



DREAM & TECHNOLOGY





Company Introduction

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In 1985 the members started to develop and manufacture its own line of hydraulic components. We completely renewed and technologically advanced, have appeared on the market with the new name as Hydraulic Friends Co., Ltd.



Our Philosophy

‘Love each other! Dreams come true with technology.’

We provide outstanding technological and service leadership beyond our customers' expectations to promote their interest, thereby ensuring continuous opportunities for our people. This philosophy drives our organization. Our managers make their decisions based on this statement.

As a result, we have developed a solid reputation from our customers. we are the very leader in the field by developing various valves such as excavators, cranes and forklifts. We have been cooperating with Korean companies such as Hyundai Construction Equipment, Hyundai-Doosan Infracore, Clark, Kanglim and Soosan Heavy Industries. In addition, we have a lot of experience in cooperation with overseas companies in China and Russia.

We propose customers' smart interest. We need your input to reinforce what we are doing right, and to change what needs to improve. It is our intention to be accessible for you. If you have any comments regarding your experiences with us, we will be your side.

Please send them to

sales@hydrofriends.com

The path of Hydraulic Friends

2023

- 09 | Development of MCV for 1.2ton Excavator
- 01 | Expansion of the MCV production line for large excavators

2019

- 01 | Building Smart Factory System

2018

- 07 | Launch of the world's first one-block type MCV
- 03 | Acquire INNOBIZ certification (Ministry of SMEs and Startups)

2016

- 01 | Development of MCV for 20~30ton Excavator

2015

- 01 | Development of MCV (TX80) for Wheel Excavator

2013

- 01 | Development of MCV for 14~18ton Excavator

2012

- 01 | Completion and relocation of Hydraulic Friends new construction plant

2011

- 01 | Development of MCV for Forklift

2010

- 02 | 20ton excavator MCV starts export

2008

- 01 | Expansion and relocation of Hydraulic Friends

2007

- 01 | Recognition of R&D centre

2006

- 12 | Establishment of R&D centre
- 10 | Acquisition ISO9001 / ISO14001
- 02 | Establishment of Hydraulic Friends



TLV500

The TLV500 provides the excellent controllability and reliability with various priority functions for 40 ton class or more excavators.

APPLICATIONS



1 Various Priority Functions

Various priority functions can be implemented for each attachment. for SWING Priority, ARM Priority, BOOM Priority, Travel Straight.

2 Provides a variety of customizations

Many features are built in by default and can be added to suit your needs.

3 Low fuel consumption and Long Life with high reliability

The design is based on minimizing pressure losses, so it consumes less fuel and is highly durable.

4 High-flow MCV for a wide range of equipment.

A large-flow MCV that can be applied to larger equipment in the 40+ ton class.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		NEGACON	
RATED	PRESSURE	350 BAR	
	FLOW	460 LPM	
OVERLOAD RELIEF		350~380 BAR	
PRIORITY FUNCTION	SWING+BOOM	BOOM PRIORITY	
	SWING+ARM	SWING PRIORITY	
	BOOM+ARM	BOOM PRIORITY	
	BOOM+BUCKET	BOOM PRIORITY	OPTION
	TRAVEL+FRONT	TRAVEL STRAIGHT	
CONFLUX	OPTION	INTERNAL	
	ARM	INTERNAL	
	BOOM	INTERNAL	
	BUCKET	INTERNAL	
SPOOL REGEN	BUCKET	SPOOL INTERNAL	
	ARM	SPOOL INTERNAL	
	BOOM	SPOOL INTERNAL	
ARM REGEN CUT VALVE	INTERNAL	O	
HOLDING		ARM / BOOM	OPTION(for BOOM2)

APPLICATIONS



Main Control Valve

TLV350

The TLV350 provides the excellent controllability and reliability with various priority functions for 20~30 ton excavators.

1 Various Priority Functions

Various priority functions can be implemented for each attachment. for SWING Priority, ARM Priority, BOOM Priority, Travel Straight

2 Provides a variety of customizations

Many features are built in by default and can be added to suit your needs.

3 Low fuel consumption and Long Life with high reliability

The design is based on minimizing pressure losses, so it consumes less fuel and is highly durable.

4 Full Electric Hydraulic(FEH) control function (optional)

MCV is also available for the latest technology, Full Electric Hydraulic (FEH) systems.



ITEM		SPECIFICATION	REMARK
CONTROL TYPE		NEGACON / FEH	
RATED	PRESSURE	350 BAR	
	FLOW	300 LPM	
OVERLOAD RELIEF		160~380 BAR	
PRIORITY FUNCTION	SWING+BOOM	BOOM PRIORITY	OPTION
	SWING+ARM	SWING PRIORITY	
	BOOM+ARM	BOOM PRIORITY	
	BOOM+BUCKET	BOOM PRIORITY	
	TRAVEL+FRONT	TRAVEL STRAIGHT	
CONFLUX	OPTION	EXTERNAL	
	ARM	INTERNAL	
	BOOM	INTERNAL	
	BUCKET	INTERNAL	
SPOOL REGEN	BUCKET	SPOOL INTERNAL	OPTION
	ARM	SPOOL INTERNAL	OPTION
	BOOM	SPOOL INTERNAL	OPTION
ARM REGEN CUT VALVE	INTERNAL	O	
	EXTERNAL	O	OPTION
HOLDING		ARM / BOOM	

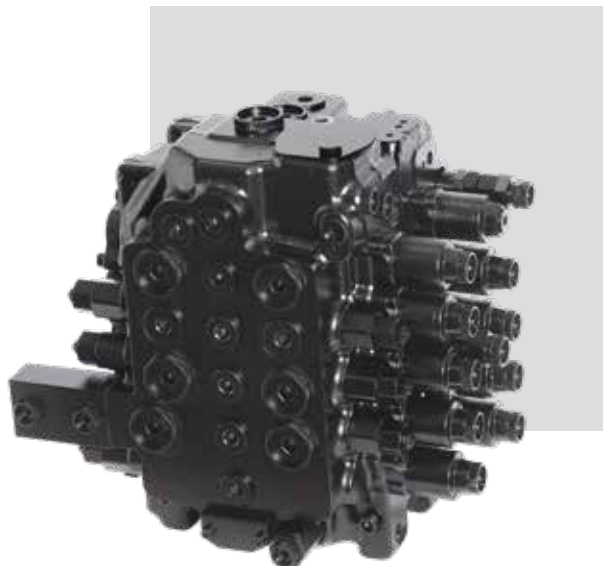
TX22

APPLICATIONS



EXCAVATOR

The TX22 provides the excellent controllability and reliability with various priority functions for 14~18 ton excavators.



1 Compact design and affordable price

It is a model that has been steadily loved by various equipment with a compact design for the past 20 years.

2 Wheel and Crawler

This MCV is compatible with wheel excavators or crawler excavators.

3 Overload relief valve with make-up function

The adoption of an overload relief valve with a built-in makeup function ensures reliable operation.

4 Low fuel consumption and Long Life with high reliability

The design is based on minimizing pressure losses, so it consumes less fuel and is highly durable.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		NEGACON	
RATED	PRESSURE	350 BAR	
	FLOW	170 LPM	
OVERLOAD RELIEF		160~380 BAR	
PRIORITY FUNCTION	SWING+BOOM	BOOM PRIORITY	
	BOOM+BUCKET	BOOM PRIORITY	
	BOOM+ARM	BOOM PRIORITY	OPTION
	TRAVEL+FRONT	TRAVEL STRAIGHT	
CONFLUX	OPTION	INTERNAL	
	ARM	INTERNAL	
	BOOM	INTERNAL	
	BUCKET	EXTERNAL	OPTION
SPOOL REGEN	BUCKET	SPOOL INTERNAL	OPTION
	ARM	SPOOL INTERNAL	OPTION
	BOOM	SPOOL INTERNAL	OPTION
ARM REGEN CUT VALVE	INTERNAL	O	
	EXTERNAL	O	OPTION
HOLDING		ARM / BOOM	

APPLICATIONS



Main Control Valve

KX16

The KX16 provides the excellent controllability and reliability with various priority functions for 5.5~8.0 ton mini-excavators.

1 Functionality and customizability

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-function valves)

2 Low fuel consumption and Long Life with high reliability

Built-in auto-idle feature automatically reduces PUMP RPM in neutral to help save fuel

3 Various functions

P3 confluence built-in enables fast operation of FRONT (ARM, BOOM, BUCKET)

4 Stable driving

The built-in driving independence function ensures stable driving by maintaining a constant driving speed even when using FRONT while driving.



ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	250 BAR	
	FLOW	80 LPM	
SPOOL CONTROL TYPE		MANUAL / PILOT	
OVERLOAD RELIEF		70~270 BAR	
PRIORITY FUNCTION	SWING+BOOM	SWING FOR P3 PUMP	
	SWING+ARM	SWING FOR P3 PUMP	
	BOOM+BUCKET	BOOM PRIORITY	
	BOOM+ARM	BOOM PRIORITY	
	TRAVEL+FRONT	TRAVEL INDEPENDENCE	
CONFLUX	ARM	EXTERNAL	
	BOOM	EXTERNAL	
	BUCKET	INTERNAL	FOR P3 PUMP
HOLDING		ARM	FOR P3 PUMP
		BOOM	FOR P3 PUMP
AUTO IDLE		O	

TLV40

The TLV40 provides the excellent controllability and reliability with various priority functions for 1.5~4.0 ton mini-excavators.

APPLICATIONS



EXCAVATOR



1 Functionality and customizability

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-function valves)

2 Low fuel consumption and Long Life with high reliability

Built-in auto-idle feature automatically reduces PUMP RPM in neutral to help save fuel)

3 Various functions

P3 confluence built-in enables fast operation of FRONT (ARM, BOOM, BUCKET).

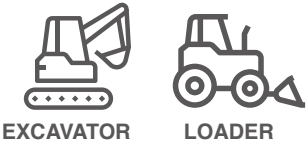
4 Stable driving

The built-in driving independence function ensures stable driving by maintaining a constant driving speed even when using FRONT while driving.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	250 BAR	
	FLOW	40 LPM	
SPOOL CONTROL TYPE		MANUAL / PILOT	
OVERLOAD RELIEF		70~270 BAR	
PRIORITY FUNCTION	SWING+BOOM	SWING FOR P3 PUMP	
	SWING+ARM	SWING FOR P3 PUMP	
	BOOM+BUCKET	BOOM PRIORITY	
	TRAVEL+FRONT	TRAVEL INDEPENDENCE	
CONFLUX	ARM	INTERNAL	FOR P3 PUMP
	BOOM	INTERNAL	FOR P3 PUMP
	BUCKET	INTERNAL	FOR P3 PUMP
HOLDING		BOOM	
AUTO IDLE		O	

TLV15

APPLICATIONS



The TLV15 provides the excellent controllability and reliability with various priority functions for 0.5~1.5 ton mini-excavators and agricultural machinery.

1 Space Saving with Compact Design

The space-saving design allows for use on relatively small machines.

2 Excellent controllability

Provides excellent operability.

3 Functionality and customizability

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-function valves, arallel and tandem circuits configurations are possible)



ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	210 BAR	
	FLOW	15 LPM	
SPOOL CONTROL TYPE		MANUAL / PILOT	
OVERLOAD RELIEF		70~270 BAR	
CONFLUX	OPTION	O	

HV80

The HV80 is dedicated and compact monoblock valve for Skid Steer Loader applications.

APPLICATIONS



1 Space Saving with Compact Design

Simple, compact and heavy duty designed 3sections monoblock valves for open center hydraulic systems.

2 Various Option

There are various options such as Carry Over(Power Beyond) and Floating functions.

3 Overload relief valve with make-up function

The adoption of an overload relief valve with a built-in makeup function ensures reliable operation.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	250 BAR	
	FLOW	80 LPM	
OVERLOAD RELIEF		70~270 BAR	
SPOOL CONTROL TYPE		PILOT	
CARRY OVER (POWER BEYOND)		O	
FLOATING		O	

HV70

APPLICATIONS



MOBILE
CRANE



CHERRY
PICKER



LOADER

The HV70 is versatility of this valve makes it the perfect control device for all sectors (Harvesting Machines, Brushcutter, Conveyors, small front loaders, Truck Mounted Cranes etc.)

1 Space Saving with Compact Design

Simple, compact and heavy duty designed monoblock valves from 1 to 4 sections for open center hydraulic systems.

2 Various Option

There are various options such as Carry Over(Power Beyond) functions.



ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	315 BAR	
	FLOW	70 LPM	
OVERLOAD RELIEF		70~270 BAR	
SPOOL CONTROL TYPE		MANUAL	
CARRY OVER (POWER BEYOND)		O	

Main Control Valve

HV50

The HV50 is versatility of this valve makes it the perfect control device for all sectors (Harvesting Machines, Brushcutter, Conveyors, small front loaders, Truck Mounted Cranes etc.)

APPLICATIONS



MOBILE CRANE



CHERRY PICKER



LOADER



1 Space Saving with Compact Design

Simple, compact and heavy duty designed monoblock valves from 1 to 4 sections for open center hydraulic systems.

2 Various Option

There are various options such as Carry Over(Power Beyond) functions.

3 Various Control Type

Actuation is manual, pneumatic, hydraulic, electro-hydraulic, with solenoid and remote spool control kits.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	315 BAR	
	FLOW	70 LPM	
SPOOL CONTROL TYPE		MANUAL	
CARRY OVER (POWER BEYOND)		O	

TX50

APPLICATIONS



MOBILE
CRANE



CHERRY
PICKER



LOADER

The TX50 provides the compact size and multipurpose sectional valve for outrigger and mini-excavator.

1 Functionality and customizability

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-functionvalves)

2 Space Saving with Compact Design

The space-saving design allows for use on relatively small machines.



ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	250 BAR	
	FLOW	50 LPM	
SPOOL	CONTROL TYPE	MANUAL	
	FUNCTION	PUSH PULL / DETENT	
BLOCK	Avaliable BLOCK Qty.	1~13 section	
SOLENOID		UNLOADING	
CARRY OVER		O (OPTION)	

TX80

The TX80 provides the compact size and multi-purpose sectional valve for 5.5~8.0ton excavators and 3.5ton cranes.

APPLICATIONS



FORKLIFT TRUCK



1 **Functionality and customizability**

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-functionvalves)

2 **Overload Relief Valve with make-up funtions**

Using a relief valve with a make-up function allows for stable operation.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	250 BAR	
	FLOW	80 LPM	
OVERLOAD RELIEF		70~270 BAR	
SPOOL CONTROL TYPE		MANUAL / PILOT	
SOLENOID	UNLOADING	O	
LOCKING	LIFT	O	
	TILT	O	

TX100

APPLICATIONS



The TX100 is a single-sided valve designed for 2.0 to 3.5 ton forklifts with excellent controllability and lift/tilt hydraulic locking and lowering flow control.

1 **Functionality and customizability**

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-functionvalves)

2 **High energy efficiency**

Energy efficiency is high by adopting a semi-loadensing system.

3 **Safety features such as inlet with power cut-off.**

Includes inlet with power cut-off function for safety.



ITEM		SPECIFICATION	REMARK
CONTROL TYPE		SEMI LOAD SENSING	
RATED	PRESSURE	250 BAR	
	FLOW	100 LPM	
SPOOL CONTROL TYPE		MANUAL	
SOLENOID	UNLOADING	O	
LOCKING	LIFT	O	
	TILT	O	

TX160

The TX160 provides a multi-purpose sectional valve for large flow rates for the 25ton cranes and 18ton folklifts.

APPLICATIONS



MOBILE CRANE



CHERRY PICKER



LOADER



1 Functionality and customizability

The basic circuit, variations, and the number of spools can be flexibly designed (general purpose and single-functionvalves)

2 Overload Relief Valve with make-up funtions

Using a relief valve with a make-up function allows for stable operation.

3 High flow sectional valve for equipment

The valve is suitable for a wide range of equipment requiring high flow rates with a flow rating of 160 lpm.

ITEM		SPECIFICATION	REMARK
CONTROL TYPE		OPEN CENTER	
RATED	PRESSURE	270 BAR	
	FLOW	160 LPM	
SPOOL CONTROL TYPE		PILOT	
OVERLOAD RELIEF		70~270 BAR	
LIFT HOLDING		O	
TILT LOCK		O	

APPLICATIONS



The TRCV is lever operation single function pilot valve, available as sectional from 2 to 4 sections.

1 Low actioning efforts.

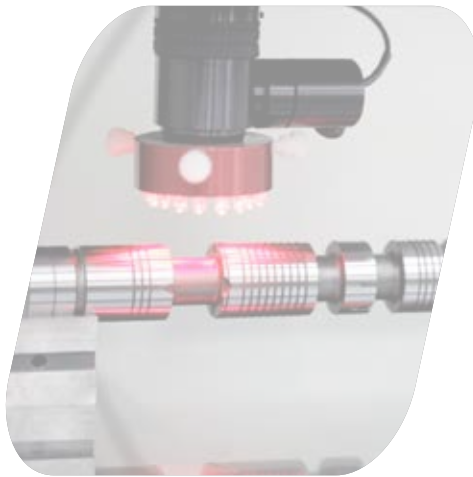
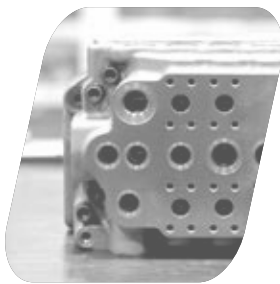
The simple structure makes it easy to operate and requires low running effort.

2 Easy installation and light weight.

The aluminium body makes it lightweight and easy to installation.



ITEM		SPECIFICATION	REMARK
RATED	PRESSURE	100 BAR	
	FLOW	20 LPM	
MAX BACK PRESSURE		3 BAR	
PRESSURE CONTROL RANGE		5~30 BAR	



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