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# Hydraulically Driven Submersible Pump

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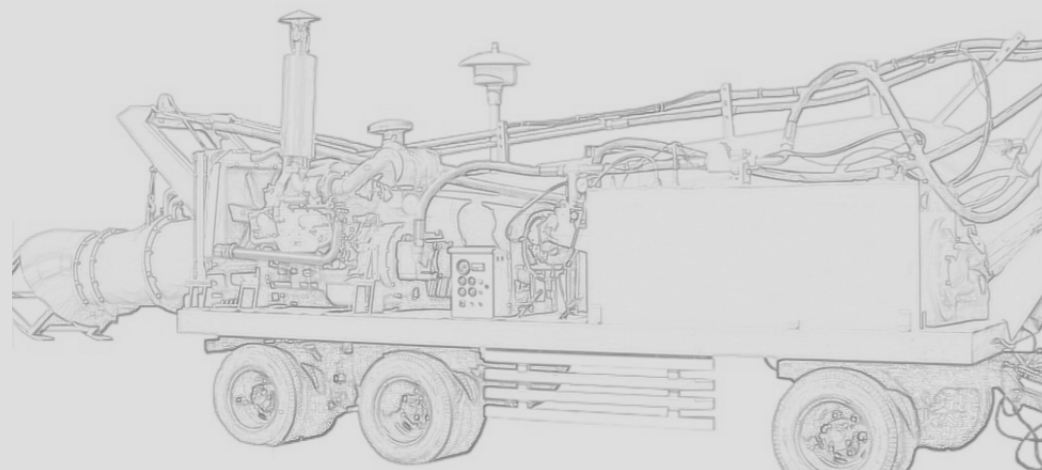
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## Hydraulically Driven Submersible Pump

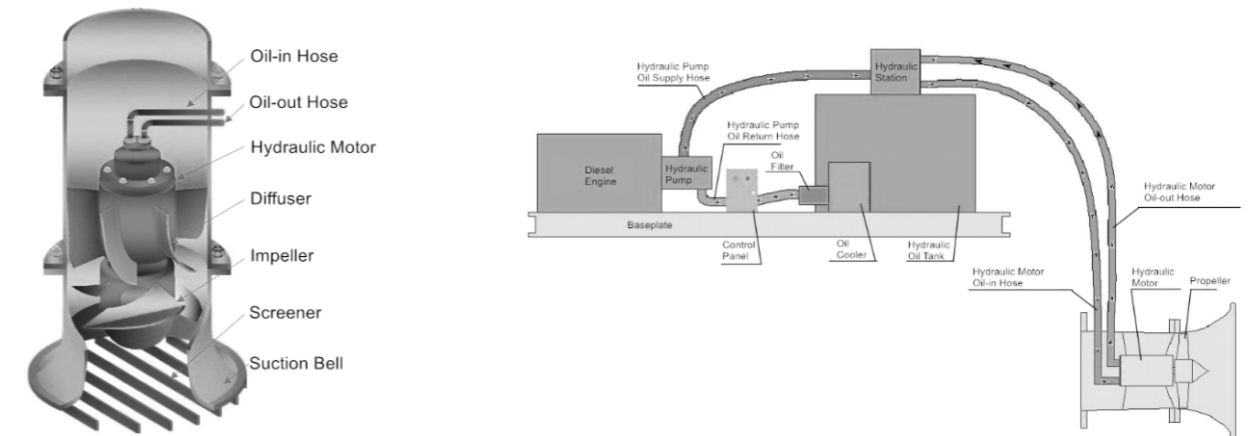
TYP series submersible pump uses power of hydraulic to drive, which is different the traditional motor or diesel engine driven pumps. It replaces a fixed motor, long rigid shaft connection with a flexible connection, which allows a free range of lifting up and down when this pump is integrated to be a portable station.

Besides a portable application, TYP pump can be installed similarly with traditional submersible pumps, vertically, horizontally or inclinedly, but with hydraulic supply drive.

Based on its special design and advantages over traditional pump station, TYP series can play an important role especially in flood control and engineering water drainage.



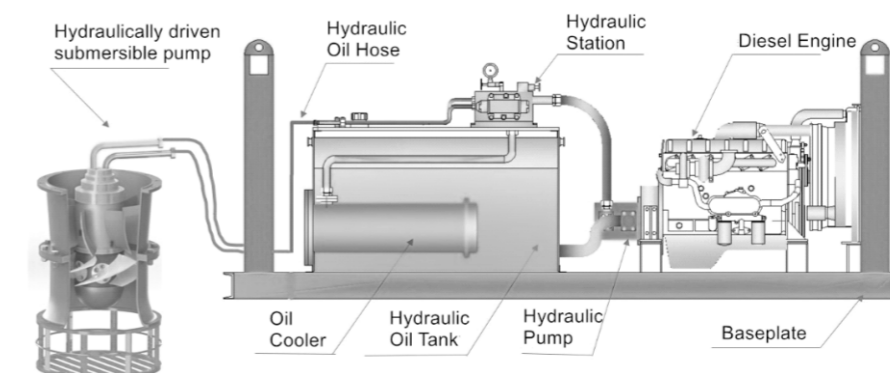
### How It Works



### What It Makes Up Of

As shown in the picture below, a typical hydraulically driven pump set is made up of four main sections

1. **Pump unit**, including submersible propeller/mixed flow pump, suction strainer, hydraulic motor, discharge pipe and discharge rubber/PVC hose.
2. **Drive unit**, including diesel engine, hydraulic pump, hydraulic station, hydraulic oil hose and control panel.
3. **Hydraulic oil hoses** to drive pump.
4. **Common baseplate**, which can be fixed on trailer and truck.



## Why It Is Advantaged

- **Wide scope of application**

As no external electric power supply and facility are required, TYP series needs only its own diesel engine hydraulic drive unit to operate pump. It has high mobility and wide range of application.

- **Low investment**

High cost of waterwork and pump house construction is not required, which saves a lot of infrastructure construction and pump station maintenance.

- **Flexible**

It can be delivered rapidly into place by trailer or truck, and is easy to operate. Pump unit is connected to drive unit by flexible hoses, and can be separated by 50-200 meters if necessary. Pump unit can be installed in several methods, and doesn't need sealing and adjustment, which makes it highly reliable.

- **Small size**

Pump unit is smaller and lighter than traditional submersible pump. It can be installed rapidly and easily.

- **Non-clogging**

Open type axial/mixed flow impeller makes pump very non-clogging and suitable for many complicated conditions.

- **High-efficiency, low-NPSHr pump hydraulics.**

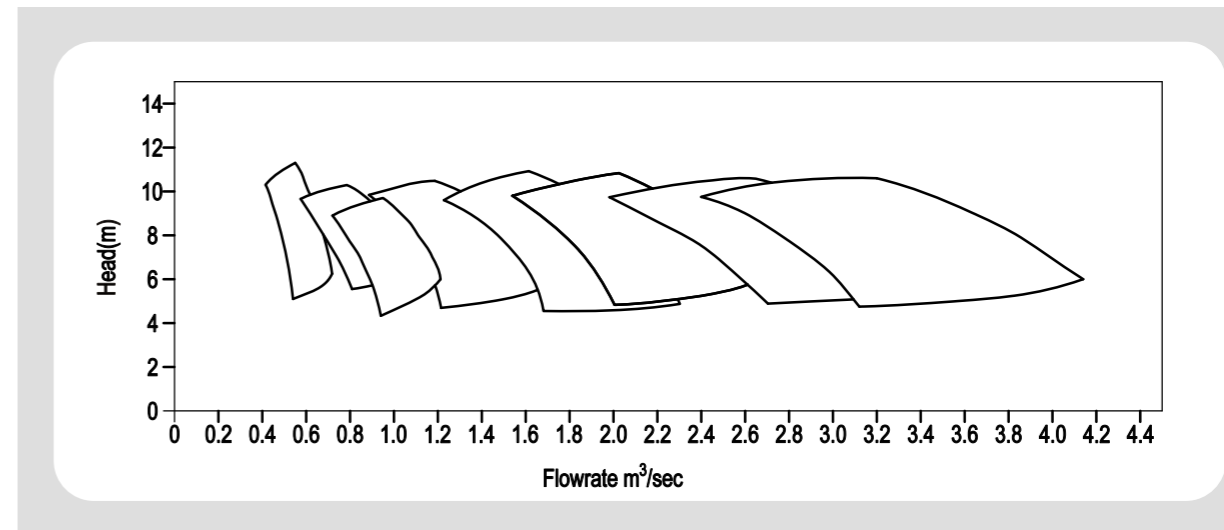
- **High utilization**

By using it as a mobile emergent equipment, it can be delivered to place via general-purpose transport vehicles and convenient for professional operation and service. By working in coordination with stationary pump station, benefit range of irrigated area can be enlarged efficiently.

- **Easy operation**

Modular operation and monitoring. Easy and reliable.

## Performance Chart



Note: For medium-head (10-20m) pump, please contact manufacturer for special proposal.

## Material and construction

		Standard	Option
Pump unit	Impeller vanes	SS321	SS420/SS304
	Diffuser/Discharge bowl	Cast steel	Aluminum alloy
	Shaft	AISI420	
	Discharge pipe	Steel St37.2	
	Discharge hose	Durable rubber, High-strength, 10 years aging-resistance	
	Drive hydraulic oil hoses	Manufacturer-standard	
Drive unit	Diesel engine	Chinese reliable brand	Cummins
	Hydraulic pump	Manufacturer-standard	
	Oil hoses	Manufacturer-standard	
	Control panel	IP65	
Baseplate	Baseplate	Steel St37.2	
Painting	wetted parts by acrylic acid primer and Polyester finish painting		

# Hydraulically Driven Submersible Pump

# Typical Applications and Installation Types

## Emergency Flood Control and Water Drainage

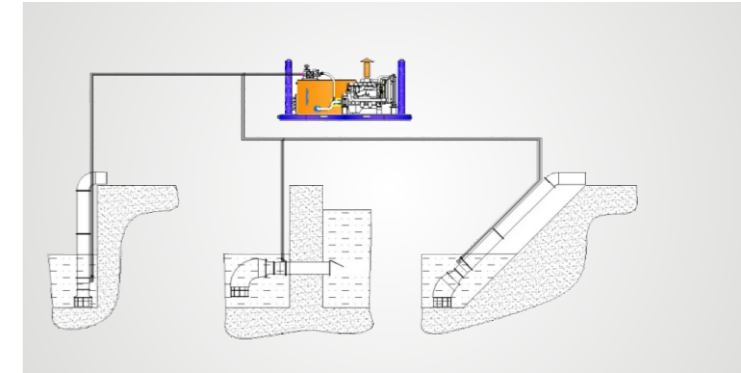
When traditional stationary pumping stations fail to work because of being flooded or washed away by heavy flood, or drought, and municipal electric supply is out, a hydraulically driven submersible pump unit

can be delivered to site emergently by fixing on trailer, truck or container, and drain water after quick connection and lifting. Pump unit can be put 50-100 meters far away from hydraulic station.



## Basement and Underground Garage Drainage

Pump unit and drive unit are installed on a baseplate and delivered to site by truck. Pump unit is carried to basement or underground garage where large machinery can't get access to, and then drain water after connecting hydraulic oil hoses and water drainage hoses.

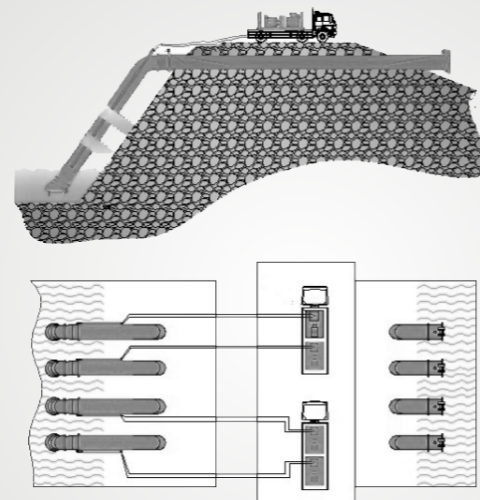


## Construction Site Drainage

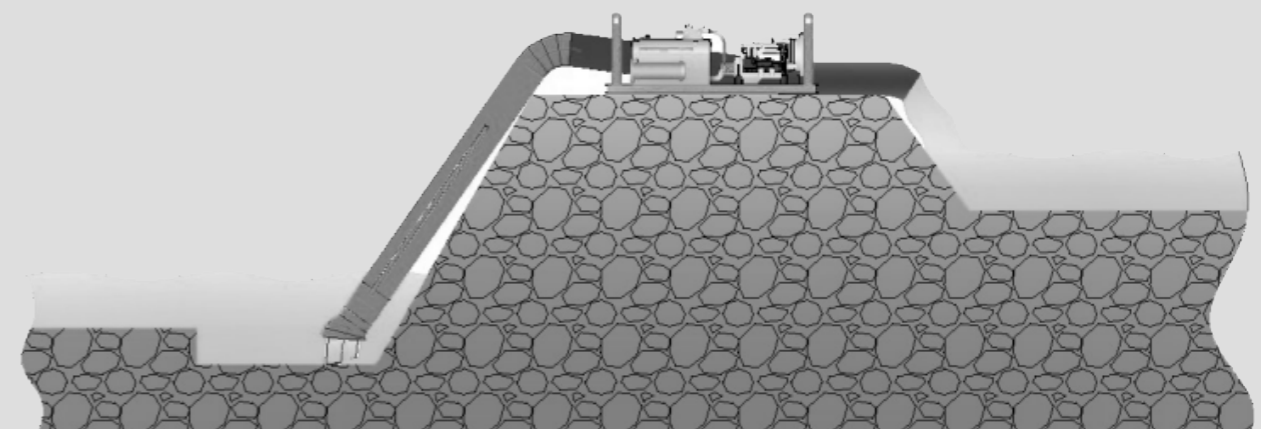


## Auxiliary to stationary pumping stations

Traditional pumping stations are designed based on once-in-a-decade/twenty-years/fifty-years flood, so the usage is actually too low. If hydraulically driven submersible pumps can be applied, pump station design would be simplified. It needs only construction of intake and discharge reservoirs and a dam, and install pumps on dam. Pump house is not required any more. The drive units are stored in warehouse and delivered to dam drainage is needed.



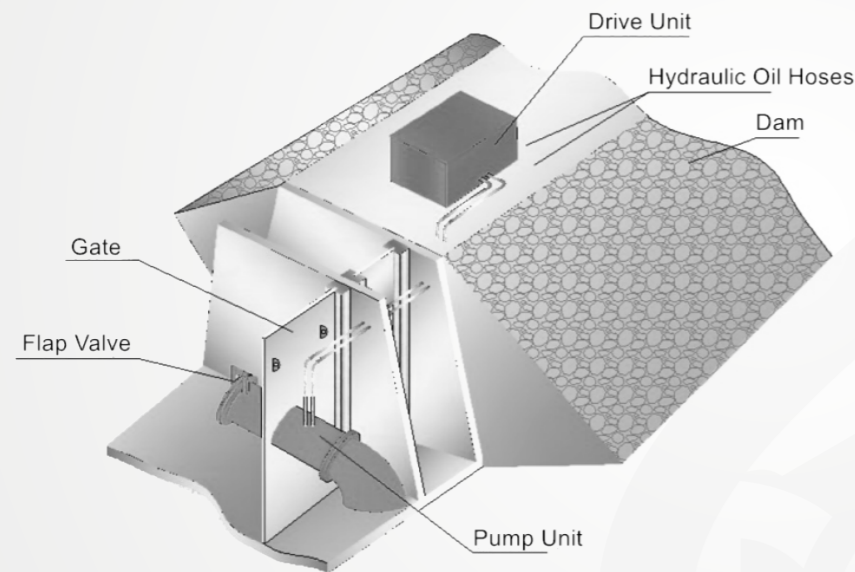
## River Regulation



## Integrated Pumping Gate

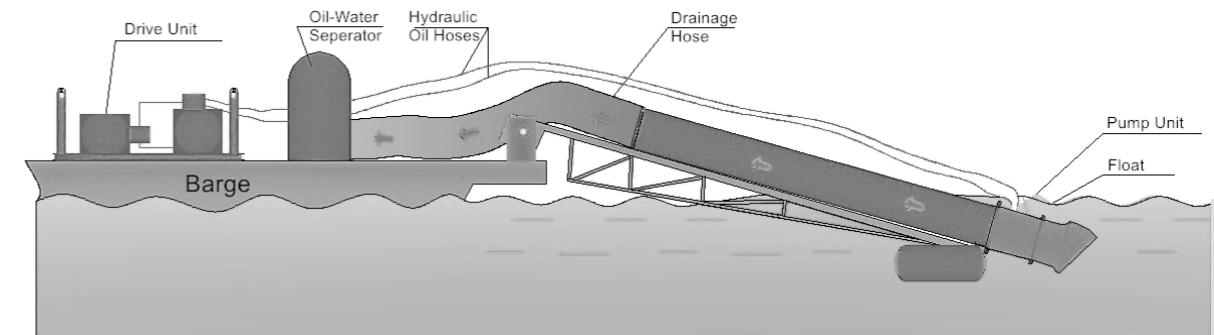
In traditional pumping stations, pumps are arranged separately from gate, and gate closes when draining water, opens to let water flow when drainage is not needed. However, this type of arrangement makes cross-section of river small and reduces capacity of flood drainage and water exchange, also causes high cost, long construction time and large footprint.

In an integrated pumping gate station, gate is not only a water block part, but also the support of pump. Hydraulically driven pump is installed in gate and requires no electric supply, which saves a lot of waterwork and transformer substation costs and operation cost. Also it increases the capacity of flood drainage and water exchange, and makes footprint smaller, construction time shorter and overall investment lower.

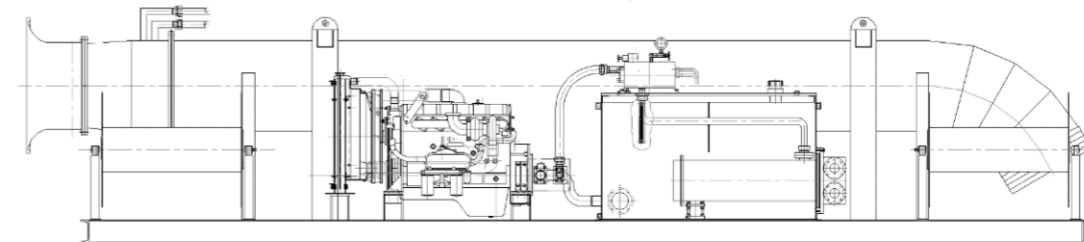
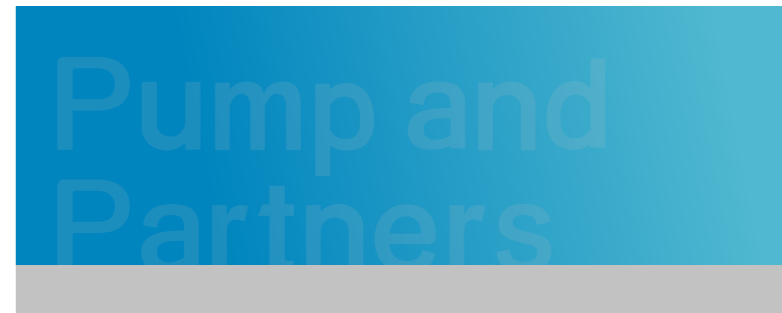


## Ship-carrying Application

This type of installation and application is mainly used for surface wastewater treatment in rivers, lakes and seas. Install the complete pump set at shipside, when it works, just lower down and slide the pump section to a auto-coupling device, and float along with waves by using a float support. Liquids can be pumped to various water treatment devices via water hoses, such as water-filter separator, filters and water conditioning equipment.



Please inform us the lengths of discharge pipe, discharge hoses, hydraulic oil hoses before order. For any other special requirements, please also let us know.



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