

ECLA EUROPEAN CLASSIFICATION

F28G

CLEANING OF INTERNAL OR EXTERNAL SURFACES OF HEAT-EXCHANGE OR HEAT-TRANSFER CONDUITS, e.g. WATER TUBES OR BOILERS (cleaning pipes or tubes in general [B08B9/02](#); devices or arrangements for removing water, minerals, or sludge from boilers while the boiler is in operation, or which remain in position while the boiler is in operation, or are specifically adapted to boilers without any other utility [F22B37/48](#); removal or treatment of combustion products or combustion residues F23J; removing ice from heat-exchange apparatus [F28F17/00](#))

F28G1/00

Non-rotary, e.g. reciprocated, appliances ([F28G3/00](#) takes precedence)

- F28G1/02 . having brushes ([N: [F28G1/12](#) takes precedence;] brushes [A46B](#))
- F28G1/04 . having articulated tools, e.g. assembled in chain manner
- F28G1/06 . having coiled wire tools, i.e. basket type
- F28G1/08 . having scrapers, hammers, or cutters, e.g. rigidly mounted
- F28G1/10 . . resiliently mounted
- F28G1/12 . Fluid-propelled scrapers, bullets, or like solid bodies
- F28G1/12B . . [N: forced back and forth by means of flow reversal]
- F28G1/14 . Pull-through rods
- F28G1/16 . using jets of fluid for removing debris ([F28G1/12](#) takes precedence)
- F28G1/16B . . [N: from internal surfaces of heat exchange conduits] [\[N1204\]](#)
- F28G1/16D . . [N: from external surfaces of heat exchange conduits] [\[N1204\]](#)

F28G3/00

Rotary appliances

- F28G3/02 . having abrasive tools
- F28G3/04 . having brushes (brushes [A46B](#))
- F28G3/06 . having articulated tools, e.g. assembled in chain manner
- F28G3/08 . having coiled wire tools, i.e. basket type
- F28G3/10 . having scrapers, hammers, or cutters, e.g. rigidly mounted
- F28G3/12 . . resiliently mounted
- F28G3/14 . . thrown into working position by centrifugal force
- F28G3/16 . using jets of fluid for removing debris
- F28G3/16B . . [N: from internal surfaces of heat exchange conduits] [\[N1204\]](#)

- F28G3/16D . . [N: from external surfaces of heat exchange conduits] [N1204]
- F28G5/00** **Cleaning by distortion** (by vibration [F28G7/00](#))
- F28G7/00** **Cleaning by vibration [N: or pressure waves]** [N1204]
- F28G7/00B . [N: by explosions or detonations; by pressure waves generated by combustion processes] [N1204]
- F28G9/00** **Cleaning by flushing or washing, e.g. with chemical solvents** (appliances using jets of fluid for removing debris [F28G1/16](#), [F28G3/16](#))
- F28G9/00B . [N: of regenerative heat exchanger]
- F28G11/00** **Cleaning by combustion, e.g. using squibs, using travelling burners [N:0 (F28G7/00B takes precedence)]** [N1204]
- F28G13/00** **Appliances or processes not covered by groups [F28G1/00](#) to [F28G11/00](#); Combinations of appliances or processes covered by groups [F28G1/00](#) to [F28G11/00](#)**
- F28G13/00B . [N: cleaning by increasing the temperature of heat exchange surfaces (F28G7/00B, F28G11/00 take precedence)] [N1204]
- F28G15/00** **Details** (measuring thickness of deposit [G01B](#))
- F28G15/00B . [N: Control arrangements] [N1204]
- F28G15/02 . Supports for cleaning appliances, e.g. frames
- F28G15/04 . Feeding and driving arrangements, e.g. power operation
- F28G15/06 . . Automatic reversing devices
- F28G15/08 . Locating position of cleaning appliances within conduits
- F28G15/10 . Masks for delimiting area to be cleaned