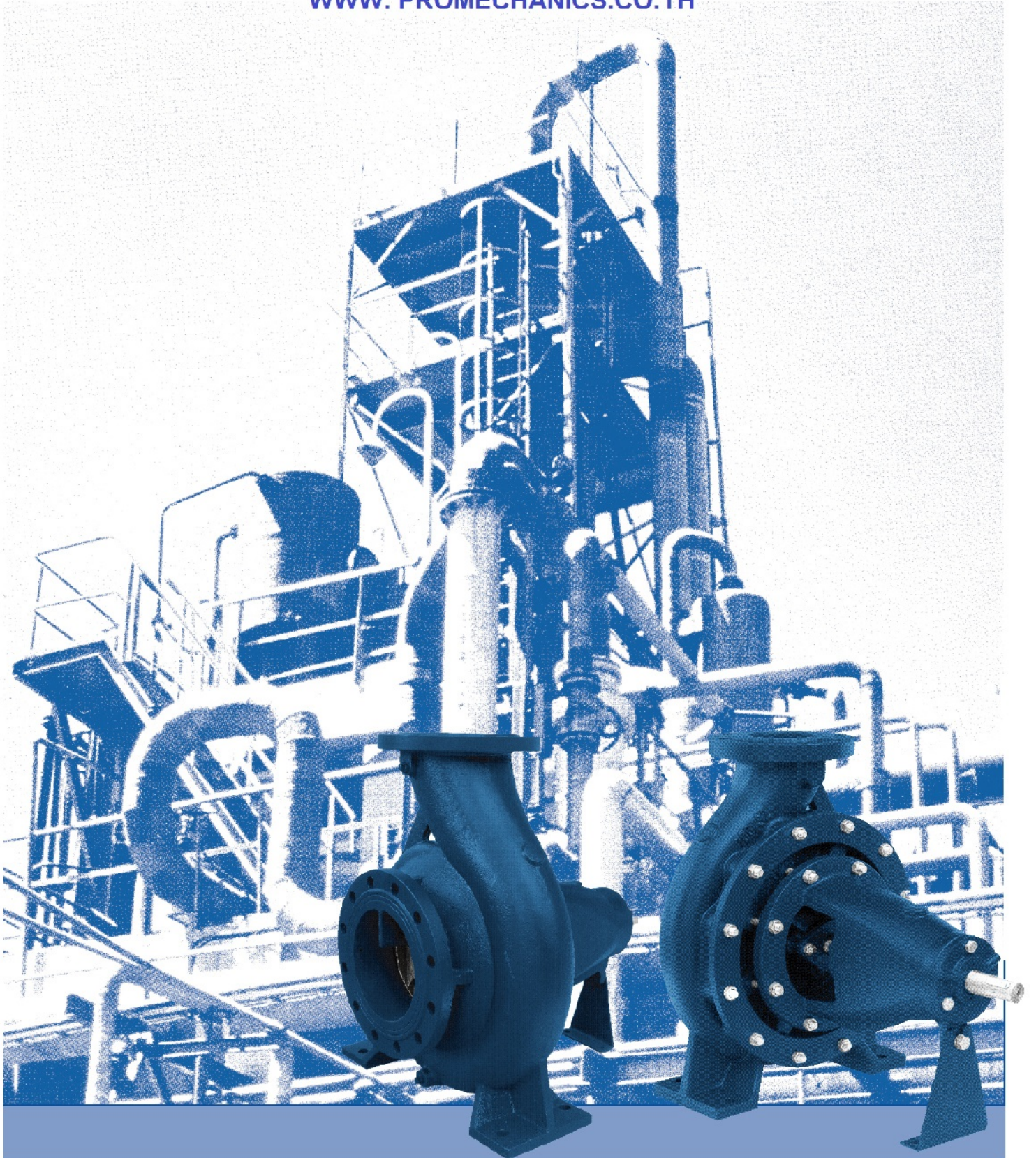




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PRO-MECHANIC CO.,LTD.

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**End Suction Back Pull-Out Pumps.**  
Type : VN





## End Suction Back Pull-Out Pumps.

Type : VN

### Description

The VN pumps are constructed to conform with the now widely accepted DIN 24255 standard, which sets out an agreed hydraulic grid for pump performance and, at the same time, ensures this performance is achieved within a precise dimensional standard.

The advantages are gained by specifying pumps constructed to the DIN 24255 standard are considerable and include the following:

- Simplification of design and tender procedure.
- Saving in time and cost due to standardization of pipework layouts.
- Reduction in spares requirements ( see interchangeability chart )
- Replacements available from a wide variety of sources, ensuring the user the best possible after sales service.

### Construction

The "VN" back pull-out facility allows the pump rotor and associated components to be removed without disturbance to the pipework. The motor can also remain in place if the space required to withdraw the pump rotor assembly is taken up with a spacer coupling. Maintenance is therefore considerably simplified, both in terms of time and in the different trade skills require

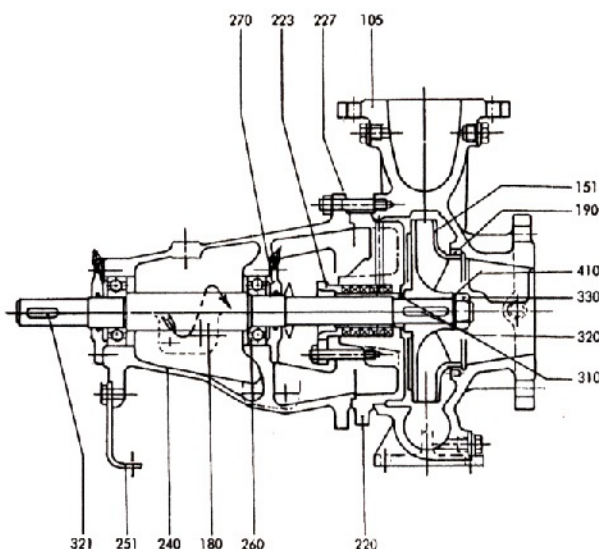
**VN pumps** are suitable for hot or cold water, sea water, oils, chemicals etc., and generally for all clear liquids of slightly dirty that may not contain any abrasive materials.

In standard execution either with mechanical seal or gland box with stuffing

**VN pumps** have been projected following the most up-to-date technics of hydraulic design, specially the value and the impeller, which allow the pumps to reach very high efficiencies. The strength of their mechanical parts, specially in the shaft and ball bearings is the best guarantee for a lasting silent and sure operation. Two replaceable wear rings, placed on the pump case, ease the maintenance of the logical wear, which may be caused by the use. The ball bearings are grease lubricated in the pumps of standard execution and can be supplied oil lubricated on request. These pumps can be offered in following executions: bronze steel and stainless steel, in all or wetted parts, according to the characteristics of the liquid to be pumped. The pumps fitted to motors will be supplied on a common bed plate with a draining channel or steel sections.

### Application

The VN pumps are suitable for pumping clear and turbid water up to 3000 ppm., circulation systems, irrigation, sprinkler systems, booster service, fire fighting, air conditioning, pumping brine, alkaline solutions, oils and benzine



### Cross Section

105	PUMP CASING	310	SHAFT SLEEVE
151	IMPELLER	240	BEARING HOUSING
251	SUPPORT FOOT	270	BEARING COVER
190	CASE WEAR RING	180	SHAFT
220	CASING COVER	321	COUPLING KEY
223	CASING MECH. SEAL	320	IMPELLER KEY
227	LANTERN RING	260	BEARING
223	STUFFING BOX RING	330	IMPELLER NUT
223	GLAND	410	LOCKING DEVICE



	2900 r.p.m.	1450 r.p.m.
Capacity (maximum)	150 l/s	320 l/s
Head (maximum)	100 m	58 m
Maximum speed : 3500 r.p.m. ( depending on impeller ).		
Also suitable for use on 60 cycle electrical supply .		
Rotation : Clockwise, looking on shaft end.		
Net Positive Suction Head requirements are generally low, thus allowing relatively high suction lifts. (See individual performance curves).		

## Operation temperature

Maximum with uncooled packed gland	105°C
Maximum with cooled packed gland	160°C
Maximum with Mechanical seal	Dependent on type of seal
Minimum	-10°C

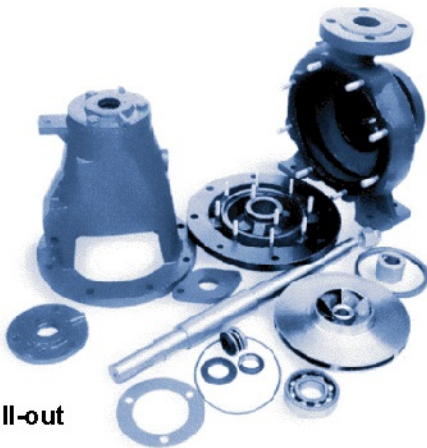
## Operation Pressure

Maximum up to	120°C	10 bars
Higher pressure and temperatures on application.		

## Performance

	CAT A.	CAT B.	CAT C.
Pump Casing	C.I.	C.I.	C.I.
Casing Cover	C.I.	C.I.	C.I.
Impeller	C.I.	C.I.	Br.
Wear Ring	C.I.	Br.	Br.
Shaft	C.S.	St.St.	St.St.
Shaft Sleeve	C.I.	Br.	Br.
Lantern Ring	C.I.	C.I.	C.I.
Gland	C.I.	C.I.	C.I.

Material	IS	Equivalent International Standards	
		BS	ASTM
Cast Iron (C.I.)	IS 210 Gr.FG 260	BS 1452 Gr. 250	ASTM-A 48 CL 35
Carbon Steel (C.S.)	IS 1570 Gr. 45 C 8	BS 970 080 M 46	ASTM-A 107 Gr. 1045
St.St.		BS 970 304S 15	ASTM-A 276 Type 410
Bronze	IS 318 Gr. LTB 2	BS 1400 LG 2C	ASTM-B62, B145 Alloy 4A



### Back Pull-out Feature

This design feature allows the complete rotating element to be removed for servicing without disconnecting pipework. If a spacer coupling is fitted then motor does not have to be moved. On re-assembly of pump coupling re-alignment problems are completely eliminated.

### Materials of construction

	Bronze Fitted	Cast Iron	All Iron
Casing	Cast Iron	Cast Iron	Cast Iron
Impeller	Bronze	Cast Iron	Cast Iron
Wear Ring	Cast Iron	Cast Iron	Cast Iron
Shaft	Stainless steel	Stainless steel	Stainless steel
Shaft Nut	Stainless steel	Stainless steel	Cast Iron
Shaft Sleeve	Stainless steel	Stainless steel	Stainless steel
Lantern Ring	Cast Iron	Cast Iron	Cast Iron
Gland	Cast Iron	Cast Iron	Cast Iron

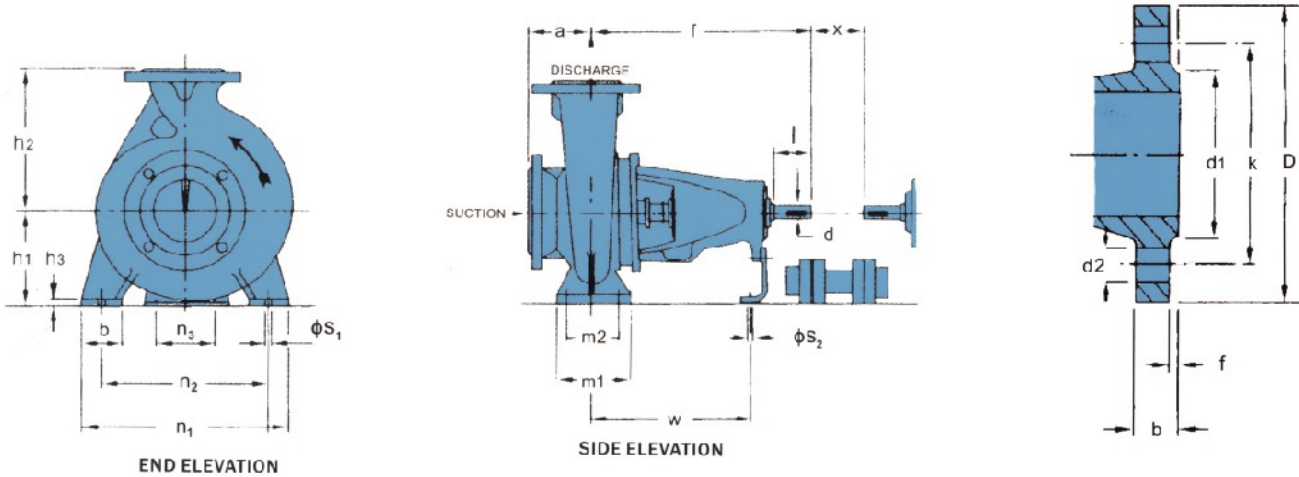
### Materials Specification

Material	Nearest Equivalent Standard			
	Australian	British	American	Din
Cast Iron	AS 1830/T200	BS 1452 GR 220	ASTM A48 Class 30	DIN 1691 GG 20
Bronze	AS 1565/836B	BS 1400 LG 2	ASTM B145 CDA836	Din1705
Stainless Steel	AS 1444 GR 420	BS 970 420/S37	AISI 420	DIN 17440



FLANGES DRILLED TO ISO 2084-16BAR

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Type	Shaft Unit	Pump Dimensions						Pump Foot Dimensions										Shaft Dimension			
		Ø 1	Ø 2	a	f	h1	h2	b	c	m1	m2	n1	n2	Ø S1	n3	Ø S2	w	d	l	t	u
VN32/13	25			80	360	112	140	50	14	100	70	190	140	14	100		267	24	50	27	8
VN32/16	25	50	32	80	360	132	160	50	14	100	70	240	190	14	100	14	267	24	50	27	8
VN32/20	25			80	360	160	180	50	14	100	70	240	190	14	110		267	24	50	27	8
VN32/26	25			100	360	180	225	65	14	125	95	320	250	14	110		267	24	50	27	8
VN40/13	25			80	360	112	140	50	14	100	70	210	160	14	100		267	24	50	27	8
VN40/16	25			80	360	132	160	50	14	100	70	240	190	14	100		267	24	50	27	8
VN40/20	25	65	40	100	360	160	180	50	14	100	70	265	212	14	110	14	267	24	50	27	8
VN40/26	25			100	360	180	225	65	14	125	95	320	250	14	110		267	24	50	27	8
VN40/32	35			125	470	200	225	65	14	125	95	345	280	14	110		342	32	80	35	10
VN50/13	25			100	360	132	160	50	14	100	70	240	190	14	100		267	24	50	27	8
VN50/16	25			100	360	160	180	50	14	100	70	265	212	14	110		267	24	50	27	8
VN50/20	25	65	50	100	360	160	200	50	14	100	70	265	212	14	110	14	267	24	50	27	8
VN50/26	25			100	360	180	225	65	14	125	95	320	250	14	110		267	24	50	27	8
VN50/32	35			125	470	225	280	65	14	125	95	345	280	14	110		267	32	80	35	10
VN65/13	25			100	360	160	180	65	14	125	95	280	212	14	110		267	24	50	27	8
VN65/16	25			100	360	160	200	65	14	125	95	280	212	14	110		267	24	50	27	8
VN65/20	25	80	65	100	360	180	225	65	14	125	95	320	250	14	110	14	267	24	50	27	8
VN65/26	35			100	470	200	225	80	16	160	120	360	280	17.5	110		342	32	80	35	10
VN65/32	35			125	470	225	280	80	16	160	120	400	315	17.5	110		342	32	80	35	10
VN80/16	25			125	360	180	225	65	14	125	120	360	280	14	110		267	24	50	27	8
VN80/20	35			125	470	180	250	65	14	125	120	360	280	14	110		342	32	80	35	10
VN80/26	35	100	80	125	470	200	280	80	16	160	120	400	315	17.5	110	14	342	32	80	35	10
VN80/32	35			125	470	250	315	80	16	160	120	400	315	17.5	110		342	32	80	35	10
VN80/40	45			125	532	280	355	85	16	160	150	500	340	17.5	110		368	42	110	45	12
VN100/16	35			125	470	200	250	80	16	160	120	360	280	17.5	110		342	32	80	35	10
VN100/20	35			15	470	200	280	80	16	160	120	360	280	17.5	110		342	32	80	35	10
VN100/26	35	125	100	140	470	225	280	80	16	160	120	400	315	17.5	110	14	342	32	80	35	10
VN100/32	35			140	470	250	315	80	16	160	120	400	315	17.5	110		342	32	80	35	10
VN100/40	45			140	530	280	355	100	18	200	150	500	400	23	110		370	42	110	45	12
VN125/20	35			140	470	250	315	80	16	160	120	400	315	17.5	110		342	32	80	35	10
VN125/26	35	150	125	140	470	250	355	80	16	160	120	400	315	17.5	110	14	342	32	80	35	10
VN125/32	45			140	530	280	355	100	18	200	150	500	400	23	110		370	42	110	45	12
VN125/40	45			140	530	315	400	100	18	200	150	500	400	23	110		370	42	110	45	12
VN150/20	35G			160	495	280	400	100	20	200	150	550	450	23	110		367	32	80	35	10
VN150/26	45	200	150	160	530	250	355	100	18	200	150	450	350	23	110	14	370	42	110	45	12
VN150/32	45			160	530	280	400	100	18	200	150	550	450	23	110		370	42	110	45	12
VN150/40	45			160	530	315	450	100	18	200	150	550	450	23	110		370	42	110	45	12
VN200/32	55	250	200	180	670	315	480	120	20	220	170	600	480	28	110	14	504	48	110	51	14
VN200/40	55			180	670	335	480	120	20	220	170	600	480	28	110		504	48	110	51	14
VN250/32	55	300	250	220	691	335	520	150	22	250	200	660	510	28	110	14	525	48	110	51	14
VN250/40	55			220	682	400	560	150	22	250	200	660	510	28	110		516	48	110	51	14

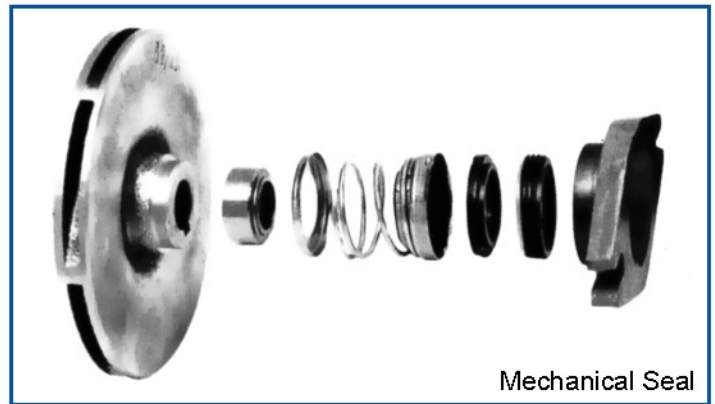




## Performance and dimensional standards for the International Standard DIN 24255

### Stuffing Box

Standard stuffing box includes gland packing with a lantern ring incorporating high pressure internal flushing. External flush can be fitted and pump can be supplied with a mechanical and back to packing is easy. All pumps that can operate at 2 pole speed have a close tolerance stuffing box bush fitted.



Mechanical Seal

### Bearing Housing

Rugged cast iron construction with only three bearing housings covering complete range of pumps which gives many common interchangeable parts

### Impeller

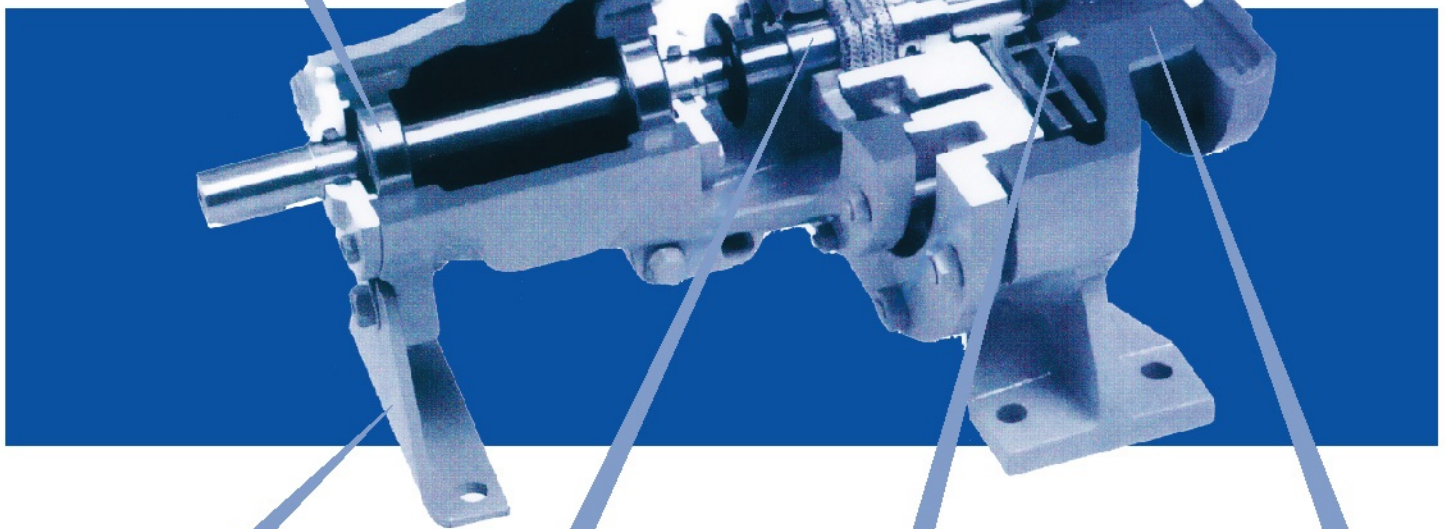
Double shrouded type is hydraulically balanced and positively driven by shaft key and axially locked between sleeve and impeller nut.

### Shaft

A domed type locking nut. Seats the stainless steel shaft at the impeller. Only 4 shafts are required to cover whole 37 sizes and reduces inventory to a minimum.

### Bearings

bearings on 33 sizes are grease lubricated-sealed for life. 4 sizes have oil lubricated bearings and for this arrangement the housing includes an oil level sight glass and vent.



### Support Foot

Each pump has a removable Support Foot fitted at drive end for greater rigidity.

### Shaft Sleeve

Fully machined hook type shaft sleeve prevents shaft damage under the gland packing which substantially reduces maintenance costs

### Wear Rings

Replaceable wear rings are fitted as standard to all casing and also to back covers on larger pumps which reduce maintenance time and cost.

### Casing

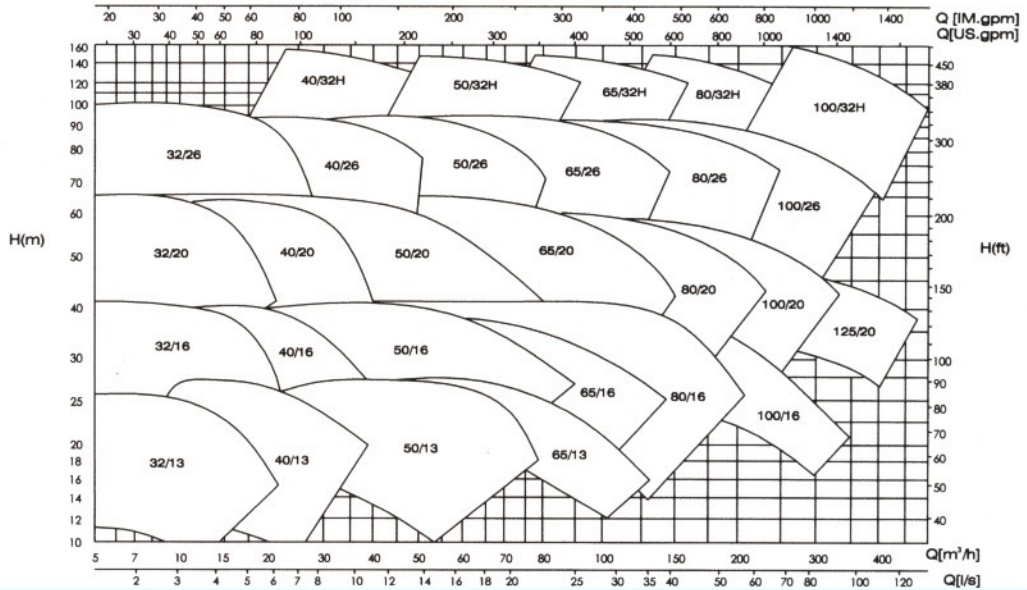
The cast iron volute casing is a robust design with integrally cast feet, vertical top centerline discharge with axial suction incorporating cast inlet vane to give best flow to impeller eye.



# SELECTION RANGE CHART

n=2900rpm

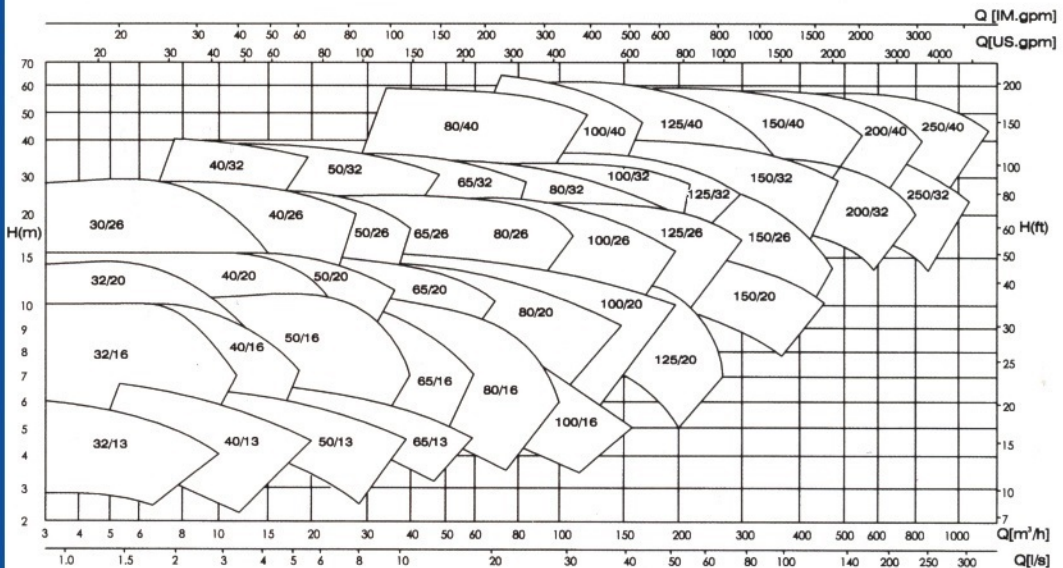
Selection charts of PA single stage centrifugal pump



SELECTION CHART  
2900 RPM

n=1450rpm

Selection charts of PA single stage centrifugal pump



SELECTION CHART  
1450 RPM