

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B60 VEHICLES IN GENERAL

(NOTE omitted)

B60S SERVICING, CLEANING, REPAIRING, SUPPORTING, LIFTING, OR MANOEUVRING OF VEHICLES, NOT OTHERWISE PROVIDED FOR

NOTE

Attention is drawn to the Note following the title of class [B60](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Cleaning of vehicles (by apparatus not integral with vehicle B60S 3/00 ; cleaning in general B08B ; de-icing of aircraft B64D ; heating arrangements specially adapted for transparent or reflecting areas H05B 3/84)	1/0444	. . . . . {comprising vibration or noise absorbing means}
1/02	. Cleaning windscreens, windows or optical devices {(wind deflectors specially adapted for preventing soiling of windows or windscreens B60J 1/2002)}	1/0447	. . . . . {non-screw fixation, (e.g. snap-in, bayonet-type..)}
1/023	. . {including defroster or demisting means}	1/045	. . . . . {having a pre-attachment device (i.e. to hold elements in position during mounting)}
1/026	. . . {using electrical means}	1/0452	. . . {Position of the wipers relative to the vehicle}
1/04	. . Wipers or the like, e.g. scrapers	1/0455	. . . . {Device for lifting the wipers off the screen in its parking position or at extremes of wipe}
1/0402	. . . {completely or partially concealed in a cavity}	1/0458	. . . . {Arrangement wherein the windscreen frame cooperates with the wipers}
1/0405	. . . . {the cavity being equipped with a movable cover}	1/0461	. . . . . {Arrangement of the side pillars}
1/0408	. . . {Means for influencing the aerodynamic quality of wipers, e.g. clip-on wind deflectors (B60S 1/32 takes precedence)}	1/0463	. . . . . {Arrangement of the cow}
1/0411	. . . {the windscreens, windows or optical devices being movable with respect to fixed wipers}	1/0466	. . . . {Arrangement of wipers on openable windows}
1/0413	. . . {Modular wiper assembly}	1/0469	. . . . {Devices for assisting the wiper positioning on the vehicle}
1/0416	. . . . {including other vehicle fittings}	1/0472	. . . . {Arrangement of the wipers on right or left-hand drive vehicles}
1/0419	. . . . {the support structure being integrally molded}	1/0475	. . . {Cleaning of wiper blades}
1/0422	. . . . {having a separate transverse element}	1/0477	. . . . {Arrangement for deicing or for removing debris from wiper blades (heated wiper blade B60S 1/3805)}
1/0425	. . . . . {characterised by the attachment of the wiper shaft holders to the transverse element}	1/048	. . . . . {with a heating device for the wiper parking position}
1/0427	. . . . . {characterised by the attachment of the wiper motor holder to the transverse element}	1/0483	. . . . {the cleaning device being separated from the vehicle (renovating blade rubbers B60S 2001/3846)}
1/043	. . . {Attachment of the wiper assembly to the vehicle}	1/0486	. . . . {the cleaning device being integrated with the vehicle}
1/0433	. . . . {Attachement of a wiper modular assembly to the vehicle}	1/0488	. . . {Wiper arrangement for crash protection or impact absorption}
1/0436	. . . . {Attachement of separate wiper shaft holders to the vehicle (B60S 1/0425 takes precedence)}	1/0491	. . . {Additional elements being fixed on wipers or parts of wipers not otherwise provided for, e.g. covers, antennae or lights}
1/0438	. . . . {Attachement of separate wiper motor assembly to the vehicle}	1/0494	. . . {Wipers actuated by wind force only}
1/0441	. . . . {characterised by the attachment means}	1/0497	. . . {Wiper units as items separate from vehicle, e.g. for emergency use or retro-fittable}

1/06	. . . characterised by the drive (producing other than swinging movement B60S 1/44)	1/14	. . . . personally driven
1/08	. . . . electrically driven ({ conjoint control of windscreen wiper motor and liquid supply of windscreen washer B60S 1/482 ; conjoint control of windscreen wiper motor and means for cleaning parts o parts other than windscreens or front windows B60S 1/56 , B60S 1/58 , B60S 1/606 })	1/16	. . . . Means for transmitting drive
1/0803	. . . . . {Intermittent control circuits}	1/163	. . . . . {with means for stopping or setting the wipers at their limit of movement}
1/0807	. . . . . {using electronic control means, e.g. tubes, semiconductors (B60S 1/0818 , B60S 1/0896 take precedence)}	1/166	. . . . . {characterised by the combination of a motor-reduction unit and a mechanism for converting rotary into oscillatory movement}
1/0811	. . . . . {combined with mechanical control means, e.g. thermal relays}	1/18	. . . . . mechanically ({ B60S 1/166 takes precedence})
1/0814	. . . . . {using several drive motors; motor synchronisation circuits}	1/185	. . . . . {with means for stopping or setting the wipers at their limit of movement}
1/0818	. . . . . {including control systems responsive to external conditions, e.g. by detection of moisture, dirt or the like}	1/20	. . . . . by cable drives; by flexible shafts
1/0822	. . . . . {characterized by the arrangement or type of detection means}	1/22	. . . . . by rotary cams
1/0825	. . . . . {Capacitive rain sensor}	1/24	. . . . . by rotary cranks
1/0829	. . . . . {Oscillator-resonator rain sensor}	1/245	. . . . . {with particular rod arrangements between the motor driven axle and the wiper arm axle}
1/0833	. . . . . {Optical rain sensor}	1/26	. . . . . by toothed gearing
1/0837	. . . . . {with a particular arrangement of the optical elements}	1/28	. . . characterised by a plurality of wipers (B60S 1/06 takes precedence)
1/084	. . . . . {including a hologram}	1/30	. . . . arranged both outside and inside
1/0844	. . . . . {including a camera}	1/32	. . . characterised by constructional features of wiper blade arms {or blades}
1/0848	. . . . . {Cleaning devices for cameras on vehicle}	1/34	. . . . Wiper arms; Mountings therefor ({wiper arms provided with liquid spreading means B60S 1/522 ; with gas spreading means B60S 1/544 })
1/0851	. . . . . {Resistive rain sensor}	1/3402	. . . . . {with means for obtaining particular wiping patterns (by varying the effective length of the angularly oscillating arm B60S 1/365)}
1/0855	. . . . . {Ultrasonic rain sensor}	1/3404	. . . . . {the wiper blades being moved substantially parallel with themselves}
1/0859	. . . . . {Other types of detection of rain, e.g. by measuring friction or rain drop impact}	1/3406	. . . . . {the wiper blades being rotated with respect to the wiper arms around an axis perpendicular to the wiped field (B60S 1/3404 takes precedence)}
1/0862	. . . . . {including additional sensors (vehicle speed sensors B60S 1/0896)}	1/3409	. . . . . {the wiper arms consisting of two or more articulated elements}
1/0866	. . . . . {including a temperature sensor (heating devices for windshield B60H)}	1/3411	. . . . . {with means for varying wiper-blade pressure on windshield during operation}
1/087	. . . . . {including an ambient light sensor (control of vehicle lights B60Q)}	1/3413	. . . . . {with means for holding the arm off the glass in an intermediate position between the working position and the fully folded back position}
1/0874	. . . . . {characterized by the position of the sensor on the windshield}	1/3415	. . . . . {with means for supplying cleaning fluid to windscreen cleaners, e.g. washers (arrangement of nozzles B60S 1/52)}
1/0877	. . . . . {at least part of the sensor being positioned between layers of the windshield}	1/3418	. . . . . {with means for additionally adjusting the wiper arm working position with respect to the surface to be wiped}
1/0881	. . . . . {characterized by the attachment means on the windshield}	1/342	. . . . . {with means for temporarily uncoupling the wiper arm from the drive}
1/0885	. . . . . {the sensor being integrated in a rear-view mirror module}	1/3422	. . . . . {Means arranged in the wiper structure to lift the arm at extremes of wipe (means arranged on the vehicle body B60S 1/0455)}
1/0888	. . . . . {characterized by the attachment of the elements in a unit}	1/3425	. . . . . {Constructional aspects of the arm}
1/0892	. . . . . {Testing and production of rain sensors}	1/3427	. . . . . {Arm piece, link piece and mounting head formed as one element}
1/0896	. . . . . {including control systems responsive to a vehicle driving condition, e.g. speed}	1/3429	. . . . . {Arm pieces}
1/10	. . . . pneumatically driven	1/3431	. . . . . {Link pieces}
1/105	. . . . . {with means for stopping or setting the wipers at their limit of movement}	1/3434	. . . . . {Manufacturing details thereof}
1/12	. . . . hydraulically driven		
1/125	. . . . . {with means for stopping or setting the wipers at their limit of movement}		

1/3436	. . . . .	{Mounting heads}	1/381	. . . . .	{Spoilers mounted on the squeegee or on the vertebra}
1/3438	. . . . .	{Manufacturing details thereof}	2001/3812	. . . . .	{Means of supporting or holding the squeegee or blade rubber}
1/344	. . . . .	{Flat-type mounting heads}	2001/3813	. . . . .	{characterised by a support harness consisting of several articulated elements}
1/3443	. . . . .	{Wiper shafts}	2001/3815	. . . . .	{characterised by the joint between elements}
1/3445	. . . . .	{Joints between elements}	2001/3817	. . . . .	{characterised by a backing strip to aid mounting of squeegee in support}
1/3447	. . . . .	{the elements being an arm piece and a link piece}	2001/3818	. . . . .	{the backing strip being a channel-like element, e.g. not continuous}
1/345	. . . . .	{the elements being a link piece and a mounting head}	2001/382	. . . . .	{the backing strip being an essentially planar reinforcing strip, e.g. vertebra}
1/3452	. . . . .	{the joint being a snap fit pivot joint}	2001/3822	. . . . .	{characterised by additional means to prevent longitudinal sliding of squeegee in support, e.g. clips}
1/3454	. . . . .	{the joint being at end of mounting head furthest away from blade}	2001/3824	. . . . .	{the blade or squeegee pivoting about an axis parallel to blade longitudinal axis}
1/3456	. . . . .	{Locks or stays for holding arms in fully folded back position}	2001/3825	. . . . .	{the squeegee mounted directly to or in wiper blade arm}
1/3459	. . . . .	{the element being a mounting head and a shaft}	2001/3827	. . . . .	{characterised by the squeegee or blade rubber or wiping element}
1/3461	. . . . .	{with means to adjust the orientation of the head relative to shaft}	2001/3829	. . . . .	{characterised by the material of the squeegee or coating thereof}
1/3463	. . . . .	{Means to press blade onto screen}	2001/3831	. . . . .	{cleaning by scrubbing or abrasive action}
1/3465	. . . . .	{with coil springs}	2001/3832	. . . . .	{cleaning by rigid or semi-rigid scraping elements, e.g. for removing ice}
1/3468	. . . . .	{Mountings therefor}	2001/3834	. . . . .	{equipped with brush-like elements}
1/347	. . . . .	{with adjustment means to adjust wiping pressure (during wiping B60S 1/3411)}	2001/3836	. . . . .	{characterised by cross-sectional shape}
1/3472	. . . . .	{with adjustment means to keep wiping pressure constant (varying wiping pressure B60S 1/3411)}	2001/3837	. . . . .	{with more than one wiping edge or lip}
1/3475	. . . . .	{with blade or leaf springs}	2001/3839	. . . . .	{with longitudinally split squeegee, with squeegee parts}
1/3477	. . . . .	{with elastomeric or rubber springs}	2001/3841	. . . . .	{Squeegee modifications to prevent longitudinally sliding of squeegee in support structure}
1/3479	. . . . .	{Means to cover the wiper parts}	2001/3843	. . . . .	{equipped with removable cover or protective elements}
1/3481	. . . . .	{for mounting head}	2001/3844	. . . . .	{equipped with means to indicate wear or usage of blade}
1/3484	. . . . .	{integral with arm or link piece}	2001/3846	. . . . .	{Devices for renewing or renovating blade wiping edges, e.g. cutters}
1/3486	. . . . .	{Means to allow blade to follow curvature of the screen (i.e. rotation along longitudinal axis of the arm)}	1/3848	. . . . .	{Flat-type wiper blade, i.e. without harness}
1/3488	. . . . .	{Means for mounting wiper arms onto the vehicle}	1/3849	. . . . .	{Connectors therefor; Connection to wiper arm; Attached to blade}
1/349	. . . . .	{Means for mounting the wiper bearing to the vehicle body}	1/3851	. . . . .	{Mounting of connector to blade assembly}
1/3493	. . . . .	{Means for mounting the wiper shaft in the wiper bearing}	1/3853	. . . . .	{Snap-fit, e.g. elastic connection}
1/3495	. . . . .	{Means for mounting the drive mechanism to the wiper shaft}	1/3855	. . . . .	{by welding, gluing or the like}
1/3497	. . . . .	{Additional means for guiding the blade other than the arm or blade joint}	1/3856	. . . . .	{Gripping the blade}
1/36	. . . . .	Variable-length arms	1/3858	. . . . .	{with protrusions cooperating with holes}
1/365	. . . . .	{the effective length being automatically varied during angular oscillation of the arm}	1/386	. . . . .	{made in two halves}
1/38	. . . . .	Wiper blades {(provided with liquid spreading means B60S 1/524 ; provided with gas spreading means B60S 1/546)}	1/3862	. . . . .	{Transport of liquid there through}
1/3801	. . . . .	{characterised by a blade support harness consisting of several articulated elements (B60S 1/3803 , B60S 1/3806 take precedence)}	1/3863	. . . . .	{Connectors having a spoiler}
1/3803	. . . . .	{heated wiper blades}	1/3865	. . . . .	{Connectors having an integral pivot pin for connection with the wiper arm}
1/3805	. . . . .	{electrically}			
1/3806	. . . . .	{Means, or measures taken, for influencing the aerodynamic quality of the wiper blades}			
1/3808	. . . . .	{Spoiler integral with the squeegee}			

1/3867	. . . . .	{pin formed on the interior of side walls}	1/4045	. . . . .	{comprising a detachable intermediate element mounted on the channel-shaped end}
1/3868	. . . . .	{pin formed on the exterior of side walls}	1/4048	. . . . .	{the element being provided with retention means co-operating with the channel-shaped end of the arm}
1/387	. . . . .	{the connector being suitable for receiving different types of adapter}	2001/4051	. . . . .	{the intermediate element engaging the side walls of the arm}
1/3872	. . . . .	{without connector, e.g. connection to wiper arm via squeegee or vertebra}	2001/4054	. . . . .	{the intermediate element engaging the back part of the arm}
1/3874	. . . . .	{with a reinforcing vertebra}	2001/4058	. . . . .	{comprising a separate locking element, e.g. in addition to an intermediate element}
1/3875	. . . . .	{rectangular section}	2001/4061	. . . . .	{covered by a removable cover mounted on the blade}
1/3877	. . . . .	{embedded in the squeegee}	1/4064	. . . . .	{the channel-shaped end being provided with protrusions on, or holes in, the side walls to create a pivot}
1/3879	. . . . .	{placed in side grooves in the squeegee}	1/4067	. . . . .	{for arms provided with a side pin}
1/3881	. . . . .	{in additional element, e.g. spoiler}	1/407	. . . . .	{with means provided on the arm for locking the side pin}
1/3882	. . . . .	{C-shape section}	1/4074	. . . . .	{with means provided on the blade for locking the side pin}
1/3884	. . . . .	{Wire-shaped section}	1/4077	. . . . .	{characterised by the connecting part of, or an intermediate element mounted on, the wiper blade (means for locking the side pin B60S 1/4074)}
1/3886	. . . . .	{End caps}	2001/408	. . . . .	{the connecting part or the intermediate element being provided with holes for different diameters of pivoting pin}
1/3887	. . . . .	{Mounting of end caps}	1/4083	. . . . .	{for arms provided with a flat end}
1/3889	. . . . .	{cooperating with holes in the vertebra}	1/4087	. . . . .	{the end being provided with protrusions or holes}
1/3891	. . . . .	{with locking device}	2001/409	. . . . .	{characterised by the arm or connecting part mounted on the arm presenting a shaped opening for bearing the pivot axis}
1/3893	. . . . .	{cooperating with holes in the squeegee}	2001/4093	. . . . .	{characterised by the mounting of the pivot on the main yoke of the blade}
1/3894	. . . . .	{having a particular shape}	2001/4096	. . . . .	{Connections between arm and blade not using a cylindrical pivot axis on the blade}
1/3896	. . . . .	{with openings at the longitudinal extremities}	1/42	. . . . .	resilient
2001/3898	. . . . .	{method for manufacturing wiper blades}	1/44	. . . . .	the wiper blades having other than swinging movement, e.g. rotary {(the wiper blade support member, e.g. arm, having a swinging movement B60S 1/32)}
1/40	. . . . .	Connections between blades and arms	1/46	. . . . .	using liquid; Windscreen washers
1/4003	. . . . .	{Multi-purpose connections for two or more kinds of arm ends}	1/48	. . . . .	Liquid supply therefor
NOTE			1/481	. . . . .	{the operation of at least part of the liquid supply being controlled by electric means (electrical washing liquid warming-up means B60S 1/488)}
Multi-aspect classification is applied for technical subjects relating to the arms and covered by subgroups B60S 1/4006 - B60S 1/4083			1/482	. . . . .	{combined with the operation of windscreen wipers}
1/4006	. . . . .	{for arms provided with a hook-shaped end}	1/483	. . . . .	{using a supply pump driven by the windscreen-wiper motor}
1/4009	. . . . .	{comprising a detachable intermediate element mounted on the hook-shaped end}	1/485	. . . . .	{including control systems responsive to external conditions, e.g. by detection of moisture, dirt or the like}
2001/4012	. . . . .	{the element being provided with bearing surfaces on its side walls}	1/486	. . . . .	{including control systems responsive to a vehicle driving condition, e.g. speed}
1/4016	. . . . .	{the element being provided with retention means co-operating with the hook-shaped end of the arm}	1/487	. . . . .	{the liquid being heated (nozzles provided with heating means B60S 1/52)}
1/4019	. . . . .	{the retention means being protrusions or holes}	1/488	. . . . .	{electrically}
2001/4022	. . . . .	{the element being provided with a locking element movable thereon}			
2001/4025	. . . . .	{the element being able to receive pivot pins of different diameters}			
2001/4029	. . . . .	{the element being able to receive arms of different widths}			
2001/4032	. . . . .	{the element being able to receive arms with hooks of different radiuses}			
2001/4035	. . . . .	{the connection being covered by a removable cover mounted on the blade}			
1/4038	. . . . .	{for arms provided with a channel-shaped end}			
1/4041	. . . . .	{the channel-shaped end comprising a pivot pin mounted between the side walls}			

- 1/50 Arrangement of reservoir
- 1/52 Arrangement of nozzles; {Liquid spreading means}(nozzles per se B05B)
- 1/522 {moving liquid spreading means, e.g. arranged in wiper arms}
- 1/524 {arranged in wiper blades}
- 1/526 {according to vehicle movement characteristics, e.g. speed, or climatic conditions, e.g. wind}
- 1/528 {the spreading means being moved between a rest position and a working position (B60S 1/526 takes precedence)}
- 1/54 using gas, e.g. hot air
- 1/542 {using wiping devices}
- 1/544 {moving gas spreading means, e.g. arranged in wiper arms}
- 1/546 {arranged in wiper blades}
- 1/548 {according to vehicle movement characteristics, e.g. speed, or climatic conditions, e.g. wind}
- 1/56 specially adapted for cleaning other parts or devices than front windows or windcreens {rear-view mirror arrangements mounted on vehicle exterior including cleaning devices B60R 1/0602}
- 1/563 {for registration, licensing or like devices}
- 1/566 {including wiping devices (B60S 1/563, B60S 1/583 take precedence)}
- 1/58 for rear windows
- 1/583 {including wiping devices}
- 1/586 {including defroster or demisting means}
- 1/60 for signalling devices, e.g. reflectors
- 1/603 {the operation of at least a part of the cleaning means being controlled by electric means}
- 1/606 {combined with the operation of windscreen or front window cleaning means}
- 1/62 Other vehicle fittings for cleaning
- 1/64 for cleaning vehicle interiors, e.g. built-in vacuum cleaners
- 1/66 for cleaning vehicle exterior
- 1/68 for freeing wheels or tyres from foreign matter, e.g. wheel scrapers
- 1/685 {for two-wheeled vehicles}
- 3/00 Vehicle cleaning apparatus not integral with vehicles** (cleaning in general B08B; cleaning peculiar to waterborne vessels B63B 57/00, B63B 59/00; ground equipment for cleaning aircraft B64F 5/30)
- 3/002 {Vehicle drying apparatus}
- 3/004 {Conveyors for vehicle cleaning apparatus}
- 3/006 {specially adapted for railway vehicles (B60S 3/008 takes precedence)}
- 3/008 {for interiors of land vehicles}
- 3/04 for exteriors of land vehicles {(B60S 3/002, B60S 3/004 take precedence; specially adapted for railway vehicles B60S 3/006)}
- 3/041 {specially adapted for two-wheeled vehicles}
- 3/042 {Wheel cleaning devices (integral with vehicle B60S 1/00)}
- 3/044 {Hand-held cleaning arrangements with liquid or gas distributing means (B60S 3/045 takes precedence)}
- 3/045 {Other hand-held cleaning arrangements, e.g. with sponges, brushes, scrapers or the like (brushes per se A46B)}
- 3/047 {using liquid or gas distributing means (B60S 3/048 takes precedence)}
- 3/048 {with rotary or vibratory bodies contacting the vehicle}
- 3/06 with rotary bodies contacting the vehicle {(hand-held B60S 3/048)}
- 3/063 {the axis of rotation being approximately vertical}
- 3/066 {the axis of rotation being approximately horizontal}
- 5/00 Servicing, maintaining, repairing or refitting of vehicles** ({collecting or removing exhaust gases in workshops B08B 15/002; straightening vehicle body parts B21D 1/12, B21D 1/14}; vehicles adapted to carry a workshop for servicing or maintenance B60P 3/14; servicing rail locomotives B61K; {registering or indicating the working of vehicles G07C 5/00; testing of vehicles G01M 17/00; arrangements for electrical testing G01R 31/00; devices for monitoring or checking brake systems B60T 17/22; filling or draining lubricant F01M 11/04; means for collecting, retaining, or draining-off lubricant F16N 31/00; draining of lubricant from gearing F16H 57/0406; assembly or repair of springs or dampers F16F 9/3271; tool, instrument or work supports or storage means used in association with vehicles B25H 5/00})
- 5/02 Supplying fuel to vehicles; General disposition of plant in filling stations (apparatus for transferring measured quantities of petrol, oil, or the like from storage space to vehicles B67D)
- 5/04 Supplying air for tyre inflation (arrangement of tyre inflating devices on vehicles B60C 23/00; tyre pressure gauges G01L 17/00 {; pumps actuated by muscle power F04B 33/00})
- 5/043 {characterised by the inflation control means or the drive of the air pressure system}
- 5/046 {using electrical or electronical means}
- 5/06 Supplying batteries to, or removing batteries from, vehicles (exchanging batteries for electric propulsion of vehicles B60L 53/80)
- WARNING**
Group B60S 5/06 is impacted by reclassification into group B60L 53/80.
Groups B60S 5/06 and B60L 53/80 should be considered in order to perform a complete search.
- 9/00 Ground-engaging vehicle fittings for supporting, lifting, or manoeuvring the vehicle, wholly or in part, e.g. built-in jacks** ({props for vehicle draw bars B60D 1/66; anti-theft devices acting on vehicle jacking means B60R 25/001}; lifting devices in general B66F, supports in general F16M)
- 9/02 for only lifting or supporting
- 9/04 mechanically
- 9/06 of screw-and-nut type
- 9/08 the screw axis being substantially vertical

- 9/10 . . by fluid pressure
- 9/12 . . . of telescopic type
- 9/14 . for both lifting and manoeuvring
- 9/16 . . for operating only on one end of vehicle
([B60S 9/205](#) takes precedence)
- 9/18 . . . mechanically
- 9/20 . . . with fluid-pressure lift
- 9/205 . . Power driven manoeuvring fittings, e.g.
reciprocably driven steppers or rotatably driven
cams ([vehicles with ground-engaging propulsion
means, e.g. walking members, B62D 57/02](#))
- 9/21 . . . comprising a rotatably driven auxiliary
wheel or endless track, e.g. driven by ground
wheel ([track vehicles with additional or
alternative ground wheels B62D 55/02,](#)
[B62D 55/04](#); auxiliary drives from a ground
wheel [B60K 25/08](#))
- 9/215 driven by an auxiliary motor
- 9/22 . Means for attaching lifting, supporting, or
manoeuvring devices to vehicles ([for separate
devices B60S 11/00](#))
- 11/00 Vehicle modifications for receiving separate lifting,
supporting, or manoeuvring devices**
- 13/00 Vehicle-manoevring devices separate from the
vehicle ([vehicle lifting {, e.g. liftable turntables} or
pushing devices B66F](#); [workshop equipment B25H](#))**
- 13/02 . Turntables; Traversers ([incorporated in vehicle-
storing garages E04H {; rotary display stands
A47F 5/02}](#))