

# Dredge pump program

A circular inset image shows two workers in a factory. They are wearing white hard hats and safety glasses. The worker on the left is a woman with dark hair, and the worker on the right is a man. They are both looking towards the right side of the frame.

**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'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's dredge pump portfolio includes pumps from well-known brands such as Thomas and Marathon.





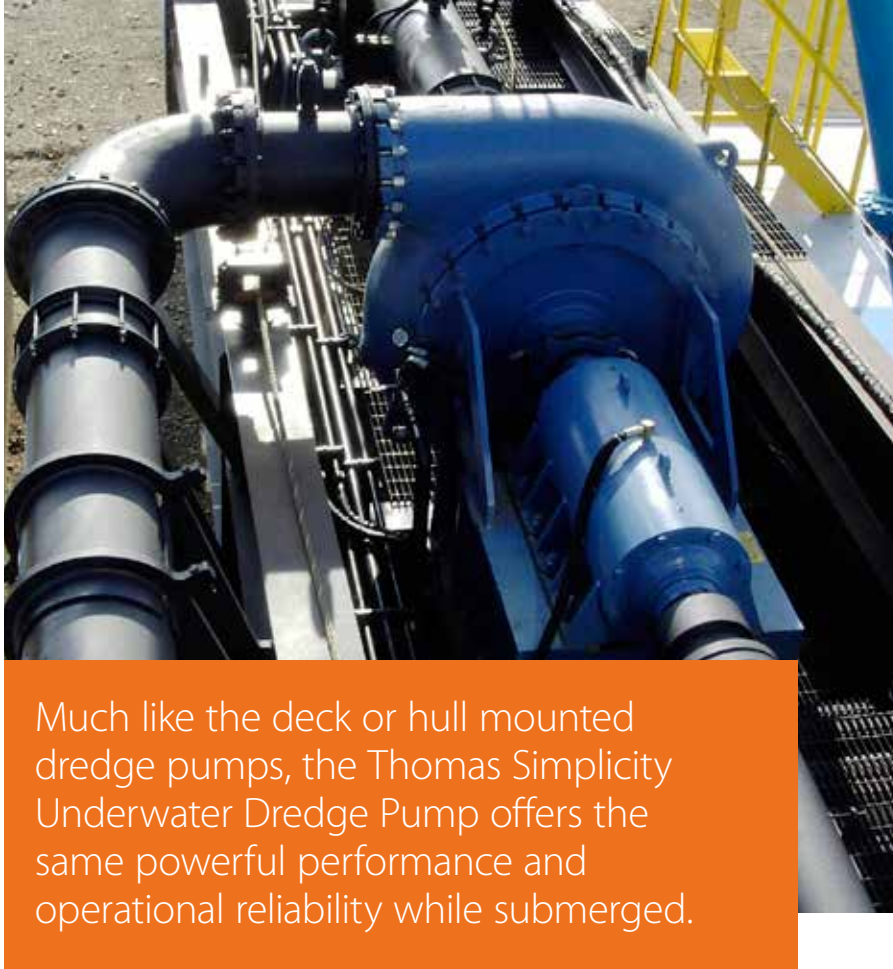
# Thomas Simplicity Dredge Pumps

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 can configure the pump and bearings to suit your specific application and 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



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

## Underwater Dredge Pump

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 and 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 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.

## Performance beneath the surface

### **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 acts to relieve tension on the impeller threads.



**Underwater pump**



## 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
- Reduced operating costs
- Easy to assemble and maintain
- Equipped with suction clean-out for easy access to inspect pump

**Booster pump**



### **Customers 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



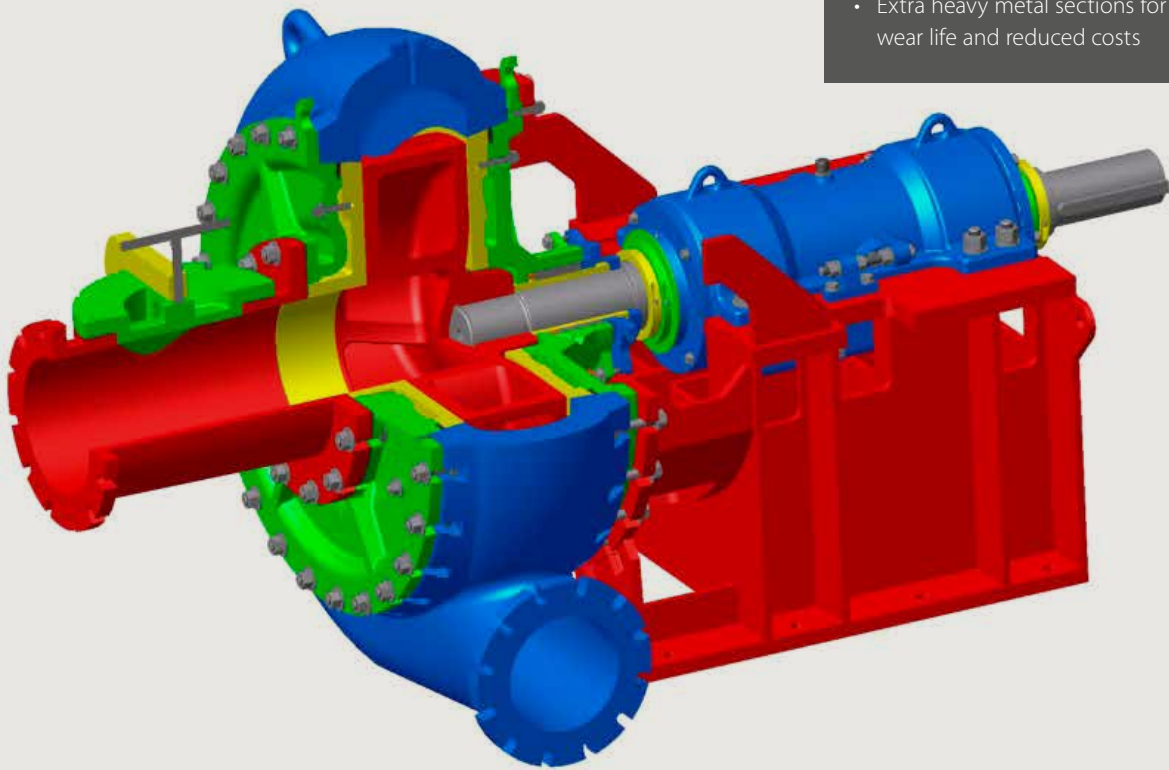
# Thomas Simplicity – The name says it all

## 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 costs

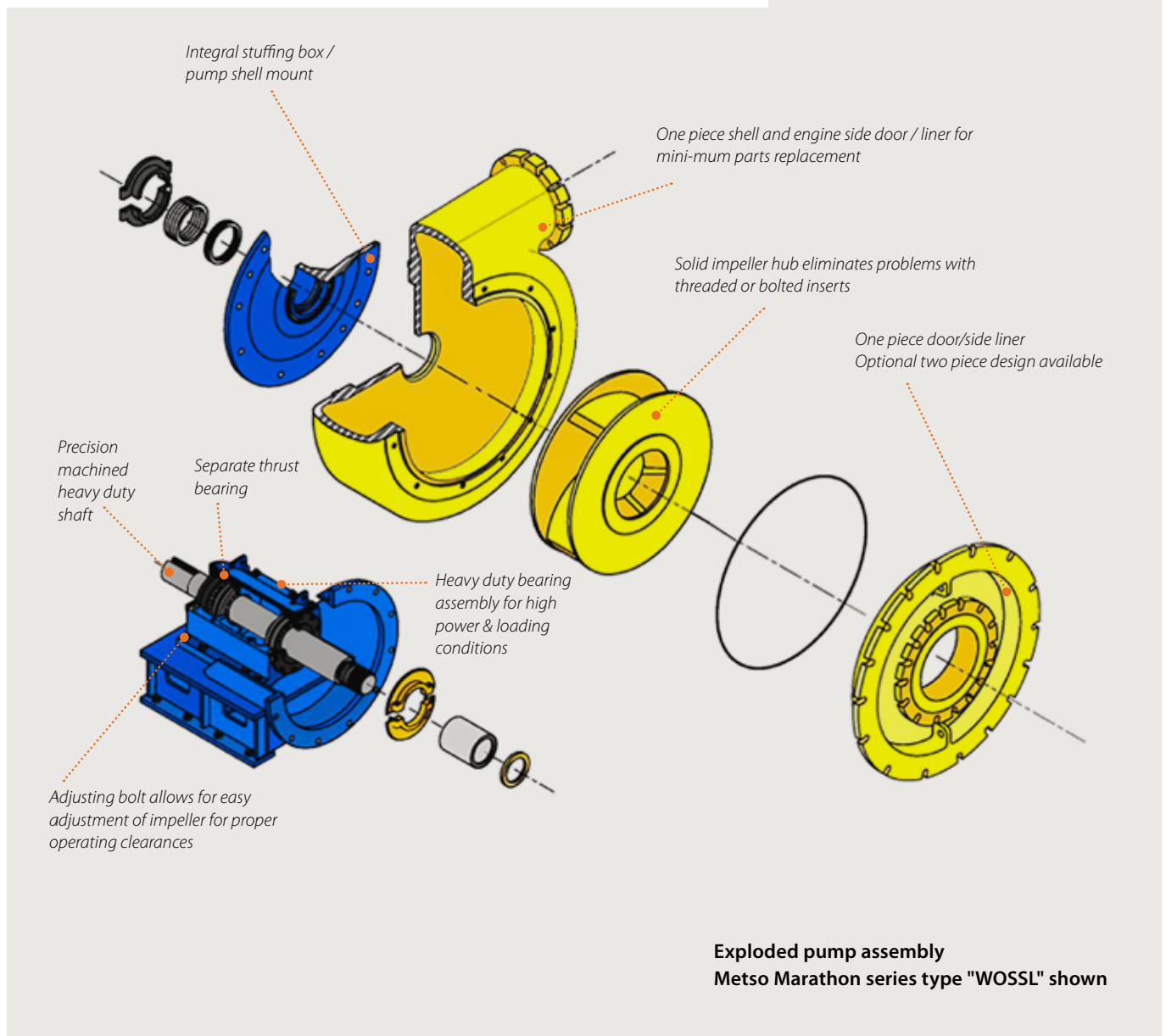


# Marathon pumps – For tough work and long wear

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.

## Marathon pumps include the following features:

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







We provide a wide range of other additional dredge products designed to work perfectly with our industry-leading pump solutions.



## Other dredge products:



### **Hydra Jet, Open suction**

for open suction dredges. Sizes 8" thru 24".

### **Hydra Jet, Twin**

for cutter-suction dredges and dredges equipped with ladders. Sizes 8" thru 24".



### **Material handling slurry hoses**

for slurry handling in various dredging applications.





**3xD Bends**  
for slurry handling in heavy wear applications.



**Cast elbows**  
of sizes 10" thru 18".

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Pumps information at  
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