

CPC COOPERATIVE PATENT CLASSIFICATION

B66C **CRANES; LOAD-ENGAGING ELEMENTS OR DEVICES FOR CRANES, CAPSTANS, WINCHES, OR TACKLES** ({specially adapted for lifting invalids [A61G 7/10](#);} rope, cable, or chain winding mechanisms, braking or detent devices therefor [B66D](#); specially adapted for nuclear reactors [G21](#))

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:

B66C 23/61	covered by	B66C 23/60
B66C 23/683	covered by	B66C 23/68
B66C 23/687	covered by	B66C 23/701
B66C 23/69	covered by	B66C 23/701
B66C 23/693	covered by	B66C 23/705
B66C 23/697	covered by	B66C 23/707

Load-engaging elements or devices attached to lifting or lowering gear of cranes or adapted for connection therewith

NOTE

In groups [B66C 1/00](#) and [B66C 3/00](#) the term "cranes" also covers capstans, winches, or tackles

- 1/00** **Load-engaging elements or devices attached to lifting or lowering gear of cranes or adapted for connection therewith for transmitting lifting forces to articles or groups of articles (fastening to cables or ropes [F16G 11/00](#))**
- 1/02 . by suction means ({suction cups for attaching purposes [F16B 47/00](#)})
- 1/0206 . . {for handling bulk or bags}
- 1/0212 . . {Circular shape}
- 1/0218 . . {Safety measures, e.g. sensors, duplicate functions}
- 1/0225 . . {Hand held}
- 1/0231 . . {Special lip configurations}
- 1/0237 . . {Multiple lifting units; More than one suction area}
- 1/0243 . . . {Separate cups}
- 1/025 . . . {Divided cups}
- 1/0256 . . {Operating and control devices}
- 1/0262 . . . {for rotation}
- 1/0268 . . . {Venturi effect}
- 1/0275 . . . {actuated by lifting action}
- 1/0281 . . {Rectangular or square shape}
- 1/0287 . . {Other shapes, e.g. triangular or oval}
- 1/0293 . . {Single lifting units; Only one suction cup}
- 1/04 . by magnetic means
- 1/06 . . electromagnetic
- 1/08 . . . Circuits therefor (for electromagnets in general [H01F 7/18](#))
- 1/10 . by mechanical means
- 1/101 . . {for containers ([B66C 1/223](#) and [B66C 1/663](#) take precedence)}
- 1/102 . . . {for two or more containers end to end}
- 1/104 . . . {for two or more containers side by side}
- 1/105 . . {Lifting beam permitting to depose a load through an opening}
- 1/107 . . {for lifting engines}

- 1/108 . . {for lifting parts of wind turbines}
- 1/12 . . Slings comprising chains, wires, ropes, or bands; Nets (article side grippers suspended by ropes or chains from crane hooks [B66C 1/42](#))
- 1/122 . . . {Sling or load protectors}
- 1/125 . . . {Chain-type slings (chains in general [F16G](#))}
- 1/127 . . . {Nets}
- 1/14 . . . Slings with hooks
- 1/16 . . . Slings with load-engaging platforms or frameworks
- 1/18 . . . Band-type slings
- 1/20 . . . specially adapted for handling vehicles
- 1/22 . . Rigid members, e.g. L-shaped members, with parts engaging the under surface of the loads; Crane hooks
- 1/223 . . . {for containers}
- 1/226 . . . {for flexible intermediate bulk containers [FIBC]}
- 1/24 . . . Single members engaging the loads from one side only
- 1/26 with means for releasing the loads
- 1/28 . . . Duplicate, e.g. pivoted, members engaging the loads from two sides
- 1/30 and also arranged to grip the sides of the loads
- 1/32 of piled or stacked articles
- 1/34 . . . Crane hooks
- 1/36 with means, e.g. spring-biased detents, for preventing inadvertent disengagement of loads
- 1/38 adapted for automatic disengagement from loads on release of cable tensions (for parachutes {[B64D 17/00](#)})
- 1/40 formed or fitted with load measuring or indicating devices
- 1/42 . . Gripping members engaging only the external or internal surfaces of the articles (for handling or stripping castings or ingots during manufacture [B22D 29/00](#))
- 1/422 . . . {actuated by lifting force ([B66C 1/44](#), [B66C 1/58](#) take precedence)}
- 1/425 . . . {motor actuated ([B66C 1/44](#), [B66C 1/58](#) take precedence)}

1/427	. . . . {by hydraulic or pneumatic motors}	5/06	. . with runways or tracks supported for lateral swinging movements
1/44	. . . and applying frictional forces	5/08	. . with vertically invlinable runways or tracks
1/442	. . . . {actuated by lifting force}	5/10	. Portals, i.e. essentially circular or square platforms with three or more legs specially adapted for supporting slewing jib cranes
1/445	. . . . {motor actuated}		
1/447	. . . . . {by hydraulic or pneumatic motors}		
1/46	. . . . by inflatable elements		
1/48	. . . . to vertical edge portions of sheets, tubes, or like thin or thin-walled articles (internally-expanding grippers B66C 1/54)	6/00	Girders, or track-supporting structures, specially adapted for cranes (base supporting structures with legs B66C 5/00; girders in general E04C 3/02)
1/485	. . . . . {Coil lifting devices}		
1/54	. . . . Internally-expanding grippers for handling hollow articles (B66C 1/46 takes precedence)	7/00	Runways, tracks or trackways for trolleys or cranes
1/56	. . . . . for handling tubes	7/02	. for underhung trolleys or cranes
1/58	. . . and deforming the articles, e.g. by using gripping members such as tongs or grapples	7/04	. . Trackway suspension
1/585	. . . . {Log grapples}	7/06	. . . on supports constructed for easy erection, e.g. transportable
1/59	. . . . Tongs for sacks	7/08	. Constructional features of runway rails or rail mountings (of general application E01B)
1/62	. . comprising article-engaging members of a shape complementary to that of the articles to be handled	7/10	. Arrangements or devices for extending runways or tracks
1/625	. . . {for gripping drums or barrels}	7/12	. Devices for changing direction of travel or for transferring from one runway to another; Crossings; Combinations of tracks of different gauges (transfer devices of general application E01B)
1/64	. . . for T- or I-section beams or girders	7/14	. . Runway interlocking devices
1/66	. . . for engaging holes, recesses, or abutments on articles specially provided for facilitating handling thereof	7/16	. Devices specially adapted for limiting trolley or crane travel; Arrangements of buffer-stops (buffer-stops of interest apart from this application B61K 7/18 ; limit-switch arrangements, limit circuits B66D 1/56)
1/663	. . . . {for containers (fastening of containers on vehicles B60P 7/13, B60P 7/132)}		
1/666	. . . . {for connection to anchor inserts embedded in concrete structures}		
1/68	. mounted on, or guided by, jibs (jibs B66C 23/64)	9/00	Travelling gear incorporated in or fitted to trolleys or cranes ({for floor-to-roof stacking devices B66F 9/072}; for dredgers E02F)
3/00	Load-engaging elements or devices attached to lifting or lowering gear of cranes or adapted for connection therewith and intended primarily for transmitting lifting forces to loose materials; Grabs (buckets and other containers B65D, e.g. pallets B65D 19/00; dredges equipped with grabs E02F)	9/02	. for underhung trolleys or cranes
3/005	. {Grab supports, e.g. articulations; Oscillation dampers; Orientation (B66C 3/16 takes precedence)}	9/04	. to facilitate negotiation of curves
3/02	. Bucket grabs	9/06	. for more than one rail gauge
3/04	. Tine grabs	9/08	. Runners; Runner bearings (wheels for railbound vehicles B60B)
3/06	. Grabs actuated by a single rope or chain	9/10	. Undercarriages or bogies, e.g. end carriages, end bogies
3/08	. . and having tipping rings	9/12	. . with load-distributing means for equalising wheel pressure
3/10	. . and having buckets opening automatically upon the grab being lowered on to the dump of material	9/14	. Trolley or crane travel drives (rope, cable, or chain drives for loads or trolleys B66C 11/16 ; control B66C 13/18)
3/105	. . . {Devices for control}	9/16	. with means for maintaining alignment between wheels and track
3/12	. Grabs actuated by two or more ropes	9/18	. with means for locking trolleys or cranes to runways or tracks to prevent inadvertent movements
3/125	. . {Devices for control}		
3/14	. Grabs opened or closed by driving motors thereon	11/00	Trolleys or crabs, e.g. operating above runways (runways, tracks or trackways therefor B66C 7/00; winch mechanisms B66D)
3/16	. . by fluid motors	11/02	. with operating gear or operator's cabin suspended, or laterally offset, from runway or track
3/18	. . by electric motors	11/04	. . Underhung trolleys (power-operated hoists with driving motor and drum or barrel contained in a common housing B66D 3/20)
3/20	. mounted on, or guided by, jibs (jibs B66C 23/64)	11/06	. . . running on monorails (overhead railway systems B61B)
Other common features; Details		11/08	. with turn-tables
5/00	Base supporting structure with legs	11/10	. . equipped with jibs (jib-cranes B66C 23/00)
5/02	. Fixed or travelling bridges or gantries, i.e. elongated structures of inverted L or of inverted U shape {or tripods}	11/12	. having hoisting gear adapted to special load-engaging elements and not otherwise provided for
5/025	. . {Tripods}		
5/04	. . with runways or tracks supported for movements relative to bridge or gantry		

- 11/14 . . . adapted to operate on crane or bridge structure of particular configuration, e.g. on reinforced concrete girders of rectangular cross-section
- 11/16 . . . Rope, cable, or chain drives for trolleys; Combinations of such drives with hoisting gear
- 11/18 . . . comprising endless ropes or cables
- 11/20 . . . Arrangements, e.g. comprising differential gears, enabling simultaneous or selective operation of travelling and hoisting gear; Arrangements using the same rope or cable for both travelling and hoisting, e.g. in Temperley cranes ([power transmissions between driving motors and winch drums B66D 1/14](#))
- 11/22 . . . actuated pneumatically or hydraulically
- 11/24 . . . with means for locating or sustaining the loads or trolleys in predetermined positions; Hay hoists
- 11/26 . . . Abutments; Stop blocks; End stops
- 13/00 Other constructional features or details**
- 13/005 . . . {[Cranes carrying advertisements or the like](#)}
- 13/02 . . . Devices for facilitating retrieval of floating objects, e.g. for recovering crafts from water ([handling live-boats B63B](#); [salvaging, or hauling-out on slipways, waterborne vessels B63C](#); [winding mechanism controls B66D 1/52](#))
- 13/04 . . . Auxiliary devices for controlling movements of suspended loads, or preventing cable slack
- 13/06 . . . for minimising or preventing longitudinal or transverse swinging of loads
- 13/063 . . . {[electrical](#)}
- 13/066 . . . {[for minimising vibration of a boom](#)}
- 13/08 . . . for depositing loads in desired attitudes or positions
- 13/085 . . . {[electrical](#)}
- 13/10 . . . for preventing cable slack ([control devices for rope, cable, or chain winding mechanisms, e.g. for controlling tensions, B66D 1/40](#))
- 13/105 . . . {[electrical](#)}
- 13/12 . . . Arrangements of means for transmitting pneumatic, hydraulic, or electric power to movable parts of devices
- 13/14 . . . to load-engaging elements or motors associated therewith
- 13/16 . . . Applications of indicating, registering, or weighing devices ([in crane hooks B66C 1/40](#); [in safety gear B66C 15/00](#); [weighing-apparatus G01G](#); [remote indicating in general G08](#))
- 13/18 . . . Control systems or devices ([exclusively for rope, cable, or chain winding mechanisms B66D 1/40](#))
- 13/20 . . . for non-electric drives ([transmitting control pulses B66C 13/40](#))
- 13/22 . . . for electric drives ([transmitting control pulses B66C 13/40](#); [systems or devices of general application H02P](#))
- 13/23 Circuits for controlling the lowering of the load
- 13/24 by dc motors
- 13/26 by ac motors
- 13/28 utilising regenerative braking for controlling descent of heavy loads and having means for preventing rotation of motor in the hoisting direction when load is released
- 13/30 Circuits for braking, traversing, or slewing motors
- 13/32 for operating grab bucket hoists by means of one or more electric motors used both for hoisting and lowering the loads and for opening and closing the bucket jaws ([other aspects or rope, cable, or chain winding mechanisms specially adapted for actuating grab buckets B66D 1/62](#))
- 13/34 through differential or planetary gearing
- 13/36 Single-motor-drive control systems
- 13/38 Systems controlling independent motors
- 13/40 . . . Applications of devices for transmitting control pulses; Applications of remote control devices ([control in general G05](#))
- 13/42 Hydraulic transmitters
- 13/44 Electrical transmitters
- 13/46 . . . Position indicators for suspended loads or for crane elements
- 13/48 . . . Automatic control of crane drives for producing a single or repeated working cycle; Programme control
- 13/50 . . . Applications of limit circuits or of limit-switch arrangements ([for winding mechanisms B66D 1/56](#))
- 13/52 . . . Details of compartments for driving engines or motors or of operator's stands or cabins
- 13/54 . . . Operator's stands or cabins
- 13/56 Arrangements of handles or pedals
- 15/00 Safety gear ([for rope, cable, or chain winding mechanisms B66D 1/54](#))**
- 15/02 . . . for retaining load-engaging elements in the event of rope or cable breakage
- 15/04 . . . for preventing collisions, e.g. between cranes or trolleys operating on the same track
- 15/045 . . . {[electrical](#)}
- 15/06 . . . Arrangements or use of warning devices
- 15/065 . . . {[electrical](#)}
- Kinds or types of cranes ([adaptations of girders or of track-supporting structures B66C 6/00](#))**
- 17/00 Overhead travelling cranes comprising one or more substantially horizontal girders the ends of which are directly supported by wheels or rollers running on tracks carried by spaced supports**
- 17/04 . . . with lifting beams, e.g. slewable beams, carrying load-engaging elements, e.g. magnets, hooks ([constructions of load-engaging elements B66C 1/00, B66C 3/00](#))
- 17/06 . . . specially adapted for particular purposes, e.g. in foundries, forges; combined with auxiliary apparatus serving particular purposes ([B66C 17/04 takes precedence](#))
- 17/08 . . . for charging treatment chambers, e.g. furnaces, kilns, ovens ([charging furnaces in general F27D 3/00](#))
- 17/10 . . . for transporting ladles
- 17/12 . . . for handling workpieces, e.g. ingots, which require to be supported temporarily within, or withdrawn from, a treatment chamber, e.g. tong cranes, soaking-pit cranes, stripper cranes ([for manipulating ingots during forging B66C 17/18](#); [grippers for handling or stripping casting or ingots during manufacture B22D 29/00](#))

17/14	. . . Tong cranes with means for moving article-pushers relative to the tongs	23/12	. . . . with means for automatically varying the effective length of the hoisting rope or cable
17/16	. . . Tong cranes with means for turning the tongs about a vertical axis	23/14	. . . . with means, e.g. pantograph arrangements, for varying jib configuration
17/18	. . for manipulating workpieces during forging operations (work-pieces manipulators in forging machines B21J 13/10)	23/16	. with jibs supported by columns, e.g. towers having their lower end mounted for slewing movements
17/20	. . for hoisting or lowering heavy load carriers, e.g. freight containers, railway wagons	23/163	. . {where only part of the column rotates, i.e. at least the bottom part is fixed}
17/22	. . for hoisting or lowering locomotives	23/166	. . {Simple cranes with jibs which may be fixed or can slew or luff}
17/24	. . for building ships on slipways	23/18	. specially adapted for use in particular purposes
17/26	. . combined with auxiliary apparatus, e.g. log saws, pushers for unloading vehicles, means for shunting railway vehicles	23/185	. . {for use erecting wind turbines (B66C 23/207 takes precedence)}
19/00	Cranes comprising trolleys or crabs running on fixed or movable bridges or gantries (B66C 17/00 takes precedence; base supporting structures with legs B66C 5/00; jib cranes B66C 23/00)	23/20	. . with supporting couples provided by walls of buildings or like structures
19/002	. {Container cranes (B66C 19/007 takes precedence)}	23/201	. . . {with supporting couples provided from above, e.g. by ceilings of buildings}
19/005	. {Straddle carriers (B66C 19/007 takes precedence)}	23/202	. . . {with supporting couples provided from below, e.g. by floors of buildings}
19/007	. {for containers}	23/203	. . . {with supporting couples provided by posts, e.g. scaffolding, trees or masts}
19/02	. collapsible (B66C 19/002 , B66C 19/005 takes precedence)}	23/205	. . . {for use on top of roofs}
21/00	Cable cranes, i.e. comprising hoisting devices running on aerial cable-ways (rope or cable drives for trolleys, combinations of such drives with hoisting gear B66C 11/16; railway systems B61B; rope or cable winding mechanisms B66D 1/00)	23/206	. . . {with supporting couples provided by iso containers}
21/02	. with cable-ways supported on framework swingably connected to groundengaging elements	23/207	. . . {with supporting couples provided by wind turbines}
21/04	. with cable-ways supported at one end or both ends on bodily movable framework, e.g. framework mounted on rail track	23/208	. . . {with supporting couples provided from the side, e.g. by walls of buildings}
21/06	. . with one end supported on a framework movable in a curved, e.g. circular, path and the other end by a column rotatable around a vertical axis	23/22	. . . Window cranes, i.e. adapted to be supported in window openings
21/08	. Sag carriers or rope trolleys, suspended or not, e.g. fixed but offering clearance for travelling gear	23/24	. . . Mobile wall cranes
21/10	. . travelling	23/26	. . for use on building sites; constructed, e.g. with separable parts, to facilitate rapid assembly or dismantling, for operation at successively higher levels, for transport by road or rail (with supporting couples provided by walls or building B66C 23/20 ; mounted on vehicles B66C 23/36 ; jib constructions B66C 23/64)
23/00	Cranes comprising essentially a beam, boom, or triangular structure acting as a cantilever and mounted for translatory of swinging movements in vertical or horizontal planes or a combination of such movements, e.g. jib-cranes, derricks, tower cranes (base supporting structures with legs B65C 5/00)	23/28	. . . constructed to operate at successively higher levels
23/005	. {with balanced jib, e.g. pantograph arrangement, the jib being moved manually}	23/283	. . . . {with frameworks composed of assembled elements}
23/02	. with non-adjustable and non-inclinable jibs mounted solely for slewing movements	23/286	. . . . . {with locking devices}
23/022	. . {Pivot axis common with column}	23/30	. . . . with frameworks composed of telescopic elements
23/025	. . {with particular mounting for base of column}	23/305	. . . . . {with locking devices}
23/027	. . {Pivot axis separated from column axis}	23/32	. . . . Self-hoisting cranes
23/04	. with jibs the effective length of which is variable in operation, e.g. longitudinally displaceable, extensible	23/34	. . . Self-erecting cranes, i.e. with hoisting gear adapted for crane erection purpose
23/06	. with jibs mounted for jibbing or luffing movements	23/342	. . . . {with telescopic elements}
23/08	. . and adapted to move the loads in predetermined paths	23/344	. . . . {adapted for transport purposes}
23/10	. . . the paths being substantially horizontal; Level-luffing jib-cranes	23/346	. . . . {with locking devices}
		23/348	. . . . {the erection being operated by jacks}
		23/36	. . mounted on road or rail vehicles; Manually-movable jib-cranes for use in workshops; Floating cranes (with pneumatic or hydraulic motors B66C 23/54 ; vehicle or ship aspects B60 - B63)
		23/365	. . . {dismantable into smaller units for transport purposes}
		23/38	. . . with separate prime movers for crane and vehicle
		23/40	. . . with a single prime mover for both crane and vehicle

23/42	. . . with jibs of adjustable configuration, e.g. foldable	23/828	. . . . . {where the angle is adjustable}
23/44	. . . Jib-cranes adapted for attachment to standard vehicles, e.g. agricultural tractors	23/84	. . Slewing gear (anti-friction bearings F16C)
23/46	. . . Mobile jib-cranes with non-slewing jibs	23/86	. . . hydraulically actuated
23/48	. . . Manually-movable jib cranes for use in workshops	23/88	. Safety gear (for cranes in general B66C 15/00 ; for rope, cable, or chain winding mechanisms B66D 1/54)
23/485	. . . . {for lifting and moving engines, e.g. car or aero engines or parts thereof}	23/90	. . Devices for indicating or limiting lifting moment
23/50	. . . mounted on railway vehicles, e.g. breakdown cranes	23/905	. . . {electrical}
23/52	. . . Floating cranes (floating dredgers E02F)	23/92	. . Snubbers or dashpots for preventing backwards swinging of jibs, e.g. in the event of cable or tackle breakage
23/525	. . . . {Double slewing cranes on ships}	23/94	. . for limiting slewing movements
23/53	. . . . including counterweight or means to compensate for list, trim, or skew of the vessel or platform (counterweights or supports for balancing lifting couples B66C 23/72 ; equipment to decrease unwanted vessel movements B63B 39/00)	25/00	Cranes not provided for in groups B66C 17/00 - B66C 23/00
23/54	. {with pneumatic or hydraulic motors, e.g. for actuating jib-cranes on tractors}	<hr/>	
23/545	. . {with arrangements for avoiding dead centre problems during cylinder motion}	2700/00	Cranes
23/56	. . {of the reciprocating type}	2700/01	. General aspects of mobile cranes, overhead travelling cranes, gantry cranes, loading bridges, cranes for building ships on slipways, cranes for foundries or cranes for public works
23/58	. arranged to carry out a desired sequence of operations automatically, e.g. hoisting followed by luffing and slewing	2700/011	. . Cable cranes
23/585	. . {electrical}	2700/012	. . Trolleys or runways
23/60	. Derricks	2700/014	. . . Devices for trolleys running on monorails
23/605	. . {employing ships' masts (B66C 23/525 takes precedence)}	2700/015	. . . . Arrangements which are easily displaceable or dismountable
23/62	. Constructional features or details (of dredgers E02F)	2700/017	. . . Installations characterised by their destination or by the load-engaging element for as far as the trolley is essential
23/64	. . Jibs	2700/018	. . . Construction details related to the trolley movement
23/66	. . . Outer or upper end constructions	2700/03	. Cranes with arms or jibs; Multiple cranes
23/68	. . . foldable or otherwise adjustable in configuration	2700/0307	. . Cranes in which it is essential that the load is moving horizontally during the luffing movement of the arm or jib
23/70	. . . constructed of sections adapted to be assembled to form jibs or various lengths	2700/0314	. . . in combination with the movement of the counterweight
23/701	. . . . {telescopic}	2700/0321	. . Travelling cranes
23/702	. . . . . {with a jib extension boom}	2700/0328	. . . Cranes on rails or on rail vehicles
23/703	. . . . . {telescoped by flexible elements, e.g. cables, chains or bands}	2700/0335	. . . . with a slewing arm
23/705	. . . . . {telescoped by hydraulic jacks}	2700/0342	. . . . . on a turntable
23/706	. . . . . {telescoped by other means}	2700/035	. . . . Construction details related to the travelling, to the supporting of the crane or to the blocking of the axles; Outriggers; Coupling of the travelling mechanism to the crane mechanism
23/707	. . . . . {guiding devices for telescopic jibs}	2700/0357	. . . Cranes on road or off-road vehicles, on trailers or towed vehicles; Cranes on wheels or crane-trucks
23/708	. . . . . {locking devices for telescopic jibs}	2700/0364	. . . . with a slewing arm
23/72	. . Counterweights or supports for balancing lifting couples	2700/0371	. . . . . on a turntable
23/74	. . . separate from jib	2700/0378	. . . . Construction details related to the travelling, to the supporting of the crane or to the blocking of the axles; Outriggers; Coupling of the travelling mechanism to the crane mechanism
23/76	. . . . and movable to take account of variations of load or of variations of length of jib	2700/0385	. . Cranes with trolleys movable along adjustable or slewing arms
23/78	. . . Supports, e.g. outriggers, for mobile cranes	2700/0392	. . Movement of the crane arm; Coupling of the crane arm with the counterweights; Safety devices for the movement of the arm
23/80	. . . hydraulically actuated	2700/06	. Cranes in which the lifting movement is done with a hydraulically controlled plunger
23/82	. . Luffing gear		
23/821	. . . {Bracing equipment for booms (Abspannstütze)}		
23/823	. . . . {Bracing equipment acting in vertical direction}		
23/825	. . . . {Bracing equipment acting in horizontal direction}		
23/826	. . . . {Bracing equipment acting at an inclined angle to vertical and horizontal directions}		

- 2700/062 . . mounted on motor vehicles
- 2700/065 . . . with a slewable jib
- 2700/067 on a turntable
- 2700/08 . . Electrical assemblies or electrical control devices
for cranes, winches, capstans or electrical hoists
- 2700/081 . . with ac motors
- 2700/082 . . Control of the secondary movements, e.g.
travelling, slewing, luffing of the jib, changing of
the range
- 2700/084 . . Protection measures
- 2700/085 . . Control actuators
- 2700/087 . . Electrical assemblies or electrical control devices
for electrically actuated grabs
- 2700/088 . . Remote control of electric cranes