

grinding units

- Simoloyer® CM01 -

standard type

Technical data		
<i>extra features</i>	standard grinding units in 2 different volume sizes with soft biconical grinding space	
<i>application</i>	High Energy Milling, Mechanical Alloying (& Reactive Milling) in batch-operation (& semi-continuous in depression mode)	
size/type	W01-1/2l	W01-2l
net weight	11 kg	14 kg
nominal volume	0.5 liter	2 liter
nominal power	5.4 kW/l	1.35 kW/l
maximum relative velocity	6.8 m/sec	10.9 m/sec
cooling system pre-seal-unit	via vessel	
cooling system flange	via vessel	
cooling system vessel	water, G $\frac{3}{8}$	
heating system vessel	no	
heating system flange	no	
atmosphere	vacuum, inert gas, air	
airlock system main port	NW45	
airlock system aux. port	NW18	
continuous ports Z01-Z04	no	
airlock system	DN40	
operation pressure	1x10 ⁻⁴ mbar - 2 bar	
operation temperature	-10 – 90°C	
operation mode	batch (semi-continuous)	
material vessel	stainless steel 1.4301	
material rotor	stainless steel 1.4301/ Stellite®/THM	
recomm. grinding media	100Cr6, 1.4401	
loading rates:	(HEM, MA, RM)	
grinding media, Ø ≤ 5mm	1-2 kg	2-4 kg
product < 4mm	40-100 g	200-400 g



grinding unit W01-1/2l



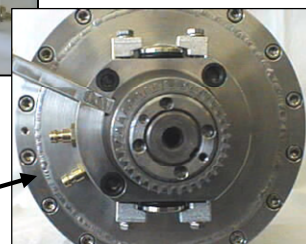
grinding unit W01-2l

modular type B

Technical data		
<i>extra features</i>	Separated cooling system of pre-seal unit from flange & vessel allows non-cooling or use of hot or cooled medium in the double-jackets of flange & vessel	
<i>application</i>	Medium - High Temperature Operation, Reactive Milling, Bonding as well as Low Temperature Operation	
size/type	W01-1/2lm	W01-2lm
net weight	11 kg	14 kg
nominal volume	0.5 liter	2 liter
nominal power	5.4 kW/l	1.35 kW/l
maximum relative velocity	6.8 m/sec	10.9 m/sec
cooling system pre-seal-unit	water, G $\frac{3}{8}$	
cooling system flange	via vessel	
cooling system vessel	water, G $\frac{3}{8}$	
heating system vessel	water/oil, G $\frac{3}{8}$	
heating system flange	via vessel	
atmosphere	vacuum, inert gas, air	
airlock system main port	NW45	
airlock system aux. port	NW18	
continuous ports Z01-Z04	no	
airlock system	DN40	
operation pressure	1x10 ⁻⁴ mbar - 2 bar	
operation temperature	-20 – 150°C	
operation mode	batch (semi-continuous)	
material vessel	stainless steel 1.4301	
material rotor	stainless steel 1.4301/Stellite®/THM	
recomm. grinding media	100Cr6, 1.4401	
loading rates:	(HEM, MA, RM)	
grinding media, Ø ≤ 5mm	1-2 kg	2-4 kg
product < 4mm	50-100 g	200-400 g



grinding unit W01-2lm

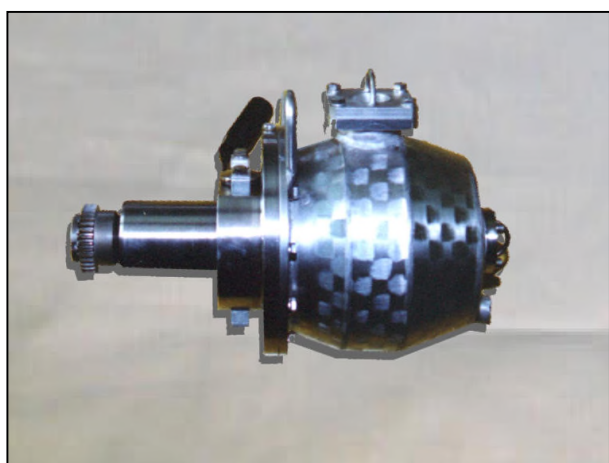


flange

technical data subject to alterations

type biconical

Technical data	
<i>extra features</i>	improved discharging behavior of CMB-materials by biconical grinding space (standard is only soft biconical)
<i>application</i>	processing of CMB-materials with extremely agglomeration and adhesion tendency in the process
size/type	W01-2lk
net weight	14 kg
nominal volume	2 liter
nominal power	1.35 kW/l
maximum relative velocity	10.9 m/sec
cooling system pre-seal-unit	via vessel
cooling system flange	via vessel
cooling system vessel	water, G ³ / ₄
heating system vessel	no
heating system flange	no
atmosphere	vacuum inert gas, air
airlock system main port	NW45
airlock system aux. port	NW18
continuous ports Z01-Z04	no
airlock system	DN40
operation pressure	1x10 ⁻⁴ mbar - 2 bar
operation temperature	-20 – 90°C
operation mode	batch (semi-continuous)
material vessel	stainless steel 1.4301
material rotor	stainless steel 1.4301/ Stellite®/THM
recomm. grinding media	100Cr6, 1.4401
loading rates:	(HEM, MA, RM)
grinding media, Ø ≤ 5mm	2-4 kg
product < 4mm	200-400 g

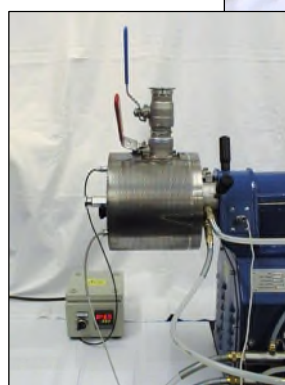


grinding unit W01-2lk

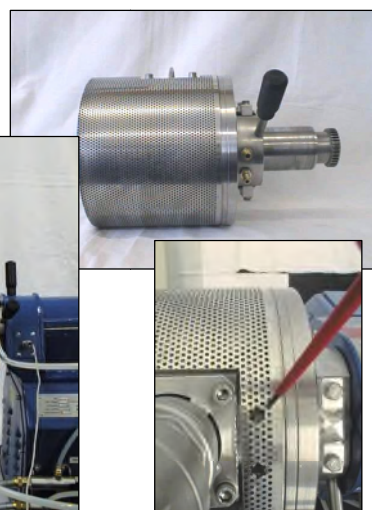
modular type C

Technical data		
<i>extra features</i>	cooling of flange, pre-seal-unit & main port, vessel with electrical heat-sheets	
<i>application</i>	High Temperature Operation, Reactive Milling	
size/type	W01-1/2lh	W01-2lh
net weight	11 kg	14 kg
nominal volume	0.5 liter	2 liter
nominal power	5.4 kW/l	1.35 kW/l
maximum relative velocity	6.8 m/sec	10.9 m/sec
cooling system pre-seal-unit	water G ³ / ₄	
cooling system flange	via pre-seal-unit	
cooling system vessel	only main port via pre-seal unit	
heating system vessel	electrical heat-sheets	
heating system flange	no	
atmosphere	vacuum inert gas, air	
airlock system main port	NW45	
airlock system aux. port	NW18	
continuous ports Z01-Z04	no	
airlock system	DN40	
operation pressure	1x10 ⁻⁴ mbar - 2 bar	
operation temperature	0 – 200°C	
operation mode	batch (semi-continuous)	
material vessel	stainless steel 1.4301	
material rotor	stainless steel 1.4301/Stellite®/THM	
recomm. grinding media	100Cr6, 1.4401	
loading rates:	(HEM, MA, RM)	
grinding media, Ø ≤ 5mm	1-2 kg	2-4 kg
product < 4mm	50-100 g	200-400 g

grinding unit W01-2lh



temperature control unit
Simoloyer® CM01

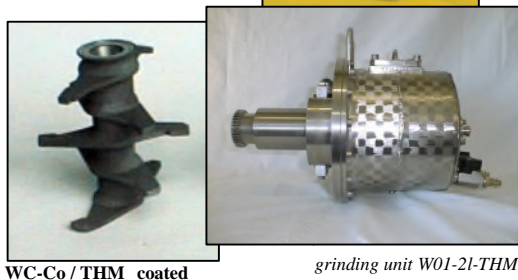
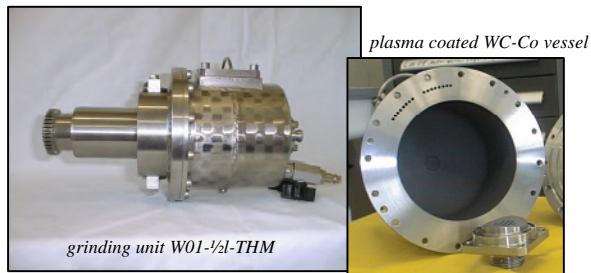


ventilation of
main-port cooling (system)

technical data subject to alterations

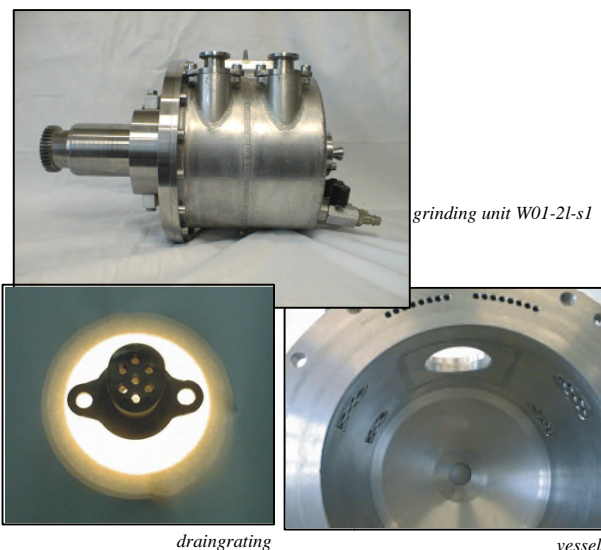
type WC-Co

Technical data		
<i>extra features</i>	chamber plasma-coated with WC-Co	
<i>application</i>	Fe-contamination free processing, in particular carbide-, oxide-, and nitride-based hard-phased materials	
size/type	W01-1/2-THM	W01-2I-THM
net weight	11 kg	14 kg
nominal volume	0.5 liter	2 liter
nominal power	5.4 kW/l	1.35 kW/l
maximum relative velocity	6.8 m/sec	10.9 m/sec
cooling system pre-seal-unit	via vessel	
cooling system flange	via vessel	
cooling system vessel	water, G $\frac{3}{8}$	
heating system vessel	no	
heating system flange	no	
atmosphere	vacuum inert gas, air	
airlock system main port	NW45	
airlock system aux. port	NW18	
continuous ports Z01-Z04	no	
airlock system	DN40	
operation pressure	1x10 ⁻⁴ mbar - 2 bar	
operation temperature	0 – 90°C	
operation mode	batch (semi-continuous)	
material vessel	1.4301 with WC-Co-coating	
material rotor	1.4301 with WC-Co-coating / THM	
recomm. grinding media	WC-Co, Co-rich	
loading rates:	(HEM, MA, RM)	
grinding media, Ø ≤ 4mm	1-2 kg	2-4 kg
product < 1mm	50-100 g	200-400 g



type semi-continuous

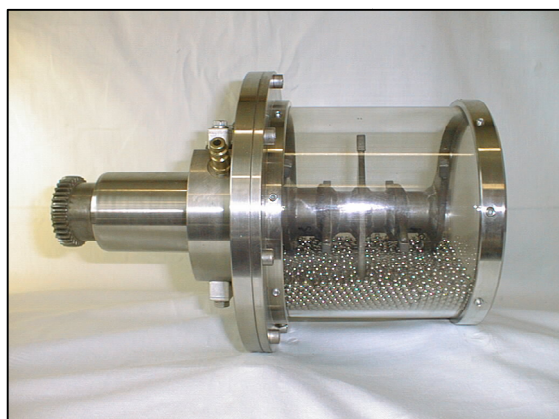
Technical data	
<i>extra features</i>	additional ports Z01-Z04
<i>application</i>	semi-continuous operation in depression & compression mode, e.g. prototyping for rapid processing of ductile metal flakes & rapid particle size reduction of brittle materials
size/type	W01-2I-s1
net weight	14 kg
nominal volume	2 liter
nominal power	1.35 kW/l
maximum relative velocity	10.9 m/sec
cooling system pre-seal-unit	via vessel
cooling system flange	via vessel
cooling system vessel	water, G $\frac{3}{8}$
heating system vessel	no
heating system flange	no
atmosphere	vacuum inert gas, air
airlock system main port	NW45
airlock system aux. port	NW18
continuous ports Z01-Z04	DN16, tangential
airlock system	DN40
operation pressure	1x10 ⁻⁴ mbar - 2 bar
operation temperature	-20 – 90°C
operation mode	batch (semi-continuous)
material vessel	stainless steel 1.4301
material rotor	stainless steel 1.4301/ Stellite®/THM
recomm. grinding media	100Cr6, 1.4401
loading rates:	(HEM, MA, RM)
grinding media, Ø ≤ 5mm	2-4 kg
product < 4mm	200-400 g



technical data subject to alterations

type transparent

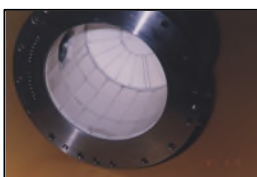
Technical data	
<i>extra features</i>	transparent vessel where the delivery volume does not include a full grinding unit, corresponding unit must be used
<i>application</i>	visual observation of kinetic and motion during high kinetic processing
size/type	glass-vessel 01-2l (fits to W01-2l, -2lm, -2lh & -2ls1)
net weight	3 kg
nominal volume	2 liter
nominal power	1.35 kW/l
maximum relative velocity	10.5 m/sec
cooling system pre-seal-unit	flange not included
cooling system flange	flange not included
cooling system vessel	no
heating system vessel	no
heating system flange	no
atmosphere	no
airlock system main port	no
airlock system aux. port	no
continuous ports Z01-Z04	no
airlock system	no
operation pressure	0 – 0.2 bar
operation temperature	RT
operation mode	batch
material vessel	1.4301 (frames) and glass
material rotor	not included
recomm. grinding media	various, rubber, steel, ceramic
loading rates:	(HEM, MA, RM)
grinding media, Ø ≤ 5mm	2-4 kg
product < 4mm	not recommended



glass-vessel 01-2l

type ceramic

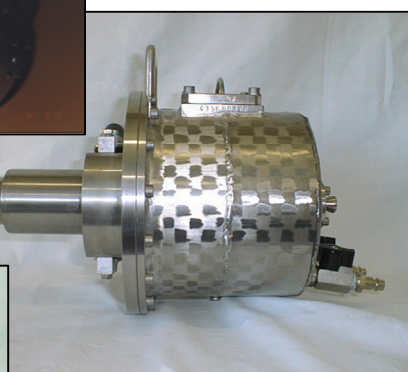
Technical data	
<i>extra features</i>	chamber coated / lined with alumina
<i>application</i>	Fe-contamination free processing, in particular ceramic and composite materials
size/type	W01-2lox
net weight	14 kg
nominal volume	2 liter
nominal power	1.35 kW/l
maximum relative velocity	5m/sec max.
cooling system pre-seal-unit	via vessel
cooling system flange	via vessel
cooling system vessel	water, G ³ / ₄
heating system vessel	no
heating system flange	no
atmosphere	vacuum, inert gas, air
airlock system main port	NW45
airlock system aux. port	NW18
continuous ports Z01-Z04	no
airlock system	DN40
operation pressure	1x10 ⁻⁴ mbar - 2 bar
operation temperature	RT – 90°C
operation mode	batch (semi-continuous)
material vessel	1.4301 with alumina lining/coating
material rotor	1.4301 with alumina coating ¹⁾ / THM
recomm. grinding media	ZrO ₂ fully stabilized
1): in development, rpm limited to 250rpm	
loading rates:	(HEM, MA, RM)
grinding media, Ø ≤ 5mm	2-3 kg
product < 4mm	200-400 g



vessel alumina lined



alumina coated rotor



grinding unit W01-2lox

technical data subject to alterations

Type SiN

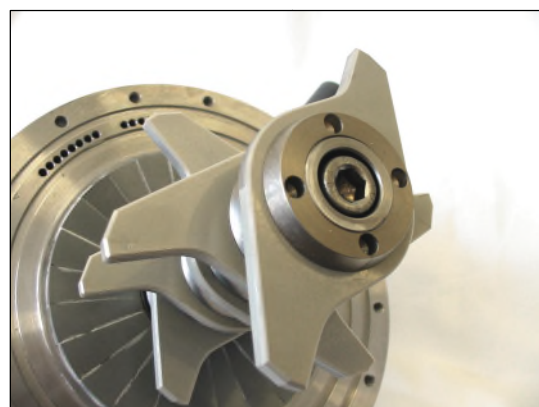
Technical data	
<i>extra features</i>	chamber lined with Si ₃ N ₄ plates, rotor blades Si ₃ N ₄ , shaft covered with ceramic-coated bushes
<i>application</i>	Fe-contamination free processing, in particular ceramic and composite materials
size/type	W01-2l-SiN
net weight	14 kg
nominal volume	1,6 liter
nominal power	1.35 kW/l
maximum relative velocity	1000 rpm
cooling system pre-seal-unit	water, G½
cooling system flange	via vessel
cooling system vessel	water, G½
heating system vessel	no
heating system flange	no
atmosphere	inert gas or vacuum
airlock system main port	NW45
airlock system aux. port	NW18
continuous ports Z01-Z04	no
airlock system	DN40
operation pressure	1x10 ⁻⁴ hPa - 2 bar
operation temperature	RT – 100°C
operation mode	batch (semi-continuous)
material vessel	1.4301 with Si ₃ N ₄ lining
material rotor	hardened steel / Si ₃ N ₄
recomm. grinding media	ZrO ₂ fully stabilized
loading rates:	(HEM, MA, RM)
grinding media, Ø ≤ 5mm	2-4 kg
product < 4mm	200-400 g



grinding unit W01-2l-SiN



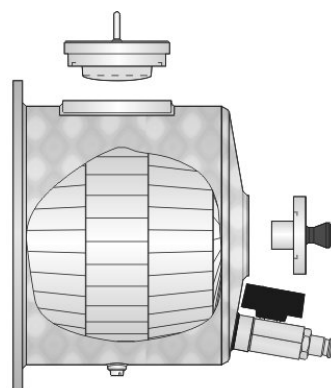
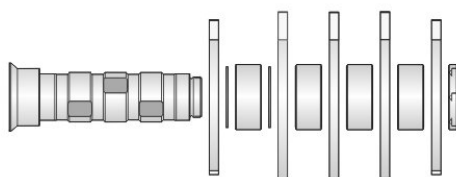
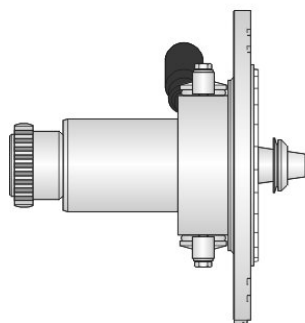
grinding unit W01-2l-SiN disassembled



rotor assembled on flange



draingratings and side-adapters with Si₃N₄ plating



technical data subject to alterations