Sizing - Medium				
1000	Designation	Oxygen		
1004	Formula	O2		
1001	Molar mass	M	32	kg/kmol
1002	Ratio of specific heats	k	1.400	
1003	Compressibility factor	Z	1.000	

Sizing - Service condition				
1100	Maximum allowable working pressure			
1101	Set pressure	p	5	bar-g
1102	Constant superimposed back pressure	paf		
2102	Variable superimposed back pressure			
1103	Built up back pressure	pae	1.335	bar
1104	Backpressure		1.335	bar-g
1105	Overpressure	dp	10.00	%
1106	Environmental pressure	pu	1.013	bar
1107	Relieving Temperature	T	25	°C
1111	Operating Temperature		25	°C
1108	Required massflow	qm,ab		
1109	Volume flow to be discharged (working condition)	qvb,ab		
1110	Volume flow to be discharged (std condition) [T=15 °C P=101,325 Pa]	qvn,ab		

Inlet pipe				
1195	Calculation according to		ISO 4126-9	
1160	Length of inlet pipe	Le	0.1	m
1161	Inlet pipe diameter	De	29.7	mm
1162	Equivalent pipe roughness	K	0.020	
1163	Pipe friction coefficient	λ	0.018	
1164	Coefficient of resistance of the straight pipe line	ζ	0.060	
1165	Coefficient of resistance of other fittings	ζ i	0.350	
1166	Coefficient of resistance complete pipe line	ζ	0.410	
1167	Coefficient of resistance permitted	ζz	0.451	
1168	Pressure loss	Δpr	0.137	bar
1169	Pressure loss based on p - paf (%)		2.74	%
1170	Allowed pressure loss based on p-paf (%)	Δp	3.00	%
1171	Maximum length of inlet pipe	Lmax	0.167	m
1172	Maximum length of the inlet pipe without pipe components		0.749	m

Outlet pipe				
1196	Calculation according to		ISO 4126-9	
1189	Coefficient of resistance for all pipe segments	ζ_i	4.262	
1184	Pressure drop of silencer	Δp		
1194	Built-up backpressure ratio		26.70	%

Outlet pipe segment #1				
1180	Length of outlet pipe	La	0.371	m
1181	Inner diameter outlet pipe	Da	38.4	mm
1182	Equivalent pipe roughness	K	0.020	
1183	Pipe friction coefficient	λ	0.017	
1185	Effective coefficient of resistance of the straight pipe line	ζ,Rohr	0.163	
1186	Effective coefficient of resistance of other fittings	ζ,Einb	0.217	
1188	Effective coefficient of resistance of complete pipe segment	ζ	0.380	
1190	Maximum length of outlet pipe	Lmax		

Outlet pipe segment #2				
1180	Length of outlet pipe	La	16.6	m
1181	Inner diameter outlet pipe	Da	44.3	mm
1182	Equivalent pipe roughness	K	0.020	
1183	Pipe friction coefficient	λ	0.016	
1185	Effective coefficient of resistance of the straight pipe line	ζ,Rohr	3.451	
1186	Effective coefficient of resistance of other fittings	ζ,Einb	0.431	
1188	Effective coefficient of resistance of complete pipe segment	ζ	3.882	
1190	Maximum length of outlet pipe	Lmax	5.88	m

Sizing - Calculation				
1200	Certified massflow	qm,zu	1,614.397	kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	196.128	m³/h
1203	Certified volumeflow (standard condition)	qvn,zu	1,192.856	m³/h
1204	Maximum mass flow	qm,max	1,793.774	kg/h
1205	Maximum volume flow (working condition)	qvb,max	217.92	m³/h
1206	Maximum volume flow (standard condition)	qvn,max	1,325.396	m³/h
1207	Capacity exceed			

Valve - General			
1500	Article number		4414.0952
1512	Reseller article number		
1513	Quantity of safety valve		1
1501	Certified coefficient of discharge for steam and gases	K,DG	0.688
1502	Certified coefficient of discharge for liquid	K,F	0.45
1505	Bonnet / Lifting device		Cap H2
1506	Body-/ Inlet base material		1.4408 / SA 351 CF8M
1511	Bonnet		Closed Bonnet
1514	Order code	4414.0952-5 bar_g-H47H51-3.1	

Inlet connection		
1303	Connection standard	acc. to DIN EN 1092
1304	DN / NPS	25
1305	PN / PR	PN 40
1306	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526 Form C)

Outlet connection		
1353	Connection standard	acc. to DIN EN 1092
1354	DN / NPS	40
1355	PN / PR	PN 16
1356	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526 Form C)

Valve - Dimensions				
1400	Discharge area	Ao	415.476	mm^2
1401	Discharge diameter	do	23	mm
1402	Centre to Face dimensions	a	111	mm
1403	Centre to Face dimensions	b	100	mm
1405	Height	H	345	mm
1406	Weight	M	9	kg
1411	Inlet flange thickness incl. raised face	S1	24	mm

Lift				
1507	Standard		5.6	mm

Valve - Calculation				
1200	Certified massflow	qm,zu	1,614.397	kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	196.128	m^3/h
1203	Certified volumeflow (standard condition)	qvn,zu	1,192.856	m^3/h
1204	Maximum mass flow	qm,max	1,793.774	kg/h
1205	Maximum volume flow (working condition)	qvb,max	217.92	m^3/h
1206	Maximum volume flow (standard condition)	qvn,max	1,325.396	m^3/h
1207	Capacity exceed			
1600	Required actual discharge area	Ao, req		
1601	Required discharge diameter	do,req		
1612	Reaction force (acc. to ISO / CD 4126-9)	Fr	164.091	N
1618	Cold differential test pressure	CDTP	5	bar-g
1620	Cold differential test pressure, manually	CDTP		