

INDUSTRIAL HEAVY-DUTY EQUIPMENT

Rev 2.5 - 2026 Series

SEMI-GANTRY HYBRID PORTAL CRANE

MODEL SERIES: INDUCT-SEMI-GANTRY-CRANE | DOCUMENT: TECHNICAL DATASHEET

3D ISOMETRIC ENGINEERING SCHEMATIC



Engineered & Manufactured in India by Induct Crane System Pvt. Ltd. | Standard: IS 3177 / IS 807 / FEM 2m

CAPACITY RANGE

2 Tons - 100 Tons

SPAN WIDTH

6m - 30m

LIFTING HEIGHT

6m - 20m

DUTY CLASS

FEM 2m | ISO M5

EXECUTIVE OVERVIEW

Induct Crane Semi-Gantry Cranes are a hybrid material handling solution combining one elevated end carriage running on a building runway beam and one ground-level gantry leg running on floor rails. This configuration saves building construction costs by utilizing existing column structures on one side while maintaining unobstructed floor access on the other.

1. PRODUCT OVERVIEW & DESIGN CHARACTERISTICS

Induct Crane Semi-Gantry Cranes are a hybrid material handling solution combining one elevated end carriage running on a building runway beam and one ground-level gantry leg running on floor rails. This configuration saves building construction costs by utilizing existing column structures on one side while maintaining unobstructed floor access on the other.

TYPICAL APPLICATION & PURPOSE

Extension bays, outdoor loading areas adjoining existing factory buildings, and multi-crane layered workshops.

OPERATING ENVIRONMENT

Indoor manufacturing facilities and semi-outdoor loading docks adjoining plant walls.

2. STRUCTURAL CONFIGURATIONS & ENGINEERING VARIANTS

SINGLE GIRDER SEMI-GANTRY

One elevated carriage on building column rail + one ground A-frame leg. Cost-effective lifting for medium spans.

Capacity: 2 Tons to 10 Tons | Span: 6m to 30m | Lift Height: 6m to 18m

DOUBLE GIRDER SEMI-GANTRY

Heavy twin box girders with top-running crab trolley. High-capacity handling for heavy fabrication and foundry yards.

Capacity: 5 Tons to 100 Tons | Span: 6m to 30m | Lift Height: 6m to 20m

3. CODIFIED DESIGN STANDARDS & COMPLIANCE

IS 3177: 1999	Code of Practice for Electric Overhead Travelling Cranes and Gantry Cranes
IS 807: 2006	Design, Manufacture, Erection and Testing of Cranes and Hoists
FEM 9.511 / 2m	Federation Europeenne de la Manutention Rules for the Design of Hoisting Appliances
ISO 4301 / M5-M6	Cranes and Lifting Appliances Classification of Duty Cycles and Mechanisms

4. COMPREHENSIVE TECHNICAL SPECIFICATIONS

Engineering Parameter	Manufacturing Specification / Value Range
Lifting Capacity Range	SG: 2T - 10T DG: 5T - 100T
Span Width (m)	6m - 30m (Customized Bay Width)
Lifting Height (m)	6m - 20m
Structural Configuration	Hybrid Semi-Portal Single & Double Girder
Duty Classification	FEM 2m ISO M5, M6 IS 3177 Class II, III
Hoisting Speed	4.0 / 0.7 m/min (Dual Speed Inverter Controlled)
Cross Travel Speed	5 - 20 m/min (Variable Frequency VFD)
Long Travel Speed	10 - 25 m/min (VFD Synchronized Drive)
Power Supply Voltage	415V +-10%, 50Hz, 3-Phase AC
Control System	Wireless Radio Remote Control & Independent Push-Button Pendant
Upper Runway Rail	Elevated Building Column Runway Rail
Lower Runway Rail	Ground-Level Flush or Raised Floor Rail
Hook Block Assembly	Forged Alloy Steel Hook with 360 deg Swivel Rotation
Drive Synchronization	Closed-Loop VFD Anti-Skew Drive System

5. MAJOR ENGINEERING COMPONENTS & NUMBERED BREAKDOWN

01MAIN GIRDER ASSEMBLY High-strength welded box section girder engineered to resist combined bendin	02GANTRY SUPPORTING LEG Rigid box-section supporting leg securely bolted to main girder and ground t
03GROUND TRAVEL CARRIAGE Ground-level wheel carriage equipped with forged steel wheels, rail sweepers	04ELEVATED END CARRIAGE Building-side end carriage mounted on elevated runway rail with rubber shock
05HOIST & TROLLEY Motorized wire rope hoist or heavy-duty crab trolley delivering smooth preci	06ELECTRICAL CONTROL SYSTEM IP55 dust/moisture proof control panel with VFD synchronization between uppe
07HOOK BLOCK ASSEMBLY Forged alloy steel hook with 360 deg swivel thrust bearing and safety catch.	

6. APPLICATIONS & INDUSTRIES SERVED	7. SAFETY & PROTECTION SYSTEMS
- Factory Extension Bays - Outdoor Handling Adjacent to Buildings - Heavy Machinery Fabrication - Foundries & Precast Lines - Logistics Bays	[+] Anti-Skewing Synchronization between upper & lower drives [+] Ground Obstacle Sweepers [+] Electronic Overload Limiter [+] Audible Alarm and Warning Beacon [+] Emergency Stop Push Button

8. ENGINEERING & PROJECT CUSTOMIZATION

- [*] Flush Ground Rail: Floor-embedded rail profiles to allow forklift and truck crossings without obstruction.
- [*] Dual Speed VFD Synchronization: Maintains bridge squareness and prevents wheel binding across long travel paths.
- [*] Weatherproof Canopy: Protects the hoist and ground drive motors from rain when operating semi-outdoors.

9. TECHNICAL & SITE INSTALLATION NOTES

- Upper runway beam alignment and lower ground rail level must be precisely surveyed during installation.
- Ground rail cleaning channels prevent debris buildup from interfering with wheel flanges.

REQUEST A TECHNICAL QUOTATION & GA DRAWING

Contact our application engineering team for site-specific general arrangement (GA) drawings and quotations:

RAJKOT HEAD OFFICE & MANUFACTURING
Plot No. 6, Shivam Ind. Zone 4, Lodhika GIDC, Rajkot, Gujarat - 360021
Phone: +91 92658 85265, +91 99743 43099 | Email: sales@inductcranesystem.com

NORTH INDIA SALES & SERVICE OFFICE
Unit-2, E-20, Chakeri-2 Industrial Area, Chakeri, Kanpur, Uttar Pradesh
Phone: +91 75250 29204 | Web: <https://inductcranesystem.com>

Contact our engineering team for project-specific technical requirements.