

DrivAx PSH Press drive Product data sheet



Advantages

- + High productivity and flexibility
- + Resource-saving and energy efficient
- + High reliability and availability
- + Integrated process monitoring
- + Modular and scalable

DrivAx servo drives

Efficient drive technology for high productivity

DrivAx servo drives combine the advantages of hydraulics with the advantages of servo drives. The result: energy-efficient drives with low heat and noise emissions and at the same time high robustness, power density and dynamics.

DrivAx servo drives consist of a variable speed pump and a servo motor, which simultaneously serves as drive and control for the actuator.

They are suitable for all linear movements requiring high forces and precision. At the same time, they are highly productive while protecting the environment, climate and resources.

Perfectly adaptable to your requirements, DrivAx servo drives are available in various system configurations:

- Motor pump combination
- Self-contained drives
- Application-specific system solutions

Machine and equipment manufacturer

Why you should rely on DrivAx servo drives?



The allrounder with a modular set-up

DrivAx servo drives supports all common standard interfaces, enabling them to be easily integrated into existing machines. Various pre-configured modules allow optimal dimensioning of the system, precisely matching to your application. Furthermore, the drive can be scaled and synchronized to cover all conceivable force spectra. The allrounder for all applications.



Less is always more – no servo valves required

The drive technology of the future works without a complex infrastructure. DrivAx drives are based on a combination of a servo motor and a variable speed pump. The servo motor drives the system and precisely controls the force, movement, and position of the actuator. Control valves, hydraulic power units and complex piping are no longer required. True to the principle: less is more.



Easily integrated, rapidly enabled

DrivAx drives are compact, optionally self-contained systems and therefore very easy to integrate into machines. A mechanical interface, an electrical connection, and data connections for the sensor system are all that is needed. As there is no need for complex power unit pipings, valve technology cabling, and filtering of the hydraulic fluid, you save a lot of time while designing and commissioning your machine. For lean mechanical engineering without compromise.

DrivAx IPS



2002

DrivAx PSH



2011

DrivAx CLDP



2012

DrivAx CSH



DrivAx PDSC



2014



Operators of machines and plants

Why you should rely on DrivAx servo drives?



Increase productivity, save resources

No proportional valves, but the pump regulates the volume flow and pressure. Only as much electrical energy as the process actually requires is converted into power. Efficiency at its best. And at the same time, electricity costs and CO₂ emissions are reduced. It's not just the environment that benefits.



Intelligent solutions for Industry 4.0

DrivAx servo drives work precisely, with high forces, while paving the way for sustainable, climate-friendly production processes. Intelligent sensors and electronics control, regulate and monitor the drive system, which not only enables high machine productivity but also gives the system diagnostic capability – ready for Condition Monitoring and Predictive Maintenance.



The reliable endurance runner

DrivAx servo drives are compact power packs with a high level of endurance and low maintenance. The actuator is practically wear-free in operation, while proven pump technology and reduced system complexity guarantee long maintenance intervals. Compared to electromechanical solutions, the lifetime is increased by 80%, even in highly demanding operating conditions.



Less oil, good for the environment

DrivAx servo drives only consume as much energy as is currently needed in the process. This not only reduces electricity costs, but also the heat input into the hydraulic medium and the necessary cooling effort are reduced. Hydraulic fluid can be reduced by up to 90%. Green light for clean technology.

DrivAx CLCP



2016

DrivAx RQ4



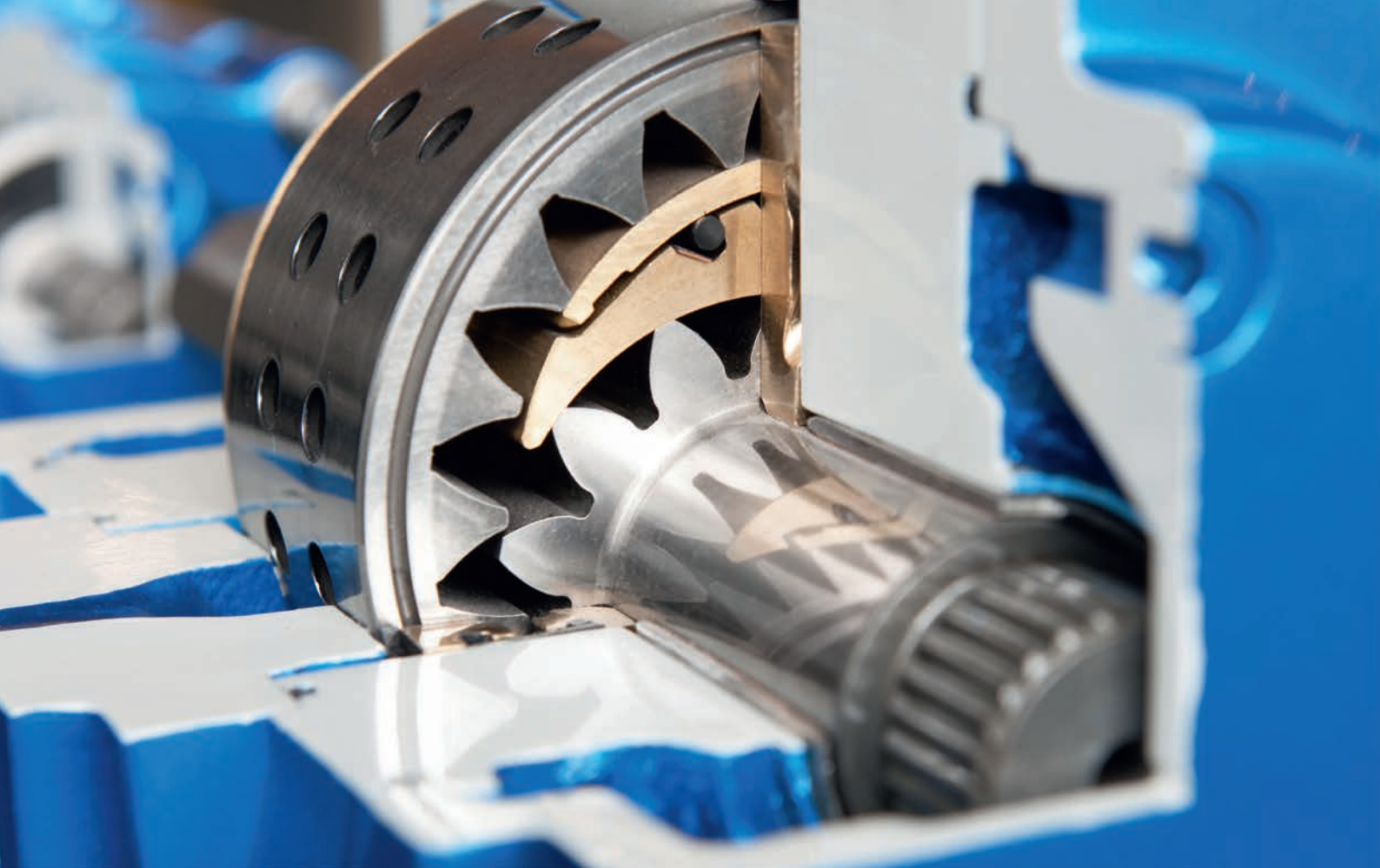
2021

DrivAx IQ4



2022





DrivAx PSH

Compact, energy-efficient and highly productive

DrivAx PSH are servohydraulic press drives suitable for high forces and precision

The press drive DrivAx PSH replaces classic valve and control technology with variable-speed pump drives. This allows optimum adaptation of force and speed to the press process and simplifies the design of the drive.

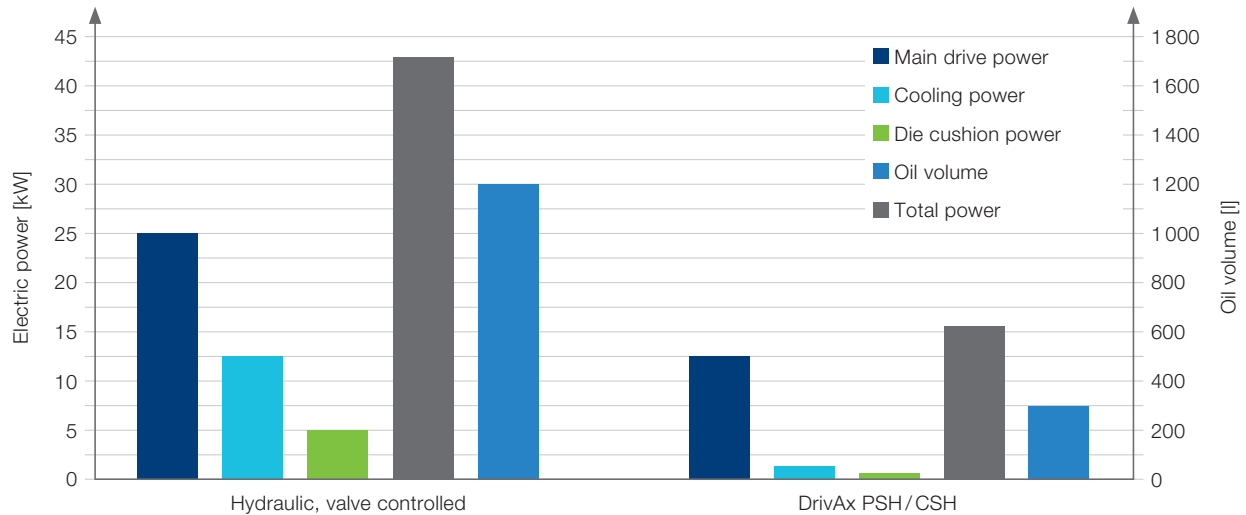
The intelligent control system allows very flexible use of the press. Productivity increases and the parts produced are of exceptionally high quality.

The complete system has a modular design and, in addition to the variable-speed pump drives, includes power units, control technology and software as well as sensors and safety modules.

Benefit from our many years of expertise in all aspects of hydraulic servo drives.

Starting with the calculation and design, continuing with the installation and commissioning, up to questions of cost-optimized operation and maintenance concepts – we are your partner with system competence.

Energy



Technical data of the compared drives

- Press force: 3 150 kN
- Speed rapid traverse : 660 mm/s
- Speed load: 140 mm/s
- Positioning accuracy: 0.01 mm

Energy use in line with the process

Compared to conventional systems, the DrivAx PSH offers energy savings up to 60 %. Energy-efficient, with DrivAx PSH modernized systems use only as much energy as the press requires in the various phases.

The comprehensive portfolio also for modernization

Press drive DrivAx PSH can be easily integrated into the press and is suitable for new installations and for retrofits. The drive solution requires significantly less space and less oil volume than older hydraulic systems; this makes it predestined for modernizing systems (retrofits).

Running costs

The DrivAx PSH concept includes low cost of commissioning, training and maintenance. The state-of-the-art sensor system provides additional diagnostic capabilities, which supports preventive maintenance and, in the ideal case, condition-oriented maintenance.

Service

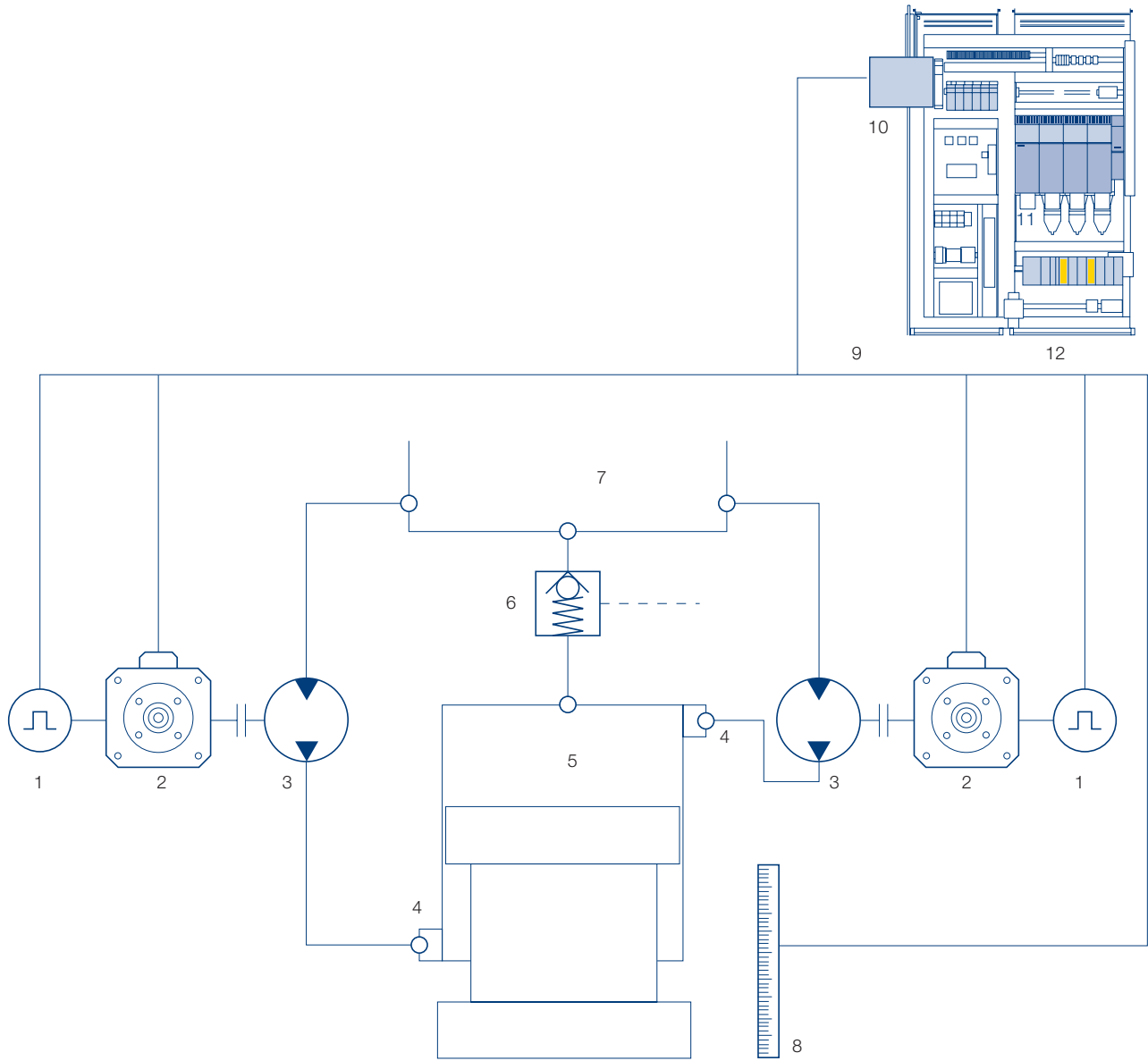
The use of proven standard components that are available around the globe and around the clock permits fast and simple access to replacement parts, and, as a consequence, secures the high availability and productivity of the press.

The complete system includes

- DrivAx IPS, servo pump group, incl. servo motor
- Hydraulic power pack
- Safety systems
- Switching electronics
- Sensors
- CPU
- I/O peripherals
- Control panel with pre-built touch screen interface



PSH diagram



Cabinet including control algorithms

- | | |
|--------------------------|--------------------------|
| 1 Encoder | 7 Oil tank |
| 2 Motor | 8 Measuring system |
| 3 Internal gear pump IPS | 9 DriveCliq |
| 4 Safety module | 10 Touchscreen MP377 |
| 5 Main cylinder | 11 Converter |
| 6 Suction valve | 12 Technology DrivAx PSH |

Scope of delivery

- Servo motor pump group DrivAx IPS
- Hydraulic safety modules
- Cabinet incl. Converter, Control Simatic S7, Software package, Control buttons
- Sensors
- Cable with a defined length for: Sensors, Motor, Valves of scope of delivery
- Performance Fluid PF-400

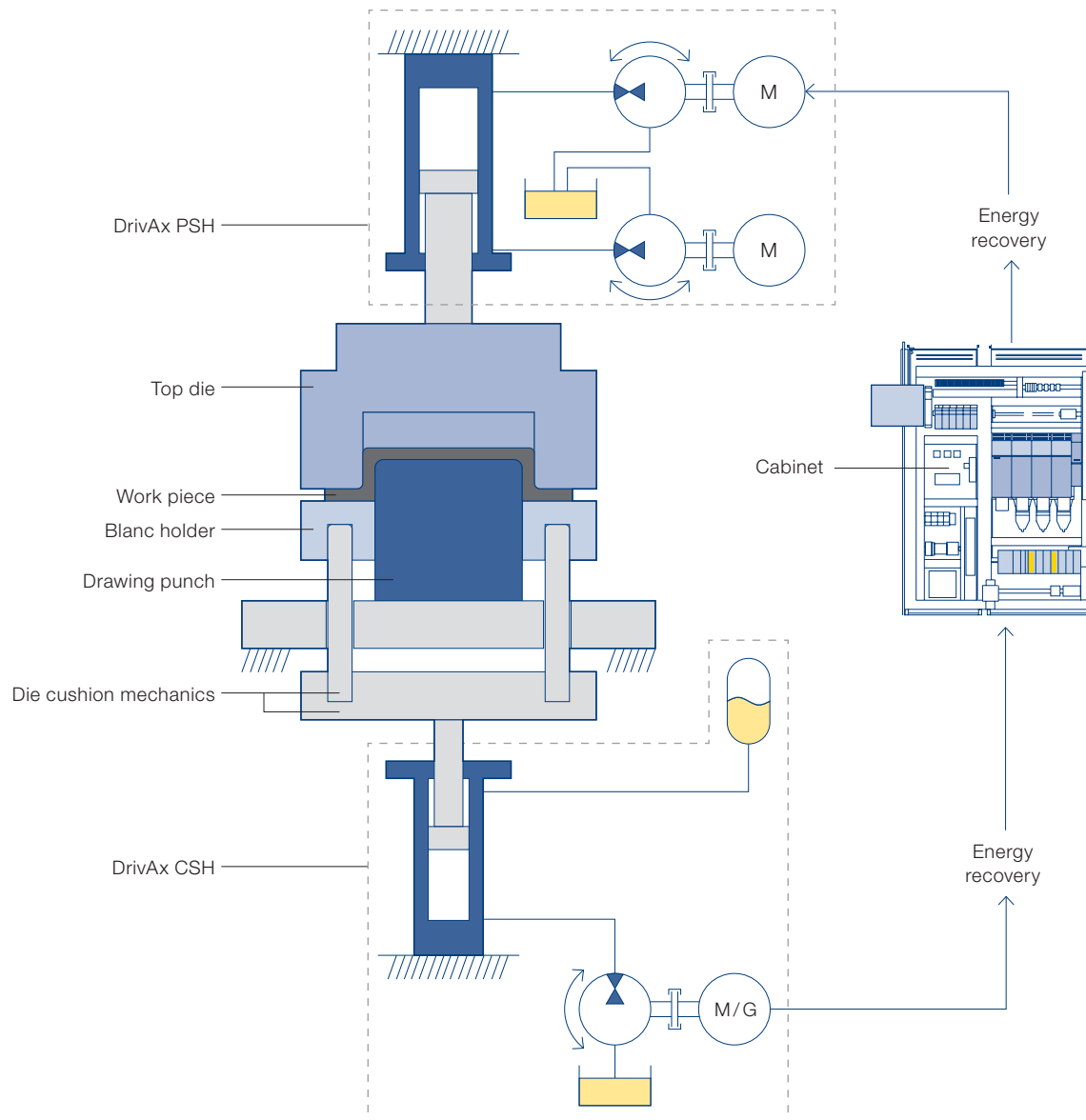
Options

- Power Pack (optimum filtering circuit, cooling, ...)
- Hoses, tubes (hydraulics)
- Suction valve
- Cylinder
- Measuring system
- HMI (in Cabinet)
- Start up assistance

Advanced scope of delivery

- Advanced safety features in Simatic S7 CPU
- Die cushion control DrivAx CSH

The option – Servo cushion DrivAx for more flexibility



Advantages using DrivAx PSH

Features	Advantages	Benefits
Speed and motion control of the actuator with a variable speed internal gear pump driven by a servo motor, operating as motor or generator	<ul style="list-style-type: none"> • Reduced energy consumption • High dynamics thanks to low mass moment of inertia • Freely and easily programmable process • Reduced cooling capacity needed • Lower noise emission • No control valves • Recovery of system energy 	<ul style="list-style-type: none"> + Increases the productivity of the machine thanks to the precise position and force control of the actuator as well as the easy adaptation to different production processes + Reduces investment and operating costs + Quick and easy installation and commissioning + Reduced effort and cost of noise protection measures
Hydraulic power transmission	<ul style="list-style-type: none"> • Almost wear-free • Over-load safe operation • High power density • High forces realizable 	<ul style="list-style-type: none"> + Low service costs thanks to long service intervals + Tools are protected, production downtimes are avoided and investments in overload safety are not necessary + Reduced machine footprint
Modular Design	<ul style="list-style-type: none"> • High variety of options • Scalable 	<ul style="list-style-type: none"> + Reduced development time and cost + Free selection from different servo motor and frequency converter manufacturer + Power can be adapted exactly to the machine cycle, thus reducing investment costs + High forces can be realized
Position measuring system, temperature and pressure sensors integrated into the drive	<ul style="list-style-type: none"> • Process monitoring without additional sensors and measuring systems • Sensors protected from damage and other process conditions 	<ul style="list-style-type: none"> + Drive is Industry 4.0-ready + Integration into the machine control without investment in sensors and measuring systems + Reliable sensor technology avoids production downtimes
Pre-configured software modules	<ul style="list-style-type: none"> • Control algorithms are optimally adapted to hydraulics and electronics 	<ul style="list-style-type: none"> + Fast and efficient commissioning + Easy integration into the machine control

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