

# World-class filtration, screen printing, architectural & specialty solutions

**S E F A R**

The logo consists of the letters S, E, F, A, and R in a bold, black, sans-serif font. Below the letter 'F' are four small squares: a red square, a black square, a grey square, and a blue square.

Sefar leads the technical fabrics industry and sets standards worldwide as a solution provider with an absolute customer focus.



# SEFAR

## Milling Knowledge sharing session

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# Sieve Tensioning and it's importance in Grain Milling





# Sieve Tensioning: Why is it so critical???

*Why do we need to tension a sieve...?*

- *Plansifter is the heart of a flour mill. It's very important for us to use the right elements and ensure a proper functioning of these to for a healthy flour mill.*
- *One of the key elements of the Plansifter is the Bolting cloth (a.k.a sieves / fabrics). These are made up of Polyamide (Nylon) material for high durability & improved sieving.*
- *The **mesh openings** of the Bolting cloth determines the granulation of your intermediary and final products. Where as the **Open area (%)** determines the throughput or the yield.*
- *Sieves are tensioned in order to maintain the above mentioned critical parameters --- mesh openings & Open area (%)*



# Sieve Tensioning: Why is it so critical???

*Why do we need to tension a sieve...?*

- A sagging screen with LOW tension results in inefficient sieving impacting product granulations and the extortion rates.*
- A sagging sieve will experience heavy friction from sieve cleaners and is bound to wear out much faster --- Sieve fabric life reduces by 5 - 6%*
- Efficiency and life of sieve cleaners is severely reduced due to low tensioned sieves --- life is expected to reduce by 2 – 4%*
- Plansifter capacity reduces as the material doesn't stratify on the sagging sieves which prevents the material from moving downstream and may also chock Plansifters in extreme cases.*
- For any mill to achieve high quality and high yield of products with consistency, they must FOCUS on the correct use of sieves and their tensioning.*

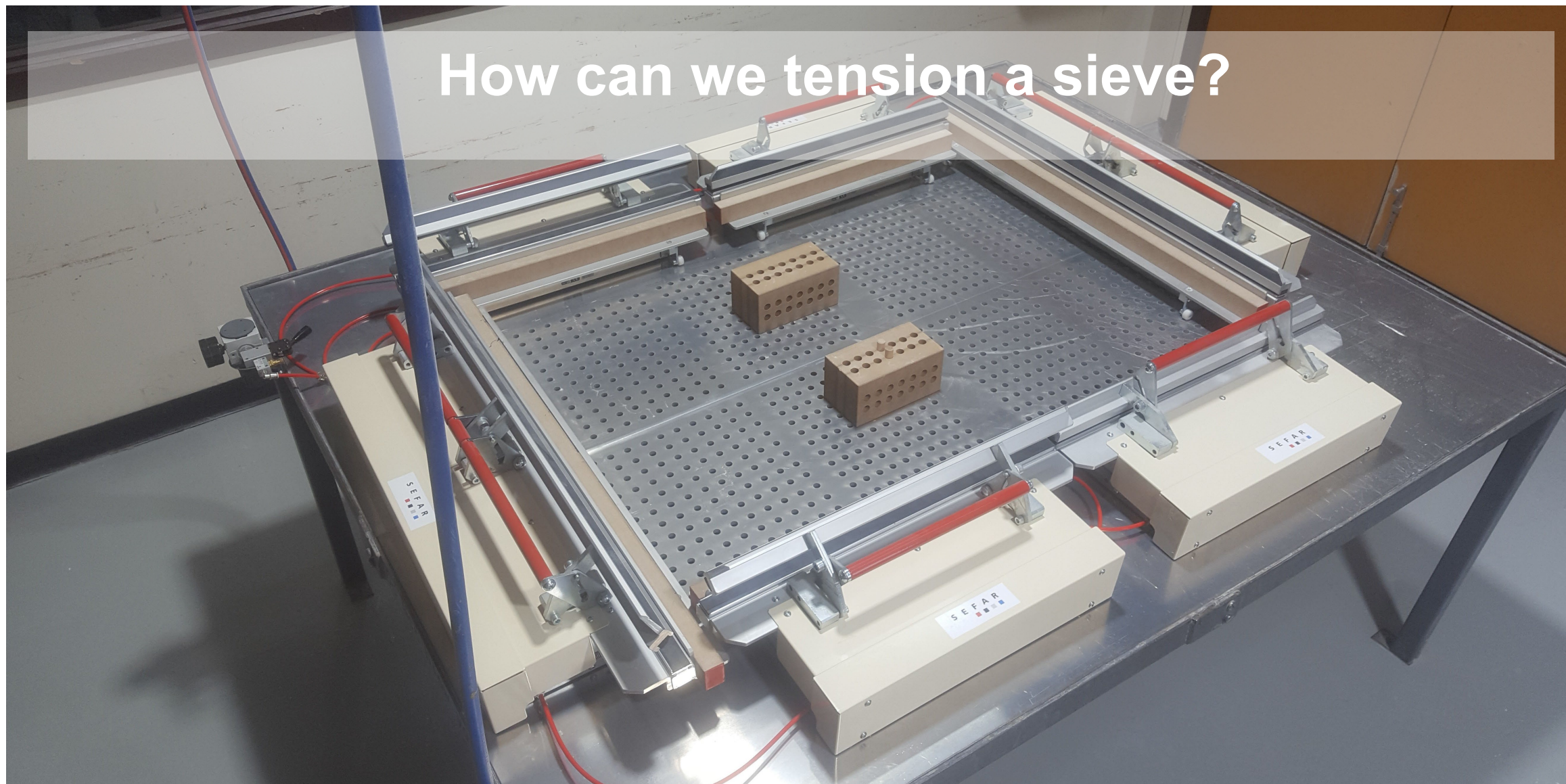


# Sieve Stretching Systems





# How can we tension a sieve?





# Various Sieve stretching (Tensioning) devices...

Manual stretching unit



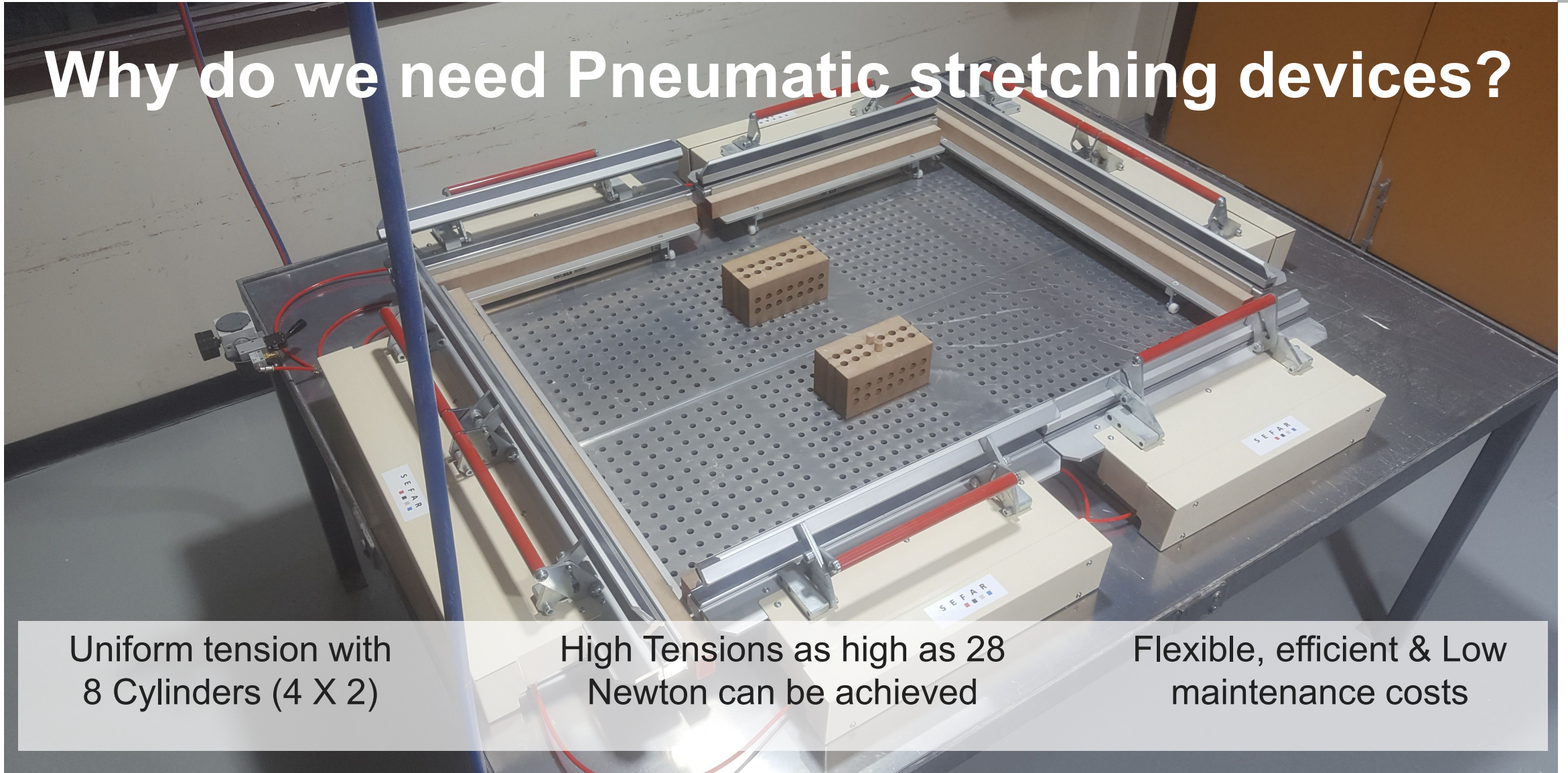
4 cylinder Pn. stretching unit



8 cylinder Pn. stretching unit  
(Recommended)



# Why do we need Pneumatic stretching devices?



Uniform tension with  
8 Cylinders (4 X 2)

High Tensions as high as 28  
Newton can be achieved

Flexible, efficient & Low  
maintenance costs



# Sieve stretching devices:

*Benefits of 8 cylinder pneumatic sieve tensioning devices.*

- High sieve tensions can be achieved using 8 cylinder pneumatic clamps.*
- Accurate and high precision sieve tensioning can be achieved consistently with these.*
- Uniform sieve tensioning across the entire sieve is possible as the stretching (pulling) on all the 4 sides is uniform.*
- Dependency on a individual is reduced --- anyone can tension the sieve easily!*
- NO to Low maintenance costs --- with zero maintenance for almost 4-5 years.*
- Easy to install and start-up --- most of these units are simple & easy to install.*



# How do we measure the tension of a sieve?





# Sieve Tensioncheck devices:

- ✓ Sieve tension can be checked with the help of devices like Sefar Tensometer and other tension measuring devices available in the market.
- ✓ Tension meters can be either analog or digital, though, we recommend the use of digital devices for high accurate and precision readings.
- ✓ These devices must be able to measure both synthetic fabrics & SS wire mesh with high precision.
- ✓ These must be able to measure tensions as high as 28 - 30 N/cm with a precision of (+/-) 0.2 units.
- ✓ Tension meters should be recalibrated at least once a year to ensure the accuracy of the readings are retained while measurement.





# Humidity influence on sieve tensioning





# Humidity influence on polyamide fabrics

*Polyamide absorbs up to 3.5 - 4.4% humidity*

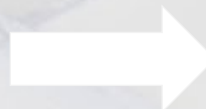


## Well stretched:

10.6 N/cm (At the time of stretching)

## Poorly stretched:

6.6 N/cm (right after stretching)



## Well stretched:

6.6 N/cm (48h after stretching)

## Poorly stretched:

3.8 N/cm (48h after stretching)

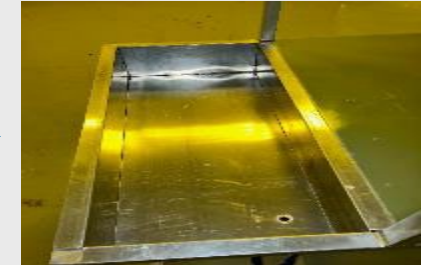
# Humidity influence on polyamide fabrics (PA)

*How to overcome the humidity impact...?*

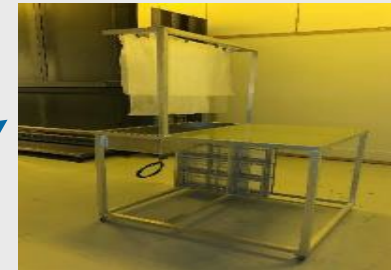
a. Store the rolls or cut panels in a room or cupboard with high humidity (+60%)



b. Leave the cut panel in bucket or cold water for ½ hour



d. Take it out and leave it hanging for ½ - 1 hour



c. Then continue to stretch the mesh on Sefar stretching unit PN-730





# Humidity influence on polyamide fabrics

*Polyamide absorbs up to 3.5 - 4.4% humidity*

DRY

## Well Stretched

10.6 N/cm (right after stretching)

**6.6 N/cm** (48h after stretching)

WET

## Well Stretched

11.4 N/cm (right after stretching)

**9.4 N/cm** (48h after stretching)

## Poorly Stretched

6.6 N/cm (right after stretching)

**3.8 N/cm** (48h after stretching)

## Poorly stretched:

9.8 N/cm (right after stretching)

**7.8 N/cm** (48h after stretching)



# Sefar Pneumapp Sieve making videos





# Sieve making videos...(3)

*Sieve preparation and fabric gluing*

