

# WÖHR COMBILIFT 553

## Specification

General description:	<p>Car parking system for the independent stacking of passenger vehicles on top and alongside one another. Relative dimensions are stated on the <u>Combilift 553</u> datasheet, together with all the required height, length and width construction dimension specifications.</p> <p>This car parking system provides a minimum of 3 (three) parking slots in the upper levels (ULs). The parking grids at entrance level (EL) and in the 1<sup>st</sup> UL always have one slot less compared to the number of slots on the 2<sup>nd</sup> UL. The empty spaces that are formed are used for lateral shifting of both the parking slots in the EL grid as well as in the 1<sup>st</sup> UL grid, and for vertical shifting of a parking slot in the 2<sup>nd</sup> upper level grid down to the EL. Apart from shifting laterally, the parking slots in the 1<sup>st</sup> UL can also be shifted vertically down to the EL. The smallest system structure is therefore a 2-grid arrangement for 4 passenger vehicles whereas the largest reasonable system arrangement option is given both by the available construction dimensions and by the number of parking slots that are needed. Due to the system's clear arrangement and for relative facility of inspection, a maximum of 8-grid rows per system are recommended.</p>
System construction and description:	<p>The Combilift 553 system is constituted by a steel structure, vertical and lateral shifting devices and platforms.</p> <p>The 2<sup>nd</sup> UL platforms are respectively connected up together with two hydraulic cylinders, each one of which is looped with a chain and is gripped onto the two rear corners of each platform.</p> <p>The platforms on the 1<sup>st</sup> UL are shifted along slide rails. Said slide rails are connected up with the platforms on the 2<sup>nd</sup> UL. If the platforms on the 2<sup>nd</sup> UL shift down, the slide rails automatically shift upwards.</p> <p>When the platforms shift back up to the 2<sup>nd</sup> UL, the slide rails position themselves back into their home position in the intermediate level.</p> <p>Shifting of the platforms along the 1<sup>st</sup> UL is performed via a drive chain assembled onto the rear end of the grid row. The platforms grip into the drive chain's drive pins. As soon as the drive unit on the 1<sup>st</sup> UL is activated, the platforms are shifted sideways, into the next-in-line grid slot.</p> <p>If one of the platforms on the 1<sup>st</sup> UL is not shifted, the relative section is lifted via a hoisting motion whereby the platform is no longer gripped by the shifting drive unit and is therefore not shifted.</p> <p>When in home position, the 2<sup>nd</sup> UL platforms lie on platform positioning devices in a position such that all the platforms stacked underneath are hooked up with the lateral shifting device.</p> <p>This is to ensure that during car parking and retrieval processes, all platforms are secure.</p> <p>Each entrance level platform has its own individual drive motor via which the platforms are shifted laterally, i.e. rightwards or leftwards respectively.</p>
System installation parts:	<p>Steel construction, consisting of:</p> <p>grid slots, each provided with 2 rear support elements in an in-line configuration with guide rails for the lift platforms, each with 1 cross beam with integrated shifting drive unit and another rear cross beam.</p> <p>Based on their configuration as 2<sup>nd</sup> or 3<sup>rd</sup> grid slot, each grid slot is provided with 2 long or 2 shortened front-end support elements with guide rails for the lift platforms, a 2- tier or a 3-tier cross beam over the drive-through section and another cross beam on the top end of the support element.</p> <p>Each support element is fitted with a positioning device for the UL platforms. The support elements are locked onto the foundations via adhesive anchors. The steel frame is cross-bonded with steel tension struts.</p> <p>UL platforms consisting of:</p> <p>2 side wall panels, 3 spreader bars, 1 spreader bar with integrated constant speed shaft, 4 chain wheels, chain drive, 10 drive plates, 1 contact wedge, 1 rear end cover plate, 1 adjustable positioning assistance unit, screws, nuts, etc.</p> <p>EL platforms consisting of:</p> <p>2 side carrier elements, 2 spreader bars, 7 drive plates, 1 contact wedge, 4 track rollers, 1 power conductor rail, 1 adjustable positioning assistance unit, screws, nuts, etc. as well as levelling tracks assembled onto the unfinished floor. Once the pavement screed has been spread, the slide rails are locked down onto the floor screed with dowel fasteners.</p> <p>UL platform drive systems, consisting of:</p> <p>2 hydraulic cylinders with deflection roller, 2 lifting chains and 2 load bearing chains for each platform.</p> <p>EL platform drive systems consisting of:</p> <p>1 gear motor (0.18 kW), 1 chain wheel and 1 chain for each platform</p> <p>First UL shifting drive unit consisting of:</p> <p>1 cross beam with 1 gear motor (0.55 kW) for up to 5 grid slots each, 4 chain wheels each, 1 drive chain with driving pins, 1 connecting chain to the next-in-line grid slot.</p>
Hydraulic power pack:	<p>The UL platforms are driven with one hydraulic power pack.</p> <p>The electric motor and pump is provided with a rubber-bonded-to-metal mounting. The hydraulic power pack is constituted by an oil tank with appropriate oil-filling capacity for the overall system, gear pump, electric motor (5.5 kW, 230/400 V, 50 Hz), ready-wired switching cabinet with motor contactor and thermal relay, pressure control valve as well as hydraulic hoses, for reduced noise transmission to hydraulic pipes.</p>

Safety features:	<p>UL platforms: Monitoring system for load-bearing chain breakages and/or sagging constituted by slack chain contactor switches and mechanical positioning device in the upper end-position. Positioning device on all 4 corners, against unintentional vertical downward shifting. Hydraulic seat-valve with vertical downward shift brakes for each grid slot. Retaining clip on the 1<sup>st</sup> UL platforms against unintentional vertical downward shifting of the 2<sup>nd</sup> UL platforms when the 1<sup>st</sup> UL platforms have shifted down.</p> <p>Combilift entrance features: the standard version is supplied without doors, the Combilift entrance section is monitored by light barriers. If the light barriers are interrupted, the Combilift shifting processes are brought to a stop. On option and for a price surcharge, doors can be installed at the Combilift entrance.</p>
Controls:	<p>1) Standard version: Operator control panel with coded key. System operation is performed via a (pillar-mounted) central control unit with coded key (two keys supplied for each parking slot) and start button activation. All system movements and shifting is performed automatically, except for vertical downwards shifting of the UL parking slots, during which it is necessary to keep the start button pressed in continuously. The coded keys can only be used to select the parking slots they are specifically allocated to.</p> <p>2) Customised versions – subject to price surcharges –</p> <p>a) Manual-push doors: Operator control panel with clear-text display, 10-key keypad, lock-release key by GEBA with key-interlock feature. (the key interlock releases the key only if the door has been pushed closed completely)</p> <p>b) Electrically operated doors Operator control panel with clear-text display, 10-key keypad, lock-release key by GEBA</p> <p>c) Radio remote controls (provided only for electrically operated doors)</p> <p>d) Interface for on-site magnetic card scanner (agreements to be taken with WÖHR accordingly)</p> <p>System operation is performed via a (pillar-mounted) central control unit. System controls are activated via simultaneous-locking keys by GEBA* (two keys per parking slot). Parking slot selection is performed via the 10-key keypad and the start button. Once the door functions have kicked in, all the system movements will proceed automatically. User directions are displayed on the clear-text display.</p> <p>* for c), additional parking slot selection option via radio remote controls. for d), additional system controls activation option via a magnetic card.</p> <p>Notice: For use of on-site half-profile cylinders belonging to domestic master key lock systems, agreements need to be taken with Wöhr accordingly.</p>
Electrical wiring:	Compliant to VDE standards and to TÜV (German Technical Inspection and Industrial Services Body) provisions, the supplier is required to perform the wiring starting from the systems switch cabinet. The switching cabinet must not be installed internally to the system. The system's entrance area must be completely visible from the position the switching cabinet is installed in.
Standards:	The WÖHR CAR PARKING SYSTEMS are machines constructed in compliance with the EC Machinery Directive no. 2006/42/EC, Annex 1, and with the DIN EN 14010 standard provisions.
Corrosion protection:	Please consult the data provided in the attached supplementary datasheet on <a href="#">Surface protection 2011</a> , no. 023-0021.
Installation site facility preparations:	<ol style="list-style-type: none"> <li>1. Performance of electrical works and fuse protection up to the control unit and/or control units.</li> <li>2. Acceptance certification by an expert and provision of a system fitter, if not formally included in the offer.</li> <li>3. Additional corrosion protection, if possibly requested by the architect / the ordering party.</li> <li>4. Safety fences and barriers as possibly required compliant to the DIN EN ISO 13857 standard provisions, in as far as the structural frame is concerned.</li> <li>5. The quality of the concrete must be compliant to the static requirements of the building, with at least a grade C20/25 concrete for the dowel fastening sections.</li> <li>6. For control units as under above points 2a), 2b) and 2c) the system needs to be fitted with lighting, also wired into the controls. The control unit is provided with a potential-free contact for up to 230 VAC, maximum 500 W. Every time a parking slot is selected, the lighting will switch on. Sixty (60) seconds after the door has closed, the light will switch back off again.</li> </ol>

Enclosure: [Surface protection 2011](#), no. C023-0021.

The right to any subsequent amendment and/or variation due to any technical and engineering progresses in the art, is hereby reserved.