

HYB

Hybrid machine controller

Completed experimenting with closed-loop control system

This system Combins the Pilot controller,high efficiency digital motion control card,driver, servomotor and pump all with digital communications.

The new digital communications system replaces the previous 0-10V analogue output system.

The completed closed loop system can be more *customized* to satisfy the customer's requirements.

Now the controller's interface utilized a full color 3-D high resolution along with USB/SD Card ports to upload and download data.



Efficiency
High speed
Energy Savings
Closed-loop control system

HYB is the pioneer
of the new generation
plastic mold injection machine.

HYB Hybrid machine controller

**High-Energy
Saving**

**Advanced
Performance**

Close-Loop

SYSTEM PERFORMANCE

- 1、All parameters can be saved and read though the USB/SD card, So it is easy for commissioning and follow-up services.



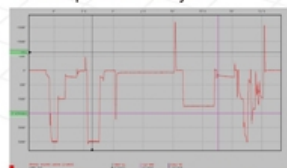
The USB/SD Card Connector

- 2、For enhancement, all PID parameters are open;



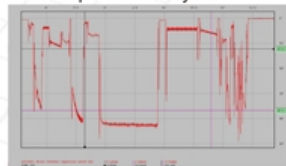
- 3、over 40% energy will be saved for the machine :

Rotation speed of servo motor in one production cycle



Cycle time = 19.04 second

Electrical current of servo motor in one production cycle



Cycle time = 19.04 second

OPTIMAL ENERGY SAVING SYSTEM HYB

- HYB system:servo-pump system

PUMP : **Eckerle 、Voith (made in Germany)**

Driver : **Siemens 、LUST (made in Germany)**

Motor : **GK 、Thor Tech 、PH 、Siemens**

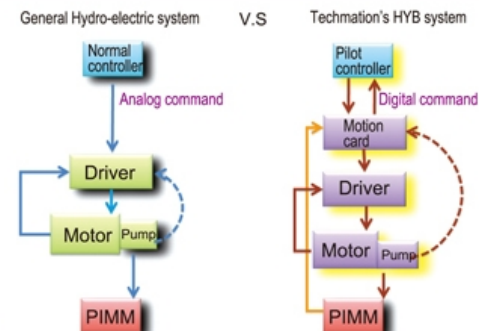
Control Card : **DSP28 Card (TECHMATION)**

Controller : **Pilot Special System (TECHMATION)**

4、Control Card

HYB Advantage

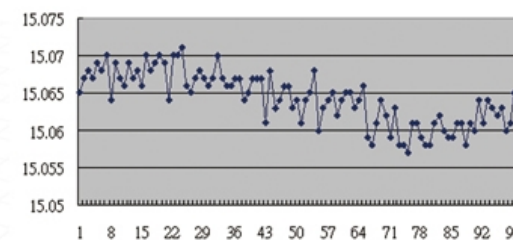
General Servo System	HYB Servo System
Control : Open-loop or Semi-Close loop	Control : Close-loop ✓
Tune : On The Drivers	Tune : On The Controller ✓
PID : The Drivers support the same PID	PID : The Controller support the different PID ✓



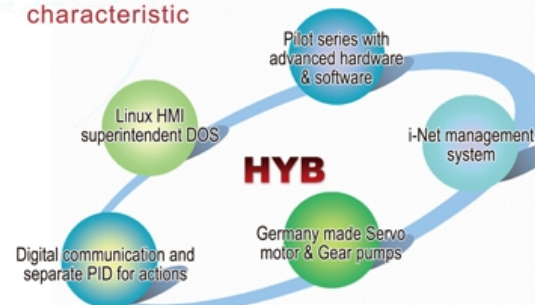
5、Close-Loop :

- Super fast response
- Very high accuracy control
- High repeatability
- Very low internal leakage
- The most smooth operation plastic injection molding machines

The stability of product weight in 100 continuous shots



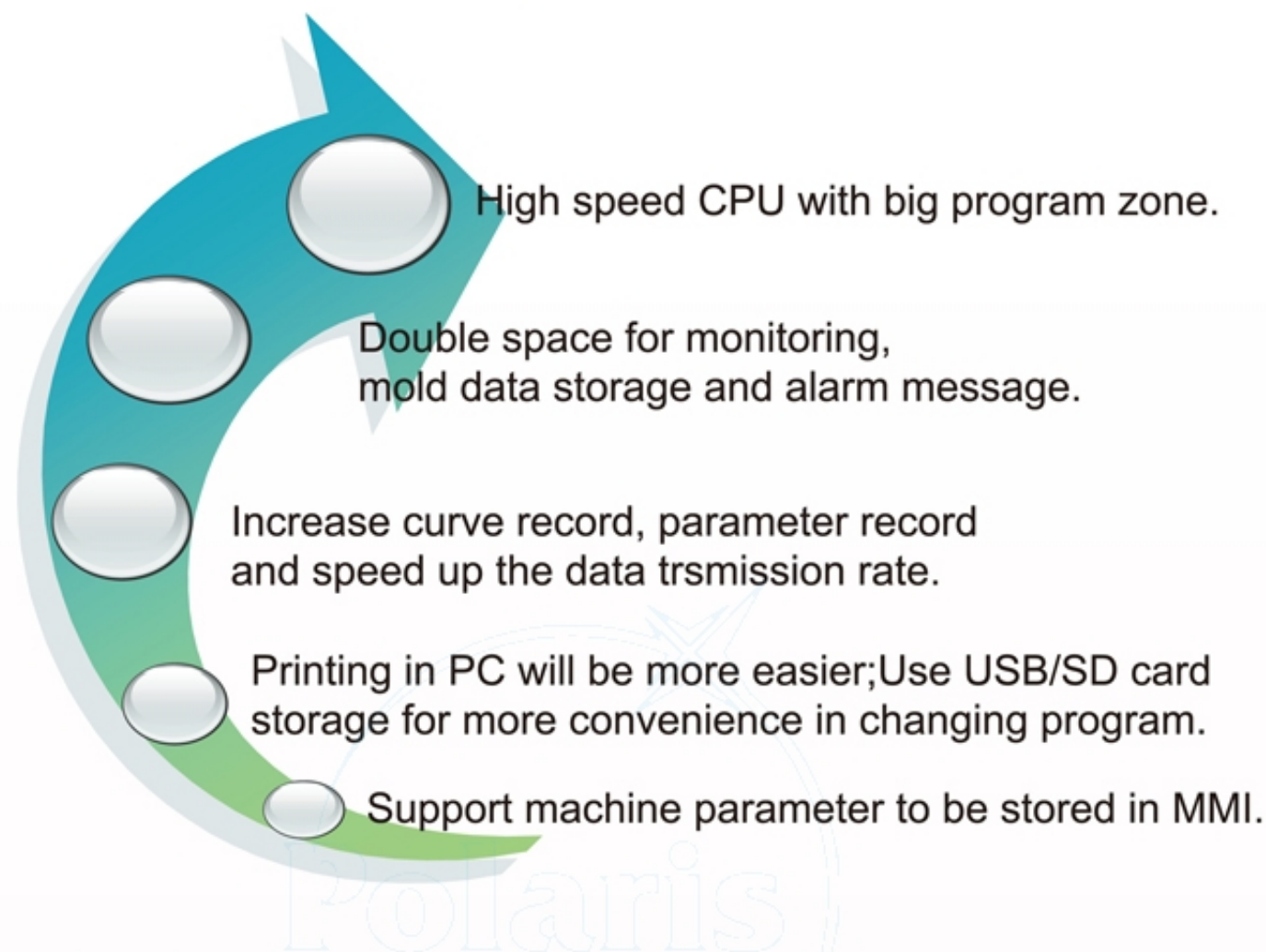
characteristic



Most effective and positive energy saving system

- 1.Pilot series of automation's controller
- 2.Germany made high precision gear pump
- 3.European made permanent magnet servo motor like SIEMENS
- 4.With European made servo driver like SIEMENS
- 5.Advanced high speed hardware and software of Techmation
- 6.No unloading and high response high accuracy control
- 7.Injection molding with highest stable and smoothness

Functional increasing in Man-machine interface



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