

STANDARDLINE

Gas-Strut Hose (GSH) Bottom Loading Arm

StandardLine Loading Arms by OPW Engineered Systems raise the bar in quality and performance for the industry. Get OPW's best-in-class loading systems in pre-engineered sizes, materials and feed orientations with delivery in 20 days or less.

The GSH provides effortless bottom loading in petroleum-distribution terminals through the use of a unique operational capability known as the Velvet Touch.

The ability of 360-degree rotation in the horizontal plane allows the GSH to easily move from a parked to a loading position, and to service vehicles on either side of the loading bay. Additionally, the vertical-plane swivel allows users to position the coupler at different heights within the API envelope.

Features and Benefits:

- Velvet Touch Gas Struts provide smooth operation over the entire stroke of the loading arm
- Exceptional durability and minimal service requirements
- Any unit can be easily configured for left-hand, right-hand, upward and downward configurations on-site
- Enhanced strength and ease of adjustment through a heavy-duty adjustment mechanism
- Adjustable up/down stop that can be set with minimal effort
- Long reach capabilities, ideal for five-, six- and seven-arm bays

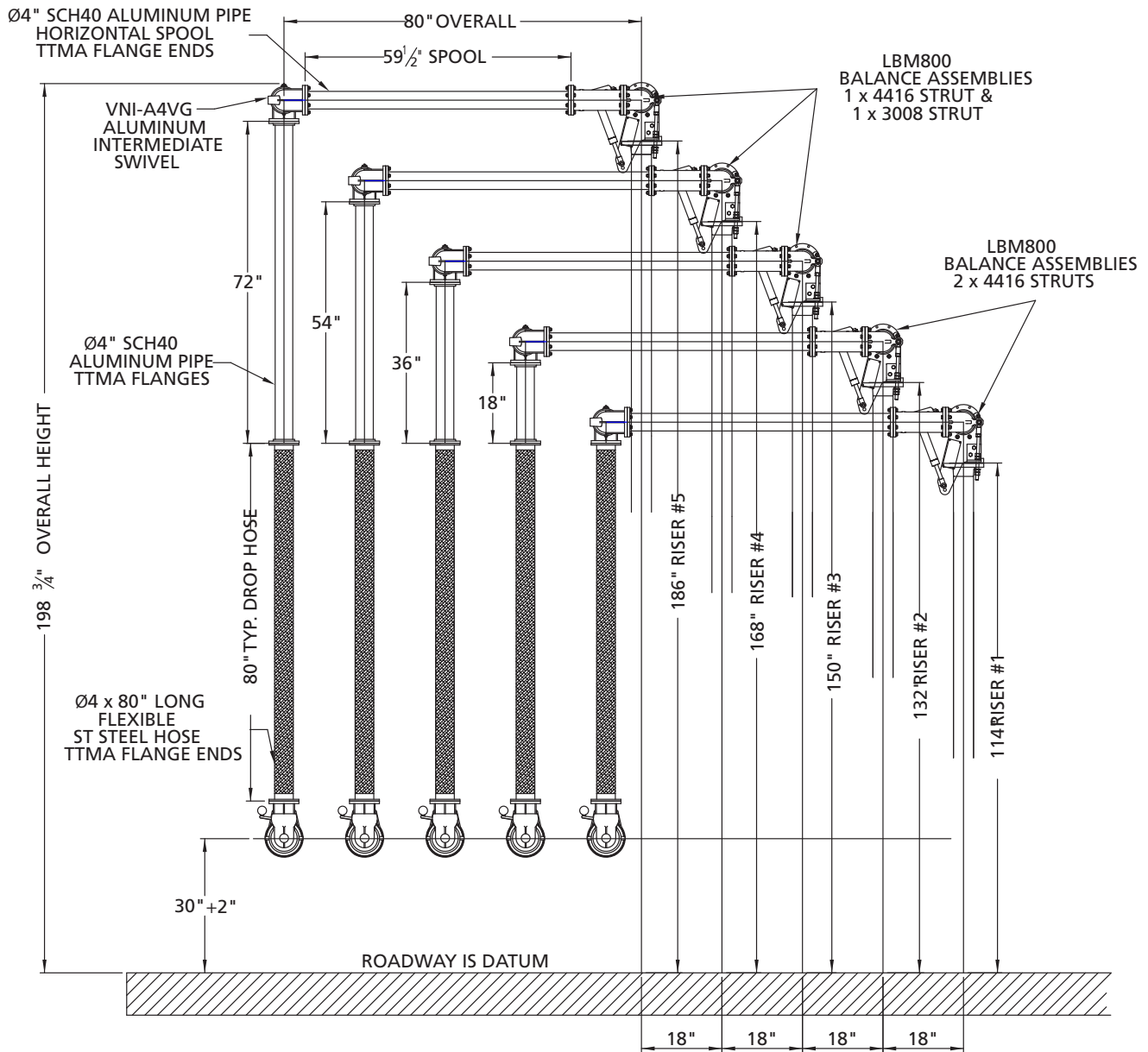


ALL STANDARDLINE ARMS FEATURE

- Fast Delivery – 20 Days or Less!†
- Menu of Options to customize your arm
- Freight is included across continental U.S. & Canada
- Exclusive 3-Year Warranty included

Gas-Strut Hose (GSH) Loader Dimensions*

StandardLine Terminal Configuration**



* Required to accommodate StandardLine Offering. Other options are available upon request.

** Left-hand configuration shown. Right-hand configuration would be mirror image with riser elevations going up from left to right.
Contact OPW for layout assistance.

*** 80" OAL shown, StandardLine also available with 60" and 90" reach. Other lengths available upon request.

Build Your Standard GSH Arm

- 1. Fill in the corresponding code for your selections.
- 2. Add accessories by filling in the appropriate corresponding number for each option.

Example													
<u>GSH</u>	<u>CA</u>	<u>60</u>	<u>UR</u>	<u>0402</u>	<u>—</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

GSH **CA** **0402**

Arm Style: (GSH) Gas-Strut Hose Type

Material Options: (CA) Carbon Steel/Aluminum

Dimension Options: (60) 60" (80) 80" (90) 90"

Orientation:

(UR) Upfeed/RH (DR) Downfeed/RH

(UL) Upfeed/LH (DL) Downfeed/LH

Size and Seal Type: (0402) 4" with fluorocarbon

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
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- 1 Drop Spool**
 - 0 - Drop Spool by Others
 - 1 - 18" Drop Spool, Alum, Sch 40
4" x 18" OAL TTMA Ends (710 ATT - 0418)
 - 2 - 4" x 36" (710 ATT-0436)
 - 3 - 4" x 54" (710-ATT-0454)
 - 4 - 4" x 72" (710-ATT-0472)
- 2 Drop Hose**
 - 0 - Drop Hose by Others
 - 1 - 4" x 80" Rackmaster Composite, TTMA Ends (L19080)
 - 2 - 4" x 80" Braided Stainless Steel, TTMA Ends (L19081)
- 3 Coupler Swivel**
 - 0 - Coupler Swivel By Others
 - 1 - 4" Style 30 (90°) Swivel Joint w/ handle, Alum/Fluorocarbon (VNC-A4VG)
- 4 Isolation Valve**
 - 0 - Isolation Valve by Others
 - 1 - 4" Full Flow (LBV 450VGL)
- 5 Spacer Spool**
 - 0 - Spacer Spool by Others
 - 1 - 4" x 8" AL, TTMA FLG (VSS4)
- 6 Site Glass**
 - 0 - Site Glass by Others
 - 1 - 4" Acrylic (BF4-SG-25)
- 7 API Coupler**
 - 0 - API Coupler by Others
 - 1 - 1004D3-0402
 - 2 - Lynx Coupler (852VG)
- 8 Assembly, Testing & Boxing (ATB)**
 - 0 - No ATB
 - 1 - ATB Included
 - 2 - ATB, Export



Technical Features	
Materials	Carbon Steel/Aluminum
Seals	Low-Temp Fluorocarbon
Working Pressure	80 PSI (5.5 Bar)
Test Pressure	120 PSI (8.2 Bar)
Operating Temperature	-20°F to 140°F (-29°C to 60°C)
Up/Down Angular Movement	-15° to 15° (from horizontal)
Typical Horizontal Spacing	18" (457 mm)
Typical Vertical Spacing	18" (457 mm)
Typical Reach (radius)	60" to 90" (1,524 mm to 2,286 mm)
Nominal Diameter	4"
Typical Flow Rates (Velocities < 15 ft/sec (7.5 M/sec))	300-600 GPM (2000-3500 LPM)
Weight	~275 lbs*

Materials of Construction	
Inlet Flange	4" 150 ANSI ASTM A105
Inlet Swivel	Investment Cast 4130 Steel
Primary Arm Piping	Sch 40 Aluminum ASTM B241
Apex Swivel (p/n VNI-A4VG)	Aluminum (Heat Treated)
Drop Hoses	(L19080) Braided Stainless Steel, TTMA Ends (L19081) Rackmaster Composite, TTMA Ends
Coupler Swivel (p/n VNI-A4VG)	Aluminum (Heat Treated)
Isolation Valve (LBV450VGL)	Cast Aluminum/Fluorocarbon
Spacer Spool (p/n VSS4)	Cast Aluminum AA601
API Coupler (p/n: 1004D3, Lynx852VG)	Aluminum/Fluorocarbon Low-Temp Fluorocarbon

Additional Information	
Weld Procedure	Per the ASME Boiler & Pressure Vessel Code Section IX
Radiograph/X-Ray	Per OPW Standard, 5% random/factory lot
Testing	All assembled Loading Arms shall be tested to 1.5X the rated design pressure.
Surface Treatments	All Carbon Steel components to be protected with a 2-part paint process. Aluminum components to be unpainted.
Lubricant	OPW 880 High-Performance Synthetic Lubricant
Gasketing	KlingerSil C5400
Warranty	Standard warranty of three years after date of invoice shall apply. LYNX API Coupler warranty to be three years after shipment from factory. 790 Counterbalance warranty to be five years after shipment from factory.
Freight	All shipments are F.O.B Factory Lebanon, OH. Full freight is allowed on surface transportation within continental United States and Canada.
Factory Assembly, Testing & Boxing (ATB)	If this option is selected, Loading Arm would be fully assembled, tested and shipped in protective wooden crate. Note: It may be necessary to ship Loading Arm in sections to accommodate crating, shipping and rigging. Arm will be shipped as fully assembled as possible.

RECOMMENDED SPARE PARTS LIST**			
Part #	Description	Where Used	Qty/Arm
0126VG	Main Seals for VNI, VNC & LBM, 4" Fluorocarbon	All Swivels (Counterbalance, Apex, Coupler Swivels)	8
L6080	Environmental Seals for VNI & VNC Swivels	VNC4AVG, VNI4AVG	2
1004D3SRK-0402	Coupler Seal Repair Kit, 4" Fluorocarbon	1004D3-0402 (API Coupler)	1
API850VGSK	Coupler Seal Repair Kit, 4" Fluorocarbon	Lynx852VG (API Coupler)	1
L4416	Gas Strut, 2800N Capacity	Counterbalance	1
L30008	Gas Strut, 5200N Capacity	Counterbalance	1

* Estimated weight for entire Loading Arm (72" Reach). Weight can vary depending on selected options.

** Other seal kits/materials available upon request.

† '20 Days or Less' refers to twenty working days.



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