

Technical Laboratories in Knitting

Machine categories in the knitting lab

- Weft Knitting Machines

- Flat automatic
- Flat manual
- Circular large diameter
- Circular small diameter

- Warp Knitting Machines

- Tricot
- Raschel
- Raschel manual
- Circular small diameter

- Circular manual
- Other Machines
- Stab protection Test Facility
- Friction Test Facility

Knitting Lab – Automatic Flat Knitting Machines

| Manufacturer | Type | Gauge | Width | Remarks |
|-----------------------------|---------------|---------|-------|---------------|
| <u>Stoll</u> | CMS 340 TC | E 6.2 | 72" | Knit & Wear |
| <u>Stoll</u> | CMS 520 C | E 3 3L | 50" | |
| <u>Stoll</u> | CMS ADF 16 | E 3,5.2 | 50" | multigauge |
| <u>Stoll</u> | IBOM/B | E 10 | 71" | |
| <u>Harry Lucas</u> | FSM-1K-1s | E10 | 18" | Rechts/Rechts |
| <u>Hertel & Richter</u> | HRMA | E10 | 8" | Rechts/Rechts |

Knitting Lab – Automatic Flat Knitting

Machine parameter:

- Stoll CMS 340 TC
- Gauge E 6.2
- Width 72"
- 4 knitting systems
- Knit and Wear



Knitting Lab – Automatic Flat Knitting

Machine parameter:

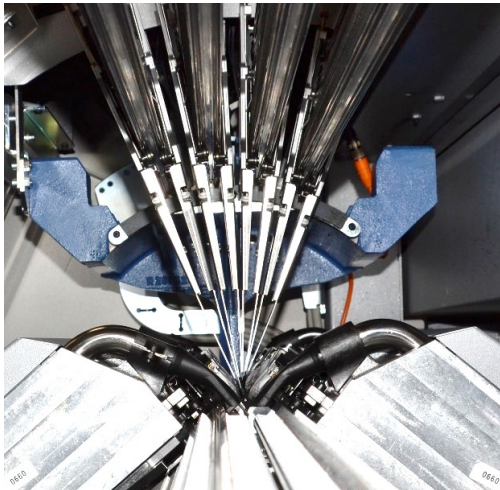
- Stoll CMS 520 C
- Gauge E 3 3L
- Width 50"
- 2 knitting systems



Knitting Lab – Automatic Flat Knitting

Machine parameter:

- Stoll CMS ADF 16
- Gauge E 3,5.2
- Width 50"
- 3 knitting systems



Knitting Lab – Motorized Flat Knitting

Machine parameter:

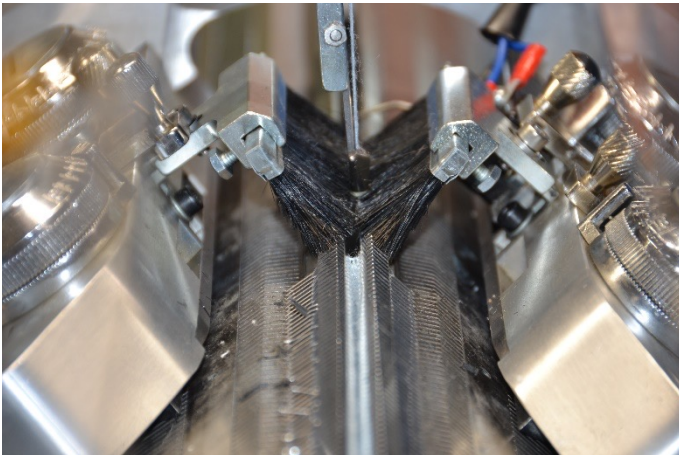
- Stoll IBOM/B
- Gauge E 10
- Width 71”
- 1 knitting system



Knitting Lab – Motorized Flat Knitting

Machine parameter:

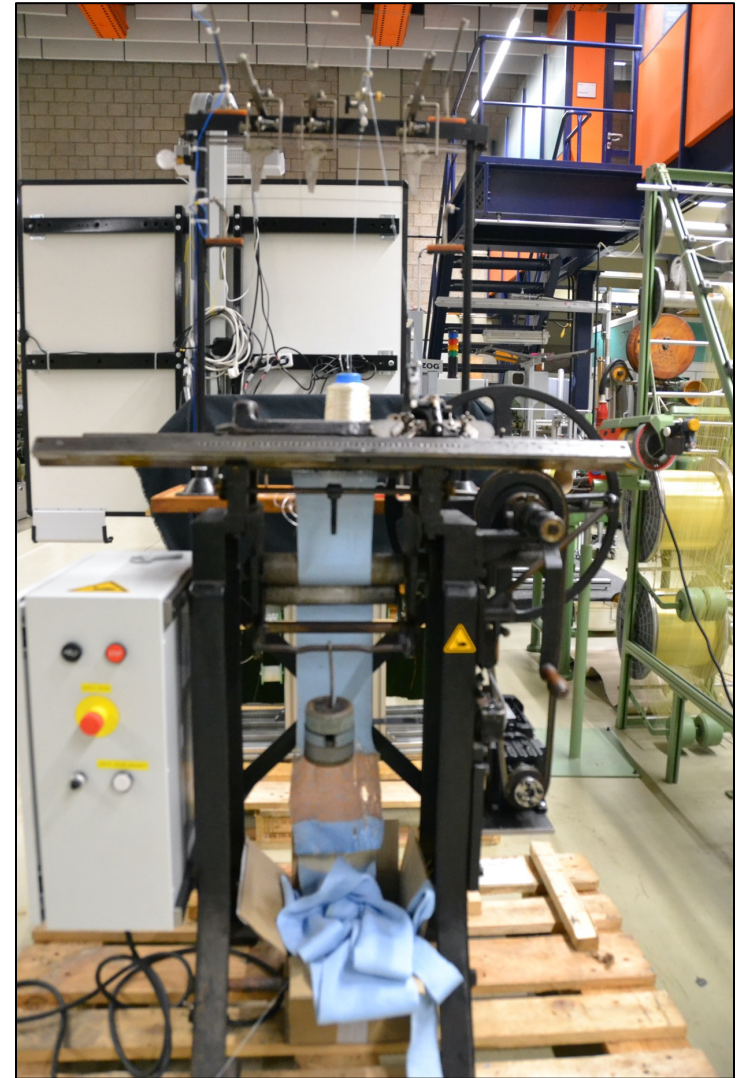
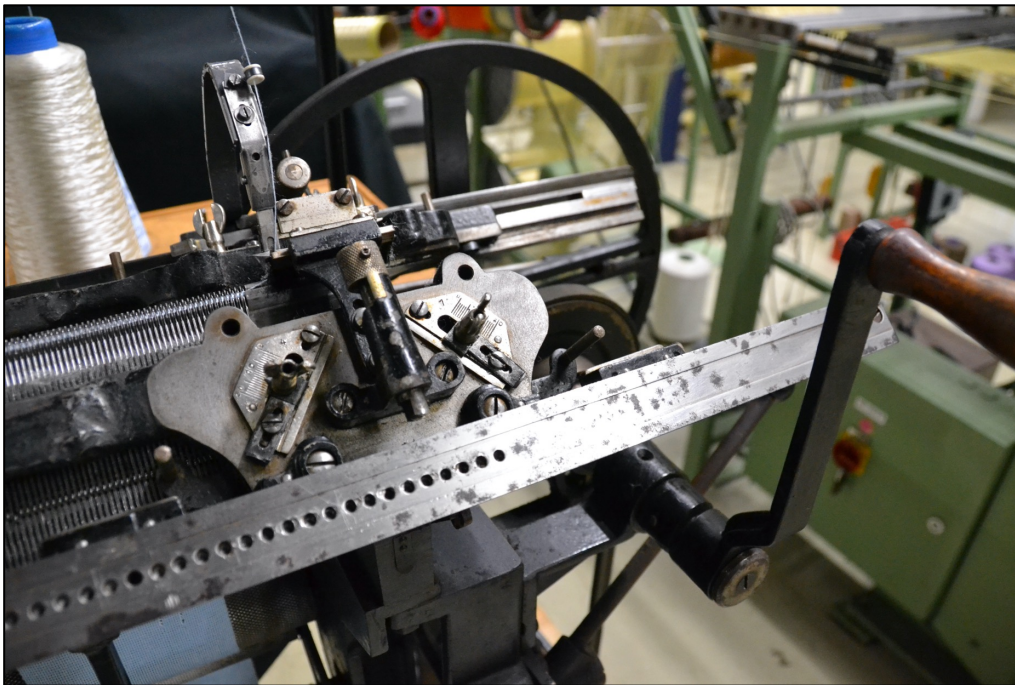
- Harry Lucas FSM-1K-1s
- Gauge E 10
- Width 18”
- 1 knitting system



Knitting Lab – Motorized Flat Knitting

Machine parameter:

- Hertel & Richter GmbH HRMA
- Gauge E 10
- Width 8”
- 1 knitting system



Knitting Lab – Flat - Manual Knitting Machines

| Manufacturer | Type | Gauge | Width | Remarks |
|-----------------|------|-------|---------------------|-----------------------|
| Stoll | IBO | E 4 | 3x 100cm , 1 x 80cm | Flat knitting machine |
| <u>Stoll</u> | IBO | E 5 | 2x 100cm | Flat knitting machine |
| Stoll | IBO | E 6 | 100cm, 120cm | Flat knitting machine |
| Stoll | IBO | E 7 | 2x 120cm | Flat knitting machine |
| Stoll | IBO | E 8 | 120cm | Flat knitting machine |
| <u>Stoll</u> | IBO | E 10 | 100cm | Flat knitting machine |
| <u>Stoll</u> | FAL | E 5 | 120cm | Flat knitting machine |
| <u>C.F.Popp</u> | | E 1,5 | 110cm | Flat knitting machine |

Knitting Lab – Flat Knitting – Manual Operation

Machine parameter:

- Stoll IBO
- Gauge E 10
- Width 100 cm
- Double (RR)



Knitting Lab – Flat Knitting – Manual Operation

Machine parameter:

- Stoll FAL
- Gauge E 5
- Width 120 cm
- Purl (LL)



Knitting Lab – Flat Knitting – Manual Operation

Machine parameter:

- C. F. Popp
- Gauge E 1,5
- Width 110 cm
- Double (RR)

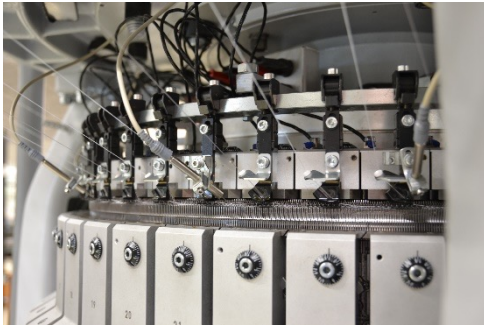


Knitting Lab – Circular Knitting Machines

large diameter

| Manufacturer | Type | Gauge | Feeds | Ø | Remarks |
|------------------------|----------------------|-------|-------|-----|--|
| <u>Mayer & Cie</u> | OVJA 1.6 EE 3/2WT | E 16 | 48 | 30" | Electronic Jacquard, cylinder (3-way), dial (2- Way) |
| <u>Terrot</u> | UP 372 | E 18 | 72 | 30" | 3-way mechanical Jacquard |
| <u>Mayer & Cie</u> | Relanit 4 | E 28 | 84 | 26" | Single Jersey, 4 track needle selection |
| <u>Mayer & Cie</u> | FV 2.0 | E 10 | 29 | 14" | Double Jersey |
| <u>Mayer & Cie</u> | IV 2.0 | E 18 | 28 | 15" | Interlock |
| <u>Mayer & Cie</u> | MPU 1.6 Plush | E 20 | 42 | 26" | Single Jersey, 4 track needle selection |

Knitting Lab – Circular Knitting – Large Diameter



Machine parameter:

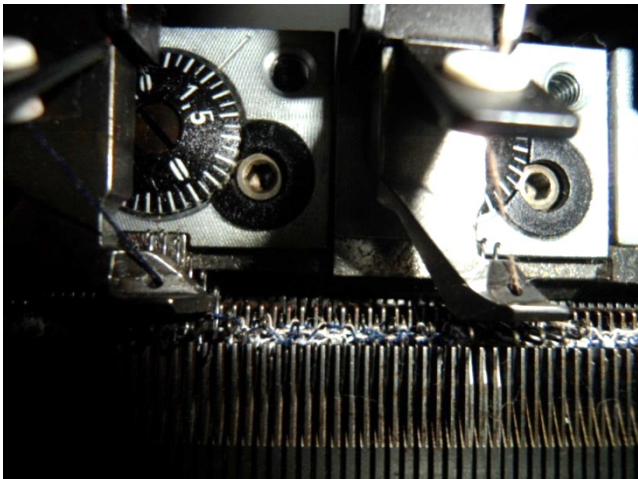
- Mayer & Cie OVJA 1.6 EE 3/2WT
- Gauge E 16
- Ø 30"
- 48 feeds
- 3-way electronic Jacquard in cylinder
- 2-way in dial
- Double jersey (Rib)



Knitting Lab – Circular Knitting – Large Diameter

Machine parameter:

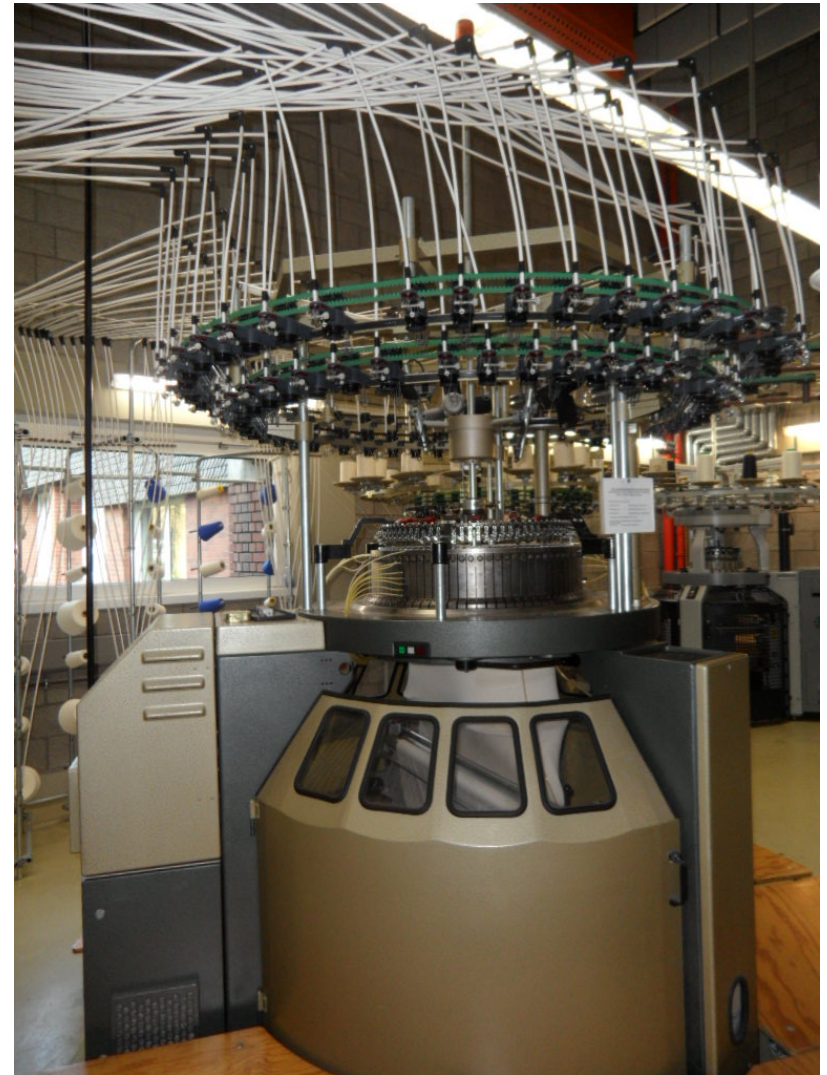
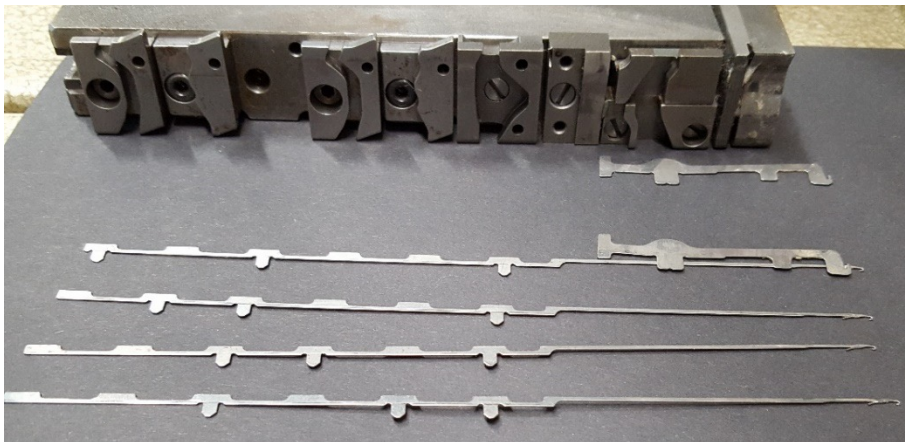
- Terrot UP 372
- Gauge E 18
- Ø 30"
- 72 feeds
- Max 40 rpm
- 3-way mechanical Jacquard
- Double jersey (Rib)



Knitting Lab – Circular Knitting – Large Diameter

Machine parameter:

- Mayer & Cie Relanit 4
- Gauge E 28
- Ø 26"
- 84 feeds
- max 40 rpm
- Single Jersey (RL)
- 4 track needle selection



Knitting Lab – Circular Knitting – Large Diameter

Machine parameter:

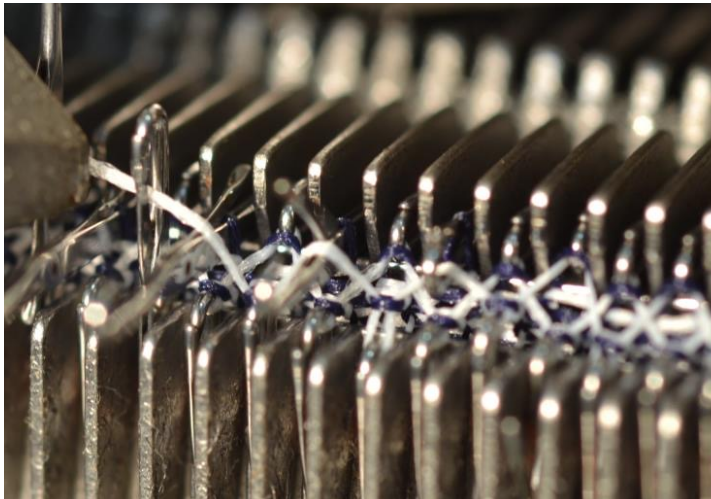
- Mayer & Cie FV 2.0
- Gauge E 10
- Ø 14''
- 29 feeds
- max 79 rpm
- Double Jersey (Rib)
- 1 track needle selection



Knitting Lab – Circular Knitting – Medium Diameter

Machine parameter:

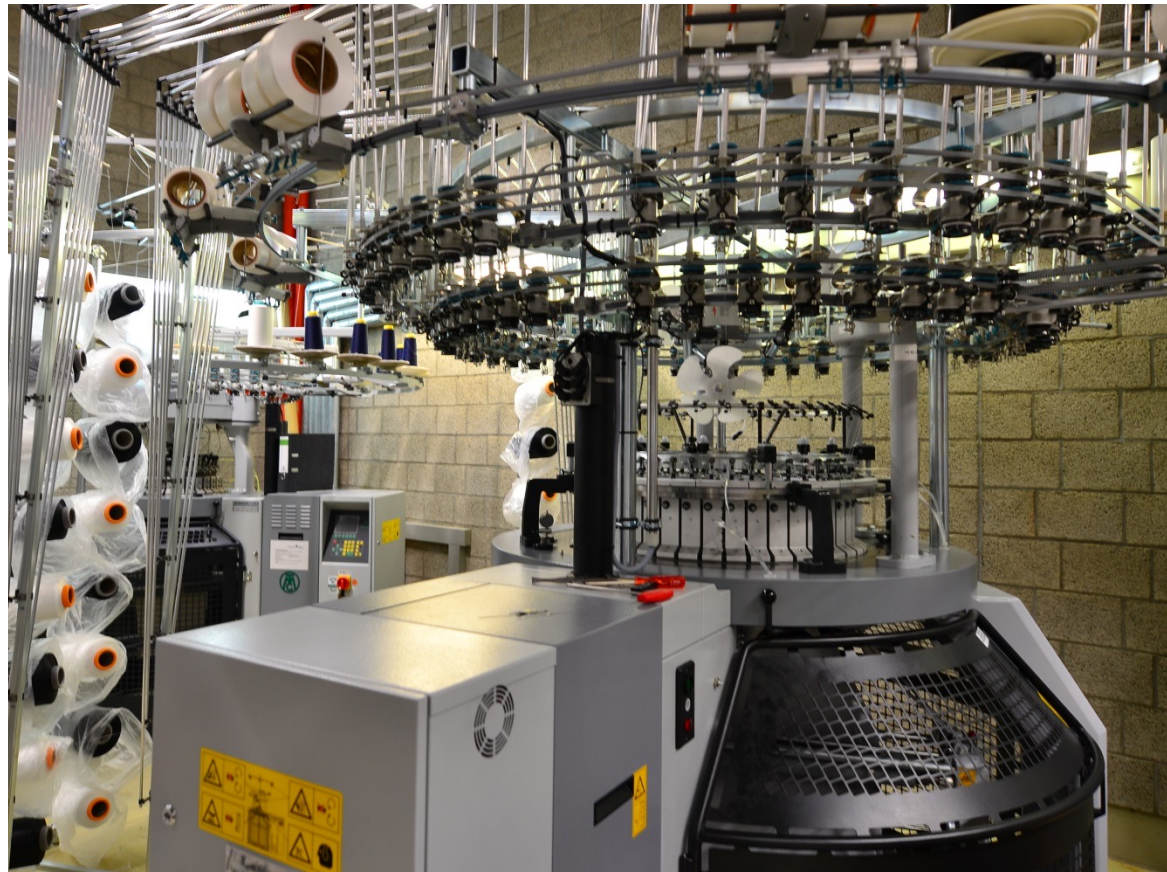
- Mayer & Cie IV 2.0
- Gauge E 18
- Ø 15"
- 28 feeds
- Max 70 rpm
- Interlock
- 2 track needle selection



Knitting Lab – Circular Knitting – Large Diameter

Machine parameter:

- Mayer & Cie MPU 1.6 Plush
- Gauge E 24, Ø 26"
- 42 feeds
- 4 track needle selection
- Single jersey (RL)
- Plush, terry, fleece



Knitting Lab – Circular Knitting Machines

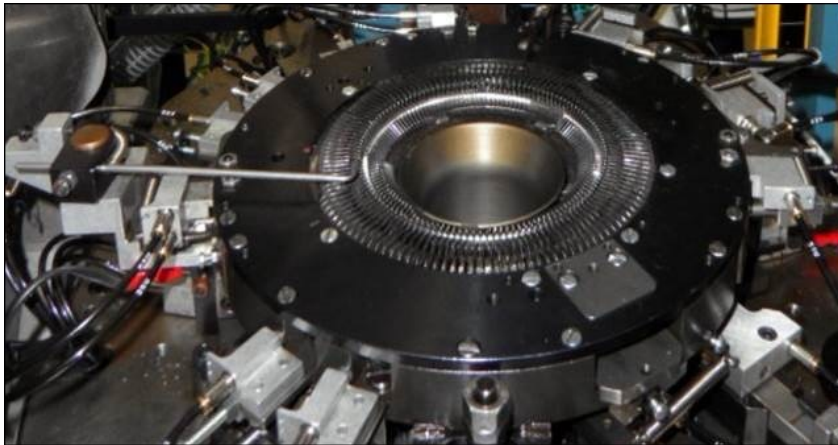
small diameter

| Manufacturer | Type | Gauge | Feeds | Ø | Remarks |
|----------------------|-----------------|-------|-------|-------|-----------------|
| <u>BUSI-GIOVANNI</u> | Idea Twin Layer | E 10 | 1+4Mu | 4“ | Sock machine |
| <u>Lonati</u> | Donna LB08MJ | E10 | 4 | 4“ | Hosiery machine |
| <u>Harry Lucas</u> | RR2-4S-ELHA | E 8 | 4 | 5,5“ | |
| <u>Foster</u> | VA | E 6 | 1 | 4,75“ | Manual |

Knitting Lab – Circular Knitting – Small Diameter

Machine parameter:

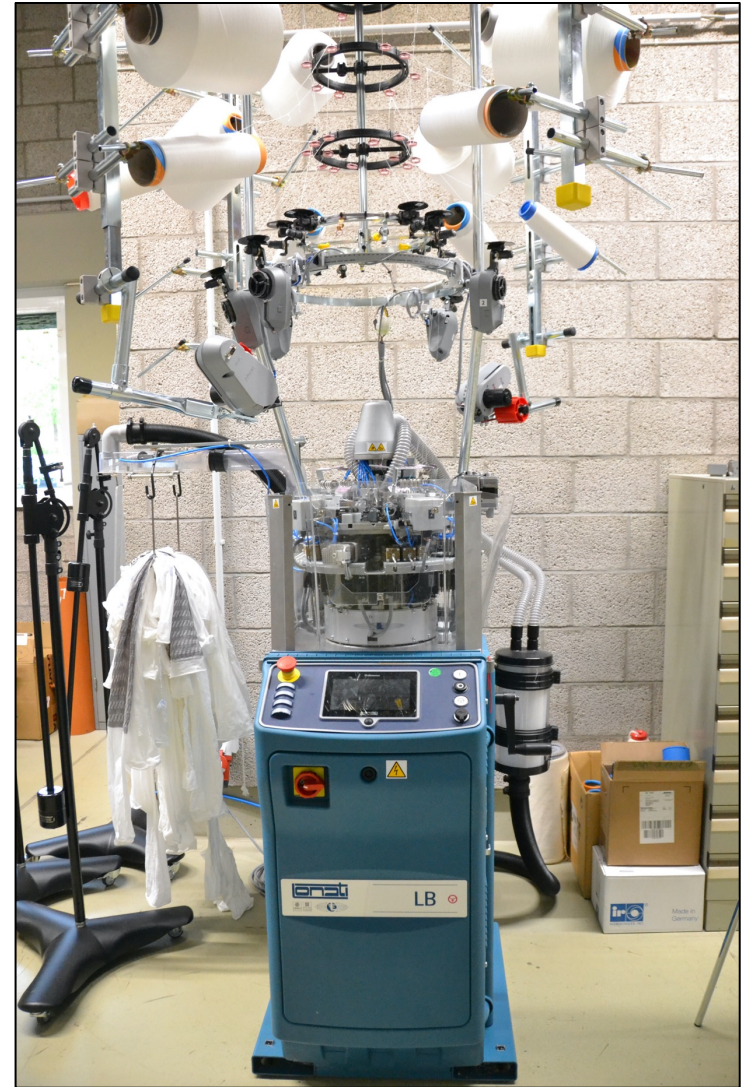
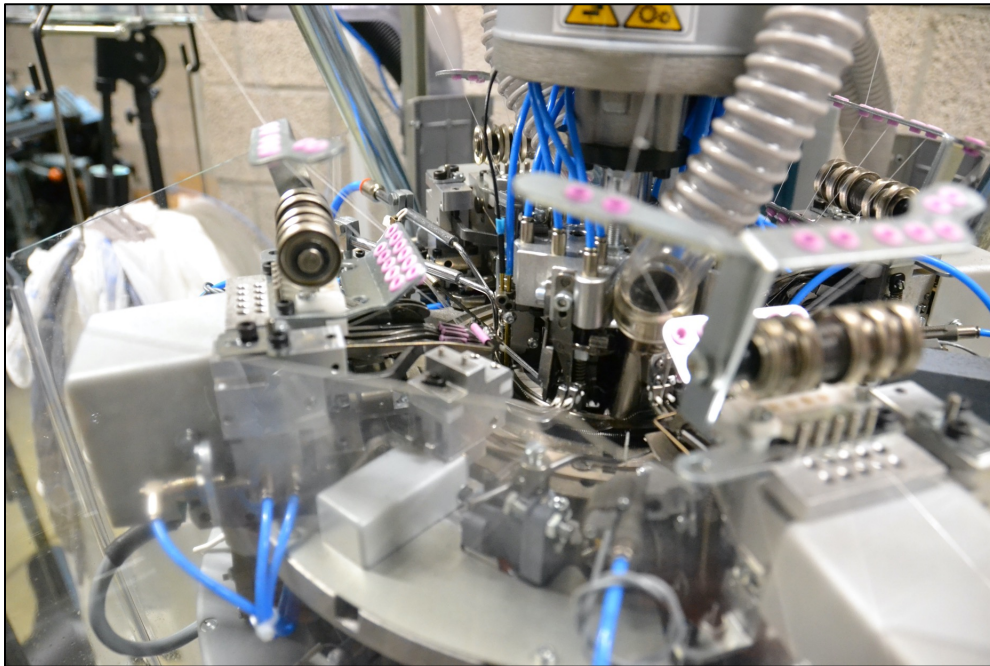
- BUSI Idea Twin Layer
- Gauge E 10
- Ø 4''
- 1 knitting feed
- 4 pattern feeds
- Max 220 rpm



Knitting Lab – Circular Knitting – Small Diameter

Machine parameter:

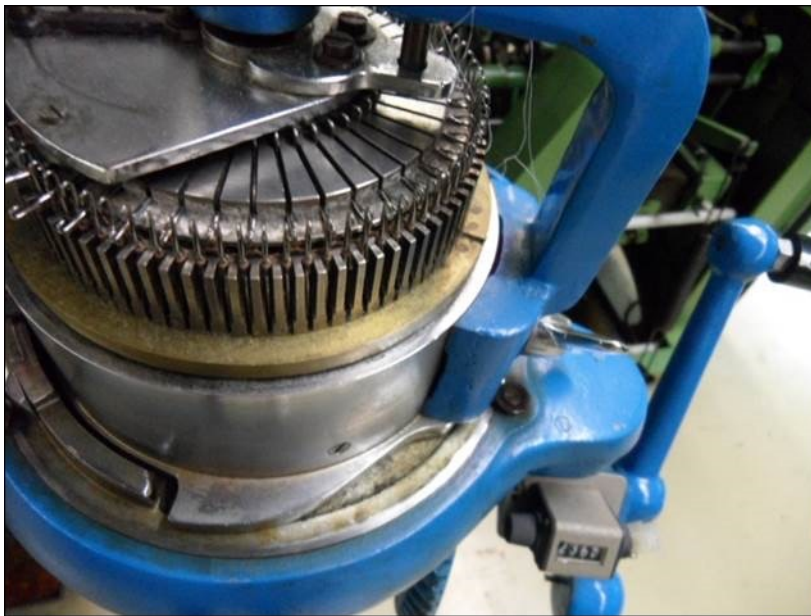
- Lonati S.p.A. Donna LB08MJ
- Gauge E10
- Ø 4"
- 4 knitting feeds
- Max. 800 rpm



Knitting Lab – Circular Knitting – Manual Operation

Machine parameter:

- Foster FA
- Gauge E 6
- Ø 4,75"
- manual



Knitting Lab - Tricot Machines

| Manufacturer | Type | Gauge | Width | Remarks |
|-------------------|-------------|-------|-------|-------------------------|
| <u>Karl Mayer</u> | KS 4 | E 28 | 42" | Tricot |
| <u>Karl Mayer</u> | KL 4 | E 28 | 22" | Tricot, bearded needles |
| <u>LIBA</u> | Copcentra 2 | E 28 | 42" | Tricot |

Knitting Lab - Tricot Machines

Machine parameter:

- Karl Mayer KS 4
- Gauge E 28
- Width 42"
- 4 guide bars
- Single Jersey (RL)
- compound needles



Machine parameter:

- Karl Mayer KL 4
- Gauge E 28
- Width 22"
- 4 guide bars
- Single Jersey (RL)
- bearded needles



Knitting Lab - Tricot Machines

Machine parameter:

- LIBA Copcentra 2
- Gauge E 28
- Width 42"
- 2 guide bars
- Single Jersey (RL)
- compound needles



Knitting Lab - Raschel Machines

| Manufacturer | Type | Gauge | Width | Remarks |
|--------------------|-----------|-------|-------|------------------------------|
| <u>Karl Mayer</u> | RS 4 MSU | E 18 | 77" | Magazine storage |
| <u>Karl Mayer</u> | MRS 10 | E 18 | 50" | Multi bar |
| <u>Karl Mayer</u> | RML 6F | E 18 | 50" | Fall plate |
| <u>Karl Mayer</u> | DR 7 E-ST | E 18 | 25" | Double needle bar |
| <u>Karl Mayer</u> | RML 6 | E 12 | 22" | Lab-scale |
| <u>Harry Lucas</u> | Vepa E | E 5 | 8" | 2 guide rings, cut/draw unit |
| <u>Schlafhorst</u> | | E 4 | 6" | Manual single needle bar |
| <u>Schlafhorst</u> | | E 4 | 6" | Manual double needle bar |

Knitting Lab - Raschel Machines

Machine parameter:

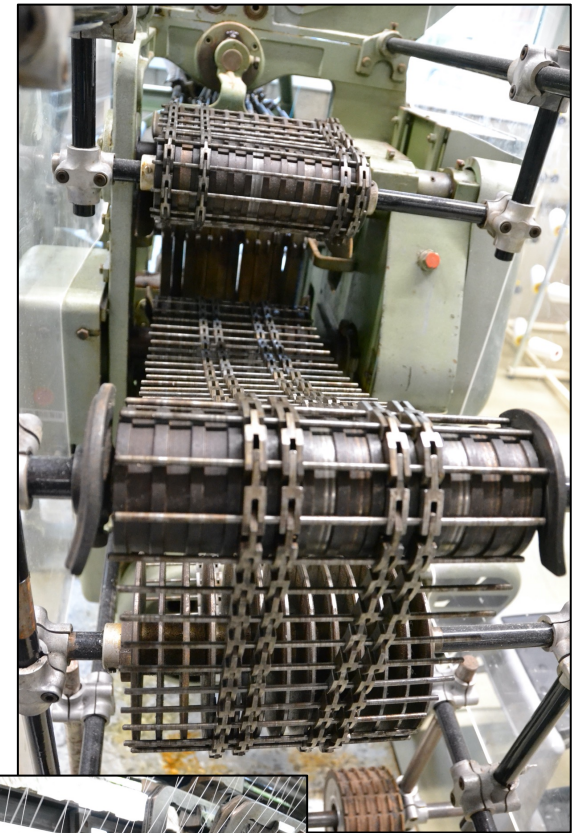
- Karl Mayer RS 4 MSU
- Gauge E 18 (ER 36)
- Width 77"
- 4 guide bars
- Magazine storage
- Single Jersey (RL)
- Compound needles



Knitting Lab – Raschel Machines

Machine parameter:

- Karl Mayer MRS 10
- Width 50"
- Gauge E 18 (ER 36)
- Single Jersey (RL)
- latch needles
- 2 ground bars, 8 pattern bars



Knitting Lab - Raschel Machines

Machine parameter:

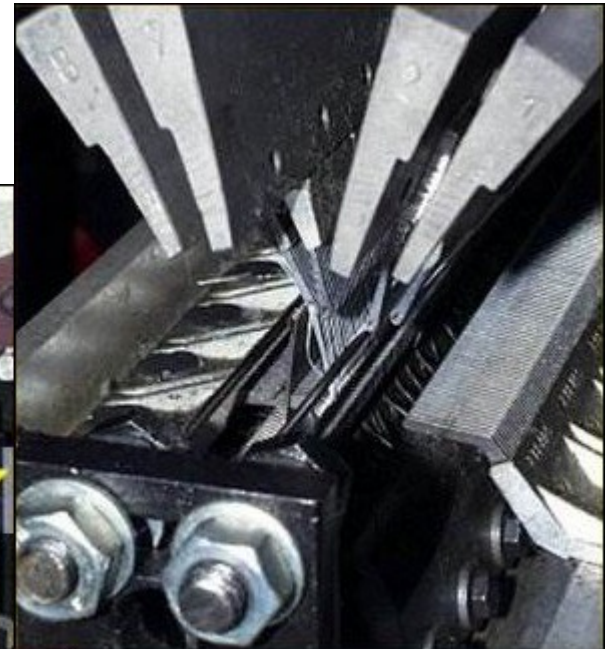
- Karl Mayer RML 6 F
- Gauge E 18 (ER 36)
- Width 50"
- 3 ground bars,
3 in front of fall plate
- Fall plate technique
- Single Jersey (RL)
- latch needles



Knitting Lab - Raschel Machines

Machine parameter:

- Karl Mayer DR 7 E-ST
- Gauge E 18 (ER 36)
- Width 25"
- 7 guide bars
- Double needle bar
- Double (RR)
- latch needles



Knitting Lab - Raschel Machines

Machine parameter:

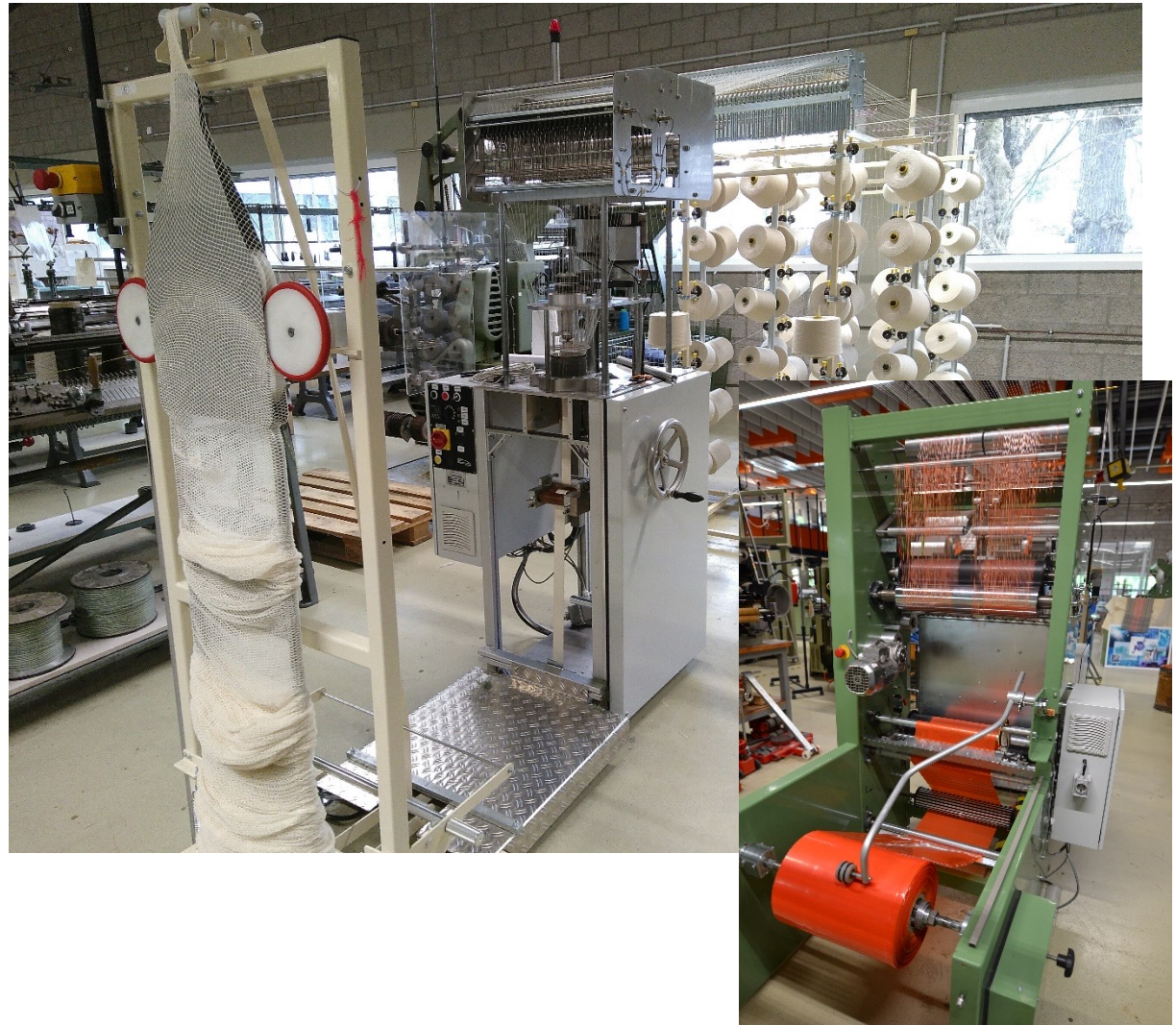
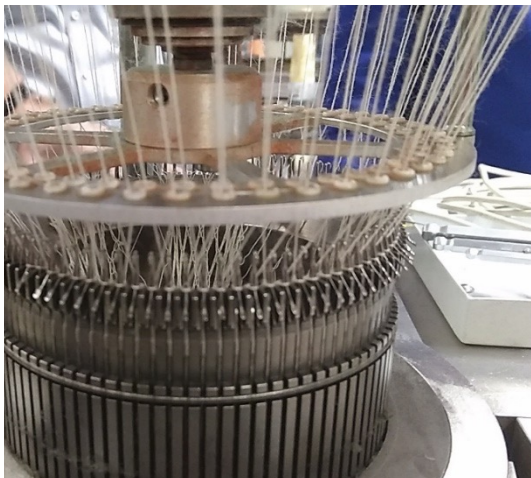
- Karl Mayer RML 6
- Gauge E 12 (ER 24)
- Width 22"
- 6 guide bars
- Single Jersey (RL)
- latch needles



Knitting Lab – Warp Knitting Circular small diameter

Machine parameter:

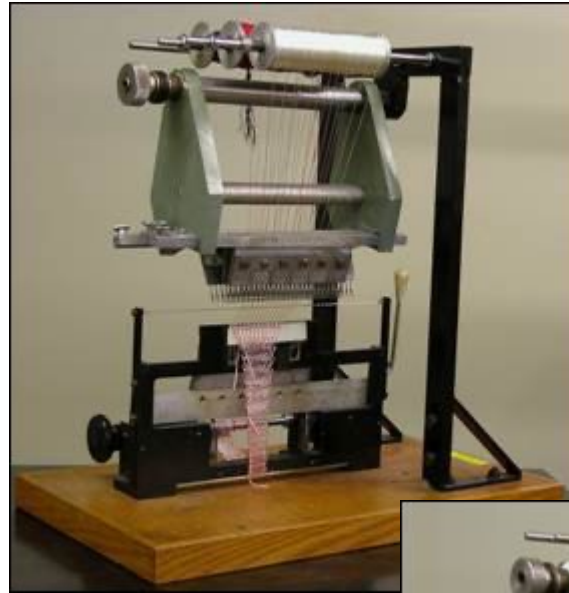
- Harry Lucas Vepa E + Cut/Draw Unit
- Diameter 8”
- 2 guide rings
- 120 needles (Gauge 5)



Knitting Lab - Raschel Machines - Manual

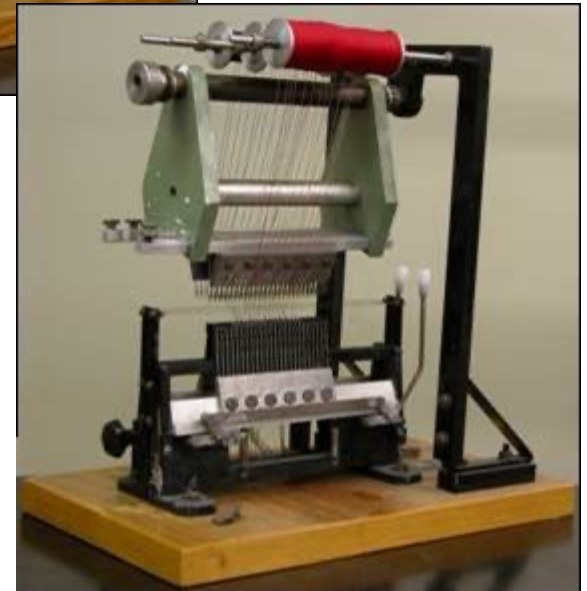
Machine parameter:

- Schlafhorst manual
- Gauge E 4 (ER 8)
- Width 6"
- 4 guide bars, single needle bar (10 machines available)



Machine parameter:

- Schlafhorst manual
- Gauge E 4 (ER 8)
- Width 6"
- 4 guide bars, double needle bar (2 machines available)



Other Machines

Stab Protection Test Facility

| Manufacturer | Knife manufacturer | type | Remarks |
|-----------------------------|--------------------|--------|---------------------|
| <u>Inhouse construction</u> | Wenger | PB/1 | According to VPAM |
| | Böker | Magnum | 440 Stainless Steel |

Friction Test Facility

| Manufacturer | Speed | Sensors | Remarks |
|-----------------------------|-------------------------|---------|--------------------|
| <u>Inhouse construction</u> | 30 m/sec – 300 m/sec | 2 | Under modification |

Other Machines – Stab Protection Test Facility

Machine parameter:

- Max drop height 23,62"
- Max impact energy 14,75 Joule

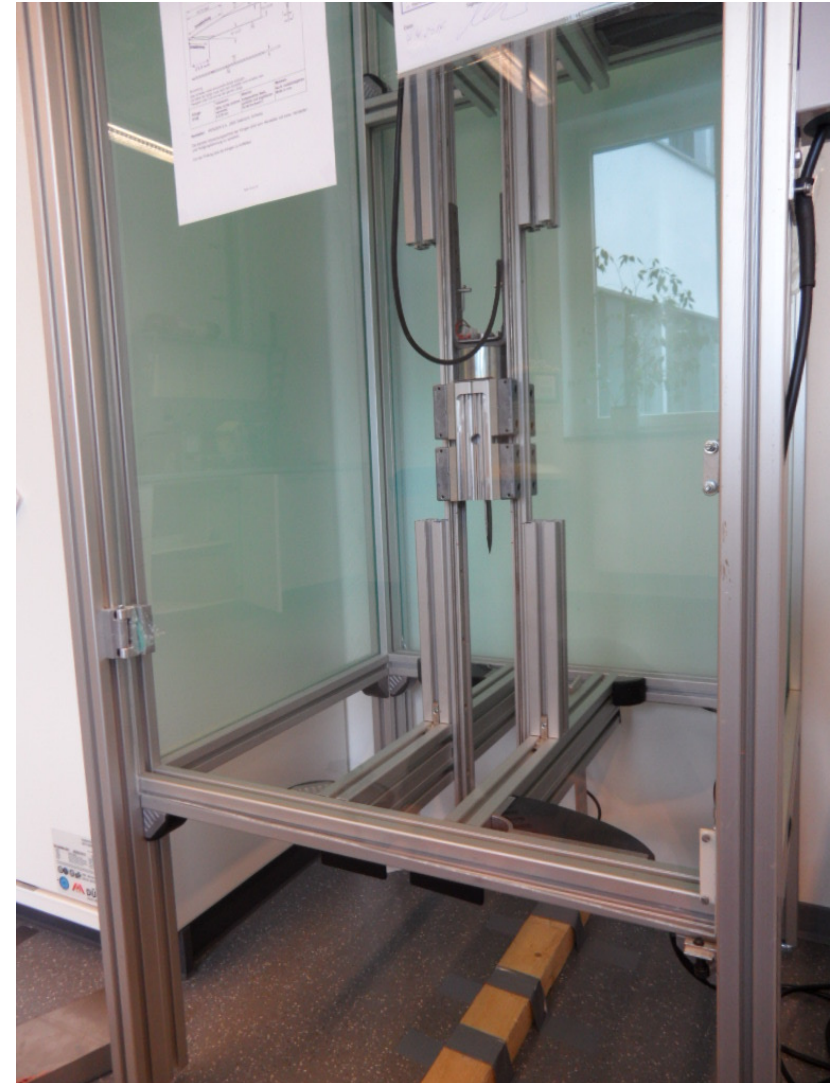
Wenger Knife parameter:

- According to VPAM P1/B
- Cold rolled steel
- Roughness < 0,05 mm on whole length

Plasticine



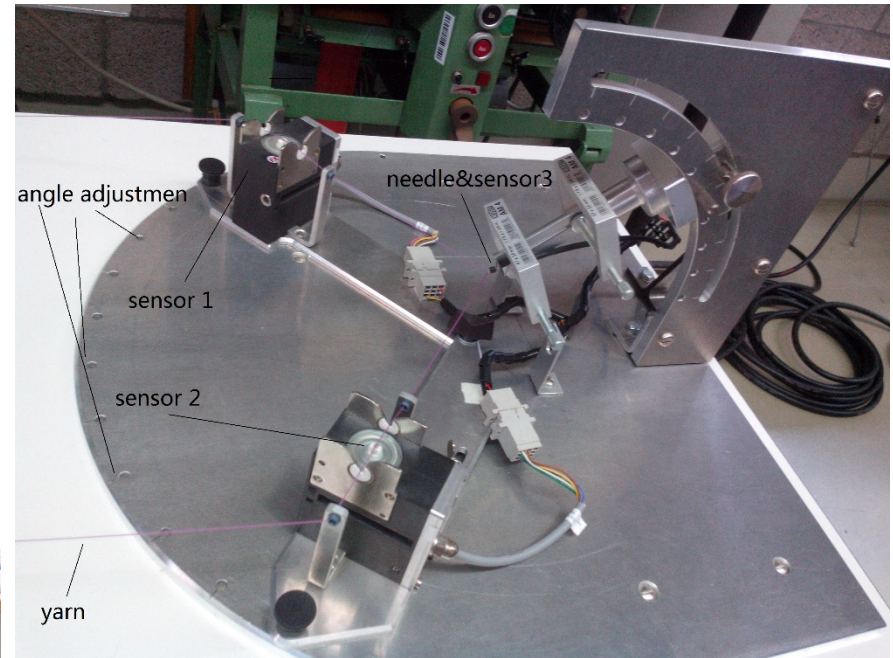
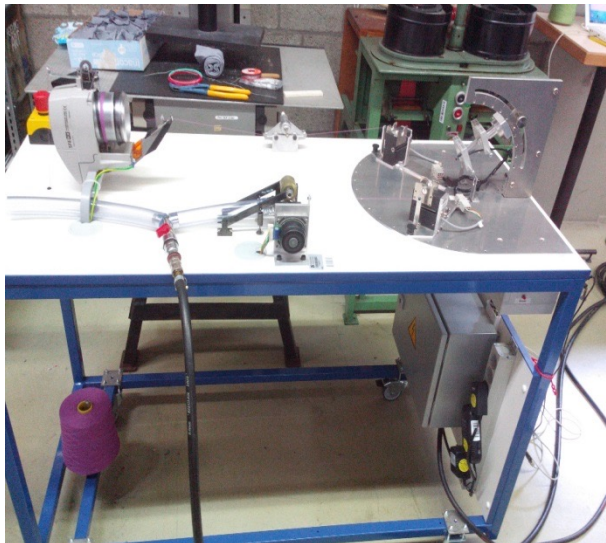
Knives



Other Machines – Friction Test Facility

Machine parameter:

- Speed 33 m/sec - 300 m/sec
- 2 yarn tension sensors before and after friction unit
- Tension measure up to 200 Hz
- Temperature measuring instrument



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