UTILITY PUMP CONFIGURATOR

PROVEN TECHNOLOGY

DESMI

Version 1.02

SELECTION LEAFLET

This leaflet is made to secure fast and correct selection of the NSL, NSLH, NSLV, DSL and ESL pump materials and design.

The main calculation tool at DESMI is winPSP. This configurator is giving the DESMI/Distributor sales engineer a quick overview over options available to select correct pump type and thereafter calculate the correct price.

- District Heating.
- Combined Heat & Power Plants (Co-generation Tri-generation/Waste-to-Energy Plants).
- District Cooling.
- Medium/Larger HVAC – chilled water and cooling tower applications (Airports, Datacenters, Skyscrapers, Hotels, Shopping Malls etc.).
- Power Generation (various types of power plant applications).

DESMI ESL Pump

Code	Pump construction	Pump design	Pump casing	Impeller Material	Shaft seal
H1 - Medium temp/ Medium pressure	Inline	A12	GG20	RG10	DESMI DSB EPDM Ceramic/Carbide
C1 - Medium temp/ Medium pressure	Inline	A12	GG20	RG10	DESMI DSB EPDM Ceramic/Carbide
G1 - Medium temp/ Medium pressure	Inline	A12	GG20	RG10	HQR Viton Silicon carbide/Silicon carbide
W1 - Medium temp/ Medium pressure	Inline	A12	GG20	RG10	DESMI DSB EPDM Ceramic/Carbide
S1 - Medium temp/ Medium pressure	Inline	D12	RG5	RG10	DESMI DSB Ntrile
F1 - Medium temp/ Medium pressure	Inline	A12	GG20	Duplex Super duplex	HQR Viton Silicon carbide/Silicon carbide

• A12 - Pump without bearing • D12 - Pump without bearing (Bronze)

Size DN25-DN80

Flow capacity up to 120 m³/h / 528 gpm

Differential pressure up to 50 mLC

Speed up to 3600 rpm (depending on size)

Temperature range (-20)-120°C (-4)-248°F

Working pressure up to 12 bar / 174 psi

- **District heating water** - H1
- **District cooling water** - C1
- **Glycol, Chilled water** - G1
- **Water without additives** - W1
- **Sea water** up to Approx. 25°C - S1 77°F
- **Flue gas cleaning (Scrupper)** - F1

DESMI ESL

DESMI DSL Pump

Code	Pump construction	Pump design	Pump casing	Impeller Material	Shaft seal
H1 - High temp/Low pressure	Inline	A-A (A-F)	GG20 (GGG40)	RG5	DESMI SEAL DS Nitrile CrNiMo/ CrNiMo
C1 - Low temp/Low pressure	Inline	A-A (A-F)	GG20 (GGG40)	RG5	DESMI SEAL DS CrNiMo/CrNiMo
S1 - Low temp/Low pressure	Inline	D-A (D-F)	RG5	NiAlBz	DESMI SEAL DS CrNiMo/CrNiMo

• -A Spacer design • -F Compact design

Size DN300-DN500

Flow capacity up to 3700 m³/h / 16291 gpm

Differential pressure up to 70 mLC

Speed up to 1800 rpm (depending on size)

Temperature range (-25)-140°C (-13)-284°F

Working pressure up to 10 bar / 145 psi

- **District heating** water - H1
- **District cooling** water - C1
- **Sea water** up to Approx. 25°C - S1 77°C

DESMI DSL

NSL/NSLV-H Selection

The first box shows the capacity range the NSL pump. For selction of pump size please download http://www.desmi.com/selection-programs.aspx

DESMI NSL

Size DN80-DN300

Flow capacity up to 1500 m3/h / 6604 gpm

Differential pressure up to 140 mLC

Speed up to 3600 rpm (depending on size)

Temperature range (-40)-100°C (-104)-212°F

Working pressure up to PN 10

- District heating water - H1
- District cooling water - C1
- Glycol, Chilled water - G1
- Water without additives - W1
- Seawater up to approx. 25°C - S1
- Flue gas cleaning (Scrupper) - F1
- Brine - B1

Working pressure PN16-PN25

- District heating water - H2
- District cooling water - C2
- Glycol, Chilled water - G2
- Water without additives - W2
- Brine - B2

DESMI NSLV

Temperature range 100-140°C 212-284°F

Working pressure up to PN10

- District heating water - H3
- Glycol, Chilled water - G3

Working pressure PN16-PN25

- District heating water - H4
- Glycol, Chilled water - G4

DESMI NSLH

Code	Pump construction	Pump design	Pump casting	Impeller Material	Shaft seal (Mechnical Seal)
H1 - Low temp/Low pressure	Inline/End suction	A02(A12/A14)	GG20 (GGG40)	NiAlBz Standard impeller	DESMI DSB EPDM Ceramic/ Carbide (HQR EPDM Silicon carbide/ Carbide)
C1 - Low temp/Low pressure	Inline/End suction	A02(A12/A14)	GG20 (GGG40)	NiAlBz Standard impeller	DESMI DSB EPDM Ceramic/ Carbide
G1 - Low temp/Low pressure	Inline/End suction	A02(A12/A14)	GG20 (GGG40)	NiAlBz Standard impeller	HQR Viton Silicon carbide/Silicon carbide
W1 - Low temp/Low pressure	Inline/End suction	A02(A12/A14)	GG20 (GGG40)	NiAlBz Standard impeller	DESMI DSB EPDM Ceramic/ Carbide
S1 - Low temp/Low pressure	Inline/End suction	D02(D12/D14)	RG5	NiAlBz Standard impeller	DESMI DSB Ntrile
F1 - Low temp/Low pressure	Inline/End suction	B02(B12/B14)	GG20 (GGG40)	Stainless steel	HQR Viton Silicon carbide/Silicon carbide
B1 - Low temp/Low pressure	Inline/End suction	A12	GGG40	NiAlBz Standard impeller	Crane 2 BR1C1/N
H2 - Low temp/High pressure	Inline/End suction	A02(A12/A14)	GGG40	NiAlBz Standard impeller	ELK EPDM Silicon carbide/ Carbide
C2- Low temp/High pressure	Inline/End suction	A02(A12/A14)	GGG40	NiAlBz Standard impeller	ELK EPDM Silicon carbide/ Carbide
G2- Low temp/High pressure	Inline/End suction	A02(A12/A14)	GGG40	NiAlBz Standard impeller	ELK Viton Silicon carbide/Silicon carbide
W2- Low temp/High pressure	Inline/End suction	A02(A12/A14)	GGG40	NiAlBz Standard impeller	ELK EPDM Silicon carbide/ Carbide
B2 - Low temp/High pressure	Inline/End suction	A12	GGG40	NiAlBz Standard impeller	Crane 2 BR1C1/N
H3 - High temp/Low pressure	Inline/End suction	A12	GG20 (GGG40)	NiAlBz Standard impeller	DESMI DSB EPDM Ceramic/ Carbide
G3 - High temp/Low pressure	Inline/End suction	A12	GG20 (GGG40)	NiAlBz Standard impeller	ELK Viton Silicon carbide/Silicon carbide
H4 - High temp/High pressure	Inline/End suction	A12	GGG40	NiAlBz Standard impeller	ELK EPDM Silicon carbide/ Carbide
G4 - High temp/High pressure	Inline/End suction	A12	GGG40	NiAlBz Standard impeller	ELK Viton icon carbide/Silicon carbide

• A02 - Pump with bearing • A12 - Pump without bearing • A14 - Pump with spacer coupling & heavy bearing bracket (max. 80°C)

SEAL KITS FOR NSL- PUMPS (Rubber parts in nitrile)

NSL PUMP IN -02 (MONOBLOCK) AND -16 (COMPACT SPACER) DESIGN:	
NSL 80 -> 150-215/-02-16	677580
NSL 80 -> 200-265/-02-16	677584
NSL 250-265/-02-16	677569
NSL 80 -> 125-330/-02-16	677589
NSL 150 -> 250-330/-02-16	677571
NSL 100 -> 125-415/-02-16	677592
NSL 150-415/-02-16	677598
NSL 200 -> 300-415/-02-16	677574
NSL 200 -> 300-525/-02	677577

The following parts are included in the seal kit:
Mech. shaft seal, Water deflector, Ring lock, Ball bearing, Grease valve ring, O-ring

NSL PUMP IN -12 (MONOBLOCK WITHOUT BEARINGS) DESIGN:	
NSL 80 -> 125-215/-12	677581
NSL 80 -> 150-265/-12	677585
NSL 80 -> 125-330/-12	677590
NSL 150 -> 250-330/-12	677572
NSL 100 -> 125-415/-12	677593
NSL 150-415/-12	677599
NSL 200 -> 300-415/-12	677575
NSL 200 -> 300-525/-12	677578

The following parts are included in the seal kit:
Mech. shaft seal, O-ring

NSL PUMP IN -13 (SPACER WITH LIGHT BEARING BRACKET) DESIGN:	
NSL 80 -> 125-215/-13	677582
NSL 80 -> 150-265/-13	677586
NSL 80 -> 125-330/-13	677591
NSL 100 -> 125-415/-13	677594

The following parts are included in the seal kit:
Mech. shaft seal, Water deflector, Ring lock Ball bearing, Grease valve ring, Ball bearing, O-ring

NSL PUMP IN -14 (SPACER WITH HEAVY BEARING BRACKET) AND -15 (HEAVY MOTOR BRACKET WITH HEAVY BEARING BRACKET) DESIGN:	
NSL 80 -> 150-215/-14-15	677583
NSL 80 -> 250-265/-14 -15	677570
NSL 150 -> 250-330/-14	677573
NSL 150-415/-14	677568
NSL 200 -> 300-415/-14	677576
NSL 200 -> 300-525/-14	677579

The following parts are included in the seal kit:
Mech. shaft seal, Water deflector, Ring lock, Ball bearing, Grease valve ring, Ball bearing, O-ring

SEAL KITS FOR DSL- PUMPS IN SPACER AND COMPACT SPACER	
DSL300-320 AD-a/AD-f	677860
DSL400-430 AD-a/AD-f	677861

The Following item no. is included in the seal kit:
DSL300-320 (Pos. no. 321.1, 322.1, 400.1, 400.2, 400.3, 412.1, 412.2, 412.3, 423.1, 433.2, 505.1, 507.1, 932.1, 932.2)
DSL400-430 (Pos. no. 321.1, 322.1, 400.1, 400.2, 400.3, 412.1, 412.2, 412.3, 412.4, 412.5, 423.1, 433.2, 505.1, 507.1, 932.1, 932.2)

DSL300:

321.1: Ball bearing
322.1: Roller bearing
400.1: Gasket
400.2: Gasket
400.3: Gasket
412.1: O-ring
412.2: O-ring
412.3: O-ring
423.1: Shaft seal ø60
433.2: Shaft seal ø45
505.1: Support washer
507.1: V-ring
932.1: Lock ring
932.2: Lock ring

DSL400:

321.1: Ball bearing
322.1: Roller bearing
400.1: Gasket
400.2: Gasket
400.3: Gasket
412.1: O-ring
412.2: O-ring
412.3: O-ring
412.4: O-ring
412.5: O-ring
423.1: Shaft seal ø80
433.2: Shaft seal ø60
505.1: Support washer
507.1: V-ring
932.1: Lock ring
932.2: Lock ring

Additional options for DESMI pumps

Coating:
DESMI pumps can be offered with an inside coating in order to increase efficiency. The applied coating is a Chesterton ARC HT-S coating. It can increase efficiency of 3-4% if the duty point is 0,5-0,9*BEP on the curve. Max liquid temperature for this coating is 150°C / 302°F.

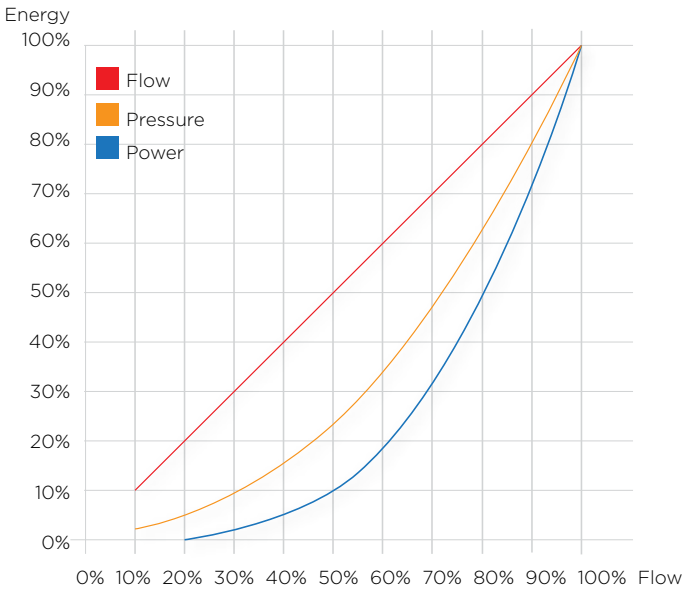
For accurate calculation of efficiency increase and price information please contact desmi@desmi.com

VFD:
DESMI pumps can be fitted with VFD (FC, VSD) as well. This give more options of selecting the right pump in WinPsP and therefore be able to achieve higher efficiency in the duty point and maybe a smaller and therefore cheaper pump.

Note in order to fit VFD to the electric motor the motor must be fitted with an insulated bearing to avoid bearing currents. For questions, please contact desmi@desmi.com

The energy consumption will decrease a lot if flow demand decreases. For example in the low demand season. If flow is reduced to 80% then power consumption will be reduced to 50% see graph below.

Ideal Energy Consumtion at Varying Speed



You can read more about our utility solutions at www.desmi.com or send your email to desmi@desmi.com

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