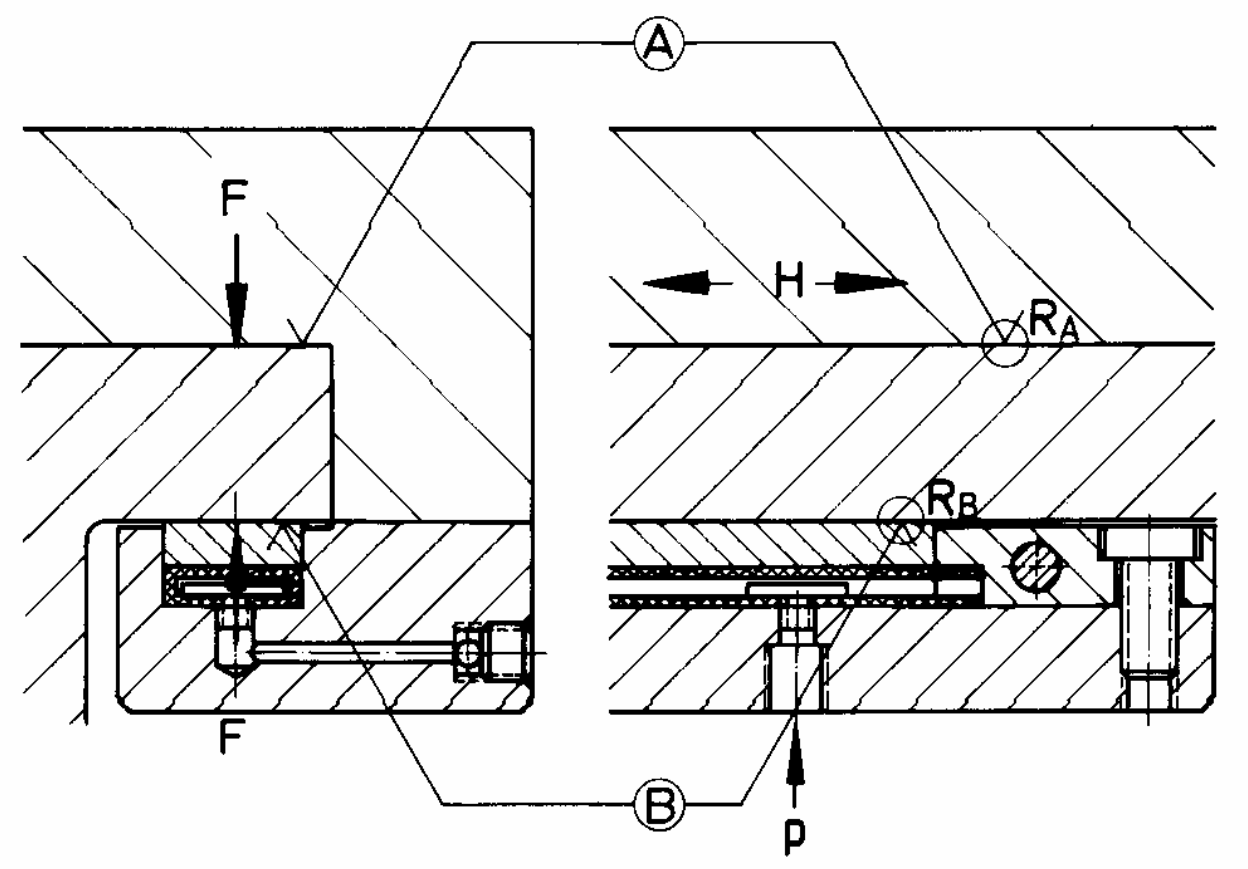

Ill. 678

Upon clamping with the total force F, a friction counteracting shifting of the slide on the machine bed is created on both pairs of clamping surfaces (A and B) each:

Friction on A:	$R_A = F \bullet \mu_A$
on B:	$R_B = F \bullet \mu_B$

On account of the too high surface pressure which would be created on the face of the pressure plate and on account of the fitting clearing which would affect precise positioning of the slide, the pressure plate may only be loaded in a vertical direction against the guideway.

For this reason, the friction R_A alone has to be sufficiently big to make sure it can hold the slide against shifting.

This means the friction force R_B is not involved.

Clamping force $F = A \cdot p \cdot \eta$

Contact surface $A = B_1 \cdot L_1$

Holding force $H = A \cdot p \cdot \eta \cdot \mu$ $\quad$ $H = B_1 \cdot L_1 \cdot p \cdot \eta \cdot \mu$

H	= holding force	in daN
F	= clamping force	in daN
A	= contact surface	in cm^2
B_1	= width of the pressure plate	in cm
L_1	= length of the pressure plate	in cm
p	= oil pressure	in bar
η	= efficiency (for clamping bars generally 0.98)	
μ	= coefficient of friction	

Example:

Width of the pressure plate $B_1 = 25$ mm
Length of the pressure plate $L_1 = 500$ mm
Available oil pressure $p = 80$ bar
Coefficient of friction $\mu = 0.12$

To be determined: Holding force H

$H = B_1 \cdot L_1 \cdot p \cdot \eta \cdot \mu$
$H = 2.5 \cdot 50 \cdot 80 \cdot 0.8 \cdot 0.12$

$H = 1176$ daN

METRON® Meßtechnik und Maschinenbau GmbH Phone: (0201) 83235-0 www.m e t r o n - e s s e n.com
D-45025 ESSEN • PO box 10 25 62 Fax: (0201) 324653 E-mail: info@metron–essen. de