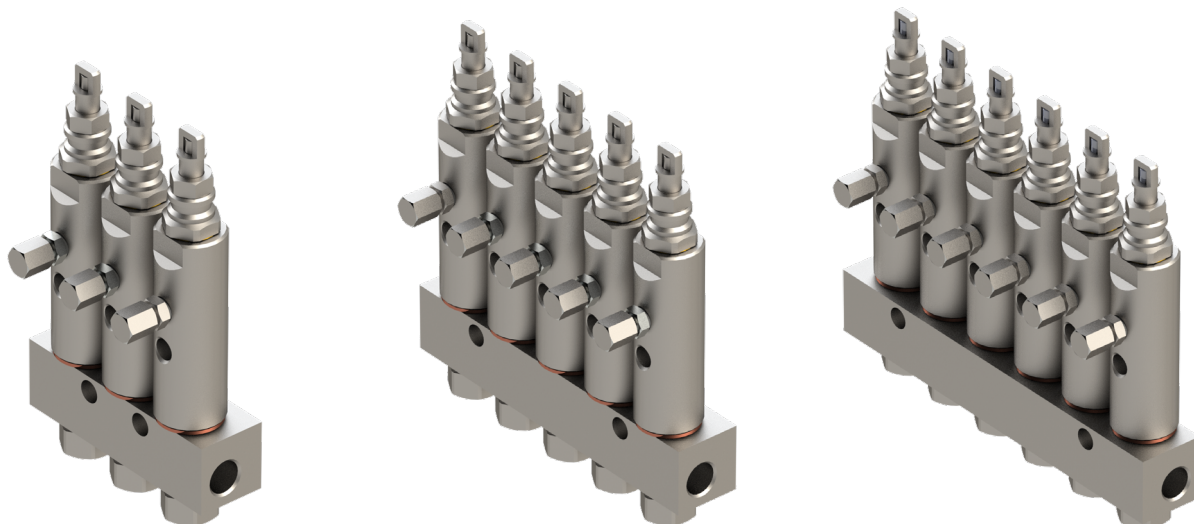


lubrication systems



# CX-1

VOLUMETRIC METERING VALVES  
FOR OIL AND GREASE OPERATION



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REV27012023

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All ILC products must only be used for their intended purposes, as specified in this brochure and in all instructions. If the product is supplied together with user instructions, the user is required to read them and comply with them. Not all lubricants are suitable for centralised lubrication systems. ILC lubrication systems or relative components cannot be used together with gas, liquid gas, pressurised gas in solution and liquids with vapour pressure exceeding normal atmospheric pressure (1013 bar) by more than 0.5 bar, maximum temperature permitted. Any type of dangerous materials, namely those classified as such by European Community Directive (EC) 67/548/EEC, Article 2 (2), can only be used in ILC centralised lubrication systems or relative components upon consultation with ILC and after having received written approval from the company.

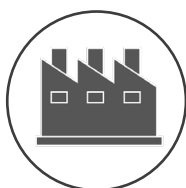
## General information

CX-1 metering valves are used in centralised lubrication single-line systems operating with oil or grease. They are installed on 1-to-6-output distributor blocks: each single valve can be easily removed for inspection or replacement. Valves and distributor blocks are made of steel, with Viton seals, suitable for high temperature applications. The flow rate is externally adjustable and the valve is equipped with a visual indicator for checking operation.

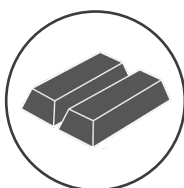
## Applications



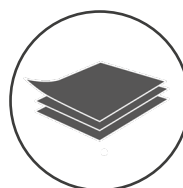
Processing  
Mining



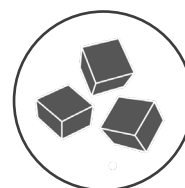
Heavy  
Industry



Steel  
Industry



Paper  
Processing



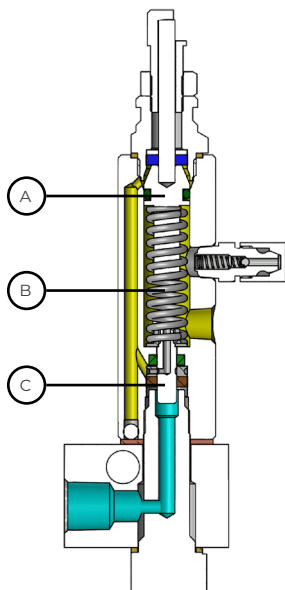
Sugar  
Processing

## Technical data

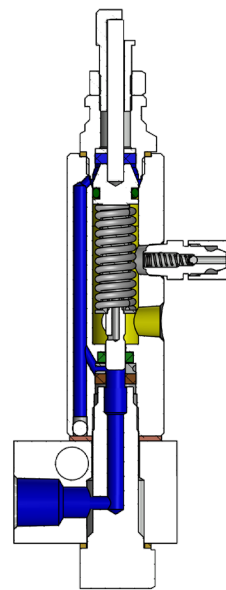
|                                             |                            |                            |
|---------------------------------------------|----------------------------|----------------------------|
| <b>Lubricants</b>                           | Oil 50 cSt – 2000 cSt      | Grease up to NLGI 2        |
| <b>Working pressure PSI [Bar] (min-max)</b> | 750 [52] - 1000 [69]       | 1850 [127] - 3500 [241]    |
| <b>Flow rate min-max CC [in³]</b>           | 0.131[0.008] - 1.31 [0.08] | 0.131[0.008] - 1.31 [0.08] |
| <b>Release pressure PSI [Bar]</b>           | 150 [10]                   | 600 [41]                   |
| <b>Temperature</b>                          | from -30 °C to +150 °C     |                            |
| <b>Seals</b>                                | VITON                      |                            |
| <b>Block inlet</b>                          | 3/8" NPTF (F)              |                            |
| <b>Valve output</b>                         | 1/8" NPTF (F)              |                            |
| <b>Valve Material</b>                       | Steel                      |                            |
| <b>Distributor material</b>                 | Steel                      |                            |

*Important: the data provided above are theoretical and subject to variation based on the extension of the system, the size of the main pipe, the type of lubricant used and the working temperature.*

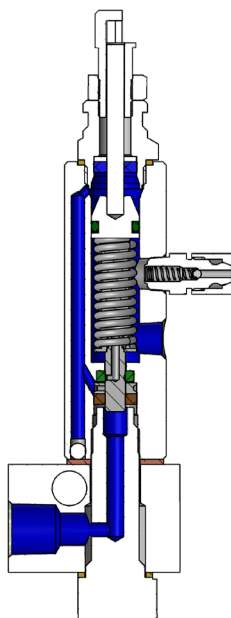
## Operation



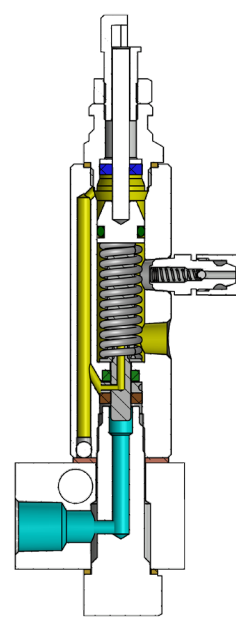
STEP 1 - Main piston C is in its rest position. Metering chamber (B) is full of lubricant from the previous cycle.



STEP 2 – The pressure on the lubricant moves main piston C so as to open the passage for conveying the lubricant above metering piston A.



STEP 3 – The pressurised lubricant moves metering piston A which sends lubricant to the point. In addition, it moves main piston C until it shuts off the pressurised lubricant flow.



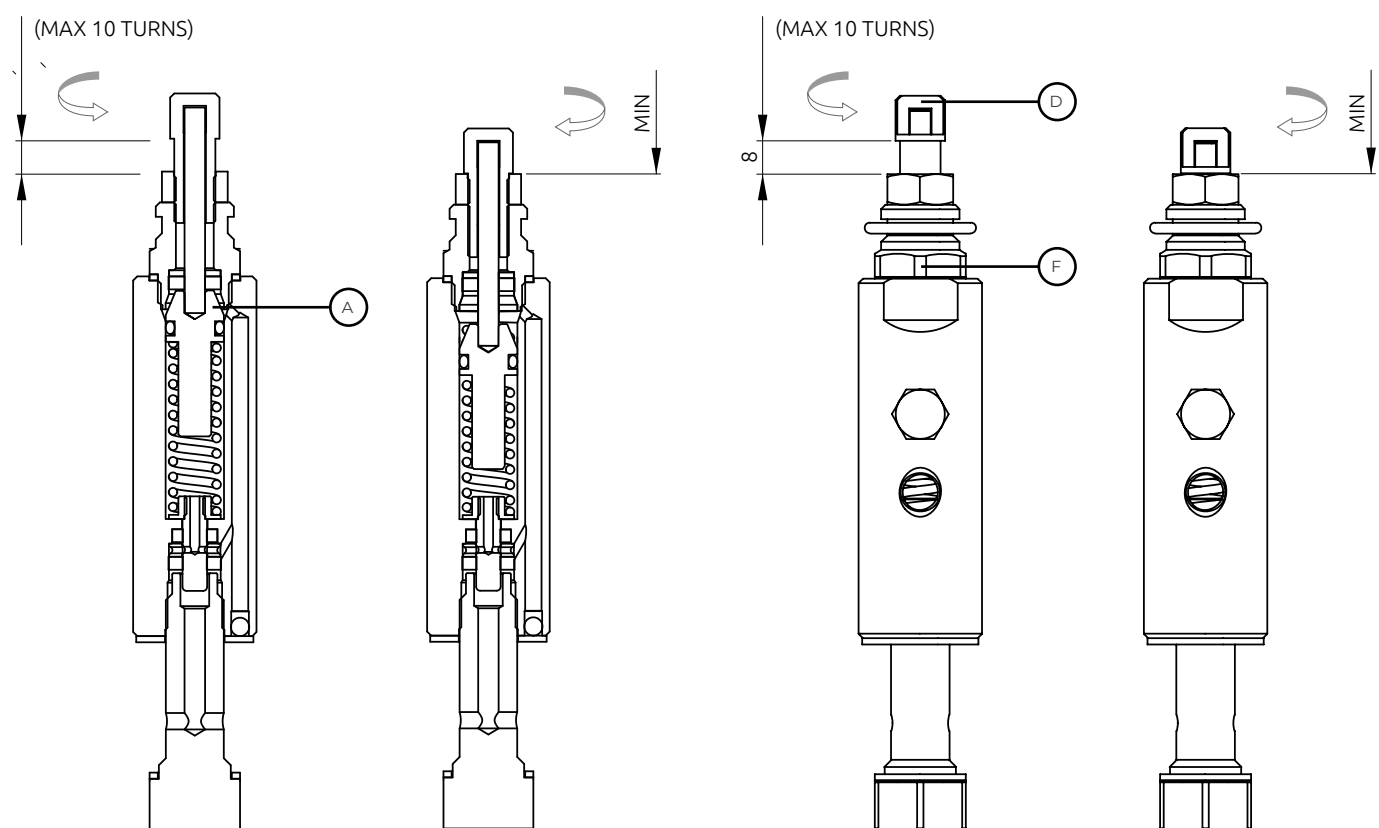
STEP 4 – When the pump stops and the main line is released, the spring returns the metering piston (A) to its rest position allowing metering chamber B to be filled.

## Adjustment

The flow rate of the valve is determined by adjusting nut D which limits the stroke of metering piston A. To reach the minimum flow rate, (0.131 cc / 0.008 cu. in.), screw counter nut F up to the valve body, screw the ring nut D by hand up to the mechanical stop and then loosen by about ½ turn.

By unscrewing ring nut D by ten turns, the maximum flow rate

of about 1.31 cc / 0.080 cu. in. will be obtained. Beyond this position, the valve will not operate smoothly. When the valve has been adjusted to the desired flow rate, counter nut F must be tightened against adjusting nut D.



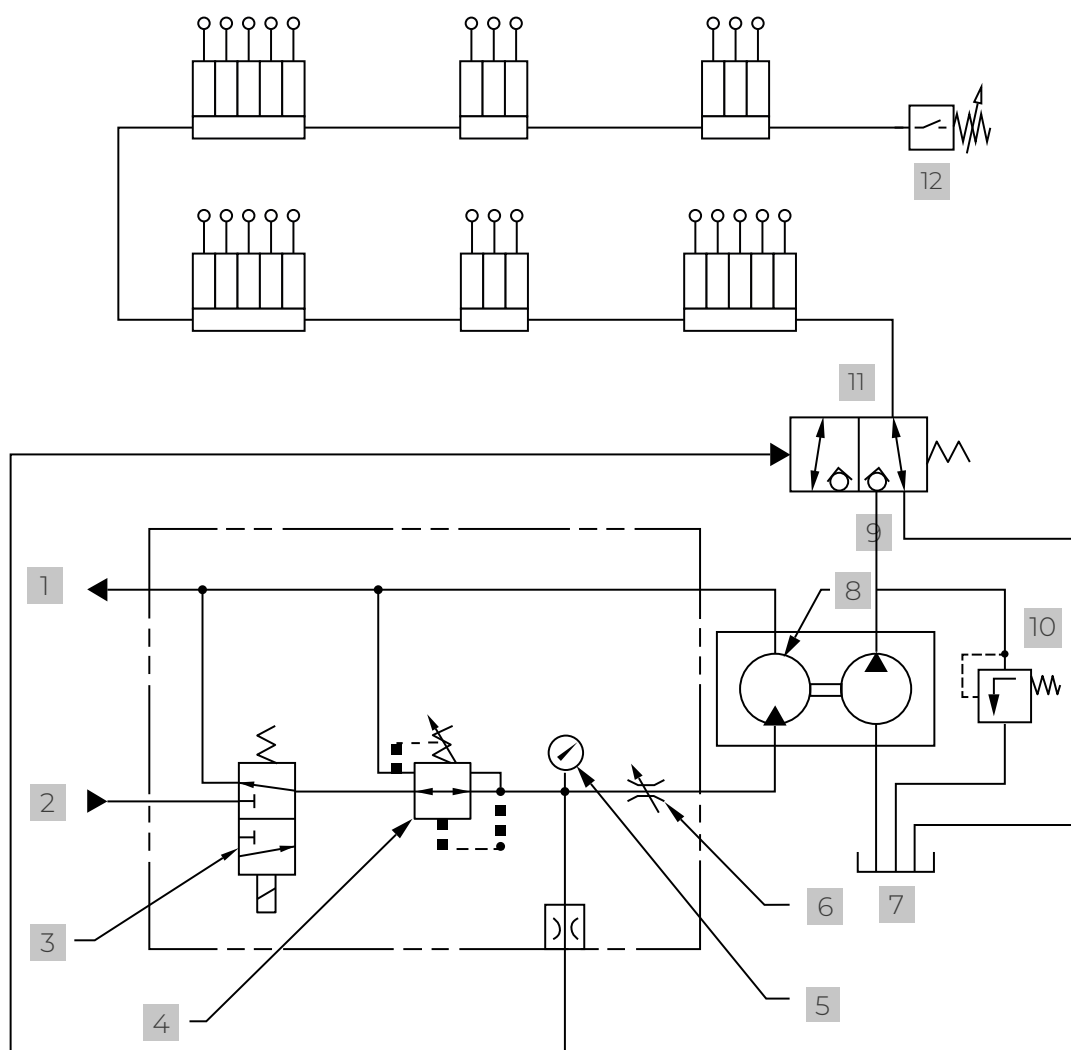
A  
Metering Piston

D  
Adjusting nut

F  
Counter nut

## NOTE

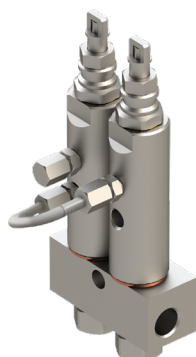
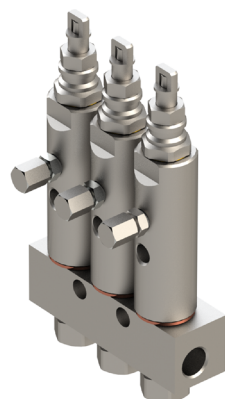
*Any output set below ½ turn must be monitored to check the actual flow rate volume.*



- |   |                            |    |                             |
|---|----------------------------|----|-----------------------------|
| 1 | Return to hydraulic line   | 7  | Lubricant Tank              |
| 2 | Hydraulic Oil Inlet        | 8  | Hydraulic Motor             |
| 3 | Solenoid valve             | 9  | Lubricant output            |
| 4 | Pressure Reducing Valve    | 10 | Pressure Limiter Valve      |
| 5 | Pressure gauge             | 11 | Release Valve               |
| 6 | Flow Rate Adjustment Valve | 12 | End of line pressure switch |

## CX-1

## Valves



## Single valve

## Grease

02.940.1.G

## Oil

02.940.1.O

## Valve+Block

## Grease

02.940.1.G.01

02.940.1.G.02

02.940.1.G.03

02.940.1.G.04

02.940.1.G.05

02.940.1.G.06

## Oil

02.940.1.O.01

02.940.1.O.02

02.940.1.O.03

02.940.1.O.04

02.940.1.O.05

02.940.1.O.06

## Outputs

1

2

3

4

5

6

## Blocks

## Part no.

## Outputs

01.190.1

1

01.190.2

2

01.190.3

3

01.190.4

4

01.190.5

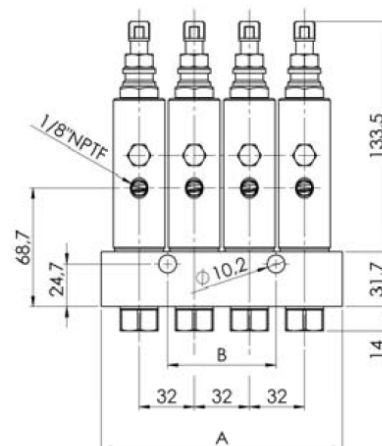
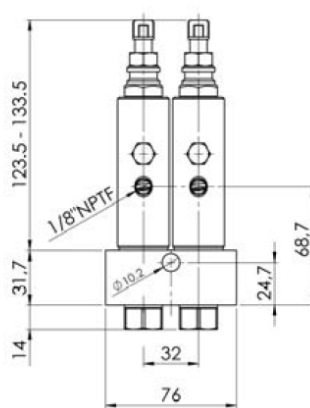
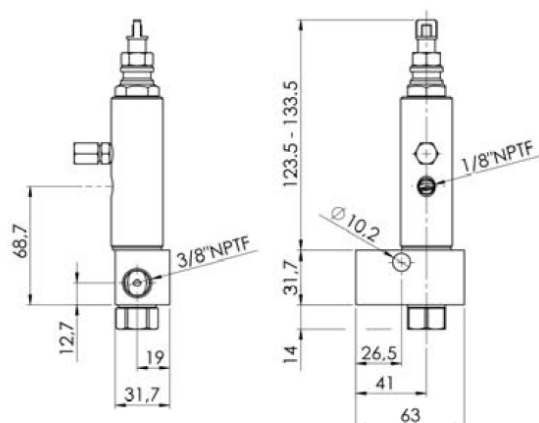
5

01.190.6

6

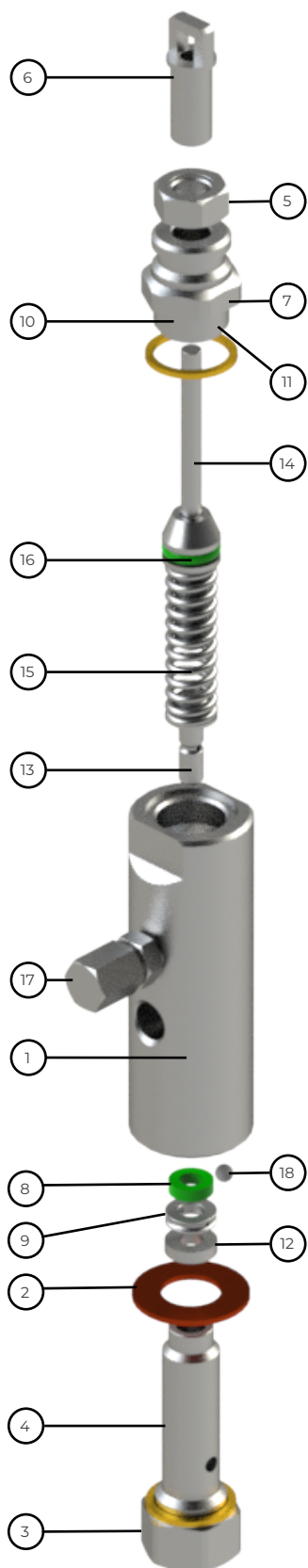
Two outputs can be joined with the bridge joint on request.

09.600.6: in this case, the two outputs of the CX-1 valves will add up.



## CX-1

## Spare parts



| Ref. | Part no.   | Description                                     |
|------|------------|-------------------------------------------------|
| 1    | A51.081009 | Cx-1 injector valve cylinder                    |
| 2    | A52.131050 | Copper washer size 28.5x14.5x1.5                |
| 3    | A52.131049 | Brass gasket size 22x18x1.5                     |
| 4    | A51.083223 | Valve cx-1 hollow bolt 9/16"x18                 |
| 5    | A51.087100 | Valve cx-1 nut 10x0.75 h.7.5                    |
| 6    | A51.083224 | Valve cx-1 adjustment screw                     |
| 7    | A51.106677 | Valve cx-1 ending fitting                       |
| 8    | A77.131053 | Flat gasket 11x5.9x3.16 fkm 80sh green          |
| 9    | A51.088163 | Valve cx-1 diverter spacer                      |
| 10   | A51.117011 | Valve cx-1 gasket block disk                    |
| 11   | A77.131051 | Flat gasket 12.8x5x3.16 fkm 80sh blue           |
| 12   | A77.131052 | Flat gasket 12.8x5.9x3.16 fkm 80sh brown        |
| 13   | A70.093711 | cx-1 injector valve pilot piston                |
| 14   | A70.093712 | cx-1 injector valve metering piston             |
| 15   | A86.126164 | Cylindrical spring for cx-1 valve grease        |
| 16   | A92.127229 | Or 3037 9.19x2.62 Viton green 90 sh             |
| 17   | A70.078451 | 1/8 nptf straight grease nipple with protection |
| 18   | A92.089018 | 4.5 sphere                                      |
| 19   | A92.127059 | Or 3068-122 17.13x2.62 Nbr 70 sh                |
| 20   | A92.104062 | Epdm ee-730-1500 cap                            |

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