SYSTEMS FOR PUMPING AND IRRIGATION

Nettuno CYCLONE motorpumps

SELF-PRIMING VOLUMETRIC

www.nettuno-irrigazione.com

EN 2015

The Nettuno® motor pumps of the CYCLONE series combine flexibility and independent of a mobile motor pump unit with proven technology of a rotary lobe pump.
Part of the volumetric pumps, this type of pump is self-priming, without valves and extremely flexible.
They are ideal for transporting almost all substances, in continuous mode and for dosage proportional to the number of revolutions

Features

- High suction capacity up to 9 m of water column;
- Resistant to dry operation Bidirectional;
- Continuous operation and low noise;
- Low cost of life cycle;
- Easy to use thanks to the electronic engine management.

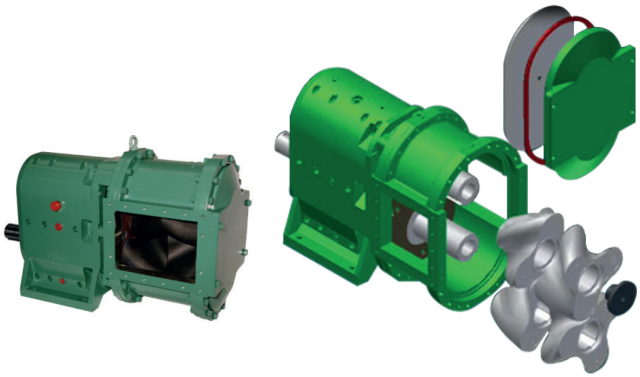
SUITABLE FOR HANDLING LIQUIDS AND SUBSTANCES

Substances with low to high viscosity and with abrasive substances
(from 1 mPas to 1 million mPas)

Substances with solid bodies in wastewater
(passage up to 60 mm)

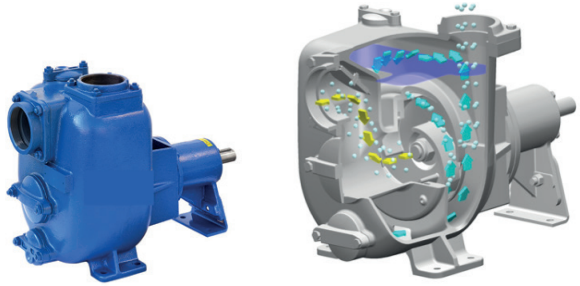
High flow rate and pressures:
Adjustable flow rate up to 950 m3/h
Pressures up to 4 bar

STRENGTHS IN COMPARISON WITH A CENTRIFUGAL PUMP



LOBE PUMP

vs



CENTRIFUGAL PUMP

SPEED REGULATION

Pump run always with the same efficient, constant performance curve (not like a centrifugal pump).

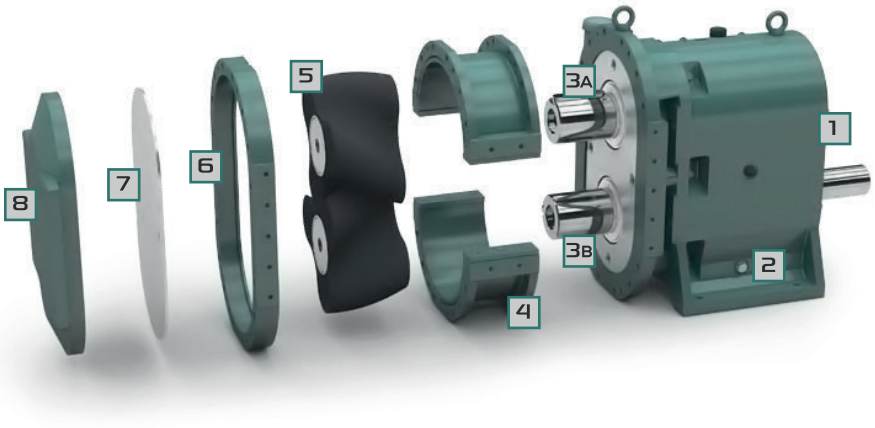
HIGH VISCOSITY LIQUID PUMPING

An important difference between a lobe Netzsch pump and a centrifugal pump is that the latter is unable to pump fluids different from water or, at most, wastewater.
As seen in previous pages, Netzsch offers as standard configuration the possibility of handling fluids with 500 mPa-s density (e.g. engine oil has 200 mPa-s at 20°C) but can reach up to 5000 mPa-s

SIMPLE CONSTRUCTION FORM - EASY MAINTENANCE FROM WEAR PARTS

As you can see, the above image shows a comparison between a Netzsch lobe pump and a self-priming centrifugal pump.
As you can see the Netzsch® pump has a very linear constructive shape and, thanks to this conception, it allows easier and faster maintenance.

The Nettuno brand CYCLONE motor pump range is equipped with pumps of the German NETZSCH, leader in the mobile version distribution.



1 drive shaft
2 housing
3 shaft
4 hull
5 lobe rotor
6 plate
7 wear plate
8 front cover

- The drive is attached to the drive shaft 1.
- The drive shaft 1 is the extension of one of the two shafts 3 of the housing 2
- In the housing 2 the movement of the drive shaft 1 is transmitted to shaft 3B which turns in opposite direction.
- The pump housing is formed by the front plate of the housing 2, the two hulls 4, the plate 6, the wear plates 7 and the cover plate 8.
- The lobe rotors 5 transport the medium within the pump housing.
- There are different forms and number of lobe rotors 5 depending on the type and size of the Netzsch - Rotary Lobe Pump

NETZSCH

NETZSCH GSS Technology - Gearbox Security System

Provides positive separation between pump head/product seals and pump gear box. Protects bearing and timing gears extending operational life time. Eliminates product ingress into gear box in the unlikely event of product seal failure. Eliminates the risk of gear oil ingress into the pump media. Reduces product seal replacement costs

Pump General characteristics

Direction of rotation	bidirectional/reversible flow
name plate material	stainless steel (self-adhesive)

Drive housing

Material	0.6025
drive oil	SAE-75W- 90-Unigear/S
Oil-gauge-glas	with

Housing

housing material	0.6025
wear plate material	Hardox 400, 500 or XAR400
housing seals	NBR/cellular rubber

WATCH THE VIDEO

Shaft seals

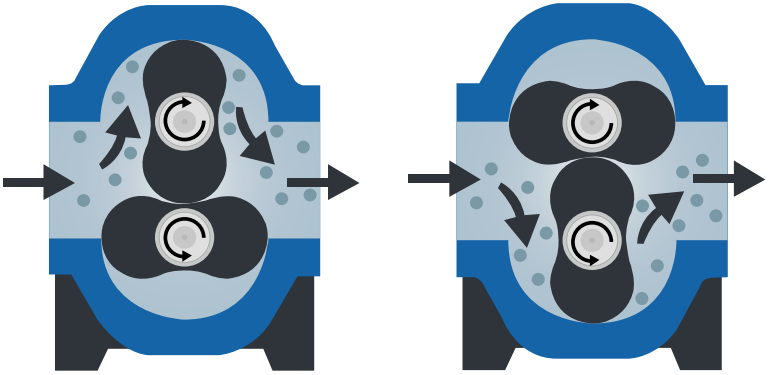
shaft seal type	mech. seal type H-08A5
shaft seal materials	Duronit/NBR
shaft seal design	Quench with NBR shaft seal
shaft seal accessory	with grease nipple
accessory material	galvanised steel

Rotating parts

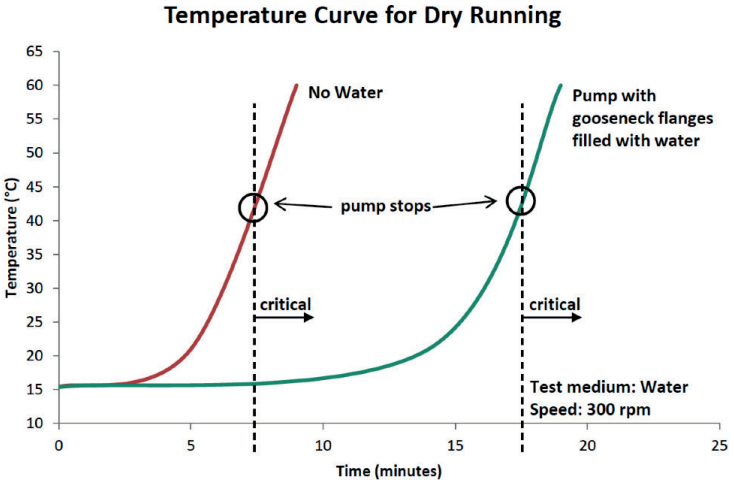
execution of drive shaft end	solid shaft
shaft end	cylindrical, underneath
drive connecting shaft material	1.7225
execution rotary lobe	screw geometry
rotor materials	0.6025/NBR

Function

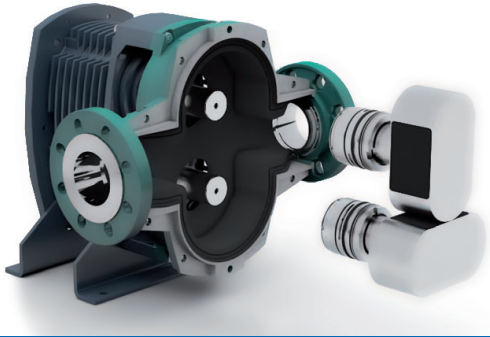
The Netzsch - Rotary Lobe Pump is a positive displacement pump.
The main components which determine the pumping principle are two lobe rotors rotating in opposite directions within a housing.
Principle of operation:



Combining the wear resistance and simple metal-rotor /rubber-stator construction of a progressing cavity pump with traditional rotary lobe pump technology is a design breakthrough that creates the advantage of durability along with simplicity and ease of maintenance.



Type	volume [l / rev.]	Max. differential pressure [bar]	Nominal speed [rpm]	Nominal delivery at nominal speed [m3 / h]
XLB-4	10.06	4	170-550	205-315
XLB-6/2	20.12	4	170-500	420-630
XLB-8/2	30.18	3	150-500	640-950



STANDARD VERSION FOR MOBILE USE

ACCESSORIES
Roof for pump and canvas

ACCESSORIES
Emergency lighting

EXHAUST PIPE
The exhaust pipes inside the canopy are insulated with special padding made with insulating material, in mineral fibre, that resists temperatures exceeding 500 C° and minimises the amount of heat inside the canopy

SUCTION AND DELIVERY BOX
In the standard equipment are included the suction and delivery BOX.

Pump mod.XLB-4	2 x 6"
Pump mod.XLB-6/2	2 x 6"
Pump mod.XLB-8/2	4 x 6"

TANK
Available in two main dimension/capacity:
- 154 lt
- 210 lt

Equipped with floating for a constant monitoring of the fuel level.

ACCESSORIES
Holders for suction pipes

CLUTCH
+
GEARBOX
+
COUPLIGN

FRAME
The frames are built using S235JR quality steel sheet metal or higher, and are assembled by welding carried out by skilled workers.
The frames are equipped standard with:
- 4 points for lifting up (4 hooks supplied with frame)
- Diesel leak retention basin
- Hot galvanized and painted on

TRAILER
- Tandem Axle
- Height adjustable rigid drawbar or Fix drawbar
- Mudguards
- 4x mechanical feet
- Frame material: Galvanized steel
- Loading platform material: Aluminium
- Brake: Mechanical auto-reverse drum brakes in conformity with EC directives. Hand brake by lever with gas spring acting on all wheels.
- Light units: 12V electrical installations and 13 pin connector.

Trailer available also for "no-road" use in different configurations

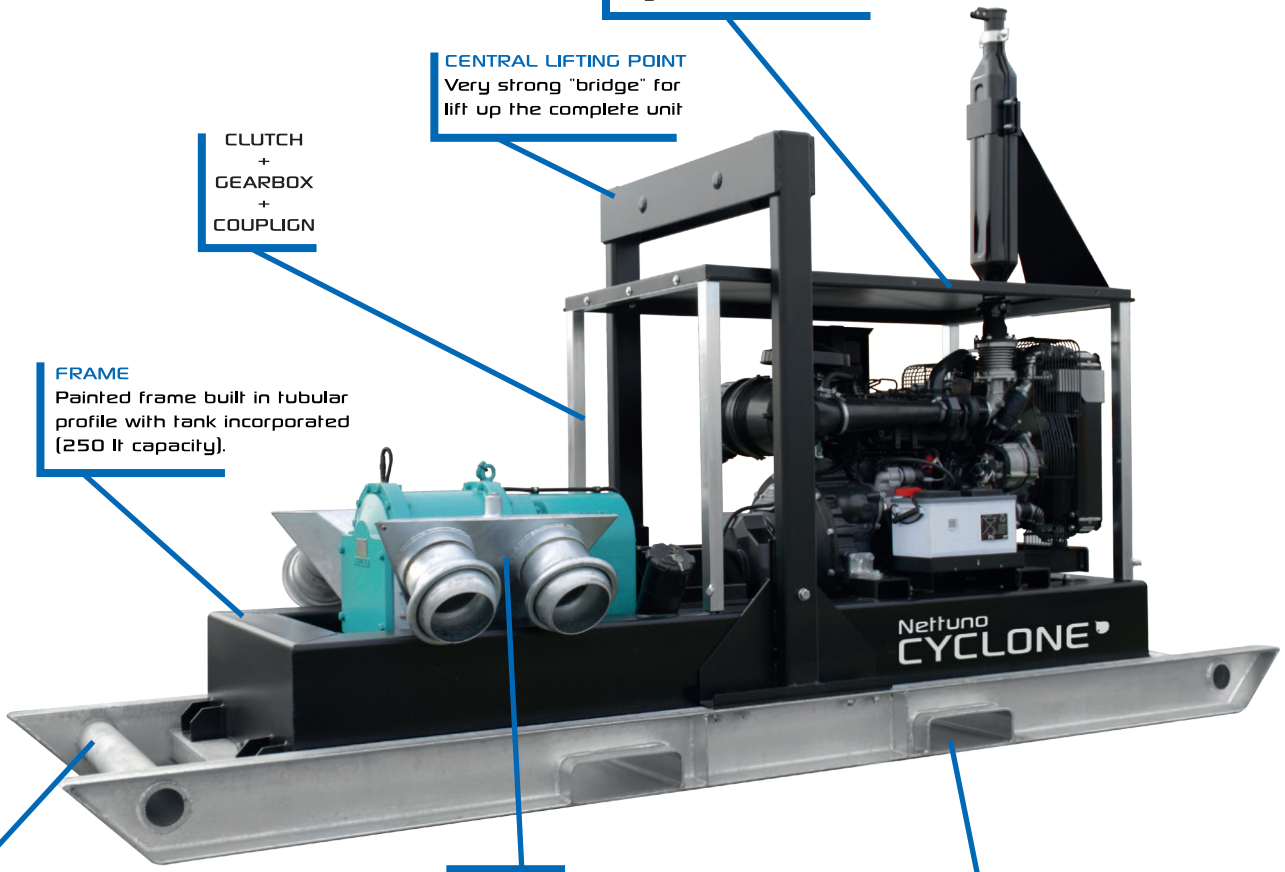
SPECIAL VERSION FOR CONSTRUCTION SITE

ROOF FOR ENGINE
Painted sheet metal for the protection of the engine from bad weather

CENTRAL LIFTING POINT
Very strong "bridge" for lift up the complete unit

CLUTCH
+
GEARBOX
+
COUPLIGN

FRAME
Painted frame built in tubular profile with tank incorporated (250 lt capacity).



SLED
The sled is built in steel profiles UNP180 and hot galvanized considering the heavy use of the unit.

SUCTION AND DELIVERY BOX
In the standard equipment are included the suction and delivery BOX.

Pump mod.XLB-4	2 x 6"
Pump mod.XLB-6/2	2 x 6"
Pump mod.XLB-8/2	4 x 6"

LIFTING POINT 2
The sled is equipped also with a lifting point for forklift

COMMAND AND CONTROL UNIT

All CYCLONE motor pumps are equipped with CIM-131 control unit connected to an actuator for speed control.

THE MAIN FUNCTIONS:

- Electronic pressure switch to control the water-pump pressure.
- Water-pump digital pressure gauge.
- Clock to program the start and stop of the motor pump.
- Delayed acceleration after start-up.
- Delayed deceleration after stop.

PROTECTS:

- Insufficient oil pressure
- Overtemperature
- Belt failure
- Insufficient water-pump pressure
- Water-pump overpressure
- Overspeed

VISUALISE:

- Hour meter
- Oil pressure gauge
- Oil water thermometer
- Rev counter
- Water-pump pressure gauge
- Timer
- Fuel level
- Battery voltmeter
- Pump protection exclusion
- Oil and battery indicators
- Protection intervention
- Emergency stop

The CYCLONE STANDARD motor pumps are preferably used to pump substances with the following properties:

Density
1 - 1.5
kg/dm³

pH value
7

Solids content (w/w)
0 - 10
% TS

Liquid temperature range
0° - 40°

Particle size
0 - 60
mm

Dynamic viscosity
1 - 500
mPa s

Special configurations can be obtained with pH values = 13 and viscosity of 5000 mPa-s

EXAMPLES OF DIFFERENT VISCOSITY COEFFICIENTS

Liquid	Temperature (C°)	Viscosity Coefficients (mPa·s)
water	0	1.79
	20	1.00
	100	0.28
ethyl alcohol	20	1.20
glycerin	20	1490
mercury	0	1.685
	20	1.554
	100	1.240
olive oil	20	84.0
engine oil	30	200
blood	37	4.0

PUMP	ENGINE	RPM pump	RPM engine	Flow m3/h	Pressure bar
NEZSCH XLB-4 NETZSCH	IVECO F32MNSX00.00 75HP@2500 rpm FPT POWERTRAIN TECHNOLOGIES	400	1200	230	0,5
		450	1350	255	0,5
		500	1500	285	0,5
		550	1650	315	0,5
		400	1200	225	1,0
		450	1350	250	1,0
		500	1500	280	1,0
		550	1650	310	1,0
		400	1200	215	2,0
		450	1350	245	2,0
		500	1500	275	2,0
		550	1650	305	2,0
		400	1200	205	4,0
		450	1350	230	4,0

PUMP	ENGINE	RPM pump	RPM engine	Flow m3/h	Pressure bar
NEZSCH XLB-6/2 NETZSCH	IVECO N45MSTA20.50 126HP@2200 rpm FPT POWERTRAIN TECHNOLOGIES	400	1200	455	0,5
		450	1350	512	0,5
		500	1500	575	0,5
		550	1650	630	0,5
		400	1200	450	1,0
		450	1350	510	1,0
		500	1500	550	1,0
		550	1650	625	1,0
		400	1200	440	2,0
		450	1350	500	2,0
		500	1500	560	2,0
		550	1650	620	2,0
		400	1200	420	3,0
		450	1350	480	3,0

PUMP	ENGINE	RPM pump	RPM engine	Flow m3/h	Pressure bar
NEZSCH XLB-8/2 NETZSCH	IVECO N67MNTA20.50 175HP@2200 rpm FPT POWERTRAIN TECHNOLOGIES	400	1200	680	0,5
		450	1350	770	0,5
		500	1500	860	0,5
		550	1650	950	0,5
		400	1200	670	1,0
		450	1350	760	1,0
		500	1500	855	1,0
		550	1650	940	1,0
		400	1200	660	2,0
		450	1350	750	2,0
		500	1500	840	2,0
		550	1650	930	2,0
		400	1200	640	3,0
		450	1350	730	3,0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MOTOPOMPE - IRRIGATORI - GRUPPI ELETTROGENI - TORRI DI ILLUMINAZIONE
MOTORPUMPS - HOSE REEL IRRIGATORS - GENERATING SETS - LIGHTING TOWERS
MOTORPUMPEAGGREGATE - BEREGNUNGMASCHINEN - STROMAGGREGATE - LICHTMASTEN
MOTORPOMPEN - BEREGENINGSHASPELS - STROOMAGGREGATEN - LICHTMASTEN
НАСОСНЫЕ СТАНЦИИ – ДОЖДЕВАЛЬНЫЕ МАШИНЫ - ЭЛЕКТРОГЕНЕРАТОРЫ – ОСВЕТИТЕЛЬНЫЕ МАЧТЫ