

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Pipe Flange, Welded Connection**

with type designation(s)

**Socket welded flanges according to SAE J518, Butt welded flanges according to ISO 6164-1**

Issued to

**Hy-Lok Corporation (Kangseo Factory)  
Busan, Republic of Korea**

is found to comply with

**Det Norske Veritas' Rules for Classification of Ships Pt.4, Ch.6 "Piping Systems"****Application :****May be used for hydraulic applications.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Type:****Socket welded flanges according to SAE J518****Butt welded flanges according to ISO 6164-1****Temperature range:****-20°C to +90°C****-20°C to +90°C****Max. working press.:****35 to 420 kg/cm<sup>2</sup>****160 to 400 kg/cm<sup>2</sup> size dependent**This Certificate is valid until **2019-06-30**.Issued at **Høvik** on **2015-10-14**for **DNV GL**DNV GL local station: **Pusan**Approval Engineer: **Tom Berg-Nielsen**

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**Marianne Spæren Marveng  
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

## Product description

Standard SAE J518 2-split flange halves or compact flanges.  
 The flanges are bolted with metric 8.8 or 10.9 bolts according to DIN 912, alternatively UNC bolts according to ASA B18.3.

Standard ISO 6164-1 flanges:  
 Butt welded flanges, T-connection or square flange.  
 The flanges are bolted with metric 8.8 or 10.9 bolts according to DIN 912.

## Application/Limitation

Max working pressures:  
 SAE J518 Flanges:

Split flange halves, SAFH			Split flange halves-flat, SAHF			Flange clamp, SAVF		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAFH 308	1/2"	350	SAHF 308	1/2"	350	SAVF 308	1/2"	350
SAFH 312	3/4"	350	SAHF 312	3/4"	350	SAVF 312	3/4"	350
SAFH 316	1"	350	SAHF 316	1"	350	SAVF 316	1"	350
-	-	-	-	-	-	SAVF 316-62	1"	420
SAFH 320	1 1/4"	280	SAHF 320	1 1/4"	280	SAVF 320	1 1/4"	280
-	-	-	-	-	-	SAVF 320-62	1 1/4"	420
SAFH 324	1 1/2"	210	SAHF 324	1 1/2"	210	SAVF 324	1 1/2"	210
-	-	-	-	-	-	SAVF 324-62	1 1/2"	420
SAFH 332	2"	210	SAHF 332	2"	210	SAVF 332	2"	210
-	-	-	-	-	-	SAVF 332-62	2"	420
SAFH 340	2 1/2"	175	-	-	-	SAVF 340	2 1/2"	175
-	-	-	-	-	-	SAVF 340-62	2 1/2"	420
SAFH 348	3"	140	-	-	-	SAVF 348	3"	140
SAFH 356	3 1/2"	35	-	-	-	SAVF 356	3 1/2"	35
SAFH 364	4"	35	-	-	-	SAVF 364	4"	35
SAFH 380	5"	35	-	-	-	SAVF 380	5"	35
SAFH 608	1/2"	420	SAHF 608	1/2"	420	SAVF 608	1/2"	420
SAFH 612	3/4"	420	SAHF 612	3/4"	420	SAVF 612	3/4"	420
SAFH 616	1"	420	SAHF 616	1"	420	SAVF 616	1"	420
SAFH 620	1 1/4"	420	SAHF 620	1 1/4"	420	SAVF 620	1 1/4"	420
SAFH 624	1 1/2"	420	SAHF 624	1 1/2"	420	SAVF 624	1 1/2"	420
SAFH 632	2"	420	SAHF 632	2"	420	SAVF 632	2"	420
-	-	-	SAHF 640	2 1/2"	420	SAVF 640	2 1/2"	420
-	-	-	SAHF 648	3"	420	SAVF 648	3"	420

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SAE J518 Flanges :

Flange clamp with tapped holes, SAVFG			Flange clamp-flat, SAEFGA			Flange clamp with tapped holes-flat, SAEFGB		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAVFG 308	1/2"	350	SAEFGA04-61	1/2"	350	SAEFGB04-61	1/2"	350
SAVFG 312	3/4"	350	SAEFGA06-61	3/4"	350	SAEFGB06-61	3/4"	350
SAVFG 316	1"	350	SAEFGA08-61	1"	350	SAEFGB08-61	1"	350
SAVFG 316-62	1"	420	SAEFGA308-62	1"	420	SAEFGB308-62	1"	420
SAVFG 320	1 1/4"	280	SAEFGA10-61	1 1/4"	280	SAEFGB10-61	1 1/4"	280
-	-	-	SAEFGA310-62	1 1/4"	420	SAEFGB310-62	1 1/4"	420
SAVFG 324	1 1/2"	210	SAEFGA12-61	1 1/2"	280	SAEFGB12-61	1 1/2"	280
-	-	-	SAEFGA312-62	1 1/2"	420	SAEFGB312-62	1 1/2"	420
SAVFG 332	2"	210	SAEFGA16-61	2"	280	SAEFGB16-61	2"	280
-	-	-	SAEFGA316-62	2"	420	SAEFGB316-62	2"	420
SAVFG 340	2 1/2"	175	SAEFGA20-61	2 1/2"	210	SAEFGB20-61	2 1/2"	210
-	-	-	SAEFGA320-62	2 1/2"	420	SAEFGB320-62	2 1/2"	420
SAVFG 348	3"	140	SAEFGA24-61	3"	210	SAEFGB24-61	3"	210
SAVFG 356	3 1/2"	35	SAEFGA28-61	3 1/2"	160	SAEFGB28-61	3 1/2"	160
SAVFG 364	4"	35	SAEFGA32-61	4"	160	SAEFGB32-61	4"	160
SAVFG 380	5"	35	SAEFGA40-61	5"	35	SAEFGB40-61	5"	35
SAVFG 608	1/2"	420	SAEFGA04-62	1/2"	420	SAEFGB04-62	1/2"	420
SAVFG 612	3/4"	420	SAEFGA06-62	3/4"	420	SAEFGB06-62	3/4"	420
SAVFG 616	1"	420	SAEFGA08-62	1"	420	SAEFGB08-62	1"	420
SAVFG 620	1 1/4"	420	SAEFGA10-62	1 1/4"	420	SAEFGB10-62	1 1/4"	420
SAVFG 624	1 1/2"	420	SAEFGA12-62	1 1/2"	420	SAEFGB12-62	1 1/2"	420
SAVFG 632	2"	420	SAEFGA16-62	2"	420	SAEFGB16-62	2"	420
SAVFG 640	2 1/2"	420	SAEFGA20-62	2 1/2"	420	SAEFGB20-62	2 1/2"	420
SAVFG 648	3"	420	SAEFGA24-62	3"	420	SAEFGB24-62	3"	420

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Pipe threaded flange, SAAFS			NPT threaded flange, SAAFS-N			UN threaded flange, SAAFS-U		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAAFS 308-08R	1/2"	350	SAAFS 308-08N	1/2"	350	SAAFS 308-08U	1/2"	350
SAAFS 312-12R	3/4"	350	SAAFS 312-12N	3/4"	350	SAAFS 312-12U	3/4"	350
SAAFS 316-16R	1"	350	SAAFS 316-16N	1"	350	SAAFS 316-16U	1"	350
SAAFS 320-20R	1 1/4"	280	SAAFS 320-20N	1 1/4"	280	SAAFS 320-20U	1 1/4"	280
SAAFS 324-24R	1 1/2"	210	SAAFS 324-24N	1 1/2"	210	SAAFS 324-24U	1 1/2"	210
SAAFS 332-32R	2"	210	SAAFS 332-32N	2"	210	-	-	-
SAAFS 340-40R	2 1/2"	175	SAAFS 340-40N	2 1/2"	175	-	-	-
SAAFS 348-48R	3"	140	SAAFS 348-48N	3"	140	-	-	-
SAAFS 356-56R	3 1/2"	35	SAAFS 356-56N	3 1/2"	35	-	-	-
SAAFS 364-64R	4"	35	SAAFS 364-64N	4"	35	-	-	-
SAAFS 608-08R	1/2"	420	SAAFS 608-08N	1/2"	420	SAAFS 608-08U	1/2"	420
SAAFS 612-12R	3/4"	420	SAAFS 612-12N	3/4"	420	SAAFS 612-12U	3/4"	420
SAAFS 616-16R	1"	420	SAAFS 616-16N	1"	420	SAAFS 616-16U	1"	420
SAAFS 620-20R	1 1/4"	420	SAAFS 620-20N	1 1/4"	420	SAAFS 620-20U	1 1/4"	420
SAAFS 624-24R	1 1/2"	420	SAAFS 624-24N	1 1/2"	420	SAAFS 624-24U	1 1/2"	420
SAAFS 632-32R	2"	420	SAAFS 632-32N	2"	420	-	-	-

\* SAAFS is companion of SAGFS

\* SAAFS-N is companion of SAGFS-N

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Metric threaded flange DIN 3901/2, SAAFG			DIN2353 connection flange DIN 3901/2, SASFCE			JIC 37° flared connection, SAAFG-J		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAAFG 308-15L	1/2"	315	SASFCE 308-15L	1/2"	315	SAAFG 308-08J	1/2"	350
-	-	-	SASFCE 308-16S	1/2"	350	SAAFG 308-10J	1/2"	350
SAAFG 312-22L	3/4"	160	SASFCE 312-18L	3/4"	315	SAAFG 312-12J	3/4"	350
SAAFG 312-20S	3/4"	350	SASFCE 312-22L	3/4"	160	-	-	-
-	-	-	SASFCE 312-28L	3/4"	160	-	-	-
-	-	-	SASFCE 312-20S	3/4"	350	-	-	-
-	-	-	SASFCE 312-25S	3/4"	350	-	-	-
SAAFG 316-22L	1"	160	SASFCE 316-28L	1"	160	SAAFG 316-16J	1"	350
SAAFG 316-28L	1"	160	SASFCE 316-25S	1"	350	-	-	-
SAAFG 316-20S	1"	350	SASFCE 316-30S	1"	350	-	-	-
SAAFG 316-25S	1"	350	-	-	-	-	-	-
SAAFG 320-28L	1 1/4"	160	SASFCE 320-28L	1 1/4"	160	SAAFG 320-20J	1 1/4"	280
SAAFG 320-35L	1 1/4"	160	SASFCE 320-35L	1 1/4"	160	SAAFG 320-16J	1 1/4"	280
SAAFG 320-30S	1 1/4"	280	SASFCE 320-25S	1 1/4"	280	-	-	-
-	-	-	SASFCE 320-30S	1 1/4"	280	-	-	-
-	-	-	SASFCE 320-38S	1 1/4"	280	-	-	-
SAAFG 324-40L	1 1/2"	160	SASFCE 324-42L	1 1/2"	160	SAAFG 324-24J	1 1/2"	210
-	-	-	SASFCE 324-38S	1 1/2"	210	-	-	-
SAAFG 608-16S	1/2"	420	SASFCE 608-16S	1/2"	400	SAAFG 608-08J	1/2"	420
-	-	-	-	-	-	SAAFG 608-10J	1/2"	420
SAAFG 612-25S	3/4"	420	SASFCE 612-20S	3/4"	400	SAAFG 612-12J	3/4"	420
-	-	-	SASFCE 612-25S	3/4"	400	-	-	-
-	-	-	SASFCE 612-30S	3/4"	400	-	-	-
-	-	-	SASFCE 616-25S	1"	400	SAAFG 616-16J	1"	420
SAAFG 616-30S	1"	420	SASFCE 616-30S	1"	400	-	-	-
SAAFG 620-38S	1 1/4"	420	SASFCE 620-30S	1 1/4"	400	SAAFG 620-20J	1 1/4"	420
SAAFG 620-30S	1 1/4"	420	SASFCE 620-38S	1 1/4"	400	SAAFG 620-16J	1 1/4"	420
SAAFG 624-38S	1 1/2"	420	SASFCE 624-38S	1 1/2"	400	SAAFG 624-24J	1 1/2"	420

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SAE J518 Flanges:

Socket weld flange, SAAFS-SW			Socket weld flange, SADFS-SW			Socket weld flange 500psi, SAAFC-SW		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAAFS 308-08SW	1/2"	350	SADFS 308-08SW	1/2"	350	SA AFC 08SW	1/2"	40
SAAFS 312-12SW	3/4"	350	SADFS 312-12SW	3/4"	350	SA AFC 12SW	3/4"	40
SAAFS 316-16SW	1"	350	SADFS 316-16SW	1"	350	SA AFC 16SW	1"	40
SAAFS 320-20SW	1 1/4"	280	SADFS 320-20SW	1 1/4"	280	SA AFC 20SW	1 1/4"	40
SAAFS 324-24SW	1 1/2"	210	SADFS 324-24SW	1 1/2"	210	SA AFC 24SW	1 1/2"	40
SAAFS 332-32SW	2"	210	SADFS 332-32SW	2"	210	SA AFC 32SW	2"	40
SAAFS 340-40SW	2 1/2"	175	SADFS 340-40SW	2 1/2"	175	SA AFC 40SW	2 1/2"	40
SAAFS 348-48SW	3"	140	SAAFS 348-48SW	3"	140	SA AFC 48SW	3"	40
SAAFS 356-56SW	3 1/2"	35	SADFS 356-56SW	3 1/2"	35	SA AFC 56SW	3 1/2"	40
SAAFS 364-64SW	4"	35	SADFS 364-64SW	4"	35	SA AFC 64SW	4"	40
-	-	-	-	-	-	SA AFC 80SW	5"	40
SAAFS 608-08SW	1/2"	420	SADFS 608-08SW	1/2"	420	-	-	-
SAAFS 612-12SW	3/4"	420	SADFS 612-12SW	3/4"	420	-	-	-
SAAFS 616-16SW	1"	420	SADFS 616-16SW	1"	420	-	-	-
SAAFS 620-20SW	1 1/4"	420	SADFS 620-20SW	1 1/4"	420	-	-	-
SAAFS 624-24SW	1 1/2"	420	SADFS 624-24SW	1 1/2"	420	-	-	-
SAAFS 632-32SW	2"	420	SADFS 632-32SW	2"	420	-	-	-
SAAFS 640-40SW	2 1/2"	420	-	-	-	-	-	-

\* SAAFS-SW is companion of SAGFS-SW

\* SAAFC-SW is companion of SAGFC-SW, SADFC-SW

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cont

Weld on flange, SAAFS-BBW			Weld on flange-pipe schedule 40, SAAFS-ABW			Weld on flange-metric tubes, SAAFS-M		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAAFS 308-08BBW	1/2"	350	SAAFS 308-08ABW	1/2"	350	SAAFS 308-20M	1/2"	350
-	-	-	-	-	-	SAAFS 308-22M	1/2"	350
SAAFS 312-12BBW	3/4"	350	SAAFS 312-12ABW	3/4"	350	SAAFS 312-25M	3/4"	350
-	-	-	-	-	-	SAAFS 312-28M	3/4"	350
SAAFS 316-16BBW	1"	350	SAAFS 316-16ABW	1"	350	SAAFS 316-30M	1"	350
-	-	-	-	-	-	SAAFS 316-35M	1"	350
SAAFS 320-20BBW	1 1/4"	280	SAAFS 320-20ABW	1 1/4"	280	SAAFS 320-38M	1 1/4"	280
-	-	-	-	-	-	SAAFS 320-42M	1 1/4"	280
SAAFS 324-24BBW	1 1/2"	210	SAAFS 324-24ABW	1 1/2"	210	SAAFS 324-38M	1 1/2"	210
-	-	-	-	-	-	SAAFS 324-42M	1 1/2"	210
SAAFS 332-32BBW	2"	210	SAAFS 332-32ABW	2"	210	-	-	-
SAAFS 340-40BBW	2 1/2"	175	SAAFS 340-40ABW	2 1/2"	175	-	-	-
SAAFS 348-48BBW	3"	140	SAAFS 348-48ABW	3"	140	-	-	-
SAAFS 356-56BBW	3 1/2"	35	SAAFS 356-56ABW	3 1/2"	35	-	-	-
SAAFS 364-64BBW	4"	35	SAAFS 364-64ABW	4"	35	-	-	-
SAAFS 380-80BBW	5"	35	SAAFS 380-80ABW	5"	35	-	-	-
SAAFS 608-08BBW	1/2"	420	-	-	-	SAAFS 608-20M	1/2"	420
SAAFS 612-12BBW	3/4"	420	-	-	-	SAAFS 612-20M	3/4"	420
-	-	-	-	-	-	SAAFS 612-25M	3/4"	420
SAAFS 616-16BBW	1"	420	-	-	-	SAAFS 616-25M	1"	420
-	-	-	-	-	-	SAAFS 616-30M	1"	420
SAAFS 620-20BBW	1 1/4"	414	-	-	-	SAAFS 620-30M	1 1/4"	420
-	-	-	-	-	-	SAAFS 620-38M	1 1/4"	420
SAAFS 624-24BBW	1 1/2"	414	-	-	-	SAAFS 624-38M	1 1/2"	420
SAAFS 632-32BBW	2"	414	-	-	-	-	-	-
SAAFS 640-40BBW	2 1/2"	420	-	-	-	-	-	-

- \* SAAFS-BBW is companion of SAGFS-BBW
- \* SAAFS-ABW is companion of SAGFS-ABW
- \* SAAFS-M is companion of SAGFS-M

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SAE J518 Flanges:

Welding head, SASFS-BW			Welding head-coupling, SADFS-BW			Welding neck hub, SAEWNF(O)		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SASFS 308-08BW	1/2"	350	SADFS 308-08BW	1/2"	350	SAEWNX04B-61	1/2"	350
SASFS 312-12BW	3/4"	350	SADFS 312-12BW	3/4"	350	SAEWNX06B-61	3/4"	350
SASFS 316-16BW	1"	350	SADFS 316-16BW	1"	350	SAEWNX08B-61	1"	350
SASFS 320-20BW	1 1/4"	280	SADFS 320-20BW	1 1/4"	280	SAEWNX10B-61	1 1/4"	280
SASFS 324-24BW	1 1/2"	210	SADFS 324-24BW	1 1/2"	210	SAEWNX12B-61	1 1/2"	280
SASFS 332-32BW	2"	210	SADFS 332-32BW	2"	210	SAEWNX16B-61	2"	280
SASFS 340-40BW	2 1/2"	175	SADFS 340-40BW	2 1/2"	175	SAEWNX20B-61	2 1/2"	210
SASFS 348-48BW	3"	140	SADFS 348-48BW	3"	140	SAEWNX24B-61	3"	210
SASFS 356-56BW	3 1/2"	35	SADFS 356-56BW	3 1/2"	35	SAEWNX28B-61	3 1/2"	160
SASFS 364-64BW	4"	35	SADFS 364-64BW	4"	35	SAEWNX32B-61	4"	160
SASFS 380-80BW	5"	35	SADFS 380-80BW	5"	35	SAEWNX40B-61	5"	35
SASFS 608-08BW	1/2"	420	SADFS 608-08BW	1/2"	420	SAEWNX04C-62	1/2"	420
SASFS 612-12BW	3/4"	420	SADFS 612-12BW	3/4"	420	SAEWNX06C-62	3/4"	420
SASFS 616-16BW	1"	420	SADFS 616-16BW	1"	420	SAEWNX08C-62	1"	420
SASFS 620-20BW	1 1/4"	420	SADFS 620-20BW	1 1/4"	420	SAEWNX10C-62	1 1/4"	420
SASFS 624-24BW	1 1/2"	420	SADFS 624-24BW	1 1/2"	420	SAEWNX12C-62	1 1/2"	420
SASFS 632-32BW	2"	420	SADFS 632-32BW	2"	420	SAEWNX16C-62	2"	420
SASFS 640-40BW	2 1/2"	420	SADFS 640-40BW	2 1/2"	420	SAEWNX20C-62	2 1/2"	420
SASFS 648-48BW	3"	420	SADFS 648-48BW	3"	420	SAEWNX24C-62	3"	420

Note: Upon request, Part No. "X" should be changed as bellow.

- Flat Face: F
- O-ring Face: O

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Welding neck hub-coupling, SAEWNC			Welding-on coupling, SADFS-BW			Closed flange, SAAFC		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAEWNC04B-61	1/2"	350	SADFS 308-08BW	1/2"	350	SA AFC 308	1/2"	350
SAEWNC06B-61	3/4"	350	SADFS 312-12BW	3/4"	350	SA AFC 312	3/4"	350
SAEWNC08B-61	1"	350	SADFS 316-16BW	1"	350	SA AFC 316	1"	350
SAEWNC10B-61	1 1/4"	280	SADFS 320-20BW	1 1/4"	280	SA AFC 320	1 1/4"	280
SAEWNC12B-61	1 1/2"	280	SADFS 324-24BW	1 1/2"	210	SA AFC 324	1 1/2"	210
SAEWNC16B-61	2"	280	SADFS 332-32BW	2"	210	SA AFC 332	2"	210
SAEWNC20B-61	2 1/2"	210	SADFS 340-40BW	2 1/2"	175	SA AFC 340	2 1/2"	175
SAEWNC24B-61	3"	210	SADFS 348-48BW	3"	140	SA AFC 348	3"	140
SAEWNC28B-61	3 1/2"	160	SADFS 356-56BW	3 1/2"	35	SA AFC 356	3 1/2"	35
SAEWNC32B-61	4"	160	SADFS 364-64BW	4"	35	SA AFC 364	4"	35
SAEWNC40B-61	5"	35	SADFS 380-80BW	5"	35	SA AFC 380	5"	35
SAEWNC04C-62	1/2"	420	SADFS 608-08BW	1/2"	420	SA AFC 608	1/2"	420
SAEWNC06C-62	3/4"	420	SADFS 612-12BW	3/4"	420	SA AFC 612	3/4"	420
SAEWNC08C-62	1"	420	SADFS 616-16BW	1"	420	SA AFC 616	1"	420
SAEWNC10C-62	1 1/4"	420	SADFS 620-20BW	1 1/4"	420	SA AFC 620	1 1/4"	420
SAEWNC12C-62	1 1/2"	420	SADFS 624-24BW	1 1/2"	420	SA AFC 624	1 1/2"	420
SAEWNC16C-62	2"	420	SADFS 632-32BW	2"	420	SA AFC 632	2"	420
SAEWNC20C-62	2 1/2"	420	SADFS 640-40BW	2 1/2"	420	SA AFC 640	2 1/2"	420
SAEWNC24C-62	3"	420	-	-	-	-	-	-

\* SAAFC is companion of SAGFC

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SAE J518 Flanges:

Flange plug, SABSO/BS			Flange head, SAFT			Locking sheet, SAAP		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SABSO/BS 308	1/2"	350	SAFT 308	1/2"	350	SAAP 308	1/2"	-
SABSO/BS 312	3/4"	350	SAFT 312	3/4"	350	SAAP 312	3/4"	-
SABSO/BS 316	1"	350	SAFT 316	1"	350	SAAP 316	1"	-
SABSO/BS 320	1 1/4"	280	SAFT 320	1 1/4"	280	SAAP 320	1 1/4"	-
SABSO/BS 324	1 1/2"	210	SAFT 324	1 1/2"	210	SAAP 324	1 1/2"	-
SABSO/BS 332	2"	210	SAFT 332	2"	210	SAAP 332	2"	-
SABSO/BS 340	2 1/2"	175	SAFT 340	2 1/2"	175	SAAP 340	2 1/2"	-
SABSO/BS 348	3"	140	-	-	-	SAAP 348	3"	-
SABSO/BS 356	3 1/2"	35	-	-	-	SAAP 356	3 1/2"	-
SABSO/BS 364	4"	35	-	-	-	SAAP 364	4"	-
SABSO/BS 380	5"	35	-	-	-	SAAP 380	5"	-
SABSO/BS 608	1/2"	420	SAFT 608	1/2"	420	SAAP 608	1/2"	-
SABSO/BS 612	3/4"	420	SAFT 612	3/4"	420	SAAP 612	3/4"	-
SABSO/BS 616	1"	420	SAFT 616	1"	420	SAAP 616	1"	-
SABSO/BS 620	1 1/4"	420	SAFT 620	1 1/4"	420	SAAP 620	1 1/4"	-
SABSO/BS 624	1 1/2"	420	SAFT 624	1 1/2"	420	SAAP 624	1 1/2"	-
SABSO/BS 632	2"	420	SAFT 632	2"	420	SAAP 632	2"	-
SABSO/BS 640	2 1/2"	420	-	-	-	-	-	-
SABSO/BS 648	3"	420	-	-	-	-	-	-

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Adapter sheet, SAZP			Adapter flange with test point, SAAGL			Adapter 90°-welded, SAAG		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAZP 308	1/2"	-	SAAGL 308	1/2"	350	SAAG 308	1/2"	350
SAZP 312	3/4"	-	SAAGL 312	3/4"	350	SAAG 312	3/4"	350
SAZP 316	1"	-	SAAGL 316	1"	350	SAAG 316	1"	350
SAZP 320	1 1/4"	-	SAAGL 320	1 1/4"	280	SAAG 320	1 1/4"	210
SAZP 324	1 1/2"	-	SAAGL 324	1 1/2"	210	SAAG 324	1 1/2"	210
SAZP 332	2"	-	SAAGL 332	2"	210	SAAG 332	2"	210
SAZP 340	2 1/2"	-	-	-	-	SAAG 340	2 1/2"	175
SAZP 348	3"	-	-	-	-	SAAG 348	3"	35
SAZP 356	3 1/2"	-	-	-	-	SAAG 356	3 1/2"	35
SAZP 364	4"	-	-	-	-	SAAG 364	4"	35
SAZP 380	5"	-	-	-	-	SAAG 380	5"	35
SAZP 608	1/2"	-	SAAGL 608	1/2"	420	-	-	-
SAZP 612	3/4"	-	SAAGL 612	3/4"	420	-	-	-
SAZP 616	1"	-	SAAGL 616	1"	420	-	-	-
SAZP 620	1 1/4"	-	SAAGL 620	1 1/4"	420	-	-	-
SAZP 624	1 1/2"	-	SAAGL 624	1 1/2"	420	-	-	-
SAZP 632	2"	-	SAAGL 632	2"	420	-	-	-

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SAE J518 Flanges:

T-connection-welded, SAT			90° L-block, SAL-GD			90° L-reduction, SARED-GD		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAT 308	1/2"	350	SAL-GD 308	1/2"	350	-	-	-
SAT 312	3/4"	350	SAL-GD 312	3/4"	350	-	-	-
SAT 316	1"	350	SAL-GD 316	1"	350	-	-	-
SAT 320	1 1/4"	210	SAL-GD 320	1 1/4"	280	-	-	-
SAT 324	1 1/2"	210	SAL-GD 324	1 1/2"	210	-	-	-
SAT 332	2"	210	SAL-GD 332	2"	210	-	-	-
SAT 340	2 1/2"	175	SAL-GD 340	2 1/2"	175	-	-	-
SAT 348	3"	140	SAL-GD 348	3"	140	-	-	-
SAT 356	3 1/2"	35	-	-	-	-	-	-
SAT 364	4"	35	-	-	-	-	-	-
SAT 380	5"	35	-	-	-	-	-	-
-	-	-	SAL-GD 608	1/2"	420	-	1/2"	420
-	-	-	SAL-GD 612	3/4"	420	-	3/4"	420
-	-	-	SAL-GD 616	1"	420	SARED-GD 616-08	1"	420
-	-	-	SAL-GD 620	1 1/4"	420	SARED-GD 620-08	1 1/4"	420
-	-	-	-	-	-	SARED-GD 620-12	1 1/4"	420
-	-	-	SAL-GD 624	1 1/2"	420	SARED-GD 624-20	1 1/2"	420
-	-	-	SAL-GD 632	2"	420	SARED-GD 632-24	2"	420
-	-	-	SAL-GD 640	2 1/2"	420	-	-	-
-	-	-	-	-	-	-	-	-

SAL-GD is companion of SAL-BL  
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T-block, SAT-GD			T-block companion, SAT-BL		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
-	-	-	SAT-BL-308	1/2"	350
-	-	-	SAT-BL-312	3/4"	350
-	-	-	SAT-BL-316	1"	350
-	-	-	SAT-BL-320	1 1/4"	280
-	-	-	SAT-BL-324	1 1/2"	210
-	-	-	SAT-BL-332	2"	210
-	-	-	SAT-BL-340	2 1/2"	175
-	-	-	SAT-BL-348	3"	140
-	-	-	SAT-BL-608	1/2"	420
SAT-GD 612	3/4"	420	SAT-BL-612	3/4"	420
SAT-GD 616	1"	420	SAT-BL-616	1"	420
SAT-GD 620	1 1/4"	420	SAT-BL-620	1 1/4"	420
SAT-GD 624	1 1/2"	420	SAT-BL-624	1 1/2"	420
SAT-GD 632	2"	420	SAT-BL-632	2"	420
-	-	-	SAT-BL-640	2 1/2"	420

ISO 6164 Flanges:

Type: SAVKA/VKK 16 (Max. Working pressure 160bar all sizes.)  
 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 5", 6", 8"

Type: SAVKA/VKK 25 (Max. Working pressure 250bar all sizes.)  
 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 5", 6", 8"

Type: SAVKA/VKK 35 (Max. Working pressure 350bar all sizes.)  
 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 5", 6", 8"

Type: SAVKA/VKK 40 (Max. Working pressure 400bar all sizes.)  
 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4", 5", 6", 8"

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ISO 6164 flanges

T-connection, SAVKV			Cetop-square flange, SACET			Cetop-square flange connection, SADCET		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )	Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SAVKV 2506	3/8"	250	SACET 2506	3/8"	250	SADCET 2506	3/8"	250
SAVKV 2508	1/2"	250	SACET 2508	1/2"	250	SADCET 2508	1/2"	250
SAVKV 2512	3/4"	250	SACET 2512	3/4"	250	SADCET 2512	3/4"	250
SAVKV 2516	1"	250	SACET 2516	1"	250	SADCET 2516	1"	250
SAVKV 2520	1 1/4"	250	SACET 2520	1 1/4"	250	SADCET 2520	1 1/4"	250
SAVKV 2524	1 1/2"	250	SACET 2524	1 1/2"	250	SADCET 2524	1 1/2"	250
SAVKV 2526	2"	250	SACET 2526	2"	250	SADCET 2526	2"	250
SAVKV 2540	2 1/2"	250	SACET 2540	2 1/2"	250	SADCET 2540	2 1/2"	250
SAVKV 2548	3"	250	SACET 2548	3"	250	SADCET 2548	3"	250
SAVKV 2556	3 1/2"	250	SACET 2556	3 1/2"	250	SADCET 2556	3 1/2"	250
SAVKV 4008	1/2"	400	SACET 4008	1/2"	400	SADCET 4008	1/2"	400
SAVKV 4012	3/4"	400	SACET 4012	3/4"	400	SADCET 4012	3/4"	400
SAVKV 4016	1"	400	SACET 4016	1"	400	SADCET 4016	1"	400
SAVKV 4020	1 1/4"	400	SACET 4020	1 1/4"	400	SADCET 4020	1 1/4"	400
SAVKV 4024	1 1/2"	400	SACET 4024	1 1/2"	400	SADCET 4024	1 1/2"	400
SAVKV 4026	2"	400	SACET 4026	2"	400	SADCET 4026	2"	400
SAVKV 4040	2 1/2"	400	SACET 4040	2 1/2"	400	SADCET 4040	2 1/2"	400
SAVKV 4048	3"	400	SACET 4048	3"	400	SADCET 4048	3"	400
SAVKV 4064	4"	400	SACET 4064	4"	400	SADCET 4064	4"	400

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Cetop-flange plug, SABS		
Flange designation (Type)	Size (inch)	Working Pressure (Kg/cm <sup>2</sup> )
SABS 2506	3/8"	250
SABS 2508	1/2"	250
SABS 2512	3/4"	250
SABS 2516	1"	250
SABS 2520	1 1/4"	250
SABS 2524	1 1/2"	250
SABS 2526	2"	250
SABS 2540	2 1/2"	250
SABS 2548	3"	250
SABS 2556	3 1/2"	250
SABS 4008	1/2"	400
SABS 4012	3/4"	400
SABS 4016	1"	400
SABS 4020	1 1/4"	400
SABS 4024	1 1/2"	400
SABS 4026	2"	400
SABS 4040	2 1/2"	400
SABS 4048	3"	400
SABS 4064	4"	400

Temperature range all flanges: -20°C to +90°C

The flanges are not be used in high pressure fuel injection systems.

The flanges are not to be used in systems where pressure impulses may occur.

### **Type Approval documentation**

The approval is based on the following:

- Manufacturer's catalogue no. H-2002SF "Hydraulic flanges SAEJ518C & ISO 6164" dated June 2002
- Test report from burst test test dated nov. 2009

### **Tests carried out**

Burst test witnessed by DNV

### **Marking of product**

For traceability to this type approval the products are to be marked with:

- Manufacturers name or trade mark
- Type designation



Job Id: **262.1-009559-3**  
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## **Periodical assessment**

For retention of the Type Approval, a DNV GL Surveyor shall perform a survey - before the expiry date of this certificate - to verify that the conditions for the type approval are complied with. The Surveyor shall perform the following tasks on samples selected at random from stock or from the running production:

- Verify that the dimensions of the couplings comply with Type Approved documentation.
- Verify that the material composition complies with Type Approved documentation.
- Witness burst testing.

END OF CERTIFICATE