API 682 – PLan 32

Enjoy the Flopac performance and treat your equipment by selecting the Flopac® series SPX-325 seal support units.

The range of Flopac® SPX seal support units include plan 32 seal flushing units that are typically used with arrangement 1 contacting wet seals (1CW-FX, 1CW-FL), in few cases with arrangement 2 and 3 dual seals in combination with plan 52 or 53 systems.

Plan 32 seal flushing units are intended to improve the seal environment by bringing a (cool) clean flush from an external source into the seal chamber in order to protect the (inboard) seal from the detrimental properties of a pumped product. For instance in applications that see hot, abrasive or polymerizing product.

Flopac seal support systems; for reliable seal performance and optimal process efficiency.

Advantages:

- **Compact and light weight designs.**
- **Engineered to offer an optimal user experience.**
- **Complete (API 682) compliant packages.**
- **Quick delivery program for our competitively priced standard range.**
- **Custom designs available.**

Technical Specification API 682 – Plan 32

The range of Flopac® SPX seal support systems include plan 32 seal support systems that are typically used with arrangement 1 contacting wet seals (1CW-FX, 1CW-FL), in few cases with arrangement 2 and 3 dual seals in combination with plan 52 or 53 systems.

Plan 32 – Description

Purpose

Plan 32 seal support systems are intended to improve the seal environment by bringing a controlled (cool) clean flush from an external source into the seal chamber – in order to protect the (inboard) seal if the pumped fluid is extremely hot, corrosive, aggressive or solids-laden.

Operation

A Plan 32 injects a (cool) clean flush liquid at elevated pressure into the seal chamber from where it will flow into the process. To maintain an elevated pressure and to avoid all too excessive losses of flush liquid the seal chamber should best be isolated from the process by a close-clearance throat bushing.

The injected flush at elevated pressure will prevent the contaminants of the pumped liquid to approach the (inboard) seal provided it is continuous and sufficient.

A properly designed Plan 32 operates self-reliant provided the continuous and sufficient supply of flush liquid is ensured. That will require a highly reliable 'external source'. Should such external source not be readily available, kindly address Flopac for our range of well-engineered Seal Flush Injection units.

Heat exchangers

Usually plan 32 units do not contain an heat exchanger. Nonetheless, there could be circumstances where it could be considered to cool or heat the flush liquid; To improve the liquid properties or to enhance process compatibility.

Please address Flopac with your requirements and we will gladly find you a suitable solution.

Instrumentation

A plan 32 should be equipped with a pressure gauge to monitor the flush supply pressure. For remote control or monitoring it could be considered to use transmitters iso gauges. A (sight) flow indicator is recommended to ensure a positive flow. A temperature instrument could be considered if relevant.

Notes/recommendations

Flopac provides a complete API 682 compliant package, including all the necessary appendages.

A fair amount of flush liquid is continuously lost into the process. Careful consideration should be given to matters as the cost of the flush liquid, its vapour pressure (flashing), process compatibility and the acceptable degree of product contamination.

That is all of a lesser concern if a suitable fluid is readily available, especially if the fluid is normally injected into the process anyway (such as make-up water). In that case a plan 32 is considered the best flush plan for single seals or the inboard seals in those dual seal arrangements that need extra care or cooling.

It however not recommended to consider a Plan 32 for cooling only, as the (energy) costs can be very high. For cooling only our plans 21 or 23 would be the better choice.

Please contact Flopac for a more detailed advise on all topics related to Flopac® seal support system plan 32. We will gladly assist.

Plan 32 – Features

Plan 21 – main features

- Improves the seal environment
- Protects the seal from contaminants
- Operates self-reliant
- No circulation device needed

Benefits of the Flopac Plan 21

- Wetted parts all SS316
- Flexible designs all properly engineered
- Reliable performance
- (API 682/ISO 21049) compliant
- Compact and lightweight configuration
- Directly from the manufacturer

Options

- Alternative material selections for specific services like HF and H_2S (NACE) services.
- The use of Smart transmitters instead of switches for remote alarm / control functions.
- High pressure designs (ANSI 600# / 1500#) for static designs up to 200 barg.

- Additional pressure-, temperature- or flow instruments to enhance monitoring facilities.
- The addition of a temperature gauge, make Badotherm, skin type TG18 -/-20/+120°C, dial 100mm, made from SS316/SS304. Other makes/types and ranges on request.

Mechanical seal system SPX-325

A complete and fully functional Plan 32 system for arrangement 1 wet single seals (or the wet inner seal of an arrangement 2 or 3 dual seal) in accordance with API 682 or ISO 21049 latest edition.

Standard configuration

Design ASME VIII, div. 1/not stamped and/or the European legislation (CE) such as PED 2014/68/EU and the ATEX 2014/34/EU – Zone 2 II/A T1-T3.

Suitable for general oil/water service – Non-hazardous.

Design 40 barg @ -15/+90°C / ANSI 300#-sch.40s. Wetted parts AISI 316(L) .

In- and outlet connections ANSI 1/2" 300# RF smf,

Engineering units: SI units, Bar/°C.
NDE: Visual-/hydrostatic and leaktesting.
Surface preparation : Flopac std 3 layer epoxy system.

Available at request:

- Designs tailored to meet your specific requirements.
- High pressure designs (ANSI 600# / 1500#) for static designs up to 200 barg.
- High temperature designs
- Extended NDE packages to include inspections such as X-ray, LPE and P(A)MI.
- Refer to the section ‘options’ below.


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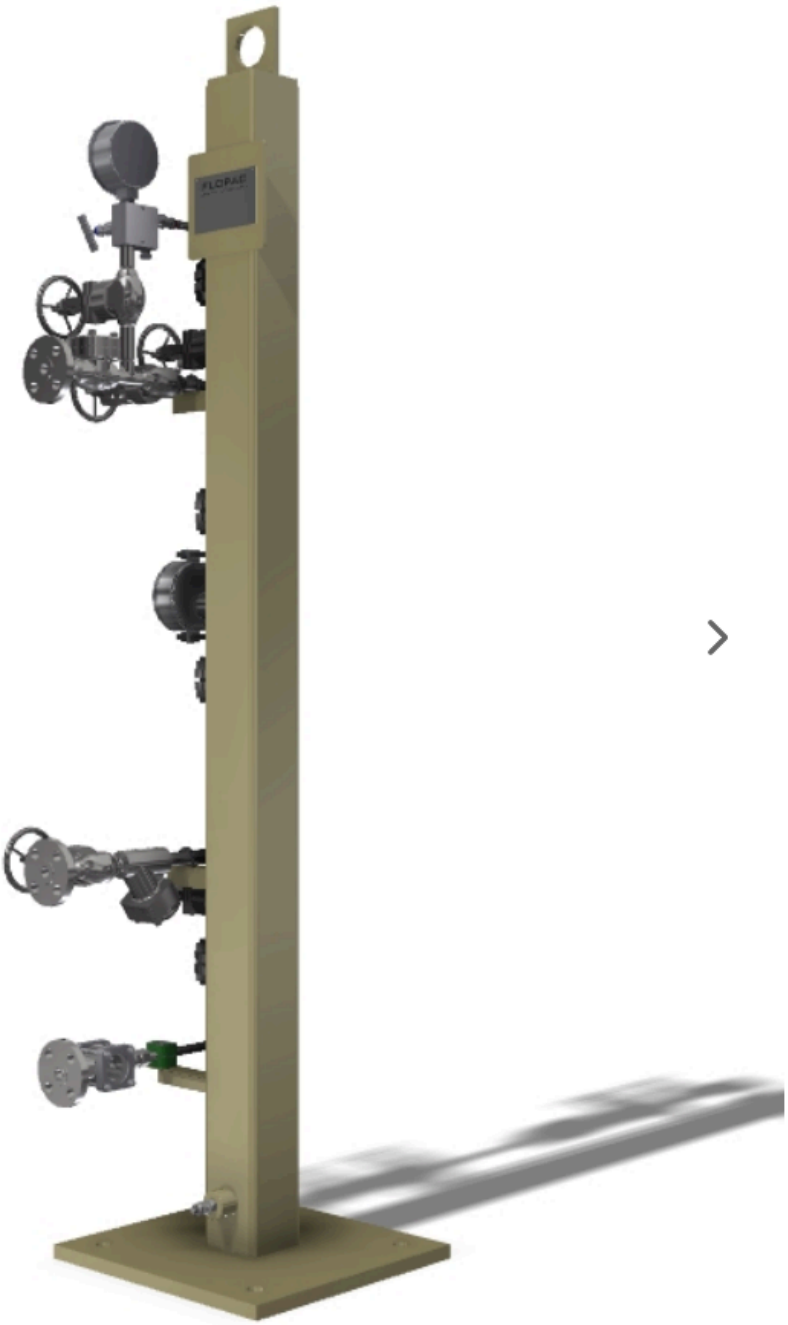
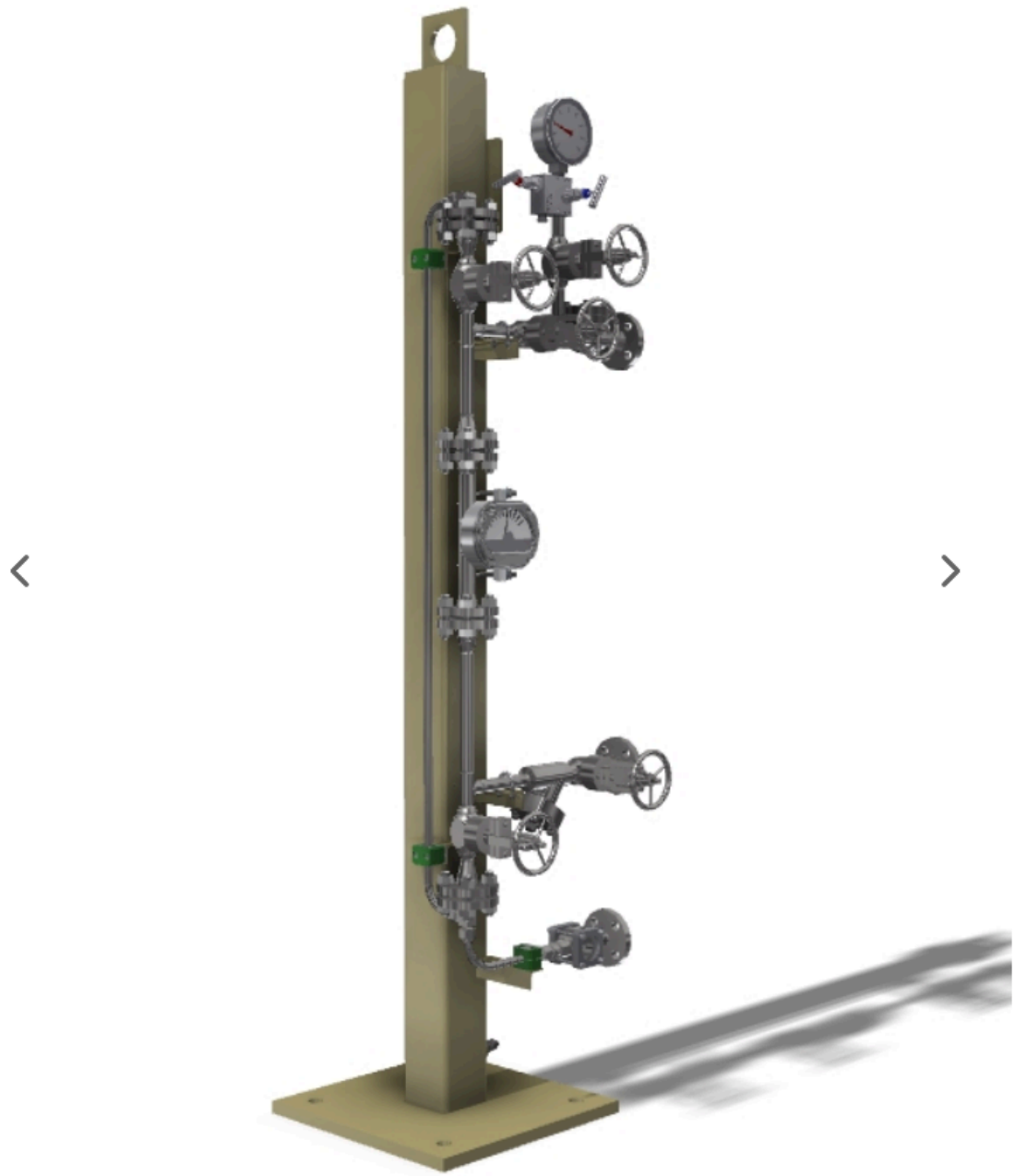




SPX-325 Configuration

Main components

One piping assembly

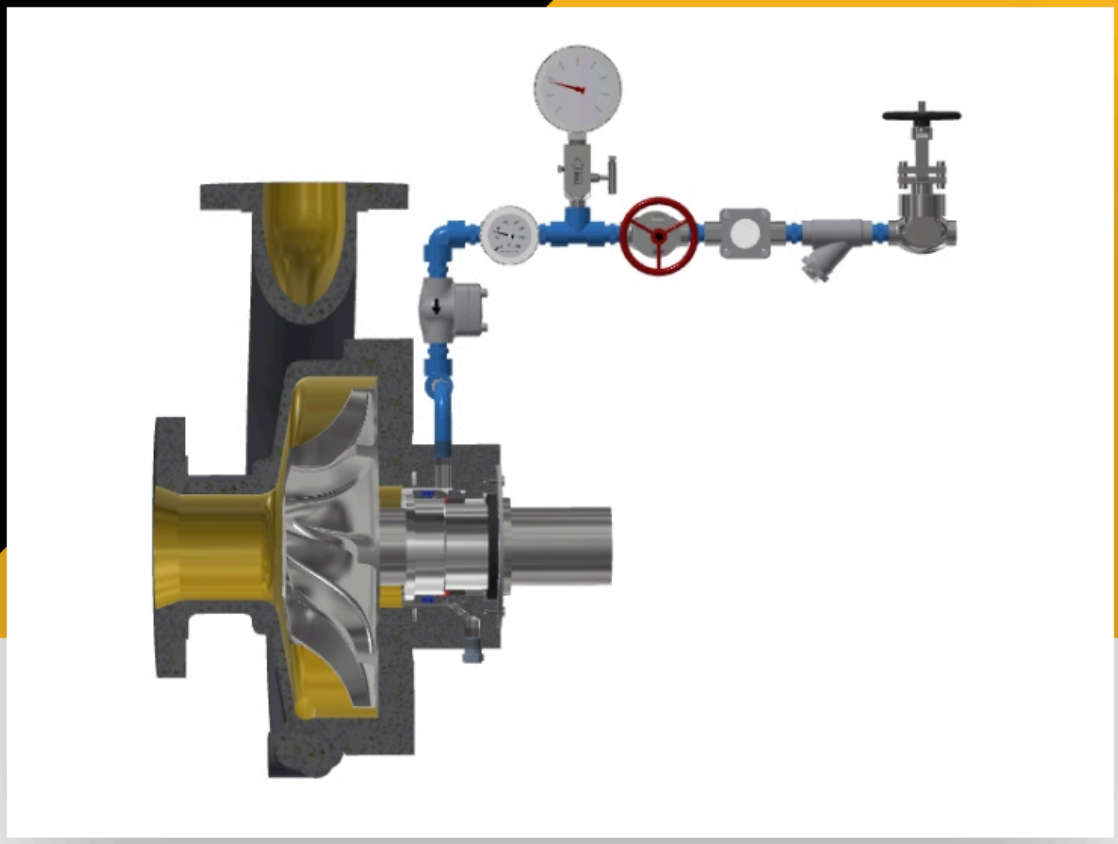
All welded – stainless steel 316L construction as appropriate.

Appendages

A block valve, y-type strainer, flow control and non-return valve as appropriate;

One temperature gauge

Make Badotherm, industrial quality 1% accuracy, dial 100mm, made from SS316/SS304. Provided with a SS316 instrument valve. Other makes/types and ranges on request.



Options

- Alternative material selections for specific services like HF and H2S (NACE) services
- These units can be tailored to all your specific demands.
- The use of Smart pressure transmitters instead of switches for alarm/control functions.
- High pressure designs (ANSI 600# / 1500#) for static designs up to 200 barg.
- Additional pressure-, temperature- or flow instruments to enhance monitoring facilities.
- The addition of a temperature gauge, make Badotherm, skin type TG18 -/-20/+120°C, dial 100mm, made from SS316/SS304. Other makes/types and ranges on request.

Address
Westelijke Havendijk 15
4703 RA Roosendaal
The Netherlands

E-mail
info@flopac.com

Phone
+31 (0)165 59 31 70