

CPC**COOPERATIVE PATENT CLASSIFICATION****A61M**

DEVICES FOR INTRODUCING MEDIA INTO, OR ONTO, THE BODY (introducing media into or onto the bodies of animals [A61D 7/00](#); means for inserting tampons [A61F 13/26](#); devices for administering food or medicines orally [A61J](#); containers for collecting, storing or administering blood or medical fluids [A61J 1/05](#)); **DEVICES FOR TRANSDUCING BODY MEDIA OR FOR TAKING MEDIA FROM THE BODY** (surgery [A61B](#); chemical aspects of surgical articles [A61L](#)); **DEVICES FOR PRODUCING OR ENDING SLEEP OR STUPOR**

NOTES

1. This subclass covers suction, pumping or atomising devices for medical use (e.g. cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers), apparatus for general or local anaesthetics, devices or methods for causing a change in the state of consciousness, catheters, dilators, apparatus for introducing medicines into the body other than orally
2. Void
3. When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

[A61M 1/18](#) covered by [B01D 63/02](#), [B01D 63/04](#)

[A61M 1/20](#) covered by [B01D 63/06](#)

[A61M 1/22](#) covered by [B01D 63/08](#)

[A61M 1/24](#) covered by [B01D 63/10](#)

[A61M 3/04](#) covered by [A61M 3/02](#)

[A61M 5/175](#) covered by [A61M 5/168](#)

[A61M 5/303](#) covered by [A61M 5/30](#)

[A61M 5/307](#) covered by [A61M 5/30](#)

[A61M 23/00](#) covered by [A61M 25/01](#), [A61M 29/00](#)

[A61M 25/08](#) covered by [A61M 25/0105](#)

[A61M 25/082](#) covered by [A61M 25/0116](#)

[A61M 25/085](#) covered by [A61M 25/0122](#)

[A61M 25/088](#) covered by [A61M 25/01](#)

[A61M 25/092](#) covered by [A61M 25/0133](#)

[A61M 25/095](#) covered by [A61M 25/01](#), [A61B 5/00](#), [A61N 1/056](#)

[A61M 25/098](#) covered by [A61M 25/0108](#)

[A61M 25/12](#) covered by [A61M 25/10](#), [A61M 29/02](#)

[A61M 25/14](#) covered by [A61M 25/0021](#)

[A61M 25/16](#) covered by [A61M 25/0009](#)

[A61M 25/18](#) covered by [A61M 25/0014](#)

[A61M 29/04](#) covered by [A61M 29/02](#)

[A61M 36/00](#) covered by [A61M 37/0069](#), [A61N 5/10](#)

A61M

(continued)

A61M 36/02 covered by [A61M 37/0069](#), [A61N 5/10](#)

A61M 36/04 covered by [A61M 37/0069](#), [A61N 5/10](#), [A61M 15/02](#)

A61M 36/06 covered by [A61M 37/0069](#), [A61N 5/10](#); [A61M 15/02](#)

A61M 36/08 covered by [A61M 5/1785](#)

A61M 36/10 covered by [A61M 37/0069](#), [A61N 5/10](#)

A61M 36/12 covered by [A61M 37/0069](#), [A61N 5/10](#)

A61M 36/14 covered by [A61M 37/0069](#), [A61N 5/10](#)

A61M 1/00

Suction or pumping devices for medical purposes; Devices for carrying-off, for treatment of, or for carrying-over, body-liquids; Drainage systems (A61M 3/00 - A61M 5/00, A61M 11/00 - A61M 16/00, A61M 27/00 - A61M 35/00 take precedence } ; catheters A61M 25/00; tube connectors, tube couplings, valves or branch units specially adapted for medical use A61M 39/00; devices for taking samples of blood A61B 5/14; implements for holding wounds open A61B 17/02; {saliva removers for dentists A61C 17/04} ; filters implantable into blood vessels A61F 2/01; pumps in general F04)

WARNING

Groups A61M 1/0007, A61M 1/0015, A61M 1/0017,
A61M 1/0025 - A61M 1/0029, A61M 1/0033, A61M 1/0035, A61M 1/0045,
A61M 1/005 - A61M 1/0054, A61M 1/006, A61M 1/0068 - A61M 1/0072,
A61M 1/0082, A61M 1/0086, A61M 1/009 - A61M 1/0098, A61M 1/0204,
A61M 1/0213 - A61M 1/0236, A61M 1/0254, A61M 1/0277, A61M 1/0286,
A61M 1/0295, A61M 1/062 - A61M 1/068, A61M 1/1001 - A61M 1/1008,
A61M 1/1012 - A61M 1/1036, A61M 1/1039 - A61M 1/1044,
A61M 1/1048 - A61M 1/1051, A61M 1/1055 - A61M 1/1058,
A61M 1/1062 - A61M 1/1065, A61M 1/1074 - A61M 1/1075, A61M 1/1082,
A61M 1/1084, A61M 1/1087 - A61M 1/1089, A61M 1/1096 - A61M 1/1098,
A61M 1/122 - A61M 1/125, A61M 1/1601 - A61M 1/1652,
A61M 1/166 - A61M 1/1676, A61M 1/1682 - A61M 1/1684,
A61M 1/1688, A61M 1/262 - A61M 1/267, A61M 1/281 - A61M 1/284,
A61M 1/288, A61M 1/301 - A61M 1/309, A61M 1/322 - A61M 1/327,
A61M 1/3403 - A61M 1/341, A61M 1/3417, A61M 1/3424 - A61M 1/3437,
A61M 1/3444 - A61M 1/3451, A61M 1/3458, A61M 1/3465,
A61M 1/3468, A61M 1/3475 - A61M 1/3493, A61M 1/3601 - A61M 1/362,
A61M 1/3629 - A61M 1/3632, A61M 1/3635 - A61M 1/3638, A61M 1/3641,
A61M 1/3644 - A61M 1/3652, A61M 1/3656 - A61M 1/3661, A61M 1/3667,
A61M 1/3673, A61M 1/3676, A61M 1/3678, A61M 1/3683, A61M 1/3686,
A61M 1/3689, A61M 1/3692, A61M 1/3695 - A61M 1/3698 are incomplete
pending reclassification of documents from group A61M 1/00 or respective
subgroup.

Until reclassification is complete, groups A61M 1/00 or respective
subgroup and A61M 1/0007, A61M 1/0015, A61M 1/0017,
A61M 1/0025 - A61M 1/0029, A61M 1/0033, A61M 1/0035, A61M 1/0045,
A61M 1/005 - A61M 1/0054, A61M 1/006, A61M 1/0068 - A61M 1/0072,
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A61M 1/3644 - A61M 1/3652,
A61M 1/3656 - A61M 1/3661, A61M 1/3667, A61M 1/3673, A61M 1/3676,
A61M 1/3678, A61M 1/3683, A61M 1/3686, A61M 1/3689, A61M 1/3692,

A61M 1/00
(continued)

[A61M 1/3695](#) - [A61M 1/3698](#) should be considered in order to perform a complete search.

- A61M 1/0001 . {Containers for suction drainage, e.g. rigid containers}
- A61M 1/0003 . . {Self-contained vacuum aspirators}
- A61M 1/0005 . . {with means for emptying the suction container, e.g. by interrupting suction}
- A61M 1/0007 . . . {Emptying the suction container without interrupting suction}
- A61M 1/0009 . . {incorporating a movable wall to create suction, e.g. syringes (with a flexible member creating suction [A61M 1/0011](#); cupping glasses [A61M 1/08](#))}
- A61M 1/0011 . . {Drainage containers incorporating a flexible member creating suction, e.g. bags in a low-pressure chamber, bellows}
- A61M 1/0013 . . {Two- or three-bottle systems for underwater drainage, e.g. for chest cavity drainage}
- A61M 1/0015 . . {Mechanical means for preventing flexible containers from collapsing when vacuum is applied inside, e.g. stents}
- A61M 1/0017 . . {Bag or liner in a rigid container, with suction applied to both}
- A61M 1/0019 . {Drainage containers not being adapted for subjection to vacuum, e.g. bags (devices worn by the patient for reception of urine [A61F 5/44](#); emptying devices for drainage bags [B65B 69/0016](#))}
- A61M 1/0021 . {Gravity drainage systems ([A61M 1/0019](#) takes precedence)}
- A61M 1/0023 . {Suction drainage systems (containers therefor [A61M 1/0001](#); suction-irrigation systems [A61M 1/0058](#))}
- A61M 1/0025 . . {comprising sensors or indicators for physical values}
- A61M 1/0027 . . . {Visual indicating means for vacuum pressure}
- A61M 1/0029 . . . {Visual indicating means for flow}
- A61M 1/0031 . . {Suction control ([A61M 1/0013](#), [A61M 1/0041](#) take precedence)}
- A61M 1/0033 . . . {by changing the size of a vent ([A61M 1/0047](#) takes precedence)}
- A61M 1/0035 . . . {by changing the section of the line, e.g. flow regulating valves ([A61M 1/0043](#), [A61M 1/0045](#) take precedence)}
- A61M 1/0037 . . {Intermittent or pulsating suction ([A61M 1/0005](#), [A61M 1/0062](#) take precedence)}
- A61M 1/0039 . . {Handpieces (aspiration tips [A61M 1/008](#))}
- A61M 1/0041 . . . {with means for varying suction manually (suction control [A61M 1/0031](#))}
- A61M 1/0043 {by changing the section of the line}
- A61M 1/0045 {by deformation of the fluid passage}
- A61M 1/0047 {by changing the size of a vent (in combination with changing the section of the line [A61M 1/0043](#))}
- A61M 1/0049 . . {Means preventing overflow or contamination of the pumping systems (combined with rigid drainage containers [A61M 1/0001](#))}
- A61M 1/005 . . . {using valves with freely moving parts, e.g. float valves}
- A61M 1/0052 . . . {by filtering, sterilising or disinfecting the exhaust air, e.g. swellable filter valves}
- A61M 1/0054 {by heat}
- A61M 1/0056 . . {Filters for solid matter (similar devices for dental use [A61C 17/046](#))}

- A61M 1/0058 . {Suction-irrigation systems (aspiration tips supplying fluids [A61M 1/0084](#); combined with tracheal tubes [A61M 16/0463](#))}
- A61M 1/006 . . {Determination of loss or gain of body fluids due to suction-irrigation, e.g. during surgery}
- A61M 1/0062 . . {operating alternately ([A61M 1/0064](#) takes precedence)}
- A61M 1/0064 . . {Handpieces therefor}
- A61M 1/0066 . {Suction pumps ([A61M 1/0003](#), [A61M 1/0011](#), [A61M 1/0023](#), [A61M 1/10](#) take precedence)}
- A61M 1/0068 . . {Piston pumps, e.g. syringes}
- A61M 1/007 . . . {the barrel serving as aspiration container, e.g. in a breast pump}
- A61M 1/0072 . . {Membrane pumps, e.g. bulbs}
- A61M 1/0074 . . {by vacuum created above a liquid flowing from a closed container}
- A61M 1/0076 . . {using Laval or Venturi jet pumps}
- A61M 1/0078 . {Tube strippers, i.e. for clearing the contents of the tubes ([vein strippers A61B 17/00008](#))}
- A61M 1/008 . {Drainage tubes; Aspiration tips}
- A61M 1/0082 . . {rotating}
- A61M 1/0084 . . {With gas or fluid supply means, e.g. for supplying rinsing fluids, anticoagulants ([for irrigation without suction A61M 3/0279](#); combined with tracheal tubes [A61M 16/0463](#); dental instruments with combined rinsing and aspirating [A61C 17/0208](#))}
- A61M 1/0086 . . {Connectors therefor, e.g. detachable from hand-piece}
- A61M 1/0088 . . {with a seal, e.g. to stick around a wound for isolating the treatment area}
- A61M 1/009 . . . {having pumping means on suction site, e.g. miniature pump on wound dressing}
- A61M 1/0092 . . . {having venting means on or near the tip}
- A61M 1/0094 . {having means for processing the drained fluid, e.g. an absorber}
- A61M 1/0096 . . {Draining devices provided with means for releasing antimicrobial or gelation agents in the drained fluid}
- A61M 1/0098 . . {Draining devices provided with means for filtering out the harmless water content before discarding the drainage container}
- A61M 1/02 . . Blood transfusion apparatus ([blood infusion by syringes A61M 5/14](#))
- A61M 1/0204 . . {Blood stirrers, e.g. for defibrination}
- A61M 1/0209 . . {Multiple bag systems for separating or storing blood components}
- A61M 1/0213 . . . {with isolated sections of the tube used as additive reservoirs}
- A61M 1/0218 . . . {with filters}
- A61M 1/0222 {and filter bypass}
- A61M 1/0227 {and means for securing the filter against damage, e.g. during centrifugation}
- A61M 1/0231 . . . {with gas separating means, e.g. air outlet through micro-porous membrane or gas bag}
- A61M 1/0236 . . . {with sampling means, e.g. sample bag or sampling port}

- A61M 1/024
 - • {Means for controlling the quantity of transfused blood, e.g. by weighing the container and automatic stopping of the transfusion after reaching a determined amount}
- A61M 1/0245
 - • • {combined with blood container shaking means}
- A61M 1/025
 - • {Means for agitating or shaking blood containers ([A61M 1/0245](#) takes precedence; shaking in general [B01F 11/00](#))}
- A61M 1/0254
 - • • {with a support plate moving only in one plane, e.g. horizontal}
- A61M 1/0259
 - • {Apparatus for treatment of blood or blood constituents not otherwise provided for (for agitating [A61M 1/025](#); for separating blood components present in distinct layers in a container [A61M 1/029](#))}
- A61M 1/0272
 - • {Apparatus for treatment of blood or blood constituents prior to or for conservation, e.g. freezing, drying or centrifuging}
- A61M 1/0277
 - • • {Frames constraining or supporting bags, e.g. during freezing}
- A61M 1/0281
 - • {Apparatus for treatment of blood or blood constituents prior to transfusion, e.g. washing, filtering or thawing}
- A61M 1/0286
 - • {Handling a large number of blood product units, e.g. storage cabinets, blood bank administration}
- A61M 1/029
 - • {Separating blood components present in distinct layers in a container, not otherwise provided for (containers for storing blood or blood components [A61J 1/05](#); sampling or analysing blood by separating blood components [G01N 33/491](#))}
- A61M 1/0295
 - • • {whereby the blood container and a solution container are compressed simultaneously by the same means}
- A61M 1/04
 - {Artificial} pneumothorax apparatus
- A61M 1/06
 - Milking pumps ([feeding-bottles A61J 9/00](#))
- A61M 1/062
 - • {Pump accessories}
- A61M 1/064
 - • • {Suction cups}
- A61M 1/066
 - • • • {Inserts therefor}
- A61M 1/068
 - • • {having means for simultaneous feeding, e.g. with rubber nipple for feeding}
- A61M 1/08
 - Cupping glasses
- A61M 1/10
 - Blood pumps; Artificial hearts; Devices for mechanical circulatory assistance, e.g. intra-aortic balloon pumps ([artificial heart valves A61F 2/24](#); [heart stimulation A61H 31/00](#))
- A61M 1/1001
 - • {General aspects of blood pumps irrespective of pump type}
- A61M 1/1003
 - • • {skeletal muscle-powered}
- A61M 1/1005
 - • • {with means for making a blood flow pulsatile ([moving filter membranes used for pumping A61M 1/267](#); piston pumps [A61M 1/1081](#))}
- A61M 1/1006
 - • • {Blood pumps incorporated within another functional device, e.g. an oxygenator, a dialyser or a blood chamber}
- A61M 1/1008
 - • {Tubes; Connections therefor}
- A61M 1/101
 - • {Non-positive displacement pumps, e.g. impeller, centrifugal, vane pumps}
- A61M 1/1012
 - • • {Constructional features thereof}
- A61M 1/1013
 - • • • {Types of bearings}
- A61M 1/1015
 - • • • • {Magnetic bearings}

A61M 1/1017	. . . . . {Hydrodynamic bearings}
A61M 1/1018	. . . . {with occluders preventing backflow}
A61M 1/102	. . . . {having a purge fluid supply}
A61M 1/1022	. . . . . {using filtered blood as purge fluid}
A61M 1/1024	. . . . {having a collapsible rotor}
A61M 1/1025	. . . . {Details on blood sealings between rotational parts, e.g. sealing by axial forces}
A61M 1/1029	. . . {Drive systems therefor}
A61M 1/1031	. . . {using a motor with canned rotor, i.e. a motor enclosed within a casing along with the rotor so that the motor bearings are lubricated by the blood that is being pumped}
A61M 1/1032	. . . . {with hydraulic or pneumatic driving means}
A61M 1/1034	. . . . {using rotating cables for driving}
A61M 1/1036	. . . . {using rotating magnets for driving}
A61M 1/1037	. . {Pumps having flexible elements, e.g. with membranes, diaphragms, or bladder pumps}
A61M 1/1039	. . . {Peristaltic pumps}
A61M 1/1041	. . . . {Linear}
A61M 1/1043	. . . {Constructional features thereof}
A61M 1/1044	. . . . {Compliance chamber containing a gas or liquid other than blood to compensate volume variations of a blood chamber}
A61M 1/1046	. . . {Drive systems therefor, e.g. mechanically, electromechanically or skeletal muscle drive means}
A61M 1/1048	. . . . {characterised by way of converting the movement}
A61M 1/1049	. . . . . {with means converting the rotation of a motor into a translational movement of the flexible element}
A61M 1/1051	. . . . . {the axis of both movements being parallel, e.g. roller screw actuator, cylindrical cam transmission}
A61M 1/1053	. . . . {using non-rotary electrical means}
A61M 1/1055	. . . . . {Electromagnetic means, e.g. solenoids or ferro-fluids, magnetostrictive means}
A61M 1/1056	. . . . . {Thermo-electric means, e.g. shaped memory alloys}
A61M 1/1058	. . . . . {Piezoelectric means}
A61M 1/106	. . . . {using hydraulic or pneumatic means}
A61M 1/1062	. . . . . {with application of vacuum at the blood pump, e.g. to accelerate filling}
A61M 1/1063	. . . . . {Diastole or systole switching by stopping or reversing a hydraulic or pneumatic pump operating at a much higher cyclical speed than the heart rate}
A61M 1/1065	. . . . . {Diastole or systole switching by valve means between the blood pump and the hydraulic or pneumatic energy source}
A61M 1/1067	. . . {using a blood vessel as flexible element (not used, see subgroups)}
A61M 1/1068	. . . . {using the heart as flexible element}

- A61M 1/107 . . . {Pulsating membrane pumps without valves, e.g. for counter pulsation, extra-arterial balloon pumps}
- A61M 1/1072 {Intra-arterial balloon pumps, e.g. intra-aortic}
- A61M 1/1074 {Intra-ventricular balloon pumps}
- A61M 1/1075 . . . {the pump membrane acting as inlet valve}
- A61M 1/1081 . . {Piston pumps}
- A61M 1/1082 . . {High-frequency pumps}
- A61M 1/1084 . . {Venturi or jet pumps}
- A61M 1/1086 . . {Regulating or controlling systems therefor}
- A61M 1/1087 . . {Active valves for blood pumps or artificial hearts, i.e. using an external force for actuating the valve}
- A61M 1/1089 . . . {where the valve is formed by a flexible tube element which is clamped for restricting the flow}
- A61M 1/1096 . . {Passive valves for blood pumps or artificial hearts, i.e. valves actuated by the fluid}
- A61M 1/1098 . . . {Valves having flexible or resilient parts, e.g. flap valve}
- A61M 1/12 . . implantable into the body {(not used, see subgroups)}
- A61M 1/122 . . . {Heart assist devices, i.e. for assisting an ailing heart, using additional pumping means in the blood circuit}
- A61M 1/125 . . . {intravascular, i.e. introduced or implanted in an existing blood vessel}
- A61M 1/127 . . . {Energy supply devices, converters therefor}
- A61M 1/14 . . Dialysis systems; Artificial kidneys; Blood oxygenators; {Reciprocating systems for treatment of body fluids, e.g. single needle systems for haemofiltration, pheris (haemofiltration using non reciprocating systems A61M 1/34; extracorporeal blood circuit aspects A61M 1/36)}; (processes of separation using semi-permeable membranes B01D 61/00; semi-permeable membranes characterised by the material, manufacturing processes therefor B01D 71/00)
- A61M 1/16 . . with membranes {(A61M 1/30 takes precedence; membranes per se B01D 69/00, B01D 71/00)}
- A61M 1/1601 . . . {Control or regulation}
- A61M 1/1603 {Regulation parameters}
- A61M 1/1605 {Physical characteristics of the dialysate fluid}
- A61M 1/1607 {before use}
- A61M 1/1609 {after use}
- A61M 1/1611 {Weight of the patient}
- A61M 1/1613 {Profiling or modelling}
- A61M 1/1615 {using measurements made at different flow rates}
- A61M 1/1617 {using measurements made during a temporary variation of a characteristic of the fresh dialysis fluid}
- A61M 1/1619 {Sampled collection of used dialysate, i.e. obviating the need for recovery of whole dialysate quantity for post-dialysis analysis}
- A61M 1/1621 . . . {Constructional aspects thereof (B01D 69/00, B01D 71/00 take precedence)}
- A61M 1/1623 {Disposition of membranes}

A61M 1/1625	. . . . .	{Dialyser of the outside perfusion type, i.e. blood flow outside hollow membrane fibres or tubes}
A61M 1/1627	. . . . .	{Dialyser of the inside perfusion type, i.e. blood flow inside hollow membrane fibres or tubes}
A61M 1/1629	. . . . .	{with integral heat exchanger}
A61M 1/1631	. . . . .	{having non-tubular membranes, e.g. sheets}
A61M 1/1633	. . . . .	{with more than one dialyzer unit}
A61M 1/1635	. . . . .	{with volume chamber balancing devices between used and fresh dialysis fluid}
A61M 1/1637	. . . . .	{containing the whole volume of dialysis fluid used during a treatment session}
A61M 1/1639	. . . . .	{linked by membranes}
A61M 1/1641	. . . . .	{linked by pistons}
A61M 1/1643	. . . . .	{with weighing of fresh and used dialysis fluid}
A61M 1/1645	. . . . .	{with mechanically linked peristaltic dialysis fluid pumps one upstream, the other one downstream of the dialyser}
A61M 1/1647	. . . . .	{with flow rate measurement of the dialysis fluid, upstream and downstream of the dialyser}
A61M 1/1649	. . . . .	{with pulsatile dialysis fluid flow}
A61M 1/165	. . . . .	{with a dialyser bypass on the dialysis fluid line}
A61M 1/1652	. . . . .	{Holding or locking systems for the membrane unit}
A61M 1/1654	. . . . .	{Dialysates therefor}
A61M 1/1656	. . . . .	{Apparatus for preparing dialysates (with regeneration of dialysates A61M 1/1696)}
A61M 1/1658	. . . . .	{Degasification (in general B01D 19/00)}
A61M 1/166	. . . . .	{Heating (for sterilisation A61M 1/1686)}
A61M 1/1662	. . . . .	. {with heat exchange between fresh and used dialysate}
A61M 1/1664	. . . . .	. {with temperature control}
A61M 1/1666	. . . . .	. {by dissolving solids}
A61M 1/1668	. . . . .	. {Details of containers}
A61M 1/167	. . . . .	. {Flexible packaging for solid concentrates}
A61M 1/1672	. . . . .	. {using membrane filters, e.g. for sterilising the dialysate}
A61M 1/1674	. . . . .	. {using UV radiation sources for sterilising the dialysate}
A61M 1/1676	. . . . .	. {containing proteins, e.g. albumin}
A61M 1/1678	. . . . .	. {intracorporal (A61M 1/28 and A61F 2/022 take precedence)}
A61M 1/168	. . . . .	. {Sterilisation or cleaning before or after use (sterilisation of materials in general A61L ; cleaning or sterilisation of membrane modules apart from the machine B01D 65/02)}
A61M 1/1682	. . . . .	. {both machine and membrane module, i.e. also the module blood side}
A61M 1/1684	. . . . .	. {Checking the module characteristics before reuse}
A61M 1/1686	. . . . .	. {by heat}
A61M 1/1688	. . . . .	. {with recirculation of the sterilising fluid}

- A61M 1/169 {using chemical substances}
- A61M 1/1692 . . . {Detection of blood traces in dialysate (testing of the membrane modules [B01D 65/10](#); investigating fluid-tightness of structures in general [G01M 3/00](#))}
- A61M 1/1694 . . . {with recirculating dialysing liquid}
- A61M 1/1696 {with dialysate regeneration}
- A61M 1/1698 . . . {Blood oxygenators with or without heat-exchangers ([A61M 1/1678](#) takes precedence; membranes therefor [B01D 67/00](#), [B01D 69/00](#), [B01D 71/00](#))}
- A61M 1/26 . . . {and internal elements} which are moving
- A61M 1/262 {rotating}
- A61M 1/265 {inducing TAYLOR vortices}
- A61M 1/267 {used for pumping}
- A61M 1/28 . . Peritoneal dialysis; {Other peritoneal treatment, e.g. oxygenation}
- A61M 1/281 . . . {Instillation other than by gravity}
- A61M 1/282 . . . {Operational modes}
- A61M 1/284 {Continuous flow peritoneal dialysis [CFPD]}
- A61M 1/285 . . . {Catheters therefor}
- A61M 1/287 . . . {Dialysates therefor}
- A61M 1/288 . . . {Priming (priming in extracorporeal blood circuits [A61M 1/3643](#))}
- A61M 1/30 . . {Reciprocating systems, alternately withdrawing blood from and returning it to the patient, e.g. single-lumen-needle dialysis or single needle systems for haemofiltration, pheresis}
- A61M 1/301 . . . {Details}
- A61M 1/302 {having a reservoir for withdrawn untreated blood}
- A61M 1/303 {having a reservoir for treated blood to be returned}
- A61M 1/304 {Treatment chamber used as reservoir, e.g. centrifuge bowl or filter with movable membrane}
- A61M 1/305 {Control of inversion point between collection and re-infusion phase}
- A61M 1/306 {Pressure control, e.g. using substantially rigid closed, gas buffered or elastic reservoirs}
- A61M 1/307 {Time control}
- A61M 1/308 {Volume control, e.g. with open or flexible containers, by counting the number of pump revolutions, weighing}
- A61M 1/309 {with trans-membrane pressure [TMP] increasing substantially continuously during arterial phase}
- A61M 1/32 . . Oxygenators without membranes
- A61M 1/322 . . . {Antifoam; Defoaming}
- A61M 1/325 {Surfactant coating; Improving wettability}
- A61M 1/327 . . . {using catalytic production of oxygen}
- A61M 1/34 . . Filtering material out of the blood by passing it through a membrane, i.e. haemofiltration, diafiltration {([A61M 1/30](#) takes precedence; extracorporeal blood circuit aspects [A61M 1/36](#))}

- A61M 1/3403 . . {Regulation parameters}
- A61M 1/3406 . . . {Physical characteristics of the filtrate, e.g. urea}
- A61M 1/341 . . . {by measuring the filtrate rate, volume}
- A61M 1/3413 . . {Diafiltration}
- A61M 1/3417 . . . {using distinct filters for dialysis and ultra-filtration}
- A61M 1/342 . . {Adding solutions to the blood, e.g. substitution solutions (for preventing coagulation [A61M 1/3672](#))}
- A61M 1/3424 . . . {Substitution fluid path}
- A61M 1/3427 {back through the membrane, e.g. by inverted trans-membrane pressure [TMP]}
- A61M 1/3431 {upstream the filter}
- A61M 1/3434 {with pre-dilution and post-dilution}
- A61M 1/3437 {downstream the filter, e.g. post-dilution with filtrate}
- A61M 1/3441 . . . {Substitution rate control as a function of the ultrafiltration rate}
- A61M 1/3444 {in which the collected ultra-filtrate expels an equal volume of substitution fluid from a reservoir}
- A61M 1/3448 {by mechanical linked pumps in both ultra-filtrate and substitution flow line}
- A61M 1/3451 {the difference in weight between both ultra-filtrate and substitution reservoir being used as control signal}
- A61M 1/3455 . . . {Substitution fluids}
- A61M 1/3458 {having electrolytes not present in the dialysate}
- A61M 1/3462 {Circuits for the preparation thereof}
- A61M 1/3465 {using dialysate as substitution fluid}
- A61M 1/3468 {using treated filtrate as substitution fluid}
- A61M 1/3472 . . {with treatment of the filtrate}
- A61M 1/3475 . . . {with filtrate treatment agent in the same enclosure as the membrane}
- A61M 1/3479 . . . {by dialyzing the filtrate}
- A61M 1/3482 . . . {by filtrating the filtrate using another cross-flow filter, e.g. a membrane filter}
- A61M 1/3486 . . . {Biological, chemical treatment, e.g. chemical precipitation; treatment by absorbents}
- A61M 1/3489 {by biological cells}
- A61M 1/3493 . . . {using treatment agents in suspension}
- A61M 1/3496 . . {Plasmapheresis; Leucopheresis; Lymphopheresis ([A61M 1/3472](#) takes precedence; single-needle processes [A61M 1/30](#))}
- A61M 1/36 . . Other treatment of blood in a by-pass of the natural circulatory system, e.g. temperature adaptation, irradiation; {Extra-corporeal blood circuits}
- A61M 1/3601 . . {Extra-corporeal circuits in which the blood fluid passes more than once through the treatment unit}
- A61M 1/3603 . . . {in the same direction}
- A61M 1/3604 . . . {in opposite directions}
- A61M 1/3606 . . {Arrangements for blood-volume reduction of extra-corporeal circuits}

- A61M 1/3607 . . {Regulation parameters}
- A61M 1/3609 . . . {Physical characteristics of the blood, e.g. haematocrit, urea}
- A61M 1/361 {before treatment}
- A61M 1/3612 {after treatment}
- A61M 1/3613 . . {Reperfusion, e.g. of the coronary vessels, e.g. retroperfusion}
- A61M 1/3615 . . {Cleaning blood contaminated by local chemotherapy of a body part temporarily isolated from the blood circuit}
- A61M 1/3616 . . {Batch-type treatment}
- A61M 1/3618 . . {Magnetic separation}
- A61M 1/362 . . {changing physical properties of target cells by binding them to added particles to facilitate their subsequent separation from other cells, e.g. immunoaffinity}
- A61M 1/3621 . . {Extra-corporeal blood circuits (single-needle circuits [A61M 1/30](#))}
- A61M 1/3624 . . . {Level detectors; Level control}
- A61M 1/3626 . . . {Gas bubble detectors (blood leak detection by change of transparency of dialysate [A61M 1/1692](#); in infusion devices [A61M 5/365](#); observing bubbles in a liquid pool for leak detection, in general [G01M 3/06](#))}
- A61M 1/3627 . . . {Degassing devices; Buffer reservoirs; Drip chambers; Blood filters (priming [A61M 1/3643](#); blood filters for infusion [A61M 5/165](#))}
- A61M 1/3629 {degassing by changing pump speed, e.g. during priming}
- A61M 1/363 {Degassing by using vibrations}
- A61M 1/3632 {Combined venous-cardiotomy reservoirs}
- A61M 1/3633 {Blood component filters, e.g. leukocyte filters}
- A61M 1/3635 {Constructional details}
- A61M 1/3636 {having a flexible housing}
- A61M 1/3638 {with a vapour trap}
- A61M 1/3639 . . . {Blood pressure control, pressure transducers specially adapted therefor}
- A61M 1/3641 {Pressure isolators}
- A61M 1/3643 . . . {Priming, rinsing before or after use}
- A61M 1/3644 {Mode of operation}
- A61M 1/3646 {Expelling the residual body fluid after use, e.g. back to the body}
- A61M 1/3647 {with recirculation of the priming solution}
- A61M 1/3649 {using dialysate as priming or rinsing liquid}
- A61M 1/365 {through membranes, e.g. by inverted trans-membrane pressure [TMP]}
- A61M 1/3652 {using gas, e.g. air}
- A61M 1/3653 . . . {Interfaces between patient blood circulation and extra-corporeal blood circuit}
- A61M 1/3655 {Arterio-venous shunts, fistulae}
- A61M 1/3656 {Monitoring patency or flow at connection sites; Detecting disconnections}
- A61M 1/3658 {Indicating the amount of purified blood recirculating in the fistula or shunt}

- A61M 1/3659 {Cannulae pertaining to extracorporeal circulation}
- A61M 1/3661 {for haemodialysis}
- A61M 1/3663 . . . {Flow rate transducers; Flow integrators ([measuring the flow in general G01F](#))}
- A61M 1/3664 . . . {for preparing cardioplegia solutions}
- A61M 1/3666 . . . {Cardiac or cardiopulmonary bypass, e.g. heart-lung machines}
- A61M 1/3667 {with assisted venous return}
- A61M 1/3669 . . . {Electrical impedance measurement of body fluids; transducers specially adapted therefor}
- A61M 1/367 . . . {Circuit parts not covered by the preceeding subgroups of group [A61M 1/3621](#)}
- A61M 1/3672 . . {Means preventing coagulation ([aspiration tips with anticoagulant delivery A61M 1/0084](#))}
- A61M 1/3673 . . . {Anticoagulant coating, e.g. Heparin coating}
- A61M 1/3675 . . . {Deactivation}
- A61M 1/3676 . . . {by interposing a liquid layer between blood and air}
- A61M 1/3678 . . {Separation of cells using wave pressure; Manipulation of individual corpuscles}
- A61M 1/3679 . . {by absorption ([A61M 1/3675 takes precedence](#))}
- A61M 1/3681 . . {by irradiation}
- A61M 1/3683 . . . {using photoactive agents}
- A61M 1/3686 {by removing photoactive agents after irradiation}
- A61M 1/3687 . . {Chemical treatment ([A61M 1/3675 takes precedence](#))}
- A61M 1/3689 . . . {by biological cells}
- A61M 1/369 . . {Temperature treatment ([heating or cooling infusion media A61M 5/44](#))}
- A61M 1/3692 . . {Washing or rinsing blood or blood constituents}
- A61M 1/3693 . . {using separation based on different densities of components, e.g. centrifuging}
- A61M 1/3695 . . . {with sedimentation by gravity}
- A61M 1/3696 . . . {with means for adding or withdrawing liquid substances during the centrifugation, e.g. continuous centrifugation}
- A61M 1/3698 . . . {Expressing processed fluid out from the turning rotor using another fluid compressing the treatment chamber; Variable volume rotors}
- A61M 1/38 . . Removing constituents from donor blood and {storing or} returning remainder to body, {e.g. for transfusion}
- A61M 1/382 . . . {Optimization of blood component yield}
- A61M 1/385 {taking into account of the patient characteristics}
- A61M 1/387 {taking into account of the needs or inventory}

Syringes; Irrigators; Baths for subaquatic intestinal cleaning (other apparatus for introducing medicines into the body [A61M 29/00](#) - [A61M 37/00](#))

A61M 3/00

Medical syringes, e.g. enemata; Irrigators ([A61M 5/00](#) takes precedence; pistons [A61M 5/315](#))

WARNING

Groups [A61M 3/0204](#) - [A61M 3/022](#) are incomplete pending reclassification of documents from group [A61M 3/02](#).

Until reclassification is complete, groups [A61M 3/02](#) and [A61M 3/0204](#) - [A61M 3/022](#) should be considered to perform a complete search.

- [A61M 3/005](#) . {comprising means for injection of two or more media, e.g. by mixing}
- [A61M 3/02](#) . Enemata; Irrigators
- [A61M 3/0204](#) . . {Physical characteristics of the irrigation fluid, e.g. conductivity or turbidity}
- [A61M 3/0208](#) . . . {before use}
- [A61M 3/0212](#) . . . {after use}
- [A61M 3/0216](#) . . . {Pressure}
- [A61M 3/022](#) . . . {Volume; Flow rate}
- [A61M 3/0225](#) . . {Devices on which the patient can sit, e.g. mounted on a toilet bowl (combined with bidets [A61M 3/06](#)); Devices containing liquid pumped by the patient's weight}
- [A61M 3/0229](#) . . {Devices operating in a closed circuit, i.e. recycling the irrigating fluid}
- [A61M 3/0233](#) . . {characterised by liquid supply means, e.g. from pressurised reservoirs}
- [A61M 3/0237](#) . . . {the pressure being generated in the reservoir, e.g. by gas generating tablets}
- [A61M 3/0241](#) . . . {the liquid being supplied by gravity}
- [A61M 3/0245](#) {Containers therefor, e.g. with heating means, with storage means for cannula}
- [A61M 3/025](#) . . . {supplied directly from the pressurised water source, e.g. with medicament supply (combined with bidets [A61M 3/06](#))}
- [A61M 3/0254](#) . . . {the liquid being pumped (by the patient's weight [A61M 3/0225](#))}
- [A61M 3/0258](#) {by means of electric pumps}
- [A61M 3/0262](#) {manually, e.g. by squeezing a bulb}
- [A61M 3/0266](#) . . {Stands, holders or storage means for irrigation devices (containers with storage means for cannula [A61M 3/0245](#))}
- [A61M 3/027](#) . . {Devices for holding the cannula in position, e.g. belts (cannula details [A61M 3/0279](#))}
- [A61M 3/0275](#) . . {Pulsating jets; Vibrating nozzles}
- [A61M 3/0279](#) . . {Cannula; Nozzles; Tips; their connection means}
- [A61M 3/0283](#) . . . {with at least two inner passageways, a first one for irrigating and a second for evacuating}
- [A61M 3/0287](#) . . . {with an external liquid collector}

- A61M 3/0291 . . . {with dilating fingers}
- A61M 3/0295 . . . {with inflatable balloon}
- A61M 3/06 . . combined with bidets

A61M 5/00

Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way; Accessories therefor, e.g. filling or cleaning devices, arm-rests ({vaccination appliances for veterinary use [A61D 1/025](#)}; tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#); containers specially adapted for medical or pharmaceutical purposes [A61J 1/00](#); {combinations of vial and syringe for mixing or transferring their contents [A61J 1/20](#); holders for containers for collecting, storing or administering blood or medical fluids [A61J 1/16](#)})

- A61M 5/001 . {Apparatus specially adapted for cleaning or sterilising syringes or needles}
- A61M 5/002 . {Packages specially adapted therefor, e.g. for syringes or needles, kits for diabetics (needle protection, e.g. caps, [A61M 5/3202](#); for sharps [A61B 50/3001](#))}
- A61M 5/003 . . {Kits for diabetics}
- A61M 2005/004 . . {Magazines with multiple needles directly inserted into an injection or infusion device, e.g. revolver-like magazines}
- A61M 2005/005 . . {Magazines with multiple ampoules directly inserted into an injection or infusion device, e.g. revolver-like magazines containing ampoules with or without needles}
- A61M 2005/006 . {for gases, e.g. CO₂}
- A61M 5/007 . {for contrast media}
- A61M 5/008 . {Racks for supporting syringes or needles ([A61M 5/001](#) takes precedence)}
- A61M 5/14 . Infusion devices, e.g. infusing by gravity; Blood infusion; Accessories therefor (suction in pumping blood transfusion [A61M 1/02](#); {infusion containers [A61J 1/05](#)})
- A61M 2005/1401 . . {Functional features}
- A61M 2005/1402 . . . {Priming}
- A61M 2005/1403 . . . {Flushing or purging}
- A61M 2005/1404 . . . {Keep vein-open rate [KVO], i.e. low flow rate}
- A61M 2005/1405 . . . {Patient controlled analgesia [PCA]}
- A61M 2005/1406 . . . {Minimizing backflow along the delivery catheter track}
- A61M 5/1407 . . {Infusion of two or more substances}
- A61M 5/1408 . . . {in parallel, e.g. manifolds, sequencing valves (access sites [A61M 39/02](#); tube connectors [A61M 39/10](#))}
- A61M 5/1409 . . . {in series, e.g. first substance passing through container holding second substance, e.g. reconstitution systems (needle sets [A61M 5/162](#))}
- A61M 5/141 . . {with capillaries for restricting fluid flow}
- A61M 5/1411 . . {Drip chambers ([A61M 5/162](#), [A61M 5/1689](#), [A61M 5/40](#) take precedence)}
- A61M 5/1412 . . {Burettes, measuring cylinders (for laboratory use [B01L 3/02](#))}
- A61M 5/1413 . . {Modular systems comprising interconnecting elements}
- A61M 5/1414 . . {Hanging-up devices}
- A61M 5/1415 . . . {Stands, brackets or the like for supporting infusion accessories}

- A61M 2005/1416 {placed on the body of the patient}
- A61M 5/1417 {Holders or handles for hanging up infusion containers}
- A61M 5/1418 {Clips, separators or the like for supporting tubes or leads}
- A61M 5/142 Pressure infusion, e.g. using pumps

NOTE

In this group, the following expression is used with the meaning indicated:

- "pressure infusion" includes powered injection working at a controlled rate

- A61M 2005/14204 {with gas-producing electrochemical cell}
- A61M 2005/14208 {with a programmable infusion control system, characterised by the infusion program}
- A61M 5/14212 {Pumping with an aspiration and an expulsion action}
- A61M 5/14216 {Reciprocating piston type}
- A61M 5/1422 {with double acting or multiple pistons}
- A61M 5/14224 {Diaphragm type}
- A61M 5/14228 {with linear peristaltic action, i.e. comprising at least three pressurising members or a helical member}

NOTE

Pumps having tubular flexible working members [F04B 43/08](#)

- A61M 5/14232 {Roller pumps}

NOTE

Pumps having rollers for peristaltic action [F04B 43/12](#)

- A61M 5/14236 {Screw, impeller or centrifugal type pumps}
- A61M 5/1424 {Manually operated pumps}
- A61M 5/14244 {adapted to be carried by the patient, e.g. portable on the body}
- A61M 5/14248 {of the skin patch type}
- A61M 2005/14252 {with needle insertion means}
- A61M 2005/14256 {with means for preventing access to the needle after use}
- A61M 2005/1426 {with means for preventing access to the needle after use}
- A61M 2005/14264 {with means for compensating influence from the environment}
- A61M 2005/14268 {with a reusable and a disposable component}
- A61M 2005/14272 {for emergency, field or home use, e.g. self-contained kits to be carried by the doctor}
- A61M 5/14276 {specially adapted for implantation}
- A61M 5/1428 {with manual pumping action}
- A61M 2005/14284 {with needle insertion means}
- A61M 2005/14288 {Infusion or injection simulation (simulation of surgery in general [A61B 34/10](#); training for or simulation of use of injection or infusion devices [G09B 23/285](#); computer simulations for diagnosis or treatment in general [G06F 19/3437](#))}

A61M 2005/14292	. . . .	{Computer-based infusion planning or simulation of spatio-temporal infusate distribution}
A61M 2005/14296	. . . .	{Pharmacokinetic models}
A61M 5/145	. . .	using pressurised reservoirs, e.g. pressurised by means of pistons
A61M 2005/14506	. . . .	{mechanically driven, e.g. spring or clockwork}
A61M 2005/14513	. . . .	{with secondary fluid driving or regulating the infusion}
A61M 5/1452	. . . .	{pressurised by means of pistons}
A61M 5/14526	. . . . .	{the piston being actuated by fluid pressure}
A61M 2005/14533	. . . . .	{cam actuated}
A61M 5/1454	. . . . .	{spring-actuated, e.g. by a clockwork}
A61M 5/14546	. . . . .	{Front-loading type injectors}
A61M 2005/14553	. . . . .	{comprising a pressure jacket}
A61M 5/1456	. . . . .	{with a replaceable reservoir comprising a piston rod to be moved into the reservoir, e.g. the piston rod is part of the removable reservoir}
A61M 5/14566	. . . . .	{with a replaceable reservoir for receiving a piston rod of the pump}
A61M 2005/14573	. . . . .	{with a replaceable reservoir for quick connection/disconnection with a driving system}
A61M 5/1458	. . . . .	{Means for capture of the plunger flange}
A61M 5/14586	. . . . .	{pressurised by means of a flexible diaphragm}
A61M 5/14593	. . . . .	{the diaphragm being actuated by fluid pressure}
A61M 5/148	. . . . .	flexible, {e.g. independent bags} (A61M 5/155 takes precedence)
A61M 5/1483	. . . . .	{using flexible bags externally pressurised by fluid pressure}
A61M 5/1486	. . . . .	{the bags being substantially completely surrounded by fluid}
A61M 5/152	. . . . .	pressurised by contraction of elastic reservoirs {(containers for dispensing contents by contraction of an elastic bag provided therein, in general B65D 83/0061)}
A61M 5/155	. . . .	pressurised by gas {introduced into the reservoir}
A61M 5/158	. .	Needles {for infusions; Accessories therefor, e.g. for inserting infusion needles, or for holding them on the body}
A61M 2005/1581	. . .	{Right-angle needle-type devices}
A61M 5/1582	. . .	{Double lumen needles}
A61M 2005/1583	. . .	{Needle extractors}
A61M 2005/1585	. . .	{Needle inserters}
A61M 2005/1586	. . .	{Holding accessories for holding infusion needles on the body (holding devices for catheters A61M 25/02)}
A61M 2005/1587	. . .	{suitable for being connected to an infusion line after insertion into a patient}
A61M 2005/1588	. . .	{having means for monitoring, controlling or visual inspection, e.g. for patency check, avoiding extravasation}
A61M 5/162	. .	Needle sets, i.e. connections by puncture between reservoir and tube; {Connections between reservoir and tube (in jet-action syringes A61M 5/30 ; connectors for tubes having sealed ends and a needle for piercing them A61M 39/14)}

- A61M 2005/1623 . . . {Details of air intake}
- A61M 5/1626 . . . {Needle protectors therefor (in combination with syringes [A61M 5/3202](#); protectors for sharps [A61B 50/3001](#))}
- A61M 5/165 . . Filtering accessories, e.g. blood filters, filters for infusion liquids ({[A61M 1/14](#) , [A61M 1/34](#), {[A61M 1/3627](#), [A61M 1/3679](#), [A61M 1/3687](#)} take precedence; {needle sets with incorporated air inlet filters [A61M 5/162](#))}
- A61M 2005/1652 . . . {Filter with duct, e.g. filtering element incorporated in a flow line, tube, duct}
- A61M 2005/1655 . . . {Filter with fibers, e.g. filtering element in form of hollow fibers}
- A61M 2005/1657 . . . {Filter with membrane, e.g. membrane, flat sheet type infusion filter}
- A61M 5/168 . . Means for controlling media flow to the body or for metering media to the body, e.g. drip meters, counters; {Monitoring media flow to the body (flow control in general [G05D 7/00](#))}
- A61M 5/16804 . . . {Flow controllers}
- A61M 5/16809 {by repeated filling and emptying of an intermediate volume (pressure infusion using positive displacement pumps [A61M 5/142](#))}
- A61M 5/16813 {by controlling the degree of opening of the flow line}
- A61M 5/16818 {by changing the height of the reservoir}
- A61M 5/16822 {by controlling air intake into infusion reservoir (needle sets with air inlet [A61M 5/162](#))}
- A61M 5/16827 {controlling delivery of multiple fluids, e.g. sequencing, mixing or via separate flow-paths (infusion of multiple fluids without using a controller [A61M 5/1407](#))}
- A61M 5/16831 . . . {Monitoring, detecting, signalling or eliminating infusion flow anomalies (low-level float-valves causing cut-off [A61M 5/40](#); indicating or recording presence, absence or direction of flow in general [G01P 13/0066](#))}
- A61M 5/16836 {by sensing tissue properties at the infusion site, e.g. for detecting infiltration (detecting tissue temperature for diagnostic purposes [A61M 39/0247](#))}
- A61M 5/1684 {by detecting the amount of infusate remaining, e.g. signalling end of infusion}
- A61M 5/16845 {by weight}
- A61M 5/1685 {by detection of position of a floating member}
- A61M 5/16854 {by monitoring line pressure}
- A61M 5/16859 {Evaluation of pressure response, e.g. to an applied pulse}
- A61M 2005/16863 {Occlusion detection}
- A61M 2005/16868 {Downstream occlusion sensors}
- A61M 2005/16872 {Upstream occlusion sensors}
- A61M 5/16877 . . . {Adjusting flow; Devices for setting a flow rate}
- A61M 5/16881 {Regulating valves (on-off valves, e.g. clamps [A61M 39/28](#))}
- A61M 5/16886 . . . {for measuring fluid flow rate, i.e. flowmeters}
- A61M 5/1689 {Drip counters}
- A61M 5/16895 {by monitoring weight change, e.g. of infusion container}
- A61M 5/172 . . . electrical or electronic ({[A61M 5/16804](#) and [A61M 5/16831](#) take precedence})

- A61M 5/1723 {using feedback of body parameters, e.g. blood-sugar, pressure (measurement of body parameters [A61B 5/00](#))}
- A61M 2005/1726 {the body parameters being measured at, or proximate to, the infusion site}
- A61M 5/178 . Syringes
- A61M 5/1782 . . {Devices aiding filling of syringes in situ (combination of a vial and a syringe for transferring or mixing their contents [A61J 1/2096](#), filling of medical containers in general [B65B 3/003](#))}
- A61M 5/1785 . . {comprising radioactive shield means (syringe shields or holders for storage of radioactive sources [G21F 5/018](#))}
- A61M 2005/1787 . . {Syringes for sequential delivery of fluids, e.g. first medicament and then flushing liquid}
- A61M 5/19 . . having more than one chamber, {e.g. including a manifold coupling two parallelly aligned syringes through separate channels to a common discharge assembly (surgical glue applicators [A61B 17/00491](#))}
- A61M 5/20 . . Automatic syringes, e.g. with automatically actuated piston rod, with automatic needle injection, filling automatically ([A61M 5/142](#) {, [A61M 5/46](#)} take precedence; {hypodermic projectiles [F42B 12/54](#)})
- A61M 2005/2006 . . . {Having specific accessories}
- A61M 2005/2013 {triggering of discharging means by contact of injector with patient body}
- A61M 2005/202 {cocking means, e.g. to bias the main drive spring of an injector}
- A61M 2005/2026 . . . {Semi-automatic, e.g. user activated piston is assisted by additional source of energy}
- A61M 5/2033 . . . {Spring-loaded one-shot injectors with or without automatic needle insertion (multishot dosing syringes [A61M 5/31525](#), needle insertion only [A61M 5/3287](#))}
- A61M 5/204 . . . {connected to external reservoirs for multiple refilling}
- A61M 5/2046 . . . {Media being expelled from injector by gas generation, e.g. explosive charge}
- A61M 5/2053 . . . {Media being expelled from injector by pressurised fluid or vacuum (for infusion [A61M 5/145](#), [A61M 5/155](#))}
- A61M 2005/206 . . . {With automatic needle insertion}
- A61M 5/2066 . . . {comprising means for injection of two or more media, e.g. by mixing}
- A61M 2005/2073 . . . {preventing premature release, e.g. by making use of a safety lock}
- A61M 2005/208 {Release is possible only when device is pushed against the skin, e.g. using a trigger which is blocked or inactive when the device is not pushed against the skin}
- A61M 2005/2086 . . . {having piston damping means, e.g. axially or rotationally acting retarders}
- A61M 2005/2093 . . . {including concentration setting means}
- A61M 5/24 . . Ampoule syringes, i.e. syringes with needle for use in combination with replaceable ampoules or carpules, e.g. automatic (ampoules or carpules [A61J 1/06](#))
- A61M 2005/2403 . . . {Ampoule inserted into the ampoule holder}
- A61M 2005/2407 {from the rear}

A61M 2005/2411	. . . .	{from the front}
A61M 2005/2414	. . . .	{from the side}
A61M 2005/2418	. . .	{comprising means for damping shocks on ampoule}
A61M 5/2422	. . .	{not used, see subgroups and A61M 5/24 }
A61M 5/2425	. . . .	{emptied by compression of deformable ampoule or carpule wall}
A61M 5/2429	. . . .	{emptied by telescoping of ampoules or carpules with the syringe body}
A61M 2005/2433	. . .	{Ampoule fixed to ampoule holder}
A61M 2005/2437	. . . .	{by clamping means}
A61M 2005/244	. . . . .	{by flexible clip}
A61M 2005/2444	. . . .	{by thread}
A61M 5/2448	. . .	{comprising means for injection of two or more media, e.g. by mixing}
A61M 2005/2451	. . . .	{preventing delivery before mixing is completed, e.g. by locking mechanisms}
A61M 5/2455	. . .	{with sealing means to be broken or opened}
A61M 5/2459	. . . .	{upon internal pressure increase, e.g. pierced or burst (A61M 5/2429 takes precedence)}
A61M 2005/2462	. . . . .	{by displacing occluding plugs}
A61M 5/2466	. . . .	{by piercing without internal pressure increase (A61M 5/2429 takes precedence)}
A61M 2005/247	. . . . .	{with fixed or steady piercing means, e.g. piercing under movement of ampoule}
A61M 2005/2474	. . . . .	{with movable piercing means, e.g. ampoule remains fixed or steady}
A61M 2005/2477	. . .	{comprising means to reduce play of ampoule within ampoule holder, e.g. springs}
A61M 2005/2481	. . .	{comprising means for biasing the ampoule out of the ampoule holder}
A61M 2005/2485	. . .	{Ampoule holder connected to rest of syringe}
A61M 2005/2488	. . . .	{via rotation, e.g. threads or bayonet}
A61M 2005/2492	. . . .	{via snap connection}
A61M 2005/2496	. . . .	{via pivot}
A61M 5/28	. .	Syringe ampoules or carpules, i.e. ampoules or carpules provided with a needle
A61M 5/281	. . .	{Not used, see subgroups and A61M 5/28 }
A61M 5/282	. . . .	{emptied by compression of deformable ampoule or carpule wall}
A61M 5/283	. . . .	{emptied by sliding the ampoules or carpules relative to the needle holding base}
A61M 5/284	. . .	{comprising means for injection of two or more media, e.g. by mixing}
A61M 5/285	. . .	{with sealing means to be broken or opened (not used, see subgroups)}
A61M 5/286	. . . .	{upon internal pressure increase, e.g. pierced or burst (A61M 5/283 takes precedence)}
A61M 2005/287	. . . . .	{by displacing occluding plugs}

- A61M 5/288 {by piercing without internal pressure increase ([A61M 5/283](#) takes precedence)}
- A61M 5/30 . . Syringes for injection by jet action, without needle, e.g. for use with replaceable ampoules or carpules
- A61M 5/3007 . . . {with specially designed jet passages at the injector's distal end}
- A61M 5/3015 . . . {for injecting a dose of particles in form of powdered drug, e.g. mounted on a rupturable membrane and accelerated by a gaseous shock wave or supersonic gas flow ([cell injection devices C12M 3/006](#))}
- A61M 2005/3022 . . . {Worn on the body, e.g. as patches ([pressure infusion of the skin patch type A61M 5/14248](#))}
- A61M 5/31 . . Details
- A61M 2005/3101 . . . {Leak prevention means for proximal end of syringes, i.e. syringe end opposite to needle mounting end}
- A61M 2005/3103 . . . {Leak prevention means for distal end of syringes, i.e. syringe end for mounting a needle}
- A61M 2005/3104 {Caps for syringes without needle}
- A61M 2005/3106 {Plugs for syringes without needle}
- A61M 2005/3107 {for needles}
- A61M 2005/3109 {Caps sealing the needle bore by use of, e.g. air-hardening adhesive, elastomer or epoxy resin}
- A61M 2005/311 {Plugs, i.e. sealing rods or stylets closing the bore of needles}
- A61M 2005/3112 . . . {Incorporating self-aspirating means, e.g. to provide flashback}
- A61M 2005/3114 . . . {Filling or refilling}
- A61M 2005/3115 {spring-assisted}
- A61M 2005/3117 . . . {Means preventing contamination of the medicament compartment of a syringe}
- A61M 2005/3118 {via the distal end of a syringe, i.e. syringe end for mounting a needle cannula}
- A61M 2005/312 {comprising sealing means, e.g. severable caps, to be removed prior to injection by e.g. tearing or twisting}
- A61M 2005/3121 {via the proximal end of a syringe, i.e. syringe end opposite to needle cannula mounting end}
- A61M 2005/3123 . . . {having air entrapping or venting means, e.g. purging channels in pistons}
- A61M 2005/3125 . . . {specific display means, e.g. to indicate dose setting}
- A61M 2005/3126 {Specific display means related to dosing}
- A61M 2005/3128 . . . {Incorporating one-way valves, e.g. pressure-relief or non-return valves}
- A61M 5/3129 . . . {Syringe barrels ([A61M 5/3205](#) and [A61M 5/50](#) take precedence)}
- A61M 2005/3131 {specially adapted for improving sealing or sliding}
- A61M 2005/3132 {having flow passages for injection agents at the distal end of the barrel to bypass a sealing stopper after its displacement to this end due to internal pressure increase}
- A61M 5/3134 {characterised by constructional features of the distal end, i.e. end closest to the tip of the needle cannula}
- A61M 5/3135 {characterised by constructional features of the proximal end}

A61M 5/3137	. . . .	{Specially designed finger grip means, e.g. for easy manipulation of the syringe rod}
A61M 2005/3139	. . . . .	{Finger grips not integrally formed with the syringe barrel, e.g. using adapter with finger grips}
A61M 2005/314	. . . .	{Flat shaped barrel forms, e.g. credit card shaped}
A61M 2005/3142	. . . .	{Modular constructions, e.g. supplied in separate pieces to be assembled by end-user}
A61M 2005/3143	. . .	{Damping means for syringe components executing relative movements, e.g. retarders or attenuators slowing down or timing syringe mechanisms}
A61M 5/3145	. . .	{Filters incorporated in syringes}
A61M 5/3146	. . .	{Priming, e.g. purging, reducing backlash or clearance}
A61M 5/3148	. . .	{Means for causing or aiding aspiration or plunger retraction}
A61M 5/315	. . .	Pistons; Piston-rods; Guiding, blocking or restricting the movement of the rod {or piston}; Appliances on the rod for facilitating dosing; {Dosing mechanisms}
A61M 5/31501	. . . .	{Means for blocking or restricting the movement of the rod or piston (A61M 5/5013 takes precedence)}
A61M 5/31503	. . . . .
A61M 5/31505	. . . . .	{Integral with the syringe barrel, i.e. connected to the barrel so as to make up a single complete piece or unit}
A61M 2005/31506	. . . . .	{formed as a single piece, e.g. molded}
A61M 2005/31508	. . . . .	{provided on the piston-rod}
A61M 2005/3151	. . . . .	{by friction}
A61M 5/31511	. . . .	{Piston or piston-rod constructions, e.g. connection of piston with piston-rod (A61M 5/5066 takes precedence)}
A61M 5/31513	. . . . .	{Piston constructions to improve sealing or sliding}
A61M 5/31515	. . . . .	{Connection of piston with piston rod}
A61M 2005/31516	. . . . .	{reducing dead-space in the syringe barrel after delivery}
A61M 2005/31518	. . . . .	{designed to reduce the overall size of an injection device, e.g. using flexible or pivotally connected chain-like rod members}
A61M 2005/3152	. . . . .	{including gearings to multiply or attenuate the piston displacing force}
A61M 2005/31521	. . . . .	{Pistons with a forward extending skirt at their front end}
A61M 2005/31523	. . . . .	{for reducing reflux}
A61M 5/31525	. . . . .	{Dosing (burettes , pipettes B01L 3/02)}
A61M 5/31526	. . . . .	{by means of stepwise axial movements, e.g. ratchet mechanisms or detents}
A61M 5/31528	. . . . .	{by means of rotational movements, e.g. screw-thread mechanisms}
A61M 5/3153	. . . . .	{by single stroke limiting means}
A61M 5/31531	. . . . .	{Micro syringes, e.g. having piston bore diameter close or equal to needle shaft diameter}
A61M 5/31533	. . . . .	{Dosing mechanisms, i.e. setting a dose (administrating mechanisms A61M 5/31565)}

A61M 5/31535	. . . . .	{Means improving security or handling thereof, e.g. blocking means, means preventing insufficient dosing, means allowing correction of overset dose}
A61M 5/31536	. . . . .	{Blocking means to immobilize a selected dose, e.g. to administer equal doses}
A61M 5/31538	. . . . .	{Permanent blocking, e.g. by medical personnel}
A61M 2005/3154	. . . . .	{limiting maximum permissible dose}
A61M 5/31541	. . . . .	{Means preventing setting of a dose beyond the amount remaining in the cartridge}
A61M 5/31543	. . . . .	{piston rod reset means, i.e. means for causing or facilitating retraction of piston rod to its starting position during cartridge change}
A61M 5/31545	. . . . .	{Setting modes for dosing}
A61M 5/31546	. . . . .	{Electrically operated dose setting, e.g. input via touch screen or plus/minus buttons}
A61M 5/31548	. . . . .	{Mechanically operated dose setting member}
A61M 5/3155	. . . . .	{by rotational movement of dose setting member, e.g. during setting or filling of a syringe}
A61M 5/31551	. . . . .	{including axial movement of dose setting member}
A61M 5/31553	. . . . .	{without axial movement of dose setting member}
A61M 5/31555	. . . . .	{by purely axial movement of dose setting member, e.g. during setting or filling of a syringe}
A61M 5/31556	. . . . .	{Accuracy improving means}
A61M 5/31558	. . . . .	{using scaling up or down transmissions, e.g. gearbox}
A61M 5/3156	. . . . .	{using volume steps only adjustable in discrete intervals, i.e. individually distinct intervals}
A61M 5/31561	. . . . .	{using freely adjustable volume steps}
A61M 5/31563	. . . . .	{interacting with a displaceable stop member}
A61M 5/31565	. . . . .	{Administration mechanisms, i.e. constructional features, modes of administering a dose (dosing mechanisms for setting a dose A61M 5/31533)}
A61M 5/31566	. . . . .	{Means improving security or handling thereof}
A61M 5/31568	. . . . .	{Means keeping track of the total dose administered, e.g. since the cartridge was inserted}
A61M 5/3157	. . . . .	{Means providing feedback signals when administration is completed (A61M 5/20 takes precedence)}
A61M 5/31571	. . . . .	{Means preventing accidental administration (for automatic syringes A61M 5/20)}
A61M 5/31573	. . . . .	{Accuracy improving means}
A61M 5/31575	. . . . .	{using scaling up or down transmissions, e.g. gearbox}
A61M 5/31576	. . . . .	{Constructional features or modes of drive mechanisms for piston rods}
A61M 5/31578	. . . . .	{based on axial translation, i.e. components directly operatively associated and axially moved with plunger rod}

A61M 5/3158	. . . . .	{performed by axially moving actuator operated by user, e.g. an injection button}
A61M 5/31581	. . . . .	{performed by rotationally moving or pivoting actuator operated by user, e.g. an injection lever or handle}
A61M 5/31583	. . . . .	{based on rotational translation, i.e. movement of piston rod is caused by relative rotation between the user activated actuator and the piston rod}
A61M 5/31585	. . . . .	{performed by axially moving actuator, e.g. an injection button}
A61M 5/31586	. . . . .	{performed by rotationally moving or pivoted actuator, e.g. an injection lever or handle}
A61M 2005/31588	. . . . .	{electrically driven}
A61M 5/3159	. . . . .	{Dose expelling manners}
A61M 5/31591	. . . . .	{Single dose, i.e. individually set dose administered only once from the same medicament reservoir, e.g. including single stroke limiting means}
A61M 5/31593	. . . . .	{Multi-dose, i.e. individually set dose repeatedly administered from the same medicament reservoir}
A61M 5/31595	. . . . .	{Pre-defined multi-dose administration by repeated overcoming of means blocking the free advancing movement of piston rod, e.g. by tearing or de-blocking}
A61M 5/31596	. . . . .	{comprising means for injection of two or more media, e.g. by mixing}
A61M 2005/31598	. . . . .	{having multiple telescopically sliding coaxial pistons encompassing volumes for components to be mixed}
A61M 5/32	. . .	Needles; Details of needles pertaining to their connection with syringe or hub (infusion needles A61M 5/158); Accessories for bringing the needle into, or holding the needle on, the body {(A61M 5/42 , A61M 5/46 take precedence; guide needles for catheters A61M 25/065); Devices for protection of needles {(apparatus specially adapted for cleaning or sterilising needles A61M 5/001)}
A61M 2005/3201	. . . . .	{Coaxially assembled needle cannulas placed on top of another, e.g. needles having different diameters}
A61M 5/3202	. . . . .	{Devices for protection of the needle before use, e.g. caps (A61M 5/50 takes precedence; for infusion spikes A61M 5/1626 ; protectors for sharps A61B 50/3001)}
A61M 5/3204	. . . . .	{Needle cap remover, i.e. devices to dislodge protection cover from needle or needle hub, e.g. deshielding devices}
A61M 5/3205	. . . . .	{Apparatus for removing or disposing of used needles or syringes, e.g. containers; Means for protection against accidental injuries from used needles (for sharps A61B 50/362 ; disintegrating apparatus in general B02C , e.g. B02C 19/0075 , B23H 9/001 ; disposal of medical waste in general B09B 3/0075 ; receptacles for refuse disposal in general B65F 1/00)}
A61M 2005/3206	. . . . .	{Needle or needle hub disconnecting devices forming part of or being attached to the hub or syringe body}
A61M 2005/3208	. . . . .	{by application of rotational movement to the needle hub, e.g. by use of electrically driven toothed wheels}
A61M 2005/3209	. . . . .	{comprising heat generating means, e.g. melt chamber}

A61M 5/321	. . . . .	{Means for protection against accidental injuries by used needles}
A61M 2005/3212	. . . . .	{Blunting means for the sharp end of the needle}
A61M 5/3213	. . . . .	{Caps placed axially onto the needle, e.g. equipped with finger protection guards (axially-extensible protective sleeves A61M 5/3243)}
A61M 2005/3215	. . . . .	{Tools enabling the cap placement}
A61M 5/3216	. . . . .	{Caps placed transversally onto the needle, e.g. pivotally attached to the needle base}
A61M 2005/3217	. . . . .	{Means to impede repositioning of protection cap from needle covering to needle uncovering position, e.g. catch mechanisms}
A61M 5/3219	. . . . .	{Semi-automatic repositioning of the cap, i.e. in which the repositioning of the cap to the needle covering position requires a deliberate action by the user to trigger the repositioning of the cap, e.g. manual release of spring-biased cap repositioning means}
A61M 5/322	. . . . .	{Retractable needles, i.e. disconnected from and withdrawn into the syringe barrel by the piston (devices for protecting guide needles in combination with catheters A61M 25/0612)}
A61M 5/3221	. . . . .	{Constructional features thereof, e.g. to improve manipulation or functioning}
A61M 2005/3223	. . . . .	{Means impeding or disabling repositioning of used needles at the syringe nozzle}
A61M 2005/3224	. . . . .	{Means to disalign the needle tip and syringe nozzle}
A61M 2005/3226	. . . . .	{with means obstructing or blocking the needle mounting opening}
A61M 2005/3227	. . . . .	{the needle being retracted laterally outside the syringe barrel, e.g. with separate guideway}
A61M 2005/3228	. . . . .	{the needle being retracted by a member protruding laterally through a slot in the barrel, e.g. double-ended needles}
A61M 2005/323	. . . . .	{Connection between plunger distal end and needle hub proximal end, e.g. stud protruding from the plunger}
A61M 2005/3231	. . . . .	{Proximal end of needle captured or embedded inside piston head, e.g. by friction or hooks}
A61M 5/3232	. . . . .	{Semi-automatic needle retraction, i.e. in which the triggering of the needle retraction requires a deliberate action by the user, e.g. manual release of spring-biased retraction means}
A61M 5/3234	. . . . .	{Fully automatic, i.e. in which the triggering does not require a deliberate action by the user}
A61M 2005/3235	. . . . .	{triggered by radial deflection of the anchoring parts between needle mount and syringe barrel or needle housing, e.g. spreading of needle mount retaining hooks having slanted surfaces by engagement with correspondingly shaped surfaces on the piston at the end of an injection stroke}
A61M 2005/3236	. . . . .	{Trigger provided at the distal end, i.e. syringe end for mounting a needle}

A61M 2005/3238	. . . . .	{Trigger provided at the proximal end, i.e. syringe end opposite to needle mounting end}
A61M 2005/3239	. . . . .	{triggered by dislodgement of outer part anchoring the needle portion to the inside of the syringe barrel wall, e.g. a ring-shaped portion}
A61M 2005/3241	. . . . .	{Needle retraction energy is accumulated inside of a hollow plunger rod}
A61M 2005/3242	. . . . .	{Needle retraction by vacuum}
A61M 5/3243	. . . . .	{being axially-extensible, e.g. protective sleeves coaxially slidable on the syringe barrel (devices for protecting guide needles in combination with catheters A61M 25/0612)}
A61M 5/3245	. . . . .	{Constructional features thereof, e.g. to improve manipulation or functioning}
A61M 2005/3246	. . . . .	{being squeezably deformable for locking or unlocking purposes, e.g. with elliptical cross-section}
A61M 2005/3247	. . . . .	{Means to impede repositioning of protection sleeve from needle covering to needle uncovering position}
A61M 2005/3249	. . . . .	{Means to disalign the needle tip and the distal needle passage of a needle protection sleeve}
A61M 2005/325	. . . . .	{Means obstructing the needle passage at distal end of a needle protection sleeve}
A61M 2005/3252	. . . . .	{being extended by a member protruding laterally through a slot in the syringe barrel}
A61M 2005/3253	. . . . .	{disconnecting the needle hub from the syringe barrel during removal of the sleeve from the syringe barrel}
A61M 2005/3254	. . . . .	{Shielding of proximal needles, e.g. for pen needles}
A61M 2005/3256	. . . . .	{having folding ring sections}
A61M 5/3257	. . . . .	{Semi-automatic sleeve extension, i.e. in which the triggering of the sleeve extension requires a deliberate action by the user, e.g. manual release of spring-biased extension means}
A61M 2005/3258	. . . . .	{being compressible or compressed along the needle}
A61M 5/326	. . . . .	{Fully automatic, i.e. in which the triggering does not require a deliberate action by the user}
A61M 2005/3261	. . . . .	{triggered by radial deflection of the anchoring parts between sleeve and syringe barrel, e.g. spreading of sleeve retaining hooks having slanted surfaces by engagement with conically shaped collet of the piston rod during the last portion of the injection stroke of the plunger}
A61M 2005/3263	. . . . .	{Trigger provided at the distal end, i.e. syringe end for mounting a needle}
A61M 2005/3264	. . . . .	{Trigger provided at the proximal end, i.e. syringe end opposite to needle mounting end}
A61M 2005/3265	. . . . .	{Degree of extension of sleeve to its needle covering position is progressively established by the degree of piston insertion into the syringe barrel}

A61M 2005/3267	. . . . .	{Biased sleeves where the needle is uncovered by insertion of the needle into a patient's body}
A61M 2005/3268	. . . . .	{having cantilever elastically spreadable arms, e.g. to accumulate energy during needle uncovering movement for urging protection sleeve to return to needle covering position}
A61M 5/3269	. . . . .	{guided by means not coaxially aligned with syringe barrel, e.g. channel-like member formed on exterior surface of syringe barrel for guiding a pushing rod connected to and displacing needle safety sheath}
A61M 5/3271	. . . . .	{with guiding tracks for controlled sliding of needle protective sleeve from needle exposing to needle covering position}
A61M 5/3272	. . . . .	{having projections following labyrinth paths}
A61M 5/3273	. . . . .	{freely sliding on needle shaft without connection to syringe or needle}
A61M 5/3275	. . . . .	{being connected to the needle hub or syringe by radially deflectable members, e.g. longitudinal slats, cords or bands}
A61M 5/3276	. . . . .	{Means imparting rotational movement to the needle or needle hub in order to assist in its disconnection from syringe nozzle}
A61M 5/3278	. . . . .	{Apparatus for destroying used needles or syringes (needle resheathing means destroying the needle A61M 5/321)}
A61M 2005/3279	. . . . .	{Breaking syringe nozzles or needle hubs}
A61M 2005/328	. . . . .	{having needle tip encapsulating means, e.g. two-component hardenable compound or molten plastic}
A61M 2005/3282	. . . . .	{using mechanical means, e.g. mills}
A61M 2005/3283	. . . . .	{using electric current between electrodes}
A61M 2005/3284	. . . . .	{Deformaton of needle by deflection or bending}
A61M 5/3286	. . . . .	{Needle tip design, e.g. for improved penetration}
A61M 5/3287	. . . . .	{Accessories for bringing the needle into the body; Automatic needle insertion (A61M 5/20 , A61M 5/31525 take precedence)}
A61M 2005/3289	. . . . .	{with rotation of the needle, e.g. to ease penetration}
A61M 5/329	. . . . .	{characterised by features of the needle shaft}
A61M 5/3291	. . . . .	{Shafts with additional lateral openings}
A61M 5/3293	. . . . .	{characterised by features of the needle hub}
A61M 5/3294	. . . . .	{comprising means for injection of two or more media, e.g. by mixing}
A61M 5/3295	. . . . .	{Multiple needle devices, e.g. a plurality of needles arranged coaxially or in parallel}
A61M 5/3297	. . . . .	{Needles arranged coaxially}
A61M 5/3298	. . . . .	{Needles arranged in parallel}
A61M 5/34	. . . . .	Constructions for connecting the needle, {e.g. to syringe nozzle or needle hub (connecting catheter tubes to hubs A61M 25/0014)}
A61M 2005/341	. . . . .	{angularly adjustable or angled away from the axis of the injector}
A61M 2005/342	. . . . .	{Off-center needles, i.e. needle connections not being coaxial with the longitudinal symmetry axis of syringe barrel}

- A61M 5/343 {Connection of needle cannula to needle hub, or directly to syringe nozzle without a needle hub ([A61M 5/322](#) takes precedence)}
- A61M 5/344 {using additional parts, e.g. clamping rings or collets}
- A61M 5/345 {Adaptors positioned between needle hub and syringe nozzle}
- A61M 5/346 {friction fit ([A61M 5/344](#) takes precedence)}
- A61M 5/347 {rotatable, e.g. bayonet or screw ([A61M 5/344](#) takes precedence)}
- A61M 5/348 {snap lock, i.e. upon axial displacement of needle assembly ([A61M 5/344](#) takes precedence)}
- A61M 5/349 {using adhesive bond or glues}
- A61M 5/36 with means for eliminating or preventing injection or infusion of air into body (dialysis systems, blood oxygenators [A61M 1/14](#); haemofiltration equipment [A61M 1/34](#); {automatic tube cut-off [A61M 39/281](#)})
- A61M 5/365 . . . {Air detectors ([A61M 5/1684](#) takes precedence; in extracorporeal blood circuits [A61M 1/3626](#))}
- A61M 5/38 . . . using hydrophilic or hydrophobic filters
- A61M 5/385 . . . {using hydrophobic filters}
- A61M 5/40 . . . using low-level float-valve to cut off media flow from reservoir {(position detection of a floating member [A61M 5/1685](#))}
- A61M 5/42 . . . having means for desensitising skin, for protruding skin to facilitate piercing, or for locating point where body is to be pierced {not used, see subgroups}
- A61M 5/422 . . . {Desensitising skin}
- A61M 5/425 . . . {Protruding skin to facilitate piercing, e.g. vacuum cylinders, vein immobilising means}
- A61M 5/427 . . . {Locating point where body is to be pierced, e.g. vein location means using ultrasonic waves, injection site templates}
- A61M 5/44 . . . having means for cooling or heating the devices or media
- A61M 5/445 . . . {the media being heated in the reservoir, e.g. warming bloodbags}
- A61M 5/46 . . . having means for controlling depth of insertion
- A61M 5/48 . . . having means for varying, regulating, indicating or limiting injection pressure ([A61M 5/142](#) takes precedence; {monitoring pressure in infusion systems [A61M 5/16854](#)})
- A61M 5/482 . . . {Varying injection pressure, e.g. by varying speed of injection}
- A61M 5/484 . . . {Regulating injection pressure}
- A61M 5/486 . . . {Indicating injection pressure}
- A61M 5/488 . . . {Limiting injection pressure}
- A61M 5/50 . . . Having means for preventing re-use, or for indicating if defective, used, tampered with or unsterile {(retractable needles or needle protectors with means for preventing re-use [A61M 5/321](#))}
- A61M 2005/5006 . . . {Having means for destroying the syringe barrel, e.g. by cutting or piercing}
- A61M 5/5013 . . . {Means for blocking the piston or the fluid passageway to prevent illegal refilling of a syringe}
- A61M 5/502 {for blocking the piston}
- A61M 2005/5026 {allowing single filling of syringe}

- A61M 2005/5033 {by use of an intermediate blocking member positioned between the syringe barrel and the piston rod to prevent retraction of the latter, e.g. toothed clip placed on the piston rod}
- A61M 5/504 . . . {for blocking the fluid passageway}
- A61M 2005/5046 {automatically, e.g. plug actuated by the piston head, one-way valve}
- A61M 2005/5053 {Valve or plug actuated by fluid flow or fluid pressure allowing initial filling of the syringe}
- A61M 2005/506 {Plug actuated by contact with fluid, e.g. hydrophilic expansion plug}
- A61M 5/5066 . . {Means for preventing re-use by disconnection of piston and piston-rod}
- A61M 2005/5073 . . . {by breaking or rupturing the connection parts}
- A61M 5/508 . . {Means for preventing re-use by disrupting the piston seal, e.g. by puncturing}
- A61M 5/5086 . . {for indicating if defective, used, tampered with or unsterile}
- A61M 2005/5093 . . {including soluble mechanical parts}
- A61M 5/52 . . Arm-rests

A61M 9/00 Baths for subaquatic intestinal cleaning

Sprayers; Atomisers; Insufflators

A61M 11/00 Sprayers or atomisers specially adapted for therapeutic purposes (in general B05B; {aerosol containers B65D 83/14})

WARNING

Groups [A61M 11/001](#) - [A61M 11/008](#), [A61M 11/042](#) - [A61M 11/048](#), [A61M 11/065](#) are incomplete pending reclassification of documents from group [A61M 11/00](#) or respective subgroup.

Until reclassification is complete, groups [A61M 11/00](#) or respective subgroup and [A61M 11/001](#) - [A61M 11/008](#), [A61M 11/042](#) - [A61M 11/048](#), [A61M 11/065](#) should be considered in order to perform a complete search.

- A61M 11/001 . {Particle size control}
- A61M 11/002 . . {by flow deviation causing inertial separation of transported particles}
- A61M 11/003 . . {by passing the aerosol through sieves or filters}
- A61M 11/005 . {using ultrasonics (spraying or atomising liquids using ultrasonic vibrations in general [B05B 17/06](#))}
- A61M 11/006 . {operated by applying mechanical pressure to the liquid to be sprayed or atomised}
- A61M 11/007 . . {Syringe-type or piston-type sprayers or atomisers}
- A61M 11/008 . . {by squeezing, e.g. using a flexible bottle or a bulb}
- A61M 11/02 . operated by air {or other gas} pressure applied to the liquid {or other product} to be sprayed or atomised {(sprayers for horticulture [A01G](#), [A01H](#); killing insects [A01M](#); air humidifying by nozzles [F24F 6/14](#), [F24F 6/18](#); cooling by spraying [F28B](#), [F28C](#))}
- A61M 11/04 . operated by the vapour pressure of the liquid to be sprayed or atomised {(air-humidification, e.g. "room humidifiers" [F24F 6/00](#))}

- A61M 11/041 . . {using heaters}
- A61M 11/042 . . . {electrical}
- A61M 11/044 {with electrodes immersed in the liquid}
- A61M 11/045 . . . {using another liquid as heat exchanger, e.g. bain-marie}
- A61M 11/047 . . . {by exothermic chemical reaction}
- A61M 11/048 . . . {with a flame, e.g. using a burner}
- A61M 11/06 . of the injector type
- A61M 11/065 . . {using steam as driving gas}
- A61M 11/08 . . Pocket atomisers of the injector type {(aerosol cans [A61M 15/009](#))}

A61M 13/00 **Insufflators for therapeutic or disinfectant purposes, {i.e. devices for blowing a gas, powder or vapour into the body}** (hand-held units in which gas flow is produced by muscular energy at the moment of use [B05B 11/062](#))

- A61M 13/003 . {Blowing gases other than for carrying powders, e.g. for inflating, dilating or rinsing}

WARNING

Group [A61M 13/006](#) is incomplete pending reclassification of documents from group [A61M 13/003](#).

Until reclassification is complete, groups [A61M 13/003](#) and [A61M 13/006](#) should be considered in order to perform a complete search.

- A61M 13/006 . . {with gas recirculation}

Inhaling devices

A61M 15/00 **Inhalators** {(drug delivery in endotracheal tubes [A61M 16/04](#))}

WARNING

Groups [A61M 15/0001](#) - [A61M 15/0026](#), [A61M 15/003](#) - [A61M 15/0043](#), [A61M 15/0046](#) - [A61M 15/0063](#), [A61M 15/0066](#) - [A61M 15/0083](#), [A61M 15/0088](#), [A61M 15/0093](#) - [A61M 15/0098](#), [A61M 15/025](#), [A61M 15/085](#) are incomplete pending reclassification of documents from group [A61M 15/00](#) or respective subgroup.

Until reclassification is complete, groups [A61M 15/00](#) or respective subgroup and [A61M 15/0001](#) - [A61M 15/0026](#), [A61M 15/003](#) - [A61M 15/0043](#), [A61M 15/0046](#) - [A61M 15/0063](#), [A61M 15/0066](#) - [A61M 15/0083](#), [A61M 15/0088](#), [A61M 15/0093](#) - [A61M 15/0098](#), [A61M 15/025](#), [A61M 15/085](#) should be considered in order to perform a complete search.

- A61M 15/0001 . {Details of inhalators; Constructional features thereof}
- A61M 15/0003 . . {with means for dispensing more than one drug}
- A61M 15/0005 . . {with means for agitating the medicament}
- A61M 15/0006 . . . {using rotating means}
- A61M 15/0008 {rotating by airflow}
- A61M 15/001 . . . {using ultrasonic means}
- A61M 15/0011 . . {with microcapsules, e.g. several in one dose}

- A61M 15/0013 . . {with inhalation check valves}
- A61M 15/0015 . . . {located upstream of the dispenser, i.e. not traversed by the product}
- A61M 15/0016 . . . {located downstream of the dispenser, i.e. traversed by the product}
- A61M 15/0018 . . {with exhalation check valves}
- A61M 15/002 . . {with air flow regulating means}
- A61M 15/0021 . . {Mouthpieces therefor}
- A61M 15/0023 . . . {retractable}
- A61M 15/0025 . . . {with caps}
- A61M 15/0026 {Hinged caps}
- A61M 15/0028 . {using prepacked dosages, one for each application, e.g. capsules to be perforated or broken-up}
- A61M 15/003 . . {using capsules, e.g. to be perforated or broken-up}
- A61M 15/0031 . . . {by bursting or breaking the package, i.e. without cutting or piercing}
- A61M 15/0033 . . . {Details of the piercing or cutting means}
- A61M 15/0035 {Piercing means}
- A61M 15/0036 {hollow piercing means}
- A61M 15/0038 {Cutting means}
- A61M 15/004 {with fixed piercing or cutting means}
- A61M 15/0041 {with movable piercing or cutting means}
- A61M 15/0043 . . . {Non-destructive separation of the package, e.g. peeling}
- A61M 15/0045 . . {using multiple prepacked dosages on a same carrier, e.g. blisters}
- A61M 15/0046 . . . {characterized by the type of carrier}
- A61M 15/0048 {the dosages being arranged in a plane, e.g. on diskettes}
- A61M 15/005 {the dosages being arranged on a cylindrical surface}
- A61M 15/0051 {the dosages being arranged on a tape, e.g. strips}
- A61M 15/0053 . . . {characterized by the type or way of disposal}
- A61M 15/0055 {the used dosages being coiled}
- A61M 15/0056 {the used dosages being crushed}
- A61M 15/0058 {the used dosages being cut from the carrier}
- A61M 15/006 {the used dosages being discarded out of the inhaler's housing}
- A61M 15/0061 . . {using pre-packed dosages having an insert inside}
- A61M 15/0063 . . {Storages for pre-packed dosages}
- A61M 15/0065 . {Inhalators with dosage or measuring devices ([A61M 15/0028](#) takes precedence; dosage devices incorporated in aerosol cans [B65D 83/52](#))}
- A61M 15/0066 . . {with means for varying the dose size}
- A61M 15/0068 . . {Indicating or counting the number of dispensed doses or of remaining doses}
- A61M 15/007 . . . {Mechanical counters}
- A61M 15/0071 {having a display or indicator}
- A61M 15/0073 {on a ring}
- A61M 15/0075 {on a disc}

- A61M 15/0076 {on a drum}
- A61M 15/0078 {on a strip}
- A61M 15/008 . . . {Electronic counters}
- A61M 15/0081 . . . {Locking means}
- A61M 15/0083 . . . {Timers}
- A61M 15/0085 . {using ultrasonics (spraying or atomising liquids using ultrasonic vibrations in general [B05B 17/06](#))}
- A61M 15/0086 . {Inhalation chambers}
- A61M 15/0088 . . {with variable volume}
- A61M 15/009 . {using medicine packages with incorporated spraying means, e.g. aerosol cans (pocket atomiser of the injector type [A61M 11/08](#))}
- A61M 15/0091 . {mechanically breath-triggered}
- A61M 15/0093 . . {without arming or cocking, e.g. acting directly on the delivery valve}
- A61M 15/0095 . . {Preventing manual activation in absence of inhalation}
- A61M 15/0096 . . {Hindering inhalation before activation of the dispenser}
- A61M 15/0098 . . {Activated by exhalation}
- A61M 15/02 . with activated or ionised {fluids, e.g. electrohydrodynamic [EHD] or electrostatic devices}; Ozone-inhalators {with radioactive tagged particles}
- A61M 15/025 . . {Bubble jet droplet ejection devices}
- A61M 15/06 . Inhaling appliances shaped like cigars, cigarettes or pipes {(simulated smoking devices, e.g. imitation cigarettes, [A24F 47/002](#))}
- A61M 15/08 . Inhaling devices inserted into the nose
- A61M 15/085 . . {Fixing means therefor}

A61M 16/00

Devices for influencing the respiratory system of patients by gas treatment, e.g. mouth-to-mouth respiration; Tracheal tubes (stimulating the respiratory movement by mechanical, pneumatic or electrical means, iron lungs combined with gas breathing means [A61H 31/00](#); {supine patient supports therefor [A61H 31/008](#)} ; respiratory apparatus in general [A62B](#); respirators for working under water [B63C 11/00](#))

WARNING

Groups [A61M 16/0003](#) - [A61M 16/0012](#), [A61M 16/006](#) - [A61M 16/0063](#), [A61M 16/0069](#), [A61M 16/0081](#) - [A61M 16/0084](#), [A61M 16/0093](#), [A61M 16/0402](#) - [A61M 16/0431](#), [A61M 16/0436](#) - [A61M 16/0438](#), [A61M 16/0443](#) - [A61M 16/0459](#), [A61M 16/0475](#) - [A61M 16/0486](#), [A61M 16/049](#) - [A61M 16/0495](#), [A61M 16/0605](#) - [A61M 16/0655](#), [A61M 16/0672](#) - [A61M 16/0677](#), [A61M 16/0688](#) - [A61M 16/0694](#), [A61M 16/0825](#) - [A61M 16/0866](#), [A61M 16/0883](#) - [A61M 16/0891](#), [A61M 16/1005](#) - [A61M 16/1015](#), [A61M 16/106](#) - [A61M 16/107](#), [A61M 16/108](#) - [A61M 16/1095](#), [A61M 16/122](#) - [A61M 16/127](#), [A61M 16/142](#) - [A61M 16/147](#), [A61M 16/161](#), [A61M 16/164](#) - [A61M 16/168](#), [A61M 16/201](#) - [A61M 16/207](#), [A61M 16/209](#) are incomplete pending reclassification of documents from group [A61M 16/00](#) or respective subgroup.

Until reclassification is complete, groups [A61M 16/00](#) or respective subgroup and [A61M 16/0003](#) - [A61M 16/0012](#), [A61M 16/006](#) - [A61M 16/0063](#), [A61M 16/0069](#), [A61M 16/0081](#) - [A61M 16/0084](#), [A61M 16/0093](#), [A61M 16/0402](#) - [A61M 16/0431](#), [A61M 16/0436](#) - [A61M 16/0438](#), [A61M 16/0443](#) - [A61M 16/0459](#), [A61M 16/0475](#) - [A61M 16/0486](#), [A61M 16/049](#) - [A61M 16/0495](#), [A61M 16/0605](#) - [A61M 16/0655](#), [A61M 16/0672](#) - [A61M 16/0677](#), [A61M 16/0688](#) - [A61M 16/0694](#), [A61M 16/0825](#) - [A61M 16/0866](#), [A61M 16/0883](#) - [A61M 16/0891](#), [A61M 16/1005](#) - [A61M 16/1015](#), [A61M 16/106](#) - [A61M 16/107](#), [A61M 16/108](#) - [A61M 16/1095](#), [A61M 16/122](#) - [A61M 16/127](#), [A61M 16/142](#) - [A61M 16/147](#), [A61M 16/161](#), [A61M 16/164](#) - [A61M 16/168](#), [A61M 16/201](#) - [A61M 16/207](#), [A61M 16/209](#) should be considered in order to perform a complete search.

- [A61M 16/0003](#) . {Accessories therefor, e.g. sensors, vibrators, negative pressure}
- [A61M 16/0006](#) . . {with means for creating vibrations in patients' airways}
- [A61M 16/0009](#) . . {with sub-atmospheric pressure, e.g. during expiration}
- [A61M 16/0012](#) . . . {by Venturi means}
- [A61M 16/0015](#) . . {inhalation detectors}
- [A61M 16/0018](#) . . . {electrical}
- [A61M 16/0021](#) {with a proportional output signal, e.g. from a thermistor}
- [A61M 16/0024](#) {with an on-off output signal, e.g. from a switch}
- [A61M 16/0027](#) . . {pressure meter}
- [A61M 16/003](#) . . {with a flowmeter}
- [A61M 16/0033](#) . . . {electrical}
- [A61M 16/0036](#) {in the breathing tube and used in both inspiratory and expiratory phase}
- [A61M 16/0039](#) {in the inspiratory circuit}
- [A61M 16/0042](#) {in the expiratory circuit}

- A61M 16/0045 . {Means for re-breathing exhaled gases, e.g. for hyperventilation treatment}
- A61M 16/0048 . {Mouth-to-mouth respiration (teaching or training models [G09B 23/288](#))}
- A61M 16/0051 . {with alarm devices}
- A61M 16/0054 . {Liquid ventilation}
- A61M 16/0057 . {Pumps therefor}
- A61M 16/006 . . {Tidal volume membrane pumps}
- A61M 16/0063 . . {Compressors}
- A61M 16/0066 . . {Blowers or centrifugal pumps}
- A61M 16/0069 . . . {the speed thereof being controlled by respiratory parameters, e.g. by inhalation}
- A61M 16/0072 . . {Tidal volume piston pumps}
- A61M 16/0075 . . {Bellows-type}
- A61M 16/0078 . . {Breathing bags}
- A61M 16/0081 . . {Bag or bellow in a bottle}
- A61M 16/0084 . . {self-reinflatable by elasticity, e.g. resuscitation squeeze bags}
- A61M 16/0087 . {Environmental safety or protection means, e.g. preventing explosion}
- A61M 16/009 . . {Removing used or expired gases or anaesthetic vapours}
- A61M 16/0093 . . . {by adsorption, absorption or filtration}
- A61M 16/0096 . {High frequency jet ventilation}
- A61M 16/01 . specially adapted for anaesthetising {([A61M 16/104](#), [A61M 16/18](#) take precedence)}
- A61M 16/04 . Tracheal tubes (catheters in general [A61M 25/00](#))
- A61M 16/0402 . . {Special features for tracheal tubes not otherwise provided for}
- A61M 16/0404 . . . {with means for selective or partial lung respiration}
- A61M 16/0406 {implanted flow modifiers}
- A61M 16/0409 . . . {with mean for closing the oesophagus}
- A61M 16/0411 . . . {with means for differentiating between oesophageal and tracheal intubation}
- A61M 2016/0413 {with detectors of CO₂ in exhaled gases}
- A61M 16/0415 . . . {with access means to the stomach}
- A61M 16/0418 . . . {with integrated means for changing the degree of curvature, e.g. for easy intubation}
- A61M 16/042 . . . {with separate conduits for in-and expiration gas, e.g. for limited dead volume}
- A61M 16/0422 . . . {Laser-resistant}
- A61M 16/0425 . . . {Metal tubes}
- A61M 16/0427 . . . {with removable and re-insertable liner tubes, e.g. for cleaning}
- A61M 16/0429 . . . {with non-integrated distal obturators}
- A61M 16/0431 . . . {with a cross-sectional shape other than circular}
- A61M 16/0434 . . {Cuffs}
- A61M 16/0436 . . . {Special fillings therefor}

- A61M 16/0438 {Liquid-filled}
- A61M 16/044 . . . {External cuff pressure control or supply, e.g. synchronisation with respiration}
- A61M 16/0443 . . . {Special cuff-wall materials ([A61M 16/0481](#), [A61M 16/0422](#) take precedence)}
- A61M 16/0445 . . . {Special cuff forms, e.g. undulated}
- A61M 16/0447 {Bell, canopy or umbrella shaped}
- A61M 16/045 . . . {with cuffs partially or completely inflated by the respiratory gas}
- A61M 16/0452 {following the inspiration and expiration pressure}
- A61M 16/0454 . . . {Redundant cuffs}
- A61M 16/0456 {one cuff within another}
- A61M 16/0459 {one cuff behind another}
- A61M 16/0461 . . {Nasoendotracheal tubes}
- A61M 16/0463 . . {combined with suction tubes, catheters or the like; Outside connections}
- A61M 16/0465 . . {Tracheostomy tubes; Devices for performing a tracheostomy; Accessories therefor, e.g. masks, filters}
- A61M 16/0468 . . . {with valves at the proximal end limiting exhalation, e.g. during speaking or coughing (air passages from trachea to oesophagus or to pharynx, artificial epiglottis [A61F 2/203](#))}
- A61M 16/047 . . . {Masks, filters, surgical pads, devices for absorbing secretions, specially adapted therefor}
- A61M 16/0472 . . . {Devices for performing a tracheostomy}
- A61M 16/0475 . . {having openings in the tube}
- A61M 16/0477 . . . {with incorporated means for delivering or removing fluids}
- A61M 16/0479 {above the cuff, e.g. giving access to the upper trachea}
- A61M 16/0481 {through the cuff wall}
- A61M 16/0484 {at the distal end}
- A61M 16/0486 . . {Multi-lumen tracheal tubes}
- A61M 16/0488 . . {Mouthpieces; Means for guiding, securing or introducing the tubes (guiding or introducing with laryngoscopes [A61B 1/267](#); holding devices on the body [A61M 25/02](#))}
- A61M 16/049 . . . {Mouthpieces}
- A61M 16/0493 {with means for protecting the tube from damage caused by the patient's teeth, e.g. bite block}
- A61M 16/0495 {with tongue depressors}
- A61M 16/0497 . . . {Tube stabilizer}
- A61M 16/06 . . Respiratory or anaesthetic masks
- A61M 16/0605 . . {Means for improving the adaptation of the mask to the patient}
- A61M 16/0611 . . . {with a gusset portion}
- A61M 16/0616 . . . {with face sealing means comprising a flap or membrane projecting inwards, such that sealing increases with increasing inhalation gas pressure}
- A61M 16/0622 {having an underlying cushion}

- A61M 16/0627 . . . {with sealing means on a part of the body other than the face, e.g. helmets, hoods or domes}
- A61M 16/0633 . . . {with forehead support}
- A61M 16/0638 {in the form of a pivot}
- A61M 16/0644 {having the means for adjusting its position}
- A61M 16/065 {in the form of a pivot}
- A61M 16/0655 {in the form of a linear or curvilinear slide}
- A61M 2016/0661 . . {with customised shape}
- A61M 16/0666 . . {Nasal cannulas or tubing (devices for improving normal breathing through the nose [A61F 5/08](#); nose filters [A62B 23/06](#); outside holding devices [A61M 25/02](#))}
- A61M 16/0672 . . . {Nasal cannula assemblies for oxygen therapy}
- A61M 16/0677 {Gas-saving devices therefor}
- A61M 16/0683 . . {Holding devices therefor}
- A61M 16/0688 . . . {by means of an adhesive}
- A61M 16/0694 . . . {Chin straps}
- A61M 16/08 . Bellows; Connecting tubes {(having means for taking samples [G01N 1/22](#)); Water traps; Patient circuits}
- A61M 16/0808 . . {Condensation traps}
- A61M 16/0816 . . {Joints or connectors}
- A61M 16/0825 . . . {with ball-sockets}
- A61M 16/0833 . . . {T- or Y-type connectors, e.g. Y-piece}
- A61M 16/0841 . . . {for sampling}
- A61M 16/085 {Gas sampling}
- A61M 16/0858 {Pressure sampling ports}
- A61M 16/0866 . . {Passive resistors therefor}
- A61M 16/0875 . . {Connecting tubes}
- A61M 16/0883 . . {Circuit type}
- A61M 16/0891 . . . {Closed circuit, e.g. for anaesthesia}
- A61M 16/10 . Preparation of respiratory gases or vapours
- A61M 16/1005 . . {with O₂ features or with parameter measurement}
- A61M 16/101 . . . {using an oxygen concentrator}
- A61M 16/1015 . . . {using a gas flush valve, e.g. oxygen flush valve}
- A61M 2016/102 . . . {Measuring a parameter of the content of the delivered gas}
- A61M 2016/1025 {the O₂ concentration}
- A61M 2016/103 {the CO₂ concentration}
- A61M 2016/1035 {the anaesthetic agent concentration}
- A61M 16/104 . . {specially adapted for anaesthetics ([A61M 16/18](#) takes precedence)}
- A61M 16/1045 . . {Devices for humidifying or heating the inspired gas by using recovered moisture or heat from the expired gas}

- A61M 16/105 . . {Filters ([A61M 16/047](#), [A61M 16/22](#) take precedence; water traps [A61M 16/08](#))}
- A61M 16/1055 . . . {bacterial}
- A61M 16/106 . . . {in a path}
- A61M 16/1065 {in the expiratory path}
- A61M 16/107 {in the inspiratory path}
- A61M 16/1075 . . {by influencing the temperature ([A61M 16/1045](#) takes precedence)}
- A61M 16/108 . . . {before being humidified or mixed with a beneficial agent}
- A61M 16/1085 . . . {after being humidified or mixed with a beneficial agent}
- A61M 16/109 . . . {the humidifying liquid or the beneficial agent}
- A61M 16/1095 . . . {in the connecting tubes}
- A61M 16/12 . . by mixing different gases
- A61M 16/122 . . . {with dilution}
- A61M 16/125 {Diluting primary gas with ambient air}
- A61M 16/127 {by Venturi effect, i.e. entrainment mixers}
- A61M 16/14 . . by mixing different fluids, one of them being in a liquid phase
- A61M 16/142 . . . {with semi-permeable walls separating the liquid from the respiratory gas}
- A61M 16/145 {using hollow fibres}
- A61M 16/147 . . . {the respiratory gas not passing through the liquid container}
- A61M 16/16 . . . Devices to humidify the respiration air {([A61M 16/1045](#) takes precedence)}
- A61M 16/161 {with means for measuring the humidity}
- A61M 16/162 {Water-reservoir filling system, e.g. automatic}
- A61M 16/164 {including a liquid inlet valve system}
- A61M 16/165 {with a float actuator}
- A61M 16/167 {acting vertically on the valve}
- A61M 16/168 {having a dual float}
- A61M 16/18 . . . Vaporising devices for anaesthetic preparations
- A61M 16/183 {Filling systems}
- A61M 16/186 {Locking systems}
- A61M 16/20 . . Valves specially adapted to medical respiratory devices
- A61M 16/201 . . {Controlled valves}
- A61M 16/202 . . . {electrically actuated}
- A61M 16/203 {Proportional}
- A61M 16/204 {used for inhalation control}
- A61M 16/205 {used for exhalation control}
- A61M 16/206 . . . {Capsule valves, e.g. mushroom, membrane valves}
- A61M 16/207 . . . {Membrane valves with pneumatic amplification stage, i.e. having master and slave membranes}
- A61M 16/208 . . {Non-controlled one-way valves, e.g. exhalation, check, pop-off non-rebreathing valves}

- A61M 16/209 . . . {Relief valves}
- A61M 16/22 . Carbon dioxide-absorbing devices; {Other means for removing carbon dioxide} (cartridges with absorbing substances for respiratory apparatus [A62B 19/00](#))

Other devices for producing sleep or stupor; Devices for ending sleep or stupor

A61M 19/00 Local anaesthesia (syringes therefor [A61M 5/00](#)); Hypothermia ([A61M 5/42](#) takes precedence; cooling blood in a bypass of the arterial system [A61M 1/36](#))

A61M 21/00 Other devices or methods to cause a change in the state of consciousness; Devices for producing or ending sleep by mechanical, optical, or acoustical means, e.g. for hypnosis

- A61M 2021/0005 . {by the use of a particular sense, or stimulus}
- A61M 2021/0011 . . {in a subliminal way, i.e. below the threshold of sensation}
- A61M 2021/0016 . . {by the smell sense}
- A61M 2021/0022 . . {by the tactile sense, e.g. vibrations}
- A61M 2021/0027 . . {by the hearing sense}
- A61M 2021/0033 . . . {subsonic}
- A61M 2021/0038 . . . {ultrasonic}
- A61M 2021/0044 . . {by the sight sense}
- A61M 2021/005 . . . {images, e.g. video}
- A61M 2021/0055 . . {with electric or electro-magnetic fields}
- A61M 2021/0061 . . {Simulated heartbeat pulsed or modulated}
- A61M 2021/0066 . . {with heating or cooling}
- A61M 2021/0072 . . {with application of electrical currents}
- A61M 2021/0077 . . {with application of chemical or pharmacological stimulus}
- A61M 2021/0083 . . {especially for waking up}
- A61M 2021/0088 . . {modulated by a simulated respiratory frequency}
- A61M 21/0094 . {Isolation chambers used therewith, i.e. for isolating individuals from external stimuli (other treatment rooms or enclosures [A61G 10/00](#))}
- A61M 21/02 . for inducing sleep or relaxation, e.g. by direct nerve stimulation, hypnosis, analgesia (for massage [A61H](#); electrotherapy [A61N](#), e.g. applying alternating or intermittent electric currents for producing anaesthesia [A61N 1/36021](#))

Probes; Catheters; Dilators; Drainage appliances for wounds

A61M 25/00 Catheters; Hollow probes (dilators [A61M 29/00](#); {peritoneal catheters [A61M 1/285](#); tracheal tubes [A61M 16/04](#); for drainage [A61M 27/00](#); for uterus, vagina or rectum [A61M 31/00](#)}; for measuring or testing [A61B](#); {materials for catheters [A61L 29/00](#)})

- A61M 2025/0001 . {for pressure measurement (not used)}
- A61M 2025/0002 . . {with a pressure sensor at the distal end}
- A61M 2025/0003 . . {having an additional lumen transmitting fluid pressure to the outside for measurement}

- A61M 2025/0004 . {having two or more concentrically arranged tubes for forming a concentric catheter system}
- A61M 2025/0006 . . {which can be secured against axial movement, e.g. by using a locking cuff}
- A61M 2025/0007 . {Epidural catheters}
- A61M 2025/0008 . {having visible markings on its surface, i.e. visible to the naked eye, for any purpose, e.g. insertion depth markers, rotational markers or identification of type}
- A61M 25/0009 . {Making of catheters or other medical or surgical tubes}
- A61M 25/001 . . {Forming the tip of a catheter, e.g. bevelling process, join or taper}
- A61M 25/0012 . . {with embedded structures, e.g. coils, braids, meshes, strands or radiopaque coils}
- A61M 25/0013 . . {Weakening parts of a catheter tubing, e.g. by making cuts in the tube or reducing thickness of a layer at one point to adjust the flexibility}
- A61M 25/0014 . . {Connecting a tube to a hub}
- A61M 25/0015 . . {Making lateral openings in a catheter tube, e.g. holes, slits, ports, piercings of guidewire ports; Methods for processing the holes, e.g. smoothing the edges}
- A61M 25/0017 . {specially adapted for long-term hygiene care, e.g. urethral or indwelling catheters to prevent infections}
- A61M 2025/0018 . {having a plug, e.g. an inflatable plug for closing catheter lumens}
- A61M 2025/0019 . {Cleaning catheters or the like, e.g. for reuse of the device, for avoiding replacement}
- A61M 25/002 . {Packages specially adapted therefor (combined with means for introducing catheters, e.g. dispensers, [A61M 25/0113](#)); catheter kit packages (for surgical articles [A61B 50/30](#))}
- A61M 25/0021 . {characterised by the form of the tubing ([A61M 25/0054](#) takes precedence)}
- A61M 25/0023 . . {by the form of the lumen, e.g. cross-section, variable diameter}
- A61M 2025/0024 . . . {Expandable catheters or sheaths}
- A61M 2025/0025 . . . {having a collapsible lumen}
- A61M 25/0026 . . . {Multi-lumen catheters with stationary elements (catheter assemblies comprising a catheter in combination with a guide tube, sheath or sleeve [A61M 2025/0681](#); catheters comprising telescoping coaxial elements [A61M 2025/0175](#))}
- A61M 25/0028 {characterized by features relating to at least one lumen located at the proximal part of the catheter, e.g. alterations in lumen shape or valves (catheter hubs [A61M 25/0097](#))}
- A61M 25/0029 {characterized by features relating to least one lumen located at the middle part of the catheter, e.g. slots, flaps, valves, cuffs, apertures, notches, grooves or rapid exchange ports (catheter shaft surface irregularities [A61M 2025/006](#))}
- A61M 25/003 {characterized by features relating to least one lumen located at the distal part of the catheter, e.g. filters, plugs or valves (catheter tips [A61M 25/0067](#))}
- A61M 2025/0031 {characterized by lumina for withdrawing or delivering, i.e. used for extracorporeal circuit treatment}

- A61M 25/0032 {characterized by at least one unconventionally shaped lumen, e.g. polygons, ellipsoids, wedges or shapes comprising concave and convex parts}
- A61M 2025/0034 {characterized by elements which are assembled, connected or fused, e.g. splittable tubes, outer sheaths creating lumina or separate cores (making of catheters [A61M 25/0009](#))}
- A61M 2025/0035 {characterized by a variable lumen cross-section by means of a resilient flexible septum or outer wall}
- A61M 2025/0036 {with more than four lumina}
- A61M 2025/0037 {characterized by lumina being arranged side-by-side}
- A61M 2025/0039 {characterized by lumina being arranged coaxially}
- A61M 2025/004 {characterized by lumina being arranged circumferentially}
- A61M 25/0041 . . {pre-formed, e.g. specially adapted to fit with the anatomy of body channels (urethral catheters [A61F 2/04](#))}
- A61M 2025/0042 . . {Micro catheters, cannula or the like having outside diameters around 1 mm or less}
- A61M 25/0043 . {characterised by structural features}
- A61M 25/0045 . . {multi-layered, e.g. coated (coating materials [A61L 29/08](#))}
- A61M 2025/0046 . . . {Coatings for improving slidability}
- A61M 2025/0047 {the inner layer having a higher lubricity}
- A61M 2025/0048 {with an outer layer made from silicon}
- A61M 25/005 . . {with embedded materials for reinforcement, e.g. wires, coils, braids}
- A61M 25/0051 . . . {made from fenestrated or weakened tubing layer}
- A61M 25/0052 . . . {Localized reinforcement, e.g. where only a specific part of the catheter is reinforced, for rapid exchange guidewire port}
- A61M 25/0053 . . . {having a variable stiffness along the longitudinal axis, e.g. by varying the pitch of the coil or braid}
- A61M 25/0054 . . {with regions for increasing flexibility}
- A61M 2025/0056 . . {provided with an antibacterial agent, e.g. by coating, residing in the polymer matrix or releasing an agent out of a reservoir}
- A61M 2025/0057 . . {Catheters delivering medicament other than through a conventional lumen, e.g. porous walls or hydrogel coatings}
- A61M 2025/0058 . . {having an electroactive polymer material, e.g. for steering purposes, for control of flexibility, for locking, for opening or closing}
- A61M 2025/0059 . . {having means for preventing the catheter, sheath or lumens from collapsing due to outer forces, e.g. compressing forces, or caused by twisting or kinking}
- A61M 2025/006 . . {having a special surface topography or special surface properties, e.g. roughened or knurled surface}
- A61M 2025/0062 . . {having features to improve the sliding of one part within another by using lubricants or surfaces with low friction (coatings [A61M 2025/0046](#))}
- A61M 2025/0063 . . {having means, e.g. stylets, mandrils, rods or wires to reinforce or adjust temporarily the stiffness, column strength or pushability of catheters which are already inserted into the human body}
- A61M 2025/0064 . . . {which become stiffer or softer when heated}

- A61M 2025/0065 . . . {which become stiffer or softer when becoming wet or humid, e.g. immersed within a liquid}
- A61M 25/0067 . {characterised by the distal end, e.g. tips ([A61M 25/0054](#), [A61M 25/04](#) take precedence; balloon catheters [A61M 25/10](#))}
- A61M 25/0068 . . {Static characteristics of the catheter tip, e.g. shape, atraumatic tip, curved tip or tip structure}
- A61M 25/0069 . . . {Tip not integral with tube}
- A61M 25/007 . . . {Side holes, e.g. their profiles or arrangements; Provisions to keep side holes unblocked}
- A61M 25/0071 . . . {Multiple separate lumens ([multiple separate lumens throughout the catheter A61M 25/0026](#))}
- A61M 2025/0073 . . . {Tip designed for influencing the flow or the flow velocity of the fluid, e.g. inserts for twisted or vortex flow ([general flow characteristics A61M 2206/10](#))}
- A61M 25/0074 . . {Dynamic characteristics of the catheter tip, e.g. openable, closable, expandable or deformable}
- A61M 25/0075 . . . {Valve means}
- A61M 2025/0076 {Unidirectional valves}
- A61M 2025/0078 {for fluid inflow from the body into the catheter lumen}
- A61M 2025/0079 . . . {Separate user-activated means, e.g. guidewires, guide tubes, balloon catheters or sheaths, for sealing off an orifice, e.g. a lumen or side holes, of a catheter}
- A61M 25/008 . . {Strength or flexibility characteristics of the catheter tip}
- A61M 2025/0081 . . . {Soft tip}
- A61M 25/0082 . . {Catheter tip comprising a tool}
- A61M 25/0084 . . . {being one or more injection needles}
- A61M 2025/0085 {Multiple injection needles protruding axially, i.e. along the longitudinal axis of the catheter, from the distal tip}
- A61M 2025/0086 {the needles having bent tips, i.e. the needle distal tips are angled in relation to the longitudinal axis of the catheter}
- A61M 2025/0087 {Multiple injection needles protruding laterally from the distal tip}
- A61M 2025/0089 {Single injection needle protruding axially, i.e. along the longitudinal axis of the catheter, from the distal tip}
- A61M 2025/009 {the needle having a bent tip, i.e. the needle distal tip is angled in relation to the longitudinal axis of the catheter}
- A61M 2025/0091 {the single injection needle being fixed}
- A61M 2025/0092 {Single injection needle protruding laterally from the distal tip}
- A61M 2025/0093 {wherein at least one needle is a microneedle}
- A61M 2025/0095 . . . {being one or more needles protruding from the distal tip and which are not used for injection nor for electro-simulation, e.g. for fixation purposes}
- A61M 2025/0096 . . . {being laterally outward extensions or tools, e.g. hooks or fibres}
- A61M 25/0097 . {characterised by the hub ([connectors A61M 39/10](#))}
- A61M 2025/0098 . {having a strain relief at the proximal end, e.g. sleeve}
- A61M 25/01 . Introducing, guiding, advancing, emplacing or holding catheters ([A61M 25/10 takes precedence](#))

- A61M 25/0102 . . {Insertion or introduction using an inner stiffening member, e.g. stylet or push-rod}
- A61M 25/0105 . . {Steering means as part of the catheter or advancing means; Markers for positioning (systems for detection of markers [A61B](#))}
- A61M 25/0108 . . . {using radio-opaque or ultrasound markers}
- A61M 25/0111 . . . {Aseptic insertion devices}
- A61M 25/0113 . . . {Mechanical advancing means, e.g. catheter dispensers}
- A61M 25/0116 . . . {self-propelled, e.g. autonomous robots ([A61M 25/0122](#) takes precedence)}
- A61M 25/0119 . . . {Eversible catheters}
- A61M 25/0122 . . . {with fluid drive by external fluid in an open fluid circuit}
- A61M 25/0125 . . . {Catheters carried by the bloodstream, e.g. with parachutes; Balloon catheters specially designed for this purpose}
- A61M 25/0127 . . . {Magnetic means; Magnetic markers}
- A61M 25/013 . . . {One-way gripping collars}
- A61M 25/0133 . . . {Tip steering devices}
- A61M 25/0136 {Handles therefor}
- A61M 25/0138 {having flexible regions as a result of weakened outer material, e.g. slots, slits, cuts, joints or coils}
- A61M 25/0141 {having flexible regions as a result of using materials with different mechanical properties}
- A61M 25/0144 {having flexible regions as a result of inner reinforcement means, e.g. struts or rods}
- A61M 25/0147 {with movable mechanical means, e.g. pull wires}
- A61M 2025/015 {Details of the distal fixation of the movable mechanical means}
- A61M 25/0152 {with pre-shaped mechanisms, e.g. pre-shaped stylets or pre-shaped outer tubes}
- A61M 25/0155 {with hydraulic or pneumatic means, e.g. balloons or inflatable compartments}
- A61M 25/0158 {with magnetic or electrical means, e.g. by using piezo materials, electroactive polymers, magnetic materials or by heating of shape memory materials}
- A61M 2025/0161 {wherein the distal tips have two or more deflection regions}
- A61M 2025/0163 {Looped catheters}
- A61M 2025/0166 . . . {Sensors, electrodes or the like for guiding the catheter to a target zone, e.g. image guided or magnetically guided}
- A61M 25/0169 . . {Exchanging a catheter while keeping the guidewire in place}
- A61M 25/0172 . . {Exchanging a guidewire while keeping the catheter in place}
- A61M 2025/0175 . . {having telescopic features, interengaging nestable members movable in relations to one another}
- A61M 2025/0177 . . {having external means for receiving guide wires, wires or stiffening members, e.g. loops, clamps or lateral tubes}
- A61M 2025/018 . . {Catheters having a lateral opening for guiding elongated means lateral to the catheter}

- A61M 2025/0183 . . {Rapid exchange or monorail catheters}
- A61M 2025/0186 . . {Catheters with fixed wires, i.e. so called "non-over-the-wire catheters"}
- A61M 2025/0188 . . {having slitted or breakaway lumens}
- A61M 2025/0191 . . {Suprapubic catheters}
- A61M 25/0194 . . {Tunnelling catheters}
- A61M 2025/0197 . . . {for creating an artificial passage within the body, e.g. in order to go around occlusions (for fixation outside the body [A61M 25/0194](#))}
- A61M 25/02 . . Holding devices, e.g. on the body
- A61M 2025/0206 . . . {where the catheter is secured by using devices worn by the patient, e.g. belts or harnesses}
- A61M 2025/0213 . . . {where the catheter is attached by means specifically adapted to a part of the human body}
- A61M 2025/022 {specifically adapted for the mouth}
- A61M 2025/0226 {specifically adapted for the nose}
- A61M 2025/0233 {specifically adapted for attaching to a body wall by means which are on both sides of the wall, e.g. for attaching to an abdominal wall}
- A61M 2025/024 . . . {having a clip or clamp system}
- A61M 2025/0246 . . . {fixed on the skin having a cover for covering the holding means}
- A61M 2025/0253 . . . {where the catheter is attached by straps, bands or the like secured by adhesives}
- A61M 2025/026 {where the straps are releasably secured, e.g. by hook and loop-type fastening devices}
- A61M 2025/0266 . . . {using pads, patches, tapes or the like}
- A61M 2025/0273 {having slits to place the pad around a catheter puncturing site}
- A61M 2025/028 . . . {having a mainly rigid support structure}
- A61M 2025/0286 . . . {anchored in the skin by suture or other skin penetrating devices}
- A61M 2025/0293 . . . {Catheter, guide wire or the like with means for holding, centering, anchoring or frictionally engaging the device within an artificial lumen, e.g. tube (natural lumen, e.g. vessels [A61M 25/04](#))}
- A61M 25/04 . . . in the body, e.g. expansible {([A61M 25/10](#), [A61M 16/0488](#) take precedence)}
- A61M 25/06 . . Body-piercing guide needles or the like
- A61M 25/0606 . . . {"Over-the-needle" catheter assemblies, e.g. I.V. catheters}
- A61M 25/0612 . . . {Devices for protecting the needle; Devices to help insertion of the needle, e.g. wings or holders}
- A61M 25/0618 {having means for protecting only the distal tip of the needle, e.g. a needle guard}
- A61M 25/0625 {with a permanent connection to the needle hub, e.g. a guiding rail, a locking mechanism or a guard advancement mechanism}
- A61M 25/0631 {having means for fully covering the needle after its withdrawal, e.g. needle being withdrawn inside the handle or a cover being advanced over the needle}
- A61M 25/0637 {Butterfly or winged devices, e.g. for facilitating handling or for attachment to the skin}

A61M 25/0643	. . . .	{Devices having a blunt needle tip, e.g. due to an additional inner component}
A61M 25/065	. . .	{Guide needles}
A61M 2025/0656	. . . .	{having a tip larger than the rest of the body}
A61M 25/0662	. . .	{Guide tubes}
A61M 25/0668	. . . .	{splittable, tear apart}
A61M 2025/0675	. . . . .	{Introducing-sheath slitters}
A61M 2025/0681	. . . .	{Systems with catheter and outer tubing, e.g. sheath, sleeve or guide tube}
A61M 2025/0687	. . . .	{having means for atraumatic insertion in the body or protection of the tip of the sheath during insertion, e.g. special designs of dilators, needles or sheaths}
A61M 25/0693	. . .	{Flashback chambers}
A61M 25/09	. .	Guide wires
A61M 2025/09008	. . .	{having a balloon}
A61M 25/09016	. . .	{with mandrils}
A61M 25/09025	. . . .	{with sliding mandrils}
A61M 25/09033	. . . .	{with fixed mandrils, e.g. mandrils fixed to tip; Tensionable wires}
A61M 25/09041	. . .	{Mechanisms for insertion of guide wires}
A61M 25/0905	. . .	{extendable; e.g. mechanisms for extension}
A61M 2025/09058	. . .	{Basic structures of guide wires (not used)}
A61M 2025/09066	. . . .	{having a coil without a core possibly combined with a sheath}
A61M 2025/09075	. . . .	{having a core without a coil possibly combined with a sheath}
A61M 2025/09083	. . . .	{having a coil around a core}
A61M 2025/09091	. . . . .	{where a sheath surrounds the coil at the distal part}
A61M 2025/091	. . .	{having a lumen for drug delivery or suction}
A61M 2025/09108	. . .	{Methods for making a guide wire}
A61M 2025/09116	. . .	{Design of handles or shafts or gripping surfaces thereof for manipulating guide wires}
A61M 2025/09125	. . .	{Device for locking a guide wire in a fixed position with respect to the catheter or the human body}
A61M 2025/09133	. . .	{having specific material compositions or coatings; Materials with specific mechanical behaviours, e.g. stiffness, strength to transmit torque}
A61M 2025/09141	. . . .	{made of shape memory alloys which take a particular shape at a certain temperature}
A61M 2025/0915	. . .	{having features for changing the stiffness}
A61M 2025/09158	. . . .	{when heated}
A61M 2025/09166	. . .	{having radio-opaque features}
A61M 2025/09175	. . .	{having specific characteristics at the distal tip}
A61M 2025/09183	. . . .	{having tools at the distal tip}
A61M 2025/09191	. . .	{made of twisted wires}

- A61M 25/10
 - Balloon catheters ([A61M 25/0125](#) takes precedence; [embolectomy A61B 17/22032](#); [retractors A61B 17/02](#) ; inflatable balloons for placing stents or stent-grafts [A61F 2/958](#); {stomach balloons for treatment of obesity [A61F 5/0003](#); oesophageal tubes [A61J 15/00](#)})
- A61M 25/1002
 - • {characterised by balloon shape ([A61M 25/1006](#), [A61M 25/1009](#) take precedence)}
- A61M 25/1004
 - • • {Balloons with folds, e.g. folded or multifolded}
- A61M 25/1006
 - • {Balloons formed between concentric tubes}
- A61M 25/1009
 - • {Balloons anchored to a disc or plate}
- A61M 25/1011
 - • {Multiple balloon catheters}
- A61M 25/1013
 - • • {with concentrically mounted balloons, e.g. being independently inflatable}
- A61M 25/1015
 - • • {having two or more independently movable balloons where the distance between the balloons can be adjusted, e.g. two balloon catheters concentric to each other forming an adjustable multiple balloon catheter system}
- A61M 25/1018
 - • {Balloon inflating or inflation-control devices}

WARNING

Groups [A61M 25/10181](#) - [A61M 25/10188](#) are incomplete pending reclassification of documents from group [A61M 25/1018](#). Until reclassification is complete, groups [A61M 25/1018](#) and [A61M 25/10181](#) - [A61M 25/10188](#) should be considered in order to perform a complete search.
- A61M 25/10181
 - • • {Means for forcing inflation fluid into the balloon}
- A61M 25/10182
 - • • • {Injector syringes}
- A61M 25/10183
 - • • • {Compressible bulbs}
- A61M 25/10184
 - • • {Means for controlling or monitoring inflation or deflation}
- A61M 25/10185
 - • • • {Valves}
- A61M 25/10186
 - • • • • {One-way valves}
- A61M 25/10187
 - • • • {Indicators for the level of inflation or deflation}
- A61M 25/10188
 - • • • • {Inflation or deflation data displays}
- A61M 25/102
 - • • {driven by a solenoid-activated pump}
- A61M 25/1022
 - • • {driven by a rotary motor-activated pump}
- A61M 25/1025
 - • {Connections between catheter tubes and inflation tubes}
- A61M 25/1027
 - • {Making of balloon catheters}
- A61M 25/1029
 - • • {Production methods of the balloon members, e.g. blow-moulding, extruding, deposition or by wrapping a plurality of layers of balloon material around a mandril}
- A61M 25/1031
 - • • • {Surface processing of balloon members, e.g. coating or deposition; Mounting additional parts onto the balloon member's surface}
- A61M 25/1034
 - • • {Joining of shaft and balloon}
- A61M 25/1036
 - • • {Making parts for balloon catheter systems, e.g. shafts or distal ends ([A61M 25/1029](#) takes precedence)}
- A61M 25/1038
 - • • {Wrapping or folding devices for use with balloon catheters}

- A61M 25/104 . . {used for angioplasty}
 - A61M 2025/1043 . . {with special features or adapted for special applications (not used)}
 - A61M 2025/1045 . . . {for treating bifurcations, e.g. balloons in y-configuration, separate balloons or special features of the catheter for treating bifurcations}
 - A61M 2025/1047 . . . {having centering means, e.g. balloons having an appropriate shape}
- NOTE**
- This group also covers other centering means and is not limited to balloons
- A61M 2025/105 . . . {having a balloon suitable for drug delivery, e.g. by using holes for delivery, drug coating or membranes}
 - A61M 2025/1052 . . . {for temporarily occluding a vessel for isolating a sector}
 - A61M 2025/1054 . . . {having detachable or disposable balloons}
 - A61M 2025/1056 . . . {having guide wire lumens outside the main shaft, i.e. the guide wire lumen is within or on the surface of the balloon}
 - A61M 2025/1059 . . . {having different inflatable sections mainly depending on the response to the inflation pressure, e.g. due to different material properties (with different compartments A61M 2025/1072)}
 - A61M 2025/1061 . . . {having separate inflations tubes, e.g. coaxial tubes or tubes otherwise arranged apart from the catheter tube}
 - A61M 2025/1063 . . . {having only one lumen used for guide wire and inflation, e.g. to minimise the diameter}
 - A61M 2025/1065 . . . {having a balloon which is inversely attached to the shaft at the distal or proximal end}
 - A61M 2025/1068 . . . {having means for varying the length or diameter of the deployed balloon, this variations could be caused by excess pressure}
 - A61M 2025/107 . . . {having a longitudinal slit in the balloon}
 - A61M 2025/1072 . . . {having balloons with two or more compartments}
 - A61M 2025/1075 . . . {having a balloon composed of several layers, e.g. by coating or embedding}
 - A61M 2025/1077 . . . {having a system for expelling the air out of the balloon before inflation and use}
 - A61M 2025/1079 . . . {having radio-opaque markers in the region of the balloon}
 - A61M 2025/1081 . . . {having sheaths or the like for covering the balloon but not forming a permanent part of the balloon, e.g. retractable, dissolvable or tearable sheaths (for balloon length adjustment A61M 2025/1068)}
 - A61M 2025/1084 . . . {having features for increasing the shape stability, the reproducibility or for limiting expansion, e.g. containments, wrapped around fibres, yarns or strands}
 - A61M 2025/1086 . . . {having a special balloon surface topography, e.g. pores, protuberances, spikes or grooves}
 - A61M 2025/1088 . . . {having special surface characteristics depending on material properties or added substances, e.g. for reducing friction}
 - A61M 2025/109 . . . {having balloons for removing solid matters, e.g. by grasping or scraping plaque, thrombus or other matters that obstruct the flow}
 - A61M 2025/1093 . . . {having particular tip characteristics}

- A61M 2025/1095 . . . {with perfusion means for enabling blood circulation while the balloon is in an inflated state or in a deflated state, e.g. permanent by-pass within catheter shaft}
- A61M 2025/1097 . . . {with perfusion means for enabling blood circulation only while the balloon is in an inflated state, e.g. temporary by-pass within balloon}
- A61M 27/00** **Drainage appliances for wounds or the like, {i.e. wound drains, implanted drains}** (implements for holding wounds open [A61B 17/02](#); {middle ear drainage [A61F 11/002](#); other drainage devices [A61M 1/00](#)})
- A61M 27/002 . {Implant devices for drainage of body fluids from one part of the body to another (intraocular [A61F 9/00781](#); middle ear [A61F 11/002](#))}
- A61M 2027/004 . . {with at least a part of the circuit outside the body}
- A61M 27/006 . . {Cerebrospinal drainage; Accessories therefor, e.g. valves}
- A61M 27/008 . . {pre-shaped, for use in the urethral or ureteral tract}
- A61M 29/00** **Dilators with or without means for introducing media, e.g. remedies** (instruments for performing visual medical inspections of cavities or tubes of the body [A61B 1/00](#))
- A61M 29/02 . Dilators made of swellable material {(balloon catheters for angioplasty [A61M 25/104](#))}
- A61M 2029/025 . . {characterised by the guiding element}
- A61M 31/00** **Devices for introducing or retaining media, e.g. remedies, in cavities of the body** ([A61M 25/00](#) takes precedence; {introducing or retaining ophthalmic products into the ocular cavities [A61F 9/0008](#)})
- A61M 31/002 . {Devices for releasing a drug at a continuous and controlled rate for a prolonged period of time (artificial gland structures or devices [A61F 2/022](#); intra-uterine contraceptive devices [A61F 6/14](#); tampons for introducing into the vagina [A61F 13/20](#), [A61L 15/00](#); suppositories or bougies for intra-vaginal or intra-uterine application [A61K 9/02](#); physical forms of medicinal preparations for sustained or differential drug release [A61K 9/20](#), [A61K 9/50](#))}
- A61M 31/005 . {for contrast media}
- A61M 31/007 . {Injectors for solid bodies, e.g. suppositories}
- A61M 35/00** **Devices for applying, {e.g. spreading}, media, e.g. remedies, on the human body** (devices for handling toilet or cosmetic substances [A45D](#); absorbent pads, e.g. swabs, [A61F 13/15](#)); **{Introducing media, e.g. remedies, into the body by diffusion through the skin}** (using salt baths [A61H 33/04](#))
- A61M 35/003 . {Hand-held applicator instruments having media dispensing or spreading means (apparatus for iontophoresis [A61N 1/30](#); hand tools for applying fluent material to surfaces, in general [B05C 17/00](#); container closures with pads or like contents-applying means, in general [B65D 47/42](#))}
- A61M 35/006 . . {Absorbent pads, e.g. swabs, containing a liquid, e.g. in a rupturable reservoir (absorbent pads, e.g. swabs, for medical use, in general [A61F 13/00](#), e.g. [A61F 13/38](#))}
- A61M 37/00** **Other apparatus for introducing media into the body** (for reproduction or fertilisation [A61B 17/425](#); apparatus for iontophoresis or cataphoresis [A61N 1/30](#)); **Percutany, i.e. introducing medicines into the body by diffusion through the skin** (salt baths [A61H 33/04](#))

- A61M 2037/0007 . {having means for enhancing the permeation of substances through the epidermis, e.g. using suction or depression, electric or magnetic fields, sound waves or chemical agents}
- A61M 37/0015 . {by using microneedles}
- A61M 2037/0023 . . {Drug applicators using microneedles}
- A61M 2037/003 . . {having a lumen}
- A61M 2037/0038 . . {having a channel at the side surface}
- A61M 2037/0046 . . {Solid microneedles}
- A61M 2037/0053 . . {Methods for producing microneedles}
- A61M 2037/0061 . . {Methods for using microneedles}
- A61M 37/0069 . {Devices for implanting pellets, e.g. markers or solid medicaments (for introducing of radioactive sources for interstitial radiation therapy, i.e. brachytherapy [A61N 5/1027](#))}
- A61M 37/0076 . {Tattooing apparatus (apparatus for marking animals [A01K 11/00](#); vaccine applicators having needles or other puncturing means [A61B 17/205](#))}
- A61M 37/0084 . . {Tattooing apparatus with incorporated liquid feeding device}
- A61M 37/0092 . {using ultrasonic, sonic or infrasonic vibrations, e.g. phonophoresis}

A61M 39/00 **Tubes, tube connectors, tube couplings, valves, access sites or the like, specially adapted for medical use (for respiratory devices, e.g. tracheal tubes [A61M 16/00](#); artificial heart valves [A61F 2/24](#))**

WARNING

Not complete, see [A61J 1/14](#)

- A61M 2039/0009 . {Assemblies therefor designed for particular applications, e.g. contrast or saline injection, suction or irrigation}
- A61M 2039/0018 . . {designed for flushing a line, e.g. by a by-pass}
- A61M 2039/0027 . . {for mixing several substances from different containers}
- A61M 2039/0036 . {characterised by a septum having particular features, e.g. having venting channels or being made from antimicrobial or self-lubricating elastomer}
- A61M 2039/0045 . . {Radiopaque indicia}
- A61M 2039/0054 . . {Multiple layers}
- A61M 2039/0063 . . {Means for alignment of the septum, e.g. septum rim with alignment holes}
- A61M 2039/0072 . . {Means for increasing tightness of the septum, e.g. compression rings, special materials, special constructions}
- A61M 2039/0081 . . {Means for facilitating introduction of a needle in the septum, e.g. guides, special construction of septum}
- A61M 2039/009 . . {Means for limiting access to the septum, e.g. shields, grids}
- A61M 39/02 . Access sites
- A61M 2039/0202 . . {for taking samples}
- A61M 2039/0205 . . {for injecting media}
- A61M 39/0208 . . {Subcutaneous access sites for injecting or removing fluids (transcutaneous access sites [A61M 39/0247](#); implantable infusion devices [A61M 5/14276](#))}
- A61M 2039/0211 . . . {with multiple chambers in a single site}

A61M 2039/0214	. . . .	{some or all chambers sharing a single septum}
A61M 2039/0217	. . . . .	{at least some chambers being stacked separated by another septum}
A61M 2039/022	. . .	{being accessible from all sides, e.g. due to a cylindrically-shaped septum}
A61M 2039/0223	. . .	{having means for anchoring the subcutaneous access site}
A61M 2039/0226	. . .	{having means for protecting the interior of the access site from damage due to the insertion of a needle}
A61M 2039/0229	. . .	{having means for facilitating assembling, e.g. snap-fit housing or modular design}
A61M 2039/0232	. . .	{having means for facilitating the insertion into the body}
A61M 2039/0235	. . .	{having an additional inlet, e.g. for a guidewire or a catheter tube}
A61M 2039/0238	. . .	{having means for locating the implanted device to insure proper injection, e.g. radio-emitter, protuberances, radio-opaque markers}
A61M 2039/0241	. . .	{having means for filtering}
A61M 2039/0244	. . .	{having means for detecting an inserted needle}
A61M 39/0247	. .	{Semi-permanent or permanent transcutaneous or percutaneous access sites to the inside of the body (peritoneal dialysis catheters A61M 1/285 ; tracheostomy devices A61M 16/0465 ; measuring pressure within the body A61B 5/03 ; colostomy devices A61F 5/445 ; gastrostomy feeding tubes A61J 15/0015 ; means for fixing a feeding tube outside of the body A61J 15/0053)}
A61M 2039/025	. . .	{through bones or teeth, e.g. through the skull}
A61M 2039/0252	. . .	{for access to the lungs}
A61M 2039/0255	. . .	{for access to the gastric or digestive system}
A61M 2039/0258	. . .	{for vascular access, e.g. blood stream access}
A61M 2039/0261	. . .	{Means for anchoring port to the body, or ports having a special shape or being made of a specific material to allow easy implantation/integration in the body}
A61M 2039/0264	. . .	{with multiple inlets or multiple outlets}
A61M 2039/0267	. . .	{comprising sensors or electrical contacts}
A61M 2039/027	. . .	{having a particular valve, seal or septum (septum A61M 2039/0036)}
A61M 2039/0273	. . .	{for introducing catheters into the body}
A61M 2039/0276	. . .	{for introducing or removing fluids into or out of the body}
A61M 2039/0279	. . .	{for introducing medical instruments into the body, e.g. endoscope, surgical tools}
A61M 2039/0282	. . .	{with implanted tubes connected to the port}
A61M 2039/0285	. . .	{with sterilisation means, e.g. antibacterial coatings, disinfecting pads, UV radiation LEDs or heating means in the port}
A61M 2039/0288	. . .	{protectors, caps or covers therefor}
A61M 2039/0291	. . .	{method or device for implanting it in the body}
A61M 2039/0294	. . .	{having a specific shape matching the shape of a tool to be inserted therein, e.g. for easy introduction, for sealing purposes, guide}
A61M 2039/0297	. . .	{at least part of it being inflatable, e.g. for anchoring, sealing or removing}

- A61M 39/04 . . . having pierceable self-sealing members
- A61M 2039/042 . . . {Shrouds encircling the access needle preventing accidental needle-stick}
- A61M 39/045 . . . {pre-slit to be pierced by blunt instrument}
- A61M 2039/047 . . . {the self-sealing member being a viscous fluid}
- A61M 39/06 . . . Haemostasis valves, i.e. gaskets sealing around a needle, catheter or the like, closing on removal thereof
- A61M 39/0606 . . . {without means for adjusting the seal opening or pressure ([A61M 39/0693](#) takes precedence)}
- A61M 39/0613 . . . {with means for adjusting the seal opening or pressure ([A61M 39/0693](#) takes precedence)}
- A61M 2039/062 . . . {used with a catheter}
- A61M 2039/0626 . . . {used with other surgical instruments, e.g. endoscope, trocar}
- A61M 2039/0633 . . . {the seal being a passive seal made of a resilient material with or without an opening}
- A61M 2039/064 {Slit-valve}
- A61M 2039/0646 {Duckbill-valve}
- A61M 2039/0653 {Perforated disc}
- A61M 2039/066 {Septum-like element}
- A61M 2039/0666 {Flap-valve}
- A61M 2039/0673 . . . {comprising means actively pressing on the device passing through the seal, e.g. inflatable seals, diaphragms, clamps}
- A61M 2039/068 . . . {having a seal being made of or coated with a special material}
- A61M 2039/0686 . . . {comprising more than one seal}
- A61M 39/0693 . . . {including means for seal penetration}
- A61M 39/08 . . . Tubes; Storage means specially adapted therefor
- A61M 2039/082 . . . {Multi-lumen tubes}
- A61M 2039/085 . . . {external enteral feeding tubes ([feeding tubes inside the stomach or intestines A61J 15/00](#))}
- A61M 2039/087 . . . {Tools for handling tubes, e.g. crimping tool for connecting tubes to a connector}
- A61M 39/10 . . . Tube connectors; Tube couplings {([A61M 39/02](#) takes precedence; connecting needles to syringes or hubs [A61M 5/34](#); connecting catheter tubes to hubs [A61M 25/0014](#))}
- A61M 2039/1005 . . . {Detection of disconnection}
- A61M 39/1011 . . . {Locking means for securing connection; Additional tamper safeties ([A61M 39/16](#) takes precedence)}
- A61M 2039/1016 . . . {Unlocking means providing a secure or comfortable disconnection}
- A61M 2039/1022 . . . {additionally providing electrical connection}
- A61M 2039/1027 . . . {Quick-acting type connectors}
- A61M 2039/1033 . . . {Swivel nut connectors, e.g. threaded connectors, bayonet-connectors}
- A61M 2039/1038 . . . {Union screw connectors, e.g. hollow screw or sleeve having external threads}

- A61M 2039/1044 . . {Verifying the connection, e.g. audible feedback, tactile feedback, visual feedback, using external light sources}
- A61M 39/105 . . {Multi-channel connectors or couplings, e.g. for connecting multi-lumen tubes (multi-channel connectors in general [F16L 37/56](#))}
- A61M 39/1055 . . {Rotating or swivel joints (in general [F16L 27/00](#))}
- A61M 2039/1061 . . {Break-apart tubing connectors or couplings}
- A61M 2039/1066 . . {having protection means, e.g. sliding sleeve to protect connector itself, shrouds to protect a needle present in the connector, protective housing, isolating sheath}
- A61M 2039/1072 . . {with a septum present in the connector}
- A61M 2039/1077 . . {Adapters, e.g. couplings adapting a connector to one or several other connectors}
- A61M 2039/1083 . . {having a plurality of female connectors, e.g. Luer connectors}
- A61M 2039/1088 . . {having a plurality of male connectors, e.g. Luer connectors}
- A61M 2039/1094 . . {at least partly incompatible with standard connectors, e.g. to prevent fatal mistakes in connection}
- A61M 39/12 . . for joining a flexible tube to a rigid attachment
- A61M 39/14 . . for connecting tubes having sealed ends {(needle sets [A61M 5/162](#); having valves closing automatically on disconnection of line [A61M 39/26](#))}
- A61M 39/143 . . . {both tube ends being sealed by meltable membranes pierced after connection by use of heat, e.g. using radiant energy}
- A61M 39/146 . . . {by cutting and welding}
- A61M 39/16 . . having provision for disinfection or sterilisation {([A61M 39/143](#) takes precedence; methods or apparatus for disinfection or sterilisation [A61L 2/00](#))}
- A61M 39/162 . . . {with antiseptic agent incorporated within the connector}
- A61M 39/165 . . . {Shrouds or protectors for aseptically enclosing the connector}
- A61M 2039/167 . . . {with energizing means, e.g. light, vibration, electricity}
- A61M 39/18 . . . Methods or apparatus for making the connection under sterile conditions, i.e. sterile docking
- A61M 39/20 . . Closure caps or plugs for connectors or open ends of tubes
- A61M 2039/205 . . {comprising air venting means}
- A61M 39/22 . . Valves or arrangement of valves {([A61M 39/02](#), [A61M 39/0247](#), [A61M 39/16](#) take precedence; regulating valves in infusion systems [A61M 5/16881](#); in devices worn by the patient for the reception of urine, faeces, catamenial or other discharge, or in colostomy devices [A61F 5/4405](#))}
- A61M 39/221 . . {Frangible or pierceable closures within tubing ([A61M 39/14](#) takes precedence; frangible closures for containers [A61J 1/14](#))}
- A61M 2039/222 . . . {frangible within tubing or bags}
- A61M 39/223 . . {Multiway valves}
- A61M 2039/224 . . . {of the slide-valve type}
- A61M 39/225 . . {Flush valves, i.e. bypass valves for flushing line}
- A61M 2039/226 . . {Spindles or actuating means}
- A61M 39/227 . . {Valves actuated by a secondary fluid, e.g. hydraulically or pneumatically actuated valves}

A61M 39/228	. . .	{with a tubular diaphragm constrictable by radial fluid force}
A61M 2039/229	. .	{Stopcocks}
A61M 39/24	. .	Check- or non-return valves
A61M 2039/2406	. . .	{designed to quickly shut upon the presence of back-pressure}
A61M 2039/2413	. . .	{designed to reduce and or shut-off the flow when a certain maximum flow limit is exceeded}
A61M 2039/242	. . .	{designed to open when a predetermined pressure or flow rate has been reached, e.g. check valve actuated by fluid}
A61M 2039/2426	. . .	{Slit valve}
A61M 2039/2433	. . .	{Valve comprising a resilient or deformable element, e.g. flap valve, deformable disc}
A61M 2039/244	. . . .	{Hinged closure member, e.g. flap valve}
A61M 2039/2446	. . . .	{Flexible disc}
A61M 2039/2453	. . . . .	{not being fixed to the valve body}
A61M 2039/246	. . . . .	{being fixed along all or a part of its periphery}
A61M 2039/2466	. . . . .	{being fixed in its center}
A61M 2039/2473	. . .	{Valve comprising a non-deformable, movable element, e.g. ball-valve, valve with movable stopper or reciprocating element}
A61M 2039/248	. . . .	{Ball-valve}
A61M 2039/2486	. . . .	{Guided stem, e.g. reciprocating stopper}
A61M 2039/2493	. . .	{Check valve with complex design, e.g. several inlets and outlets and several check valves in one body}
A61M 39/26	. .	Valves closing automatically on disconnecting the line and opening on reconnection thereof {(check valves A61M 39/24)}
A61M 2039/261	. . .	{where the fluid space within the valve is increasing upon disconnection}
A61M 2039/262	. . .	{having a fluid space within the valve remaining the same upon connection and disconnection, i.e. neutral-drawback valve}
A61M 2039/263	. . .	{where the fluid space within the valve is decreasing upon disconnection}
A61M 2039/265	. . .	{electrically operated, e.g. a male connector closing an electrical circuit upon connection to a female valve portion}
A61M 2039/266	. . .	{where the valve comprises venting channels, e.g. to insure better connection, to help decreasing the fluid space upon disconnection, or to help the fluid space to remain the same during disconnection}
A61M 2039/267	. . .	{having a sealing sleeve around a tubular or solid stem portion of the connector}
A61M 2039/268	. . . .	{wherein the stem portion is moved for opening and closing the valve, e.g. by translation, rotation}
A61M 39/28	. .	Clamping means for squeezing flexible tubes, e.g. roller clamps {(tube strippers A61M 1/0078)}
A61M 39/281	. . .	{Automatic tube cut-off devices, e.g. squeezing tube on detection of air}
A61M 2039/282	. . . .	{including severing of the tube}
A61M 39/283	. . .	{Screw clamps}
A61M 39/284	. . .	{Lever clamps}
A61M 39/285	. . .	{Cam clamps, e.g. roller clamps with eccentric axis}

- A61M 39/286 . . . {Wedge clamps, e.g. roller clamps with inclined guides}
- A61M 39/287 {Wedge formed by a slot having varying width, e.g. slide clamps}
- A61M 39/288 . . . {by bending or twisting the tube}

A61M 2202/00 **Special media to be introduced, removed or treated** (applying radioactive material [A61N 5/1028](#))

NOTE

The classification symbols [A61M 2202/0007](#) - [A61M 2202/0092](#) are not listed first when assigned to patent documents.

They are used only when associated to other subgroups of [A61M 2202/00](#) in combination sets

Example:

[A61M 2202/0417](#), [A61M 2202/0057](#)

- A61M 2202/0007 . introduced into the body
- A61M 2202/0014 . removed from the body
- A61M 2202/0021 . removed from and reintroduced into the body, e.g. after treatment
- A61M 2202/0028 . fluid entering a filter
- A61M 2202/0035 . fluid leaving the cross-flow filter without having passed through the filtering element
- A61M 2202/0042 . filtrate, i.e. the fluid passing through the filter
- A61M 2202/005 . residue retained by the filter due to size
- A61M 2202/0057 . retained by adsorption
- A61M 2202/0064 . changed by biological action
- A61M 2202/0071 . product to be retained or harvested, e.g. by pheresis
- A61M 2202/0078 . changed by chemical action
- A61M 2202/0085 . product washed out
- A61M 2202/0092 . starting product created by centrifuging
- A61M 2202/02 . Gases ([smoke evacuating A61B 2218/008](#))
- A61M 2202/0208 . . Oxygen
- A61M 2202/0216 . . Ozone
- A61M 2202/0225 . . Carbon oxides, e.g. Carbon dioxide
- A61M 2202/0233 . . . Carbon monoxide
- A61M 2202/0241 . . Anaesthetics; Analgesics
- A61M 2202/025 . . Helium
- A61M 2202/0258 . . Krypton (KR)
- A61M 2202/0266 . . Nitrogen (N)
- A61M 2202/0275 . . . Nitric oxide [NO]
- A61M 2202/0283 . . . Nitrous oxide (N₂O)
- A61M 2202/0291 . . Xenon
- A61M 2202/03 . Gases in liquid phase, e.g. cryogenic liquids

A61M 2202/04

. Liquids

NOTE

The codes can be followed by additional symbols. The symbols have the meaning as listed below:

- +A fluid entering a filter;
- +B fluid leaving the cross-flow filter without having passed through the filtering element ;
- +C filtrate, i.e. the fluid passing through the filter;
- +D residue retained by the filter due to size;
- +E retained by adsorption;
- +F changed by biological action;
- +H product to be retained or harvested, e.g. by pheresis;
- +K changed by chemical action;
- +W product washed out;
- +Z starting product created by centrifuging.

- A61M 2202/0401 . . Ascitics
- A61M 2202/0403 . . Gall; Bile
- A61M 2202/0405 . . Lymph
- A61M 2202/0407 . . . Lymphocytes
- A61M 2202/0409 B-Lymphocytes
- A61M 2202/0411 T-Lymphocytes
- A61M 2202/0413 . . Blood
- A61M 2202/0415 . . . Plasma
- A61M 2202/0417 Immunoglobulin
- A61M 2202/0419 Immunoglobulin G
- A61M 2202/0421 Beta-2-microglobulin
- A61M 2202/0423 Serum; Human serous fluid, i.e. plasma without fibrinogen
- A61M 2202/0425 Thrombin
- A61M 2202/0427 . . . Platelets; Thrombocytes
- A61M 2202/0429 . . . Red blood cells; Erythrocytes
- A61M 2202/0431 Gerocytes
- A61M 2202/0433 Free haemoglobin
- A61M 2202/0435 Neocytes, e.g. reticulocytes
- A61M 2202/0437 Blood stem cells
- A61M 2202/0439 . . . White blood cells; Leucocytes ([lymphocytes A61M 2202/0407](#))
- A61M 2202/0441 Granulocytes, i.e. leucocytes containing many granules in their cytoplasm
- A61M 2202/0443 Macrophages, e.g. monocytes

A61M 2202/0445	. . .	Proteins (immunoglobulin A61M 2202/0417 ; beta-2-microglobulin A61M 2202/0421 ; thrombin A61M 2202/0425 ; haemoglobin A61M 2202/0433)
A61M 2202/0447	. . . .	Glycoproteins
A61M 2202/0449	. . . . .	Fibrinogen, also called factor 1
A61M 2202/045	. . . . .	Fibrin
A61M 2202/0452	. . . . .	Factor VIII
A61M 2202/0454	. . . . .	Fibrinase, i.e. Factor XIII
A61M 2202/0456	. . .	Lipoprotein
A61M 2202/0458	. . . .	High-density lipoprotein
A61M 2202/046	. . . .	Low-density lipoprotein
A61M 2202/0462	. . .	Placental blood, umbilical cord blood
A61M 2202/0464	. .	Cerebrospinal fluid
A61M 2202/0466	. .	Saliva
A61M 2202/0468	. .	non-physiological
A61M 2202/047	. . .	cardioplegic
A61M 2202/0472	. . . .	cryo-cardioplegic
A61M 2202/0474	. . .	haemodiluting
A61M 2202/0476	. . .	Oxygenated solutions
A61M 2202/0478	. . .	Heparin
A61M 2202/048	. . .	Anaesthetics (see also A61M 19/00)
A61M 2202/0482	. . .	Enteral feeding product
A61M 2202/0484	. . .	Alcohol
A61M 2202/0486	. . .	Glucose
A61M 2202/0488	. . .	Surfactant, e.g. for the lung
A61M 2202/049	. . .	Toxic
A61M 2202/0492	. .	Pleural
A61M 2202/0494	. .	Obstetrical, amniotic fluid
A61M 2202/0496	. .	Urine
A61M 2202/0498	. . .	Urea
A61M 2202/06	. .	Solids
A61M 2202/062	. .	Desiccants
A61M 2202/064	. .	Powder
A61M 2202/066	. . .	made from a compacted product by abrading
A61M 2202/068	. .	Faeces; Excretions
A61M 2202/07	. .	Proteins
A61M 2202/08	. .	Lipoids
A61M 2202/09	. .	Body tissue
A61M 2202/092	. .	Sweat glands
A61M 2202/095	. .	Collagen

- A61M 2202/097 . . . endothelial cells
- A61M 2202/10 . Bone-marrow
- A61M 2202/20 . Pathogenic agents
- A61M 2202/203 . . Bacteria
- A61M 2202/206 . . Viruses
- A61M 2202/30 . Vaccines

A61M 2205/00**General characteristics of the apparatus**

- A61M 2205/02 . characterised by a particular materials
- A61M 2205/0205 . . Materials having antiseptic or antimicrobial properties, e.g. silver compounds, rubber with sterilising agent
- A61M 2205/0211 . . Ceramics
- A61M 2205/0216 . . Materials providing elastic properties, e.g. for facilitating deformation and avoid breaking
- A61M 2205/0222 . . Materials for reducing friction
- A61M 2205/0227 . . Materials having sensing or indicating function, e.g. indicating a pressure increase
- A61M 2205/0233 . . Conductive materials, e.g. antistatic coatings for spark prevention
- A61M 2205/0238 . . the material being a coating or protective layer
- A61M 2205/0244 . . Micro-machined materials, e.g. made from silicon wafers, microelectromechanical systems [MEMS] or comprising nano-technology
- A61M 2205/025 . . Materials providing resistance against corrosion
- A61M 2205/0255 . . . in acidic environments or acidic fluids
- A61M 2205/0261 . . . in alcalic environments or alcalic fluids
- A61M 2205/0266 . . Shape memory materials
- A61M 2205/0272 . . Electro-active or magneto-active materials
- A61M 2205/0277 . . . Chemo-active materials
- A61M 2205/0283 . . . Electro-active polymers [EAP]
- A61M 2205/0288 . . . Electro-rheological or magneto-rheological materials
- A61M 2205/0294 . . . Piezoelectric materials
- A61M 2205/04 . implanted
- A61M 2205/05 . combined with other kinds of therapy
- A61M 2205/051 . . with radiation therapy
- A61M 2205/052 . . . infra-red
- A61M 2205/053 . . . ultra-violet
- A61M 2205/054 . . with electrotherapy
- A61M 2205/055 . . . with electrophoresis
- A61M 2205/056 . . with active exercise
- A61M 2205/057 . . with magnetotherapy
- A61M 2205/058 . . with ultrasound therapy
- A61M 2205/07 . having air pumping means

A61M 2205/071	. . hand operated
A61M 2205/073	. . . Syringe, piston type
A61M 2205/075	. . . Bulb type
A61M 2205/076	. . mouth operated
A61M 2205/078	. . foot operated
A61M 2205/10	. with powered movement mechanisms
A61M 2205/103	. . rotating
A61M 2205/106	. . reciprocating
A61M 2205/11	. with means for preventing cross-contamination when used for multiple patients
A61M 2205/12	. with interchangeable cassettes forming partially or totally the fluid circuit
A61M 2205/121	. . interface between cassette and base
A61M 2205/122	. . . using evacuated interfaces to enhance contact
A61M 2205/123	. . with incorporated reservoirs
A61M 2205/125	. . with incorporated filters
A61M 2205/126	. . . with incorporated membrane filters
A61M 2205/127	. . with provisions for heating or cooling
A61M 2205/128	. . with incorporated valves
A61M 2205/13	. with means for the detection of operative contact with patient, e.g. lip sensor
A61M 2205/14	. Detection of the presence or absence of a tube, a connector or a container in an apparatus
A61M 2205/15	. Detection of leaks
A61M 2205/16	. with back-up system in case of failure
A61M 2205/17	. with redundant control systems
A61M 2205/18	. with alarm
A61M 2205/183	. . the sound being generated pneumatically
A61M 2205/186	. . the sound being acoustically amplified, e.g. by resonance
A61M 2205/19	. Constructional features of carpules, syringes or blisters
A61M 2205/192	. . Avoiding coring, e.g. preventing formation of particles during puncture
A61M 2205/195	. . . by the needle tip shape
A61M 2205/197	. . . by the seal material
A61M 2205/21	. insensitive to tilting or inclination, e.g. spill-over prevention
A61M 2205/215	. . Tilt detection, e.g. for warning or shut-off
A61M 2205/27	. preventing use
A61M 2205/273	. . preventing reuse, e.g. of disposables
A61M 2205/276	. . preventing unwanted use
A61M 2205/32	. with radio-opaque indicia
A61M 2205/33	. Controlling, regulating or measuring
A61M 2205/3303	. . Using a biosensor
A61M 2205/3306	. . Optical measuring means

- A61M 2205/331 . . . used as turbidity change detectors, e.g. for priming-blood or plasma-hemoglobine-interface detection
- A61M 2205/3313 . . . used specific wavelengths
- A61M 2205/3317 . . . Electromagnetic, inductive or dielectric measuring means
- A61M 2205/332 . . . Force measuring means
- A61M 2205/3324 . . . PH measuring means
- A61M 2205/3327 . . . Measuring
- A61M 2205/3331 . . . Pressure; Flow
- A61M 2205/3334 Measuring or controlling the flow rate
- A61M 2205/3337 Controlling, regulating pressure or flow by means of a valve by-passing a pump
- A61M 2205/3341 stabilising pressure or flow to avoid excessive variation
- A61M 2205/3344 Measuring or controlling pressure at the body treatment site
- A61M 2205/3348 Pressure measurement using a water column
- A61M 2205/3351 Controlling upstream pump pressure
- A61M 2205/3355 Controlling downstream pump pressure
- A61M 2205/3358 Measuring barometric pressure, e.g. for compensation
- A61M 2205/3362 with minimised length of fluid lines; Taking into account the elastic expansion of fluid lines to increase accuracy
- A61M 2205/3365 . . . Rotational speed
- A61M 2205/3368 . . . Temperature
- A61M 2205/3372 Temperature compensation
- A61M 2205/3375 . . . Acoustical, e.g. ultrasonic, measuring means
- A61M 2205/3379 . . . Masses, volumes, levels of fluids in reservoirs, flow rates
- A61M 2205/3382 Upper level detectors
- A61M 2205/3386 Low level detectors
- A61M 2205/3389 Continuous level detection ([A61M 2205/3393 takes precedence](#))
- A61M 2205/3393 by weighing the reservoir
- A61M 2205/3396 Reservoirs being alternately filled and emptied for measuring flow rate or delivered volume
- A61M 2205/35 . . . Communication
- A61M 2205/3507 . . . with implanted devices, e.g. external control
- A61M 2205/3515 using magnetic means
- A61M 2205/3523 using telemetric means
- A61M 2205/353 using mechanical means, e.g. subcutaneous pushbuttons
- A61M 2205/3538 using electrical conduction through the body of the patient
- A61M 2205/3546 . . . Range
- A61M 2205/3553 remote, e.g. between patient's home and doctor's office
- A61M 2205/3561 local, e.g. within room or hospital
- A61M 2205/3569 sublocal, e.g. between console and disposable

- A61M 2205/3576 . . with non implanted data transmission devices, e.g. using external transmitter or receiver
- A61M 2205/3584 . . . using modem, internet or bluetooth
- A61M 2205/3592 . . . using telemetric means, e.g. radio or optical transmission
- A61M 2205/36 . . related to heating or cooling
- A61M 2205/3606 . . cooled
- A61M 2205/3613 . . by body heat
- A61M 2205/362 . . by gas flow
- A61M 2205/3626 . . by controlled mixing of fluids at different temperatures
- A61M 2205/3633 . . thermally insulated
- A61M 2205/364 . . by chemical reaction
- A61M 2205/3646 . . by heat accumulators, e.g. ice, sand
- A61M 2205/3653 . . by Joule effect, i.e. electric resistance
- A61M 2205/366 . . by liquid heat exchangers
- A61M 2205/3666 . . using heat loss of a motor
- A61M 2205/3673 . . thermo-electric, e.g. Peltier effect, thermocouples, semi-conductors
- A61M 2205/368 . . by electromagnetic radiation, e.g. IR waves
- A61M 2205/3686 . . . microwaves
- A61M 2205/3693 . . by mechanical waves, e.g. ultrasonic
- A61M 2205/42 . Reducing noise
- A61M 2205/43 . making noise when used correctly
- A61M 2205/44 . making noise when used incorrectly
- A61M 2205/50 . with microprocessors or computers
- A61M 2205/502 . . User interfaces, e.g. screens or keyboards
- A61M 2205/505 . . . Touch-screens; Virtual keyboard or keypads; Virtual buttons; Soft keys; Mouse touches
- A61M 2205/507 . . . Head Mounted Displays [HMD]
- A61M 2205/52 . . with memories providing a history of measured varying parameters of apparatus or patient
- A61M 2205/58 . Means for facilitating use, e.g. by people with impaired vision
- A61M 2205/581 . . by audible feedback
- A61M 2205/582 . . by tactile feedback
- A61M 2205/583 . . by visual feedback
- A61M 2205/584 . . . having a color code
- A61M 2205/585 . . . having magnification means, e.g. magnifying glasses
- A61M 2205/586 . . Ergonomic details therefor, e.g. specific ergonomics for left or right-handed users
- A61M 2205/587 . . Lighting arrangements
- A61M 2205/588 . . by olfactory feedback, i.e. smell
- A61M 2205/59 . Aesthetic features, e.g. distraction means to prevent fears of child patients
- A61M 2205/60 . with identification means

- A61M 2205/6009 . . for matching patient with his treatment, e.g. to improve transfusion security
- A61M 2205/6018 . . providing set-up signals for the apparatus configuration
- A61M 2205/6027 . . Electric-conductive bridges closing detection circuits, with or without identifying elements, e.g. resistances, zener-diodes
- A61M 2205/6036 . . characterised by physical shape, e.g. array of activating switches
- A61M 2205/6045 . . having complementary physical shapes for indexing or registration purposes
- A61M 2205/6054 . . Magnetic identification systems
- A61M 2205/6063 . . Optical identification systems
- A61M 2205/6072 . . . Bar codes
- A61M 2205/6081 . . . Colour codes
- A61M 2205/609 . . Biometric patient identification means
- A61M 2205/70 . with testing or calibration facilities
- A61M 2205/702 . . automatically during use
- A61M 2205/705 . . Testing of filters for leaks ([blood in dialysate A61M 1/1692](#))
- A61M 2205/707 . . Testing of filters for clogging
- A61M 2205/75 . with filters
- A61M 2205/7509 . . for virus
- A61M 2205/7518 . . bacterial
- A61M 2205/7527 . . liquophilic, hydrophilic
- A61M 2205/7536 . . allowing gas passage, but preventing liquid passage, e.g. liquophobic, hydrophobic, water-repellent membranes
- A61M 2205/7545 . . for solid matter, e.g. microaggregates
- A61M 2205/7554 . . with means for unclogging or regenerating filters
- A61M 2205/7563 . . with means preventing clogging of filters
- A61M 2205/7572 . . with means for preventing contamination of the environment when replaced
- A61M 2205/7581 . . with means for switching over to a fresh filter on clogging or saturation
- A61M 2205/759 . . for removing preservatives, e.g. heavy metal compositions
- A61M 2205/80 . voice-operated command
- A61M 2205/82 . Internal energy supply devices
- A61M 2205/8206 . . battery-operated
- A61M 2205/8212 . . . with means or measures taken for minimising energy consumption
- A61M 2205/8218 . . Gas operated
- A61M 2205/8225 . . . using incorporated gas cartridges for the driving gas
- A61M 2205/8231 . . . using electrochemical gas generating device for the driving gas
- A61M 2205/8237 . . Charging means
- A61M 2205/8243 . . . by induction
- A61M 2205/825 . . . using mechanical generation of electricity, e.g. hand cranked generators
- A61M 2205/8256 . . . being integrated in the case or housing of the apparatus
- A61M 2205/8262 . . connectable to external power source, e.g. connecting to automobile battery through the cigarette lighter
- A61M 2205/8268 . . Fuel storage cells

A61M 2205/8275	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Mechanical
A61M 2205/8281	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> spring operated
A61M 2205/8287	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> operated by an external magnetic or electromagnetic field
A61M 2205/8293	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Solar
A61M 2205/84	<ul style="list-style-type: none"> for treating several patients simultaneously
A61M 2206/00	Characteristics of a physical parameter; associated device therefor
A61M 2206/10	<ul style="list-style-type: none"> Flow characteristics
A61M 2206/11	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Laminar flow
A61M 2206/12	<ul style="list-style-type: none"> <ul style="list-style-type: none"> the flow being spirally in a plane, e.g. against a plane side of a membrane filter element
A61M 2206/14	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Static flow deviators in tubes disturbing laminar flow in tubes, e.g. archimedes screws
A61M 2206/16	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Rotating swirling helical flow, e.g. by tangential inflows
A61M 2206/18	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Coaxial flows, e.g. one flow within another
A61M 2206/20	<ul style="list-style-type: none"> <ul style="list-style-type: none"> having means for promoting or enhancing the flow, actively or passively
A61M 2206/22	<ul style="list-style-type: none"> <ul style="list-style-type: none"> eliminating pulsatile flows, e.g. by the provision of a dampening chamber
A61M 2207/00	Methods of manufacture, assembly or production
A61M 2207/10	<ul style="list-style-type: none"> Device therefor
A61M 2209/00	Ancillary equipment
A61M 2209/01	<ul style="list-style-type: none"> Remote controllers for specific apparatus
A61M 2209/02	<ul style="list-style-type: none"> Equipment for testing the apparatus
A61M 2209/04	<ul style="list-style-type: none"> Tools for specific apparatus
A61M 2209/045	<ul style="list-style-type: none"> <ul style="list-style-type: none"> for filling, e.g. for filling reservoirs
A61M 2209/06	<ul style="list-style-type: none"> Packaging for specific medical equipment
A61M 2209/08	<ul style="list-style-type: none"> Supports for equipment
A61M 2209/082	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Mounting brackets, arm supports for equipment
A61M 2209/084	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Supporting bases, stands for equipment
A61M 2209/086	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> Docking stations
A61M 2209/088	<ul style="list-style-type: none"> <ul style="list-style-type: none"> on the body
A61M 2209/10	<ul style="list-style-type: none"> Equipment for cleaning
A61M 2210/00	Anatomical parts of the body
A61M 2210/005	<ul style="list-style-type: none"> used as an access side to the body
A61M 2210/02	<ul style="list-style-type: none"> Bones
A61M 2210/04	<ul style="list-style-type: none"> Skin
A61M 2210/06	<ul style="list-style-type: none"> Head
A61M 2210/0606	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Face
A61M 2210/0612	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Eyes
A61M 2210/0618	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Nose

A61M 2210/0625	. . Mouth
A61M 2210/0631	. . . Gums
A61M 2210/0637	. . . Teeth
A61M 2210/0643	. . . Tongue
A61M 2210/065	. . . Throat; Pharynx
A61M 2210/0656	. . . Epiglottis
A61M 2210/0662	. . Ears
A61M 2210/0668	. . . Middle ear
A61M 2210/0675	. . . Eustachian tube
A61M 2210/0681	. . Sinus (maxillaris)
A61M 2210/0687	. . Skull, cranium
A61M 2210/0693	. . Brain, cerebrum
A61M 2210/08	. Limbs
A61M 2210/083	. . Arms
A61M 2210/086	. . Legs
A61M 2210/10	. Trunk
A61M 2210/1003	. . Spinal column
A61M 2210/1007	. . Breast; mammary
A61M 2210/101	. . Pleural cavity
A61M 2210/1014	. . Diaphragm
A61M 2210/1017	. . Peritoneal cavity
A61M 2210/1021	. . Abdominal cavity
A61M 2210/1025	. . Respiratory system (A61M 2210/0618 take precedence)
A61M 2210/1028	. . . Larynx
A61M 2210/1032	. . . Trachea
A61M 2210/1035	. . . Bronchi
A61M 2210/1039	. . . Lungs
A61M 2210/1042	. . Alimentary tract (A61M 2210/0618 takes precedence)
A61M 2210/1046	. . . Pharynx
A61M 2210/105	. . . Oesophagus
A61M 2210/1053	. . . Stomach
A61M 2210/1057	. . . . Duodenum
A61M 2210/106	. . . Small intestine
A61M 2210/1064	. . . Large intestine
A61M 2210/1067	. . . Anus
A61M 2210/1071	. . . Liver; Hepar
A61M 2210/1075	. . . Gall bladder
A61M 2210/1078	. . Urinary tract
A61M 2210/1082	. . . Kidney
A61M 2210/1085	. . . Bladder

A61M 2210/1089	. . . Urethra
A61M 2210/1092	. . . . Female
A61M 2210/1096	. . . . Male
A61M 2210/12	. Blood circulatory system
A61M 2210/122	. . Pericardium
A61M 2210/125	. . Heart
A61M 2210/127	. . Aorta
A61M 2210/14	. Female reproductive, genital organs
A61M 2210/1408	. . Ovaries
A61M 2210/1416	. . Ova, ovum
A61M 2210/1425	. . Uterine tubes
A61M 2210/1433	. . Uterus
A61M 2210/1441	. . . Ovocytes
A61M 2210/145	. . . Embryo, fetus
A61M 2210/1458	. . . Placenta
A61M 2210/1466	. . . Umbilical cord
A61M 2210/1475	. . Vagina
A61M 2210/1483	. . Labia
A61M 2210/1491	. . Clitoris
A61M 2210/16	. Male reproductive, genital organs
A61M 2210/161	. . Testis
A61M 2210/162	. . Epididymis
A61M 2210/163	. . Ductus deferens
A61M 2210/164	. . Seminal vesicles
A61M 2210/165	. . Sperm ducts
A61M 2210/166	. . Prostate
A61M 2210/167	. . Penis
A61M 2210/168	. . Scrota, Scrotums

Parts of the body

A61M 2230/00

Measuring parameters of the user

NOTE

+A following the symbol means that the parameter is used for

controlling an apparatus

The classification symbol [A61M 2230/005](#) is not listed first when assigned to patent documents. It is used only when associated to other subgroups of

[A61M 2230/00](#). Example: [A61M 2230/06](#) + [A61M 2230/005](#)

- A61M 2230/005 . Parameter used as control input for the apparatus
- A61M 2230/04 . Heartbeat characteristics, e.g. ECG, blood pressure modulation
- A61M 2230/06 . . Heartbeat rate only
- A61M 2230/08 . Other bio-electrical signals
- A61M 2230/10 . . Electroencephalographic signals
- A61M 2230/14 . . Electro-oculogram [EOG]
- A61M 2230/16 . . Visual evoked potential [VEP]
- A61M 2230/18 . Rapid eye-movements [REM]
- A61M 2230/20 . Blood composition characteristics
- A61M 2230/201 . . Glucose concentration
- A61M 2230/202 . . partial carbon oxide pressure, e.g. partial dioxide pressure (P-CO₂)
- A61M 2230/204 . . . partial carbon monoxide pressure (P-CO)
- A61M 2230/205 . . partial oxygen pressure (P-O₂)
- A61M 2230/207 . . hematocrit
- A61M 2230/208 . . pH-value
- A61M 2230/30 . Blood pressure ([A61M 2230/04 takes precedence](#))
- A61M 2230/40 . Respiratory characteristics
- A61M 2230/42 . . Rate
- A61M 2230/43 . . Composition of exhalation
- A61M 2230/432 . . . partial CO₂ pressure (P-CO₂)
- A61M 2230/435 . . . partial O₂ pressure (P-O₂)
- A61M 2230/437 . . . the anaesthetic agent concentration
- A61M 2230/46 . . Resistance or compliance of the lungs
- A61M 2230/50 . Temperature
- A61M 2230/60 . Muscle strain, i.e. measured on the user
- A61M 2230/62 . Posture
- A61M 2230/63 . Motion, e.g. physical activity
- A61M 2230/65 . Impedance, e.g. conductivity, capacity

A61M 2240/00 Specially adapted for neonatal use

- A61M 2240/02 . To-be-deleted with administrative transfer to parent group

A61M 2250/00 Specially adapted for animals