



PROTEA
GROUP

ENGINEERING CAPABILITIES

taylor-made
approach

concept
design

multi-discipline
design office

experienced
engineers

wide-range design
verification

state-of-the-art
software



PROTEA[®]

AXXIA

DESIGN / OFFICE



PERSONEL

- 4** STRUCTURAL ENGINEERS
- 14** MECHANICAL ENGINEERS
- 4** HYDRAULIC ENGINEERS
- 8** SENIOR ENGINEERS
- 4** ELECTRICAL ENGINEERS
- 4** PROCESS ENGINEERS

DESIGN APPROVAL



HYDRAULIC SYSTEMS

Control Systems

- › Manual
- › Hydraulic
- › Electro-hydraulic
- › Remote/radio
- › Mixed, e.g. radio+manual

Devices

- › Devices with own hydraulic power unit
- › Devices supplied from external source
- › Hydraulic power unit (self contained)

HPU Devices and Controls

- › Electric motor
- › Diesel engine
- › Pneumatic motor
- › Load sensing (ls)
- › Pressure compensated (pc) ls + torque limiter
- › Pc + torque limiter

Connections Systems

- › Jic 37 (iso 8434-2)
- › F37 (iso 6162-1/-2)
- › Vossform (iso 8434-1)
- › Walform (iso 8434-1)
- › Other systems (on customer's request,
- › E.G. Eo-2 iso8434-1, eo2-form, cutting ring, etc.)

ELECTRICAL SYSTEMS

Switchboards & Junction Boxes

- › Power
- › Control

Drives

- › Electro-hydraulic
- › Electric

PLC & safety PLC (EN 13849)

- › Siemens
- › Danfoss
- › Schneider
- › Mitsubishi
- › Other systems (on customer's request, e.g. Omron, allen-bradley, etc.)

Human Machine Interface

- › Touch panel
- › Display
- › Control stand
- › Radio control

Hazardous Area Solutions

- › ATEX / Ex rated systems
- › ATEX / Ex rated components
- › Customized Ex switchboards
- › Certified engineers

MECHANICAL SYSTEMS

Basic engineering

- › Design basis record
- › Calculation of loads
- › Preliminary design

Mechanisms

- › Electric
- › Hydraulic
- › Pneumatic

Strength calculations

- › Main structure
- › Detailed calculations
- › Buckling
- › Fatigue
- › FEM analysis components
- › selection (motors, gearboxes, cylinders, bearings etc.)
- › Calculations report

Software

- › AutoCAD
- › Autodesk Robot Structural Analysis
- › Autodesk Inventor
- › Dlubal Plate-Buckling
- › Dlubal Shape-Thin
- › Femap with NX Nastran **and more**



PROTEA
GROUP

ABOUT

140 employees

established 2001

30 design engineers

over 200 projects

20 years experience

worldwide clients



Head office Protea

Galaktyczna 30A
80-299 Gdansk, Poland



Design office & Factory

Ligota Gorna, Gorzowska 18
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Head office Axxia

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