

ALARKO

Submersible Pumps AL 6 - 8 - 10 - 14"



It is valuable as water



Second lake of Turkey is from Alarko

Alarko, presented a lake as big as Van Lake to Turkey by its produced submersible pumps more than 50.000 since 1974.

Alarko submersible pumps are **UNIQUE INDIVIDUAL** and **UNINTERRUPTED WATER SOURCE** in potable water status by

- everytime being ready to use,
- with no trouble
- and with short reimbursement term.



Alarko submersible pumps are **MULTIFUNCTIONAL** because of usable for from detached houses to skyscrapers and because of obtained advantage using it as a water stocking hydrophore.

Alarko submersible pumps are **PROPER INVESTMENT** in providing using water and process water in industrial facilities and administrations because of

- high efficiency
- and long life period.



Alarko submersible pumps are **RELIABLE FRIENDS** of garden lovers and farmers on horticulture, agriculture and from little house garden to agricultural land as thousands acres.

Alarko submersible pump is a **UNIQUE RELIABLE WATER SOURCE** for touristic facilities, which especially need more water in tourism term.



Alarko submersible pumps are **PREEMINENT** because of

- high technology
- economy
- continual and quality service
- quick procurement of spare part.



ALARKO IS ALWAYS THE **"FIRST"** ON SUBMERSIBLE PUMP*.

* In Turkish pump market.

PUMP SELECTION

Applications

- Water supply in towns and rural areas.
- Sprinkling - irrigation.
- Water pressurisation in all buildings industrial water supplies.
- Water fountains.
- And for all general pumping of clear water from standard sink and bore holes.

Advantages

- It does not have to be protected from open air conditions because motor works in the well water.
- No limitation for the depth of immersion. It can be come down to deep as total head.
- Any special tube or tool is not required.
- There is not fan adjustment problem.
- Shaft cutting or oil lack is not experienced.
- Mounting is easily and there is not any axle alignment problem.
- It is silent.
- It is not effected well inclines as pump with perpendicular shaft.
- For 50 HP motors, facility of open 6" well instead of 8" well

Application Limits

- According to pump nominal diameters; first four series as 6", 8", 10", 14"
- Total 29 models and 816 types between 2 and 180 HP

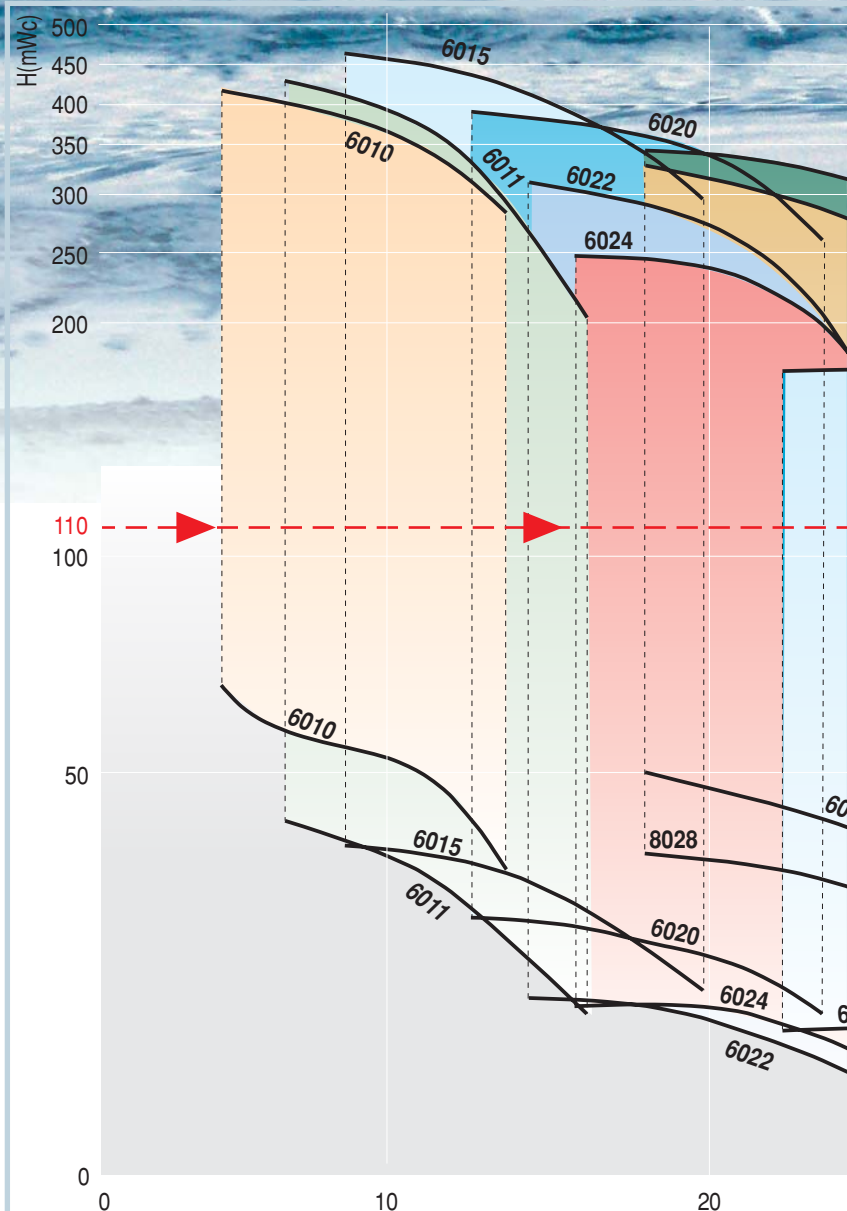
DESIGN

Pump

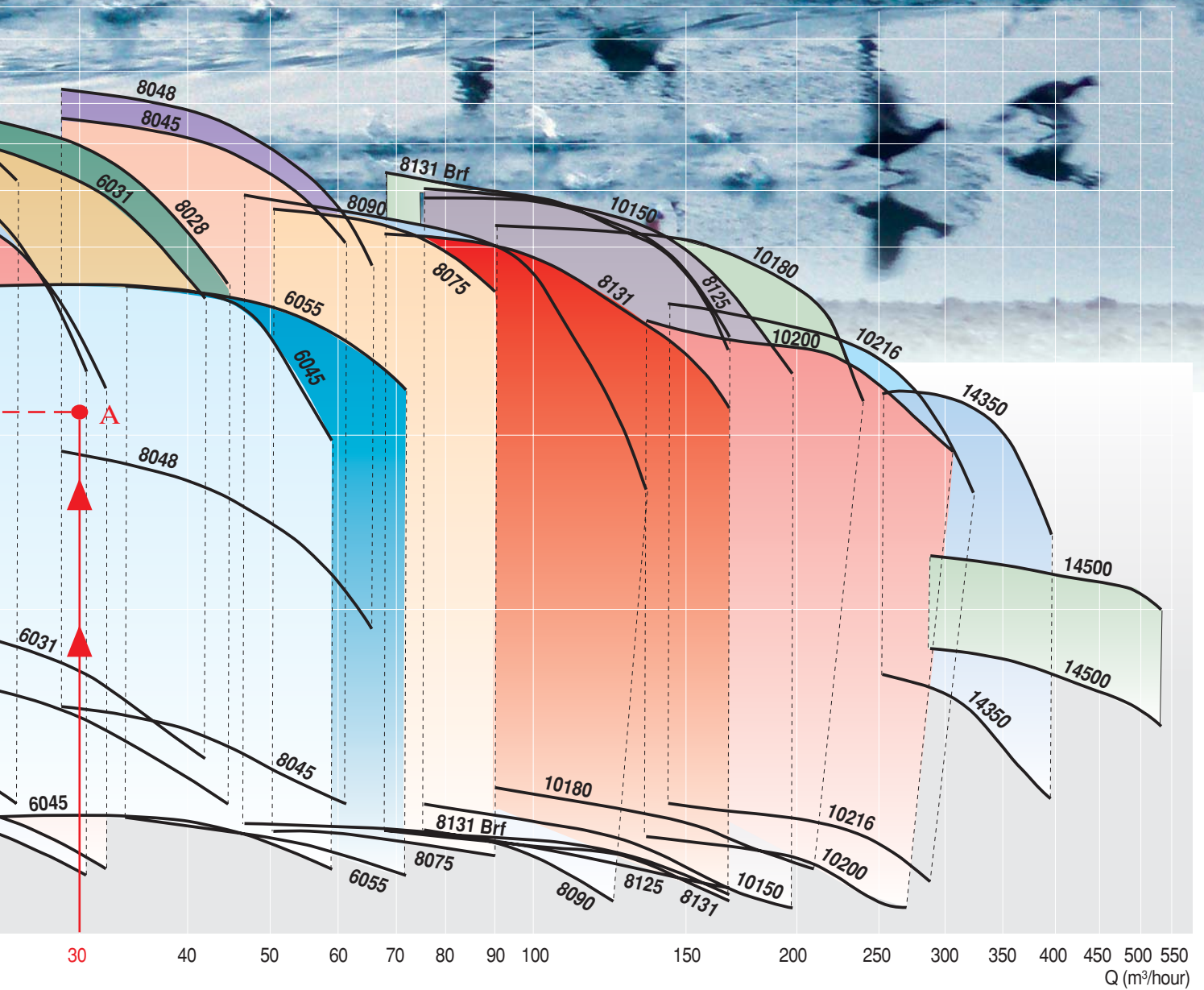
- Multistage centrifugal pump.
- Pump shaft, coupling, suction stainer bearing sleeve and external housing sleeve (for 6010-6015-6020-6031 types), casing wear ring (for 6010-6015-6020-6031-8028-8048 types) are made of stainless steel.
- Radial Noryl impellers and diffusers for small flows, semiaxial cast-iron or bronze impellers and diffusers for large flows
- Sliding bronze bearings or rubber bearings cooled and lubricated by well waetr.
- Max. operating time at closed valve position is 5 min.

Motor

- Water filled and cooled squirrel cage type.
- Wet stator windings insulated PVC, PP or XLPE.
- Graphite radial and axial bearings and stainless steel bearing pads.
- Stainless steel motor external housing and rotor shafts for 6" & 8" motors.
- Carbon steel motor external housing and heat treated steel rotor shafts for 10" motors.
- Supply voltage: 3 phase 380 V, 50 hz.
- Shaft extensions & axial load carrying capacities are according to NEMA standards.

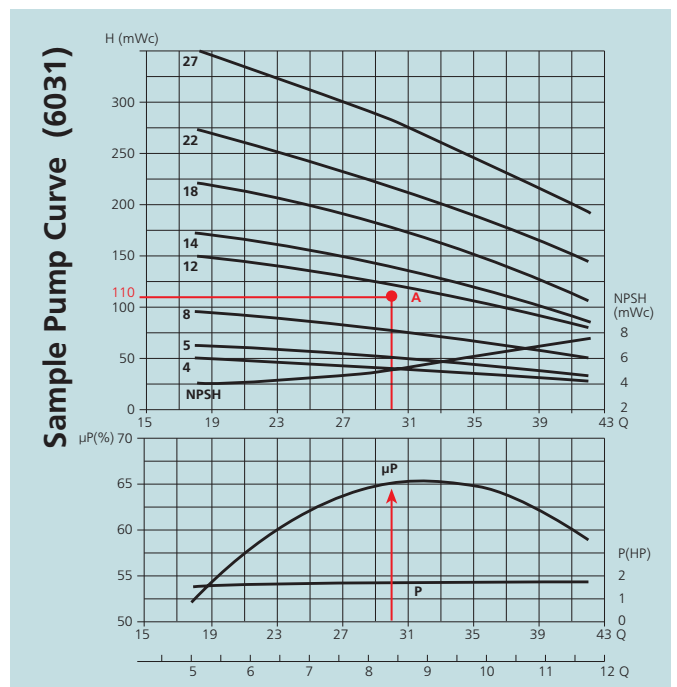


It is determined that requested intersection point (A) of flow and manometer height is remained in which pump's area from "General Selection Abac" In order to select pump, its "Independent Characteristic Curve" is checked Level number on the upper nearest curve to intersection point of flow and manometer head. According to determined pump type and level, motor type and power are defined from "Electrical Specifications, Dimensions and Weight Table" Pump according to "Order Notation" is demanded from Alarko Carrier vendor with determining electrical switchboard demand and electrical cable length.



Selection Sample

Assume that Well diameter is 8 5/8", flow (Q) is 30 m³/h and manometer height is (H) 110 mWc. On "General Selection Abac" 30m³/h at the horizontal axle and 110 mWc at the vertical axle are intersected. Intersection point (A), is stayed in 6031 type pump area. From this area, it is passed to "Independent Characteristic Curve" of 6031 type pump. The intersection point of 30 m³/h and 110 mWc is near to 12nd level (stage). Pump level is selected as 12. Pump efficiency is 65%. Pump type and motor power is found as AL 6-20 from "Electrical Specifications, Dimensions and Weight Table" Order notation is determined as 6031-12+AL 6-20



CONTROL PANEL



Available parts in the standard electrical switchboard:

Energy Control Lamp: It shows whether if power supply is available or not in the switch board.

Main switch: It switches on the power supply of switchboard.

Control Switch: It directs motor.

Water Level Automat: It controls pump entrance and exit to circuit according to well water level. It prevents pump works without water. Water level automat, level control electrode and electrode cable group are present as a set.

Phase (Motor) Control Relay and Warning Lamp: It prevents motor staying with two phase at three phase motors. On the other hand, it provides a protection via stopping the pump while phase imbalance in the network.

Fuses: Protection to short circuit.

Thermal Relay: Protection to overload

Warning Lamps: "Malfunction", "Run", "Well is drought" lamps. It enables monitoring of pump running easily.

Ammeter and Voltmeter: Current and voltage values can be measured by them.

Cable Selection (%3 Voltage Drop)

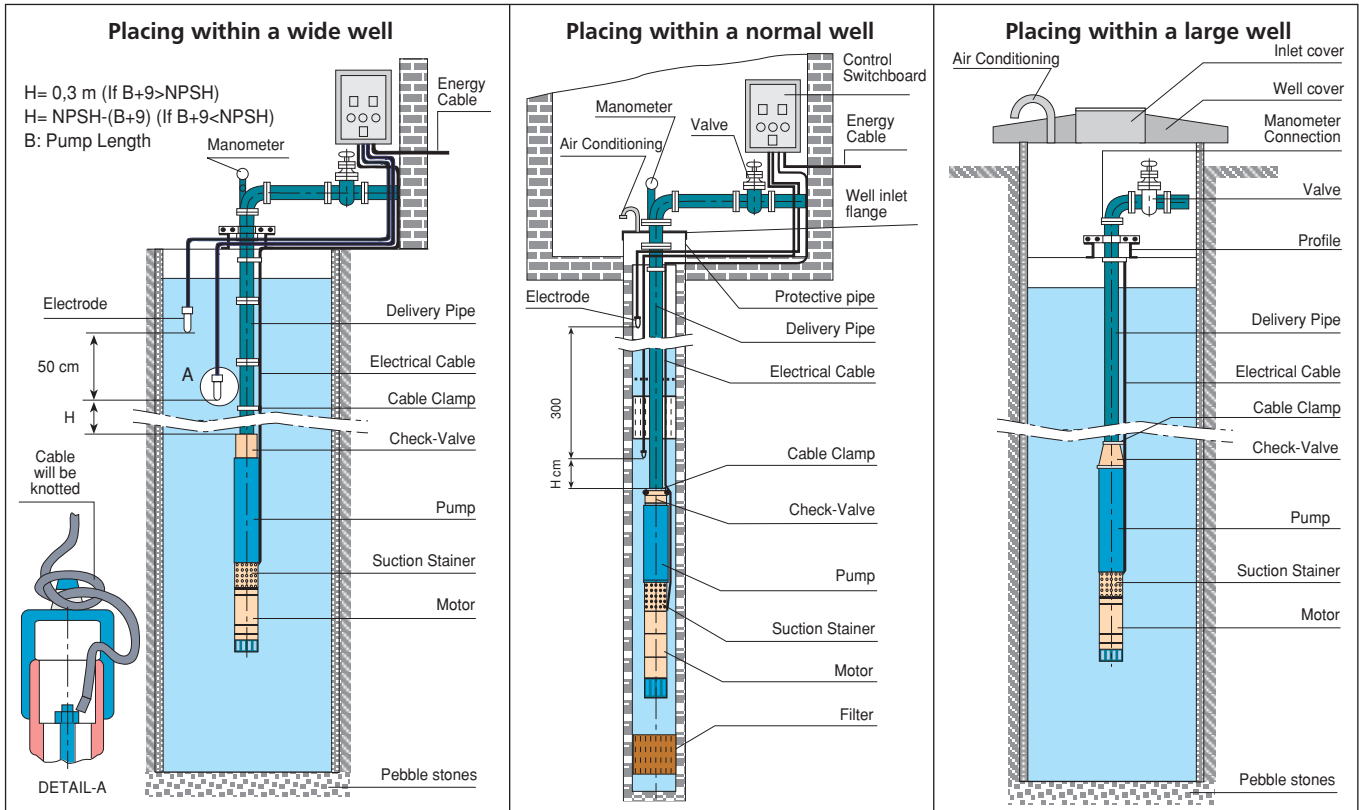
Nominal Gerilim	Motor Gücü		Kablo Kesiti (mm ²)										
	kW	HP	4x1.5	4x2.5	4x4	4x6	4x10	3x16+10	3x25+16	3x35+16	3x50+25	3x70+35	3x95+50
Tek Fazlı 220 V	0,37	0,5	80	133	212	316	520						
	0,55	0,75	58	96	150	226	372						
	0,75	1	42	69	110	164	271						
	1,1	1,5	35	55	91	136	164						
	1,5	2	25	41	66	98	121						
3 Fazlı 380 V	0,37	0,5	545										
	0,55	0,75	347	575									
	0,75	1	296	490									
	1,1	1,5	199	331	528								
	1,5	2	155	257	411	612							
	2,2	3	108	180	287	429	707						
	3	4	80	133	213	317	522						
	3,7	5	70	125	186	290	420						
	4	5,5	62	104	166	248	400						
	4,4	6	50	82	160	240	260	645	1005				
	5,5	7,5	45	75	119	178	293						
	7,5	10		60	95	145	245	390	610	855			
	11	15		40	66	100	170	275	430	605			
	15	20		30	50	75	130	205	325	455	650		
	18,5	25		35	60	90	155	245	390	545	780		
	22	30		30	50	75	130	205	325	455	650		
	30	40				55	95	155	240	340	485	680	925
	37	50				45	75	125	195	275	390	550	745
	45	60					65	100	160	225	325	455	620
	55	75					50	80	130	180	260	365	495
70	96						65	100	140	205	285	390	
80	110							85	120	170	240	330	
96	130								100	145	205	275	
110	150								85	125	175	240	
132	180									105	145	200	

Motors 25 HP and over are star delta. In star delta motor, selected cable from the upper table will be used 2 quantities. Do not use the above table with soft starter.

FOR SECURE AND EFFICIENT USES

- Well water temperature and sand ratio in the well water should be controlled in the laboratory. Maximum sand in the well water should be 50 gr/m³ and well temperature should be 30°C.
- Pipes and Pipe clamps should have durability as carrying water in the vertical tube, tube group and itself weight.
- It is recommended that well diameter is bigger than pump diameter as at least 2" (inch).
- Distance between pump suction filter and well filter should be maximum.
- Distance between the bottom end of the motor and base of the well should be at least 50 cm. Length of pump in the well is determined due to this measurement.
- Since pump does not suck air, pump assembly depth should be proper to Net Positive Suction Height (minimum depth it can work at) values.

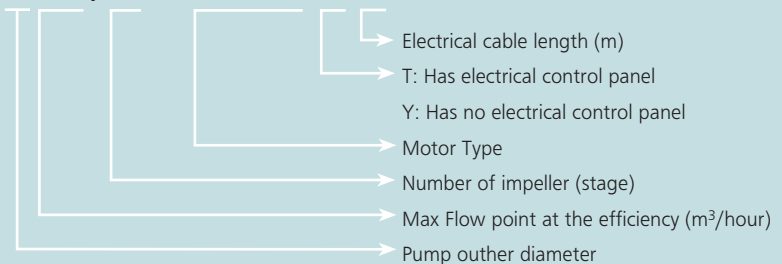
Application Methods



Alarko Carrier Sanayi ve Ticaret A.Ş. Submersible Pump Experiment Laboratory was accredited by TÜRKAK (Turkey Accreditation Foundation) on 28/03/2006. This laboratory is the first laboratory which was accredited in submersible pump industry for clean water in our country.

Order Notation

6 031 / 12 + AL6 - 20 -T. 60



Alarko submersible pumps are shipped as securely packaged from factory. There are Allen wrench, water freeze funnel and locktite. in the packages of 6", 8", 10", 14" submersible pumps. Control switchboard, water level control electrode and cable are optional. If it is requested, the yare delivered in a second package.

The company reserves its right to alter its products due to technological developments

ALARKO



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