FIBER ANALYSIS KNITTER

F A K

3½″

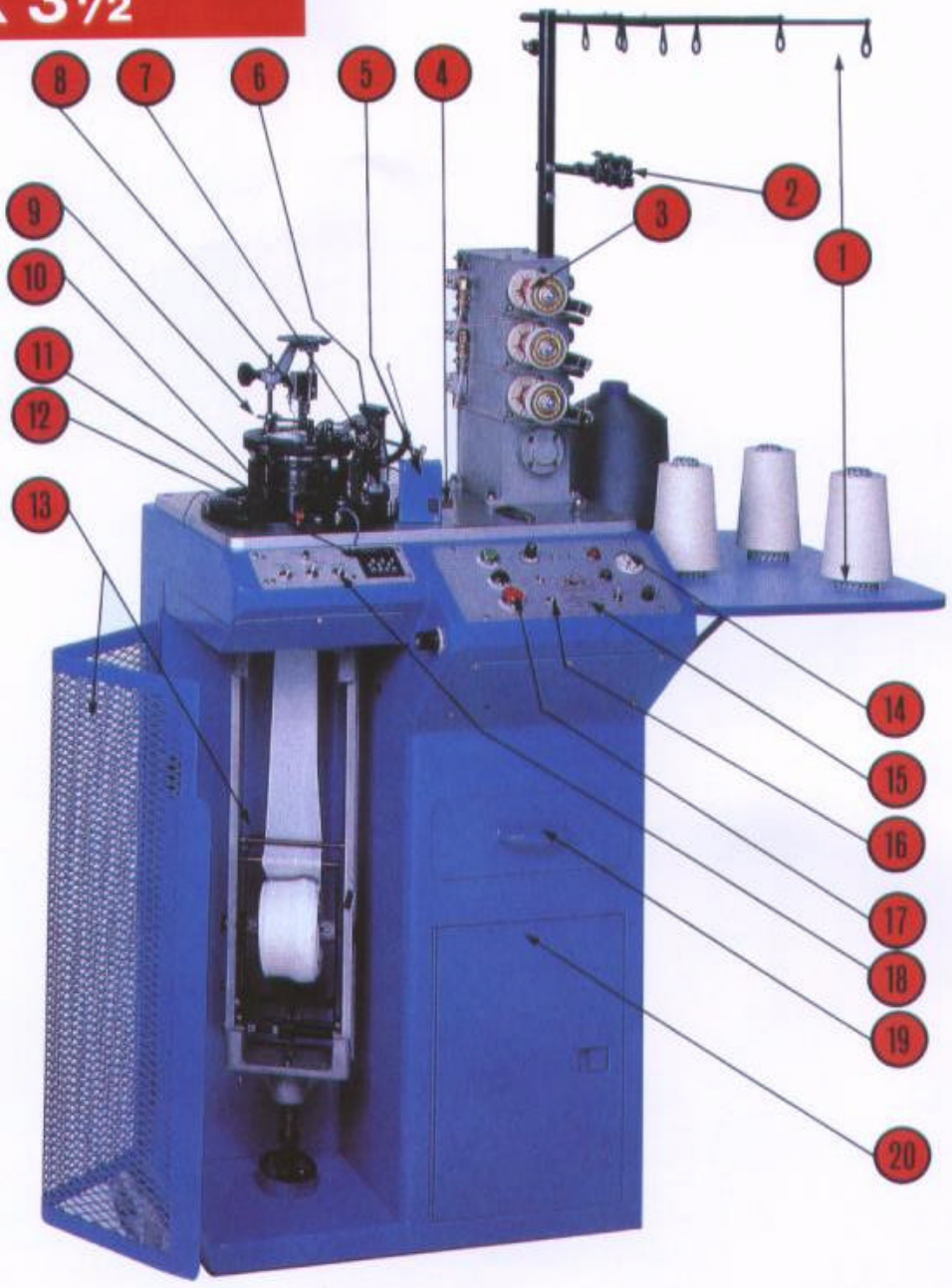
The Industry Standard to Insure Uniform Quality in Yarns

The FAK is considered the standard lab knitting machine worldwide.

Used extensively by yarn manufacturers, dye houses, spinning and texturizing plants, government agencies, standards bureaus, and research laboratories in more than 60 countries.

LAWSON-HEMPHILL

FAK 3½"



FAK STANDARD FEATURES

1. Yarn rack with easy threading tree.
2. Pre-tension for yarn control.
3. Calibrated yarn meterheads to select feed rate.
4. Selectors for individual finger control.
5. Air relay system to control yarn meters and maintain knitting tension.
6. Selectors for individual finger control.
7. Three finger programmed yarn change system.
8. Automatic yarn trimmer and binder.
9. Interlace feed for introducing run barriers and sample markers.
10. Raise cam for easy cylinder exchange.
11. Electrical stop motion system with extra outlets.
12. Solid state (L.C.D. display) stripe programmer.
13. Snap out controlled tension fabric take-up unit with stop motion protected guard.
14. Complete air system including gauge, regulator and filter.
15. Solid state control panel - pre-wired for automatic programming.
16. Variable speed control for knitting speeds up to 250 RPM.
17. Color coded start, jog and stop buttons.
18. Selector switch for automatic or manual striping.
19. Totally enclosed drawer for tools and parts.
20. Cabinet for alternate gauge cylinder storage.

FAK OPTIONAL FEATURES

(NOT ILLUSTRATED)

a. Hand-held tensiometer (0 - 25g)
b. Tool kit with tray to fit FAK drawer.
c. Full range of knitting cylinders:
   For the FAK 3½", 88 - 420 needles, 18 - 75 gauge.
d. Sinker caps for alternate cylinders.
e. Pulley thread guides to minimize thread guide tensions.
f. Automatic Oiler.

WHAT IS THE LAWSON-HEMPHILL FIBER ANALYSIS KNITTER?

1. It is a unique, multi-purpose textile laboratory machine designed to provide conclusive evaluation of synthetic and natural yarns and fibers.
2. It is a machine which manufactures standard samples of knitted fabric to within a tolerance of ½ of 1 percent.
3. It is a machine which knits from 6" to 48" per course in increments as fine as .010" on 1 or 2 independent knitting stations.
4. It is a machine that can be operated by any laboratory personnel to yield consistently reliable results.
5. It is a machine with precisely calibrated controls to provide samples not only identically knitted, but containing exactly equal (or desired) amounts of yarn.
6. It is a machine which provides for fast, simple cylinder change for knitting samples from a wide variety of counts and deniers. The **Lawson-Hemphill Fiber Analysis Knitter** takes all doubt and guesswork out of yarn evaluation – eliminating all variables except in the yarn itself.

HOW DOES THE LAWSON-HEMPHILL KNITTER WORK?

1. By utilizing the **Lawson-Hemphill Stitch Control System,** a predetermined stitch length can be selected and the air-stitch cam regulator automatically adjusts the machine to maintain that stitch length.
2. By use of an automatic yarn change device for striping yarns at predetermined intervals for visual comparison.
3. By the use of a variable-speed drive for selection of knitting speeds up to 250 RPM (3½") to suit a variety of test or convenience needs. (The Stitch Control Mechanism maintains uniform stitch regardless of speed.)
4. The use of a built-in electronic programmer provides the operator with exact control over yarn content in each sample fabric and the number of samples produced.

WHO NEEDS THE LAWSON-HEMPHILL KNITTER?

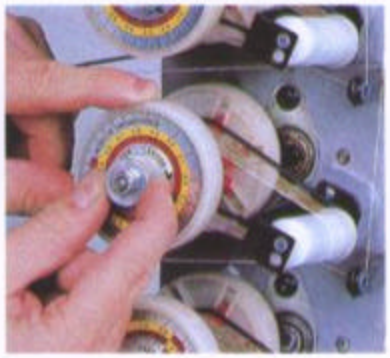
1. RESEARCH AND DEVELOPMENT LABS OR DEPARTMENTS, as a reliable (and quick) tool for determining commercial significance or feasibility of experimental fibers or fiber blends.
2. PRODUCTION CONTROL LABS in yarn manufacture, throwing or dyeing plants to check uniformity and consistency of production runs quickly and accurately.
3. QUALITY CONTROL LABS in knitting and weaving mills, to check yarn or fiber quality against standard specifications.

. . . in fact, all elements in the textile industry need the **Lawson-Hemphill Fiber Analysis Knitter** – the first and only completely reliable device for evaluating yarn and duplicating fabrics.

THE LAWSON-HEMPHILL STITCH CONTROL SYSTEM

. . . is an automatic, positive and accurate method of controlling stitch length – providing calibrated production of identical fabrics and accurate reproduction of any fabric. The system maintains yarn consumption to ±½% (.5%) tolerance, handles all fibers, corrects for run-out and requires no stitch-cam adjustments. The stitch is controlled by the two main components listed below:

1. THE YARN METER is a calibrated, adjustable, positive feed mechanism that is geared directly to the knitting cylinder. Essentially, it is a six-segment spindle, expandable in circumference from 3 to 6 inches, which is accurately set by a dial on the face of the meter. The ratio can be changed by the operator. This meter is teamed up with a driven skew roll to control the yarn path and prevent tangling. There is absolutely no slippage, no matter what yarn is used. Wear, therefore, is non-existent. Each meter can be adjusted to ±½% by simply dialing the stitch desired.



2. THE STITCH CAM REGULATOR instantly detects any variance between the rate of feed and machine yarn consumption and maintains the two in equilibrium. It consists of a number of elements, including the servo, the thread or "sensing" arm, and the stitch cam. The thread arm detects the difference between yarn feed rate and yarn consumption and immediately directs movement of the stitch cam through the air servo mechanism. While knitting, the thread arm is in continuous motion as it detects and transmits variances in yarn demand. In operation, these components work together as follows: The rate of consumption is set by the Meter and sensed by the Regulator, which automatically adjusts the stitch cam to maintain equilibrium. Should the yarn break or pull excessively, the stop motion is activated to stop the machine before any damage can occur. Any stitch (within the limits of the machine) may be dialed on the meter, and once set, the desired fabric quality is maintained without further adjustment.

PHYSICAL SPECIFICATIONS

Lawson-Hemphill Fiber Analysis Knitters are contained in a single, cabinet-type unit. The feed and knitting mechanisms are carefully mounted for 360° accessibility, and the control console and course-counter are positioned for maximum visibility. The cabinets also contain storage drawers for frequently-used attachments, accessories, and spare needles, and enclosed shelves for spare cylinders. Floor space required for the FAK 3½" is 2' x 3½' (610 mm x 1067 mm).

GENERAL INFORMATION

Power Supply: 115 volts A.C. 50-60 Hz, 220 volts A.C. 50 Hz (Transformer available for other voltage supply)

Power Consumption: 500 Watts

Dimensions: Depth: 21.5" (546 mm)
Width: 26" (660 mm)
Height: 53" (1346 mm)

Weight: 325 lbs. (147 KG)

Air Requirement: 40 p.s.i.
Instrument air required.

Shipping Dimensions: Depth: 23" (584 mm)
Width: 28" (711 mm)
Height: 60" (1524 mm)

Shipping Weight: 420 lbs. (191 KG)

NOTE: Specifications subject to change without notice.

AVAILABLE ALTERNATE CYLINDERS
FAK 3½"

NEEDLE GAUGE	NO. OF NEEDLES	NEEDLES PER IN.	DENIER RANGE	COTTON COUNTS	METRIC COUNT (NM)
18	88	8	*1500-500	*3.5-11	*6 -18
24	120	10.9	1000-300	7.0-18	9 -30
36	160	14.9	850-250	10.0-20	10.6-36
48	200	18.2	550-150	18.0-30	16.4-60
54	220	20	400-100	20.0-40	22.5-90
54	260	23.2	300-70	25.0-70	30 -128.5
70	320	29	140-40	50.0-120	64.3-225
75	380	35	70-7	75.0-Up	128.6-1285.7

*Consult factory before ordering.

Also, 420 Cylinder available for very fine yarns under 20 denier.

OTHER LABORATORY KNITTING MACHINES AVAILABLE THROUGH LAWSON-HEMPHILL

- FAK (SAMPLER) -Manually operated version of the world-famous FAK for low volume use; or may be used in combination with the SAK* for fully-automatic knitting of up to 36 packages before it is necessary to load more yarns, or with storage feeder.

- HDK-DFT (HOT DRAWER KNITTER WITH DRAW FORCE TESTING) -A precision lab knitting machine for lab testing and quality control of POY (Partially oriented yarn), MOY (Medium oriented yarn), LOY (Low oriented yarn). Also, the draw zone may be bypassed for knitting conventional yarns (and may be used in combination with the SAK*).

- SAK (SAMPLE AUTOMATIC KNOTTER) -Automatic yarn changing system which knots preselected sample lengths for continuous feeding to a host test instrument at speeds up to 500m/min.

AGENTS WORLDWIDE

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LAWSON-HEMPHILL
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881156

Committed to the Global Textile Industry and Smart Quality Control

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48	200	16.2	550-150	18.0-30	18.4-60
54	220	20	400-100	20.0-40	22.6-80
54	260	23.2	300-70	25.0-70	30-128.5
70	320	29	140-40	50.0-120	64.0-225
75	330	35	70-7	75.0-Up	128.6-1285.7

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- TUK (TAKE UP KNITTER) — A precision knitting machine that knits at a constantly maintained tension with a unique take up system which receives yarn from a host at any machine rate and automatically adjusts the speed to synchronize the knitter with the feeding device.
- *SAK (SAMPLE AUTOMATIC KNOTTER) — Automatic yarn changing system which knots preselected sample lengths for continuous feeding to a host test instrument at speeds up to 500 m/min.

AGENTS WORLDWIDE

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