To Our Customers

HETRAN PURSUES ISO REGISTRATION

2 Briefly Speaking Updates:

TRAINING FOR ISO 9001 &
BT-Z TURNER SALES

Hetran Core Products

Quarterly Bulletin

Corporate Headquarters:

Hetran Inc.
70 Pinedale Industrial Rd
Orwigsburg, PA 17961
USA
Phone: 570.366.1411
Fax: 570.366.1829
Email:
hetran@hetraninc.com
Website:
www.hetraninc.com

Inside this issue:

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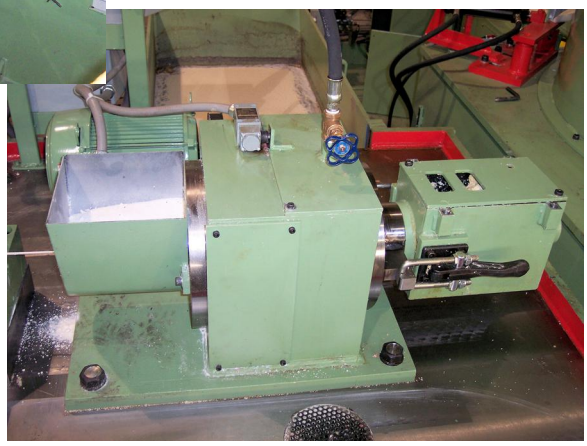
HETRAN DIE SHAVING MACHINES

A new die shaving machine for 5.5 - 12.7 mm wire rod and coil weights up to 500 kg is tested in Hetran's facility prior to shipment.



A close-up of the die shaving head.

8 FEATURES THAT OPTIMIZE DIE SHAVING EFFICIENCIES

To Our Customers:
HETRAN PURSUES ISO REGISTRATION

Hetran is increasingly exposed to customers around the globe who expect our company to become ISO registered. We are committed and already have begun the journey to certification.

ISO 9000 is a global quality management system standard that has been around for more than twenty years. It represents international consensus on best practices.

ISO registration requires a process approach for quality, supported by documented procedures, a focus on the customer, and continuous improvement.

We have engaged Quality Business Systems (QBS) to help us take our quality management system to the next level and to become ISO 9001:2008 registered in the third quarter of 2011. QBS is a well known consulting firm familiar with the steel industry and with metal processing equipment like that which we produce.

For our registrar, we have selected TUV because this company is well recognized internationally, and like QBS, their auditors are very familiar with metal producers and processors.

We look forward to the challenges of registration and for the opportunities to improve our quality management system. Our aim is to make this good company better.

You can read more about our ISO registration initiative in the “Briefly Speaking” section of this bulletin.

Best Regards,
Helmut Oertmann, President

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Hetran’s Core Products ... Machines To Meet Your Processing Needs:

Centerless Bar Turners

Coil Shavers (rotary and die)

Coil-to-Bar (turning) Lines

Coil to Bar Drawing Lines*

Bar, Tube and Coil Belt Polishing Systems

Belt Polishing Systems for Super-Finishing Bars Prior to Plating

Complete Billet and Ingot Conditioning Systems*

Two-Roll Vertical Straighteners, Burnishers, Work Rolls and Roll Housings

High Speed, Dry Abrasive Saws

Horizontal Press Straighteners

Chamfering, Facing and Deburring Machines

Bar End Stamping, Engraving Systems

Bar and Coil End Pointers

Handling Tables for all Processing Equipment

Custom Designed Bar & Coil Processing Lines

Integration of Eddy Current and Sonic NDE Technology into Processing Lines

Cell Configurations for In-Line, Continuous Processing

Laser Size Measurement Systems for Automatic Compensation*

Precision Centerless Grinders*

Multi-roll Bar Straighteners*

(* components from long term partners)

FEATURE STORY

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8 FEATURES THAT OPTIMIZE DIE SHAVING EFFICIENCIES !

HETRAN DIE SHAVING MACHINES PROVIDE HIGH SPEED, LOW COST REMOVAL OF SURFACE DEFECTS ON WIRE & WIRE ROD

1. MAKE SURE THE METAL AND SIZE IS COMPATIBLE WITH DIE SHAVING.

Die shaving is accomplished by pulling wire through a stationary carbide cutting die with an opening that is smaller than the starting wire diameter. This causes the outer layer of the wire surface to be stripped. High tensile pull and high line speed (up to 600 ft/min; 180 m/min) are required.

Some metals are difficult to machine and require very low surface speeds. These metals cannot be die shaved because the required high line speed (surface speed) for die shaving will cause rapid and catastrophic die shaving tool failure due to the very high temperatures and compressive forces generated at the cutting edge of the shaving die. Titanium, cobalt and nickel based “super alloys” are alloy examples that are best rotary shaved at lower surface speeds.

Other metals may have very high notch sensitivity or do not have the ultimate tensile strength to withstand being pulled through the cutting die. The wire will break repeatedly due to the high tensile forces required to pull the wire through the shaving die. Coarse grained silicon irons and 440 stainless alloys are examples of alloys that are rarely die shaved and require rotary shaving.

Size and depth of surface removal requirements also must be considered. Die shaving of ferrous metals is ideally suited for wire diameters up to 12.7 mm. The die shaving process can be cost effective on ferrous alloys up to 25 mm, including stainless, but removal even on the largest sizes is limited to about 0.30 mm (.012”) maximum versus rotary shaving that can remove 1 mm (.040”) or more from an 18 to 25 mm (.708”- 1”) diameter wire rod.

Hetran builds die shaving machines to process wire rod sizes up to 12.7 mm. For shaving larger diameters, Hetran’s Rotary Wire Shavers (peelers) are offered.

Note that copper and aluminum coils are more easily machined than are ferrous metals and therefore higher removals are possible.

READILY DIE SHAVED:
Stainless, (e.g., 201. 203 302, 303, 304, 316, 410, 416, 420,)
Most Tool Steels
Low Carbon Steels
Copper, Aluminum
Depending upon diameter, removal is 0.30 mm (.012 inches) or less*
Metal tensile strengths 500—1,000 N/mm2

RARELY DIE SHAVED (BETTER ROTARY SHAVED):
Titanium
Super Alloys
Silicon Irons
440 Series Stainless
Cast Iron
If required removal from diameter is more than 0.30 mm (0.012 inches)*

*higher removal is possible for copper and aluminum

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Hetran's "Push-up" style blocks with top-riding strippers are good for die shaving wire diameters to12.7mm and coils weighing up to 500 kg.

Hetran inverted take-up blocks for die shavers, above, are ideal for all diameter wires and for coils weighing more than 500 kg. Tension free, dead cast, coils are die shaved and cast onto carriers below the take-up. Two different style carriers, each holding 1 ton die shaved coils processed on a Hetran inverted block, are shown at right.

2. CHOOSE THE PROPER STYLE TAKE-UP BLOCK

For coils weights up to 500 KG and diameters up to 12.7 mm, a push-up block is adequate and is easy to install as no pit is required to set the block. For heavier weight coils, an inverted block will provide better results, and a pit or operator platform is required, thereby requiring a moderately more expensive foundation.

Both style Hetran take-up blocks include special devices to produce a tension-free, dead-cast coil. These devices "shed" the successive rings of shaved wire up onto the top-riding stripper of the push-up block or down onto the carrier beneath the inverted take-up with no scratching.

Hetran vertical lift-off systems are especially effective for small diameter wires and heavy weight coils.

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3. USE THE PROPER STYLE PAY-OFF

High line speeds require careful selection of the type coil pay-off equipment. Rotary payoffs should be avoided as high rotational speeds would result and be dangerous, difficult to control, and allow a high potential for tangles.

Instead, Hetran die shaving systems employ one of two types of pay-offs: a vertical lift - off system where the coil is positioned eye-to-the-sky and the wire passes vertically through an elevated and telescoping arm, then guided down to the die shaver.

The second type “flips” rings of coils horizontally. In this system, the coil is spread horizontally onto a “boom”. When the wire is pulled, coil rings slip off the end of the boom one at a time, and the “flipped” wire ring is pulled straight as it elongates to enter the die shaving head. “Back tension” caused by a weighted arm retards the remaining rings from sliding off the boom.

Both Hetran pay-off systems include a safety “snarl switch”. If coil rings become tangled during pay-off, the snarl switch senses the tangle and cuts electrical power to the take-up thereby avoiding potential injury and equipment damage.

The pay-off style Hetran recommends in each die shaving system is based upon coil weights to be processed, coil dimensions, wire diameters, uniformity of the incoming coil package, and whether the coil is coated and/or acid cleaned.

Roll pointers, like shown at right, work well for creating cold worked points on small diameter wires to be die shaved.

Swaging machines, as depicted above, are ideal for pointing larger diameters and can be fitted with coil feeding devices that make pointing fast and easy for the operator.

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4. MAKE CERTAIN A HIGH TORQUE DRIVE SYSTEM QUICKLY RAMPS UP TO SPEED

The drive system must be carefully sized to deliver the necessary horsepower and torque at the high line speeds required for die shaving. Also it is critical that the drive system very quickly ramp up to the required line speed otherwise premature die failure and wire tearing will occur.

5. COLD-WORK THE POINT

Efficient die shaving installations require a coil pointing system. To thread the coil through the die shaver to start the process, the die shaving operator can point the coil end, while the previous coil is being shaved.

A machined (turned) point is not recommended as it is prone to tear or break at the juncture of the point and the full section wire. A cold-worked point with a tapered shoulder to transition from the point to the wire works best because the tensile strength of the cold-worked point is elevated and better withstands tearing. The smooth, tapered shoulder minimizes potential for damaging the die when the full section of the wire enters the die shaving cutting tool at the start of the coil. The point length should position the shoulder close to the cutting tool.

Roll pointers work well for smallest sizes, up to 8 mm, as these smaller size wires can be manipulated manually when roll pointing. Swaging machines are ideally suited for all sizes and especially useful for sizes above 8 mm. Unlike roll pointers, swaging machines can readily be fitted by Hetran with auto-mated coil feeding mechanisms to minimize the manual effort required by the operator to point the coil end.

6. SELECT THE RIGHT DIE SHAVING TOOL

The right die shaving tool makes a huge difference. Hetran carries a complete inventory of die shaving cutting tools for processing a wide range of metals.

More than 25 years of experience enable Hetran to provide the optimum die shaving tool for customer applications.

Hetran's know-how regarding the selection of the grade of carbide, die edge preparation, and coatings alternatives optimize die shaving performance.

Hetran stocks die shaving tools for a wide variety of alloys and for sizes up to 12.7mm diameter.

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7. CHOOSE THE RIGHT METHOD FOR SIZING AND ROUNDING THE WIRE TO OPTIMIZE SPEED, TOOL LIFE, REMOVAL , SHAVED SIZE TOLERANCE, AND SURFACE FINISH

Hot rolled wire rod has a size and roundness variation which can cause tensile pull to fluctuate during die shaving. When the coil is being pulled through the die shaving tool, the wire is near its tear strength due to the resistance created by the shaving process. By rounding and performing a shallow sizing pass of the wire rod through a draw die in front of the die shaving tool, a constant shaving envelope is provided; therefore, the tensile force required to pull the wire through the cutting die is more consistent than would be if the wire rod were die shaved directly.

The consistent diameter and roundness of the drawn wire enhances tool life and optimizes the line speed and surface removal that can be attained. It also minimizes the potential for size variation that could be caused by intermittent stretching from the fluctuating tensile forces that otherwise would be required to pull wire with more size variation through the cutting die. Likewise, the surface finish of shaved wire that first has been given a shallow draw pass generally is smoother and more uniform.

Drawing the wire rod in-line for die shaving means that the wire must first be cleaned and coated, otherwise drawing in-line would be impossible.

An alternative method of sizing and rounding the wire that does not require the wire first be cleaned and coated is to use a roller die. This capability can be very important to wire producers that wish to have acidless processes. When using the roller die as an alternative in-line method to size and round the wire, it is beneficial to use a lubricant and even to pre-coat the wire to minimize roller die wear. Hetran die shavers are designed to accommodate quick roller die assembly changes so that roller die set-ups can be done externally to the process thereby enhancing machine set-up times.

Hetran adapts both roller dies and draw dies to its die shaving processes. The choice depends upon customer preferences and the alloys to be processed.

8. INSTALL A TOOL RECONDITIONING SYSTEM

Many used die shaving tools can be salvaged by regrinding. Hetran offers a variety of grinding machines to enable the user to efficiently salvage shaving dies that otherwise may be scrapped. The total time to regrind a die is generally less than 10 minutes and the cost savings can be very significant.

Reclaim rates vary by the die shaving tool size and the different wear rates caused by the alloy processed. The smallest dies typically have higher reclaim rates than do larger size shaving dies.

DIE #	MAX DIAMETER	TYPICAL SALVAGE %
0	5.6mm (.223”)	55 to 60%
1	9.5mm (.375”)	50 to 60%
2	12.7mm (.500”)	35 to 50%

Briefly Speaking

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HETRAN STARTS TRAINING EMPLOYEES ON ISO 9001

An increasing number of our current and potential customers have communicated expectations that their suppliers become ISO 9001:2008 registered. Employee training started in January with the goal to achieve certification by the third quarter of 2011. ISO 9001 is the most common internationally recognized standard among service and product manufacturers. It represents international consensus on best Quality Management System practices.

In addressing employees about this initiative Helmut Oertmann, President, commented: "Complying with this ISO standard creates an opportunity to create, document, and implement new procedures and methods to make this good company better."

Helmut Oertman, President, answers employee questions on the benefits of ISO certification.

ISO training session for Hetran employees started January, 2011

As noted in the letter at right, Hetran has contracted with Quality Management Strategies (QBS) consulting to expedite the process of achieving ISO 9001 certification.

TUV has been selected as the registrar.

Quality
business strategies

January 11, 2011

To Current and Potential Hetran Customers,

In their ongoing commitment to excellence Hetran Inc. has teamed with Quality Business Strategies Inc (QBS) to ensure the appropriate allocation of corporate resources towards ISO 9001: 2008 certification. QBS is proud to be an integral part of this process.

Throughout the standardization process Hetran has demonstrated both compliance and the attention to detail required for certification. Hetran has engaged TUV of America as their registrar and the certification audit is scheduled for the third quarter of 2011.

In accordance with Hetran's level of commitment, certification is imminent.

Denise Green
President, CEO
P.O Box 1363
Mishawaka, In. 46546
Bus. Cell: 574 229-0326
Fax: 574 522-8521
www.denise.green@qbsincorp.com

Briefly Speaking (continued)

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UPDATE : NEW DESIGN HETRAN BTZ BAR PEELING (TURNING) MACHINES

Hetran continues to realize strong market acceptance for its newest "BT-Z" large bar peeling machines and has already booked multiple orders for these high performance large bar peelers.

Introduced last year, these innovative peeling machines were featured in the October 2010 Hetran Bulletin which can be viewed on the Hetran website.

Don't hesitate to contact the nearest Hetran representative or our corporate office to learn more about this exciting new large bar Turning (Peeling) machine design.

View inside the spindle housing of a new Hetran BT8 - Z large bar peeler recently commissioned by Hetran

At left, Barry Rapp, Hetran management executive, and customer sign an agreement for a BT-Z 16 (400 mm) bar peeling machine and polishing system.

Going Forward

HETRAN CLOSED - MANUFACTURING CELLS

Hetran is highly regarded for its competence in designing and building closed - manufacturing cells for coil -to-coil, coil-to-bar, and bar-to-bar processes. These highly automated equipment arrangements provide a continuous flow of material through multiple processing steps.

The feature article in the next Quarterly Bulletin will document examples and explain how these Hetran cell designs generate cost, quality, and lead-time benefits for customers.

How To Reach Us

HETRAN®
WORLDWIDE ENGINEERS AND MANUFACTURERS

NORTH & SOUTH AMERICA

CORPORATE MANAGEMENT

HETRAN INC.
70 Pinedale Industrial Road
Orwigsburg, PA 17961, U.S.A.
Phone: + 1 570-366-1411
Fax: + 1 570-366-1829
E-Mail: hetran@hetraninc.com
Web site: www.hetraninc.com
Engineering: Mr. Benjamin P. Houser
Inside Sales: Ms. Nicole G. Oertmann

HETRAN INC.
4061 Wyncote Road
So. Euclid, OH 44121, U.S.A.
Phone/Fax: + 1 216-291-4590
Cell: + 1 216-533-2794
E-mail: martystrayer@hetraninc.com
Contact: Mr. Martin L. Strayer

SOUTH, CENTRAL AMERICA AND MEXICO

HETRAN INC.
Rua das Acácias n° 1966
Bairro Horto Florestal Jacyra
Americana – S.P. – Brazil
Phone/Fax: + 55 19-3407-7220
Cell: + 55 19-9289-7717
E-mail: pauloamaral@hetraninc.com
Contact: Mr. Paulo Sérgio do Amaral
Chief Technical Specialist-
Specialty Steels
Territory Manager

ASIA

HETRAN INC.
14343 – 30 Avenue, Surrey
British Columbia V4P 1R3, CANADA
Phone: + 1 604-538-6397
Cell: + 1 778-888-8662
+ 86-13683668854 (China)
E-mail: wahsanchong@hetraninc.com
Contact: Mr. WahSan Chong, P.E.
Territory Manager – Asia

CHINA

JAGON INTERNATIONAL LIMITED
A-2101, Jinglong International Building,
No. 9, Fulin Road, Chaoyang District
Beijing 100107, China
Phone: + 86 10-84540026
Fax: + 86 10-84540025
Cell: + 86 13701251022
E-mail: sales@jagonbj.com
Contact: Mr. Jack Ju

JAPAN

ALCONIX CORPORATION
9-13, Akasaka 1-chome, Minato-ku
Toyko, 107-0052 Japan
Phone: + 81-3-5575-2759
Fax: + 81-3-5575-2758
Email: noda.kazuyoshi@alconix.com
Contact: Kazuyoshi Noda
Deputy General Manager

A.K. TECHNO CO., LTD.
No. 134-3, Sugi-cho, Yamato-Koriyama
Nara 639-1121 Japan
Phone: + 81-743-56-4931
Fax: + 81-743-56-4934
Email: e.asano@aktech.jp
Contact: Mr. E. Asano

INDIA

HETRAN INDIA PRIVATE LIMITED
G-513, Phase-1
Riico Industrial Area
Bhiwadi, Rajasthan
301019 India
Phone: + 91-1493-510941
Fax: + 91-1493-510985
E-mail: ceo@hetranindia.com

SOUTH KOREA

EUROCA CORPORATION
820, Kumkang Livingstel, 400-1
Shindolimdong, Guro-Gu
Seoul, 152-887 KOREA
Phone: + 82 (2) 2676-0487
Fax: + 82 (2) 2676-4539
E-mail: eurocajik@hanmail.net
Contact: Mr. J.I. Kong

TAIWAN

GOOD POWER TRADING CO., LTD.
Room 310, No. 42 Sung Chiang Road
Taipei, Taiwan
Phone: + 886 (02) 25817102
Fax: + 886 (02) 25312801
Cell + 886 937-451504
E-mail: gp581710@ms7.hinet.net
Contact: Mr. Fu-Tong Pai

TURKEY

ENKOS ENGINEERING
Ankara, Turkey
Phone: + 0090-312-4735870
Fax: + 0090-312-4735872
Cell: + 0090-546-4069875
E-mail: abayenkos@superonline.com
Contact: Mr. Fikret Abay
Company Manager &
Metallurgical Engineer

RUSSIA AND CIS TERRITORY

HETRAN REPRESENTATIVE OFFICE
Narteh Ltd.
Krasnaya Street 9A, Room 203
Moscow Region
Russian Federation 144 000
Phone: + 7-496-579-06-50
Fax: + 7-496-579-06-50
Cell: + 7-906-750-48-17
E-Mail: elenadruzhinina@hetraninc.com
Contact: Mrs. Elena Druzhinina

POLAND

ZAKMET
Zaktad Produkcyjno-Handlowy
Kościelniki Średnie 33, 59-820 Leśna
Phone: + 48-505-104-945
Fax: + 48-75-72-11-999
E-Mail: k.nnoli@zakmet.pl
Contact: Mr. Karol Nnoli

EUROPE

GERMANY

HETRAN GmbH
Schelpmilser Weg 8
33609 Bielefeld, GERMANY
Phone: + 49 (0) 521-33873 & 33874
Fax: + 49 (0) 521-33875
Cell: + 49 171-3875956
E-mail: hetran@aol.com
Web site: www.hetraninc.com
Contact: Mr. Jörg Wiethüchter
Director & Territory Manager

FRANCE

EXIM Trade Groupe Numen
Immeuble Parc Elysée-41 rue Michel Ange
91080 Courcouronnes
France
Phone: + 33 (0) 1 69 91 14 62
GSM: + 33 (0) 6 83 46 40 94
Fax: + 33 (0) 1 69 91 36 42
E-mail: didier.delalande@eximtrade.fr
Contact: Mr. Didier Delalande

U.K. & SCANDINAVIA

WIRE MACHINERY CONSULTANCY
5 Fernyhurst Avenue,
Rownhams, Southampton
Hampshire, UK SO16 8DR
Phone: + 44 (0) 2380 73 76 34
Fax: + 44 (0) 2380 39 59 19
Cell: + 44 (0) 7766 70 73 02
E-mail: tedtravers@hetraninc.com
Contact: Mr. Ted Travers

Contact us for additional information about our company, our products, or to arrange a processing trial.