Definition statement

This subclass/group covers:
- Methods and machines for laying pipes (F16L 1/00)
- Devices to support, fix or hold pipes (F16L 3/00)
- Pipes: conduits of closed cross-section which are specially adapted to convey fluids, material or objects (F16L 9/00 and F16L 11/00)
- Joints between pipes (F16L 13/00 - F16L 41/00, F16L 47/00, F16L 49/00)
- Energy and noise absorbers associated with pipes (F16L 55/02 - F16L 55/055)
- Means for stopping flow from or in pipes (F16L 55/10 - F16L 55/136)
- Devices for covering leaks in pipes (F16L 55/16 - F16L 55/179)
- Pipe pigs primarily for repairing pipes (F16L 55/26 - F16L 55/48)
- Protection of pipes against wear, heat, cracking, buckling and corrosion (F16L 57/00 and F16L 58/00)
- Thermal insulation of pipes, or in general, e.g. when no other special application of the insulation is given (F16L 59/00)
- Tubular bodies that are not used to carry fluid, material or objects, e.g. pipes for scaffoldings, or furniture
- If the pipe or connection is adapted for a specific use, it is only classified in the use field (e.g. medical connectors, micro connectors or vacuum cleaners)
- Documents that concern the specific material or a specific use for thermal insulation are classified in the specific fields for the material or use (e.g. fridges, building panels or motor compartments)

The class is divided in the following main groups

F16L 1/00 Laying of pipes
F16L 3/00 Fixation of pipes
F16L 5/00 Pipes passing through walls
F16L 7/00 Pipe support inside other pipes
F16L 9/00 Rigid pipes
F16L 11/00 Hoses (the product)
F16L 13/00 Non-disconnectable pipe-joints (not made of plastic material)
F16L 15/00 Screw-threaded joints
F16L 17/00 Sealing by fluid pressure
F16L 19/00 Connection of pipes with swivel nuts
F16L 21/00 Male-female couplings
F16L 23/00 Flanged joints
F16L 25/00 Special types of connections for pipes (not in F16L 13/00-F16L 23/00)
F16L 27/00 Adjustable joints (e.g. for allowing movements)
F16L 29/00 Joints with cut-off means
F16L 31/00 Connection of two hoses or two flexible sleeves
F16L 33/00 Connection of hoses to rigid members
F16L 35/00 Safety connections of hoses
F16L 37/00 Quick-acting couplings
F16L 39/00 Multiple.double-walled joints of fittings for pipes or hoses
F16L 41/00 Branching pipes or joining pipes to walls or pipes
F16L 43/00 Bends
F16L 45/00 Pipe units with apertures
F16L 47/00 Connection of plastic pipes; Connectors made of plastic
F16L 49/00 Connection of pipes or to pipes of brittle material
F16L 51/00 Expansion compensation devices (e.g. thermal expansion)
F16L 53/00 Heating/cooling pipes or pipe-systems
F16L 55/00 Energy absorbers, noise absorbers, means for plugging pipes, pigs, repairing pipes etc.
F16L 57/00 Protection of pipes, e.g. against external/internal damage or wear
F16L 58/00 Protection of pipes against corrosion of incrustation (e.g. by coatings)
### References relevant to classification in this subclass

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Description</th>
<th>Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watering gardens, fields, sports grounds, or the like, e.g. perforated pipe-lines</td>
<td>A01G 25/00</td>
</tr>
<tr>
<td>Vacuum cleaners, e.g. corrugated hoses; leaning machines, e.g. hose connections combined with electrical contacts, steam hoses with cables for steam ironing</td>
<td>A47L</td>
</tr>
<tr>
<td>Connectors in the medical field, e.g. catheters</td>
<td>A61M</td>
</tr>
<tr>
<td>Fire fighting/fire fighting hoses/sprinkler systems/</td>
<td>A62C</td>
</tr>
<tr>
<td>Micro/macro connectors, e.g. for lab on chip</td>
<td>B01L</td>
</tr>
<tr>
<td>Air conditioning ducts in vehicles</td>
<td>B60H</td>
</tr>
<tr>
<td>Fuel conduits in vehicles, connections to LPG tank</td>
<td>B60K 15/00</td>
</tr>
<tr>
<td>Fixing of hoses or cables in motors vehicles</td>
<td>B60R</td>
</tr>
<tr>
<td>Arrangement of piping or air hoses for brake systems</td>
<td>B60T 17/04</td>
</tr>
<tr>
<td>Containers/bags/vessels/tanks Connections to containers in generalClosing straps</td>
<td>B65D</td>
</tr>
<tr>
<td>Bends for conveying concrete</td>
<td>B65G</td>
</tr>
<tr>
<td>Wear protection for bends for conveying concrete</td>
<td>B65G 53/52</td>
</tr>
<tr>
<td>LPG couplings/filling nozzles/Transferring fluids, e.g. fuel from bulk to vehicles or portable containers</td>
<td>B67D</td>
</tr>
<tr>
<td>Description</td>
<td>Classification</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Dispensing fluids, e.g. filling bottles or cans</td>
<td>B67D 1/00</td>
</tr>
<tr>
<td>Fastening of pipes or cables to bridges</td>
<td>E01D 19/00</td>
</tr>
<tr>
<td>Couplings for dredgers</td>
<td>E02F 3/3609</td>
</tr>
<tr>
<td>Domestic plumbing: shower hoses; toilet installations; drainage; Sewage</td>
<td>E03C E03D E02B E03F</td>
</tr>
<tr>
<td>Downpipes for roof drainage, fixing means therefore</td>
<td>E04D</td>
</tr>
<tr>
<td>Vertical ducts, channels in buildings, e.g. chimneys</td>
<td>E04F</td>
</tr>
<tr>
<td>Air ducts for ventilation of mines or tunnels, connections therefore</td>
<td>E21F 1/04</td>
</tr>
<tr>
<td>Suspension devices for tubes or the like in mines or tunnels</td>
<td>E21F 17/00</td>
</tr>
<tr>
<td>Exhaust pipes</td>
<td>F01N</td>
</tr>
<tr>
<td>Air intake in motor engines, e.g. ducts between motor and filter</td>
<td>F02M</td>
</tr>
<tr>
<td>Conduits, junctions for lubrication systems</td>
<td>F16N 21/00</td>
</tr>
<tr>
<td>Connections to gas tanks</td>
<td>F17C</td>
</tr>
<tr>
<td>Pipelines/pipe systems</td>
<td>F17D</td>
</tr>
<tr>
<td>Water tubes of steam boilers</td>
<td>F22B 37/00</td>
</tr>
<tr>
<td>Joints, connection for chimneys or flues</td>
<td>F23J 13/00</td>
</tr>
<tr>
<td>Hot water systems, central heating, e.g. distributors for heating built up from modules</td>
<td>F24D</td>
</tr>
<tr>
<td>Ducting arrangements for air-conditioning</td>
<td>F24F 13/02</td>
</tr>
</tbody>
</table>
Informative references

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprayers</td>
<td>B05B</td>
</tr>
<tr>
<td>Cleaning of pipes</td>
<td>B08B</td>
</tr>
<tr>
<td>Pipe laying ships</td>
<td>B63B</td>
</tr>
<tr>
<td>Fluid concrete transport</td>
<td>E04G</td>
</tr>
<tr>
<td>Fixing devices, e.g. hollow screws</td>
<td>F16B</td>
</tr>
<tr>
<td>Valves</td>
<td>F16K</td>
</tr>
<tr>
<td>Heat exchangers</td>
<td>F28D</td>
</tr>
<tr>
<td>Installation of electric cables, e.g. cable or pipe binders, cable or pipe channels</td>
<td>H02G</td>
</tr>
</tbody>
</table>

Special rules of classification within this subclass

- Don't give classification when the features in the document concerning this subclass are obviously of no technical value, or a mere reference (e.g. if in a document it is mentioned that the connection can be also made by gluing, welding, screwing... without a further relevant technical information)

- Documents mainly concerning the material of the pipe or hose are classified in main groups F16L 9/00 or F16L 11/00

- There is a horizontal indexing scheme for further details not related to a specific ECLA group:

  Uses or applications of pigs or moles F16L 2101/00

  Special arrangements for pipe couplings F16L 2201/00
F16L 1/00

Laying or reclaiming pipes; Repairing or joining pipes on or under water (soldering or welding B23K; lifting-gear and load-engaging elements B66; hydraulic installations, soil drainage E02B; excavations or underwater constructions E02D; [N: conduits made of concrete in situ E02D 29/10]; machines for digging trenches in combination with pipe-assembly E02F; laying sewer pipes E03F 3/06; in earth boreholes or wells E21B; tunnelling E21D; laying electric, or combined optical and electric, cables H02G; making special pipes joint, see the relevant groups for the joints)

References relevant to classification in this group

This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lining of pipes, replacement of damaged part of a pipe, replacing an existing pipe with a new pipe, wherein the old pipe is being ruptured</td>
<td>F16L 55/16</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laying sewer pipes</td>
<td>E03F 3/06</td>
</tr>
<tr>
<td>Laying sewer pipes in earth boreholes or wells</td>
<td>E21B</td>
</tr>
</tbody>
</table>

Informative references

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soldering or welding</td>
<td>B23K</td>
</tr>
<tr>
<td>Pipe laying ships</td>
<td>B63B</td>
</tr>
<tr>
<td>Lifting-gear and load-engaging elements</td>
<td>B66</td>
</tr>
<tr>
<td>Hydraulic installations, soil drainage</td>
<td>E02B</td>
</tr>
<tr>
<td>Description</td>
<td>Classification</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Excavations or underwater constructions</td>
<td>E02D</td>
</tr>
<tr>
<td>Machines for digging trenches in combination with pipe-assembly</td>
<td>E02F</td>
</tr>
<tr>
<td>Tunnelling</td>
<td>E21D</td>
</tr>
<tr>
<td>Laying electric, or combined optical and electric, cables</td>
<td>H02G</td>
</tr>
</tbody>
</table>

**F16L 1/0246**

[N: at a certain height off the ground]

**Definition statement**

*This subclass/group covers:*

Pipes passing over streets or bodies of water

**F16L 1/038**

the pipes being made in situ

**Definition statement**

*This subclass/group covers:*

Methods of laying pipes wherein the material which forms the pipe later, takes the pipe-shape at the building site, e.g. concrete

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe laying methods wherein the pipe is made by connecting together short pipe pieces</td>
<td>F16L 1/036</td>
</tr>
</tbody>
</table>

**F16L 1/123**

Devices for the protection of pipes under water (in general F16L 57/00)
**Definition statement**

*This subclass/group covers:*
This group covers e.g.:

- protection against fishing, cortex induced vibrations

F16L 1/15

vertically

**Definition statement**

*This subclass/group covers:*
This group covers e.g.:

- pipes that stay vertically, for example: riser pipes

F16L 1/161

[N: the pipe being composed of sections of short length]

**Definition statement**

*This subclass/group covers:*
This group covers

- e.g. pipe laying methods wherein the pipe segments are joined together on the bottom of the body of water.

F16L 1/225

Stingers

**Definition statement**

*This subclass/group covers:*
This group covers e.g.
F16L 1/23
Pipe tensioning apparatus

Definition statement
This subclass/group covers:
clamping devices holding the pipe during laying

F16L 1/235
Apparatus for controlling the pipe during laying

Definition statement
This subclass/group covers:
e.g. checking welding seams or coatings just before laying of the pipe

F16L 3/00
Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets (anchors for holding pipes on or under the ground F16L 1/06; [N: sound-damping supports F16L55/033S; supports for insulated pipes F16L 59/135])

References relevant to classification in this group
This subclass/group does not cover:
Holders for pipes passing through walls or partitions | F16L 5/00

Sound-damping supports | F16L55/033S

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Supports for insulated pipes | F16L 59/135

Informative references

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

Anchors for holding pipes on or under the ground | F16L 1/06

F16L 3/1033

[N: with two members engaging the pipe, cable or tubing, the two members being joined only on one side of the pipe]

Definition statement

This subclass/group covers:
This group covers

e.g. pipe clamps made of two parts, the parts being connected on one side and the opposite side stays open

F16L 3/1203

[N: with a pair of arms moved automatically to closed position by over centred spring]

Definition statement

This subclass/group covers:
This group covers e.g.
F16L 3/1215

[N: the pipe being fixed by rotation of an element]

Definition statement

This subclass/group covers:
This group covers e.g.
**F16L 3/123**

and extending along the attachment surface

**Definition statement**

*This subclass/group covers:*

This group covers e.g.

---

**F16L 3/202**

the transverse movement being converted to a rotational movement *(F16L 3/215 takes precedence)*

**Definition statement**

*This subclass/group covers:*
This group covers e.g.

**F16L 3/2053**

[N: the axis of each spring being parallel with the direction of the movement of the pipe] [N9601]

**Definition statement**

*This subclass/group covers:*

This group covers e.g.

**F16L 3/221**
[N: having brackets connected together by means of a common support]

Definition statement

This subclass/group covers:
Support for supporting a number of parallel pipes at intervals, wherein the brackets and support are originally two different parts

F16L 3/222

[N: having single supports directly connected together]

Definition statement

This subclass/group covers:
This group covers e.g.
F16L 3/223

each support having one transverse base for supporting the pipes (F16L 3/23, F16L 3/237 take precedence)

Definition statement

This subclass/group covers:
one integral support for all pipes

F16L 5/00

Devices for use where pipes, cables or protective tubing pass through walls or partitions([N: joining pipes to walls F16L
41/00; joining plastic pipes to walls F16L47/00J; passing insulated pipes through walls F16L 59/121; for steam boilers F22B 37/105; arrangements for leading electric cables or lines through walls, floors or ceilings H02G 3/22

References relevant to classification in this group

This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Joining pipes to walls</th>
<th>F16L 41/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joining plastic pipes to walls</td>
<td>F16L47/00J</td>
</tr>
<tr>
<td>Passing insulated pipes through walls</td>
<td>F16L 59/121</td>
</tr>
<tr>
<td>Arrangements for leading electric cables or lines through walls, floors or ceilings</td>
<td>H02G 3/22</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

For steam boilers F22B 37/105

Informative references

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

<table>
<thead>
<tr>
<th>Sealing elements into header boxes or end plates of heat-exchangers</th>
<th>F28F 9/00</th>
</tr>
</thead>
</table>
| Holders for pipes passing through walls or partitions

**F16L 7/00**

Supporting of pipes or cables inside other pipes or sleeves, e.g. for enabling pipes or cables to be inserted or withdrawn from under road or railways without interruption of traffic (sleeves for supporting pipes, cables or protective tubing, between relatively movable points F16L 3/01, [N: fixation devices of optical cables in ducts G02B 6/508, installation of electric cables H02G 1/08]) [C0207]
References relevant to classification in this group

This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleeves for supporting pipes, cables or protective tubing, between relatively movable points</td>
<td>F16L 3/01</td>
</tr>
<tr>
<td>Fixation devices of optical cables in ducts</td>
<td>G02B 6/508</td>
</tr>
<tr>
<td>Installation of electric cables</td>
<td>H02G 1/08</td>
</tr>
</tbody>
</table>

F16L 9/00

Rigid pipes [N: (steam boiler tubes F22B 37/10)]

Informative references

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam boiler tubes</td>
<td>F22B 37/10</td>
</tr>
</tbody>
</table>

F16L 9/22

Pipes composed of a plurality of segments

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

The term "segments" means radial segments, not axial segments

This group covers e.g.
F16L 11/00

Hoses, i.e. flexible pipes (hose-like supports for pipes, cables or protective tubing, between relatively movable points F16L 3/01; suction-cleaner hoses A47L 9/24)

References relevant to classification in this group

This subclass/group does not cover:

| Hose-like supports for pipes, cables or protective tubing, between relatively movable points | F16L 3/01 |

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Suction-cleaner hoses | A47L 9/24 |

F16L 11/082

[N: two layers]

Definition statement
This subclass/group covers:
This group covers
e.g. hoses with two layers of helically wound cord or wire

**F16L 11/083**

[N: three or more layers]

**Definition statement**

This subclass/group covers:
This group covers
e.g. hoses with three or more layers of helically wound cord or wire

**F16L 11/086**

[N: two layers]

**Definition statement**

This subclass/group covers:
This group covers
e.g. hoses with two braided layers

**F16L 11/087**

[N: three or more layers]

**Definition statement**

This subclass/group covers:
This group covers
e.g. hoses with three of more braided layers

**F16L 11/11**

with corrugated wall [N: (F16L 11/24 takes precedence)]

**Definition statement**

This subclass/group covers:
corrugated hoses made from elastic material
F16L 11/115
having reinforcements not embedded in the wall

Definition statement
This subclass/group covers:
This group covers
e.g.

F16L 13/00
Non-disconnectible pipe-joints, e.g. soldered, adhesive or caulked joints (joints for rigid pipes of plastics F16L 47/00; [N: non-disconnectible pipe-joints to walls or other pipes, the joined pipe axis being perpendicular to the plane of the wall or to the axis of the other pipe F16L 41/082])

References relevant to classification in this group
This subclass/group does not cover:

| Non-disconnectible pipe-joints to walls or other pipes, the joined pipe axis being perpendicular to the plane of the wall or to the axis of the other pipe | F16L 41/082 |

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger
system:

| Joints for rigid pipes of plastics | F16L 47/00 |

**F16L 15/00**

Screw-threaded joints ([N: hose connections with parts screwed directly on or into the hose F16L 33/24; joining pipes to wall F16L 41/00]; casing joints used in deep-drilling E21B 17/08; joints sealed primarily by means other than engagement of screw-threads, see the relevant groups characterised by the sealing arrangements); Forms of screw-threads for such joints

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Screw-threaded connections for drilling rods (drill hammer)</th>
<th>E21B 17/042</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hose connections with parts screwed directly on or into the hose</td>
<td>F16L 33/24</td>
</tr>
<tr>
<td>Joining pipes to walls</td>
<td>F16L 41/00</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Casing joints used in deep-drilling | E21B 17/08 |

**Informative references**

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

| For lubricating aspects | C10M |

**F16L 15/08**

with supplementary elements (F16L 15/04, [N: F16L 41/00] and
**F16L 43/02** take precedence)

**Definition statement**

This subclass/group covers:

This group covers

screw threaded connections with supplementary elements, e.g. additional locking elements. Not covered are screw threaded connections with supplementary elements which form a sealing.

**F16L 17/00**

Joints with packing adapted to sealing by fluid pressure (\[N: for universal joints with partly spherical engaging surfaces F16L 27/067; joints allowing adjustment or movement only about the axis of one pipe F16L 27/08; joints comprising a flexible connection only F16L 27/10; joints allowing substantial longitudinal adjustment or movement F16L 27/12; for hoses F16L 33/16; couplings of the quick acting type F16L 37/00;] compensating devices F16L 51/00; sealings tightened by external pressure, inflatable packings F16J 15/00)

**Informative references**

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

| For universal joints with partly spherical engaging surfaces | F16L 27/067 |
| Joints allowing adjustment or movement only about the axis of one pipe | F16L 27/08 |
| Joints comprising a flexible connection only | F16L 27/10 |
| Joints allowing substantial longitudinal adjustment or movement | F16L 27/12 |
| For hoses | F16L 33/16 |
| Couplings of the quick acting type | F16L 37/00 |
| Compensating devices | F16L 51/00 |
| Sealings tightened by external pressure, inflatable packings | F16J 15/00 |
**F16L 17/025**

the sealing rings having radially directed ribs

**Definition statement**

*This subclass/group covers:*

This group covers

---

**FIG. 6**

---

**Glossary of terms**

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

the term "radially directed ribs" also includes the ribs which are deformed in axial direction upon connection

---

**F16L 17/035**

the sealing rings having two lips parallel to each other

**Definition statement**

*This subclass/group covers:*

This group covers
F16L 17/04

with longitudinally split or divided sleeve

**Definition statement**

*This subclass/group covers:*

This group covers
F16L 19/00

Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts ([N: screw-threaded joints F16L 15/00;] F16L 17/00 takes precedence; if using bolts or equivalent connecting means F16L 23/00; [N: electrically insulating F16L 25/02; adjustable joints, joints allowing movement F16L 27/00; specially adapted for pipes of brittle material F16L 49/06])

References relevant to classification in this group

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw-threaded joints</td>
<td>F16L 15/00</td>
</tr>
<tr>
<td>If using bolts or equivalent connecting means</td>
<td>F16L 23/00</td>
</tr>
<tr>
<td>Adjustable joints, joints allowing movement</td>
<td>F16L 27/00</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:
Informative references

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

| Electrically insulating | F16L 25/02 |

F16L 19/0206

[N: the collar not being integral with the pipe]

Definition statement

This subclass/group covers:
Joints with flanges not forming part of the pipe body. This includes welded or screwed on flanges which are not considered to be integral with the pipe.

F16L 19/0653

[N: the ring being rotatably connected to one of the connecting parts]

Definition statement

This subclass/group covers:
This group covers
connections wherein the ring rotates with the nut during the fastening.

F16L 19/061

[N: a pressure ring being arranged between the clamping ring and the threaded member or the connecting member]

Definition statement

This subclass/group covers:
This group covers
connections having two rings.
**F16L 19/065**

the wedging action being effected by means of a ring

**Definition statement**

*This subclass/group covers:*

This group covers

connections having one ring

**F16L 19/083**

[N: the longitudinal cross-section of the ring not being modified during clamping]

**Definition statement**

*This subclass/group covers:*

This group covers

connections wherein the ring being a split ring

**F16L 19/10**

the profile of the ring being altered

**Definition statement**

*This subclass/group covers:*

This group covers

connection wherein the ring being no split ring

**F16L 21/00**

Joints with sleeve or socket ([F16L 13/00](#), [F16L 15/00](#), [F16L 17/00](#), [F16L 19/00](#), [F16L 25/0027](#), [F16L 27/00](#), [F16L 37/00](#) take precedence; [N: specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/06](#); specially adapted for pipes of brittle material [F16L 49/08](#); devices for covering leaks in pipes or hoses [F16L 55/16](#)]

**References relevant to classification in this group**

*This subclass/group does not cover:*

<p>| Non-disconnectable pipe-joints | F16L 13/00 |</p>
<table>
<thead>
<tr>
<th>Joint Type</th>
<th>Class Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw-threaded joints</td>
<td>F16L 15/00</td>
</tr>
<tr>
<td>Joints adapted to sealing by fluid pressure</td>
<td>F16L 17/00</td>
</tr>
<tr>
<td>Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut</td>
<td>F16L 19/00</td>
</tr>
<tr>
<td>Joints for pipes made of reinforced concrete</td>
<td>F16L 25/0027</td>
</tr>
<tr>
<td>Adjustable joints</td>
<td>F16L 27/00</td>
</tr>
<tr>
<td>Couplings of the quick-acting type</td>
<td>F16L 37/00</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Special Adaptation</th>
<th>Class Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specially adapted to be used with pipes of plastic</td>
<td>F16L 47/06</td>
</tr>
<tr>
<td>Specially adapted to be used with pipes of brittle material</td>
<td>F16L 49/08</td>
</tr>
</tbody>
</table>

**Informative references**

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

<table>
<thead>
<tr>
<th>Device type</th>
<th>Class Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devices for covering leaks in pipes or hoses</td>
<td>F16L 55/16</td>
</tr>
</tbody>
</table>

**F16L 23/00**

Flanged joints ([F16L 13/00](#), [F16L 17/00](#), [F16L 19/00](#) take precedence; adjustable joints [F16L 27/00](#); for hoses [F16L 33/00](#); couplings of the quick-acting type [F16L 37/00](#); for double-walled or multi-channel pipes or assemblies [F16L 39/00](#); specially adapted for pipes of brittle material pipe [F16L 49/00](#))
### References relevant to classification in this group

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-disconnectable pipe-joints</td>
<td>F16L 13/00</td>
</tr>
<tr>
<td>Joints adapted to sealing by fluid pressure</td>
<td>F16L 17/00</td>
</tr>
<tr>
<td>Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut</td>
<td>F16L 19/00</td>
</tr>
<tr>
<td>Adjustable joints</td>
<td>F16L 27/00</td>
</tr>
<tr>
<td>For hoses</td>
<td>F16L 33/00</td>
</tr>
<tr>
<td>Couplings of the quick-acting type</td>
<td>F16L 37/00</td>
</tr>
<tr>
<td>For double-walled or multi-channel pipes or assemblies</td>
<td>F16L 39/00</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specially adapted to be used with pipes of brittle material</td>
<td>F16L 49/08</td>
</tr>
</tbody>
</table>

---

**F16L 23/003**

[N: Auxiliary devices]

**Definition statement**

*This subclass/group covers:*

This group covers devices for aligning, separating or locking of the flange connection

---

**F16L 23/006**

[N: Attachments]

**Definition statement**
This subclass/group covers:
Attachments to the joints having no sealing or connection function e.g. measuring devices or valves that are attached to, or integrated in the flange

F16L 23/0286

[N: the shoulder not being formed from the pipe]

Definition statement

This subclass/group covers:
This group covers

References relevant to classification in this group

This subclass/group does not cover:

Joints with sleeve and socket, where  F16L 21/08
the pipe ends are overlapping:

F16L 23/162
[N: the pipe ends abutting each other]

Definition statement
This subclass/group covers:
Joints where "pipe ends are abutting each other", which should be interpreted in the way that no extra sealing rings are present and there is surface to surface contact between the flanges

F16L 25/00
Constructive types of pipe joints not provided for in groups F16L 13/00 to F16L 23/00 (adjustable joints F16L 27/00; couplings of the quick-acting type F16L 37/00; specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00) [N: Details of pipe joints not otherwise provided for, e.g. electrically conducting or insulating means]

References relevant to classification in this group
This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Non-disconnectable pipe-joints</th>
<th>F16L 13/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw-threaded joints</td>
<td>F16L 15/00</td>
</tr>
<tr>
<td>Joints adapted to sealing by fluid</td>
<td>F16L 17/00</td>
</tr>
<tr>
<td>pressure</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Joints in which sealing surfaces are pressed together by means of a member, e.g. swivel nut</td>
<td></td>
</tr>
<tr>
<td>F16L 19/00</td>
<td></td>
</tr>
<tr>
<td>Joints with sleeve or socket</td>
<td></td>
</tr>
<tr>
<td>F16L 21/00</td>
<td></td>
</tr>
<tr>
<td>Flanged joints</td>
<td></td>
</tr>
<tr>
<td>F16L 23/00</td>
<td></td>
</tr>
<tr>
<td>Adjustable joints</td>
<td></td>
</tr>
<tr>
<td>F16L 27/00</td>
<td></td>
</tr>
<tr>
<td>Couplings of the quick-acting type</td>
<td></td>
</tr>
<tr>
<td>F16L 37/00</td>
<td></td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Specially adapted to be made of plastics or to be used with pipes made of plastics            |
| F16L 47/00                                                                                   |

**F16L 25/009**

combination of quick-acting type coupling with conventional one

**Definition statement**

*This subclass/group covers:*
This group covers
**F16L 25/04**

with a collar or ring having a threaded pin rigid with the pipe-encircling member

**Definition statement**

*This subclass/group covers:*

This group covers

---

**F16L 25/10**

Sleeveless joints between two pipes, one being introduced into the other [N0309]

**Definition statement**

*This subclass/group covers:*
This group covers

**F16L 27/00**

Adjustable joints, Joints allowing movement (of the quick-acting type **F61L37/50**; for double-walled or multi-channel pipe assemblies **F16L 39/04**; [N: connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics **F16L 47/00**; connecting arrangements specially adapted for pipes of brittle material **F16L 49/00**)

References relevant to classification in this group

This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Couplings of the quick-acting type</th>
<th>F16L 37/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>For double-walled or multi-channel pipes or assemblies</td>
<td>F16L 39/04</td>
</tr>
<tr>
<td>Branching pipes, wherein the branch pipes are moveable</td>
<td>F16L 41/18</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Connecting arrangements or other</th>
<th>F16L 47/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fittings specially adapted to be made of plastics or to be used with pipes made of plastics</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Specially adapted to be used with pipes of brittle material</td>
<td>F16L 49/00</td>
</tr>
<tr>
<td>Connections between hoses and sprayers</td>
<td>B05B</td>
</tr>
</tbody>
</table>

**F16L 27/047**

held in place by a screwed member having an internal spherical surface

**Definition statement**

*This subclass/group covers:*

This group covers

joints held together with a swivel nut

**F16L 27/0861**

Arrangements of joints with one another and with pipes or hoses

**Definition statement**

*This subclass/group covers:*

This group covers

e.g.
F16L 27/12
allowing substantially longitudinal adjustment or movement

References relevant to classification in this group
This subclass/group does not cover:

| Telescopic bends: | F16L 43/006 |

F16L 29/00
Joints with fluid cut-off means (quick-acting joints with cut-off means F16L 37/28; [N: valves, taps or cocks in general F16K])

Definition statement
This subclass/group covers:
This group covers

The fluid cut off means must be a part of, or functionally associated with the connection, not just a valve in a pipe, otherwise its classified only with the valves F16K

References relevant to classification in this group
This subclass/group does not cover:

| Couplings of the quick-acting type with cut-off means | F16L 37/28 |
Informative references

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

| Valves, taps and cocks in general | F16K |

F16L 31/00

Arrangement for connecting hoses to one another or to flexible sleeves (F16L 33/00 takes precedence)

Definition statement

This subclass/group covers:

This group covers:

hoses directly connected to each other

References relevant to classification in this group

This subclass/group does not cover:

| Arrangements for connecting hose to rigid members | F16L 33/00 |
| Rigid hose connectors, i.e. single members engaging both hoses | F16L 33/00 |

F16L 33/00

Arrangements for connecting hoses to rigid members (hand tools for inserting fittings into hoses B25B 27/10); Rigid hose connectors, i.e. single members engaging both hoses [N: (hoses or hose couplings specially adapted for suction cleaners A47L 9/24)]

References relevant to classification in this group

This subclass/group does not cover:

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Hose couplings specially adapted for suction cleaners | A47L 9/24 |
Informative references

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

| Hand tools per se for inserting fittings into hoses | B25B 27/10 |

F16L 33/025

tightened by deforming radially extending loops or folds

Definition statement

This subclass/group covers:
e.g. Oetiker ears

F16L 33/14

with a taping bolt, i.e. winding up the end of the hose-encircling member

Definition statement

This subclass/group covers:
e.g. fastening means working like a sardine-can opener

F16L 33/26

specially adapted for hoses of metal

Definition statement

This subclass/group covers:
This group covers e.g.
corrugated hoses

F16L 35/00

Special arrangements used in connection with end fittings of hoses, e.g. safety or protecting devices

Definition statement
This subclass/group covers:
safety housings; devices against unauthorized use, anti-kink devices for pipe ends; pressure relief devices

F16L 37/00

Coupling of the quick acting type (radially binding sleeves F16L 17/04, F16L 21/06; connecting hoses to rigid members F16L 33/00; connections made automatically when vehicles are brought together B60D, B61G; specially adapted for

Definition statement

This subclass/group covers:
Joints wherein the connection is established by one or two simple quick movements

References relevant to classification in this group

This subclass/group does not cover:

| Radially binding sleeves       | F16L 17/04 F16L 21/06          |
| Connecting hoses to rigid members | F16L 33/00                  |
| Welded connections or screwed connections | F16L 13/00, F16L 15/00       |

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Connections between hoses and sprayers  | B05B                          |
| Connections made automatically when vehicles are brought together | B60D, B61G                |
| Specially adapted for lubricating devices | F16N 21/00                |

F16L 37/02

in which the connection is maintained only by friction of the
parts being joined

**Definition statement**

_This subclass/group covers:_

This group covers

Couplings that can be separated by force, e.g. pulling strongly

**F16L 37/084**

combined with automatic locking

**Definition statement**

_This subclass/group covers:_

Joints wherein the connection is established by one simple quick movement: simply push the two pipe ends together: "click"

**F16L 37/0844**

by means of a ring pivoting so as to lie against the tube

**Definition statement**

_This subclass/group covers:_

**F16L 37/0848**

with hooks, rocking freely

**Definition statement**

_This subclass/group covers:_
Couplings with rigid hook members which can pivot by means of latching members pushed radially by spring-like elements

**F16L 37/086**

**Definition statement**

This subclass/group covers:

**References relevant to classification in this group**

This subclass/group does not cover:

| Radially moved latching members | F16L 37/0841 |
**F16L 37/096**

by means of hooks hinged about an axis

**Definition statement**

*This subclass/group covers:*

![Diagram](image)

**F16L 37/10**

using an external sleeve or ring on one part

**Definition statement**

*This subclass/group covers:*

Joints wherein the connection is established by two simple quick movements:
Pushing the two pipe ends together plus an additional second action; an action to achieve the locking

**F16L 37/1205**

hooks hinged about an axis placed behind a flange and which act behind the other flange

**Definition statement**

*This subclass/group covers:*
F16L 37/16
wedge shaped hinged hook

Definition statement
This subclass/group covers:

GB607402

F16L 37/18
eccentric or rotatable cams

Definition statement
This subclass/group covers:
US5904380

F16L 37/248
Bayonet type coupling

Definition statement
This subclass/group covers:
Joints wherein the locking pins are visible in closed position

F16L 37/252
the male part having lugs on its outer periphery penetrating in the corresponding slots provided in the female part

Definition statement
This subclass/group covers:
Bayonet type couplings with male part having external lugs, wherein the locking pins are not visible in closed position

F16L 39/00
Joints or fittings for double-walled or multi-channel pipes or pipe assemblies

References relevant to classification in this group
This subclass/group does not cover:

| Joints of the quick acting type | F16L 37/56 |
**F16L 39/04**

allowing adjustment or movement

**Definition statement**

*This subclass/group covers:*

Connections wherein the different lines turn together

![Diagram](image)

---

**F16L 39/06**

of the multiline swivel type, e.g. comprising a plurality of vertically mounted modules

**Definition statement**

*This subclass/group covers:*

Connections wherein the different lines are independently turnable

---

45
Branching pipes; joining pipes to walls (F16L 39/00 takes precedence; joints suitable for connecting together pipe-ends see the relevant groups [N: specially adapted to be made of plastics or to be used with pipes made of plastics F16L47/00J; characterised by couplings of the quick-acting type F16L 37/008;] connections not designed for conveying fluid F16B 9/00)

Definition statement

This subclass/group covers:
joining pipes to walls of other pipes

References relevant to classification in this group

This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Joints or fittings for double-walled or multi-channel pipes or pipe assemblies</th>
<th>F16L 39/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>The branch pipe being joint to the main pipe or the wall by a coupling of the quick acting type</td>
<td>F16L 37/008</td>
</tr>
</tbody>
</table>
Joining pipes to walls of vehicle tanks  B60K 15/00

The pipes passing through the walls  F16L 5/00

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Specially adapted to be made of plastics or to be used with pipes made of plastics  F16L47/00J

Informative references

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

Connectors not designed for conveying fluid  F16B 9/00

F16L 41/005

[N: adjustable and comprising a hollow threaded part in an opening]

Definition statement

This subclass/group covers:
F16L 41/007
[N: adjustable and comprising a bend]

Definition statement
This subclass/group covers:

DE1475792

F16L 41/03
comprising junction pieces for four or more pipe members

Definition statement
This subclass/group covers:
e.g. manifolds
Informative references

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

| Manifolds for hydraulics and pneumatics | F15B 13/0807 |

**F16L 41/04**

Tapping pipe walls

References relevant to classification in this group

This subclass/group does not cover:

| Tapping means specially adapted for plastic pipes | F16L 47/34 |

**F16L 41/045**

[N: without removal of material]

Definition statement

This subclass/group covers:

e.g. the tapping means piercing the wall

**F16L 41/065**

[N: without removal of material]

Definition statement

This subclass/group covers:

e.g. the tapping means piercing the wall by using guidance on attaching means embracing the pipe

**F16L 43/00**

Bends; Siphons (with cleaning apertures F16L 45/00; [N: expansion-compensation arrangements making use of bends F16L 51/04; odour seals for basins E03C 1/18;] siphons for water-closets E03D 11/18; siphons in general F04F 10/00)
References relevant to classification in this group

This subclass/group does not cover:

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bends with cleaning apertures</td>
<td>F16L 45/00</td>
</tr>
<tr>
<td>Expansion-compensation arrangements making use of bends</td>
<td>F16L 51/04</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour seals for basins</td>
<td>E03C 1/18</td>
</tr>
<tr>
<td>Siphons for water-closets</td>
<td>E03D 11/18</td>
</tr>
<tr>
<td>Siphons in general</td>
<td>F04F 10/00</td>
</tr>
</tbody>
</table>

F16L 43/02

Bends; Siphons; adapted to make use of special securing means

Definition statement

This subclass/group covers:
e.g. stress relief devices holding the pipe on both sides of the bend
**F16L 45/00**

[Pipe units with cleaning aperture and closure therefore]

**References relevant to classification in this group**

*This subclass/group does not cover:*

| Means for stopping flow from or in pipes or hoses | F16L 55/10 |

**Informative references**

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

| Launching or retrieval of pigs or moles | F16L 55/46 |

**F16L 47/00**

Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [N: (connections for hoses of plastics F16L 33/006)]

**Relationship between large subject matter areas**

Not covered are fittings made of plastic or which are used with plastic pipes, but are not specially adapted therefore, e.g. if they could be made of any other material without any adaptations. These fittings are classified in the general groups for the respective connections.

**References relevant to classification in this group**

*This subclass/group does not cover:*

| Connections for hoses of plastics | F16L 33/006 |

**Informative references**

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

| Rigid pipes of plastics | F16L 9/12 |
**F16L 49/00**

Connection arrangements, e.g. joints, specially adapted for pipes of brittle material, e.g. glass, earthware [N: (sleeves, nipples or reduction pieces made of elastic material F16L 21/005)]

**Relationship between large subject matter areas**

Not covered are joints of pipes of brittle material when the connection is not specially adapted therefore, e.g. if they could be made of any other material without any adaptations. These fittings are classified in the general groups for the respective connections.

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleeves, nipples of reduction pieces made of elastic material</td>
<td>F16L 21/005</td>
</tr>
</tbody>
</table>

**F16L 51/00**

Expansion-compensation arrangements for pipe-lines ([N: hangers or supports for pipes with special provision allowing movement of the pipes F16L 3/16]; telescopic pipes F16L 27/12)

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telescopic pipes</td>
<td>F16L 27/12</td>
</tr>
</tbody>
</table>

**Informative references**

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hangers or supports for pipes with special provision allowing movement of the pipes</td>
<td>F16L 3/16</td>
</tr>
</tbody>
</table>
F16L 51/02
Expansion-compensation arrangements for pipe-lines, making use of bellows

References relevant to classification in this group
This subclass/group does not cover:

| Bellows that are intended to provide adjustment or movement to the coupling: | F16L 27/107 |

F16L 51/028
with the expansion or contraction of each corrugation being limited

Definition statement
This subclass/group covers:
This group covers

US6422611

F16L 51/03
comprising two or more bellows

Definition statement
This subclass/group covers:
This group covers

DE102007052243

F16L 53/00

Heating or cooling pipes or pipe systems (preventing freezing of pipes, thawing frozen pipes E03B 7/12, E03B 7/14; pipe-line systems, pipe-lines F17D)

References relevant to classification in this group

This subclass/group does not cover:

| Heating or cooling of hoses | F16L 11/12 |

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| Preventing freezing of pipes, thawing frozen pipes | E03B 7/12; E03B 7/14 |
| Pipe-line systems, pipe-lines | F17D |
| Heat exchangers | F28D |

Informative references

Attention is drawn to the following places, which may be of interest for search:
Heating or cooling of valves | F16K 31/002

**F16L 55/00**

Devices or appurtenances for use in, or in connection with pipes or pipe systems (the preceding groups and groups F16L 57/00, F16L 59/00 take precedence; repairing or joining pipes on or under water F16L 1/26; nozzles B05B; cleaning of pipes B08B 9/02; [N: arrangements of draining devices for water main or service pipe systems E03B 7/08;] devices for preventing bursting of water pipes by freezing E03B 7/10; [N: draining devices for hydrants E03B 9/14;] for domestic plumbing installations E03C 1/00; [N: steam traps for draining of liquids from enclosures containing gases or vapours F16T;] arrangements for sealing leaky tubes or conduits of heat-exchangers F28F 11/00)

**Definition statement**

*This subclass/group covers:*
e.g. damping devices, means for stopping flow, devices for covering leaks, pigs or moles, preventing accumulation of dirt,

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repairing or joining pipes on or under water</td>
<td>F16L 1/26</td>
</tr>
<tr>
<td>Cleaning of pipes</td>
<td>B08B 9/02</td>
</tr>
<tr>
<td>Devices for preventing bursting of water pipes by freezing</td>
<td>E03B 7/10</td>
</tr>
<tr>
<td>Steam traps for draining of liquids from enclosure containing gases or vapours</td>
<td>F16T</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Application</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>For domestic plumbing installations</td>
<td>E03C 1/00</td>
</tr>
</tbody>
</table>
Arrangements for sealing leaky tubes or conduits of heat-exchangers  F28F 11/00

Arrangements of draining devices for water main or service pipe systems  E03B 7/08

Draining devices for hydrants  E03B 9/14

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

Nozzles  B05B

F16L 55/02736
transversal baffles defining a tortuous path

Definition statement
This subclass/group covers:
This group covers

FR2942018
This group covers
central core throttling the passage

pneumatic reservoirs wherein the gas in the reservoir is separated from the fluid in the pipe

Definition statement
This subclass/group covers:
 pneumatic reservoirs having a membrane

plugs

Definition statement
This subclass/group covers:
closing means which can be fixed inside the pipe end

caps

Definition statement
This subclass/group covers:
closing means which can be fixed on the outside of the pipe end
by means of rings, bands or sleeves pressed against the outside of the pipe or hose

**Definition statement**

*This subclass/group covers:*
*This group covers*

also two half sleeves

**F16L 55/24**

preventing accumulation of dirt

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Cleaning of pipes:</th>
<th>B08B</th>
</tr>
</thead>
</table>

**F16L 55/26**

Pigs or moles, i.e. devices movable in a pipe or conduit with or without self-contained propulsion means (tunnel railway systems B61B 13/10; conveying articles through pipes or tubes, e.g. tube mail systems, B65G 51/00)

**Definition statement**

*This subclass/group covers:*
pigs which are used to repair pipes

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Pigs which are used to stop flow in pipes</th>
<th>F16L 55/1283</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs which are used to apply liquids to the inside of the pipes</td>
<td>B05C 7/00</td>
</tr>
<tr>
<td>Pigs for cleaning pipes</td>
<td>B08B 9/02</td>
</tr>
<tr>
<td>Pigs for welding or cutting</td>
<td>B23K 37/02</td>
</tr>
<tr>
<td>Pigs for measuring or testing</td>
<td>G01M, G01N</td>
</tr>
</tbody>
</table>
### F16L 57/00

**Protection of pipes or objects of similar shape against external or internal damage or wear** ([N: protection under water F16L 1/123]; supporting of pipes inside other pipes or sleeves F16L 7/00; used in connection with end fittings of hoses F16L 35/00; protection thereof during transport B65D, e.g. B65D 59/00; [N: for steam boilers F22B 37/107])

**References relevant to classification in this group**

*This subclass/group does not cover:*

<table>
<thead>
<tr>
<th>Protection under water</th>
<th>F16L 1/123</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting of pipes inside other pipes or sleeves</td>
<td>F16L 7/00</td>
</tr>
<tr>
<td>Used in connection with end fittings or hoses</td>
<td>F16L 35/00</td>
</tr>
<tr>
<td>Protecting of pipes during transport</td>
<td>B65D 59/00</td>
</tr>
</tbody>
</table>

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

| For steam boilers | F22B 37/107 |

**Informative references**

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

| For tubular articles not conveying fluid | B65D 59/02 |
F16L 57/06
protection of pipes against wear

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

| For pipes conveying concrete | B65G 53/523 |

F16L 58/00
protection of pipes or fittings against corrosion or incrustation (supporting of pipes inside other pipes or sleeves F16L 7/00; compound tubes F16L 9/14; cleaning pipes or tubes B08B 9/02)

References relevant to classification in this group
This subclass/group does not cover:

| Cathodic corrosion protection | C25F |
| Compound tubes                | F16L 9/14 |

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

| Cleaning pipes or tubes       | B08B 9/02 |
| Supporting of pipes or sleeves| F16L 7/00 |

F16L 59/00
Thermal insulation in general (heat, sound insulation in buildings E04B; heat insulation of steam engines F01B 31/08; [N: thermal or acoustic isolation for combustion engines F02B 77/11]; heat insulation in rotary piston machines F01C 21/06; heat insulation of pumps F04C 29/04; thermal insulation of
pressure vessels \textbf{F17C 1/12}; vessels not under pressure, with provision for insulation \textbf{F17C 3/02}

**Definition statement**

\textit{This subclass/group covers:}

insulation for pipes or hoses or pipe cover elements wherein no other specific use is given. This group does not cover materials for thermal insulation, which are classified in the specific groups for the materials.

**References relevant to classification in this group**

\textit{This subclass/group does not cover:}

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

<table>
<thead>
<tr>
<th>Heat, sound insulation in buildings</th>
<th>E04B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat insulation of steam engines</td>
<td>F01B 31/08</td>
</tr>
<tr>
<td>Thermal or acoustic insulation for combustion engines</td>
<td>F02B 77/11</td>
</tr>
<tr>
<td>Heat insulation in rotary piston machines</td>
<td>F01C 21/06</td>
</tr>
<tr>
<td>Heat insulation of pumps</td>
<td>F04C 29/04</td>
</tr>
<tr>
<td>Thermal insulation of pressure vessels</td>
<td>F17C 1/12</td>
</tr>
<tr>
<td>Vessels not under pressure, with provision for insulation</td>
<td>F17C 3/02</td>
</tr>
<tr>
<td>For refrigerators</td>
<td>F25D</td>
</tr>
</tbody>
</table>

**F16L 59/023**

with a hinge opposite the slit

**Definition statement**

\textit{This subclass/group covers:}
F16L 59/141

in which the temperature of the medium is below the ambient temperature

Definition statement

This subclass/group covers:
insulation for pipes conveying cryogenic fluids

F16L 59/166

covering the end of an insulated section

Definition statement

This subclass/group covers: