

RING-LOCK SYSTEM

WE ARE FORMING YOUR IDEAS





Formwork & Scaffolding

Ring-Lock System

The Unisteel Ringlock System is a high-performance modular scaffolding solution engineered for efficiency, safety, and structural versatility across a wide range of construction and industrial projects. Designed with precision and durability in mind, this system provides exceptional load-bearing capacity and adaptability for both access scaffolding and heavy-duty shoring applications.

Manufactured in compliance with EN 10219 standards, Unisteel Ringlock components are produced using high-quality structural steel grades – Q235B and Q355B – to meet various strength requirements. Each tube is precisely fabricated to a dimension of $\Phi 48.3 \text{ mm} \times 3.2 \text{ mm}$, then hot-dip galvanized with a zinc coating thickness of 40-60 μm to ensure long-term corrosion resistance and durability under harsh site conditions.

Unisteel operates under a certified ISO 9001 Quality Management System, ensuring consistent product quality and process control at every stage of production. In addition, Unisteel's Ringlock products are regularly tested and inspected by globally recognized third-party certification bodies such as SGS, reinforcing our commitment to safety, reliability, and compliance with international standards.

The system's signature rosette node design enables fast and secure connections at multiple angles, reducing labor time while enhancing structural integrity. With its robust design, easy assembly, and minimal maintenance needs, the Unisteel Ringlock System offers a reliable, long-lasting solution for complex scaffolding demands.



Features & Benefits

1 Rosette Connection Technology

Feature

Central rosette plate welded at 500 mm intervals allows up to 8 connections per node at various angles (0°, 45°, 90°).

Benefit

Provides unmatched versatility and geometric flexibility, making the system suitable for complex layouts, curved structures, and varying elevations.

2 High-Strength Steel materials

Feature

Components are manufactured using Q235B and Q355B structural steel grades.

Benefit

Ensures optimal load-bearing performance for both light access scaffolding and heavy-duty shoring.

3 Hot-Dip Galvanized Finish

Feature

All tubes and accessories are hot-dip galvanized with 40-60µm zinc coating.

Benefit

Provides excellent corrosion resistance, extends service life, and reduces maintenance costs in aggressive environments such as coastal or industrial areas.

4 Standardized Tube Dimensions

Feature

Main tubes: Ø48.3 mm diameter with 3.2 mm wall thickness, per EN 10219 standard.

Benefit

Ensures compatibility, structural reliability, and integration with international Ringlock systems and accessories.

5 Fast and Tool-Free Assembly

Feature

Wedge-head connections lock quickly into rosettes without the need for bolts or specialized tools.

Benefit

Speeds up erection and dismantling time, reduces labor costs, and minimizes training requirements.

6 High Load Capacity

Feature

Engineered and tested for vertical and horizontal loads under stringent conditions.

Benefit

Ideal for load-intensive applications such as bridge construction, slab formwork support, and heavy civil works.

7 Modular and Compatible Design

Feature

Standardized components and modular grid (typically 2.0m bays, 500mm vertical spacing).

Benefit

Allows for easy scalability, simplified planning, and full compatibility with other Ringlock systems, reducing inventory redundancy.

8 Durable Welds and Manufacturing Quality

Feature

Automated robotic welding and strict quality control across production lines.

Benefit

Enhances connection reliability and overall structural integrity, ensuring worker safety and performance under load.

9 Enhanced Site Safety

Feature

Secure connections with locking wedges prevent accidental disassembly or slippage.

Benefit

Provides a stable working platform and reduces risk of failure during erection, use, or dismantling

Ring-Lock Applications

1

Façade and Access Scaffolding

Ideal for external plastering, cladding, painting, and maintenance works.

2

Heavy-Duty Shoring

Supports slab and beam formwork in high-load environments such as commercial buildings and industrial plants.

3

Infrastructure Projects

Used extensively in the construction and maintenance of bridges, viaducts, tunnels, and highways.

4

Industrial Maintenance

Adaptable for use in oil & gas refineries, power plants, chemical facilities, and manufacturing plants.

5

Public & Institutional Buildings

Used in the renovation and maintenance of museums, airports, stadiums, and government facilities.

6

Event Structures and Temporary Installations

Used in constructing grandstands, stage platforms, camera towers, and temporary walkways.





Formwork & Scaffolding

Ring-lock System Components



Vertical Standards



Ledgers



Diagonal Braces



Starter Base Collar



Spigot Connector



Cantilever Brackets



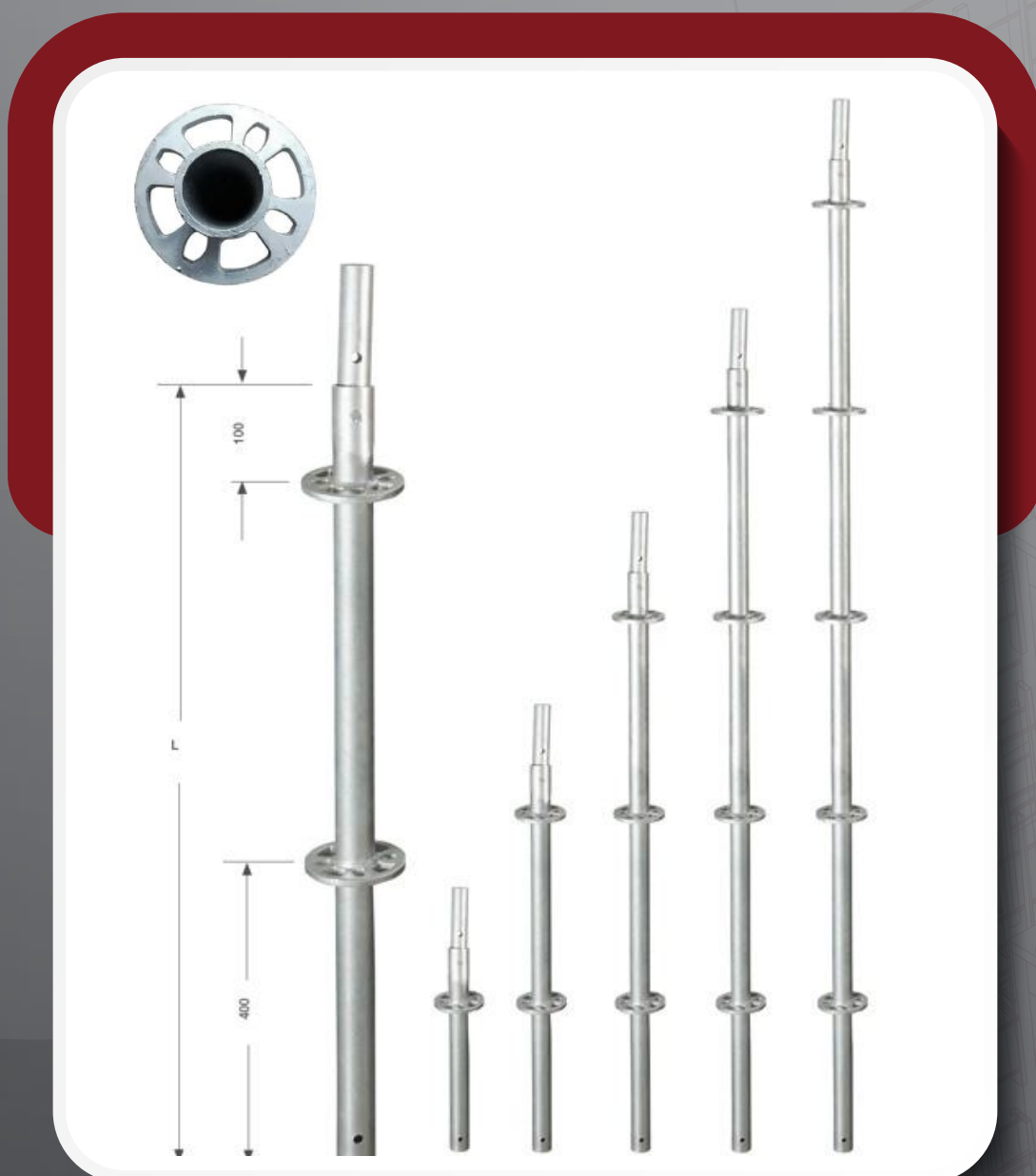
U-Head Jack



Base Jack

Vertical Standards (Q355B)

Item Code	Description	Weight (kg)
R200-001	Ring Lock Vertical 1.5", L=3.00m, galv.	15.46
R200-002	Ring Lock Vertical 1.5", L=2.50m, galv.	12.98
R200-003	Ring Lock Vertical 1.5", L=2.00m, galv.	10.57
R200-004	Ring Lock Vertical 1.5", L=1.50m, galv.	8.12
R200-005	Ring Lock Vertical 1.5", L=1.00m, galv.	5.67



Ledgers / Horizontals (Q235B)

Item Code	Description	Weight (kg)
R200-006	Ring Lock Ledger, L=0.60m, galv.	2.90
R200-007	Ring Lock Ledger, L=0.90m, galv.	4.01
R200-008	Ring Lock Ledger, L=1.20m, galv.	5.12
R200-009	Ring Lock Ledger, L=1.50m, galv.	6.23
R200-010	Ring Lock Ledger, L=1.80m, galv.	7.34
R200-011	Ring Lock Ledger, L=2.40m, galv.	9.57



Ringlock Ledger



Ledger pin



Ledger Head

Diagonal Braces (Q235B)

Item Code	Description	Weight (kg)
R200-012	Ring Lock Diagonal (0.60/1.00)m, galv.	5.72
R200-013	Ring Lock Diagonal (0.60/1.50)m, galv.	7.47
R200-014	Ring Lock Diagonal (0.60/2.00)m, galv.	9.27
R200-015	Ring Lock Diagonal (0.90/1.00)m, galv.	6.26
R200-016	Ring Lock Diagonal (0.90/1.50)m, galv.	7.86
R200-017	Ring Lock Diagonal (0.90/2.00)m, galv.	9.58
R200-018	Ring Lock Diagonal (1.20/1.00)m, galv.	6.99
R200-019	Ring Lock Diagonal (1.20/1.50)m, galv.	8.40
R200-020	Ring Lock Diagonal (1.20/2.00)m, galv.	10.02
R200-021	Ring Lock Diagonal (1.50/1.00)m, galv.	7.83
R200-022	Ring Lock Diagonal (1.50/1.50)m, galv.	9.10
R200-023	Ring Lock Diagonal (1.50/2.00)m, galv.	10.58
R200-024	Ring Lock Diagonal (1.80/1.00)m, galv.	8.75
R200-025	Ring Lock Diagonal (1.80/1.50)m, galv.	9.88
R200-026	Ring Lock Diagonal (1.80/2.00)m, galv.	11.23
R200-027	Ring Lock Diagonal (2.40/1.00)m, galv.	10.72
R200-028	Ring Lock Diagonal (2.40/1.50)m, galv.	11.62
R200-029	Ring Lock Diagonal (2.40/2.00)m, galv.	12.77



Other Accessories

1. Spigot Connector

A steel insert (Ø38mm x 2.75mm) used to connect two vertical standards together in-line.



Item code	Description	Weight (kg)
R200-033	Spigot Connector L=270mm φ38x2.75mm	0.70
R200-034	Spigot Connector Bolt/Nut M10x60 4.8	0.09

2. U-Head Jack

Hollow threaded shaft with a U-shaped top for supporting ledgers or beams at higher levels.



Item code	Description	Weight (kg)
R200-035	U-Head jack 150 x 150 x 6mm (L=0.6m) φ38*5mm hollow	5.10

3. Base Jack

Hollow shaft screw jack with base plate, used to support and level the bottom of the scaffold.



Item code	Description	Weight (kg)
R200-036	Base jack 150 x 150 x 6mm plate (L=0.6m) φ38*5mm hollow	4.20

Other Accessories

4. Starter Base Collar

A short vertical tube with rosette, placed above the base jack to initiate vertical alignment of standards.

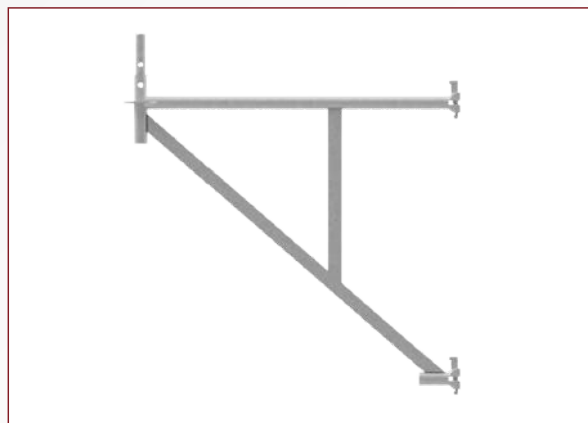
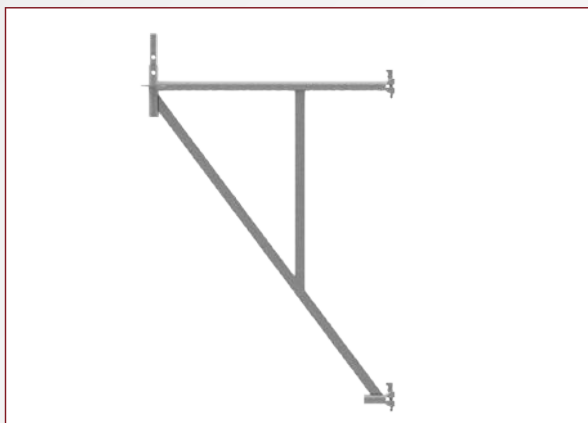


Item code	Description	Weight (kg)
R200-030	Starter Base Collar	1.82

5. Cantilever Brackets

Allow platform extension where direct vertical support isn't possible—ideal for edge or bridge work.

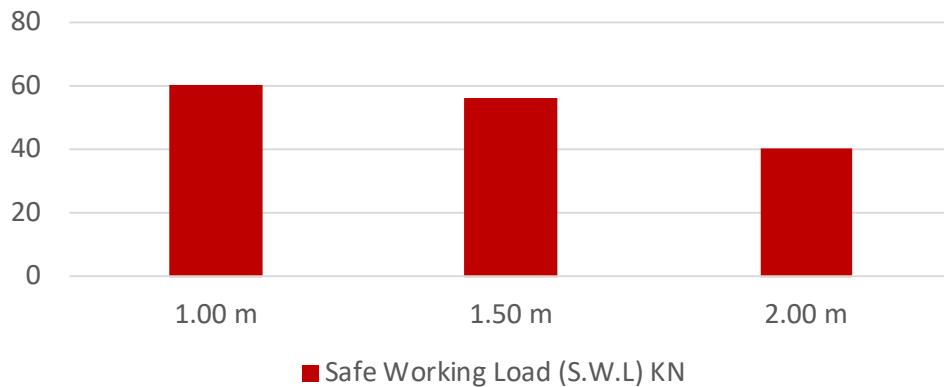
Item code	Description	Weight (kg)
R200-031	Cantilever Bracket 1.20 / 1.50m	14.50
R200-032	Cantilever Bracket 1.20 / 1.00m	12.50



Engineering & loading Specifications

Vertical Standards

Maximum permissible loading (ton)



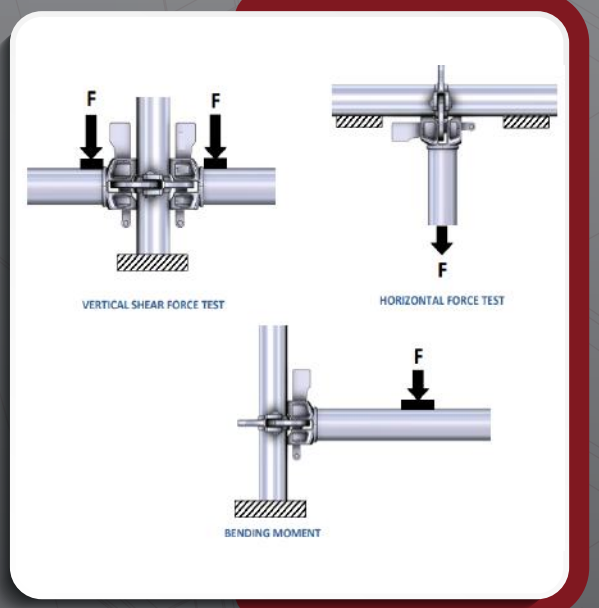
unbraced length standards (cm)



Lift Height (M)	Safe Working Load (S.W.L) KN
1.00	60
1.50	56
2.00	40

Rossete Clamp

Load Specs.	Safe Working Load	Test Result Observed
Vertical Shear Force	10.0 kN	14 kN
Horizontal Force	12.5 kN	25.kN
Bending Moment	0.4 kN.m	0.8 kN.m



Diagonal Braces

Brace Code	Panel Size		Bay Shear SWL		
	Width	Height	Comp	Tension	Reversed Pair
	mm	mm	kN	kN	kN
R200-012	600	1000	9.34	9.67	19.01
R200-013		1500	4.65	7.19	11.83
R200-014		2000	2.17	2.17	4.34
R200-015	900	1000	9.34	9.67	19.01
R200-016		1500	4.65	7.19	11.83
R200-017		2000	2.17	2.17	4.34
R200-018	1200	1000	9.37	11.71	21.08
R200-019		1500	5.81	9.26	15.07
R200-020		2000	3.04	7.5	10.54
R200-021	1500	1000	8.42	13.02	21.44
R200-022		1500	7	10.83	17.82
R200-023		2000	3.34	9.05	12.38
R200-024	1800	1000	10.07	13.87	23.95
R200-025		1500	5.17	11.99	17.16
R200-026		2000	5.71	10.3	16.01
R200-027	2400	1000	5.39	14.84	20.23
R200-028		1500	6.65	13.5	20.15
R200-029		2000	5.22	12.12	17.34



Formwork & Scaffolding

Ringlock Erection Procedure



1. Arrange the adjustable **base jack** to the fixed point according to the size of the configuration drawing



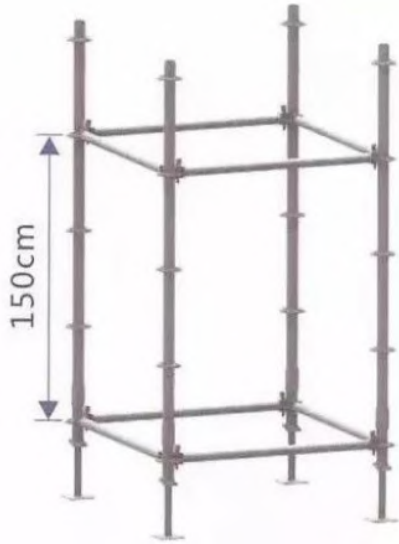
2. Set **Starter Base Collar** , and mark the bottom edge of the base to be completely placed into the groove of the force plane of the wrench



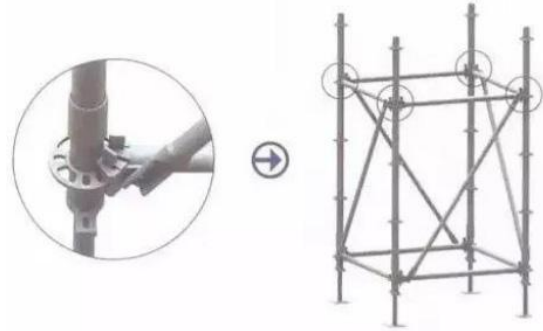
3. Insert the **ledger** head to the little hole position of the Ring and then put the wedge pin through the hole, hammer the wedge pin to make the ledger firmly connected to the **Starter Base Collar**



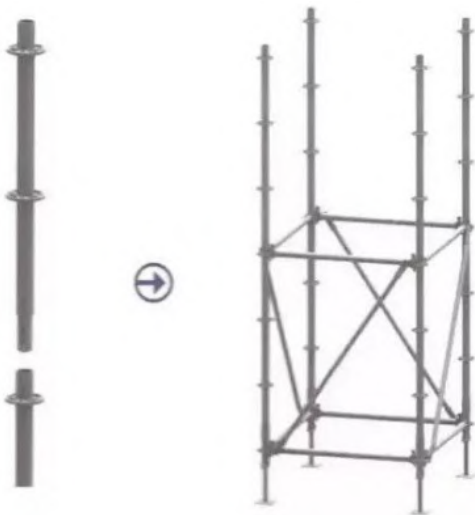
4. Insert the long end of the **standard** into the sleeve of the **base collar** as shown in the figure.



5. Second stage ledger Repeat step 3 as shown



6. Install the **diagonal brace** all clockwise direction or all counterclockwise direction, as shown



7. Insert the Spigot connector into the standard to connect two vertical standards together in-line



8. Insert the connecting rod of **Uhead** into the upper standard tube

Ringlock Safety Manual

1 General Safety Guidelines

- ▶ Only trained and authorized personnel should erect, modify, inspect, or dismantle the Ringlock scaffolding system.
- ▶ All scaffolding work must comply with relevant local and international safety standards (e.g., **EN 12811, OSHA, ISO 45001**).
- ▶ Appropriate **personal protective equipment (PPE)** must be worn at all times: hard hats, gloves, safety boots, fall arrest harnesses, and high-visibility clothing.
- ▶ A competent person must supervise all scaffolding operations.

2 Pre-Assembly Inspection

Before erection, inspect all components for:

- ▶ Cracks, corrosion, deformation, or worn parts
- ▶ Damaged or missing rosettes, spigots, and locking wedges
- ▶ Proper hot-dip galvanization with no signs of rust or pitting
- ▶ Cleanliness – remove oil, mud, or other materials affecting grip and stability

Note: Do not use damaged components.

3 Site Preparation

- ▶ Ensure the ground is firm, level, and properly compacted.
- ▶ Use base plates or adjustable screw jacks on sole boards to distribute load and maintain leveling.
- ▶ Mark off work zones with warning signs & barriers to prevent unauthorized access

4 Erection Safety

- ▶ Erection should follow a systematic vertical sequence (bottom-up).
- ▶ Always begin with vertical standards, followed by ledgers, diagonal braces, and platform decks.
- ▶ Use temporary guardrails during assembly to reduce fall hazards.
- ▶ All connections must be fully engaged and locked with wedges before loading.
- ▶ Do not exceed the maximum vertical spacing (typically 2m) or bay width limits

5 Load Management

- ▶ Do not overload scaffolds. Respect **load classifications**.
- ▶ Distribute material loads evenly to avoid point-loading.
- ▶ Use loading platforms & hoists for material handling instead of manually tossing.

6 Use & Access

- ▶ Provide **safe access** through integrated **stair towers or ladders**.
- ▶ Install full **toe boards, mid rails, and top rails** on all working platforms.
- ▶ Never alter or remove any scaffold part during use unless under supervision.
- ▶ Keep platforms **free of debris, water, and trip hazards** at all times.

7 Weather & Site Conditions

- ▶ In high winds (>65 km/h), storms, or heavy rain, **halt Scaf. work immediately**.
- ▶ Inspect and secure scaffolding after extreme weather events.
- ▶ Do not use tarps or sheeting without engineering approval — they can act as sails and destabilize the scaffold.

8 Regular Inspection & Maintenance

- ▶ A competent person should inspect the scaffold:
 - Before initial use
 - At least every 7 days
 - After any modification
 - Following severe weather or impact
- ▶ Record all inspections and findings in a Scaffold Safety Logbook.
- ▶ Immediately tag and isolate any unsafe sections.

9

Dismantling Procedures

- ▶ Dismantle the scaffold in **reverse order** of erection (top-down).
- ▶ Maintain system stability— remove components **evenly & symmetrically**.
- ▶ Lower materials in a controlled manner, using ropes, chutes, or mechanical hoists.

10

Emergency Response

- ▶ Ensure all workers are trained in **fall rescue procedures**.
- ▶ First aid kits and fire extinguishers should be readily available on-site.
- ▶ Establish clear **communication protocols** in the event of an accident

Disclaimer

This manual serves as a guideline only. All users must refer to local regulations and consult Unisteel technical teams for project-specific engineering assessments.





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