IGA International TEC

Loading Systems

Top Loading Systems

Bottom Loading Systems

Folding Stairways

Know how & consulting directly from manufacturer with decades of experience

That‘s why you choose... IGA International TEC

- **Radial gaskets**
  Allow a maximum of feasible sealing materials and longer lifetime compared to axial gaskets
- **DUPLEX, SUPERDUPLEX, HASTELLOY, ALUMINIUM…**
  We machine all compatible materials
- **ASME, NACE, NORSOK, DIN…**
  We manufacture according to all required guidelines and directives
- **Customized connections**
- **IGATEC Swivel Joints**
  Made of carbon steel (e.g. St52-3, …) are nitrided to reach maximized hardness of surface and optimized corrosion protection at the same time
- **Certifications**
  TA-Luft
  VdS
  ISO 9001:2008

Headquarter

IGATEC GmbH &
IGATEC International GmbH
Siemensstraße 18
D-67346 Speyer

Phone:+49 (0)6232 91 904-0
Fax: +49 (0)6232 91 904-990
eMail: info@igatec.de

Subsidiary

IGATEC International GmbH
Profilstraße 6
D-58093 Hagen

Phone:+49 (0)2331 36 788-0
Fax: +49 (0)2331 36 788-11
eMail: info@igatec-international.de

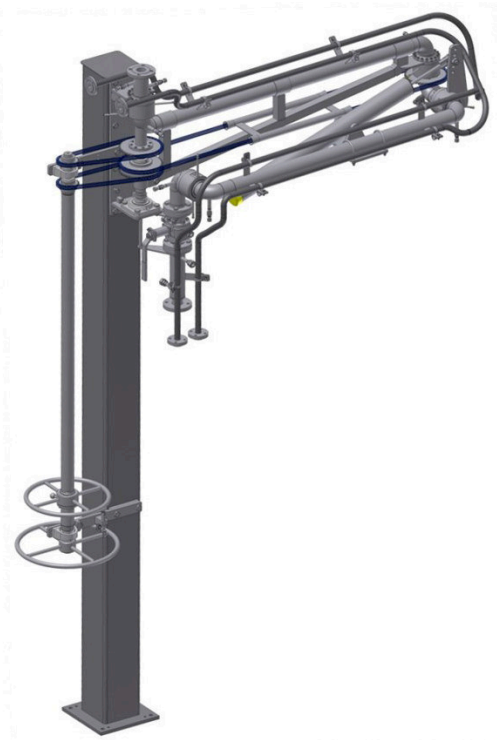
IGATEC Top Loading Systems are used for the safe and fast loading and unloading of railcars, road tankers, sedimentation tanks, trailers and any other suitable tanks from above.

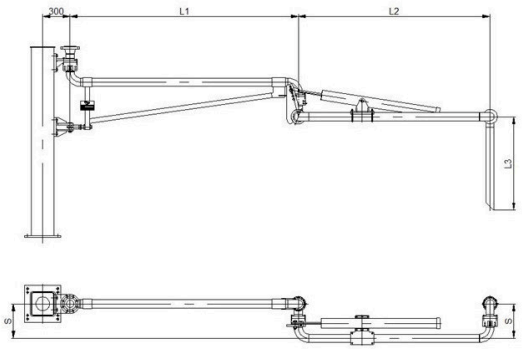
Providing an appropriate choice of materials and components the loading of almost every liquid and gaseous fluid (mostly from chemical or petrochemical industry) is feasible.

IGATEC Top Loading Systems are characterized by a wide working range and high flexibility. Accurate positioning of vehicles is not necessary. Vehicles with different heights can be served by the same loading arm.

Top Loading Systems are normally operated from an operator platform. Folding stairs allow safe walking on vehicles.

The loading arms are connected to a pillar or beam (or similar) which is designed for that.





After loading procedure the loading arms can be fixed in idle position by a safety notch. The easy use of **IGATEC Loading Systems** is guaranteed by integrated weight balancing systems. The operating stuff is able to move and position the system with very small effort.

The connecting interface of the loading arm to the vehicles to be filled depends on the needed requirements for vehicle and products to be loaded.

The configuration of **IGATEC Top Loading Systems** is always according to customers' demands.

Top Loading Systems

Dimensions:

Nominal diameter	DN25 / **1"** up to DN150 / **6"**
Working pressure	**Vacuum up to** 40 bar / **580 psi**
Working temperature	-60°C up to 250°C / **-76°F up to 482°F**
Material	• Standard (1.4571, 25CrMo4) • Stainless steel • C-steel • Low temp. steel • PTFE
Control system	• Manually • Pneumatically • Hydraulically • Electrically
Control functions	• Lift / sink • Pressing • Telescopic pipe up / down • Bottom contact • Gate valve open / closed ⇒ Electrically ⇒ Pneumatically • Pivoting L1 right / left • Pivoting L2 right / left • Automatically, SPS
Weight balance	• Without auxiliary energy ⇒ Balance weight ⇒ Spring cylinder ⇒ Pneumatic cylinder ⇒ Gashydraulic torque compensation • Auxiliary energy operated ⇒ Pneumatic cylinder ⇒ Hydraulic cylinder ⇒ Electrically operated • Combined weight balancing with / without auxiliary energy • **Special accessories:** manually operated fixing unit
Gate valves	• Manually operated • Pneumatically operated • Electrically operated
Overfill protection	• Vibration principle (liquiphant) • Pneumatically (blubber) • Capacitive sensor • Height adjustable

By combining different dimensions (see table left) **IGATEC Top Loading Systems** can be configured for nearly every liquid and gaseous fluid.

Furthermore optional features (see table below) can be added to the loading system.

Optional Features:

Vapor return line	• Vapor return arm • Vapor return hose • Parallel arm
PTFE-lining	
Type of heating	• 100% double jacket, incl. swivel joints • Double jacket, tubes and elbows only • Double jacket, tubes only • Electrically
Heating fluids	• Hot water • Steam • Thermal oil
Piggable	
Drop pipe	• Flanged connection • 45°- drop pipe spout • Y-deflector • T-deflector • **Special accessoires** ⇒ Telescopic pipe ⇒ Drop pipe with internal valve ⇒ Sieve ⇒ Dry coupling
Dome interface (Anschluss an das Transportmittel)	• Clamp • Cover plate • Coated cone • Inflatable sealing cushion

Special accessoires	• „Deadman" control • Vacuum breaker • Earthing control system • Dry coupling

TOP SPOT® Loading Systems

TOP SPOT® and **New On Spot Loading Systems** represent cutting edge technology of fully automated loading arms.

TOP SPOT® Loading Arms combine the properties of the wellknown

- On Spot (high loading performance) with
- Top Loading (high flexibility, mobility and working range)

to a maximum functional device.

This new loading technology is patented by **IGATEC** and has been successfully launched in Russia.

TOP SPOT® Loading Systems are designed for high loading capacities (10.000.000 t/year) into railcars. Railcar loading is operating fully automated.

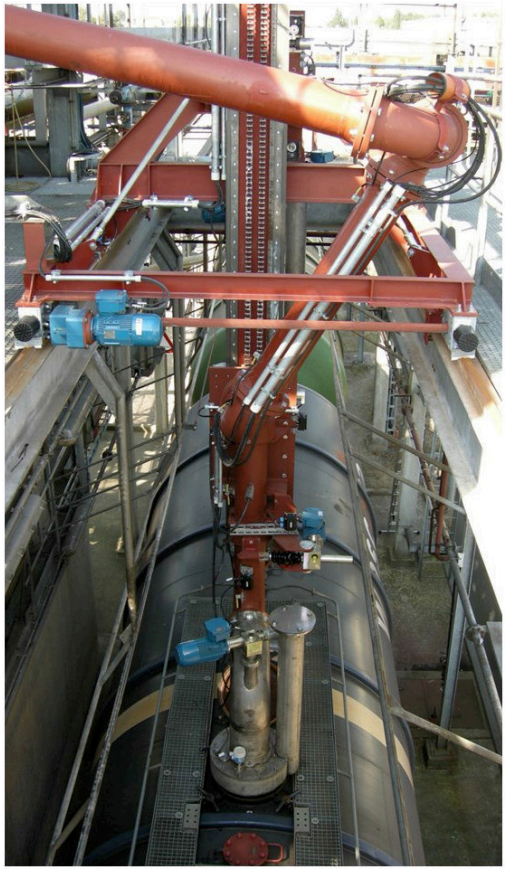
Furthermore our equipment is designed for extreme environments and weather conditions. Particularly the Russian Federation requires equipment designed for deepest temperatures down to minus 55°C.

New On Spot Loading Systems

TOP SPOT® and **New On Spot Loading Systems** represent cutting edge technology of fully automated loading arms.

Our fully automated **New On Spot Loading System** is the result of the advancement of regular hydraulically On Spot systems.

New On Spot Loading Systems are designed for high loading capacities (10.000.000 t/year) into railcars. Railcar loading is operated fully automated.



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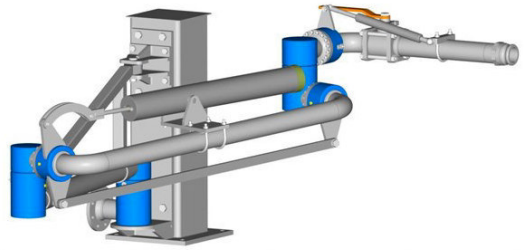
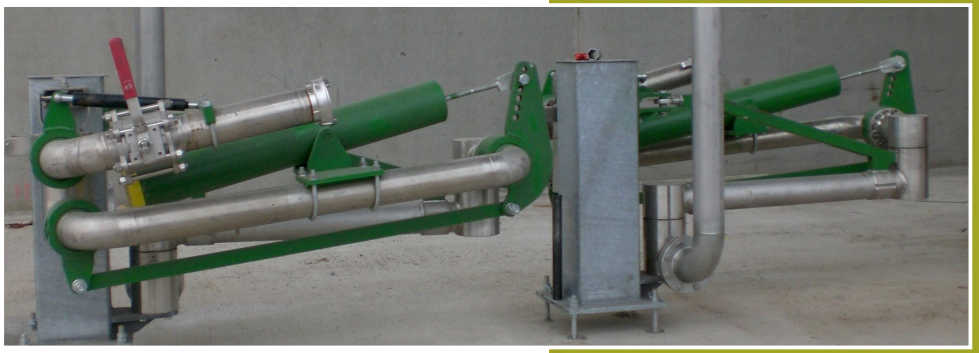




IGATEC Bottom Loading Systems are used for the safe and fast loading and unloading of railcars and road tankers from below.

Providing an appropriate choice of materials and components the loading of almost every liquid and gaseous fluid (mostly from chemical or petrochemical industry) is feasible.

IGATEC Bottom Loading Systems are characterized by a wide working range and high flexibility. Accurate positioning of vehicles is not necessary. Vehicles with different connecting positions can be served by the same loading arm as well.

The loading arms are connected to a pillar or beam (or similar).

After finishing loading the loading arm can be fixed in idle position by a safety notch. The easy use of bottom loading arms is guaranteed by integrated weight balancing systems. The operating stuff is able to move and position the system with very small effort.

The connecting interface of the loading arm to the vehicles to be filled is specified by the needed requirements for vehicle and products to be loaded.

Configuration of **IGATEC Bottom Loading Systems** is always according to customers' demands.

Bottom Loading Systems

Dimensions:

Nominal diameter	DN25 / **1"** up to DN100 / **4"**
Working pressure	**Vacuum up to** 40 bar / **580 psi**
Working temperature	-60°C up to 250°C / **-76°F up to 482°F**
Material	• Standard (1.4571, 25CrMo4) • Stainless steel • C-steel • Low temp. steel • PTFE
Control system	• Manually • Pneumatically • Hydraulically • Electrically
Control functions	• Lift / sink • Gate valve open / closed ⇒ Electrically ⇒ Pneumatically
Weight balance	• Without auxiliary energy ⇒ Balance Weight ⇒ Spring cylinder ⇒ Pneumatic cylinder ⇒ Gashydraulic torque compensation • Auxiliary energy operated ⇒ Pneumatic cylinder ⇒ Hydraulic cylinder ⇒ Electrically operated • Combined weight balancing with / without auxiliary energy • **Special accessories:** manually operated fixing unit
Gate valves	• Manually operated • Pneumatically operated • Electrically operated
Connections on vehicle side	• Flanged • Lapped flanged • Quick coupling • Dry coupling • Others
Breakaway coupling	• Browden wire controlled • Shear pin controlled • Hydraulically activated

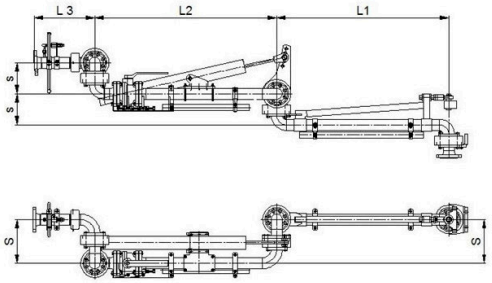
By combining different dimensions (see table left) **IGATEC Bottom Loading Systems** can be configured for nearly every liquid and gaseous fluid.

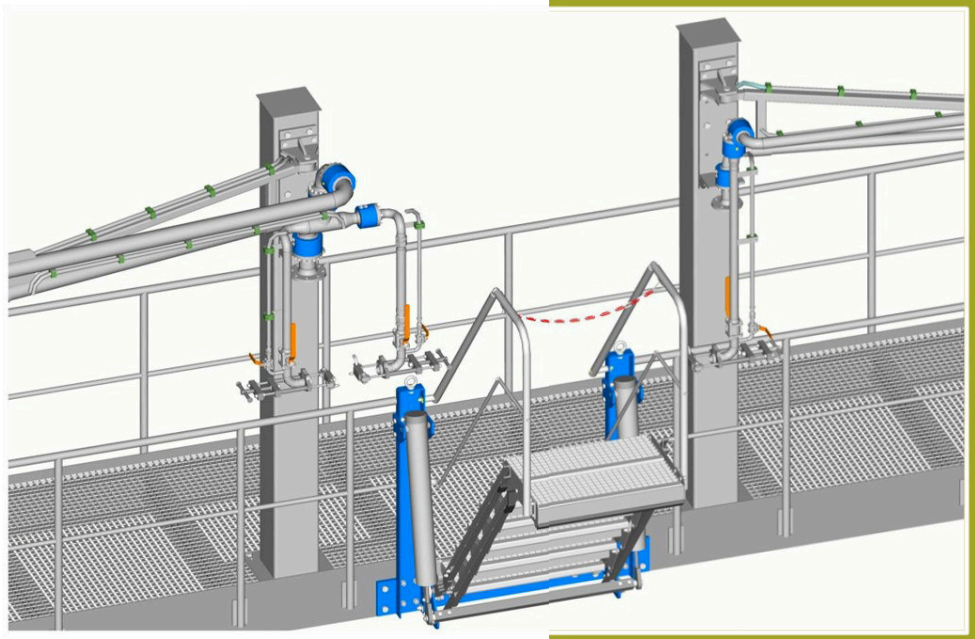
Furthermore optional features (see table below) can be added to the loading system.

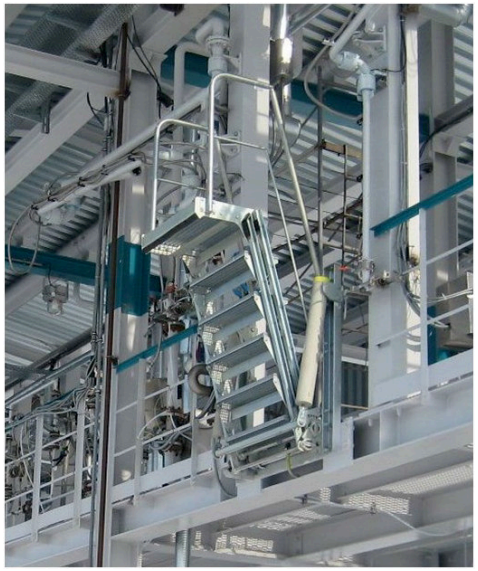
Optional Features:

Vapor return line	• Vapor return arm
PTFE-lining	
Type of heating	• 100% double jacket, incl. swivel joints • Double jacket, tubes and elbows only • Double jacket, tubes only • Electrically
Heating fluids	• Hot water • Steam • Thermal oil
Piggable	

Special accessoires	• Groanding sensor • Rinsing and decompression units







IGATEC Folding Stairways are used for top loading systems to ensure safely walking on vehicles to be loaded and unloaded.

Folding stairways are fixed to the loading platform and swung out to the level of the tanker vehicle.

A suitable number of steps and folding angle allow the easy adjustment to different heighted vehicles.

Safety steps and railing with knee strip ensure a highest level of occupational health and safety.
The safety steps are designed in a way that injuries caused by the folding stairs are avoided.

Notches allow the stairway to hover above the vehicle to be loaded, so there is no need to touch it.

Folding Stairways

Dimensions:

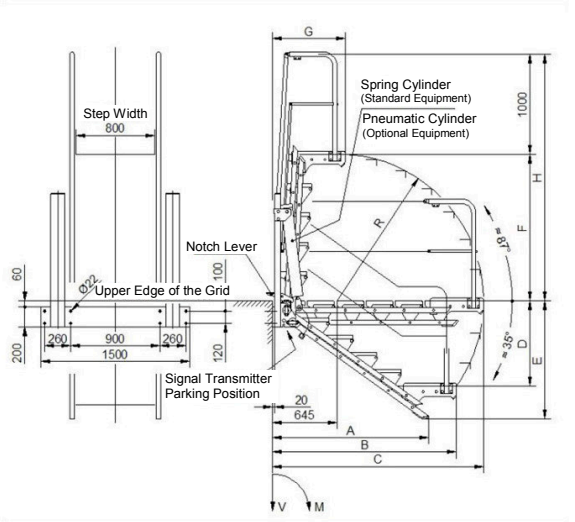
• Number of steps	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	R [mm]	V [mm]	V* [mm]	M [mm]	M* [mm]
3	845	1125	1235	340	668	589	678	1589	590	5.0	5.4	3.0	4.1
4	1085	1366	1530	511	839	884	694	1884	885	5.3	5.7	4.0	5.2
5	1326	1607	1825	681	1009	1178	711	2178	1180	5.6	6.0	5.0	6.3
6	1568	1849	2120	852	1181	1473	727	2473	1475	5.9	6.3	6.0	7.4

*incl. protective cage (1400mm x 2800mm)

- Manual operation by spring cylinder
- Large operation angle
- Safety railing with knee strip
- Steps hot-dip galvanized
- Arrester notch to ensure hovering whilst walking
- Unified drilling pattern
- Corrosion inhibition by zinc coating
- Notch for parking position
- Rubber coated touching area

Optional Accessories:

- Operation
  ⇉ Pneumatical
  ⇉ Hydraulical
- Protective cage with railing for additional coverage of loading area
  ⇉ 1400mm x 1400mm
  ⇉ 1400mm x 2800mm
- Verification of parking position by proximity switch (also for explosion hazard area)
- Moving device to drive the folding stairs along the platform



Engineering, production and sales

IGATEC International GmbH

Siemensstraße 18
D-67346 Speyer

Phone: +49 (0)6232 91 904-0
Fax: +49 (0)6232 91 904-990
eMail: info@igatec.de
http://www.igatec.de

Directing management: Benedikt Eberhard, Dominic Eberhard