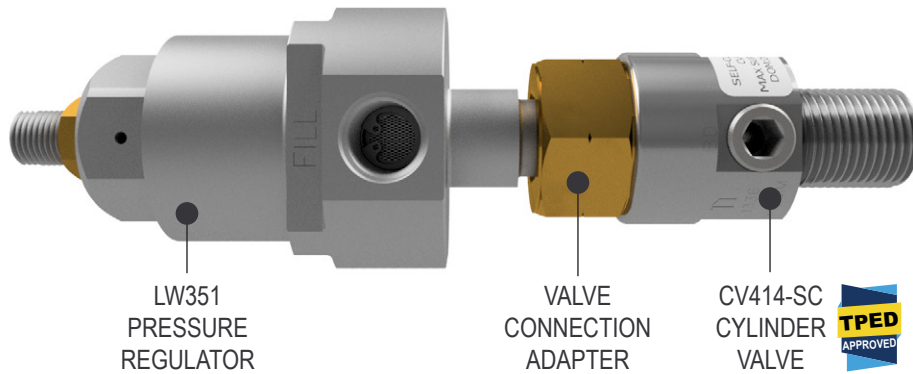


# LW351 & CV414-SC Datasheet

PRESSURE REGULATOR & CYLINDER VALVE FOR  
LIGHTWEIGHT HYDROGEN FUEL CELL APPLICATIONS

Gas  
  Liquid  
  Diaphragm  
  Piston  
  Self-Venting  
  Non-Venting  
 Max Inlet: 350 bar (5,075 psi)  
 Max Outlet: 3 bar (45 psi)  
 Cv 0.06



## INTRODUCING THE LW351 & CV414-SC...

The LW351 is a piston-sensed pressure regulator, designed specifically to provide constant pressure supply to the hydrogen fuel cell for lightweight applications. The CV414-SC is a TPED approved self-closing cylinder valve for high pressure gas systems.

Together, the LW351 and CV414-SC offer a quick and easy solution for connection to and disconnection from hydrogen gas cylinders.

## SPECIFICATION

Max. Rated Inlet Pressure	350 bar (5,075 psi)
Outlet Ranges	Up to 3 bar (45 psi)
Design Proof Pressure	150% max. working pressure
Seat Leakage	In accordance with ANSI/FCI 70-3
Weight	0.2kg (LW351) / 0.14kg (CV414)

*Note:* Pressure regulator rating may be limited by connection type, Cv and/or seat material. Contact the office for specific pressure or temperature requirements.

## STANDARD MATERIALS OF CONSTRUCTION

LW351	MATERIALS
Body and Bonnet	Aluminium T6511 (UNS AW6082)
Main Valve Pin	ASTM A479 316/316L Stainless Steel (UNS S31600/S31603)
Seat	Devlon X100
Valve Spring	Inconel® X750 (UNS N07750)
Piston	Aluminium T6511 (UNS AW6082)
O-Rings	FKM/FPM (Viton)
Loading Spring	ASTM 17-7 PH Stainless Steel (UNS S17700)
Filter	40 Microns

CV414-SC	MATERIALS
Body	ASTM A479 316/316L Stainless Steel (UNS S31600/S31603)
Seat	PEEK™ (450G) PCTFE (Kel-F)
O-Rings	EPDM (Ethalyne)

## FEATURES AND BENEFITS

### 1 EASY DISCONNECT FEATURE

Offers a low torque, quick and easy disconnect when a cylinder refill is required.

### 2 CONTINUAL OPERATION

When connected, the CV414-SC offers a continual supply of gas from the cylinder.

### 3 CV414-SC: TPED APPROVED (UP TO 350 BAR)

For the transportation of pressure equipment including gas cylinders and their valves.

### 4 EASY FILLING

Quick cylinder filling connection provides a long life-span.

### 5 OPTIONAL BURST DISC

For extra gas cylinder protection.

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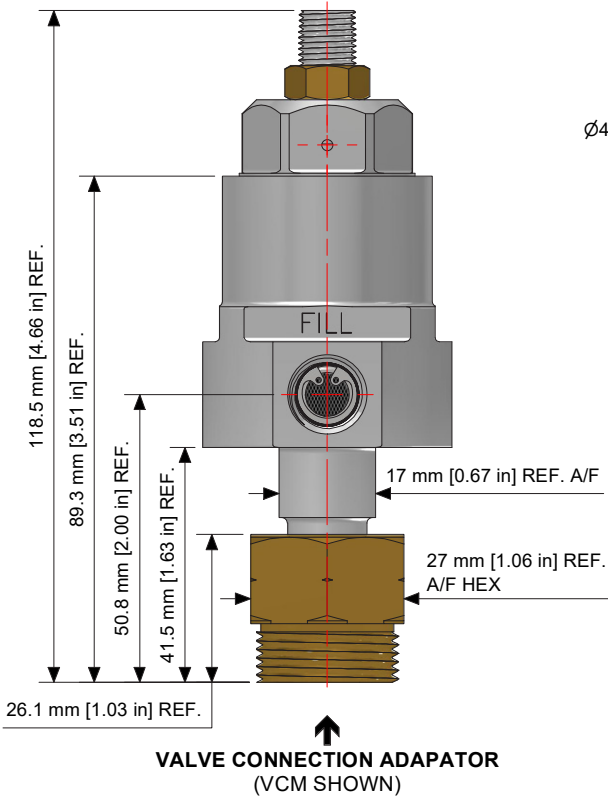
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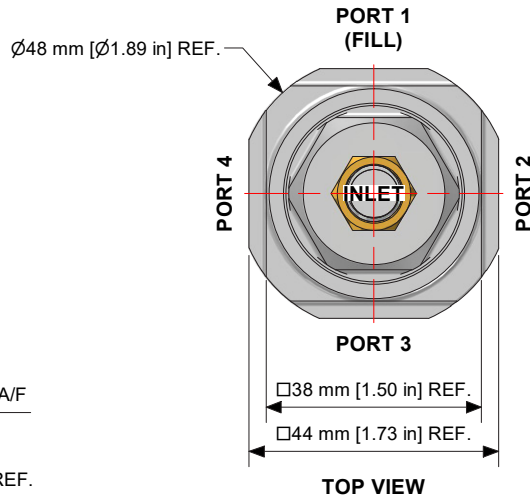
## DRAWING AND INSTALLATION DIMENSIONS

LW351:

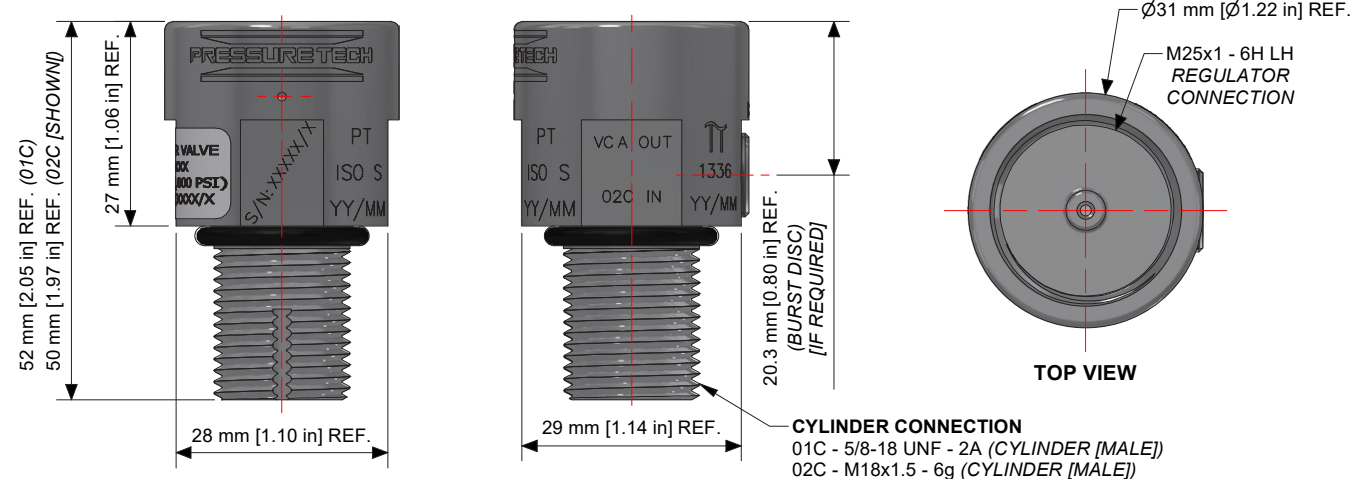


## PORT POSITIONS: LW351

Use 'ORDERING INFORMATION' on page 4 to select connection size and type for each port position - port 1 is the fill port and includes a filter as standard.



CV414:



## FLOW CURVES

For flow curve information, please see separate LW351 datasheet.

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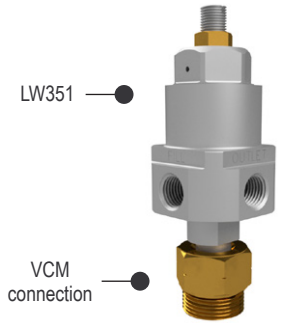
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PRESSURE REGULATOR & CYLINDER VALVE FOR  
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● Gas ● Liquid ● Diaphragm ● Piston ● Self-Venting ● Non-Venting | Max Inlet: 350 bar (5,075 psi) | Max Outlet: 3 bar (45 psi) | Cv 0.06

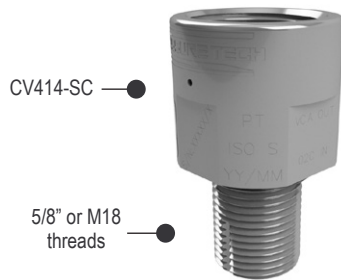
## HOW IT WORKS

- 1** The LW351 is ordered with a VCM connection specified as the inlet connection.



Example part number:  
LW351-06-01-V-K-VCM-DJDJ

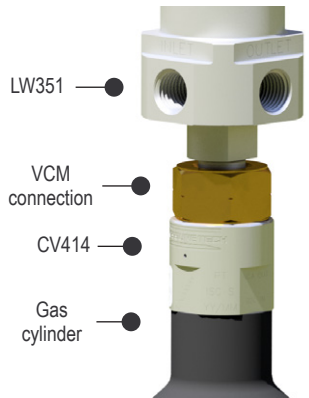
- 2** The CV414 is ordered with 5/8" or M18 threads to suit the cylinder's connection. A burst disc port is an optional extra.



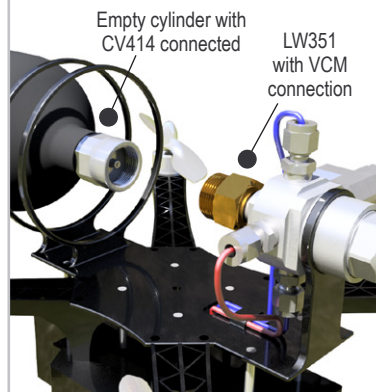
- 3** The CV414 is permanently connected to the cylinder.



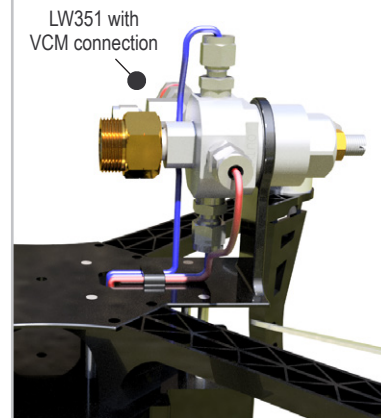
- 4** The LW351 is wound onto the CV414, opening its main valve and allowing gas to flow through the regulator.



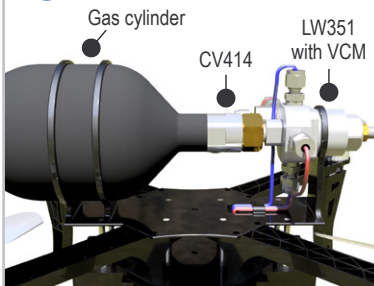
- 5** To refuel, the CV414's low torque disconnect makes it easy to remove the cylinder from the LW351.



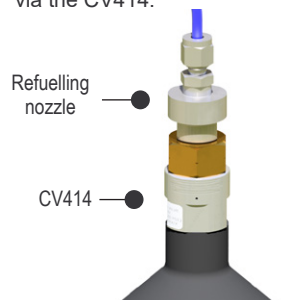
- 6** The LW351 stays connected to the application, e.g. drone.



- 7** A new cylinder with CV414 is connected to the LW351.



- 8** Empty cylinders are refilled via the CV414.



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 Max Outlet: 3 bar (45 psi)   
 Cv 0.06

## ORDERING INFORMATION: LW351

To build a part number, simply combine the characters identified below in sequence:

PORTS 1 2 3 4	
<b>LW351</b>	<b>06 01 V D VCA AAAAXX XXX</b>
<b>MODEL/SERIES</b> LW351 – Pressure Regulator	<b>MODIFICATIONS*</b> Contact the office for further information.
<b>CV VALUE</b> 06 – 0.06	<b>PORT CONNECTION SIZES/TYPES**</b> X – No port B – Inlet with 1/4" BSPP D – Inlet with 1/4" NPT L – Inlet with 1/4" SAE A – Inlet with 1/8" BSPP C – Inlet with 1/8" NPT E – Inlet with 3/8" 24 UNF (Burst Disc) K – Inlet with M8x1 (Transducer Port) P – Inlet with M10 x 1 (Transducer Port) N – Inlet with M11 x 0.75 (Burst Disc) F – Outlet with 1/8" BSPP H – Outlet with 1/8" NPT G – Outlet with 1/4" BSPP J – Outlet with 1/4" NPT M – Outlet with 1/4" SAE S – Outlet Solenoid Valve T – Outlet with M8x1
<b>CONTROL PRESSURE</b> 01 – Up to 1 bar (14.5 psi) 02 – Up to 2 bar (29 psi) 03 – Up to 3 bar (45 psi)	<div style="background-color: #003366; color: white; padding: 5px;">                     1. See page 3 for position of ports 1 to 4.                      2. DJDJ configuration available on short lead time.                 </div>
<b>O-RING MATERIAL**</b> E – EPDM V – FKM/FPM	
<b>SEAT MATERIAL**</b> D – Devlon X100	
<b>INLET CONNECTION** (BASE OF REGULATOR)</b> 01C – 5/8"-18 UNF Cylinder (Male) 02C – M18 x 1.5 Cylinder (Male) 02B – 1/4" BSPP (Female) 02N – 1/4" NPT (Female) VCA – Valve Connection Adapter (Female Thread) - CV414-SC required (sold separately) VCM - Valve Connection Adapter (Male Thread) - CV414-SC required (sold separately) X – No Inlet Connection	

**Important:** If supplied with an integrated Manual Isolation Valve or Solenoid Valve on the downstream of the regulator, please ensure a suitably sized pressure relief valve has been fitted to the additional downstream port of the LW351.

OPTIONAL EXTRAS		
	PART NUMBER	DESCRIPTION
Service Kit	SRK-LW351-06-A-01-V-K...	LW351 service kit.

*Note:* Ancillary equipment also available

TURN FOR  
CV414 ORDER  
INFO

**TRADEMARKS:** Inconel® is a registered trademark of Inco Alloys International

\* Where applicable

\*\* Other connections/materials may be available - contact the office

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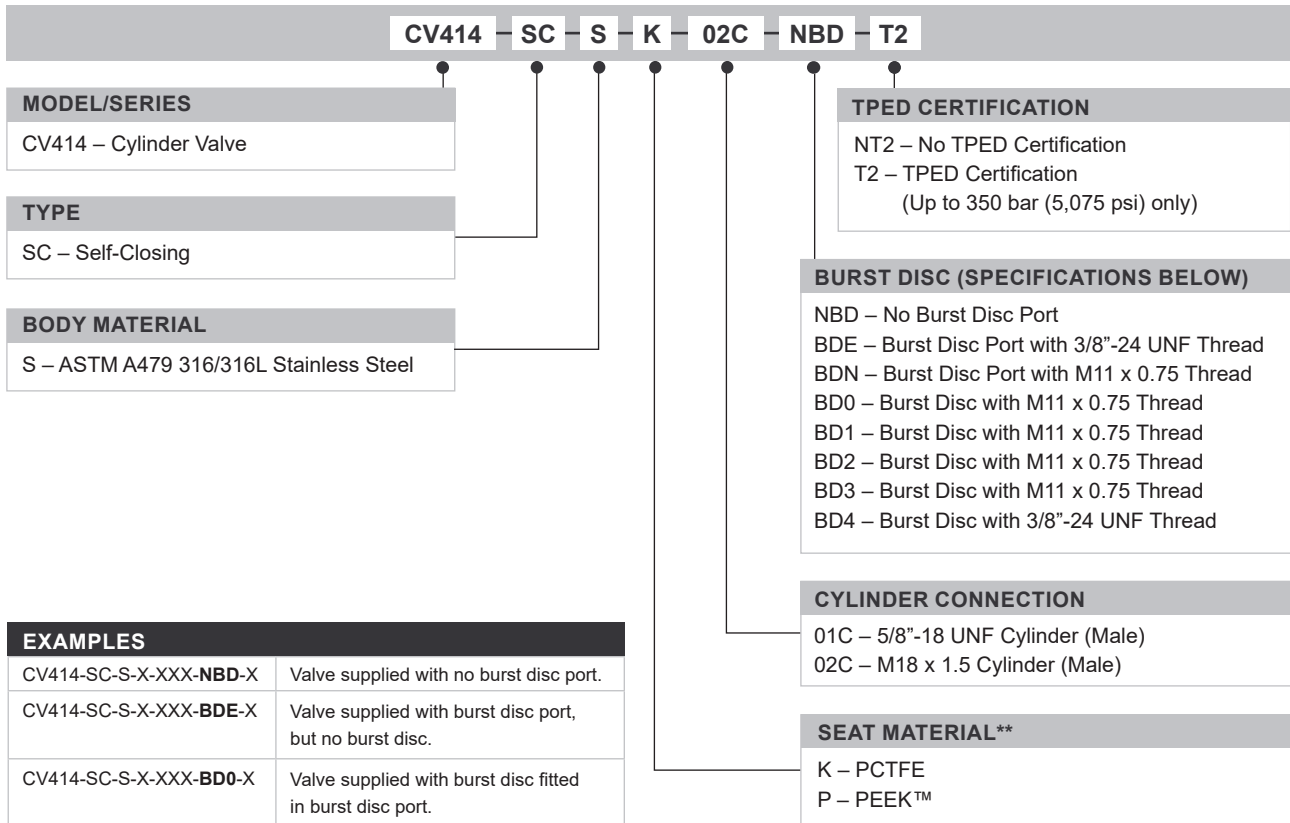
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## ORDERING INFORMATION: CV414

To build a Pressure Tech part number, simply combine the characters identified below in sequence:



BURST DISC SPECIFICATIONS					
Burst discs are also available to order separately, as spares - please contact the office to enquire or order:					
	REF.	THREAD	CYLINDER RATED PRESSURE	MAX.	MIN.
Burst Discs	BD0*	M11 x 0.75	300 bar (4,350 psi)	450 bar (6,525 psi)	427 bar (6,195 psi)
	BD1*	M11 x 0.75	310 bar (4,500 psi)	517 bar (7,500 psi)	491 bar (7,120 psi)
	BD2*	M11 x 0.75	350 bar (5,075 psi)	525 bar (7,615 psi)	498 bar (7,225 psi)
	BD3*	M11 x 0.75	414 bar (6,000 psi)	621 bar (9,005 psi)	590 bar (8,555 psi)
	BD4	3/8"-24 UNF	310 bar (4,500 psi)	517 bar (7,500 psi)	491 bar (7,120 psi)
<i>Note 1:</i> Burst disc selection is the users' responsibility and the information displayed is for guidance only. <i>Note 2:</i> The maximum and minimum pressures shown above represent bursting pressures at 20°C.					

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PEEK™ is a trademark of Victrex PLC

\* Burst disc meets the requirements of ASME UG-134 E and CGA S1.1 standards

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