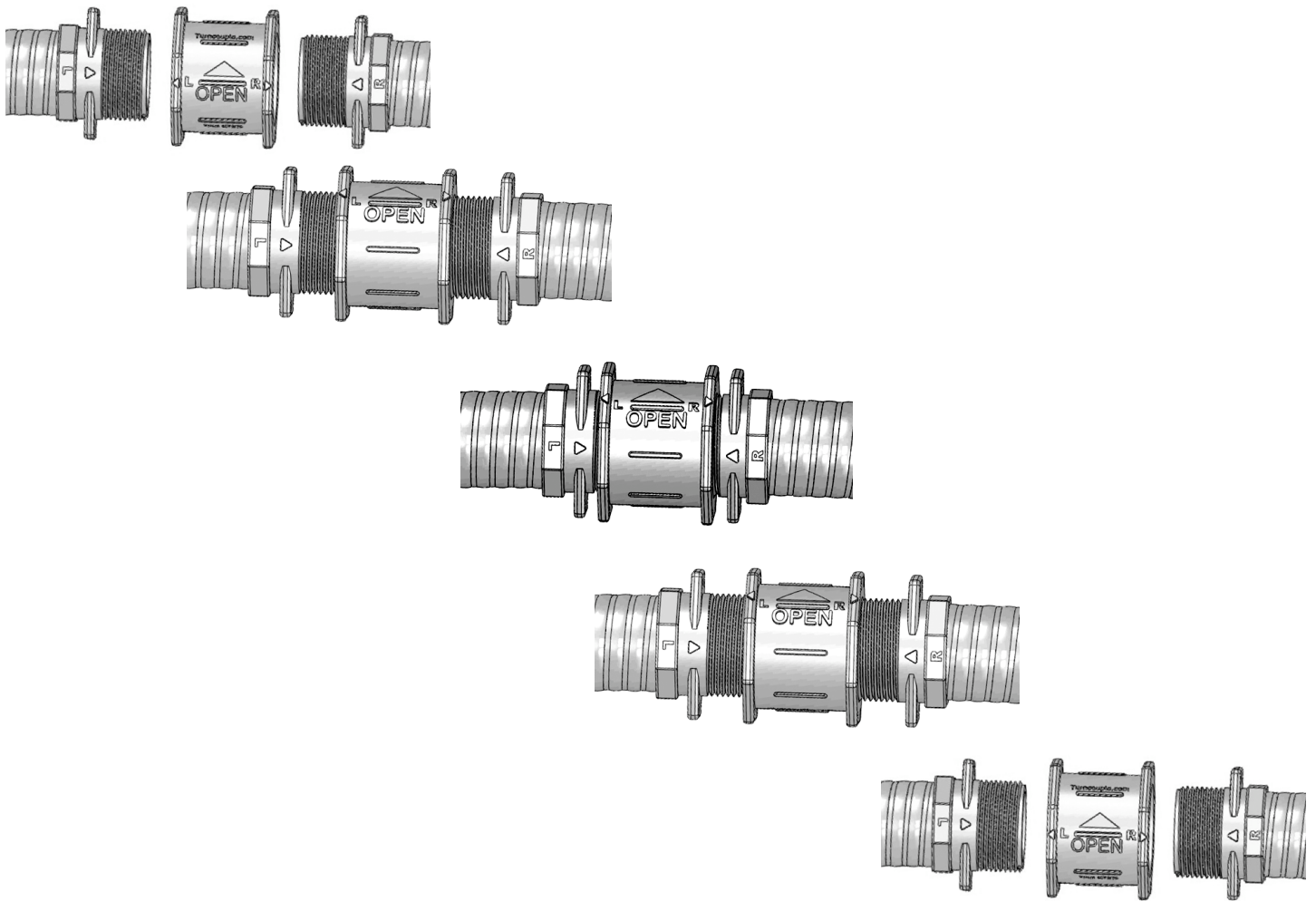


The Award-Winning

TURNCOUPLE[®] Assembly

Hose Connection and Disconnection System

Patent for Sale or License



Good Turns, LLC

The Award-Winning TURNCOUPLE® Assembly and System Investment Opportunity

OVERVIEW

The valuable utility patent and trademark for a unique coupling device, which could transform fluid management systems in a variety of industries, are available for sale or licensing.

The TURNCOUPLE® Assembly

The TURNCOUPLE® Assembly is a simple, unique coupling and decoupling device for use in fluid management systems. This Assembly provides a mechanism for creating integrated systems of fluid-handling equipment that are easily assembled and disassembled for use and maintenance.

The TURNCOUPLE® Assembly has three cylindrical parts through which fluid flows: a female coupler with right and left threaded ends, and two male adapters, one right-threaded and the other left-threaded. The coupler rotates to engage both adapters simultaneously, creating a fluid-tight seal. The TURNCOUPLE® Assembly is precise, secure, quick and easy to use.

The Market

The TURNCOUPLE® Assembly has potential in any application of fluid, gas or dry material transfer which requires simple, secure connection with repetitive or occasional disconnection. The TURNCOUPLE® Assembly can be the primary link in integrated fluid-handling systems. It has application in many fields, for example:

- ◆ large industrial
- ◆ military
- ◆ food processing
- ◆ medical technology
- ◆ marine and recreational vehicles
- ◆ agriculture, aquaculture
- ◆ general consumer use

The TURNCOUPLE® concept should be recognized as having value in fluid management systems throughout a wide range of applications, sizes and configurations.

The Patent

The advantage of the TURNCOUPLE® Assembly, in addition to its simplicity, is the flexibility of its utility patent. The Assembly can be:

- used in any industry that involves the handling of fluids, gases or dry materials,
- manufactured of any appropriate material,
- made with any thread type,
- created by any manufacturing process.

The patent also describes a System Approach which allows the adapters to be any device with a threaded end compatible with the coupler. Individual components can also be utilized as a housing for other devices.

The Vision

We visualize the power of the patent and trademarked name leading to the development of a high-quality line of fittings under the name TURNCOUPLE® Brand. The holder of this patent can take advantage of:

- a new, improved application of existing technology, with unique features,
- a robust, viable patent with broad application possibilities;
- a clever trademarked name, TURNCOUPLE®;
- an award-winning product with a proven track record;
- the opportunity to collaborate with other manufacturers to expand the market, and
- the entry of a new high-end series of fittings into the general plumbing hardware market.

The TURNCOUPLE® Assembly

Questions and Answers

1. What makes the TURNCOUPLE® Assembly unique?

Distinctive design features of the TURNCOUPLE® Assembly make it secure, precise and easy to use:

- threads at each end of the coupler begin at exactly the same point on the internal circumference, and those points are indicated by a positional mark on the outside of the coupler;
- positional marks on the adapters indicate the beginning of the threads on the inner (coupler) end - these marks are aligned to each other at installation, ensuring that the coupler closes on both sides simultaneously;
- aligning the adapter marks to the coupler marks assures that thread engagement is immediate and positive;
- perforated external flanges enable the fastening of parts together with a lock, seizing wire, wire tie, or other locking mechanism, and also permit the use of a pin spanner as a space-saving alternative to a wrench,
- a directional arrow points the way to open the coupler - in our embodiment, this arrow and the positional marks are tactile as well as visual.

2. How does the TURNCOUPLE® Assembly out-perform other connection systems?

This product is designed for secure long-term, permanent connection where occasional or incidental uncoupling is required for cleaning, maintenance, or other operation. The TURNCOUPLE® Assembly compares favorably with several of the commonly used coupling technologies:

- allows repetitive connection and disconnection of hose fittings
- provides a positive locking mechanism separate from the sealing function, eliminating the possibility of thread and/or seal failure due to over-stressing
- considerably shorter and smaller outside diameter compared to a union with the same ID
- fewer components than a union or a flanged connection
- faster and easier than a flange-and-bolt system
- more secure than a quick-release, bayonet or union
- stronger connection than quick-release or bayonet

3. What are the potential markets for the TURNCOUPLE® Assembly?

The TURNCOUPLE® Assembly has potential wherever hose or flexible pipe is used in applications requiring simple, secure connection and/or repetitive or occasional disconnection. The TURNCOUPLE® Assembly can help provide solutions in a wide variety of industries that handle fluids, gases or other similarly transportable materials.

Because of its versatility, the TURNCOUPLE® Assembly can be manufactured specifically for use in many industries, including:

- Generic plumbing components
- Recreational vehicles, campers
- Liquid food processing
- Military vehicles: tanks, airplanes, submarines
- Agriculture
- Aquaculture
- Aircraft manufacturing and maintenance
- Ships and boats: building, maintenance and operation
- Manufacturing processes for liquid, gaseous or dry material
- Truck and train maintenance, i.e. sanitary or kitchen facilities
- Medical: microtechnology, handling systems for gases or liquids in hospitals
- Photographic and copying equipment, i.e. large photograph developing companies such as NASA, US Coast and Geodetic Survey
- Refining, such as oil and biodiesel
- Waste treatment plants
- Water treatment and desalinization plants
- Uranium processing in centrifuge systems
- Chemical and paint manufacturing systems
- Commercial laundries, such as navy or cruise ship laundry facilities
- Hydraulic and pneumatic systems, such as those used in landing gear or tool and die stamping
- Printing: maintenance of hoses
- Aerospace industries.

To be more specific:

- In juice or ice cream manufacturing plants where different flavors are run successively through the same hose, TURNCOUPLE® assemblies would facilitate the disconnection and reconnection of those hoses for cleaning between flavors. TURNCOUPLE® assemblies can be made with diameters of five or more inches for the hoses through which foods such as cereals are transferred. For example, a hose could be easily disconnected from a food source, connected to a cleaning solution source, then connected to the next food source.

- Large TURNCOUPLE® assemblies could be used in irrigation applications to quickly and securely connect hoses to water sources. They would be useful in milking applications, crop spraying, or sap lines in maple sugaring operations. Large diameter TURNCOUPLE® assemblies could also be used to connect multiple storage tanks or grain elevators.

- Miniature TURNCOUPLE® assemblies made of appropriate materials could be used for sterile connections in medical applications, possibly even implants. They could facilitate the change from disposable fluid-handling products to reusable, sterilizable products, saving immense amounts of waste.

- TURNCOUPLE® assemblies can be manufactured in materials and with thread types that are capable of holding hydraulic pressures. Fine, straight (NPS) threads with interior flanges and gaskets would hold high pressures, and the lockable connection prevents tampering and accidental uncoupling.

- TURNCOUPLE® components can function as a housing for valves, check valves, reducers, metering or sensing devices, expansion joints, etc.

We have had interest in this product expressed by people involved in industries as diverse as submarine building and operation, desalination and cardboard manufacture (for the hoses used in the printing of labels, etc.)

The following benefits are conferred with this patent:

- a new, improved application of existing technology, with unique features,
- a robust, viable patent with broad application possibilities;
- a clever trademarked name, TURNCOUPLE®;
- an award-winning* product with developing acceptance in the marine industry;
- a complete mold for an Assembly in 1½" ID;
- the opportunity to enter into collaboration with other manufacturers to expand the market, and
- the entry of a new high-end series of fittings into the generic market.

* SAIL Magazine's prestigious Freeman Pittman Award for Innovation in 2006

4. What is in the TURNCOUPLE® patent?

Coupling systems with left and right threads are not unique by themselves; there needs to be added detail in each individual patent to exclusively define each system. The salient features of this full utility patent, specifically the thread-start indicators and the locking capability provided by the perforated flange, are what give the product its high level of functionality and precision. The patent is robust yet allows maximum flexibility in developing embodiments of the product.

The narrative portion of the patent describes the broad use of the TURNCOUPLE® Assembly as a mechanism for creating integrated fluid management systems. While the patent generally references marine and land vehicle fluid-handling systems, it is evident that the TURNCOUPLE® Assembly can be valuable in many different industries. The narrative also describes a System Approach which is explained below.

This utility patent has 24 claims, ranging from the very specific to the very general. The most general claim specifies basically the coupler with left and right threads, perforated annular flanges and positional indicators. The most detailed claim specifies the coupler and adapter assembly with each component having the perforated flanges and thread-start indicators, directional arrow and spacer on the coupler, an unthreaded extension on the adapters intended to facilitate positioning into the coupler, and the other end of the adapters barbed, threaded or smooth.

The claims include "metric threads, National Pipe Straight (NPS) threads, National Pipe Tapered (NPT) threads, and other thread types used in the art of plumbing fittings." Because this description is so general, the Assembly can be manufactured for low-pressure or high-pressure applications depending on the thread type selected. The claims also specifically provide for the optional use of an internal annular flange in the coupler, with or without a sealing mechanism such as o-rings, to be utilized if needed to provide a compression seal. Nowhere is material or size specified, nor is a manufacturing method described, leaving these entirely up to the discretion of the patent holder and the needs of the application.

For complete detail, US Patent No. 6,578,876 can be accessed using the search feature on the US Patent and Trademark Office web site, <http://www.uspto.gov/>.

More information is available at Good Turns, LLC. You can reach us at 802.760.6053 or through email at goodturns@vtlink.net. If you haven't visited our website, please go to <http://www.turncouple.com/>.

5. What is the TURNCOUPLE® System Approach and how can it be implemented effectively?

The TURNCOUPLE® patent describes a System Approach in which the TURNCOUPLE® Assembly becomes the key connection in a series of integrated fluid, gas or dry material management components. This approach permits the following scenarios:

- The patent holder can manufacture a series of interconnecting parts with TURNCOUPLE® features and thread patterns all made to the same precise standard, which are designed to be connected by the TURNCOUPLE® coupler. This manufacturer can then sell entire systems of integrated, interconnecting components for various fluid management needs.
- A patent holder collaborates with other manufacturers who agree to produce their pipe, pumps, tanks, valves, etc. with thread-start marks and a male-threaded end which meets the same precise thread standards as the TURNCOUPLE® coupler - we call this TURNCOUPLE®-compliant. The patent holder's TURNCOUPLE® coupler connects its left adapter to other manufacturers' TURNCOUPLE®-compliant right-threaded parts to build integrated systems. The coupler can be locked to the patent holder's left adapter's flange for security. Each manufacturer can select its own profitable components to become TURNCOUPLE®-compliant, so that the entire range of interconnectable products is available to consumers while each manufacturer can limit its own product inventory to its own specialty. Manufacturing costs are spread among multiple companies, while the patent holder increases its market through the collaboration. All participating companies benefit because their products integrate easily with others, making them more attractive to customers.
- TURNCOUPLE® threaded parts can be manufactured so they are compatible with the vast diversity of other threaded components found in the market. The right "adapter" then becomes any other male right-threaded device. It is important to note that the achieved maximum PSI may be decreased in these cases, depending on the quality of the other components used. Additionally, TURNCOUPLE® assemblies can be manufactured with the right adapter right-threaded on the outer end, which will fit any female-threaded component made to the same general standard, i.e. size and thread pattern.

6. How can the TURNCOUPLE® Assembly be manufactured?

TURNCOUPLE® components can be manufactured using any technology appropriate for the material and the application. It can be cast, machined, or injection molded. The most advantageous and powerful technology is injection molding; technological improvements in molding processes have made possible the production of very high-quality, consistent precision products in large quantities. We chose injection molding because it provided consistency in the parts and lower manufacturing costs than the alternatives. Injection molding also allowed us to experiment with different materials until we found the one we felt was best for our projected application.

Injection molding allows for flexibility within the mold, such as using inserts for the outer ends of the adapters so that barbed or threaded ends can be run alternatively in the same mold. Different inserts could be built for the internal threads of the coupler and the matching external threads of the adapters, providing the ability to generate several thread types depending on demand. Multiple cavities can be built into each mold so that several parts are generated per cycle, which improves production time and reduces cost per part.

While NPT threads generally require a sealant, such as Teflon tape or paste, it is possible to mold very fine dry-seal threads (NPTF) that are fluid-tight without needing a separate sealant. There is also the potential to overmold a softer material over the threads of either the coupler or the adapters as a sealant, again depending on intended application.

Injection molding offers a manufacturer access to a new breed of metals-replacement plastics that have appeared on the market in the last 10-20 years. In fact, introduction of the TURNCOUPLE® Assembly could be a catalyst for a company to transition from metals or older generation plastics such as nylon or PVC into new, high-strength, high-impact metals replacement plastics in a market-friendly manner. With the cost of metals escalating rapidly, metals-replacement plastics merit serious consideration.

7. How has the Assembly been developed so far?

We developed our embodiment of the TURNCOUPLE® Assembly for a marine application: to facilitate the connection and disconnection of the stiff commercial-grade hoses used on boats for head (bathroom), domestic water, bilge, raw water cooling, fuel and other fluid systems. We had an injection mold built for a 1½" TURNCOUPLE® Assembly, designed to fit one of the most commonly used sizes of heavy-duty marine hose. To broaden the application, we made our right-threaded adapter with two options for the outer end: barbed for connection to a hose, or threaded for connection to a female-threaded device such as a tank. To accomplish this, our mold has two inserts for the right adapter end, one for barbs, the other for right threads.

We tested with several materials, plain and glass-reinforced, in the process having to modify our mold to accommodate differing shrink rates. Our final selection was rigid thermoplastic polyurethane (TPU), 20% long glass reinforced. This versatile material produces the strength and durability characteristics we required, molds with precision, absorbs virtually no water, and gives a nice look and feel in the finished product.

Our embodiment of the Assembly was awarded SAIL Magazine's 2006 Freeman Pittman Award for Innovation after being seen at the 2005 United States Sailboat Show in Annapolis, MD.

For further details on the initial embodiment of the TURNCOUPLE® Assembly, please refer to the document entitled "**The TURNCOUPLE® Assembly in Marine Use,**" which can be found at <http://www.turncouple.com/>.

8. Where can I find more information on the TURNCOUPLE® Assembly, system and patent?

Visit our website at <http://www.turncouple.com/>.

The principals at Good Turns, LLC, Jed Guertin and Page Guertin, can be reached at 802.760.6053 or by email at goodturns@vtlink.net. Our mailing address is 116 South Main St., Waterbury, VT 05676. We would be happy to provide additional information on the device and to discuss any questions you might have.

Please consider the functionality and flexibility of this product with an eye toward purchasing or licensing the patent and developing a full line of TURNCOUPLE® brand products.