

## Area of application

The flexible block clamp unit of the type EFS is designed for mechanical and hydraulic presses exerting a force of ca. 500 tonnes force upwards, and also for large component step and transfer presses. It is particularly suitable for top die clamping, and requires dies with straight clamping edges.

In combination with the positioning unit type EFV, the flexible block clamp unit in the ram T-slot is conveyed to the die to be clamped. The positioning unit type EFV is rigidly secured to the outside of the ram.

## Mode of operation

*Flexible block clamp unit type EFS:* by means of an electric motor operating through a gearbox and a spindle stroke, the angle clamping jaw is rotated about its position, and thus exerts a force on the clamping edge of the die. The whole clamp unit is introduced into the T-slot of the ram and can be moved as required in this slot with the aid of the positioning unit.

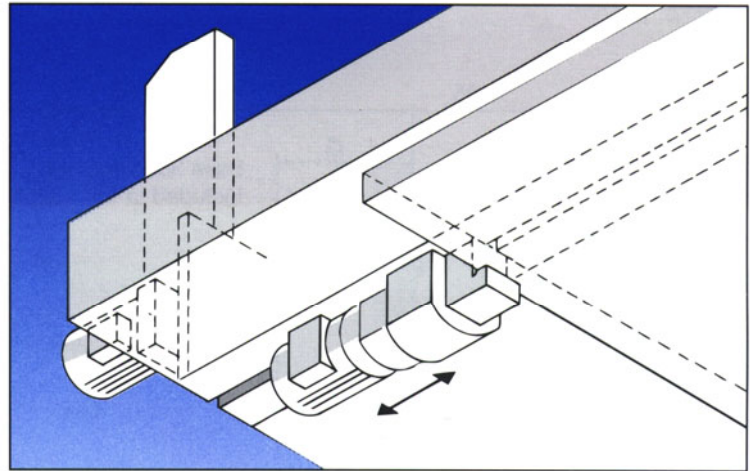
*Positioning unit type EFV:* an electric motor, operating through a spur wheel gear, sets a trapezoidal threaded spindle in rotation, which, via a rigidly applied spindle nut in the T-slot block of the flexible clamp unit, produces the sliding movement.

### Movement sequence for applying the clamping force:

- Sliding the clamp unit up to the die clamping edge
- Clamping movement of the clamping jaw (release of the clamp unit in reverse order)

## Distinguishing features

The infinitely variable adaptation to different die widths renders standardization of the die/adaptor plates in terms of their width superfluous. Due to the continuous control of the important functions, and linking with the machine control system, fully automatic working is ensured. The cables which are needed for transmitting the electrical signals and the drive power of the clamp unit are combined in a flexible trailing chain which is passed into the machine T-slot.



### Electrical control of the following functions (switches):

- Clamping jaw in the permitted clamping range (S4)
- Clamping jaw released (S5)
- Continuous monitoring of clamping force (S6)
- Clamp unit in parking position (S7)
- Clamp unit at the die clamping edge (S8)

## Technical data

Motor:	DC motor (EFV, EFS)
Supply voltage:	400 V, 50 Hz; n = 3000 rpm; (EFS); n = 1500 rpm (EFV); S3-duty factor 15%
Switches:	4 inductive proximity switches (EFS) 1 inductive proximity switch (EFV), p-n-p normally open contact in each case
Supply voltage:	10-30 V DC
Speed	
Sliding rate:	91 mm/sec.
Clamping rate:	depending on type (see reverse)
Max. operating temp:	70° C
Wired to:	plug-in connections

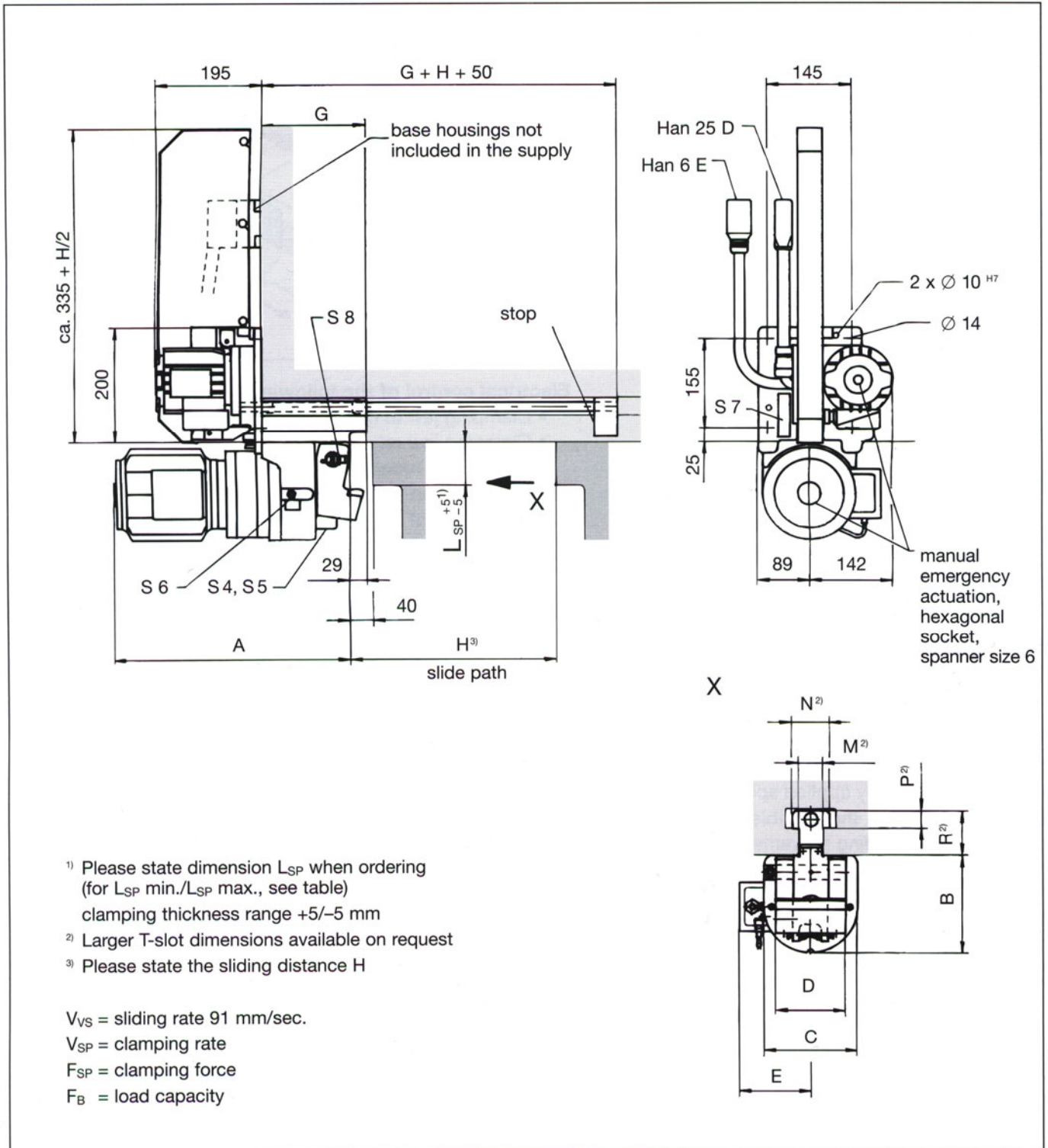
## Advantages

- Infinitely variable adaptation to different die widths
- Large clamping thickness tolerance
- Mechanical self-locking
- Electrical control of all important functions
- Automatic positioning at die
- Central control and continuous monitoring of clamping force.

## Construction

The clamp unit has a nickel-plated housing. A high-ratio epicyclic gear ensures the drive power required.

To secure the positioning unit to the machine, please use four M12 bolts, strength class 8.8 (DIN 912) and also two locating pins, diameter 10 mm (not included in the supply).



The company reserves the right to make technical changes.

Type	$F_{SP}$ [kN]	$F_B$ [kN]	$L_{SP}$ <sup>1)</sup>		Motor power [kW]	$V_{SP}$ [mm/s]	A	B	C	D	E	G	M <sup>2)</sup> min.	N <sup>2)</sup> min.	P <sup>2)</sup> min.	R <sup>2)</sup> min.	Weight [kg]
			min.	max.													
EFS 60	60	100	50	75	0,55	1,4	383	170	160	120	102	180	42	65	30	80	53
EFS 120	120	200	50	75	0,75	1,4	415	170	160	120	123	180	42	65	30	80	56
EFS 240	240	450	60	80	1,50	0,9	512	210	200	150	123	240	42	65	30	80	98