

## SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

### F16 ENGINEERING ELEMENTS OR UNITS; GENERAL MEASURES FOR PRODUCING AND MAINTAINING EFFECTIVE FUNCTIONING OF MACHINES OR INSTALLATIONS; THERMAL INSULATION IN GENERAL

#### F16N LUBRICATING

##### Note(s) [2006.01]

Attention is drawn to the following places, which cover lubrication of specific apparatus or in particular processes:

A01D 69/12.....	Harvesters
B21B 25/04.....	Mandrels for metal tube rolling mills
B21B 27/06.....	Rolls for metal rolling mills
B21D 37/18.....	Tools for machines for working metal without removing material
B21J 3/00.....	Forging or pressing
B22D 11/07.....	Moulds for continuous casting of metals
B23C 5/28.....	Milling cutters
B23D 59/02, B23D 59/04.....	Metal saws
B23Q 11/10, B23Q 11/12.....	Machine tools
B25D 17/26.....	Portable power-driven percussive tools
B26B 19/40.....	Hair-clippers or dry-shavers
B27B 13/12.....	Band saw blades for wood or the like
B60R 17/00.....	Vehicles
B61B 12/08.....	Cable systems for railways
B61C 17/08.....	Railway locomotives
B61F 17/00.....	Axle-boxes of rail vehicles
B61K 3/00.....	Rail or wheel flanges of railways
B62D 55/092.....	Endless-track units for vehicles
B62J 31/00.....	Cycles
B65G 45/02.....	Conveyors
B66B 7/12.....	Ropes, cables or guides of elevators
D01H 7/20.....	Spindles of machines for spinning or twisting threads or fibres
D04B 35/28.....	Knitting machines
D05B 71/00.....	Sewing machines
D05C 13/04.....	Embroidering machines
E01B 7/26.....	Switches for railways
E05B 17/08.....	Locks
E05D 11/02.....	Hinges
E21B 10/22.....	Roller bits for earth drilling
F01C 21/04.....	Rotary-piston or oscillating-piston machines or engines
F01D 25/18.....	Non-positive-displacement machines
F01M.....	Machines or engines in general
F02C 7/06.....	Gas-turbine plants
F02F 1/20.....	Cylinders of combustion engines
F04B 39/02.....	Pumps for liquids
F04C 29/02.....	Rotary-piston or oscillating-piston pumps for liquids
F04D 29/04.....	Non-positive-displacement pumps
F16C 1/24.....	Flexible shafts
F16C 33/10.....	Sliding-contact bearings
F16C 33/66.....	Ball or roller bearings
F16F 1/24.....	Springs
F16H 57/04.....	Transmissions
F41A 29/04.....	Smallarms or ordnance
G04B 31/08.....	Clocks
H01R 39/56.....	Rotary current collectors, distributors or interrupters

##### Subclass index

MODIFICATIONS OF APPARATUS OR MACHINES TO ENSURE LUBRICATION.....1/00

## LUBRICATION DEVICES

Stationary; mobile; manual.....	7/00, 11/00, 9/00, 3/00, 5/00
Lubricating-pumps.....	13/00
Details: reservoirs; conduits; check valves.....	19/00, 21/00, 23/00
EQUIPMENT FOR DISTRIBUTION, PROPORTIONING, SAFETY, CONTROL, CLEANING.....	23/00-33/00
HANDLING OF LUBRICANTS, STORAGE.....	33/00-39/00
SPECIAL LUBRICATION.....	15/00, 17/00
SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS.....	99/00

**Lubrication devices or arrangements for oil or grease**

<b>1/00</b>	<b>Constructional modifications of parts of machines or apparatus for the purpose of lubrication [1, 2006.01]</b>	7/38	• with a separate pump; Central lubrication systems [1, 2006.01]
<b>3/00</b>	<b>Devices for supplying lubricant by manual action [1, 2006.01]</b>	7/40	• • in a closed circulation system [1, 2006.01]
3/02	• delivering oil [1, 2006.01]	<b>9/00</b>	<b>Arrangements for supplying oil or unspecified lubricant from a moving reservoir or the equivalent (also usable with a stationary reservoir F16N 7/00) [1, 2006.01]</b>
3/04	• • Oil cans; Oil syringes [1, 2006.01]	9/02	• with reservoir on or in a rotary member [1, 2006.01]
3/06	• • • delivering on squeezing [1, 2006.01]	9/04	• with reservoir on or in a reciprocating, rocking, or swinging member [1, 2006.01]
3/08	• • • incorporating a piston-pump [1, 2006.01]	<b>11/00</b>	<b>Arrangements for supplying grease from a stationary reservoir or the equivalent in or on the machine or member to be lubricated; Grease cups [1, 2006.01]</b>
3/10	• delivering grease [1, 2006.01]	11/02	• Hand-actuated grease cups, e.g. Stauffer cups [1, 2006.01]
3/12	• • Grease guns [1, 2006.01]	11/04	• Spring-loaded devices [1, 2006.01]
<b>5/00</b>	<b>Apparatus with hand-positioned nozzle supplied with lubricant under pressure (F16N 3/00 takes precedence) [1, 2006.01]</b>	11/06	• Weight-loaded devices [1, 2006.01]
5/02	• Nozzles or nozzle-valve arrangements therefor, e.g. high-pressure grease guns [1, 2006.01]	11/08	• with mechanical drive, other than directly by springs or weights (lubricating-pumps F16N 13/00) [1, 2006.01]
<b>7/00</b>	<b>Arrangements for supplying oil or unspecified lubricant from a stationary reservoir or the equivalent in or on the machine or member to be lubricated [1, 2006.01]</b>	11/10	• by pressure of another fluid [1, 2006.01]
7/02	• with gravity feed or drip lubrication [1, 2006.01]	11/12	• by centrifugal action [1, 2006.01]
7/04	• • with oil flow promoted by vibration [1, 2006.01]	<b>13/00</b>	<b>Lubricating-pumps (oil cans with pump F16N 3/08) [1, 2006.01]</b>
7/06	• • Arrangements in which the droplets are visible [1, 2006.01]	13/02	• with reciprocating piston (pumps with distributing equipment F16N 13/22) [1, 2006.01]
7/08	• • controlled by means of the temperature of the member to be lubricated [1, 2006.01]	13/04	• • Adjustable reciprocating pumps [1, 2006.01]
7/10	• • incorporating manually-operated control means, e.g. spindles [1, 2006.01]	13/06	• • Actuation of lubricating-pumps [1, 2006.01]
7/12	• with feed by capillary action, e.g. by wicks [1, 2006.01]	13/08	• • • by hand [1, 2006.01]
7/14	• the lubricant being conveyed from the reservoir by mechanical means (by pumping devices F16N 7/36, F16N 7/38) [1, 2006.01]	13/10	• • • with mechanical drive (F16N 13/18 takes precedence) [1, 2006.01]
7/16	• • the oil being carried up by a lifting device [1, 2006.01]	13/12	• • • • with ratchet [1, 2006.01]
7/18	• • • with one or more feed members fixed on a shaft [1, 2006.01]	13/14	• • • • with cam or wobble-plate on shaft parallel to the pump cylinder or cylinders [1, 2006.01]
7/20	• • • with one or more members moving around the shaft to be lubricated [1, 2006.01]	13/16	• • • with fluid drive [1, 2006.01]
7/22	• • • • shaped as rings [1, 2006.01]	13/18	• • • relative movement of pump parts being produced by inertia of one of the parts or of a driving member [1, 2006.01]
7/24	• • • with discs, rollers, belts, or the like contacting the shaft to be lubricated [1, 2006.01]	13/20	• Rotary pumps (with distributing equipment F16N 13/22) [1, 2006.01]
7/26	• • Splash lubrication [1, 2006.01]	13/22	• with distributing equipment [1, 2006.01]
7/28	• • Dip lubrication [1, 2006.01]	<b>15/00</b>	<b>Lubrication with substances other than oil or grease; Lubrication characterised by the use of particular lubricants in particular apparatus or conditions (F16N 17/00 takes precedence; lubricating compositions, selection of particular substances as lubricants in general C10M; lubrication specially adapted to machines or apparatus provided for in a single other class, see the relevant class for the machine or apparatus) [1, 2006.01]</b>
7/30	• the oil being fed or carried along by another fluid [1, 2006.01]		
7/32	• • Mist lubrication [1, 2006.01]		
7/34	• • • Atomising devices for oil [1, 2006.01]		
7/36	• with feed by pumping action of the member to be lubricated or of a shaft of the machine; Centrifugal lubrication [1, 2006.01]		

- 15/02 • with graphite or graphite-containing compositions [1, 2006.01]
- 15/04 • with water [1, 2006.01]
- 17/00 Lubrication of machines or apparatus working under extreme conditions** (additives to lubricating oil or lubricating grease C10M) [1, 2006.01]
  - 17/02 • at high temperature [1, 2006.01]
  - 17/04 • at low temperature [1, 2006.01]
  - 17/06 • in vacuum or under reduced pressure (of rotary anodes of X-ray tubes H01J 35/10) [1, 2006.01]

#### Details of lubricators or lubrication systems

- 19/00 Lubricant containers for use in lubricators or lubrication systems** [1, 2006.01]
- 21/00 Conduits; Junctions; Fittings for lubrication apertures** [1, 2006.01]
  - 21/02 • Lubricating nipples [1, 2006.01]
  - 21/04 • Nozzles for connection of lubricating equipment to nipples [1, 2006.01]
  - 21/06 • Covering members for nipples, conduits, or apertures [1, 2006.01]
- 23/00 Special adaptations of check valves** [1, 2006.01]
- 25/00 Distributing equipment** (combined with oil pump F16N 13/22) [1, 2006.01]
  - 25/02 • with reciprocating distributing slide valve [1, 2006.01]
  - 25/04 • with rotary distributing member [1, 2006.01]
- 27/00 Proportioning devices** [1, 2006.01]
  - 27/02 • Gating equipment [1, 2006.01]

- 29/00 Special means in lubricating arrangements or systems providing for the indication or detection of undesired conditions; Use of devices responsive to conditions in lubricating arrangements or systems** (constructions of apparatus outside the lubricating arrangements or systems, see the relevant classes) [1, 2006.01]
  - 29/02 • for influencing the supply of lubricant [1, 2006.01]
  - 29/04 • enabling a warning to be given; enabling moving parts to be stopped [1, 2006.01]
- 31/00 Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus** [1, 2006.01]
  - 31/02 • Oil catchers; Oil wipers (oil-scraping rings for pistons F16J 9/20) [1, 2006.01]

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- 33/00 Mechanical arrangements for cleaning lubricating equipment; Special racks or the like for use in draining lubricant from machine parts** [1, 2006.01]

#### Care of lubricants

- 35/00 Storage of lubricants in engine-rooms or the like** [1, 2006.01]
- 37/00 Equipment for transferring lubricant from one container to another** [1, 2006.01]
  - 37/02 • for filling grease guns [1, 2006.01]
- 39/00 Arrangements for conditioning of lubricants in the lubricating system** (cleaning of lubricating oil, lubricating compositions C10M) [1, 2006.01]
  - 39/02 • by cooling [1, 2006.01]
  - 39/04 • by heating [1, 2006.01]
  - 39/06 • by filtration [1, 2006.01]
  - 39/08 • by diluting, e.g. by addition of fuel [1, 2006.01]

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- 99/00 Subject matter not provided for in other groups of this subclass** [2006.01]