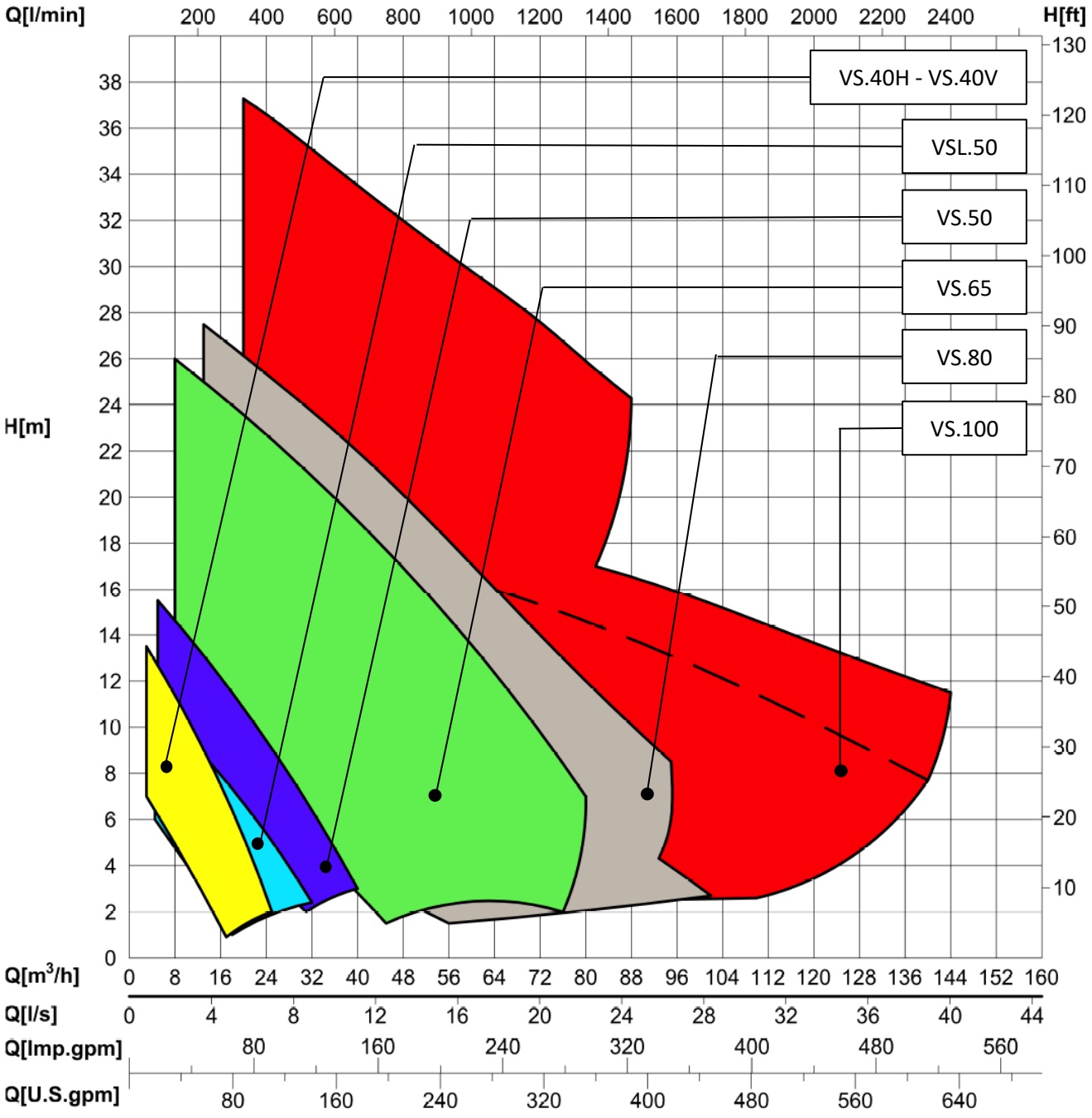
VORTEX

SUBMERSIBLE
PUMPS FOR DIRTY WATERS

with vortex impeller [VS] suitable for sludge
and waste waters with suspended solids

POMPE
SOMMERGIBILI PER ACQUE SPORCHE

con girante vortex [VS] idonea per fanghi
e acque di scarico con solidi sospesi



VORTEX VS

EN

Submersible pumps with a backward open impeller. Hydraulic solution that guarantees a wide free passage of solids reducing the risk of blocking and clogging of the impeller.
Very suitable to pump sewage and domestic/industrial waste waters.

IT

Elettropompe sommergibili con girante semiaperta arretrata. Soluzione idraulica che garantisce un ampio passaggio libero di corpi solidi, riducendo il pericolo di blocco della girante ed intasamento del corpo pompa.
Molto indicata per il pompaggio di reflui civili, reflui industriali ed acque luride in genere.

1 Cast Iron G25 Motor Body.
Corpo motore in ghisa GG25.

2 Stator (1 ~ or 3 ~).
Statore avvolto (1 ~ or 3 ~).

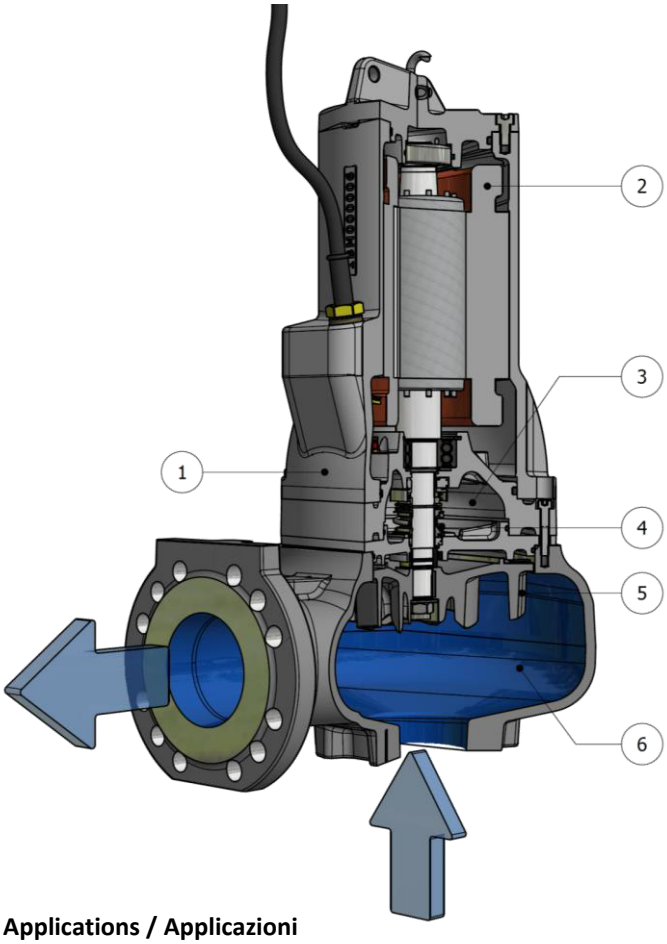
3 Oil Chamber - cooling and lubrication of the mechanical seals.

Camera olio - raffreddamento e lubrificazione delle tenute meccaniche.

4 Mechanical seals.
Tenute meccaniche.

5 Impeller.
Girante .

6 GG25 Cast iron body pump.
Corpo Pompa in ghisa GG25.



Area of use / Settori d'impiego

- Waste water treatment - civil / industrial plants
  Trattamento delle acque di scarico - impianti civili / industriali.

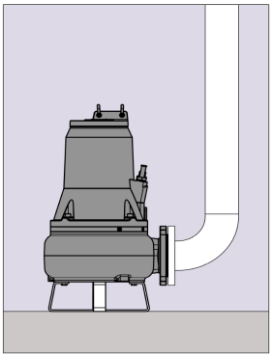
- Drainage and lifting in domestic and residential systems.
  Drenaggio e sollevamento in impianti domestici e residenziali.

Applications / Applicazioni

- Water and sludge from civil, industrial, domestic and agricultural waste..
  Acque e fanghi provenienti da scarichi civili, industriali, domestici ed agricoli.
- Drainage, rainwater and process water.
  Acque di drenaggio, piovane e di processo.

Types of installation - Tipi di installazione

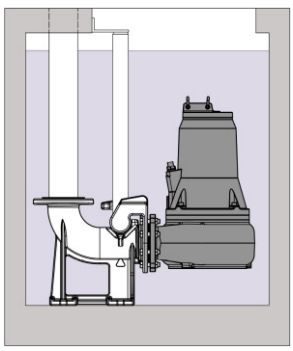
S Transportable underwater
Trasportabile in immersione



- Versatile solution suitable for various uses. A hose connection or connection flange is required for the rigid discharge line. The pump must be placed on a support stand.

- Soluzione versatile adatta a diversi impieghi.
E' necessario un attacco per tubo flessibile o flangia di collegamento per la tubazione premente rigida. La pompa va posizioata su un cavalletto di sostegno.

FC Fixed submersible with coupling device
Fissa in immersione con dispositivodi accoppiamento



- Automatic positioning system of the pump inside the tank connected to the discharge pipe. The pump is lowered or extracted with a lifting chain; the pump slides along two guide rails until it engages with the foot coupling.
- Sistema di posizionamento automatico della pompa all'interno della vasca collegato alla tubazione premente. La pompa viene calata o estratta con catena di sollevamento; scorre lungo due tubi guida fino ad agganciarsi al piede di accoppiamento.

SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

VS.65

VS.65_[GM.135] series

THREE-PHASE MOTORS 3~

VS.65_11.4T_[GM.135]	- 4 poles	- 1,1 kW
VS.65_18.4T_[GM.135]	- 4 poles	- 1,8 kW
VS.65_22.4T_[GM.135]	- 4 poles	- 2,2 kW
VS.65_11.2T_[GM.135]	- 2 poles	- 1,1 kW
VS.65_18.2T_[GM.135]	- 2 poles	- 1,8 kW
VS.65_22.2T_[GM.135]	- 2 poles	- 2,2 kW
VS.65_30.2T_[GM.135]	- 2 poles	- 3,0 kW

SINGLE-PHASE MOTORS 1~

VS.65_11.2M_[GM.135]	- 2 poles	- 1,1 KW

VS.65_[GM.173] series

THREE-PHASE MOTORS 3~

VS.65_30.4T_[GM.173]	- 4 poles	- 3,0 kW
VS.65_40.4T_[GM.173]	- 4 poles	- 4,0 kW
VS.65_44.2T_[GM.173]	- 2 poles	- 4,4 kW
VS.65_55.2T_[GM.173]	- 2 poles	- 5,5 kW
VS.65_75.2T_[GM.173]	- 2 poles	- 7,5 kW

VS.65_[GM.135]

VS.65_[GM.173]

- Pompe sommergibili con girante arretrata a vortice, compatte e di robusta costruzione.
- Costruzione in ghisa; trattamento di fondo con primer acrilico a base d'acqua e rifinitura finale con vernice a base d'acqua (30µm). Rivestimento speciale con bicomponente epossidico resistente all'abrasione (80µm) su richiesta.

- Submersible pumps with vortex impeller, compact and robust construction.
- Cast iron construction; base treatment with water-based acrylic primer and final finishing with water-based paint (30µm). Special coating with two-component epoxy resistant to abrasion on request (80µm).

- Pompes submersibles avec roue vortex, construction compacte et robuste.
- Construction en fonte ; traitement de base avec apprêt acrylique à base d'eau et finition finale avec peinture à base d'eau (30µ Revêtement spécial avec époxy bi-composant résistant à l'abrasion (80µm) sur demande.

- Bombas sumergibles con impulsor vortex, construcción compacta y robusta.
- Construcción de hierro fundido; tratamiento base con imprimación acrílica al agua y acabado final con barniz al agua (30µ Revestimiento especial con epoxi bicomponente (80µm) resistente a la abrasión, bajo pedido.

OPERATING LIMITS - LIMITI DI UTILIZZO

- Tmax = 40 °C prodotto standard
  Tmax = 70 °C versioni speciali
  6 ≤ PH ≤12
  Contenuto cloruri < 200 mg/l
  Contenuto solidi abrasivi < 1 mg/l
  Densità ~ 1kg/dm^3
  Viscosità ~ 1mm^2/s;

- Tmax = 40 °C standard product
  Tmax = 70 °C special version
  6 ≤ PH ≤12
  Chloride content < 200 mg/l
  Abrasive solid content < 1 mg/l
  Density ~ 1 kg/dm^3
  Viscosity ~ 1 mm^2/s;

- Tmax = 40 °C produit standard
  Tmax = 70 °C versions spéciales
  6 ≤ PH ≤12
  Teneur en chlorurec< 200 mg/l
  Teneur en solides abrasifs < 1 mg/l
  Densité ~ 1kg/dm^3
  Viscosité ~ 1mm^2/s;

- Tmax = 40 °C producto estándar
  Tmax = 70 °C versiones especiales
  6 ≤ PH ≤12
  Contenido de cloruro< 200 mg/l
  Contenido sólidos abrasivos < 1mg/l
  Densidad ~ 1kg/dm^3
  Viscosidad ~ 1mm^2/s;

TECHNICAL DATA - DATI TECNICI

VS.65_[GM.135]

MODELS - MODELLI	VS.65_11.4T	VS.65_18.4T	VS.65_22.4T	VS.65_11.2M	VS.65_11.2T	VS.65_18.2T	VS.65_22.2T	VS.65_30.2T
RPM/Poles - NGiri al min/Nr poli	1500 / 4	1500 / 4	1500 / 4	3000 / 2	3000 / 2	3000 / 2	3000 / 2	3000 / 2
P2: Shaft power - Potenza all'albero [kW]	1,1	1,8	2,2	1,1	1,1	1,8	2,2	3,0
P1: Input Power - Potenza assorbita [kW]	1,3	2,1	2,8	1,6	1,6	2,3	3,3	3,9
Power Factor - Fattore di potenza [Cosφ]	0,67	0,82	0,75	0,95	0,72	0,75	0,87	0,83
Power supply/Freq - Alimentazione/Freq [V/Hz]	3~400/50	3~400/50	3~400/50	1~230/50*	3~400/50	3~400/50	3~400/50	3~400/50
Single-phase - Monofase				•				
Three-phase - Triase	•	•	•		•	•	•	•
Starting - Avviamento	D.O.L.	D.O.L.	D.O.L.	40+40 µF	D.O.L.	D.O.L.	D.O.L.	D.O.L.
Rated current - Corrente nominale [A]	2,8	3,7	5,4	7,3	3,2	4,4	5,5	6,8
Starting current - Corrente di spunto [A]	16,0	20,4	29,3	21,9	17,6	24,2	27,5	32,5
Free Passage - Passaggio libero Ø [mm]	>65	>65	>65	>65	>65	>65	>65	>65
Impeller diameter - Diametro girante [mm]	183	208	220	116	116	148	162	164
Float level switch - Galleggiante	-	-	-	-	-	-	-	-
Power cable type/lenght - Cavo alim. tipo/lungh. [m]	H07RN-F 4G1,5 / 10							
Signal cable type/lenght - Cavo segn. tipo/lungh. [m]	H07RN-F 7G1,5 / 10							
Nr. Starts per hour - Nr. Avviamenti / ora	30	25	25	30	30	25	25	25
Pump weight - Peso pompa [kg]	58	62	66	55	55	57	58	62

VS.65_[GM.173]

MODELS - MODELLI	VS.65_30.4T	VS.65_40.4T	VS.65_37.2T	VS.65_44.2T	VS.65_55.2T	VS.65_75.2T
RPM/Poles - NGiri al min/Nr poli	1500 / 4	1500 / 4	3000 / 2	3000 / 2	3000 / 2	3000 / 2
P2: Shaft power - Potenza all'albero [kW]	3,0	4,0	3,7	4,4	5,5	7,5
P1: Input Power - Potenza assorbita [kW]	3,8	5,0	4,8	5,5	7,25	9,59
Power Factor - Fattore di potenza [Cosφ]	0,78	0,85	0,87	0,88	0,87	0,87
Power supply/Freq - Alimentazione/Freq [V/Hz]	3 ~ 400 / 50	3 ~ 400 / 50	3 ~ 400 / 50	3 ~ 400 / 50	3 ~ 400 / 50	3 ~ 400 / 50
Single-phase - Monofase						
Three-phase - Triase	•	•	•	•	•	•
Starting - Avviamento	D.O.L.	D.O.L.	D.O.L.	D.O.L.	D.O.L. / S.D.*	D.O.L. / S.D.*
Rated current - Corrente nominale [A]	7	8,5	8	9	12	16
Starting current - Corrente di spunto [A]	38,0	44,5	53,0	53,0	65 / 22	88 / 30
Free Passage - Passaggio libero Ø [mm]	53	53	64	64	64	64
Impeller diameter - Diametro girante [mm]	203,0	220,0	154,0	161,0	174,0	189,0
Float level switch - Galleggiante	-	-	-	-	-	-
Power cable type/lenght - Cavo alim. tipo/lungh. [m]	H07RN-F 4G2,5 / 10					
Signal cable type/lenght - Cavo segn. tipo/lungh. [m]	+ H07RN-F 4G1,5 / 10					
Nr. Starts per hour - Nr. Avviamenti / ora	25,0	20,0	20,0	20,0	20,0	15,0
Pump weight - Peso pompa [kg]	83	84	80	80	85	86

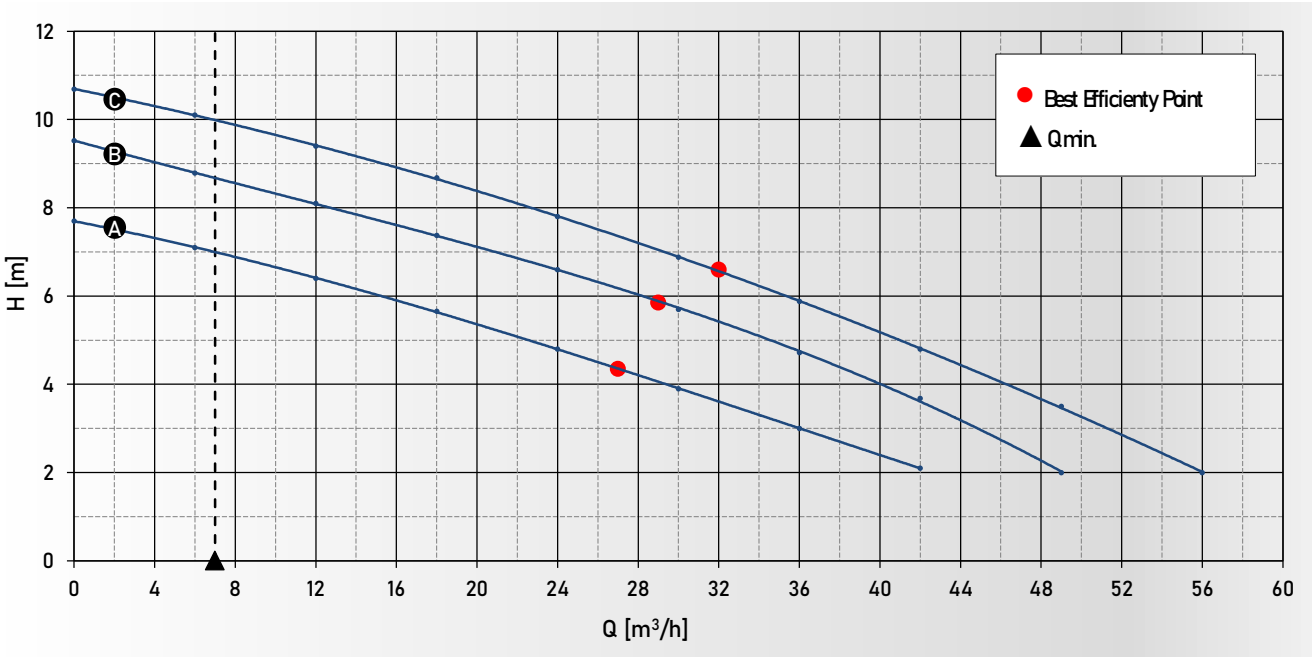
S.D.* - Power cable type - Cavo di alimmentazione: H07RN-F 7G1,5

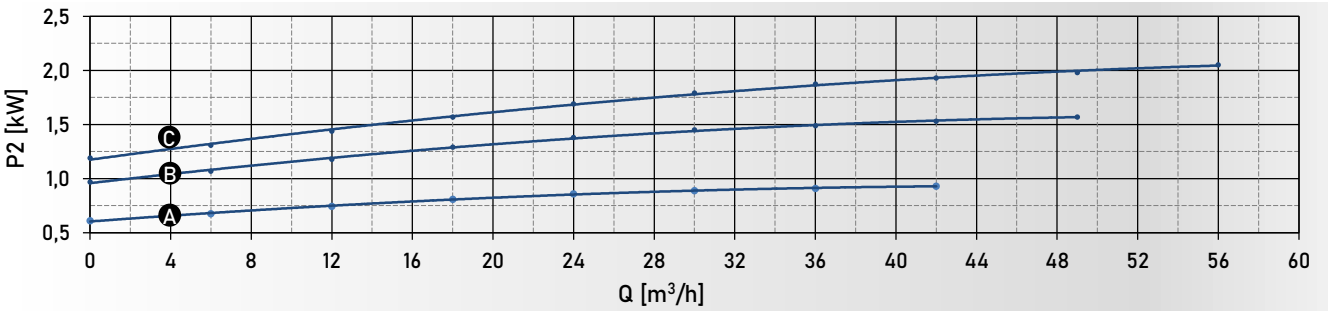
SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

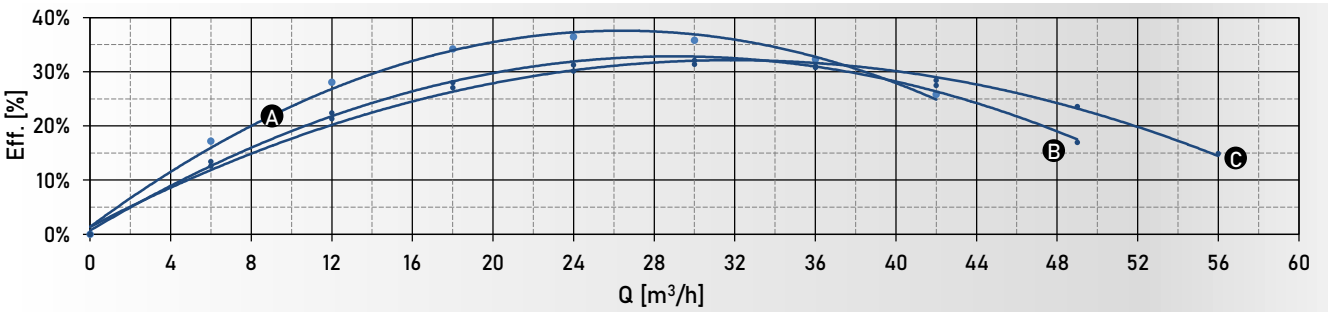
VS.65_[GM.135]

Ⓐ = VS.65_11.4T_[GM135] - 1,1 KW
Ⓑ = VS.65_18.4T_[GM135] - 1,8 KW
Ⓒ = VS.65_22.4T_[GM135] - 2,2 KW

50 Hz Three-phase motors - 4 poles - 1500 rpm





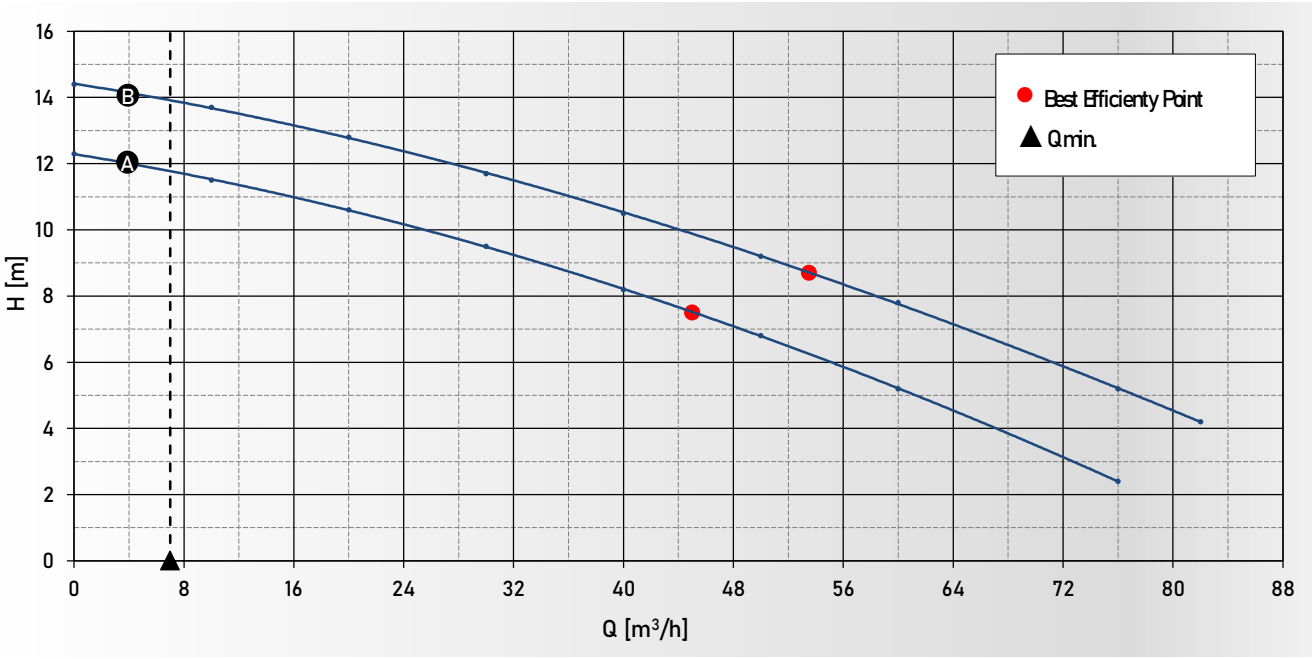


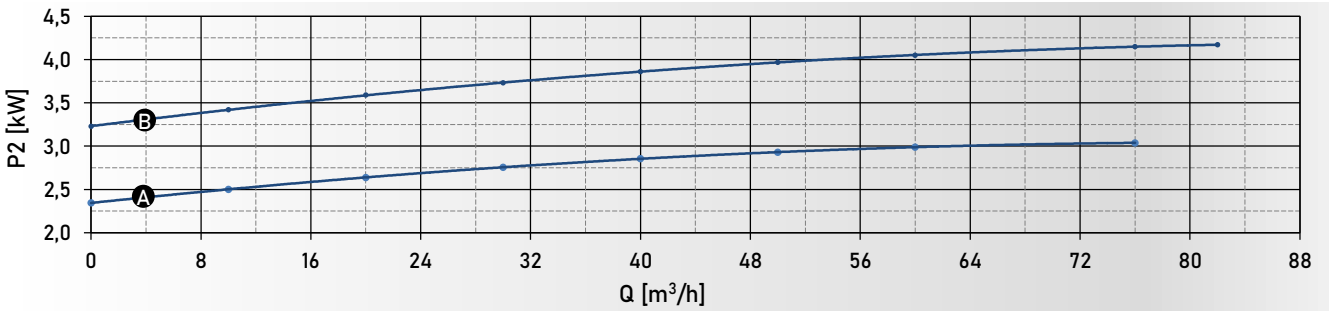
Q											
	m³/h	0	6	12	18	24	30	36	42	49	56
	L/min	0	100	200	300	400	500	600	700	817	933
	L/s	0	1,7	3,3	5,0	6,7	8,3	10,0	11,7	13,6	15,6
Ⓐ	=VS.65_11.4T_[GM135]	7,7	7,1	6,4	5,7	4,8	3,9	3,0	2,1		
Ⓑ	=VS.65_18.4T_[GM135]	9,5	8,8	8,1	7,4	6,6	5,7	4,7	3,7	2,0	
Ⓒ	=VS.65_22.4T_[GM135]	10,7	10,1	9,4	8,7	7,8	6,9	5,9	4,8	3,5	2,0

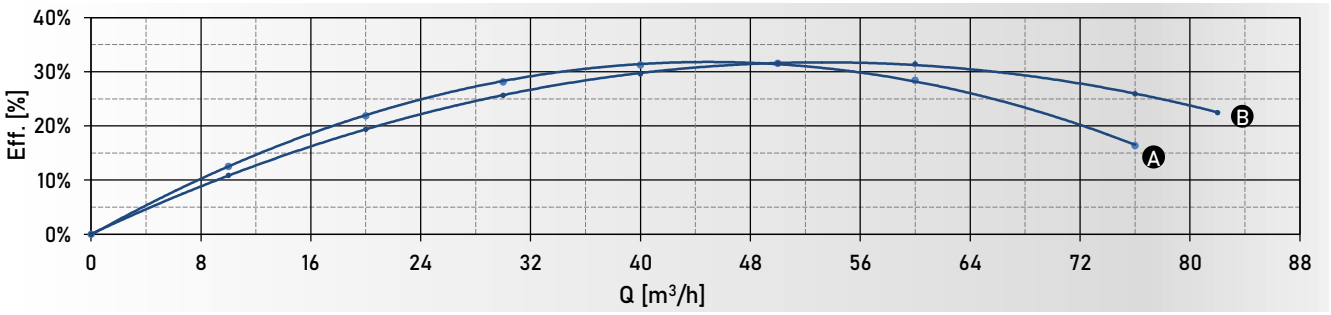
H [m]

Ⓐ = VS.65_30.4T_[GM173] - 3,0 KW
Ⓑ = VS.65_40.4T_[GM173] - 4,0 KW

50 Hz Three-phase motors - 4 poles - 1500 rpm







Q	m³/h	0	10	20	30	40	50	60	76	80
	L/min	0	167	333	500	667	833	1000	1267	1333
	L/s	0	2,8	5,6	8,3	11,1	13,9	16,7	21,1	22,2
Ⓐ =VS.65_30.4T_[GM173]		12,3	11,5	10,6	9,5	8,2	6,8	5,2	2,4	
Ⓑ =VS.65_40.4T_[GM173]		14,4	13,7	12,8	11,7	10,5	9,2	7,8	5,2	4,2

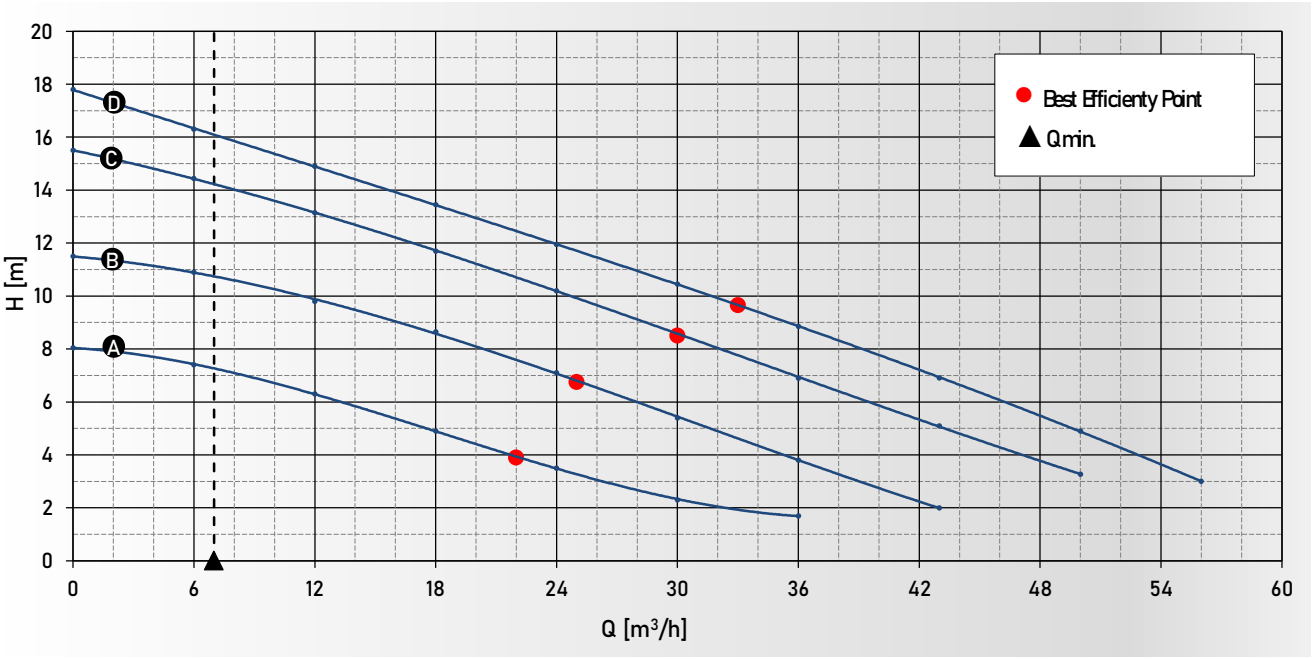
H [m]

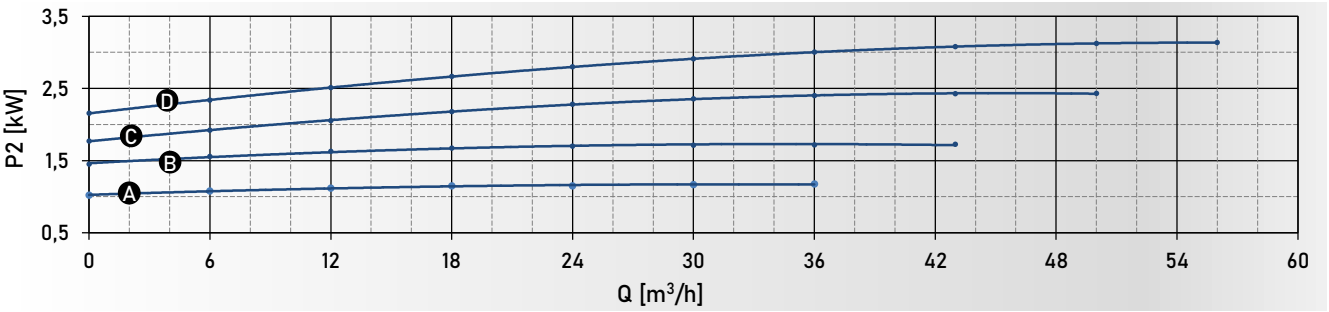
SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

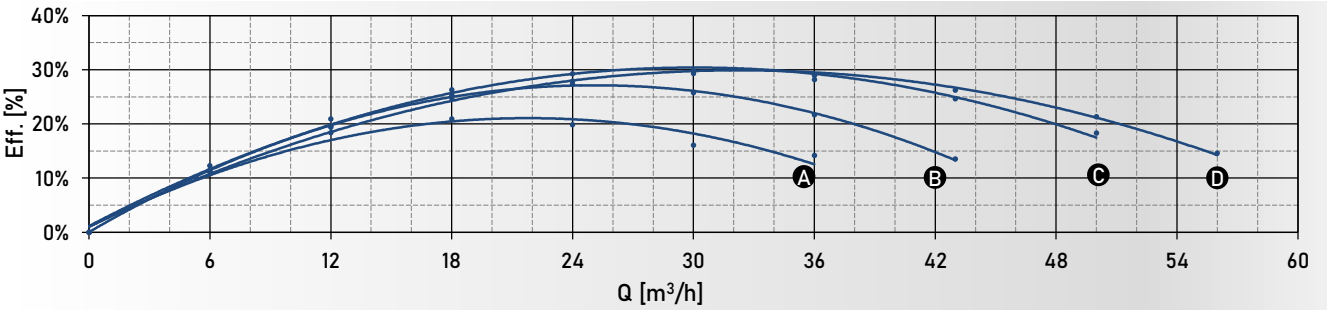
VS.65_[GM.135]

Ⓐ = VS.65_11.2T_[GM135] / VS.65_11.2M_[GM135] * - 1,1 KW
Ⓑ = VS.65_18.2T_[GM135] - 1,8 KW
Ⓒ = VS.65_22.2T_[GM135] - 2,2 KW
Ⓓ = VS.65_30.2T_[GM135] - 3,0 KW

50 Hz Three-phase motors - 2 poles - 3000 rpm
*50 Hz Single-phase motors - 2 poles - 3000 rpm







Q											
	m³/h	0	6	12	18	24	30	36	43	50	56
	L/min	0	100	200	300	400	500	600	717	833	933
	L/s	0	1,7	3,3	5,0	6,7	8,3	10,0	11,9	13,9	15,6

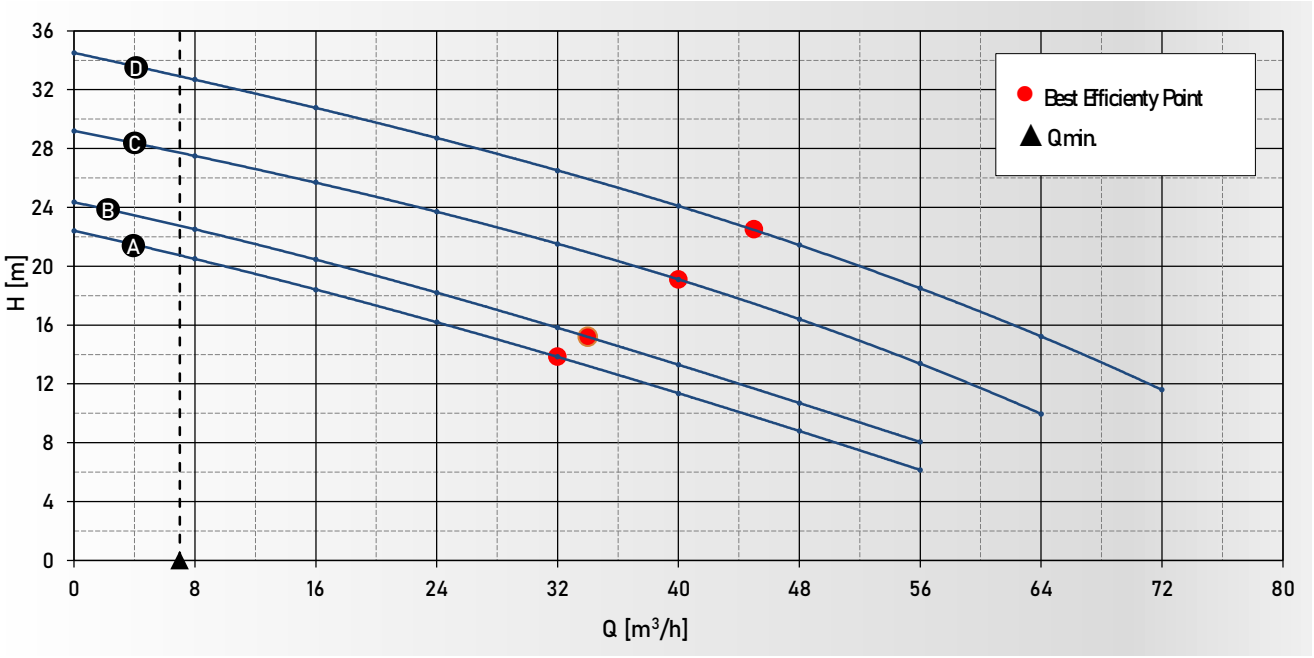
											H [m]
Ⓐ	=VS.65_11.2T / VS.65_11.2M_[GM135]	8,1	7,4	6,3	4,9	3,5	2,3				
Ⓑ	=VS.65_18.2T_[GM135]	11,5	10,9	9,8	8,7	7,1	5,4	3,8			
Ⓒ	=VS.65_22.2T_[GM135]	15,5	14,4	13,2	11,7	10,2	8,6	6,9	5,1		
Ⓓ	=VS.65_30.2T_[GM135]	17,8	16,3	14,9	13,5	12,0	10,5	8,9	6,9	4,9	3,0

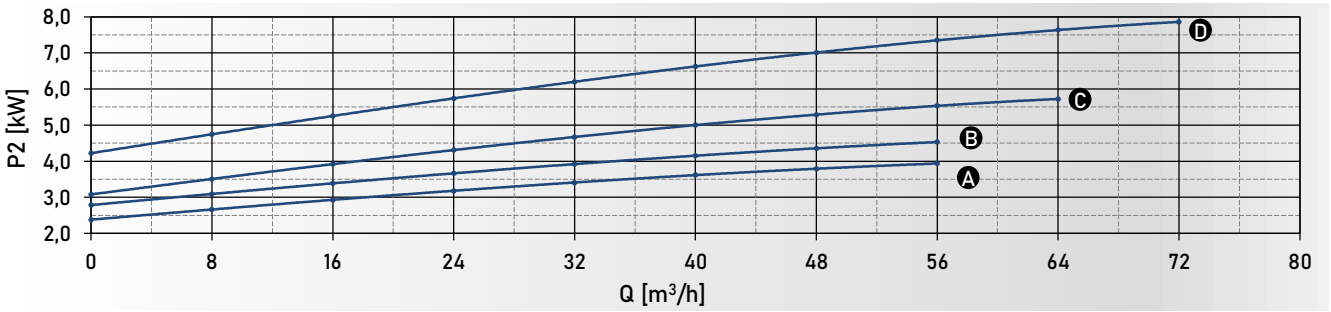
SUBMERSIBLE PUMPS
POMPE SOMMERGIBILI

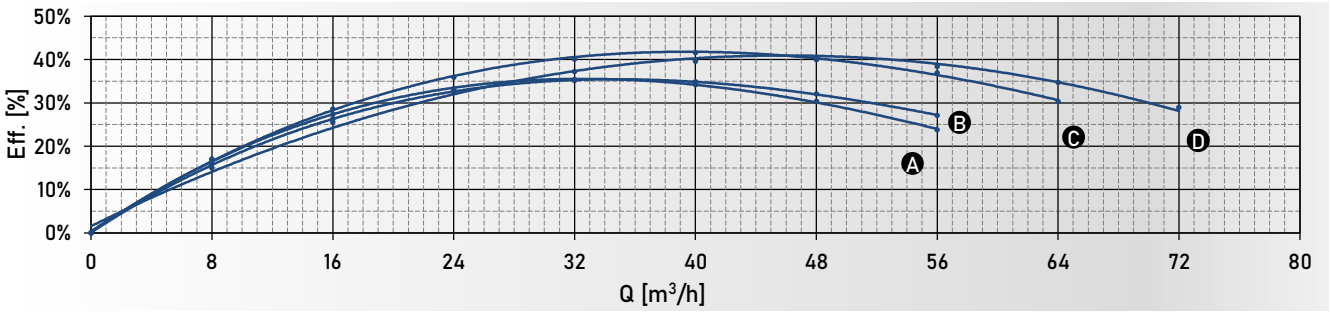
VS.65_[GM.173]

Ⓐ = VS.65_37.2T_[GM173] – 3,7 KW
Ⓑ = VS.65_44.2T_[GM173] – 4,4 KW
Ⓒ = VS.65_55.2T_[GM173] – 5,5 KW
Ⓓ = VS.65_75.2T_[GM173] – 7,5 KW

50 Hz Three-phase motors – 2 poles – 3000 rpm







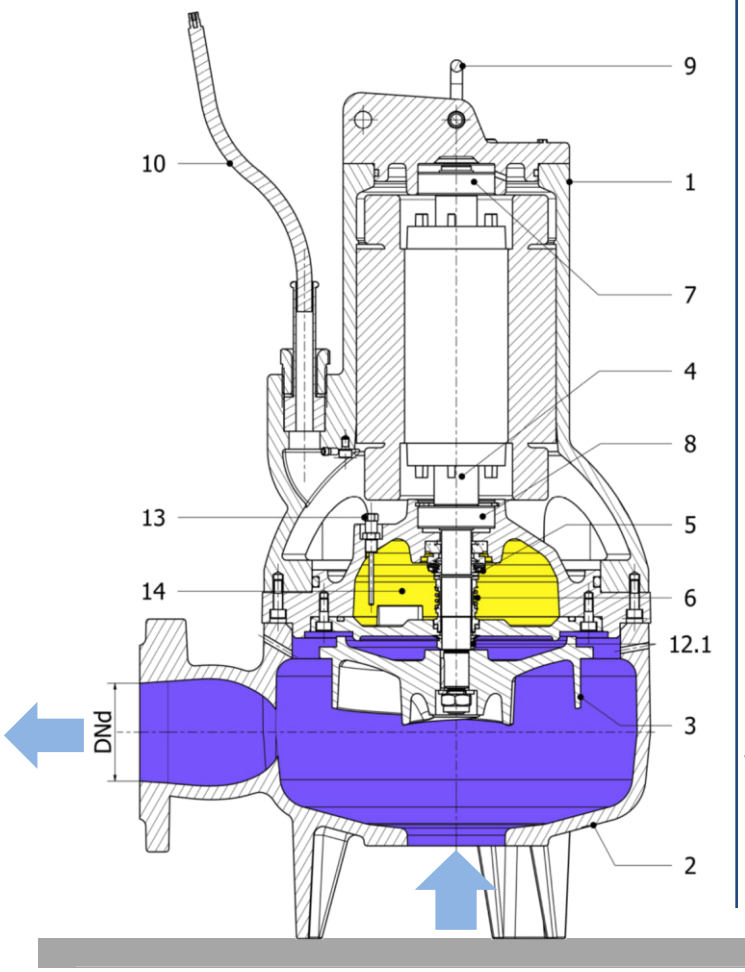
Q											
	m³/h	0	8	16	24	32	40	48	56	64	72
	L/min	0	133	267	400	533	667	800	933	1067	1200
	L/s	0	2,2	4,4	6,7	8,9	11,1	13,3	15,6	17,8	20,0

Ⓐ	=VS.65_37.2T_[GM173]	22,4	20,5	18,4	16,2	13,9	11,4	8,8	6,2		
Ⓑ	=VS.65_44.2T_[GM173]	24,4	22,5	20,5	18,2	15,8	13,3	10,7	8,1		
Ⓒ	=VS.65_55.2T_[GM173]	29,2	27,5	25,7	23,7	21,5	19,1	16,4	13,4	10,0	
Ⓓ	=VS.65_75.2T_[GM173]	34,5	32,7	30,8	28,7	26,5	24,1	21,5	18,5	15,2	11,6

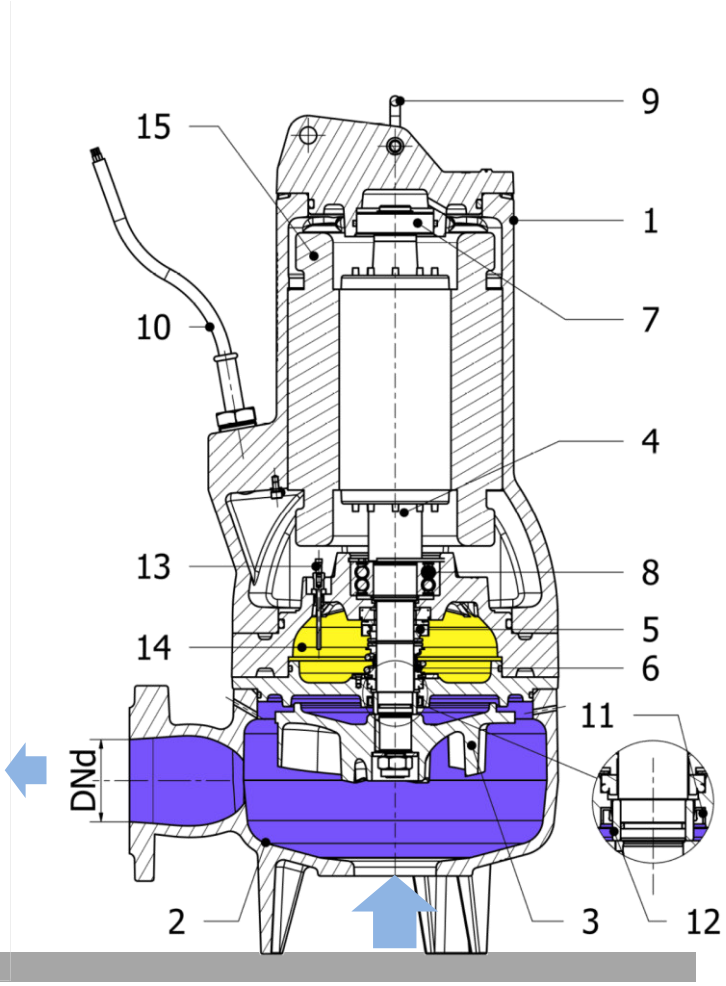
H [m]

SECTIONAL VIEWS - VISTE IN SEZIONE

VS.65_[GM.135]



VS.65_[GM.173]

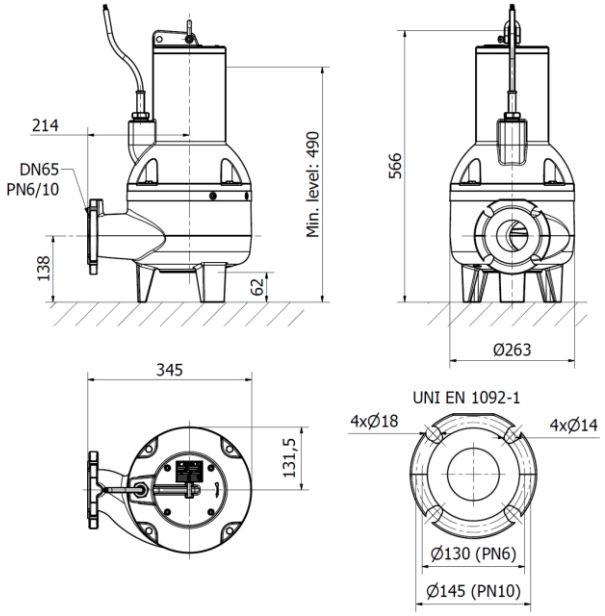


Pos.	Description	Descrizione	Material - Materiale
1	Motor body	Corpo motore	Cast Iron GG25 - Ghisa
2	Pump body	Corpo idraulico	Cast Iron GG25 - Ghisa
3	Impeller	Girante	Cast Iron GG25 - Ghisa
4	Shaft	Albero	Steel AISI 420B - Acciaio
5	Mechanical seal (motor side)	Tenuta meccanica (lato motore)	Carbon graphite / Al-Oxide - NBR
6	Mechanical seal (pump side)	Tenuta meccanica (lato pompa)	Silicon carbide / Silicon Carbide
7	Upper beraing	Cuscinetto superiore	
7.1	Upper beraing	Cuscinetto superiore	6203-2RS1
8	Lower bearing	Cuscinetto inferiore	
8.1	Lower bearing	Cuscinetto inferiore	6203-2RS1
9	Handle	Grillo	Steel AISI 304 - Acciaio
10	Supply Cable	Cavo elettrico	H07RN-F [10m]
11	Shaft protection sleeve	Bussola protezione albero	Steel AISI 304 - Acciaio
12	Radial lip seal ring	Anello tenuta radiale	NBR
12.1	Seal V-Ring	Anello tenuta V-Ring	NBR
13	Oil probe (optional)	Sonda olio (optional)	
14	Oil chamber - cooling and lubrication of mechanical seal	Camera olio - raffreddamento e lubrificazione tenuta meccanica	
15	Class F [GM.135] / Class H [GM.173] Built in Thermal protector	Classe F [GM.135] - Classe H [GM.173] Pastiglie termice	Bimetal - Bimetallico
DNd	Delivery outlet	Bocca di mandata	Ø65 mm - PN6-PN16
	Screw quality grade	Grado di qualità delle viti	A2

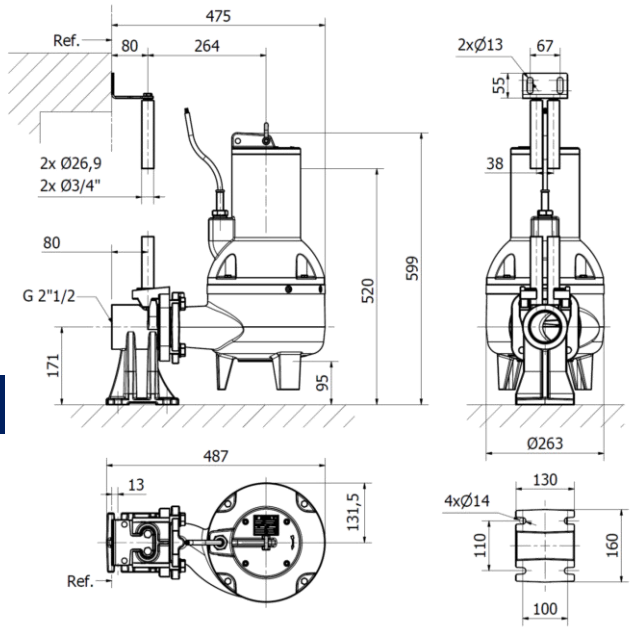
OVERALL DIMENSIONS - DIMENSIONI D'INGOMBRO

VS.65_[GM.135]

S

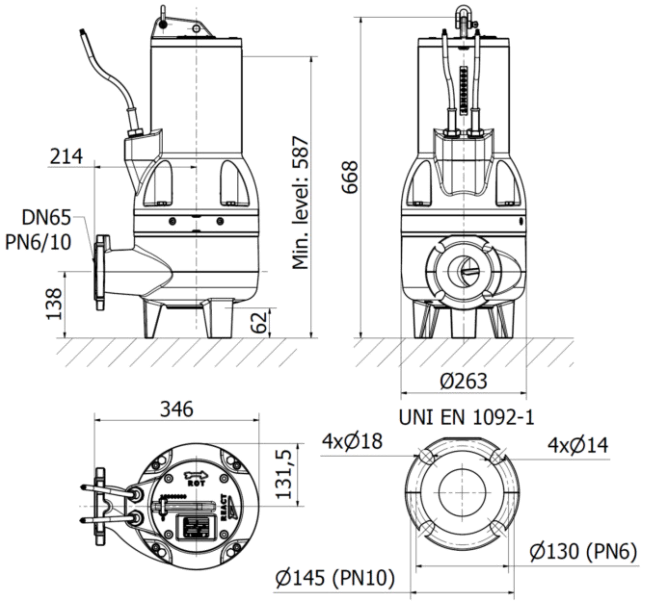


FC

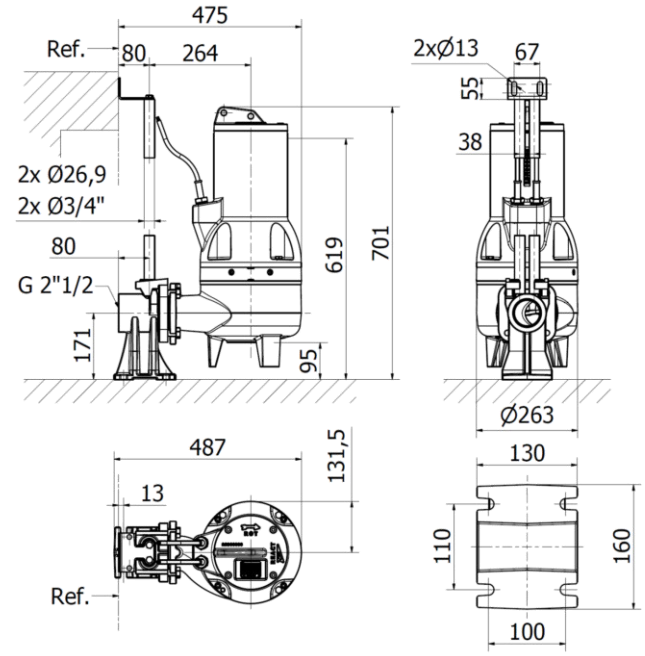


VS.65_[GM.173]

S



FC



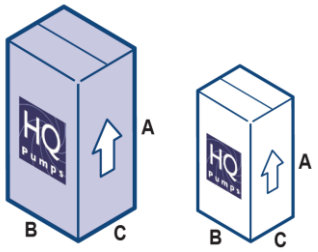
INSTALLATION MODES - MODALITA' D'INSTALLAZIONE

S = Transportable underwater - Trasportabile in immersione

FC = Fixed with coupling dvice - Fissa con dispositivo di accoppiamento

PACKAGING DIMENSIONS - DIMENSIONI IMBALLAGGIO mm

	A	B	C
Pump VS.65_[GM.135] - Pompa	720	370	300
Pump VS.65_[GM.173 - Pompa	720	370	300
Foot coupling - Piede di accoppiamento	260	175	195

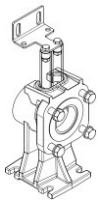


Dimensions and technical data are indicative, not binding and subjected to possible modifications without notice.
Dimensioni e dati tecnici sono indicativi, non vincolanti e soggetti a eventuali modifiche senza preavviso.

ACCESSORIES - ACCESSORI

TBV (1) - art. 4BV000004
FBV (2) - art. 4BV000006

(1) Threaded valve G 2"1/2 - (2) Flanged DN65
(1) Valvola a palla filettata G 2"1/2 - Flangiata



FC - art. 8FC000003

DN65 PN10 Coupling devide - outlet 2"1/2
Piede di accoppiamento DN65 PN10 - uscita G

SHELL - art. 3CS000021

Counterweight for level switch
Contrappeso per galleggiante

AT 65 - art. 2SB000006

Adapter for competitors foot coupling device
Adattatore per dispositivo di accoppiamento

HF - art. 3CS000007

Level switch for sewage (10 m el. cable)
Regolatore di livello per acque reflue (cavo el. 10 m)

TUTOR - art. 3CS000020

Float guidance system for confined spaces
Sistema di guida del galleggiante per spazi ristretti

CHAIN - ART. 2SC000032

Stailess steel chain
Catena in acciaio inox

START BOX (M) - art. 5EC000001
START BOX (MA) - art. 5EC000002

Capacitor box for 1 singlephase pump starting
(M) without float switch - (MA) with float switch
Cassetta portacondensatore per avviamento di 1 pompa
(M)senza galleggiante - (MA) con galleggiante

ECH

ECL

VS.65_[GM.135]		P_2 [kW]	In [A]	Avv. Start.
VS.65_11.4T_[GM.135]	- 4 poles	1,1	2,8	DOL
VS.65_18.4T_[GM.135]	- 4 poles	1,8	3,7	DOL
VS.65_22.4T_[GM.135]	- 4 poles	2,2	5,4	DOL
VS.65_11.2M_[GM.135]	- 2 poles	1,1	7,3	40+40mF
VS.65_11.2T_[GM.135]	- 2 poles	1,1	3,2	DOL
VS.65_18.2T_[GM.135]	- 2 poles	1,8	4,4	DOL
VS.65_22.2T_[GM.135]	- 2 poles	2,2	5,5	DOL
VS.65_30.2T_[GM.135]	- 2 poles	3	6,8	DOL
VS.65_[GM.173]				
VS.65_30.4T_[GM.173]	- 4 poles	3	7,0	DOL
VS.65_40.4T_[GM.173]	- 4 poles	4	8,5	DOL
VS.65_44.2T_[GM.173]	- 2 poles	4,4	9,0	DOL
VS.65_55.2T_[GM.173]	- 2 poles	5,5	12,3	DOL / S/D
VS.65_75.2T_[GM.173]	- 2 poles	7,5	15,5	DOL / S/D

ECH - ELECTROMECHANICAL
ELETTROMECCANICO

	1 Pump				2 Pumps			
ECH1.M-14 5EC000081	ECH1.T-7 5EC000005	ECH1.T-14 5EC000007	ECH1.T-22 5EC000009	ECH2.M-14 5EC000032	ECH2.T-7 5EC000029	ECH2.T-14 5EC000031	ECH2.T-22 5EC000033
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S/D*							
			▪				▪
S/D*							

ECL - ELECTRONIC
ELETTRONICO

1 Pump			2 Pumps		
ECL1.M-16 5EC000081	ECL1.T-15 5EC000083	ECL1.T-24 5EC000086	ECL2.M-16 5EC000082	ECH2.T-15 5EC000084	ECH2.T-24 5EC000087
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S/D* = Control panel on request - Quadro di controllo su richiesta.