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### **FREYR AS**

# **Cathode Milling Equipment**

**Document Title** 

# **Equipment List**

#### **FOR FINAL**

TOTAL:

2 sheets (Included cover)

COF	PIES
DATE	NO. OF PRINTS.

	3						
). OF	2	22-Jun-22	Revise Tag No.	R. Kejima.	Theogram		S, Nagata
NTS.	1	22-Jan-22	Revise Machine No.	R.Kojima	T.Fukagawa		S.Nagata
	0	30-Nov-21	Original	R.Kojima	T.Fukagawa		S.Nagata
	REV.	DATE	DESCRIPTION	BY	CHKD	CHKD	APPD

<b>NIPPON COKE</b>	&
NIPPON COKE ENGINEERING	CO., LTD.

<b>Engineering Division</b>	JOB No.	DOC.No.	REV.
Chemical Machinery Department	M7475	20F0175-D1-009	1

#### Equipment list

Part1:DN160 Part2:DN100 • J-type thermocouple	rate meter. powder charge two ports.  1 1 1 1 e 2 chiller water inlet/outlet) er. 1 ow rate meter. 1
A1-1001-NN-701 COMPOSI  1 CP130 SUS304 Impeller speed :MAX 29 Thin type impeller  Accessories:  Cooling water flow Automatic valve of part1:DN160 Part2:DN100 J-type thermocouple (inside of tank and of the impeller speed method) Impeller speed method Shaft sealing gas flow Lid Open/Close Cool	Ref min-1
Thin type impeller  Accessories: Cooling water flow Automatic valve of part1:DN160 Part2:DN100 J-type thermocouple (inside of tank and of the model of the model) Impeller speed metels Shaft sealing gas fleet.	rate meter.  powder charge two ports.  1 1 1 1 2 chiller water inlet/outlet) er. ow rate meter. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Accessories:  Cooling water flow Automatic valve of part1:DN160 Part2:DN100  J-type thermocouple (inside of tank and of the speed meters) Shaft sealing gas flow Lid Open/Close Cool	rate meter.  powder charge two ports.  1 1 1 2 chiller water inlet/outlet) er. ow rate meter. ntrol Panel  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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· Automatic valve of part1:DN160 Part2:DN100 · J-type thermocouple (inside of tank and of	powder charge two ports.  1
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Part2:DN100  • J-type thermocouple ( inside of tank and of tank an	e 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
( inside of tank and o Impeller speed met Shaft sealing gas flo Lid Open/Close Cor	chiller water inlet/outlet)       ier.     1       ow rate meter.     1       ntrol Panel     1
Impeller speed met Shaft sealing gas fle Lid Open/Close Cor	rer.
• Shaft sealing gas flu • Lid Open/Close Cor	ow rate meter. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
• Lid Open/Close Cor	ntrol Panel 1
• Safety Interlock	TBD
A1-1001-CA701 Dust filter 1 Body: SUS304 Filtration area: 0.5m <sup>2</sup>	50 0
	ats shaped filter ⋅N₂ back flash ,
Accessories:	
• Pressure transmitte	
Pressure gauge	
• Solenoid valve	
A1-1001-PF701 Vaccum pump 1 Dry screw FCD Pumping speed:220m³/t	n ±10% at 50Hz 5.5 4 400 320 O
Ulitimate pressure:5Pa Accessories:	
• Exhaust gas silence	er 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
· Check valve	1
Piping Unit 1 CS Unit for N <sub>2</sub> gas piping, a	ir piping, and cooling water piping
SUS304 • Flow meter	4   4   6
• Thermocouple	4
• Pressure gauge	
Automatic ball valve	
· Air operate valve · Safety relif valve	5
Regulator	
Manifold solenoid v	
A1-1001-EC-701 Control panel 1 CS This panel is built-in pov	wer control circuit of above mentioned equipment, 500 O
and has PLC.	Some of the state
Accessories : Alarm lam	qu
A1-1001-JE-702 Local operation panel 1 CS This panel has HMI.	50 O
A4 4004 10704 0	
A1-1001-JC701 Oxygen meter box 1 CS This box is built-in Oxyg	en meter. (under vacuume)