

# Weco<sup>®</sup> Plug Valves

## premium,

### Choice of operators, actuators

Gear operators, pneumatic actuators and hydraulic actuators are available.

### Body erosion virtually eliminated

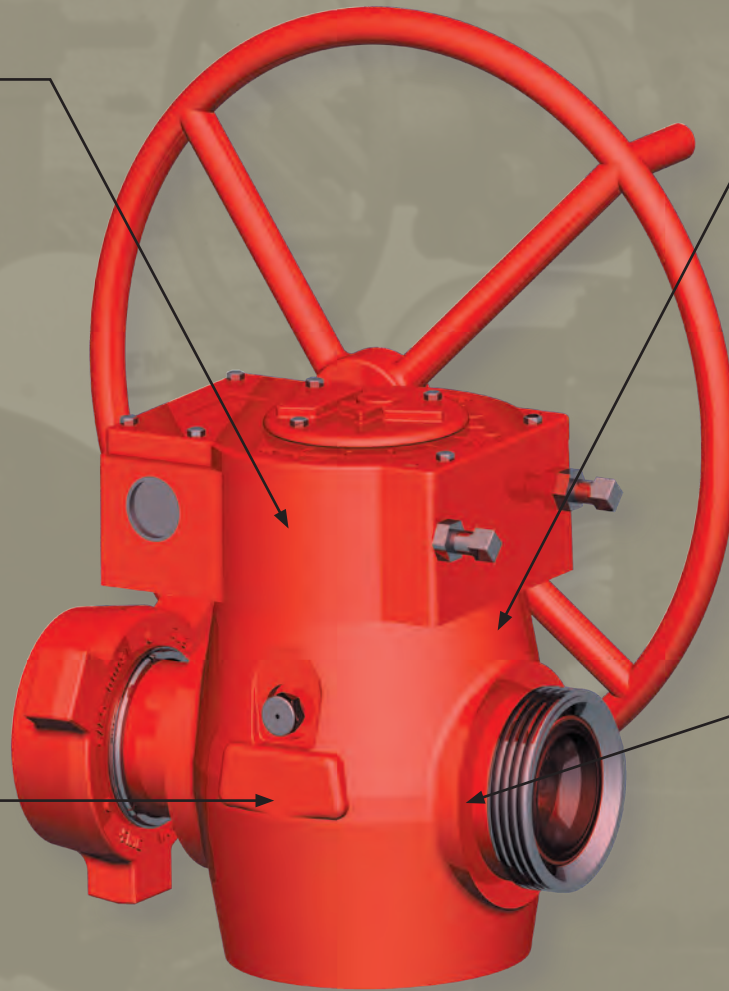
Fluid is forced between the plug/seal interface, limiting wear to replaceable parts.

### Ultimate sealability, no adjustments required

Floating plug improves sealability and reduces plug wear.

### Low torque operation at all pressures

Cylindrical plug fits between seal and side segments, reducing plug drag on the valve body.



Weco ULT and DR plug valves are premium, quarter-turn valves designed for a wide range of standard and sour gas drilling, production, and well-servicing applications. These rugged valves are offered in single and dual-body designs in pressures to 20,000 psi. They range in size from 1 to 4-inches and come with threaded, Weco wing union, flanged, and clamp hub ends. Consult factory for configurations. Like all pressure containing products, Weco plug valves require special handling (see inside back cover for Warnings and Cautions).

# quarter-turn valves

## ULT Plug Valves

The benefits of FMC's ULT plug valve are a direct result of its unique design features. Combined, these features have redefined the standards for plug valve operating principles and performance.

### Ultimate Sealability

The key to the ULT plug valve's unprecedented seal integrity is its proprietary floating plug and dual-seal design. When the valve is closed, the dual segment seal provides a redundant seal on the downstream side of the valve. In 3-inch and larger sizes, the ULT plug valve also employs a two-piece plug and stem design. When these valves are closed, line fluid pressure in the body is equalized around the plug resulting in ultimate sealing and low operating torque.

### Ultimate Valve Body Life

In addition to improved bidirectional seal performance, the ULT plug valve dramatically extends service life. When a traditional plug valve is closed, high-pressure fluids are forced between the upstream body and seal segment interface. This flow path can erode the valve body, potentially ruining the valve. When a ULT plug valve is closed, the only available flow path is between the seal segment and plug interface. This flow path eliminates body erosion and limits any potential wear to replaceable components.

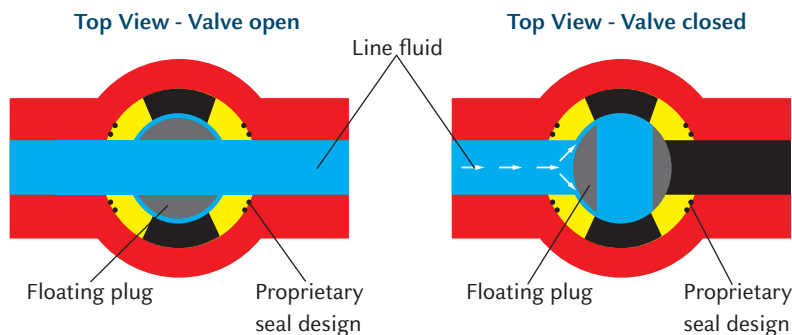
### Ultimate Seal Life

In addition to improved valve body life, two other frequent operating problems associated with high-pressure plug valves - both of which cause premature damage to seals and increased valve operating torque - are solved by the ULT plug valve. Traditional plug valve designs can sometimes seal on the upstream side of the valve, resulting in extrusion damage to the upstream segment seal. Traditional plug valves can also trap body pressure after line pressure is removed from the valve, resulting in extrusion damage to both upstream and downstream segment seals. The dual-seal design of the ULT plug valve, by forcing flow between the plug and segment interface, eliminates both of these problems.

### Ultimate Life Cycle Cost Savings

Superior sealability, increased life of valve body and elimination of premature seal damage result in significant savings in life cycle costs of the ULT plug valve over traditional plug valves. Qualification tests have proven the the ULT plug valve extends service life 3 to 5 times over other plug valves while reducing maintenance costs. On 1 inch size, ULT parts kits may be used in existing DR plug valve bodies to extend the life of these valves.

### OPERATING PRINCIPAL



# ULT Plug Valves

(3-inch and larger)

Up to 20,000 psi cold working pressure

## Recommended service

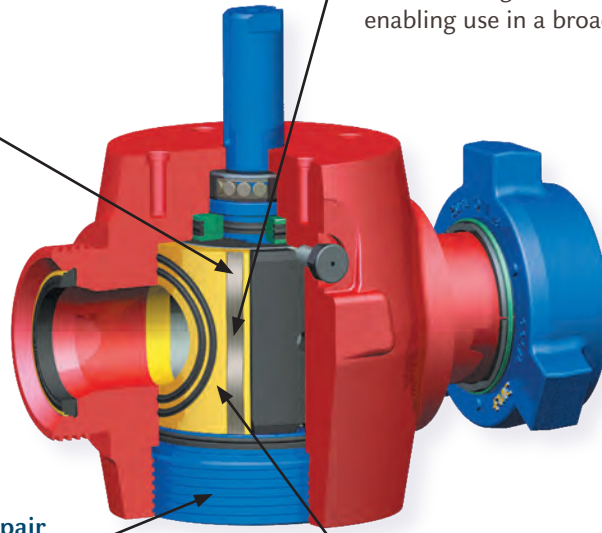
Slick water, sand, proppant/gel, energized fluids, inhibited acids and cement

### Two-piece floating plug/stem

Proprietary floating plug and stem uniformly distribute load against the downstream seat to improve sealability and reduce plug wear.

### Handles sand, proppant, and cement

Linear wave springs prevent small particles from entering metal-to-metal seal area, enabling use in a broad range of applications.



### Fast, simple field repair

Bottom entry design provides access to all valve internals without having to remove the operator or actuator.

### Eliminates body washout, extends body life

Dual seals direct flow between the seal segment and plug to provide long, trouble-free service life.

# ULT Plug Valves

(below 3-inch)

Up to 20,000 psi cold working pressure

## Recommended service

Slick water, sand, proppant/gel, energized fluids, inhibited acids and cement

### Eliminates body washout, extends body life

Dual seals direct flow between the seal segment and plug to provide long, trouble-free service life.

### Fast assembly

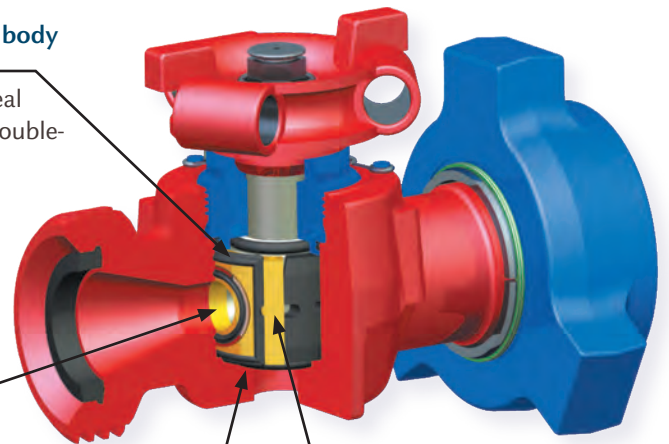
Integral stem and plug provide fast, sure assembly without adjustments.

### Interchangeable design

Internal components of 1" size interchange with Weco DR valve components, potentially extending the life of those valve bodies.

### Eliminates corrosion in segment sealing area

Dual segment seals greatly reduce erosive fluid flow between the seal segments and the plug valve body to improve sealing capabilities and extend service life.



# Specialty ULT Plug Valves

The ULT plug valve's proven, proprietary design technology enables customers to take advantage of a wide range of configurations for a host of specialty applications. Options include single and dual body designs; drill pipe, Weco union, or flanged end connections; and side outlets.

Consult factory for specific applications.

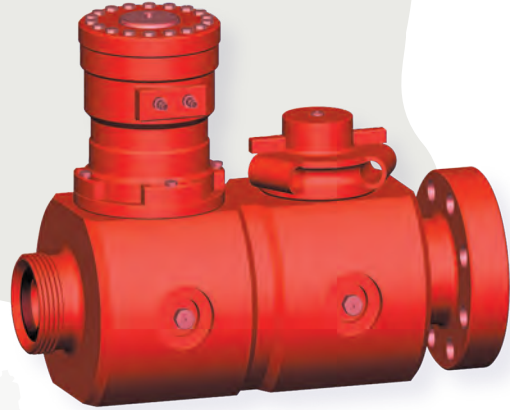
## ULT Dual Body Plug Valves

(Drill Pipe Connections)



## ULT Dual Body Plug Valves

(Weco Union x Flanged End Connections)



## ULT Flanged Plug Valves

(Flanged End Connections)





## Weco® Plug Valve Specifications

### Weco® and Chiksan® Low Temperature Ranges (LT)

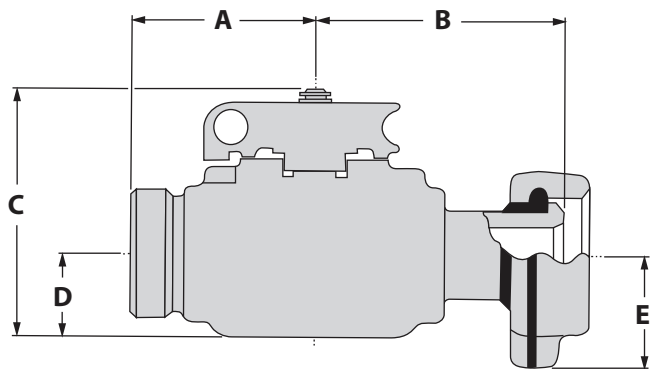
FMC leads the way with our new line of low temperature (-40°C) equipment. Please consult an FMC representative for more information on our standard service flowline low temperature products.

#### Plug Valves

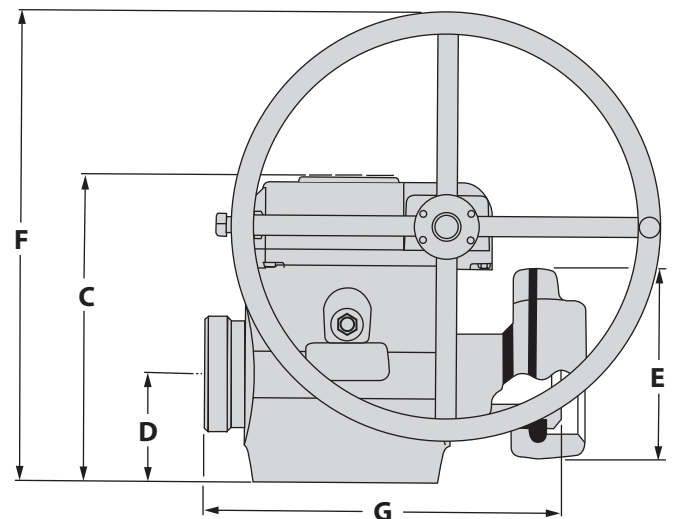
Model	Nominal Size, in.	Part No.	Part No.-LT	Weco End Connection *	Service	CWP psi (bar)	Weight lb (kg)
ULT 150	1	P516114	P516114-LT	1502	Standard	15,000 (1034)	37 (16.8)
ULT 100	1	P524578		1502	Sour	10,000 (690)	37 (16.8)
ULT 150	1x2	P516108	P516108-LT	1502	Standard	15,000 (1034)	43 (19.5)
	1x2 (.38 bore)	P516146	P516146-LT	1502	Standard	15,000 (1034)	58 (26.3)
ULT 100	1x2	P516208		1502	Sour	10,000 (690)	37 (16.8)
ULT 150	2	3247527		1502	Standard	15,000 (1034)	93 (42.2)
ULT 100	2	3248705		1502	Sour	10,000 (690)	93 (42.2)
DR 200	2	3223008		2002	Standard	20,000 (1380)	83 (37.6)
	2	3234183		2202	Sour	15,000 (1034)	83 (37.6)
ULT 150 (Manual)	3	3265904	3265904-LT	1502	Standard	15,000 (1034)	238 (108)
ULT 100 (Manual)	3	P501010		1502	Sour	10,000 (690)	241 (109)
ULT 150 (Hydraulic)	3	3265123	3265123-LT	1502	Standard	15,000 (1034)	337 (153)
ULT 100 (Hydraulic)	3	3267427		1502	Sour	10,000 (690)	340 (154)
ULT 150 (Handwheel)	3	3265122	3265122-LT	1502	Standard	15,000 (1034)	288 (131)
ULT 100 (Handwheel)	3	3265257		1502	Sour	10,000 (690)	288 (131)
ULT 200 (Hydraulic)	3	P519087	P519087-LT	2002	Standard	20,000 (1380)	754 (342)
ULT 200 (Handwheel)	3	P519453	P519453-LT	2002	Standard	20,000 (1380)	634 (288)
ULT 150 (Handwheel)	3	P522233		2202	Sour	15,000 (1034)	640 (290)
ULT 100 (Hydraulic)	4	P518352	P518352-LT	1002	Standard	10,000 (690)	738 (335)
ULT 100 (Handwheel)	4	P518356	P518356-LT	1002	Standard	10,000 (690)	660 (299)
ULT 150 (Hydraulic)	4	P516015	P516015-LT	1502	Standard	15,000 (1034)	774 (351)
ULT 150 (Handwheel)	4	P518749	P518749-LT	1502	Standard	15,000 (1034)	660 (299)

Note: 1", 1x2" ULT 150, DR150 and DR200 plug valves can be furnished with hydraulic actuators.

\* Other end connections are available. Consult factory.



DR 150 with Manual Operator

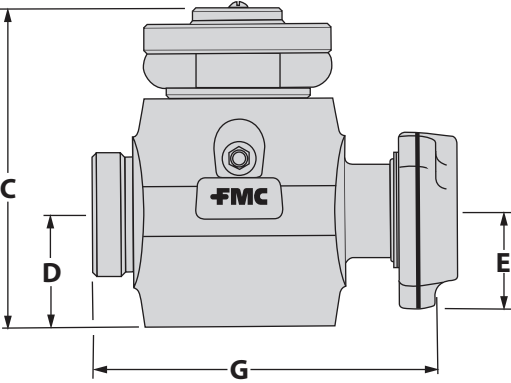


ULT 150 with Handwheel Operator

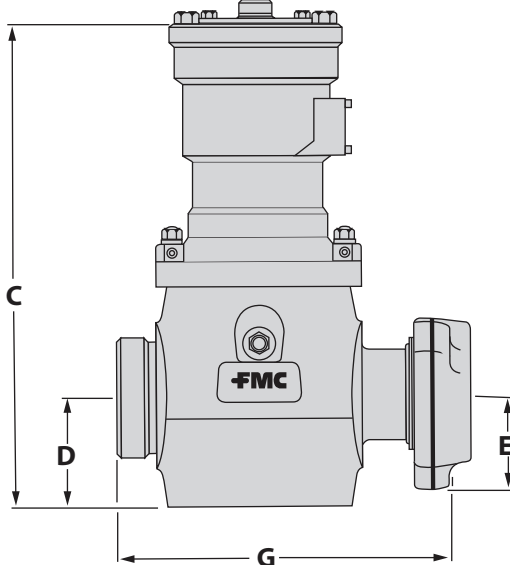
# Weco® Plug Valve Specifications

## Plug Valves

Model	Nominal Size, in.	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)
ULT 150	1	4.69 (119)	5.88 (149)	6.59 (167)	1.75 (45)	2.88 (73)	—	—
ULT 100	1	4.69 (119)	5.88 (149)	6.59 (167)	1.75 (45)	2.88 (73)	—	—
ULT 150	1x2	4.69 (119)	5.88 (149)	6.59 (167)	1.75 (45)	3.93 (100)	—	—
	1x2 (.38 bore)	4.69 (119)	5.88 (149)	6.59 (167)	1.75 (45)	3.93 (100)	—	—
ULT 100	1x2	4.69 (119)	5.88 (149)	6.59 (167)	1.75 (45)	3.93 (100)	—	—
DR 150	2	6 (152)	7.88 (200)	8.05 (205)	2.62 (67)	3.93 (100)	—	—
	2	6 (152)	7.88 (200)	8.05 (205)	2.62 (67)	3.93 (100)	—	—
DR 200	2	6.06 (154)	9.19 (233)	8.05 (205)	2.62 (67)	3.76 (96)	—	—
	2	6.06 (154)	9.19 (233)	8.05 (205)	2.62 (67)	3.76 (96)	—	—
ULT 150 (Manual)	3	—	—	14.27 (363)	5 (127)	4.55 (116)	—	15.69 (399)
ULT 100 (Manual)	3	—	—	14.27 (363)	5 (127)	4.55 (116)	—	15.69 (399)
ULT 150 (Hydraulic)	3	—	—	21.81 (554)	5 (127)	4.55 (116)	—	15.69 (399)
ULT 100 (Hydraulic)	3	—	—	21.81 (554)	5 (127)	4.55 (116)	—	15.69 (399)
ULT 150 (Handwheel)	3	—	—	14.47 (368)	5 (127)	4.55 (116)	22.12 (562)	15.69 (399)
ULT 100 (Handwheel)	3	—	—	14.47 (368)	5 (127)	4.55 (116)	22.12 (562)	15.69 (399)
ULT 200 (Hydraulic)	3	—	—	29.63 (753)	6.26 (159)	6 (152)	—	22.08 (561)
ULT 200 (Handwheel)	3	—	—	17.62 (448)	6.26 (159)	6 (152)	36.88 (937)	22.08 (561)
ULT 150 (Handwheel)	3	—	—	17.62 (448)	6.26 (159)	6 (152)	36.88 (937)	22.08 (561)
ULT 100 (Hydraulic)	4	—	—	28.49 (724)	7.00 (118)	4.94 (126)	—	22.85 (580)
ULT 100 (Handwheel)	4	—	—	19.1 (485)	7.00 (118)	4.94 (126)	38.36 (974)	22.85 (580)
ULT 150 (Hydraulic)	4	—	—	28.49 (724)	7.00 (118)	4.94 (126)	—	22.85 (580)
ULT 150 (Handwheel)	4	—	—	19.1 (485)	7.00 (118)	4.94 (126)	38.29 (973)	22.85 (580)



**DR 150 with Manual Operator**



**ULT 150 with Hydraulic Actuator**