

HOW TO ORDER LOADING ARMS

Emco Wheaton World Series loading arms are a custom engineered articulated pipework system, which enables safe, reliable, and cost effective fluid transfer from site to transport. By utilizing state of the art materials, methods of design and construction, Emco Wheaton provides you with the world's most comprehensive range of loading and unloading arms for today's petroleum, chemical, liquid gas, and food industries.

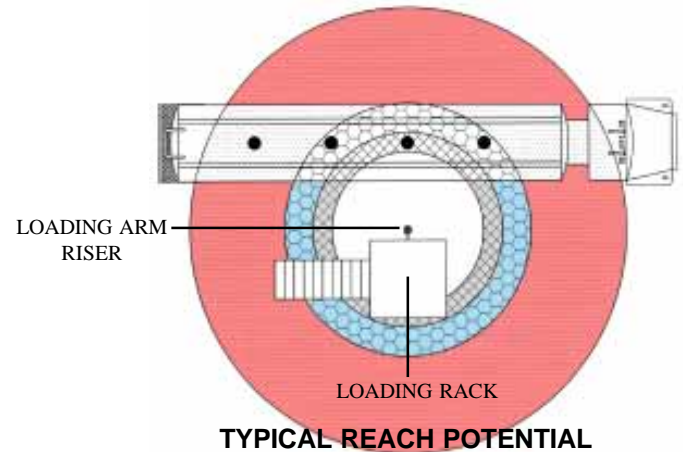
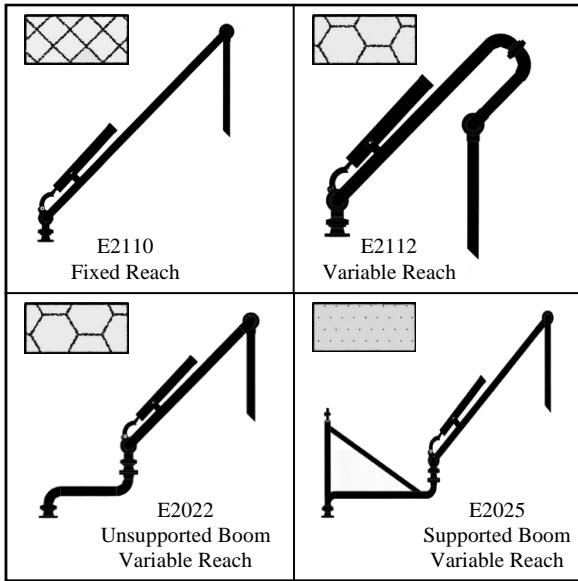
With some exceptions, loading arms are specifically designed for each unique application in which they are used. While the different styles of loading arms are similar, factors such as reach, materials of construction, and line size create an infinite combination of potential loading arm configurations. The following "How to Order" series will break down the information that Emco Wheaton needs to design a loading arm that will maximize your loading arms efficiency.

TOP LOADING

Top loading of tank trucks and railcars can be achieved through open manlid loading or tight fill connections. Whether loading gasoline, chemicals, asphalt, or acids, we can design an arm to fit your needs.

The type of loading arm that you choose is determined by the distance necessary to reach the farthest compartment to be loaded without re-spotting the transport.

The illustrations below will help you determine the type of loading arm that will best suit your needs.

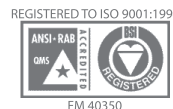


	2"	3"	4"	6"
E2110	9'+	10'+	12'+	12'+
E2112	9'+	10'+	12'+	12'+
E2022	--	12'+	14'+	14'+
E2025	17'+	18'+	20'+	20'+

The illustration to the right shows the working envelope that the different styles of top loading arms can achieve. For your convenience, we have color coded the loading arm drawings above to correspond with the envelope drawing.

EMCO WHEATON

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BOTTOM LOADING

Bottom loading is a safe, efficient way to load both tank trucks and railcars. Operator safety and vapor recovery is inherent in any bottom loading system.

Like top loading, the type of arm that you choose is determined by the distance necessary to reach the farthest compartment to be loaded without re-spotting the transport.

The illustrations to the right show the most common configurations of Emco Wheaton Bottom Loaders.



Now that you have decided the type of loading arm that you need, it's just a matter of filling in the details. The following page will highlight the specific items that allow us to design the correct loading arm for your application.

Remember, if you don't see the loading arm or loading arm component that you are looking for, please give us a call.



E2573
COUNTERWEIGHT
HOSE LOADER



E2304
SPRING CYLINDER
HOSE LOADER



E2313
"A" FRAME
BOTTOM LOADER



E2022
BOTTOM TRANSFER
LOADER



E2123
MYR LINKAGE
"A" FRAME LOADER

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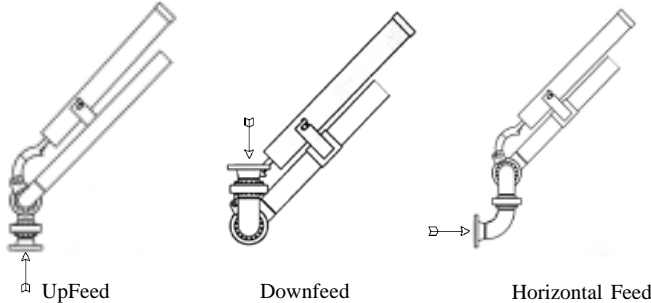
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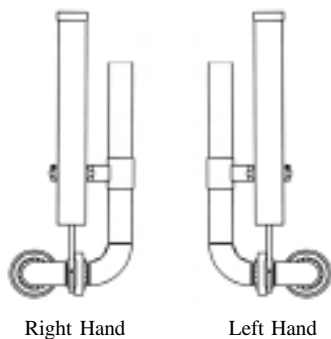
- **Line Size:** Typically, a loading arm is the same size as the plant piping. Industry practice suggests that line velocities should not exceed 15 ft./sec. Below are maximum recommended flow rates for different line sizes.

LINE SIZE	LINE VELOCITY	
	15 FT. PER SEC. FLOW IN USGPM	20 FT. PER SEC. FLOW IN USGPM
2"	150	210
3"	350	460
4"	600	800
6"	1350	1800

- **Riser Connection:** Please specify the orientation of the riser pipe that the loading arm will be attached to. Arrow indicates flow direction into loading arm.



- **Right Hand vs. Left Hand:** Our loading arms are available with either a right hand or left hand configuration, depending on your application requirements.



Plan View
Looking from above the arm.

- **Swivel Joint Type:** All catalog loading arms use the D2000 World series swivel joint. Depending on the application, a wide variety of other swivel types can be used.

- **Materials and Seals:** The type of fluid being handled also determines loading arm assembly selection. Metallurgy and seals must be chemically compatible with the product and its temperature during handling.
- **Balance Mechanism:** A properly balanced loading arm will allow the operator to effortlessly and safely move the arm into and out of the loading position. Several options for balancing the arm exist, including our compression spring cylinder, torsion spring, counterweights, and pneumatic and hydraulic cylinders.
- **Dimensions:** Several general dimensions are key in the design of a loading arm. See each individual loading arm type page for the relevant design dimensions. If the loading arm dimensions are not known, certain site dimensions are key in allowing us to provide a loading arm that will fit your application. For these dimensions, please see our "Loading Arm Data Sheets".
- **Added Weight:** A very important concept in the operation of a loading arm is that of moment load. Moment load is the overturn force exerted at a point and is caused by a weight whose center of gravity is located at some distance from that point. Simply put, adding or reducing weight on an arm will affect that arm's balance. Please specify all weight that will be added to or taken off of the arm when installed.
- **Accessories/Options:** Standard options on Emco Wheaton loading arms range from lockdown assemblies to vapor recovery systems. For a complete listing of available options, please see the appropriate specification sheet or consult the factory.
- **Application Information:** Help us design a loading arm specific to your application by providing the following information.

- Product being handled
- Temperature (Min / Max)
- Flow Rate
- End User

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