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 **walvoil**  
FLUID POWER E | MOTION



Innovation · Continuity · Integration  
————— It is Power —————



Welcome to ICUEE 2017

**High performance, Efficiency, Flexibility** and **Safety** are the goals **Walvoil** keeps on following to offer increasingly interconnected components tailor-made for utility equipment and 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 1<sup>st</sup> 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



PHC  
STUDIO



**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 • MTHC



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

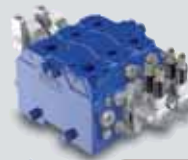


PHC  
STUDIO

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

CJWC



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 **3**



**WORKING CONDITIONS:** Displacements: from 4 cm<sup>3</sup>/rev - 0.24 in<sup>3</sup>/rev to 31.5 cm<sup>3</sup>/rev - 1.92 in<sup>3</sup>/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 **3**



**WORKING CONDITIONS:** Displacements: from 19.3 cm<sup>3</sup>/rev - 1.18 in<sup>3</sup>/rev to 77.2 cm<sup>3</sup>/rev - 4.71 in<sup>3</sup>/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 cm<sup>3</sup>/rev - 0.24 in<sup>3</sup>/rev to 31.5 cm<sup>3</sup>/rev - 1.92 in<sup>3</sup>/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 **3**



**WORKING CONDITIONS:** Displacements: from 4 cm<sup>3</sup>/rev - 0.24 in<sup>3</sup>/rev to 31,5 cm<sup>3</sup>/rev - 1.92 in<sup>3</sup>/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

## MTH + PZ

Multifunction handles

Display **3**



**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
- **PZ:** Up to 8 push-buttons, up to 3 rollers and up to 3 rocker switches • Dead man switch • Controls on front and operator side



## AJW

Analog electronic joysticks

Display **3**



**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: >10<sup>6</sup> 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 **3**



**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: >10<sup>6</sup> 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

## PVD200

Proportional Valve Driver

Display **3**



**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

## CED400W

Electronic control unit

Display **3**



**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 **3**



**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

## DPX050 + SDE030 - SDE060

Full Flow Sharing sectional control valve and Directional control valve with direct acting solenoids

Display **2**



- DPX050 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

- SDE030 - SDE060 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

## DPX100 - DPX100HF

Full Flow Sharing sectional control valve

Display **2**



- 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

## DPC Series

Pre-compensated Load Sensing sectional control valves

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



## EX SERIES

Full Flow Sharing sectional control valves

Display **1**



**WORKING CONDITIONS:** Nominal flow rating on inlet port: up to 450 l/min – 122 US gpm

Nominal flow rating on working ports: up to 350 l/min – 95 US gpm

Max. pressure: 350 bar – 5100 psi

**FEATURES:** Mechanical, hydraulic and electrohydraulic proportional controls  
 • Available for Open Center and Load Sensing circuits • EX series valves are stackable each other





COMPONENTS

## DVS14

Sectional directional control valve

Display **1**



**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



COMPONENTS

## DVS10

Sectional directional control valve

Display **1**



**WORKING CONDITIONS:** Nominal flow rating: 45 l/min – 12 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 **1**


**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

**GMV115**

Monoblock directional control valve

 Display **1**


**WORKING CONDITIONS:** Inlet nominal flow rating: up to 115 l/min – 30 US gpm  
 Inlet max. pressure: up to 320 bar – 4700 psi

**FEATURES:** Compensated flow regulator • Electrical full flow dump valve inlet • High pressure Carry Over • Second relief valve on Carry Over port



## 078 Series

Counterbalance valves

Display **3**



**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 **3**



**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



## 1516 Series

Counterbalance valves

Display **3**



**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



## EC08T - EC10T - EC16 T

SAE cavity electric valves, 2 way-2 positions

Display **3**



**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 **3**



**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 **3**

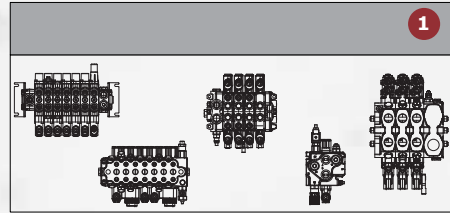


**FUNCTION:** Pressure control • Flow control • Motion control • Directional control

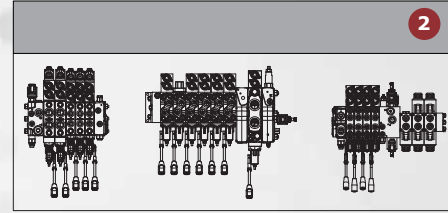
**WORKING CONDITIONS:** Nominal flow rating: up to 400 l/min – 105 US gpm  
Max. pressure: up to 380 bar – 5500 psi

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

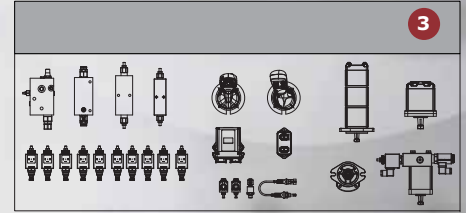
Product/Application Displays



APPLICATIONS: Construction • Industrial Vehicles • Material Handling



APPLICATIONS: Construction • Industrial Vehicles • Material Handling



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