

Piping list
ASU Area

Diagram No.: 792.86811
Revision: As B.
Date: 30.11.2006
Diagram state: As B.

Project: KOSICE, ASU Area
Project No.: K70101
List state: As B.

DN	Fluid	Piping No.	Piping classification	P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility-test	Remarks
								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
600	N	20011	AA10C1	005 003	700 N 20011 AA10C1 W14001	610	1.0254	6	23	N	6,6	-	-				2	II		Modul A1,D1,E1
700	N	20011	AA10C1	009 005	W20010 - W20040 600 N 20011 AA10C1	711	1.0254	6	23	N	6,6	-	-				2	II		Modul A1,D1,E1
500	N	20012	AA10C1	005 005	W15001 500 N 20010 AA10C1	508	1.0254	6	200	N	6,6	-	-	W			2	I		Modul A
100	N	20013	AA10C1	005 024	700 N 20011 AA10C1 100 N 87001 AA10C1	114,3	1.0254	2	23	N	2,2	-	-				2	3-3		
400	A	20015	MA_W	009 014	W20010 - W20040 K21001	406,4						-	-							CB
500	N	20016	AA10C1	005 005	500 N 20010 AA10C1 600 N 15006 AA10C1	508	1.0254	2	23	N	2,2	-	-	W			2	3-3		
400	N	20017	AA10C1	010 010	600 N 20008 AA10C1 N20005	406,4	1.0254	2	23	N	2,2	-	-				2	3-3		
150	N	20018	ZB40C1	010 010	FV20002 N20001	168,3	1.4541	30	23	N	33	-	-				2	II		Modul A1,D1,E1
80	N	20018	ZB40C1	010 010	100 N 20004 ZB40C1 FV20002	88,9	1.4541	30	23	N	33	-	-				2	I		Modul A
150	O	20019	ZB40C1	010 010	250 O 20006 ZB40C1 FV20012	168,3	1.4541	28	24	N	33,6	-	-				1	III		Modul B1+D,B1+ +F,B+E,B+C1,H
300	O	20019	ZB40C1	010 010	FV20012 N20011	323,9	1.4541	40	23	N	48	-	-				1	III		Modul B1+D,B1+ +F,B+E,C1,H
15	N	20028	AA40C1	010 015	TF (100 N 20005 AA64C1) LIN Pump / Seal Gas Box	21,3	1.0254	21	24	N	23,2	-	-				2	3-3		
150	A	21001	MA_W	009 009	B21001 (N3) 400 A 20015 MA_W	168,3						-	-							CB

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	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
100	AL	21002	MA_W	011	150 AL 21002 MA_W	114,3						-							CB
				014	K21001 (N3)														
150	AL	21002	MA_W	009	B21001 (N1)	168,3						-							CB
				011	100 AL 21002 MA_W														
50	A	21003	MA_W	014	350 N 21020 MA_W	60,3						-							CB
				018	W43001														
50	A	21004	MA_W	014	400 A 20015 MA_W	60,3						-							CB
				017	150 OL 23004 MA_W														
300	AL	21005	MA_W	009	W20010-W20040	323,9						-							CB
				009	B21001 (N2)														
100	AL	21006	MA_W	011	150 AL 21002 MA_W	114,3						-							CB
				011	W23001														
200	OL	21007	ZB16C1	012	200 OL 21007 MA_W	219,1			1.4541			-							CB
				012	LOX Pump / P61100														
200	OL	21007	MA_W	014	K22001 (N9)	219,1						-							CB
				012	200 OL 21007 ZB16C1														
150	OL	21008	ZB16C1	012	200 OL 21008 ZB16C1	168,3			1.4541										CB
				012	P61200														
200	OL	21008	ZB16C1	012	200 OL 21007 ZB16C1	219,1			1.4541			-							CB
				012	150 OL 21008 ZB16C1														
50	OL	21009	ZB16C1	012	Valve V61293	60,3						-				1	I		Modul A
				026	80 OL 90001 ZB16C1		16	-183	N	19,2									
40	OL	21010	ZB10C1	012	150 OL 21008 ZB16C1	48,3													CB
				012	50 OL 21009 ZB16C1														
80	NL	21013	ZB16C1	015	80 NL 21013 MA_W	88,9						-							CB
				015	LN Pump / P71100														

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								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
80	NL	21013	MA_W	014 015	150 NL 21018 MA_W 80 NL 21013 ZB16C1	88,9							-							CB
80	NL	21014	ZB16C1	015 015	80 NL 21013 ZB16C1 LIN Pump / P71200	88,9	1.4541						-							CB
25	NL	21015	ZB16C1	015 026	Valve V71190 50 NL 90004 ZB16C1	33,7	1.4541	16	-183	N	17,6		-				2	3-3		
25	NL	21016	ZB16C1	015 015	80 NL 21014 ZB16C1 25 NL 21015 ZB16C1	33,7	1.4541						-							CB
200	NL	21017	MA_W	014 014	B21002 (N2) K21001 (N5)	219,1							-							CB
150	NL	21018	MA_W	014 011	B21002 (N3) W23001	168,3							-							CB
80	N	21019	MA_W	014 014	350 N 21020 MA_W B21002 (N5)	88,9							-							CB
350	N	21020	MA_W	014 014	K21001 (N7.1/7.2) W21001	355,6							-							CB
50	N	21021	MA_W	014 013	350 N 21020 MA_W 150 NL 23007 MA_W	60,3							-							CB
150	OL	21023	MA_W	014 011	K21001 (N1) W23001	168,3							-							CB
50	OL	21024	ZB16C1	014 026	K21001 (N4) 80 OL 90001 ZB16C1	60,3	1.4541	16	-183	N	19,2		-				1	I		Modul A
25	N	21025	MA_W	014 014	W21001 Atmosphere	33,7							-							CB
50	N	21027	MA_W	014 013	400 A 20015 MA_W 150 AL 23002 MA_W	60,3							-							CB

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		Piping No.	Piping classification					Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
400	N	22001	MA_W	013 011	K22001 (N22) W23001	406,4							-							CB
150	O	22002	MA_W	013 011	K22001 (N14) 600 N 23010 MA_W	168,3							-							CB
500	O	22003	MA_W	013 016	K22001 (N16.1/N16.2) K40001 (N2.1/N2.2)	508							-							CB
	N	22004	MA_W	013 013	400 N 22001 MA_W Atmosphere								-							CB
350	NL	22006	MA_W	014 014	W21001 B21002 (N1)	355,6							-							CB
500	N	22007	MA_W	013 011	K22001 (N19.1/19.2) W23001	508							-							CB
500	N	23001	MA_W	011 009	W23001 W20010 - W20040	508							-							CB
100	AL	23002	MA_W	011 013	W23001 150 AL 23002 MA_W	114,3							-							CB
150	AL	23002	MA_W	013 013	100 AL 23002 MA_W K22001 (N20.1/20.2)	168,3							-							CB
50	NL	23003	MA_W	011 011	W23001 50 NL 23005 ZB16C1	60,3							-							CB
150	OL	23004	MA_W	011 017	W23001 B40001 (N8)	168,3							-							CB
50	NL	23005	ZB16C1	011 035	50 NL 23003 MA_W Tank Farm (B72001)	60,3	1.4541	23	-192	N	25,3		-	CV			2	3-3		
150	NL	23007	MA_W	011 013	W23001 K22001 (N21)	168,3							-							CB

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	Fluid	Piping No.		from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
25	NL	23008	ZB10C1	011	Cold Box (V23017)	011	1.4541					-	-				2	3-3		
				011	Drain															
50	AL	23009	MA_W	011	100 AL 23002 MA_W	011	60,3	10	-196	N	11	-	-				2	3-3		CB
				011	Drain															
600	N	23010	MA_W	011	W23001	011	610	16				-	-							CB
				009	W20010 - W20040															
50	NL	23011	MA_W	011	50 NL 23003 MA_W	011	60,3					-	-							CB
				011	PV23073															
50	NL	23011	ZB16C1	011	Cold Box (PV23073)	011	60,3	2,3	-192	N	2,55	-	-				2	3-3		
				026	50 NL 90004 ZB16C1															
50	WC	24101	AA10C2	029	W24165	029	60,3	4	16	W	5,7	-	-				2	3-3		
				023	80 WC 24201 AA10C2															
150	LV	24102	AA10C1	029	V24182	029	168,3	1	60			-	-				2	3-3		
				029	Atmosphere															
25	A	24103	AA10C1	029	Turbine 1 / ET24101	029	33,7	1	20	N	1,1	-	-				2	3-3		
				029	150 LV 24102 AA10C1															
150	A	24105	MA_W	007	ET24101	007	168,3					-	-							CB
				007	200 A 24105 MA_W															
150	LV	24105	ZB16C1	007	ET24101/ET24201	007	168,3					-	-							
				007	Atmosphere															
200	A	24105	MA_W	007	150 A 24105 MA_W	007	219,1					-	-							CB
				008	250 A 24105 MA_W															
250	A	24105	MA_W	008	200 A 24105 MA_W	008	273					-	-							CB
				009	400 A 20015 MA_W															
25	A	24106	AA10C1	007	Valve V34183	007	33,7	55	-173	N	60,5	-	-				2	3-3		
				007	Drain															

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								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
150	LV	24180	ZB16C1	007	ET24101/ET24201	168,3	1.4541						-						
				007	Atmosphere														
80	WC	24201	AA10C2	030	W24265	88,9	1.0254	4	16	W	5,7		-				2	3-3	
				023	500 WC 24301 AA10C2														
50	LV	24202	AA10C1	030	V24282	60,3	1.0254	0	60	-			-				2	3-3	
				029	150 LV 24102 AA10C1														
25	A	24203	AA10C1	030	Turbine 2 / ET24201	33,7	1.0254	1	30	N	1,1		-				2	3-3	
				029	150 LV 24102 AA10C1														
150	A	24205	MA__W	008	Turbine 2 / ET24201	168,3							-						CB
				008	200 A 24205 MA__W														
200	A	24205	MA__W	008	150 A 24205 MA__W	219,1							-						CB
				008	250 A 24105 MA__W														
80	LV	24205	ZB16C1	008	ET24201	88,9	1.4541						-						
				007	150 LV 24105 ZB16C1														
25	A	24206	AA10C1	008	Valve V34283	33,7	1.0254	0	-173				-				2	3-3	
				008	Drain														
80	LV	24280	ZB16C1	008	ET24201	88,9	1.4541						-						
				007	150 LV 24180 ZB16C1														
500	WC	24301	AA10C2	023	250 WC 13020 AA10C2	508	1.0254						-						
				023	TOP 7 Cooling water														
200	OL	40001	ZB16C1	016	200 OL 40001 MA__W	219,1	1.4541						-						CB
				016	Pump P40100														
200	OL	40001	MA__W	016	K40001 (N1)	219,1							-						CB
				016	200 OL 40001 ZB16C1														
400	R	40002	MA__W	016	K40001 (N4.1)	406,4							-						CB
				017	K40002 (N2.1)														



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	Fluid	Piping No.	Piping classification	from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
250	RL	40003	MA_W	W40001/B40001 (N7)	K40002 (N3)	273							-						CB
40	RL	40004	MA_W	50 RL 40004 MA_W	K43001 (N3)	48,3							-						CB
50	RL	40004	MA_W	250 RL 40003 MA_W	Atmosphere	60,3							-						CB
150	RL	40005	MA_W	K40002 (N1)	K40001 (N3)	168,3							-						CB
100	OL	40007	MA_W	B40001 (N5)	K22001 (N17)	114,3							-						CB
50	O	40008	MA_W	100 OL 40007 MA_W	Atmosphere	60,3							-						CB
400	R	40009	MA_W	K40001 (N4.2)	K40002 (N2.2)	406,4							-						CB
400	R	40010	MA_W	K40002 (N4.1)	W40001/B40001 (N6)	406,4							-						CB
50	R	40011	MA_W	150 R 40015 MA_W	80 R 43005 MA_W	60,3							-						CB
500	O	40012	MA_W	B40001 (N10)	K22001 (N18.1/N18.2)	508							-						CB
40	OL	40013	ZB10C1	Valve V40190	40 OL 40102 ZB16C1	48,3	1.4541	6	-182	N	7,2		-				1	I	Modul A
25	R	40014	MA_W	B40001 (N9)	Atmosphere	33,7							-						CB
150	R	40015	MA_W	400 R 40010 MA_W	Atmosphere	168,3							-						CB



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					from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
25	NL	40016	MA__W	014 018	150 NL 21018 MA__W	40 AL 43007 MA__W	33,7							-						CB
100	OL	40101	ZB16C1	016 016	Pump P40100	100 OL 40101 MA__W	114,3	1.4541						-						CB
100	OL	40101	MA__W	016 013	100 OL 40101 ZB16C1	100 OL 40101 MA__W	114,3							-						CB
40	OL	40102	ZB16C1	016 026	Valve V40193	80 OL 90001 ZB16C1	48,3	1.4541	16	-183	N	19,2		-				1	I	Modul A
80	OL	40103	ZB16C1	016 016	100 OL 40101 ZB16C1	V40171	88,9	1.4541						-						CB
80	OL	40103	MA__W	016 016	V40171	K40001 (N5)	88,9							-						CB
25	RL	43001	ZB16C1	018 041	25 RL 43001 MA__W	B44101	33,7	1.4541	17	-181	N	18,7		-	CV			2	3-3	
25	RL	43001	MA__W	018 018	K43001 (N6)	25 RL 43001 ZB16C1	33,7		16	-181				-						CB
25	RL	43002	ZB16C1	018 026	25 RL 43001 MA__W	50 RL 90002 ZB16C1	33,7	1.4541	16	-181	N	17,6		-				2	3-3	
25	RL	43003	ZB16C1	041 042	25 RL 43001 ZB16C1	B44201	33,7	1.4541	17	-182		18,7		-	CV			2	3-3	
80	RL	43003	MA__W	018 018	K43001 (N2)	W43001	88,9							-						CB
100	RL	43004	MA__W	018 018	W43001	K43001 (N1)	114,3							-						CB
80	R	43005	MA__W	018 018	W43002	K43001 (N5)	88,9							-						CB

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	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
50	RL	43006	MA__W	018	W43002	60,3						-						CB
				018	K43001 (N4)													
40	AL	43007	MA__W	018	25 NL 43015 MA__W	48,3						-						CB
				018	B43001 (N3)													
80	N	43009	MA__W	018	B43001 (N4)	88,9						-						CB
				011	500 N 22007 MA__W													
80	AL	43011	MA__W	018	W43002	88,9						-						CB
				018	B43001 (N2)													
100	A	43012	MA__W	018	B43001 (N5)	114,3						-						CB
				018	W43002													
25	A	43013	MA__W	018	W43002	33,7						-						CB
				018	Atmosphere													
	N	43014	MA__W	018	80 N 43009 MA__W							-						CB
				018	Z43028 (SV)													
25	NL	43015	MA__W	018	W43001	33,7						-						CB
				013	150 AL 23002 MA__W													
1/4"	RL	44003	ZB10C1	042	80 RL 44101 ZB16C1	8	1,6	-182	N	1,76		-				2	3-3	PUV
				042	P44001													
1/4"	RL	44005	ZB10C1	043	80 RL 44101 ZB16C1	8	7	-182	N	7,7		-				2	3-3	PUV
				043	P48001													
80	RL	44101	ZB16C1	041	B44101	88,9	7	-182	N	7,7		-	C	120		2	3-3	
				043	P44001/P48001													
50	RL	44102	ZB16C1	041	B44101	60,3	5	-182	N	5,5		-				2	3-3	
				042	B44201													
25	RL	44104	ZB40C1	041	B44101	33,7	40	-182	N	44		-				2	3-3	
				041	Atmosphere													

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AIR LIQUIDE

Piping list ASU Area

Diagram No.: 792.86811
Revision: As B.
Date: 30.11.2006
Diagram state: As B.

Project: KOSICE, ASU Area
Project No.: K70101
List state: As B.

DN	Fluid	Piping No.	Piping classification	P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility-test	Remarks
								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
80	RL	44201	ZB16C1	042	B44201	88,9	1.4541	7	-182	N	7,7	-	-	C	120		2	-		
50	RL	44203	ZB40C1	042	P44001 Tanker	60,3	1.4541	16	-182	N	17,6	-	-				2	-		
25	RL	44204	ZB40C1	042	B44201	33,7	1.4541	7	-182	N	7,7	-	-				2	-		
50	RL	44205	ZB40C1	042	50 RL 44203 ZB40C1	60,3	1.4541	5	-182	N	5,5	-	-	C	110		2	-		
50	RL	48001	ZB40C1	041	B44101	60,3	1.4541	23	-180	N	24,2	-	-	C	110		2	-		
50	RL	48004	ZB40C1	043	LAR Back Up Pump P48001	60,3	1.4541	23	-180	N	25,3	-	-	C	110		2	-		
25	R	48009	ZB40C1	044	B48001	33,7	1.4541	40	-142	N	44	-	-				2	3-3		
25	R	48033	ZB40C1	044	B48001	33,7	1.4541					-	-							
50	R	48033	ZB40C1	044	W48101	60,3	1.4541	21	2	N	23,1	-	-				2	3-3		
25	R	48034	ZB40C1	044	W48101	33,7	1.4541	22	-142	N	24,2	-	-				2	3-3		
50	R	48034	ZB40C1	044	25 R 48033 ZB40C1	60,3	1.4541	22	-142	N	24,2	-	-				2	I		Modul A
100	OL	61101	MA_W	012	W48201	114,3	1.4541	22	-142	N	24,2	-	-							CB
100	OL	61101	ZB40C1	009	50 R 48033 ZB40C1	114,3	1.4541					-	-							CB
				012	100 OL 61101 ZB40C1															
				012	LOX Pump / P61100															
				012	100 OL 61101 MA_W															

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Project: KOSICE, ASU Area
Project No.: K70101
List state: As B.

DN	Piping		P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permissing Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation		Fluidgroup	Category n. 97/23/EG	Flexibility- test	Remarks
	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
50	OL	61102	ZB10C1	032	LOX Tank B62001	60,3	1.4541	10	-182	N	12	-	C			1	I	Modul A
				011	Cold Box													A
50	OL	61102	MA_W	011	50 OL 61102 ZB10C1	60,3						-						CB
				011	100 OL 61101 MA_W													
80	OL	61103	ZB16C1	011	Cold Box (LV23076)	88,9	1.4541	16	-183	N	19,2	-				1	I	Modul A
				026	80 OL 90001 ZB16C1													A
25	OL	61104	ZB16C1	012	Valve V61192	33,7	1.4541	16	-183	N	19,2	-				1	3-3	
				012	40 OL 61110 ZB16C1													
100	OL	61105	MA_W	012	100 OL 61105 ZB40C1	114,3						-						CB
				014	K22001 (N 24)													
100	OL	61105	ZB40C1	012	100 OL 61101 ZB40C1	114,3	1.4541					-						CB
				012	100 OL 61105 MA_W													
15	OL	61107	ZB16C1	012	40 OL 61110 ZB16C1	21,3	1.4541	16	-183	N	19,2	-				1	3-3	
				012	LOX Pump P61100													
25	O	61108	ZB16C1	014	50 O 61111 MA_W	33,7	1.4541	16	-183	N	19,2	-				1	I	
				026	80 OL 61103 ZB16C1													
40	OL	61110	ZB16C1	012	50 OL 21009 ZB16C1	48,3	1.4541	16	-183	N	19,2	-				1	I	Modul A
				012	Valve V61193													A
50	O	61111	MA_W	011	50 OL 61102 MA_W	60,3						-						CB
				014	K22001 (N13)													
100	OL	61201	ZB40C1	012	LOX Pump / P61200	114,3	1.4541					-						CB
				012	100 OL 61101 ZB40C1													
25	OL	61204	ZB16C1	012	Valve V61292	33,7	1.4541	16	-183	N	19,2	-				1	3-3	
				012	50 OL 21009 ZB16C1													
100	OL	61205	ZB40C1	012	100 OL 61201 ZB40C1	114,3	1.4541					-						CB
				012	100 OL 61205 MA_W													

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DN	Piping		P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility- test	Remarks
	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
100	OL	61205	MA__W	012	100 OL 61205 ZB40C1	114,3						-							CB
				014	K22001 (N 23)														
15	OL	61207	ZB16C1	012	50 OL 21009 ZB16C1	21,3	16	-183	N	19,2		-				1	3-3		
				012	LOX Pump P61200														
150	WC	70020	AA10C2	019	VW70001-VW70003	168,3	1	16	W	1,4		-				2	3-3		
				023	500 WC 24301 AA10C2														
150	WC	70021	AA10C2	020	VW77001-VW77003	168,3	1	16	1,4	1		-				2	3-3		
				023	150 WC 70020 AA10C2														
100	WC	70022	AA10C2	019	150 WC 80007 AA10C2	114,3	1	16	W	1,4		-				2	3-3		
				019	150 WC 70020 AA10C2														
100	WC	70023	AA10C2	020	250 WC 80008 AA10C2	114,3	1	16	W	1,4		-				2	3-3		
				020	150 WC 70021 AA10C2														
200	N	70074	AA16C1	019	250 N 75005 AA16C1	219,1	2	23	N	2,2		-				2	3-3		
				019	300 N 70074 AA16C1														
300	N	70074	AA16C1	019	200 N 70074 AA16C1	323,9	2	23	N	2,2		-				2	3-3		
				019	400 N 20008 AA10C1														
15	LV	70505	AA10C1	019	Z70505 (SV)	21,3						-							
				019	Atmosphere														
80	LV	70802	AA10C1	021	V70803	88,9						-				2	3-3		
				021	Atmosphere		0	60	-										
50	NL	71101	MA__W	015	50 NL 71101 ZB40C1	60,3						-							CB
				009	W20010 - W20040														
50	NL	71101	ZB40C1	015	LIN Pump / P71100	60,3						-							CB
				015	50 NL 71101 MA__W														
50	NL	71102	MA__W	015	Valve V71171	60,3						-							CB
				014	B21002 (N4.1)														

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Piping list
ASU Area

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Project: KOSICE, ASU Area
Project No.: K70101
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Piping		P & I Sheet	Piperouting		Pipe dimension (mm)	Material	max. permissing Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility-test	Remarks
DN	Fluid		Piping No.	Piping classification			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
50	NL		71102	ZB16C1	015	50 NL 71101 ZB40C1						-							CB
					015	Valve V71171													
25	NL		71103	ZB16C1	015	Valve V71193						-					2	3-3	
					015	25 NL 21015 ZB16C1	22	-176	N	24,2									
15	NL		71104	ZB16C1	015	25 NL 21015 ZB16C1						-					2	3-3	
					015	LN Pump P71100	16	-183	N	17,6									
50	NL		71201	ZB40C1	015	LN Pump P71200						-							CB
					015	50 NL 71101 ZB40C1													
50	NL		71202	ZB40C1	015	50 NL 71201 ZB40C1						-							CB
					015	Valve V71271													
50	NL		71202	MA__W	015	Valve V71271						-							CB
					014	B21002 (N4.2)													
25	NL		71203	ZB16C1	015	Valve V71293						-					2	3-3	
					015	25 NL 21015 ZB16C1	16	-183	N	17,6									
15	NL		71204	ZB16C1	015	25 NL 21015 ZB16C1						-					2	3-3	
					015	LN Pump P71200	16	-183	N	17,6									
40	NL		73001	MA__W	011	50 NL 23003 MA__W						-							CB
					014	K21001 (N6)													
25	NL		73017	ZB16C1	014	Cold Box (V73081)						-					2	3-3	
					026	50 NL 90004 ZB16C1	8	-173	N	7,7									
250	N		75005	AA16C1	019	VW70003						-					2	I	Modul A
					020	N70041	7,3	26	N	8,1									
150	N		75006	AA16C1	019	250 N 75005 AA16C1						-					2	I	Modul A
					019	N70035	7,3	26	N	8,1									
250	N		76005	AA16C1	020	VW77003						-					2	I	Modul A
					020	250 N 75005 AA16C1	7,3	26	N	8,1									

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Piping list ASU Area

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List state: As B.

DN	Piping		P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation		Fluidgroup	Category n. 97/23/EG	Flexibility- test	Remarks
	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
150	N	76006	AA16C1	020	250 N 76005 AA16C1	168,3	7,3	26	N	8,1	-	-				2	I	Modul A
				020	N77035													
200	N	77074	AA16C1	020	250 N 76005 AA16C1	219,1	7,3	26	N	8,1	-	-				2	I	Modul A
				020	300 N 77074 AA16C1													
300	N	77074	AA16C1	020	400 N 20009 AA10C1	323,9	7,3	26	N	8,1	-	-				2	II	Modul A1,D1,E1
				020	200 N 77074 AA16C1													
15	LV	77505	AA10C1	020	Z77505 (SV)	21,3					-	-						
				020	Atmosphere													
80	LV	77802	AA10C1	022	V77803	88,9	0	60	-		-	-				2	3-3	
				022	Atmosphere													
500	WC	80001	AA10C2	023	TOP 8 Cooling water	508					-	-						
				023	250 WC 80004 AA10C2													
300	WC	80002	AA10C2	023	500 WC 80001 AA10C2	323,9	8	16	W	11,5	-	-				2	3-3	
				001	MAC (VW11011-VW11032)													
300	WC	80003	AA10C2	023	300 WC 80002 AA10C2	323,9	8	16	W	11,5	-	-				2	3-3	
				006	BAC (VW16001-VW16004)													
250	WC	80004	AA10C2	023	500 WC 80001 AA10C2	273	4	16	W	5,7	-	-				2	3-3	
				002	150 WC 80010 AA10C2													
50	WC	80005	AA10C2	023	80 WC 80006 AA10C2	60,3	8	16	W	11,5	-	-				2	3-3	
				029	W24165													
200	WC	80006	AA10C2	002	250 WC 80004 AA10C2	219,1	8	16	W	11,5	-	-	WE			2	3-3	
				002	P13100													
80	WC	80006	AA10C2	023	500 WC 80001 AA10C2	88,9	8	16	W	11,5	-	-				2	3-3	
				030	W24265													
150	WC	80007	AA10C2	023	250 WC 80008 AA10C2	168,3	8	16	W	11,5	-	-				2	3-3	
				019	VW70001-VW70003													

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	Fluid	Piping No.	Piping classification	from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
200	WC	80007	AA10C2		P13100 W13001 (N3)	219,1	1.0254	8	16	W	11,5	-	-	WE			2	3-3		
200	WC	80008	AA10C2		200 WC 80006 AA10C2 P13200	219,1	1.0254	4	16	W	5,7	-	-	WE			2	3-3		
250	WC	80008	AA10C2		500 WC 80001 AA10C2 VW77001-VW77003	273	1.0254	8	16	W	11,5	-	-				2	3-3		
200	WC	80009	AA10C2		P13200 200 WC 80007 AA10C2	219,1	1.0254	8	16	W	11,5	-	-	WE			2	3-3		
150	WC	80010	AA10C2		250 WC 80004 AA10C2 KA12001 (C8)	168,3	1.0254	4	16	W	5,7	-	-	WE			2	3-3		
100	WC	80011	AA10C2		150 WC 80010 AA10C2 W14001 (N3)	114,3	1.0254	4	16	W	5,7	-	-	WE			2	3-3		
	WC	80012	AA10C2		300 WC 80002 AA10C2 W11839		1.0254					-	-						COV	
80	WC	80013	AA10C2		300 WC 80003 AA10C2 W16706	88,9	1.0254	8	16	W	11,5	-	-				2	3-3		COV
150	WC	80014	AA10C2		300 WC 80002 AA10C2 300 WC 11003 AA10C2	168,3	1.0254	8	26	W	11,5	-	-				2	3-3		
150	WC	80015	AA10C2		300 WC 80003 AA10C2 300 WC 16003 AA10C2	168,3	1.0254	8	16	W	11,5	-	-				2	3-3		
40	WC	80016	AA10C1		50 WC 80005 AA10C2 50 WC 24101 AA10C2	48,3	1.0254	8	16	W	11,5	-	-				2	3-3		
40	WC	80017	AA10C1		80 WC 80006 AA10C2 80 WC 24201 AA10C2	48,3	1.0254	8	16	W	11,5	-	-				2	3-3		
	WC	80018	AA10C2		300 WC 80003 AA10C2 W16842		1.0305					-	-						COV	

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	Fluid	Piping No.					Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
80	WC	80030	AA10C2	001	MAC	88,9	1.0254	8	16	W	11,5	-				2	3-3		COV
				027	W11706														
80	N	81002	AA10C1	025	Tank Farm (V81005)	88,9	1.0254	6	23	N	6,6	-				2	3-3		
				025	Collecting pipe														
50	A	81003	AA10C1	025	50 A 15016 AA10C1	60,3	1.0254	6	23	N	6,6	-				2	3-3		
				025	Tank Farm/Dump Vaporizer														
50	N	81004	AA10C1	025	80 N 81002 AA10C1	60,3	1.0254					-							
				024	100 N 87001 AA10C1														
15	N	81006	AA10C1	025	80 N 81002 AA10C1	21,3	1.0254	6	23	N	6,6	-				2	3-3		
				012	P61100/P61200														
25	N	81007	AA10C1	025	80 N 81033 AA10C1	33,7	1.0254	6	23	N	6,6	-				2	3-3		
				022	Seal gas N2 Compr. 2														
25	N	81008	AA10C1	025	80 N 81033 AA10C1	33,7	1.0254	6	23	N	6,6	-				2	3-3		
				021	Seal gas N2 Compr. 1														
15	N	81009	AA10C1	025	80 N 81002 AA10C1	21,3	1.0254					-							
				016	P40100 / Seal Gas Box														
40	N	81010	AA10C1	025	80 N 81033 AA10C1	48,3	1.0254	6	23	N	6,6	-				2	3-3		
				028	Seal gas Oil System BAC														
40	N	81013	AA10C1	025	80 N 81033 AA10C1	48,3	1.0254	6	23	N	6,6	-				2	3-3		
				027	Seal gas Oil System MAC														
25	O	81020	ZB40C1	010	TF (250 O 64005 ZB40C1)	33,7	1.4541	28	24	N	33,6	-				1	3-3		
				025	Collecting pipe														
15	O	81021	ZB10C1	025	25 O 81020 ZB40C1	21,3	1.4541	10	24	N	12	-				1	3-3		
				012	P61200 / Seal Gas Box														
15	O	81022	ZB10C1	025	25 O 81020 ZB40C1	21,3	1.4541	10	24	N	12	-				1	3-3		
				016	P40100 / Seal Gas Box														

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					from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
25	N	81025	AA10C1	025 029	80 N 81002 AA10C1 ET24101		33,7	1.0254	6	23	N	6,6		-				2	3-3		
25	N	81026	AA10C1	025 030	80 N 81002 AA10C1 ET24201		33,7	1.0254	6	23	N	6,6		-				2	3-3		
15	O	81028	ZB10C1	012 012	15 O 81021 ZB10C1 P61100 / Seal Gas Box		21,3	1.4541	10	24	N	12		-				1	3-3		
80	N	81033	AA10C1	025 025	80 N 81002 AA10C1 Collecting pipe		88,9	1.0254	6	24	N	6,6		-				2	3-3		
100	S	84002	BA25C1	031 005	200 S 84001 BA25C1 W15001		114,3	1.0305	22	310	W	46,2		-	W			2	I		Modul A
100	S	84003	BA25C1	031 026	200 S 84001 BA25C1 N90004		114,3	1.0305	22	310	W	46,2		-	W			2	I		Modul A
250	S	84003	BA25C1	026 026	N90004 W90001		273	1.0305	22	310	W	46,2		-	W			2	II		Modul A1,D1,E1
25	S	84010	BA25C1	026 026	100 S 84003 BA25C1 Drain		33,7	1.0305	22	310	W	46,2		-				2	3-3		
25	S	84011	BA25C1	026 026	25 S 84010 BA25C1 Drain		33,7	1.0305	22	310	W	46,2		-				2	3-3		
25	S	84012	BA25C1	031 031	100 S 84002 BA25C1 Drain		33,7	1.0305	22	310	W	46,2		-				2	3-3		
25	S	84013	BA25C1	031 031	25 S 84012 BA25C1 Drain		33,7	1.0305	22	310	W	46,2		-				2	3-3		
25	S	84014	BA25C1	031 031	100 S 84002 BA25C1 Drain		33,7	1.0305	22	310	W	46,2		-				2	3-3		
25	S	84015	BA25C1	031 031	25 S 84014 BA25C1 Drain		33,7	1.0305	22	310	W	46,2		-				2	3-3		

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Druckdatum: 26. Apr. 07

W=Wasserdrukprüfung, D=Dichtheitsprüfung, P=Druckprüfung

Piping list ASU Area

Diagram No.: 792.86811
Revision: As B.
Date: 30.11.2006
Diagram state: As B.

Project: KOSICE, ASU Area
Project No.: K70101
List state: As B.

DN	Piping		P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation		Fluidgroup	Category n. 97/23/EG	Flexibility- test	Remarks
	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
25	S	84018	BA25C1	031	100 S 84003 BA25C1	33,7	22	310	W	46,2	-	-				2	3-3	
				031	Drain													
25	S	84019	BA25C1	031	25 S 84018 BA25C1	33,7	22	310	W	46,2	-	-				2	3-3	
				031	Drain													
25	S	84030	BA25C1	005	100 S 84002 BA25C1	33,7	22	310	W	46,2	-	-				2	3-3	
				005	Drain													
25	S	84031	BA25C1	005	25 S 84030 BA25C1	33,7	22	310	W	46,2	-	-				2	3-3	
				005	Drain													
25	S	84032	BA25C1	005	100 S 84002 BA25C1	33,7	22	310	W	46,2	-	-				2	3-3	
				005	Drain													
25	S	84033	BA25C1	005	25 S 84032 BA25C1	33,7	22	310	W	46,2	-	-				2	3-3	
				005	Drain													
100	N	87001	AA10C1	024	Collecting pipe	114,3	0,4	20	N	1,45	-	-				2	3-3	
				024	Collecting pipe													
25	N	87002	AA10C1	024	100 N 87001 AA10C1	33,7	0,4	20	N	1,45	-	-				2	3-3	
				024	HE Box													
25	N	87003	AA10C1	024	100 N 87001 AA10C1	33,7	0,4	20	N	1,45	-	-				2	3-3	
				024	HE Box													
25	N	87004	AA10C1	024	100 N 87001 AA10C1	33,7	0,4	20	N	1,45	-	-				2	3-3	
				024	Cold Box													
25	N	87005	AA10C1	024	100 N 87001 AA10C1	33,7	0,4	20	N	1,45	-	-				2	3-3	
				024	Cold Box													
25	N	87006	AA10C1	024	100 N 87001 AA10C1	33,7	0,4	20	N	1,45	-	-				2	3-3	
				024	Cold Box													
25	N	87007	AA10C1	024	100 N 87001 AA10C1	33,7	0,4	20	N	1,45	-	-				2	3-3	
				024	Cold Box													

	Piping list ASU Area	Diagram No.: 792.86811 Revision: As B. Date: 30.11.2006 Diagram state: As B.	Project: KOSICE, ASU Area Project No.: K70101 List state: As B.
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DN	Fluid	Piping No.	Piping classification	P & I Sheet	Piperouting from... to...	Pipe dimension (mm)	Material	max. permissing Operating-		Test Medium	Test Press. (bar ii)	Coating	Heat Tracing	Insulation		Fluidgroup	Category n. 97/23/EG	Flexibility-test	Remarks
								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)			
25	N	87008	AA10C1	024	100 N 87001 AA10C1	33,7	1.0254	0,4	20	N	1,45		-				2	3-3	
				024	Cold Box														
80	OL	90001	ZB16C1	026	Collecting pipe	88,9	1.4541	16	-183	N	19,2		-				1	I	Modul A
				026	W90001														
50	RL	90002	ZB16C1	026	Collecting pipe	60,3	1.4541	16	-186	N	17,6		-				2	3-3	
				026	W90001														
50	NL	90004	ZB16C1	026	Collecting pipe	60,3	1.4541	16	-196	N	17,6		-				2	3-3	
				026	W90001														
25	S	90007	BA25C1	026	N90004	33,7	1.0305	20	310	W	42		-				2	3-3	
				026	Drain														
25	S	90008	BA25C1	026	25 S 90007 BA25C1	33,7	1.0305	20	310	W	42		-				2	3-3	
				026	Drain														