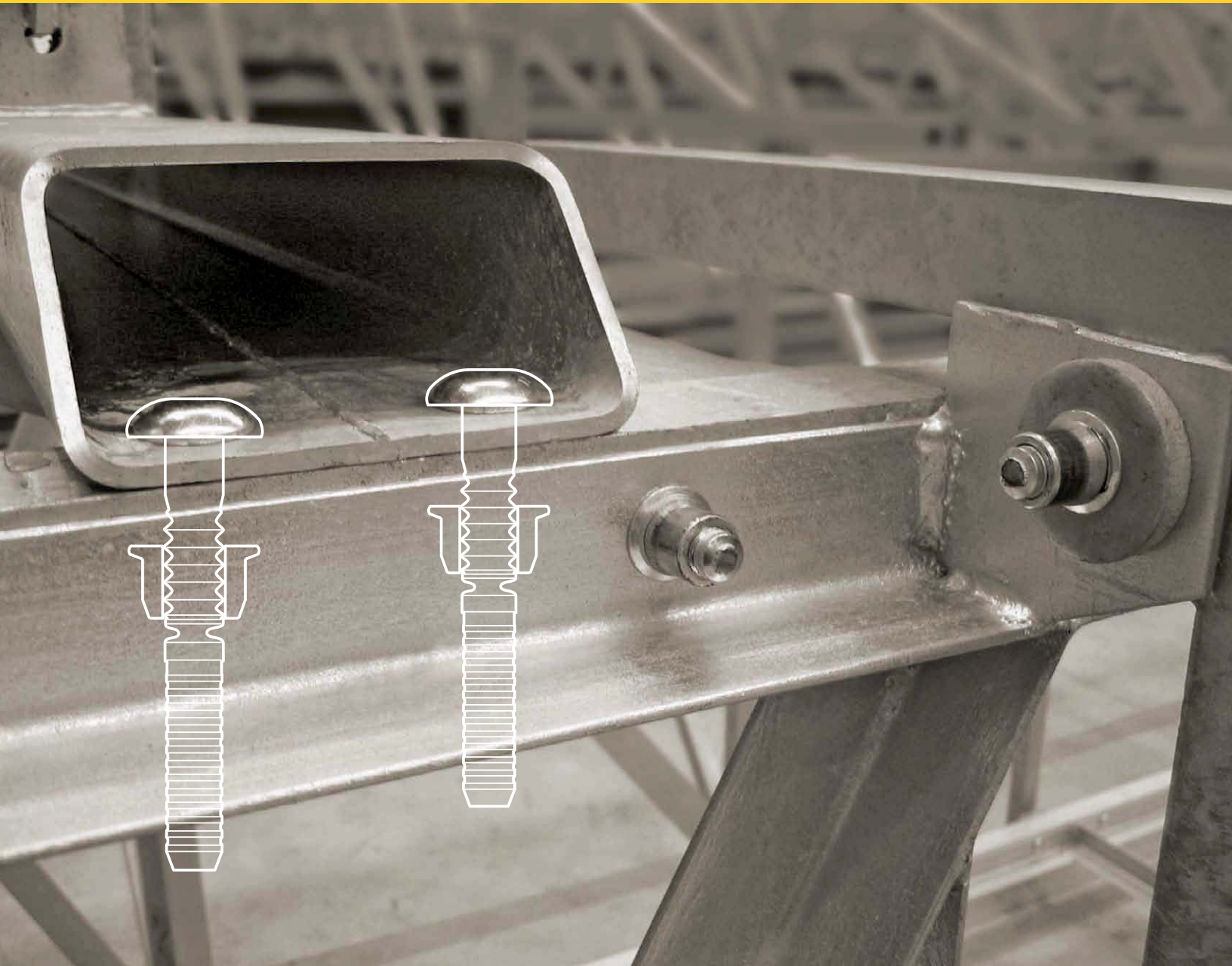


STANLEY®

Engineered Fastening



Lockbolt Systems

POP®  **Avdel®**

Lockbolt Systems

Structural vibration resistant fasteners with high clamp load performance and multi-grip capabilities.

Holding your world together®



Lockbolt fasteners

Lockbolts are specified whenever robust and reliable fastening is desired. Our intelligent fastening systems and durable, ergonomic installation tools create an ideal assembly solution in any manufacturing environment.

Structural lockbolts consist of a separate pin and collar which are mechanically locked during installation. These fasteners form joints capable of withstanding the toughest applications and environments that traditional rivet and screw joints often cannot provide. They offer exceptional resistance to vibration and material fatigue due to the swaged lock which forms collar material permanently into the circular grooves of the bolt.

Installation

Structural lockbolts can be installed quickly and easily without the need for special training or the skilled labour that's often required for other fastening methods. This simple installation process eliminates negative manufacturing influences including examples of RSI (Repetitive Strain Injury) – thus ensuring safety & quality from the first to the last installation.

Applications

Structural lockbolts are mostly used in the automotive, HGV & transportation markets as well as machinery and equipment manufacturing, heating and ventilation, and metal fabrication and construction.

Our structural lockbolt range can provide a cost effective solution for any application, often reducing total assembly cost and time as well as inventory.

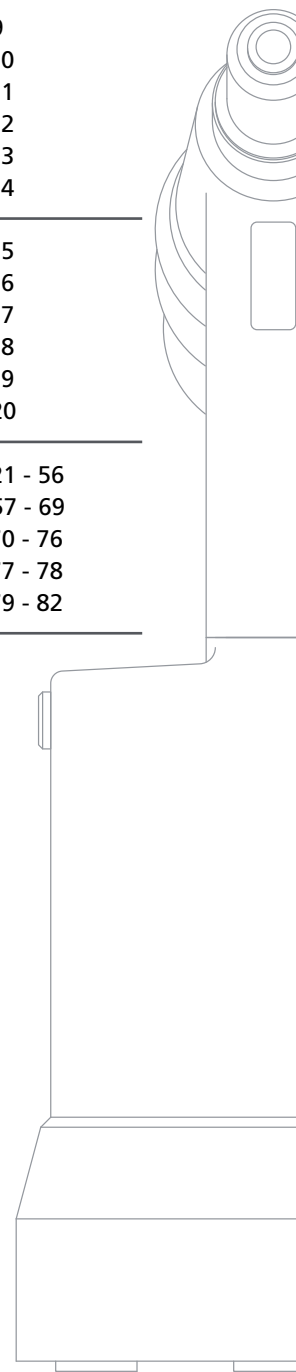
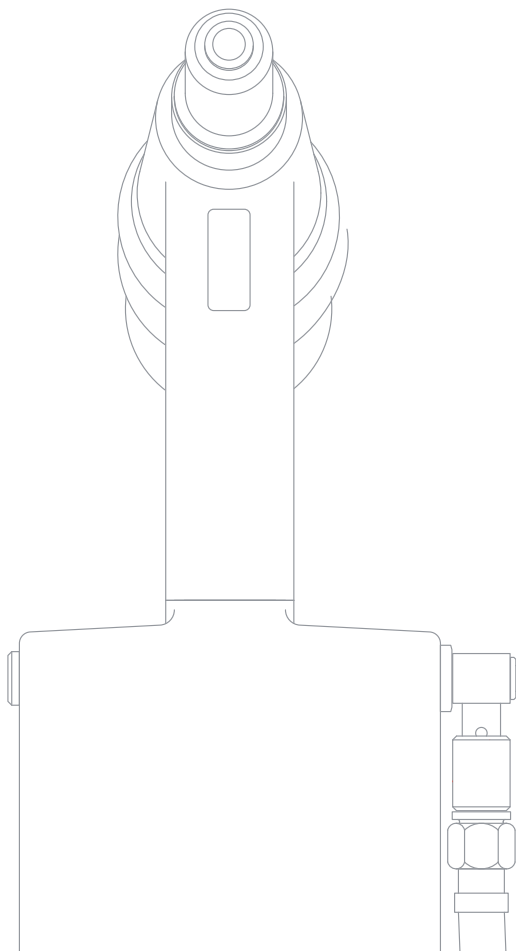
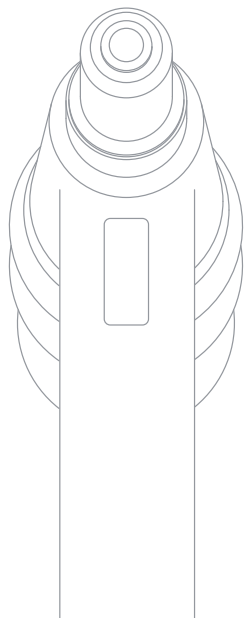
Mission

Together with our customers we develop fastening systems that simplify your production process and improve the quality and functionality of your products. We are not just a provider of fasteners and equipment but a design and development partner helping you to improve assembly and product performance.



Table of Contents

Systems Range Overview	Structural Lockbolt Systems	4
	Range Overview	5
	Selecting a Lockbolt Fastener	6
	Selection Guide	7 - 8
Lockbolt Range	Avdelok®	9
	Avdelok® XT	10
	Maxlok®	11
	Avtainer®	12
	Avbolt®	13
	Customized Designs	14
Installation Equipment	Tool Selection Guide	15
	Genesis® nG4	16
	73200 Model	17
	AV™ Series	18
	Enerpac® Power Units	19
	SmartSet® Process Monitoring	20
Data Sheets	Avdelok®	21 - 56
	Avdelok® XT	57 - 69
	Maxlok®	70 - 76
	Avtainer®	77 - 78
	Avbolt®	79 - 82



Structural Lockbolt Systems

Lockbolt systems are designed for high strength, secure assembly. Quick and simple to place, durable and long lasting, they are the ideal solution where spot welding is not practical and other methods are costly, time consuming or not possible. Our lockbolt systems have been widely used for many years in demanding engineering industries throughout the world, including vehicle body building, railways, construction, mining and containers.

Benefits of assembly

High speed assembly

Lockbolts are placed in seconds, to provide a secure, long lasting joint.

High shear and tensile strength

Lockbolts have been designed to deliver the high strength performance required in load-bearing, structural applications.

Consistent, high performance

Designed and manufactured to close tolerances, our lockbolt systems ensure consistently accurate and secure, high strength assembly. Combined with a special purpose tool, our lockbolts eliminate installation errors or variability of clamp associated with conventional assembly methods.

Robust and rugged tools

Designed for use in demanding engineering environments, these tools have a long and reliable track record. They provide consistently accurate and secure installation within a few seconds.

Excellent vibration resistance

As permanent as a weld, lockbolts resist loosening when all other methods fail.

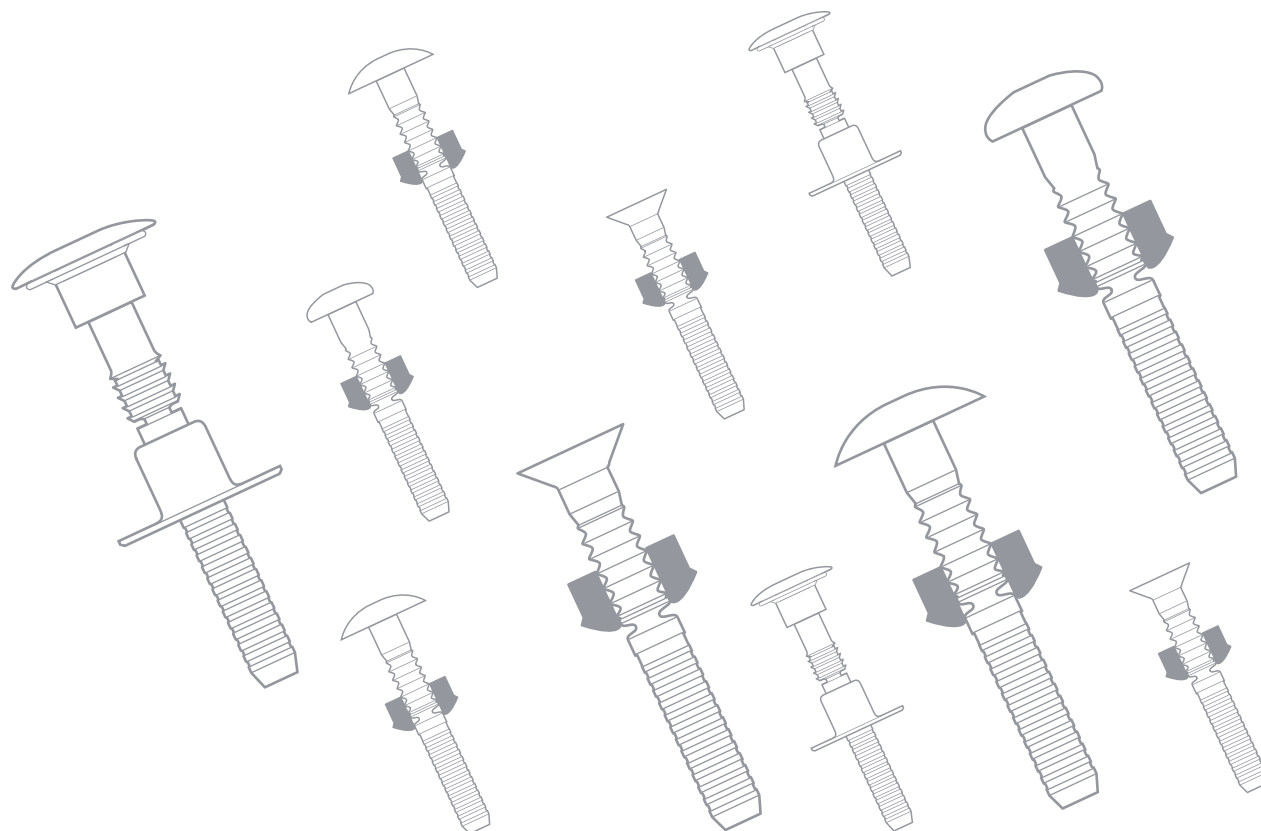
Ease of inspection

A quick and simple visual inspection is sufficient to check that the lockbolt has been correctly installed. Tampering is immediately obvious and enables lockbolt fasteners to be TIR (Transports Internationaux Routiers) approved.



Range overview

Brand	Material	Key features
Avdelok® 	Aluminum Steel Stainless Steel	High shear strength High controlled clamp
Avdelok® XT 	Steel	Exceptional shear and tensile strength Sizes from 1/2" to 1-1/8" (12.7 to 28.6 mm)
Maxlok® 	Aluminum Steel	Extra-wide grip range High shear strength
Avtainer® 	Steel	High shear strength Joins composite panels to metal Leak resistant
Avbolt® 	Steel	One side access installation High residual clamp force High tensile and shear strength Speed of installation



Selecting a Lockbolt Fastener

Selecting a structural lockbolt fastener is a simple process. The factors detailed below are designed to help you identify a fastener suitable for your application:

Fastener selection

Accessibility

If there is only access from one side the Avbolt® structural blind fastener is the only choice. Avdelok®, Avdelok® XT, Maxlok® and Avtainer® lockbolts require access from both sides of the component.

Grip range

The fastener should be selected to ensure that the total thicknesses of the parent materials fall within the grip range.

Hole size

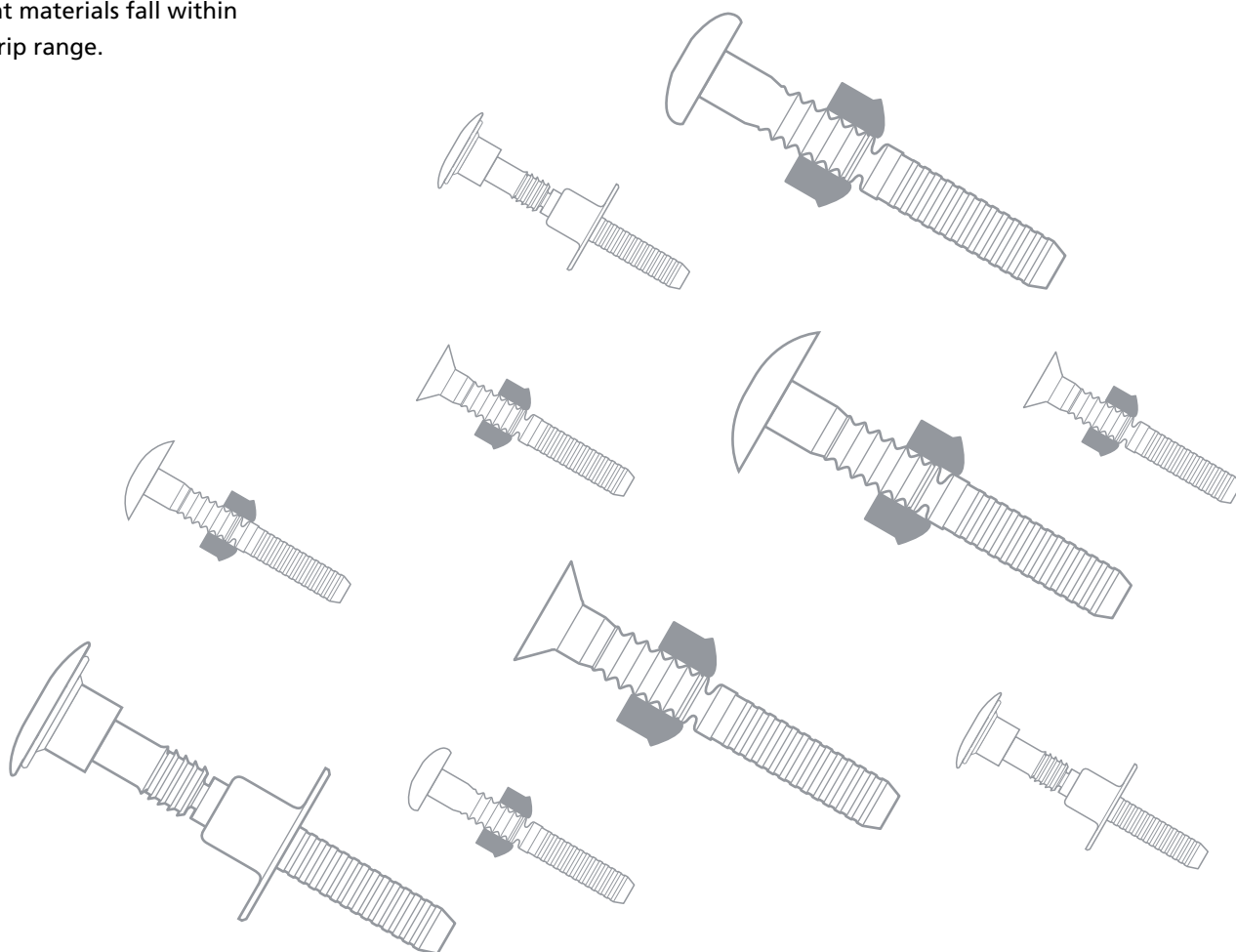
This is specified on the relevant technical data sheet for the structural fastener. It is important to control the hole size accurately in order to ensure the performance of the fastener.

Corrosion Resistance

Material and plating selection should be based on the level of corrosion resistance required. Corrosion is best reduced by selecting a fastener material which is the same as the parent material(s). Stainless steel fasteners offer the best corrosion resistance.

Important Information

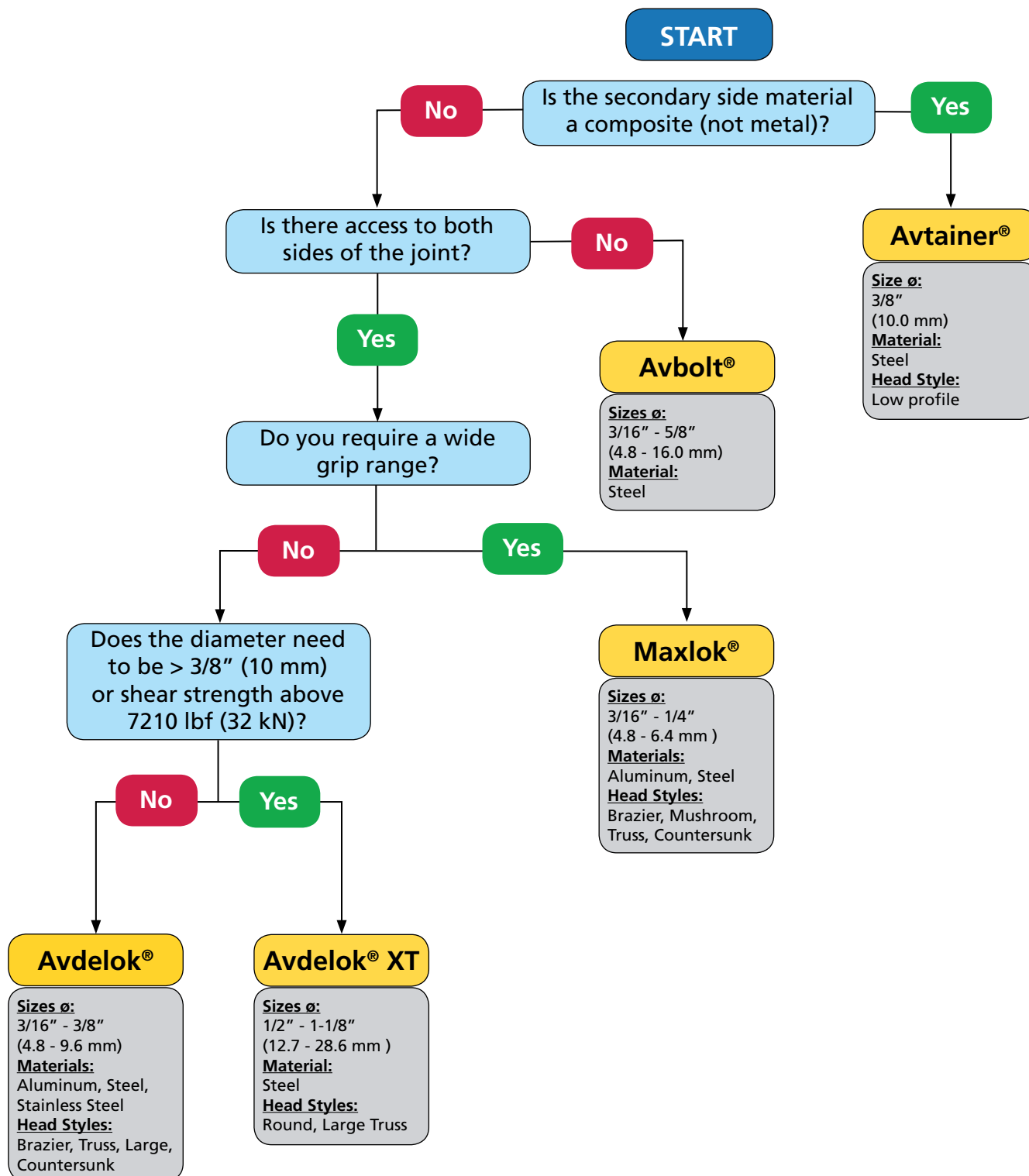
The information on this page should be used in conjunction with the technical data available on our website where you can also find additional information about corrosion, safety and RoHS.



Selection Guide

This selection guide is designed to illustrate which fasteners may be the most suitable for your application.

This guide does not include the full range of POP Avdel products; our Applications Engineers are available to advise as to the best solution for your specific application needs.



Selection Guide

This table is designed as a guide to help you select the most suitable lockbolt for your particular application.

Full technical and performance data for each fastener can also be found on our website or contact your local STANLEY Engineered Fastening representative.

Product Range	Material Pin & Collar			Headform Pin					Collar			Fastener Size (nom)															Page No.		
	Aluminum	Steel	Stainless Steel	Brazier head	90° Countersunk	Truss head	Large head	Round head	Mushroom head	Low profile	Full	Half	Flanged	3/16" (4.8 mm)	1/4" (6.4 mm)	5/16" (8.0 mm)	3/8" (9.6 mm)	3/8" (10.0 mm)	1/2" (12.7 mm)	5/8" (15.9/16 mm)	3/4" (19.1 mm)	7/8" (22.2 mm)	1" (25.4 mm)	1-1/8" (28.6 mm)	Series No.	Description	Data Sheet		
Avdelok®		•		•							•	•	•	•	•	•	•								2621	9	21		
		•			•						•	•	•	•	•	•	•								2622	9	26		
		•				•					•	•	•	•	•	•	•								2624	9	31		
			•	•							•		•	•	•	•	•								2691	9	36		
	•			•							•	•	•	•	•	•	•								2801	9	40		
	•				•						•	•	•	•	•	•	•								2802	9	45		
	•					•					•	•	•	•	•	•	•								2803	9	50		
	•						•				•	•	•				•								2804	9	55		
Avdelok® XT		•						•			•		•						•	•	•	•	•	•	2851	10	57		
		•				•					•		•						•	•	•	•	•		2854	10	64		
Maxlok®		•		•							•			•	•										1901	11	70		
		•			•						•			•											1902	11	71		
		•							•		•			•	•										1903	11	72		
		•				•					•			•	•										1905	11	73		
	•			•							•			•	•										1921	11	74		
	•								•		•			•											1923	11	75		
	•					•					•			•	•										1925	11	76		
Avtainer®		•							•									•							2311	12	77		
Avbolt®		•																•	•	•					21001	13	79		
		•												•	•	•									21021	13	81		

Avdelok®

High strength, vibration resistant lockbolts with high, controlled clamp.



Key features and benefits

- High shear strength for high strength assembly
- High, controlled clamp provides excellent vibration resistance
- Quick to install across a wide range of applications
- Wide choice of materials, sizes, head forms and collar options to suit a wide variety of applications
- Easy to inspect for tampering
- TIR approved
- Steel Avdelok® pins typically offer comparable values to property class 5.8 threaded products
- Robust and rugged installation tools

Specifications

Sizes:

3/16" – 3/8"

(4.8 mm – 9.6 mm)

Materials:

Aluminum, Steel,
Stainless Steel

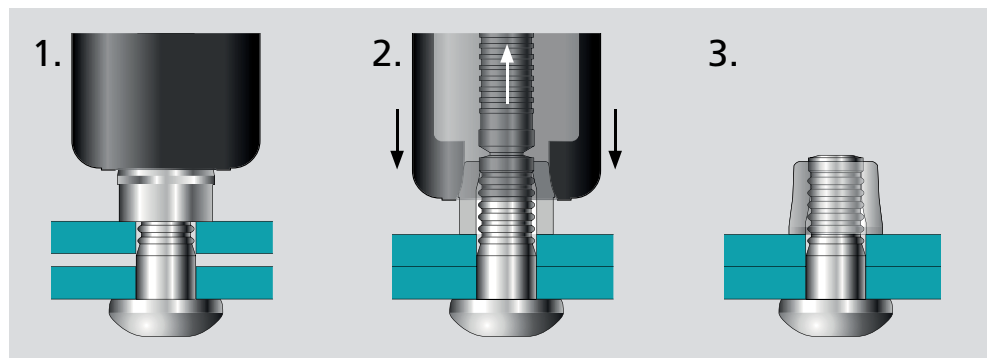
Headforms:

Brazier, Countersunk,
Truss, Large

Collar options:

Full, Half, Flanged

Typical placing sequence



Please visit our website for fastener placing animations and technical data.

Assembly applications

- Commercial vehicles
- Truck & trailer
- Heating systems
- Steel construction
- Solar panels
- Railway
- Mining

Heating systems



Ventilator frame



Commercial vehicles



Car seat



Avdelok® XT

Large diameter lockbolt for heavy engineering applications.



Key features and benefits

- Exceptional shear and tensile strength provides consistent, high performance required in load-bearing structural applications
- Excellent vibration resistance
- Quick and easy to install
- Tamper resistant - TIR approved
- Tolerates variation in joint - allows angled installation up to 7°
- Ease of use - requires only minimum skill
- Simple installation tooling eliminates the cost of calibration and reduces maintenance
- Consistent installation prevents rework and associated costs
- Visual joint control
- Installed Avdelok® XT fasteners provide a minimum shear, tensile and pre-load strength which is equivalent to or exceeds ISO898-1 property class 8.8 or ASTM A-325 standards

Specifications

Sizes:

1/2" – 1-1/8"

(12.7 mm – 28.6 mm)

Material:

Steel

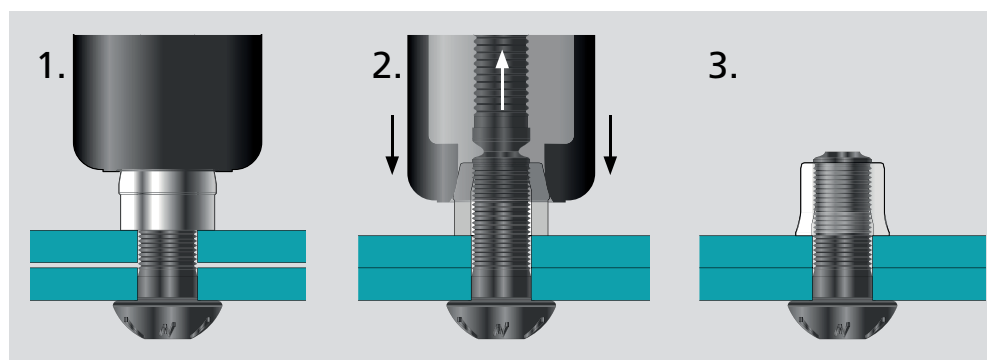
Headforms:

Round, Large Truss Head

Collar options:

Full, Flanged

Typical placing sequence



Please visit our website for fastener placing animations and technical data.

Assembly applications

- Commercial vehicles
- Steel construction
- Bridge building/repair
- Renewable energies
- Railway/rail track
- Mining

Commercial vehicles



Bridge building



Rail track



Lattice towers



Solar power plants



Solar power plants (detail)



Maxlok®

High strength, vibration resistant lockbolts with multi-grip capability.



Key features and benefits

- Wide grip range reduces inventory, simplifies stock control, and accommodates wide variations in material thickness
- High shear strength for high strength assembly
- High, controlled clamp provides excellent vibration resistance
- Wide range of special purpose installation tools
- Quick to install across a wide range of applications
- Brazier, countersunk, mushroom and truss head forms suit a wide variety of applications
- Easy to inspect tampering
- TIR approved

Specifications

Sizes:

3/16" – 1/4"

(4.8 mm – 6.4 mm)

Materials:

Aluminum, Steel

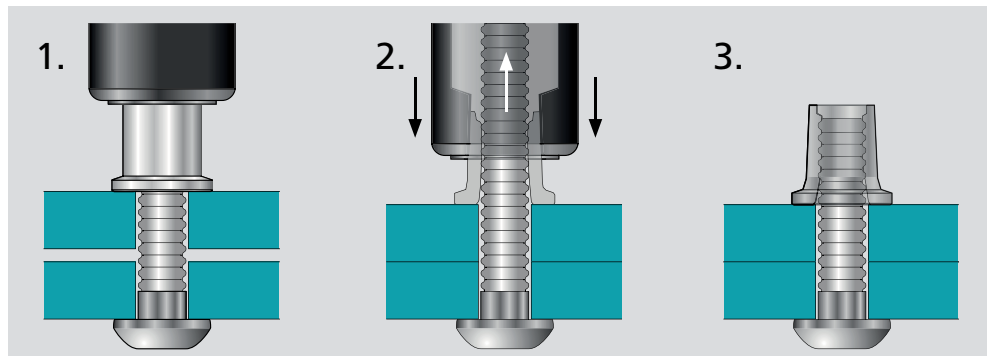
Headforms:

Brazier, Mushroom, Truss,
Countersunk

Collar option:

Flanged

Typical placing sequence



Please visit our website for fastener placing animations and technical data.

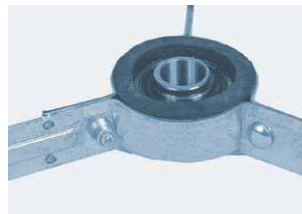
Assembly applications

- Commercial vehicles
- Heating and ventilation
- Frame building

Commercial vehicles



Fan bearing arm



Avtainer®

High strength, steel fastener and shell designed for joining composite panels to metal.



Key features and benefits

- Prevents cracking and pull through of composite materials
- Ideal for the assembly of GRP vehicle panels
- High shear strength for high strength assembly
- Underhead Santoprene® seal for a water/air tight joint
- Internally locked stem provides a secure, vibration resistant joint
- Low profile head and shell give a neat appearance
- Smaller shell size available for use against metal surfaces
- Optional encapsulated heads to match the surrounding colour
- Quick to install with Genesis® power tools
- Easy to inspect for tampering
- TIR approved

Specifications

Size:

3/8" (10.0 mm)

Material:

Steel

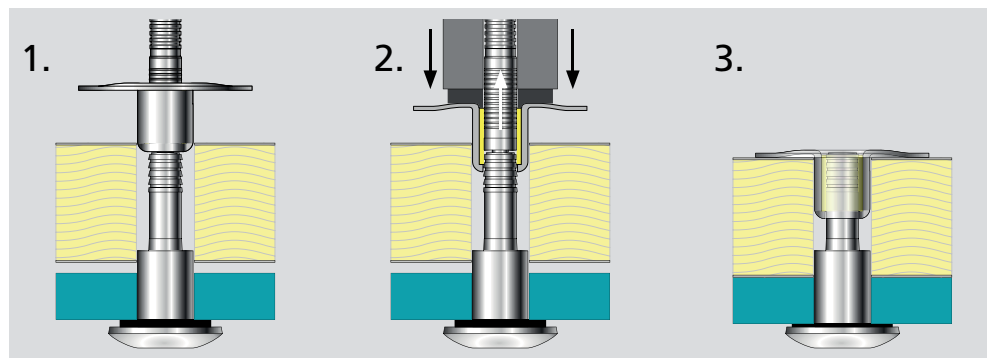
Headform:

Low profile

Option:

Encapsulated heads

Typical placing sequence



Please visit our website for fastener placing animations and technical data.

Assembly applications

- Commercial vehicles
- Container



Avbolt® Structural Blind Fastener

The Avbolt® structural fastener is a high strength, tamper resistant, blind steel fastener designed for use in heavy-duty structural applications. It offers a high tensile and shear strength normally only possible with non blind lockbolts and combines it with the installation speed of blind products.



Avbolt® 3/8", 1/2" and 5/8" (10.0, 12.7 and 16.0 mm):
3 piece design (sleeve, collar, stem)



Avbolt® 3/16", 1/4" and 5/16" (4.8, 6.4 and 8.0 mm):
2 piece design (sleeve with collar, stem)

Key features and benefits

- Use on blind sided application
- High tensile and shear strength for heavy-duty applications
- Wide grip capability suits a variety of material thicknesses
- Ideal for areas with restricted access
- Locking feature creates a vibration resistant joint and prevents loose stems
- Fast installation
- High security tamper resistance - TIR approved
- Simple tooling requires only minimum operator skill

Specifications

Sizes:

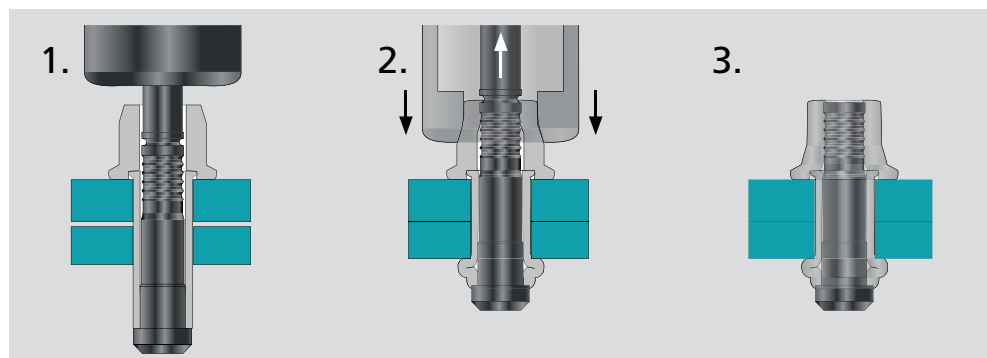
3/16" – 5/8"
(4.8 mm – 16.0 mm)

Material:

Steel

Patent Protected.

Typical placing sequence (3 piece design)



Please visit our website for fastener placing animations and technical data.

Assembly applications

- Automotive
- Truck and trailer
- Construction
- Container
- Renewable energies
- Railway
- Mining
- Security fencing

Security fence



Steel construction



Hinge attachment



Customized Designs

As you would expect from a leader in fastening solutions, we can design and manufacture lockbolt fastener with a wide variety of forms and finishes to meet your unique assembly requirements. Shown below are just a few examples of our customized lockbolt capabilities. Whether you require custom fastener geometry, a particular finish, different fastener material, limited access placing tooling, or anything else we don't offer as standard, please contact us to discuss your special requirements.



Avdelok® Lockbolt (pin) - Stepped Head (Standard Strength)

- Steel, Phosphate + Delta Seal® GZ Black
- Shouldered head provides a pivot in a car seat mechanism



Avdelok® Lockbolt (pin) - High Strength + Magni Finish + Identification Colour

- Steel, Magni 565 - Green
- Specific colour coding for identification purposes



Avdelok® Lockbolt (pin) - Al Alloy 7075 to T73 heat treatment

- 7075 Al Alloy, mechanical polish
- Pin in 7075 aluminum with special heat treatment for improved corrosion resistance in an oil storage tank



Avdelok® Lockbolt (pin) - Extended Grip Range + Special Head Style

- Steel, 8 µm Min Zinc + Clear Cr3 Passivation
- Additional lock grooves increase the grip range of Avdelok pins



Maxlok® Lockbolt (pin & collar) - Large Flange Head

- 8 µm Min Zinc + Clear Cr3 Passivation
- Larger pin head and collar flange size to spread load in soft application materials



Avdelok® Lockbolt (pins & collar) - Extra Long Pin, 316 Stainless Steel

- Grade 316 Stainless Steel
- Non-magnetic 316 stainless steel pins for use in electric motors



Maxlok® Lockbolt (collar) - Shorter Collar without Recess

- Steel, 8 µm Min Zinc + Clear Cr3 Passivation
- Shorter collar for applications demanding limited protrusion from the joint



Avbolt® Structural Blind Fastener - Underhead Rimlex® Seal

- Improves sealing capability without manually fitted seals

Installation Tools

Tool Selection Guide

This table is designed as a guide to help you select the most suitable tool for your particular lockbolt.

Please note that all tools require fastener specific nose assemblies.

Full technical data can also be found on our website or contact your STANLEY Engineered Fastening representative.

Fastener Type	Size	Installation Tool					
		Genesis® nG4	73200	AV10*	AV15*	AV30*	AV50*
Avdelok®	3/16" (4.8mm)	•	•				
	1/4" (6.4mm)	•	•				
	5/16" (8.0mm)		•				
	3/8" (9.6mm)		•	•			
Avdelok® XT	1/2" (12.7mm)				•	•	
	5/8" (16.0mm)					•	
	3/4" (19.1mm)					•	
	7/8" (22.2mm)						•
	1" (25.4mm)						•
	1-1/8" (28.6mm)						•
Maxlok®	3/16" (4.8mm)	•	•				
	1/4" (6.4mm)	•	•				
Avtainer®	3/8" (10.0mm)	•	•				
Avbolt®	3/16" (4.8mm)		•				
	1/4" (6.4mm)		•				
	5/16" (8.0mm)		•	•			
	3/8" (10.0mm)			•			
	1/2" (12.7mm)				•	•	
	5/8" (16.0mm)					•	

*All AV™ Series tools require Enerpac® Power Unit for operation.

Installation Tools

Genesis® nG4

Versatile lightweight pneumatic/hydraulic power tool capable of placing lockbolts up to a 1/4" (6.4 mm) and 3/8" (10.0 mm) Avtainer®. High force to weight ratio and innovative ergonomic design delivers maximum user efficiency and comfort.

Features and Benefits

- Ergonomic, lightweight design reduces operator fatigue
- Quick cycle time increases productivity
- Integral cycle counter helps establish accurate service intervals
- Toughened plastic body and heavy duty rubber base make it a robust tool for a long working life
- Soft touch rubber grip on handle
- Adjustable vacuum air flow minimizes air consumption
- Can be suspended
- Collar cropper attachment available to remove collars from installed Avdelok® and Maxlok® lockbolts

Specifications

Air pressure	5 - 7 bar
Free air volume required @5.5 bar	4.3 litres
Stroke (min.)	17 mm
Pull force @5.5 bar	18.68 kN
Cycle time (approx.)	1.2 sec
Noise level	75 dB(A)
Weight incl. nose equipment	2.25 kg
Vibration	<2.5m/s ²

Base Tool

Part Number	Description
71233-02000	Genesis® nG4 base tool with quick release stem collector bottle

Nose Equipment / Optional Accessories

Part Number	Description
71230-05010	Avdelok® 3/16" (4.8mm) nose assembly
71230-05020	Avdelok® 1/4" (6.4mm) nose assembly
07610-02000	Maxlok® 3/16" (4.8mm) nose assembly
07610-02100	Maxlok® 1/4" (6.4mm) nose assembly
71234-03400	Maxlok® Adaptor kit for 3/16" & 1/4"
71230-20300	Maxlok® front end extension
71230-15600	Avtainer® 3/8" (10mm) nose assembly
07498-00802	Avtainer® 3/8" (10mm) nose tip
71210-20100	Stem deflector kit
71210-20300	Front end extension



Installation Tools

73200 Model

The hydro-pneumatic 73200 tool is designed to place all sizes of our lockbolts up to 3/8" (10.0 mm) as well as Avbolt® fasteners up to 5/16" (8.0 mm). Featuring an innovative new hydraulic design and using the latest sealing and guiding technology, this new tool delivers unmatched fastening efficiency and dependability.

Features and Benefits

- Forged aerospace-grade aluminum alloy head and handle delivers the optimum combination of low weight, strength and durability
- Designed for heavy duty use over long periods of time, even in the most demanding environments
- Balanced ergonomic design and lightweight Genesis® pneumatic trigger operation
- Quick and simple operation minimizes operator fatigue and reduces assembly time to a minimum
- Wide choice of nose assemblies to suit access restrictions of the application
- Collar cropper attachment available to remove collars from installed Avdelok® lockbolts

Specifications

Air pressure	5 - 7 bar	
Free air volume required	@5.5 bar	15.6 litres
Stroke (min.)	0.79" (20 mm)	
Pull force	@5.5 bar	6,407 lbf (28.5 kN)
Cycle time (approx.)	3 seconds	
Noise level	75 dB(A)	
Weight without nose equipment	10.8 lbs (4.9 kg)	
Vibration	<2.5m/s ²	

Base Tool

Part Number	Description
73200-02000	73200 Model base tool

Nose Equipment / Optional Accessories

Part Number	Description
07200-02500	Avdelok® 3/16" (4.8mm) nose assembly
07200-02600	Avdelok® 1/4" (6.4mm) nose assembly
07200-02700	Avdelok® 5/16" (8.0mm) nose assembly
07200-02000	Avdelok® 3/8" (9.6mm) nose assembly
07610-02000	Maxlok® 3/16" (4.8mm) nose assembly
07610-02100	Maxlok® 1/4" (6.4mm) nose assembly
73200-04300	Adaptor kit for 3/16" & 1/4" Avdelok® & Maxlok®
07220-08100	Avbolt® 3/16" (4.8mm) nose assembly
07220-07500	Avbolt® 1/4" (6.4mm) nose assembly
07220-07700	Avbolt® 5/16" (8.0mm) nose assembly



Installation Tools

AV™ Series Tools

The AV™ hydro-electric power tool line is capable of setting all Avdelok® and Avdelok® XT lockbolts from as small as 3/8" (9.6mm) to as large as 1 1/8" (28.6mm). It also has the flexibility needed to set Avbolt® sizes 5/16" (8.0mm) through 5/8" (16.0mm) and other brands of large diameter lockbolts.

Features and Benefits

- Robust and highly durable installation tools designed for a long working life in extreme conditions
- Choice of placing heads and nose equipment to suit the entire range of large diameter Avdelok® XT lockbolts as well as other lockbolt brands
- Ergonomic and compact design for optimised operator comfort
- Easy-to-change nose equipment and range of hydraulic hoses in different lengths enable the tool to be adapted to suit local assembly requirements
- Low maintenance

Specifications

		AV10 73430-02000	AV15 73432-02000	AV30 73434-02000	AV50 73435-02000
Operating pressure	Pull Return	510 bar 200 bar			
Force	Pull at stated pull pressure Push Off at stated return pressure	55 kN 26 kN	80 kN 37.5 kN	175 kN 81 kN	350 kN 168 kN
Piston stroke		25 mm	32 mm	41 mm	55 mm
Weight without nose equipment		3.5 kg	4.5 kg	6.8 kg	13.5 kg
Power / Weight ratio		15.7	17.7	25.7	17.9
Swept volume	Pull Return	114 cm³ 139 cm³	214 cm³ 261 cm³	589 cm³ 705 cm³	1564 cm³ 1869 cm³

Nose Equipment / Optional Accessories

Product	Diameter	AV™ Tool	Nose Equipment
Avdelok®	3/8" (9.6mm)	AV10	73430-03100
	1/2" (12.7mm)	AV15	73432-03200 73433-03200*
	5/8" (15.9mm)	AV30	73412-03200
Avdelok® XT	3/4" (19.1mm)	AV30	73412-03300
	7/8" (22.2mm)	AV50	73410-03200
	1" (25.4mm)	AV50	73410-03100
	1-1/8" (28.6mm)	AV50	73410-03300
Avbolt®	5/16" (8.0mm)	AV10	73430-03300
	3/8" (10.0mm)	AV10	73430-03200
	1/2" (12.7mm)	AV15	73432-03100
	1/2" (12.7mm)	AV30	73412-03600
	5/8" (16.0mm)	AV30	73432-03100

* Nose assembly with jaw release



AV10



AV15



AV30



AV50

Installation Tools

Enerpac® PRO Series Pumps

STANLEY Engineered Fastening has partnered with Enerpac®, the World Leader in Hydraulic Equipment to offer a specialized selection of reliable, durable and versatile high-pressure hydraulic pumps to power all AV™ Hydro-Electric Power Tools.

Features and Benefits

- High-efficiency hydraulic pump design; higher oil flow and bypass pressure, cooler running and requires 18% less current draw than comparable pumps
- Powerful electric motor provides high power-to-weight ratio and excellent low-voltage operating characteristics
- High-strength, molded composite shroud protects electric pump motor and electronics, while providing an ergonomic, non-conductive handles for easy portability
- Full sight oil level glass & durable steel reservoir
- All pump configurations able to power all AV series tools
- Accessories kit for heat exchanger and roll cage available



Part Number		PRO115E	PRO220E	PRO115	PRO220	PRO240	PRO480	PRO415
Motor Sz. hp		1.7	1.7	1.5	1.5	1.5	1.5	1.5
Motor type		Universal	Universal	Induction	Induction	Induction	Induction	Induction
Reservoir gal.		2.0	2.0	2.5	2.5	2.5	2.5	2.5
Output flow rate (in ³ /min)	100 psi	700	700	650	650	650	650	650
	700 psi	535	535	600	600	600	600	600
	5000 psi	76	76	62	62	62	62	62
	10000 psi	60	60	60	60	60	60	60
Flow rate Adv. (psi)		7400	7400	7400	7400	7400	7400	7400
Flow rate Retr. (psi)		2900	2900	2900	2900	2900	2900	2900
Motor Electrical Specification	Volts	115	220	115	230	208-240	460-480	380-415
	Phase	1	1	1	1	3	3	3
	Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Sound (dBA)		90	90	75	75	75	75	75
Weight (lbs)		80	80	133	133	133	133	133
Dimensions (in.)	L	18	18	22	22	22	22	22
	W	9.5	9.5	15	15	15	15	15
	H	17	17	18	18	18	18	18

There are different hose lengths available. Please select the length according to your application:

Hose Assembly Length	Part Number
5 metre	07008-00448
10 metre	07008-00449
15 metre	07008-00450



Installation Tools

SmartSet® Process Monitoring

SmartSet® gives manufacturers an off-the-shelf and affordable system for monitoring the resulting joint or fastening integrity when setting our lockbolts. A Micro Strain Sensor connected to the lockbolt tool takes readings during the rivet setting cycle and sends them to a Control Unit. In RUN mode, the system will monitor each sequential setting and compare this with the sample settings to determine a GO or NO GO result. Outputs from the Control Unit can be connected to an audible or visual alarm to alert the user to NO GO results.

Application Capability

- Lockbolt failures
- Lockbolt set in air detection
- Use of incorrect Lockbolt type

System Capability

- Lockbolt accountability
- Sequencing
- Program Multiple Grips within the Application - PLC selectable
- Input/Output communication available (PLC compatible)
- User defined GO and NO GO signal output



SmartSet Operator Control Unit



SmartSet Operator Interface

POP  **Avdel**

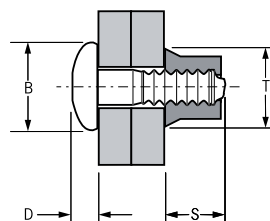
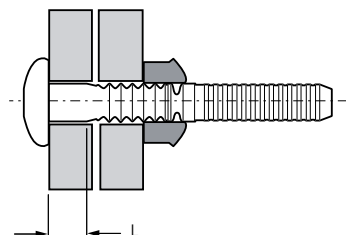
Avdelok® 2621 Series

Lockbolt Fastener

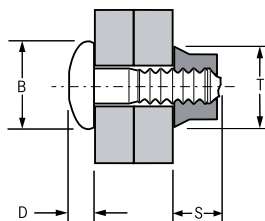


English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Carbon boron steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato, Passivazione	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato, Passivazione	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	chiara trivalente	Pasivado claro trivalente

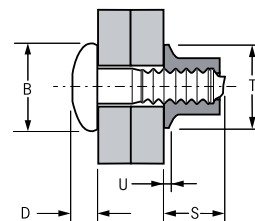
*: SAE 10B21 EN 10263-4 23MnB4 **: SAE 1008 EN 10263-2 C8C



Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



Half Collar
Schließring flach
Bague courte
Collare ribassato
Medio Collar



Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D max.	Part No/ref Pin	Part No/ref		Part No/ref		Part No/ref		
	min.	max.						Full Collar S max.	T max.	Half Collar ¹⁾ S max.	T max.	Flanged Collar ²⁾ S max. T max. U ²⁾ nom.		
3/16" (4.8mm)	.062 (1.57)	.187 (4.75)		.062 (1.57)	.395 (10.1)	.132 (3.4)	02621-70602	.370 (9.4)	.315 (8.0)	.310 (7.9)	.315 (8.0)	.402 (10.2) .390 (9.9) .030 (0.76)		
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02621-70603							
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02621-70604							
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02621-70605							
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02621-70606							
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02621-70607							
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02621-70608							
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02621-70609							
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02621-70610							
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02621-70611							
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02621-70612							

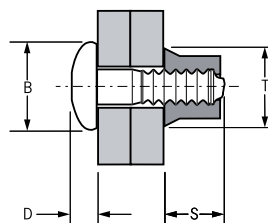
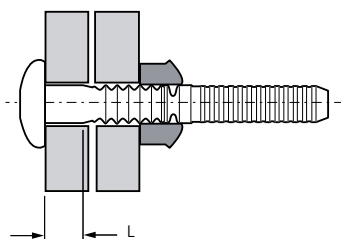
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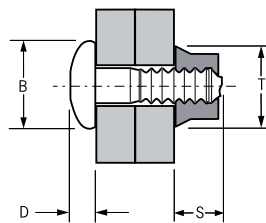
POP® **Avdel®**

Avdelok® 2621 Series

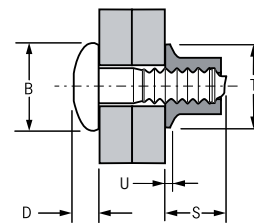
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref			
	min.	max.		nom.	max.	max.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾			
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.	
3/16" (4.8mm)	.750 (19.05)	.875 (22.23)	.196 (5.0)	.750 (19.05)	.395 (10.1)	.132 (3.4)	02621-70613	02662-70600	.370 (9.4)	.315 (8.0)	02682-70600	.402 (10.2)	.390 (9.9)	.030 (0.76)	02615-70600
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02621-70614								
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02621-70615								
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02621-70616								
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02621-70617								
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02621-70618								
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02621-70619								
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02621-70620								
1/4" (6.4mm)	.062 (1.57)	.187 (4.75)	.261 (6.6)	.062 (1.57)	.526 (13.4)	.161 (4.1)	02621-70802	02662-70800	.480 (12.2)	.417 (10.6)	02682-70800	.520 (13.2)	.515 (13.1)	.037 (0.94)	02615-70800
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02621-70803								
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02621-70804								
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02621-70805								
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02621-70806								
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02621-70807								
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02621-70808								
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02621-70809								
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02621-70810								
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02621-70811								
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02621-70812								
	.750 (19.05)	.875 (22.23)		.750 (19.05)			02621-70813								

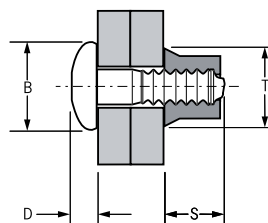
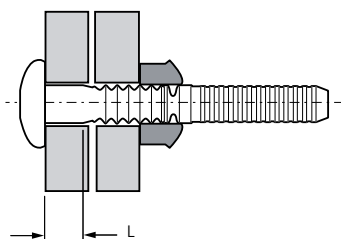
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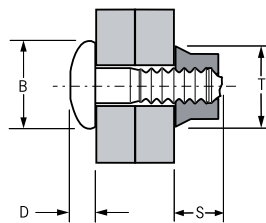
POP® **Avdel®**

Avdelok® 2621 Series

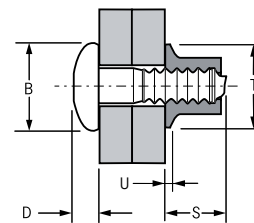
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D max.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
1/4" (6.4mm)	.812 (20.62)	.937 (23.80)	.261 (6.6)	.812 (20.62)	.526 (13.4)	.161 (4.1)	02621-70814	.480 (12.2)	.417 (10.6)	.420 (10.7)	.417 (10.6)	.520 (13.2)	.515 (13.1)	.037 (0.94)
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02621-70815							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02621-70816							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02621-70818							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02621-70820							
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.657 (16.7)	.214 (5.5)	02621-71004	.610 (15.5)	.524 (13.3)	.490 (12.5)	.524 (13.3)	.662 (16.8)	.640 (16.3)	.048 (1.22)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02621-71006							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02621-71008							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02621-71010							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02621-71012							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02621-71014							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02621-71016							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02621-71018							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02621-71020							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02621-71022							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02621-71024							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02621-71026							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02621-71028							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02621-71030							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02621-71032							

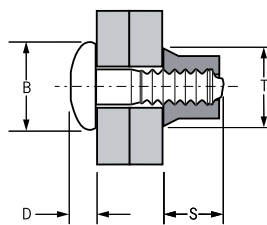
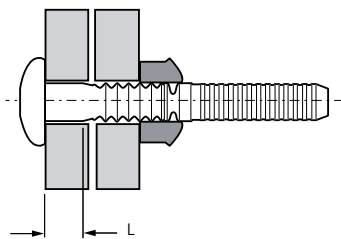
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

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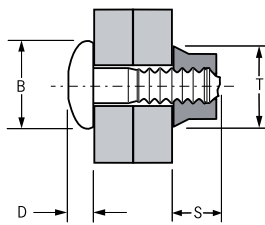
POP® X Avdel®

Avdelok® 2621 Series

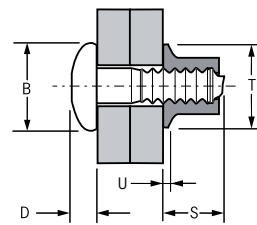
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D max.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/8" (9.6mm)	.125 (3.18)	.375 (9.53)		.125 (3.18)	.788 (20.1)	.262 (6.7)	02621-71204	.730 (18.6)	.610 (15.5)	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02621-71206							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02621-71208							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02621-71210							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02621-71212							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02621-71214							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02621-71216							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02621-71218							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02621-71220							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02621-71222							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02621-71224							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02621-71226							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02621-71228							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02621-71230							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02621-71232							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 25 / voir page 25 / siehe Seite 25 / vedi pagina 25 / ver página 25

Avdelok® 2621 Series Lockbolt Fastener

- 1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .062" (1.57 mm) for ø 3/16" (4.8 mm) and 1/4" (6.4 mm) fasteners and .125" (3.18 mm) for ø 5/16" (8.0 mm) and 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .062" (1,57 mm) pour tiges de ø 3/16" (4,8 mm) et 1/4" (6,4 mm), et de .125" (3,18 mm) pour tiges de ø 5/16" (8,0 mm) et 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .062" (1,57 mm) für ø 3/16" (4,8 mm) und ø 1/4" (6,4 mm) Bolzen und .125" (3,18 mm) für ø 5/16" (8,0 mm) und ø 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .062" (1,57 mm) per i bulloni da ø 3/16" (4,8 mm) e 1/4" (6,4 mm) e di .125" (3,18 mm) per i bulloni da ø 5/16" (8,0 mm) e 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .062" (1,57 mm) para diámetros de 3/16" (4,8 mm) y 1/4" (6,4 mm) y de .125" (3,18 mm) para diámetros de 5/16" (8,0 mm) y 3/8" (9,6 mm).

- 2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

ø		
nom.	lbf ⁽³⁾ (kN ⁽³⁾)	lbf ⁽³⁾ (kN ⁽³⁾)
3/16" (4.8 mm)	1940 (8.63)	1650 (7.34)
1/4" (6.4 mm)	3310 (14.73)	3000 (13.35)
5/16" (8.0 mm)	5030 (22.38)	4900 (21.81)
3/8" (9.6 mm)	7210 (32.08)	6500 (28.93)

- 3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

Steel Avdelok® pins typically offer comparable performance values to similar diameter metric property class 5.8 threaded products.

Les tiges Avdelok® acier offrent des performances comparables à celles d'un boulon métrique de classe 5.8 et de diamètre similaire.

Avdelok® Bolzen aus Stahl bieten normalerweise Festigkeitswerte, die mit denen eines metrischen Gewindeproduktes der Festigkeitsklasse 5.8 mit ähnlichem Durchmesser vergleichbar sind.

I bulloni Avdelok® in acciaio normalmente offrono valori prestazionali comparabili a prodotti filettati metrici di pari diametro in classe di resistenza 5.8.

Los pernos Avdelok® de acero normalmente ofrecen resistencias comparables a la de un tornillo métrico, de clase 5.8, con un diámetro similar.

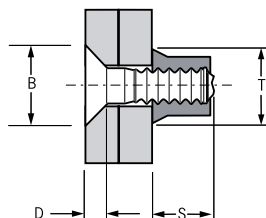
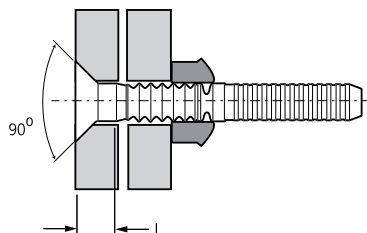
Avdelok® 2622 Series

Lockbolt Fastener

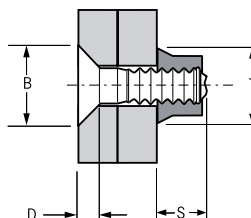


English	Français	Deutsch	Italiano	Español
90° Countersunk	90° Tête fraisée	90° Senkkopf	90° Testa svasata	90° Cabeza avellanada
Pin: Carbon boron steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato, Passivazione	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato, Passivazione	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	chiara trivalente	Pasivado claro trivalente

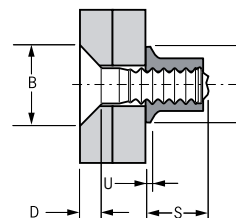
*: SAE 10B21 EN 10263-4 23MnB4 **: SAE 1008 EN 10263-2 C8C



Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



Half Collar
Schließring flach
Bague courte
Collare ribassato
Medio Collar



Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

ø				L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref							
	w. Full Collar ¹⁾							Full Collar	Half Collar ¹⁾	Flanged Collar ²⁾									
nom.	min.	max.		nom.	max.	nom.	Pin	S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.					
3/16" (4.8mm)	.125 (3.18)	.250 (6.35)	.196 (5.0)	.125 (3.18)	.349 (8.9)	.085 (2.2)	02622-70603	02662-70600	02682-70600	02615-70600									
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02622-70604												
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02622-70605												
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02622-70606												
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02622-70607												
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02622-70608						.370 (9.4)	.315 (8.0)	.310 (7.9)	.315 (8.0)	.402 (10.2)	.390 (9.9)	.030 (0.76)
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02622-70609												
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02622-70610												
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02622-70611												
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02622-70612												

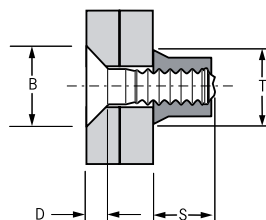
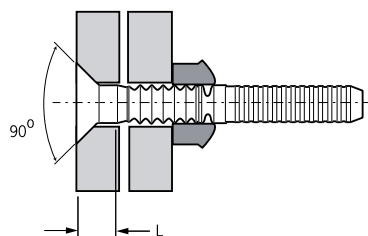
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

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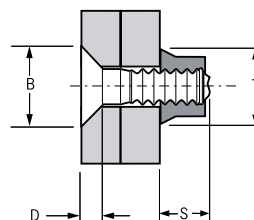
POP® **Avdel®**

Avdelok® 2622 Series

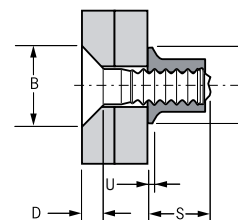
Lockbolt Fastener



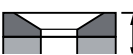
Full Collar



Half Collar



Flanged Collar

ø	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref		
nom.	min.	max.		nom.	max.	nom.	Pin	S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.750 (19.05)	.875 (22.23)	.196 (5.0)	.750 (19.05)	.349 (8.9)	.085 (2.2)	02622-70613	02662-70600	.370 (9.4)	.315 (8.0)	02682-70600	.402 (10.2)	.390 (9.9)	.030 (0.76)
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02622-70614							
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02622-70615							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02622-70616							
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02622-70617							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02622-70618							
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02622-70619							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02622-70620							
1/4" (6.4mm)	.125 (3.18)	.250 (6.35)	.261 (6.6)	.125 (3.18)	.465 (11.9)	.114 (2.9)	02622-70803	02662-70800	.480 (12.2)	.417 (10.6)	02682-70800	.520 (13.2)	.515 (13.1)	.037 (0.94)
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02622-70804							
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02622-70805							
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02622-70806							
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02622-70807							
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02622-70808							
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02622-70809							
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02622-70810							
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02622-70811							
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02622-70812							
	.750 (19.05)	.875 (22.23)		.750 (19.05)			02622-70813							

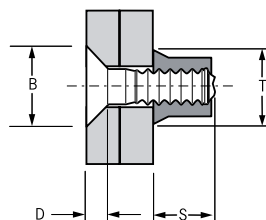
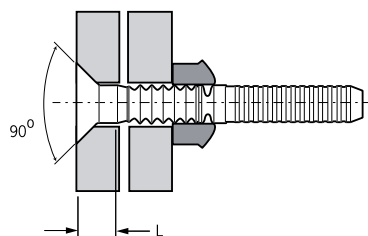
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

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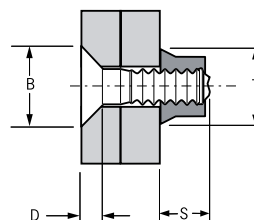
POP® **Avdel®**

Avdelok® 2622 Series

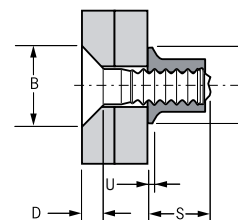
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
1/4" (6.4mm)	.812 (20.62)	.937 (23.80)	.261 (6.6)	.812 (20.62)	.465 (11.9)	.114 (2.9)	02622-70814	.480 (12.2)	.417 (10.6)	.420 (10.7)	.417 (10.6)	.520 (13.2)	.515 (13.1)	.037 (0.94)
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02622-70815							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02622-70816							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02622-70818							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02622-70820							
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.581 (14.8)	.143 (3.6)	02622-71004	.610 (15.5)	.524 (13.3)	.490 (12.5)	.524 (13.3)	.662 (16.8)	.640 (16.3)	.048 (1.22)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02622-71006							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02622-71008							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02622-71010							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02622-71012							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02622-71014							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02622-71016							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02622-71018							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02622-71020							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02622-71022							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02622-71024							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02622-71026							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02622-71028							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02622-71030							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02622-71032							

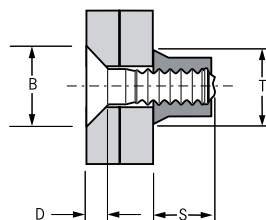
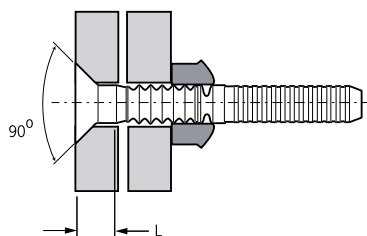
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

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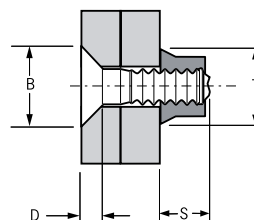
POP®  Avdel®

Avdelok® 2622 Series

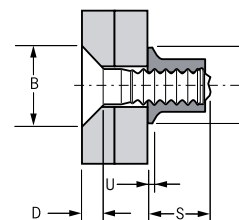
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/8" (9.6mm)	.250 (6.35)	.500 (12.70)	.386 (9.8)	.250 (6.35)	.697 (17.7)	.172 (4.4)	02622-71206							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02622-71208							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02622-71210							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02622-71212							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02622-71214							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02622-71216							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02622-71218							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02622-71220							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02622-71222							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02622-71224							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02622-71226							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02622-71228							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02622-71230							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02622-71232							
								.730 (18.6)	.610 (15.5)	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 30 / voir page 30 / siehe Seite 30 / vedi pagina 30 / ver página 30

Avdelok® 2622 Series Lockbolt Fastener

- 1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .062" (1.57 mm) for ø 3/16" (4.8 mm) and 1/4" (6.4 mm) fasteners and .125" (3.18 mm) for ø 5/16" (8.0 mm) and 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .062" (1,57 mm) pour tiges de ø 3/16" (4,8 mm) et 1/4" (6,4 mm), et de .125" (3,18 mm) pour tiges de ø 5/16" (8,0 mm) et 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .062" (1,57 mm) für ø 3/16" (4,8 mm) und ø 1/4" (6,4 mm) Bolzen und .125" (3,18 mm) für ø 5/16" (8,0 mm) und ø 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .062" (1,57 mm) per i bulloni da ø 3/16" (4,8 mm) e 1/4" (6,4 mm) e di .125" (3,18 mm) per i bulloni da ø 5/16" (8,0 mm) e 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .062" (1,57 mm) para diámetros de 3/16" (4,8 mm) y 1/4" (6,4 mm) y de .125" (3,18 mm) para diámetros de 5/16" (8,0 mm) y 3/8" (9,6 mm).

- 2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

ø		
nom.	lbf ⁽³⁾ (kN ⁽³⁾)	lbf ⁽³⁾ (kN ⁽³⁾)
3/16" (4.8 mm)	1940 (8.63)	1650 (7.34)
1/4" (6.4 mm)	3310 (14.73)	3000 (13.35)
5/16" (8.0 mm)	5030 (22.38)	4900 (21.81)
3/8" (9.6 mm)	7210 (32.08)	6500 (28.93)

- 3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

Steel Avdelok® pins typically offer comparable performance values to similar diameter metric property class 5.8 threaded products.

Les tiges Avdelok® acier offrent des performances comparables à celles d'un boulon métrique de classe 5.8 et de diamètre similaire.

Avdelok® Bolzen aus Stahl bieten normalerweise Festigkeitswerte, die mit denen eines metrischen Gewindeproduktes der Festigkeitsklasse 5.8 mit ähnlichem Durchmesser vergleichbar sind.

I bulloni Avdelok® in acciaio normalmente offrono valori prestazionali comparabili a prodotti filettati metrici di pari diametro in classe di resistenza 5.8.

Los pernos Avdelok® de acero normalmente ofrecen resistencias comparables a la de un tornillo métrico, de clase 5.8, con un diámetro similar.

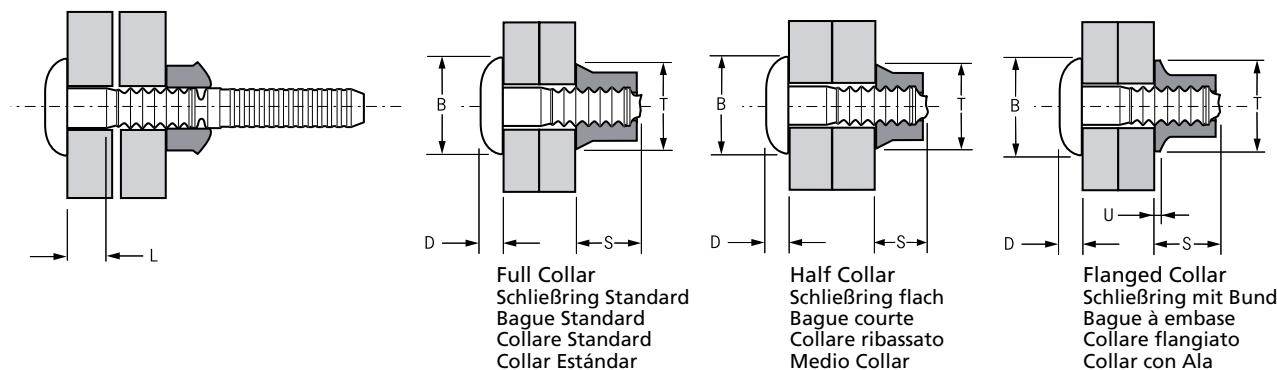
Avdelok® 2624 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Truss head	Tête large	Flachrundkopf groß	Testa larga	Cabeza alomada de perfil bajo
Pin: Carbon boron steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato, Passivazione	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato, Passivazione	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	chiara trivalente	Pasivado claro trivalente

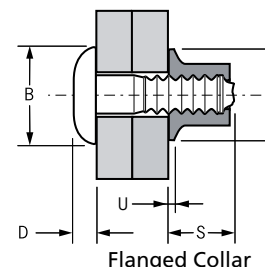
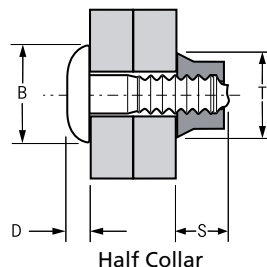
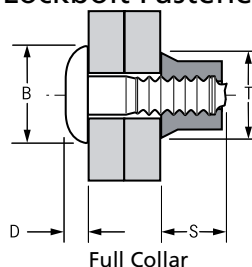
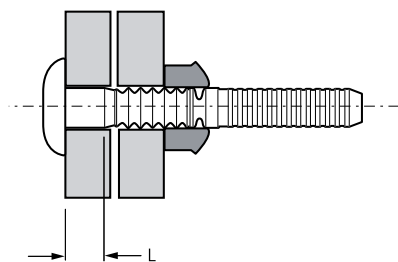
*: SAE 10B21 EN 10263-4 23MnB4 **: SAE 1008 EN 10263-2 C8C



ø nom.	w. Full Collar ¹⁾		L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.					S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.062 (1.57)	.187 (4.75)	.196 (5.0)	.470 (12.0)	.085 (2.2)	02624-70602	02662-70600	.370 (9.4)	.315 (8.0)	02682-70600	.402 (10.2)	.390 (9.9)	.030 (0.76)
	.125 (3.18)	.250 (6.35)				02624-70603							
	.187 (4.75)	.312 (7.92)				02624-70604							
	.250 (6.35)	.375 (9.53)				02624-70605							
	.312 (7.92)	.437 (11.10)				02624-70606							
	.375 (9.53)	.500 (12.70)				02624-70607							
	.437 (11.10)	.562 (14.27)				02624-70608							
	.500 (12.70)	.625 (15.88)				02624-70609							
	.562 (14.27)	.687 (17.45)				02624-70610							
	.625 (15.88)	.750 (19.05)				02624-70611							
	.687 (17.45)	.812 (20.62)				02624-70612							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

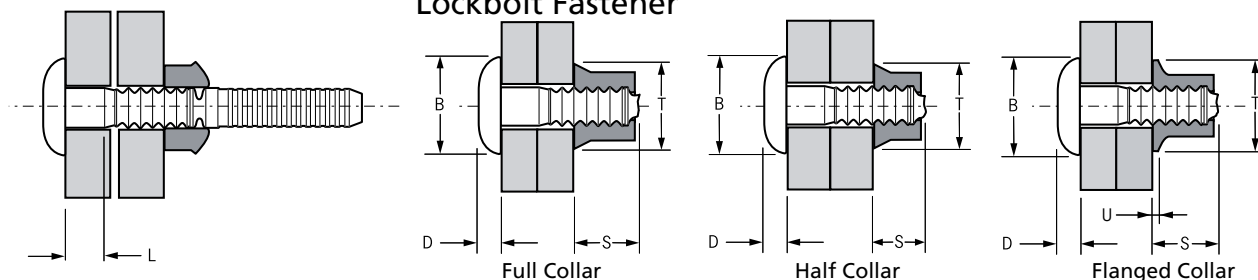
1) & 2) see page 35 / voir page 35 / siehe Seite 35 / vedi pagina 35 / ver página 35

POP® **Avdel®**
Avdelok® 2624 Series
Lockbolt Fastener


ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref		
	min.	max.		nom.	max.	nom.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾		
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.750 (19.05)	.875 (22.23)	.196 (5.0)	.750 (19.05)	.470 (12.0)	.085 (2.2)	02624-70613	02662-70600	02682-70600	02615-70600				
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02624-70614							
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02624-70615							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02624-70616							
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02624-70617							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02624-70618							
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02624-70619							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02624-70620							
	1/4" (6.4mm)	.062 (1.57)		.187 (4.75)			.261 (6.6)						.062 (1.57)	.595 (15.2)
.125 (3.18)		.250 (6.35)	.125 (3.18)	02624-70803										
.187 (4.75)		.312 (7.92)	.187 (4.75)	02624-70804										
.250 (6.35)		.375 (9.53)	.250 (6.35)	02624-70805										
.312 (7.92)		.437 (11.10)	.312 (7.92)	02624-70806										
.375 (9.53)		.500 (12.70)	.375 (9.53)	02624-70807										
.437 (11.10)		.562 (14.27)	.437 (11.10)	02624-70808										
.500 (12.70)		.625 (15.88)	.500 (12.70)	02624-70809										
.562 (14.27)		.687 (17.45)	.562 (14.27)	02624-70810										
.625 (15.88)		.750 (19.05)	.625 (15.88)	02624-70811										
.687 (17.45)		.812 (20.62)	.687 (17.45)	02624-70812										
.750 (19.05)		.875 (22.23)	.750 (19.05)	02624-70813										

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

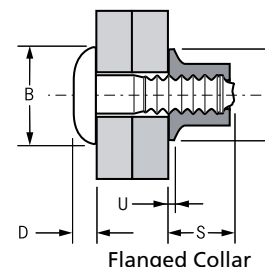
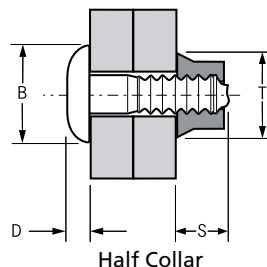
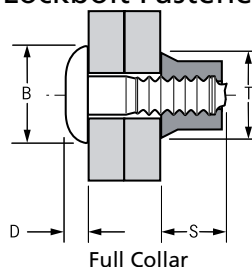
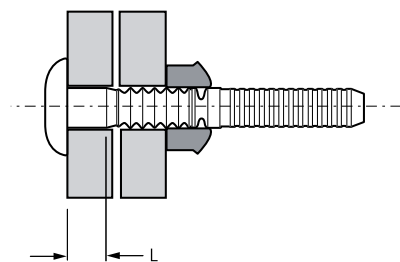
1) & 2) see page 35 / voir page 35 / siehe Seite 35 / vedi pagina 35 / ver página 35

POP® **Avdel®**
Avdelok® 2624 Series
Lockbolt Fastener


ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
1/4" (6.4mm)	.812 (20.62)	.937 (23.80)	.261 (6.6)	.812 (20.62)	.595 (15.2)	.110 (2.8)	02624-70814	.480 (12.2)	.417 (10.6)	.420 (10.7)	.417 (10.6)	.520 (13.2)	.515 (13.1)	.037 (0.94)
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02624-70815							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02624-70816							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02624-70818							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02624-70820							
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.782 (19.9)	.140 (3.6)	02624-71004	.610 (15.5)	.524 (13.3)	.490 (12.5)	.524 (13.3)	.662 (16.8)	.640 (16.3)	.048 (1.22)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02624-71006							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02624-71008							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02624-71010							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02624-71012							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02624-71014							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02624-71016							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02624-71018							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02624-71020							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02624-71022							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02624-71024							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02624-71026							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02624-71028							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02624-71030							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02624-71032							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 35 / voir page 35 / siehe Seite 35 / vedi pagina 35 / ver página 35

POP® **Avdel®**
Avdelok® 2624 Series
Lockbolt Fastener


ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/8" (9.6mm)	.125 (3.18)	.375 (9.53)	.386 (9.8)	.125 (3.18)	.923 (23.5)	.160 (4.1)	02624-71204	.730 (18.6)	.610 (15.5)	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02624-71206							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02624-71208							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02624-71210							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02624-71212							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02624-71214							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02624-71216							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02624-71218							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02624-71220							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02624-71222							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02624-71224							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02624-71226							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02624-71228							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02624-71230							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02624-71232							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 35 / voir page 35 / siehe Seite 35 / vedi pagina 35 / ver página 35

Avdelok® 2624 Series Lockbolt Fastener

- 1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .062" (1.57 mm) for ø 3/16" (4.8 mm) and 1/4" (6.4 mm) fasteners and .125" (3.18 mm) for ø 5/16" (8.0 mm) and 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .062" (1,57 mm) pour tiges de ø 3/16" (4,8 mm) et 1/4" (6,4 mm), et de .125" (3,18 mm) pour tiges de ø 5/16" (8,0 mm) et 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .062" (1,57 mm) für ø 3/16" (4,8 mm) und ø 1/4" (6,4 mm) Bolzen und .125" (3,18 mm) für ø 5/16" (8,0 mm) und ø 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .062" (1,57 mm) per i bulloni da ø 3/16" (4,8 mm) e 1/4" (6,4 mm) e di .125" (3,18 mm) per i bulloni da ø 5/16" (8,0 mm) e 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .062" (1,57 mm) para diámetros de 3/16" (4,8 mm) y 1/4" (6,4 mm) y de .125" (3,18 mm) para diámetros de 5/16" (8,0 mm) y 3/8" (9,6 mm).

- 2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

ø		
nom.	lbf ⁽³⁾ (kN ⁽³⁾)	lbf ⁽³⁾ (kN ⁽³⁾)
3/16" (4.8 mm)	1940 (8.63)	1650 (7.34)
1/4" (6.4 mm)	3310 (14.73)	3000 (13.35)
5/16" (8.0 mm)	5030 (22.38)	4900 (21.81)
3/8" (9.6 mm)	7210 (32.08)	6500 (28.93)

- 3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

Steel Avdelok® pins typically offer comparable performance values to similar diameter metric property class 5.8 threaded products.

Les tiges Avdelok® acier offrent des performances comparables à celles d'un boulon métrique de classe 5.8 et de diamètre similaire.

Avdelok® Bolzen aus Stahl bieten normalerweise Festigkeitswerte, die mit denen eines metrischen Gewindeproduktes der Festigkeitsklasse 5.8 mit ähnlichem Durchmesser vergleichbar sind.

I bulloni Avdelok® in acciaio normalmente offrono valori prestazionali comparabili a prodotti filettati metrici di pari diametro in classe di resistenza 5.8.

Los pernos Avdelok® de acero normalmente ofrecen resistencias comparables a la de un tornillo métrico, de clase 5.8, con un diámetro similar.

POP® **Avdel®**

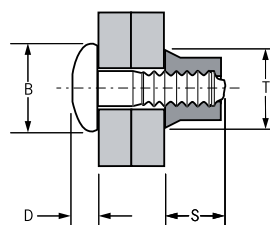
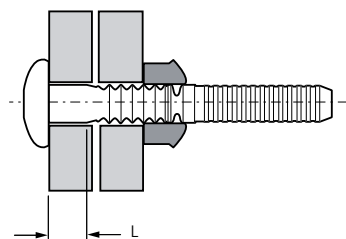
Avdelok® 2691 Series

Lockbolt Fastener

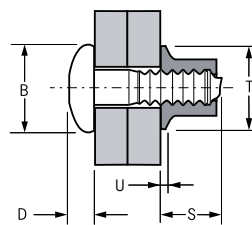


English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Stainless steel* natural	Tige: Inox* Brut	Bolzen: Edelstahl* Blank	Bullone: Acciaio inox * Nessuna finitura	Vástago: Acero inoxidable* Natural
Collar: Stainless steel** Zinc plated Clear trivalent passivated	Bague: Inox** Revêtement zingué Passivation claire trivalente	Schließring: Edelstahl** Verzinkt Klar chromatiert, Cr6-frei	Collare: Acciaio inox** Zincato Passivazione chiara trivalente	Collar: Acero inoxidable** Zincado Pasivado claro trivalente

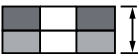
*: AISI 304Cu, EN 10263-5, X3CrNiCu18-9-4 **: AISI 430, EN 10263-5 X6Cr17



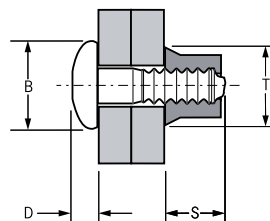
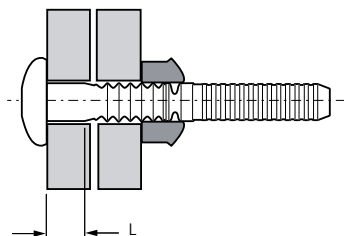
Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



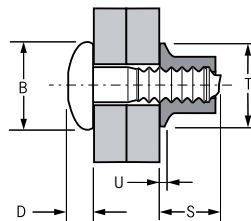
Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

ø				L	B	D	Part No/ref	Part No/ref		Part No/ref		
nom.	w. Full Collar			nom.	max.	max.	Pin	Full Collar		Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.062 (1.57)	.187 (4.75)	.196 (5.0)	.062 (1.57)	.394 (10.0)	.132 (3.4)	02691-00602	02605-70600		.402 (10.2)	.390 (9.9)	.030 (0.76)
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02691-00603					
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02691-00604					
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02691-00605					
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02691-00606					
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02691-00607					
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02691-00608					
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02691-00609					
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02691-00610					
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02691-00611					
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02691-00612					
	.750 (19.05)	.875 (22.23)		.750 (19.05)			02691-00613					
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02691-00614					

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)
 2) see page 39 / voir page 39 / siehe Seite 39 / vedi pagina 39 / ver página 39

POP®  **Avdel®**
Avdelok® 2691 Series
Lockbolt Fastener


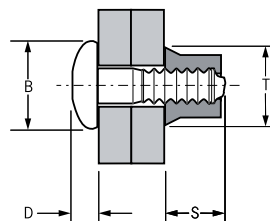
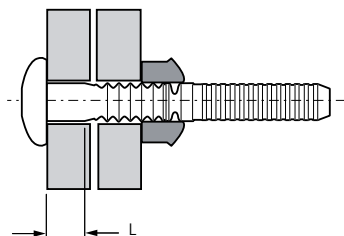
Full Collar



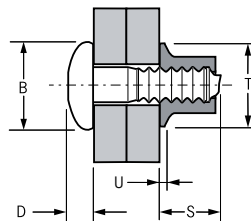
Flanged Collar

ø	 w. Full Collar			L	B	D	Part No/ref	Part No/ref		Part No/ref		
nom.	min.	max.		nom.	max.	max.	Pin	Full Collar		Flanged Collar ²⁾		
								S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.875 (22.23)	1.000 (25.40)	.196 (5.0)	.875 (22.23)	.394 (10.0)	.132 (3.4)	02691-00615	02605-70600		02648-70600		
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02691-00616					
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02691-00617					
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02691-00618					
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02691-00619					
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02691-00620					
1/4" (6.4mm)	.062 (1.57)	.187 (4.75)	.261 (6.6)	.062 (1.57)	.525 (13.4)	.161 (4.1)	02691-00802	02605-70800		02648-70800		
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02691-00803					
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02691-00804					
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02691-00805					
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02691-00806					
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02691-00807					
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02691-00808					
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02691-00809					
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02691-00810					
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02691-00811					
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02691-00812					
	.750 (19.05)	.875 (22.23)		.750 (19.05)			02691-00813					
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02691-00814					
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02691-00815					
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02691-00816					
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02691-00818					
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02691-00820					

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)
 2) see page 39 / voir page 39 / siehe Seite 39 / vedi pagina 39 / ver página 39

POP® **Avdel®**
Avdelok® 2691 Series
Lockbolt Fastener


Full Collar



Flanged Collar

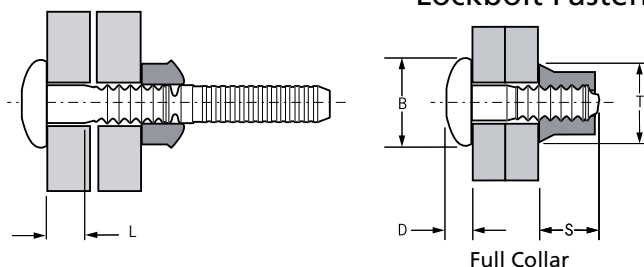
ø nom.	 w. Full Collar			L	B	D	Part No/ref	Part No/ref		Part No/ref		
	min.	max.		nom.	max.	max.	Pin	Full Collar		Flanged Collar ²⁾		
								S max.	T max.	S max.	T max.	U ²⁾ nom.
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.656 (16.7)	.214 (5.5)	02691-01004	02605-71000	.610 (15.5)	.524 (13.3)	N/A	
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02691-01006					
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02691-01008					
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02691-01010					
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02691-01012					
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02691-01014					
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02691-01016					
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02691-01018					
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02691-01020					
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02691-01022					
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02691-01024					
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02691-01026					
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02691-01028					
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02691-01030					
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02691-01032					
3/8" (9.6mm)	.125 (3.18)	.375 (9.53)	.386 (9.8)	.125 (3.18)	.787 (20.0)	.262 (6.7)	02691-01204	02605-71200	.730 (18.6)	.610 (15.5)	N/A	
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02691-01206					
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02691-01208					
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02691-01210					
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02691-01212					
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02691-01214					

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)
 2) see page 39 / voir page 39 / siehe Seite 39 / vedi pagina 39 / ver página 39

POP® **Avdel®**

Avdelok® 2691 Series

Lockbolt Fastener



Full Collar

Ø nom.	w. Full Collar			L nom.	B max.	D max.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Flanged Collar		
	min.	max.						S max.	T max.	S max.	T max.	U nom.
3/8" (9.6mm)	.875 (22.23)	1.125 (28.58)	.386 (9.8)	.875 (22.23)	.787 (20.0)	.262 (6.7)	02691-01216	02605-71200	.730 (18.6)	.610 (15.5)	N/A	
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02691-01218					
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02691-01220					
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02691-01222					
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02691-01224					
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02691-01226					
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02691-01228					
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02691-01230					
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02691-01232					

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

Ø nom.		
	lbf ⁽³⁾ (kN ⁽³⁾)	lbf ⁽³⁾ (kN ⁽³⁾)
3/16" (4.8 mm)	1750 (7.79)	2080 (9.26)
1/4" (6.4 mm)	3270 (14.55)	3980 (17.71)
5/16" (8.0 mm)	5000 (22.24)	6700 (29.80)
3/8" (9.6 mm)	7100 (31.58)	8500 (37.81)

3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund.

I dati si riferiscono a bulloni installati con collari standard o flangiato. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala.

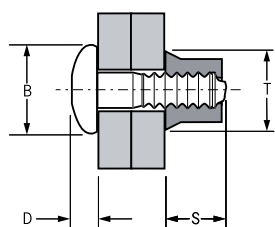
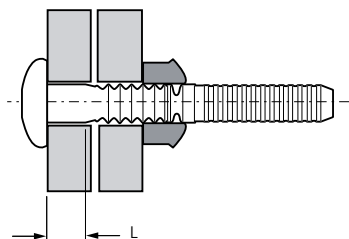
Avdelok® 2801 Series

Lockbolt Fastener

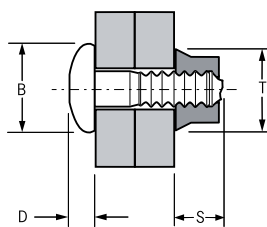


English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy**	Bague: Alliage d'aluminium**	Schließring: Aluminium**	Collare: Lega di alluminio**	Collar: Aluminio**
Natural	Brut	Blank	Nessuna finitura	Natural

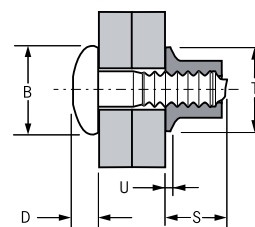
*: AA 2024, DIN 1725, AlCuMg2, Werkstoff 3.1355 **: BS 1473 6061, AA 6061, DIN 1725 AlMg1SiCu, Werkstoff 3.3211



Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



Half Collar
Schließring flach
Bague courte
Collare ribassato
Medio Collar



Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

ø	w. Full Collar ¹⁾			L	B	D	Part No/ref Pin	Part No/ref		Part No/ref		
	min.	max.						Full Collar S max. T max.	Half Collar ¹⁾ S max. T max.	Flanged Collar ²⁾ S max. T max. U ²⁾ nom.		
3/16" (4.8mm)	.062 (1.57)	.187 (4.75)		.062 (1.57)	.394 (10.1)	.132 (3.4)	02801-00602	02837-00600 .370 (9.4) .315 (8.0)	02838-00600 .310 (7.9) .315 (8.0)	02839-00600 .402 (10.2) .390 (9.9) .030 (0.76)		
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02801-00603					
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02801-00604					
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02801-00605					
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02801-00606					
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02801-00607					
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02801-00608					
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02801-00609					
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02801-00610					
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02801-00611					
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02801-00612					

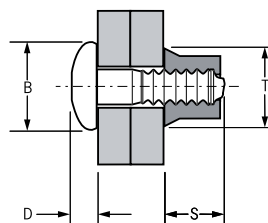
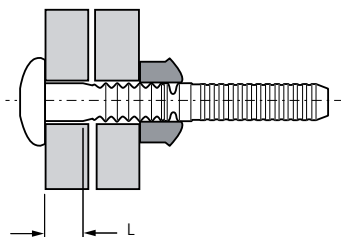
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 44 / voir page 44 / siehe Seite 44 / vedi pagina 44 / ver página 44

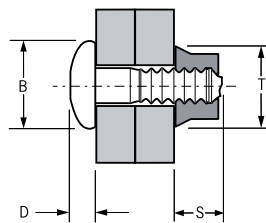
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Avdelok® 2801 Series

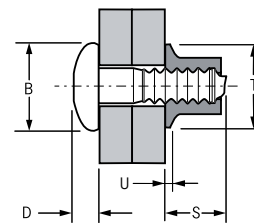
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref		
	min.	max.		nom.	max.	max.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾		
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.750 (19.05)	.875 (22.23)	.196 (5.0)	.750 (19.05)	.394 (10.1)	.132 (3.4)	02801-00613	02837-00600	.370 (9.4)	.315 (8.0)	02838-00600	.402 (10.2)	.390 (9.9)	.030 (0.76)
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02801-00614							
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02801-00615							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02801-00616							
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02801-00617							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02801-00618							
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02801-00619							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02801-00620							
1/4" (6.4mm)	.062 (1.57)	.187 (4.75)	.261 (6.6)	.062 (1.57)	.525 (13.4)	.161 (4.1)	02801-00802	02837-00800	.480 (12.2)	.417 (10.6)	02838-00800	.520 (13.2)	.515 (13.1)	.037 (0.94)
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02801-00803							
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02801-00804							
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02801-00805							
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02801-00806							
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02801-00807							
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02801-00808							
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02801-00809							
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02801-00810							
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02801-00811							
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02801-00812							
	.750 (19.05)	.875 (22.23)		.750 (19.05)			02801-00813							

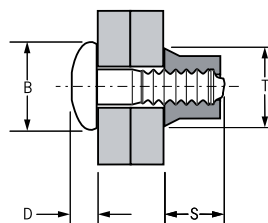
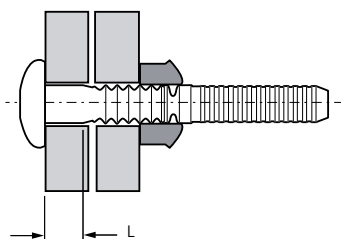
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 44 / voir page 44 / siehe Seite 44 / vedi pagina 44 / ver página 44

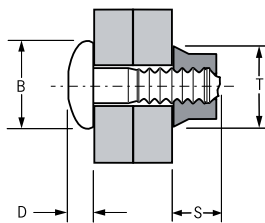
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Avdelok® 2801 Series

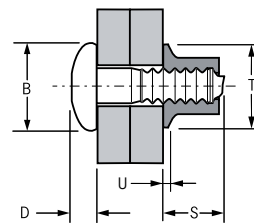
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref		
	min.	max.		nom.	max.	max.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾		
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
1/4" (6.4mm)	.812 (20.62)	.937 (23.80)	.261 (6.6)	.812 (20.62)	.525 (13.4)	.161 (4.1)	02801-00814	02837-00800		02838-00800		02839-00800		
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02801-00815							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02801-00816							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02801-00818							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02801-00820							
	1.250 (31.75)	1.375 (34.93)		1.250 (31.75)			02801-00821							
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.657 (16.7)	.214 (5.5)	02801-01004	02837-01000		02838-01000		02839-01000		
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02801-01006							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02801-01008							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02801-01010							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02801-01012							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02801-01014							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02801-01016							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02801-01018							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02801-01020							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02801-01022							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02801-01024							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02801-01026							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02801-01028							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02801-01030							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02801-01032							

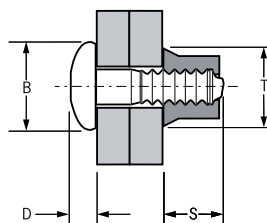
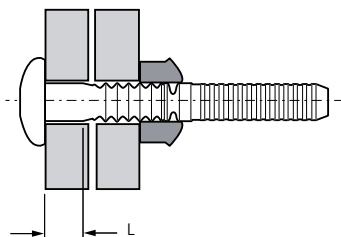
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 44 / voir page 44 / siehe Seite 44 / vedi pagina 44 / ver página 44

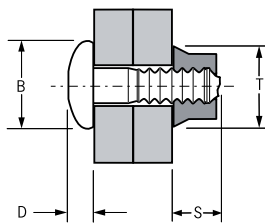
POP® Avdel®

Avdelok® 2801 Series

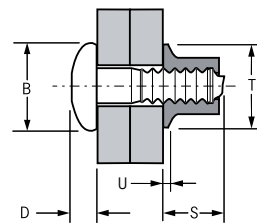
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D max.	Part No/ref Pin	Part No/ref		Part No/ref		Part No/ref		
	min.	max.						Full Collar S max.	T max.	Half Collar ¹⁾ S max.	T max.	Flanged Collar ²⁾ S max. T max. U ²⁾ nom.		
3/8" (9.6mm)	.125 (3.18)	.375 (9.53)		.125 (3.18)	.787 (20.0)	.256 (6.5)	02801-01204	.730 (18.6)	.610 (15.5)	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02801-01206							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02801-01208							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02801-01210							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02801-01212							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02801-01214							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02801-01216							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02801-01218							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02801-01220							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02801-01222							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02801-01224							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02801-01226							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02801-01228							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02801-01230							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02801-01232							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 44 / voir page 44 / siehe Seite 44 / vedi pagina 44 / ver página 44

Avdelok® 2801 Series

Lockbolt Fastener

- 1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .062" (1.57 mm) for ø 3/16" (4.8 mm) and 1/4" (6.4 mm) fasteners and .125" (3.18 mm) for ø 5/16" (8.0 mm) and 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .062" (1,57 mm) pour tiges de ø 3/16" (4,8 mm) et 1/4" (6,4 mm), et de .125" (3,18 mm) pour tiges de ø 5/16" (8,0 mm) et 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .062" (1,57 mm) für ø 3/16" (4,8 mm) und ø 1/4" (6,4 mm) Bolzen und .125" (3,18 mm) für ø 5/16" (8,0 mm) und ø 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .062" (1,57 mm) per i bulloni da ø 3/16" (4,8 mm) e 1/4" (6,4 mm) e di .125" (3,18 mm) per i bulloni da ø 5/16" (8,0 mm) e 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .062" (1,57 mm) para diámetros de 3/16" (4,8 mm) y 1/4" (6,4 mm) y de .125" (3,18 mm) para diámetros de 5/16" (8,0 mm) y 3/8" (9,6 mm).

- 2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

ø		
nom.	lbf ³⁾ (kN ³⁾)	lbf ³⁾ (kN ³⁾)
3/16" (4.8 mm)	1050 (4.67)	1060 (4.72)
1/4" (6.4 mm)	1875 (8.34)	1780 (7.92)
5/16" (8.0 mm)	2925 (13.02)	2850 (12.68)
3/8" (9.6 mm)	4200 (18.68)	4200 (18.68)

- 3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

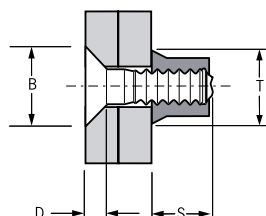
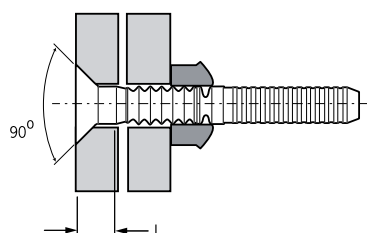
Avdelok® 2802 Series

Lockbolt Fastener

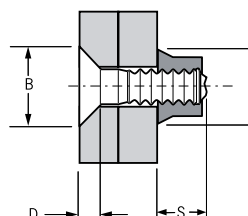


English	Français	Deutsch	Italiano	Español
90° Countersunk	90° Tête fraisée	90° Senkkopf	90° Testa svasata	90° Cabeza avellanada
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy**	Bague: Alliage d'aluminium**	Schließring: Aluminium**	Collare: Lega di alluminio**	Collar: Aluminio**
Natural	Brut	Blank	Nessuna finitura	Natural

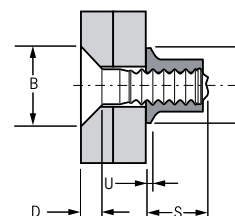
*: AA 2024, DIN 1725, AlCuMg2, Werkstoff 3.1355 **: BS 1473 6061, AA 6061, DIN 1725 AlMg1SiCu, Werkstoff 3.3211



Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



Half Collar
Schließring flach
Bague courte
Collare ribassato
Medio Collar



Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref			
	min.	max.		nom.	max.	nom.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾			
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.	
3/16" (4.8mm)	.125 (3.18)	.250 (6.35)	.196 (5.0)	.125 (3.18)	.348 (8.9)	.085 (2.2)	02802-00603	02837-00600	.370 (9.4)	.315 (8.0)	.310 (7.9)	.315 (8.0)	.402 (10.2)	.390 (9.9)	.030 (0.76)
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02802-00604								
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02802-00605								
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02802-00606								
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02802-00607								
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02802-00608								
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02802-00609								
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02802-00610								
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02802-00611								
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02802-00612								

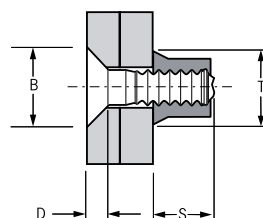
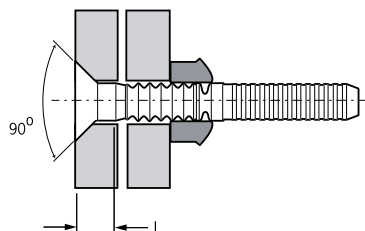
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 49 / voir page 49 / siehe Seite 49 / vedi pagina 49 / ver página 49

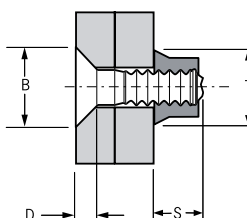
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Avdelok® 2802 Series

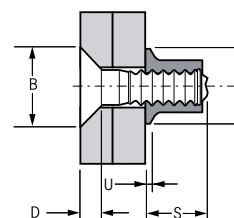
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref		
nom.	min.	max.		nom.	max.	nom.	Pin	S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.750 (19.05)	.875 (22.23)	.196 (5.0)	.750 (19.05)	.348 (8.9)	.085 (2.2)	02802-00613	02837-00600	02838-00600	02839-00600	.402 (10.2)	.390 (9.9)	.030 (0.76)	
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02802-00614							
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02802-00615							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02802-00616							
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02802-00617	.370 (9.4)	.315 (8.0)	.310 (7.9)	.315 (8.0)			
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02802-00618							
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02802-00619							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02802-00620							
1/4" (6.4mm)	.125 (3.18)	.250 (6.35)	.261 (6.6)	.125 (3.18)	.464 (11.8)	.114 (2.9)	02802-00803	02837-00800	02838-00800	02839-00800	.520 (13.2)	.515 (13.1)	.037 (0.94)	
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02802-00804							
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02802-00805							
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02802-00806							
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02802-00807							
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02802-00808	.480 (12.2)	.417 (10.6)	.420 (10.7)	.417 (10.6)			
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02802-00809							
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02802-00810							
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02802-00811							
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02802-00812							
	.750 (19.05)	.875 (22.23)		.750 (19.05)			02802-00813							

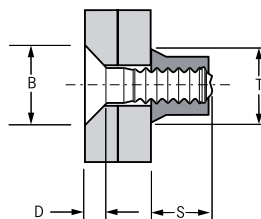
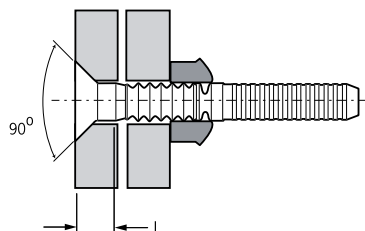
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 49 / voir page 49 / siehe Seite 49 / vedi pagina 49 / ver página 49

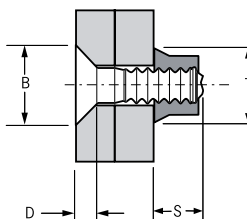
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Avdelok® 2802 Series

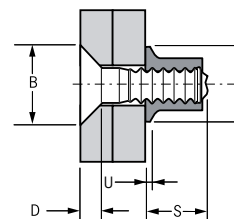
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

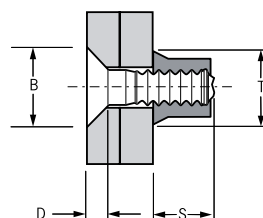
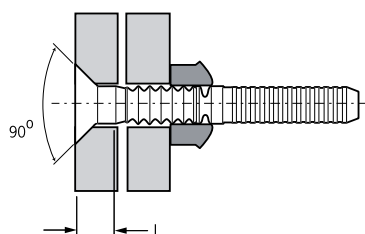
ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
1/4" (6.4mm)	.812 (20.62)	.937 (23.80)	.261 (6.6)	.812 (20.62)	.464 (11.8)	.114 (2.9)	02802-00814	02837-00800	02838-00800	02839-00800				
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02802-00815							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02802-00816							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02802-00818							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02802-00820							
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.580 (14.8)	.143 (3.7)	02802-01004	02837-01000	02838-01000	02839-01000				
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02802-01006							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02802-01008							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02802-01010							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02802-01012							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02802-01014							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02802-01016							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02802-01018							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02802-01020							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02802-01022							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02802-01024							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02802-01026							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02802-01028							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02802-01030							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02802-01032							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)
 1) & 2) see page 49 / voir page 49 / siehe Seite 49 / vedi pagina 49 / ver página 49

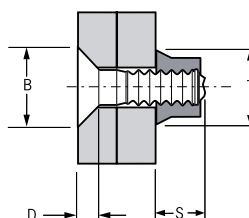
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Avdelok® 2802 Series

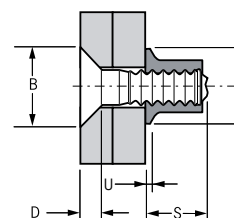
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref		
	min.	max.		nom.	max.	nom.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾		
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
3/8" (9.6mm)	.250 (6.35)	.500 (12.70)	.386 (9.8)	.250 (6.35)	.696 (17.7)	.172 (4.4)	02802-01206	02837-01200	.730 (18.6)	.610 (15.5)	02838-01200	02839-01200		
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02802-01208					.788 (20.0)	.786 (20.0)	.056 (1.42)
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02802-01210							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02802-01212							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02802-01214							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02802-01216							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02802-01218							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02802-01220							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02802-01222							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02802-01224							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02802-01226							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02802-01228							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02802-01230							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02802-01232							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 49 / voir page 49 / siehe Seite 49 / vedi pagina 49 / ver página 49

Avdelok® 2802 Series

Lockbolt Fastener

- 1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .062" (1.57 mm) for $\varnothing$ 3/16" (4.8 mm) and 1/4" (6.4 mm) fasteners and .125" (3.18 mm) for $\varnothing$ 5/16" (8.0 mm) and 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .062" (1,57 mm) pour tiges de $\varnothing$ 3/16" (4,8 mm) et 1/4" (6,4 mm), et de .125" (3,18 mm) pour tiges de $\varnothing$ 5/16" (8,0 mm) et 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .062" (1,57 mm) für $\varnothing$ 3/16" (4,8 mm) und $\varnothing$ 1/4" (6,4 mm) Bolzen und .125" (3,18 mm) für $\varnothing$ 5/16" (8,0 mm) und $\varnothing$ 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .062" (1,57 mm) per i bulloni da $\varnothing$ 3/16" (4,8 mm) e 1/4" (6,4 mm) e di .125" (3,18 mm) per i bulloni da $\varnothing$ 5/16" (8,0 mm) e 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .062" (1,57 mm) para diámetros de 3/16" (4,8 mm) y 1/4" (6,4 mm) y de .125" (3,18 mm) para diámetros de 5/16" (8,0 mm) y 3/8" (9,6 mm).

- 2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

$\varnothing$		
nom.	lbf ⁽³⁾ (kN ⁽³⁾)	lbf ⁽³⁾ (kN ⁽³⁾)
3/16" (4.8 mm)	1050 (4.67)	1060 (4.72)
1/4" (6.4 mm)	1875 (8.34)	1780 (7.92)
5/16" (8.0 mm)	2925 (13.02)	2850 (12.68)
3/8" (9.6 mm)	4200 (18.68)	4200 (18.68)

- 3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

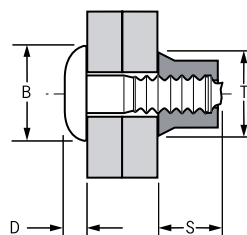
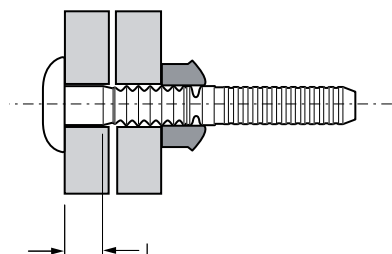
Avdelok[®] 2803 Series

Lockbolt Fastener

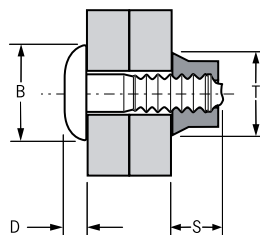


English	Français	Deutsch	Italiano	Español
Truss head	Tête large	Flachrundkopf groß	Testa larga	Cabeza alomada de perfil bajo
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy**	Bague: Alliage d'aluminium**	Schließring: Aluminium**	Collare: Lega di alluminio**	Collar: Aluminio**
Natural	Brut	Blank	Nessuna finitura	Natural

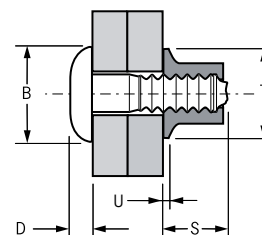
*: AA 2024, DIN 1725, AlCuMg2, Werkstoff 3.1355 **: BS 1473 6061, AA 6061, DIN 1725 AlMg1SiCu, Werkstoff 3.3211



Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



Half Collar
Schließring flach
Bague courte
Collare ribassato
Medio Collar



Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

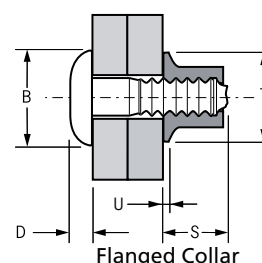
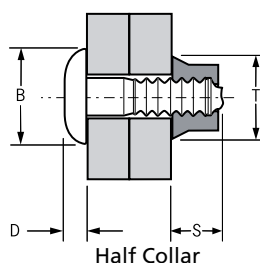
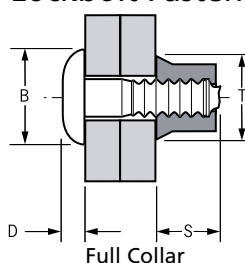
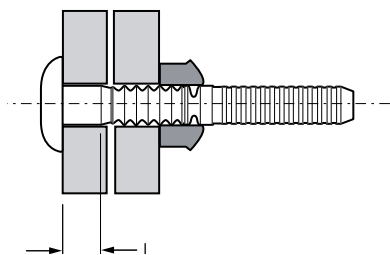
ø	w. Full Collar ¹⁾			L	B	D	Part No/ref Pin	Part No/ref		Part No/ref		Part No/ref		
	min.	max.		nom.	max.	nom.		Full Collar S max. T max.	Half Collar ¹⁾ S max. T max.	Flanged Collar ²⁾ S max. T max. U ²⁾ nom.		S max.	T max.	U ²⁾ nom.
3/16" (4.8mm)	.062 (1.57)	.187 (4.75)		.062 (1.57)	.469 (12.0)	.085 (2.2)	02803-00602	02837-00600 .370 (9.4) .315 (8.0)	02838-00600 .310 (7.9) .315 (8.0)	02839-00600 .402 (10.2) .390 (9.9) .030 (0.76)				
	.125 (3.18)	.250 (6.35)		.125 (3.18)			02803-00603							
	.187 (4.75)	.312 (7.92)		.187 (4.75)			02803-00604							
	.250 (6.35)	.375 (9.53)		.250 (6.35)			02803-00605							
	.312 (7.92)	.437 (11.10)		.312 (7.92)			02803-00606							
	.375 (9.53)	.500 (12.70)		.375 (9.53)			02803-00607							
	.437 (11.10)	.562 (14.27)		.437 (11.10)			02803-00608							
	.500 (12.70)	.625 (15.88)		.500 (12.70)			02803-00609							
	.562 (14.27)	.687 (17.45)		.562 (14.27)			02803-00610							
	.625 (15.88)	.750 (19.05)		.625 (15.88)			02803-00611							
	.687 (17.45)	.812 (20.62)		.687 (17.45)			02803-00612							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)
1) & 2) see page 54 / voir page 54 / siehe Seite 54 / vedi pagina 54 / ver página 54

POP® X Avdel®

Avdelok® 2803 Series

Lockbolt Fastener



ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref								
	min.	max.		nom.	max.	nom.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾								
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.						
3/16" (4.8mm)	.750 (19.05)	.875 (22.23)	.196 (5.0)	.750 (19.05)	.469 (12.0)	.085 (2.2)	02803-00613	02837-00600		02838-00600	02839-00600									
	.812 (20.62)	.937 (23.80)		.812 (20.62)			02803-00614													
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02803-00615													
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02803-00616													
	1.000 (25.40)	1.125 (28.58)		1.000 (25.40)			02803-00617							.370 (9.4)	.315 (8.0)	.310 (7.9)	.315 (8.0)	.402 (10.2)	.390 (9.9)	.030 (0.76)
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02803-00618													
	1.125 (28.58)	1.250 (31.75)		1.125 (28.58)			02803-00619													
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02803-00620													
	1/4" (6.4mm)	.062 (1.57)		.187 (4.75)			.261 (6.6)							.062 (1.57)	.594 (15.1)	.110 (2.8)	02803-00802	02837-00800		02838-00800
.125 (3.18)		.250 (6.35)	.125 (3.18)	02803-00803																
.187 (4.75)		.312 (7.92)	.187 (4.75)	02803-00804																
.250 (6.35)		.375 (9.53)	.250 (6.35)	02803-00805																
.312 (7.92)		.437 (11.10)	.312 (7.92)	02803-00806																
.375 (9.53)		.500 (12.70)	.375 (9.53)	02803-00807																
.437 (11.10)		.562 (14.27)	.437 (11.10)	02803-00808	.480 (12.2)	.417 (10.6)		.420 (10.7)	.417 (10.6)	.520 (13.2)	.515 (13.1)	.037 (0.94)								
.500 (12.70)		.625 (15.88)	.500 (12.70)	02803-00809																
.562 (14.27)		.687 (17.45)	.562 (14.27)	02803-00810																
.625 (15.88)		.750 (19.05)	.625 (15.88)	02803-00811																
.687 (17.45)		.812 (20.62)	.687 (17.45)	02803-00812																
.750 (19.05)		.875 (22.23)	.750 (19.05)	02803-00813																

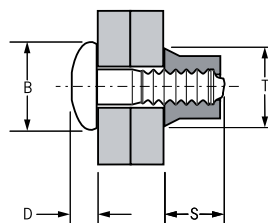
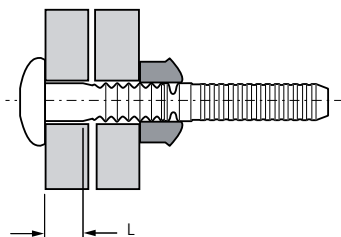
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 54 / voir page 54 / siehe Seite 54 / vedi pagina 54 / ver página 54

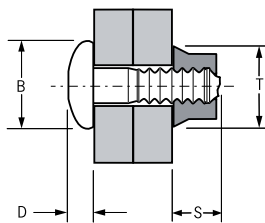
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Avdelok® 2803 Series

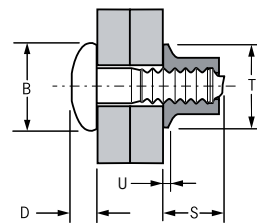
Lockbolt Fastener



Full Collar



Half Collar



Flanged Collar

ø nom.	w. Full Collar ¹⁾			L nom.	B max.	D nom.	Part No/ref Pin	Part No/ref Full Collar		Part No/ref Half Collar ¹⁾		Part No/ref Flanged Collar ²⁾		
	min.	max.						S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.
1/4" (6.4mm)	.812 (20.62)	.937 (23.80)	.261 (6.6)	.812 (20.62)	.594 (15.1)	.110 (2.8)	02803-00814	02837-00800	02838-00800	02839-00800		.520 (13.2)	.515 (13.1)	.037 (0.94)
	.875 (22.23)	1.000 (25.40)		.875 (22.23)			02803-00815							
	.937 (23.80)	1.062 (26.97)		.937 (23.80)			02803-00816							
	1.062 (26.97)	1.187 (30.15)		1.062 (26.97)			02803-00818							
	1.187 (30.15)	1.312 (33.32)		1.187 (30.15)			02803-00820							
	1.250 (31.75)	1.375 (34.93)		1.250 (31.75)			02803-00821							
5/16" (8.0mm)	.125 (3.18)	.375 (9.53)	.323 (8.2)	.125 (3.18)	.781 (19.9)	.140 (3.6)	02803-01004	02837-01000	02838-01000	02839-01000		.662 (16.8)	.640 (16.3)	.048 (1.22)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02803-01006							
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02803-01008							
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02803-01010							
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02803-01012							
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02803-01014							
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02803-01016							
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02803-01018							
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02803-01020							
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02803-01022							
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02803-01024							
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02803-01026							
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02803-01028							
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02803-01030							
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02803-01032							

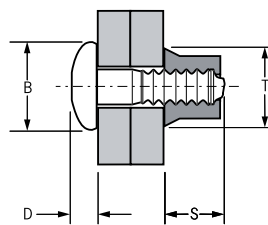
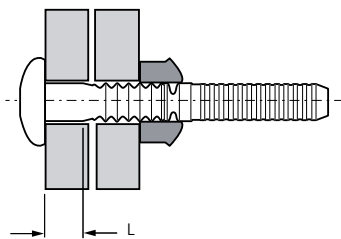
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 54 / voir page 54 / siehe Seite 54 / vedi pagina 54 / ver página 54

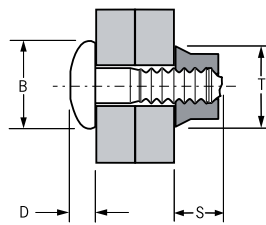
POP® X Avdel®

Avdelok® 2803 Series

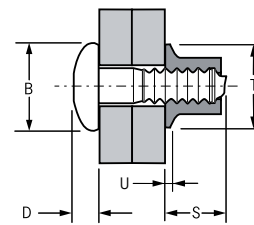
Lockbolt Fastener



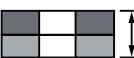
Full Collar



Half Collar



Flanged Collar

ø nom.				L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref				
	w. Full Collar ¹⁾							Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾				
	min.	max.		nom.	max.	nom.	Pin	S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.		
3/8" (9.6mm)	.125 (3.18)	.375 (9.53)	.386 (9.8)	.125 (3.18)	.922 (23.5)	.160 (4.1)	02803-01204	02837-01200	.730 (18.6)	.610 (15.5)	02838-01200	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)
	.250 (6.35)	.500 (12.70)		.250 (6.35)			02803-01206									
	.375 (9.53)	.625 (15.88)		.375 (9.53)			02803-01208									
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02803-01210									
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02803-01212									
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02803-01214									
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02803-01216									
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02803-01218									
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02803-01220									
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02803-01222									
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02803-01224									
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02803-01226									
	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02803-01228									
	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02803-01230									
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02803-01232									

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) & 2) see page 54 / voir page 54 / siehe Seite 54 / vedi pagina 54 / ver página 54

Avdelok® 2803 Series

Lockbolt Fastener

- 1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .062" (1.57 mm) for $\varnothing$ 3/16" (4.8 mm) and 1/4" (6.4 mm) fasteners and .125" (3.18 mm) for $\varnothing$ 5/16" (8.0 mm) and 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .062" (1,57 mm) pour tiges de $\varnothing$ 3/16" (4,8 mm) et 1/4" (6,4 mm), et de .125" (3,18 mm) pour tiges de $\varnothing$ 5/16" (8,0 mm) et 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .062" (1,57 mm) für $\varnothing$ 3/16" (4,8 mm) und $\varnothing$ 1/4" (6,4 mm) Bolzen und .125" (3,18 mm) für $\varnothing$ 5/16" (8,0 mm) und $\varnothing$ 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .062" (1,57 mm) per i bulloni da $\varnothing$ 3/16" (4,8 mm) e 1/4" (6,4 mm) e di .125" (3,18 mm) per i bulloni da $\varnothing$ 5/16" (8,0 mm) e 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .062" (1,57 mm) para diámetros de 3/16" (4,8 mm) y 1/4" (6,4 mm) y de .125" (3,18 mm) para diámetros de 5/16" (8,0 mm) y 3/8" (9,6 mm).

- 2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

$\varnothing$		
nom.	lbf ⁽³⁾ (kN ⁽³⁾)	lbf ⁽³⁾ (kN ⁽³⁾)
3/16" (4.8 mm)	1050 (4.67)	1060 (4.72)
1/4" (6.4 mm)	1875 (8.34)	1780 (7.92)
5/16" (8.0 mm)	2925 (13.02)	2850 (12.68)
3/8" (9.6 mm)	4200 (18.68)	4200 (18.68)

- 3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

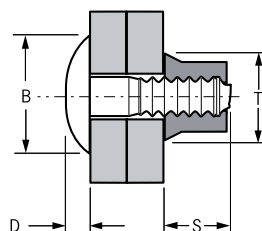
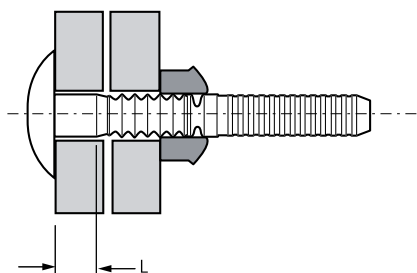
Avdelok[®] 2804 Series

Lockbolt Fastener

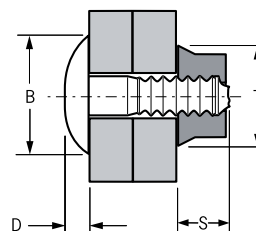


English	Français	Deutsch	Italiano	Español
Large head	Tête large	Rundkopf extragroß	Testa larga	Cabeza ancha
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy**	Bague: Alliage d'aluminium**	Schließring: Aluminium**	Collare: Lega di alluminio**	Collar: Aluminio**
Natural	Brut	Blank	Nessuna finitura	Natural

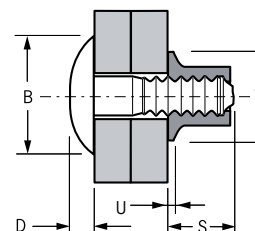
*: AA 2024, DIN 1725, AlCuMg2, Werkstoff 3.1355 **: BS 1473 6061, AA 6061, DIN 1725 AlMg1SiCu, Werkstoff 3.3211



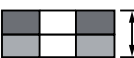
Full Collar
Schließring Standard
Bague Standard
Collare Standard
Collar Estándar



Half Collar
Schließring flach
Bague courte
Collare ribassato
Medio Collar

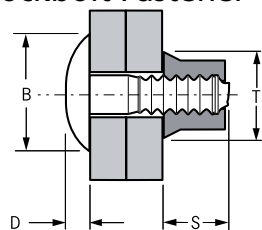
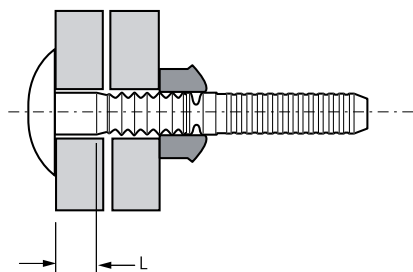


Flanged Collar
Schließring mit Bund
Bague à embase
Collare flangiato
Collar con Ala

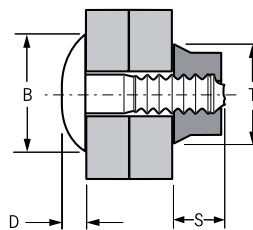
Ø nom.	 w. Full Collar ¹⁾			L	B	D	Part No/ref	Part No/ref		Part No/ref		Part No/ref			
	min.	max.		nom.	max.	nom.	Pin	Full Collar		Half Collar ¹⁾		Flanged Collar ²⁾			
								S max.	T max.	S max.	T max.	S max.	T max.	U ²⁾ nom.	
3/8" (9.6mm)	.375 (9.53)	.625 (15.88)	.386 (9.8)	.375 (9.53)	1.265 (32.2)	.195 (5.0)	02804-01208	02837-01200		02838-01200		02839-01200			
	.500 (12.70)	.750 (19.05)		.500 (12.70)			02804-01210								
	.625 (15.88)	.875 (22.23)		.625 (15.88)			02804-01212								
	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02804-01214								
	.875 (22.23)	1.125 (28.58)		.875 (22.23)			02804-01216								
	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02804-01218	.730 (18.6)	.610 (15.5)	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)	
	1.125 (28.58)	1.375 (34.93)		1.125 (28.58)			02804-01220								
	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02804-01222								
	1.375 (34.93)	1.625 (41.28)		1.375 (34.93)			02804-01224								
	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02804-01226								

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

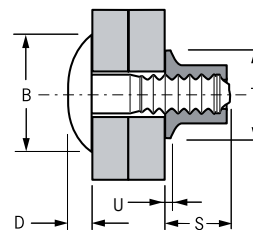
1) & 2) see page 56 / voir page 56 / siehe Seite 56 / vedi pagina 56 / ver página 56

POP® **Avdel®**
Avdelok® 2804 Series
Lockbolt Fastener


Full Collar



Half Collar



Flanged Collar

Ø	w. Full Collar ¹⁾			L	B	D	Part No/ref Pin	Part No/ref		Part No/ref		Part No/ref		
	nom.	min.	max.		max.	nom.		Full Collar S max.	T max.	Half Collar ¹⁾ S max.	T max.	Flanged Collar ²⁾ S max. T max. U ²⁾ nom.		
3/8" (9.6mm)	1.625 (41.28)	1.875 (47.63)		1.625 (41.28)			02804-01228	02837-01200		02838-01200		02839-01200		
	1.750 (44.45)	2.000 (50.80)	.386 (9.8)	1.750 (44.45)	1.265 (32.2)	.195 (5.0)	02804-01230	.730 (18.6)	.610 (15.5)	.610 (15.5)	.610 (15.5)	.788 (20.0)	.786 (20.0)	.056 (1.42)
	1.875 (47.63)	2.125 (53.98)		1.875 (47.63)			02804-01232							

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by .125" (3.18 mm) for 3/8" (9.6 mm) fasteners.

Avec une bague courte, la plage de serrage maximale est équivalente à celle de l'Avdelok de longueur immédiatement supérieure. La plage de serrage augmente de .125" (3,18 mm) pour tiges de 3/8" (9,6 mm).

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um .125" (3,18 mm) für 3/8" (9,6 mm) Bolzen.

Utilizzando i collari ribassati lo spessore serrabile aumenta, ed è uguale a quello massimo del bullone di misura superiore. Il massimo spessore serrabile aumenta di .125" (3,18 mm) per i bulloni da 3/8" (9,6 mm).

El empleo de medio collar incrementa el máx. espesor a remachar al de la siguiente toma. El máximo espesor a remachar por uso de medio collar es de .125" (3,18 mm) para diámetro de 3/8" (9,6 mm).

2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

Ø		
nom.	lbf ³⁾ (kN ³⁾)	lbf ³⁾ (kN ³⁾)
3/8" (9.6 mm)	4200 (18.68)	4200 (18.68)

3) These figures represent minimum fastener shear and tensile strength values with the use of a full or flanged collar. When using half collars tension is reduced to approximately 45 %.

Cette valeurs représentent minimum résistances au cisaillement et à la traction avec l'usage d'une bague standard ou à embase. Avec l'usage des bagues courtes la résistance à la traction se diminue à env. 45 %.

Diese Werte repräsentieren Minimum Scher- und Zugfestigkeiten der Verbindung unter Verwendung von Schließringen Standard oder mit Bund. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari standard o flangiato, utilizzando collari ribassati i valori di trazione diminuiscono del 45 % circa, i valori di taglio rimangono invariati. I dati indicati in tabella sono minimi.

La figura representa los valores mínimos de resistencia a la cortadura y tracción cuando se utiliza collar estándar o con ala. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.

POP  **Avdel**

Avdelok® XT 2851 Series

Lockbolt Fastener

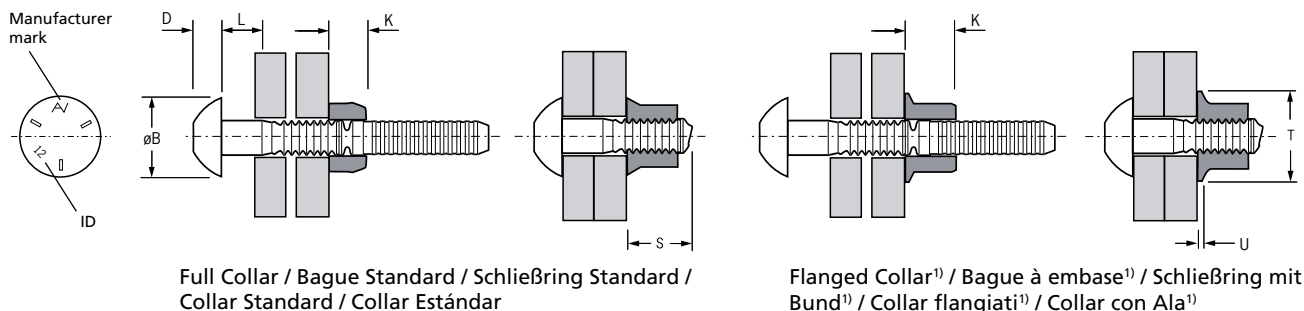


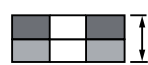
English	Français	Deutsch	Italiano	Español
Round head	Tête plate	Rundkopf	Testa tonda	Cabeza alomada
Pin: Carbon steel Black self-colour	Tige: Acier Noir	Bolzen: Stahl Schwarz	Bullone: Acciaio Negro	Vástago: Acero Pavonado
Collar: Low carbon steel Zinc plated, 10 µm	Bague: Acier Zingué, 10 µm	Schließring: Stahl Verzinkt, 10 µm	Collare: Acciaio Zincato, 10 µm	Collar: Acero Zincado, 10 µm

Options:

2852 series: 10 µm zinc plated, clear trivalent passivated / 10 µm zingué, passivation claire trivalente / 10 µm verzinkt, klar chromatiert, Cr6-frei / 10 µm zincato, passivazione chiara trivalente / 10 µm zincado, pasivado claro trivalente

2853 series: 15 µm zinc plated, clear trivalent passivated / 15 µm zingué, passivation claire trivalente / 15 µm verzinkt, klar chromatiert, Cr6-frei / 15 µm zincato, passivazione chiara trivalente / 15 µm zincado, pasivado claro trivalente



Ø					L	ø B	D	Part No/ref										
	nom.	ID	min.					max.	nom.	max.	max.	Pin	Full Collar		Flanged Collar ¹⁾			
									K	S	K	T	U ¹⁾					
									max.	max.	max.	max.						
1/2" (12.7mm)	4	.250 (6.35)	.500 (12.70)	17/32 .531 (13.5)	.181 (4.60)	.938 (23.9)	.330 (8.4)	02851-01604	02662-01600									
	8	.500 (12.70)	.750 (19.05)		.431 (10.95)			02851-01608										
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02851-01612										
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02851-01616										
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02851-01620										
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02851-01624										
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02851-01628						.635 (16.2)	1.043 (26.5)	.740 (18.8)	1.031 (26.2)	.125 (3.18)
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02851-01632										
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02851-01636										
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02851-01640										
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02851-01644										
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02851-01648										

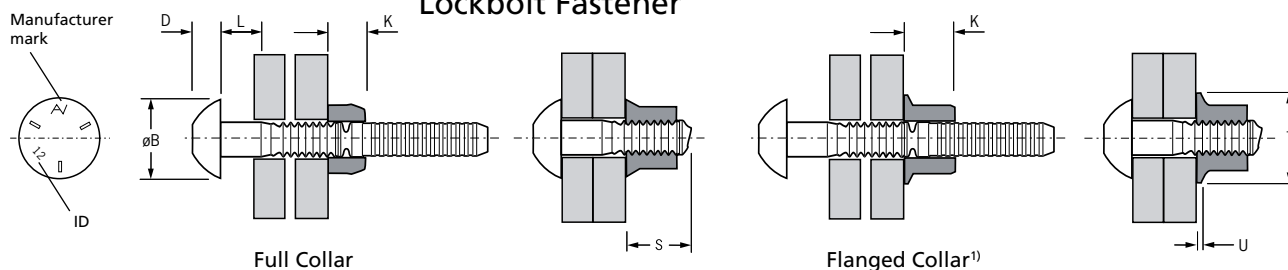
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 63 / voir page 63 / siehe Seite 63 / vedi pagina 63 / ver página 63

POP **Avdel**

Avdelok® XT 2851 Series

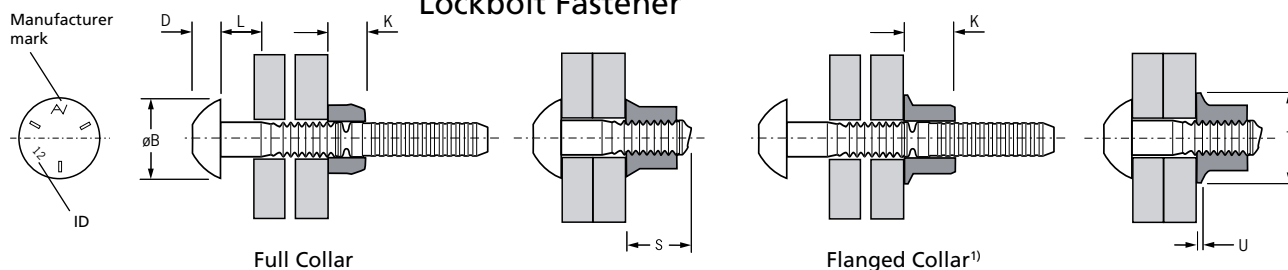
Lockbolt Fastener



Ø nom.					L	ø B	D	Part No/ref						
	ID	min.	max.		nom.	max.	max.	Pin	Full Collar K max.	S max.	Flanged Collar ¹⁾ K max. T max. U ¹⁾			
1/2" (12.7mm)	52	3.250 (82.55)	3.500 (88.90)	17/32 .531 (13.5)	3.181 (80.80)	.938 (23.9)	.330 (8.4)	02851-01652	02662-01600	.635 (16.2)	1.043 (26.5)	02615-01600 .740 (18.8) 1.031 (26.2) .125 (3.18)		
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02851-01656						
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02851-01660						
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02851-01664						
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02851-01668						
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02851-01672						
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02851-01676						
	80	5.000 (127.00)	5.250 (133.35)		4.931 (125.25)			02851-01680						
5/8" (15.9mm)	4	.250 (6.35)	.500 (12.70)	21/32 .656 (16.7)	.181 (4.60)	1.187 (30.2)	.415 (10.6)	02851-02004	02662-02000	.870 (22.1)	1.283 (32.6)	02615-02000 .955 (24.3) 1.281 (32.6) .156 (3.96)		
	8	.500 (12.70)	.750 (19.05)		.431 (10.95)			02851-02008						
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02851-02012						
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02851-02016						
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02851-02020						
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02851-02024						
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02851-02028						
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02851-02032						
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02851-02036						
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02851-02040						
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02851-02044						
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02851-02048						
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02851-02052						

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 63 / voir page 63 / siehe Seite 63 / vedi pagina 63 / ver página 63

POP **Avdel**
Avdelok® XT 2851 Series
Lockbolt Fastener


ø					L	ø B	D	Part No/ref					
	ID	min.	max.					Pin	Full Collar		Flanged Collar ¹⁾		
nom.	ID	min.	max.		nom.	max.	max.		K max.	S max.	K max.	T max.	U ¹⁾
5/8" (15.9mm)	56	3.500 (88.90)	3.750 (95.25)	21/32 .656 (16.7)	3.431 (87.15)	1.187 (30.2)	.415 (10.6)	02851-02056	02662-02000	02615-02000 .955 1.281 .156 (24.3) (32.6) (3.96)			
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02851-02060					
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02851-02064					
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02851-02068					
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02851-02072					
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02851-02076					
3/4" (19.1mm)	4	.250 (6.35)	.500 (12.70)	25/32 .781 (19.9)	.181 (4.60)	1.438 (36.6)	.500 (12.7)	02851-02404	02662-02400	02615-02400 1.142 1.531 .188 (29.1) (38.9) (4.78)			
	8	.500 (12.70)	.750 (19.05)		.431 (10.95)			02851-02408					
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02851-02412					
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02851-02416					
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02851-02420					
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02851-02424					
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02851-02428					
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02851-02432					
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02851-02436					
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02851-02440					
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02851-02444					
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02851-02448					
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02851-02452					
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02851-02456					
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02851-02460					

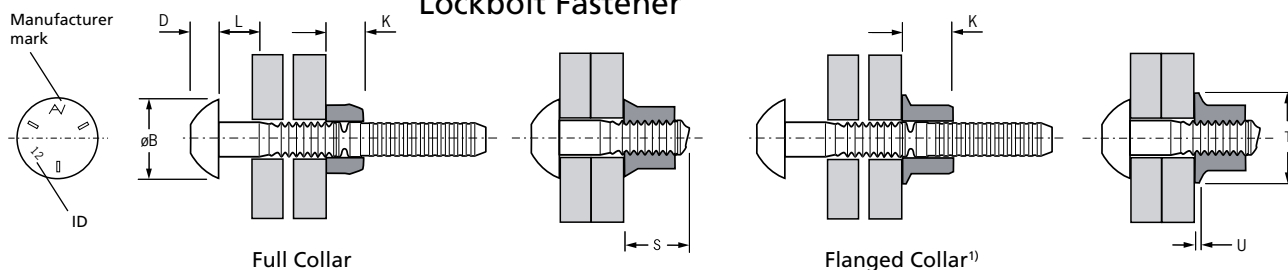
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 63 / voir page 63 / siehe Seite 63 / vedi pagina 63 / ver página 63

POP  **Avdel**

Avdelok® XT 2851 Series

Lockbolt Fastener



ø					L	ø B	D		Part No/ref					
	nom.	ID	min.						max.	nom.	max.	max.	Pin	Full Collar K max.
3/4" (19.1mm)	64	4.000 (101.60)	4.250 (107.95)	25/32 .781 (19.9)	3.931 (99.85)	1.438 (36.6)	.500 (12.7)	02851-02464	02662-02400	.955 (24.3)	1.377 (35.0)	1.142 (29.1)	1.531 (38.9)	.188 (4.78)
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02851-02468						
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02851-02472						
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02851-02476						
7/8" (22.2mm)	8	.500 (12.70)	.750 (19.05)	29/32 .906 (23.01)	.431 (10.95)	1.656 (42.1)	.578 (14.7)	02851-02808	02662-02800	1.112 (28.3)	1.540 (39.2)	1.325 (33.7)	1.625 (41.3)	.218 (5.54)
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02851-02812						
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02851-02816						
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02851-02820						
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02851-02824						
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02851-02828						
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02851-02832						
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02851-02836						
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02851-02840						
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02851-02844						
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02851-02848						
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02851-02852						
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02851-02856						
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02851-02860						
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02851-02864						
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02851-02868						
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02851-02872						

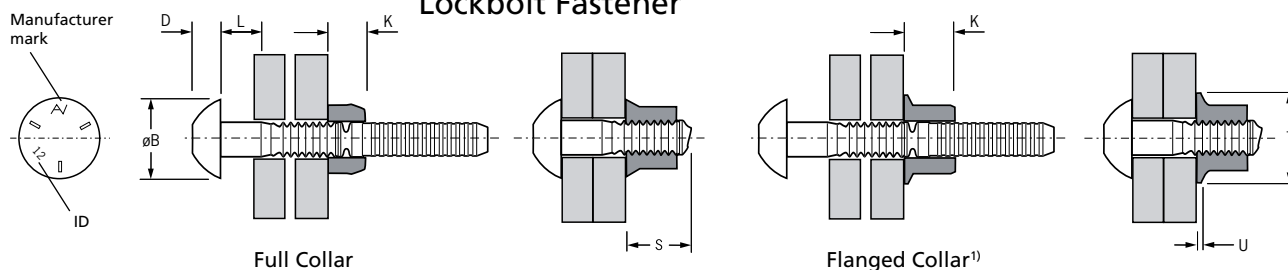
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 63 / voir page 63 / siehe Seite 63 / vedi pagina 63 / ver página 63

POP[®]  Avdel[®]

Avdelok[®] XT 2851 Series

Lockbolt Fastener



Ø					L	ø B	D	Part No/ref					
nom.	ID	min.	max.		nom.	max.	max.	Pin	Full Collar K max.	S max.	Flanged Collar ¹⁾ K max. T max. U ¹⁾		
1 " (25.4mm)	8	.500 (12.70)	.750 (19.05)	1-1/32 1.031 (26.18)	.431 (10.95)	1.906 (48.5)	.640 (16.3)	02851-03208	02662-03200		02615-03200 1.510 1.906 .250 (38.4) (48.5) (6.35)		
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02851-03212					
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02851-03216					
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02851-03220					
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02851-03224					
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02851-03228					
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02851-03232					
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02851-03236					
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02851-03240					
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02851-03244					
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02851-03248					
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02851-03252					
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02851-03256					
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02851-03260					
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02851-03264					
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02851-03268					
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02851-03272					
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02851-03276					
	80	5.000 (127.00)	5.250 (133.35)		4.931 (125.25)			02851-03280					

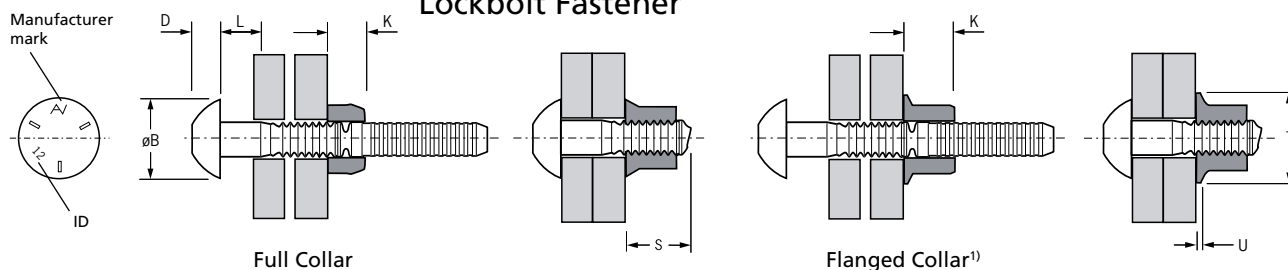
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

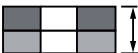
1) see page 63 / voir page 63 / siehe Seite 63 / vedi pagina 63 / ver página 63

POP **Avdel**

Avdelok® XT 2851 Series

Lockbolt Fastener



ø					L	ø B	D		Part No/ref					
	nom.	ID	min.						max.	nom.	max.	max.	Pin	Full Collar
										K max.	S max.	K max.	T max.	U ¹⁾
1 " (25.4mm)	84	5.250 (133.35)	5.500 (139.70)	1-1/32 1.031 (26.18)	5.181 (131.60)	1.906 (48.5)	.640 (16.3)	02851-03284	02662-03200	02615-03200				
	88	5.500 (139.70)	5.750 (146.05)		5.431 (137.95)			02851-03288	1.272 (32.4)	1.701 (43.3)	1.510 (38.4)	1.906 (48.5)	.250 (6.35)	
	92	5.750 (146.05)	6.000 (152.40)		5.681 (144.30)			02851-03292						
1-1/8 " (28.6mm)	8	.500 (12.70)	.750 (19.05)	1-5/32 1.156 (29.36)	.500 (12.70)	2.129 (54.1)	.694 (17.7)	02851-03608	02662-03600	02615-03600				
	12	.750 (19.05)	1.000 (25.40)		.750 (19.05)			02851-03612						
	16	1.000 (25.40)	1.250 (31.75)		1.000 (25.40)			02851-03616						
	20	1.250 (31.75)	1.500 (38.10)		1.250 (31.75)			02851-03620						
	24	1.500 (38.10)	1.750 (44.45)		1.500 (38.10)			02851-03624						
	28	1.750 (44.45)	2.000 (50.80)		1.750 (44.45)			02851-03628						
	32	2.000 (50.80)	2.250 (57.15)		2.000 (50.80)			02851-03632						
	36	2.250 (57.15)	2.500 (63.50)		2.250 (57.15)			02851-03636						
	40	2.500 (63.50)	2.750 (69.85)		2.500 (63.50)			02851-03640						
	44	2.750 (69.85)	3.000 (76.20)		2.750 (69.85)			02851-03644						
	48	3.000 (76.20)	3.250 (82.55)		3.000 (76.20)			02851-03648						
	52	3.250 (82.55)	3.500 (88.90)		3.250 (82.55)			02851-03652						
	56	3.500 (88.90)	3.750 (95.25)		3.500 (88.90)			02851-03656						
	60	3.750 (95.25)	4.000 (101.60)		3.750 (95.25)			02851-03660						
	64	4.000 (101.60)	4.250 (107.95)		4.000 (101.60)			02851-03664						
	68	4.250 (107.95)	4.500 (114.30)		4.250 (107.95)			02851-03668						
	72	4.500 (114.30)	4.750 (120.65)		4.500 (114.30)			02851-03672						

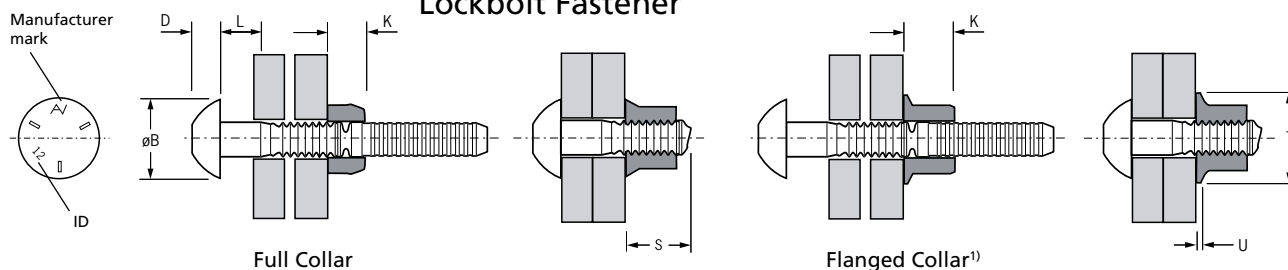
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 63 / voir page 63 / siehe Seite 63 / vedi pagina 63 / ver página 63

POP  **Avdel**

Avdelok® XT 2851 Series

Lockbolt Fastener



ø					L	ø B	D	Part No/ref						
	ID	min.	max.					Pin	Full Collar		Flanged Collar ¹⁾			
nom.	ID	min.	max.		nom.	max.	max.		K max.	S max.	K max.	T max.	U ¹⁾	
1-1/8" (28.6mm)	76	4.750 (120.65)	5.000 (127.00)	1-5/32 1.156 (29.36)	4.750 (120.65)	2.129 (54.1)	.694 (17.7)	02851-03676	02662-03600	1.418 (36.1)	1.894 (48.1)	1.688 (42.9)	2.158 (54.9)	.270 (6.85)
	80	5.000 (127.00)	5.250 (133.35)		5.000 (127.00)			02851-03680						
	84	5.250 (133.35)	5.500 (139.70)		5.250 (133.35)			02851-03684						
	88	5.500 (139.70)	5.750 (146.05)		5.500 (139.70)			02851-03688						
	92	5.750 (146.05)	6.000 (152.40)		5.750 (146.05)			02851-03692						

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

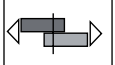
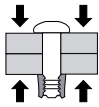
1) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

Ø nom.			
	lbf (kN) min.	lbf (kN) min.	lbf (kN) min.
1/2" (12.7)	14,400 (64.0)	17,050 (75.8)	12,050 (53.6)
5/8" (15.9)	22,500 (100.0)	27,100 (120.5)	19,200 (85.4)
3/4" (19.1)	32,400 (144.4)	40,100 (178.3)	28,400 (126.3)
7/8" (22.2)	43,400 (193.0)	55,450 (246.6)	39,250 (174.6)
1" (25.4)	56,500 (251.3)	72,700 (323.3)	51,500 (229.1)
1-1/8" (28.6)	69,500 (309.1)	82,950 (368.9)	58,450 (259.0)

Installed Avdelok® XT fasteners provide a minimum shear, tensile and pre-load strength, which is equivalent to or exceeds ISO 898-1 property class 8.8 or ASTM A-325 standards. Made to British Standard B7805: Part 2:1997, the Avdelok® XT fastener can be the perfect alternative to conventional property class 8.8 threaded fasteners, providing a permanent, high tensile friction grip joint but without the risk of loosening.

Une fois posées les fixations Avdelok® XT proposent des performances de résistance au cisaillement et à l'arrachement et une pré-tension qui sont équivalentes ou meilleures que les propriétés d'une ISO 898-1 classe 8.8 ou de la norme ASTM A-325. Fabriquée selon la norme Anglaise B7805: Part 2:1997, la fixation Avdelok® XT peut être une parfaite alternative aux boulons traditionnels de classe 8.8 et offre un assemblage permanent, haute résistance sans risque de desserrage.

Verarbeitete Avdelok® XT Schließringbolzen bieten Mindestwerte für Scher- und Zugbruchlast sowie Vorspannkraft, die der ISO 898-1 Festigkeitsklasse 8.8 oder ASTM A-325 Standards entsprechen oder übertreffen. Avdelok® XT werden nach British Standard B7805: Part 2:1997 hergestellt. Sie können die perfekte Alternative zu herkömmlichen 8.8 Gewindeprodukten sein und bieten eine dauerhafte, hochfest vorgespannte Verbindung ohne Risiko des ungewollten Lösen.

I bulloni a strappo Avdelok® XT, una volta installati sono paragonabili o superiori alle ISO 898-1 classi di resistenza 8.8 o ASTM A-325. Costruiti secondo le norme Britanniche B7805: Parte 2:1997, i bulloni Avdelok® XT possono essere perfettamente alternativi al grado di resistenza 8.8 dei bulloni tradizionali, garantendo però un sicuro e permanente serraggio senza rischi di manomissione.

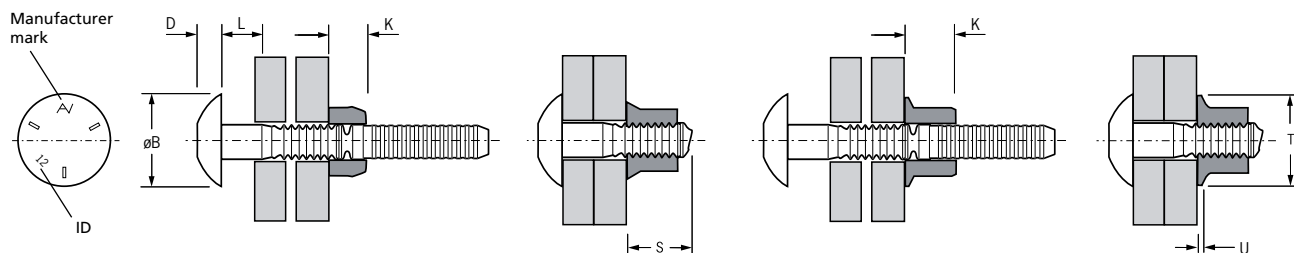
Los remaches Avdelok® XT proporcionan una resistencia a cortadura y a tracción y proporcionan una fuerza de apriete, equivalentes o superiores a la tornillería de ISO 898-1 clase 8.8 o ASTM A-325. Fabricados bajo la norma British Standard B7805, parte 2:1997, los remaches Avdelok® XT pueden ser una alternativa perfecta a la tornillería tradicional de clase 8.8, proporcionando una alta fricción permanente entre las piezas a unir sin el riesgo de aflojado que tienen las uniones atornilladas.

Avdelok® XT 2854 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Large truss head	Tête large	Rundkopf extragroß	Testa larga	Cabeza ancha
Pin: Carbon steel	Tige: Acier	Bolzen: Stahl	Bullone: Acciaio	Vástago: Acero
Zinc plated, 15µm	Revêtement zingué, 15µm	Verzinkt, 15µm	Zincato, 15µm	Zincado, 15µm
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel	Bague: Acier bas carbone	Schließring: Stahl	Collare: Acciaio a basso tenore di carbonio	Collar: Acero bajo en carbono
Zinc plated, 10 µm	Zingué, 10 µm	Verzinkt, 10 µm	Zincato, 10 µm	Zincado, 10 µm



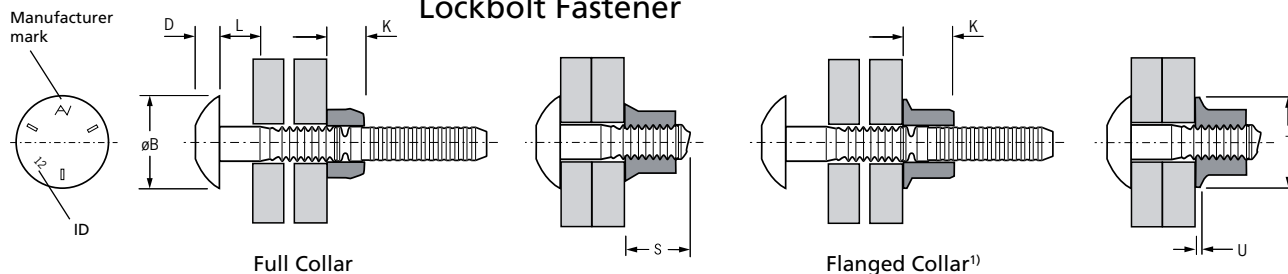
Full Collar / Bague Standard / Schließring Standard / Collar Standard / Collar Estándar

Flanged Collar¹⁾ / Bague à embase¹⁾ / Schließring mit Bund¹⁾ / Collar flangiati¹⁾ / Collar con Ala¹⁾

Ø					L	ø B	D	Part No/ref						
	nom.	ID	min.					max.	nom.	max.	max.	Pin	Full Collar	
										K	S	K	T	U ¹⁾
										max.	max.	max.	max.	
1/2" (12.7mm)	4	.250 (6.35)	.500 (12.70)	17/32 .531 (13.5)	.181 (4.60)	1.142 (29.0)	.304 (7.8)	02854-01604	02662-01600					
	8	.500 (12.70)	.750 (19.05)		.431 (10.95)			02854-01608						
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02854-01612						
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02854-01616						
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02854-01620						
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02854-01624						
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02854-01628						
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02854-01632						
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02854-01636						
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02854-01640						
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02854-01644						
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02854-01648						

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

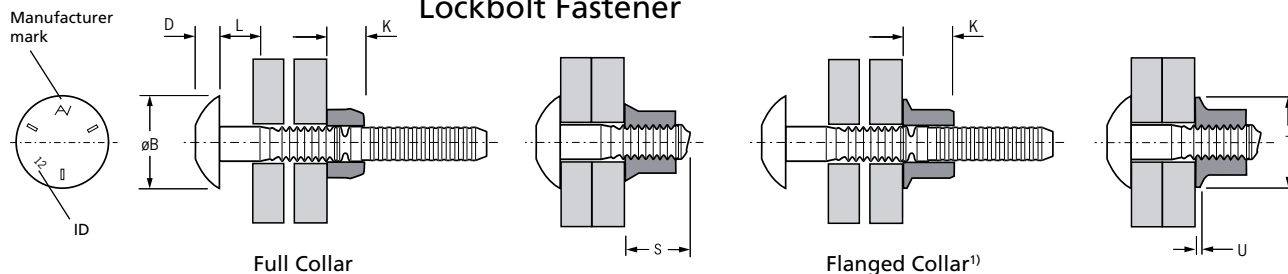
1) see page 69 / voir page 69 / siehe Seite 69 / vedi pagina 69 / ver página 69

POP **Avdel**
Avdelok® XT 2854 Series
Lockbolt Fastener


ø					L	ø B	D		Part No/ref					
	ID	min.	max.						Pin	Full Collar		Flanged Collar ¹⁾		
nom.					nom.	max.	max.		K max.	S max.	K max.	T max.	U ¹⁾	
1/2" (12.7mm)	52	3.250 (82.55)	3.500 (88.90)	17/32 .531 (13.5)	3.181 (80.80)	1.142 (29.0)	.304 (7.8)	02854-01652	02662-01600	.635 (16.2)	1.043 (26.5)	.740 (18.8)	1.031 (26.2)	.125 (3.18)
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02854-01656						
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02854-01660						
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02854-01664						
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02854-01668						
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02854-01672						
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02854-01676						
	80	5.000 (127.00)	5.250 (133.35)		4.931 (125.25)			02854-01680						
5/8" (15.9mm)	4	.250 (6.35)	.500 (12.70)	21/32 .656 (16.7)	.181 (4.60)	1.435 (36.5)	.359 (9.2)	02854-02004	02662-02000	.870 (22.1)	1.283 (32.6)	.955 (24.3)	1.281 (32.6)	.156 (3.96)
	8	.500 (12.70)	.750 (19.05)		.431 (10.95)			02854-02008						
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02854-02012						
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02854-02016						
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02854-02020						
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02854-02024						
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02854-02028						
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02854-02032						
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02854-02036						
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02854-02040						
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02854-02044						
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02854-02048						
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02854-02052						

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

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POP **Avdel**
Avdelok® XT 2854 Series
Lockbolt Fastener


ø					L	ø B	D	Part No/ref						
	ID	min.	max.					Pin	Full Collar		Flanged Collar ¹⁾			
nom.					nom.	max.	max.		K max.	S max.	K max.	T max.	U ¹⁾	
5/8" (15.9mm)	56	3.500 (88.90)	3.750 (95.25)	21/32 .656 (16.7)	3.431 (87.15)	1.435 (36.5)	.359 (9.2)	02854-02056	02662-02000	.870 (22.1)	1.283 (32.6)	02615-02000 .955 (24.3) 1.281 (32.6) .156 (3.96)		
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02854-02060						
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02854-02064						
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02854-02068						
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02854-02072						
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02854-02076						
3/4" (19.1mm)	4	.250 (6.35)	.500 (12.70)	25/32 .781 (19.9)	.181 (4.60)	1.716 (43.6)	.429 (10.9)	02854-02404	02662-02400	.955 (24.3)	1.377 (35.0)	02615-02400 1.142 (29.1) 1.531 (38.9) .188 (4.78)		
	8	.500 (12.70)	.750 (19.05)		.431 (10.95)			02854-02408						
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02854-02412						
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02854-02416						
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02854-02420						
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02854-02424						
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02854-02428						
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02854-02432						
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02854-02436						
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02854-02440						
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02854-02444						
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02854-02448						
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02854-02452						
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02854-02456						
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02854-02460						

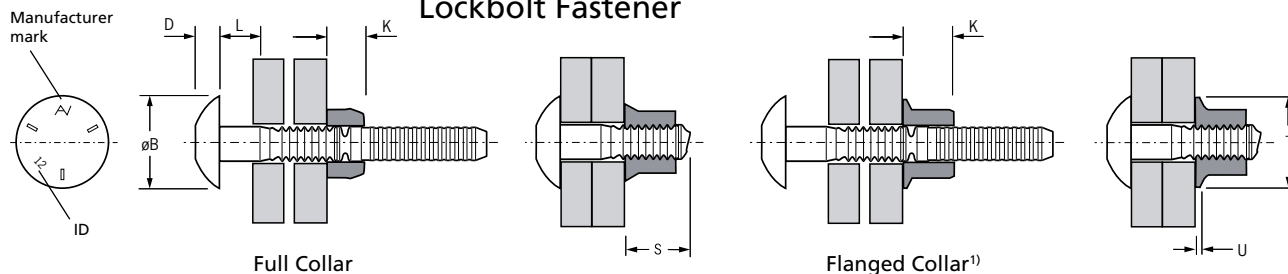
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 69 / voir page 69 / siehe Seite 69 / vedi pagina 69 / ver página 69

POP **Avdel**

Avdelok® XT 2854 Series

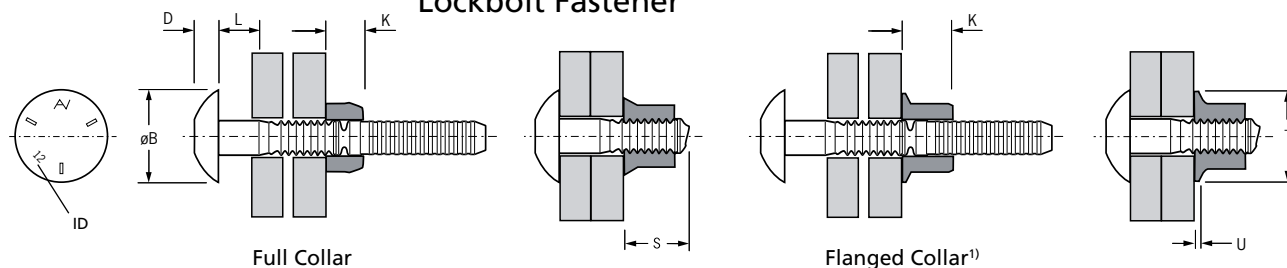
Lockbolt Fastener



ø					L	ø B	D		Part No/ref				
	ID	min.	max.						Pin	Full Collar		Flanged Collar ¹⁾	
nom.					nom.	max.	max.		K max.	S max.	K max.	T max.	U ¹⁾
3/4" (19.1mm)	64	4.000 (101.60)	4.250 (107.95)	25/32 .781 (19.9)	3.931 (99.85)	1.716 (43.6)	.429 (10.9)	02854-02464	02662-02400		02615-02400		
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02854-02468					
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02854-02472					
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02854-02476					
7/8" (22.2mm)	8	.500 (12.70)	.750 (19.05)	29/32 .906 (23.1)	.431 (10.95)	2.000 (50.8)	.501 (12.8)	02854-02808	02662-02800		02615-02800		
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02854-02812					
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02854-02816					
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02854-02820					
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02854-02824					
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02854-02828					
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02854-02832					
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02854-02836					
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02854-02840					
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02854-02844					
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02854-02848					
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02854-02852					
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02854-02856					
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02854-02860					
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02854-02864					
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02854-02868					
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02854-02872					

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 69 / voir page 69 / siehe Seite 69 / vedi pagina 69 / ver página 69

POP **Avdel**
Avdelok® XT 2854 Series
Lockbolt Fastener


ø					L	ø B	D	Part No/ref						
nom.	ID	min.	max.		nom.	max.	max.	Pin	Full Collar K max.	S max.	Flanged Collar ¹⁾ K max. T max. U ¹⁾			
1 " (25.4mm)	8	.500 (12.70)	.750 (19.05)	1-1/32 1.031 (26.2)	.431 (10.95)	2.284 (58.1)	.572 (14.6)	02854-03208	02662-03200	1.272 (32.4)	1.701 (43.3)	02615-03200 1.510 (38.4) 1.906 (48.5) .250 (6.35)		
	12	.750 (19.05)	1.000 (25.40)		.681 (17.30)			02854-03212						
	16	1.000 (25.40)	1.250 (31.75)		.931 (23.65)			02854-03216						
	20	1.250 (31.75)	1.500 (38.10)		1.181 (30.00)			02854-03220						
	24	1.500 (38.10)	1.750 (44.45)		1.431 (36.35)			02854-03224						
	28	1.750 (44.45)	2.000 (50.80)		1.681 (42.70)			02854-03228						
	32	2.000 (50.80)	2.250 (57.15)		1.931 (49.05)			02854-03232						
	36	2.250 (57.15)	2.500 (63.50)		2.181 (55.40)			02854-03236						
	40	2.500 (63.50)	2.750 (69.85)		2.431 (61.75)			02854-03240						
	44	2.750 (69.85)	3.000 (76.20)		2.681 (68.10)			02854-03244						
	48	3.000 (76.20)	3.250 (82.55)		2.931 (74.45)			02854-03248						
	52	3.250 (82.55)	3.500 (88.90)		3.181 (80.80)			02854-03252						
	56	3.500 (88.90)	3.750 (95.25)		3.431 (87.15)			02854-03256						
	60	3.750 (95.25)	4.000 (101.60)		3.681 (93.50)			02854-03260						
	64	4.000 (101.60)	4.250 (107.95)		3.931 (99.85)			02854-03264						
	68	4.250 (107.95)	4.500 (114.30)		4.181 (106.20)			02854-03268						
	72	4.500 (114.30)	4.750 (120.65)		4.431 (112.55)			02854-03272						
	76	4.750 (120.65)	5.000 (127.00)		4.681 (118.90)			02854-03276						
	80	5.000 (127.00)	5.250 (133.35)		4.931 (125.25)			02854-03280						

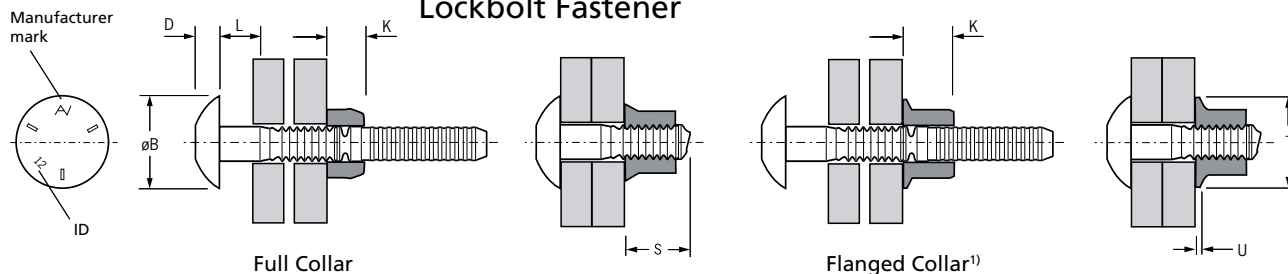
dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) see page 69 / voir page 69 / siehe Seite 69 / vedi pagina 69 / ver página 69

POP  **Avdel**

Avdelok® XT 2854 Series

Lockbolt Fastener



Ø					L	ø B	D	Part No/ref					
	ID	min.	max.					Pin	Full Collar K max.	S max.	Flanged Collar ¹⁾ K max. T max. U ¹⁾		
nom.	ID	min.	max.		nom.	max.	max.						
1 " (25.4mm)	84	5.250 (133.35)	5.500 (139.70)	1-1/32 1.031 (26.18)	5.181 (131.60)	2.284 (58.1)	.572 (14.6)	02854-03284	02662-03200		02615-03200		
	88	5.500 (139.70)	5.750 (146.05)		5.431 (137.95)			02854-03288	1.272 (32.4)	1.701 (43.3)	1.510 (38.4)	1.906 (48.5)	.250 (6.35)
	92	5.750 (146.05)	6.000 (152.40)		5.681 (144.30)			02854-03292					

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

Avec une bague à embase, la plage de serrage est diminuée de la valeur de la cote U.

Schließbringe mit Bund werden in Anwendungen benötigt, wo das Bohrloch auf der Schließbringseite übergroß oder länglich ist. Um den richtigen Bolzen zu bestimmen, addieren Sie das Maß U zu der zu verbindenden Materialstärke hinzu.

Utilizzando i collari flangiati la dimensione „U“ deve essere aggiunta allo spessore da serrare per determinare il tipo di bullone adatto.

Utilizar collar con ala cuando en la aplicación el barreno está sobredimensionado o es ranurado para propósitos de alineación. Para calcular la referencia de perno es necesario añadir la cota U al espesor de la aplicación.

Ø nom.	 lbf (kN) min.	 lbf (kN) min.	 lbf (kN) min.
1/2" (12.7)	14,400 (64.0)	17,050 (75.8)	12,050 (53.6)
5/8" (15.9)	22,500 (100.0)	27,100 (120.5)	19,200 (85.4)
3/4" (19.1)	32,400 (144.4)	40,100 (178.3)	28,400 (126.3)
7/8" (22.2)	43,400 (193.0)	55,450 (246.6)	39,250 (174.6)
1" (25.4)	56,500 (251.3)	72,700 (323.3)	51,500 (229.1)

Installed Avdelok® XT fasteners provide a minimum shear, tensile and pre-load strength, which is equivalent to or exceeds ISO 898-1 property class 8.8 or ASTM A-325 standards. Made to British Standard B7805: Part 2:1997, the Avdelok® XT fastener can be the perfect alternative to conventional property class 8.8 threaded fasteners, providing a permanent, high tensile friction grip joint but without the risk of loosening.

Une fois posées les fixations Avdelok® XT proposent des performances de résistance au cisaillement et à l'arrachement et une pré-tension qui sont équivalentes ou meilleures que les propriétés d'une ISO 898-1 classe 8.8 ou de la norme ASTM A-325. Fabriquée selon la norme Anglaise B7805: Part 2:1997, la fixation Avdelok® XT peut être une parfaite alternative aux boulons traditionnels de classe 8.8 et offre un assemblage permanent, haute résistance sans risque de desserrage.

Verarbeitete Avdelok® XT Schließbringbolzen bieten Mindestwerte für Scher- und Zugbruchlast sowie Vorspannkraft, die der ISO 898-1 Festigkeitsklasse 8.8 oder ASTM A-325 Standards entsprechen oder übertreffen. Avdelok® XT werden nach British Standard B7805: Part 2:1997 hergestellt. Sie können die perfekte Alternative zu herkömmlichen 8.8 Gewindeprodukten sein und bieten eine dauerhafte, hochfest vorgespannte Verbindung ohne Risiko des ungewollten Lösen.

I bulloni a strappo Avdelok® XT, una volta installati sono paragonabili o superiori alle ISO 898-1 classi di resistenza 8.8 o ASTM A-325. Costruiti secondo le norme Britanniche B7805: Parte 2:1997, i bulloni Avdelok® XT possono essere perfettamente alternativi al grado di resistenza 8.8. dei bulloni tradizionali, garantendo però un sicuro e permanente serraggio senza rischi di manomissione.

Los remaches Avdelok® XT proporcionan una resistencia a cortadura y a tracción y proporcionan una fuerza de apriete, equivalentes o superiores a la tornillería de ISO 898-1 clase 8.8 o ASTM A-325. Fabricados bajo la norma British Standard B7805, parte 2:1997, los remaches Avdelok® XT pueden ser una alternativa perfecta a la tornillería tradicional de clase 8.8, proporcionando una alta fricción permanente entre las piezas a unir sin el riesgo de aflojado que tienen las uniones atornilladas.

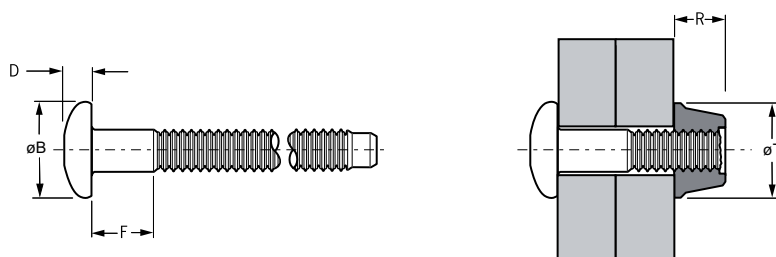
Maxlok® 1901 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Medium carbon steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero medio al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente

*: BS 3111 Type 10, SAE 10B35 DIN 1654, 35B2 **: SAE 1008 EN 10263-2 C8C



Ø				ØB	D	F	R	ØT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ¹⁾ (kN ¹⁾)	lbf ¹⁾ (kN ¹⁾)	Pin	Collar
3/16" (4.8mm)	.062 (1.6)	.625 (15.9)	.203 (5.16)	.395 (10.1)	.126 (3.2)	.090 (2.3)	.344 (8.7)	.396 (10.1)	1855 (8.25)	2250 (10.01)	01901-70610	01981-70600
	.312 (7.9)	1.250 (31.7)				.330 (8.4)					01901-70620	
1/4" (6.4mm)	.062 (1.6)	.625 (15.9)	.265 (6.75)	.525 (13.3)	.153 (3.9)	.085 (2.2)	.531 (13.5)	.516 (13.2)	2650 (11.79)	3600 (16.01)	01901-70810	01981-70800
	.312 (7.9)	1.250 (31.7)				.360 (9.1)					01901-70820	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

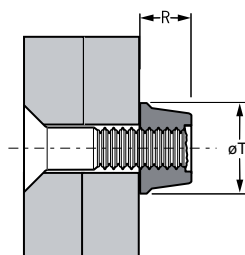
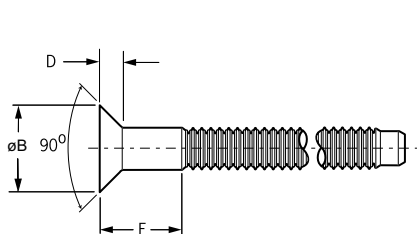
Maxlok® 1902 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
90° Countersunk	90° Tête fraisée	90° Senkkopf	90° Testa svasata	90° Cabeza avellanada
Pin: Medium carbon steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero medio al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente

*: BS 3111 Type 10, SAE 10B35 DIN 1654, 35B2 **: SAE 1008 EN 10263-2 C8C



Ø				ØB	D	F	R	ØT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ¹⁾ (kN ¹⁾)	lbf ¹⁾ (kN ¹⁾)	Pin	Collar
3/16" (4.8mm)	.096 (2.4)	.625 (15.9)	.203 (5.16)	.349 (8.9)	.085 (2.2)	.170 (4.3)	.344 (8.7)	.396 (10.1)	1855 (8.25)	2250 (10.01)	01902-70610	01981-70600
	.312 (7.9)	1.250 (31.7)				.370 (9.4)					01902-70620	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

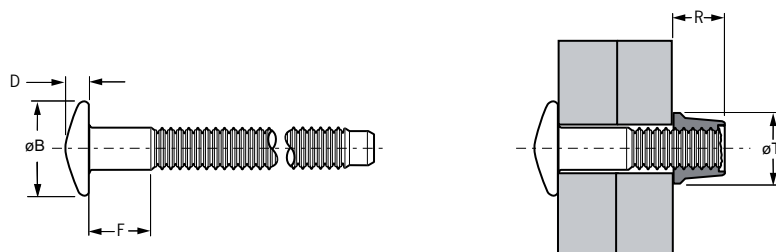
Maxlok® 1903 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Mushroom head	Tête large	Rundkopf groß	Testa larga	Cabeza alomada de perfil alto
Pin: Medium carbon steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero medio al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente

*: BS 3111 Type 10, SAE 10B35 DIN 1654, 35B2 **: SAE 1008 EN 10263-2 C8C



Ø				ØB	D	F	R	ØT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ¹⁾ (kN ¹⁾)	lbf ¹⁾ (kN ¹⁾)	Pin	Collar
3/16" (4.8mm)	.062 (1.6)	.625 (15.9)	.203 (5.16)	.491 (12.5)	.111 (2.9)	.090 (2.3)	.344 (8.7)	.396 (10.1)	1855 (8.25)	2250 (10.01)	01903-70610	01981-70600
	.312 (7.9)	1.250 (31.7)				.330 (8.4)					01903-70620	
1/4" (6.4mm)	.062 (1.6)	.625 (15.9)	.265 (6.75)	.657 (16.7)	.126 (3.2)	.085 (2.2)	.531 (13.5)	.516 (13.2)	2650 (11.79)	3600 (16.01)	01903-70810	01981-70800
	.312 (7.9)	1.250 (31.7)				.360 (9.1)					01903-70820	
	1.099 (27.9)	2.037 (51.7)				1.147 (29.1)					01903-70832	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

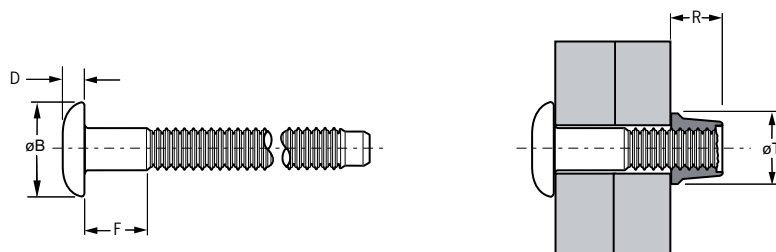
Maxlok® 1905 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Truss head	Tête large	Flachrundkopf groß	Testa larga	Cabeza alomada de perfil bajo
Pin: Medium carbon steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero medio al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente
Collar: Low carbon steel**	Bague: Acier bas carbone**	Schließring: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear trivalent passivated	Passivation claire trivalente	Klar chromatiert, Cr6-frei	Passivazione chiara trivalente	Pasivado claro trivalente

*: BS 3111 Type 10, SAE 10B35 DIN 1654, 35B2 **: SAE 1008 EN 10263-2 C8C



Ø				ØB	D	F	R	ØT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ¹⁾ (kN ¹⁾)	lbf ¹⁾ (kN ¹⁾)	Pin	Collar
3/16" (4.8mm)	.062 (1.6)	.625 (15.9)	.203 (5.16)	.470 (12.0)	.111 (2.9)	.090 (2.3)	.344 (8.7)	.396 (10.1)	1855 (8.25)	2250 (10.01)	01905-70610	01981-70600
	.312 (7.9)	1.250 (31.7)				.330 (8.4)					01905-70620	
1/4" (6.4mm)	.062 (1.6)	.625 (15.9)	.265 (6.75)	.595 (15.2)	.121 (3.1)	.085 (2.2)	.531 (13.5)	.516 (13.2)	2650 (11.79)	3600 (16.01)	01905-70810	01981-70800
	.312 (7.9)	1.250 (31.7)				.360 (9.1)					01905-70820	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

POP® **Avdel®**

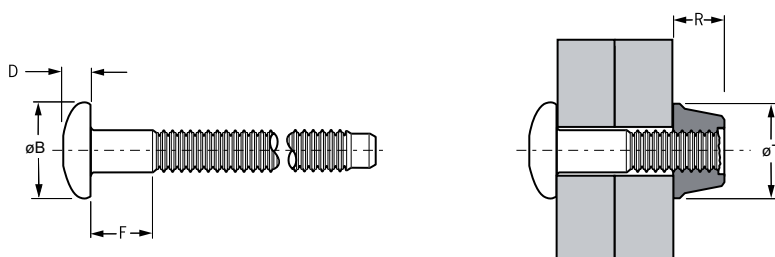
Maxlok® 1921 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy*	Bague: Alliage d'aluminium*	Schließring: Aluminium*	Collare: Lega di alluminio*	Collar: Aluminio*
Natural	Brut	Blank	Nessuna finitura	Natural

*: EN AW-7075, AlZn5.5MgCu **: EN AW-6061, AlMg1SiCu



ø				øB	D	F	R	øT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ⁽¹⁾ (kN ⁽¹⁾)	lbf ⁽¹⁾ (kN ⁽¹⁾)	Pin	Collar
3/16" (4.8mm)	.062 (1.6)	.625 (15.9)	.203 (5.16)	.394 (10.0)	.133 (3.4)	.090 (2.3)	.313 (7.9)	.390 (9.9)	950 (4.23)	1300 (5.78)	01921-00610	01985-00600
	.312 (7.9)	1.250 (31.7)				.330 (8.4)					01921-00620	
1/4" (6.4mm)	.062 (1.6)	.625 (15.9)	.265 (6.75)	.525 (13.3)	.162 (4.2)	.085 (2.2)	.438 (11.1)	.510 (13.0)	1675 (7.45)	2200 (9.79)	01921-00810	01985-00800
	.312 (7.9)	1.250 (31.7)				.360 (9.1)					01921-00820	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

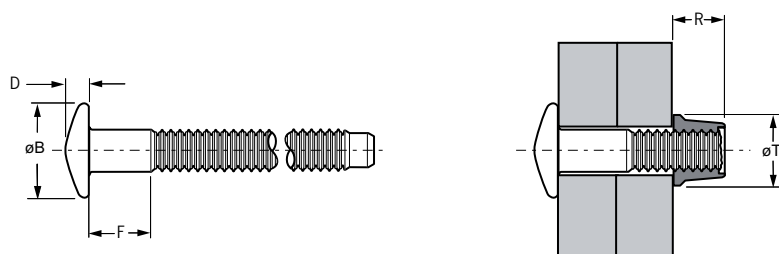
Maxlok® 1923 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Mushroom head	Tête large	Rundkopf groß	Testa larga	Cabeza alomada de perfil alto
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy**	Bague: Alliage d'aluminium**	Schließring: Aluminium**	Collare: Lega di alluminio**	Collar: Aluminio**
Natural	Brut	Blank	Nessuna finitura	Natural

*: BS 1473 7075, DIN 1725, AlZnMgCu1.5, Werkstoff 3.4365 **: BS 1473 6061, DIN 1725, AlMg1SiCu, Werkstoff 3.3211



Ø				ØB	D	F	R	ØT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ¹⁾ (kN ¹⁾)	lbf ¹⁾ (kN ¹⁾)	Pin	Collar
3/16" (4.8mm)	.062 (1.6)	.625 (15.9)	.203 (5.16)	.490 (12.5)	.110 (2.8)	.090 (2.3)	.313 (7.9)	.390 (9.9)	950 (4.23)	1300 (5.78)	01923-00610	01985-00600
	.312 (7.9)	1.250 (31.7)				.330 (8.4)					01923-00620	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

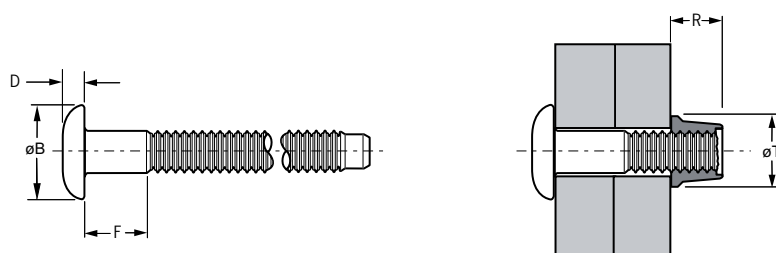
Maxlok® 1925 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Truss head	Tête large	Flachrundkopf groß	Testa larga	Cabeza alomada de perfil bajo
Pin: Aluminum alloy*	Tige: Alliage d'aluminium*	Bolzen: Aluminium*	Bullone: Lega di alluminio*	Vástago: Aluminio*
Polished	Poli	Poliert	Lucido	Pulido
Collar: Aluminum alloy**	Bague: Alliage d'aluminium**	Schließring: Aluminium**	Collare: Lega di alluminio**	Collar: Aluminio**
Natural	Brut	Blank	Nessuna finitura	Natural

*: 7075 **: 6061



Ø				ØB	D	F	R	ØT			Part No/ref	Part No/ref
nom.	min.	max.	max.	max.	max.	ref.	max.	max.	lbf ¹⁾ (kN ¹⁾)	lbf ¹⁾ (kN ¹⁾)	Pin	Collar
3/16" (4.8mm)	.062 (1.6)	.625 (15.9)	.203 (5.16)	.469 (12.0)	.110 (2.8)	.090 (2.3)	.313 (7.9)	.390 (9.9)	950 (4.23)	1300 (5.78)	01925-00610	01985-00600
	.312 (7.9)	1.250 (31.7)				.330 (8.4)					01925-00620	
1/4" (6.4mm)	.062 (1.6)	.625 (15.9)	.265 (6.75)	.594 (15.1)	.120 (3.1)	.085 (2.2)	.437 (11.1)	.515 (13.1)	1675 (7.45)	2200 (9.79)	01925-00810	01985-00800
	.312 (7.9)	1.250 (31.7)				.360 (9.1)					01925-00820	

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / valori tipici / valores típicos

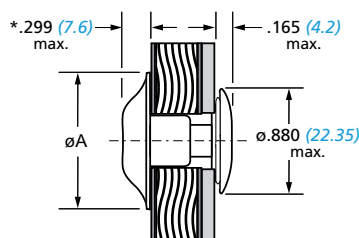
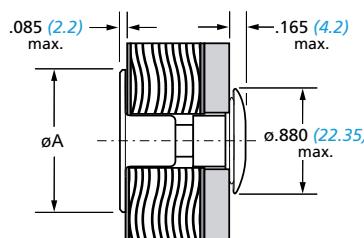
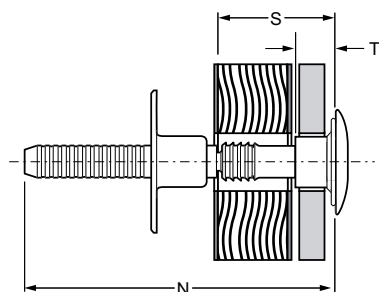
Avtainer[®] 2311 Series

Lockbolt Fastener



English	Français	Deutsch	Italiano	Español
Low profile head	Profil bas	Flachkopf	Basso profilo	Perfil bajo
Pin: Low carbon steel*	Tige: Acier*	Bolzen: Stahl*	Bullone: Acciaio a carbonio*	Vástago: Acero al carbono*
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
JS500 coated	Finition JS 500	JS500 Beschichtung	Protezione JS500	Pasivado JS500
Shell: Low carbon steel**	Bague: Acier bas carbone**	Hülse: Stahl**	Collare: Acciaio a basso tenore di carbonio**	Collar: Acero bajo en carbono**
Zinc plated	Revêtement zingué	Verzinkt	Zincato	Zincado
Clear passivated	Passivation claire	Klar chromatiert, Cr6-frei	Passivazione chiara	Pasivado claro
Locking slug: Nylon	Manchon: Nylon	Sicherungsbuchse: Nylon	Tubolare: Nylon	Junta de bloqueo: Nailon
Seal: Santoprene [®]	Joint: Santoprene [®]	Dichtscheibe: Santoprene [®]	Guarnizione: Santoprene [®]	Junta de estanqueidad: Santoprene [®]

*: BS 3111 Type 0 DIN 1654 Qst 34-3 **: BS 1449 CS 1 SAE 1008 DIN 1614 StW 24 / DIN 1624 St4



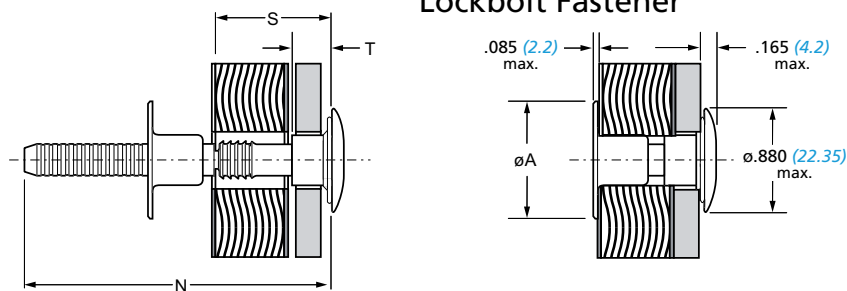
*02310-11860 only /
seulement/nur/solo/solo

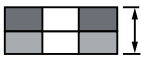
ø				S	N	T					Part No/ref	Collar / Bague / Hülse / Collare / Collar	
	nom.	min.		max.	nom.	max.	nom.	lbf ⁽¹⁾ (kN ⁽¹⁾)	lbf ⁽¹⁾ (kN ⁽¹⁾) e min.	lbf ⁽¹⁾ (kN ⁽¹⁾) e max.	Pin	øA	Part No/ref.
3/8" (10mm)	.220 (5.60)	.283 (7.20)		.437 (11.1)	2.24 (56.9)	-	500 (2.22)	1500 (6.60)	1000 (4.44)	02311-01207 ²⁾	1.20 (30.5)	02310-11860	
	.438 (11.13)	.563 (14.30)		.500 (12.7)	2.24 (56.9)	-				02311-01208 ²⁾			
	.500 (12.70)	.625 (15.87)		.563 (14.3)	2.24 (56.9)	-				02311-01209 ²⁾			
	.562 (14.27)	.687 (17.45)		.625 (15.9)	2.24 (56.9)	-				02311-01210 ²⁾			
	.625 (15.87)	.750 (19.05)		.688 (17.5)	2.30 (58.4)	.18 (4.6)				02311-01211	1.25 (32.0)	02321-01200 ³⁾	
	.687 (17.45)	.812 (20.62)		.750 (19.0)	2.37 (60.2)	.24 (6.1)				02311-01212	.90 (22.9)		02325-01200 ⁴⁾
	.750 (19.05)	.875 (22.22)		.813 (20.6)	2.43 (61.7)	.31 (7.9)				02311-01213			
	.812 (20.62)	.937 (23.80)		.875 (22.2)	2.49 (63.2)	.37 (9.4)				02311-01214			
	.875 (22.22)	1.000 (25.40)		.938 (23.8)	2.55 (64.8)	.43 (10.9)				02311-01215			
	.937 (23.80)	1.062 (26.97)		1.000 (25.4)	2.62 (66.5)	.49 (12.5)				02311-01216			

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)
1) - 5) see page 78 / voir page 78 / siehe Seite 78 / vedi pagina 78 / ver página 78

POP  **Avdel**

Avtainer® 2311 Series Lockbolt Fastener



ø				S	N	T				Part No/ref	Collar / Bague / Hülse / Collare / Collar	
nom.	min.	max.		nom.	max.	nom.		lbf ¹⁾ (kN ¹⁾) e min.	lbf ¹⁾ (kN ¹⁾) e max.	Pin	øA	Part No/ref.
3/8" (10mm)	1.000 (25.40)	1.125 (28.57)	.405 - .421 ⁵⁾ (10.3 - 10.7 ⁵⁾)	1.063 (27.0)	2.99 (75.9)	.56 (14.2)	500 (2.22)	1500 (6.60)	1000 (4.44)	02311-01217	1.25 (32.0) .90 (22.9)	02321-01200 ³⁾ 02325-01200 ⁴⁾
	1.062 (26.97)	1.187 (30.15)		1.125 (28.6)	2.99 (75.9)	.56 (14.2)				02311-01218		
	1.125 (28.57)	1.250 (31.75)		1.188 (30.2)	2.99 (75.9)	.56 (14.2)				02311-01219		
	1.187 (30.15)	1.312 (33.32)		1.250 (31.7)	2.99 (75.9)	.56 (14.2)				02311-01220		
	1.250 (31.75)	1.375 (34.92)		1.313 (33.3)	2.99 (75.9)	.56 (14.2)				02311-01221		
	1.312 (33.32)	1.437 (36.50)		1.375 (34.9)	2.99 (75.9)	.56 (14.2)				02311-01222		
	1.375 (34.93)	1.500 (38.10)		1.438 (36.5)	2.99 (75.9)	.56 (14.2)				02311-01223		
	1.437 (36.50)	1.562 (39.67)		1.500 (38.1)	2.99 (75.9)	.56 (14.2)				02311-01224		

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

1) typical values / valeurs moyennes / typische Werte / Valori tipici / valores típicos

2) Part numbers -01207, -01208, -01209 & -01210 do not have shouldered pins. / Les références -01207, -01208, -01209 & -01210 ne possèdent pas d'épaulement. / Artikel-Nr. -01207, -01208, -01209 & -01210 haben keine Stufe im Bolzenschaft / Codici prodotto -01207, -01208, -01209 & -01210 non hanno lo spallamento. / Las referencias -01207, -01208, -01209 & -01210 no tienen el cuerpo escalonado.

3) 02321-01200: The larger shell assembly is for use against softer material, spreading the bearing load. / La bague standard 02321-01200 est à utiliser sur des matériaux tendre, pour une meilleure répartition des efforts / Die größere Hülse ist für den Einsatz gegen weichere Materialien ausgelegt, die auftretende Kraft wird verteilt. / Collare di grande diametro per materiali teneri. / Collar de diámetro mayor para materiales blandos.

4) 02325-01200: The smaller shell assembly should only be used against metal surfaces. / La bague à diamètre réduit ne peut être utilisée qu'en appui sur un support métallique. / Die kleinere Hülse darf nur auf Metalloberflächen eingesetzt werden. / Collare di piccolo diametro per superfici metalliche. / Collar de diámetro menor para superficies metálicas.

5) Where shells are used against metal surfaces, the hole through the metal should be .59 (15mm) diameter or chamfered .10 (2.5mm) x 45°. / Lorsque la bague prend appui sur un support métallique, percer à .59 (15mm) de diamètre ou chanfreiner l'entrée du trou à 45° x .10 (2.5mm). / Bei Auflage der Hülse auf Metall ist im Metall eine .10 (2.5mm) x 45°-Senkung oder ein Bohrungsdurchmesser von .59 (15mm) erforderlich. / Quando i guschi sono usati su parti metalliche, il foro nella lamiera dovrebbe avere un diametro di .59 (15mm) o deve presentare una svasatura di .10 (2.5mm) a 45°. / Cuando el collar se utiliza sobre superficies metálicas, el barrenado en la pieza metálica debe de ser de .59 (15mm) o tener un avellanado de entrada de .10 (2.5mm) x 45°.

Avbolt® 21001 Series

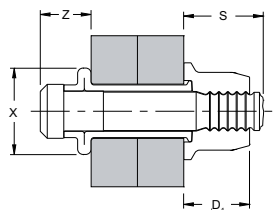
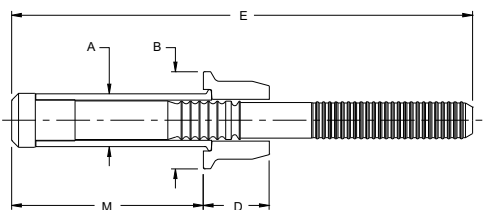
Structural Blind Fastener



English	Français	Deutsch	Italiano	Español	****
Stem: Chromium Molybdenum steel* Black oxide	Tige: Acier* Noir	Dorn: Stahl* Schwarz	Gambo: Acciaio* Passivato nero	Vástago: Acero* Pavonado	 8 h
Sleeve: Carbon steel** Zinc plated Clear trivalent passivated	Douille: Acier** Revêtement zingué Passivation claire trivalente	Hülse: Stahl** Verzinkt Klar chromatiert, Cr6-frei	Bussola: Acciaio** Zincata Passivazione chiara trivalente	Cuerpo: Acero al carbono** Zincado, Pasivado claro trivalente	 240 h
Collar: Carbon steel*** Zinc plated Clear trivalent passivated	Bague: Acier*** Revêtement zingué Passivation claire trivalente	Schließring: Stahl*** Verzinkt Klar chromatiert, Cr6-frei	Collare: Acciaio*** Zincato Passivazione chiara trivalente	Collar: Acero al carbono*** Zincado, Pasivado claro trivalente	 240 h

*: EN 10263-4 34CrMo4 SAE 4135 SCM435 **: EN 10263-2 C8C SAE 1008 ***: EN 10263-4 23MnB4

****: to red rust / à la rouille rouge / bis Rotrost / alla ruggine rossa / al óxido rojo (ASTM B117)



Ø			Ø A	Ø B	D	D ₁	E	M	S	X	Z			Part No/ref
nom.	min.	max.	max.	max.	max.	max.	min.	max.	max.	nom.	max.	lbf min. (kN min.)	lbf min. (kN min.)	
3/8" (10 mm)	.188 (4.78)	.313 (7.95)	.412 (10.47)	.739 (18.8)	.498 (12.7)	.571 (14.6)	2.905 (73.7)	.988 (25.1)	.722 (18.4)	.610 (15.5)	.377 (9.6)	10115 (45.00)	7250 (32.25)	21001-01204
	.313 (7.95)	.438 (11.13)					3.031 (76.9)	1.113 (28.3)						21001-01206
	.375 (9.54)	.501 (12.72)					3.103 (78.8)	1.182 (30.1)						21001-01207
	.438 (11.13)	.563 (14.30)					3.157 (80.1)	1.238 (31.5)						21001-01208
	.563 (14.30)	.688 (17.48)					3.283 (83.3)	1.363 (34.7)						21001-01210
	.688 (17.48)	.813 (20.65)					3.409 (86.5)	1.488 (37.8)						21001-01212
	.813 (20.65)	.938 (23.83)					3.531 (89.6)	1.613 (41.0)						21001-01214
	.938 (23.83)	1.063 (27.00)					3.657 (92.8)	1.738 (44.2)						21001-01216
	1.063 (27.00)	1.188 (30.18)					3.783 (96.0)	1.863 (47.4)						21001-01218
	1.188 (30.18)	1.313 (33.35)					3.909 (99.2)	1.988 (50.5)						21001-01220

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

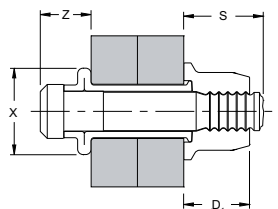
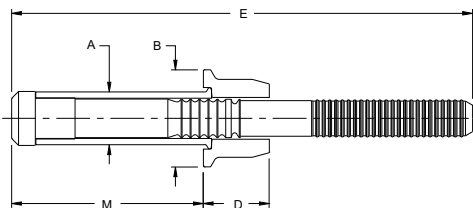
Notes / Notes / Hinweise / Note / Notas

Avbolt® fasteners are supplied with lubricated collars and must not be degreased. / Avbolt® sont lubrifiées et ne doivent pas être dégraissées. / Avbolt® sind mit einem Gleitmittel beschichtet, welches nicht entfernt werden darf. / I Avbolt® sono forniti lubrificati e non devono essere sgrassati. / Los Avbolt® se suministran con collares lubricados y no deben ser desengrasados.

POP® **Avdel®**

Avbolt® 21001 Series

Structural Blind Fastener



ø				ø A	ø B	D	D ₁	E	M	S	X	Z			Part No/ref
nom.	min.	max.		max.	max.	max.	max.	min.	max.	max.	nom.	max.	lbf min. (<i>kN min.</i>)	lbf min. (<i>kN min.</i>)	
1/2" (12.7 mm)	.251 (6.38)	.376 (9.55)	.546 - .581 (13.87 - 14.76)	.543 (13.8)	.957 (24.3)	.591 (15.0)	.634 (16.1)	3.172 (80.5)	1.253 (31.9)	.807 (20.5)	.812 (20.6)	.516 (13.1)	20150 (90.00)	13000 (57.00)	21001-01604
	.376 (9.55)	.501 (12.73)						3.297 (83.7)	1.378 (35.0)						21001-01606
	.501 (12.73)	.626 (15.90)						3.422 (86.9)	1.503 (38.2)						21001-01608
	.626 (15.90)	.751 (19.08)						3.548 (90.1)	1.628 (41.4)						21001-01610
	.751 (19.08)	.876 (22.25)						3.672 (93.2)	1.753 (44.6)						21001-01612
	.876 (22.25)	1.001 (25.43)						3.797 (96.4)	1.878 (47.7)						21001-01614
	1.001 (25.43)	1.126 (28.60)						3.922 (99.6)	2.003 (50.9)						21001-01616
	1.126 (28.60)	1.251 (31.78)						4.046 (102.7)	2.127 (54.1)						21001-01618
	1.251 (31.78)	1.376 (34.95)						4.170 (105.9)	2.250 (57.2)						21001-01620
	1.376 (34.95)	1.501 (38.13)						4.292 (109.0)	2.373 (60.3)						21001-01622
1.501 (38.13)	1.626 (41.30)	4.413 (112.1)	2.494 (63.4)	21001-01624											
5/8" (16 mm)	.250 (6.35)	.500 (12.7)	.687 - .728 (17.45 - 18.49)	.681 (17.3)	1.160 (29.5)	.687 (17.5)	.790 (20.1)	4.044 (102.7)	1.549 (39.4)	1.200 (30.5)	1.000 (25.4)	.630 (16.1)	29000 (129.00)	20500 (91.19)	21001-02004
	.500 (12.7)	.750 (19.05)						4.294 (109.0)	1.799 (45.7)						21001-02008
	.750 (19.05)	1.000 (25.4)						4.544 (115.4)	2.049 (52.1)						21001-02012
	1.000 (25.4)	1.250 (31.75)						4.794 (121.7)	2.299 (58.4)						21001-02016
	1.250 (31.75)	1.500 (38.1)						5.044 (128.1)	2.549 (64.8)						21001-02020

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

Notes / Notes / Hinweise / Note / Notas

Avbolt® fasteners are supplied with lubricated collars and must not be degreased. / Avbolt® sont lubrifiées et ne doivent pas être dégraissées. / Avbolt® sind mit einem Gleitmittel beschichtet, welches nicht entfernt werden darf. / I Avbolt® sono forniti lubrificati e non devono essere sgrassati. / Los Avbolt® se suministran con collares lubricados y no deben ser desengrasados.

POP[®] X Avdel[®]

Avbolt[®] 21021 Series

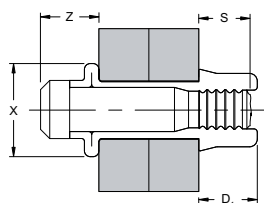
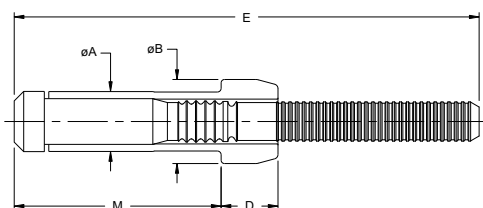
Structural Blind Fastener



English	Français	Deutsch	Italiano	Español	***
Body: Carbon steel* Zinc plated Clear trivalent passivated	Corps: Acier* Revêtement zingué Passivation claire trivalente	Hülse: Stahl* Verzinkt Klar chromatiert, Cr6-frei	Corpo: Acciaio* Zincata Passivazione chiara trivalente	Cuerpo: Acero al carbono* Zincado Pasivado claro trivalente	 240 h
Stem: Carbon steel** Black oxide	Tige: Acier** Noir	Dorn: Stahl** Schwarz brüniert	Gambo: Acciaio** Passivato nero	Vástago: Acero al carbono** Pavonado	 8 h

*: SAE 1008 EN 10263-2 C8C **: SCM 435 SAE 4135 EN 10263-4 34CrMo4

***: to red rust / à la rouille rouge / bis Rotrost / alla ruggine rossa / al óxido rojo (ASTM B117)

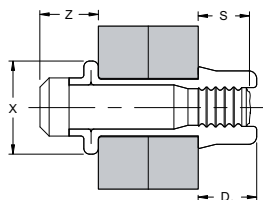
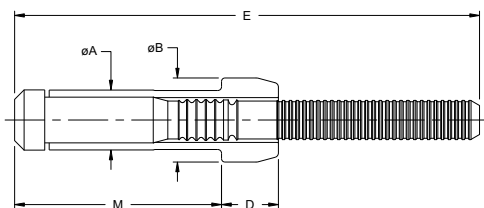


Ø			Ø A	Ø B	D	D ₁	E	M	S	X	Z			Part No/ref
nom.	min.	max.	max.	max.	max.	max.	min.	max.	max.	nom.	max.	lbf min. (kN min.)	lbf min. (kN min.)	
3/16" (4.8 mm)	.093 (2.36)	.157 (3.99)	.207 (5.26)	.288 (7.4)	.195 (5.0)	.207 (5.3)	1.461 (37.1)	.488 (12.5)	.252 (6.4)	.297 (7.5)	.210 (5.4)	2800 (12.40)	1800 (8.00)	21021-00602
	.157 (3.99)	.220 (5.59)					1.523 (38.6)	.551 (14.1)						21021-00603
	.220 (5.59)	.282 (7.16)					1.585 (40.2)	.614 (15.6)						21021-00604
	.282 (7.16)	.345 (8.76)					1.647 (41.8)	.677 (17.2)						21021-00605
	.345 (8.76)	.407 (10.34)					1.709 (43.4)	.738 (18.8)						21021-00606
	.407 (10.34)	.470 (11.94)					1.771 (44.9)	.801 (20.4)						21021-00607
	.470 (11.94)	.532 (13.51)					1.833 (46.5)	.864 (22.0)						21021-00608
	.532 (13.51)	.595 (15.11)					1.895 (48.1)	.927 (23.6)						21021-00609
	.595 (15.11)	.657 (16.69)					1.957 (49.7)	.988 (25.2)						21021-00610
	.657 (16.69)	.720 (18.29)					2.019 (51.2)	1.051 (26.8)						21021-00611
	.720 (18.29)	.783 (19.89)					2.081 (52.8)	1.114 (28.3)						21021-00612

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

Avbolt® 21021 Series

Structural Blind Fastener



Ø				Ø A	Ø B	D	D ₁	E	M	S	X	Z			Part No/ref
nom.	min.	max.		max.	max.	max.	max.	min.	max.	max.	nom.	max.	lbf min. (kN min.)	lbf min. (kN min.)	
1/4" (6.4 mm)	.093 (2.36)	.157 (3.99)	.277 - .292 (7.04 - 7.42)	.275 (6.99)	.382 (9.7)	.260 (6.7)	.310 (7.9)	1.806 (45.8)	.650 (16.6)	.345 (8.8)	.380 (9.7)	.285 (7.3)	5100 (22.69)	3250 (14.46)	21021-00802
	.157 (3.99)	.220 (5.59)						1.863 (47.3)	.713 (18.2)						21021-00803
	.220 (5.59)	.282 (7.16)						1.925 (48.8)	.775 (19.7)						21021-00804
	.282 (7.16)	.345 (8.76)						1.987 (50.4)	.838 (21.3)						21021-00805
	.345 (8.76)	.407 (10.34)						2.049 (52.0)	.900 (22.9)						21021-00806
	.407 (10.34)	.470 (11.94)						2.111 (53.6)	.963 (24.5)						21021-00807
	.470 (11.94)	.532 (13.51)						2.173 (55.1)	1.025 (26.1)						21021-00808
	.532 (13.51)	.595 (15.11)						2.235 (56.7)	1.088 (27.7)						21021-00809
	.595 (15.11)	.657 (16.69)						2.297 (58.3)	1.150 (29.3)						21021-00810
	.657 (16.69)	.720 (18.29)						2.359 (59.9)	1.213 (30.9)						21021-00811
	.720 (18.29)	.783 (19.89)						2.421 (61.4)	1.275 (32.4)						21021-00812
5/16" (8.0 mm)	.188 (4.78)	.313 (7.95)	.348 - .368 (8.84 - 9.35)	.345 (8.76)	.488 (12.4)	.340 (8.7)	.362 (9.2)	2.457 (62.4)	.917 (23.4)	.404 (10.3)	.483 (12.3)	.358 (9.1)	8200 (36.47)	5300 (23.57)	21021-01004
	.313 (7.95)	.438 (11.13)						2.581 (65.5)	1.042 (26.5)						21021-01006
	.438 (11.13)	.563 (14.30)						2.705 (68.7)	1.167 (29.7)						21021-01008
	.563 (14.30)	.688 (17.48)						2.829 (71.8)	1.292 (32.9)						21021-01010
	.688 (17.48)	.813 (20.65)						2.953 (75.0)	1.417 (36.1)						21021-01012
	.813 (20.65)	.938 (23.83)						3.077 (78.1)	1.542 (39.2)						21021-01014
	.938 (23.83)	1.062 (26.97)						3.201 (81.3)	1.667 (42.4)						21021-01016

dimensions in inch and (mm) / en pouces et (millimètre) / alle Maße in Zoll und (mm) / in pollici e (millimetri) / en pulgadas y (milímetros)

Notes / Notes / Hinweise / Note / Notas

Bodies are supplied lubricated and must not be degreased. / Les corps sont lubrifiés et ne doivent pas être dégraissés. /

Hülsen sind mit einem Gleitmittel beschichtet, welches nicht entfernt werden darf. / I corpi sono forniti lubrificati e non devono essere sgrassati. / Los cuerpos se suministran lubricados y no deben ser desengrasados.

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