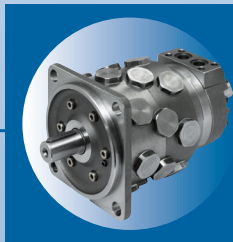




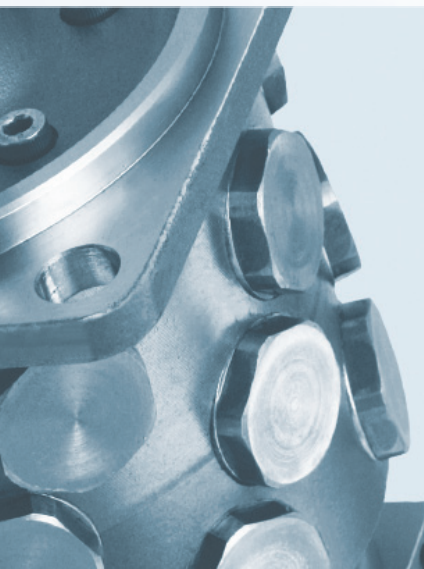
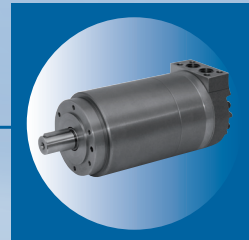
DÜSTERLOH **Fluidtechnik**

High-precision hydro motors

RADIAL PISTON



AXIAL PISTON



High-precision hydro motors



Quantum leap for synchronisation performance, even with lowest speeds

An exact adherence to the specified rotational speed profile is of essential importance for many fields of application of hydraulic motors.

DÜSTERLOH Fluidtechnik GmbH now presents a new generation of motors, for which a significantly improved constancy of rotational speed was achieved compared to conventional motors.

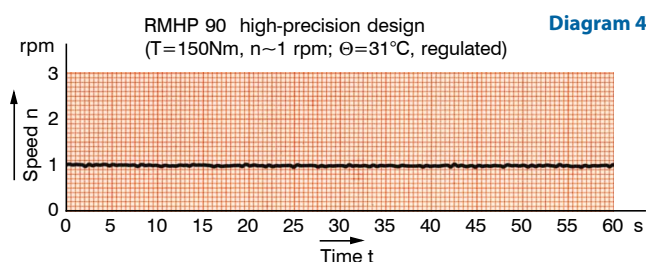
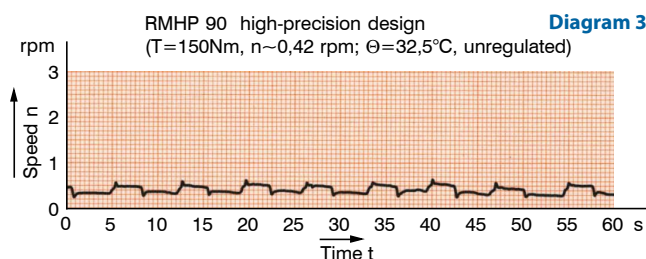
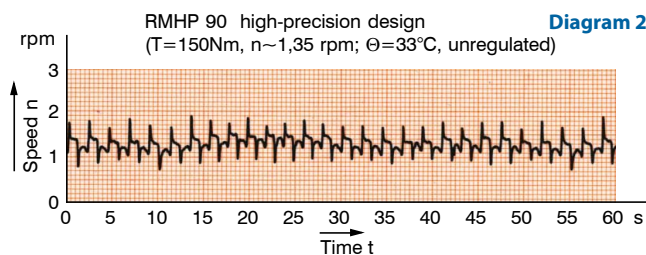
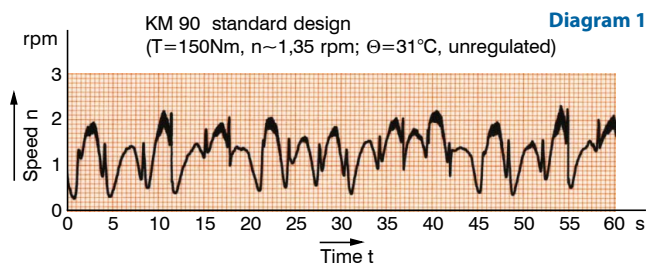
Due to the constantly improved sensor system as well as the permanently growing capabilities of the measuring and control technology, the demands for the precision of the periphery of controlled processes are constantly increasing. This development is remarkably accelerated and facilitated by improvements to the drive units. The control variable can follow up faster and more precisely when its deviation from the target value is already smaller in an unregulated condition.

As a reaction to corresponding requirements of the market, DÜSTERLOH Fluidtechnik now expand their tried and tested motors by a "high precision motor" variant.

Design modifications in the flow control inside the motor as well as in the arrangement of the pistons have led to significant improvement of the constancy of the rotational speed. In addition, the speed range was clearly extended downwards. For the "standard motor" which is already precise in competitive comparison, the ability to run is ensured for a minimum speed of 5 min^{-1} .

The "high-precision motor" can achieve speeds of significantly less than 1 min^{-1} with already good constancy of speed in unregulated operation. The maximum speed is still up to 2000 min^{-1} , depending on the motor size.

The superior running characteristics of the high-precision motor in unregulated and regulated condition are shown in the diagrams.



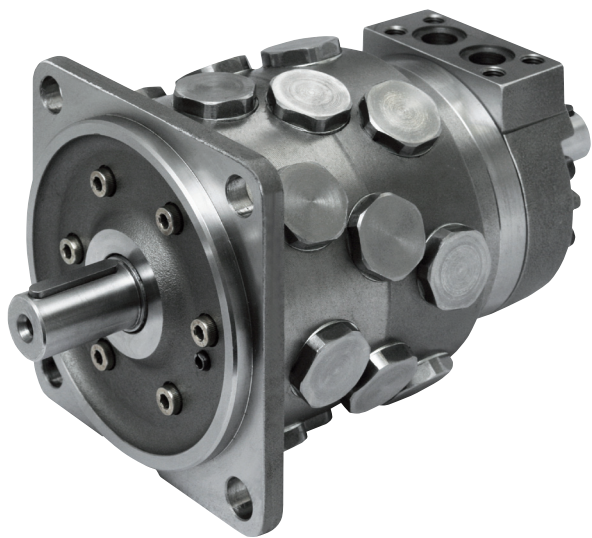


Diagram 1 was taken with a conventional motor with standard control disc with fixed tolerance. The wide deviations around the average speed of 1.35 min^{-1} are largely erratic and can hardly be regulated completely.

Diagram 2 was run with the high-precision motor also with a speed of 1.35 min^{-1} . The run of the curve is regular.

Diagram 3 clearly shows that such low speeds can safely be run with the high-precision motor which previously could not be realised, in this case 0.42 min^{-1} .

Diagram 4 shows the speed constancy of the regulated motor. It is apparent that all deviations from the target value which occurred in unregulated operation, are smoothed here by means of a regulator and a dynamic servo valve. For a speed of 1 min^{-1} , a standard deviation of 0.011 min^{-1} is reached, a value which previously could not be achieved, meeting highest demands, e.g. in the test stand technology.

The high-precision motor RMHP 90 was used for the recording of the diagrams. This is a 3-row

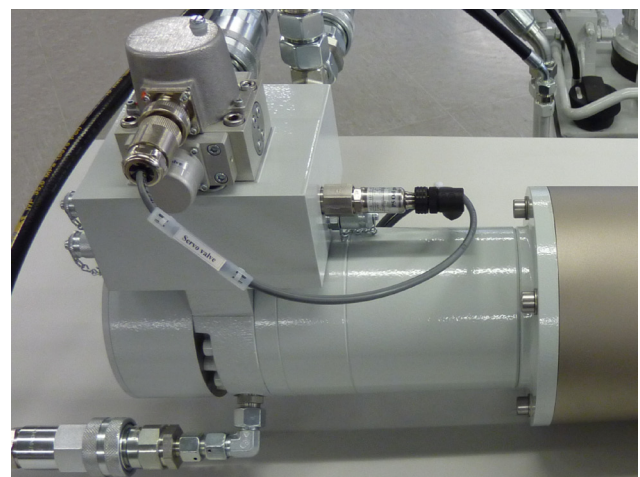
radial piston motor with clearance-adjusting control disc and a geometric cyclic irregularity of only 0.28%.

Due to the large speed range and the excellent constancy of speed, this motor is particularly suitable for regulated precision drives - primarily in connection with standstill stopping brakes, one- or multi-stage planetary gear sets as well as installed speed or rotation angle measuring devices.

The plastometer test stand of Bähr Thermoanalyse GmbH in Hüllhorst may be mentioned here as an example of application, with such high demands to the hydraulic motor. It is used to analyse the hot deformation of electrically conductive materials at high temperatures. The torque required for the inspection must be applied to the heated specimen with the utmost possible speed constancy.

Only the DÜSTERLOH high-precision motor RMHP 90 was able to meet the requirements of Bähr Thermoanalyse.

A comparable quality improvement as for the described radial piston motor is also tested for the DÜSTERLOH axial piston motors.



DÜSTERLOH has been developing fluid technology products for more than 100 years.

The drives, controls and hydraulic power units from Hattingen are appreciated throughout the world for their complete reliability; including under extreme conditions. The owner-managed company's own development and construction department and the wide range of products cater for distinctive flexibility and customer-orientation.

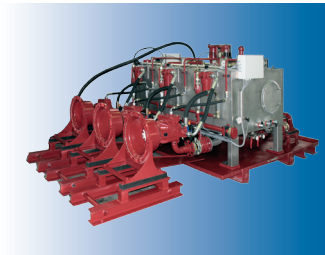
Products

- Hydraulic radial piston motors
- Hydraulic axial piston motors
- High-precision hydro motors
- Pneumatic motors
- Pneumatic starters
- Hydraulic and pneumatic controls
- Hydraulic power units

Designing controls and hydraulic power units specific to the customer is our company's major strength. Vast product diversity is also available for standardised products.

Industrial areas of application

- Machine tools
- Smelting and rolling mill equipment
- Foundry machines
- Testing machines
- Shipbuilding (diesel engines)
- Offshore technology
- Printing and paper technology
- Vehicle construction
- Manipulators
- Environmental technology
- Mining equipment
- Materials handling equipment



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