

The KINETIC Certified Winding Mandrel.

**Unprecedented precision in the control
of mandrel vibration.**

- **Balanced in three planes.**
 - **Certified to a maximum amplitude of .002 inch peak-to-peak through its complete range of speeds.**
 - **For 42 years we've made the industry's best mandrels.**
- Now we've designed the best way to balance them.**

**Does mandrel vibration
have your production costs
spinning out of control?**



Keep costs in line with a Kinetic Certified Winding Mandrel.

Balanced at operational speeds in three planes and certified to less than .002 inch amplification of vibration.

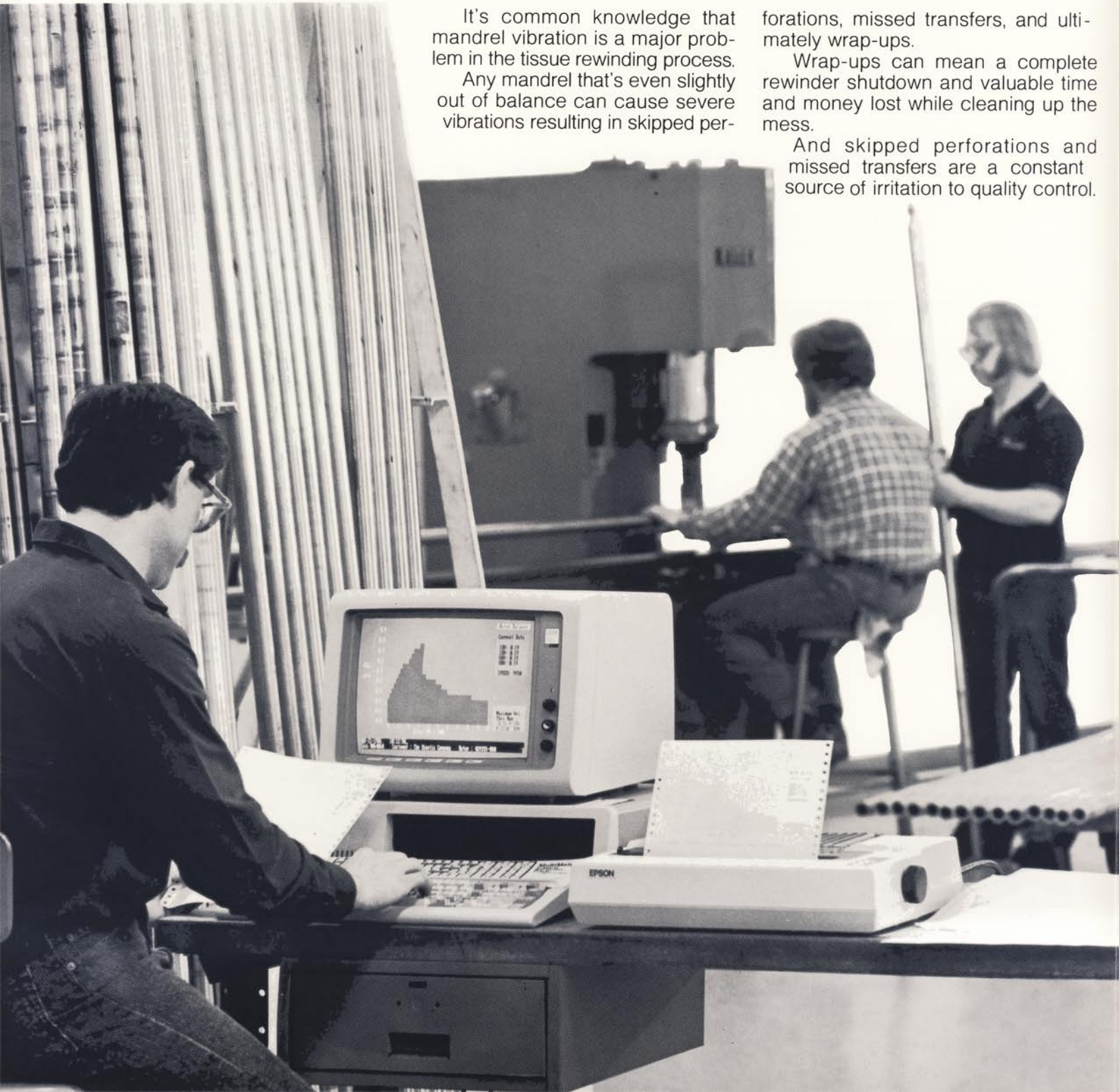
It's common knowledge that mandrel vibration is a major problem in the tissue rewinding process.

Any mandrel that's even slightly out of balance can cause severe vibrations resulting in skipped per-

forations, missed transfers, and ultimately wrap-ups.

Wrap-ups can mean a complete rewriter shutdown and valuable time and money lost while cleaning up the mess.

And skipped perforations and missed transfers are a constant source of irritation to quality control.



At the Kinetic Co., we've been supplying high-quality winding mandrels to the world's leading manufacturers of tissue rewinders for over 33 years.

After receiving a Kinetic mandrel, the manufacturer inserts the core release rod into the mandrel, installs both ends, and then balances the completely assembled mandrel.

Unfortunately, the balancing techniques that have been used to date have done little to control mandrel vibration.

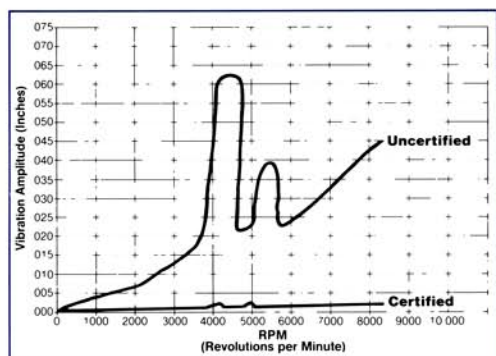
As rewinders are designed to run faster, it's simply been an accepted fact that mandrel vibration is becoming a bigger and more costly problem.

So we decided something should be done.

The breakthrough in mandrel balancing.

Using traditional industry methods, a two-plane balancing machine simply monitors both ends of a mandrel being rotated at low speed. The vibrations on each end of the mandrel are measured, and the mandrel is balanced accordingly.

The problem is, simple slow-speed, two-plane balancing doesn't identify the vibrations caused by eccentricities in the body of the mandrel which occur when the mandrel goes through its critical speeds in operation. **So every mandrel you're now using is far from being accurately balanced.**



Comparison of Certified vs Uncertified Mandrel Amplification

In fact, a two-plane balancing machine operator may be totally unaware of the range of eccentricities and resulting vibration along a mandrel's entire length. Obviously, this can spell big trouble for you.

Now, The Kinetic Co. has introduced a revolutionary new method of mandrel balancing that actually measures the vibration force in three planes, in the mandrel body and at each end, as it would occur in a tissue rewriter at actual operating speeds.

Mass eccentricities, the cause of vibration, can now be removed precisely.

The result is the **Kinetic Certified Winding Mandrel**, an amazing example of precision engineering that thrusts the technology of mandrel balancing years forward and eliminates a major source of downtime and maintenance expense for you — all at a cost that's comparable to what you're now paying for mandrels.

Unprecedented, certified precision.

For years, the tissue industry standard of acceptable mandrel vibration has been 1/16 inch or more. Kinetic Certified Winding Mandrels have .002 inch or less — 30 times better.

Present testing and measuring techniques are crude, at best.

Mandrels have traditionally been balanced only at low speed, not at their operating speed. And what's been measured has been static imbalance not dynamic imbalance.

But we've changed all that.

Every Kinetic Certified Winding Mandrel will be balanced and certified to a maximum amplitude of .002 inch peak-to-peak through its complete range of speeds.

This degree of precision in testing is unprecedented. And to actually certify a mandrel's performance to such an exact degree is an industry breakthrough.

We will record the testing process for every Kinetic Certified Winding Mandrel that comes out of our plant. This certified computer printout of your mandrel's balance characteristics will accompany your mandrel when it is shipped.

Now you'll have certified proof that every mandrel you receive has been operated through its full speed range, and that there are no excessive amplitudes.

So you can install your Kinetic Certified Winding Mandrel with the confidence that you won't be plagued by unexpected wrap-ups and skipping problems caused by mandrel vibration.

A bold new direction.

Over the 33 years that we've been the leading manufacturer of winding mandrels for rewinding machinery, we've gained considerable expertise and knowledge in mandrel technology.

We've also become exceptionally skilled in mandrel repair.

Through it all we've enjoyed an unblemished reputation for the quality of both our products and our service.

And now you have the opportunity to benefit directly from our years of experience.

We are selling complete mandrels — Kinetic Certified Winding Mandrels, including all components — directly to you for replacement on your rewinders, at a cost you'll like.

This move represents a bold new direction for Kinetic. But for you, it means much more.

Because now you can take advantage of both significantly improved products and a high degree of direct, personal service, all from the company recognized as the world's leader in winding mandrel technology.

Three ways to put Kinetic's innovative new mandrel technology to work for you.

1. Order a Kinetic Certified Winding Mandrel directly from us for replacement on your rewriter. You will receive a complete mandrel — balanced, tested and fully certified — ready for mounting on your machine.

2. Specify "Kinetic Certified Winding Mandrels" when ordering new equipment. The next time you order a rewriter, specify the best by name — Kinetic — and be assured of optimum mandrel performance.

3. Send your existing mandrels to Kinetic for rebalancing and certification. Whenever you return a mandrel to us for repair, have it rebalanced and certified at the same time. Or better yet, simply pull your mandrels a few at a time and send them to Kinetic for certified rebalancing.

Continuing the Kinetic tradition.

Together, our new Kinetic Certified Winding Mandrel and our new direct sales policy add yet another chapter to Kinetic's long tradition of innovation and commitment to superior service.

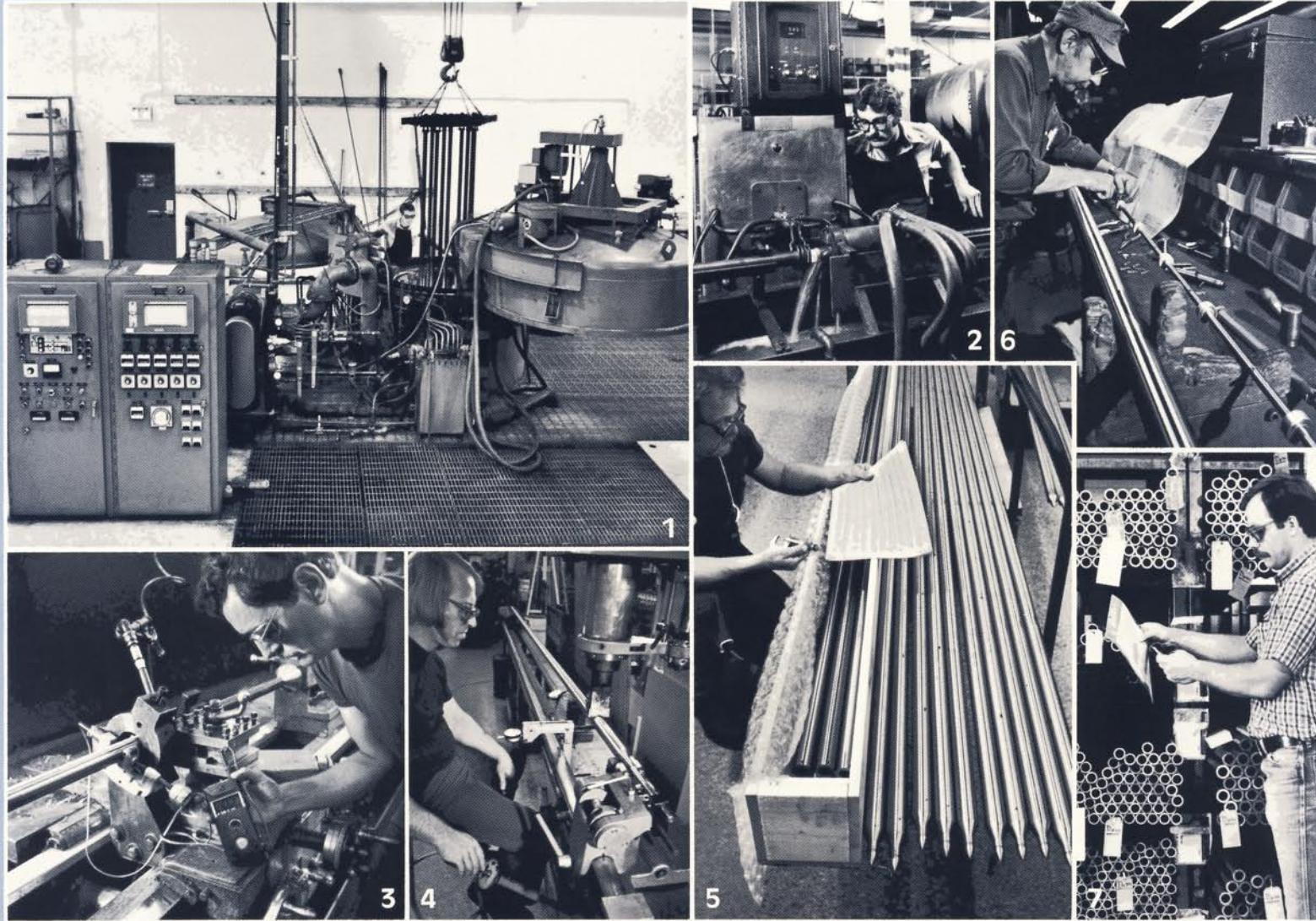
Like the long line of fine Kinetic products that have preceded it, the

Kinetic Certified Winding Mandrel will be subjected to precision craftsmanship and exacting levels of quality at every stage of production.

And you'll find our direct sales and service efforts will be every bit as reliable and efficient as the mandrels themselves.

At Kinetic, we're excited about these developments. And we'd like to tell you more about how our improvements can save you time and money right down the line.

For the full story, call or write The Kinetic Co., or contact your Kinetic representative.



1. Heat Treating

A Kinetic exclusive, this custom-made vacuum furnace is specifically designed to heat treat winding mandrels to enhance their mechanical characteristics. Every Kinetic mandrel you receive has been individually heat treated for maximum strength and toughness. Competitive mandrels aren't!

2. Induction Unit

Under carefully controlled conditions, rings and selected areas of the mandrel are hardened to exacting specifications, allowing the mandrel to withstand the wear of the slitting operation.

3. Machining with Digital Readout

A truer running mandrel is the result of our digitally precise machining.

4. Straightening Mandrels

Precision straightening to within .002" T.I.R. — a number Kinetic made an industry standard — ensures a smooth-running mandrel.

5. Packing Mandrel

Kinetic mandrels are oiled and then packaged with the utmost care to preserve their straightness, so you can install them with confidence "right out of the box."

6. Mandrel Repair

For over 25 years, the skilled hands of Kinetic craftsmen have been carefully disassembling and assembling mandrels, repairing them to the same exacting standards we apply to our new mandrels for smooth, trouble-free operation.

7. Stock Inventory

At Kinetic, we maintain a substantial inventory of aircraft quality alloy tubing in a complete range of sizes. No matter what you require in a winding mandrel, we have the proper tubing on hand and ready to go.



KINETIC[®]

The Kinetic
Certified Winding Mandrel.
Unprecedented precision in the
control of mandrel vibration.

THE KINETIC CO.
P.O. Box 200
Greendale, Wisconsin 53129-0200
Phone: 414-425-8221
Cable: MASTERS-MILWAUKEE
Telex: 26-9541
FAX: 414-425-7927

KINETIC CERTIFIED MANDREL
FINAL TEST RESULTS

Kinetic Test

Greendale

JOB: M066790

PART NO. 428588

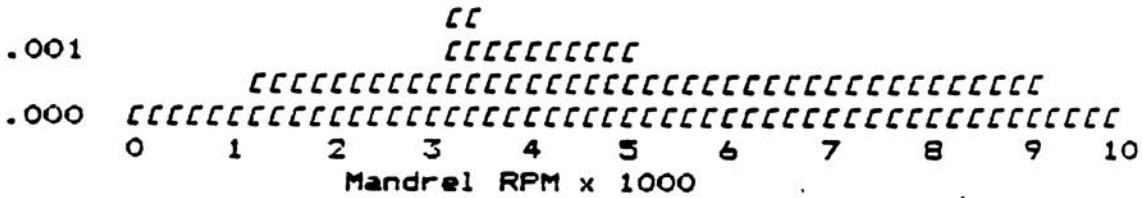
SERIAL NO. 8232

05-02-1986

08:22:12

DISP.
in.

.009
.008
.007
.006
.005
.004
.003
.002
.001



Maximum Disp.
This Run :
.0018 @ CPV
@ 3250 RPM
Maximum Speed
This Run :
9950 RPM

The Kinetic Co. PO Box 248 Greendale, WI 53129 USA



KINETIC[®]

THE KINETIC CO., INC.
P.O. Box 200
Greendale, WI 53129-0200
Phone: 414-425-8221
Fax: 414-425-7927

Visit us on the Internet at www.knifemaker.com