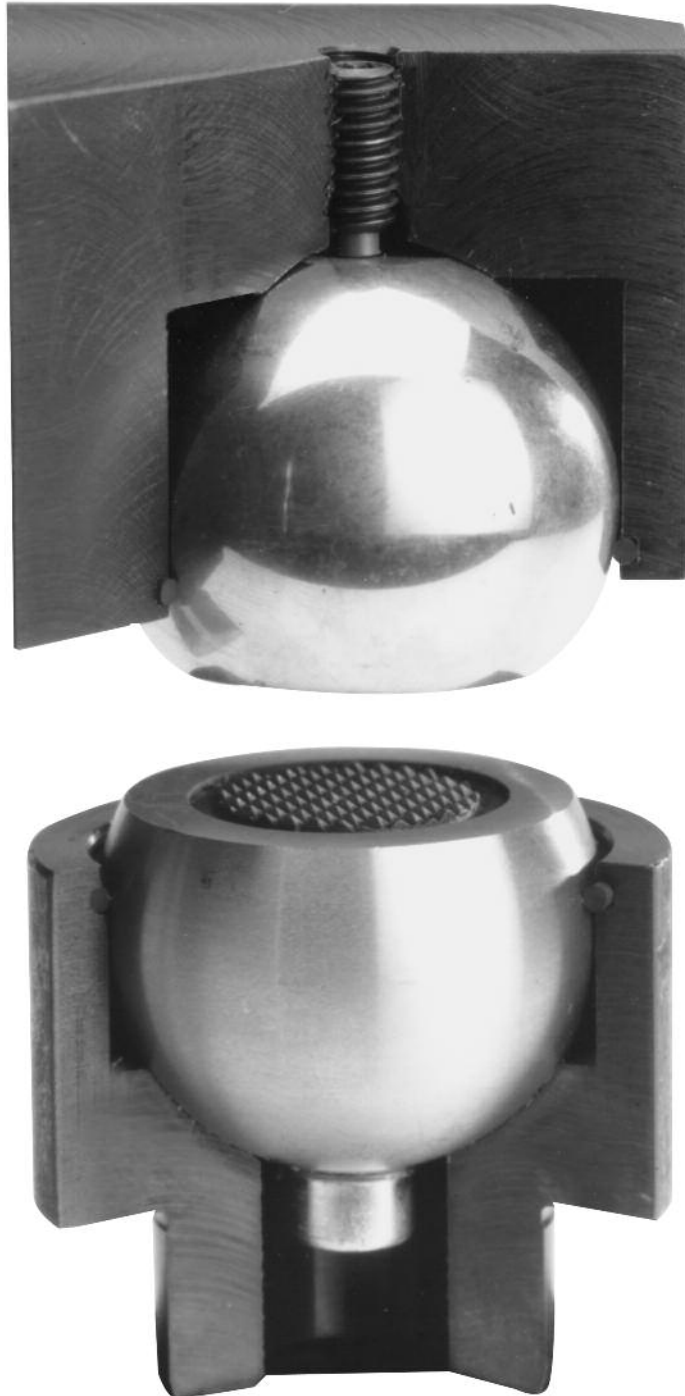


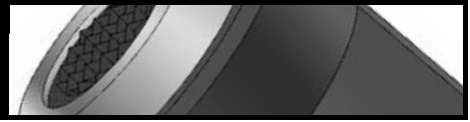
System Features



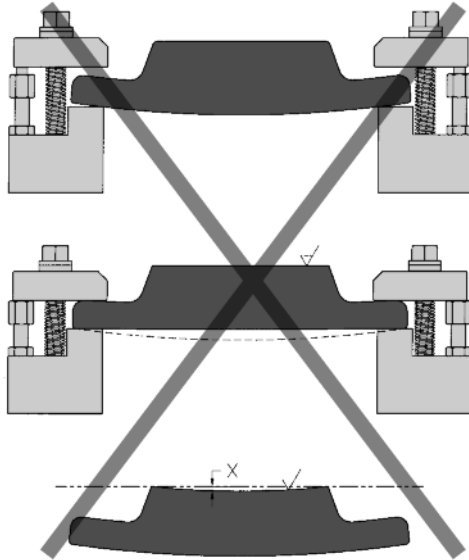
Self-Aligning Fixture Elements (S.A.F.E.)

The heart of the AMFLEX® Workholding System

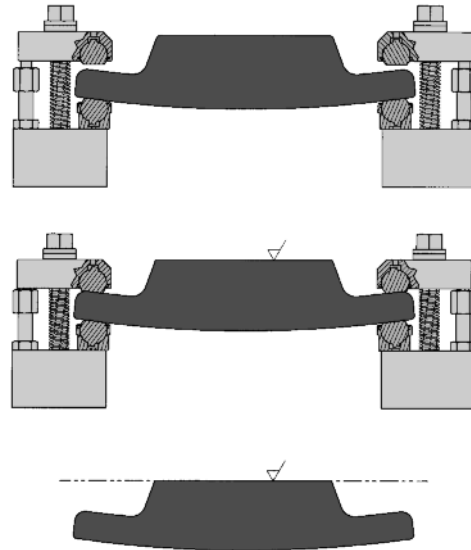
System Features



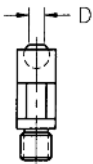
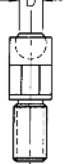
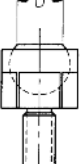
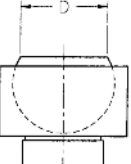
Conventional Clamping



Clamping with the AMFLEX® Workholding System

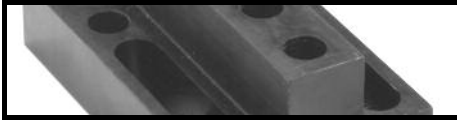


S.A.F.E. elements use ball pads to support the workpiece. These ball pads are flexible and align themselves to the contour of the workpiece. The clamping bars also have ball pads, therefore distortion of the part is practically eliminated. When properly applied, the AMFLEX® system guarantees flexible positioning and **stress-free** clamping.

Size	400 Series	500 Series	600 Series	700 Series
				
ball diameter (in)	.315	.472	.945	1.575
face diameter (in) D	.26	.43	.71	1.36
load force (lbs)	1798	4496	11240	22480



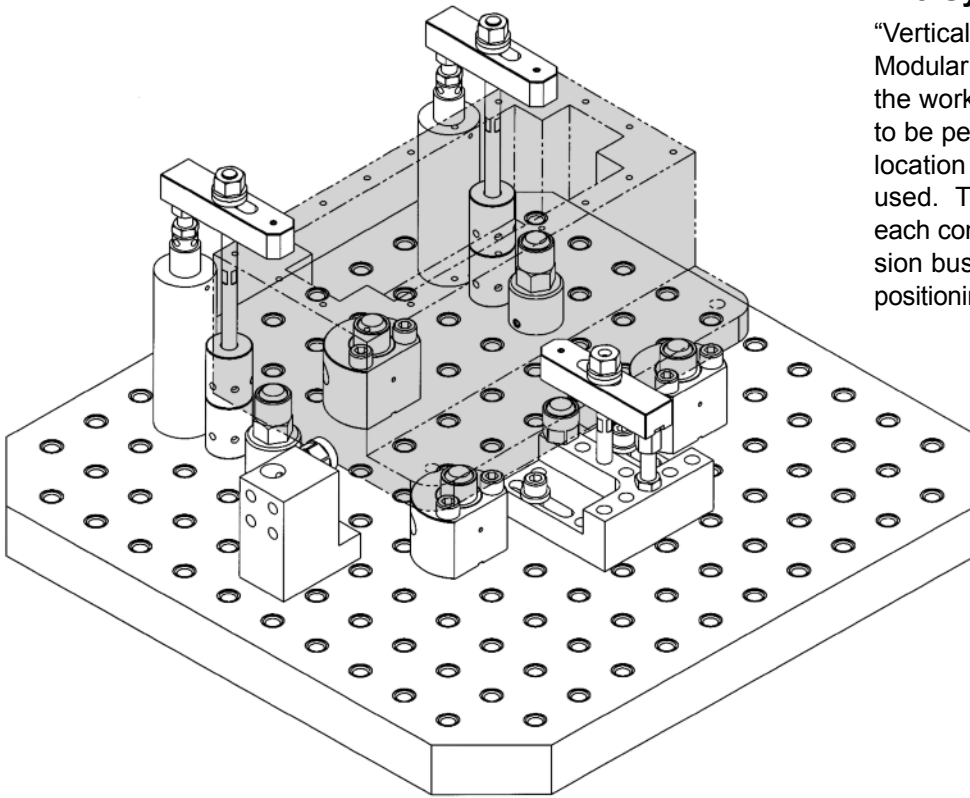
The AMFLEX® Modular Workholding System has four standard sizes “**S.A.F.E.**” **self-aligning fixture elements**. The four sizes differ by the diameter of the ball and the overall size of the units. Ball elements are available with either a smooth or serrated surface. Ball elements used as supporting units hold precision heights of $\pm .0005$ ” on smooth balls and semi-precision heights of $\pm .005$ ” for serrated balls.



System Features

The System Features and Benefits

“Vertical Clamping” using the AMFLEX® Modular Workholding System. The shape of the workpiece and the machining operations to be performed will determine the style, location and number of components to be used. The Grid Bases with co-axial holes, each containing a threaded insert and precision bushing, provide multiple and exact positioning of AMFLEX® components.



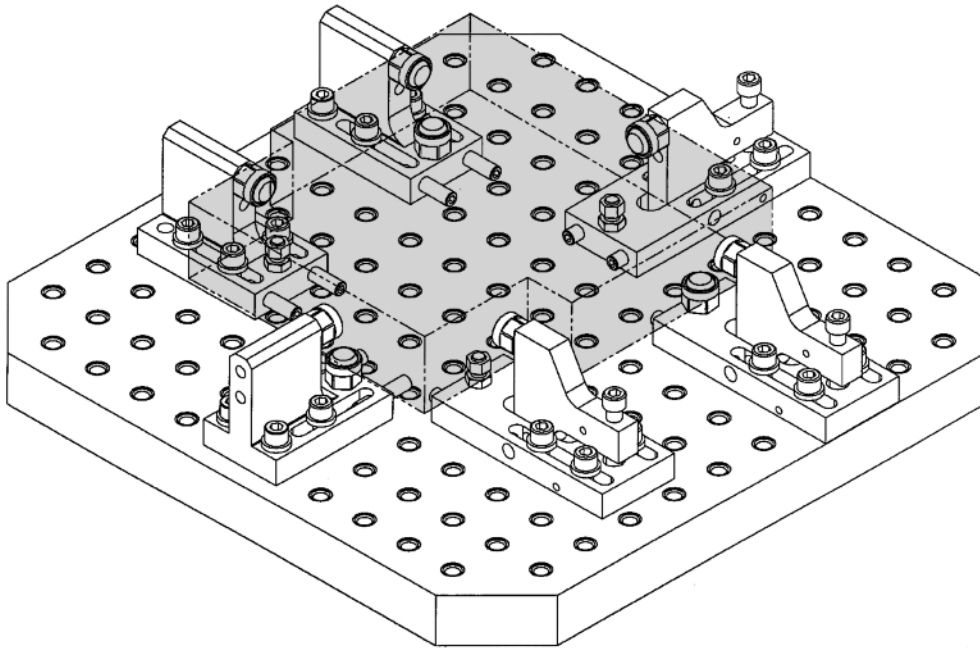
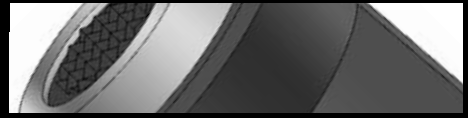
This 3D view illustrates how easily AMFLEX® components can be combined to clamp workpieces of varying shapes and sizes.

All grid bases come equipped with alpha-numerical rows and columns. Therefore, a bill of material and photograph or layout drawing are sufficient information to repeat the exact set-up every time, quickly and economically.

Fixture notes and procedures

1. Set Torque wrench to 28 ft. lbs = 1800 lbs. clamping force per clamp.
2. Total clamping force - 5,400 lbs.
3. Activate Spring Supports (AMF-87615) after workpiece is completely clamped.
4. Estimated time to assemble fixture = 15 minutes.

Qty	Part Number AMF-	Description
1	AMF-P3232-2-1	31.5" x 31.5" Grid Plate (1/2" - 13 System)
1	—	Machined Part
3	AMF-87615	600 Series Spring Supports
6	—	1/2" - 13 x 3 1/2" S.H.C.S.
1	AMF-24520	Universal Clamp Base
1	AMF-87184	1/2" - 13 Jack Screw, 3.13" Long
1	AMF-77562	5" Clamping Screw
3	AMF-87623	600 Series Smooth Clamp
3	AMF-87100	Spherical Nut (with washer)
1	AMF-87601	600 Series Smooth Fixed Ball Element (1.200" Tall)
2	AMF-87747	1/2" - 13 x 2 1/4" S.H.C.S. (with flat washer)
1	AMF-77520	Heavy Duty Locator fastened by
2	AMF-87992	1/2" - 13 Precision Dowel Screws (not visible)
4	AMF-67520	Precision Edge Towers (Æ1.5" x 2.0")
2	AMF-66516	6" Universal Clamping Body
2	AMF-66522	2" Universal Threaded Plug
2	AMF-87339	1/2" - 13 Jack Screw, 1.75" Long
2	AMF-77565	8" Clamping Screw
2	AMF-87691	600 Series Smooth Support Unit
1	AMF-87636	600 Series Smooth Fixed Ball (1.000" Tall)



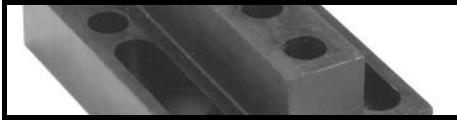
The System Features and Benefits

“Horizontal Clamping” using the AMFLEX® Modular Workholding System. The shape of the workpiece and the machining operations to be performed will determine the style, location and number of components to be used.

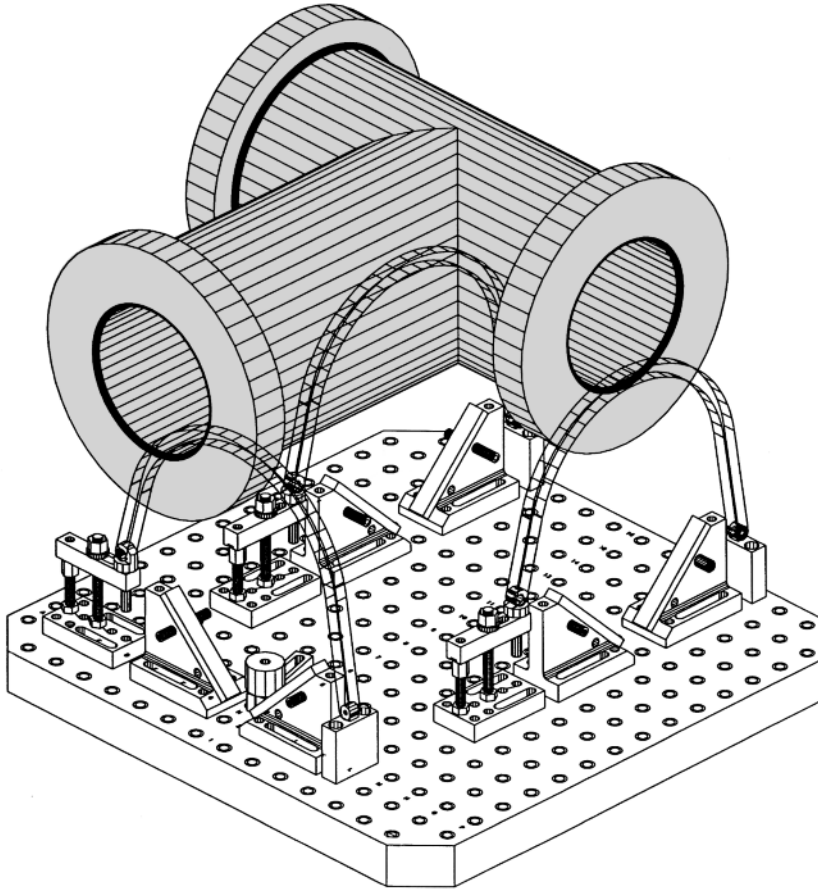
Qty	Part Number AMF-	Description
1	AMF-P3232-2-1	31.5" x 31.5" Grid Plate (1/2" - 13 System)
3	AMF-42510	Horizontal Stop
3	AMF-42520	Horizontal Clamp
6	AMF-87993	1/2" - 13 Precision Dowel Screw
18	AMF-54364	1/2"-13 x 2 1/2" S.H.C.S
24	AMF-87747	Washer
9	AMF-87636	600 Series Smooth Fixed Ball (1.000")
3	AMF-51067	500 Series Adjustable Height Ball Element

Fixture notes and procedures

1. Set Torque wrench to 32 ft. lbs = 5000 lbs. clamping force per clamp.
2. Total clamping force - 20,000 lbs.
3. Activate center Horizontal Clamp first.
4. Adjust AMF-51067 Ball Elements before activating remaining Horizontal Clamps.
5. Estimated time to assemble fixture = 15 minutes.



System Features



The System Features & Benefits

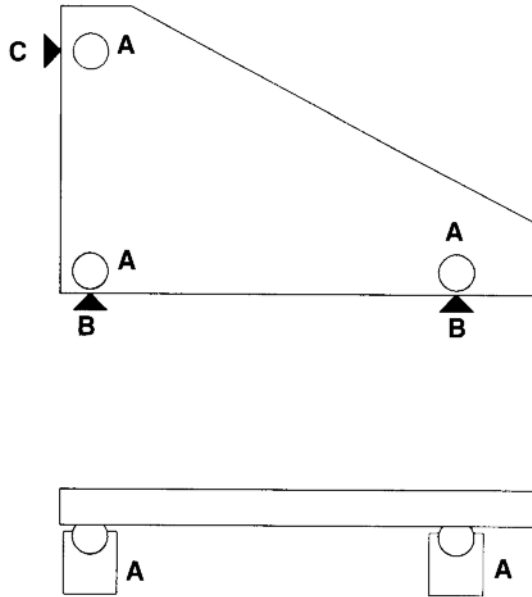
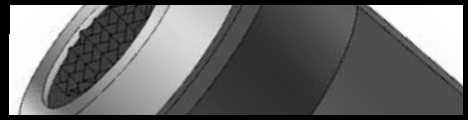
“Round Clamping” using the AMFLEX® Modular Workholding System. The shape of the workpiece and the machining operations to be performed will determine the style, location and number of components to be used.

Qty	Part Number AMF-	Description
1	AMF-P3232-2-1	31.5" x 31.5" Grid Plate (1/2"-13 System)
6	AMF-78950	Split V
3	AMF-71532	Precision Riser 3"
3	AMF-22510	Clamp Base 1.000" Height
1	AMF-72510	1 hole Sliding Bar
12	AMF-87993	Precision Dowel Screw
31	AMF-54364	1/2"-13 x 2 1/2" S.H.C.S. (not shown)
1	AMF-87582	500 Series Fixed Height Ball - Smooth
5	AMF-87496	400 Series Ball Set Screw (1/2"-13 x 3")
3	AMF-77560	6" Clamp Stud
3	AMF-87070	4" Support Stud
3	AMF-87100	Spherical Clamping Nut
3	AMF-88108	Clamping Spring (3.75" - 5.13")
3	AMF-87746	Clamp Spring Washer
3	AMF-31510	Universal Clamping Bar
1	AMF-65515	Precision Tower → 2.000" x 1.500" D
3	AMF-59667-01	Schedule 60 Chain x 36" Assembly

CAD MODELS AVAILABLE BY CLICKING THE MODEL NUMBER

Requires Internet access. CAD Models not available for part numbers shown in black.

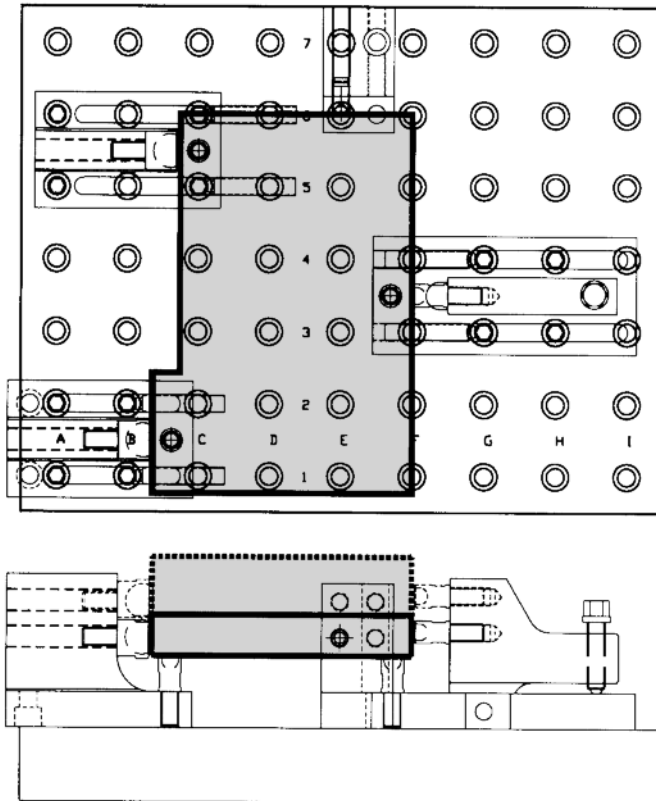
System Features



Fixture System - Vertical

Function: Positioning of the workpiece

- 1st plane:** Place workpiece on three supporting units ("A").
- 2nd plane:** Butt workpiece against two locating points ("B").
- 3rd plane:** Butt workpiece flush against third locating point ("C").



Function: Clamping of the workpiece with hold down effect

The unique construction of the AMFLEX® Horizontal Clamp produces a downward as well as horizontal clamping force to insure that the workpiece will be held securely. The Horizontal Locators and Clamps have corresponding dual mounting positions located in their faces to allow clamping of thin as well as thick parts. For added holding power, serrated Ball Elements can be used in place of smooth units. **(CAUTION:** Serrated Ball Elements will produce depressions where the Carbide grips contact the workpiece).



Innovative People, Products and Processes

At AME, innovation is part of our culture. You can see the result in our processes, partnerships, people and services—and in the precision engineered components, machines and services showcased here. To learn more about AME and our innovative approach to precision machining, please call **815-962-6076** or visit **www.ame.com** today.



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