Timars OHE Frame

Buffers Model 6102-7539

Fully-Automatic Electro-Mechanical Overheight Frame w/ Hoist Interlock Capability

DESCRIPTION

Timars' OHE frame is a fully-electric overheight frame with the latest safety systems. It has been developed from Timars' experience in producing the most efficient and safest overheight frames universally used with any kind of automatic spreader and spreader brand.

This overheight frame has been developed to meet the increased safety demands in ports, and is equipped with a new electro-mechanical system with IFM PLC, alloy steel actuators, several smart safety features and a very smart, power-saving sleep mode. The OHE can also be equipped with the new Hoist Interlock system and service communication system.

The connection between the spreader and the overheight frame is like that of a regular container – by the twistlocks on the spreaders. There's no other mechanical connection to the spreader, and there's no need to manually connect or disconnect the overheight frame itself; it can be left anywhere.

Technical Specifications

DESIGN

Body: The Timars OHE frame has two short-side profiles and one center beam that are bolted together and are telescopic from 20', up to 45' (40' is preset). The body has gone through Finite Element Analysis to optimize the construction to make it strong, yet light. The frame is, of course, CE-approved according to the machinery directive. The spreader conforms with the following standard(s) or other normative document(s) following the provisions of Directive 2006/42/EG (machinery), annex 2: CE-labeled, SS-EN 13155+A2:2009 and SS-EN 15056:2006.

Test load certificate from 20T for each "leg" under survey by Inspecta (third-party inspection company).

Frame Assembly:
Each OHE frame is delivered in three separate pieces (if not agreed otherwise), consisting of two short-side profiles and one center beam, to help save on freight cost. The frame is assembled very easily in less than one hour.
The frame is then ready to use.

Dimensions:
The fixed sized OHE frame follows ISO standard base measures:

- Sizing: Telescopic, 20' – 45'
- Free height: 2.4 m (others proposed separately on request)
- Total height: 3.15 m
- Weight: 6,614 lbs. / 3,000 kg (approx.)

Paint specifications:

- According to A4.08.C4 medium
- Degreasing, Abrasive blasting to Sa 2.5, 80u EP, 160u PUR top coat
- Color: RAL 1028 (yellow)
- Total painting thickness: 240 microns
- Others to be proposed

BUILT-IN SAFETY SYSTEMS

The Timars OHE frame is an intelligent tool that helps the operator take control of some possible external errors, such as the inside of the corner casting being partly blocked.

Safety Twistlock Blocking system (STB system):
The OHE frame is equipped with landing probes which prevents the overheight frame mechanically to lock the twistlocks unless the overheight frame is landed correctly. Each landing probe is also verified by an inductive sensor (IFM). A yellow LED light will indicate when all landing probes are activated (overheight frame landed correct). To be able to lock and unlock the twistlocks of the overheight frame, all sensors must detect landed landing probes. The overheight frame can also signal (for example, by flashing light) if one or more landing probes fail (for example, if one or more landing probes stay in the upper position after a set time).

Technical Specifications

BUILT-IN SAFETY SYSTEMS *(cont'd)*

Safety Torque Limitation system (STL system): If one or more twistlocks are prevented to lock (for example, if something is blocking the rotation in the corner casting of the container/flatrack) the twistlocks will return to the original position.

Safety Twistlocks Emergency system (STE system): Each twistlock of the OHE frame can, when the frame is resting on its goods, manually be turned by hand – or if slightly jammed, by a standard tool. Due to this special design, there is no risk of an incorrect position when putting it back to normal again.

OTHER EQUIPMENT

LED Lamps: Robust LED lights indicate "Twistlocks Open" (green), "Twistlocks Locked" (red), "Overheight Frame Landed" (yellow). Note that other colors can be chosen, and the lights also can be used for indicating, for example, failed landing probes or failed twistlock position. There are two sets of LED lights on each overheight frame.

PLC: The robust PLC from IFM includes the program for operating the overheight frame. On a color screen on the electrical cabinet, the operator can get current equipment readouts such as battery condition, number of TEUs handled and time in operation. There is also a "Smart Service" mode for easy fault search.

Solar Panels: The overheight frame operates by an internal 24V system. The batteries are located on the overheight frame in a protected position. The frame is equipped with a "Smart" power-saving system, which means that it will not drain the batteries during normal use and will be able to keep charge through just the solar panels. There is, of course, the option to charge the batteries through an electrical outlet connection, which might be used during some conditions.

Optional Communication Service: The OHE frame can be equipped with a modem for wireless communication with port engineers (or to Timars). With this system, the operator can always get the exact position of the frame (by GPS), and also direct information about battery condition, number of TEUs handled, time in operation and error messages.

Compatibility to Parent Spreader: The Timars overheight frame is fully compatible to any kind of parent spreader with ISO box base that measures within 20' – 45' length.

NOTE: Parent spreader must be allowed to telescope with locked twistlocks to be able to telescope the OHE 20' – 45'.

To use the option with the Hoist Interlock system, the spreader must have an installed wireless communication programmed for the Timars Overheight Frame.

ISO Requirements for Payload Connection: The goods that are to be connected to the OHE twistlocks must be of ISO box corners with same ISO c/c base measures as the OHE frame. All four corners must be connected to the twistlocks of the OHE frame.

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Technical Specifications

OPERATIONAL DESCRIPTION

Timars OHE v6.0 is a fully-automatic overheight frame with electro-mechanical operation.
It works with any type of automatic container spreader of any brand (with ISO container measurements).

ATTACHING/DETACHING of the parent spreader to the Timars OHE Frame: The parent spreader (crane, reach stacker, straddler carrier, etc.) should be located on top of the Timars OHE frame, as on a regular container. The driver of the crane, reach stacker, straddler carrier, etc. now locks the twistlocks of the parent spreader. This will start up the overheight frame from sleep mode, making it ready to operate.

Detaching the parent spreader from the Timars OHE frame is simply done by unlocking the twistlocks of the parent spreader at any time when the Timars OHE Frame is put down. It can be put anywhere, for example: on the quay, on a trailer or onto a container.

LOCKING & UNLOCKING of Timars OHE frame twistlocks: The operator then lands the overheight frame onto a flatrack/open top container. When all four landing probes are affected (the overheight frame has landed correctly) the operator receives a yellow light from the LED light indication panel. The operator now initiates an open–lock sequence with the spreader. The open signal from the spreader is used to lock the twistlocks to the container, using two electro-mechanical actuators (one on each side of the overheight frame) which are connected to a rod on the twistlocks.

The LED lights indicate the twistlock status (locked and unlocked). A red light indicates that overheight frame twistlocks are locked, and a green light indicates that overheight frame twistlocks are open. This can be customized with different colors.

Same procedure for unlocking the container: land the container, and when the overheight frame rests on the container the landing probes detect this. The operator makes an open-lock sequence with the spreader, and the twistlocks turn to open. This is indicated by the LED lights.

DOCUMENTATION

Three complete sets of manuals for maintenance, operation and setup in English language (Certificates in English) are included. All documentation also provided on one CD or DVD. Other documentation to be advised.

Other Certificates: Timars Svets & Smide AB is both approved ISO 9001:2008, ISO 14001:2004 and ISO 3834-2 company. All welders are licensed, and each frame follows a well-documented, quality program.

Equipment warranty: All equipment supplied is guaranteed against bad workmanship and failure of any components other than normal usage over a two-shift period (16 hours). Guarantee is valid 12 months from date of delivery.

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904.696.0010 | Sales@BuffersUSA.com | BuffersUSA.com
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