

NZ SERIES

Non Metallic Mechanical Seal Pumps

PP-H

PVDF

ETFE

ANTICO



ZEUS

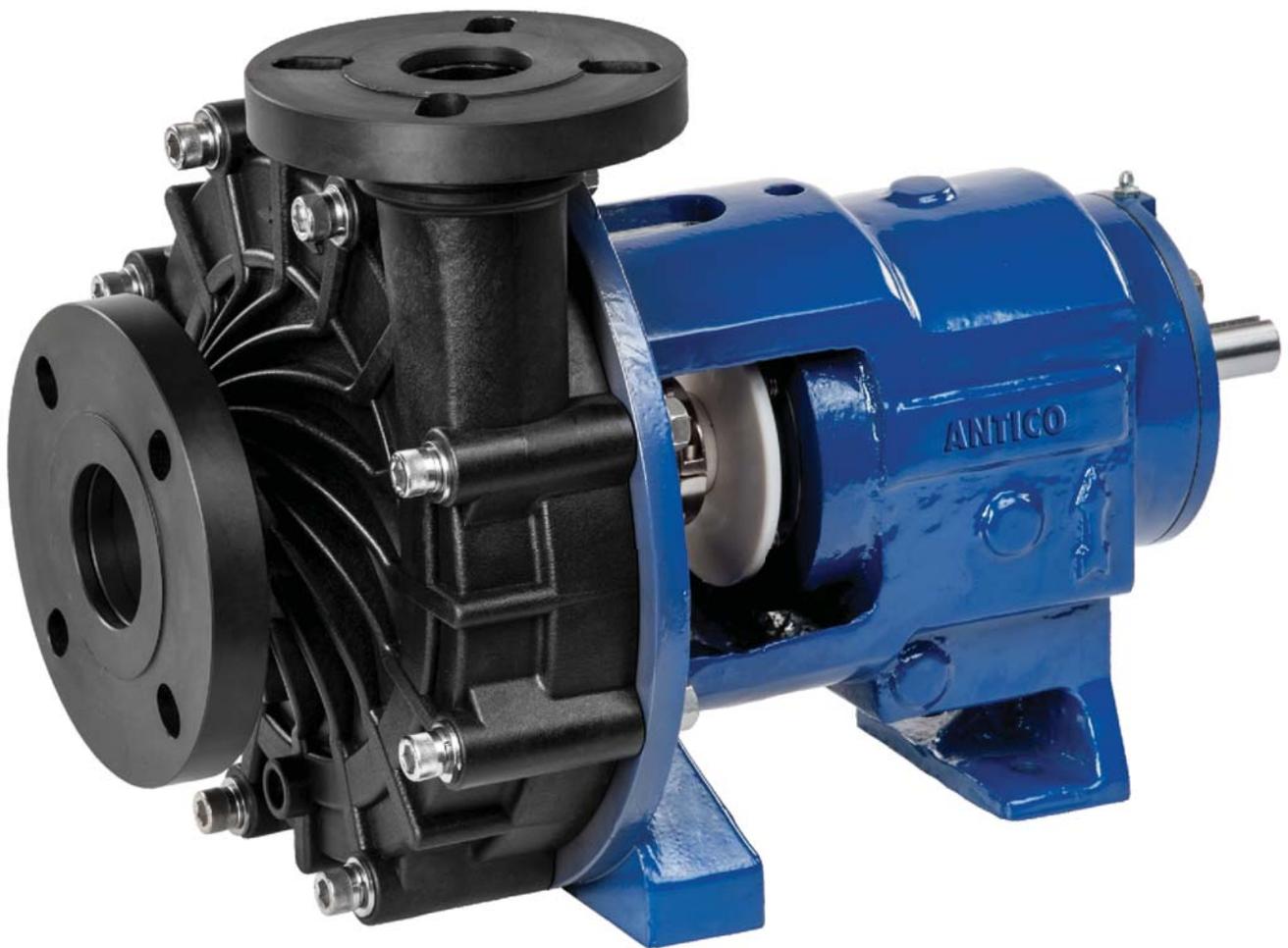
Corrosion Resistant Chemical Pumps

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PRODUCT OVERVIEW

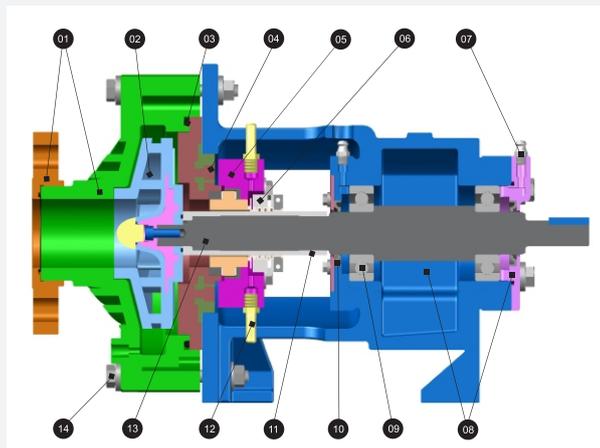
Non metallic Zeus pumps are injection moulded, horizontal, side discharge, back pull-out, volute casing type, single stage, end suction centrifugal pumps. NZ Series pumps are specifically designed to provide optimum pumping solutions with reduced life cycle cost for all chemical applications.

TECHNICAL DATA

Operating Frequency		50 Hz	60 Hz
Capacity [Q]	up to	40 m ³ /hr (176 US gpm)	220 US gpm (50 m ³ /hr)
Head [H]	up to	38 m (125 ft)	176 ft (54 m)
Motor Power [P]	up to	15 kW (20 hp)	25 hp (18.5 kW)
Viscosity	up to	150 mPas (cP)	
Suction Lift	up to	8 m (26 ft) with priming chamber*	
Maximum Working Pressure		10 bar (145 psi)	
Maximum Specific Gravity [SG]		1.8 - 3	
Minimum Continuous Flow [MCF]		2.5 m ³ /hr (11 US gpm)	
Maximum Temperature		PP-H: 82°C (180°F), GFRPP: 90°C (194°F), PVDF: 104°C (220°F), ETFE: 121°C (250°F)	
Suction & Delivery Connection		ANSI B16.5 - Class 150, DIN 2501, BS4504 - PN16, BSP or NPT*	
Shaft Seal		Single (TB/RA) & Double (DROTT) Mechanical Seals	
Bearings		Rolling Element Bearings	
Lubrication		Grease / Oil	
Motor Compatibility		IS 1231, IEC 72-1, NEMA*	

*available on request

MATERIALS



- Casing & Flanges 01
- Impeller 02
- O-Rings 03
- Casing Cover 04
- Gland Plate 05
- Mechanical Seal (Stationary & Rotary) 06
- Grease Nipple 07
- Bearing Bracket & Cover 08
- Rolling Element Bearings 09
- Oil Seals 10
- Sleeve 11
- Male Hose Barb Nipple 12
- Shaft 13
- Fasteners 14

- PP-H¹ / GFRPP² / PVDF³ / ETFE⁴
- PP-H / GFRPP / PVDF / ETFE
- FKM / FFKM / EPDM / TFE-P
- PP-H / GFRPP / PVDF / ETFE
- GFRPP / PVDF / Stainless Steel
- Ceramic / SiC⁵ / GFT⁶ / Carbon
- Stainless Steel
- Cast Iron*
- Carbon Chromium Steel
- Chlorobutadiene Rubber
- Ceramic / SiC / FRB⁷ / Super Alloys
- Brass
- EN Steel / SS316 / Super Alloys
- Stainless Steel

1 - Polypropylene - Homopolymer, 2 - Glass filled Reinforced PP, 3 - Polyvinylidene Fluoride, 4 - Ethylene Tetrafluoroethylene, 5 - Silicon Carbide, 6 - Glass Filled Polytetrafluoroethylene (PTFE), 7 - Fibre Reinforced Bisphenol

* - with high grade 2C corrosion protection paint. Special coatings available on request



PP-H : Suitable for Corrosive Media up to 82°C (180°F)



GFRPP : Suitable for Aggressive Media up to 90°C (194°F)



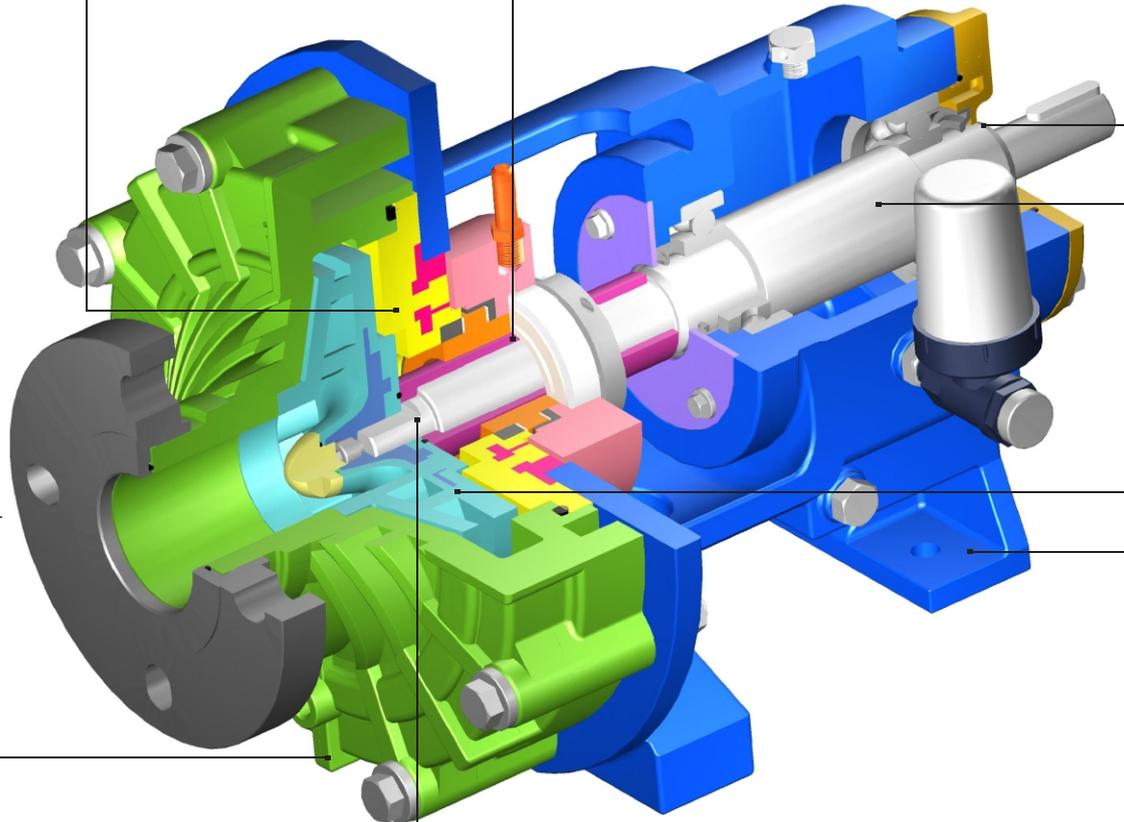
PVDF : Suitable for Corrosive, Hazardous Media up to 104°C (220°F)

DESIGN FEATURES

- Volute Casing
- Flanges
- Impeller
- Impeller Insert
- Casing Cover
- Casing Cover Insert
- O-Rings
- Shaft & Key
- Sleeve
- Bush
- Stationary Unit
- Rotary Unit
- Gasket
- Gland Plate
- Hose Barb Nipple
- Bearing Cover (IB)
- Bearing Pedestal
- Bearings & Oil Seal
- Bearing Cover (OB)
- Constant Level Oiler
- Fasteners

Polymer lined cast casing cover to accommodate single & double mechanical seals without any modifications

Stepped sleeve aids proper sealing at the impeller rear side and accurate alignment of rotary and stationary seal faces



Unique volute casing design in non metallic construction with high wall thickness provides efficient & smooth flow of pumping media and excellent internal & external corrosion resistance

Innovative positive locking methodology to prevent failure due to wrong rotation and ensures maximum torque transmission



Impeller Locking Mechanism

Prevents catastrophic failure in case of reverse rotation



Drain Plug

PVDF drain plug with quick connect coupling allow swift drainage of hazardous liquids

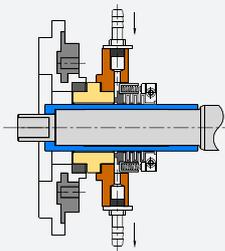


Flexible Casing Orientation

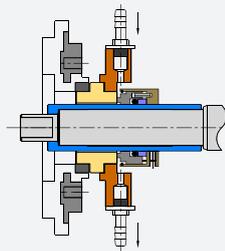
Vertical or Horizontal orientation for optimized discharge piping layout

MECHANICAL SEAL OPTIONS

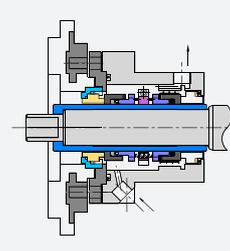
Bearings capable of carrying high dynamic loads to run beyond standard lifetime (17500 hrs)



Single PTFE Bellows seal (TB)



Single Pusher Seal (RA)



Double Pusher Seal (DROTT)

- **Type TB** is single, outside mounted seal, uses PTFE bellows as secondary seal offering universal chemical resistance for a broad range of clean & corrosive pumping media.
- **Type RA** is single, outside mounted seal, employs fluoroelastomer (FKM/FFKM) as secondary seal to handle highly corrosive & homogenous slurries.
- **Type DROTT** is double, back to back arrangement seal; using fluoroelastomer (FKM / FFKM) & fluoropolymer (PTFE) as secondary seals suitable for handling hazardous chemicals, media with tendency to crystallize and to avoid dry running while pumping volatile liquids. Compatible pressurized buffer liquid needs to be circulated via thermosyphon or other external pressurized systems.

Operating parameters*

Type		TB	RA	DROTT
Pressure	up to	5 bar (75 psi)	27.6 bar (400 psi)	27.6 bar (400 psi)
Temperature	up to	71°C (160°F)	204°C (400°F)	204°C (400°F)
Shaft Speed	up to	10 m/s (33 fps)	23 m/s (75 fps)	23 m/s (75 fps)

*Values for Flowserve seals. Other seals available on request.

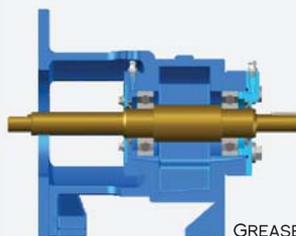
Robust shaft with low stiffness ratio to ensure less than 0.05 mm (0.002 in) deflection at seal faces thus maximizes mechanical seal life

Hydrodynamically optimized, closed / semi-open radial impeller designed for

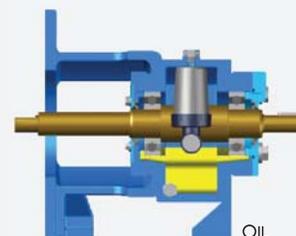
- Optimum suction behaviour with low NPSH requirement
- Low noise and vibration
- Minimum axial Loading on bearings and seal

Sturdy, single piece bearing bracket, lantern, leg ensure simple assembly and accurate installation of pumps

BEARING BRACKET & LUBRICATION



GREASE



OIL

Bearing Bracket Features

- Single piece heavy duty bearing bracket combines lantern and leg to give high interchangeability between models and lowering inventory.
- Rugged design minimizes unexpected downtime and enhances ease of assembly and maintenance.
- Monolithic bearing bracket provides accurate mounting on the base frame and prevents coupling misalignment.

Lubrication Options

- Grease lubricated bearing bracket for applications up to 120°C / 250°F uses grease nipples fitted at the pump end and drive end. Greased for life / Sealed for life bearings available on request.
- Oil lubricated bearing bracket for applications up to 180°C / 355°F uses a constant level oiler. Large oil sump volume (430 ml) results in effective heat transfer for cooler bearings.

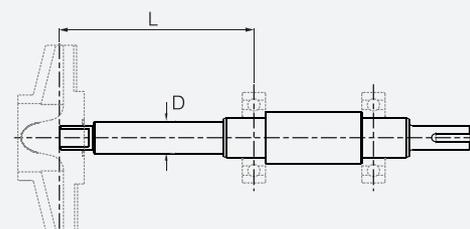


Impeller Options

Option of closed and semi-open impeller with efficient blade passage for effective pumping of process media

SHAFT DESIGN

NZ Series shafts are designed with solid & sleeved options to have low shaft stiffness ratio (L^3/D^4) thus minimizing shaft deflection in turn promoting improved seal & bearing life. First Obstruction length (FOB) requirements of standard readily available single & double mechanical seals are considered in the design.

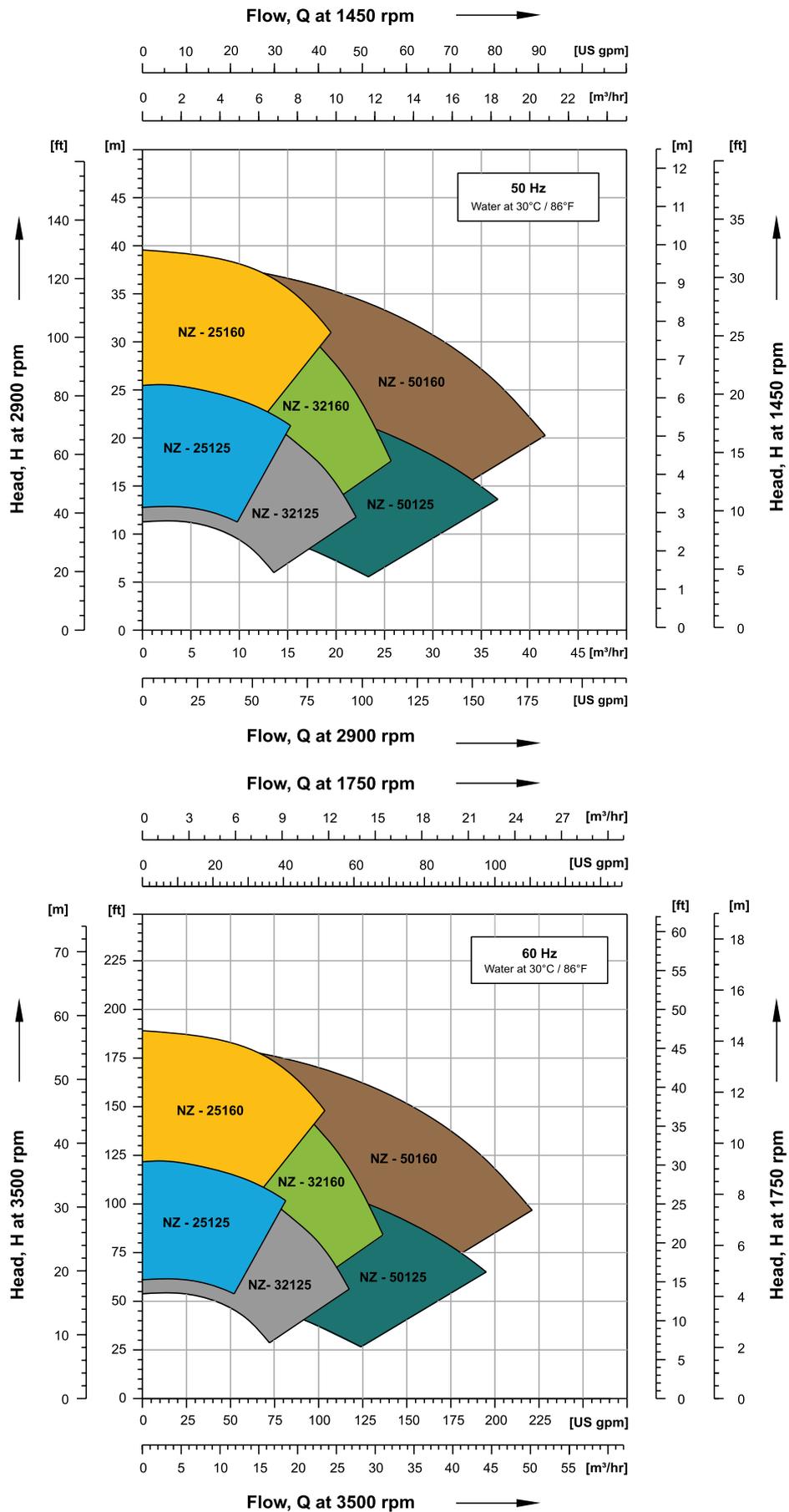


L = Distance between IB bearing center and impeller center

D = Diameter of shaft under sleeve

Shaft stiffness ratio (L^3/D^4)		
System of Units	Metric	Inch
Solid/Wet	3.57	90.76
Metal Sleeved	5.02	127.45
Non Metallic Sleeved	7.18	182.39

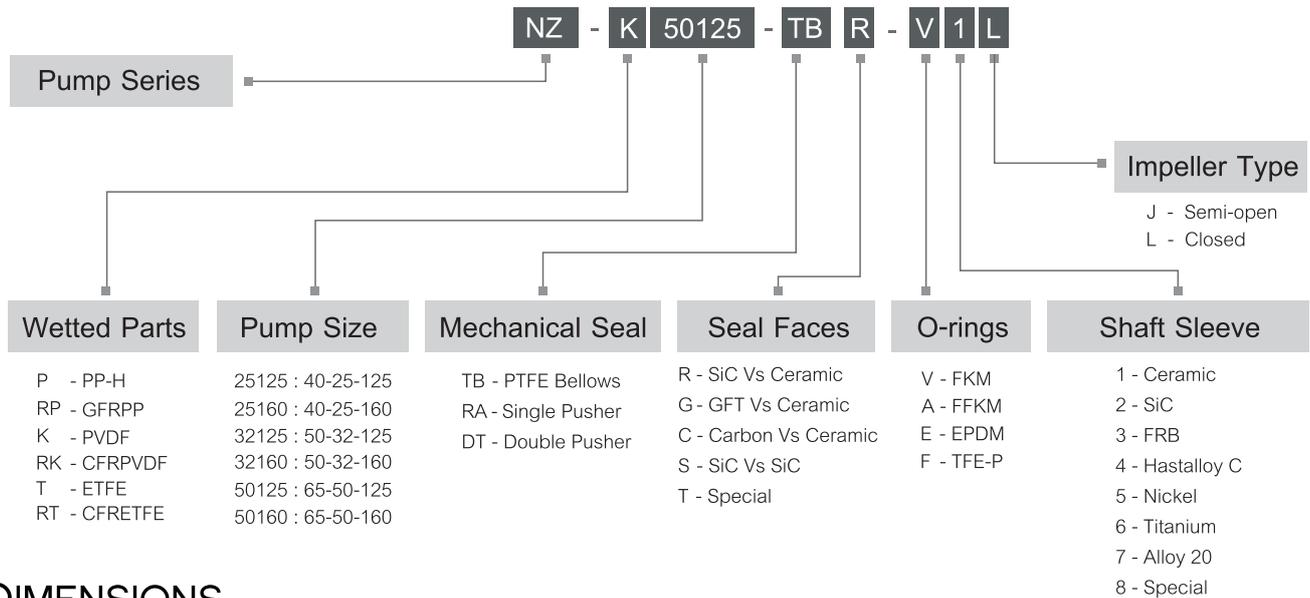
HYDRAULIC COVERAGE



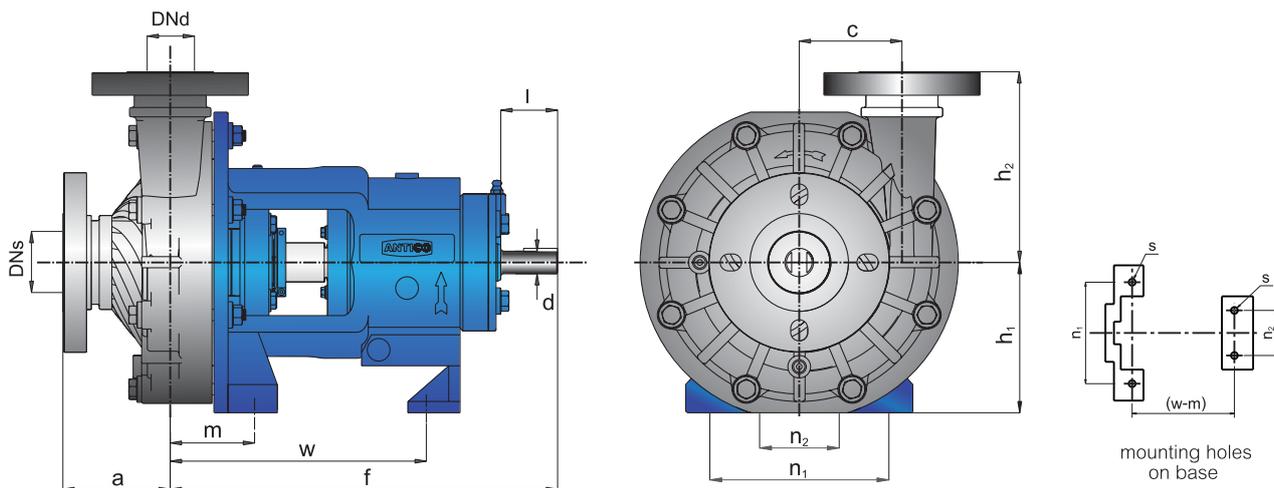
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PUMP IDENTIFICATION



DIMENSIONS



MODELS	PUMP DIMENSIONS													
	DN _s	DN _d	a	f	c	h ₁	h ₂	m	n ₁	n ₂	w	s	d	l
NZ - 25125	40	25	100	410	90	160	182	95	180	80	275	M12	24	60
NZ - 25160	40	25	110	410	104	160	208	95	180	80	275	M12	24	60
NZ - 32125	50	32	100	410	90	160	182	95	180	80	275	M12	24	60
NZ - 32160	50	32	110	410	104	160	208	95	180	80	275	M12	24	60
NZ - 50125	65	50	100	410	96	160	182	95	180	80	275	M12	24	60
NZ - 50160	65	50	110	410	108	160	208	95	180	80	275	M12	24	60

All Dimensions in mm



Anticorrosive Equipment Pvt. Ltd.