



Self-Aligning Flange Sets

AN EASIER WAY TO KEEP YOUR PRODUCT PURE



The Young Industries "Self-aligning flange set" is a precision machined and unique pipe coupling system. This design helps you maintain high product quality by eliminating degradation of your product, providing a positive seal against leakage, easily assembles and disassembles for cleaning. It is called a Self-Aligning Flange (SAF) set because the patented design consists of a piloted male stub end that mates with a close tolerance counter bore female stub end that virtually eliminates eccentricity in the interior of the line. The design is complete with an O-ring seal that provides a positive seal against leakage. The interior has a smooth continuous internal surface for liquid or dry material handling. It helps reduce production down time and maintenance cost caused by the deterioration of the line when handling abrasive products.

UNIQUE JOINT DESIGN ASSURES LONG LEAK FREE SERVICE

The "O" ring pressure-responsive gasket design has been the heart of the SAF system since its inception. An O-ring is considered such an elegantly simple, reliable, and cost-effective sealing solution for a number of rea-

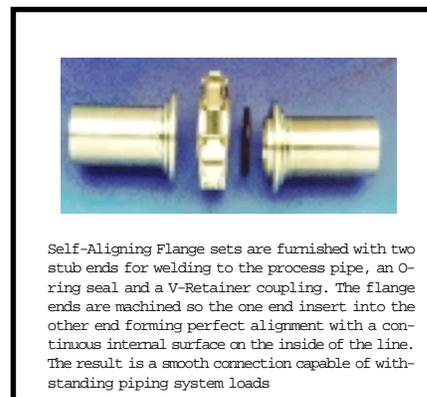
sions including - capable of bi-directional sealing, capable of compensating for tolerance run out, reusable within limits and resilient thus eliminating re-tighten of bolts. O-rings do not require any special installation tools or primers

O-rings project a small sealing footprint which enhances sealing properties. The symmetry of the O-ring's circular cross-section allows for sealing in any direction (radially, axially, or angularly) Also, O-ring's are made of a varied number of compounds that can resist virtually all aggressive chemicals and environmental application.

Unique seal design eliminates any contamination of your product by the seal material. The O-ring is full encased to prevent any exposure of the seal material to your product. The piloted male stub end and the counter bore female stub end surround, reinforce, and slightly compresses the O-ring seal. The design also eliminates the protrusion of the gasket into the pipe line to cause a leak or restrict material flow. The "O" ring is always secured making it easy to disassemble and reassemble.

SELF-ALIGNING FLANGE'S V-RETAINER COUPLING OFFERS QUICK ACCESS TO PIPING SYSTEMS.

The standard SAF uses an over-center latch style V-Retainer coupling to join the flange sets. The V-Retainer coupling exerts a uniform compressive force against the stub flanges. The over-center latch style reduces time when you need to removal sections of



Self-Aligning Flange sets are furnished with two stub ends for welding to the process pipe, an O-ring seal and a V-Retainer coupling. The flange ends are machined so the one end insert into the other end forming perfect alignment with a continuous internal surface on the inside of the line. The result is a smooth connection capable of withstanding piping system loads

the piping system for clean-out or maintenance. The over-center handle does not require tools to open or close the coupling once you make initial adjustment. A nut provides adjustable tension. The self-energizing latch and retainer reduces accidental opening of the coupling. Note: any internal pressure must be released before opening the coupling.

Although the SAF couplings form a permanent pipe connection, they easily disassemble for maintaining, cleaning or retrofitting a piping system. Since each joint is a union, simply loosening the coupling permits a damaged piece of pipe to be removed, an elbow to be replaced by a tee to extend a system, or a valve, strainer or other component to be installed later. Fittings can be assembled loosely and rotated to line up with mating components before tightening. This simplifies working in tight spaces around existing piping structures, or equipment.

Selecting Couplings

Engineers faced with building a piping systems know a coupling must meet one or more of the following requirements:

- A: Is easy to install, remove and reuse
- B: Guarantees contact of the two pipe ends
- C: Prevents pipe sections from moving apart
- D: Keeps the pipe sections aligned
- E: Guarantees electrical conductivity
- F: Is airtight

Commercial couplings are available in several types and each fulfill specific requirements. The Self-Aligning Flange coupling will meet all of the above requirements.

The SAF connector design is easy to install. It features a captured O-ring seal that is out of the product contact area and is airtight. The flange or clamp provides positive clamping action to resist flexural and torsional loads. It conforms to the support and hanging requirements. As the stub end flanges are drawn together by the clamp assembly, the O-ring seals without full compression when the stub end makes metal to metal contact.



The following information describes other common coupling types:



Welded pipe - Welding pipe sections together is a common coupling procedure. During installation, you must weld carefully to prevent weld drips or splatters from forming inside the pipe. Clean up

is almost impossible with a 20' section of pipe.



Gasket and sleeve - This coupling includes a sleeve that's installed over the pipe ends and two gaskets with triangular cross-sections that are inserted between the sleeve edges and the pipe to seal the coupling. The sleeve ends

are bolted together, forcing the gasket tightly between the sleeve and the pipe wall. During installation you are never sure the pipe ends contact each other and that the coupling is centered on the joint. Internal Alignment is not guaranteed.



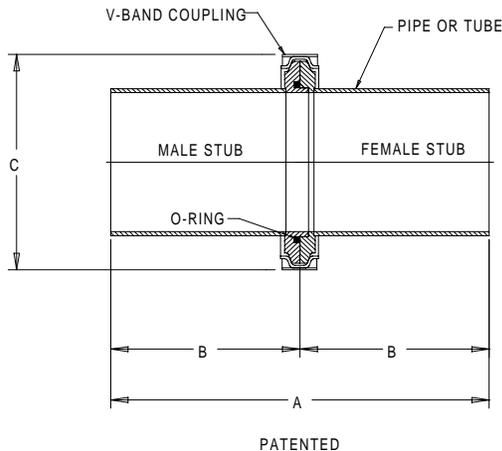
Pinch clamps - Available in several types, typically containing a gasket that wraps around the pipe joint. A shell is then clamped around the gasket with bolts or toggle

clamps. During installation, you are never sure that the clamp is centered on the joint, and the gasket is straight and that the gasket ends don't overlap each other. Internal alignment is also not assured.



Flanged pipe - To form a flanged pipe coupling, a flange is screwed or welded on each of the pipe ends. To install the coupling you must carefully align the two pipe sections.

Standard flange bolts and bolt holes permit as much as 1/8" inch misalignment. If you use gaskets to seal the coupling, many times the gasket material intrudes inside the pipe and the pipe is not electrically conductive.



NOM. SIZE	A	B	C
2"	8.00"	4.00"	4.03"
3"	8.00"	4.00"	5.41"
4"	10.00"	5.00"	6.60"
5"	10.00"	5.00"	7.73"
6"	10.00"	5.00"	8.91"
8"	10.00"	5.00"	11.03"
10"	10.00"	5.00"	13.17"
12"	10.00"	5.00"	15.41"

Standard sizes - Custom designs are available

DIMENSIONS - SELF-ALIGNING FLANGE SET WITH V-RETAINER COUPLING

The Young Industries patented Self-Aligning Flange sets are offered in a large selection of standard sizes. Available in 2", 3", 4", 5", 6", 8", 10" and 12" diameters in both tubing and pipe sizes. The sets are offered in carbon steel, aluminum, stainless steel and titanium and other non standard materials of construction. All the V-Retaining couplings are constructed with formed sections and band of 304 stainless steel, with the bolt con-

structed of 431 stainless steel and with 347 stainless steel self locking nut.

The standard Self-Aligning Flange sets offered include:

1. Style LP - 15 PSIG working pressure low pressure with over center latch V-retainer
2. Style MP - 50 PSIG working pressure medium pressure with T-handle V-retainer.

3. Style HP - 150 PSIG working pressure with high pressure lap flanges, full penetration welds

The Self-Aligning Flange sets can be furnished in several design variations. We offer technical services to assist you on special applications. Contact us for current pricing and delivery or in you have any questions.