

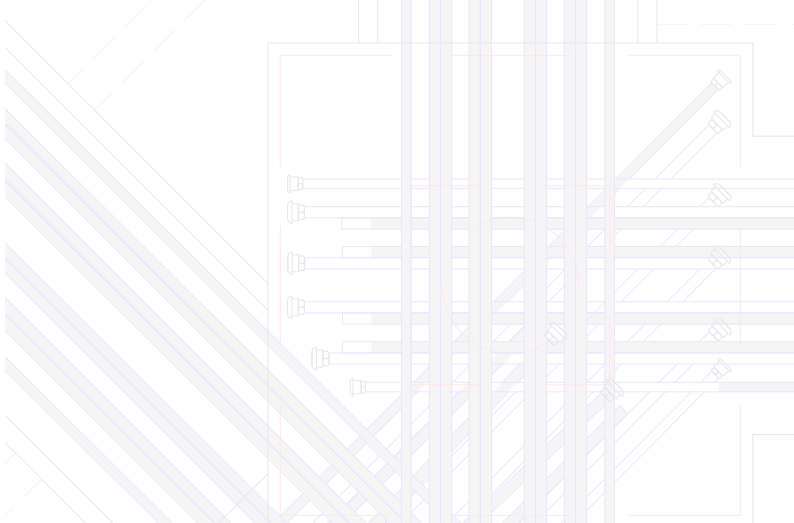


IRON MAN BAR-COUPLER MECHANICAL SPLICE

CATALOGUE

**OVERCOME
REINFORCING STEEL
CONGESTION
WITH IMBMS COUPLERS
AND TERMINATORS**

www.imbms.co.nz





INTRODUCTION

Since 1999 more than 125 million Iron Man BMS parallel threaded couplers have been supplied for almost every form of civil and commercial structure imaginable, from Olympic stadiums, nuclear power stations to mass rapid transit systems like the prestigious Singaporean deep tunnel sewage system, the Burgh Khalifa in Dubai and Rymans Healthcare's Bob Scott Retirement Village in Wellington, New Zealand.

Features and benefits of the mechanical splice system:

- Overcome steel congestion and reduce steel wastage as lap and hook bars replaced by couplers and terminators
- Superior cyclic performance compared to lap joint as coupler performs as a continuous bar
- Use of couplers significantly saves time thus reducing labour cost for fixing and installation
- IMBMS couplers knuckle design for easy use with any gripping tool
- Allows greater flexibility for designer/engineers
- Improves concrete flow in critical zones
- Parallel **rolled** thread means only 5 turns for faster fixing
- Can roll thread G300E and G500E deformed and plain from 12mm to 40mm
- Locally tested and compliant to NZS 3101 clause 8.7.5.2 and meets seismic and slip requirements of ISO 15835:2009
- Meets the requirements of NZTA 3rd Edition Bridges Manual (SP/M/022)

THREADING

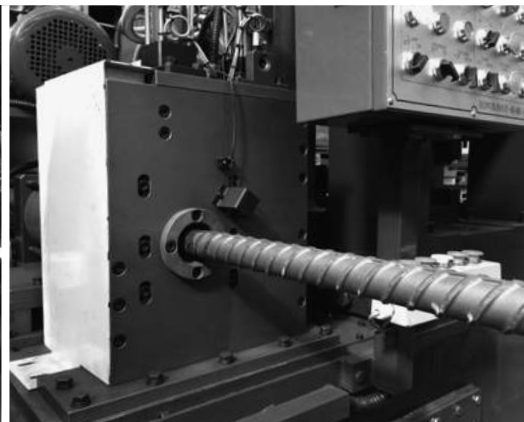
The Cold forming method is essentially simple – the shape of the end of the rebar to be threaded, is modified via a round accurately predetermined sized steel die set. The forming load is minimal and applied transversely to the grain flow of the material, this in effect aligns the grain flow of the ribs and the core diameter. The core diameter and ribs are formed to

an accurate circular shape suitable to thread roll. For a standard thread suitable for the 32mm Type A rebar coupler this takes approximately 10 seconds.

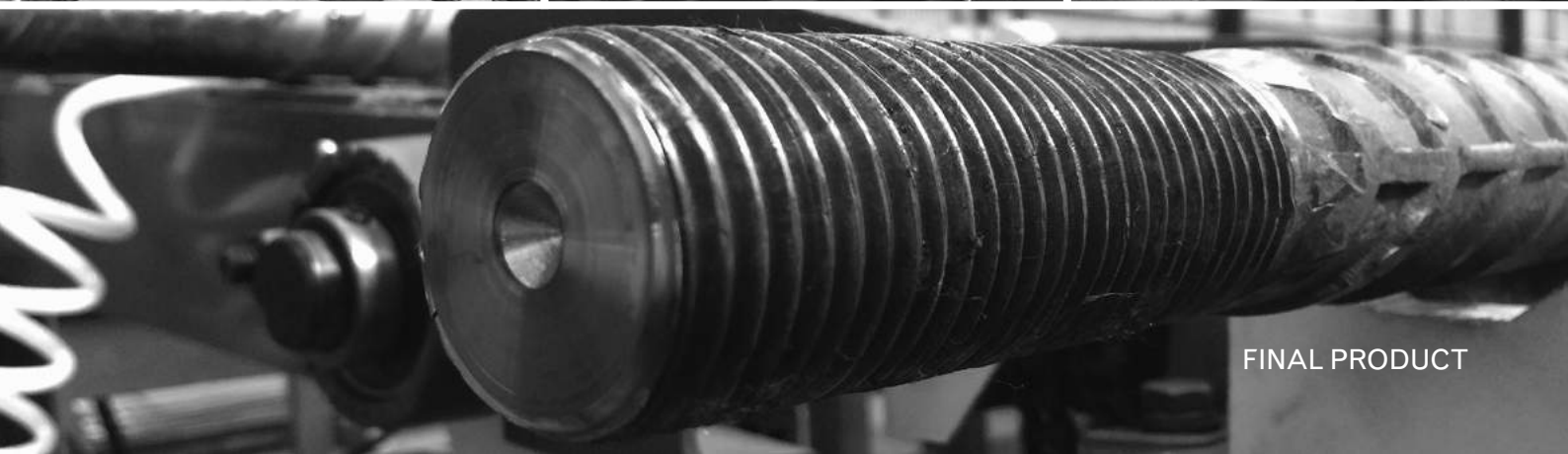
STEP 1



STEP 2



STEP 3



FINAL PRODUCT

HIGH TENSILE STRENGTH IMBMS-BAR COUPLER

IMBMS-BAR COUPLER

The couplers are designed to provide high tensile strength connections with external ribs or spanner

flats, for easy gripping by hand tools; such as spanner, pipe wrench and chain wrench etc.

Protected knuckles – Increase bond strength

The surface of the coupler has hexagonal shape knuckles, increasing bond strength.

Batch marking

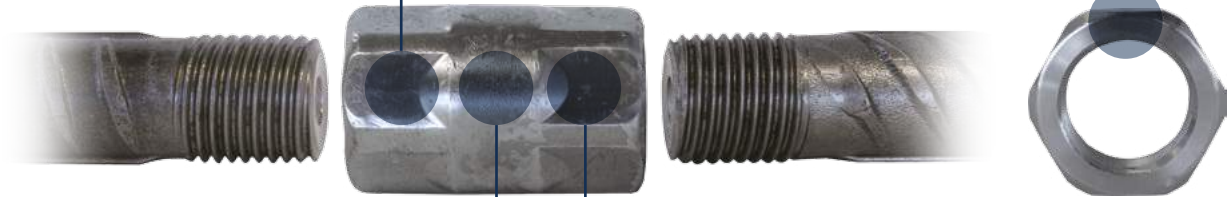
All products are marked with 'IMBMS', size and production batch numbers.

Reinforcing ring

The centre section form adds strength to the coupler without increasing diameter. It is suitable for ultra high strength reinforcing steel bars.

Hexagonal seat for gripping tool

Spanner seats are provided at both ends for easy connection by fixing tools.



IMBMS-BAR (NORMAL-TEMPERATURE SWAGED BAR COUPLER)

Attributes:

- Meets NZ 3101
- Meets NZTA Bridge manual specification - 3rd edition specification
- Patent registration No.0316435
- No heat applied, no upsetting, no thread cutting
- Through normal-temperature swaging, original stress-resistance in tension and compression force is ensured
- Concrete placement is easy thanks to the small diameter and short length of the coupler
- Couplers are available for dissimilar sizes on request

IMBMS-BAR (NORMAL-TEMPERATURE SWAGED BAR COUPLER)



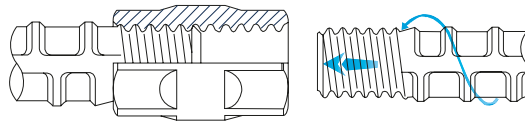
Performance is ensured

| TYPICAL TEST RESULTS-BS 8100 HOT ROLLED BARS BS.4449 | | | | |
|---|-----------------------------------|-----------------|------------------------------------|--------------|
| NOMINAL BAR SIZE | YIELD STRESS (N/mm ²) | ULTIMATE STRESS | PERMANENT ELONGATION (0.6fy) mm | FAILURE MODE |
| 50 | 516 | 651 | 0.0820 | BAR BREAK |
| 40 | 537 | 628 | 0.0721 | BAR BREAK |
| 32 | 526 | 638 | 0.0518 | BAR BREAK |
| 28 | 533 | 653 | 0.0480 | BAR BREAK |
| 25 | 540 | 638 | 0.0014 | BAR BREAK |
| 20 | 505 | 618 | 0.0021 | BAR BREAK |
| 16 | 507 | 621 | 0.0048 | BAR BREAK |
| 12 | 521 | 638 | 0.0040 | BAR BREAK |

IMBMS-BAR INSTALLATION

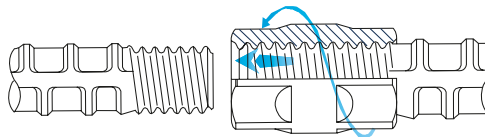
TYPE A

- Used where the continuity bar can be rotated. Final tightening is by wrench, spanner etc.
- Used for P.S.C. box at the top of the bridge: ILM, FCM, MSS method of construction, second application, slip-form construction, etc.

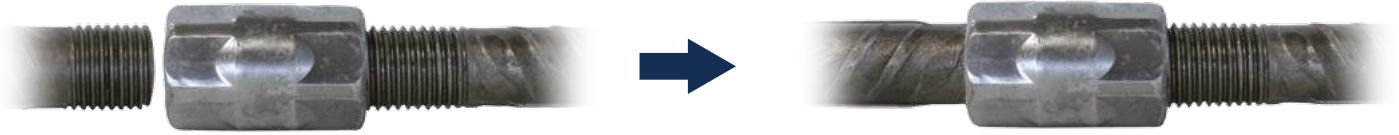


TYPE B

- We extend the bar thread at one side to allow the coupler to screw right on, flush with bar end. On assembly the bar ends are placed against each other and the coupler rotated onto the short thread to form the connection
- Turn the coupler onto the short thread to complete the assembly and tighten the bar with a wrench



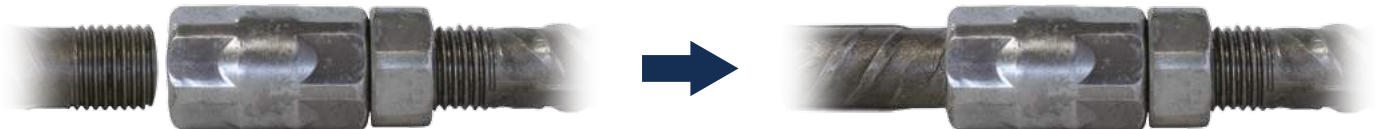
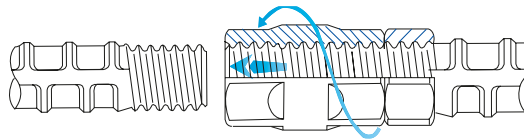
TYPE B CONT.



Used in applications of larger diameter, long bars. Where bars can be rotated but may be difficult to do so.
E.g.: Over 6 metre long 32mm bars (and above) in a horizontal plane.

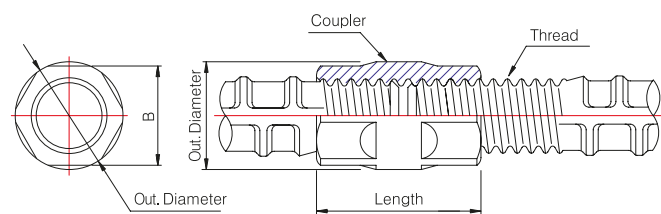
TYPE C

- We extend the bar thread at one side to allow the lock-nut and coupler to screw right on flush with bar end
- To assemble, the bar ends are placed against each other and the coupler rotated onto the short thread to form the connection. Wrench tighten the coupler onto the short bar and rotate the lock nut against the coupler and wrench tight



Used for construction of prefabricated cages, or fixing hooked/cranked bars.

COUPLER SIZE



BS.4449

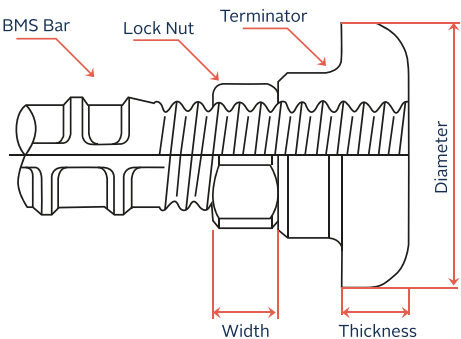
| NOMINAL BAR SIZE (Ømm) | 12 | 16 | 20 | 25(26) | 32 | 40 | 50 |
|------------------------|----|----|----|--------|----|----|-----|
| COUPLER DIAMETER (mm) | 19 | 23 | 31 | 38 | 48 | 60 | 75 |
| HEXAGON-B (mm) | 17 | 21 | 29 | 36 | 46 | 56 | 70 |
| COUPLER LENGTH | 30 | 38 | 46 | 58 | 70 | 86 | 110 |

ASTM A615/A 615M

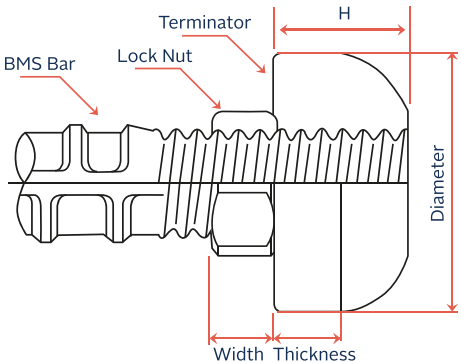
| BAR DESIGNATION (#) | 3(10) | 4(13) | 5(16) | 6(19) | 7(22) | 8(25) | 9(29) | 10(32) | 11(36) | 14(43) | 18(57) |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| COUPLER DIAMETER (mm) | 18 | 20 | 24 | 28 | 32 | 38 | 42 | 48 | 55 | 65 | 85 |
| COUPLER LENGTH | 22 | 30 | 38 | 45 | 50 | 58 | 65 | 70 | 78 | 95 | 125 |

TERMINATOR

LONGITUDINAL RE-BARS



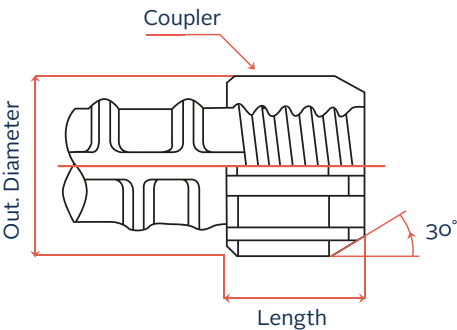
SHEAR RE-BARS



| BS.4449 | | | | | | | | | |
|----------------------|-----------|-----|----|----|----|------|-----|-----|------|
| BAR SIZE | | 12 | 16 | 20 | 25 | 28 | 32 | 40 | 50 |
| LONGITUDINAL RE-BARS | DIAMETER | 29 | 36 | 45 | 56 | 65 | 72 | 90 | 112 |
| | THICKNESS | 6 | 7 | 8 | 9 | 10 | 10 | 18 | 20 |
| | H | 15 | 19 | 23 | 29 | 32 | 35 | 43 | 55 |
| SHEER RE-BARS | DIAMETER | 32 | 51 | 64 | 80 | 89 | 102 | 127 | 159 |
| | THICKNESS | 8 | 8 | 10 | 14 | 16 | 18 | 22 | 26 |
| LOCK NUT | WIDTH | (8) | 10 | 13 | 18 | (18) | 18 | 25 | (30) |

IMBMS WELDABLE COUPLER SIZE

Weldable couplers allow unrestricted and easy placing of re-bar to steel piles, forms, etc.

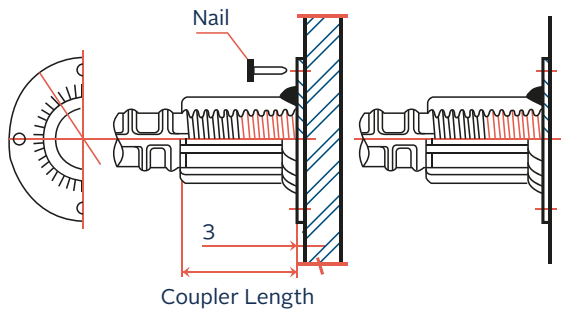


| BS. 4449 | | | | | | | | |
|-----------------------|----|----|----|----|----|----|----|----|
| BAR SIZE | 12 | 16 | 20 | 25 | 28 | 32 | 40 | 50 |
| COUPLER DIAMETER (mm) | 19 | 23 | 31 | 38 | 43 | 48 | 60 | 75 |
| COUPLER LENGTH | 15 | 19 | 23 | 29 | 33 | 35 | 43 | 55 |

| ASTM A615/A 615M | | | | | | | | | | | |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| BAR DESIGNATION (#) | 3(10) | 4(13) | 5(16) | 6(19) | 7(22) | 8(25) | 9(29) | 10(32) | 11(36) | 14(43) | 18(57) |
| COUPLER DIAMETER (mm) | 18 | 20 | 24 | 28 | 32 | 38 | 42 | 48 | 55 | 65 | 85 |
| COUPLER LENGTH | 22 | 30 | 38 | 45 | 50 | 58 | 65 | 70 | 78 | 95 | 125 |

IMBMS-FORM SAVER

Coupler has an attached nail plate for accurate and easy fixing to wooden form.



| BS. 4449 | | | | | | | | |
|-----------------------|----|----|----|----|----|----|----|-----|
| BAR SIZE | 12 | 16 | 20 | 25 | 28 | 32 | 40 | 50 |
| COUPLER DIAMETER (mm) | 19 | 23 | 31 | 38 | 43 | 48 | 60 | 75 |
| COUPLER LENGTH | 30 | 38 | 46 | 58 | 65 | 70 | 86 | 110 |

| ASTM A615/A 615M | | | | | | | | | | | |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| BAR DESIGNATION (#) | 3(10) | 4(13) | 5(16) | 6(19) | 7(22) | 8(25) | 9(29) | 10(32) | 11(36) | 14(43) | 18(57) |
| COUPLER DIAMETER (mm) | 18 | 20 | 24 | 28 | 32 | 38 | 42 | 48 | 55 | 65 | 85 |
| COUPLER LENGTH | 22 | 30 | 38 | 45 | 50 | 58 | 65 | 70 | 78 | 95 | 125 |



IRON MAN BAR-COUPLER MECHANICAL SPLICE

| PART CODE | DESCRIPTION | BAR DIAMETER |
|------------|-------------------|--------------|
| 12BMS-CPLR | BMS Coupler | 12mm |
| 16BMS-CPLR | BMS Coupler | 16mm |
| 20BMS-CPLR | BMS Coupler | 20mm |
| 25BMS-CPLR | BMS Coupler | 25mm |
| 32BMS-CPLR | BMS Coupler | 32mm |
| 40BMS-CPLR | BMS Coupler | 40mm |
| 12BMS-LOCK | BMS Locknut | 12mm |
| 16BMS-LOCK | BMS Locknut | 16mm |
| 20BMS-LOCK | BMS Locknut | 20mm |
| 25BMS-LOCK | BMS Locknut | 25mm |
| 32BMS-LOCK | BMS Locknut | 32mm |
| 40BMS-LOCK | BMS Locknut | 40mm |
| 12BMS-TRM | BMS Terminator | 12mm |
| 16BMS-TRM | BMS Terminator | 16mm |
| 20BMS-TRM | BMS Terminator | 20mm |
| 25BMS-TRM | BMS Terminator | 25mm |
| 32BMS-TRM | BMS Terminator | 32mm |
| 40BMS-TRM | BMS Terminator | 40mm |
| 12BMS-A | BMS A Type Thread | 12mm |
| 16BMS-A | BMS A Type Thread | 16mm |
| 20BMS-A | BMS A Type Thread | 20mm |
| 25BMS-A | BMS A Type Thread | 25mm |
| 32BMS-A | BMS A Type Thread | 32mm |
| 40BMS-A | BMS A Type Thread | 40mm |
| 12BMS-B | BMS B Type Thread | 12mm |
| 16BMS-B | BMS B Type Thread | 16mm |
| 20BMS-B | BMS B Type Thread | 20mm |
| 25BMS-B | BMS B Type Thread | 25mm |
| 32BMS-B | BMS B Type Thread | 32mm |
| 40BMS-B | BMS B Type Thread | 40mm |
| 12BMS-C | BMS C Type Thread | 12mm |
| 16BMS-C | BMS C Type Thread | 16mm |
| 20BMS-C | BMS C Type Thread | 20mm |
| 25BMS-C | BMS C Type Thread | 25mm |
| 32BMS-C | BMS C Type Thread | 32mm |
| 40BMS-C | BMS C Type Thread | 40mm |

P 04 566 2253
F 04 566 2256
E enquiry@imbms.co.nz

PO Box 38-509
Wellington Mail Centre
Te Puni 5045

www.imbms.co.nz

