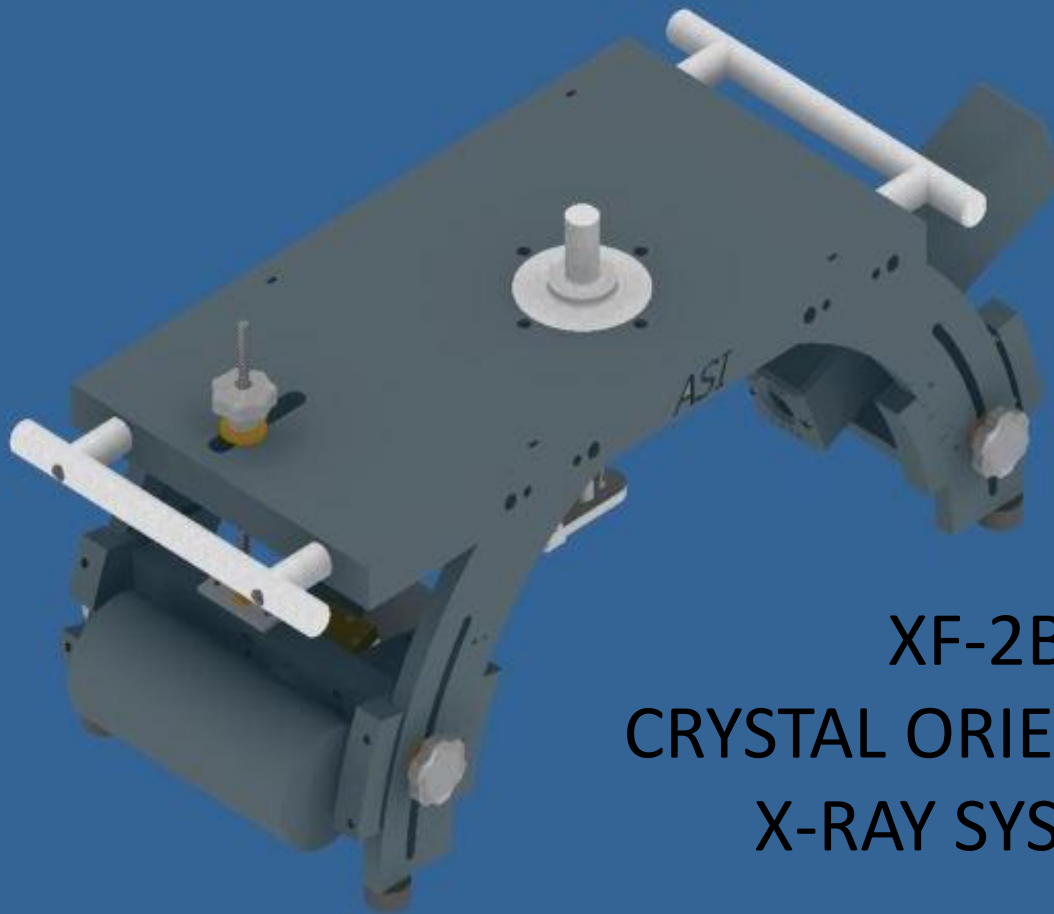




# ALVORD SYSTEMS

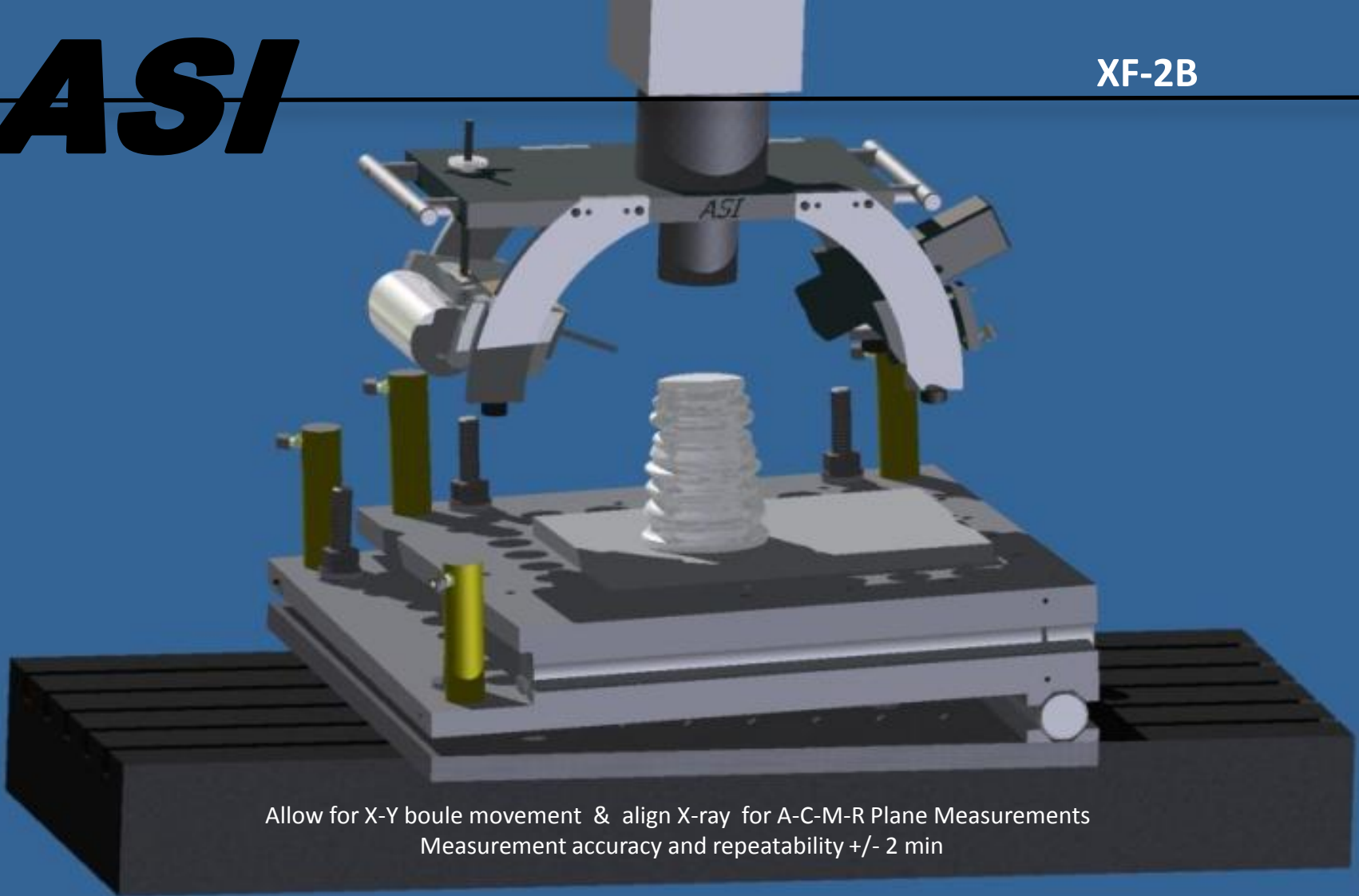
2 JULY 2012

ALVORD SYSTEMS, INC.  
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Clairton, PA 15025  
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## XF-2B CRYSTAL ORIENTATION X-RAY SYSTEM

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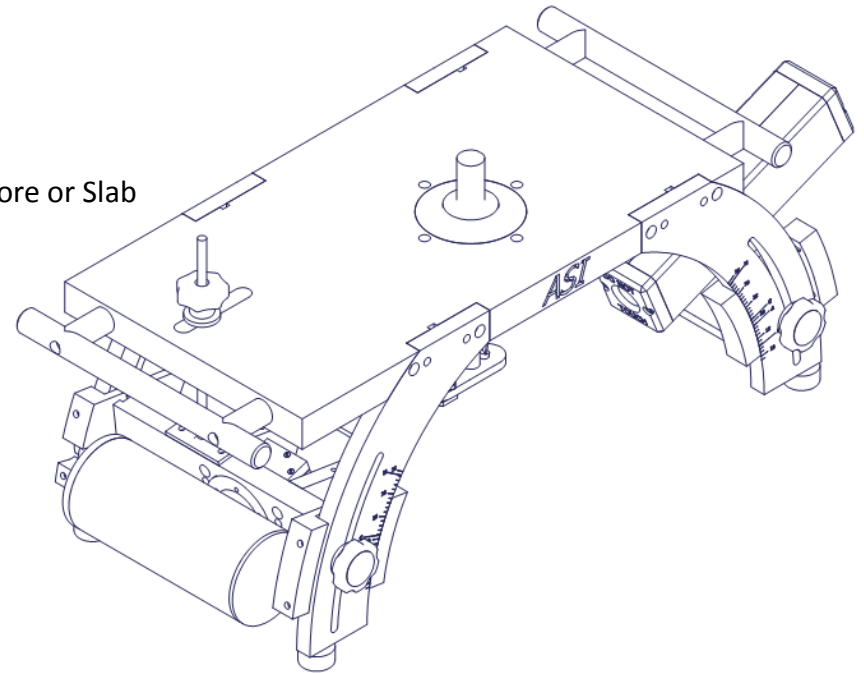


Allow for X-Y boule movement & align X-ray for A-C-M-R Plane Measurements  
Measurement accuracy and repeatability +/- 2 min

The Model XF-2 Portable Vertical X-ray Diffraction System is a single operator, high performance orientation system for boules, cores, and ingots, designed to provide years of accurate and reliable service in today's high-tech production environment.

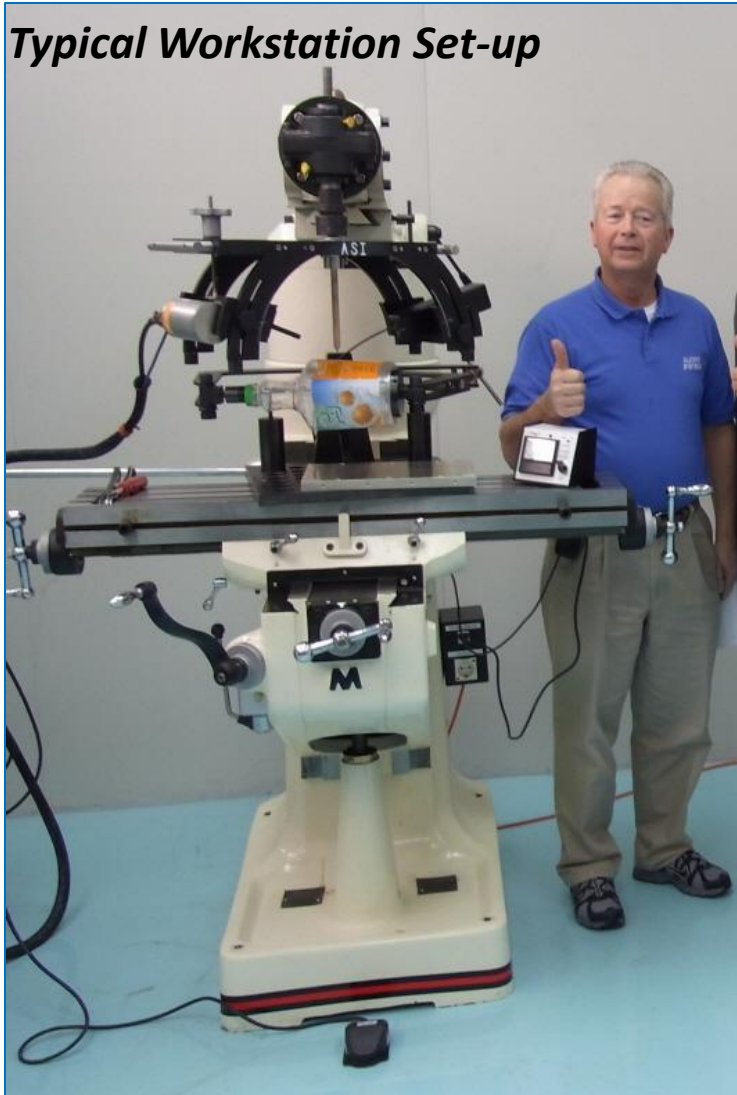
### Portable X-RAY Station Allows:

- Mounting and Positioning of Crystal Boule, Cores, or Slabs
  - Swing Clamp Assembly provides multi-functions
    - Hold/Rotate Crystal into Position for precision epoxy mounting
    - Clamp feature allows clear Work Plate access for positioning
  - X-Y Table allows mounted Crystals to be X-ray positioned for Core or Slab Operations
- Provides full range of X-Y movement for A-C-M-R Planes
- Measurement accuracy and repeatability +/- 2 min
  - Manual detection GM 2000
- Provides Pre-set projector positions
  - With Calibration veneer adjustment
- Provides Proven XF-2 X-ray technology
  - Ease of use
  - Compact Assembly
  - Easy Controls
  - X-Ray on demand Foot Switch operations
  - Reliability / Repeatability / Accuracy / Precision
  - Flexible Configuration Options to match Production Process.



Alvord Systems XF-2B System Provides the Technology for Integrating X-Ray Crystal Orientation into Your Production Process

*Typical Workstation Set-up*

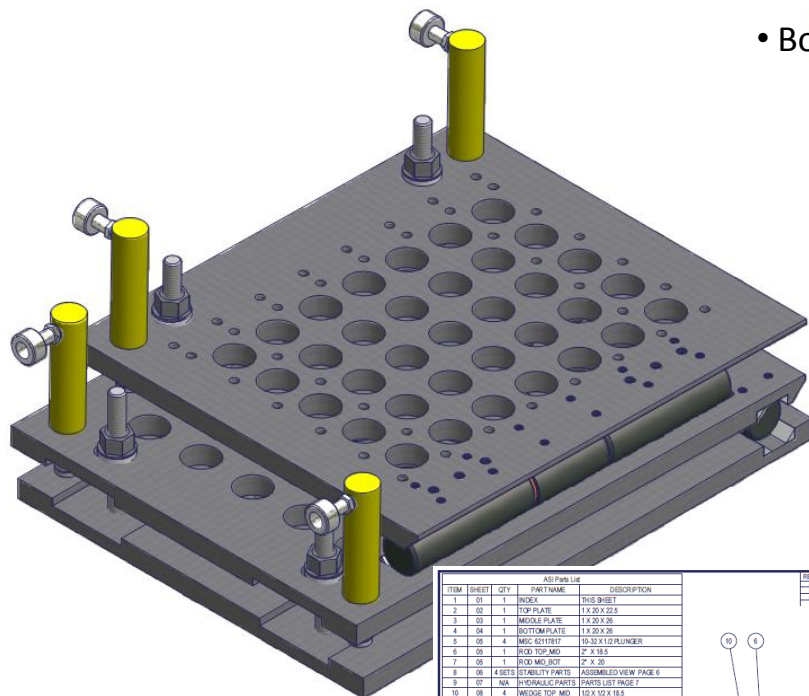


Flexible interface with current machining operations  
No Facility Modifications Required  
Standard 120VAC Outlet



Install the XF-2 Assembly and the GM Display on your boule cutting machine table.  
The spindle interfaces with a 3/4" collet chuck.

### Boule Orientation Fixtures

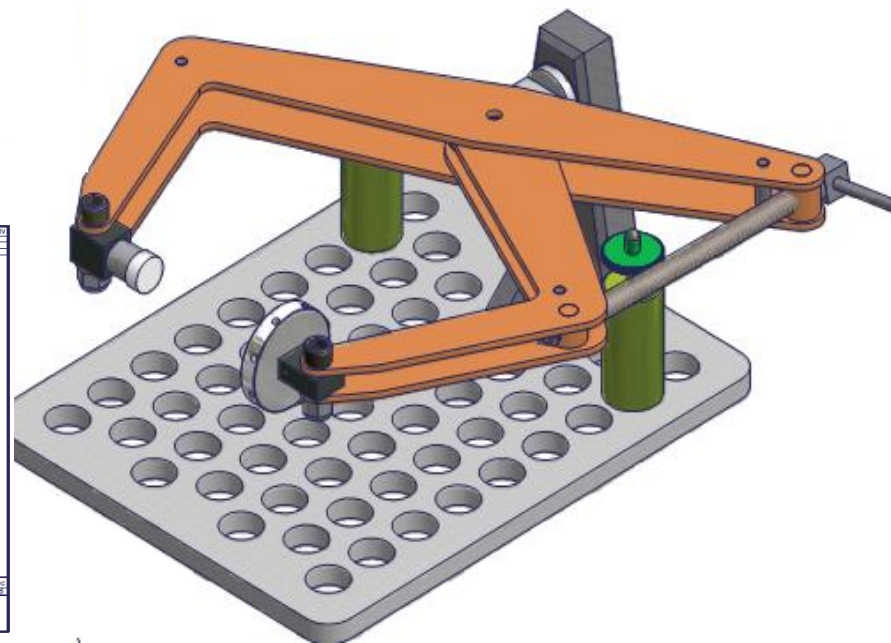


- Boule Orientation Assemblies:
  - Compound Sine Table Provides X-Y Tilt Adjustments
  - Clamp Provides for a rotational adjustment in the X-Y Planes
  - Each provides ease of movement between productions steps
    - Boule Mounting - X-ray Positioning - Work Plate Attachment

ITEM	SHEET	QTY	PART NAME	DESCRIPTION	REV	DESCRIPTION	DATE	APPROV
1	01	1	INDEX	THIS SHEET	1	REWORKED FOR MACHINING		
2	02	1	TOP PLATE	1 X 20 X 20.5				
3	03	1	MIDDLE PLATE	1 X 20 X 20				
4	04	1	BOTTOM PLATE	1 X 20 X 20				
5	05	4	MISC. 62119191	10.50 X 12 PLUNGER				
6	06	1	ROD TOP MTD	2" X 18.5				
7	07	1	ROD MID BOT	2" X 20				
8	08	4 SETS	STABILITY PARTS	ASSEMBLED VIEW PAGE 6				
9	09	NA	HYDRAULIC PARTS	PARTS LIST PAGE 7				
10	03	4	WEDGE TOP MTD	10 X 10 X 18.5				
11	09	4	WEDGE MID BOT	10 X 10 X 20				
12	10	1	3D VIEW	SINE TABLE 3 ASSEMBLED				

HYDRAULIC PARTS: PAGE 7			
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MATERIAL: ALL SIZE:		CHECKED BY MKE-KRS/BJG	DATE 09M 2006/07 BY EDR MKEK



Flexibility for Mounted Crystal X-Ray Orientation within your Production Machines

## Custom Design & Assembling of X-ray Diffraction Systems

ALVORD SYSTEMS, INC.

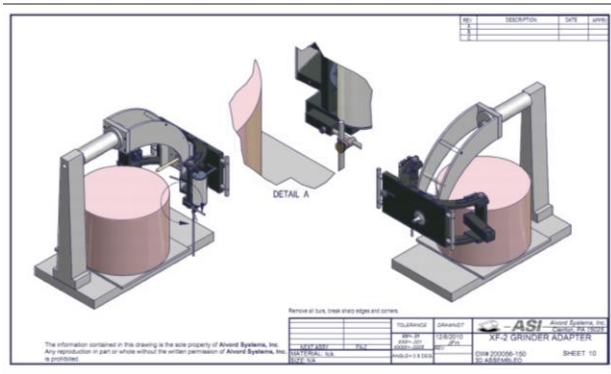
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- **Custom Design**
  - Precision Crystal Orientation
  - Operational Flexibility
  - Precision Diffraction Measurements +/- 2 min

### ASI XF-2B X-RAY ASSEMBLY

**Portable X-Ray Station Allows:**

- Mounting and Positioning of Crystal Boule, Cores, or Slabs
  - Swivel Clamp Assembly provides multi-functions
  - Hold/Rotate Crystal into Position for precision epoxy mounting
  - Clamp feature allows clear Work Plate access for positioning
- X-Y Table allows mounted Crystals to be X-ray positioned for Core or Slab Operations
- Provides full range of X-Y movement for A-C-M-R Planes
- Measurement accuracy and repeatability +/- 2 min
- Manual detection GM 2000
- Provides Pre-set projector positions

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### ASI XF-2B ADAPTABILITY

**Typical Workstation Set-up**

Flexible interface with current machining operations  
No Facility Modifications Required  
Standard 120VAC Outlet

**Portable Cart Set-up**

Install the XF-2 Assembly and cutting head  
The spindle interfaces

**B System Provides the Technology for Integrating X-Ray Crystal Orientation into Your Production Process**

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### ASI XF-2B Boule Orientation Fixtures

**Boule Orientation Assemblies:**

- Compound Swive Table Provides X-Y Tilt Adjustments
- Clamp Provides for a rotational adjustment in the X-Y Planes
- Each provides ease of movement between production steps
- Boule Mounting: X-ray Positioning: Work Plate Attachment

Flexibility for Mounted Crystal X-Ray Orientation within your Production Machines

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Alvord Systems XF-2B System Provides the Technology and Flexibility for Mounted Crystal X-Ray Orientation within you Production Machines