Series Number:

4760

Type:
Mini

Stand:
Bench Top

Mounting Style:
Moveable or Fixed Head

Sizes, mL:
100-600

Standard Pressure MAWP Rating, psi (bar):
3000 (200)

High Pressure (HP) MAWP Rating, psi (bar):
2000 (138)

Standard Maximum Operating Temp., °C:
225 w/ FKM O-ring
300 w/ FFKM O-ring
350 w/ PTFE Flat Gasket

High Temperature (HT) / Maximum Operating Temperature, °C:
500 w/ FG Flat Gasket

Series 4760 Pressure Vessels, 100-600 mL

These are the most popular of our small general purpose vessels. Parr offers a range of sizes large enough to work with significant sample sizes, yet small enough to be handled with ease by all operators.

They are made in both fixed head and moveable vessel styles and are available with an FKM O-ring seal for operating temperatures to 225 °C, and FFKM O-ring for temperatures to 300 °C, or with a flat, PTFE gasket for operating temperatures up to 350 °C maximum.

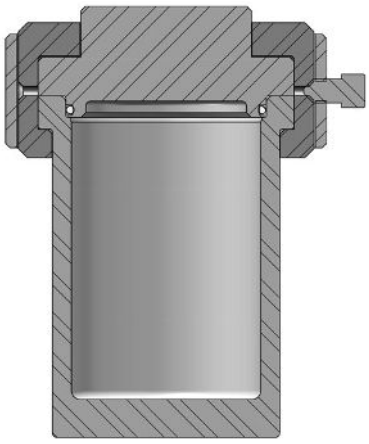
Choosing the high temperature option (HT) boosts the maximum temperature to 500 °C, but reduces the MAWP to 2000 psi (138 bar). Standard temperature vessels can be converted to high temperature vessels (500 °C max temperature and 2000 psi MAWP) by changing the head assembly (contains cone connections, high temperature valves, and Grafoil® gasket) replacing the heater with a ceramic fiber heater and replacing the split ring. Contact Parr for details.

Although internal and external space is limited on these small vessels, custom ports and fittings are available. All vessels in this series can also be easily converted from one size to another by simply substituting a longer or shorter cylinder with the corresponding internal fittings and heater.

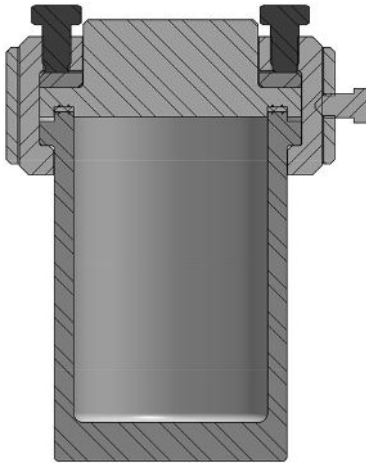
Clamp-on or mantle heaters are available for the Series 4760 moveable vessels. Stands with heaters are offered for the fixed head vessels.

The heaters furnished for non-stirred vessels are the same as those furnished for the stirred versions of the same size vessels. A full description of the different types of heaters is found in our Heater Options section. Automatic temperature controllers are available for most Parr non-stirred vessels.

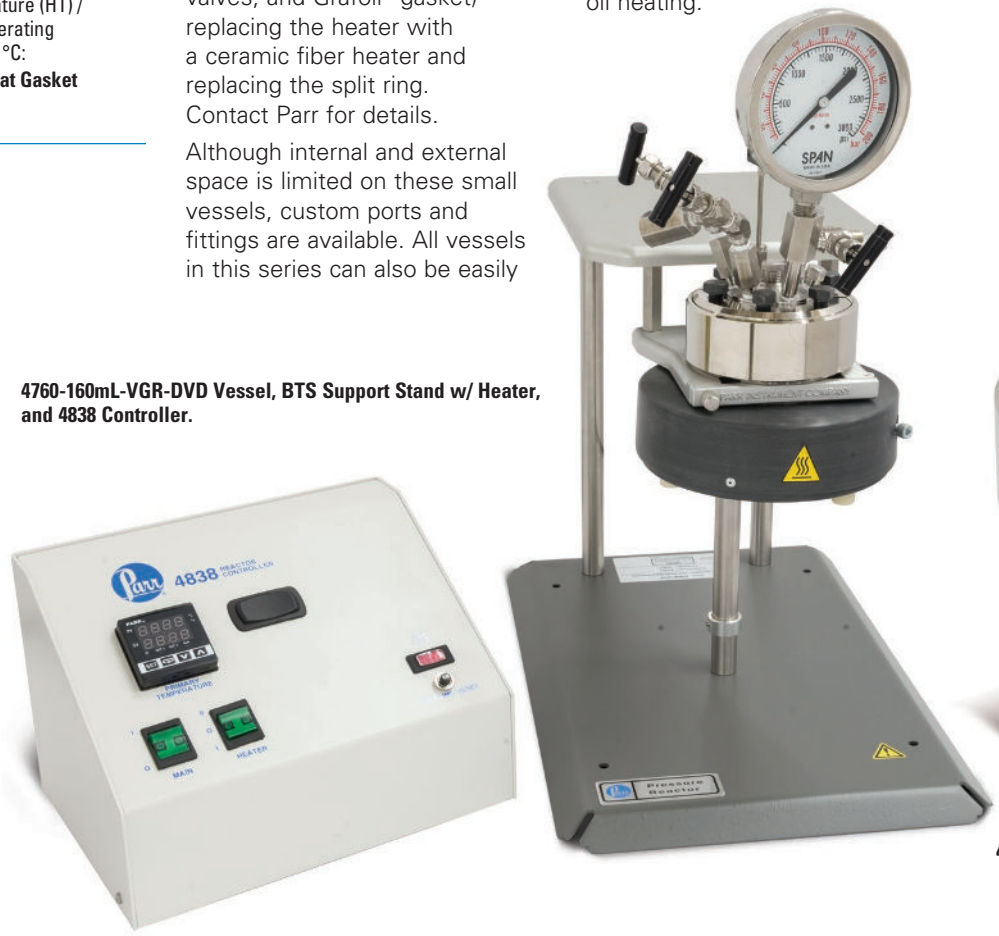
Custom heaters are also available for these vessels when it is necessary to meet explosion proof requirements, to accommodate installed windows or fittings, or to convert to a welded jacket for steam or oil heating.



4760Q Cross Section with O-ring Seal



4760 Cross Section with Flat Gasket Seal



4760-160mL-VGR-DVD Vessel, BTS Support Stand w/ Heater, and 4838 Controller.

4760-300mL with plug and rupture disc assembly installed.

4760

Series 4760 Pressure Vessel Specifications					
Shaded bar indicates specifications that change within series.					
Model Number	**4760**				
Approximate Volume, mL	100	160	300	450	600
Maximum Pressure (MAWP)	3000 psi (207 bar, 200 bar for CE orders)				
Maximum Pressure for HT (MAWP)	N/A		2000 psi (138 bar)		
Maximum Temperature					
with FKM O-ring	225 °C				
with FFKM O-ring	300 °C				
with PTFE Flat Gasket	350 °C				
with Grafoil Gasket (HT)	N/A		500 °C		
Vessel Details					
Mounting Style	Moveable or Fixed Head				
Closure	Split-Ring (6 Compression Bolts for Flat Gasket, no Compression Bolts for O-ring)				
Head Opening Mounts	One head opening (1/8" NPT*, 1/4" NPT*, "A" socket, or rupture disc assembly port) Ports for valve, gage, rupture disc, and thermocouple (VGR) Custom port option (Contact our technical sales department to discuss options)				
Maximum Head Openings	7 (Dependent on opening size, and required fittings)				
Valve Connections	1/8" NPT Male, 1/8" NPT Female for HT				
Pressure Gage, Size	3.5 inches				
Range, Standard Temperature	0-3000 psi (207 bar)				
Range, High Temperature	N/A		0 - 2000 psi (138 bar)		
Temperature Measurement	Fixed Thermocouple (Thermowell for special alloys)				
Cooling Coil (optional)	N/A		Single Loop		
Bottom Drain Valve (BDV) (optional)	1/4" NPT (Not available on HT Models)				
* NPT ports are not available for vessels with a High Temperature (HT) rating.					
Stand and Heater (optional)					
Cooling Coil (optional)	Heater Only (standard rated vessels only) and Bench Top Stand with Heater (standard rated vessels and high temperature rated vessels)				
Heater Style (Standard Temperature)	Clamp-on Band		Rigid Mantle		
Heater Power, Watts	525		510	590	780
Maximum Load, amps (115V / 230V), Nominal	5 / 3		5 / 3	5 / 3	7 / 4
Heater Style (High Temperature)	N/A		Ceramic Fiber		
Heater Power, Watts			800	800	1100
Maximum Load, amps (115V / 230V), Nominal			7 / 4	7 / 4	10 / 5
Weight & Dimensions					
Cylinder I.D. x Depth, inches	2.0 x 2.0	2.5 x 2.0	2.5 x 4.0	2.5 x 6.0	2.5 x 8.0
Vessel Assembly w/ Moveable Head Weight, pounds**	14	13	14	15	17
Vessel Assembly w/ Moveable Head Weight, pounds**	15	14	15	17	18
Cylinder Weight, pounds	3.3	2.4	3.7	4.9	6.2
** Vessel Assembly weight varies based on head configuration choice and fitting options. Weights shown are based on vessels with valve, gage, rupture disc, thermocouple, and double valve assembly.					
Other options available. See Ordering Guide, visit www.parrinst.com, or call for more information.					

Series Number:

4760

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Series 4760 Pressure Vessel Systems

Model 4760-300mL, VGR-VD with PTFE Flat Gasket and optional second valve.

Model 4760-300mL-A Vessel with Adapter and Needle Valve.

Model 4760-600mL, with VGR, O-ring seal, and single inlet valve.

4760-300mL, Fixed Head, Quick-release Split Ring, and a 4838 Temperature Controller.

Series 4760 Ordering Guide

An example order number for a vessel in this series is: **4760-100mL-T-SS-VGR-3000**

A composite identification number to be used when ordering a 4760 Series Pressure Vessel System can be developed by combining individual symbols from the separate sections below. For more information on how to use this ordering guide, please see page 27.

A Vessel Rating

-No Symbol	3000 psi, 200 bar @ 350 °C
-HT	2000 psi, 138 bar @ 500 °C (300, 450, or 600 mL only)

High Pressure sizes are 970 mL & 1900 mL

B Vessel Volume

-100mL	100 mL, 2.0" ID
-160 mL	160 mL, 2.5" ID
-300 mL	300 mL, 2.5" ID
-450 mL	450 mL, 2.5" ID
-600 mL	600 mL, 2.5" ID

C Head Mounting Style

-No Symbol	Moveable Head (Standard configuration)
-FH	Fixed Head

D Gasket / Maximum Temperature

-T	PTFE Flat Gasket, 350 °C
-OV	FKM O-ring, 225 °C
-OK	FFKM O-ring, 300 °C
-FG	Flexible Graphite, Flat Gasket, 500 °C (HT option only)

E Vessel Material of Construction

-SS	T316 Stainless Steel
-C20	Alloy 20*
-MO	Alloy 400*
-IN600	Alloy 600
-IN625	Alloy 625
-HB	Alloy B-2 / B-3*
-HC	Alloy C-276
-NI	Nickel 200
-TI2	Titanium Grade 2*
-TI4	Titanium Grade 4*
-ZR702	Zirconium Grade 702*
-ZR705	Zirconium Grade 705*

**High temperature option not available.*

See page 10 or 24 for complete list of available alloys.

F Head Configuration

-RD	Rupture disc port with rupture disc assembly & disc
-1/8	One head opening, 1/8" NPT port, plugged
-1/4	One head opening, 1/4" NPT port, plugged
-A	One head opening, "A" socket
-VGR	Valve on gage adapter, pressure gage, rupture disc assembly, & thermocouple (includes thermowell for special alloys)
-NS	Non-standard, custom head opening

G Optional Fittings & Custom Options (List all needed)

-VD	Single valve on head w/ dip tube (VGR Required)
-DVD	Double valve assembly on head w/ dip tube (VGR Required)
-CL	Cooling Loop
-BDV	Bottom drain valve
-4310A	Gage block assembly (for head with "A" socket opening)
-CAD	Internal Catalyst Addition Device
-XCAD	External Catalyst Addition Device
-SCP	Solids Charging Port (Ball Valve)
-RC	Reflux Condenser
-RTC	Reflux/Take-Off Condenser
-WJ	Welded Jacket

H Pressure Gage Option (VGR and Gage Block only)

-No Symbol	None
-3000	3000 psi / 207 bar
-2000	2000 psi / 138 bar
-1000	1000 psi / 69 bar
-600	600 psi / 40 bar
-200	200 psi / 14 bar
-100	100 psi / 7 bar

I Stand and Heater Options

-No Symbol	None
-NS	Heater only, no stand (Temperatures up to 350 °C)
-BTS	Bench top stand with heater

See Section "G" for Welded Jacket option

J Controller

-4838	PID Control, Ramp & Soak Programming, and Data logging with Software (RS-485 to USB cable not included). For use with one additional display module.
-4848	PID Control, Ramp & Soak Programming, and Data logging with Software. (RS-485 to USB cable not included). For use with up to three additional display modules.

See Chapter 6 for complete list of Controller options.

K Controller Options

-PDM	Pressure Display Module
-HTM	High Temperature Cut Off Module
-ETLM	External Temperature Limit Module
-SVM	Solenoid Valve Module (for cooling control)
-A1925E4	RS-485 to USB Cable for 4838/4848 Controller (required for data logging)
-A1925E6	RS-485 to USB Converter, isolated, 30-ft
-A2208E	RS-485 Daisy Chain for Multiple Controllers (Must be used with A1925E6)
-A3504HC	SpecView Software Package for 4838/4848 Controller

L Electrical Supply for Heater and/or Controller

-No Symbol	None
-115	115V
-230	230V

M Certifications

-ASME	ASME Documentation
-CE	CE Documentation
-P	Parr Certification