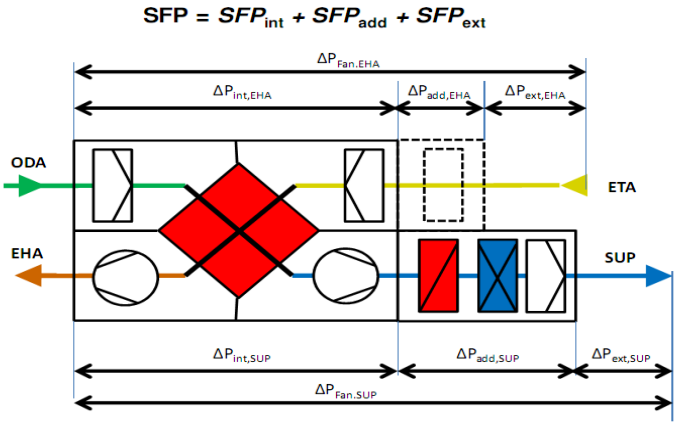


$$P_{SFP} = \frac{\Delta p_{int\ tot}}{\eta_{tot}} + \frac{\Delta p_{add\ tot}}{\eta_{tot}} + \frac{\Delta p_{ext\ tot}}{\eta_{tot}} = \frac{\Delta p_{int\ stat}}{\eta_{stat}} + \frac{\Delta p_{add\ stat}}{\eta_{stat}} + \frac{\Delta p_{ext\ stat}}{\eta_{stat}}$$

Sketch: C.Händel

$$SFP_{int} = \frac{\Delta p_{int}}{\eta_{fan}} = \frac{P_{el,int}}{\dot{v}}$$

$$\frac{\Delta p_{(int+add+ext)}}{\Delta P_{int}} = \frac{P_{el,(int+add+ext)}}{P_{el,int}}$$

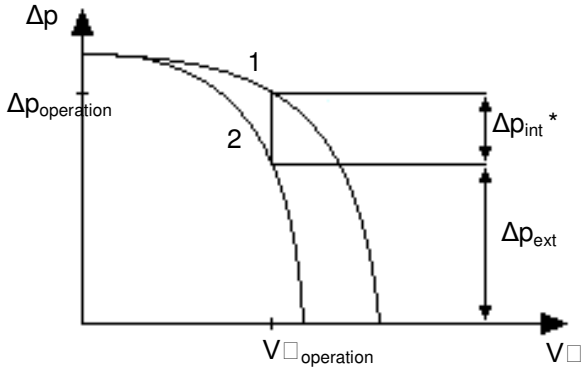
$$P_{el,int} = \frac{P_{el,(\ int+add+ext)} * \Delta p_{int}}{\Delta p_{(int+add+ext)}}$$

$P_{el,(int+add+ext)}$: effective electric power input of the fan drives, including any motor control equipment in operation point

$\Delta p_{(int+add+ext)}$: measured at the ventilation unit using pressure plugs at air inlet and air outlet of the fan in operation point

Δp_{int} can be calculated as following:

Ventilation unit without additional components ($\Delta p_{add} = 0$)



1: Dismounted fan at operation speed and operation air flow *)
2: Ventilation unit influenced by internal components / inside NRVU *)
*) at the same speed

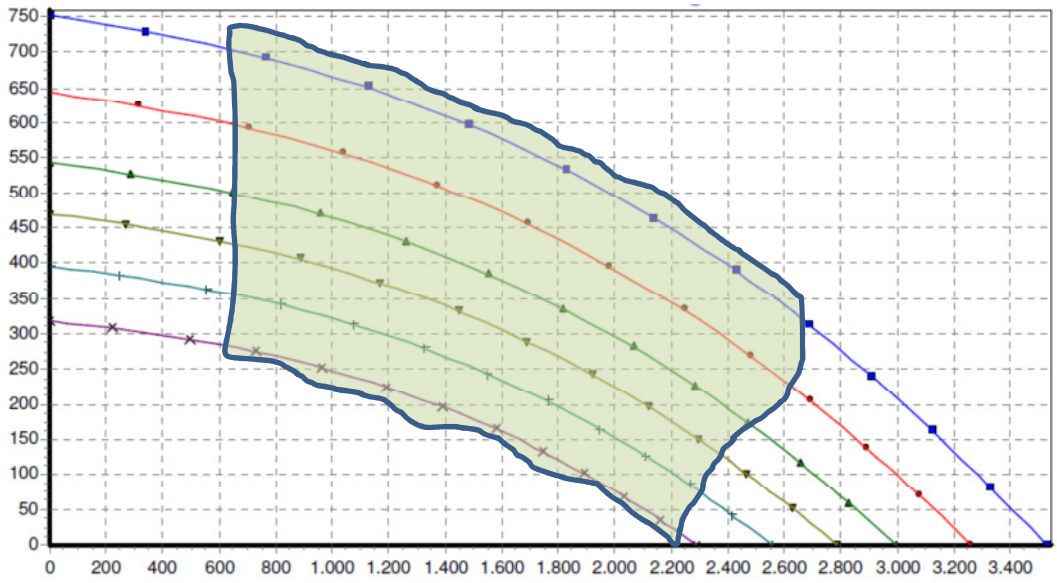
*The difference between the curves displays the internal pressure losses.

Proposal C. Händel for catalogue products where no calculation software is available:

Each NRVU has to be measured only once because

^{2} Remark: In practice exponent is not 2 but 1,6 to 1,7.

To each separate air flow it can be calculated the and therefore SFP int. This can be used to produce catalogue information as well as for market surveillance on catalogue ventilation units.



= SFP $_{int}$ requirements fulfilled = allowed operation area