

Top Loading Arms

<input type="checkbox"/>	General description	
<input type="checkbox"/>	Schematic overview of available types.	
<input type="checkbox"/>	Mounting Column and Mounting Plate	101101
<input type="checkbox"/>	Top Loading Arm, Models TLA330 & TLA340	330340
<input type="checkbox"/>	Top Loading Arm, Models TLA331 & TLA341	331341
<input type="checkbox"/>	Top Loading Arm, Models TLA332 & TLA342	332342
<input type="checkbox"/>	Top Loading Arm, Models TLA333 & TLA343	333343
<input type="checkbox"/>	Top Loading Arm, Models TLA334 & TLA344	334344
<input type="checkbox"/>	Top Loading Arm, Models TLA336 & TLA346	336346
<input type="checkbox"/>	Top Loading Arm, Models TLA337 & TLA347	337347
<input type="checkbox"/>	Top Loading Arm, Models TLA338 & TLA348	338348
<input type="checkbox"/>	Top Loading Arm, Models TLA231 & TLA241	231241
<input type="checkbox"/>	Top Loading Arm, Models TLA232 & TLA242	232242
<input type="checkbox"/>	Operating Envelope	350026, 350029
<input type="checkbox"/>	Pressure drop curves,	350014
<input type="checkbox"/>	Design Data Sheet for Top Loading Arms	

Introduction:

Top loading arms are designed to load (or unload) tanks by the top. These tanks can be either small containers (barrels), rail- / road tankers or ISO containers.

Standard top loading arms are provided with four swivel joints for the product line and a balance system (counterweight or multi-coil spring cylinder).

Top loading arms can be equipped with a large number of accessories. Depending on the requirements involved, the design can vary between standard Kanon solutions and fully customer specific.

Three different systems for top loading can be distinguished:

Open Loading

In case of open loading, the drop pipe has no provisions such as a cone, coupler or flange to avoid exposure of the handled liquids to the outside environment.

Semi-closed loading

When liquids which are dangerous to health or environment are loaded or unloaded, a top loading arm could be equipped with a manhole cone and vapour return line. This is called semi-closed loading. The cone will cover the manhole during the loading sequence, so that product vapours will be released through the vapour line and product splashes will not cause risks to the operator.

Fully closed loading

Fully closed loading might be required in case the handled liquids are pressurised, dangerous or are not allowed to be exposed to air. In this case the top loading arms should be equipped with a flange or coupler for connection to the truck tanker.

Basic characteristics:

- Diameter : 2" (DN50), 3" (DN80), 4" (DN100) and 6" (DN150)
- Materials (piping) : carbon steel, stainless steel, low temperature steel, PTFE-lined
- Seal faces : Stainless steel, duplex, Hastelloy, or other on request
- Seals : PTFE-C, PTFE-virgin, FPM, NBR, UHMW-PE, or others on request
- Balancing : counterweight or spring cylinder
- Temperature range : -200°C up to +300°C
- Pressure range : maximum 120 bar

Top Loading Arms

General Description Bulletin 2/2

Design data may include:

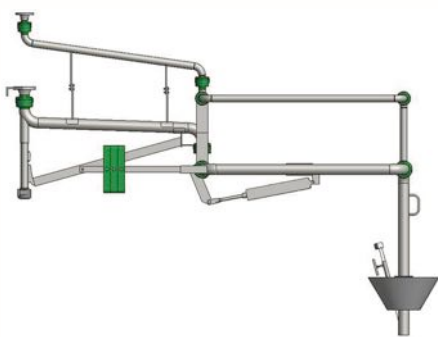
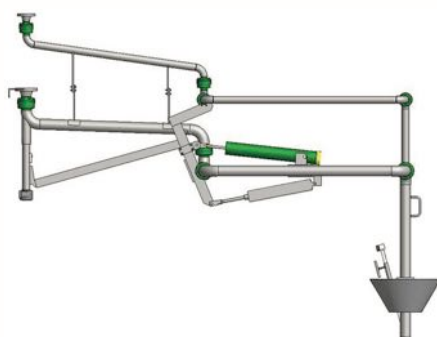

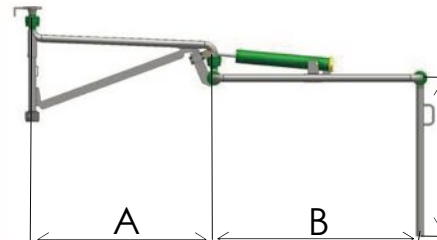
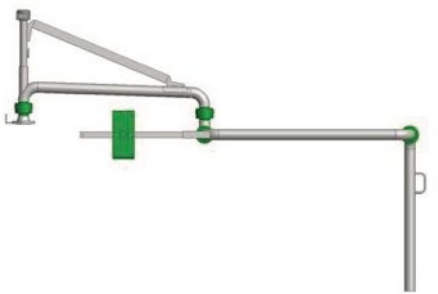

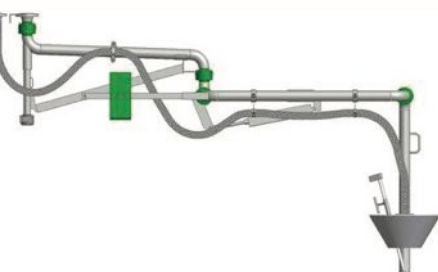



- Type of fluid, viscosity, temperature and pressure
- Capacity in cubic meters per hour (m³) or tonnes per hour
- Number of different fluids at one loading station
- Number of loading arms filling simultaneously at one tanker
- PED 97/23/EC classification
- Required level of operators safety / area classification
- Environmental requirements
- Pigging requirements
- Integration with metering or weighbridge facilities, control and/or shut-off valves
- Dimensional information of (existing) loading station and tankers

Accessories:

- Mounting column or mounting plate.
- Cone on the drop pipe.
- Vapour-return hose alongside the loading arm.
- Different types of deflectors at the end of the droppipe such as plate, 45° edge or T-type.
- Heating systems (electric, steam/hot oil), with or without insulation.
- Telescopic drop pipe manually or pneumatically operated.
- Pneumatic press down system
- Pneumatic up/down system to move the drop pipe of the arm up or down.
- Two stage start and stop system.
- Vacuum Breaker
- Drip catcher for stored position
- Breakaway coupling in droppipe in case of a flanged connection at truck side.
- Nitrogen purge hose alongside the loading arm to pressurise the tank truck or rail road.
- Locking device for stored position.
- An extra swivel joint in case of a flanged connection at truck side.
- A vertical balance system together with the extra swivel joint.
- Top level control for open or close manhole (electrically or pneumatically).
- Manually or pneumatically operated valve in arm.
- Mechanical lockdown device.

Top Loading Arms

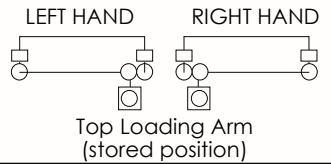
Counterweight & Spring Balanced
2", 3", 4", 6"
Bulletin TLA Models

	COUNTERWEIGHT	SPRING BALANCED	
TLA 330			TLA 340
TLA 331			TLA 341
TLA 332			TLA 342
TLA 333			TLA 343
TLA 334			TLA 344

STANDARD DIMENSIONS: Are for A=1500 B=1700 C=1500, but can be changed to suit customers requirements

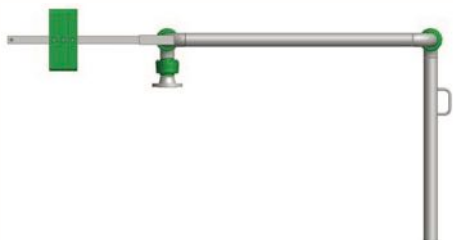



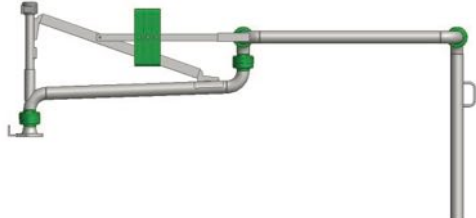
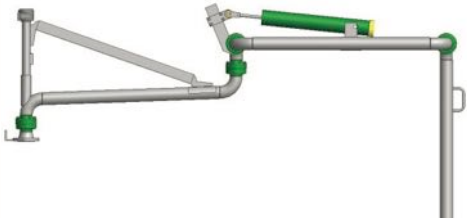
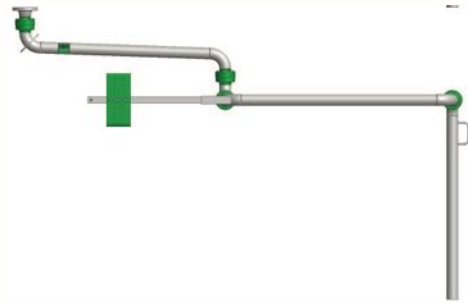



STANDARD MATERIALS: Carbon steel; AISI 304, AISI 316; PTFE Lining is also possible

STANDARD SEALS: Teflon (PTFE-C); Viton (FPM); BUNA (NBR), UHMW-PE



Top Loading Arms

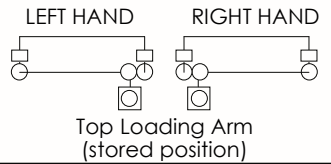
Counterweight & Spring Balanced
2", 3", 4", 6"
Bulletin TLA Models

	COUNTERWEIGHT	SPRING BALANCED	
TLA 336			TLA 346
TLA 337			TLA 347
TLA 338			TLA 348
TLA231			TLA241
TLA232			TLA242

STANDARD DIMENSIONS: Are for A=1500 B=1700 C=1500, but can be changed to suit customers requirements

STANDARD MATERIALS: Carbon steel; AISI 304, AISI 316; PTFE Lining is also possible

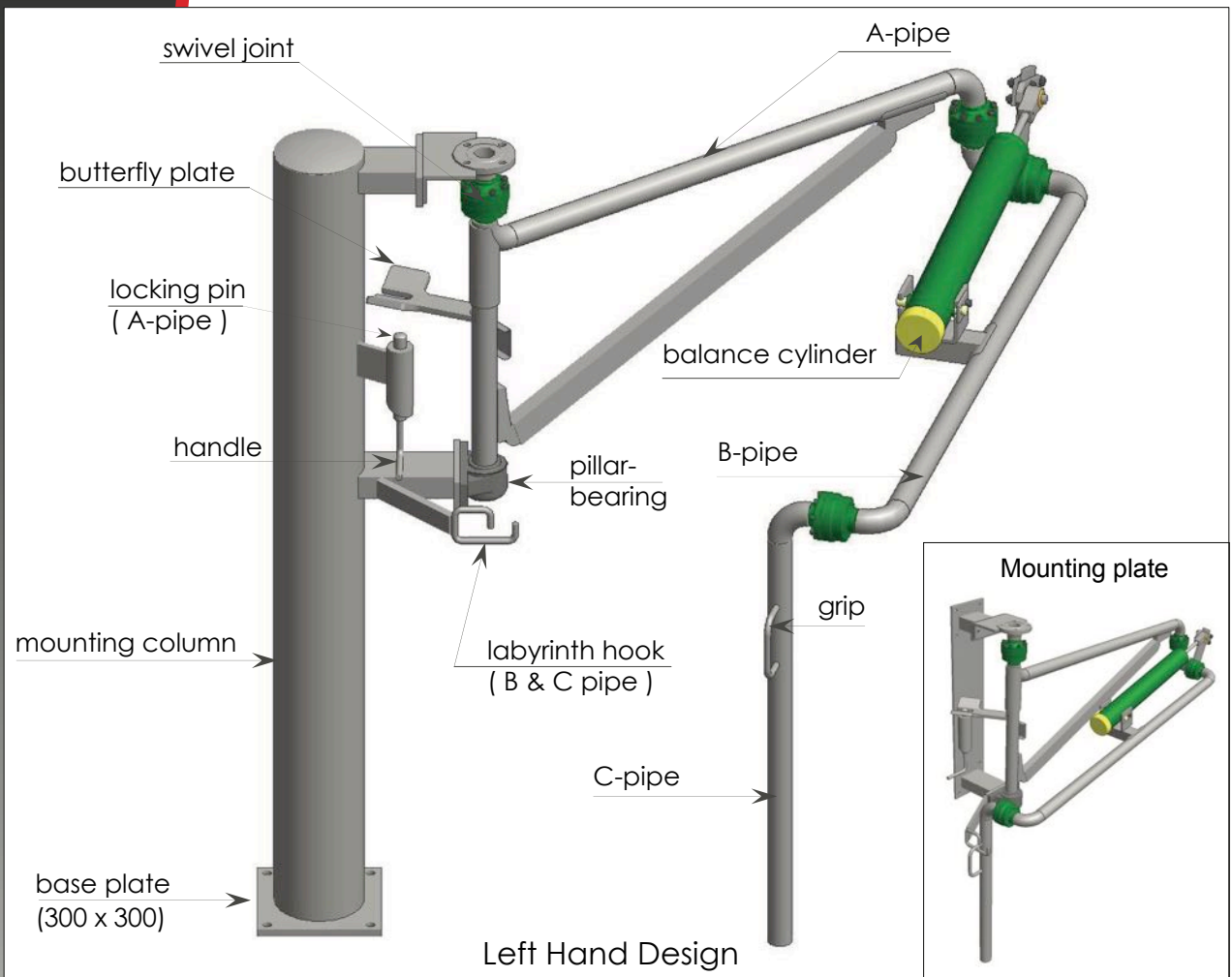
STANDARD SEALS: Teflon (PTFE-C); Viton (FPM); BUNA (NBR), UHMW-PE



Top Loading Arms

Mounting column / -plate
Bulletin 101101

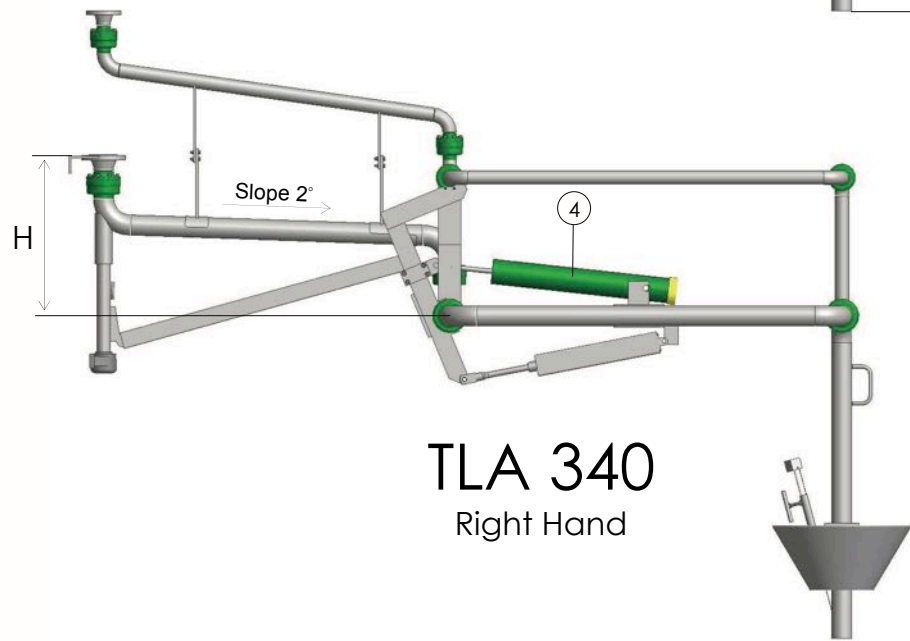
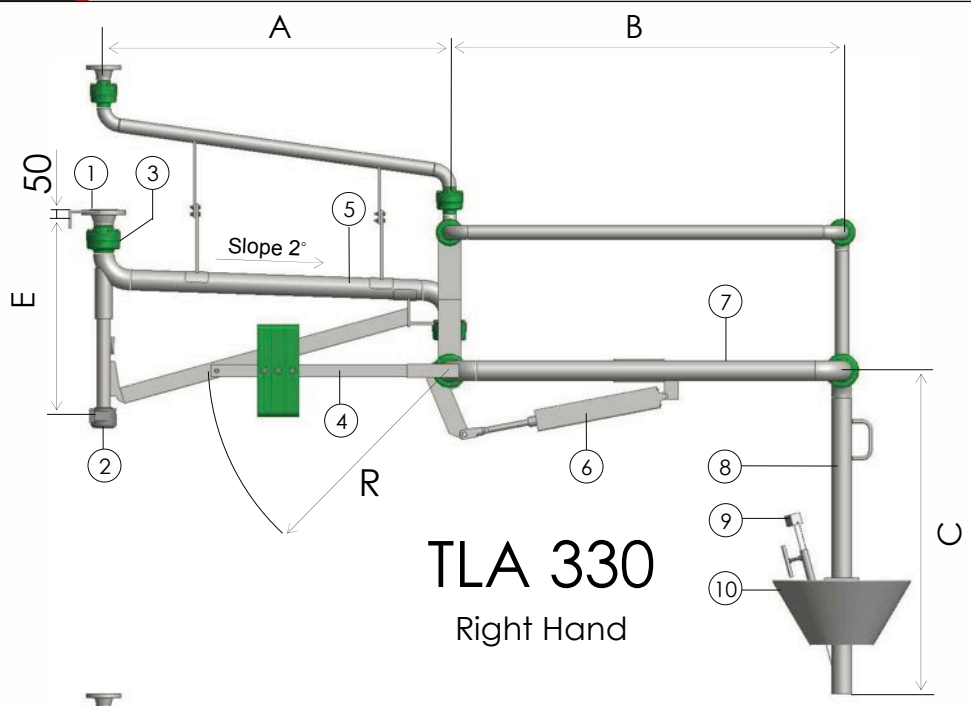
Mounting column/ -plate
Mounting columns or mounting plate are equipped with a double locking device; one for locking of the A-pipe and one for locking of both B-pipe and C-pipe.



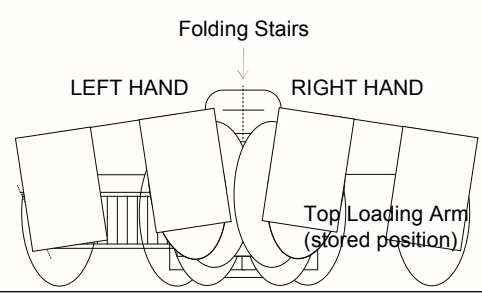
- Available options:**
- Proximity switch on locking pin for stored position detection
 - Galvanised or provided with paint system

Top Loading Arms

With vapour recovery line
Bulletin 330340



	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
E	850	850	850	850
H	559	679	794	1235
R	1200	1200	1200	1500

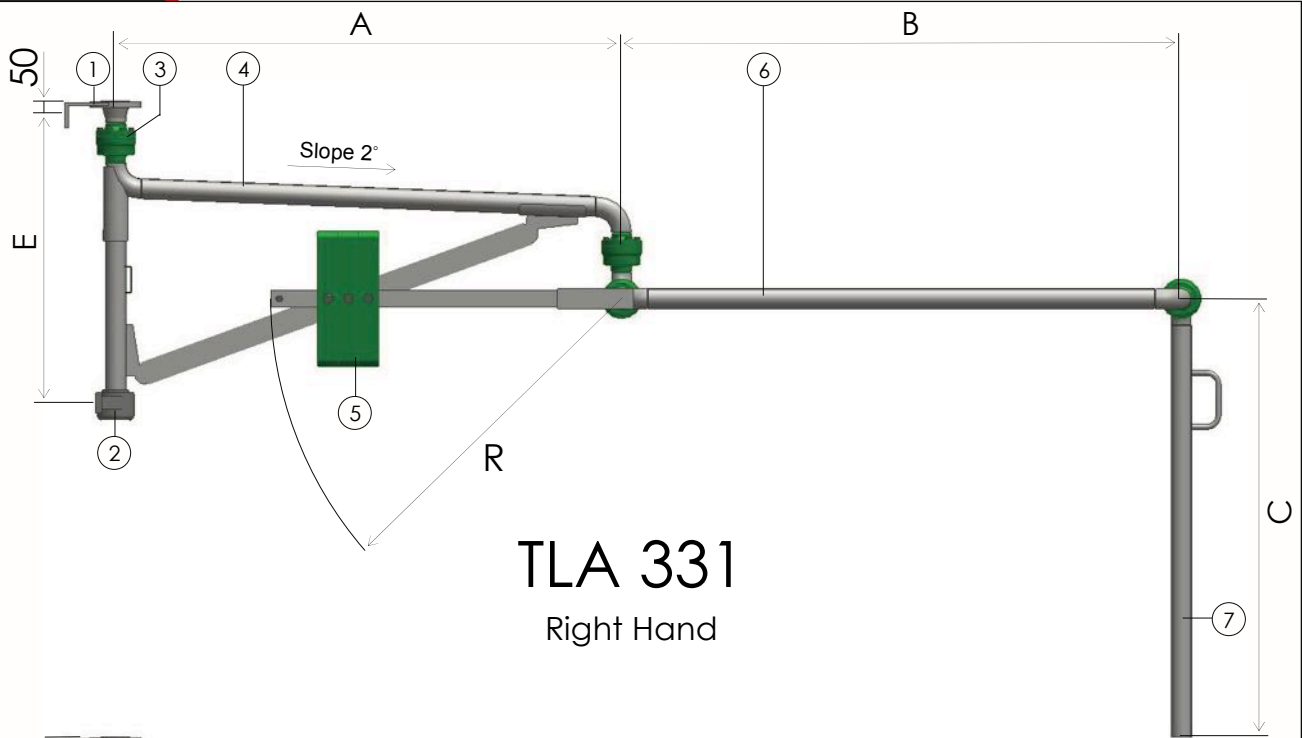


- 1 Inletflange
- 2 Pillar bearing
- 3 Swivel joint
- 4 Counterweight (330) or Balance cylinder (340)
- 5 A-pipe
- 6 Press down cylinder
- 7 B-pipe
- 8 C-pipe
- 9 Top level control
- 10 Cone

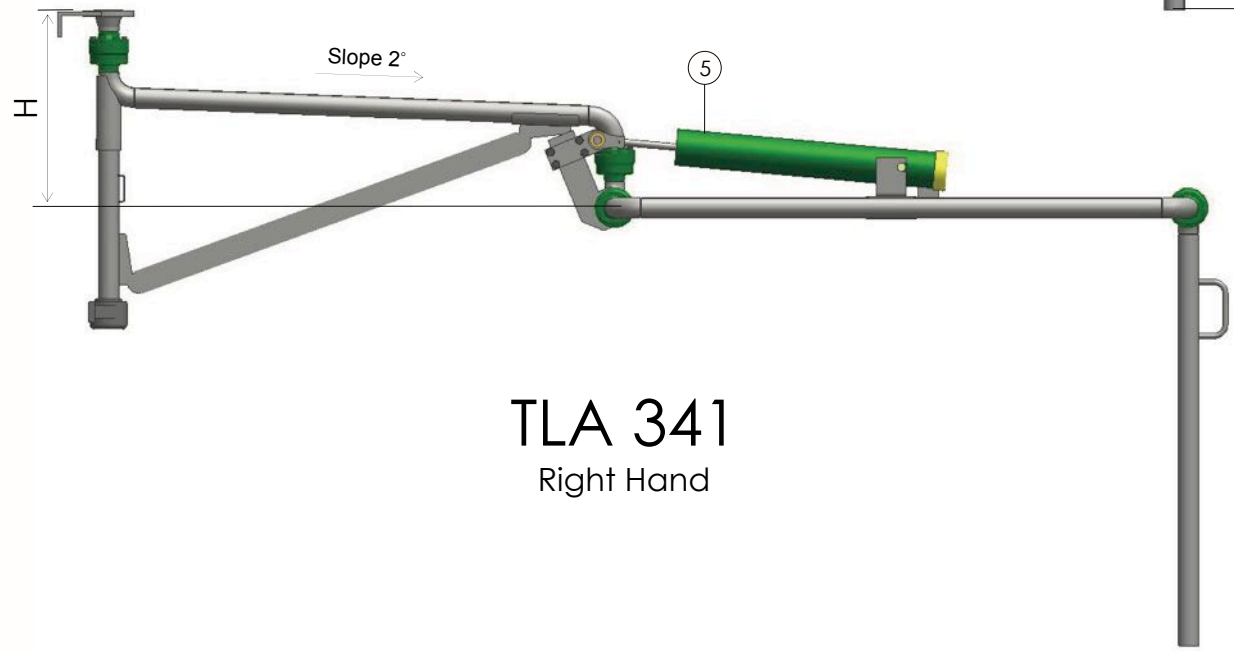
Top Loading Arms

Top inlet

Bulletin 331341

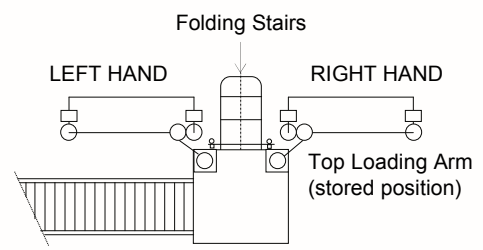


TLA 331
Right Hand



TLA 341
Right Hand

	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
E	850	850	850	850
H	559	679	794	1235
R	1200	1200	1200	1500

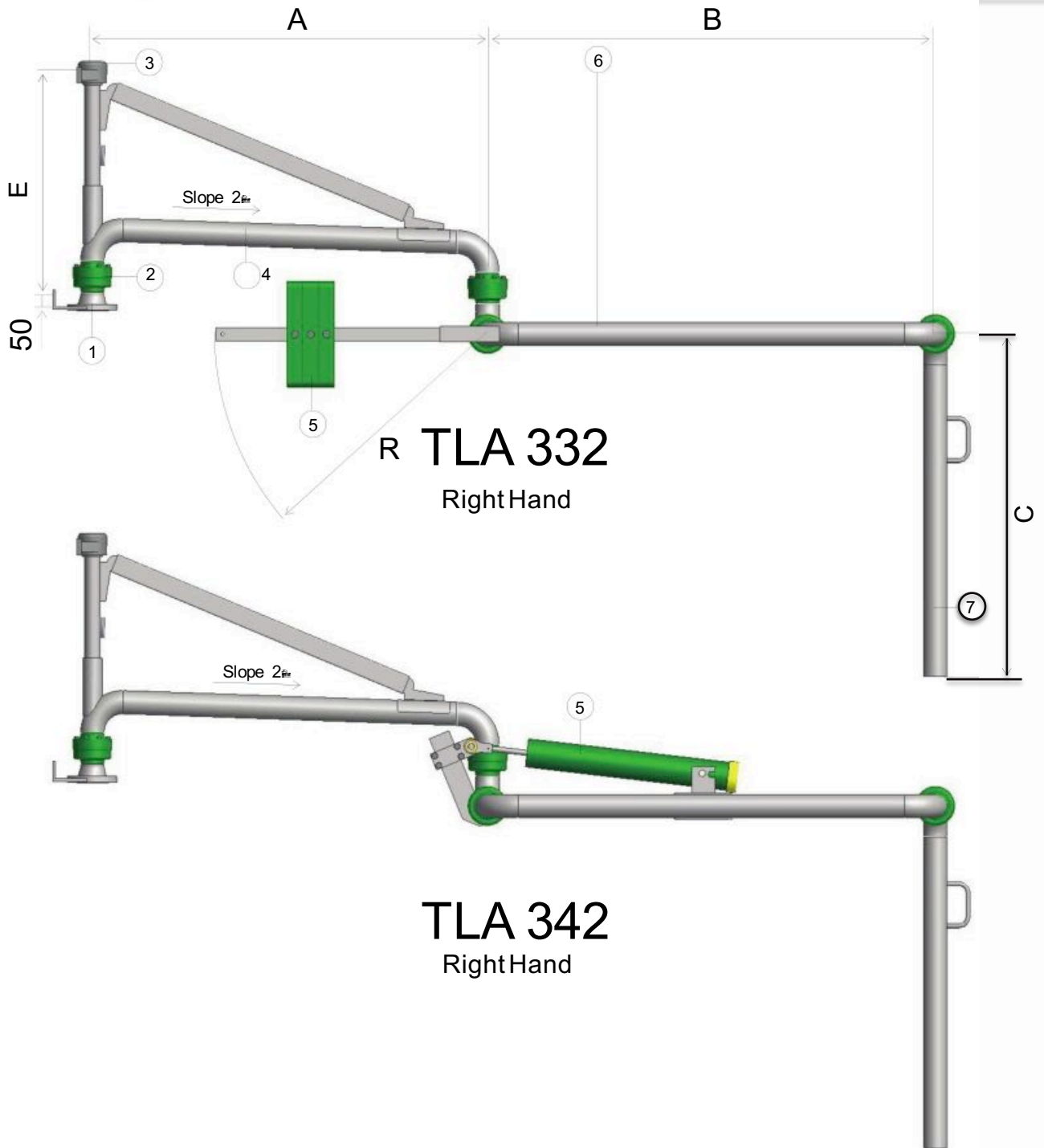


- 1 Inletflange
- 2 Pillar bearing
- 3 Swivel joint
- 4 A-pipe
- 5 Counterweight (331) or Balance cylinder (341)
- 6 B-pipe
- 7 C-pipe

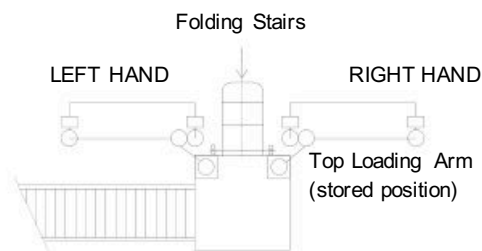
Top Loading Arms

Bottom inlet

Bulletin 332342



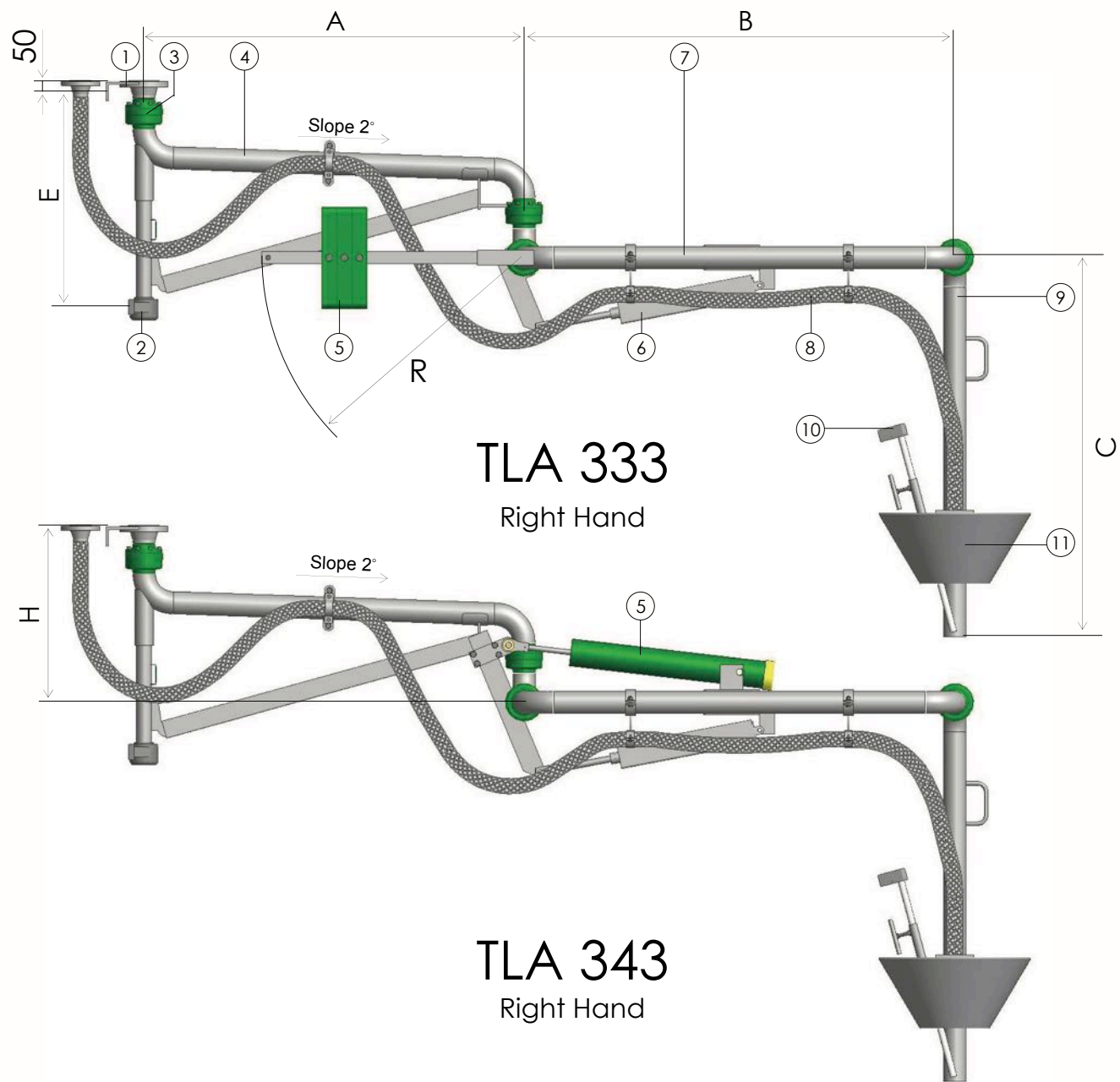
	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
E	850	850	850	850
R	1200	1200	1200	1500



- 1 Inletflange
- 2 Swivel joint
- 3 Pillar bearing
- 4 A-pipe
- 5 Counterweight (332) or Balance cylinder (342)
- 6 B-pipe
- 7 C-pipe

Top Loading Arms

With vapour recovery hose
Bulletin 333343



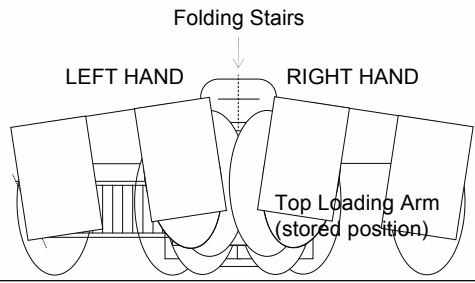
TLA 333

Right Hand

TLA 343

Right Hand

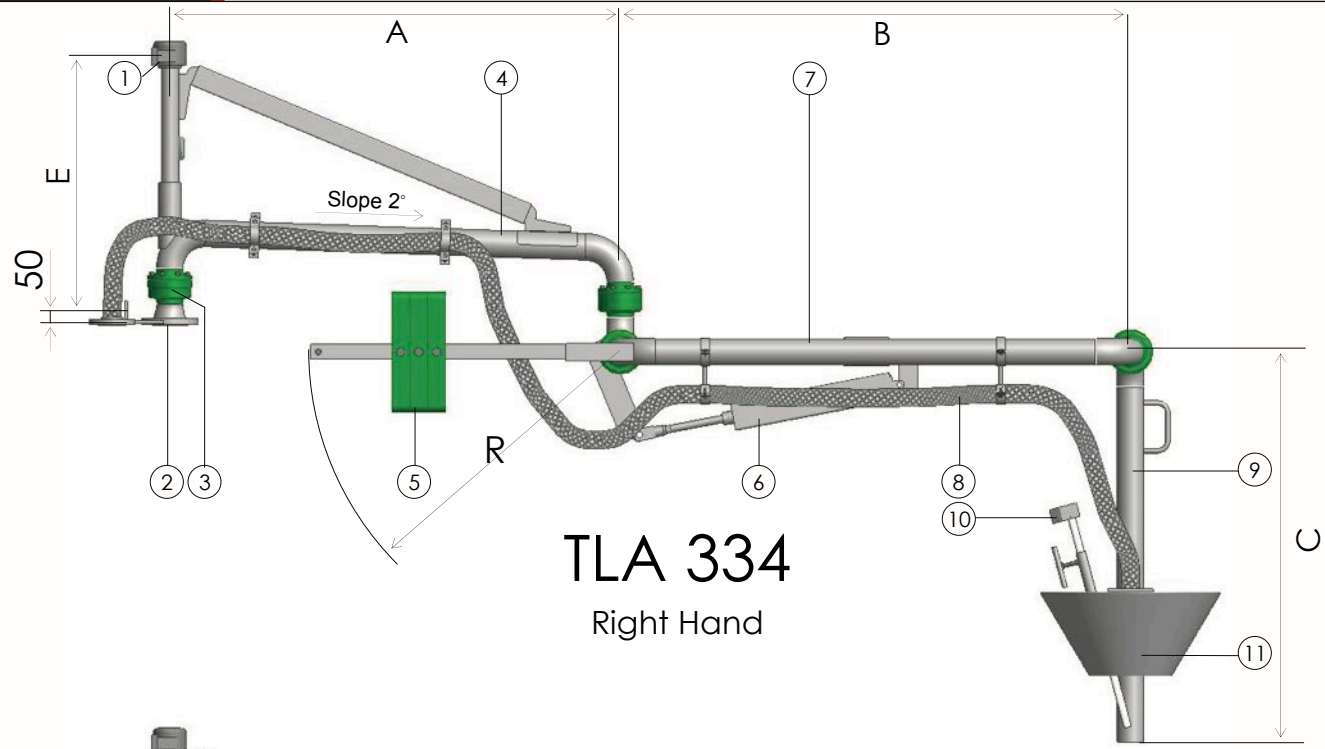
	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
E	850	850	850	850
H	559	679	794	1235
R	1200	1200	1200	1500



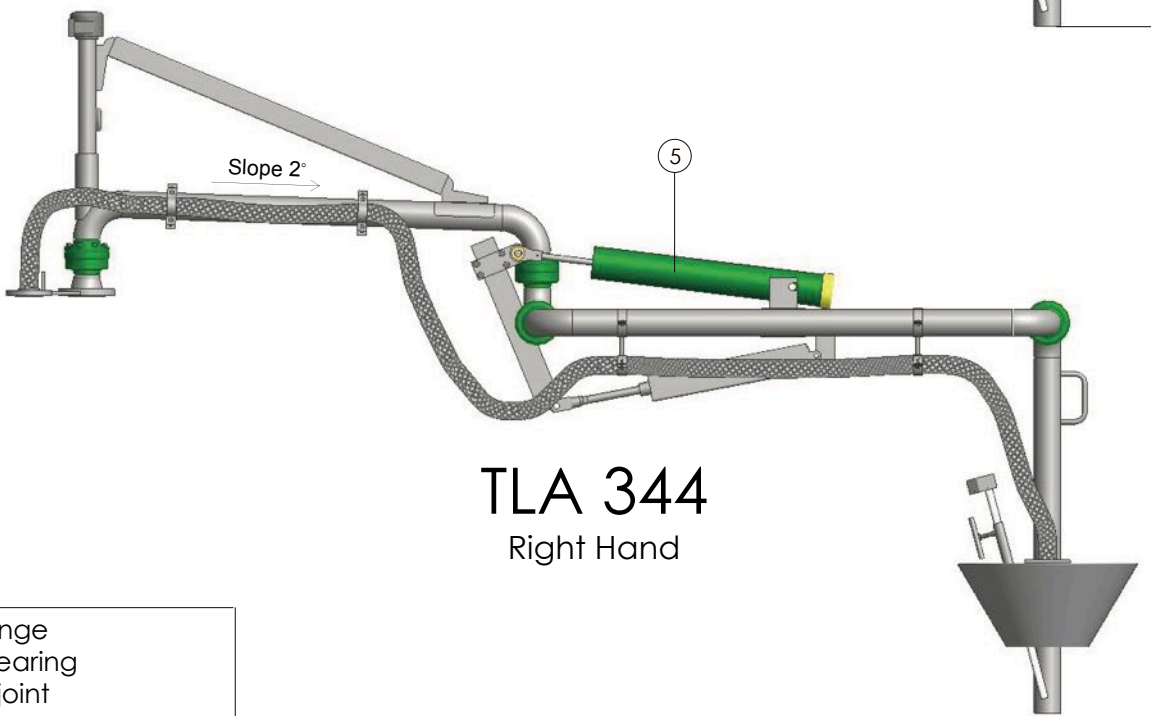
- 1 Inletflange
- 2 Pillar bearing
- 3 Swivel joint
- 4 A-pipe
- 5 Counterweight (333) or Balance cylinder (343)
- 6 Press down cylinder
- 7 B-pipe
- 8 Vapour return hose
- 9 C-pipe
- 10 Top level control
- 11 Cone

Top Loading Arms

With vapour recovery hose
Bulletin 334344

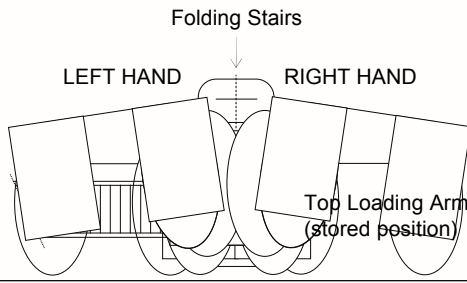


TLA 334
Right Hand



TLA 344
Right Hand

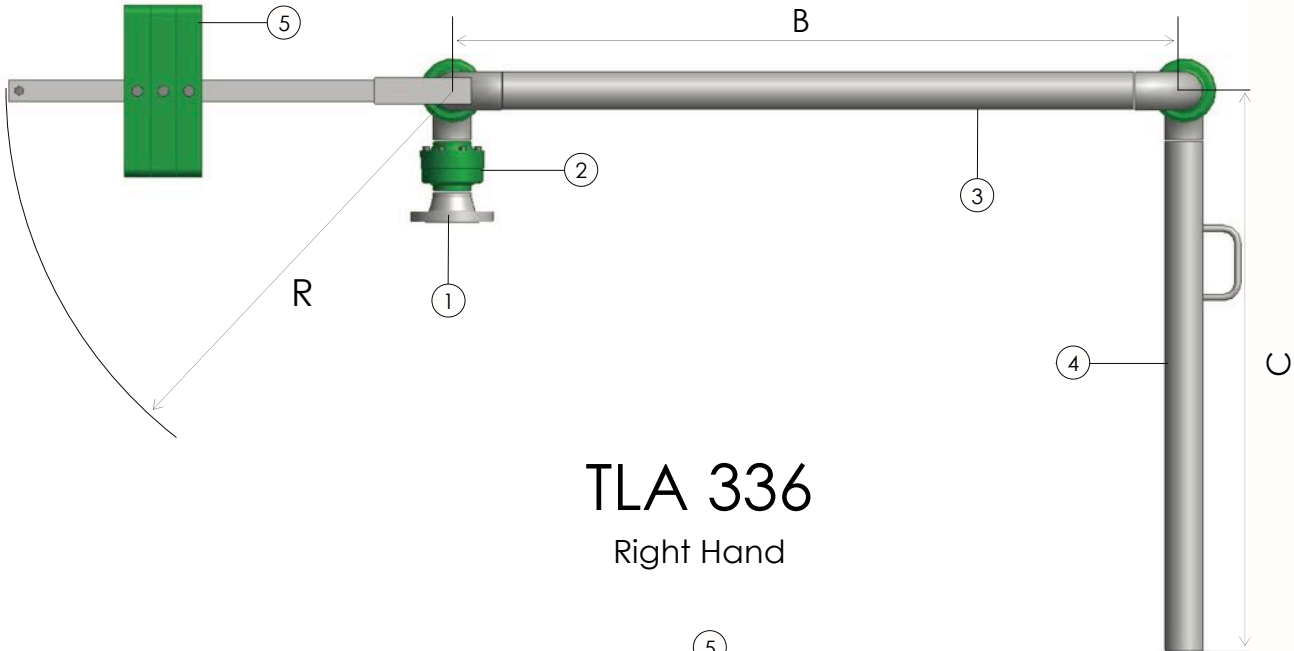
- 1 Inletflange
- 2 Pillar bearing
- 3 Swivel joint
- 4 A-pipe
- 5 Counterweight (334) or Balance cylinder (344)
- 6 Press down cylinder
- 7 B-pipe
- 8 Vapour return hose
- 9 C-pipe
- 10 Top level control
- 11 Cone



	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
E	850	850	850	850
H	559	679	794	1235
R	1200	1200	1200	1500

Top Loading
Arms

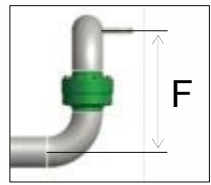
Single swing
Bottom inlet
Bulletin 336346



TLA 336
Right Hand

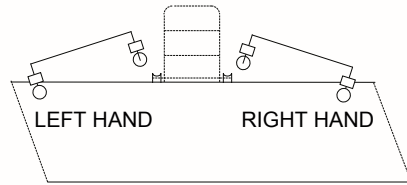


TLA 346
Right Hand



Top view at
C-pipe

Folding Stairs

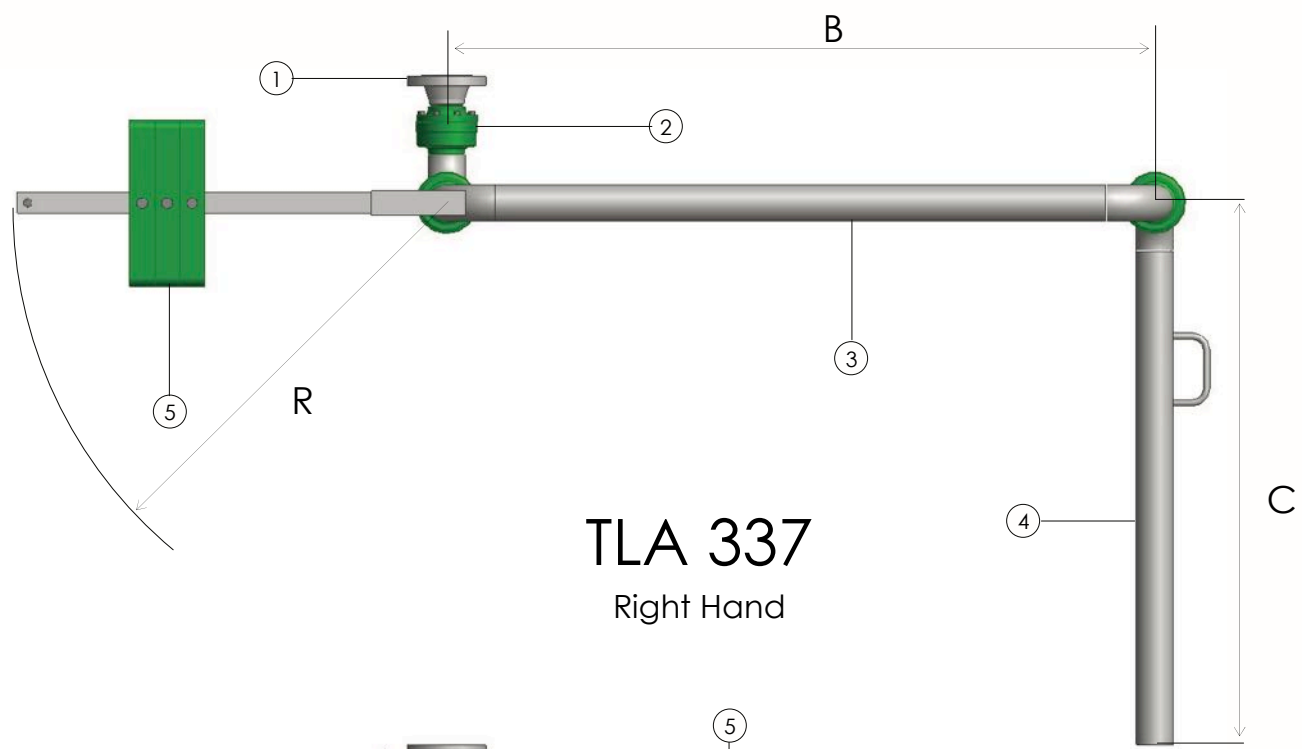


	2"	3"	4"
B	1700	1700	1700
C	1500	1500	1500
F	273	286	330
R	1200	1200	1200

- 1 Inletflange
- 2 Swivel joint
- 3 B-pipe
- 4 C-pipe
- 5 Counterweight (336) or Balance Cylinder (346)

Top Loading
Arms

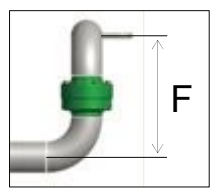
Single swing
Top inlet
Bulletin 337347



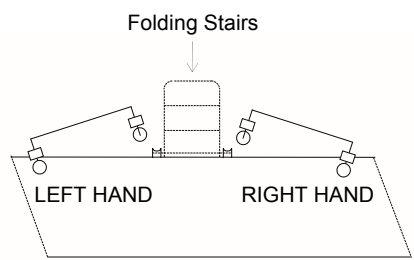
TLA 337
Right Hand



TLA 347
Right Hand



Top view at
C-pipe



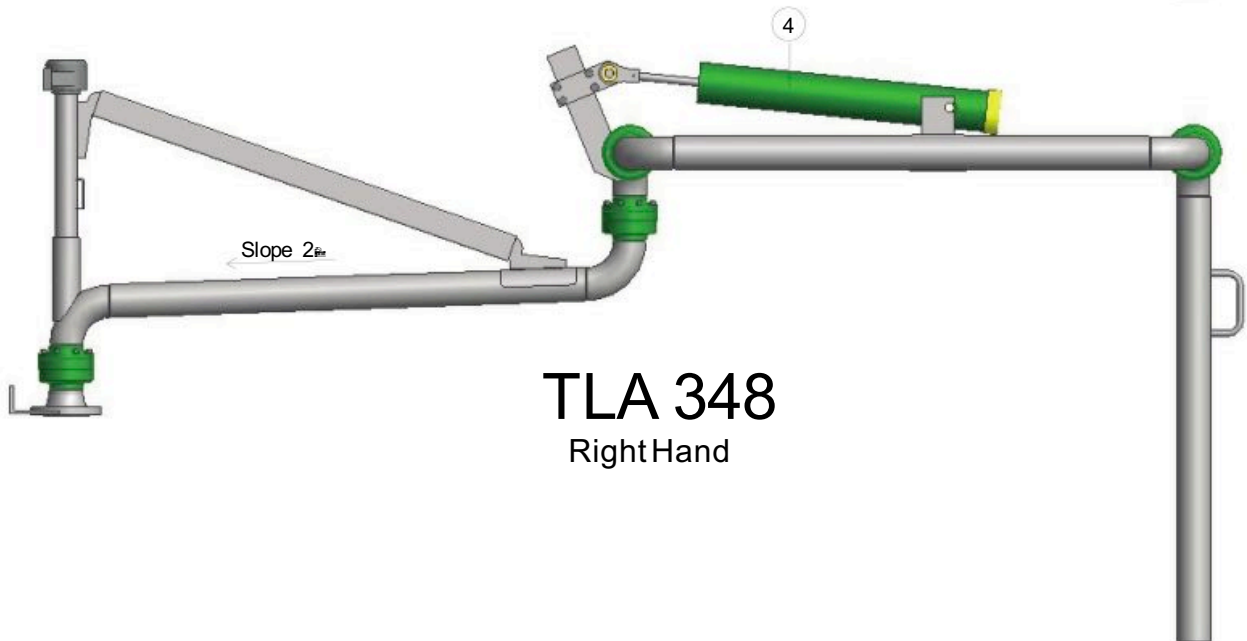
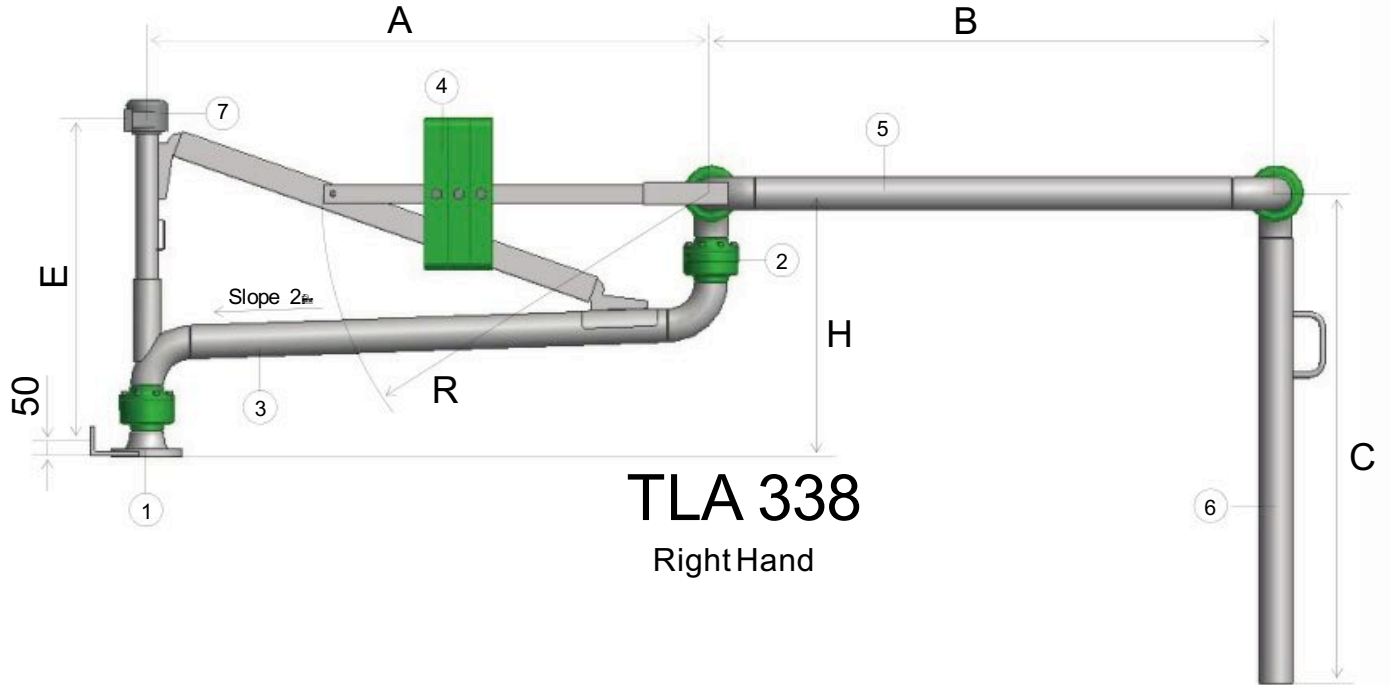
	2"	3"	4"
B	1700	1700	1700
C	1500	1500	1500
F	273	286	330
R	1200	1200	1200

- 1 Inletflange
- 2 Swivel joint
- 3 B-pipe
- 4 C-pipe
- 5 Counterweight (337) or Balance Cylinder (347)

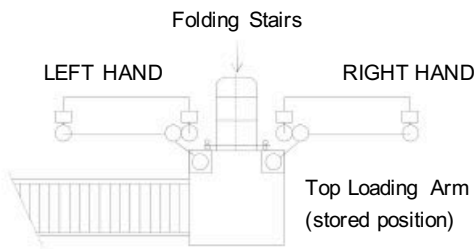
Top Loading Arms

Bottom inlet

Bulletin 338348



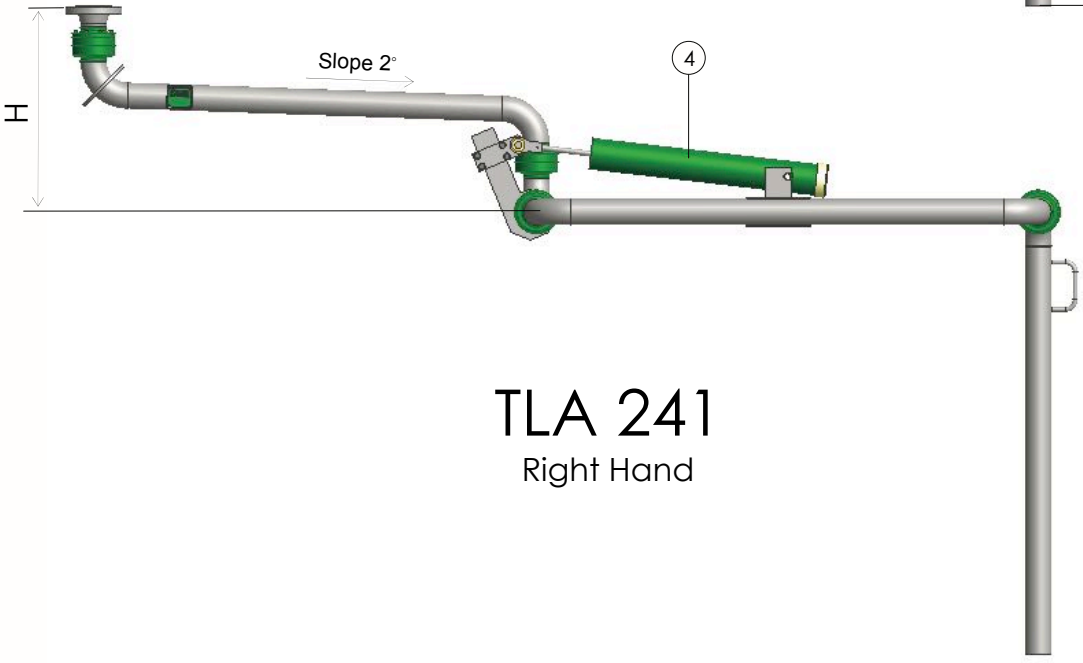
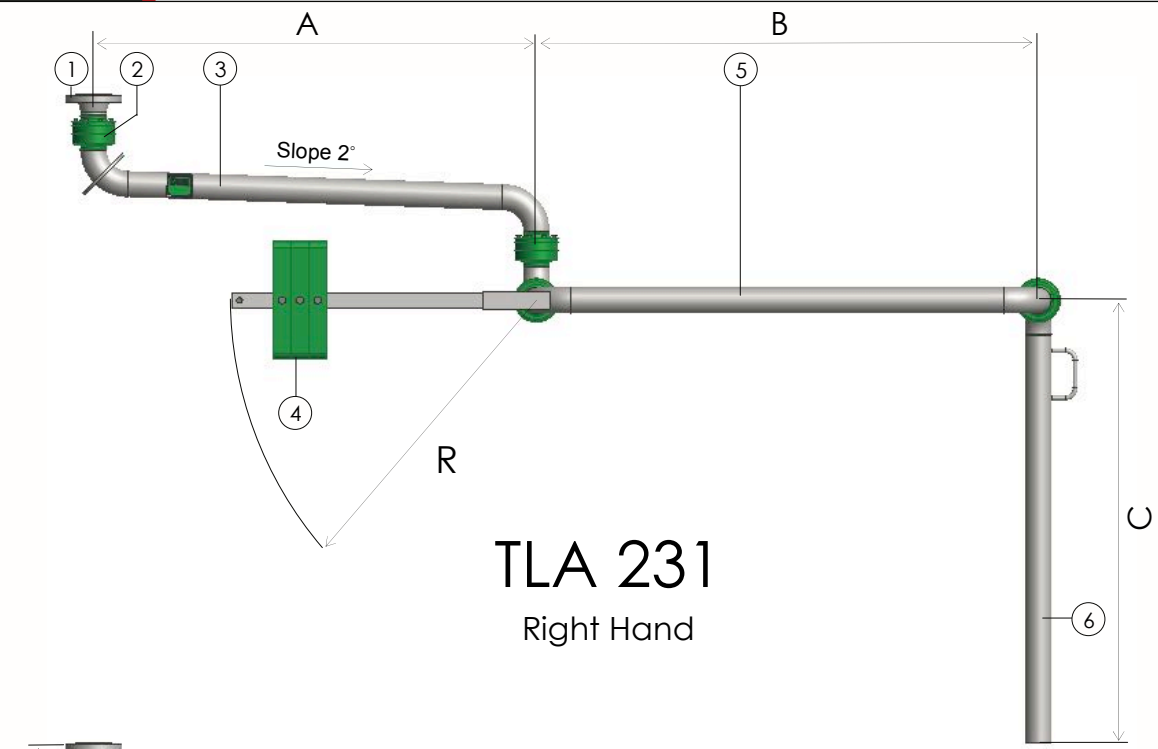
	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
E	850	850	850	850
H	559	679	794	1235
R	1200	1200	1200	1500



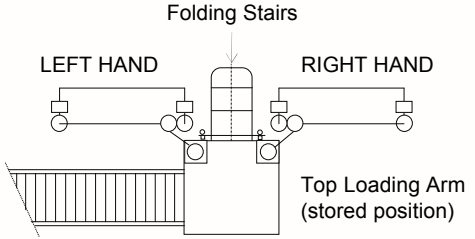
- 1 Inlet flange
- 2 Swivel joint
- 3 A-pipe
- 4 Counterweight (338) or Balance Cylinder (348)
- 5 B-pipe
- 6 C-pipe
- 7 Pillar Bearing

Top Loading
Arms

Top inlet
Unsupported
Bulletin 231241



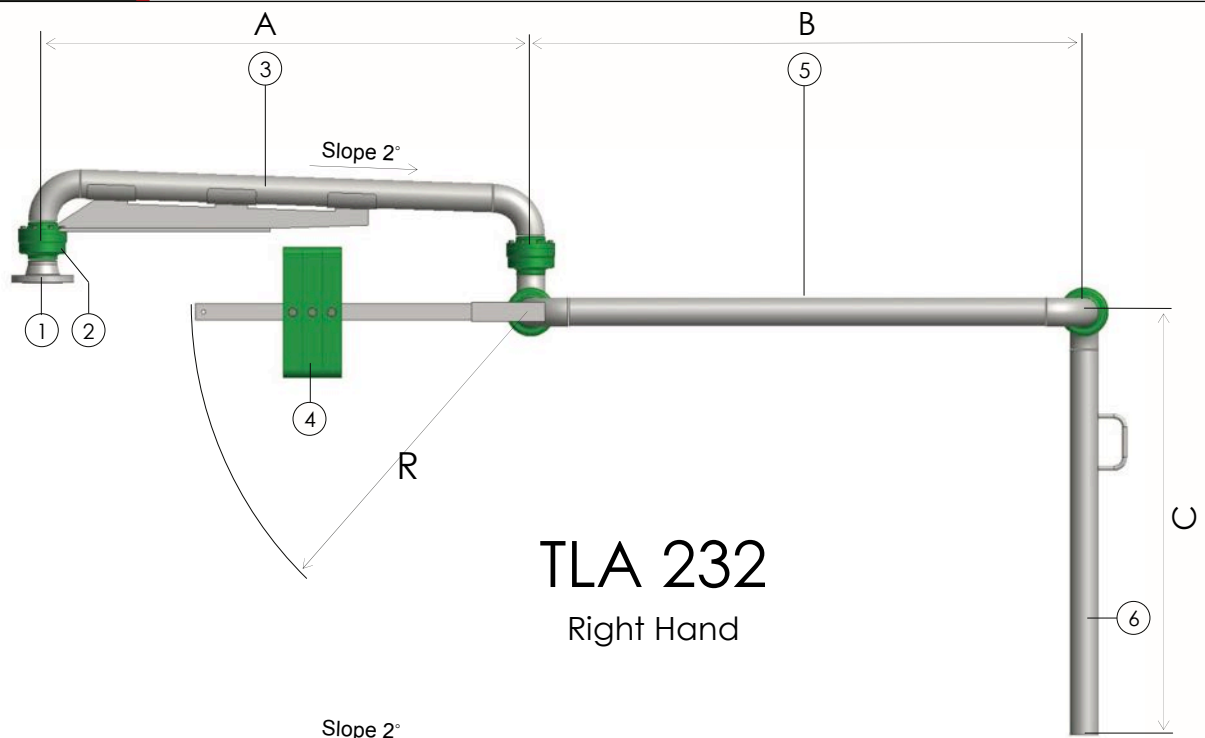
	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
H	559	679	794	1235
R	1200	1200	1200	1500



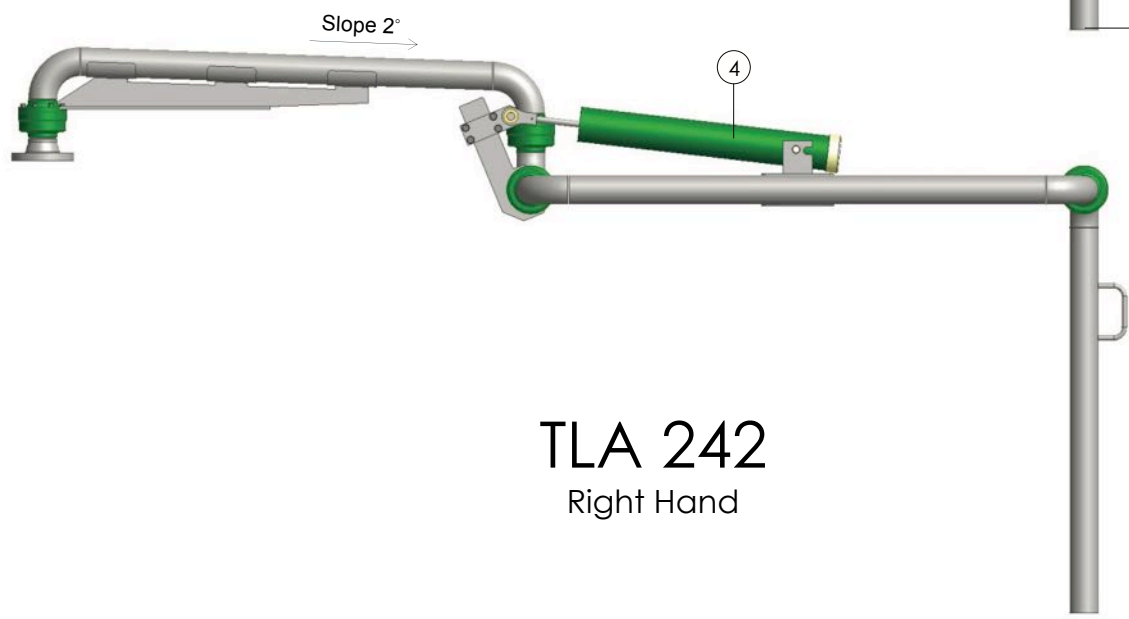
- 1 Inlet flange
- 2 Swivel joint
- 3 A-pipe
- 4 Counterweight (231) or Balance cylinder (241)
- 5 B-pipe
- 6 C-pipe

Top Loading Arms

Bottom inlet
Unsupported
Bulletin 232242

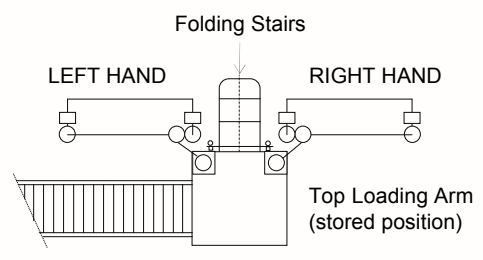


TLA 232
Right Hand



TLA 242
Right Hand

	2"	3"	4"	6"
A	1500	1500	1500	1700
B	1700	1700	1700	2000
C	1500	1500	1500	1500
H	559	679	794	1235
R	1200	1200	1200	1500

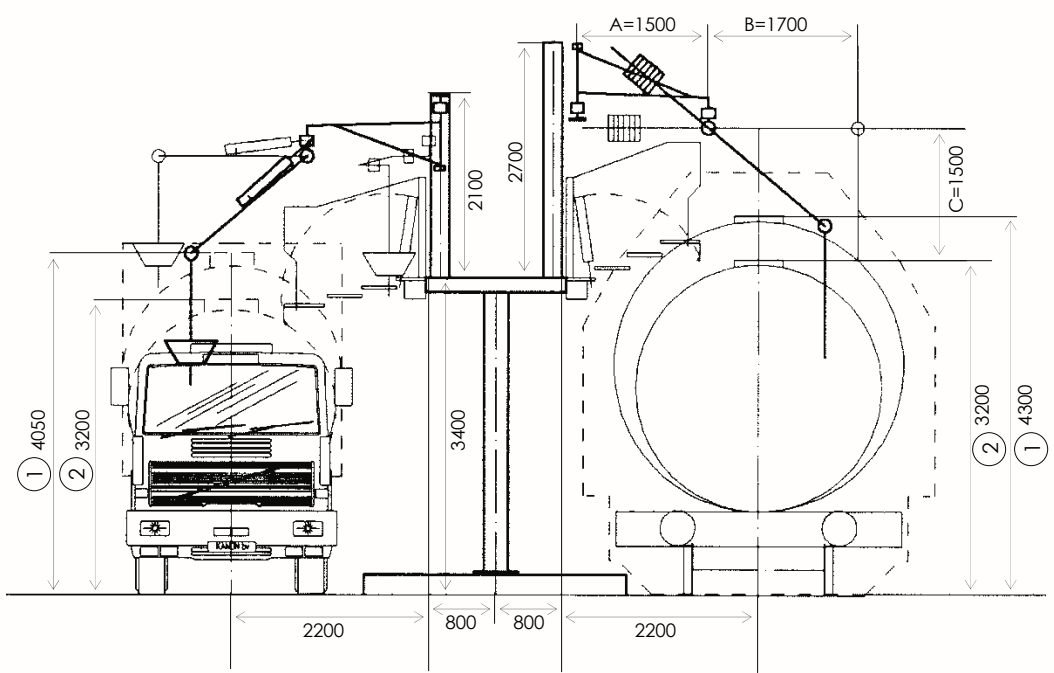
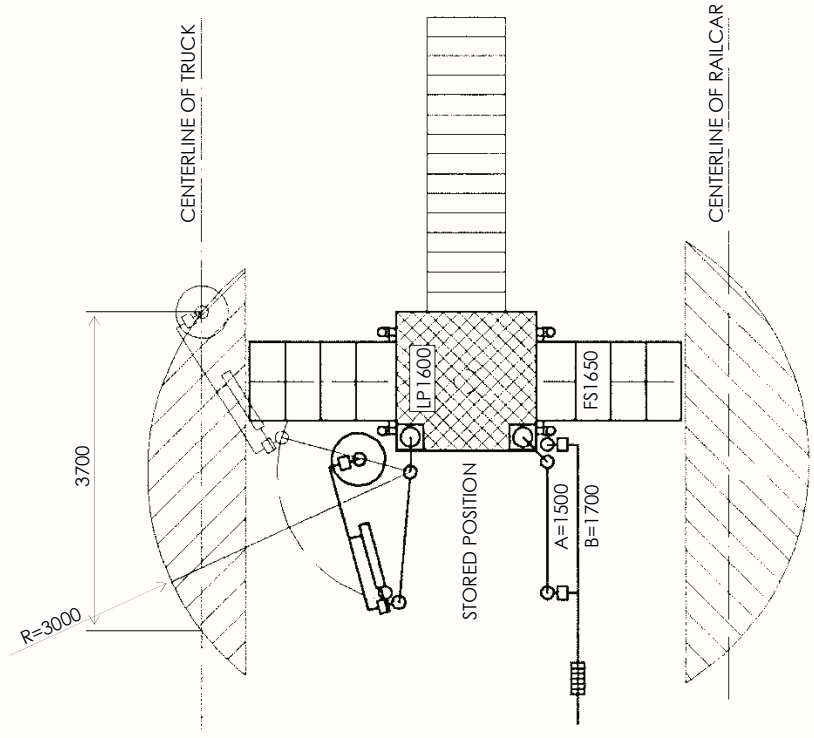


- 1 Inletflange
- 2 Swivel joint
- 3 A-pipe
- 4 Counterweight (232) or Balance cylinder (242)
- 5 B-pipe
- 6 C-pipe

Top Loading Arms

Operating Envelope Bulletin 350026

- 1 Height highest manhole
- 2 Height lowest manhole



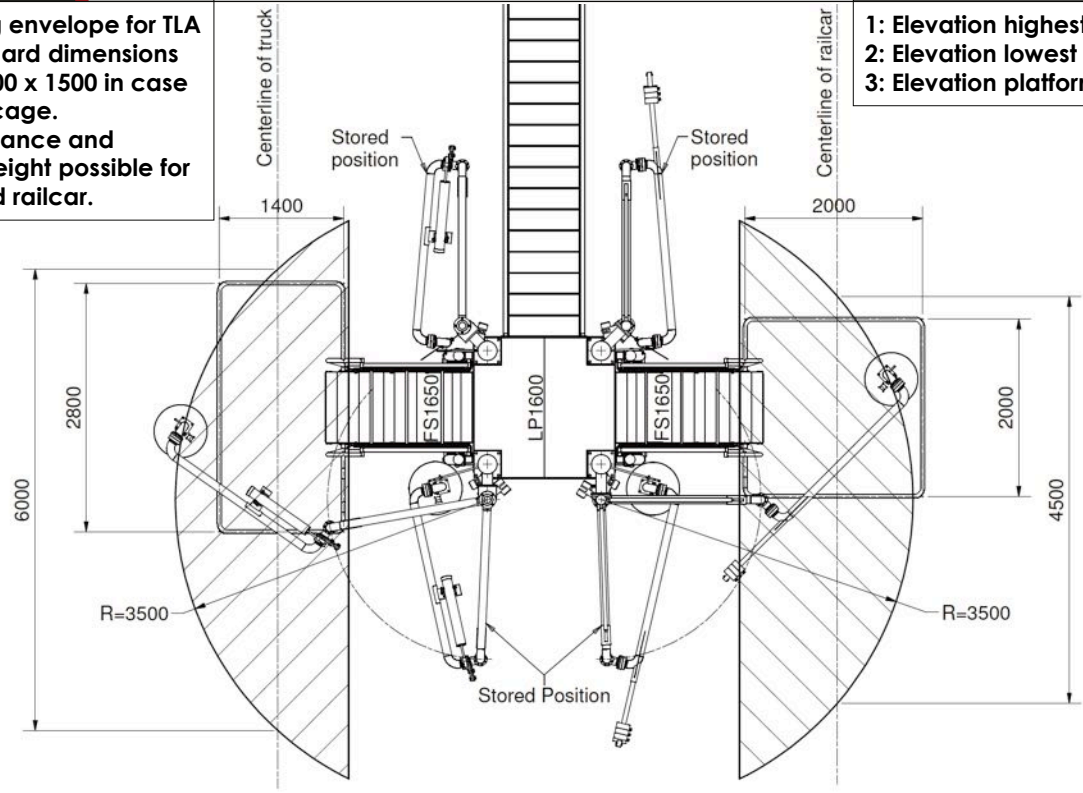
Operating envelope for TLA with standard dimensions 1500 x 1700 x 1500.
Spring balance and counterweight possible for as well truck as railcar

Top Loading Arms

Operating Envelope Bulletin 350029

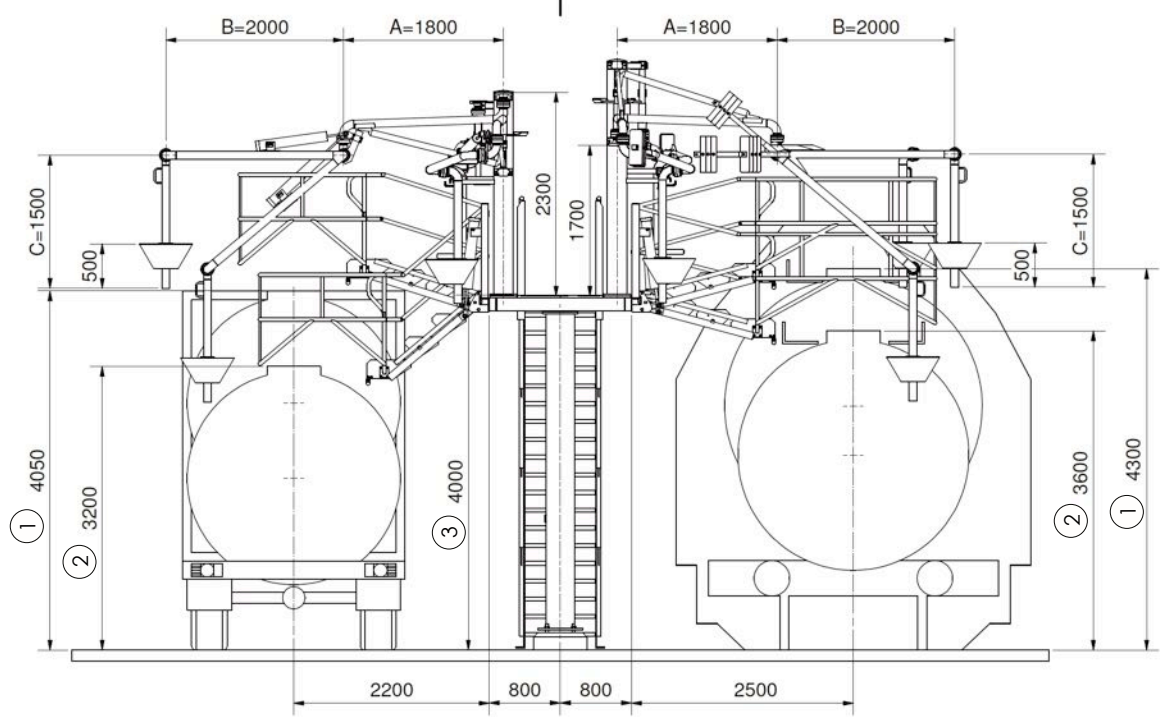
Operating envelope for TLA with standard dimensions 1800 x 2000 in case of safety cage. Spring balance and counterweight possible for trucks and railcar.

- 1: Elevation highest manhole
- 2: Elevation lowest manhole
- 3: Elevation platform



Operating envelope for truck loading

Operating envelope for railcar loading

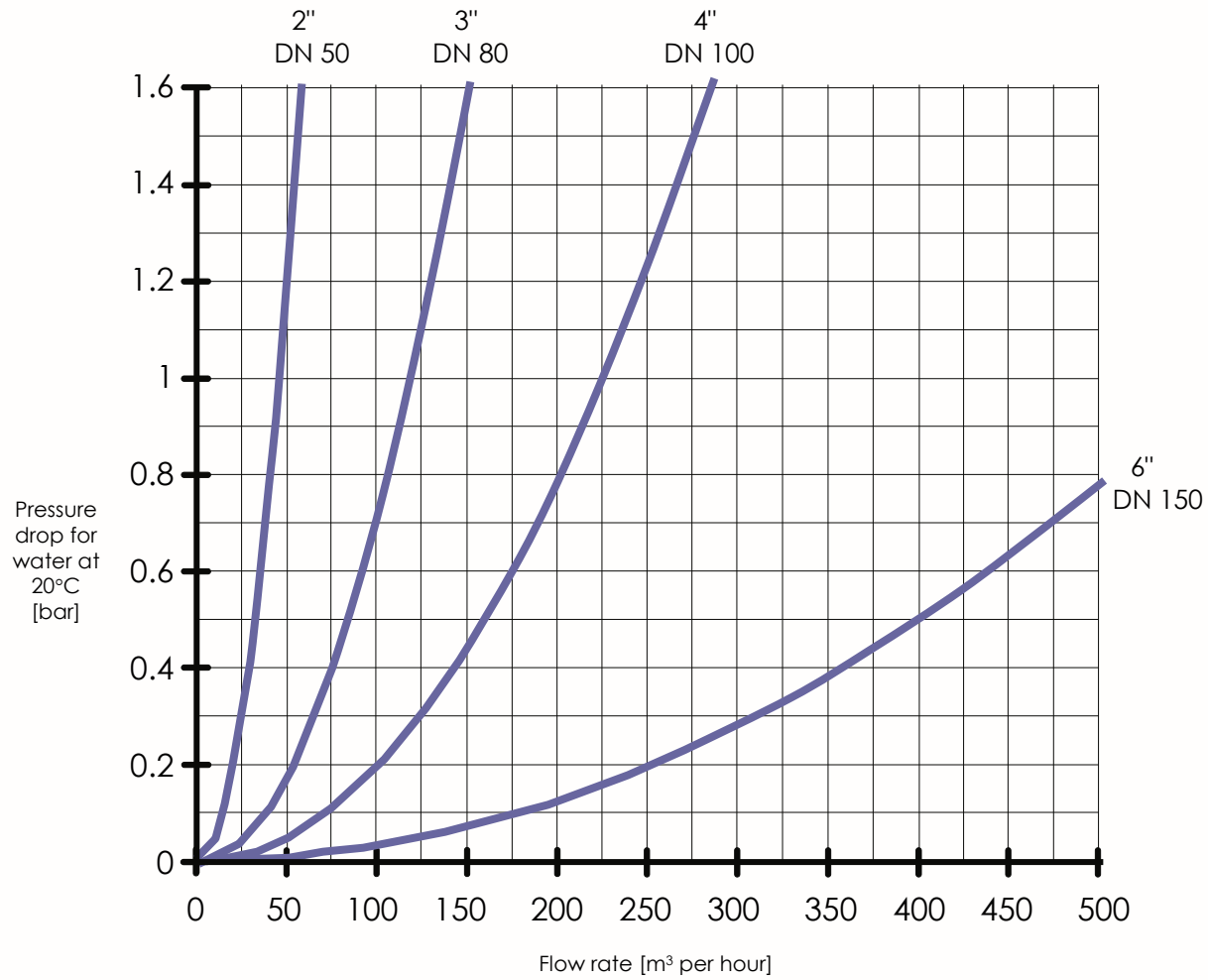


Rev1 - 7-07-2009

Pressure Drop Curves

For Top Loading arms
Bulletin 350014

Pressure Drop for KANON Top Loading Arms
Dimensions 1500x1700x1500 mm



Conversion factors	
Gazoline / Petrol	0.75
Sulphur	2.0
Sulphuric acid	2.3
Vegetable oil	1.45
Figures are rough estimations ! For precise calculations consult KANON	