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A member of



 **walvoil**
FLUID POWER EMOTION



Innovation · Continuity · Integration
It is Power

A member of



Welcome to Ifpe Conxpo 2017

High performance, Efficiency, Flexibility and **Safety** are the goals **Walvoil** keeps on following to offer increasingly interconnected components tailor-made for construction machinery.

Thanks to the recent merger in Walvoil Spa (Italy), **Hydrocontrol** and **Galtech** experiences will enrich our company's offer to the market.



In North America, a growing reality

Effective 1st January 2017, Walvoil Fluid Power Corp. and **Hydrocontrol Inc.** have merged into **Walvoil Fluid Power Corp.**

Together with **Galtech Canada**, other company part of Walvoil and member of Interpump Group, they can now express a more competitive reality whose aim is to lead Walvoil growth in the North American Fluid Power market.

Innovation through **Continuity** and **Integration** is our mission.



Walvoil Fluid Power Corp.
Tulsa . OK



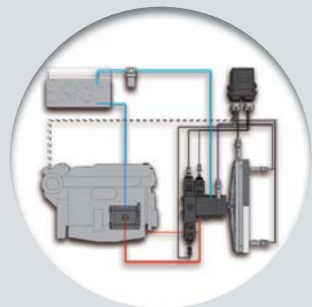
Walvoil Fluid Power Corp.
Hydrocontrol Business Unit - Red Wing . MN



Galtech Canada Inc.
Terrebonne . Qc



Electro-hydraulic Fan Drive Systems



2SP



2SM + FANR



PVD200



CED400W



FUNCTION: Fan cooling application for mobile equipment

COMPONENTS: **2SP** Gear pump • **2SM+FANR** Fan Drive motor • **PVD200** Proportional valve driver or **CED400W** Electronic Control Unit fully programmable through **PHC STUDIO** (Integrated Development Environment)

FEATURES: Fail-safe design in case of electrical failure • Anti-cavitation valve and proportional relief valve • Optional reverse valve for automatic radiator cleaning • Versatile and precise control through electronic control unit on machine CAN bus network

Mini-Excavator Application

2SP+2SP+2SP TCC



SVM405



RCT



DPX050



SDS100



FUNCTION: Responsive and ergonomic control system for Mini-Excavator
COMPONENTS: **2SP+2SP+2SP TCC** Triple gear pump • **SVM405** Hydraulic remote control, double axis • **RCT** Foot pedal hydraulic remote control • **DPX050** Full Flow Sharing sectional control valve or **SDS100** Sectional directional control valve



Telehandler Application

CJW • MTH



CED400W



PHC
STUDIO

DPX160



SDS140



FUNCTION: Versatile and ergonomic CAN bus system for Telehandler
COMPONENTS: **CJW** CAN bus electronic joystick • **MTH** Ergonomic handle with up to 10 push-buttons and up to 3 rollers • **CED400W** Electronic Control Unit fully programmable through **PHC STUDIO** (Integrated Development Environment) • **DPX160** Full Flow Sharing sectional control valve or **SDS140** Open/Closed center sectional directional control valve



Compact Wheel Loader Application

AJW • MTH



CED400W



PHC
STUDIO

DPX100



FUNCTION: Ergonomic, precise and safe control system for Compact Wheel Loader
COMPONENTS: **AJW** Analog electronic joystick • **MTH** Ergonomic handle with up to 10 push-buttons and up to 3 rollers • **CED400W** Electronic Control Unit fully programmable through **PHC STUDIO** (Integrated Development Environment)
 • **DPX100** Full Flow Sharing sectional control valve with Hall effect spool position sensors optional for functional safety



Rough Terrain Crane Application

CJW • MTH



CED400W



PHC
STUDIO

EX54



EX72



FUNCTION: Ergonomic control combined with precise Flow Sharing technology for Rough Terrain Cranes
COMPONENTS: **CJW** CAN bus electronic joystick • **MTH** Ergonomic handle with up to 10 push-buttons and up to 3 rollers • **CED400W** Electronic Control Unit fully programmable through **PHC STUDIO** (Integrated Development Environment)
 • **EX72** or **EX54** Full Flow Sharing sectional control valves



Skid Steer Loader Application

AJW • MTH



CED400W



SK8



FUNCTION: Advanced electronic control system for Skid Steer Loader

COMPONENTS: **AJW** Analog electronic joystick • **MTH** Ergonomic handles with up to 10 push-buttons and up to 3 rollers • **CED400W** Electronic Control Unit fully programmable through **PHC STUDIO** (Integrated Development Environment)
• **SK8** Monoblock directional control valve



Backhoe Loader Application

SVM405



DVS14



FUNCTION: Efficient hydraulic control system for Backhoe Loader

COMPONENTS: **SVM405** Hydraulic remote control, double axis
• **DVS14** Open/Closed center sectional directional control valve



Aerial Lift Application

CJW



CED400W



SDE030-SDE060



FUNCTION: Safe and flexible electronic control system for Aerial Lift
COMPONENTS: **CJW** CAN bus electronic joystick • **CED400W** Electronic Control Unit fully programmable through **PHC STUDIO** (Integrated Development Environment) • **SDE030-SDE060** Sectional directional control valve with direct acting solenoid



Backhoe Application

TR55



FUNCTION: Compact e precise Backhoe control valve
COMPONENTS: **TR55** Monoblock directional control valve





COMPONENTS

2SP

Gear pump, Group 2 series

Display **4**



WORKING CONDITIONS: Displacements: from 4 cm³/rev - 0.24 in³/rev to 31.5 cm³/rev - 1.92 in³/rev • Max. continuous pressure: up to 250 bar - 3600 psi
Max. peak pressure: up to 290 bar - 4200 psi

FEATURES: Aluminium and cast iron flanges and covers • Standard and short flange kits • Single suction port • Possibility to combine all available pump groups



COMPONENTS

3GP

Gear pump, Group 3 series

Display **2**



WORKING CONDITIONS: Displacements: from 19.3 cm³/rev - 1.18 in³/rev to 77.2 cm³/rev - 4.71 in³/rev • Max. continuous pressure: up to 250 bar - 3600 psi
Max. peak pressure: up to 300 bar - 4350 psi

FEATURES: Cast iron flanges and covers • Standard and short flange kits • Single suction port • Possibility to combine all available pump groups





COMPONENTS

2SP+2SP+2SP TCC

Triple gear pump, Group 2 series

Display **3**



WORKING CONDITIONS: Displacements: From 4 cm³/rev - 0.24 in³/rev to 31.5 cm³/rev - 1.92 in³/rev • Max. continuous pressure: up to 250 bar - 3600 psi
Max. peak pressure: up to 290 bar - 4200 psi

FEATURES: Aluminium and cast iron flanges and covers • Standard and short flange kits • Single suction port • Possibility to combine all available pump groups.

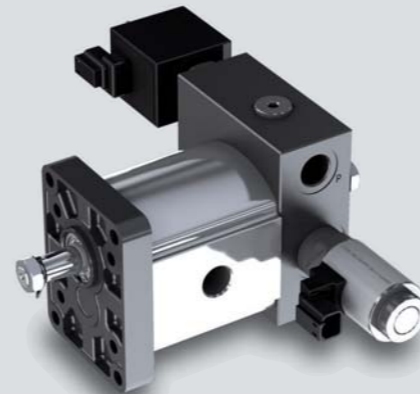


COMPONENTS

2SM+FANR

Unidirectional and reversible Fan Drive motor

Display **4**



WORKING CONDITIONS: Displacements: from 4 cm³/rev - 0.24 in³/rev to 31.5 cm³/rev - 1.92 in³/rev • Max. continuous pressure: up to 230 bar - 3350 psi

FEATURES: Built in proportional pressure relief valve • Anti-cavitation valve and 4 way on-off solenoid for reverse rotation direction • Special outrigger bearings for high axial loads • To be combined with **CED400W** Electronic Control Unit, temperature and speed sensors

AMH - MTH

Multifunction handles

Display **1**



WORKING CONDITIONS: Voltage supply: 8 ... 32 V
Working temperature: from -40 to +85°C / from -40 to +185°F

FEATURES: Ergonomic design for a high comfort level • Functional Safety (rollers): Cat.2, PL d / SIL 2 capable • Easily customizable with rollers and push buttons of different colours
MTH: Up to 10 push-buttons and up to 4 rollers • Proportional controls on front and operator side • Right and left hand configurations • Capacitive operator presence detection with backlight illumination
AMH: Up to 10 push-buttons, 1 roller and 3 LEDs • Proportional control on front or left side



AJW

Analog electronic joystick

Display **1**



WORKING CONDITIONS: Voltage supply: 8 ... 32 V • Working temperature: -40 ... +85°C / -40... +185°F • Weather protection: IP67/69k

FEATURES: Single and redundant Analog output • Hall effect, heavy duty, long life • Electrical/Mechanical life: >10⁶ operations for each axis • EMI/RFI: 100V/m • Functional Safety (axis and rollers): Cat.2, PL d / SIL 2 capable • Compact design for easy cab installation • Single and double axis available • Suitable for all Walvoil handles



CJW

CAN bus electronic joystick

Display **1**



WORKING CONDITIONS: Voltage supply: 8 ... 32 V • Working temperature: -40 ... +85°C / -40... +185°F • Weather protection: IP65

FEATURES: Hall effect, Heavy Duty, Long Life • CAN bus protocols: CANopen, SAE J1939, ISOBUS and CANopen Safety • Redundant diversity option: CANbus + Analog
 • Electric/mechanical life: >10⁶ operations for each axis • EMI/RFI: 100 V/m
 • Functional Safety: Cat.2, PL c/d / SIL 1 capable • Compact design for easy cab installation
 • Single and double axis available • Suitable for all Walvoil handles

SVM405

Hydraulic remote control

Display **3**



WORKING CONDITIONS:
 Nominal flow rating: 20 l/min – 5.3 US gpm
 Max. pressure: 100 bar – 1450 psi

FEATURES: Double axis with damping system • Low effort actuation • Wide selection of pilot curves and range of handles



COMPONENTS

SVM102

Hydraulic remote control

Display **3**



WORKING CONDITIONS: Nominal flow rating: 20 l/min – 5.3 US gpm
Max. pressure: 100 bar – 1450 psi

FEATURES: Double axis with damping system • Low effort actuation • Wide selection of pilot curves and range of handles



COMPONENTS

FU

Feed Units

Display **3**



WORKING CONDITIONS: Nr of outlet: up to 4 • Nominal flow rating: up to 60 l/min – 16 US gpm • Max. input pressure: up to 350 bar – 5100 psi

FEATURES: Pressure relief and pressure reducing valves available on inlet and pressure lines • Accumulator option

RCT

Foot pedal hydraulic remote control

Display **3**



WORKING CONDITIONS:

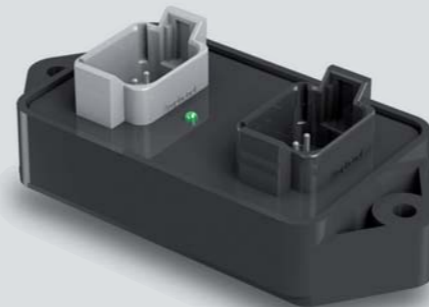
Nominal flow rating: 12 l/min – 3.2 US gpm
Max. pressure: 100 bar - 1450 psi

FEATURES: Wide selection of pilot curves and various types of foot pedals

PVD200

Proportional valve driver

Display **1**



WORKING CONDITIONS: Voltage supply: 8 ... 32 V

Working temperature: from -40 to +85°C / from -40 to +185°F
Weather protection: IP67/69k

FEATURES: 4 analog inputs • 2+2 proportional PWM outputs • Heavy duty Deutsch DT connectors • CANopen and SAE J1939 protocols

CED252

Electronic control unit

Display **1**



WORKING CONDITIONS: Voltage supply: 9 ... 16 V
 Working temperature: from -40 to +85°C / from -40 to +185°F
 Weather protection: IP67/69k

FEATURES: 11 analog inputs / 1 digital inputs • 2+2 proportional PWM outputs
 • 5 On/Off outputs • Heavy duty Deutsch connectors • ISOBUS, CANopen and
 SAE J1939 protocols • Functional Safety: Cat.2, PL c/d, SIL 1 capable



CED160

Electronic control unit

Display **1**



WORKING CONDITIONS: Voltage supply: 9 ... 16 V
 Working temperature: from -40 to +85°C / from -40 to +185°F
 Weather protection: IP67/69k

FEATURES: 3 analog inputs / 6 digital inputs • 1+1 proportional PWM outputs
 • 6 on/off outputs • Heavy duty Deutsch DTM connectors • CANopen and SAE J1939
 protocols • Functional Safety: Cat.2, PL c/d, SIL 1 capable



CED400W

Electronic control unit

Display **1** **4**



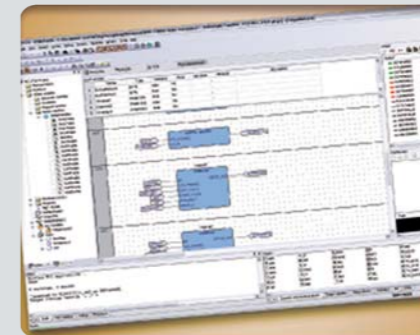
WORKING CONDITIONS: Voltage supply: 8 ... 32 V • Working temperature: -40 ... +85°C / -40... +185°F • Weather protection: IP67/IP69K

FEATURES: 4 analog inputs / 2 digital inputs • 4+4 proportional PWM outputs
 • Heavy duty Deutsch DTM-12p connectors • CANopen and SAE J1939 protocols
 • Functional Safety: Cat.2, PL c/d, SIL 1 capable • Programmable according to IEC 61131 standard through PHC STUDIO

PHC STUDIO

Integrated Development Environment

Display **1**



FEATURES: PHC STUDIO is an Integrated Development Environment (IDE) that supports the 5 programming languages defined in IEC 61131 standard (ST, FBD, LD, IL and SFC)
 • The CED400W electronic control unit series is programmable through PHC STUDIO



COMPONENTS

DPX050

Full Flow Sharing sectional control valve

Display **3**



WORKING CONDITIONS: Nominal flow rating on working ports: 50 l/min - 13 US gpm
Max. pressure on working ports: 350 bar - 5100 psi

FEATURES: For Open Center and Load Sensing circuits • Proportional hydraulic and electrohydraulic controls • Hall effect sensors for spool position



COMPONENTS

DPX100 - DPX100HF

Full Flow Sharing sectional control valve

Display **5**



WORKING CONDITIONS: Nominal flow rating on inlet ports: > 120 l/min - > 32 US gpm

• Nominal flow rating on working ports: up to 120 l/min - 32 US gpm

Max. pressure (on HP and HF sections): up to 420 bar - 6100 psi

FEATURES: For Open Center and Load Sensing circuits • High pressure option
• Optional inlet sections with LS priority valve • Proportional electrohydraulic controls with Hall effect sensors for spool position • High flow section available and stackable with DPX100 standard valve • Proportional mechatronic control



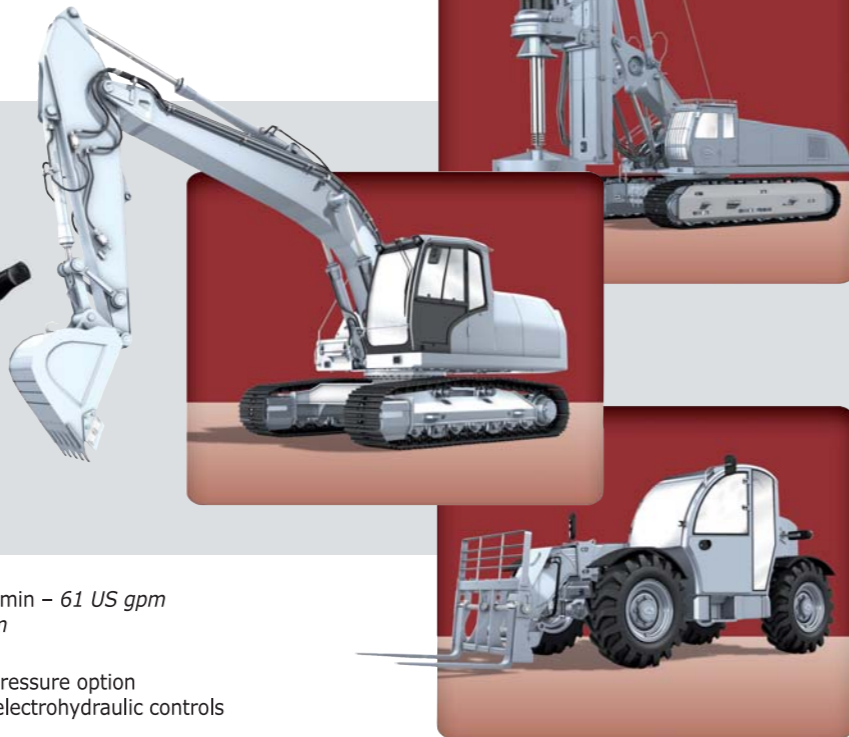
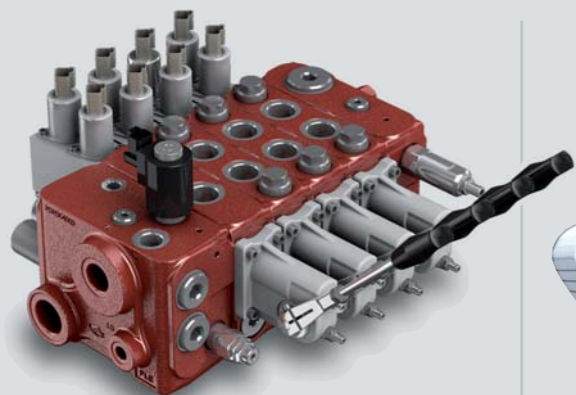


COMPONENTS

DPX160

Full Flow Sharing sectional control valve

Display **5**



WORKING CONDITIONS: Nominal flow rating on inlet port: 230 l/min – 61 US gpm
Nominal flow rating on working ports: 160 l/min – 42 US gpm
Max. pressure on working ports: up to 420 bar - 6100 psi

FEATURES: For Open Center and Load Sensing circuits • High pressure option
• Optional inlet sections with LS priority valve • Proportional electrohydraulic controls with Hall effect sensors for spool position



COMPONENTS

SDS100

Sectional directional control valve

Display **3**



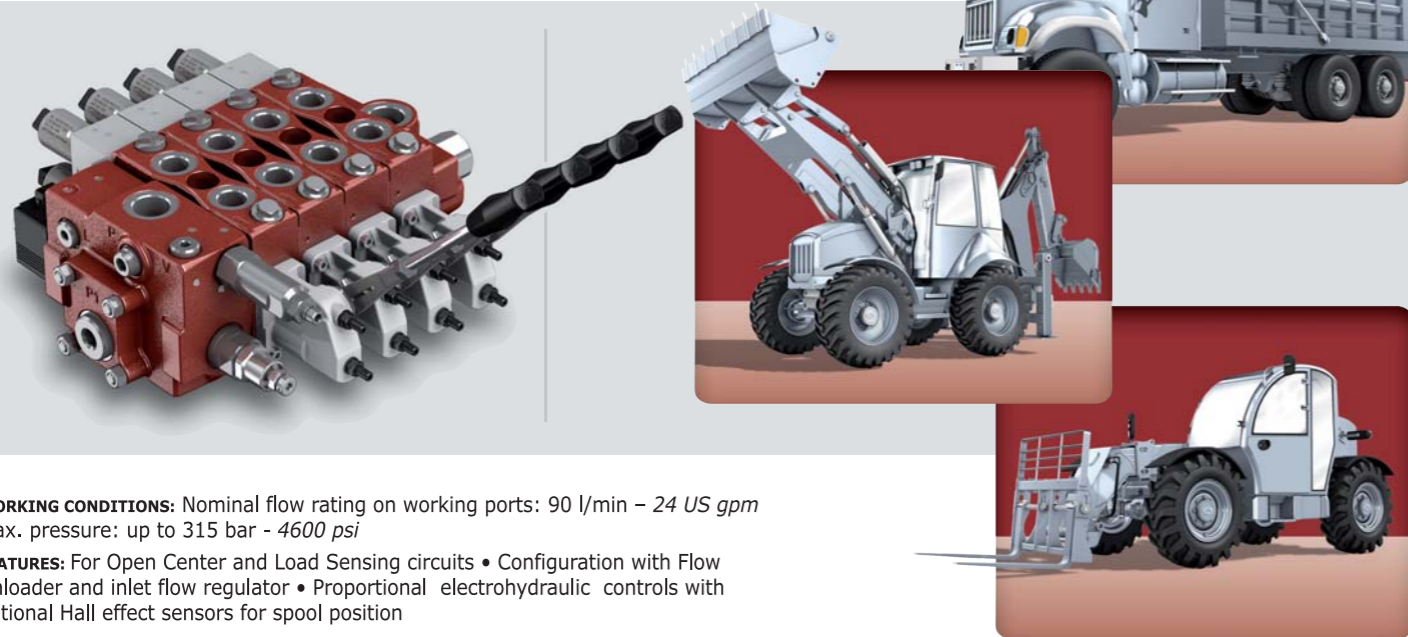
WORKING CONDITIONS: Nominal flow rating: 60 l/min – 16 US gpm
Max. pressure: up to 315 bar - 4600 psi

FEATURES: For Open Center and Load Sensing circuits • Inlet and outlet sections integrated with working section • Proportional hydraulic and electrohydraulic controls • Mechanical spool positions sensors

SDS140

Sectional directional control valve

Display **5**



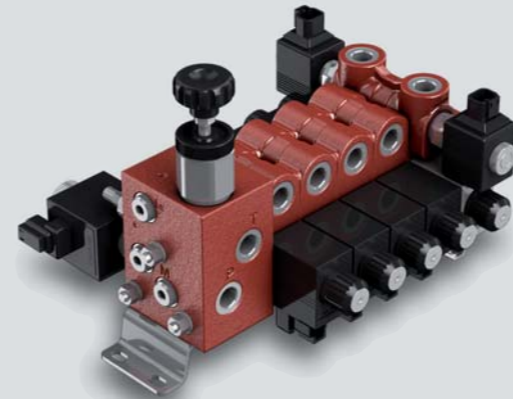
WORKING CONDITIONS: Nominal flow rating on working ports: 90 l/min – 24 US gpm
 Max. pressure: up to 315 bar - 4600 psi

FEATURES: For Open Center and Load Sensing circuits • Configuration with Flow Unloader and inlet flow regulator • Proportional electrohydraulic controls with optional Hall effect sensors for spool position

SDE030 - SDE060

Directional control valves with direct acting solenoids – sectional

Display **4**



WORKING CONDITIONS: Nominal flow rating: up to 60 l/min – 16 US gpm
 Max. pressure: up to 315 bar - 4600 psi

FEATURES: Wide inlet cover option (standard, with flow regulator, Open and Closed center switch kit) • On/off solenoid controls • Zinc plated working sections
 • Optional side port location and built in check valves

DPC130X

Pre-compensated Load Sensing sectional control valve

Display **2**



WORKING CONDITIONS: Nominal flow rating on inlet port: 150 l/min min – 40 US gpm
 Nominal flow rating on working ports: 130 l/min – 34 US gpm
 Max. pressure on working ports: 315 bar – 4600 psi

FEATURES: In compliance with ATEX Directive 2014/34/UE • Open Center and Closed Center configurations • Manual, hydraulic and proportional electrohydraulic controls



DPC Series

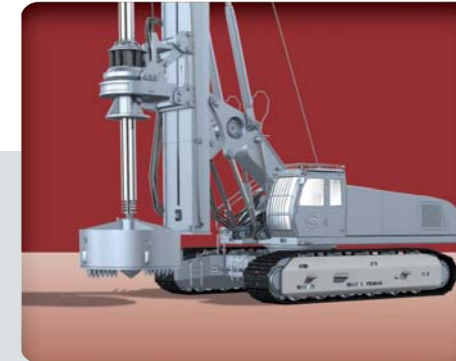
Pre-compensated Load Sensing sectional control valve

Display **2**



WORKING CONDITIONS: Nominal flow rating on inlet port: up to 260 l/min – 69 US gpm
 • Nominal flow rating on working ports: up to 200 l/min – 53 US gpm
 Max. pressure: up to 420 bar – 6100 psi

FEATURES: Load Sensing technology • Open Center and Closed Center configurations
 • Manual, hydraulic and proportional electrohydraulic controls with Hall effect sensors for spool position





COMPONENTS

EX54

Full Flow Sharing sectional control valve

Display **5**



WORKING CONDITIONS: Nominal flow rating on inlet port: 300 l/min – 80 US gpm
Nominal flow rating on working ports: 250 l/min – 66 US gpm
Max. pressure: 350 bar – 5100 psi

FEATURES: Mechanical, hydraulic and electro-proportional controls • Available for Open Center and Load Sensing circuits • Stackable with **EX72**, **EX46** and **EX38**

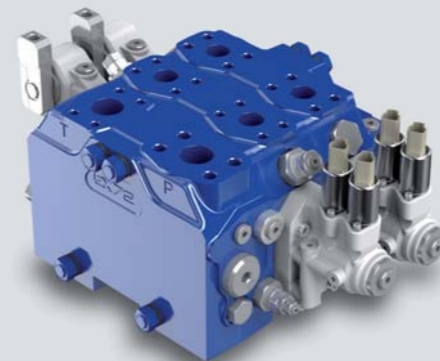


COMPONENTS

EX72

Full Flow Sharing sectional control valve

Display **5**



WORKING CONDITIONS: Nominal flow rating on inlet port : 450 l/min – 119 US gpm
Nominal flow rating on working ports: 350 l/min – 92 US gpm
Max. pressure: 350 bar – 5100 psi

FEATURES: Mechanical, hydraulic and electro-proportional controls • Available for Open Center and Load Sensing circuits • Stackable with **EX54**, **EX46** and **EX38**

DVS14

Sectional directional control valve

Display **2**



WORKING CONDITIONS: Nominal flow rating: 80 l/min – 21 US gpm

Max. pressure: 350 bar - 5100 psi

FEATURES: Mechanical, hydraulic, electric on/off and electro-proportional controls

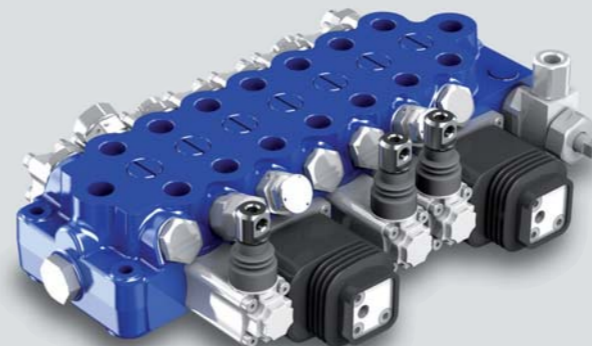
- Available for Open and Closed center circuits



TR55

Monoblock directional control valve

Display **2**



WORKING CONDITIONS: Nominal flow rating: 50 l/min – 13 US gpm

Max. pressure: 350 bar – 5100 psi

FEATURES: Antishock, anticavitation and combined valves are available on each section • Load check valve on all sections • Mechanical (also with flexible cable), hydraulic, electrohydraulic controls • Optional Clamping valve



COMPONENTS

SK8

Monoblock directional control valve

Display **2**



WORKING CONDITIONS: Nominal flow rating: P1: 75 l/min – 20 US gpm
P2: 40 l/min – 11 US gpm • Max. pressure: 350 bar - 5100 psi

FEATURES: Mechanical, hydraulic and electro-proportional controls • Aux. section with P1+P2 summation • Electrical unloading valve • Optional zero leakage version



COMPONENTS

HIC

Hydraulic Integrated Circuit

Display **4**



WORKING CONDITIONS: Inlet nominal flow rating: up to 200 l/min – 53 US gpm
Inlet max. pressure: up to 350 bar – 5100 psi

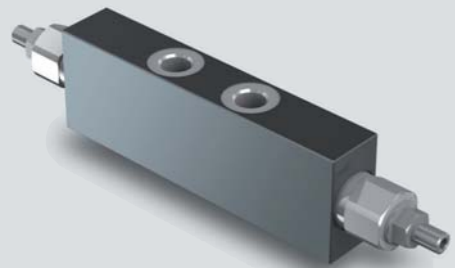
FEATURES: Compact construction • Highly versatile configurations



078 Series

Counterbalance valves

Display **4**



WORKING CONDITIONS: Nominal flow rating: 40 l/min – 11 US gpm

Max. pressure: 350 bar - 5100 psi

FEATURES: Zinc plated steel body • Single and double valve types • Load sensitive and vented configurations • Customized pilot ratio option



1116 Series

Counterbalance valves

Display **4**



WORKING CONDITIONS: Nominal flow rating: 60 l/min – 16 US gpm

Max. pressure: 350 bar - 5100 psi

FEATURES: Aluminium or zinc plated steel body • Single and double valve types • Load sensitive, relief compensated and vented configurations • Customized pilot ratio option



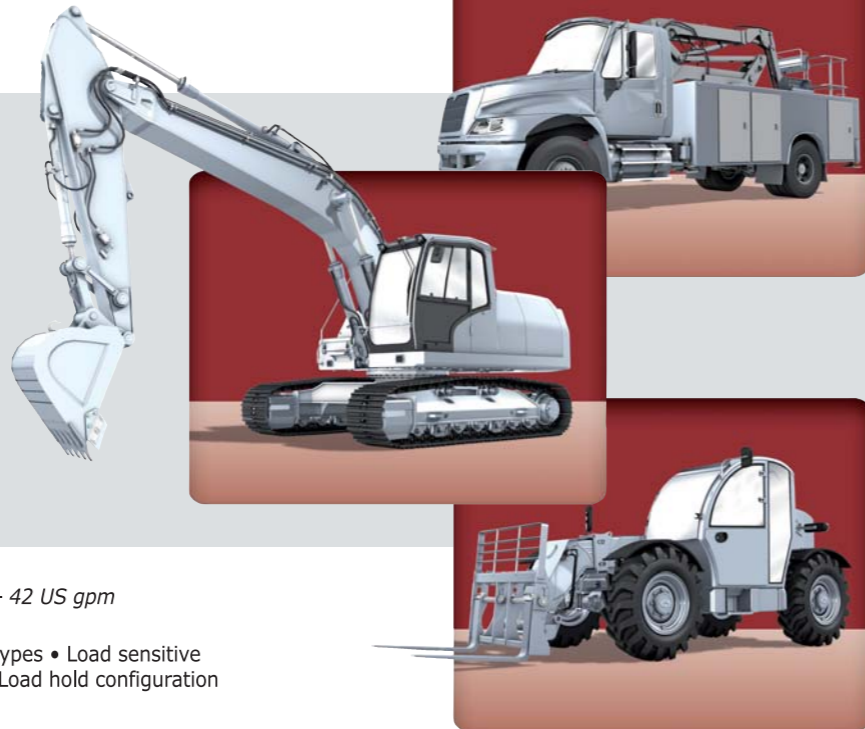


COMPONENTS

1516 Series

Counterbalance valves

Display **4**



WORKING CONDITIONS: Nominal flow rating: up to 160 l/min – 42 US gpm
Max. pressure: up to 400 bar - 5800 psi

FEATURES: Zinc plated steel body • Single and double valve types • Load sensitive and vented configurations • Customized pilot ratio option • Load hold configuration available according to EN474-5 and ISO8643

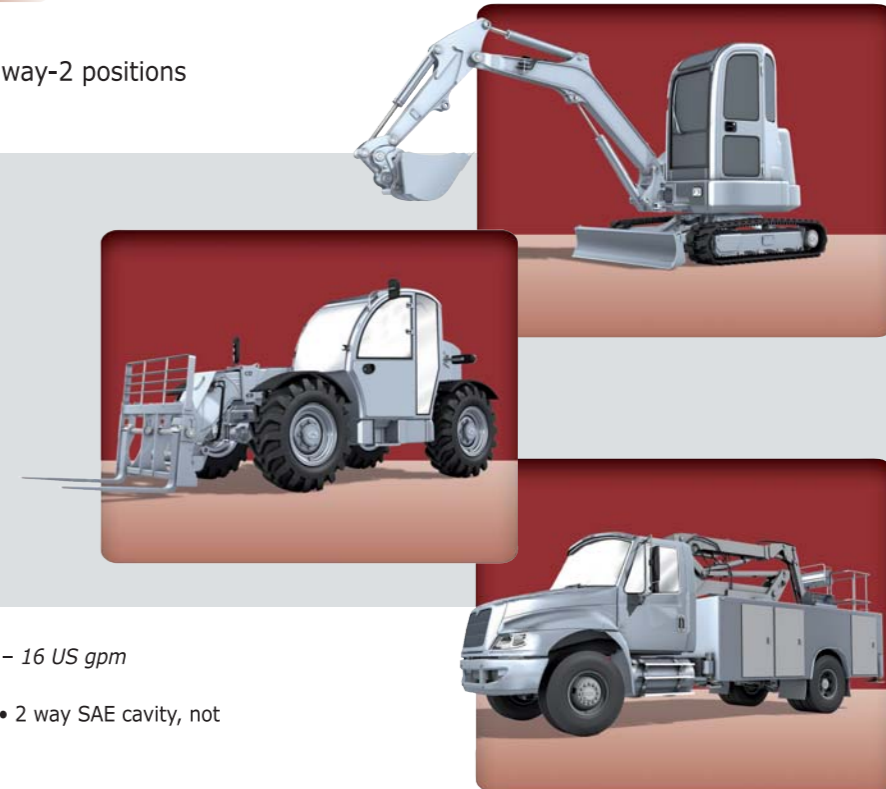


COMPONENTS

EC08T - EC10T - EC16 T

SAE cavity proportional flow control valves, 2 way-2 positions

Display **4**



WORKING CONDITIONS: Nominal flow rating: up to 60 l/min – 16 US gpm
Max. pressure: up to 350 bar – 5100 psi

FEATURES: Pilot operated • Poppet type • Normally closed • 2 way SAE cavity, not compensated

Logic Elements

SAE Cavity cartridges – spool type

Display **4**



WORKING CONDITIONS: Nominal flow rating: up to 150 l/min – 39.6 US gpm

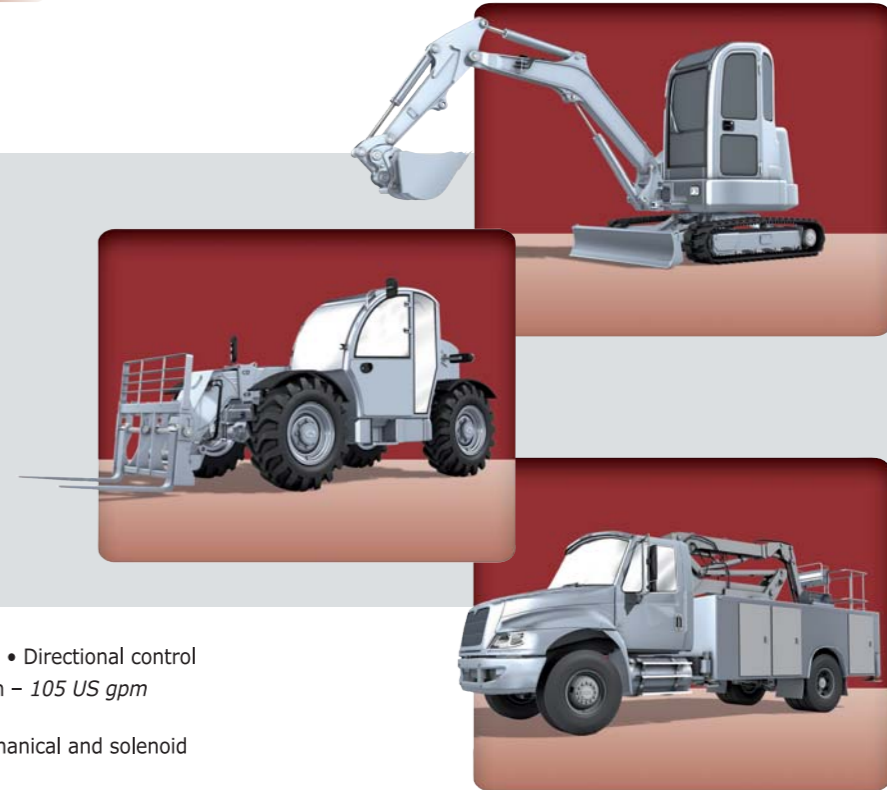
Max. pressure: up to 350 bar – 5100 psi

FEATURES: Spool type • Fixed or adjustable spring setting • Compact 3 way SAE cavity

SAE

Cartridge valves range

Display **4**



FUNCTION: Pressure control • Flow control • Motion control • Directional control

WORKING CONDITIONS: Nominal flow rating: up to 400 l/min – 105 US gpm

Max. pressure: up to 380 bar – 5500 psi

FEATURES: From SAE8 to SAE20, 2-3-4 way cavities • Mechanical and solenoid control • Direct and pilot, on/off and proportional types

Product/Application Displays

- 1** PHC, Electronics
- 2** Construction & Mining
- 3** Construction & Earth Moving
- 4** Pumps, Motors & Compact Hydraulics
- 5** Lifting & Transport



