DYNASET

POWERED BY HYDRAULICS



INSTALLATION GUIDE

INSTALLATION VALVES



PILOT VALVE

11/21
rev 1.0

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1. GENERAL

1.1. APPLICATIONS

DYNASET Pilot valve are designed to enable easy and reliable installation of DYNASET product to any modern type of hydraulic system with electric control.

Pilot control kit is designed for pilot controlled hydraulic pumps, pilot controlled spools and other pilot controlled hydraulic devices.

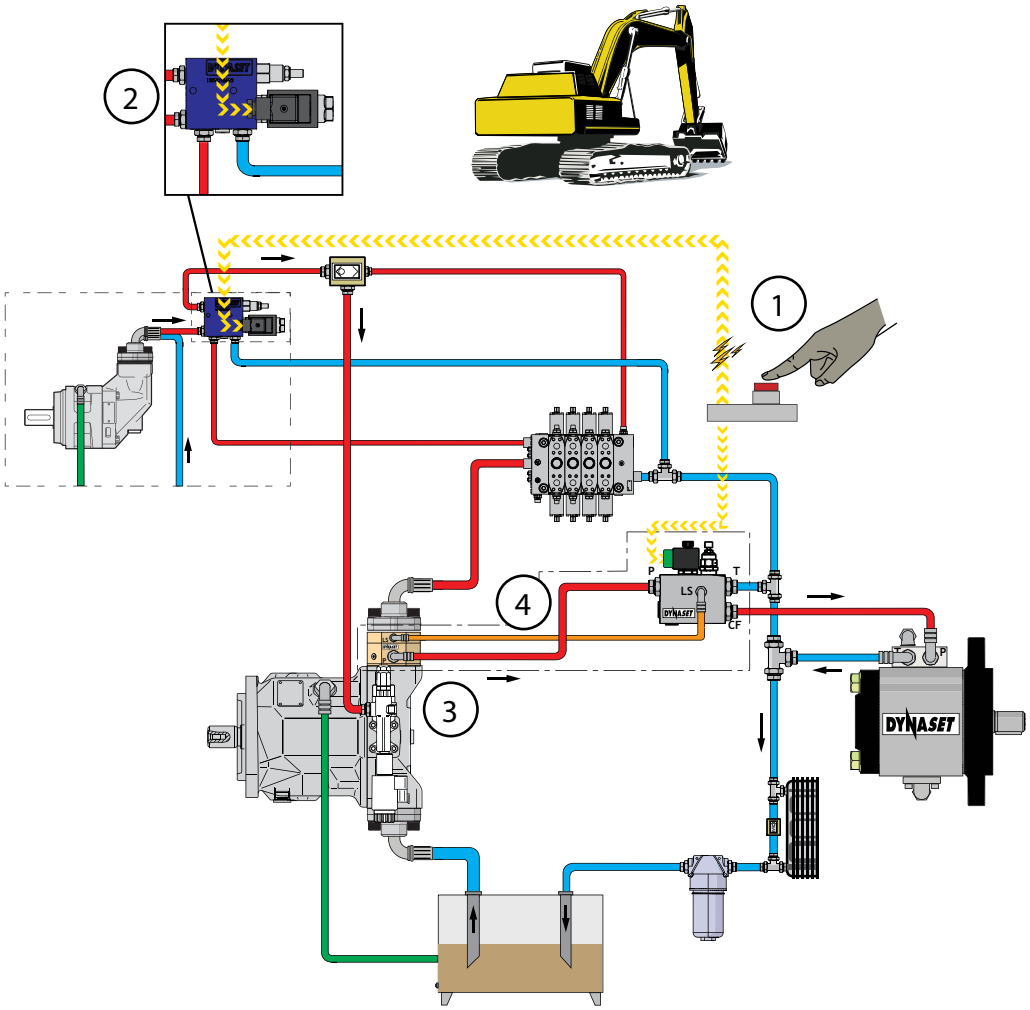
Hydraulic systems with pilot control are increasing in number and require more understanding when upgrading the sytems with additional hydraulic equipment.

Dynaset Pilot Control Kit is designed to fit any hydraulic pilot system for enabling installation and use of additional hydraulic equipment. It can also be used to actuate pressure switches in hydraulic system.

Pilot systems are desigend to ease the hydraulic load in big hydraulic systems. The pilot system is very light and turns on the main hydraulic system. It is connected to the system controls and takes input from them. As pilot system receives input, e.g. move the right track of the excavator, it sends the signal to main hydraulic system that does the actual work. The machine works totally on the basis of pilot systems and main hydraulic systems symbiosis.

If one wants to add a new hydraulic equipment to this kind of system, it must also make it controlable by the pilot system. This is were the Dynaset Pilot Control Kit is used. With it, user can install any hydraulic device to the hydraulic system and make it work properly.

1.2. OPERATING PRINCIPLE



1. When operator switches on the Dynaset equipment, e.g. HG Hydraulic Generator, the Dynaset hydraulic system powers simultaniously the Pilot Control valve and the PV-SAE Priority Valve (depending on the base machines hydraulic system) for the Dynaset Equipment.

2. The Pilot Control Valve triggers the main pump to action by sending a pilot pressure to open main hydraulic pumps actuators. Now the pump takes commands from operator to use the Dynaset equipment.

3. The main hydraulic pump now provides hydraulic oil flow and Dynaset PV-SAE Priority Valve guides the flow to the Dynaset equipment.

4. If the the PV-SAE is needed for the system it balances the hydraulic oil flow to the Dynaset equipment without hindering the use of other hydraulic functions of the machine, such as moving the boom.

2. SAFETY

⚠ ATTENTION!

Operator and maintenance personnel must act in compliance with the laws, regulations and recommendations issued by the local work safety authorities.

⚠ WARNING

HIGH PRESSURE OIL!

Can cause severe injuries.
Always wear appropriate clothing and safety equipment.



The pressure in hydraulic circuits is considerably high. Therefore the condition of your equipment are to be kept under constant observation. All couplings, valves and hoses are to be kept tight and clean. Leaks in the hydraulic system must be repaired immediately to avoid injuries caused by high pressure and oil blowouts.

⚠ WARNING

RISK OF BURNS!

Parts of the unit, oil, and oil filler cap can be hotter than 80 °C!

Wear personal safety equipment!



⚠ ATTENTION!

Before beginning any maintenance, repair or disassembly to the hydraulic system and DYNASET product, ensure that the hydraulic system is stopped and depressurized. Make sure that the system can not start accidentally.

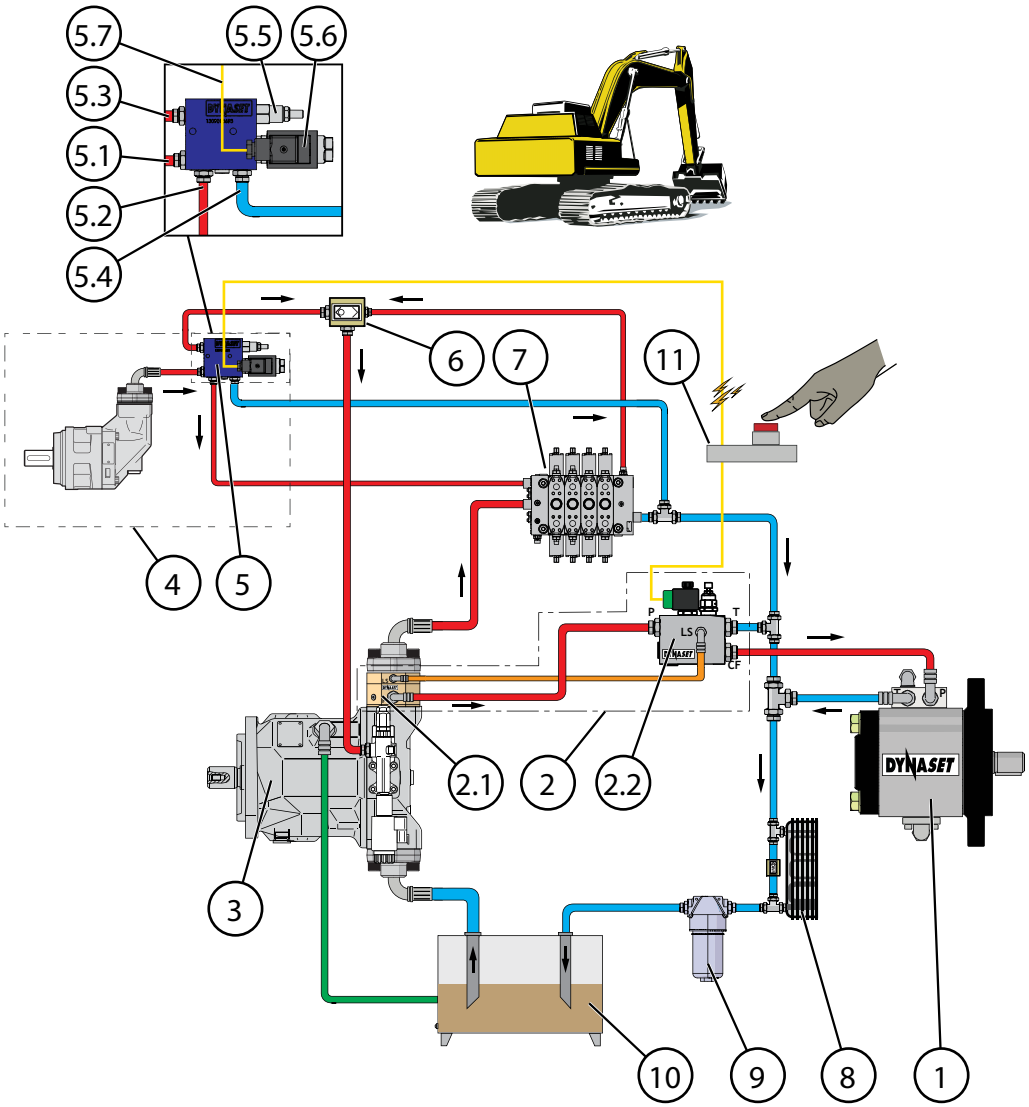
NOTE!

When carrying out any maintenance to the hydraulic system keep the components clean. This is to ensure safe, reliable and longlife operation of your equipment.

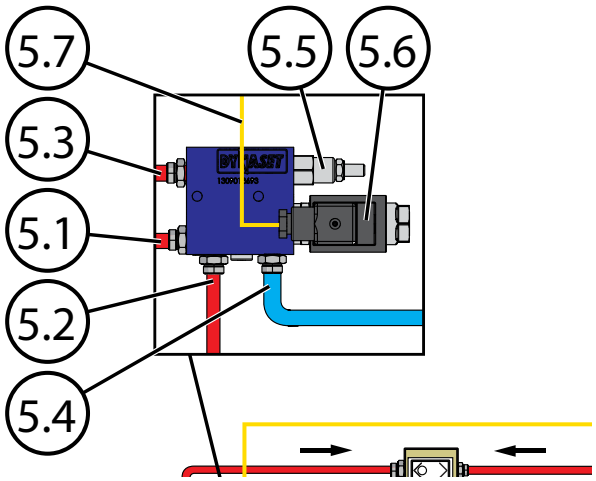
When working with the hydraulic system wear appropriate protective clothing, safety goggles, gloves, ear protection.

3. INSTALLATION ON HYDRAULIC SYSTEM

3.1. SYSTEM COMPONENTS



1. DYNASET hydraulic equipment
2. DYNASET Priority valve PV-SAE
   - 2.1. DYNASET PC-SAE pressure compensator
   - 2.2. DYNASET LSV Load Sensing valve
3. Base machine's variable displacement pump
4. Hydraulic Pilot system
5. Dynaset Pilot Control Kit
6. Check valve
7. Open centre directional control valves
8. Oil cooler
9. Oil filter
10. Oil tank
11. Dynaset equipment ON/OFF button



DYNASET Pilot valve has following components

5.1 Pin, intatake for the pilot pressure and hydraulic flow.

5.2 Pin, bypass to the pilot hydraulic system, if needed. This port is plugged by default.

5.3 Pout, the pilot pressure 5-55 bar regulated as the main hydraulic pump requires to be actuated.

5.4 Return line to the tank

5.5 Pressure reducing valve

5.6 Solenoid valve

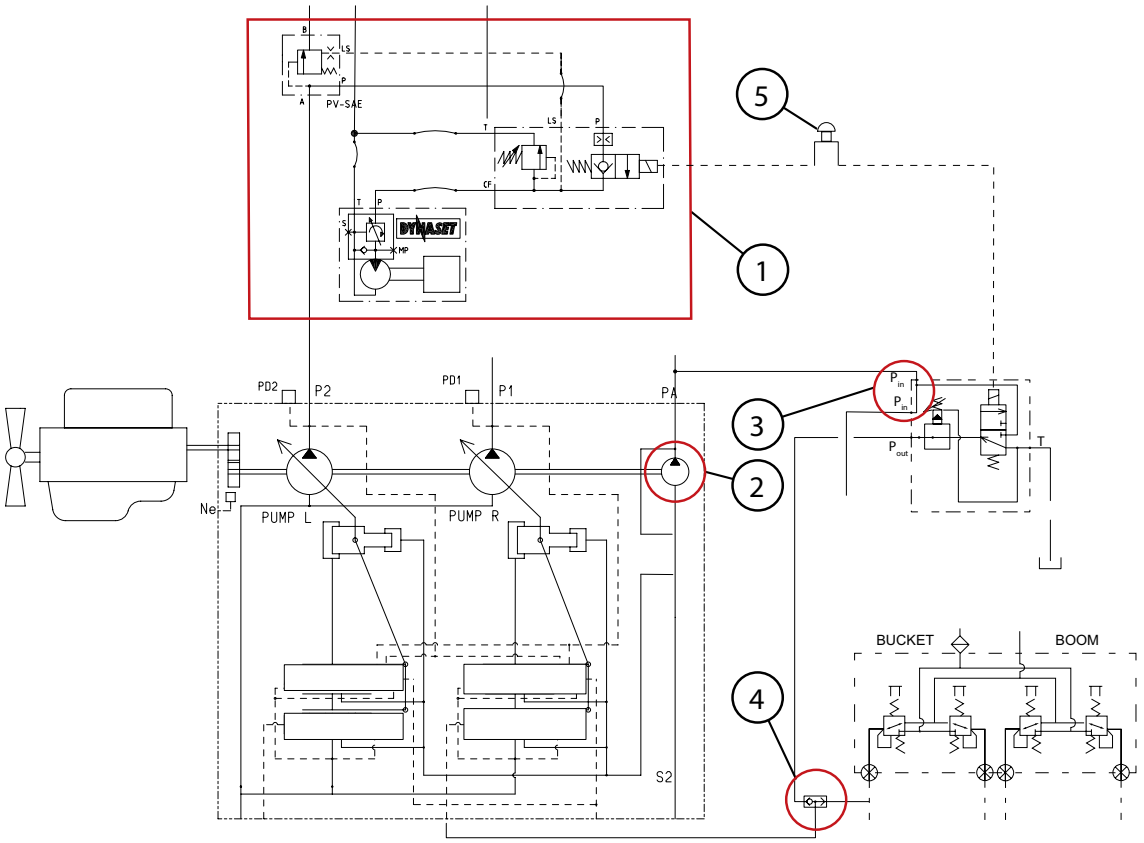
5.7 Cable wiring for operating Pilot Valve

3.8. INSTALLATION

Install the system with following steps:

1. Install the PV-SAE system. Installation for this can be found from PV-SAE installation manual.

2. Check the hydraulic schematic and locate the pilot systems pump.



3. Make a connection to the Pilot Control Valve from the Pilot systems main pressure line. If there isn't avaialble ports in valve manifold, then make a bypass for the pilot systems main pressure line with both Pin connections.

4. Connect the Pout to the pressure switch that actuates the main hydraulic pump. Use shuttle valve to make a balancing system with the rest of the main hydraulic system.

5. Connect the electric wiring between the PV-SAE LSV modules connector and pilot valves coil.

3.9. HYDRAULIC FLUIDS

Wide range of standard hydraulic fluids can be used with the DYNASET hydraulic equipment. Depending on the operating temperature, following mineral hydraulic oils are recommended:

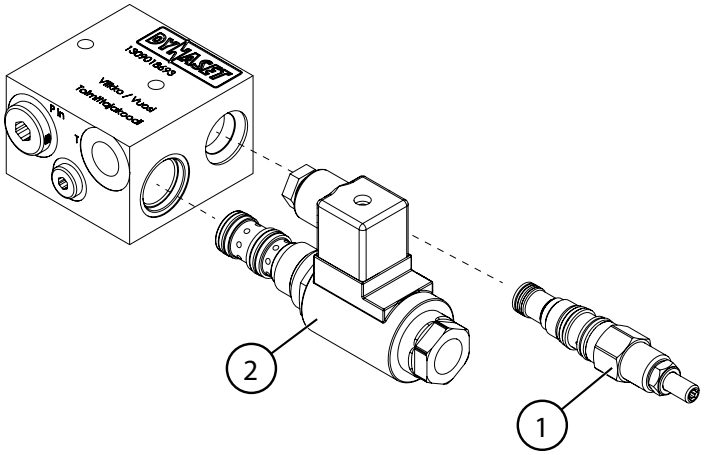
MINERAL HYDRAULIC OIL	OPERATION TEMPERATURE UP TO
ISO VG 32S	60 °C (140 °F)
ISO VG 46S	70 °C (158 °F)
ISO VG 68S	80 °C (176 °F)

Synthetic and bio oils can also be used if their viscosity characteristics and lubricating efficiency are corresponding to the mineral oils.

Automatic transmission fluids and even engine oils can be used, provided that they are allowed to be used in the hydraulic system of your base machine.

Hydraulic fluid change interval is according to the base machine's maintenance instructions. To use special hydraulic fluid with DYNASET equipment, please contact nearest DYNASET presentative for an advice.

4. SPARE PARTS



POS.	PART NO.	DESIGNATION	DETAILS
1	V1300505050	PRESSURE REDUCING VALVE CARTRIDGE	350/5-55 20 lpm
2	V7106881100	VALVE CARTRIDGE	3/2 - 35 lpm - 210 bar - 24 V

5. TECHNICAL SPECIFICATIONS

HYDRAULIC SPECIFICATIONS		
Pressure range	**bar (psi)**	5-55 bar (72.5-797.5)
Flow max.	**l/min (gpm)**	20 (5.28)
CONNECTIONS		
Pin		BSBB 3/8"
Pout		BSBB 3/8"
T		BSBB 3/8"
Coil	24VDC	Hirchsmann

6. MANUFACTURERS LIMITED WARRANTY

1.Warranty coverage

All hydraulic accessories manufactured by DYNASET OY are subject to the terms and conditions of this limited warranty. Products are warranted to the original purchaser to be free from defects in materials or workmanship. Exclusions from warranty are explained in item Exclusions from warranty.

2.Beginning of warranty period

Warranty period begins from the delivery date of the product. Delivery is considered to be done on the date when installation has been accomplished or purchaser has taken the product in use. Product is considered as taken in use at the date when DYNASET OY has delivered the product to purchaser, unless separately agreed otherwise by written agreement.

3.Warranty period

Warranty period is twenty four (24) months based on maximum of 2000 hours usage during this time period. In cases where the system is provided complete with certain special components (e.g. drive unit), those components are considered as a subject to their manufacturer's warranty.

4.Warranty procedures

Immediately upon identifying a problem which purchaser believes to be a failure subject to the product's limited warranty, purchaser must contact primary to the seller of the product. Contact must be made as soon as possible, latest thirty (30) days after the problem was identified. Seller and/or manufacturer technical staff determines the nature of the problem primarily by phone or e-mail. Purchaser commits to give necessary information and to perform routine diagnostic procedures in order to determine the nature of the problem and necessary procedures.

5.Warranty repairs

If the product is found to be defective during the warranty period, DYNASET OY will, at its option, either repair the product, author it to be repaired at its authorized workshop or exchange the defective product. If the product must be repaired elsewhere than premises of DYNASET OY or authorized workshop, all costs excluded from this warranty (traveling and waiting hours, daily allowance, traveling expenses and uninstallation/reinstallation costs) will be charged from the purchaser.

If the problem is not covered by this limited warranty, DYNASET OY has the right to charge purchaser of troubleshooting and repairing.

6.Delivery terms of warranty repair

If the product is found possible to be defective under this limited warranty and it needs to be repaired, DYNASET OY gives Warranty Return Number (WRN). Items being returned must be shipped, at the purchaser's cost, adequately packed for shipment, to the DYNASET OY or to other location authored by DYNASET OY.

Shipment documents must contain:

Purchaser's name and contact information

Receipt of original purchase

WRN code

Problem description

7.Warranty of repaired product

Warranty period of the product repaired under this limited warranty continues to the end of original warranty period.

8.Exclusions from warranty

This warranty shall not apply to:

- Failures due to normal wear and tear, improper installation, misuse, abuse, negligence, purchaser selection of improper product to intended use, accident, improper filtration of hydraulic oil or intake water or lack of maintenance.
- Cost of maintenance, adjustments, installation or startup.
- Coating, hydraulic oil, quick couplings and interconnection hoses (internal or external to system assemblies).
- Products altered or modified in a manner not authorized by DYNASET OY in writing.
- Products which have been repaired during warranty period by others than DYNASET OY or its authorized workshop.
- Costs of any other damage or loss, whether direct, indirect, incidental, special or consequential, arising out of the use of, or the inability to use, the product.
- Telephone or other communications expense.
- Product that is used in exceptional conditions, considered to cause excessive wear and tear.
- Faults caused by nature phenomenon's like flood, thunder, etc.

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7. PRODUCT DISPOSAL

Dispose and recycle all the DYNASET products and their packaging environmentally responsible way.

Do not dispose used oils, electrical components, batteries or any other hazardous waste with normal waste. They are harmful for the environment and can be recycled for re-use.

Contact your local waste recycling facility for more information about recycling hazardous waste.

NOTE!

Always act according to the waste legislation, regulations and recommendations in waste disposal and waste recycling issued by your local authorities.

8. DECLARATION OF CONFORMITY

We hereby declare that the design and manufacture of the product stated below are in conformity with the provisions of the European Parliament and Councils on the harmonization of the laws of Member States on the safety of machine's.

Machine directive 2006/42/EC

LVD directive 2014/35/EU

EMC directive 2014/30/EU

RoHS directive 2015/863

Applied conformity standards:

CEN EN ISO 4413: EN ISO 4413:2010 Hydraulic fluid power - General rules and safety requirements for systems and their components.

EN60204-1 Safety of machinery – Electrical equipment of machines.

Manufacturer: **DYNASET Oy**
Menotie 3, FI-33470 Ylöjärvi, Finland

Product group: INSTALLATION VALVES

Product: Pilot valve

If the device has been modified by someone other than the manufacturer or without the manufacturer's permission, this declaration is not valid.

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Ylöjärvi, Suomi, 01.11.2021

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POWERED BY HYDRAULICS

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ELECTRICITY
HG Hydraulic Generator
HGV POWER BOX Variable Hydraulic Generator System
HGV Variable Hydraulic Generator System
HWG Hydraulic Welding Generator
HGG Hydraulic Ground Power Generator

HIGH PRESSURE WATER
HPW Hydraulic High Pressure Water Pump
HPW Hydraulic Power Washer
KPL High Pressure Street Washing Unit
HPW-DUST High Pressure Dust Suppression System
PPL High Pressure Pipe Cleaning Unit
HDF Hydraulic Drilling Fluid Pump
HPW-FIRE High Pressure Firefighting System
FP Firefighting Piercing Kit
JPL High Pressure Bin Washing System
HSP Hydraulic Submersible Pump

COMPRESSED AIR
HK Hydraulic Piston Compressor
HKR Hydraulic Screw Compressor
HKL Hydraulic Rotary Vane Compressor

VACUUM
HCF Hydraulic Centrifugal Fan
HRVB Hydraulic Recycling Vacuum Bucket

MAGNET POWER
HMG PRO Hydraulic Magnet Generator
MAG Lifting Magnet
HMAG PRO Hydraulic Magnet

VIBRATION
HVB Hydraulic Vibra
HVD Hydraulic Directional Vibra
HRC Hydraulic Reversal Cylinder

POWER BOOSTING
HPI Hydraulic Pressure Intensifier
HPIC Hydraulic Pressure Intensifier for Cylinder

KNOW-HOW
Hydraulic Power Take-off (PTO)
Installation Valves
HMV Hydraulic Modular Valve System
HHK Hydraulic Grinder
HV Hydraulic Winch & HVY Hydraulic Winch Unit
De-Icing Technology
HEU Hydraulic Expansion Unit
HPU Hydraulic Power Unit
HRU Hydraulic Rescue Unit

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