

# Technical News Bulletin

Steinhausen, March 2012

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## Multi Gob Weight System (FlexIS)

- Intuitive system settings, instant response.
- Plunger and Shear Controlled and monitored from a single screen for optimized visualization.
- Operation settings are section independent to suite production requirement.

## Introduction

Unparalleled production flexibility can be achieved by operating the 555 Feeder and 565 Shear with the new Emhart Multi Gob Weight System (plunger and shear motion profile). This permits each section of a forming machine (IS, AIS, NIS or BIS) to produce items with different gob weights and shapes. The advantages of such a system are many:

- Production can be very closely coordinated with demand, both in time as well as in quantities. This optimises machine utilisation, and minimises stock.
- To accommodate a short-notice job, it is no longer necessary to halt an existing run. Some of the sections can continue, whilst the remainder can be changed to one or more new jobs.
- For low-quantity production runs, it is not required to equip the entire machine with moulds, or to leave some sections standing idle.
- This application can be used to test a new set of mould equipment or to make sampling runs on a single section without interrupting the normal production.

Production can be adjusted precisely to the supply of glass, thus optimising the furnace output

## System Description

The FlexIS Multi Gob Weight System software interacts simultaneously with the controls of the Feeder and Shear, and thus overcomes the limiting factors permitting the choice of gob weight and gob shape. Multi Gob weight jobs are controlled and monitored from a single screen for plunger and shear.

### *Multi motion profile - Plunger Mechanism*

The software allows operator to adjust, individually for each section the:

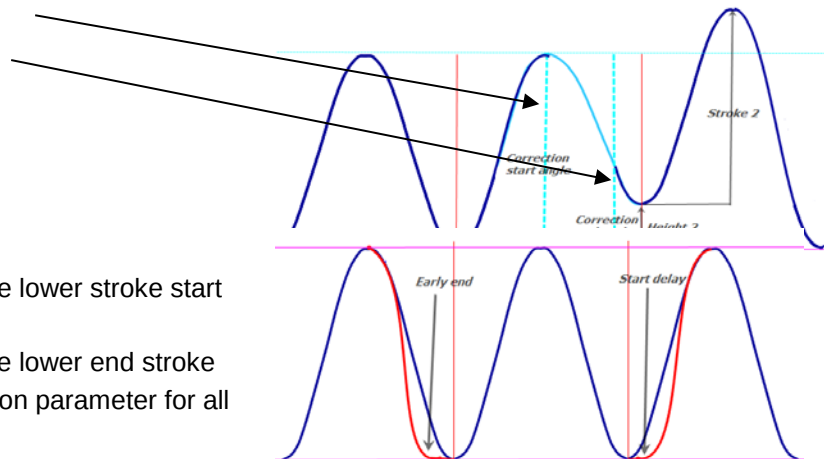
- Plunger cam profile
- Plunger height
- Plunger stroke

| Parameter        | Setting  | Actual |
|------------------|----------|--------|
| Plunger Phase    | 023.0    | 023.0  |
| Zero Calibration | -040.0   | -040.0 |
| Operating Mode   | Run      |        |
| Stop Position    | Variable | 060.0  |

|                        | 01      | 02      | 03      | 04      | 05      | 06      | 07      | 08      |
|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Cam                    | HS SPEC | HS SPEC | HS SPEC | HS SPEC | HS SPEC | HS SPEC | HS SPEC | HS SPEC |
| Stroke                 | 046.0   | 046.0   | 026.0   | 046.0   | 046.0   | 046.0   | 030.0   | 030.0   |
| Height                 | 007.7   | 012.0   | 004.0   | 015.0   | 010.0   | 011.5   | 007.0   | 008.3   |
| Correction Start Angle | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   |
| Correction End Angle   | 359.9   | 359.9   | 359.9   | 359.9   | 359.9   | 359.9   | 359.9   | 359.9   |
| Start Delay (0-.45")   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   | 000.0   |
| Early End (-45-.0")    | 008.0   | 008.0   | 008.0   | 008.0   | 008.0   | 008.0   | 008.0   | 008.0   |
| Gob No                 | 1       | 8       | 2       | 7       | 3       | 5       | 4       | 6       |

Fill Selected Parameter

- Correction start angle
- Correction end angle



- Delayed start (0 - 45°)  
plunger stays longer in the lower stroke start
- Early end (45 - 0°)  
plunger arrives early in the lower end stroke
- Plunger phase is a common parameter for all sections.

position

position  
the

## Multi Shear

The operator can adjust the shear parameters, each section individually.

- Shear blade overlap
- Shear moving time
- Shear differential

| Parameter               | 01    | 02    | 03     | 04    | 05    | 06     | 07     | 08     |
|-------------------------|-------|-------|--------|-------|-------|--------|--------|--------|
| Stroke Length           | 091.5 | 091.5 | 091.9  | 091.5 | 091.5 | 091.5  | 091.7  | 091.9  |
| Blade Overlap           | 002.0 | 002.0 | 002.4  | 002.0 | 002.0 | 002.0  | 002.2  | 002.4  |
| Move Time               | 250   | 250   | 250    | 250   | 250   | 250    | 250    | 250    |
| Differential [-20..20]* | 007.0 | 002.0 | -003.0 | 000.0 | 007.5 | -002.0 | -008.0 | -008.0 |
| Gob No.                 | 1     | 8     | 2      | 7     | 3     | 5      | 4      | 6      |

## Shear blade overlap

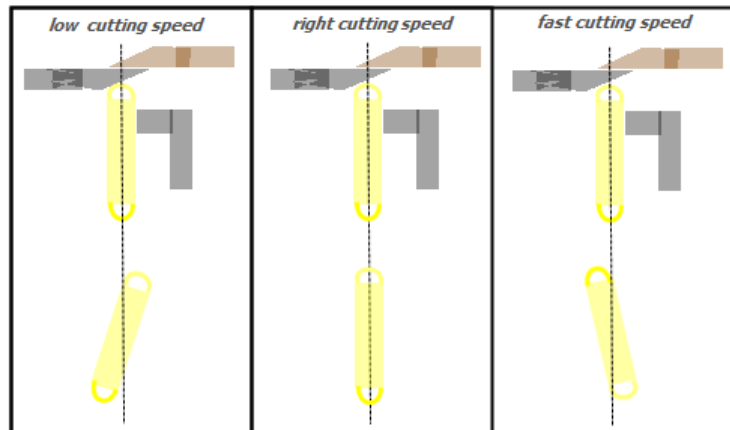
The production of multi-weight containers usually involves different gob shapes. This will require different drop guide positions to stabilize the vertical motion of the gob. The Multi Gob weight System compensates for this variation by programming the "blade overlap" individually for each section. The drop guide is positioned manually in an intermediate position.

### *Shear moving time*

The length of a complete shear open/close cycle influences the cutting speed, which in turn affects the rotation of the gob. For this reason, shear moving time can be used as an additional option to stabilize the vertical motion of the gob, taking account of different gob shapes, lengths or diameters.

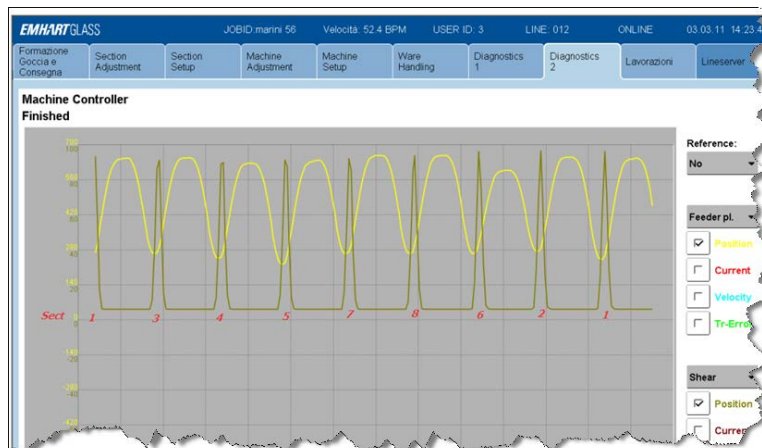
### *Shear differential*

This parameter provides the option to adjust gob length for the same gob weight (useful in cases where different processes are running on the same machine), or to correct gob weights in cases of minor weight variations.



### *Graphical visualisation*

The position, velocity and current of one complete machine cycle can be visualized for feeder, shear and gob mechanisms. Below the plunger and shear position profiles are displayed.



### *Availability*

The Multi Gob Weight System software is working with very good results on a number of lines since 2010. The software package works on all FlexIS 555 Feeder / 565 Shear Systems and on FlexIS stand alone. The optional licence can be ordered under the part number **P.N. 601-20001-2**

## Installation requirements

Software version V1.07.03.13 or above is required and the optional licence needs to be purchased to activate this feature.

Contact Emhart Service if a software update is required.

## Features / Benefits

| Features                                                                    | Benefits                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plunger and Shear Controlled and monitored from a single screen.            | Optimized visualization                                                                                                                                                                                                                                                                                                                                    |
| Intuitive system settings - Self explaining and instant response.           | User knowledge is easily built upon and storable job file.                                                                                                                                                                                                                                                                                                 |
| Operation settings are section independent to suite production requirement. | Different jobs per section can be produced with different gob shape and different gob weight. (around 25% - job depended) <ul style="list-style-type: none"><li>o Optimises the machine utilisation<br/>minimizes stock</li><li>o Reduces the moulds cost for low quantity production</li><li>o Section sampling without interrupting production</li></ul> |