

**TOBEE®**  
Centrifugal Slurry Pumps

**SP & SPR Heavy Duty Sump Pump**



# Tobee pumps are specialists in delivering and supporting Slurry Equipment Solutions including pumps, hydrocyclones, valves and wear resistant linings for global mining and mineral processing, the power sector, and general industry.

**We use our specialist slurry knowledge and experience from around the world to deliver reliable product and service solutions.**

**Our global network ensures that we are close to our customer wherever they base their local operations.**

**We strive to understand the customer's needs and to reduce their total cost of equipment ownership.**

**We aim to lead the market in application expertise, service-support and product development.**

The strength of Weir Minerals products lies in the superiority of our hydraulic designs and wear and corrosion resistant materials.

Weir Minerals has invested heavily in an ongoing programme of research and development which focuses on the areas of hydraulic design, materials technology and shaft sealing.

The Warman SP/SPR heavy duty cantilever sump pump is designed for applications requiring greater reliability and durability than conventional vertical process pumps can offer.

The heavy duty cantilever design makes the Warman SP/SPR sump pump ideally suited for heavy continuous handling of abrasive and corrosive liquids and slurries whilst submerged in sumps or pits.

## **SP/SPR sump pumps offer you:**

- **Reliability**  
- by design.
- **Low Spares costs**  
- from longer wear life.
- **Lower Energy costs**  
- from maintained efficiency.
- **After Sales Support**  
- second to none.

## **World class manufacturing**

Underlying our product capability is our introduction of the latest CAD CAM techniques and the implementation of lean manufacturing principles, keeping Weir Minerals at the forefront of manufacturing technology, delivering direct customer benefits.

Weir Minerals products are manufactured on all five continents by member companies of the Weir Minerals Division and Licensees in strategic locations around the world.

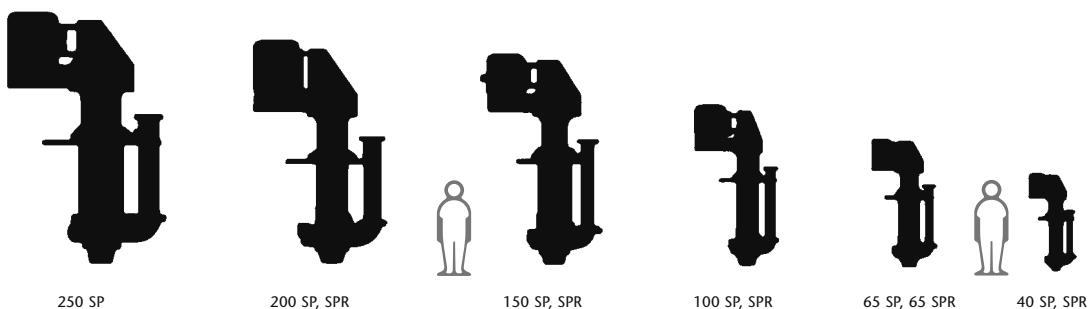
## **Worldwide sales and service**

Weir Minerals has the geographical presence to service all the major minerals markets around the world.

In Europe and the Middle East, Weir Minerals sales offices are located in Belgium, the Czech Republic, Finland, France, Germany, Hungary, Italy, Poland, Russia, Romania, Sweden, the U.A.E. , the UK and in the Ukraine. Supported by a comprehensive network of agents and representatives they provide professional, qualified technical assistance and service.

## **Meeting international standards**

The quality management systems of Weir Minerals Europe Limited in the UK are accredited to BS EN ISO 9001:2000 and our Environmental Management Systems are accredited to BS EN ISO 14001:1996.



## Tobee pump customers range from the world's largest mining and minerals multinationals to single pump set operators.

The rugged SP/SPR Heavy Duty Sump Pumps are available in a wide range of popular sizes to suit most pumping applications. Thousands of these pumps are proving their reliability and efficiency worldwide in:

- **Minerals processing**
- **Coal preparation**
- **Chemical processing**
- **Effluent handling**
- **Sand and gravel**

and almost every other tank, pit or hole-in-the-ground slurry handling situation.

The Warman SP/SPR design with either hard metal (SP) or elastomer covered (SPR) components makes it ideal for:

- **Abrasive and/or corrosive slurries**
- **Large particle sizes**
- **High density slurries**
- **Continuous or "snore" operation**
- **Heavy duties demanding cantilever shafts**



*left: One of six Warman 150SVSP pumps handling waste water from a brown coal mine in the Czech Republic. below/centre: Warman 100RVSP on a hydrocyclone feed duty in Italy, pumping with only the bottom inlet submerged.*



The SP/SPR Heavy Duty Sump Pumps are available in various standard lengths to suit common sump depths, for very deep sumps or where high shaft speeds limit the length of the pump, a suction extension pipe can be fitted to the bottom inlet to extend the depth of the pump by up to 2 metres.

Pumping is maintained even when the top inlet is not submerged, thus enabling the level of liquid to be lowered right down to the bottom inlet or the bottom of any suction extension pipe.

To suit special requirements other Warman pump wet ends can be fitted to the standard Warman SP pump dry end.

*top: Warman 65QSVP on a moving gantry in a Slag Sand Preparation Plant in Germany. below: Warman 100RVSP pump in a FGD plant in Poland.*



### **Less wear, less corrosion**

Wetted components are available in a wide range of alloys and elastomers, from which Weir Minerals selects the optimum combination of materials for maximum resistance to wear in virtually any industrial application, including those demanding both abrasion and corrosion resistance and where larger particles or high density slurries are encountered.

- Abrasion resistant A05 Ultrachrome® alloy.
- Abrasion/corrosion-resistant A49 Ultrachrome® alloy.
- Corrosion-resistant stainless steels.
- Natural and synthetic elastomers.

### **No submerged bearing failures**

The robust cantilever shaft avoids the need for lower submerged bearings - which are often the source of premature bearing failure.

- Heavy duty roller bearings, above mountingplate.
- No submerged bearings.
- Labyrinth/flinger bearing protection.
- Rigid, large diameter shaft.

### **No shaft sealing problems**

The vertical cantilever design requires no shaft seal.

### **No priming required**

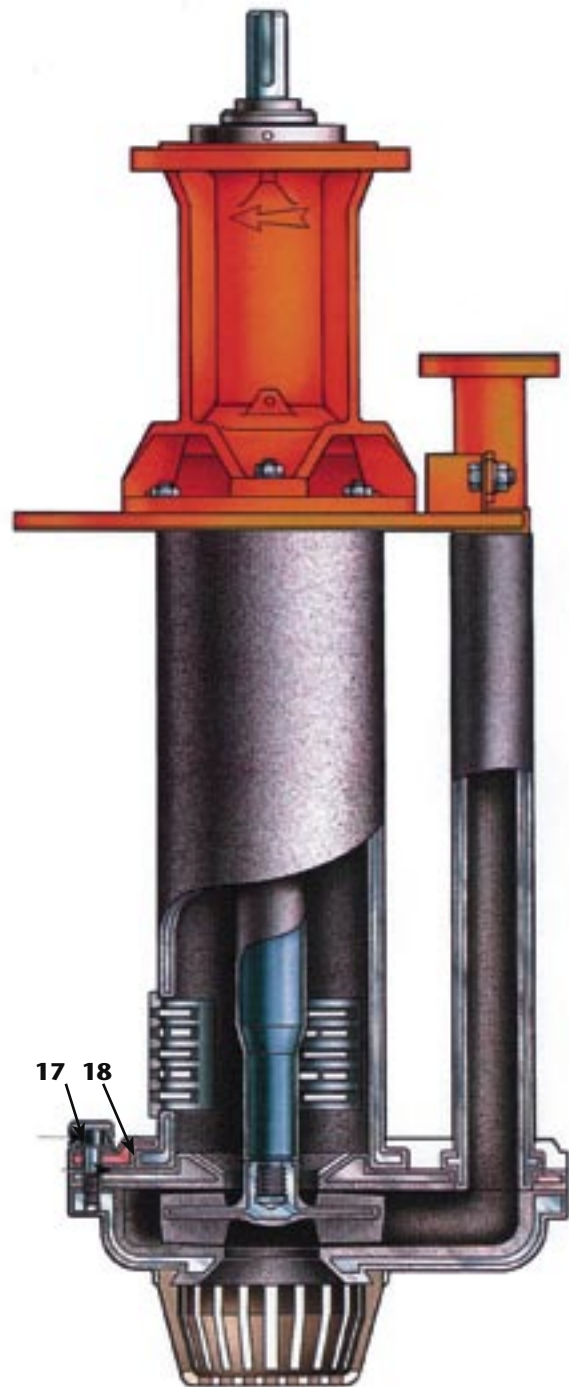
The top and bottom inlet design is ideally suited for "snore" conditions.

### **Less risk of blocking**

The screened inlets and large impeller passages reduce the risk of blockages.

### **Zero ancillary water costs**

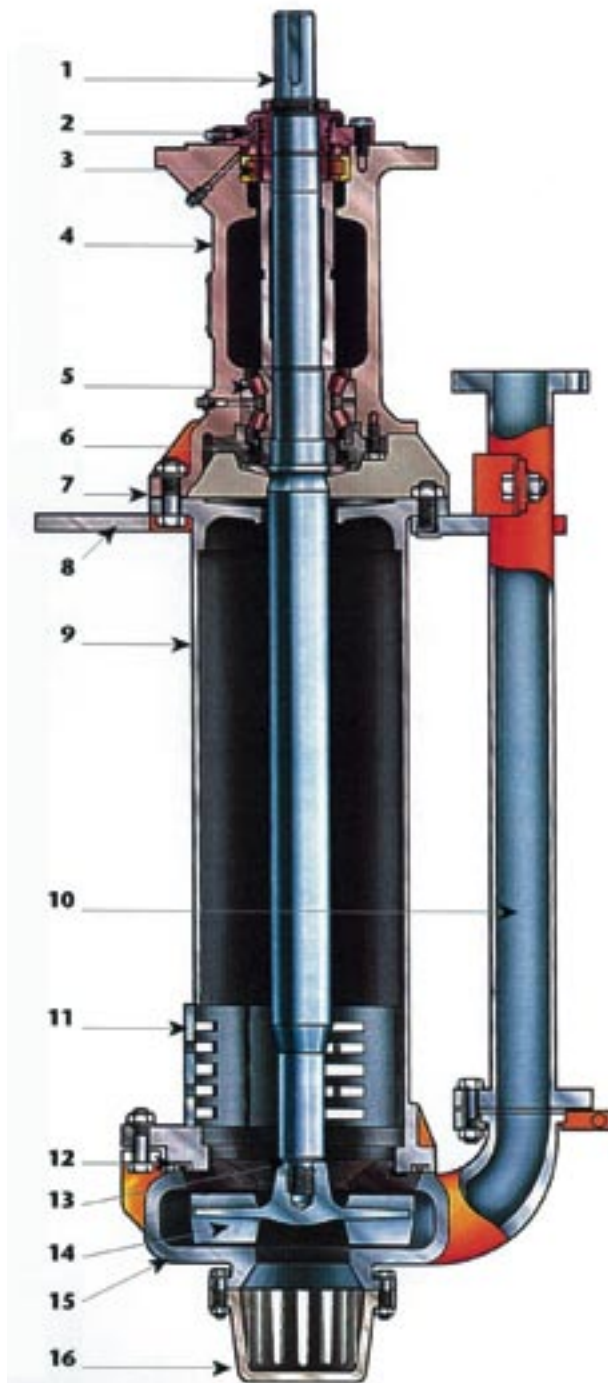
The vertical cantilever design with no gland or submerged bearings avoids the need for expensive gland or bearing flushing water.



### **Type "SPR"**

Wetted parts 100% elastomer protected  
for corrosive/abrasive duty

## The SP/SPR Heavy Duty Cantilever Sump Pump

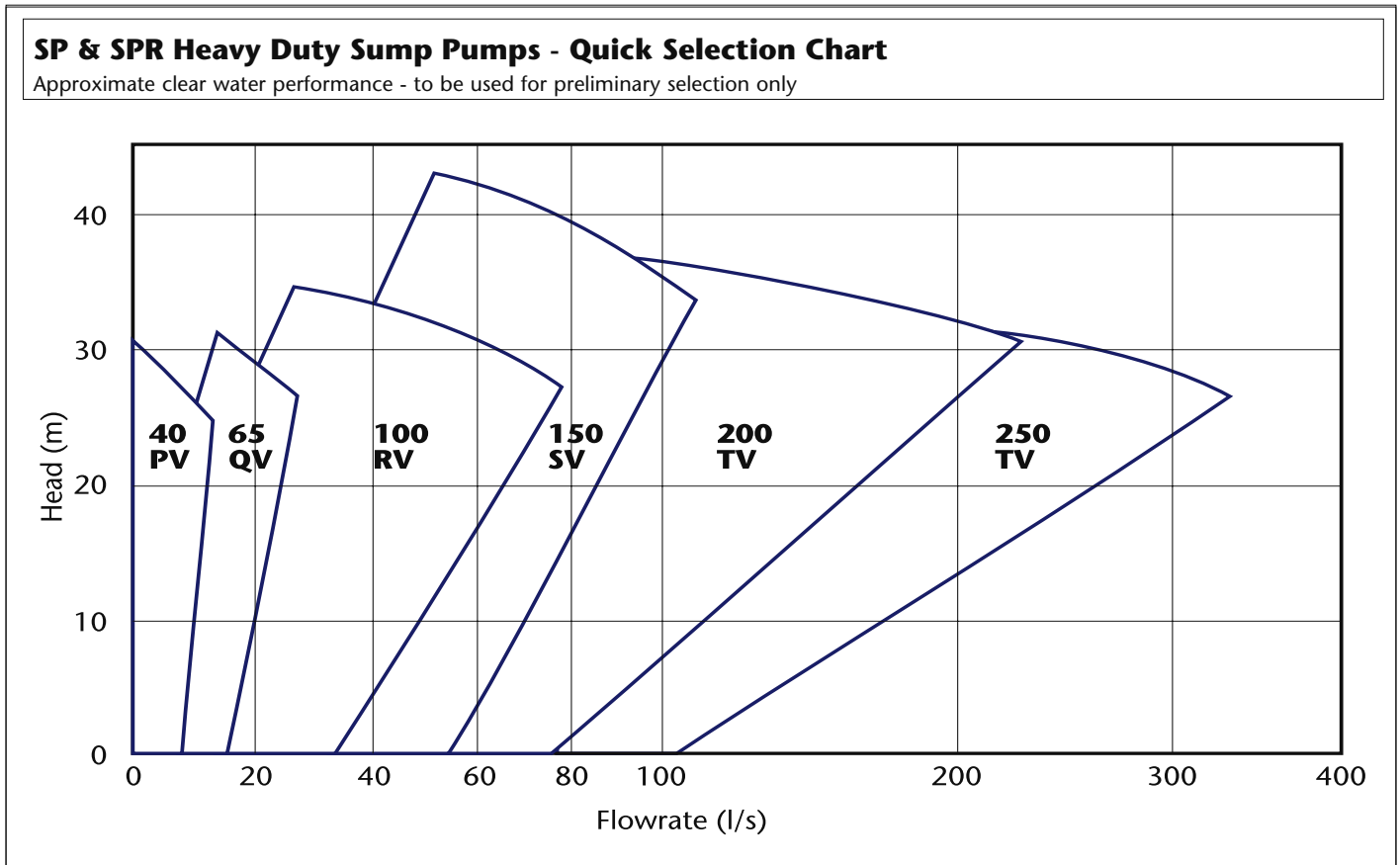


### Type "SP"

All metal for abrasive duty

- 1. Shaft**  
SP - Steel  
SPR - Elastomer covered steel
- 2. Upper Bearing Seal**  
Labyrinth, piston rings and grease purge
- 3. Upper Bearing**  
Heavy duty grease lubricated parallel roller
- 4. Bearing Housing**  
Robust heavy duty, SG iron
- 5. Lower Bearings**  
Heavy duty grease lubricated double taper roller
- 6. Lower Bearing Seal**  
Lip Seal and Flinger
- 7. Shims**  
Allow vertical adjustment of the impeller in the casing
- 8. Mounting Plate**  
SP - Steel  
SPR - Elastomer covered steel
- 9. Column**  
SP - Steel  
SPR - Elastomer covered steel
- 10. Discharge Pipe**  
SP - Steel  
SPR - Elastomer covered steel
- 11. Upper Strainer**  
SP - Stainless Steel  
SPR - Polyurethane
- 12. Back Liner Seal**  
SP - Elastomer
- 13. Impeller Thread Seal**  
SP - Elastomer
- 14. Impeller**  
SP - UltraChrome®  
SPR - Elastomer moulded metal
- 15. Casing**  
SP - UltraChrome®  
SPR - Elastomer moulded metal
- 16. Lower Strainer**  
SP - Polyurethane  
SPR - Elastomer moulded metal
- 17. Socket Head Protectors**  
SPR - Elastomer moulded
- 18. Column Clamp**  
SPR - Elastomer moulded metal

## Quick selection chart



### Product Information Software

Weir Minerals product information software is available for download from the Weir Minerals website or on CD from your local sales office.

The Weir Minerals Catalogue wsCAT was developed by the Pump Technology Centre and is an integrated browser of two modules :

**Pump performance curves**, which are downloadable and unlocked by obtaining a key obtained via email from your local sales office, and

**Technical reference** which, due to file size, is only available on the CD version.

The technical reference information includes application data, drawings, engineering data, marketing data and operation and maintenance manuals.

