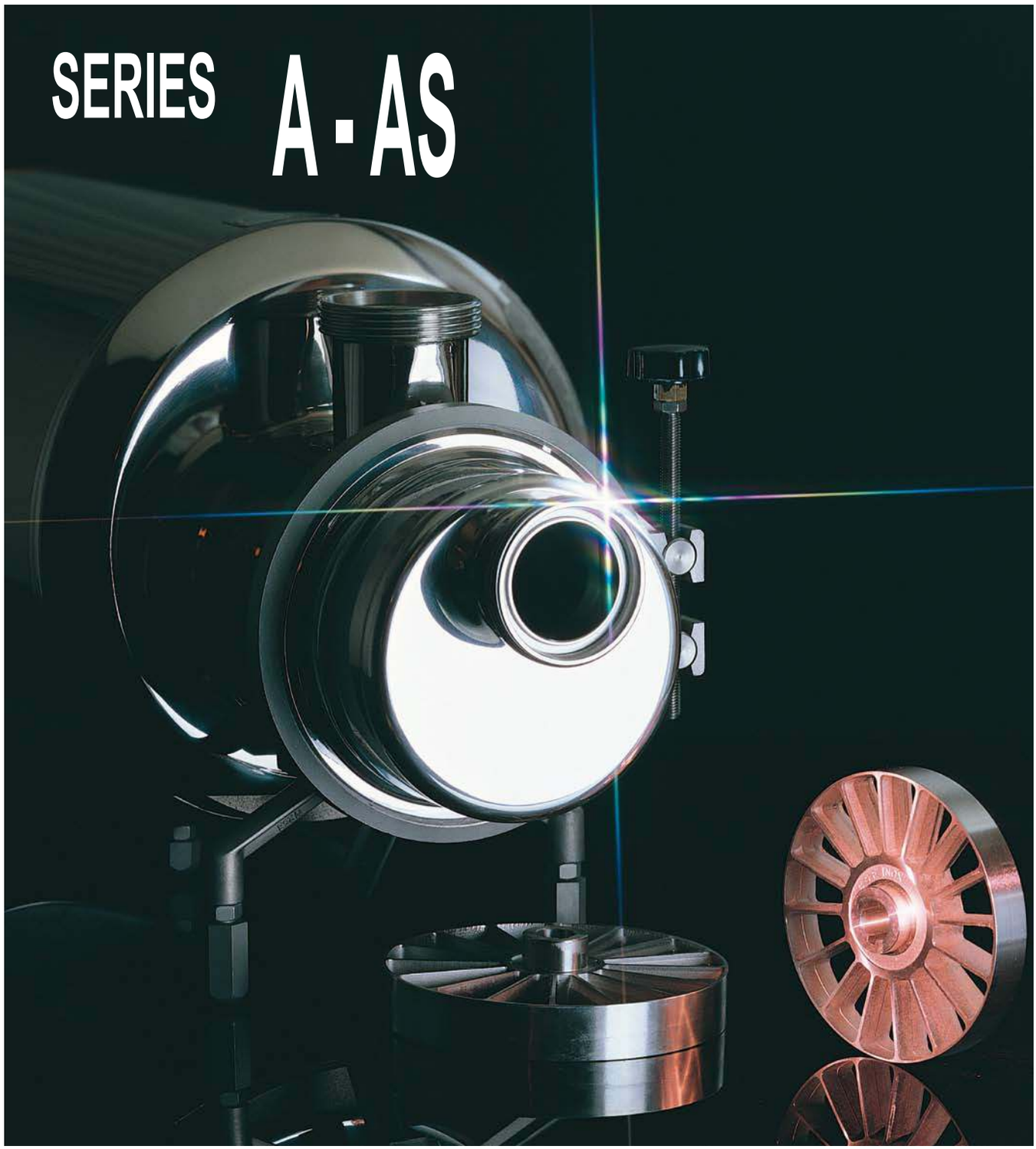
SANITARY SELF-PRIMING PUMPS

CLOSED COUPLED WITH STANDARD MOTOR



CSF inox

C.S.F. INOX SPA

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SELF-PRIMING SANITARY PUMPS
AS SERIES

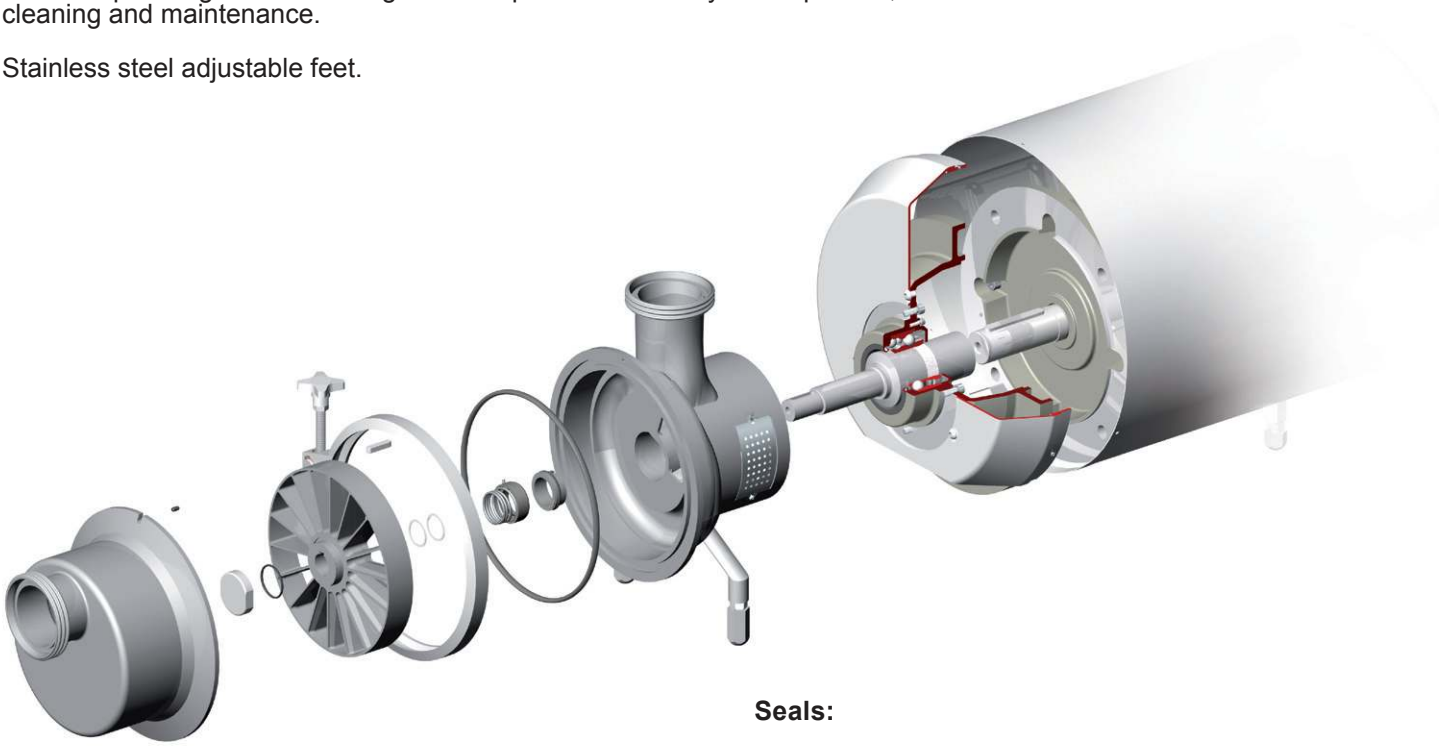
Standard design

AS series sanitary self-priming pumps..
A close coupled design with independent shaft support and standard IEC motors. The ability of these pump to maintain a vacuum under varying suction conditions, makes them ideal for applications where the incoming liquid contains gas or air, such as vessel scavenging, the handling of foaming liquids or where the suction pipe is only partially flooded.
Prior to the first start-up, they must be initially filled with liquid; subsequently, liquid remains in the pump, allowing rapid self-priming to occur, even if the suction pipe is emptied. The construction materials and the quick disassembly design make the AS series particularly suitable for a wide range of applications.
The pumps are designed to a modular concept.

Wetted parts in CF-3M 1.4404 / AISI 316L stainless steel, investment cast and electro-chemically polished. Special internal finishes to 0,5 micron Ra are available on request.

The clamp casing and seal design allows quick disassembly for inspection, cleaning and maintenance.

Stainless steel adjustable feet.



Seals:

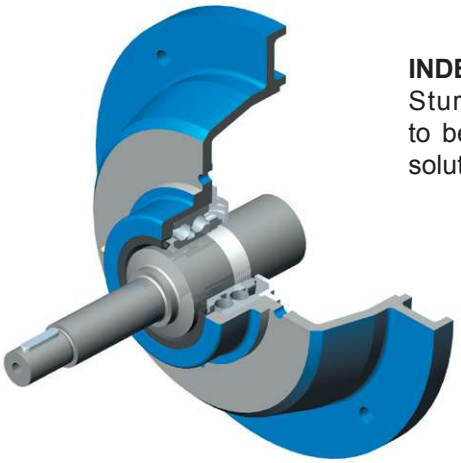
Mechanical seals with seats to EN 12756, ISO 3069 standards.
Single internal mechanical seal
Flushed mechanical seal
Double flushed mechanical seal

Elastomers (certified to FDA):

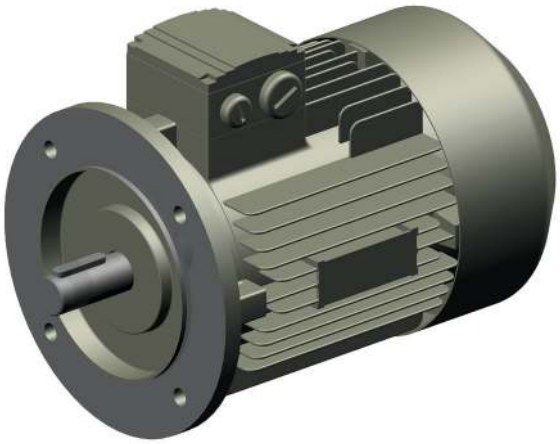
EPDM
Fluorocarbon
Silicone
P.T.F.E. (FEP)

Connections:

DIN - SMS - IDF - BS / RJT - DS - CLAMP and EN 1092-1 PN16 flanges to suit most international standards.



INDEPENDENT SUPPORT
Sturdy and modular support to be integrated in the various solutions.



SEPARATE MOTOR
For a self-sufficient choice in compliance with the following standards:
- IEC 34 - 1
- VDE 0530T1
- NF C51 - 111
- BS 5000 PART. 99
- NEMA MG1 PART. 1

CASING
Casing with side duct, 6 mm thick, with perfect development of the shape, enhanced by investment casting.

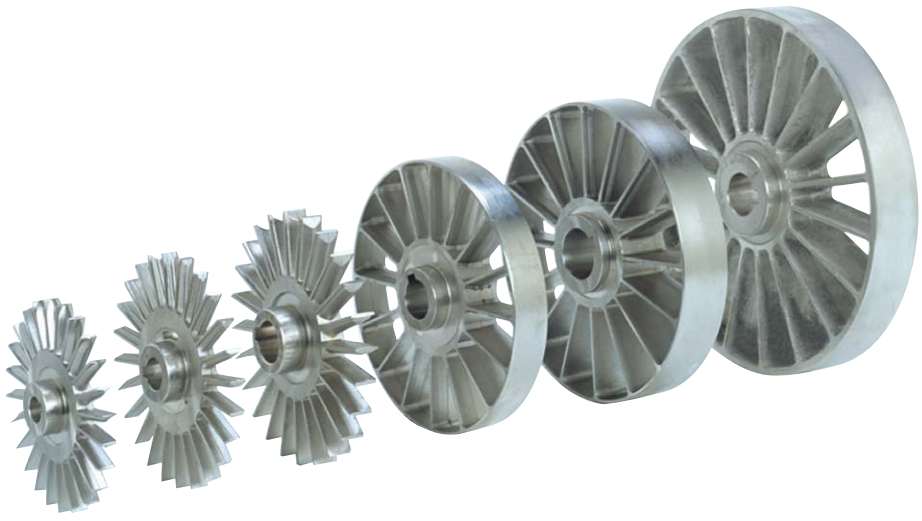
IMPELLER
Each pump model has its own impeller that is manufactured with perfect shapes, thickness and materials and balanced thanks to the investment casting procedure. This means that they are perfectly efficient and reliable.

FRONT CASING COVER
Front casing cover with side duct obtained by investment casting plus holding chamber.

APPLICATIONS

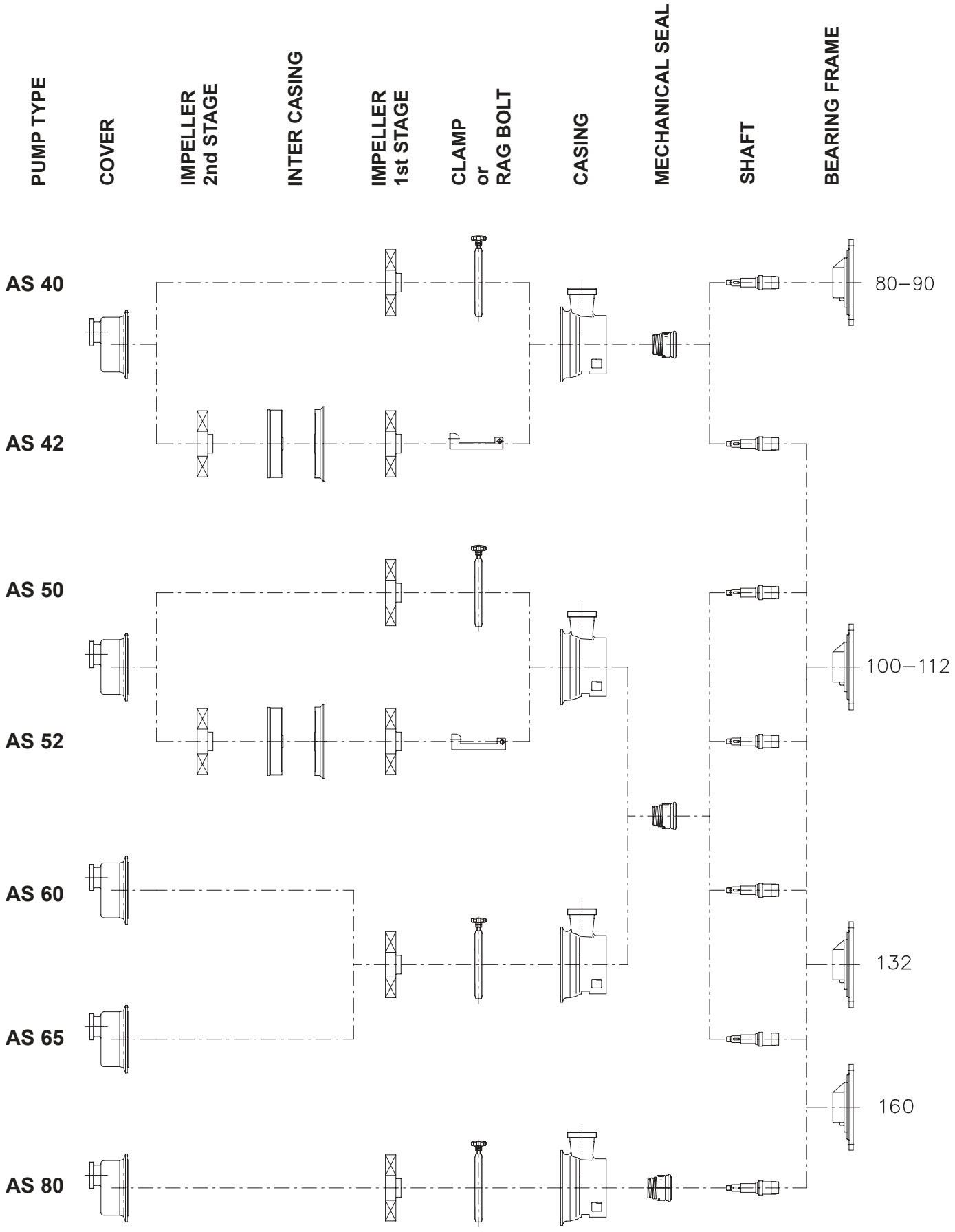
AS series pumps incorporate design features and material technologies that enable them to fulfil a wide range of operational requirements within the food, beverage, dairy, pharmaceutical and chemical industries. They are especially suited for clear low viscosity fluids: CIP solutions, water, juices, wine, spirits, chemicals and pharmaceutical media, in CIP scavenge/return and tank emptying duties.

Self - priming, sanitary, easy - opening, side channel pump.



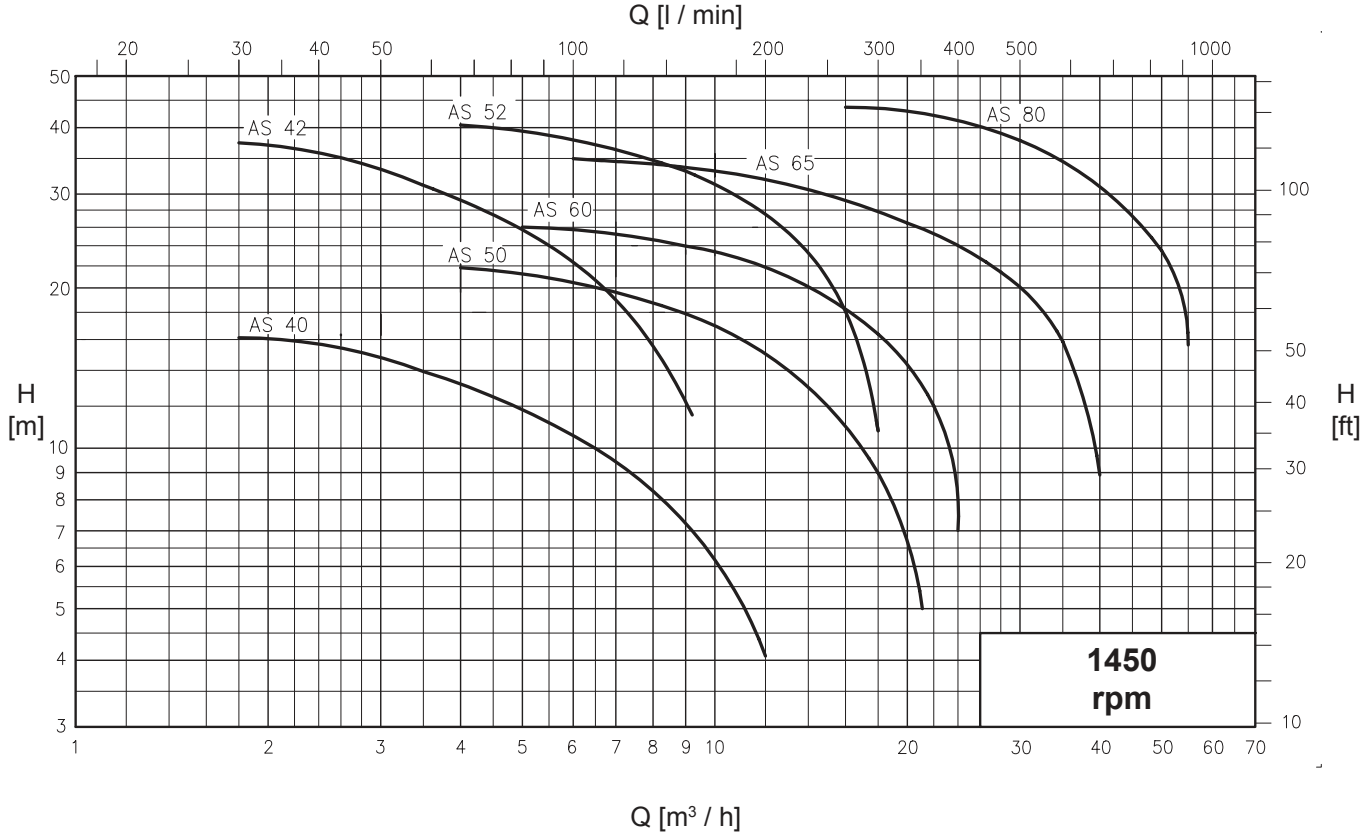
Star-shaped impellers in CF-3M 1.4404 / AISI 316L stainless steel achieved with micro-casting procedure.

AS SERIES



A range of 4 single-stage and 2 two-stage versions.

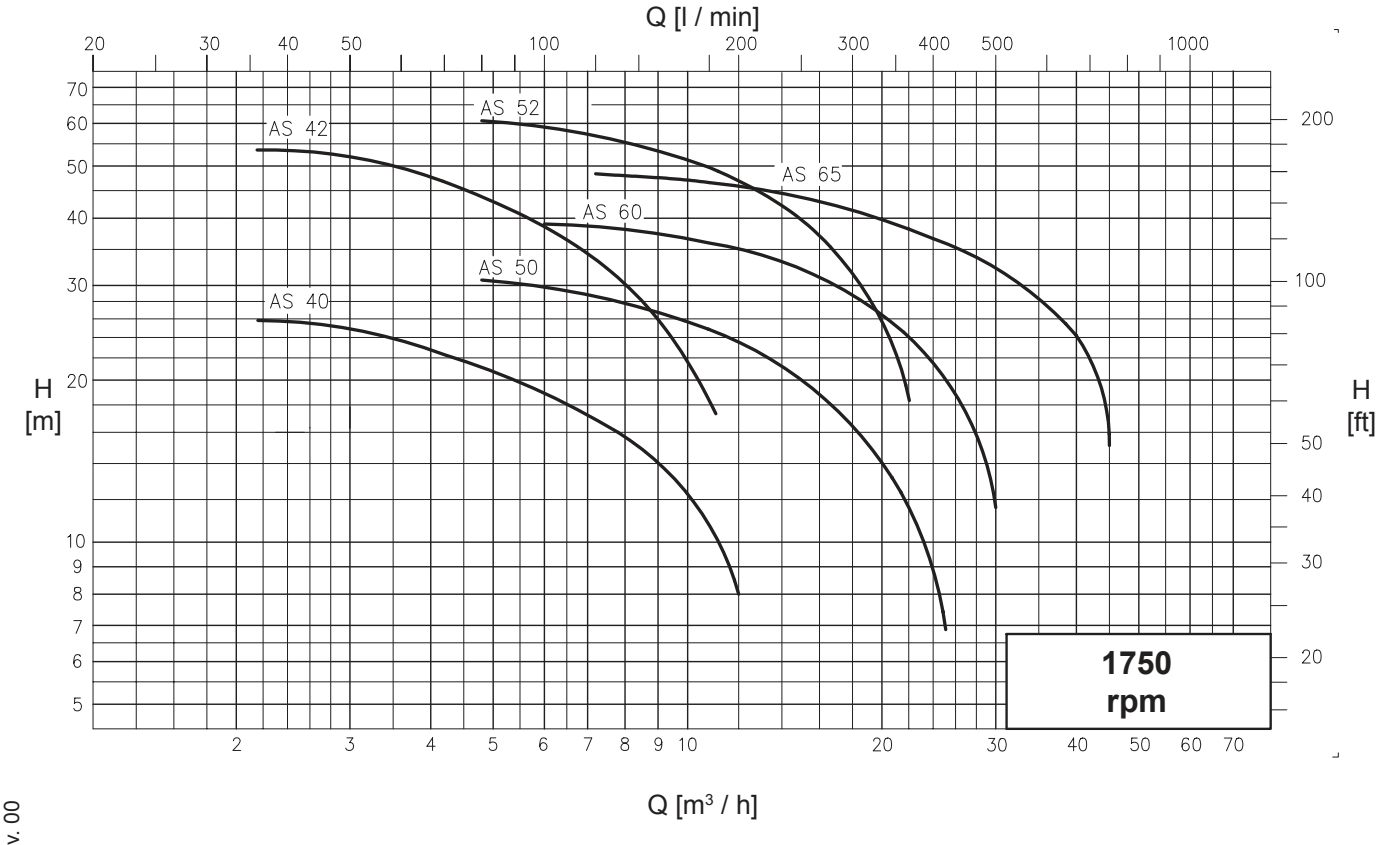
GENERAL DIAGRAM



Performance applies to H_2O at 20 °C, 1013 millibar

Data not binding

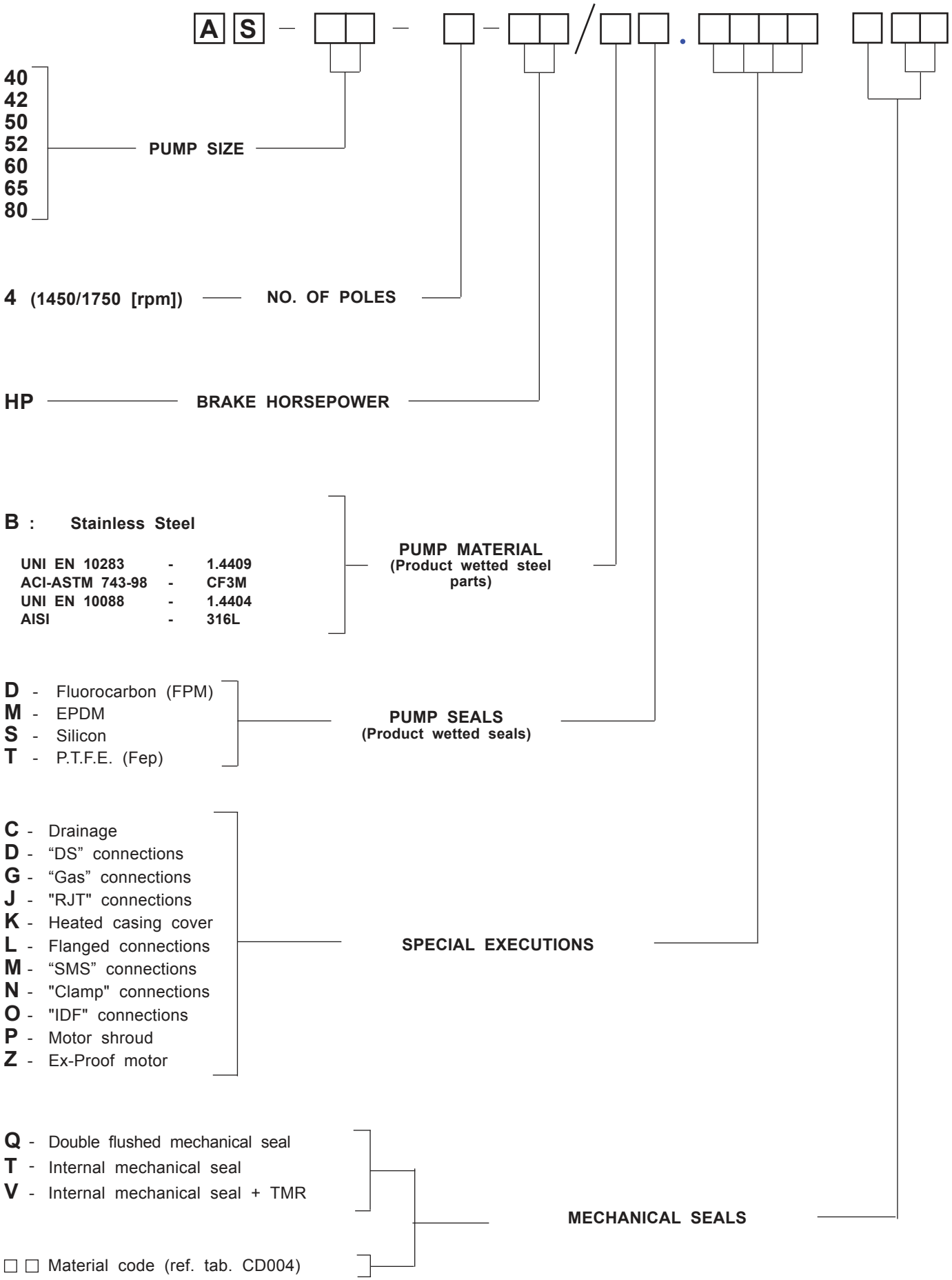
GENERAL DIAGRAM



Performance applies to H_2O at 20 °C, 1013 millibar

Data not binding

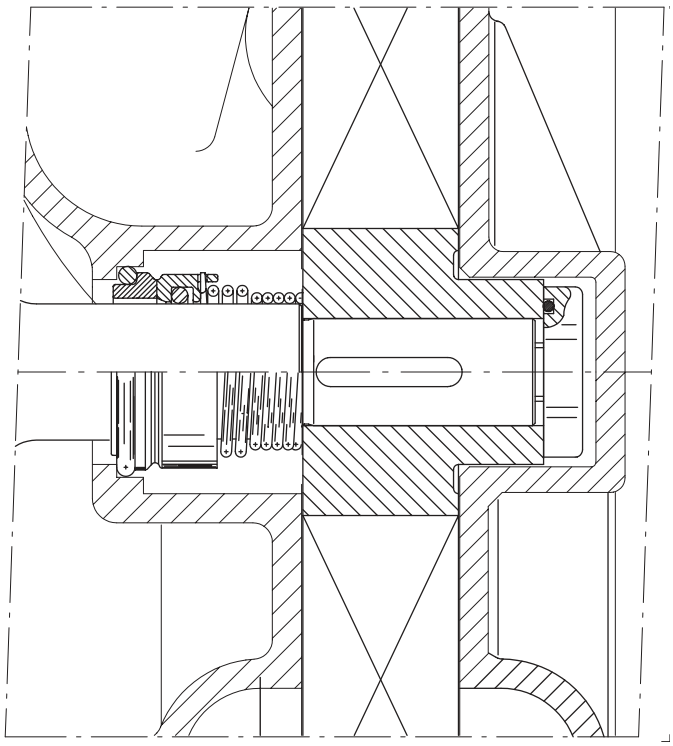
PUMP CODES GUIDE AS



Example: AS 50-4-3/BM.PT31

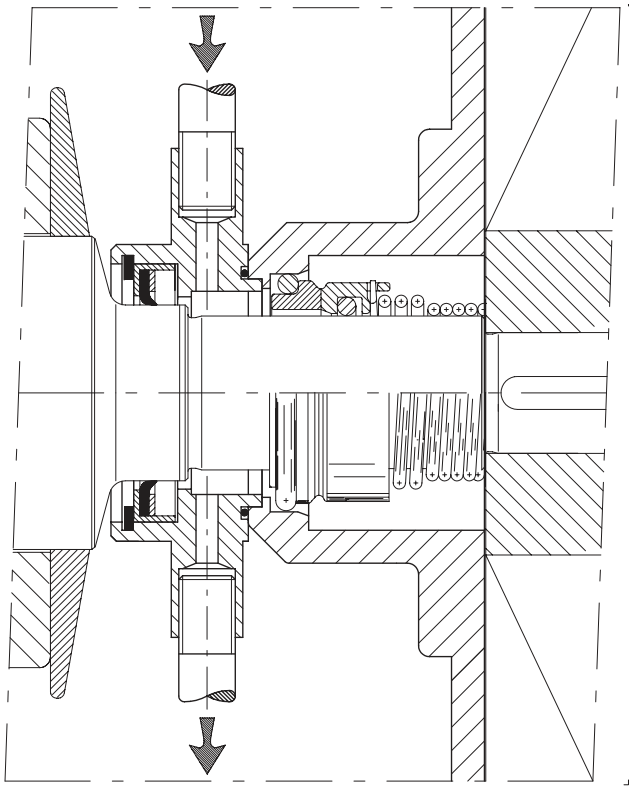
MECHANICAL SEALS

AS pumps are fitted with standard seal seats according to: EN 12756, ISO 3069 standards .
The seal components are available in a wide range of materials, to be selected according to handled product features and the operating conditions.



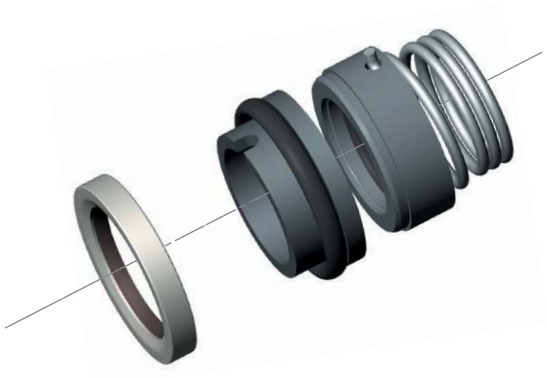
EXECUTION T

STANDARD MECHANICAL SEAL ASSEMBLY "T"
Internal assembly seal, running into the handled product and placed immediately behind the impeller in a special seal chamber to ensure the correct re-circulation around the seal faces.



EXECUTION V

INTERNAL MECHANICAL SEAL ASSEMBLY "V"
The external liquid circulation chamber prevents any damages to the electric motor and contamination of the environment, due to the possible leakage of the internal mechanical seal.



MECHANICAL SEALS

MATERIAL CODES

METALS
X - Stainless steel AISI 316L
L - Hastelloy (Ni alloy)

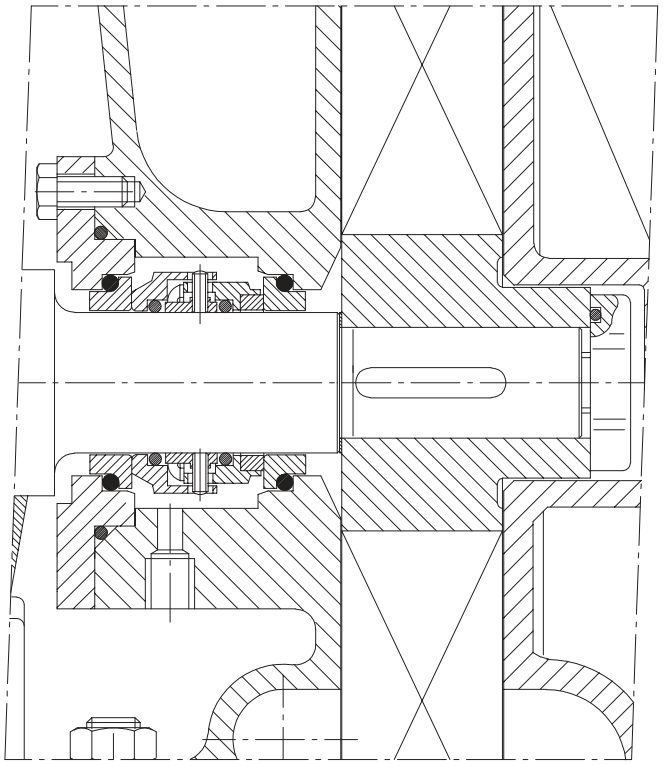
CARBONS
V - Normal carbon
Z - Special carbon

RESINS
5 - Normal PTFE
4 - Loaded PTFE
F - O-Ring FEP

METAL OXIDES
2 - Alumina ceramic

METAL CARBONS
3 - Hard metal welded on stainless steel (TUC)
R - Integral anti-corrosion hard metal (TUC)
K - Integral silicate carbon (SIC)

ELASTOMERS
6 - Nitrile (NBR)
7 - Ethylene propylene (EPDM)
W - FPM for high T
Y - Fluorocarbon (FPM)
B - Silicone
Q - Chemraz
U - Kalrez

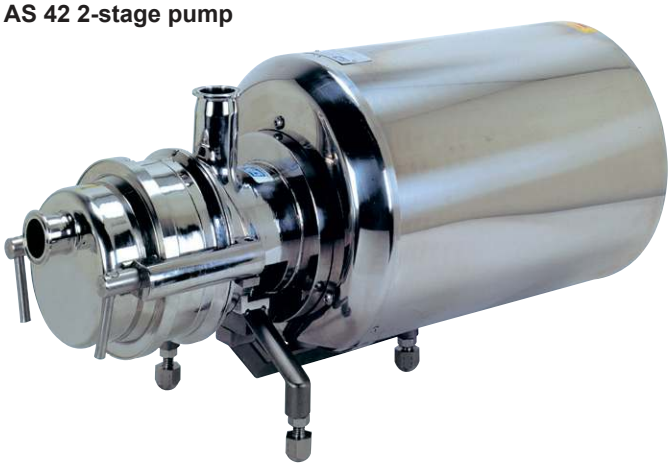


EXECUTION Q

COMPACT DOUBLE MECHANICAL SEAL ASSEMBLY "Q"

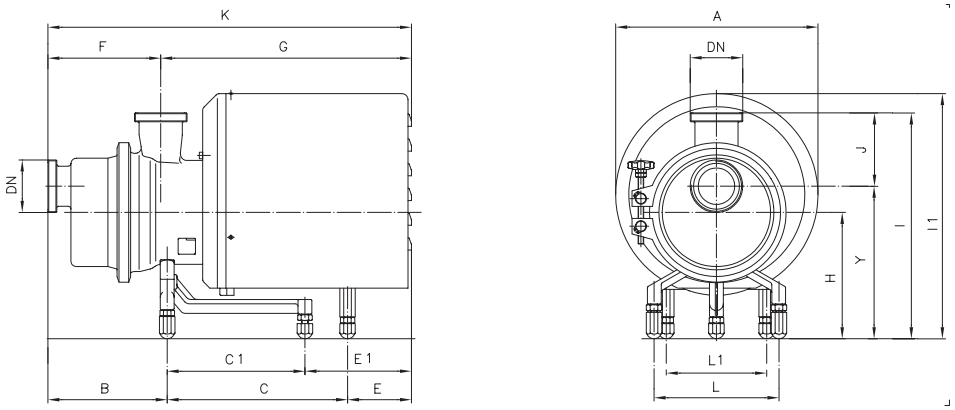
Double back-to-back assembly seal, suitable for abrasive, dirty, crystallizing or high-temperature liquids.
The seal assembly is completely housed and the latter is provided with inlet/outlet flushing media that lubricates and cools the seal faces preventing also crystal formation. In case of product-side seal leakage, traces of the handled product can be noted into the flushing media.

AS 42 2-stage pump



AS 50 - AS 65 single-stage pumps

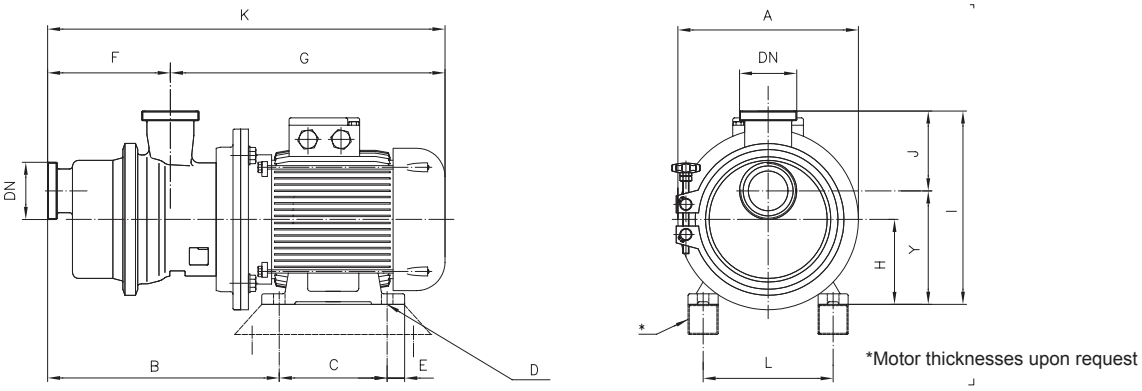
SERIES AS 40-50-60-65-80 WITH SHROUD 1450 rpm — OVERALL DIMENSIONS



Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors

Pumps		kW	DN	A	B	C	C1	E	E1	F	G	K	H	J	I	I1	Y	L	L1	Weight kg
AS 40	1450 rpm	1,1	40	302	176	-	190	-	224	150	440	590	162	110	307	346	197	178	-	29
		1,5	40	302	176	-	190	-	224	150	440	590	162	110	307	346	197	178	-	31
		2,2	40	330	176	-	301	-	183	150	520	670	190	110	335	395	225	225	-	45
AS 50		2,2	50	330	196	-	301	-	202	175	523	697	228	114	378	433	264	225	-	50
		4	50	330	196	-	301	-	202	175	523	697	228	114	378	433	264	225	-	59
		5,5	50	370	196	333	-	268	-	175	622	797	228	114	378	450	264	225	198	70
AS 60		4	65	330	215	-	301	-	202	204	514	718	228	135	408	433	273	225	-	62,5
		5,5	65	370	215	334	-	267	-	204	612	816	228	135	408	450	273	225	198	75
AS 65		5,5	65	370	215	334	-	267	-	204	612	816	228	135	408	450	273	225	198	76,5
		7,5	65	370	215	334	-	267	-	204	612	816	228	135	408	450	273	225	198	82,5
		11	65	480	215	470	-	337	-	204	818	1022	228	135	480	523	273	225	254	109
AS 80		11	80	480	267	498	-	337	-	245	854	1099	228	160	446	523	286	225	254	129
		15	80	480	267	542	-	337	-	245	854	1099	228	160	446	523	286	225	254	140
		18,5	80	400	267	570	-	254	-	245	852	1097	230	160	448	575	288	225	279	168

SERIES AS 40-50-60-65-80 WITHOUT SHROUD 1450 rpm — OVERALL DIMENSIONS

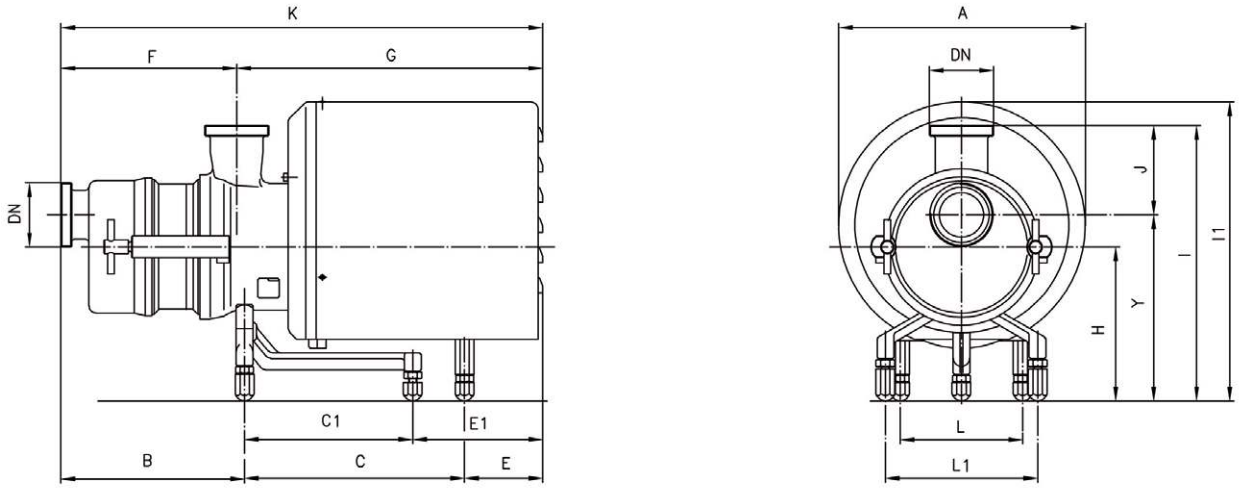


*Motor thicknesses upon request

Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors

Pumps		kW	DN	A	B	C	øD	E	F	G	K	H	J	I	Y	L	M	N	O	Weight kg
AS 40	1450 rpm	1,1	40	200	296	100	10	34	150	377	527	90	110	235	125	140	-	-	-	26
		1,5	40	200	296	125	10	9	150	377	527	90	110	235	125	140	-	-	-	28
		2,2	40	250	313	140	12	18	150	463	613	100	110	245	135	160	-	-	-	41
AS 50		2,2	50	250	344	140	12	18	175	467	642	100	114	250	136	160	-	-	-	45
		4	50	250	351	140	12	18	175	431	606	112	114	262	148	190	-	-	-	54
		5,5	50	300	392	140	12	15	175	538	713	132	114	282	168	216	-	-	-	65
AS 60		4	65	250	371	140	12	18	204	430	634	112	135	292	157	190	-	-	-	57
		5,5	65	300	412	140	12	20	204	529	733	132	135	312	177	216	-	-	-	68
AS 65		5,5	65	300	412	140	12	20	204	529	733	132	135	312	177	216	-	-	-	69,5
		7,5	65	300	412	178	12	20	204	529	733	132	135	312	177	216	-	-	-	76
		11	65	350	475	210	15	21	204	687	891	160	135	340	205	254	-	-	-	104
AS 80		11	80	350	552	210	15	23	245	722	967	160	160	378	218	254	-	-	-	118
		15	80	350	552	254	15	23	245	722	967	160	160	378	218	254	-	-	-	129
		18,5	80	350	561	279	15	23	245	767	1012	180	160	398	238	279	-	-	-	157

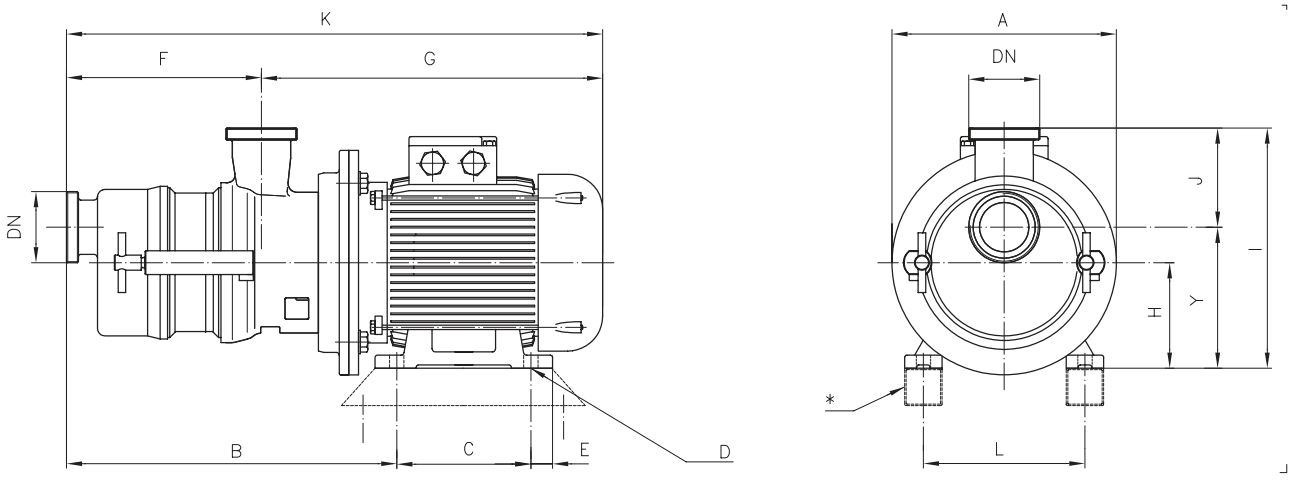
SERIES AS 42-52 WITH SHROUD 1450 rpm — OVERALL DIMENSIONS



Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors

Pumps	1450 rpm	kW	DN	A	B	C	C1	E	E1	F	G	K	H	J	I	I1	Y	L	L1	Weight kg
AS 42		2,2	40	300	234	-	301	-	183	208	520	728	190	110	335	395	225	225	-	56
		3	40	300	234	-	301	-	183	208	520	728	190	110	335	395	225	225	-	60
AS 52		5,5	50	430	258	266	-	280	-	237	567	804	228	113	378	450	264	225	180	85

SERIES AS 42-52 WITHOUT SHROUD 1450 rpm — OVERALL DIMENSIONS

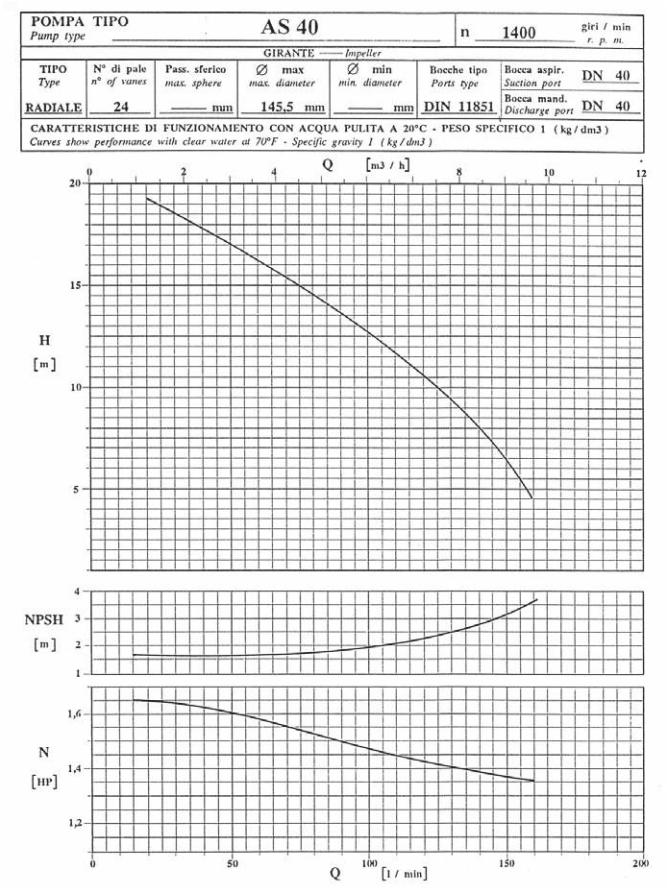


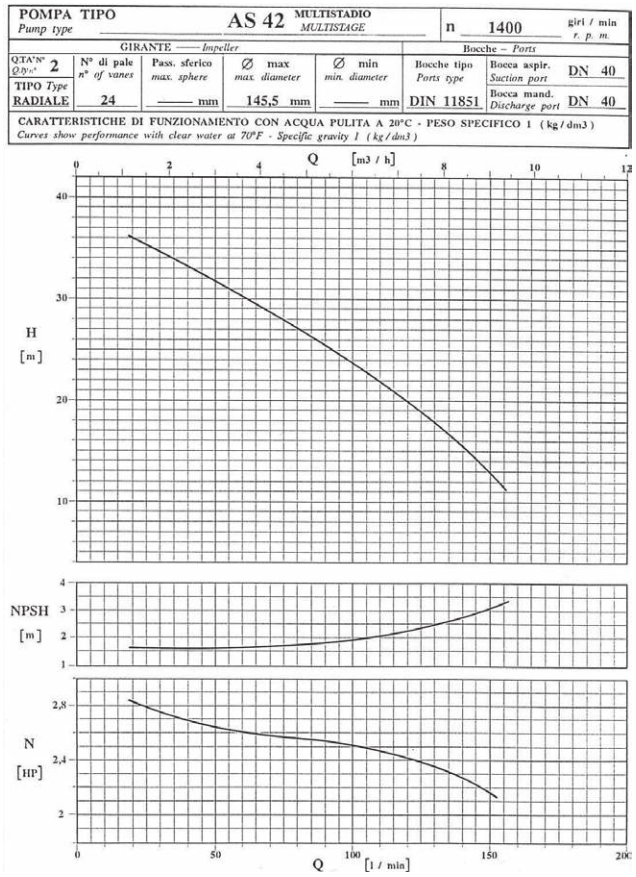
*Motor thicknesses upon request

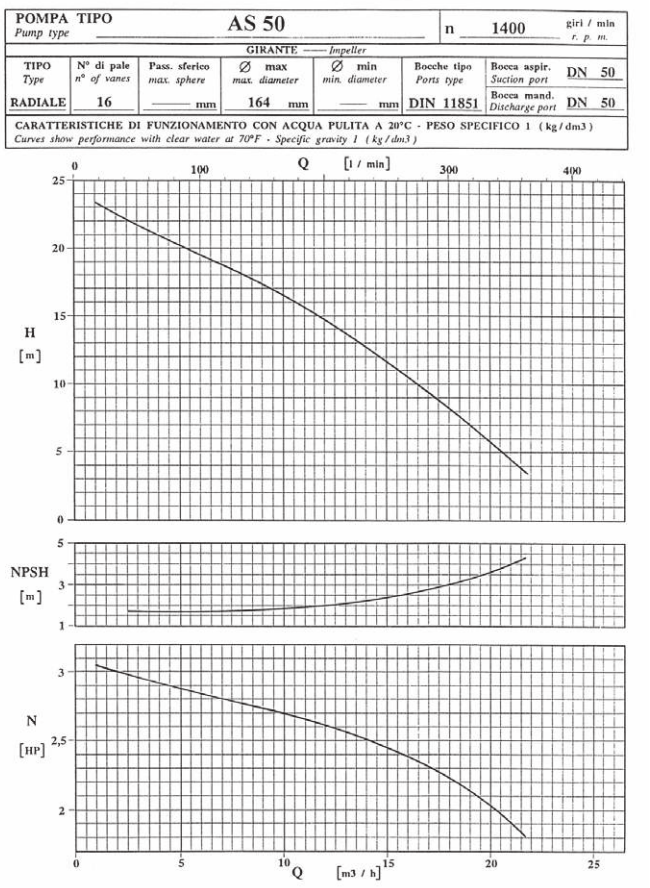
Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors

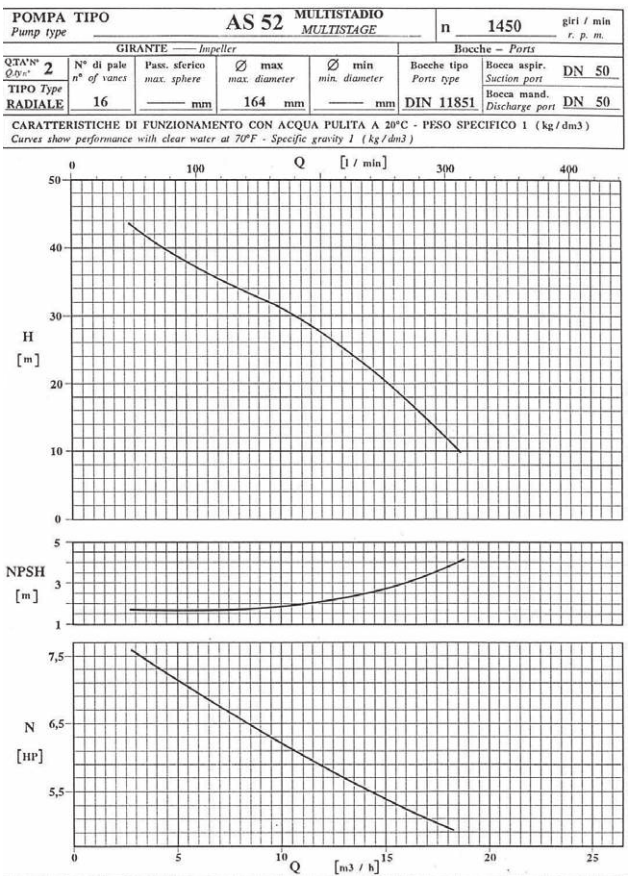
Pumps	1450 rpm	kW	DN	A	B	C	øD	E	F	G	K	H	J	I	Y	L	M	N	O	Weight kg
AS 42		2,2	40	250	382	140	12	18	208	426	634	100	110	245	135	160	-	-	-	51
		3	40	250	382	140	12	18	208	426	634	100	110	245	135	160	-	-	-	55
AS 52		5,5	50	300	454	140	12	20	237	505	742	132	113	282	168	216	-	-	-	77

1450 giri/min - ***1450 rpm***









CURVE CARATTERISTICHE — Serie AS
PERFORMANCE CURVES — *AS Series*

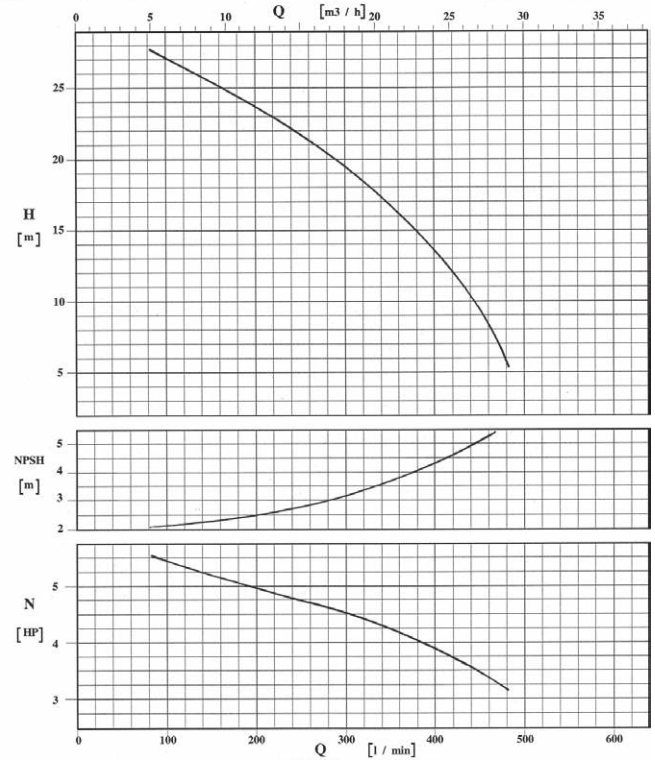
1450 giri/min - ***1450 rpm***

POMPA TIPO *Pump type* **AS 60 - 4 - 5,5** | n 1450 giri/min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	ϕ max *max. diameter*	ϕ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 65
RADIALE	16	—— mm	200 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 65

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm3)

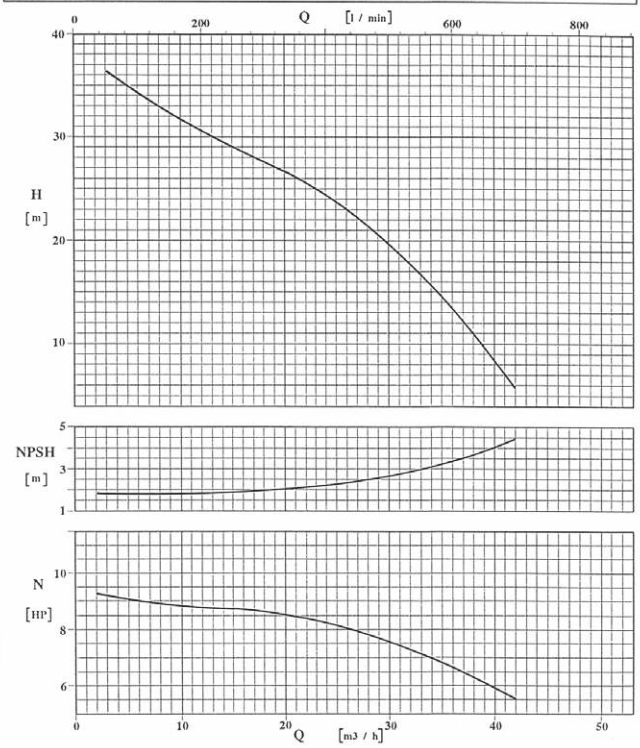


POMPA TIPO *Pump type* **AS 65** | n 1400 giri/min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 65
RADIALE	16	—— mm	200 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 65

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm3)

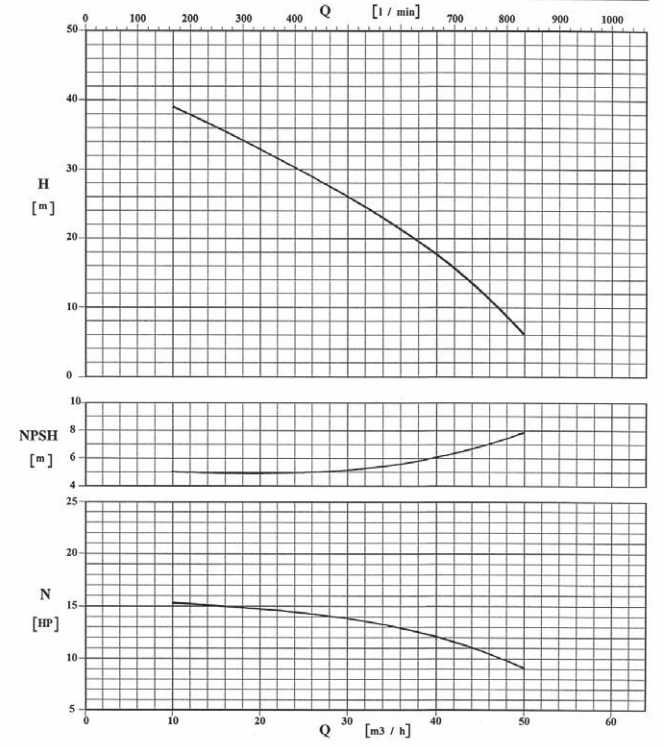


POMPA TIPO *Pump type* **AS 80 - 4 - 15** | n 1450 giri/min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 80
RADIALE	16	—— mm	240 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 80

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm3)

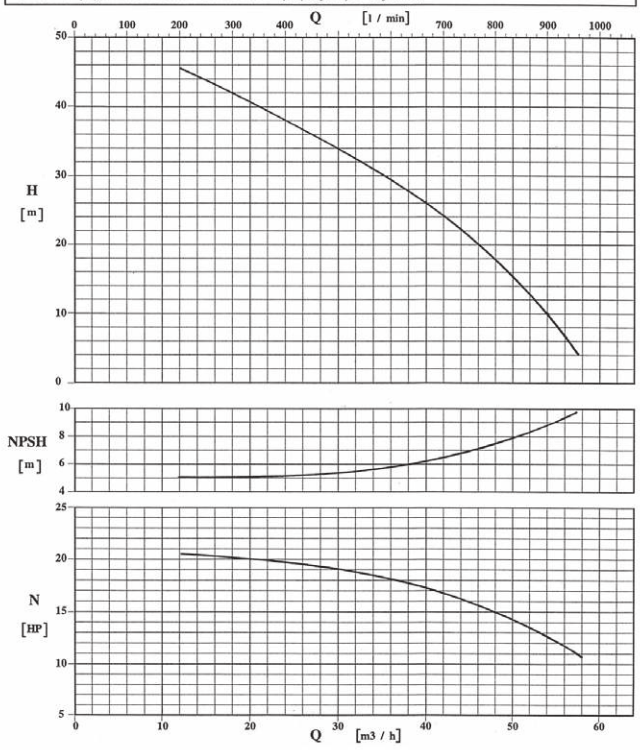


POMPA TIPO *Pump type* **AS 80 - 4 - 20** | n 1450 giri/min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 80
RADIALE	16	—— mm	240 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 80

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg/dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg/dm3)



CURVE CARATTERISTICHE
PERFORMANCE CURVES

Serie AS
AS Series

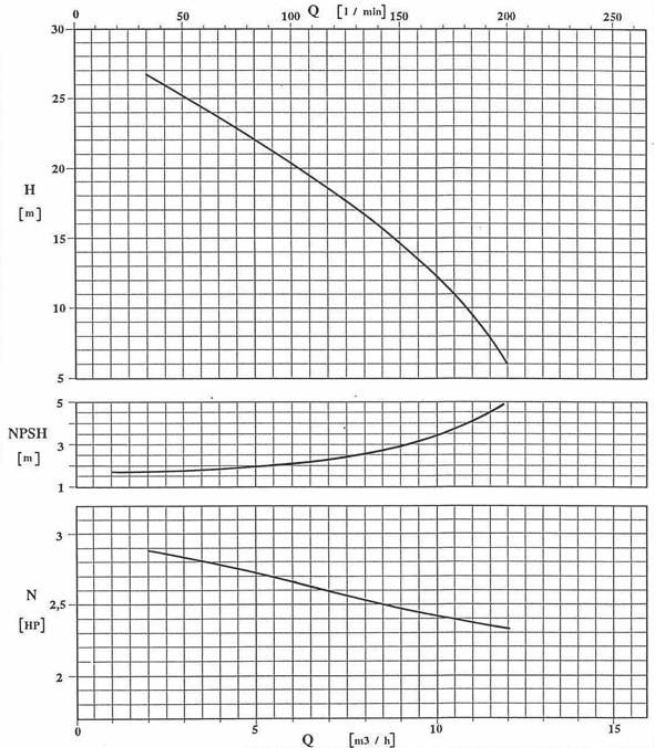
1750 giri/min - ***1750 rpm***

POMPA TIPO *Pump type*	AS 40	n 1750 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 40
RADIALE	24	——— mm	145,5 mm	——— mm	DIN 11851	Bocca mand. *Discharge port*	DN 40

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

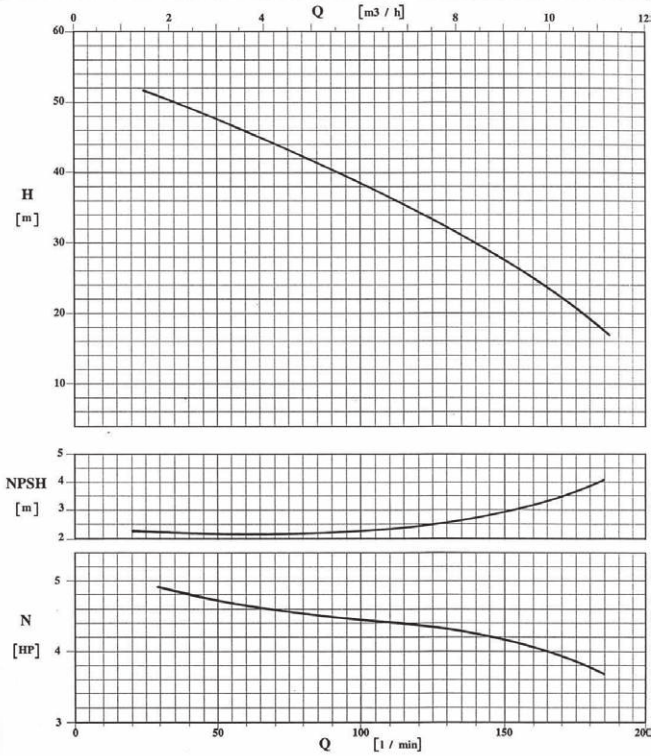


POMPA TIPO *Pump type*	AS 42 MULTISTADIO *MULTISTAGE*	n 1750 giri / min *r. p. m.*

GIRANTE — *Impeller* — Bocche – *Ports*

Q.TA' N° *Q.ty n°* 2	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 40
TIPO *Type* RADIALE	24	——— mm	145,5 mm	——— mm	DIN 11851	Bocca mand. *Discharge port*	DN 40

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

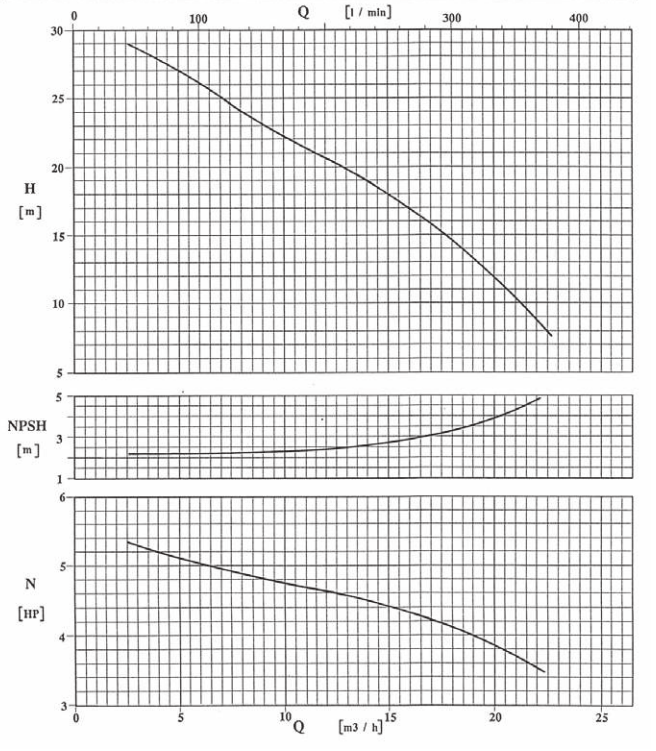


POMPA TIPO *Pump type*	AS 50	n 1750 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 50
RADIALE	16	——— mm	164 mm	——— mm	DIN 11851	Bocca mand. *Discharge port*	DN 50

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

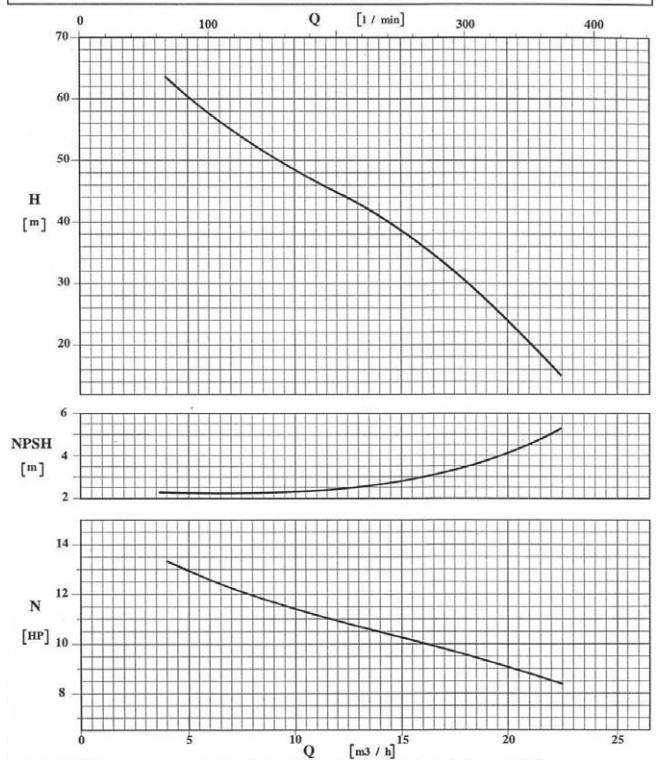


POMPA TIPO *Pump type*	AS 52 MULTISTADIO *MULTISTAGE*	n 1750 giri / min *r. p. m.*

GIRANTE — *Impeller* — Bocche – *Ports*

Q.TA' N° *Q.ty n°* 2	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 50
TIPO *Type* RADIALE	16	——— mm	164 mm	——— mm	DIN 11851	Bocca mand. *Discharge port*	DN 50

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)



CURVE CARATTERISTICHE — Serie AS
PERFORMANCE CURVES — *AS Series*

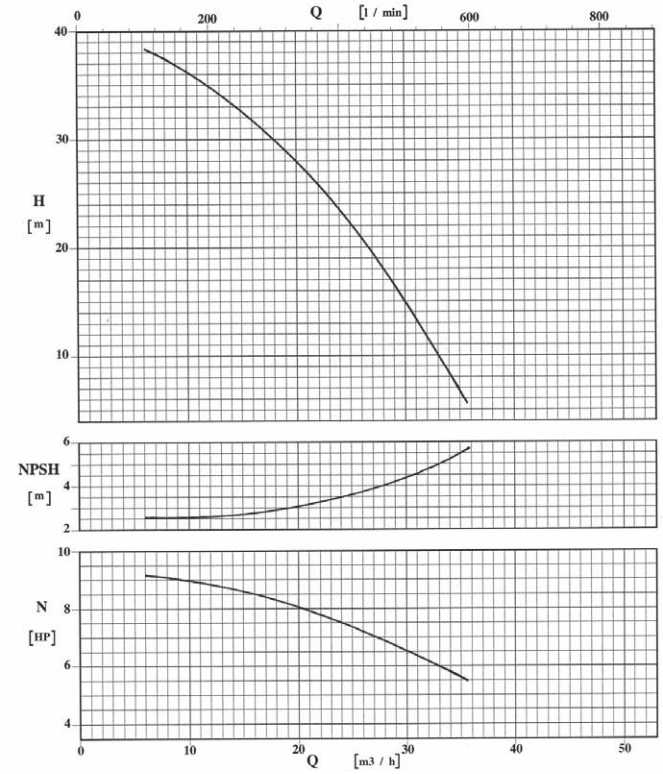
1750 giri/min - ***1750 rpm***

POMPA TIPO *Pump type*	AS 60	n	1750 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	ϕ max *max. diameter*	ϕ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Discharge port*	DN 65
RADIALE	16	——— mm	200 mm	——— mm	DIN 11851	Bocca mand. *Suction port*	DN 65

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

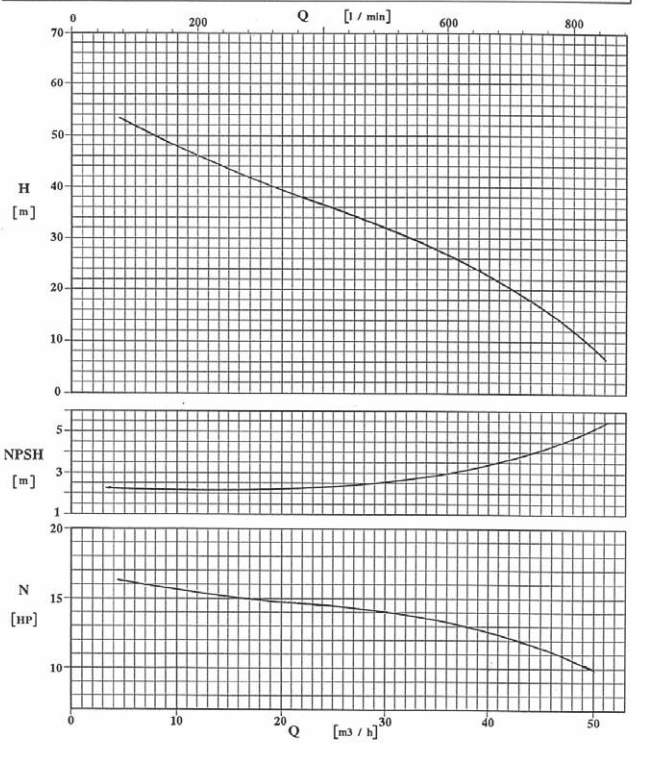


POMPA TIPO *Pump type*	AS 65	n	1750 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 65
RADIALE	16	——— mm	200 mm	——— mm	DIN 11851	Bocca mand. *Discharge port*	DN 65

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

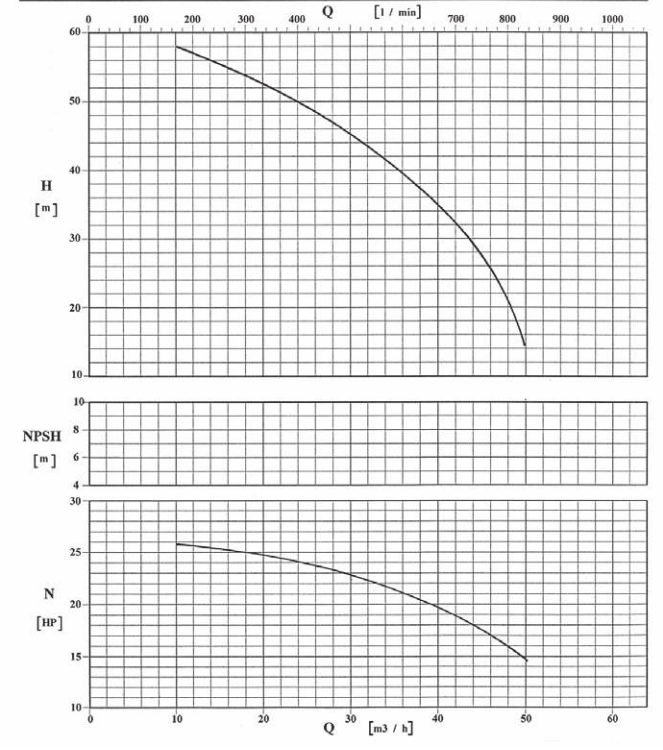


POMPA TIPO *Pump type*	AS 80	n	1750 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 80
RADIALE	16	——— mm	240 mm	——— mm	DIN 11851	Bocca mand. *Discharge port*	DN 80

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)



SELF-PRIMING PUMPS
A SERIES

Standard design

A Series pumps ideally suited for scavenge duties and applications where the inlet pipework is only partially filled, or where the incoming liquid includes entrained air or gas. The construction materials and quick disassembly design make them particularly suitable for a wide variety of applications.

They must be initially filled with liquid for the first start-up; afterwards, a small liquid reservoir remains to enable rapid self-priming to occur even if the suction pipe is emptied.

All CF-8M 1.4408 / AISI 316 Stainless steel parts.

Investment cast, with electro-chemical polishing.

Flow rates up to 50 m^3 /h, heads up to max. 35 m (3,5 bar) (50 Hz).

Seals: (Suitability for food contact on demand)

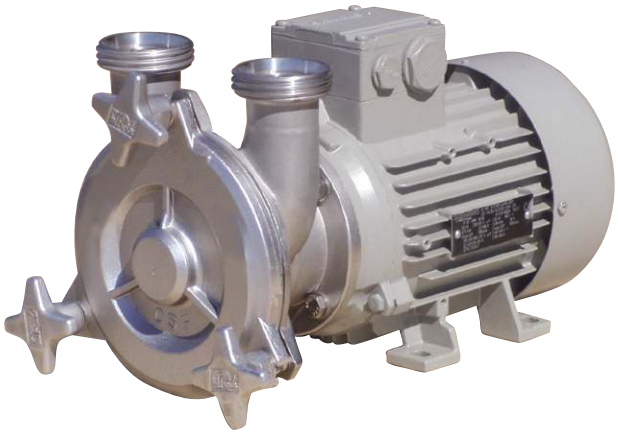
Mechanical seals with seats to EN 12756.
ISO 3069 standards.
Single internal mechanical seal
Tenuta singola esterna

Elastomers

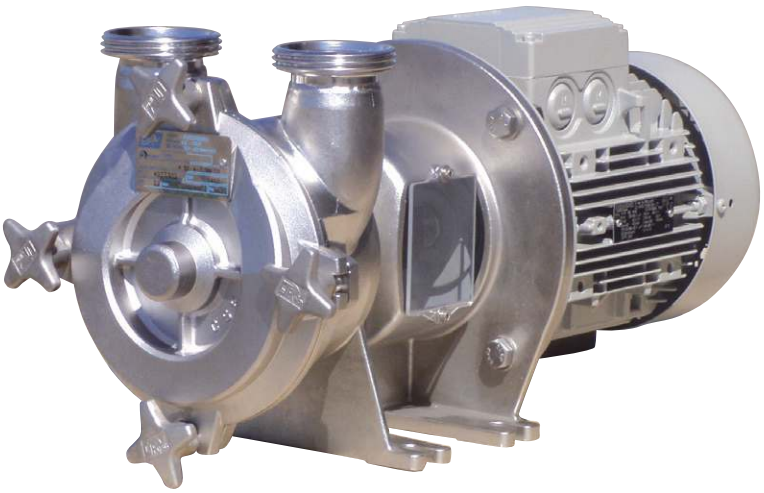
EPDM
Fluorocarbon
Silicone
P.T.F.E. (Fep)

Connections:

DIN - SMS - IDF - BS / RJT - DS - CLAMP and EN 1092-1 PN16 flanges to suit most international standards.



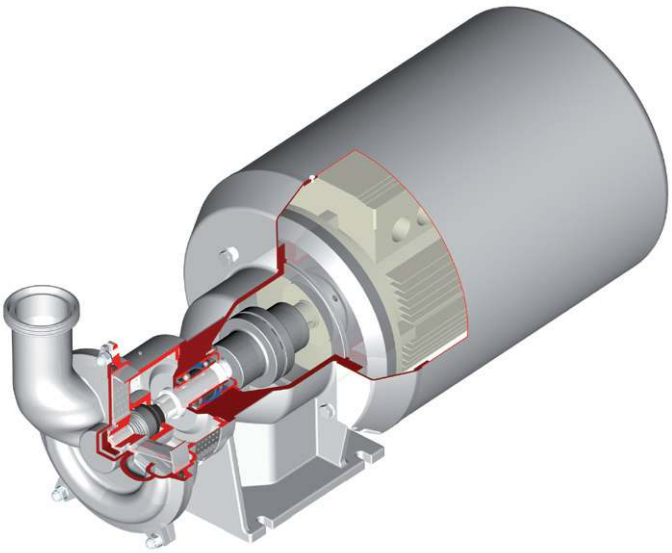
A 21- A31 : Close-coupled pumps with the impeller directly supported by the electric motor shaft. Easy-opening front cover, by unscrewing three hand-nuts, allows quick inspection without disconnecting the inlet and outlet pipes



A41 - A51 - A66 - A81: Close-coupled design with separate IEC motor and flexible coupling. Easy-opening front cover, for quick inspection without disturbing the inlet and outlet pipes.

DIFFERENT EXECUTIONS

Closed coupled pump mod. A 31 with external mechanical seal and overhang impeller on extended motor shaft.



Closed coupled pump mod. A 41 - 51 - 66 - 81, with shroud and internal mechanical seal, coupled with motor through flexible coupling.

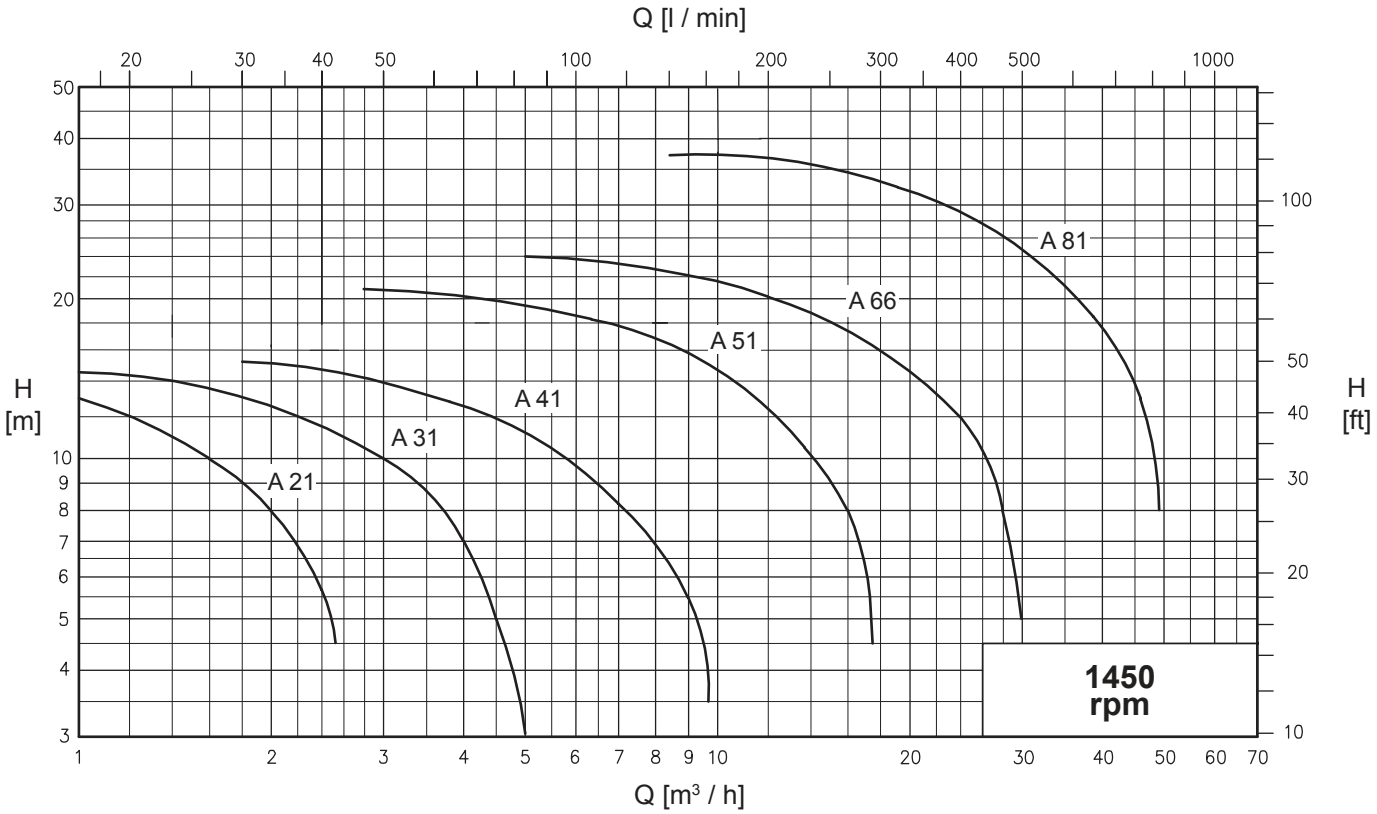
APPLICATIONS

Pump suitable to handle clear fluids, chemical products, solvents, CIP solutions, raw alimentary products, oil, wine, liqueurs.

Execution with hydraulic motor.

Installation on tanker.

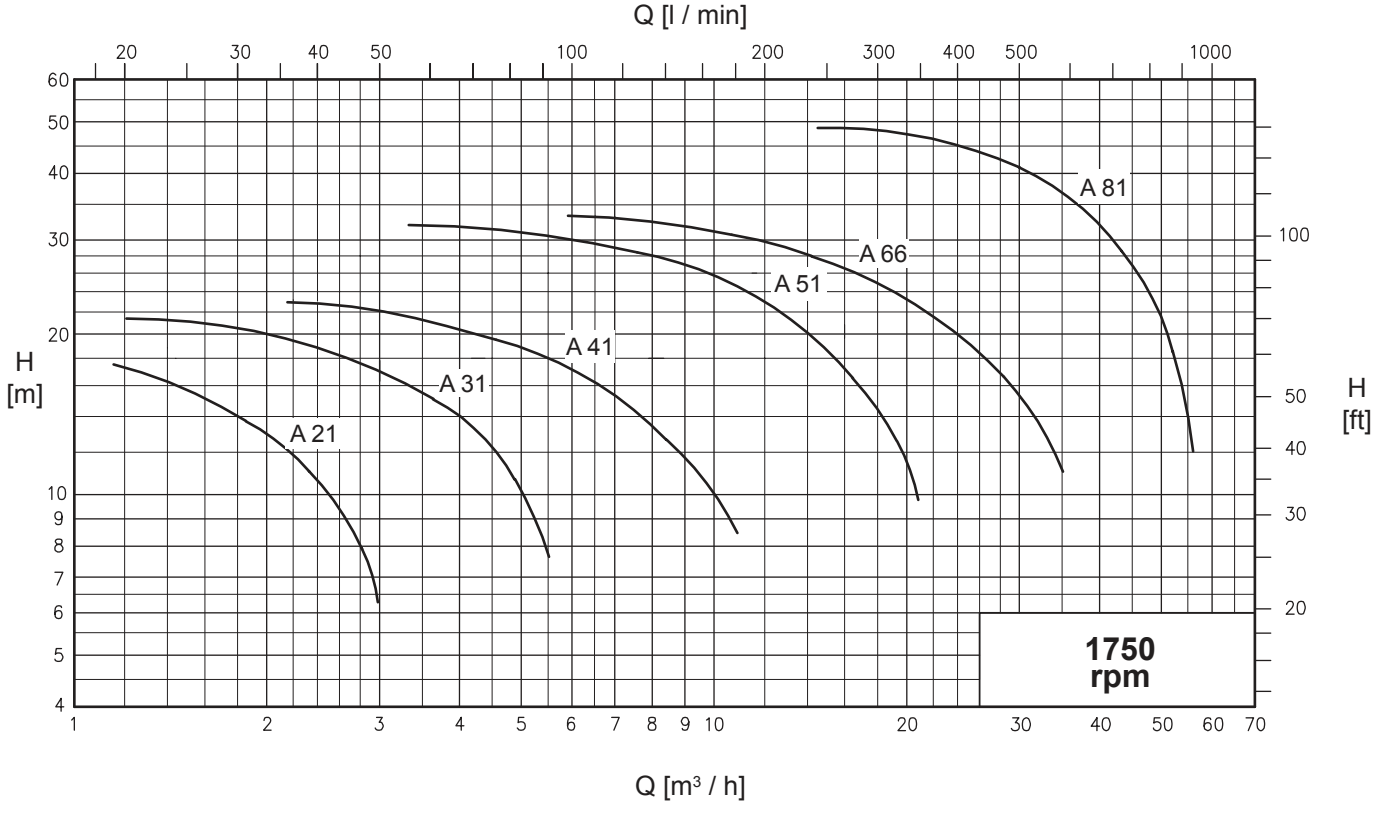
GENERAL DIAGRAM



Performance applies to H_2O at 20 °C, 1013 millibar

Data not binding

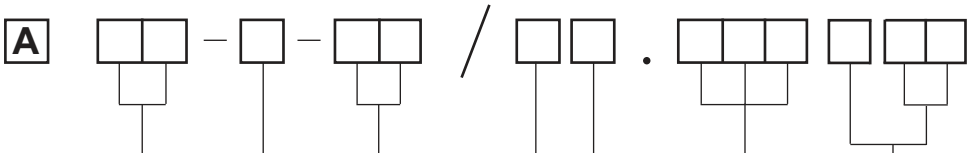
GENERAL DIAGRAM



Performance applies to H_2O at 20 °C, 1013 millibar

Data not binding

PUMP CODES GUIDE A



21
31
41
51
66
81

PUMP SIZE

4 **(1450/1750 [rpm])** — **NO. OF POLES**

HP — **BRAKE HORSEPOWER**

B : **Stainless Steel**

UNI EN 10283	**-**	**1.4408**
ACI-ASTM 743-98	**-**	**CF8M**
UNI EN 10088	**-**	**1.4401**
AISI	**-**	**316**

PUMP MATERIAL
(Product wetted steel parts)

D - Fluorocarbon (FPM)
M - EPDM
S - Silicon
T - P.T.F.E. (Fep)

PUMP SEALS
(Product wetted seals)

B - By-Pass
C - Drainage
J - "RJT" connections
K - Heated casing cover
L - Flanged connections
M - "SMS" connections
N - "Clamp" connections
O - "IDF" connections
P - B5 motor with shroud
Z - Ex-Proof motor

SPECIAL EXECUTIONS

Y - External mechanical seal (One direction or reversible)

T - Internal mechanical seal (Reversible)

□ □ Material code (ref. tab. CD004)

MECHANICAL SEALS

Example: A 51-4-3/BM.NT31

MECHANICAL SEALS

A pumps are fitted with standard seal seats according to: EN 12756, ISO 3069 standards.
The seal components are available in a wide range of materials, to be selected according to handled product features and the operating conditions.

MATERIAL CODES

FOR A 21 - A 31 PUMPS

Metals
X - Molybdenum nickel-plated stainless steel AISI 316

Metal oxides
2 - Alumina ceramic

Carbons
V - Normal carbon
Z - Special carbon

Resins
4 - Normal PTFE
5 - Loaded PTFE
F - O-ring FEP

Metal carbons
3 - Hard metal welded on stainless steel (TUC)
R - Integral anti-corrosion hard metal (TUC)
K - Integral silicate carbon SIC

Elastomers
6 - Nitrile
7 - Ethylene propylene
Y - Fluorocarbon
B - Silicone
U - Kalrez

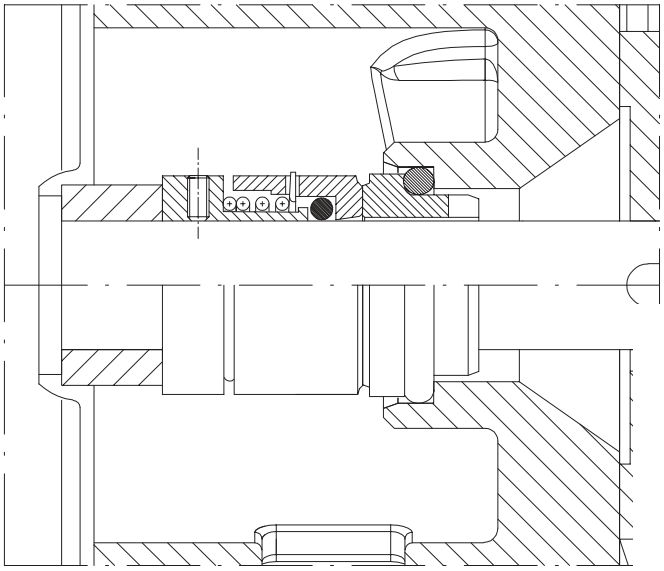
FOR A 41 - A 51 - A 66 - A 81 PUMPS

Carbons
Z - Special carbon

Resins
5 - Loaded PTFE
F - O-ring FEP

Metal carbons
K - Integrate silicate carbon SIC

Elastomers
7 - Ethylene propylene
Y - Fluorocarbon

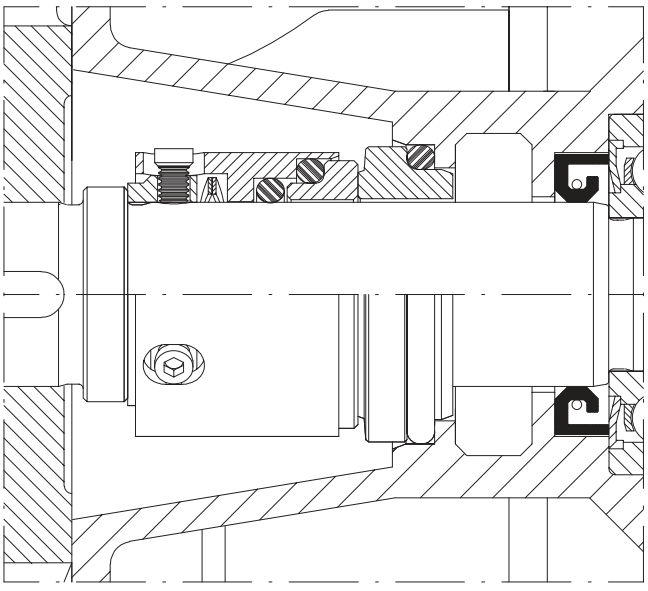


EXECUTION Y

MECHANICAL SEAL ASSEMBLY "Y"
External assembly seal, standard version on A 21-31 pump sizes. Suitable for these low-pressure sizes, the seal components are not directly touched by the handled product, avoiding corrosion problems and seal-working conditioning.

ONE DIRECTION

REVERSIBLE

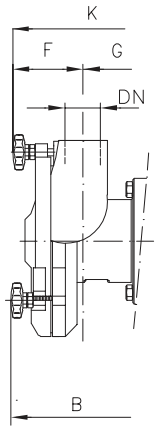


EXECUTION T REVERSIBLE

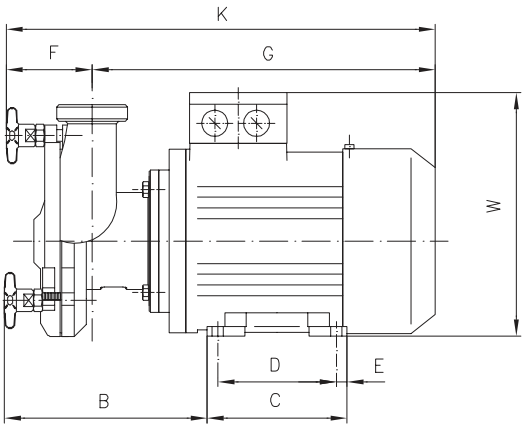
MECHANICAL SEAL ASSEMBLY "T" REVERSIBLE
Internal assembly seal, standard version on A 41 - A 51 - A 66 - A 81 pump sizes, placed in a suitable seal chamber to ensure the correct re-circulation. It can operates in both directions.

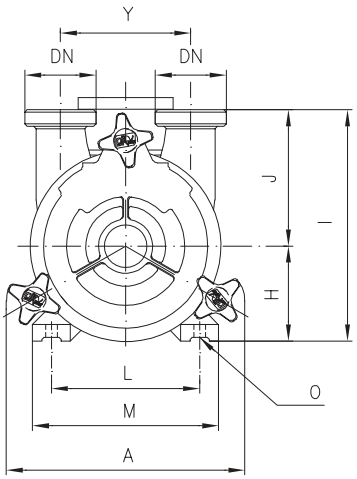
SERIES A 21-31 WITHOUT SHROUD 1450 rpm OVERALL DIMENSIONS

A 21



A 31



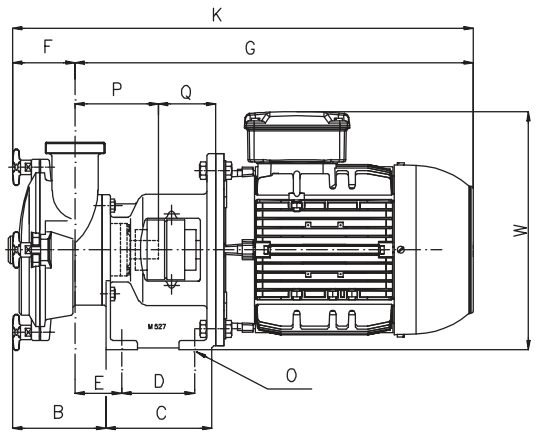


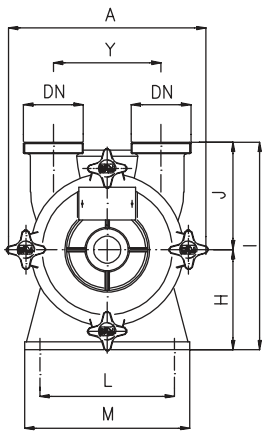
Dimensions not binding - DN = GAS (BSP female) connection on A21
DN = DIN 11851 male threaded connection for A31

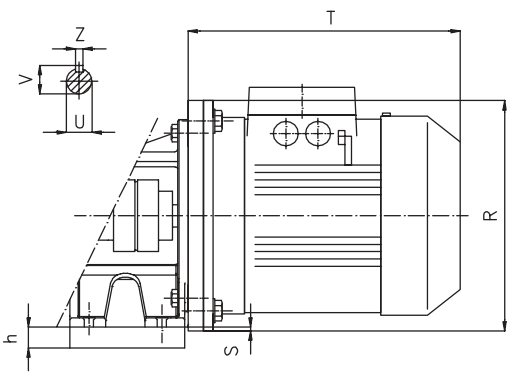
Pumps	1450 r.p.m.	kW	DN	A	B	C	D	E	F	G	K	H	J	I	Y	L	M	O	P	Q	W	Weight kg
A 21		0,37	3/4"G	170	149	106	90	8	62	268	330	71	84	155	80	112	132	7	-	-	192	11
		0,55	3/4"G	170	152	118	100	9	62	286,5	348,5	80	84	164	80	125	150	9	-	-	210	13,5
A 31		0,55	32	203	175	118	100	9	75	295,5	370,5	80	117	197	110	125	150	9	-	-	210	16
		0,75	32	203	175	118	100	9	75	295,5	370,5	80	117	197	110	125	150	9	-	-	210	17

SERIES A 41-51-66 WITHOUT SHROUD 1450 rpm OVERALL DIMENSIONS

exec. A 66
(MOTORS SIZE IEC 132)



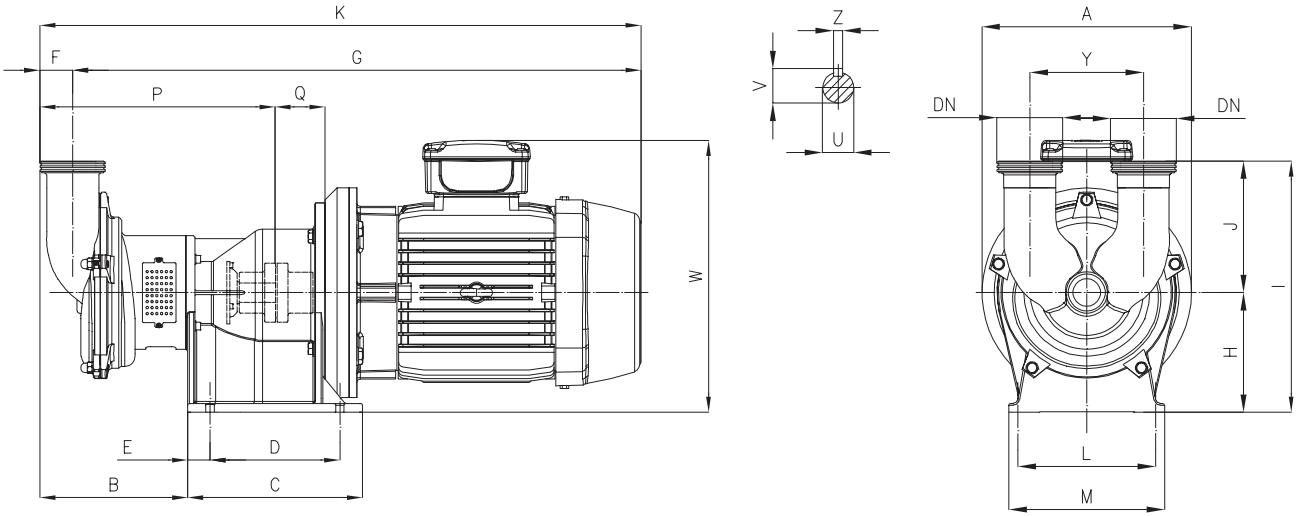




Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors
(*) Bearing frame designed for direct coupling with motor frame ...

Pumps	1450 r.p.m.	kW	DN	A	B	C	D	E	F	G	K	H	h	J	I	Y	L	M	O	P	Q	R	S	T	U	V	W	Z	PAM (*)	Weight kg
A 41		1,1	40	250	116	132	89	53,5	79	452	531	122	-	120	242	120	135	175	12	117	54	-	-	-	20	22,5	272	6	90	39
		1,5	40	250	116	132	89	53,5	79	452	531	122	-	120	242	120	135	175	12	117	54	-	-	-	20	22,5	272	6	90	42
A 51		2,2	50	273	127	138	95	59,5	88	499	587	130	-	140	270	140	175	215	12	119	64	-	-	-	20	22,5	290	6	100	60
		4	50	273	127	138	95	59,5	88	521	609	130	-	140	270	140	175	215	12	119	64	-	-	-	20	22,5	284	6	112	73
A 66		4	65	307	182	150	95	74	133	540	673	145	-	185	330	180	190	230	12	137	65	-	-	-	25	28	299	8	112	87
		5,5	65	307	182	150	95	74	133	600	732	145	15	185	330	180	190	230	12	137	65	300	5	393	25	28	299	8	132	104

SERIES A 81 WITHOUT SHROUD 1450 rpm OVERALL DIMENSIONS

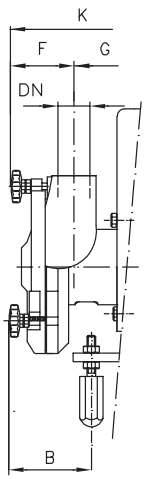


Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors
(*) Bearing frame designed for direct coupling with motor frame ...

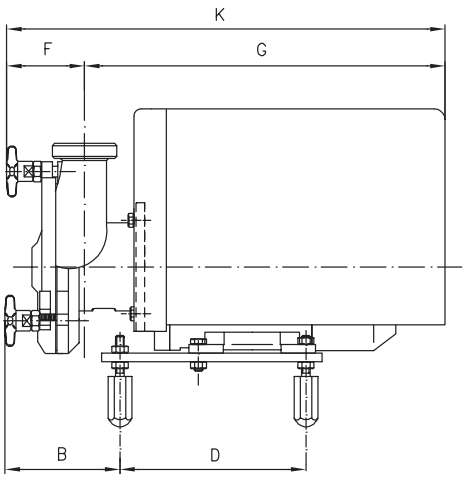
Pumps	1450 r.p.m.	kW	DN	A	B	C	D	E	F	G	K	H	J	I	Y	L	M	O	P	Q	U	V	W	Z	PAM (*)	Weight kg
A 81		9,2	80	326	247	292	214	233	55	833	888	200	220	420	190	230	260	14	339	83	32	35	406,5	10	132	101
		11	80	350	247	292	214	233	55	994	1049	200	220	420	190	230	260	14	339	123	32	35	464	10	160	120
		15	80	350	247	292	214	233	55	994	1049	200	220	420	190	230	260	14	339	123	32	35	464	10	160	129

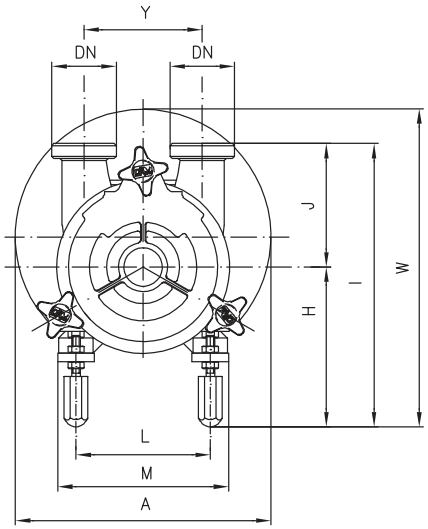
SERIES A 21-31 WITH SHROUD 1450 rpm OVERALL DIMENSIONS

A 21



A 31



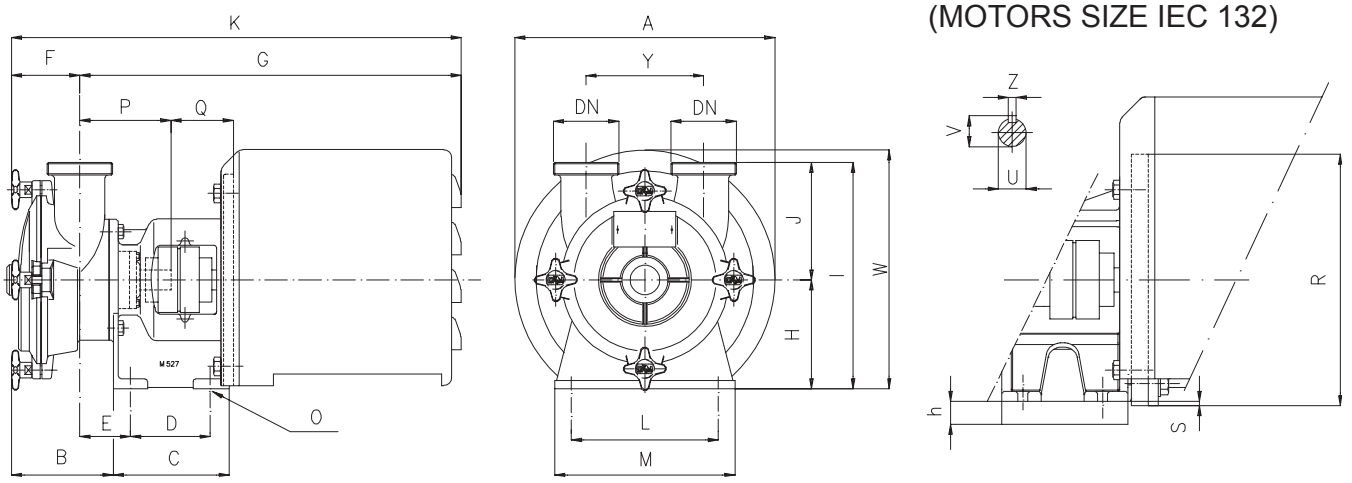


Dimensions not binding - DN = GAS (BSP female) connection on A21
DN = DIN 11851 male threaded connection for A31

Pumps	1450 r.p.m.	kW	DN	A	B	C	D	E	F	G	K	H	J	I	Y	L	M	O	P	Q	W	Weight kg
A 21		0,55	3/4"G	238	88	-	173	-	62	336	398	153	85	238	80	125	150	-	-	-	301	16,5
A 31		0,55	32	238	111	-	173	-	75	334	409	153	117	270	110	125	150	-	-	-	301	19
		0,75	32	238	111	-	173	-	75	334	409	153	117	270	110	125	150	-	-	-	301	20

SERIES A 41-51-66 WITH SHROUD 1450 rpm OVERALL DIMENSIONS

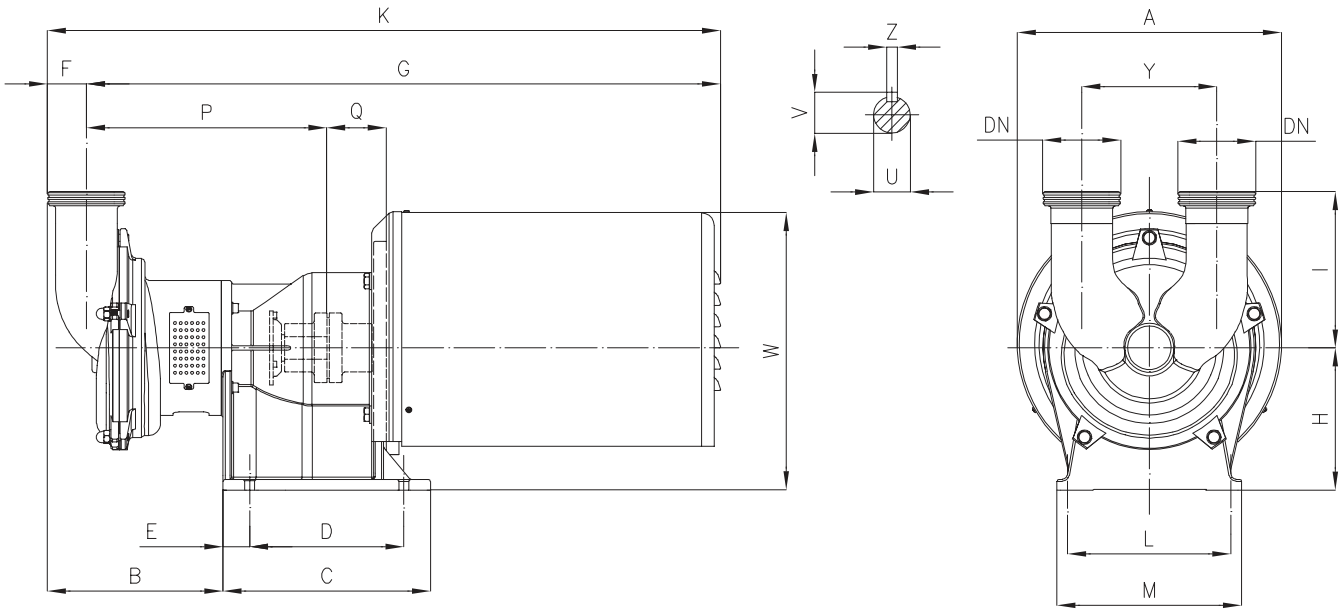
exec. A 66
(MOTORS SIZE IEC 132)



Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors
(*) Bearing frame designed for direct coupling with motor frame ...

Pumps	1450 r.p.m.	kW	DN	A	B	C	D	E	F	G	K	H	h	J	I	Y	L	M	O	P	Q	R	S	U	V	W	Z	PAM (*)	Weight kg
A 41		1,1	40	297	116	132	89	53,5	79	549	631	122	-	120	242	120	135	175	12	117	51	-	-	20	22,5	313	6	90	42
		1,5	40	297	116	132	89	53,5	79	549	631	122	-	120	242	120	135	175	12	117	51	-	-	20	22,5	313	6	90	45
A 51		2,2	50	333	127	138	95	59,5	88	607	704	130	-	140	270	140	175	215	12	119	61	-	-	20	22,5	337	6	100	63
		4	50	333	127	138	95	59,5	88	607	704	130	-	140	270	140	175	215	12	119	61	-	-	20	22,5	337	6	112	76
A 66		4	65	369	182	150	95	74	133	667	800	145	-	185	330	180	190	230	12	137	62	-	-	25	28	360	8	112	91
		5,5	65	369	182	150	95	74	133	667	800	145	15	185	330	180	190	230	12	137	62	300	5	25	28	360	8	132	108

SERIES A 81 WITH SHROUD 1450 rpm OVERALL DIMENSIONS



Dimensions not binding - DN = DIN 11851 male threaded connections with standard IEC/EN motors
(*) Bearing frame designed for direct coupling with motor frame ...

Pumps	1450 r.p.m.	kW	DN	A	B	C	D	E	F	G	K	H	J	I	Y	L	M	O	P	Q	U	V	W	Z	PAM (*)	Weight kg
A 81		9,2	80	432	247	292	214	233	55	1036	1090	200	220	420	190	230	260	14	339	83	32	35	434	10	132	109
		11	80	432	247	292	214	233	55	1036	1090	200	220	420	190	230	260	14	339	123	32	35	475	10	160	134
		15	80	432	247	292	214	233	55	1036	1090	200	220	420	190	230	260	14	339	123	32	35	475	10	160	143

CURVE CARATTERISTICHE
PERFORMANCE CURVES

Serie A
A Series

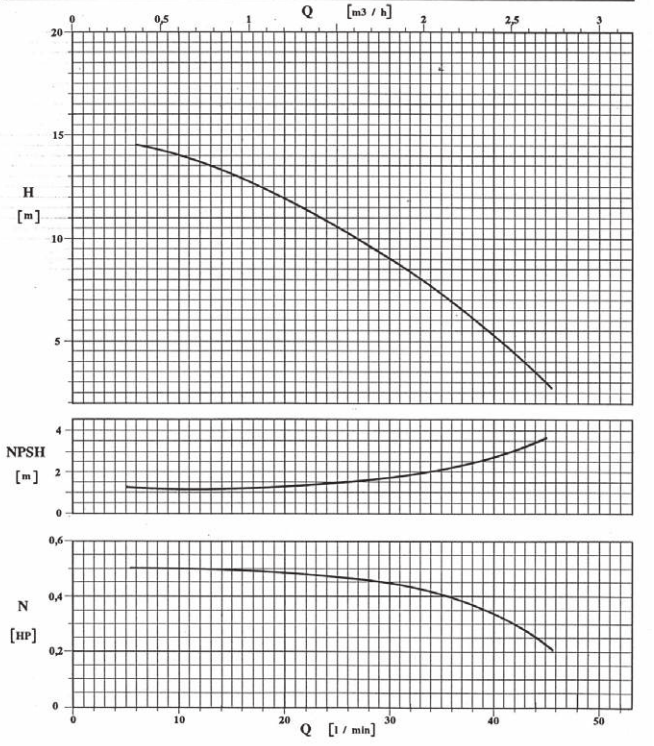
1450 giri/min - ***1450 rpm***

POMPA TIPO *Pump type* **A 21 - 4 - 0,5** | n **1400** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	G. 3/4"F.
RADIALE	24	—— mm	117 mm	—— mm	Fil. cil.GAS	Bocca mand. *Discharge port*	G. 3/4"F.

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

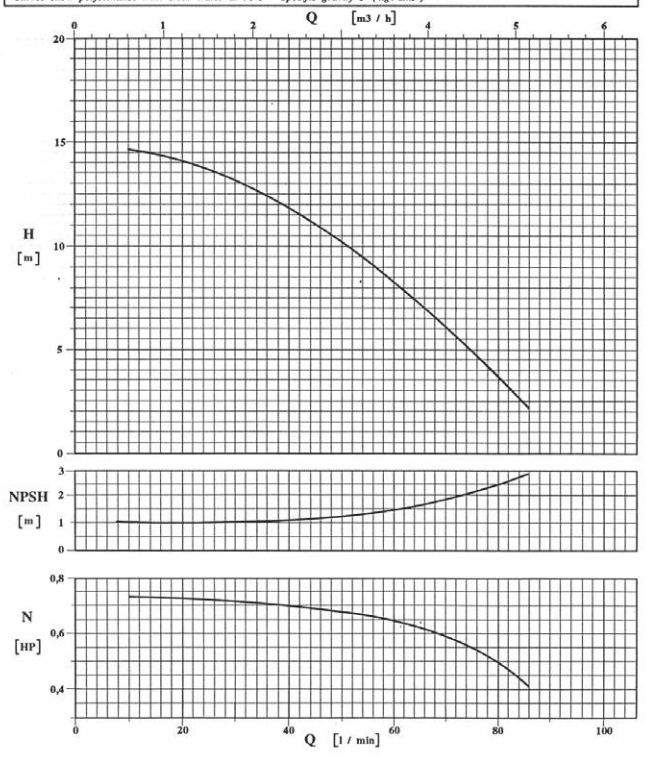


POMPA TIPO *Pump type* **A 31 - 4 - 0,75** | n **1400** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 32
RADIALE	24	—— mm	130 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 32

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

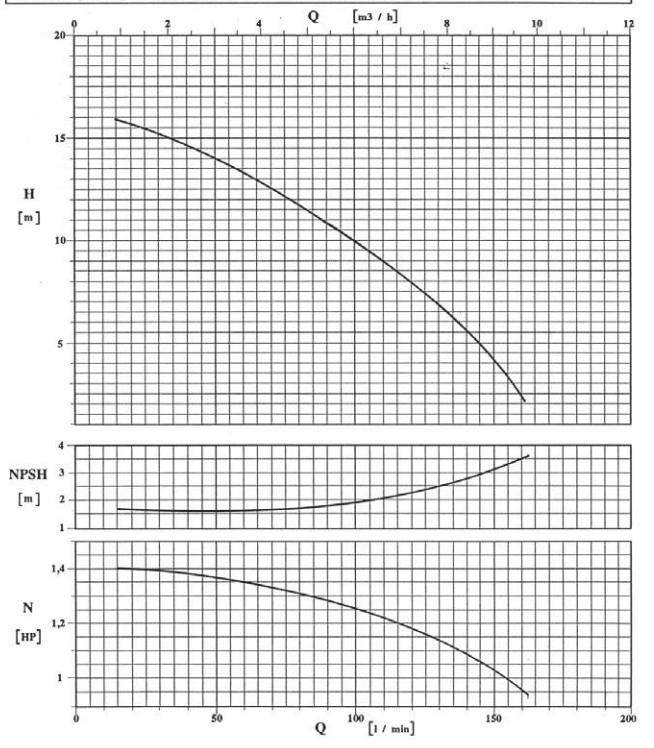


POMPA TIPO *Pump type* **A 41 - 4 - 1,5** | n **1400** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 40
RADIALE	24	—— mm	145,5 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 40

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

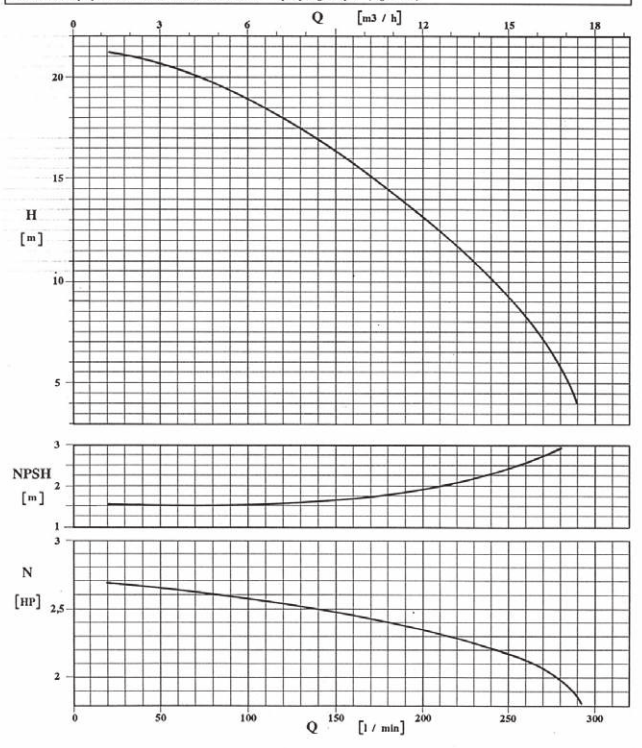


POMPA TIPO *Pump type* **A 51 - 4 - 3** | n **1400** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 50
RADIALE	16	—— mm	164 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 50

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)



CURVE CARATTERISTICHE — Serie A
PERFORMANCE CURVES — *A Series*

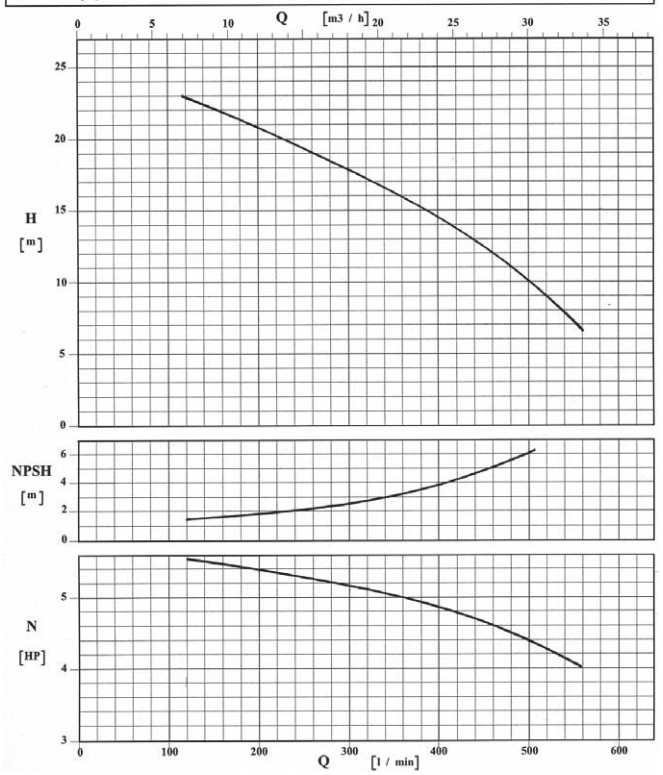
1450 giri/min - ***1450 rpm***

POMPA TIPO *Pump type*	A 66 - 4 - 5,5	n	1400 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 65
RADIALE	16	—— mm	188,6 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 65

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

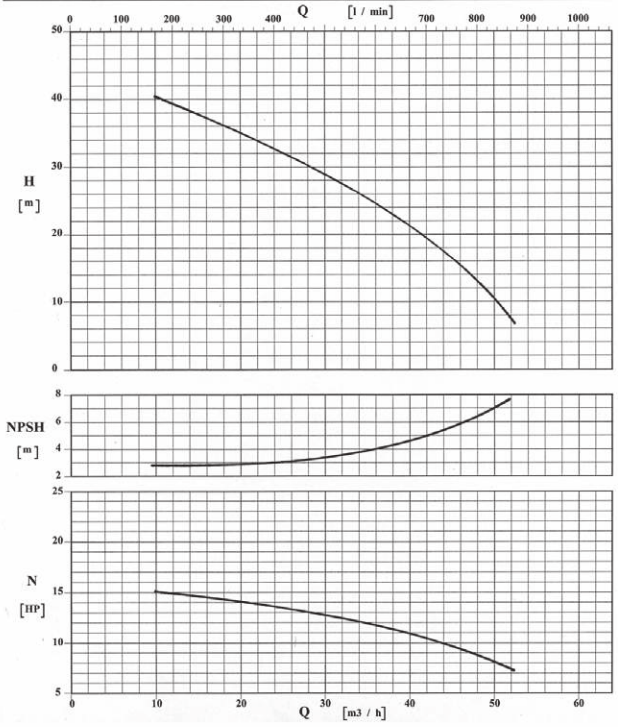


POMPA TIPO *Pump type*	A 81 - 4 - 15	n	1450 giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	ϕ max *max. diameter*	ϕ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 80
RADIALE	18	—— mm	240 mm	—— mm	DIN 11851	Bocca mand. *Discharge port*	DN 80

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)



CURVE CARATTERISTICHE
PERFORMANCE CURVES

Serie A
A Series

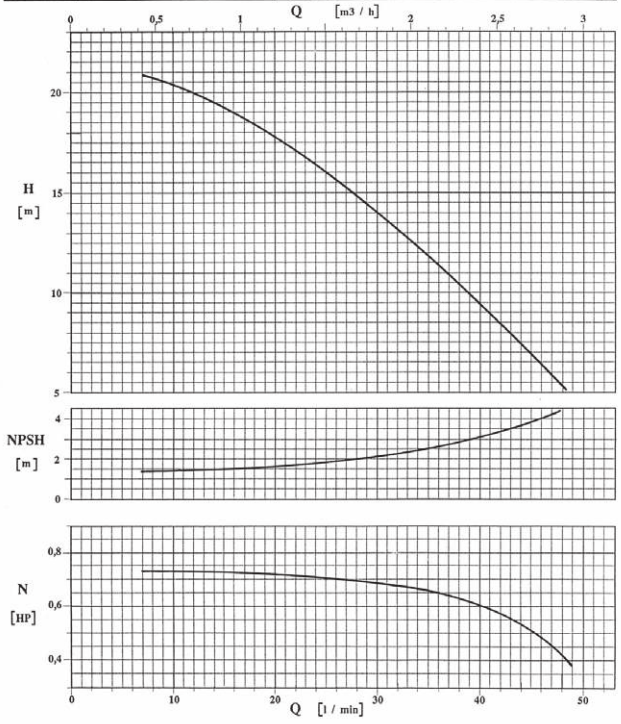
1750 giri/min - ***1750 rpm***

POMPA TIPO *Pump type* **A 21 - 4 - 1** | n **1750** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	G. 3/4" F.
RADIALE	24	—— mm	117 mm	—— mm	Fil. cil.GAS	Bocca mand. *Discharge port*	G. 3/4" F.

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

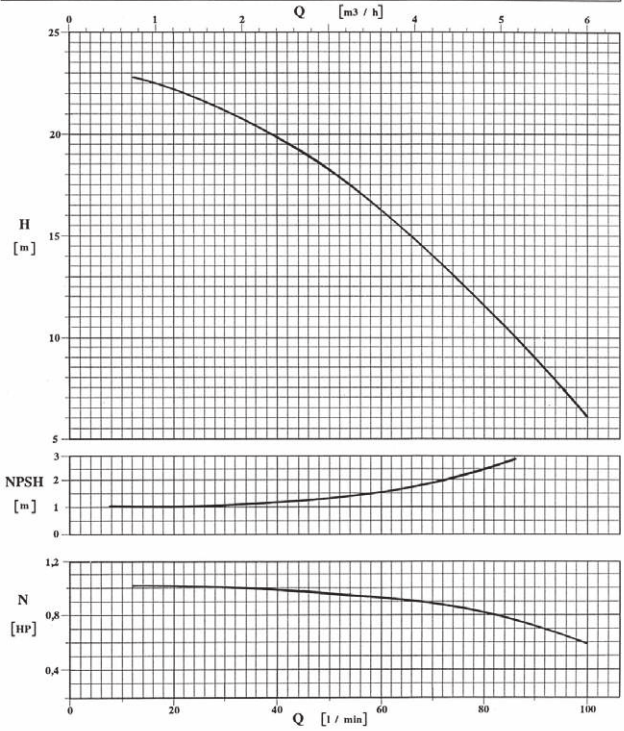


POMPA TIPO *Pump type* **A 31 - 4 - 1** | n **1750** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Discharge port*	DN 32
RADIALE	24	—— mm	130 mm	—— mm	DIN 11851	Bocca mand. *Suction port*	DN 32

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

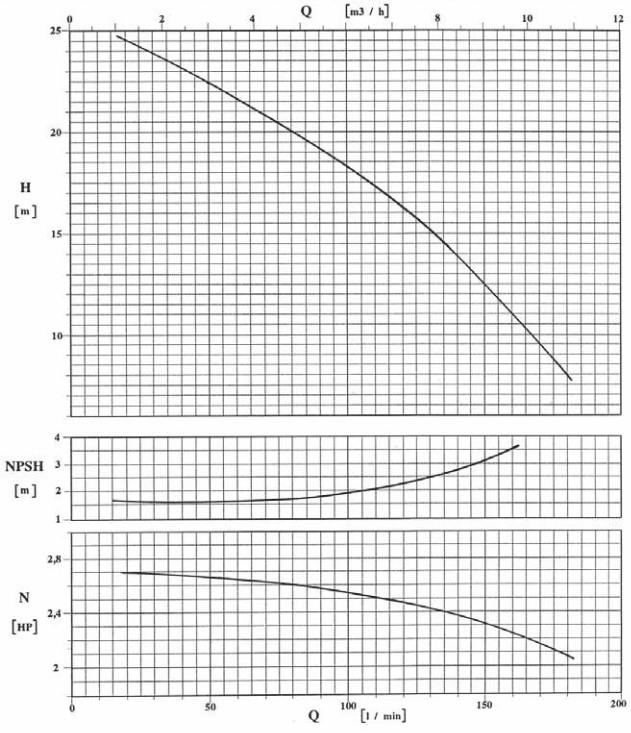


POMPA TIPO *Pump type* **A 41 - 4 - 3** | n **1750** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Discharge port*	DN 40
RADIALE	24	—— mm	145,5 mm	—— mm	DIN 11851	Bocca mand. *Suction port*	DN 40

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)

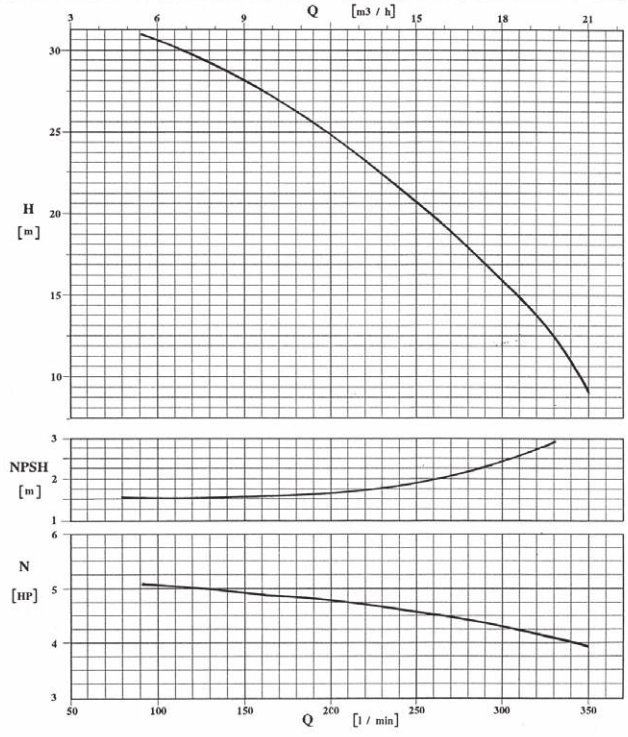


POMPA TIPO *Pump type* **A 51 - 4 - 5,5** | n **1750** giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	Ø max *max. diameter*	Ø min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Discharge port*	DN 50
RADIALE	16	—— mm	164 mm	—— mm	DIN 11851	Bocca mand. *Suction port*	DN 50

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)



CURVE CARATTERISTICHE
PERFORMANCE CURVES

Serie A
A Series

1750 giri/min - ***1750 rpm***

POMPA TIPO *Pump type*	A 66 - 4 - 10	n	1750	giri / min *r. p. m.*

GIRANTE — *Impeller*

TIPO *Type*	N° di pale *n° of vanes*	Pass. sferico *max. sphere*	∅ max *max. diameter*	∅ min *min. diameter*	Bocche tipo *Ports type*	Bocca aspir. *Suction port*	DN 65
RADIALE	16	____ mm	189 mm	____ mm	DIN 11851	Bocca mand. *Discharge port*	DN 65

CARATTERISTICHE DI FUNZIONAMENTO CON ACQUA PULITA A 20°C - PESO SPECIFICO 1 (kg / dm3)
Curves show performance with clear water at 70°F - Specific gravity 1 (kg / dm3)