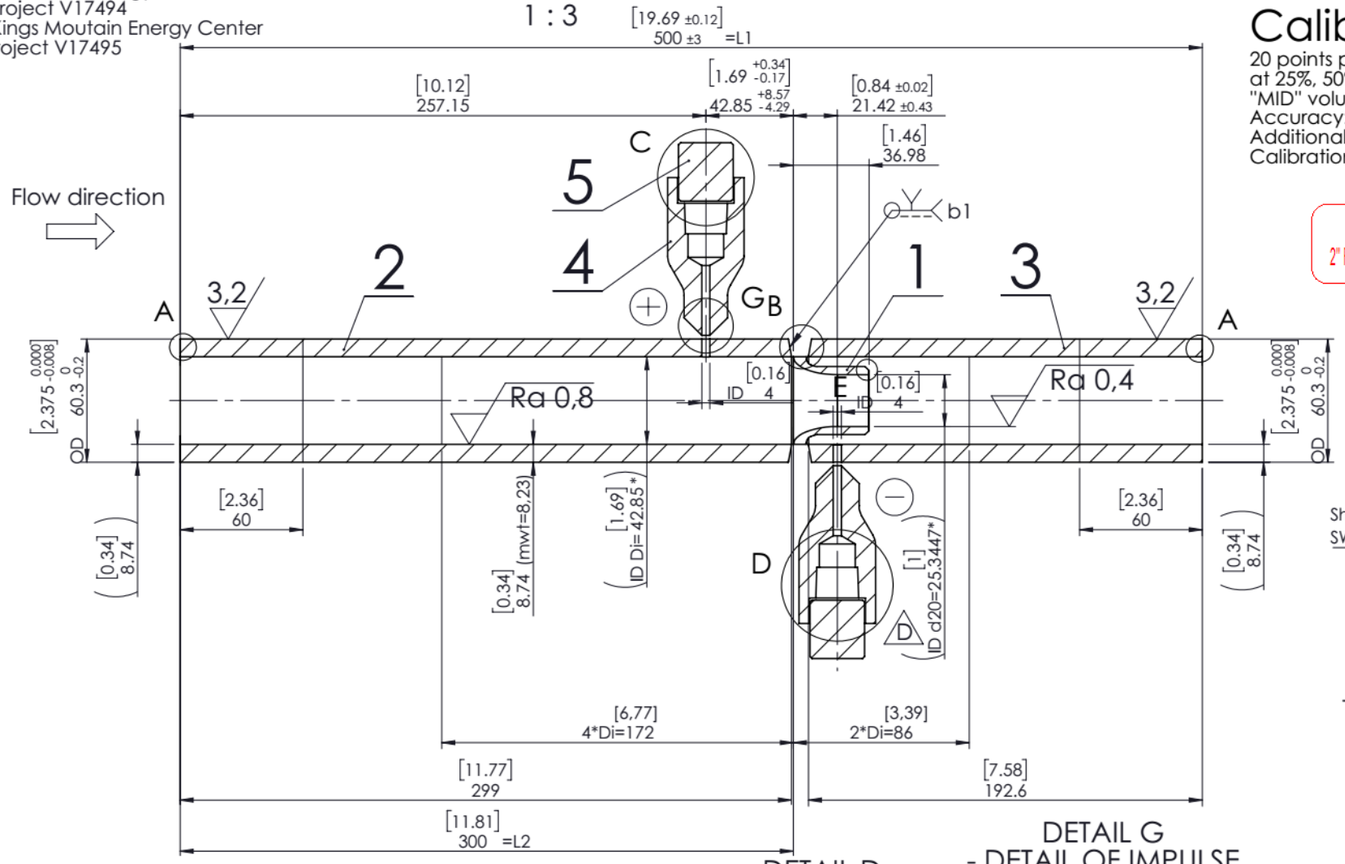
Middletown Energy Center CCPP 475MW
- Project V17494
& Kings Moutain Energy Center
- Project V17495

Calibration-VCS

20 points per tap set, incl. repeat test points
at 25%, 50% and 75% of calibrated range /
"MID" volumetric procedure / ReDmax: 810000
Accuracy: ±1/4%
Additional uncertainties: min. 0,50%
Calibration code: ASME PTC-19.5-2004

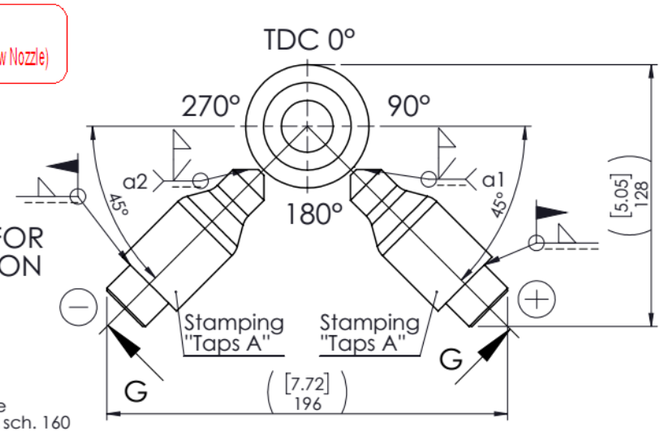
VOGT POWER INTERNATIONAL
Released, Work May Proceed
Bell, Milton | Apr-26-2016

G-G
1 : 3



Ansicht in Durchflussrichtung!
View in flow-direction!

SCALE 1 : 3



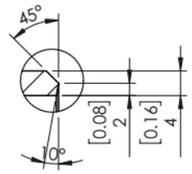
MEC/KMEC
2" Flow Element 1HP-FE3002 (HP Attemp - Flow Nozzle)

DETAIL A
- PIPE ENDING FOR SW CONNECTION
1 : 2

Sharp edge for SW connection

SW in accordance with ASME B16.11, sch. 160

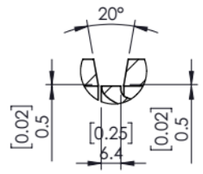
DETAIL E
- NOZZLE ENDING
1 : 1



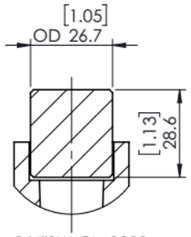
DETAIL Y

VOGT POWER INTERNATIONAL
V17494-CIXD-6001-03
12-Apr-2016

DETAIL B
- NOZZLE DETAIL
1 : 2

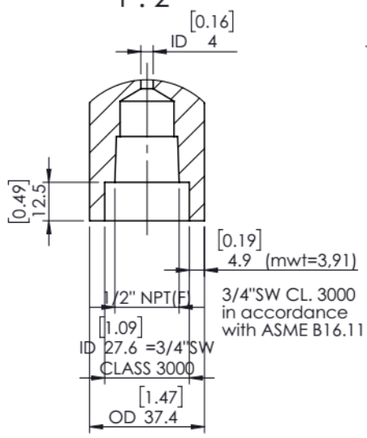


DETAIL C
- PLUGGED TAP
1 : 2



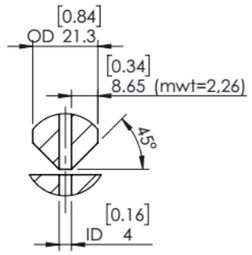
3/4"SW CL. 3000
in accordance
with ASME B16.11

DETAIL D
- TAP DETAIL
1 : 2



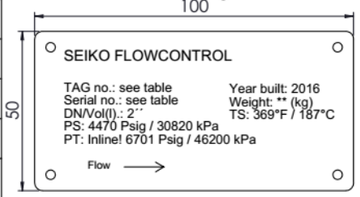
3/4"SW CL. 3000
in accordance
with ASME B16.11

DETAIL G
- DETAIL OF IMPULSE CONNECTION
1 : 2



max. misalignment acc. Fig. 127.3 max. 2mm
max. thickness of reinforcement acc. Table 127.4. 4mm

Pos. 6 TAG-Plate
mounted with lacing cord



*dimension will be change

Untolerierte Maße nach/ Untolarate Dimensions acc. DIN 7168-mittel		
bis/to	6	±0,1
über/over bis/to	6 30	±0,2
über/over bis/to	30 100	±0,3
über/over bis/to	100 300	±0,5
über/over bis/to	300 1000	±0,8
über/over bis/to	1000 2000	±1,2
Untolerierte Maße nach/ Untolarate Dimensions acc. EN ISO 13920- class/Klasse B		
über/over bis/to	2 30	±1
über/over bis/to	30 120	±2
über/over bis/to	120 400	±2
über/over bis/to	400 1000	±3
über/over bis/to	1000 2000	±4
über/over bis/to	2000 4000	±6
über/over bis/to	4000 8000	±8
über/over bis/to	8000 12000	±10
über/over bis/to	12000 16000	±12
über/over bis/to	16000 20000	±14
über/over	20000	±16

ASME PTC 19.5-2004				
Target	42.850	mm ±	0.129	mm
ID Di:	1.687	in ±	0.005	in
Target	25.345	mm ±	0.013	mm
ID d20:	0.998	in ±	0.0005	in

Pos. Part	Benennung/Denomination Abmessung/Dimension	MA/ pcs	Werkst. Nr./ Material	Zeugnis/ EN10204 certificate	Norm / Standard	Schmelze Nr. / Charge
6	TAG plate 100 x 50 x min.1.5) [3,94x1,97xmin.0,06in]	1	SA-240 304	-		
5	Plug OD26,7x28,6 [OD1,05x1,13in]	2	SA-105	3.1		
4	Pressure tap OD37,4x80 [OD1,47x3,15in]	2	SA-105	3.1		
3	Downstream pipe OD60,3x8,74x192,6 [OD2,375x0,34x7,58in]	1	SA-106 Gr. B	3.1		
2	Upstream pipe OD60,3x8,74x299 [OD2,375x0,34x11,77in]	1	SA-106 Gr. B	3.1		
1	Nozzle OD42,85x36,98 [OD1,69x1,46in]	1	SA-105	3.1		

Construction Code: ASME Section I, Ed. 2013 Clasification: NBEP Supporting Code: ASME B31.1 Edition 2014 + 2012	
Stamping:	N.A. (not required by customer)
NB Registration:	N.A. (not required by customer)
appl. Code cases:	None
Medium:	water
PWHT:	NO
Baujahr/Year built:	2016
Gew./Weight: (kg)	~13,5 lb / 6,1 kg
Abmessungen./Dimensions: (mm) L: 500 mm 19,69 in W: 196 mm 7,72 in H: 128 mm 5,05 in	
PS (max. Pressure):	4470Psig/ 30820kPa /308,2 bar(g)
TS (max. Temp.):	369°F/ 187 °C
PT (Testpressure):	Inline!6701Psig/ 46200kPa/ 462bar(g)
Isolierstärke/ Insulation thickness	0 mm
Corrosion allowance:	0 mm

No SILICA used on pressure parts.

Index rev.	Änderungshinweis / Details of revision	Datum Date	Name
D	Modification of diameter d20.	13.04.16	LB
C	Modification of pressure class.	07.04.16	LB
B	Implementation of customer comments	03.02.16	LB
A	For release	02.01.15	LB

Revisions

Inspector:	SEIKO
Einbaulage/mounting pos.:	horizontal
Druckentnahmestutzen/taps:	1 pair
Corrosion protection:	Remosil
Oberflächenbeh./Surface treatment:	SA2,5
KKS-Nr./TAG-No.: 1HP-FE3002	Fabr. Nr./Serial No.: SEI15_2816

Kunde/Customer: Vogt Power International

Projekt/Project.: V17494 - Middletown Energy Center & V17495 -Kings Moutain Energy Center

PO: V0009647 Item #2

HO: A16020088-150712

Benennung/Title: 2" Sch. 160 Cl. 2500
Flow device with lolg radius nozzle
HP Attemperator Spraywater Flow Element

Zeichnungs-Nr./Drawing-No.: Seiko: A16020088-150712/02

Type: HVLD

Kunde: Vogt Power International (VPI) 1/2

EXCERPT FROM ASME PTC 19.5-2004, TABLE 7-1.2-1 REQUIRED STRAIGHT LENGTHS FOR ORIFICE PLATES AND NOZZLES

BETA RATIO	Single 90° bend or tee		Several 90° bends, same plane		Several 90° bends, different planes		Reducer 2D to D over length of 1.5D to 3 D		Expander 0.5D to D over length of D to 2D		Globe Valve Fully Open		Gate Valve Fully Open		Abrupt diameter reduction		Thermometer-pocket, Ø ≤ 0,03 Di		Thermometer-pocket, Ø > 0,03 Di		Downstream (Outlet) section	
1	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	9A	9B	10A	10B	11A	11B	12A	12B
0.591	30.41	15.21	43.93	21.96	81.10	40.55	15.21	8.45	37.17	18.59	43.93	21.96	23.65	11.83	50.69	25.34	8.45	5.07	33.79	16.90	11.83	11.83

GENERAL NOTES:

(a) Values expressed are expressed in INCHES.

(b) The pipe roughness shall not exceed that of a smooth, commercially available pipe approximately k/D < 10-3.

(c) Column A for each fitting gives lengths corresponding to “zero additional uncertainty” values.

(d) Column B for each fitting gives lengths corresponding to “0.5% additional uncertainty” values.

Untolerierte Maße nach/ Untolarate Dimensions acc. DIN 7168-mittel	
bis/to 6	±0,1
über/over 6 bis/to 30	±0,2
über/over 30 bis/to 100	±0,3
über/over 100 bis/to 300	±0,5
über/over 300 bis/to 1000	±0,8
über/over 1000 bis/to 2000	±1,2

Untolerierte Maße nach/ Untolarate Dimensions acc. EN ISO 13920- class/Klasse B	
über/over 2 bis/to 30	±1
über/over 30 bis/to 120	±2
über/over 120 bis/to 400	±2
über/over 400 bis/to 1000	±3
über/over 1000 bis/to 2000	±4
über/over 2000 bis/to 4000	±6
über/over 4000 bis/to 8000	±8
über/over 8000 bis/to 12000	±10
über/over 12000 bis/to 16000	±12
über/over 16000 bis/to 20000	±14
über/over 20000	±16

Construction Code:	ASME Section I, Ed. 2013
Clasification:	NBEP
Supporting Code:	ASME B31.1 Edition 2014 + 2012
Stamping:	N.A. (not required by customer)
NB Registration:	N.A. (not required by customer)
appl. Code cases:	None
Medium:	water
PWHT:	NO
Baujahr/Year built:	2016
Gew./Weight: (kg)	~13,5 lb / 6,1 kg
Abmessungen./Dimensions: (mm)	L: 500 mm 19,69 in W: 196 mm 7,72 in H: 128 mm 5,05 in
PS (max. Pressure):	4470Psig/ 30820kPa /308,2 bar(g)
TS (max. Temp.):	369°F/ 187 °C
PT (Testpressure):	Inline!6701Psig/ 46200kPa/ 462bar(g)
Isolierstärke/ Insulation thickness	0 mm
Corrosion allowance:	0 mm

Index rev.	Änderungshinweis / Details of revision	Datum Date	Name
D	Modification of diameter d20.	13.04.16	LB
C	Modification of pressure class.	07.04.16	LB
B	Implementation of customer comments	03.02.16	LB
A	For release	02.01.15	LB

Revisions

Inspector:	SEIKO
Einbaulage/mounting pos.:	horizontal
Druckentnahmestutzen/taps:	1 pair
Corrosion protection:	Remosil
Oberflächenbeh./Surface treatment:	SA2,5

KKS-Nr./TAG-No.:	Fabr. Nr./Serial No.:
1HP-FE3002	SEI15_2816

Kunde/Customer: Vogt Power International

Projekt/Project.: V17494 - Middletown Energy Center & V17495 -Kings Moutain Energy Center

SEIKO FLOWCONTROL

Benennung/Title: 2" Sch. 160 Cl. 2500
Flow device with lolg radius nozzle
HP Attemperator Spraywater Flow Element

Zeichnungs-Nr./Drawing-No.: Seiko: A16020088-150712/02

Type: HVLD

PO: V0009647 Item #2

HO: A16020088-150712

Kunde: Vogt Power International (VPI)

2/2