

# Technical News Bulletin

Steinhausen, September 2022

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## 575 Dual Drive Servo Shear Integral part of SMARTFEEDER™

- Shear arms individually driven by linear motors
- Designed for cut rate of 220 cuts/min and higher
- Modular design
- Integrated shear spray head
- Open shear frame
- Together with the 570 Multi Drive Servo Feeder Plunger makes the advanced hardware of SMARTFEEDER.

## Introduction

The 575 Dual Drive Servo Shear mechanism is the latest generation of parallel shearing mechanisms developed for enhanced gob forming and for higher performances.

The mechanism is designed for cutting speeds of 220 cuts per minute and higher.

Two independent Linear motors allow for an optimal gob cut, minimizing the blade-to-glass contact time and giving the possibility of independent motion to each shear arm, resulting in better gob shapes, with minimal gob tilting due to the action of the shear blades.

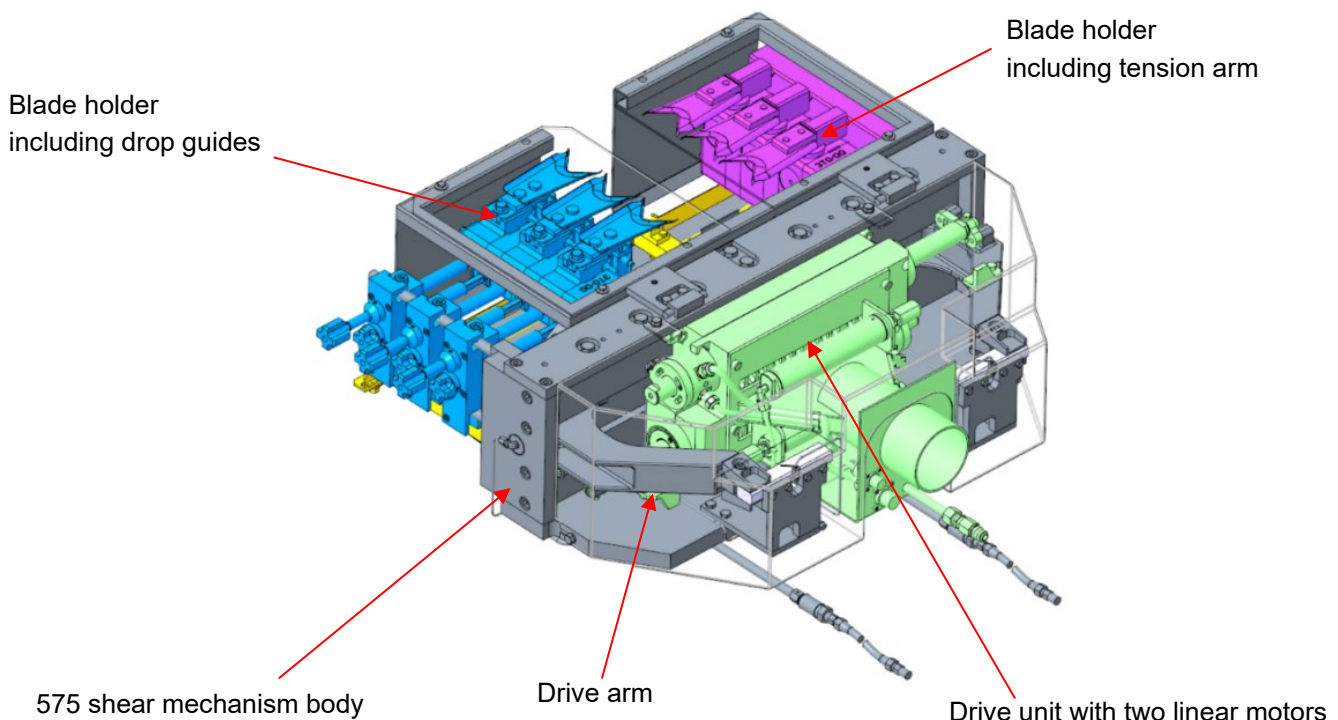
Linear motors and individual arm motion minimize drop guide disturbance to the gob drop, simplifying the setup for Multi Gob Application and opening the possibility for operation without drop guides.

The 575 Dual Drive Servo Shear allows independent control of shear arms:

- ✓ Motion cam
- ✓ Motion time
- ✓ Stroke
- ✓ Center position
- ✓ Blade overlap

## 575 Dual Drive Servo Shear

The modular design of blade holder arms makes the 575 Dual Drive Servo Shear mechanism universal for all center distances (4-3/8" DG and TG; 3" TG and QG, 1,83" QG) and for all mechanism types (standard, wide-body, and small ware), allowing for standardization within the production site and reducing the total cost of ownership.



Each tension arm and drop guide has a separate universal gearbox, allowing for an easy configuration of the shear mechanism by combining the proper number of gearboxes with spacers.

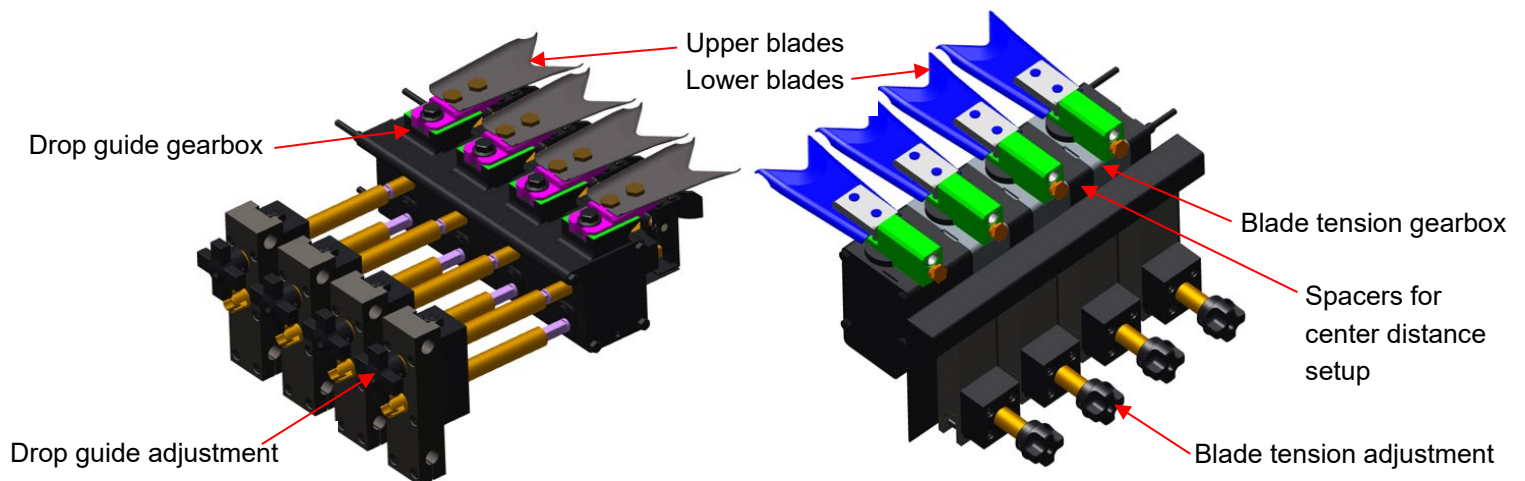
The universal gearbox allows for a reduction of the spare parts in stock and for a higher flexibility towards changes in the production schedule.

Once assembled in a configured arm, blade tension and drop guide gearboxes are in a closed housing to increase the protection from the shear spray effects.

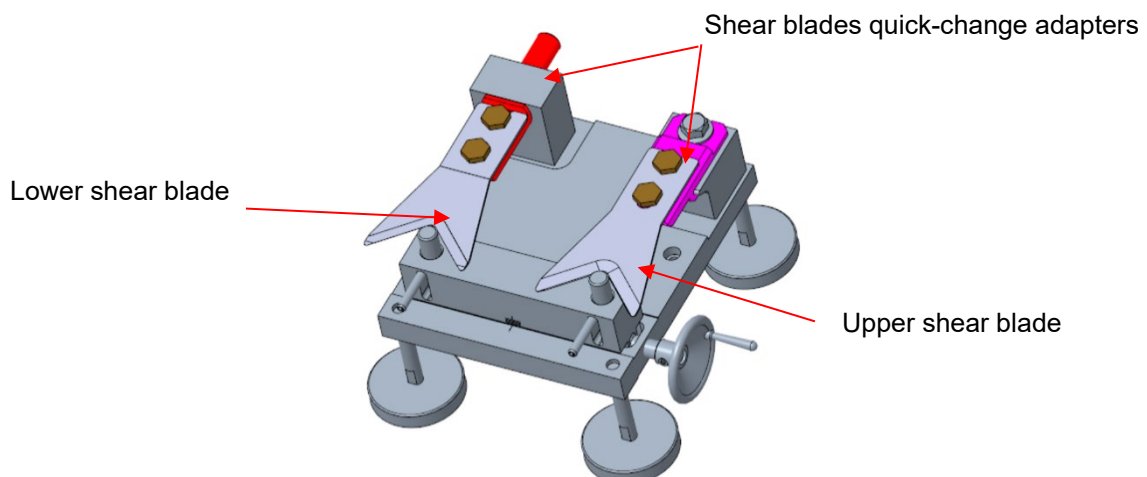
Tension arm and drop guide units are located on the opposite blade holders for an optimal weight balance resulting in improved mechanism dynamics.

Drop guide arm

Tension arm



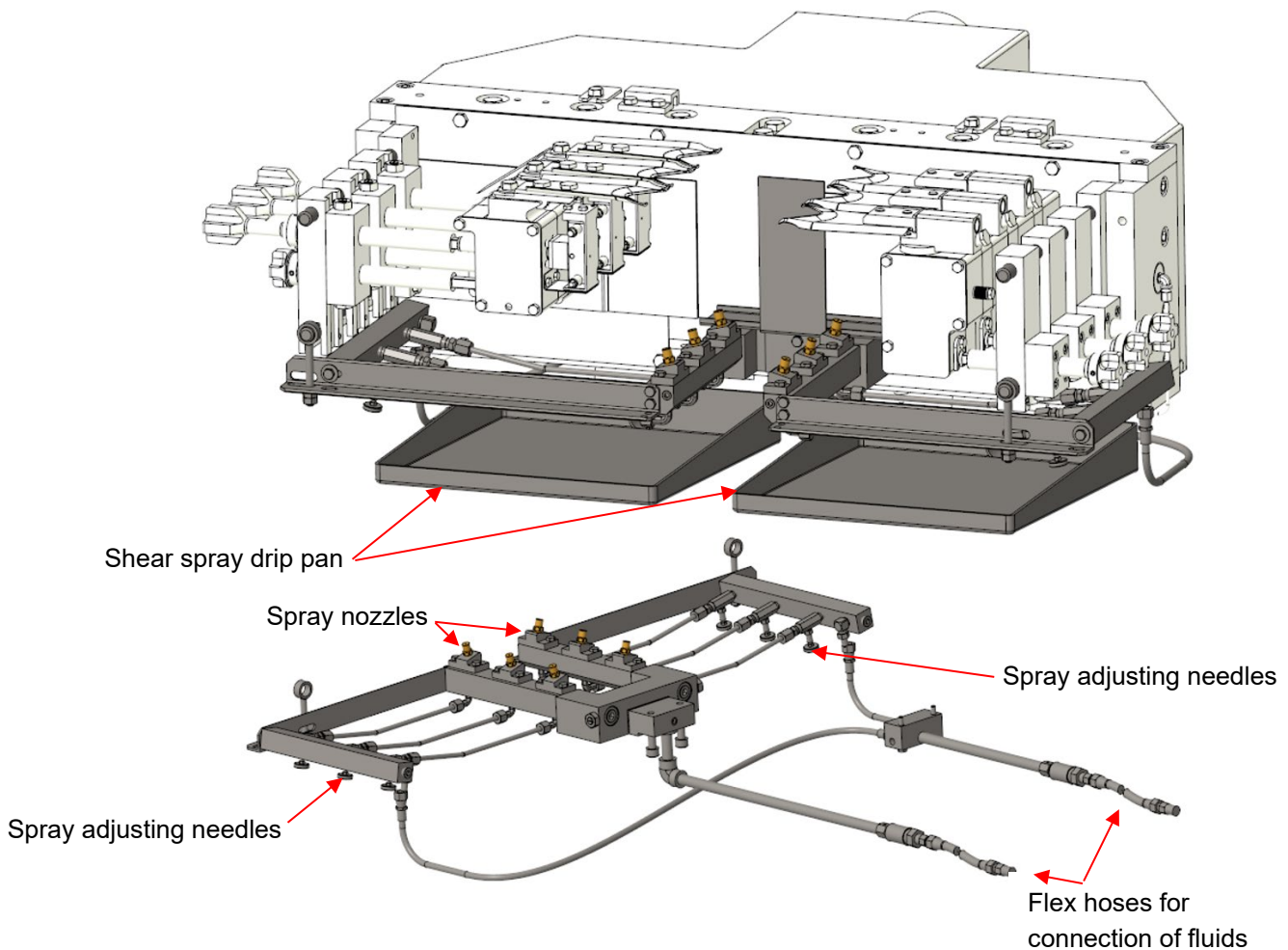
Each pair of shear blades is pre-aligned in the workshop, using a dedicated aligning fixture, to minimize the downtime required for the exchange of a pair of blades on the mechanism in production.



The 575 Dual Drive Servo Shear includes an optimized design of the shear spray head assembly, providing higher spray efficiency.

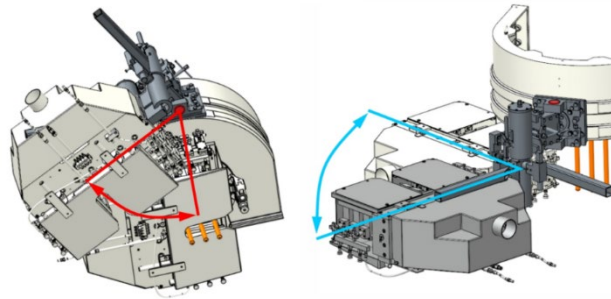
Spray nozzles are now closer to the shear blades to reduce overspray and are oriented to protect the orifice ring from unintended spray.

Needle valves for the shear spray adjustment are located at the outer sides of the frame for an easier and safer adjustment.



Standard Shear spray head is bottom-up spraying. Top-down spray head is available as option.

The open frame design improves the visibility of the falling gobs and allows for an easier and safer mechanism maintainability, avoiding the shear mechanism to pass through the glass stream during the swing out motion.



## Specification

The 575 Dual Drive Servo Shear mechanism is available for all center distances and for all the Emhart spout casings.

The 575 Dual Drive Servo Shear mechanism with the universal mounting bracket, combined with the existing spout casing, allows for the direct replacement of the 565 Shear mechanism.

Center distance	SINGLE GOB		DOUBLE GOB		TRIPLE GOB		QUADRUPLE GOB	
	Master assembly	Spout casing type	Master assembly	Spout casing type	Master assembly	Spout casing type	Master assembly	Spout casing type
SG	575-1-1	81 503 515 555						
1,83"							575-1-7(**)	81
3"			575-1-2(*)	81	575-1-5	81 503 515 555	575-1-8	585
4-3/8"			575-1-3	81 503 515 555	575-1-6	585		
				575-1-9			585	
5"			575-1-4(*)	503 515				

(\*) 5" and 3" Double Gob are customer's special applications limited to retrofit installation on existing machines. The delivery system for these center distances does not exist any longer.

(\*\*) 1,83" Quadruple Gob shear mechanism is under development



## Installation Requirements

The 575 Dual Drive Servo Shear mechanism can be installed on all existing machines equipped with FlexIS 3 forming control system, as replacement of the 565 Servo Shear mechanism.

For machines operated by a different control system, a standalone FlexIS 3 control system is needed.

Refer to the following documents to validate space requirements and utilities specification:

- Installation requirements 575-10182
- Clearance diagram 585 spout 575-10176
- Clearance diagram 555 spout 575-10177
- Clearance diagram 503 & 515 spout 575-10178
- Clearance diagram 81 spout 575-10179
- Clearance diagram 81 spout small ware application 575-10181

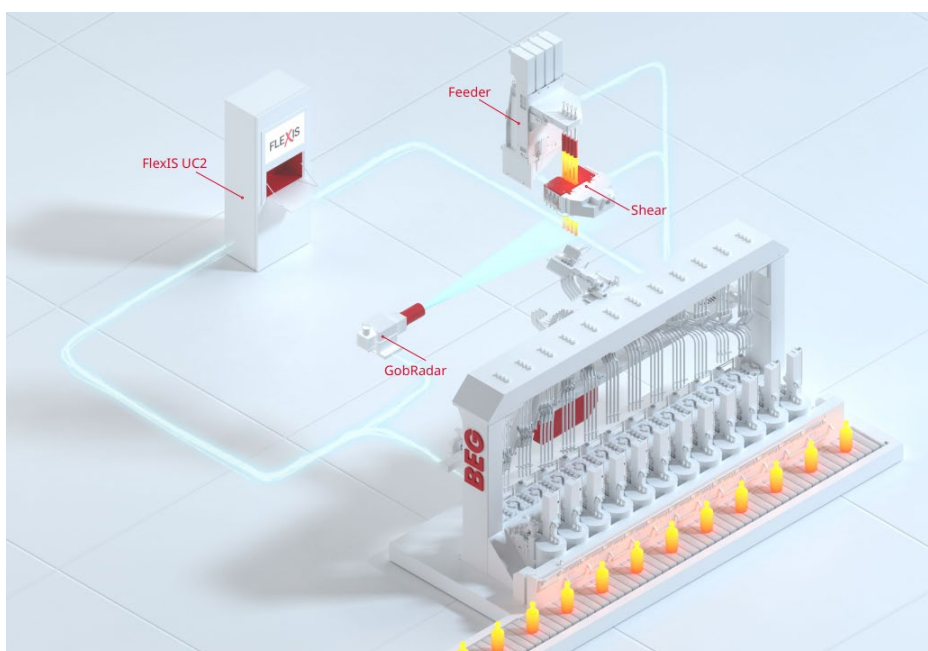
## SMARTFEEDER integration

In a conventional feeder control, the adjustment of the individual parameters is done manually, and it is a complex and time-consuming operation.

The 575 Dual Drive Servo Shear in combination with the 570 Multi Drive Servo Feeder Plunger, the Gob Radar and the Gob Control Closed Loop supersedes the need for such a complex setup.

The desired gob parameters (gob weight, length) are entered in the system and constantly monitored by the Gob Radar. The Gob Control Closed Loop then automatically and individually adapts the settings of the servo motors to:

- Keep the gob weight constant and minimize weight variations.
- Keep the gob length constant and minimize length variations.



By working with Gob Control Closed Loop, the measurements from the Gob Radar are used for the constant monitoring of the gob parameters and are kept under control or are dynamically changed for Multi Gob Application.

The 575 Dual Drive Servo Shear and the Gob Control Closed Loop (in combination with the 570 Multi Drive Servo Feeder Plunger) can also be set for an automatic compensation of the gob elongation through the delivery equipment to guarantee that all the IS machine sections are loaded with gobs having the same length.

The 575 Dual Drive Shear also allows to compensate for gob tilting.

## Features

Dual Drive with linear motors and independent cams

Modular design

Integrated shear spray

Open shear frame

No drop guide operation (under development)

Integral part of SMARTFEEDER

## Benefits

Optimal gob cutting

Cut rate up to 220 cpm and higher

Reduces gob shape deformation

Reduces gob tilting

Easier multi gob application.

Same components for all configurations, less maintenance cost, less parts in stock → reduces total cost of ownership.

Increases spray efficiency:

- reduces overspray
- protects the orifice

Adjusting needles at the shear body ends increase safety during adjusting operations.

Improves gob drop visibility.

Safer operation of mechanism swing-in/out under the glass stream

Reduces the marks due to the contact between gob and drop guide.

It provides huge benefits in Multi-Gob Application

Full gob control.

It provides huge benefits in Multi-Gob application.