PSM International
GLOBAL FASTENING SOLUTIONS

The **MINARB**® is a miniature **ANCHOR**® RIVET BUSH designed for applications where space or distance to the sheet edge is at a premium. Weight saving is one reason the MINARB® may be selected. A standoff version (MINOFF) allows the body length to be specified, thus providing a captive threaded spacer.

ADVANTAGES

- IDEAL FOR BOTH THINNER AND HARDER SHEET METALS
- CAN BE INSTALLED BY HAND OR AUTOMATIC METHODS
- SUITABLE FOR USE IN PUNCHED OR DRILLED HOLES
- CAN BE SUPPLIED FOR SHEET THICKNESSES FROM 0.5MM TO 3.0MM
- CAN BE INSTALLED CLOSE TO EDGE OF SHEET
- PROVIDES AN ALMOST FLUSH FINISH

DESIGN GUIDE

HOLE SIZE IN SHEET
Holes may be punched or drilled and a tolerance of -0.00 +0.1mm should be maintained.

INSTALLATION
It is essential that the correct design of riveting punch is always used (see Assembly Punch data).
For consistent results a press is recommended, however small quantities may be installed using hand tools.

STAND OFF TYPES
Where minimum projection is not essential there are performance advantages in specifying the next larger shank code.
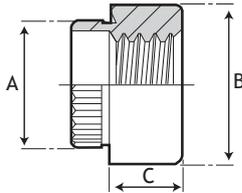
DIRECTION OF LOAD
Although the mating component can be fastened to either side of the bush, maximum performance will be achieved when fastening to the riveted shank side.
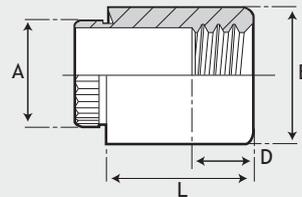
TECHNICAL DATA MINARB®

BUSHES

Product Code MINARB®

STANDARD MATERIAL - Mild Steel (S)
STANDARD FINISH - Zinc & Clear Trivalent Passivation (Z).
Other materials and finishes possible on quotation.

STAND OFFS

Product Code MINOFF

DIMENSIONS

INTERNAL THREAD SIZES		Dia.of Shank A	Dia.of Body B	Depth of Body C	Thread Length D	Rec Hole Size -0.00+0.10
Unified	ISO Metric	mm	mm	mm	ARBSO	mm
2	2	3.5	5.0	2.3	2.8	3.6
-	2.5	4.2	5.5	2.8	3.3	4.3
4	3	4.2	5.5	2.8	3.3	4.3
6	3.5	5.4	7.0	3.2	3.8	5.5
8	4	5.4	7.0	3.2	3.8	5.5
10	5	6.4	8.5	3.8	4.3	6.5
1/4	6	7.6	10.0	5.1	5.6	7.7
5/16	8	9.7	12.0	6.5	7.0	9.8

MINOFF-Lengths Available('L')

MILLMETRES	3	4	5	6	8	10	12	14	16	18	20
SHANK CODE	001	003	004	006	008	010	012	013	014	016	
SHEET THICKNESS	0.5-0.6	0.7-0.8	0.9-1.0	1.1-1.3	1.4-1.6	1.7-1.9	2.0-2.2	2.3-2.5	2.6-2.8	2.9-3.1	

HOW TO SPECIFY

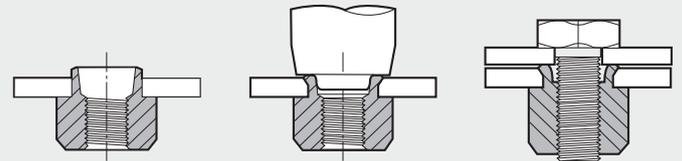| MINARB	
PRODUCT CODE	MINARB-M4-008-S-Z
THREAD SIZE	MINARB-M4-008-S-Z
SHANK CODE	MINARB-M4-008-S-Z
MATERIAL CODE	MINARB-M4-008-S-Z
FINISH	MINARB-M4-008-S-Z

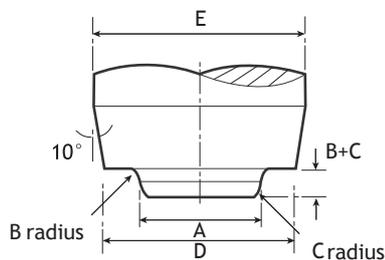| MINOFF	
PRODUCT CODE	MINOFF-M4-008-S-12MM-Z
THREAD SIZE	MINOFF-M4-008-S-12MM-Z
SHANK CODE	MINOFF-M4-008-S-12MM-Z
MATERIAL CODE	MINOFF-M4-008-S-12MM-Z
LENGTH	MINOFF-M4-008-S-12MM-Z
FINISH	MINOFF-M4-008-S-12MM-Z

MINARB® can be installed using both an "impact" and a "squeeze" action, allowing both hand and machine installation. Sheet hardness is not critical as the bush deforms rather than the sheet, during installation.

METHOD OF ASSEMBLY

1. Punch a hole in the metal sheet to the size recommended in our technical data table. De-burring of the hole is not recommended.
2. Insert the serrated shank through the hole in the sheet.
3. Using the profiled punch detailed below, rivet the shank, spreading and flattening it onto the face of the sheet.

PUNCHDET AIL

Thread Size		MINARB & MINOFF PUNCH				
Unified	Metric	A mm	B mm	C mm	D mm	E mm
2	M2	2.4	0.5	0.5	4.8	12.0
4	M2.5 / M3	3.1	0.5	0.5	5.5	12.0
6 /8	M3.5 / M4	4.3	0.5	0.5	7.1	12.0
10	M5	5.3	0.5	0.5	8.7	12.0
1/4	M6	6.5	0.75	0.5	10.3	12.0
5/16	M8	8.5	0.75	0.5	12.4	16.0

Punch material 1% C/Mn Steel (Silver Steel)
Water quench pilot end from 820°C, Temper at 260°C

PERFORMANCE DATA

MINARB METRIC

Thread Size	Cold Rolled Steel		Aluminum	
	Pushout (N)	Torque-out (Nm)	Pushout (N)	Torque-out (Nm)
M2	700	1.2	500	0.9
M2.5 / M3	900	1.7	720	1.2
M3.5 / M4	1300	3.4	915	2.4
M5	2250	5.3	1550	3.5
M6	2600	9.5	1850	6.7
M8	3000	13.0	2100	9.7

Tests conducted using a steel MINARB® - 008 shank code into 1.5mm sheet. For unified see equivalent metric size.

Note: *The above values are averages when correct installation is performed. Variations in holes size, material and installation will affect these results. For specific advice we strongly recommend consultation with your PSM Technology Centre.*