

At Townley,
+ Inspiration + Imagination
leads to Innovation!

TOWNLEY PRODUCT GUIDE

SERVING:
Coal-Fired Power • Phosphate Mining • Dredging
Oil Sands Copper Mining • Coal Mining
Iron Mining • Sand & Silica Mining

TOWNLEY

Engineering & Manufacturing Co., Inc.



Solving Wear Problems

From our very beginning in 1963, our founder Jake Townley was on the ground at the phosphate mines personally demonstrating the significant advantages of Towniprene® polyurethane to solve abrasion and corrosion wear found with traditional metal or rubber lining used in flotation, hydrocyclones, piping and other high wear parts and fittings in these demanding mine services.

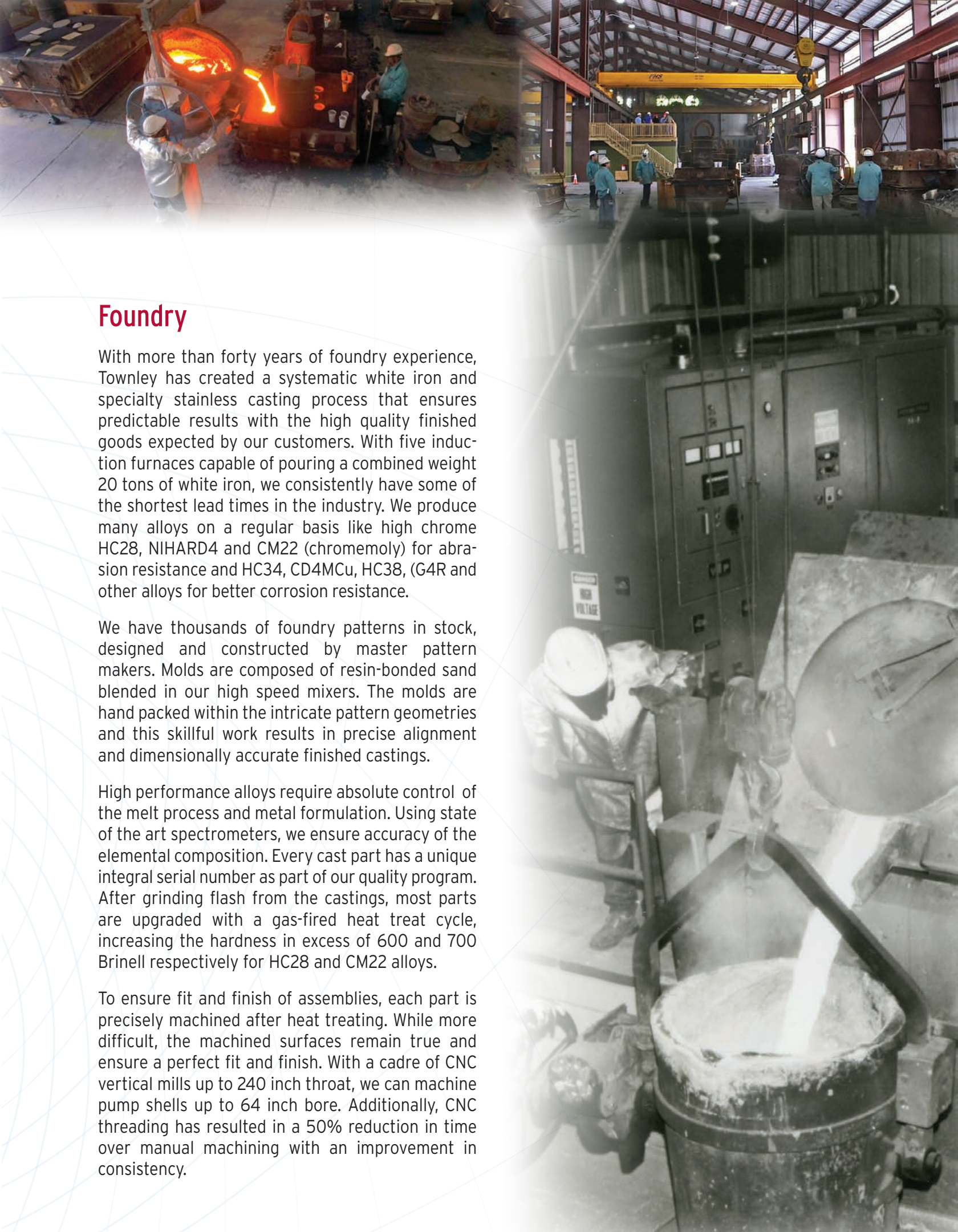
Over the years, along with the Towniprene®, we have developed rubber hose & linings along with high quality cast alloy providing Townley a unique manufacturing capability. Having unique wear characteristics resistant to abrasion and corrosion variables, these technologies permit us to create excellent wear solutions for our customers found in the transport of solids and slurry associated with mining and FGD scrubbed power plants.

Our skilled field representatives and technical back-up teams have the experience to work with customers on-site, examining wear parts and making creative recommendations.

We apply the right materials and designs to the problem, giving customers extended wear life and more utility. This reduces maintenance down-time and unplanned outages. In many cases we have improved output and efficiency with the resultant lowering the cost-per-ton or cost per kilowatt hour.

Whether at the pit, flue gas scrubber, in the plant or transporting tailings, we can provide wear solutions for items such as complete pumps, wet-ends, submersibles, elbows, elastomer lined pipe, rubber hose, valves, nozzles, chutes, cyclones, agitators and many other wear parts.





Foundry

With more than forty years of foundry experience, Townley has created a systematic white iron and specialty stainless casting process that ensures predictable results with the high quality finished goods expected by our customers. With five induction furnaces capable of pouring a combined weight 20 tons of white iron, we consistently have some of the shortest lead times in the industry. We produce many alloys on a regular basis like high chrome HC28, NIHARD4 and CM22 (chromemoly) for abrasion resistance and HC34, CD4MCu, HC38, (G4R and other alloys for better corrosion resistance.

We have thousands of foundry patterns in stock, designed and constructed by master pattern makers. Molds are composed of resin-bonded sand blended in our high speed mixers. The molds are hand packed within the intricate pattern geometries and this skillful work results in precise alignment and dimensionally accurate finished castings.

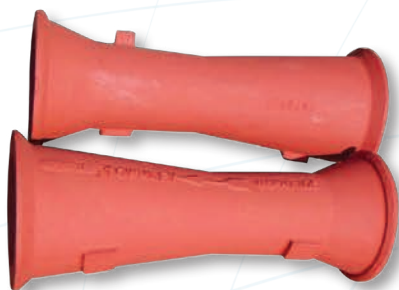
High performance alloys require absolute control of the melt process and metal formulation. Using state of the art spectrometers, we ensure accuracy of the elemental composition. Every cast part has a unique integral serial number as part of our quality program. After grinding flash from the castings, most parts are upgraded with a gas-fired heat treat cycle, increasing the hardness in excess of 600 and 700 Brinell respectively for HC28 and CM22 alloys.

To ensure fit and finish of assemblies, each part is precisely machined after heat treating. While more difficult, the machined surfaces remain true and ensure a perfect fit and finish. With a cadre of CNC vertical mills up to 240 inch throat, we can machine pump shells up to 64 inch bore. Additionally, CNC threading has resulted in a 50% reduction in time over manual machining with an improvement in consistency.

Alloy Wear Parts

We cast hundreds of different alloy wear parts for slurry applications including ball mill chutes, cast elbows, coal pulverizers, agitators, combining tubes and wet-end pump parts. Townley is noted for process improvements such as refined metallurgy, robust designs, reduced part count or just moving lifting lugs for safety and convenience to the operator.

Often a customer will come to us with OEM parts that experience a repeated wear pattern. Our technical reps will examine the wear, review the feed and flow parameters and make recommendations for an alloy replacement part with improved design, including enhanced wear-back areas and lifting eyes to help with installation.



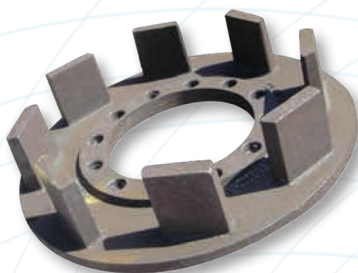
CM22 Combining Tubes for severe duty found in coal fired power plant's bottom ash discharge.



Flanged Elbow HC28



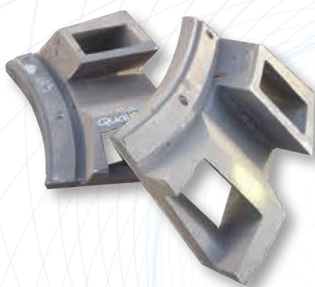
HC28 Elbow with wear back for focused wear improvement.



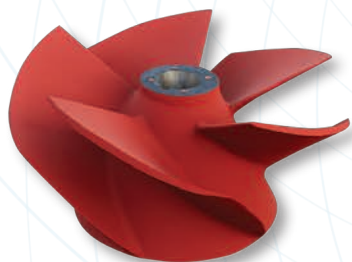
Blungers Blades



Wearmaster™ FGD Agitator



Coal Pulverizer Air Ports



Recirculation Water Impeller



Wearmaster® Alloy Dewatering Cyclones

Centrifugal Pumps

Slurry Pumps and Alloy Wear Parts - Townley's pump and wear parts are cast in our North American "state-of-the-art" white iron foundry and finished in our large-scale CNC machine shop. These high-quality alloy pumps and parts provide our customers with longer life and improved efficiency for the most corrosive and abrasive slurry applications.



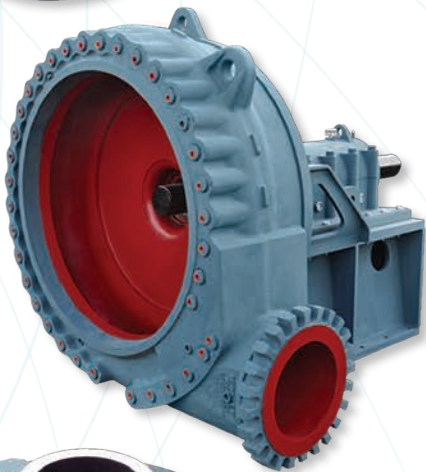
UBD® Matrix & Tailings Pump has a recessed volute and nesting impeller. This patented pump was engineered to provide longer wear life by maintaining consistent peak flow and uniform part wear throughout the life cycle of the pump, extending the useful life beyond other OEM designs.

This unique design reduces recirculation and cavitation, the two main obstacles to uniform pump wear. Used for mineral beneficiation of phosphate, iron and copper as well as tailings transport, the UBD® has been a well accepted upgrade to the OEM installed base of pumps.



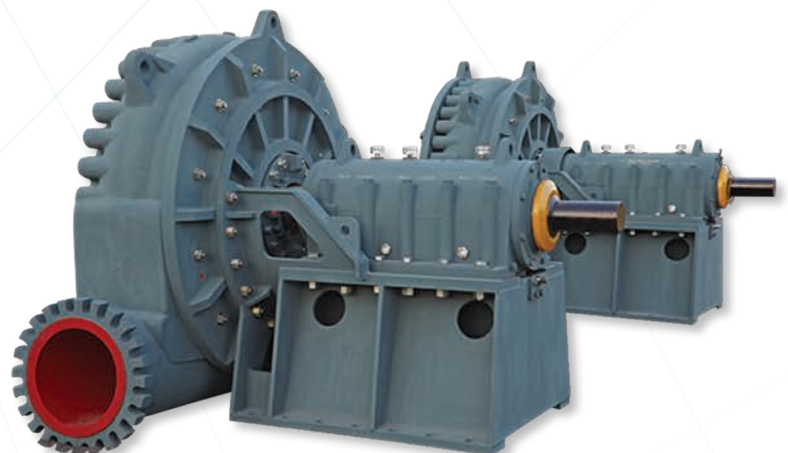
WRK® Slurry Pump (Warman style upgrade) - This Wet-end Retrofit Kit is a simple alternative to the split-case OEM process or mill pumps used in power plant scrubbers and mining applications. This wet-end has fewer parts and significantly thicker metal than OEM's. Featuring the patented volute as in the UBD®, customers are enjoying extended life along with easy, safe assembly.

OEM Pump Parts Upgrade - We have many patterns for impellers, casings, suction liners/doors to fit many standard sizes of ASH, Warman, GIW, Thomas, Wemco, Hazleton, Galigher and Denver.



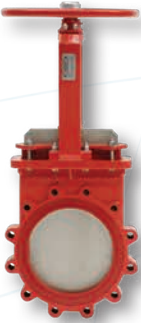
Towniprene® Urethane-lined Pumps - We can provide molded-in or bolt-in volute liners, as well as urethane-lined impellers. These specialty parts are perfect for fine feed found in tailings or sand.

Complete Pumps - Townley is considered an OEM supplier by many customers providing complete bare-shaft pumps with durable bearing assemblies. With a 72-hour factory break-in and a thicker shaft, customers are assured smooth start-ups and longer service life.



Knife Gate Valves

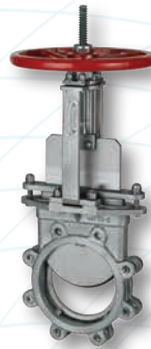
Townley has produced knife gate valves for mining and coal fired power plant slurry applications for over thirty years. Aware of problems with other commercial valves, we were able to design our new valves from a clean sheet of paper, ensuring that we eliminated the problem areas and incorporated all the innovations asked for by our customers. Unless noted, all Townley valves are rebuild-able and allow bi-directional operation. All Series 80 valves are available from 2 inch ID to 54 inch and the Series 150 is available from 4 inch to 36 inch.



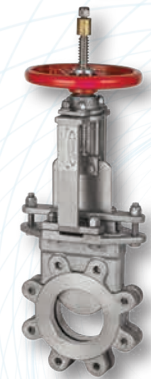
Series 80 TP & 80 TP-XL - The 80 TP is the work horse of the industry featuring a treated blade, radiused blade sides and a new packing cavity design. Perfect for many applications in fine feed where positive closure is required, such as limestone, cyclone feed & FGD service in Coal Fired Power Plants and mineral & metal mining control of fine feed in flotation cyclones and tailings. Resistant to mild reagents and acids, this 80-TP is a very versatile addition to your process.



Series 80 BA - The 80-BA/SD is a heavy duty knife gate valve for solids handling, having all the features of the 80TP plus integrated hi-chrome inserts. This is a good selection for many applications in coarse feed where positive closure is required with maximum resistance to impact abrasion as found in Bottom Ash discharge service in Coal Fired Power Plants and face of the mine, mill regrind and coarse tailing circuits in mineral & metal mining. Resistant to mild reagents and acids, this 80-BA/SD is a very robust addition to your process.



Series 80 SS - The Series 80 SS uni-directional style valve was created to provide a unique valve for service where chemicals and higher temperatures are expected. Featuring a cast 304 or 316 stainless body, gate, packing gland, seat, yoke, stem and bolting, you can be assured of corrosion resistant duty.



Series 80 SSRS - The Series 80 SSRS style was created to provide a unique valve for service where chemicals and higher temperatures are expected.

Featuring a cast 316 stainless body, gate, and elastomer seat, 304 yoke, stem and bolting, you can be assured of corrosion resistant duty in extreme service.



TMV 150 - A directional knife gate valve specifically designed for the harshest conditions in the mining industry. Comes Standard with a 6 inch diameter hydraulic cylinder for increased opening and closing force.

Featuring a dovetail clevis that is threaded to the valve shaft creating a more robust connection, thicker cast blade, improved Towniprene® urethane for better wear, and a deeper seat channel that improves sealing.



Series 150 - The heavy duty Series 150 fabricated valves were created in response to customer's need of a robust valve for coarse solids and tailings service in mining. These valves have found excellent service in abrasive bottom ash discharge circuits in coal fired power plants as well. Available with higher pressure ratings upon request.

Butterfly Valves

Townley manufactures these unique, bi-directional, purpose-designed butterfly valves for throttling of mining slurry or isolation of water service in power plant circuits. Most valves featured here are rebuildable to new specifications at our factory and are available with actuation of your choosing.



Series 120 Butterfly Valve - Designed for handling high volume solution flow, this valve features an interference fit when closed, ensuring positive sealing. Available in sizes from 18 inch to 96 inch these valves are especially useful. With a one piece Towniprene® body and Neoprene disk, this valve ensures interference fit when closed. Especially useful for water circulation control and power plant cooling water isolation. Townley can rebuild and convert your worn existing OEM valve to Series 120 specs.



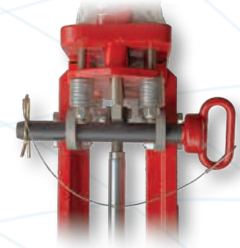
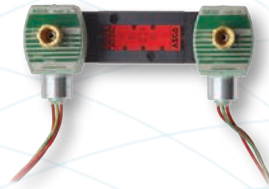
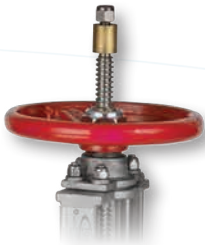
TM 3 & 4 Valves - Available in sizes from 2 inch to 24 inch, This general service valve is designed with a cartridge-style EPDM, metal reinforced seat that resists blow out in high-pressure or high flow applications. The precision disk is available in 316 stainless steel, nickel-plated ductile iron or rubber lined.



Townley's **Pinch Valves** will operate manually or automatic modulation driven by flow control circuits. Designed with unique self-centering, double action pinch bars that compress the tube equally from both sides, you will experience uniform wear from both sides.

Valve Actuators & Accessories

Townley provides manual or powered actuation, positioners, limit switches, lock-outs, and remote control operations, and many more accessories for all of our valves or our valve bodies to match the customers' existing setup. Our experienced sales team will be able to look at your operation and recommend the most suitable actuation for your valves. All of the products bought from Townley are back by our standard warranty to ensure that all products are of the highest quality.



Townley Series MSP® Submersible Slurry Sump Pump

Power plants and the mineral and mining industries have experienced great success with wear life and utility after upgrading to the MSP® from vertical cantilever pumps or less robust submersibles. Ease of installation and removal make the Series MSP® Submersible Slurry Pump a favorite of plant maintenance and engineering personnel. Now featuring the optional jet ring to keep the slurry in solution.

Especially important to our customers, we are the ONLY manufacturer to 100% hydro test all new and rebuilt pumps to ensure operational conformance.

Our experienced representatives will guide you in the proper pump selection and accessories for a seamless transition to the Series MSP® for your site.

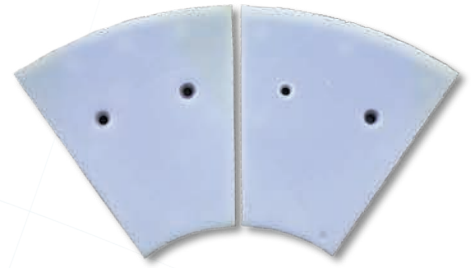
Townley has a large inventory of pumps ready to ship when you need it!

Towniprene® Proprietary Urethanes

We cast our urethanes from continuous dispensing delivery systems into precisely machined molds to create long lasting wear parts, lined pipe & fittings, pump liners, and impellers, suited to the fine feed and sliding abrasion found in the mining process.



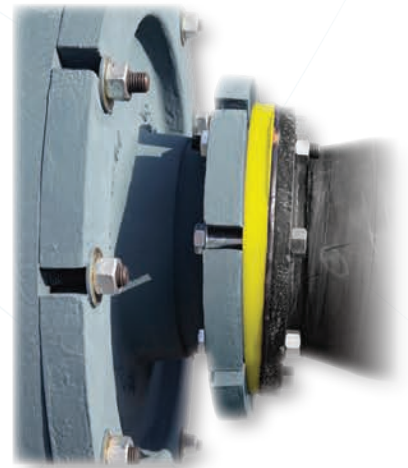
Log Teeth upgraded from metal castings resulting in lighter weight, improved wear cycles and cost reduction.



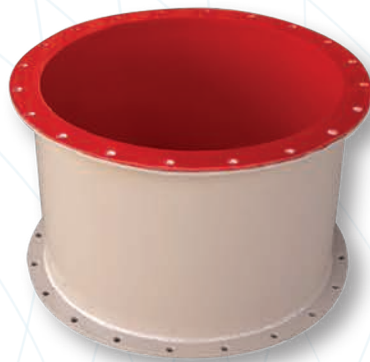
Classifier Shoes upgraded from other elastomers and metal resulting in longer life cycles.



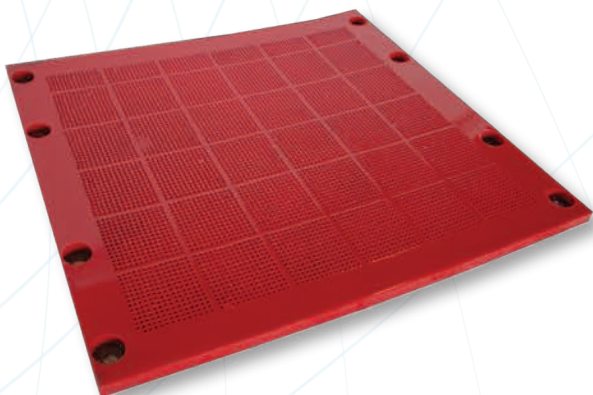
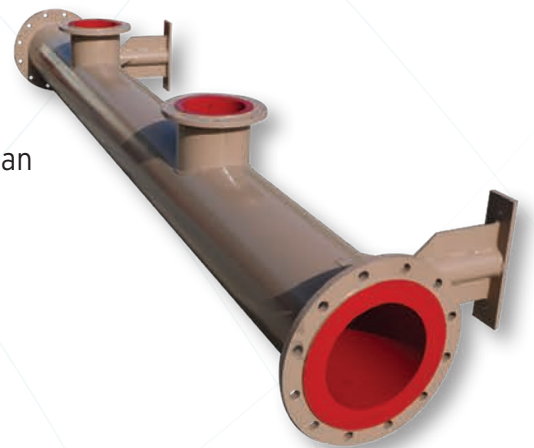
Coal fired power plants are using **Scrubber Nozzles** molded from urethane to provide resilience unlike the ceramic nozzles offered by the OEM.



Gaskets and Wedges used anywhere rigid pipe fittings are misaligned due to terrain movement or plant settling.



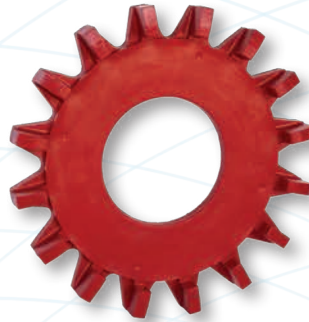
Lined Pipe and Fittings provide excellent wear characteristics for sliding abrasion with fine feed and can be re-lined.



Miscellaneous Wear Parts like mixing agitators, trommel screens, flow regulators, round to rectangle connectors, pulley wheels, classifier tubes, hydrocyclone overflow piping, bird filter wheels, and dart valves are just few examples of unique solutions to problematic wear parts.

Towniprene® Flotation

Working with mining operations, Townley pioneered the Towniprene® urethane formulation for flotation cells. Upgrading from rubber or metal, these engineered parts have provided improved wear for flotation circuits. Urethane is naturally resistant to the chemical degradation caused by the reagents used in these cells. With regional manufacturing, Townley can expedite a rebuild service for your site. We line draft tubes, collars, standpipes, skirts, stators, rotors, cell bottoms, impellers, diffusers, paddles, stabilizers and dart valves. Available to fit Wemco, Galigher, Denver, Dorr Oliver, Outokumpu and Sala in most standard sizes.



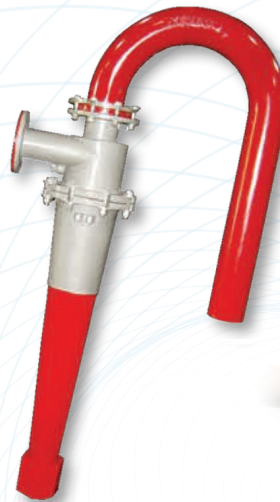
Towniprene® Lined Parts

Towniprene® Hydrocyclones

Towniprene® Hydrocyclones lined cones are used for dewatering and classification of fine particles in slurry. These cones, vortex finders, feed chambers and apex' are rebuildable at Townley. Available in a variety of sizes from 4 inch to 48 inch and cone angles from 14° to 30° we can match your application specifications.

Where possible Townley adds extra material to the typical high wear areas on each part to ensure uniform wear before replacement is required.

Townley can also supply robust hose overflows, modulating valves and lined tubs to rebuild your complete assemblies.





Towniflex® Hose

Utility - The **Series 6000** is the Flagship of the hose line with the best utility for most applications. This medium duty hose is available in lengths 5 - 50 feet and 3 - 40 inch ID. With excellent flexibility for discharge duty and light suction, this hose can handle up to 150 PSI operating pressure.

Heavy Duty - For higher pressure ratings and field piping, our **Mining-Flex** is considered the workhorse of mine sites both for Matrix tailings discharge circuits. Designed for 150 - 300 PSI operating pressures.

Heavy Duty Flex - When faced with severe bending, the **Super-Mining-Flex** also known as "Flex-pipe" by our customers would be a great choice. The ring design enables flexing with a maximum bend radius of seven times the ID without deforming or crimping the wear tube. This is especially valuable for severe terrain and hose articulation. Designed for 150 - 300 PSI operating pressures.

Suction - For in-plant use, the heavily wire reinforced **Series 1000** hose is the perfect choice for pump suction service available in shorter lengths for this dedicated application.

Special Use - For low pressure gravity feed, higher pressure applications, wear tube selection, flange styles, taps, drains or lifting lugs please contact our Towniflex® engineering department for assistance with your particular specifications.



*This is the day which the LORD has made;
we will rejoice and be glad in it.*

– Psalms 118:24

TOWNLEY PRODUCT GUIDE

PROUD MEMBER



TOWNLEY

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