

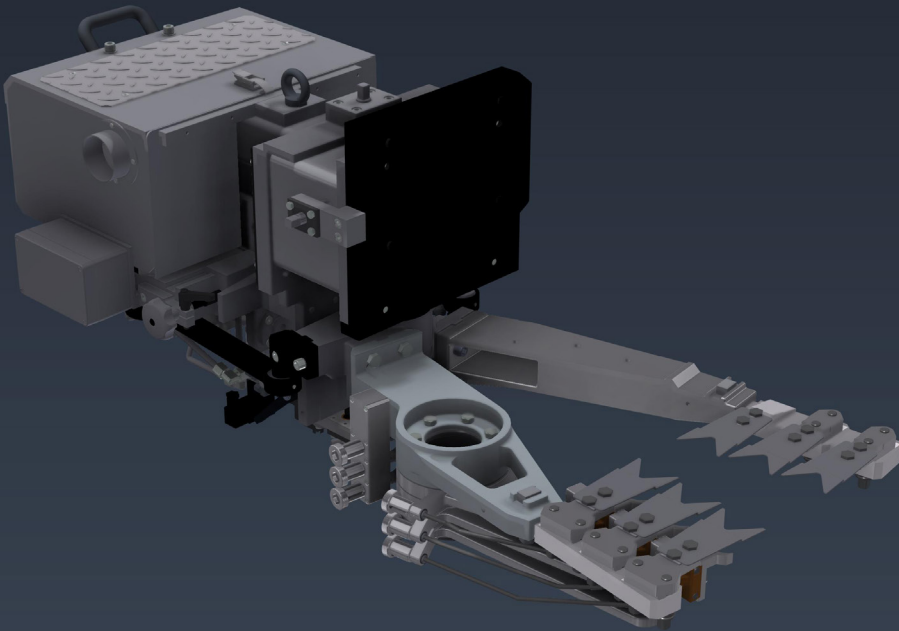
WE ARE GLASS PEOPLE

HEYE

DUAL MOTOR SHEARS

Type 2323

HiPERFORM



THE DUAL MOTOR SHEARS

This shear mechanism for gob feeders is a compact unit which can be adapted to different feeder types and their arrangements. The shear blades move on a circular arc. Thus, a nearly wear- and backlash-free suspension of the shear arms – using tapered roller bearings – is possible.

Nearly parallel cut

As a special feature, the centres of rotation of both shear arms are located on a common axis, ensuring that the motion of the shear blades is rectangular to the centre line at the moment of the cut.

Minimum orifice distance

These shears can cut very close ($1/2''$) to the orifice ring.

No reverse rotation

Each of the shear arms is driven by a separate three-phase servo motor. Both motors complete one full revolution per cut, eliminating the need to reverse the motors' rotation at the cutting point. A common control system ensures phase-locked synchronisation of both shear arm movements.

Low wear

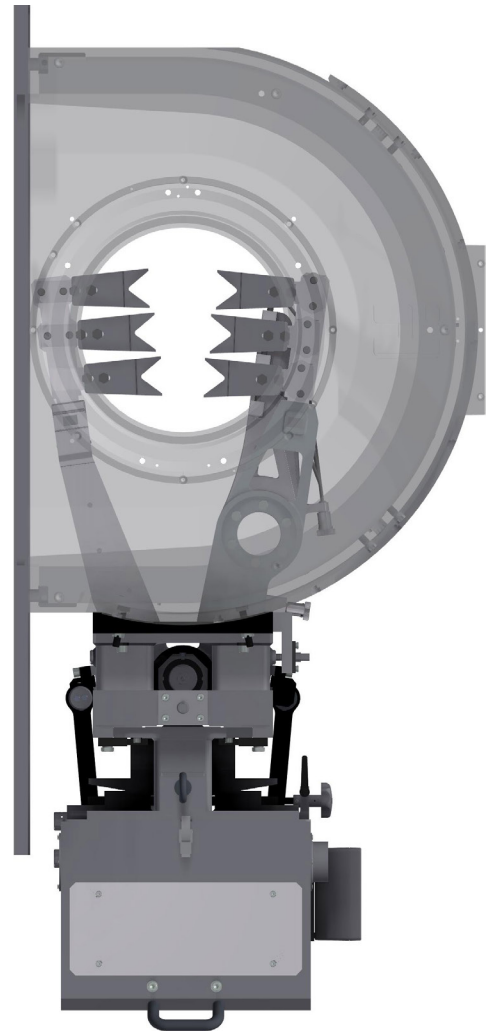
The force-transmitting joints of the moving parts are equipped with spherical roller bearings, making them nearly free of wear and backlash.

Optimised bearing and structure of the gob guide arms

The shear arm, which accommodates the gob guide arms, has been revised and optimised in terms of its bearing. Additionally, the geometry of the gob guide arms has been improved. This minimises harmful vibrations and significantly enhances gob fall. Along with the improved gob fall, this also leads to a considerably longer lifespan of the bearing and the gob guide arms.

FUNCTION

The shears are mounted at the feeder head using four T-bolt screws. Two three-phase servo motors with modulated speed are used to drive the shears. Upon receiving a start signal, the motors perform one revolution per cut in opposite directions. Each motor drives one of the shear arms for opening and closing movements via a crank drive. The speed profile and motion time are selectable. In practice, a minimum motion time of 230 ms has proven advantageous, allowing a dwell time of 10 ms for a cutting rate of 250 cuts per minute. The movement of the shear arms during operation is 13° (standard) per arm (shear blade), with an optional angle of 19° . The motors are mounted on a carriage which can be retracted by means of a pneumatic cylinder during the shears' standstill. This retraction allows for a larger opening angle of $2 \times 26^\circ$, which is required for changing the orifice ring. Additionally, the carriage automatically moves into this position in the event of a system failure, voltage drop, or activation of the EMERGENCY-STOP button.



Mechanical adjustment via spindles:

- Overlap
- Shear blade pre-tensioning
- Height of shears
- Gob guide assembly

The gob guide assembly is mounted on the right shear arm and moves with it. The adjustment of the unit in the direction of the centre line is carried out laterally.

CONTROL UNIT

To control the servo motor, the Heye Simotion® Servodrive is used. Please also see product description for the “Heye Simotion® Servodrive”

Heye Simotion® Servodrive

This highly flexible control system is based on Siemens' future-proof multi-axis drive system, Simotion®. The excellent reliability of the electronic components, combined with the use of a compact servo motor with a robust resolver, ensures reliable non-stop operation. Furthermore, this control system is ideal for servicing, as it is easy to handle.

If control components need to be exchanged, complicated manual addressing or programming is not necessary because the configuration data are stored on a memory board. When the control is started, the data are automatically transferred. As a result, commissioning times and downtimes during servicing are minimised, and the training effort for service staff is reduced. Fault and operating messages are logged by the control unit with date and time, and they can be accessed in detail on the touchscreen at any time.

The synchronisation and phase adjustment of the shears to a zero signal are automatically performed by the control system. All operating conditions can be controlled through a control box located near the shears.

Shear Blade Spraying

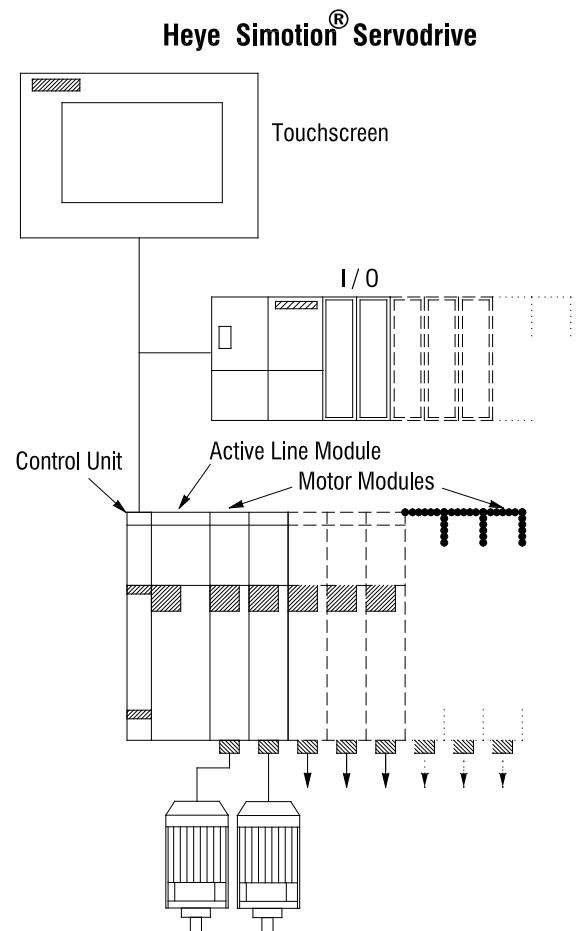
The control system provides an intermittent signal for the shear blade spraying based on the system pulse. The start of the spray and the spray duration can be set either via the touchscreen or using the control box.

Lubrication

All bearings of the dual motor shears are lubricated with grease from a central lubrication unit. The signal for lubrication is initiated periodically by the control unit.

Installation

The control box must be positioned to allow observation of the shear cut during adjustment. The control cabinet should be placed in an air-conditioned room (see technical data).



OVERVIEW

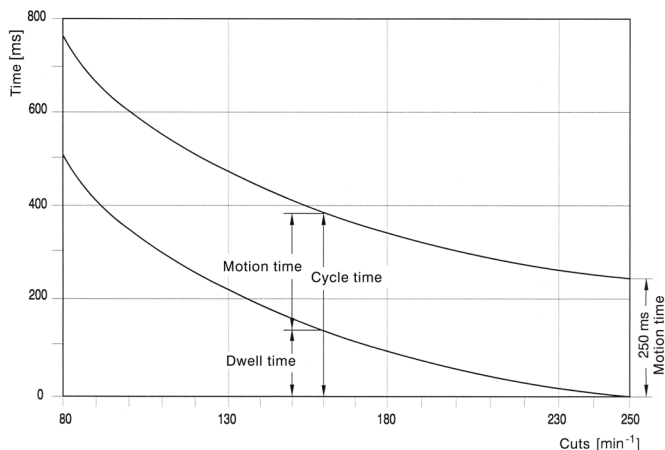
Advantages

- Blade motion rectangular to the centre line (at the time of cut)
- Reproducible motion and thus improved constant weight of gobs (max. possible timing error 0.2 ms)
- Preselectable motion profiles
- Production speeds of up to 250 cuts per minute
- Dwell time of the shears in the opened position and thus improved cooling conditions for the shear blades
- Long service life of the shear blades
- Long service life of the shears mechanism
- Almost maintenance-free operation
- Optimised design of the gob guide arms, resulting in minimised vibrations and improved gob fall

Scope of Delivery

- Shears with feeder connection console
- Control unit in a closed cabinet, completely wired
- Remote control
- Set of cables
- Compressed air station
- Central lubrication

Performance limits



Technical Data

- Cutting rate max. 250 cuts/min
- Weight of the shears approx. 160 kg
- Dimensions width/height/depth 510 / 710 / 1200 mm
- Power consumption approx. 0.3 kW (at 200 cuts/min)
- Supplies compressed air 6 bar, fan air 500 mm water column 100 m³/h

Emissions

- The A-weighted permanent sound pressure level of this system is below 70 dB(A)

Compatible control units*

Heye Simotion® Servodrive

Up to 10 servo axes can be operated (depending on combination of drives and cabinet width)

- Dimensions width/height/depth 800 / 2200 / 600 mm
1000 / 2200 / 600 mm
1200 / 2200 / 600 mm
- Weight 320 - 400 kg
- Power input with two active ventilators depending on the number of axes
- Mains supply three-phase 380 - 480 V ± 10 %, PE, no neutral wire
- Mains frequency 50/60 Hz ± 3 Hz
- Mains fuse 35 A slow-blow (to be made available by the customer)
- Ambient temperature for the control unit max. 35°C

Heye Simotion® Servodrive Compact

Up to 4 servo axes can be operated (depending on combination of drives)

- Dimensions width/height/depth 400 / 2200 / 600 mm
- Weight 170 - 230 kg
- Power input depending on the number of axes
- Mains supply three-phase 380 - 480 V ± 10 %, PE, no neutral wire
- Mains frequency 50/60 Hz ± 3 Hz
- Mains fuse 35 A slow-blow (to be made available by the customer)
- Ambient temperature for the control unit max. 35°C

* For further information on the control unit and respective combination of drives, please refer to our separate brochure.

Illustrations are non-binding and may include optional equipment. Products are subject to continuous technical modifications.

The mentioned consumption values are non-binding and are subject to the customer's individual production program.

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