

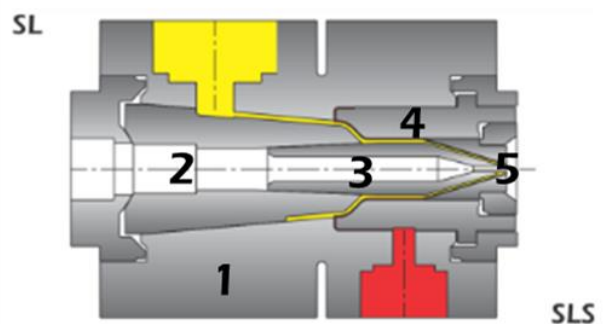


From fixed center to fine tuning, in search of perfection,

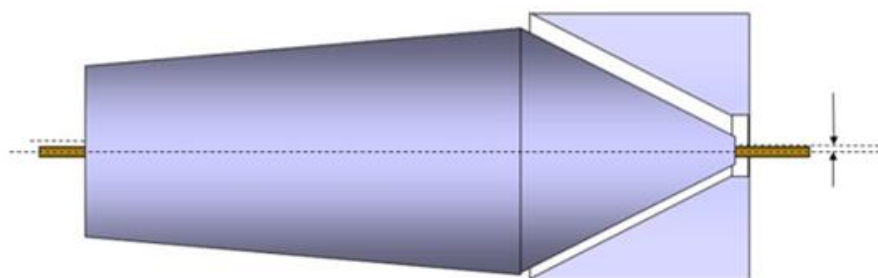
A fixed center cross head is an assembly of several mechanical parts

- Head block 1
- Distributor 2
- Tip 3
- Collet 4
- Die 5

### Avantis 10



Due to the dimensional tolerance of each of the 5 parts assembled together, a slight deviation between tip [3] center and die [5] center is inevitable.

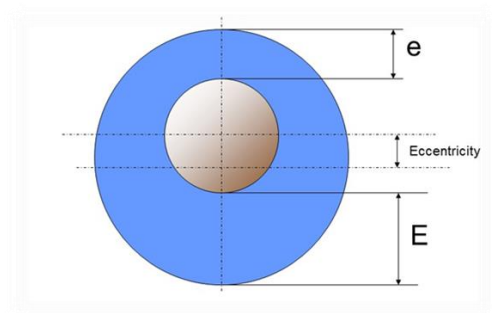


## The limits of a fixed center cross head

Typical concentricity factors of a 0.5 mm wire extruded on a fixed center head

Nominal wall thickness	concentricity	Min wall thickness	Max wall thickness	Eccentricity microns
0.15	0.90	0.142	0.158	8
0.25	0.92	0.240	0.260	10
0.30	0.94	0.291	0.309	9
0.50	0.95	0.487	0.513	13

concentricity factor =  $e/E$  (the most popular), or  $e/E \times 100$ , expressed in %



## The need of a better centering

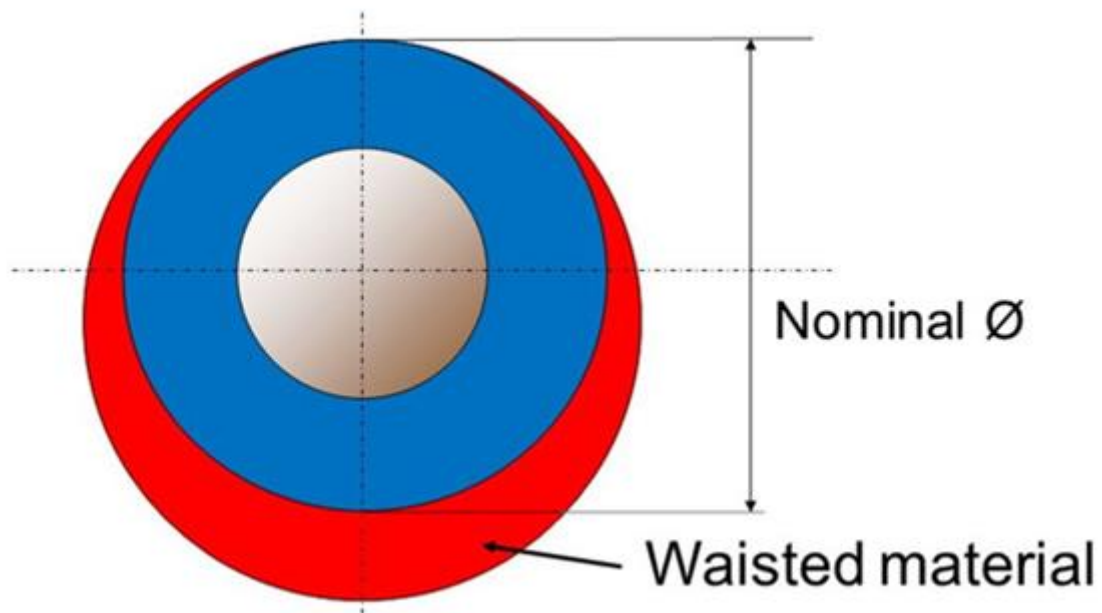
The fixed center head inevitable deviation used to be accepted but now the industry asks for more precision for two main reasons:

### Electrical:

Coaxial and LAN cat 7 and above require a perfect insulation geometry to guarantee their performances in terms of return losses and transmission speed.

### Economical:

Keeping the overall  $\varnothing$  at the minimum will result in a substantial saving.



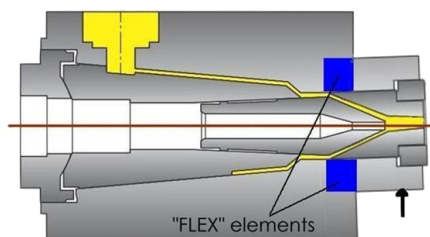
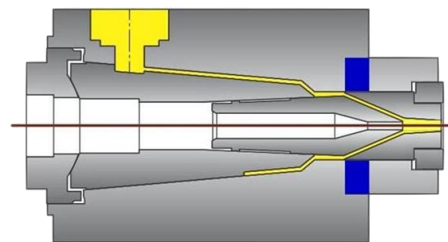
## Microflex working principle

The extrusion die is inserted in a flexible element on the front of the cross head.

Die alignment can be manually slightly altered by mean of four radial or axial screws.

Cross head with the Microflex fitting loose

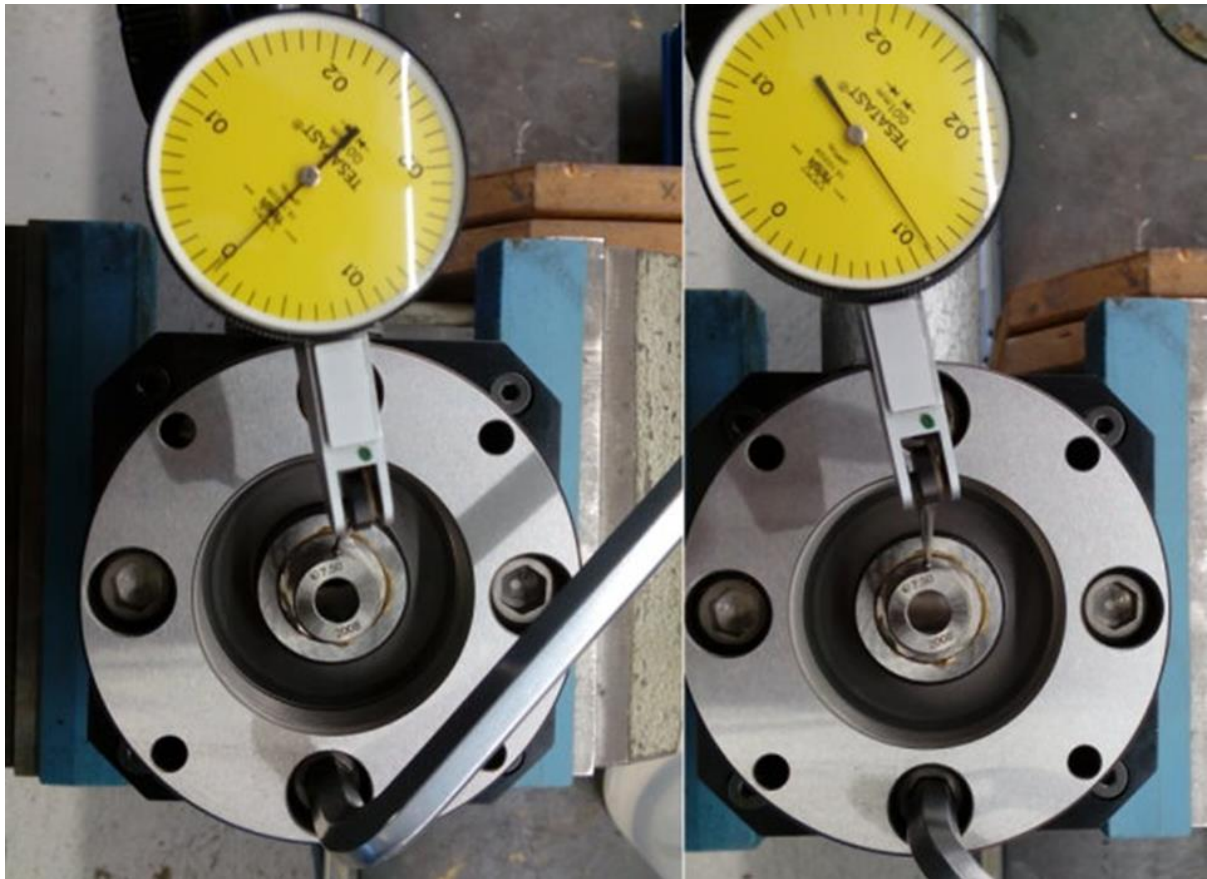
Works like a standard fixed center cross head.



Cross head with the Microflex Flex element fully tight, correction is applied to the die.

# Microflex axial showing the correction applied to the die

All four screws are released die is in its normal position



Bottom screw tighten. The die went down by 0.11 mm

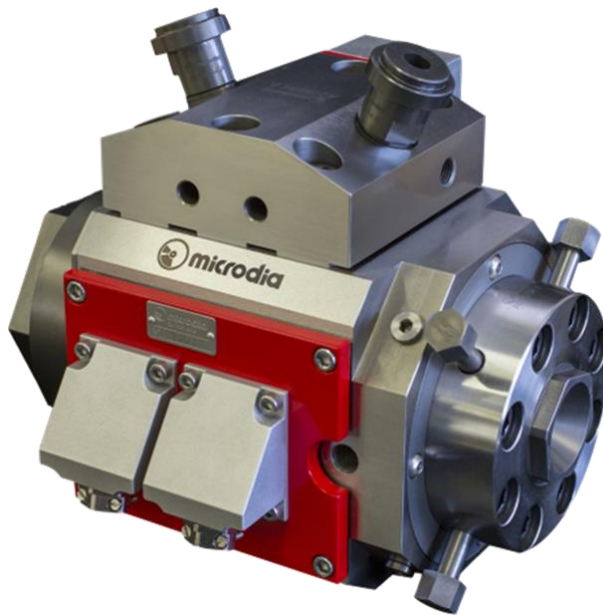
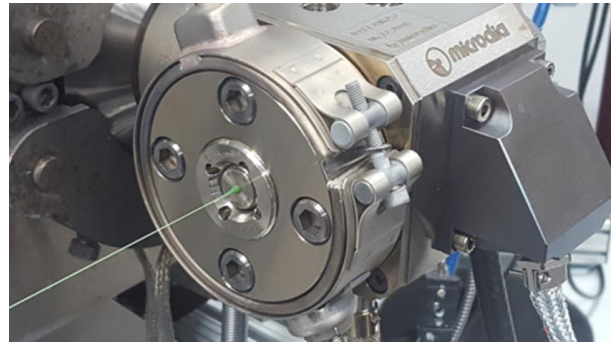
## Microflex axial and radial applications

Axial Microflex System on a Fluomex 07 SL  
Running FEP with tube tooling.

Core  $\varnothing$  0,405mm

OD  $\varnothing$  0,650mm

Concentricity 95%

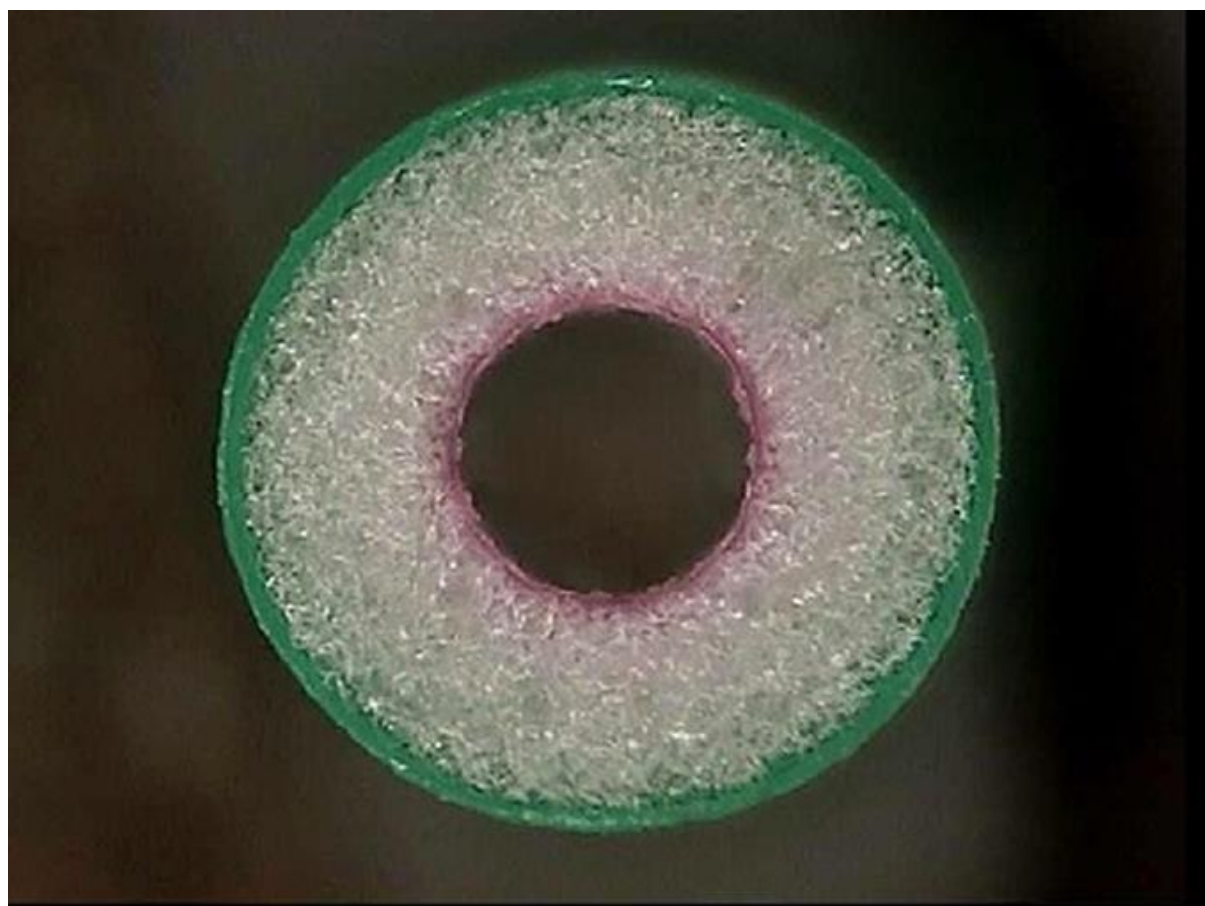


Radial Microflex system on a MF-9000-10  
Mflex skin/foam/skin For LAN cable Cat 7  
and above

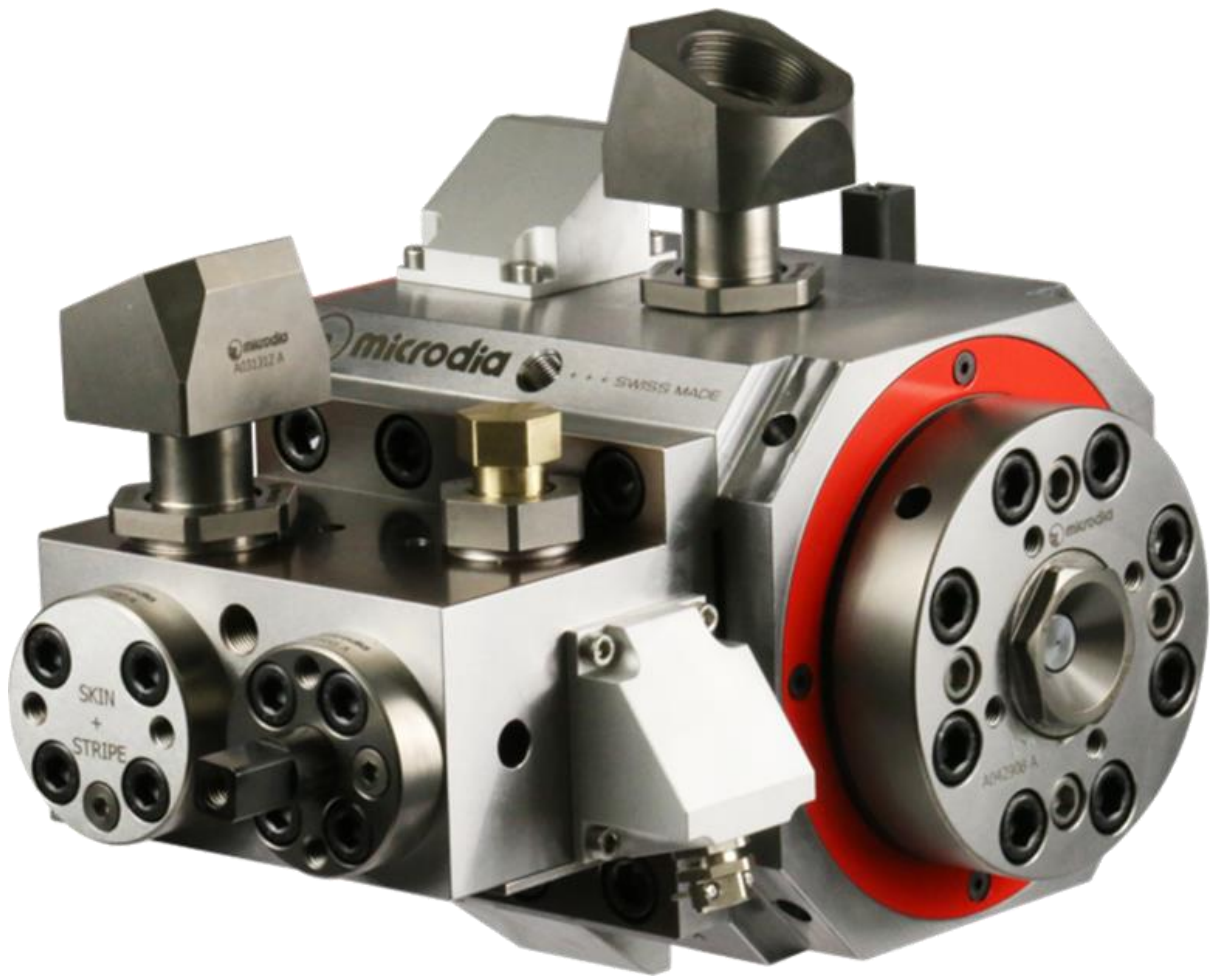
Skin-foam-skin physical foaming 0.64 x 1.55 mm Eccentricity 0.001 mm

Concentricity factor 0.99 or 99%





MF-9000-10 Axial Mflex Skin-foam-skin + stripe with **only 3 extruders**







Skin-foam-skin cat 7 physical foaming 0.91 x 1.38 mm

Eccentricity 0.002 mm

Concentricity factor 0.98

MF-3000 Axial Mflex In line cross head

For high precision tube

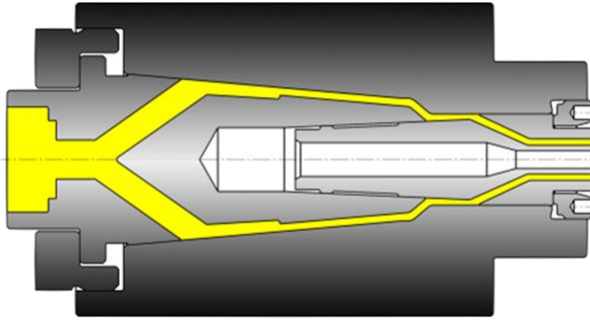
MF 3000 family:

MF 3000-10 max die  $\varnothing$  12mm

MF 3000-20 max die  $\varnothing$  20mm

MF 3000-30 max die  $\varnothing$  37mm





Domain of use:

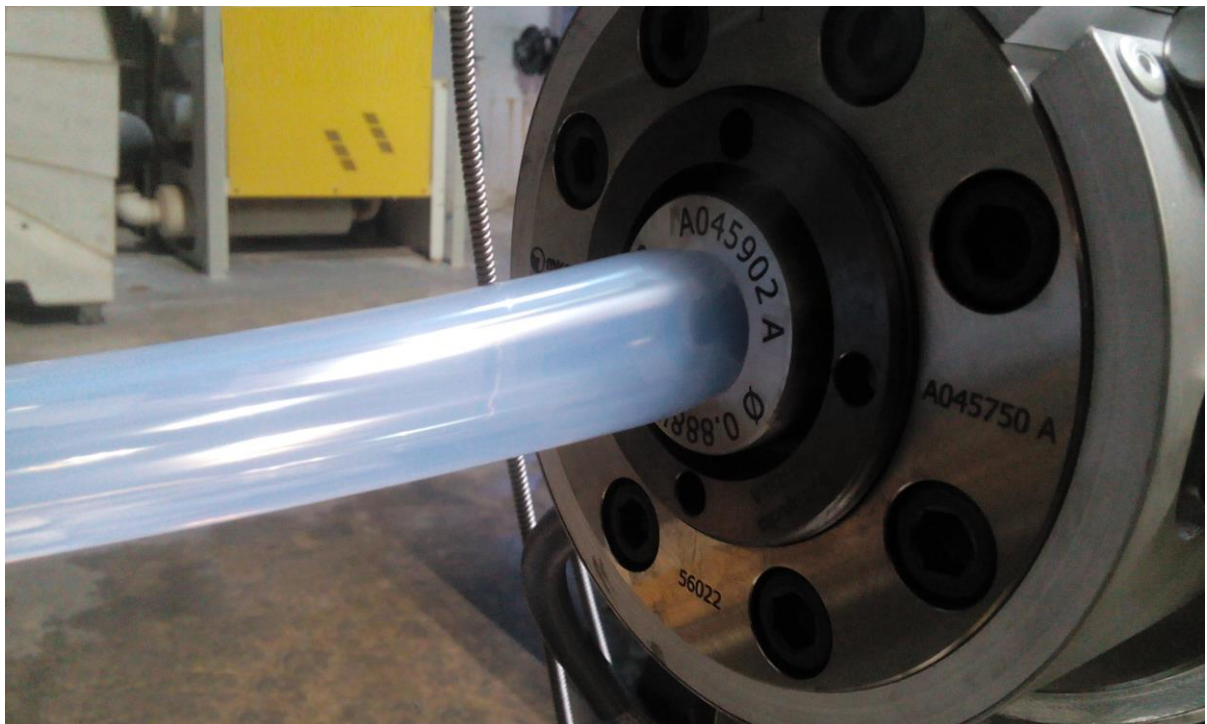
Precision medical tubing

Calibrated tubes

Pneumatic tubes

Technical tubes

Compound PVC / PE / PA / PUR..



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+41 (0) 24 447 35 00

Prés du Lac 69bis  
1400 Yverdon-les-Bains (VD)  
Switzerland