

Masterfix Masterbulb

The Masterfix Masterbulb is a newcomer in the assortment of standard high strength rivets Masterfix is offering.

The steel as well as the stainless steel Masterbulb rivets forms a very large secondary flange on the back side after setting. This makes this rivet ideal for high strength assembly in thin sheets.

Advantages

High tensile and shear strengths

Permanent mandrel retention, avoids rattling of rest-mandrels

Good hole filling capacity compensates oversized, slotted or misaligned holes

Provides a large back side bearing area

Good spreading of the clamping load

Vibration resistant

No special tooling or “nose piece” is needed

Applications

Automotive industry

Electronics & Telecom industry

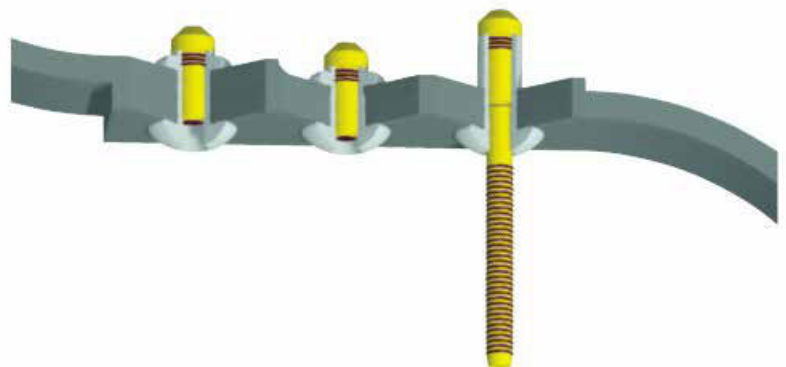
Cabinets and enclosures

White goods

HVAC industry

Construction work

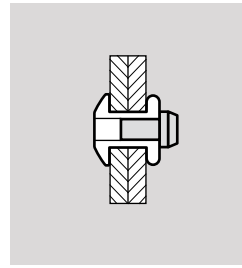
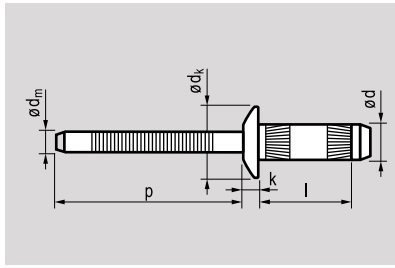
Repair & Service industry









Info

 **Stainless steel**
Polished

 **Stainless steel**
Polished



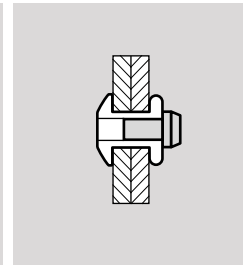
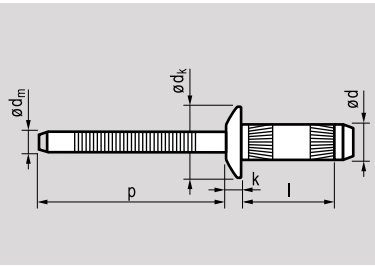
MASTERBULB | high strength | dome head

$\varnothing d$	l [+1/-0,2]		Item nr.	$\varnothing d_k$ [max.]	k [max.]	$\varnothing d_m$	p		
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
3,2	6,6	1,0-3,0	16113207						1.600
[+0,09/-0,15]	9,2	3,0-5,0	3209	6,8	1,4	~2,10	≥27	2.000	1.700
	11,5	5,0-7,0	3211						2.500
$\varnothing 3,3$ [3,4 max]									
4,0	7,5	1,0-3,0	16114008						
[+0,09/-0,15]	9,5	3,0-5,0	4010	8,0	1,5	~2,60	≥27	4.000	4.200
	12,5	5,0-7,0	4012						
$\varnothing 4,1$ [4,3 max]									
4,8	10,0	1,5-3,5	16114809						
[+0,09/-0,15]	12,0	3,5-6,0	4812	9,6	1,5	~3,20	≥27	5.000	5.500
	14,3	6,0-8,5	4814						
$\varnothing 4,9$ [5,1 max]									









 **Steel**
Zinc plated

 **Steel**
Zinc plated



MASTERBULB I high strength I dome head

$\varnothing d$	l [+1/-0,2]		Item nr.	$\varnothing d_k$ [max.]	k [max.]	$\varnothing d_m$	p		
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
3,2	6,6	1,0-3,0	16213207						1.200
[+0,09/-0,15]	9,2	3,0-5,0	3209	6,8	1,4	~2,00	≥27	1.300	1.700
	11,5	5,0-7,0	3211						2.500
$\varnothing 3,3$ [3,4 max]									
4,0	7,5	1,0-3,0	16214008						
[+0,09/-0,15]	9,5	3,0-5,0	4010	8,0	1,5	~2,60	≥27	2.800	3.500
	12,5	5,0-7,0	4012						
$\varnothing 4,1$ [4,3 max]									
4,8	10,0	1,5-3,5	16214809						
[+0,09/-0,15]	12,0	3,5-6,0	4812	9,6	1,5	~3,00	≥27	3.800	4.200
	14,3	6,0-8,5	4814						
$\varnothing 4,9$ [5,1 max]									

Masterfix high strength rivets

Masterfix High strength rivets are especially designed for heavy applications, for example in the automotive industry and in the construction industry. In short, everywhere, where high loads are combined with a need for reliability.

High strength rivets are known for their high tensile and shear strengths and mandrel retention capacity.

MASTERLOCK II

MASTERLOCK

The Masterlock has been engineered to fulfil a market need for a high clamp blind fastener, for thin sheet applications. Large diameter head and broad secondary flange diffuses the load over a large area, ensuring permanent clamp. This unique fastener also offers a tapered hole-seeking tip, which ensures quick and easy installation.

P-LOCK

P-LOCK

The blind rivet with a multigrip clamping range and a high tensile and shear strength offers a high resistance to vibrations and a good watertight connection. After setting, the rest mandrel is retained in the body permanently, because of the special mandrel locking system.

Advantages

- The special locking mechanism increases the clamping force
- After setting, the mandrel is locked permanently
- A 100% watertight connection
- High resistance to vibrations
- Large clamping capacity





Applications

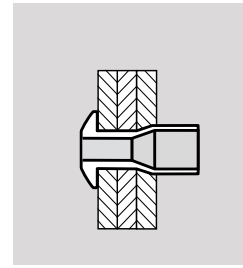
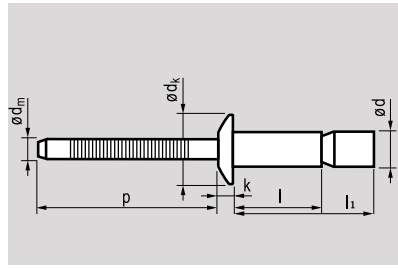
Automotive industry
Containers
Coach works

Truck building
Construction work





Info



-  **Steel**
Zinc plated
-  **Steel**
Zinc plated



P-LOCK | high strength | dome head

$\varnothing d$	l (I1) [max.]		Item nr.	$\varnothing d_k$	k	$\varnothing d_m$	p		
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
6,4	14,0 (23,7)	2,03-9,53	17616414	12,7	$\leq 2,9$	$\sim 4,00$	≥ 27	10.400	11.700
[+0,18/-0,05]	20,0 (33,0)	2,03-15,87	6420	[+/-0,7]					
 $\varnothing 6,6-7,0$									



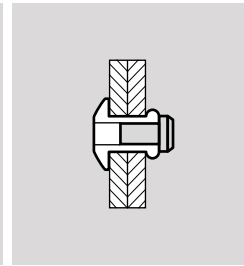
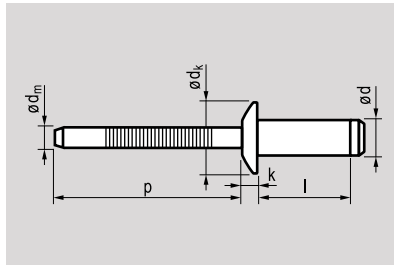
- This rivet requires to be set with a special nose piece.
The nose piece can be ordered at Masterfix.
Nose piece 6,4: item number O900P00040

- Minimal setting force required 13,5 kN
Check tool specifications for complete information.




 **Steel**
Zinc plated

 **Steel**
Zinc plated

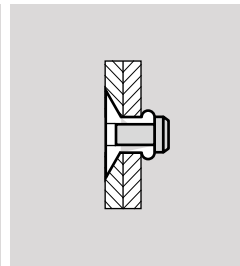
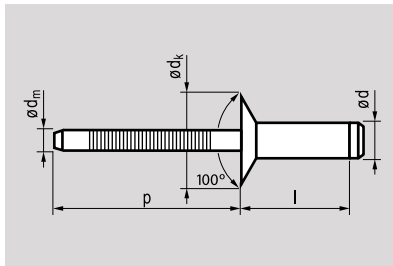


MASTERLOCK I high strength I dome head





$\varnothing d$	l [+1/-0,3]		Item nr.	$\varnothing d_k$	k	$\varnothing d_m$	p		
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
6,4	10,5	2,8-4,8	14716410						
[+0,11/-0,05]	12,5	4,8-6,8	6412						
	14,5	6,8-8,8	6414	13,0	3,0	~4,17	≥32	6.600	min. 5.390
$\varnothing 6,6$ [6,8 max]	16,5	8,8-10,8	6416	[+/-0,3]	[+/-0,2]				max. 11.180
	18,5	10,8-12,8	6418						
	20,5	12,8-14,8	6420						

 **Steel**
Zinc plated

 **Steel**
Zinc plated



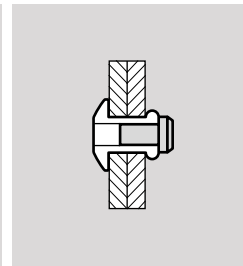
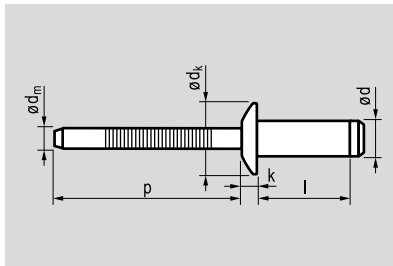
MASTERLOCK I high strength I countersunk head

$\varnothing d$	l [+1/-0,2]		Item nr.	$\varnothing d_k$	k	$\varnothing d_m$	p		
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
6,4	11,5	3,8-5,8	14746411						
[+0,11/-0,05]	12,5	4,8-6,8	6412						
	13,5	5,8-7,8	6413	10,0	2,0	~4,17	≥32	5.490	min. 5.390
$\varnothing 6,6$ [6,8 max]	15,5	7,8-9,8	6415	[+/-0,3]	[+/-0,2]				max.10.300
	17,5	9,8-11,8	6417						
	19,5	11,8-13,8	6419						





 **Aluminium [AlMg2,5]**
Polished

 **Aluminium [AlMg6,0]**
Polished



MASTERLOCK I high strength I dome head

$\varnothing d$	l [+/-0,3]		Item nr.	$\varnothing d_k$	k	$\varnothing d_m$	p	$\frac{\uparrow}{\downarrow}$	$\frac{\leftarrow}{\rightarrow}$
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
6,4	10,5	2,8-4,8	15116410						
[+0,11/-0,05]	12,5	4,8-6,8	6412						
	14,5	6,8-8,8	6414	13,0	3,0	~4,17	≥32	3.500	5.000
$\varnothing 6,6$ [6,8 max]	16,5	8,8-10,8	6416	[+0/-0,3]	[+/-0,2]				
	18,5	10,8-12,8	6418						
	20,5	12,8-14,8	6420						

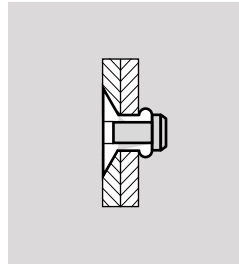
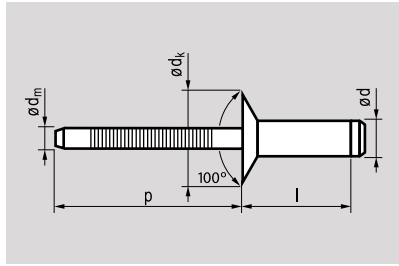
MFX 1514



Aluminium [AlMg2,5]
Polished



Aluminium [AlMg6,0]
Polished

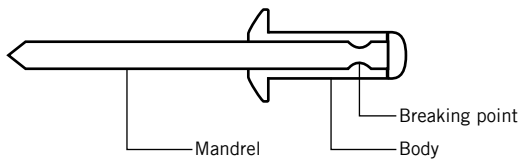


MASTERLOCK I high strength I countersunk head

$\varnothing d$	l [+1/-0,2]		Item nr.	$\varnothing d_k$	k	$\varnothing d_m$	p	$\begin{matrix} \updownarrow \\ \text{---} \\ \updownarrow \end{matrix}$	$\begin{matrix} \rightleftarrows \\ \text{---} \\ \rightleftarrows \end{matrix}$
[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[N]	[N]
6,4	11,5	3,8-5,8	15146411						
[+0,11/-0,05]	13,5	5,8-7,8	6413						
	15,5	7,8-9,8	6415	10,0	2,0	~4,17	≥32	3.000	4.000
$\varnothing 6,6$ [6,8 max]	17,5	9,8-11,8	6417	[+0/-0,3]	[+/-0,2]				
	18,5	11,8-13,8	6419						
	21,5	13,8-15,8	6421						

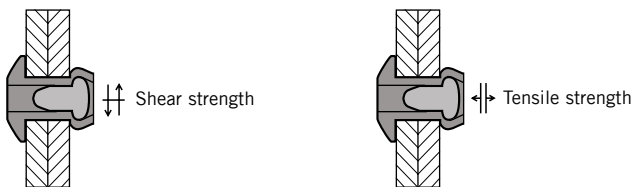
Blind rivet breaking point

The rivet is made of two parts namely, the body and the mandrel. The body is deformed when the rivet is set and it is this part which clamps the materials together. The function of the mandrel is to deform the body of the rivet. The mandrel is therefore always stronger than the body. The mandrel breaks off at its specific breaking point. The breaking point ensures that the mandrel breaks off at the right moment so that the body is correctly deformed. The breaking load can be adjusted so that the mandrel breaks at a sooner or a later point of time.



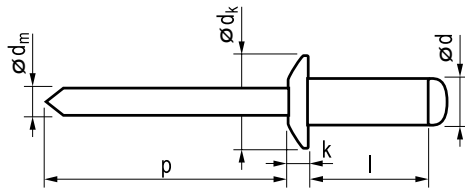
Tensile and shear strength

The tensile strength is the maximum force the rivet, rivet nut or rivet bolt can bear lengthways (see arrows) before it gives out. The tensile strength is obtained through tests and is always the smallest average value. The shear strength is the maximum force the rivet, rivet nut or rivet bolt can bear vertical to its length (see arrows) before it gives out. The shear strength is obtained through tests and is always the smallest average value. By changing the breaking point, the shear strength will be increased or decreased. Both tensile and shear strength are expressed in Newton ($1 \text{ kg} = 10 \text{ N}$).



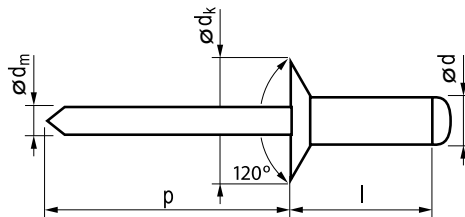
Technical details

Dimensioning rivets

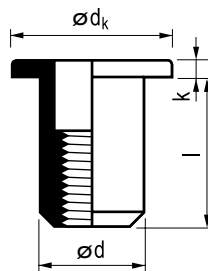


Standard rivet (all sizes in mm)

- $\varnothing d$ = Rivet body diameter
- $\varnothing d_k$ = Head diameter
- $\varnothing d_m$ = Mandrel diameter
- k = Head height
- l = Rivet body length
- p = Mandrel length

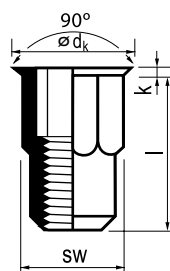


Dimensioning rivet nuts



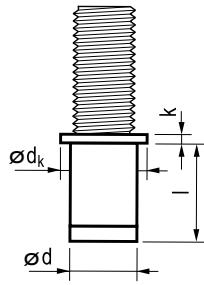
Standard rivet nut (all sizes in mm)

- $\varnothing d$ = Rivet nut body diameter
- $\varnothing d_k$ = Head diameter
- k = Head height
- l = Rivet nut body length
- sw = Key size



Technical details

Dimensioning rivet bolts



Standard rivet bolt (all sizes in mm)

$\varnothing d$ = Rivet nut body diameter

$\varnothing d_k$ = Head diameter

k = Head height

l = Rivet nut body length

Technical details

Aluminium AL 99,5

Low weight

Easy to deform

Highly electrical and warmth conductive

Aluminium alloys AlMg

Solid and strong - easy to polish

If the degree of Mg increases, the strength of the rivet increases and the deformability decreases

Steel

Suitable for heavy constructions

Easy to deform

Easy to coat (e.g. with anti-corrosion coating)

Stainless steel

Highly resistant to corrosion

Suitable for heavy constructions

A4 has a higher resistance to acids than A2

Copper

Highly electrical and warmth conductive

Easy to deform

Suitable for soldering

Material features

Contact corrosion

When different metals come in contact with each other, contact corrosion will arise. The table below shows how the different materials combine.

Material rivet body	Material to be connected			
	Aluminium	Copper	Steel	Stainl.steel
Aluminium	++	--	+	+
Copper	--	++	--	+
Steel	+	--	++	++
Stainl. steel	+	+	++	++
i Monell"	--	+	++	+

++ very good | + good | - moderate | -- bad

Coatings

Corrosion can never be reduced to 0%. However, coatings can help to reduce the chance of corrosion or delay corrosion:

Painting

2-Components painting is possible in many colors. All RAL-colours can be delivered on request.

Zinc plating

This is a coating obtained through electrolysis and consists of a Zinc-iron alloy. This coating is characterized by a high resistance to wear and tear.

Material features

STANLEY
Engineered Fastening

Edition September 2015

