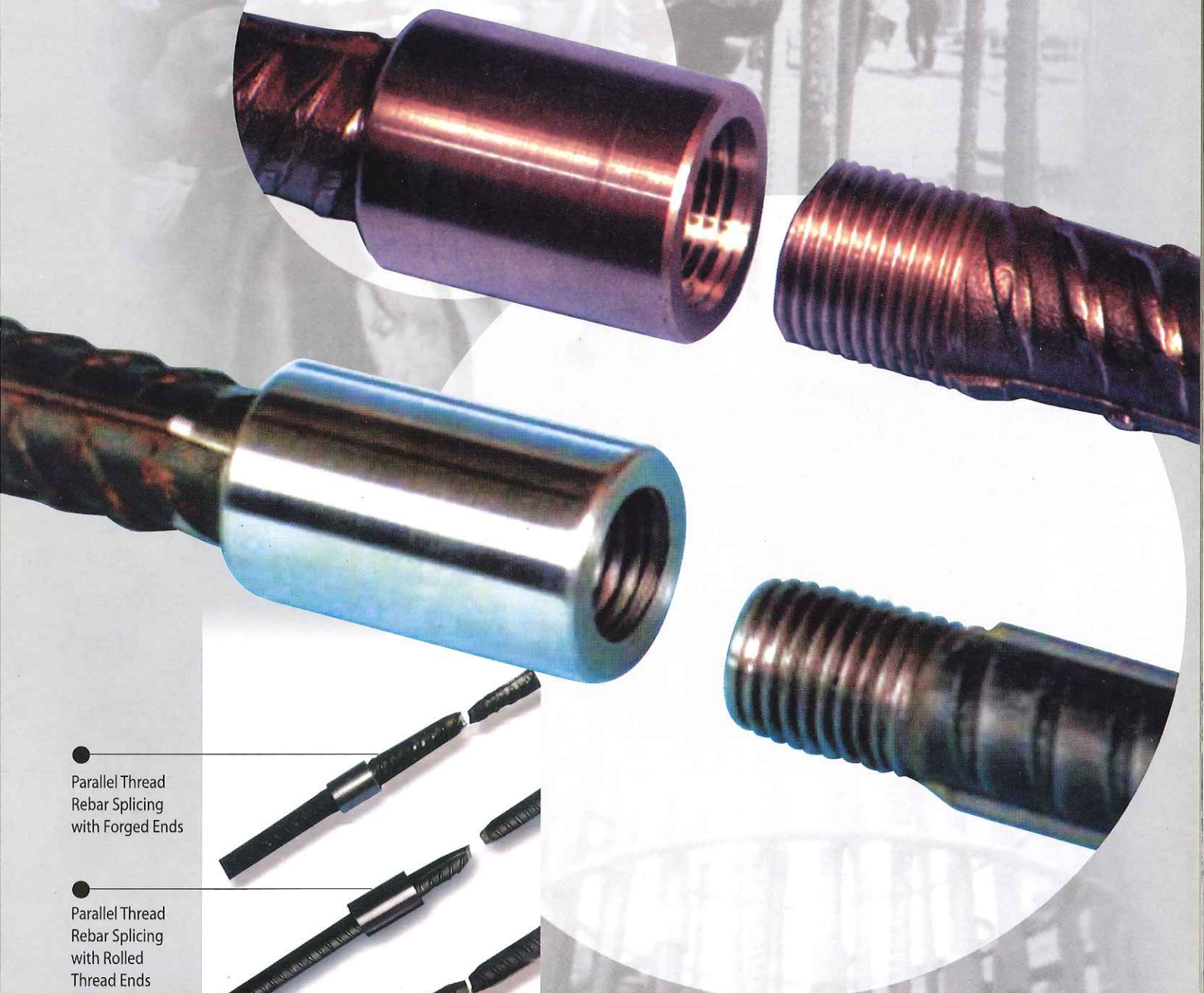


# MECHANICAL SPLICING

## - The better way to splice rebars



● Parallel Thread  
Rebar Splicing  
with Forged Ends

● Parallel Thread  
Rebar Splicing  
with Rolled  
Thread Ends

● Parallel Thread  
Rebar Splicing  
with Stripped &  
Rolled Thread End

● Swaged Sleeve  
Rebar Splicing



**INDUSTRIAL HARDWARE  
SUPPLY SDN. BHD.** (21382-M)



**Mechanical Splicing** is a purposely designed method for splicing reinforced bars in concrete constructions. A rebar splicing is where two rebars with threaded ends are coupled into a sleeve type steel coupling with matching parallel threads.

With its strength properties exceeding those of the rebars', mechanical splicing is the better way to splice than conventional method where rebars are connected by tightening together two ends of rebars using wires. This mechanical splicing method conforms to the following standard specifications, i.e.,

**ISO/WD 15835 (Draft)**  
**NF 35-20-1**

**BS 8110**  
**JGJ 107**

**DIN 1045**  
**ACI 318**

Parallel Thread Splicing is suitable for all concrete constructions, either with or without seismic design. It is highly recommended to use parallel thread splicing for moment resisting frame structures where full strength of rebars and high ductility of splicing joints are desired.

## 1. Parallel Thread Rebar Splicing

**Formation of threaded ends: Rib Stripping → Thread Rolling → Rebar Splicing.**

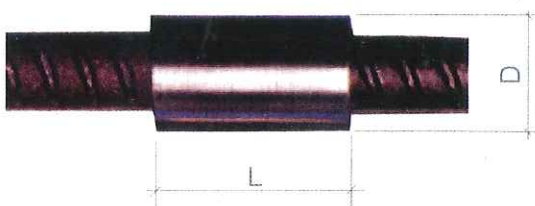
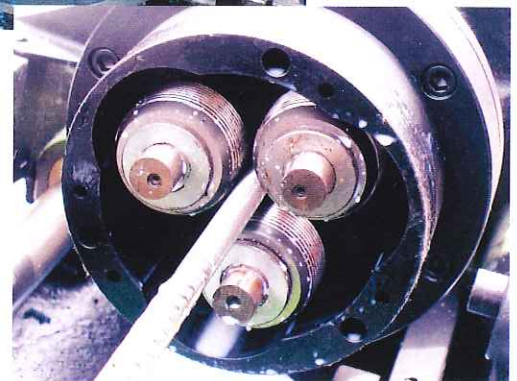
### Rebar Stripping & Rolling Machine



#### Rib Stripping



#### Thread Rolling



### Coupling for Parallel Thread Rebar Splicing

Bar Size (mm)	Outer Diameter (D) (mm)	Length(L) (mm)	Weight (kg)	Thread Size
16	24.0	40	0.072	M 16.5 X 2.0
18	28.0	46	0.150	M 18.5 X 2.5
20	30.0	50	0.177	M 20.5 X 2.5
22	33.0	54	0.228	M 22.5 X 2.5
25	38.0	62	0.354	M 25.5 X 3.0
28	43.0	68	0.486	M 28.5 X 3.0
32	48.0	76	0.650	M 32.3 X 3.0
36	53.0	84	0.93	M 36.0 X 3.0
40	60.0	92	1.25	M 40.0 X 3.0
50	77.0	114	2.35	M 50.0 X 3.0

#### Benefits:

- Simple operation, fast splicing of rebars on sites
- High efficiency: 300 – 500 threaded ends per production shift (Splicing can be fabricated in advanced to construction schedules).
- Economical: no overlapping of rebars, low overhead costs
- Environment-friendly and safety oriented.



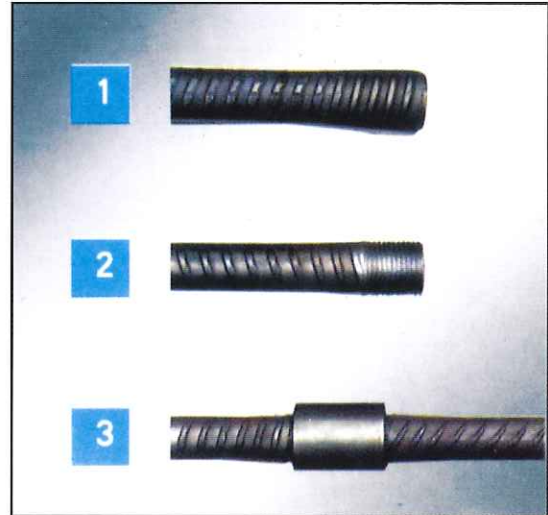
## 2. Parallel Thread Rebar Splicing for Rebars with Cold Forged Ends

### Formation of thread ends: Cold Forging → Thread Rolling → Rebar Splicing

Benefits:

- High splicing strength, exerting rebars' ultimate tensile strength.
- Simple operation, fast splicing works.
- Highly adaptable to various rebar formations: rebar links, cage, etc.
- Economical: no overlapping of rebars, low overhead costs
- Environment friendly: no material wastage.

### Rebar Forging and Threading Machine



### Coupling for Splicing Rebars with Cold Forged Ends.



Bar diameter (mm)	Outer Diameter (mm)	Length (mm)	Thread size	weight (kg)
14	23	28	M16 x 2.0	0.05
16	26	32	M18 x 2.0	0.07
18	30	36	M22 x 2.0	0.09
20	33	40	M24 x 2.0	0.13
22	35	44	M25 x 3.0	0.16
25	40	50	M29 x 3.0	0.23
28	46	56	M32 x 3.0	0.38
32	50	64	M36 x 3.5	0.48
36	58	72	M40 x 3.5	0.78
40	68	80	M45 x 3.5	1.28

### Typical Test Results:



Bar diameter (mm)	Yield strength (MPa)	Proof Load Test	Ultimate Strength (MPa)	Tensile Failure Mode
14	468	Passed	656	Bar Fracture
16	491	Passed	674	Bar Fracture
18	501	Passed	687	Bar Fracture
20	476	Passed	620	Bar Fracture
22	465	Passed	632	Bar Fracture
25	473	Passed	659	Bar Fracture
28	470	Passed	644	Bar Fracture
32	486	Passed	680	Bar Fracture
36	479	Passed	655	Bar Fracture
40	470	Passed	662	Bar Fracture



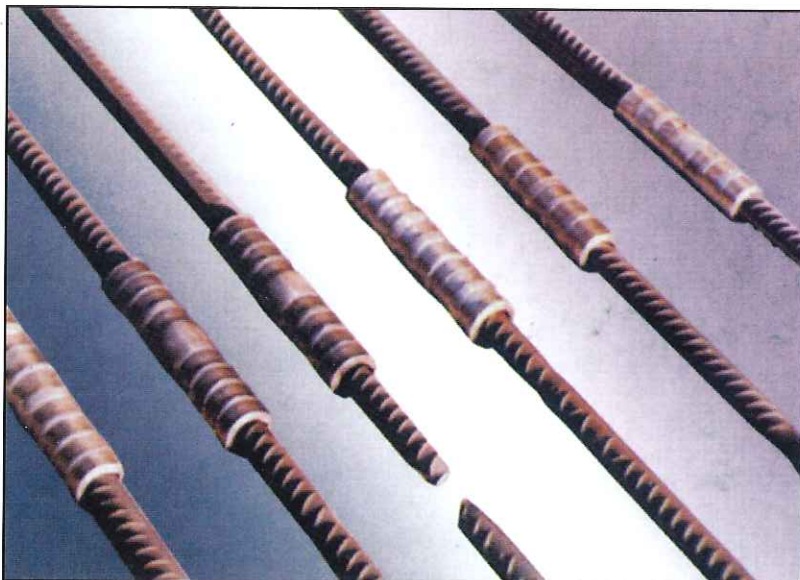
### 3. Swaged Sleeve Rebar Splicing

Principles: Rebars are spliced together by swaging steel sleeves over them using either a hydraulic or pneumatic power clamping system as shown below.

#### Sleeve Rebar Splicing Swaging System

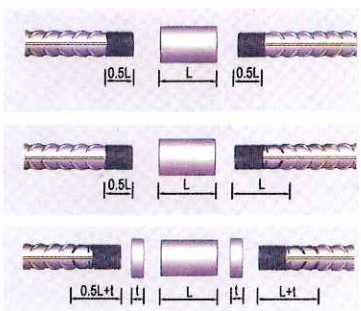


Specification of sleeve	JC18	JC20	JC22	JC25	JC28	JC32	JC36	JC40
O.D x Length (mm)	33 x 110	36 x 120	40 x 132	45 x 150	50 x 168	56 x 192	63 x 216	70 x 240
Weight (kg)	0.38	0.46	0.66	0.98	1.39	2.00	3.05	4.12

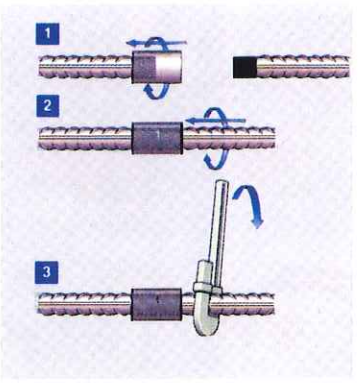


## Installations of Parallel Thread Rebar Splicing

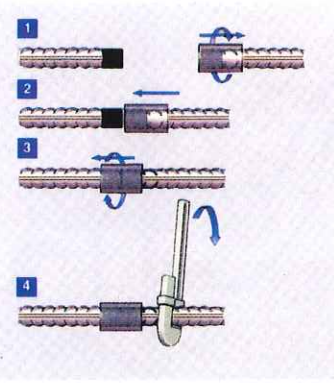
1. Schematic diagrams of threaded rebars and couplings



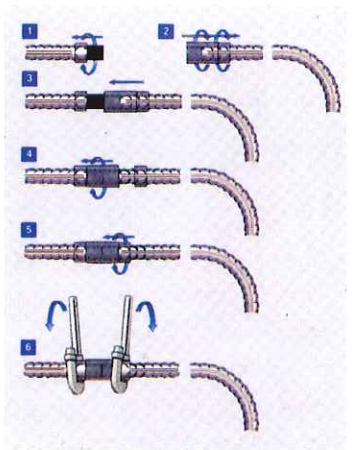
(1)
2. Standard Mechanical Splicing Installation



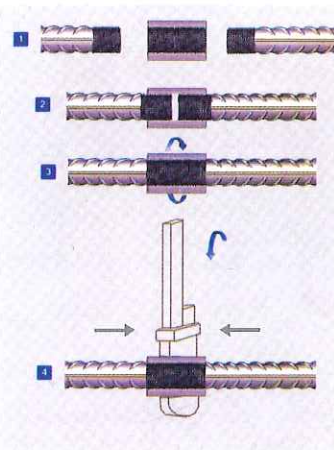
(2)
3. Splicing rebars with lengthened thread end



(3)
4. Splicing using coupling and Lock Nut



(4)
5. Splicing using Left- & Right-Hand Thread Coupling



(5)

### Types of Rebar Splicing



Standard Splicing



Coupling and Lock Nut



Coupling with one chamfered end



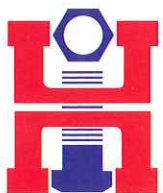
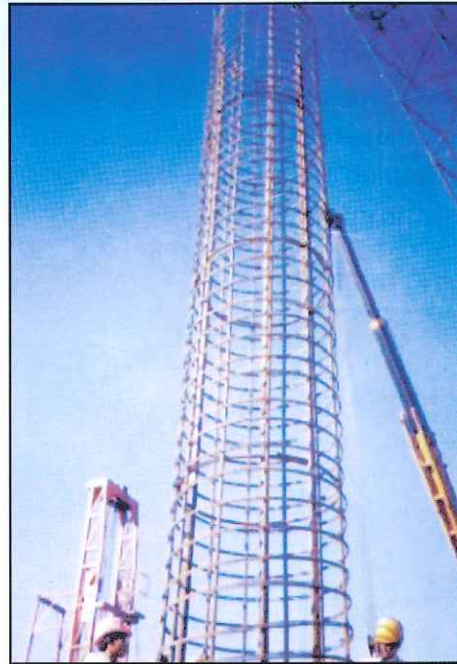
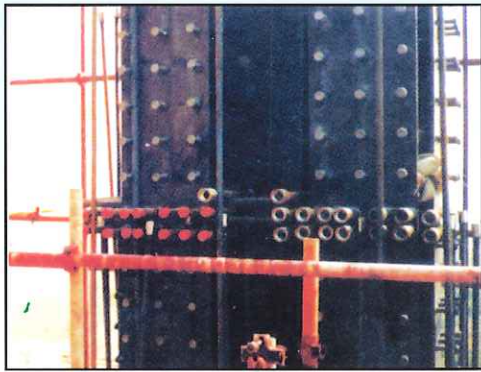
Different bar's diameters



Left- & Right-Hand Thread Coupling



Mechanical splicing methods are now widely adopted in various construction projects ranging from sky-scraping buildings, bridges, hydro-dams to power plants, and received affirmative acknowledgements of its applications. We at Industrial Hardware Supply Sdn. Berhad are ready to supply reliable mechanical splicing equipments, accessories, and provide dependable after-sale services to all our constructor clients, home and abroad.



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