



### STANDARD EQUIPMENT

No	Description	Qty	Type
1	MAIN VALVE HYTROL AE/GE/NGE	1	100-01/KH
2	ISOLATION BALL VALVE	3	RB-117
3	STRAINER WITH INCORPORATED ORIFICE	2	X44-A
4	3-WAY SOLENOID VALVE (0 = CLOSED)	2	311-C

### OPTIONAL FEATURES

No	Description	Qty	Type
F	REMOTE SENSING	1	-
H	DRAIN TO ATMOSPHERE	1	-
M	MANUAL OPERATOR	2	RB-117
M1	MANUAL OPERATOR (DRAIN TO ATMOSPHERE)	2	RB-117

### NOTES

AE/GE : DN 32 - DN 150 / NGE : DN 50 - DN 200  
 (#) = According to valve size this feature type could change

OPTIONAL FEATURES : \_\_\_\_\_  
 NOT FURNISHED BY CLA-VAL : \_\_\_\_\_

### ▶ Operating data

#### 1.1 ▶ SOLENOID CONTROL FEATURE

Isolation ball valves **(2A)**, **(2B)** and **(2C)** open.

##### **Controlled closing position:**

Solenoid valve 311-C **(4B)** closed.

Solenoid valve 311-C **(4A)** is a direct-acting, 2-way solenoid control that opens when its coil is energized; this applies pressure in the control chamber of the main valve **(1)** through the calibrated orifice X44-A **(3A)**. The main valve **(1)** is closing progressively, at a closing speed controlled by orifice **(3A)**.

The closing of solenoid valve **(4A)** is locking the main valve **(1)** in any desired partial opening of its lift.

##### **Controlled opening position:**

Solenoid valve **(4A)** closed.

Solenoid valve **(4B)** is a direct-acting, 2-way solenoid control that opens when its coil is energized; this releases pressure from the control chamber of the main valve **(1)** through the calibrated orifice X44-A **(3B)** at its outlet. The main valve **(1)** is opening progressively, at an opening speed controlled by orifice **(3B)**.

The closing of solenoid valve **(4B)** is locking the main valve **(1)** in any desired partial opening of its lift.

#### 1.2 ▶ (E\*) EUROPEAN STANDARDS

ITEM **(2)** - Isolation ball valve:

The isolation ball valves RB-117 **(2)** are used to isolate the pilot system from main line pressure. These isolation ball valves must be open during normal operation.

ITEM **(3)** - Strainer with incorporated orifice:

Strainers X44-A **(3A)** and X44-A **(3B)** are installed in the pilot supply line to protect the pilot system from foreign particles. The strainer screen **(3A)** and **(3B)** must be cleaned periodically.

The incorporated orifices **(3A)** and **(3B)** are calibrating the operating speeds [closing/opening] of the main valve **(1)** on a protected way; the set speed is not altered by any internal build-up. In order to modify the working speed, it is necessary to change the respective calibrated orifice.

#### 1.3 ▶ OPTIONAL FEATURE

Suffix **(F)** - Independent operating pressure:

The control pressure for the pilot system is taken from an independent source; in any application, the independent pressure must be equal or higher than the existing inlet main valve **(1)** pressure.

Suffix **(H)** - Drain to atmosphere:

The outlet of isolation ball valve **(2C)** is not connected to outlet of main valve **(1)**, but is discharging directly into the atmosphere (female orifice Rp 3/8").

Suffix **(M)** - manual operator or Suffix **(M1)** - manual operator (discharge to atmosphere):

Isolation ball valve **(2B)** closed.

The opening of isolation valve **(MF)** produces the closing of main valve **(1)**; the opening of isolation valve **(MO)** produces a partial **(M)** opening (depending of the rate of flow through the main valve) or a complete **(M1)** opening [regardless the rate of flow through the main valve **(1)**]. The closing of both isolation valves **(MF)/ (MO)** permits to maintain the main valve **(1)** in any partial lift.

In normal service, the isolation ball valve **(2B)** must be open and the two isolation valves **(MF)/ (MO)** must be closed.



### 1.4 ► CHECK LIST FOR PROPER OPERATION

- System valve(s) open upstream and downstream (if existing).
- Air removed from the main valve cover and pilot system at all high points.
- Isolation ball valves **(2)** open.
- Periodic cleaning of strainer screens **(3A)** and **(3B)**.
- Correct voltage to solenoid controls **(4A)** and **(4B)**.
- Manual solenoid valve **(4A)** and **(4B)** overrides disengaged.
- Isolation ball valves **(MF)** and **(MO)** closed (if provided).