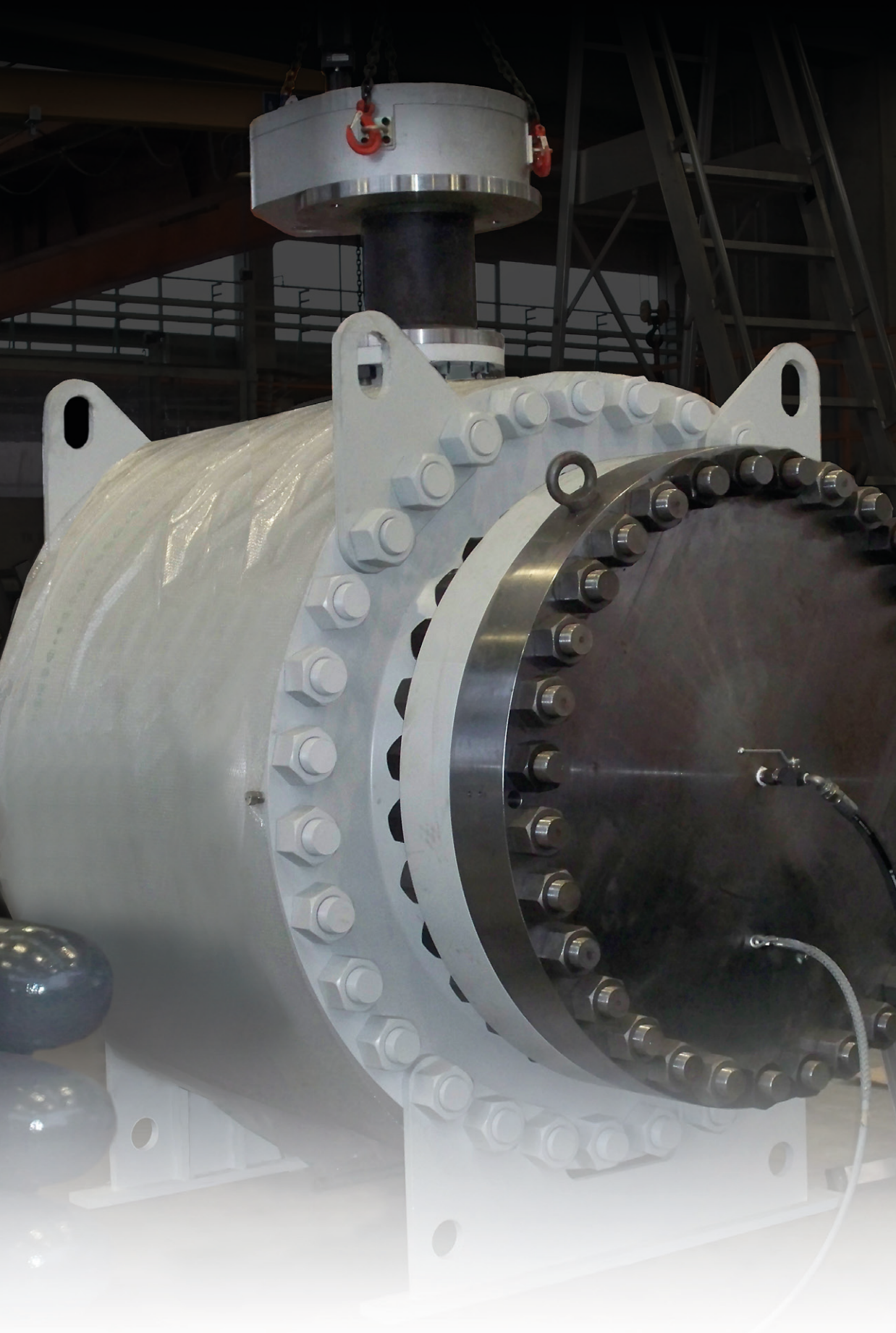


MDS

ZG

**Ball Valve Torque
Testing Equipment**



alkitronic[®]

make your work more transparent

Applications

Oil and gas industry is involved in the transport of hazardous chemicals. Therefore actuated valves must perform correctly and provide high performance. Ball valve manufacturers are responsible for testing and publishing valve torque data.

Comprehensive **reporting and documentation for the end user is of utmost importance**. Ball valves and actuators which do not work properly reduce safety during production processes and increase acquisition and maintenance costs significantly.

Advantages and *alkitronic*[®] Specials

alkitronic[®] MDS and ZG are ideal for testing all kinds of valves of all sizes. Our torque testing equipment consists of a sensor torque tool, an application software and an operation panel. It was customized to test 90° opening and closing cycles of ball valves with a tool torque range of central gear up to 200,000 Nm.

alkitronic[®] MDS and ZG outperform international standards of traceability of torque values, quality and reliability. These are **the key factors to prevent failures effectively**. **Smoothly working valves increase productivity as well as plant safety and reduce maintenance costs at the same time**. The documentation of torque values helps to **identify and avoid threatening risks** (e.g. running costs). Moreover, it enables you to prove the necessary torque to move the ball valve with different loads.

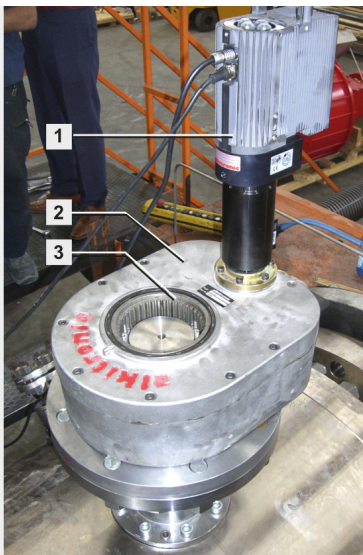
Specifications

alkitronic[®] ESDx 200

Sensor tool, consistent torque accuracy in all international power supplies with maintenance free, brushless synchronous motor.

Electrical data

Universal input 100 V - 253 V, frequency 45 Hz - 66 Hz
Power max. 2000 W, protection category I.



(1) Sensor torque tool *alkitronic*[®] ESDx 200
(2) Central gearing *alkitronic*[®] ZG 225
(3) Customized adaptor



alkitronic[®] cardos OP
Operation interface with LC Display and menu guidance

- Remote control to start/stop the cycle
- Choose of parameter settings
- Data transmitting via USB

Measurement and Documentation System



alkitronic[®] cardos OS application software

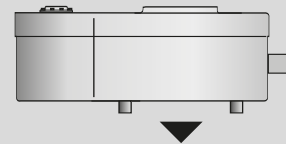


alkitronic[®] ESDx 200 sensor tool, suitable for all *alkitronic*[®] ZG models

D = 54 mm

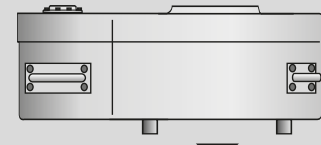


alkitronic[®] cardos OP operation panel



alkitronic[®] ZG central gear models

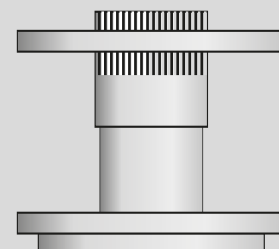
ZG 225
torques up to 22,000 Nm



ZG 1150
torques up to 90,000 Nm



ZG 1250
torques up to 200,000 Nm



Customized torque reaction absorber

Ball valve shaft

Application Software, Data Visualisation, Documentation

Application Software *CARDOS OS*

Typical application:

Determine breakaway torque and continuous torque of ball valves.

Features:

- Recording and documentation of torque during the valve opening or closing process
- Continuous rotation 90° CW or CCW
- Measuring increment 1°

The illustration on the right shows the screen menu "D-Protocols" displaying the ball valve opening process with 90 measuring values, one for each degree.

It provides graphical and tabular data display. Data can be printed straightaway from the software interface.

alkitronic cardos OS

D Protocols No Filter Set

Step	Torque N	Angle	Torque m	Torque m	Angle ball	Count
1	1	90	1	22500	0	90
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0

Count	Step
1	1
2	2
3	3
4	4
5	5

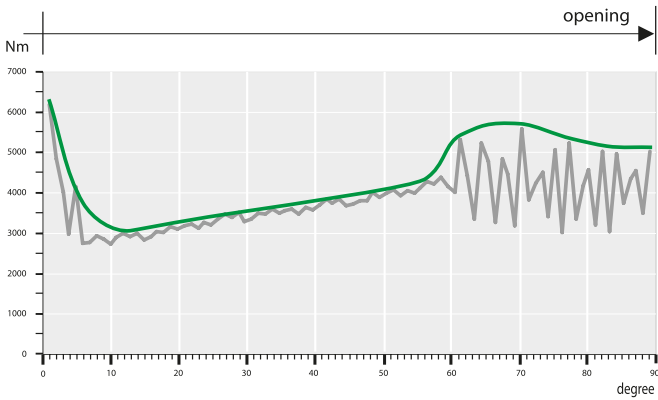
Project Description: Ball valve ccw - pipe 2
 Operator: Jerome Panda
 Object/Type: as4P2 2354 77
 Parameter Set: @W@ valve ccw
 Tool Type Serial Number: ESDx200 1627-68106
 Cardos OP S-No.: cardos OP #88003
 Unit: Nm
 Pump Type Serial Number: CCW
 1 Tool

Bar chart showing torque data over 90 degrees. The y-axis ranges from 0 to 8000 Nm. The x-axis ranges from 0 to 90 degrees. The chart shows a peak torque of approximately 7000 Nm at the beginning of the opening process, followed by a sharp drop and then a relatively stable torque around 3000-4000 Nm.

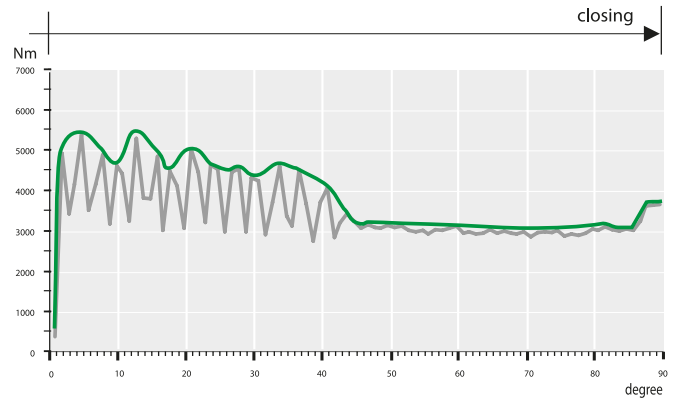
Buttons: << Back, Print Protocol, Delete Filter

Generate Line Charts with Flattened Torque Data for Your Customers!

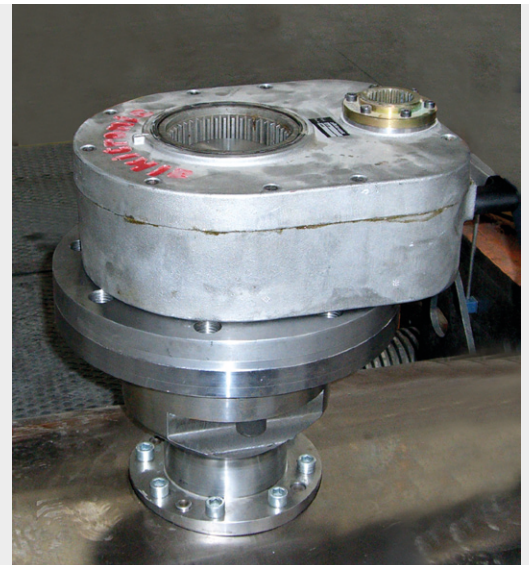
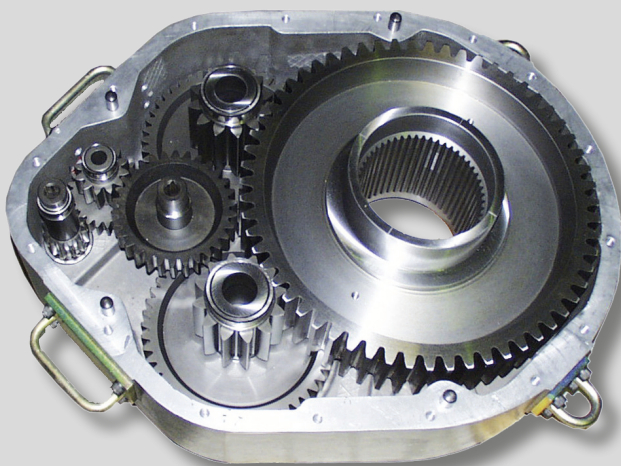
Valve opening process



Valve closing process



Inside view *alkitronic® ZG 1250*



alkitronic® provides all drive technologies.

Extract from our product range:

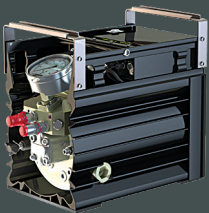
✓ **ELECTRIC**



✓ **PNEUMATIC**



✓ **HYDRAULIC**



✓ **MANUAL**



alkitronic®

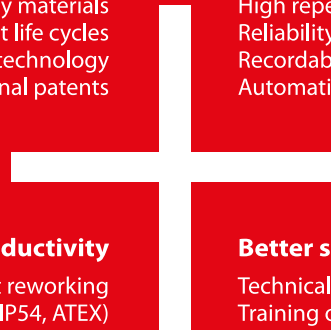
YOUR PLUS FOR MORE PERFORMANCE

Increased quality

Premium production
Use of high-quality materials
Long product life cycles
30 years' experience in bolting technology
Made in Germany – international patents

Increased precision

Precise, customer-specific torques
High repeatability
Reliability in permanent operation
Recordable tightening outputs
Automatic shut-off



Increased productivity

Quicker tightening without reworking
No environmentally caused failures (IP54, ATEX)
High work safety
Simple use – easy instruction
Low maintenance and cost efficient

Better service

Technical advice on site
Training offers
Manufacturer's calibration and certification
Lifecycle support
Spare part and repair service

TORQUE POWER WORLDWIDE

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Development, Production and Distribution of Bolting Systems

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