



Sisimat Uluslararası
Arıtma Makinaları
İnşaat Mühendislik
Sanayi ve Tic. A.Ş.



**HORIZONTAL SHAFT
SURFACE AERATORS**



HORIZONTAL SHAFT SURFACE AERATORS (BRUSH AERATORS)

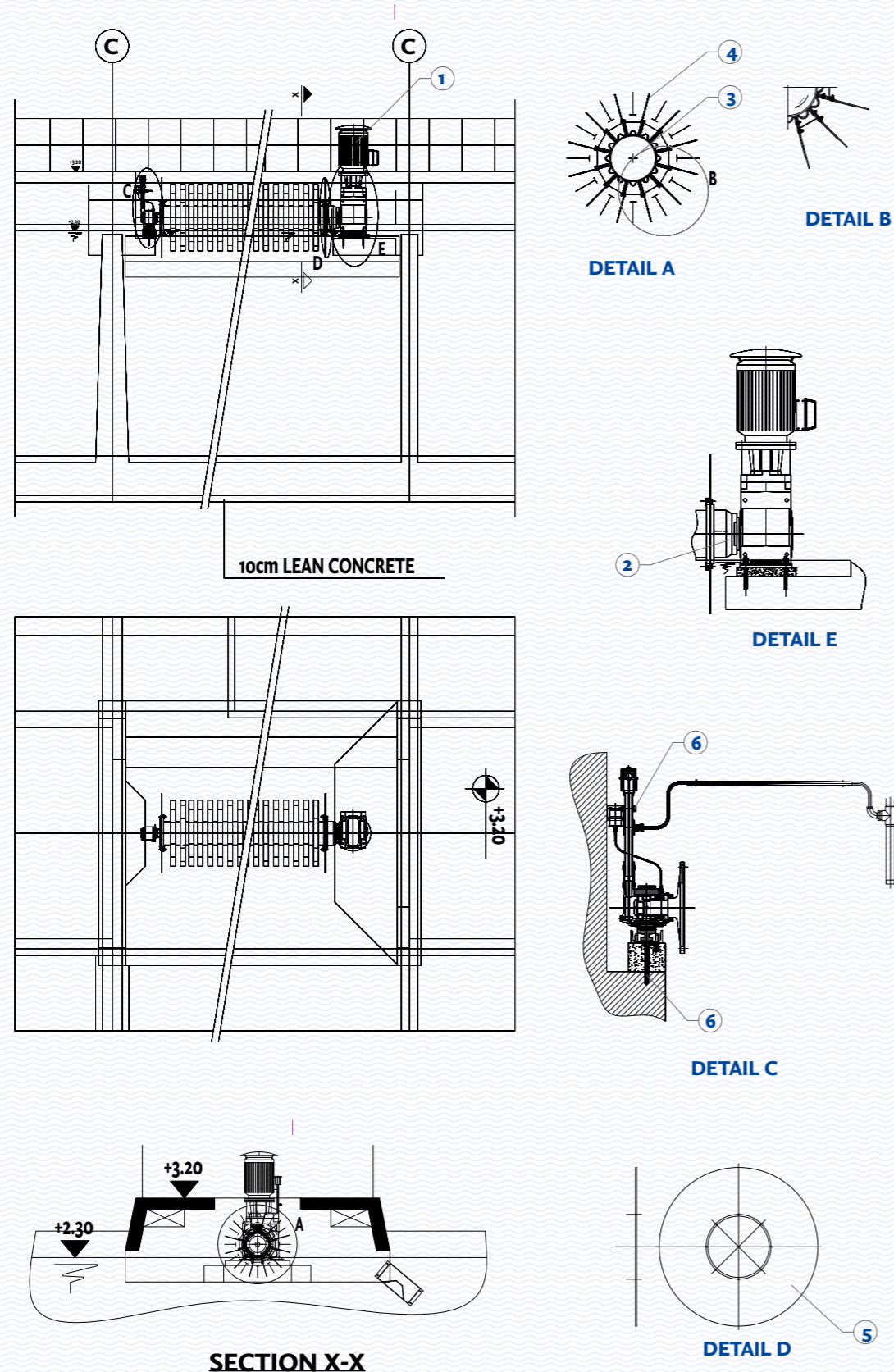
Wastewater aeration is the process of introducing oxygen into wastewater to facilitate the aerobic bio-degradation of pollutants. Surface aerators agitate the wastewater vigorously, entraining air in the wastewater and causing a rapid change of the air-water interface to facilitate solution of the air. The oxygen-enriched water is dispersed and mixed, resulting in highly effective aeration.

Sismat Uluslararası horizontal shaft surface aerators (brush aerators) are used for oxygen transfer and directional mixing and provide high efficient aeration, while maintaining sufficient mixing of activated sludge, wastewater and oxygen in the basin.

FEATURES AND BENEFITS OF SISMAT ULUSLARARASI HORIZONTAL SHAFT SURFACE AERATORS:

- Low operating and maintenance costs
- Trouble-free performance
- High oxygen transfer efficiency
- Resistant to corrosion and abrasion
- High efficiency
- Long life-time
- Manufactured up to 9,0 m length

Typical Horizontal Shaft Surface Aerator & Components



OUR HORIZONTAL SHAFT SURFACE AERATOR COMPONENTS

	Horizontal Shaft Surface Aerator Components	Materials Available
1	Drive unit	According to norm of manufacturer
2	Clutch	According to norm of manufacturer
3	Shaft	Carbon steel or stainless steel grade, AISI304, AISI304L, AISI316, AISI316L, AISI316Ti, DUPLEX or SUPER DUPLEX
4	Blade	Carbon steel or stainless steel grade, AISI304, AISI304L, AISI316, AISI316L, AISI316Ti, DUPLEX or SUPER DUPLEX
5	Splash disc	Carbon steel or stainless steel grade, AISI304, AISI304L, AISI316, AISI316L, AISI316Ti, DUPLEX or SUPER DUPLEX
6	Fasteners	A2, A4 , DUPLEX or SUPER DUPLEX

HORIZONTAL SHAFT SURFACE AERATOR

Horizontal shaft surface aerator consists of a paddle wheel or brush, partly submerged in the wastewater, revolving on a horizontal axis. Air is absorbed by surface contact and by droplets of water thrown through the air by the paddle mechanism. This type of aerators consists of blades mounted on the pipe forming the main shaft and is generally used to provide aeration and circulation in oxidation ditches. One end of the main shaft is fixed to the bedding, while the other end is connected to the drive unit. Both ends of the aerator need to be protected against splashes.

Horizontal shaft surface aerator blades hit the air and also the atmospheric oxygen in the water surface. A turbulently agitated air bubble-water mixture builds behind the rotor. Simultaneous rotor operation creates flow current as well as intensive circulation in the basin. Maximizing the staying time of the air bubbles and achieving necessary depth effect, requires guide walls, even brake walls. Normally, a weir flap regulates inlet, by keeping the water level and immersion depth regulated.

Horizontal Shaft Surface Aerator Capacity Table

Model	Diameter (mm)	Rotor Length (mm)	Oxygenation Capacity (kg O ₂ /h)	Oxygenation Efficiency (kg O ₂ /kwh)
YMH100.4500	1000	4500	40	1,89
YMH100.6000	1000	6000	56	2,0
YMH100.9000	1000	9000	85	2,0

Horizontal shaft surface aerator consists primarily the following:

1. MOTOR AND GEARING

The gearing is designed as a straight bevel gear pair and is mounted to a ground plate. The motor is perpendicularly flange-mounted in an upright position and is connected to the gearing by an elastic clutch for larger capacities. The gearing is filled with oil and protected from wetness penetration by highly raised moisture filter. The drive wheel is protected by a ring seal with regreasable fat stopper and spinning disc.

2. CLUTCH

An angel elastic special support clutch keeps the power transfer and the intake of supporting energy at high tolerances free from angle allowances. The clutch is attached to the drive wheel and is flange-mounted to the rotor wheel.

3. ROTOR WITH BLADING

The rotor consists of a stable, strong walled steel pipe. The blading is clamped to prevent loosening while in constant operation. The blades are made of pressed, hot galvanized sheet steel. The end flanges are designed like the welding neck flange to prevent spikes. The blading is slightly twisted back to prevent water shock. The ends of the blades are equipped with splash throwers to protect gearing and the outer bearings.

4. OUTER BEARINGS

Two roller bearings in an oil bath capsule build the outer bearings. The capsule is installed in a floating protective shall bedding. Aeration is pumped into the gearing by means of piping above the walkway, thus preventing water penetration. High quality armored running gear sealing as well as labyrinth ring seal with a regreasable fat stopper and spinning disc protect the drive wheel.

ADDITIONAL EQUIPMENT

- Guide walls and brake walls with fixing devices
- Ice screens
- Aerosol aprons
- Accessible walkway covers with aerosol protectors
- Shutter weirs for water level regulation





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