

CS JIRKOV	
DP	73.5 barg
MOP	63 barg
DT	-20°C/+85°C

PROCESS CONTROL		
	CONTROL	OVERRIDE
CXX1	FLOW, P suction, P discharge	Pmax, Pmin, Tmax
CXX2	LOAD SHARING	
CXX3	SPEED	Pmax, discharge
UCS	ANTI-SURGE	Pmin, suction Tmax, discharge

COMPRESSORS	EMCS1 / EMCS2 / EMCS3
FABRICATE	-
SHAFT POWER, EACH	7.8 MW (20°C)

FILTER SEPARATOR	FS1 / FS2 / FS3
CAPACITY EACH	22.55 MSCM/D
DESIGN	73.5 BARG -20/+85 °C
GAS COOLER	CG1
HEAT DUTY	3.5 MW (NOTE 2, 4)
DESIGN	73.5 BARG -20/+85 °C

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LEGEND:

-
- CHECK VALVE
-
-
- BLOCK VALVE
-
-
- BLOCK VALVE CLOSED
-
-
- BALL VALVE
-
-
- MOTOR OPERATED VALVE
-
-
- ELECTRO-HYDRAULIC OPERATED VALVE
-
-
- PISTON OPERATED VALVE
-
-
- SAFETY POSITION OPEN
-
-
- SAFETY POSITION CLOSED
-
-
- CONTROL VALVE
-
-
- ISOLATION COUPLING
-
-
- GAS COOLER
-
-
- COMPRESSOR
-
-
- MOTOR WITH VARIABLE FREQUENCY DRIVE
-
-
- FILTER / SEPARATOR
-
-
- FLOW TRANSMITTER
-
-
- PRESSURE TRANSMITTER
-
-
- TEMPERATURE CONTROL
-
-
- TEMPERATURE TRANSMITTER
-
-
- PIPELINE (EXISTING)
-
-
- COMPRESSOR STATION (AND REPLACED PIPELINE SECTIONS)
-
-
- PROCESS DATA POINT

ABBREVIATIONS:

ESD - EMERGENCY SHUTDOWN

NOTES:

1. FILLING BYPASS NOT SHOWN.
2. FINAL DESIGN OF GASCOOLER CG1 ON HOLD.
3. SIZING OF VENT LINES AND RECYCLE LINES ON HOLD.
4. PERFORMANCE TESTING, RECYCLE MODE
5. POTENTIAL INSTALLATION OF ADDITIONAL CHOKE VALVE TO BE ACC. COMPRESSOR VENDOR REQUIREMENTS.
6. REPLACEMENT OF LINE SECTION DUE TO CHANGED CATEGORY ON HOLD.
7. FINAL POSITION OF ISOLATION COUPLINGS ON HOLD.
8. POSITION OF HOT BYPASS VALVE AND ANTI SURGE VALVE TO BE CLARIFIED WITH COMPRESSOR VENDOR.

003	27.09.2017	APPROVED	Boruch	Schimpf	Schorling
002	12.07.2017	APPROVED	Boruch	Schimpf	Schorling
001	29.05.2017	APPROVED	Boruch	Schimpf	Schorling
000	11.05.2017	APPROVED	Boruch	Schimpf	Schorling
B01	06.04.2017	ISSUED FOR REVIEW	Boruch	Schimpf	Schorling
REV	DATUM DATE	VYDANI, DRUH ZMENY ISSUE, SCOPE OF REVISION	VYPRACOVAL PREPARED	KONTROLOVAL CHECKED	SCHVALIL APPROVED



KLIENT / CLIENT:			NET4GAS, s. r. o.		
PROJEKTANT / ENGINEERING CONTRACTOR:			ILF CONSULTING ENGINEERS		
PROJEKT / PROJECT:			CAPACITY FOR GAS - C4G Kompresní Stanice Jirkov 73 bar Compressor Station Jirkov 73 bar		
DRAWING TITLE / NÁZEV VÝKRESU:			STUPEN / PHASE:		

DRAWING TITLE / NÁZEV VÝKRESU:					
PROCESS FLOW DIAGRAM AND STREAM TABLE					
				Annex 1, Attachment 1.14	
MĚRITKO / SCALE:	PROJ. NO.:	Č. VÝKRESU / DRAWING NO.:		LIST / SHEET Z / OF	
NTS	N663	C4G-JI73-ILF-KS007-STR-DIA-100-003		1	2

Standardconditions: 1.013,25 bara, 20°C																					Note: compressor discharge temperatures, required shaft power and cooling duty were calculated with inhouse software										
	1A	1B	2	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	6C	7A	7B	7C	8A	8B	9										
	Gas from I. DN900 PN63	Gas from II. DN900 PN64	Inlet filter header section	upstream inlet filter FS1	upstream inlet filter FS2	upstream inlet filter FS3	suction EMCS1	suction EMCS2	suction EMCS3	discharge EMCS1	discharge EMCS2	discharge EMCS3	Discharge Gas to Pipeline	Discharge Gas to Pipeline	Discharge Gas to Pipeline	Discharge Gas to Cooler	Discharge Gas to Cooler	Discharge Gas to Cooler	outlet to I.DN900 PN63	outlet to II.DN900 PN63	station cold recycle line										
Design Point (OP1 max.)																															
Flow mcm/d	22.55	22.55	45.1	22.55	22.55	2 filters in operation, worst case	22.55	22.55	standby	22.55	22.55	standby	22.55	22.55	standby	0	0	0	22.55	22.55	0										
Operational Flow m3/h	18,921	18,921	38,080	19,187	19,187		19,525	19,525		16,175	16,175		16,244	16,244		-	-	-	16,245	16,245	-										
Pressure barg	47.2	47.2	47	46.8	46.8		46.3	46.3		60.3	60.3		60	60					59.8	59.8											
Temperature °C	11.4	11.4	12	13	13		15	15		36.2	36.2		36	36					35	35											
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700											
gas velocity m/s	8.3	8.3	16.6	13.9	13.9	-	14.1	14.1		11.7	11.7	-	11.7	11.7	-	-	-	-	11.7	11.7											
	required shaft Power / Duty					standby			standby	7.509 kW	7.509 kW	standby			standby																
										Total 15.018 kW																					
OP 2 (min., 1 Compressor)																															
Flow mcm/d	22	0	22	22	1 filter in operation, worst case	1 filter in operation, worst case	22	standby	standby	22	standby	standby	22	standby	standby	0	0	0	22	0	0										
Operational Flow m3/h	17,949	-	18,020	18,093	-	-	18,276	-	-	16,566			16,674			-	-	-	16,619	-	-										
Pressure barg	49.2	49.2	49	48.8			48.3			55.6			55.1						55.1	55.1											
Temperature °C	15	15	15	15			15			26.7			26						25	25											
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700											
gas velocity m/s	7.8	-	7.9	13.1	-	-	13.2	-	-	12.0	-	-	12.0	-	-	-	-	-	12.0	-											
	required shaft Power / Duty									4.003 kW																					
										Total 4.003 kW																					
OP3 (max., 1 compressor) No.14																															
Flow mcm/d	24.5	0	24.5	24.5	upstream inlet filter FS2	upstream inlet filter FS3	24.5	standby	standby	24.5	standby	standby	24.5	standby	standby	0	0	0	22	0	0										
Operational Flow m3/h	19,988	-	20,068	20,149	-	-	20,353	-	-	17,392	-	-	17,478	-	-	-	-	-	15,643	-	-										
Pressure barg	49.2		49	48.8			48.3			60.3			59.8						59.8												
Temperature °C	15		15	15			15			33			32						31												
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700											
gas velocity m/s	8.7	-	8.8	14.6	-	-	14.7	-	-	12.6	-	-	12.6	-	-	-	-	-	11.3	-											
	required shaft Power / Duty									6.880 kW																					
										Total 6.880 kW																					
OP4 (min.,2 compressors) No.8																															
Flow mcm/d	18.63	18.63	37.26	18.63	18.63	2 filters in operation, worst case	18.63	18.63	standby	18.63	18.63	standby	18.63	18.63	standby	0	0	0	18.63	18.63	0										
Operational Flow m3/h	15,571	15,571	31,271	15,667	15,667	-	15,863	15,863	-	13,320	13,320	-	13,421	13,421	-	-	-	-	13,377	13,377	-										
Pressure barg	48	48	47.8	47.7	47.7		47.1	47.1		60.3	60.3		59.8	59.8					59.8	59.8											
Temperature °C	15	15	15	15	15		15	15		35.2	35.2		35	35					34	34											
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700											
gas velocity m/s	6.8	6.8	13.7	11.3	11.3	-	11.5	11.5	-	9.6	9.6	-	9.7	9.7	-	-	-	-	9.7	9.7											
	required shaft Power / Duty									5.884 kW	5.884 kW																				
										Total 11.768 kW																					
OP5 max. flow No.40																															
Flow mcm/d	23.9	23.9	47.8	23.9	23.9	2 filters in operation, worst case	23.9	23.9	standby	23.9	23.9	standby	23.9	23.9	standby	0	0	0	23.9	23.9	0										
Operational Flow m3/h	20,141	20,141	40,448	20,308	20,308		20,521	20,521		17,110	17,110		17,329	17,329		-	-	-	17,273	17,273											
Pressure barg	47.6	47.6	47.4	47.2	47.2		46.7	46.7		60.3	60.3		59.8	59.8					59.8	59.8											
Temperature °C	15	15	15	15	15		15	15		35.6	35.6		37	37					36	36											
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700	500										
gas velocity m/s	8.8	8.8	17.7	14.7	14.7	-	14.8	14.8	-	12.4	12.4	-	12.5	12.5	-	-	-	-	12.5	12.5	-										
	required shaft Power / Duty									7.716 kW	7.716 kW																				
										Total 15.432 kW																					
OP Recycling + (max., 1 compressor) No.14																															
Flow mcm/d	22.55	0	37.55	18.775	18.775	2 filters in operation, worst case	18.775	18.775	standby	18.775	18.775	standby	18.775	0	standby	0	15	0	24.5	0	15										
Operational Flow m3/h	18,167	-	31,380	15,753	15,753	-	15,913	15,913		13,647	13,647		13,745	-		-	12,846	-	17,879	-	13,036										
Pressure barg	49.2	49.2	49	48.8	48.8		48.3	48.3		60.3	60.3		59.8				50.2		59.8		49.4										
Temperature °C	11.4	15	21	21	21		21	21		40.3	40.3		40				35.3		39		35										
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700											
gas velocity m/s	7.9	-	13.7	11.4	11.4	-	11.5	11.5	-	9.9	9.9	-	9.9	-	-	-	18.2	-	12.9	-											
	required shaft Power / Duty									6.880 kW	4.633 kW																				
										Total 11.514 kW																					
OP Recycling during start of 1 compressor No.14																															
Flow mcm/d	0	0	15	15	1 filter in operation, worst case	1 filter in operation, worst case	15	standby	standby	15	standby	standby	0	0	standby	0	15	0	0	0	15										
Operational Flow m3/h	-	-	13,439	13,493	-	-	13,543	-	-	11,595	-	-	-	-	-	-	13,674	-	-	-	13,467										
Pressure barg	49.2	49.2	49	48.8	48.8		48.3			60.3							50.2				49.4										
Temperature °C	15	15	42	42	41		40			60.2							55.2				45.2										
Line Size DN	900	900	900	700	700	700	700	700	700	700	700	700	700	700	700	500	500	500	700	700											
gas velocity m/s	-	-	5.9	9.7	-	-	9.8	-	-	8.4	-	-	-	-	-	-	19.4	-	-	-											
	required shaft Power / Duty									4.633 kW																					
										Total 4.633 kW							3.255 kW														

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