



Sewage Pumps DAS

APPLICATIONS:

- Pumping of domestic and industrial sewage.
- At sewage treatment plants.
- Pumping of chemical and industrial waste water.
- Pumping of rain water
- All kinds of drainage and dewatering work.
- Pumping of difficult liquids of industrial processes.

FLUID TYPES:

- Unscreened sewage and other waste water types with high solids concentration.
- Water with sand content. Maximum grain size (20 – 30 mm). Liquid, sand ratio can be maximum % 6. For higher sand concentration preventive provisions must be taken against wear.
- Maximum allowed fluid temperature is 50°C
- Maximum allowed medium density is 1,2 gr/cm³, maximum allowed medium viscosity is 1,5 x 10⁻⁶ m²/s. Measures must be taken to lower these values.
- DAS series pumps cannot be used for pumping flammable and explosive fluids.

TECHNICAL DETAILS:

SUBMERSIBLE ELECTRIC MOTOR Masflo DEM type submersible electric motor operates with 3 phase 380 V AC (+/- % 5) power supply. Insulation class of motors is F, protection class is IP 68. H class insulation available upon request.

Motor Cooling : DEM type submersible motors are cooled externally by surrounding medium. In order to have sufficient cooling the motor must be submerged up to the top.

BEARINGS : The rotor is supported by means of two heavy duty ball bearings. Bearings are grease lubricated, no need for maintenance for 2 years of operation time.

SHAFT SEALING: Between the motor and the pumped fluid high quality (Silicon carbide – Silicon carbide) mechanical seal is used, seals operate in the oil chamber. (DIN 2450 / EN 12756)

STR-1 PROTECTION RELAY:

A special relay manufactured by Masflo is a very important part of submersible pumps and has to be fitted to the control system.

MOTOR OVER HEAT PROTECTION SYSTEM : Stator windings protected against over heat by 120°C thermistors. Over is heat usually caused by dry operation of the pump, excessive start stop frequency, or faulty electrical connection in case of over heating, the pump is tripped by a relay and will not operate.

WATER LEAKAGE WARNING SYSTEM:

Motor does not operate in case water leaks in to the motor.

PUMP IMPELLER:



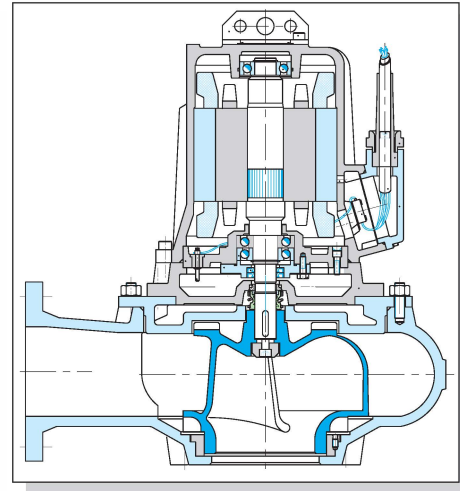
Single vane double angled non clogging impeller: These impellers have large solid passages, high efficiencies and they do not strain motor power at low discharge head values.



Double vane impeller : For discharge head values that cannot be attained with single vane impellers. They have smaller solid passages than single vane impellers. In some cases water must be screened.



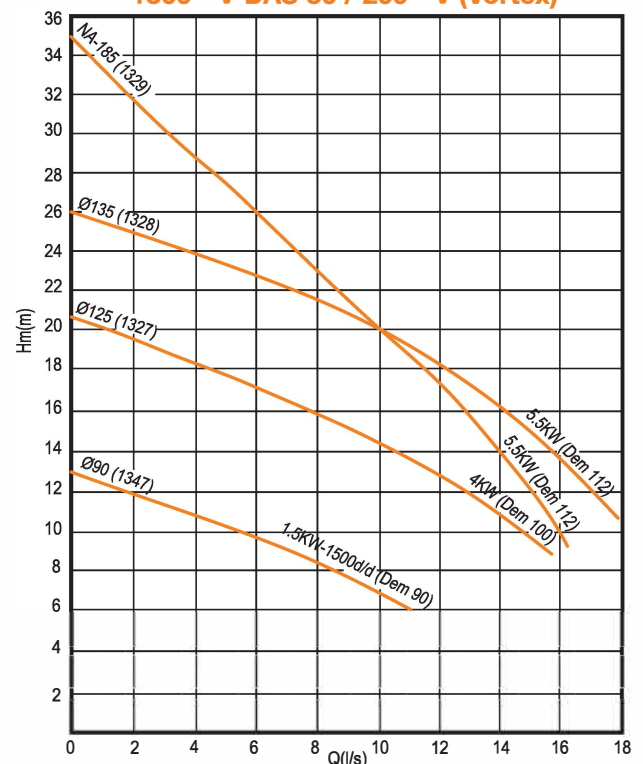
Vortex type impeller : This type of impellers do not have closed channels. Impeller is located deep inside the volute casing. Pumping action is generated by a vortex created within the fluid by rotation of the impeller. With this geometry they can tolerate larger solids than other impeller types more specifically they tolerate fibrous materials in the pumped liquid. The disadvantage of this impeller type is lower efficiencies.



Pump Materials :

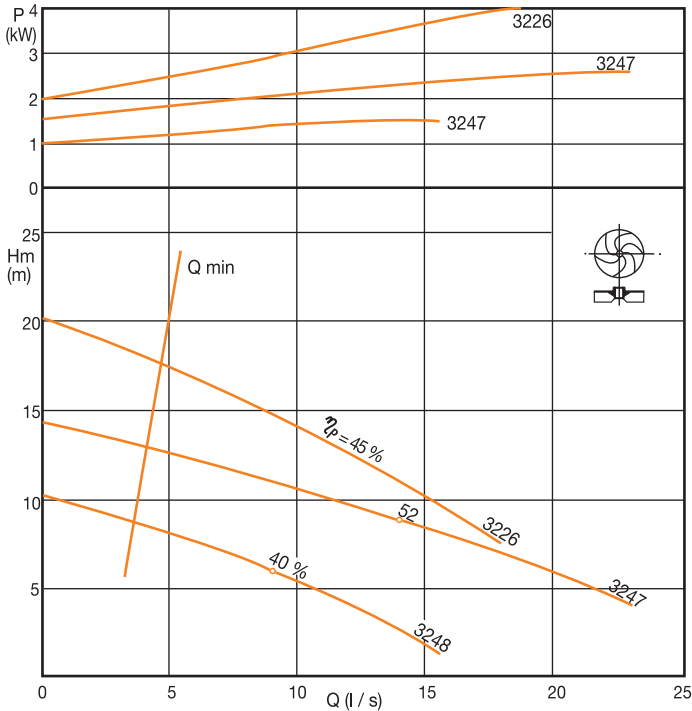
Pump component	Material
Motor casing – volute casing	Cast iron GG-20 (EN-JL 1030)
Shaft	AISI 420
Pump impeller	Cast iron GG-25 (EN-JL 1040)
Bolts – Nuts	Stainless steel
Mechanical seal	SIC/SIC – NBR
Cable	H07RN-f
Coating	Coal tar epoxy paint over Epoxy primer

1300 - V DAS 50 / 200 - V (Vortex)



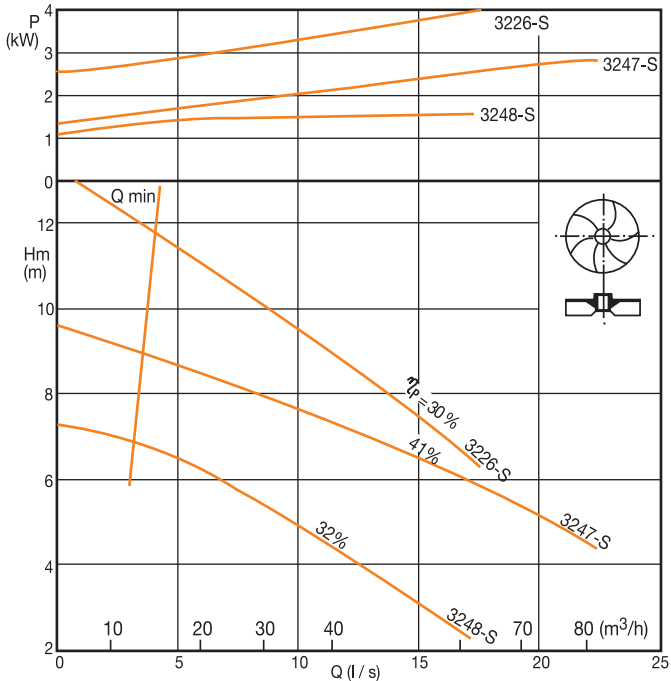
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
1347	Ø50	Ø35	90L	1.5	1450	52
1327	Ø50	Ø35	C-100L	4	2900	62
1328	Ø50	Ø35	C-112	5.5	2900	87
1329	Ø50	Ø10	C-112	5.5	2900	86

3200 - DAS 80 / 160 - V (Vortex)



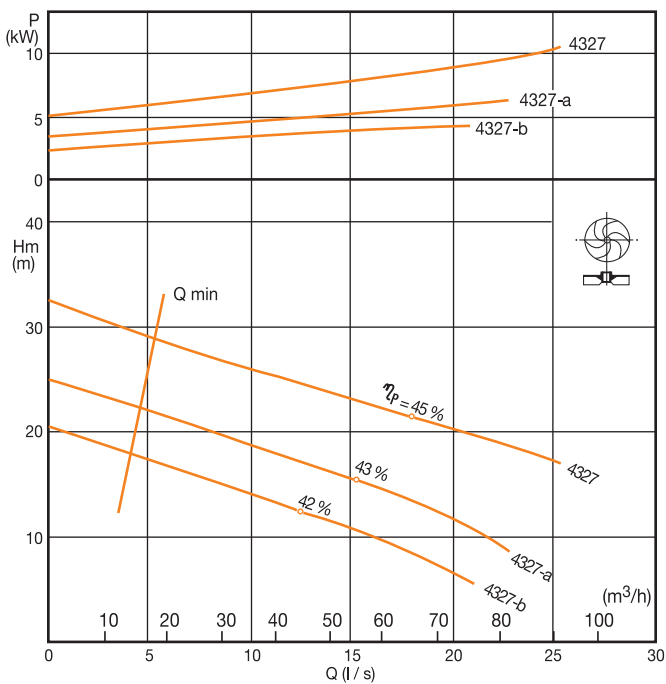
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
3226	Ø80	Ø48	C-100L	4	2900	80
3247	Ø80	Ø48	100L	3	1450	75
3248	Ø80	Ø48	100L	2.2	1450	75

3200 S - DAS 80 / 160 - V (Vortex)



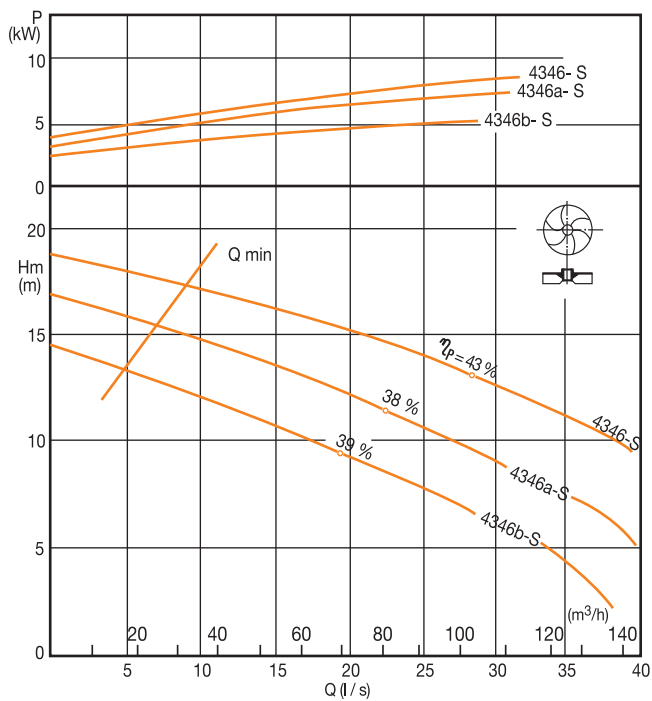
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
3226-S	Ø80	Ø80	C-100L	4	2900	95
3247-S	Ø80	Ø80	100L	3	1450	85
3248-S	Ø80	Ø80	100L	2.2	1450	80

4300 - DAS 100 / 200 - V (Vortex)



Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
4327	Ø100	Ø50	C-132M	11	2900	140
4327-a	Ø100	Ø50	132S	7.5	2900	135
4327-b	Ø100	Ø50	132S	5.5	2900	130

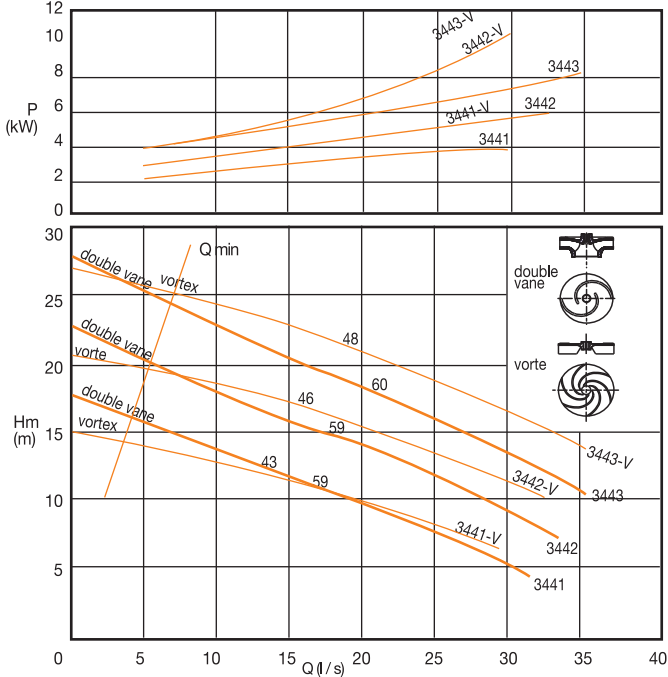
4300 S - DAS 100 / 200 - V (Vortex)



Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
4346-S	Ø100	Ø100	C-132M	11	1450	155
4346a-S	Ø100	Ø100	132M	7.5	1450	150
4346b-S	Ø100	Ø100	132S	5.5	1450	145

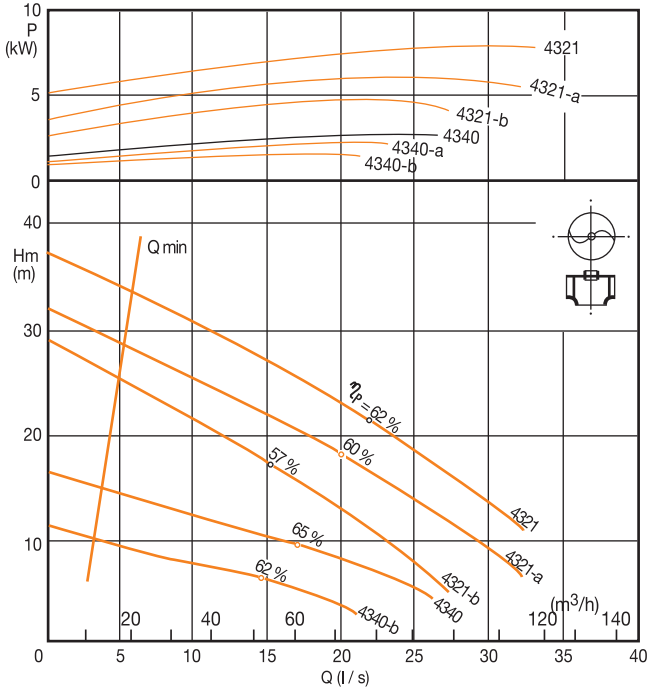
DAS / PERFORMANCE CURVES

3400 - DAS 80 / 250 - (Vortex & Double Vane)



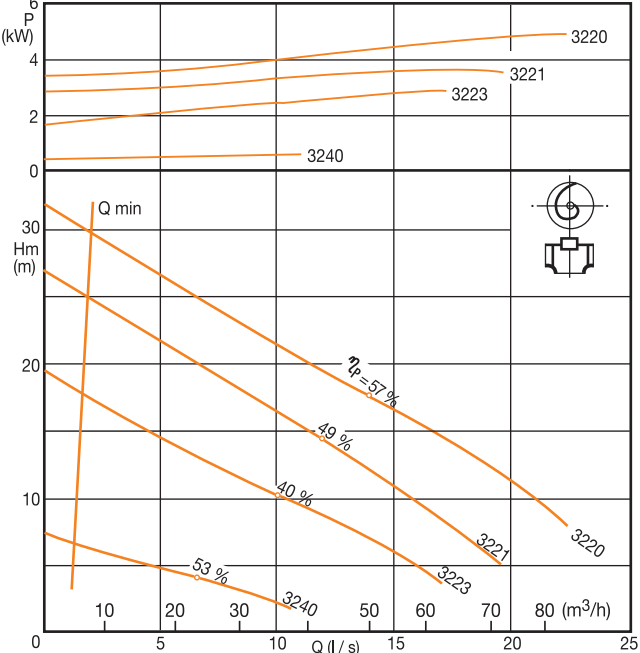
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
3441	Ø80	Ø38	132S	5.5	1430	120
3442	Ø80	Ø38	132M	7.5	1430	125
3443	Ø80	Ø38	C-132M	11	1455	180
3441-V	Ø80	Ø38	132S	5.5	1430	115
3442-V	Ø80	Ø38	132M	7.5	1430	120
3443-V	Ø80	Ø38	C-132M	11	1455	180

4300 - A DAS 100 / 200 - (Double Vane)



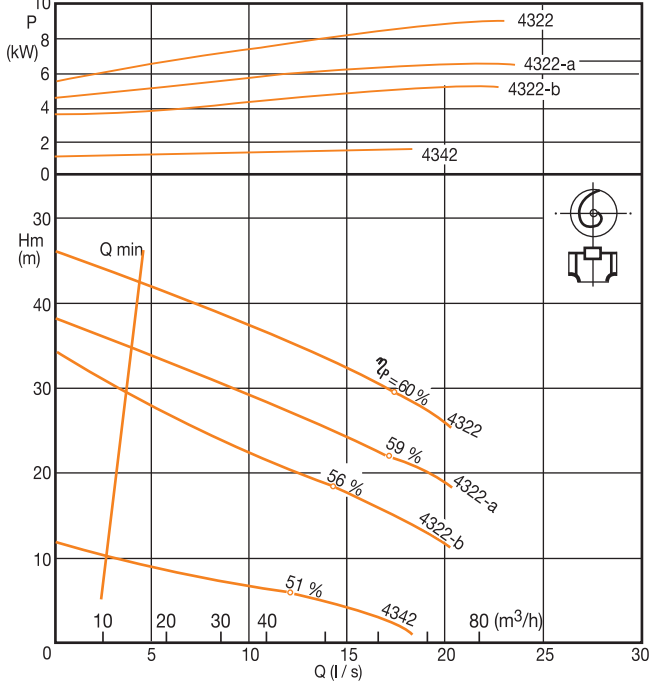
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
4321	Ø100	35x35	C-132M	11	2900	140
4321-a	Ø100	35x35	132S	7.5	2900	135
4321-b	Ø100	35x35	132S	5.5	2900	130
4340	Ø100	35x35	112M	4	1450	120
4340-b	Ø100	35x35	100L	2.2	1450	110

3200 DAS 80 / 160 (Single Vane)



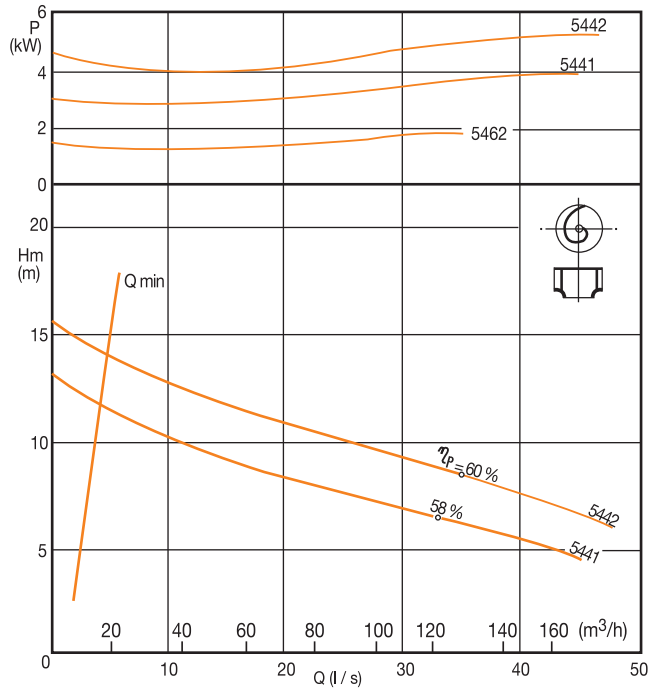
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
3220	Ø80	Ø42	C-112M	5.5	2900	90
3221	Ø80	Ø42	C-100L	4	2900	80
3223	Ø80	Ø42	100L	3	2900	75
3240	Ø80	Ø42	90L	1.5	1450	70

4300 DAS 100 / 200 (Single Vane)



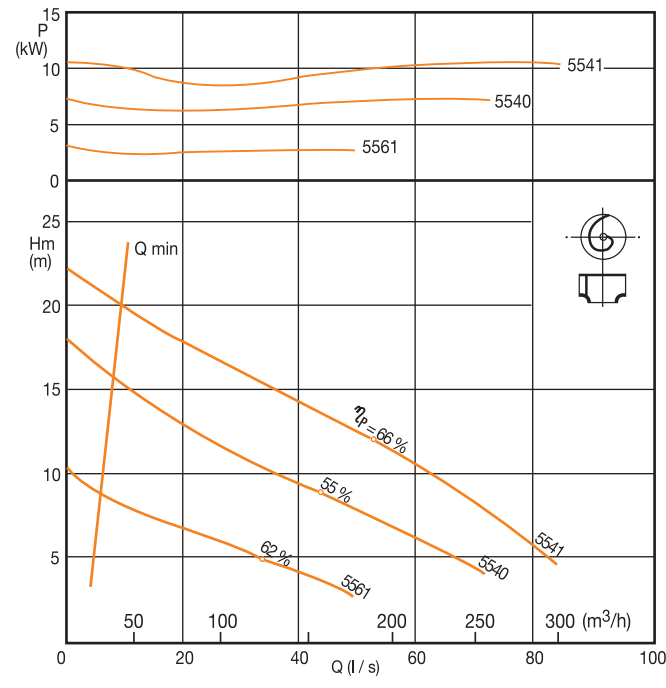
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
4322	Ø100	Ø44	C-132M	11	2900	140
4322-a	Ø100	Ø44	132S	7.5	2900	135
4322-b	Ø100	Ø44	132S	5.5	2900	130
4342	Ø100	Ø44	100L	2.2	1450	110

5400 DAS 125 / 250 (Single Vane)



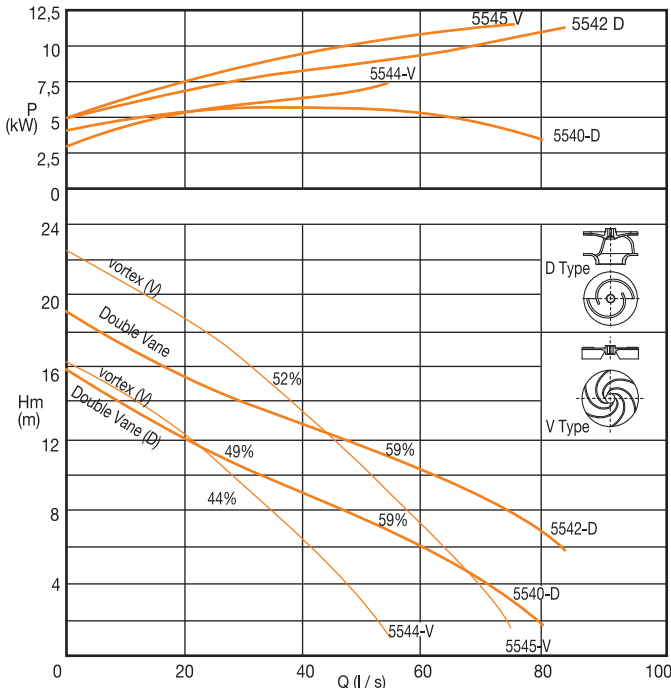
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
5442	Ø125	Ø100	132S	5.5	1450	165
5441	Ø125	Ø100	112M	4	1450	150

5500 DAS 125 / 300 (Single Vane)



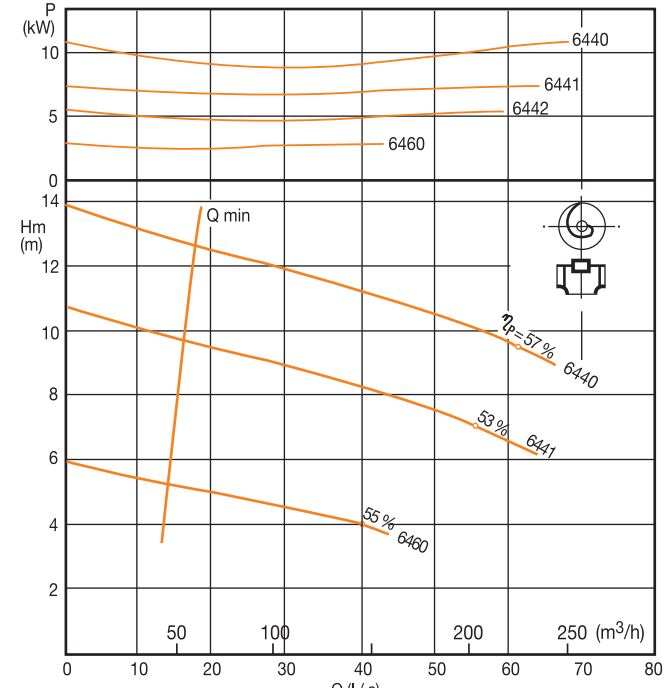
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
5541	Ø125	Ø105	C-132M	11	1450	210
5540	Ø125	Ø105	132M	7.5	1450	200
5561	Ø125	Ø105	132S	3	960	180

5500 - D DAS 125 / 300 (Double Vane & Vortex)



Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
5540-D	Ø125	Ø70	132M	7.5	1430	220
5542-D	Ø125	Ø70	C-132M	11	1440	210
5544-V	Ø125	Ø70	132M	7.5	1430	195
5545-V	Ø125	Ø70	C-132M	11	1440	205

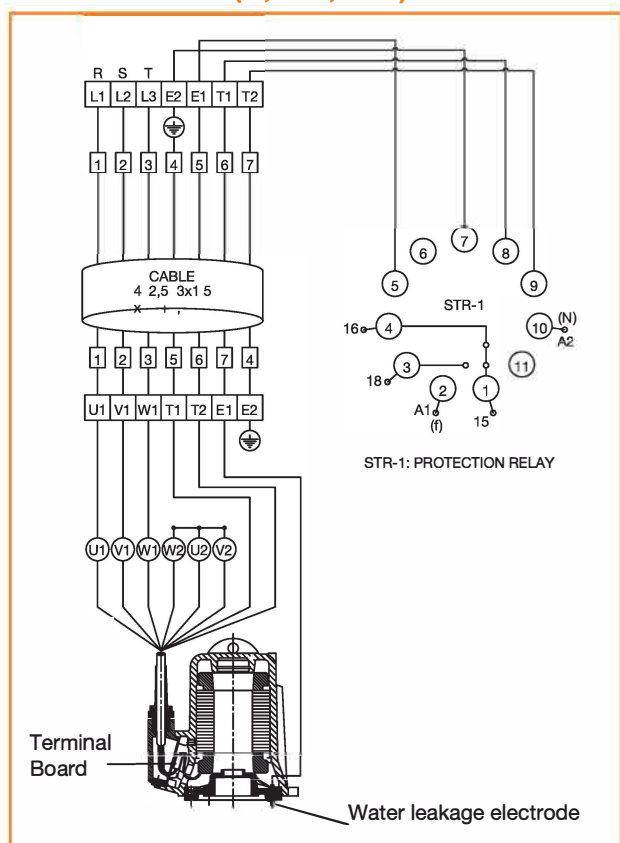
6400 DAS 150 / 250 (Single Vane)



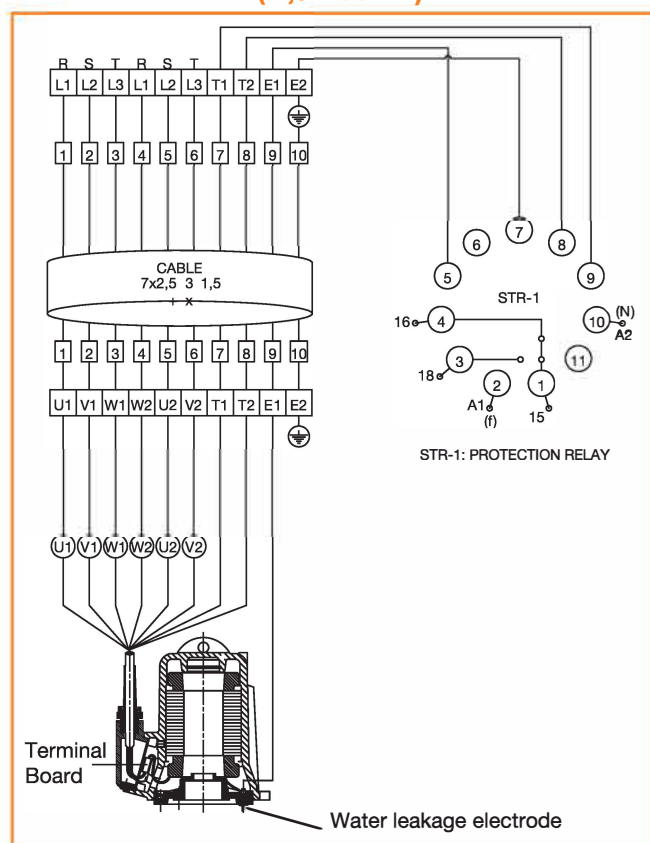
Pump Curve No:	Discharge Diameter Ømm	Max. Solid Dimension Ømm	DEM Type Motor			Weight (kg)
			IEC	kW	rpm	
6440	Ø150	Ø120	C-132M	11	1450	220
6441	Ø150	Ø120	132M	7.5	1450	210
6460	Ø150	Ø120	132S	3	960	200

Note: Weigts are approximate cable weight excluded

DAS – PARPO SERIES PUMPS DIRECT ONLINE STARTING CABLE CONNECTION DIAGRAM (1,5 – 5,5 Kw)



DAS SERIES PUMPS (Y/Δ) STAR / DELTA STARTING CABLE CONNECTION DIAGRAM (7,5 – 11 kW)



CABLE LEAD NO	MAIN CABLE	TERMINAL BOX
1	R	L1
2	S	L2
3	T	L3
4		E2
5		T1
6		T2
7		E

CABLE LEAD NO	MAIN CABLE	TERMINAL BOX
1	R	L1
2	S	L2
3	T	L3
4	R	L1
5	S	L2
6	T	L3
7		E2
8		T1
9		T2
10		E

STR-1 RELAY CONNECTION LEADS	
E	Water leakage
T1 T2	Termistor contacts
15 16 18	Relay contact leads
A1 (F) A2 (N)	Relay coil connections 220V

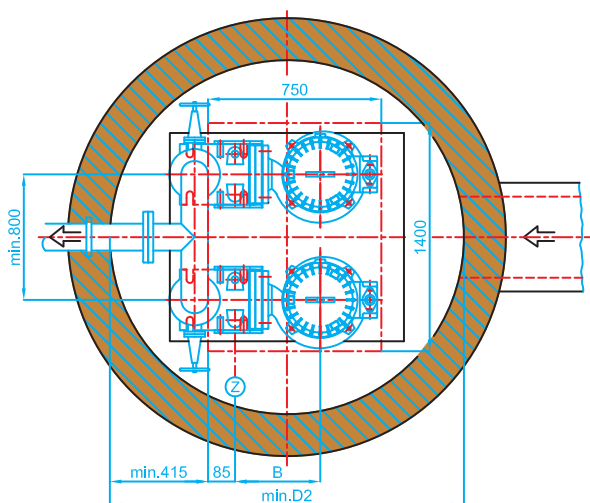
CAUTION :
Masflo warranty is not valid, if
pump operates without being
connected to STR-1 relay

1) AUTOMATIC COUPLING (DUCK FOOT BEND)

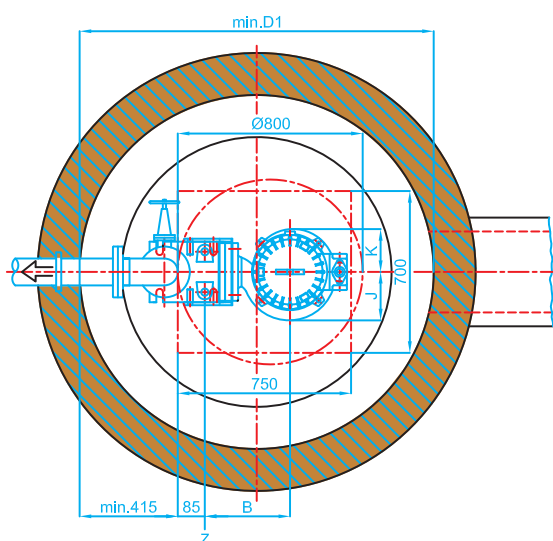
It is an economic and practical installation for stationary systems. Automatic coupling system consists of a duck foot bend fixed on sump floor, guide rail (consists of two galvanized pipes connected in parallel) and fixing flange which is fitted to the pump. Automatic coupling set components and discharge piping have to be installed before the sump gets filled with medium.

The fixing flange which is fitted to the pump slides through the guide rails and the pump is lowered to the sump by means of a chain. To take the pump out of the sump by pulling pump by chain is enough, no dismantling or bolt removal required.

Sealing is done by special gasket.



Note: D1 and D2 are minimum well diameters.

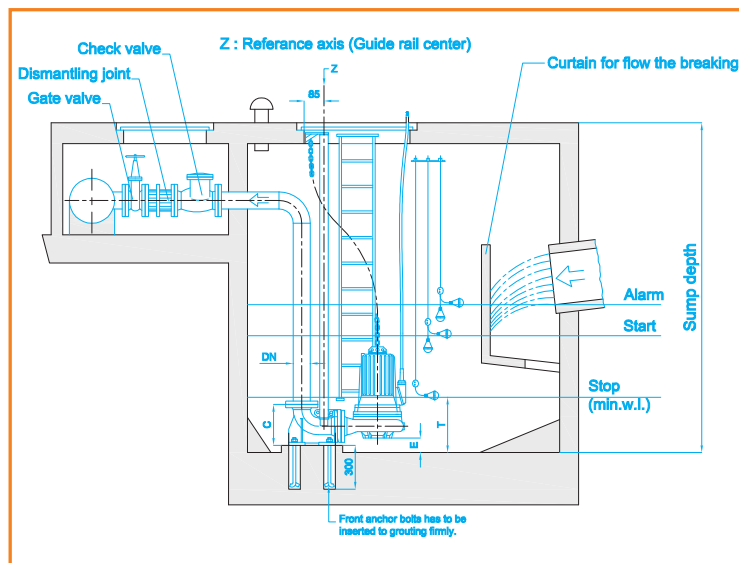


2) VERTICAL FREE STANDING HOSE CONNECTION

This installation for is suitable for sumps with smooth and flat floors. Pump must stay on floor freely. Pump can be removed from sump by pulling out by chain.

CAUTION :

Pumps should never be pulled from the electric cables.

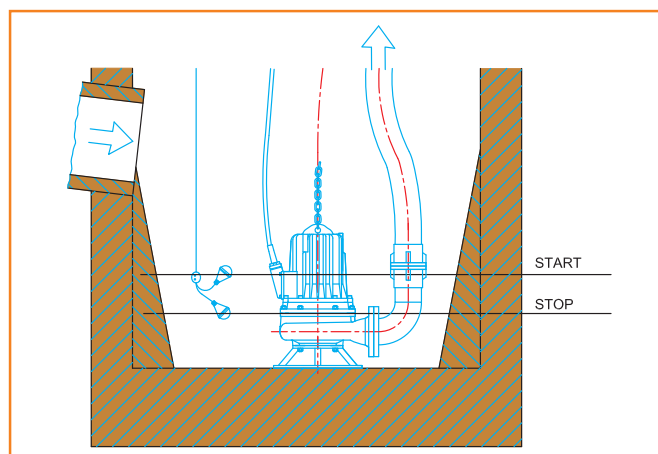


PUMP MODEL	DIMENSIONS						
	DN mm	B mm	D1 mm	D2 mm	E mm	T mm	C mm
DAS-50/200-V	50	227	1200	1400	100	300	245
DAS-80/160	80	280	1200	1400	100	400	250
DAS-80/250	80	380	1200	1500	100	420	250
DAS-100/200	100	330	1200	1500	120	420	280
DAS-125/250	125	415	1300	1600	140	520	348
DAS-125/300	125	455	1400	1600	140	520	348
DAS-150/250	150	470	1400	1600	150	550	450

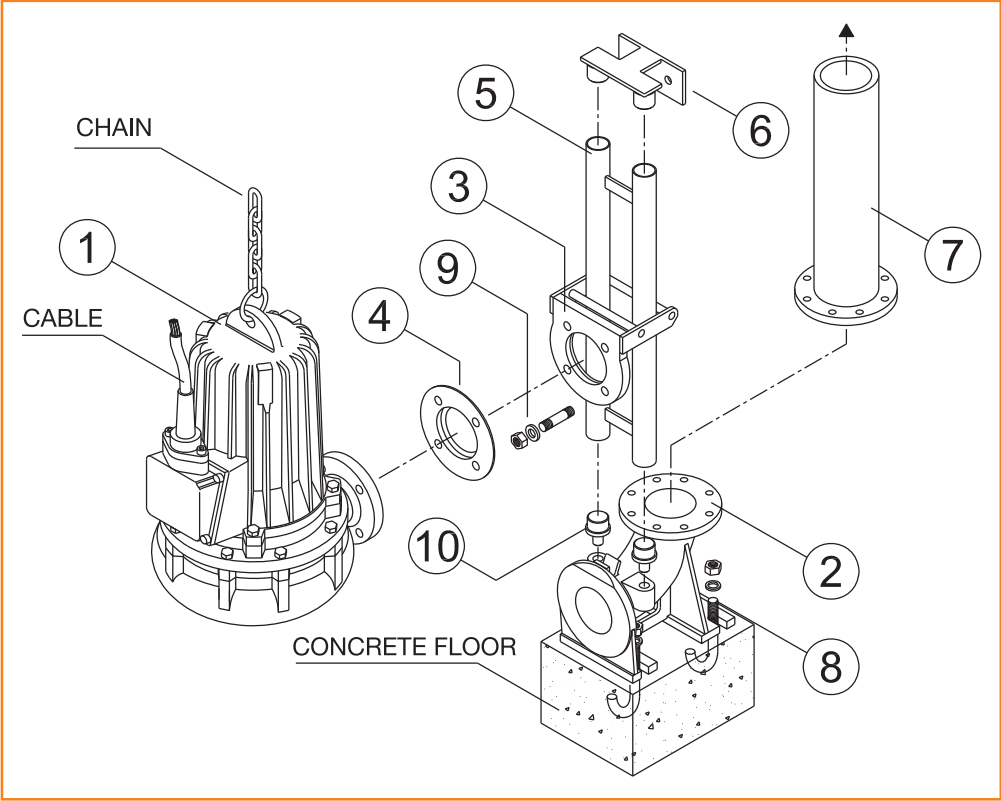
Note: D1 and D2 are minimum well diameters.

CAUTION :

In flow to the well might cause flow and vortex inside the sump this improper suction condition must be prevented.

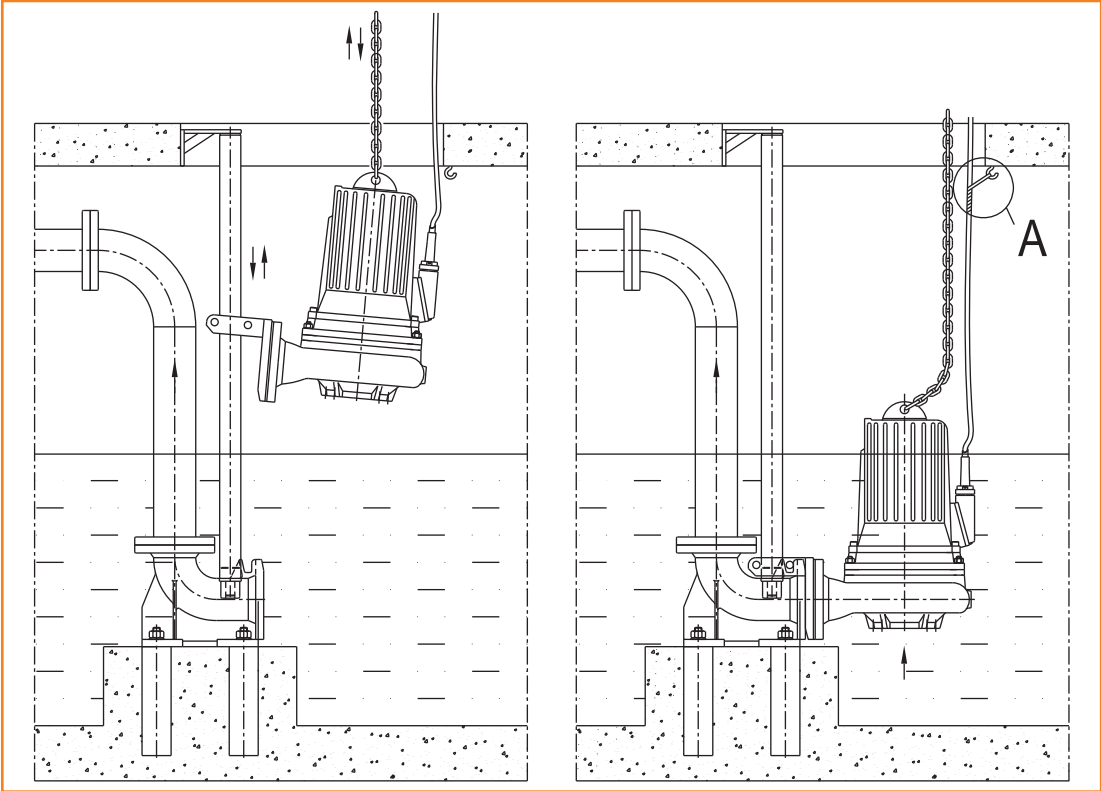


AUTOMATIC COUPLING SET COMPONENTS



Automatic coupling set components list	
1	Submersible pump
2	Duck foot bend
3	Guide flange
4	Gasket
5	Guide rail
6	Upper support bracket
7	Discharge pipe
8	Anchor bolt
9	Guide flange studs
10	Lower support pins.

OPERATION OF AUTOMATIC COUPLING SET



A- Cable fixing point

CAUTION : Never use cable when lowering or rising the pump. Use chain supplied with pump for this purpose.

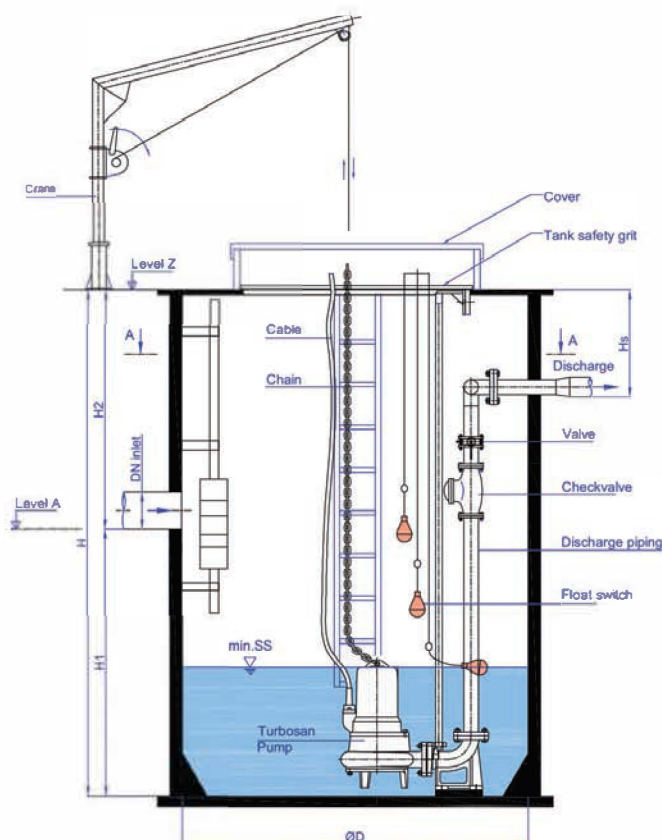
Before pumping them to treatment plant waste and drainage water collected in concrete made storage facilities. For small settlements to avoid large civil work costs, " Packaged sewage pumping stations are used. Using these stations minimizes excavation and construction costs . Stations get manufactured and delivered as a complete single unit along with all necessary accessories. They get manufactured by using high density polyethylene STP, PEHD.

Stations are easy to install, corrosion resistant and leak free.

Available up to 2400 mm diameter and 6 m height can be equipped with 1 – 3 pumps. Lowering pumps into the tanks done by means of guide rail – duck foot bend system. In the centre of station a platform is provided for accessibility to equipment in the station such as pumps, valves, pipes.

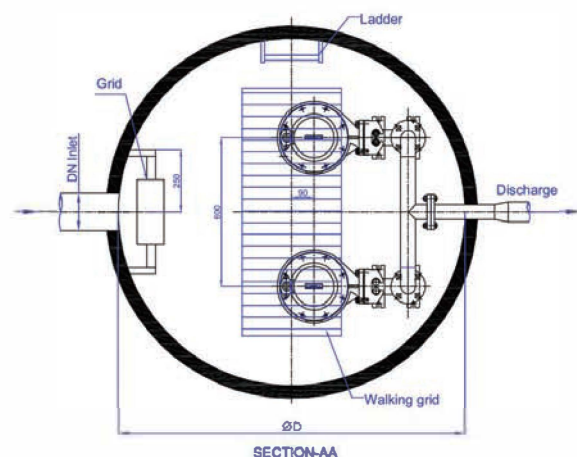
Pumps used in stations are with following specifications :

Capacity : 20 – 400 m³/h Discharge head : 10 – 30 m Discharge diameters : 50 – 150 mm



APPLICATIONS :

- Waste water treatment plants
- Drainage systems
- Rain water surface water collection and discharge



Packaged pump station components :

- | | |
|---|---------------------|
| 1- Submersible pump | 8- Ladder |
| 2- Discharge bend and guide rails | 9- Tank safety grit |
| 3- Discharge piping | 10- Crane |
| 4- Ball type waste water non return valve | 11- Walking grid |
| 5- Gate valve or Butterfly valve | 12- Control panel |
| 6- Float switch or level transmitter | 13- Grid |
| 7- CTP, PEHD main tank | |



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