



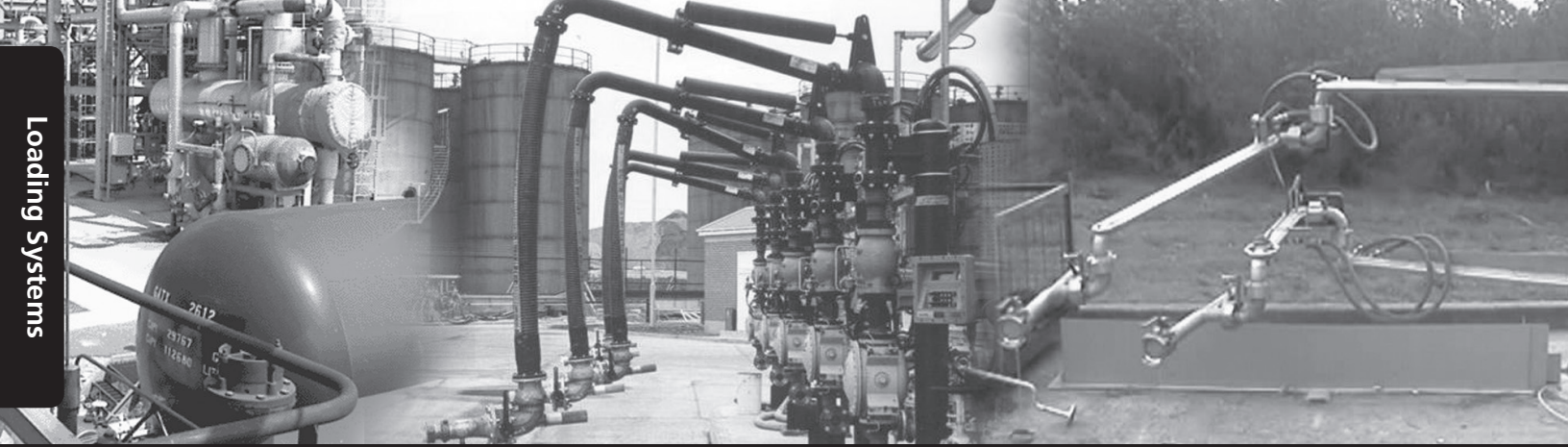
LOADING ARMS

Standard Loading Arms

February 2019

OPW 
ENGINEERED SYSTEMS
a **DOVER** company

DELIVERING | WHAT'S NEXT



Loading Systems

System Design

- Typically, the loading arm assembly is the same size as the plant piping on which it is installed.
- Must be capable of handling the design capacity without excessive pressure drop.
- Pump size and loader pipe diameter must be given consideration in order to ensure economic advantages.
- As a general rule, it is recommended that the line velocity not exceed 15-20 ft./sec. (4.6 to 6.1 m./sec.).

LINE SIZE	MAXIMUM FLOW RATE BY LINE VELOCITY	
	15 ft/sec	20 ft/sec
2"	150 GPM	200 GPM
3"	350 GPM	450 GPM
4"	600 GPM	800 GPM
6"	1350 GPM	1800 GPM

GPM = Gallons Per Minute

Ease of Maintenance

- Consideration should be given to the operation and maintenance facilities at the point of use.
- The addition of excessive mechanical features mean additional service requirements.

Product Being Handled / Material Construction

- The loader must be designed and constructed to handle the required products.
- Metals, seals and gaskets must be chemically compatible with the products being handled, as well as their transfer temperatures and prevailing climatic conditions.

Bottom Loading

Bottom loading offers:

- Personnel safety advantages – personnel remain on the ground.
- Reduction in static build-up during loading.
- Reduction in vapors.
- Improved loading times.
- Cost savings relative to loading rack construction.

Standard plant practice, personnel preference, safety and environmental requirements, the nature of the product, and how vehicles are equipped will determine whether top or bottom loading is used.

Balancing Method

Torsion Spring

- Is self-contained and space efficient.
- Can be adjusted to make the vertical lifting action of the arm respond in virtually any manner desired.
- Lowering the arm winds the spring tighter so that when the arm is released after loading, the spring unwinds and effortlessly lifts the arm upward.

Counterweights

- Can be used to balance arm, but are rarely used today.
- Requires larger space behind arm to accommodate both horizontal swing and vertical movement.

Pneumatic and Hydraulic Cylinders

- Can be used on specialized applications to balance and operate arms.

Moment Load

Moment load is the overturning force exerted at a particular point and is caused by a weight whose center of gravity is located at some distance from that point. The importance of this is that adding or reducing weight on an arm will affect its balance and operation. The addition of components, such as insulation, tracing, valves and even retained product must be given consideration in the design stage since they will affect the weight and balance of the arm and may require changing the spring balance unit and adding swivels to the arm design.



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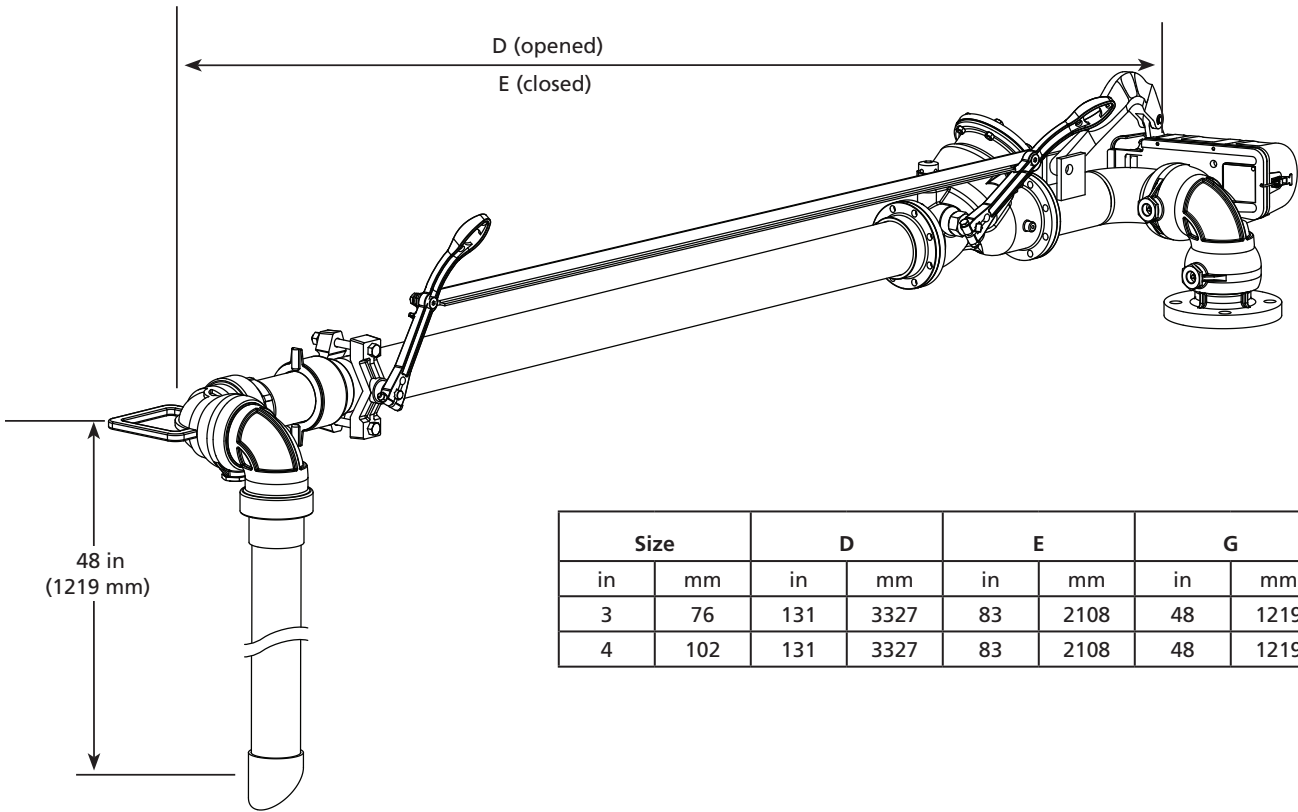
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LOADING SYSTEMS

Loading Arms

- Prices include all component products needed for a complete system.
- All loading systems included in this price list are for right-hand upfeed inlets. Consult your regional manager for price and availability of loaders/unloaders with other configurations.
- Fluorocarbon seals are standard in all OPW loading arms, unless otherwise noted. Consult factory for price and availability of arms with other seals.
- All torsion spring balanced loading arms are available with the OPW 788-L lockdown to secure the arm during loading/unloading operations. Prices of the OPW 788-L, for right hand springs, and 788-LLH, for left hand springs, are \$246.00
- All prices are based on standard components of ductile iron, carbon steel and aluminum, unless otherwise noted. Consult factory for price, availability and design assistance on special loaders/unloaders in carbon steel, stainless steel, and other materials of construction.
- Note: Adjustment of spring is necessary when arm is installed.
- All prices are for unassembled loading arm. Assembly is available for an additional cost. Consult your regional manager for pricing information.

Slide Sleeve Type Loading Arms, with Valve



Size		D		E		G	
in	mm	in	mm	in	mm	in	mm
3	76	131	3327	83	2108	48	1219
4	102	131	3327	83	2108	48	1219

Prod. No.	Description	Size (in)	Replaces (Old Number)	Wt. (lb)	Price 1+
SLSDA0830048MUR0302-10	Slide Sleeve Loader, Torsion Spring Balance, Flanged Inlet, Ductile Iron, Steel, Brass,	3	A32RF-4368	130	\$8,977.00
SLSDA0830048MUR0402-10	Aluminum Construction, Fluorocarbon Seals. Remote Control Linkage	4	A32RF-4378	170	\$10,856.00

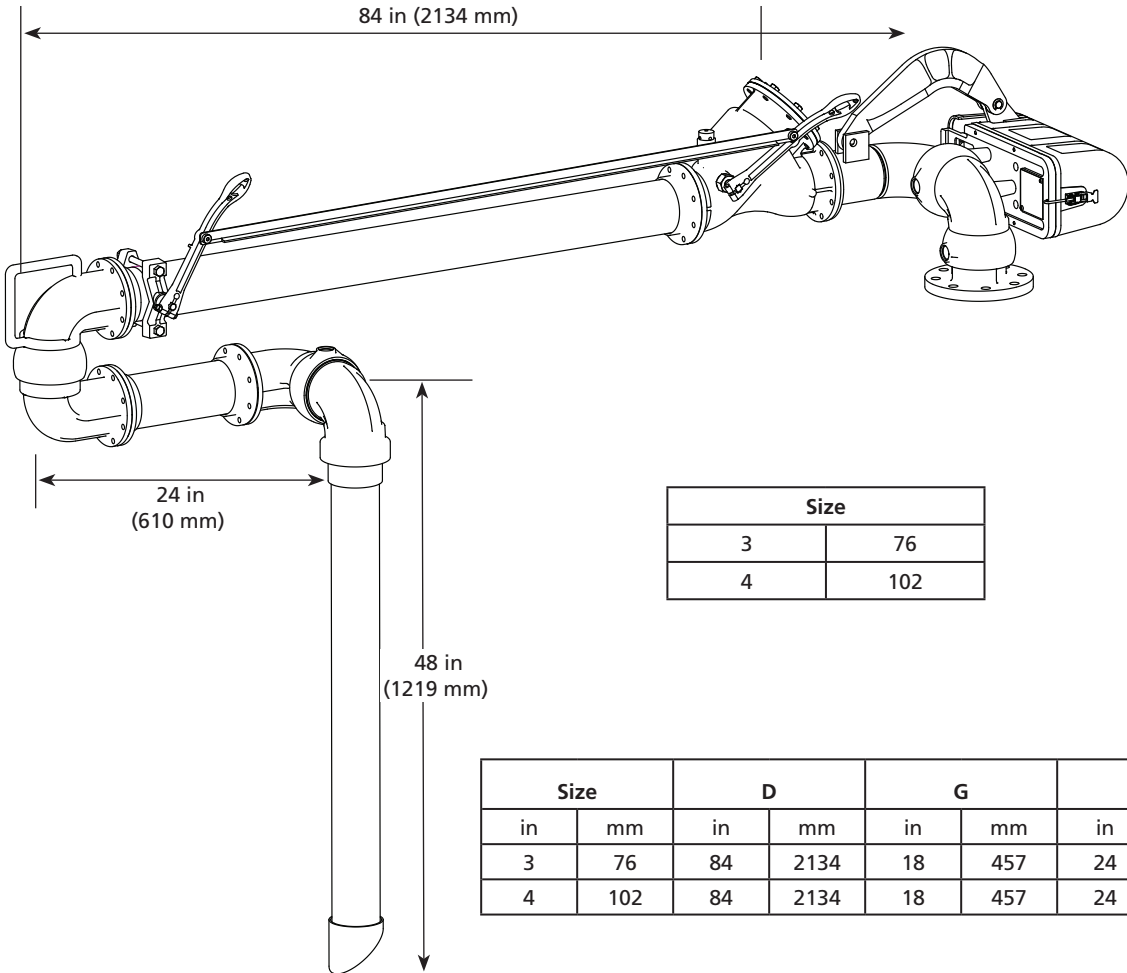
Note: 2" Slide Sleeve no longer available.

Top Loading Accessories*		
Part	3" P/N	4" P/N
Bolt-On Handle, Alum.	BOH-S-3	BOH-S-4
Bucket Hook	BH-3	BH-4

* Accessories ordered separately

LOADING SYSTEMS

Scissor Arm Type Loaders, Valve Inboard



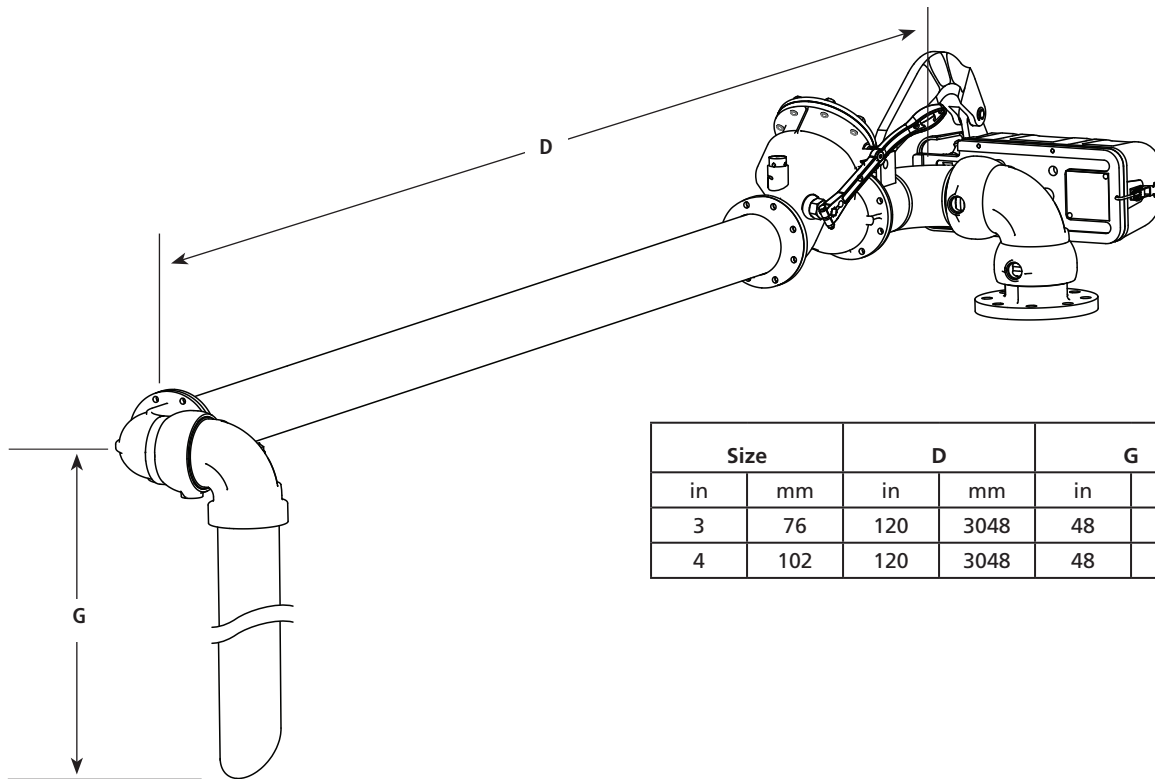
Prod. No.	Description	Size (in)	Replaces (Old Number)	Wt. (lb)	Price 1+
SCIDA0842448MUR0302-10	Scissor Arm Loader, Valve Inboard, Torsion Spring Balance, Flanged Inlet, Fluorocarbon Seals, 1000RC Remote Control. Ductile Iron, Steel, Aluminum Construction.	3	C32RF-5358	126	\$8,350.00
SCIDA0842448MUR0402-10	Scissor Arm Loader, Valve Inboard, Torsion Spring Balance, Flanged Inlet, Fluorocarbon Seals, 1000RC Remote Control. Ductile Iron, Steel, Aluminum Construction.	4	C32RF-5368	200	\$9,545.00

Top Loading Accessories*		
Part	3" P/N	4" P/N
Bolt-On Handle, Alum.	BOH-S-3	BOH-S-4
Bucket Hook	BH-3	BH-4

* Accessories ordered separately

LOADING SYSTEMS

Single Arm (Fixed Reach) Type Unloaders/Loaders, With Valve



Size		D		G	
in	mm	in	mm	in	mm
3	76	120	3048	48	1219
4	102	120	3048	48	1219

Prod. No.	Description	Size (in)	Replaces (Old Number)	Wt. (lb)	Price 1+
FXRCA1200048MUR0302-10	Fixed Reach Loader, with Valve, Torsion Spring Balance, Flanged Inlet. Carbon Steel,	3	E32F-0268		\$7,985.00
FXRCA1200048MUR0402-10	Aluminum Construction.	4	E32F-0278		\$8,783.00

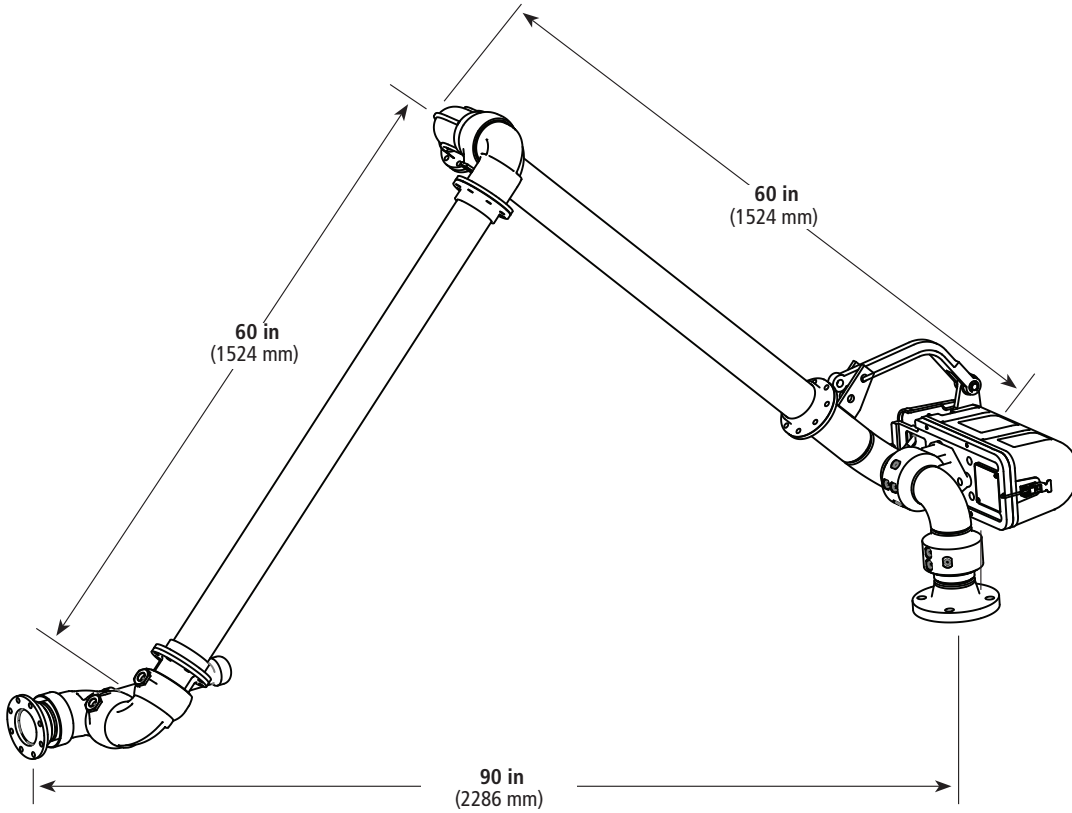
Top Loading Accessories*		
Part	3" P/N	4" P/N
Bolt-On Handle, Alum.	BOH-S-3	BOH-S-4
Bucket Hook	BH-3	BH-4

* Accessories ordered separately

IMPORTANT: OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models and to discontinue models without notice or obligation.

LOADING SYSTEMS

A-Frame Type Bottom Loading (Crossover) Arms

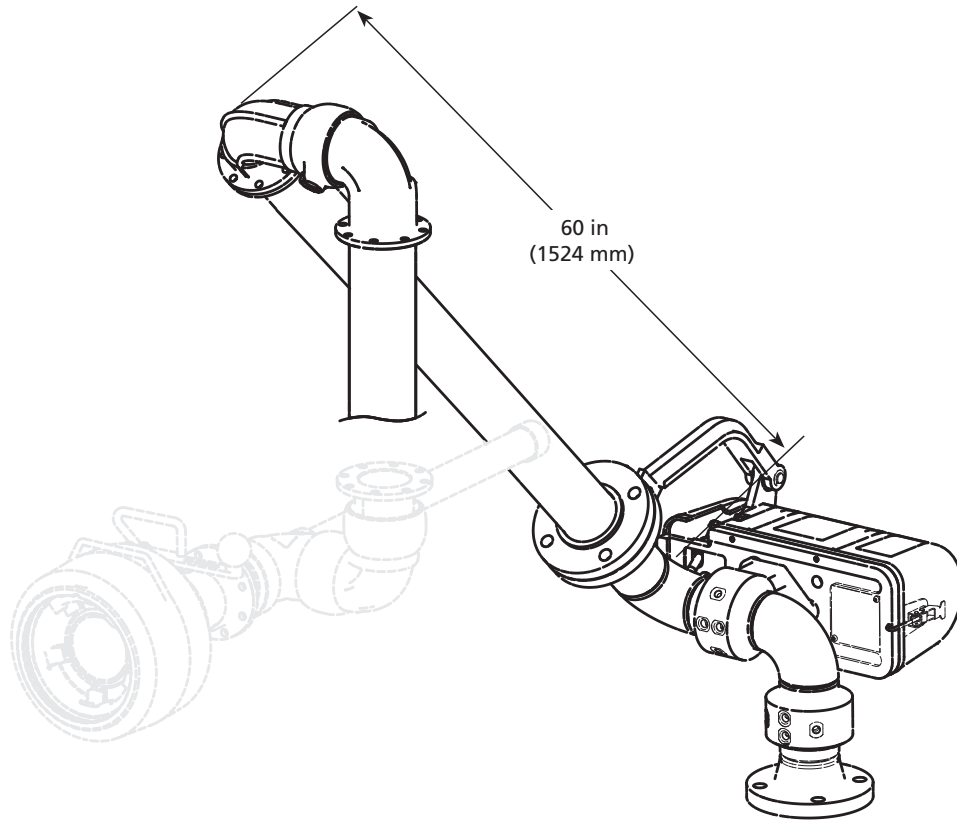


Size		D		G		Z	
in	mm	in	mm	in	mm	in	mm
3	76	60	1524	60	1524	90	2286
4	102	60	1524	60	1524	90	2286

Prod. No.	Description	Size (in)	Replaces (Old Number)	Wt. (lb)	Price 1+
AFPCA060UR0302-00000000	A-Frame Type Bottom Loader, Torsion Spring Balance, Flanged Inlet, Fluorocarbon Seals.	3	M32F-0200	159	\$9,490.00
AFPCA060UR0402-00000000	Outlet Swivel is 3655 on 3" arm; 3655FTO on 4" arm. Carbon Steel, Aluminum Construction.	4	M32F-0112	204	\$9,846.00

BOTTOM LOADING SYSTEMS

Hose Type Bottom Loading Arms



Prod. No.	Description	Size (in)	Replaces (Old Number)	Wt. (lb)	Price 1+
AFHCA060UR0302-00000000	A-Frame Hose Bottom Loader. Does Not Include: Drop Hose, Outlet Swivel Elbow (3635FTH*), Spacer Spool (710ATT*), or API Bottom Loading Coupler (1004D3/D4). D=60"	3	AFH32F-0302	150	\$6,841.00
AFHCA060UR0402-00000000		4	AFH32F-0402	175	\$7,690.00

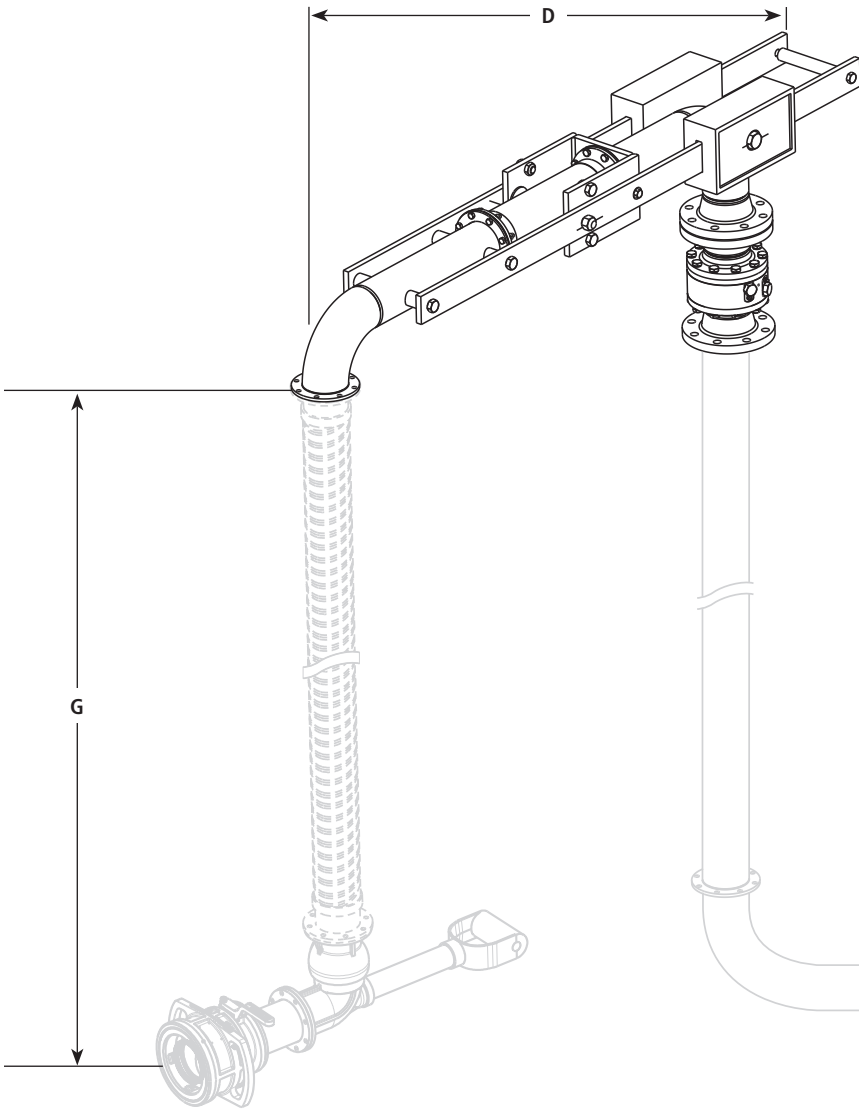
Other Hose Lengths Available

AFH Hose Options

H31781M	3" Polypropylene Drop Hose, TTMA Flanged Ends (G=72")	3
HX85260	4" Polypropylene Drop Hose, TTMA Flanged Ends (G=72")	4

LOADING SYSTEMS

Hose Type Bottom Loading Arms (continued)



CWH-Series Counterweighted Hose Type Bottom Loader Carbon Steel Construction, Heavy-Duty Split Flange Inlet, Drop Elbow. **Does Not Include:** Drop Hose, Outlet Swivel Elbow (3635FTH*), Spacer Spool (710ATT*), or Coupler (1004D3/D4). AVAILABLE WITH HORIZONTAL (D) DIMENSIONS OF 78", 90", AND 114".

Prod. No.	Description	Size (in)	Replaces (Old Number)	Wt. (lb)	Price 1+
CWHCA078UP0402-00000000	D=78, less hose	4	CWH78-0402		\$9123.00
CWHCA090UP0402-00000000	D=90, less hose	4	CWH90-0402		\$9137.00
CWHCA114UP0402-00000000	D=114, less hose	4	CWH114-0402		\$10,112.00

CWH Hose Options

Prod. No.	Description	Size (in)	Prod. No.	Price
H30271M	Drop Hose, Rackmaster Composite	4" x 80" OAL	TTMA Flanges	\$786.00
H30272M	Drop Hose, Braided Stainless Steel	4" x 80" OAL	TTMA Flanges	\$786.00