

2022/23

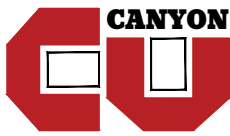
RINGLOCK SYSTEM CATALOGUE

An extensive range of scaffold systems available
for sale & hire with tailor-made design and
technical services provided



金源通架工程有限公司
CANYON METAL SCAFFOLDING ENGINEERING LTD.

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PROFESSIONAL
QUALITY
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RINGLOCK SCAFFOLD

碟型組合通架

FUNCTIONAL DESIGN WITH SIMPLICITY OF CONNECTION

The Ringlock system has been designed and developed to meet the requirements of the Hong Kong construction and housing industries. Ringlock principal design features include:

- Efficiency of assembly
- Low maintenance required to keep in top working condition
- Versatility of application
- Simplicity of components and their connection
- Galvanized components improve corrosion resistance
- No special tools required for assembly (hammer and spirit level only)



VERSATILE IN USE

With the flexibility to connect at eight positions around the rosette on the Vertical post, Ringlock can be used to go around curved or angled structures.



EASY TO ERECT

The Vertical features robust rosettes onto which all horizontal and diagonal components attach. The simple connection between components ensures ease of erection and dismantling. No additional loose parts are required to join components in the system.

PROVEN DESIGN WITH SAFETY ACCESSORIES

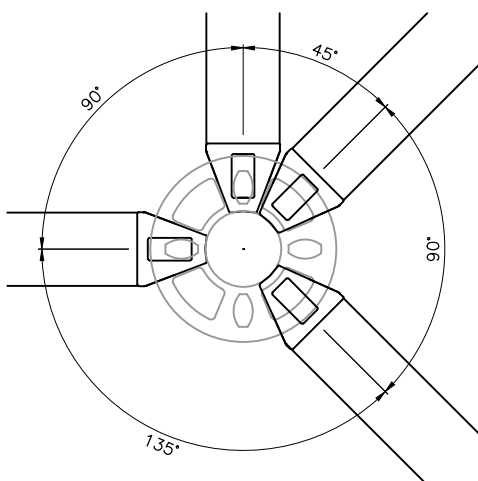
The Ringlock system has a proven performance history on an extensive number of sites, meeting the requirements of the various statutory bodies. A full range of accessories is available to cater for safety requirements such as guardrails, catwalk, ladder access, staircase access and components to provide overhead protection.



UNIQUE METHOD OF CONNECTION

The principal feature of RINGLOCK is the simplest method of connecting horizontals and diagonals to the vertical in one locking action without the use of any bolts or tools.

The 4 smaller openings in the rosette automatically centre the ledgers in the correct dimensions and at right angles – the 4 wide openings permit alignment of horizontals and diagonal braces at the angles required.



RINGLOCK BENEFITS

- Safety Working Load: 30 to 70 kN per leg
F.O.S. = 1.65 (Refer to Page 1.4, Ringlock Vertical Compressive Capacity)
*Depends on different horizontal member's vertical spacing.
- Assemble efficiently, accurately and reliably.
- Systemized bracing design can reduce labour costs.
- Any special hand tools are not required except hammer during assemble and dismantle.
- All vertical, horizontal & diagonal components are pre-galvanized to increase corrosion resistance and life time of components.

RING-LOCKING PROCEDURE



1. Slide the wedge head over the rosette.

2. Insert the wedge into one of the holes to hold its location.



3. A blow with a hammer on the wedge transforms the connection from structural assembly to force transmitting rigidity.

4. A positive and rigid connection of four units is achieved with one locking action.



Ringlock Junction Point

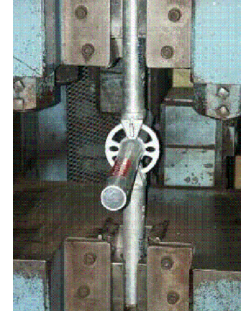
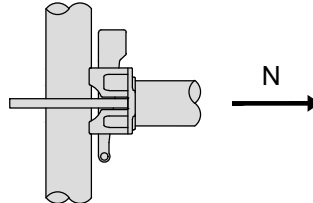
The following values for Ringlock junction specifications are per the HOKLAS testing results.

NORMAL FORCE

Load on the connecting rosette and the wedge lock by tensile and compressive forces (longitudinal forces) along the axis of the horizontal member.

Permissible $N = \pm 31.80 \text{ kN}$

(Breaking load as 63.60 kN)



VERTICAL SHEAR FORCE

Acting on the horizontal members of the junction and on the connecting rosettes.

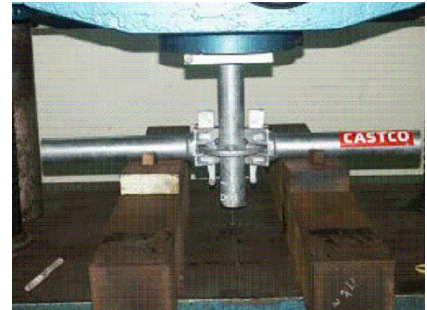
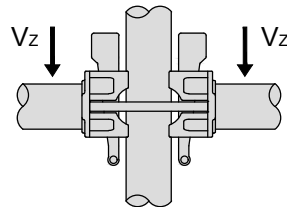
Permissible $Q_v = + 16.92 \text{ kN}$

(Breaking load as 33.84 kN)

Maximum Total Q_v total junction

$= 4 \times 16.92 \text{ kN}$

$= 67.68 \text{ kN}$

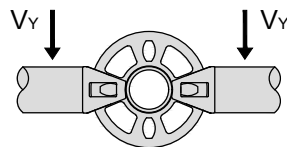


HORIZONTAL SHEAR FORCE

Acting on the junctions together with the connecting rosette and the connecting horizontal member.

Permissible $Q_h = \pm 8.425 \text{ kN}$

(Breaking load as 16.85 kN)

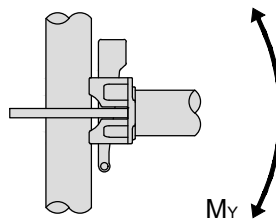


CONNECTION MOMENT

Acting on the Ringlock Junctions

Permissible $M = \pm 91 \text{ kNcm}$.

(Max. design testing load 182 kNcm)

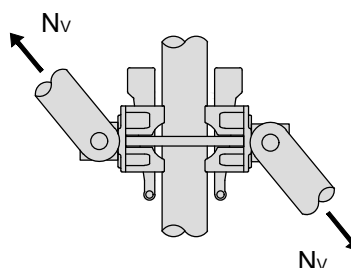


AXIAL FORCE, DIAGONAL BRACE

Acting on the junction connecting rosette/diagonal through tensile and compressive forces.

Permissible $D = \pm 15.75 \text{ kN}$

(Breaking Load as 31.50 kN , for angle 30° and 60°)

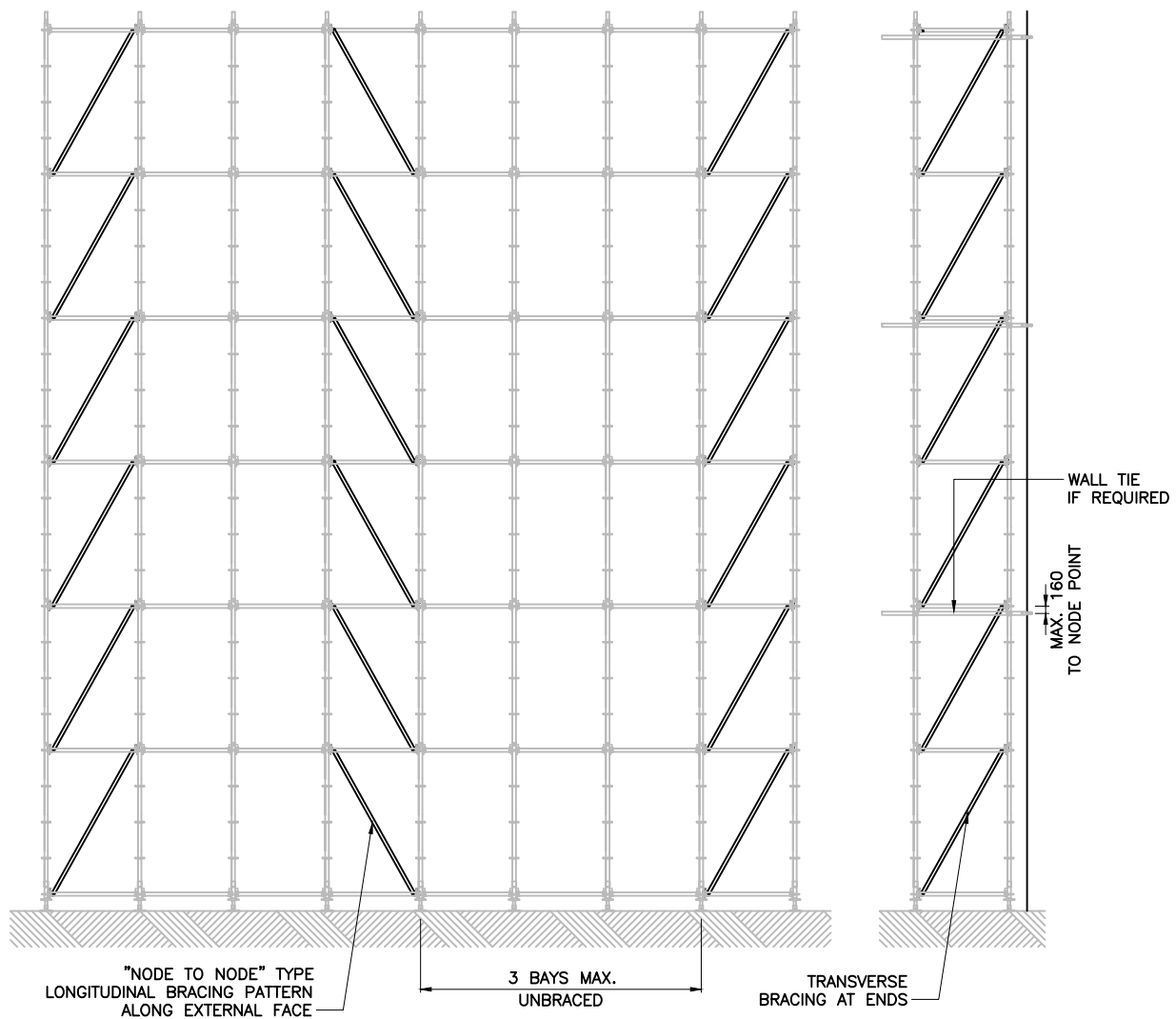


General Rules for Diagonal Bracing

All scaffolds require a certain amount of Diagonal Face Bracing to eliminate any tendency for the scaffold to distort or sway.

Before the scaffold goes beyond the second lift, bracing should be added to the outside face and on the ends. Braces attach to the outward face of the Vertical.

Further bracing must be placed on the scaffold as it progresses in length and height. Braces should span from lift level to lift level and cross over joints in Verticals and be positioned all the way to the top of the scaffold.

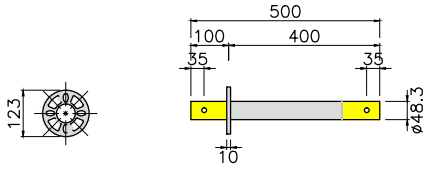


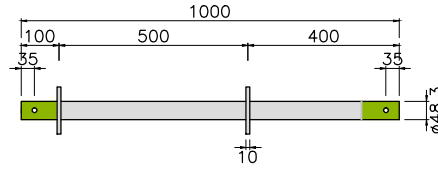
Diagonal Braces provide stability to the scaffold and are used to brace adjacent Verticals longitudinally or transversely.

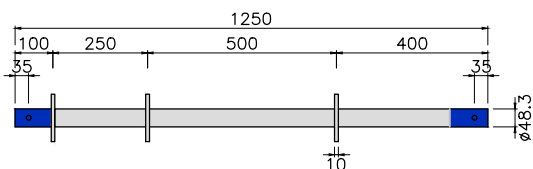
Face Diagonal Braces are positioned in the end bays of a scaffold run on the external face of the scaffold. They extend from the first cup near ground level to the top working level. They are typically arranged in an alternating (node-node) manner to provide more stability to the scaffold. For long scaffold runs exceeding 5 bays in length, intermediate bracing is required where Diagonal Face Braces are placed every 4 bays maximum. Variations to this spacing must be checked by the appropriate designer and specified in the design layout.

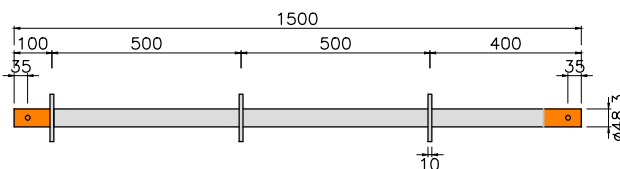
End Diagonal Braces are used between end pair of Verticals in the transverse direction. They extend from the first rosette near ground level to the top working level in an alternating manner.

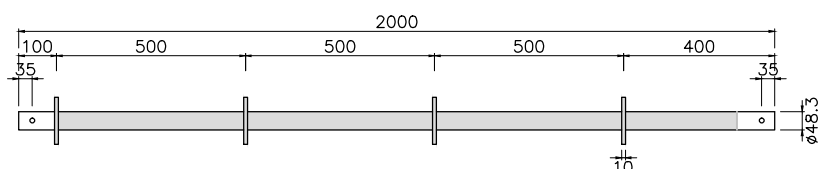


Vertical 直柱	Weight
RSP-V05	2.3 kg
	

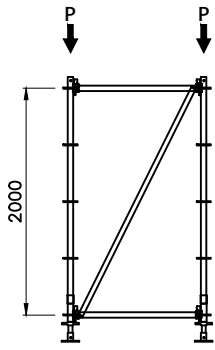
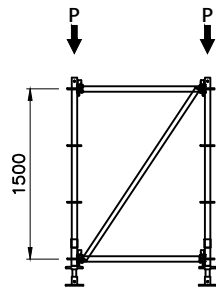
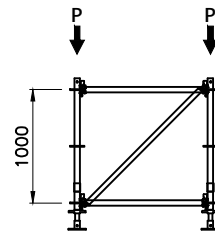
Vertical 直柱	Weight
RSP-V10	4.6 kg
	

Vertical 直柱	Weight
RSP-V12.5	6.0 kg
	

Vertical 直柱	Weight
RSP-V15	6.9 kg
	

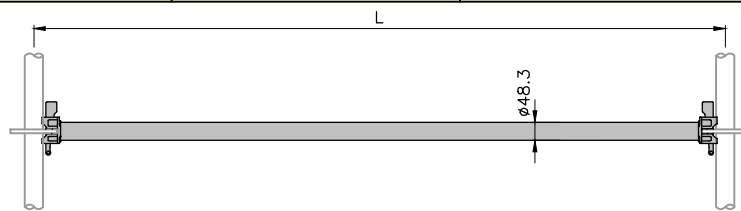
Vertical 直柱	Weight
RSP-V20	9.1 kg
	

* Ringlock spigot RPN-SPG shall be used for connection points between vertical components.

VERTICAL COMPRESSIVE CAPACITY			
MATERIAL	CHS 48.3 X 3.2t Grade Q345		
EFFECTIVE LENGTH			
	SAFETY WORKING LOAD, P	30 kN / LEG	50 kN / LEG
	FACTOR OF SAFETY	1.65	

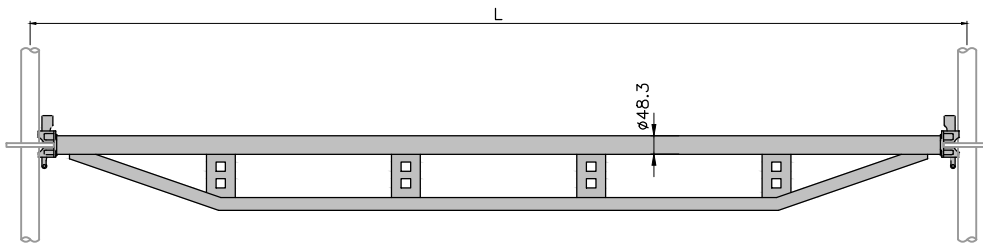


Horizontal 橫桿	Span, L	Weight	Marking
RSP-H165	165	1.1 kg	N/A 不適用
RSP-H325	325	1.7 kg	Pink / 粉紅
RSP-H650	650	2.9 kg	Yellow / 黃
RSP-H950	950	4.0 kg	Green / 綠
RSP-H1175	1175	4.9 kg	Purple / 淺紫
RSP-H1300	1300	5.3 kg	Blue / 藍
RSP-H1600	1600	6.5 kg	Orange / 橙
RSP-H1829	1829	7.3 kg	Red / 紅
RSP-H2479	2479	9.7 kg	Pink / 粉紅
RSP-H2700	2700	10.5 kg	Brown / 淺啡

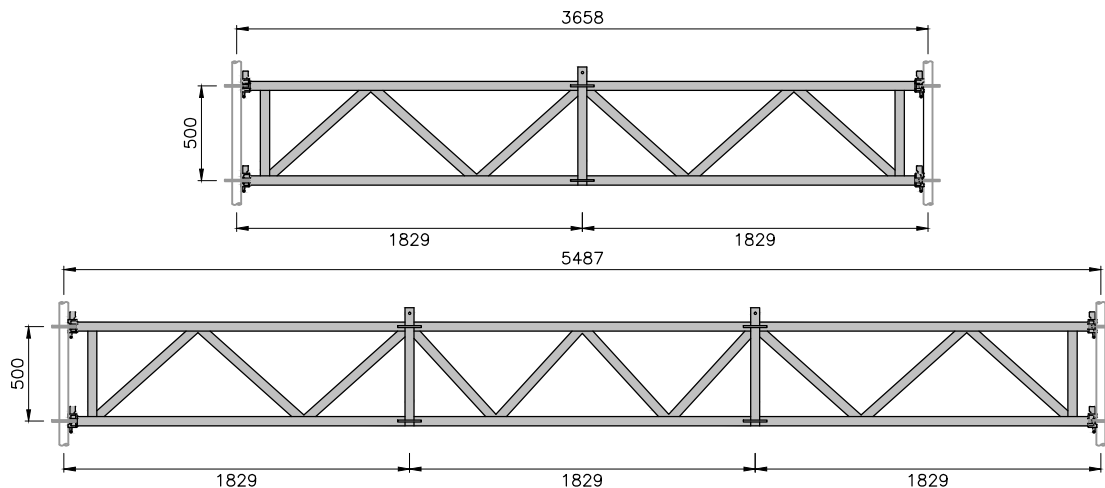


- Material : CHS $\phi 48.3 \times 3.2$ t Grade Q345

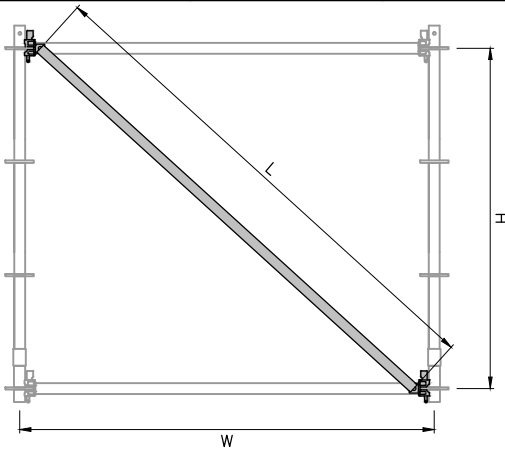
O-Bridging Horizontal 強化橫桿	Span, L	Weight	Safety Working Load
RSP-OBH1829	1829	11.7 kg	10 kN/m
RSP-OBH2479	2479	15.7 kg	5 kN/m



Truss 橫構架	Span, L	Weight	Safety Working Load (Working Platform)	Safety Working Load (Shoring)
RTA-W3605	3658 (1829 X 2)	45.3 kg	5 kN/m	45 kN
RTA-W5405	5487 (1829 X 3)	68.9 kg	4.5 kN/m	15 kN x 2



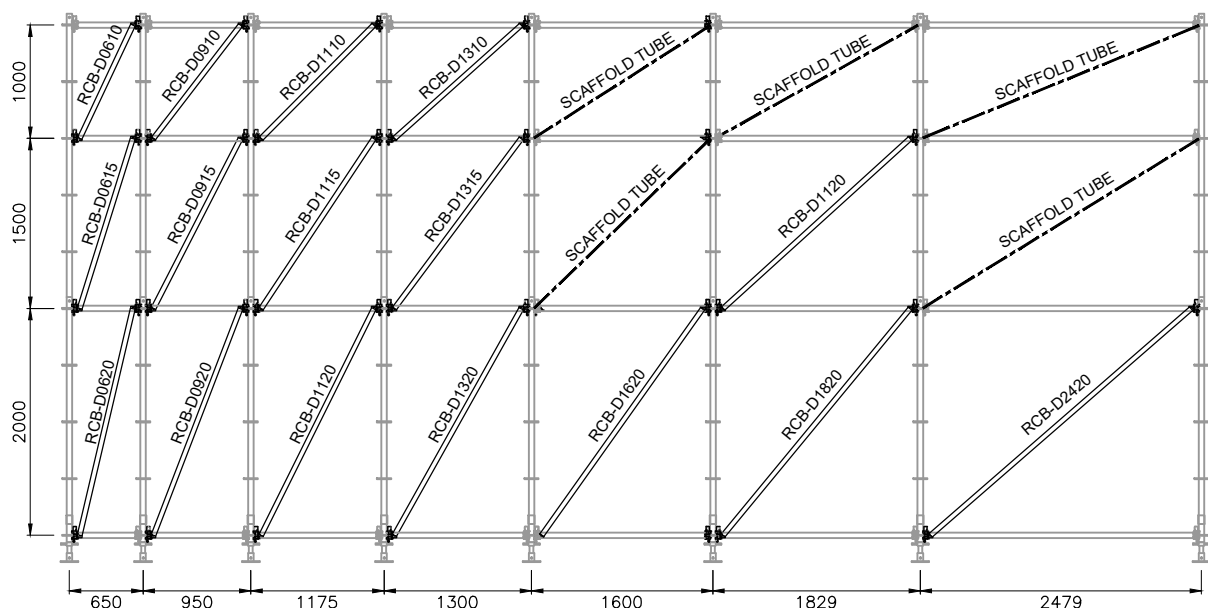
Diagonal Brace 斜桿	H	W	Weight	Color 1	Color 2
RCB-D2710	1000	2700	9.0 kg	Brown / 淺啡	Green / 綠
RCB-D2420	2000	2479	9.8 kg	Pink / 粉紅	White / 白
RCB-D1820	2000	1829	8.6 kg	Red / 紅	White / 白
RCB-D1620	2000	1600	8.2 kg	Orange / 橙	White / 白
RCB-D1320	2000	1300	7.8 kg	Blue / 藍	White / 白
RCB-D1315	1500		6.8 kg		Orange / 橙
RCB-D1310	1000		5.9 kg		Green / 綠
RCB-D1120	2000	1175	7.7 kg	Purple / 淺紫	White / 白
RCB-D1115	1500		6.6 kg		Orange / 橙
RCB-D1110	1000		5.6 kg		Green / 綠
RCB-D0920	2000	950	7.4 kg	Green / 綠	White / 白
RCB-D0915	1500		6.3 kg		Orange / 橙
RCB-D0910	1000		5.3 kg		Green / 綠
RCB-D0620	2000	650	7.2 kg	Yellow / 黃	White / 白
RCB-D0615	1500		6.0 kg		Orange / 橙
RCB-D0610	1000		4.9 kg		Green / 綠

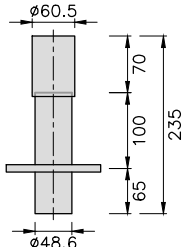


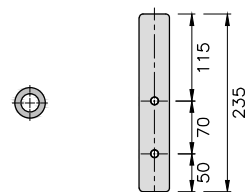
Detail of Diagonal Wedge Head

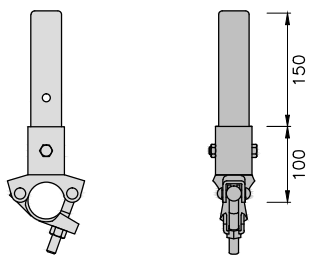
- Material : CHS $\phi 42.7 \times 2.5$ Grade Q345

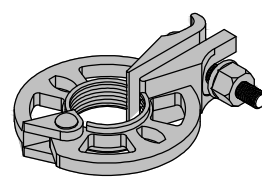
Diagonal Brace Combination Example

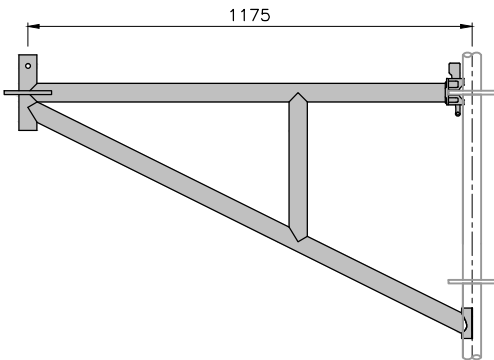


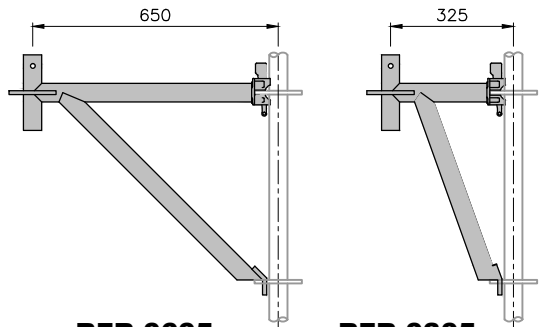
Base Collar 底座	Weight
RSP-BC	1.6 kg
	

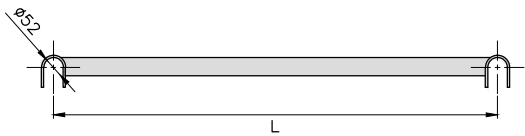
Spigot 駁心	Weight
RPN-SPG	0.7 kg
	

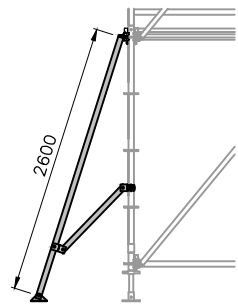
Spigot Single Coupler 駁心碼仔	Weight
RPN-CLP	1.4 kg
 BS or JIS Type Coupler are available upon request.	

Rosette Clamp 可拆式圓盤	Weight
RSP-RC	1.3 kg
	

Support Bracket 三角支撐	Weight	S.W.L.
RFR-1106	12.3 kg	6 kN/m
		

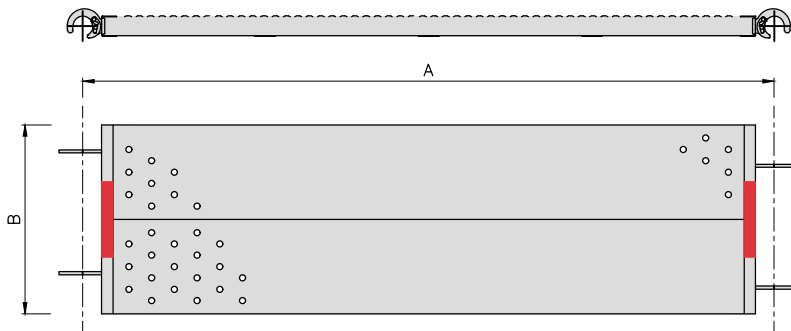
Support Bracket 三角支撐	Weight	S.W.L.
RFR-0605	6.9 kg	20 kN/m
RFR-0305	5.2 kg	20 kN/m
		

Board Bearer 橫擔	Span, L	Weight	Marking
RSP-BB1600	1600	2.3 kg	Orange / 橙
RSP-BB1300	1300	4.4 kg	Blue / 藍
RSP-BB1175	1175	4.1 kg	Purple / 淺紫
RSP-BB950	950	3.5 kg	Green / 綠
RSP-BB650	650	2.7 kg	Yellow / 黃
			

Stabilizer 穩定斜撐	Weight
RSP-S2600	13.2 kg
	

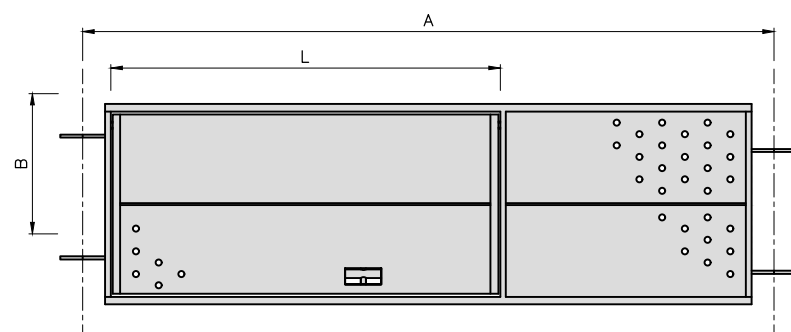


Catwalk 平台板	A	B	Weight	Color 1	Color 2
RCA-2430	2479	300	12.9 kg	Pink / 粉紅	Red / 紅
RCA-2425		250	12.0 kg	Pink / 粉紅	-
RCA-1850	1829	500	17.5 kg	Red / 紅	-
RCA-1830		300	10.0 kg		Red / 紅
RCA-1825		250	9.3 kg		-
RCA-1815		150	7.2 kg		-
RCA-1650	1600	500	15.5 kg	Orange / 橙	-
RCA-1630		300	8.9 kg		Red / 紅
RCA-1625		250	8.3 kg		-
RCA-1350	1300	500	13.2 kg	Blue / 藍	-
RCA-1330		300	7.5 kg		Red / 紅
RCA-1325		250	7.1 kg		-
RCA-1150	1175	500	11.7 kg	Purple / 淺紫	-
RCA-1130		300	7.0 kg		Red / 紅
RCA-1125		250	6.5 kg		-
RCA-0950	950	500	9.9 kg	Green / 綠	-
RCA-0930		300	6.0 kg		Red / 紅
RCA-0925		250	5.6 kg		-
RCA-0650	650	500	7.3 kg	Yellow / 黃	-
RCA-0630		300	4.6 kg		Red / 紅
RCA-0625		250	3.0 kg		-
RCA-0350	350	500	4.8 kg	Pink / 粉紅	-



Catwalk Width	Safety Working Load
500	250 kg
300	150 kg
250	125 kg
150	75 kg

Open-Top Catwalk 揭蓋平台板	A	B	L	Weight	Marking
TCA-60PA	1829	530	1170	18.3 kg	Yellow / 黃
RCA-60PS	1829	500	600	17.5 kg	Red / 紅
RCA-50PS	1600	500	600	15.2 kg	Orange / 橙
RCA-40PS	1300	500	600	12.4 kg	Blue / 藍

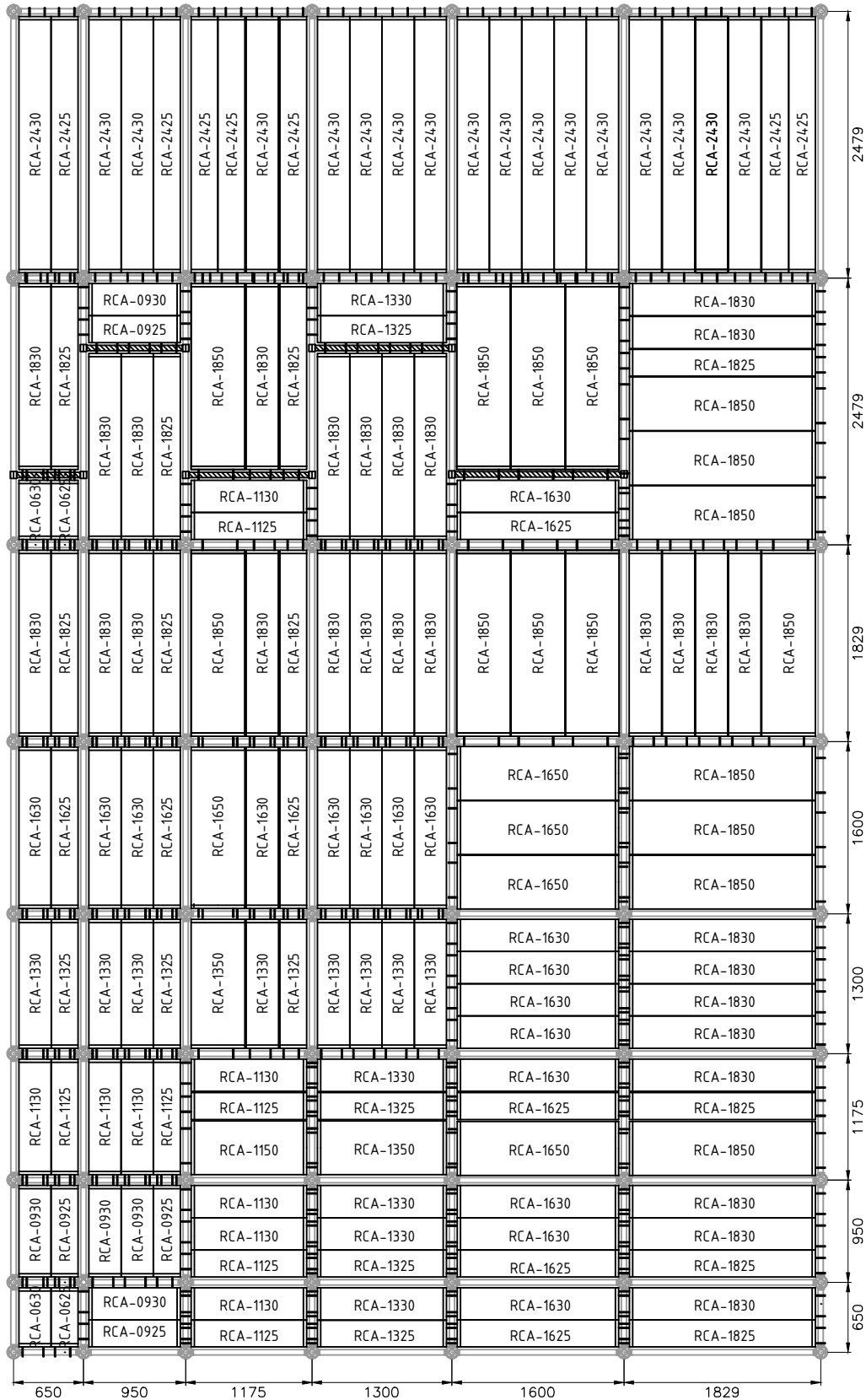


Safety Working Load
250 kg

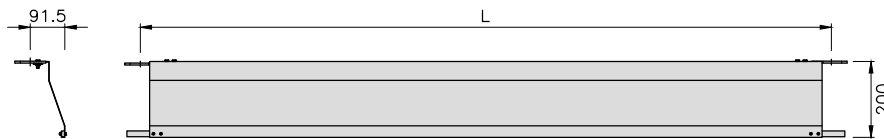


Catwalk Combination Example

BOARD BEARER



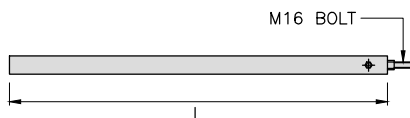
Toeboard 踢腳板	L	Weight	Marking
RTB-2420	2479	7.6 kg	Pink / 粉紅
RTB-1820	1829	5.7 kg	Red / 紅
RTB-1620	1600	5.0 kg	Orange / 橙
RTB-1320	1300	4.1 kg	Blue / 藍
RTB-1120	1175	3.8 kg	Purple / 淺紫
RTB-0920	950	3.1 kg	Green / 綠
RTB-0620	650	1.6 kg	Yellow / 黃



Toeboard (Cutted) 踢腳板 (斜口)	L	Weight	Marking
RTB-2420A	2479	7.2 kg	Pink / 粉紅
RTB-1820A	1829	5.3 kg	Red / 紅
RTB-1620A	1600	4.6 kg	Orange / 橙
RTB-1320A	1300	3.8 kg	Blue / 藍
RTB-1120A	1175	3.4 kg	Purple / 淺紫
RTB-0920A	950	2.8 kg	Green / 綠
RTB-0620A	650	1.9 kg	Yellow / 黃

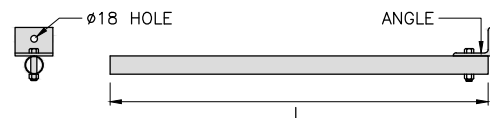


Wall Tie 連牆器	L	Weight
TWT-WA3000	3000	7.6 kg
TWT-WA2500	2500	6.4 kg
TWT-WA2000	2000	5.2 kg
TWT-WA1500	1500	4.0 kg
TWT-WA1000	1000	2.8 kg
TWT-WA500	500	1.6 kg



- Material : CHS $\varnothing$ 48.3 x 2.1t Grade Q235

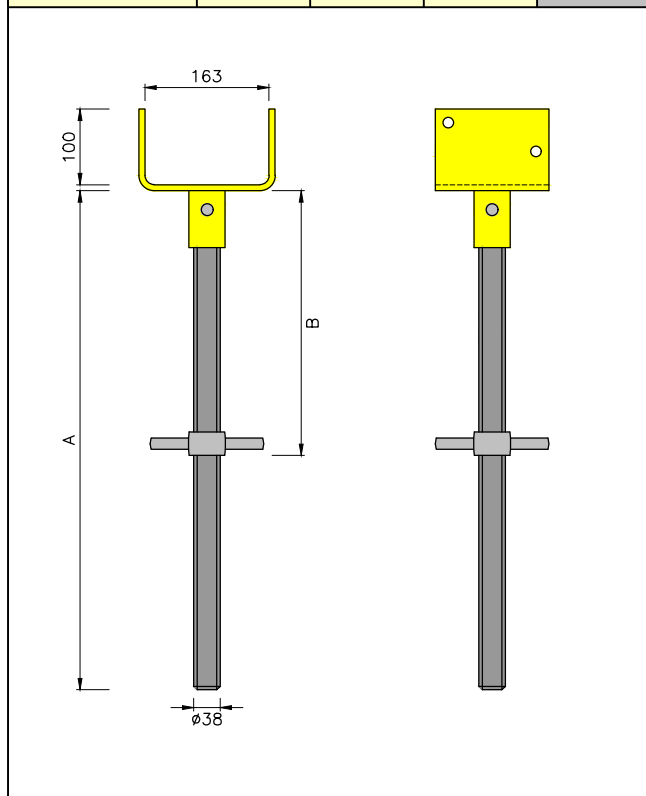
Wall Tie 連牆器	L	Weight
TWT-WA3000UA	3000	9.5 kg
TWT-WA2500UA	2500	7.3 kg
TWT-WA2000UA	2000	6.1 kg
TWT-WA1500UA	1500	4.9 kg
TWT-WA1000UA	1000	3.7 kg
TWT-WA500UA	500	2.5 kg



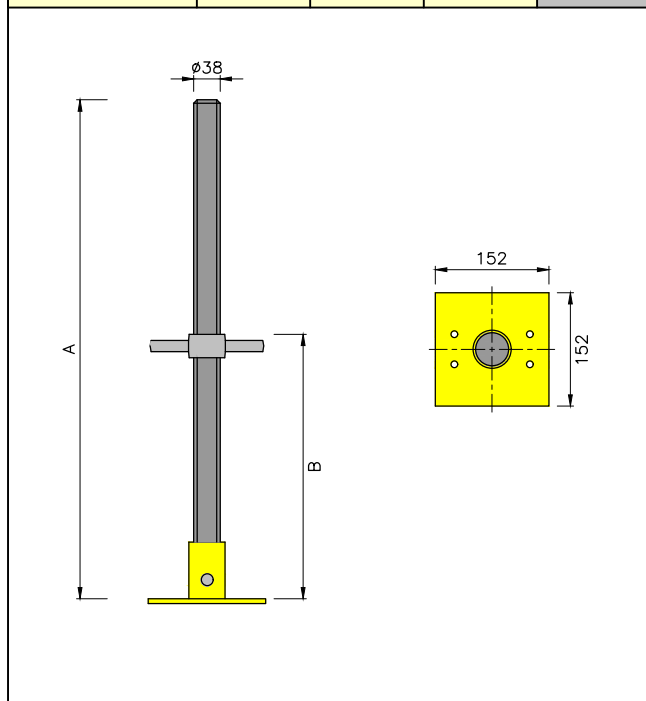
- Material : CHS $\varnothing$ 48.3 x 2.1t Grade Q235



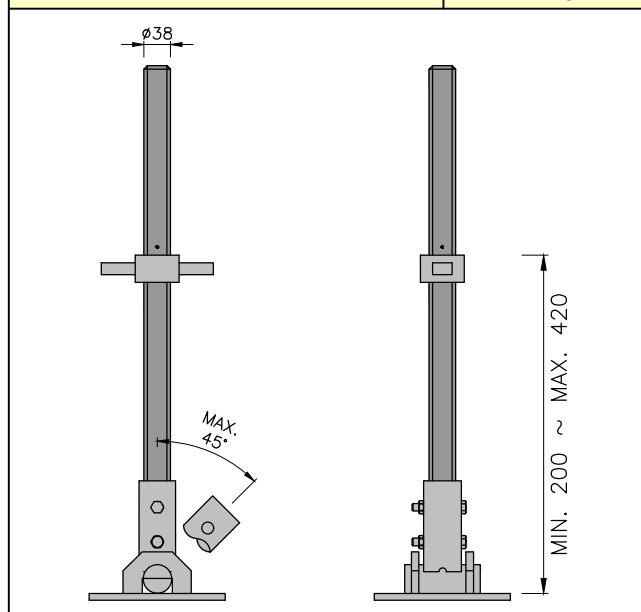
U-Head Jack 頂積	A	B	Weight	Marking
CJK-FHJ86	860	150 ~ 620	8.3 kg	Red / 紅
CJK-FHJ66	660	150 ~ 420	7.5 kg	Yellow / 黃
CJK-FHJ43	430	150 ~ 280	6.6 kg	Silver / 銀



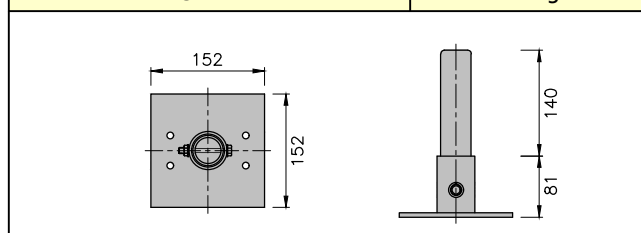
Base Jack 底積	A	B	Weight	Marking
CJK-BPJ86	860	150 ~ 620	6.6 kg	Red / 紅
CJK-BPJ66	660	150 ~ 420	5.4 kg	Yellow / 黃
CJK-BPJ43	430	150 ~ 280	4.5 kg	Silver / 銀



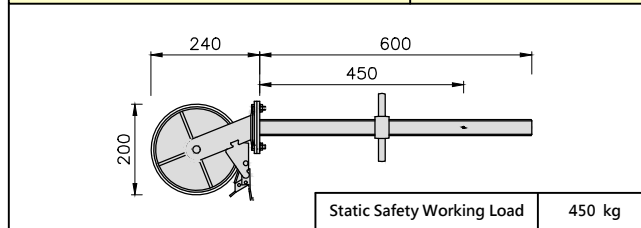
Swivel Base Plate Jack 可調較角度底積	Weight
RJK-SBPJ	6.5 kg



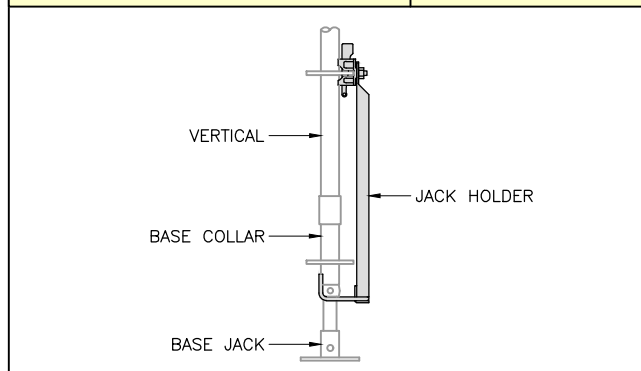
Base Plate 底掌	Weight
RJK-BP	2.2 kg



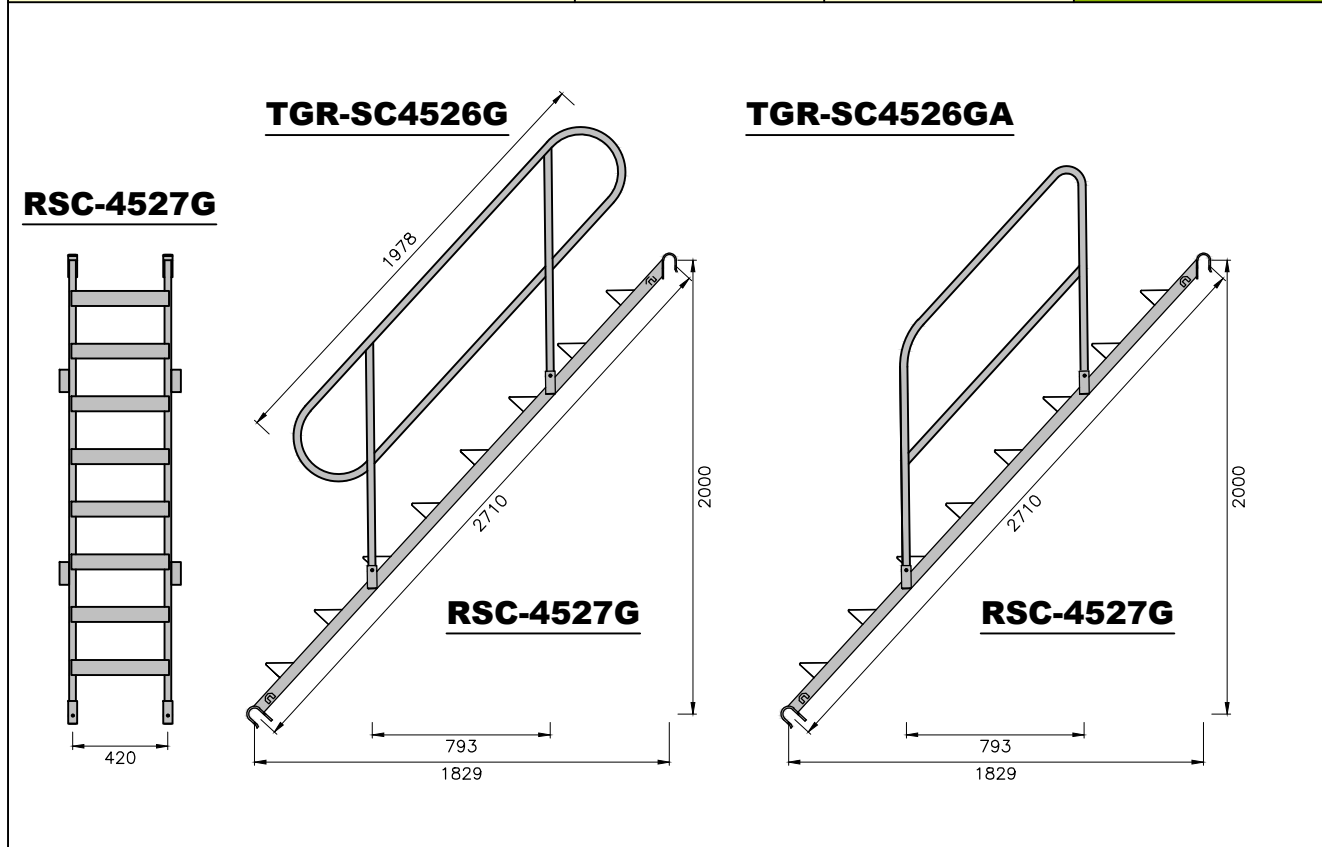
Adjustable Jack Castor 有制轆仔連積芯	Weight
TWH-2060PA	10.3 kg



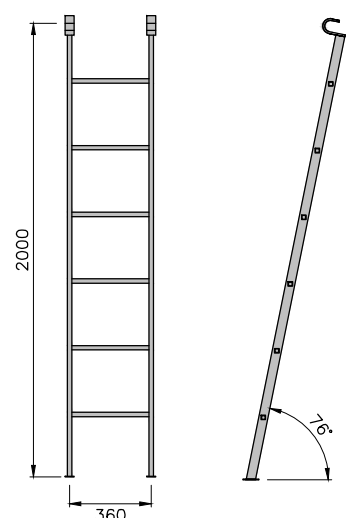
Jack Holder 底積吊勾	Weight
RJK-HLR	2.0 kg



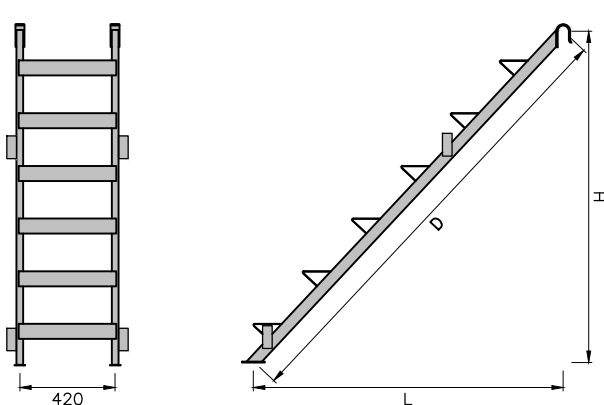
Item Name	Code	Weight	Marking
Staircase 樓梯	RSC-4527G	24.4 kg	Orange / 橙
Staircase Handrail for RSC-4527G 樓梯扶手	TGR-SC4526G	5.0 kg	Orange / 橙
Staircase Handrail for RSC-4527G 樓梯扶手	TGR-SC4526GA	2.9 kg	Green / 綠

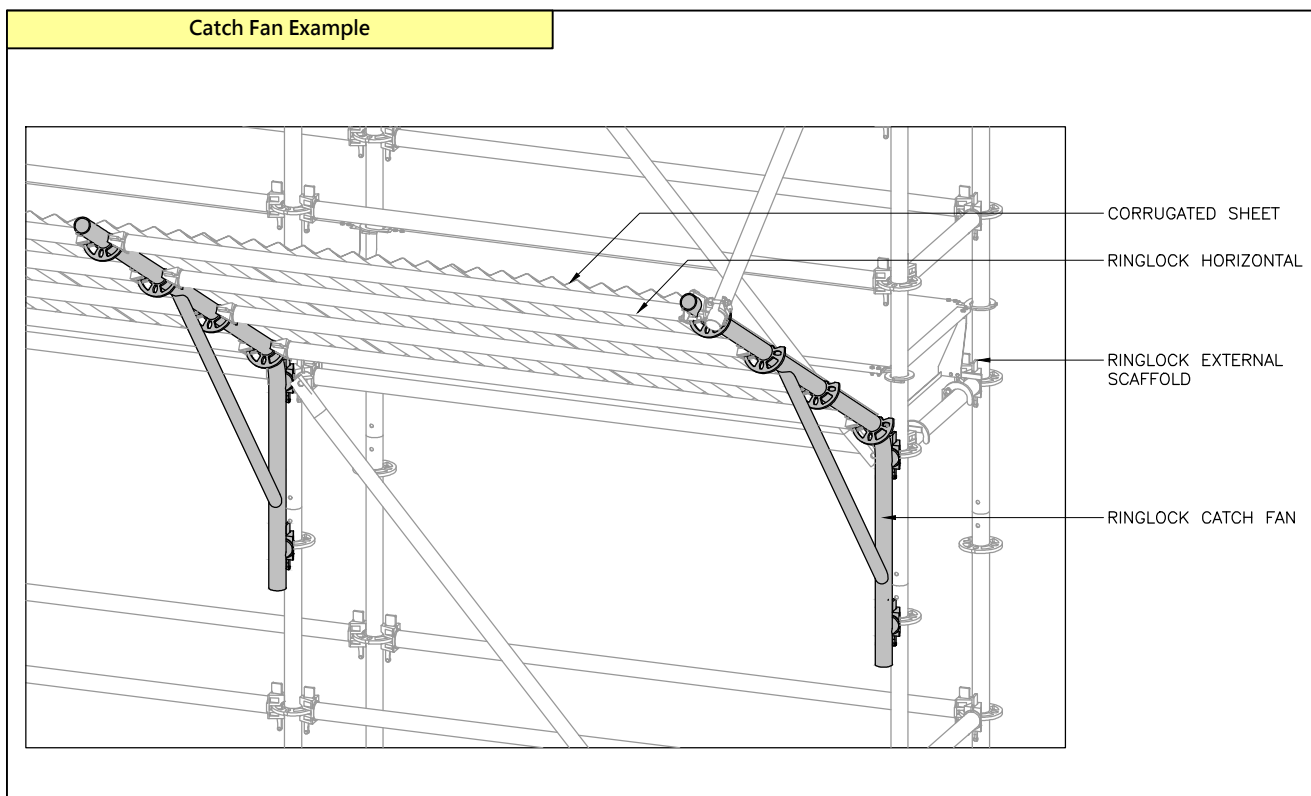
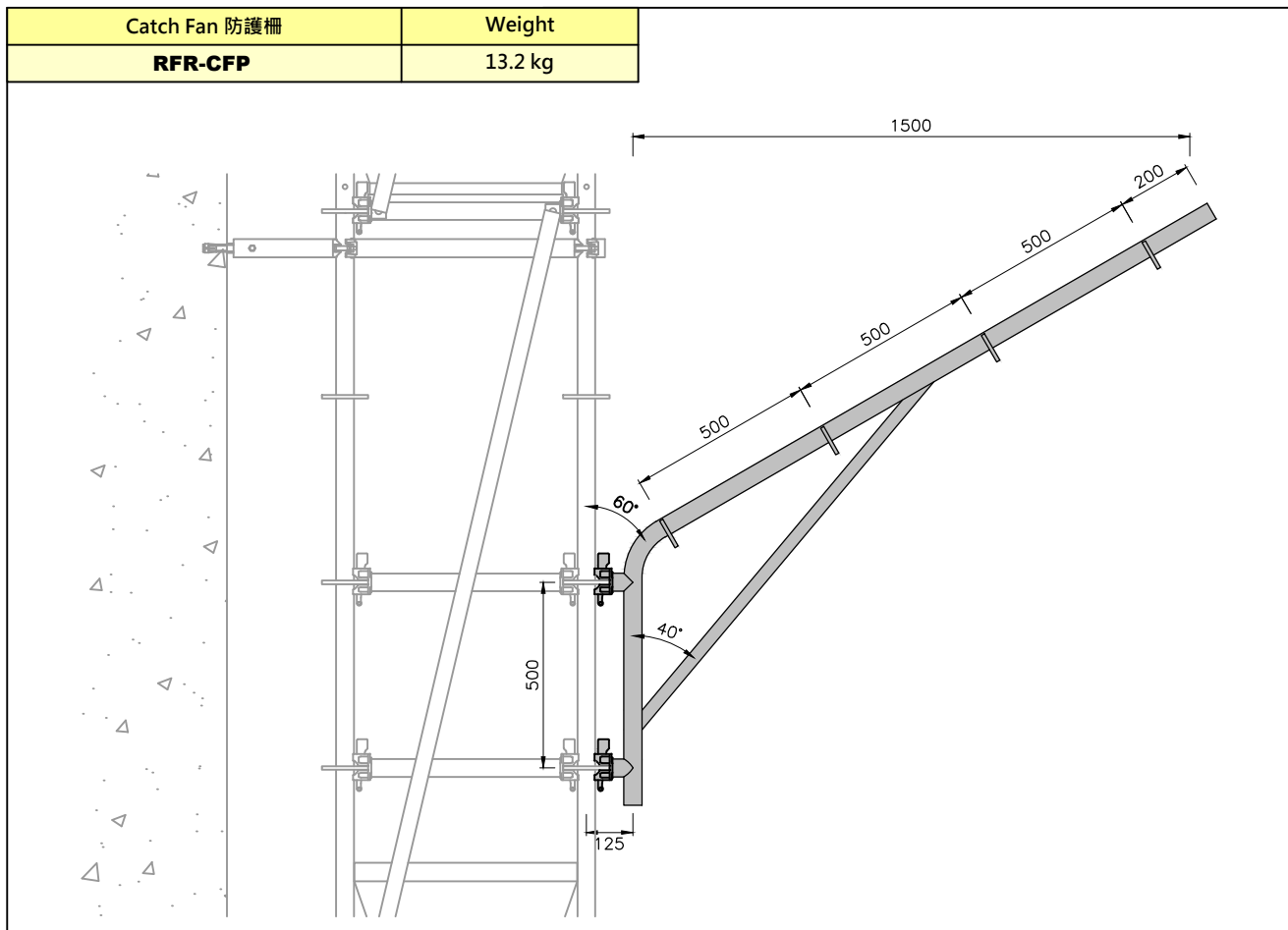


Hanging Ladder 掛梯	Weight
RSC-4020A	9.5 kg



Staircase 樓梯	Steps	L	H	D	Weight	Marking
TSC-4520G	6	1370	1500	2031	19.1 kg	Blue / 藍
TSC-4515G	4	915	1000	1355	13.5 kg	Green / 綠
TSC-4507G	2	455	500	676	7.4 kg	Pink / 粉紅



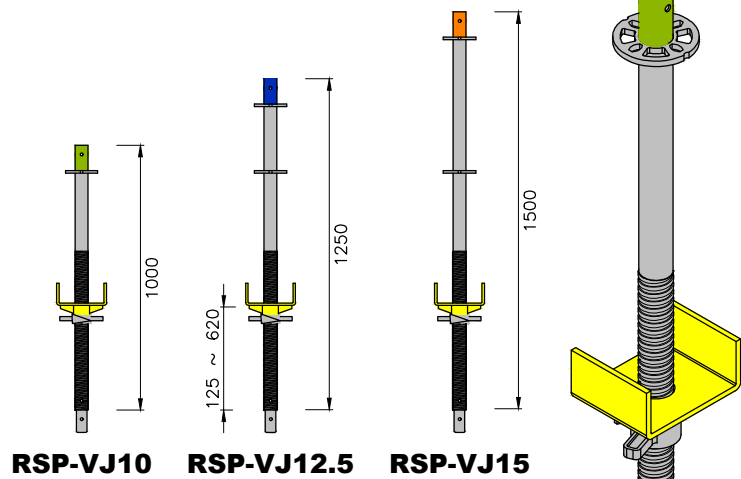



Vertical with Jack 直柱連頂積	L	Weight	Marking
RSP-VJ10	1000	9.3 kg	Blue / 藍
RSP-VJ12.5	1250	10.7 kg	Orange / 橙
RSP-VJ15	1500	11.7 kg	Green / 綠

PATENT NO: HK1251779

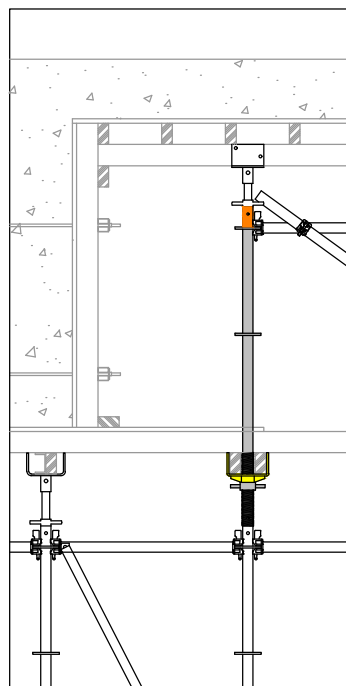
The RINGLOCK VERTICAL WITH JACK is used in conjunction with the RINGLOCK scaffold system, providing a more efficient way to support beam and slab structures on site.

The VERTICAL WITH JACK is composed of two main components: an adjustable screw jack on one end and a RINGLOCK vertical member on the other. While the jack screw length remains the same, the vertical comes in 3 different sizes to suit its application. The vertical component adds flexibility by allowing the extension of the standard RINGLOCK modular system, as well as inserting another jack component into the vertical to create a "double head" jack. For typical framing plans, the VERTICAL WITH JACK significantly enhances the formworks process by helping increase the working space on the ground and decrease the amount of modular scaffold components required for the falsework structure, which in turn minimizes the total labour and time.

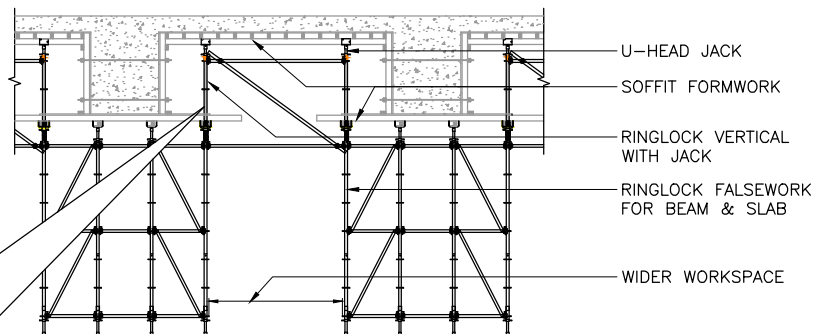


- Material : Screwed CHS $\phi 48.3 \times 3.2$ t Grade Q345
Vertical's Compressive S.W.L (F.O.S. = 1.65)

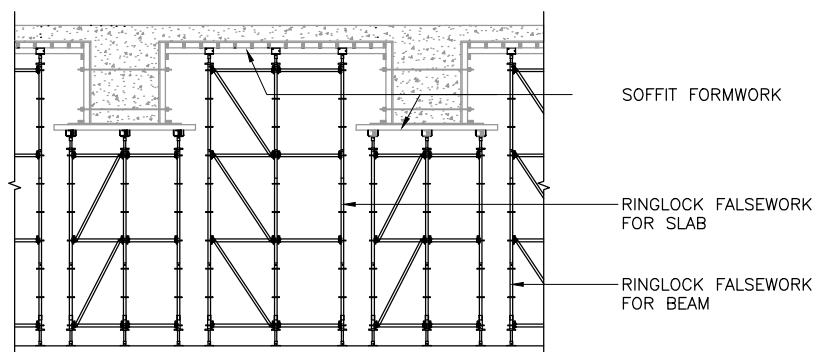
Effective Length	Compressive S.W.L.
1000 mm	40 kN
1250 mm	34 kN
1500 mm	27 kN



ASSEMBLY DETAIL



NEW FALSEWORK DESIGN USING RINGLOCK VERTICAL WITH JACK

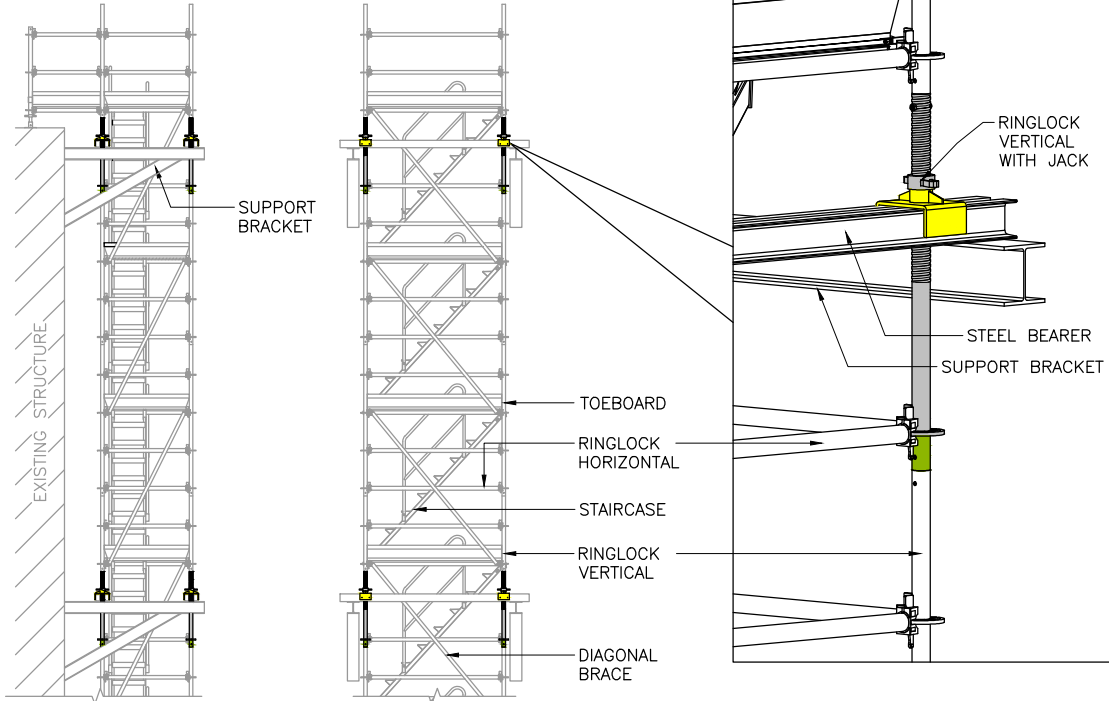


TRADITIONAL FALSEWORK DESIGN



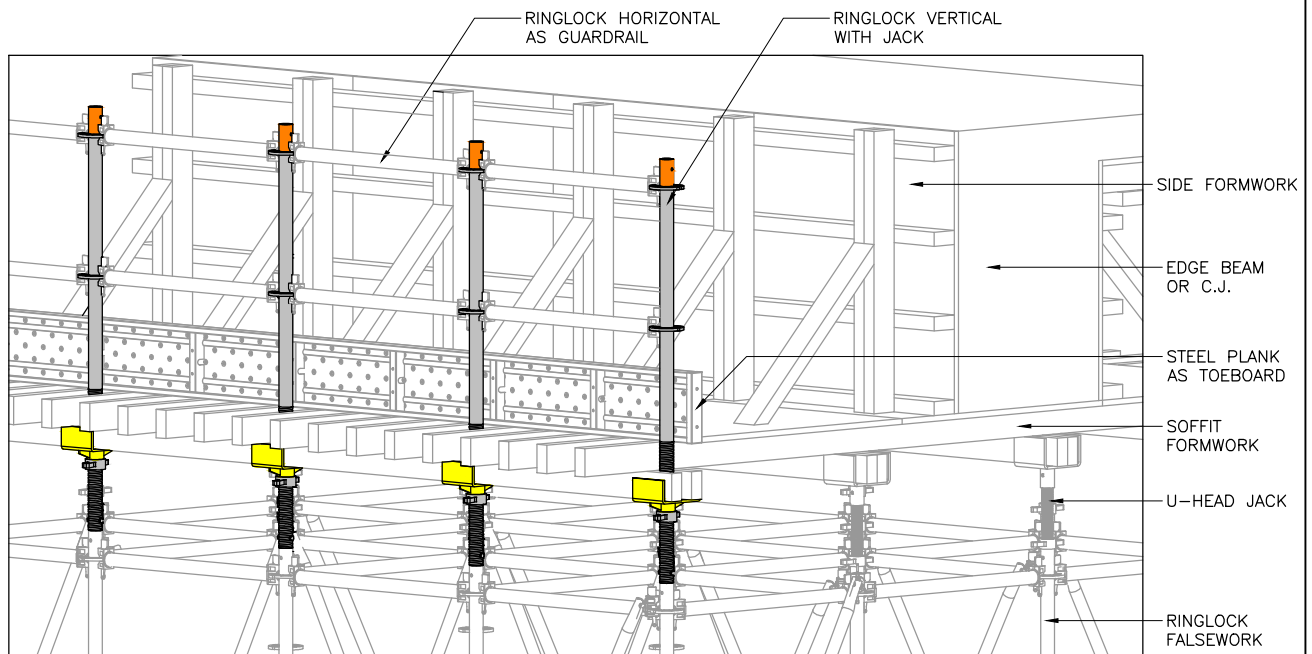
Hanging Access Tower Example

An option for extension of the VERTICAL WITH JACK is utilizing the screw jack to "hang" on steel bearers and support brackets to efficiently erect a hanging access ladder.

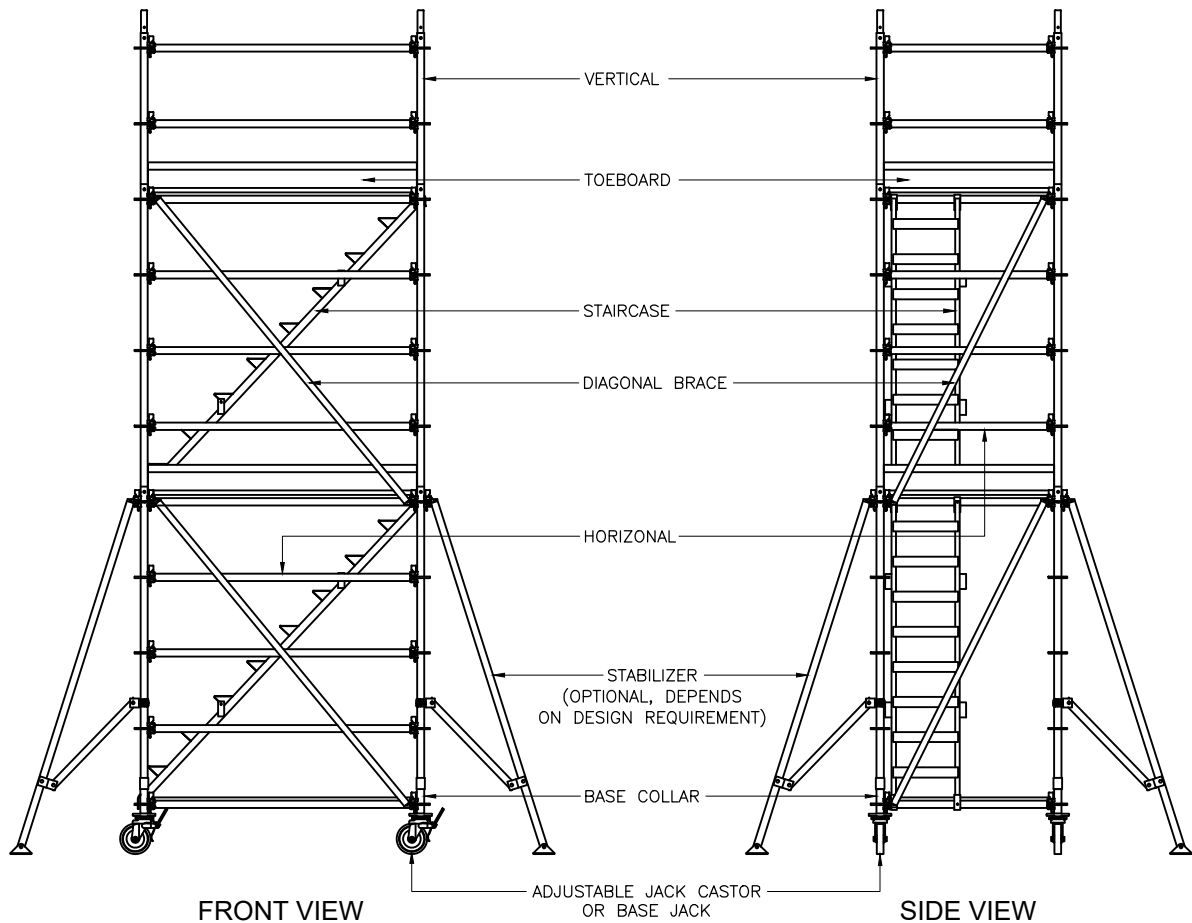
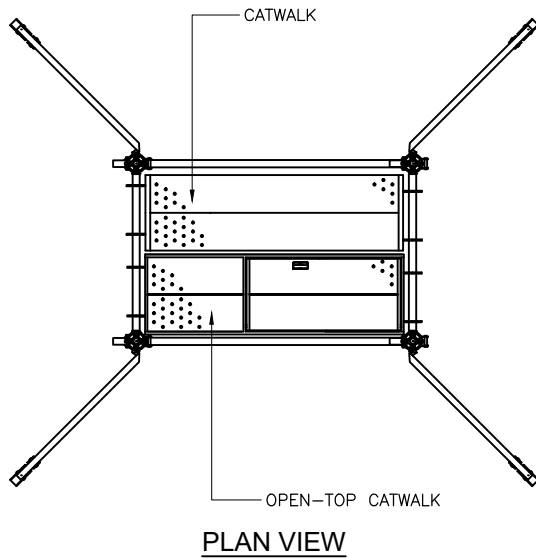


Falsework Temporary Edge Protection Example

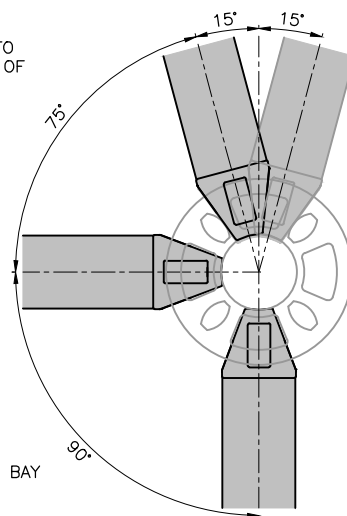
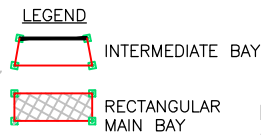
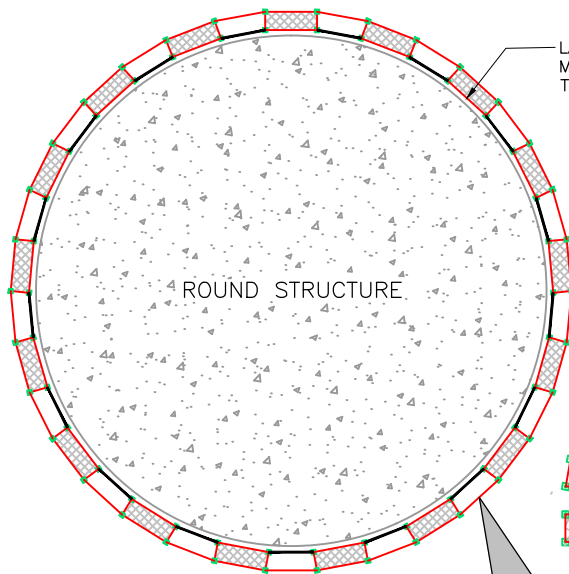
Maximizing both ends of the VERTICAL WITH JACK by connecting the screw jack to the existing falsework with a spigot and allowing the vertical end to extend above the formwork to be used in conjunction with respective horizontal components as the guardrail.



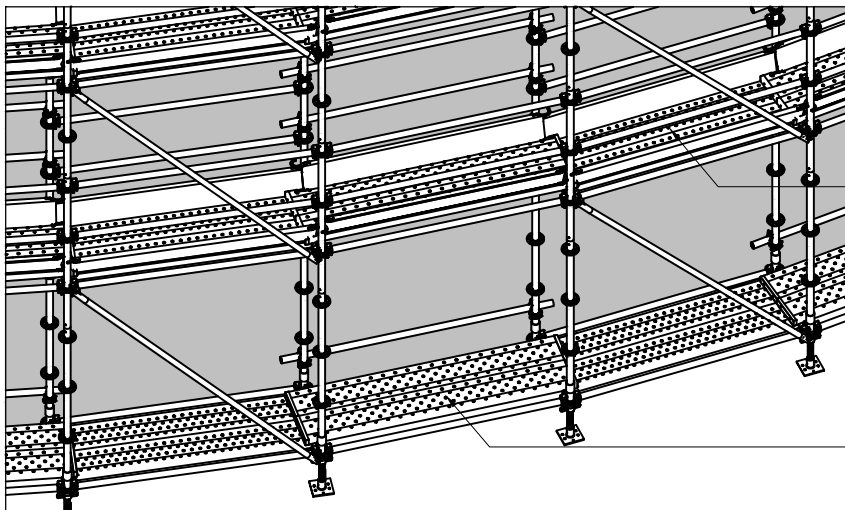
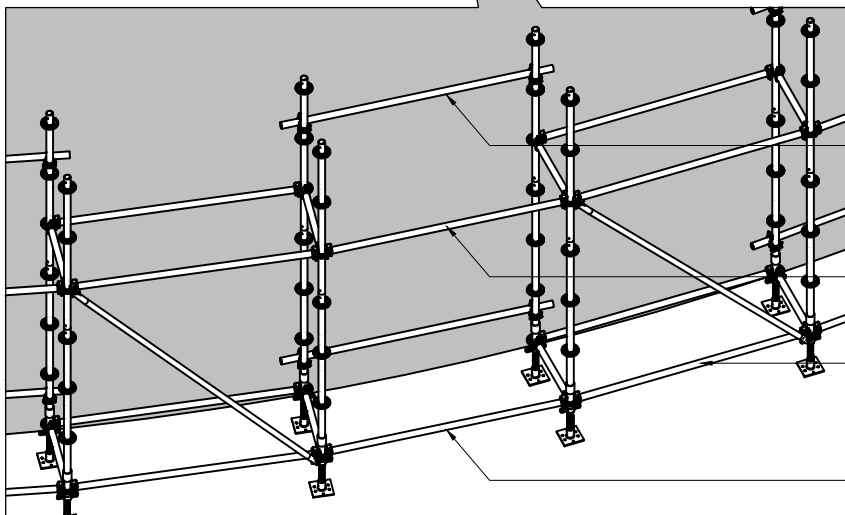
Working Platform Example



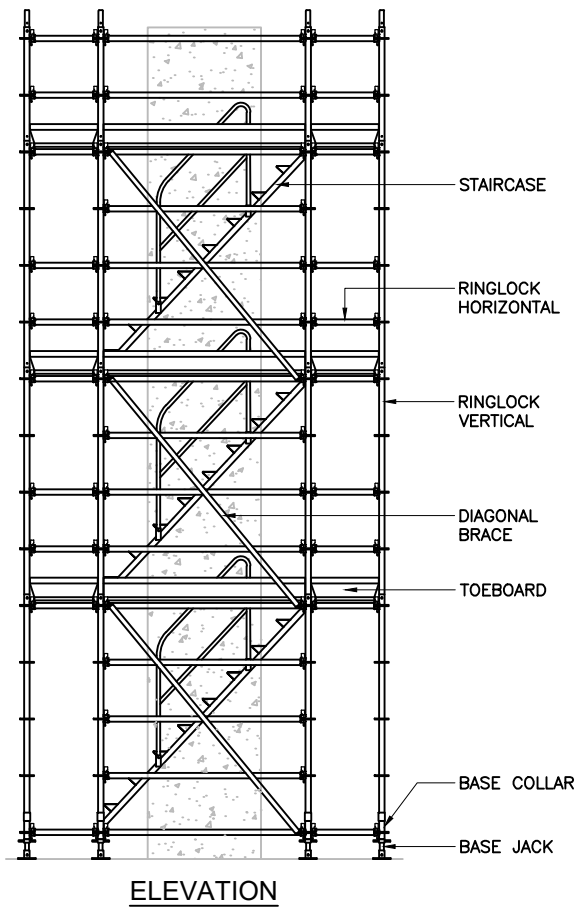
Circular Working Platform Example



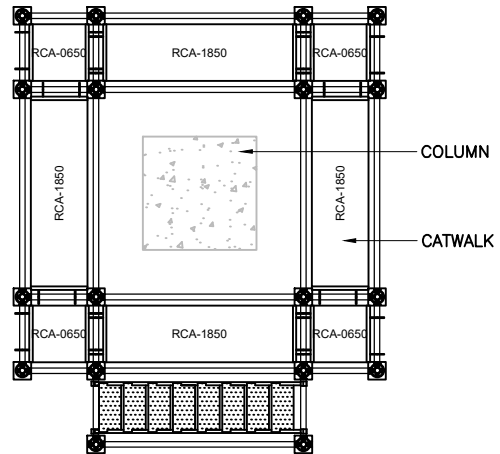
Depending on the radius, it is advantageous to use the large holes with the horizontals to obtain a more flexible curvature.



Column Working Platform Example



ELEVATION

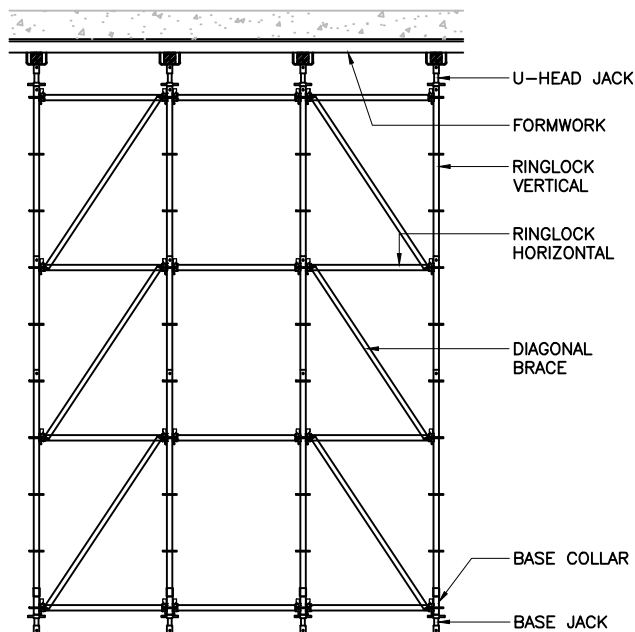


PLAN VIEW

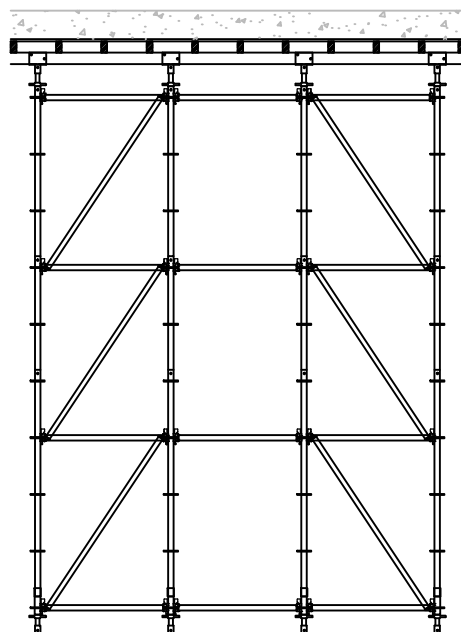
- Lifiable feature is available upon request.

Falsework Shoring Example

Remark: Variations to diagonal brace spacing must be checked by the appropriate designer and specified in the design layout.
Please see "General Rules for Diagonal Bracing" at Page 1.18.



ELEVATION



ELEVATION



Main Contractor	Contract / Project Site
Gammon Construction Limited	Foundation Works for Proposed Property Development of West Rail Tsuen Wan West Station TW5
Dragages - China Harbour - VSL Joint Venture	Contract No. HY/2011/09 Hong Kong – Zhuhai – Macao Bridge Hong Kong Link Road
Bachy Soletanche - Laing O'Rourke Joint Venture	Contract 811A West Kowloon Terminus Approach Tunnel (North)
Gammon - Leighton Joint Venture	Contract 811B West Kowloon Terminus Approach Tunnel (South)
Leighton Contractors (Asia) Ltd	Contract 1112 Hung Hom Station and Stabling Sidings
Penta-Ocean Construction Co Ltd	Redevelopment of Queen Mary Hospital Phase 1 – Conversion of SSQ
Penta-Ocean Construction Co Ltd	Contract 1102 Hin Keng Station and Approach Structures
Kaden - Chun Wo Joint Venture	Contract 1108 Kai Tak Station and Associated Tunnels
Shui Wing Engineering Company Limited	Central Police Station Conservation and Revitalisation Project
Chun Wo - CRGL Joint Venture	Contract No. HK/2009/02 Wan Chai Development Phase II - Central - Wan Chai Bypass at Wan Chai East
Chun Wo - Leader Joint Venture	Contract No. HK/2009/01 Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre
Kier - Laing O'Rourke - Kaden Joint Venture	Contract 901 Admiralty Integrated Station and SCL Enabling Works
Nishimatsu Construction Co Ltd	Contract 902 Nam Fung Tunnel and Ventilation Buildings
Leighton - Gammon Joint Venture	Contract 810A West Kowloon Terminus Station North
Gammon Building Construction Limited	Proposed Residential Tower At 25-35 Seymour Road Hong Kong
Leader Joint Venture	Contract 1106 Diamond Hill Station Extension
Vinci Construction Grands Projets	Contract 1103 Hin Keng to Diamond Hill tunnels and Fung Tak Public Transport Interchange
Kier-Kaden-OSSA Joint Venture	Contract 824 Ngau Tam Mei to Tai Kong Po Tunnels
Sun Fook Kong (Civil) Limited	Contract No. HY/2012/11 Provision of Barrier-free Access Facilities for Highway Structures – Phase 3 Contract 1
Kone Elevator (HK) Ltd	Contract 847 Lifts
Otis Elevator Company (H.K.) Ltd	Two International Finance Centre
Leighton Contractors (Asia) Ltd	H2634 - Contract No. SS C505 - Construction of Liantang / Heung Yuen Wai Boundary Control Point
Hip Hing Joint Venture (VEC)	Tsing Yi Vehicle Examination Centre



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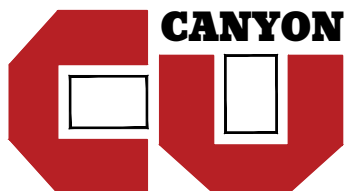


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