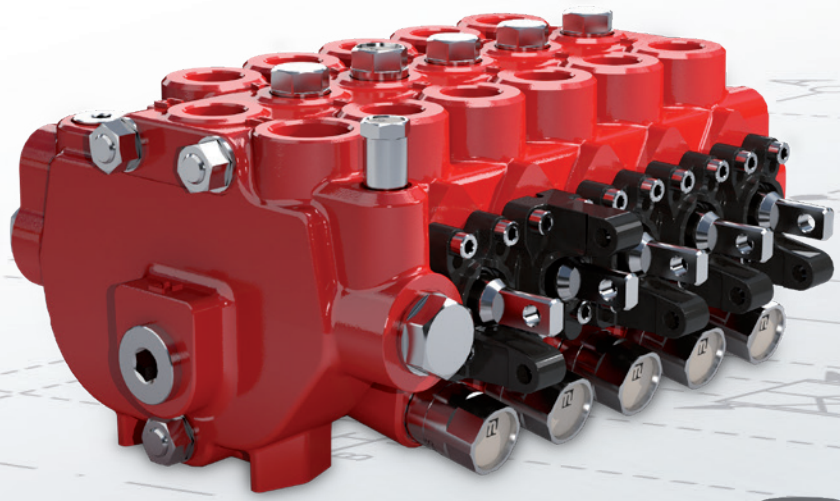
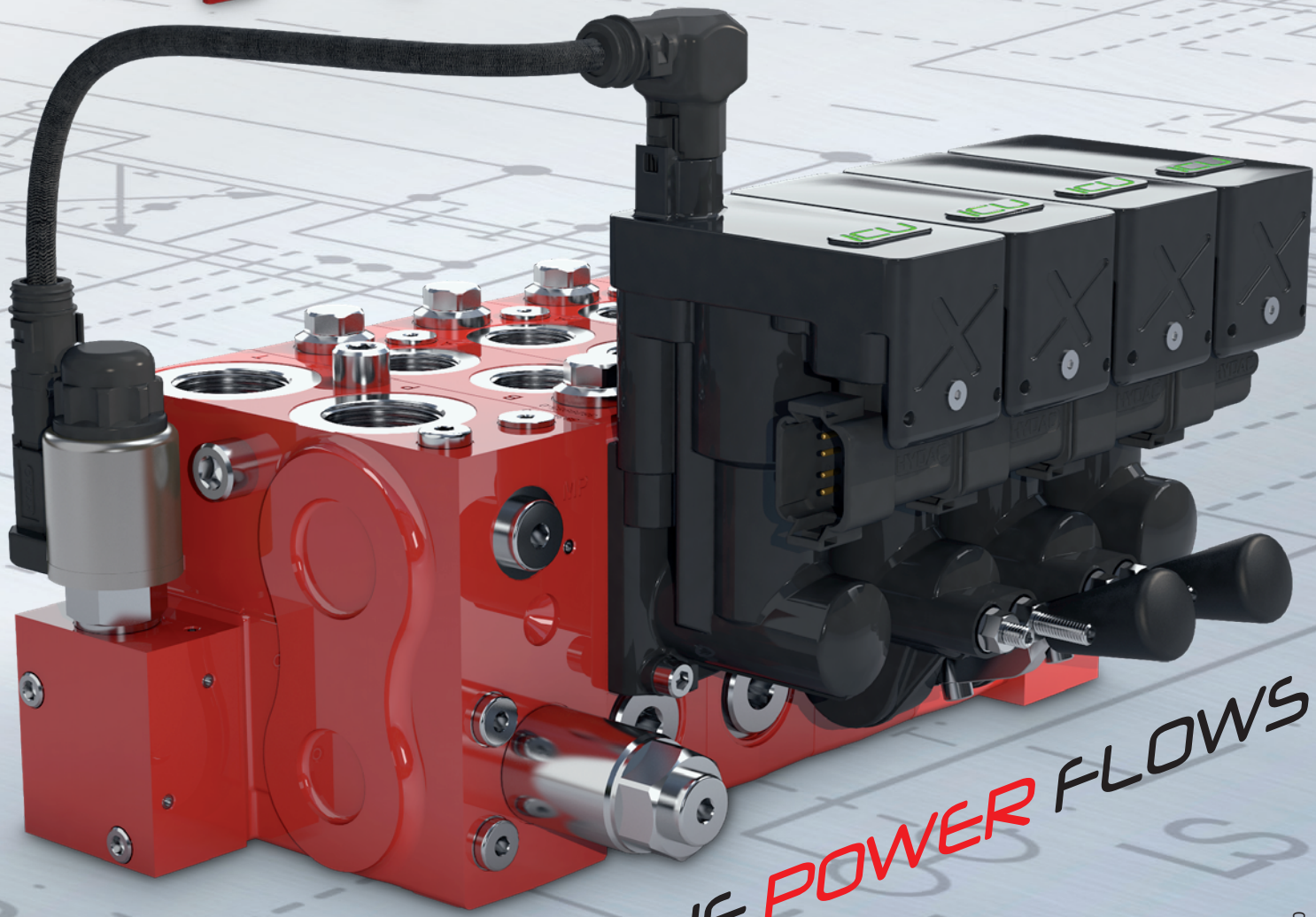
HYDAC INTERNATIONAL

Mobile Valves
Kits, Electronics, Software





THE POWER FLOWS

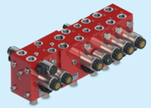
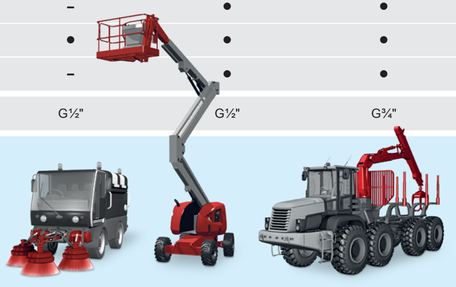
EN 5.254.8/10.20

Universal Standard Directional Control Valves

X-Series

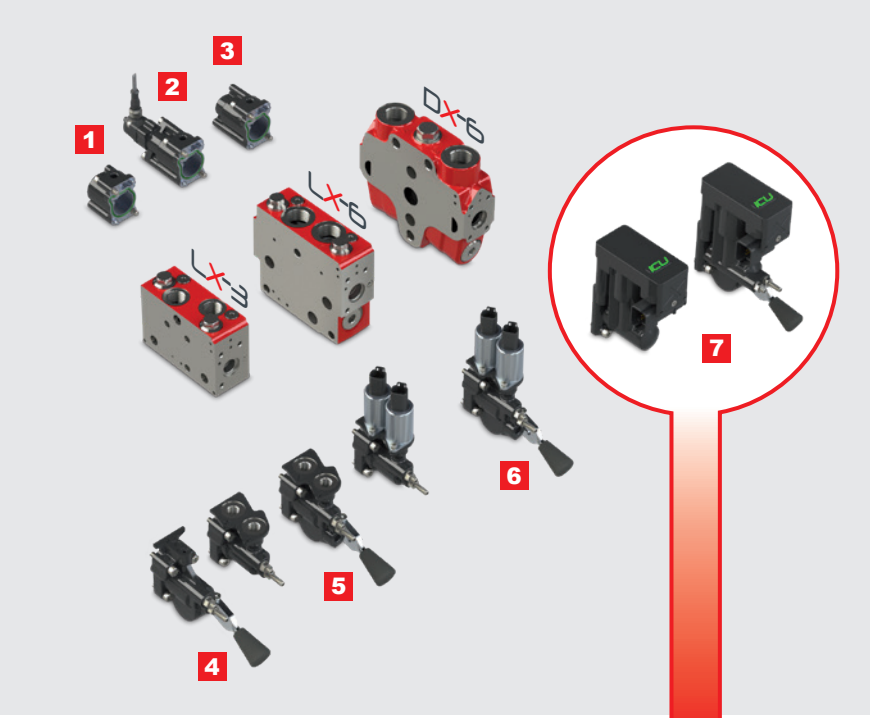
X-Series X-Series

Valve Types Overview

	Open Center Valves							Frontloader Valves		Selector Valves	Load Sensing Valves		
Product name	RM 230	RM 270	RS 160	RS 210	RS 220	RSQ 240	DX-6	RMS 202	RV 360	RV 713	HX1	LX-3	LX-6
													
Technology	Non-pressure compensated – Open Center (OC) Technology							Non-pressure compensated			Pressure compensated – Load Sensing (LS) Technology		
Pump types and performance													
Fixed displacement pump	●	●	●	●	●	●	●	●	●	●	●	●	●
Variable displacement pump	–	–	●	–	●	●	●	●	●	●	●	●	●
$Q_{max\ Pump}$ [l/min]	70	120	60	70	80	120	180	120	80	160	120	150	250
$Q_{max\ Work\ port}$ [l/min]	70	120	60	70	80	100	180	90	60	160	70	100	180
$p_{max\ Pump}$ [bar]	210	210	250	350	350	350	350	250	300	250	250	350	350
Valve types (monobloc or sectional)	mono	mono	section	section	section	section	section	mono	mono	mono	section	section	section
Max. number of sections	4	4/6	10	10	10	10	10 (20)	2	2	1	10	10	10
Spool control									6/2	3/2			
Open spool end for mechanical attachment	●	●	–	●	–	●	●	●	–	●	–	–	–
Hand lever								–	–		–		
Pneumatic	●	●	●	●	–	–	●	–	–	●	–	–	–
Electro-pneumatic ON/OFF	●	●	●	●	–	–	●	–	–	●	–	–	–
Hydraulic	●	●	●	●	●	●	●	–	–	–	–	●	●
Electro-hydraulic	–	–	●	–	●	●	●	●	●	–	●	●	●
CAN Bus (ICU technology*)	–	–	–	–	–	–	●	–	–	–	–	●	●
Port working sections	G½"	G¾"	G⅜"	G½"	G½"	G½"	G¾"	G½"	G⅜-½"	G¾"	G½"	G½"	G¾"
Main applications													

* Please contact our technical sales, not available at present

X-Series – Spool Control Options for LX-3, LX-6, DX-6



Spring Caps

1 Standard spring cap

2 Spring cap with position indicator HLS 200

3 Spring cap for floating position spool

Operation Units

4 Manual control
with encapsulated spool ends

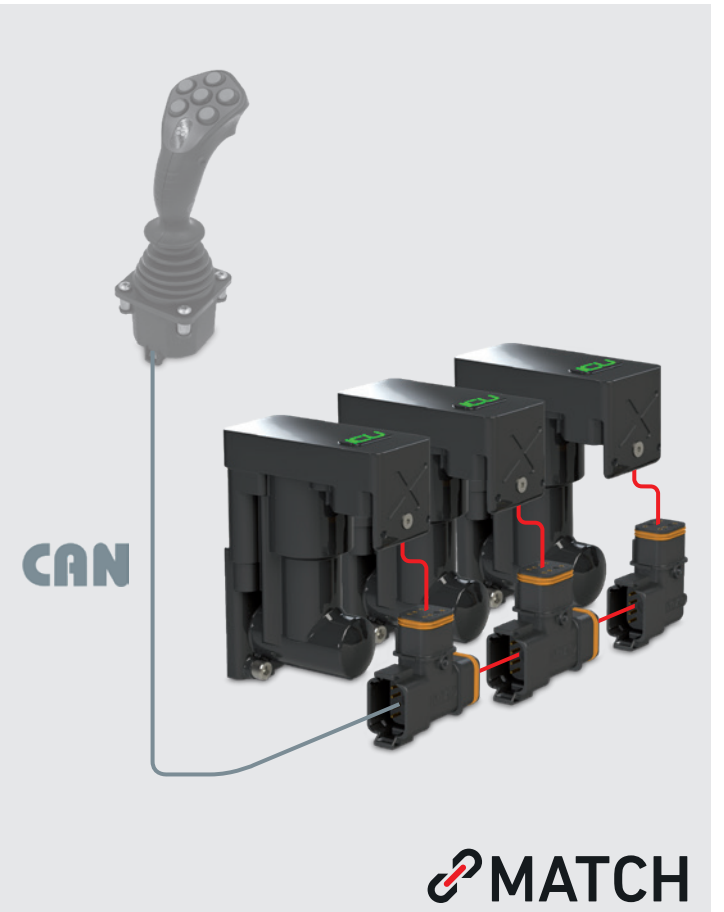
5 Hydraulic control
(with / without manual override)

6 Electro-hydraulic control
(with / without manual override)

7 Electronic control unit (ICU)
via CAN-Bus system

Advanced CAN-Bus Control by ICU (Intelligent Control Unit*) for X-Series Valve Systems

The Intelligent Control Unit (ICU) ensures the control of a mobile valve spool with spring centered neutral position and advanced control / monitoring options.



Product Features

Motor actuation with

- High precision
- Quick response
- Hysteresis free
- Contamination resistant (pilot oil-free control)
- Power boost – for higher force in emergency cases

Ready for the road

- Easy to customize parameters via HYDAC MATCH
- Auto-Addressing - at initial start-up
- Auto-Calibration – at production end-of-line test
- Auto-Service – import information from neighbor ICU
- Protocol: HYDAC MATCH, J1939, optional CANopen
- With and without manual override

Intelligent electronics

- Adjustable valve characteristics and performance
- Spool condition monitoring – position and force
- Intelligent malfunction management – active service

Optional

- Integrated pressure and temperature sensors
- I/O's for external analogue sensors / actuators

* Please contact our technical sales, not available at present

The Easy to Implement Plug & Work “Crane Control System” by TECHNION

xCrane

Xcrane is a turnkey electronic control system for mobile cranes.

Product Features

- Fast response times
- Smooth individual controls for each operator
- Truly compatible with both current and voltage controlled valves
- An I/O set enables it to be interfaced with a variety of sensors, joysticks and third party modules

The Easy to Implement Open Loop “Crane Tip Control System” by TECHNION

xCrane PLUS

Xcrane Plus is designed for operators who need both a parallel crane and a traditional forestry crane depending on the work phase. The traditional forestry crane works as a parallel crane just by choosing the parallel mode from the display. In parallel mode the lift boom and the outer boom are operated simultaneously with one joystick control. In this mode the operator can also activate the automatic extension. When this is selected, the control imitates the tip control mode; the lift boom, outer boom and extension are moving at the same time with left-hand joystick movement.

Product Features

- Enables to drive multiple crane movements simultaneously at the same time with only one joystick movement

The Advanced Closed Loop “Crane Tip Control System” by TECHNION

xCrane PRO

Xcrane Pro controls the tip of the boom instead of controlling each cylinder separately.

Product Features

- Sensors calculate the cylinder positions for main boom, outer boom and extension
- Algorithms calculate optimal way to move crane tip based on these sensors
- Enables automated movements and collision prevention
- Extremely effective, fast and precise
- Easy to learn and use, ergonomic
- Constant speed of crane tip reduces stress on crane and base machine
- End damping – slows down speed in end positions automatically increasing well-being at work and lifetime of the crane
- Increases significantly ergonomics for the operators
- Quick to implement hardware with “pro” application engineering support for any crane geometry or hydraulic solution

TECHNION
HYDAC INTERNATIONAL

Contact

TECHNION Ltd., Linkkikatu 15, 21100 Naantali, FINLAND
Phone: +358 40 191 1000
Email: xCrane@technion.fi

MATCH Subsystems

Our electrohydraulic subsystems are developed based on MATCH and are tested comprehensively in all of the available configurations and ranges of functions. In terms of functional safety, we offer solutions up to the safety levels PL d or AgPL d (SRL 2).

Our portfolio includes software for electro-hydraulic machine control, for electro-hydraulic auxiliary steering systems, electro-hydraulic additional steering systems and electro-hydraulic or electric fan controls.

We also provide the subsystem configuration tool SCT for the users of the subsystem software. The SCT enables configuration of the functionalities, parametrization and calibration of the software.

A licence is required on the controller to operate the software.
This can be managed with the SCT.

EHC

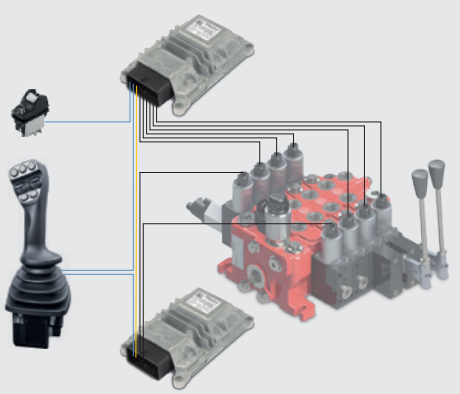
EHC – Software for Electro-hydraulic Machine Control

The software for electro-hydraulic control (EHC) is a machine application software for manual control of mobile valves that are controlled by proportional valves. The valve spool can be controlled directly by solenoid or pilot-controlled via proportional pressure-reducing valves. The application is available on the controllers HY-TTC 32 / HY-TTC 32S – depending on the required level of functional safety.

The EHC software makes it easy to develop a system for machine control: you can apply the signals from analogue joysticks, push-buttons or switches to the controller inputs, combine the current outputs in pairs with pilot valves of the mobile valve axis and then configure the software functionalities to suit the system behaviour you require.

The subsystem configuration tool SCT can be used to commission and service the EHC software. The SCT USER, standard version, is included in delivery.

- Implementation of the four proportional functions that can, for example, be controlled via joystick, through a combination of two controllers in versions BASIC and BASICplus
- With flowsharing technology for continuous movement with parallel control of multiple functions even under maximum pump demand



Available EHC Versions

The following EHC software variants, which build on each other, are available, with each one working on its own controller HY-TTC 32(S):

BASIC

Proportional and / or on / off valve control, with evaluation of a large number of different analogue joystick signals. Your machine can be operated safely in combination with the implemented release functions.

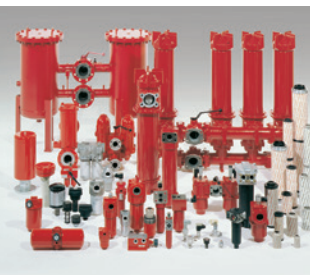
BASICplus

BASICplus contains the entire function range of the BASIC version.
A continuous hydraulic function is also provided, which provides much greater ease of use thanks to its adjustable and retrievable flow rate adjustment.
The electronic flowsharing makes it possible for you to operate a classic load-sensing valve – such as one from the HYDAC LX family – like a valve with downstream pressure compensators.

See also: HYDAC Software Product Catalogue EN 18.500.1.0

Contact:
HYDAC SOFTWARE GmbH
Zum Kiesberg 15–16, 14979 Großbeeren (near Berlin), Germany
Tel.: +49 33701 3389-4410, E-mail: info.software@hydac.com

Accumulator Technology 30.000



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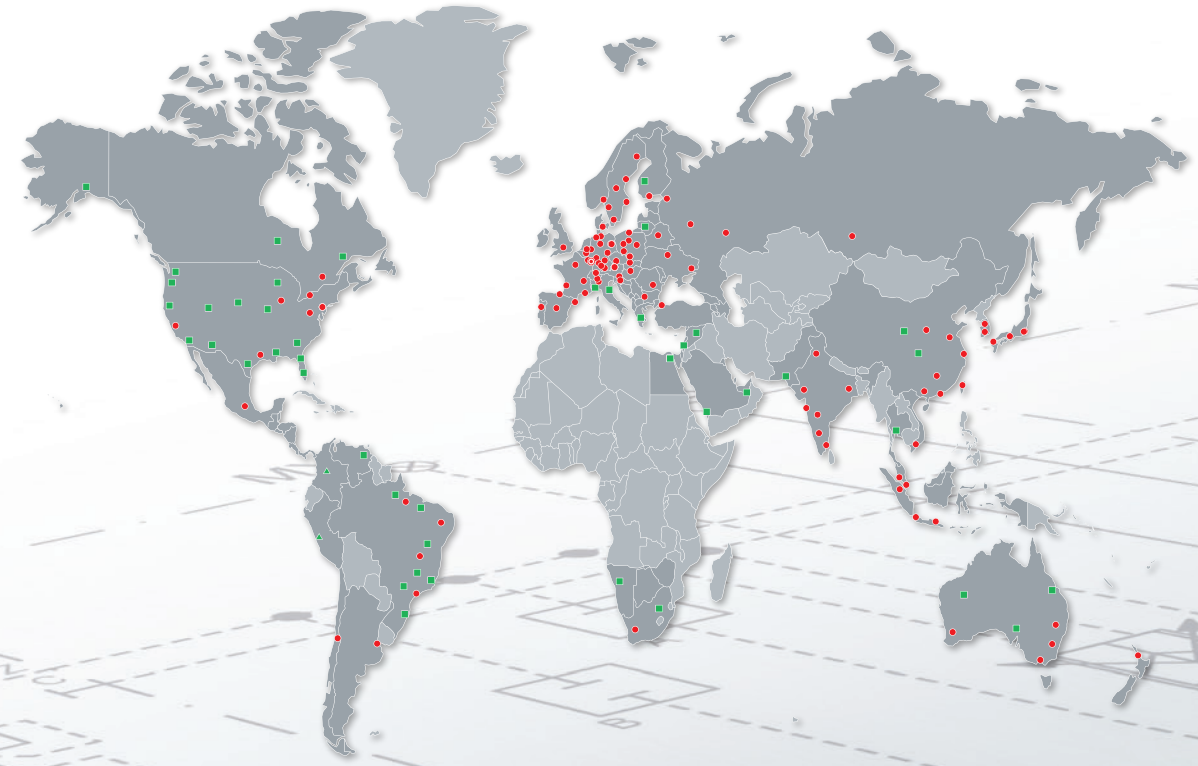

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- HYDAC Companies
- HYDAC Sales and Service Partners
- Free Sales Partners

Head Office
HYDAC INTERNATIONAL GMBH

Nordhydraulic
HYDAC INTERNATIONAL

Industriegebiet
66280 Sulzbach/Saar
Germany

Tel.: +49 6897 509-01
Fax: +49 6897 509-577

E-mail: mobilevalves@hydac.com
Internet: www.hydac.com

Note
The information in this brochure relates to the operating conditions and applications described. For applications and/or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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