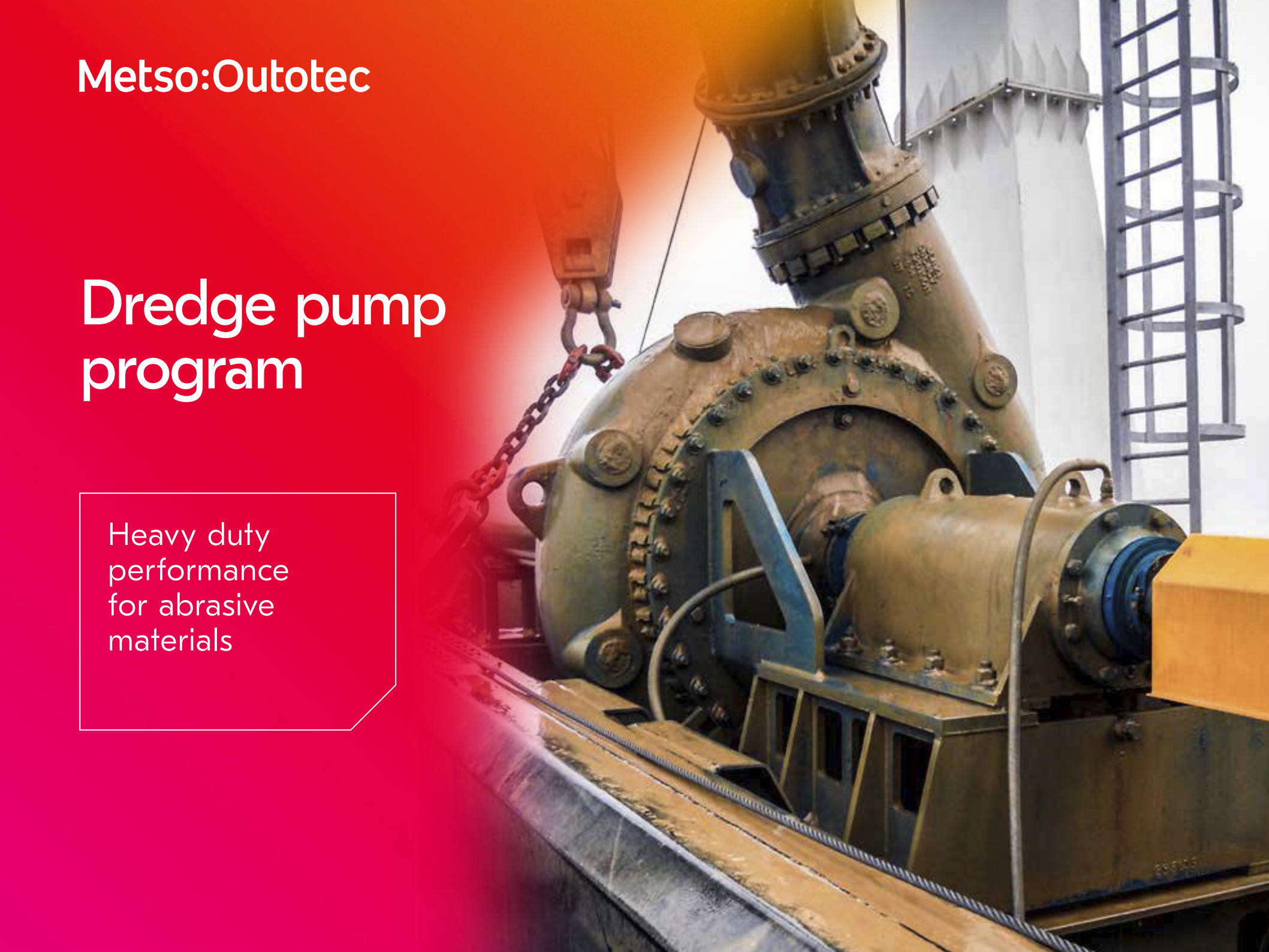
Metso:Outotec

Dredge pump program

Heavy duty performance for abrasive materials



Rough and rugged solutions for dredging



Dredging is not a gentle process. Dealing with large, heavy and abrasive materials, you need a pumping solution that is built to last and perform, all at the lowest cost of ownership.

Metso Outotec's range of heavy duty dredge pumps are designed specifically for dredging large and abrasive materials. Years of experience have brought design improvements that have resulted in products that offers the lowest cost of ownership in the industry when dredging abrasive material. Metso Outotec's dredge pump portfolio includes pumps from well-known brands such as Thomas and Marathon.

Thomas Simplicity Dredge Pumps

The Thomas "Simplicity" dredge pump is engineered for your specific operation. The rugged wet-end parts are designed to feature extra heavy metal sections – the extra weight pays off in performance and low maintenance cost.

Whether hull, deck, underwater or booster mounting, Metso Outotec can configure the pump and bearings to suit your specific application provide you with the best performance and lowest cost of operation

Typical applications:

- Dredging:
  - Sand and gravel
  - Contract dredging
  - Tailings
- Booster pump
- Sand waste pump
- Material transfer pump



Underwater Dredge Pump

Much like the deck or hull mounted dredge pumps, the Thomas Simplicity Underwater Dredge Pumps offers the same powerful performance and operational reliability while submerged.



Underwater dredge pumps are productive tools that take advantage of the pump being in close proximity to the abrasive material. This placement increases performance and production.

The dredging application is demanding with its abrasive material and durability demands and the same powerful performance ensures continuous operation.

Thomas Simplicity design features:

Long life
The heavy wearing parts are constructed from high alloy materials permitting continuous operations and pump design allows for easy replacement of parts.

Shaft
To meet rugged operating conditions, an oversized, high-strength alloy steel shaft is furnished.

Stuffing box/shaft sleeve
An extra deep stuffing box equipped with a lantern ring gives superior sealing of the shaft opening. Replaceable shaft sleeve allows for quick maintenance of the sealing surface.

Bearings
Heavy duty anti-friction roller bearings are housed in separate radial and thrust assemblies for maximum rigidity and alignment. The Metso Outotec Global bearing frames offer single piece housing and increased shaft size.

Wear adjustment
Adjusting screw allows axial adjustment of impeller, shaft and bearing assembly to compensate for wear, maintaining maximum pump efficiency.

Underwater Dredge Pump

Cantilevered pump design
The underwater pumps are furnished in the cantilevered design, eliminating the need for case feet. Additionally, the overhang of the impeller has been shortened to reduce shaft deflection and improve packing life.

One piece bearing housing & three bearing design
Bearing housing is solid, eliminating oil leakage at the splits. The three bearing design features two double row spherical radial bearings and one steep angle thrust bearing.

DuoCone floating oil seals
Developed for extreme service application. Precision machining on the housing and seal assures excellent performance. The special hardened steel alloy sealing rings are precision lapped to ensure positive sealing at the mating surfaces. Rubber torics position sealing rings and furnish the floating action to compensate for shaft deflection and endplay.

The specially lapped faces of the mating seal rings form a sealing band, which retains the oil lubricant and seals out all foreign material. As wear occurs, the contact band broadens, moving slowly inward until the inside diameter is reached. Thus, a simple visual check shows the amount of remaining life.



ArmorLok seal
The ArmorLok seal design features a "Metal to Metal" fit between the side liners and the case, eliminating the side liner wedge rubber seal used in previous designs. Parts are machined to close tolerances, affording reduced wear at the juncture of the case and liners.

Knockout ring
The knockout ring feature allows you to easily remove the pump impeller, saving time and reducing maintenance costs. The three piece tapered ring mechanism

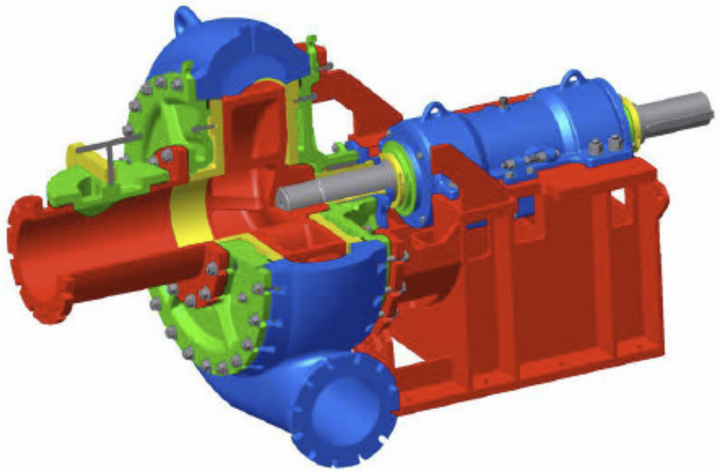
Thomas Simplicity — The name says it all

Standard features:

- Optional left or right rotation
- Optional discharge positions
- Three or four vane impellers
- Metal to metal fit
- Cantilevered design
- Knock out ring
- Over sized bearings
- Armor-lok seal on side liners
- Suction adapter with clean out
- Better packing and bearing life
- 360 degree ring support
- Less shaft deflection
- No case feet required

Simplicity design:

- Only four wear parts for easy maintenance
- Extra heavy metal sections for longer wear life and reduced





Thomas Simplicity pump advantages

- Most efficient volute and impeller designs
- Speed and Power to suit your service conditions
- Maximum size and percentage of solids
- Minimal repairs and downtime equals reduced operating costs
- Easy to assemble and maintain
- Equipped with suction clean-out for easy access to inspect pump

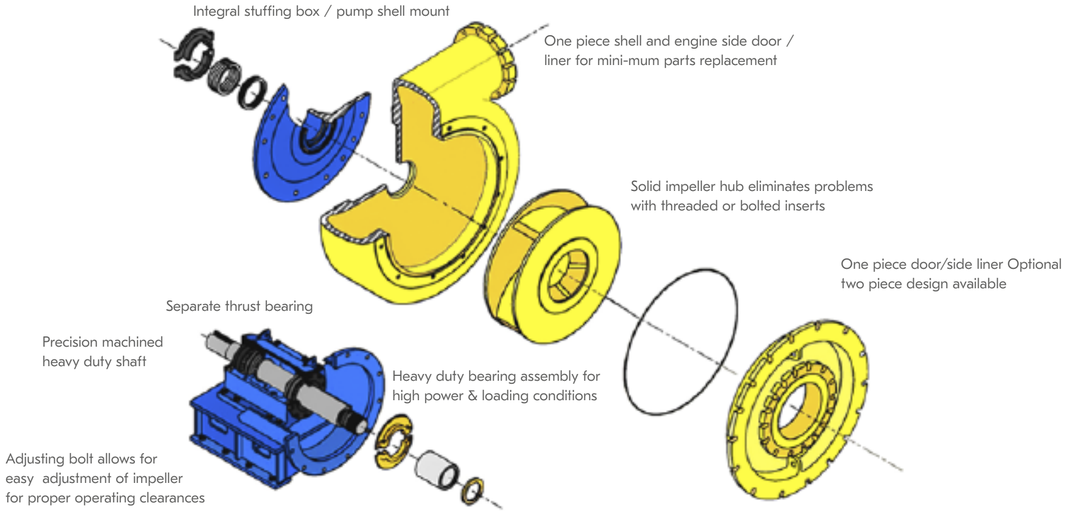


Customer benefits:

- Wear parts from abrasion and impact resistant materials
- Minimum repairs and downtime
- Maximum operating profits
- Maximum production
- Impeller sized for the application
- Pump sized for the application

Marathon pumps – For tough work and long wear

Marathon pumps are rugged, durable material handling pumps for medium to high-head applications. Made with oil lubricated bearings in a horizontally split housing for ease of inspection and maintenance.



Exploded pump assembly: Metso Outotec Marathon series type "WOSSL" shown

Marathon pumps standard features:

- Wet-ends consist of three or four components
- Heavy-duty shaft and bearing design
- Wear parts from Metso Outotec high chrome iron material
- Easily adapted for submersible applications



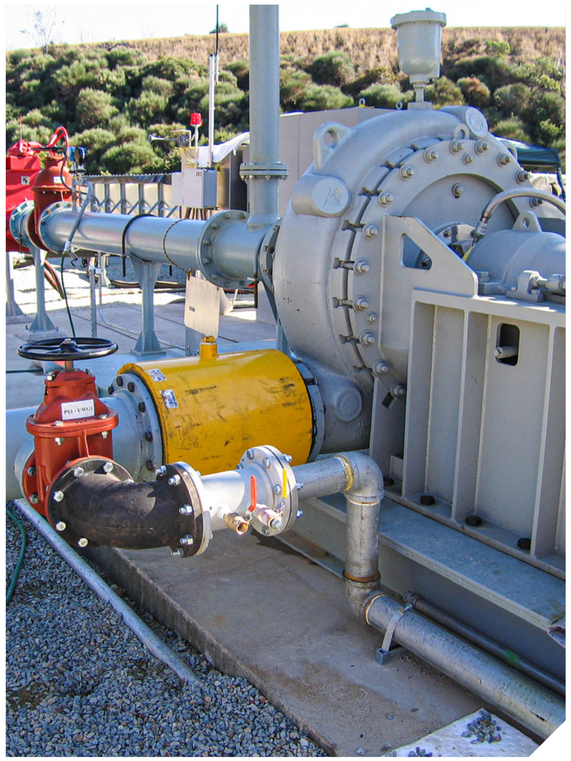
Full range of services and parts to keep your pumps up and running:



When you run pumps in your processes, you also run into familiar challenges. These can include things like higher than expected wear rates, turbulence and leaks, as well as issues with getting the right parts on time and getting the right expertise when you need it. Although pumps may be a small part of your process, they need to work reliably to ensure that your operations run smoothly

We provide a wide range of other additional dredge products





Metso Outotec is a frontrunner in sustainable technologies, end-to-end solutions and services for the aggregates, minerals processing and metals refining industries globally. By improving our customers' energy and water efficiency, increasing their productivity, and reducing environmental risks with our product and process expertise, we are the partner for positive change.

Metso Outotec is committed to limiting global warming to 1.5°C with Science Based Targets. We ranked 8th on the 2021 Global 100 list of the world's most sustainable companies.

Headquartered in Helsinki, Finland, Metso Outotec employs over 15,000 people in more than 50 countries and its sales for 2020 were about EUR 3.9 billion. The company is listed on the Nasdaq Helsinki.

Partner for positive change

Metso:Outotec

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