Functionality.

of Permobil wheelchairs

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THE POWER OF MOBILITY

Freedom.
of the user

Contents.

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THE POWER OF MOBILITY

Driving 3

Turning radius 5
Front-wheel drive, mid-wheel drive or rear-wheel drive 5
Suspension 5
Centre of gravity and weight distribution 5
Driving slowly 6
Large capacity batteries 6
Permolock anchoring system 6

Sitting 7

Electric tilt in space 9
Negative tilt (-5 degrees) 9
Electrically adjustable seat height 10
Electric adjustment of backrest recline 10
Electric adjustment of leg support angle 10
Electric adjustment of lower leg length 11
Electric stand-up function (SUF) 11
Seat to the ground 11
Stand Up wheelchair 11

Modifications 13

Biomechanical adjustment of backrest recline 15
Orthotic frames 15
Moving armrests 15
Folding arm supports 16
Swing away armrests 16
Central leg support with length compensation 16
Accessory rail 16
Flat seat pan 16

Control 17

R-net control box with display 19
R-net LED control box 19
Compact joystick 19
Compact Light joystick 19
Co-pilot attendant controls 19
Switchbox 20
Sitting position memory 20
Special control 20

Electronics 21

Intelligent Control System (ICS) 22
Extra safety 22
PUSH function 22
Enhanced Steering Performance (ESP) 22
Questions and Suggestions 23

Overview of Permobil wheelchairs 24

40 years working to achieve quality. For over 40 years Permobil has exclusively built electric wheelchairs. We base the continuous development of our wheelchairs on user experience in combination with the latest technical possibilities. Our wheelchairs are optimally adjustable to the user's physical constitution and activities. The many options and accessories available offer users more independence and maximum comfort.

For everyone, everywhere

Permobil builds wheelchairs for everyone and for all circumstances. Our range includes wheelchairs for children, adults, indoors and outdoors, or for outdoors only. Especially robust wheelchairs are also available for heavier users. In addition, we offer a wide range of options in terms of special controls. An overview of our current models is available on www.permobil.com

A wide network

Permobil supplies wheelchairs through renowned rehabilitation companies. Our own product specialists provide the dealers with active support and advice during fitting. They can also help with the re-issue of Permobil wheelchairs. In addition, we maintain close contact with Special schools (schools for children with physical disabilities), rehabilitation centres and other advisors/consultants.

Customisation and modifications

If during a fitting session it appears that the requirements of a particular user cannot be met, despite the wide range of options currently available, we will do our utmost to create a customised solution.

Questions about options and possibilities

Please contact us if you have any questions.
See www.permobil.com for contact details.

Driving.

Driving. An electric wheelchair is a friend that will take you anywhere you want to go. The better the wheelchair suits the circumstances, the more freedom of movement the user will be able to enjoy. Permobil electric wheelchairs have powerful motors, long-lasting batteries, independent suspension, a tight turning radius and excellent driving characteristics.

Turning radius

One of the greatest obstacles preventing people from using a wheelchair in the home is the turning radius. The shorter the turning radius, the less space you will need to manoeuvre into the bathroom, bedroom or kitchen. For example, a compact wheelchair with a small turning radius requires fewer modifications in the home. At Permobil we aim to keep the turning radius of our wheelchairs as small as possible. This can be done using a central leg support, rounded footrests, unilateral suspension of castor wheels, concave back, and rounded armrests.

Front-wheel drive, mid-wheel drive or rear-wheel drive

Whether the wheelchair has front-wheel, mid-wheel or rear-wheel drive will determine where the pivot point is. By definition, the vertical axis of rotation is between the large drive wheels. Wheelchairs with front-wheel or mid-wheel drive consequently require less turning space indoors than those with rear-wheel drive. For years now, Permobil has been building compact wheelchairs which are suitable for indoor use but also easy to steer outdoors. The smart gyroscope ESP stabilises driving performance, also at higher speeds, enabling a compact indoor wheelchair to be used safely outside.

Suspension

For a comfortable outdoor ride, the wheelchair must have good suspension. The wheel suspension is also important to how the wheelchair holds the road. In addition to individually adjustable suspension, the Permobil C500 also has adjustable shock absorbers. Good suspension limits the effect of vibration on the sitting posture. This saves the user wasting energy tightening their muscles to stabilise their joints and correct their posture. Good suspension can therefore help prevent and reduce aches and pains. Suspension is often adjustable and will depend on the user weight. Most Permobil wheelchairs have independently suspended front and rear wheels. The disadvantage of good suspension is that the wheelchair can prove more difficult to handle at higher speeds. You could veer off course. There is a smart solution however: ESP. A built-in gyroscope which stabilises the steering performance of the wheelchair as much as possible, also at high speeds and on poor, slippery or sloping road surfaces *(see 'ESP' on page 22)*. ESP is a standard feature of the C400 and C500.

Centre of gravity and weight distribution

The wheelchair centre of gravity is essential to the driving performance. Correctly distributed pressure on the castor wheels allows smoother turning and prevents shaking at high speeds. Base the choice of drive (front, mid or rear wheel drive) on the weight, sitting posture and weight distribution of the user and any external equipment to be mounted to the wheelchair. See the tips on choosing or ask our product specialists for more information.

Driving slowly

Even more important than how fast a wheelchair can drive is how slowly it can drive. To enable good slow driving performance, can drive motors must provide high torque. So even on very rough surfaces, you will still be able to drive slowly, maintaining good control, therefore safely.

Battery capacity

The larger the battery capacity, the larger the range. A powerful battery is also required in the event of intensive use of electric adjustments or to power external equipment such as breathing apparatus. This is why we always use large-capacity batteries.

Wheelchair as a car seat: Permolock

The Permolock car anchoring system enables you to use your wheelchair as a driver's seat or passenger seat in your own car. Permolock is a demonstrably safe and user-friendly system. It is also the only system to have been tested in real crash tests in combination with a wheelchair. The Permolock mounting plate is mounted to the floor of the vehicle after which the wheelchair can be secured quickly and easily without any awkward operations. The Permolock directly supports the wheelchair chassis, thus bridging the suspension. This makes the system just as stable and comfortable as an ordinary car seat.

Sitting.

Sitting. Many of our customers have one chair only, which serves as a dining chair, armchair, kitchen chair, desk chair, travel chair, car seat and sofa bed. The more adjustable the wheelchair is, the better it can serve all these purposes. An easily adjustable powered wheelchair is also healthier because it enables you, the user, to adjust your posture yourself according to the circumstances and the requirements of your own body.

Electric tilt in space

A wheelchair is not only intended to drive around or sit in, it's also to relax in. This means that it is also very handy if it has an electric tilt in space system. This enables the user to adjust the best sitting balance themselves and to change position every now and then. Adjusting the tilt alters the pressure on the user's seat and back. This helps prevent pressure sores.

Back ache and fluid retention in the legs

In the event of back ache, adjusting the tilt could increase the pressure on the back or improve the pressure distribution. This could cause the muscles to relax, thus placing less strain on the joints. A maximum tilt range of up to 30 degrees will suffice in most cases but some situations call for a range of more than 45 degrees. If fluid retention in the legs or feet is a problem, the electric adjustment of tilt in space, recline angle and leg support angle can all be combined to bring the legs to the same height as or even a little higher than the heart. The body will then be better able to drain the fluid from the legs.

Care

The adjustable tilt in space also makes personal care much easier, e.g. catheterization. If a passive hoist is used to place the user in the wheelchair, tilting the wheelchair will also make it easier for him/her to 'land' in the back of the seat. It is often unnecessary to lift the user again, and hence places less of a strain on either the user or the carer.

Passing obstacles

Tilting the wheelchair raises the footplate. This makes it easier to avoid obstacles. That is why it is advisable to always choose a wheelchair with adjustable tilt in space if it is to be used outside.

Limited for safety

The adjustable tilt in space can easily be limited on most Permobil wheelchairs. The reclining tilt is often limited if breathing apparatus is mounted behind the backrest, for example. It may sometimes be necessary to limit the forward tilt to avoid the footrests of someone with long lower legs accidentally touching the ground *(see ICS on page 22)*.

Negative tilt position (-5˚)

Tilting the seat forwards 5 degrees will lower the front. This makes it easier for you to get into the wheelchair and to sit well back. The negative tilt enables a more active posture at the table. This function can also be useful during personal care, e.g. to enable the use of a urinal. The combination of forward tilting with the electrical height adjustment is also very practical. Raising the seat makes it a lot easier to get out of the wheelchair.

Electric Raise and lower (High/Low)

A height adjustment offers the user more independence. It's easier for you to reach things on higher shelves at home or in shops for instance. Cash machines are also easier to reach. From a social aspect, it is also pleasant to be able to raise your chair to the same level as the seats of the people you are with. There are plenty of other such situations. The height adjustment enables you to raise your seat to worktop height so you can to cook, wash up or do craft, even for users with reduced lifting ability. The high/low system can also help the user to stand up independently. The special stand-up function raises the seat while the footplates remain on the ground. This brings the hips and knees to the right angle to facilitate standing up.

Recline angle adjustment

The electric recline angle adjustment is used to alter the hip angle and consequently the posture. The movement mobilises muscles and joints in the lower back and hips. This movement is best combined with a tilt and leg support angle adjustment, to avoid slumping in the seat. In the event of back ache, the electric recline angle adjustment can help mobilise the lower back and change the back support. The electric recline angle adjustment is practical when providing personal care. Catheterizing clients, for example, or cleaning out mucus from a clients lungs. Of course, the back angle adjustment is mostly used to recline the wheelchair, often in combination with a leg-support angle or tilt adjustment. The user being able to relax in their own wheelchair will reduce the amount of transferring required. Pleasant for both the user and the attendant. In the event of reduced hip flexion the electric recline angle adjustment can be used to change sitting position, to be able to participate in activities, and to compensate for the hip restriction. Care should be taken, however, to avoid any undesirable effect on the sitting posture. People with a poor trunk/sitting balance use the recline angle adjustment to find the best sitting balance. The best position depends on their condition on the day, fatigue and the kind of activity. See also the Memory setting options *(page 20)* and Biomechanical recline angle adjustment *(page 15)*.

Leg-support angle adjustment

The electric leg-support angle adjustment brings the feet up and forward. In Permobil wheelchairs the central leg support automatically compensates the length to avoid raising the knees too high or excess pressure under the feet. Corpus 3G even has individually adjustable length compensation. Raising the feet helps drain fluid away from the legs. In combination with the tilt in space adjustment, the feet can be raised even higher than the heart if required. The electric leg angle adjustment helps prevent or reduce contractures in the knees. When extending the leg support it is sometimes also necessary to increase the ankle angle to avoid overstretching the calf muscles. With the Corpus 3G seat this is a standard function. To facilitate manoeuvring in small spaces the knee angle can be adjusted in such a way as to minimise the length of the wheelchair. Reducing the knee angle also enables the user to move nearer to the kitchen unit, for example. The leg-support angle adjustment is also very handy when

using the wheelchair outside. Raising the leg support slightly increases the footplate clearance, making it easier to drive over obstacles. Some people also use the electric leg angle adjustment to sit back properly in the wheelchair. Extra support for the feet can prevent slumping or to push off when changing position.

Lower leg length adjustment

The lower leg length can be adjusted to vary the pressure under the feet, in the event of spasms, pain or pressure sores, for example. Once again, this adjustment is a useful way of creating extra footplate clearance to cope with obstacles. Some people also use this adjustment to make it easier to get out of the wheelchair. Lowering the footplate to the ground enables the user to get out of the wheelchair independently and safely. Without having to fold the leg supports back or up. This enables people with reduced hand functions to get out of the chair independently. Without needing to use any other aids such as a standing hoist.

Electrical stand-up function (SUF)

The SUF lowers the footplate to the ground. The electric height adjustment is then activated. The footplate remains on the ground while the seat is being raised. The transfer height can be adjusted to enable the user to get up independently more easily. In particular, this function is used by patients with progressive conditions to limit or delay the use of other transfer aids.

Seat to the ground

The seat of the Permobil K450 can be lowered to the ground electrically to enable the user to easily slide in or out of the wheelchair. The wheelchair is still relatively short in this low position as the seat moves between the castor wheels. It stays within its wheelbase and can therefore also travel at full speed in a lower seat position. The maximum user weight for the K450 is 60kg. This makes it ideally suitable for children but also for people with brittle bone disease or dwarfism.

Stand Up wheelchair

As the name suggests, an electric stand up wheelchair (C400 Vertical Seat of C500 Vertical Seat) is a wheelchair in which the user can stand up. They can even drive the wheelchair in this position. A stand up wheelchair offers many advantages. Firstly, more things are within the user's reach: kitchen cupboards, the medicine cupboard, the wash basin, the thermostat, light switches… practically anything. This means you can still cook, see into pans, do your make-up in front of the mirror, urinate standing up, etc. Being able to stand can also benefit productivity and psycho-social development, even if only because it enables the client to look other people in the eye. Some people even deliver group presentations, standing up in their wheelchair.

Medical advantages

Standing improves the blood circulation and can prevent and/or cure pressure sores. The strain on the body can promote bone growth, combat osteoporosis and help prevent muscle contractures. If someone who is able to stand in their wheelchair they will not need to transfer to a standing table. If a client needs to stand several times a day, a stand-up wheelchair is an interesting option. For both the client and the carer.

Return on Investment

Of course, a stand up wheelchair requires a greater investment. In the long run however, the increase in independence and functionality may end up actually being cheaper, due to the savings in medical care and home modifications (standing table is no longer required) and the increased independence and productivity.

Modifications.

Modifications. Permobil electric wheelchairs can be modified in numerous ways according to the user's personal circumstances and requirements. Every human body is different; everyone sits and moves in their own individual way. Whatever the requirement, Permobil will meet it. With existing solutions or with customised modifications. You can see examples of our special modifications on our website: permobil.com.

Biomechanical recline angle adjustment

A special Permobil function is the biomechanical recline angle adjustment. As the angle of the backrest is adjusted to recline further, the backrest also slides down. The pivot point of a chair is at the lower back. This does not correspond with a human's anatomical pivot point because that is at hip level. If only the backrest was to recline, its position in relation to the user's back would also change. The backrest, any side supports and the headrest would move upwards when reclined. Alternatively, if it moves forward, the backrest would apply extra pressure to the seat and the user could slump. The biomechanical recline angle adjustment avoids all this. When adjusted, the backrest remains in exactly the same position in relation to the user's back. The headrest and any head or chin controls also remain in the same position in relation to each other.

Orthotic frames

Specifically for users with orthoses and spinal corrective devices, we have two orthotic frames. These make the backrest infinitely adjustable and increase the angle of recline, thus enabling us to optimise the centre of gravity and driving performance. The first option is adaptable for moulded seats. The second option has electric recline angle adjustment and an adjustable pivot point round the hips. We use these orthotic frames in combination with infinitely adjustable arm supports. These are strong and removable, the angle can be adjusted and they have integrated brackets to fit a lap tray. The orthotic frame with electric back angle adjustment is specifically for shared seating orthoses or spinal corrective devices. The pivot point can be adjusted precisely for each user round the anatomical pivot point: the hip joint. The frame is firm and fully re-adjustable. This avoids a great deal of individual modification and means the frame can be reissued.

Moving armrests

In most cases we mount the armrests to the backrest. When the backrest is adjusted, the armrests move accordingly ensuring the arms are properly supported at all times. Of course, the joystick also moves with the backrest as it is adjusted, so that it stays within reach. The armrests stay largely horizontal, but they do rise slightly to ensure the hands and joystick remain visible and to avoid overstretching the elbows.

Folding arm supports

The arm supports on a Permobil wheelchair can be folded up at the backrest to enable the user to transfer sideways if necessary. Using a passive hoist to transfer to or from the wheelchair is also easier if the wheelchair has folding armrests. There is then more space all round to position the user properly and to see if he/she is lowered into the right position, and to position the hoist sling. We prefer to use folding armrests as opposed to removable armrests as removing the armrests requires considerably more effort than folding them away and folding them away is less likely to of damaging the control box wiring and electronics.

Swing away armrests

Swing away armrests (swinging in or out) are a standard option for the Corpus 3G. Some people have shoulder restrictions that make it difficult or impossible for them to hold their arms straight in front of them. An armrest that can swing in or out, possibly including the control box, may reduce the problem. The armrest swings in and out very easily and can also be folded away.

Central leg support with length compensation

A central leg support takes up less space during manoeuvres than leg supports fitted to the side frame. Fitting the leg supports in the centre leaves the sides of the seat free, ensuring there are no obstructions for the client to hurt themselves on. It also makes sideways transfer easier. Operating the simple control, the user can elevate both legs at the same time with less effort.
A standard feature of the Permobil central leg support is integrated length compensation: the more the leg support rises the longer it becomes.
This ensures that the knees stay level and the thighs remain firmly on the seat.
A final advantage of a central leg support is sturdiness and stability. This is very much greater than with two separate leg supports, making it easier to push off.

Accessory rail (Unitrack)

The seat of Permobil wheelchairs have a rail to which various accessories, such as thigh supports and hip supports, can be mounted wherever they are required.

Flat seat pan

All Permobil wheelchairs are supplied with a well contoured seat cushion. However, if you would prefer to replace this, a cushion for pressure sore prevention will easily fit on the flat seat pan.

Control.

Control. A robust, manoeuvrable and comfortable wheelchair with lots of customised settings… that's all very well but of no use at all if you can't control it. And by controlling it, we don't just mean steering it from A to B but also using all the electronic aids and the many seat settings. At Permobil we do our outmost to ensure our wheelchairs have as logical a ´dashboard´ as possible. It is our philosophy that we apply state-of-the-art technology to make our users' lives as pleasant as possible.

R-net control box with display

This control box has a graphic display which shows you exactly what the available functions do. We can programme the controls and joystick settings extensively to meet individual user requirements. You can regulate the speed of the adjustment motors yourself with the joystick, to enable very precise regulation of the required tilt-in-space, recline angle and leg support angle.

R-net LED control box

This control box is compacter and a little simpler. There are separate buttons to regulate the speed. The wheelchair can be adjusted using the 'mode' button on the joystick. This control box has five speed settings. Most people choose this control box either because it is a little more compact or because the more comprehensive control box seems rather complicated at first. Bright green LED lights indicate the selected speed setting. This can be an advantage in terms of visibility

Compact joystick

The joystick consists of a compact casing without a display. We can fit an on/off switch and a button indicating the 'mode'. The selected functions are relayed via the R-net control box. This control system is ideal for situations in which you just drive and an attendant controls the various function via the R-net control box

Compact Light joystick

This is comparable to the Compact joystick but is more sensitive and easier to use.

Co-pilot attendant controls

It is important for a wheelchair to be easy for an attendant to control. Permobil's wheelchair Co-pilot, which is used by attendants, is very different to earlier versions of attendant controls. The main advantage of the Co-pilot is that it is power assisted and the wheelchair is highly intuitive to control; it's as easy as steering a pushchair. The control system responds immediately to any change of speed or direction. The Co-pilot also has a unique function that allows the attendant to control the seat functions and speed.

Control handle

Gently grip the control handle and the wheelchair will move in the desired direction. Push lightly to the right and the wheelchair will move to the right without any difficulty at all. If you start to walk a little faster, the wheelchair will also accelerate. Thanks to the proportional control the wheelchair is easier and safer to operate for both the wheelchair user and their attendant.

Handles
The ergonomically designed handle can be folded away when it is not in use.

Ergonomics
The height and angle of the handle is adjustable, making it even more user friendly for the attendant.

Switchbox
Instead of using the control box, the seat settings can also be adjusted using a separated switch box. This is more direct, it can be used while driving and it's all a little easier to understand. The switch box is supplied with either push buttons or flexible push/pull switches which make it even easier to use.

Sitting position memory
Every user always has certain favourite settings for sitting, relaxing and working. If you store these in the so-called 'sitting positions memory', you can adjust the whole wheelchair to the stored sitting position at the flick of a switch. This applies for all sensor controlled seat settings, such as leg support angle, tilt in space and recline angle. Up to three entire sitting positions can be stored and retrieved via the control box, the switch box or separate switches. Sitting position memories are also extremely practical for people with cognitive or physical limitations. Storing and assigning the appropriate sitting position(s) to a designated button or the display of the control box would enable any carer to select the right position at the touch of a button. Positions for resting, transfers, sitting in the car, or ADL activities. Programming the sitting positions accurately can help prevent pressure sores.

Special controls
Permobil develops special wheelchair controls in-house, including head, chin, foot and switch controls. Numerous alternatives and variations are also available for the more widely used joystick controls. The Permobil product specialists would be happy to discuss the possibilities with you.

Electronics.

Intelligent Control System (ICS)

The ICS is the beating heart of the seat adjustments. This is where all the data relating to the electrical seat adjustments comes together. Most of the adjustment motors have sensors which provide feedback on the current position. This enables us to allocate and programme sitting positions to a memory (send the motors back to a particular position), to easily modify or limit the adjustments, and to influence the wheelchair power according to a certain leg support angle or tilt in space.

Extra safety

The ICS enables us to incorporate a speed limitation function, as an extra safety measure. If a seat lift has been activated, for instance, the wheelchair will only be able to drive at half speed and in certain sitting and fully reclined positions it will not be able to drive at all. Any activated limitations are indicated clearly by symbols on the control box and coloured LEDs on the switch box. The user will therefore know why the wheelchair is driving more slowly or not at all and that he will have to adjust his sitting position to cancel the limitation.

PUSH function

The PUSH function is the 'permission' that a seat adjustment has to modify another adjustment. If the seat is tilted forwards, for example. The PUSH function may then move the leg support forwards to prevent it from touching the chassis. If a backrest is reclined to 180 degrees, provided the PUSH function is on, the tilt in space function can still be used. The back will automatically move forwards as the seat tilts backwards. The backrest will consequently remain horizontal.

Enhanced Steering Performance (ESP)

ESP is a built-in gyroscope to maximise the wheelchair's steering performance. This is a standard feature of the C400 and C500 front-wheel drive wheelchairs. ESP is ideal for outdoor use, driving at high speeds, on uneven ground, in icy conditions, on grass… it makes driving in difficult conditions safer and more controllable. Also because the risk of the wheelchair 'breaking away', as a result of skidding on an icy road, has been practically eliminated.

Suspension and steering

Good suspension is usually detrimental to the wheelchair's steering performance. In particular, wheelchairs with front-wheel drive and suspension have great difficulty staying on course. The ESP corrects the effects of the suspension on the handling.

Lateral pressure

The ESP is also very effective in helping to keep the wheelchair on track if extra pressure is applied to one side of the chair by an assistance dog, for example, or a side slope. The ESP reduces the amount of steering adjustment required, hence saving the client's energy.

Special aids for people with limitations

For users with impaired reactions it is especially important to be able to drive as stably as possible and to anticipate the direction of the wheelchair. Users with special controls (such as switch, head or chin controls) also need to have more control as the steering possibilities are more restricted. Users with single-switch controls and ESP seldom have to stop on a through road to make steering adjustments, whereas this is frequently necessary in a wheelchair without ESP.

Notes

Below is space for your own notes. If you find you have any questions once you use your wheelchair, or perhaps you have a brilliant idea for possible improvements or developments, write them here. You can then pass them on to us later, when you have a quiet moment. We are always interested in any questions or problems, as they give us food for thought on how to improve our products and services. We even have a special incentive programme for the most innovative ideas which are put into practice.

Please send your comments and suggestions to: info@permobil.com

PERMOBIL	C300		C350	
Model	**TS**	**Corpus**	**TS**	**Corpus**
Total length incl. seat (mm)	1080	1080	1065	1065
Total width (mm)	620	620	625	625
Minimum transport length (mm)	885	885	900	900
Seat height fixed (mm)	510	510	510	460
Seat height powered seat lift (mm)	510-710	510-710	510-710	460-660
Total weight incl. batteries (kg)	128	112	130	133
Maximum user weight (kg)	136	120	136	136
Seat width (mm)	380-530 / by 50	430-480	380-530 / by 50	430-480
Seat depth (mm)	380-550	410-560 / by 50	380-550	410-560 / by 50
Backrest width (mm)	380-530 / by 50	340-390-440	380-530 / by 50	340-390-440
Backrest height (mm)	450-600	535-605	450-600	535-605
Distance between armrests (mm)	380-530	350-400-450	380-530	350-400-450
Adjustable backrest angle	90°-125°	90°-165°	90°-125°	90°-140°
Adjustable leg support angle	90°-150°	80°-150°	90°-150°	90°-150°
Battery capacity (Ah)	2 x 60	2 x 60	2 x 60	2 x 60
Charging time (hours)	8	8	8	8
Range (km)	30-35	30-35	30-35	30-35
Maximum speed (km/hr)	7	7	10	10
Braking distance (mm)	1200	1200	1200	1200
Engine power (watts)	2 x 250	2 x 250	2 x 250	2 x 250
Turning radius (mm)	625	625	945	945
Obstacle clearance ability (mm)	60 - 80	60	60 - 80	70 - 80
Suspension	yes	yes	yes	yes
Electronics	VR2	R-net	VR2	R-net
Powered seat lift	yes	yes	yes	yes
Powered seat tilt	yes	yes	yes	yes
Powered leg rest adjustment	yes	yes	yes	yes
Powered backrest adjustment	yes	yes	yes	yes
Guarantee (years)	2	2	2	2

C400			C500			Street
Miniflex	**Corpus 3G**	**VS** (VS Jr.)	**Miniflex**	**Corpus 3G**	**VS**	**Corpus**
1085	1130	1185	1050	1225	1215	1150
620	620	620	650	675	675	620
890	900	1055	905	930	1085	875
520	535	530	520	535	530	560
520-720	535-735	530-780	520-720	535-735	530-780	560-810
135	147	146	138	149	149	155
35	136	70-100-120	35	136	70-100-120	120
250-300-350	420-570 / by 50	430-480	250-300-350	420-570 / by 50	430-480	430-480
270-320-370	370-570 / by 25	400-550 / by 25 (350-450 / by 25)	270-320-370	370-570 / by 25	400-550 / by 25 (350-450 / by 25)	360-560 / by 50
270-320-370	360-410-460	340-390-440	270-320-370	360-410-460	340-390-440	340-390-440
325-375-425	470, 545-670	550-620	325-375-425	470, 545-670	550-620	535-605
210-375	380-580	350-400-450	215-375	380-580	360-420-470	350-400-450
80°-145°	85°-175°	90°-180°	90°-165°	85°-175°	90°-180°	90°-135°
80°-125°	85°-170°	90°-180°	90°-150°	85°-170°	90°-180°	100°-180°
2 x 73	2 x 73	2 x 73	2 x 73	2 x 73	2 x 73	2 x 73
8	8	8	8	8	8	8
30-35	30-35	30-35	30-40	30-40	30-40	30-35
7.5	7.5	7.5	8-10	8-10	8-10	12
1200	1200	1200	1200	1200	1200	1200
2 x 300	2 x 300	2 x 300	2 x 300	2 x 300	2 x 300	2 x 500
665	665	665	715	715	715	900
60	70 - 80	70 - 100	70	60 - 80	70 - 90	60 - 80
yes	yes	yes	yes	yes	yes	yes
Pilot+	R-net	R-net	Pilot+	R-net	R-net	R-net
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
no	yes	yes	no	yes	yes	yes
no	yes	yes	no	yes	yes	yes
2	2	2	2	2	2	2

X850		M400	Koala	Chairman HD	K300PS JR	K450
Corpus	**TS** (TS Jr.)	**Corpus 3G**	**Miniflex**	**Corpus**	**PS Jr**	**MX**
1260-1460	1260-1460	1105	965	1120	1080	1240
720	720	620	560	700	620	640
1260	1260	815	710	920	885	1110
560	560	450	410	550	460	-
560-760	560-760	450-650	410-660	550-750	460-660	100-650
190	190	149	85	165	109	112
136	136	136	35	200	76	60
430-480	380-530 (380-430)	420-570 (by 50)	250-300-350	480-530-580	275-400	250-400 / by 50
360-560 / by 50	380-550 (250-370)	370-570	270-320-370	435-635 (by 50)	250-450	250-400 / by 50
340-390-440	380-530 (380-430)	360-410-460	270-320-370	460-510-560	275-400	250-350 / by 50
535-605	450-600 (450)	470, 545-670	325-375-425	720	350-560	325-475
350-400-450	-	380-580	250-350	470-520-570	adjustable	adjustable
90°-120°	90°-120°	up to 175°	90°-165°	90°-135°	85˚-120˚	adjustable
-	-	up to 170°	90°-150°	90°-135°	-	90°-180°
2 x 97	2 x 97	2 x 60 - 2 x 73	2 x 40	2 x 73	2 x 60	2 x 60
11	11	8	8	8	8	8
35-45	35-45	30-35	25-30	30-40	30-35	30-35
10-15	10-15	10-12	6.5	6.5	7	8.5
3500	3500	1200 - 2000	1000	1200	1200	1200
2 x 500	2 x 500	2 x 350	2 x 300	2 x 300	2 x 250	2 x 250
1680	1680	585	570	750	625	1060
110	110	60 - 80	60	60	60 - 80	50 - 60
yes	yes	yes	no	no	yes	yes
Perm. Safegate	Perm. Safegate	R-net	Pilot+	Pilot+	R-net	R-net
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
-	-	yes	no	yes	no	no
yes	yes	yes	no	yes	no	no
2	2	2	2	2	2	2

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