HITECH
STEEL INDUSTRIES
FENCE & STEEL



Installation Manual For

CHAIN-LINK SLIDING GATE

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+966 11 474 8635
www.hitech.sa
sales@hitech.sa
Building no 3824, Nira Street, 2nd
Industrial area, Riyadh 14338 RSNB3824

1. Introduction & Scope

This manual provides step-by-step instructions for the safe and correct **site installation (erection)** of Hitech chain-link-fabric sliding gates. It is written as a generic reference applicable to any gate size, opening width, or Purchase Order.

The instructions are intended for use by trained installation crews, fencing contractors, and site supervisors erecting factory-fabricated gate posts and leaves on site. They should be read in full, together with the project-specific approved production drawing issued for your order, before work begins.

This manual covers on-site work only: receiving and checking factory-supplied materials, setting out, foundation and support-post installation, hanging and fitting the pre-fabricated gate leaf, roller-carriage fitting, locking-system and guide-roller fitting, chain-link mesh fixing, final adjustment, and routine in-service maintenance.

This manual is **not** a workshop fabrication or production manual. It does not cover cutting, welding, or manufacture of the gate posts, frames, or hardware — these operations are carried out under factory-controlled conditions before dispatch to site. Gate posts and the gate leaf arrive at site as complete, pre-welded assemblies (items P-451 and P-452) ready for erection.

NOTE

This is a generic, component-based installation reference. Exact dimensions and quantities for your gate are shown on the approved project drawing issued against your Purchase Order. If any site condition, drawing revision, or Purchase Order conflicts with this manual, the current approved drawing and Purchase Order always take precedence.

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2. Product Overview

This manual covers the sliding gate configuration. The gate uses hot-dip-galvanised and PVC / powder-coated steel tube framing infilled with PVC-coated chain-link fabric, and is supplied with Hitech standard roller-carriage and locking hardware. Exact dimensions, post sizing, and quantities are defined by the approved project drawing for each order.

SLIDING GATE

A single-leaf sliding gate for vehicular or pedestrian access, supported on a line of reinforced-concrete support posts (sized and spaced per project drawing) and fitted with Hitech standard roller-carriage and lock hardware. Unlike a swing gate, the leaf slides horizontally on roller carriages and cantilevers past the last support post to close the opening — no ground-mounted track or trench is required across the driveway.

Typical components

A. One movable gate leaf, incorporating the cantilever track beam

B. Gate frame and chain-link mesh infill

C. Support posts (minimum three, per project drawing)

D. Roller carriage assemblies (HTRC)

E. Closed-end guide post and catch roller

F. Locking system (HTLS) and fixing hardware



Figure 2.1 — Sliding gate, closed position

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3. Safety Precautions

Read this section before starting work. Gate installation involves lifting heavy steel sections, concrete work, and work with hand and power tools.

A. Wear personal protective equipment at all times: safety boots, gloves, hi-visibility vest, and eye protection when cutting, drilling, or welding.

B. The gate leaf and posts are heavy and awkward to handle — use a minimum of two people (or mechanical lifting aid) for every lift; never lift alone.

C. Confirm the location of buried services (water, drainage, electrical, communications) before excavating post holes.

D. Temporarily brace and prop all posts immediately after positioning, and before concrete has cured — an unbraced post can fall and cause serious injury.

E. Keep the work area barriered off from pedestrian and vehicle traffic while the gate is partially installed or the foundation is curing.

F. Do not load the gate leaf onto the roller carriages, fit the locking system, or remove post propping until foundations have reached adequate strength (see Section 7.4).

G. Never stand beneath the leading (cantilevered) end of the gate leaf during lifting or placement — the leaf overhangs past the last support post with no support beneath it.

H. If any welding, grinding, or hot work is required on site, follow a permit-to-work / hot-works procedure and keep fire extinguishing equipment on hand.

I. Check that the finished gate slides freely and locks securely before handing the site back into use; a gate that does not latch or that slides uncontrolled is a hazard to users.

> ⚠ **CAUTION**
>
> Do not remove temporary props from posts, and do not allow vehicle or pedestrian traffic through the opening, until the concrete foundations have cured for the minimum period stated in Section 7.4 and all fixings have been fully tightened.

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4. Materials & Bill of Materials

Before starting installation, unload and check all components against the table below and against the delivery note. Report any shortage or transport damage to Hitech before beginning installation. Quantities per gate set and exact dimensions are defined by the approved project drawing and Purchase Order — this schedule is a generic component reference only.

BILL OF MATERIALS — SLIDING GATE

Item Code	Generic Description	Unit
P-450	Gate elevation (complete sliding gate assembly)	Each
P-451	Support post assembly (incl. base / embed plate)	Each
P-452	Gate frame welding assembly (leaf)	Each
P-452-1/2	Frame stile — steel tubular frame member	Each
P-452-3	Stretcher bar — mesh-supporting tension member	Each
P-452-4/5	Frame rail — steel tubular frame member (top / bottom)	Each
P-452-6	Bracing pipe / cantilever truss member — internal bracing	Each
P-452-7	Welded cleat — steel fixing cleat	Each
P-453	Cantilever track beam / bottom guide rail (fixed to leaf)	Each
HTRC	Hi-tech standard roller carriage (post-mounted)	Each
P-454	Closed-end guide post & catch roller assembly	Each
P-455	Open-end guide bracket / rear travel-stop assembly	Each
HTLS	Hi-tech standard locking system	Each
—	Chain-link fabric — PVC-coated / galvanized infill, mesh opening per project specification	As reqd.

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SITE CONSUMABLES

In addition to the above gate components, the following consumables are required on site and are not included in the factory-supplied kit unless separately ordered:

A. Ready-mix or site-mixed concrete for post foundations (grade per project specification, minimum C20/25 recommended).

B. Fixing rod / anchor rod (size per project drawing) and tie wire for mesh fixing.

C. Anti-corrosion touch-up paint matching the factory finish, for use on any site cuts or weld repairs.

5. Tools & Equipment Required

A. Post-hole auger or excavator / hand digging tools

B. Spirit level (minimum 1200 mm) and laser or water level

C. Builder's line, string line, pegs and tape measure (30 m)

D. Concrete mixing equipment (mixer or mixing tray), shovels, tamping bar

E. Adjustable spanners / socket set and torque wrench (for roller carriage, lock and cleats)

F. Angle grinder with cutting and grinding discs (for on-site trimming only)

G. Electric drill with metal drill bits (for site-fixed cleats / anchors, where applicable)

H. Fencing pliers / mesh clips and tie wire tool, for chain-link fabric fixing

I. Straight edge / string line for checking post plumb and gate alignment

J. Engine hoist, chain hoist, or forklift rated for the gate leaf weight

K. Temporary props / adjustable stays for holding posts and the leaf plumb while concrete cures

L. PPE as listed in Section 3

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6. Site Survey & Setting Out

A. Confirm the finished gate opening width, support-post positions, and post spacing against the approved project drawing and Purchase Order.

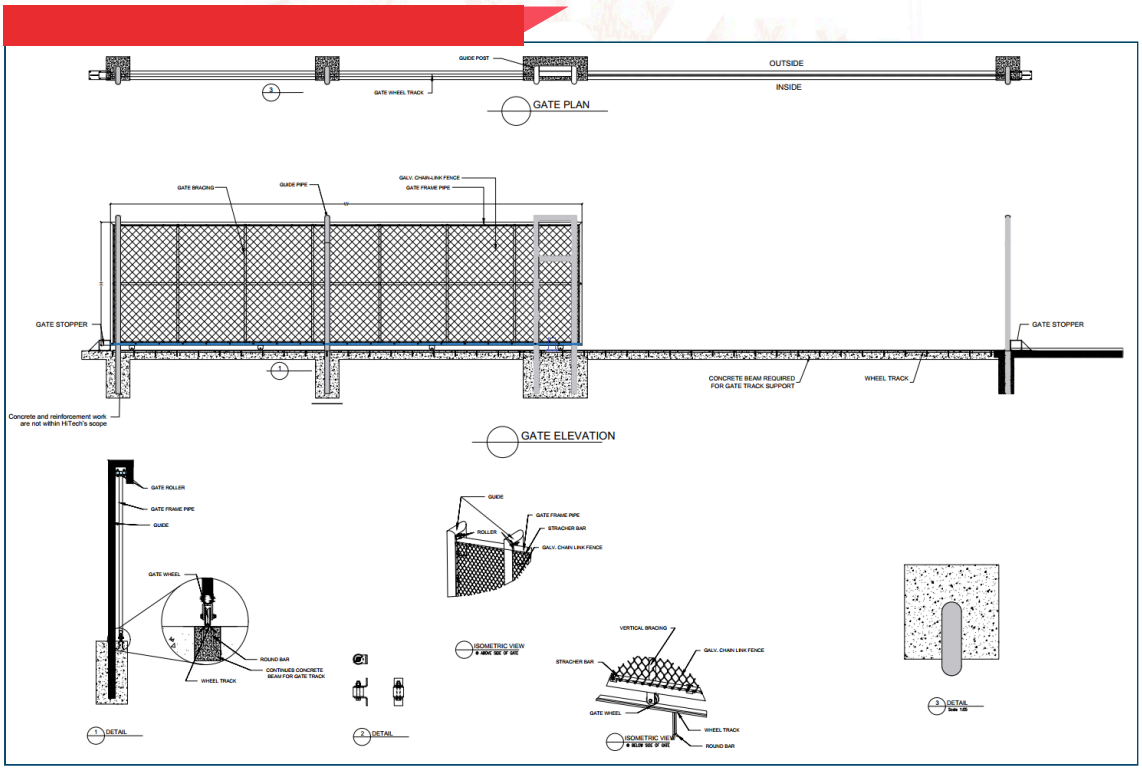
B. Locate and mark the centreline of the opening and the exact position of every support post using pegs and a string line.

C. Check ground levels across the full width of the gate travel path — the finished gate line should follow a level or evenly-graded line, since a cantilever gate has no ground track and is less tolerant of ground irregularity than a wheeled track gate.

D. Confirm there is adequate clearance for the full slide travel, including the cantilevered overhang at both the open and closed positions, and mark this on site.

E. Locate underground services before any excavation (see Section 3).

F. Verify support-post foundation positions match the pad / footing sizes and reinforcement (if any) shown on the project civil / structural drawings, in addition to the gate manufacturer's drawing.



Typical sliding gate arrangement — gate plan, elevation and track details

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7. Foundation & Support Posts

EXCAVATION

A. Excavate a post hole at each marked position. As a general guide (to be confirmed against local ground conditions and the project structural drawing): minimum embedment depth 600 mm below finished ground level, hole diameter / size sufficient to give a minimum 100–150 mm concrete surround to the post on all sides. Cantilever gate posts carry the full weight of the gate leaf and are typically founded deeper and more heavily reinforced than swing-gate posts — always confirm against the project structural drawing.

POSITIONING THE SUPPORT POSTS

A. Stand each post in its hole (post diameter and reinforcement sized per project drawing). Posts are supplied pre-fitted with roller-carriage mounting brackets — confirm the gate travel direction before setting, so brackets face the correct way.

B. Plumb each post in two directions (front-to-back and side-to-side) using a spirit level, and check post-to-post spacing and alignment against the approved project drawing. All roller-carriage mounting brackets must finish at the same height — check across every post with a laser or water level before pouring.

C. Brace each post securely in the plumb position using timber props or adjustable stays, fixed to stakes outside the hole. Re-check level, spacing, and bracket height before pouring concrete.

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A. Pour concrete into the hole around the post in stages, tamping to remove air pockets, keeping the post plumb and correctly positioned throughout.

B. Finish the concrete slightly proud of finished ground level and slope it away from the post to shed water.

C. Leave bracing / props in place undisturbed until the concrete has cured.

CURING TIME

⚠ **CAUTION**

Do not load the gate leaf onto the roller carriages, fit hardware, or remove post bracing until the concrete has cured sufficiently to support the loads — as a general guide allow a minimum of 5–7 days before hanging the leaf and at least 7 days before the gate is put into full service, or follow the concrete supplier's stated cure time if longer.



Support posts set and cured before the leaf is loaded onto the carriages

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8. Receiving & Handling the Leaf

A. The gate leaf is supplied to site as a complete, factory pre-welded P-452 frame assembly (stiles, rails, bracing, cantilever track beam, and stretcher bars already welded per the approved project drawing) with the chain-link mesh either factory-fitted or supplied separately for site fixing (Section 11). No welding, cutting, or frame fabrication is permitted on site.

B. On delivery, check the leaf against the Bill of Materials in Section 4 and against the delivery note — leaf dimensions, stile / rail sizes, track beam, and bracing should match the approved project drawing issued for your order (see Section 15).

C. Visually inspect the leaf for transport damage: bent tube, damaged welds, or coating damage, and check the track beam is straight along its full length. Report any damage to Hitech before installation — do not straighten, re-weld, or repair a damaged leaf on site.

D. Check the leaf is square (equal diagonal measurements) and true before lifting into position — a leaf that has racked in transit should be set aside and reported, not forced square on site.

E. Store and handle the leaf flat or vertically supported, off the ground, and protected from impact until ready for hanging (Section 9).

F. The leaf (item P-452) is supplied complete with the cantilever track beam (item P-453) already fitted to its lower edge. Refer to the approved project drawing for exact leaf and track-beam dimensions.

9. Roller Carriage & Hanging

The Hi-tech standard roller carriage (HTRC) is fitted to each support post and carries the cantilever track beam (item P-453) welded to the underside of the gate leaf, allowing the leaf to roll horizontally across the posts. Refer to the HTRC detail view on the approved project drawing for component dimensions.

A. Confirm the roller carriage assemblies (HTRC) are correctly positioned and secured to every support post at the height matching the underside of the leaf's track beam. All carriages must sit at the same elevation — recheck with a laser level before loading the leaf.

B. With at least two people (or a lifting aid), lift the leaf and align the track beam with the roller carriages on the posts.

C. Lower the leaf carefully onto the roller carriages, engaging every carriage fully so the track beam is captured along its length.

D. Support the leaf temporarily and check it slides freely through its full intended travel without fouling any post, the ground, or the closed-end guide post.

E. Check the leaf hangs level and does not sag or bind at the cantilevered (leading) end — adjust roller carriage shims / fixings as needed per the Hitech HTRC instructions.

F. Fit and adjust the open-end guide bracket / rear travel stop (item P-455) so the leaf is captured and limited correctly at full-open travel.

NOTE

Do not leave a hung leaf unsupported and unlocked / unpropped when unattended during installation — an unsecured leaf can slide and cause injury or damage.

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10. Guide Roller Installation

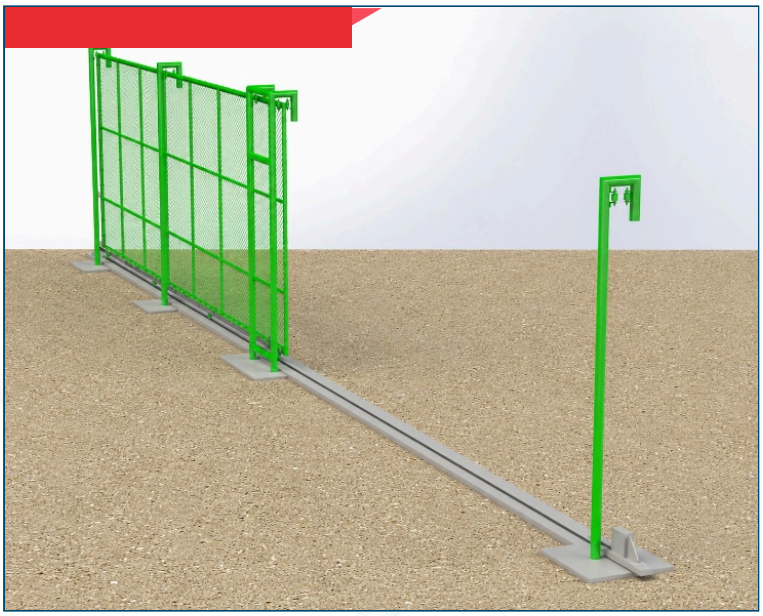
CLOSED-END GUIDE POST & CATCH ROLLER (P-454)

The closed-end guide post and catch roller (item P-454) stabilise and capture the leading edge of the gate leaf when it reaches the fully closed position, preventing lateral sway and misalignment.

A. Fit the closed-end guide post assembly at the position shown on the approved project drawing, plumb and at the correct offset from the leaf edge.

B. Fit the top and bottom guide brackets and catch roller so the leaf is captured with minimal lateral play but no binding as it enters the closed position.

C. Slide the gate to the fully closed position and confirm the leaf seats squarely against the catch roller with an even gap, and that the lock engages correctly.



Leaf captured at the closed-end guide post, seated square with an even gap

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11. Chain-Link Mesh Fitting

Chain-link fabric (mesh specification per project drawing) is fitted to the leaf frame per Mesh Detail (C) on the approved project drawing.

A. Unroll the chain-link fabric and offer it up to the assembled leaf frame, keeping the diamond pattern square to the frame.

B. Thread the stretcher bar (see Section 8) through the end row of the mesh diamonds at the leading and trailing edges.

C. Pull the mesh taut (hand-tension, without distorting the frame) and fix the stretcher bars to the frame stiles using the fixing points shown in Mesh Detail (C).

D. Fix the top, bottom, and any intermediate rails using tie wire or mesh clips at regular centres matching the cleat spacing shown on the approved project drawing, so the mesh cannot sag or be lifted out.

E. Trim any excess mesh neatly at the edges — do not leave sharp cut wire ends exposed; turn or clip them back on themselves.



Mesh tensioned square to the frame and fixed at every edge

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12. Final Adjustment & Checks

Before handing the gate over for use, carry out and record the following checks:

A. All support posts are plumb and foundations fully cured (Section 7.4).

B. The leaf slides freely through the full intended travel without binding, dragging on the ground, or fouling any post.

C. Roller carriages are fully engaged, tight, and show no excessive play; all carriages sit at the same elevation.

D. Lock (HTLS) engages and releases smoothly and holds the gate securely when closed.

E. Closed-end guide post and catch roller engage fully and hold the leaf firm with no lateral sway.

F. Chain-link mesh is taut, square, securely fixed at all edges, and free of sharp / loose wire ends.

G. All welds, cleats, and bolted fixings are tight and free of visible defects.

H. Factory paint / galvanising finish is intact; touch up any site cuts, weld repairs, or damaged coating.

I. Temporary props and bracing have been removed only after all checks above are satisfied.

J. Work area is cleared of offcuts, packaging, and debris.



Completed sliding gate — free-running on its carriages and correctly captured

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13. Maintenance & Care

A. Inspect roller carriages, track beam, lock, and guide roller every 6 months (or per site maintenance schedule) and lubricate moving parts with a light machine oil or grease.

B. Check support-post foundations and ground fixings periodically for movement, cracking, or corrosion, particularly after severe weather.

C. Touch up any scratches or damage to the paint / galvanised finish promptly to prevent corrosion.

D. Keep the ground line and travel path clear of soil build-up, vegetation, or debris that could obstruct the sliding leaf or the cantilevered overhang.

E. Re-tension or re-fix any chain-link mesh that becomes loose or damaged.

F. Do not force a gate that binds or does not close / lock freely — investigate and correct the cause (post movement, roller wear, ground settlement) before continued use.



Routine inspection: carriages, track beam, lock, guide roller and finish

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14. Troubleshooting Guide

Use the table below to identify and correct the most common faults reported after installation. Where a fault cannot be cleared by these actions, contact Hitech using the details in Appendix A.

Symptom	Likely Cause / Action
Gate leaf drags or binds partway through travel	Check support-post plumb and roller-carriage height / adjustment; check for foundation settlement; re-level carriages per Section 9.
Gate sags at the cantilevered (leading) end	Check leaf length / counterbalance ratio against the approved drawing; inspect roller carriages nearest the opening for wear and re-adjust or replace.
Gate will not slide to full travel	Check for ground obstructions or debris in the travel path; check the open-end stop (P-455) and closed-end guide post are correctly positioned; clear obstruction or adjust bracket.
Lock will not engage / binds	Check leaf alignment and keep / striker plate position; re-align keep plate; check for post or leaf movement.
Excessive lateral sway when closing	Check closed-end guide bracket clearance (Section 10.1); tighten guide brackets to reduce play without binding.
Mesh sagging or loose	Re-tension using the stretcher bars; add or replace tie wires / clips at closer centres (Section 11).
Visible corrosion at cut / weld areas	Clean back to sound metal and apply matching touch-up paint as soon as identified.

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15. Reference Drawings

This is a generic installation manual and does not reproduce a project-specific production drawing. For every order, Hitech issues an approved production drawing showing the exact gate dimensions, opening width, post height and spacing, roller-carriage and hardware detail views, and Bill of Material quantities applicable to that Purchase Order.

Always install strictly in accordance with the approved project drawing issued for your order. Where any instruction in this manual differs from that drawing, the approved drawing and Purchase Order always take precedence.

NOTE

If you have not received an approved production drawing for your order, contact Hitech using the details in Appendix A before beginning installation.

APPENDIX A — DOCUMENT CONTROL & CONTACT

Item	Detail
Manual title	Site Installation Manual — Chain-Link Sliding Gate (Single-Leaf)
Applicable drawing	Issued per Purchase Order — refer to the project-specific approved production drawing
Supplier	Hitech Fence and Steel Factory
Address	Exit 13 Al Kharj Road, 2nd Industrial Area, Riyadh, PO Box 325752, Riyadh 11371, Saudi Arabia
Telephone	011 208 007
Fax	011 291 4419

For spare parts, replacement hardware or technical queries, contact the supplier above quoting your Purchase Order reference.