

Avdelok[®]

Overview

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



Key features and benefits

- High strength, high speed assembly
- High shear and tensile strength
- Excellent vibration resistance
- Consistent, high performance
- Large diameter option from 13mm to 25mm (1/2" to 1") with tensile strength of over 300kN for heavy engineering applications
- TIR approved - easy to inspect for tampering
- Robust and rugged installation tools

Assembly applications

- Automotive
- Building and construction
- Bridge building
- Cabinets and enclosures
- Commercial vehicle bodies
- Fencing
- Mining
- Railways
- Reefer cool and dry freight containers

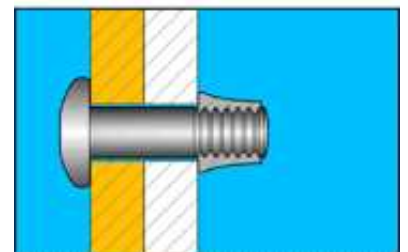
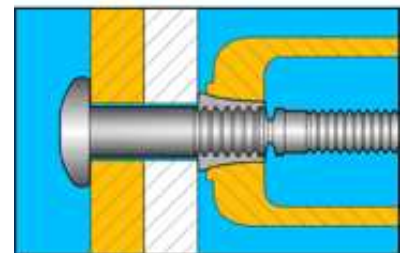
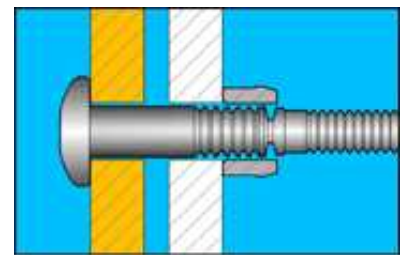
Specifications

Sizes: 4.8mm to 9.6mm (3/16" to 3/8")
(Large diameter option also available in steel - 13mm to 25mm (1/2" to 1" tool))

Materials: Aluminium alloy, steel and stainless steel

Headforms: Brazier, countersunk, truss and large head

Collars: Full, half and flanged



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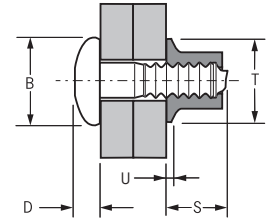
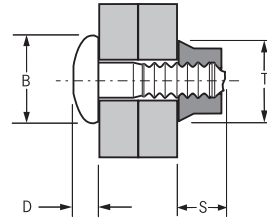
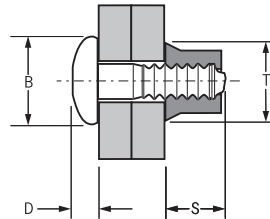
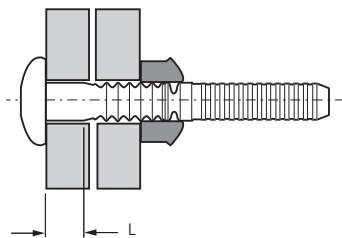
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English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Carbon boron steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras 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	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar		Half Collar ²⁾		Flanged Collar ³⁾		
nom.			nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	1.57	4.75	5.0	1.57	10.1	3.4	02621-70602	02662-70600	02682-70600	02615-70600	10.2	9.9	0.76
	3.18	6.35		3.18			02621-70603						
	4.75	7.92		4.75			02621-70604						
	6.35	9.53		6.35			02621-70605						
	7.92	11.10		7.92			02621-70606						
	9.53	12.70		9.53			02621-70607						
	11.10	14.27		11.10			02621-70608						
	12.70	15.88		12.70			02621-70609						
	14.27	17.45		14.27			02621-70610						
	15.88	19.05		15.88			02621-70611						
	17.45	20.62		17.45			02621-70612						
	19.05	22.23		19.05			02621-70613						
	20.62	23.80		20.62			02621-70614						
22.23	25.40	22.23	02621-70615										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
1), 2), 3) see last page / voir page 3 / siehe letzte Seite / vedi pagina 3 / ver Pág. 3

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ø	w. Full Collar ²⁾		L	B	D	Part No/ref Pin ¹⁾	Part No/ref Full Collar		Part No/ref Half Collar ²⁾		Part No/ref Flanged Collar ³⁾		
	min.	max.					S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	23.80	26.97	5.0	23.80	10.1	3.4	02621-70616	02662-70600	02682-70600	02615-70600	10.2	9.9	0.76
	25.40	28.58		25.40			02621-70617						
	26.97	30.15		26.97			02621-70618						
	28.58	31.75		28.58			02621-70619						
	30.15	33.32		30.15			02621-70620						
6.4 (1/4")	1.57	4.75	6.6	1.57	13.4	4.1	02621-70802	02662-70800	02682-70800	02615-70800	13.2	13.1	0.94
	3.18	6.35		3.18			02621-70803						
	4.75	7.92		4.75			02621-70804						
	6.35	9.53		6.35			02621-70805						
	7.92	11.10		7.92			02621-70806						
	9.53	12.70		9.53			02621-70807						
	11.10	14.27		11.10			02621-70808						
	12.70	15.88		12.70			02621-70809						
	14.27	17.45		14.27			02621-70810						
	15.88	19.05		15.88			02621-70811						
	17.45	20.62		17.45			02621-70812						
	19.05	22.23		19.05			02621-70813						
	20.62	23.80		20.62			02621-70814						
	22.23	25.40		22.23			02621-70815						
	23.80	26.97		23.80			02621-70816						
26.97	30.15	26.97	02621-70818										
30.15	33.32	30.15	02621-70820										
8.0 (5/16")	3.18	9.53	8.2	3.18	16.7	5.5	02621-71004	02662-71000	02682-71000	02615-71000	16.8	16.3	1.22
	6.35	12.70		6.35			02621-71006						
	9.53	15.88		9.53			02621-71008						
	12.70	19.05		12.70			02621-71010						
	15.88	22.23		15.88			02621-71012						
	19.05	25.40		19.05			02621-71014						
	22.23	28.58		22.23			02621-71016						
	25.40	31.75		25.40			02621-71018						
	28.58	34.93		28.58			02621-71020						
	31.75	38.10		31.75			02621-71022						
	34.93	41.28		34.93			02621-71024						
	38.10	44.45		38.10			02621-71026						
	41.28	47.63		41.28			02621-71028						
	44.45	50.80		44.45			02621-71030						
	47.63	53.98		47.63			02621-71032						

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ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.	min.	max.	nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	3.18	9.53	3.18	20.1	6.7	02621-71204	02662-71200	18.6	15.5	02682-71200	20.0	20.0	1.42
	6.35	12.70	6.35			02621-71206							
	9.53	15.88	9.53			02621-71208							
	12.70	19.05	12.70			02621-71210							
	15.88	22.23	15.88			02621-71212							
	19.05	25.40	19.05			02621-71214							
	22.23	28.58	22.23			02621-71216							
	25.40	31.75	25.40			02621-71218							
	28.58	34.93	28.58			02621-71220							
	31.75	38.10	31.75			02621-71222							
	34.93	41.28	34.93			02621-71224							
	38.10	44.45	38.10			02621-71226							
	41.28	47.63	41.28			02621-71228							
	44.45	50.80	44.45			02621-71230							
	47.63	53.98	47.63			02621-71232							

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et different nombre de cannelures sont disponible.

Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar

Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature

Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.

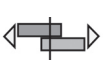

3) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁴⁾	kN ⁴⁾
4.8 (3/16")	8.63	7.34
6.4 (1/4")	14.73	13.35
8.0 (5/16")	22.38	21.81
9.6 (3/8")	32.08	28.93

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



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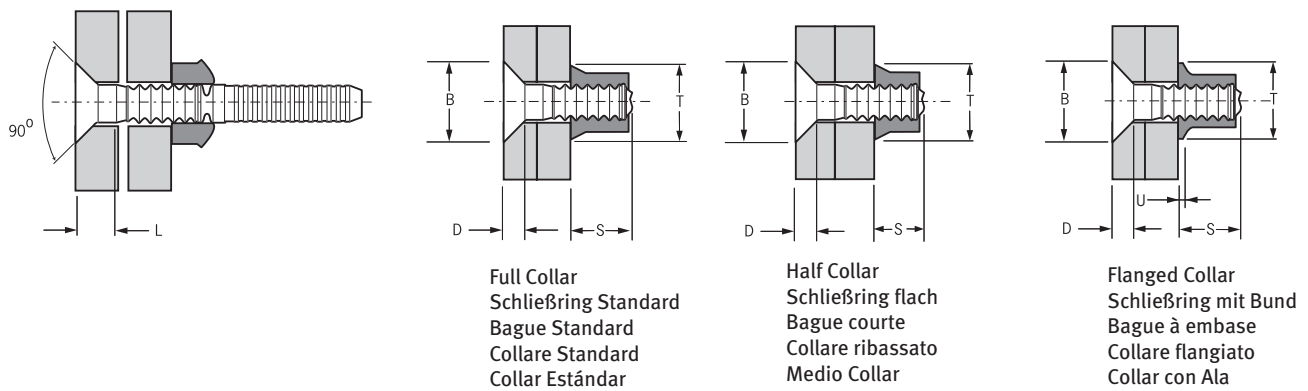
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English	Français	Deutsch	Italiano	Español
90° Countersunk	90° Tête fraisée	90° Senkkopf	90° Testa svasata	90° Cabeza avellanada
Pin: Carbon boron steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras Pasivado claro trivalente

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





ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar		Half Collar ²⁾		Flanged Collar ³⁾		
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	3.18	6.35	5.0	3.18	8.9	2.2	02622-70603	02662-70600	02682-70600	02615-70600	10.2	9.9	0.76
	4.75	7.92		4.75			02622-70604						
	6.35	9.53		6.35			02622-70605						
	7.92	11.10		7.92			02622-70606						
	9.53	12.70		9.53			02622-70607						
	11.10	14.27		11.10			02622-70608						
	12.70	15.88		12.70			02622-70609						
	14.27	17.45		14.27			02622-70610						
	15.88	19.05		15.88			02622-70611						
	17.45	20.62		17.45			02622-70612						
	19.05	22.23		19.05			02622-70613						
	20.62	23.80		20.62			02622-70614						
22.23	25.40	22.23	02622-70615										

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ø				L	B	D	Part No/ref	Part No/ref		Part No/ref				
	w. Full Collar ²⁾							Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.	min.	max.		nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	23.80	26.97	5.0	23.80	8.9	2.2	02622-70616	02662-70600	9.4	8.0	02682-70600	10.2	9.9	0.76
	25.40	28.58		25.40			02622-70617							
	26.97	30.15		26.97			02622-70618							
	28.58	31.75		28.58			02622-70619							
	30.15	33.32		30.15			02622-70620							
6.4 (1/4")	3.18	6.35	6.6	3.18	11.9	2.9	02622-70803	02662-70800	12.2	10.6	02682-70800	13.2	13.1	0.94
	4.75	7.92		4.75			02622-70804							
	6.35	9.53		6.35			02622-70805							
	7.92	11.10		7.92			02622-70806							
	9.53	12.70		9.53			02622-70807							
	11.10	14.27		11.10			02622-70808							
	12.70	15.88		12.70			02622-70809							
	14.27	17.45		14.27			02622-70810							
	15.88	19.05		15.88			02622-70811							
	17.45	20.62		17.45			02622-70812							
	19.05	22.23		19.05			02622-70813							
	20.62	23.80		20.62			02622-70814							
	22.23	25.40		22.23			02622-70815							
	23.80	26.97		23.80			02622-70816							
26.97	30.15	26.97	02622-70818											
30.15	33.32	30.15	02622-70820											
8.0 (5/16")	3.18	9.53	8.2	3.18	14.8	3.6	02622-71004	02662-71000	15.5	13.3	02682-71000	16.8	16.3	1.22
	6.35	12.70		6.35			02622-71006							
	9.53	15.88		9.53			02622-71008							
	12.70	19.05		12.70			02622-71010							
	15.88	22.23		15.88			02622-71012							
	19.05	25.40		19.05			02622-71014							
	22.23	28.58		22.23			02622-71016							
	25.40	31.75		25.40			02622-71018							
	28.58	34.93		28.58			02622-71020							
	31.75	38.10		31.75			02622-71022							
	34.93	41.28		34.93			02622-71024							
	38.10	44.45		38.10			02622-71026							
	41.28	47.63		41.28			02622-71028							
	44.45	50.80		44.45			02622-71030							
47.63	53.98	47.63	02622-71032											

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ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	6.35	12.70	9.8	6.35	17.7	4.4	02621-71206	02662-71200	02682-71200	02615-71200			
	9.53	15.88		9.53			02621-71208						
	12.70	19.05		12.70			02621-71210						
	15.88	22.23		15.88			02621-71212						
	19.05	25.40		19.05			02621-71214						
	22.23	28.58		22.23			02621-71216						
	25.40	31.75		25.40			02621-71218						
	28.58	34.93		28.58			02621-71220						
	31.75	38.10		31.75			02621-71222						
	34.93	41.28		34.93			02621-71224						
	38.10	44.45		38.10			02621-71226						
	41.28	47.63		41.28			02621-71228						
	44.45	50.80		44.45			02621-71230						
47.63	53.98	47.63	02621-71232										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et différent nombre de cannelures sont disponible

Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar

Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature

Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.

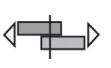

3) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁴⁾	kN ⁴⁾
4.8 (3/16")	8.63	7.34
6.4 (1/4")	14.73	13.35
8.0 (5/16")	22.38	21.81
9.6 (3/8")	32.08	28.93

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



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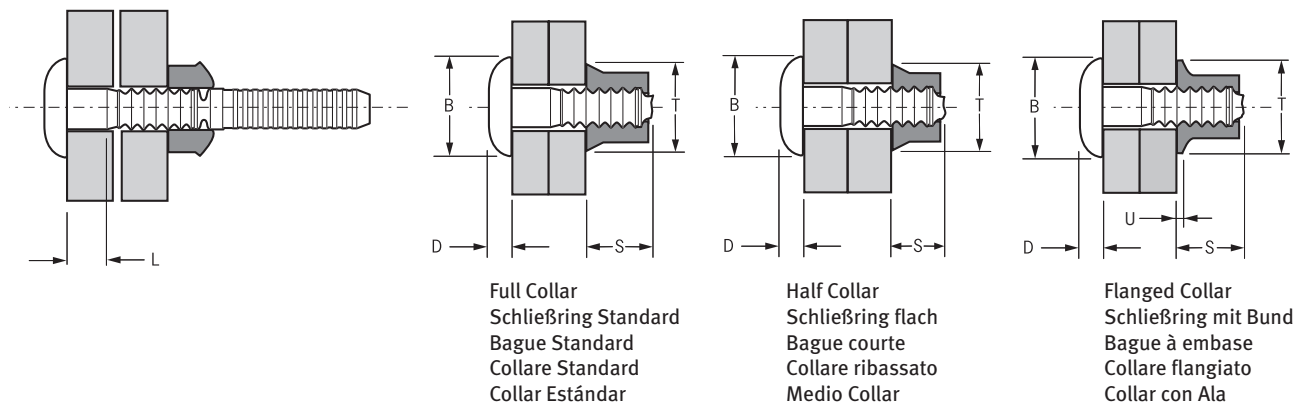
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English	Français	Deutsch	Italiano	Español
Truss head	Tête large	Flachrundkopf groß	Testa larga	Cabeza alomada de perfil bajo
Pin: Carbon boron steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras Pasivado claro trivalente

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



ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar		Half Collar ²⁾		Flanged Collar ³⁾		
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	1.57	4.75	5.0	1.57	12.0	2.2	02624-70602	02662-70600	02682-70600	02615-70600	10.2	9.9	0.76
	3.18	6.35		3.18			02624-70603						
	4.75	7.92		4.75			02624-70604						
	6.35	9.53		6.35			02624-70605						
	7.92	11.10		7.92			02624-70606						
	9.53	12.70		9.53			02624-70607						
	11.10	14.27		11.10			02624-70608						
	12.70	15.88		12.70			02624-70609						
	14.27	17.45		14.27			02624-70610						
	15.88	19.05		15.88			02624-70611						
	17.45	20.62		17.45			02624-70612						
	19.05	22.23		19.05			02624-70613						
	20.62	23.80		20.62			02624-70614						
22.23	25.40	22.23	02624-70615										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
1), 2), 3) see last page / voir page 3 / siehe letzte Seite / vedi pagina 3 / ver Pág. 3

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ø	w. Full Collar ²⁾		L	B	D	Part No/ref Pin ¹⁾	Part No/ref Full Collar		Part No/ref Half Collar ²⁾		Part No/ref Flanged Collar ³⁾		
	min.	max.					S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	23.80	26.97	23.80	12.0	2.2	02624-70616	02662-70600	02682-70600	02615-70600	10.2	9.9	0.76	
	25.40	28.58				02624-70617							
	26.97	30.15				02624-70618							
	28.58	31.75				02624-70619							
	30.15	33.32				02624-70620							
6.4 (1/4")	1.57	4.75	6.6	15.2	2.8	02624-70802	02662-70800	02682-70800	02615-70800	13.2	13.1	0.94	
	3.18	6.35				02624-70803							
	4.75	7.92				02624-70804							
	6.35	9.53				02624-70805							
	7.92	11.10				02624-70806							
	9.53	12.70				02624-70807							
	11.10	14.27				02624-70808							
	12.70	15.88				02624-70809							
	14.27	17.45				02624-70810							
	15.88	19.05				02624-70811							
	17.45	20.62				02624-70812							
	19.05	22.23				02624-70813							
	20.62	23.80				02624-70814							
	22.23	25.40				02624-70815							
	23.80	26.97				02624-70816							
26.97	30.15	02624-70818											
30.15	33.32	02624-70820											
8.0 (5/16")	3.18	9.53	8.2	19.9	3.6	02624-71004	02662-71000	02682-71000	02615-71000	16.8	16.3	1.22	
	6.35	12.70				02624-71006							
	9.53	15.88				02624-71008							
	12.70	19.05				02624-71010							
	15.88	22.23				02624-71012							
	19.05	25.40				02624-71014							
	22.23	28.58				02624-71016							
	25.40	31.75				02624-71018							
	28.58	34.93				02624-71020							
	31.75	38.10				02624-71022							
	34.93	41.28				02624-71024							
	38.10	44.45				02624-71026							
	41.28	47.63				02624-71028							
	44.45	50.80				02624-71030							
	47.63	53.98				02624-71032							

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
 1), 2), 3) see last page / voir page 3 / siehe letzte Seite / vedi pagina 3 / ver Pág. 3



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ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	3.18	9.53	3.18	23.5	4.1	02624-71204	02662-71200	18.6	15.5	02682-71200	20.0	20.0	1.42
	6.35	12.70	6.35			02624-71206							
	9.53	15.88	9.53			02624-71208							
	12.70	19.05	12.70			02624-71210							
	15.88	22.23	15.88			02624-71212							
	19.05	25.40	19.05			02624-71214							
	22.23	28.58	22.23			02624-71216							
	25.40	31.75	25.40			02624-71218							
	28.58	34.93	28.58			02624-71220							
	31.75	38.10	31.75			02624-71222							
	34.93	41.28	34.93			02624-71224							
	38.10	44.45	38.10			02624-71226							
	41.28	47.63	41.28			02624-71228							
	44.45	50.80	44.45			02624-71230							
47.63	53.98	47.63	02624-71232										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et différent nombre de cannelures sont disponible.

Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar

Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature

Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.



3) 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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁴⁾	kN ⁴⁾
4.8 (3/16")	8.63	7.34
6.4 (1/4")	14.73	13.35
8.0 (5/16")	22.38	21.81
9.6 (3/8")	32.08	28.93

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



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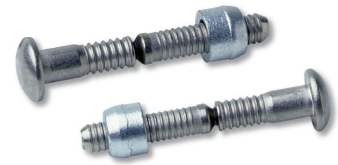
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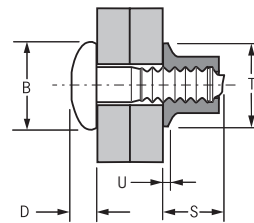
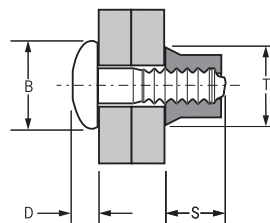
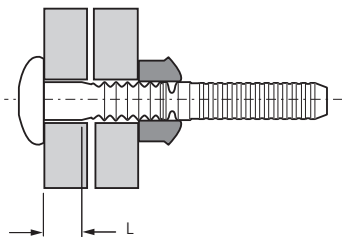
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English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Stainless steel* natural	Tige: Inox* Brut	Bolzen: Edelstahl* Blank	Bullone: Acciaio inox * Nessuna finitura	Vástago: Acero inoxidable* Natural
Collar: Stainless steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Inox** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Edelstahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio inox** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero inoxidable** Zincado, 8 micras 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	w. Full Collar		L	B	D	Part No/ref	Part No/ref		Part No/ref			
	min.	max.					Full Collar		Flanged Collar ²⁾			
nom.			nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	U ²⁾ nom.	
4.8 (3/16")	1.57	4.75	1.57	10.0	3.4	02691-00602	02605-70600	9.4	8.0	10.2	9.9	0.76
	3.18	6.35	3.18			02691-00603						
	4.75	7.92	4.75			02691-00604						
	6.35	9.53	6.35			02691-00605						
	7.92	11.10	7.92			02691-00606						
	9.53	12.70	9.53			02691-00607						
	11.10	14.27	11.10			02691-00608						
	12.70	15.88	12.70			02691-00609						
	14.27	17.45	14.27			02691-00610						
	15.88	19.05	15.88			02691-00611						
	17.45	20.62	17.45			02691-00612						
	19.05	22.23	19.05			02691-00613						
	20.62	23.80	20.62			02691-00614						
22.23	25.40	22.23	02691-00615									

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) & 2) see last page / voir page 3 / siehe letzte Seite / vedi pagina 3 / ver Pág. 3

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∅				L	B	D	Part No/ref	Part No/ref		Part No/ref		
	w. Full Collar							Full Collar		Flanged Collar ²⁾		
nom.	min.	max.		nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	U ²⁾ nom.
4.8 (3/16")	23.80	26.97	5.0	23.80	10.0	3.4	02691-00616	02605-70600	9.4	8.0	02648-70600 10.2 9.9 0.76	
	25.40	28.58		25.40			02691-00617					
	26.97	30.15		26.97			02691-00618					
	28.58	31.75		28.58			02691-00619					
	30.15	33.32		30.15			02691-00620					
6.4 (1/4")	1.57	4.75	6.6	1.57	13.4	4.1	02691-00802	02605-70800	12.2	10.6	02648-70800 13.2 13.1 0.94	
	3.18	6.35		3.18			02691-00803					
	4.75	7.92		4.75			02691-00804					
	6.35	9.53		6.35			02691-00805					
	7.92	11.10		7.92			02691-00806					
	9.53	12.70		9.53			02691-00807					
	11.10	14.27		11.10			02691-00808					
	12.70	15.88		12.70			02691-00809					
	14.27	17.45		14.27			02691-00810					
	15.88	19.05		15.88			02691-00811					
	17.45	20.62		17.45			02691-00812					
	19.05	22.23		19.05			02691-00813					
	20.62	23.80		20.62			02691-00814					
	22.23	25.40		22.23			02691-00815					
	23.80	26.97		23.80			02691-00816					
26.97	30.15	26.97	02691-00818									
30.15	33.32	30.15	02691-00820									
8.0 (5/16")	3.18	9.53	8.2	3.18	16.7	5.5	02691-01004	02605-71000	15.5	13.3	N/A	
	6.35	12.70		6.35			02691-01006					
	9.53	15.88		9.53			02691-01008					
	12.70	19.05		12.70			02691-01010					
	15.88	22.23		15.88			02691-01012					
	19.05	25.40		19.05			02691-01014					
	22.23	28.58		22.23			02691-01016					
	25.40	31.75		25.40			02691-01018					
	28.58	34.93		28.58			02691-01020					
	31.75	38.10		31.75			02691-01022					
	34.93	41.28		34.93			02691-01024					
	38.10	44.45		38.10			02691-01026					
	41.28	47.63		41.28			02691-01028					
	44.45	50.80		44.45			02691-01030					
47.63	53.98	47.63	02691-01032									

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) & 2) see last page / voir page 3 / siehe letzte Seite / vedi pagina 3 / ver Pág. 3



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ø				L	B	D	Part No/ref	Part No/ref		Part No/ref		
	w. Full Collar							Full Collar		Flanged Collar ²⁾		
nom.	min.	max.		nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	U ²⁾ nom.
9.6 (3/8")	3.18	9.53	9.8	3.18	20.0	6.7	02691-01204	02605-71200	18.6	15.5	N/A	
	6.35	12.70		6.35			02691-01206					
	9.53	15.88		9.53			02691-01208					
	12.70	19.05		12.70			02691-01210					
	15.88	22.23		15.88			02691-01212					
	19.05	25.40		19.05			02691-01214					
	22.23	28.58		22.23			02691-01216					
	25.40	31.75		25.40			02691-01218					
	28.58	34.93		28.58			02691-01220					
	31.75	38.10		31.75			02691-01222					
	34.93	41.28		34.93			02691-01224					
	38.10	44.45		38.10			02691-01226					
	41.28	47.63		41.28			02691-01228					
	44.45	50.80		44.45			02691-01230					
47.63	53.98	47.63	02691-01232									

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et différent nombre de cannelures sont disponible

Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar

Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature

Disponibles pernos con diferente número de anillos según el espesor a remachar

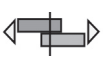

2) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ³⁾	kN ³⁾
4.8 (3/16")	7.79	9.26
6.4 (1/4")	14.55	17.71
8.0 (5/16")	22.24	29.80
9.6 (3/8")	31.58	37.81

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

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

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

I dati indicati in tabella sono minimi e si riferiscono a bulloni installati con collari Standard.

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



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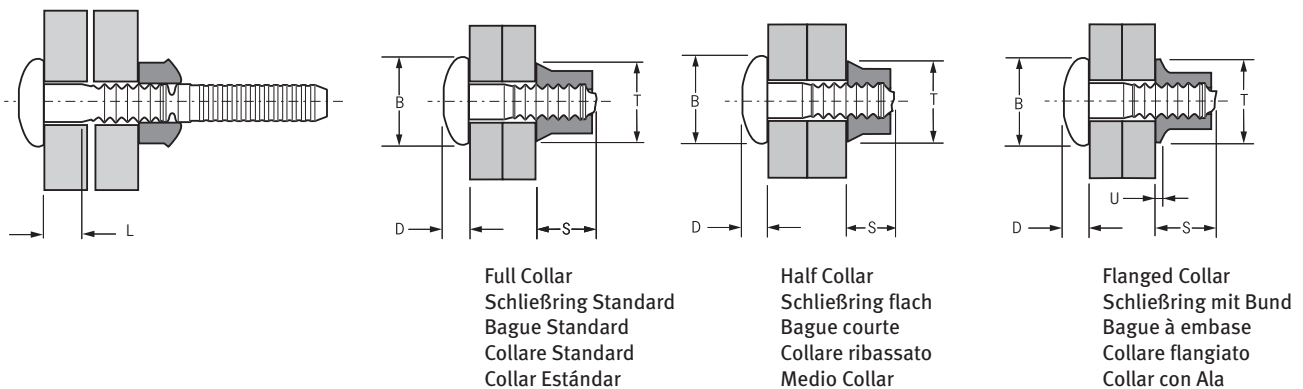
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English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Aluminium alloy* Polished	Tige: Alliage d'aluminium* Poli	Bolzen: Aluminium* Poliert	Bullone: Lega di alluminio* Lucido	Vástago: Aluminio*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



ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar		Half Collar ²⁾		Flanged Collar ³⁾		
nom.			nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	1.57	4.75	5.0	1.57	10.1	3.4	02801-00602	02837-00600	02838-00600	02839-00600	10.2	9.9	0.76
	3.18	6.35		3.18			02801-00603						
	4.75	7.92		4.75			02801-00604						
	6.35	9.53		6.35			02801-00605						
	7.92	11.10		7.92			02801-00606						
	9.53	12.70		9.53			02801-00607						
	11.10	14.27		11.10			02801-00608						
	12.70	15.88		12.70			02801-00609						
	14.27	17.45		14.27			02801-00610						
	15.88	19.05		15.88			02801-00611						
	17.45	20.62		17.45			02801-00612						
	19.05	22.23		19.05			02801-00613						
	20.62	23.80		20.62			02801-00614						
	22.23	25.40		22.23			02801-00615						

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ø	w. Full Collar ²⁾		L	B	D	Part No/ref Pin ¹⁾	Part No/ref Full Collar		Part No/ref Half Collar ²⁾		Part No/ref Flanged Collar ³⁾				
	min.	max.					S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.		
nom.			nom.	max.	max.										
4.8 (3/16")	23.80	26.97	5.0	23.80	10.1	3.4	02801-00616	02837-00600	02838-00600	02839-00600	10.2	9.9	0.76		
	25.40	28.58		25.40			02801-00617								
	26.97	30.15		26.97			02801-00618							9.4 8.0	7.9 8.0
	28.58	31.75		28.58			02801-00619								
	30.15	33.32		30.15			02801-00620								
6.4 (1/4")	1.57	4.75	6.6	1.57	13.4	4.1	02801-00802	02837-00800	02838-00800	02839-00800	13.2	13.1	0.94		
	3.18	6.35		3.18			02801-00803								
	4.75	7.92		4.75			02801-00804								
	6.35	9.53		6.35			02801-00805								
	7.92	11.10		7.92			02801-00806								
	9.53	12.70		9.53			02801-00807								
	11.10	14.27		11.10			02801-00808								
	12.70	15.88		12.70			02801-00809								
	14.27	17.45		14.27			02801-00810							12.2 10.6	10.7 10.6
	15.88	19.05		15.88			02801-00811								
	17.45	20.62		17.45			02801-00812								
	19.05	22.23		19.05			02801-00813								
	20.62	23.80		20.62			02801-00814								
	22.23	25.40		22.23			02801-00815								
	23.80	26.97		23.80			02801-00816								
26.97	30.15	26.97	02801-00818												
30.15	33.32	30.15	02801-00820												
31.75	34.93	31.75	02801-00821												
8.0 (5/16")	3.18	9.53	8.2	3.18	16.7	5.5	02801-01004	02837-01000	02838-01000	02839-01000	16.8	16.3	1.22		
	6.35	12.70		6.35			02801-01006								
	9.53	15.88		9.53			02801-01008								
	12.70	19.05		12.70			02801-01010								
	15.88	22.23		15.88			02801-01012								
	19.05	25.40		19.05			02801-01014								
	22.23	28.58		22.23			02801-01016								
	25.40	31.75		25.40			02801-01018							15.5 13.3	12.5 13.3
	28.58	34.93		28.58			02801-01020								
	31.75	38.10		31.75			02801-01022								
	34.93	41.28		34.93			02801-01024								
	38.10	44.45		38.10			02801-01026								
	41.28	47.63		41.28			02801-01028								
	44.45	50.80		44.45			02801-01030								
	47.63	53.98		47.63			02801-01032								

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
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ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.	min.	max.	nom.	max.	max.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	3.18	9.53	3.18	20.0	6.5	02801-01204	02837-01200	18.6	15.5	02838-01200	15.5	15.5	02839-01200
	6.35	12.70	6.35			02801-01206							
	9.53	15.88	9.53			02801-01208							
	12.70	19.05	12.70			02801-01210							
	15.88	22.23	15.88			02801-01212							
	19.05	25.40	19.05			02801-01214							
	22.23	28.58	22.23			02801-01216							
	25.40	31.75	25.40			02801-01218							
	28.58	34.93	28.58			02801-01220							
	31.75	38.10	31.75			02801-01222							
	34.93	41.28	34.93			02801-01224							
	38.10	44.45	38.10			02801-01226							
	41.28	47.63	41.28			02801-01228							
	44.45	50.80	44.45			02801-01230							
	47.63	53.98	47.63			02801-01232							

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et différent nombre de cannelures sont disponible.

Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar

Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature

Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.

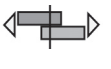

3) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁴⁾	kN ⁴⁾
4.8 (3/16")	4.67	4.72
6.4 (1/4")	8.34	7.92
8.0 (5/16")	13.02	12.68
9.6 (3/8")	18.69	18.68

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



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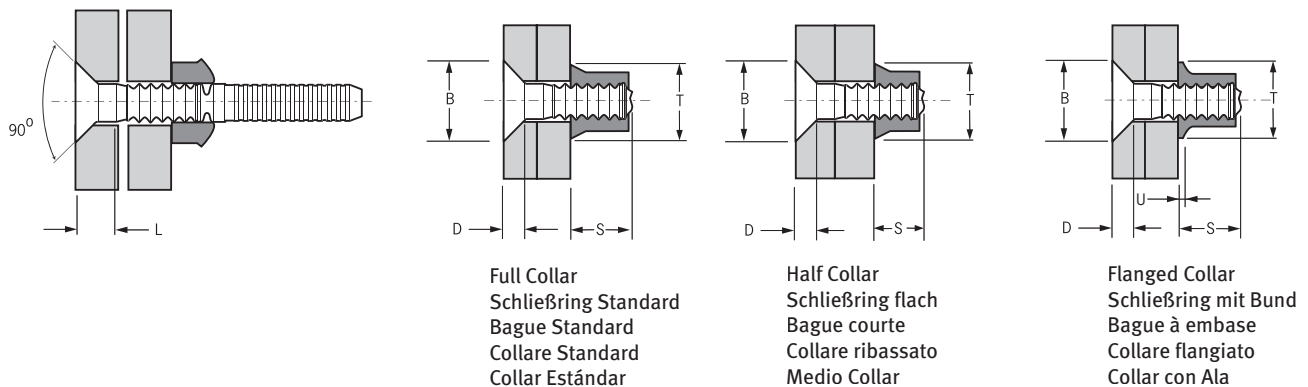
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English	Français	Deutsch	Italiano	Español
90° Countersunk	90° Tête fraisée	90° Senkkopf	90° Testa svasata	90° Cabeza avellanada
Pin: Aluminium alloy* Polished	Tige: Alliage d'aluminium* Poli	Bolzen: Aluminium* Poliert	Bullone: Lega di alluminio* Lucido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

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



ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref										
	min.	max.					nom.	max.	nom.	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.			
4.8 (3/16")	3.18	6.35	5.0	3.18	8.9	2.2	02802-00603	02837-00600	02838-00600	02839-00600									
	4.75	7.92		4.75			02802-00604												
	6.35	9.53		6.35			02802-00605												
	7.92	11.10		7.92			02802-00606												
	9.53	12.70		9.53			02802-00607												
	11.10	14.27		11.10			02802-00608												
	12.70	15.88		12.70			02802-00609						9.4	8.0	7.9	8.0	10.2	9.9	0.76
	14.27	17.45		14.27			02802-00610												
	15.88	19.05		15.88			02802-00611												
	17.45	20.62		17.45			02802-00612												
	19.05	22.23		19.05			02802-00613												
	20.62	23.80		20.62			02802-00614												
22.23	25.40	22.23	02802-00615																

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
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ø	w. Full Collar ²⁾		L	B	D	Part No/ref Pin ¹⁾	Part No/ref Full Collar		Part No/ref Half Collar ²⁾		Part No/ref Flanged Collar ³⁾						
	min.	max.					S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.				
4.8 (3/16")	23.80	26.97	5.0	23.80	8.9	2.2	02802-00616	02837-00600	02838-00600	02839-00600	10.2	9.9	0.76				
	25.40	28.58		25.40			02802-00617										
	26.97	30.15		26.97			02802-00618							9.4	8.0	7.9	8.0
	28.58	31.75		28.58			02802-00619										
	30.15	33.32		30.15			02802-00620										
6.4 (1/4")	3.18	6.35	6.6	3.18	11.8	2.9	02802-00803	02837-00800	02838-00800	02839-00800	13.2	13.1	0.94				
	4.75	7.92		4.75			02802-00804										
	6.35	9.53		6.35			02802-00805										
	7.92	11.10		7.92			02802-00806										
	9.53	12.70		9.53			02802-00807										
	11.10	14.27		11.10			02802-00808										
	12.70	15.88		12.70			02802-00809										
	14.27	17.45		14.27			02802-00810							12.2	10.6	10.7	10.6
	15.88	19.05		15.88			02802-00811										
	17.45	20.62		17.45			02802-00812										
	19.05	22.23		19.05			02802-00813										
	20.62	23.80		20.62			02802-00814										
	22.23	25.40		22.23			02802-00815										
	23.80	26.97		23.80			02802-00816										
	26.97	30.15		26.97			02802-00818										
30.15	33.32	30.15	02802-00820														
8.0 (5/16")	3.18	9.53	8.2	3.18	14.8	3.7	02802-01004	02837-01000	02838-01000	02839-01000	16.8	16.3	1.22				
	6.35	12.70		6.35			02802-01006										
	9.53	15.88		9.53			02802-01008										
	12.70	19.05		12.70			02802-01010										
	15.88	22.23		15.88			02802-01012										
	19.05	25.40		19.05			02802-01014										
	22.23	28.58		22.23			02802-01016										
	25.40	31.75		25.40			02802-01018							15.5	13.3	12.5	13.3
	28.58	34.93		28.58			02802-01020										
	31.75	38.10		31.75			02802-01022										
	34.93	41.28		34.93			02802-01024										
	38.10	44.45		38.10			02802-01026										
	41.28	47.63		41.28			02802-01028										
	44.45	50.80		44.45			02802-01030										
	47.63	53.98		47.63			02802-01032										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
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ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	6.35	12.70	9.8	6.35	17.7	4.4	02802-01206	02837-01200	18.6	15.5	02838-01200	15.5	02839-01200
	9.53	15.88		9.53			02802-01208						
	12.70	19.05		12.70			02802-01210						
	15.88	22.23		15.88			02802-01212						
	19.05	25.40		19.05			02802-01214						
	22.23	28.58		22.23			02802-01216						
	25.40	31.75		25.40			02802-01218						
	28.58	34.93		28.58			02802-01220						
	31.75	38.10		31.75			02802-01222						
	34.93	41.28		34.93			02802-01224						
	38.10	44.45		38.10			02802-01226						
	41.28	47.63		41.28			02802-01228						
	44.45	50.80		44.45			02802-01230						
	47.63	53.98		47.63			02802-01232						

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et différent nombre de cannelures sont disponible.
Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar
Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature
Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.

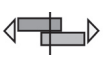

3) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁴⁾	kN ⁴⁾
4.8 (3/16")	4.67	4.72
6.4 (1/4")	8.34	7.92
8.0 (5/16")	13.02	12.68
9.6 (3/8")	18.69	18.68

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



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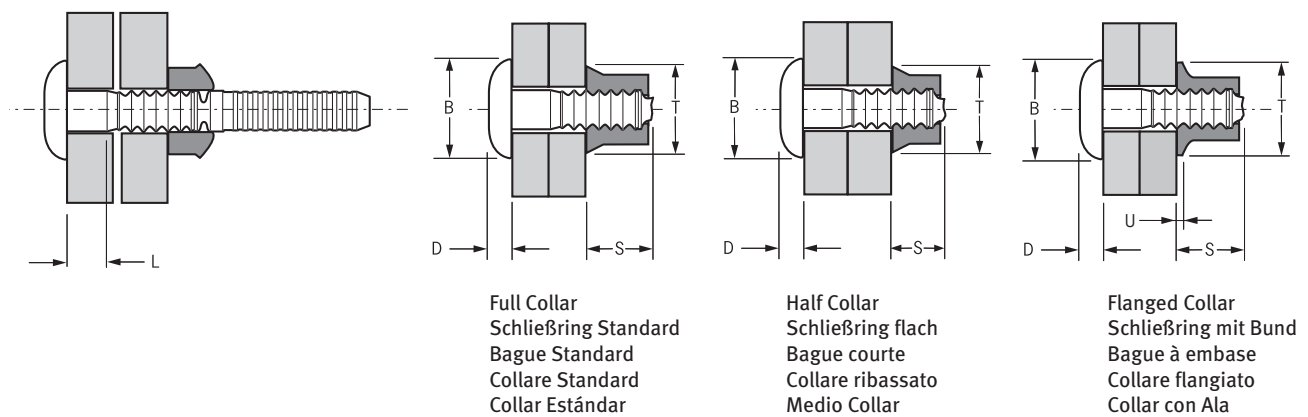
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Avdelok® 2803



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

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



ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar		Half Collar ²⁾		Flanged Collar ³⁾		
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
4.8 (3/16")	1.57	4.75	5.0	1.57	12.0	2.2	02803-00602	02837-00600	02838-00600	02839-00600	10.2	9.9	0.76
	3.18	6.35		3.18			02803-00603						
	4.75	7.92		4.75			02803-00604						
	6.35	9.53		6.35			02803-00605						
	7.92	11.10		7.92			02803-00606						
	9.53	12.70		9.53			02803-00607						
	11.10	14.27		11.10			02803-00608						
	12.70	15.88		12.70			02803-00609						
	14.27	17.45		14.27			02803-00610						
	15.88	19.05		15.88			02803-00611						
	17.45	20.62		17.45			02803-00612						
	19.05	22.23		19.05			02803-00613						
	20.62	23.80		20.62			02803-00614						
22.23	25.40	22.23	02803-00615										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
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ø	w. Full Collar ²⁾		L	B	D	Part No/ref Pin ¹⁾	Part No/ref Full Collar		Part No/ref Half Collar ²⁾		Part No/ref Flanged Collar ³⁾						
	min.	max.					S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.				
4.8 (3/16")	23.80	26.97	5.0	23.80	12.0	2.2	02803-00616	02837-00600	02838-00600	02839-00600	10.2	9.9	0.76				
	25.40	28.58		25.40			02803-00617										
	26.97	30.15		26.97			02803-00618							9.4	8.0	7.9	8.0
	28.58	31.75		28.58			02803-00619										
	30.15	33.32		30.15			02803-00620										
6.4 (1/4")	1.57	4.75	6.6	1.57	15.1	2.8	02803-00802	02837-00800	02838-00800	02839-00800	13.2	13.1	0.94				
	3.18	6.35		3.18			02803-00803										
	4.75	7.92		4.75			02803-00804										
	6.35	9.53		6.35			02803-00805										
	7.92	11.10		7.92			02803-00806										
	9.53	12.70		9.53			02803-00807										
	11.10	14.27		11.10			02803-00808										
	12.70	15.88		12.70			02803-00809										
	14.27	17.45		14.27			02803-00810							12.2	10.6	10.7	10.6
	15.88	19.05		15.88			02803-00811										
	17.45	20.62		17.45			02803-00812										
	19.05	22.23		19.05			02803-00813										
	20.62	23.80		20.62			02803-00814										
	22.23	25.40		22.23			02803-00815										
	23.80	26.97		23.80			02803-00816										
26.97	30.15	26.97	02803-00818														
30.15	33.32	30.15	02803-00820														
31.75	34.93	31.75	02803-00821														
8.0 (5/16")	3.18	9.53	8.2	3.18	19.9	3.6	02803-01004	02837-01000	02838-01000	02839-01000	16.8	16.3	1.22				
	6.35	12.70		6.35			02803-01006										
	9.53	15.88		9.53			02803-01008										
	12.70	19.05		12.70			02803-01010										
	15.88	22.23		15.88			02803-01012										
	19.05	25.40		19.05			02803-01014										
	22.23	28.58		22.23			02803-01016										
	25.40	31.75		25.40			02803-01018							15.5	13.3	12.5	13.3
	28.58	34.93		28.58			02803-01020										
	31.75	38.10		31.75			02803-01022										
	34.93	41.28		34.93			02803-01024										
	38.10	44.45		38.10			02803-01026										
	41.28	47.63		41.28			02803-01028										
44.45	50.80	44.45	02803-01030														
47.63	53.98	47.63	02803-01032														

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros
 1), 2), 3) see last page / voir page 3 / siehe letzte Seite / vedi pagina 3 / ver Pág. 3



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Avdelok® 2803

ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar	Half Collar ²⁾	Flanged Collar ³⁾				
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	3.18	9.53	3.18	23.5	4.1	02803-01204	02837-01200	18.6	15.5	02838-01200	15.5	15.5	02839-01200
	6.35	12.70	6.35			02803-01206							
	9.53	15.88	9.53			02803-01208							
	12.70	19.05	12.70			02803-01210							
	15.88	22.23	15.88			02803-01212							
	19.05	25.40	19.05			02803-01214							
	22.23	28.58	22.23			02803-01216							
	25.40	31.75	25.40			02803-01218							
	28.58	34.93	28.58			02803-01220							
	31.75	38.10	31.75			02803-01222							
	34.93	41.28	34.93			02803-01224							
	38.10	44.45	38.10			02803-01226							
	41.28	47.63	41.28			02803-01228							
	44.45	50.80	44.45			02803-01230							
47.63	53.98	47.63	02803-01232										

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) Different grip range pins with different numbers of grooves are available

Tiges avec autres plages de serrage et différent nombre de cannelures sont disponible.

Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar

Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature

Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.

Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.

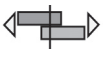

3) Flanged collars are used in applications where the hole on the collar side of the application is oversize or is slotted for alignment purposes. To determine what length of pin is required, add dimension U to the thickness of material being fastened.

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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁴⁾	kN ⁴⁾
4.8 (3/16")	4.67	4.72
6.4 (1/4")	8.34	7.92
8.0 (5/16")	13.02	12.68
9.6 (3/8")	18.69	18.68

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



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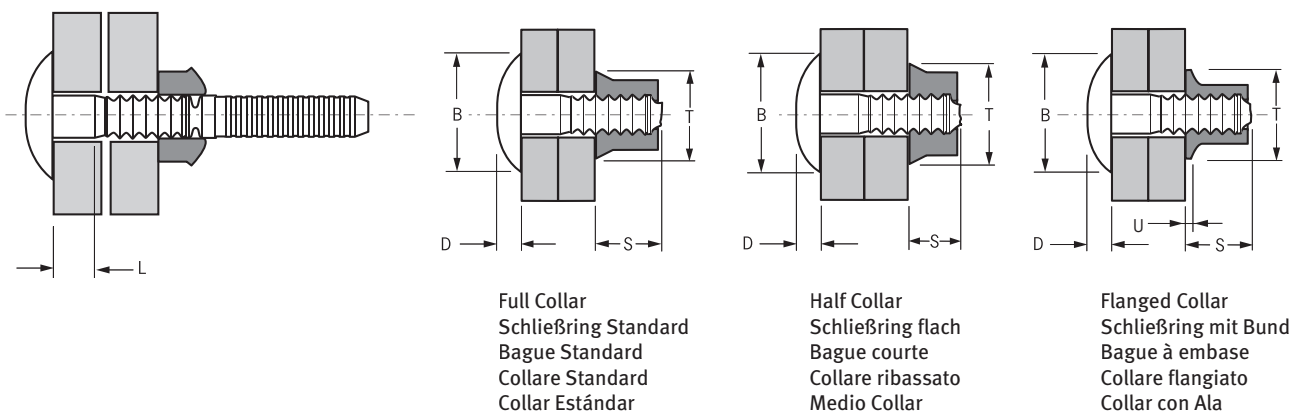
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Avdelok® 2804



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



ø	w. Full Collar ²⁾		L	B	D	Part No/ref	Part No/ref		Part No/ref				
	min.	max.					Full Collar		Half Collar ²⁾		Flanged Collar ³⁾		
nom.			nom.	max.	nom.	Pin ¹⁾	S max.	T max.	S max.	T max.	S max.	T max.	U ³⁾ nom.
9.6 (3/8")	9.53	15.88	9.8	9.53	32.2	5.0	02804-01208	02837-01200	02838-01200	02839-01200			
	12.70	19.05		12.70			02804-01210						
	15.88	22.23		15.88			02804-01212						
	19.05	25.40		19.05			02804-01214						
	22.23	28.58		22.23			02804-01216						
	25.40	31.75		25.40			02804-01218						
	28.58	34.93		28.58			02804-01220						
	31.75	38.10		31.75			02804-01222						
	34.93	41.28		34.93			02804-01224						
	38.10	44.45		38.10			02804-01226						
	41.28	47.63		41.28			02804-01228						
	44.45	50.80		44.45			02804-01230						
	47.63	53.98		47.63			02804-01232						

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1), 2), 3) see last page / voir page 2 / siehe letzte Seite / vedi pagina 2 / ver Päg. 2



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1) Different grip range pins with different numbers of grooves are available



Tiges avec autres plages de serrage et different nombre de cannelures sont disponible.
 Bolzen mit anderem Klemmbereich und anderer Anzahl von Rillen sind verfügbar
 Sono disponibili bulloni con spessori serrabili differenti con diverso numero di scanalature
 Disponibles pernos con diferente número de anillos segun el espesor a remachar

2) Half collars increase the grip range to that of the next longest pin. Maximum grip increases by 1.57 mm (0.062") for 4.8 mm and 6.4 mm fasteners and 3.18 mm (0.125") for 8.0 mm and 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 1.57 mm pour tiges de 4.8 mm et 6.4 mm, et de 3.18 mm pour tiges de 8.0 mm et 9.6 mm.
 Die Verwendung von flachen Schließringen erhöht den Klemmbereich auf den des nächstlängeren Bolzens. Der maximale Klemmbereich erhöht sich um 1,6 mm für ø 4,8 mm und ø 6,4 mm Bolzen und 3,2 mm für ø 8,0 mm und ø 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 1.57 mm per i bulloni da 4.8 mm e 6.4 mm e di 3.18 mm per i bulloni da 8.0 mm e 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 1,57 mm para diámetros de 4,8 y 6,4 mm y de 3,18 mm para diámetros de 8 y 9,6 mm.

3) 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 taladro está sobredimensionado o es ranurado. Para calcular la referencia de perno necesaria añadir la cota U al espesor de la aplicación.

ø		
nom.	kN ⁽⁴⁾	kN ⁽⁴⁾
9.6 (3/8")	18.69	18.68

4) These figures represent minimum fastener shear and tensile strength values with the use of a full 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. 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 Standard-Schließringen. Bei Verwendung von flachen Schließringen reduziert sich die Zugfestigkeit auf ca. 45 %.

I dati si riferiscono a bulloni installati con collari Standard, 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. Cuando se utiliza medio collar se reducen aproximadamente en un 45 %.



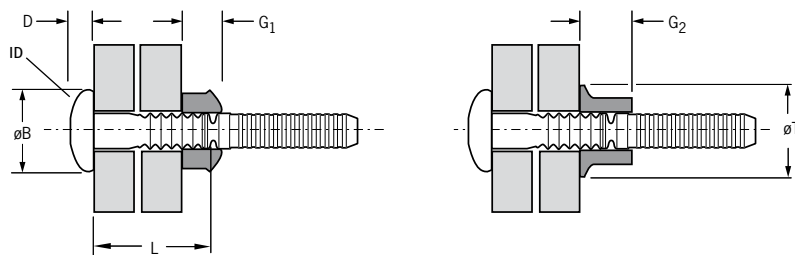
Avdelok® LD 2861



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

*: SAE 15B36 **: BS 3111 Type 0 SAE 1008 DIN 1654 Qst 34-3 ***: BS EN 12329

For Avdelok® LD with countersunk head replace part no 02861 with 02871.
 Pour un Avdelok® LD avec tête fraisée remplacer la référence 02861 par 02871
 Für Avdelok® LD mit Senkkopf ersetzen Sie die Artikel-Nr. 02861 durch 02871.
 Per Avdelok® LD con testa svasata sostituire il codice 02861 con 02871
 Para Avdelok® de Gran Diámetro con cabeza avellanada, sustituir en la referencia 02861 por 02871.



Full Collar
Schließring Standard
Bague Standard
Collar Standard
Collar Estándar

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

ø					L	ø B	D	G1	G2	ø T	Part No/ref		
	nom.	ID	min.								max.	nom.	max.
12.7 (1/2")	6	6.0	13.0	13.2 - 14.2	32.0	23.0	9.2	15.9	19.2	26.2	02861-01604	02662-01600	02615-01600
	12	12.0	19.0		38.0						02861-01608		
	18	18.0	25.0		44.0						02861-01612		
	24	24.0	31.0		50.0						02861-01616		
	31	31.0	38.0		57.0						02861-01620		
	37	37.0	44.0		63.0						02861-01624		
	44	44.0	51.0		70.0						02861-01628		
	50	50.0	57.0		76.0						02861-01632		
	57	57.0	64.0		83.0						02861-01636		
	63	63.0	70.0		89.0						02861-01640		
	70	70.0	77.0		96.0						02861-01644		
	77	77.0	84.0		103.0						02861-01648		
	83	83.0	90.0		109.0						02861-01652		
	89	89.0	96.0		115.0						02861-01656		
	95	95.0	102.0		121.0						02861-01660		

all dimensions in mm / en millimètres / alle Maße in mm / in millimetri / en milímetros

1) see page 3 / voir page 3 / siehe Seite 3 / vedi pagina 3 / ver Pág. 3



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Avdelok® LD 2861

ø					L	ø B	D	G1	G2	ø T	Part No/ref		
	nom.	ID	min.								max.	nom.	max.
15.9 (5/8")	6	6.0	13.0	16.4 - 17.5	36.0	30.0	11.3	21.9	24.3	32.3	02861-02004	02662-02000	02615-02000
	12	12.0	19.0		42.0						02861-02008		
	18	18.0	25.0		48.0						02861-02012		
	24	24.0	31.0		54.0						02861-02016		
	31	31.0	38.0		61.0						02861-02020		
	37	37.0	44.0		67.0						02861-02024		
	44	44.0	51.0		74.0						02861-02028		
	50	50.0	57.0		80.0						02861-02032		
	57	57.0	64.0		87.0						02861-02036		
	63	63.0	70.0		93.0						02861-02040		
	70	70.0	77.0		100.0						02861-02044		
	77	77.0	84.0		107.0						02861-02048		
	83	83.0	90.0		113.0						02861-02052		
	89	89.0	96.0		119.0						02861-02056		
	95	95.0	102.0		125.0						02861-02060		
19.1 (3/4")	6	6.0	13.0	19.6 - 20.5	39.0	35.0	13.5	24.3	29.0	38.7	02861-02404	02662-02400	02615-02400
	12	12.0	19.0		45.0						02861-02408		
	18	18.0	25.0		51.0						02861-02412		
	24	24.0	31.0		57.0						02861-02416		
	31	31.0	38.0		64.0						02861-02420		
	37	37.0	44.0		70.0						02861-02424		
	44	44.0	51.0		77.0						02861-02428		
	50	50.0	57.0		83.0						02861-02432		
	57	57.0	64.0		90.0						02861-02436		
	63	63.0	70.0		96.0						02861-02440		
	70	70.0	77.0		103.0						02861-02444		
	77	77.0	84.0		110.0						02861-02448		
	83	83.0	90.0		116.0						02861-02452		
	89	89.0	96.0		122.0						02861-02456		
	95	95.0	102.0		128.0						02861-02460		
22.2 (7/8")	6	6.0	13.0	22.8 - 23.7	42.0	41.0	15.3	28.2	33.7	41.0	02861-02804	02662-02800	02615-02800
	12	12.0	19.0		48.0						02861-02808		
	18	18.0	25.0		54.0						02861-02812		
	24	24.0	31.0		60.0						02861-02816		
	31	31.0	38.0		67.0						02861-02820		
	37	37.0	44.0		73.0						02861-02824		
	44	44.0	51.0		80.0						02861-02828		
	50	50.0	57.0		86.0						02861-02832		
	57	57.0	64.0		93.0						02861-02836		
	63	63.0	70.0		99.0						02861-02840		

all dimensions in mm / en millimètres / alle Maße in mm / in millimetri / en milímetros

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Avdelok® LD 2861

ø					L	ø B	D	G1	G2	ø T	Part No/ref		
	nom.	ID	min.								max.	nom.	max.
22.2 (7/8")	70	70.0	77.0	22.8 - 23.7	106.0	41.0	15.3	28.2	33.7	41.0	02861-02844	02662-02800	02615-02800
	77	77.0	84.0		113.0						02861-02848		
	83	83.0	90.0		119.0						02861-02852		
	89	89.0	96.0		125.0						02861-02856		
	95	95.0	102.0		131.0						02861-02860		
25.4 (1")	6	6.0	13.0	26.0 - 27.0	46.0	47.0	17.7	32.0	38.0	48.5	02861-03204	02662-03200	02615-03200
	12	12.0	19.0		52.0						02861-03208		
	18	18.0	25.0		58.0						02861-03212		
	24	24.0	31.0		64.0						02861-03216		
	31	31.0	38.0		71.0						02861-03220		
	37	37.0	44.0		77.0						02861-03224		
	44	44.0	51.0		84.0						02861-03228		
	50	50.0	57.0		90.0						02861-03232		
	57	57.0	64.0		97.0						02861-03236		
	63	63.0	70.0		103.0						02861-03240		
	70	70.0	77.0		110.0						02861-03244		
	77	77.0	84.0		117.0						02861-03248		
	83	83.0	90.0		123.0						02861-03252		
	89	89.0	96.0		129.0						02861-03256		
95	95.0	102.0	135.0	02861-03260									

all dimensions in mm / en millimètres / alle Maße in mm / in millimetri / en milímetros

1) Use of a flanged collar reduces the stated grip range as follows: / L'utilisation d'une bague à embase réduit la plage de serrage de : / Bei Verwendung eines Schließringes mit Bund reduziert sich der angegebene Klemmbereich um die genannten Werte: / L'uso del collare flangiato riduce il campo dello spessore serrabile come segue: / El empleo de collares con ala reduce los espesores a remachar indicados en: ø 12.7 mm: 3 mm; ø 15.9 mm: 4 mm; ø 19.1 mm: 5 mm; ø 22.2 mm: 5.5 mm; ø 25.4 mm: 6 mm

ø			
nom.	kN	kN	kN
12.7 (1/2")	64.0	75.8	53.6
15.9 (5/8")	100.0	120.5	85.4
19.1 (3/4")	144.1	178.4	126.3
22.2 (7/8")	193.0	246.6	174.6
25.4 (1")	251.3	323.4	229.1

The strength of the joints will vary with the thickness and hardness of the metal sheet of the application. The performance figures shown are minimum values of installed fastener. Round head in carbon steel is equivalent to ASTM A325 high strength bolts and meets performance requirements of BS 7805. These values are comparable to property class 8.8 threaded products.

Les caractéristiques de l'assemblage dépendent de la dureté et de l'épaisseur du matériau support. Les données indiquées sont des valeurs minimales. Une version acier tête plate est équivalente à un boulon haute résistance suivant la norme ASTM A325 et atteint les performances de la norme BS7805. Ces valeurs de performance sont comparables à un boulon de classe 8.8.

Die Festigkeit der Fugstellen variiert mit der Materialstärke und -härte der verwendeten Bauteile. Die genannten Belastungswerte sind die Mindestwerte des gesetzten Verbinders. Rundkopf in Stahl ist äquivalent zu ASTM A325 hochfesten Bolzen und entspricht den Anforderungen der BS 7805. Diese Werte sind mit einem Gewindeprodukt der Festigkeitsklasse 8.8 gleichzusetzen.

La forza dei giunti varierà con lo spessore serrabile e la durezza del materiale dell'applicazione. I valori delle prestazioni indicate sono i valori minimi del fastener installato. La testa tonda in acciaio al carbonio è equivalente a ASTM A325 per bulloni ad elevata resistenza ed è conforme alle prestazioni richieste da BS 7805. Questi valori sono comparabili alla classe di resistenza 8.8 dei prodotti filettati.

La resistencia de la unión variará con el espesor y dureza de la chapas a unir. Los valores de resistencia indicados, son valores mínimos del remache colocado. La resistencia de remache cabeza alomada en acero al carbono es equivalente a los tornillos de alta resistencia según la ASTM A325 y cumple con las exigencias de la BS 7805. Estos valores son equivalentes a la calidad 8.8 de los productos roscados.



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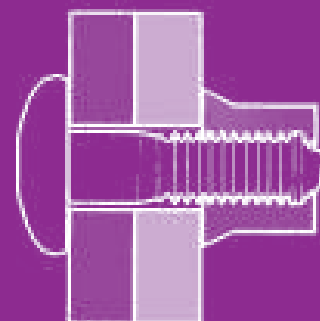
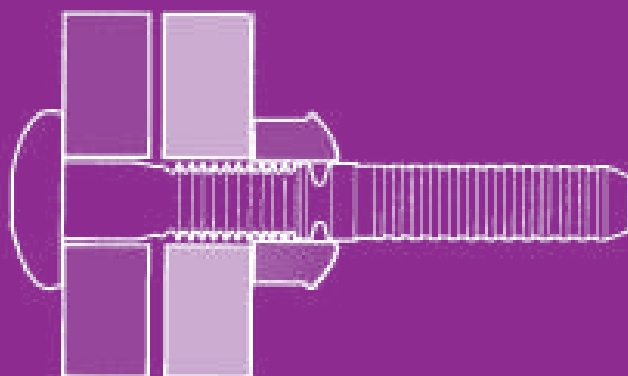
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Large diameter Avdelok[®]

Boulons à sertir



FIXATION HAUTE RÉSISTANCE

Large Diameter Avdelok®

Présentation

Les Avdelok® grands diamètres sont des fixations à très haute résistance composées d'une bague à sertir sur une tige cannelée. Ce procédé simple et utilisé depuis de nombreuses années permet d'effectuer un assemblage là où souder n'est pas possible où lorsque des impératifs de sécurité interdisent tout produit démontable.

Caractéristiques et avantages

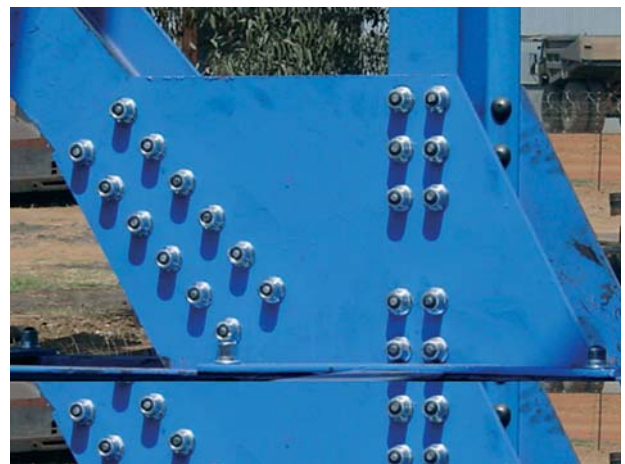
Tension résiduelle obtenue par tension de la fixation, fiabilité et résistance dans le temps de l'assemblage
Cannelures de verrouillage pour une résistance élevée aux vibrations

Rapidité de pose : coûts de mise en œuvre réduits, augmentation de la productivité

L'outil assure seul la pose correcte qui ne dépend pas de l'expérience de l'opérateur. Moindre fatigue pour l'utilisateur

Facilité d'utilisation, ne nécessite pas d'avoir recours à une main d'œuvre qualifiée

Contrôle visuel de la pose : L'accostage des pièces peut être vérifié par un simple contrôle des dimensions



Applications

Avec des résistances à l'arrachement dépassant 300 kN, les boulons à sertir Avdelok® grand diamètre sont largement utilisés dans les industries ferroviaires, minières ou dans le bâtiment.

Gamme

Tête ronde ou fraisée

5 diamètres : 13, 16, 19, 22 et 25 mm

Serrage de 6 à 102 mm par pas de 6,3mm



Matière et finition

Tige : Acier, brut

Bague : Acier zingué (avec embase en option)

Outil de pose robuste et fiable pour des conditions d'utilisation exigeantes et une durée de vie allongée.

Pour la pose de:

- Avbolt®
- Large diameter Avdelok®

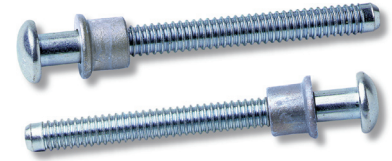


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Notice:

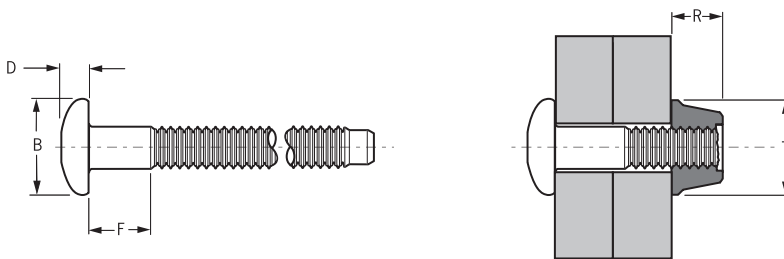
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Maxlok® 1901



English	Français	Deutsch	Italiano	Español
Brazier head	Tête plate	Flachrundkopf	Testa tonda	Cabeza alomada
Pin: Medium carbon steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero medio al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras Pasivado claro trivalente

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



ø	Thread		B	D	F	R	T	Pin	Collar	Part No/ref	Part No/ref	
	min.	max.										max.
4.8 (3/16")	1.6	15.9	5.16	10.1	3.2	2.3	8.7	10.1	8.25	10.01	01901-70610	01981-70600
	7.9	31.7									8.4	
6.4 (1/4")	1.6	15.9	6.75	13.3	3.9	2.2	13.5	13.2	11.79	16.01	01901-70810	01981-70800
	7.9	31.7									9.1	

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) typical values / valeurs moyennes / typische Werte / Valori tipici / resistencias máximas recomendadas



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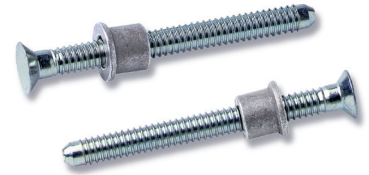
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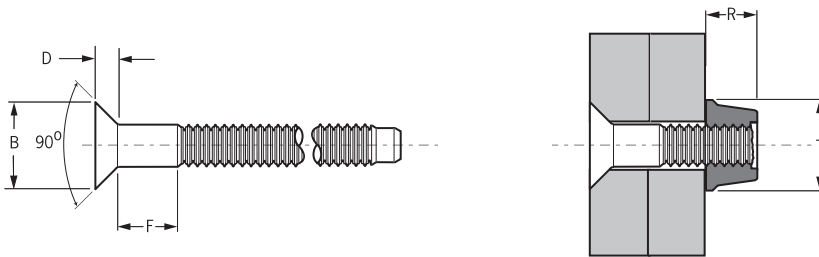
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Maxlok® 1902



English	Français	Deutsch	Italiano	Español
90° Countersunk	90° Tête fraisée	90° Senkkopf	90° Testa svasata	90° Cabeza avellanada
Pin: Medium carbon steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero medio al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras Pasivado claro trivalente

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



Ø	[Cross-section diagram]		[Thread diagram]	B	D	F	R	T	[Torque diagram]	[Torque diagram]	Part No/ref	Part No/ref
	min.	max.										
4.8 (3/16")	2.4	15.9	5.16	8.9	2.2	4.3	8.7	10.1	8.25	10.01	01902-70610	01981-70600
	7.9	31.7				9.4					01902-70620	

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) typical values / valeurs moyennes / typische Werte / Valori tipici / resistencias máximas recomendadas



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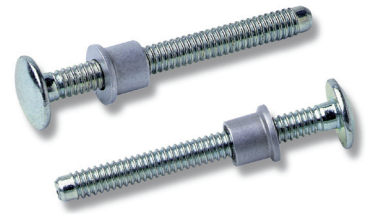
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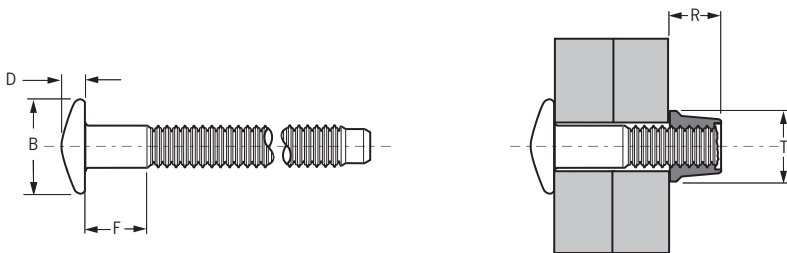
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Maxlok® 1903



English	Français	Deutsch	Italiano	Español
Mushroom head	Tête large	Rundkopf groß	Testa larga	Cabeza alomada de perfil alto
Pin: Medium carbon steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero medio al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras Pasivado claro trivalente

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



ø	[Cross-section diagram]		[Thread diagram]	B	D	F	R	T	[Torque diagram]	[Torque diagram]	Part No/ref	Part No/ref
	min.	max.										
4.8 (3/16")	1.6	15.9	5.16	12.5	2.9	2.3	8.7	10.1	8.25	10.01	01903-70610	01981-70600
	7.9	31.7				8.4					01903-70620	
6.4 (1/4")	1.6	15.9	6.75	16.7	3.2	2.2	13.5	13.2	11.79	16.01	01903-70810	01981-70800
	7.9	31.7				9.1					01903-70820	
	27.9	51.7				29.1					01903-70832	

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) typical values / valeurs moyennes / typische Werte / Valori tipici / resistencias máximas recomendadas



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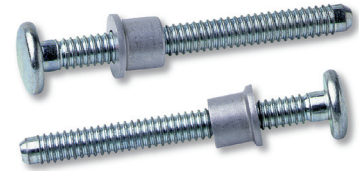
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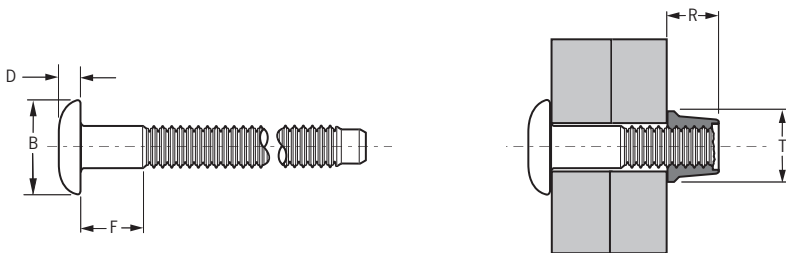
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Maxlok® 1905



English	Français	Deutsch	Italiano	Español
Truss head	Tête large	Flachrundkopf groß	Testa larga	Cabeza alomada de perfil bajo
Pin: Medium carbon steel* Zinc plated, thickness 8 µm Clear trivalent passivated	Tige: Acier* Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Bolzen: Stahl* Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Bullone: Acciaio a carbonio* Zincatura spessore 8 µm Passivazione chiara trivalente	Vástago: Acero medio al carbono* Zincado, 8 micras Pasivado claro trivalente
Collar: Low carbon steel** Zinc plated, thickness 8 µm Clear trivalent passivated	Bague: Acier bas carbone** Revêtement zingué, épaisseur 8 µm Passivation claire trivalente	Schließring: Stahl** Verzinkt, 8 µm Klar chromatiert, Cr6-frei	Collare: Acciaio a basso tenore di carbonio** Zincatura spessore 8 µm Passivazione chiara trivalente	Collar: Acero bajo en carbono** Zincado, 8 micras Pasivado claro trivalente

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



ø	B		D	F	R	T	kN ¹⁾	kN ¹⁾	Part No/ref	Part No/ref		
	min.	max.									max.	max.
4.8 (3/16")	1.6	15.9	5.16	12.0	2.9	2.3	8.7	10.1	8.25	10.01	01905-70610	01981-70600
	7.9	31.7									8.4	
6.4 (1/4")	1.6	15.9	6.75	15.2	3.1	2.2	13.5	13.2	11.79	16.01	01905-70810	01981-70800
	7.9	31.7									9.1	

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) typical values / valeurs moyennes / typische Werte / Valori tipici / resistencias máximas recomendadas



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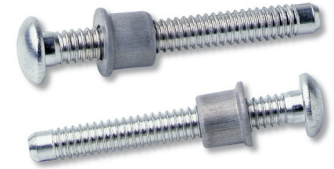
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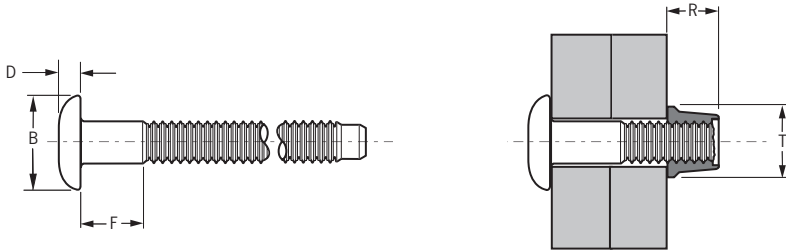
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Maxlok® 1921



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

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



ø	B		max.	B	D	F	R	T	kN ¹⁾	kN ¹⁾	Part No/ref	Part No/ref
	min.	max.										
4.8 (3/16")	1.6	15.9	5.16	10.0	3.4	2.3	7.9	9.9	4.23	5.78	01921-00610	01985-00600
	7.9	31.7				8.4					01921-00620	
6.4 (1/4")	1.6	15.9	6.75	13.3	4.2	2.2	11.1	13.0	7.45	9.79	01921-00810	01985-00800
	7.9	31.7				9.1					01921-00820	

all dimensions in mm / en millimètre / alle Maße in mm / in millimetri / en milímetros

1) typical values / valeurs moyennes / typische Werte / Valori tipici / resistencias máximas recomendadas



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