

5 ABSOLUTE VALUE INPUT

(Option)

5.1 GENERAL

On the injection unit this program manifold creates the possibility to give more injection moulded part-specific data to the control unit. So in parallel to the screen pages with their relative values analogously structured screen images exist, which include absolute set and actual values.

The following injection parameters are linked with each other as partner:

Hydraulic pressures	(bar)	<====>	Specific injection pressures	(bar)
Back pressures	(bar)	<====>	Specific back pressures	(bar)
Stroke positions	(mm)	<====>	Stroke volumes	(ccm)
Injection speeds	(mm/s)	<====>	Injection rates	(ccm/s)
Screw speeds	(%)	<====>	Peripheral velocity	(m/min)

Thus absolute values and relative values exist in parallel, when changing one of the two values the respective partner value being calculated newly. If the conversion for the partner value yields an unallowed result, the value of the selected parameter is taken over, but the partner value is not updated. The not updated partner value flashes from this moment until it is written on a plausible value. Further, new calculations occur when changing the screw diameter as well as when switching over from increased injection pressure to not increased injection pressure (and vice versa). Starting point of these new calculations are the absolute values in each case.

Screen pages

INJECTION	<==>	INJECTION ABSOLUTE VAL
SWITCHOVER MODE	<==>	SWITCHOVER MODE ABS.VAL
HOLD.PRES	<==>	HOLDING PRESSURE
PLASTICIZING	<==>	PLASTICIZING ABSOLUTE VALUES
SET VALUE GRAPHICS	<==>	SET VALUE GRAPHICS ABSOLUTE VALUES

5.2 STORAGE

The absolute values are stored on disk. When the control unit reads in a disk which has not stored any absolute values, from the read-in relative values new absolute values are calculated.

5.3 COMPUTER ALGORITHMS

Pressure:

$Pr = Ps *$	As / Ak	$Ps = Pr *$	Ak / As
Pr	...	Hydraulic pressure (relative)	
Ps	...	Specific injection (back) pressure (absolute)	
As	...	Surface screw	
Ak	...	Surface injection plunger	

Volume:

$$s = V / A_s$$

s	...	Stroke
A _s	...	Surface screw
V	...	Volume

Injection rate:

$$v = V / A_s$$

V	...	Injection rate
v	...	Injection speed
A _s	...	Surface screw

Screw speed:

$$n_0 = nn / U$$

U	...	Screw circumference [m]
n ₀	...	Starting screw speed [1/min]
nn	...	Rotational speed m/min]

The screw speed (%) is converted in m/min.