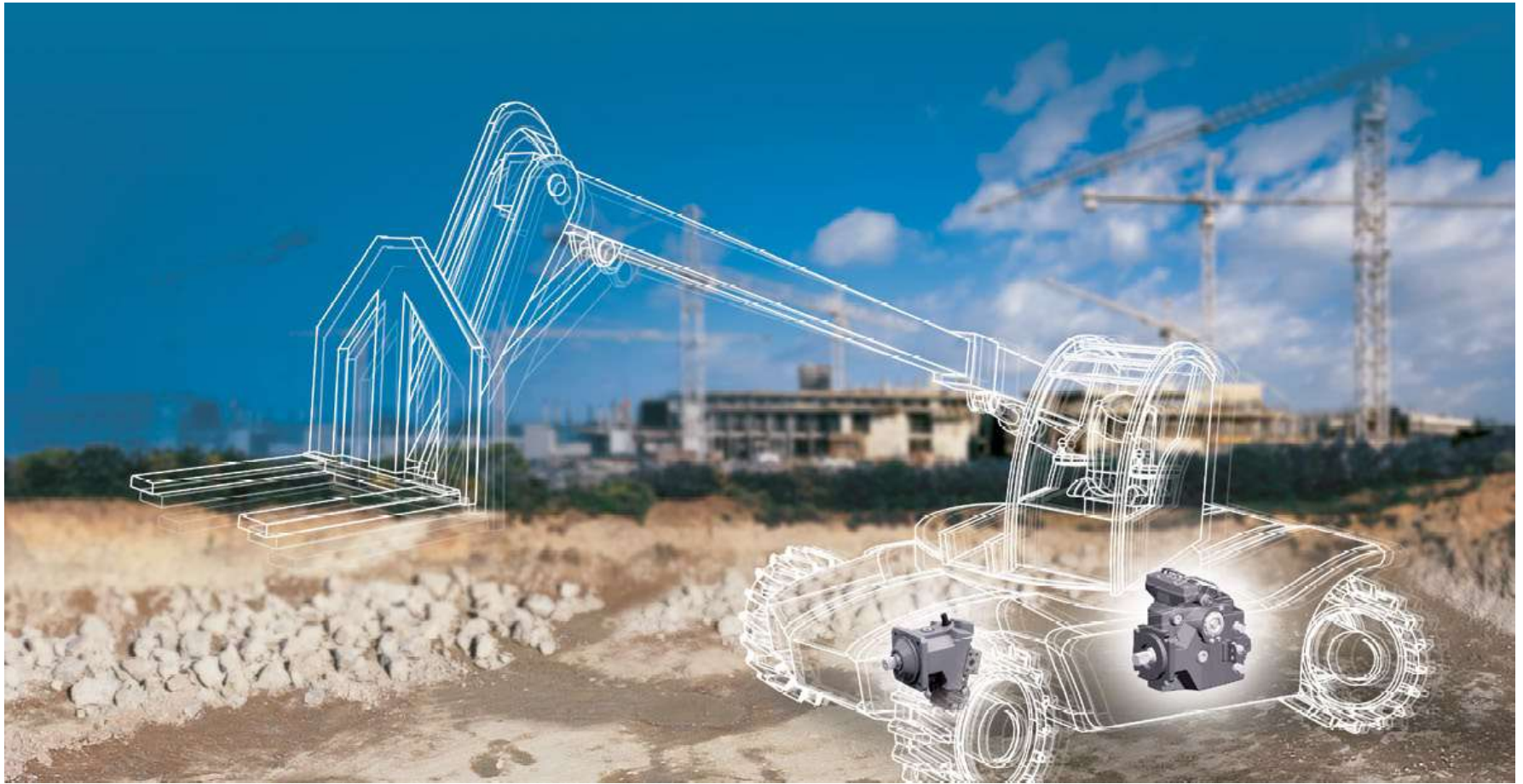


H1 Product Family



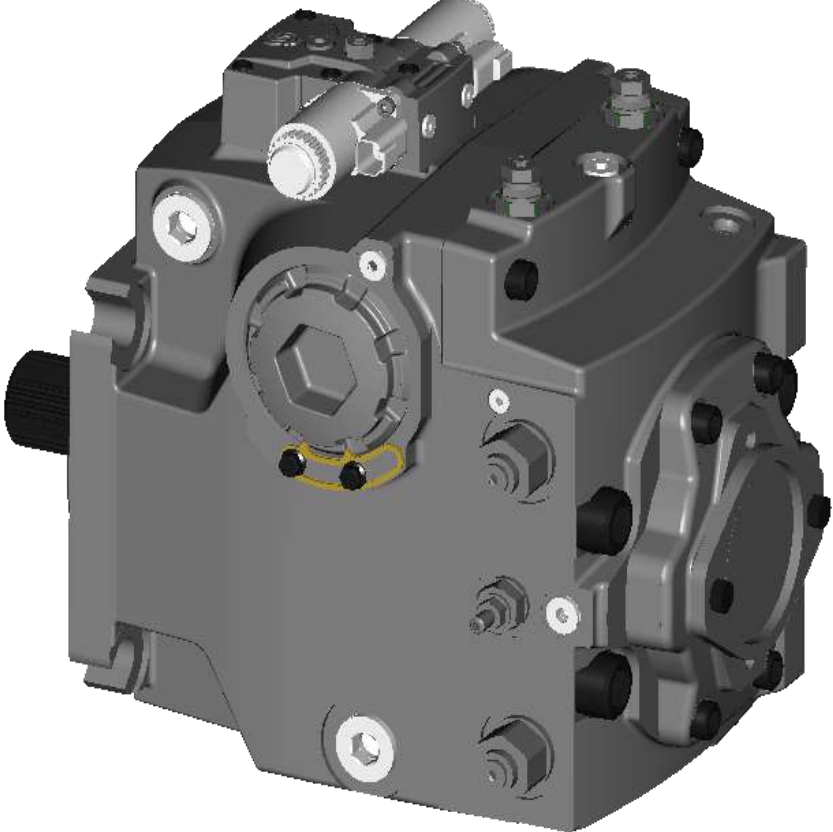
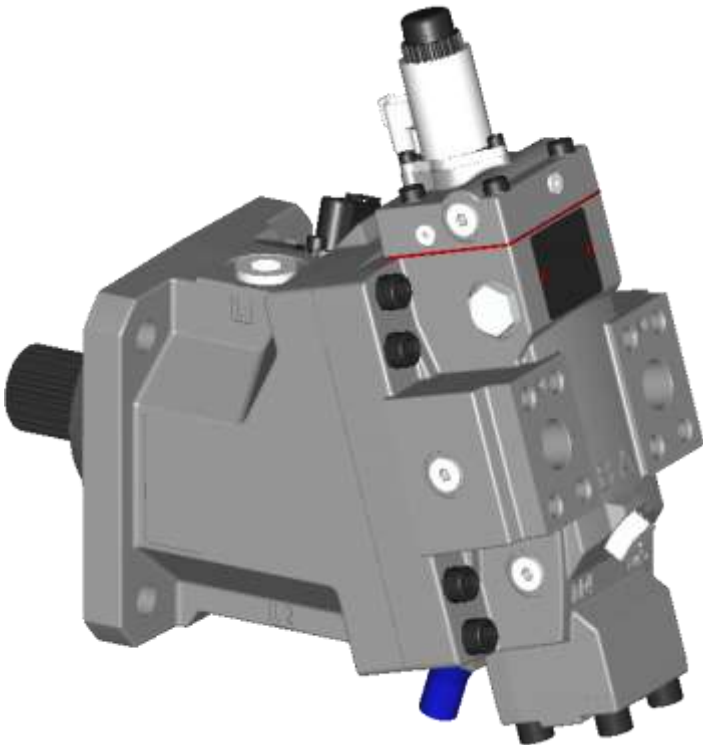
H1 Product Family

Agenda

- H1 Product Family
- H1 Axial Piston Pumps
- H1 Bent Axis Motors
- H1 Hydraulic System Circuit
- H1 Automotive Control System

H1 Product Family

Pumps and Motors



H1 Product Family

Efficiency, Functionality, and Value

- Greater overall vehicle efficiency
- SIL 2 certified Automotive Control (H1 AC)
- Optimized for modern control systems
- Improved fuel economy and reduced heat load
- Proven operating performance and increased productivity

H1 Pumps - Product Overview

- Heavy and Medium Duty System
450 bar max. working pressure
- Electric displacement control (EDC)
- Forward-Neutral-Reverse (FNR)
- Non Feedback Proportional Electric (NFPE)
- Automotive Control (AC)
- Improved reliability and performance
- More compact and lightweight

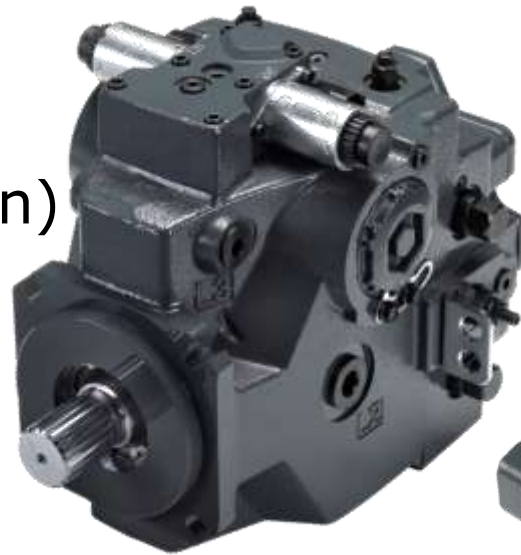


H1 Product Family

H1 Pump: Displacements (Single & Tandem)

Single

- 45cm³/53cm³
- 60cm³/68cm³
- 69 cm³(available soon)
- 78cm³
- 89cm³/ 100cm³
- 115cm³/130cm³
- 147cm³/165cm³
- 210 cm³/250 cm³(available soon)



Tandem

- 45cm³/53cm³



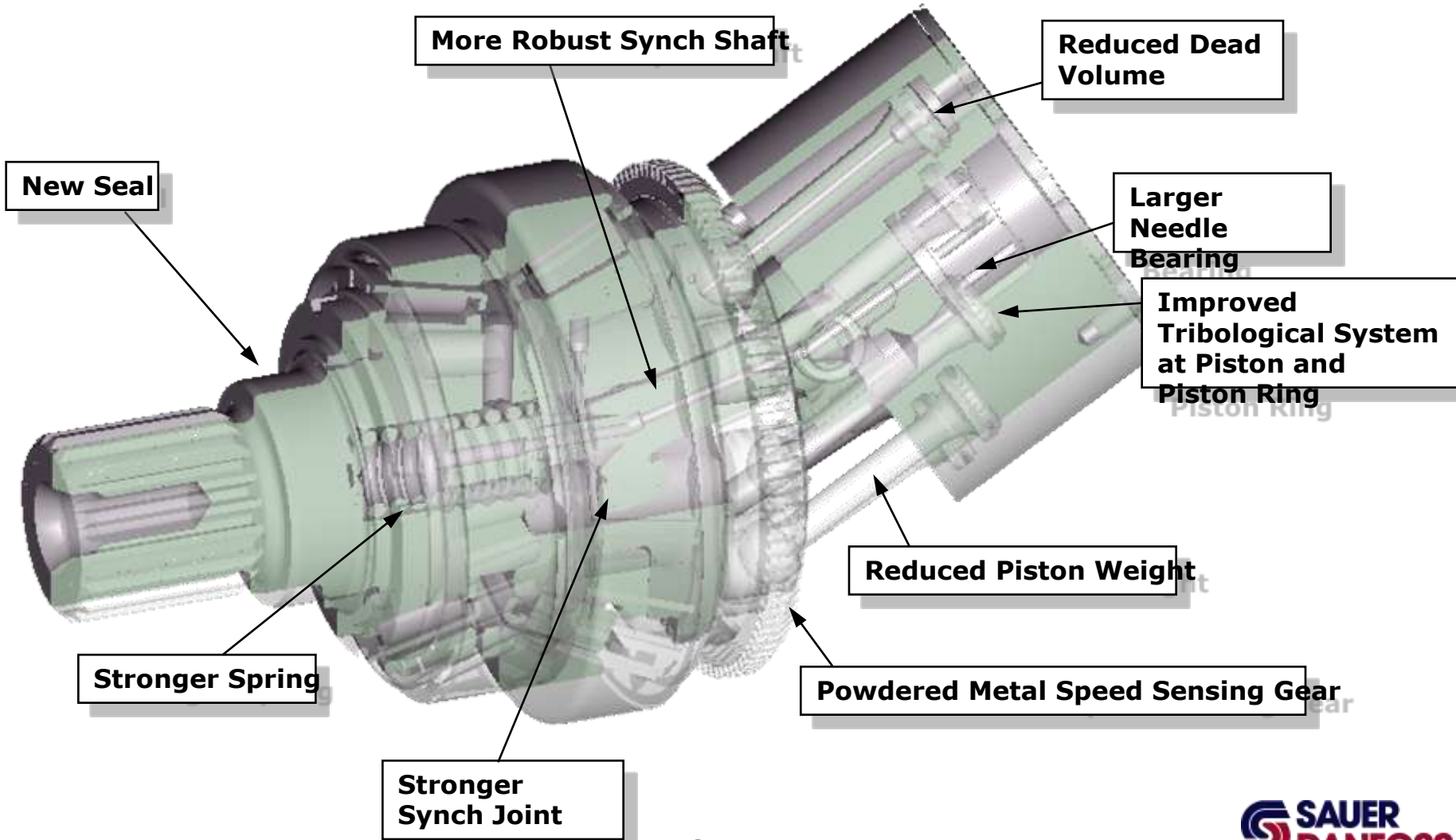
H1 Bent Axis - Product Overview

- Evolution of the successful S51 & S51-1 product family
- HyTron Bent Axis Frame sizes:
 - **60, 80, 110, 160 & 250 cc**
- Maximum Pressure 480 bar
- Design optimized for electric controls
- 0° capability
- Shortest unit length on the market
- All electric components are IP67 & IP69K rated
- Quality Goal 250 DPM



H1 Product Family

H1 B: Rotating group



H1 Automotive Control System

Introduction

- Optimized for H1 family of pumps and motors
 - Compatible with multiple Sauer-Danfoss motor families
- PLUS+1™ Compliant
- PLUS+1™ Service Tool configurable
- Compatible with Sauer-Danfoss HMI products
 - Joysticks, Foot Pedals, Displays
- Pump control, controller available across H1P family

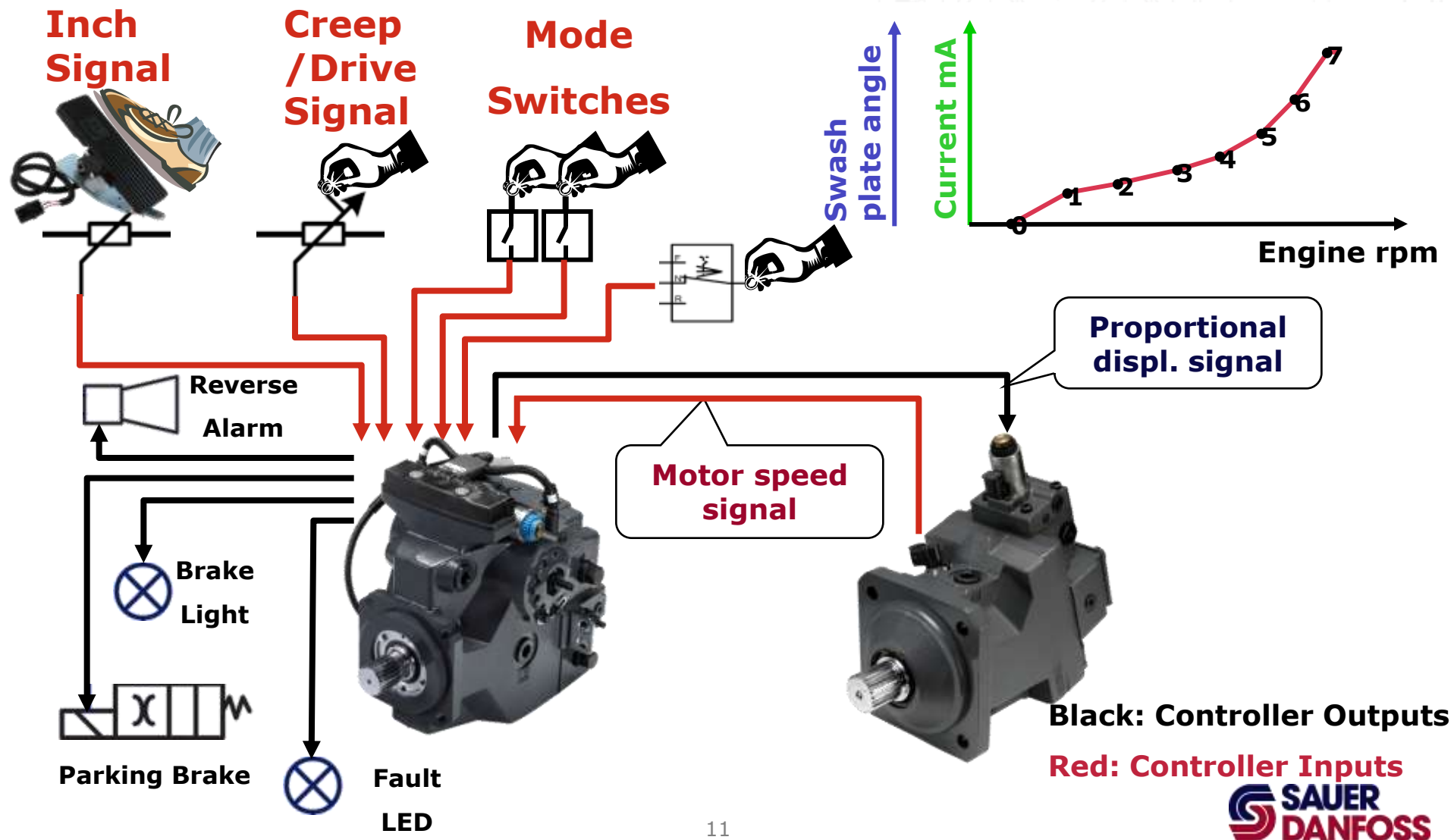


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H1 Automotive Control System

H1P-AC Automotive Functionality

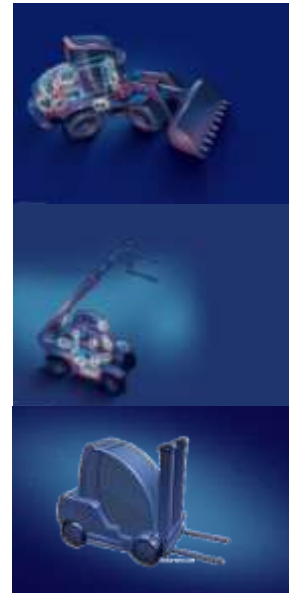
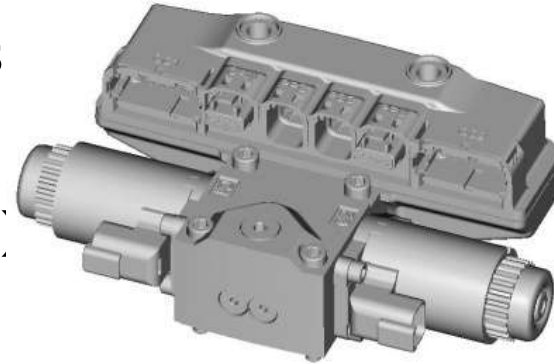


H1 Automotive Control System

Complete System Functionality

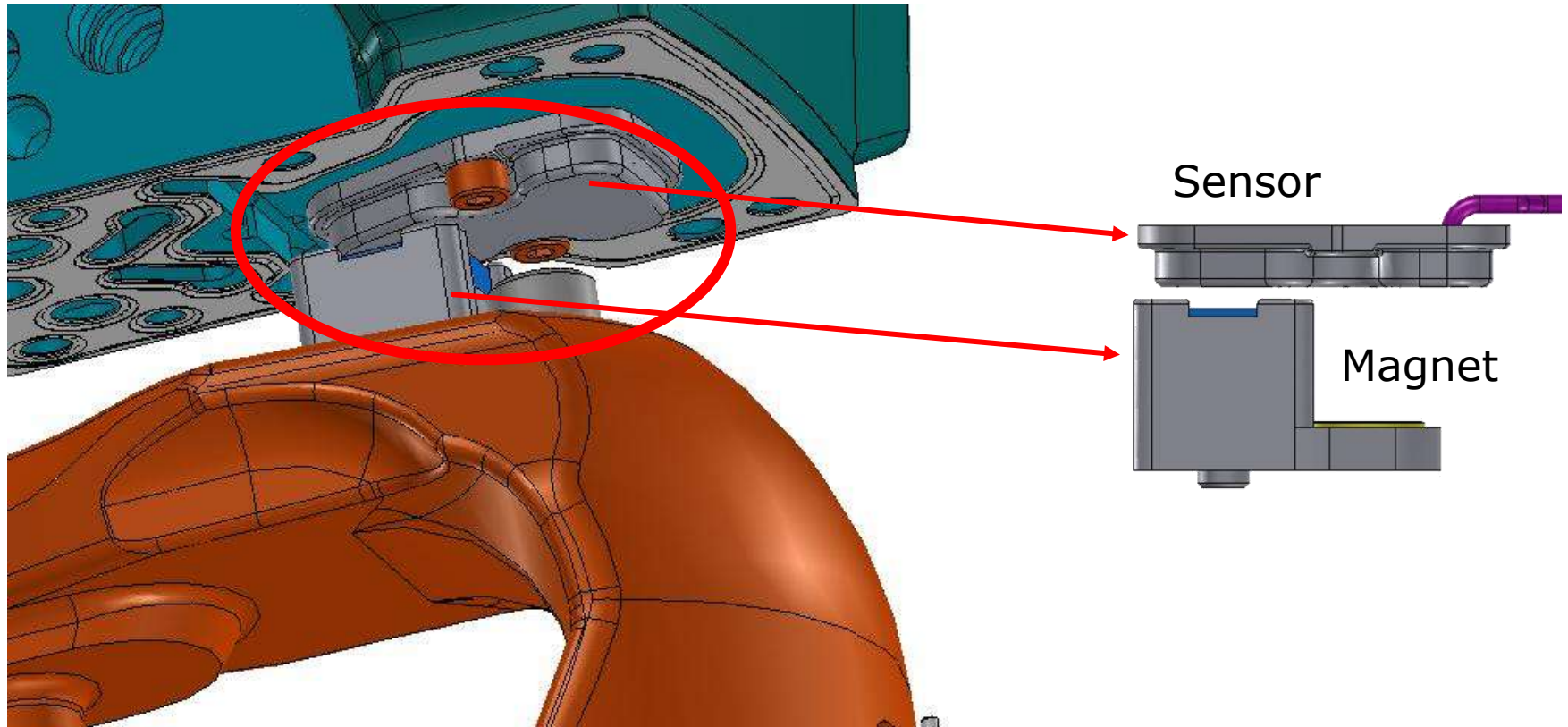
(AC-1)

- 4 Selectable Transmission-Modes
 - Automotive
 - Creep-Automotive
 - Non-Automotive (load dependent)
- Hydrostatic Braking (Inching)
- Engine Over-Speed Protection
- Hydraulic-Motor Over-Speed Protection
- Temperature, Pump Hysteresis Compensation
- Anti-Stall
- Constant Speed Control (Flow or RPM)
- Parking Brake or Backup Alarm
- SIL2 certification (IEC 61508)
- CAN Interface
 - J1939 Engine Interface, PLUS+1™ Devices, Service & Diagnosis



H1 Automotive Control System

Detail – Pump Swash Angle Sensor (AC-2)

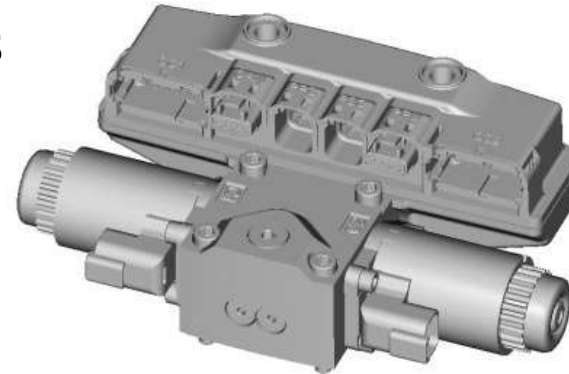


H1 Automotive Control System

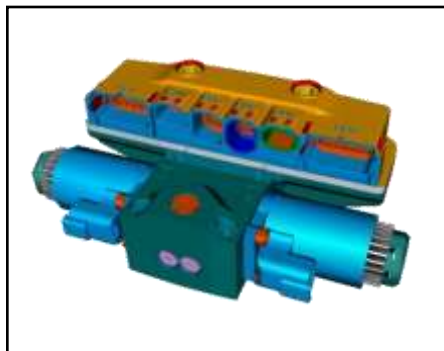
Complete System Functionality

(AC-2)

- 4 Selectable Transmission-Modes
 - Automotive
 - Creep-Automotive
 - Non-Automotive (EDC style)
- Hydrostatic Braking (Inching)
- Engine Over-Speed Protection
- Hydraulic-Motor Over-Speed Protection
- Temperature, Pump Hysteresis Compensation
- Anti-Stall
- Constant Speed Control (Flow or RPM)
- Parking Brake or Backup Alarm
- SIL2 certification (IEC 61508)
- CAN Interface
 - J1939 Engine Interface, PLUS+1™ Devices, Service & Diagnosis
- Pump Swash Angle Control
- Breakaway motor torque override



Thank you for your kind attention!



COMMITMENT · RELIABILITY
What really matters is inside
INNOVATION · OPENNESS

