TO HELP YOU OPTIMIZE your process performance and reliability, Metso Automation approaches each process and application as a specific challenge. Neles control, on-off and ESD valves, accessories, intelligent devices and software products are engineered to meet these challenges. They provide innovative, fundamentally simple construction, operation and maintenance features to optimize process performance at the lowest cost.

Testing capabilities
Metso Automation has an extensive quality assurance program covering all production activities. All components or valve units are tested before shipping to avoid costly returns. The testing includes hydrostatic and leakage testing. Advanced computerized testing has been provided for these valve testing activities. Basic testing includes hydrostatic, seat leakage and functional testing. Advanced computer-based test rigs have been provided for these valve testing activities. A special feature in Metso Automation test facilities is our high pressure gas test and top-of-range industrial cryogenic laboratory.

Simplifying Service Solutions
Metso Automation is committed to helping energy and hydrocarbon, and pulp and paper customers improve process performance and reduce operating costs. Our leading edge technologies and service solutions are designed to improve process performance while reducing your total cost of ownership. Neles ValvGuard™ partial stroke testing system is a powerful testing solution that helps ensure your valves will always perform properly when needed. Emergency shutdown (ESD) and venting (ESV) valves are the process industry’s front line defense against the threat to personnel and equipment posed by fires and explosions. Because many of these valves spend the majority of their time idle, traditional safety systems may not recognize a potential valve failure until it’s too late. Now you can easily monitor and test valve performance for maximum availability while reducing overall operating costs.

Neles FieldCare™ - device and asset management

Neles FieldCare is a totally open solution based on FDT/DTM technology to provide an accurate information flow during the commissioning, operation or maintenance of a production process.

It provides a single tool with which to manage any device, in any communication protocol, and its web-enabled interfaces allow for the information to be distributed anywhere across the user’s network in real time. Its ability to show both standard configuration parameters and device-specific functions eliminates the need for vendor-specific tools.

Online data flow from all devices is visualised through an innovative colour-coded alert system and a series of selective alarms which provides a clear view of process performance and allows easy and early problem recognition.

FieldCare provides real time information under operational process conditions, and its ability to browse and store data makes prediction of device condition extremely accurate. The information it provides supports predictive maintenance and can be used to plan regular maintenance activities, ensuring sufficient time to order spare parts and plan for service operations.

FieldCare lowers the cost of ownership as it can manage any device, any communication protocol, and its web-enabled interfaces allow for the information to be distributed anywhere across the user’s network in real time. Its ability to show both standard configuration parameters and device-specific functions eliminates the need for vendor-specific tools.


Neles ND9000® - intelligent valve controller

FieldCare’s partner, the Neles ND9000 intelligent valve controller, records and stores data for the lifetime of the device. It helps with smooth and reliable process operation by supporting all process buses and communication processes through comprehensive diagnostics provided by its rugged and reliable design with an easy set-up, smooth cable entry and local user interface.

The key advantage of the new ‘best in class’ positioner is its ability to be applied to new or existing control valve packages in all industry areas, regardless of the application. Its design features and unique diagnostic ability provide superior performance to anything else on the process control diagnostics market, allowing you to predict failures in critical high-cycle switching applications and che valve condition remotely without visiting the field. With this unprecedented visibility to valves you can plan your maintenance actions well before problems have a major impact on the process.

The controller’s superb features and unique, embedded diagnostics guarantee high availability in your on/off applications. SwitchGuard analyses the operation of an automated on/off valve online and stores this diagnostics data for further use. With open communication technology, such as FDT/DTM, and with Metso Automation’s FieldCare field device configuration and condition monitoring tool you can use this valuable information to plan your maintenance activities better.

Advanced online diagnostics confirm essential information on valve and instrument performance in a clear and easily understood way, a fact confirmed by offline tests which complement the online diagnostics. In addition, user-friendly and well-guided start-up procedures, combined with Local User Interface, make the commissioning of the process fast and simple.

Bulletin reference: 7ND9120, 7ND9220

Neles SwitchGuard™ - suitable for all critical high-cycle switching applications

Neles SwitchGuard™ is Metso Automation’s new intelligent controller for pneumatic on/off valves. Featuring innovative diagnostic features, it enables you to predict failures in critical high-cycle switching applications and to check valve condition remotely without visiting the field. With this unprecedented visibility to valves you can plan your maintenance actions well before problems have a major impact on the process.

The controller’s superb features and unique, embedded diagnostics guarantee high availability in your on/off applications. SwitchGuard analyses the operation of an automated on/off valve online and stores this diagnostics data for further use. With open communication technology, such as FDT/DTM, and with Metso Automation’s FieldCare field device configuration and condition monitoring tool you can use this valuable information to plan your maintenance activities better.

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Systems and software
Control Valves

nelesCVSegment

Series: RA, RB, RE
Design: Wafer, flanged
Size range: DN 25 - 150 / 1" - 6"
Pressure classes: PN 10 - 40 / ASME 150 - 300
Temperature range: -40 to +125 °C / -40 to +260 °F
Standard body materials: CF8M, WCB
Leakage rate: 1/100 of Class IV
Cv-range: 0.5 - 1540
Service: General
Options:** Reduced Cv trims, Q-Trims
Bulletin reference: 3821, 3824, 6820, 7699120

nelesCVFinetrol

Series: FC, FG
Design: Flanged
Size range: DN 25 - 250 / 1" - 10"
Pressure classes: PN 10 - 64 / ASME 150 - 600
Temperature range: -200 to +425 °C / -320 to 800 °F
Standard body materials: CF8M, WCB
Leakage rate: Class IV
Cv-range: 0.5 - 1540
Service: General, severe
Options:** Reduced Cv trims, Q-Trims, Cryogenic
Bulletin reference: 5FT20, 6E20, 7ND9120

nelesCVNeldisc

Series: L15, L6, L1 & L2
Design: Wafer, double flanged
Size range: DN 80 - 2000 / 3" - 80"
Pressure classes: PN 10 - 160 / ASME 150 - 2500
Temperature range: -200 to +600 °C / -320 to +1110 °F
Standard body materials: WCB, CF8M, WCC, 1.4581, 254SMO, 5A
Leakage rate: Class V - VI
Cv-range: 0.5 - 1520
Service: General, severe
Options:** Heat traced, 5-Disc, Cryogenic, TA-Luft packing
Bulletin reference: 2L121, 2L1220, 2L620, 6B20, 6E20, 6D26, 7ND9120

Top 5 rotary valves

Series: T5
Design: Reduced port flanged, weldends
Size range: DN 25 - 400 / 1" - 16"
Pressure classes: PN 10 - 700 / ASME 150 - 600
Temperature range: -200 to +600 °C / -320 to +1110 °F
Standard body materials: CF8M, WCB
Leakage rate: Class V - VI
Cv-range: 0.5 - 1520
Service: Heavy duty
Options:** Q-Trims, V-port ball, Cryogenic
Bulletin reference: 1T520, 6E20, 6B20, 7ND9120

E series ceramic valves

Series: E2 & E6
Design: Reduced port wafer, lagged
Size range: DN 25 - 150 / 1" - 6"
Pressure classes: PN 10 - 40 / ASME 150 - 300
Temperature range: -40 to +600 °C / -40 to +1110 °F
Standard body materials: Stainless steel, Magnesia Partially stabilized Zirconia (Mg-PSZ)
Leakage rate: Class V
Cv-range: 0.5 - 1530
Service: Erosive applications
Options:**
Bulletin reference: 1E220, 6E20, 6B20, 7ND9120
### X series ball valves
- **Series**: XA, XB, XC, XD, XT
- **Design**: Full or reduced bore, seat supported
- **Body materials**:
  - Metal and soft seats
  - CF8M, WCB, C5
- **Temperature range**: -50 to +250 °C / -60 to +480 °F
- **Standard body materials**: CF8M, WCB, C5
- **Leakage rate**: Class V or VI
- **Cv-range**: 105 - 9380
- **Options**: Steam jacket, Cryogenic & high temperature, Catalyst handling
- **Bulletin reference**: 1X20, 1X21, 1X22, 6E20, 6B20, 7SOL20, 7QZ20

### M series ball valves
- **Series**: M1, M2
- **Design**: Full bore, seat supported and trunnion mounted
- **Body materials**:
  - Metal and soft seats
  - CF8M, WCB, CG8M
- **Temperature range**: -50 to +250 °C / -60 to +480 °F
- **Standard body materials**: CF8M, WCB, CG8M
- **Leakage rate**: ISO rate B, metal seats, Bubble tight with soft seats
- **Cv-range**: 105 - 22400
- **Options**: Bulletin reference 1M120, 1M220, 6E20, 6B20, 7SOL20, 7QZ20

### D series ball valves
- **Series**: D1C, D2C, D2D, D1F
- **Design**: Full or reduced port, Stemball construction
- **Body materials**:
  - CF8M, WCB, LCC
- **Temperature range**: -200 to +600 °C / -320 to +1110 °F
- **Cv-range**: 110 - 104000
- **Options**: Steam jacket, Catalyst handling, High cycling
- **Bulletin reference**: 2D20, 6E20, 6B20, 7ECL20, 7SOL20, 7QZ20

### Neldisc butterfly valves
- **Series**: L12, L6, LW & LG, L90
- **Design**: Wafer, lug, double flanged, weld-end
- **Body materials**:
  - CF8M, WCB, LCC, 254SMO, 5A
- **Temperature range**: -200 to +600 °C / -320 to +1110 °F
- **Cv-range**: 4800 - 192000
- **Options**: Bulletin reference 2L121, 2L621, 2L9B20, 6E20, 6B20, 7ECL20, 7SOL20, 7QZ20

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* Other materials or performance criteria upon request, please see the bulletin reference
** Other options available, please see the bulletin reference
### X series ball valves
- **Series:** XA, XB, XC, XT - seat supported
- **Design:** Full or reduced bore
- **Standard body materials:** CF8M, WCB, C5
- **Leakage rate:** Class V - VI
- **Cv-range:** 105 - 9300
- **Service:** High MTBF
- **Options:** Cryogenic, high temperature
- **Bulletin reference:** 1X21, 1X22, 1X24, 1X25

### D series ball valves
- **Series:** DJC, DJD, DJF
- **Design:** Full or reduced port
- **Standard body materials:** CF8M, WCB, LCC
- **Leakage rate:** Class V - VI
- **Cv-range:** 400 - 192000
- **Service:** High MTBF, SIL 3 certified
- **Options:** Cryogenic, high temperature
- **Bulletin reference:** 1D20, 1D21

### Top entry ball valves
- **Series:** T5
- **Design:** Reduced or full port
- **Standard body materials:** CF8M, WCB
- **Leakage rate:** Class V - VI
- **Cv-range:** 0.5 - 15200
- **Service:** Emergency shut-down (ESD), and venting (ESV)
- **Options:** Cryogenic, high temperature
- **Bulletin reference:** 1T520, 1T521

### Neldisc butterfly valves
- **Series:** L6, LW & LG, LT & LL
- **Design:** Wafer, lugged, double flanged
- **Standard body materials:** CF8M, WCB, CSFM, LCC, 254SMO, 5A
- **Leakage rate:** Class V - VI
- **Cv-range:** 110 - 104000
- **Service:** High MTBF
- **Options:** Cryogenic, high temp.
- **Bulletin reference:** 2L121, 2LW20, 2L621, 1D21

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*Other materials upon request, please see the bulletin reference
**Other options available, please see the bulletin reference*
Application based products

Capping valve
- Model: PZ
- Design: Capping valve
- Size range: DN 500 - 750 / 20" - 30"
- Pressure classes: PN 16 & ASME 150
- Temperature range: upto +200 °C / +390 °F
- Body materials: CF8M
- Bulletin reference: 8PZ

nexusACE basis weight control valve
- Design: Segmented valve together with high resolution stepping motor
- Size range: DN 500 - 750 / 20" - 30"
- Pressure classes: PN 25/40, ASME 150/300
- Temperature range: -40 to +250 °C / -40 to +480 °F
- Body materials: CF8M
- Bulletin reference: 8ACE21

Pocket feeder
- Model: P1, P2
- Design: Pocket feeder construction
- Size range: DN 50 - 200 / 2" - 8"
- Pressure classes: PN 10 - 40
- Temperature range: -50 to +250 °C / -60 to +480 °F
- Body materials: CF8M, AISI 329, XM-19
- Bulletin reference: 8PF20

Actuators

E series
- Series: E1, E2
- Type: Pneumatic double-diaphragm actuator
- Actuator type: Double action, Spring return
- Pressure input: 2.8 - 10 bar / 40 - 140 psi
- Torque output: 15 - 1460 Nm / 11 - 1077 ft-lbs
- Temperature range: -40 to +120 °C / -40 to +250 °F
- Bulletin reference: 6QPX20

B series
- Series: B1C & B1J
- Type: Pneumatic rotary cylinder actuator
- Actuator type: Double action, Spring return
- Pressure input: 0.5 - 10 bar / 7 - 150 psi
- Torque output: 40 - 100000 Nm / 30 - 73800 ft-lbs
- Temperature range: -40 to +120 °C / -40 to +250 °F
- Bulletin reference: 6B20, 6B21

Quadra-Powr X
- Series: Quadra-Powr
- Type: Spring diaphragm rotary actuator
- Actuator type: Spring return
- Pressure input: 1.5 - 7 bar / 20 - 100 psi
- Torque output: 15 - 1100 Nm / 11 - 839 ft-lbs
- Temperature range: -25 to +110 °C / -13 to +230 °F
- Bulletin reference: HOPX20
## Limit Switches

### Neles Solid™
- **Type**: Limit switch
- **Compliance**: FOUNDATION Fieldbus, AS-I, DeviceNet, Modbus
- **Temperature range**: -40 to +80°C / -40 to +176°F
- **Bulletin reference**: 7SOL20

### Neles Eclipse™
- **Type**: Limit switch
- **Compliance**: FOUNDATION Fieldbus, AS-I, DeviceNet, Modbus
- **Temperature range**: -40 to +80°C / -40 to +176°F
- **Bulletin reference**: 7ECL20

### Neles Quartz™
- **Type**: Limit switch
- **Compliance**: FOUNDATION Fieldbus, AS-I, DeviceNet, Modbus
- **Temperature range**: -40 to +80°C / -40 to +176°F
- **Bulletin reference**: 7QZ20

## Valve options

### Q-ball
- **Type**: Low noise and anti-cavitation trim for ball, segment and eccentric plug valves
- **Size range**: DN 50… 900 / 2”… 36”
- **Pressure classes**: ASME 150 - 1500, PN 10 - 100
- **Materials**: CF8M, WCB
- **Bulletin reference**: 8Q20

### S-Disc
- **Type**: Noise attenuator plate for ball valves
- **Size range**: DN 25 - 1000 / 1” - 40”
- **Pressure classes**: ASME 150, 300, 600
- **Cv-range**: 7 - 4480
- **Materials**: CF8M, WCB
- **Options**: Option 1 threaded directly onto Finetrol ® or T5 valve body. Option 2 wafer style. Can be mounted between flanges.
- **Bulletin reference**: 8ATT20

### A-plate
- **Type**: Flow balancing trim for butterfly valves
- **Size range**: DN 80… 1500 / 3”… 60”
- **Pressure classes**: ASME 150 and 300
- **Cv-range**: 150 - 43800
- **Materials**: CF8M, CG8M, WCB
- **Bulletin reference**: 2S-L120

### Neles SolaR™
- **Type**: Limit switch
- **Input**: Depending on the bus solution
- **Supply Power**: Taken from the bus or separate power supply depending on the bus solution

### Neles Eclipse™
- **Type**: Limit switch
- **Input**: Depending on the bus solution
- **Supply Power**: Taken from the bus or separate power supply depending on the bus solution

### Neles Quartz™
- **Type**: Limit switch
- **Input**: Depending on the bus solution
- **Supply Power**: Taken from the bus or separate power supply depending on the bus solution
**Smart products**

**Neles ND9000®**
- **Temperature range**: -40 to +85 °C / -40 to +185 °F
- **Communication**: HART, Profibus PA, FOUNDATION FieldBus
- **Bulletin reference**: 7ND9120, 7ND9220

**Neles ValvGuard™**
- **Supply pressure**: 3.5 - 7 bar / 50 - 100 psi
- **Vibration effect**: < 1%, 2g, 5-100 Hz
- **Temperature range**: -40 to +85 °C / -40 to +185 °F
- **Options**: Leakage detection, limit switches
- **Communication**: HART
- **Bulletin reference**: 9VG20, 9VG/B20

**Neles SwitchGuard™**
- **Supply pressure**: 2,5–8,0 bar / 36–116 psi
- **Temperature range**: -40–+85 °C / -40–+185 °F
- **Communication**: HART
- **Bulletin reference**: 7SG20

**Analog positioners**

**Pneumatic positioner**
- **Series**: NP 700
- **Temperature range**: -40 to +85 °C / -40 to +185 °F
- **Bulletin reference**: NP 700

**Electropneumatic positioner**
- **Series**: NE 700
- **Temperature range**: -25 to +85 °C / -15 to +185 °F
- **Bulletin reference**: NE 700