

STEEL PLANT  
PORT CRANE  
SHIP UNLOADER  
CEMENT INDUSTRY  
MINING  
FERTILIZER  
INDUSTRIAL CRANES

**STRATEGEM**<sup>®</sup>  
An ISO 9001:2008 Certified

**SCIENTIFIC & MODERNIZED TECHNOLOGY FOR REVAMP OF  
SHIP UNLOADER & PORT EQUIPMENT.**





## RELIABLE AND PRODUCTIVE AND BULK HANDLING

The STRATEGEM AGD Grab Unloader meets the modern bulk terminal's need for consistent performance and high reliability. It covers all capacities and site conditions from barge unloading to the largest ocean-going bulk carriers. Our Advanced Grab Drive (AGD) technology is the most advanced on the market today, providing excellent unloading efficiency, high availability, high eco-efficiency and reduced energy consumption.

### ERGONOMIC CABIN

Spacious, ergonomic cab ensures operator productivity. Good visibility to all operating areas. Remote cab operation is available as an option.



### INCREASED ECO-EFFICIENCY

- Regenerative network braking feeds energy back to grid when any movement is decelerated or the load is lowered.
- During free digging, 30% of electrical power intake is fed back to the grid in each grab duty cycle.
- Rotating components have a small moment of inertia.

### SMARTER ROPE REEVING power intake is fed back to the grid in each grab duty cycle

- Rope arrangement balances force impact on steel structure: total weight and wheel loads are decreased.
- Total length of ropes, number of rope pulleys are considerably less than in conventional unloader design.
- Greater reliability and availability, less maintenance.

### DUST-FREE MATERIAL FLOW

- Total length of ropes, number.
- For moderately dusty materials: water mist is used for effective dust suppression of rope pulleys are considerably less than in conventional design.
- For dusty materials e.g. animal feed, clinker, unloader design cement: dust extracted with powerful fans.
- Greater reliability and availability, from grab discharge area in hopper and from less maintenance all conveyor loading points; filter bags in dust extraction units are air-cleaned after each cycle; hopper has special grizzly preventing escape of return air from hopper.



### ADVANCED GRAB DRIVE (AGD) SYSTEM

- Four-drum system with electrical synchronization of drives. Provides automatic unloading with range of operating modes as standard. Greater efficiency and reduced operator fatigue.
- All of the machinery components in the four main winches are interchangeable. Standard STRATEGEM components provide reliability and easy maintenance. Good access to all service points.
- Standard STRATEGEM components provide reliability and easy maintenance. Good access to all service points.

### SMARTER CORE OF LIFTING

An integrated package of motor/gearbox/ control system designed and built specifically for lifting by STRATEGEM, in-house. It provides:

- Accurate movement
- Lower weight
- Fewer components
- Better eco-efficiency
- Better reliability

## STRATEGEM ELECTRICAL SYSTEM

- Designed for crane applications. Smooth, precise movements with short response times. Special circuitry for speed supervision. Controls ensure smooth starts and stops, reducing mechanical stresses and prolonging unloader lifetime. Software specifically designed for dynamic load handling.



## CRANE MANAGEMENT SYSTEM (CMS)

- Wide range of reporting, analytical and remote diagnostics features for terminal mgmt, unloader operation and maintenance.
- Includes all operation and maintenance instructions and data collection system
- All signals from the unloader are collected at 30 ms intervals and stored to PC.

## TRUCONNECT REMOTE SERVICE

- CMS can be connected to STRATEGEM Global Technical Service Center for remote trouble-shooting, technical assistance and real-time analytics.



# STRATEGEM ADVANCED TECHNOLOGY

## THE ADVANTAGES OF STRATEGEM REVAMP AND MODERNIZATION

STRATEGEM is a world-leading company in field of revamping & modernization for the port engineering & equipment like ship unload RTGs, port crane, stacker reclaimer, wagon loading system and the material handling. Ports and terminals. STRATEGEM provides productivity-enhancing lifting solutions as well as services for lifting equipment and machine tools of all makes.

### LOW OPERATING COSTS

- Low energy consumption per unloaded ton
- Low rope consumption
- Less maintenance
- Low downtime, high availability

### EXCELLENT ENERGY EFFICIENCY

- Regenerative network braking feeds energy back to grid
- Rotating components have a small moment of inertia

### HIGH PRODUCTIVITY

- Range of automatic operation modes as standard
- No slack rope problems
- Easy to drive, short learning curve for operators

### HIGH RELIABILITY

- Smarter Core of Lifting: package of motor gearbox / controls designed and built specifically for lifting
- Simple design
- Standard STRATEGEM components
- STRATEGEM worldwide service network for responsive local support
- Remote diagnostics supplied as an option

### REDUCED MAINTENANCE

- Simple rope reeving: fewer ropes and pulleys
- Short rope change time: one-rope change possible
- Easy access to all maintenance points
- Minimum maintenance requirements for STRATEGEM AC drives & motors

### HIGH ECO-EFFICIENCY

- Low energy consumption
- Modern control system enables spill-free material handling
- Dust suppression with water mist for moderately dusty materials
- Dust extraction with fully enclosed conveyor arrangement for materials such as animal feed, cement and clinker

STRATEGEM provides productivity-enhancing lifting solutions as well as services for lifting equipment and core sector of all makes.

### SMALL

### MEDIUM

### LARGE

Lifting capacity	Up to 80,000 dwt20 - 35 tons	Up to 160,000 dwt 35 - 65 tons	Over 160,000 dwt50 - 90 tons
Unloading capacity	1000 - 1500 tph	1500 - 2800 tph	2000 - 3500 tph

Unloading capacities are calculated based on actual vessel size and wharf/jetty conditions

### Dimensions

Outreach	30 - 37 m	37 - 42 m	40 - 50 m
Rail span	11 - 20 m	16 - 30 m	16 - 30 m
Backreach Speeds	0 - 20 m	0 - 30 m	0 - 40 m
Gantry traveling	20 - 30 m/min	20 - 30 m/min	20 - 30 m/min
Hoisting	180 m/min	180 m/min	180 m/min
Closing	180 m/min	180 m/min	180 m/min
Trolley traversing	180 m/min	180 m/min	180 m/min
Boom hoisting <b>Power supply</b>	6 - 7 min	6 - 7 min	6 - 7 min

### supply

Cable reel power supply	50 /60 Hz, 3.3 - 20 kV		
Current collector power supply	50 /60 Hz, 3.3 kV		
Shore power supply	50 /60 Hz, 400 V		
Drive system <b>Rope</b>	STRATEGEM AC drives with regenerat ive braking		
system	Four drum system with electric synchronization		
Grab types	Four rope grabs, clamshell/scissors		
Typical wheel loads	35 - 45 tons/wheel	45 - 60 tons/wheel	50 - 70 tons/wheel
	30 - 40 tons/m	35 - 50 tons/m	50 - 60 tons/m
Maintenance	Wheel loads are calculated case-by-case, according to the dimensions of the crane and the local conditions		

## TRUSTED BY:

**ZPMC**

**TRF**

**Terex**

**Metso**

**Sany**

**Telestack**

**Krishnapatnam Port**

**Dhamra Port**

**Kandla Port**

**Adani Port**

**South West Port JSW**

**APM Terminal**

**Mangalore Port**

**Thaison Group**

**STRATEGEM**<sup>®</sup>  
An ISO 9001:2008 Certified

Strategem Iceberg Industrial Solutions India Pvt. Ltd.

(Division of Strategem, UK)

803 Asters, A wing, Off Pune – Nagar Highway,

Wagholi, Pune – 412207 (India)

Tel: +91 20 27034860, 65609292, 20262323 Fax: +91 20 2703486

Email: admin@strategemindia.biz projects@strategemindia.biz

Website: www.strategemiceberg.com