band, Quick Connect V-Insert Clamp.

- Invicta Quick Release V-Band Clamp is designed as per customized requirement to connect Heavy Duty Metal flanges.
- Saddle Type Quick Release V-Band Clamp is suitable to sustain high burst pressure of Exhaust with the help of high Axial clamp force whereas quick release latch enables easy fitment & removal of clamp without removing anti-vibration nut.
- Invicta V-Band clamp is available in two, three or Four V-Petal configurations, this V-Petals are welded on a band with robust welded construction to ensure high strength.
- T-Bolt, Trunnion & Nut mechanism is used to fix & tighten the clamp on assembly whereas self-locking nut configuration prevents loosening of clamp due heavy vibrations.
- Invicta Quick connection V-Band clamp is available with several standard sizes frequently used in V-Profile.

Diesel Particulate Filter (DPF) V-Band Clamp (DTV)



Diesel Particulate Filter V-Band clamp is designed & Developed by Invicta clamps to suit the large size flange connections. With availability of a wide range of V-profiles, DPF V-Band clamp found application in Exhaust Filtration systems in Heavy Duty Truck.

- Invicta Diesel Particulate Filter V-Band Clamp is designed as per customized requirement for DPF application which is used in Exhaust Filtration System of Heavy Duty trucks for Emission control.
- Invicta DPF clamps can withstand temperature up-to 600° C subject to material grade selection. DPF V-Band clamp is available in three or Four V-Petal configurations, this V-Petals are welded on a band with robust welded construction to ensure high strength.
- DPF V-Petal clamp can be easily assembled & disassembled for trouble-free service & maintenance of DPF System. Robust T-Bolt, Trunnion & Nut construction is used to fix & tightened the clamp on assembly.
- Invicta DPF clamp is available with several standard sizes frequently used in V-Profile.

Allen Bolt Quick Release V-Band Clamp (AVB)



Allen Bolt Quick release V-Band clamp is manufactured with compact quick release locking system to suit the requirement of quick & easy installation of flange connection where limited installation space is available.

Due to compact design construction Allen Bolt V-band clamp weighs lighter than other equivalent V-Band clamps & finds its application mostly in complex maintenance prone areas.

- Invicta Allen Bolt V-Band Clamp is designed as per customized requirement to connect Heavy Duty Metal flanges.
- Allen Bolt V-Band Clamp uses Allen Bolt & Barrel arrangement in place of conventional T-Bolt & Nut arrangement whereas threaded Barrel is used for tightening of clamp.
- Invicta Allen Bolt V-Petal clamp is suitable to sustain high burst pressure of Exhaust with the help of high Axial clamp force also quick release Allen Bolt & Barrel arrangement enables easy fitment & removal of clamp.
- Invicta V-Band clamp is available in two, three or Four V-Petal configuration, this V-Petals are welded on a band with robust welded construction to ensure high strength.
- Invicta quick connection V-Band clamp is available with several standard sizes frequently used for V-Profile.

V-clamp with connecting link (VCL)



Invicta V-clamp with Connecting link is a medium duty compact V-band design for easy & quick installation of small size flanged connections. With availability of a wide range of weldless V-profiles, V-clamp is most widely used in applications like EGR tube fittings.

- Invicta V-clamp with connecting link is designed as per customized requirement to connect Metal flanges with gaskets in medium duty applications.
- V-clamp is made of weld-free two V-Petal construction connected to each other with the help of connecting link construction which enables quick & easy installation of clamp on assembly.
- This makes the clamp most suitable for EGR Tube fitting. Bolt & Nut mechanism is used to fix & tighten the clamp on assembly.
- Invicta V-clamp is available with several standard sizes frequently used in V-Profile.



Invicta Clamp manufacturers high quality light Duty V-Clamps for quick & easy flanged connections. With one piece V-Profile construction V-Clamp is most commonly used in applications of low strength small flange connections.

- Invicta V-clamp is designed as per customized requirement to connect low strength customized V-Profile connections.
- Invicta V-Profile clamp has simple weld-free customized V-Profile construction.
- Invicta V-clamp is available with several standard sizes frequently used in V-Profile.
- Invicta V-clamp is available with several standard sizes frequently used in V-Profile.



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