

Compressor unit Questionnaire

Existing questionnaire to be filled to specify compressor parameters aimed for technological gases pumping

COMPRESSION PROCESS PARAMETERS

Compressor assign: *natural gas compression after purification to pipe line pressure*

| № | Parameters | Units | Meaning | Note |
|----------|--|---------------------|--|------|
| 1 | Suction/discharge pressure | | | |
| 1.1 | Suction pressure | | | |
| | min | MPa | | |
| | max | MPa | | |
| 1.2 | Discharge pressure | | | |
| | min | MPa | | |
| | max | MPa | | |
| 2 | Capacity (normal conditions) | | | |
| | min | m ³ /day | | |
| | max | m ³ /day | | |
| | Reference point | m ³ /day | | |
| 3 | Gas suction/discharge temperature | | | |
| 3.1 | Suction temperature | | Specify possible meanings and reference point is necessary | |
| | min | °C | | |
| | max | °C | | |
| | Reference point | °C | | |
| 3.2 | Discharge temperature | | Specify possible meanings and reference point is necessary | |
| | min | °C | | |
| | max | °C | | |
| | Reference point | °C | | |

WORK CONDITIONS AND EQUIPMENT LOCATION

Compressor unit location (production facility sheltered, block-box, on base, on sand, on concrete...)

| № | Parameters | Dimension | Meaning | Note |
|----------|---|-----------------------------------|---------|------|
| 4 | Climate conditions | | | |
| 4.1 | Atmospheric pressure or <u>elevation</u> | millimeters of mercury column / m | | |
| 4.2 | Average annual air temperature | °C | | |
| 4.3 | Average the warmest month temperature | °C | | |
| 4.4 | Absolute possible maximum | °C | | |
| 4.5 | Average the coldest month temperature | °C | | |
| 4.6 | Absolute possible minimum | °C | | |
| 4.7 | Relative air humidity in the warmest period | % | | |
| 4.8 | Relative air humidity in the coldest period | % | | |
| 4.9 | Dust content | mg/m ³ | | |
| 4.10 | Operating temperature range in compressor station facility (if necessary) | °C | | |
| 5 | | | | |
| 5.1 | Closed-circuit cooling water system availability/absence (enclose a reference of water characteristics) | | | |
| 5.2 | Application necessity of air cooling system (gas, antifreeze air coolers) | | | |
| 5.3 | Renovation necessity of existing system (yes/no) | | | |
| 6 | Secondary systems of station, plant, GTU (if exist) | | | |
| 6.1 | Instrumental air (working pressure) | MPa | | |
| 6.2 | Nitrogen (working pressure) | MPa | | |

7.3. Oil-free compression necessity (yes/no) _____

COMPRESSOR DRIVE

Choose the option (options)

| № | Parameters | Meaning | Note |
|----------|---|---------|------|
| 8 | Electric drive | | |
| 8.1 | Motor type (asynchronous, wound rotor, synchronous) | - | |
| 8.2 | Supply voltage | - | |
| 8.3 | Frequency regulation necessity | - | |
| 8.4 | Performance according to IP | - | |
| 8.5 | Explosion protection type performance | - | |
| 8.6 | Isolation type (B or F) | - | |
| 9 | Gas engine or turbine engine drive | | |
| 9.1 | Fuel gas purification necessity | | |
| 9.2 | Fuel gas supply (suction line, discharge line, separate line, etc.) | | |
| 9.3 | Startup system type (electric, pressurized gas, compressed air) | | |
| 9.4 | Shielded or no shielded ignition system performance | | |

COMPRESSOR FULLFILMENT

| № | Parameters | Meaning | Note |
|-----------|---|---------|------|
| 10 | Compressor unit performance | | |
| 10.1 | Skid type (modular assembly, common platform with technological pipelines, valves, control panel with outputs on platform edge) | | |
| 10.2 | Separate block supply (compressor, motor, tanks, fittings, controller) – customer assembles at site by supplier's supervision | | |
| 11 | Control panel | | |
| 11.1 | Local/remote | | |

| | | | |
|------|--|--|--|
| 11.2 | Remote monitoring necessity of compressor working parameters | | |
| 11.3 | Compressor parameters list to be controlled (according to local operation norms) | | |

CUSTOMER INFORMATION

| | |
|--------------------------------|--|
| Company | |
| Adress | |
| Contacts (tel., e-mail) | |
| Position | |
| Signature | |
| Date | |