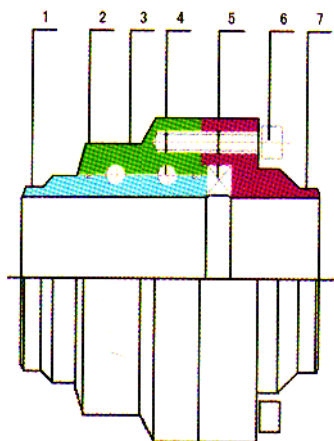


The Growco AL Series loading arm consists of the connection of flexible swivel, well sealed swivel joints and pipeline, which are flexible equipments used to transport liquid medium between the tank trucks and loading platforms. Our Growco AL Series loading arms are used widely for road tankers in the oil storage tanks terminals, refineries, petrochemical plants, etc.

The key part - swivel joint which uses alloy steel for its outer ring and stainless steel or liner polytetrafluoroethylene (PTFE) for its inner ring ensuring it can be used for high temperature, low temperature, strong corrosive medium safely and reliably. Below is the typical drawing with descriptions for easy understanding.

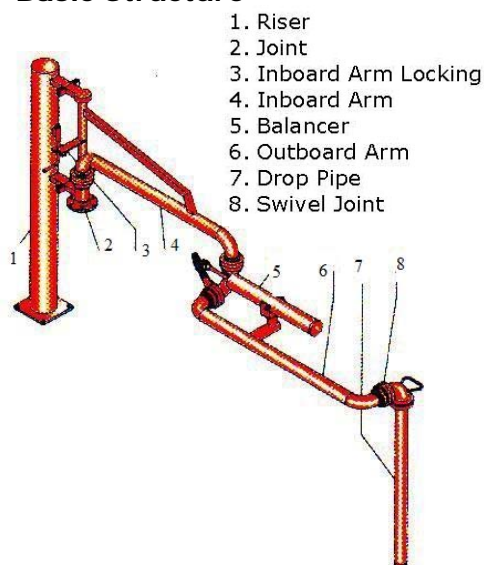


1. Inner Ring
2. Vice Sealing
3. Outer Ring
4. Steel Ball
5. Master Sealing
6. Bolt
7. Flange

**Typical Features :**

- Joints supported with double raceway and the leak-less PTFE sealing gasket;
- Spring cylinder balancer that can be in indifferent equilibrium, which make the operation be portable and save labor;
- Moves along with the tank truck in the regular moving range of the tanker truck during the loading and unloading.
- Locking device parallels with the tank truck during the rest state and occupies small space;
- May be installed with pneumatic, hydraulic, electrical operation system, full automatic operation can be realized.
- Skillful & diversified accessories can realize safe work and environment-protection.
- Surface preparation and coating of high quality make the equipment has good resistance to elements.
- Simple installation / operation.

**Basic Structure**



1. Riser
2. Joint
3. Inboard Arm Locking
4. Inboard Arm
5. Balancer
6. Outboard Arm
7. Drop Pipe
8. Swivel Joint

**Optional Accessories / Parts :**

- . Outboard Arm Locking Device
- . Insulation Flange
- . Telescopic Drop Pipe
- . Static Electric Conduction System
- . Sealing Cover
- . Cut-Off Valve

## TYPICAL SPECIFICATIONS:

- .**Medium:** Various types of petroleum / chemical liquid and gas products
- .**Nominal Sizes:** DN50 (2") - DN100 (4")
- .**Design Temperature:** -196°C to +250°C
- .**Design Pressure:** -0.08MPa to +4.0MPa
- .**Connection Flange:** To specify the required standard
- .**Inboard Arm Length:** To specify the required length
- .**Drop Pipe Length:** To specify the required length

The below are various type of configurations in our Growco AL Series Loading Arms:

### AL1401:



**Typical Application:** Tanker loading at top open loading; upward flange connection.

**Used for:** Crude oil, petroleum products and chemical medium.

**Design pressure:** 1.0MPa; 1.6MPa; 2.5MPa

**Design temperature:** - 50 °C ~ + 80 °C

**Material:** Pipeline - Carbon steel /  
Stainless steel  
Drop pipe - Aluminum alloy /  
FRP / PVC

### AL 1402:

**Typical Application:** Tanker loading at top open loading; downward flange connection.

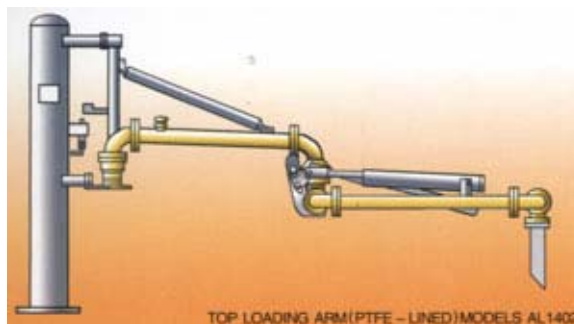
**Used for:** Crude oil, petroleum products and chemical medium.

**Design Pressure:** 1.0Mpa, 1.6Mpa, 2.5Mpa

**Design Temperature:** - 50°C ~ +80°C

**Material:** Pipeline - Carbon steel / stainless steel

Drop pipe - Aluminum alloy / FRP / PVC



### AL1403 :

**Typical Application:** Top loading / unloading; downward flange connection.

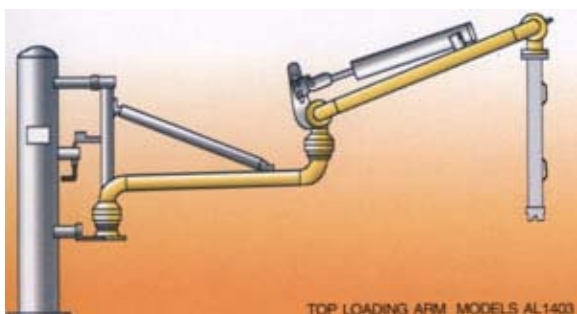
**Used for:** crude oil, petroleum products and chemical medium.

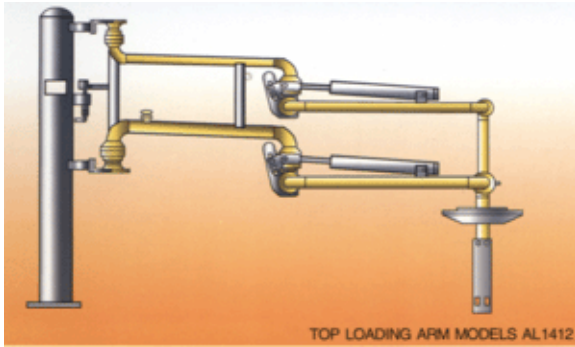
**Design pressure:** - 0.08MPa ~ 2.5Mpa

**Design temperature:** - 50°C ~ + 80°C

**Material:** Pipeline - Carbon steel / stainless steel

Drop pipe - Aluminum alloy / FRP / PVC





**AL1412:**

**Typical Application:** Double pipes closed top loading applications, the top is gas phase pipe, the bottom is liquid pipe.

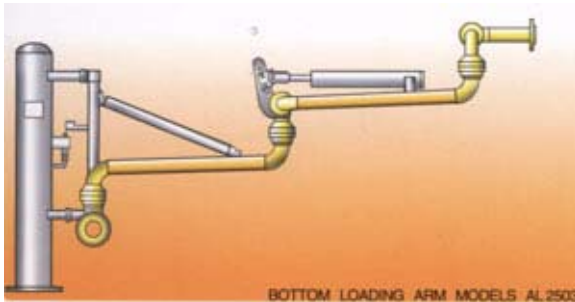
**Used for:** volatile and poisonous medium.

**Design pressure:** 1.0MPa ~ 2.5MPa

**Design temperature:** - 50 °C ~+ 80 °C

**Material:** Pipeline - Carbon steel / stainless steel

Drop pipe - Aluminum alloy / FRP / PVC



**AL2503:**

**Typical Application:** bottom loading / unloading, the flange connection can be downward or sideways direction; with QCDC.

**Used for:** crude oil , residual oil and others.

**Design pressure:** - 0.08MPa ~ 2.5MPa

**Design temperature:** -50°C ~+ 80°C

**Material:** Pipeline — Carbon steel / stainless steel

Joint — Aluminum connection / cast steel quick joint

**AL2504:**

**Typical Application:** Bottom (side) loading / unloading , the flange connection can be downward or sideways direction; with QCDC.

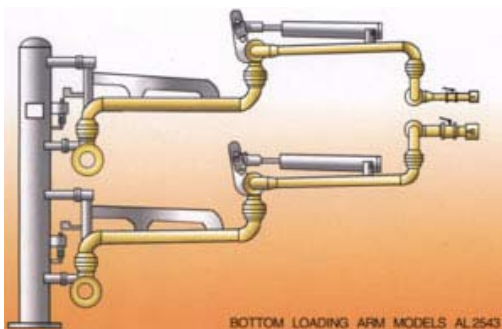
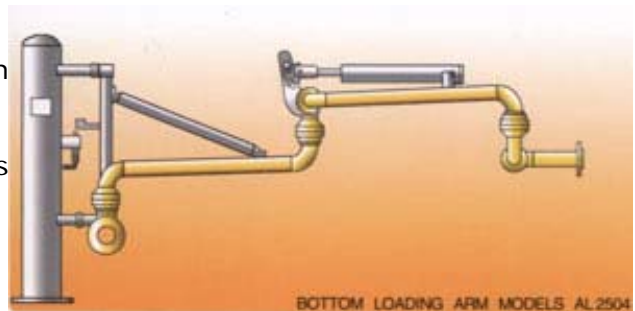
**Used for:** crude oil, residual oil and others (please specify).

**Design pressure:** - 0.08MPa ~ 2.5Mpa

**Design temperature:** - 50°C ~+ 80°C

**Material:** Pipeline — Carbon steel / stainless steel

Joint — Aluminum connection / cast steel quick joint



**AL2543:**

**Typical Application:** Tank truck liquefied gas (LPG) bottom loading / unloading.

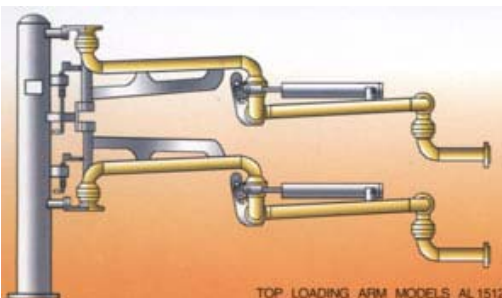
**Used for:** Liquefied gas (LPG), liquid chlorine, liquid ammonia , etc

**Design Pressure:** 1.6MPa, 2.5MPa, 4.0MPa

**Design temperature:** - 19°C ~+110°C

**Material:** Pipeline - Carbon steel / stainless steel / low temperature steel

Joint – Copper / stainless steel / low temperature steel



**AL1512:**

**Typical Application:** Rail train liquefied gas (LPG) loading / unloading.

**Used for :** normal and low temperature liquefied gas (LPG).

**Design pressure:** 2.5MPa ~ 3.0MPa

**Design temperature:** - 50°C ~+ 80°C

**Material:** Pipeline - Carbon steel/ stainless steel/ low temperature steel

Flange - Carbon steel / stainless steel / low temperature steel



### Heat Tracing Loading/Unloading Arm

**Typical Application:** Tank truck top open loading / unloading.

**Used for:** Medium of pool flow ability, needs heating and thermal retardation. Heat-Conduction Medium Types : Vapor, heat-conduction oil, electrical heat tracing (may be designed, manufactured with electrical heating jacket.)

**Design Temperature:** +80°C to +250°C

**Design Pressure:** - 0.08MPa - 2.5MPa

**Optional Models: AL1402 and AL1403 (consult us)**

### Liner Pipe Loading/Unloading Arm

**Typical Application:** Tank truck top open loading/unloading.

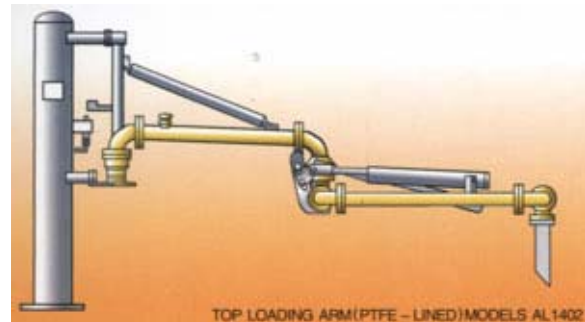
**Used for:** Corrosive mediums such as acid, alkali ,etc (consult us)

**Liner Pipe Material:** PTFE, PVC, PP, etc

**Design Temperature:** -40°C to +80°C

**Design Pressure:** -0.08MPa - 2.5MPa

**Optional Models: AL1402 and AL1412 and AL1403 (consult us)**



#### ➤ NOTICE WHEN ORDERING:

- Describe its application
- Specify its model
- Specify exact design pressures
- Specify exact design temperatures
- Provide working area dimensions
- Provide liquid name & its properties
- Specify preferred materials
- Specify exact site environment
- Other useful details or contact us

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