

## F02C

**GAS-TURBINE PLANTS; AIR INTAKES FOR JET-PROPULSION PLANTS; CONTROLLING FUEL SUPPLY IN AIR-BREATHING JET-PROPULSION PLANTS (construction of turbines [F01D](#); jet-propulsion plants [F02K](#); construction of compressors or fans [F04](#); generating combustion products of high pressure or high velocity [F23R](#); using gas turbines in compression refrigeration plants [F25B 11/00](#))**

### Definition statement

*This place covers:*

- Combustion product or hot gas turbine plants.
- Internal combustion turbines or turbine plants.
- Turbine plants in which the working fluid is an unheated, pressurised gas.

### References

#### Limiting references

*This place does not cover:*

|  |                            |
|--|----------------------------|
| Construction of turbines                               | <a href="#">F01D</a>       |
| Steam turbine plants                                   | <a href="#">F01K</a>       |
| Special vapour plants                                  | <a href="#">F01K</a>       |
| Jet-propulsion plants                                  | <a href="#">F02K</a>       |
| Construction of compressors or fans                    | <a href="#">F04D</a>       |
| Gas-turbine combustion chambers                        | <a href="#">F23R</a>       |
| Using gas turbines in compression refrigeration plants | <a href="#">F25B 11/00</a> |

### Special rules of classification

In this subclass the Indexing Code scheme [F05D](#) is used as follows:

- [F05D 2200/00](#) Mathematical features
- [F05D 2210/00](#) Working fluids
- [F05D 2220/00](#) Application
- [F05D 2230/00](#) Manufacture
- [F05D 2240/00](#) Components
- [F05D 2250/00](#) Geometry
- [F05D 2260/00](#) Function
- [F05D 2270/00](#) Control
- [F05D 2300/00](#) Materials; Properties thereof

## F02C 1/00

**Gas-turbine plants characterised by the use of hot gases or unheated pressurised gases, as the working fluid (by the use of combustion products [F02C 3/00](#), [F02C 5/00](#))**

### Definition statement

*This place covers:*

Gas-turbine plants characterised by the use of hot gases or unheated pressurised gases, as the working fluid, e.g. heated indirectly by solar power, nuclear power or the like; unheated pressurized gas that is stored and prior to use the expansion of the pressurized gas is used to drive a turbine.

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

|  |   |
|--|---|
| Gas-turbine plants characterized by the use of combustion products | <a href="#">F02C 3/00</a> , <a href="#">F02C 5/00</a> |
|--|---|

## F02C 3/00

**Gas-turbine plants characterised by the use of combustion products as the working fluid (generated by intermittent combustion [F02C 5/00](#))**

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

|  |                           |
|--|---------------------------|
| The working fluid being generated by intermittent combustion | <a href="#">F02C 5/00</a> |
|--|---------------------------|

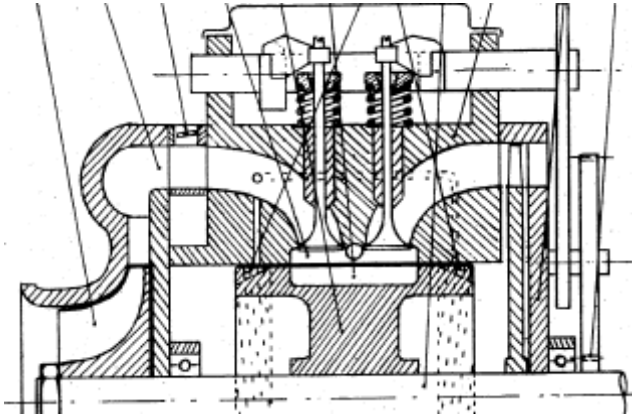
## F02C 5/00

**Gas-turbine plants characterised by the working fluid being generated by intermittent combustion**

### Definition statement

*This place covers:*

Gas-turbine plants characterised by the working fluid being generated by intermittent combustion, i.e. non continuous combustion e.g. in a combustion chamber having valves



taken from FR2210718

## F02C 6/04

**Gas-turbine plants providing heated or pressurised working fluid for other apparatus, e.g. without mechanical power output ([F02C 6/18](#) takes precedence {; for a fluidised-bed combustor [F02C 3/205](#)})**

### References

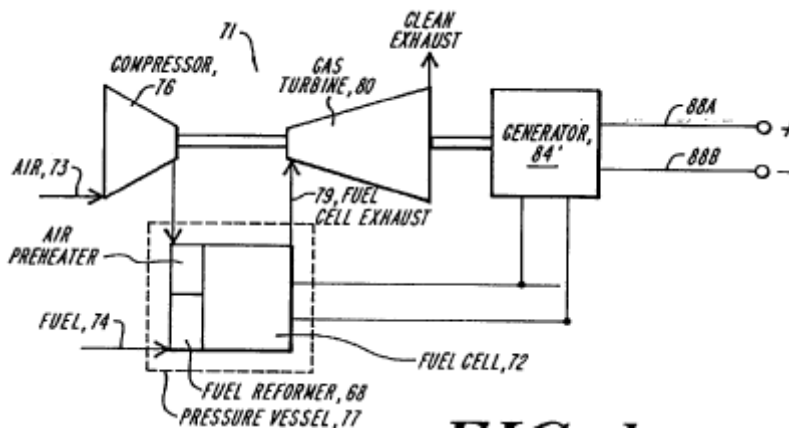
#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|   |                            |
|---|----------------------------|
| If related to a fluidised-bed combustor                           | <a href="#">F02C 3/205</a> |
| If waste heat from the gas turbine and usage thereof is concerned | <a href="#">F02C 6/18</a>  |

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 6/04](#)



taken from US2003012997

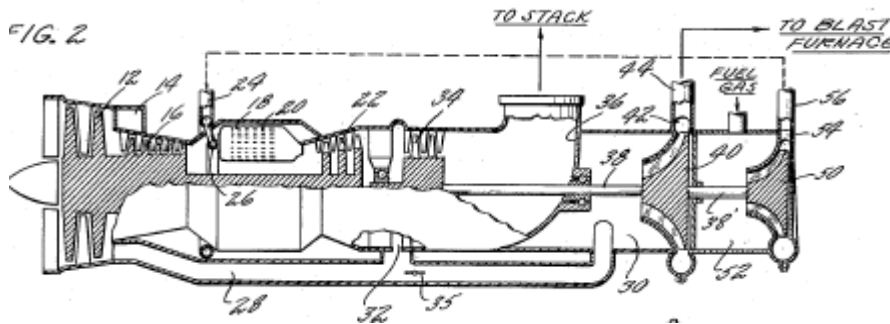
If recovery of waste heat from the gas turbine to a second process or plant is concerned, classify only in [F02C 6/18](#), which takes precedence.

**F02C 6/06**

providing compressed gas ([F02C 6/10](#) takes precedence)

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 6/06](#)



taken from US3216712

**F02C 6/08**

the gas being bled from the gas-turbine compressor

**References**

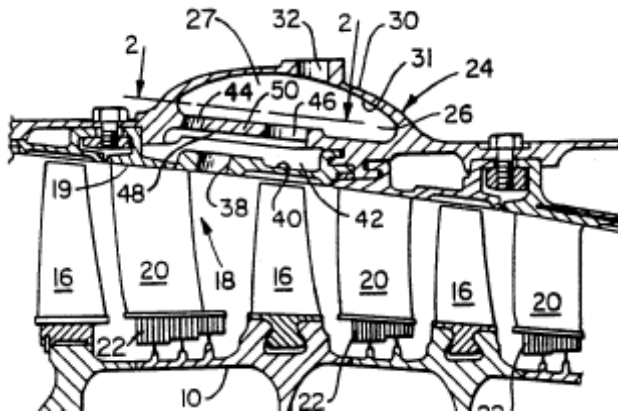
**Informative references**

Attention is drawn to the following places, which may be of interest for search:

|  |                           |
|--|---------------------------|
| For controlling of working fluid flow by bleeding or bypassing | <a href="#">F02C 9/18</a> |
|--|---------------------------|

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 6/08](#)



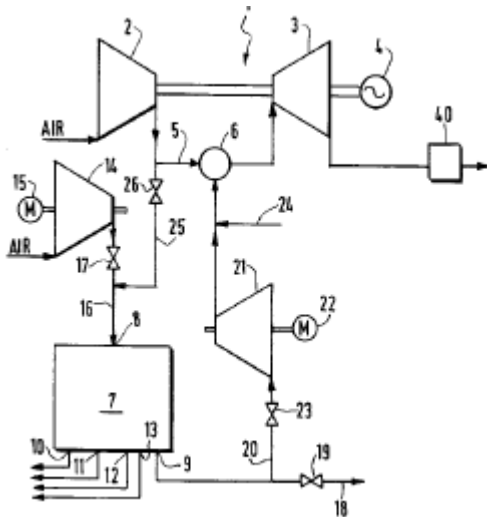
taken from US5203162

**F02C 6/10**

supplying working fluid to a user, e.g. a chemical process, which returns working fluid to a turbine of the plant

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 6/10](#)



Taken from EP568431

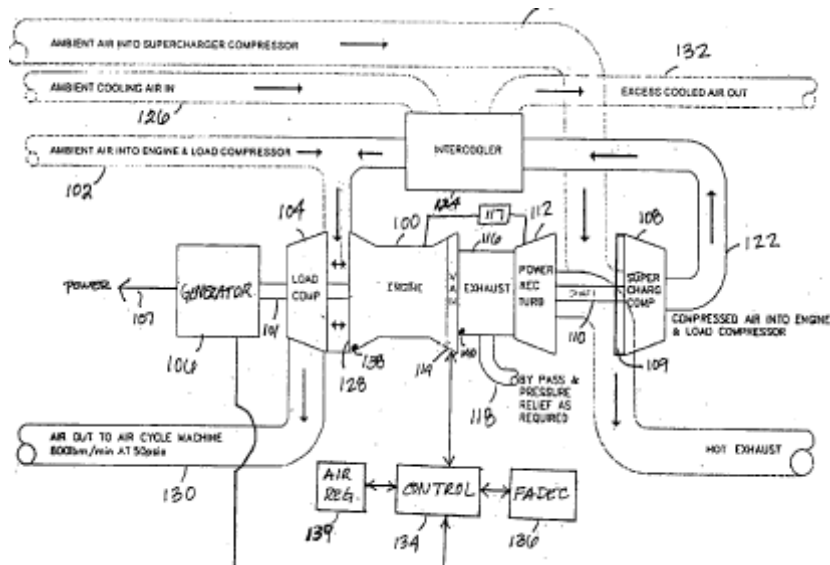
## F02C 6/12

**Turbochargers, i.e. plants for augmenting mechanical power output of internal-combustion piston engines by increase of charge pressure**

### Definition statement

*This place covers:*

Either turbochargers and details thereof if not covered elsewhere or plants/cycles with supercharging apparatuses or processes



taken from US2006016196

### References

#### Limiting references

*This place does not cover:*

|                            |   |
|----------------------------|---|
| Seals                      | <a href="#">F01D 11/00</a>                              |
| Variable geometry turbines | <a href="#">F01D 17/14</a> , <a href="#">F01D 17/16</a> |
| Bearings                   | <a href="#">F01D 25/16</a>                              |
| Lubrication                | <a href="#">F01D 25/18</a>                              |
| Casings                    | <a href="#">F01D 25/24</a>                              |

### Special rules of classification

Use [F05D 2220/40](#) for classifying additional information

### Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

|     |                           |
|-----|---------------------------|
| VGT | variable turbine geometry |
|-----|---------------------------|

## F02C 6/18

using the waste heat of gas-turbine plants outside the plants themselves, e.g. gas-turbine power heat plants (using waste heat as source of energy for refrigeration plants [F25B 27/02](#); using the waste heat of a gasturbine for steam generation or in a steam cycle see [F01K 23/10](#))

### References

#### Informative references

Attention is drawn to the following places, which may be of interest for search:

|   |                            |
|---|----------------------------|
| Using the waste heat of a gasturbine for steam generation or in a steam cycle | <a href="#">F01K 23/10</a> |
| Using waste heat as source of energy for refrigeration plants                 | <a href="#">F25B 27/02</a> |

### Special rules of classification

Do not classify here if gas turbine is just an otherwise unspecific feature of a HRSG system, consider [F01K](#) and subgroups instead

### Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

|      |                               |
|------|-------------------------------|
| HRSG | heat recovery steam generator |
|------|-------------------------------|

## F02C 7/00

Features, components parts, details or accessories, not provided for in, or of interest apart form groups [F02C 1/00](#) - [F02C 6/00](#); Air intakes for jet-propulsion plants (controlling [F02C 9/00](#))

### References

#### Informative references

Attention is drawn to the following places, which may be of interest for search:

|   |                           |
|---|---------------------------|
| Controlling or regulation of gas turbine plants | <a href="#">F02C 9/00</a> |
|---|---------------------------|

## F02C 7/05

having provisions for obviating the penetration of damaging objects or particles

### Relationships with other classification places

Separation of particles from gases in general: [B01D 45/00](#)

## F02C 7/22

### Fuel supply systems

#### References

##### Limiting references

This place does not cover:

|  |                            |
|--|----------------------------|
| Injectors, mixing or premixing devices | <a href="#">F23D 14/00</a> |
|--|----------------------------|

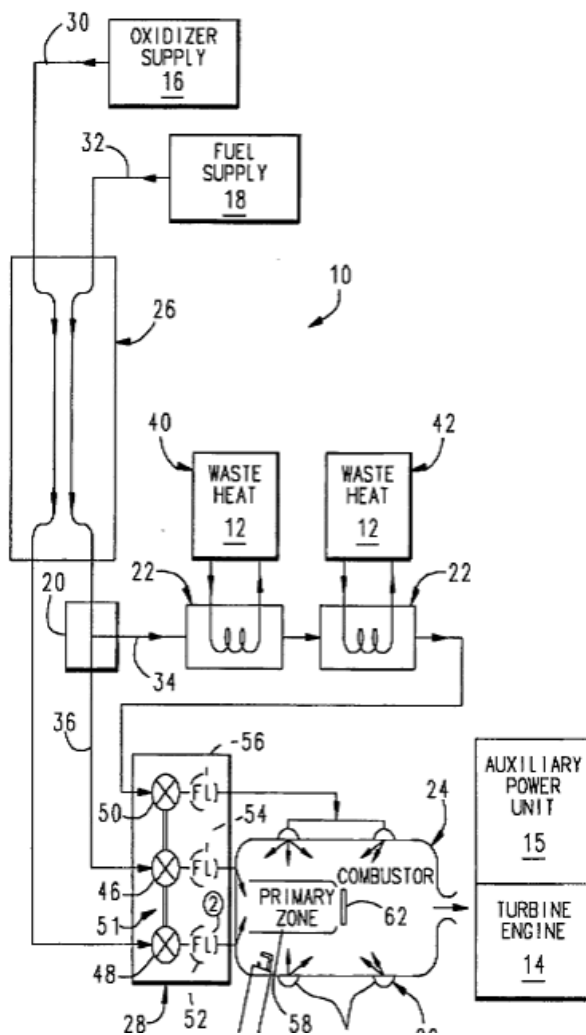
## F02C 7/224

### Heating fuel before feeding to the burner

#### Definition statement

This place covers:

Illustrative example of subject matter classified in this group: US6105370



#### Relationships with other classification places

Relates to [F02C 7/08](#), [F02C 7/10](#) and [F02C 7/105](#) or [F02C 7/12](#), i.e. cooling potential of the fuel is used for cooling purposes in other parts of the engine;

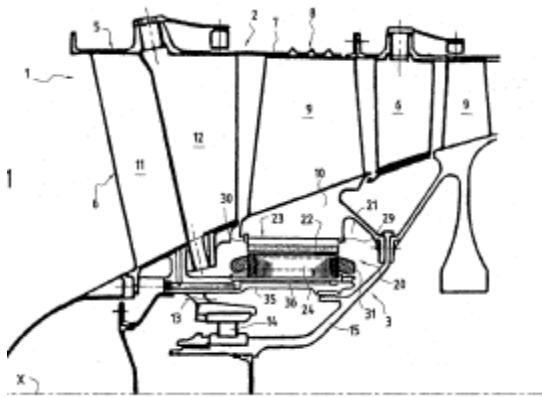


**F02C 7/268**

Starting drives for the rotor {, acting directly on the rotor of the gas turbine to be started}

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 7/268](#)



taken from EP1382802

**F02C 7/27**

Fluid drives (turbine starters [F02C 7/277](#))

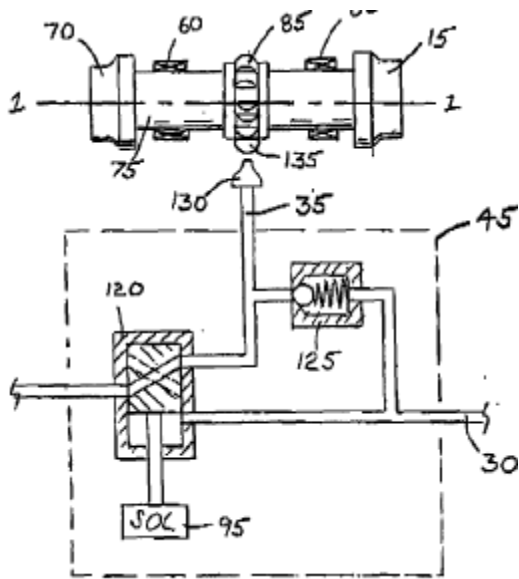
**References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

|                  |                            |
|------------------|----------------------------|
| Turbine starters | <a href="#">F02C 7/277</a> |
|------------------|----------------------------|

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 7/27](#)



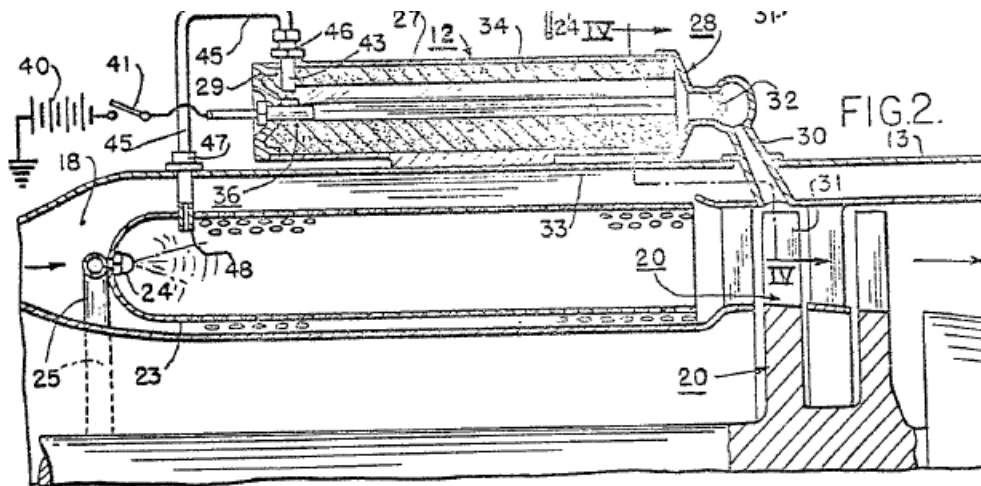
Taken from EP1298298

**F02C 7/272**

generated by cartridges

**Special rules of classification**

Illustrative example of subject matter classified in [F02C 7/272](#)



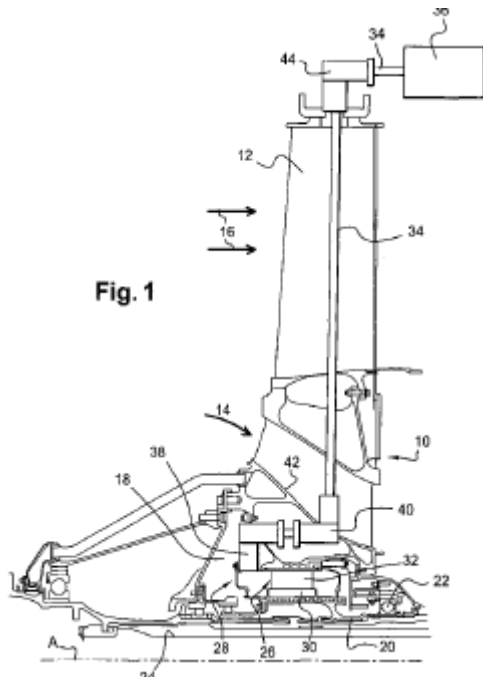
Taken from GB889105

## F02C 7/275

### Mechanical drives

#### Special rules of classification

Illustrative example of subject matter classified in [F02C 7/275](#)



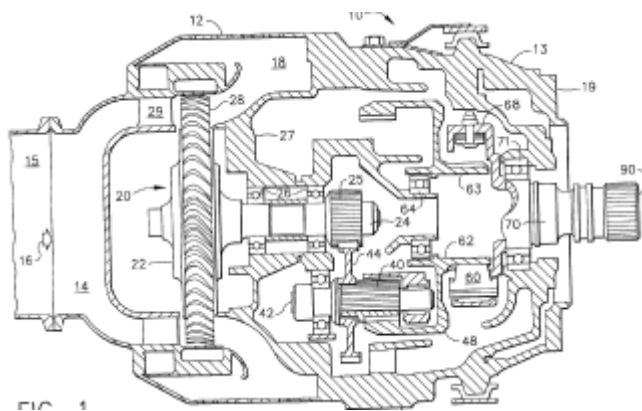
taken from EP1811132

## F02C 7/277

### the starter being a {separate} turbine

#### Special rules of classification

Illustrative example of subject matter classified in [F02C 7/277](#)



taken from US2001028845

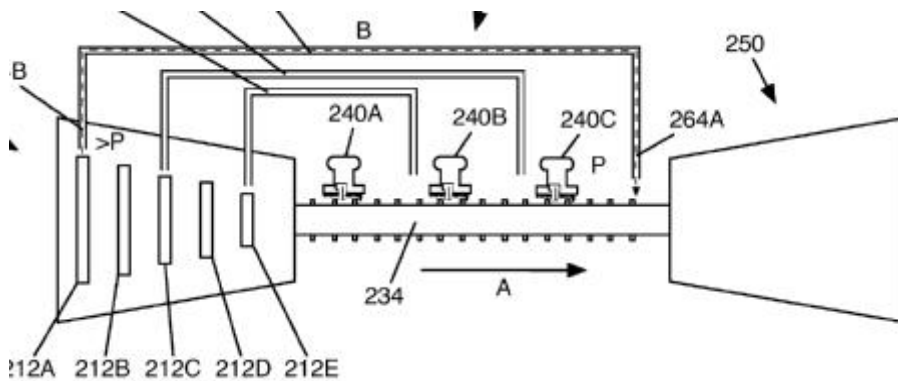
## F02C 7/28

### Arrangement of seals

#### Definition statement

*This place covers:*

Arrangement of seals in a gas or steam turbine in a macroscopic sense



taken from US2010284782

#### Relationships with other classification places

For details of seals in gas turbine applications: [F01D 11/00](#).

Sealing in general: [F16J](#).

## F02C 7/30

### Preventing corrosion {or unwanted deposits} in gas-swept spaces

#### References

##### Limiting references

*This place does not cover:*

|                               |                            |
|-------------------------------|----------------------------|
| If related to blade treatment | <a href="#">F01D 5/286</a> |
|-------------------------------|----------------------------|

## F02C 7/32

### Arrangement, mounting, or driving, of auxiliaries

#### Relationships with other classification places

|           |                      |
|-----------|----------------------|
| Gearboxes | <a href="#">F16H</a> |
|-----------|----------------------|

#### Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

|     |                |
|-----|----------------|
| PTO | Power Take Off |
|-----|----------------|

## F02C 9/00

Controlling gas-turbine plants; Controlling fuel supply in air-breathing jet-propulsion plants (controlling air intakes [F02C 7/057](#); controlling turbines [F01D](#); controlling compressors [F04D 27/00](#); controlling in general [G05](#))

### Definition statement

*This place covers:*

Controlling gas-turbine plants, controlling fuel supply in air-breathing jet-propulsion plants

### Relationships with other classification places

Controlling air intakes; [F02C 7/057](#)

Controlling compressors; [F04D 27/00](#)

Monitoring of gas turbines/performance monitoring; [G05B](#), [G05D](#)

### References

#### *Informative references*

*Attention is drawn to the following places, which may be of interest for search:*

|                           |                            |
|---------------------------|----------------------------|
| Modelling of gas turbines | <a href="#">G05B 17/00</a> |
|---------------------------|----------------------------|