International Standard 4814

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Household sewing machines — Determination of stability of needle thread tension

Machines à coudre domestiques (ou de ménage) — Détermination de la stabilité de la tension du fil d'aiguille

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4814 was developed by Technical Committee ISO/TC 148, *Sewing machines*, and was circulated to the member bodies in October 1978.

It has been approved by the member bodies of the following countries :

Australia	Italy	Sweden
Chile	Korea, Rep. of	Switzerland
Czechoslovakia	Poland	United Kingdom
France	Romania	USSR
Germany, F. R.	South Africa, Rep. of	Yugoslavia
India	Spain	

No member body fo the following country expressed disapproval of the document.

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Household sewing machines — Determination of stability of needle thread tension

1 Scope and field of application

This International Standard specifies a method of test for determining the variation of needle thread tension of household sewing machines at given positions of the tension regulator.

The method is applicable to motor-operated household sewing machines, but it may also be possible to apply it to hand or treadle operated machines.

2 References

ISO 2, *Textiles — Designation of the direction of twist in yarns and related products.*

ISO 139, *Textiles — Standard atmospheres for conditioning and testing.*

3 Principle

Repeated measurement of thread tension, by means of a thread tension measuring device, at six given positions of the tension regulator of the machine being tested. Calculation of the mean thread tension and the percentage variation of thread tension at each setting.

4 Material and apparatus

4.1 Threefold cotton thread, as specified in the annex.

NOTE — Cotton thread other than specified in the annex may be used, but, if so, this shall be stated in the test report.

4.2 Thread tension measuring device.

5 Preparation of the sewing machine

5.1 Place the take-up lever at its highest position.

5.2 Set the needle thread tension regulator to zero.

5.3 Pull the thread free of the supply bobbin, so that the thread needed for the test is under zero tension.

5.4 Thread the machine as specified in the manufacturer's instruction manual up to and including the take-up lever.

5.5 Insert the thread into the measuring device.

5.6 Lower the presser foot.

6 Procedure

6.1 Lift and lower the presser foot before each measurement and set the needle thread tension regulator to zero before each measuring cycle.

6.2 Measure the increasing thread tension T at 25, 50 and 75 % of the total range of the thread tension regulator and then after passing through the maximum thread tension setting (100 %), measure the decreasing thread tension T at 75, 50 and 25 %. Measurement at these six positions constitutes one measuring cycle.

6.3 Set the tension regulator at 25 % and pull the thread through the measuring device at a rate of approximately 30 mm/s, parallel to the working surface of the machine and perpendicular to the course of the thread take-up lever. Determine and record the mean value of the thread tension T for this position.

6.4 Repeat the operation described in 5.3 for each of the other positions of the cycle.

6.5 Carry out five measuring cycles and record the mean values of the thread tension T determined at each setting; a form, to be used for this purpose, is shown in the figure.

Cycle number	Thread tension at the tension regulator setting of		
	25 %	50 %	75 %
1			
2			
3			
4			
5			
Average tension			

Figure — Form to be used for recording values of thread tension