

Atacama Large Millimeter Array


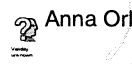
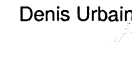


ALMA Cryostat Shipping Inspection Checklist, Preproduction Cryostat # 1


Version: A

Status: Released

FEND-40.03.00.00-020-A-LIS

2004-09-20

Prepared By:		
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Change Record

Version	Date	Affected Section(s)	Change Request #	Reason/Initiation/Remarks
A	2004-08-30	All	none	First issue



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1. Description


1.1 Purpose

The purpose of this document is to provide a detailed description (Part/Model number, Serial number and Comments) of all the parts delivered with every ALMA Preproduction Cryostat in agreement with [AD 01].

Note: ALMA Preproduction Cryostat number one delivered to NRAO has a punch list with it, for details see PAI Review minutes.


1.2 Applicable / Reference Documents

No	Document Title	Date	Reference
AD 01	ALMA Cryostat Design Development and Pre-Production, Statement of Work	2003-09-19	FEND-40.03.00.00-003-B-SOW
RD 01	ICD between Antenna and Front End	2004-06-28	ALMA-34.00.00.00-40.00.00.00-B-ICD
RD 02	Standard for AC Plugs, Socket-Outlets and Couplers	2003-12-15	ALMA-80.05.00.00-004-B-STD


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2. Parts List


Item	Description	Parts/Model #	S/N #	Comments
	Cryostat Vessel and Parts attached to:			
001	RAL cryostat		40.03.00.00-001-1	
002	Sumitomo Cold Head	RDK-3ST 103H89331-0265	12316	
003	Leybold Vacuum Gauge ITR90 DN 25 ISO KF	120 91	Not available at this time!	
004	Leybold Turbovac TW70H, flange 63 ISO-K, Turbo Drive S with RS 232 and air cooling	80002V1236	209003	
005	VAT Gate valve manual operated	VAT 12036- PA06-0003/0163	A392077	Final electro- mechanical operated gate valve will be delivered later by ESO/RAL.
006	"Speedy Valve", right angle valve, DN 16 KF, manual operated	SP16K	No S/N visible!	Final electro- mechanical operated failsafe valve will be delivered later by ESO/RAL (see 045 for details).
007	"Speedy Valve" straight valve, DN 25 KF, manual operation	No model number visible!	No S/N visible!	
008	10 (6 plus 4) Dummy cartridges			First 2 cryostats will be delivered with 4 additional dummy cartridges.
009	10 sets of IR Filters, Band 1 to 10			
010	5 Vacuum windows, Band 3,4,6,7 and 9			Band 4 window will delivered later by ESO/RAL.
011	5 Vacuum windows blank, Band 1,2,5,8 and 10			

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Item	Description	Parts/Model #	S/N #	Comments
	Vacuum parts not attached to Vessel:			
012	Leybold Vacuum Gauge Controller Center One plus power cable EURO norm	230002	1101	
013	Leybold cable between Gauge and Vacuum controller, 5 m long	12356	No S/N available.	
014	24 VDC PSU plus H15 type connector.	KNIEL Model #: CP 24.15	No S/N available.	Final 24 VDC power supply and backplane connector will be delivered later by ESO/RAL.
015	Leybold 24 VDC PSU cable, 3 m long	800091V0300	No S/N available.	
016	Leybold Diaphragm Backing Pump: (model TBD), 16 KF, plus power cable EURO norm. Tests are still ongoing on the right size and performance.	No model # available!	No S/N # available!	Final Backing Pump will be delivered later by ESO/RAL.
017	Flexible Vacuum Hose, DN 16 KF, xx m long			Final length be defined by NRAO
018	Set of spare O-Rings for cartridge bottom flange, 2 for each type of cartridge			

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Item	Description	Parts/Model #	S/N #	Comments
	Cryo Parts not attached to the vessel:			All parts listed on this page will be delivered as soon as possible to NRAO.
019	Sumitomo indoor He-Line, supply, 20 m long	No model # available!	No S/N # available!	Refer to RD 01
020	Sumitomo indoor He-Line, return, 20 m long	No model # available!	No S/N # available!	Refer to RD 01
021	Sumitomo indoor He-Line, buffer tank, 20 m long	No model # available!	No S/N # available!	Refer to RD 01
022	Sumitomo outdoor He-Line, supply, 10 m long	No model # available!	No S/N # available!	Refer to RD 01
023	Sumitomo outdoor He-Line, return, 10 m long	No model # available!	No S/N # available!	Refer to RD 01
024	Sumitomo Indoor Unit	CAN-61D-E	024443	Refer to RD 01
025	Sumitomo Outdoor Unit	CNA-61D-C	024643	Refer to RD 01
026	Sumitomo Buffer Tank	E940372	400170	Refer to RD 01
027	Pressure Transducer on supply line of indoor unit together with mating plug.	xxx	xxx	Model and Serial number will be updated later.
028	Input Power Cable	Cable HV	No S/N # available!	Refer to RD 01
029	Indoor Unit to Outdoor Unit Power Cable, 20 m long	Cable 1-1D	No S/N # available!	Refer to RD 01
030	Indoor Unit to Outdoor Unit Control Cable, 20 m long	Cable 1-2	No S/N # available!	Refer to RD 01
031	Indoor Unit Outdoor Unit Control Cable, 20 m long	Cable 1-3	No S/N # available!	Refer to RD 01
032	AC Power plug for Indoor Unit	Mennekes model # 3853	No S/N # available!	Refer to RD 02. Will be delivered by ESO/RAL.

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Item	Description	Parts/Model #	S/N #	Comments
	Test Reports, RAL Cryostat Documents, Operation Manuals, Technical Instructions:			
033	ALMA Cryostat Operating Instructions	FEND-40.03.00.00-019-A-PRO		Can be found in the ALMA EDM
034	ALMA Cryostat test reports and calibration charts	ALMA xxx		Can be found in the ALMA EDM
035	ALMA Cryostat Configured Items Data List	FEND-40.03.00.00-012-A-LIS		Can be found in the ALMA EDM
036	CIDL listed Documents			
037	Leybold Vacuum Gauge ITR90 Operation Manual			
038	Leybold Turbovac TW70H and Turbo S-drive Operation Manual	GA 05.14516.02-0412002		
039	Leybold Vacuum Gauge Controller Center One Operation Manual	GA 05.0331 - 2.02		
040	24 VDC PSU reference document	KNIEL model #: CP 24.15		
041	Leybold Diaphragm Backing Pump Divac Operation Manual	GA 07.4221 2.02-02102		
042	Sumitomo technical instruction RDK-408 4K cold head	CD32AA-064		
043	Sumitomo technical instruction CSA-71A Compressor Unit	CD32ZZ-067		
044	Sumitomo technical instruction CAN-61A Outdoor used Compressor Unit	CD32ZZ-077		
045	Sumitomo technical instruction CAN-61A Outdoor used Compressor Unit	CD32ZZ-078		

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Item	Description	Parts/Model #	S/N #	Comments
	Other parts to be delivered:			
046	Cryostat Valve Interlock , see details under: ALMA Front End Cryostat Valve Interlock and Fail-Safe Requirements. Doc #: FEND-40.03.03.00-001-A-SPE		40.03.03.xx.xxx-x	The so called HW-Interlock is a separate new WP, not part of this WP as defined in AD 01. ESO has taken responsibility for this WP and will absorb costs. It will be delivered at a later to be agreed date.
047	Fail-safe Valve, see details under: ALMA Front End Cryostat Valve Interlock and Fail-Safe Requirements. Doc #: FEND-40.03.03.00-001-A-SPE		40.03.03.xx.xxx-x	The so called fail-safe valve is a separate new WP, not part of this WP as defined in AD 01. ESO has taken responsibility for this WP and will absorb costs (to be confirmed with the EU ALMA Project manager). It will be delivered at a later to be agreed date.