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jc914 U.S. PTO

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(MODIFIED) PTO/SB/16 (12-97)
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

jc914 U.S. PTO
60/246463
11/07/00

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
Kurt Scott Dale		WITHAM MEYERS KENNEDY		North Muskegon, Michigan Grand Haven, Michigan New Era, Michigan	
☐ Additional inventors are being named on the ____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
SLIDE APPARATUS FOR MACHINE TOOLS					
CORRESPONDENCE ADDRESS					
Direct all Correspondence to:			Place Customer Number Bar Code Label here		
☐ Customer Number					
OR			Type Customer Number here		
☒ Firm or Individual Name		Douglas H. Pauley			
Address		Pauley Petersen Kinne & Fejer			
Address		2800 West Higgins Road, Suite 365			
City		Hoffman Estates	State	Illinois	ZIP 60195
Country		USA	Telephone	847-490 1400	Fax 847-490 1403
ENCLOSED APPLICATION PARTS (check all that apply)					
☒ Specification Number of Pages		26		☒ Small Entity Statement	
☐ Drawing(s) Number of Sheets				☐ Other (specify)	
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
☒ A check or money order is enclosed to cover the filing fees			FILING FEE AMOUNT (\$)		
☒ The Commissioner is hereby authorized to charge any deficiency in filing fees or credit any overpayment to Deposit Account Number:			19-3550		\$75.00
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
☒ No.					
☐ Yes, the name of the U.S. Government agency and the Government contract number are:					

Respectfully submitted,

SIGNATURE

Date

11/07/00

TYPED or PRINTED NAME

Douglas H. Pauley

REGISTRATION NO.

33,295

TELEPHONE

847-490 1400

(If appropriate)

Docket Number:

AIM-101-P

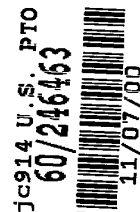
USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, DC 20231

+

AIM-101-P

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Applicants: Kurt WITHAM
Scott MEYERS
Dale KENNEDY

Title: SLIDE APPARATUS FOR MACHINE TOOLS

Express Mail No.: EL686797339US

Date of Deposit: 07 November 2000

CERTIFICATE OF MAILING BY EXPRESS MAIL

Box PROVISIONAL APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

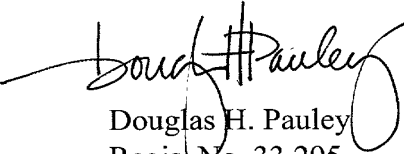
I hereby certify that the subject provisional patent application is being deposited with the United States Postal Service as Express Mail Post Office to Addressee No. EL686797339US, on 07 November 2000, and is addressed to Box PROVISIONAL APPLICATION, Assistant Commissioner for Patents, Washington, D.C. 20231, together with the items listed below.

- Provisional Application for Patent Cover Sheet, one (1) page, in duplicate
- Twenty-six (26) pages of specification
- Executed Claim for Small Entity Status document
- A check in the amount of \$75.00 to cover the filing fee

Express Mail No.: EL686797339US

- Return Receipt Postcard

Respectfully submitted,


Douglas H. Pauley
Regis. No. 33,295

Pauley Petersen Kinne & Fejer
2800 West Higgins Road
Suite 365
Hoffman Estates, Illinois 60195
(847) 490-1400
FAX (847) 490-1403

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PTO/SB/10 (10-92)

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(d))-SMALL BUSINESS CONCERN

 Docket Number
 AIM-101-P
Applicant or Patentee: Kurt WITHAM et al.

Serial or Patent No.: _____

Filed or Issued: _____

Title: SLIDE APPARATUS FOR MACHINE TOOLS

I hereby declare that I am

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN Automated Industrial Motion, Inc.
 ADDRESS OF SMALL BUSINESS CONCERN 1818 East Sherman Boulevard
Muskegon, Michigan 49444

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention must file separate verified statements averring to their status as small entities and that no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization having any rights in the invention is listed below:

- ☒ no such person, concern or organization exists.
☐ each such person, concern or organization is listed below:

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Kurt WithamTITLE OF PERSON IF OTHER THAN OWNER PRESIDENT / OWNERADDRESS OF PERSON SIGNING 1818 East Sherman Boulevard, Muskegon, Michigan 49444SIGNATURE DATE 11/7/00

PTO/SB/10 (10-92)

P702.1

History of AIM Coated Square Gib Slides

Slides first employed on AIM CNC Spring Coilers in 1991. Today the slides are used on six different models of AIM Coilers.

Replacement slides for mechanical spring coilers introduced to the public in October 1994.

Coated square gib slides used on a variety of custom wire forming equipment since 1991.

DuraBond Slides introduced to public on July 9, 1999.

Product Description

AIM square gib slides are an alternative to the original bronze dovetail slides on Torin mechanical spring coilers. Our square gib design incorporates a Rulon coated surface, which provides high load capacity, is resistant to contaminants and can be run without lubrication. Mating surfaces are fabricated from hardened and ground A2 tool steel. The maintenance free slides are extremely durable and provide high accuracy.

Changes in 2000

Using Thompson Rod material for tool post rather than drill rod or tool steel

Hardening A2 slide to 58-62 Rc rather than 48-52 Rc.

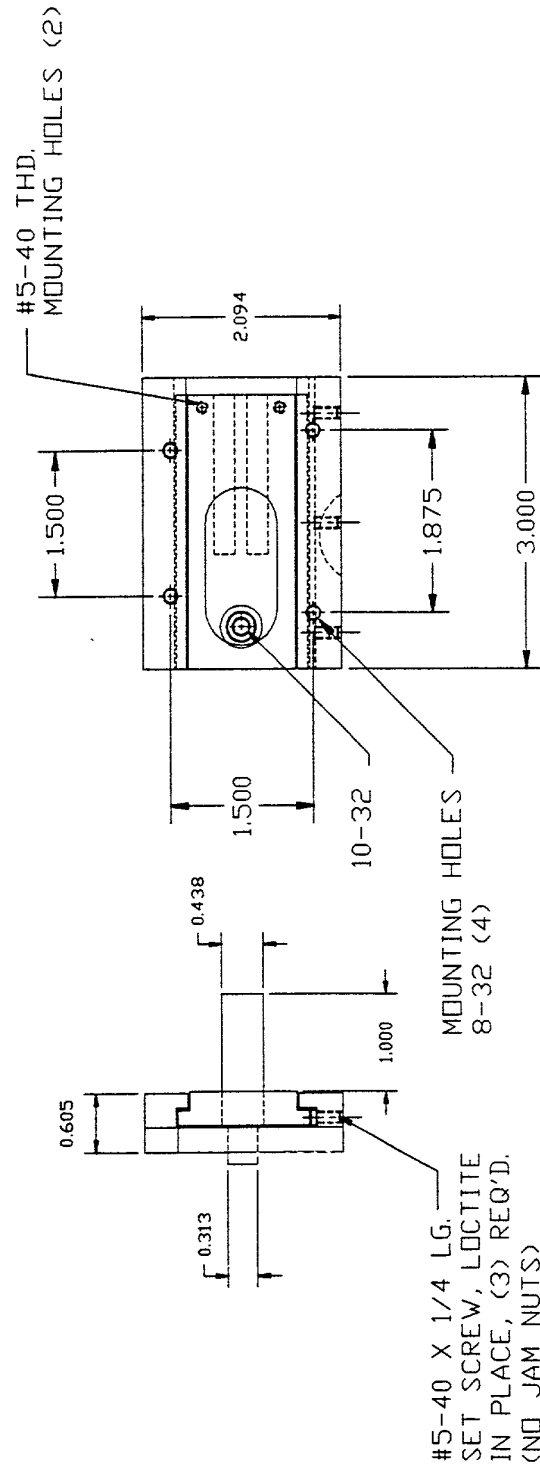
Revised CNC machining process to minimize setups.

Converted to HRS material from gauge stock on gibs and bottom plates

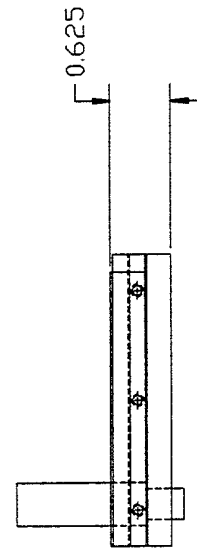
Engraving DuraBond Logo on face of slide

Future changes

Considering a change from 0.040" Rulon to 0.031" which will provide higher rigidity.

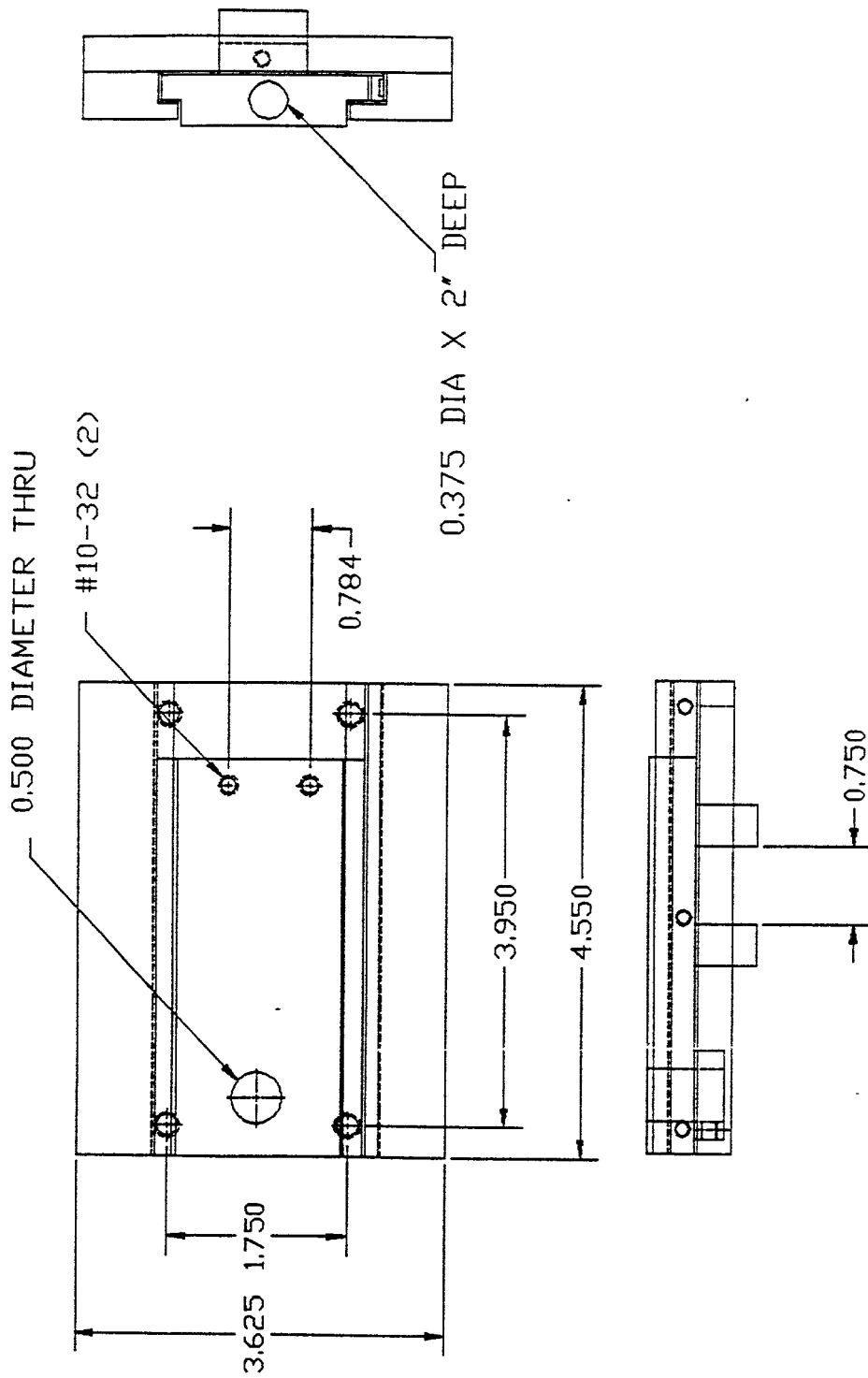


MOUNTING HARDWARE: (2) REQ'D ~ 5-40 X 3/8 LG. S.H.C.S.
(4) REQ'D. ~ 8-32 X 1/2 LG. S.H.C.S.



W100A CUSTOMER APPROVAL

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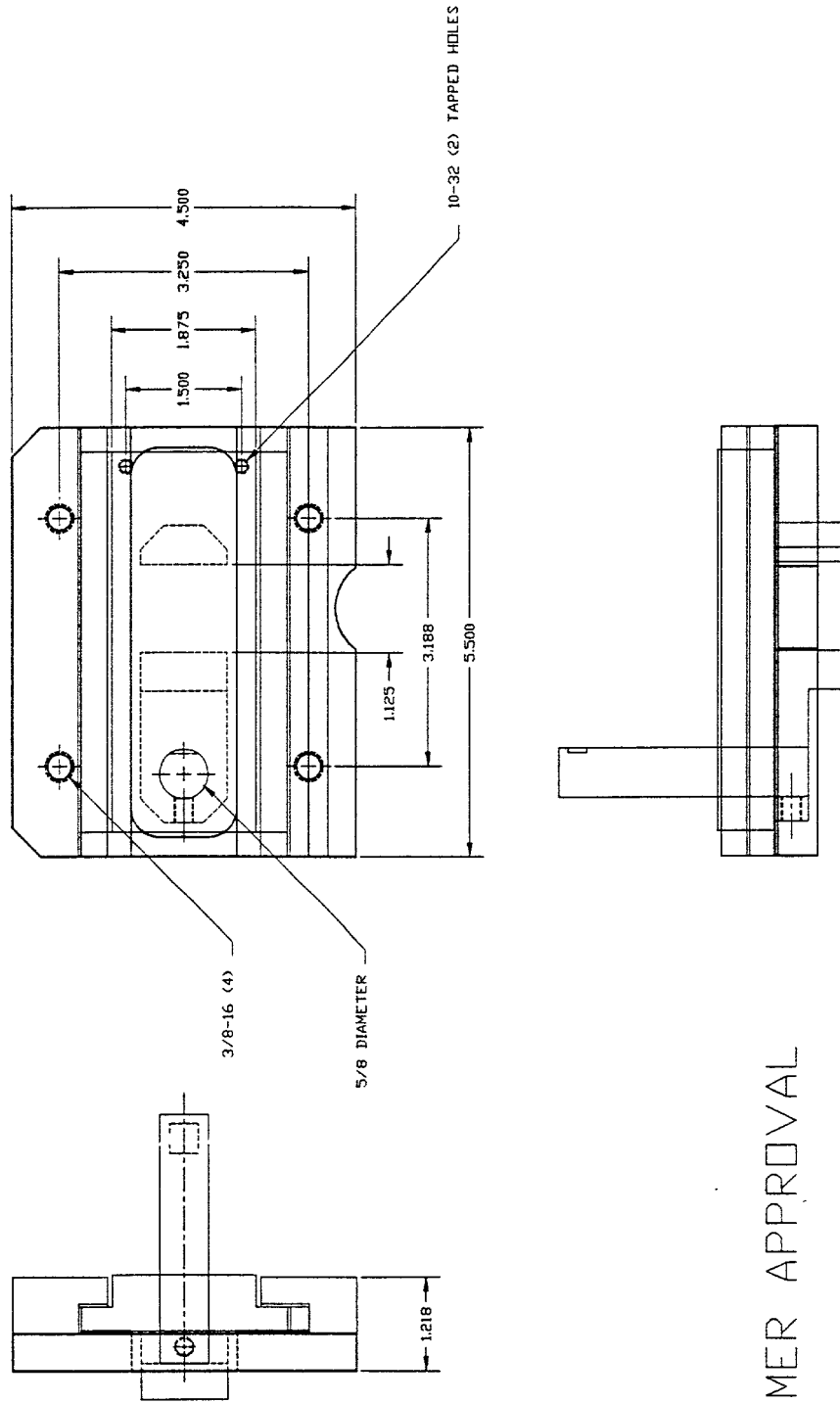


FASTENERS
1/4-20 X 5/8 (4)
10-32 X 3/8 (2)

W10A SLIDE ASSEMBLY

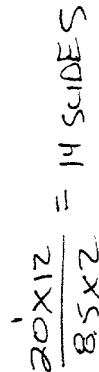
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W11A CUSTOMER APPROVAL

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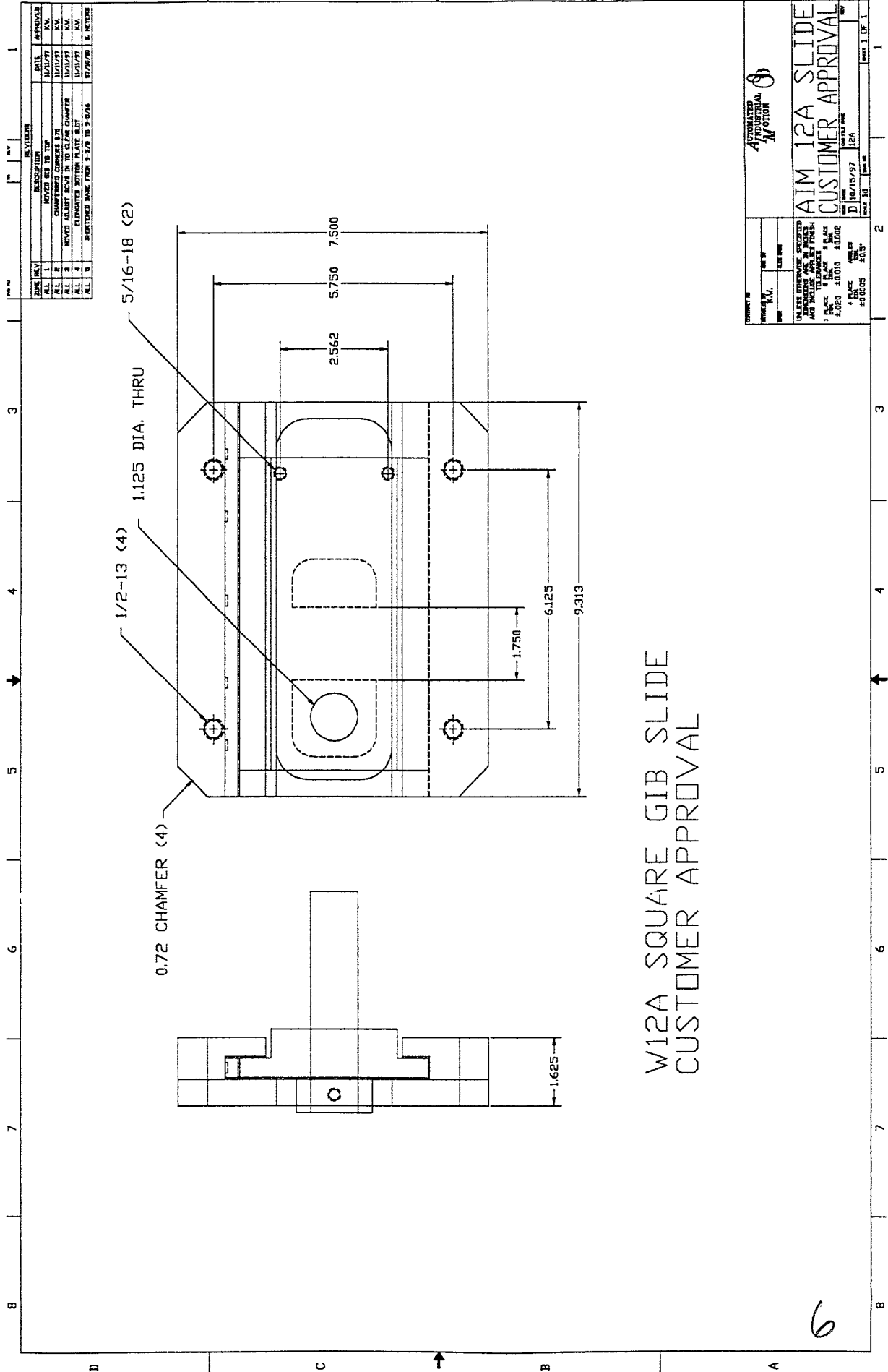
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W115A CUSTOMER APPROVAL

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002077" 09112009



W12A SQUARE GIB SLIDE
CUSTOMER APPROVAL

AIM for every production advantage you need!

Replacement Slide Assemblies

10

Designed to improve
the production quality of your
mechanical coilers and
offer you a
low cost
advantage.



AIM

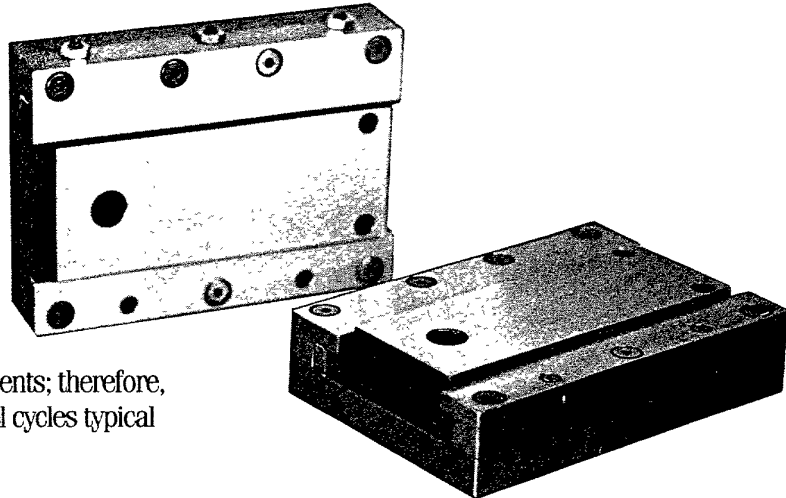
Automated Industrial Motion

The Leader In Production Advantages

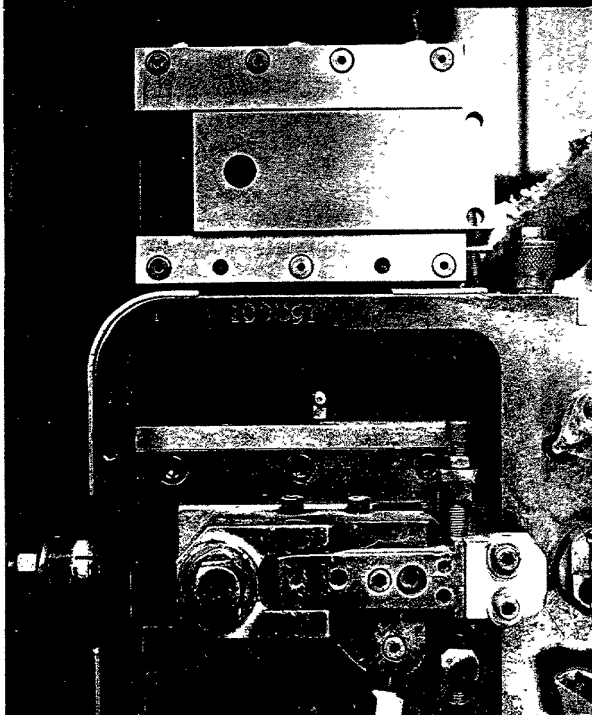
The Maintenance-Free Advantage

from Automated Industrial Motion **AIM**

AIM square gib replacement slides for mechanical coilers eliminate the need for constant lubrication that ball slides and bronze gibs require. The square gib features an innovative surface providing both strength and resistance to foreign particles. AIM square gib replacement slides contain no rolling elements; therefore, they are ideally suited for the short travel cycles typical in most coiling applications.



AIM slides offer a directly interchangeable low cost quality production advantage



- ☐ Designed for easy replacement
- ☐ Permanent "built-in" lubrication
- ☐ Grinding dust and metal particals do not adversely affect performance
- ☐ Can operate dry or wet
- ☐ Available for most sizes and configurations
- ☐ High load capacity
- ☐ Square gib slides perform well in difficult environments
- ☐ Self-lubricating surface reduces maintenance
- ☐ Long lasting accuracy and repeatability
- ☐ Noise and vibration dampening
- ☐ Quick delivery on standard sizes
- ☐ Custom design available

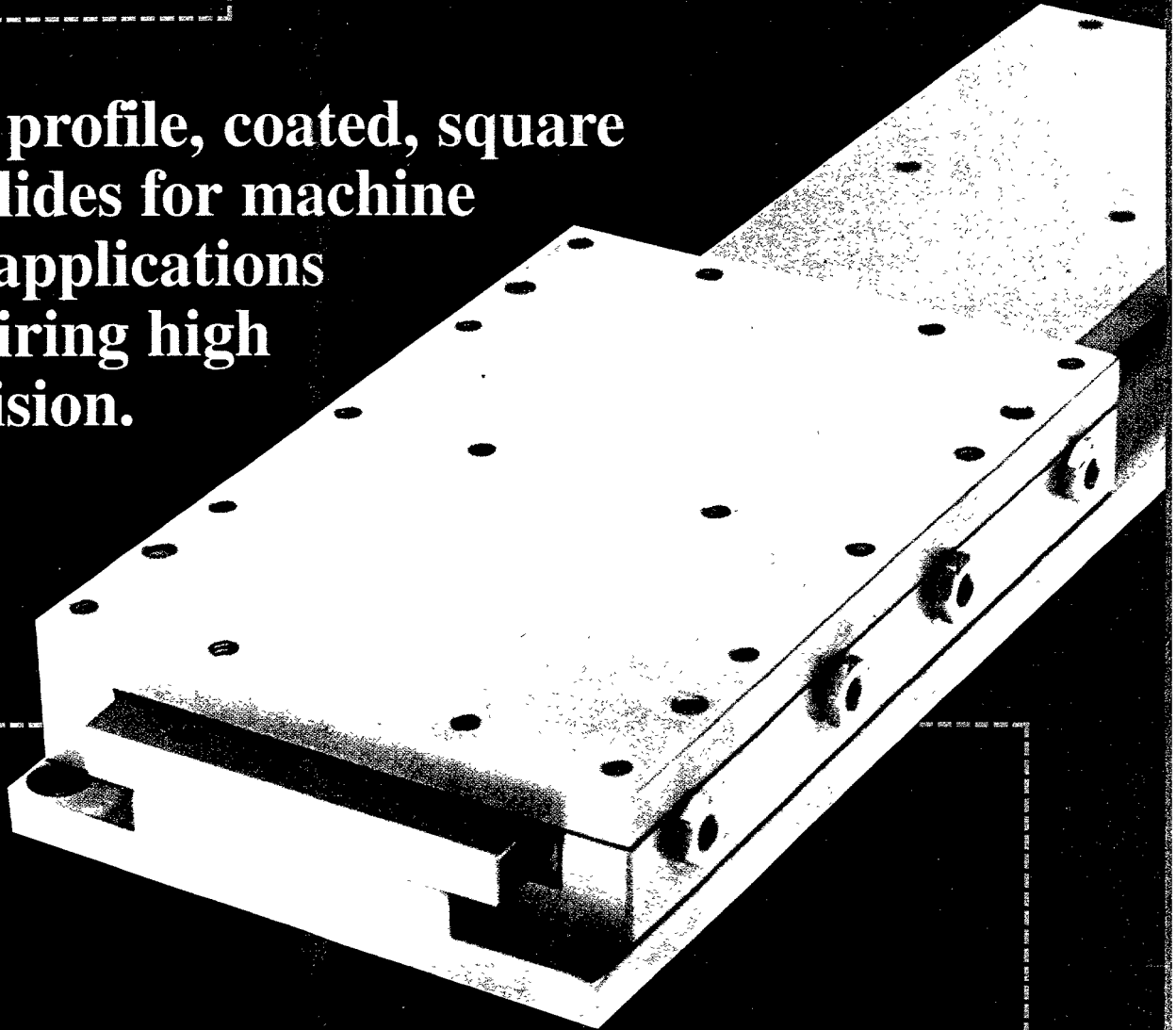
AIM The Leader In Production Advantages

1818 Sherman Blvd., Muskegon, Michigan 49444

Phone (616) 739-5525 FAX (616) 733-4981

AIM **AUTOMATED
INDUSTRIAL
MOTION**

Low profile, coated, square
gib slides for machine
tool applications
requiring high
precision.



DURABONDTM
SLIDE

BASIC COMPONENTS

1. Base

Stationary member of the slide system. Manufactured from high quality tool steel, hardened to 58-62 Rc and finish ground.

2. Saddle

Moving member of the slide system. Manufactured from high quality steel, bonded with Rulon® bearing material and finish ground.

3. Way

Saddle tracking member. Manufactured from high quality steel, bonded with Rulon® bearing material and finish ground.

4. Adjustment Way

Saddle retaining member. Manufactured from high quality steel, bonded with Rulon® bearing material and finish ground.

5. Adjustment Gib

Adjustable member of the slide system for setting clearance between the saddle and base. This member is bonded with Rulon® bearing material and finish ground.

6. Gib Screw

High quality, fine thread Allen head set screws strategically oriented along one side of the saddle for positioning the adjustment gib.

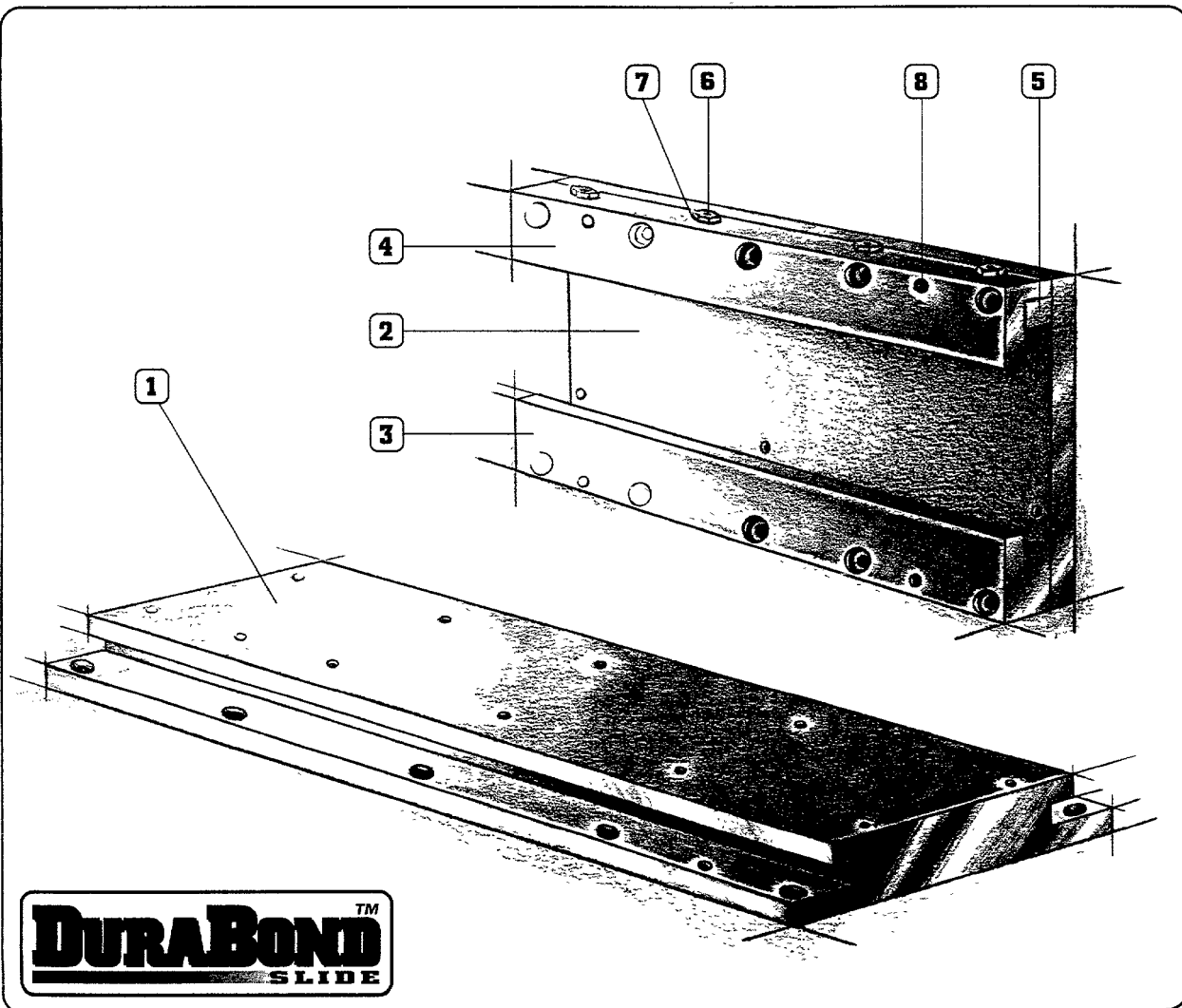
7. Gib Screw Nut

Locks the gib screw in place to maintain gib adjustment.

8. Dowel Pins

Dowel pins are incorporated for definitive alignment of the ways and saddle plate.

Each slide is assembled and individually fitted by qualified toolmakers prior to shipment.



DURA BOND™
SLIDE

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USE DURABOND SLIDES

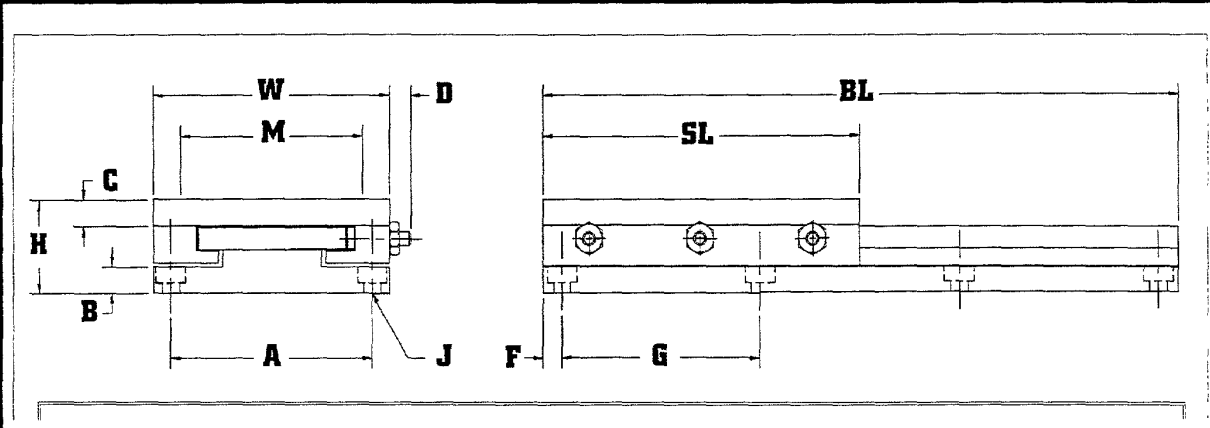
- Wherever high quality, high precision slides are required.
- Where lubrication is undesirable or impossible.
- In corrosive environments, with non-lubricating liquids, or under conditions of high or low humidity, where high vacuums are present.
- In lubricated applications where friction and wear rates are unacceptable during starting and stopping, or where stick/slip is a problem.
- Where the electrical and insulative properties are important.
- Where space and weight must be saved.
- When other slides such as steel on steel, bronze on steel, ball bearing or cross roller bearing are causing problems.
- In general, DuraBond™ slides are designed to operate dry. They offer self-lubrication with high performance.

Standard replacement slide with back drive linkage for mechanical spring coilers.

Two-Axis positioning slide featuring mechanical screw drive and locks.

STANDARD LOW-PROFILE SLIDE ASSEMBLIES IN WIDTHS FROM 2" TO 12"

DURABOND™
SLIDE



SADDLE DIMENSIONS

Series	W Saddle Width	H Overall Height	SL Saddle Lengths	M Mounting Area	A Hole Width	B Flange Thick	C Plate Thick	D Gib Adj.	E Screw Size
AS02	2.00	.938	3.00, 6.00, 8.00	1.38	1.625	.25	.25	.21	#8 SHCS
AS03	3.00	1.125	4.00, 6.00, 8.00	2.31	2.563	.31	.31	.27	#10 SHCS
AS04	4.00	1.375	6.00, 8.00, 10.00	3.19	3.500	.38	.38	.27	¼ SHCS
AS06	6.00	1.875	9.00, 12.00, 14.00	5.00	5.344	.47	.47	.30	⅜ SHCS
AS08	8.00	2.250	12.00, 14.00, 16.00	6.81	7.250	.56	.56	.44	½ SHCS
AS010	10.00	2.500	15.00, 18.00, 24.00	8.81	9.250	.62	.62	.44	¾ SHCS
AS012	12.00	2.625	18.00, 24.00, 26.00	10.81	11.250	.62	.62	.44	¾ SHCS

STATIC LOAD CAPACITY PER INCH OF ENGAGEMENT

Series	Vertical Plane	Horizontal Plane	Inverted Plane
AS02	1030	250	380
AS03	1870	260	500
AS04	2660	315	625
AS06	4220	470	940
AS08	5900	625	1250
AS010	7900	625	1250
AS012	9900	750	1500

DESIGN NOTES

1. Load capacity chart to be used as a guideline only.
2. Capacities shown based on static load limits of Rulon® LR at 1000 P.S.I.
3. Minimum saddle engagement not to exceed half of saddle length.
4. Lever arms not to exceed (2) times width of saddle from any direction.
5. Load capacities shown are for weights evenly distributed over saddle length.
6. All loads shown are in pounds per square inch of base/saddle contact length.
7. All dimensions are in inches.

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ORDER NUMBER INFORMATION

Saddle Width
(2" Wide)

Saddle Length
(6" Long)

Base Length
(12" Long)

AS02-SL06-BL12

MOUNTING NOTES

1. (2) Location dowels are provided in each base.
2. Metric mounting holes available on request.
3. Tooling hole patterns in saddle, machined to customer specs. Available on request.

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AS02 BASE CONFIGURATIONS

BL Base Lengths	4.00	6.00	8.00	10.00	12.00
F From Edge	.25	.38	.50	.62	.75
G Hole Spacing	1.750	1.750	1.750	1.750	1.750
No. of Mounting Holes	6	8	10	12	14

AS03 BASE CONFIGURATIONS

BL Base Lengths	6.00	8.00	12.00	16.00	18.00
F From Edge	.50	.25	1.00	.50	.25
G Hole Spacing	2.500	2.500	2.500	2.500	2.500
No. of Mounting Holes	6	8	10	14	16

AS04 BASE CONFIGURATIONS

BL Base Lengths	12.00	14.00	16.00	18.00	20.00
F From Edge	.50	1.50	1.12	.75	.38
G Hole Spacing	2.750	2.750	2.750	2.750	2.750
No. of Mounting Holes	10	10	12	14	16

AS06 BASE CONFIGURATIONS

BL Base Lengths	12.00	14.00	16.00	18.00	20.00
F From Edge	1.12	.50	1.50	.88	1.88
G Hole Spacing	3.250	3.250	3.250	3.250	3.250
No. of Mounting Holes	8	10	10	12	12

AS08 BASE CONFIGURATIONS

BL Base Lengths	14.00	16.00	18.00	20.00	24.00
F From Edge	1.38	.50	1.50	.62	.75
G Hole Spacing	3.750	3.750	3.750	3.750	3.750
No. of Mounting Holes	8	10	10	12	14

AS010 BASE CONFIGURATIONS

BL Base Lengths	18.00	22.00	26.00	28.00	32.00
F From Edge	.75	.69	.62	1.62	1.56
G Hole Spacing	4.125	4.125	4.125	4.125	4.125
No. of Mounting Holes	10	12	14	14	16

AS012 BASE CONFIGURATIONS

BL Base Lengths	22.00	24.00	28.00	30.00	32.00
F From Edge	.69	1.69	1.62	.56	1.56
G Hole Spacing	4.125	4.125	4.125	4.125	4.125
No. of Mounting Holes	12	12	14	16	16

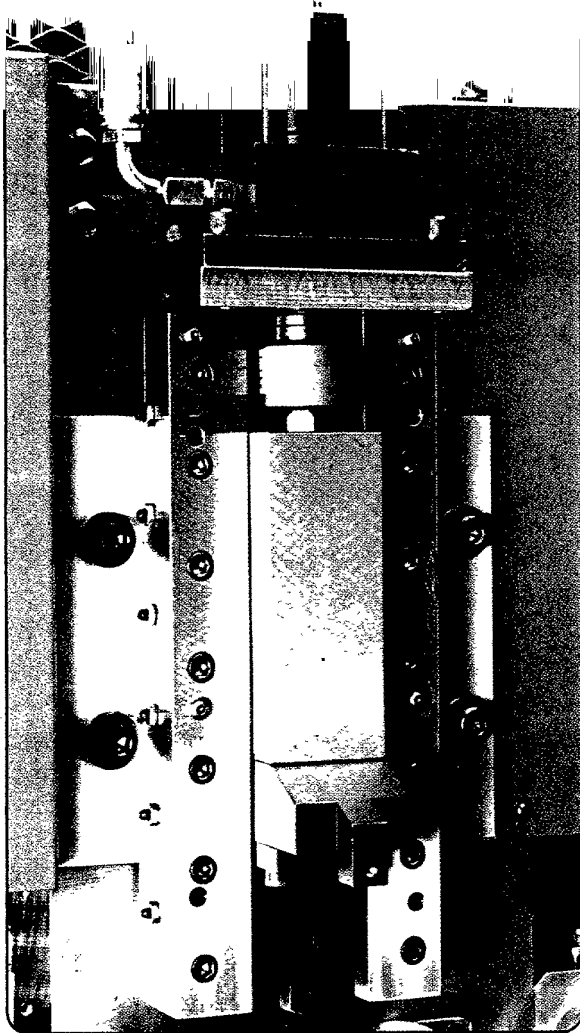
DURABOND™ CUSTOM SLIDES

DuraBond™ custom slides are designed for specific applications where standard slides are not commercially available.

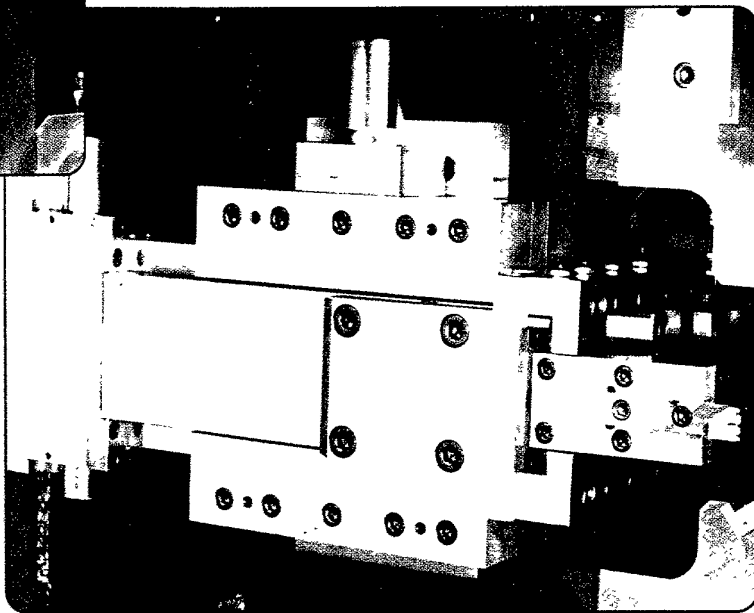
DuraBond™ slides are ideal for upgrading original slide systems on worn out manufacturing equipment. The slides are engineered to duplicate exact dimensional characteristics including cross section, stroke, mounting holes and tooling bolt patterns.

DuraBond™ slides can be built from prints, electronic file data, or existing slides can be sent to us directly for duplication. In most cases, slides are documented and returned on the day of receipt.

Contact our sales engineering staff to discuss the method best suited for you.



*Hydraulically actuated
DuraBond™ slide with
adjustable stroke.*



Servo actuated, three axes DuraBond™ slide system.

SPECIFICATIONS

Saddle Width 2" to 12"
Base Length 4" to 32"
Stroke 0" to 18"
Load Up to 260,000 pounds

- Single and multi axis slides are available.
- Actuation systems include mechanical screw, pneumatic, hydraulic, stepper and servo.

DURABOND SLIDES

PERFORMANCE CONSIDERATIONS

LOAD

DuraBond™ slides are generally limited to 1000 psi, however: load limits can be increased by using thinner Rulon® cross sections.

SPEED

DuraBond™ slides are generally limited to 400 feet per minute under dry, low load operation. Higher speeds are possible with lubricants or liquid coolants.

FRICTION

Friction decreases rapidly with increases in load. Figure 1 shows the effect of surface velocity on friction. Because friction at start up and very low speeds is extremely low, stick/slip is virtually non-existent, making DuraBond™ slides ideal for start/stop applications.

MATING SURFACES

Performance is optimized when the hardest possible mating member is used. DuraBond™ bases are fabricated from A2 tool steel and hardened to 58-62 Rc.

CORROSION RESISTANCE

Rulon® material is practically inert to all acids, bases and solvents.

CONTAMINATION

Although Rulon® material embeds foreign particles to prevent wear, shielding or covering is suggested in areas of heavy contamination. Where practical, the saddle should maintain complete engagement with the base to produce a self-wiping action.

FIGURE 1
COEFFICIENT OF FRICTION VS. LOAD

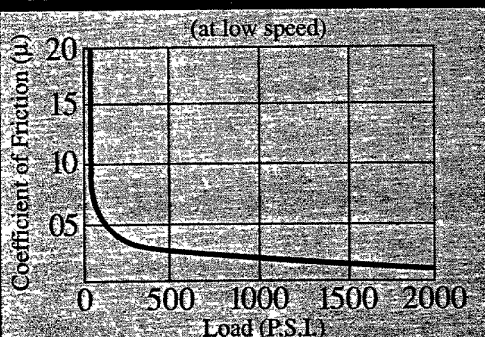
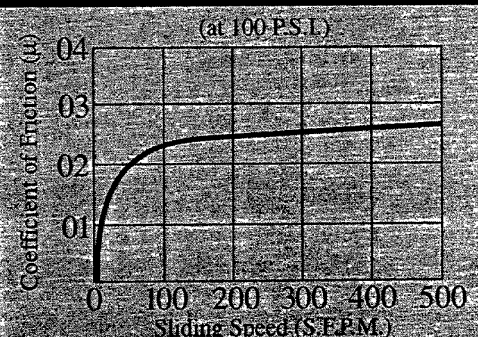


FIGURE 2
COEFFICIENT OF FRICTION VS. SPEED



DURABONDTM
SLIDE

**THE ONLY
PRECISION SLIDE
YOU WILL
EVER NEED!**

AIM **AUTOMATED
INDUSTRIAL
MOTION**

1818 E. Sherman Blvd. • Muskegon, Michigan 49444

Phone: 231-739-5525 • Toll Free: 800-933-0404

Fax: 231-733-4981

Website: www.aimcoil.com • E-mail: aim@aimcoil.com

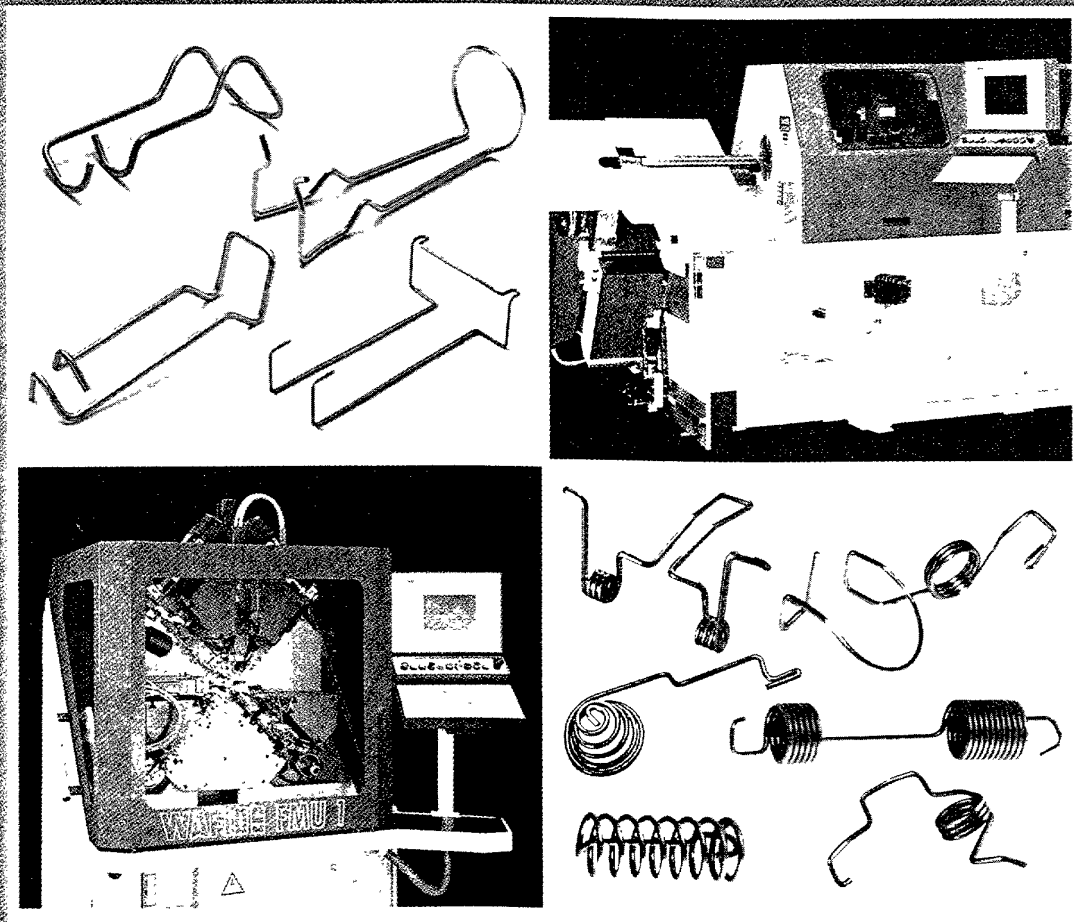
19

SEPTEMBER 1998

Wire Forming Technology

International

Serving Manufacturers of Springs and
Wire Formed Products



Inside ... Spring Making, Wire Forming, Welded Assembly of Wires,
CASMI All Springs 98 Preview

Which Slide is Best?

by:

Kelly Dausey
AIM Automated Industrial Motion
1818 E. Sherman Blvd.
Muskegon, MI 49444 USA

Slides used in forming and springmaking machines require precision, stability, reliability, high load capacity, good wear characteristics and reduced maintenance. Only one type of slide meets all of these requirements.

No matter what type of wire bending or springmaking equipment you use, the repeatability and long term effectiveness of your equipment is highly dependent on the linear motion system that guides the tooling axes. This system, which serves as an integral part of the forming process, generally consists of a driving mechanism (either servo or cam actuated) and a slide.

Because of the rigorous requirements of wire forming and springmaking applications, the slide must be rigid and durable, and it must operate with as little maintenance as possible. Advances in linear motion technology have brought about many different slide configurations that offer improved features over what was once the standard on most wire forming and springmaking machines. With so many choices available, it can be difficult to determine which type of slide is best for each application.

Rolling Element Slides

Many slides on the market today operate through the circulation of rolling bearing elements which may be either spherical or cylindrical in shape. Three commonly used slide types in this category are the recirculating ball slide (**Figure 1**), linear ball bearing slide (**Figure 2**) and roller bearing slide (**Figure 3**). Recirculating ball and linear ball bearing slides contain spherical rollers and roller bearing slides use cylindrical rollers.

As the moving part of the slide translates over the stationary part of the slide, these elements in turn circulate through a channel or track whose profile complements that of the rolling element, being either radiused or linear. The geometry of the track thus distributes the load on each element over as much surface as possible.

Because there is minimal surface contact, the frictional force is quite low and thus the efficiency is higher for rolling element slides when compared to nonrolling element slides. These slides work optimally where the application offers long strokes or travel distances which allow the bearing elements to completely recirculate and distribute both load and lubricant over as many elements as possible. Applications characterized by short repetitive cycles, however, can be somewhat problematic for rolling element slides. Localized wear can result because there is no opportunity for complete circulation and contact is repeatedly made over just a fraction of the total bearing element surface available.

Because forces are distributed over a limited surface area, these slides are not well suited for impact or shock loading such as would occur in wire cutting or even in repetitive, short stroke high accel/decel applications. *Brinelling*, or the permanent indentation of the slide surface by the rolling element due to dynamic loading, can result under these conditions.

Because there is steel-on-steel contact in rolling element slides, lubrication is critical in minimizing wear and optimizing performance. Care should be taken to avoid contamination of the recirculating tracks with wire shavings or grinding dust common in spring manufacturing environments. Contaminants can aggravate conditions known as counterrotation and stick-slip (see **Figure 4**).

Shields, wipers and periodic cleaning can help to minimize the effects of adhesion of any airborne metallic or dust particles which could otherwise lead to premature failure.

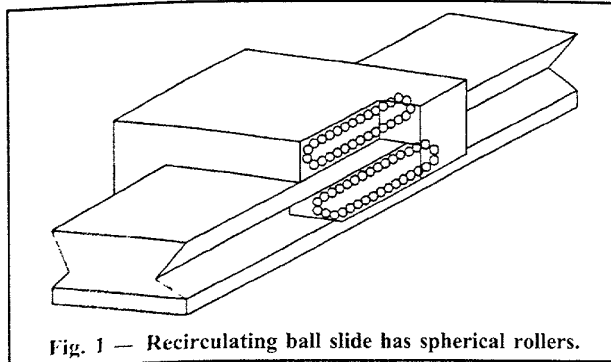


Fig. 1 — Recirculating ball slide has spherical rollers.

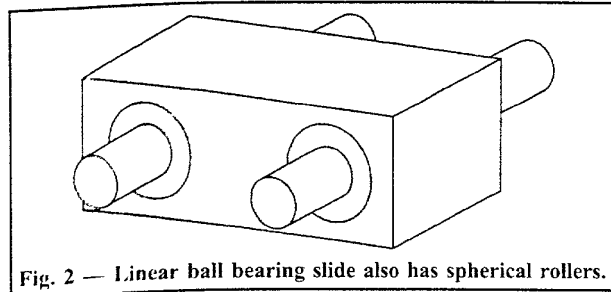


Fig. 2 — Linear ball bearing slide also has spherical rollers.

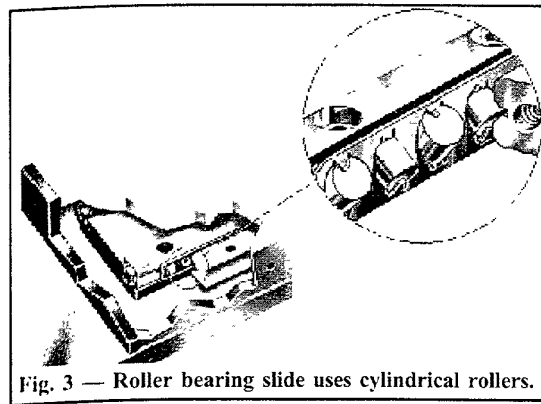


Fig. 3 — Roller bearing slide uses cylindrical rollers.

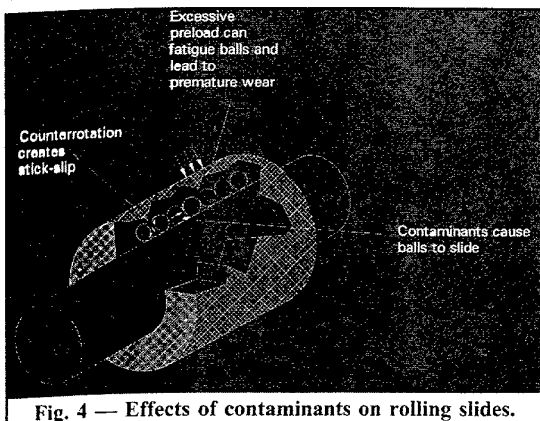
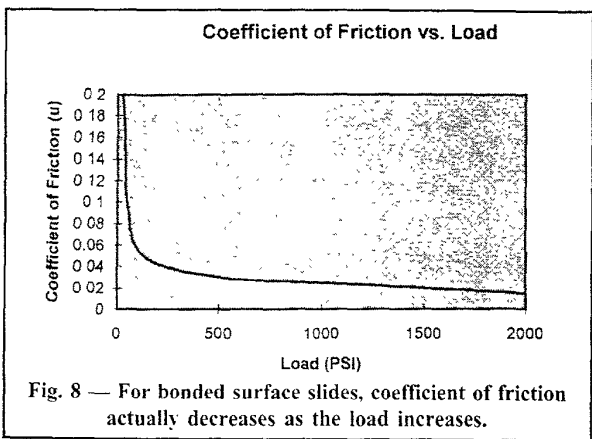
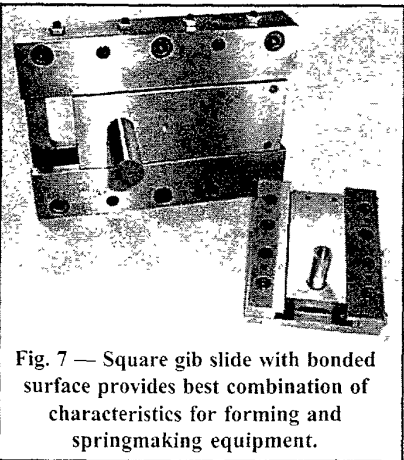
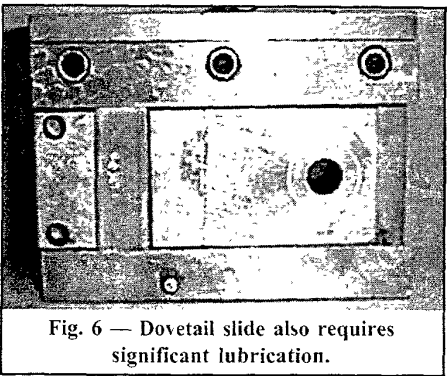
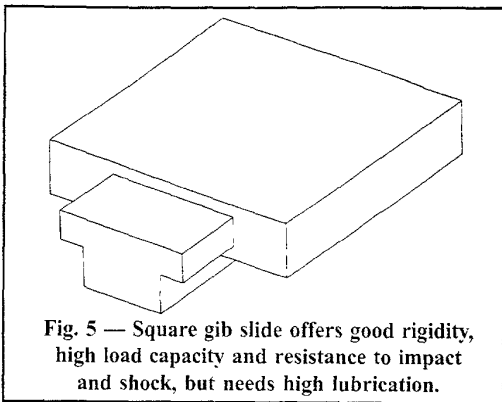


Fig. 4 — Effects of contaminants on rolling slides.

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Square Gib & Dovetail Slides

In contrast to the rolling element slides, many machines use square gib, sometimes called box gib (see **Figure 5**), or dovetail slide configurations (see **Figure 6**), which do not contain rolling bearing elements. Although these slides have a higher coefficient of friction as previously discussed, the large amount of surface contact also means that these slides offer excellent rigidity, high load capacity and are better suited to withstand impact and shock loads.

Traditionally these slides also require significant lubrication due to the metal-to-metal contact.

The Bonded Square Gib Slide

A significant improvement to the original design however is in the application of a bonded surface to the traditional square gib style slide (see **Figure 7**). This new technology results in a slide that offers high load capacity and excellent rigidity in addition to many other interesting features. The bonded surface provides excellent wear characteristics and eliminates the need for re-lubrication. Although an initial coating of oil is recommended to facilitate break-in, no further lubrication is required throughout the life of the slide.

It is also interesting to note that the coefficient of friction, and therefore losses due to friction, actually decreases as load increases (see **Figure 8**). The bonded surface is also ideal for operation in tough manufacturing environments characterized by airborne debris or grinding dust. The coating allows contaminants to embed into the surface eliminating the need for seals and maintenance normally required for cleaning slide surfaces.

Although bonded square gib slides do provide gib adjustment, because there is no metal-to-metal contact, wear is minimal and the need for adjustment is greatly reduced. These slides are particularly well suited for start/stop or reversing applications such as those common in spring production because of the excellent properties offered relative to stick-slip and start-up.

Best Slide for Forming & Springmaking Machines

Certainly the rolling bearing element type slides can offer excellent precision and good reliability, particularly in longer stroke, high-speed applications. However, their sensitivity to shock loads and contamination as well as their need for constant lubrication make them less desirable for some forming and spring manufacturing applications.

The steel-on-steel square gib or steel-on-bronze dovetail slide configurations offer increased load capacity and good rigidity, but do not possess the excellent wear characteristics, vibration dampening capability and high tolerance to contamination of the bonded square gib slide.

Bonded slide technology, the optimum slide technology for forming and springmaking applications, has been applied in both new equipment and in replacement slides with great success. Bonded square gib slides offer long term operation with reduced maintenance and improved process control due to less wear and fewer adjustments.

To receive additional information on bonded square gib slide technology, and to obtain technical specifications on AIM's wire forming and springmaking equipment, contact the author

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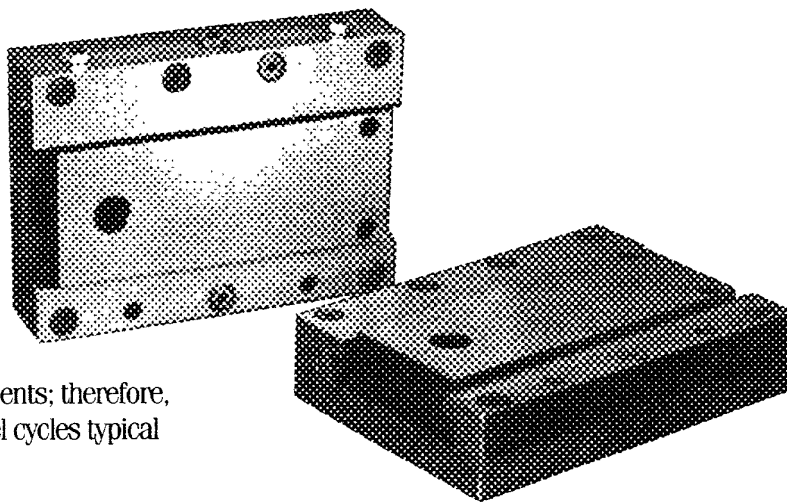
Company Profile...

AIM Automated Industrial Motion, manufactures spring and wire forming equipment and components. The company also offers services such as process development and spring prototyping.

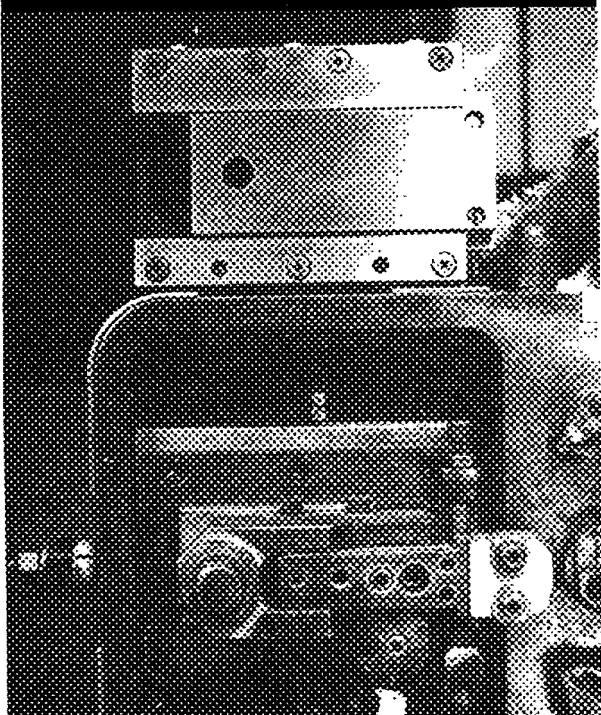
The Maintenance-Free Advantage

from Automated Industrial Motion **AIM**

AIM square gib replacement slides for mechanical coilers eliminate the need for constant lubrication that ball slides and bronze gibs require. The square gib features an innovative surface providing both strength and resistance to foreign particles. AIM square gib replacement slides contain no rolling elements; therefore, they are ideally suited for the short travel cycles typical in most coiling applications.



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- ☐ Available for most sizes and configurations
- ☐ High load capacity
- ☐ Square gib slides perform well in difficult environments
- ☐ Self-lubricating surface reduces maintenance
- ☐ Long lasting accuracy and repeatability
- ☐ Noise and vibration dampening
- ☐ Quick delivery on standard sizes
- ☐ Custom design available

AIM The Leader In Production Advantages

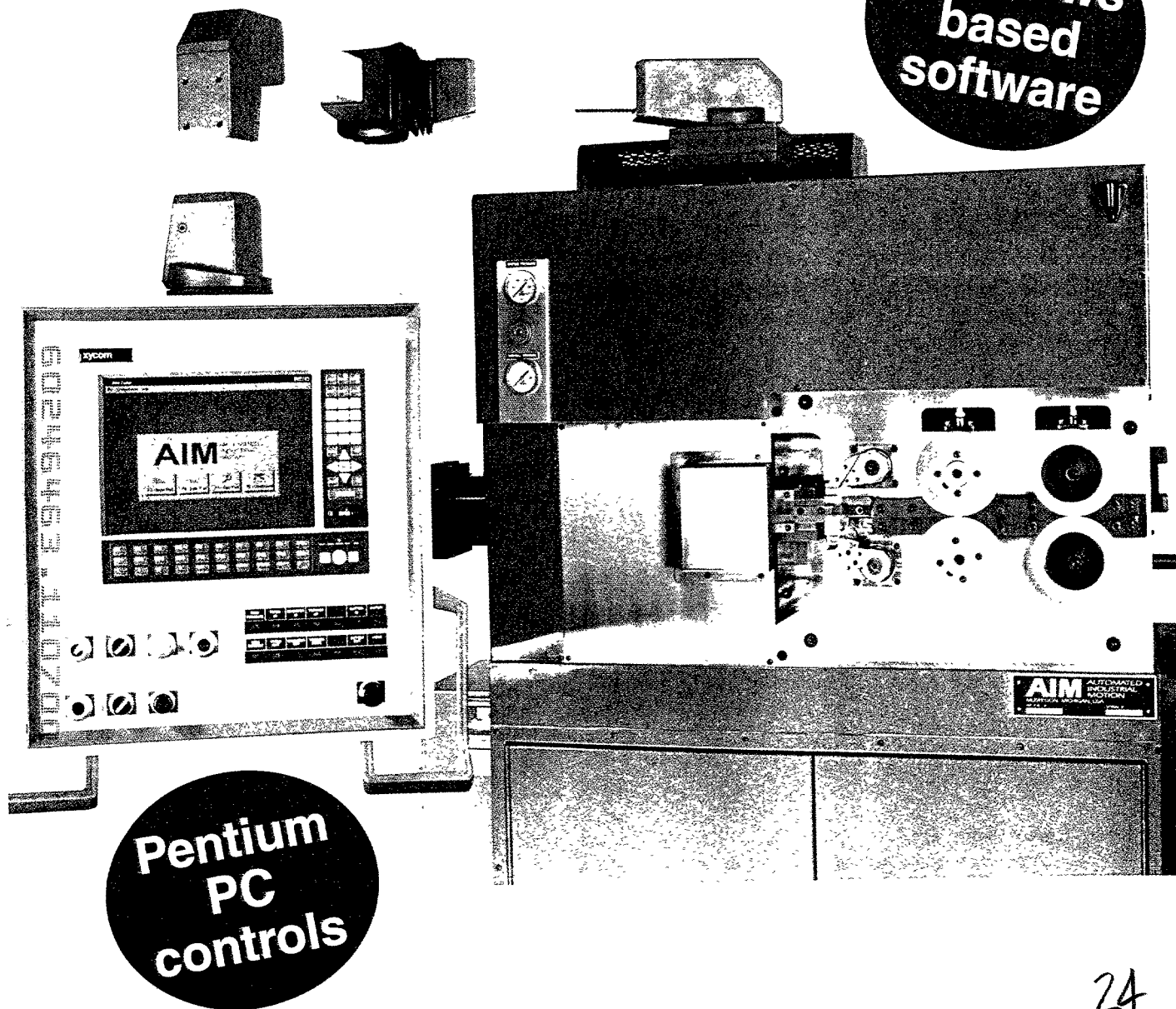
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by springmakers to provide you with every computer
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Control Features

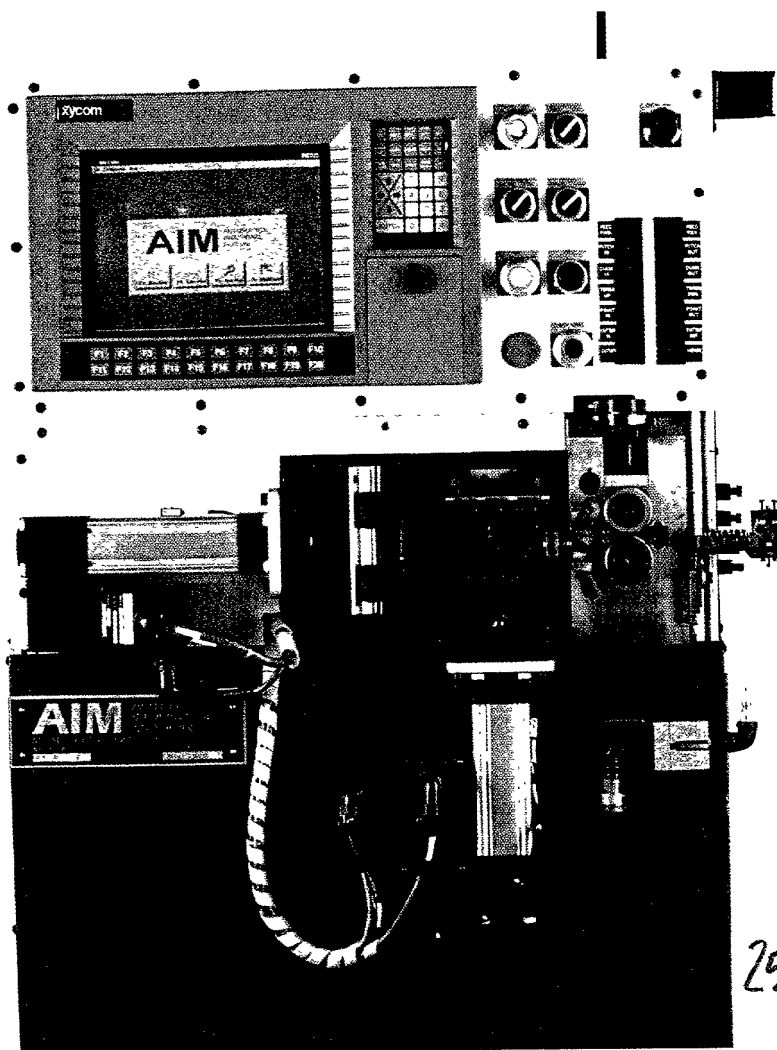
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- Windows based software
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- Unlimited steps
- Maximum memory
- On-the-fly tool adjustments
- Controls housed in air conditioned base
- Pendant mounted operator interface
- On screen machine diagnostics
- Auxiliary inputs and outputs
- RS 232 port & modem communications
- Stores detailed part information
- Total parts counter and countdown production counter
- Diameter and free length gauging
- External equipment fault input for machine shutdown

Proven Service and support

Mechanical Features

- Coated Square Gib Slides
- AC Brushless servo motors
- High precision linear actuators
- True x-y linear motion eliminates pivot points
- Flush mount tooling
- Square chuck design for cassette tooling capability
- Separate locking of chuck and arbor
- Industry standard tooling
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- Adaptable to commercially available spring gauges

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Computerized Coiler Specifications:

	<u>Micro Coiler</u>	<u>AIM 100</u>	<u>AIM 1000</u>
Wire Feed Speed	75"/sec	75"/sec	75"/sec
Maximum Wire Size	0.010"	0.040"	0.080"
Minimum Wire Size	0.0015"	0.008"	0.026"
Feed Length	Unlimited	Unlimited	Unlimited
Coil Diameter Range	3x wire DIA to 0.325"	3x wire DIA to 1"	3x wire DIA to 1.75"
Power	240 volt, 3 phase	240 volt, 3 phase	240 volt, 3 phase
Wire Line	48"	48"	48"
Machine Dimensions			
Length	20"	28"	48"
Width	18"	34"	29"
Height	Tabletop	70"	80"
Gross Weight	600 lbs.	2,800 lbs.	3,600 lbs.
	<u>AIM 2000</u>	<u>AIM 3000</u>	<u>AIM 4000</u>
Wire Feed Speed	40"/sec	50"/sec	40"/sec
Maximum Wire Size	0.180"	0.313"	0.625"
Minimum Wire Size	0.047"	0.080"	0.250
Feed Length	Unlimited	Unlimited	Unlimited
Coil Diameter Range	3x wire DIA to 3"	5x wire DIA to 5"	5x wire DIA to 8"
Power	240 volt, 3 phase	240 volt, 3 phase	240 volt, 3 phase
Wire Line	48"	48"	48"
Machine Dimensions			
Length	67"	86"	140"
Width	40"	71"	108"
Height	80"	96"	96"
Gross Weight	6,700 lbs.	16,000 lbs.	45,000 lbs.

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