



HITECH
STEEL INDUSTRIES
FENCE & STEEL

Installation Manual For CHAIN LINK FENCE SWING GATES



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1. Introduction & Scope

This manual provides step-by-step instructions for the safe and correct **site installation (erection)** of Hitech chain-link-fabric swing gates, covering both the Single-Leaf Swing Gate and the Double-Leaf Swing Gate variants. 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 post installation, hanging and fitting the pre-fabricated gate leaves, hinge fitting, locking-system and drop-bolt 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 leaves arrive at site as complete, pre-welded assemblies (items P-401 and P-402) 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

Two gate configurations are covered by this manual. Both use hot-dip-galvanised and PVC / powder-coated steel tube framing infilled with chain-link mesh, and both are supplied to site as factory pre-welded assemblies ready for erection.

SINGLE-LEAF GATE



Figure 2.1 – Single-leaf swing gate

DOUBLE-LEAF GATE



Figure 2.2 – Double-leaf swing gate

Typical components

- A.** Single movable gate leaf
- B.** Gate frame
- C.** Chain-link mesh infill
- D.** Gate posts
- E.** Hinges (HTFH / HTMH)
- F.** Locking system (HTLS)
- G.** Associated fixing hardware

Typical components

- A.** Two movable gate leaves
- B.** Gate frames
- C.** Chain-link mesh infill
- D.** Gate posts
- E.** Hinges (HTFH / HTMH)
- F.** Locking system (HTLS)
- G.** Centre meeting & drop bolt

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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.** Gate leaves and posts are heavy and awkward to handle — use a minimum of two people (or a 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 and leaves immediately after positioning, and before concrete has cured — an unbraced post or leaf 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 hang leaves on hinges, fit the locking system, or remove propping until post foundations have reached adequate strength (see Section 7.4).
- G.** 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.
- H.** Check that the finished gate swings freely and locks securely before handing the site back into use; a gate that does not latch or that swings uncontrolled is a hazard to users.

CAUTION

Do not remove temporary props from posts or leaves, 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 tables 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 — SINGLE-LEAF GATE

Item Code	Generic Description	Unit
P-400	Gate elevation (complete gate assembly)	Each
P-401	Gate post assembly	Each
P-402	Gate frame welding assembly (leaf)	Each
P-402-1/2	Frame stile — steel tubular frame member	Each
P-402-3	Stretcher bar — mesh-supporting tension member	Each
P-402-4/5	Frame rail — steel tubular frame member	Each
P-402-6	Bracing pipe — steel internal bracing member	Each
P-402-7	Welded cleat — steel fixing cleat	Each
HTFH	Hi-tech standard female hinge	Each
HTLS	Hi-tech standard locking system	Each
HTMH	Hi-tech standard male hinge	Each
—	Chain-link fabric — PVC-coated / galvanized infill, mesh opening per project specification	As reqd.

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BILL OF MATERIALS — DOUBLE-LEAF GATE

Item Code	Generic Description	Unit
P-400	Gate elevation (complete gate assembly)	Each
P-401	Gate post assembly	Each
P-402	Gate frame welding assembly (per leaf)	Each
P-402-1/2	Frame stile — steel tubular frame member	Each
P-402-3	Stretcher bar — mesh-supporting tension member	Each
P-402-4	Frame rail — steel tubular frame member	Each
P-402-5/6	Bracing pipe — steel internal bracing member (diagonal / short)	Each
P-402-7	Welded cleat — steel fixing cleat	Each
P-403	Drop bolt assembly (inactive leaf)	Each
HTFH	Hi-tech standard female hinge	Each
HTLS	Hi-tech standard locking system	Each
HTMH	Hi-tech standard male hinge	Each
—	Chain-link fabric — PVC-coated / galvanized infill, mesh opening per project specification	As reqd.

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 site cuts or weld repairs.

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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 (for hinge pins, lock, and bolted 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.** Lifting straps or a two-person lifting aid for gate leaves
- K.** Temporary props / adjustable stays for holding posts and leaves plumb while concrete cures
- L.** PPE as listed in Section 3



Factory pre-welded single-leaf assembly, erected and checked on site

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6. Site Survey & Setting Out

- A.** Confirm the finished gate opening width, post positions, and configuration (single-leaf or double-leaf) against the approved project drawing and Purchase Order.
- B.** Locate and mark the centreline of the opening and the exact position of both gate posts using pegs and a string line.
- C.** Check ground levels across the full width of the opening — the finished gate line should follow a level or evenly-graded line so both leaves close and latch together correctly.
- D.** Confirm there is adequate clearance for the leaf swing arc (typically 90°–180°) on the side the gate will open toward, and mark this on site.
- E.** Locate underground services before any excavation (see Section 3).
- F.** Verify 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.



Opening set out for a double-leaf gate — both leaves closing level and flush

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7. Foundation & Post Installation

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 500 mm below finished ground level, hole diameter / size sufficient to give a minimum 100–150 mm concrete surround to the post on all sides.

POSITIONING THE POSTS

- A.** Stand each post in its hole (post diameter sized per project drawing according to gate configuration). Posts are supplied pre-fitted with hinge brackets / lugs – confirm the hinge side and gate swing direction before setting, so hinge lugs 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.
- C.** Brace each post securely in the plumb position using timber props or adjustable stays, fixed to stakes outside the hole. Re-check level and spacing before pouring concrete.

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CONCRETING

- 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 hang gate leaves, fit hardware, or remove post bracing until the concrete has cured sufficiently to support the loads — as a general guide allow a minimum of 48–72 hours before hanging leaves and at least 7 days before the gate is put into full service, or follow the concrete supplier's stated cure time if longer.



Posts set and cured before the leaf is hung on the hinges

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8. Receiving & Handling the Leaf

- A.** Gate leaves are supplied to site as complete, factory pre-welded P-402 frame assemblies (stiles, rails, bracing 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 each leaf against the Bill of Materials in Section 4 and against the delivery note — leaf dimensions, stile / rail sizes, and bracing should match the approved project drawing issued for your order (see Section 15).
- C.** Visually inspect each leaf for transport damage: bent tube, damaged welds, or coating damage. 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 leaves flat or vertically supported, off the ground, and protected from impact until ready for hanging (Section 9).
- F.** For the double-leaf gate, both leaves (item P-402) are supplied as mirror images of matching size; for the single-leaf gate, a single leaf is supplied.

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9. Hinge Fitting & Hanging

The Hitech standard hinge set (HTFH female hinge on the post, HTMH male hinge on the leaf) allows the leaf to be lifted onto the post-mounted hinges. Refer to the HTFH and HTMH detail views on the approved project drawing for hinge component dimensions.

- A.** Confirm the female hinge halves (HTFH) are correctly positioned and secured on the gate post at the heights matching the male hinge pins welded to the leaf stile.
- B.** With at least two people (or a lifting aid), lift the leaf and align the male hinge pins on the leaf stile with the female hinge sockets on the post.
- C.** Lower the leaf carefully onto the hinges, engaging all hinge pairs fully home.
- D.** Support the leaf temporarily and check it swings freely through its full arc without fouling the post, ground, or (for the double-leaf gate) the adjacent leaf.
- E.** Check the leaf hangs level and does not drop or bind — adjust hinge shims / fixings as needed per the Hitech hinge instructions.
- F.** For the double-leaf gate, repeat for the second leaf, then check both leaves meet centrally, flush, and level when closed.

NOTE

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

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10. Locking System & Drop Bolt

LOCKING SYSTEM (HTLS)

Referring to Lock Details (B) on the approved project drawing, the Hi-tech standard locking system (HTLS) is fitted to the active leaf, engaging with the mating lock plate / keep fixed to the post or, for the double-leaf gate, to the inactive leaf.

- A.** Fit the lock body to the gate frame at the position and height shown in Lock Details (B) on the approved project drawing.
- B.** Fit the mating keep / striker plate to the post (or inactive leaf) so the lock engages smoothly when the gate is closed.
- C.** Operate the lock several times to confirm smooth engagement and release, and adjust the keep position if the lock binds or does not engage fully.

DROP BOLT — DOUBLE-LEAF GATE ONLY (P-403)

The inactive leaf of the double-leaf gate is fitted with a ground-set drop bolt (see Drop Bolt Detail, item P-403), which secures that leaf to the ground so the active leaf's lock can operate normally.

- A.** Fit the drop bolt assembly to the bottom rail of the inactive leaf, in the position shown on the Drop Bolt Detail.
- B.** Mark and set a bolt-receiver socket (per detail) into the ground / foundation directly below the bolt, in the closed leaf position.
- C.** Check the drop bolt engages fully into the ground socket and releases smoothly, and that it holds the inactive leaf firmly closed under normal use.

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11. Chain-Link Mesh Fitting

Chain-link fabric (mesh specification per project drawing) is fitted to each 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 through the end row of the mesh diamonds at the hinge and latch 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.
- E.** Trim any excess mesh neatly at the edges — do not leave sharp cut wire ends exposed; turn or clip them back on themselves.
- F.** Repeat for the second leaf on the double-leaf gate.

12. Final Adjustment & Checks

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

- A.** Both posts are plumb and foundations fully cured (Section 7.4).
- B.** Leaf(s) swing freely through the full intended arc without binding, dragging on the ground, or fouling the post.
- C.** Hinges are fully engaged, tight, and show no excessive play.
- D.** Lock (HTLS) engages and releases smoothly and holds the gate securely when closed.
- E.** Drop bolt (double-leaf gate) engages fully and holds the inactive leaf firm.
- F.** Chain-link mesh is taut, square, securely fixed at all edges, free of 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 or damaged coating.
- I.** Temporary props and bracing removed only after all checks above are satisfied.
- J.** Work area is cleared of offcuts, packaging, and debris.

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13. Maintenance & Care

- A.** Inspect hinges, lock, and drop bolt every 6 months (or per site maintenance schedule) and lubricate moving parts with a light machine oil or grease.
- B.** Check 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 clear of soil build-up, vegetation, or debris that could obstruct leaf swing or the drop-bolt socket.
- 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, hinge wear, ground settlement) before continued use.



Routine inspection: hinges, lock, drop bolt, mesh tension 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 on the ground	Check post plumb and hinge height / adjustment; check for foundation settlement; adjust hinges per Section 9.
Gate will not swing to full arc	Check for ground obstructions, foundation encroaching the swing path, or the adjacent leaf / post fouling; clear obstruction or adjust hinge position.
Lock will not engage / binds	Check leaf alignment and keep / striker plate position (Section 10.1); re-align keep plate; check for post or leaf movement.
Drop bolt will not seat in ground socket	Check inactive leaf position and level; re-align or re-set the ground socket; clear debris from the socket.
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, 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 Fence Swing Gates (Single-Leaf & Double-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 (HTFH / HTMH hinges, HTLS lock, drop bolt assembly), or technical queries not covered by this manual, contact the supplier using the details above and quote your Purchase Order or project reference.

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