

Pump Speed Control Type Electro-Hydraulic Hybrid System

Features

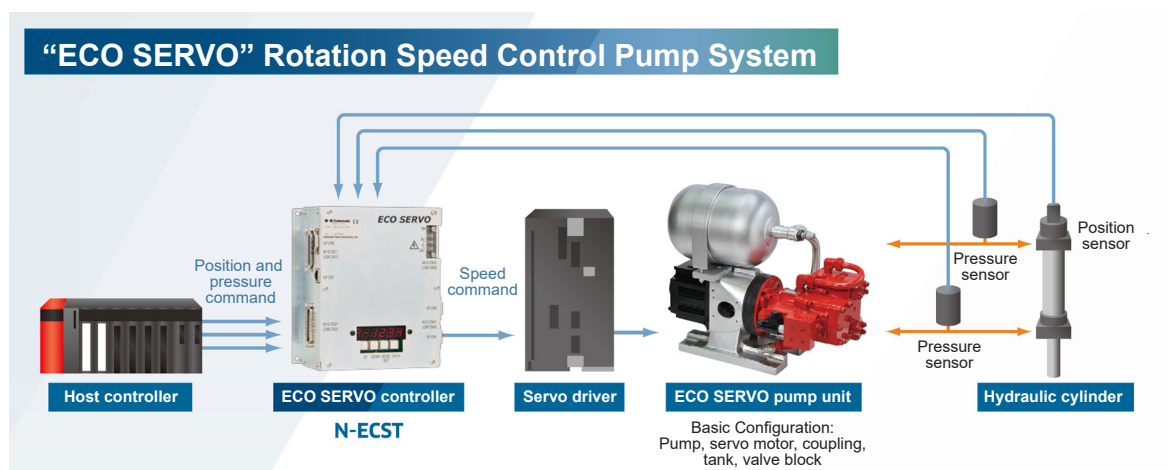
- ◆ Controls rotational speed of hydraulic pumps in accordance with the required power
- ◆ Enables configurations with both advantages of electric system and hydraulic system
- ◆ Minimizes power consumption when stopping actuators or holding pressure
- ◆ Downsizes hydraulic fluid tank and cooler capacity due to reduced calorific values



Pump unit and controller

Basic Concept or Summary

The pump speed control system drives the controlling device directly with variable speed control of the motors. The electric motor runs at desired delivery flow and to the desired directions only when the load power is needed.



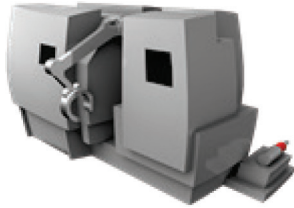
It is called an “electro-hydraulic hybrid system” since it uses the advantages of both hydraulic and electric control systems.

- (1) Reduces pressure loss due to simple hydraulic circuits without a control valve since it directly controls the actuator
- (2) Enables downsizing of fluid tank capacity and cooler capacity because of small calorific value generation

Applicable to a broad range of products

Energy saving

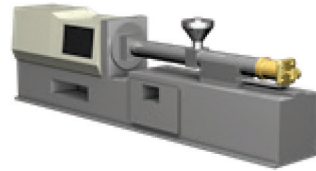
Max.60%



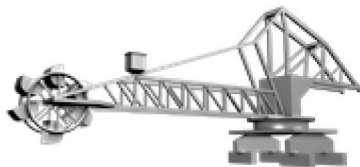
Forming machines, packing machines

Energy saving

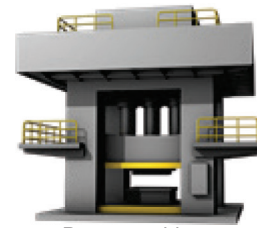
Saving 50% energy compared with the conventional system



Injection molding machines



Reclaimers (steel making plants)



Press machines

Energy saving/reproducibility

Saving 40% energy compared with the conventional system

High-precision

5 μ m Position control accuracy

Energy saving hydraulic unit

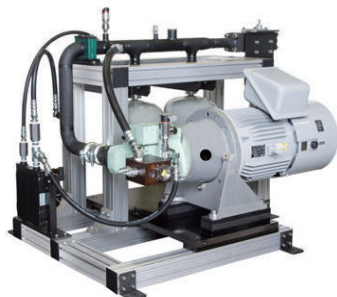
The “ECO SERVO Light” and “ECO SERVO Avant” serialized as integrated energy saving package units with a pump, tank and valve block.

“Light”

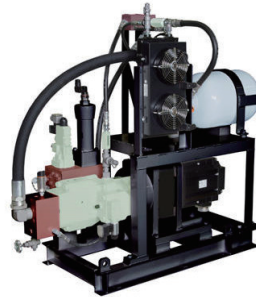
- The open circuit type piston pump is driven by an inverter motor
- The specialized for flow control and pressure control makes it easy to handle and install into equipment

“Avant”

- The closed circuit type piston pump is driven by a servo motor
- In addition to functions featured by Light, such various functions as cylinder position control, high response, and power regeneration have been added to realizing both energy savings and upgrading of equipment



ECO SERVO® Light



ECO SERVO® Avant

Installation in Practice or Schedule

- ◆ Delivered: 1,200 units (as of the end of June 2024)
- ◆ Major applications: Press machines, molding machines, experimental system, machine tools, steel making plants, etc.

Contact: **Kawasaki Heavy Industries, Ltd.**, Precision Machinery Business Division
 Tel: +81-78-360-8607 Fax: +81-78-360-8609
 URL: http://global.kawasaki.com/en/industrial_equipment/hydraulic/index.html