



AIR LIQUIDE

## PRESSURE TEST CERTIFICATE

Project No. : K70101

Project Name : ASU KOSICE TF

Client :

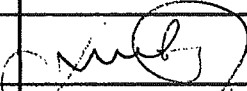
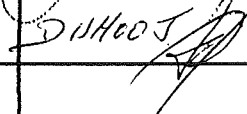
Subcontractor : VAM  
Subcontract No. : 5.6801

**VAM**  
VOEST MONTAGE

TEST NUMBER : 09/08/05SYSTEM : RISK CATEGORY : I.

PID No.	Line Size	Line No.	Area	Isometric No.	Material Class
038/035		60 NL 72003	TF	60NL72003	1.4541
038/035		60 NL 73001	TF	60NL73001	1.4541

Test Pressure: 22,9 barTest Duration: 30 minTest Medium: NManometers No.: 0 - 40 bar, 013418Special requirements / comments:  
  
  

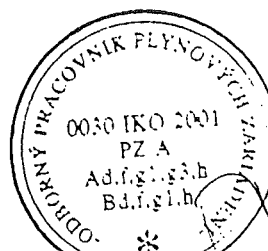
WITNESSED AND ACCEPTED ON BEHALF OF	WITNESS	SIGNATURE	DATE
	SUBCONTRACTOR		20.8.2005
	ALE		20/8/05
	CLIENT		
	NOTIFIED BODY		

E-FRM-9-5-8-9

VAM GmbH & Co Anlagentechnik und Montagen A. Bernoláka 10, Ružomberok		<b>PROTOKOL O STAVEBNEJ A TLAKOVÝCH SKÚŠKACH ODOLNOSTI A TESNOSTI POTRUBIA č. 09/08/05</b>			
Miesto stavby:		AIR LIQUIDE - U. S. STEEL s. r. o. Košice ASU No. 9 Košice			
Označenie skúšaného potrubia:		50 NL 72003, 50 NL 73001			
Prevádzkové podmienky:		Najvyšší pracovný pretlak: <b>1,6 MPa</b>		Najvyššia pracovná teplota: <b>- 196 ° C</b>	
Parametre rozvodu:		Menovitá svetlosť: <b>DN 50</b>		Materiál: <b>tr. 1.4541</b>	
Potrubie bolo podrobené stavebnej a tlakovým skúškam podľa STN 130020, NV 576/02 a STN 38 6461					
Stavebná skúška		Skúška odolnosti		Skúška tesnosti	
Dátum skúšky:	20.8.2005	Dátum skúšky:	20.8.2005	Dátum skúšky:	20.8.2005
<ul style="list-style-type: none"> <li>- umiestnenie výstroja potrubia</li> <li>- funkcie uzatváracích zariadení</li> <li>- dokončenie a kvalita zvaračských prác</li> <li>- správnosť uloženia a jeho spádovanie</li> <li>- úplnosť dokumentácie</li> </ul>		Skúšobný pretlak:	2,29 MPa	Skúšobný pretlak:	1,6 MPa
		Skúšobné médium:	N <sub>2</sub>	Skúšobné médium:	N <sub>2</sub>
		Skúšobná doba:	30 min.	Skúšobná doba:	po dobu prehladky
		Použité meracie prístroje: kontrolný deformačný manometer 0 – 4 MPa  Ø 160 mm  v. č. 013418		Použité meracie prístroje: kontrolný deformačný manometer 0 – 4 MPa  Ø 160 mm  v. č. 013418	

Potrubie vyhovuje daným prevádzkovým podmienkam. Skúška odolnosti a tesnosti bola v zmysle hore uvedených nariadení a noriem úspešná.

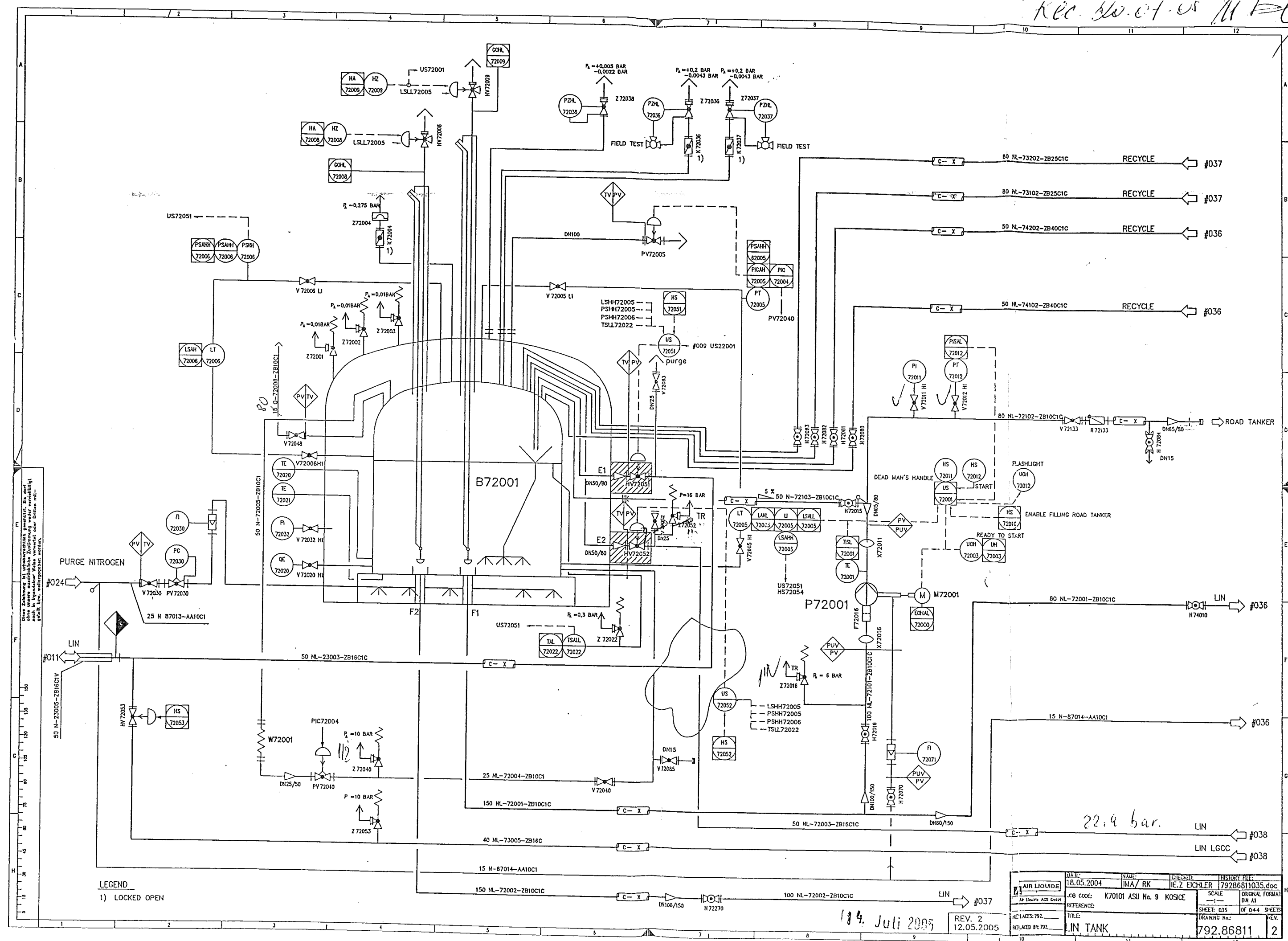
Za objednávateľa



Za zhotoviteľa

V Košiciach dňa 20.8.2005

KCC No. 07-05 M 12

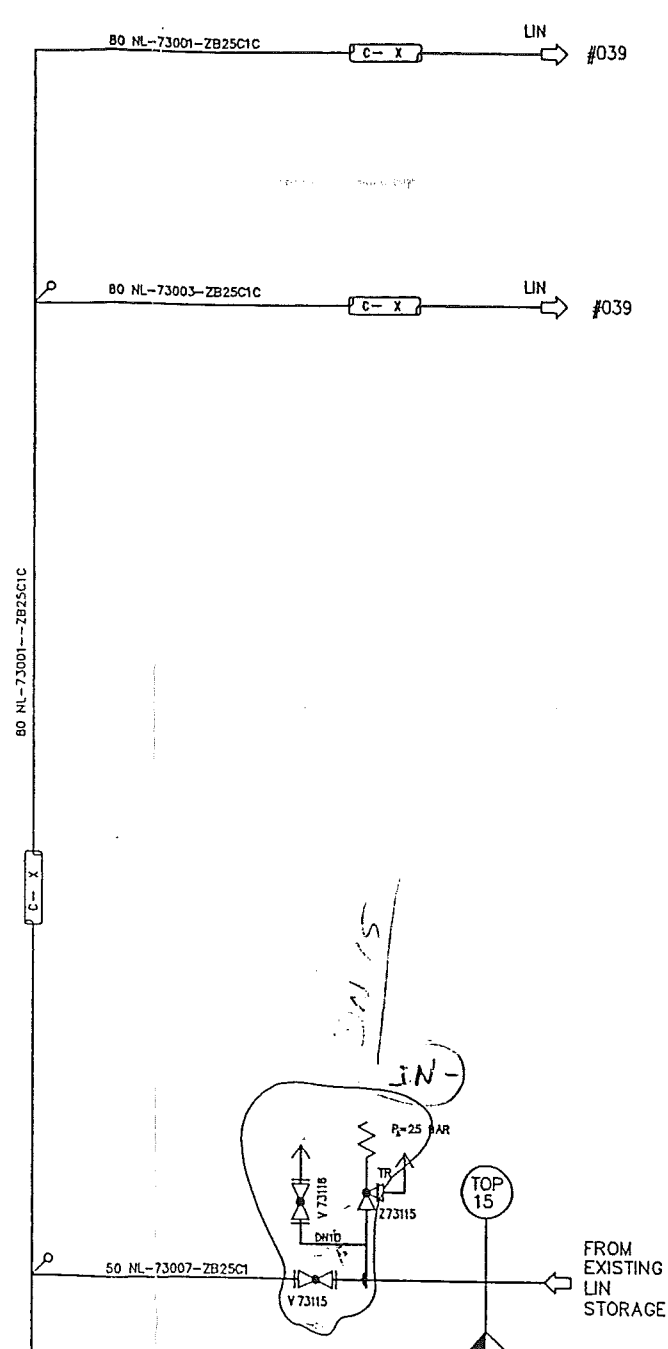


LEGEND  
1) LOCKED OPEN

18. Juli 2005  
REV. 2  
12.05.2005

DATE:	18.05.2004	NAME:	IMA / RK	CHECKED:	HE. Z. EICHLER	HISTORY FILE:	79286811035.doc
JOB CODE:	K70101 ASU No. 9 KOSCE	SCALE:	1:1	ORIGINAL FORMAT:	DN A1		
REFERENCE:		SHEET:	035	OF 044	SHEETS		
TITLE:	LIN TANK	DRAWING No.:	792.86811	REV.	2		

/



14. Juli 2005

1	AIR GUIDE	DATE:	NAME:	CHECKED:	HISTORY FILE:
		21.05.2004	IMA / HAC	IE.2 EICHLER	7928681038.doc
		JOB CODE:	SCALE		ORIGINAL FORMAT
	AP Airbase ACS 8801	K70101 ASU Na. 9 K03CE	---		DIN A1
		REFERENCE:	SHEET: 038		OF 044 SHEETS
	REPLACES 792	TITLE:	DRAWING No.:		REV.
	REPLACES BY 792	LIN MP TANK	792.86811		2

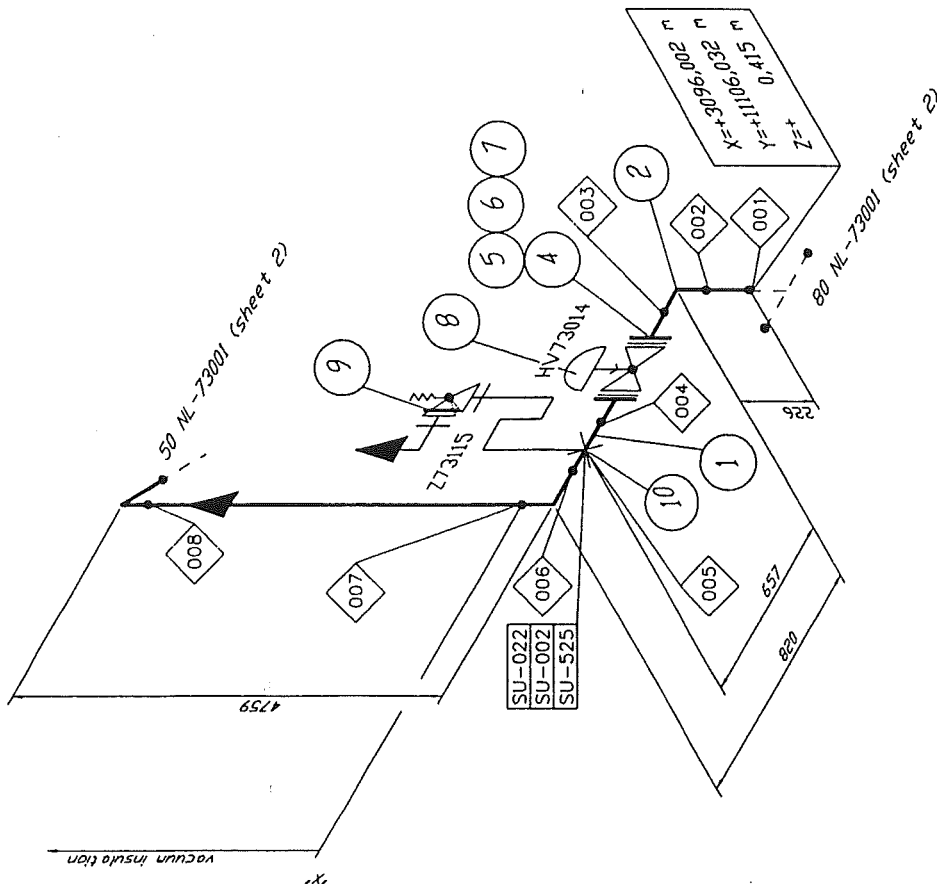
List1

# VAM

VOEST MONTAGE

50 NL 73001				
Welding	DN	Q	Welder No	Protoc.No
1	50	60,3	97	----
2	50	60,3	97	----
3	50	60,3	97	----
4	50	60,3	97	----
5	1/2"	12	97	----
6	50	60,3	97	----
7	50	60,3	97	----
8	50	60,3	97	----

This drawing is protected by copyright.  
It may not be copied or used without our written  
authorization and it is strictly prohibited  
to disclose it to any third parties.



Welding No.	DN	φ	Welder No.	Protec. No.
001	50	60.3	---	---
002	50	60.3	---	---
003	50	60.3	---	---
004	50	60.3	---	---
005	12	---	---	---
006	50	60.3	---	---
007	50	60.3	---	---
008	50	60.3	---	---

#### Remarks:

- Responsibility of the assembling company:
- Situation of mounting seams
- Situation of pass-lengths
- Check of measure details and pipe courses on the construction site
- Situation of the spindle at valve

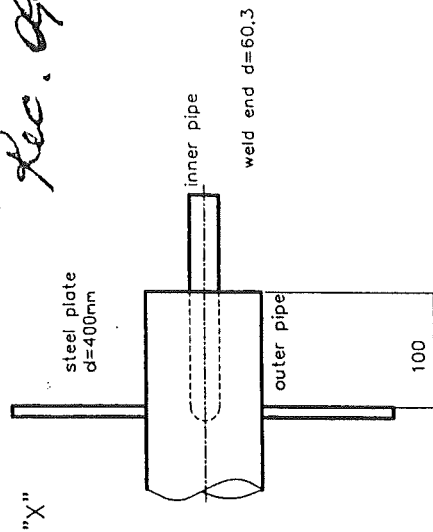
#### Accompanying drawings:

- 50 NL-73001

#### Accompanying lists:

- Parts list:

*Rec. 00001*

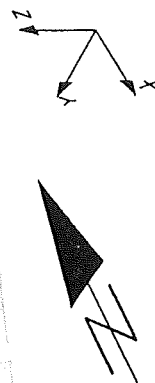


Pipe Length: 5m

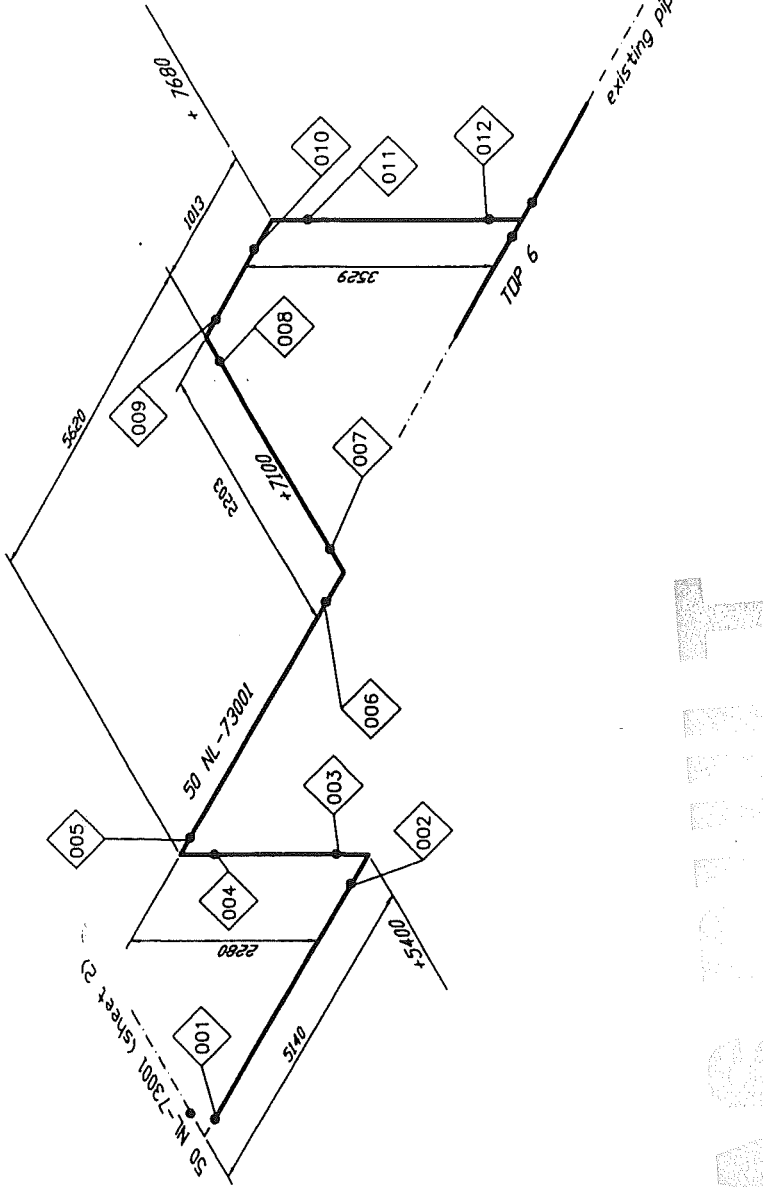
Rev.	Revisions	Date	Name	proved
---	---	---	---	---
C	---	06.04.05	WP/Rod.	---
B	---	01.04.05	WP/Rod.	---
A	---	17.12.04	WP/Rod.	---

vacuum insulated

<b>AIR LIQUIDE</b> Air Liquide AGS GmbH		Date: 28.10.2004 Name: WIP/Rad.	Checked: 79287106.doc History file:
Job code: K70101 Reference: ASU Kosice		Scale: ---:--- Sheet: 001 of 003	Original format: DIN A3
Replaces: 79_--- Replaced by: 79_---		Title: 50 NL 73001 Drawing No.: 792.87106 C	



This drawing is protected by copyright.  
It may not be copied or used without our written  
authorization and it is strictly prohibited  
to disclose it to any third parties.



#### Remarks:

- Responsibility of the assembling company:
- Situation of mounting seams
  - Situation of pass-lengths
  - Check of measure details and pipe courses on the construction site
  - Situation of the spindle at valve

#### Accompanying drawings:

- 50 NL-73001

#### Accompanying lists:

- Parts list:

Welding No.	DN
001	50
002	50
003	50
004	50
005	50
006	50
007	50
008	50
009	50
010	50
011	50
012	50

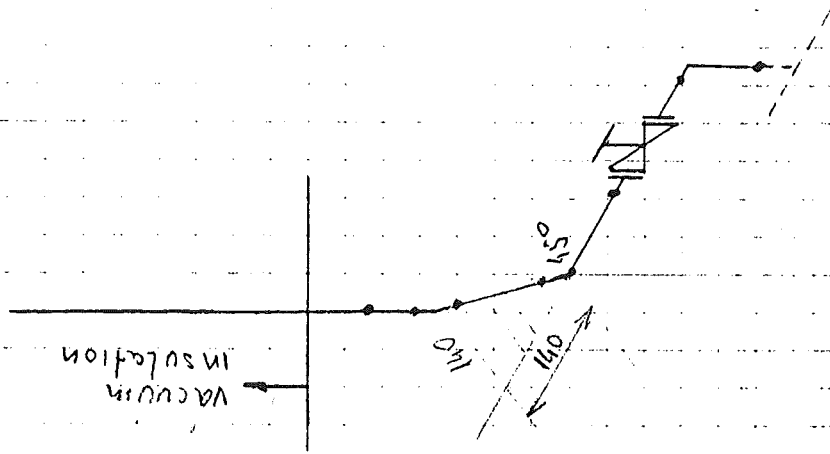
Pipe Length: 20m

Rev.	Revisions	Date	Name	proved
C		06.04.05	WIP/Rad.	
B		01.04.05	WIP/Rad.	
A		27.12.04	WIP/Rad.	

vacuum insulated

<b>AIR LIQUIDE</b>		Date : 28.10.2004	Name : WIP/Rad.
Air Liquide AGS GmbH		Job code: K70101	Checked: 79287106.doc
Replaces: 79		Reference: ASU Kosice	Scale: ---:---
Replaced by: 79		Title: 50 NL 73001	Original format: DN A3
		Sheet: 003 of 003 Sheets	History file: 79287106.doc
		Drawing No.: 792.87106	Rev.:

AS 2011

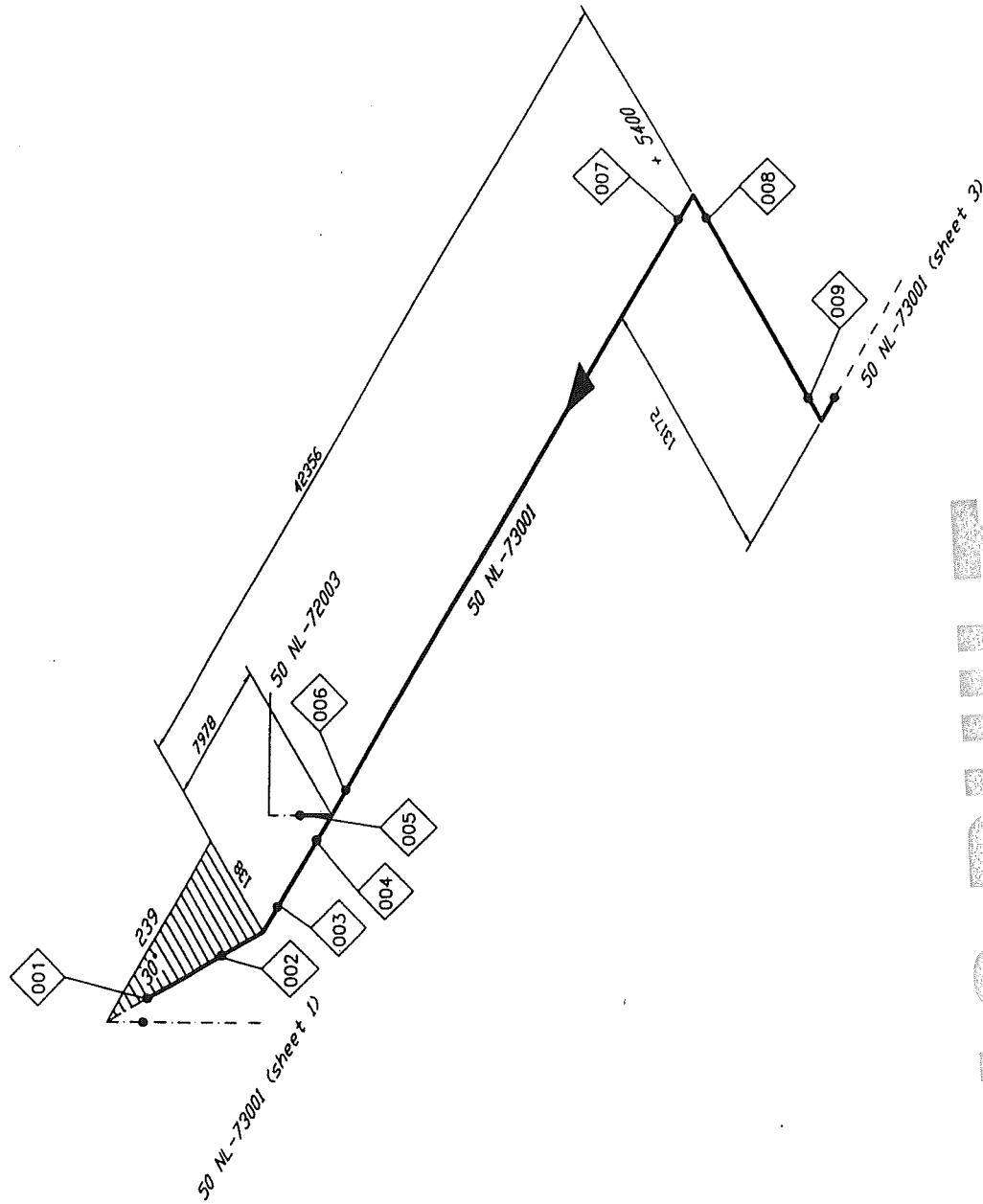


FOOST 7N 05

Sheet 01



This drawing is protected by copyright.  
It may not be copied or used without our written  
authorization and it is strictly prohibited  
to disclose it to any third parties.



#### Remarks:

- Responsibility of the assembling company:
- Situation of mounting seams
- Situation of pass-lengths
- Check of measure details and pipe courses on the construction site
- Situation of the spindle at valve

#### Accompanying drawings:

- 50 NL-73001

#### Accompanying lists:

- Parts list:

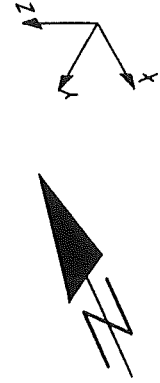
Welding No.	DN	Welding No.	Protocol No.
001	50	60.3	
002	50	60.3	
003	50	60.3	
004	50	60.3	
005	50	60.3	
006	50	60.3	
007	50	60.3	
008	50	60.3	
009	50	60.3	

Pipe Length: 6m

Rev.	Revisions	Date	Name	proved
C		06.04.05	WIP/Rad.	
B		01.04.05	WIP/Rad.	
A		17.12.04	WIP/Rad.	

Date : 28.10.2004	Name : WIP/Rad.	Checked: --	History file: 79287106.doc
Job code: K70101		Scale: ---	Original format: DIN A3
Reference: ASU Kosice		Sheet: 002	of 003 Sheets
Title: 50 NL 73001		Drawing No.: 792.87106	Rev. C
Replaces: 79_			
Replaced by: 79_			

vacuum insulated



ASBUILT

Made by : Ing. Supak  
Date : 11.10.2005  
revision : 0

## **VAM** Anlagentechnik und Montagen

01 - 5 - 6801 - 01 KOSICE AIR LIQUIDE TANKFARM - AS BUILT

Line Number : 50 NL 73001 ZB25C1

	Weight (kg)
pipe mat.:	12,61
con. valves	56,00
man. valves:	1,20
pr. supports:	-
sek. supports	11,30
summe:	81,11

AS BUILT

01 - 5-6801-01 KOSICE AIR LIQUIDE TANKFARM

Stückliste 01 50 NL-73001 ZB25C1 Revision:

Teilenummer	NW1	NW2	Teilebezeichnung	Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.
-------------	-----	-----	------------------	------------	-------	--------------	------------	--------	--------------

FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokls verwenden

ELBOW12	50	2	Elbow 90°, type 3 1.4541 DIN 2605-1 60,3x2	0,35 kg	2,00				
ELBOW6	50	2	Elbow 45°, type 3 1.4541 DIN 2605-1 60,3x2	0,18 kg	1,00				
FLANGE6	50	0	Welding neck flange 1.4541 DIN EN 1092-1	3,00 kg	2,00				
GASKET6	50	2	Gasket Graphite w. C/Ni-Inlay DIN EN 1514-1 107X2x61x		2,00				
NUT4	16	0	Hexagon nut A4-70 DIN EN ISO 4032	0,03 kg	8,00				
PIPE15	15	1,5	PIPE, SEAMLESS 1.4541	0,51 kg	1,50				
PIPE8	50	2	Pipe 1.4541 DIN EN ISO 1127 60,3x2	2,92 kg	1,20				
SCREW5	16	0	Hexagon head screw A2-70 DIN EN ISO 4014 70	0,14 kg	8,00				
SOCKET1	15	0	socket piece G1/2" by AL-AGS	0,10 kg	1,00				
SWAG8	0	0	X 1/2" AD2KL15GE12 1,4571 swagelok		1,00				
WASH2	17	0	Washer B A4-70		8,00				
Summe: 01 50 NL-73001 ZB25C1				12,61 kg					

Stückliste 01 50 NL-73001 ZB25C1 Revision:									
Teilenummer	NW1	NW2	Teilebezeichnung	Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.
FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokls verwenden									

Liefersumme:	
Montagesumme:	
Gesamtsumme:	
Gesamt-Stunden:	
Gesamtgewicht:	12,61 kg
** Ende der Ausgabe	

AS BUILT

Stückliste 01 50 NL-73001 CON VAL BY AL Revision:									
Teilenummer	NW1	NW2	Teilebezeichnung	Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.

FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - RokIs verwenden

CHV73014	50	0	CONTROL VALVE; HV73014 assembling only	56,00 kg	1,00				
Summe: 01 50 NL-73001 CON VAL BY AL				56,00 kg					

Liefersumme:	
Montagesumme:	
Gesamtsumme:	
Gesamt-Stunden:	
Gesamtgewicht:	56,00 kg
** Ende der Ausgabe	

AS BUILT

Stückliste 01 50 NL-73001 MAN VAL BY AL Revision:

Teilenummer	NW1	NW2	Teilebezeichnung	Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.
-------------	-----	-----	------------------	------------	-------	--------------	------------	--------	--------------

FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokls verwenden

SVZ73014	0	0	SAFETY VALVE Z73014 by AL-AGS	1,20 kg	1,00				
Summe: 01 50 NL-73001 MAN VAL BY AL				1,20 kg					

Liefersumme:	
Montagesumme:	
Gesamtsumme:	
Gesamt-Stunden:	
Gesamtgewicht:	1,20 kg
** Ende der Ausgabe	

AS BUILT

Stückliste 01 50 NL-73001 SEK SUP 000000 Revision:

Teilenummer	NW1	NW2	Teilebezeichnung	Einzelgew.	Menge	EP-Lieferung	EP-Montage	gesamt	Stunden ges.
-------------	-----	-----	------------------	------------	-------	--------------	------------	--------	--------------

FEHLER diese Liste bitte nur mit Menu 1 sortiert nach BG - Leitung - Rokls verwenden

SU537	0	0	SUPORT DWG.792.87247 SHEET537 St37-2	11,30 kg	1,00				
Summe: 01 50 NL-73001 SUPPORTS 000000				11,30 kg					

Liefersumme:	
Montagesumme:	
Gesamtsumme:	
Gesamt-Stunden:	
Gesamtgewicht:	11,30 kg
** Ende der Ausgabe	

AS BUILT

## CONSULTING & CONTROL OF WELDING

**Ing. Pavol Višňovský**

Dihé Pole 323

013 32 Žilina

**tel: +421 - 41 - 500 66 97**

**fax: +421 - 41 - 500 66 99**

C-CW@C-CW,sk

# Protokol o skúške prežiarením Radiographic examination report

Protokol/Report:

**3358/2005**

List č./Sheet No. 1/1

**Výrobca/Producer VAM GmbH**

Objednávateľ/Customer **US Steel Košice**

Popis zvaru/Description of weld	USS / VAM GmbH
---------------------------------	----------------

Číslo výkresu / Drawing No.: NL 73001

Priemer Diameter	60,3	Druh zvaru Weld type	V	Material / Material	1.4571	Požadovaný stupeň kvality Permitted degree of quality
Hrúbka Thickness	1,65	Druh výroby Mode of operation		Rozsah kontroly Range of control		

Zdroj/Source	Ir192
--------------	-------

Aktivita žiariča / Intensity 37 Ci

Skúška vykonaná podľa/Examination acc. to: **STN EN 444, STN EN 14 35**

Hodnotenie podľa/Valuation of imperf.acc to: STN EN 12 517, STN EN 13 480.5

Velkosť ohniska/Focal spot size	3x1,8	Ohnisková
vzdialenosť/Focal distance	350	

Druh filmu/Film type	
----------------------	--

**AGFA D5; Druh fólií /**

Screen type:0.027

Mierka/IQI: 10FEEN

Expozičný čas / Exposure time

1min35sec


Vzdialenosť povrch-film

Distance surface-film

0-1 mm

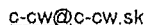
[illegible]

Celkové hodnotenie / General evaluation: **ALL WELDS ACCEPTED**

Dátum skúšky/Date of examination <b>22.8.2005</b>	Skúšku vykonal/Name of exam. <b>František Višňovský1A156/02</b>	Vyhodnotil / Valuated <b>František Višňovský1A156/02</b>	Dňa / Date <b>23.8.2005</b>  Signature and stamp
---	---	--	--

**Vysvetlivky / Notes:** V : Zvar vyhovel / WELD ACCEPTED  
N : Zvar nevyhovel / WELD NOT ACCEPTED  
R : Opravovaný zvar / REPAIRED WELD





## List č./Sheet No. 1/1

Objednávateľ/Customer **US Steel Košice**

Číslo výkresu / Drawing No.: NL 73001

Celkové hodnotenie / General evaluation: **ALL WELDS ACCEPTED**

**Vysvetlivky / Notes:** V : Zvar vyhovel / WELD ACCEPTED  
N : Zvar nevyhovel / WELD NOT ACCEPTED  
R : Opravovaný zvar / REPAIRED WELD