PISTON SHOE
Q = (No. of Pistons) x (Piston Size) x (Piston Stroke) x (Drive Speed)
\[ Q = (\text{No. of Pistons}) \times (\text{Piston Size}) \times (\text{Piston Stroke}) \times (\text{Drive Speed}) \]
VARIABLE DISPLACEMENT PUMP - REDUCED FLOW

\[ Q = (\text{No. of Pistons}) \times (\text{Piston Size}) \times (\text{Piston Stroke}) \times (\text{Drive Speed}) \]
Q = (No. of Pistons) x (Piston Size) x (Piston Stroke) x (Drive Speed)
Q = (No. of Pistons) \times (Piston Size) \times (Piston Stroke) \times (Drive Speed)
Q = (No. of Pistons) x (Piston Size) x (Piston Stroke) x (Drive Speed)
SWASH PLATE BEARING

PINTLE

SADDLE
OPEN LOOP TRANSMISSION
OVER CENTRE OPEN LOOP TRANSMISSION
CLOSED LOOP TRANSMISSION
CLOSED LOOP TRANSMISSION
CLOSED LOOP TRANSMISSION
CLOSED LOOP TRANSMISSION

[Diagram of a closed loop transmission system]
DIRECT DISPLACEMENT CONTROL:
- Manual
- Electric Motor
- Pilot pressure
- Electronic

PRESSURE / DISPLACEMENT CONTROL:
- Pressure Compensation
- Load Sensing
- Constant Power
MANUAL DISPLACEMENT CONTROL

Q

Diagram showing a manual displacement control system with a linear relationship depicted by the graph Q vs. another variable.
ELECTRIC DISPLACEMENT CONTROL

~8 sec  ~40 sec
ELECTRONIC DISPLACEMENT CONTROL

$Q$ vs. $U$

$t_{MIN} \sim 300 \text{ mS} - 1000 \text{ mS}$
PILOT PRESSURE DISPLACEMENT CONTROL

Q

\[ P_p \text{ (bar)} \]

10 \quad 40
PRESSURE COMPENSATION
POWER LIMITING

Diagram showing a motor with a graph indicating power (P) versus load (Q). The graph shows a decrease in power as the load increases, representing the concept of power limiting.
AXIAL PISTON PUMP CHARACTERISTICS

- Displacements to 750+ cm³/r
- Pressure capabilities to 350/400 bar
- High noise level
- Sensitive to poor inlet conditions & contamination
- High overall efficiency
- Good life expectancy
- Large, bulky units
- Good fluid compatibility
- High cost.
PVB SERIES

- Classic product
- Single control piston
- No separate valve plate
- Pintle bearing yoke
- Fixed displacements up to 95 cm³/rev.

140 bar

11 14 21 33 43 62 95 198 cm³ / rev

210 bar
Mainly mobile applications
Single control piston
Pintle bearing yoke
Through drive option
Integral vane pump option.

CONTROLS
- Pressure compensator
- Load sensing
- Remote compensator
- Electric dual setting compensator
- Accumulator unloading compensator

185 bar
210 bar

25 cm³ / rev
41 cm³ / rev
45 cm³ / rev
PVQ SERIES

◆ Industrial pump range comprising quietened versions of PVB & PVE
◆ Single control piston
◆ Pintle bearing yoke.

140 bar
185 bar
210 bar

11 14 21 25 33 41 45 cm³ / rev

CONTROLS
- Pressure compensator
- Load sensing
- Remote compensator
- Electric dual setting compensator
- Accumulator unloading compensator
Medium duty hydrostatic transmission for mobile applications

Single and double units with integral charge and auxiliary pumps

Based on PVE open loop pump

Aluminium body

Typical applications include fork lift trucks and skid-steer loaders.

41 cm³/rev

41 + 41 cm³/rev

P_{MAX}

- 350 bar / 5000 psi
- 210 bar / 3000 psi
PVH SERIES

- Industrial and mobile pump range
- Wide range of control options (including torque limiting)
- Control piston plus bias piston
- 200% through drive capability
- Saddle bearing yoke.

250 bar
57 74 98 131 cm³ / rev
Low noise Industrial and Mobile pump series
Single control piston
Saddle bearing yoke
200% through drive capability.
High pressure open loop pumps for industrial applications

Wide range of control options

Saddle bearing yoke with single axial control piston.
High pressure open loop pumps for industrial applications

Wide range of control options

Saddle bearing yoke with perpendicular control piston

Suitable for larger displacements and multiple units.
PVX & PVW SERIES OPEN LOOP PUMPS

PVX & PVW SERIES OPEN LOOP PUMPS

PVW

PVX

66
90
130
180
250
360
500
750

cm³/rev
High pressure closed loop pumps for industrial applications

Wide range of control options

Saddle bearing yoke with perpendicular control piston

Integral pilot and charge pump options.
An oil-cooled electric motor and pump assembly mounted within a noise reducing shroud
An oil-cooled electric motor and pump assembly mounted within a noise reducing shroud.
◆ An oil-cooled electric motor and pump assembly mounted within a noise reducing shroud
Significant noise and space reductions

Suitable for standard single or multiple vane or piston pumps

Access port for pump control adjustments

Available in five power sizes from 15 to 92 kW.
PISTON PUMP RANGE

PRESSURE CAPABILITY

PVQ
PVE
PVM
PVH
PVX / PVW

DISPLACEMENT